Service Manual

JCB 354/360 TRACTOR

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Fluids, Lubricants and Capacities

Table 2.

Item	Capacity Litres	Fluid / Lubricant	International Specification
Fuel Tanks	72 litre	Diesel Oil	⇨ *Types of Fuel (3-33)*
Engine (Oil)	7 litre	JCB 10W/30 or SAE 30 above 25°C (above 77°F)	API CD/CE
		10W30 Multigrade SAE 20 0°C to 25°C (32°F to 77°F)	
		10W-30 or SAE 10 below 0°C (32°F)	
Hydraulic (Oil)	43 litre	RPM Tractor Hydraulic Fluid or Textron TDH Premium (Caltex)	
		TDH Oil or TDH Oil Special (Texaco)	
		Chevron 1000 THF	
Engine Coolant	8 litre	JCB Universal Antifreeze/water ⇨ *Coolant Mixtures (3-11)*	ASTM D3306-74
Front Axle and final drive case (B) (Oil)	16.3 litres		
All Other Grease		JCB MPL Grease	Lithium based no 2 consistency

Initial Hydraulic Oil and Filter Change.....50 hours

Hydraulic Oil and Filter Change, Thereafter.....350 hours

Initial Engine Oil and Filter Change.....50 hours

Engine Oil and Filter Change, Thereafter.....100 hours

Note: *Change intervals stated above are for normal usage. Due to adverse operating conditions that may be experienced (extremely dusty or muddy), change intervals may need to be more frequent.*

Coolant Mixtures

T3-009_3

Check the strength of the coolant mixture at least once a year, preferably at the start of the cold period.

Replace the coolant mixture according to the intervals shown in the machine's Service Schedule.

⚠ WARNING

Antifreeze can be harmful. Obey the manufacturer's instructions when handling full strength or diluted antifreeze.

7-3-4-4_1

You must dilute full strength antifreeze with clean water before use. Use clean water of 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.

The correct concentration of antifreeze protects the engine against frost damage in winter and provides year round protection against corrosion.

The protection provided by JCB High Performance Antifreeze and Inhibitor is shown below.

50% Concentration (Standard)

Protects against damage down to -40 °C (-39 °F)

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Compressor

Table 2. Compressor indications

Symptom	Condition	Cause	Remedy
Abnormal noise	Inlet noise	Insufficient lubricant	Replenish
	Outlet noise	Belt tension incorrect	Adjust
		Loose bracket	Tighten the bolts
		Clutch failure	Check, replace
Abnormal rpm	Inlet	Damaged parts	Check, replace
		Slipping clutch	Check, replace
		Insufficient lubricant	Replenish
	Outlet	Belt tension incorrect	Adjust
Refrigerant or oil leakage	Refrigerant or oil leakage	Sealing washer damaged	Replace
		Head bolt loose	Tighten head bolts
		D-ring damaged	Replace
Excessive pressure	Low, High pressure	Insufficient refrigerant	Replenish
		Compressor faulty	Replace

Motor

Table 3. Motor indications

Symptom	Condition	Cause	Remedy
Low pressure or air conditioning not working	Motor is normal	Air inlet blocked	Clean/replace
		Evaporator freezing	Controlling minimum pressure
		Ventilator switch damage	Replace the switch
		Compressor	Replace
	Motor is abnormal	Motor failure	Replace
		Wire broken	Replace
	Air leakage	Duct leakage	Check, tighten
Unable to control the fan	Motor	Air volume control switch failure	Check, tighten
	Motor is abnormal	Motor failure	Replace

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Component Key

1	Combination switch
2	Instrument panel
3	Starter switch
4	Emergency switch
5	Stop lamp switch
6	Safety switch
7	Parking pedal
8	Hydraulic lever switch
9	Coupling for spare power (max. 10 A)
10	Fuel gauge
11	Turn signal lamp (rear right)
12	Stop lamp (right)
13	Working lamps
14	Trailer socket
15	Side light
16	Turn signal (right)
17	Stop lamp
18	Turn signal (left)
19	(spare)
20	Side light
21	Reversing lamp
22	Reversing buzzer
23	Turn signal lamp (rear left)
24	Stop lamp (left)
25	Licence plate lamp
26	PTO valve
27	Turn signal (front left)
28	Turn signal (front right)
29	tba
30	tba
31	tba
32	Reverse switch
33	Flasher
34	Battery
35	For cabin (optional)
36	Relay for starter motor
37	Starter motor
38	Alternator
39	Fuel injection pump
40	Fuel pump
41	Fuse for preheater
42	Main
43	Fuse for alternator
44	Fuse for cabin
45	tba
46	Horn
47	Thermo switch
48	Oil pressure gauge
49	Preheater
50	Glow relay
51	Receive dryer
52	Air conditioning compressor
53	Headlight (left)
54	Headlight (right)
55	Washer tank (front)
56	Washer tank (rear)
W	White
B	Black
R	Red
Y	Yellow
G	Green
L	Blue
Br	Brown
Lg	Light green
O	Orange

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Fault Finding

Hydraulic System

Fault:

⇨ *Table 7. Lift will not rise (E-31)*
⇨ *Table 8. Lifting speed too slow (E-32)*
⇨ *Table 9. Lift lowers when adjusting knob is fully closed (E-32)*
⇨ *Table 10. Lift will not lower (E-32)*
⇨ *Table 11. Lowering speed too slow (E-32)*
⇨ *Table 12. Relief valve beeps when hydraulic control lever is raised (E-32)*
⇨ *Table 13. Overheating fluid (E-33)*
⇨ *Table 14. Pump noisy (E-33)*
⇨ *Table 15. Excessive wear, deflection or damage to pump (E-33)*
⇨ *Table 16. Oil leaks from pump (E-33)*
⇨ *Table 17. Oil leaks from piping or joints (E-33)*
⇨ *Table 18. Oil leaks around lift arm (E-33)*
⇨ *Table 19. Independent PTO clutch slips or is slow in engaging (E-33)*
⇨ *Table 20. Independent PTO clutch is too quick in engaging (E-34)*

Table 7. Lift will not rise

Possible Cause	Action
Insufficient engine speed.	Increase engine speed slightly.
Insufficient transmission oil.	Replenish.
Suction line taking in air.	Tighten securely or replace broken parts.
Clogged suction filter.	Clean filter
Damaged or worn hydraulic pump.	Repair or replace pump.
Incorrect adjustment or worn link.	Adjust or replace link.
Excessive load on lift.	Reduce load.
Broken cylinder.	Replace.
Viscosity of transmission oil too low.	Replace oil with SAE80 grade.
Incorrectly adjusted relief valve.	Adjust relief valve to correct setting.
Internal leaks.	Inspect cylinder and valves. Replace damaged seals.
Sticking sequential valve spool.	Disassemble and wash spool clean. Replace/repair if necessary.
Damaged control valve: Sticking compensator plunger (unloading valve 1) Blocked orifices in pilot passage. Sticking poppet (unloading valve 2). Sticking check valve plunger.	 Lap valve after repairing minor flaws with oil stone. Clean with compressed air or sharp point. Correct minor flaws with oil stone. Lap valve after repairing minor flaws with oil stone.

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Charging System

Fault:

⇨ *Table 21. Battery is low in charge or discharge (C-34)*
⇨ *Table 22. Battery is charging at a high rate (battery overheating) (C-34)*
⇨ *Table 23. No output from alternator (C-34)*
⇨ *Table 24. Intermittent or low alternator output (C-34)*
⇨ *Table 25. Warning light dim (C-35)*
⇨ *Table 26. Warning light is normal but battery is discharged (C-35)*
⇨ *Table 27. Warning light is lit during operation (C-35)*
⇨ *Table 28. Warning light flashes intermittently (C-35)*

Table 21. Battery is low in charge or discharge

Possible Cause	Action
Loose or worn alternator drive belt.	Check, adjust tension or replace.
Defective battery: It will not accept or hold a charge. Electrolyte level Low.	Check condition of battery and replace if necessary.
Excessive resistance due to loose charging system connections.	Check, clean and tighten circuit connections.
Faulty alternator.	Check, and repair or replace.

Table 22. Battery is charging at a high rate (battery overheating)

Possible Cause	Action
Defective battery.	Check condition of battery and replace if necessary.
Faulty alternator.	Check, and repair or replace.

Table 23. No output from alternator

Possible Cause	Action
Alternator drive belt is broken.	Replace and tension correctly.
Loose connection or broken cable in charge system.	Inspect system, tighten connections and repair or replace faulty wiring.
Faulty voltage regulator.	Check and replace.
Faulty alternator.	Check, and repair or replace.

Table 24. Intermittent or low alternator output

Possible Cause	Action
Faulty external charging circuit connections.	Inspect system, clean and tighten connections.
Faulty rotor slip rings or brushes in alternator.	Inspect, repair or replace.
Defective monitor and warning light.	Check and replace.
Faulty rectifier or rectifying diodes in alternator.	Check and replace.

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