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Safety Notices

Important Information

T1-015

The Operator Manual

⚠ WARNING

Study the Operator Manual before starting the machine. You must understand and follow the instructions in the Operator Manual. You must observe all relevant laws and regulations. If you are unsure about anything, ask your JCB dealer or employer. Do not guess, you or others could be killed or seriously injured.

INT-1-1-1_2

Do not operate the machine without an Operator Manual.

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

Safety Warnings



This safety alert system identifies important safety messages in this manual. When you see this symbol, be alert, your safety is involved, carefuly read the message that follows, and inform other operators.

In this publication and on the machine, there are safety notices. Each notice starts with a signal word. The signal word meanings are given below.

⚠ DANGER

Denotes an extreme hazard exists. If proper precautions are not taken, it is highly probable that the operator (or others) could be killed or seriously injured.

INT-1-2-1

⚠ WARNING

Denotes a hazard exists. If proper precautions are not taken, the operator (or others) could be killed or seriously injured.

INT-1-2-2

⚠ CAUTION

Denotes a reminder of safety practices. Failure to follow these safety practices could result in injury to the operator (or others) and possible damage to the machine.

INT-1-2-3

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Identifying Your Machine

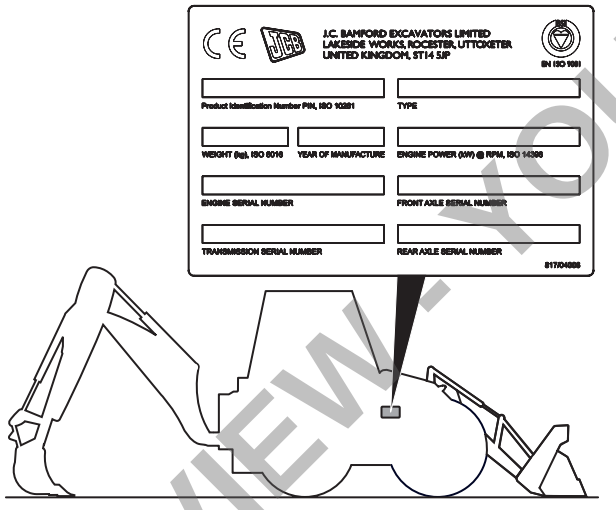
Machine Identification Plate

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

Note: *The machine model and build specification is indicated by the PIN. Refer to* ***Typical Product Identification Number (PIN)****.*

The serial number of each major unit is also stamped 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 stamp the new number of the unit on the identification plate, or simply stamp out 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.

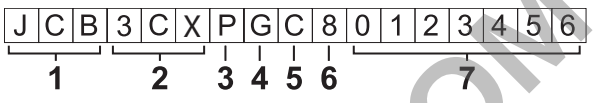


T025210-1

Fig 4.

Component Identification Plates

Typical Product Identification Number (PIN)



T016220-3

Fig 5.

1 World Manufacturer Identification (3 Digits)

2 Machine Model (3 Digits)

3CX

3 Engine Type (1 Digit)

JCB Dieselmax (Tier 3):

P = Turbocharged and after-cooled, 85kW (114Hp)

S = Turbocharged, 74kW (100Hp)

T = Turbocharged, 63kW (85Hp)

4 Gearbox Model (1 Digit)

G = 4-Speed (Synchro shuttle PS750)

H = 4-Speed (Powershift)

J = 6-Speed (Powershift)

5 Check Letter (1 Digit)

The Check Letter is used to verify the authenticity of a machine's PIN.

6 Year of Manufacture (1 Digit)

7 = 2007	A = 2010
8 = 2008	B = 2011
9 = 2009	C = 2012

7 Machine Serial Number (7 Digits)

Each machine has a unique serial number.

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Operation

Introduction

T2-006_2

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.

Before you start the machine, you must know how the machine operates. Use your 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 distributor.

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.

Finally, 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

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Cab Layout

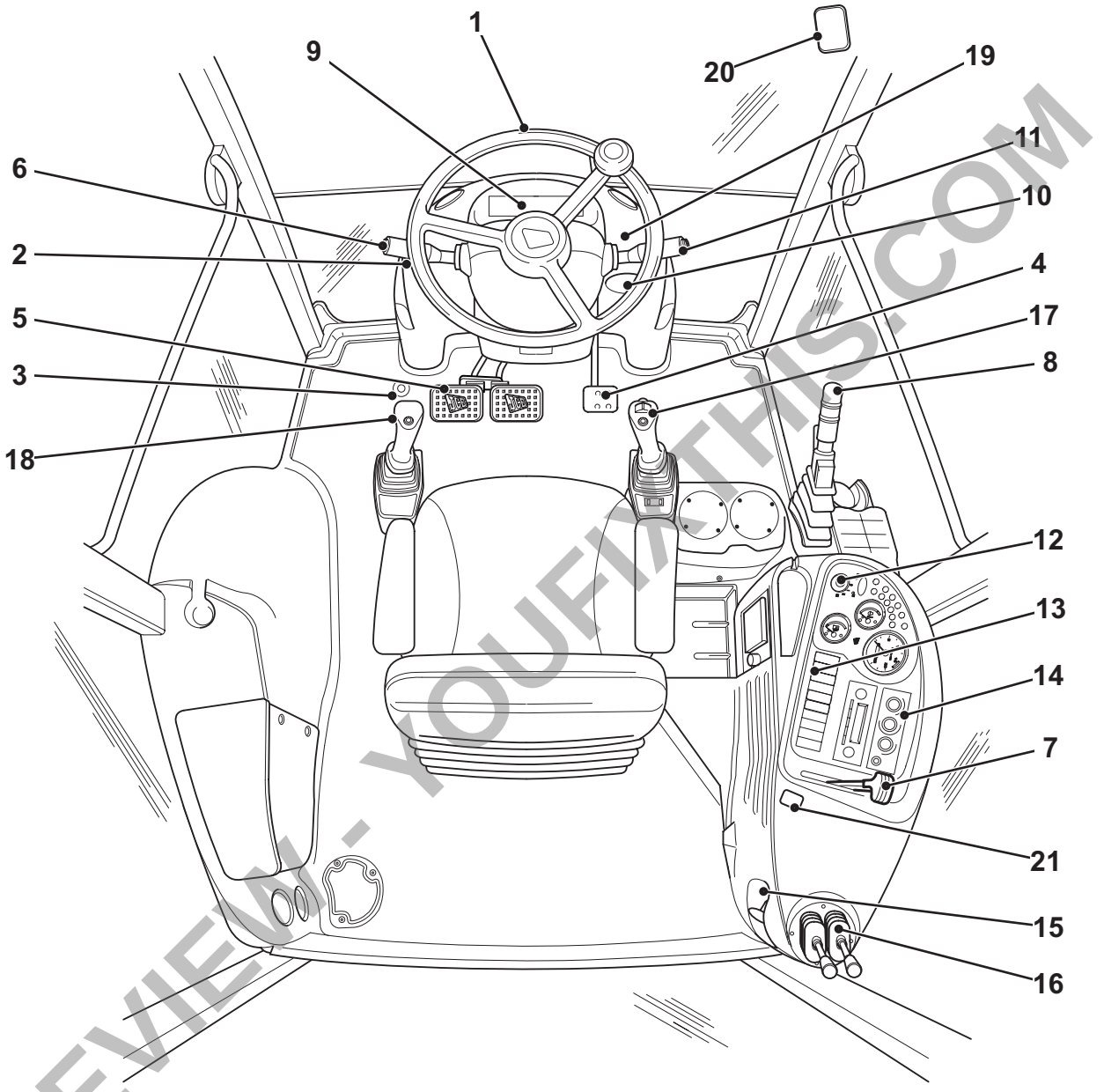


Fig 11.

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Optional Attachments

Introduction

T4-002

⚠ WARNING

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.

2-4-5-2_1

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

JCB attachments are designed and manufactured specifically to suit the machine's hydraulic system, mounting arrangements and safe load requirements. Attachments which are not designed for use with this machine may cause damage and create safety hazards for which JCB cannot be held responsible. In addition the machine's warranty, "CE" and any other legislative compliance may be affected by the use of non JCB approved attachments.

2-4-1-13_2

⚠ CAUTION

If you have an attachment which is not covered in the Operator 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.

5-5-1-1_2

This part of the manual includes general information on attachment operation and instructions for installation and removal of attachments.

Some attachments are supplied complete with instructions on safety, installing and removing, operation and maintenance. Read and fully understand the information before fitting, using and servicing the attachment. If there is anything you do not understand, ask your JCB Distributor.

Before using any attachment, read again ***Working With The Machine*** in the Operation section and consider how the attachment is going to affect operational safety. With the attachment fitted, there may be changes in the machine's centre of gravity or overall dimensions. This could have an effect on, for example, machine stability, the gradients on which it is safe to operate or the safe distance from power lines.

Practice using attachments off the job before working with them for the first time.

If your machine needs the hydraulic system adapting to facilitate the use of auxiliary attachments, you must consult your distributor. Only suitably qualified personnel must re-route hydraulic hoses.

All optional attachments will have limits on their operation. i.e. lifting capacity, speeds, hydraulic flow rates, etc. Always check in the literature supplied with the attachment or in the SPECIFICATION section of this manual. Some specification limits may also be displayed on the attachments Data/Rating Plate.

⚠ CAUTION

Some attachments may contact parts of the machine when in the fully folded position. Take extra care to avoid damage to the machine.

3-4-1-4

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Using the Knuckle Boom

The knuckle boom permits the dipper to be pivoted up to 30 degrees each side of the centre line. With a knuckle boom you can, for example, dig around obstacles without moving the machine.

1 Make sure the seat is locked in the rear facing position. The excavator auxiliary roller switch can not be operated with the seat locked in the forward facing position.

2 Enable excavator auxiliary services with rocker switch **F**.

3 Press and release the servo enable switch **B**, the lights on the top of both joysticks will illuminate.

4 Raise the shovel.

5 Push the right hand control lever thumb switch to the left to pivot left **C** and right to pivot to the right **D**.

6 To isolate the control lever thumb switch, press rocker switch **F** to the centre position.

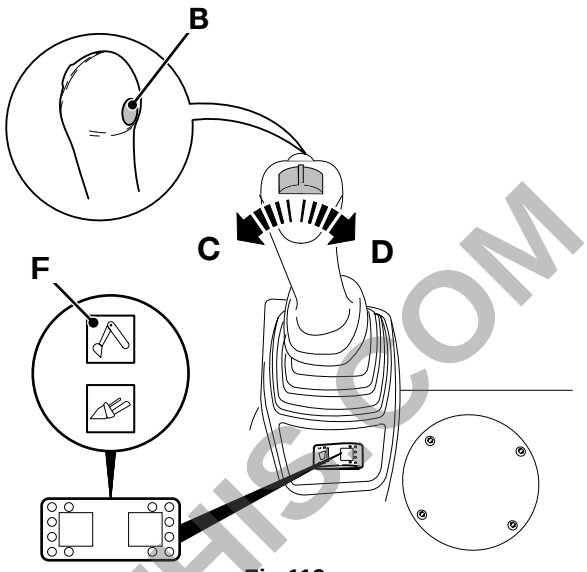


Fig 119.

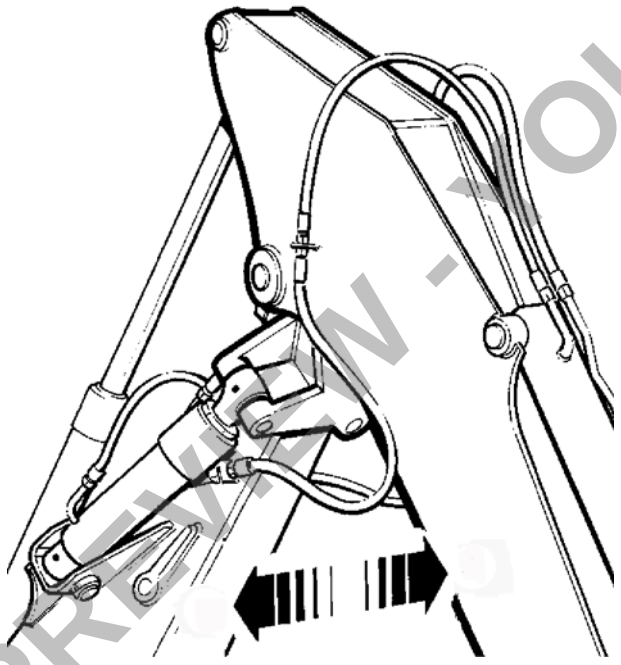


Fig 118.

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Loader Arms

Total 22 grease points.

For each grease point shown, there is another on the other side of the machine.

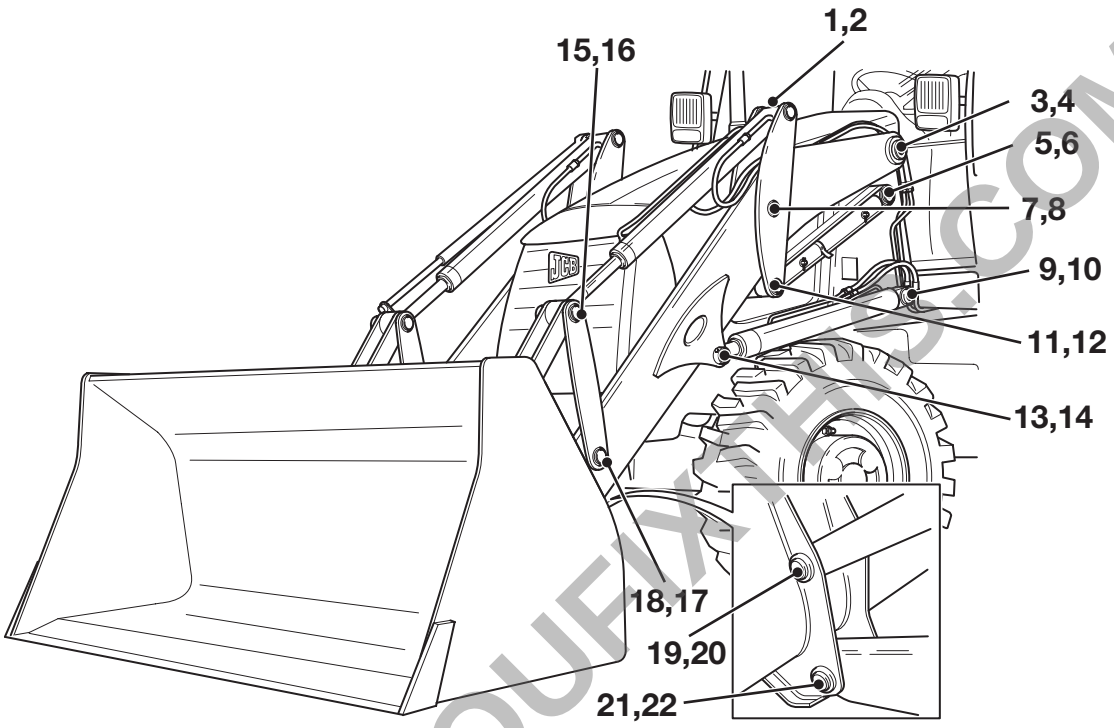


Fig 10.

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ROPS/FOPS Structure

Checking The ROPS/FOPS Structure

⚠ WARNING

You could be killed or seriously injured if you operate a machine with a damaged or missing ROPS/FOPS. If the Roll Over Protection Structure (ROPS)/Falling Objects Protection Structure (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.

INT-2-1-9_6

For assistance, contact your JCB distributor. Failure to take these precautions could result in death or injury to the operator.

Check the structure for damage. Check that the mounting bolts are installed and undamaged. Check the bolt torques. ⇨ *Torque Settings (153)*. Tighten them to the correct torque if necessary.

1 Remove the rear wheels to gain access to the rear mounting bolts **A**.

2 Remove the covers **C** and external trim panels **D** to gain access to the front mounting bolts **B**.

Table 4. Torque Settings

Bolts **A** and **B**	205 Nm (150 lbf ft)

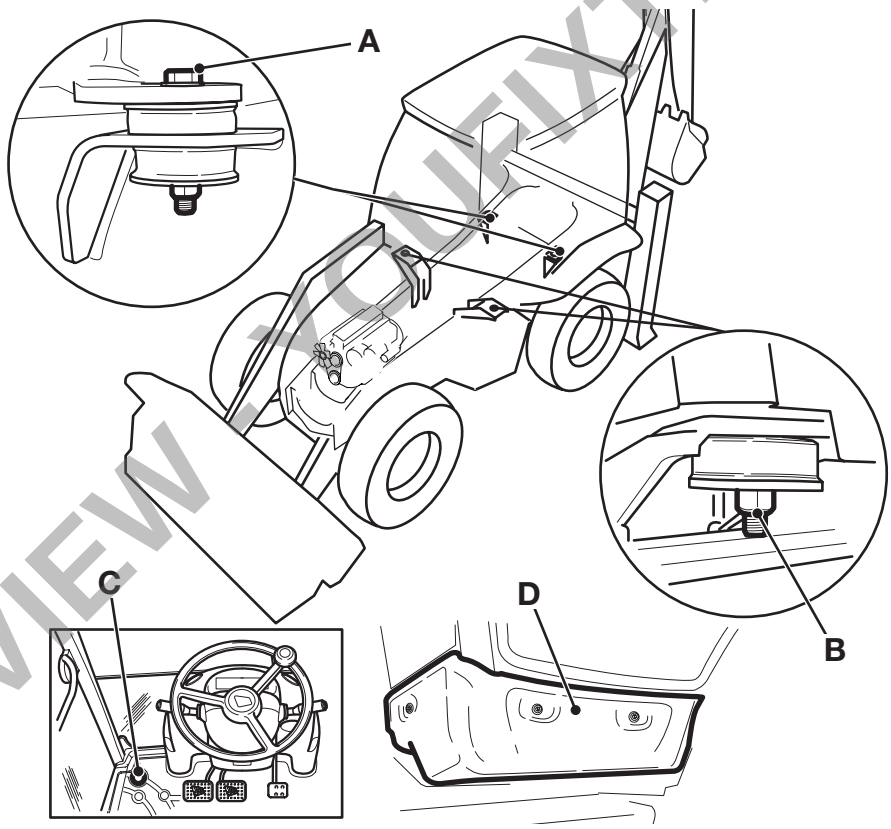


Fig 9.

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Safety Check List

P2-1003

Safety - Yours and Others

INT-1-3-1_3

All machinery can be hazardous. When a machine is correctly operated and properly maintained, it is a safe machine to work with. But 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. Read and understand them. They tell you of potential hazards and how to avoid them. If you do not fully understand the warning messages, ask your employer or JCB distributor to explain them.

But 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 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 job until you are sure that you and those around you will be safe.

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

Remember

BE CAREFUL
BE ALERT
BE SAFE

General Safety

T1-007_3

⚠ WARNING

Operator Manual

You and others can be injured if you operate or maintain the machine without first studying the Operator Manual. Read the safety instructions before operating the machine. If you do not understand anything, ask your employer or JCB dealer to explain it. Keep the Operator Manual clean and in good condition. Do not operate the machine without an Operator Manual, or if there is anything on the machine you do not understand.

INT-1-3-2_3

⚠ WARNING

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.

INT-1-3-5

⚠ WARNING

Clothing

You can be injured if you do not wear the proper clothing. Loose clothing can get caught in the machinery. Wear protective clothing to suit the job. Examples of protective clothing are: a hard hat, safety shoes, safety glasses, a well fitting overall, ear-protectors and industrial gloves. Keep cuffs fastened. Do not wear a necktie or scarf. Keep long hair restrained. Remove rings, watches and personal jewellery.

INT-1-3-6_2

⚠ WARNING

Alcohol and Drugs

It is extremely dangerous to operate machinery 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.

INT-1-3-9_2

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Fluids, Lubricants and Capacities

Note: *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).*

Table 1.

ITEM	CAPACITY		FLUID/LUBRICANT	INTERNATIONAL SPECIFICATION
	Litres	UK Gal		
Fuel Tank	160	35	Diesel Oil	ASTM D975-66T Nos. 1D, 2D
Engine (Oil)			**JCB Extreme Performance**	SAE15W-40, ACEA E5/B3/ A3,API CH-4/SG
Min.	12	2.64	(-15°C to +50°C (5°F to 122°F)	
Max.	15	3.3		
			JCB Cold Climate Engine Oil (EP 5W-40)	SAE 5W-40, ACEA E2/B3/A3, API CH-4/CG-4/ CF-4/CF/SJ
			(-20°C to +50°C (10°F to 122°F)	
			! CAUTION: DO NOT USE ORDINARY ENGINE OIL	
Engine (Coolant)(1)	17.5	3.85 Wet	**JCB High Performance Antifreeze and Inhibitor/ Water.** ⇒ *Coolant Mixtures (🗋 139)*.	ASTM D6210
	18.5	4.07 Dry		
Powershift 6 speed(2)	16	3.5 Dry	**JCB Extreme Performance**	
	11.5	2.5 Wet	-32ºC to 40ºC (-25ºF to 104ºF)	10W, EL4117
			-5ºC to 46ºC (23ºF to 115ºF)	SAE30, EL4118
Powershift 4 speed(2)	15.5	3.4 Dry	**JCB Extreme Performance**	
	11	2.4 Wet	-32ºC to 40ºC (-25ºF to 104ºF)	10W, EL4117
			-5ºC to 46ºC (23ºF to 115ºF)	SAE30, EL4118
Front Axle (4WD)			**JCB HD90 Gear Oil** (without LSD)	API-GL-5
Housing (2WS)	13	2.86	**JCB Gear Oil HP Plus** (with LSD)	API-GL-4
Housing (4WS)(2)	18	3.96	Must be suitable for use with limited slip differentials (LSD).	
Hubs (x2)	2.0	0.44		
Rear Axle (4WS)			**JCB Gear Oil HP Plus**	API-GL-4
Housing	16.5	3.62	Must be suitable for use with oil immersed brakes and limited slip differentials (LSD).	
Hubs (x2)	1.9	0.41		
Rear Axle (2WS)	21	4.61		

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Pre-start Cold Checks, Service Points and Fluid Levels

	Operation	10	50	100(1)	500	1000	2000	6000
ENGINE								
Coolant Quality and Level	- Check	☐	☐	☐	☐	☐		
Cooling System	- Drain and Refill						☐	☐
Oil level	- Check	☐	☐					
Oil and Filter (2)(3)	- Change				☐	☐	☐	☐
Air Cleaner Outer Element(4)	- Change					☐	☐	☐
Air Cleaner Inner Element	- Change						☐	☐
Water Separator and Engine Fuel Filter	- Drain		☐	☐	☐	☐	☐	☐
Water Separator Fuel Filter(5)	- Change				☐	☐	☐	☐
Engine Fuel Filter(5)	- Change					☐	☐	☐
Front End Accessory Drive (FEAD) Belt Condition	- Check				☐	☐	☐	☐
Front End Accessory Drive (FEAD) Belt	- Change							☐
Engine Mounting Bolts for Tightness	- Check			☐	☐	☐	☐	☐
All Hoses - Condition	- Check			☐	☐	☐	☐	☐
Radiator(4)	- Clean				☐	☐	☐	☐
Breather Gauze	- Clean						☐	☐
Valve Clearances(6)	- Check and Adjust						☐	☐
Oil Filler and Dipstick Seals	- Check and Adjust						☐	☐
Rocker Cover and Injector Seals(6)	- Change						☐	☐
Injectors(6)	- Change							☐
Injector(s) Leak Off Rail(6)	- Change							☐
High Pressure Fuel Lines(6)	- Inspect							☐
TRANSMISSION, AXLES AND STEERING								
Transmission Oil Level	- Check	☐	☐	☐	☐			
Transmission Oil(7)	- Change					☐	☐	☐
Transmission Filter	- Change			☐	☐	☐	☐	☐
Axle Oil Level (incl. Hubs when applicable)(8)	- Check			☐	☐			
Axle Oil (incl. Hubs when applicable)(9)	- Change					☐	☐	☐
Axle Oil - Limited Slip Differential	- Change				☐	☐	☐	☐
Tyre Pressures and Condition	- Check	☐	☐	☐	☐	☐	☐	☐

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