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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 3. The safety alert system symbol

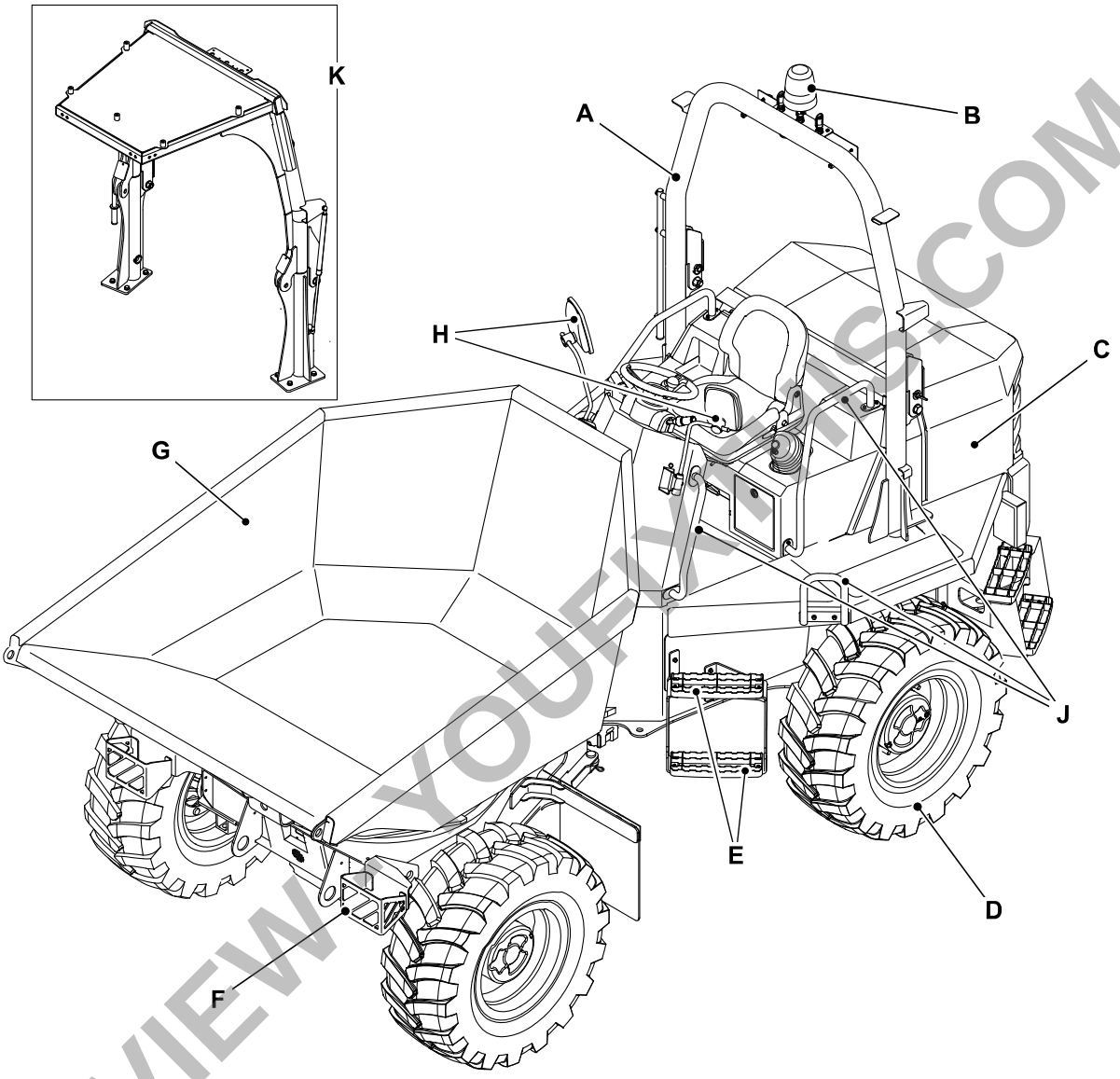


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(For: 6T-1 Swivel Tip, Without Cab)

Figure 4.



A ROPS (Roll-Over Protective Structure)
B Beacon
C Engine
D Tyres/Wheels
E Steps
F Head lights
G Skip
H Mirrors
J Hand rails
K FOPS (Falling Object Protective Structure)

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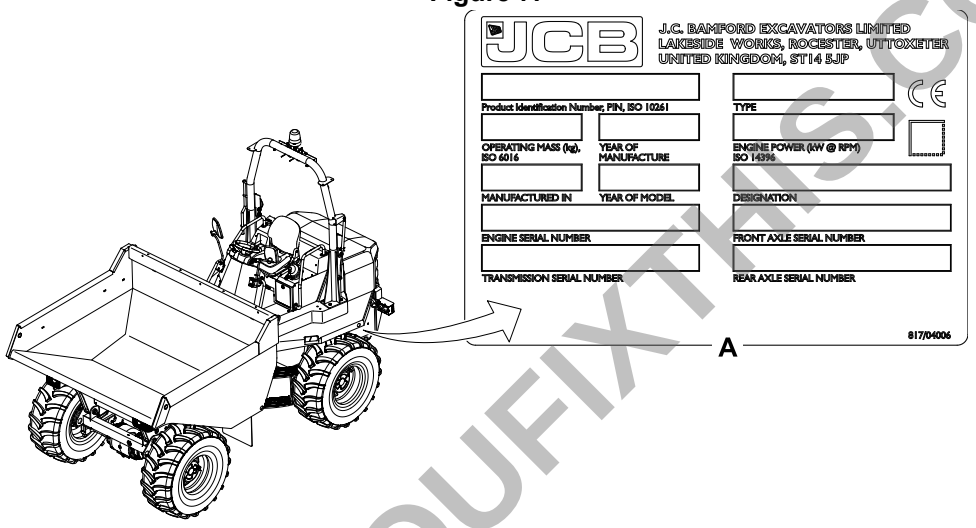
Product and Component Identification

Machine

Your machine has an identification plate. The PIN (Product Identification Number), weight, engine power, year of manufacture and serial number of the machine are shown on the identification plate.

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.

Figure 7.



A Identification plate

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	6TFTR	A	B	1234567

Table 2. Explanation of the PIN

Digit	Description
1 to 3	World manufacturer identification. For example, JCB = UK Build.
4 to 8	Machine type and model
9	Randomly Generated Check Letter. The check letter is used to verify the authenticity of a machine's PIN.
10	Year of manufacturer J=2018, K=2019
11 to 17	Machine serial number

Engine

The engine data labels are attached to the cylinder block as shown.

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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.

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Starting the Engine

General

⚠ **DANGER** If you try to charge a frozen battery, or jump start and run the engine, the battery could explode. Do not use a battery if its electrolyte is frozen. To prevent the battery electrolyte from freezing, keep the battery at full charge.

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.

1. Make sure that the machine is ready to start.
   Refer to: Before Starting the Engine (Page 42).
2. Make sure the battery isolator key is installed and switched on.
   Refer to: Battery Isolator (Page 41).
3. Sit on the operator seat.
4. Make sure the seat belt is correctly fastened and adjusted.
   Refer to: Seat Belt (Page 45).
5. Apply the park brake.
   Refer to: Park Brake (Page 61).
6. Put the forward/reverse lever in neutral position.
   Refer to: Transmission Drive Lever (Page 62).
7. Press the gear lever in neutral.
8. Turn the ignition key to position 1. An audible warning sounds if drive is engaged.
9. Turn the ignition key switch to position 3 and hold it there to crank the engine.
10. Release the ignition key as soon as the engine starts. The ignition key will return to the position 2.
11. Do not operate the starter motor without engine firing for more than specified duration.
    Duration: 20s
    11.1. Let the starter motor cool at least a few minutes between starts.
    Duration: 2min
12. Never engage the starter motor when the engine is running.
13. When the engine has started, check that all the warning lights have gone off and audible alarm is silent.
14. If any of the warning light fails to go off, or come on while engine is running, stop the engine as soon as it is safe to do so.
15. Check lighting and indicators operate (if fitted).
16. Stop the engine and check for any fluid leaks or signs of overheating.
17. Re-start the engine, drive the machine a short distance to check operation of transmission, brakes and steering.
18. Check that the skip tips and lowers.
19. Park up and stop the engine.
20. Report and have rectified any faults before placing machine into service.

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Operating Levers/Pedals

Control Layouts

⚠ **WARNING** Control lever/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.

WARNING Do not operate any machine controls from outside the machine. You or others could be injured or killed by movement of the machine or its working tools or attachments.

The control levers and switches may vary on machines.

Dumper Body Controls

For: 6T-1 Front Tip, 7T-1 Front Tip [Hi-Viz], 9T-1 Front Tip ..... Page 73
For: 6T-1 Swivel Tip ..... Page 73

(For: 6T-1 Front Tip, 7T-1 Front Tip [Hi-Viz], 9T-1 Front Tip)

It is recommended that the drive lever is set to the neutral position and park brake is applied before discharging the material.

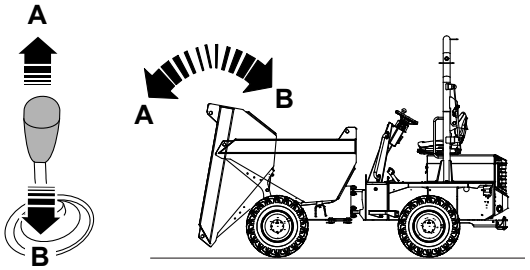
To Tip the Skip

1. Position the machine where the load is to be discharged.
2. Make sure that the area is clear of people.
3. Push the control lever forwards towards the front of the machine to tip the skip and the load will be discharged. Refer to Figure 53.

To Lower the Skip

1. Discharge the load.
2. Pull the control lever towards the back of the machine. Refer to Figure 53.
3. The skip will lower.

Figure 53.



A Tip the skip **B** Lower the skip

(For: 6T-1 Swivel Tip)

It is recommended that the drive lever is set to the neutral position and park brake is applied before discharging the material.

To Rotate and Tip the Skip

1. Position the machine where the load is to be discharged.
2. Make sure that the area is clear of people.

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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 malfunctions. It is the machine owner's responsibility to ensure maintenance is conducted properly in 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 11.

O	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

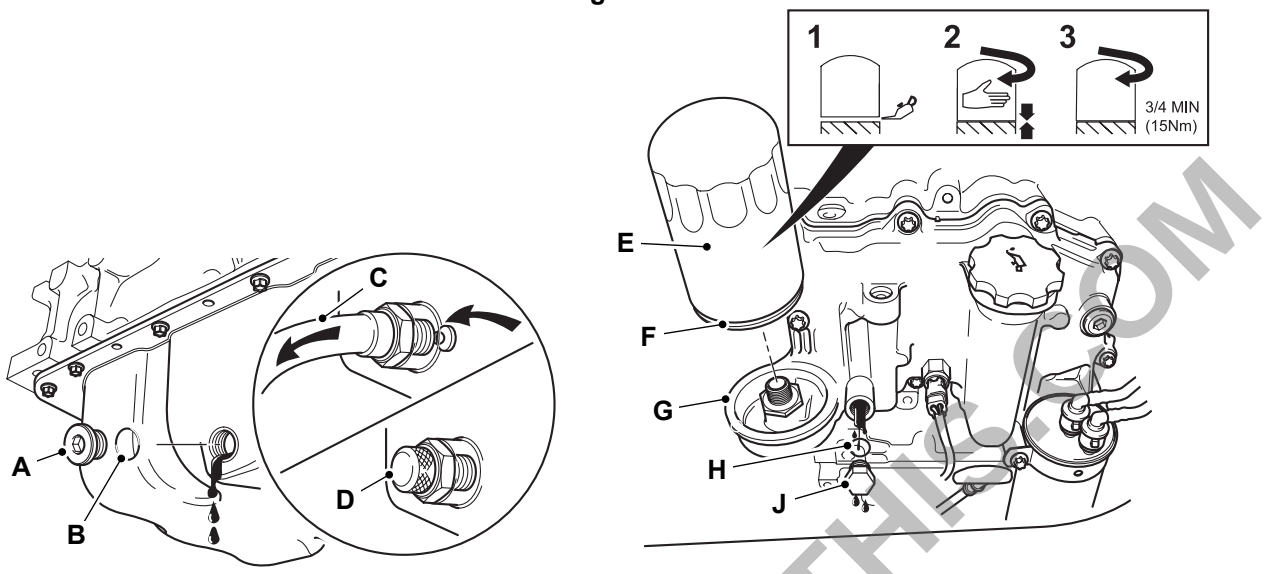
General

Table 12.

Interval (h)	Calendar Equivalent
10	Daily
50	Weekly
100	Monthly
500	Six months
1000	Yearly

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Figure 88.



A Sump drain plug
B 'O'-ring
C Drain tube
D Dust cap
E Filter
F Seal
G Filter head
H 'O'-ring
J Filter housing drain plug

5.1. Machine with a sump plug, remove the sump drain plug and its 'O' ring. Let the oil drain out, then clean and refit the drain plug with a new 'O' ring. Torque the drain plug.

Refer to: Torque Values (Page 180).

5.2. Machines with a drain valve, remove the dust cap from the sump drain port. Attach drain tube. With the free end of the tube in an oil container, screw in the drain tube assembly to open the valve. When all the oil has drained, unscrew the drain tube assembly and fit the dust cap.

6. Place a container of suitable size under filter housing drain plug to catch the oil.

7. Loosen and remove the filter housing drain plug and its 'O' ring. Let the oil fully drain, then clean and refit the drain plug with a new 'O' ring. Torque the drain plug.

Refer to: Torque Values (Page 180).

8. Unscrew the filter canister, use a chain wrench if necessary.

9. Clean the seal face of the filter head.

10. Smear the seal on the new filter canister with clean engine oil.

11. Screw the filter on until it just contacts the filter head.

12. Turn the filter at least a further 3/4 of a turn.

13. Through the top filler point, fill the engine with the recommended oil to the MAX mark on the dipstick. Wipe off any spilt oil, refit the filler cap and make sure it is secure.

Refer to: Fluids, Lubricants and Capacities (Page 175).

14. Operate the engine until the oil pressure low warning light has extinguished. Check for oil leakage. When the oil has cooled, check the oil level again, and if necessary top up with clean engine oil.

Refer to: Check (Level) (Page 132).

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Technical Data
Static Dimensions

Dimensions

For: 6T-1 Front Tip, 6T-1 Swivel Tip, 9T-1 Front Tip ..... Page 161
For: 7T-1 Front Tip [Hi-Viz], Cab ..... Page 162

(For: 6T-1 Front Tip, 6T-1 Swivel Tip, 9T-1 Front Tip)

Figure 101.

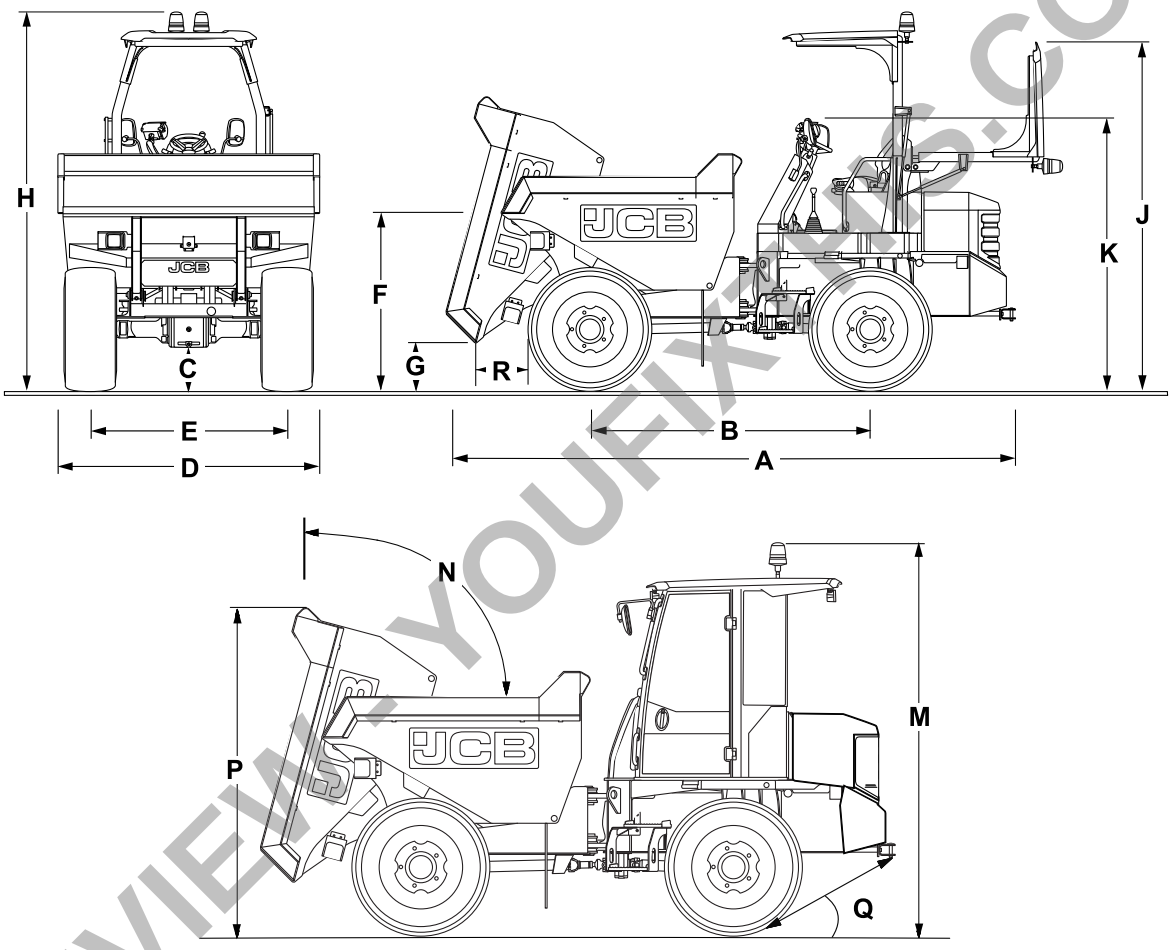


Table 16.

Item	Description	6T		9T
		FT	ST	
A	Overall length	4,792mm	5,027mm	4,912mm
B	Wheel base	2,480mm	2,480mm	2,680mm
C	Minimum ground clearance	312mm	312mm	359mm
D	Width over tyres	2,255mm	2,255mm	2,380mm
E	Track width	1,850mm	1,850mm	1,880mm
F	Height to front lip of skip (untipped)	1,672mm	1,719mm	1,732mm
G	Height to front lip of skip (tipped)	310mm	1,188mm	415mm
H	Height to top of ROPS (raised, with/without beacon)	3,354mm / 3,131mm	3,354mm / 3,131mm	3,570mm / 3,347mm
H	Height to top of ROPS/FOPS (raised, with/ without beacon)	3,354mm / 3,169mm	3,354mm / 3,169mm	3,570mm / 3,385mm

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Hydraulic System

General

The information is included to advise the machine operator of the hydraulic hose burst pressures for all hoses used on this machine.

JCB prefix number can be found stamped on the swaged end of a hose immediately behind the hose nut. The JCB prefix is the two or three digit prefix of the JCB part number, e.g., 612/21100 or 34AP/BA130.

Hydraulic Hose Burst Pressures

Old Type Hose

Table 41. 3 Digit JCB Part Number Prefix

JCB Prefix	Bore Size	Range	Maximum Working Pressure	Minimum Burst Pressure
607/	19.05mm	MP (Medium Pressure)	235bar (3,406psi)	950bar (13,768psi)
611/	6.35mm	HP (High Pressure)	400bar (5,797psi)	1,600bar (23,188psi)
612/	9.6mm	HP	330bar (4,783psi)	1,320bar (19,130psi)
613/	12.7mm	HP	275bar (3,985psi)	1,100bar (15,942psi)
614/	15.9mm	HP	250bar (3,623psi)	1,000bar (14,493psi)
615/	19.05mm	HP	275bar (3,985psi)	1,100bar (15,942psi)
629/	5mm	SAE (Society of Automotive Engineers) 100 R7 (or 4.76mm)	207bar (3,000psi)	827bar (11,985psi)
631/	6.35mm	LP (Low Pressure)	190bar (2,754psi)	760bar (11,014psi)
632/	9.6mm	LP	155bar (2,246psi)	620bar (8,985psi)
633/	12.7mm	LP	140bar (2,029psi)	550bar (7,971psi)
634/	15.9mm	LP	100bar (1,449psi)	415bar (6,014psi)
635/	19.05mm	LP	85bar (1,232psi)	345bar (5,000psi)
637/	25.4mm	LP	70bar (1,014psi)	275bar (3,985psi)

New Type Hose

Table 42. 2 Digit JCB Part Number Prefix (From Serial number 2006051)

JCB Prefix		Bore Size	Type/Range	Maximum Working Pressure	Minimum Burst Pressure
1st Digit	2nd Digit				
1	1	6.4mm	Pilot servo hose	103bar (1,493psi)	412bar (5,971psi)
1	2	9.5mm	Pilot servo hose	103bar (1,493psi)	412bar (5,971psi)
2	1	6.4mm	LP hose	190bar (2,754psi)	760bar (11,014psi)
2	2	9.5mm	LP hose	155bar (2,246psi)	620bar (8,985psi)
2	3	12.7mm	LP hose	140bar (2,029psi)	560bar (8,116psi)
2	4	15.9mm	LP hose	100bar (1,449psi)	400bar (5,797psi)
2	5	19.1mm	LP hose	85bar (1,232psi)	340bar (4,928psi)
2	6	25.4mm	LP hose	70bar (1,014psi)	280bar (4,058psi)
2	7	31.8mm	LP hose	40bar (580psi)	160bar (2,319psi)
2	8	38.1mm	LP hose	35bar (507psi)	140bar (2,029psi)
2	9	50.8mm	LP hose	25bar (362psi)	100bar (1,449psi)
3	1	6.4mm	HP hose	350bar (5,072psi)	1,400bar (20,290psi)

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Notes:

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