

Foreword

The Operator's Manual

▲ You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator's Manual. You must understand and follow the instructions in the Operator's Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

Do not operate the machine without an Operator's Manual, or if there is anything on the machine you do not understand.

Treat the Operator's Manual as part of the machine. Keep it clean and in good condition. Replace the Operator's Manual immediately if it is lost, damaged or becomes unreadable.

California Proposition 65

▲ WARNING Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Machine Delivery and Installation

Even if you have operated this type of equipment before, it is very important that your new machines operations and functions are explained to you by a JCB Dealer Representative following delivery of your new machine.

Following the installation you will know how to gain maximum productivity and performance from your new product.

Please contact your local JCB dealer if the Installation Form (included in this manual) has not yet been completed with you.

Your local JCB Dealer is



OPERATOR'S MANUAL

LOADALL (ROUGH TERRAIN
VARIABLE REACH TRUCK)
526-56, 531-70, 531T70, 535-95,
536T195, 536-60, 536T160, 536T70,
536T70LP, 541-70, 541T70,
550-80, 550T80, 560-80, 560T80

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This manual contains original instructions, verified by the manufacturer (or their authorized representative).

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Acronyms Glossary

2WD	Two Wheel Drive
CAN	Controller Area Network
CESAR	Construction Equipment Security and Registration
DEF	Diesel Exhaust Fluid
DTV	Dual Technology Variable Transmission
ECU	Electronic Control Unit
FEAD	Front End Accessory Drive
FOPS	Falling Object Protective Structure
HVAC	Heating Ventilation Air Conditioning
ISO	International Organization for Standardization
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LLMC	Longitudinal Load Moment Control
LLMI	Longitudinal Load Moment Indicator
LMI	Load Moment Indicator
LSD	Limited Slip Differential
OECD	Organization for Economic Cooperation and Development
PIN	Product Identification Number
RMS	Root Mean Square
ROPS	Roll-Over Protective Structure
RPM	Revolutions Per Minute
SCR	Selective Catalytic Reduction
SRS	Smooth Ride System
SWL	Safe Working Load

Notes:





Introduction About this Manual

Model and Serial Number

This manual provides information for the following model(s) in the JCB machine range:

Model	From:	To:
526-56	2460601	2473000
	2565203	2575200
	2724382	2734380
	2781755	2792710
531-70	2460601	2473000
	2565203	2575200
	2724382	2734380
	2781755	2792710
535-95	2460601	2473000
	2565203	2575200
	2724382	2734380
	2781755	2792710
536160	2460601	2473000
	2565203	2575200
	2724382	2734380
536170	2460601	2473000
	2565203	2575200
536170LP	2460601	2473000
	2565203	2575200
541-70	2460601	2473000
	2565203	2575200
	2724382	2734380
541-70	2460601	2473000
	2565203	2575200
	2724382	2734380
550-80	2460601	2473000
	2565203	2575200
	2724382	2734380
550180	2460601	2473000
	2565203	2575200
	2724382	2734380
560-80	2460601	2473000
	2565203	2575200
	2724382	2734380
	2781755	2792710



Model	From:	To:
560T80	2781755	2792710
	2460601	2473000
	2565203	2575200
	2724382	2734380

Using the Manual

This operator's manual is arranged to give you a good understanding of the machine and its safe operation. It also contains maintenance and technical data.

Read this manual from the front to the back before you use the machine for the first time, even if you have used machines of a similar/same type before as the technical specification, systems and controls of the machine may have changed. Particular attention must be given to all the safety aspects of operating and maintaining the machine.

If there is anything you are not sure about, ask your JCB dealer or employer. Do not guess, you or others could be killed or seriously injured.

The general and specific warnings in this section are repeated throughout the manual. Read all the safety statements regularly, so you do not forget them. Remember that the best operators are the safest operators.

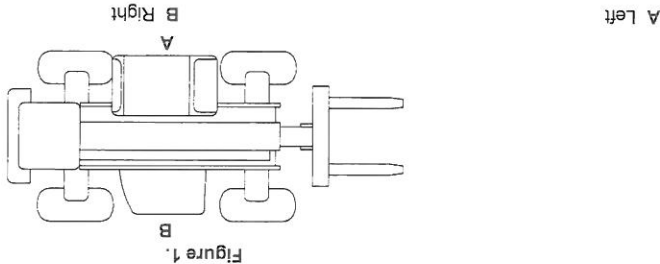
The illustrations in this manual are for guidance only. Where the machines are different, the text and or the illustration will specify.

The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will be accepted for discrepancies which may occur between specifications of the machine and the descriptions contained in this manual.

All of the optional equipment included in this manual may not be available in all territories

Left-Hand Side, Right-Hand Side

In this manual, 'left' and 'right' mean your left and right when you are seated correctly in the machine.



Cab/Canopy

This manual frequently makes references to the cab. For example, 'do not operate the machine without an operator's manual in the cab'. These statements also apply to canopy build machines.

Cross References

In this manual, cross references are made by presenting the subject title in blue (electronic copy only). The number of the page upon which the subject begins is indicated within the brackets. For example: Refer to: Cross References (Page 2).

Safety

Safety - Yours and Others

All machinery can be hazardous. When a machine is correctly operated and maintained, it is a safe machine to work with. When it is carelessly operated or poorly maintained it can become a danger to you (the operator) and others.

In this manual and on the machine you will find warning messages, you must read and understand them. They inform you of potential hazards and how to avoid them. If you do not fully understand the warning messages, ask your employer or JCB dealer to explain them.

Safety is not just a matter of responding to the warnings. All the time you are working on or with the machine you must be thinking of what hazards there might be and how to avoid them.

Do not work with the machine until you are sure that you can control it.

Do not start any work until you are sure that you and those around you will be safe.

If you are not sure of anything, about the machine or the work, ask someone who knows. Do not assume anything.

Remember:

- Be careful
- Be alert
- Be safe.

Safety Warnings

In this manual there are safety notices. Each notice starts with a signal word. The signal word meanings are given below.

The signal word 'DANGER' indicates a hazardous situation which, if not avoided, will result in death or serious injury.

The signal word 'WARNING' indicates a hazardous situation which, if not avoided, could result in death or serious injury.

The signal word 'CAUTION' indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

The signal word 'Notice' indicates a hazardous situation which, if not avoided, could result in machine damage.

The safety alert system symbol (shown) also helps to identify important safety messages in this manual. When you see this symbol your safety is involved, carefully read the message that follows.

Figure 2. The safety alert system symbol





General Safety

Training

To operate the machine safely you must know the machine and have the skill to use it. You must abide by all relevant laws, health and safety regulations that apply to the country you are operating in. The operators manual instructs you on the machine, its controls and its safe operation; it is not a training manual. Ensure that you receive the correct training before operating any machinery. Failing to do so will result in incorrect operation of the machine and you will be putting yourself and others at risk. In some markets, and for work on certain jobsites, you may be required to have been trained and assessed in accordance with an operator competence scheme. Make sure that you and your machine comply with relevant local laws and jobsite requirements – it is your responsibility.

Care and Alertness

All the time you are working with or on the machine, take care and stay alert. Always be careful. Always be alert for hazards.

Clothing

You can be injured if you do not wear the correct clothing. Loose clothing can get caught in the machinery. Keep cuffs fastened. Do not wear a necktie or scarf. Keep long hair restrained. Remove rings, watches and personal jewellery.

Alcohol and Drugs

It is extremely dangerous to operate machine when under the influence of alcohol or drugs. Do not consume alcoholic drinks or take drugs before or while operating the machine or attachments. Be aware of medicines which can cause drowsiness.

Feeling Unwell

Do not attempt to operate the machine if you are feeling unwell. By doing so you could be a danger to yourself and those you work with.

Mobile Phones

Switch off your mobile phone before entering an area with a potentially explosive atmosphere. Sparks in such an area could cause an explosion or fire resulting in death or serious injury. Switch off and do not use your mobile phone when refuelling the machine.

Lifting Equipment

You can be injured if you use incorrect or faulty lifting equipment. You must identify the weight of the item to be lifted then choose lifting equipment that is strong enough and suitable for the job. Make sure that lifting equipment is in good condition and complies with all local regulations.

Raised Equipment

Never walk or work under raised equipment unless it is supported by a mechanical device. Equipment which is supported only by a hydraulic device can drop and injure you if the hydraulic system fails or if the control is operated (even with the engine stopped).

Raised Machine

Never position yourself or any part of your body under a raised machine which is not correctly supported. If the machine moves unexpectedly you could become trapped and suffer serious injury or be killed.

Lightning

Lightning can kill you. Do not use the machine if there is lightning in your area.

Machine Modifications

This machine is manufactured in compliance with prevailing legislative requirements. It must not be altered in any way which could affect or invalidate its compliance. For advice consult your JCB dealer.



Clothing and Personal Protective Equipment (PPE)

Do not wear loose clothing or jewellery that can get caught on controls or moving parts. Wear protective clothing and personal safety equipment issued or called for by the job conditions, local regulations or as specified by your employer.

Lined writing area consisting of 15 horizontal lines.

Notes:





About the Product Introduction

General

Before you start using the machine, you must know how the machine operates. Use this part of the manual to identify each control lever, switch, gauge, button and pedal. Do not guess, if there is anything you do not understand, ask your JCB dealer.

Name and Address of the Manufacturer

JCB Excavators Limited, Lakeside Works, Rocester, Litchexeter, United Kingdom, ST145JP

Product Compliance

Your JCB product was designed to comply with the laws and regulations applicable at the time of its manufacture for the market in which it was first sold. In many markets, laws and regulations exist that require the owner to maintain the product at a level of compliance relevant to the product when first produced. Even in the absence of defined requirements for the product owner, JCB recommend that the product compliance be maintained to ensure safety of the operator and exposed persons and to ensure the correct environmental performance. Your product must not be altered in any way which could affect or invalidate any of these requirements. For advice consult your JCB dealer.

For its compliance as a new product, your JCB and some of its components may bear approval numbers and markings, and may have been supplied with a Declaration/Certificate of Conformity. These markings and documents are relevant only for the country/region in which the product was first sold to the extent that the laws and regulations required them.

Re-sales and import/export of products across territories with different laws and regulations can cause new requirements to become relevant for which the product was not originally designed or specified. In some cases, pre owned products irrespective of their age are considered new for the purposes of compliance and may be required to meet the latest requirements which could present an insurmountable barrier to their sale/use.

Despite the presence of any compliance related markings on the product and components, you should not assume that compliance in a new market will be possible. In many cases it is the person responsible for import of a pre owned product into a market that becomes responsible for compliance and who is also considered the manufacturer.

JCB may be unable to support any product compliance related enquiry for a product which has been moved out of the legislative country/region where it was first sold, and in particular where a product specification change or additional certification would have been required in order for the product to be in compliance.



Description

General

The JCB Loadall is a self propelled, seated operator, wheeled machine for operation on unimproved natural terrain and disturbed terrain.

A main structural support is designed to carry an extending boom with a carriage mounted on the front to which forks or an approved attachment can be fitted.

When used normally the machine lifts and places loads by extending/retracting, raising/lowering the boom.

Intended Use

The machine is intended to be used in normal conditions for the applications described in this manual. If the machine is used for other applications or in dangerous environments, for example in a flammable atmosphere or in areas with dust containing asbestos, special safety regulations must be obeyed and the machine must be equipped for use in these environments.

Make sure you follow the instructions outlined in the operator's manual of the mounted or trailed machinery or trailer. Do not operate the combination tractor-machine or tractor-trailer unless all instructions have been followed.

Log Moving/Object Handling

Do not use the machine to move or handle logs unless sufficient log protection is installed. You could cause serious injury to yourself and damage to the machine. For more information, contact your JCB dealer.

Optional Equipment and Attachments

A wide range of optional attachments are available to increase the versatility of your machine. Only the JCB approved attachments are recommended for use with your machine. Contact your JCB dealer for the full list of approved attachments available.

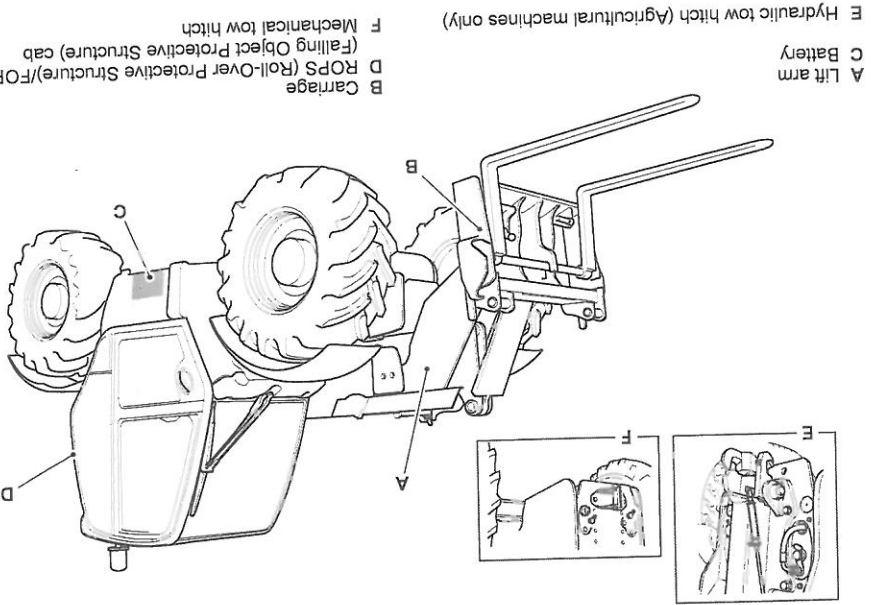
Danger Zone

The danger zone is any zone within and/or around the machinery in which a person is subject to a risk to their health or safety. The danger zone includes the area in immediate proximity to any hazardous moving parts, areas into which working equipment and attachments can be moved to quickly, the machine normal stopping distances and also areas into which the machine can quickly turn under normal conditions of use. Depending on the application at the time, the danger zone could also include the area into which debris, from use of an attachment or working tool, could be projected and any area into which debris could fall from the machine. During the operation of the machine, keep all persons out of the danger zone. Persons in the danger zone could be injured.

Before you do a maintenance task, make the product safe, stopping operation, isolating the controls and turning off the engine.

Main Component Locations

Figure 3.





Product and Component Identification

Machine

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Machine Identification Plate

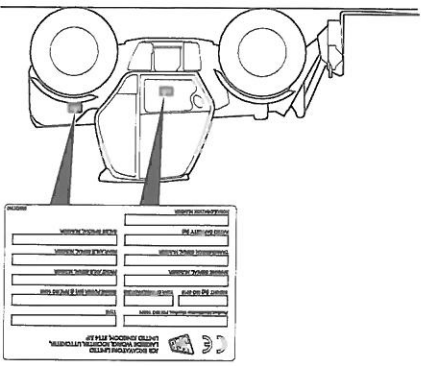
Your machine has an identification plate mounted in one of two positions as shown. The serial numbers of the machine and its major units are shown on the plate.

The machine model and build specification is indicated by the PIN (Product Identification Number)

The serial number of each major unit is also shown on the unit itself. If a major unit is replaced by a new one, the serial number on the identification plate will be wrong. Either get a replacement identification plate from your JCB Dealer or simply remove the old number. This will prevent the wrong unit number being quoted when replacement parts are ordered. The machine and engine serial numbers can help identify exactly the type of equipment you have.

The machine identification plate fitted to European Tractor Type Approved builds is different. Refer to Figure 5.

Figure 4.



Typical Product Identification Number

The machine model and build specification are indicated by the PIN. The PIN has 17 digits and must be read from left to right.

Table 1. Typical PIN

JCB	SAA	J	E	C	G1234567
-----	-----	---	---	---	----------

Table 2.

Digit 1 to 3	World Manufacturer Identification
JCB	United Kingdom
GEO	Georgia, US
HAR	Haryana, India
SOR	Sorocaba, Brazil
GET	Gatersleben, Germany
PUN	Pune, India



Digit 1 to 3	World Manufacturer Identification
SHA	Shanghai, China
JBP	JCB Branded Products

Table 3.

Digit 4 to 6	Machine Model
5AA	531-70
5AB	535-95
5AC	536-60
5AD	541-70
5AE	540-170
5AH	533-105
5AL	540-140
5AN	535-125 HiViz
5AP	535-140 HiViz
5AR	536-70
5AS	526-56
5AW	550-80
5AX	540-200
5AY	560-80
5A1	536-70 LP
5TA	531-70
5TB	541-70
5TC	536-60
5TD	535-95
5TE	536-70
5T1	536-70 LP
5UW	550-80
5UY	560-80

Table 4.

Digit 7	Engine Type
JCB Diesemax (Tier 4):	
2 (T4F)	81kW
3 (T4F)	93kW
4 (T4F)	108kW
7 (T4F)	55kW
8 (T4F)	68kW
A (T4F)	55kW
B (UN3/GB3)	68kW
C (UN3/GB3)	81kW
D (UN3/GB3)	93kW
E (UN3/GB3)	108kW

Table 5.

Digit 8	Gearbox Model
E	3 Speed (P5750) Agri Plus
F	3 Speed (P5760) Agri Plus
G	4 Speed (P5750) Agri Plus
H	4 Speed (P5760) Agri Plus



Digit 8	Gearbox Model
J	6 Speed (P576) Agri Super
M	4 Speed (SS700) Agri
N	4 Speed (P5750) Agri
W	DVTI (Dual Technology Variable Transmission)
	(HM560) Agri Pro

Table 6.

Digit 9
Random check letter. The check letter is used to verify the authenticity of a machine's PIN

Table 7.

Digit 10
Year of manufacture. 0 = N/A G = 2016 H = 2017 etc.

Table 8.

Digit 11 to 17
Machine serial number. Each machine has a unique serial number.

European Tractor Type Approved Builds

Figure 5.

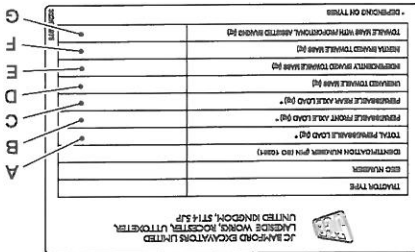


Table 9. Hitch Descriptions

H1	JCB Hydraulic Pick-up Hitch
H2/H3	Rockinger Fixed Clevis (Auto & Manual)
H4/H5/H6	Rockinger Ladder Clevis (Top Position)
H4/H5/H6	Rockinger Ladder Clevis (Bottom Position)
H7/H8	Rockinger Ladder with Piton/ Ball Ø80
H9	JCB Ladder with Clevis (Manual)
H10	JCB Piton

Table 10.

Item	51A	51B	51C	51D
kg	531-70	541-70	536-60	535-95
kg	11,000	11,000	11,000	11,000
Maximum Permitted Laden Mass ⁽¹⁾	From	From	From	From
Maximum Permitted Mass On Front Axle ⁽²⁾	To	To	To	To
	8,500	8,500	8,500	8,500



Item	531-70	541-70	531-70LP	531-70LP	531-70LP	531-70LP
	531-70	541-70	531-70LP	531-70LP	531-70LP	531-70LP
C	Maximum Permitted Mass On Rear	From	6,900	6,900	6,900	7,500
		To	7,500	7,500	7,500	7,500
D	Unbraked Towable Mass		750	750	750	750
E	Independently Braked Towable Mass		6,000	6,000	6,000	6,000
F	Inertia Braked Towable Mass		3,500	3,500	3,500	3,500
G	Towable Mass Fitted with a Propor-	H1	10,305	9,540	10,810	8,695
	tionally Assisted Braking System	H2-H10	17,280	15,780	17,855	14,270

(1) Dependent on tyre option.

Table 11.

Item	531-70	541-70	531-70LP	531-70LP	531-70LP	531-70LP
	531-70	541-70	531-70LP	531-70LP	531-70LP	531-70LP
A	Maximum Permitted Laden Mass ⁽¹⁾	From	11,000	11,000	13,500	13,500
		To	8,500	8,500	10,000	10,000
C	Maximum Permitted Mass On Rear	From	6,900	7,500	9,000	9,000
		To	8,500	8,500	10,000	10,000
D	Unbraked Towable Mass		750	750	750	750
E	Independently Braked Towable Mass		6,000	6,000	6,000	6,000
F	Inertia Braked Towable Mass		3,500	3,500	3,500	3,500
G	Towable Mass Fitted with a Propor-	H1	9,510	9,375	7,460	7,350
	tionally Assisted Braking System	H2-H10	15,710	16,325	10,805	10,570

(1) Dependent on tyre option.

Engine

Engine data labels are located on the cylinder block and rocker cover (if fitted). The data label contains important engine information and includes the engine identification number, injector codes are on a label on the rocker cover.

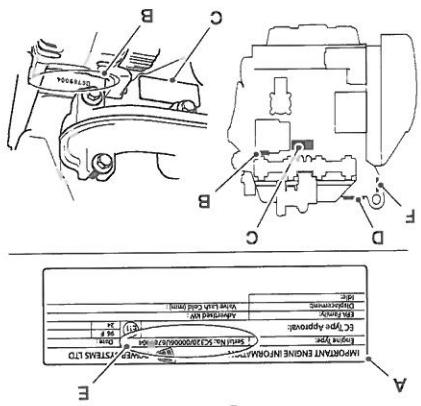


Figure 6.

- A Engine data label
- C Engine data label - cylinder block
- E Engine identification number
- F Injector codes label - rocker cover
- B Stamp - cylinder block
- D Engine data label - rocker cover

The data label includes the engine identification number.

Digit	SJ	320/4001	U	11	12-16	17-18
04						

Table 12. Example of the engine identification number

Digit 1-2	Engine Type
SJ	4.4L turbocharged and aftercooled electronic common rail fuel injection (Tier 4F) < 55kW
DJ	4.8L turbocharged and aftercooled electronic common rail fuel injection (Tier 4F)
SL	4.4L turbocharged and aftercooled electronic common rail fuel injection (Tier 4F) 55kW
FL	3L turbocharged and aftercooled electronic common rail fuel injection (Tier 4F)
SM	4.4L turbocharged and aftercooled electronic common rail fuel injection (Tier 3 High Sulphur UN3/GB3) < 55kW
DM	4.8L turbocharged and aftercooled electronic common rail fuel injection (Tier 3 High Sulphur UN3/GB3) < 55kW

Table 13.

Digit	Explanation
3-10	Engine part number
11	Country of manufacture. U = United Kingdom
12-16	Engine serial number
17-18	Year of manufacture

Table 14. Explanation of the engine identification number

The country of manufacturer, engine serial number and year of manufacture of the engine are also stamped on the cylinder block. Refer to Figure 6.



Axle(s)

For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F]

Page 15

Page 15

(For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

The axles have a serial number stamped on a data plate as shown.

To view the front axle data plate remove the cover. The plate will be visible through hole.

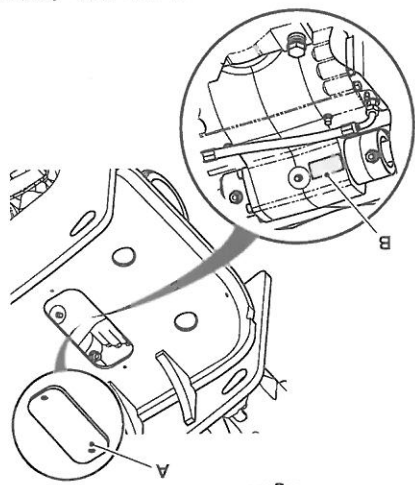


Figure 7. Front axle

A Cover
B Data plate - front axle

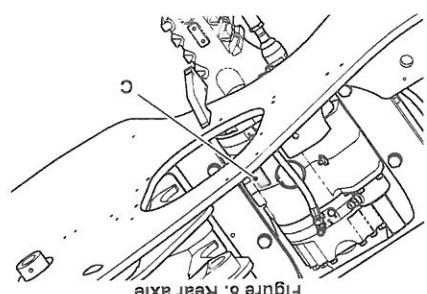


Figure 8. Rear axle

C Data plate - rear axle

(Otherwise)

The axles have a serial number stamped on a data plate as shown.

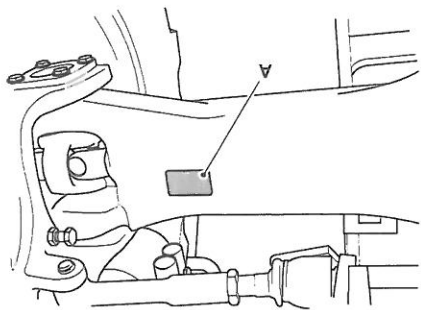


Figure 9. Front axle

A Data plate - front axle

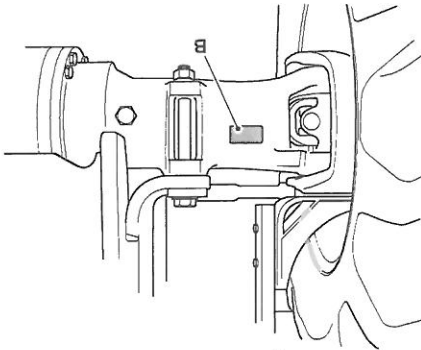


Figure 10. Rear axle

B Data plate - rear axle

Gearbox

For: 526-56 [T4F] Page 16
 For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F] Page 17
 (For: 526-56 [T4F])
 The gearbox has a serial number stamped on a data plate as shown.

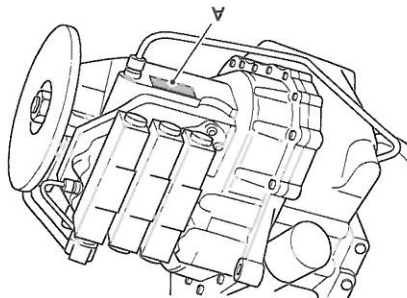


Figure 11. Power-shift Transmission

A Data plate

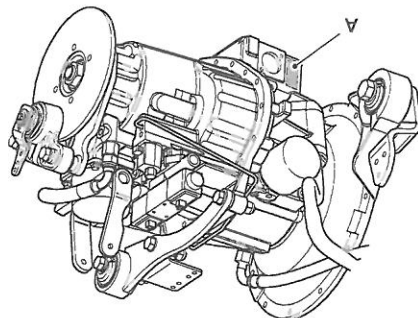


Figure 12. Synchro Shuttle Transmission

A Data plate

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560-80 [UN3/GB3], 560-80 [T4F], 560U80 [T4F])

The gearbox has a serial number stamped on a data plate as shown.

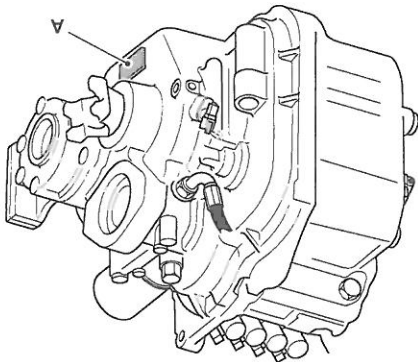


Figure 13. Power-shift Transmission

A Data plate

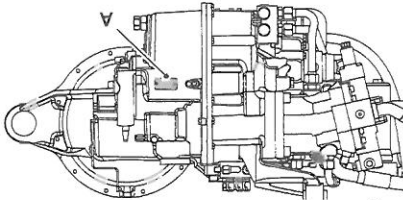


Figure 14. Dual Tech Variable Transmission

A Data plate

Operator Protective Structure

▲ WARNING You could be killed or seriously injured if you operate a machine with a damaged or missing ROPS/FOPS/FGS. If the ROPS/FOPS/FGS has been in an accident, do not use the machine until the structure has been renewed. Modifications and repairs that are not approved by the manufacturer may be dangerous and will invalidate the ROPS/FOPS/FGS certification.

WARNING Machines with a ROPS, FOPS, FOGS or TOPS are equipped with a seat belt. The ROPS, FOPS, FOGS or TOPS is designed to give you protection in an accident. If you do not wear the seat belt you could be thrown off the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

FOPS Data Plate

▲ WARNING Do not use the machine if the falling objects protection level provided by the structure is not sufficient for the application. Falling objects can cause serious injury.

If the machine is used in any application where there is a risk of falling objects then a FOPS (Falling Object Protective Structure) must be installed. For further information, contact your JCB dealer.

The FOPS has a data plate attached. The data plate indicates what level of protection the structure provides.

There are two levels of FOPS:

- Level 1 Impact Protection - impact strength for protection from small falling objects (e.g. bricks, small concrete blocks, hand tools) encountered in operations such as highway maintenance, landscaping and other construction site services.

- Level II Impact Protection - impact strength for protection from heavy falling objects (e.g. trees, rocks) for machines involved in site clearing, overhead demolition or forestry.

ROPS Data Plate

▲ WARNING Your machine may be installed with a Roll-Over Protective Structure (ROPS) indicating that the purchaser specified the machine for use in applications where there is risk of roll-over. ROPS is a device to protect the operator in the event of roll-over. Any damage or modification to the structure may invalidate the ROPS certification. If damage has occurred then an authorised JCB dealer should be consulted.

A machine with a ROPS (Roll-Over Protective Structure) can be identified by referring to the cab identification plate. Work place (work site, job site) risk assessment should facilitate the machine selection and the need for an machine with a ROPS.

WA SERIAL NUMBER XXXXXXXXXXXXXXXXXX	YEAR OF MANUFACTURE XXXX	STAFF ENGLAND STAFF	ROPS COMPLIANCE EN 12448 EN 12449 EN 12450 EN 12451 EN 12452 EN 12453 EN 12454 EN 12455 EN 12456 EN 12457 EN 12458 EN 12459 EN 12460 EN 12461 EN 12462 EN 12463 EN 12464 EN 12465 EN 12466 EN 12467 EN 12468 EN 12469 EN 12470 EN 12471 EN 12472 EN 12473 EN 12474 EN 12475 EN 12476 EN 12477 EN 12478 EN 12479 EN 12480 EN 12481 EN 12482 EN 12483 EN 12484 EN 12485 EN 12486 EN 12487 EN 12488 EN 12489 EN 12490 EN 12491 EN 12492 EN 12493 EN 12494 EN 12495 EN 12496 EN 12497 EN 12498 EN 12499 EN 12500
CAB WA PART NUMBER XXXX/XXXX	MAX UNDER MASS XXXX KG	ROPS COMPLIANCE EN 12448 EN 12449 EN 12450 EN 12451 EN 12452 EN 12453 EN 12454 EN 12455 EN 12456 EN 12457 EN 12458 EN 12459 EN 12460 EN 12461 EN 12462 EN 12463 EN 12464 EN 12465 EN 12466 EN 12467 EN 12468 EN 12469 EN 12470 EN 12471 EN 12472 EN 12473 EN 12474 EN 12475 EN 12476 EN 12477 EN 12478 EN 12479 EN 12480 EN 12481 EN 12482 EN 12483 EN 12484 EN 12485 EN 12486 EN 12487 EN 12488 EN 12489 EN 12490 EN 12491 EN 12492 EN 12493 EN 12494 EN 12495 EN 12496 EN 12497 EN 12498 EN 12499 EN 12500	

Figure 15.

WA SERIAL NUMBER XXXXXXXXXXXXXXXXXX	YEAR OF MANUFACTURE XXXX	STAFF ENGLAND STAFF	ROPS COMPLIANCE EN 12448 EN 12449 EN 12450 EN 12451 EN 12452 EN 12453 EN 12454 EN 12455 EN 12456 EN 12457 EN 12458 EN 12459 EN 12460 EN 12461 EN 12462 EN 12463 EN 12464 EN 12465 EN 12466 EN 12467 EN 12468 EN 12469 EN 12470 EN 12471 EN 12472 EN 12473 EN 12474 EN 12475 EN 12476 EN 12477 EN 12478 EN 12479 EN 12480 EN 12481 EN 12482 EN 12483 EN 12484 EN 12485 EN 12486 EN 12487 EN 12488 EN 12489 EN 12490 EN 12491 EN 12492 EN 12493 EN 12494 EN 12495 EN 12496 EN 12497 EN 12498 EN 12499 EN 12500
CAB WA PART NUMBER XXXX/XXXX	MAX UNDER MASS XXXX KG	ROPS COMPLIANCE EN 12448 EN 12449 EN 12450 EN 12451 EN 12452 EN 12453 EN 12454 EN 12455 EN 12456 EN 12457 EN 12458 EN 12459 EN 12460 EN 12461 EN 12462 EN 12463 EN 12464 EN 12465 EN 12466 EN 12467 EN 12468 EN 12469 EN 12470 EN 12471 EN 12472 EN 12473 EN 12474 EN 12475 EN 12476 EN 12477 EN 12478 EN 12479 EN 12480 EN 12481 EN 12482 EN 12483 EN 12484 EN 12485 EN 12486 EN 12487 EN 12488 EN 12489 EN 12490 EN 12491 EN 12492 EN 12493 EN 12494 EN 12495 EN 12496 EN 12497 EN 12498 EN 12499 EN 12500	

Figure 16.

Data plate - ROPS/FOPS and OECD
(Organization for Economic Cooperation and
Development) standards

Protection Offered by the Cab

Definition of Category 1

The Cab meets the requirements defined in EN 15695-1. This means that the air delivery and filtration system does not provide a specified level of protection against hazardous substances but only from external atmospheric conditions (e.g. rain, wind, snow etc).

Definition of Category 2

The Cab meets the requirements defined in EN 15695-1. This means that the air delivery and filtration system provides protection against dust and the minimum differential pressure. The necessary filtered fresh air flow rate can be obtained using A/C system and by adjusting the maximum fan speed provided that doors, windows and hatches are closed and the recirculation device is deactivated.

Comfort and Safety Inside the Cab

The cab category 1 does not guarantee full protection against dust, aerosols and vapours.

The cab category 2 cab offers protection against dust but only partially for aerosols and vapours. For application of plant protection products (e.g. pesticides, fungicides, herbicides), refer to the instructions provided by the supplier of the chemical agent as well as instructions provided by the sprayer's manufacturer.

Personal protective equipment (PPE) must be used inside the cab when specified by those directions.



The air delivery system cannot offer a full protection, but a partial protection can be achieved by following some basic rules:

- Keep doors windows and hatches closed during the spraying operation.
- Keep the cab interior clean.
- Do not enter the cab with contaminated shoes and/or clothing.
- Keep all used personal protective equipment outside the cab.
- Bring the wire harness of the remote spray control box into the tractor cab.
- Remove the outside air delivery cab filter after the spraying operation and store it in a dry dust free room.
- Reserve it for the next spraying operation; replace with a service part filter.
- Active carbon filters must be properly stored in a sealed plastic bag to preserve their functionality.
- Use only genuine JCB filters and ensure that the filter is correctly installed.
- Check the condition of the sealing material and have it repaired when required.

Safety Labels

General

▲ WARNING Safety labels on the machine warn you of particular hazards. You can be injured if you do not obey the safety instructions shown.

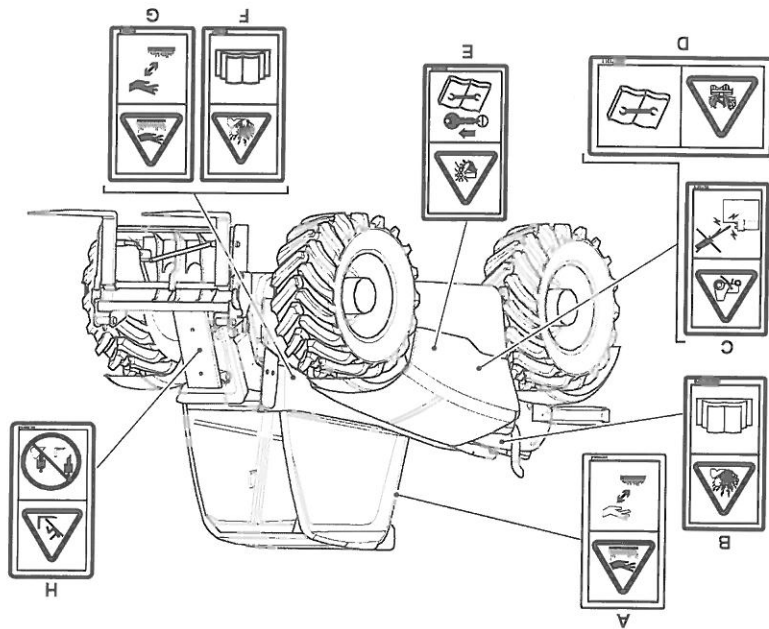
The safety labels are strategically placed around the machine to remind you of possible hazards.

If you need eye-glasses for reading, make sure you wear them when reading the safety labels. Do not over-stretch or put yourself in dangerous positions to read the safety labels. If you do not understand the hazard shown on the safety label, then refer to Safety Label Identification.

Keep all of the safety labels clean and readable. Replace a lost or damaged safety label. Make sure the replacement parts include the safety labels where necessary. Each safety label has a part number printed on it; use this number to order a new safety label from your JCB dealer.

Safety Label Identification

Figure 17.



Item	Part No.	Description	Qty.
A	8177/0004	Warning: Burns to fingers and hands. Stay a safe distance away.	1
B	332/G7379	Pressure hazard. Read Operator's Manual.	1
C	332/C9978	Run over hazard. Start the engine from the operator's seat only. Do not short across the terminals.	1
D	332/P7131	Pressure hazard. Read the Service Manual.	1
E	333/D0526	Severing of hands or fingers. Keep clear of/ do not reach into the moving parts. Stop the engine and remove the starter key before you start maintenance work. Refer to Maintenance Section in the Operator's Manual.	1
F	332/G7379	Pressure hazard. Read Operator's Manual.	1
G	8177/0004	Warning: Burns to fingers and hands. Stay a safe distance away.	1
H	8177/0011	Fall from raised attachment. Do not stand or ride on the bucket or forks.	1
J	332/P4650	Stability hazard. Read the Operator's Manual.	1
K	8177/0014	Warning. Read the Operator's Manual before you operate the machine.	1
L	8177/0029	Warning. Crush hazard. Wear seat belt.	1
M	8177/0040	Electrical hazard. Stay a safe distance away from power lines.	1
N	8177/0008	Crushing of whole body. Keep a safe distance from machine.	1
P	8177/0010	Crushing of whole body. Insert the boom support device before you complete any service or maintenance work underneath the boom.	1
R	332/G7379	Pressure hazard. Read Operator's Manual.	1

Table 15. Safety Labels

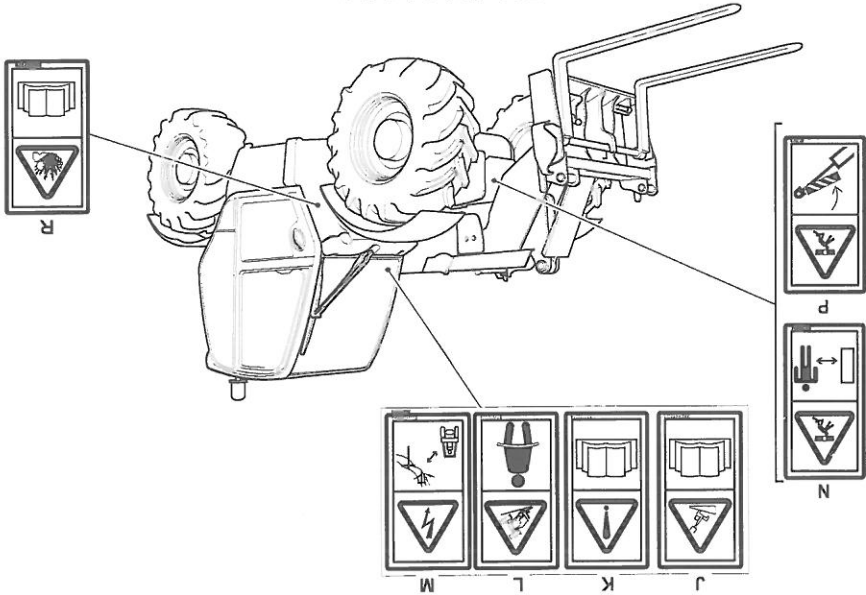


Figure 18.



Operator Station

Component Locations

For 526-56 [T4F] Page 23
 For 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 560-80 [T4F], 560-80 [T4F] Page 24
 (For: 526-56 [T4F])

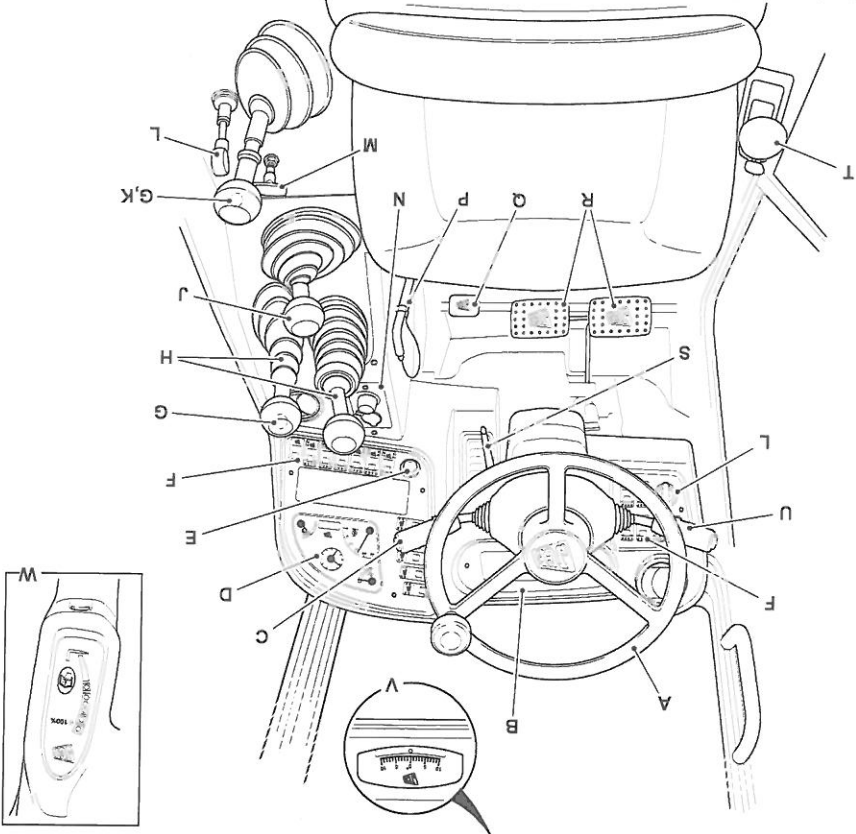


Figure 19.

- A Steering wheelRefer to: Steering Wheel (Page 85).
- C Multi-Purpose switchRefer to: Multi-Purpose Switch (Page 26).
- E Starter switchRefer to: Ignition Switch (Page 29).
- G Transmission dumpRefer to: Transmission Dump Switch (Page 97).
- J Auxiliary controlsRefer to: Auxiliary Circuit Controls (Page 160).
- K Gear lever (syncro shuttle transmission)Refer to: Gear Lever (Page 90).
- H Boom and carriage controlsRefer to: Operating Levers/Pedals (Page 152).
- F Console switchesRefer to: Console Switches (Page 99).
- D Instrument panelRefer to: Instrument Panel (Page 99).
- B Instrument panelRefer to: Instrument Panel (Page 99).

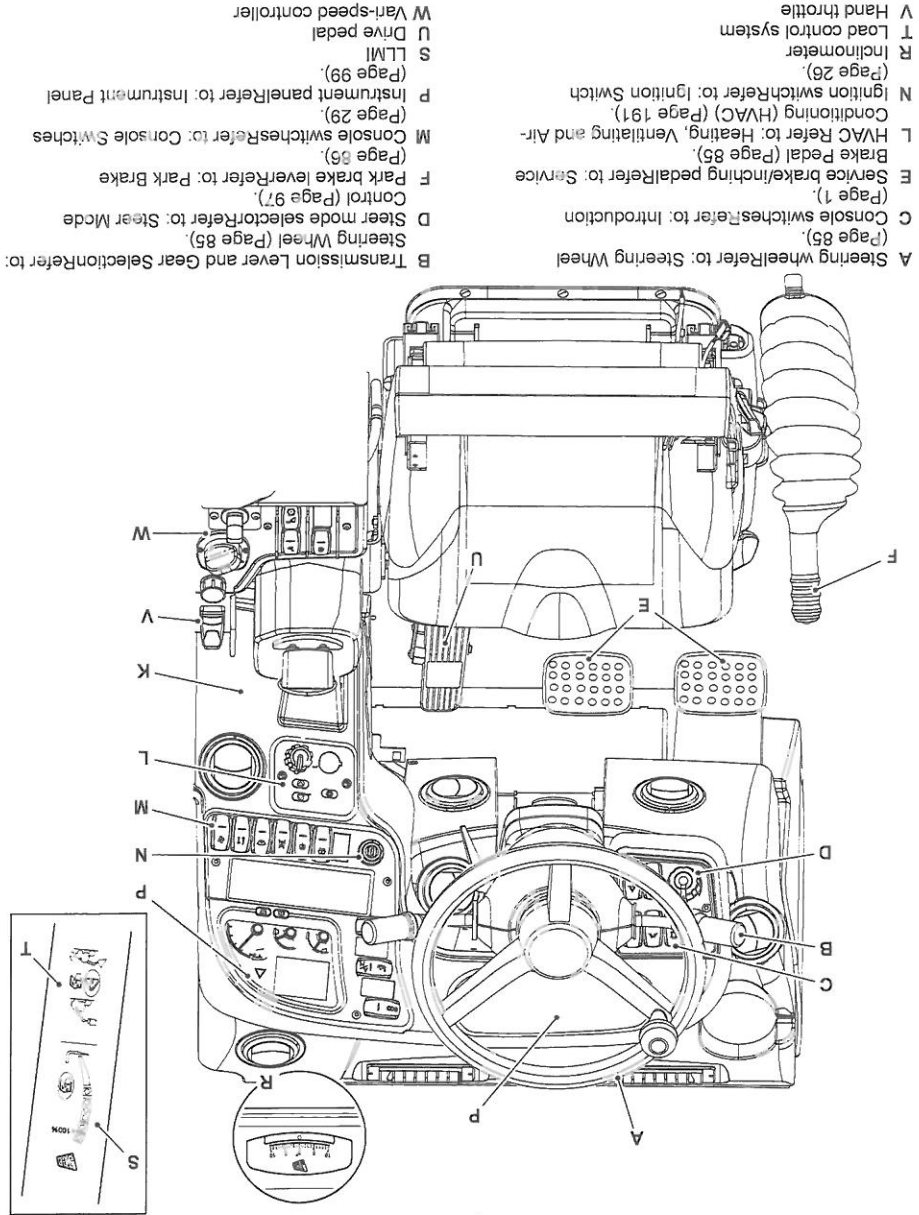


Figure 20.



Interior Switches

Ignition Switch

The ignition key operates the four-position ignition switch. The ignition key can only be inserted or removed in position 0.

If the engine fails to start, the ignition key must be returned to position 0 before the starter motor is re-engaged. Do not operate the starter motor for more than 20s without the engine firing. If the engine fires but does not fully start, let the starter motor cool for at least 2min between starts.

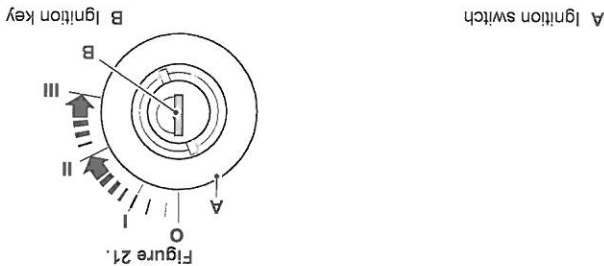


Table 16. Switch Positions

Position	Function
0	Off/Stop the Engine: Turn the ignition key to this position to stop the engine. Make sure the controls are in neutral and the boom is lowered before you stop the engine.
I	On: Turn the ignition key to this position to connect the battery to all of the electrical circuits. The ignition key will return to this position when it is released from position II or position III.
II	This position is not used.
III	Start: Turn the ignition key to this position to operate the starter motor and turn the engine. The ignition switch has an inhibitor to stop the ignition switch being turned ON when the engine is running.

Multi-Purpose Switch

Direction Indicators

Push the stalk forwards to indicate a left turn. Pull the stalk backwards to indicate a right turn. Place in central position to cancel.

Windscreen Wiper

Rotate the switch barrel to activate and cancel the windscreen wipers. The wiper speed can vary dependant on machine specification.

Single Speed (Standard)

0 = Off

I = On

Two Speed (Optional)

J = Intermittent Wipe

Press either end of the light unit to turn on the cab interior light.
 Press the other end of the light unit to turn off the cab interior light.
 Make sure the cab interior light is turned off when you intend to leave the machine for a long period of time.

Cab Interior Light

- A Backwards - Right turn
- C Rotate - Wiper on and off or intermittent
- E Upwards - Headlights flash
- B Forwards - Left Turn
- D Push - Washer on
- F Downwards - Main beam

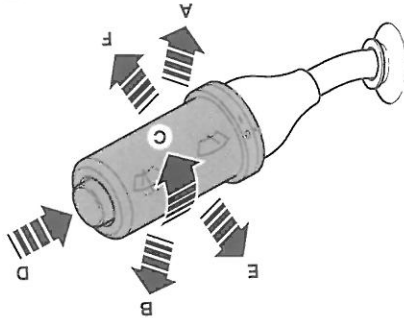


Figure 22.

When the road lights are switched on via main switch on console, push the stalk downwards to turn on the main beam. Pull the stalk upwards to the central position to turn off main beam. Switch off main beam for oncoming vehicles.

Main Beam

Lift the stalk upwards to flash the headlights. Allow the stalk to spring back to central position when finished.

Headlights Flash

Push the button to activate the windscreen washer. Allow the stalk to spring back to central position when finished.

Windscreen Washer

- 0 = Off
- 1 = Slow
- 11 = Fast

A Cab interior light

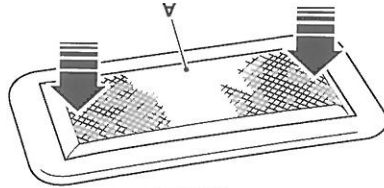


Figure 23.



General

The installed switches and their positions can change according to the specification of the machine.

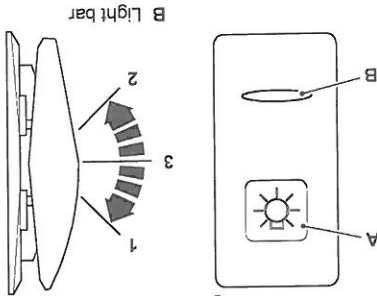
Each switch has a graphic symbol to show the function of the switch. Before you operate a switch, make sure that you understand its function.

The rocker switches have two or three positions (as shown).

If the switch has a backlight, then the graphic symbol illuminates when the ignition switch or side lights are in the on position.

The light bar illuminates to show that the switch function is active.

Figure 24.



A Graphic symbol

Road Lights



Three position rocker switch. The switch functions operate front sidelight, headlights and rear tail lights. Position 2 operates when the ignition is in the on and off positions, and rear tail lights are designed for site use. You may be breaking local laws if you travel on the road without headlights or side lights.

Position : 1 = Off
Position : 3 = Sidelights on
Position : 2 = Headlights and rear tail lights on (ignition switch on).
Position : 2 = Sidelights and rear tail lights on (ignition switch off).

Rear Fog Lights



Two position rocker switch. The switch functions operate when the ignition switch is in the on position and the headlights are on.
Position 1: Off
Position 2: Rear fog light on

Hazard Warning Lights



Two position rocker switch. The switch functions operate when the ignition switch is in the on and off positions.
Position : 1 = Off
Position : 2 = On. A light on the instrument panel flashes with the outside lights.

Console Switches



Work Lights

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])



(If fitted) Three position rocker switch. The switch functions operate when the ignition switch is in the on position. The work lights work independently of the main circuit lights.
Position : 1 = Off
Position : 2 = Front work lights on
Position : 3 = Front/rear/high work lights on.
WARNING! Do not drive on the road with the work lights switched on. You can interfere with other drivers visibility and cause an accident.

Transmission Mode



Two position rocker switch. The switch functions operate when the ignition switch is in the on position.
Position 1: Manual
Position 2: Auto (Push then release)

Transmission Disconnect



Three position rocker switch. The switch functions operate when the ignition switch is in the on position. If the ignition is cycled then the system returns to off (no transmission disconnect) even if the switch is left in position 3. Position 2 must be selected every key cycle to engage transmission disconnect.
Position 1: Off
Position 3: Prime
Position 2: Transmission disconnect (push then release)

Information



Two position rocker switch. The switch functions operate when the ignition switch is in the on position.
Position 1: Off
Position 2: On (Push then release to move to the next screen)

Tilt Lock



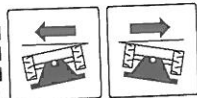
Two position rocker switch with backlight. The switch functions operate when the ignition switch is in the on position.
Position 1: Off (Backlight off)
Position 2: Tilt lock on (Backlight on)



Chassis Levelling

Three position rocker switch. The switch functions operate when the engine is running.

Position 1: Sway left - Push left - Push and hold the switch.
Position 3: Off.
Position 2: Sway right - Push right - Push and hold the switch.



Hydraulic Function

Two position push switch. The switch functions operate when the engine is running.

Position 1: Enable the hydraulic functions (turn the knob to the right then release).
Position 2: Disable the hydraulic functions (push the knob).

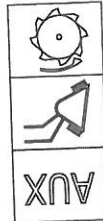


Hydraulic Mode

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Three position rocker switch. The switch functions operate when the engine is running.

Position 1: Auxiliary selection
Position 3: Automatic bucket control system
Position 2: Constant flow selector



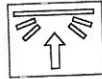
Refer to: Operating Levers/Pedals (Page 152).

Hydraulic Venting

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Two position rocker switch. The switch function differs depending on machine state.

Position 1: Off
Position 2: Service venting (ignition switch on, engine off) or
Position 2: Aux venting (engine running)



Refer to: Discharge (Page 361).

Hydraulic Tow Hitch

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Three position rocker switch. The switch functions operate when the engine is running.
 Position 1 : Raise tow hitch
 Position 3: Neutral
 Position 2: Lower tow hitch



Reverse Fan

Three position rocker switch. The switch functions operate when the engine is running. An ECU controls the fan speed and direction. The cooling fan rotation can be reversed to help clear debris from the grilles. Always position the machine in a relatively clean area before reversing the fan to make sure that other debris (chaff, silage, etc.) is not drawn in.



Position 1: Off
 Position 3: Auto - With Auto selected, every 15 minutes the machine will automatically reduce the fan speed, change the direction and then increase the fan speed to maximum for 10 seconds. The machine will then reduce the fan speed, change back to the correct direction and then return to the optimum fan speed required to cool the machine.
 Position 2: Manual (spring-loaded) - A buzzer will sound while you reverse the fan manually, the dash should be displayed notifications on the main display. With Manual selected (press and hold) the machine will automatically reduce the fan speed, change the direction and then increase the fan speed. The fan will stay reversed until the switch is released, then the machine will reduce the fan speed, change back to the correct direction and then return to the optimum fan speed required to cool the machine. When you release the switch from manual mode the fan will then be in auto mode. You will have to move the switch to position 1 to ensure the fan does not auto reverse.

Rear Window Wiper

Three position rocker switch. The wiper will self park when switched off.
 Position 1: Wiper off
 Position 3: Wiper on
 Position 2: Washer on (push and hold)



Roof Window Wiper

Three position rocker switch. The switch functions operate when the ignition switch is in the on position.
 Position 1: Wiper off
 Position 3: Wiper on
 Position 2: Washer on (push and hold)



Auxiliary Hydraulic Circuit

Two position rocker switch with backlight. The switch functions operate when the ignition switch is in the on position.
 Position 1: Rear auxiliary circuit (backlight off)
 Position 2: Front auxiliary circuit (backlight on)



ECO/Power

(For: 531-70 [T4F], 531T70 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], Dual Tech Variable Transmission (HM560))

ECO / POWER Two position rocker switch. The switch functions operate when the ignition switch is

in the on position.

Position 1: eco Mode – Machine moves faster at a lower engine rpm, making it quieter for low power jobs. The transmission response is reduced for smooth

operation. Suitable for yard use.

Position 2: Power Mode – More power and hydraulic speed for high power

requirements. The transmission response is optimised for rehandling with the use of the inching pedal. Suitable for loading bulk materials.

Auto 2WD

(For: 531-70 [T4F], 531T70 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], Dual Tech Variable Transmission (HM560))

Two position rocker switch. The switch functions operate when the ignition switch is in the on position.



Position 1: 2WD auto enabled. Select Auto 2WD for trailer towing, at all other times it

is recommended to select 4WD for optimum machine performance, and to minimise

uneven tyre wear.

Position 2: 2WD disabled - permanent 4WD.

Locking Pin Isolator



Two position rocker switch. The switch functions operate when the ignition switch is in the on position.

Position 1: Off (Light bar off)

Position 2: On (Light bar on) Spring loaded, push and hold while you move locking pins.



Operation Introduction

General

The aim of this part of the manual is to guide the operator step-by-step through the task of learning how to operate the machine efficiently and safely. Read the Operation section through from beginning to end.

The operator must always be aware of events happening in or around the machine. Safety must always be the most important factor when you operate the machine.

When you understand the operating controls, gauges and switches, practice using them. Drive the machine in an open space, clear of people. Get to know the 'feel' of the machine and its driving controls.

Do not rush the job of learning, make sure you fully understand everything in the Operation section. Take your time and work efficiently and safely.

Remember:

- Be careful.
- Be alert.
- Be safe.



Operating Safety

General

Training

Make sure that you have had adequate training and that you are confident in your ability to operate the machine safely before you use it. Practice using the machine and its attachments until you are completely familiar with the controls and what they do. With a careful, well-trained and experienced operator, your machine is a safe and efficient machine. With an inexperienced or careless operator, it can be dangerous. Do not put your life or the lives of others, at risk by using the machine irresponsibly. Before you start to work, tell your colleagues what you will be doing and where you will be working. On a busy site, use a signalman.

Before doing any job not covered in this manual, find out the correct procedure. Your local JCB distributor will be glad to advise you.

Fuel

Fuel is flammable, keep naked flames away from the fuel system. Stop the engine immediately if a fuel leak is suspected. Do not smoke while refuelling or working on the fuel system. Do not refuel with the engine running. Completely wipe off any spill fuel which could cause a fire. There could be a fire and injury if you do not follow these precautions.

Machine Condition

A defective machine can injure you or others. Do not operate a machine which is defective or has missing parts. Make sure the maintenance procedures in this manual are completed before using the machine.

Machine Limits

Operating the machine beyond its design limits can damage the machine, it can also be dangerous and increase the risk of the machine overturning. Do not operate the machine outside its limits. Do not try to upgrade the machine performance with unapproved modifications or additional equipment. Other factors may contribute to an increased risk of overturning, if in doubt stop immediately and request advice from your local JCB distributor.

Engine/Steering Failure

If the engine or steering fails, stop the machine as quickly as possible. Do not operate the machine until the fault has been corrected.

Exhaust Gases

Machine exhaust gases can harm and possibly kill you or bystanders if they are inhaled. Do not operate the machine in closed spaces without making sure there is good ventilation. If possible, install an exhaust extractor. If you begin to feel drowsy, stop the machine at once and get into fresh air.

Workites

Workites can be hazardous. Examine the site before working on it. You could be killed or injured if the ground gives way under your machine or if piled material collapses onto it. Check for potholes and hidden debris, logs, ironwork etc. Any of these could cause you to lose control of your machine. Check for utilities such as electric cables (overhead and underground), gas and water pipes etc. Mark the positions of the underground cables and pipes. Make sure that you have enough clearance beneath overhead cables and structures.

Communications

Bad communications can cause accidents. Keep people around you informed of what you will be doing. If you Workites can be noisy, do not rely on spoken commands.

Parking

An incorrectly parked machine can move without an operator. Follow the instructions in the Operator's Manual to park the machine correctly.

Banks and Trenches

Banked material and trenches can collapse. Do not work or drive too close to banks and trenches where there is danger of collapse.

Safety Barriers

Unguarded machines in public places can be dangerous. In public places, or where your visibility is reduced, place barriers around the work area to keep people away.



Lighting

Ensure adequate lighting of the worksite during operation; where necessary additional lighting may be required to improve visibility of hazards around the machine.

Sparks

Explosions and fire can be caused by sparks from the exhaust or the electrical system. Do not use the machine in closed areas where there is flammable material, vapour or dust.

Hazardous Atmospheres

This machine is designed for use in normal out door atmospheric conditions. It must not be used in an enclosed area without adequate ventilation. Do not use the machine in a potentially explosive atmosphere, i.e. combustible vapours, gas or dust, without first consulting your JCB dealer.

Regulations

Obey all laws, worksite and local regulations which affect you and your machine.

Electrical Power Cables

You could be electrocuted or badly burned if you get the machine or its attachments too close to electrical power cables.

You are strongly advised to make sure that the safety arrangements on site comply with the local laws and regulations concerning work near electric power lines.

Before you start using the machine, check with your electricity supplier if there are any buried power cables on the site.

There is a minimum clearance required for working beneath overhead power cables. You must obtain details from your local electricity supplier.

Working Platform

Using the machine as a working platform is hazardous. You can fall off and be killed or injured. Never use the machine as a working platform unless approved man-basket or man-crate (if applicable).

Machine Safety

Stop work at once if a fault develops. Abnormal sounds and smells can be signs of trouble. Examine and repair before resuming work.

Hot Components

Touching hot surfaces can burn skin. The engine and machine components will be hot after the unit has been running. Allow the engine and components to cool before servicing the unit.

Travelling at High Speeds

Travelling at high speeds can cause accidents. Always travel at a safe speed to suit working conditions.

Hillslides

Operating the machine on hillslides can be dangerous if the correct precautions are not taken. Ground conditions can be changed by rain, snow, ice etc. Check the site carefully. When applicable, keep all attachments low to the ground.

Visibility

Accidents can be caused by working in poor visibility. Use your lights to improve visibility. Keep the road lights, windows, mirrors and cameras clean (when fitted).

Do not operate the machine if you cannot see clearly.

Modification of the machine's configuration by the user (e.g. the fitting of large and non-approved attachments) may result in a restriction of the machine visibility.

Hands and Feet

Keep your hands and feet inside the machine. When using the machine, keep your hands and feet clear of moving parts. Keep your hands and feet within the operator compartment while the vehicle is in motion.



Controls

You or others can be killed or seriously injured if you operate the control levers from outside the machine. Operate the control levers only when you are correctly seated.

Passengers

Passengers in or on the machine can cause accidents. Do not carry passengers.

Fires

If your machine is equipped with a fire extinguisher, make sure it is checked regularly. Keep it in the correct machine location until you need to use it.

Do not use water to put out a machine fire, you could spread an oil fire or get a shock from an electrical fire. Use carbon dioxide, dry chemical or foam extinguishers. Contact your nearest fire department as quickly as possible.

Roll Over Protection

If the machine starts to roll over, you can be crushed if you try to leave the cab. If the machine starts to roll over, do not try and jump from the cab. Stay in the cab, with your seat belt fastened.

Confined Areas

Pay extra attention to proximity hazards when operating in confined areas. Proximity hazards include buildings, traffic and bystanders.

Safe Working Loads

Overloading the machine can damage it and make it unstable. Study the specifications in the Operator's Manual before using the machine.

Lightning

If you are inside the machine during a lightning storm stay in the machine until the storm has passed. If you are outside of the machine during a lightning storm stay away from the machine until the storm has passed. Do not attempt to mount or enter the machine.

If the machine is struck by lightning do not use the machine until it has been checked for damage and malfunction by trained personnel.

Worksite Safety

▲ WARNING You or others can be killed or seriously injured if you do unfamiliar operations without first practising them. Practise away from the worksite on a clear area. Keep other people away. Do not perform new operations until you are sure you can do them safely.

WARNING There could be dangerous materials such as asbestos, poisonous chemicals or other harmful substances buried on the site. If you uncover any containers or you see any signs of toxic waste, stop the machine and advise the site manager immediately.

WARNING Before you start using the machine, check with your local gas company if there are any buried gas pipes on the site.

If there are buried gas pipes we recommend that you ask the gas company for any specific advice regarding the way you must work on the site.

Some modern gas pipes cannot be detected by metal detectors, so it is essential that an accurate map of buried gas pipes is obtained before any excavation work commences.

Hand dig trial holes to obtain precise pipe locations. Any cast iron pipes found must be assumed to be gas pipes until contrary evidence is obtained.

Older gas pipes can be damaged by heavy vehicles driving over the ground above them.

Leaking gas is highly explosive.

If a gas leak is suspected, contact the local gas company immediately and warn all personnel on the site. Ban smoking, make sure that all naked lights are extinguished and switch off any engines which may be running.

You are strongly advised to make sure that the safety arrangements on site comply with the local laws and regulations concerning work near buried gas pipes.



CAUTION Before you start using the machine, check with your local public water supplier if there are buried pipes and drains on the site. If there are, obtain a map of their locations and follow the advice given by the water supplier.

You are strongly advised to make sure that the safety arrangements on site comply with the local laws and regulations concerning work near buried pipes and drains.

CAUTION If you cut through a fibre optic cable, Do not look into the end of it, your eyes could be permanently damaged.

An applicable worksite organisation is required in order to minimise hazards that are caused by restricted visibility. The worksite organisation is a collection of rules and procedures that coordinates the machines and people that work together in the same area. Examples of worksite organisation include:

- Restricted areas
- Controlled patterns of machine movement
- A system of communication.

You and/or your company could be legally liable for any damage you may cause to public utilities. It is your responsibility to make sure that you know the locations of any public utility cables or pipes on the worksite which could be damaged by your machine.

Risk Assessment

▲ DANGER Factors affecting machine stability include size and type of load, angle of elevation, the distance the boom is extended, ground condition and wind speed and direction.

It is the responsibility of the operator to assess the wind conditions and size of load before operating the machine.

It is the responsibility of the operator to assess the terrain, surface roughness, firmness of ground (remember that when wet, the ground will not support the same loads as when dry) before operating the machine.

It is the responsibility of the competent people that plan the work and operate the machine to make a judgement about the safe use of the machine, they must take into account the specific application and conditions of use at the time.

It is essential that a risk assessment of the work to be done is completed and that the operator obeys any safety precautions that the assessment identifies.

If you are unsure of the suitability of the machine for a specific task, contact your JCB dealer who will be pleased to advise you.

The following considerations are intended as suggestions of some of the factors to be taken into account when a risk assessment is made. Other factors may need to be considered.

A good risk assessment depends on the training and experience of the operator. Do not put your life or the lives of others at risk.

Personnel

- Are all persons who will take part in the operation sufficiently trained, experienced and competent? Are they fit and sufficiently rested? A sick or tired operator is a dangerous operator.
- Is supervision needed? Is the supervisor sufficiently trained and experienced?
- As well as the machine operator, are any assistants or lookouts needed?

The Machine

- Is it in good working order?
- Have any reported defects been corrected?
- Have the daily checks been carried out?
- Are the tyres still at the correct pressure and in good condition and is there sufficient fuel to complete the job (if applicable)?



The Load

- How heavy is it? Is it within the capabilities of the machine?
- How bulky is it? The greater the surface area, the more affected it will be by wind speeds.
- Is it an awkward shape? How is the weight distributed? Uneven loads are more difficult to handle.
- Is there a possibility of the load shifting while being moved?

General

An area selected as a loading/unloading area should be large enough to accommodate all the wheels of the machine and stabilisers (if fitted). It should not be necessary for the machine to make tight turns with an elevated load.

The area should be of consolidated firm ground, capable of accepting the weight of the machine and its load without significant deformation. Ideally, it should be substantially level in both planes, that is no gradient of more than 2.5% (1 in 40) in either plane.

However, your machine may safely be used for loading/unloading operations in areas which are not substantially level provided that its design capabilities are not exceeded and that the operator is satisfied that no part of the operation is outside the scope of his/her training and experience.

The capabilities of your machine are extended if stabilisers or sway control are fitted.

Traffic routes should be of consolidated firm ground with no gradient more severe than the following:

- Maximum up slope: 1.5% (1 in 7)
- Maximum down slope: 1.5% (1 in 7)
- Maximum lateral slope: 1.5% (1 in 7)

These figures apply only to the machine in its normal travelling mode, that is with boom retracted and with the upper surface of the heels of the fork arms not more than 500mm (19.7 in) above mean ground level, and travelling no faster than walking pace. Particularly in the case of a lateral slope, some form of restraint on the load may be necessary.

Observe the maximum wading depth of this machine. Water can enter the engine and axles, and the cooling fan can be damaged if the machine is operated in deeper water.

Loading/Unloading Area

- Is it level? Any slope of more than 2.5% (1 in 40) must be carefully considered.
- Is more than one direction of approach to the load possible? Approaching across the slope must be avoided, if possible.
- Is the ground solid? Will it support the weight of the machine when loaded?
- How rough is the ground? Are there any sharp projections which could cause damage, particularly to the tyres?
- Are there any obstacles or hazards in the area, for example, debris, excavations, manhole covers, power lines?
- Is the space sufficient for safe manoeuvring?
- Are any other machines or persons likely to be in or to enter the area while operations are in progress?

The Route to be Travelled

- How solid is the ground, will it provide sufficient traction and braking?
- How steep are any slopes, up/down/cross? A cross slope is particularly hazardous, is it possible to detour to avoid them?

Weather

- How windy is it? High wind will adversely affect the stability of a loaded machine, particularly if the load is bulky.
- Is it raining or is rain likely? The ground that was solid and smooth when dry will become uneven and slippery when wet, and it will not give the same conditions for traction, steering or braking.



Walk-Around Inspection

General

▲ WARNING Walking or working under raised attachments can be hazardous. You could be crushed by the attachments or get caught in the linkages. Lower the attachments to the ground before doing these checks. Also make sure that the park brake is engaged before doing these checks.

The following checks must be made each time you return to the machine after leaving it for any period of time. We advise you also to stop the machine occasionally during long work sessions and do the checks again.

All these checks concern the serviceability of the machine. Some concern your safety. Get your service engineer to check and correct any defects.

1. Check for cleanliness.
 - 1.1. Clean the windows, light lenses and the rear view mirrors (where applicable).
 - 1.2. Remove dirt and debris, especially from around the linkages, rams, pivot points and radiator.
 - 1.3. Make sure the cab step and handrails are clean and dry.
 - 1.4. Clean all of the safety and instructional labels. Replace any label that is missing or cannot be read.
2. Check for damage.
 - 2.1. Examine the machine generally for damaged and missing parts.
 - 2.2. Make sure that the attachment is correctly attached and in good condition.
 - 2.3. Make sure that all of the pivot pins are correctly installed.
 - 2.4. Examine the windows for cracks and damage. Glass splinters can blind.
 - 2.5. Check for oil, fuel and coolant leakage below the machine.
- WARNING!** You could be killed or injured if a machine tyre bursts. Do not use the machine with damaged, incorrectly inflated or excessively worn tyres.
3. Check the tyres.

Refer to: Tyres (Page 353).
4. Make sure that all of the filler caps are installed correctly.
5. Make sure that all of the access panels are closed correctly.

Refer to: Access Apertures (Page 312).
6. If the filler caps and access panels are installed with locks, we recommend that you lock them to prevent theft or tampering.

Entering and Leaving the Operator Station

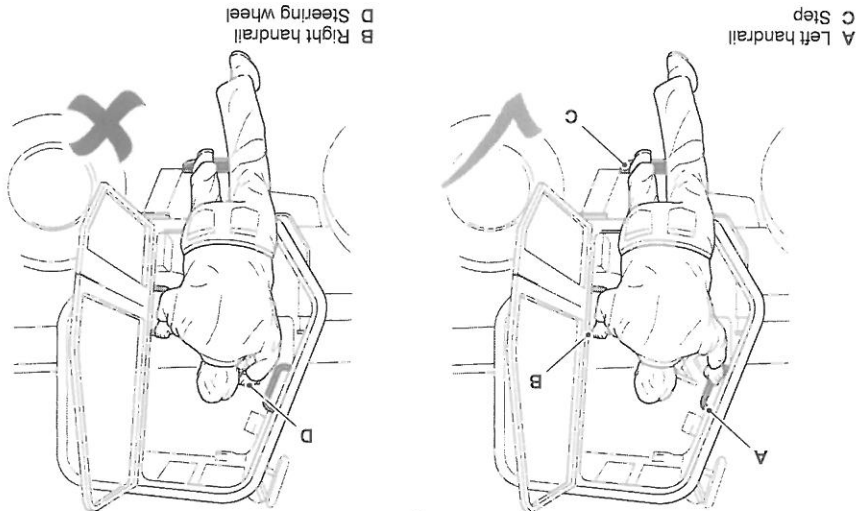
General

▲ CAUTION Entering or leaving the operator station must only be made where steps and handrails are provided. Always face the machine when entering and leaving. Make sure the steps, handrails and your boot soles are clean and dry. Do not jump from the machine. Do not use the machine controls as handholds, only use the handrails.

Make sure the machine is stopped and correctly parked before entering or leaving the cab. Refer to: General ('page 71).

When you get 'on' and 'off' the machine always maintain a three point contact with the handrails and step(s). Do not use the machine controls as handholds.

Figure 25.



Emergency Exit

For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 536T70LP [T4F], 541-70 [T4F], 541T70 [T4F], 536T70LP [T4F], 550-80 [T4F], 550U80 [T4F] Page 44
 For: 526-56 [T4F] Page 45

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 541-70 [T4F], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 536T70LP [T4F], 541-70 [T4F], 541T70 [T4F], 536T70LP [T4F], 550-80 [T4F], 550U80 [T4F])

▲ WARNING Do not obstruct the rear cab window, this is an emergency exit.

The rear window can be used as an emergency exit. Make sure the emergency exit is not obstructed.

1. Remove pins and open the window fully.

1.1. Pins should be removed in the event of an emergency. Do not remove the pins to increase the rear window opening.

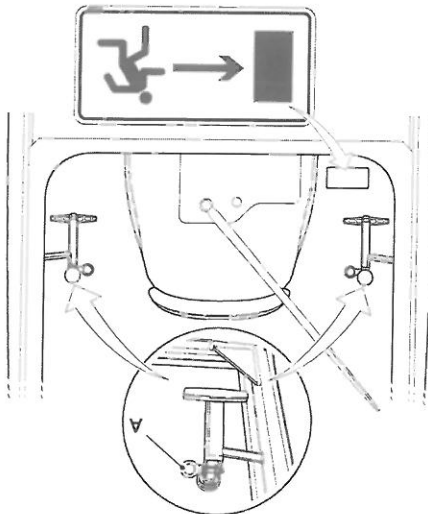


Figure 26.

A Pins

Glazing Breaker (if installed)

If the machine is installed with a glazing breaker, in an emergency use the glazing breaker to break the glass. Use the side screen as an emergency exit.
Remove the glazing breaker and strike the side screen near the corner, this will shatter the screen which can then be knocked out.
The right hand side cab glass is installed for the operator protection. If this is damaged, do not use the machine until it has been replaced.

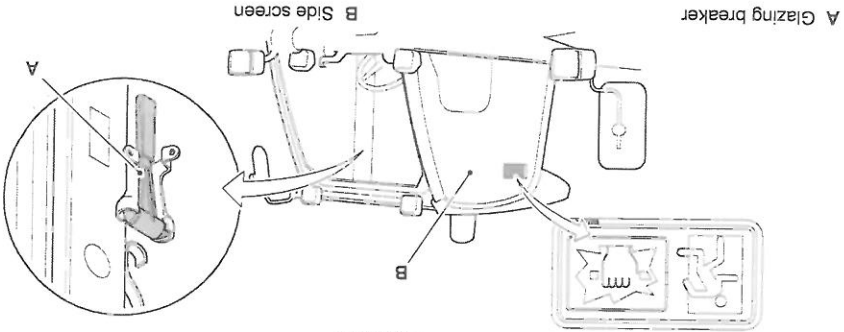


Figure 27.

(For: 526-56 [T4F])

▲ **WARNING** Do not obstruct the rear cab window, this is an emergency exit.



The main panel of the rear window can be used as an emergency exit. Make sure the emergency exit is not obstructed.

1. Remove pin from the rear window hinges.
- 1.1. The pin should be removed in the event of an emergency exit. Do not remove the pin to increase the rear window opening. Contact your JCB dealer for advice on installing the window.
2. Push the window panel out.

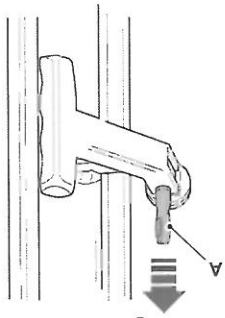


Figure 28.

A Pin

To close the door:
 2. Pull the handle to release the latch.
 1. Unlock the door with the ignition key.

To open the door from the outside: Refer to Figure 32.

Door

(For: 526-56 [T4F])

A Button

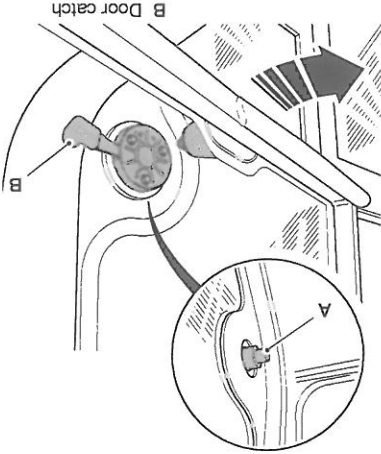


Figure 31.

2. Swing the door closed until it latches into position.
1. Press the button (if inside the cab) or release the catch (if outside the cab).

To close the upper door section:

A Lever

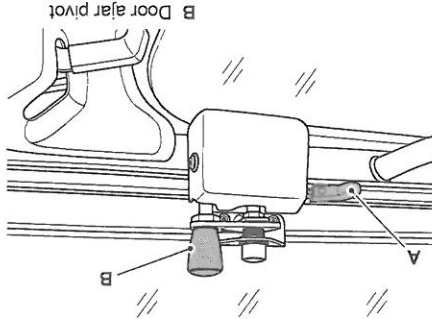


Figure 30.



1. Press the button (if inside the cab) or release the catch (if outside the cab).
 2. Swing the door closed.
 3. Push the lever forward to latch the upper door on to the lower door.
- To close the upper door section: Refer to Figure 34.

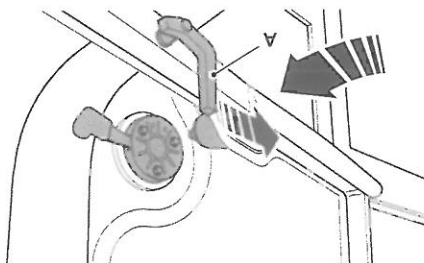


Figure 34.

1. With the cab door closed, push the lever to release the upper door section.
 2. Swing the door fully open until it latches.
 3. Do not drive the machine with the upper door section unlatched.
- To open the upper door section: Refer to Figure 33.

Upper Door Section

- A Handle
- C Lever

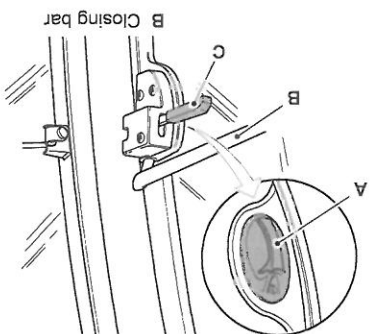


Figure 32.

To open the door from the inside, pull lever to release the latch. Refer to Figure 32.



A Lever
C Door catch

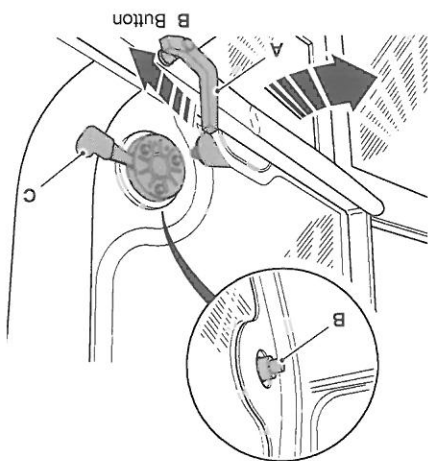


Figure 34.





Windows

Rear Window

For: 526-56 [T4F] Page 51
 For: 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F] Page 51
 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F] Page 51

(For: 526-56 [T4F])

To open the window, swing the catch in the direction shown, as far as required.

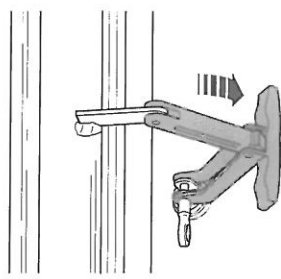
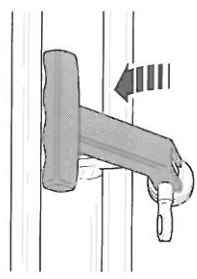


Figure 35.

To close the window, swing the catch in the direction shown until it locks in position.

Figure 36.



(For: 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

To open the window, swing the catches in the direction shown, as far as required.

To close the window, swing the catches in the opposite direction until it locks in position.

A Catches

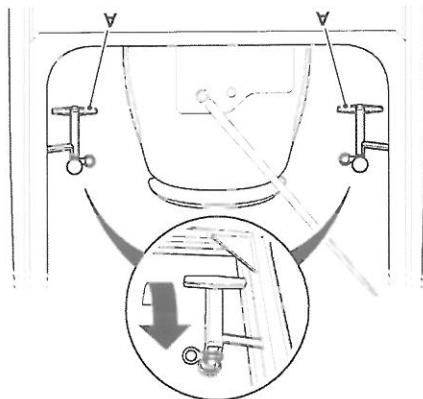


Figure 37.





Battery Isolator

General

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

▲ Notice: Before carrying out arc welding on the machine, disconnect the battery and alternator to protect the circuits and components. The battery must still be disconnected even if a battery isolator is installed.

Notice: Do not isolate the machine electrics when the engine is running, this may cause damage to the machine electrics.

To allow the engine ECU (Electronic Control Unit) to shutdown correctly, you must wait 85s before you isolate the battery. The 85s period starts when you turn the ignition off. If a radio is fitted, you may lose any settings.

Additionally on machines using DEF (Diesel Exhaust Fluid) there is a 85s delay after isolating the machine electrics. A ticking noise will be heard from the purge pump during this time.

Disconnect the Machine Electrics:

1. Turn the ignition key to the off position.
2. Wait for the engine ECU to shutdown correctly.

Duration: 85s

3. Get access to the battery isolator.

Refer to: Service Points (Page 281).

4. Turn the battery isolator key in a counter-clockwise direction and remove.

Connect the Machine Electrics:

1. Make sure the ignition is switched off.
2. Insert the battery isolator key and turn in a clockwise direction.



Before Starting the Engine

General

- ▲ DANGER** Before lowering the attachments to the ground, make sure that the machine and the area around it are clear of other people. Anyone on or close to the machine could fall and be crushed by the attachments, or get caught in the linkages.
- WARNING** Secure all loose articles. Loose articles can fall and strike you or roll on the floor. You could be knocked unconscious, or the controls could get jammed. If that happens you could lose control of the machine.
- CAUTION** Machines installed with hose burst protection valves cannot have their attachments lowered with the engine stopped. Start the engine and lower the attachments before doing the walk-around inspection.
- CAUTION** Keep the machine controls clean and dry. Your hands and feet could slide off slippery controls. If that happens you could lose control of the machine.
1. The park brake should have been engaged when the machine was last parked. If it is not already engaged, engage it now.
 2. Read the Operating in Low Temperatures or Operating in High Temperatures procedures in the Operation section if you will be using the machine in very cold or very hot climates.
Refer to: Operating Environment (Page 207).
 3. If the fuel tank was empty or if any part of the fuel system has been drained or disconnected, the fuel system must be primed before you try to start the engine.
 4. Lower the attachment to the ground.
 5. For your own safety (and others) and for the maximum service life of your machine, do a pre-start inspection before you start the engine.
 - 5.1. If you have not done it, do a walk-around inspection of the outside of the machine.
Refer to: Walk-Around Inspection (Page 43).
 - 5.2. Remove any dirt and rubbish from the cab interior, especially around the pedals and control levers.
 - 5.3. Remove any oil, grease and mud from the pedals and control levers.
 - 5.4. Make sure that your hands and shoes are clean and dry.
 - 5.5. Remove or stow all loose articles in the cab, for example tools.
 - 5.6. Examine the ROPS (Roll-Over Protective Structure) and/or FOPS (Falling Object Protective Structure) for damage. Get your JCB dealer to repair any damage. Make sure all its securing bolts are installed and correctly tightened.
 - 5.7. Check around the cab for loose or missing bolts, screws etc. Replace or tighten where necessary.
 - 5.8. Examine the seat belt and its mountings for damage and excessive wear.
Refer to: Seat Belt (Page 327).
 - 5.9. Make sure that the following operate correctly: lights, horn, all switches, front window washer and wipers (if installed).
 6. Adjust the seat so that you can comfortably reach all the driving controls. You must be able to operate the control pedal with your back against the seat back. Make sure the seat locking lever has fully engaged.
Refer to: Operator Seat (Page 55).
 7. Adjust the rear view mirrors (where applicable) to give you a good view close behind the machine, when you are correctly seated.
 8. Fasten the seat belt.



Operator Seat

General

▲ CAUTION Position the seat so that you can comfortably reach the machine controls. Do not adjust the seat while the machine is moving. You could have an accident if you operate the machine with the seat in the wrong position.

CAUTION The operator seat contributes to the operators comfort and the level of vibration felt by the operator. Ensure seat is maintained and replace if damaged with a JCB approved option.

The operator's seat can be adjusted for your comfort. A correctly adjusted seat will lower the operator fatigue. Adjust the seat so that you can comfortably reach the machine controls.

For driving the machine, adjust the seat so that you can push the pedals fully down when your back is against the seat back.

Basic Seat

The basic seat has vibration isolation performance as follows: ISO 7096 EM classes EM3, EM4, EM5, EM6, EM7, EM8, EM9 ISO 5007 classes AG 1, AG2, AG3 DIRECTIVE 78/784/EEC classes I, II, III

Seat Adjustments

Fore/Aft

Lift the fore/aft lever and slide the seat into the required position. Release the lever. Make sure the seat is locked in position.

Backrest

Lift the backrest lever and move the backrest to the required angle. Release the lever.

Height

Pull the lever upwards and raise or lower the front of the seat and the seat cushion into required position. Release the lever.

Weight

The weight indicator shows the adjustment required for the seat to match the operator weight.

Pump the lever up or down as required until the weight indicator is set to the correct position.

Suspension Seat

The suspension seat has vibration isolation performance as follows: ISO 7096 EM classes EM3, EM5, EM6, EM7 ISO 5007 classes AG 1, AG2, AG3 DIRECTIVE 78/764/EEC classes I, II, III

Suspension Seat (KAB 100 Series - Mechanical)

Horizontal Adjustment

Lift the lever and slide the seat into the required position. Release the lever.

Height

Turn the adjuster lever until the ride height indicator is in the green 'comfort' zone.

Backrest

Lift the backrest lever and move the backrest to the required angle. Release the lever.

- A Fore/aft adjustment lever
- C Height adjustment lever
- E Lever
- G Weight set too low

- B Backrest lever
- D Weight indicator
- F Weight set correctly
- H Weight set too high

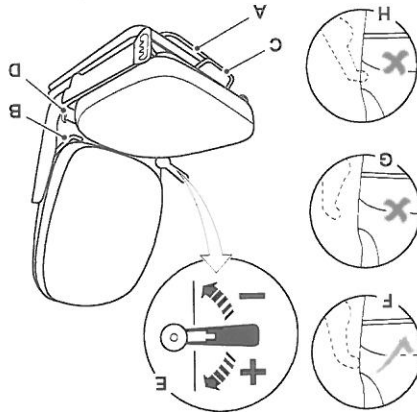


Figure 38.



Suspension Seat (KAB 100 Series - Air)

- A Horizontal adjustment lever
- C Height adjustment lever
- E Document cover

- B Ride height indicator
- D Backrest lever

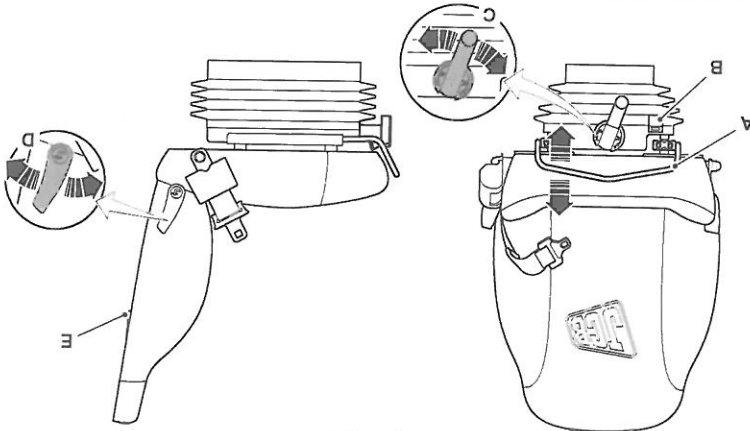


Figure 39.

Lift the backrest lever and move the backrest to the required angle. Release the lever.

Backrest

Turn the adjuster lever until the ride height indicator is in the green 'comfort' zone.

Height

Lift the lever and slide the seat into the required position. Release the lever.

Horizontal Adjustment



Suspension Seat (KAB 800 Series - Air)

Horizontal Adjustment

Lift the lever upwards and slide the seat into the required position. Push the lever down to lock the seat in its position.

Height

Turn the adjuster lever until the ride height indicator is in the green 'comfort' zone.

One Touch Raiser (if fitted)

Press the one touch raiser button to automatically adjust the seat to the mid ride position.

Lumbar

Turn the lumbar adjuster to increase or decrease the lumbar support.

Backrest

Lift the backrest lever and move the backrest to the required angle. Release the lever.

- A Horizontal adjustment lever
- C Height adjustment lever
- E Document cover

- B Ride height indicator
- D Backrest lever

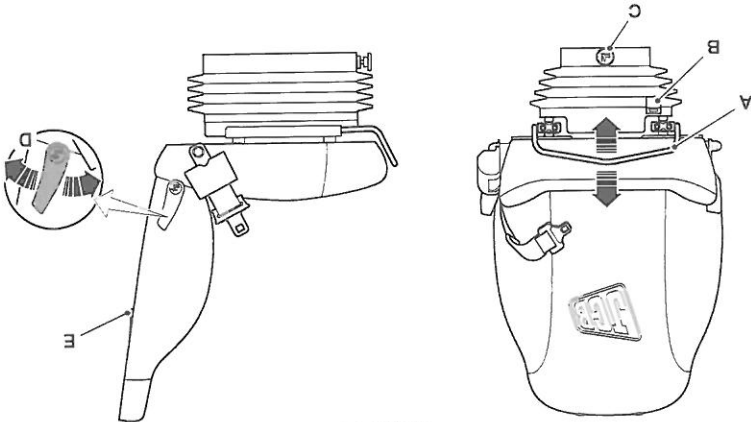


Figure 40.



The heated seat option is only available on the KAB 800 Series and Grammer Air Suspension Seats. A manually operated switch is located on the rear of the backrest. Press heater switch to select on. Functions only with the ignition on.

The seat heater is thermostatically controlled and operates intermittently to achieve and maintain a predetermined temperature. No manual temperature adjustment is available.

Heated Seat Controls

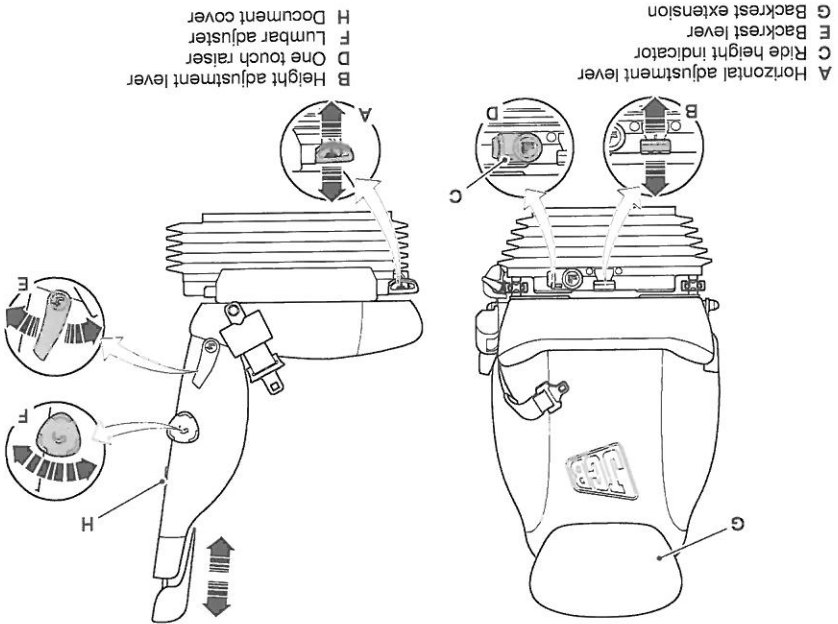


Figure 41.



Seat Belt

General

- ▲ **WARNING** Operating the machine without a seat belt can be dangerous. Before starting the engine, make sure your seat belt is fastened. Check the tightness and condition of the seat belt securing bolts regularly.
- WARNING** When a seat belt is installed on your machine replace it with a new one if it is damaged, if the fabric is worn, or if the machine has been in an accident.

Inertia Reel Seat Belt

Fasten the Seat Belt

- ▲ **WARNING** If you do not wear your seat belt you could be thrown about inside the machine, or thrown out of the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

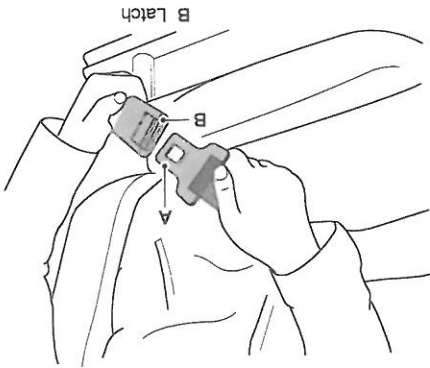
1. Sit correctly in the seat.

2. Pull the seat belt and the tongue from the inertia reel holder in one continuous movement.

3. Push the tongue into the latch. Make sure the seat belt worn is snug and properly located on the body. Make sure the seat belt is not twisted and that it is over your hips not your stomach.

- 3.1. If the seat belt 'locks' before the tongue is engaged, let the seat belt retract into the inertia reel holder then try again. The inertia mechanism can lock if you pull the seat belt too quickly or if the machine is parked on an slope.

Figure 42.



A Tongue

B Latch

WARNING! If the seat belt does not 'lock' when you check if the seat belt is operating correctly, do not drive the machine. Get the seat belt repaired or replaced immediately.

4. To make sure the seat belt operates correctly, hold the middle of the seat belt and pull quickly. The seat belt should 'lock'. Refer to Figure 43.

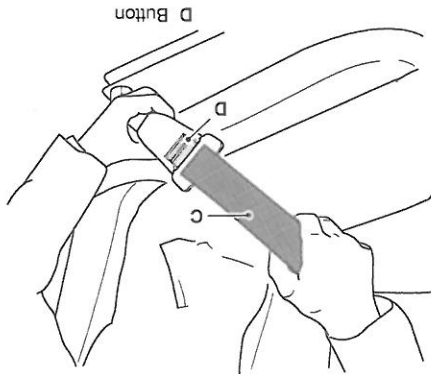


Figure 43.

C Seat belt

Release the Seat Belt

▲ **WARNING** Release the seat belt only after safely stopping the machine, switching off the engine and engaging the park brake (if applicable).

1. Push the button and pull the tongue from the latch.
2. Carefully let the seat belt retract into the inertia reel holder.

Static Seat Belt

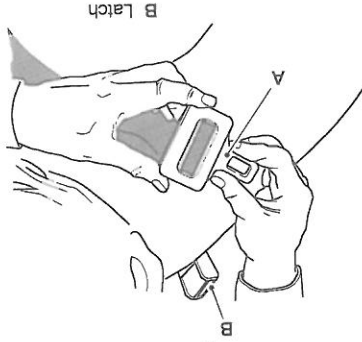
Fasten the Seat Belt

▲ **WARNING** If you do not wear your seat belt you could be thrown about inside the machine, or thrown out of the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

1. Sit correctly in the seat.

2. Push the tongue into the latch. Make sure the seat belt is worn snug and properly located on the body. Make sure the seat belt is not twisted and that it is over your hips not your stomach.

Figure 44.



A Tongue

B Latch



Adjust

1. Move the toggle the required distance down the strap.
2. To make the strap longer, pull the end as far as it will go.
3. To make the strap shorter, pull the end as far as it will go.

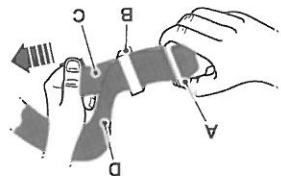


Figure 45.

- A Tongue
- C Strap (pull here to lengthen)
- B Toggle
- D Strap (pull here to shorten)

Release the Seat Belt

▲ WARNING Release the seat belt only after safely stopping the machine, switching off the engine and engaging the park brake (if applicable).

1. Push the button and pull the tongue from the latch.



Figure 46.

- A Tongue
- C Button

B Latch

Mirrors

General

(For: 526-56 [T4F], 531-70 [T4F], 531TT70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541TT70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

The following information is provided so that the operator can minimise visibility hazards when operating the machine.

This machine meets the visibility requirements specified in FPrEN 15830:2011. The machine has been subjected to a static visibility assessment with a simulated load in two positions: the load on the forks 500 ± 50mm above the ground, and the load suspended 600mm beneath the forks while the forks are 2,200mm above the ground.

The test simulates operator visibility in establishing lines of sight between the operator's eyes and points on the ground at a 12m radius from the machine, and on a boundary line 1,5m above the ground and 1m away from the smallest rectangle that encompasses a plan view of the machine. Whilst based upon ergonomic data (binocular eye spacing, turning of the head and body torso movement), the standard sometimes purposefully restricts/removes movement which is ergonomically achievable in order to improve/maintain the current state of art. As a consequence, visibility diagrams in accordance with FPrEN 15830:2011 often report visibility maskings which do not exist in practice.

Visibility diagrams according to FPrEN 15830:2011 are provided. Refer to: Static Dimensions (Page 377). When they operate the machine, the operator must continually survey their field of vision. It is important that the mirrors are securely installed and give maximum vision around the machine. The machine should be used in accordance with appropriate jobsite organisation and persons should be kept outside of the immediate vicinity of the machine considering the working range of equipment/attachment and speed of movement of the machine.

When a mirror is provided to supplement the operator's direct field of vision, it must be adjusted to give the field of view shown in order for it to serve as an aid to the operator in seeing people or obstacles around the machine. The mirror provides indirect vision to hidden areas and improves the effectiveness of the machines usage. The visibility requirements of this machine has also been assessed in a lorry trailer loading condition as specified in FPrEN 15830:2011. The machine has been subjected to a static visibility assessment with the simulated load on the forks 1,000 ± 50mm above the ground.

Use of the machine with non-standard modifications, and/or in non-standard configurations, and/or with attachments that result in restriction of the machine visibility should be assessed in accordance with FPrEN 15830:2011 to determine if further devices and/or jobsite controls are required.

If a suspended load or the resulting geometry creates a substantial blockage to visibility, the operator should consider alternative means of carrying the load (e.g. palletised load).





- 6.3. There is an intentional delay prior to starting the engine to assist the priming of the engine lubrication system.
Duration: 3s
- 6.4. After you start the machine there is an intentional delay at idle during which time the throttle control is overridden to assist priming of the lubrication system.
Duration: 11s
7. Start the engine at cold climate engine start: -12°C to -20°C
 - 7.1. When you start the machine at these ambient temperatures, a grid heater must be installed in to the inlet manifold of the engine.
 - 7.2. Turn the ignition key to the on position (position I), the cold start inlet manifold heater icon shows on the dash.
Refer to: Instruments (Page 95).
 - 7.3. When the icon is extinguished, turn the ignition key to the start position (position III) and hold it there until the engine starts.
 - 7.4. There is an intentional delay prior to starting the engine to assist the priming of the engine lubrication system.
Duration: 4s
 - 7.5. After you start the machine there is an intentional delay at idle during which time the throttle control is overridden to assist priming of the lubrication system.
Duration: 21s
8. Start the engine at cold climate engine start: below -20°C
 - 8.1. When you start the machine at these ambient temperatures, a grid heater must be installed in to the inlet manifold of the engine and block heaters must be installed in to the engine block coolant jacket.
8.2. There is no detriment if the block heater is used in ambient temperatures of -12°C to -20°C
 - 8.3. Do not use the block heater in ambient temperatures of above 0°C
 - 8.4. Regularly check the ambient temperature to determine if the block heater is necessary.
 - 8.5. Turn the ignition key to the on position (position I), the cold start inlet manifold heater icon shows on the dash.
Refer to: Instruments (Page 95).
 - 8.6. When the icon is extinguished, turn the ignition key to the start position (position III) and hold it there until the engine starts.
 - 8.7. After you start the machine there is an intentional delay at idle during which time the throttle control is overridden to assist priming of the lubrication system.
Duration: 33s
9. Release the ignition key when the engine starts.
 - 9.1. The ignition key will go back to the on position (position I).
10. When the engine has started, make sure that all the warning lights have gone off and that the audible alarm is silent.
Refer to: Instrument Panel (Page 99).
- 10.1. Do not race the engine until the oil pressure low light has gone off.
- 10.2. Racing the engine too soon could damage the turbo-charger due to under lubrication.
11. The engine noise and/or tone may be louder than usual when cold. This is normal and is due to the fuel injection pump being advanced. The engine will become quieter when the engine reaches normal operating temperature.



12. If any warning lights fail to go off, or come on while the engine is running, stop the engine as soon as it is safe to do so.

13. Operate the hydraulic services to make sure that each function is working correctly and to help warm up the hydraulic system.

13.1. Do not operate the attachments until the hydraulic oil has reached its normal working temperature.

New engines do not require a running-in period. The engine/machine should be used in a normal work cycle immediately; glazing of the piston cylinder bores resulting in excessive oil consumption, could occur if the engine is gently run-in. Under no circumstances should the engine be allowed to idle for extended periods; (e.g. warming up without load).

(For: 526-56 [T4F], 531-70 [T4F], 535-95 [UN3/CB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 536-60 [T4F], 536-60 [UN3/CB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/CB3], 541-70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], JCB T4F 3.0 55kW Electronic Turbocharged Aftercooled Engine)

▲ Notice: Do not use ether or other starting fluids to assist cold starting. Using these fluids may result in an explosion causing possible injury and/or damage to the engine.

The engine control system automatically controls the response of the engine during its crank, start and warm up phase, depending on the engine temperature, ambient air temperature, and throttle pedal response.

Under certain conditions condensate (steam) can be seen emitting from the exhaust tail pipe. This is normal and should not be considered a fault.

1. Make sure that the machine is ready to start.

Refer to: Before Starting the Engine (Page 54)

2. Disarm the immobiliser (if fitted).

Refer to: Immobiliser (Page 67)

3. Put the forward/reverse lever in neutral.

Refer to: Operating Levers/Pedals (Page 152)

3.1. The engine will not start unless the forward/reverse lever is in neutral.

4. Make sure the battery isolator key is installed and switched on.

Refer to: Battery Isolator (Page 53)

5. Start the engine at normal engine start.

5.1. Turn the ignition key to the start position (position III) and hold it there until the engine starts.

6. Start the engine at cold climate engine start: -12°C to -20°C

6.1. Turn the ignition key to the on position (position I), the glow plug icon shows on the dash.

Refer to: Instruments (Page 99)

6.2. When the icon is extinguished, turn the ignition key to the start position (position III) and hold it there until the engine starts.

7. Start the engine at cold climate engine start: below -20°C

7.1. When you start the machine at these ambient temperatures, a grid heater must be installed in to the inlet manifold of the engine and block heaters must be installed in to the engine block coolant jacket.

7.2. There is no detriment if the block heater is used in ambient temperatures of -12°C to -20°C

7.3. Do not use the block heater in ambient temperatures of above 0°C

7.4. Regularly check the ambient temperature to determine if the block heater is necessary.



- 7.5. Turn the ignition key to the on position (position I), the cold start inlet manifold heater icon shows on the dash.
- 7.6. When the icon is extinguished, turn the ignition key to the start position (position III) and hold it there until the engine starts.

8. Release the ignition key when the engine starts.
 - 8.1. The ignition key will go back to the on position (position I).
9. When the engine has started, make sure that all the warning lights have gone off and that the audible alarm is silent.
 - 9.1. Do not race the engine until the oil pressure low light has gone off.
 - 9.2. Racing the engine too soon could damage the turbo-charger due to under lubrication.

10. The engine noise and/or tone may be louder than usual when cold. This is normal and is due to the fuel injection pump being advanced. The engine will become quieter when the engine reaches normal operating temperature.

11. If any warning lights fail to go off, or come on while the engine is running, stop the engine as soon as it is safe to do so.
 12. Operate the hydraulic services to make sure that each function is working correctly and to help warm up the hydraulic system.
 - 12.1. Do not operate the attachments until the hydraulic oil has reached its normal working temperature.
- New engines do not require a running-in period. The engine/machine should be used in a normal work cycle immediately; glazing of the piston cylinder bores resulting in excessive oil consumption, could occur if the engine is gently run-in. Under no circumstances should the engine be allowed to idle for extended periods; (e.g. warming up without load).

Immobiliser

(if installed)

There are two different JCB immobiliser systems, one uses a keypad and the other a unique key system. If your machine has an immobiliser system installed, then your JCB dealer should enable the system as part of the standard machine installation. If you prefer that the system is not enabled, then you must tell your JCB dealer. Your JCB dealer can enable the system at a later date. Machines with immobilisers installed should always be parked as per the instructions in the operators manual.

Introduction

Before attempting to disarm the immobiliser check that the machine is ready to start and that you have your four digit PIN (Product Identification Number) code available.

The green LED (Light Emitting Diode) will illuminate every time that a keypad button is fully depressed. Do not operate buttons with sharp objects, they may damage and disable the keypad.

If you make an error entering your PIN code and you realise this before pressing the ENT button then pressing the MID button cancels inputs and allows you to re-commence.

If the PIN code is incorrectly entered five times the immobiliser will lock for 15min. In this event it is recommended that you contact the machine owner for confirmation of the PIN code.

The PIN code will have to be entered every time that the ignition is switched off for longer than two minutes.

To Disarm the Immobiliser to Allow the Machine to be Used

1. Put the ignition key in the ignition switch. Turn the ignition key to position 1.
2. Enter your four digit PIN code using the keypad.
3. Push the 'ENT' button. The LED will come on for three seconds if the PIN code is correct and the machine can be started.
4. If an incorrect PIN code is entered the unit will lock. The LED will flash twice quickly, pause and then flash twice again and will continue this pattern until the ignition key is turned to the off position. In this event return to step 1 to try again.
- 4.1. After five failed tries the system will lock.
Duration: 15min

Figure 47.



A LED

To Arm the Immobiliser

1. Stop the engine. Remove the ignition key.
2. The immobiliser arms automatically after two minutes. The green LED flashes for 60 seconds, then goes off.
3. If you restart the engine within two minutes, the system disarms automatically.

To Add a New or Additional PIN Code

Before you try to add a new or additional PIN code, make sure that the machine is ready to start and that you have your six digit master code and your new four digit PIN code available.

If you are unsure of the master code or your new PIN code, then do not start this procedure.

The keypad immobiliser can be programmed to accept up to 14 different four digit PIN codes, any of which will let the machine be started.

1. Put the ignition key in the ignition switch. Turn the ignition key to position 1

2. Enter your six digit master code using the keypad. Push the 'ENT' button.

3. The LED will flash three times to indicate the acceptance of the master code.

4. Within 59 seconds of the three flashes, push the 'MD' button.

5. Enter your new four digit PIN code using the keypad. Push the 'ENT' button. The LED will flash four times to indicate that the new PIN code has been successfully entered.

6. Turn the ignition key to the off position, then a minimum of five seconds later, turn the ignition key to position 1. The new PIN code is now entered and recorded.

7. If another PIN code is to be entered, turn the ignition key to the off position, then return to step 1.



To Delete all of the PIN Codes

Deleting all the PIN codes does not allow the immobiliser to be bypassed. A four digit PIN code must be entered before the machine can be started.

If you are unsure of the master PIN code or your new PIN code, then do not start this procedure.

1. Put the ignition key in the ignition switch. Turn the ignition key to position 1.
2. Enter your six digit master PIN code using the keypad. Push the 'ENT' button. The LED will flash three times to indicate the acceptance of the code.
3. Push the buttons in the following sequence, 'MD', 'F1', 'ENT'. The LED will flash five times to indicate the acceptance of the delete command.

Unique Key Immobiliser System

The red key must not be kept on the same key ring as the black key, if the red key is too close to the key switch the antenna can pick up on the key transponder and cause the immobiliser ECU (Electronic Control Unit) to enter the key programme mode. If this happens it will prevent the machine from starting and the antenna LED will blink 3 times indicating the immobiliser ECU is in the key programme mode.

Introduction

Each machine is supplied with a master key (red) and two ignition keys (black). The master key is used by the operator to program the ignition keys. You must use an ignition key to start or operate the machine.

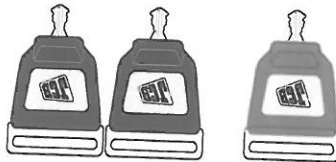


Figure 48.

To Disarm the Immobiliser

1. Put the ignition key in the ignition switch.
2. Start the engine.



Figure 49.

A LED (The position may vary).

To Arm the Immobiliser

1. Stop the engine. Remove the ignition key.
2. The immobiliser immediately arms automatically.



To Add a New or Additional Ignition Key

The ignition keys can be programmed to start more than one machine.

1. Put the master key in the ignition switch.
2. Turn the master key to position 1. The LED will flash three times.
3. Turn the master key to position 0. Remove the master key.
4. Put a new or an additional ignition key in the ignition switch. Turn the ignition key to position 1. The LED will flash four times.
5. The new key has been added.

To Remove the Program From an Ignition Keys

The ignition keys can still be used on any other machine on which they have been programmed.

1. Put the master key in the ignition switch.
2. Turn the master key to position 1. The LED will flash three times.
3. Keep the master key in position 1 for 60 seconds. The ignition keys codes have now been deleted from the ECU.
4. Turn the master key to position 0. Remove the master key.
5. Add the required black keys in the system.

The starter keys will still be able to be used on any other machine on which they have been programmed. If a non-programmed key or standard key is used, then a symbol will appear on the LCD (Liquid Crystal Display) screen, and the machine will not start.

Stopping and Parking

General

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

▲ DANGER Before lowering the attachments to the ground, make sure that the machine and the area around it are clear of other people. Anyone on or close to the machine could fall and be crushed by the attachments, or get caught in the linkages.

WARNING You or others can be killed or injured if you suddenly change from forward to reverse, or vice versa, when travelling. The machine will immediately reverse direction without warning to others. Always follow the recommended procedure for changing between forward and reverse drive.

WARNING Do not dismount a moving machine.

CAUTION Entering or leaving the operator station must only be made where steps and handrails are provided. Always face the machine when entering and leaving. Make sure the steps, handrails and your boot soles are clean and dry. Do not jump from the machine. Do not use the machine controls as handholds, only use the handrails.

Notice: The park brake must not be used to slow the machine from travelling speed, except in an emergency, otherwise the efficiency of the brake will be reduced.

1. Stop the machine on dry and level ground where the machine will not be a hazard or danger.
2. Ease up on the accelerator pedal and press down on the brake pedal to bring the machine to a smooth stop. Keep the foot brake on until the park brake has been applied and the drive disengaged.
3. Activate the park brake by pulling up the lever.
4. Set the transmission to neutral. Make sure the lever is in its detent position. 506-36 machines only: make sure that the park brake indicator light is extinguished.
5. Retract and lower the boom, rest the forks flat on the ground.
6. Lock the controls.

Refer to: Control Lock (Page 82).

7. It is recommended that turbocharged engines are run at 1000 RPM (approximately) and reduced load for a short of time before shut down to let the turbocharger to cool.
Duration: 2–3min

7.1. Engines with SCR (Selective Catalytic Reduction) after-treatment: A ticking noise will be heard from the purge pump for a short time after stopping the engine.

8. If you are leaving the machine, make sure that all switches are set to off. If necessary, leave the hazard warning and/or side lights switched on. Remove the ignition key.

9. Use the handholds and step when you climb down from the machine. If you are leaving the machine, close and latch all windows and lock both doors. Make sure that the diesel fuel and DEF (Diesel Exhaust Fluid) (if applicable) filler caps are locked on.

10. At the end of a working cycle or if the machine is being left unattended, provided the lights are not required, remove the battery isolator key (if installed).

Refer to: Battery Isolator (Page 366).



Preparing for Travel

General

When you travel on the road or on site there are usually local rules and safety regulations for the machine travel position.

This publication contains recommendations that may help you meet the requirements of these regulations, they are not necessarily the applied law.

If your machine is installed with a travel height label make sure you adhere to it.

Make sure that before you travel on public roads or site, you and your machine comply with all the relevant local laws - it is your responsibility.

UK Road Travel

In the U.K. before you travel on the public roads, it is your responsibility as a user to comply with The Road Vehicles (Construction and Use) (Amendment) Regulations 1997 (Bridge Bashing Regs.). By way of guidance only, follow the steps to take the vehicle on road:

Always assess your route for overhead structures such as bridges which could be damaged by your machine. Use a restraint device to tie the bucket to the lower structure.

This information is believed to be correct, JCB cannot be aware of all circumstances in which JCB machines may be operated on a public highway and it is the responsibility of the user to make sure the compliance with the regulations.

Other Territories Road Travel

This publication does not contain the rules and laws of the areas that the machine will be travelling. Contact your local authorities before you travel on public roads.

Preparing for Road Travel

▲ WARNING In low visibility or at night, we recommend removing the forks before travelling on public roads. Transport the forks on a suitable vehicle.

1. Before you travel on public roads, remove the front windscreen guard if installed.
2. Use the chassis levelling (sway) switch (if installed) to set the machine body square to the axles. Refer to: Chassis Levelling Controls (Page 157).
3. Make sure that both the stabiliser legs (if installed) are fully raised and isolated.
4. Fully retract the boom.
5. Lower the boom fully then raise it until carrier is above the ground.
Length/Dimension/Distance: 300mm
6. Tilt the carriage back, to keep the heel of the forks above the ground.
Length/Dimension/Distance: 300mm

- 9. 1. Move the rear light cluster to the horizontal position. The cluster is spring loaded by its rubber mounting bush. To swing it up or down, whichever is applicable to your machine, pull the cluster slightly rearward to disengage, then swing it to the new position as shown. Refer to Figure 53.
- 9. If the pivoting lights are installed, move them to the horizontal position.

E Safety guard

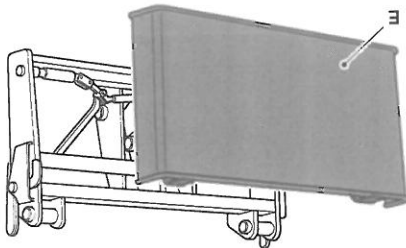


Figure 52.

- 8. In certain countries, legislation requires forks to be removed and safety guard installed. Contact the local authorities.

- B Retention brackets
- D Locking pin

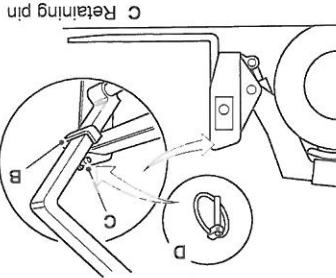


Figure 51.

- 7. Install the fork retention brackets (as required) and secure with the retaining pin and locking pin.

A Fork

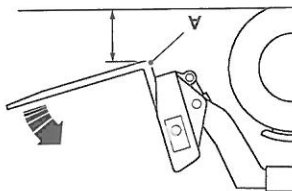


Figure 50.



- 11. If any optional attachments are installed, make them safe.
- Refer to: Attachments (Page 213)
- 11.1. Install the tooth guard if you travel the machine with bucket.
- 11.2. In certain countries, legislation requires safety marker plate to be installed before travelling on public roads.

G Restraining strap

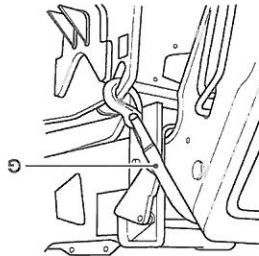


Figure 54.

- 10. Put the boom in travel position and install the restraining strap over the boom and attach to the lifting lugs on the chassis side plates.

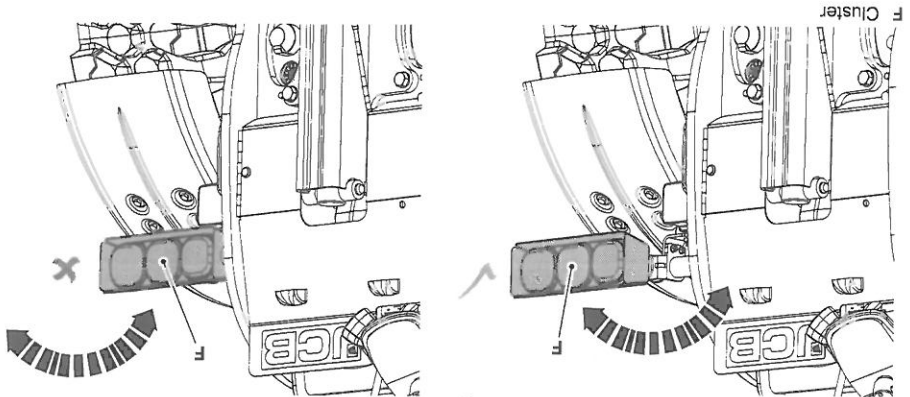


Figure 53.



1. Dual Tech Variable Transmission only – Select Auto 2WD for trailer towing, at all other times it is recommended to select 4WD for optimum machine performance, and to minimise tyre wear.
2. Use the chassis levelling (sway) switch, (if installed) to set the body of the machine square to the axes. Refer to: Chassis Levelling Controls (Page 157).
3. Make sure that both the stabiliser legs (if installed) are fully raised and isolated.
4. Fully retract the boom.

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Otherwise
 Page 75
 Page 77

For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F]

Preparing for Worksite Travel

The SRS performance can be reduced if the carriage is fully crowded back, due to an interaction with the parallel lift ram.

19. Switch on the SRS (Smooth Ride System) (if installed). Refer to: Smooth Ride System (SRS) (Page 78).
- Refer to: Beacon (Page 80).
18. The traffic regulations may require you to have a rotating beacon operating on some public roads.
17. Check that all road lights are working correctly.
16. Select 2-wheel drive.
15. Select 2-wheel steer, do not use crab steer or 4-wheel steer on public roads.
14. Align the road wheels.
13. Lock the controls (as required).
12. Do not travel on public roads with the machine loaded.

H Tooth guard
 J Marker plate

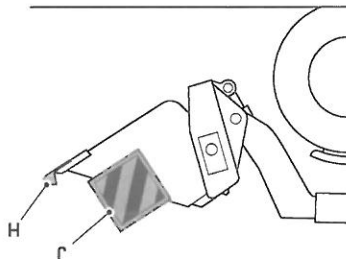
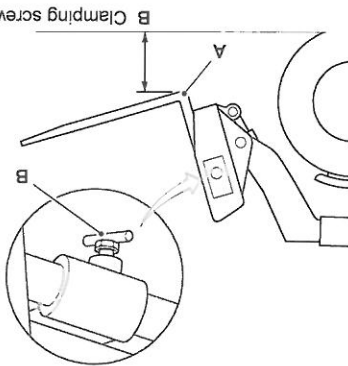


Figure 55.



5. Lower the boom fully then raise it until the carrier is above the ground.
Length/Dimension/Distance: 300mm
6. Tilt the carriage back, to keep the heel of the forks above the ground.
Length/Dimension/Distance: 300mm

Figure 56.

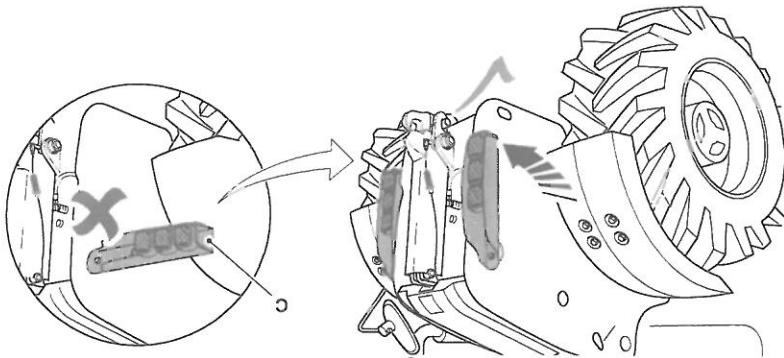


A Fork

B Clamping screws

7. When attachments are fitted, position the boom in the 'low carry' position so that the right hand mirror is not hidden from the operator's view.
8. Tighten the clamping screws to prevent side movement of the forks (if installed).
9. Move the rear light cluster to the vertical position. The cluster is spring loaded by its rubber mounting to disengage, then swing it up or down, whichever is applicable to your machine, pull the cluster slightly rearward to disengage, then swing it to the new position as shown.

Figure 57.



C Cluster

10. Select the steer mode required.
11. If any optional attachments are installed, make them safe.
Refer to: Attachments (Page 213).

12. Switch on the SRS (Smooth Ride System) (if installed).
Refer to: Smooth Ride System (SRS) (Page 73).

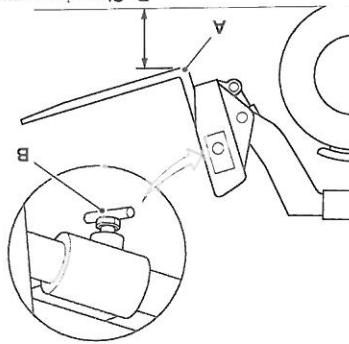
The SRS performance can be reduced if the carriage is fully crowded back, due to an interaction with the parallel lift ram.

(Otherwise)

1. Use the chassis levelling (sway) switch, (if installed) to set the body of the machine square to the axles.
2. Make sure that both the stabiliser legs (if installed) are fully raised and isolated.
3. Fully retract the boom.
4. Lower the boom fully then raise it until the carrier is above the ground.
Length/Dimension/Distance: 300mm
5. Tilt the carriage back, to keep the heel of the forks above the ground.
Length/Dimension/Distance: 300mm

6. Fully retract the boom.
7. Lower the boom fully then raise it until the carrier is above the ground.
Length/Dimension/Distance: 300mm
8. Tilt the carriage back, to keep the heel of the forks above the ground.
Length/Dimension/Distance: 300mm

Figure 58.



A Fork

6. When attachments are fitted, position the boom in the 'low carry' position so that the right hand mirror is not hidden from the operator's view.
7. Tighten the clamping screws to prevent side movement of the forks (if installed).
8. Move the rear light cluster to the vertical position. The cluster is spring loaded by its rubber mounting to bush. To swing it up or down, whichever is applicable to your machine, pull the cluster slightly rearward to disengage, then swing it to the new position as shown.

3. 1. If the SRS icon does not appear, make sure the boom is fully lowered before repeating steps 1 and 2.
3. The SRS is now applied.
2. Operate the boom lower control, until SRS icon appears on the dash.
1. Press and hold the switch fully down (position 2).

Activate the system:

The boom must be fully lowered, or the weight supported on the ground, before the system will engage.

The boom will move up and down independently of the machine with SRS selected. Make sure there is adequate ground clearance below the boom and attachment to allow for this movement.

The SRS (Smooth Ride System) will enhance machine operation when used in loading and re-handling operations.

The SRS (Smooth Ride System) will enhance machine operation by smoothing the ride across uneven surfaces.

SRS before working on the machine.

▲ WARNING Do not attempt to use the boom to raise the front of the machine. With the Smooth Ride System activated, the machine will drop suddenly when the control lever returns to the neutral position. Switch off

(For: 526-56 [T4F])

For 526-56 [T4F] Page 78
 For 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 560-80 [T4F], 560U80 [T4F] Page 79

Smooth Ride System (SRS)

The SRS performance can be reduced if the carriage is fully crowded back, due to an interaction with the parallel lift ram.

11. Switch on the SRS (if installed).
 10. If any optional attachments are installed, make them safe.
 9. Select the steer mode required.
- C Cluster

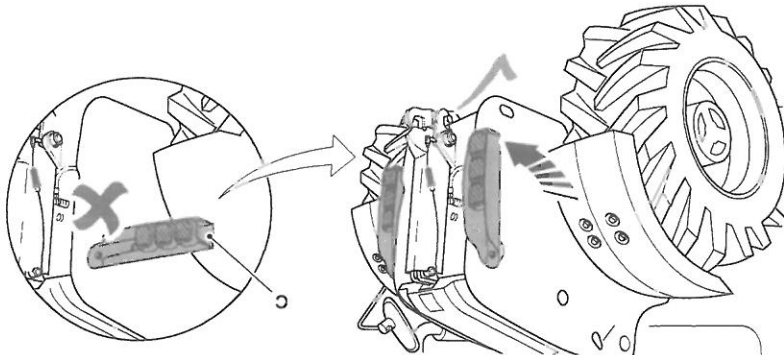


Figure 59.



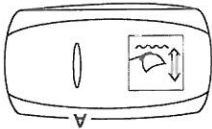
4. Release the boom lower control and the switch.

The SRS performance can be reduced if the carriage is fully crowded back, due to an interaction with the parallel lift ram.

Switch off the SRS before placing loads where greater precision is needed.

The SRS system will need to be re-selected every time the ignition key is switched off, or the power supply is interrupted.

Figure 60.



A Switch

(For: 53170 [T4F], 53170 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 560-80 [T4F], 560-80 [T4F], 560U80 [T4F])

Auto Smooth Ride System

▲ WARNING Do not attempt to use the boom to raise the front of the machine. With the Smooth Ride System activated, the machine will drop suddenly when the control lever returns to the neutral position. Switch off SRS before working on the machine.

The SRS will enhance machine operation by smoothing the ride across uneven surfaces.

It is intended for use when travelling, but will also enhance machine operation when used in loading and re-handling operations.

The boom will move up and down independently of the machine with SRS selected.

Make sure there is adequate ground clearance below the boom and attachment to allow for this movement.

Activate the auto SRS:

1. Press the switch to position 3.

2. An auto SRS icon appears on the dash.

Refer to: Instruments (Page 99).

3. The auto SRS is now engaged when the machine travels faster than

Speed: 4km/h (2.5mph)

4. The auto SRS disengage below required speed in order to give better fine control when stationary.

Speed: 2km/h (1.2mph)

The auto SRS will engage and disengage automatically with no intervention from the driver, and no notifications on the dash. It will remain active through an starter key cycle.

Activate the manual SRS:

1. Press and hold the switch to position 2.

The beacon is permanently installed on the machine. When in use it must be raised in position. When not in use it must be lowered in position. Refer to Figure 62.

Knock-back Beacon

Refer to: Console Switches (Page 29)

1. Put the beacon on the cab roof. A magnetic base keeps the beacon in position.
2. Put the plug into the cab roof socket.
3. Use the beacon switch in the cab to operate the beacon. The indicator light in the switch illuminates when the beacon is operating.

Be careful when you operate the machine with a beacon. The total height of the machine is increased when the beacon is in the operating position.

In certain territories you will break the law if you do not install a beacon before you travel on site/public highways. Make sure you comply with the local laws.

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 535T95 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 535T95 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F] Page 80

For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 535T95 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F] Page 81

Beacon

A Switch

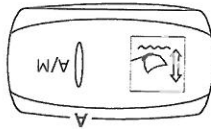


Figure 61.

2. All the SRS icons will disappear from the dash.

1. Press the switch to position 1.

Deactivate the SRS:

The SRS performance can be reduced if the carriage is fully crowded back, due to an interaction with the parallel lift ram.

4. When the engaged SRS will stay engaged until it is disengaged or the starter key has been cycled.

Speed: 4km/h (2.5mph)

3. The manual SRS is now engaged if the boom is lifted, or the machine travels faster than

2. An manual SRS icon appears on the dash.



1. Put the beacon on the cab roof. A magnetic base keeps the beacon in position.
2. Put the plug into the cab roof socket.

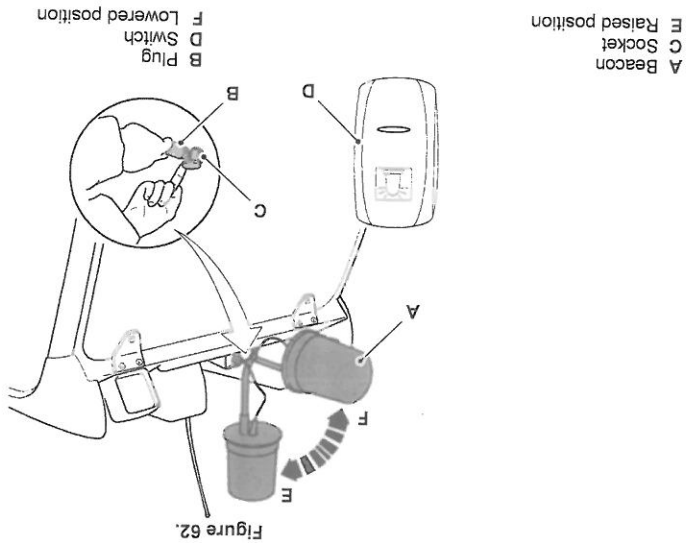
Do not use green beacon when driving on roads. A green beacon is not compliant with road legislation.

Be careful when you operate the machine with a beacon. The total height of the machine is increased when the beacon is in the operating position.

Your machine may be fitted with a green beacon and orange seatbelt. These safety features give a site supervisor visibility that the operator is wearing their seatbelt. In addition a start inhibitor function may be fitted. This feature prevents the operator from starting the engine until their seatbelt is fastened.

Green Beacon (option)

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 541T70 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 535T95 [T4F], 541-70 [T4F])



Safety Equipment

Control Lock

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

The requirement for control lever(s) lock/isolation varies according to the local legislation. You must comply with the local legislation at all times.

The control locks/switches are designed to lock or isolate the control(s) in the neutral position.

Control levers and switches could change on machines. The machine might be installed with any of the following control layouts:

Single Lever Control Lock

Move the joystick isolation switch to the on position to isolate the joystick functions.
Move the tilt lock switch (if installed) to the on position to isolate the tilt function.

Operate the related controls to make sure that the functions are locked.

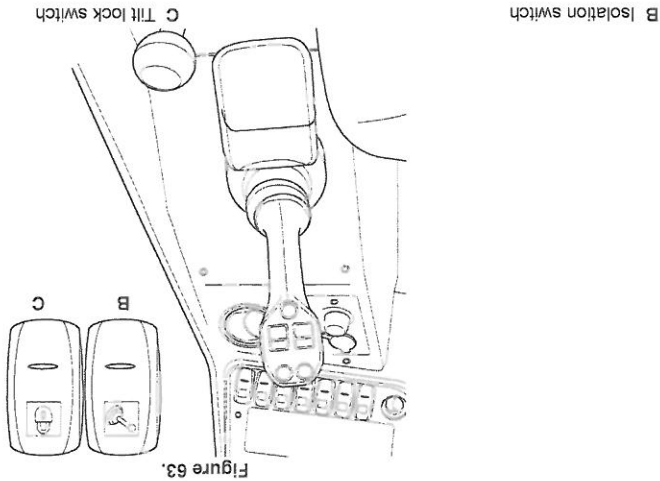


Figure 63.

Single Lever Control Lock (Push Button Type)

Lock all the control levers before you travel on public roads.

To lock the controls, make sure the lever is in the neutral position, then press down pin as far as it will go.

Before you start the engine make sure the controls are locked.

Raise the pin to release the lock.

Isolate the joystick button functions before travel on public roads. Operate the joystick isolation switch to isolate the buttons. Refer to: Console Switches (Page 29).

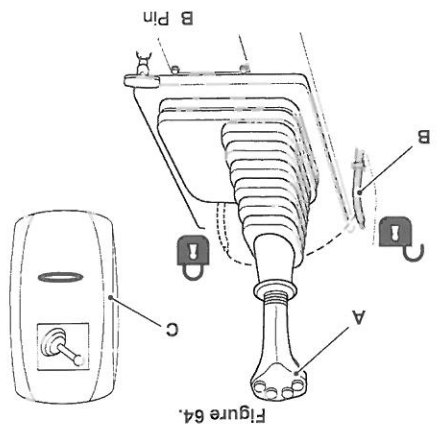


Figure 64.

A Lever
C Isolation switch

Dual Lever Control (Loading and Placing Patterns)

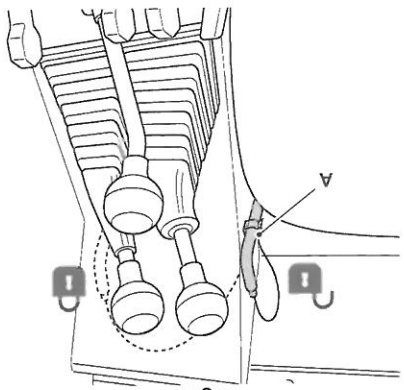
All Levers Lock

Lock all the control levers before you travel on public roads.

To lock the controls, make sure the levers are in the neutral position, then press down pin as far as it will go.

Before you start the engine make sure the controls are locked.

Raise the pin to release the lock.



A Pin

Tilt Lever Lock

The tilt lever lock must be installed when using a platform.

To lock the controls, make sure the lever tilt lever is in the neutral position, then press down pin as far as it will go.



Before you start the engine make sure the controls are locked.

Raise the pin to release the lock.

Auxiliary Lever Lock

To lock the controls, make sure the auxiliary lever is in the neutral position and move the mechanical lock to the lock position.

Before you start the engine make sure that the lever is locked.

Move the lock away from the lever to release.

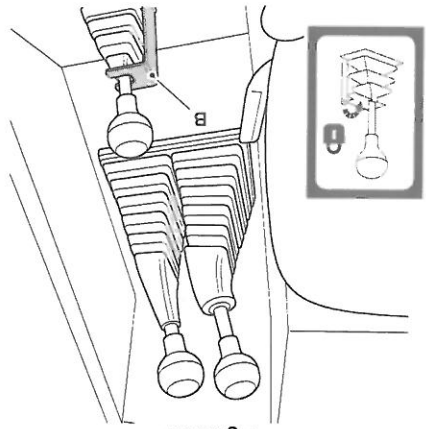


Figure 66.

B Mechanical lock

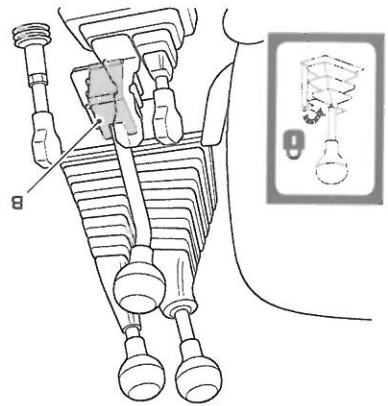


Figure 67.

B Mechanical lock

Drive Controls

Steering Wheel

Turn the steering wheel in the direction you want to go. Refer to: Component Locations (Page 23).
The steering wheel incorporates an assister knob for single handed operation.

Steering Column

CAUTION Make sure the steering column is locked in position. Do not adjust the steering column while driving.

The steering column angle can be adjusted to suit the operator and to allow easier access for entering and leaving the cab.
To adjust the steering column:

1. Hold the steering wheel, complete turn the lever in a counter clockwise direction to unlock the steering column.
2. Adjust the steering column to the required position.
3. Turn the lever in a clockwise direction to lock the steering column.

To adjust the position of the lock lever, pull the lever and move to the required position.

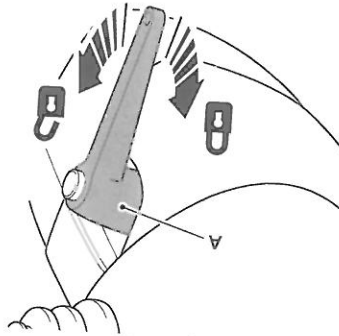


Figure 68.

A Lever

Accelerator Pedal

Push this pedal down to increase engine speed. Let the pedal up to reduce engine speed. With your foot off the pedal the engine will idle.

Service Brake Pedal

Push down on the brake pedals to slow or stop the machine. Use the brakes to prevent overspeeding down a slope.

The brake pedal is in two parts so that you can use either foot to operate the brakes. Note that the two parts are linked together, depressing either side applies all brakes and they do not operate independently.
The stop lights should come on when the brakes are applied. Do not drive the machine unless both stop lights work correctly.



Inching Pedal

(For: 531-70 [T4F], 531T70 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], 560-80 [HM560])

Dual Tech Variable Transmission only – The first part of the service brake action reduces the drive speed via the transmission so that machine speed can be controlled independently of engine speed. Ideal for loading lorries.

Park Brake

▲ WARNING Be careful, if the park brake is not functioning and the drive controls are in neutral the machine will roll down the slope. To stop the machine engage drive controls.

Notice: The park brake must not be used to slow the machine from travelling speed, except in an emergency, otherwise the efficiency of the brake will be reduced.

Use this lever to engage the park brake before leaving the machine.

The park brake lever is located on the floor of the cab, to the left of the operator seat.

The transmission drive is automatically disconnected when the park brake is engaged.

Pull the lever up to apply the park brake.

If the park brake is engaged when forward/reverse is selected, the park brake engaged indicator will come on.

Squeeze the release lever and lower the lever to release the park brake. Refer to: Component Locations (Page 23).

Transmission Drive Lever

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Otherwise
Page 86
Page 88

▲ WARNING You and others can be injured if you operate the forward/reverse lever while you travel. The machine will immediately reverse direction without warning to others. Follow the recommended procedure for proper use of this selector.

1. Stop the machine.
2. Apply the service brake.
3. Let the engine speed drop to idle.
4. Select the required direction.
5. Release the service brake and accelerate.

To select the drive:

Drive Selection

If the park brake is engaged when forward/reverse is selected, the park brake indicator will illuminate and the warning buzzer will sound.

The lever has detent positions in forward, reverse and neutral. Pull the lever towards you to move the lever from the detent position.

The lever is at neutral. The lever has detent positions in forward, reverse and neutral. Pull the lever towards you to move the lever from the detent position. If the park brake is engaged when forward/reverse is selected, the park brake indicator will illuminate and the warning buzzer will sound. Dual Tech Variable Transmission only: Forward and Reverse can be selected whilst moving, however if reverse is selected over 15kph, a buzzer will sound, and you will need to reduce your forward speed, and once below 15kph the machine will then complete the requested direction change, the request can be simply cancelled by reselecting the current direction. When reverse is selected an alarm will sound. Gear or direction changes only occur at predetermined speeds, this may result in gear/direction change delays. To prevent unexpected gear changes only select gears or direction as they are required. The transmission is controlled by an ECU (Electronic Control Unit), and information is displayed on the instrument panel. The engine will only start if the lever is at neutral. Except Dual Tech Variable Transmission: Stop the machine before moving the lever. To select forward (F), reverse (R) or neutral (N), 'lift' and move the lever to the required position. All four gears are available in forward and reverse. When reverse is selected an alarm will sound. The engine will only start if the lever is at neutral.

The drive lever has three positions forward (F), reverse (R) and neutral (N).

A hand operated drive lever controls the direction of the machine.

- A Drive lever
- N Neutral
- X Horn
- F Forward direction
- R Reverse direction

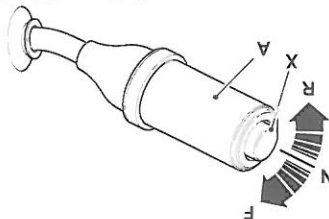
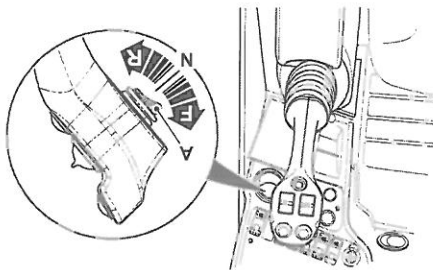


Figure 69.

Drive Selection Switch (Option)

Figure 70.



A Drive selection switch

Your machine may be installed with a drive selection switch that controls the direction of the machine.

The drive selection switch has three positions forward (F), reverse (R) and neutral (N). Press the switch up to select the forward direction, down to select the reverse direction.

To select neutral, position the drive selection switch between the forward and reverse positions. The drive selection switch is disabled if the drive lever is moved from the neutral (N) position. Before you operate the switch, read and understand the principle of operation of the drive lever.

Drive Selection

To select the drive:

1. Stop the machine.
2. Apply the service brake.
3. Let the engine speed drop to idle.
4. Make sure the drive lever is set to neutral (N) position. The drive selection switch is disabled, when the drive lever is set to the forward (F) or reverse (R) position.
5. Make sure that the drive selection switch is set to the neutral (N) position. The machine will not recognise a change in direction unless the switch has first been set to neutral.
6. Press the switch to select the required direction.
7. Release the service brake and accelerate.

Horn

The horn button is at the end of the forward/reverse lever. Push the button to operate the horn. It functions only with the starter switch set to on.

(Otherwise)

▲ WARNING You and others can be injured if you operate the forward/reverse lever while you travel. The machine will immediately reverse direction without warning to others. Follow the recommended procedure for proper use of this selector.

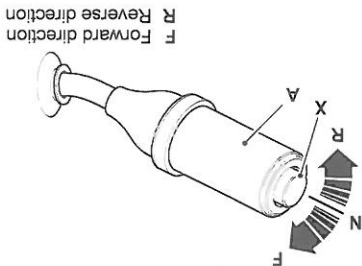


Figure 71.

A hand operated drive lever controls the direction of the machine.

The drive lever has three positions forward (F), reverse (R) and neutral (N).

Stop the machine before moving the lever. To select forward (F), reverse (R) or neutral (N), 'lift' and move the lever to the required position. All four gears are available in forward and reverse. When reverse is selected an alarm will sound. The engine will only start if the lever is at neutral.

The lever has detent positions in forward, reverse and neutral. Pull the lever towards you to move the lever from the detent position.

If the park brake is engaged when forward/reverse is selected, the park brake indicator will illuminate and the warning buzzer will sound.

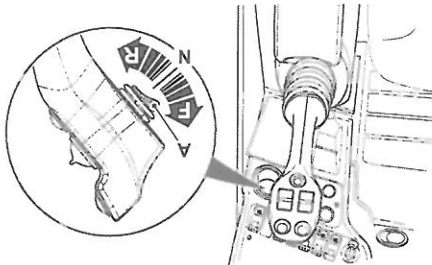
Drive Selection

To select the drive:

1. Stop the machine.
2. Apply the service brake.
3. Let the engine speed drop to idle.
4. Select the required direction.
5. Release the service brake and accelerate.

Drive Selection Switch (Option)

Figure 72.



A Drive selection switch

Your machine may be installed with a drive selection switch that controls the direction of the machine.



The drive selection switch has three positions forward (F), reverse (R) and neutral (N). Press the switch up to select the forward direction, down to select the reverse direction.

To select neutral, position the drive selection switch between the forward and reverse positions. The drive selection switch is disabled if the drive lever is moved from the neutral (N) position. Before you operate the switch, read and understand the principle of operation of the drive lever.

Drive Selection

To select the drive:

1. Stop the machine.
2. Apply the service brake.
3. Let the engine speed drop to idle.
4. Make sure the drive lever is set to neutral (N) position. The drive selection switch is disabled, when the drive lever is set to the forward (F) or reverse (R) position.
5. Make sure that the drive selection switch is set to the neutral (N) position. The machine will not recognise a change in direction unless the switch has first been set to neutral.
6. Press the switch to select the required direction.
7. Release the service brake and accelerate.

Horn

The horn button is at the end of the forward/reverse lever. Push the button to operate the horn. It functions only with the starter switch set to on.

Gear Lever

Page 90	For: 526-56 [T4F], 4 Speed Synchro Shuttle Transmission
Page 91	For: 4 Speed Powershift Transmission (Barrel Select)
Page 92	For: 4 Speed Powershift Transmission
Page 92	For: 6 Speed Powershift Transmission
Page 94	For: Dual Tech Variable Transmission (HM560)

(For: 526-56 [T4F], 4 Speed Synchro Shuttle Transmission)

▲ CAUTION Gear or direction changes on this machine will only occur at a predetermined speed, this may result in gear/direction change delays. To prevent unexpected gear changes only select gears or direction as they are required.

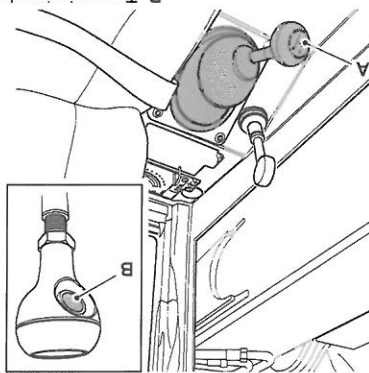


Figure 73.

A Lever

B Transmission dump switch

To select a gear, move the lever as shown on the shift pattern.

When the machine is stationary, before you select a gear, make sure the drive lever is set to the neutral position and engine is at idle speed.

The machine can be moved in any gear depending on the ground conditions.

To change the gear on the move:

1. Press the transmission dump switch.

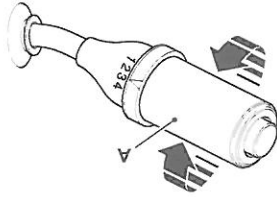
2. Select the new gear.

3. Release the transmission dump switch.

4. Use the accelerator to produce a smooth gear change.

(For: 4 Speed Powershift Transmission (Barrel Select))

▲ CAUTION Gear or direction changes on this machine will only occur at a predetermined speed, this may result in gear/direction change delays. To prevent unexpected gear changes only select gears or direction as they are required.



A Switch barrel

When the machine is stationary, before you select a gear, make sure the drive lever is set to the neutral position and engine is at idle speed.

To select a gear on the move, rotate the switch barrel so that the arrow marked on it aligns with the required gear.

You do not need to press the transmission dump switch.

The machine can be moved in any gear depending on the ground conditions.

(For: 4 Speed Powershift Transmission)

▲ CAUTION Gear or direction changes on this machine will only occur at a predetermined speed, this may result in gear/direction change delays. To prevent unexpected gear changes only select gears or direction as they are required.

The transmission is controlled by an ECU (Electronic Control Unit), and information is displayed on the instrument panel.

When the machine is stationary and the drive lever is set to the neutral position, the previously selected gear will be shown on the main screen display.

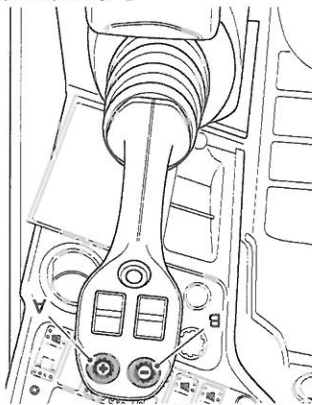
On the selection of forward or reverse the transmission will return to the previously selected gear. Even after an ignition switch cycle the ECU will remember the previously selected gear.

To select a gear on the move, press the right button on the top of the control lever to up shift the gear and press the left button to downshift the gear. One gear change will be completed for each press of the button. Pre-selection of a gear is possible when in neutral.

The machine is installed with a transmission disconnect sensor on the brake pedal, this option can be switched on and off.

The machine can be moved in any gear depending on the ground conditions.

Figure 75.



A Gear up shift button

B Gear downshift button

(For: 6 Speed Powershift Transmission)

▲ CAUTION Gear or direction changes on this machine will only occur at a predetermined speed, this may result in gear/direction change delays. To prevent unexpected gear changes only select gears or direction as they are required.

The transmission is controlled by an ECU, and information is displayed on the instrument panel.

To select the most applicable gear ratio for a given application, you can select one of two transmission modes, manual and auto. This selection can be made through the transmission mode selector. Refer to: Console Switches (Page 29).

You must select manual transmission mode to cancel auto transmission mode.

When you up shift from 3rd gear, you re-enter the automatic range.

Downshift protection will cut in if the speed is too high to allow the selected gear to be engaged.

When in the automatic range (4th to 6th) if you press the down shift button, the ECU will select third gear and you will now be able to manually select the 1st to 3rd gears.

This mode allows you to manually select the 1st to 3rd gears, however when 4th gear is selected the remaining gears are automatically controlled.

Auto

The machine has an anti-stall feature which prevents 6th gear being used to pull away from stationary. This is achieved by the transmission automatically shifting down from 6th to 5th.

The machine is installed with a transmission disconnect sensor on the brake pedal, this option can be switched on and off.

One gear change will be completed for each press of the button. Multiple gear change request are stored and are completed when the transmission reaches pre-determined limits. Downshift protection can delay the downshifts. Pre-selection of a gear is possible when in neutral.

To select a gear on the move, press the right gear select button on the top of the control lever to shift to high gear and press the left gear select button to shift to low gear.

On the selection of forward the transmission will return to the previously selected gear. On the selection of reverse the transmission will change to the optimum matched ratio.

When the machine is stationary and the drive lever is set to the neutral position, the previously selected gear will be shown on the main screen display.

This mode allows you to manually select all gears.

Manual

Transmission Mode

A Gear up shift button

B Gear downshift button

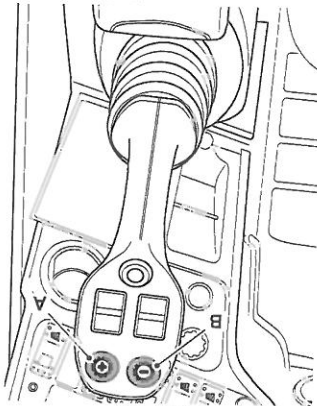


Figure 76



To enable a higher gear the accelerator pedal must be pressed. Release the accelerator pedal fully when coasting downhill, this prevents up shifts occurring thus ensuring maximum machine control.

Transmission Gear Mapping

The below table shows what will be displayed on the instrument panel and which gear will be selected by the ECU, in the event of either a direction change, or the selection of drive from neutral. This gear offset optimises the best ratio match between forward and reverse.

Even after an ignition switch cycle, the ECU will remember the previously selected gear and mode.

Table 17.

Neutral Displayed Gear		Gear Ratio	
	N1	1	Forward
	N2	2	Reverse
	N3	3	Forward
	N4	4	Reverse
	N5	5	Forward
	N6	6	Reverse

Downshift Protection

The ECU will protect the transmission when changing down, if the speed is too high, two audible beeps will result when a lower gear is selected. The transmission will remain in the currently selected gear until the speed has reduced sufficiently for the downshift to occur.

(For: Dual Tech Variable Transmission (HM560))

▲ CAUTION Gear or direction changes on this machine will only occur at a predetermined speed, this may result in gear/direction change delays. To prevent unexpected gear changes only select gears or direction as they are required.

The transmission is controlled by an ECU, and information is displayed on the instrument panel. In the event of a serious transmission error, the dash will display a cog with the word RESTRICTED, the handbrake will need to be cycled and the machine will only travel at 10km/h (6.2mph).

A short press of the upshift and downshift buttons allows you to manually select gears 1, 2 and 3. Forward and Reverse can be selected whilst moving, however if reverse is selected over 15kph (with gear 2, 3 or D selected), a buzzer will sound, and you will need to reduce your forward speed, and once below 15kph the machine will then complete the requested direction change, the request can be simply cancelled by reselecting the current direction. When a direction change is selected whilst moving, with the drive pedal depressed, and you are travelling below 15kph, then the machine will automatically slow you down make the direction change and accelerates in the opposite direction, in a smooth but productive manner.

Manual

Gear	eco maximum rpm	Power maximum rpm
Snail	1700	2200
1	1700	2200
2	2000	2350
3	2000	2350
D	2350	2350

Table 19.

Mode Name	eco Mode Speed	Power Mode Speed	Comments
Snail	0-17km/h (0-10.6mph)	0-19km/h (0-11.8mph)	Max speed controlled by vari-speed controller to enter pedal mode set hand throttle
1	0-17km/h (0-10.6mph)	0-19km/h (0-11.8mph)	Gear selected = highest gear machine auto shifts into selected gear
2	Locked up direct	19km/h (11.8mph)	
3	mechanical drive	27km/h (16.8mph)	
D		40km/h (24.9mph)	

Table 18.

Transmission Mode

A Gear up shift button

B Gear downshift button

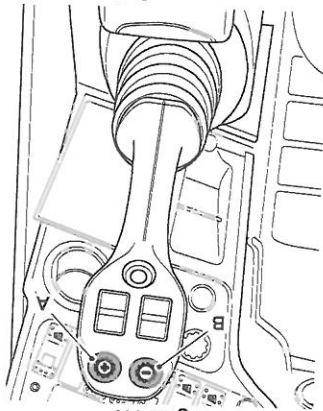


Figure 77.



Active Stand Still

When a direction is selected or if the machine is in neutral with the engine running, the machine is in active standstill. The transmission will attempt to hold the vehicle from rolling forwards or backwards. This may overcome if there is a heavy weight or steep hill. In this situation also use the foot brake, or park brake. Do not leave the seat unless the park brake is applied and the transmission is in neutral. In this instance a warning is displayed. Refer to the dash if the park brake is not applied and the engine is off the machine will roll.

Leaving the machine in gear will not prevent it running away. Do not leave the driving seat under any circumstances unless the park brake is on.

Drive Mode

Drive Mode is selected by pressing and holding the gear upshift button. The selected gear will be displayed on the instrument dash – N1 – ND. This represents the maximum attainable gear. When in drive mode the transmission is effectively fully automatic. The machine will select the most appropriate gear dependant on speed and loading, within the confines of the drivers maximum gear selection. If ND is selected (top gear) the machine will operate between 0 – 40kph. If N3 were selected the machine would be prevented from entering top gear and max speed would be restricted accordingly. Forward and reverse can be selected whilst moving, however if reverse is selected over 15kph (with gear 2, 3 or D selected), a buzzer will sound, and you will need to reduce your forward speed, and once below 15kph the machine will then complete the requested direction change, the request can be simply cancelled by reselecting the current direction. When a direction change is selected whilst moving, with the drive pedal depressed, and you are travelling below 15kph, then the machine will automatically slow you down make the direction change and accelerates in the opposite direction, in a smooth but productive manner.

Snail Mode

This mode is selected by pressing and holding the gear downshift button. The selection will be indicated by the snail mode symbol which will be displayed on the dash.

While in this mode, as per 1st gear the machine will be restricted to hydrostatic drive, and the machines maximum speed will be limited by the Vari-speed controller, which can be set from 0 to 100% of the maximum speed, the percentage selected is displayed on the dash for convenience. Ideal for limiting the machines speed when rehandling bulk materials.

Hand Throttle

Once in Snail mode and the hand throttle is set, pedal mode becomes active. In pedal mode the drive pedal function now changes - from controlling engine speed to controlling vehicle speed. Ideal for use, when loading, sweeping and feeding (when used in conjunction with the constant auxiliary system.) The hand throttle is used to set the engine speed. Operation is as follows:

Downshift in to Snail Mode

Table 20.

Short push forward	First push activates Pedal Mode, and the engine revs to 1500RPM, subsequent short pushes increase engine speed 100 rpm (see ECO/Power Table for maximum engines speeds)
Long push forward	First long push activates Pedal Mode, and the engine revs to 1500RPM, if you continue to hold, the engine will automatically go to maximum speed (see ECO/Power Table for maximum engines speeds)
Short pull back	Decrease engine speed 100 rpm
Long pull back	Returns the engine to idle, and deactivates Pedal Mode

Whilst in pedal mode the Vari-speed controller continues to set the maximum vehicle speed. Actual vehicle movement is achieved by depressing the drive pedal. Hand throttle setting is memorised so shifting from snail

to 1st, engine revs will return to idle, then when shifting back in to snail the engine will return to the previously set speed (ideal for emptying your collector or refilling your feeder). This memory is reset after a key cycle. When a direction change is selected whilst moving, with the drive pedal depressed, then the machine will automatically slow you down make the direction change and accelerates in the opposite direction, in a smooth but productive manner.

Transmission Dump Switch

(For: 526-56 [T4F], 531-70 [T4F], 531-T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541-T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F]). Not for: Dual Tech Variable Transmission (HM560))

The transmission dump allows you to disconnect the transmission to improve the hydraulic performance by reducing the engine load. There are two options depending on machine type and control lever(s).

Transmission Dump Switch (Non-single Lever Thumb Wheel)

The transmission dump switch can be found on the control levers. Refer to: Operating Levers/Pedals (Page 152).

Transmission Disconnect Switch (Single Lever Thumb Wheel)

The machine is installed with a transmission disconnect sensor on the brake pedal, this option can be switched on and off. Refer to: Console Switches (Page 29).

Transmission Disconnect Mode - On

When the brake pedal is applied the transmission is disconnected from the axles to prevent the machine driving against the pressure of the brakes. This operates automatically when the mode is set to on and the machine is travelling less than 2km/h (1.2mph)

Transmission Disconnect Mode - Off

The transmission is not disconnected when the brake pedal is applied.

2/4 Wheel Drive Selection

The transmission has an optional 2/4 wheel drive selector switch. Refer to: Console Switches (Page 29).

This allows you to disconnect the rear axle from drive. It is recommended that when on the public highway the machine should be operated in 2 wheel drive in order to increase the life of the tyres.

When you apply brakes the transmission automatically engages 4 wheel drive, this ensures the machine brakes on all four wheels.

Steer Mode Control

▲ CAUTION With 4-wheel steer, the back end of the machine will swing out when you make a turn. Check for clearance before making a turn.

CAUTION Failure to align the steering before selecting the required steer mode will cause the machine to steer incorrectly.



CAUTION Failure to phase 4-wheel steer at least once per day may mean a reduction in steering effectiveness

The steer mode selector is used to select the most suitable steer mode for the terrain and type of work you do.

This machine is a 4-wheel steer machine. Before you drive the machine, understand how the steer modes change the operation of your machine. Refer to: Steer Modes (Page 127).

For effective steering response you must re-phase the steering:

- At least once per day.
- If difficulty in steering.
- After travelling for 24km (15mi) or more on the road (in 2-wheel steer).

Transmission Mode

(For: Dual Tech Variable Transmission (HM560))

2/4 Wheel Drive Selection

The transmission has an optional 2/4 wheel drive selector switch. Refer to: Console Switches (Page 29).

This allows you to disconnect the front axle from drive. It is recommended that when on the public highway the machine should be operated in auto 2 wheel drive in order to increase the life of the tyres.

When you apply brakes the transmission automatically engages 4 wheel drive, this ensures the machine brakes on all four wheels.

If towing a heavy load in damp conditions hunting can sometimes be felt through the transmission, this can be resolved by selecting 4 wheel drive.

Indicates the engine speed in revolutions per minute. Refer to Figure 78.

Tachometer

The warning indicator will light up red whenever there is a critical Error. A buzzer will permanently sound when there is a critical fault. This fault cannot be cancelled and you should contact your dealer.

The warning indicator will light up amber whenever there is a Warning Error. A buzzer shall sound for 1s when there is a service fault. This fault can be cancelled via the Fault Log Screen. Refer to Figure 78.

Warning Indicator

The LCD screen displays information such as current machine status, machine setup, service information and fault logs. Refer to Figure 78.

Display Screen

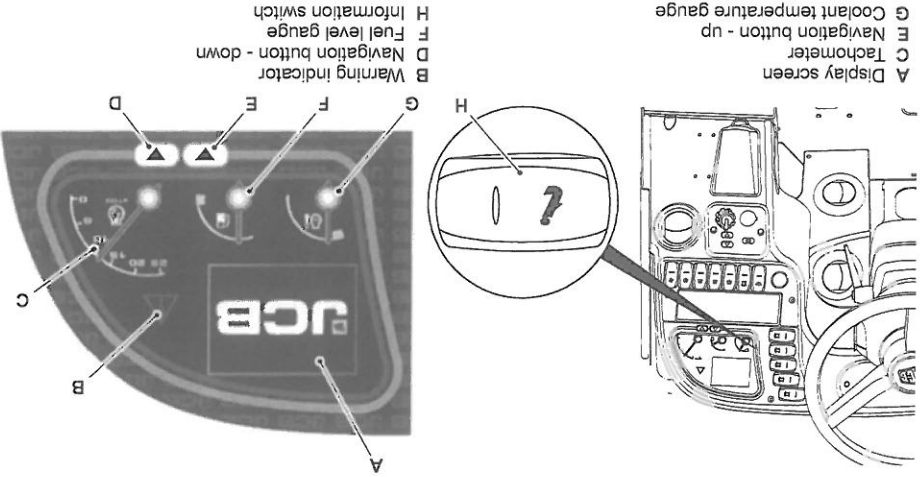


Figure 78.

The control levers and switches may vary on machines.

You can navigate to different screen shown on the LCD display screen using the up and down navigation buttons and information switch.

It provides the interface with the machines electronic system.

The instrument panel, warning indicator and warning lights are located in the dash panel at the front of the cab in the line of sight from the operator's seat.

(For: 526-56 [T4F], 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Instrument Panel

Instruments



Navigation button (Down)

Used to navigate through the various options on the LCD Screen. Refer to Figure 78.

Navigation button (Up)

Used to navigate through the various options on the LCD Screen. Refer to Figure 78.

Fuel level gauge

Indicates the level of diesel fuel in the tank. Do not let the tank run dry, or air will enter the fuel system. When the Fuel level enters the red zone, an alarm will sound and the Warning Indicator Lamp will illuminate. Refer to Figure 78.

Coolant temperature gauge

Indicates the temperature of the engine coolant. The gauge pointer will gradually swing upwards as the coolant temperature increases. When the coolant temperature enters the red zone, an alarm will sound and the Warning Indicator Lamp will illuminate. Refer to Figure 78.

Information Switch

The information switch is used to perform different actions. Refer to Figure 78.

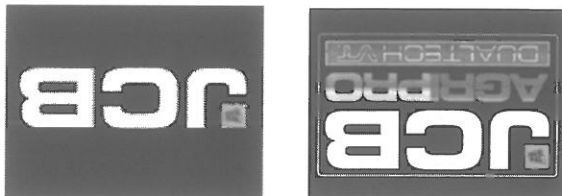
- Short Press - Press the information button for less than 2s allows the operator to cycle through the main screens.
- Long Press - Press the information button longer than 2s allows the operator to enter the displayed screen.

Main Display Screens

Start-Up Screen

When the ignition switch is switched on the JCB logo is displayed or on AGRIPRO models a different screen is shown. After 3s the display will show the normal operating mode screen.

Figure 79.



Default Operating Screen

Displays the machine travel speed, transmission and gear information, steer mode, clock and machine status.

The current selected gear will be displayed in solid yellow.

When a gear change request is acknowledged by the transmission, but has not yet been carried out, the requested gear will be displayed in flashing yellow until the shift takes place. Requested shifts can be cancelled by shifting in the opposite direction. Both multiple changes and downshift protection can delay shifts.

The forward arrow will be shown if a forward gear is selected.

The reverse arrow will be shown if a reverse gear is selected.

If neutral is selected the icon N and the previously selected forward gear will be shown.

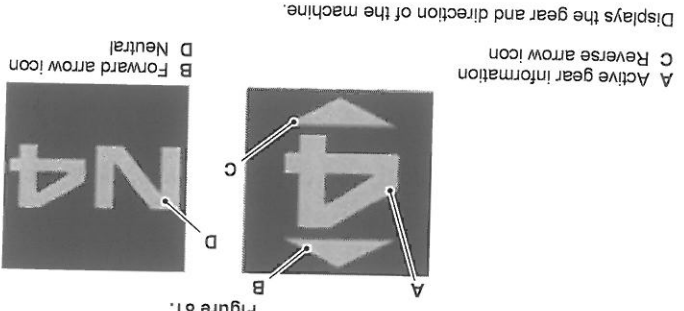


Figure 81.

Transmission FNR and Gear Information

Normally displays the speed of the machine.

Travel Speed

Transmission FNR and gear information - Displays the selected gear and direction of the machine. The current selected gear will be displayed in solid yellow. When a gear change request is acknowledged by the shift takes place. Requested shifts can be cancelled by shifting in the opposite direction.

Travel speed - Normally displays the speed of the machine. This section is also used when a notification is activated.

- A Travel speed
- C Transmission status and SCR (Selective Catalytic Reduction) status tray
- E Clock/machine hours
- G DEF (Diesel Exhaust Fluid) level
- H Brake system accumulator pressure
- F Machine status tray (stabilisers, joystick configuration)
- D Steering mode tray
- B Transmission FNR and gear information



Figure 80.





Transmission Status Symbols

Displays the current transmission status. There are more icons than space in the Transmission Icons Tray, you will always have a notification when a status changes, however only the most important status icons will be displayed.

ECO mode active	
Park brake active	
Foot brake dump active	
Torque converter lock up engaged	
2WD active/Auto 2WD active	
Driver not in seat	
Transmission auto mode active	

Table 21.

Auto Steer Mode Symbols (if installed)

Displays the active steer mode in the solid grey.

When changing between the steer modes the amber icons will flash at 1s intervals. If there is a fault a symbol will flash rapidly, and a notification will be displayed.

Table 22.

2 Wheel steer mode active	
4 Wheel steer mode active	
Crab steer mode active	
2WS to 4WS (symbol flashes during mode change)	





Auto SRS (Smooth Ride System) active (if installed)	
Bucket control system active (if installed)	
SRS active	
Constant auxiliary mode active	

Table 24.

Displays the status of various hydraulic systems of the machine. There are more icons than space in the Machine Status Tray. You will always have a notification when a status changes, however only the most important status icons will be displayed.

Machine Status Symbols








No wheels are aligned	
Front wheels are aligned	
Rear wheels are aligned	
All wheels are aligned	

Table 23.

If there is a fault a symbol will flash rapidly, and a notification will be displayed.

Displays when the wheels are aligned to straight ahead position.

Indicated Manual Steer Mode Symbols (if installed)

2WS to crab steer (symbol flashes during mode change)	
4WS to 2WS (symbol flashes during mode change)	
Crab steer to 2WS (symbol flashes during mode change)	

Secondary auxiliary active	
Auto fan reverse active	
Tilt lock active	
Full lock active or Hydraulic function isolation active	
Left stabilizer deployed	
Right stabilizer deployed	
Joystick configuration - placing pattern	
Joystick configuration - loader pattern	

Notification Screens

The notification screen displays temporary operator messages such as operator requested mode changes, user input screens, etc.

When a request becomes active, the primary information is displayed on the left half of the main display screen and the notification is displayed on the right side of the main display screen. A buzzer may sound to notify the operator that a request has been acknowledged.

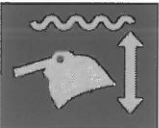
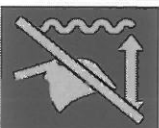



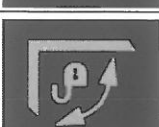


If multiple operator notifications become active, only the latest active notification is displayed.

Table 25.

Icon	Event	Buzzer
	Audible/Visual Steer mode change from 2WS to 4WS	No
	Audible/Visual Steer mode change from 2WS to crab steer	No



Event	Icon
Audible/Visual. Steer mode change from 4WS to 2WS.	
Audible/Visual. Steer mode change from crab steer to 2WS.	
Audible/Visual. Cab heater fan speed setting. Number of yellow bars corresponds to current fan speed setting.	
Audible/Visual. Constant auxiliary operational position.	
Audible/Visual. Constant auxiliary stored position.	
Audible/Visual. Constant auxiliary cancelled.	
Audible/Visual. 2nd auxiliary active.	
Audible/Visual. 2nd auxiliary cancelled.	

Buzzer	Event	Icon
No	Audible/Visual. SRS active.	
No	Audible/Visual. SRS cancelled.	
No	Audible/Visual. Hydraulic lock active.	
No	Audible/Visual. Hydraulic lock cancelled.	
No	Audible/Visual. Tilt lock active.	
No	Audible/Visual. Tilt lock cancelled.	
No	Audible/Visual. Transmission disconnect active.	
No	Audible/Visual. Transmission disconnect cancelled.	

Icon	Event	Buzzer
	Audible/Visual, LLMC (Longitudinal Load Moment Control) override active.	
	Audible/Visual, Air conditioning system active.	No
	Audible/Visual, Air conditioning system cancelled.	No
	Audible/Visual, Auto reverse fan active.	No
	Audible/Visual, Auto reverse fan cancelled.	No
	Audible/Visual, Grd heater/glow plugs active.	No
	Audible/Visual, 2WD active.	No
	Audible/Visual, 2WD cancelled.	No





Buzzer	Event	Icon
No	Audible/Visual. Stabilizer isolation active.	
No	Audible/Visual. Stabilizer isolation cancelled.	
No	Audible/Visual. Immobiliser active.	
Yes	Audible/Visual. Operator has left the seat, with transmission engaged and park brake disengaged (excludes 540-170).	
Yes	Audible/Visual. Service/Aux venting activated	
No	Audible/Visual. Transmission auto mode active.	
No	Audible/Visual. Transmission auto mode cancelled.	
No	Audible/Visual. Transmission auto mode cancelled.	

Fault log screen

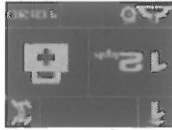


Figure 85.

Machine setup screen



Figure 84.

Service information screen



Figure 83.

Machine status screen

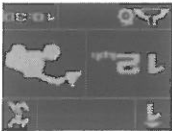

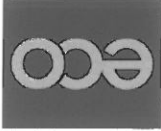


Figure 82.

Press the information switch for less than 2s to cycle through the main screens.

Secondary Level Display Screens

Pressing the information switch and navigation arrows will take the operator to the secondary level display screens.

Icon	Event	Buzzer
	Audible/visual. Small mode active or, small percent adjusted..	No
	Audible/visual. ECO mode active.	No

Press the information switch for longer than 2s to enter the displayed screen.
Press the arrows to navigate up and down within the main screens.

Machine Status

To see the machine status information:

Go to the machine status screen.

Press the information switch for more than 2s to see the machine status.



Figure 86.

- A Battery voltage
- B Coolant temperature
- C Engine RPM (Revolutions Per Minute)
- D Not used

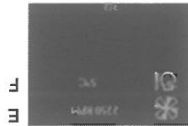


Figure 87.

- E Not used
- F Engine air intake temperature

Press the navigation arrows to switch between the screens.

Press the information switch again for less than 2s to the exit screen.



Figure 88.

Exit screen

Press the information switch again for more than 2s to return to the default operating screen (home screen).

Service Information

To see the service information:

Go to the service information screen.

Press the information switch for 20s to see the service information.

Press the navigation arrows to switch between the screens.



Figure 89.

- A Engine hours
- C Machine serial number
- D Next service interval

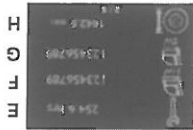


Figure 90.

- E Time to next service
- G Right hand cluster software version number
- F Right hand cluster hardware version number
- H Tyre diameter

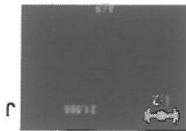


Figure 91.

- J Axle ratio

The machine option screens allow the dealer to identify the options installed and the status of each option.



Figure 92.

- K Machine options screen 1



Figure 93.

- L Machine options screen 2

Press the information switch again for less than 2s to display the last screen.

Exit screen



Figure 94.

Press the information switch again for more than 2s to return to the default operating screen (home screen).

Machine Setup

The machine setup screen allows the operator to configure the time, date, brightness, etc.

Press the information switch for less than 2s to display the main screen.

Press the navigation arrows to scroll down to the machine setup screen.

Press the information switch for more than 2s to activate the machine setup screen.

Press the navigation arrows to switch between the available options on the screen.

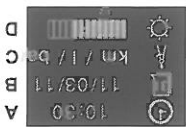


Figure 95.

- A Clock
- C Units of measure



Figure 96.

- E Gauge backlight brightness
- G Automatic refresh inhibit
- F DTVT (Dual Technology Variable Transmission) Transmission calibration

Press the information switch again for less than 2s to display the last screen.



Figure 97.

Exit screen

Press the information switch again for more than 2s to return to the default operating screen (home screen).

Time Setup

To setup/adjust the time:

1. Go to the machine setup screen.
2. Press the navigation arrows to select the clock.



Figure 98.

3. Press the information switch for more than 2 seconds.
4. Press the navigation arrows to select the time format.

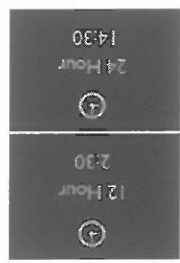


Figure 99.

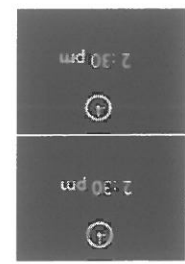


Figure 100.

5. Press the information switch for 2 seconds to adjust the clock.
6. Press the information switch for 2 seconds to switch between the hours and minutes. Use the arrows to adjust the values.

7. Press the information switch for more than 2 seconds to confirm the setup.

Date Setup

To setup the date:

1. Go to the machine setup screen.
2. Press the navigation arrows to select the date.



Figure 101.

3. Press the information switch for more than 2 seconds.
4. Press the navigation arrows to select the date format.



Figure 102.

5. Press the information switch for 2 seconds to adjust the date.
6. Press the information switch for 2 seconds to switch between the day, month and year values. Use the arrows to adjust the values.

Figure 103.



7. Press the information switch for more than 2 seconds to confirm the setup.

Units of Measure

To setup the units of measure:

1. Go to the machine setup screen.
2. Press the information switch for more than 2 seconds
3. Press the navigation arrows to select the units.
4. Press the information switch for more than 2 seconds to confirm the setup.

Display Screen Brightness

To adjust the brightness of gauge backlight or display screen:

1. Go to the machine setup screen.
2. Press the navigation arrows to select the brightness.

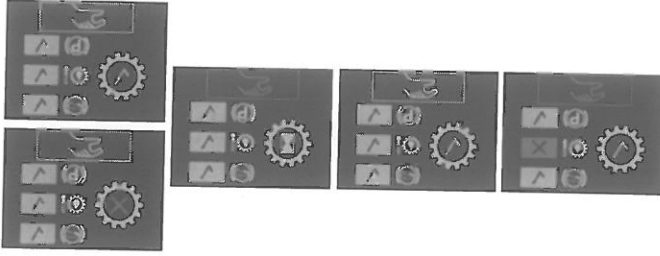


Figure 106.

8. A short press initiates calibration a quick press reverts to previous screen.
 7. If calibration is unsuccessful a red X is displayed. If calibration is successful a green tick is displayed.
 6. A short press initiates calibration a quick press reverts to previous screen.
Temperature: 50–55°C (121.9–130.9°F)
Temperature range is:
 5. For the calibration to initiate the foot brake and park brake must be applied and the transmission temperature must be in the specified temperature range. If one or more of these conditions is not met then the hand symbol remains grey. Once the conditions are all met the hand symbol illuminates. The specified temperature range is:
 4. Press the information switch for more than 2 seconds.
 3. Press the navigation arrows to select the transmission calibration.
 2. Go to the machine setup screen.
 1. Make sure the transmission oil level is correct.
- To calibrate the transmission:

DTV Transmission Calibration

5. Press the information switch for more than 2 seconds to confirm the setup.

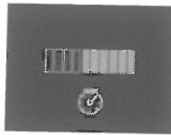


Figure 105.

4. Press the navigation arrows to increase or decrease the brightness.
3. Press the information switch for more than 2 seconds.

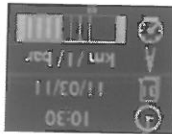


Figure 104.

Automatic Refresh Inhibit

Use this menu item enable/disable the automatic refresh.

1. Go to the machine setup screen.
2. Press the navigation arrows to select the inhibit feature.
3. Auto refresh inhibit active (tick mark), auto refresh inhibit not active (X mark).
4. Press the information switch for more than 2 seconds to confirm the setup.

Fault Log

The fault log screen provides information on the active and previously active faults on the machine. The fault log display screen shows the fault code, time, date, engine hours and number of times that the fault has been active. By default, the fault log display shall only show the active faults. It shall be possible to view active and historical faults by going to the diagnostic menu. Faults shall be displayed in the colour of their severity (critical = red, warning = yellow, trivial = grey).

Figure 107.


If a service fault or critical acknowledged fault is recognised by the machine electronic system a fault icon and fault code is displayed on the right side of the home screen. The fault indicator is illuminated amber or red. The buzzer sounds momentarily when a fault is active. The code will remain until it is acknowledged by pressing the information button.

Figure 108.


When a critical non-acknowledged fault is active, the left area of the main screen will show the fault icon and right area of the main screen will show the fault code. The fault indicator is illuminated red. The buzzer sounds when a critical fault is active. It sounds until the critical fault is no longer active.

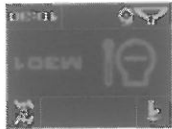
Figure 109.




Figure 110.



Figure 111.





Warning/Fault icons

There are three levels of warnings each is represented by a different colour. Depending on the level of severity it may or may not be acknowledged by the operator. Some icons are available at all three levels but are not shown below:

- Yellow - acknowledged
- Critical red - not acknowledged
- Critical red (50% screen size) - acknowledged

Transmission		Stabilizer		Transmission	
Exhaust treatment		Joystick		Telematics	
DEF level		Engine		DEF level	
Coolant temperature				Coolant temperature	
		Hydraulics			
		CAN (Controller Area Network)		Transmission temperature	
Fuel level		Indicator lamp		Fuel level	
Water in fuel				Water in fuel	
Sway		Air filter		Sway	
Battery				Battery	

Table 26.

	Coolant level		Engine oil level	
	HVAC (Heating Ventilation Air Conditioning)		Brake light	

Warning Lights
 ▲ CAUTION If any of the audible/visual warnings operate while the engine is running, stop the engine as soon as it is safe to do so and rectify the fault.

The warning lights are grouped together on a panel located on the dash board.
 When a warning light comes on an alarm will sound (depending on security of the condition). The only way to cancel the alarm is to set the ignition switch to position '0'. The problem can then be rectified.
 Do not use the machine if it has a fault condition, or you may damage the engine and/or the transmission.
 All instruments and indicators will be turned off when the ignition switch is set to off (the hazard warning indicator will still operate if the hazard warning lights are switched on).

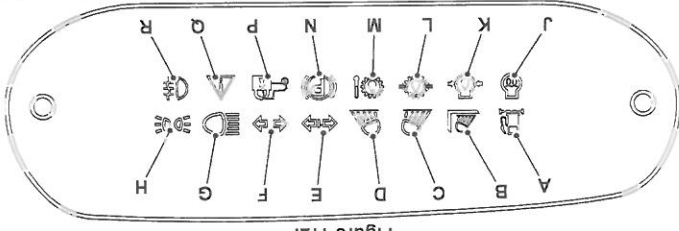




Figure 112.

- A Low fuel indicator - Not used. Information displayed on instrument panel.
- C Front work light - Visual (Amber Light). Illuminates when the front work lights are switched on.
- E Trailer indicator - Visual Only (Green Light). Flashes with the trailer indicators.
- G Main beam - Visual only (Blue light). Illuminates when the headlights main beams are switched on.
- J Grid heater - Not used. Information displayed on instrument panel.
- L Transmission oil pressure - Visual (Red light). Illuminates if the oil pressure drops below the normal working pressure.
- N Park brake engaged - Visual (Red light). Illuminates when the park brake is engaged.
- Q Master warning - Not used. Information displayed on instrument panel.
- R Fog lights - Visual only (Amber light). Illuminates when the fog lights are switched on.
- P Not used.
- M Transmission oil temperature - Not used. Information displayed on instrument panel.
- K Engine oil pressure - Visual only (Red light). Operates if the engine oil pressure drops below the normal working pressure.
- H Side lights - Visual only (Green light). Illuminates when the side lights are switched on.
- F Direction indicators - Visual only (Green light). Flashes with the direction indicators.
- D Rear work light - Visual (Amber Light). Illuminates when the rear work lights are switched on.
- B Boom work light - Visual (Amber Light). Illuminates when the boom work lights are switched on.



SCR Exhaust After Treatment Notification Symbols

Table 27.

	Low DEF, derate warning - flashing/solid - amber icon.
	Low DEF derate warning - flashing/solid - red icon.

DEF Level

The LCD (Liquid Crystal Display) permanently displays the DEF level bargraph. Each bar represents approximately 10% of tank volume.



Figure 113.

As the DEF level depletes to low, warning icons and notification symbols and warning icons are displayed. The intensity of the warnings symbols and indicator changes as follows as the DEF level depletes further.





- Amber warning icon. Operator warning, fill up this shift.
- Flashing amber notification symbol. Operator warning, fill up now.
- Figure 114.
 
- Red warning icon. 0% DEF, fill up now. Initial derate starts.
- Figure 115.
 
- Solid amber icon. Derate condition, fill up now.
- Figure 116.
 
- Flashing red notification symbol. Second stage derate condition, fill up now.
- Figure 117.
 

Figure 118.



- Solid red notification symbol. Forced idle, machine unusable, fill up now.

Figure 119.



General



Getting the Machine Moving

Operation Getting the Machine Moving

For 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 541-70 [T4F], 531T70 [T4F], 536-60 [T4F], 536T60 [T4F], 536T70LP [T4F], 550-80 [T4F], 550-80 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F] Page 121

For 531-70 [T4F], 531T70 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70LP [T4F], 550-80 [T4F], 550U80 [T4F], 550-80 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F] Page 122

▲ **WARNING** Operating the machine on hillsides can be dangerous if proper precautions are not taken. Ground conditions can be changed by rain, snow, ice etc. Check the site carefully. Going uphill, reverse when unloaded or travel forwards when loaded. Going downhill, travel forwards when unloaded or reverse when loaded. Take special care when moving across a slope. If the slope is too steep your machine could roll over. If you must drive across a slope, keep the attachments close to the ground.

WARNING Do not dismount a moving machine.

WARNING Always drive a loaded machine forward uphill and in reverse downhill. Always drive an unloaded machine in reverse uphill and forward downhill.

The machine can be put in motion in any gear. But do not over work the engine unnecessarily by using too high a gear for example, on a hill. Operating in too high a gear will overheat the torque converter fluid. When moving the machine, keep it under control at all times. Stay alert for obstructions and possible hazards.

Do not use the pedals as footrests. Do not coast the machine in neutral, you will not have full control. Also, do not turn on or drive across a slope. Select the necessary gear before starting down a slope. Use the same gear you would use to go up the slope. Do not change gear on the slope.

If the load will be pushing the machine on a downslope, select first gear (1) before starting downhill. Use the brake pedal to prevent overspeeding down a slope.

Approach deep mud in first gear (1) with the front wheels straight.

Take particular care when reversing. If the machine has mirrors, make sure your view of the mirrors is not obstructed. Ensure that the way behind is clear before reversing. Ensure that the reverse alarm is functioning correctly and can be heard clearly by people around the machine.

Various types of reverse alarm can be installed on your machine, to suit different operating environments. There may be local regulations which control the type of reverse alarm that may be used in particular areas. Make sure the correct type of reverse alarm is installed on your machine.

After you have warmed up the engine and tested the park brake, move off as described below.

1. Sit in the machine Check your seat belt and seat.
 - 1.1. Make sure that your seat belt is correctly fastened.
 - 1.2. Make sure that the seat is correctly adjusted.

CAUTION With 4-wheel steer, the back end of the machine will swing out when you make a turn. Check for clearance before making a turn.

2. Select the required steer mode. Remember that the steering may temporarily remain in the last selected mode until the rear wheels pass through the 'straight ahead' position.



WARNING! You or others can be killed or injured if you suddenly change from forward to reverse, or vice versa, when travelling. Exaggerated and unnecessary movements of the lever(s) may rapidly reverse the travel direction of the machine without warning to others. Always follow the recommended procedure for changing between forward and reverse drive.

WARNING! Do not change from a high gear to a low gear (for instance, 4th to 1st) in one sudden movement when the machine is moving. Otherwise the machine will rapidly decelerate, you or others could be killed or seriously injured. When selecting lower gears, allow the engine speed to drop before each gear change.

3. Select Transmission Disconnect mode - on or off (if fitted).
 4. Check the boom is in the travel position.
 5. Push the brake pedal(s).
 6. Release the park brake, continuing to apply the foot brake. The park brake must be released before selecting forward or reverse.
 7. Select forward or reverse. Dependant on software version, you cannot engage drive or operate the hydraulic controls unless you are sat in the seat.
 8. Make sure it is safe to move off, then release the brake pedals and push down on the accelerator pedal. The machine will move smoothly away.
 9. **WARNING!** If the engine or steering fails, stop the machine as quickly as possible. Do not operate the machine until the fault has been corrected.
- While the machine is travelling slowly, check the steering and brakes. Do not drive the machine unless the steering and brakes are working correctly. If you are not sure, assume they are faulty.

(For: 531-70 [T4F], 531-70 [T4F], 536-60 [UN3/GB3], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560U80 [T4F], 560U80 [T4F], Dual Tech Variable Transmission (HM560))

WARNING! Operating the machine on hillsides can be dangerous if proper precautions are not taken. Ground conditions can be changed by rain, snow, ice etc. Check the site carefully. Going uphill, reverse when unloaded or travel forwards when loaded. Going downhill, travel forwards when unloaded or reverse when loaded. Take special care when moving across a slope. If the slope is too steep your machine could roll over. If you must drive across a slope, keep the attachments close to the ground.

WARNING! Do not dismount a moving machine.

WARNING! Always drive a loaded machine forward uphill and in reverse downhill. Always drive an unloaded machine in reverse uphill and forward downhill.

The machine can be put in motion in any gear but do not overwork the engine unnecessarily by using too low a gear. For example, if you are driving more than 500m do not stay in first gear, use second and/or third gear as well. When moving the machine, keep it under control at all times. Stay alert for obstructions and possible hazards.

Do not use the pedals as footrests. Do not coast the machine in neutral, you will not have full control. Also, coasting the machine will damage the transmission.

Do not turn on or drive across a slope. Do not change gear on the slope. Use the same gear you would use to go up the slope. Do not change gear on the slope.

If the load will be pushing the machine on a downslope, select first gear (1) before starting downhill. Use the brake pedal to prevent overspeeding down a slope.

Approach deep mud in first gear (1) with the front wheels straight.

Take particular care when reversing. If the machine has mirrors, make sure your view of the mirrors is not obstructed. Ensure that the way behind is clear before reversing. Ensure that the reverse alarm is functioning correctly and can be heard clearly by people around the machine.

Various types of reverse alarm can be installed on your machine, to suit different operating environments. There may be local regulations which control the type of reverse alarm which may be used in particular areas. Make sure the correct type of reverse alarm is installed on your machine.

LSD (Limited Slip Differential) is an option which can be specified on some machines to enhance traction in difficult conditions. This is achieved by transferring a high proportion of the available driving torque from the spinning wheel to the gripping wheel. The limited slip differential operates automatically and should not be confused with differential locks. Wheel slip is an indication that the limited slip limit has been reached. On high traction surfaces (concrete etc.) noise and judder may be experienced when the LSD is operating, particularly on full steering lock. The level of noise depends on the weight of the machine, the ground conditions and steering angles. Noise in the LSD is not an indication of axle damage.

After you have warmed up the engine and tested the park brake, move off as described below.

1. Sit in the machine and check your seat belt and seat.

- 1.1. Make sure that your seat belt is correctly fastened.

- 1.2. Make sure that the seat is correctly adjusted.

CAUTION! With 4-wheel steer, the back end of the machine will swing out when you make a turn. Check for clearance before making a turn.

2. Select the required steer mode. Remember that the steering may temporarily remain in the last selected mode until the rear wheels pass through the 'straight ahead' position.

WARNING! You or others can be killed or injured if you suddenly change from forward to reverse, or vice versa, when travelling. Exaggerated and unnecessary movements of the lever(s) may rapidly reverse the travel direction of the machine without warning to others. Always follow the recommended procedure for changing between forward and reverse drive.

3. Select Transmission Disconnect mode - on or off (if fitted).

4. Check the boom is in the travel position.

5. Push the brake pedal(s).

6. Release the park brake, continuing to apply the foot brake. The park brake must be released before selecting forward or reverse.

7. Select forward or reverse with the lever. Dependant on software version, you cannot engage drive or operate the hydraulic controls unless you are sat in the seat.

8. Make sure it is safe to move off, then release the brake pedals and push down on the accelerator pedal. The machine will move smoothly away.

WARNING! If the engine or steering fails, stop the machine as quickly as possible. Do not operate the machine until the fault has been corrected.

9. While the machine is travelling slowly, check the steering and brakes. Do not drive the machine unless the steering and brakes are working correctly. If you are not sure, assume they are faulty.



Slopes

General

▲ WARNING Make sure that you have been trained and are familiar with the use of machines on slopes, and understand the adverse effects that slopes and site conditions can have on stability. Never use the machine on a slope if you do not understand the recommended practices for the use of machines in such applications.

There are a number of factors which can adversely affect the stability of the machine and the safety of the machine and operator when used on a slope. It is essential that a risk assessment of the work to be done is completed and that the operator complies with any safety precautions that the assessment identifies.

Driving on Slopes

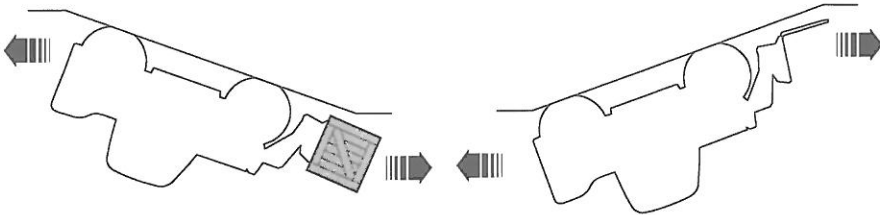
Driving Up and Down Slopes

▲ WARNING Operating the machine on hillsides can be dangerous if proper precautions are not taken. Ground conditions can be changed by rain, snow, ice etc. Check the site carefully. Going uphill, reverse when unloaded or travel forwards when loaded. Going downhill, travel forwards when unloaded or reverse when loaded. Take special care when moving across a slope. If the slope is too steep your machine could roll over. If you must drive across a slope, keep the attachments close to the ground.

To get the maximum traction when you drive on a slope:

- Drive an unladen machine forward down a slope and in reverse up a slope
- Drive a laden machine forward up a slope and in reverse down a slope

Figure 120.



Driving Across Slopes

To get the maximum stability, operate the machine on solid, level ground. The stability of the machine is decreased when it is driven across a slope.

When you drive across a slope, fully retract the boom and drive slowly at walking pace.

Do not lift the carriage more than necessary. This is normally when the lowest point of the load is not more than 500mm (19.7in) above the ground, with a load which is carried on top of the forks. Some loads may be carried suspended below the forks, as shown. In this case, assess the risk involved before raising the carriage sufficiently to achieve ground clearance.

Remember, be careful and be safe. Your life or the lives of others can be in danger if you take unnecessary risks.

Machines with stabilisers can be made level across their width using the stabilisers.

Machines with chassis levelling (sway) option can be made level across their width using the sway control facility.

An inclinometer can be used to check if the machine is level. Refer to: Inclinometers (Page 170).

Make sure the machine is level across its width to maintain lateral (sideways) stability.

Lateral Stability

load chart.

Always operate the machine within the longitudinal stability limits indicated by the LLMl (if installed) or the

with the machine (if installed).

Read and understand the section that describes the operation of the LLMl before you do a lifting operation

in the cab, if installed.

The longitudinal (forward) stability is measured and indicated by the LLMl (Longitudinal Load Moment Indicator)

Longitudinal Stability

is to be extended, or raised by more than 500mm above the ground with the machine on a slope.

The longitudinal and lateral stability are the two important safety factors that must be considered if the boom

A lifting operation should not be done on a slope, unless the machine is level across its width (laterally level).

It is recommended that the machine is operated on solid, level ground where possible for the maximum machine

stability.

WARNING Stop the machine and apply the park brake before conducting any lifting operations.

▲ **WARNING** Conducting lifting operations on slopes can be dangerous. The machine can become laterally unstable and tip over. You and others can be seriously injured or killed.

Lifting Operations on Slopes

Working on Slopes

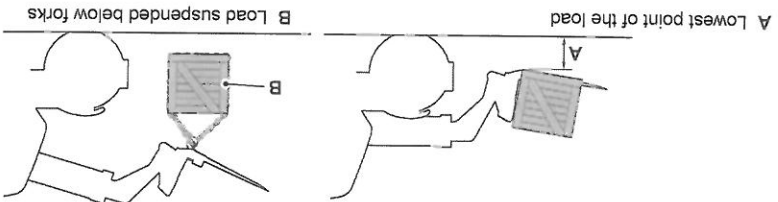


Figure 121.



A Inclinator

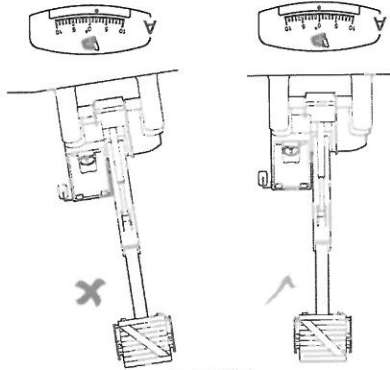


Figure 123.

If the machine cannot be made level across its width, the operator must complete a risk assessment before attempting a lifting operation.

It is recommended that the machine should be operated on firm, level ground wherever possible for maximum machine stability.

A Inclinator
 C Stabilisers level

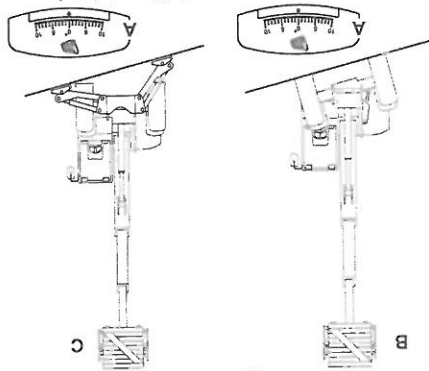


Figure 122.



Driving the Machine

Steer Modes

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Wheel Alignment

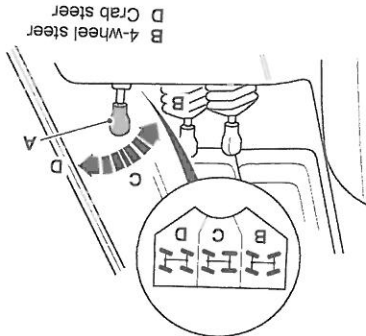
Manual Steer Mode

Before you select the required steer mode, make sure the wheels are aligned correctly.

To align the wheels:

1. Stop the machine. Set the gear lever to neutral position.
2. Use the lever to select 4-wheel steer.
3. Turn the steering wheel until the rear wheels are in the straight ahead position.
4. Use the lever to select 2-wheel steer.
5. Turn the steering wheel until the front wheels are in the straight ahead position.
6. All wheels are now aligned in the straight ahead position. Select the steer mode required and continue in the normal manner.

Figure 124.



Indicated Manual (if fitted)

- A Steer mode selector lever
- C 2-wheel steer
- D 4-wheel steer

To change the steer mode:

1. Stop the machine. Set the gear lever to neutral position.
2. Turn the steering wheel until the icon in the steer mode frame indicates all the wheels are in the straight ahead position.
3. Use the decal to identify the current steer mode.
4. Use the lever to select the required steer mode.

Electronic Steer Mode

Before you select the required steer mode, make sure the wheels are aligned correctly.



To align the wheels:

1. Stop the machine. Set the gear lever to neutral position.
2. Use the switch to select 2-wheel steer.

- 2.1. Sensors on the axles prevent the steer mode from changing until the wheels are aligned in the straight ahead position.
- 2.2. A symbol will appear on the main screen display to show the requested change of mode. This will flash whilst the mode change takes place.
3. Turn the steering wheel until the rear wheels are in the straight ahead position.
- 3.1. When the rear wheels are straight ahead position the machine will go to 2-wheel steer. The symbol stops flashing and change to indicate when 2-wheel steer is active.
4. Use the switch to select 4-wheel steer.

5. Turn the steering wheel until the front wheels are in the straight ahead position.
6. All wheels are now aligned in the straight ahead position. Select the steer mode required and continue in the normal manner.

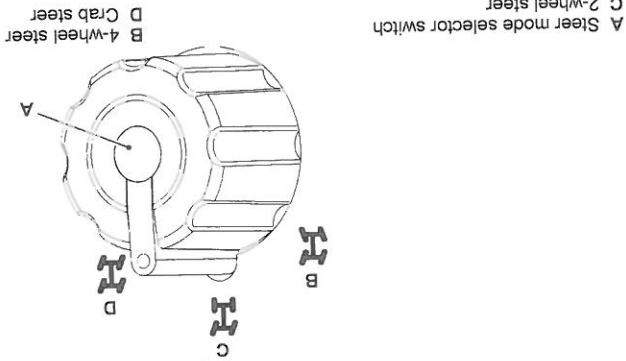


Figure 125.

Limited Slip Differential (LSD)

This is an option which can be specified on some machines to improve the traction in difficult conditions. This is achieved by transferring a high proportion of the available driving torque from the spinning wheel to the gripping wheel. The LSD (Limited Slip Differential) operates automatically and should not be confused with differential locks.

Wheel slip is an indication that the limited slip limit has been reached. On high traction surfaces (concrete etc.) noise and judder may be experienced when the LSD is operating, particularly on full steering lock. The level of noise depends on the weight of the machine, the ground conditions and steering angles. Noise in the LSD is not an indication of axle damage.

TorqueLock

(PS766 only)

This feature is designed to eliminate torque converter slip when loading, providing improved fuel consumption and machine road performance. Because the torque converter ratio remains 1-1 in top gear this does not alter the overall top speed.

The torque lock feature is automatically engaged by the transmission ECU (Electronic Control Unit) hydraulically engaging a clutch plate in the converter at a pre determined machine road speed and engine rpm preventing torque converter slip.

This feature would normally engage when the machine is driven at road speeds, and will disengage the park brake will also disconnect the lockup.

Operation

When the 6-speed transmission mode is in auto mode the machine will engage 4th gear. Higher gears and the lock up will engage automatically at the predetermined settings.

Lock up operates in 5th and 6th gear only. The Torque Lock icon comes on when the torque converter is locked up. Refer to: Instrument Panel (Page 93).

When the foot throttle pedal is in the up position (for example descending hills in a low gear), the machine will hold 4th or 5th gear and not change up.

Because the ECU is programmed only to lock up when it senses minimal torque converter slip (the difference between the engine rpm and road speed), with practice the lock up engagement can be brought in earlier by momentarily releasing the foot throttle to reduce the engine rpm then re-applying once the lock up is felt to occur. It is good practice to endeavour to drive the machine on the road with the torque converter locked up as further fuel saving can be achieved over the normal torque converter operation.

Towing Other Equipment

For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536T70 [T4F],
 541-70 [T4F], 541T70 [T4F], 541T70 [UN3/GB3], 541T70 [T4F], 541T70 [T4F], 541T70 [UN3/GB3], 535-95 [T4F], 535T95 [T4F], 536T70 [T4F], 536-60 [UN3/GB3], 536T60 [T4F],
 For: 526-56 [T4F],
 For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F],
 Page 129 Page 134
 Page 134 Page 140
 Page 140 Page 146

Introduction

WARNING Do not exceed the permitted limits on trailer gross weight or hitch load. The machine may become unstable.

WARNING Before reversing, make sure the area behind the machine is clear of other persons. If this is not observed, injury or death can result.

WARNING Examine the tow hitch and the trailer draw bar towing ring for signs of wear before each use. A badly installed or worn hitch or towing ring could cause loss of the trailer and injury to yourself or other people.

Your machine can be equipped with an optional trailer pickup hitch.

Make sure that before you tow with the machine, you and your machine obey with all the pertinent laws and regulations.

Make sure that the trailer draw bar is suitable for your machine and has sufficient clearance to let the machine to turn without fouling.

Make sure the machine tyre pressures are correct and that the loaded trailer does not exceed the maximum gross trailer weight. Refer to: Static Dimensions (Page 377).



Connecting the Trailer

Mechanical Tow Hitch

To operate the pickup hitch, use the procedure as follows:

1. Engage the park brake.
2. Adjust the mirror(s) to obtain a good view of the tow hitch area.
3. If your machine is installed with a switch operated 2/4 wheel drive selector, you can tow in 2 wheel drive if required.
4. Engage the trailer.

4.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.

4.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.

4.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.

4.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.

4.5. When the trailer has been engaged, with pin secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.

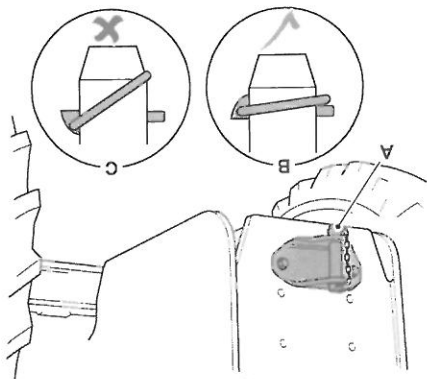


Figure 126.

Hydraulic Tow Hitch

To operate the pickup hitch, use the procedure as follows:

1. Engage the park brake.
2. Adjust the mirror(s) to obtain a good view of the tow hitch area.
3. If your machine is installed with a switch operated 2/4 wheel drive selector, you can tow in 2 wheel drive if required.
4. To select the rear auxiliary circuit, set switch to position 1. The switch light should be extinguished. Refer to Figure 127.

- 7.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
- 7. Engage the trailer.
- D Locking lever

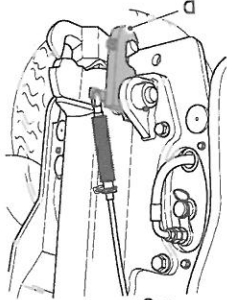


Figure 129.

- 5. Pull up and hold release handle to release the locking lever, and operate the switch to lower the hitch.

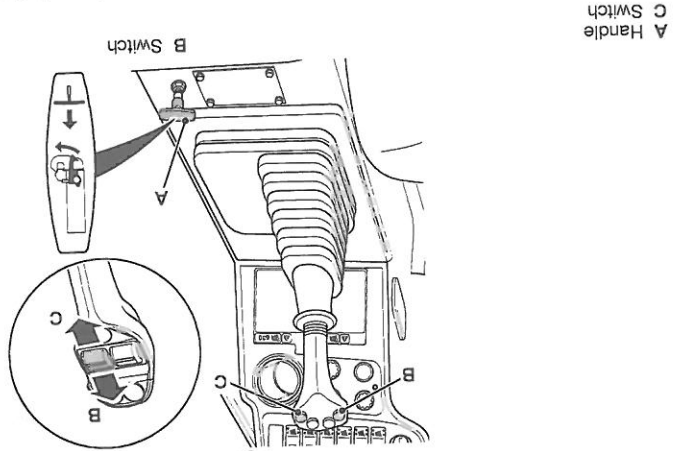


Figure 128.

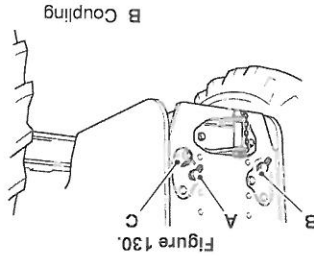
- 5. Operate the switch to raise the hitch, this will remove the load on locking lever. Refer to Figure 128.



Figure 127.



7. For the auxiliary operation (i.e., trailer tipping) operate the switch to depend on the attachment installed and the function required.
- 6.1. Make sure the hitch/auxiliary switch lamp is working that is set switch to position II. Refer to Figure 127.
6. To select the rear auxiliary circuit, set switch to position I. The switch light should be extinguished. Refer to Figure 127.
5. Connect auxiliary hose to the coupling.
4. Before you travel on the public highway, check that the brakes work correctly and get used to the braking effect.
3. If an optional trailer brake valve is installed, connect the trailer brakes into socket. Trailer braking is operated by the brake pedals.



A Socket
C Socket

1. Connect the trailer lights into socket.
2. Make sure that all the trailer lights and the direction indicator lights are working correctly and are visible by other road users.

Mechanical Tow Hitch

Preparing the Trailer for Towing

9. When the trailer has been engaged, with locking lever secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.
8. Operate the switch to raise the hitch. The locking lever will automatically spring back to the engaged position when the hitch is raised.
- 7.5. In certain conditions you may have to drive forward when closing the hitch to prevent the pickup hitch overriding the trailer towing hitch.
- 7.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 7.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 7.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.



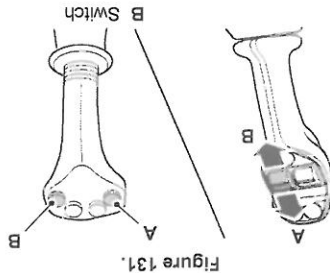


Figure 131.

A Switch

8. To prevent contamination of the machine hydraulics, when using a tipping trailer leave the trailer flat before disconnecting the hydraulic service to exhaust the trailer ram of oil.

9. Select the 2 wheel steer if you tow the machine on public roads. Make sure the indicator shows that 2 wheel steer has engaged.

Refer to: Preparing for Road Travel (Page 72).

10. It is recommended to also select 2WD (Two Wheel Drive) or auto 2WD (HM560).

Refer to: Drive Controls (Page 85).

Hydraulic Tow Hitch

▲ WARNING Do not use the rear auxiliary for trailer braking. If trailer brakes are required and the optional trailer brake valve is not installed, first consult your JCB dealer.

WARNING Make sure the trailer hitch has correctly engaged and locked before driving off.

1. Connect the trailer lights into socket. Refer to Figure 132.

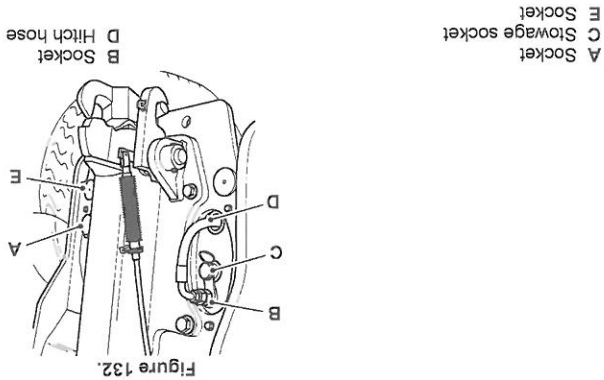


Figure 132.

- A Socket
- C Stowage socket
- B Socket
- D Hitch hose
- E Socket

2. Make sure that all the trailer lights and the direction indicator lights are working correctly and are visible by other road users.
3. If an optional trailer brake valve is installed, connect the trailer brakes into socket. Trailer braking is operated by the brake pedals.
4. Before you travel on the public highway, check that the brakes work correctly and get used to the braking effect.
5. To operate trailer auxiliary services:



- 5.1. Disconnect the hydraulic hitch hose from the socket and reconnect to stowage socket. Refer to Figure 132.
 - 5.2. Connect the trailer auxiliary hose to socket. Set the trailer switch to position I, the switch light should be extinguished. Refer to Figure 132.
 - 5.3. Operate the switch to depend on the attachment installed and the function required. Refer to Figure 128.
 - 5.4. Connect the hoses in the existing positions before the hitch can operate.
 - 5.5. To prevent contamination of the machine hydraulics, close all rams on the attachment/trailer before disconnecting the hydraulic service to exhaust the trailer ram of oil.
 6. Select the 2 wheel steer if you tow the machine on public roads. Make sure the indicator shows that 2 wheel steer has engaged.
- Refer to: Preparing for Road Travel (Page 72).
- (For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Introduction

- ▲ WARNING** Do not exceed the permitted limits on trailer gross weight or hitch load. The machine may become unstable.
- WARNING** Before reversing, make sure the area behind the machine is clear of other persons. If this is not observed, injury or death can result.

Your machine can be equipped with an optional trailer pickup hitch.

Make sure that before you tow with the machine, you and your machine obey with all the pertinent laws and regulations.

Make sure that the trailer draw bar is suitable for your machine and has sufficient clearance to let the machine to turn without fouling.

Make sure the machine tyre pressures are correct and that the loaded trailer does not exceed the maximum gross trailer weight. Refer to: Static Dimensions (Page 377).

Connecting the Trailer Mechanical Tow Hitch

To operate the pickup hitch, use the procedure as follows:

1. Engage the park brake.
2. Adjust the mirror(s) to obtain a good view of the tow hitch area.
3. If your machine is installed with a switch operated 2/4 wheel drive selector, you can tow in 2 wheel drive if required.
4. Engage the trailer.
 - 4.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
 - 4.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.
 - 4.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
 - 4.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.

1. Engage the park brake.
2. Adjust the mirror(s) to obtain a good view of the tow hitch area.
3. If your machine is installed with a switch operated 2/4 wheel drive selector, you can tow in 2 wheel drive if required.
4. Move the auxiliary/hitch selection lever to the hitch position. Refer to Figure 134.

To operate the pickup hitch, use the procedure as follows:
 The trailer hydraulics and hydraulic tow hitch are operated independently of the loader end auxiliaries. You can operate the trailer hydraulics without having to disconnect and connect the hydraulic feed from the tow hitch.

Hydraulic Tow Hitch

A Pin

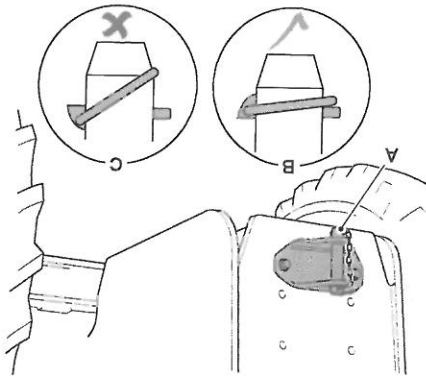


Figure 133.

- 4.5. When the trailer has been engaged, with pin secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.



- 5. Operate the switch to raise the hitch, this will remove the load on locking lever.
- 6. Pull up and hold release handle to release the locking lever, and operate the switch to lower the hitch.

A Handle
 C Switch
 B Hitch position
 D Switch

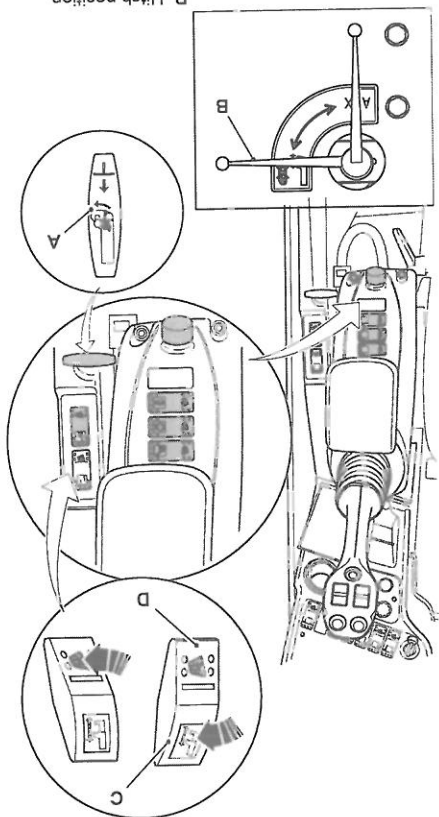
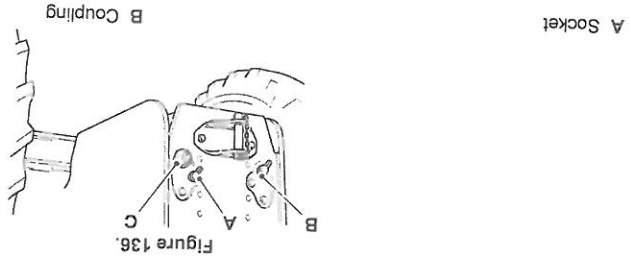


Figure 134.





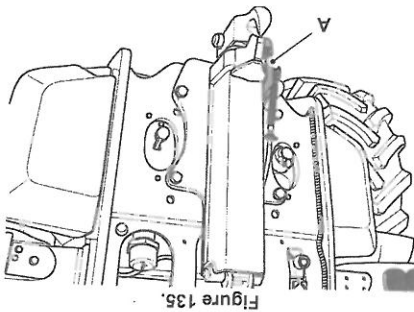
1. Connect the trailer lights into socket.
2. Make sure that all the trailer lights and the direction indicator lights are working correctly and are visible by other road users.

Mechanical Tow Hitch

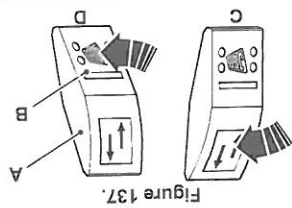
Preparing the Trailer for Towing

10. It is recommended to also select 2WD or auto 2WD (HM560). Refer to: Drive Controls (Page 85).
9. When the trailer has been engaged, with locking lever secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer. Refer to Figure 135.
8. Operate the switch to raise the hitch. The locking lever will automatically spring back to the engaged position when the hitch is raised.
- 7.5. In certain conditions you may have to drive forward when closing the hitch to prevent the pickup hitch overriding the trailer towing hitch.
- 7.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 7.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 7.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.
- 7.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
7. Engage the trailer.

A Locking lever

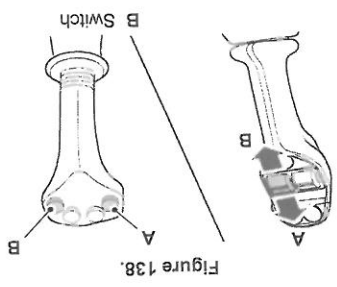


- C Socket
- 3. If an optional trailer brake valve is installed, connect the trailer brakes into socket. Trailer braking is operated by the brake pedals.
- 4. Before you travel on the public highway, check that the brakes work correctly and get used to the braking effect.
- 5. Connect auxiliary hose to the coupling.
- 6. To select the rear auxiliary circuit, set switch to position I. The switch light should be extinguished.
- 6.1. Make sure the hitch/auxiliary switch lamp is working that is set switch to position II.



- A Set switch
- C Position I
- D Position II
- B Switch light

- 7. For the auxiliary operation (i.e., trailer tipping) operate the switch to depends on the attachment installed and the function required.



- A Switch
- 8. To prevent contamination of the machine hydraulics, when using a tipping trailer leave the trailer flat before disconnecting the hydraulic service to exhaust the trailer ram of oil.
- 9. Select the 2 wheel steer if you tow the machine on public roads. Make sure the indicator shows that 2 wheel steer has engaged.
- Refer to: Preparing for Road Travel (Page 72).
- 10. It is recommended to also select 2WD or auto 2WD (HM560).
- Refer to: Drive Controls (Page 85).

Hydraulic Tow Hitch

1. Connect the trailer lights into socket.
2. Make sure that all the trailer lights and the direction indicator lights are working correctly and are visible by other road users.
3. Move the auxiliary/hitch selection lever to the auxiliary position.

- 7. For the trailer auxiliary operation, operate the switch to depend on the attachment installed and the function required.
- 7.1. To prevent contamination of the machine hydraulics, close all rams on the attachment/trailer before disconnecting the hydraulic service to exhaust the trailer ram of oil.
- 8. Select the 2 wheel steer if you tow the machine on public roads. Make sure the indicator shows that 2 wheel steer has engaged.
Refer to: 'Preparing for Road Travel' (Page 72).
- 9. It is recommended to also select 2WD or auto 2WD (HM560).

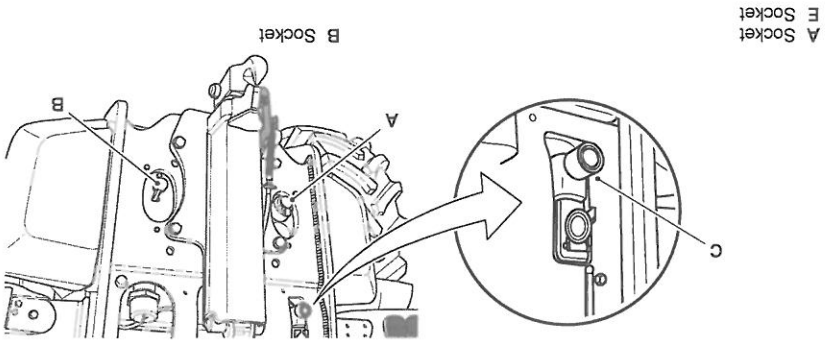


Figure 139

- 6. Connect the trailer auxiliary hose to socket.
- 5. Before you travel on the public highway, check that the brakes work correctly and get used to the braking effect.
- 4. If an optional trailer brake valve is installed, connect the trailer brakes into socket. Trailer braking is operated by the brake pedals.



To operate the pickup hitch, use the procedure as follows:

Mechanical Tow Hitch

Connecting the Trailer

Make sure the machine tyre pressures are correct and that the loaded trailer does not exceed the maximum gross trailer weight. Refer to: Static Dimensions (Page 377).

Make sure that the trailer draw bar is suitable for your machine and has sufficient clearance to let the machine to turn without fouling.

Make sure that before you tow with the machine, you and your machine obey with all the pertinent laws and regulations.

Your machine can be equipped with an optional trailer pickup hitch.

WARNING Examine the tow hitch and the trailer draw bar towing ring for signs of wear before each use. A badly installed or worn hitch or towing ring could cause loss of the trailer and injury to yourself or other people.

WARNING Before reversing, make sure the area behind the machine is clear of other persons. If this is not observed, injury or death can result.

WARNING Do not exceed the permitted limits on trailer gross weight or hitch load. The machine may become unstable.

Introduction

(For: 526-56 [T4F])

A Auxiliary position
C Switch

B Switch

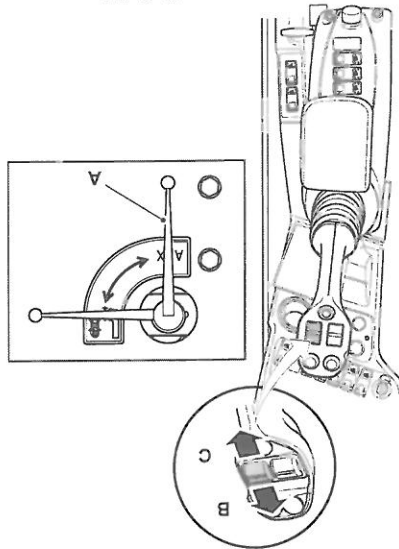


Figure 140.

1. Engage the park brake.
2. Adjust the mirror(s) to obtain a good view of the tow hitch area.
3. If your machine is installed with a switch operated 2/4 wheel drive selector, you can tow in 2 wheel drive if required.
4. Engage the trailer.
 - 4.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
 - 4.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.
 - 4.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
 - 4.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
 - 4.5. When the trailer has been engaged, with pin secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.

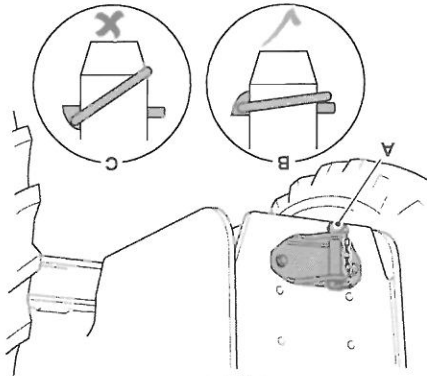


Figure 141.

A Pin

Hydraulic Tow Hitch

To operate the pickup hitch, use the procedure as follows:

1. Engage the park brake.
2. Adjust the mirror(s) to obtain a good view of the pickup hitch.

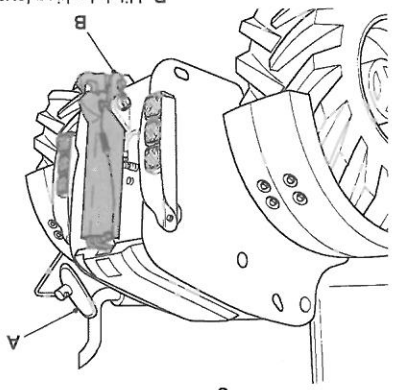


Figure 142.

- A Mirror
- 3. To select the rear auxiliary circuit, set switch to position I. The switch light should be extinguished.
- 4. Make sure the hitch/auxiliary switch lamp is working, i.e. set switch to position II.

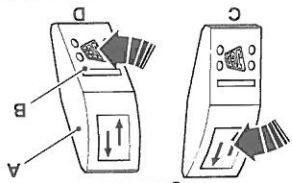
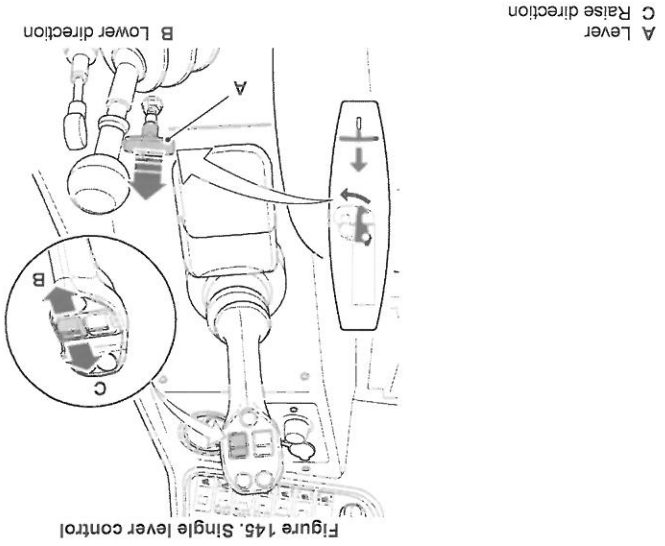
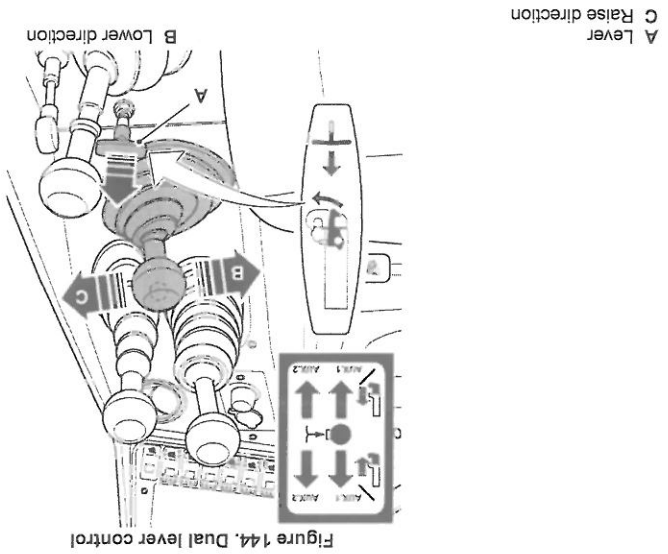


Figure 143.

- A Set switch
 - C Position I
 - D Position II
 - B Switch light
5. Operate the control in direction to raise the hitch, this will remove the load on locking lever.
 6. Pull up lever and hold to release the pickup hitch locking lever.
 7. Operate the control in direction to lower the hitch.
 8. Engage the trailer.

- 8.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
- 8.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.
- 8.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 8.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 8.5. In certain conditions you may have to drive forward when closing the hitch to prevent the pickup hitch overriding the trailer towing hitch.
9. Operate the control in direction to raise the hitch. The lock lever will automatically spring back to the engaged position when the hitch is raised.
10. When the trailer has been engaged, with lock lever secured in position, the machine operator must not operate the machine or trailer until the helper is clear of the machine and trailer.



Preparing the Trailer for Towing

Mechanical Tow Hitch

1. Connect the trailer lights into socket.

2. Make sure that all the trailer lights and the direction indicator lights are working correctly and are visible by other road users.

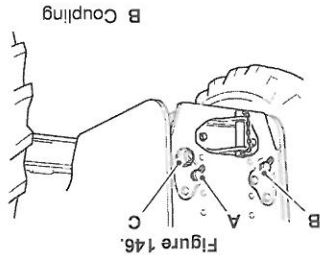


Figure 146.

3. If an optional trailer brake valve is installed, connect the trailer brakes into socket. Trailer braking is operated by the brake pedals.
4. Before you travel on the public highway, check that the brakes work correctly and get used to the braking effect.
5. Connect auxiliary hose to the coupling.
6. To select the rear auxiliary circuit, set switch to position I. The switch light should be extinguished.
- 6.1. Make sure the hitch/auxiliary switch lamp is working that its set switch to position II. Refer to Figure 143.
7. For the auxiliary operation (i.e. trailer tipping) operate the switch to depends on the attachment installed and the function required.

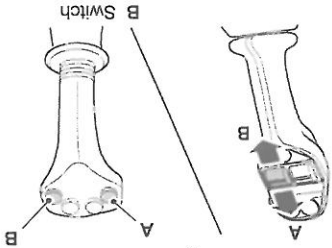


Figure 147.

8. To prevent contamination of the machine hydraulics, when using a tipping trailer leave the trailer flat before disconnecting the hydraulic service to exhaust the trailer ram of oil.
 9. Select the 2 wheel steer if you tow the machine on public roads. Make sure the indicator shows that 2 wheel steer has engaged.
- Refer to: Preparing for Road Travel (Page 72).

Hydraulic Tow Hitch

1. To select the rear auxiliary circuit, set switch to position I. The switch light should be extinguished.
2. Make sure the hitch/auxiliary switch lamp is working, i.e. set switch to position II. Refer to Figure 143.
3. Connect the trailer lights into socket. Make sure that all the trailer lights are working correctly and are visible by other road users.
4. Make sure the trailer direction indicator lights are working correctly.

9. For the machine in 2 wheel steer mode.
 8. To prevent contamination of the machine hydraulics, close all rams on the attachment/trailer before disconnecting the hydraulic service to exhaust the trailer ram of oil.
 7. Operate the control in direction depend on the attachment installed and the function required.
 6. For the auxiliary operation, i.e. trailer tipping, connect the service to adaptor. If using the auxiliary service for braking, after disconnecting the brake/hitch hose, reconnect the brake/hitch hose prior to moving off.
- WARNING!** If the hose for auxiliary braking is temporarily disconnected to allow the use of the trailer's auxiliary service (ie. tipping), make sure the hose for auxiliary braking is connected to adaptor before driving the machine.
- WARNING!** Make sure the trailer hitch has correctly engaged and locked before driving off.

- WARNING!** All single lever option machines have a non progressive auxiliary service which is not recommended for trailer braking. You must only use the progressive trailer brake valve option on these machines.
- 5.1. For the auxiliary braking, disconnect the hose from the adaptor and reconnect to stowage adaptor. Connect the blanking cap to the adaptor. To apply the brakes, move the control in direction.
 - 5.2. If an optional trailer brake valve is installed, connect the trailer brake hose to adaptor. To apply the brakes push the brake pedal.
 - 5.3. Before you travel on the public highway, check that the brakes work correctly and get used to the braking effect.

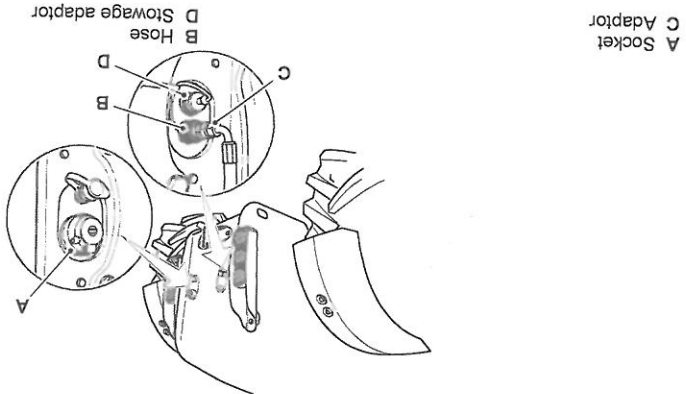


Figure 148.

5. Connect the trailer brakes:

WARNING! Make sure that the hitch/auxiliary selector switch is in the correct position or the lever operated brake circuit will be inoperable.

Figure 149. Dual lever control

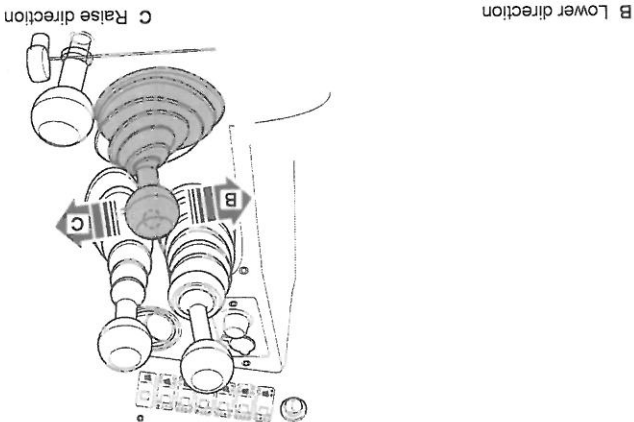
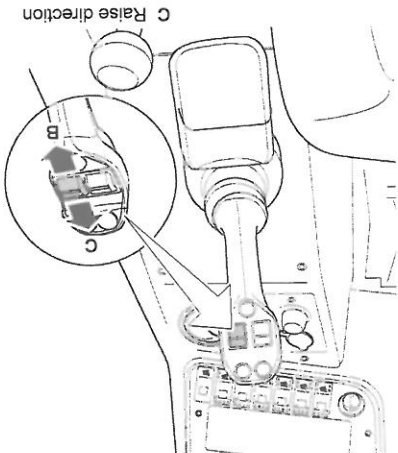


Figure 150. Single lever control



Introduction

- ▲ WARNING** Do not exceed the permitted limits on trailer gross weight or hitch load. The machine may become unstable.
- WARNING** Before reversing, make sure the area behind the machine is clear of other persons. If this is not observed, injury or death can result.
- WARNING** Examine the tow hitch and the trailer draw bar towing ring for signs of wear before each use. A badly installed or worn hitch or towing ring could cause loss of the trailer and injury to yourself or other people.

Your machine can be equipped with an optional trailer pickup hitch.

Make sure that before you tow with the machine, you and your machine obey with all the pertinent laws and regulations.

Make sure that the trailer draw bar is suitable for your machine and has sufficient clearance to let the machine to turn without fouling.

Make sure the machine tyre pressures are correct and that the loaded trailer does not exceed the maximum gross trailer weight. Refer to: Static Dimensions (Page 377).

Connecting the Trailer

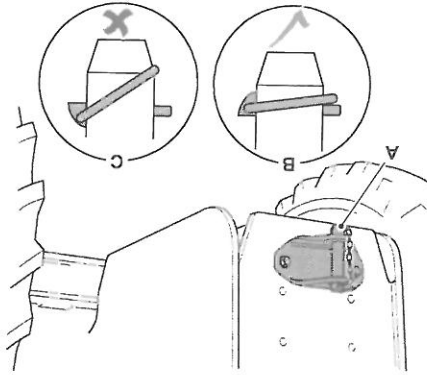
Mechanical Tow Hitch

To operate the pickup hitch, use the procedure as follows:

1. Engage the park brake.
2. Adjust the mirror(s) to obtain a good view of the tow hitch area.
3. If your machine is installed with a switch operated 2/4 wheel drive selector, you can tow in 2 wheel drive if required.
4. Engage the trailer.

- 4.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
- 4.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.
- 4.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 4.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 4.5. When the trailer has been engaged, with pin secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.

Figure 151.



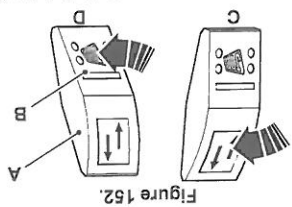
A Pin

Hydraulic Tow Hitch

To operate the pickup hitch, use the procedure as follows:

1. Engage the park brake.

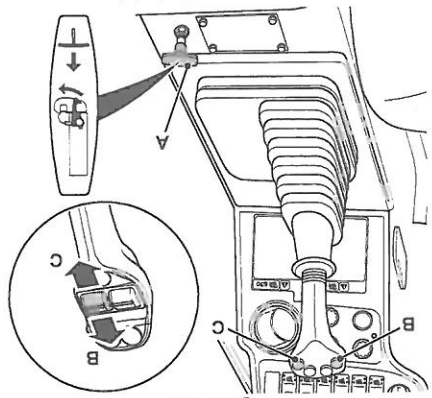
2. Adjust the mirror(s) to obtain a good view of the tow hitch area.
3. If your machine is installed with a switch operated 2/4 wheel drive selector, you can tow in 2 wheel drive if required.
4. To select the rear auxiliary circuit, set switch to position I. The switch light should be extinguished.



- A Set switch
- C Position I
- B Switch light
- D Position II

5. Operate the switch to raise the hitch, this will remove the load on locking lever.

Figure 153.



- A Handle
- C Switch

6. Pull up and hold release handle to release the locking lever, and operate the switch to lower the hitch.

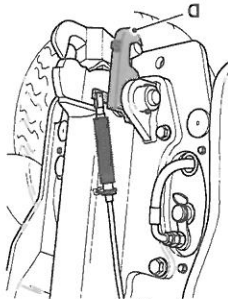


Figure 154.

- D Locking lever
- 7. Engage the trailer.

- 7.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
- 7.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.
- 7.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 7.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 7.5. In certain conditions you may have to drive forward when closing the hitch to prevent the pickup hitch overriding the trailer towing hitch.
- 8. Operate the switch to raise the hitch. The locking lever will automatically spring back to the engaged position when the hitch is raised.
- 9. When the trailer has been engaged, with locking lever secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.

Preparing the Trailer for Towing

Mechanical Tow Hitch

- 1. Connect the trailer lights into socket.
- 2. Make sure that all the trailer lights and the direction indicator lights are working correctly and are visible by other road users.

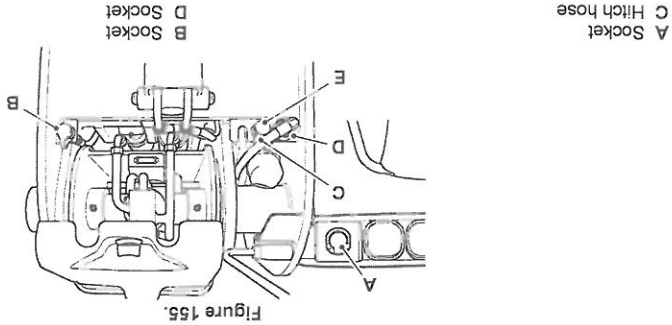


Figure 155.

A Socket
C Hitch hose

B Socket
D Socket

E Stowage socket

3. If an optional trailer brake valve is installed, connect the trailer brakes into socket. Trailer braking is operated by the brake pedals.
4. Before you travel on the public highway, check that the brakes work correctly and get used to the braking effect.
5. Connect auxiliary hose to the coupling.
6. To select the rear auxiliary circuit, set switch to position 1. The switch light should be extinguished.
- 6.1. Make sure the hitch/auxiliary switch lamp is working that is set switch to position II.
7. For the auxiliary operation (i.e., trailer tipping) operate the switch to depend on the attachment installed and the function required.

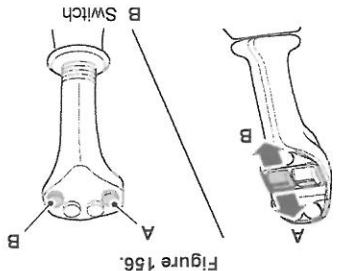


Figure 156.

A Switch

8. To prevent contamination of the machine hydraulics, when using a tipping trailer leave the trailer flat before disconnecting the hydraulic service to exhaust the trailer ram of oil.
9. Select the 2 wheel steer if you tow the machine on public roads. Make sure the indicator shows that 2 wheel steer has engaged.
10. It is recommended to also select 2WD or auto 2WD (HM560).
Refer to: Preparing for Road Travel (Page 72).
Refer to: Drive Controls (Page 85).

Hydraulic Tow Hitch

▲ WARNING Do not use the rear auxiliary for trailer braking. If trailer brakes are required and the optional trailer brake valve is not installed, first consult your JCB dealer.

WARNING Make sure the trailer hitch has correctly engaged and locked before driving off.

1. Connect the trailer lights into socket. Refer to Figure 155.
2. Make sure that all the trailer lights and the direction indicator lights are working correctly and are visible by other road users.
3. If an optional trailer brake valve is installed, connect the trailer brakes into socket. Trailer braking is operated by the brake pedals.
4. Before you travel on the public highway, check that the brakes work correctly and get used to the braking effect.
5. To operate trailer auxiliary services:
- 5.1. Disconnect the hydraulic hitch hose from the socket and reconnect to stowage socket. Refer to Figure 155.



- 5.2. Connect the trailer auxiliary hose to socket. Set the trailer switch to position I, the switch light should be extinguished.
- 5.3. Operate the switch to depend on the attachment installed and the function required. Refer to Figure 153.
- 5.4. Connect the hoses in the existing positions before the hitch can operate.
- 5.5. To prevent contamination of the machine hydraulics, close all rams on the attachment/trailer before disconnecting the hydraulic service to exhaust the trailer ram of oil.
6. Select the 2 wheel steer if you tow the machine on public roads. Make sure the indicator shows that 2 wheel steer has engaged.
Refer to: Preparing for Road Travel (Page 72).
7. It is recommended to also select 2WD or auto 2WD (HM560).
Refer to: Drive Controls (Page 85).



Operating Levers/Pedals

General

For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560-80 [UN3/GB3], 560-80 [T4F], 560U80 [T4F]

Otherwise Page 152
 Page 153

▲ **WARNING** Make sure it is clear overhead before raising the boom. Keep an adequate safe distance from all electrical power lines. Contact your local power company for safety procedures.

CAUTION Keep the machine controls clean and dry. Your hands and feet could slide off slippery controls. If that happens you could lose control of the machine.

The levers are spring-loaded to their central hold positions. The speed of movement of the associated hydraulic rams depends on how far you move a lever - the further you move the lever, the faster the ram action.

Never operate a machine with a broken side window. If the side window is broken stop using the machine until it is replaced. Your machine may be fitted with a safety device which will prevent the boom controls from (indicator) override function to lower the boom for recovery purposes only.

Control Pod Adjustment

You can adjust the position of the control pod forwards or backwards so that you can comfortably reach the machine controls when you are sat correctly in the operator seat.

To adjust the position of the control pod: Refer to Figure 157.

1. Make the machine safe.
2. Press the button to isolate the machine hydraulics. This will prevent accidental operation of the controls during adjustment.
3. Push the lever to unlock the control pod.
4. Move the control pod forwards or backwards, as required.
5. Make sure that you can comfortably reach the machine controls when you are sat correctly in the operator seat.
6. Pull the lever to lock the control pod.
7. Release the button to enable the machine hydraulics.

The levers are spring-loaded to their central (hold) position.

The right hand lever controls the movement of the boom and the carriage (or any other attachment which is installed on the boom).

up time with the engine at half throttle. Operate the arm and bucket services to warm the hydraulic oil. CAUTION Do not attempt to operate the machine immediately after starting in cold conditions, i.e. below 0 °C (32.0 °F). The machine may not respond properly to control movements. Allow at least 10 min warm position can result in carriage slowly crowding back.

▲ **WARNING** Release the boom raise lever as soon as the boom is fully raised. Holding the control in the lift

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 536T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Boom Controls

The control levers and switches may vary on machines.

▲ **WARNING** Control levers/switch action may vary on machines, instructional labels near the levers/switches show by symbols, which levers/switches cause what actions. Before operating control levers/switches check the instructional label to make sure you select the desired action.

Control Layouts

Never operate a machine with a broken side window. If the side window is broken stop using the machine until it is replaced. Your machine may be fitted with a safety device which will prevent the boom controls from operating if the side window is broken. In this instance it is possible to use the LLM override function to lower the boom for recovery purposes only.

If that happens you could lose control of the machine. CAUTION Keep the machine controls clean and dry. Your hands and feet could slide off slippery controls.

▲ **WARNING** Make sure it is clear overhead before raising the boom. Keep an adequate safe distance from all electrical power lines. Contact your local power company for safety procedures.

(Otherwise)

A Control pod
C Lever
B Button

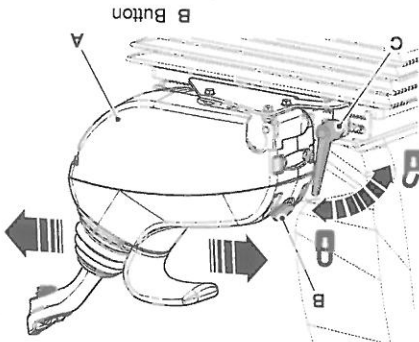


Figure 157.



The speed of boom/carriage movement depends on how far you move the lever, the further you move the lever the faster the action.

It is important that 3-stage booms can go out of phase if the hydraulic rams are not fully retracted regularly. Fully retract the boom at least once every day.

Single Lever Control

The right hand lever controls the movement of the boom and the shovel (or any other attachment which is installed on the boom).

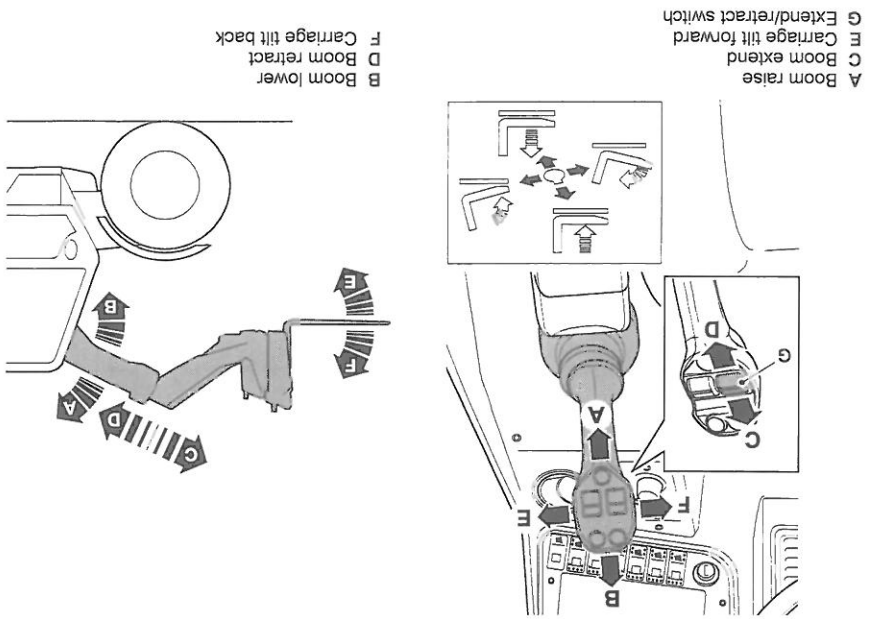
The lever has four main movements and is spring-loaded to its central (hold) position.

The speed of boom/carriage movement depends on how far you move the lever, the further you move the lever the faster the action.

The main lever movements and their effects are described below. Combined actions can be achieved by moving the lever diagonally.

1. To raise the boom pull the lever back.
2. To lower the boom, push the lever forward.
3. To tilt the carriage forward, push the lever to the right.
4. To tilt the carriage back, push the lever to the left.

Figure 158.



Single Lever Control (Push Button Type)

The main lever movements and their effects are described below.

1. To raise the boom pull the lever back.
 2. To lower the boom, push the lever forward.
 3. To extend the boom, push the lever forward.
 4. To retract the boom, pull the lever back.
 5. To tilt the carriage forward, push the lever to the right.
 6. To tilt the carriage back, push the lever to the left.
- The main lever movements and their effects are described below.

Loading Pattern

Dual Lever Control

- A Boom raise
- C Boom extend
- E Carriage tilt forward
- B Boom lower
- D Boom retract
- F Carriage tilt back

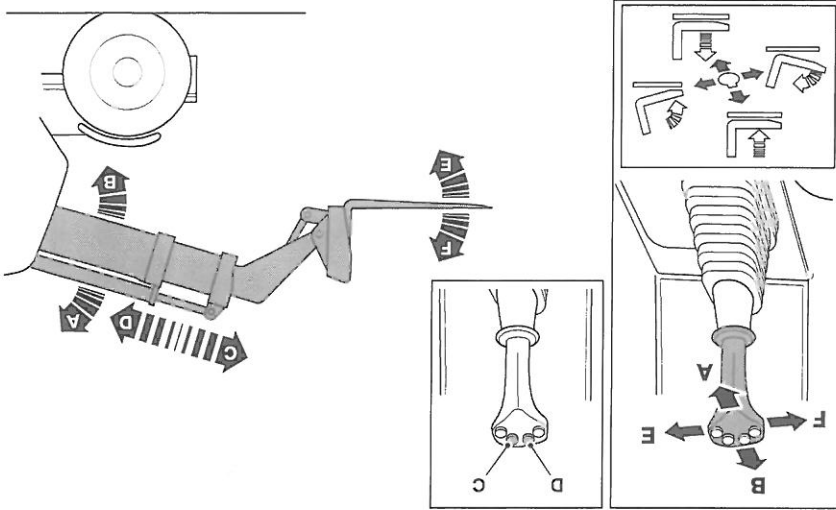


Figure 159.

1. To raise the boom pull the lever back.
2. To lower the boom, push the lever forward.
3. To extend the boom, press the button on top of the control lever.
4. To retract the boom, press the button on top of the control lever.
5. To tilt the carriage forward, push the lever to the right.
6. To tilt the carriage back, pull the lever to the left.



1. To raise the boom pull the lever back.
 2. To lower the boom, push the lever forward.
 3. To extend the boom, push the lever to the right.
 4. To retract the boom, pull the lever to the left.
 5. To tilt the carriage forward, push the lever forward.
 6. To tilt the carriage back, push the lever back.
- The main lever movements and their effects are described below.

Placing Pattern

- A Boom raise
- C Boom extend
- E Carriage tilt forward
- B Boom lower
- D Boom retract
- F Carriage tilt back

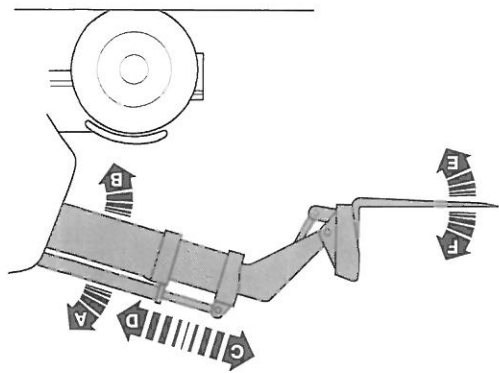
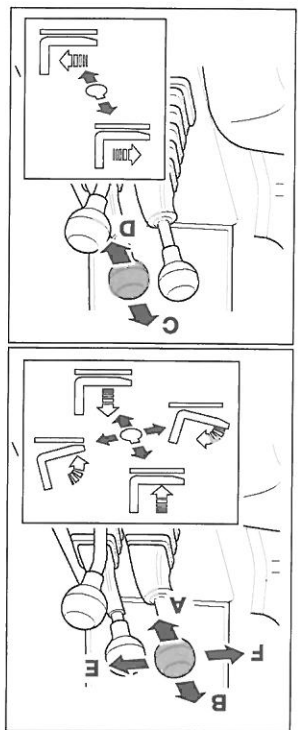


Figure 160.



Chassis Levelling Controls

- A Boom raise
- C Boom extend
- E Carriage tilt forward
- B Boom lower
- D Boom retract
- F Carriage tilt back

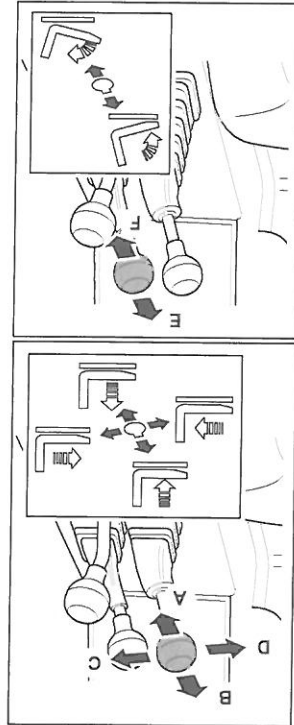
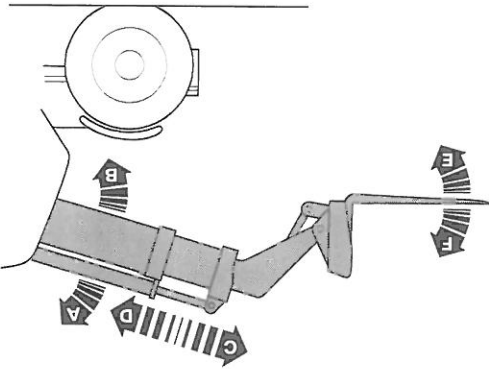


Figure 161.



For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F].

Otherwise
 Page 157
 Page 158

The chassis levelling (sway) control switch allows the machine to be levelled from side to side. The chassis levelling ram will stay in any position until you move it with the switch.

Before you start to operate the machine, make sure the machine is level.



Inclinometer

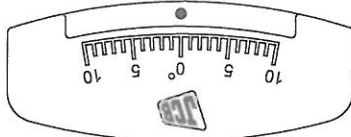


Figure 164.

Before you start to operate the machine, make sure the machine is level.

The chassis levelling (sway) control switch allows the machine to be levelled from side to side. The chassis levelling ram will stay in any position until you move it with the switch. Refer to: Chassis Levelling (Page 33).

(Otherwise)

While you operate the chassis levelling system the cooling fan speed may be reduced, this is not a fault.

When the machine is swayed to the left.

When the indicator rod is above the tube, the machine is swayed right. When the rod is down inside the tube,

A Indicator rod

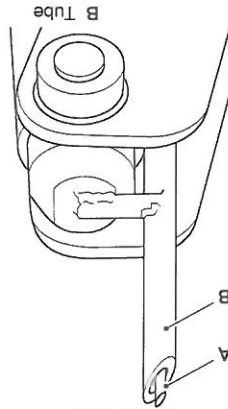


Figure 163.

Use the indicator rod to check that the machine is level, when the indicator rod is level with the top end of tube

Before you start to drive, make sure the body of the machine is square to the axles.

0° the machine is level.

Use the lateral inclinometer to check that the machine is level from side to side, when the inclinometer shows

Inclinometer

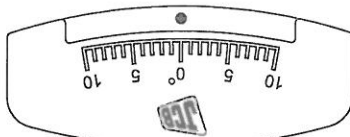


Figure 162.



Use the lateral inclinometer to check that the machine is level from side to side, when the inclinometer shows 0° the machine is level.

Before you start to drive, make sure the body of the machine is square to the axes.

Use the indicator rod to check that the machine is level, when the indicator rod is level with the top end of tube the machine is square to the axes.

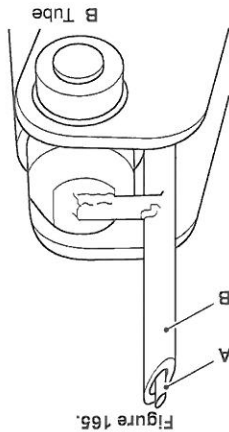


Figure 165.

A Indicator rod

B Tube

When the indicator rod is above the tube, the machine is swayed to the left. When the rod is down inside the tube, the machine is swayed to the right.

While you operate the chassis levelling system the cooling fan speed may be reduced, this is not a fault.

Your machine may be fitted with an alternate indicator, located in front of the cab. The machine is square to the axes when the plate is level with the top of the pressing. When the plate is above the pressing, the machine is swayed to the left. When the plate is down below the pressing, the machine is swayed to the right.

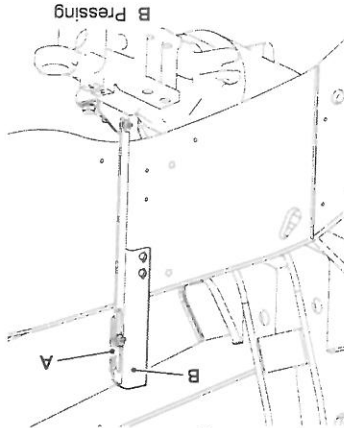


Figure 166.

B Pressing

A Plate



Auxiliary Circuit Controls

For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F]

For: 526-56 [T4F] Page 160
 For: 526-56 [T4F] Page 163

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

▲ WARNING Before operating the auxiliary control system make sure that you are aware of all safety notices that apply to the attachment you are using. Also make sure you have installed the attachment correctly and have read its operator's manual.

General

The machine is installed with a hydraulic mode switch and in combination with the control lever, this enables the operator to select and control 3 hydraulic modes. AUX selection, bucket control system and constant flow mode. The machine is installed with one auxiliary circuit (AUX I). A second circuit (AUX II) might be available as an option. An optional trailer pickup hitch may also available.

AUX I can be set to provide a constant flow to the attachment connected, if installed.

To enable the operator to identify which auxiliary mode is selected, the dash will display a series of icons.

Before operating the controls identify which auxiliary mode is selected.

Single Lever Control

The auxiliary control switch is a proportional roller type. It is spring loaded to its central position. The speed of operation depends on how far the switch is moved.

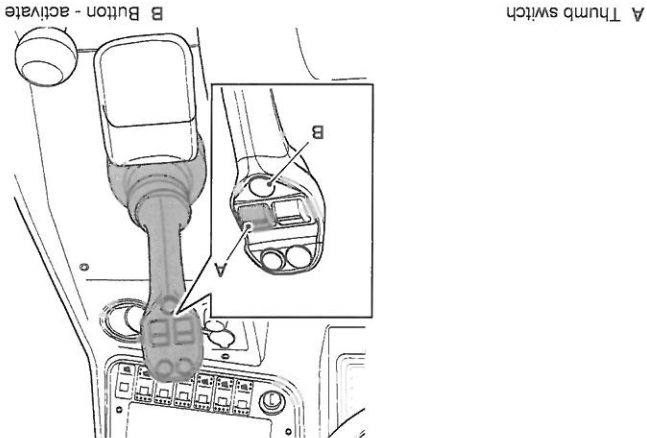


Figure 167.

1. Turn on the hitch/auxiliary selector switch, if installed.
Refer to: Console Switches (Page 29).
2. Set the hydraulic mode switch to position 1.
Refer to: Console Switches (Page 29).
3. To enter the AUX II mode, press the button.
Roll the thumb switch forwards or backwards depending on the attachment installed and function required.
4. To exit the AUX II, press the button. The symbol on the main display screen will extinguish.

Auxiliary II (AUX II) (if installed)

- 5.1. Press the button on the control lever. The symbol on the main display screen will go grey.
 - 5.2. Set the hydraulic mode switch to position 1. The symbol on the main display screen will extinguish.
3. The constant flow mode symbol on the screen will indicate the active and inactive mode.
Refer to: Instruments (Page 99).
 4. Use the thumb switch to adjust the speed and direction of the constant flow mode.
To exit the constant flow mode:
 5. To exit the constant flow mode:
- 2.6. When in constant flow mode, pressing the button or moving the thumb switch will activate the display. Subsequent operations of button, will activate and then deactivate constant flow mode.
 - 2.5. The main screen will display the percentage of flow available.
 - 2.4. Use the thumb switch to adjust the speed and direction.
 - 2.3. On selecting the button the constant auxiliary system will resume to the speed and direction previously stored.
 - 2.2. Press the button on the control lever, a symbol will be displayed on the screen.
Refer to: Instruments (Page 99).
 - 2.1. Set the hydraulic mode switch to position 2.
Refer to: Console Switches (Page 29).
 2. To activate the constant flow mode:
 1. Turn on the hitch/auxiliary selector switch, if installed.
Refer to: Console Switches (Page 29).

When using motorised attachments for a prolonged period (30min) a maximum constant flow of 65% should be selected.

Constant Flow Mode (if installed)

3. Roll the thumb switch forwards or backwards depending on the attachment installed and the function required.
2. The dash should not display auxiliary symbol on the display.
Refer to: Console Switches (Page 29).
1. Turn on the hitch/auxiliary selector switch, if installed.

Auxiliary I (AUX I)



Bucket Control System (if installed)

The bucket control system allows the operator to automatically oscillate the bucket, in order to assist with the discharge of material.

1. Set the hydraulic mode switch to position 3, a symbol will be displayed on the screen.
2. Press the button on the control lever.
3. Move the control lever to required direction.

The amount and type of oscillation will change depending on the distance or the direction selected with the control lever, and the amount of engine revs used. The oscillation varies in the ways as follows:

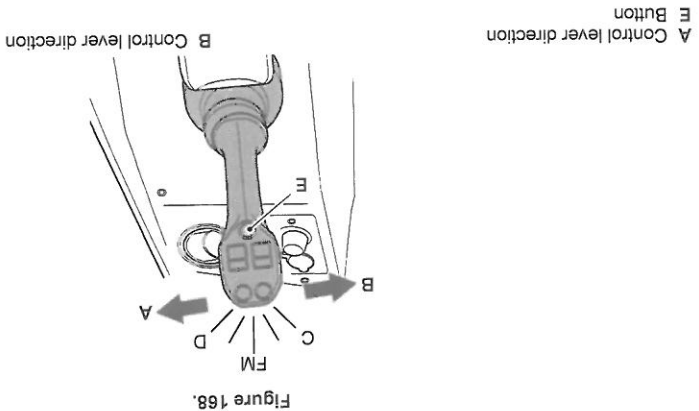


Table 28.

C band	The bucket will oscillate with a larger amplitude, and tend to crowd more over time. This has been designed for assisting the operator with flicking material up and out of the bucket
D band	The bucket will oscillate with a larger amplitude, and tend to dump more over time. This has been designed for assisting the operator for discharging sticky material
FM band	Small amount of oscillation, the bucket will tend to oscillate around the original position of the bucket (this will depend on the type and amount of material). This has been designed to assist the operator with the fine metering of material

The oscillation will cease at any point when the operator releases the button, but the bucket will continue to move in the selected joystick direction.

Single Lever Control (Push Button Type)

The machine is fitted with one auxiliary circuit (AUX 1). A second circuit (AUX 2) is available as an option. An optional trailer pickup hitch is also available. Refer to: Towing Other Equipment (Page 129).

AUX 1 - Ensure the Hitch/Auxiliary selector switch, if fitted, is set to the auxiliary position. The switch light will illuminate. Press the AUX 1 buttons depending on the attachment fitted and the function required.

AUX 2 - Ensure the Hitch/Auxiliary selector switch, if fitted, is set to the auxiliary position. The switch light will illuminate. Press the AUX 2 buttons depending on the attachment fitted and the function required.

The auxiliary control switch is a proportional roller type. Its spring loaded to it's central position. The speed of operation depends on how far the switch is moved.

Single Lever Control

Before operating the controls identify which auxiliary mode is selected.

To enable the operator to identify which auxiliary mode is selected, the dash will display a series of icons.

AUX I can be set to provide a constant flow to the attachment connected, if installed.

The machine is installed with one auxiliary circuit (AUX I). A second circuit (AUX II) might be available as an option. An optional trailer pickup hitch may also available.

The machine is installed with a hydraulic mode switch and in combination with the control lever, this enables the operator to select and control 3 hydraulic modes; AUX selection, bucket control system and constant flow mode.

General

▲ **WARNING** Before operating the auxiliary control system make sure that you are aware of all safety notices that apply to the attachment you are using. Also make sure you have installed the attachment correctly and have read its operator's manual.

(For: 526-56 [T4F])

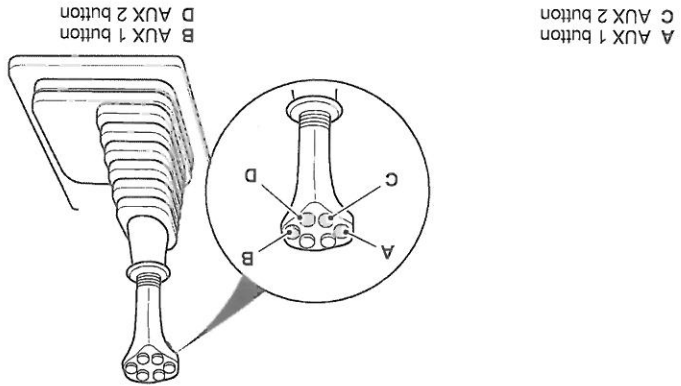


Figure 169.

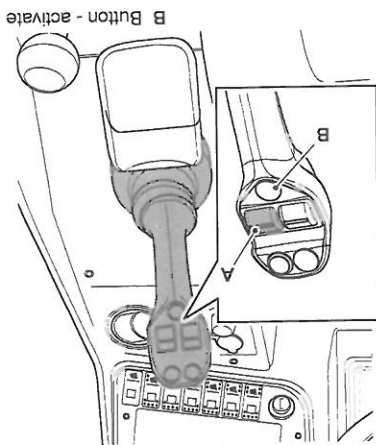
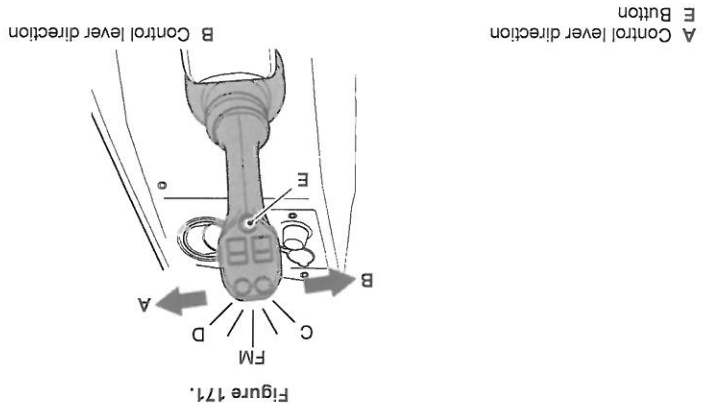


Figure 170.

Auxiliary I (AUX I)

1. Turn on the hitch/auxiliary selector switch, if installed.
Refer to: Console Switches (Page 29).
 2. The dash should not display auxiliary symbol on the display.
 3. Roll the thumb switch forwards or backwards depending on the attachment installed and the function required.
- Constant Flow Mode (if installed)
- When using motorised attachments for a prolonged period (30min) a maximum constant flow of 65% should be selected.

1. Turn on the hitch/auxiliary selector switch, if installed.
Refer to: Console Switches (Page 29).
2. To activate the constant flow mode:
 - 2.1. Set the hydraulic mode switch to position 2.
Refer to: Console Switches (Page 29).
 - 2.2. Press the button on the control lever, a symbol will be displayed on the screen.
Refer to: Instruments (Page 99).
 - 2.3. On selecting the button the constant auxiliary system will resume to the speed and direction previously stored.
 - 2.4. Use the thumb switch to adjust the speed and direction.
 - 2.5. The main screen will display the percentage of flow available.
 - 2.6. When in constant flow mode, pressing the button or moving the thumb switch will activate the display. Subsequent operations of button, will activate and then deactivate constant flow mode.
3. The constant flow mode symbol on the screen will indicate the active and inactive mode.
Refer to: Instruments (Page 99).
4. Use the thumb switch to adjust the speed and direction of the constant flow mode.



1. Set the hydraulic mode switch to position 3, a symbol will be displayed on the screen.
 2. Press the button on the control lever.
 3. Move the control lever to required direction.
- The amount and type of oscillation will change depending on the distance or the direction selected with the control lever, and the amount of engine revs used. The oscillation varies in the ways as follows:

The bucket control system allows the operator to automatically oscillate the bucket, in order to assist with the discharge of material.

Bucket Control System (if installed)

1. Turn on the hitch/auxiliary selector switch, if installed.
- Refer to: Console Switches (Page 29).
2. Set the hydraulic mode switch to position 1.
- Refer to: Console Switches (Page 29).
3. To enter the AUX II mode, press the button.
4. Roll the thumb switch forwards or backwards depending on the attachment installed and function required.
5. To exit the AUX II, press the button. The symbol on the main display screen will extinguish.

Auxiliary II (AUX II) (if installed)

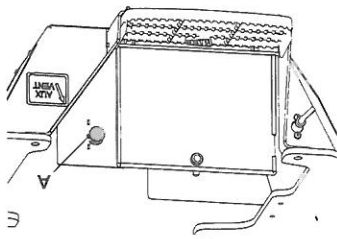
- 5.1. Press the button on the control lever. The symbol on the main display screen will go grey.
- 5.2. Set the hydraulic mode switch to position 1. The symbol on the main display screen will extinguish.
5. To exit the constant flow mode:

C band	The bucket will oscillate with a larger amplitude, and tend to crowd more over time. This has been designed for assisting the operator with flicking material up and out of the bucket
D band	The bucket will oscillate with a larger amplitude, and tend to dump more over time. This has been designed for assisting the operator for discharging sticky material
FM band	Small amount of oscillation, the bucket will tend to oscillate around the original position of the bucket (this will depend on the type and amount of material). This has been designed to assist the operator with the fine metering of material

The oscillation will cease at any point when the operator releases the button, but the bucket will continue to move in the selected joystick direction.

Auxiliary Vent Knob (option)

Figure 172.



A Auxiliary vent knob

WARNING! You must lower the attachments to the ground before venting the auxiliary system, otherwise bystanders could be crushed by the attachments or get caught in the linkages.

With the boom lowered and the engine off pull the external auxiliary vent knob to vent the auxiliary hydraulics and enable attachments to be fitted to the quick release couplings.

Lifting and Loading

General

▲ WARNING A high load can block your view and reduce the machine's stability. Travel with the load low to the ground. Travel slowly and with caution over rough, muddy or loose surfaces.

WARNING When transporting a load on a slope, drive slowly and keep the load uphill of the machine. This will increase stability.

WARNING Do not use the machine for object handling unless it is equipped for this purpose. Without the relevant devices the machine can become unstable and tip over. You and others could be seriously injured or killed.

WARNING Before you lift a load with the machine, you must read and understand this section. Failure to take the precautions shown can result in death or injury.

If your machine is not installed with a lifting point (for example a hook or shackle) and load charts then it must not be used for object handling.

Lifting (Object Handling) Regulations

The owner and/or operator must make sure that they fully understand the laws and regulations concerning the use of the JCB machine as an earthmover and for lifting. Consult your JCB dealer for more information.

In certain countries safety regulations in force call for the application of specific safety factors. Consult your JCB dealer for more information.

All figures and lift capacities (if applicable) in this publication are based on the machine being on level, solid ground.

Safe Working Loads

The maximum load which may be lifted depends on the equipment attached to the machine and the laws and regulations in force at the time and in the country in which the machine is being used.

If your machine is equipped to be operated under 'Exemption Certificate' rules, your Exemption Certificate will specify the safe working loads.

Fit for Purpose Tests for Lifting Equipment

All lifting equipment (for example forks, lifting hooks and shackles) needs regular inspections and testing by a competent person to make sure they are fit for purpose. These may be needed every six months or at least annually in some countries to meet and comply with legislation and for insurance purposes. Refer to: Functional Tests and Final Inspection (Page 274). Check with your local JCB dealer for further advice.

Load Charts

▲ WARNING The limits shown on the load charts are for a stationary level machine. Do not raise or extend the boom while the machine is moving. Retract the boom fully and lower it as far as possible before you travel with a load.

CAUTION The load chart shown is only an example. Do not use it to find the loading limits on your machine. Before lifting or placing loads, refer to the load charts in the cab of your machine.

The SWL (Safe Working Load) of the machine depends on how far the boom is extended and the angle it is raised to.

The SWL at different boom positions is shown on the load charts in the cab.

The load charts show how far you can raise and extend a load without exceeding the safe working load. Each machine model has its own load chart for a standard fork carriage, and alternative charts for use when stabilisers or chassis levelling (sway) are used. Some other load charts for use when a different carriage or attachment is installed on the boom.



The limits shown on the load chart only apply to a machine installed with JCB approved tyres. To obtain the limits show the tyre must be in good condition and inflated to the correct pressure. If you are in doubt, contact your JCB dealer.

Check the relevant load chart is available for any alternative carriage or attachment. Where appropriate, the load chart shows the part number of the carriage or attachment it refers to. If you are not sure of the correct load chart to use, contact your JCB distributor for advice.

Renew any damaged or missing charts.

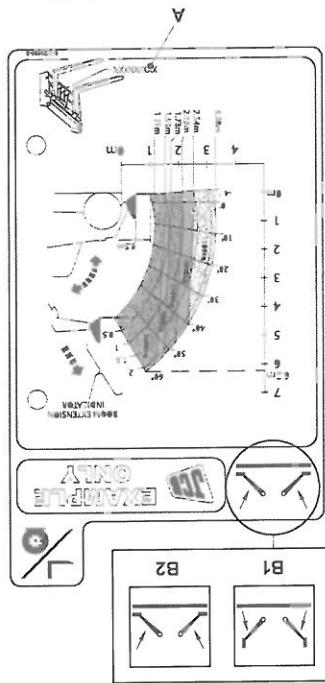


Figure 173.

A Attachment part number
B2 Stabiliser down

B1 Stabiliser up

Using the Load Charts

1. Check what boom attachment is installed on your machine, then refer to the correct load chart in the cab.
2. You must know the weight of a load before picking or placing it.
3. Check that the loads centre of gravity in front of the fork uprights will not be more than .500m (19.7in)
- 3.1. The loads centre of gravity may not be in the middle of the load. You will have to find out where it is.

- 6.1. When the load is high up (say on a scaffolding) you will have to get it clear before fully retracting the boom.
6. When the load is on the forks, retract the boom before raising or lowering it. This will reduce the risk of getting the machine unstable. While moving the boom, watch the boom angle and extension indicators.
- 5.2. If the lines cross above or on the left of the segment, do not try to pick up the load. Withdraw the forks, retract the boom and try again. If even with the boom fully retracted, the boom angle and extension readings still cross outside your maximum load segment, do not try to lift the load.
- 5.1. You will see on the chart that lines run from the boom angle and extension scales, through the coloured area of the chart. Find where the lines for your readings cross. If they cross inside your maximum load segment or to the right of it the load is within safe limits.
5. After installing the forks beneath the load, and before lifting the load, check the readings on the boom angle and extension indicators. Find the same readings on the load chart.

E Left hand edge
F Upper edge

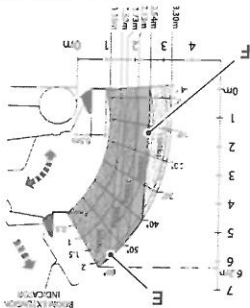


Figure 175.

- 4.1. For example, if your load weight is 1800kg (3968lb), find the 2000kg (4409lb) segment. This is the maximum load segment for your load.
- 4.2. The left hand edge and the upper edge of this segment show the machine stability limits for your load. You must not angle or extend the boom beyond these limits.
4. When you know the weight of the load, look on the load chart and find the coloured segment with the next highest weight.

C Length = 500mm (19.7in)

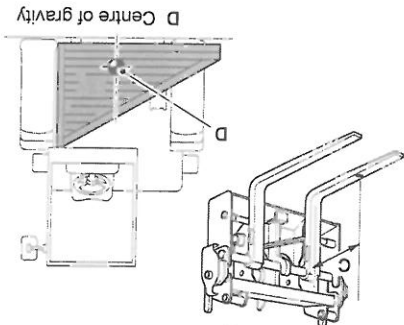


Figure 174.

D Centre of gravity



- Before you place a load, use the load chart to find how close you should get the machine to the unload point. You must be able to place the load without crossing the left hand or upper boundaries of your maximum load segment.

Boom Indicators

The SWL (Safe Working Load) at different boom positions shown on the load charts in the cab. Refer to the charts in the cab before lifting or placing a load. Refer to: Load Charts (Page 167).

The boom angle and extension indicators are installed on the boom itself. It is indicated by numbered labels, the numbers represent boom extension in metres.

The boom angle is indicated by an indicator. It has a scale marked in degrees.

Always refer to the charts in the cab before lifting or placing a load. Refer to: Load Charts (Page 167).

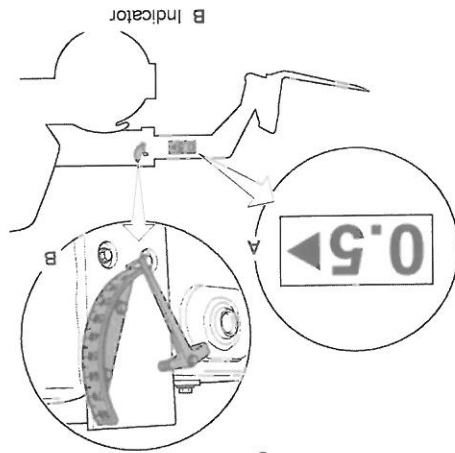


Figure 176.

Inclinometers

The lateral position of the machine is indicated by an inclinometer installed in the cab.

Use the inclinometer to check that the machine is level before operating the boom. The machine is level when the inclinometer shows 0°.

Reposition the machine if a level position cannot be achieved.

Refer to: Slopes (Page 124).

- Know the mass and load centre of loads being handled.
 - Know the boom angle and extension that will be required to place the load (this can be checked by doing a dry run first without the load).
 - While moving the load, obey lift charts and boom extension markers.
- The system is an enhancement to the devices that JCB currently install as standard, for example load charts and boom extension markers. The system must not be relied upon as the primary source of protection for the machine. The duty of care is still with the operator/site agent to:
- The system does not warn the operator when the machine is at risk of tipping or overturning sideways or rearwards. The system is not intended to warn the operator of tipping or overturning when the machine is travelling, operating on unsuitable ground or subjected to sudden overloading.
- The system is not intended to warn the operator when the machine is at risk of tipping or overturning sideways or rearwards. The system is not intended to warn the operator of tipping or overturning when the machine is travelling, operating on unsuitable ground or subjected to sudden overloading.
- The system does not warn the operator when the machine is at risk of tipping or overturning sideways or rearwards. The system is not intended to warn the operator of tipping or overturning when the machine is travelling, operating on unsuitable ground or subjected to sudden overloading.
- The LLM (Longitudinal Load Moment Indicator) warns the operator when the machine is nearing its maximum forward longitudinal load moment (when the load moment could cause the machine to tip forward).
- The longitudinal load moment is a product of the load on the boom and the distance the load is moved forward from the centre of gravity of the machine. As the load is moved forward so the load moment increases to a value where the machine will tip forwards.

Longitudinal Load Moment Indicator (LLMI)

You cannot operate the chassis levelling (sway) function if the boom is more than 10° above the horizontal.

Chassis Levelling (Sway) Operation

Your machine has a system of interlocks to prevent the operation of the machine beyond default limits unless the boom and/or the stabiliser legs are moved to the correct position.

Introduction

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Interlocks

A Inclinometer

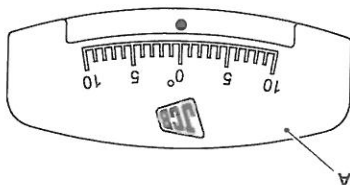


Figure 177.

Checking LLMi Limits Against Load Chart Limits

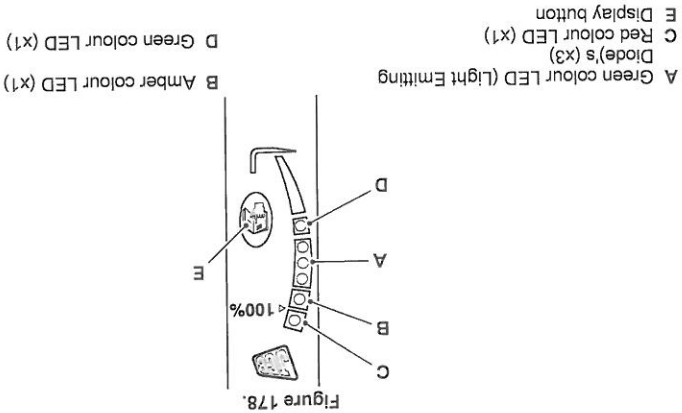
As mentioned above the the LLMi control system fitted to the machines prevents longitudinal overturn. The system responds to a reduction in rear axle load.

There are a number of elements which determine the actual capacity of a telescopic handler. These can include stability limits, structural limits and hydraulic limitations.

The loadcharts in JCB Loadall machines show the lowest of all limits.

Therefore where a limit is shown on a load chart which is not a longitudinal stability limit, the LLMi control system may allow the machine to exceed the load chart limit whilst staying within the stability limitations of the machine. A table comparing the maximum distance from the front of the tyres to the load centre derived from the LLMi and the loadchart for a range of loads is within the flipchart pack supplied with the machine.

This table can be used for third party inspections.



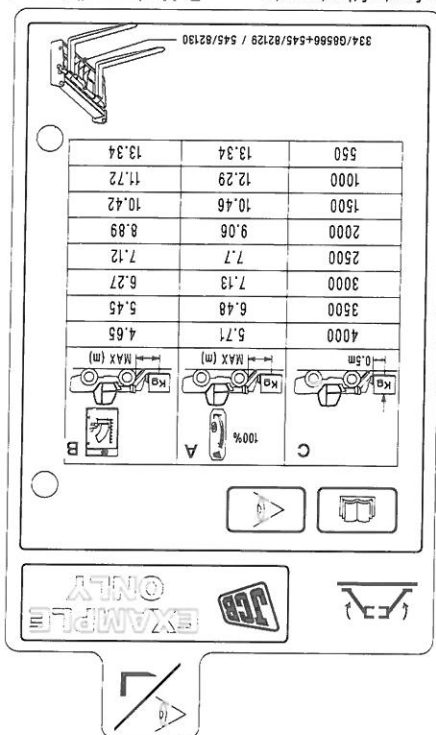


Figure 179.

Operation

- A Maximum distance from the front of the tyres to the load centre derived from the LLM
- C Load on forks at 0.5m load centres
- B Maximum distance from the front of the tyres to the load centre derived from the flip chart

WARNING Look at the indicator lights frequently while lifting or handling loads. As more lights show, take extra care with control lever movements. Do not jerk the levers or make sudden changes of direction.

WARNING The Load Moment Indicator shows forward machine stability only. Do not use it as a guide to the weight being lifted. Refer to the load charts in the cab. The maximum working load indicated by the load moment indicator does not correspond to the SWL specified on the load charts in the cab.

WARNING The readout display will be affected by extreme steer lock and extreme axle pivoted angles. Before lifting a load, always ensure that the steering is not on full lock and that the rear axle is not fully pivoted.

The system is permanently on when the ignition is on. The green LED is lit to confirm the unit is on.

A sensor measures the load exerted on the rear axle and sends a signal to the indicator unit. The indicator unit converts the signal into a display in the form of three green LED, one amber LED and one red LED. The LED will illuminate progressively as the load increases. Refer to Figure 178.

The amber LED will flash as the load nears the maximum working limit. If this happens, move the load into a stable position by raising or retracting the boom.

If the load exceeds the maximum working limit, the red LED will illuminate and an audible warning will activate.

The display brightness and audible warning levels can be adjusted. If a system fault is detected, a combination of LED will indicate a fault code.

Testing

▲ WARNING If the Load Moment Indicator is faulty, contact your JCB dealer. Do not try to repair it yourself.

Test the LLM unit daily:

1. Park the machine on solid, level ground with the engine running.
2. Apply the park brake and place the forward/reverse lever in the neutral position.
3. The green LED at the bottom of the display illuminates to show that the indicator is receiving power. Refer to Figure 178.
4. Press the display button and release.
5. All LED on the indicator flash and the audible alarm sounds if the unit is functioning correctly.
6. Do not use the machine if the fault does not clear. Stop and park the machine as soon as safety permits. Switch off the engine. Contact your JCB distributor.

Setting the Volume and Brightness

The volume of the audible alarm, and the brightness of the display LED can be set by the operator using display button. The system will reset to the default setting when the ignition key is switched to the off position. This allows the volume and brightness to be reduced for night time use. The possible options are:

- Full volume and full brightness (default setting)
- Reduced volume and full brightness
- Full volume and reduced brightness
- Reduced volume and reduced brightness

1. Park the machine on solid, level ground with the engine running.
 2. Apply the park brake and place the forward/reverse lever in the neutral position.
 3. The green light at the bottom of the display will illuminate to show that the indicator is receiving power. Refer to Figure 178.
 4. Press and hold the display button.
 - 4.1. The display will cycle through the volume and brightness options, pausing for a short period of time to demonstrate each option.
 5. Release the button during the required demonstration to select the option.
- The system will reset to the default setting when the ignition key is switched to the off position.

Diagnostic Fault Codes

▲ WARNING If the Load Moment Indicator is faulty, contact your JCB dealer. Do not try to repair it yourself. If the system detects a fault, the audible alarm will sound and a combination of LED illuminate to indicate a fault code for approximately 10s. Refer to Figure 178.

The audible alarm and the fault code display cancel after 10s and all LED on the display will flash continuously as long as the fault remains. Press and release display button to show the fault code for a further 10s.

The longitudinal load moment is a product of the load on the boom and the distance the load is moved forward from the centre of gravity of the machine. As the load is moved forward so the load moment increases to a point where the machine will tip forwards.

The LLMC (Longitudinal Load Moment Control) system slows the operation of all hydraulic services as the machine gets closer to its maximum working limit (i.e. when the load moment could cause the machine to tip forward) when performing loading and placing operations. Automatic isolation of the hydraulic services inhibits the operator from exceeding the maximum longitudinal load moment.

The system does not warn or prevent the machine tipping or overturning sideways or rearwards. The system is not intended to warn, or prevent tipping or overturning when the machine is travelling, operating on unsuitable ground or subjected to sudden overloading.

▲ WARNING Load Control monitors forward machine stability only. Do not use it as a guide to the weight being lifted. Refer to the load charts in the cab. The maximum working load indicated by the Load Control System does not necessarily correspond to the SWL specified on the load charts in the cab.

WARNING The readout display will be affected by extreme steer lock and extreme axle pivot angles. Before lifting a load, always ensure that the steering is not on full lock and that the rear axle is not fully pivoted.

Longitudinal Load Moment Control (LLMC)

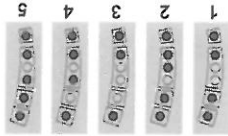


Figure 182. LLMC External faults

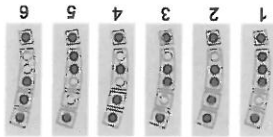


Figure 181. LLMC Unit faults

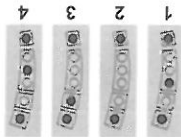


Figure 180. Calibration faults

If a fault code is displayed, switch the ignition key off and on again. If the fault clears, the display will return to normal. Do not use the machine if the fault does not clear. Stop and park the machine as soon as safety permits. Switch off the engine. Contact your JCB distributor.

Neither will the system protect against instability due to the stabiliser legs being lifted nor misuse of the chassis levelling (sway) function (if either of these options are fitted). Refer to: Chassis Levelling Controls (Page 157). The system is designed to help you to work more safely - It is not a substitute for skill and common sense.

The use of handling attachments for unit loads (for example, bales or bulk bags) can cause a significant increase in the overturning moment through use of the crowd and dump operations. Make sure that use of such attachments does not take the machine beyond its stability limit. Refer to: Load Charts (Page 167).

- Know the mass and load centre of loads being handled.
 - Know boom angle and extension that will be required to place the load (this can be checked by doing a dry run first without the load).
 - While moving the load, obey lift charts, boom extension markers and LLMl (Longitudinal Load Moment Indicator) indications.
- The system is an enhancement to the devices that JCB currently install as standard, for example loadcharts and boom extension markers. The system must not be relied upon as the primary source of protection for the machine. Duty of care is still with the operator/site agent to:

A Boom retract
B Boom raise

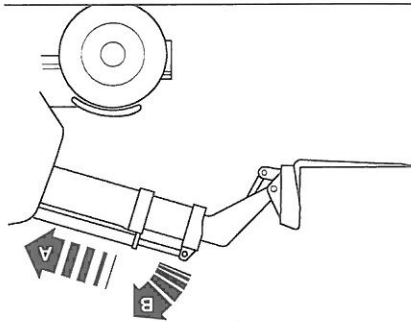


Figure 184.

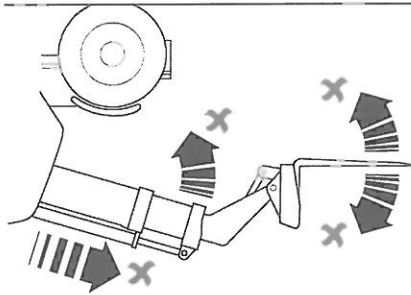
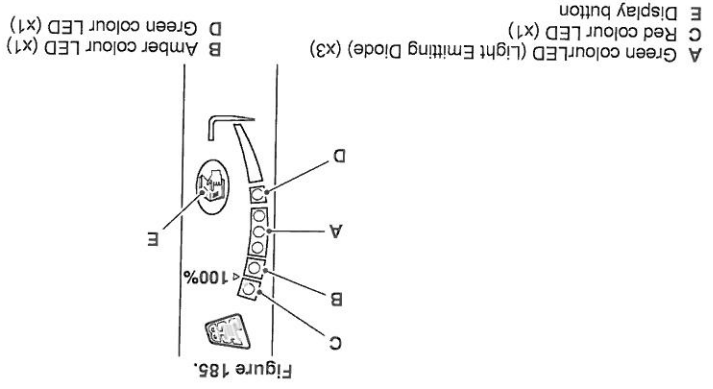


Figure 183.

Operation



The system is permanently on when the ignition is on. The system automatically switches between active (green symbol illuminated) and not active (amber symbol illuminated) depending on the machine status. The LLMC system functions as normal.

Be aware that the LLMC system is not active when the machine is travelling or when the boom is fully retracted.

As the machine gets closer to its stability limit, the amber LED will start flashing. When the amber light is flashing the extend and lower services stop, dump and crowd services will continue to operate at a reduced speed and lift and retract services will continue to operate at the normal speed. If you continue to move the load outside of the stability limit of the machine the red LED will be illuminated, and the boom arm hydraulic services will stop, except for lift and retract, these services should be used to bring the load back in to a more stable condition. When a load has been recovered to a more stable condition, it will only be possible to use other hydraulic services after the lever has been returned to the neutral position. If there is a system fault the boom hydraulic services are automatically isolated.

Warm Up Procedure

For the machine hydraulic system to work efficiently, the machine hydraulic oil temperature should be a minimum of 10°C (50.0°F). If the air temperature is below freezing, do as follows:

1. Park the machine on solid, level ground with the engine running.
2. Apply the park brake and place the forward/reverse lever in the neutral position.
3. The engine at approximately 1500 rpm.
 - 3.1. Raise and lower the boom five times.
 - 3.2. Extend and retract the boom five times.
 - 3.3. Dump and crowd the carriage five times.
4. Perform the LLMC functional check.

System Override

WARNING In override mode the machine is not protected. Only use it to reduce the load moment of the machine. Never exceed the limits set by the load chart, extension markers or angle indicator.
WARNING Incorrect operation of the crowd/dump functions (when laden) can cause the machine to become unstable and a loss of the load. The LLMC does not prevent such operation and you must operate within the machines limits.

If it is not possible to recover the load by raising or retracting the boom, the system can be temporarily overridden.

1. Press and hold the mode change button.

2. An audible alarm will sound when all the LED flash the override function is enabled for a maximum of Duration: 60s

3. Operate the controls to recover the load and then release the mode change button. The override function can not be selected again until

Duration: 5s

Figure 186.

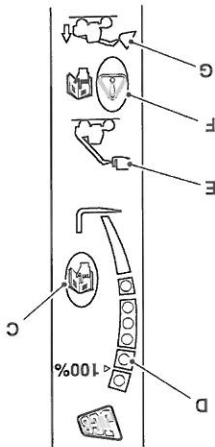


Table 30.

Callout	Colour	Description
C	Display button	
D	Amber LED	
E	Load control mode symbol	Lit when load control mode selected, flashes when red LED is lit (in load control mode).
F	Mode change button	
G	Ground work mode symbol	Lit when ground work mode selected.

Functional Check

▲ WARNING If the Load Moment Indicator is faulty, contact your JCB dealer. Do not try to repair it yourself. LLM1 and LLMC permanently. A defective LLM1 or LLMC may allow the operator to exceed the limits of stability and can cause the machine to overturn, serious injury or death.

When operating in cold ambient temperatures, the machine can fail the Daily Functional Check if the hydraulic oil is insufficiently warm. If this is the case, repeat the warm up procedure prior to repeating the Daily Functional Check.

Do not use the machine if the result for one or more of the test procedures is not correct. Stop and park the machine as soon as safety permits. Switch OFF the engine. Contact your JCB distributor.



Test the LLMC system at the start of each shift.

1. Complete the LLM unit daily check.
2. Park the machine on solid, level ground with the engine running.
3. Fully retract and lower the boom. The symbol G should illuminate. Refer to Figure 186.
4. Complete the test procedure in the sequence as shown. Refer to Table 31.

Table 31.

S.No.	Operation	Result
1	Partly raise and extend the boom	Symbol G = Off, Symbol E = On
2	Drive the machine forwards	Symbol E = Off, Symbol G = On
3	Stop the machine	Symbol E = On, Symbol G = Off
4	Press and release display button. When the LED flash on the LLM, operate the boom lower.	The boom should not lower
5	Press and release display button. When the LED flash on the LLM, operate the boom extend.	The boom should not extend
6	Press and release display button. When the LED flash on the LLM, operate the boom raise.	The boom should raise
7	Press and release display button. When the LED flash on the LLM, operate the boom retract.	The boom should retract
8	Select a suitable load (for example a pack of blocks). Make sure the machine is on solid, level ground and apply the park brake. With the stabilisers up, position the boom so that the load is just clear of the ground. Extend the boom slowly and carefully. Watch the LED progress up the scale.	Hydraulic operation should slow and then stop when the amber LED flashes

Working with the Boom

General



▲ WARNING Stop the machine and apply the park brake before conducting any lifting operations.

WARNING Under no circumstances should personnel be lifted into the air without using an approved and properly secured platform. Failure to follow this warning could result in death or serious injury.

WARNING Maintain correct tyre pressures to avoid upsetting the lateral stability of the machine. Inspect tyres daily for signs of damage, cuts or embedded objects which could cause loss of pressure.

WARNING Loading and unloading on soft or uneven ground can be hazardous. The machine could tip over and you could be killed or injured. Make sure that the ground is level and firm before loading and unloading. Whenever possible, avoid soft or uneven ground when carrying a load.

WARNING Overloaded scaffolding can collapse. Never load scaffolding beyond the regulation capacity.

WARNING Operating the boom while you travel can cause accidents. You will not have total control of the machine. Never operate the boom when you travel.

WARNING A high load can block your view and reduce the machine's stability. Travel with the load low to the ground. Travel slowly and with caution over rough, muddy or loose surfaces.

WARNING When transporting a load on a slope, drive slowly and keep the load uphill of the machine. This will increase stability.

WARNING Keep yourself and all others away from the lifting mechanism. Never allow persons to walk below a raised cab at any time. Do not carry passengers.

WARNING In the event of a breakdown with the boom not in the normal travel position, contact your local JCB dealer for assistance with getting the boom and load back to a safe position.

CAUTION Make sure you know the weight of the load before trying to lift it. Raise the load only a few centimetres at first, to check that the machine is stable. Lower the load straight away if the machine begins to feel unstable. Do not exceed the loading limits shown on the Load Charts.

CAUTION Travelling too fast or with the load too high can make the machine tip over. Keep the load close to the ground when travelling. Do not go faster than walking pace when the machine is carrying a load. Drive carefully over bumps and curbs. Do not operate the boom/carriage controls while the machine is moving.

CAUTION Loads stacked on uneven ground can topple. Never stack loads on uneven ground.

CAUTION A raised boom can strike overhead objects. Always check for overhead clearance before raising the boom.

Practice with palletted loads first. Do not handle awkward loads until you can handle palletted loads safely and confidently.

Make sure that any location where a load is to be placed is strong enough to hold the weight of the load.

Look in the direction of travel and keep a clear view of the way ahead. Seek assistance if forward vision is obscured by a bulky load. Particular care is required when driving off level ground. Refer to: Slopes (Page 124).

Do not carry stacked loads that are higher than the fork carriage.

Drive at a speed consistent with conditions. Slow down when travelling on wet, slippery or loose surfaces.

Drive with care to minimise bouncing over rough surfaces. This can result in loss of load.

Lifting and Loading Operations

Ensure that all local and national legislation governing operations such as lifting and loading are fully satisfied before operating the machine. This should include the selection of the correct and loading are fully satisfied for the operation, and the planning of the lifting operation itself.

Further information concerning the safe use of lifting and other equipment in the UK is available from the HSE information line on 0541 545500 or on the world wide web at: <http://www.hse.gov.uk>

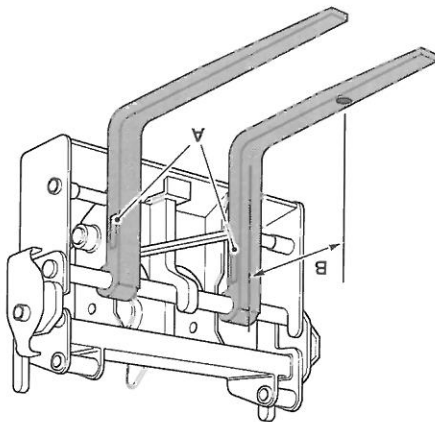
Other countries and territories have their own legislation similar to the above. Be sure that you are aware of all local and national legislation governing lifting and loading operations where you are operating.

Fork Ratings

▲ CAUTION Do not exceed the total rated load capacity of the forks being used. Forks can break resulting in a loss of load and possible injury.

The JCB approved forks for this machine have a plate which shows their maximum load capacity rating. The rating shows the maximum load capacity in kilograms that the forks can carry safely at the maximum load centre of 500mm.

Figure 187.



A Plate

B Maximum load centre

The total load rating for two forks will be the addition of their single rated capacity.

The forks must be used in matched pairs.

To get the maximum rated load capacity of the machine, Refer to: Performance Dimensions (Page 41▲).

The forks used on this machine must have a total load rating which is equal to, or exceeds the rated load capacity of the machine.

If the load rating of the machine is different to the load capacity of the forks, the lower value must be used as the overall load capacity.

All lifting equipment, including the forks and their mountings, need regular inspections and testing by a competent person to make sure they are fit for purpose. For more information, contact your JCB dealer.

Repositioning the Forks

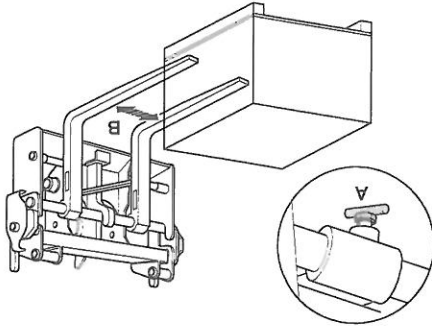
▲ WARNING Loads can fall off incorrectly spaced forks. Always space the forks correctly for the load. Make sure the forks are completely under the load before lifting.

CAUTION The forks are heavy. Make sure suitable lifting equipment is used to support and transport them.

1. Loosen the fork clamping screws.

2. Space the forks as wide as possible to suit the load.
3. Tighten the fork clamping screws.

Figure 188.



A Clamping screws

B Fork space adjustment

Working with Pallets

Loading

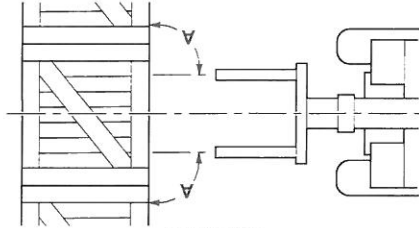
- ▲ **WARNING** If the machine starts to feel unstable when you begin lifting the load, lower the load immediately.
- WARNING** Load and unload on firm, level ground. Always be alert for possible hazards. Take special care when turning or reversing.
- CAUTION** A load lifted on one fork can slip off. Never lift a load with one fork.

When carrying a palletised load, the height above the ground to the underside of the load should not be more than 300mm.

1. Put the forks in the horizontal position.
- Refer to: Boom Controls (Page 153).

2. Retract the boom.
3. Approach the load straight-on, with all wheels straight.
4. Stop the machine and leave enough room to manoeuvre the boom.

Figure 189.



A Angle = 90°

5. Engage the park brake and put the transmission in neutral.
6. Do not use the side of the forks or carriage to move the load, this can cause damage to the forks.

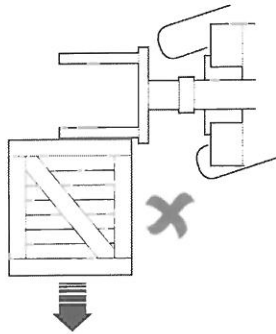


Figure 190.

7. If the load is on a high platform you may have to raise the boom to allow you to get the machine close enough to the load.

8. Extend the boom or drive the machine, to insert the forks under the load.
9. Stop the machine, when the carriage touches the load.

10. Check the boom extension/angle(s) are in limits.

WARNING! If the machine starts to feel unstable when you begin lifting the load, lower the load immediately.

11. Raise the load slightly, then tilt the carriage back.

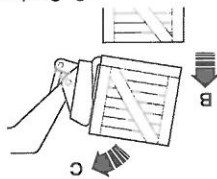


Figure 191.

B Load raise
C Carriage tilt

12. Retract the boom, then lower it into the travel position.

13. Carefully drive the machine to the unloading point.

Unloading

▲ **CAUTION** Never unload the forks by stopping the machine suddenly. Follow the procedures in the Operator Manual for unloading.

1. Approach the unload straight-on, with all wheels straight.
2. Stop the machine and leave enough room to manoeuvre the boom.
3. Make sure the loading should not exceed the limits.
Refer to: Load Charts (Page 167).
4. Engage the park brake and put the transmission in neutral.
5. Move the load above its required position.

6. Lower the load into position. Make sure the load is level.
7. Carefully withdraw the forks. Depending on the height of the load, you may have to raise or lower the boom as the forks come out.
8. When the forks are clear of the load, fully retract the boom.
9. Lower the boom into the travel position.

Working with Bales

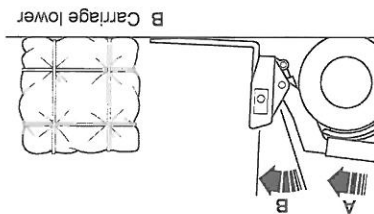
▲ WARNING The bale may have to be manhandled off the forks. If so, stop the engine before allowing anyone to approach the forks.

Lifting Bales

1. Lower the boom and tilt the carriage forward.

Refer to: Boom Controls (Page 153).

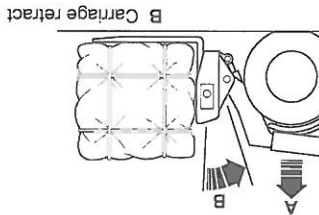
Figure 192.



A Boom extend

2. Extend and raise the boom to insert the forks under the load.
3. Tilt the carriage back and put the boom in the travel position.

Figure 193.



A Boom raise

Lowering Bales

1. Move the boom so that the bale is directly above its required position.
2. Lower the boom and tilt the carriage forward, so that the forward edge of the bale rests on the ground.

Working with Irregular Loads

Be careful when you operate the boom and carriage with an uneven load.

1. Find the load's centre of gravity. On packaged loads it may be marked on the box. If you cannot find out the load's centre of gravity:

- 1.1. Do trial lifts at different positions until you are sure the load is stable on the forks.
- 1.2. Do not raise the load more than a few centimetres when you do a trial lift.

2. Move the machine so that the load's centre of gravity is halfway between the forks.

3. Pick/place the load, this will depend on the type of load.

- 3.1. If it is palletted, follow the procedure for palletted loads.

- 3.2. If it is not palletted, it may be necessary to secure the load to the forks using suitable chains.

4. Stop the engine before allowing anyone to approach the forks.

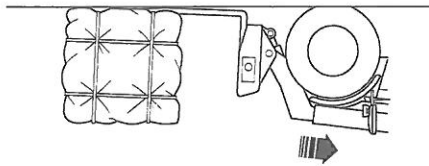


Figure 195.

4. When the forks are clear, return the boom and carriage to the road travel position.
3. Retract the boom and withdraw the forks from under the bale.

A Boom lower

B Carriage extend

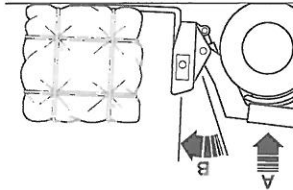
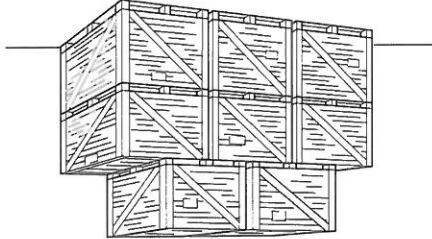


Figure 194.

Stacking Loads Box Pallets

Stack the box pallets straight and square. For extra stability, stagger the top row as shown.

Figure 197.



Cylindrical Loads

Stack the cylindrical loads tightly together and level. Put wedges at both ends of each row. If you are building a pyramid stack, put wedges at both ends of the bottom row.

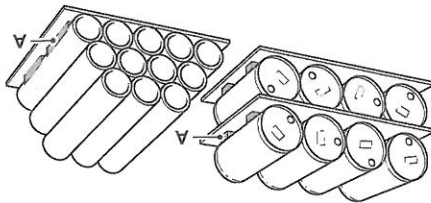


Figure 198.

A Wedge

Filling the Shovel

For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560-80 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F]

Otherwise

Page 187
Page 188

▲ **WARNING** When loading with material from a high bank or pile, remove any overhanging first. Watch out for sliding material. If overhanging material falls, you and your machine could be buried.

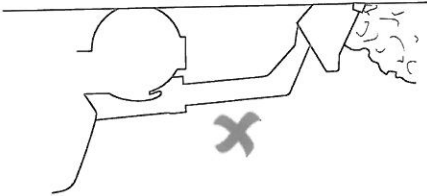
Your machine can be used with a wide variety of attachments, for example shovels. Refer to: Attachments (Page 213).

This information is not intended to be comprehensive, nor to be a substitute for adequate training. Make sure you are trained before you use an attachment.

Notice: Do not load a shovel with the boom extended. This may cause serious damage to the boom.

1. Approach the pile with the shovel level and skimming the ground.

Figure 199.



2. When you are loading from a pile of loose material, start at the bottom and follow up its face.

3. When you are loading from a pile of tightly packed material, start at the top and work down.

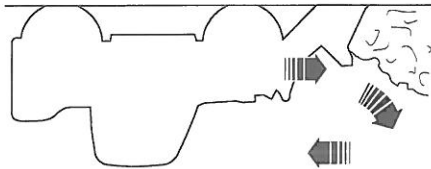
4. When you are removing material from a high pile, start at a shovel's height from the base. When the height of the pile has been reduced, begin loading from the base.

5. As the shovel enters the pile, start rolling the shovel back while raising it at the same time. This will sweep the shovel up the pile, gathering material as it goes.



6. More power can be given to the loader and speed the operation, by using transmission dump (except DTVT (Dual Technology Variable Transmission)) or inching pedal (DTV only).

Figure 200.



7. Try to fill the shovel in one pass. Half full shovels are less productive.
8. When moving the load, roll the shovel fully back to prevent spillage.

(Otherwise)

▲ WARNING When loading with material from a high bank or pile, remove any overhang first. Watch out for sliding material. If overhanging material falls, you and your machine could be buried.

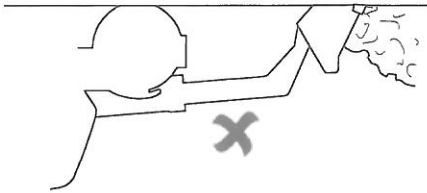
Your machine can be used with a wide variety of attachments, for example shovels. Refer to: Attachments (Page 213).

This information is not intended to be comprehensive, nor to be a substitute for adequate training. Make sure you are trained before you use an attachment.

Notice: Do not load a shovel with the boom extended. This may cause serious damage to the boom.

1. Approach the pile with the shovel level and skimming the ground.

Figure 201.



2. When you are loading from a pile of loose material, start at the bottom and follow up its face.
3. When you are loading from a pile of tightly packed material, start at the top and work down.
4. When you are removing material from a high pile, start at a shovel's height from the base. When the height of the pile has been reduced, begin loading from the base.
5. As the shovel enters the pile, start rolling the shovel back while raising it at the same time. This will sweep the shovel up the pile, gathering material as it goes.
6. More power can be given to the loader and speed the operation, by using transmission dump.

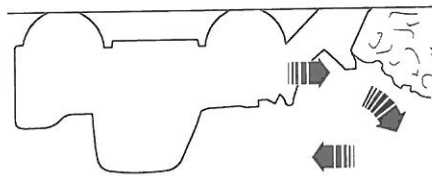


Figure 202.

7. Try to fill the shovel in one pass. Half full shovels are less productive.
8. When moving the load, roll the shovel fully back to prevent spillage.

Loading a Truck

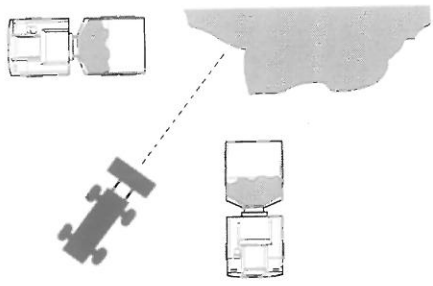
(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Put the truck(s) at an angle of about 45° to the pile. This cuts out unnecessary manoeuvring. Allow enough distance for the shovel to reach its unloading height while you are travelling, without slowing down. Keep the wind on your back. This keeps dust away from you and your machine. Move your machine as close as possible to the truck before unloading.

If the truck body is about as long as a shovel's width, tip the load into the centre of the truck. If the truck is too shovel width's long or more, load the front of the truck first.

Do not dump the material in one sudden movement. Roll the shovel forward in stages until it is empty. Use the control lever or bucket control system to rock the shovel back and forth to loosen any sticky material.

Figure 203.



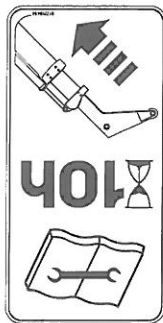
Adjusting the Boom

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Re-phasing of 3-Stage Booms

3-stage booms can go out of phase if the hydraulic rams are not fully retracted regularly. You must fully retract the boom at least once every 10h of operation.

Figure 204.



To re-phase the boom sections:

- Hold the control in the retract position with the engine at high speed until the boom sections are fully retracted.



Heating, Ventilating and Air-Conditioning (HVAC)

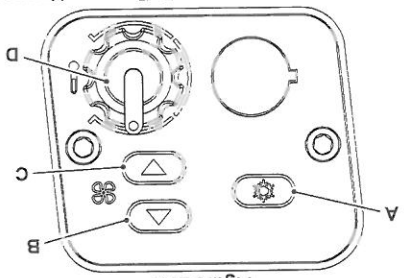
General

The operator must set the controls to obtain the best working environment in the operator station. Close doors and windows for best HVAC (Heating Ventilation Air Conditioning) performance and in dusty conditions.

Poor ventilated air can cause tiredness. Do not operate the machine for long periods without ventilation or with the operator station fully closed and the fan turned off.

Air-Conditioning Controls

(For: 526-56 [T4F], 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])



- A Air conditioning on/off switch
- C Fan speed decrease button
- B Fan speed increase button
- D Temperature control switch

Air-conditioning reduces moisture from the air and can be used to demist windows quickly in damp weather. Used in conjunction with the heater, it also makes the interior of the cab warm and dry.

The air conditioning control panel is installed on the right console.

The temperature is adjusted by the control switch and the heater fan controls.

Adjust the air vents to direct the hot air flow to the front window (for demisting) and/or the cab floor.

To obtain the best results from the air conditioning system make sure that all doors and windows are closed.

Before starting the engine make sure the air conditioning is switched off. Press the air conditioning switch to turn on/off the air conditioning system.

Heat Control

Turn the temperature control switch clockwise to increase the temperature.

Turn the temperature control switch counterclockwise to decrease the temperature.

Fan Speed Control

Press the up arrow button to increase the fan speed.

Press the down arrow button to decrease the fan speed. This functions only when the ignition key is in position I.

The current fan speed will be displayed on the LCD screen.

Face Level Fan

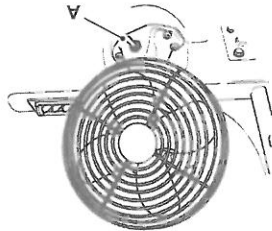


Figure 206.

A Switch - fan on/off

The face level fan is installed on the left side dash.

Press the switch to turn on/off the face level fan. This functions only when the ignition key is in position I.

Fire Extinguisher

General

Location

The fire extinguisher is stowed in a bracket behind the seat. Keep the fire extinguisher in the bracket until you need to use it.

Operation

▲ WARNING Do not use the fire extinguisher in a confined space. Make sure that the area is well ventilated during and after using the fire extinguisher.

WARNING After any use, the extinguisher must be replaced or serviced.

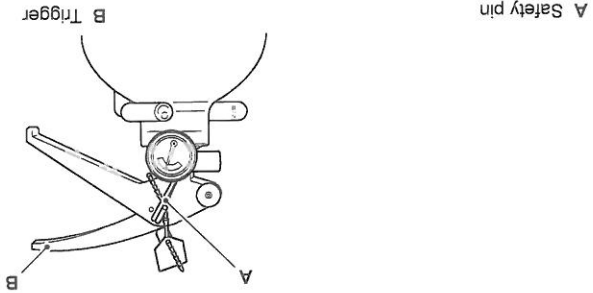
Make sure that you understand how to use the fire extinguisher. If necessary, refer to the instructions found on the fire extinguisher.

Only try to extinguish a fire if the circumstances permit and your safety is not endangered. If necessary, contact your nearest fire department.

Using the fire extinguisher:

1. Move the machine to a safe area to prevent the fire from spreading.
2. Remove the fire extinguisher from its bracket.
3. Remove the safety pin.
4. Aim directly at the fire from an upwind position, if possible.
5. Squeeze the trigger to operate the fire extinguisher, release the trigger to stop the flow.

Figure 207.



Moving a Disabled Machine

Jump-Starting the Engine

▲ WARNING In temperatures below freezing, the battery electrolyte may freeze if the battery is discharged or poorly charged. Do not use a battery if its electrolyte is frozen. To prevent the battery electrolyte from freezing, keep the battery at full charge.

If you try to charge a frozen battery or jump-start and run the engine, the battery could explode. Batteries produce a flammable gas, which is explosive. Do not smoke when checking the electrolyte levels. When jump-starting from another vehicle, make sure that the two vehicles do not touch each other. This prevents any chance of sparks near the battery.

Switch off all circuits which are not controlled by the ignition key.

Do not connect the booster (slave) supply directly across the starter motor.

Use only sound jump leads with securely attached connectors. Connect one jump lead at a time.

The machine has a negative earth electrical system. Check which battery terminal is positive (+) before making any connections. Keep metal watch straps and jewellery away from the jump lead connectors and the battery terminals - an accidental short could cause serious burns and damage equipment. Make sure you know the voltage of the machine. The booster (slave) supply must not be higher than that of the machine. Using a higher voltage supply will damage your machine's electrical system. If you do not know the voltage of your booster (slave) supply, then contact your JCB dealer for advice. Do not attempt to jump-start the engine until you are sure of the voltage of the booster (slave) supply. The negative (-) terminal on the battery is connected to frame earth.

CAUTION When the engine is running, there are rotating parts in the engine compartment. Before disconnecting the cables, make sure that you have no loose clothing (cuffs, ties etc.) which could get caught in rotating parts.

1. Set all switches in the cab to their off positions.

2. Get access to the battery.

Refer to: Access Apertures (Page 312).

3. Connect the booster cables:

3.1. Connect the positive booster cable to the positive (+) terminal on the machine battery. Connect the other end of this cable to the positive (+) terminal of the booster supply.

3.2. Connect the negative (-) booster cable to a good frame earth on the machine, away from and below the battery. A good frame earth is a part of the machine frame, free from paint and dirt. Do not use a pivot pin for an earth.

3.3. Connect the other end of this cable to the negative (-) terminal on the booster supply.

4. Do the pre-start checks.

5. Start the engine.

6. Disconnect the booster cables:

6.1. Disconnect the negative booster cable from the machine frame earth. Then disconnect it from the booster supply.

6.2. Disconnect the positive booster cable from the positive (+) terminal on the battery. Then disconnect it from the booster supply.

Recovery

For: 526-56 [T4F] Page 195
 Otherwise Page 196

(For: 526-56 [T4F])

▲ WARNING Using the recovery hitch for towing may exceed the capability of the recovery hitch. This could damage or weaken the recovery hitch or pin which can result in the trailer becoming detached from the machine.

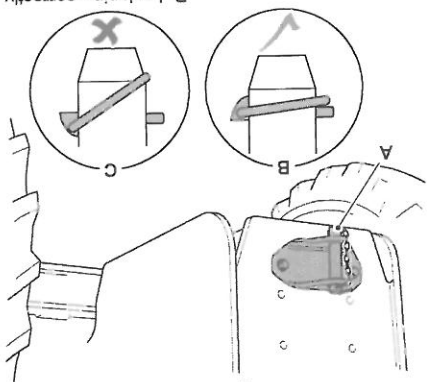
Notice: Towing a machine too far or too fast can damage the transmission. Do not tow the machine further than 1.6 km (1 mi). Use a trailer for greater distances. When towing do not travel faster than 10 km/h (6 mph). Use a rigid draw-bar. If a towing chain must be used, then use two towing vehicles. One towing vehicle should be coupled to the front of the disabled machine. The other towing vehicle should be coupled to the rear of the disabled machine, to provide braking power. The towing vehicle(s) must have enough pulling and braking power to move and stop the machine.

The recovery hitch is only suitable for occasional off highway towing with a maximum gross trailer weight of 1,000kg if it is not approved as a permanent towing hitch. Make sure you will be obeying all pertinent laws and regulations before towing.

To install the recovery hitch lock pin:

1. Install the lock pin at the rear of the machine as shown.
2. Use the lock ring to secure the pin in position.

Figure 208.



- A Recovery hitch
- C Lock pin - incorrectly secured
- B Lock pin - correctly secured

Preparing the Machine for Towing

1. Make the machine safe.
 2. Set the transmission to the neutral position. Dual Tech Variable Transmission: The engine must be switched off to enable mechanical neutral.
 3. Prepare the machine for travel.
- 3.1. If the engine cannot be run, the boom may have to be hoisted into the transport position and secured. The procedure for doing this will depend on the machine's condition and its hydraulic circuits. For assistance, contact your JCB dealer.

4. Attach the drawbar to a suitable location.
5. The machine is now ready for towing. Make sure you understand what the towing driver will be doing. Obey his instructions and all relevant regulations.
6. If the engine cannot be started, the effort required to steer the machine is greatly increased.

(Otherwise)

WARNING Do not use the hitch to recover the machine or exceed the capability of the hitch. This could damage or weaken the hitch or pin which can result in the trailer becoming detached from the machine.

The recovery hitch is only suitable for occasional off highway towing with a maximum gross trailer weight of 1,000kg. It is not approved as a permanent towing hitch. Make sure you will be obeying all pertinent laws and regulations before towing.

Preparing the Machine for Recovery

▲ Notice: Towing a machine too far or too fast can damage the transmission. Do not tow the machine further than 1.6 km (1 mi). Use a trailer for greater distances. When towing do not travel faster than 10 km/h (6 mph). Use a rigid draw-bar. If a towing chain must be used, then use two towing vehicles. One towing vehicle should be coupled to the front of the disabled machine. The other towing vehicle should be coupled to the rear of the disabled machine, to provide braking power. The towing vehicle(s) must have enough pulling and braking power to move and stop the machine.

1. Make the machine safe.

2. Set the transmission to the neutral position. Dual Tech Variable Transmission: The engine must be switched off to enable mechanical neutral.

3. Prepare the machine for travel.

3.1. If the engine cannot be run, the boom may have to be hoisted into the transport position and secured. The procedure for doing this will depend on the machine's condition and its hydraulic circuits. For assistance, contact your JCB dealer.

4. Attach the draw-bars or chains to the points marked with a recovery decal. Do not use the trailer hitch or any part of the machine other than those marked with a recovery decal.

Figure 209.



5. The machine is now ready for towing. Make sure you understand what the towing driver will be doing. Obey his instructions and all relevant regulations.
6. If the engine cannot be started, the effort required to steer the machine is greatly increased.



Lifting the Machine

General

For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70LP [T4F], 541-70 [UN3/GB3], 541T70 [T4F] Page 197
For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F] Page 198
For: 526-56 [T4F] Page 199

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541T70 [T4F])

▲ DANGER Do not stand underneath the raised load during the lifting/lowering procedure. Stand clear and to one side until the load has been safely lowered. Make sure that the area is clear of other people before lowering the load. If you do not follow these precautions you or others could be killed or seriously injured.
CAUTION You can be injured if you use incorrect or faulty lifting equipment. You must identify the weight of the item to be lifted then choose lifting equipment that is strong enough and suitable for the job. Make sure that lifting equipment is in good condition and complies with all local regulations.

Safe Lifting Procedure

Provided a hoist of adequate capacity is available, it is permissible to lift a machine directly onto a suitable transporting vehicle.

For machine weight and dimensions. Refer to: Static Dimensions (Page 377).

Make sure that the cab door is closed before lifting the machine. Refer to: Doors (Page 47).

1. Remove all attachments.

2. Make the machine safe with the boom lowered.

Refer to: Maintenance Position - Boom Lowered (Page 277).

3. Remove all loose equipment from machine exterior.

4. Check the unladen weight of the machine.

Refer to: Static Dimensions (Page 377).

5. Attach lifting equipment to lifting points.

5.1. The correct lift-point positions are identified on the machine by a label.

6. A suitable lifting beam should be used to align the chains vertically at the chassis lifting points with the drop chains of sufficient length to ensure the lifting beam is clear of the cab.

7. Check that the lifting eye is positioned directly above the machine centre of gravity.

1. Remove all attachments.
2. Make the machine safe with the boom lowered.
Refer to: Maintenance Position - Boom Lowered (Page 277).
3. Remove all loose equipment from machine exterior.
4. Check the unladen weight of the machine.
Refer to: Static Dimensions (Page 377).
5. Attach lifting equipment to lifting points.
- 5.1. The correct lift-point positions are identified on the machine by a label.
6. A suitable lifting beam should be used to align the chains vertically at the chassis lifting points with the drop chains of sufficient length to ensure the lifting beam is clear of the cab.
7. Check that the lifting eye is positioned directly above the machine centre of gravity.

Make sure that the cab door is closed before lifting the machine. Refer to: Doors (Page 47).
For machine weight and dimensions. Refer to: Static Dimensions (Page 377).

Provided a hoist of adequate capacity is available, it is permissible to lift a machine directly onto a suitable transporting vehicle.

Safe Lifting Procedure

▲ DANGER Do not stand underneath the raised load during the lifting/lowering procedure. Stand clear and lowering the load. If you do not follow these precautions you or others could be killed or seriously injured.
CAUTION You can be injured if you use incorrect or faulty lifting equipment. You must identify the weight of the item to be lifted then choose lifting equipment that is strong enough and suitable for the job. Make sure that lifting equipment is in good condition and complies with all local regulations.

(For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

A Lifting point (x4)

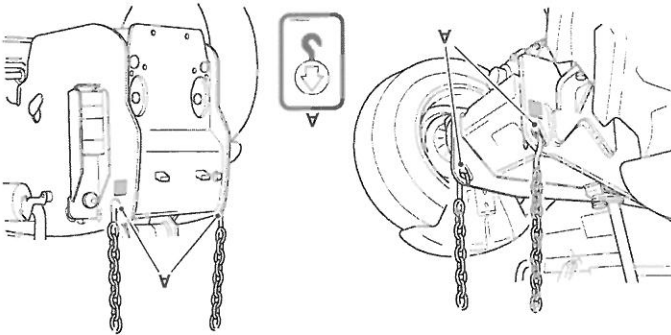


Figure 210.



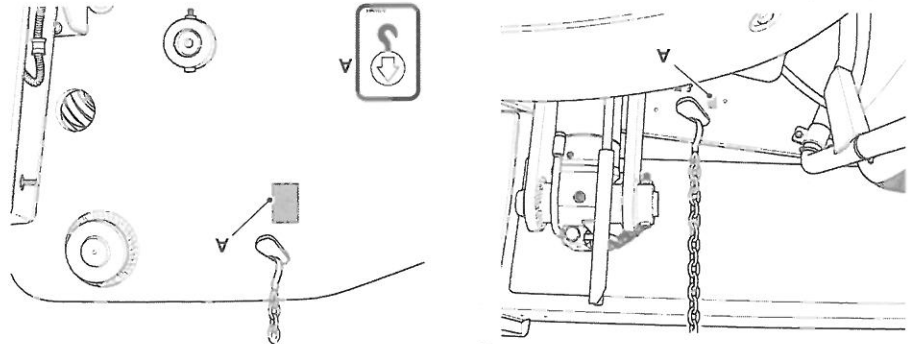


Figure 211.

(For: 526-56 [T4F])

▲ **DANGER** Do not stand underneath the raised load during the lifting/lowering procedure. Stand clear and to one side until the load has been safely lowered. Make sure that the area is clear of other people before lowering the load. If you do not follow these precautions you or others could be killed or seriously injured. **CAUTION** You can be injured if you use incorrect or faulty lifting equipment. You must identify the weight of the item to be lifted then choose lifting equipment that is strong enough and suitable for the job. Make sure that lifting equipment is in good condition and complies with all local regulations.

Safe Lifting Procedure

Provided a hoist of adequate capacity is available, it is permissible to lift a machine directly onto a suitable transporting vehicle.

For machine weight and dimensions, Refer to: Static Dimensions (Page 377).

Make sure that the cab door is closed before lifting the machine. Refer to: Doors (Page 47).

1. Remove all attachments.

2. Make the machine safe with the boom lowered.

Refer to: Maintenance Position - Boom Lowered (Page 277).

3. Remove all loose equipment from machine exterior.

4. Check the unladen weight of the machine.

Refer to: Static Dimensions (Page 377).

5. Attach lifting equipment to lifting points.

5.1. The correct lift-point positions are identified on the machine by a label.

6. A suitable lifting beam should be used to align the chains vertically at the chassis lifting points with the drop chains of sufficient length to ensure the lifting beam is clear of the cab.

7. Check that the lifting eye is positioned directly above the machine centre of gravity.

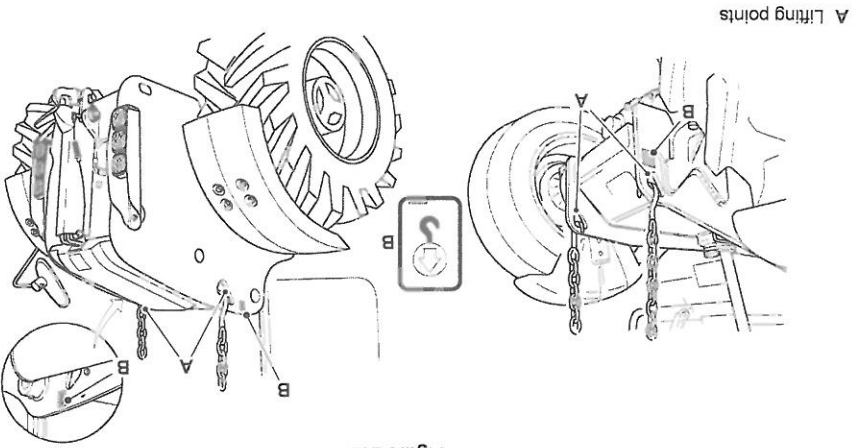


Figure 212.



Transporting the Machine

General

▲ WARNING The safe transit of the load is the responsibility of the transport contractor and driver. Any machine, attachments or parts that may move during transit must be adequately secured.

CAUTION Before moving the machine onto the trailer, make sure that the trailer and ramp are free from oil, grease and ice. Remove oil, grease and ice from the machine tyres. Make sure the machine will not foul on the ramp angle.

Check the condition of the transport vehicle before the machine is loaded on to its trailer.

Make sure that the transport trailer is suitable for the dimensions and weight of your machine. Refer to: Static Dimensions (Page 377).

Before transporting the machine make sure you will be obeying the local rules and laws regarding machine transportation of all the areas that the machine will be carried through.

Loading the Machine onto the Transporting Vehicle/Trailer

For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550-80 [UN3/GB3], 550-80 [T4F], 550-80 [UN3/GB3], 550T80 [T4F], 560-80 [T4F], 560-80 [UN3/GB3], 560-80 [T4F], 560-80 [UN3/GB3], 560T80 [T4F]

Otherwise Page 204

1. Attachments other than forks should be removed from the machine and secured separately.

2. Stop the transport vehicle on solid, level ground.

3. Put blocks at the front and rear of the wheels on the transport trailer.

4. Move the machine onto the transport vehicle.

4.1. Make sure the ramps are in their correct positions, then secure them.

4.2. Set the boom.

4.3. Slowly and carefully drive the machine onto the transport trailer.

4.4. Make the machine safe with the boom lowered.

Refer to: Maintenance Position - Boom Lowered (Page 277).

4.5. Put blocks at the front and rear of all four tyres.

4.6. Check that the overall height of the load is within regulations. Adjust if necessary.

4.7. Secure the cab.

5. Anchor the machine to the trailer with chains.

6. The correct tie down positions are identified on the machine by their labels. Refer to Figure 215.

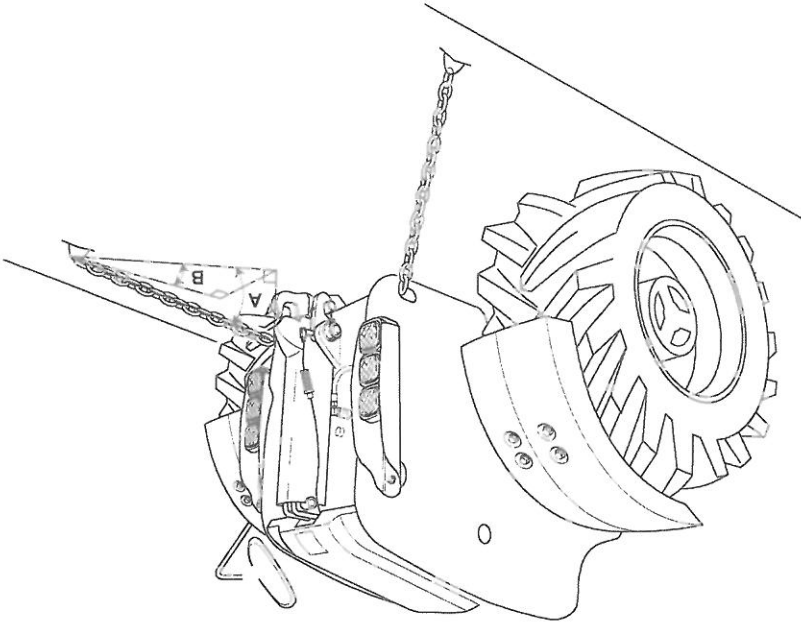


Figure 214.

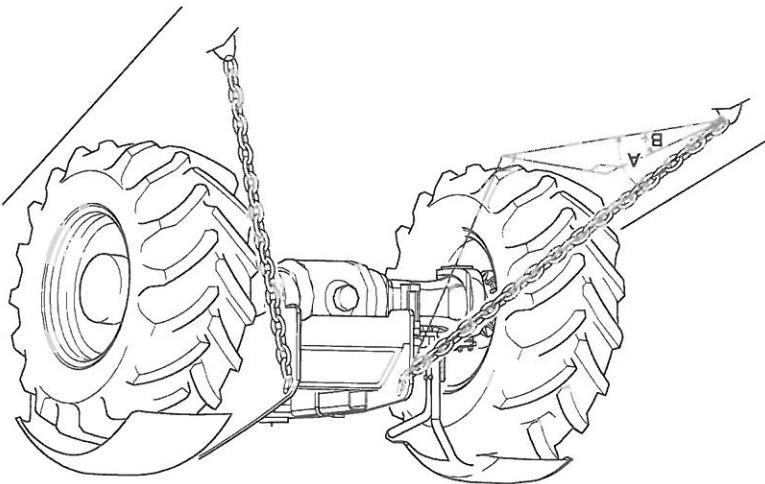


Figure 213.

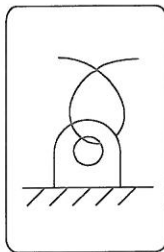


Figure 215.

7. Measure the maximum height of the machine from the ground. Make sure that the transporter driver knows the maximum height before he drives away.

The down chains must be minimum 10mm Grade 'T' 8 BS EN 818-2 (63kN Lashing capacity) and other tie-down equipment of an equal or greater capacity, appropriate chain tensioning devices must be used to prevent chain overload.

Check the down equipment before use and discard any distorted, damaged or excessively worn items. The tie down chain angles must be within the limits.

Table 32. Tie down chain angles

Model	A angle °		B angle °		Minimum chain grade (kN)	Minimum chain grade (kN)
	Min	Max	Min	Max		
526-56 front	27	37	31	50	10mm grade 'T' 8 BS 818-2 (63kN lashing capacity)	43kN
526-56 rear	15	20	31	46	10mm grade 'T' 8 BS 818-2 (63kN lashing capacity)	39kN
531-70 front	25	35	27	43	10mm grade 'T' 8 BS 818-2 (63kN lashing capacity)	46kN
531-70 rear	18	24	29	41	10mm grade 'T' 8 BS 818-2 (63kN lashing capacity)	44kN
535-95 front	25	35	27	43	10mm grade 'T' 8 BS 818-2 (100kN lashing capacity)	56kN
535-95 rear	18	24	29	41	10mm grade 'T' 8 BS 818-2 (63kN lashing capacity)	53kN
536-60 front	25	35	27	43	10mm grade 'T' 8 BS 818-2 (100kN lashing capacity)	46kN



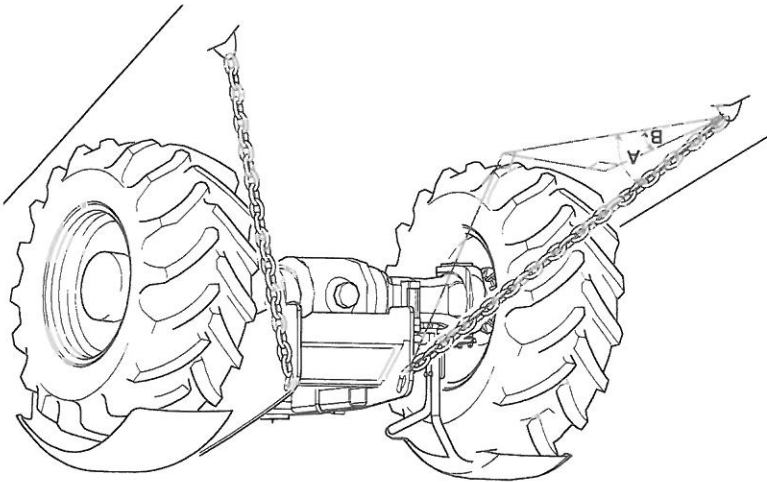
Model	A angle °		B angle °		Minimum chain grade (kN)
	Min	Max	Min	Max	
536-60 rear	18	24	29	41	10mm grade T 8 BS 818-2 (63kN lashing capacity) 44kN
536-70 front	25	35	27	43	10mm grade T 8 BS 818-2 (63kN lashing capacity) 56kN
536-70 rear	18	24	29	41	10mm grade T 8 BS 818-2 (63kN lashing capacity) 53kN
536-70 LP front	25	35	27	43	10mm grade T 8 BS 818-2 (63kN lashing capacity) 56kN
536-70 LP rear	18	24	29	41	10mm grade T 8 BS 818-2 (63kN lashing capacity) 53kN
541-70 front	25	35	27	43	10mm grade T 8 BS 818-2 (100kN lashing capacity) 56kN
541-70 rear	18	24	29	41	10mm grade T 8 BS 818-2 (63kN lashing capacity) 53kN
550-80 front	27	38	26	42	10mm grade T 8 BS 818-2 (100kN lashing capacity) 78kN
550-80 rear	18	24	28	39	10mm grade T 8 BS 818-2 (100kN lashing capacity) 74kN
560-80 front	27	38	26	42	10mm grade T 8 BS 818-2 (100kN lashing capacity) 78kN
560-80 rear	18	24	28	39	10mm grade T 8 BS 818-2 (100kN lashing capacity) 74kN

(Otherwise)

- Attachments other than forks should be removed from the machine and secured separately.
- Stop the transport vehicle on solid, level ground.
- Put blocks at the front and rear of the wheels on the transport trailer.
- Move the machine onto the transport vehicle.
- 4.1. Make sure the ramps are in their correct positions, then secure them.

- 4.2. Set the boom.
- 4.3. Slowly and carefully drive the machine onto the transport trailer.
- 4.4. Make the machine safe with the boom lowered.
Refer to: Maintenance Position - Boom Lowered (Page 277).
- 4.5. Put blocks at the front and rear of all four tyres.
- 4.6. Check that the overall height of the load is within regulations. Adjust if necessary.
- 4.7. Secure the cab.
5. Anchor the machine to the trailer with chains.

Figure 216.



- 7. Measure the maximum height of the machine from the ground. Make sure that the transporter driver knows the maximum height before he drives away.
The down chains must be minimum 10mm Grade 'T' 8 BS EN 818-2 (63kN Lashing capacity) and other tie-down equipment of an equal or greater capacity, appropriate chain tensioning devices must be used to prevent chain overload.
Check the down equipment before use and discard any distorted, damaged or excessively worn items. The tie down chain angles must be within the limits.

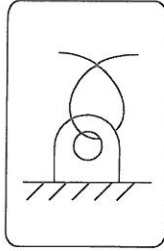


Figure 218.

- 6. The correct tie down positions are identified on the machine by their labels. Refer to Figure 215. Refer to Figure 218.

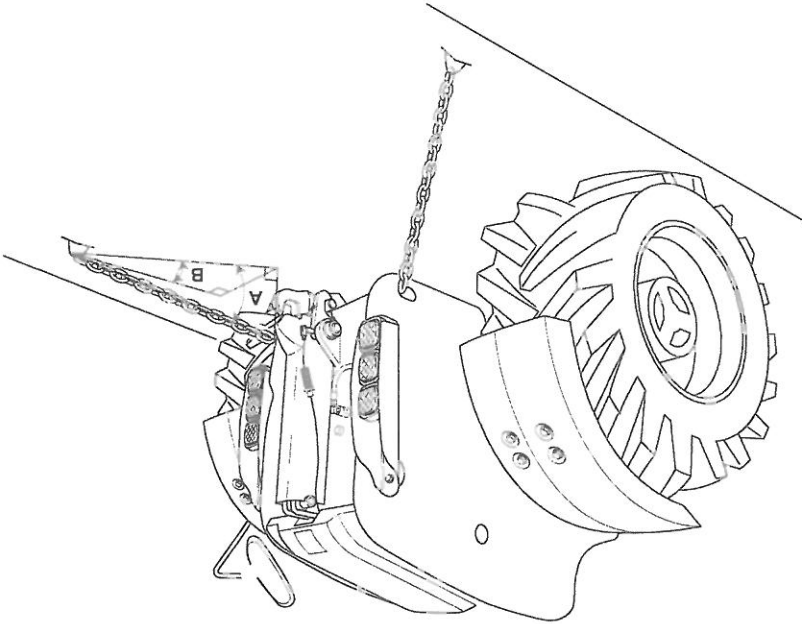


Figure 217.





Operating Environment

General

Operating in Dusty or Sandy Areas

1. Air Cleaner. Frequently check, clean or replace the elements regardless of the inspection interval. (Not the safety element).
2. Securely tighten the hydraulic oil tank filler cap to prevent sand and dust from entering the hydraulic system.
3. Check for debris accumulation below the engine.

Operating in Coastal Regions

1. Check that all the plugs, bolts and fasteners are all tightened properly.
2. After daily operations, wash the machine thoroughly and take special care when cleaning the electrical devices and hydraulic cylinders to prevent salt entry and eventual corrosion.

Operating on Wet or Soft Ground

1. Clean the Machine. Moisture or mud will cause the paint, wiring and metallic parts to deteriorate. When operating the machine keep it as dry as possible and regularly grease the machine.
2. Check for debris accumulation below the engine.

Operating in Low Temperatures

(For: 526-56 [T4F], 531-70 [T4F], 531-70 [T4F], 535-95 [UN3/GB3], 535-95 [T4F], 536-60 [UN3/GB3], 536-60 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536-60 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 541-70 [UN3/GB3], 541-70 [T4F], 550-80 [T4F], 550-80 [T4F], 550-80 [T4F], 550-80 [T4F], 560-80 [T4F], 560-80 [T4F])

▲ Notice: Do not connect two batteries in series to give 24 V for starting as this can cause damage to the electrical circuits.

1. Use the correct viscosity engine lubricating oil.
Refer to: Fluids, Lubricants and Capacities (Page 432).
2. Use the correct viscosity hydraulic oil.
3. If available, use a low temperature diesel fuel.
4. Use the correct coolant mixture.
5. Keep the battery at full charge.

6. Fill the fuel tank and DEF (Diesel Exhaust Fluid) tank (if applicable) at the end of each work period, this will help to prevent condensation forming on the tank walls. Do not bring the tank in low temperatures, use the DEF level gauge on the instrument panel (ignition on).
7. Protect the machine when its not in use. Park the machine inside a building or cover it with a tarpaulin.
8. Install a cold weather starting aid. In very low temperatures (less than the value shown) additional starting aids may be needed. For example are fuel, oil and coolant heaters. Ask your JCB dealer for advice.
Temperature: -18°C (-0.4°F)
9. Remove snow from the engine compartment before starting otherwise snow could get into the air filter.
10. Always follow the starting procedure applicable to the current ambient temperature.

Refer to: Starting the Engine (Page 54).



For the machine hydraulic system to work efficiently, the machine hydraulic oil temperature should be a minimum of 10°C (50.0°F). If the air temperature is below freezing, do as follows:

1. Park the machine on solid, level ground with the engine running.
2. Apply the park brake and place the forward/reverse lever in the neutral position.
3. For every degree below 0 degrees Celsius the engine should be left at low idle for one minute.
4. With the engine at approximately 1500 rpm:
 - 4.1. Raise and lower the lift arm five times.
 - 4.2. Extend and retract the lift arm five times.
 - 4.3. Dump and crowd the carriage five times.

Operating in High Temperatures

For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560U80 [T4F]

Otherwise Page 208
..... Page 208

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560U80 [T4F])

1. Use the correct viscosity engine lubricating oil.
 2. Use the correct coolant mixture.
 3. Check the coolant system regularly, keep the coolant at the correct level. Make sure there are no leaks.
 4. Keep the cooling pack and engine clean, regularly remove dirt and debris from the cooling pack and the engine.
 5. Check the air vents. Make sure that the air vents to and from the engine compartment are not blocked.
 6. Check the engine pre-cleaner regularly (if installed).
 7. Check the battery electrolyte level.
- (Otherwise)

1. Use the correct viscosity engine lubricating oil.
2. Use the correct coolant mixture.
3. Check the coolant system regularly, keep the coolant at the correct level. Make sure there are no leaks.
4. Keep the cooling pack and engine clean, regularly remove dirt and debris from the cooling pack and the engine.
5. Check the air vents. Make sure that the air vents to and from the engine compartment are not blocked.
6. Check the engine pre-cleaner regularly (if installed).
7. Check the battery electrolyte level.



Refuelling

General

▲ CAUTION Spilt fuel may cause skidding and therefore accidents. Clean any spilt fuel immediately.

Do not use fuel to clean the machine.

When filling with fuel, choose a well aired and ventilated area.

Notice: Consult your fuel supplier or JCB dealer about the suitability of any fuel you are unsure of.

Low Fuel Levels

If you operate the machine on very low fuel levels, then air can enter the fuel system. To prevent the entry of air, always add more fuel when the fuel gauge shows a low level of fuel.

If air enters the fuel system, the engine speed will vary dramatically and low power will be experienced. The symptoms may be made worse when the machine operates on steep slopes.

If you increase the engine speed or load when there is air in the fuel system, then damage to the engine can occur.

If the fuel supply contains air, you must stop the engine, fill the fuel tank then bleed the fuel system to remove the air. Refer to: Bled (Page 340).

You must bleed the fuel system after changing the fuel filter(s).

Filling the Tank

For: 550-80 [14F], 550U80 [14F]
For: 526-56 [14F], 531-70 [14F], 535-95 [14F], 535-95 [UN3/GB3], 535T95 [14F], 536-60 [14F], 536-60 [UN3/GB3], 536T60 [14F], 536T60 [14F], 536T60LP [14F], 541-70 [14F], 541-70 [UN3/GB3], 541T70 [14F], 550-80 [14F], 550U80 [14F], 560-80 [14F], 560U80 [14F]
Page 209
Page 210

(For: 550-80 [14F], 550U80 [14F])

Before you add the fuel to the machine. Refer to: Fluids, Lubricants and Capacities (Page 432). If you use the incorrect type of fuel or fuel which is contaminated, then damage to the fuel injection system can occur.

WARNING! Do not use petrol in this machine. Do not mix petrol with the diesel fuel. In storage tanks the petrol will form flammable vapours.

At the end of every working day, fill the tank with the correct type of fuel. This will prevent overnight condensation from developing in the fuel.

1. Make the machine safe.

Refer to: Maintenance Positions (Page 277).

2. Remove all unwanted material around the fuel cap.

3. Remove the fuel cap.

Refer to: Service Points (Page 281).

4. Add the fuel through the filler neck as necessary.

5. Install the fuel cap.

6. Lock the fuel cap to prevent theft and tampering.

▲ Notice: Make sure that you use the DEF filler and not the fuel filler. Even small amounts of DEF in the fuel tank may damage the system. If there is any possibility that the fuel system has been contaminated with DEF, the engine must not be started before cleaning the system. Contact your JCB dealer.

Filling the Diesel Exhaust Fluid Tank

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
2. If the machine has a protective flap, you must move the flap to get access to the filler cap. Lift the corner of the protective flap then attach to the hook.
3. Remove all unwanted material around the diesel fuel cap.
4. Remove the diesel fuel tank cap. Refer to Figure 219.
5. Add the fuel through the filler neck as necessary.
6. Install the diesel fuel tank cap.
7. Lock the diesel fuel tank cap to prevent theft and tampering.
8. Lower the protective flap.

▲ Notice: Make sure that you use the fuel filler and not the DEF filler. Even small amounts of fuel in the DEF tank may damage the system. If there is any possibility that the DEF system has been contaminated with fuel, the engine must not be started before cleaning the system. Contact your JCB dealer.

Filling the Diesel Tank

DEF has a totally separate tank of its own. You can recognise your DEF tank by its blue cap or an AdBlue label.

Always replenish the DEF tank at the same as you refill the diesel tank. It is recommended that the DEF tank is not continually run down to the minimum, as this may drag contamination into the system and reduces the likelihood of an engine de-rate due to DEF level.

Fill the fuel tank and DEF (Diesel Exhaust Fluid) tank (if applicable) at the end of each work period, this will help to prevent condensation forming on the tank walls.

Refer to: Fluids, Lubricants and Capacities (Page 432). If you use the incorrect type of fuel or fuel which is contaminated, then damage to the fuel injection system can occur.

Notice: No warranty liability whatsoever will be accepted for failure of the emissions control system where the failure is attributed to contamination of the diesel fuel.

Notice: No warranty liability whatsoever will be accepted for failure of the emissions control system where the failure is attributed to contamination of the diesel exhaust fluid (DEF).

Notice: No warranty liability whatsoever will be accepted for failure of fuel injection equipment where the failure is attributed to the quality and grade of the fuel used.

▲ WARNING Do not use petrol in this machine. Do not mix petrol with the diesel fuel. In storage tanks the petrol will form flammable vapours.

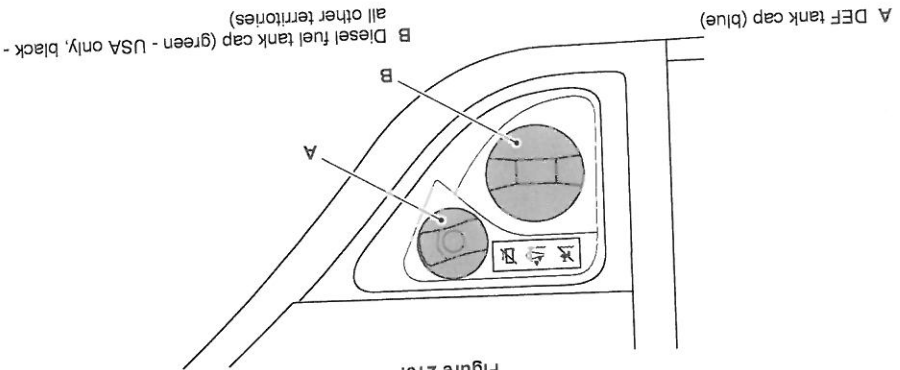
(For: 526-56 [T4F], 531-T70 [T4F], 531-T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 536T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541-T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Machines with SCR (Selective Catalytic Reduction) after-treatment: If the engine and has been run low on DEF and the engine has entered a de-rate state due to low DEF you must fill the machine with DEF and cycle the ignition twice to remove the fault.

With the ignition on and the engine off it is possible to monitor the DEF level on the instrument panel as you fill the tank.

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
2. Remove all unwanted material around the DEF cap.
3. Remove the DEF cap.
4. Add the DEF through the filler neck as necessary.
5. Install the DEF cap.
6. Lock the DEF cap to prevent theft and tampering.

Figure 219.



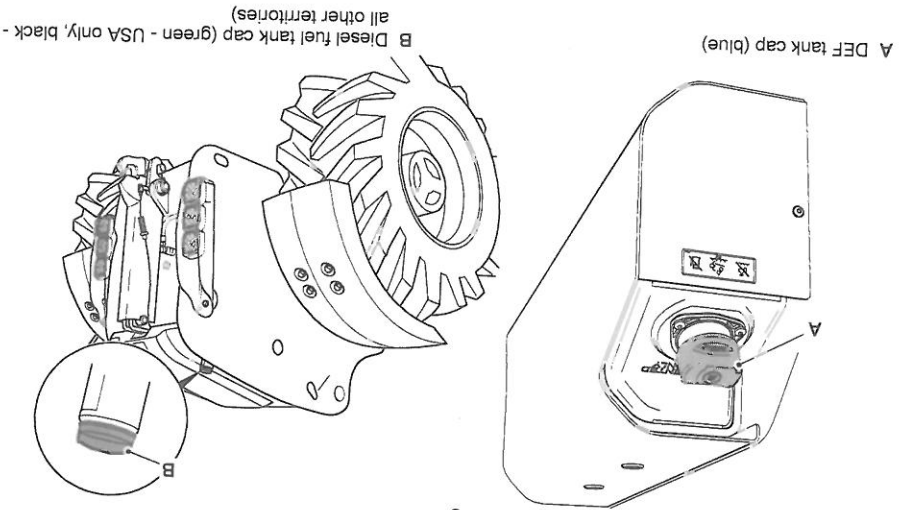


Figure 220.





Attachments Working with Attachments

Introduction

Attachments

Use only the JCB approved attachments that are specified for your machine. Operating with non-specified attachments can overload the machine, causing possible damage and machine instability which could result in injury to yourself or others.

The use of non-approved attachments could invalidate your warranty and cause damage to both machine and attachments.

Metal Splinters

You can be injured by flying metal splinters when driving metal pins in or out. Use a soft faced hammer or copper drift to remove and install metal pins. Always wear personal protective equipment.

Attachments

If you have an attachment which is not covered in the Operator's Manual do not install it, use it or remove it until you have obtained, read and understood the pertinent information. Install attachments only on the machines for which they were designed.

Some attachments are supplied with the instructions on the safety, installation, removal, operation and maintenance procedures. Read and fully understand these procedures before the attachment is installed, used and serviced. If there is anything you do not understand, ask your JCB dealer.

Before you use an attachment, make sure you understand how the attachment will affect the operational safety. When an attachment is installed, there may be changes in the machines centre of gravity or overall dimensions. This change can effect for example, the machine stability, the gradients on which it is safe to operate or the safe distance from power lines.

Practice with an attachment off the job before you work with it for the first time.

A JCB attachment is designed and manufactured specifically to suit the machines hydraulic system, mounting components and safe load requirements.

An attachment which is not designed for use with the machine can cause damage and create a safety hazard for which JCB cannot be held responsible. Also the machines warranty and any other legislative compliance can be affected by the use of non JCB approved attachments.

If your machine needs the hydraulic system adapting to use an auxiliary attachment, you must consult your JCB dealer. Only suitably qualified personnel must re-route the hydraulic hoses.

All optional attachments must be used within the limits for the machine and will have limits on their operation, for example, the lifting capacity, speeds, hydraulic flow rates. Always check the instruction supplied with the attachment, or if in doubt check with a JCB Dealer for advice. Some specification limits may also be shown on the data/rating plate on the attachment.

This section of the Operator's Manual includes general information on the operation of the attachment and the procedures for the installation and removal of the attachment.

Attachments for your Machine

▲ Notice: Some attachments (e.g. muck fork/push-off) can cause damage to the front tyres when the boom is lowered and the carriage is tilted forward. Exercise caution when lowering the boom with the carriage tilted forward when a muck fork/push-off type attachment is installed.

▲ Notice: Do not extend the boom when an attachment is connected to the high flow auxiliary connectors (if installed). Severe damage to the hoses will result.

All standard machines are installed with a Q-Fit carriage.



If the Q-Fit Carriage is changed or modified it may alter the setting of the LMI (Load Moment Indicator). Always consult your JCB distributor.

Attachments will help increase the productivity of your machine, for more information contact your JCB distributor.

Remember, do not operate attachments until you have read and fully understand the attachment operating instructions.

For the Sideshift Carriage, Fork Mounted Hook, Extension Jib and Roof Truss Jib, the information in this book includes installation/removal, operation and routine maintenance.

For other attachments, please refer to the manufacturer's manual for the attachment (if supplied). General installation and removal procedures for other attachments are, however, included here.

Do not operate attachments until the hydraulic oil has reached its normal working temperature.

Do not use this machine in conjunction with a sweeper/collector unless the attachment is connected to optional high flow equipment auxiliary connections. Allow the hydraulic system to cool between each period of use. 30min An approved removable load back rest extension can be used when using forks to stop loose objects from falling to help protect the operator and machine.

Connecting/Disconnecting Hydraulic Hoses

For: 526-56 [T4F] Page 214
Otherwise Page 218

(For: 526-56 [T4F])

Some attachments are hydraulically powered. The following procedures show how to connect and disconnect the hydraulic hoses safely:

Connecting the Hydraulic Hoses

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
2. Vent the hydraulic system.
Refer to: Discharge (Page 361).
3. If necessary, remove the blanking caps.
4. Check the hoses and adaptors for damage.
Refer to: Check (Condition) (Page 361).
5. Connect the hoses:
5.1. Make sure that the hose is not twisted. Pressure applied to a twisted hose can cause the hose to fail or the connections to loosen.

2. Vent the hydraulic system.

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).

Disconnecting the Hydraulic Hoses

- 6.1. Start the engine.
 - 6.2. Operate the related controls to increase the pressure in the hydraulic system.
 - 6.3. Stop the engine then remove the ignition key.
 - 6.4. Check for indications of leakage at the hose connections. Correct, as necessary.
6. Check for leaks:

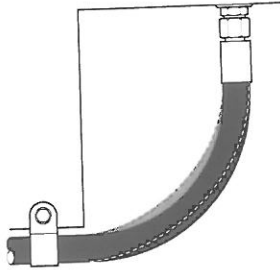


Figure 223.

5.5. To allow for length changes when the hose is pressurised, do not clamp at the bend. The curve absorbs the change.

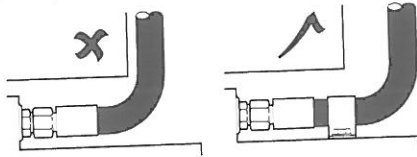


Figure 222.

moving parts, etc.

- 5.4. Use the hose clamps (where possible) to support long hose runs and keep the hoses away from
- 5.3. Make sure that the hose does not touch parts which can rub or cause abrasion.
- 5.2. Make sure that the hose does not touch hot parts. High ambient temperatures can cause the hose to fail.

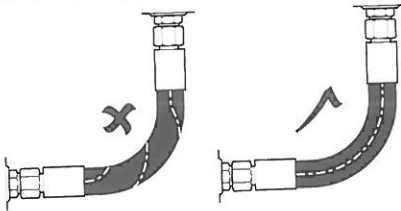


Figure 221.



Refer to: Discharge (Page 361).

3. Disconnect the hoses.

4. Check the hoses and adaptors for damage.

Refer to: Checking For Damage (Page 257).

5. If necessary, install the blanking caps.

6. Check for leaks:

6.1. Start the engine.

6.2. Operate the related controls to increase the pressure in the hydraulic system.

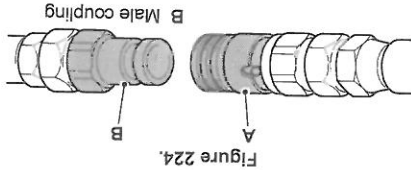
6.3. Stop the engine then remove the ignition key.

6.4. Check for indications of leakage at the hose connections. Correct, as necessary.

Quick Release Couplings

▲ WARNING The external surfaces of the couplings must be clean before connecting or disconnecting. Ingress of dirt will cause fluid leaks and difficulty in connecting or disconnecting. You could be killed or seriously injured by faulty quick release couplings.

The flat face quick release couplings allow the operator to remove and install attachments swiftly and efficiently. Generally, your machine pipework will be installed with a female coupling and a male coupling. The optional attachment hoses will also be installed with a female coupling and a male coupling.



A Female coupling

The quick release couplings will be trouble free and relatively easy to connect and disconnect, if they are kept clean and used correctly. The recommendations listed below must always apply when using flat face quick release couplings.

Read the correct connecting and releasing procedures before you install or remove any optional attachment connected with quick release couplings.

Essential do's:

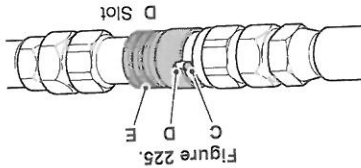
- Before connecting or removing any hydraulic hose, the residual hydraulic pressure trapped in the service hose line must be vented. Make sure the hose service line has been vented before connecting or removing the hoses.
- Always wipe the two mating faces clean before connecting.
- Use caps and plugs when the couplings are disconnected.
- Always align the external locking ball (if used) with the notch in the locking sleeve and then pull the locking sleeve back fully to disconnect.
- If a coupling sticks, first check that pressure has been released. Make sure the locking ball and notch in the locking sleeve are aligned, pull back the sleeve and twist the couplings apart. Sticking is normally caused by dirt in the coupling or physical damage due to abuse.
- Connect and disconnect the new couplings two or three times to work the PTFE seals. Sometimes a new coupling will stick if the seal has not been worked.
- When connecting the couplings, only apply the spanner or grips to the hexagon and nowhere else.
- Avoid damage to the coupling faces. Burrs and scratches cause damage to the seals and cause leaks.
- They can also impede connection and disconnection of the couplings.

Refer to: Auxiliary Circuit Controls (Page 160).
Duration: 2-3s

- 1.1. Pull and hold the hydraulic venting knob.
1. Remove any residual hydraulic pressure trapped in the service line hose.

Disconnecting Quick Release Couplings

C Ball
E Sleeve



5. Where applicable, rotate the sleeve half a turn and make sure that the locking ball does not align with the slot.
 4. Connect the male coupling into the female coupling.
 3. Make sure that ball in the female coupling is located in one of its slots.
 2. Wipe the two faces of the male and female couplings and make sure they are clean.
 - 1.4. Release the knob to stop the venting function.
 - 1.3. If installed auxiliary II will require selection in order to vent.
 - 1.2. Some attachments may require the hydraulic venting knob to be pulled for longer.
- Refer to: Auxiliary Circuit Controls (Page 150).
Duration: 2-3s
- 1.1. Pull and hold the hydraulic venting knob.
 1. Remove any residual hydraulic pressure trapped in the service line hose.

Connecting Quick Release Couplings

- Never try to reconnect using a damaged half coupling as this will destroy the seals in the mating half and necessitate replacement of both halves.
 - Do not leave the coupling where it may be run over by a machine or otherwise crushed, this will distort the sleeve and prevent connection and disconnection.
 - Never try to turn the sleeve when the coupling is disconnected as this will cause the locking ball to jam under the locking sleeve and damage the coupling.
 - Never try to strip the coupling down, there are no user serviceable parts. If the coupling is damaged it must be replaced with a new one.
 - Never hit the centre poppet of the coupling to try and release the locked in pressure. This can cause irreparable damage to the coupling and serious injury.
 - When connecting the couplings, never clamp on the sleeve of the female or nose of the male, this will cause distortion and/or damage.
 - Never subject the couplings to external forces, especially side load. This can decrease the life of the coupling or cause failure.
 - Never allow the torsional forces transmitted from the hoses to unscrew/screw together the couplings.
 - Never use a coupling as a plug.
 - Do not connect and disconnect with pressure in the line unless the coupling type is specifically designed to do so.
- Essential don'ts:
- Periodically lubricate the internal locking balls on the female half of the coupling with silicone grease.

- 1.2 Some attachments may require the hydraulic venting knob to be pulled for longer.
- 1.3 If installed auxiliary II will require selection in order to vent.
- 1.4 Release the knob to stop the venting function.
2. Where applicable, align the slot with ball.
3. Pull back the sleeve to release the coupling.

(Otherwise)

Some attachments are hydraulically powered. The following procedures show how to connect and disconnect the hydraulic hoses safely.

Connecting the Hydraulic Hoses

1. Make the machine safe.
- Refer to: Maintenance Positions (Page 277).
2. Vent the hydraulic system.
- Refer to: Discharge (Page 361).
3. Check the hoses and adaptors for damage.
- Refer to: Check (Condition) (Page 361).
4. Connect the hoses:
- 4.1. Make sure that the hose is not twisted. Pressure applied to a twisted hose can cause the hose to fail or the connections to loosen.

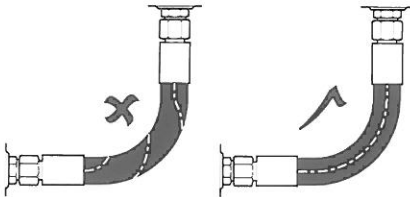


Figure 226.

- 4.2. Make sure that the hose does not touch hot parts. High ambient temperatures can cause the hose to fail.
- 4.3. Make sure that the hose does not touch parts which can rub or cause abrasion.
- 4.4. Use the hose clamps (where possible) to support long hose runs and keep the hoses away from moving parts, etc.

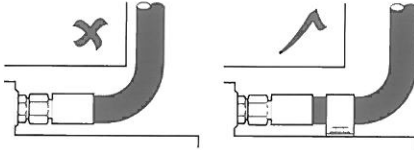


Figure 227.

- 4.5. To allow for length changes when the hose is pressurised, do not clamp at the bend. The curve absorbs the change.

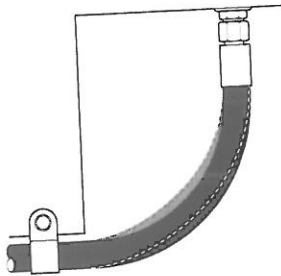


Figure 228.

- 5.1. Start the engine.
- 5.2. Operate the related controls to increase the pressure in the hydraulic system.
- 5.3. Stop the engine then remove the ignition key.
- 5.4. Check for indications of leakage at the hose connections. Correct, as necessary.

Disconnecting the Hydraulic Hoses

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
2. Vent the hydraulic system.
Refer to: Discharge (Page 361).
3. Disconnect the hoses.
4. Check the hoses and adaptors for damage.
Refer to: Checking For Damage (Page 257).
5. If necessary, install the blanking caps.
6. Check for leaks:

- 6.1. Start the engine.
- 6.2. Operate the related controls to increase the pressure in the hydraulic system.
- 6.3. Stop the engine then remove the ignition key.
- 6.4. Check for indications of leakage at the hose connections. Correct, as necessary.

Quick Release Couplings

▲ WARNING The external surfaces of the couplings must be clean before connecting or disconnecting. Ingress of dirt will cause fluid leaks and difficulty in connecting or disconnecting. You could be killed or seriously injured by faulty quick release couplings.

The flat face quick release couplings allow the operator to remove and install attachments swiftly and efficiently. Generally, your machine pipework will be installed with a female coupling and a male coupling. The optional attachment hoses will also be installed with a female coupling and a male coupling.

1. Remove any residual hydraulic pressure trapped in the service line hose.
Refer to: Console Switches (Page 29)
- ### Connecting Quick Release Couplings

- Do not connect and disconnect with pressure in the line unless the coupling type is specifically designed to do so.
- Never use a coupling as a plug.
- Never allow the torsional forces transmitted from the hoses to unscrew/screw together the couplings.
- Never subject the couplings to external forces, especially side load. This can decrease the life of the coupling or cause failure.
- When connecting the couplings, never clamp on the sleeve of the female or nose of the male, this will cause distortion and/or damage.
- Irreparable damage to the coupling and serious injury.
- Never hit the centre poppet of the coupling to try and release the locked in pressure. This can cause must be replaced with a new one.
- Never try to strip the coupling down, there are no user serviceable parts. If the coupling is damaged it under the locking sleeve and damage the coupling.
- Never try to turn the sleeve when the coupling is disconnected as this will cause the locking ball to jam the sleeve and prevent connection and disconnection.
- Do not leave the coupling where it may be run over by a machine or otherwise crushed, this will distort the sleeve and prevent replacement of both halves.
- Never try to reconnect using a damaged half coupling as this will destroy the seals in the mating half and necessitate replacement of both halves.
- Essential don'ts:
 - Periodically lubricate the internal locking balls on the female half of the coupling with silicone grease.
 - They can also impede connection and disconnection of the couplings.
 - Avoid damage to the coupling faces. Burrs and scratches cause damage to the seals and cause leaks.
 - When connecting the couplings, only apply the spanner or grips to the hexagon and nowhere else.
 - coupling will stick if the seal has not been worked.
 - Connect and disconnect the new couplings two or three times to work the PTFE seals. Sometimes a new caused by dirt in the coupling or physical damage due to abuse.
 - in the locking sleeve are aligned, pull back the sleeve and twist the couplings apart. Sticking is normally If a coupling sticks, first check that pressure has been released. Make sure the locking ball and notch sleeve back fully to disconnect.
 - Always align the external locking ball (if used) with the notch in the locking sleeve and then pull the locking Use caps and plugs when the couplings are disconnected.
 - Always wipe the two mating faces clean before connecting.
 - Always use caps and plugs when the couplings are disconnected.
- Before connecting or removing any hydraulic hose, the residual hydraulic pressure trapped in the service hose line must be vented. Make sure the hose service line has been vented before connecting or removing the hoses.

Essential do's:

- Read the correct connecting and releasing procedures before you install or remove any optional attachment connected with quick release couplings.
- The quick release couplings will be trouble free and relatively easy to connect and disconnect, if they are kept clean and used correctly. The recommendations listed below must always apply when using flat face quick release couplings.

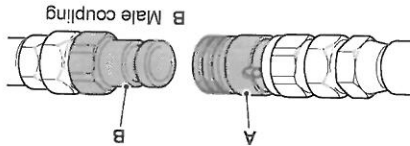
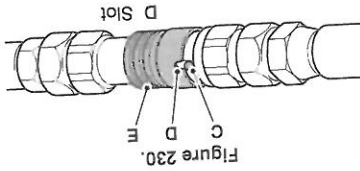


Figure 229



- 1.1. Press and hold the hydraulic venting switch. A notification will appear on the instrument panel and the buzzer will sound.
- Duration: 2-3s
- 1.2. Some attachments may require the hydraulic venting switch to be pressed for longer.
- 1.3. If installed auxillary II will be automatically vented, and does not need to be pre-selected.
- 1.4. Release the switch to stop the venting function.
2. Wipe the two faces of the male and female couplings and make sure they are clean.
3. Make sure that ball in the female coupling is located in one of its slots.
4. Connect the male coupling into the female coupling.
5. Where applicable, rotate the sleeve half a turn and make sure that the locking ball does not align with the slot.



C Ball
E Sleeve

Disconnecting Quick Release Couplings

1. Remove any residual hydraulic pressure trapped in the service line hose.
 - 1.1. Press and hold the hydraulic venting switch. A notification will appear on the instrument panel and the buzzer will sound.
 - Duration: 2-3s
 - 1.2. Some attachments may require the hydraulic venting switch to be pressed for longer.
 - 1.3. If installed auxillary II will be automatically vented, and does not need to be pre-selected.
 - 1.4. Release the switch to stop the venting function.
2. Where applicable, align the slot with ball.
3. Pull back the sleeve to release the coupling.



Tool Carrier

General

(For: 526-56 [74F])

▲ **WARNING** Do not retract the locking pins when the attachment is raised, the attachment could fall and kill or seriously injure someone. Retract the locking pins only after the attachment has been placed on the ground.

Mechanical Pin Locking

Installing Attachments

1. Position the attachment.
 - 1.1. Make sure the attachment is on firm, level ground.
 - 1.2. Make sure the attachment will not roll over.
2. Remove the existing attachment.
3. Leave the tool carrier lock pin disengaged or remove from stowage position.
4. Engage the attachment.
 - 4.1. Make sure that the carrier lock pin is withdrawn.
 - 4.2. Use the control levers to align the carrier with the attachment and just below the attachment hook plates.
 - 4.3. Apply the park brake.
 - 4.4. Set the transmission to neutral.
 - 4.5. Use the boom controls to engage the support bar on the carrier into the hook plates on the attachment.
 - 4.6. Make sure that both hook plates are engaged equally.
 - 4.7. Lift and tilt the carrier back, to align the locking holes in the carrier with those in the attachment.
5. Insert the lock pin.
 - 5.1. Make sure that the transmission is set to neutral and that the park brake is on.
 - 5.2. Stop the engine.
 - 5.3. Remove the ignition key.
 - 5.4. At the carrier, insert the lock pin into the locking holes in the carrier and attachment.
 - 5.5. Secure with lynch pin.
 - 5.6. If a second person is to do this job keep your hands and feet away from the controls until he is clear of the machine.
6. If the attachment is hydraulically operated, connect the hoses.

Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).

- 6.4. Tilt the carrier forward slowly to withdraw the lower end of the carrier from the attachment.
- 6.3. Start the engine.
- 6.2. Install the locking pin in stowage position.
- 6.1. Remove the lynch pin and withdraw the locking pin.
6. Remove the locking pin.
5. Remove the ignition key.
4. Stop the engine.
3. Make sure the transmission is set to neutral and the park brake is applied.
2. If the attachment is hydraulically operated, connect the hoses.
Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).
1. Lower the attachment to the ground.

▲ WARNING Keep other people clear of the area while you disengage the attachment. If a second person is to be involved in this procedure, ensure that he keeps clear of the machine and attachment until signalled by you to proceed.

Removing Attachments

- B Lock pin
- D Lynch pin

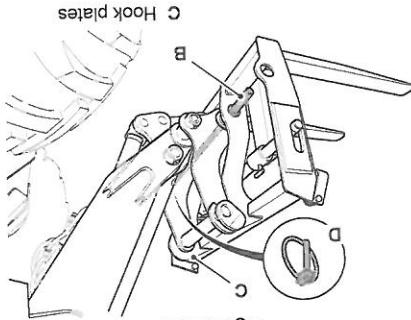


Figure 232.

- A Lock pin

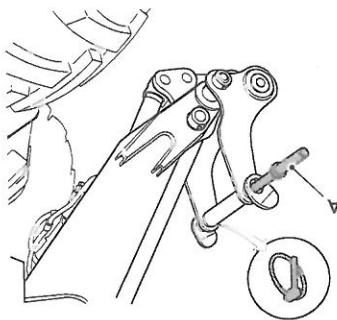


Figure 231.



- 6.5. Then lower the boom slowly to withdraw the carrier from the attachment hook plates.
- 6.6. Carefully reverse the machine away from the attachment or retract the boom.

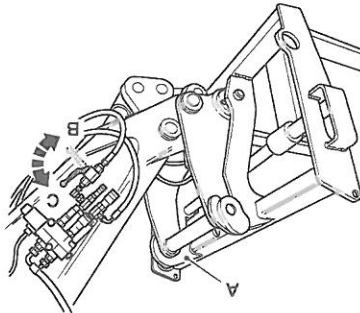
Hydraulic Pin Locking

The hydraulic pin locking option allows attachments to be installed or removed without leaving the cab.

Installing Attachments

1. Park the machine on firm level ground.
2. Apply the park brake and set the transmission to neutral.
3. Lower the boom to the ground.
4. Move the hydraulic pin locking isolation valve to the horizontal position.
5. The hydraulic pin locking isolation valve is only installed to machines with alternative boom auxiliary options.
6. Use the boom controls to engage the support bar on the carriage in to the hook plates.
7. Make sure that both hook plates are engaged equally.
8. Lift and tilt the carriage back, to align the locking holes in the carriage with those in the attachment.
9. Turn on the hitch/auxiliary switch.
10. Move the thumb switch backwards to engage the locking pins.
11. Move the hydraulic pin isolation valve to the vertical position. In this position the locking pins are isolated and the auxiliary circuit is active.
12. If the attachment is hydraulically operated, connect the hoses.
Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).

Figure 233.



- A Hook plates
- C Isolation valve - active position
- B Isolation valve - inactive position

1. Park the machine on firm level ground.
2. Apply the park brake and set the transmission to neutral.
3. Lower the boom to the ground.
4. If the attachment is hydraulically operated, then disconnect the hoses.
Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214)
5. Move the hydraulic pin locking isolation valve to the horizontal position.
6. Turn on the hitch/auxiliary switch.
7. Move the thumb switch forwards to disengage the locking pins.
8. Tilt the carriage forward slowly to withdraw the lower end of the carriage from the attachment.
9. Lower the boom slowly to withdraw the carriage from the attachment hook plates.
10. Carefully reverse the machine away from the attachment or retract the boom.
11. Move the hydraulic pin locking isolation valve to the vertical position. In this position the locking pins are isolated and the auxiliary circuit is active.

Removing Attachments

A Backward - engage locking pins

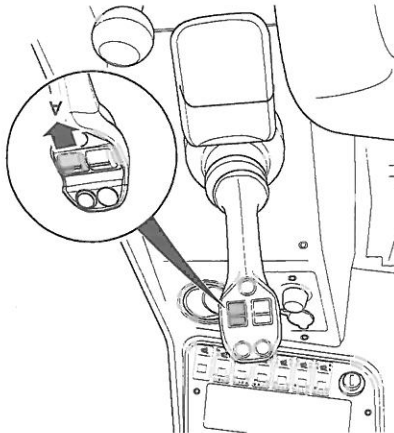
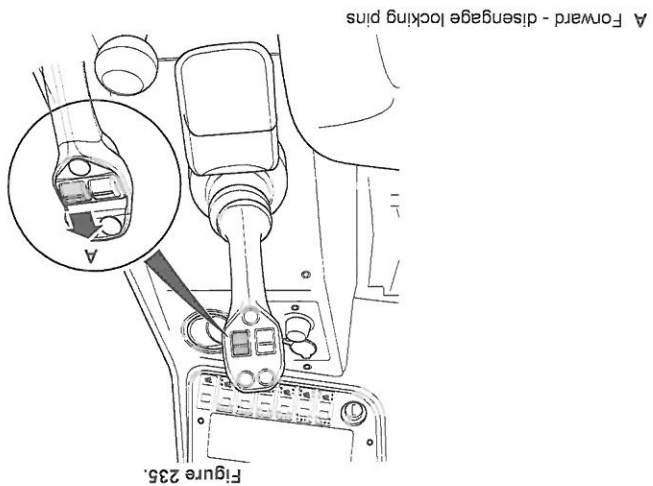


Figure 234

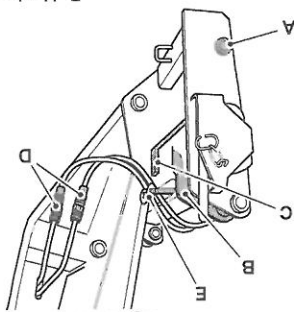


Quick-fit Carriage

General

- ▲ **WARNING** Do not retract the locking pins when the attachment is raised, the attachment could fall and kill or seriously injure someone. Retract the locking pins only after the attachment has been placed on the ground.
- WARNING** Keep other people clear of the area while you disengage the attachment. If a second person is to be involved in this procedure, ensure that he keeps clear of the machine and attachment until signalled by you to proceed.

Mechanical Pin Locking



A Carriage lock pins
B Hook plates
C Manual locking lever
D Hoses
E Locking pins - hydraulic hoses

Installing Attachments

1. Make the machine safe.
Refer to: Stopping and Parking (Page 71).
2. Position the attachment on solid, level ground. Make sure the attachment will not roll over.
3. Remove the existing attachment.
4. Engage the attachment. Refer to Figure 236.
 - 4.1. Make sure that the carrier lock pin is withdrawn.
 - 4.2. Use the control levers to align the carrier with the attachment and just below the attachment hook plates.
 - 4.3. Apply the park brake.
 - 4.4. Set the transmission to neutral.
 - 4.5. Use the boom controls to engage the support bar on the carrier into the hook plates on the attachment.
 - 4.6. Make sure that both hook plates are engaged equally.
 - 4.7. Lift and tilt the carrier back, to align the locking holes in the carrier with those in the attachment.
5. Lower the attachment to the ground.
6. Stop the engine.
7. Remove the ignition key.
8. At the carriage, operate the manual locking lever to engage the locking pins. Refer to Figure 236.

9. Make sure the locking pins are fully engaged. If a second person is to do this job keep your hands and feet away from the controls until he is clear of the machine.
10. If the attachment is hydraulically operated, connect the hoses. Refer to Figure 236. Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).
11. Secure the hydraulic hose(s) to the carriage with locking pins. Refer to Figure 236.

Removing Attachments

1. Make the machine safe.
Refer to: Stopping and Parking (Page 71).
2. Lower the attachment to the ground.
3. If the attachment is hydraulically operated, disconnect the hoses. Refer to Figure 236. Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).
4. Remove the locking pins to release the attachment hydraulic hoses from the carriage. Refer to Figure 236.
5. Move the locking lever to the unlock position to disengage the locking pins. Refer to Figure 236.
6. Start the engine.
7. Tilt the carrier forward to withdraw the lower end of the carrier from the attachment. Then lower the boom slowly to withdraw the carrier from the attachment hook plates.
8. Carefully reverse the machine away from the attachment or retract the boom.

Hydraulic Pin Locking

▲ WARNING The hydraulic pin locking isolation valve must be returned to the fully closed position otherwise the locking pins could be inadvertently disengaged.

The hydraulic pin locking option allows attachments to be installed or removed without leaving the cab.

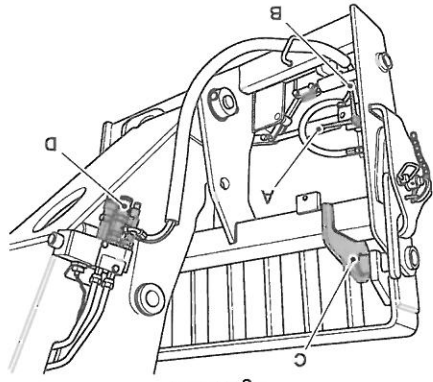


Figure 237.

- A Lever - Hydraulic pin locking isolation valve (horizontal position)
- C Hook plates
- B Lever - Hydraulic pin locking isolation valve (vertical position)
- D Hose(s) couplings

Installing Attachments

1. Make the machine safe.



Refer to: Stopping and Parking (Page 71).

2. Set the transmission to neutral.
3. Lower the boom to the ground.
4. Position the attachment on solid, level ground. Make sure the attachment will not roll over.
5. Remove the existing attachment.
6. If installed, move the lever of the hydraulic pin locking isolation valve to the horizontal position. Refer to Figure 237.
7. Engage the attachment. Refer to Figure 237.

- 7.1. Make sure that the carrier lock pin is withdrawn.
- 7.2. Use the control levers to align the carrier with the attachment and just below the attachment hook plates.
- 7.3. Apply the park brake.
- 7.4. Set the transmission to neutral.
- 7.5. Use the boom controls to engage the support bar on the carrier into the hook plates on the attachment.
- 7.6. Make sure that both hook plates are engaged equally.
- 7.7. Lift and tilt the carrier back, to align the locking holes in the carrier with those in the attachment.
- 7.8. Operate the auxiliary control to engage the locking pins. Visually check they are engaged.

8. Lower the attachment to the ground.
9. Stop the engine.

10. Remove the ignition key.

11. If installed, move the lever of the hydraulic pin locking isolation valve to the vertical position, in this position the locking pins are isolated and the auxiliary circuit is active. Refer to Figure 237.
12. If the attachment is hydraulically operated, connect the hose(s) to the couplings. Refer to Figure 237. Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).

Removing Attachments

1. Make the machine safe. Refer to: Stopping and Parking (Page 71).
2. Lower the attachment to the ground.
3. If the attachment is hydraulically operated, disconnect the hose(s) from the couplings. Refer to Figure 237. Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).
4. If installed, move the lever of the hydraulic pin locking isolation valve to the horizontal position. Refer to Figure 237.
5. If installed, press and hold the locking pin isolator switch. Operate the auxiliary control.
6. Tilt the carriage forward slowly to withdraw the lower end of the carriage from the attachment.
7. Lower the boom slowly to withdraw the carriage from the attachment hook plates. Refer to Figure 237.
8. Carefully reverse the machine away from the attachment (or retract the boom).
9. Lower the boom to the ground.
10. Stop the engine.



11. Remove the ignition key.
12. If installed, move the lever of the hydraulic pin locking isolation valve to the vertical position, in this position the locking pins are isolated and the auxiliary circuit is active. Refer to Figure 237.



Tow Hitches

General

(For: 526-56 [T4F], 531-T70 [T4F], 531-T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Introduction

▲ WARNING Do not exceed the permitted limits on trailer gross weight or hitch load. The machine may become unstable.
WARNING Examine the tow hitch and the trailer draw bar towing ring for signs of wear before each use. A badly installed or worn hitch or towing ring could cause loss of the trailer and injury to yourself or other people.

Your machine may be equipped with an optional trailer towing hitch.

You must identify the type of towing hitch installed and follow the appropriate operating instructions.

Make sure that the trailer draw bar is suitable for your machine and has sufficient clearance to enable the machine to turn without fouling. The table shows the recommended trailer ring for each hitch type.

Make sure that before you tow with the machine, you and your machine obey with all the pertinent laws and regulations.

Make sure the machine tyre pressures are correct and that the loaded trailer does not exceed the maximum gross trailer weight and vertical hitch load. Refer to: Wheels and Tyres (Page 468).

When towing, the machine must be unladen (without ballast).

Hitch Identification

Use the following table to identify your tow hitch and trailer connection. Some machines are installed with a fixed hitch on ball and a ladder mounted clevis hitch.

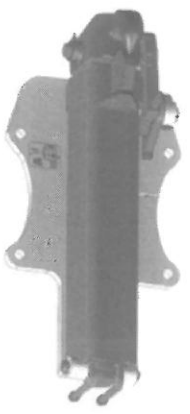




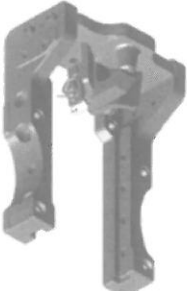
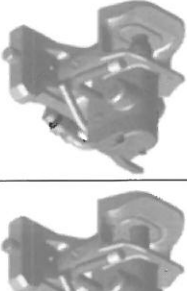

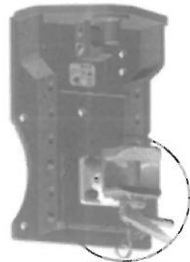
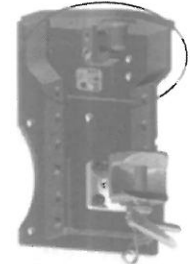

160/02038	<p>Ring (ISO (International Organization for Standardization) 5692-1:2004) Internal Ø 50, Outer Ø 110, Section Ø 30 to 41</p> <p>20019-1:2001) Internal Ø 50, Outer Ø 110 - 132, Section Ø 30 to 41</p>		H1	Hydraulic pick-up hitch
331/29312	<p>Ring (ISO 5692-2:2002) Internal Ø 40, Outer Ø 100, Section Ø 42</p>		H2	Rockinger fixed clevis hitch - automatic
331/26986	<p>Ring (ISO 5692-2:2002) Internal Ø 40, Outer Ø 100, Section Ø 42</p>		H3	Rockinger fixed clevis hitch - manual
333/H1305	<p>Ring (ISO 5692-2:2002) Internal Ø 40, Outer Ø 100, Section Ø 42</p>		H4 ¹⁾	Rockinger automatic hitch Ø 38mm

Table 33.

<p>Rockinger automatic hitch ø 30,6mm H5⁰⁰</p>		<p>Ring (ISO 5692-2:2002) Internal ø 40, Outer ø100, Section ø 42</p>	<p>333/H1358</p>
<p>Rockinger manual hitch H6⁰⁰</p>		<p>Ring (ISO 5692-2:2002) Internal ø 40, Outer ø100, Section ø 42</p>	<p>333/H1359</p>
<p>Rockinger ladder hitch - H7 piton</p>		<p>Ring (ISO 5692-1:2004) Internal ø 50, Outerø110, Section ø 30</p>	<p>333/H1235</p>
<p>Rockinger ladder hitch - H8 ball</p>		<p>Socket (ISO 24347) Internal ø 80, Outer ø125</p>	<p>333/H1241</p>



<p>160/15242</p>	<p>Ring (ISO 5692-2:2002) Internal Ø 40, Outer Ø100, Section Ø 42</p>		<p>H9</p>	<p>Ladder hitch with Rockinger fixed clevis hitch</p>
<p>160/13344</p>	<p>Ring (ISO 5692-1:2004) Internal Ø 50, Outer Ø110, Section Ø 30</p>		<p>H10</p>	<p>Ladder hitch - piton</p>
<p>333/H1239</p>	<p>Ring (ISO 5692-2:2002) Internal Ø 40, Outer Ø100, Section Ø 42, or Ring (ISO 5692-2:2002) Inter- nal Ø 40, Outer Ø100, Section Ø 42</p>		<p>H11^m</p>	<p>Rockinger ladder hitch (only)</p>

(1) Installed on to Rockinger ladder hitch - piton, Rockinger ladder hitch - ball or Rockinger ladder hitch (only).

Ladder Hitch

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

▲ **WARNING** Ensure that no person is between the machine and trailer when the machine is reversing up to the trailer.

Manual Rockinger Hitch

1. Apply the park brake.
2. Adjust the mirror (s) to obtain a good view of the pickup hitch.

1. Apply the park brake.
2. Adjust the mirror (s) to obtain a good view of the pickup hitch.
3. Remove the safety pin.

Manual Piton Hitch

- 8.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
 - 8.2. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
 - 8.3. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
 - 8.4. When the trailer has been engaged, with pin secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.
8. Engage the Trailer:
 7. Remove the trailer securing pin.
 6. Install the locating pin and retaining pins.
 5. The hitch can be moved up or down until the holes for the locating pins align with the holes in the hitch.
 4. Support the hitch and remove the locating pins.

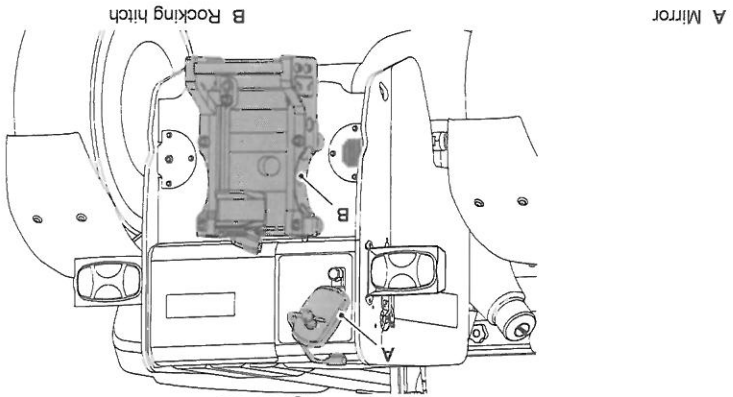


Figure 238.

3. Remove the retaining pin to adjust the hitch height.

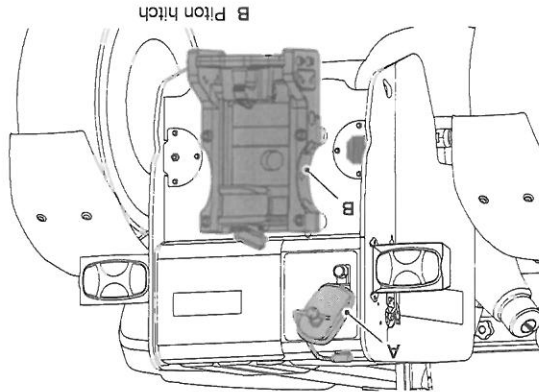


Figure 239.

A Mirror

4. Remove the securing arm pin.

5. Lift up the securing arm.

6. Engage the trailer onto the hitch.

- 6.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
- 6.2. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 6.3. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 6.4. When the trailer has been engaged, replace the pins and make sure they are secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.

Rockinger Automatic Tow Hitch

1. Apply the park brake.
2. Adjust the mirror (s) to obtain a good view of the pickup hitch.
3. Move the locking lever to the position as shown.

4. Engage the trailer in the funnel:
- 4.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.

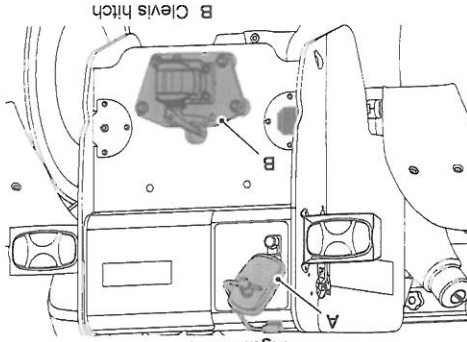


Figure 241.

3. Move the clevis hitch lever to the position as shown.
2. Adjust the mirror (s) to obtain a good view of the pickup hitch.
1. Apply the park brake.

Clevis Hitch

4. Engage the trailer in the funnel:
- 4.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
- 4.2. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 4.3. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 4.4. When the trailer has been engaged, the lever will automatically return to the locked position.

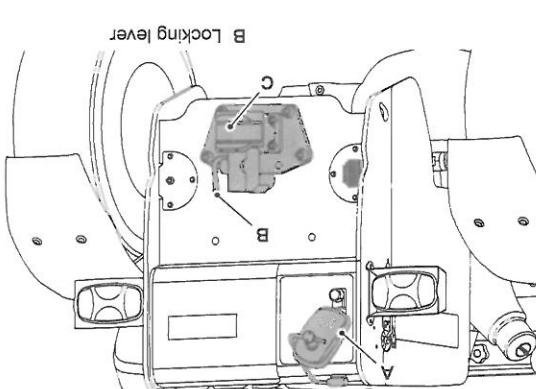


Figure 240.

- A Mirror
C Funnel

3. Make sure the auxiliary/hitch switchover lever is in the position shown.

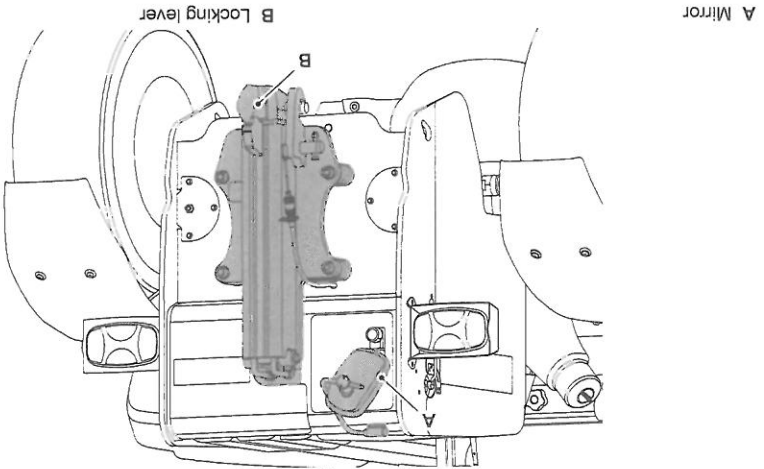


Figure 242.

2. Adjust the mirror (s) to obtain a good view of the tow hitch area.

1. Apply the park brake.

To operate the pickup hitch, use the procedure as follows:

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Hydraulic Tow Hitch

- 4.2. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer by eye.
- 4.3. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 4.4. When the trailer has been engaged, the lever will automatically return to the locked position.

5. Operate the switch to raise the hitch, this will remove the load on locking lever.

- A Set switch
- C Position I
- D Position II
- B Switch light

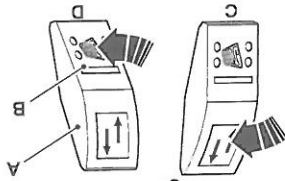


Figure 244.

4. To select the rear auxiliary circuit, set switch to position I. The switch light should be extinguished.

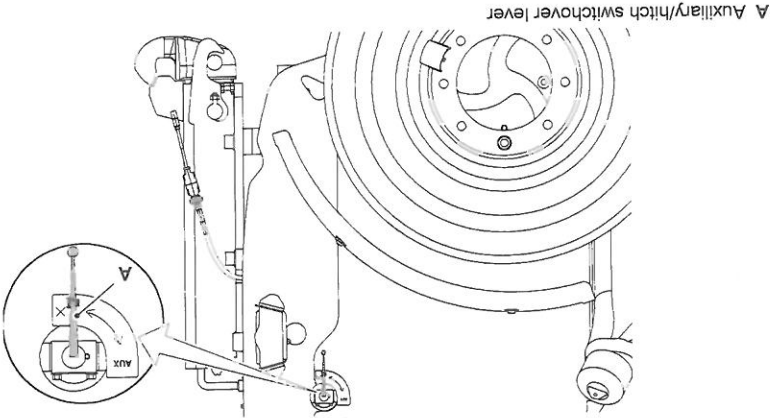


Figure 243.

A Auxiliary/hitch switchover lever



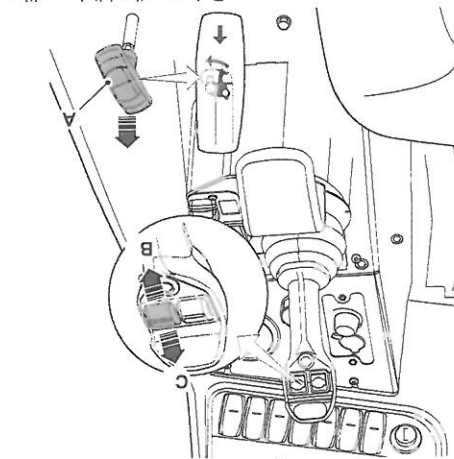


Figure 245

- A Lever
- C Raise the hitch position

6. Pull up the lever and hold to release the pickup hitch locking lever.
7. Operate the control in backward direction to lower the hitch.

WARNING! Ensure that no person is between the machine and trailer when the machine is reversing up to the trailer.

8. Engage the trailer.
- 8.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
- 8.2. It is essential that the tow bar is parallel with the machine when the pickup hitch is raised and locked.
- 8.3. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 8.4. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
9. Operate the switch to raise the hitch. The locking lever will automatically spring back to the engaged position when the hitch is raised.
10. When the trailer has been engaged, with locking lever secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.

Mechanical Tow Hitch

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Connecting the Trailer

▲ WARNING Ensure that no person is between the machine and trailer when the machine is reversing up to the trailer.

WARNING Make sure the hitch/auxiliary selector switch is in the correct position or the lever operated brake circuit will be inoperable.

WARNING Make sure the trailer hitch has correctly engaged and locked before driving off.

WARNING If the hose for auxiliary braking is temporarily disconnected to allow the use of the trailer's auxiliary service (ie. tipping), make sure the hose for auxiliary braking is connected to adaptor before driving the machine.

Prepare the Trailer for Towing

- 3.1. Make sure that the trailer and its draw bars are correctly positioned for engagement before the machine begins to approach it.
- 3.2. If a helper is available to manoeuvre the trailer he should stand well clear of the machine until the tow hitch is correctly aligned with the trailer towing eye.
- 3.3. The helper should not approach the trailer or machine until the machine has been stopped, with the park brake engaged and the engine switched off.
- 3.4. When the trailer has been engaged, with pin secured in position, the machine operator must not start the engine until the helper is clear of the machine and trailer.

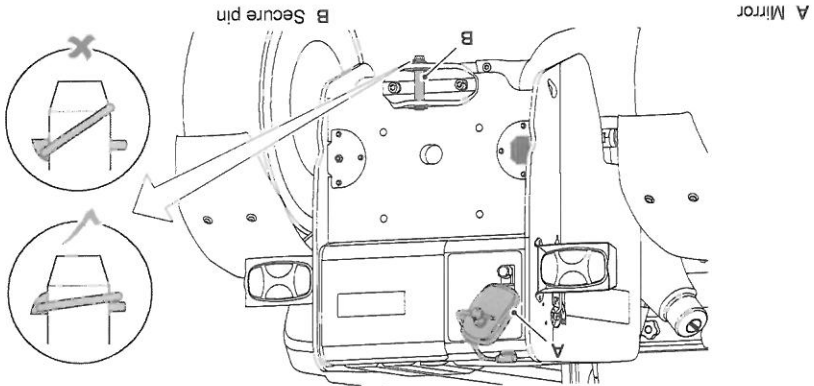


Figure 246.

1. Apply the park brake.
2. Adjust the mirror(s) to obtain a good view of the pickup hitch.
3. Engage the Trailer.

To operate the pickup hitch, use the procedure as follows:

1. To select the rear auxiliary circuit, set switch to position 1. The switch light should be extinguished.
2. Connect the trailer lights into the socket. Make sure that all the trailer lights are working correctly and are visible by other road users.
3. Make sure the trailer direction indicator lights are working correctly.
4. Connect the trailer brakes to connector (if installed):
 - 4.1. If an optional trailer brake valve is installed: to apply the brakes push the brake pedal.
 - 4.2. Before you travel on the public highway check that the brakes work correctly and get used to the braking effect.
5. For auxiliary operation, i.e. trailer tipping, connect the service to adaptor. If using the auxiliary service for braking, after disconnecting the brake/hitch hose, reconnect the brake/hitch hose prior to moving off.
6. Operate the control in direction (s) depending on the attachment installed and the function required.
7. To prevent contamination of the machine hydraulics, close all rams on the attachment/trailer before disconnecting the hydraulic service to exhaust the trailer ram of oil.

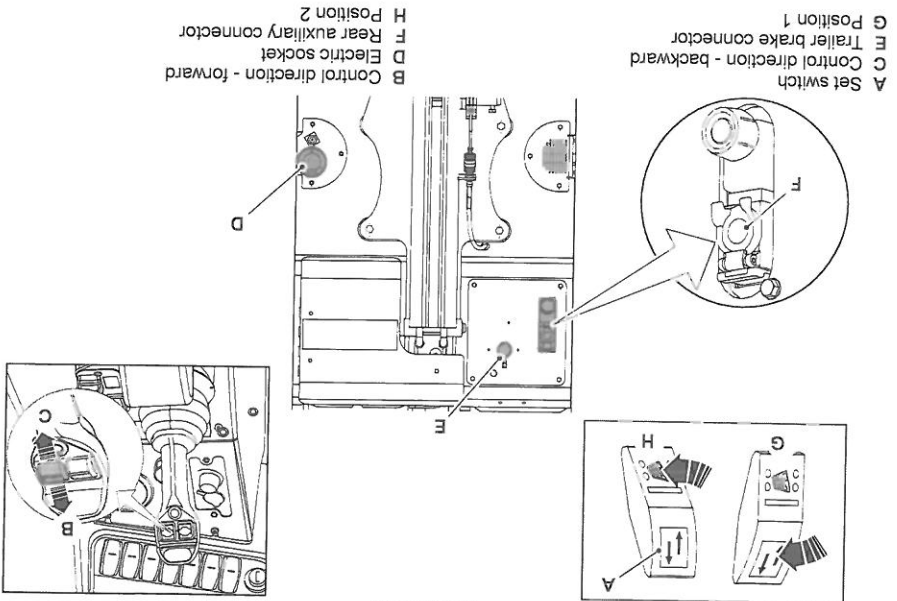


Figure 247.

Side-Shift Carriage

General

The side-shift carriage allows you to accurately position both forks simultaneously with 100mm of sideways movement with a load on the forks. The forks are controlled by the auxiliary control in the cab.

Operate the auxiliary controls as required to move the forks.

- Side-shift left
- Side-shift right

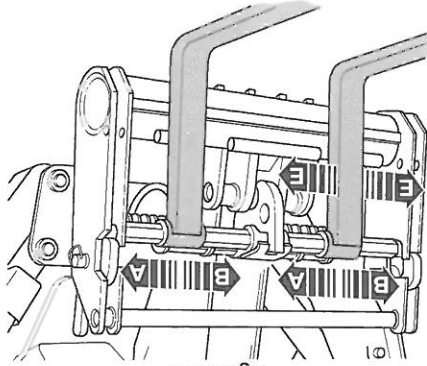


Figure 248.

- A Side-shift left
- E Fork spacing

B Side-shift right

Fork Spacing

▲ WARNING Loads can fall off incorrectly spaced forks. Always space the forks correctly for the load. Make sure the forks are completely under the load before lifting.

Fork spacing may be adjusted to suit the load either hydraulically, using the auxiliary control, or manually.

Hydraulic Fork Spacing

1. Raise the boom.
2. Tilt the carriage forward until the left hand fork fingers disengage from the cylinder, leaving the right hand fork fingers engaged.
3. Use the auxiliary control to side-shift the right hand fork only, in order to position the forks.
4. Tilt the carriage back and make sure the left hand fork re-engages with the cylinder.

1. Make sure the attachment is on firm level ground.
 2. Make sure the attachment will not roll over.
 3. Remove the existing attachment, leave the Q-fit carriage lock pin disengaged.
 4. Remove the carriage locking pins.
 5. Use the controls to align the carriage with the attachment and just below the attachment hook plates.
- ▲ WARNING** Keep other people clear of the area while you engage the attachment. If a second person is to be involved in this procedure, make sure that he keeps clear of the machine and attachment until signalled by you to proceed. The machine loading limits at different boom positions are shown on the load charts in the cab.

Installing the Side-shift Carriage

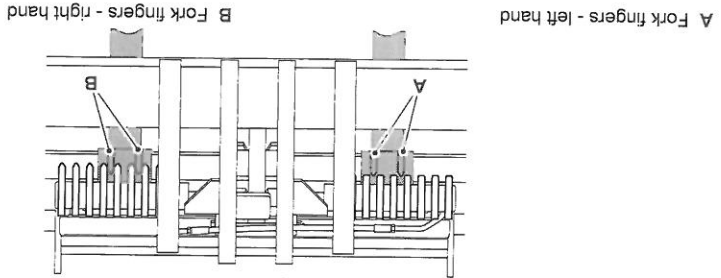


Figure 250.

1. Raise the boom.
2. Tilt the carriage forward until both the left and right forks disengage from the cylinder.
3. Manually position the forks as required.
4. Tilt the carriage back and make sure both forks re-engage with the cylinder.

▲ WARNING Forks are heavy. Take care when spacing forks or folding back the forks.

Manual Fork Spacing

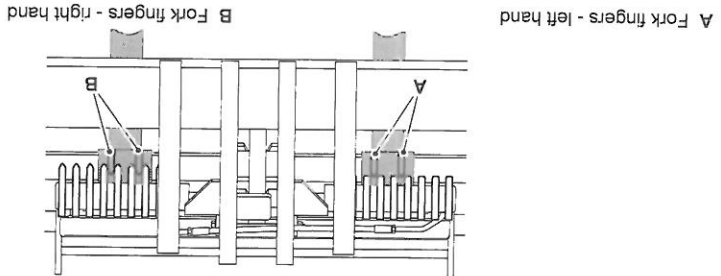


Figure 249.

16. Connect the hoses.
15. Make sure the pins are fully engaged, and secure with locking rings at both sides of the carriage.
14. Engage the locking pins.
13. Remove the ignition key.
12. Stop the engine.
11. Make sure that the transmission is set to neutral, and that the park brake is engaged.
10. Make sure both hook plates are engaged equally.
9. Use the boom controls to engage the support bar on the attachment into the hook plates on the carriage.
8. Remove the protective cover for clarity.
7. Align the sections of the side-shift attachment centrally.
6. Apply the park brake, set the transmission to neutral.
5. Side-shift - central position
4. Carriage locking pins
3. Hook plates

Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).

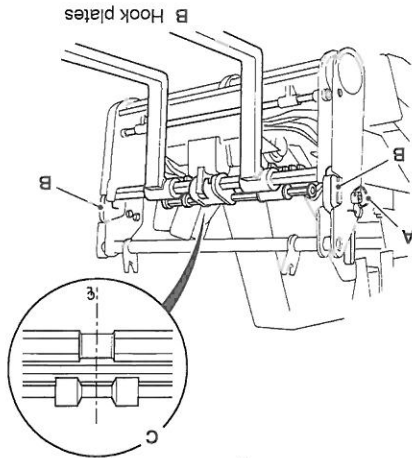


Figure 251.

Lubricate the sideshift carriage in three places. Refer to Figure 253.

Every 50 Hours

Clean with the rest of the machine.

Daily

Maintenance

10. Carefully reverse the machine away from the attachment or retract the boom.
9. Lower the boom slowly to withdraw the carriage from the attachment hook plates.
8. Tilt the carriage forward slowly to withdraw the lower end of the carriage from the attachment.
7. Start the engine.
6. Remove the lock rings and remove the locking pins at both sides of the carriage.
Refer to: Connecting/Disconnecting Hydraulic Hoses (Page 214).
5. Disconnect the hoses.
4. Stop the engine.
3. Set the transmission to neutral.
2. Apply the park brake.
1. Lower the attachment to the ground.

▲ WARNING Keep other people clear of the area while you disengage the attachment. If a second person is to be involved in this procedure, ensure that he keeps clear of the machine and attachment until signalled by you to proceed.

Removing the Side-shift Carriage

A Hoses

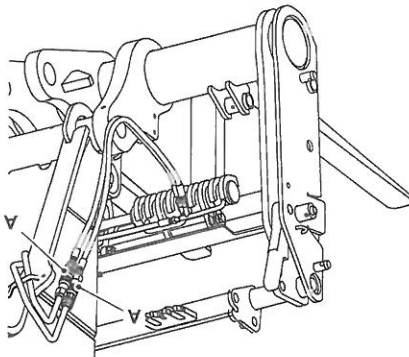


Figure 252.

Protective cover removed for clarity.

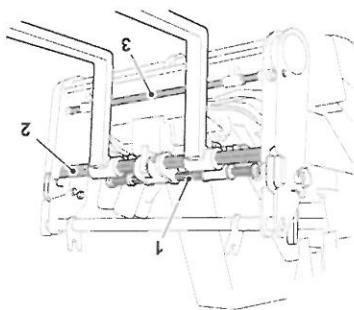


Figure 253.

Jibs

General Safety

Read and understand all the warning messages. Follow all the safety instructions given in this Operator Manual. Do not install/operate an attachment until you are sure that you can operate it.

Use the attachment only if it carries up to date test certificates.

Operation

You must obey the following precautions when using this attachment.

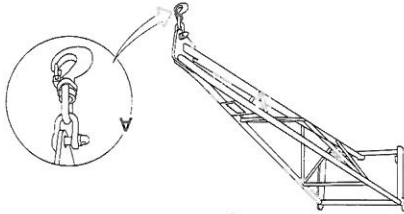
- Before you lift or manoeuvre a load with the attachment, check the appropriate load chart in the cab and understand the lift capacities.
- Make sure the machine is in a level position. If necessary, reposition the machine using chassis levelling control or stabilisers (if fitted).
- Use the lifting shackle which is suitable for the job, in good condition and proof tested where necessary.
- Always sling the load safely and in accordance with any local regulations.
- Make sure that the hook safety catch is closed correctly to prevent the sling(s) from slipping off the hook.
- Always lift the load carefully, to avoid snatching the sling(s).
- Keep yourself and other people clear of a suspended load, especially from beneath the load.
- Always remember that the effective length of the boom is increased when an attachment is installed.
- Before manoeuvring the machine with an attachment make sure you have sufficient clearance.
- You must be careful while carrying a suspended load. Keep the load as low to the ground as possible. If necessary, use guide ropes to prevent the load from swinging.
- Always travel in 1st gear at walking speed when carrying a suspended load. Wherever possible, travel on firm, level ground. Avoid rough or excessively uneven ground.
- Do not carry suspended loads on public roads.
- Always be aware of the effects of wind velocity on the load being handled.

Extension Jib

▲ WARNING The attachment is heavy. Take care when lifting and handling it. Use suitable lifting equipment. Make sure the lifting equipment is in good condition. Make sure the lifting equipment complies with all pertinent regulations. Wear gloves and safety shoes.

This is a Q-fit attachment. It gives your machine greater reach and height. This attachment is supplied with test certificates for its fabrication, its hook and its shackle. The safe working load is stamped on a plate mounted on the attachment. Refer to: Working with the Boom (Page 180).

Figure 254.



Extension jib

The jib may be extended to one of four positions:

Extending the Jib

Store the attachment carefully to prevent damage and corrosion.

The installation will be easier if the attachment is rested on wooden blocks.

Wear gloves and safety shoes.

The attachment is heavy. Take care when lifting and handling it. Use suitable lifting equipment. Make sure the lifting equipment is in good condition. Make sure the lifting equipment complies with all relevant regulations.

Installing/Removing

A Roof truss jib

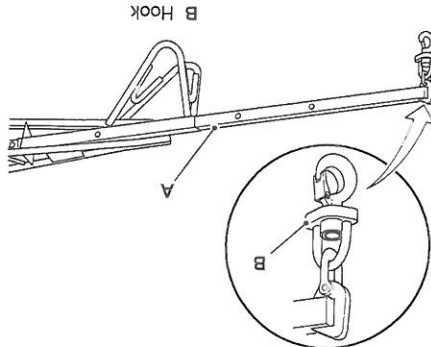


Figure 255.

This is a Q-fit attachment. It gives your machine greater reach and height. This attachment is supplied with test certificates for its fabrication, its shackle. The safe working load is stamped on a plate mounted on the attachment.

Roof Truss Jib



- Placing position
- Travel position

The angle of the jib may be set in one of two positions.

Changing the Jib Angle

1. Remove the load and lower the jib to the ground.
 2. Make sure the skid is supporting the weight of the jib.
 3. Remove the lynch pin, then pin.
 4. Move the jib extension to the required position; fully extended or fully retracted.
 5. Insert the pin and secure with lynch pin.
- A Skid
 B Lynch pin
 C Pin
 E Jib- extended position 1
 F Jib- fully retracted
 G Jib- fully extended position 2

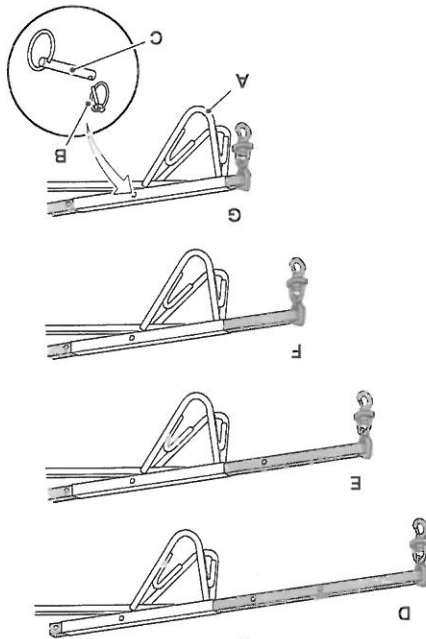


Figure 256.

1. Remove the load and lower the jib to the ground.
2. Make sure the skid is supporting the weight of the jib.
3. Remove the lynch pin, then pin.
4. Use the tilt control in the cab to rotate the carriage until the holes align in the required position. Stops will prevent excessive movement of the jib.
5. Insert the bar and secure with lynch pin.

To change the jib position:

When in the travel position, do not extend the boom and do not raise the boom more than 45°

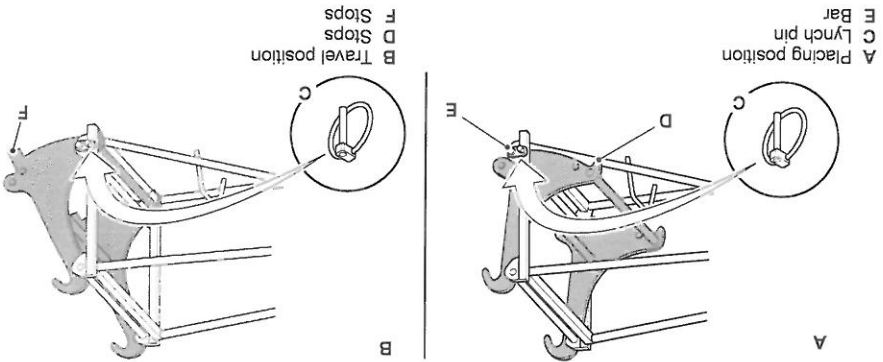


Figure 257.



Hooks

Fork-Mounted Hook

▲ WARNING The attachment is heavy. Take care when lifting and handling it. Use suitable lifting equipment. Make sure the lifting equipment is in good condition. Make sure the lifting equipment complies with all pertinent regulations. Wear gloves and safety shoes.

WARNING Never exceed the capacity of the Loadall. Also make sure that the load rating for slings, chains, or straps used with the hook are equal to or exceed the rating of both the Loadall and the hook, if not, always limit the load to the lowest rated part of the lifting system.

The fork mounted hook allows the machine to carry slung loads with safety. It incorporates a swivel hook with a spring-loaded safety catch. This attachment is supplied with test certificates for its fabrication and its hook. Its safe working load is stamped on a plate mounted on the attachment.

Safety

Obey all the safety instructions given in the main part of this book, plus the ones given in this section. Use this attachment only if it carries updated test certificates.

Before use inspect the swivel hook to make sure that it is in good condition and the anchor pin fits correctly.

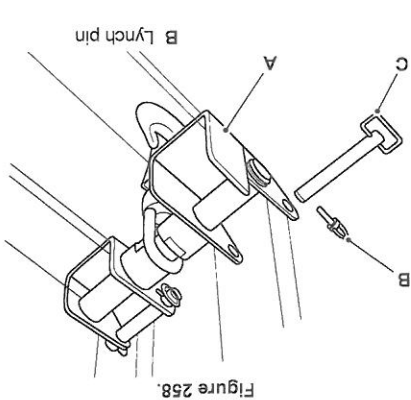


Figure 258.

A Mounting sockets
C Locking bar

Installing

1. Make the machine safe.
2. Space the forks, equally on either side of the machine centreline, so that the mounting sockets can be slid onto them.
3. Tighten the fork clamping screws to prevent movement.
4. Install the attachment.

- 4.1. Remove the lynch pin and locking bar.
- 4.2. Slide the attachment over the forks so that the rear of the attachment butts against the heels of the forks.
- 4.3. Install the locking bar and secure with lynch pin.
- 4.4. Make sure both mounting brackets are installed securely.

Removing

1. Lower the attachment so that it just clears the ground.



2. Apply the park brake and stop the engine.
3. Remove the attachment.

- 3.1. Remove the lynch pin and locking bar.
- 3.2. Carefully slide the attachment off the forks.
- 3.3. Install the locking bar and secure with lynch pin.
- 3.4. Store the attachment carefully to prevent damage and corrosion.

Maintenance

Daily

1. Clean with the rest of the machine.

2. Check for damage. Make sure that the hook safety catch is in good working order.

As Required or At least Annually

All lifting equipment including this attachment may need regular inspection and testing by a competent person to make sure they are fit for purpose.

This may be needed every six months or at least annually in many countries to meet and comply with local legislation and for insurance purposes.

Contact your JCB dealer for further advice.



Work Platforms

General

▲ DANGER Using the forks alone as a working platform is hazardous; you can fall off and be killed or injured. Never use the forks as a working platform.

The use of work platforms with this machine is subject to legislation which varies from territory to territory. It is the responsibility of the owner/operator and supplier of the work platform to ensure compliance with the relevant legislation in the relevant territory. In the case of uncertainty, guidance should be sought from the relevant local or government authority.

JCB supply integrated work platforms solely for use in Europe which comply with the requirements of European Directive 2006/42/EC. Contact your dealer for further details. Health and safety legislation also varies from territory to territory. Customers should check the latest health and safety legislation for the territory in which the work platform is to be used prior to operation.



Preservation and Storage Cleaning

General

▲ WARNING When using cleaning agents, solvents or other chemicals, you must adhere to the manufacturer's instructions and safety precautions.

WARNING Airborne particles of light combustible material such as straw, grass, wood shavings, etc. must not be allowed to accumulate within the engine compartment or in the propshaft guards (when installed). Examine these areas frequently and clean at the beginning of each work shift or more often if required. Before opening the engine cover, make sure that the top is clear of debris.

CAUTION To avoid burning, wear personal protective equipment when handling hot components. To protect your eyes, wear goggles when using a brush to clean components.

Notice: Cleaning metal parts with incorrect solvents can cause corrosion. Use only recommended cleaning agents and solvents.

Notice: The efficiency of the rams will be affected if they are not kept free of solidified dirt. Clean dirt from around the rams regularly. When leaving or parking the machine, close all rams if possible to reduce the risk of weather corrosion.

Notice: Never use water or steam to clean inside the operator station. The use of water or steam could damage the machine electronics and render the machine inoperable. Remove dirt using a brush or damp cloth.

Clean the machine with water and/or steam. Do not let mud, debris etc. to collect on the machine.

Before you do any service procedures that require components to be removed:

- The cleaning must be done either in the area of components to be removed, or in the case of major work, or work on the fuel system, the whole engine and the surrounding machine must be cleaned.
- When cleaning is complete, move the machine away from the wash area or alternatively, remove the material washed from the machine.

When you remove components, be aware of exposure to dirt and debris. Cover any open ports and remove the deposits before proceeding.

Refer to the individual clean procedures throughout the Maintenance section. Refer to: Maintenance Schedules (Page 270).

Detergents

Do not use a full strength detergent. Always dilute the detergents as per the manufacturer's recommendations, or damage to the paint finish can occur.

Always obey the local regulations regarding the disposal of debris created from cleaning the machine.

Pressure Washing and Steam Cleaning

▲ CAUTION When using a steam cleaner, wear safety glasses or a face shield as well as protective clothing. Steam can cause personal injury.

Notice: The engine and other components could be damaged by high pressure washing systems. Special precautions must be taken if the machine is to be washed using a high pressure system. Make sure that the alternator, starter motor and any other electrical components are shielded and not directly cleaned by the high pressure cleaning system. Do not aim the water jet directly at bearings, oil seals or the engine air induction system.

Use a low pressure water jet and brush to remove dried mud or dirt.

Use a pressure washer to remove soft dirt and oil.

The machine must always be greased (if appropriate) after pressure washing or steam cleaning.



Preparation

1. Make the machine safe.

Refer to: Maintenance Positions (Page 277).

2. Stop the engine and let it cool for at least one hour. Do not try to clean any part of the engine while it is running.

3. Make sure that all of the electrical connectors are correctly coupled. If the connectors are open, attach the correct caps or seal with water proof tape.



Checking For Damage

General

Refer to the individual condition checks throughout the Maintenance section. Refer to: Maintenance Schedules (Page 270).



Storage

General

For: 541-70 [T4F], 541-70 [UN3/GB3], 541-70 [T4F] Page 258

For: 526-56 [T4F], 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535-95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536-60 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536-60 [T4F], 541-70 [T4F], 541-70 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541-70 [T4F], 550-80 [T4F], 550-80 [T4F], 550-80 [T4F] Page 258

(For: 541-70 [T4F], 541-70 [UN3/GB3], 541-70 [T4F])

If the machine will not be used for an extended period, you must store the machine correctly. If you prepare the machine carefully and apply on-going care you can prevent deterioration and damage to the machine while it is in storage.

Storage Area

The machine can be stored in a temperature range of: -40°C (-39,9°F) to 54°C (129,1°F)

When possible, you must keep the machine in a dry building or shelter.

If only an outdoor storage area is available, look for a storage area with good drainage.

Prepare the Machine for Storage

1. Clean the machine to remove all unwanted material and corrosive products.

2. Dry the machine to remove solvents and moisture.

3. Touch-up any damaged paint.

4. Apply grease to the moving parts (if applicable).

5. Examine the machine for worn or damaged parts. Replace if necessary.

6. Fill the fuel tank to prevent a build up of condensation in the tank (if applicable).

7. Examine the coolant condition. Replace if necessary.

8. Examine all fluid levels. Top up if necessary.

(For: 526-56 [T4F], 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535-95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536-60 [T4F], 536-60 [UN3/GB3], 536-60 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 541-70 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541-70 [T4F], 550-80 [T4F], 550-80 [T4F], 550-80 [T4F], 550-80 [T4F], 550-80 [T4F], 550-80 [T4F])

If the machine will not be used for an extended period (greater than two months), you must store the machine correctly. If you prepare the machine carefully and apply on-going care you can prevent deterioration and damage to the machine while it is in storage.

Storage Area

The machine can be stored in a temperature range of: -40°C (-39,9°F) to 30°C (86,0°F)

If the machine uses DEF (Diesel Exhaust Fluid) and is to be stored with DEF (or other fluids present), check the relevant fluid storage requirements as they may affect the applicable storage temperature range. Refer to: During Storage (Page 259).

When possible, you must keep the machine in a dry building or shelter.

If only an outdoor storage area is available, look for a storage area with good drainage.



Prepare the Machine for Storage

1. Clean the machine to remove all unwanted material and corrosive products.
2. Dry the machine to remove solvents and moisture.
3. Touch-up any damaged paint. Treat exposed parts with anti-rust agent. Apply grease to unpainted surfaces.
4. Apply grease to the moving parts.
5. Examine the machine for worn or damaged parts. Replace if necessary.
6. Fill the diesel fuel and DEF tanks to prevent a build up of condensation in the tank.
7. Examine the coolant condition. Replace if necessary.
8. Examine all fluid levels. Top up if necessary.
9. Inflate the tyres to the correct pressure (if applicable).

Put into Storage

1. Park the machine on solid, level ground.

1.1. Park the machine in an area where it is easy to access. (In case the machine does not start at the end of the storage period).

- 1.2. Put suitable timbers under the machine to eliminate direct contact with the ground.
2. Retract all of the rams and lower the attachment to the ground.
3. Vent the hydraulic system.
4. Remove the ignition key.
5. Apply a thin layer of grease or petroleum jelly to all of the exposed ram piston rods.
6. Remove the battery.
- 6.1. Keep the battery in warm, dry conditions.
- 6.2. Charge the battery periodically.
7. If you keep the machine outdoors, cover the machine with tarpaulins or plastic sheets.

During Storage

For: 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F]..... Page 259

For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 550-80 [T4F], 560U80 [T4F]..... Page 260

(For: 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F])

Operate the machine functions each week to prevent a build up of rust in the engine and hydraulic circuits, and to minimise the deterioration of the hydraulic seals.

1. Remove any air cleaner covers or exhaust covers.
2. Remove the grease or petroleum jelly from the ram piston rods.
3. Examine all fluid levels. If necessary, add more fuel.
4. Install a charged battery.



5. Start the engine.
6. Operate the hydraulic controls. Make sure that the hydraulic functions operate correctly.
7. Prepare the machine for storage.

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Operate the machine functions each week to prevent a build up of rust in the engine and hydraulic circuits, and to minimise the deterioration of the hydraulic seals.

1. Remove the grease or petroleum jelly from the ram piston rods.
2. Examine all fluid levels. If necessary, add more fuel and DEF (Diesel Exhaust Fluid).
3. Install a charged battery.
4. Start the engine.
5. Operate the hydraulic controls. Make sure that the hydraulic functions operate correctly.
6. Prepare the machine for storage.

Effects of Storage on the DEF System (if applicable)

If the engine has been shutdown correctly and there are no faults with the DEFsystem, the DEF system and engine can remain in a deactivated state under the following conditions:

Table 34.

Storage Period	Storage Actions
Up to 9 months	Fill DEF tank to maximum level with fresh DEF. Do not disconnect any electrical or hydraulic connections. Make sure the ambient temperature is between the values shown, -40°C (-39,9°F) to 30°C (86,0°F)
Longer than 9 months	Carry out recommissioning process

Take out of Storage

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

1. Examine the coolant condition. Replace if necessary.
2. Examine all fluid levels. If necessary, add more fluid.
3. Clean the machine to remove all unwanted material and corrosive products. Dry the machine to remove solvents and moisture.
4. Remove the grease or petroleum jelly from the ram piston rods.
5. Install a charged battery.
6. Start the engine.
7. Operate the hydraulic controls. Make sure that the hydraulic functions operate correctly.



DEF Recommissioning Process (if applicable)

1. Drain the DEF (Diesel Exhaust Fluid) tank.
2. Refill DEF tank with fresh fluid.
3. If a DEF system failure is detected, contact your JCB dealer for advice.

Vandalism and the theft of unattended machines is an ever increasing problem and JCB is doing everything possible to help stop this.

Your JCB dealer will be pleased to provide information on any of these sensible precautions. Act now!

JCB Plantguard

JCB Plantguard is a comprehensive package available to help you safeguard your machine. It includes such devices as a vandal proof covers, window etching, immobiliser, concealed serial number, battery isolator, tracker security system etc.

Remember that the installation of any one of these security devices will help to minimise not only the damage or loss of your machine, but also subsequent lost productivity. It could also help to reduce insurance premiums.

Construction Equipment Security and Registration Scheme (CESAR)

CESAR (Construction Equipment Security and Registration) is a simple, effective method of machine identification and registration that operates throughout the United Kingdom and Ireland and across the whole spectrum of JCB products.

CESAR is a scheme to help decrease plant theft, and was developed by the Metropolitan Police and the Home Office Plant Theft Action Group.

The key to the scheme is its simplicity and it will mean that every police officer in the country will know how to identify construction machinery and verify ownership. This will provide a major leap forward in both protecting machinery, and recovering it.

The Construction Equipment Association is managing the scheme, and Datag are providing the security material and support. JCB is fully supportive of the CESAR initiative and will offer it as a factory option across the range.

The CESAR kit includes 2 tamper proof triangular identification plates installed on either side of the machine, a unique transponder, mini radio frequency identification tags concealed throughout the machine, Datag micro dots, and a unique DNA coded chemical painted on the machines major components. Plus a registration certificate logged onto the CESAR or DVLA databases, and a change of keeper form.

Livelink

Your JCB machine may be installed with Livelink, JCB's advanced machine monitoring system. Livelink monitors a range of information about your machine and sends it through cellular and satellite communication back to JCB's secure monitoring centre.

The machine owners and JCB dealers can then view that information through the Livelink website, by email and even through text message. If you want to know how Livelink can help manage your JCB machines, contact your local dealer for more information.





Maintenance Introduction

General

Your machine has been designed and built to give maximum performance, economy and ease of use under a wide variety of operating conditions. Prior to delivery, your machine was inspected both at the factory and by your dealer to make sure that it reaches you in optimum condition. To maintain this condition and trouble free operation it is important that the routine services and maintenance, as specified in this manual, are done at the recommended specified intervals and it is recommended that this is done by an approved JCB dealer using genuine JCB parts. Servicing/repairs carried out by unauthorised personnel or the use of non-genuine inferior quality parts could limit machine warranty.

After completing any routine servicing, maintenance or repairs you must complete the functional checks according to the maintenance schedule.

This section of the manual gives full details of the service requirements necessary to maintain your JCB machine at peak efficiency.

It can be seen from the service schedules on the following pages that many essential service checks must only be done by a JCB trained specialist competent person. JCB dealer service engineers have been trained by JCB to do such specialist tasks, and are equipped with the necessary special tools and test equipment to do such tasks, thoroughly, safely, accurately and efficiently.

JCB regularly updates its dealers to advise them of any machine developments, changes in specifications and procedures. Therefore only a JCB dealer is fully able which makes them best placed to maintain and service your machine.

A service record sheet or book is provided at the back of this publication which will enable you to plan your service requirements and keep a service history record. It must be dated, signed and stamped by your dealer each time your machine is serviced.

Remember, if your machine has been correctly maintained, not only will it give you improved reliability but its resale value will be greatly enhanced.

When the machine is removed from service, local regulations for machine decommissioning and disposal will vary. Contact your nearest JCB dealer for further information.

Owner/Operator Support

JCB together with your dealer wants you to be completely satisfied with your new JCB machine. However, if you do have a problem, you can contact your dealers service department who are there to help you!

You will have been given the names of the relevant service contacts at your dealer when the machine was supplied.

To get the most from your dealer please help them to satisfy you by providing them with:

1. Your name, address and telephone number.
2. Your machine model and serial number.
3. The date of purchase and hours of work.
4. The nature of the problem.

Remember, only your JCB dealer has access to the vast resources available at JCB to help support you. In addition, your dealer is able to offer a variety of programmes covering warranty, fixed price servicing, safety inspections, including weight tests, covering both legal and insurance requirements.

It is machine owner's responsibility to ensure that the maintenance is carried out properly in accordance with the requirement of this manual.



Service/Maintenance Agreements

To help plan and spread the costs of maintaining your machine, we strongly recommend you take advantage of the many service and maintenance agreements your dealer can offer. These can be tailor made to meet your operating conditions, work schedule etc.

Please consult your JCB dealer for details.

Initial Service and Inspection

To further protect your machine's performance it is essential your JCB distributor carries out an initial service and inspection when the machine is one month old or when it has completed 100h of operation (whichever occurs first). You should notify your distributor in advance to allow the necessary arrangements to be made.

Obtaining Spare Parts

If you use non-genuine JCB parts or consumables, then you can compromise the health and safety of the operator and cause machine failure.

A parts book for your machine is available from your JCB dealer. The parts book will help you identify parts and order them from your JCB dealer.

Your dealer will need to know the exact model, build and serial number of your machine. Refer to: Product and Component Identification (Page 10).

The data plate also shows the serial numbers of the engine, transmission and axle(s), where applicable. Remember, if any of these units have been changed, the serial number on the data plate may be wrong. Check on the unit itself.



Maintenance Safety

General

Raised Machine

Never position yourself or any part of your body under a raised machine which is not correctly supported. If the machine moves unexpectedly you could become trapped and suffer serious injury or be killed.

Air Conditioning Maintenance

The air conditioning system is a closed loop system and contains pressurised refrigerant. No part of the system should be disconnected until the system has been discharged by a refrigeration engineer or a suitably trained person. You can be severely frostbitten or injured by escaping refrigerant.

Compressed Air

Compressed air is dangerous. Wear personal protective equipment. Never point a compressed air jet at yourself or others.

Springs

Always wear personal protective equipment when dismantling assemblies containing components under pressure from springs. This will protect against eye injury from components accidentally flying out.

Metal Splinters

You can be injured by flying metal splinters when driving metal pins in or out. Use a soft faced hammer or copper drift to remove and install metal pins. Always wear personal protective equipment.

Communications

Bad communications can cause accidents. If two or more people are working on the machine, make sure each is aware of what the others are doing. Before starting the engine make sure the others are clear of the danger areas. Examples of danger areas are: the rotating blades and belt on the engine, the attachments and linkages, and anywhere beneath or behind the machine. People can be killed or injured if these precautions are not taken.

Repairs

If your machine does not function correctly in any way, get it repaired straight away. Neglect of necessary repairs could result in an accident or affect your health. Do not try to do repairs or any other type of maintenance work you do not understand. To avoid injury and/or damage get the work done by a specialist engineer.

Hydraulic Pressure

Hydraulic fluid at system pressure can injure you. Before connecting or removing any hydraulic hose, residual hydraulic pressure trapped in the service hose line must be vented. Make sure the hose service line has been vented before connecting or removing hoses. Make sure the engine cannot be started while the hoses are open.

'O' rings, Seals and Gaskets

Badly installed, damaged or rotted 'O' rings, seals and gaskets can cause leakages and possible accidents. Renew whenever disturbed unless otherwise instructed. Do not use Trichloroethane or paint thinners near 'O' rings and seals.

Arc Welding

To prevent the possibility of damage to electronic components, disconnect the battery and the alternator before arc-welding on the machine or attached implements.

If the machine is equipped with sensitive electrical equipment, i.e. amplifier drivers, electronic control units (ECUs), monitor displays, etc., then disconnect them before welding. Failure to disconnect the sensitive electrical equipment could result in irreparable damage to these components.

Parts of the machine are made from cast iron, welds on cast iron can weaken the structure and break. Do not weld cast iron. Do not connect the welder cable or apply any weld to any part of the engine.

Always connect the welder earth (ground) cable to the same component that is being welded to avoid damage to pivot pins, bearings and bushes. Attach the welder earth (ground) cable a distance from the part being welded no more than 0.6 m.

Counterweights

Your machine may be installed with counterweights. They are extremely heavy. Do not attempt to remove them.



Accumulators

The accumulators contain hydraulic fluid and gas at high pressure. Prior to any work being carried out on systems incorporating accumulators, the system pressure must be discharged by a JCB dealer, as the sudden release of the hydraulic fluid or gas may cause serious injury or death.

Hot Components

Touching hot surfaces can burn skin. The engine and machine components will be hot after the unit has been running. Allow the engine and components to cool before servicing the unit.

Soft Ground

A machine can sink into soft ground. Never work under a machine on soft ground.

Working Under the Machine

Make the machine safe before getting beneath it. Make sure that any attachments on the machine are correctly attached. Engage the park brake, remove the ignition key, disconnect the battery. If the machine has wheels use blocks to prevent unintentional movement.

Lifting the Machine

Under no circumstances must the engine be run with the transmission in gear and only one driving wheel jacked

Chemicals

Certain seals and gaskets (e.g. crankshaft oil seal) on JCB machines contain fluoroelastomeric materials such as Viton®, Fluorel™ and Technolon®. Fluoroelastomeric materials subjected to high temperatures can produce highly corrosive hydrofluoric acid. This acid can severely burn. New fluoroelastomeric components at ambient temperature require no special safety precautions. Used fluoroelastomeric components whose temperatures have not exceeded 300 °C (571,6 °F) require no special safety precautions. If evidence of decomposition (e.g. charring) is found, refer to the next paragraph for safety instructions. Do not touch component or surrounding area. Used fluoroelastomeric components subjected to temperatures greater than 300 °C (571,6 °F) (e.g. engine fire) must be treated using the following safety procedure. Make sure that heavy duty gloves and special safety glasses are worn: Thoroughly wash contaminated area with 10% calcium hydroxide or other suitable alkali solution, if necessary use wire wool to remove burnt remains. Thoroughly wash contaminated area with detergent and water. Contain all removed material, gloves etc. used in this operation in sealed plastic bags and dispose of in accordance with Local Authority Regulations. Do not burn fluoroelastomeric materials.

Hydraulic Hoses

Never re-use hydraulic hose end crimps or use reusable hose end crimps.

Personal Protective Equipment

Use the appropriate personal protective equipment before performing maintenance on the machine, otherwise you could be injured.

Working at Height

Use appropriate access equipment such as ladders or a working platform if it is necessary to work at height to perform maintenance tasks on the machine. If you do not use suitable access equipment there is a risk of falling, resulting in personal injury or death.

Fluids and Lubricants

Oil

Oil is toxic. If you swallow any oil, do not induce vomiting, seek medical advice. Used engine oil contains harmful contaminants which can cause skin cancer. Do not handle used engine oil more than necessary. Always use barrier cream or wear gloves to prevent skin contact. Wash skin contaminated with oil thoroughly in warm soapy water. Do not use petrol, diesel fuel or paraffin to clean your skin.

Fluid Under Pressure

Fine jets of fluid at high pressure can penetrate the skin. Keep face and hands well clear of fluid under pressure and wear personal protective equipment. Hold a piece of cardboard close to suspected leaks and then examine the cardboard for signs of fluid. If fluid penetrates your skin, get medical help immediately.



Fuel

Fuel is flammable, keep naked flames away from the fuel system. Stop the engine immediately if a fuel leak is suspected. Do not smoke while refuelling or working on the fuel system. Do not refuel with the engine running. Completely wipe off any spill fuel which could cause a fire. There could be a fire and injury if you do not follow these precautions.

Hygiene

JCB lubricants are not a health risk when used correctly for their intended purposes.

However, excessive or prolonged skin contact can remove the natural fats from your skin, causing dryness and irritation.

Low viscosity oils are more likely to do this, so take special care when handling used oils, which might be diluted with fuel contamination.

Whenever you are handling oil products you must maintain good standards of care and personal and plant hygiene. For details of these precautions we advise you to read the relevant publications issued by your local health authority, plus the following.

Storage

Always keep lubricants out of the reach of children.

Never store lubricants in open or unlabelled containers.

Waste Disposal

▲ CAUTION It is illegal to pollute drains, sewers or the ground. Clean up all spill fluids and/or lubricants.

Used fluids and/or lubricants, filters and contaminated materials must be disposed of in accordance with local regulations. Use authorised waste disposal sites.

CAUTION Damaged or spent batteries and any residue from fires or spillage must be put in a suitable closed receptacle and must be disposed of in accordance with local environmental waste regulations.

All waste products must be disposed of in accordance with all the relevant regulations.

The collection and disposal of used oil must be in accordance with any local regulations. Never pour used engine oil into sewers, drains or on the ground.

Handling

▲ CAUTION The temperature of the hydraulic oil will be high soon after stopping the machine. Wait until it cools before beginning maintenance.

New Oil

There are no special precautions needed for the handling or use of new oil, beside the normal care and hygiene practices.

Used Oil

Used engine crankcase lubricants contain harmful contaminants.

Here are precautions to protect your health when handling used engine oil:

- Avoid prolonged, excessive or repeated skin contact with used oil
- Apply a barrier cream to the skin before handling used oil. Note the following when removing engine oil from skin:
- Wash your skin thoroughly with soap and water

Eyes

In the case of eye contact, flush with water for 15min. always get medical attention.

First Aid - Electrolyte**Fires**

▲ WARNING Do not use water to put out an oil fire. This will only spread it because oil floats on water. Extinguish oil and lubricant fires with carbon dioxide, dry chemical or foam.

Spillage

Absorb with sand or a locally approved brand of absorbent granules. Scrape up and remove to a chemical disposal area.

Skin

In the case of excessive skin contact, wash with soap and water.

Swallowing

If oil is swallowed do not induce vomiting. Get medical advice.

Eyes

In the case of eye contact, flush with water for 15min. If irritation persists, get medical attention.

First Aid - Oil

- A Keep away from children
- C No smoking, no naked flames, no sparks
- E Battery acid
- B Shield eyes
- D Explosive gas
- F Note operating instructions

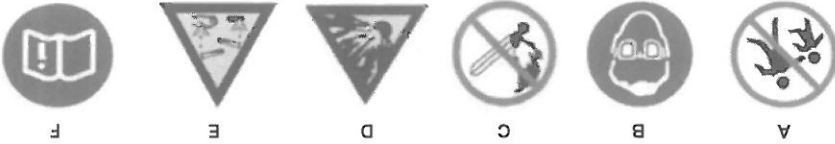


Figure 259.

The following warning symbols may be found on the battery:

Warning Symbols**Battery**

- Using a nail brush will help
- Use special hand cleansers to help clean dirty hands
- Never use petrol, diesel fuel, or paraffin for washing
- Avoid skin contact with oil soaked clothing
- Don't keep oily rags in pockets
- Wash dirty clothing before re-use
- Throw away oil-soaked shoes



Swallowing

Do not induce vomiting. Drink large quantities of water or milk. Then drink milk of magnesia, beaten egg or vegetable oil. Get medical help.

Skin

Flush with water, remove affected clothing. Cover burns with a sterile dressing then get medical help.

First Aid - DEF (if applicable)

Do not drink or inhale DEF (Diesel Exhaust Fluid). If large quantities of DEF have been swallowed a doctor should be called immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Avoid prolonged or repeated skin contact. After contact with skin wash thoroughly with plenty of soap and water. If irritation develops seek medical advice.

Avoid contact with eyes, skin and clothing. Wear chemical resistant gloves, overalls and safety goggles complying with an approved standard. If in contact with eyes, rinse immediately with plenty of clean water. If irritation occurs seek medical attention. Always wash hands and arms thoroughly after handling before eating, drinking, smoking or using the lavatory.



Maintenance Schedules

General

▲ WARNING Maintenance must be done only by suitably qualified and competent persons.

Before doing any maintenance make sure the machine is safe, it must be correctly parked on solid, level ground.
To prevent anyone starting the engine, remove the ignition key. Disconnect the battery (by means of the battery isolator if installed) when you are not using electrical power. If you do not take these precautions you could be killed or injured.

A badly maintained machine is a danger to the operator and the people working around the operator. Make sure that the regular maintenance and lubrication tasks listed in the service schedules are done to keep the machine in a safe and efficient working condition.

To ensure the correct functioning of the engine and emissions control system all operation and maintenance must be conducted in accordance with the instructions in this manual. Incorrect operation, maintenance or repair of the engine and emissions control system may lead to reduced product life, loss of performance or accordance with the requirements in this manual.

Apart from the daily tasks, the schedules are based on the machine running hours. Keep a regular check on the hourmeter readings to correctly gauge the service intervals. When there is no hourmeter installed, use the calendar equivalents to determine the service intervals.

Do not use a machine which is due for a service. Make sure any defects found during the regular maintenance checks are corrected immediately.

More frequent checks of engine components than the engine manufacturer recommends do not invalidate emissions warranty.

How to Use the Maintenance Schedules

The schedules show the service tasks which must be done and their intervals.

The services must be done at either the hourly interval or the calendar equivalent, whichever occurs first.

The intervals given in the schedules must not be exceeded. If the machine is operated under severe conditions (high temperature, dust, water, etc.) shorten the intervals.

Table 35.

Service task can be completed by a competent operator. Details of how to complete the service task are given in the Operator's Manual.	○
We recommend that a Service Engineer completes the service task. Details of how to complete the service task are given in the Service Manual.	□

Maintenance Intervals

Table 36.

Interval (h)	Calendar Equivalent
10	Daily
50	Weekly
500	Six months
1000	Yearly
2000	Two Years
5000	Five Years



Pre-start Cold Checks, Service Points and Fluid Levels

(For: 526-56 [T4F], 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 536T195 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Table 37.

Component	Task	10	50	100	500	1,000	1,500	2,000
-----------	------	----	----	-----	-----	-------	-------	-------

ENGINE								
Coolant Quality and Level	Check	○	○	○	○	○	○	○
Coolant, Oil or Fuel Leaks	Check	○	○	○	○	○	○	○
Cooling System	Drain and Refill							
Oil level	Check	○	○	○	○	○	○	○
Oil and Filter (UN3/GB3, SJ and SL engine) ^(2, 4)	Replace							
Oil and Filter (FL engine) ^(3, 9)	Replace							
Air Cleaner Dust Valve ⁽¹⁷⁾	Clean							
Air Cleaner Outer Element ⁽¹⁷⁾	Replace							
Air Cleaner Inner Element ⁽¹⁷⁾	Replace							
DEF (Diesel Exhaust Fluid) Filter (SJ engine) ⁽¹⁶⁾	Replace							
Pre-Cleaner (if fitted)	Check		○	○	○	○	○	○
Water Separator	Check for contamination and drain		○	○	○	○	○	○
Water Separator Fuel Filter (SJ and SL engine, excludes UN3/GB3 engines) ⁽⁶⁾	Replace							
Water Separator Fuel Filter (FL engine, excludes UN3/GB3 engines) ⁽⁶⁾	Replace							
Fuel Filter 30 micron, Fuel Filter 5 micron, Lubricity Filter (UN3/GB3 engines) ⁽⁶⁾	Replace							
Engine Fuel Filter ⁽⁶⁾	Replace							
Front End Accessory Drive (FEAD) Belt Condition	Check							
Front End Accessory Drive (FEAD) Belt ^(14, 15)	Replace							
Powertrain Mounting Bolts for Tightness	Check							
All Hoses - Condition	Check							
Radiator ⁽¹⁷⁾	Clean							
Crankcase Ventilation Filter	Replace							
Valve Clearances ⁽⁷⁾	Check and adjust							
Oil Filter and Dipstick Seals	Replace							
Injectors ^(7, 14)	Replace							
Injector(s) Leak Off Rail ^(7, 14)	Replace							
High Pressure Fuel Lines ^(7, 14)	Replace							



Component	Task	10	50	100 ⁽¹⁾	500	1,000	1,500	2,000
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TRANSMISSION, AXLES AND STEERING	Transmission Mount Security							
	Transmission Oil Level		○					
	Transmission Oil ⁽⁹⁾							
	Replace Transmission Oil Filter Canister							
	Replace							
	DTVT (Dual Technology Variable Transmission) Oil Filter Canister							
	Canister							
	Axle Mount Security							
	Axle(s) Oil Level		○					
	Axle(s) Oil (550-80, 560-80 machines)							
Axle(s) Oil (Other machines)								
Hub Oil Level ⁽⁹⁾								
Hub Oil (550-80, 560-80 machines)								
Hub Oil (Machines With- out Oil Immersed Brakes								
Hub Oil (Machines With- out Oil Immersed Brakes								
Hub Oil (Machines With Oil Immersed								
Hub Oil (Machines With Oil Immersed								
Brakes - 550-170, 550-140 ⁽⁹⁾								
Axle Breather(s)								
Check								
Steering Stops (if fitted)								
Security								
Wheel Nut Security		○	○					
Check								
Tire Pressures/Condition		○	○					
Check								
Wheel Alignment		○	○					
Check								
Transmission Strainer								
Clean								
Drive Shafts and Universal Joints ⁽¹⁰⁾								
Security and grease								
Grease		○						
HYDRAULICS								
Oil Level			○					
Oil								
Sample								
Oil								
Servo Pilot Oil Filter								
Replace								
Oil Filter (Hydraulic Oil Tank) ⁽¹¹⁾								
Replace								
Oil Filter (Hydraulic Oil Tank, Top Mount- ing)								
Replace								
Oil Filter (Canister Type)								
Replace								
Suction Strainer								
Clean								
BRAKES								
Brake System Fluid Level ⁽¹²⁾		○	○					
Check (condition)								
Brake System Fluid ⁽¹²⁾								
Replace								
ELECTRICS								



Component	Task	10	50	100	500	1,000	1,500	2,000
BATTERY ELECTROLYTE AND CAB	Battery Electrolyte Level (if applicable)							
	Battery Terminals for Condition and Tightness							

All Ram Pivot Pins	Grease							
	Grease							
All Other Pivot Pins (Excluding 550-80 tilt link pivots)	Grease							
	Grease							
550-80 Tilt Link Pivot Pins	Grease							
Fire Extinguisher (if fitted)	Check							
Wing Mirrors Condition and Security	Check							
ROPS/FOPS Structure	Check							
Doors and Hinges	Lubricate							
Control Lever Linkages	Lubricate							
Windsield Washer Fluid Level	Check							
Cab Heater Fresh Air Filter (if fitted)	Replace							
Cab Re-circulation Filter (if fitted)	Replace							
Boom Wear Pad Runways	Waxoyl							
Inner Boom Hoses	Grease							
Boom Chains	Oil							
Boom Wear Pad Clearance ⁽¹⁹⁾	Check/Adjust							
Boom Wear Pad Condition and Security ⁽¹³⁾	Check/Adjust							
ATTACHMENTS								
Carriage Lock Pins	Grease							
Hydraulic Tow Hitch Inner Leg (if fitted)	Waxoyl							
Hydraulic Tow Hitch Pivot Pin (if fitted)	Grease							
Hydraulic Tow Hitch Release Cable/Retain Spring/Retaining Latch (if fitted)	Check							



Component	Task	REGISTRATION/CERTIFICATION					
		10	50	100 ⁽¹⁾	500	1,000	1,500/2,000
SWL Stickers (UK) and Flip Chart	Renew as required	○	○	○	□	□	□
		○	○	○	□	□	□

- (1) First 100 Hours Service only, to be completed by your JCB Distributor.
 (2) If operating under arduous conditions, do an engine oil flush (use the normal recommended engine oil) every 250 hours. Change the engine oil and filter every 250 hours.
 (3) If operating under arduous conditions, do an engine oil flush (use the normal recommended engine oil) every 500 hours. Change the engine oil and filter every 500 hours.
 (4) When the engine is operated with 20% biodiesel change the engine oil and filter every 250 hours. Refer to Fuel System for more information.
 (5) When the engine is operated with 20% biodiesel change the engine oil and filter every 500 hours. Refer to Fuel System for more information.
 (6) If the engine is difficult to start or the engine has poor performance, fit new filters.
 (7) Jobs which should only be done by a specialist.
 (8) After a major transmission repair, the new oil should be run to operating temperature and changed again to remove any contamination which entered during the repair. Change the oil and filter after a further 100 hours if the oil was heavily contaminated because of, or from the failure (e.g. water contamination).
 (9) After a hub repair, the new oil should be run to operating temperature and changed again to remove any bedding-contamination which entered during the repair. Change the oil after a further 100 hours to remove any bedding-in wear. This is particularly important if new brake plates have been fitted.
 (10) The axles and drivshafts are factory greased with a high performance grease, if during service a standard grease is used, then the interval must be reduced to every 50 hours, contact your JCB Distributor for advice.
 (11) Agri, Agri Plus, Agri Super.
 (12) Not applicable to 550-80 machines.
 (13) If operating under arduous conditions, check the boom wear pads every 250 hours.
 (14) 8000 hours.
 (15) If the operating environment is very warm i.e above 40°C (103.9°F) then the FEAD (Front End Accessory Drive) belt may need changing every 4000 hours.
 (16) If operating under arduous conditions, change the DEF filter more frequently.
 (17) More frequently if operating in dusty environments.

Functional Tests and Final Inspection

(For: 526-56 [T4F], 53170 [T4F], 53170 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 53570LP [T4F], 53570LP [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 53670 [T4F], 53670 [T4F], 53670LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 54170 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Table 38.

Component	Task	ENGINE					
		10	50	100 ⁽¹⁾	500	1,000	1,500/2,000
Idle speed ⁽²⁾	Check	□	□	□	□	□	□
	Check	□	□	□	□	□	□
Torque converter stall speed ⁽²⁾	Check	□	□	□	□	□	□
	Check	□	□	□	□	□	□
Max. no load speed ⁽²⁾	Check	□	□	□	□	□	□
	Check	□	□	□	□	□	□
Exhaust system security ⁽²⁾	Check	□	□	□	□	□	□
	Check	□	□	□	□	□	□
Air inlet system security	Check	□	□	□	□	□	□
	Check	□	□	□	□	□	□
TRANSMISSION, AXLES AND STEERING							
Steering - Operation/Phasing	Check	○	○	○	□	□	□
	Check	○	○	○	□	□	□
2WD/4WD Selection (if fitted)	Check	□	□	□	□	□	□
	Check	□	□	□	□	□	□
Transmission Operation	Check	○	○	○	□	□	□
	Check	○	○	○	□	□	□



Component	Task	10	50	100	500	1,000	1,500	2,000
Forward/Reverse/Gear - Selection/ Operation	Check							
	Check							
Torque Converter Main Line Pressure ⁽²⁾	Check							
	Check							
Neutral Start Operation	Check							
	Check							
Clutch Disconnect/Dump Button	Check							
	Check							
brake pedal operation ⁽²⁾	Check							
	Check							
MRV Pressure at Max RPM ⁽²⁾	Check and adjust							
	Check							
Operation of All Services	Check							
	Check							
Hose Burst Protection Valves (if fitted)	Check							
	Check							
ARV Pressure at idle ⁽²⁾	Check and adjust							
	Check and adjust							
Steer Circuit MRV Pressure ⁽²⁾	Check and adjust							
	Check							
Fan Motor Speed (if fitted) ⁽²⁾	Check							
	Check							
Attachment Operation/Remote Servo (if fitted)	Check							
	Check							
Piston Rods Chrome	Check							
	Check							
Boom Extension/Phasing (3 stage boom) ⁽²⁾	Check							
	Check							
Parallel Lift/Lower	Check							
	Check							
Stabiliser Leg Cut-out (if fitted) ⁽²⁾	Check							
	Check							
Chassis Levelling (Sway) Cut-out (if fitted)	Check							
	Check							
BRAKES								
Foot Brake - Operation	Check							
	Check and adjust							
ELECTRICS								
Alternator - Output ⁽²⁾	Check							
	Check							
All Electrical Equipment Operation, (warning lights, beacon, alarms, horn, wipers etc.)	Check							
	Check							
Longitudinal Load Moment Indicator	Check							
	Check							
LLMC/LC4 System (if fitted)	Check							
	Check							
Stabiliser Indicators (if fitted)	Check							
	Check							
BODYWORK AND CAB								
Inclinometer (if fitted) ⁽²⁾	Check							
	Check							
Glazing for Correct Fit/Leaks	Check							
	Check							
Seat/Seat Belts	Check							
	Check							
Air Conditioning (if fitted)	Check							
	Check							
Forks ⁽²⁾	Fit and Check security							
	Check							



Component	Task	Hours						
		10	50	100 ⁽¹⁾	500	1,000	1,500	2,000
Generally for damage, leaks and wear	Check	○	○	□	□	□	□	□
	BOOM CHAIN SERVICING							
Boom Chains	Oil	○	○	□	□	□	□	□
Boom Chains - Tension ⁽⁴⁾	Check (tension and phasing)		○	□	□	□	□	□
Boom Chains - Wear and De-fects ^(2, 3, 6)	Check			□	□	□	□	□
Boom Roller - Wear	Check		○	□	□	□	□	□
Boom Roller Pivot Pin (with grease point fitted)	Grease			□	□	□	□	□
Ram Roller (replace if necessary)	Check	○	○	□	□	□	□	□
LIFTING EQUIPMENT								
Fit for Purpose Test ⁽⁶⁾	Check							□

(1) First 100 Hours Service only, to be completed by your JCB Distributor.

(2) Jobs which should only be done by a specialist.

(4) If chains require adjusting contact your JCB Dealer.

(5) This may be required every six months or at least annually in some countries to meet and comply with legislation and for insurance purposes.

(6) If operating under arduous conditions, complete this operation every 250 hours.

Maintenance Positions

General

▲ WARNING Maintenance must be done only by suitably qualified and competent persons. Before doing any maintenance make sure the machine is safe, it must be correctly parked on solid, level ground.

To prevent anyone starting the engine, remove the ignition key. Disconnect the battery (by means of the battery isolator if installed) when you are not using electrical power. If you do not take these precautions you could be killed or injured.

WARNING Make the machine safe before getting beneath it. Make sure that any attachments on the machine are correctly attached. Engage the park brake, remove the ignition key, disconnect the battery.

WARNING A machine can roll off jacks and crush you unless the wheels have been blocked. Always block the wheels at the opposite end of the machine that is to be jacked. Do not work underneath a machine supported only by jacks. Always support a jacked-up machine on axle stands before working underneath it.

Make the machine safe before you start a maintenance procedure. You can complete most of the maintenance procedures with the boom lowered. Unless a maintenance procedure instructs you differently, you must lower the boom. Refer to: Maintenance Position - Boom Lowered (Page 277).

When lifting a machine make sure the jacks are on the correct point. The jacks are on the front and rear axle castings on the machine.

Before you jack the rear axle make sure the axle has wedges added between the axle and the chassis oscillation stop to stop the axle from oscillating.

Make sure the jack is placed on a firm and level surface and that the jack is of a suitable capacity for the load. Only jack one point at a time.

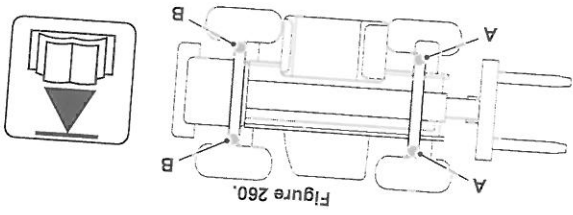


Figure 260.

A Jack point

Maintenance Position - Boom Lowered

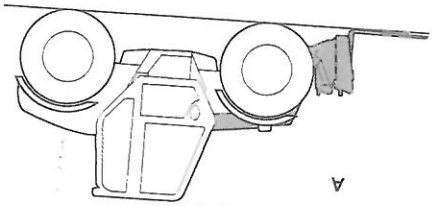


Figure 261.

A Boom lowered

1. Park the machine on level, solid ground.
2. Lower the boom.
3. Put the attachment flat on the ground.

4. Stop the engine and remove the starter key.
5. Disconnect the battery to prevent accidental operation of the engine.
6. Make sure there are no loose articles in the enclosure.
7. If necessary, put chocks against the two sides of the wheels before you get below the machine.

Maintenance Position - Boom Raised

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

▲ WARNING You could be killed or injured if the lift arm drops while you are working under it. Install the lift arm maintenance strut as instructed before doing any maintenance work with the lift arm raised. Keep people away from the machine while you install or remove the lift arm maintenance strut.

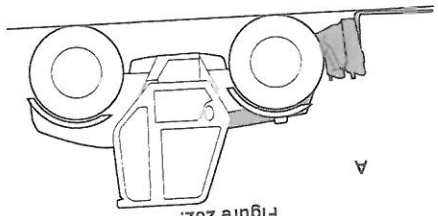
WARNING Make sure that you use the correct JCB maintenance strut for the machine. Make sure that the safety strut is only used with the correct JCB retaining bolt or securing device. Never substitute this bolt or securing device, always use the correct JCB part.

Make sure that the strut and bolt/securing device is installed correctly. Never use a strut intended for another machine. If in doubt, consult your JCB dealer.

WARNING Do not drive the machine with the maintenance strut installed. **CAUTION** You will have to climb onto the machine to install or remove the strut. Take care, especially if the machine is wet. Remove mud and oil before climbing onto the machine. Do not use the exhaust as a handhold. It can burn you.

Lift Arm Lowered

Figure 262



A Boom lowered

1. Park the machine on level, solid ground.
2. Lower the boom.
3. Put the attachment flat on the ground.
4. Stop the engine and remove the starter key.
5. Disconnect the battery to prevent accidental operation of the engine.
6. Make sure there are no loose articles in the enclosure.
7. If necessary, put chocks against the two sides of the wheels before you get below the machine.

- 7. Place the strut around the lift ram piston rod. Secure it in position with the strap.
 - 6. Install the maintenance strut.
- A Maintenance strut

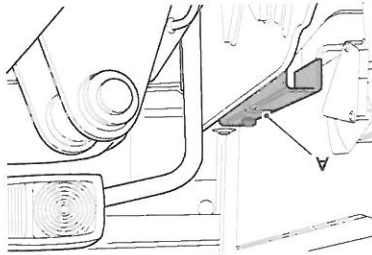


Figure 264.

- 5. Remove the maintenance strut from its stowage position.
- 4. Stop the engine and remove the ignition key.
- 3. Raise the lift arm.
- 2. Retract the lift arm.
- 1. Make the machine safe.

Installing the Maintenance Strut

Lift arm raised

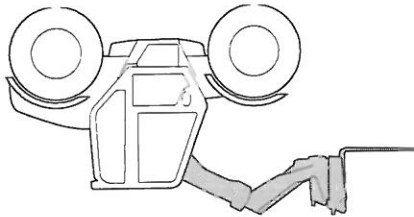


Figure 263.

If you raise the lift arm to get access for maintenance, you must install the maintenance strut on the lift arm. Before you install the maintenance strut remove any load on the forks and empty shovels or attachments.

Lift Arm Raised



1. Raise the lift arm to take the weight off of the strut.
2. Stop the engine and remove the ignition key.
3. Remove the maintenance strut.
4. Secure the strut in its stowage position.
5. Lower the lift arm to the ground.

Removing the Maintenance Strut

10. If necessary, put blocks against the two sides of the wheels before you get below the machine.
9. Isolate the battery to prevent accidental operation of the engine.
8. To prevent any chance of the lift arm creeping down and trapping your fingers, the lift arm should be lowered onto the strut. Lower the arm carefully, to prevent possible damage to the strut. Stop as soon as the weight of the lift arm is on the strut.

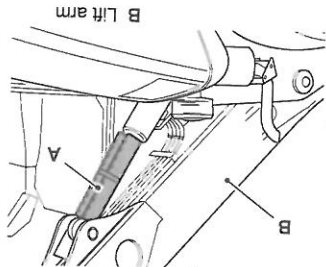


Figure 265.

A Maintenance strut

B Lift arm

C Water separator
E Engine oil filter
G Engine oil dipstick
J Coolant expansion tank

D Radiator
F Drive belt guard
H Engine oil filler cap



A Battery Isolator

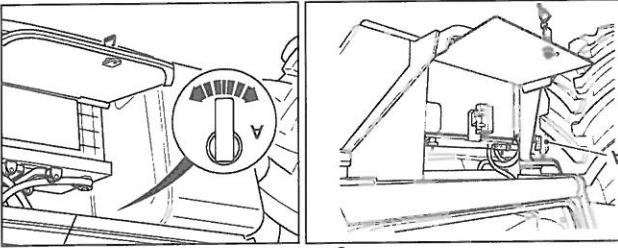


Figure 267.

Battery Isolator



Hydraulic Oil Level Indicator
Machines with External Sight Gauge

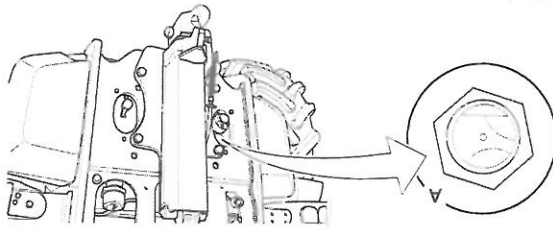


Figure 268.

A Hydraulic oil level indicator

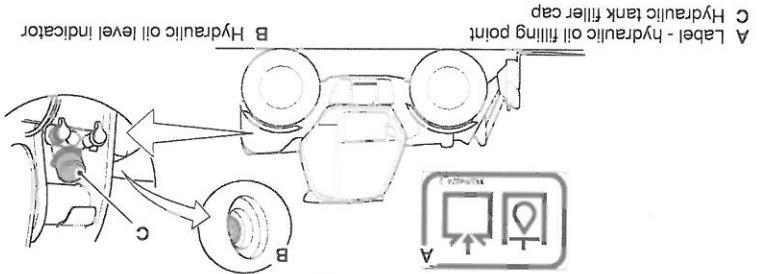


Figure 269.

A Label - hydraulic oil filling point

B Hydraulic oil level indicator

C Hydraulic tank filler cap

Machines without External Sight Gauge

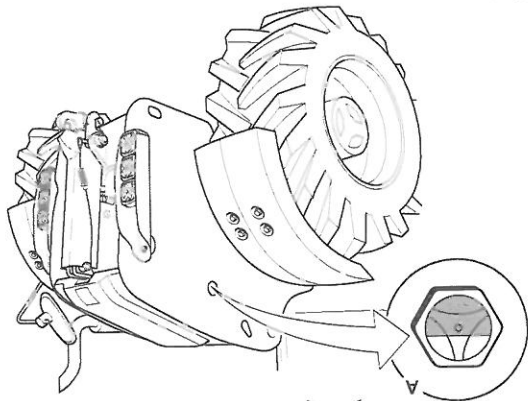


Figure 270.

A Hydraulic oil level indicator

A Hydraulic oil level indicator
 B Label - hydraulic oil filling point
 C Hydraulic tank filler cap

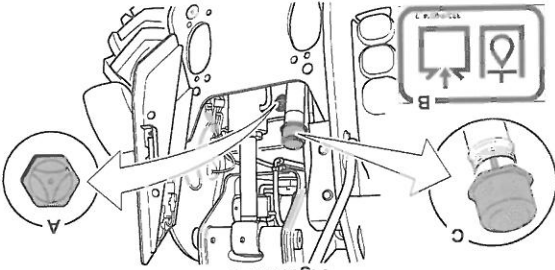


Figure 271.

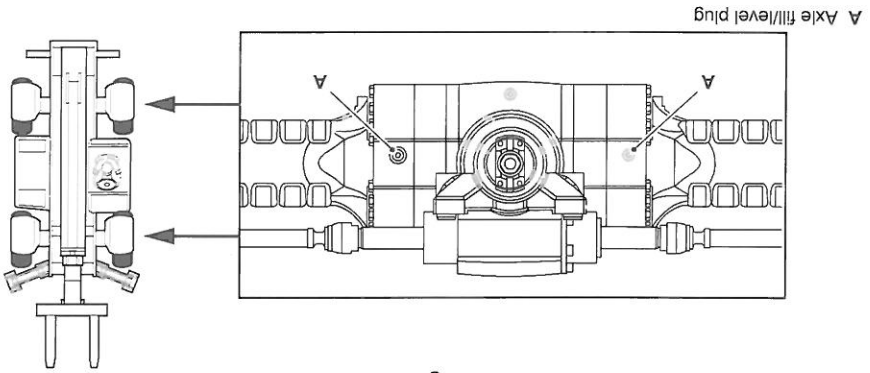


Figure 272.

For: 550-80

Axles



Filling the Tank

A Axle fill/level plug

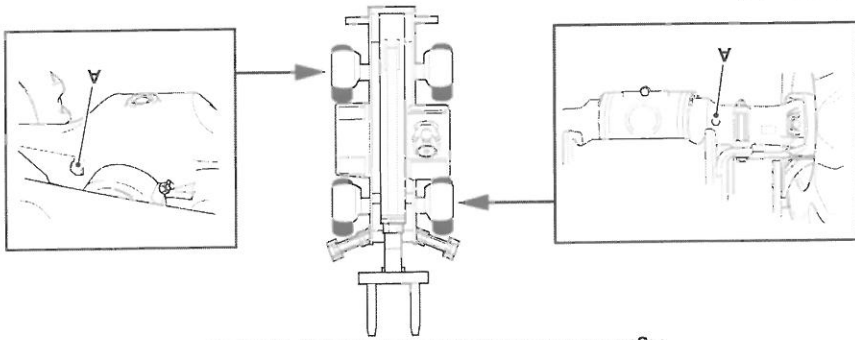


Figure 273. Machines with Double Acting Cylinders

For: Other Models

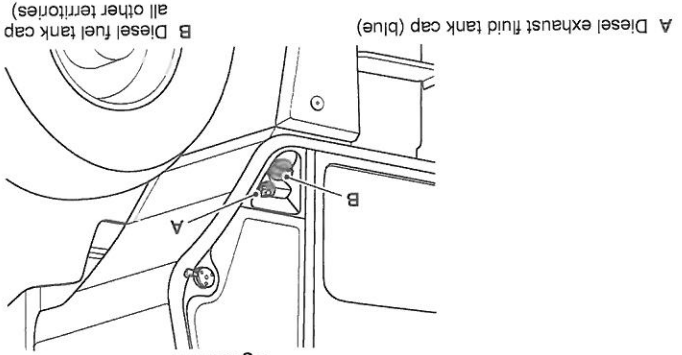
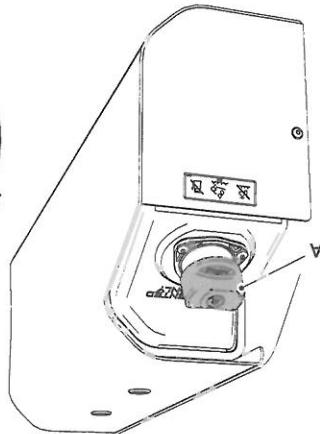


Figure 274.

A Diesel exhaust fluid tank cap (blue)
B Diesel fuel tank cap (green - USA only, black - all other territories)



A Diesel exhaust fluid tank cap (blue)



B Diesel fuel tank cap (green - USA only, black - all other territories)

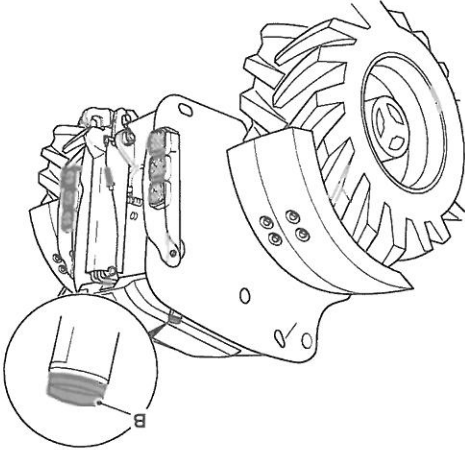
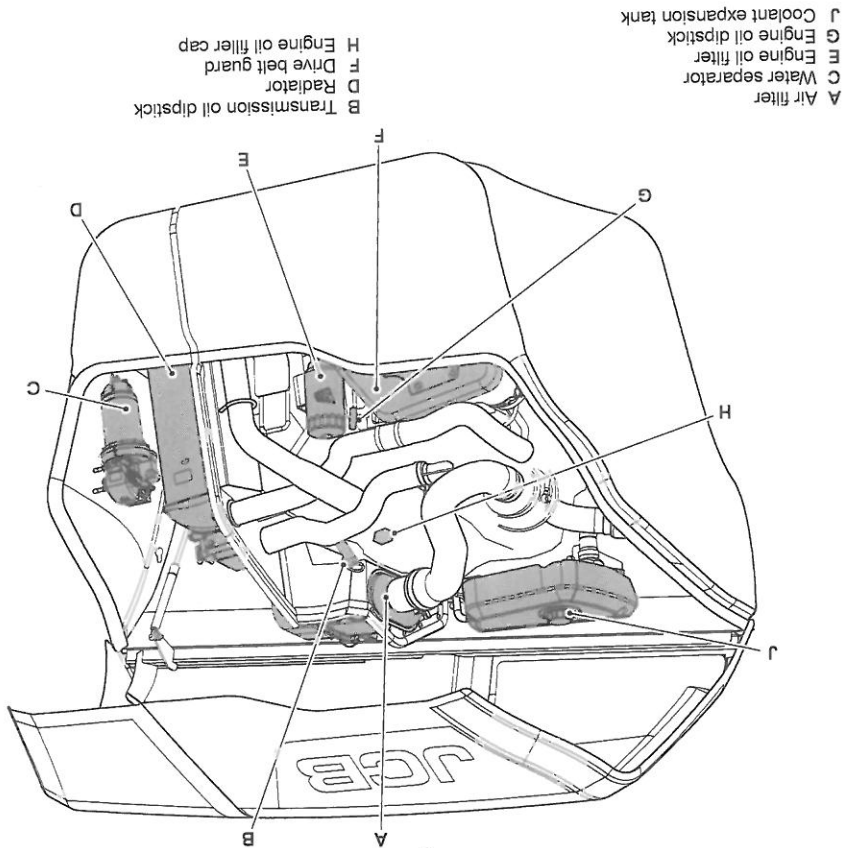


Figure 275.

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], JCB T4F 3.0 55kw Electronic Turbocharged Aftercooled Engine)

Engine Compartment

Figure 276.



- A Air filter
- C Water separator
- E Engine oil filter
- G Engine oil dipstick
- J Coolant expansion tank
- B Transmission oil dipstick
- D Radiator
- F Drive belt guard
- H Engine oil filler cap

A Battery Isolator

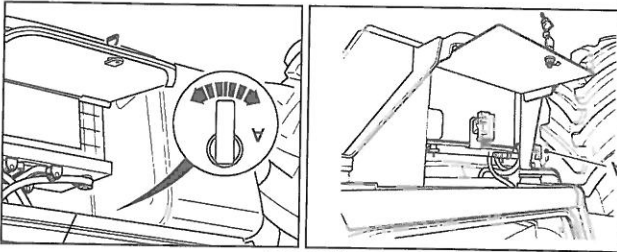


Figure 277.

Battery Isolator



Hydraulic Oil Level Indicator

Machines with External Sight Gauge

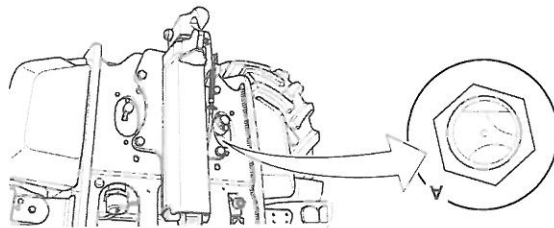


Figure 278.

A Hydraulic oil level indicator

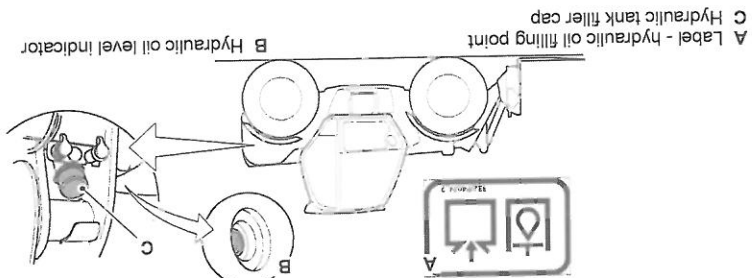


Figure 279.

A Label - hydraulic oil filling point

C Hydraulic tank filler cap

B Hydraulic oil level indicator

Machines without External Sight Gauge

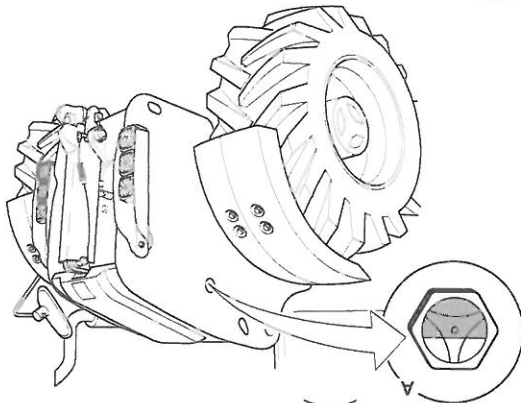
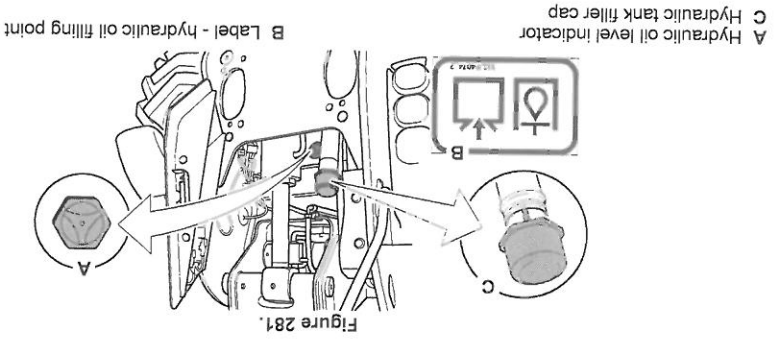


Figure 280.

A Hydraulic oil level indicator

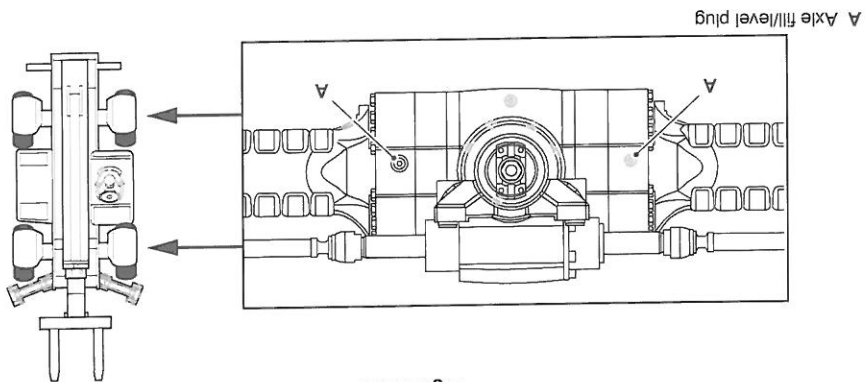


A Hydraulic oil level indicator

C Hydraulic tank filler cap

B Label - hydraulic oil filling point

Figure 281.



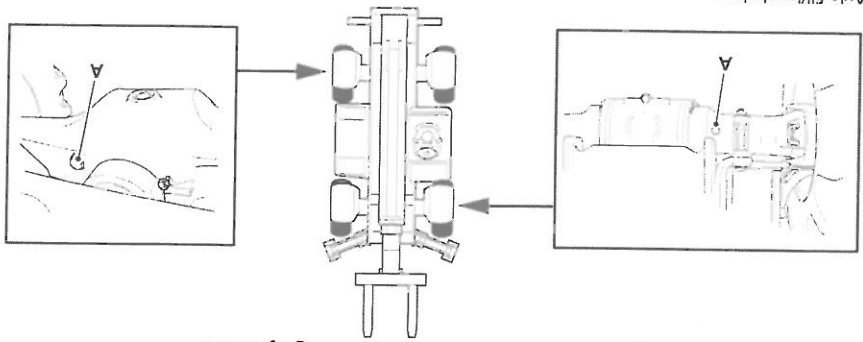
For: 550-80

Axles



For: Other Models

Figure 283. Machines with Double Acting Cylinders

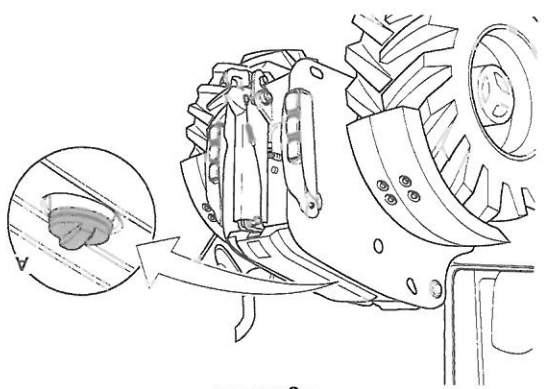


A Axle fill/level plug

Filling the Tank

For: 526-56

Figure 284.



A Fuel cap



For: Other Models

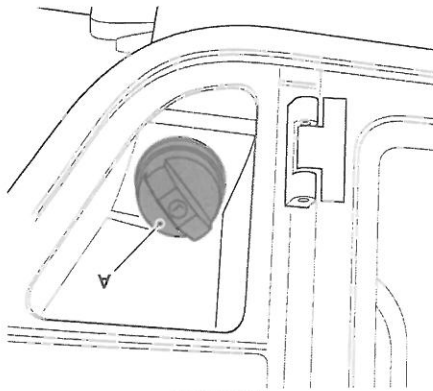


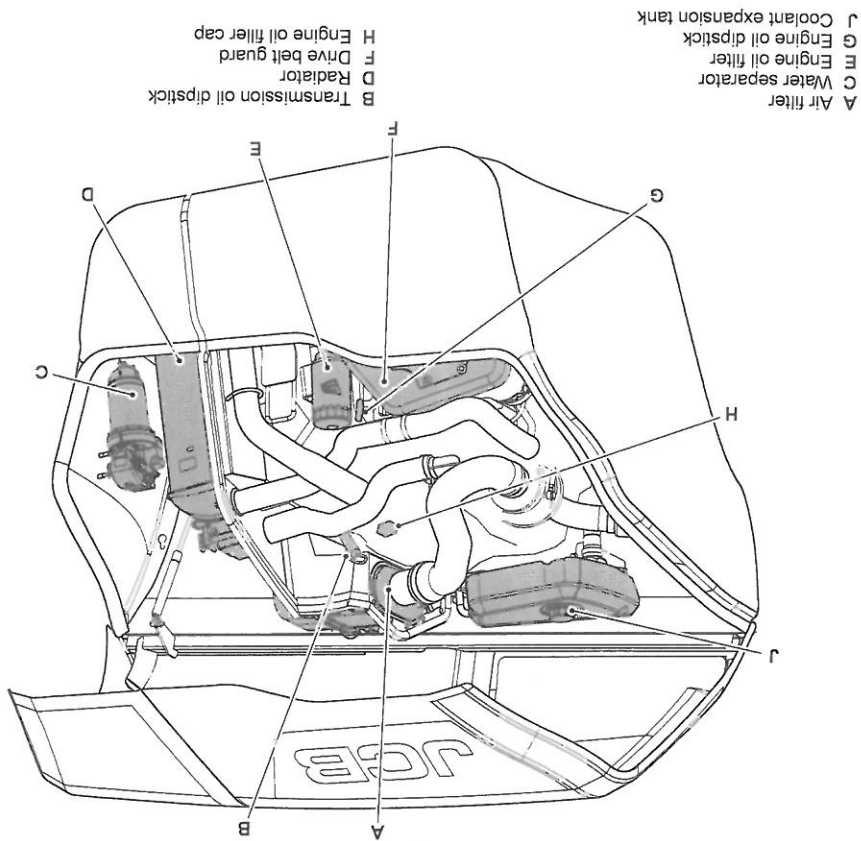
Figure 285.

A Fuel cap

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], JCB (UN3/GB3) Electronic Dieselmax Turbocharged Aftercooled Engine)

Engine Compartment

Figure 286.



A Battery Isolator

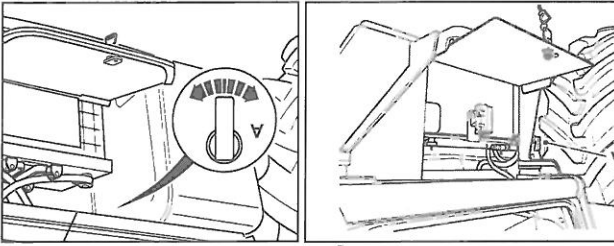


Figure 288.

Battery Isolator

- A Main Water separator
- C 5 micron Fuel filter (with separator bowl)

- B 30 micron Fuel filter (with separator bowl)

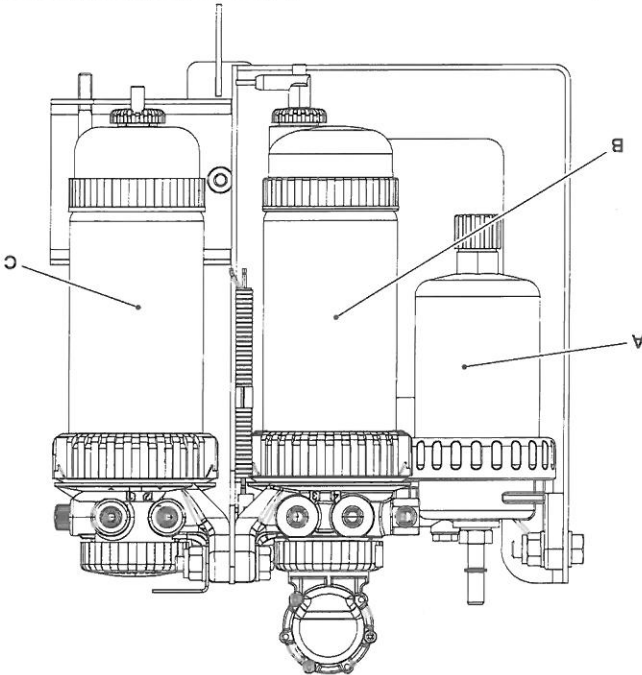


Figure 287.



Hydraulic Oil Level Indicator

Machines with External Sight Gauge

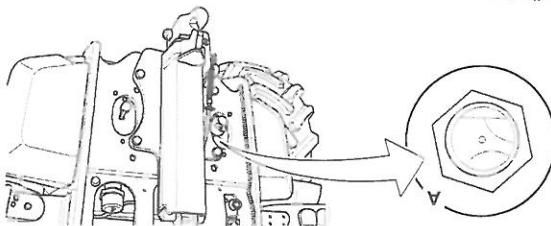
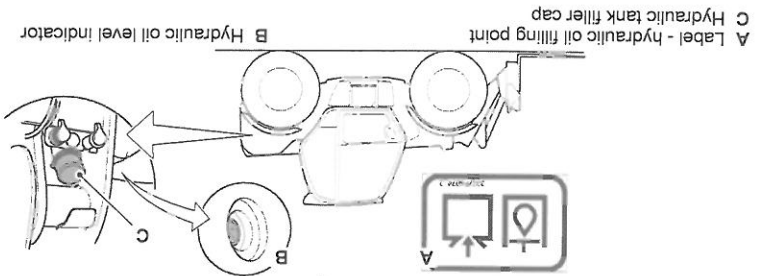


Figure 289.

A Hydraulic oil level indicator



A Label - hydraulic oil filling point

C Hydraulic tank filler cap

B Hydraulic oil level indicator

Figure 290.



Machines without External Sight Gauge

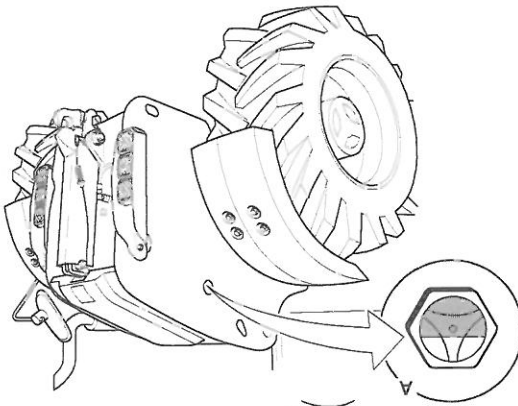
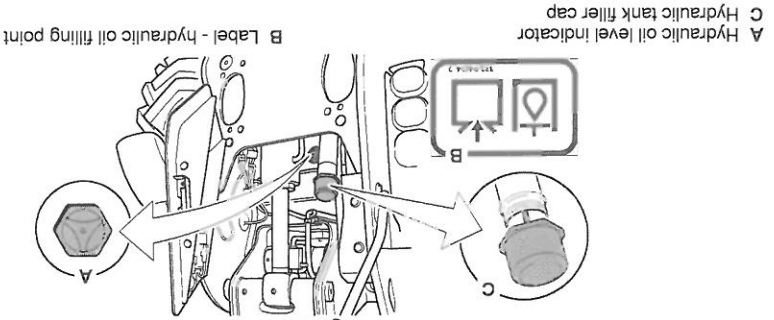


Figure 291.

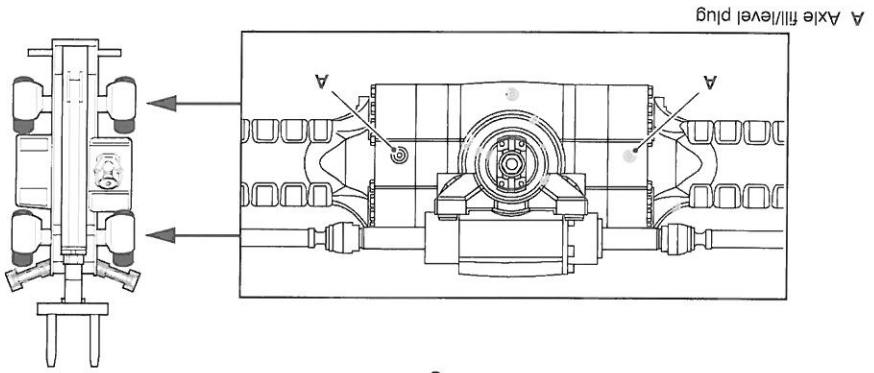
A Hydraulic oil level indicator



A Hydraulic oil level indicator
C Hydraulic tank filler cap

B Label - hydraulic oil filling point

Figure 292.



For: 550-80

Axles



A Fuel cap

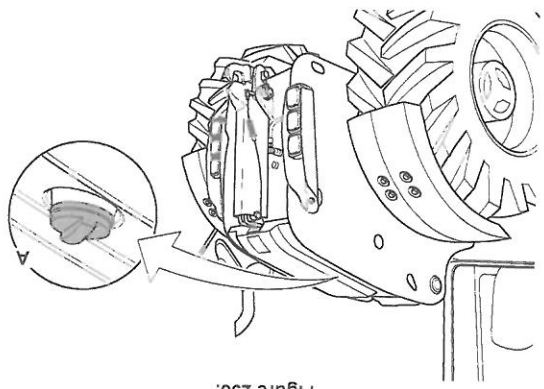


Figure 295.

For: 526-56

Filling the Tank

A Axle fill/level plug

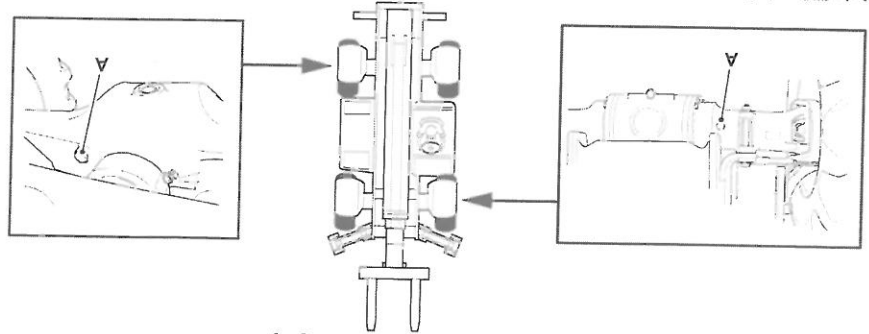


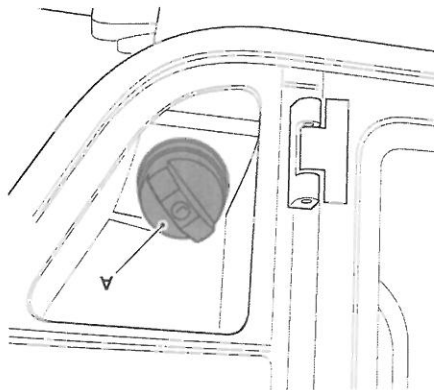
Figure 294. Machines with Double Acting Cylinders

For: Other Models



For: Other Models

Figure 296.

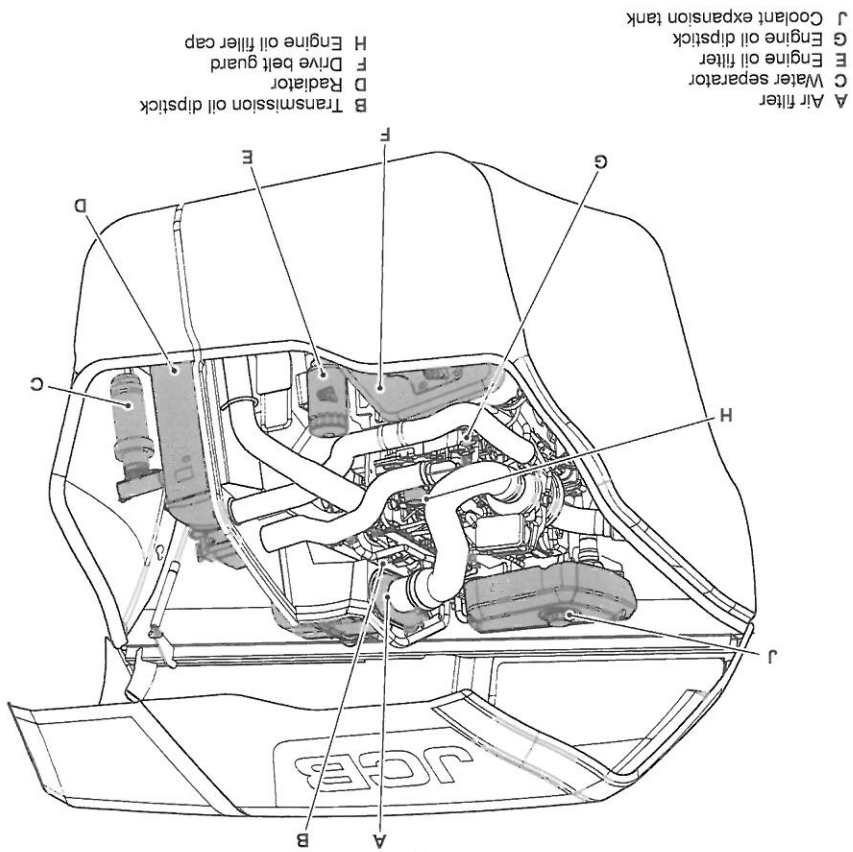


A Fuel cap

(Otherwise)

Engine Compartment

Figure 297.



A Battery Isolator

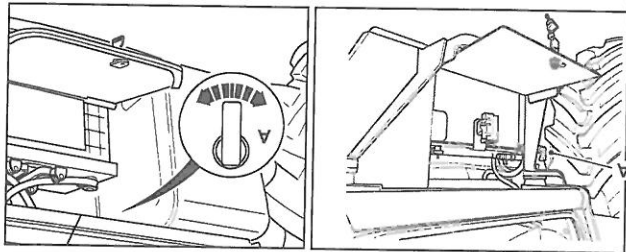


Figure 298

Battery Isolator



Hydraulic Oil Level Indicator Machines with External Sight Gauge

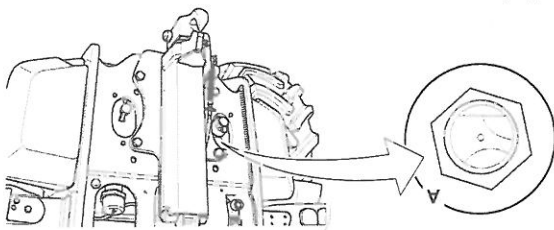


Figure 299.

A Hydraulic oil level indicator

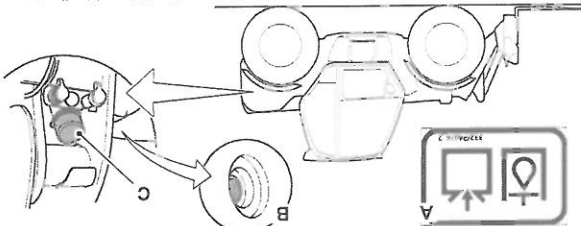


Figure 300.

A Label - hydraulic oil filling point
C Hydraulic tank filler cap

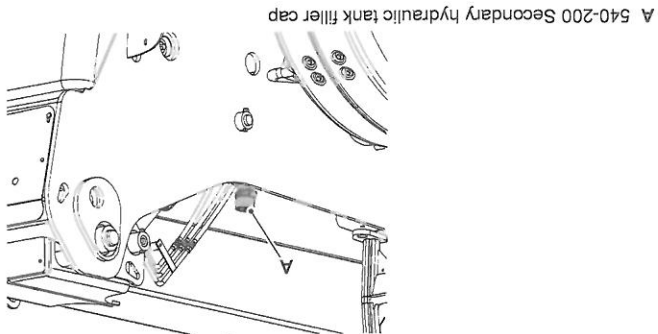


Figure 301.

Machines without External Sight Gauge

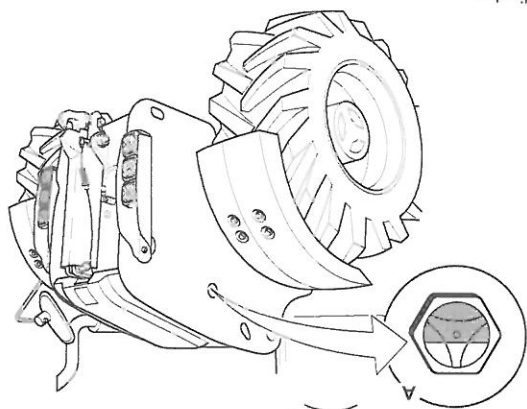
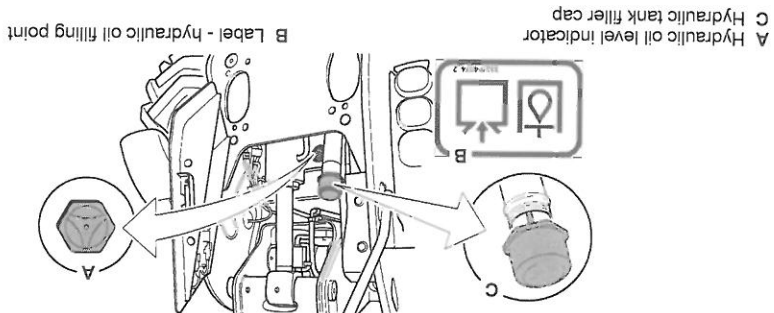


Figure 302.

A Hydraulic oil level indicator



A Hydraulic oil level indicator
C Hydraulic tank filler cap

B Label - hydraulic oil filling point

Figure 303.

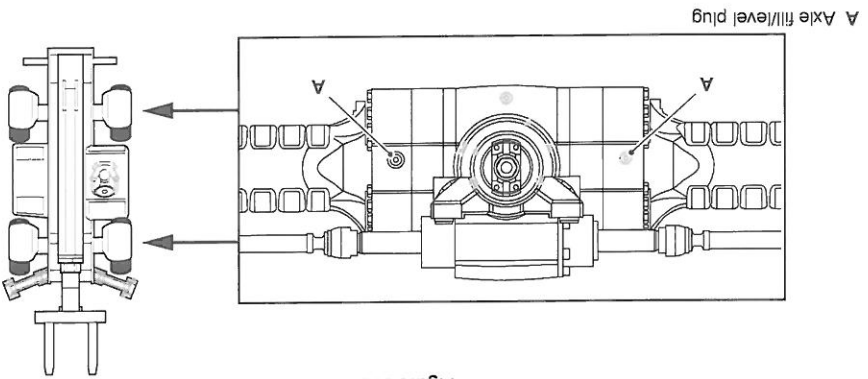


Figure 304.

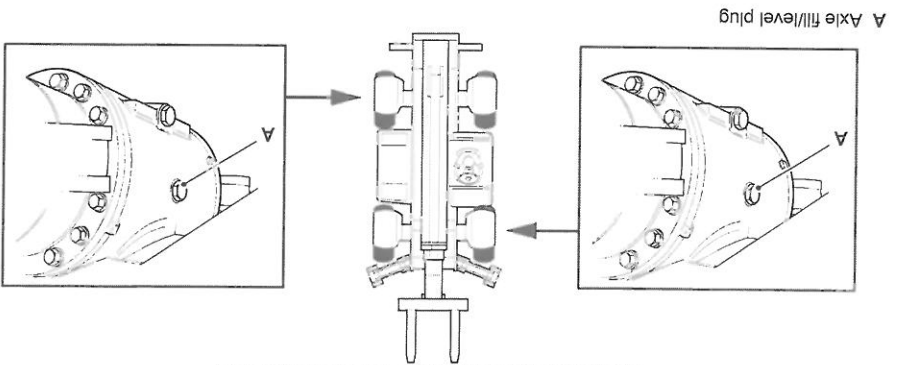
For: 550-80, 560-80

Axles



For: 535-125, 535-140 and 540-140

Figure 305. Machines with Powered Track Rods



A Axle fill/level plug

A Axle fill/level plug

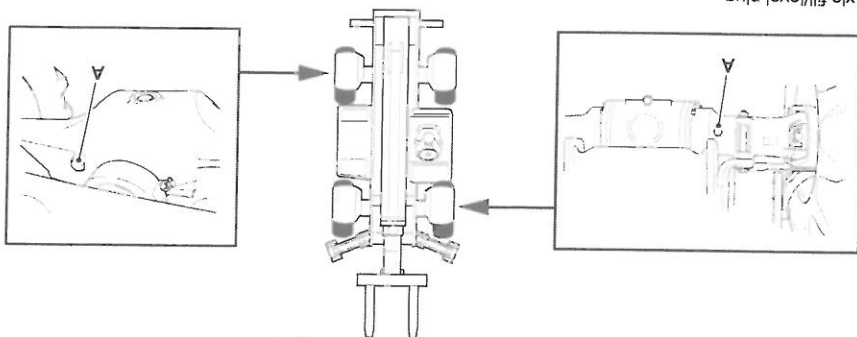


Figure 307. Machines with Double Acting Cylinders

A Axle fill/level plug

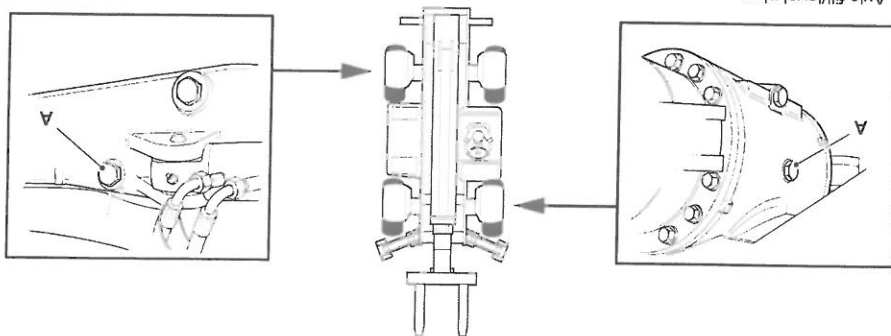


Figure 306. Machines with Powered Track Rods

For: Other Models



Filling the Tank

For: 526-56

A Fuel cap

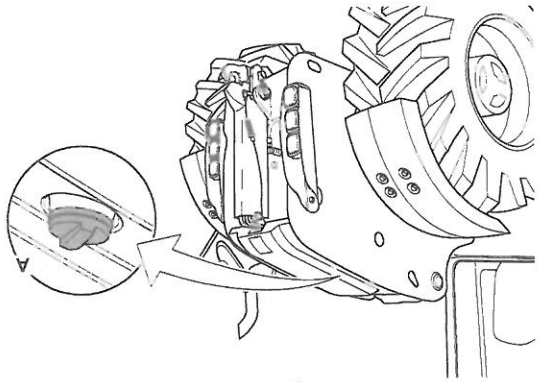


Figure 308.

A Fuel cap

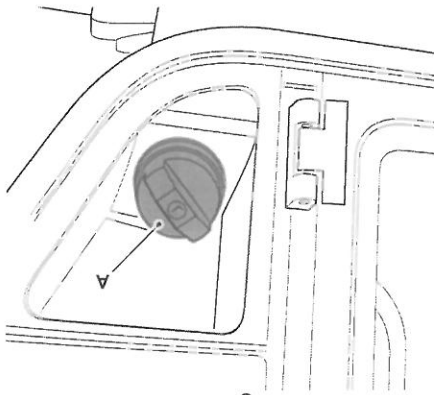


Figure 309.

For: Other Models



Access Apertures

General

When moved to their maintenance position, the access panels give you access to parts or areas of the machine that are not required during machine operation.

Before you operate the machine, make sure that all of the access panels are correctly in their closed or installed positions.

Battery Cover

Single Step Installation

Open

1. Make the machine safe.
- Refer to: *Maintenance Positions* (Page 277).
2. Use the key to unlock the battery compartment cover.
3. Open the battery compartment cover.

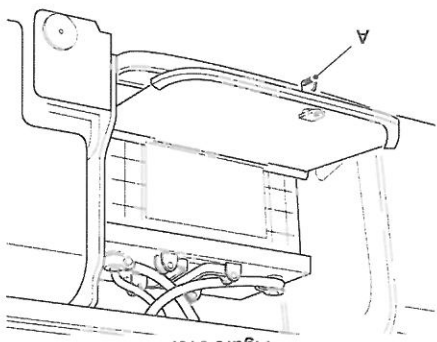


Figure 310.

Close

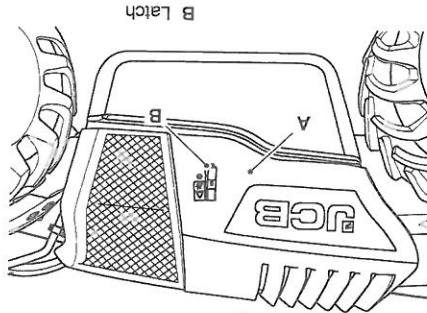
1. Close the battery compartment cover.
2. Make sure the battery compartment cover is closed correctly.
3. Use the key to lock the battery compartment cover.

Twin Step Installation

Open

1. Make the machine safe.
- Refer to: *Maintenance Positions* (Page 277).
2. Remove the bolts (and washers).
3. Lift the battery compartment cover to a small distance and allow the cover to pivot forward.

A Engine cover



B Latch

Figure 312.

1. Make the machine safe.
 2. Unlock and release the latch. Allow the cover to raise on its gas strut. Keep hold of the cover while it rises.
- Access to the engine compartment is provided by opening the engine cover.
- Before you stop the engine, you must let the engine run at low idle for 4min. The delay lets the coolant temperature to stabilise before you open the engine cover.

▲ WARNING The engine has exposed rotating parts. Switch off the engine before working in the engine compartment. Do not use the machine with the engine cover open.

Open

Engine Compartment Cover

1. Position the battery compartment cover.
2. Install the bolts.
3. Tighten the bolts to the correct torque value.

Close

A Bolts

B Battery compartment cover

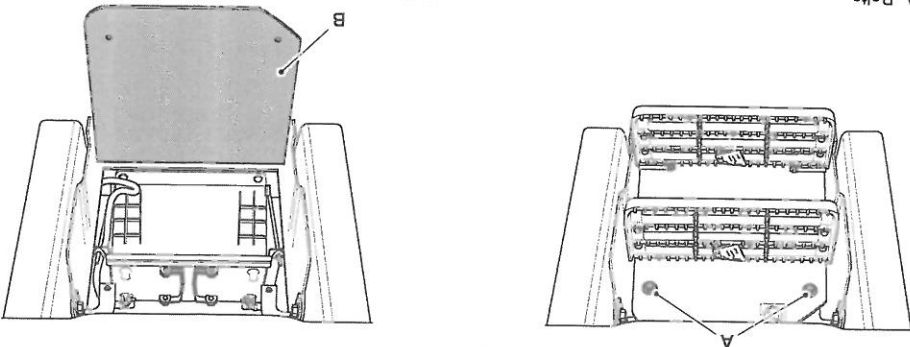


Figure 311.



Close

1. Push the cover down.
2. Make sure that the cover is correctly latched.
3. Make sure to lock the engine cover.

Rear Cover

For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 541T70 [T4F], 550-80 [T4F], 536T70LP [T4F], 536T70 [T4F], 541-70 [UN3/GB3], 536-60 [UN3/GB3], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 560U80 [T4F] Page 314

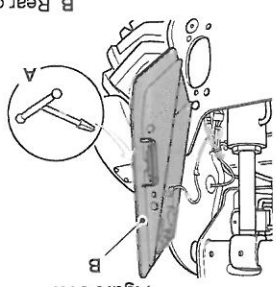
For: 526-56 [T4F] Page 314

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 541-70 [UN3/GB3], 536T60 [T4F], 536T70LP [T4F], 536T70 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Open the rear cover for access to the filler cap and sight glass.

Open

1. Make the machine safe. Refer to (PIL 01-03).
2. Use the key to unlock the rear cover.
3. Open the rear cover.



A Key
B Rear cover

Close

1. Position the rear cover.
2. Use the key to lock the rear cover.

(For: 526-56 [T4F])

CAUTION You will have to climb on the machine to install or remove the cover. Take care, especially if the machine is wet. Remove mud and oil before you climb on the machine. Do not use the exhaust as a handhold. It can burn you.

Remove the rear cover for access to the hydraulic oil and fuel tanks. Make sure you lock the rear cover to prevent theft and tampering.

1. Make the machine safe.

When you clean around the engine and radiator, debris will be released more easily if the undershields are removed.

▲ WARNING You will be working close into the machine for these jobs. Lower the attachments. Remove ignition key and disconnect the battery. This will prevent the engine being started.

Removal

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Undershield

1. Position the cover.
2. Hold the cover and install the bolts from the bottom of the cover.
3. Install the bolts from top of the cover.

Install

A Rear cover

B Bolts

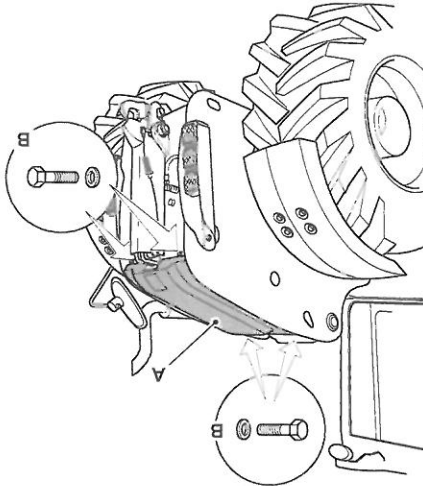


Figure 314.

1. Make the machine safe. Refer to (PIL 01-03).
2. Remove the bolts from top of the cover.
3. Hold the cover and remove the bolts from the bottom of the cover.
4. Carefully lower the cover to the ground.

Remove

1. Install the undershields.
2. Before you install the bolts, make sure the lips on the two smaller undershields are located above the frame.

Install

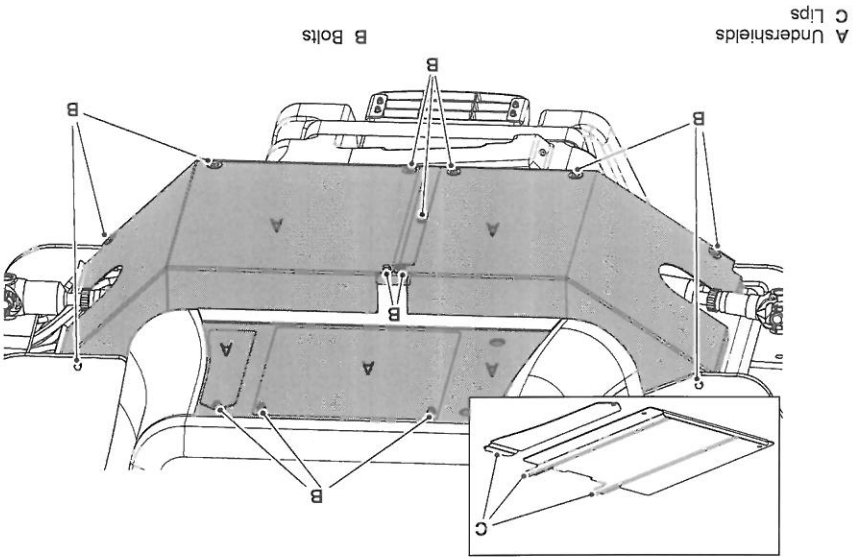


Figure 315.

3. Lower the undershields to the ground.
2. Working under the engine compartment, support each of the three undershields in turn and remove the bolts.



Tools

General

All tools must be kept in the toolbox (if installed) when not in use.

Toolbox

(For: 536T70LP [T4F])

The toolbox is located under the cab door, next to the fuel filler cap. The toolbox must be opened and closed using the key.

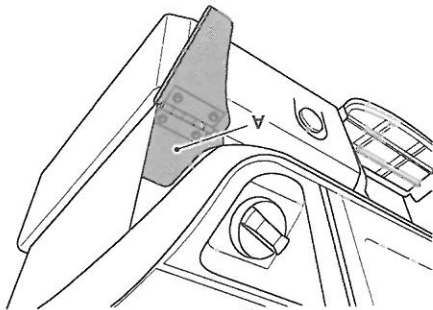


Figure 316.

A Toolbox



Lubrication

General

▲ CAUTION Waxoyl contains turpentine substitute which is flammable. Keep flames away when applying Waxoyl. Waxoyl can take a few weeks to dry completely. Keep flames away during the drying period. Do not weld near the affected area during the drying period. Take the same precautions as for oil to keep Waxoyl off your skin. Do not breathe the fumes. Apply in a well-ventilated area.

You must grease the machine regularly to keep it working efficiently. Regular greasing will also lengthen the machine's working life.

Refer to the individual condition checks throughout the Maintenance section.

The machine must always be greased after pressure washing or steam cleaning.

Greasing must be done with a grease gun. Normally, two strokes of the grease gun is sufficient. Stop greasing when fresh grease appears at the joint.

Use only the recommended type of grease. Do not mix different types of grease, keep them separate.

Attach the dust caps after greasing (if installed).

Preparation

▲ WARNING You will be working close into the machine for these jobs. Lower the attachments. Remove ignition key and disconnect the battery. This will prevent the engine being started.

Make the machine safe before you start a greasing procedure.

You can complete most of the greasing procedures with the boom lowered. If you raise the boom to get access for greasing, you must install the maintenance strut on the boom.



Attachments

General

Lubricate

Where applicable, refer to the specific manufacturers manual for instructions on the lubrication of optional attachments.

Check (Condition)

Where applicable, refer to the specific manufacturers manual for instructions on the maintenance of optional attachments.



Body and Framework

General

Clean

Keep all intakes and grilles clear from snow, ice and debris.

Debris can collect under the boom. Remove all debris from under the boom.

Thoroughly dry the piston rams and protect them with clean transmission or hydraulic oil if necessary.

Check (Condition)

1. Make sure that all of the guards and protective devices are in position, secured by their locking devices and free from damage.

2. Inspect all of the steelwork for damage. Include the following:

2.1. Examine all of the lifting point welds.

2.2. Examine all of the pivot point welds.

2.3. Examine the condition of all the pivot pins.

2.4. Check that the pivot pins are correctly in position and secured by their locking devices.

3. Check the steps and handrails are undamaged and correctly attached.

4. Check for broken, cracked or crazed window glass and mirrors. Replace the damaged items.

4.1. The right hand side cab glass is installed for the operators protection. If the cab glass becomes damaged, the machine should not be operated until it has been replaced.

5. Check that the lamp lenses are undamaged.

6. Check that all of the attachment teeth are undamaged and correctly attached.

7. Check that all of the safety and instructional labels are undamaged and in position. Install new labels where necessary.

8. Note any damaged paintwork for future repair.

9. Inspect the machine for broken or loose fasteners.

Pivot Pins

Lubricate

Make the machine safe. Refer to: Maintenance Positions (Page 277).

Apply grease to all the pivot points and linkages.

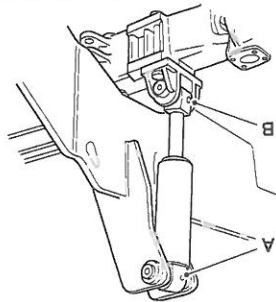


Figure 317.

B Lower grease point

A Upper grease point

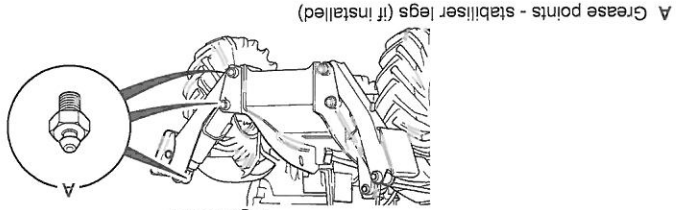


Figure 318.

A Grease points - stabiliser legs (if installed)

Boom

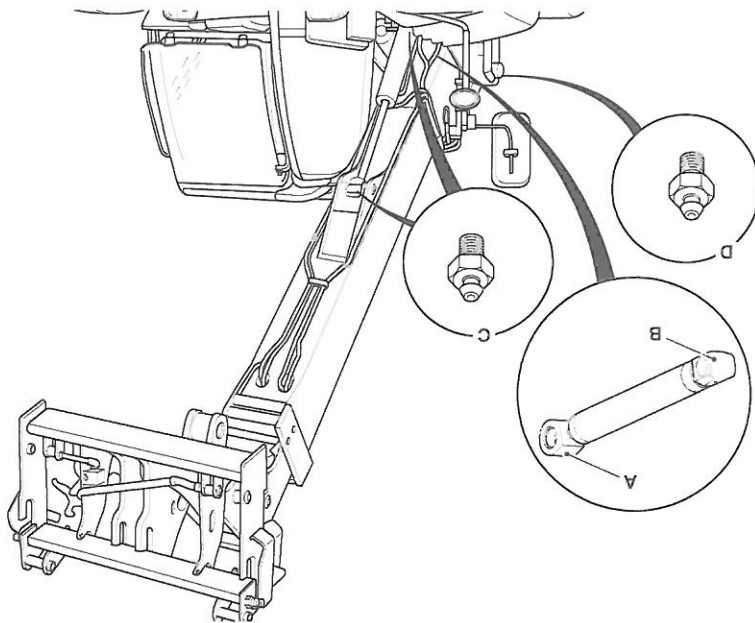
General

Lubricate

For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F] Page 322
 For: 526-56 [T4F] Page 323
 For: 531-70 [T4F], 531T70 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F] Page 324
 For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F] Page 325
 For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F] Page 326

(For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Figure 319.



Make the machine safe. Refer to: Maintenance Positions (Page 277).

Apply grease to all the points and linkages shown.

Make the machine safe. Refer to: Maintenance Positions (Page 277).
Apply grease to all the points and linkages.

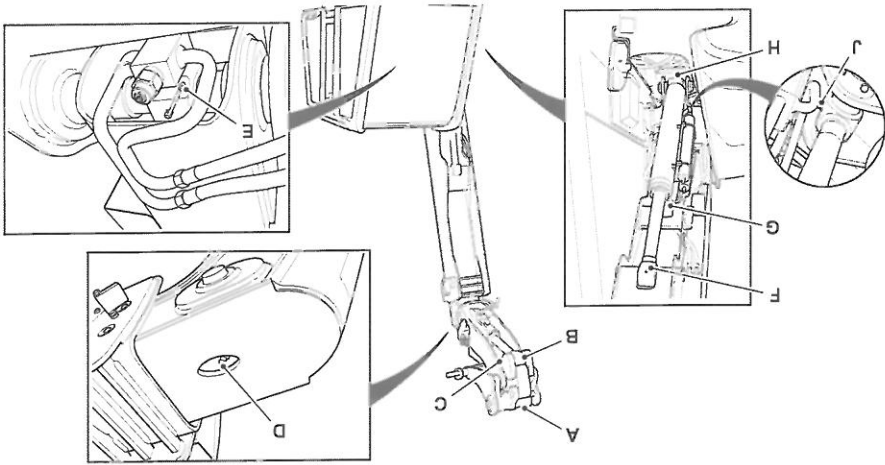
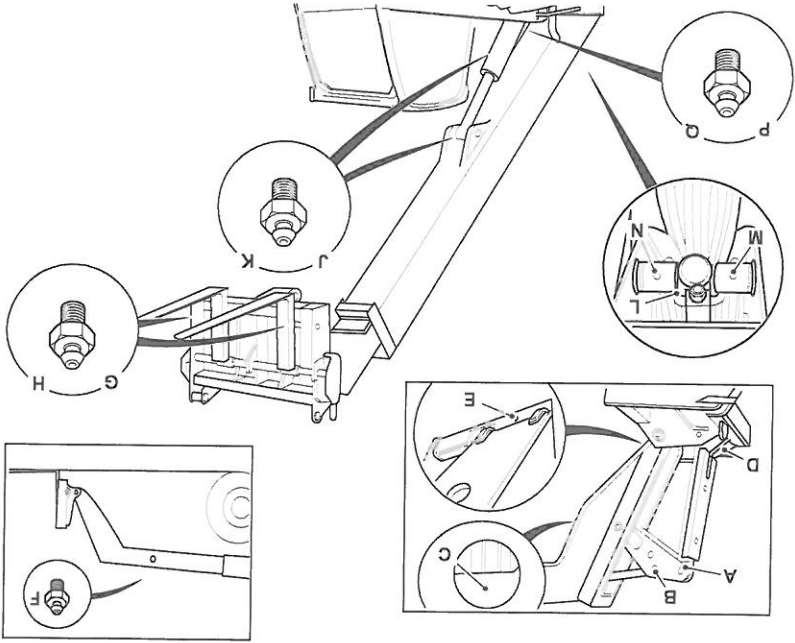


Figure 320.

(For: 526-56 [14F])



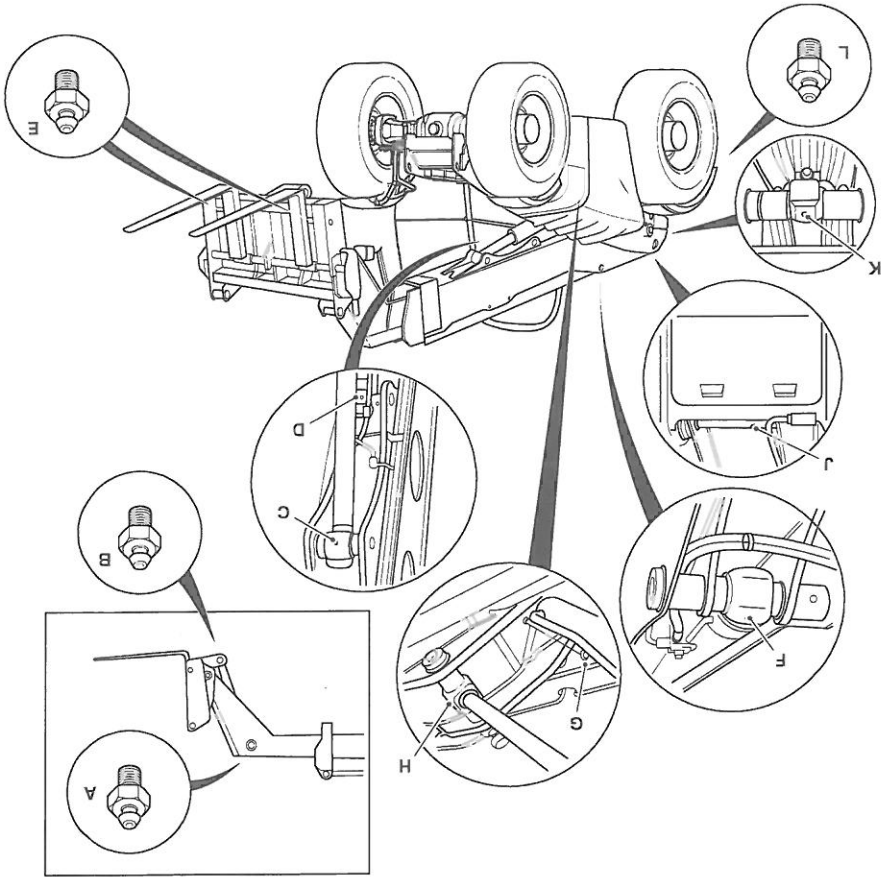
Make the machine safe. Refer to: Maintenance Positions (Page 277).
 Apply grease to all the points and linkages.

Figure 321.

(For: 531-70 [T4F], 531T70 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F])

(For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F])

Figure 322.



Make the machine safe. Refer to: Maintenance Positions (Page 277).
Apply grease to all the points and linkages.

Apply grease to all the points and linkages.

Make the machine safe. Refer to: Maintenance Positions (Page 277).

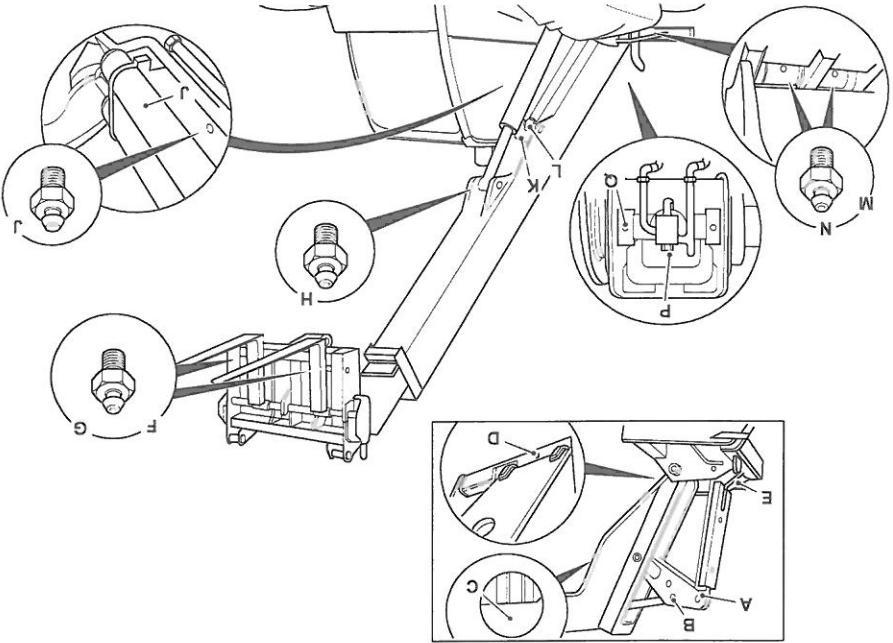


Figure 323.

(For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F])



Operator Station

General

Clean

- ▲ Notice: Never use water or steam to clean inside the operator station. The use of water or steam could damage the machine electrics and render the machine inoperable. Remove dirt using a brush or damp cloth.
- Remove debris and loose articles from inside the cab.

Operator Protective Structure

Check (Condition)

- ▲ WARNING You could be killed or seriously injured if you operate a machine with a damaged or missing ROPS/FOPS. If the ROPS/FOPS has been in an accident, do not use the machine until the structure has been renewed. Modifications and repairs that are not approved by the manufacturer may be dangerous and will invalidate the ROPS/FOPS certification.

▲ Failure to adhere to these precautions can cause death or injury to the operator. For assistance, contact your JCB dealer.

1. Make the machine safe. Refer Maintenance, Maintenance positions.

2. Check the structure for damage.

3. Make sure that all of the ROPS/FOPS mounting bolts are undamaged and in position.

4. Make sure that the ROPS/FOPS mounting bolts are tightened to the correct torque setting. Refer to Technical data, Torque values.

Seat

Check (Condition)

1. Check that the seat adjustments operate correctly.

2. Check the seat is undamaged.

3. Check the seat mounting bolts are undamaged, correctly installed and tight.

4. Make sure the seat is clear from unwanted materials and hazards at all times.

Seat Belt

Check (Condition)

- ▲ WARNING When a seat belt is installed on your machine replace it with a new one if it is damaged, if the fabric is worn, or if the machine has been in an accident.
- ▲ WARNING If the seat belt does not 'lock' when you check if the seat belt is operating correctly, do not drive the machine. Get the seat belt repaired or replaced immediately.

1. Make sure the seat belt can be adjusted.

2. Examine the seat belt for signs of fraying and stretching.

3. Check that the stitching is not loose or damaged.

4. Check that the belt mounting bolts are undamaged, correctly installed and tight.

5. Check that the buckle assembly is undamaged and operates correctly.



Maintenance
Operator Station

Controls

Check (Operation)

Check the operation of the non-hydraulic and non-electrical operator station controls.



Engine

General

Clean

▲ WARNING Airborne particles of light combustible material such as straw, grass, wood shavings, etc. must not be allowed to accumulate within the engine compartment or in the propshaft guards (when installed). Examine these areas frequently and clean at the beginning of each work shift or more often if required. Before opening the engine cover, make sure that the top is clear of debris.

Notice: The engine or certain components could be damaged by high pressure washing systems; special precautions must be taken if the engine is to be washed using a high pressure system. Ensure that the engine air intake, alternator, starter motor and any other electrical components are shielded and not directly cleaned by the high pressure cleaning system.

Notice: Clean the engine before you start engine maintenance. Obey the correct procedures. Contamination of the fuel system will cause damage and possible failure of the engine.

Stop the engine and allow it to cool for at least one hour. Do not attempt to clean any part of the engine while it is running.

Do not aim the water jet directly at oil seals or electrical and electronic components such as the ECU (Electronic Control Unit), alternator or fuel injectors.

Before carrying out any service procedures that require components to be removed, the engine must be properly cleaned.

Cleaning must be carried out either in the area of components to be removed or, in the case of major work, or work on the fuel system, the whole engine and surrounding machine must be cleaned.

1. Remove the undershield.
Refer to: Access Apertures (Page 312).

2. Make sure that the electrical system is isolated.
3. Make sure that all electrical connectors are correctly coupled. If connectors are open fit the correct caps or seal with water proof tape.
4. Cover the alternator with a plastic bag to prevent water ingress.

5. Seal the engine air intake, exhaust and breather system.
6. Make sure that the oil filter caps and dipstick are correctly installed.
7. Use a low pressure water jet and brush to soak off caked mud or dirt.
8. Apply an approved cleaning and degreasing agent with a brush. Obey the manufacturers instructions.

9. Use a pressure washer to remove the soft dirt and oil. Do not place the jet nozzle closer to any part of the engine than the distance specified, 600mm (23.6in)
10. When the pressure washing is complete move the machine away from the wash area, or alternatively, clean away the material washed from the machine.

11. Before working on specific areas of the engine use a compressed air jet to dry off any moisture. When the area is dry use a soft clean brush to remove any sand or grit particles that remain.
12. When removing components be aware of any dirt or debris that may be exposed. Cover any open ports and clean away the deposits before proceeding.

Check (Condition)

Start the engine and check for:

- Excessive smoke



- Excessive vibration
- Excessive noise
- Overheating
- Performance
- Unusual smells

Oil

Check (Leaks)

Before you start the machine, do a check for oil leaks:

1. Make the machine safe.

2. Get access to the engine compartment (if applicable)

3. Check the engine and the area below for oil leaks.

4. Close the engine cover (if applicable).

5. If necessary, contact your JCB dealer.

Check (Level)

▲ WARNING Never check the oil level or add oil with the engine running. Be careful of hot lubricating oil.
Danger of scalding.

Notice: Do not exceed the maximum level of engine oil in the sump. If the maximum is exceeded, the excess must be drained to the correct level. An excess of engine oil could cause the engine speed to increase rapidly without control.

1. Make the product safe.

Refer to: *Maintenance Positions* (Page 277).

2. Wait for the oil to drain back into the engine sump before you take a reading. If not, a false low reading may be recorded which can cause the engine to be overfilled.

3. Get access to the engine compartment (if applicable).

Refer to: *Access Apertures* (Page 312).

4. Remove and clean the dipstick.

Refer to: *Service Points* (Page 281).

5. Replace the dipstick.

6. Remove the dipstick.

7. Check the oil level. The oil should be between the two marks on the dipstick.

8. If necessary, add more oil:

- 8.1. Remove the filler cap.

Refer to: *Service Points* (Page 281).

- 8.2. Add the recommended oil slowly through the filler point

Refer to: *Fluids, Lubricants and Capacities* (Page 432).

- 8.3. Replace the dipstick.

- 8.4. Remove the dipstick.

- 8.5. Check the oil level, if necessary add more oil.

- 8.6. Replace the dipstick

- 8.7. Replace the filler cap.
9. Close and secure the engine cover (if applicable).

Replace

For: JCB (UN3/GB3) Electronic Dieselmax Turbocharged Aftercooled Engine, JCB T4F 4.4 over 55kw Electronic Turbocharged Aftercooled Engine, JCB T4F 4.4 up to 55kw Electronic Dieselmax Turbocharged Aftercooled Engine Page 331
 For: JCB T4F 3.0 55kw Electronic Turbocharged Aftercooled Engine Page 332

(For: JCB (UN3/GB3) Electronic Dieselmax Turbocharged Aftercooled Engine, JCB T4F 4.4 over 55kw Electronic Dieselmax Turbocharged Aftercooled Engine, JCB T4F 4.4 up to 55kw Electronic Dieselmax Turbocharged Aftercooled Engine)

▲ CAUTION Oil will gush from the hole when the drain plug is removed. Keep to one side when you remove the plug.

CAUTION It is illegal to pollute drains, sewers or the ground. Clean up all spill fluids and/or lubricants. Used fluids and/or lubricants, filters and contaminated materials must be disposed of in accordance with local regulations. Use authorised waste disposal sites.

Drain the oil when the engine is warm as contaminants held in suspension will then be drained with the oil.

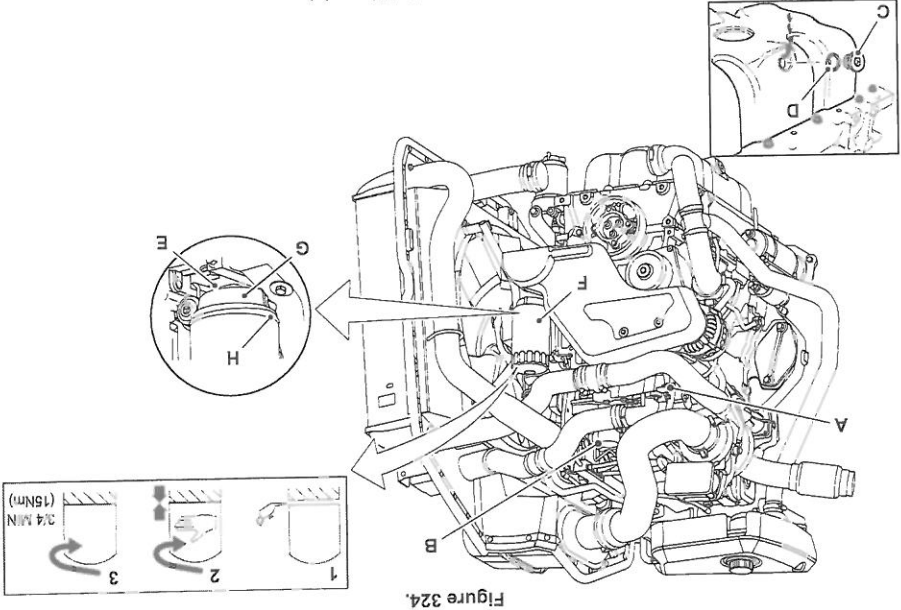


Figure 324.

- B Filler point
- D O-ring
- F Filter canister
- H Seal

- A Dipstick
- C Drain plug
- E Drain plug
- G Filter head

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).

2. Get access to the engine compartment.
Refer to: Access Apertures (Page 312).

3. Place a suitable container below the sump drain plug.
4. Remove the sump drain plug and O-ring. Drain the oil in to a suitable container.
5. Clean the sump drain plug. Install the sump drain plug with a new O-ring. Tighten the sump drain plug to the correct torque value.
Torque: 40–60N·m
6. Loosen and remove the filter housing drain plug. Drain the oil.
Torque: 40–60N·m

7. Install the filter housing drain plug. Tighten the filter housing drain plug to the correct torque value.
Torque: 40–60N·m
8. Remove the filter canister.
- 8.1. Use a chain wrench if necessary.
9. Clean the seal face of the filter head.
10. Fit a seal on the new filter canister with clean engine oil.
11. Install and tighten the new filter canister with your hand.

12. Add the correct specification and quantity of oil through one of the filler points to the maximum mark on the dipstick.
- 12.1. Clean the spill oil.

13. Fit the filler cap and make sure to secure the filler cap.
14. Operate the engine at idle speed until the oil pressure low warning light has extinguished and the new filter primed before the engine speed is increased above idle speed.
15. Check for leaks.
16. Check the oil level when the oil has cooled.
- 16.1. Fill with clean engine oil, if necessary.

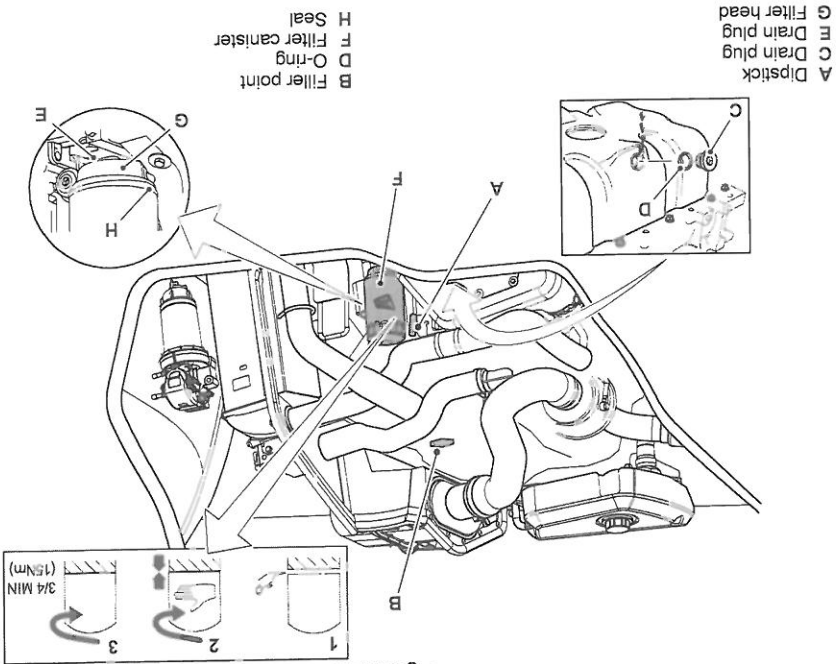
(For: JCB T4F 3.0 55kw Electronic Turbocharged Aftercooled Engine)

▲ CAUTION Oil will gush from the hole when the drain plug is removed. Keep to one side when you remove the plug.

CAUTION It is illegal to pollute drains, sewers or the ground. Clean up all spill fluids and/or lubricants. Used fluids and/or lubricants, filters and contaminated materials must be disposed of in accordance with local regulations. Use authorised waste disposal sites.

Drain the oil when the engine is warm as contaminants held in suspension will then be drained with the oil.

1. Make the machine safe.
2. Get access to the engine compartment.
3. Place a suitable container below the sump drain plug.
4. Remove the sump drain plug and O-ring. Drain the oil in to a suitable container.
5. Clean the sump drain plug. Install the sump drain plug with a new O-ring. Tighten the sump drain plug to the correct torque value.
Torque: 45–55N·m
6. Loosen and remove the filter housing drain plug. Drain the oil.
Torque: 24–28N·m
7. Install the filter housing drain plug. Tighten the filter housing drain plug to the correct torque value.
Torque: 17–21N·m
8. Remove the filter canister.
- 8.1. Use a chain wrench if necessary.
9. Clean the seal face of the filter head.
10. Fit a seal on the new filter canister with clean engine oil.
11. Install and tighten the new filter canister with your hand.
12. Tighten the new filter canister to the correct torque value.



13. Add the correct specification and quantity of oil through one of the filler points to the maximum mark on the dipstick.
- 13.1. Clean the spill oil.
14. Fit the filler cap and make sure to secure the filler cap.
15. Operate the engine at idle speed until the oil pressure low warning light has extinguished and the new filter primed before the engine speed is increased above idle speed.
16. Check for leaks.
17. Check the oil level when the oil has cooled.
- 17.1. Fill with clean engine oil, if necessary.

Drive Belt

Check (Condition)

- ▲ **WARNING** Do not try to turn the engine by pulling the fan or fan belt. This could cause injury or premature component failure.
- CAUTION** Make sure the engine cannot be started. Disconnect the battery before doing this job, otherwise you could be injured.

The FEAD (Front End Accessory Drive) belt drives the alternator, water pump and the air conditioning compressor (if fitted).

The belt is automatically kept in tension so will not need to be adjusted.

At the recommended service interval, visually inspect the belt for damage:

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
2. Open the engine cover.
Refer to: Engine Compartment Cover (Page 313).
3. Remove the FEAD belt cover.
4. Inspect the belt for cracks, fraying or missing pieces. If necessary contact your JCB dealer for service requirements.
5. When maintenance is complete, make sure that the guard is installed correctly.
Refer to: Service Points (Page 281).

Emissions Control System

General

(For: 526-56 [T4F], 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/G/B3], 535T195 [T4F], 536-60 [T4F], 536-60 [UN3/G/B3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/G/B3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Stationary Refresh

Before starting the SCR (Selective Catalytic Reduction) stationary refresh procedure the following conditions must be met:

- Clean under the bonnet to ensure there is no flammable material on hot surfaces (eg turbo, exhaust manifold).
- The diesel and AdBlue / DEF (Diesel Exhaust Fluid) tanks should be full.
- Stop the machine on flat level ground where the machine will not be a hazard or danger.
- Ease up on the accelerator pedal and down on the brake pedal to bring the machine to a smooth stop.
- Keep the foot brake on until the park brake has been applied and the drive disengaged.
- Activate the park brake.
- Set the transmission to neutral. Make sure the lever is in its detent position.
- Retract and lower the boom, rest the forks flat on the ground.
- Hand throttle (if fitted) should be set to minimum.

Activation

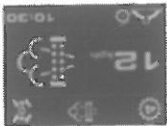
- Neutral must be selected.
- Park brake must be applied.
- The engine coolant must be 70°C (157.9°F) or higher.
- If necessary warm the engine by running at high revs and activating the auxiliary hydraulics (where fitted ensure any powered attachments are disconnected) or boom retract and fork crowd functions.
- When a stationary refresh is available the display will show an icon.

Figure 326.



- Press the info button (less than 2s) to access the following screen.

Figure 327.



- Press the info button (more than 3s) again to access the following screen.



Figure 328.

- Once all requirements are met the screen will look like the following.



Figure 329.

- The engine coolant must be at 70°C (157.9°F) at this point.
- Press the info button (more than 3s) to activate stationary refresh.
- A progress indicator is displayed.



Figure 330.

- If the refresh is interrupted or unsuccessful the display will show a red icon.



Figure 331.

- What to Expect and Do While a Stationary Refresh is Running
- During refresh the following screen will be displayed.



Figure 332.

- The engine revs will increase from idle to 1500RPM (Revolutions Per Minute). After 3min the revs will increase to 2000RPM and remain at this speed for approximately 30min. After this time the revs will drop to 1200RPM for 2min to cool the exhaust system.
- Do not operate the throttle, park brake or transmission control - it will stop the process immediately.
- Do not operate the hydraulic functions.
- The process can be interrupted at any time but will then have to be repeated to clear the fault.
- It is advised that the operator should stay with the machine during the procedure.



Figure 335.

- The machine can now return to normal operation.
- If the refresh has not been successful then the following icon will remain on the display. Repeat the process to clear the icon.



Figure 334.

- After a successful refresh the display will return to its default setting.

Completion



Figure 333.

- In the unlikely event that the exhaust temperature reaches 465°C (868.3°F) this icon will be displayed.





Air Filter

General

Check (Condition)

▲ Notice: Do not modify or install non JCB approved components to the engine induction system, otherwise the engine emissions will be compromised.

1. Make the machine safe.

2. Get access to induction system.

3. Check the system hoses for:

3.1. Condition.

3.2. Damage.

3.3. Security.

4. Replace the system hoses if necessary.

Outer Element

Replace

▲ Notice: The outer element must be renewed immediately if the warning light on the instrument panel illuminates.

Do not attempt to clean or wash the elements - they must only be renewed.

A new inner element must be installed at least every other time the outer element is changed. As a reminder, mark the inner element with a felt tipped pen each time the outer element is changed.

1. Get access to the engine.

Refer to: Service Points (Page 281).

2. Unclip and remove the prefilter element.

3. Remove the main element. Take care not to tap or knock the element.

4. If the safety element is to be changed, lift up pulls and remove the safety element.

5. Clean the prefilter element housing and main element housing. Make sure that the air holes on the prefilter housing are clear.

6. Make sure that the aspirator hose is securely installed and is in good condition.

7. Put the new safety element and main element into the housing. Push them firmly in so that they seated correctly.

8. Install the prefilter element. Make sure that the aspirator hose mates with the spigot.

Check (Condition)

- Check the dust valve for rips/tears.
- Check there are no obstructions.
- Check that the dust valve is free of dirt and dust.
- Check that the dust valve securely attached to the air filter housing.

Dust Valve

- A Air holes
- C Main element
- E Main housing

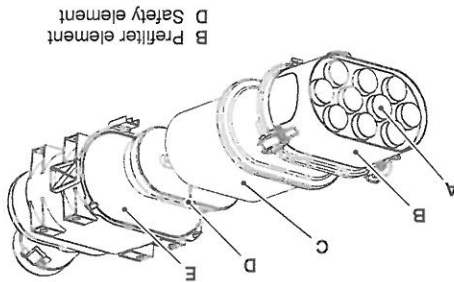


Figure 336.

- B Prefilter element
- D Safety element



(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], JCB T4F 3.0 55kW Electronic Turbocharged Aftercooled Engine)

▲ WARNING Do not open the high pressure fuel system with the engine running. Engine operation causes high fuel pressure. High pressure fuel spray can cause serious injury or death.

The engine installation features an electrically operated fuel lift pump.

The system is designed to bleed automatically when the lift pump is operated.

Make sure that as much air is removed from the fuel system as possible before starting the engine.

Bleed the system as follows:

1. Make the machine safe.

2. Turn the ignition key to position I (this will start the fuel lift pump).

3. Do not start the engine.

4. Allow the fuel lift pump to run for a short period of time.

Duration: 30s

5. Turn the ignition key to the off position to stop the fuel lift pump. Wait for a short period of time and then turn the starter switch to start the pump.

Duration: 10s

6. Start the engine and make sure it runs smoothly.

7. If the engine fails to start or does not run smoothly contact your JCB dealer.

Check (Leaks)

1. Make the machine safe.

2. Get access to the engine compartment (if applicable).

3. Check the engine compartment (if applicable), fuel lines and the area below for leaks.

4. If necessary, contact your JCB dealer.

Tank

Clean

Draining Fuel Tank Impurities

1. Make the machine safe.

Refer to: Maintenance Positions (Page 277).

2. Remove the cover plate from below the fuel tank.

3. Put a suitable container below the self sealing drain plug.

4. Remove the outer threaded cover from the self sealing drain plug.

5. Connect the self sealing drain kit threaded union with attached pipe. Drain the water and deposits until there is clean diesel.

6. Remove the self seal drain kit.

1. Make the machine safe. Refer to Maintenance, Maintenance Positions.
2. Get access to the filter. Refer to Maintenance, Access Apertures
3. Drain and remove the separator bowl. Refer to Maintenance, Fuel System, Water separator.
4. Replace the fuel filter.
5. Install the separator bowl.
6. Bleed the fuel system. Refer to Maintenance, Fuel System, General, Bleed.

Notice: Running the engine with air in the system could damage the fuel injection pump. After maintenance, the system must be bled to remove any air.

▲ **Notice:** Do not allow dirt to enter the fuel system. Before disconnecting any part of the fuel system, thoroughly clean around the connection. When a component has been disconnected, for example a fuel pipe, always install protective caps and plugs to prevent dirt ingress. Failure to follow these instructions will lead to dirt entering the fuel system. Dirt in the fuel system will seriously damage the fuel injection equipment and could be expensive to repair.

55kW Electronic Dieselmix Turbocharged Aftercooled Engine)

(For: JCB (UN3/GB3) Electronic Dieselmix Turbocharged Aftercooled Engine, JCB T4F 4.4 up to 4.4 over 55kW Electronic Dieselmix Turbocharged Aftercooled Engine, JCB T4F 4.4 up to

Replace

Fuel Filter

1. Make the machine safe.
- Refer to: Maintenance Positions (Page 277).
2. Get access to the fuel filler cap.
- Refer to: Service Points (Page 281).
3. Clean the exterior of the cap with a clean cloth.
4. Remove the fuel filler cap.
5. Clean the interior of the fuel filler cap with a clean cloth.
6. Install the fuel filler cap.

Clean the Filler Cap

7. Clean and install the outer threaded cover. Do not over tighten the cover.
8. Install the cover plate.



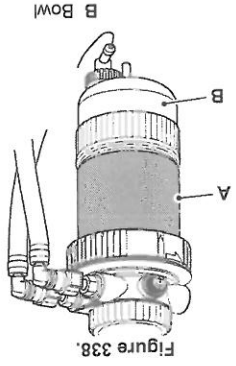


Figure 338.

Lubricity Filter

Replace

(For: JCB (UN3/GB3) Electronic Dieselmax Turbocharged Aftercooled Engine)

1. Make the machine safe.
Refer to: Maintenance Position - Boom Lowered (Page 277).
2. Get access to the filter.
Refer to: Service Points (Page 281).
3. Unscrew the filter to remove it.
4. Replace the lubricity filter.
5. Use the pump to prime the filter.

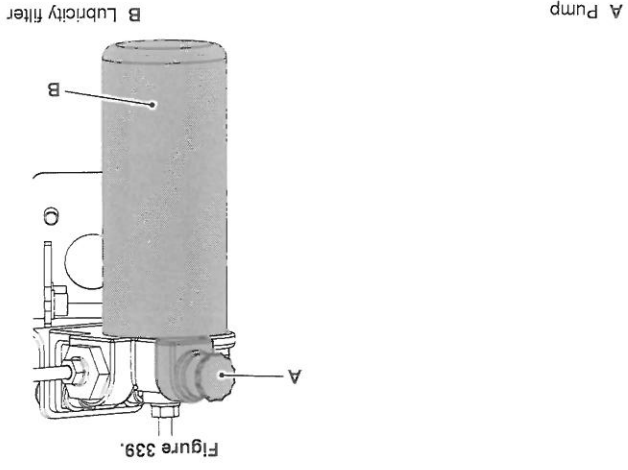


Figure 339.

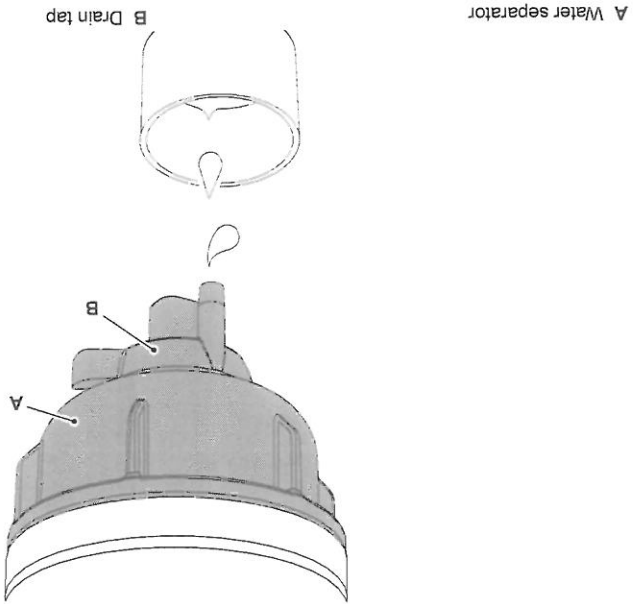
A Pump

B Lubricity filter

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], JCB T4F 3.0 55kw Electronic Turbocharged Aftercooled Engine)

1. Make the machine safe.
2. Get access to the filter.
3. If there is water but no sediment, open the tap to drain the water. If there is any sediment in the bowl replace the fuel filter element. Do not disconnect the electrical connector (if installed).
4. Tighten the drain tap when all the water is drained.

Figure 341.



(For: JCB (UN3/GB3) Electronic Dieselmex Turbocharged Aftercooled Engine)

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
2. Get access to the separator.
Refer to: Service Points (Page 281).
3. Check the water separator float position. If the float has reached the red line, open the drain tap and drain the water.
4. Tighten the drain tap when all the water is drained.

A Maximum level - red line
B Drain tap

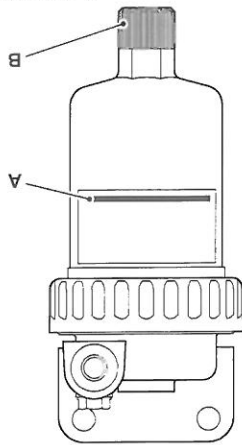


Figure 342.





Cooling System

General

Check (Leaks)

Before you start the machine, inspect the system for leaks:

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
2. Get access to the cooling pack.
Refer to: Access Apertures (Page 312).
3. Check the cooling system for leaks.
4. If necessary, contact your JCB dealer.

Coolant

Check (Condition)

Refer to: Coolant (Page 443).

Check (Level)

▲ CAUTION The cooling system is pressurised when the coolant is hot. Make sure that the engine is cool before you work on the cooling system. can spray out and burn you.

1. Make the machine safe.

2. Let the engine cool.

3. Get access to the coolant expansion tank.

Refer to: Service Points (Page 231).

4. Check the coolant level in the expansion tank.

- 4.1. Carefully loosen the cap on the expansion tank and let the pressure release from the system.

Refer to: Service Points (Page 281).

- 4.2. Remove the cap from the expansion tank.

- 4.3. Add the recommended coolant up to the maximum mark.

Refer to: Fluids, Lubricants and Capacities (Page 432).

- 4.4. Replace the cap.

5. Start the engine and run the engine up to operating temperature.

6. Stop the engine.

7. Remove the ignition key.

8. Check for leaks.

Cooling Pack

Clean

1. Make the machine safe. Do not stop the engine at this time.

Refer to: Maintenance Positions (Page 277).



2. Position the machine in a relatively clean area before reversing the fan to make sure that other debris is not drawn in.
 3. Turn on the reverse fan switch.
Refer to: Console Switches (Page 29).
 4. Stop the engine.
 5. Let the engine cool.
 6. Get access to the radiator.
Refer to: Access Apertures (Page 312).
 7. If necessary, use a soft bristle brush or compressed air to remove all debris from the radiator.
- Check (Condition)**
1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
 2. Let the engine cool.
 3. Get access to the cooling pack.
 - Refer to: Access Apertures (Page 312).
 4. Check the condition of the hoses, radiator and fan for:
 4. 1. Condition.
 4. 2. Damage.
 4. 3. Security.
 5. Replace the system hoses/radiator if necessary.

Brakes

General

Check (Level)

For: 526-56 [T4F], 531-70 [T4F], 535-95 [T4F], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 541T70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F]
 For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F]
 For: 536T70LP [T4F]

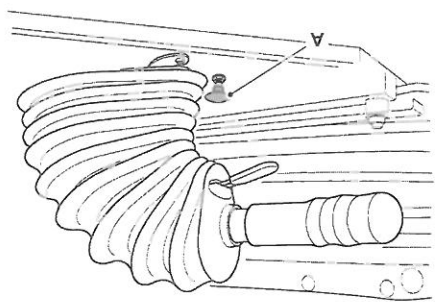
(For: 526-56 [T4F], 531-70 [T4F], 535-95 [T4F], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 536-60 [UN3/GB3], 541T70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F])

▲ **WARNING** Faulty brakes can kill. If you have to top up the brake oil reservoir frequently, get the brake system checked by your JCB Dealer. Do not use the machine until the fault has been rectified.

Notice: Using incorrect fluid could damage the system. See Fluids, Capacities and Lubricants for the correct fluid. The fluid can harm your skin. Wear rubber gloves. Cover cuts or grazes.

The brake fluid tank is in the panel in front of the cab. Pull the release knob to open the panel.

Figure 343.



A Knob

1. Make the machine safe.
2. Check the brake fluid level. The correct fluid level is marked on the tank.
3. If necessary, add more fluid.



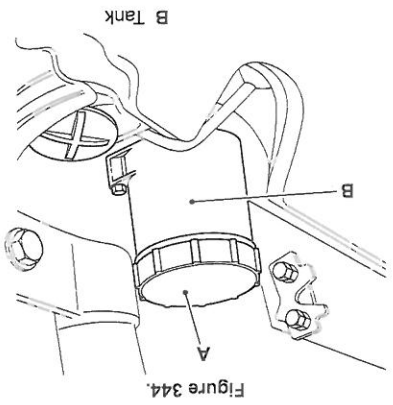


Figure 344.

- A Tank cap
 - B Tank
- 3.1. Remove the tank cap.
 - 3.2. Add the recommended fluid slowly.
 - 3.3. Replace the tank cap.
 - 3.4. Clean any spill fluid.

(For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

The braking system uses the machine hydraulic fluid supply so no reservoir is necessary.

The system stores energy in an accumulator for use when the engine is not running, therefore maintenance on this system must be done only by suitably qualified and competent persons.

(For: 536T70LP [T4F])

▲ WARNING Faulty brakes can kill. If you have to top up the brake oil reservoir frequently, get the brake system checked by your JCB Dealer. Do not use the machine until the fault has been rectified.
 Notice: Using incorrect fluid could damage the system. See Fluids, Capacities and Lubricants for the correct fluid. The fluid can harm your skin. Wear rubber gloves. Cover cuts or grazes.

The brake oil reservoir is located behind a cover, under the front window on the outside the machine.

1. Make the machine safe.
2. Remove the cover.
3. Check the brake oil level. The correct fluid level is marked on the reservoir.
4. If necessary, add more oil.

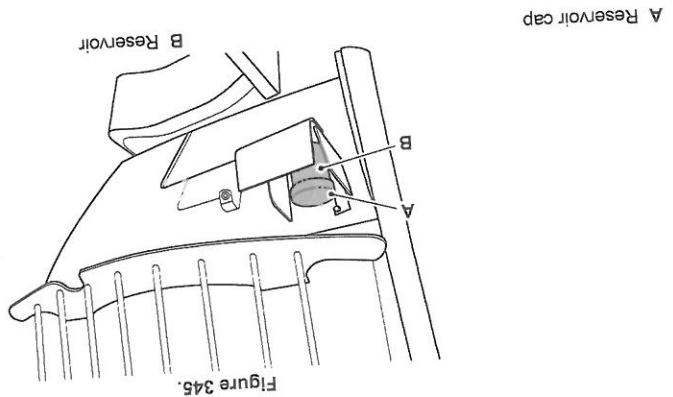


Figure 345.

- 4.1. Remove the reservoir cap.
- 4.2. Add the recommended oil slowly.
- Refer to: Fluids, Lubricants and Capacities (Page 432).
- 4.3. Replace the reservoir cap.
- 4.4. Clean any spill oil.
- 5. Fit the cover.

Park Brake

Check (Operation)

WARNING Before testing the park brake make sure the area around the machine is clear of people.

WARNING Be careful, if the park brake is not functioning and the drive controls are in neutral the machine will roll down the slope. To stop the machine engage drive controls.

WARNING Do not use a machine with a faulty park brake.

WARNING Non approved modifications to drive ratios, machine weight or wheel and tyre sizes may adversely affect the performance of the park brake.

- 1. Make sure your seat belt is securely fastened.
 - 2. Position the machine on a suitable slope. Make sure the machine is safely held in position using the drive controls.
 - 3. Engage the park brake. Release hold of the drive controls, the machine should not move. If the machine does start to move immediately disengage the park brake and use the drive controls to hold the machine in position.
- If the machine moved during the test, drive the machine to a suitable flat location and contact your JCB dealer to inspect the brake.



Adjust

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

▲ Notice: Over adjustment or failure to disengage the park brake properly will cause excessive wear of the park brake mechanism.

1. Disengage the park brake (lever horizontal). Failure to disengage the park brake fully will result in excessive wear of the park brake mechanism.

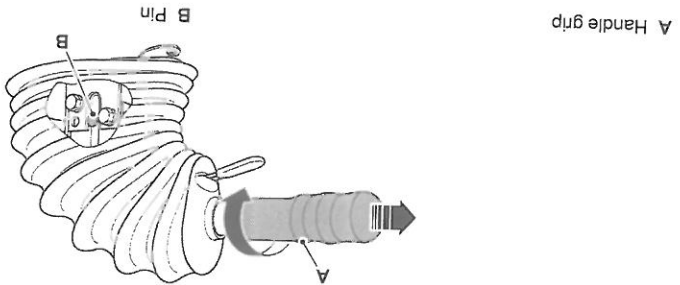
2. Pull and turn handle grip clockwise, half a turn.

3. Test the park brake.

Refer to: Check (Operation) (Page 351).

If the brake fails the test repeat the above steps. If there is no more adjustment and the pin is at the end of its travel get the brake checked by your JCB dealer.

Figure 346.



Service Brake

Check (Operation)

1. Before you start the machine, check the brake system hydraulic hoses for any signs of damage or leaks.

2. Start the engine.

3. Wait for the brake accumulator amber warning symbol to extinguish from the main display screen.

4. If the brake accumulator red warning symbol illuminates do not use the machine. Contact your JCB dealer for any service requirements.

Gearbox



Oil

Check (Level)

1. Make the machine safe with the boom lowered.
2. Start the engine and operate at low idle for few minutes. This allows the oil to fill the filter, pump, torque converter, oil cooler and hoses.
Duration: 4min
3. Stop the engine.
4. Remove the ignition key.
5. Open the engine compartment cover.
6. Before you complete a check of the oil level, you must wait for a time as shown on the instructional label.
7. Check the gearbox oil level on the dipstick. The oil level must be between the end of the dipstick and maximum mark on the dipstick.
8. If necessary add oil through the dipstick tube.

Axles

General

Lubricate

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Make the machine safe. Refer to Maintenance, Maintenance positions.
Apply grease to all the points and linkages shown.

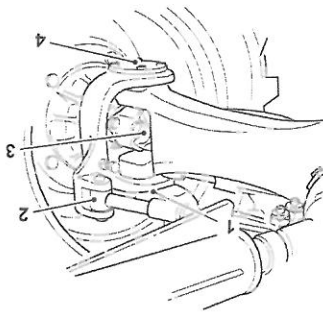


Figure 347.

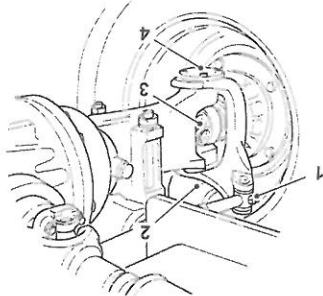


Figure 348.

Oil

Check (Level)

- ▲ Notice: The oil level must be checked with the machine level, otherwise a false indication of the amount of oil will be given.
- Notice: It is not recommended that the machine be driven with the axle partially filled with oil.

1. Make the machine safe.

Refer to: Maintenance Position - Boom Lowered (Page 277).



2. Get access to the axle fill/level plug.
Refer to: Service Points (Page 281).
3. Clean the area around the fill/level plug.
4. Remove the plug with its sealing washer.
5. Make sure the oil is level with the bottom of the hole.
6. If necessary add oil.
Refer to: Fluids, Lubricants and Capacities (Page 432).
7. Clean the fill/level plug.
8. Install the plug with its sealing washer.
9. Tighten the plug to the correct torque value.
Refer to: Torque Values (Page 444).



Wheels

General

Check (Condition)

▲ **WARNING** A raised and badly supported machine can fall on you. Position the machine on a firm, level surface before raising one end. Ensure the other end is securely chocked. Do not rely solely on the machine hydraulics or jacks to support the machine when working under it. Disconnect the battery, to prevent the machine being started while you are beneath it.

WARNING Walking or working under raised attachments can be hazardous. You could be crushed by the attachments or get caught in the linkages. Lower the attachments to the ground before doing these checks. Also make sure that the park brake is engaged before doing these checks.

WARNING Whenever a wheel has been changed, check the nut torques every two hours. When the nuts stay tight for 8 h, the interval for checking can revert to the period stated in the servicing schedule.

WARNING A machine can roll off jacks and crush you unless the wheels have been blocked. Always block the wheels at the opposite end of the machine that is to be jacked. Do not work underneath a machine supported only by jacks. Always support a jacked-up machine on axle stands before working underneath it. **WARNING** Wheels and tyres are heavy. Take care when lifting or moving them. Store with care to ensure that they cannot fall and cause injury. Use suitable lifting equipment if necessary.

Changing a Wheel

If for whatever reason a wheel bolt is renewed, all the bolts for that wheel must be replaced as a set, since the remaining bolts may have been damaged.

Where a wheel has been replaced, ensure that the offset of the central nave plate of the wheel rim is as specified for the tyre by JCB. If in doubt request additional information from your JCB Dealer.

Remove

1. Make the machine safe.

Refer to: Maintenance Positions (Page 277).

2. Jack up the machine to gain access to whichever wheel you wish to change.

3. Remove the nuts then remove the wheel

Replace

1. Inspect the wheel for any damage, i.e. elongated holes.

2. Clean the hub, wheel mounting face and nut cones thoroughly if they are contaminated with paint, rust or debris.

3. Ensure the wheel stud thread surface is maintained dry and is free from all lubricants.

4. Position the wheel on the hub.

5. Lightly tighten the nuts to ensure the wheel is correctly seated onto the hub.

6. Tighten the nuts in the sequence shown.

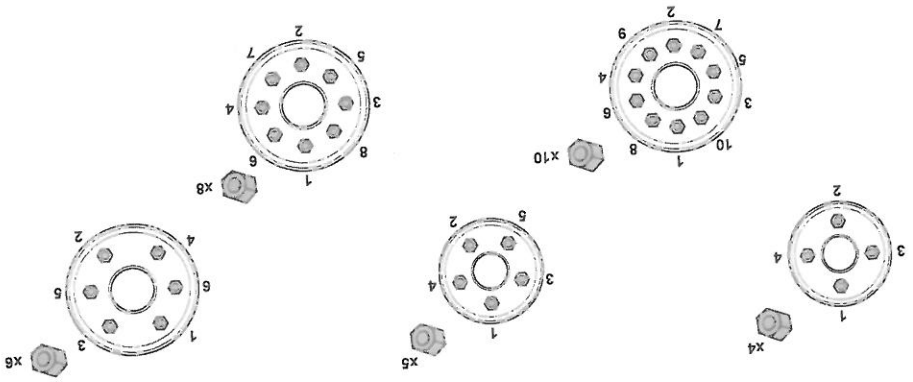


Figure 349.

Checking the Wheel Nut Torques

Refer to: Torque Values (Page 444).

7. Lower the machine to the ground.
8. Torque tighten the nuts in the sequence shown.

▲ WARNING If, for whatever reason, a wheel stud is renewed, all the studs for that wheel must be changed as a set, since the remaining studs may have been damaged.

On new machines, and whenever a wheel has been removed, check the wheel nut torques every two hours until they stay correct.

Every day, before starting work, check that the wheel nuts are tight.

Refer to: Torque Values (Page 444).



Tyres

General

Check (Condition)

▲ WARNING Do not use the machine with damaged, incorrectly installed, incorrectly inflated or excessively worn tyres. Recognise the speed limitation of the tyres installed and do not operate at more than their recommended maximum speed.

WARNING An exploding tyre can kill. Inflated tyres can explode if over-heated or over-inflated. Follow the instructions given when inflating the tyres. Do not cut or weld the rims. Use a tyre/wheel specialist for all repair work.

WARNING Wheels and tyres are heavy. Take care when lifting or moving them. Store with care to ensure that they cannot fall and cause injury. Use suitable lifting equipment if necessary.

Where a replacement tyre is necessary, seek advice from your JCB Dealer. Always use a trained tyre technician to replace the tyre onto the rim. Tyres are critical to the machines stability and performance. Always select replacement tyres from approved options for your machine as listed. Refer to: Wheels and Tyres (Page 468).

Checking the Tyre Condition

Always drive with consideration for the condition of the tyres. Incorrect tyre pressures will affect the stability of the machine. Check the tyres daily for the correct tyre pressure and signs of damage. For example:

- Signs of distortion (bulges)
- Cuts or wear
- Embedded objects (nails, etc.)

Install the valve caps firmly to prevent dirt from entering the valve. Inspect for leaks when you check the tyre pressures.

Inspect the tyre valve for leaks, when you check the tyre pressures.

Tyre Inflation

Always try to maintain your tyre pressure to the recommended settings. Using your machine with under-inflated tyres means:

- Decreasing the machines stability
- Higher tyre temperatures
- Excessive strain of the tyre fabric
- More bulging of the sidewalls
- Shortens the tyres life.

Using the machine with over-inflated tyres is dangerous:

- It causes excessive tensile loads in the fabric: this makes a tyre more susceptible to cuts and punctures.

Do not cut or weld on the rim of an inflated tyre.

Always deflate the tyre before removing foreign obstacles from the tread.

Always check the tyre pressures with the machine in an unladen state.

After checking or amending the tyre pressure always replace and secure the valve cap.

Under special conditions (e.g. on sand) the air pressure in the tyre may be reduced after you have consulted your JCB dealer or tyre manufacturer.

These instructions are for adding air to a tyre which is already inflated. If the tyre has lost all its air pressure, call in a qualified tyre mechanic. The tyre mechanic should use a tyre inflation cage and the correct equipment to do the job.

1. Prepare the wheel. Before you add air to the tyre, make sure it is correctly fitted on the machine or installed in a tyre inflation cage. Refer to Figure 350.

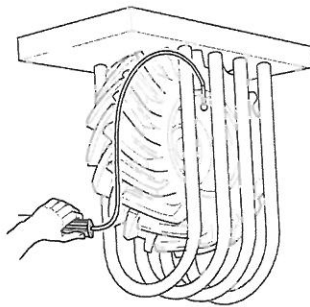


Figure 350.

2. Prepare the equipment.
 - 2.1. Use only an air supply system which includes a pressure regulator. Set the regulator no higher than 1.38 bar (20 psi) above the recommended tyre pressure.
Refer to: Wheels and Tyres (Page 468).
 - 2.2. Use an air hose fitted with a self-locking air chuck and remote shut-off valve.
3. Add the air.
 - 3.1. Make sure that the air hose is correctly connected to the tyre valve. Clear other people from the area. Stand behind the tread of the tyre while adding the air.
 - 3.2. Inflate the tyre to the recommended pressure. Do not over-inflate.

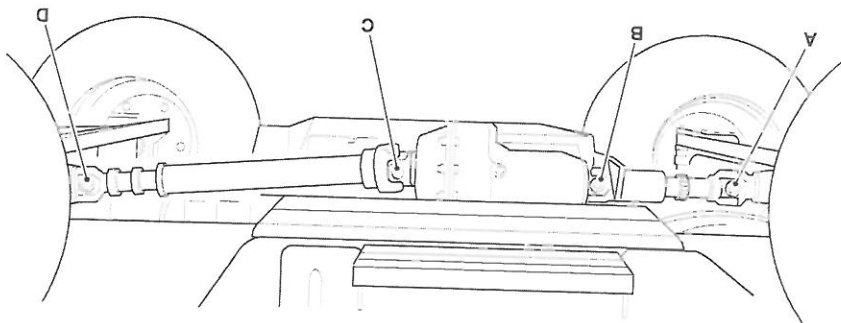


Figure 351.

Apply grease to all the points and linkages shown. Refer to Figure 351.

Make the machine safe.

Lubricate

General

Propshafts

Maintenance
Propshafts





Hydraulic System

General

Discharge

- ▲ **CAUTION** Allow the hydraulic fluid temperature to cool before removing the hydraulic tank filler cap. Open the cap slowly to prevent oil being forced out of the filler neck.
- CAUTION** Do not run the machine with the hydraulic tank filler cap removed.
- Notice:** Do not allow dirt to enter the system. Before disconnecting any part of the system, thoroughly clean around the connection. When a component has been disconnected, always install protective caps and plugs to prevent dirt ingress.
- Failure to follow these instructions will lead to dirt entering the system. Dirt in the system will seriously damage the systems components and could be expensive to repair.

1. Make the machine safe.
Refer to: Maintenance Positions (Page 277).
2. Operate the controls to remove the hydraulic pressure from the service hose lines.
 - 2.1. For manually operated services, turn the ignition key to the on position. Operate the controls
 - 2.2. For servo operated hydraulic services, turn the ignition key to the on position. Operate the controls
 - 2.3. For electrical hydraulic services, turn the ignition key to the on position. Press and hold the hydraulic venting switch. The notification will appear on the dash and buzzer will sound. Operate the hydraulic controls of the service(s) to be disconnected.
 - 2.4. If the boom is raised and or extended, then the boom will retract and lower when these services are selected.
3. Turn the ignition key to the off position.
4. Remove the ignition key.
5. Carefully remove the hydraulic tank filler cap to vent residual tank hydraulic pressure.
6. Install the hydraulic tank filler cap.

Check (Condition)

Hydraulic Hoses

- ▲ **WARNING** Damaged hoses can cause fatal accidents. Examine the hoses regularly. Do not use the machine if a hose or hose fixture is damaged.
 - Examine the hoses for:
 - Damaged hose ends
 - Worn outer covers
 - Ballooned outer covers
 - Kinked or crushed hoses
 - Exposed armouring in the outer covers
 - Displaced hose end fittings.
 - Worn cover sheathing or hose burst protection covering.
 - Replace a damaged hose before you use the machine again.
- and then examine the cardboard for signs of fluid. If fluid penetrates your skin, get medical help immediately.
- WARNING** Fine jets of fluid at high pressure can penetrate the skin. Keep face and hands well clear of fluid under pressure and wear personal protective equipment. Hold a piece of cardboard close to suspected leaks



The replacement hoses must be of the same size, standard and pressure rating. If necessary, for more information contact your JCB dealer.

Check (Leaks)

▲ Notice: If the fluid is cloudy, then water or air has contaminated the system. This could damage the hydraulic pump. Contact your JCB dealer immediately.

1. Make the machine safe.
2. Open the access covers.
3. Check the hydraulic hoses for damage.
4. Close the access covers.
5. If necessary, contact your JCB dealer.

Services

Check (Operation)

Check the operation of all the hydraulic services. Check for:

- Speed of operation
- Strength of operation
- Juddering
- Abnormal noises.

Do not use the machine if one or more of these faults are found. You must make sure that the hydraulic service is repaired immediately.

Oil

Check (Level)

▲ Notice: If the fluid is cloudy, then water or air has contaminated the system. This could damage the hydraulic pump. Contact your JCB dealer immediately.
Notice: Using incorrect fluid could damage the system. See Fluids, Capacities and Lubricants for the correct fluid. The fluid can harm your skin. Wear rubber gloves. Cover cuts or grazes.

External Sight Gauge

1. Make the machine safe with the boom lowered.
Refer to: Maintenance Positions (Page 277).
2. Get access to the hydraulic oil level indicator and hydraulic oil filler cap.
Refer to: Service Points (Page 281).
3. Check the hydraulic oil level indicator. The hydraulic oil level must be visible in the level indicator.
Top up oil level if necessary.
4. 1. Vent the hydraulic system.
Refer to: Discharge (Page 361).
2. Remove the hydraulic oil filler cap.
4.3. Add hydraulic oil.
Refer to: Fluids, Lubricants and Capacities (Page 432).



4.4. Install the filler cap.

Dipstick

1. Make the machine safe with the boom lowered.

Refer to: Maintenance Positions (Page 277).

2. Get access to the hydraulic oil filler cap.

Refer to: Service Points (Page 281).

3. Check the hydraulic oil level on the dipstick. The hydraulic oil level must be between the two marks on the dipstick.

4. Top up oil level if necessary:

4.1. Vent the hydraulic system.

Refer to: Discharge (Page 361).

4.2. Remove the hydraulic oil filler cap.

4.3. Add hydraulic oil.

Refer to: Fluids, Lubricants and Capacities (Page 432).

4.4. Install the filler cap.

Cylinders / Rams

Check (Condition)

Extend each ram fully, one at a time and visually examine for score marks, dents, leaks or similar defects. Make the machine safe before inspecting each ram.

If a ram piston appears defective, contact your service engineer or JCB dealer.

Hose Burst Check Valves

Check (Operation)

▲ **WARNING** Keep people clear of the machine while you do these checks.

The hose burst check valves 'lock' to prevent the uncontrolled movement of the ram pistons if the hydraulic pressure falls or a hose bursts. The valves are installed directly on the rams.

Keep people clear of the machine while you do these checks.

The machine must have an attachment installed for the test to operate correctly.

1. Park the machine on a solid, level ground.
2. Raise and extend the boom to its maximum position, then move the attachment to a horizontal position.
3. Stop the engine.

4. Turn the ignition key to the on position.

5. Use the control lever to try to lower the boom and tip the attachment. If there is any movement, get the hydraulic system checked by your JCB dealer.

6. Use the extend/retract function to try to retract the boom. If there is any movement, get the hydraulic system checked by your JCB dealer.



Electrical System

General

Check (Operation)

Make sure all of the electrical equipment operates correctly, for example:

- Switches
- Warning lights
- Beacon
- Alarms
- Horn
- Wipers
- Hourmeter/display
- Battery
- Lights

Check (Condition)

All defective equipment must be repaired before the machine is used.

▲ DANGER Batteries give off an explosive gas. Do not smoke when handling or working on the battery. Keep the battery away from sparks and flames.

Battery electrolyte contains sulphuric acid. It can burn you if it touches your skin or eyes. Wear goggles. Handle the battery carefully to prevent spillage. Keep metallic items (watches, rings, zips etc) away from the battery terminals. Such items could short the terminals and burn you.

Set all switches to off before disconnecting and connecting the battery. When disconnecting the battery, take off the earth (-) lead first.

Re-charge the battery away from the machine, in a well ventilated area. Switch the charging circuit off before connecting or disconnecting the battery. When you have installed the battery in the machine, wait 5 min before reconnecting, attach the positive (+) lead first.

DANGER Batteries give off explosive gases. Keep flames and sparks away from the battery. Do not smoke close to the battery. Make sure there is good ventilation in closed areas where batteries are being used or charged. Do not check the battery charge by shorting the terminals with metal. Use a hydrometer or voltmeter.

WARNING Battery electrolyte is toxic and corrosive. Do not breathe the gases given off by the battery. Keep the electrolyte away from your clothes, skin, mouth and eyes. Wear safety glasses.

CAUTION Understand the electrical circuit before connecting or disconnecting an electrical component. A wrong connection can cause injury and/or damage.

Examine the electrical circuits regularly for:

- Damaged connectors
- Loose connections
- Chaffing on the wiring harnesses
- Corrosion
- Missing insulation
- Incorrect routing of the wiring harnesses.

Do not use the machine if one or more of these faults are found. You must make sure that the electrical circuit is repaired immediately.

Battery

Clean

- ▲ **WARNING** Keep metal watch straps and any metal fasteners on your clothes, clear of the positive (+) battery terminal. Such items can short between the terminal and nearby metal work. If it happens you can get burned.

1. Make the machine safe.

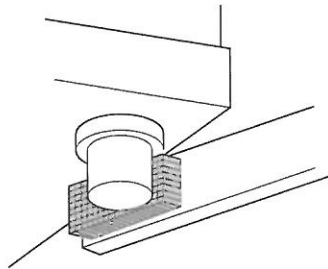
Refer to: Maintenance Positions (Page 277).

2. Get access to the battery.

Refer to: Access Apertures (Page 312).

- 3. If the terminal posts are corroded and covered with a wire brush or abrasive paper. Refer to Figure 352. If there is considerable corrosion, clean the terminal posts with a wire brush or abrasive paper. Refer to Figure 352.

Figure 352.



- 4. Apply a thin layer of petroleum jelly to the terminal posts.

Connect

- ▲ **WARNING** Keep metal watch straps and any metal fasteners on your clothes, clear of the positive (+) battery terminal. Such items can short between the terminal and nearby metal work. If it happens you can get burned.

CAUTION The machine is negatively earthed. Always connect the negative pole of the battery to earth.

When connecting the battery, connect the earth (-) lead last.

When disconnecting the battery, disconnect the earth (-) lead first.

CAUTION Understand the electrical circuit before connecting or disconnecting an electrical component. A wrong connection can cause injury and/or damage.

1. Get access to the batteries.

Refer to: Disconnect (Page 365).

2. Connect the battery leads. Connect the earth (-) terminal last.

3. If the machine has a battery isolator, move the switch to the on position.

Disconnect

- ▲ **WARNING** Keep metal watch straps and any metal fasteners on your clothes, clear of the positive (+) battery terminal. Such items can short between the terminal and nearby metal work. If it happens you can get burned.

CAUTION The machine is negatively earthed. Always connect the negative pole of the battery to earth.

▲ Notice: Always replace fuses with ones of correct ampere rating to avoid electrical system damage.

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

D Primary fuses

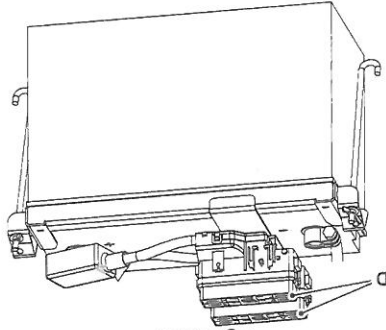


Figure 354.

The primary fuse box is situated to the left hand side of the engine, at the rear of the engine compartment. The additional fuse links are installed at the battery positive terminal. Refer to: Fuses (Page 446).

Primary Fuses

- A Fuses
- C Screws (x3)

B Cover

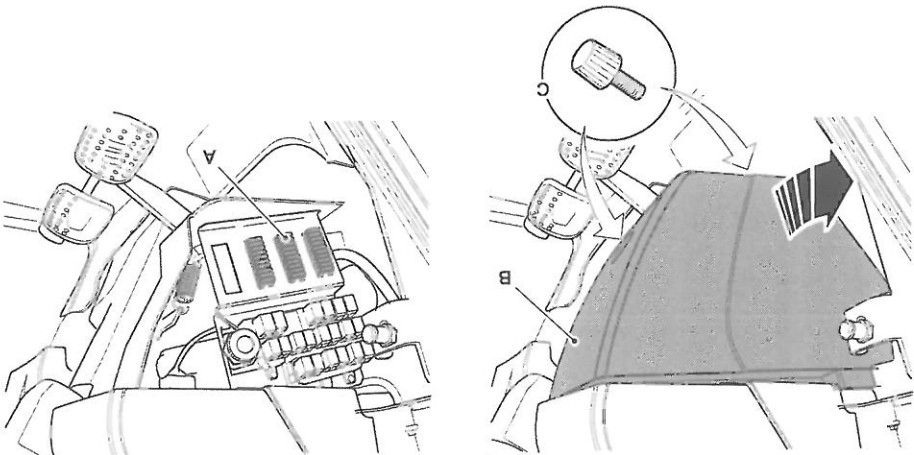


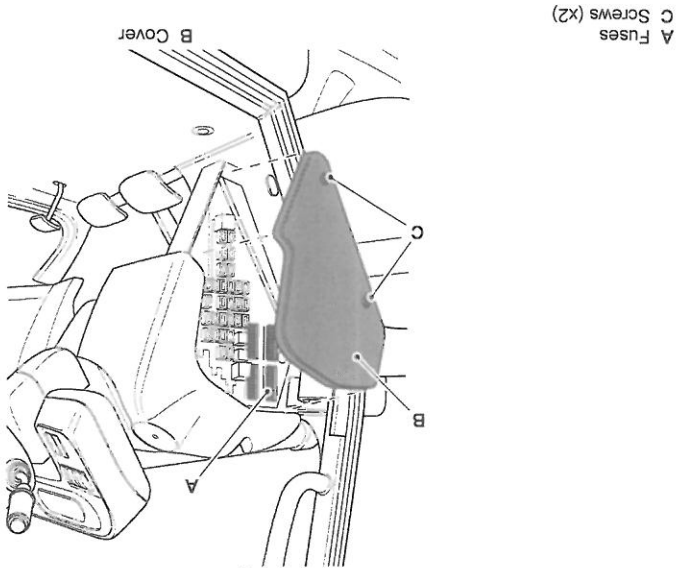
Figure 353.

The electrical circuits are protected by fuses. The fuses are located in a fuse box inside the door. They are in four banks. Each fuse position in each bank is numbered to aid identification. If a fuse ruptures, find out why and rectify the fault before fitting a new one. Refer to: Fuses (Page 446).

Additional fuse links are fitted at the battery positive terminal and within the engine compartment. Refer to: Fuses (Page 446).

1. Make the machine safe with the boom lowered.
Refer to: Maintenance Position - Boom Lowered (Page 277).
2. Open the cab door.
3. Hold the cover and remove the screws.
4. Remove the cover.

Figure 355.



Primary Fuses

To further protect the machine wiring harnesses and electrical circuits, a fuse link box is fitted as shown. Remember to check the main circuit fuses as well as the primary fuses shown on this page.

Your machine may not be equipped with all the fuses shown.

1. Make the machine safe.
Refer to: Stopping and Parking (Page 71).
 2. Open the cab door.
 3. Hold the cover and remove the screws.
 4. Remove the cover.
- The relays are separated into banks. Each relay position in each bank is numbered to aid identification. Refer to: Relays (Page 457).

The relays are situated in a fuse box inside the door.

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541T70 [UN3/GB3], 541T70LP [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536T60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 541T70LP [T4F], 550-80 [T4F], 550U80 [T4F] Page 369
 For: 526-56 [T4F] Page 370

Replace

Relays

D Primary fuses

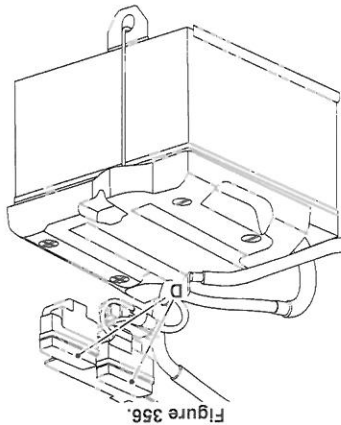


Figure 356



1. Make the machine safe.
Refer to: Stopping and Parking (Page 71).
2. Open the cab door.
3. Hold the cover and remove the screws.
4. Remove the cover.

The relays are separated into banks. Each relay position in each bank is numbered. Refer to: Relays (Page 457).
The relays are situated in a fuse box inside the door.

(For: 526-56 [T4F])

- A Relays
- C Screws (x2)

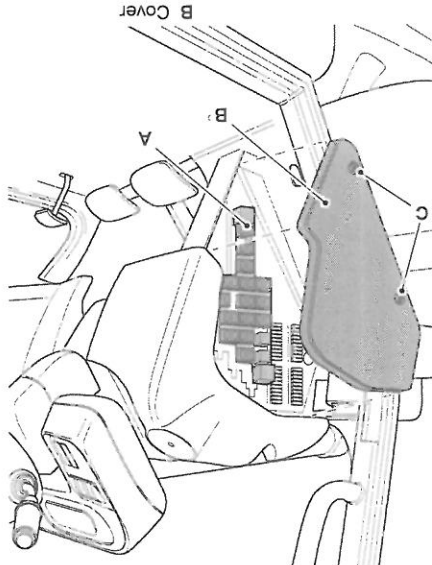


Figure 357.

- A Washer bottle
- 1. Make the machine safe.

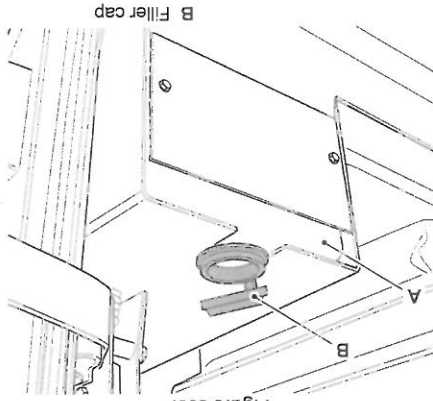


Figure 359.

(For: 526-56 [T4F])

For: 526-56 [T4F] Page 371
 For: 531-70 [T4F], 531-70 [UN3/GB3], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [UN3/GB3], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F] Page 372
 For: 536T70LP [T4F] Page 373

Check (Level)

Window Washer

- A Relays
- C Screws (x3)

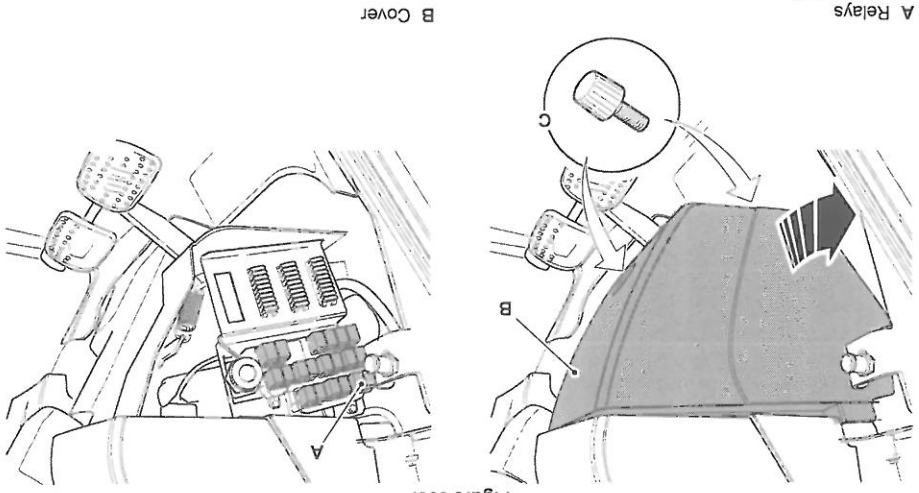


Figure 358.



4. Remove the washer bottle filler cap. Refer to Figure 361.
3. Locate the washer bottle in the panel in front of the cab.

A Knob

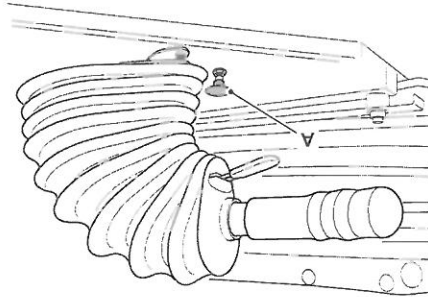


Figure 360.

2. Pull the release knob to open the panel in front of the cab. Refer to Figure 360.

Refer to: Stopping and Parking (Page 71).

1. Make the machine safe.

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 560-80 [T4F], 560U80 [T4F])

Do not use the window washer when there is no liquid in the washer bottle as it will cause damage to the motor.

Do not use engine coolant antifreeze.

5. Replace the washer bottle filler cap

Refer to: Fluids, Lubricants and Capacities (Page 432).

4. Check the water level. If necessary, fill in the washer bottle with clean water. Add de-icing fluid to prevent it freezing.

3. Remove the washer bottle filler cap. Refer to Figure 359.

2. Get access to the washer bottle to the left of the operator seat. Refer to Figure 359.

Refer to: Stopping and Parking (Page 71).

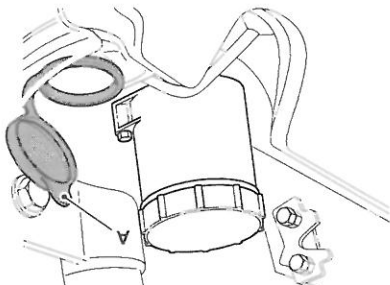


Figure 361.

A Filler cap

5. Check the water level. If necessary, fill in the washer bottle with clean water. Add de-icing fluid to prevent it freezing.

Refer to: Fluids, Lubricants and Capacities (Page 432).

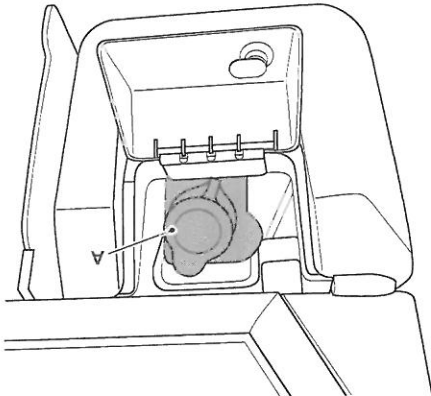
6. Replace the washer bottle filler cap

Do not use engine coolant antifreeze.

Do not use the window washer when there is no liquid in the washer bottle as it will cause damage to the motor.

(For: 536T70LP [T4F])

Figure 362.



A Washer bottle

Refer to: Stopping and Parking (Page 71).

1. Make the machine safe.
2. Get access to the washer bottle next to the cab step. Refer to Figure 362.
3. Remove the washer bottle filler cap.
4. Check the water level. If necessary, fill in the washer bottle with clean water. Add de-icing fluid to prevent it freezing.

Refer to: Fluids, Lubricants and Capacities (Page 432).

5. Replace the washer bottle filler cap

Do not use engine coolant antifreeze.

Do not use the window washer when there is no liquid in the washer bottle as it will cause damage to the motor.

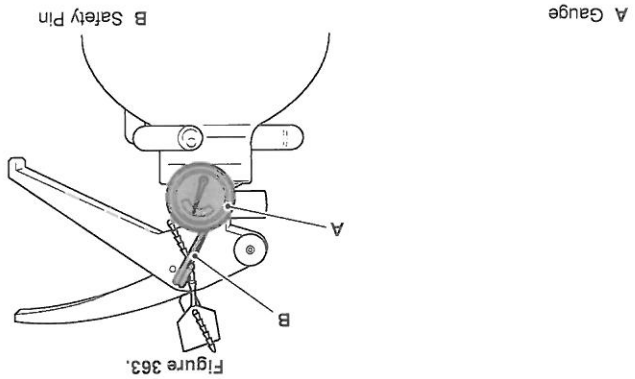


Miscellaneous

Fire Extinguisher Check (Condition)

In addition to the operator check the extinguisher must be serviced every 12 months by a suitably qualified person.

1. Examine the fire extinguisher for damage and leaks.
2. Make sure the fire extinguisher is correctly attached.
3. Make sure that the gauge indicates that the extinguisher is charged i.e. the needle is in the green segment
- 3.1. If the needle is in or very near the red segment at either end of the gauge, the extinguisher must be serviced or replaced.
4. Make sure the safety pin is correctly installed.





Technical Data Static Dimensions

Dimensions

Page 378	For: 526-56 [T4F]
Page 381	For: 531-70 [T4F], 531T70 [T4F]
Page 380	For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F]
Page 383	For: 560-80 [T4F], 560U80 [T4F]
Page 384	For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F]
Page 386	For: 536T70 [T4F]
Page 387	For: 550-80 [T4F], 550U80 [T4F]
Page 388	For: 536T70LP [T4F]
Page 389	For: 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F]

Item	Description	20 inch Tyres	24 inch Tyres
A	Overall height	2,250mm	2,400mm
B	Overall width (over tyres)	2,250mm	2,230mm
C	Inside width of cab (between windows)	880mm	880mm
D	Front track	1,850mm	1,810mm
E	Wheelbase	2,657mm	2,657mm
F	Overall length to front of tyres	4,020mm	4,070mm
G	Overall length to front of carriage	4,660mm	4,660mm
H	Ground clearance	390mm	440mm
K	Centre of gravity (unladen)	1,287mm	1,287mm

Table 39.

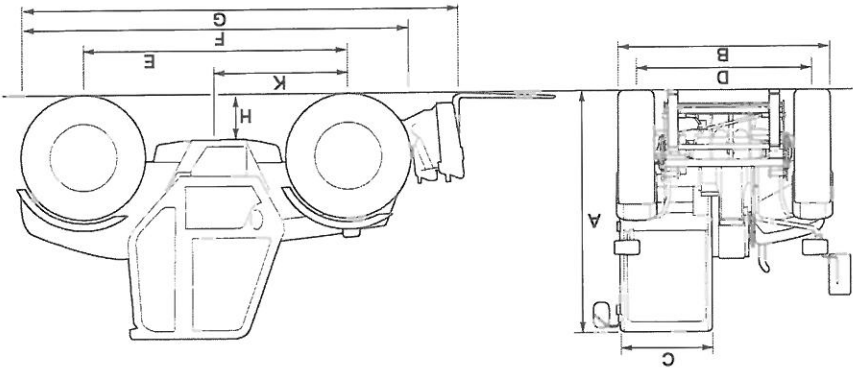


Figure 364.

(For: 526-56 [T4F])

Item	Description	Length
M	1,067mm	1,200mm
R1	1,067mm forks	4,480mm
R2	1,200mm forks	4,620mm
R3		3,580mm
R4		1,060mm
S		1,215mm
T		103mm
U1	1,067mm forks	3,420mm
U2	1,200mm forks	3,560mm
V	1,067mm forks	7,240mm

Table 40.

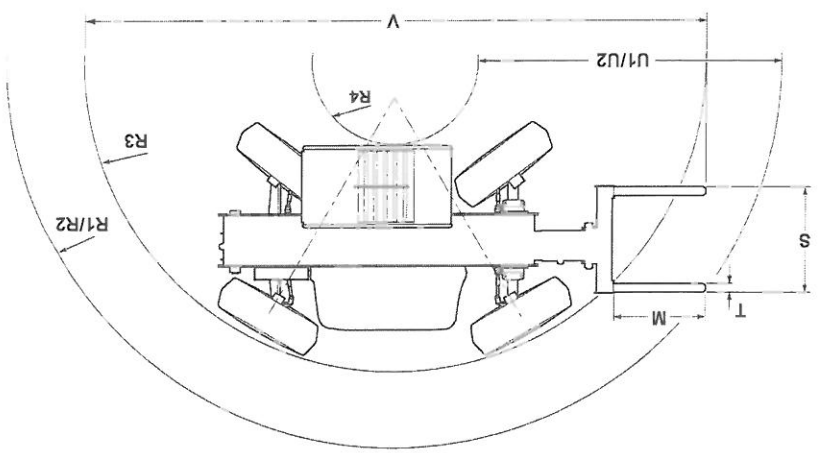


Figure 365.



(For: 531-70 [T4F], 531T70 [T4F])

Figure 366.

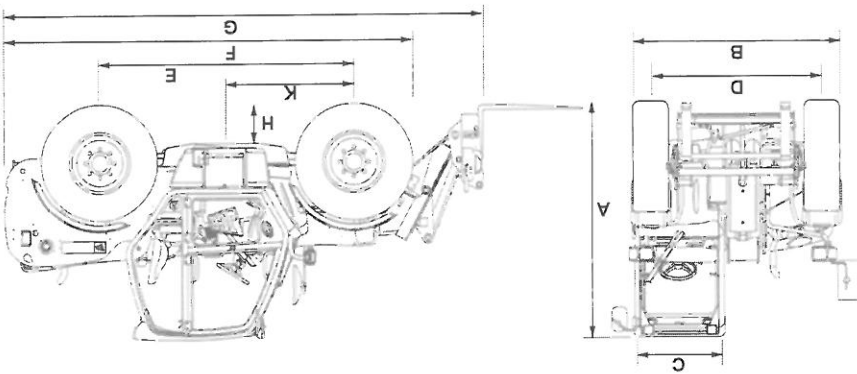


Table 41.

Item	Description	Dimension ⁽¹⁾
A	Overall height	2,490mm
B	Overall width (over tyres)	2,230mm
C	Inside width of cab (between windows)	940mm
D	Front track	1,810mm
E	Wheelbase	2,750mm
F	Overall length to front tyres	4,380mm
G	Overall length to front of carriage	4,990mm
H	Ground clearance	40mm
K	Centre of gravity (unladen)	1,381mm
	Outside turn radius (over tyres)	3,700mm

⁽¹⁾ Dimensions relative to 15.5/80-24 tyres.

(1) Dimensions relative to 15.5 R24 tyres.

Item	Description	Dimension ^m
A	Overall height	2,490mm
B	Overall width (over tyres)	2,290mm
C	Inside width of cab (between windows)	940mm
D	Front track	1,870mm
E	Wheelbase	2,750mm
F	Overall length to front tyres	4,380mm
G	Overall length to front of carriage	4,990mm
H	Ground clearance	400mm
K	Centre of gravity (unladen)	1,515mm

Table 42.

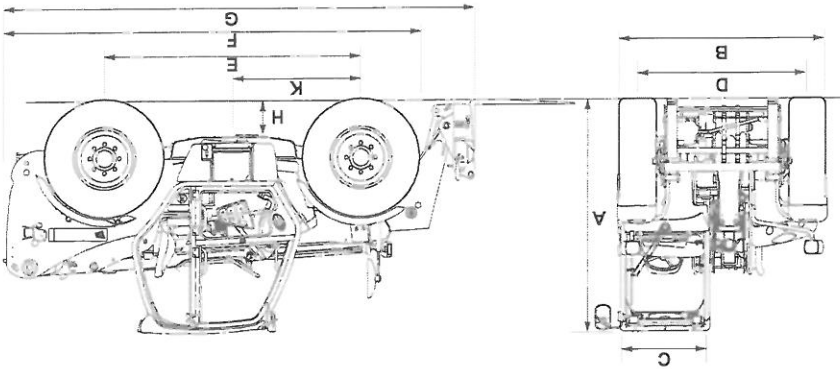


Figure 367.

(For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F])

(1) Dimensions relative to 15.5 R24 tyres.

Item	Description	Dimension ⁽¹⁾
M	1,067mm forks	1,067mm
	1,200mm forks	1,200mm
R1	1,067mm forks	4,585mm
R2	1,200mm forks	4,700mm
R3		3,700mm
R4		1,190mm
S		1,226mm
T		103mm
U1	1,067mm forks	3,395mm
U2	1,200mm forks	3,510mm
V	1,067mm forks	7,290mm

Table 43.

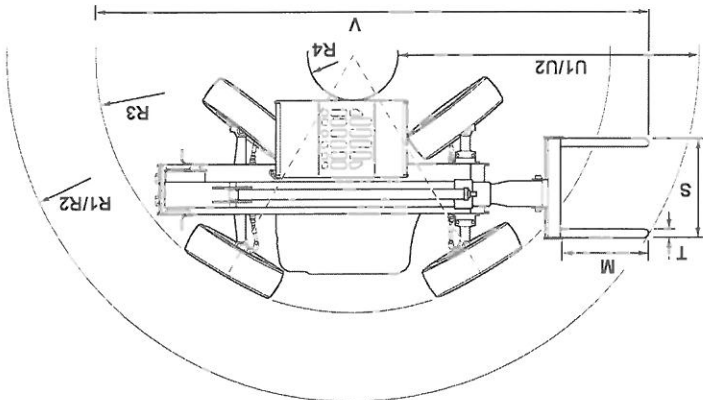


Figure 368.

(1) Dimensions relative to 480/80 R26 tyres.

Item	Description	Length"
A	Overall height	2,590mm
B	Overall width (over tyres)	2,420mm
C	Inside width of cab (between windows)	940mm
D	Front track	1,980mm
E	Wheelbase	2,750mm
F	Overall length to front tyres	4,420mm
G	Overall length to front of carriage	5,273mm
H	Ground clearance	400mm
K	Centre of gravity (unladen)	1,618mm

Table 44.

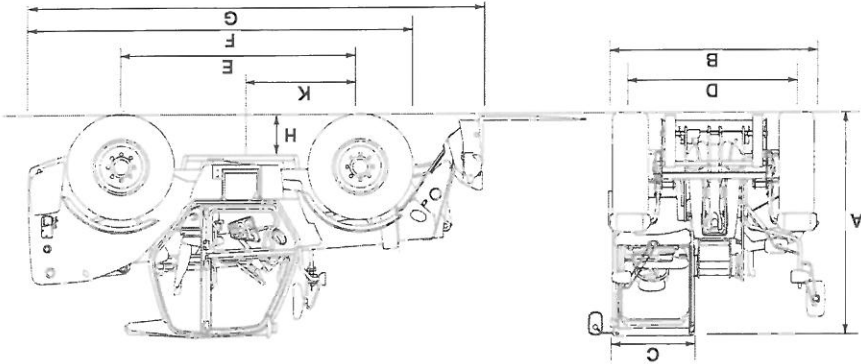


Figure 369.

(For: 560-80 [T4F], 560U80 [T4F])

(1) Dimensions relative to 440/70 R24 tyres.

Item	Description	Dimension"
A	Overall height	2,490mm
B	Overall width (over tyres)	2,280mm
C	Inside width of cab (between windows)	940mm
D	Front track	1,810mm
E	Wheelbase	2,750mm
F	Overall length to front tyres (with out hitch)	4,030mm
	Overall length to front tyres (with hitch)	4,229mm
G	Overall length to front of carriage	4,550mm
H	Ground clearance	400mm
K	Centre of gravity (unladen)	1,395mm

Table 45.

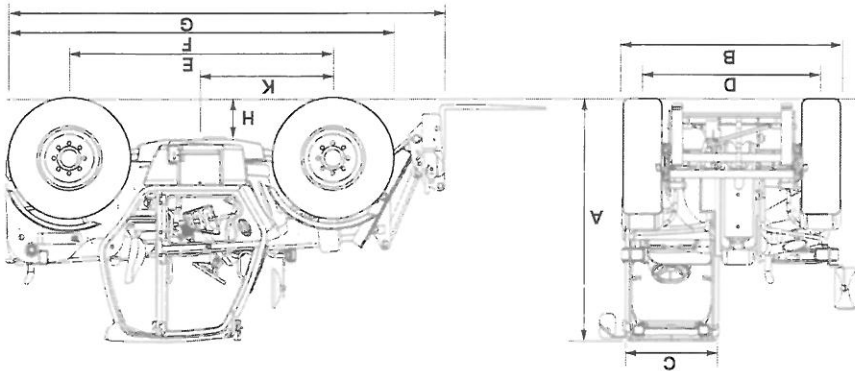


Figure 370.

(For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F])

(1) Dimensions relative to 440/70 R24 tyres.

Item	Description	Dimension ⁽¹⁾
M		1,067mm
		1,200mm
R1	1,067mm forks	4,486mm
R2	1,200mm forks	4,619mm
R3		3,605mm
R4		965mm
S		1,226mm
T		103mm
U1	1,067mm forks	3,521mm
U2	1,200mm forks	3,654mm
V	1,067mm forks	7,217mm

Table 46.

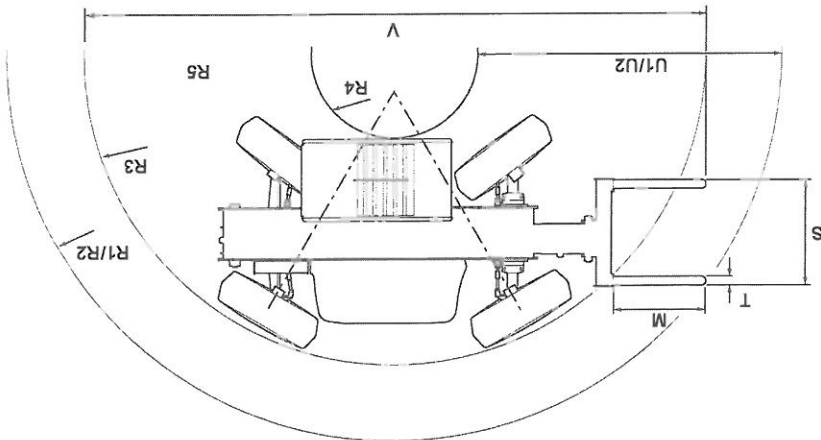


Figure 371.



(For: 536T70 [T4F])

Figure 372.

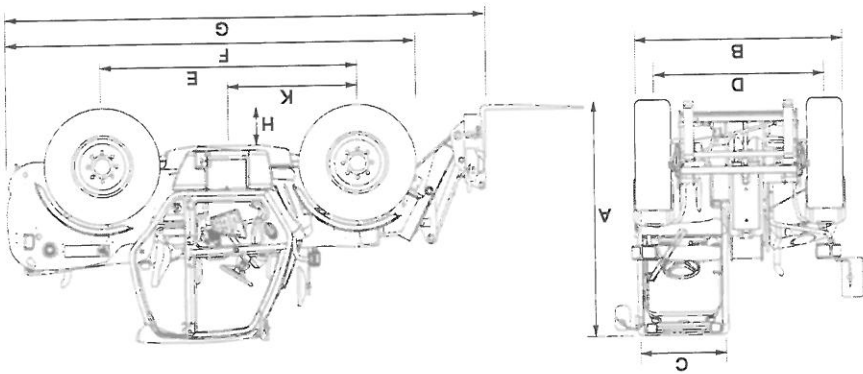


Table 47.

Item	Description	Dimension ⁽¹⁾
A	Overall height	2,490mm
B	Overall width (over tyres)	2,230mm
C	Inside width of cab (between windows)	940mm
D	Front track	1,810mm
E	Wheelbase	2,750mm
F	Overall length to front tyres	4,380mm
G	Overall length to front of carriage	4,990mm
H	Ground clearance	400mm
K	Centre of gravity (unladen)	1,466mm
	Outside turn radius (over tyres)	3,700mm

⁽¹⁾ Dimensions relative to 15.5/80-24 tyres.

(For: 550-80 [T4F], 550U80 [T4F])

Figure 373.

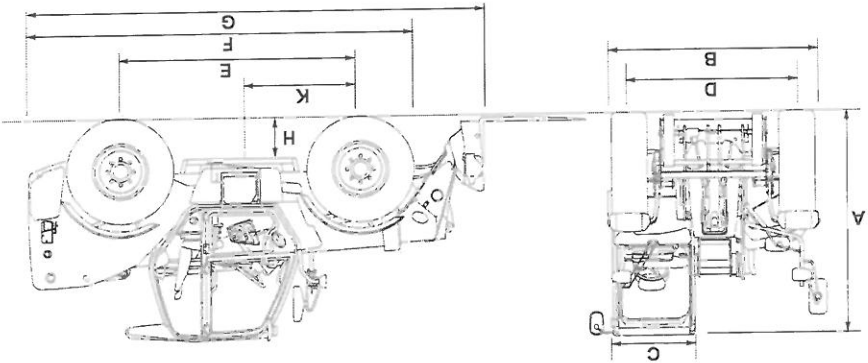


Table 48.

Item	Description	Length ¹⁾
A	Overall height	2,590mm
B	Overall width (over tyres)	2,420mm
C	Inside width of cab (between windows)	940mm
D	Front track	1,980mm
E	Wheelbase	2,750mm
F	Overall length to front tyres	4,420mm
G	Overall length to front of carriage	5,273mm
H	Ground clearance	400mm
K	Centre of gravity (unladen)	1,550mm

(1) Dimensions relative to 480/80 R26 tyres.

(1) Dimensions relative to 460/70 R24 tyres.

Item	Description	Dimension ⁽¹⁾
A	Overall height	2,330mm
B	Overall width (over tyres)	2,290mm
C	Inside width of cab (between windows)	940mm
D	Front track	1,810mm
E	Wheelbase	2,750mm
F	Overall length to front tyres	4,380mm
G	Overall length to front of carriage	4,990mm
H	Ground clearance	400mm
K	Centre of gravity (unladen)	1,493mm
	Outside turn radius (over tyres)	3,700mm

Table 49.

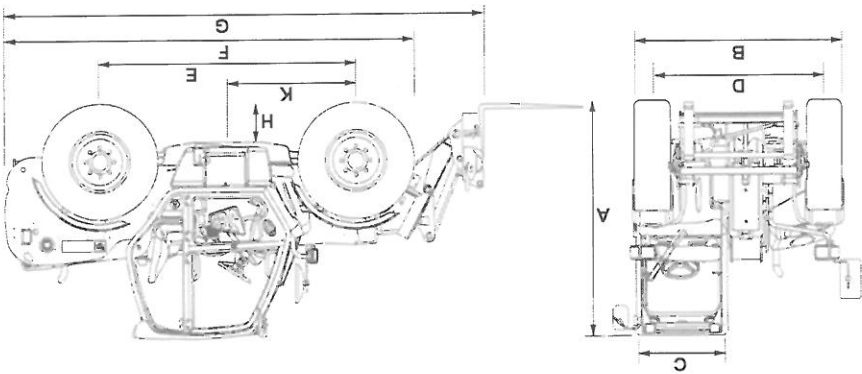


Figure 374.

(For: 536T70LP [T4F])

All machines are with standard tyres, no tyre fill.

The figures are based on the machine with the boom in the load carrying position (boom retracted, fork heel 300mm above the ground), a full tank of fuel.

(For: 526-56 [T4F])

Page 389 For: 526-56 [T4F], 536T60 [T4F]
 Page 390 For: 536-60 [UN3/GB3], 536T60 [T4F]
 Page 390 For: 541-70 [UN3/GB3], 541T70 [T4F]
 Page 390 For: 536T70 [T4F]
 Page 391 For: 536T70LP [T4F]
 Page 391 For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F]
 Page 391 For: 531-70 [T4F], 531T70 [T4F]
 Page 391 For: 550-80 [T4F], 550U80 [T4F]
 Page 392 For: 560-80 [T4F], 560U80 [T4F]

Weights

(1) Dimensions relative to 15.5/80-24 tyres.

Item	Description	Dimension ⁽¹⁾
A	Overall height	2,490mm
B	Overall width (over tyres)	2,230mm
C	Inside width of cab (between windows)	940mm
D	Front track	1,810mm
E	Wheelbase	2,750mm
F	Overall length to front tyres	4,380mm
G	Overall length to front of carriage	4,990mm
H	Ground clearance	400mm
K	Centre of gravity (unladen)	1,420mm
	Outside turn radius (over tyres)	3,700mm

Table 50.

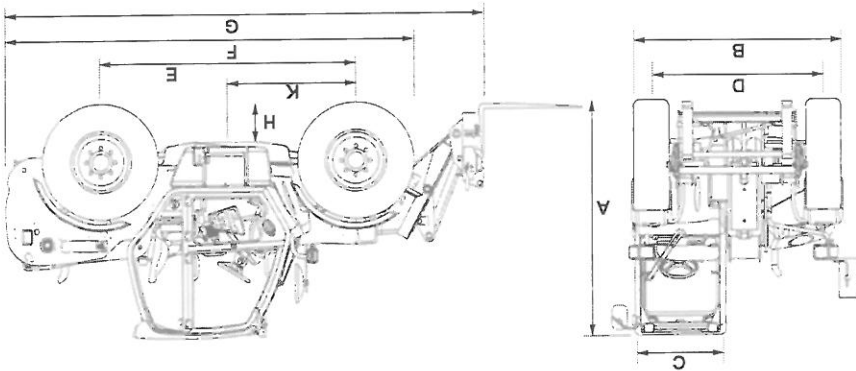


Figure 375.

(For: 541-70 [T4F], 541T70 [UN3/GB3], 541T70 [T4F])



Axle Load	Front	4,479kg	Total	Lift Capacity	3,600kg	Axle Load at Maximum Lift	Front	9,739kg	Total	11,835kg
	Rear	8,340kg					Rear	2,096kg		

Table 54.

The base machine mass with equipment and empty attachment in the most usual configuration (machine with forks, with the boom in the load carrying position, boom fully retracted, fork heel 300mm above the ground), including a 75kg operator, a full fuel tank and all operating fluids (hydraulic oil, transmission oil, engine oil, engine coolant, Adblue/DEF etc.) at the level specified by the manufacturer.

The figures below are based on the machine operating mass as defined by ISO 6016:2008, describing operating mass as:

(For: 536170 [T4F])

Axle Load	Front	4,559kg	Total	Lift Capacity	4,100kg	Axle Load at Maximum Lift	Front	10,470kg	Total	12,315kg
	Rear	8,320kg					Rear	1,845kg		

Table 53.

The base machine mass with equipment and empty attachment in the most usual configuration (machine with forks, with the boom in the load carrying position, boom fully retracted, fork heel 300mm above the ground), including a 75kg operator, a full fuel tank and all operating fluids (hydraulic oil, transmission oil, engine oil, engine coolant, Adblue/DEF etc.) at the level specified by the manufacturer.

The figures below are based on the machine operating mass as defined by ISO 6016:2008, describing operating mass as:

(For: 541-70 [T4F], 541T70 [UN3/GB3], 541T70 [T4F])

Axle Load	Front	3,920kg	Total	Lift Capacity	3,600kg	Axle Load at Maximum Lift	Front	9,700kg	Total	11,240kg
	Rear	7,565kg					Rear	1,540kg		

Table 52.

The base machine mass with equipment and empty attachment in the most usual configuration (machine with forks, with the boom in the load carrying position, boom fully retracted, fork heel 300mm above the ground), including a 75kg operator, a full fuel tank and all operating fluids (hydraulic oil, transmission oil, engine oil, engine coolant, Adblue/DEF (Diesel Exhaust Fluid) etc.) at the level specified by the manufacturer.

The figures below are based on the machine operating mass as defined by ISO (International Organization for Standardization) 6016:2008, describing operating mass as:

(For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F])

Wheel Load	Front	3,173kg	Total	Lift Capacity	2,600kg	Axle Load at Maximum Lift	Front	7,688kg	Total	9,050kg
	Rear	6,553kg					Rear	1,391kg		

Table 51.

(For: 536T70LP [T4F])

The figures below are based on the machine operating mass as defined by ISO 6016:2008, describing operating mass as:

The base machine mass with equipment and empty attachment in the most usual configuration (machine with forks, with the boom in the load carrying position, boom fully retracted, fork heel 300mm above the ground), including a 75kg operator, a full fuel tank and all operating fluids (hydraulic oil, transmission oil, engine oil, engine coolant, Adblue/DEF etc.) at the level specified by the manufacturer.

Table 55.

Axle Load	Total		Lift Capacity	Axle Load at Maximum Lift	Total
	Front	Rear			
	3,701kg	4,479kg	8,180kg	3,600kg	9,579kg
					2,096kg
					11,675kg

(For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F])

The figures below are based on the machine operating mass as defined by ISO 6016:2008, describing operating mass as:

The base machine mass with equipment and empty attachment in the most usual configuration (machine with forks, with the boom in the load carrying position, boom fully retracted, fork heel 300mm above the ground), including a 75kg operator, a full fuel tank and all operating fluids (hydraulic oil, transmission oil, engine oil, engine coolant, Adblue/DEF etc.) at the level specified by the manufacturer.

Table 56.

Axle Load	Total		Lift Capacity	Axle Load at Maximum Lift	Total
	Front	Rear			
	3,961kg	4,839kg	8,800kg	3,500kg	9,632kg
					2,563kg
					12,195kg

(For: 531-70 [T4F], 531T70 [T4F])

The figures below are based on the machine operating mass as defined by ISO 6016:2008, describing operating mass as:

The base machine mass with equipment and empty attachment in the most usual configuration (machine with forks, with the boom in the load carrying position, boom fully retracted, fork heel 300mm above the ground), including a 75kg operator, a full fuel tank and all operating fluids (hydraulic oil, transmission oil, engine oil, engine coolant, Adblue/DEF etc.) at the level specified by the manufacturer.

Table 57.

Wheel Load	Total		Lift Capacity	Axle Load at Maximum Lift	Total
	Front	Rear			
	3,532kg	4,293kg	7,25kg	3,100kg	8,499kg
					2,321kg
					10,820kg

(For: 550-80 [T4F], 550U80 [T4F])

The figures below are based on the machine operating mass as defined by ISO 6016:2008, describing operating mass as: The base machine mass with equipment and empty attachment in the most usual configuration (machine with forks, with the boom in the load carrying position, boom fully retracted, fork heel 300mm above the ground).

Axle Load	Front	4,845kg	Total	Lift Capacity	6,000kg	Axle Load at Maximum Lift	Front	15,210kg	Total
	Rear	6,329kg					Rear	1,839kg	

Table 59.

The figures below are based on the machine operating mass as defined by ISO 6016:2008, describing operating mass as: The base machine mass with equipment and empty attachment in the most usual configuration (machine with forks, with the boom in the load carrying position; boom fully retracted, fork heel 300mm above the ground).

(For: 560-80 [T4F], 560U80 [T4F])

Axle Load	Front	4,889kg	Total	Lift Capacity	5,000kg	Axle Load at Maximum Lift	Front	13,505kg	Total
	Rear	6,043kg					Rear	2,302kg	

Table 58.



Visibility Diagrams

Page 394 For: 526-56 [T4F].....

Page 397 For: 531-70 [T4F], 531T70 [T4F], 536T70 [T4F], 541-70 [T4F], 541T70 [UN3/GB3], 541T70 [T4F].....

Page 400 For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F].....

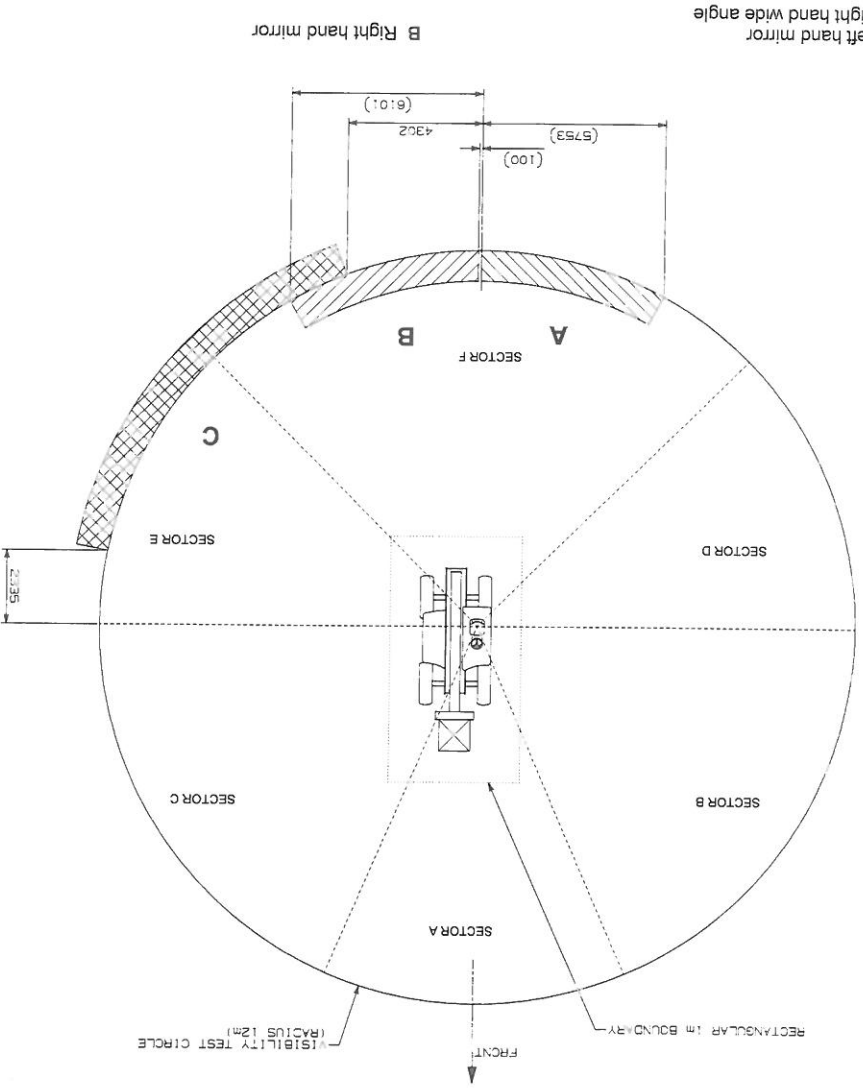
Page 403 For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F].....

Page 408 For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F].....

Page 411 For: 536T0LP [T4F].....

(For: 526-56 [14F])

Figure 376. Mirror Setup

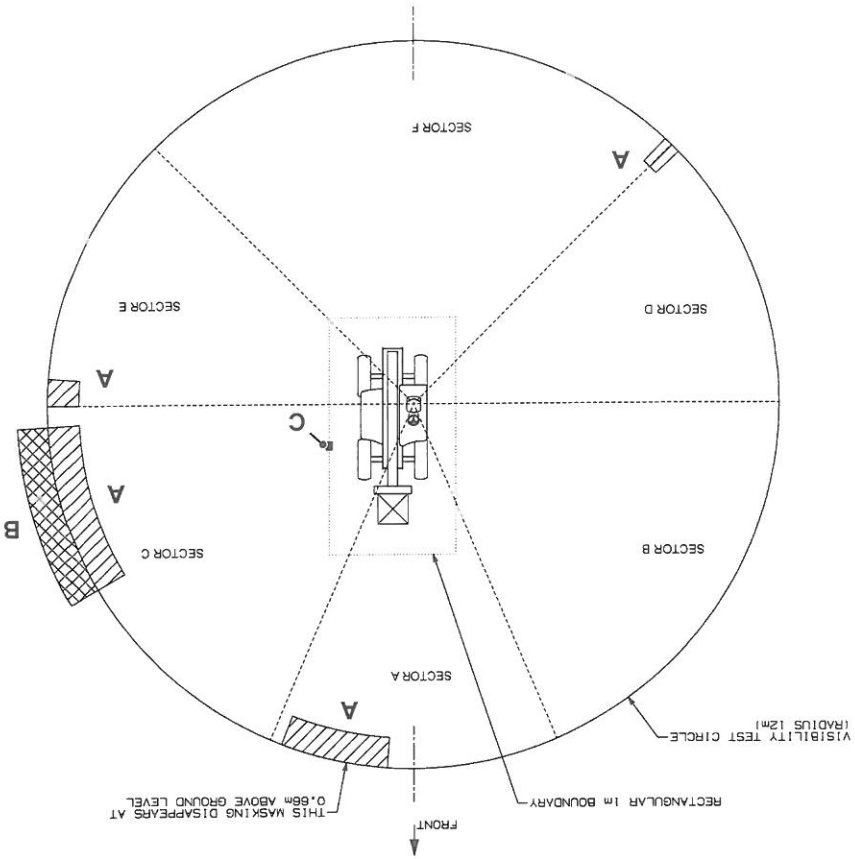


A Left hand mirror
C Right hand wide angle

B Right hand mirror



Figure 377. Visibility Masking in Suspended Load Condition



- A Masking at 12m radius measured at ground level
- B Masking at 12m radius measured at 0.75m above ground level
- C Masking at 1m boundary measured between ground level and 1.5m above ground level

- A Masking at 12m radius measured at ground level
- C Masking at 1m boundary measured between ground level and 1.5m above ground level
- B Masking at 12m radius measured at 0.75m above ground level

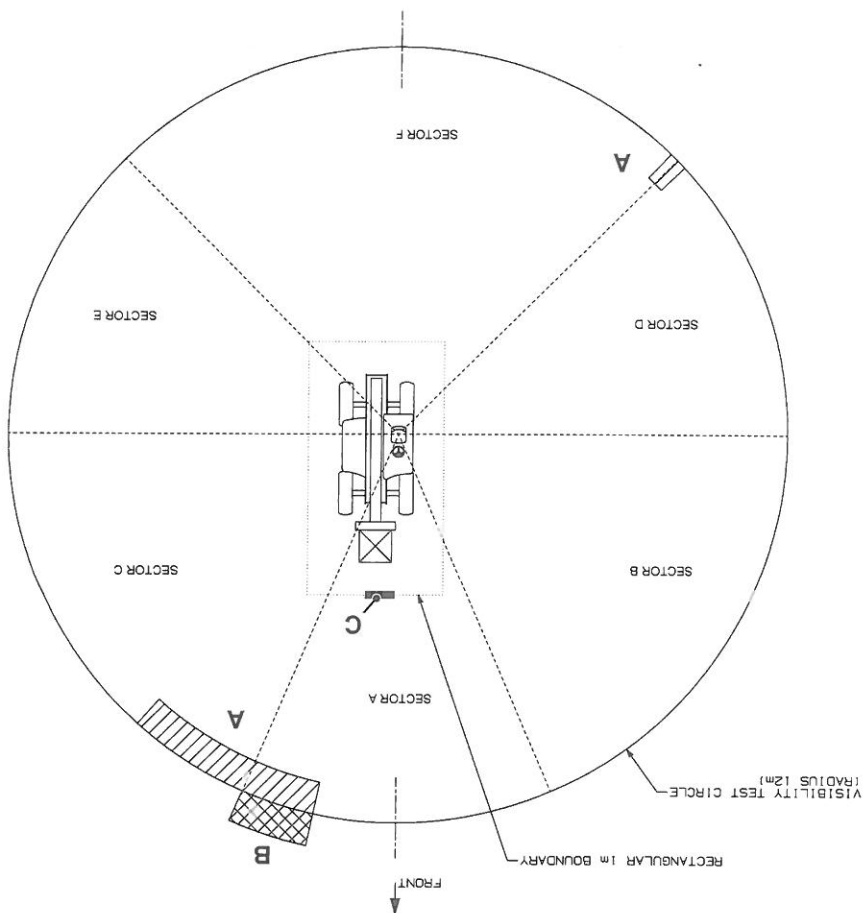


Figure 378. Visibility Masking in Lorry Trailer Loading Condition



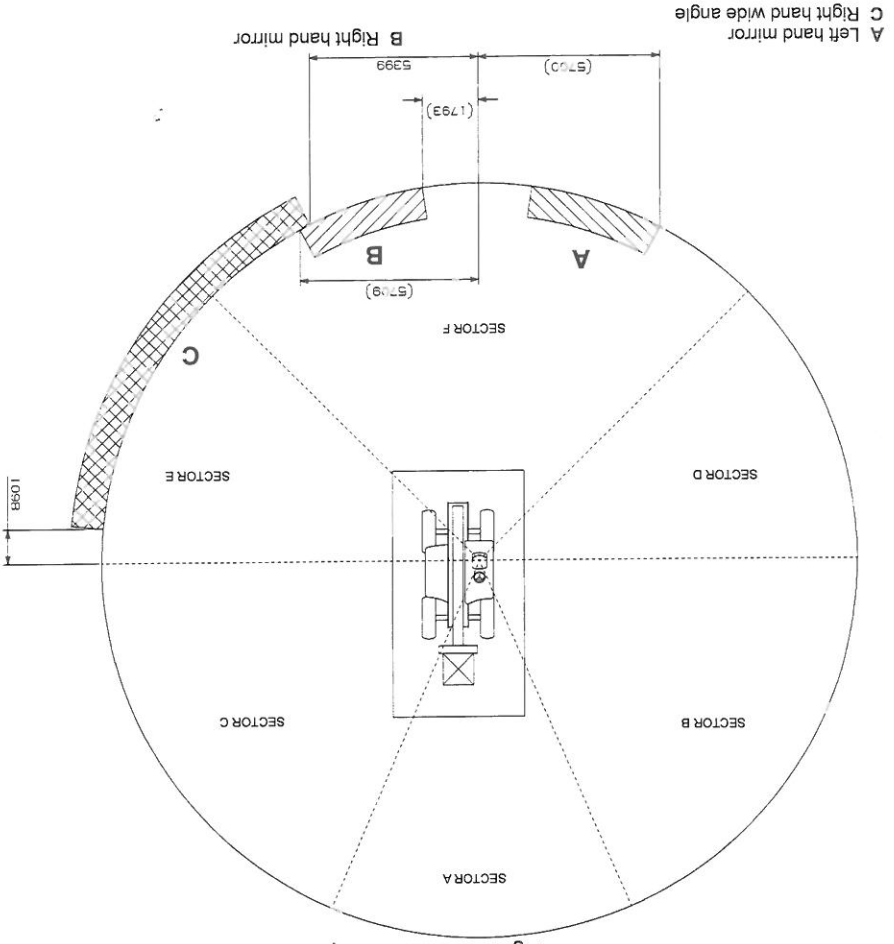
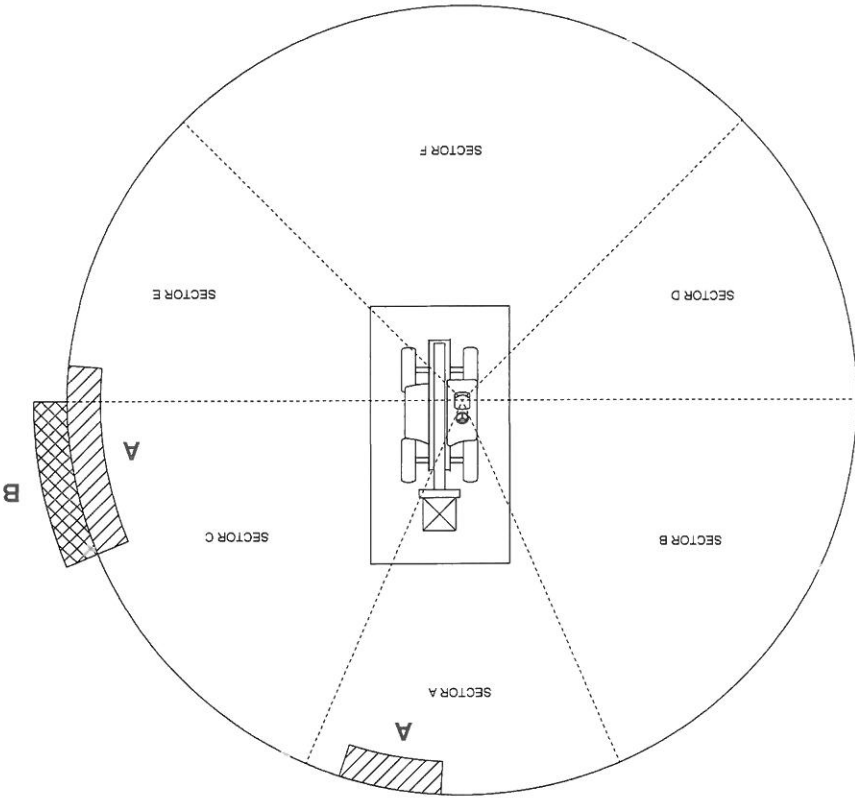


Figure 379, Mirror Setup

(For: 531-70 [T4F], 531T70 [T4F], 536T70 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F])

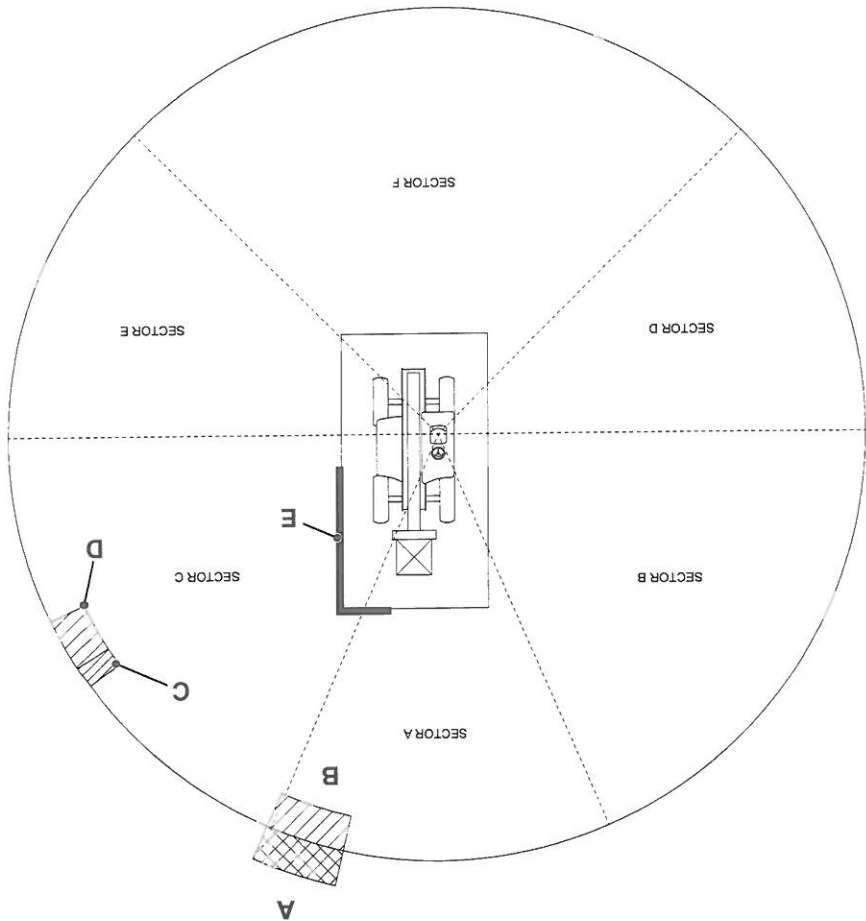


Figure 380. Visibility Masking in Suspended Load Condition



A Masking at 12m radius measured at ground level
B Masking at 12m radius measured at 0.75m above ground level

Figure 381. Visibility Masking in Lorry Trailer Loading Condition



- A Masking at 12m radius measured at 0.75m above ground level
- B Masking at 12m radius measured at ground level
- C Masking at 12m radius that disappears at 0.74m above ground level
- D Masking at 12m radius measured at ground level that disappears 0.45m above ground level
- E Masking at 1m boundary (>200mm width) measured between ground level and 1.5m above ground level

A Left hand mirror
 C Right hand wide angle

B Right hand mirror
 D Rear mounted wide angle

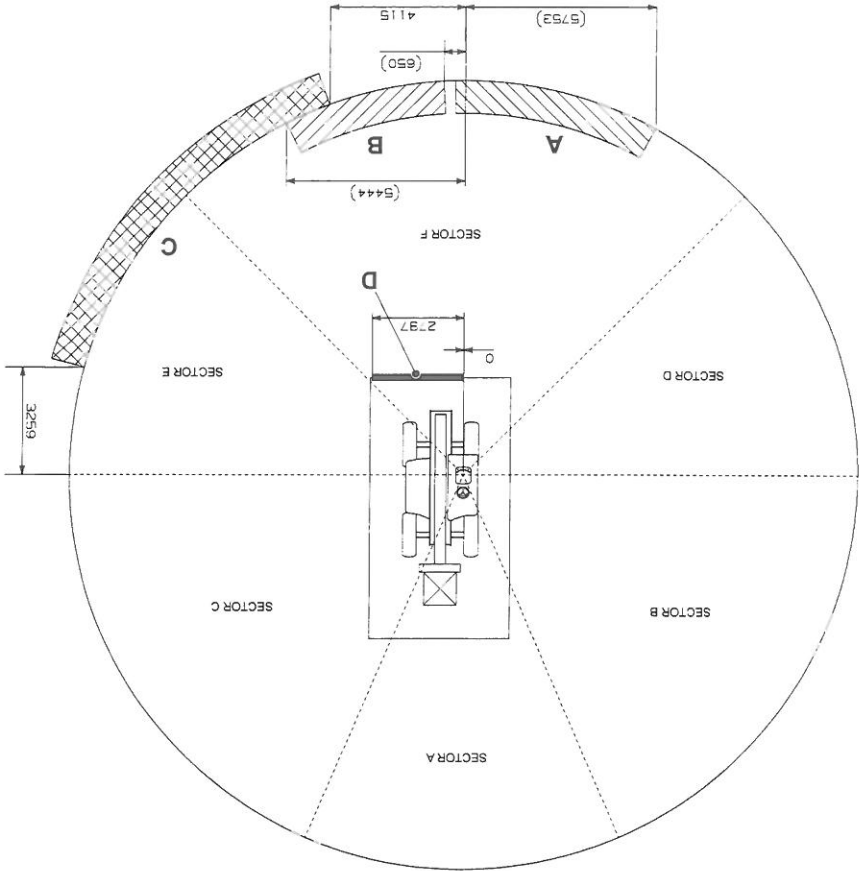
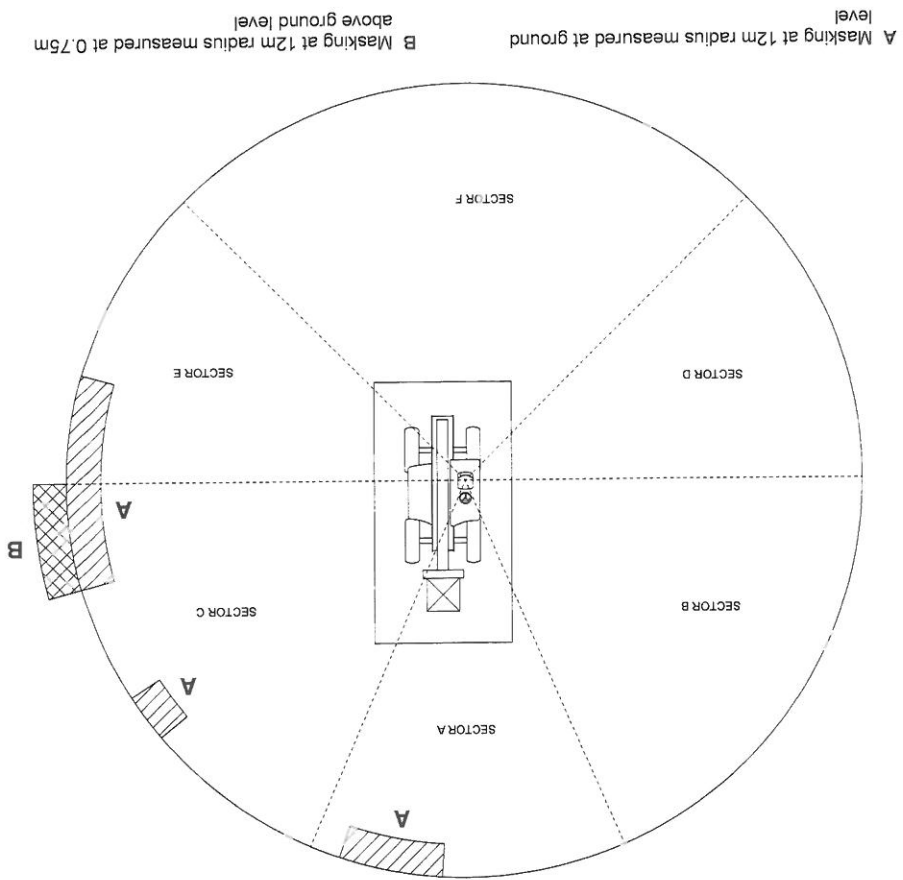


Figure 382. Mirror Setup

(For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F])



Figure 383. Visibility Masking in Suspended Load Condition



- A Masking at 12m radius measured at ground level
- C Masking at 1m boundary measured between ground level and 1.5m above ground level
- B Masking at 12m radius measured at 0.75m above ground level

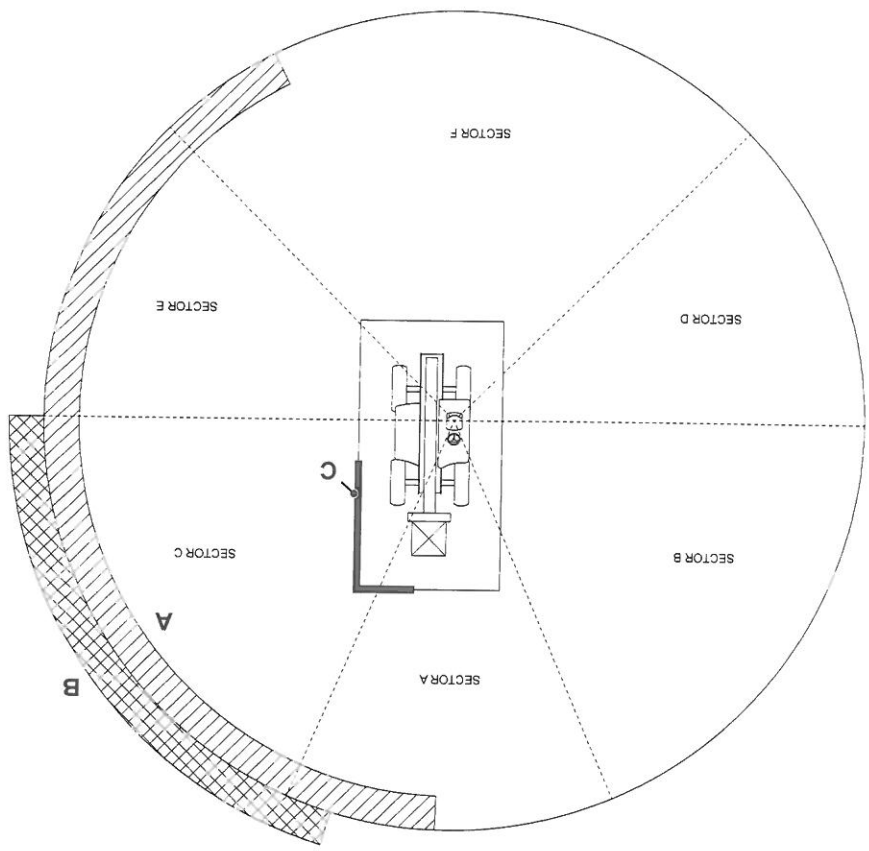


Figure 384. Visibility Masking in Lorry Trailer Loading Condition



(For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Figure 385. Mirror Setup

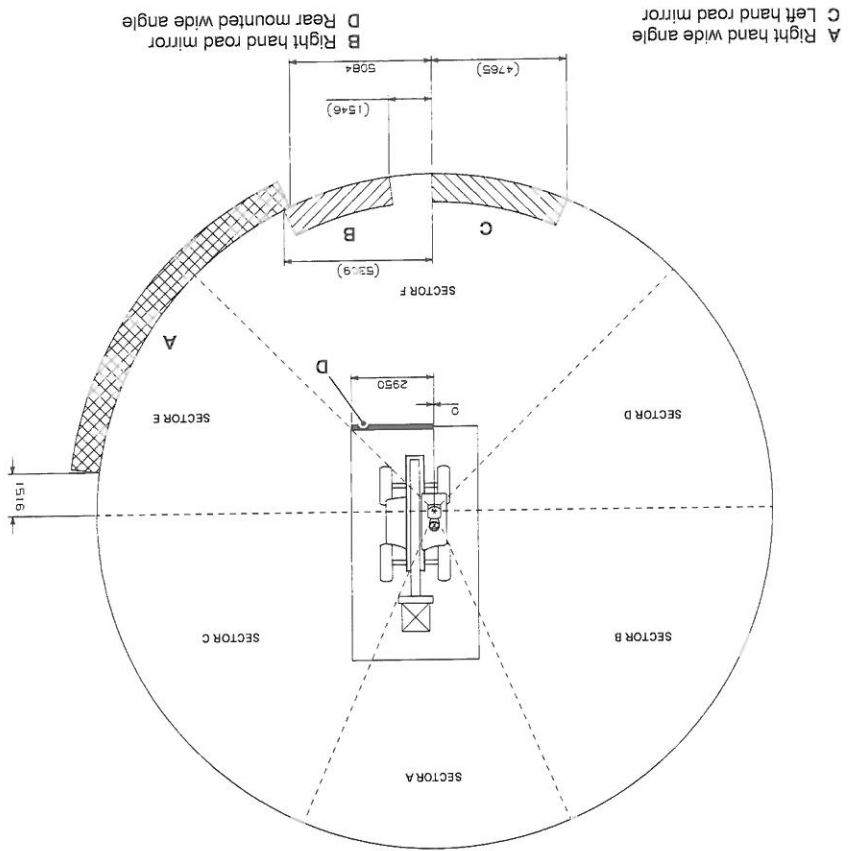


Figure 386. Visibility Masking in Suspended Load Condition

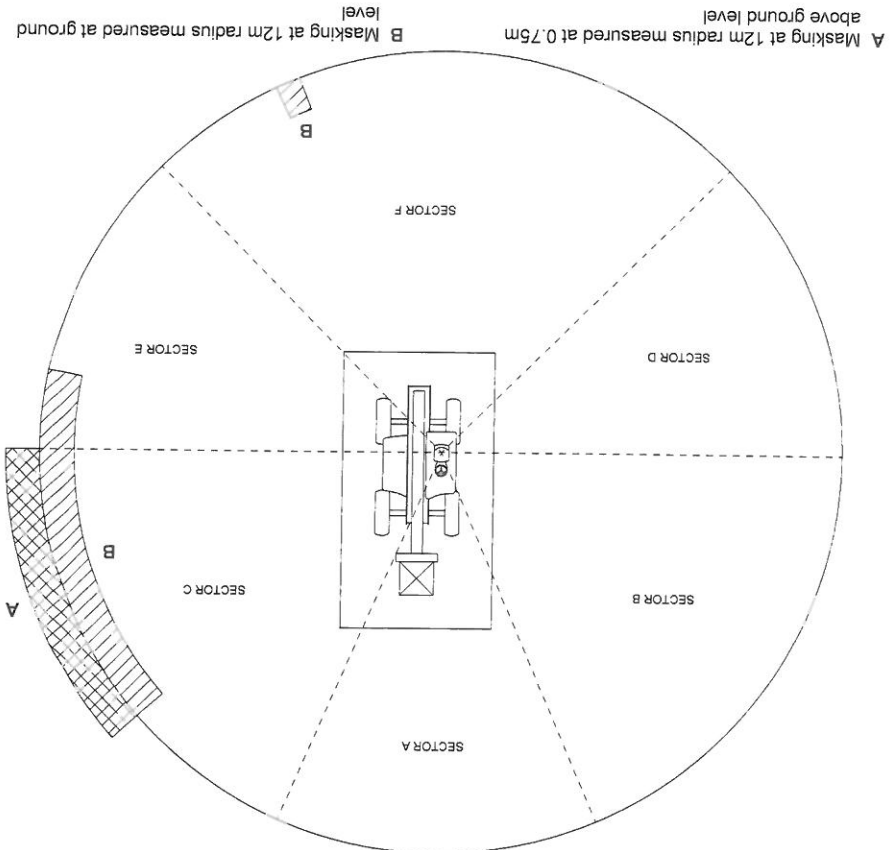
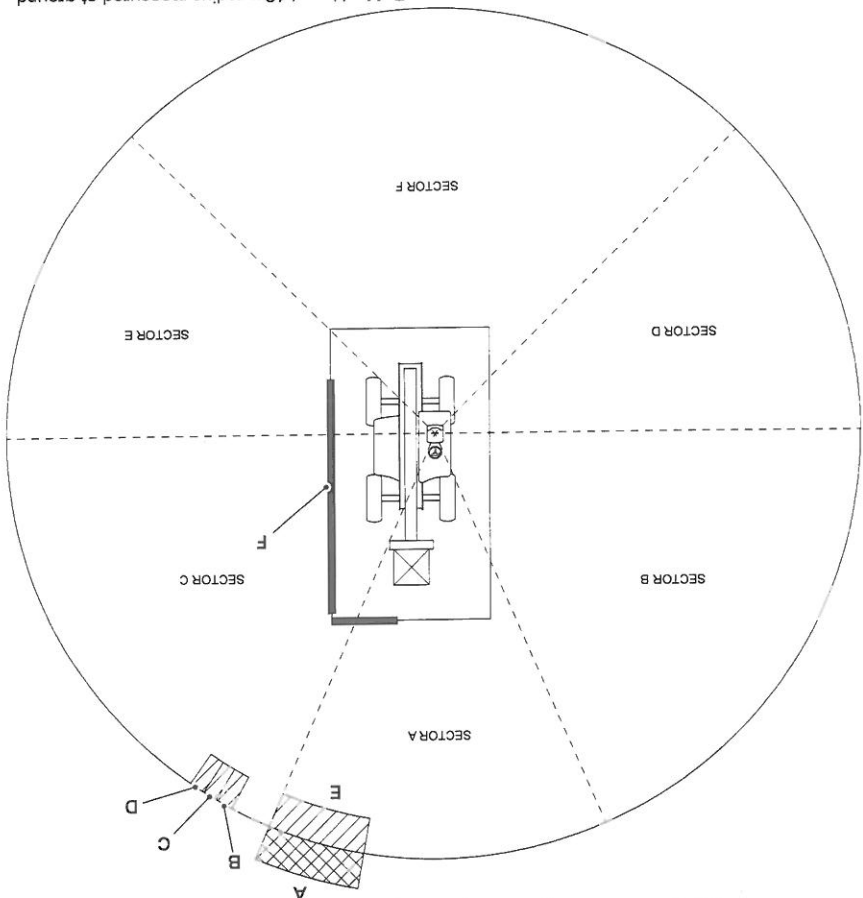


Figure 387. Visibility Masking in Lorry Trailer Loading Condition



- A Masking at 12m radius measured at 0.75m above ground level
- B Masking at 12m radius measured at ground level (This masking disappears at 0.72m above ground level)
- C Masking at 12m radius measured at ground level (This masking disappears at 0.47m above ground level)
- E Masking at 12m radius measured at ground level
- F Masking at 1m boundary (>200mm width) measured between ground level and 1.5m above ground level

- Visibility Masking 5m³ Grain Shovel positioned:
 A Masking at 12m radius measured at ground level
 B Masking at 12m radius measured at 0.75m above ground level
 C Masking at 1m boundary (>200mm width) measured between ground level and 1.5m above ground level

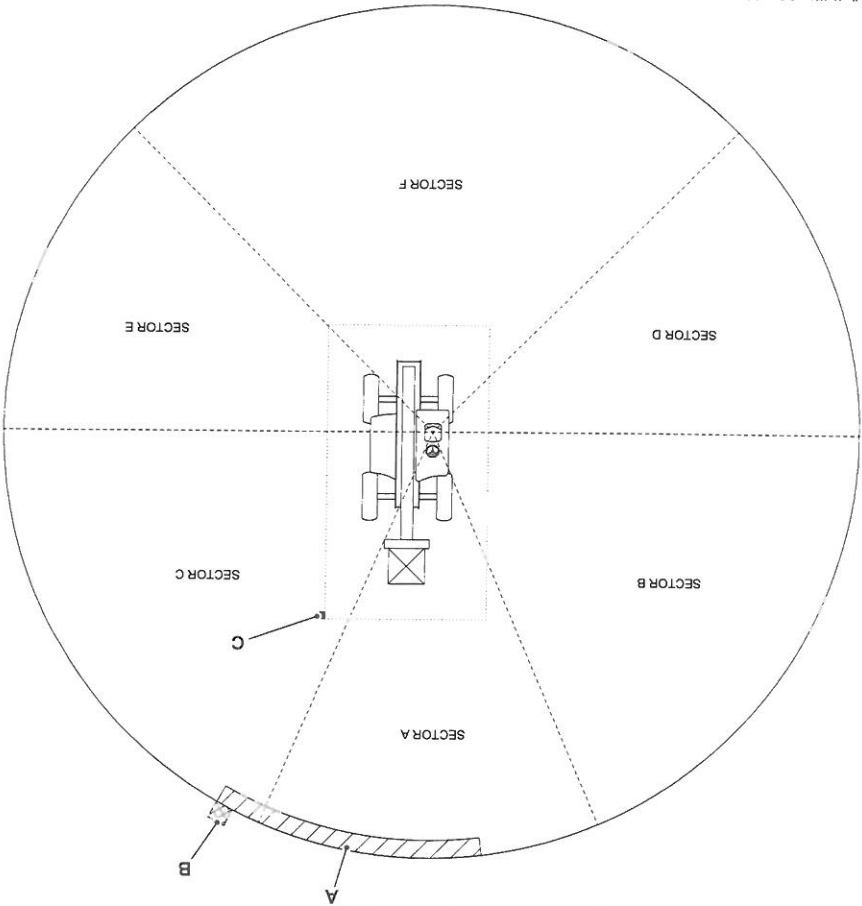


Figure 388. Visibility Masking - Grain Shovel



Visibility Masking in Sectors A and C at the 12m radius with the machine in normal travel mode fork load condition (560-80 only)

A Masking at 12m radius measured at ground level

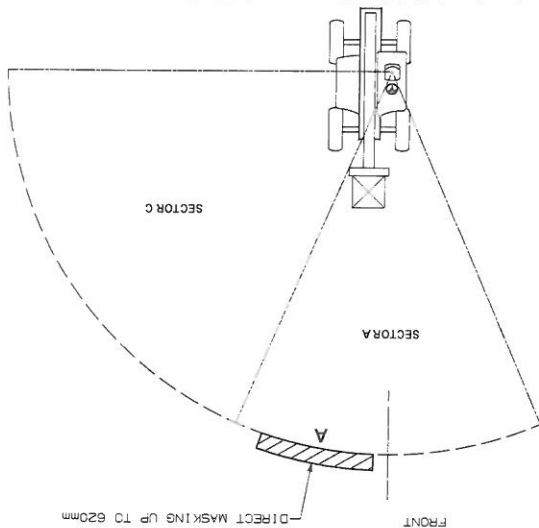


Figure 389. Visibility Masking in Sectors A and C



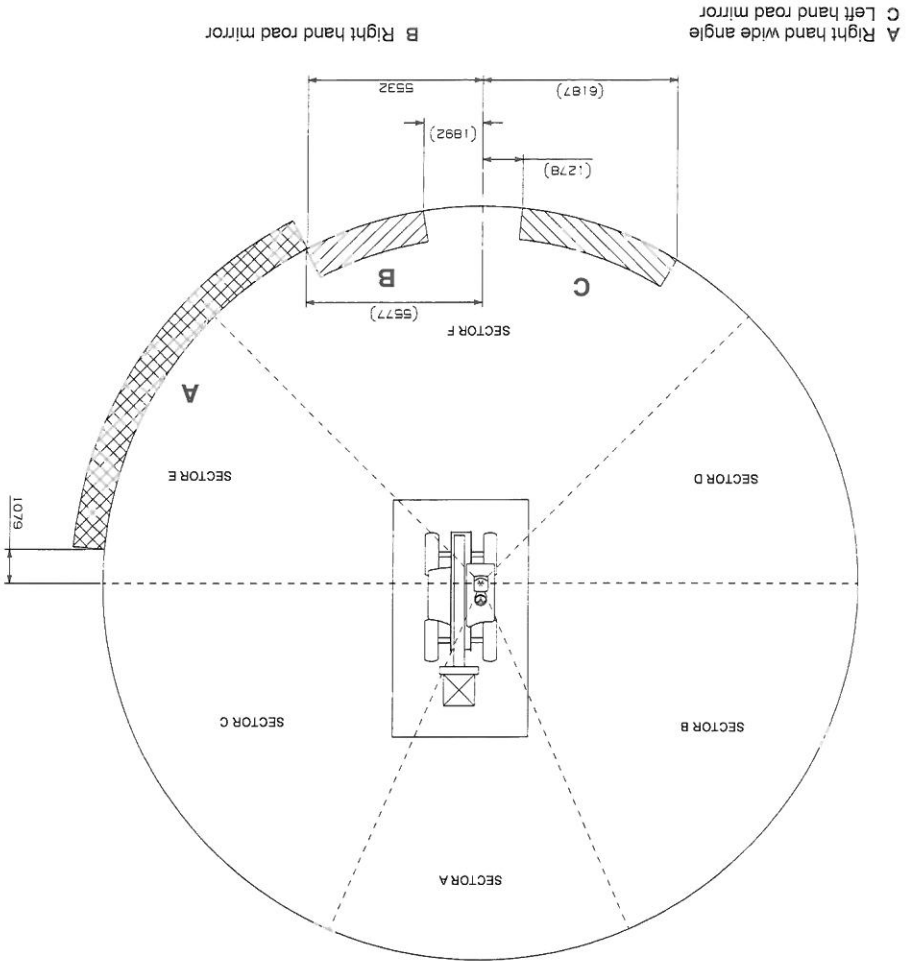
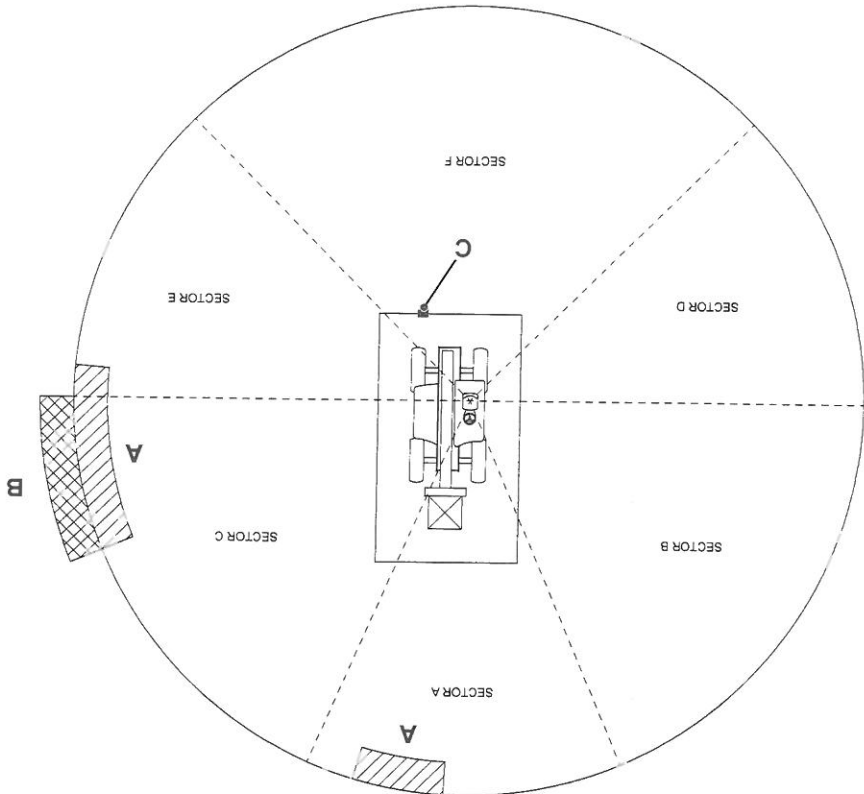


Figure 390. Mirror Setup

(For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F])



Figure 391. Visibility Masking in Suspended Load Condition



- A Masking at 12m radius measured at ground level
- C Masking at 1m boundary (>200mm width) measured between ground level and 1.5m above ground level
- B Masking at 12m radius measured at 0.75m above ground level

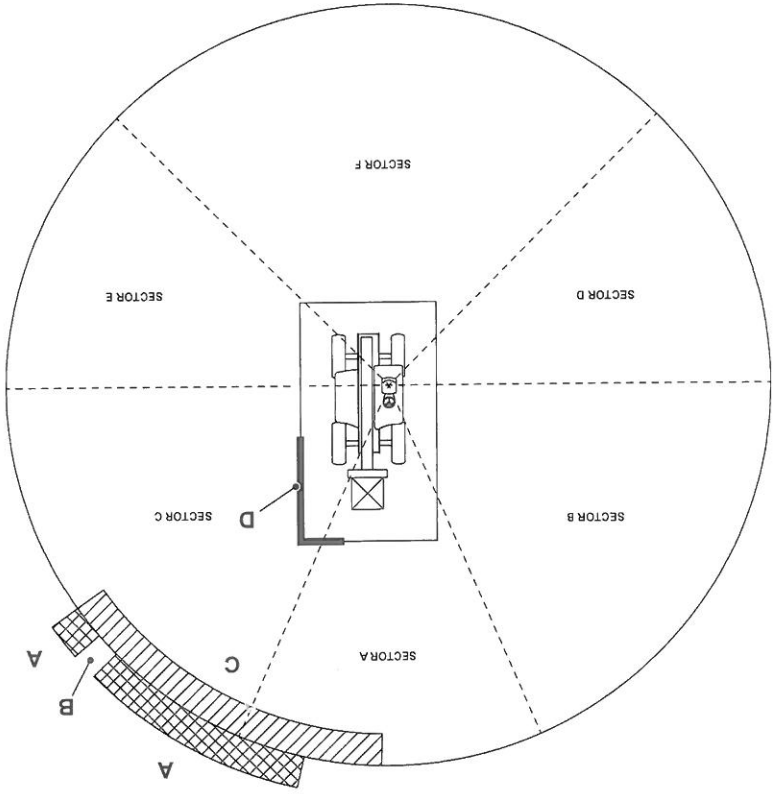


Figure 392. Visibility Masking in Lorry Trailer Loading Condition

- A Masking at 12m radius measured at 0.75m above ground level
- B Masking Disappears at 0.45m above ground level
- C Masking at 12m radius measured at ground level
- D Masking at 1m boundary (>200mm width) measured between ground level and 1.5m above ground level

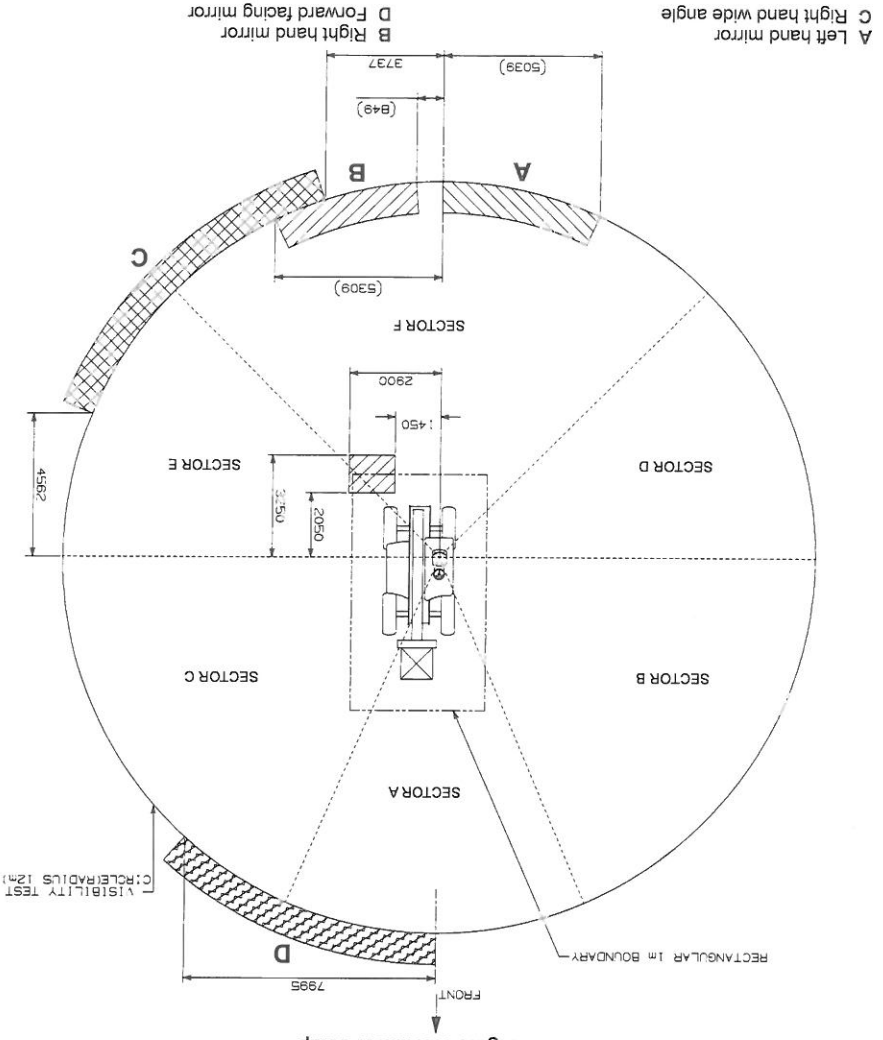


Figure 393. Mirror Setup

(For: 536T70LP (T4F))



Figure 394. Visibility Masking in Suspended Load Condition

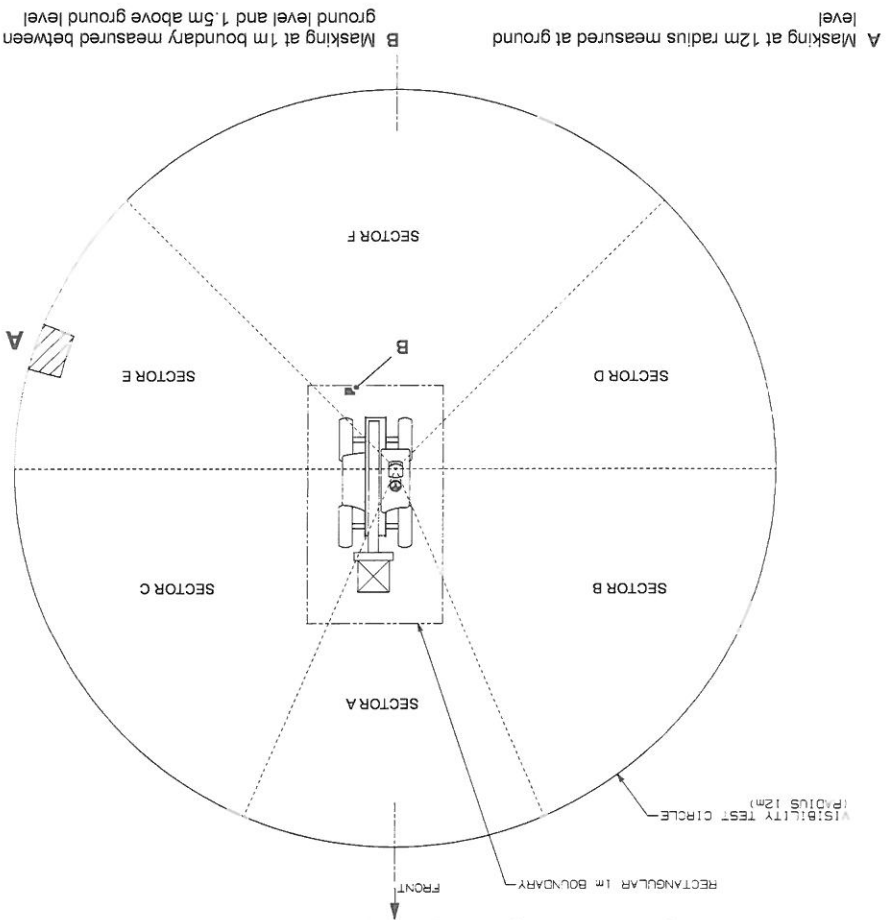
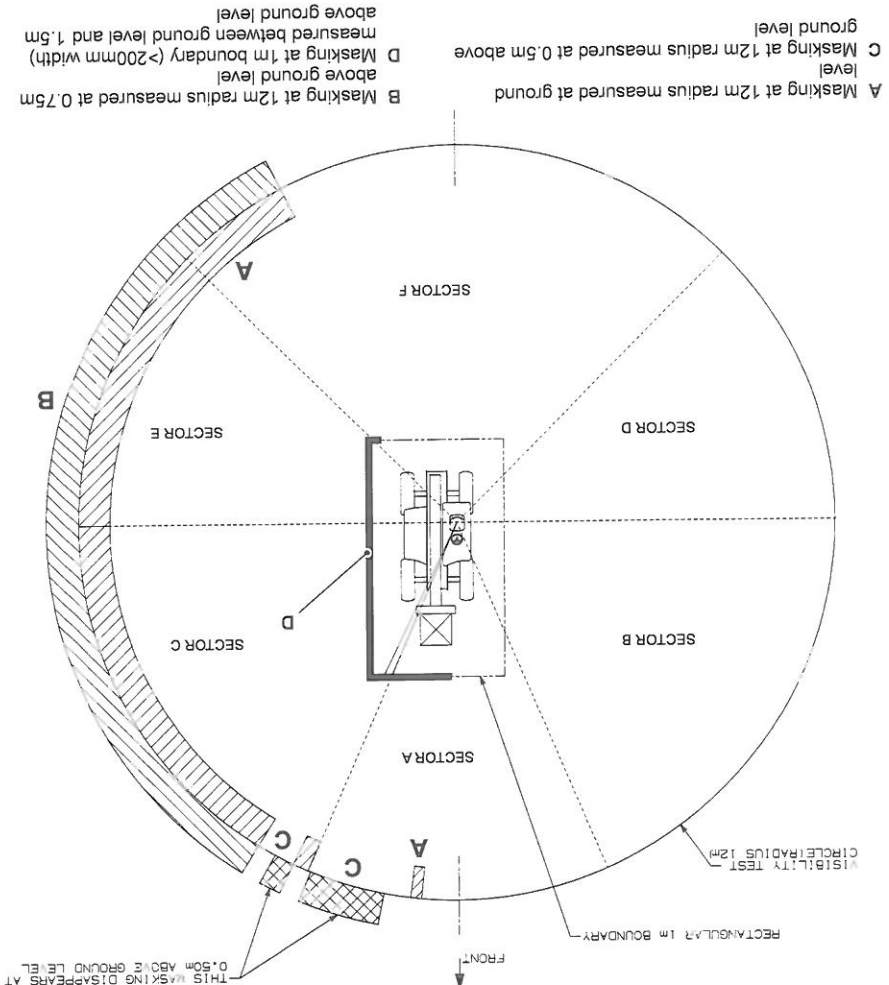


Figure 395. Visibility Masking in Lorry Trailer Loading Condition



General**Maximum Wading Depth**

The maximum wading depth of the machine is 400mm. Water can enter the engine and axles and the cooling fan can be damaged if the machine is operated in deeper water.

Performance Dimensions



Boom Dimensions and Performance

Page 416	For: 526-56 [T4F]
Page 417	For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F]
Page 418	For: 531-70 [T4F], 531T70 [T4F]
Page 419	For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F]
Page 420	For: 536T70 [T4F], 536T70LP [T4F]
Page 421	For: 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F]
Page 422	For: 550-80 [T4F], 550U80 [T4F]
Page 423	For: 560-80 [T4F], 560U80 [T4F]



(For: 526-56 [T4F])

Table 60.

Description	Weight
Maximum lift capacity	2,600kg
Lift capacity to full height	2,600kg
Lift capacity at full reach	1,250kg

Table 61.

Description	Length
Maximum lift height (508mm tyres)	5,550mm
Maximum lift height (610mm tyres)	6,600mm
Reach at maximum lift height	530mm
Maximum forward reach	2,950mm
Reach with 1t load	2,950mm
Placing height (508mm tyres)	4,820mm
Placing height (610mm tyres)	4,870mm



(For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F])

Table 62.

Description	Weight
Maximum lift capacity	3,500kg
Lift capacity to full height	3,500kg
Lift capacity at full reach	550kg

Table 63.

Description	Length
Maximum lift height	9,500mm
Reach at maximum lift height	2,430mm
Maximum forward reach	6,520mm
Reach with 1t load	5,080mm
Placing height	8,780mm

Description	Length
Maximum lift height	7,000mm
Reach at maximum lift height	480mm
Maximum forward reach	3,700mm
Reach with 1t load	3,700mm
Placing height	6,300mm

Table 65.

Description	Weight
Maximum lift capacity	3,100kg
Lift capacity to full height	2,400kg
Lift capacity at full reach	1,250kg

Table 64.

(For: 531-70 [T4F], 531T70 [T4F])





(For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F])

Table 66.

Description	Weight
Maximum lift capacity	3,600kg
Lift capacity to full height	3,500kg
Lift capacity at full reach	1,500kg

Table 67.

Description	Length
Maximum lift height	6,200mm
Reach at maximum lift height	870mm
Maximum forward reach	3,300mm
Reach with 1t load	3,300mm
Placing height	5,420mm

Description	Length
Maximum lift height	7,000mm
Reach at maximum lift height	480mm
Maximum forward reach	3,700mm
Reach with 1t load	3,700mm
Placing height	6,300mm

Table 69.

Description	Weight
Maximum lift capacity	3,600kg
Lift capacity to full height	2,500kg
Lift capacity at full reach	1,500kg

Table 68.

(For: 536T70 [T4F], 536T70LP [T4F])





(For: 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F])

Table 70.

Description	Weight
Maximum lift capacity	4,100kg
Lift capacity to full height	2,500kg
Lift capacity at full reach	1,500kg

Table 71.

Description	Length
Maximum lift height	7,000mm
Reach at maximum lift height	480mm
Maximum forward reach	3,700mm
Reach with 1t load	3,700mm
Placing height	6,300mm



(For: 550-80 [T4F], 550U80 [T4F])

Table 72. Fixed Machine

Description	Weight
Maximum lift capacity	4,90kg
Lift capacity to full height	2,00kg
Lift capacity at full reach	1,50kg

Table 73. Fixed Machine

Description	Length
Maximum lift height	8,100mm
Reach at maximum lift height	920mm
Maximum forward reach	4,470mm
Reach with 1t load	4,470mm
Placing height	7,450mm

Table 74. Sway Machine

Description	Weight
Maximum lift capacity	4,90kg
Lift capacity to full height	4,00kg
Lift capacity at full reach	1,50kg

Table 75. Sway Machine

Description	Length
Maximum lift height	8,100mm
Reach at maximum lift height	920mm
Maximum forward reach	4,470mm
Reach with 1t load	4,470mm
Placing height	7,450mm



(For: 560-80 [T4F], 560U80 [T4F])

Description	Weight @ 500mm Load Centre	Weight @ 600mm Load Centre
Maximum lift capacity	6,000kg	5,500kg
Lift capacity to full height	3,000kg	2,750kg
Lift capacity at full reach	1,750kg	1,700kg

Table 76. Fixed Machine

Description	Length @ 500mm Load Centre	Length @ 600mm Load Centre
Maximum lift height	7,900mm	7,900mm
Reach at maximum lift height	1,221mm	1,321mm
Maximum forward reach	4,466mm	4,566mm
Reach with 1t load	4,466mm	4,566mm
Placing height	7,250mm	7,250mm

Table 77. Fixed Machine

Towing Weights

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Tow Hitch Capacity

The tow hitch capacity details the maximum allowable horizontal and vertical hitch loads for your machine. The information should be used to establish the correct maximum loadings for your machine.

Identifying Maximum Allowable Trailer Mass to Tow with your Machine

1. Identify the relevant tables for your machine.
Refer to: Wheels and Tyres (Page 468).
2. Select the correct column table for your machine speed.
3. Select the correct column, which corresponds with the hitch type on your machine.
4. Select the correct row, which corresponds with the breaking type of trailer breaking system you are able to use with the trailer.

Identifying Maximum Allowable Vertical Hitch Download for your Machine

1. Use the same table previously identified.
2. Select the correct column, which corresponds with the hitch type on your machine.
3. Select the row, which corresponds to the tyres installed to your machine.
4. Look at the inflation pressure column, to ensure the correct tyre pressure has been used.

Towing Limitations

▲ WARNING Do not exceed the permitted limits on trailer gross weight or hitch load. The machine may become unstable.

Maximum Gross Trailer Weight

The maximum gross trailer weight permitted to be towed by your machine (when fitted with JCB approved towing equipment) is shown. Refer to: Wheels and Tyres (Page 468).

Tyre Pressures and Hitch Loads

The correct tyre pressures and maximum speeds relative to trailer hitch loads MAX KG are shown on a tyre chart (found in the cab). Refer to: Wheels and Tyres (Page 468).
 Make sure that the tyre pressures are correct and do not exceed the speed or loads shown against the size of tyres fitted.

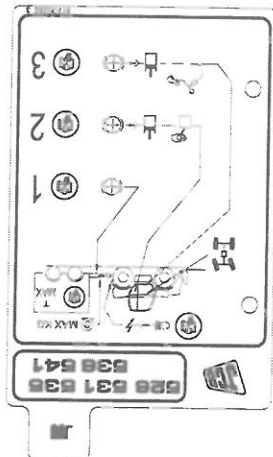
Trailer Braking Systems

The maximum gross trailer weight is restricted by the type of braking system fitted.
 Up to 750kg gross trailer weight, trailer brakes are not essential.

Above 750kg and not exceeding 3,500kg gross trailer weight, over-run brakes must be fitted to the trailer. Inertia brakes are those that are automatically operated if the trailer exerts a force on the towbar of the towing vehicle.
 Above 3,500kg and not exceeding 6,000kg gross trailer weight, independent brakes must be fitted. Independent brakes are those that are applied by the operator.
 Above 6,000kg and not exceeding the maximum gross trailer weight permitted, close-coupled brakes must be fitted to the trailer. Close-coupled brakes are those that are operated when the foot brake pedal is depressed in the towing vehicle.

In all cases the towing Loadall must have 2-wheel steering engaged and trailer lighting must be operative.
 The towing chart gives a visual summary of the requirements for towing with the machine. Always refer to the chart in your machine.

Figure 396. Example Towing Chart



- 1 Over-run brakes
- 2 Close-coupled brakes
- 3 Independent brakes

Vibration Emissions

General

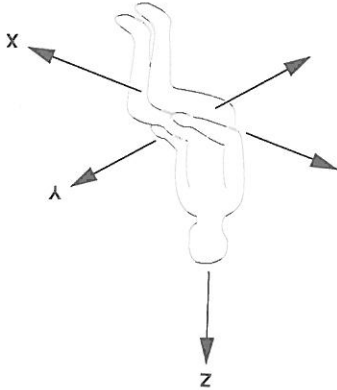
To assist in compliance with the European Directive 2002/44/EC, the duty specific vibration emission values for this machine type have been provided on the following page(s) and may be used for the assessment of risks to exposure from vibration.

Unless otherwise indicated for a specific operating condition, the vibration values are calculated with the machine equipped with the standard attachments (for example bucket, shovel, fork, etc.) for the respective operating condition.

The vibration values are calculated from measurements in three perpendicular axes (X, Y and Z). The highest weighted (RMS (Root Mean Square)) value is used to specify the vibration emission.

The axis upon which the highest weighted (RMS) value occurs is shown on the vibration chart for each of the machine operating duties, see dominant axis (X, Y or Z).

Figure 397.



Exposure to Vibration

Exposure to vibration can be minimised through:

- Selection of the correct size and capacity of machine, equipment and attachments for a particular application
- Use of a machine equipped with an appropriate seat, keeping the seat maintained and adjusted
- Checks to make sure that the machine is correctly maintained, reporting and correcting any faults
- Steering, braking, accelerating, shifting gears, moving the attachments and load smoothly
- Adjusting the machine speed and travel path to minimise the vibration level
- Keeping the terrain on worksites where the machine works and travels in good condition, removing any large rocks or obstacles and filling in any ditches and holes
- Choosing routes that avoid rough surfaces and, if this is not possible, drive more slowly to avoid bumping and jolting
- Travel over longer distances at an adjusted (medium) speed
- Avoiding bad postures, i.e. slumping in your seat, constantly leaning forward or sideways or driving with your back twisted.



Vibration Data

For: 526-56 [T4F] Page 428
For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F] Page 429
For: 531-70 [T4F], 531T70 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F] Page 430
For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F] Page 431

X-Z Dominant axis
 D1 Machine operating duty: Roading (tarmac)
 D2 Machine operating duty: Roading (rough terrain)
 D4 Machine operating duty: Loader work (stone)
 D5 Machine operating duty: Lift cycles

Whole-body vibration emission determined in accordance with ISO 2631-1:1997.
 Hand-arm vibration determined in accordance with dynamic test conditions defined in ISO 5349-2:2001 does not exceed 2.5m/s².
 Errors bars are due to variations in vibration emissions due to measurement uncertainty (50% in accordance with EN 12096:1997).

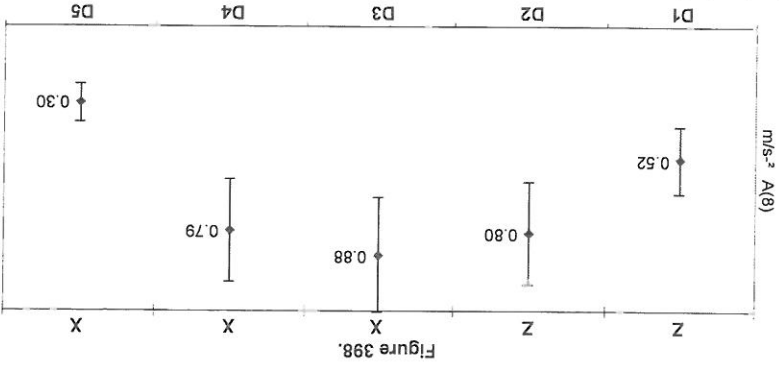


Figure 398.

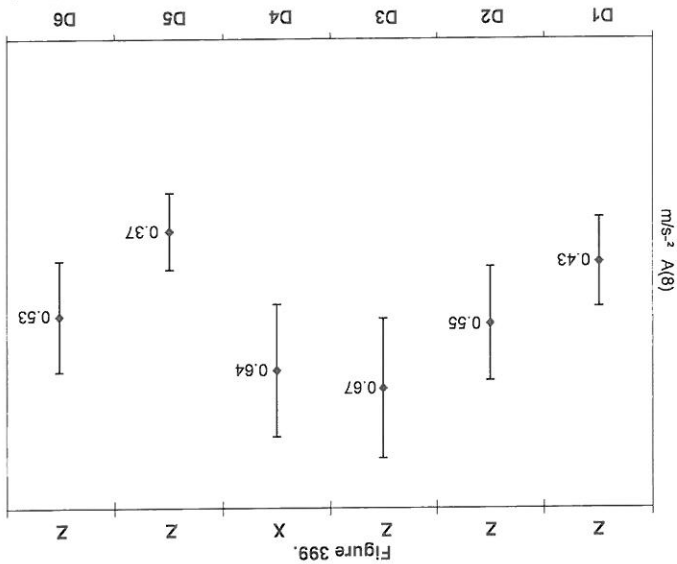
(For: 526-56 [T4F])
 The whole-body vibration emission under representative operating conditions (according to the intended use) are shown.





(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F])

The whole-body vibration emission under representative operating conditions (according to the intended use) are shown.



X-Z Dominant axis
D2 Machine operating duty: Roading (rough terrain)
D4 Machine operating duty: Loader work (stone)
D6 Machine operating duty: Pick and place cycles
D1 Machine operating duty: Roading (farmac)
D3 Machine operating duty: Loader work (soil)
D5 Machine operating duty: Lift cycles

Whole-body vibration emission determined in accordance with ISO 2631-1:1997.

Hand-arm vibration determined in accordance with dynamic test conditions defined in ISO 5349-2: 2001 does not exceed 2.5m/s².

Errors bars are due to variations in vibration emissions due to measurement uncertainty (50% in accordance with EN 12096:1997).

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F])

The whole-body vibration emission under representative operating conditions (according to the intended use) are shown.

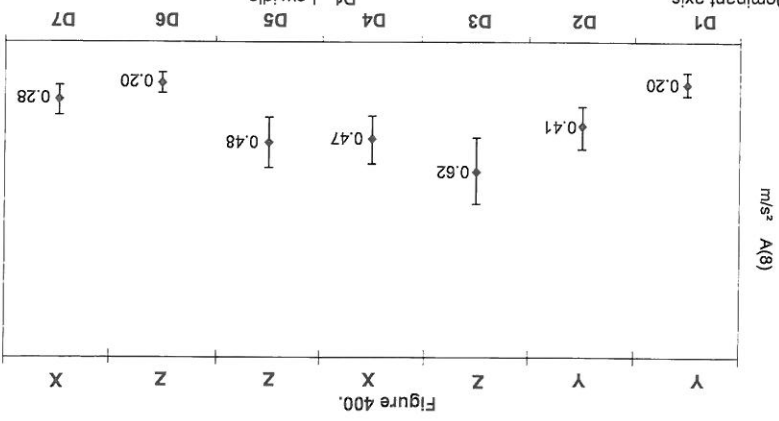


Figure 400.

X-Z Dominant axis
D1 Machine operating duty: Roading (tarmac)
D2 Machine operating duty: Roading (tarmac)
D3 Machine operating duty: Roading (rough terrain)
D4 Machine operating duty: Loader work (soil)
D5 Machine operating duty: Loader work (stone)
D6 Machine operating duty: Lift cycles
D7 Machine operating duty: Pick and place cycles

Whole-body vibration emission determined in accordance with ISO 2631-1:1997.

Hand-arm vibration determined in accordance with dynamic test conditions defined in ISO 5349-2:2001 does not exceed 2.5m/s².

Errors bars are due to variations in vibration emissions due to measurement uncertainty (50% in accordance with EN 12096:1997).



(For: 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

The whole-body vibration emission under representative operating conditions (according to the intended use) are shown.

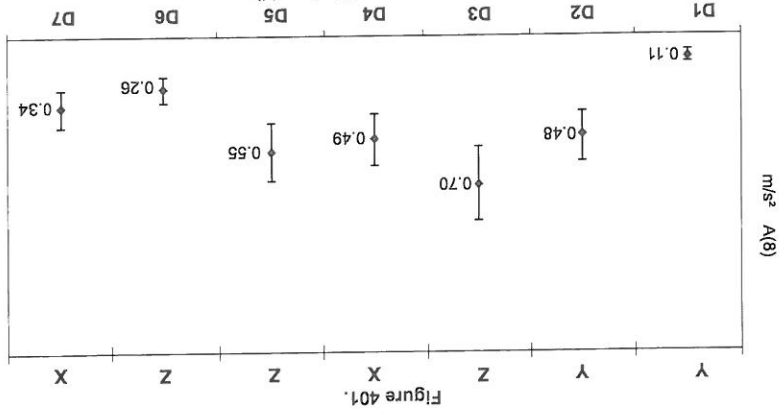


Figure 401.

Whole-body vibration emission determined in accordance with ISO 2631-1:1997.

Hand-arm vibration determined in accordance with dynamic test conditions defined in ISO 5349-2: 2001 does not exceed 2.5m/s².

Errors bars are due to variations in vibration emissions due to measurement uncertainty (50% in accordance with EN 12096:1997).



Fluids, Lubricants and Capacities

General

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

JCB recommend that you use the JCB lubricants shown as they have been verified by JCB for use on JCB machines. However, you could use other lubricants that are equivalent to the JCB standards and quality or offer the same machine component protection.

No warranty liability will be accepted for engine failures where unacceptable fuel grades (or their equivalent) have been used at any stage.

Table 81.

Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size ⁽¹⁾
Fuel Tank (except 526-56)	146L	Diesel Oil	-	See Tech- nical Da- ta, Fluids, Lubricants and Capac- ities, Fuel.
Fuel Tank (526-56)	112L	Diesel Oil	-	See Tech- nical Da- ta, Fluids, Lubricants and Capac- ities, Fuel.
DEF (Diesel Exhaust Flu- id) Tank (minimum to maxi- mum)	13.5L	DEF	-	See Tech- nical Da- ta, Fluids, Lubricants and Capac- ities, Diesel Exhaust Fluid.
Engine (Oil) ⁽²⁾	Min12.5L - Max15L (Except FL engine) (FL engine) , Min11.5L - Max14L CJ-4) -30-30°C (-22.0-86.0°F) CJ-4) -30-30°C (-22.0-86.0°F) (USA Only) JCB Engine Oil UP 5W40 (API CJ-4) -30- 46°C (-22.0-114.7°F) JCB Engine Oil UP 10W30 (API CJ-4) -15-46°C (5.0- 114.7°F) UN3/GB3 Machines only: JCB Engine Oil EP 5W40 (API CH-4/CG-4/CF-4/CF/SJ, ACEA E2/B3/A3)--30-46°C (-22.0-114.7°F)	4001/3105 (API UP 5W30 (API UP 5W40 (API CJ-4) -30- 46°C (-22.0-114.7°F) JCB Engine Oil UP 10W30 (API CJ-4) -15-46°C (5.0- 114.7°F) UN3/GB3 Machines only: JCB Engine Oil EP 5W40 (API CH-4/CG-4/CF-4/CF/SJ, ACEA E2/B3/A3)--30-46°C (-22.0-114.7°F)	4001/3105 4001/3405 4001/3005 4001/2705	20L
Engine (Coolant) ⁽³⁾	28L (Except FL en- gine), 25.5L (FL en- gine)	JCB Antifreeze HP/Coolant + Water	4006/1120	20L
Transmission (SS750 in- stalled with 81kW engines)	• Wet fill 11.5L • Dry fill 13.5L	JCB Transmission Fluid EP 10W-30, ESP-M2C 33G	4000/2505	20L



Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size ⁽¹⁾
Transmission (P570 in-stalled with 55kW and 55kW engines)	• Wet fill 17L	JCB Transmission Fluid EP 10W30, -32-40°C (-25-103.9°F) ⁽¹⁰⁾	4000/2505	20L
	• Dry fill 19L	JCB Transmission Fluid SAE 30, -5-46°C (23.0-114.7°F) ⁽¹⁰⁾	4000/2506	20L
Transmission (P570 in-stalled with 93kW and 108kW engines)	• Wet fill 21L	JCB Transmission Fluid EP 10W30, -32-40°C (-25-103.9°F) ⁽¹⁰⁾	4000/2505	20L
	• Dry fill 23L	JCB Transmission Fluid SAE 30, -5-46°C (23.0-114.7°F) ⁽¹⁰⁾	4000/2506	20L
Dual Tech Variable Transmission (HM560)	• Wet fill 10.5L	JCB Transmission Fluid EP 10W30, -32-40°C (-25-103.9°F) ⁽¹⁰⁾	4000/2505	20L
	• Dry fill 12.5L	JCB Transmission Fluid EP 10W30, -32-40°C (-25-103.9°F) ⁽¹⁰⁾	4000/2506	20L
Gearbox	14.5L	JCB Gear oil LS plus 10W-30, ESP-M2C 33G	4000/3905	20L
	17.7L	JCB Gear oil HP plus 4000/2205 ⁽⁹⁾	4000/2205	20L
Front axle housing (550-80, 560-80)	17.7L	JCB Gear oil HP plus 4000/2205 ⁽⁹⁾	4000/3905	20L
	1.9L	JCB Gear oil LS plus 4000/3905	4000/2205	20L
Hubs (other machines)	1.9L	JCB Gear oil HP plus 4000/2205 ⁽⁹⁾	4000/2205	20L
	1.9L	JCB Gear oil LS plus 4000/3905	4000/2205	20L
Front axle housing (531-70, 533-105, 535-95, 536-60, 536-70, 536-70LP 541-70)	10L	JCB Gear oil HP plus 4000/2205 ⁽⁹⁾	4000/2205	20L
Front axle housing (540-200, 540-140, 540-170, 536-70, 536-70LP 541-70)	19L	JCB Gear oil HP plus 4000/2205 ⁽⁹⁾	4000/2205	20L
Front axle housing (535-125, 535-140)	17.7L	JCB Gear oil HP plus 4000/2205 ⁽⁹⁾	4000/3905	20L
Front axle housing (550-80, 560-80)	13.5L	JCB Gear oil LS plus 4000/3905	4000/3905	20L
Hubs (550-80, 560-80)	1.9L	JCB Gear oil LS plus 4000/3905	4000/2205	20L
Hubs (other machines)	2L	JCB Gear oil HP plus 4000/2205 ⁽⁹⁾	4000/2205	20L
Brake system ⁽⁸⁾		JCB Hydraulic fluid HP 15 ⁽⁷⁾ 4002/0503	4002/0503	5L
Hydraulic tank (526-56) ⁽⁶⁾	116L	JCB Optimum Performance Hydraulic Fluid 46 or 68 4002/2005 or 4002/2705	4002/2005	20L
Hydraulic tank (531-70, 536-70, 536-70LP, 541-70) ⁽⁶⁾	115L	JCB Special HP Grease (Blue) ⁽⁹⁾	4003/2017	0.4kg
Hydraulic tank (535-95) ⁽⁶⁾	125L	JCB Special MPL EP Grease ⁽⁹⁾	4003/1501	0.4kg
Hydraulic tank (536-60) ⁽⁶⁾	113L	JCB Waxoyl	4004/0502	5L
Hydraulic tank (550-80) ⁽⁶⁾	112L			
Grease Points				
Wear pad runways				



Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size ^m
Boom hoses		JCB Special HP Grease (Blue)	4003/2017	0.4kg
Boom chain		JCB Chain Lubricant	4004/0237A	0.3L

- (1) For information about the different container sizes that are available (and their part numbers), contact your JCB Dealer.
- (2) Do not use ordinary engine oil.
- (3) It is recommended that the cooling system be filled at a maximum rate of 6L per minute. If the fill rate is any higher than this then there is a possibility of air becoming trapped in the system.
- (4) Friction modified oils must not be used (eg Dexron ATF type).
- (5) Must be suitable for use with oil immersed brakes and limited slip differentials (LSD).
- (6) Excluding 550-80 machines.
- (7) Do not use ordinary brake fluid.
- (8) This is nominal tank capacity. The total hydraulic system capacity depends on the equipment being used.
- (9) JCB Special HP Grease is the recommended specification grease. If JCB Special MPL-EP Grease is used, all 50h greasing operations must be carried out at 10h intervals; all 500h greasing operations must be carried out at 50h intervals.

Fuel

For: 526-56 [T4F], 531-70 [T4F], 531-70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T60 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560-80 [T4F], 560U80 [T4F]

For: JCB (UN3/GB3) Electronic Dieselmex Turbocharged Aftercooled Engine Page 434
Page 437

Acceptable and Unacceptable Fuels

▲ WARNING Do not use petrol in this machine. Do not mix petrol with the diesel fuel. In storage tanks the petrol will form flammable vapours.

Notice: No warranty liability whatsoever will be accepted for failure of fuel injection equipment where the notice is attributed to the quality and grade of the fuel used.

Notice: Sulphur can be detrimental to the emissions performance of your machine and it is in your interest to ensure Ultra Low Sulphur Diesel (ULSD) is used. Failure to adhere to local emissions regulations will result in no support and no warranty liability being accepted on any machine.

Fuel Groups

The major world fuels standards are divided into four categories. Those that are fully accepted as suitable fuels, those that are acceptable from a "warranty" point of view, but may have undesirable effects on the expected life of the engine performance, those that will reduce the expected life, and lastly those that are viewed as unacceptable for use (fuels shown on the same line as each other are considered equivalents).

The lists below are not exhaustive of all diesel fuel standards encountered in the marketplace. If comment is required on the suitability of fuel standards not on the list, requests with, if possible, specification details showing at least the key characteristics described above should be forwarded to JCB Service for assessment and comment.



Table 82. Group 1

Fuel	Advice	Service Requirements
EN590 Diesel fuel types - Auto/CO/C1/C2/C3/C4 Sulphur < 10ppm.	Preferred and may be used with no restrictions or conditions.	For fuel with unspecified parameters, EN590 values apply. Fuel grades within each standard must be appropriate to the ambient temperature. The appropriate level of fuel cleanliness at the FIE inlet after filtration has to be ensured by the customer.
BS2869 Class A2 Sulphur < 10ppm		
ASTM D975-076 2-D, US DF1, US DF2, US DFA Sulphur < 15ppm		
JIS K2204 Grades 1, 2, 3 and Special Grade 3 Sulphur < 10ppm		

Table 83. Group 2

Fuel	Advice	Service Requirements
Group 1 fuels with HFR WSD in the range 460 to 520	Not preferred and may be used but may lead to reduced FIE life and / or loss of performance.	
ASTM D975-91 Class 1-1DA		

(1) See your JCB dealer for advice on service requirements.

Table 84. Group 3

Fuel	Advice
AVTUR FS11 (NATO F34, JP8, MIL T83133, DEF STAN 91-87, DERD 2463)	Not preferred and may be used only with appropriate additives and will lead to reduced FIE life and / or loss of performance.
AVCAT FS11 (NATO F44, JP5, MIL T5624, DERD 2452, AVTOR))	
JET A1 (NATO F35, DEF STAN 91-91, DERD 2494)	
AVCAT (NATO F43, JP5 without additives)	
JET A (ASTM D1655)	
ASTM D3699 Kerosene	
JP7 (MIL T38219 XF63)	
NATO F63	

Table 85. Group 4

Fuel	Advice
Unmodified Vegetable Oils and Biodiesels over 20% concentration	Unacceptable

Additives

The additives listed below are advertised as being suitable for bringing the lubricity levels of kerosene/low sulphur fuels up to those of diesel fuels.

These products are given as examples only. The information is derived from the manufacturers data. The products are not recommended or endorsed by JCB. Contact your JCB dealer for further advice.

- Eif 2S 1750. Dosage 1000-1500 ppm (0.1% to 0.15%), specifically for Indian Superior Kerosene (SKO) but may be applicable to other fuels.
- Lubrizol 539N. Dosage (on Swedish low sulphur fuel) 250 ppm.
- Paradyme 7505 (from Infineum). Dosage 500 ppm (0.05%).

Warranty

JCB have shown a commitment to support the environment by approving the use of biodiesel blended fuels. Using a B5 blend of biodiesel requires caution and additional servicing of the engine is required.



Failure to follow the additional recommended service requirements may lead to a warranty claim being declined.
Failures resulting by the incorrect use of biodiesels or other fuel additives are not defects of the engine workmanship and therefore will not be supported by JCB Warranty.

Usage and Effects of Fuels

The information that follows indicates types of fuel that are acceptable or unacceptable.

Acceptable Fuels

Ultra Low Sulphur Diesel (EN590)

Available throughout the UK, Europe and North America since March 1999. This fuel has a maximum sulphur content of 0.0015% (0.0015% in North America) by weight and a further reduction in the natural lubricity and aromatic content than experienced with low sulphur diesel. Major oil producers will add lubrication improvers and also maintain the total aromatic content to an acceptable level.

Unacceptable Fuels

B20 Biodiesel

Biodiesel refers to pure fuel before it is blended with diesel fuel. When biodiesel is blended with diesel fuel it is referred to as B5, B20 etc., where the number indicates the percentage of biodiesel in the fuel, for example B5 contains 5% biodiesel.

Biodiesel has different characteristics than mineral based fuels, this could lead to seals swelling, fuel system corrosion and seal damage.

Using B20 biodiesel can result in poisoning of the SCR (Selective Catalytic Reduction) system.
The natural properties of biodiesel make it a good medium for micro bacterial growth, these microbes can cause fuel system corrosion and early fuel filter blocking.

B100 - Chemically Modified Vegetable Oils (FAME/ VOME)

These fuels have been derived from a wide range of vegetable oils and animal fats, resulting in better stability, viscosity and cetane number than those produced from unmodified vegetable oils, but it is recognised that there are potential problems associated with the finished fuel characteristics. These oils are less stable than mineral oil derived fuels when stored and they will readily degrade producing fatty acids, methanol and water, none of which are desirable in the FIE. These effects are known to be accelerated when the fuel is stored in the presence of air and water together.

An extract common statement from the FIE manufacturers specifies that "The fuel injection equipment manufacturers can accept no liability whatsoever for failure attributable to operating their products with fuels for which the products were not designed, and no warranties or representations are made as to the possible effects of running these products with such fuels".

Unmodified Vegetable Oils

Burned in diesel engines neat or used as an extender to mineral derived fuel. When these are subjected to heat in the fuel injection system they form sticky deposits that can be found inside the fuel pump and a hard lacquer in the injectors where exposure to even higher temperatures takes place.

Sulphur Content

▲ Notice: A combination of water and Sulphur will have a corrosive chemical effect on fuel injection equipment. Use of high Sulphur fuels will poison the Selective Catalytic Reduction (SCR) catalyst (if fitted) and must not be used. Ultra Low Sulphur Diesel (ULSD) should always be used. Ultra Low Sulphur Diesel (ULSD) has a Sulphur content of less than 10 ppm (US 15ppm).

Effects of Fuel Contaminates

The effect of dirt, water and other contaminants in diesel can be disastrous for injection equipment:

Dirt

A severely damaging contaminant. Finely machined and mated surfaces such as delivery valves and distributor rotors are susceptible to the abrasive nature of dirt particles - increased wear will almost inevitably lead to greater leakage, uneven running and poor fuel delivery.

Water

Water can enter fuel through poor storage or careless handling, and will almost inevitably condense in fuel tanks. The smallest amount of water can result in effects that are just as disastrous to the fuel injection pump as dirt, causing rapid wear, corrosion and in severe cases, even seizure. It is vitally important that water is prevented from reaching the fuel injection equipment. The filter/water trap must be drained regularly.

Wax

Wax is precipitated from diesel when the ambient temperature falls below that of the fuel's cloud point, causing a restriction in fuel flow resulting in rough engine running. Special winter fuels may be available for engine operation at temperatures below 0°C (32.0°F). These fuels have a lower viscosity and limit wax formation.

Chemical Contamination

It should be noted that exposure of fuel to surfaces containing Copper (Cu), Zinc (Zn) or Lead (Pb) can adversely affect fuel quality and should be minimised.

(For: JCB (UN3/GB3) Electronic Dieselmix Turbodiesel Engine)

Acceptable and Unacceptable Fuels

▲ **WARNING** Do not use petrol in this machine. Do not mix petrol with the diesel fuel. In storage tanks the petrol will form flammable vapours.

Notice: No warranty liability whatsoever will be accepted for failure of fuel injection equipment where the failure is attributed to the quality and grade of the fuel used.

Notice: Sulphur can be detrimental to the emissions performance of your machine and it is in your interest to ensure Ultra Low Sulphur Diesel (ULSD) is used. Failure to adhere to local emissions regulations will result in no support and no warranty liability being accepted on any machine.

Fuel Groups

The major world fuel standards are divided into four categories. Those that are fully accepted as suitable fuels, those that are acceptable from a "warranty" point of view, but may have undesirable effects on the expected life of the engine performance, those that will reduce the expected life, and lastly those that are viewed as unacceptable for use (fuels shown on the same line as each other are considered equivalents).

The lists below are not exhaustive of all diesel fuel standards encountered in the marketplace. If comment is required on the suitability of fuel standards not on the list, requests with, if possible, specification details showing at least the key characteristics described above should be forwarded to JCB Service for assessment and comment.



Table 86. Group 1

Fuel	EN590 Diesel fuel types - Auto/CO/ C1/C2/C3/4 Sulphur < 10ppm. BS2869 Class A2 Sulphur < 10ppm ASTM D975-076 2-D, US DF1, US DF2, US DFA Sulphur < 15ppm JIS K2204 Grades 1, 2, 3 and Spe- cial Grade 3 Sulphur < 10ppm
Advice	Preferred and may be used with no restrictions or conditions.
Service Requirements	For fuel with unspecified param- eters, EN590 values apply. Fuel grades within each standard must be appropriate to the ambient tem- perature. The appropriate level of fuel cleanliness at the FIE inlet af- ter filtration has to be ensured by the customer.

Table 87. Group 2

Fuel	Group1 fuels with HFFR WSD in the range 460 to 520 ASTM D975-91 Class 1-1DA B20 Biodiesels can cause serious problems for engines. JCB Eco- max Stage 3b / Tier 4i engines have been developed to run with biodiesels up to 20 mix (B20), but NOT with higher biodiesel propor- tion. The biodiesel content of this mix must be to ASTM D6751, DIN 51606, or ISO 14214 standards. Using a B20 blend of biodiesel re- quires caution and additional ser- vicing of the engine is required."
Advice	Not preferred and may be used but may lead to reduced FIE life and / or loss of performance.
Service Requirements	The Ecomax dealer, or JCB Pow- er Systems Applications depart- ment, should be consulted for fur- ther guidance. Biodiesel is very problematic to store; fuel in storage has to be very carefully managed to ensure that it does not deterio- rate during this period. No warranty liability will be accepted for failure of fuel injection equipment where the failure is attributed to the quali- ty and grade of the fuel used.

(7) See your JCB dealer for advice on service requirements.

Table 88. Group 3

Fuel	AVTUR FS11 (NATO F34, JP8, MIL T83133, DEF STAN 91-87, DERD 2463) AVCAT FS11 (NATO F44, JP5, MIL T5624, DERD 2452, AVTOR)
Advice	Not preferred and may be used only with appropr- ate additives and will lead to reduced FIE life and / or loss of performance.
Service Requirements	AVCAT (NATO F35, DEF STAN 91-91, DERD 2494) AVCAT (NATO F43, JP5 without additives) JET A (ASTM D1655) ASTM D3699 Kerosene JP7 (MIL T38219 XF63) NATO F63

Table 89. Group 4

Fuel	Unmodified Vegetable Oils and Biodiesels over 20% concentration
Advice	Unacceptable

Additives

The additives listed below are advertised as being suitable for bringing the lubricity levels of kerosene/low sulphur fuels up to those of diesel fuels.

These products are given as examples only. The information is derived from the manufacturers data. The products are not recommended or endorsed by JCB. Contact your JCB dealer for further advice.



- Eif 2S 1750, Dosage 1000-1500 ppm (0.1% to 0.15%), specifically for Indian Superior Kerosene (SKO) but may be applicable to other fuels.
- Lubrizol 539N, Dosage (on Swedish low sulphur fuel) 250 ppm.
- Paradyne 7505 (from Infineum), Dosage 500 ppm (0.05%).

Service Requirements for use of B20 Biodiesel

- The engine oil must be a grade CH4 as minimum specification.
- Do not leave unused B20 biodiesel in the fuel tank for extended periods (top up each day).
- Make sure that 1 in 5 fuel tank fills use standard diesel to EN590 specification, this will help to prevent 'gumming'.
- Make sure regular oil sampling is completed (look for excessive unburnt fuel content, water or wear particles).
- Change the engine oil and filter more frequently (as a minimum half the recommended intervals), or as indicated by oil sampling.
- Change the fuel filters more frequently (as a minimum half the recommended intervals), or if there are engine performance related issues.
- Make sure the fuel is stored correctly, care must be taken to make sure no water enters the machine fuel tank (or the storage tank). Water will encourage microbial growth.
- Make sure that the fuel pre-filter is drained daily (not every week as currently advised).
- Use heater kits in low ambient temperature territories.
- The biodiesel must meet the following standards: ASTM D6751, DIN 51606, ISO 14214.

If necessary use a test kit to confirm the fuel specification. Testing kits are available (not from JCB currently), use the internet as a source for the kits.

If performance related issues are to be reported to JCB Service, and the engine has been run on biodiesel, then the fuel system must be filled with standard diesel (at least 2 x tank fills) to EN590 specification and relevant stall speeds recorded prior to making the report.

Warranty

JCB have shown a commitment to support the environment by approving the use of biodiesel blended fuels.

Using a B5 blend of biodiesel requires caution and additional servicing of the engine is required.

Failure to follow the additional recommended service requirements may lead to a warranty claim being declined.

Failures resulting by the incorrect use of biodiesels or other fuel additives are not defects of the engine workmanship and therefore will not be supported by JCB Warranty.

Usage and Effects of Fuels

The information that follows indicates types of fuel that are acceptable or unacceptable.

Acceptable Fuels

Ultra Low Sulphur Diesel (EN590)

Available throughout the UK, Europe and North America since March 1999. This fuel has a maximum sulphur content of 0.001% (0.0015% in North America) by weight and a further reduction in the natural lubricity and aromatic content than experienced with low sulphur diesel. Major oil producers will add lubrication improvers and also maintain the total aromatic content to an acceptable level.

B20 Biodiesel

Biodiesel refers to pure fuel before it is blended with diesel fuel. When biodiesel is blended with diesel fuel it is referred to as B5, B20 etc., where the number indicates the percentage of biodiesel in the fuel, for example B5 contains 5% biodiesel.

Biodiesel has different characteristics than mineral based fuels, this could lead to seals swelling, fuel system corrosion and seal damage.

The effect of dirt, water and other contaminants in diesel can be disastrous for injection equipment:

Effects of Fuel Contaminates

▲ Notice: A combination of water and Sulphur will have a corrosive chemical effect on fuel injection equipment. Use of high Sulphur fuels will poison the Selective Catalytic Reduction (SCR) catalyst (if fitted) and must not be used. Ultra Low Sulphur Diesel (ULSD) should always be used. Ultra Low Sulphur Diesel (ULSD) has a Sulphur content of less than 10 ppm (US 15ppm).

Sulphur Content

Burned in diesel engines neat or used as an extender to mineral derived fuel. When these are subjected to heat in the fuel injection system they form sticky deposits that can be found inside the fuel pump and a hard lacquer in the injectors where exposure to even higher temperatures takes place.

Unmodified Vegetable Oils

An extract 'common statement' from the FIE manufacturers specifies that "The fuel injection equipment manufacturers can accept no liability whatsoever for failure attributable to operating their products with fuels for which the products were not designed, and no warranties or representations are made as to the possible effects of running these products with such fuels".

These fuels have been derived from a wide range of vegetable oils and animal fats, resulting in better stability, viscosity and cetane number than those produced from unmodified vegetable oils, but it is recognised that there are potential problems associated with the finished fuel characteristics. These oils are less stable than mineral oil derived fuels when stored and they will readily degrade producing fatty acids, methanol and water, none of which are desirable in the FIE. These effects are known to be accelerated when the fuel is stored in the presence of air and water together.

B100 - Chemically Modified Vegetable Oils (FAME/VOME)

Unacceptable Fuels

If the recommended actions are not taken there may be the following consequences:- low temperature filter clogging- injectors lacquering / sticking deterioration of seals and rubber hoses- corrosion of metal parts in the fuel system- engine performance problems. These risks will be increased if the fuel has been poorly stored, that is deteriorated through oxidation and / or water absorption.

To minimise the risk of engine damage when using a B20 mix, there are additional service requirements.

It may also effect the power and performance of the engine.
percentage biodiesel mixture (>20%) can lead to fuel gelling and filter blocking in low temperature operation, conventional antibacterial additives when used in biodiesel is still being investigated in the fuel industry. A high and oxidation. It will be necessary to consult and seek advice from your fuel supplier, the effectiveness of cause fuel system corrosion and early fuel filter blocking. Biodiesels must be stored to exclude water absorption. The neutral properties of biodiesel make it a good medium for micro bacterial growth, these microbes can

Using B20 biodiesel can result in unburnt fuels accumulating in the engine oil, ultimately this can affect the engine oil efficiency and lead to engine damage (with standard diesel any unburnt fuel evaporates off the lubricating oil).

Preheating will be required.
Point. Using diesel at temperatures below its cloud point can result in filter clogging. To prevent this happening its Pour Point the diesel fluid becomes cloudy due to crystallization of waxy constituents - this is known as Cloud temperature at which fluid can flow and performs its functions is referred to as Pour Point. Just prior to reaching Biodiesels will 'cloud' at higher temperatures than mineral based fuels. To explain Cloud Point - the lowest



Dirt

A severely damaging contaminant. Finely machined and mated surfaces such as delivery valves and distributor gears are susceptible to the abrasive nature of dirt particles - increased wear will almost inevitably lead to greater leakage, uneven running and poor fuel delivery.

Water

Water can enter fuel through poor storage or careless handling, and will almost inevitably condense in fuel tanks. The smallest amount of water can result in effects that are just as disastrous to the fuel injection pump as dirt, causing rapid wear, corrosion and in severe cases, even seizure. It is vitally important that water is prevented from reaching the fuel injection equipment. The filter/water trap must be drained regularly.

Wax

Wax is precipitated from diesel when the ambient temperature falls below that of the fuel's cloud point, causing a restriction in fuel flow resulting in rough engine running. Special winter fuels may be available for engine operation at temperatures below 0°C (32.0°F). These fuels have a lower viscosity and limit wax formation.

Chemical Contamination

It should be noted that exposure of fuel to surfaces containing Copper (Cu), Zinc (Zn) or Lead (Pb) can adversely affect fuel quality and should be minimised.

Diesel Exhaust Fluid (DEF)

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 560-80 [T4F], 560U80 [T4F], JCB (UN3/GB3) Electronic Dieselmax Turbocharged Aftercooled Engine, JCB T4F 4.4 over 55kw Electronic Dieselmax Turbocharged Aftercooled Engine)

Diesel Exhaust Fluid (DEF)

▲ Notice: No warranty liability whatsoever will be accepted for failure of the emissions control system where the failure is attributed to the quality and grade of the diesel exhaust fluid (DEF) used.
Notice: No warranty liability whatsoever will be accepted for failure of the emissions control system where the failure is attributed to contamination of the diesel exhaust fluid (DEF).

This engine has exhaust gas treatment using selective catalytic reduction technology. In SCR (Selective Catalytic Reduction) technology, a liquid called diesel exhaust fluid is injected into the exhaust gases. DEF (Diesel Exhaust Fluid) is used within SCR systems on diesel engines to reduce harmful exhaust gas emissions known as NOx. When the DEF is injected into the exhaust stream it turns into ammonia and water, this ammonia enters the catalyst and reacts with the NOx molecules to form nitrogen and water. Naturally occurring and harmless, they are then released into the atmosphere.

The DEF consumption depends on the duty cycle of the engine.

DEF is a highly purified, colourless liquid containing demineralized water 67.5% and Urea 32.5%. DEF is specified under ISO 22241 and is marketed under various names such as AdBlue®, ARLA 32 or AUS 32.

Make sure that genuine DEF is used. Do not dilute DEF or mix it with other substances, it may damage the catalyst.

The DEF tanks and pipes are heated if there is any danger of freezing, the congealing point of DEF at 32.5% is -11°C (12.2°F). The DEF storage tank on the machine will be heated from the engine cooling system automatically.



If a problem is detected within the DEF system for any problem including contamination, engine power will be reduced.

Storage

Always use polyethylene, polypropylene, stainless steel or plastic containers for storing DEF, as DEF can be corrosive to most metals (eg steel, copper, and aluminium). This applies to any funnels, jugs, pipes, pumps and other handling equipment.

Avoid decanting wherever possible to prevent contamination from dirt or trace amounts of metals that can occur when metal containers are used. Even the use of apparently clean items such as jugs or funnels may introduce damaging contaminants if they have ever been used for other purposes.

Always ensure any caps on DEF storage containers are screwed tight to prevent evaporation and crystallisation. DEF can be stored for up to 12 months in a sealed container, and must be kept between -6°C (21°F) and 25°C (77°F) in a shaded area out of direct sunlight and ultraviolet radiation.

Spillages

A small DEF spill can be diluted with water. It is best to mop up the spillage and avoid flushing it down a drain or waterway.

In case of a large spill, try to prevent the spillage from entering drains or waterways. Contain the spill with sand, earth or your spill kit and dispose of it properly.

The surface on which you spill DEF may become slippery. Make sure that you clean up the spill as quickly as possible to prevent slips and falls.

If a spill occurs on the machine, wash away with water as white crystals will form and these will eventually become corrosive to paintwork and, in turn, metal work.

DEF should never be spilled onto electrical connectors as it will destroy terminals quickly. It can also travel easily by capillary action between the insulation and copper wires in harnesses.

Preventing Contamination of the DEF tank

In order to prevent damage to the SCR system, DEF used must be compliant to the ISO 22241-1 standard. ISO 22241-1 DEF is available from all JCB dealers.

Every machine equipped with a JCB SCR system is fitted with a quality sensor in the DEF tank to help prevent problems caused by cross contamination with other fluids.

DEF needs to be kept free from dirt and other particle contaminants at all times to prevent damage to the SCR system. There is a mesh strainer fitted in the JCB DEF filler.

DEF needs to be kept free from liquid contaminants such as diesel, oil, antifreeze, screenwash and other fluids at all times. Even one drop of diesel or oil can pollute 20L of DEF.

If diesel is poured into the DEF tank this can damage the after treatment system, do not start the engine, please contact your local JCB dealer immediately so they can correctly flush the system to avoid an expensive repair.

A range of special tools and fluid analysis services are available at your local JCB dealer to check DEF quality via simple hydrocarbon test paper strips, or a more comprehensive laboratory service. Digital and optical concentration measuring devices are also available.

If any cross contamination is detected JCB will not be liable for any further diagnosis or repairs to the SCR system.

- Make sure that the antifreeze complies with International Specification ASTM D6210.
- Always read and understand the manufacturer's instructions.
- Make sure that a corrosion inhibitor is included. Serious damage to the cooling system can occur if corrosion inhibitors are not used.
- Make sure that the antifreeze is ethylene glycol based and does not use Organic Acid Technology (OAT).

If you use any other brand of antifreeze:

Do not exceed a 60% concentration, as the freezing protection provided reduces beyond this point.

Concentration	Level of protection
60% (Standard)	Protects against damage down to -40°C (-40°F)
60% (Extreme Conditions Only)	Protects against damage down to -56°C (-69°F)

Table 90.

The protection provided by JCB High Performance Antifreeze and Inhibitor is shown below.

The correct concentration of antifreeze protects the engine against frost damage in winter and provides year round protection against corrosion.

You must dilute full strength antifreeze with clean water before use. Use clean water or no more than a moderate hardness (pH value 8.5). If this cannot be obtained, use de-ionized water. For further information advice on water hardness, contact your local water authority.

Replace the coolant mixture according to the intervals shown in the machine's Service Schedule.

Check the strength of the coolant mixture at least once a year, preferably at the start of the cold period.

▲ CAUTION Antifreeze can be harmful. Obey the manufacturer's instructions when handling full strength or diluted antifreeze.

Coolant

If contamination occurs do not start the engine. Please contact your local JCB dealer immediately so they can correctly flush the system to avoid an expensive repair.

There is a special magnet fitted in the DEF filler neck which will allow some DEF electric dispensing pumps to start if it has the matching ISO feature, as all forecourt dispensing systems have, thus preventing DEF being dispensed if nozzle is not in the DEF tank.

Every JCB DEF cap is lockable with a special key with a blue key fob, which can be given to a site supervisor or other person of responsibility.

The diesel cap is also clearly marked with lettering.

The DEF cap on every JCB machine is blue and clearly marked with AdBlue®, DEF and the ISO (International Organization for Standardization) symbol in white lettering. There are warning decals next to the DEF filling point

The opening for your DEF tank is narrower than the opening for a diesel tank, so you should not be able to put diesel in the wrong tank (as the nozzle does not fit)

Preventing Cross Contamination of Diesel Fuel and DEF

Torque Values

General

ROPS/FOPS

Mounting bolts torque	205N·m
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Table 91.

Wheels

Front Wheel Nut Torque	680N·m
Rear Wheel Nut Torque	680N·m
JCB	650N·m
Dana	650N·m

Table 92.

Step/Battery Compartment Cover

Mounting bolt torque	25N·m
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Table 93.

Axles

Fill/level plug torque	79N·m
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Table 94.





Electrical System

General

Table 95.

Item	Specification
Battery voltage/system voltage	12V

Fuses

For: 53670LP [T4F] Page 446
 For: 531-70 [T4F], 53170 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T95 [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 54170 [T4F], 53670LP [T4F], 560U80 [T4F] Page 450
 For: 526-56 [T4F] Page 454

(For: 53670LP [T4F])

Figure 402

1A	AUX 5A	11H	20A	11H	20A
2A	15A	12H	15A	12H	15A
3A	25A	13H	10A	13H	10A
4A	3A	14C	15A	14C	15A
5A	30A	15C	20A	15C	20A
6B	3A	16D	7.5A	16D	7.5A
7B	A/C 20A	17D	5A	17D	5A
8B	3A	18B	15A	18B	15A
9B	10A	19B	5A	19B	5A
10B	D/B 10A	20B	20A 5A	20B	20A 5A
21H	25A	31B	30A	31B	30A
22H	3A	32C	3A	32C	3A
23H	3A	33C	25A	33C	25A
24H	3A	34C	20A	34C	20A
25H	3A	35C	25A	35C	25A
26D	10A	36C	15A	36C	15A
27D	25A	37G	10A	37G	10A
28D	7.5A	38G	20A	38G	20A
29D	10A	39G	10A	39G	10A
30D	3A	40	5A	40	5A
41E	20A	41E	20A	41E	20A
42E	5A	42E	5A	42E	5A
43E	5A	43E	5A	43E	5A
44E	10A	44E	10A	44E	10A
45E	15A	45E	15A	45E	15A
46E	3A	46E	3A	46E	3A
47E	5A	47E	5A	47E	5A
48E	3A	48E	3A	48E	3A
49E	3A	49E	3A	49E	3A
50E	5A	50E	5A	50E	5A

Table 96.

Fuse	Circuits	Rating
1A	Auxiliary	5
2A	Auxiliary/hitch hydraulics	15
3A	Air conditioning	25
4A	Immobiliser	3
5A	Heater	30
6B	Indicators	3
7B	Air conditioning	20
8B	Starter relay	3
9B	Drive control ECU (Electronic Control Unit)	10
10B	Reversing alarm/lights	10
11H	Rear/roof wiper	20
12H	Front wiper	15
13H	Brake lights	10
14C	Dipped beam	15
15C	Main beam	20
16D	Left hand sidelights	7.5
17D	Right hand sidelights	5
18B	12V Accessory socket	15
19B	Ignition relay	5
20B	Rear hitch light	5
21H	Heated windows	25
22H	Gauge master warning	3
23H	Park brake warning light	3
24H	Engine running	3
25H	Operator present switch	3
26D	Sidelights	10
27D	Headlight flasher, horn	25
28D	Beacon	7.5
29D	Interior light	10
30D	Hazard lights	3
31B	Neutral start	30
32C	Fog light	3
33C	Boom worklight	25
34C	Roadlights	20
35C	Front work lamps	25
36C	Rear work lamps	15
37G	Drive control ECU	10
38G	Heated seat, face fan	20
39G	Radio	10
40	Livelink	5
41E	Hydraulics ECU	20
42E	Transmission	5
43E	Livelink	5
44E	Trailer indicator	10
45E	Instruments	15

Fuse	Circuit	Rating
A	Horn, sidelights, hazard warning lights, beacon, interior light	50
B	Road lights, working lights, boom light	50
C	Sway, auxiliary, heater	50
D	SRS (Smooth Ride System) starting circuit, transmission, brake lights	50
E	LLMI, heater, wipers, radio, instruments	50
F	Seat, electric mirrors, heated glass	50
G	Engine	50
H	Hydraulic control ECU	50

Table 97.

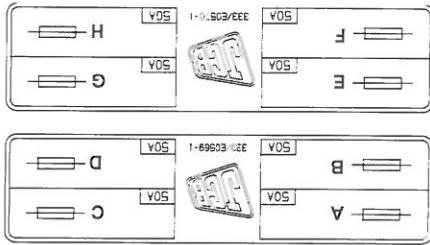


Figure 403.

Primary Fuses

Fuse	Circuits	Rating
50E	Hydraulics controller ignition	5
49E	Instruments	3
48E	LLMI (Longitudinal Load Moment Indicator)	3
47E	Livelink	5
46E	Transmission	3
A		



Engine Fuses

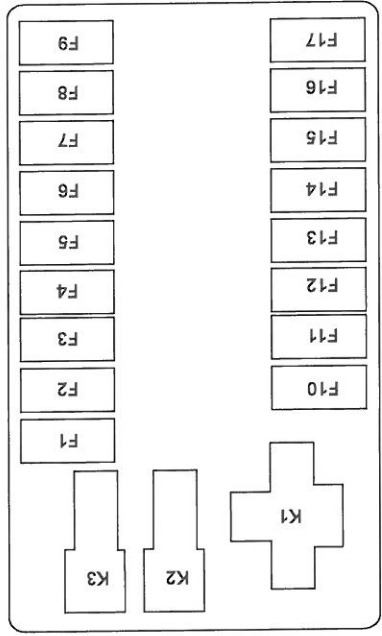


Figure 404.

Table 98.

Fuse	Circuits
F1	Power hold relay
F2	Fuel pump
F3	Starter solenoid
F4	Fuel pump ECU - 40
F5	Spare
F6	Spare
F7	Spare
F8	ECU - 49
F9	ECU - 53
F10	HC- doser/spare
F11	Lambda Sensor/spare
F12	WF sensor
F13	Empty/spare
F14	Engine power supply
F15	Engine power supply
F16	Engine ECU - 60
F17	Engine ECU - 57

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

Secondary Fuses

Figure 405.

11A		5A
2		30A
3		25A
4		15A
5		5A
6		3A
7		30A
8		10A
9		3A
10		3A
21C		R 10A
22		Aux 5A
23		10A
24		10A
25		5A
26		5A
27		25A
28		10A
29		20A
30		25A
41E		15A
42		20A
43		7.5A
44		5A
45		5A
46		5A
47		20A
48		10A
49		20A
50		10A
11B		25A
12		20A
13		15A
14		20A
15		15A
16		20A
17		25A
18		7.5A
19		15A
20		25A
31D		20A
32		15A
33		10A
34		3A
35		15A
36		3A
37		5A
38		3A
39		3A
40		5A
51		5A
52		5A
53		10A
54		5A

Table 99.

Fuse	Circuit(s) Protected	Rating
1A	Ignition	5A
2	Crank	30A
3	Heated Glass	25A
4	Front/rear Auxiliary	15A
5	Heater Hose and SCR (Selective Catalytic Reduction) ECU	5A
6	Engine ECU	3A
7	Heater Blower	30A
8	Brake Lights	10A
9	Seat Pressure Switch and Park Brake	3A
10	Directional Indicators	3A
11B	Roof Air Conditioning Fans	25A
12	Rear Wiper	20A
13	Front Wiper	15A
14	Air Conditioning	20A
15	12V Power Connection Auxiliary	15A
16	After Treatment	20A
17	Front Work lights	25A
18	Beacon	7.5A
19	Machine ECU	15A
20	Boom Worklights	25A
21C	Reverse Alarm	10A
22	Auxiliary Connector	5A
23	Transmission Controller	10A
24	Radio	10A
25	Ignition	5A
26	Live Link	5A
27	Rear Work Lights	25A
28	Head Lights	10A
29	Head Lights	20A
30	Horn and Main Beam	25A
31D	Hydraulic ECU	20A
32	SPARE	15A
33	NOX Sensor	10A
34	Hazard Lights	3A
35	Instruments V+	15A
36	Machine ECU	3A
37	Live Link	5A
38	LLMI	3A
39	Instruments	3A
40	Immobiliser	5A
41E	Dipped Beam	15A
42	Main Beam	20A
43	Side Lights	7.5A
44	Side Lights	5A
45	Fog lights	5A
46	Live Link	5A
47	Seat Heater and Face Fan	20A

Fuse	Circuit(s) Protected	Rating
A	Starting circuit	50A
B	Engine/DEF ECU, Heater blower, Directional Indicators	50A
C	Wipers, A/C Fluid Levels	50A
D	Fluid Levels, Work Lights, Beacon, Radio, Interior Light	50A
E	Reverse Lights/Alarm, DEF System, DEF Heated Lines	50A
F	Road Lights, Worklights, Horn	50A
G	Machine ECU, Hazards/DIR, RH Instruments	50A
H	Engine	50A

Table 100.

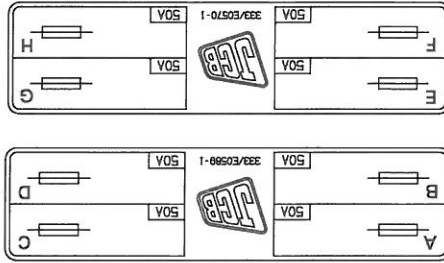


Figure 406.

Primary Fuses

Fuse	Circuit(s) Protected	Rating
48	Trailer Directional Indicators	10A
49	DEF (Diesel Exhaust Fluid) Heated Hoses	20A
50	Interior Light and Radio	10A
51	Daily Checks (when fitted)	5A
52	Daily Checks (when fitted)	5A
53	Man Basket - Recovery Pump (when fitted)	10A
54	Man Basket - Radio (when fitted)	5A



Engine Fuses

Figure 407.

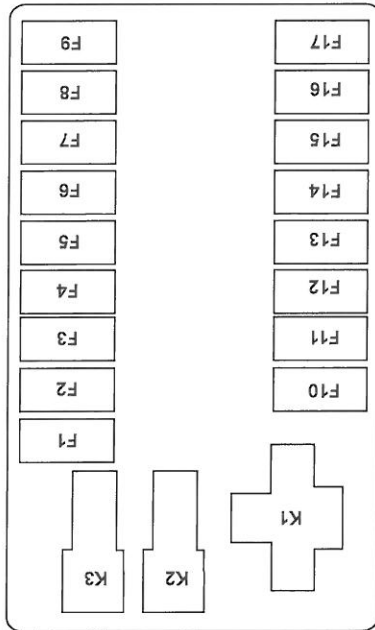


Table 101.

Fuse	Circuit(s)
F1	Power hold relay
F2	Fuel pump
F3	Starter solenoid
F4	Fuel Pump ECU- 40
F5	Spare
F6	Spare
F7	Spare
F8	ECU- 49
F9	ECU- 53
F10	HC-doser /spare
F11	Machine Isolation
F12	WF sensor
F13	Empty/spare
F14	Engine power supply
F15	Engine power supply
F16	ECU- 60
F17	ECU- 57

(For: 526-56 [T4F])

Figure 408.

1A		5A
2		30A
3		30A
4		15A
5		5A
6		5A
7		30A
8		10A
9		3A
10		3A
11B		25A
12		20A
13		15A
14		20A
15		15A
16		20A
17		25A
18		7.5A
19		15A
20		25A
21C		10A
22		5A
23		5A
24		10A
25		5A
26		5A

Fuse

Circuit(s) Protected

Rating

Table 102.

1A		5A
2		30A
3		30A
4		15A
5		5A
6		5A
7		30A
8		10A
9		3A
10		3A
11B		25A
12		20A
13		15A
14		20A
15		15A
16		20A
17		25A
18		7.5A
19		15A
20		25A
21C		10A
22		5A
23		5A
24		10A
25		5A
26		5A

Fuse	Circuit	Rating
A	Horn, sidelights, hazard warning lights, beacon, interior light	50
B	Road lights, working lights, boom light	50
C	Sway, auxiliary, heater	50
D	SRS starting circuit, transmission, brake lights	50
E	LLMI, heater, wipers, radio, instruments	50

Table 103.

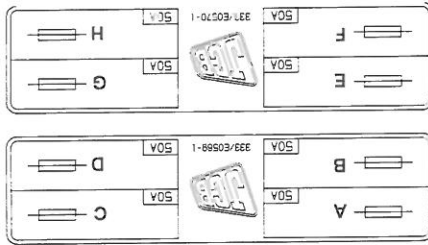


Figure 409.

Primary Fuses

Fuse	Circuit(s) Protected	Rating
50	Interior light and radio	10A
49	DEF Heated hoses	20A
48	Trailer directional indicators	10A
47	Seat heater and face fan	20A
46	Live link	5A
45	Fog lights	5A
44	Side lights	5A
43	Side lights	7.5A
42	Main beam	20A
41E	Dipped beam	15A
40	Immobiliser	5A
39	Instruments	3A
38	LLMI	3A
37	Live link	5A
36	Machine ECU	3A
35	Instruments V+	15A
34	Hazard lights	3A
33	NOX sensor	10A
32	SPARE	15A
31D	Hydraulic ECU	20A
30	Horn and main beam	25A
29	Head lights	20A
28	Head lights	10A
27	Rear work lights	25A
		Rating

Fuse	Circuit	Rating
F	Seat, electric mirrors, heated glass	50
G	Engine	50
H	Hydraulic control ECU	50

Engine Fuses

Figure 410.

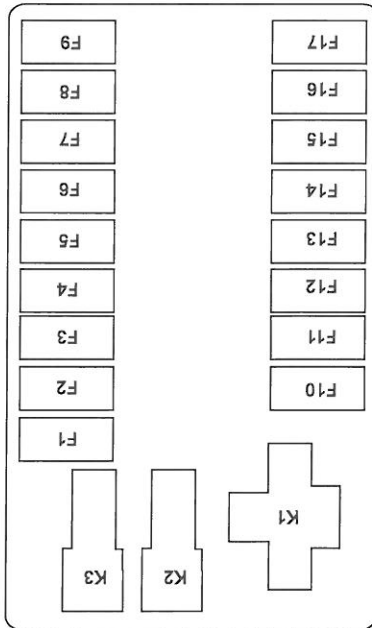


Table 104.

Fuse	Circuits
F1	Power hold relay
F2	Fuel pump
F3	Starter solenoid
F4	Fuel pump ECU - 40
F5	Spare
F6	Spare
F7	Spare
F8	ECU - 49
F9	ECU - 53
F10	HC- doser/spare
F11	Lambda Sensor/spare
F12	WF sensor
F13	Empty/spare

Fuse	Circuits
F14	Engine power supply
F15	Engine power supply
F16	Engine ECU - 60
F17	Engine ECU - 57

Relays

For: 536T0LP [T4F] Page 457

For: 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F] Page 460

For: 526-56 [T4F] Page 462

(For: 536T70LP [T4F])

Figure 411.

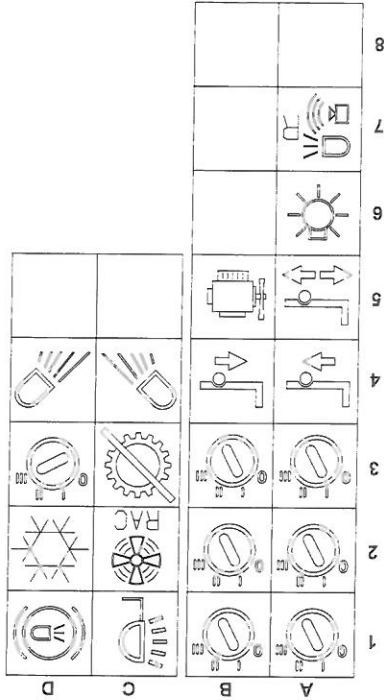


Table 105.

Relay	Circuit
A1	Ignition
A2	Ignition
A3	Ignition
A4	Left trailer flash



Relay	Circuit
A5	Trailer indicator
A6	Roadlights
A7	Reverse alarm and lamp
A8	Not used
B1	Ignition
B2	Ignition
B3	Ignition
B4	Right trailer flash
B5	Engine running
B6	Not used
B7	Not used
B8	Not used
C1	Boom worklight
C2	Roof air conditioning fans
C3	Transmission dump
C4	Rear worklights
C5	Not used
D1	Brake lights
D2	Air conditioning
D3	Neutral start
D4	Front worklights
D5	Not used

Engine Relays

Figure 412.

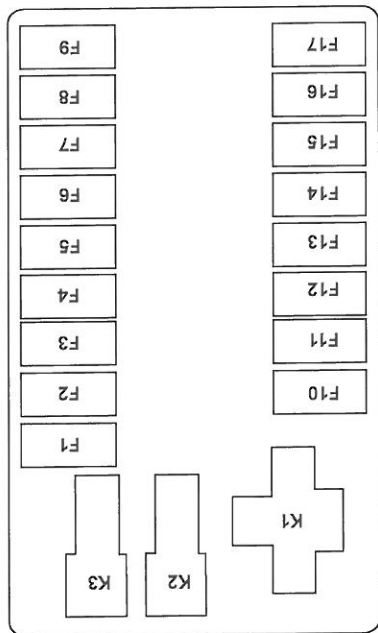


Table 106.

Fuse	Circuits
K1	Power hold relay
K2	Starter inhibit
K3	Fuel pump

(For: 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F])

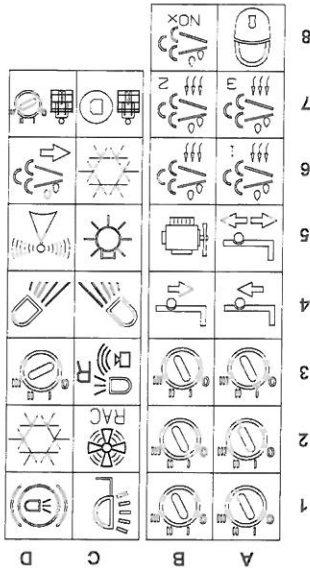


Figure 413.

Table 107.

Relay	Circuit(s)
A1	Ignition
A2	Ignition
A3	Ignition
A4	Right Trailer Flash
A5	Trailer Indicator
A6	DEF Heated Line 1
A7	DEF Heated Line 3
A8	Immobiliser
B1	Ignition
B2	Ignition
B4	Ignition
B4	Left Trailer Flash
B5	Engine Run
B6	DEF Heated Line All
B7	DEF Heated Line 2
B8	NOx Sensor
C1	Boom Worklight
C2	Roof Air Conditioning Fans
C3	Reverse Alarm and Lamp

Relay	Circuit(s)
C4	Rear Work Lights
C5	Roadlights
C6	Air Conditioning
C7	Man Basket - Recovery Pump
D1	Brake Lights
D2	Air Conditioning
D3	Crank
D4	Front Work Lights
D5	Machine Isolation
D5	Man Basket - Remote Start

Engine Relays

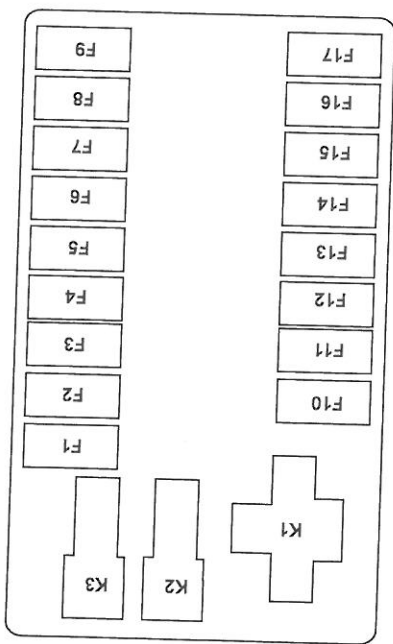


Figure 414.

Relay	Circuit(s)
K1	Power hold relay
K2	Starter inhibit
K3	Fuel pump

Table 108.

Relay	A1	Ignition
	A2	Ignition
	A3	Ignition
	A4	Rear work lamps
	A5	DEF heated line 1
	A6	Air conditioning
	B1	Ignition
	B2	Ignition
	B3	Ignition
	B4	Rear work lamps
	B5	DEF heated line All
	B6	Machine isolation
	C1	Right trailer flash
	C2	Trailer indicator
	C3	Roadlights
	C4	DEF heated line 3
	C5	Immobiliser
	C6	Auxiliary engine fan
	D1	Ignition
	D2	Engine run
	D3	Man basket - remote start

Table 109.

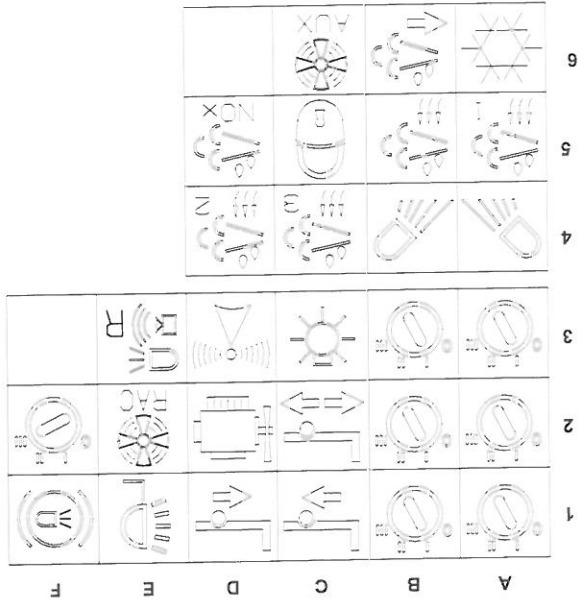


Figure 415.

(For: 526-56 [T4F])



K3	Fuel pump
K2	Starter inhibit
K1	Power hold relay
Fuse	Circuits

Table 110.

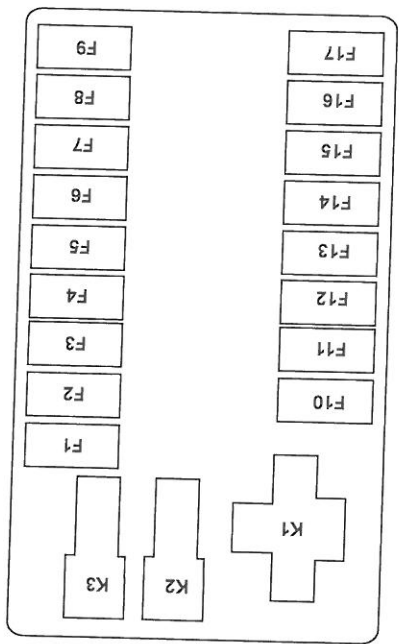


Figure 416.

Engine Relays

Relay	Circuit
D4	DEF heated line 2
D5	NOx sensor
E1	Boom worklight
E2	Roof air conditioning fans
E3	Reverse alarm and lamp
F1	Brake lights
F2	Neutral start





Engine

Exhaust After Treatment (EAT)

(For: 526-56 [T4F], 531-70 [T4F], 531T70 [T4F], 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F], 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F], 536T70 [T4F], 536T70LP [T4F], 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F], 550-80 [T4F], 550U80 [T4F], 560-80 [T4F], 560U80 [T4F], JCB (UN3/GB3) Electronic Dieselmex Turbocharged Aftercooled Engine, JCB T4F 4.4 over 55kw Electronic Dieselmex Turbocharged Aftercooled Engine)

Introduction

For the applicable regulations this engine has been designed in compliance with, the emissions control system is essential for meeting the requirements of exhaust emission content. The emissions control system is defined as any device, system or element of design which controls or reduces engine exhaust emissions. Emissions control systems can be integrated into the case engine structure, or contained separately. To ensure the correct functioning of the engine and emissions control system all operation and maintenance must be conducted in accordance with the instructions of this manual. Incorrect operation, maintenance or repair of the engine and emissions control system may lead to reduced product life, loss of performance or malfunctions. Malfunction operation and maintenance must be in accordance with the instructions provided in the applicable machine operator manual. If the emissions control system is not functioning correctly and detects a fault, the operator will be informed by the operator warning system. Failure to respond to this warning and rectify the detected fault will lead to the activation of the operator inducement system. This system will limit engine performance until the detected fault is rectified and may result in the machine being unable to conduct its mission.

The issued type approval certificate is valid only when the following conditions are met: (i) The engine and emissions control system are operated and maintained in accordance with the instructions of this manual. (ii) Prompt action is taken for the rectification of incorrect operation, maintenance or repair. (iii) No deliberate misuse or tampering of the engine or emission control system has occurred.

Your engine is equipped with an SCR (Selective Catalytic Reduction) after-treatment system. This is a fully automated system in which DEF (Diesel Exhaust Fluid) is fed into the exhaust to remove Nitrogen Oxides. It has a sophisticated system of self-monitoring and fault detection to ensure it is both reliable and compliant to applicable emissions legislation.

The engine must operate with DEF of the correct specification at all times. Correct use and refuelling of the DEF system is essential to ensure the correct functioning of the engine and emission control system.

In order that the machine can be compliant across all duty cycles the performance of the SCR must be maintained. Therefore the engine is equipped with a mode which runs the after-treatment system at typical less efficient. This mode is used for a prolonged period (100s of hours) in light duties the SCR can become operating temperatures whilst the machine is being lightly used. In this way the SCR is refreshed while the machine is running normally. This is automatic and seamless to the operator and the machine can continue to be operated normally while this is happening.

Should the duty cycle continue to be very light the operator will be warned. If this occurs the operator has a choice to either operate the machine at a higher duty or complete the refresh cycle with the machine stationary. This again is a fully automatic process once initiated by the operator.

If the operator ignores the warnings and does not complete a stationary refresh then the SCR will cease to be compliant and the engine will derate in accordance with the legislative requirements until a stationary refresh has been completed.

The system has been designed such that the majority of customers should not have to invoke a stationary refresh, however the mode exists to ensure all products remain compliant. Typically the earliest a refresh would be required is around 700-1000 hours.

Stationary Refresh

The engine is equipped with a setting that will automatically run the exhaust system hot enough while the machine is stationary. The operator will need to park the machine in a safe position and acknowledge that the machine can run a stationary refresh by initiating the procedure. Refer to the machine operator manual stationary refresh initiation procedure. Refer to: Instruments (Page 99).

The presence of emissions system related faults will result in (initially) warnings given and engine power reduction. If the warnings continue to be ignored, it will lead to the engine being only able to idle, and then only at reduced idle power.

If the engine is shut down by the operator during these steps, unless the fault is repaired, the duration of the step will resume from the point at which it was left.

If the fault is still detected again when the engine is restarted, the engine will continue at reduced power.

Emissions System- First Fault

1	Engine speed	X	Percentage
2	Engine torque	Y	Time
A	DEF level Low. Early warning to operator - F-fill up this shift		
B	DEF level indicated critical low. Last warning to operator - F-fill up now		
C	0% DEF level indicated on level gauge. Machine starts to derate (reduced torque) - F-fill up now		
D	Engine torque will remain at the levels shown for a period - F-fill up now		
E	Engine torque begins to reduce further, engine maximum speed begins to reduce - F-fill up now		
F	Engine torque and engine maximum speed will no longer respond when the accelerator is operated - F-fill up now		

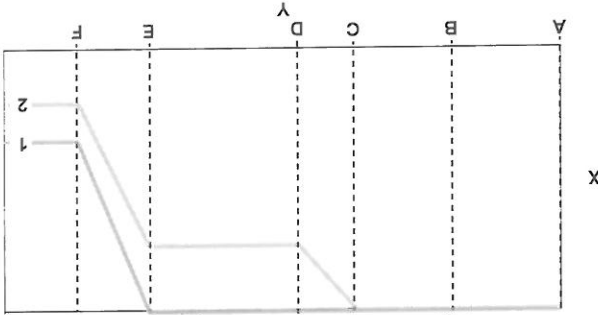


Figure 417. DEF Level Warning Graph

If there are no other engine or emission system faults, the information below explains when the engine power and speed de-ratings occur, according to DEF tank level.

DEF is required for type approval, operators attempting to operate the machine without DEF may be liable for civil and criminal prosecution in the European Union.

Attempting to operate the machine without DEF is a Federal Offence in the United States of America, operators may be prosecuted under the Clean Air Act.

- Restore power when the DEF tank is refilled.
- Allow only enough power for 'limp home' i.e. to move the machine to a safe area or onto a trailer.
- Give the driver a warning when the remaining level falls low, which if continually ignored will progressively automatically reduce engine torque and reduce engine speed to tick over, preventing effective working activity.

The engine will not shut down if you run out of DEF, however it will:

The engine or SCR will not be damaged when you run out of DEF. To protect itself the machine performance will be reduced. Refill the DEF tank to restore performance.

DEF Levels

NON'TS

- Before engine start up, locate and identify both separate diesel and DEF tanks, they do not share the same tank. Do not allow cross contamination between diesel and DEF.
- Act on machine warnings that DEF is running low.
- Ensure that there is sufficient DEF in the machine at all times.
- Use only high quality DEF to ISO 22241-1 from a reputable source.
- Keep all DEF, tanks, tank necks, drums and dispensing equipment clean to prevent contamination.

DO'S

DEF DO'S and NON'TS

Parameter	Subsequent Fault Effects
Engine power output	Initial full power further reduces to limited power at idle speed only over time.
Engine RPM limit	Reducing to idle speed only over time
Driver/operator action needed	If appropriate to the application, park the machine in a safe place. Contact your JCB engines dealer immediately

Table 11. Emissions system-faults occurring in less than 40 hours

If the emissions system detects a second fault within 40 engine hours of a previous fault occurring, the system will reduce power immediately to protect the engine, this is usually indicative of a more serious fault with the system. The system will return to normal operation when the fault(s) are repaired.

Emissions Systems Faults - Additional Faults Within 40 Hours of The First Fault

- A** Fault detected
- C** Engine torque will remain at the levels shown for a period
- E** Engine torque and engine maximum speed will remain at the levels shown. The engine will no longer respond when the accelerator is operated
- 2** Engine torque
- Y** Time
- X** Percentage
- B** Fault continues to be ignored, engine torque reduction begins, engine maximum speed is unaffected
- D** Fault continues to be ignored, engine torque begins to reduce further, engine maximum speed begins to reduce
- 1** Engine speed

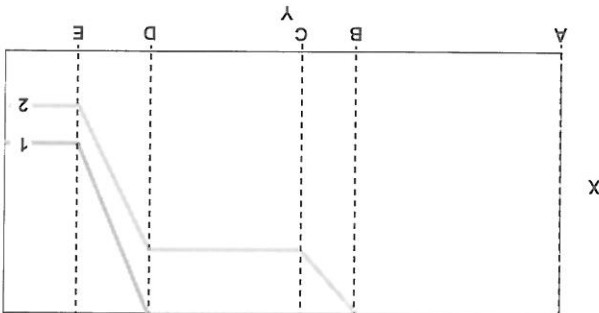


Figure 418. Emissions System First Fault Graph



- Don't add chemicals to your DEF to prevent freezing.
- Don't dilute DEF with water or any other fluids or the machine may stop or be permanently damaged.
- When the engine is switched off, there is a small pump in the DEF system which purges the line from the supply module to the dosing injector. Don't remove the battery isolator for 30s so this operation can be completed and the system shut down correctly. Some machines may be fitted with a power hold relay to prevent this purge from being interrupted by operating the isolator.





Wheels and Tyres

General

▲ WARNING Do not use the machine with damaged, incorrectly installed, incorrectly inflated or excessively worn tyres. Recognise the speed limitation of the tyres installed and do not operate at more than their recommended maximum speed.

Before you operate the machine, make sure that the correct tyres are installed and they are inflated to the correct pressure.

You must refer to the chart in the machine for correct tyre and pressure rating. Do not use the maximum pressure marked on the tyre.

The pressures shown on the chart are agreed with the tyre manufacturer(s) according to the European Tyre and Rim Technical Organisation (ETRTO) standards to satisfy the machine stability performance.

If the chart does not show the tyres installed on your machine, then contact your JCB dealer for instruction. Do not guess the tyre pressures.

Non-approved tyre ballast cab cause damage to the machine's drive train and structures. It will also affect manufacturer's warranty. Contact your JCB dealer for more details.

Specifications

Michelin XMline D2 tyres are limited to a maximum travel distance of 6km (3½mi) in any 1h period. Speeds above 6km/h (3.7mph) are permitted in short bursts provided the maximum distance travelled in 1h does not exceed 6km/h (3.7mph).

The Effect of Tyres on Stability

Because tyres deflect and distort under load they have a significant effect on machine stability.

Although tyres from different manufacturers may be of the same specification in terms of size, number of plies and load/speed ratings their deflection and distortion under load may vary significantly.

Hence when establishing the machine load chart, thorough performance and stability testing, JCB works with tyre manufacturers to agree suitable tyre and tyre pressures for the machine and its application.

The use of tyres not approved by JCB may effect the stability of the machine and its ability to conform to its load chart.

Even when a machine is installed with JCB's approved tyres its performance may be adversely affected by issues such as:

- Mixing of tyres from different manufacturers
- Incorrect ply rating
- Differences in diameter of tyres on the same axle due to differential wear
- Low tyre pressure
- High tyre pressure
- Uneven tyre pressure
- Poor repairs

Since JCB approve wheel and tyre assemblies by performance and stability testing, replacement tyres should be the same size, ply and brand as originally installed unless a set of four alternative manufacturer approved tyres and rims are installed.

Due to size variations between tyre brands and reduction in diameter due to wear, both tyres on axle must be replaced at the same time with identical tyres.

If the tyres in opposite sides are different sizes the machine will not be vertical when standing on level ground. This will cause the combined centre of gravity of the machine and load to move sideways, which may lead to instability.

Tyre Sizes and Pressures

Page 470	For: 526-56 [T4F]
Page 473	For: 536-60 [T4F], 536-60 [UN3/GB3], 536T60 [T4F]
Page 476	For: 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F]
Page 479	For: 536T70 [T4F]
Page 482	For: 536T70LP [T4F]
Page 485	For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F]
Page 488	For: 531-70 [T4F], 531T70 [T4F]
Page 491	For: 550-80 [T4F], 550U80 [T4F]
Page 494	For: 560-80 [T4F], 560U80 [T4F]



(For: 526-56 [T4F])

Table 112. Tyre Specifications

Brand	Size	Designation	Load Index/Speed Rating	Inflation Pressure bar (psi)	JCB Tyre Part Num-ber	Max. Speed km/h (mph)
Continental [®]	445/70 R 24	MPT AC70	151 G	3.5 (51)	42/925361	40 (24.9)
Goodyear	15.5/80 - 24	SURE GRIP IMPL-MENT	145 A6	3.5 (51)	42/413800	30 (18.6)
JCB Sitemaster [®]	15.5 - 25 12 PR	XLW	168 A2	4 (58)	332/H7461	30 (18.6)
JCB Sitemaster [®]	15.5/80 - 24 12 PR	IMP I-3 TRACTION	145 A6	3.5 (51)	332/H7460	30 (18.6)
Michellin [®]	380/75 R20	XMCL	148 A8	3.5 (51)	42/925372	30 (18.6)
Michellin [®]	460/70 R24	IND XMCL	159 A8	3.5 (51)	42/925369	40 (24.9)
Alliance	460/70 R24	AGRO INDUSTRIAL	159 A8	3.7 (54)	333/H7444	40 (24.9)

(1) This tyre is approved for fitment to French M/GA Approved Machines.



Hitch Options (JCB)

Table 113. Maximum Trailer Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Trailer Mass kg ⁽²⁾														
			Top	Bottom													
Brake System	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	750	750	750												
						JCB Ladder with Rockinger Clevis H9	8,000	8,000	8,000								
										Independently braked	750	3,500	3,500				
														Proportional assisted	750	6,000	6,000

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 114. Maximum Tractor-Trailer Combination Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Tractor-Trailer Mass kg ⁽²⁾														
			Top	Bottom													
Brake System	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	7,200	7,200	7,200												
						JCB Ladder with Rockinger Clevis H9	9,950	9,950	9,950								
										Independently braked	7,200	12,450	12,450				
														Proportional assisted	7,200	14,450	14,450

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 115. Maximum Allowable Vertical Hitch Load

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Allowable Vertical Hitch Load kg ⁽²⁾																																										
			Top	Bottom																																									
JCB Tyre Part Number	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	2,000	1,450	2,000																																								
						JCB Ladder with Rockinger Clevis H9	1,850	1,440	1,850	1,900																																			
											332/H7461	500	2,000	1,955	2,000																														
																332/H7460	500	2,000	1,440	1,850																									
																					42/925372	500	2,000	1,635	2,000																				
																										42/925369	500	2,000	1,440	1,970															
																															333/H7444	500	2,000	1,440	2,000										
																																				42/925372	500	2,000	1,970	2,000					
																																									42/413800	500	1,850	1,900	2,000

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.



Hitch Options (Rockinger)

Table 116. Maximum Trailer Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Trailer Mass kg ⁽¹⁾	
		Top	Bottom		
Brake System	Ladder with Piton/Ball 80mm H7/H8	Maximum Trailer Mass kg ⁽¹⁾			
		Unbraked	750	750	750
		Inertia braked	3,500	3,500	3,500
		Independently braked	6,000	6,000	6,000
Proportional assisted braking	8,000	8,000	8,000	8,000	

(1) Local legislation may limit the maximum trailer mass.

Table 117. Maximum Tractor-Trailer Combination Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Tractor-Trailer Mass kg ⁽¹⁾	
		Top	Bottom		
Brake System	Ladder with Piton/Ball 80mm H7/H8	Maximum Tractor-Trailer Mass kg ⁽¹⁾			
		Unbraked	7,200	7,200	7,200
		Inertia braked	9,950	9,950	9,950
		Independently braked	12,450	12,450	12,450
Proportional assisted braking	14,450	14,450	14,450	14,450	

(1) Local legislation may limit the maximum trailer mass.

Table 118. Maximum Allowable Vertical Hitch Load

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Allowable Vertical Hitch Load kg ⁽¹⁾	
		Top	Bottom		
JCB Tyre Part Number	Ladder with Piton/Ball 80mm H7/H8	Maximum Allowable Vertical Hitch Load kg ⁽¹⁾			
		42/925361	2,000	1,395	2,000
		42/413800	1,900	1,385	1,900
		332/H7461	2,000	1,370	2,000
		332/H7460	1,900	1,385	1,900
		42/925372	2,000	1,585	2,000
		42/925369	2,000	1,385	2,000
		333/H7444	2,000	1,385	2,000

(1) Local legislation may limit the maximum trailer mass.

(1) This tyre is approved for fitment to European Tractor Type Approved Machines.

Brand	Size	Designation	Load Index/Speed Rating	Inflation Pressure bar (psi)	JCB Tyre Part Num-ber	Max. Speed km/h (mph)
Goodyear	15.5 - 25 12 PR	SGL	168 A2	4 (58)	42/405700	30 (18.6)
JCB Sitemaster	15.5 - 25 12 PR	XLW	168 A2	4 (58)	332/H7461	30 (18.6)
JCB Earthmover	15.5 R25	925 GPR L3	160 B	4 (58)	42/925396	30 (18.6)
Michelin	15.5 R25	XHA L3	169 A2	4 (58)	42/105900	30 (18.6)
Nokian	480/65 R24	TL SF	146 D	4 (58)	42/925216	40 (24.9)
Alliance	460/70 R24	AGRO INDUSTRIAL	159 A8	4 (58)	333/H7444	40 (24.9)
Michelin	400/80 - 24	IND TL POWER CL	156 A8	4 (58)	333/E2760	40 (24.9)
Trelleborg	500/70 R24	TH400	164 A8	3.5 (51)	334/D8386	40 (24.9)
Michelin	400/80 - 24	IND TL POWER CL	162 A8	4 (58)	332/C4655	40 (24.9)
Michelin	460/70 R24	BIBLOAD HARD SURFACE	159 A8	4 (58)	334/D3793	40 (24.9)
Michelin	500/70 R24	IND XMCL	164 A8	3.5 (51)	331/64138	40 (24.9)
Michelin	500/70 R24	BIBLOAD HARD SURFACE	164 A8	3.5 (51)	334/F6896	40 (24.9)
Michelin	460/70 R24	IND XMCL	159 A8	4 (58)	42/925369	40 (24.9)
Mitas	15.5/80 - 24	TR-01	151 A8	4 (58)	334/E3667	40 (24.9)

Table 119. Tyre Specifications

(For: 536-60 [T4F], 536-60 [UN3/CB3], 536T60 [T4F])



Hitch Options (JCB)

Table 120. Maximum Trailer Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Trailer Mass kg ⁽²⁾
			Top	Bottom	
Unbraked	750	750	750	750	750
Inertia braked	750	3,500	3,500	3,500	3,500
Independently braked	750	6,000	6,000	6,000	6,000
Proportional assisted braking	750	10,809	17,540	17,540	17,540

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 121. Maximum Tractor-Trailer Combination Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Tractor-Trailer Mass kg ⁽²⁾
			Top	Bottom	
Unbraked	8,210	8,210	8,210	8,210	8,210
Inertia braked	8,210	10,960	10,960	10,960	10,960
Independently braked	8,210	13,460	13,460	13,460	13,460
Proportional assisted braking	8,210	18,269	25,000	25,000	25,000

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 122. Maximum Allowable Vertical Hitch Load

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Allowable Vertical Hitch Load kg ⁽²⁾
			Top	Bottom	
42/405700	500	2,000	1,525	2,000	2,000
332/H7461	500	1,850	1,495	2,000	2,000
42/925396	500	2,000	1,495	2,000	2,000
42/105900	500	1,850	1,505	2,000	2,000
42/925216	500	2,000	1,500	2,000	2,000
333/H7444	500	2,000	1,515	2,000	2,000
333/E2760	500	2,000	1,515	2,000	2,000
334/D8386	500	2,000	1,435	2,000	2,000
332/C4655	500	2,000	1,515	2,000	2,000
334/D3793	500	2,000	1,515	2,000	2,000
331/64138	500	2,000	1,435	2,000	2,000
334/F6896	500	2,000	1,435	2,000	2,000
42/925369	500	2,000	1,515	2,000	2,000
334/E3667	500	2,000	1,500	2,000	2,000

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Hitch Options (Rockinger)
Table 123. Maximum Trailer Mass

Hitch Type	Fixed Clevis (Auto/Man-ual) H2/H3	Maximum Trailer Mass kg ⁽¹⁾	
		Top	Bottom
Ladder with Piton/Ball 80mm H7/H8	Ladder Clevis H4/H5/H6	750	750
Unbraked		750	750
Inertia braked		3,500	3,500
Independently braked		6,000	6,000
Proportional assisted braking		17,540	17,540

(1) Local legislation may limit the maximum trailer mass.

Table 124. Maximum Tractor-Trailer Combination Mass

Hitch Type	Fixed Clevis (Auto/Man-ual) H2/H3	Maximum Tractor-Trailer Mass kg ⁽¹⁾	
		Top	Bottom
Ladder with Piton/Ball 80mm H7/H8	Ladder Clevis H4/H5/H6	8,210	8,210
Unbraked		8,210	8,210
Inertia braked		10,960	10,960
Independently braked		13,460	13,460
Proportional assisted braking		25,000	25,000

(1) Local legislation may limit the maximum trailer mass.

Table 125. Maximum Allowable Vertical Hitch Load

Hitch Type	JCB Type Part Number	Fixed Clevis (Auto/Man-ual) H2/H3	Maximum Allowable Vertical Hitch Load kg ⁽¹⁾	
			Top	Bottom
Ladder with Piton/Ball 80mm H7/H8		Ladder Clevis H4/H5/H6	2,000	2,000
42/405700			1,455	2,000
332/H7461			1,425	2,000
42/925396			1,425	2,000
42/105900			1,435	2,000
42/925216			1,480	2,000
333/H7444			1,445	2,000
333/E2760			1,445	2,000
334/D8386			1,365	2,000
332/C4655			1,445	2,000
334/D3793			1,445	2,000
331/64138			1,365	2,000
334/F6896			1,365	2,000
42/925369			1,445	2,000
334/E3667			1,480	2,000

(1) Local legislation may limit the maximum trailer mass.



(For: 541-70 [T4F], 541-70 [UN3/GB3], 541T70 [T4F])

Table 126. Tyre Specifications

Brand	Size	Designation	Load Index/Speed Rating	Inflation Pressure (psi) ber	JCB Tyre Part Num-	Max. Speed (mph)
Goodyear	15.5 - 25 12 PR	SGL	168 A2	4 (58)	42/405700	30 (18.6)
JCB Sitemaster	15.5 - 25 12 PR	XLW	168 A2	4 (58)	332/H7461	30 (18.6)
JCB Earthmover	15.5 R25	925 GPR L3	160 B	4 (58)	42/925396	30 (18.6)
Michellin ⁽¹⁾	15.5 R25	XHA L3	169 A2	4 (58)	42/105900	30 (18.6)
Nokian ⁽¹⁾	480/65 R24	TL SF	146 D	4 (58)	42/925216	40 (24.9)
Alliance ⁽¹⁾	460/70 R24	AGRO INDUSTRIAL	159 A8	4 (58)	333/H7444	40 (24.9)
Michellin ⁽¹⁾	400/80 - 24	IND TL POWER CL	156 A8	4 (58)	333/E2760	40 (24.9)
Trelleborg ⁽¹⁾	500/70 R24	TH400	164 A8	3.5 (51)	334/D8386	40 (24.9)
Michellin ⁽¹⁾	400/80 - 24	IND TL POWER CL	162 A8	4 (58)	332/C4655	40 (24.9)
Michellin ⁽¹⁾	460/70 R24	BIBLOAD HARD SURFACE	159 A8	4 (58)	334/D3793	40 (24.9)
Michellin ⁽¹⁾	500/70 R24	IND XMCL	164 A8	3.5 (51)	331/64138	40 (24.9)
Michellin ⁽¹⁾	500/70 R24	BIBLOAD HARD SURFACE	164 A8	3.5 (51)	334/F6896	40 (24.9)
Michellin ⁽¹⁾	460/70 R24	IND XMCL	159 A8	4 (58)	42/925369	40 (24.9)
Mitas ⁽¹⁾	15.5/80 - 24	TR-01	151 A8	4 (58)	334/E3667	40 (24.9)

(1) This tyre is approved for fitment to European Tractor Type Approved Machines.



Hitch Options (JCB)

Table 127. Maximum Trailer Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Trailer Mass kg ⁽²⁾								
			Top	Bottom									
Brake System	Unbraked	750	750	750	750								
						Inertia braked	750	3,500	3,500				
										Independently braked	750	6,000	6,000

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 128. Maximum Tractor-Trailer Combination Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Tractor-Trailer Mass kg ⁽²⁾								
			Top	Bottom									
Brake System	Unbraked	8,965	8,965	8,965	8,965								
						Inertia braked	8,965	11,715	11,715				
										Independently braked	8,965	14,215	14,215

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 129. Maximum Allowable Vertical Hitch Load

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Allowable Vertical Hitch Load kg ⁽²⁾					
			Top	Bottom						
ber	500	500	2,000	965	2,000					
						332/H7461	500	2,000	940	1,470
						42/105900	500	2,000	945	1,475
						333/H7444	500	2,000	955	1,485
						334/D8386	500	1,950	890	1,415
						334/D3793	500	2,000	965	1,485
						334/F6896	500	1,950	890	1,415
						334/E3667	500	1,600	985	1,520

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.



Hitch Options (Rockinger)

Table 130. Maximum Trailer Mass

Hitch Type	Fixed Clevis (Auto/Man-ual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Trailer Mass kg ⁽¹⁾		
		Top	Bottom			
Brake System	Ladder with Piton/Ball 80mm H7/H8	Maximum Trailer Mass kg ⁽¹⁾		750		
		Unbraked	750		750	
			Inertia braked	3,500		3,500
				6,000		6,000
Proportional assisted braking	15,781		15,781			

(1) Local legislation may limit the maximum trailer mass.

Table 131. Maximum Tractor-Trailer Combination Mass

Hitch Type	Fixed Clevis (Auto/Man-ual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Tractor-Trailer Mass kg ⁽¹⁾		
		Top	Bottom			
Brake System	Ladder with Piton/Ball 80mm H7/H8	Maximum Tractor-Trailer Mass kg ⁽¹⁾		8,965		
		Unbraked	8,965		8,965	
			Inertia braked	11,715		11,715
				14,215		14,215
Proportional assisted braking	23,996		23,996			

(1) Local legislation may limit the maximum trailer mass.

Table 132. Maximum Allowable Vertical Hitch Load

Hitch Type	Fixed Clevis (Auto/Man-ual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Allowable Vertical Hitch Load kg ⁽¹⁾		
		Top	Bottom			
Brake System	Ladder with Piton/Ball 80mm H7/H8	Maximum Allowable Vertical Hitch Load kg ⁽¹⁾		1,995		
		Unbraked	1,670		1,995	
			Inertia braked	1,640		1,995
				1,650		1,995
Proportional assisted braking	1,875		1,995			

(1) Local legislation may limit the maximum trailer mass.

42/405700	1,890	880	1,670	1,995
332/H7461	1,855	855	1,640	1,965
42/925396	1,855	855	1,640	1,965
42/105900	1,865	865	1,650	1,975
42/925216	1,915	900	1,695	2,000
333/H7444	1,875	870	1,660	1,985
333/E2760	1,875	870	1,660	1,985
332/C4655	1,875	870	1,660	1,985
334/D3793	1,875	870	1,660	1,985
331/64138	1,795	805	1,580	1,900
334/F6896	1,795	805	1,580	1,900
42/925369	1,875	870	1,660	1,985
334/E3667	1,600	900	1,660	1,600

Brand	Size	Designation	Load Index/ Speed Rating	Inflation Pressure bar (psi)	JCB Tyre Part Number	Max. Speed km/h (mph)
Goodyear	15.5 - 25 12 PR	SGL	168 A2	4 (58)	42/405700	30 (18.6)
JCB Sitemas- ter	15.5 - 25 12 PR	XLW	168 A2	4 (58)	332/H7461	30 (18.6)
JCB Earth- mover	15.5 R25	925 GPR L3	160 B	4 (58)	42/925396	30 (18.6)
Michellin ⁽¹⁾	15.5 R25	XHA L3	169 A2	4 (58)	42/105900	30 (18.6)
Michellin ⁽¹⁾	500/70 R24	IND XMCL	164 A8	3.5 (51)	331/64138	40 (24.9)
Michellin ⁽¹⁾	460/70 R24	IND XMCL	159 A8	4 (58)	42/925369	40 (24.9)
Alliance	460/70 R24	AGRO IN- DUSTRIAL	159 A8	4 (58)	333/H7444	40 (24.9)
Michellin ⁽¹⁾	445/70 R24	XM47	151 G	4.1 (59)	42/106600	40 (24.9)
Michellin ⁽¹⁾	500/70 R24	TH400	164 A8	3.5 (51)	334/D8386	40 (24.9)
Trelleborg ⁽¹⁾	480/65 R24	TL SF	146 D	3.8 (55)	42/925216	40 (24.9)
Nokian ⁽¹⁾	460/70 R24	BIBLOAD HARD SUR- FACE	159 A8	4 (58)	334/D3793	40 (24.9)
Michellin ⁽¹⁾	400/80 - 24	IND TL POW- ER CL	162 A8	4 (58)	332/C4655	40 (24.9)
Michellin ⁽¹⁾	500/70 R24	BIBLOAD HARD SUR- FACE	164 A8	3.5 (51)	334/F6896	40 (24.9)
Michellin ⁽¹⁾	400/80 - 24	IND TL POW- ER CL	156 A8	4 (58)	333/E2760	40 (24.9)
Mitas ⁽¹⁾	15.5/80 - 24	TR-01	151 A8	4 (58)	334/E3667	40 (24.9)

(1) This tyre is approved for fitment to European Tractor Type Approved Machines.

Table 133.

(For: 536T70 [T4F])

Hitch Options (JCB)

Hitch Type	Brake System	Recovery Hitch H0 ^m	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Trailer Mass kg ^m
				Top	Bottom	
Hitch H10	Piton H10	Unbraked	750	750	750	750
		Inertia braked	750	3,500	3,500	750
		Independently braked	750	6,000	6,000	6,000
		Proportional assisted braking	750	9,512	15,708	15,708

(1) The recovery hitch is only suitable for occasional off-highway use.
 (2) Local legislation may limit the maximum trailer mass.

Table 134. Maximum Trailer Mass

Hitch Type	Brake System	Recovery Hitch H0 ^m	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Tractor-Trailer Mass kg ^m
				Top	Bottom	
Hitch H10	Piton H10	Unbraked	8,985	8,985	8,985	8,985
		Inertia braked	8,985	11,735	11,735	8,985
		Independently braked	8,985	14,235	14,235	14,235
		Proportional assisted braking	8,985	17,747	23,943	23,943

(1) The recovery hitch is only suitable for occasional off-highway use.
 (2) Local legislation may limit the maximum trailer mass.

Table 136. Maximum Allowable Vertical Hitch Load

Hitch Type	JCB Tyre Part Number	Recovery Hitch H0 ^m	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Allowable Vertical Hitch Load kg ^m	
				Top	Bottom		
Hitch H10	Piton H10	42/405700	2,000	1,110	1,655	2,000	
		42/H7461	2,000	1,085	1,625	2,000	
		42/925396	2,000	1,085	1,625	2,000	
		42/105900	500	2,000	1,090	1,630	2,000
		331/64138	500	2,000	1,035	1,565	2,000
		42/925369	500	2,000	1,100	1,640	2,000
		333/H7444	500	2,000	1,100	1,640	2,000
		42/106600	500	2,000	1,095	1,635	2,000
		334/D8386	500	2,000	1,035	1,565	2,000
		42/925216	500	2,000	1,125	1,675	2,000
		334/D3793	500	2,000	1,100	1,640	2,000
		332/C4655	500	2,000	1,100	1,640	2,000
		334/F6896	500	2,000	1,035	1,565	2,000
		333/E2760	500	2,000	1,100	1,640	2,000
		334/E3667	500	2,000	1,125	1,600	1,650

(1) The recovery hitch is only suitable for occasional off-highway use.
 (2) Local legislation may limit the maximum trailer mass.



Hitch Options (Rockinger)

Table 137. Maximum Trailer Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Maximum Trailer Mass kg ⁽¹⁾	
		Top	Bottom
Ladder with P/ton/Ball 80mm H7/H8	Ladder Clevis H4/H5/H6	750	750
	Bottom	750	750
Unbraked		750	750
Inertia braked		3,500	3,500
Independently braked		6,000	6,000
Proportional assisted braking		15,708	15,708

(1) Local legislation may limit the maximum trailer mass.

Table 138. Maximum Tractor-Trailer Combination Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Maximum Tractor-Trailer Mass kg ⁽¹⁾	
		Top	Bottom
Ladder with P/ton/Ball 80mm H7/H8	Ladder Clevis H4/H5/H6	8,985	8,985
	Bottom	8,985	8,985
Unbraked		8,985	8,985
Inertia braked		11,735	11,735
Independently braked		14,235	14,235
Proportional assisted braking		23,943	23,943

(1) Local legislation may limit the maximum trailer mass.

Table 139. Maximum Allowable Vertical Hitch Load

Hitch Type	JCB Tyre Part Number	Fixed Clevis (Auto/Manual) H2/H3	Maximum Allowable Vertical Hitch Load kg ⁽¹⁾	
			Top	Bottom
Ladder with P/ton/Ball 80mm H7/H8		Ladder Clevis H4/H5/H6	1,840	1,840
		Bottom	1,840	1,840
42/405700		2,000	1,030	1,840
332/H7461		2,000	1,005	1,805
42/925396		2,000	1,005	1,805
42/105900		2,000	1,010	1,815
331/64138		1,965	955	1,745
42/925369		2,000	2,010	1,825
333/H7444		2,000	2,010	1,825
42/106600		2,000	1,015	1,820
334/D8386		1,965	955	1,745
42/925216		2,000	1,050	1,860
334/D3793		2,000	1,020	1,825
332/C4655		2,000	1,020	1,825
334/F6896		1,965	955	1,745
333/E2760		2,000	1,020	1,825
334/E3667		1,650	1,050	1,650

(1) Local legislation may limit the maximum trailer mass.

Brand	Size	Designation	Load Index/ Speed Rating	Inflation Pressure bar (psi)	JCB Tyre Part Number	Max. Speed km/h (mph)
Michelin ⁽¹⁾	460/70 R24	IND XMCL	159 A8	4 (58)	42/925369	40 (24.9)

(1) This tyre is approved for fitment to European Tractor Type Approved Machines.

Table 140.

(For: 536T70LP [T4F])





Hitch Options (JCB)

Table 141. Maximum Trailer Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1		Maximum Trailer Mass kg ⁽²⁾		
		JCB Ladder with Rockinger Clevis H9	Top	Bottom		
Unbraked	750	750	750	750	750	
	750	3,500	3,500	3,500	3,500	
	750	6,000	6,000	6,000	6,000	
	750	9,735	16,325	16,325	16,325	
Brake System	750	750	750	750	750	
	750	3,500	3,500	3,500	3,500	
	750	6,000	6,000	6,000	6,000	
	750	9,735	16,325	16,325	16,325	
Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Trailer Mass kg ⁽²⁾		Piton H10	
			JCB Ladder with Rockinger Clevis H9	Top		Bottom
			750	750		750
			750	3,500		3,500
Unbraked	750	750	750	750	750	
	750	3,500	3,500	3,500	3,500	
	750	6,000	6,000	6,000	6,000	
	750	9,735	16,325	16,325	16,325	
Inertia braked	750	3,500	3,500	3,500	3,500	
	750	6,000	6,000	6,000	6,000	
	750	9,735	16,325	16,325	16,325	
	750	16,325	16,325	16,325	16,325	
Independently braked	750	6,000	6,000	6,000	6,000	
	750	9,735	16,325	16,325	16,325	
	750	16,325	16,325	16,325	16,325	
	750	16,325	16,325	16,325	16,325	
Proportional assisted braking	750	6,000	6,000	6,000	6,000	
	750	9,735	16,325	16,325	16,325	
	750	16,325	16,325	16,325	16,325	
	750	16,325	16,325	16,325	16,325	

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 142. Maximum Tractor-Trailer Combination Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1		Maximum Tractor-Trailer Mass kg ⁽²⁾		
		JCB Ladder with Rockinger Clevis H9	Top	Bottom		
Unbraked	8,825	8,825	8,825	8,825	8,825	
	8,825	11,575	11,575	11,575	11,575	
	8,825	14,075	14,075	14,075	14,075	
	8,825	17,810	24,400	24,400	24,400	
Brake System	8,825	8,825	8,825	8,825	8,825	
	8,825	11,575	11,575	11,575	11,575	
	8,825	14,075	14,075	14,075	14,075	
	8,825	17,810	24,400	24,400	24,400	
Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Tractor-Trailer Mass kg ⁽²⁾		Piton H10	
			JCB Ladder with Rockinger Clevis H9	Top		Bottom
			8,825	8,825		8,825
			8,825	11,575		11,575
Unbraked	8,825	8,825	8,825	8,825	8,825	
	8,825	11,575	11,575	11,575	11,575	
	8,825	14,075	14,075	14,075	14,075	
	8,825	17,810	24,400	24,400	24,400	
Inertia braked	8,825	11,575	11,575	11,575	11,575	
	8,825	14,075	14,075	14,075	14,075	
	8,825	17,810	24,400	24,400	24,400	
	8,825	24,400	24,400	24,400	24,400	
Independently braked	8,825	14,075	14,075	14,075	14,075	
	8,825	17,810	24,400	24,400	24,400	
	8,825	24,400	24,400	24,400	24,400	
	8,825	24,400	24,400	24,400	24,400	
Proportional assisted braking	8,825	14,075	14,075	14,075	14,075	
	8,825	17,810	24,400	24,400	24,400	
	8,825	24,400	24,400	24,400	24,400	
	8,825	24,400	24,400	24,400	24,400	

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 143. Maximum Allowable Vertical Hitch Load

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1		Maximum Allowable Vertical Hitch Load kg ⁽²⁾		
		JCB Ladder with Rockinger Clevis H9	Top	Bottom		
Unbraked	500	500	500	500	500	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
Brake System	500	500	500	500	500	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Allowable Vertical Hitch Load kg ⁽²⁾		Piton H10	
			JCB Ladder with Rockinger Clevis H9	Top		Bottom
			500	500		500
			500	2,000		2,000
Unbraked	500	500	500	500	500	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
Inertia braked	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
Independently braked	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
Proportional assisted braking	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	
	500	2,000	2,000	2,000	2,000	

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.



Hitch Options (Rockinger)

Table 144. Maximum Trailer Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Trailer Mass kg ⁽¹⁾
		Top	Bottom	
Unbraked	750	750	750	750
Inertia braked	3,500	3,500	3,500	3,500
Independently braked	6,000	6,000	6,000	6,000
Proportional assisted braking	16,325	16,325	16,325	16,325

(1) Local legislation may limit the maximum trailer mass.

Table 145. Maximum Tractor-Trailer Combination Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Tractor-Trailer Mass kg ⁽¹⁾
		Top	Bottom	
Unbraked	8,825	8,825	8,825	8,825
Inertia braked	11,575	11,575	11,575	11,575
Independently braked	14,075	14,075	14,075	14,075
Proportional assisted braking	24,400	24,400	24,400	24,400

(1) Local legislation may limit the maximum trailer mass.

Table 146. Maximum Allowable Vertical Hitch Load

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Allowable Vertical Hitch Load kg ⁽¹⁾
		Top	Bottom	
Unbraked	8,825	8,825	8,825	8,825
Inertia braked	11,575	11,575	11,575	11,575
Independently braked	14,075	14,075	14,075	14,075
Proportional assisted braking	24,400	24,400	24,400	24,400

(1) Local legislation may limit the maximum trailer mass.



(For: 535-95 [T4F], 535-95 [UN3/GB3], 535T95 [T4F])

Table 147. Tyre Specifications

Brand	Size	Designation	Load Index/ Speed Rating	Inflation Pressure bar (psi)	JCB Tyre Part Number	Max. Speed km/h (mph)
JCB Sitemas-ter	15.5 - 25 12	XLW	168 A2	4 (58.0)	332/H7461	30 (18.6)
Michelin	15.5 R25	XHA L3	169 A2	4 (58.0)	42/105900	30 (18.6)
JCB Earth-mover	15.5 R25	925 GPR L3	160 B	4 (58.0)	42/925396	30 (18.6)
Goodyear	15.5 - 25 12 PR	SGL	168 A2	4 (58.0)	42/405700	30 (18.6)
Michelin	445/70 R24	XM47	151 G	4.1 (59.4)	42/106600	40 (24.9)
Alliance ⁽¹⁾	460/70 R24	AGRO IN-DUSTRIAL	159 A8	4 (58.0)	333/H7444	40 (24.9)
Trelleborg ⁽¹⁾	500/70 R24	TH400	164 A8	3.5 (50.7)	334/D8386	40 (24.9)
Michelin	500/70 R24	IND XMCL	164 A8	3.5 (50.7)	331/64138	40 (24.9)
Michelin ⁽¹⁾	460/70 R24	BIBLOAD HARD SUR- FACE	159 A8	3.5 (50.7)	334/D3793	40 (24.9)
Michelin ⁽¹⁾	400/80 - 24	IND TL POW- ER CL	162 A8	4 (58.0)	332/C4655	40 (24.9)
Michelin ⁽¹⁾	500/70 R24	BIBLOAD HARD SUR- FACE	164 A8	3.5 (50.7)	334/F6896	40 (24.9)
Michelin ⁽¹⁾	400/80 - 24	IND TL POW- ER CL	156 A8	4 (58.0)	333/E2760	40 (24.9)
Continental ⁽¹⁾	445/70 R24	MPT AC70	151 G	4.5 (65.2)	42/925361	40 (24.9)

(1) This tyre is approved for fitment to European Tractor Type Approved Machines.



Hitch Options (JCB)

Table 148. Maximum Trailer Mass

Hitch Type	Recovery Hitch H0 ^m	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Trailer Mass kg ^m	
			Top	Bottom		
Brake System	750	750	750	750	750	
						Unbraked
						Inertia braked
						Independently braked
Proportional assisted braking	750	8,965	14,268	6,000	14,268	
						Proportional assisted
						Independently braked
						Unbraked

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 149. Maximum Tractor-Trailer Combination Mass

Hitch Type	Recovery Hitch H0 ^m	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Tractor-Trailer Mass kg ^m	
			Top	Bottom		
Brake System	9,445	9,445	9,445	9,445	9,445	
						Unbraked
						Inertia braked
						Independently braked
Proportional assisted braking	9,445	14,695	17,660	22,963	22,963	
						Proportional assisted
						Independently braked
						Unbraked

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 150. Maximum Allowable Vertical Hitch Load

Hitch Type	JCB Tyre Part Number	Recovery Hitch H0 ^m	Hydraulic Pick-up Hitch H1	Maximum Allowable Vertical Hitch Load kg ^m		
				Top	Bottom	
Piton H10	332/H7461	1,800	1,800	980	1,540	
						500
						500
						500
						500
						500
						500
						500
						500
						500
332/H7444	333/H7444	1,800	1,800	930	1,485	
						500
						500
						500
						500
						500
						500
						500
						500
						500
334/D8386	334/D3793	1,800	1,800	995	1,560	
						500
						500
						500
						500
						500
						500
						500
						500
						500
332/C4655	334/F6896	1,800	1,800	930	1,485	
						500
						500
						500
						500
						500
						500
						500
						500
						500
42/106600	42/25361	1,800	1,800	995	1,570	
						500
						500
						500
						500
						500
						500
						500
						500
						500

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.



Hitch Options (Rockinger)

Table 151. Maximum Trailer Mass

Hitch Type	Fixed Clevis (Auto/Man-ual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Trailer Mass kg ^m	
		Top	Bottom		
Brake System	Ladder with Piton/Ball 80mm H7/H8	Maximum Trailer Mass kg ^m		750	
		Unbraked	750	750	750
		Inertia braked	3,500	3,500	3,500
		Independently braked	6,000	6,000	6,000
		Proportional assisted braking	14,268	14,268	14,268

(1) Local legislation may limit the maximum trailer mass.

Table 152. Maximum Tractor-Trailer Combination Mass

Hitch Type	Fixed Clevis (Auto/Man-ual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Tractor-Trailer Mass kg ^m	
		Top	Bottom		
Brake System	Ladder with Piton/Ball 80mm H7/H8	Maximum Tractor-Trailer Mass kg ^m		9,445	
		Unbraked	9,445	9,445	9,445
		Inertia braked	12,195	12,195	12,195
		Independently braked	14,695	14,695	14,695
		Proportional assisted braking	22,963	22,963	22,963

(1) Local legislation may limit the maximum trailer mass.

Table 153. Maximum Allowable Vertical Hitch Load

Hitch Type	Fixed Clevis (Auto/Man-ual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Allowable Vertical Hitch Load kg ^m	
		Top	Bottom		
JCB Tyre Part Number	Ladder with Piton/Ball 80mm H7/H8	Maximum Allowable Vertical Hitch Load kg ^m		1,800	
		332/H7461	1,850	890	1,720
		42/105900	1,850	895	1,730
		42/925396	1,850	890	1,720
		42/405700	1,850	915	1,750
		42/106600	1,850	900	1,730
		333/H7444	1,850	905	1,740
		334/D8386	1,850	835	1,655
		331/64138	1,850	835	1,655
		334/D3793	1,850	905	1,740
		332/C4655	1,850	905	1,740
		334/F6896	1,850	835	1,655
		333/E2760	1,850	905	1,740
		42/925361	1,850	915	1,750

(1) Local legislation may limit the maximum trailer mass.



(For: 531-70 [T4F], 531T70 [T4F])

Table 154. Tyre Specifications

Brand	Size	Designation	Load Index/Speed Rating	Inflation Pressure (psi)	JCB Tyre Part Num-	Max. Speed (mph)
Goodyear	15.5 - 25 12 PR	SGL	168 A2	4 (58.0)	42/405700	30 (18.6)
JCB Stiemaster	15.5 - 25 12 PR	XLW	168 A2	4 (58.0)	332/H7461	30 (18.6)
JCB Earthmover	15.5 R25	925 GPR L3	160 B	4 (58.0)	42/925396	30 (18.6)
Michellin	15.5 R25	XHA L3	169 A2	4 (58.0)	42/105900	30 (18.6)
Nokian	480/65 R24	TL SF	146 D	3.8 (55.1)	42/925216	40 (24.9)
Alliance	460/70 R24	AGRO INDUSTRIAL	159 A8	4 (58.0)	333/H7444	40 (24.9)
Michellin	400/80 - 24	IND TL POWER CL	156 A8	4 (58.0)	333/E2760	40 (24.9)
Trelleborg	500/70 R24	TH400	164 A8	3.5 (50.7)	334/D8386	40 (24.9)
Michellin	400/80 - 24	IND TL POWER CL	162 A8	4 (58.0)	332/C4655	40 (24.9)
Michellin	460/70 R24	BIBLOAD HARD SURFACE	159 A8	4 (58.0)	334/D3793	40 (24.9)
Michellin	500/70 R24	IND XMCL	164 A8	3.5 (50.7)	331/64138	40 (24.9)
Michellin	500/70 R24	BIBLOAD HARD SURFACE	164 A8	3.5 (50.7)	334/F6896	40 (24.9)
Michellin	460/70 R24	IND XMCL	159 A8	4 (58.0)	42/925369	40 (24.9)
Michellin	15.5/80 - 24	TR-01	151 A8	4 (58.0)	334/E3667	40 (24.9)

(1) This tyre is approved for fitment to European Tractor Type Approved Machines.



Hitch Options (JCB)

Table 155. Maximum Trailer Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Trailer Mass kg ⁽²⁾		
			Top	Bottom	
Brake System	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Trailer-Trailer Mass kg ⁽²⁾		
			Unbraked	750	750
			Inertia braked	750	3,500
			Independently braked	750	6,000
Proportional assisted braking	750	10,307	17,280	17,280	

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 156. Maximum Tractor-Trailer Combination Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Tractor-Trailer Mass kg ⁽²⁾		
			Top	Bottom	
Brake System	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Tractor-Trailer Mass kg ⁽²⁾		
			Unbraked	8,470	8,470
			Inertia braked	8,470	11,220
			Independently braked	8,470	13,720
Proportional assisted braking	8,470	18,027	25,000	25,000	

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 157. Maximum Allowable Vertical Hitch Load

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Allowable Vertical Hitch Load kg ⁽²⁾		
			Top	Bottom	
JCB Tyre Part Number	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Allowable Vertical Hitch Load kg ⁽²⁾		
			42/405700	1,900	885
			332/H7461	1,870	865
			42/925396	1,870	865
			42/105900	1,880	870
			42/925216	1,925	905
			333/H7444	1,885	875
			333/E2760	1,885	875
			334/D8386	1,805	820
			332/C4655	1,885	875
			334/D3793	1,885	875
			331/64138	1,805	820
			334/F6896	1,805	820
			42/925369	1,885	875
			334/E3667	500	1,750

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.



Hitch Options (Rockinger)

Table 158. Maximum Trailer Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Maximum Trailer Mass kg ⁽¹⁾	
		Top	Bottom
Ladder with Piton/Ball 80mm H7/H8			
Unbraked	750	750	750
Inertia braked	3,500	3,500	3,500
Independently braked	6,000	6,000	6,000
Proportional assisted braking	17,280	17,280	17,280

(1) Local legislation may limit the maximum trailer mass.

Table 159. Maximum Tractor-Trailer Combination Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Maximum Tractor-Trailer Mass kg ⁽¹⁾	
		Top	Bottom
Ladder with Piton/Ball 80mm H7/H8			
Unbraked	8,470	8,470	8,470
Inertia braked	11,220	11,220	11,220
Independently braked	13,720	13,720	13,720
Proportional assisted braking	25,000	25,000	25,000

(1) Local legislation may limit the maximum trailer mass.

Table 160. Maximum Allowable Vertical Hitch Load

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Maximum Allowable Vertical Hitch Load kg ⁽¹⁾	
		Top	Bottom
Ladder with Piton/Ball 80mm H7/H8			
42/405700	1,755	805	1,550
332/H7461	1,720	785	1,520
42/925396	1,720	785	1,520
42/105900	1,730	790	1,525
42/925216	1,775	825	1,570
333/H7444	1,740	795	1,535
333/E2760	1,740	795	1,535
334/D8386	1,660	735	1,460
332/C4655	1,740	795	1,535
334/D3793	1,740	795	1,535
331/64138	1,660	735	1,460
334/F6896	1,660	735	1,460
42/925369	1,740	795	1,535
334/E3667	1,775	825	1,570

(1) Local legislation may limit the maximum trailer mass.



(For: 550-80 [T4F], 550U80 [T4F])

Table 161. Tyre Specifications

Brand ⁽¹⁾	Size	Designation	Load Index/Speed Rating	Inflation Pressure bar (psi)	JCB Tyre Part Num-ber	Max. Speed km/h (mph)
Michelin ⁽⁴⁾	17.5 R25	XMINE D2**	-	6 (87)	333/T9071	30 (18.6)
ITWS ⁽⁵⁾	1300-24	SE TRACTION	145 A8	N/A	332/F3525	30 (18.6)
Michelin ⁽³⁾	500/70 R24	XMCL	164 A8	4.2 (61)	42/925370	40 (24.9)
Mitas	17.5 - 25	EM60	177 A2	4.3 (62)	333/C7324	40 (24.9)
	16PR					
Michelin ⁽⁴⁾	440/80/ R26	XMCL	161 A8	4.4 (64)	332/W0574	40 (24.9)
Michelin ⁽³⁾	480/80 R26	BIBLOAD HARD SURFACE	167 A8	4 (58)	334/E0759	40 (24.9)
Michelin ⁽³⁾	480/80 R26	XMMLC	160 A8	3.7 (54)	333/F8823	40 (24.9)
Nokian ⁽⁶⁾	500/70 R24	TRI Steel 2	164 A8	4 (58)	333/D9811	40 (24.9)

(1) The recovery hitch is only suitable for occasional off-highway use

(2) Local legislation may limit the maximum trailer mass

(3) This tyre is approved for fitment to European Tractor Type Approved Machines

(4) These tyres are limited to a maximum travel distance of 6km (3.7 miles) in any one hour period. Speeds above 6kph (3.7 mph) are permitted in short bursts provided the maximum distance

(5) Semi-solid tyre. These tyres are limited to a maximum travel distance of 5km (3 miles) in any one hour period. Speeds above 5kph (3 mph) are permitted in short bursts provided the maximum distance travelled in

one hour does not exceed 5 km or 3 miles.



Hitch Options (JCB)

Table 162. Maximum Trailer Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Trailer Mass kg ⁽²⁾								
			Top	Bottom									
Hitch System	Unbraked	750	750	750	750								
						Inertia braked	750	3,500	3,500				
										Independently braked	750	6,000	6,000

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 163. Maximum Tractor-Trailer Combination Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Tractor-Trailer Mass kg ⁽²⁾								
			Top	Bottom									
Hitch System	Unbraked	11,555	11,555	11,555	11,555								
						Inertia braked	11,555	14,305	14,305				
										Independently braked	11,555	16,805	16,805

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 164. Maximum Allowable Vertical Hitch Load

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	JCB Ladder with Rockinger Clevis H9		Maximum Allowable Vertical Hitch Load kg ⁽²⁾	
			Top	Bottom		
JCB Tyre Part Number	333/T9071	500	1,915	745	500	
	332/F3525	500	-	-	-	
	42/925370	500	1,915	745	500	
	333/C7324	500	1,760	625	500	
	333/W0574	500	1,915	745	500	
	334/E0759	500	1,730	600	500	
	333/F8823	500	1,730	600	500	
	333/D9811	500	1,915	745	500	

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Hitch Options (Rockinger)
Table 165. Maximum Trailer Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Trailer Mass kg ⁽¹⁾
		Top	Bottom	
Unbraked		750	750	750
Inertia braked		3,500	3,500	3,500
Independently braked		6,000	6,000	6,000
Proportional assisted braking		10,804	10,804	10,804

(1) Local legislation may limit the maximum trailer mass.

Table 166. Maximum Tractor-Trailer Combination Mass

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Tractor-Trailer Mass kg ⁽¹⁾
		Top	Bottom	
Unbraked		11,555	11,555	11,555
Inertia braked		14,305	14,305	14,305
Independently braked		16,805	16,805	16,805
Proportional assisted braking		21,611	21,611	21,611

(1) Local legislation may limit the maximum trailer mass.

Table 167. Maximum Allowable Vertical Hitch Load

Hitch Type	Fixed Clevis (Auto/Manual) H2/H3	Ladder Clevis H4/H5/H6		Maximum Allowable Vertical Hitch Load kg ⁽¹⁾
		Top	Bottom	
333/T9071		-	-	-
332/F3525		-	-	-
42/925370	1,585	630	1,515	1,910
333/C7324	1,435	505	1,370	1,750
332/M0574	1,585	630	1,515	1,910
334/E0759	1,405	485	1,340	1,725
333/F8823	1,405	485	1,340	1,725
333/D9811	1,585	630	1,515	1,910

(1) Local legislation may limit the maximum trailer mass.



(For: 560-80 [T4F], 560U80 [T4F])

Table 168. Tyre Specifications

Brand ^(1,2)	Size	Designation	Load Index/ Speed Rating	Inflation Pressure bar (psi)	JCB Tyre Part Num-ber	Max. Speed km/h (mph)
Michelin ⁽³⁾	17.5 R25	XMINE D2**	-	6 (87)	333/T9071	30 (18.6)
ITWS ⁽⁴⁾	1300-24	SE TRACTION	145 A8	N/A	332/F3525	30 (18.6)
Michelin ⁽³⁾	500/70 R24	XMCL	164 A8	4.2 (61)	42/925370	40 (24.9)
Michelin ⁽³⁾	480/80 R26	XMCL	160 A8	3.7 (54)	333/F8823	40 (24.9)
Michelin ⁽³⁾	480/80 R26	BIBLOAD HARD SURFACE	160 A8	4 (58)	334/E0759	40 (24.9)

(1) The recovery hitch is only suitable for occasional off-highway use

(2) Local legislation may limit the maximum trailer mass

(3) These tyres are limited to a maximum travel distance of 6km (3.7 miles) in any one hour period. Speeds above 6kph (3.7 mph) are permitted in short bursts provided the maximum distance

(4) These tyres are limited to a maximum travel distance of 6km (3.7 miles) in any one hour period. Speeds above 6kph (3.7 mph) are permitted in short bursts provided the maximum distance

(5) Semi-solid tyre. These tyres are limited to a maximum travel distance of 6km (3 miles) in any one hour period. Speeds above 5kph (3 mph) are permitted in short bursts provided the maximum distance travelled in

one hour does not exceed 5 km or 3 miles.



Hitch Options (JCB)

Table 169, Maximum Trailer Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Trailer Mass kg ⁽²⁾	
			Top	Bottom
JCB Ladder with Rockinger Clevis H9	-	-	750	750
			3,500	3,500
Independently braked	750	6,000	6,000	6,000
			750	750
Proportional assisted braking	750	7,350	10,572	10,572
			750	750

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 170, Maximum Tractor-Trailer Combination Mass

Hitch Type	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Tractor-Trailer Mass kg ⁽²⁾	
			Top	Bottom
JCB Ladder with Rockinger Clevis H9	-	-	11,800	11,800
			14,550	14,550
Unbraked	11,800	14,550	14,550	14,550
			11,800	11,800
Independently braked	11,800	17,050	17,050	17,050
			11,800	11,800
Proportional assisted braking	11,800	18,399	21,621	21,621
			11,800	11,800

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Table 171, Maximum Allowable Vertical Hitch Load

Hitch Type	JCB Tyre Part Num-ber	Recovery Hitch H0 ⁽¹⁾	Hydraulic Pick-up Hitch H1	Maximum Allowable Vertical Hitch Load kg ⁽²⁾	
				Top	Bottom
Piton H10	-	-	-	1,910	1,910
				2,000	2,000
333/T9071	500	-	-	-	-
				500	500
332/F3525	500	-	-	-	-
				500	500
42/925370	500	1,940	705	1,425	2,000
				500	500
333/F8823	500	1,550	655	1,255	1,550
				500	500
334/E0759	500	1,745	655	1,255	1,910
				500	500

(1) The recovery hitch is only suitable for occasional off-highway use.
(2) Local legislation may limit the maximum trailer mass.

Brand	Size	Designation	Load Index/Speed Rating	Inflation Pressure (psi)	JCB Part Max. Speed
JCB Sitemaster	15.5 - 25 12	XLW	168 A2	4 (58.0)	332/H7461 30 (18.6)
Michelin	15.5 R25	XHA L3	169 A2	4.5 (65.2)	42/105900 30 (18.6)
Goodyear	15.5 - 25 12	SGL	168 A2	4 (58.0)	42/405700 30 (18.6)
Michelin	15.5 R25	XTLA L2	169 A2	4.5 (65.2)	42/107000 30 (18.6)
Galaxy	15.5 - 25 12	GIRAFFE L2 TRAC-TION	168 A2	4 (58.0)	332/D0017 30 (18.6)
Michelin	440/80 - 24	IND TL POWER CL	168 A8	4.5 (65.2)	332/C4139 30 (18.6)
JCB Earthmover	15.5 R25	925 GPR L3	160 B	4.5 (65.2)	42/925396 30 (18.6)
Nokian	460/65 R24	TRI 2	156 A8	4.5 (65.2)	42/925398 30 (18.6)

Table 175. Tyre Specifications

Hitch Type	JCB Tyre Part Number	Fixed Clevis (Auto/Manual) H2/H3		Ladder Clevis H4/H5/H6		Ladder with Piton/Ball 80mm H7/H8	Maximum Allowable Vertical Hitch Load kg ⁽¹⁾
		Top	Bottom	Top	Bottom		
Unbraked	333/T9071	-	-	-	-	-	-
Inertia braked	332/F3525	-	-	-	-	-	-
Independently braked	42/925370	1,590	585	1,515	1,935	1,935	1,935
Proportional assisted braking	334/E0759	1,400	430	1,335	1,735	1,735	1,735

(1) Local legislation may limit the maximum trailer mass.

Table 174. Maximum Allowable Vertical Hitch Load

Hitch Type	Brake System	Fixed Clevis (Auto/Manual) H2/H3		Ladder Clevis H4/H5/H6		Ladder with Piton/Ball 80mm H7/H8	Maximum Tractor-Trailer Mass kg ⁽¹⁾
		Top	Bottom	Top	Bottom		
Unbraked		11,800	11,800	11,800	11,800	11,800	11,800
Inertia braked		14,550	14,550	14,550	14,550	14,550	14,550
Independently braked		17,050	17,050	17,050	17,050	17,050	17,050
Proportional assisted braking		21,621	21,621	21,621	21,621	21,621	21,621

(1) Local legislation may limit the maximum trailer mass.

Table 173. Maximum Tractor-Trailer Combination Mass

Hitch Type	Brake System	Fixed Clevis (Auto/Manual) H2/H3		Ladder Clevis H4/H5/H6		Ladder with Piton/Ball 80mm H7/H8	Maximum Trailer Mass kg ⁽¹⁾
		Top	Bottom	Top	Bottom		
Unbraked		750	750	750	750	750	750
Inertia braked		3,500	3,500	3,500	3,500	3,500	3,500
Independently braked		6,000	6,000	6,000	6,000	6,000	6,000
Proportional assisted braking		10,572	10,572	10,572	10,572	10,572	10,572

(1) Local legislation may limit the maximum trailer mass.

Hitch Options (Rockinger)

Table 172. Maximum Trailer Mass



Hitch Type	JCB Tyre Part Number	Maximum Allowable Vertical Hitch Load kg
	332/H7461 JCB Sitemaster 15.5-25 XLW	500
	42/105900 Michelin 15.5 R25 XHA	500
	42/405700 Goodyear 15.5-25 SGL	500
	42/107000 Michelin 15.5-25 XTLA L2	500
	332/D0017 Galaxy 15.5-25 Giraffe L2 Traction	500
	332/C4139 Michelin 440/80-24 Power CL	500
	42/925396 JCB Earthmover 15.5 R25 925	500
	42/925398 Nokian 460/65 R24 TRI 2	500

Table 177. Maximum Allowable Vertical Hitch Load

(1) The mechanical hitch is only suitable for occasional off-highway use.
 (2) Local legislation may limit the maximum trailer mass or prevent towing on public roads.

Hitch Type	Mechanical Hitch H0 ⁽²⁾	Maximum Trailer Mass kg ⁽²⁾	Brake System	Unbraked	Inertia braked
				750	750

Table 176. Maximum Trailer Mass

Hitch Options





Declaration of Conformity

General

A completed copy of the EC Declaration of Conformity is supplied with all machines manufactured according to EC type examination and/or self-certification requirements.

A sample copy of the EC Declaration of Conformity and a summary of the information that can appear is provided. Refer to: Data (Page 498).

Data

Table 178.

A	Refer to: Name and Address of the Manufacturer (Page 7).
B	Lift Truck, Combustion-Engine Driven, Counterbalanced (Rough Terrain Trucks)
C	Refer to: Model and Serial Number (Page 1).
D	Refer to: Machine (Page 10).
E	EN 1459-1:2017
F	Engineering Director, JCB Excavators Limited, Lakeside Works, Rocoester, Staffordshire, United Kingdom, ST14 5JP
G	Principal Engineer NVH, JCB Excavators Limited, Lakeside Works, Rocoester, Staffordshire, United Kingdom, ST14 5JP
H	ANNEX VI PROCEDURE 1
J	A. V. Technology, A. V. House, Birdhall Lane, Stockport, Cheshire, United Kingdom, SK3 0XU
K	Refer to: Noise Emissions (Page 425).
L	Refer to: Noise Emissions (Page 425).
M	Rocoester
N	Managing Director
P	Variable reach truck



Figure 419.

DECLARATION OF CONFORMITY

I HEREBY DECLARES THAT THE MACHINERY / EQUIPMENT DESCRIBED BELOW:

NAME AND ADDRESS OF MANUFACTURER:

DESIGNATION OF MACHINERY/EQUIPMENT:

DESCRIPTION OF MACHINERY / EQUIPMENT:

TRADE NAME:

MODEL NAME:

SERIAL NUMBER OF MACHINERY / EQUIPMENT:

COMPLIES WITH THE PROVISIONS OF THE "MACHINERY DIRECTIVE" (DIRECTIVE 2006/42/EC AS AMENDED):

THE FOLLOWING STANDARDS HAVE BEEN USED:

NAME AND ADDRESS OF THE PERSON WHO COMPLETES THE TECHNICAL DOCUMENTATION:

COMPLIES WITH THE PROVISIONS OF THE "ELECTRO-MAGNETIC COMPATIBILITY DIRECTIVE" (DIRECTIVE 2004/108/EC AS AMENDED):

COMPLIES WITH THE PROVISIONS OF THE "NOISE EMISSIONS IN THE ENVIRONMENT BY EQUIPMENT FOR USE OUTDOORS DIRECTIVE" (DIRECTIVE 2000/14/EC AS AMENDED):

TECHNICAL DOCUMENTATION:

NAME AND ADDRESS OF THE PERSON WHO KEEPS THE TECHNICAL DOCUMENTATION:

CONFORMITY ASSESSMENT PROCEDURE:

NAME AND ADDRESS OF NOTIFIED BODY:

MEASURED SOUND POWER LEVEL ON EQUIPMENT REPRESENTATIVE FOR THIS TYPE:

GUARANTEED SOUND POWER LEVEL FOR THIS EQUIPMENT:

NET INSTALLED POWER / MASS OF APPLIANCE:

PLACE OF DECLARATION:

DATE OF DECLARATION:

NAME OF AUTHORIZED SIGNATORY:

POSITION:

SIGNATURE:

English

9814/0850

Issue 4

Figure 422. 500h/6 Month

Figure 421. 1st 100h/1 Month

Figure 420. Installation Checklist

	Annual Insurance (Yes)		Hours
	Signature and stamp		Date

Table 179.

Service Record Sheet

Warranty Information

Technical Data
Warranty Information

