Service Manual

JCB 7000 Series Fastrac

Section 1 - General Information

Section 2 - Care and Safety

Section 3 - Maintenance

Section A - Optional Equipment

Section B - Body and Framework

Section C - Electrics

Section D - Controls

Section E - Hydraulics

Section F - Transmission

Section G - Brakes

Section H - Steering

Section S - Suspension

Section T - Engine



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Contents **Page No.**

Introduction
About This Manual 1-1
Machine Model and Serial Number 1-1
Using the Service Manual 1-1
Units of Measurement 1-1
Section Numbering 1-1
Identifying your Machine 1-2
Machine Identification Plate 1-2
Component Identification Plates 1-3

Standard Torque Settings
Zinc Plated Fasteners and Dacromet Fasteners 1-6
Introduction 1-6
Zinc Plated Fasteners (golden finish) 1-7
Dacromet Fasteners (mottled silver finish) 1-8
Hydraulic Connections 1-9
'O' Ring Face Seal System 1-9
'Torque Stop' Hose System 1-12

Special Tools
Numerical List 1-13
Tool Detail Reference 1-17
Section B - Body and Framework 1-17
Section C - Electrics 1-24
Section E - Hydraulics 1-27
Section F - Transmission 1-32
Section G - Brakes 1-32
Section S - Suspension 1-32

Service Consumables
Sealing and Retaining Compounds 1-38

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Fastrac 7170, 7200 and 7230 from serial number 1350000.

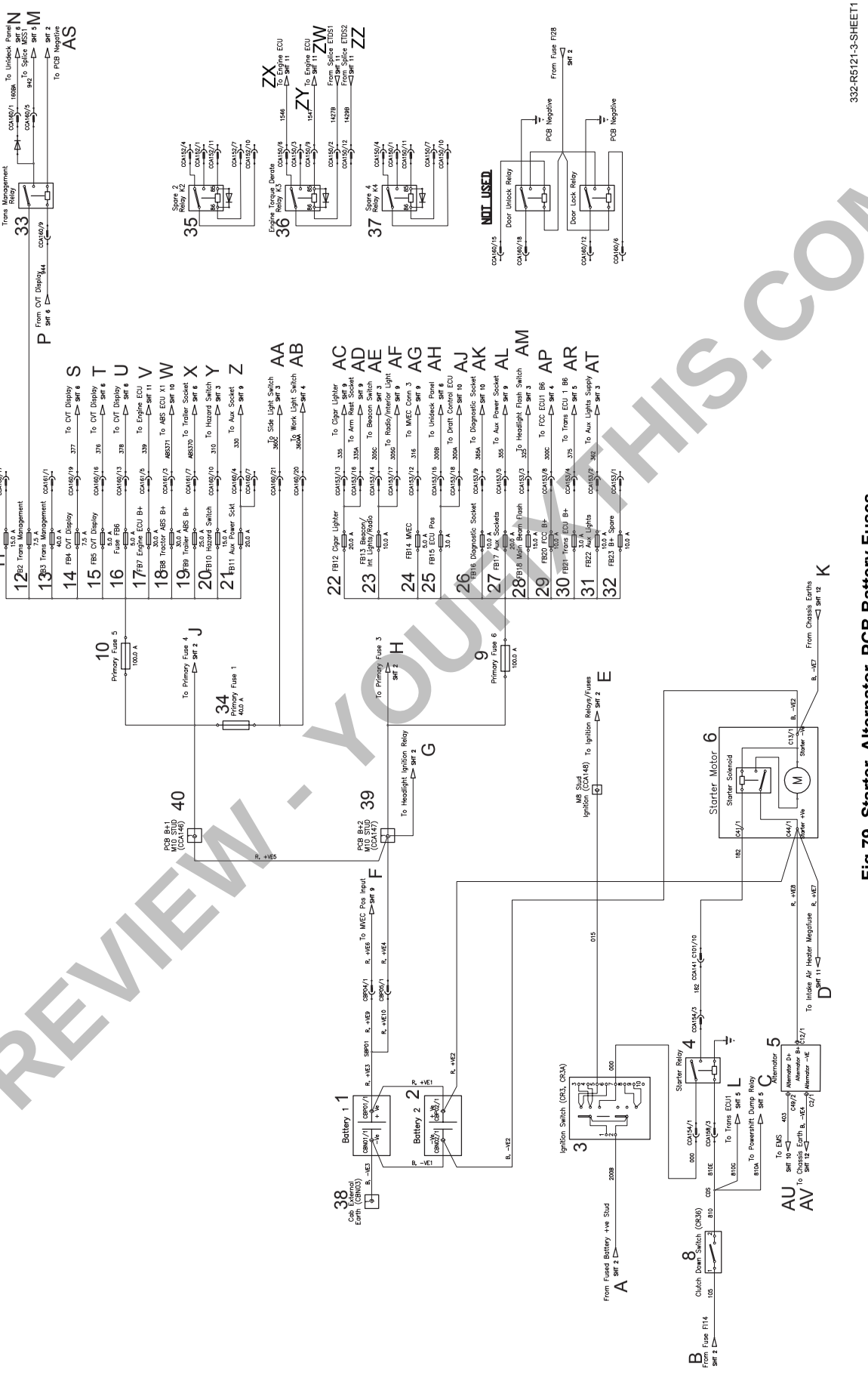


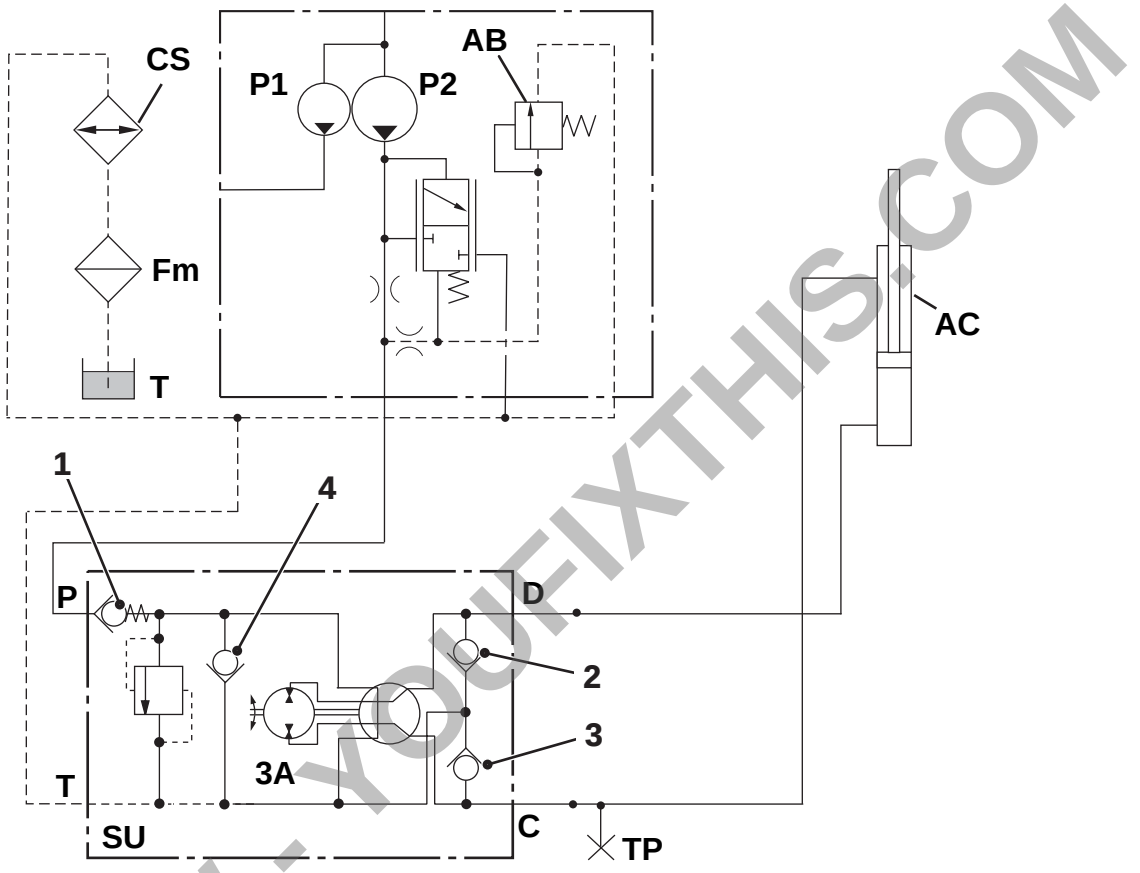
Fig 79. Starter, Alternator, PCB Battery Fuses

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Steering Hydraulic Circuit

Description



C057540

Fig 1.

Circuit Operation

Engine driven pumps **P1** and **P2** supply the machines hydraulic requirements. Pump **P2** controls steering supply and its pressure delivery is limited by an in built pressure relief valve **AB**.

Oil displaced by pump **P2** flows through restricted port and on to steering box **SU**. This flow enters the steering box via port **P**, opens spring loaded non-return valve and supplies the recirculating ball metering unit, driven by the operator's steering wheel. ⇨ *H-4)*

The Drag link, which is gear driven by the recirculating ball valve, connects with a ball joint to the front axle's R.H. steer knuckle which is in turn connected to the L.H. steer knuckle via a track rod.

A steer assist ram **AC** is incorporated into the system. With steer right operated, the drag link pushes the R.H. steer knuckle and the track rod completes the operation by pushing the L.H. steer knuckle. To assist the operation, steer ram **AC** which has its eye end connected to the L.H. steer knuckle is operated by pressurised oil filling its rod side via port **C** of the steer box.

With steer left operated, recirculating ball valve **3A** pulls the drag link connected to the R.H. steer knuckle, whilst the track rod pulls the L.H. knuckle. Assist ram **AC** supplied with pressurised oil via port **D** begins to extend assisting the steering operation.

Emergency Steer Operation

If the engine stops whilst the machine is in motion pump pressure delivery through port **P** ceases, steering function, although no longer power assisted, still contimues. The steering recirculating ball valve, driven only by the steering column, generates sufficient pressure to operate the steering links already described.

Non-return valves **2** and **3** in bridging port between pressure supply lines **C** and **D** to steering assist ram react to circuit demands and spring loaded non-return **1** In port

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Clutch Drum and Hub

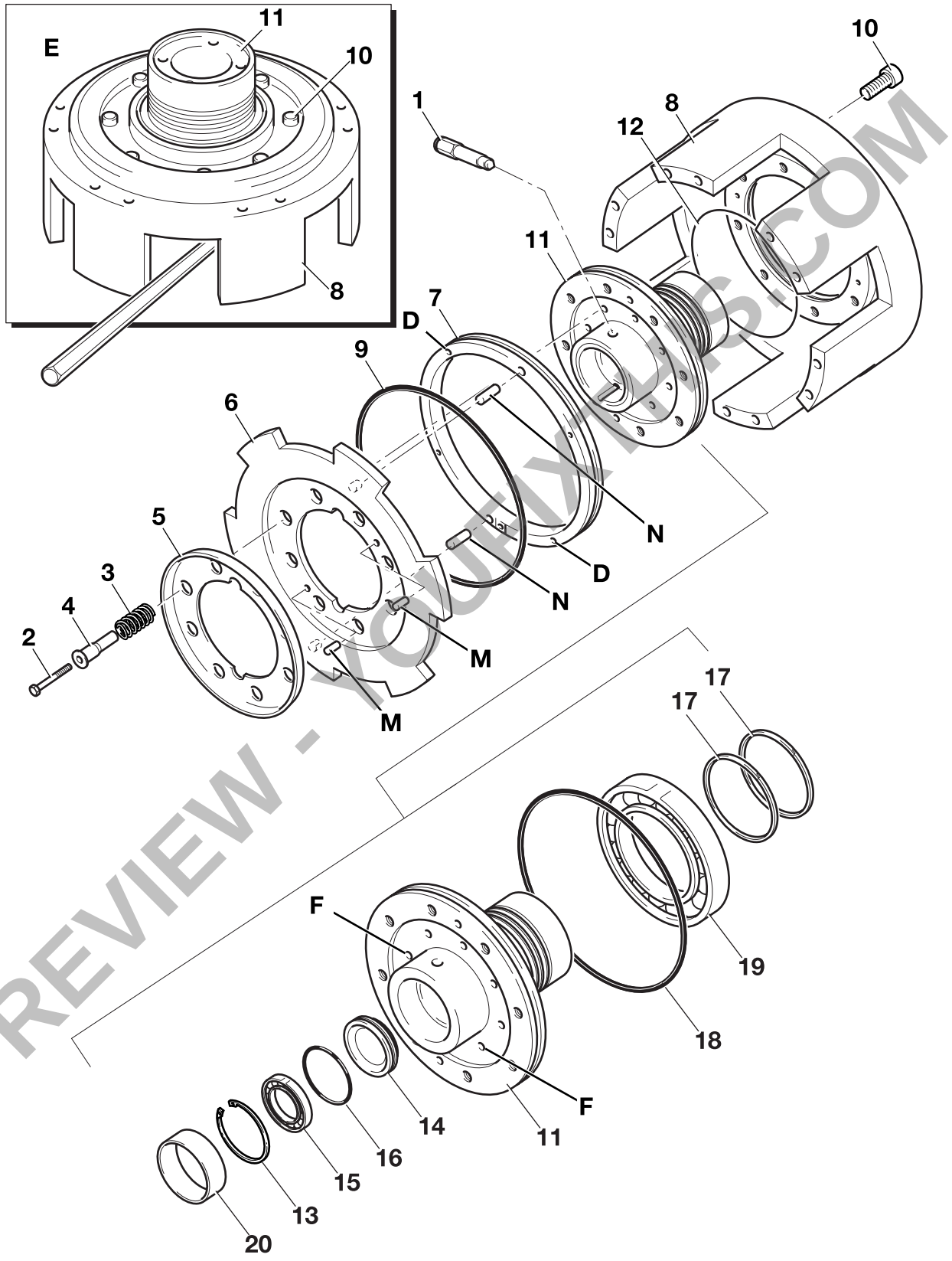


Fig 73.

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Zinc Plated Fasteners (golden finish)

Use the values on these pages only where no torque setting is specified in the text. Values are for dry threads and may be within three per cent of the figures stated. For lubricated threads the values should be REDUCED by one third.

Metric Grade 8.8 Bolts

Size			Torque Settings		
			Nm	kgf m	lbf ft
Diameter (mm)		Hexagon (A/F) mm			
M5	(5)	8	7	0.7	5
M6	(6)	10	12	1.2	9
M8	(8)	13	28	3.0	21
M10	(10)	17	56	5.7	42
M12	(12)	19	98	10	72
M16	(16)	24	244	25	180
M18	(18)	27	350	36	258
M20	(20)	30	476	48	352
M24	(24)	36	822	84	607
M30	(30)	46	1633	166	1205
M36	(36)	55	2854	291	2105

Metric Grade 10.9 Bolts

Size			Torque Settings		
			Nm	kgf m	lbf ft
Diameter (mm)		Hexagon (A/F) mm			
M6	(6)	8	16	1.6	12
M8	(8)	13	39	4	29
M10	(10)	17	78	8	57
M12	(12)	19	137	14	101
M16	(16)	24	343	35	253
M20	(20)	30	657	67	485
M24	(24)	36	1157	118	853

Metric - All Internal Hexagon Headed Cap Screws

Diameter	Torque Settings		
mm	Nm	kgf m	lbf ft
M3	2	0.2	1.5
M4	6	0.6	4.5
M5	11	1.1	8
M6	19	1.9	14
M8	46	4.7	34
M10	91	9.3	67
M12	159	16.2	117
M16	395	40	292
M18	550	56	406
M20	770	79	568
M24	1332	136	983

Verbus Ripp Bolts

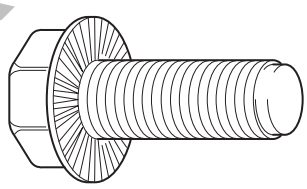


Fig 8.

Torque settings for these bolts are determined by the application. Refer to the relevant procedure for the required settings.

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Fault Finding Tables

Fault Codes

ABS ECU

Code	Description
A0101	No ABS faults
A0201	Front Left Wheel Speed Sensor Excessive Air Gap
A0202	Front Left Wheel Speed Sensor Output Low at Drive-Off
A0203	Front Left Hand Wheel Speed Sensor Open or Shorted
A0204	Front Left Hand Wheel Sensor Loss of Sensor Signal
A0205	Front Left Hand Wheel End Fault
A0206	Front Left Wheel Speed Sensor Erratic Signal
A0207	Front Left Wheel Speed Sensor Tyre Size Calibration
A0301	Front Right Wheel Speed Sensor Excessive Air Gap
A0302	Front Right Wheel Speed Sensor Output Low at Drive-Off
A0303	Front Right Hand Wheel Speed Sensor Open or Shorted
A0304	Front Right Hand Wheel Sensor Loss of Sensor Signal
A0305	Front Right Hand Wheel End Fault
A0306	Front Right Wheel Speed Sensor Erratic Signal
A0307	Front Right Wheel Speed Sensor Tyre Size Calibration
A0401	Rear Left Wheel Speed Sensor Excessive Air Gap
A0402	Rear Left Wheel Speed Sensor Output Low at Drive-Off
A0403	Rear Left Hand Wheel Speed Sensor Open or Shorted
A0404	Rear Left Hand Wheel Sensor Loss of Sensor Signal
A0405	Rear Left Hand Wheel End Fault
A0406	Rear Left Wheel Speed Sensor Erratic Signal
A0407	Rear Left Wheel Speed Sensor Tyre Size Calibration Fault
A0501	Rear Right Wheel Speed Sensor Excessive Air Gap
A0502	Rear Right Wheel Speed Sensor Output Low at Drive-Off
A0503	Rear Right Hand Wheel Speed Sensor Open or Shorted
A0504	Rear Right Hand Wheel Sensor Loss of Sensor Signal
A0505	Rear Right Hand Wheel End Fault
A0506	Rear Right Wheel Speed Sensor Erratic Signal
A0507	Rear Right Wheel Speed Sensor Tyre Size Calibration
A0601	Battery Voltage Too Low, As measured by the ABS ECU
A0602	Battery Voltage Too High, As measured by the ABS ECU

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Cab

Removal and Replacement

Removal

⚠ WARNING

This component is heavy. It must only be removed or handled using a suitable lifting method and device.

BF-4-1_1

Before Lifting

Note: *The exhaust system stays fitted to the chassis. The rear fenders stay fitted to the cab.*

1 Remove waist-level work lights **X**.

2 Disconnect steering column drive shaft couplings.

3 Disconnect air lines from park brake control valve.

4 Disconnect wiper motors.

5 Disconnect all other harness connectors.

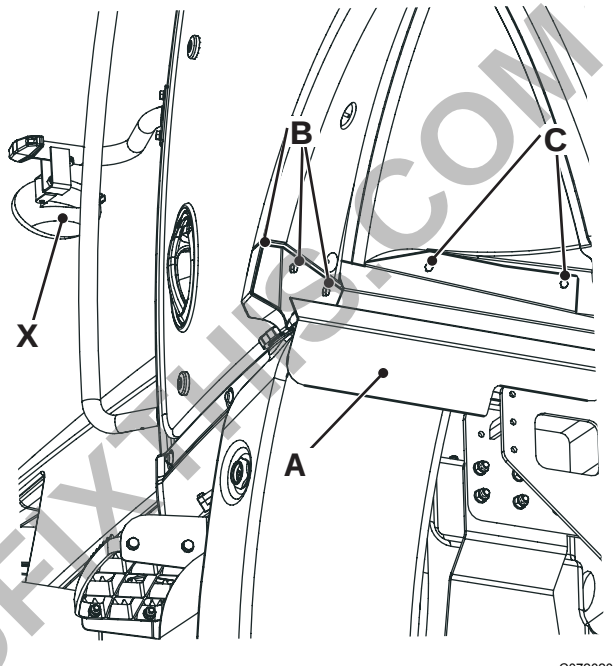
Note: *You need to raise the cab to allow access to some connections.* ⇨ *Lifting (B-5)*

6 Disconnect pick-up hitch or trailer coupling cables (as fitted).

7 Remove lower panels as follows to allow you to attach lifting hooks:

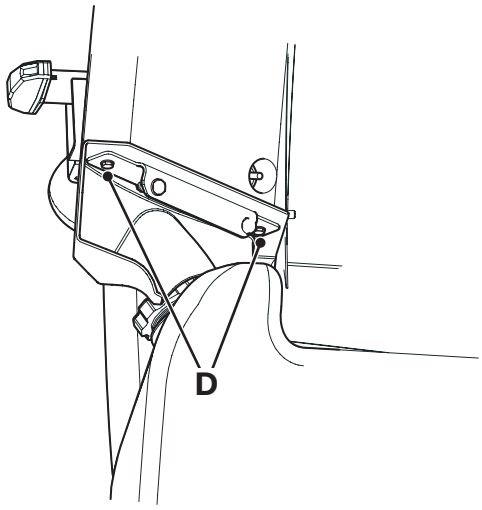
a Remove panel **A** by unscrewing bolts **B** and nuts **C**.

b Remove bolts **D**.



C072020

Fig 1.



C072030

Fig 2.

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Fault Finding

Complete Transmission, Clutches, Gearboxes and Axles

Table 1.

CHECK		ACTION
1	Has the tractor software just been reprogrammed?	Make sure the correct software has been used.
2	Does the touch screen (DECU) show a gear and direction selected?	
3	Check all transmission ECU fuses.	
4	Check the powershift dump relay.	
5	Check for tractor error codes.	Download datalog.
6	Monitor the clutch pedal position (%) and activation switch using Service Master or the DECU Information.	Recalibrate if necessary.
7	Using Service Master, check that the selected powershift solenoids are energised.	
8	Using Service Master, monitor the selected range gear and rail position (%).	
9	Using Service Master, monitor the transmission intermediate and output speed sensors.	
10	Check transmission oil level and oil grade are correct.	
11	Check that mainline oil pressure is correct. ⇨ *Gearbox Pressure Test Procedure (F-24)*	
12	Check the relevant wet clutch, powershift and range oil pressures. ⇨ *Gearbox Pressure Test Procedure (F-24)*	
13	Do axle drive shafts rotate when a gear is selected? (Test with 4WD selected.)	Isolate mechanical components and investigate.

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Fluids, Lubricants and Capacities

Table 1.

ITEM	CAPACITY		FLUID/LUBRICANT	INTERNATIONAL SPECIFICATION
	Litres	UK Gal		
Fuel Tank	430	94	Diesel Oil	ASTM D975-66T Nos. 1D, 2D
Engine (Oil)	16	3.5	JCB Engine Oil EP 15W/40 (-20 to +40 deg C) (1)	API CH-4 or ACEA E3/ B3A3, SAE15W/40(2)
Engine (Coolant)	30	6.6	JCB High Performance Antifreeze & Inhibitor/ Water ⇨ *Coolant Mixtures (3-15)*	ASTM D6210
Transmission	43.5	9.5	JCB Super Universal Agricultural Oil	API-GL-4, MIL-L-2105
Front Axle			JCB HD90 Gear Oil	API-GL-5, MIL-L-2105C
- Axle Beam	15	3.3		
- Hubs (each)	3.75	0.8		
Rear Axle	42	9.2	JCB HD90 Gear Oil	API-GL-5, MIL-L-2105C
Brake System			JCB Brake Fluid Dot 4 (capacity given is for each reservoir)	SAE J1703 DOT 4
- Front	0.75	0.2		
- Rear (2 reservoirs)	0.75	0.2		
Hydraulic System(3)	147	32	JCB Hydraulic Fluid HP46 (Above 38ºC,100ºF) JCB Hydraulic Fluid HP32 (Below 38ºC,100ºF)	ISO VG46 ISO VG32
Grease Points			JCB HP Grease	Lithium complex NLGI No.2 consistency including extreme pressure additives

(1) While 15W/40 oil is recommended for most climates, limited use of low viscosity oils such as 10W/30 is permitted to provide easier starting and sufficient oil flow at temperatures below -5ºC (23ºF). Continued use of low viscosity oils can decrease engine life and will require different service intervals.

(2) If API CH-4 or ACEA E3/B3A3 engine oil AT SAE 15W/40 is not available, the engine oil must be changed at 250 hours, using the following alternative oils: For -20ºC to +40ºC: JCB Engine Oil HP15W/40 or for -25ºC to +30 ºC: JCB Engine Oil HP10W/30.

(3) The total hydraulic system capacity depends on the equipment being used. Watch level indicator on hydraulic tank

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Pre-start Cold Checks, Service Points and Fluid Levels

	Operation	10 Hr	50 Hr	100 Hr(1)	500 Hr	1000 Hr	2000 Hr	5000 Hr
ENGINE								
Oil level	- Check	☐	☐					
Oil and Filter(2)(3)	- Change			☐	☐	☐	☐	☐
Air Cleaner Outer Element(3)	- Change					☐	☐	☐
Air Cleaner Inner Element(3)	- Change						☐	
Air Cleaner Hose and Clamp Security	- Check	☐	☐	☐	☐	☐	☐	☐
Air Compressor Mountings(4)	- Check				☐	☐	☐	☐
Air Compressor Discharge Lines(4)	- Check						☐	
Fuel Pre-filter	- Drain	☐	☐					
Fuel Pre-filter (3)	- Change	☐	☐	☐	☐	☐	☐	☐
Fuel Filter (3)	- Change				☐	☐	☐	☐
Coolant Level	- Check	☐	☐	☐	☐	☐		
Coolant Antifreeze and Coolant Additive Concentration(4)	- Check			☐	☐	☐	☐	☐
Coolant	- Change						☐	
Fan Belt Condition	- Check	☐	☐	☐	☐	☐	☐	☐
Fan Hub(4)	- Check					☐	☐	☐
Fan Belt Tensioner Condition(4)	- Check					☐	☐	☐
Vibration Damper(4)	- Check						☐	
Valve Clearances(4)	- Check and Adjust							☐
Crankcase Breather Tube	- Check	☐	☐	☐	☐	☐	☐	☐
Engine Mounting Bolts for Tightness(4)	- Check						☐	
Fuel Injection Pump Mounting Bolts for Tightness(4)	- Check				☐	☐	☐	☐
Radiator and Coolers	- Clean	☐	☐	☐	☐	☐	☐	☐
Charge Air Cooler Hose and Clamp Security	- Check	☐	☐	☐	☐	☐	☐	☐
Charge Air Cooler	- Check				☐	☐	☐	☐
Turbocharger(4)	- Check					☐	☐	☐
Engine	- Steam Clean						☐	

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Calibration

Note: *If the values attempted to be saved are not within the allowable limits then a default value is used and a fault code generated. See JCB Service Master for details.*

Engine

Hand Throttle

1 Access the Calibration Menu ⇨ ***Accessing Calibration Menu (C-171)***

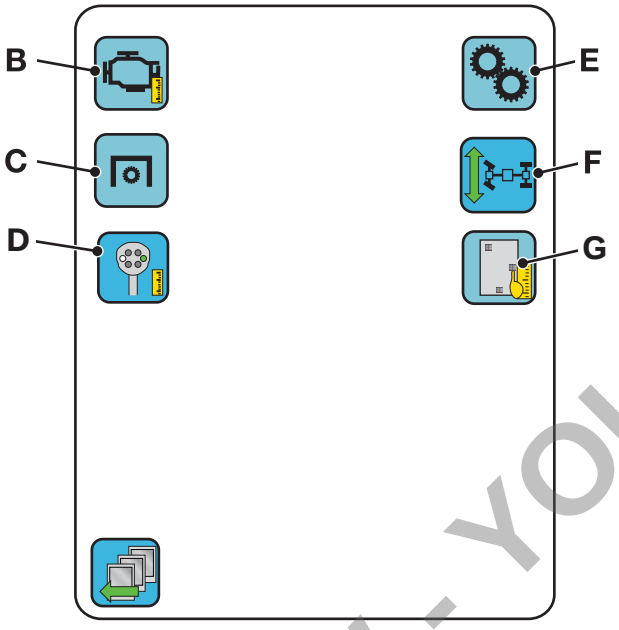


Fig 154.

2 Select the engine calibration icon **B**.

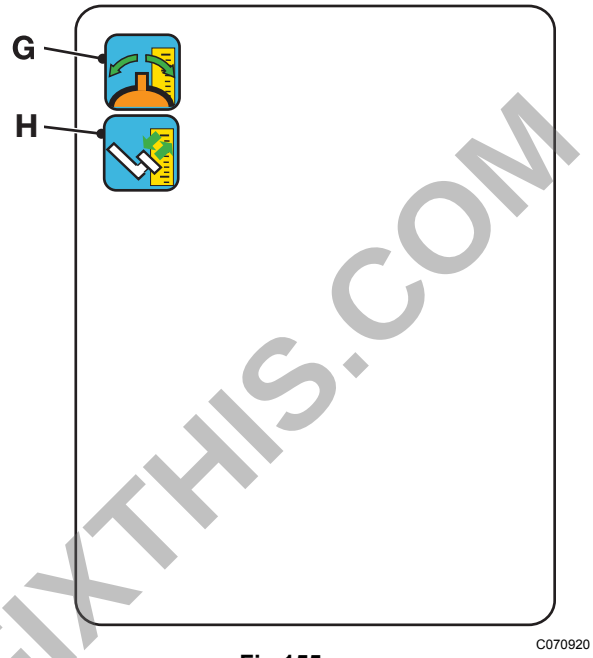


Fig 155.

3 Select the hand throttle icon **G**.

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Notes:

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Cooling System

Checking the Coolant Level

⚠ WARNING

The cooling system is pressurised when the coolant is hot. When you remove the cap, hot coolant can spray out and burn you. Make sure that the engine is cool before you work on the cooling system.

9-3-3-1_2

1 Prepare the Machine

Park the machine on firm, level ground. Apply the park brake. Lower any mounted implements to the ground. Turn the front wheels to full left hand lock.

⚠ WARNING

When gaining access for maintenance work, make sure no-one is in a position to be trapped by the wheels as the steering wheel is turned.

13-3-2-15

2 Stop the Engine

Remove the starter key.

3 Open the Engine Cover

4 Check the Level

Visually check that the level of the coolant is up to the line marked `COLD MIN' (**A**) but below the line marked `HOT MAX' (**B**). If the level is low, then continue with steps 5 to 7.

⚠ WARNING

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

7-3-4-4_1

5 Top-up the Expansion Tank

Remove filler cap **C** and add pre-mixed water/ antifreeze solution until the level is up to the line marked `COLD MIN'. Do not overfill. ⇨ ***Coolant Mixtures (🗋 3-15)***

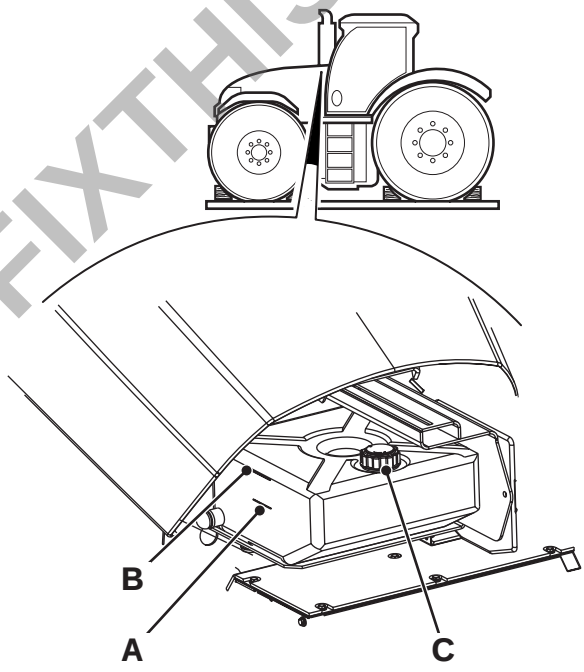
Note: *Check the quality of the antifreeze mixture every year before the cold weather starts. Change it every two years.*

6 Refit the Filler Cap

Make sure it is tight.

7 Check for Leaks

Run the engine for a while to raise the coolant to working temperature and pressure. Stop the engine and check for leaks.



C039990-B2

Fig 40.

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Contents **Page No.**

General
Using a Multimeter C-1
Measuring DC Voltage C-2
Measuring Resistance C-2
Measuring Continuity C-3
Measuring Frequency C-3
Testing a Diode or a Diode Wire C-4
Battery C-5
Maintenance C-5
First Aid - Electrolyte C-5
Testing C-6
Specific Gravity Testing C-7
Wire and Harness Number Identification C-8
Introduction C-8
Wire Numbers and Functions C-9
Wiring Harness Repair C-10
Introduction C-10
Repair Procedure C-10
Auxiliary Lighting Relays C-13

Electronics System
Main Components Diagram C-14
Description C-14
ECU Locations C-16
Why Use Service Master? C-17
Introduction C-17
Fault Finding C-17
Identify Poor Maintenance C-17
Access Machine Set Up Data C-17
Re-Programming ECUs C-17
Summary C-17
What is Service Master? C-18
Introduction C-18
CANbus Communications System C-18
Service Master Structure C-18
How to Set Up Service Master C-19
Install Service Master C-20
Start Service Master C-21
Load the DLA Laptop Driver Software C-22
Configure the DLA Type and Communications Port C-23
Check the DLA Firmware File C-24
Connect Service Master to the Machine CANbus C-26

Charging System
Fault Finding C-27

Harness Data
Drawings and Interconnection C-28
Harnesses C-28

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AP1
ABS BULKHEAD CONNECTOR

1	370	Y	4.0	ABS1-1
2	150	Y	4.0	ABS1-2
3	7210/0030			
4	7210/0030			
5	1804	Y	1.0	ABS2-1
6	1803	Y	1.0	ABS2-2
7	1805	Y	1.0	ABS2-3
8		U	0.75	ABS8-1
9		N	0.75	ABS8-2
10		U	0.75	ABS9-1
11		N	0.75	ABS9-2
12	1807	Y	1.0	ABS2-4
13	1808	Y	1.0	ABS2-5
14	1806	Y	1.0	ABS2-6
15	1800	Y	1.0	ABS2-7
16	1801	Y	1.0	ABS2-8
17	1802	Y	1.0	ABS2-9
18	7210/0052			
19		N	0.75	ABS10-2
20	7210/0052			
21		U	0.75	ABS10-1
22	ABS565	Y	1.0	SABS3-1
23	7210/0052			
24	7210/0052			
25	ABS564	Y	1.0	SABS4-1
26	440	Y	1.5	ABS1-5
27	7210/0052			
28	7210/0030			
29	7210/0052			

29 Way HDP Free Pin Housing Reversed L015 : 1 : 332/R4000

ABS1
ABS T/SOCKET

1	370	Y	4.0	AP1-1
2	150	Y	4.0	AP1-2
3	605	Y	1.5	ABS4-1
4	615	Y	4.0	ABS4-1
5	440	Y	1.5	AP1-26
6				
7				

7 Way Trailer ABS Socket – Male Pins : 1 : 332/R5072

ABS2
ABS CHASSIS/PANNIER I/F

1	1804	Y	1.0	AP1-5
2	1803	Y	1.0	AP1-6
3	1805	Y	1.0	AP1-7
4	1807	Y	1.0	AP1-12
5	1808	Y	1.0	AP1-13
6	1806	Y	1.0	AP1-14
7	1800	Y	1.0	AP1-15
8	1801	Y	1.0	AP1-16
9	1802	Y	1.0	AP1-17
10	7210/0030			
11	7210/0030			
12	7210/0030			

12 Way DT06 Socket Housing : 1 : 7219/0016
12 Way DT06 Wedge : 1 : 7219/0012

ABS4
BELL HOUSING BRACKET (–VE)

1	605,615	Y	1.5,4.0	ABS1-3,ABS1-4

Ring Terminal M12 4.0–6.0 : 1 : 7207/1602
Adhesive Lined Heatshrink : 1 : 7000/3212

ABS8
REAR LH SPEED SENSOR

1		U	0.75	AP1-8
2		N	0.75	AP1-9

ABS Cable Assy – 3000mm Lg : 1 : 332/R4843

ABS9
REAR RH SPEED SENSOR

1		U	0.75	AP1-10
2		N	0.75	AP1-11

ABS Cable Assy – 3000mm Lg : 1 : 332/R4843

332-R5127-5sheet2

Fig 56. ABS Chassis Harness 332/R5127 sheet 2

⇒ *Table 10. ABS Chassis Harness 332/R5127 (C-57)*

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For **next** schematic	⇨ *Fig 88. (C-118)*
For component key	⇨ *Table 45. (C-117)*
For connecting schematics key	⇨ *Table 46. (C-117)*

For **previous** schematic	⇨ *Fig 86. (C-113)*
For component key	⇨ *Table 41. (C-112)*
For connecting schematics key	⇨ *Table 42. (C-112)*

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Foot Throttle

1 Access the Calibration Menu ⇨ *Accessing Calibration Menu (C-171)*

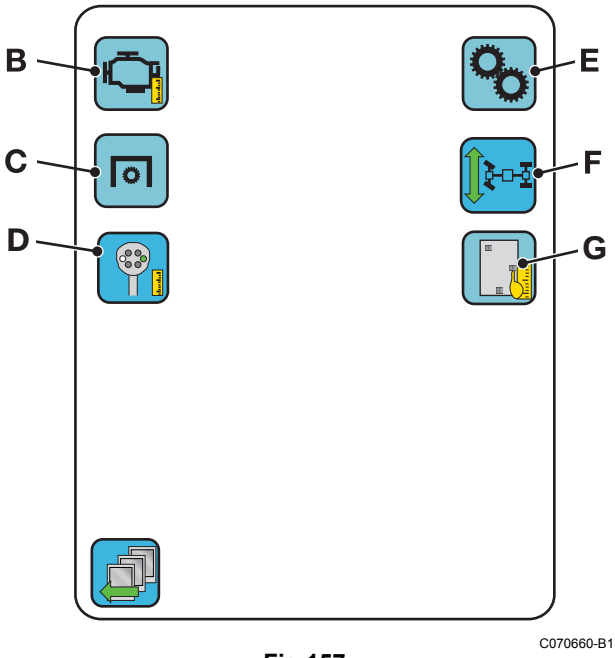


Fig 157.

2 Select the engine calibration icon **B**.

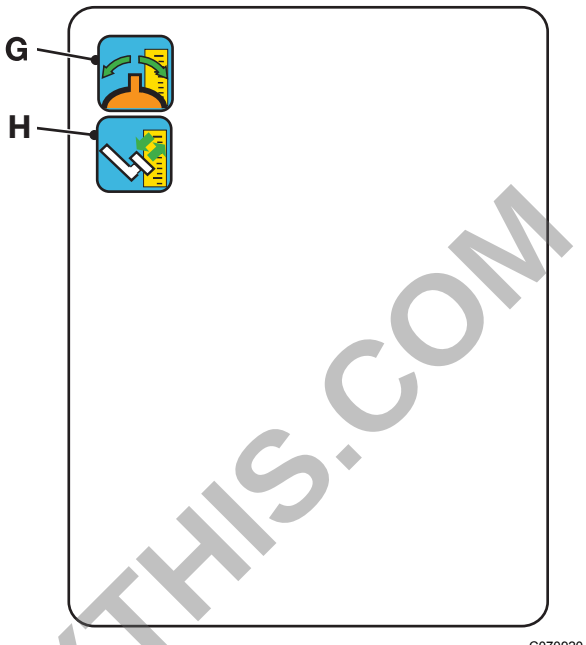


Fig 158.

3 Select the foot throttle icon **H**.

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Schematic Circuits

Introduction to Hydraulic Schematic Symbols

TE-001

General (Basic and Functional Symbols)

Complex hydraulic components and circuits can be described to the engineer by using graphical symbols. The following pages illustrate and give a brief description for some of the more common symbols used.

There are many symbols in use and it would be impossible to include them all here. However it should be noted that most are only variations or refinements on the basic principles explained here. If more detailed information is required you are recommended to obtain a copy of BS2917 or IS01219.

Once familiar with the symbols, the engineer can use hydraulic circuit diagrams as an aid to fault finding. It will be possible to see the complete hydraulic circuit and decipher the relationship between hydraulic components.

Table 1. General

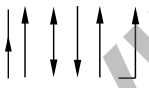
	Spring
	Flow restriction affected by viscosity
	Direction of flow
	Indication of rotation
	Indication of direction and paths of flow
	Variable control

Table 2. Rams

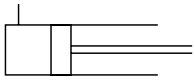
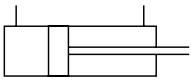
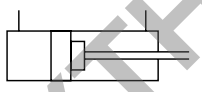
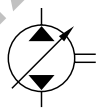
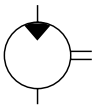
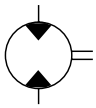
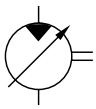
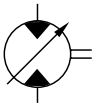
	Single acting
	Double acting
	Double ended
	Double acting with damping at rod area end

Table 3. Pumps and Motors

	Variable capacity pump two directions of flow
	Fixed capacity motor one direction of flow
	Fixed capacity motor two directions of flow
	Variable capacity motor one direction of flow
	Variable capacity motor two directions of flow

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Gearbox Pressure Test Procedure

Operate machine to correct transmission operating temperature.

***Note:** It may be noted that when pressure gauge **C** is connected to remote pressure testing points numbered **1 - 12** a delay will be experienced as pressure builds in the microbore hoses connecting test points to transmission control valve block.*

The following illustrations identify the microbore connections at the transmission and also the self seal couplings which may be used to check pressures controlling other transmission functions.

Item No	Pressure Measured
1	Mainline Pressure
2	Lubrication Pressure
3	Wet Clutch Operating Pressure
4	Clutch B Operating Pressure
5	Clutch C Operating Pressure
6	Clutch D Operating Pressure
7	Clutch E Operating Pressure
8	High Range Selector Operating Pressure
9	Medium Range Selector Operating Pressure
10	Low Range Selector Operating Pressure
11	Extra Low Range Selector Operating Pressure
12	Four Wheel Drive Disconnect Clutch Operating Pressure
13	Rear Valve Block Pressures ***See Section E***
14	Wet Clutch High Pressure Lubrication
15	Clutch A Operating Pressure
16	Front PTO Brake Release Operating Pressure
17	Clutch R Operating Pressure
18	Rear PTO Brake Release Operating Pressure
19	Front PTO Clutch Operating Pressure
20	Transmission Brake Release Operating Pressure
21	Rear PTO Clutch Operating Pressure

Mainline Pressure

Position 0-40 bar (0-600 lbf/in^2) pressure gauge **G** to test point **1**. With transmission in neutral and at normal operating temperature run engine at idle, allow recorded pressure to stabilise, note pressure. Progressively increase engine speed to maximum rev/min and note pressure.

Compare recorded pressures with the figures in Technical Data Section.

Lubrication Pressure

Stop engine and move 0-40 bar (0-600 lbf/in^2) pressure gauge **G** to test point **2**. With transmission in neutral, start engine and allow to idle, once stabilised note pressure. Progressively increase engine speed to maximum rev/min and note pressure.

Compare recorded pressures with the figures in Technical Data Section.

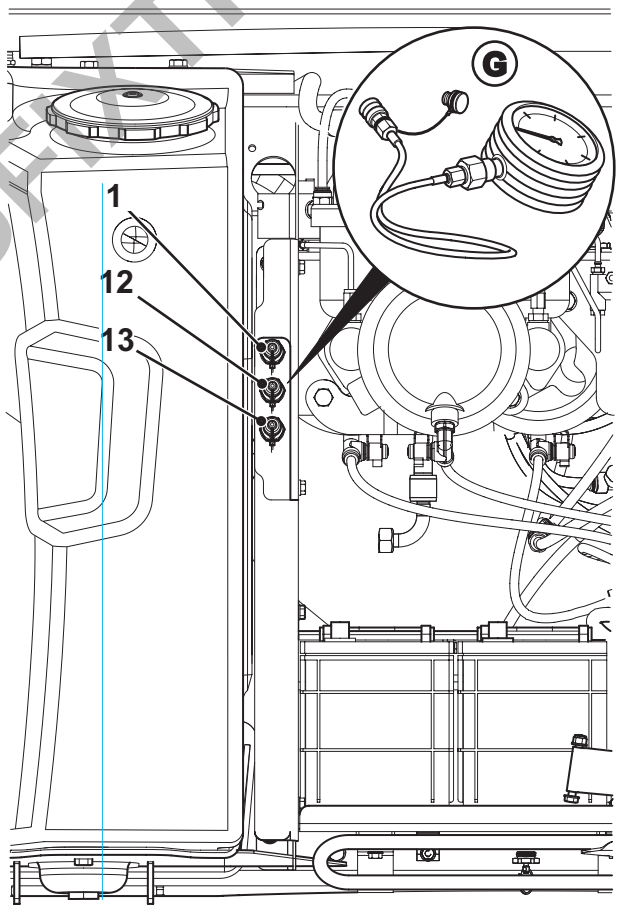


Fig 61.

Wet Master Clutch - Operating Pressure

Stop engine and move 0-40 bar (0-600 lbf/in^2) pressure gauge **G** to test point **3**. With personnel kept clear of transmission output flanges, start engine and allow to idle, press clutch pedal to full travel, note pressure.

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Assembly

Assembly is a reverse of dismantling with the following precautions.

1 Ensure all lubrication oil ways through gears are clear.

2 Torque set capscrews retaining gear **12** to gear **13** which is machined to shaft to 148Nm (15 kgf/m, 109 lbf/ft).

3 If bearing **15** has been removed, replace/renew at this stage. Ensure accurate sized sleeve is used to prevent damage to bearing cage. ***See para 9.***

4 When shaft is mounted in press or stood on bench, place small spacer under shaft to protect bearing **15**.

5 Lubricate needle rollers with clean transmission oil prior to assembling low range and extra low range gears **2** and **1**.

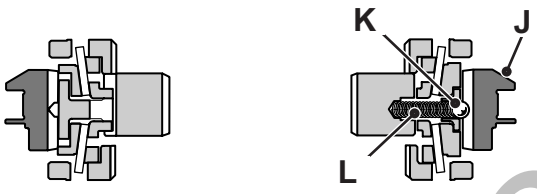


Fig 126.

6 Carefully lower synchronizer hub **3** onto shaft, ensuring chamfer on selector fork collar **J** faces towards larger diameter extra low range gear **1**. ⇨ *Fig 126. (F-83)*

7 Select an accurate sized mandrel when pressing extra low range needle bearing sleeve **9** onto shaft.

8 Unequal length needle races **7** and **8** supporting extra low range gear **1** must be fitted as shown to accurately align with lubrication drillings in gear **1**.

9 As shaft support taper roller bearings **4** and **15** are fitted, keep them rotating to check that the bearing cage is not inadvertently distorted. Press bearings down until they abut shaft shoulder to ensure accurate end float setting on final assembly into casing.

10 Check both gears rotate freely after assembly, washer item **5** should not rotate

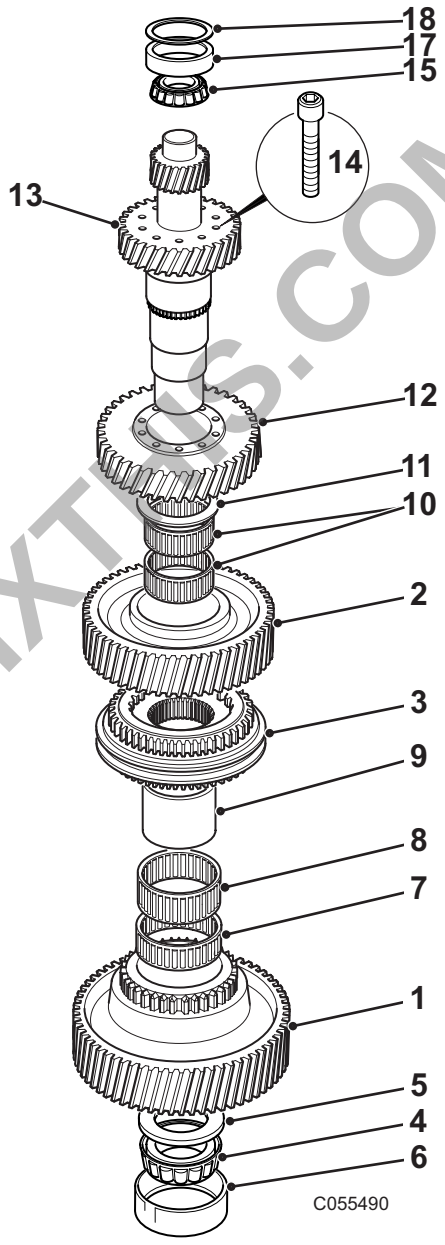


Fig 127.

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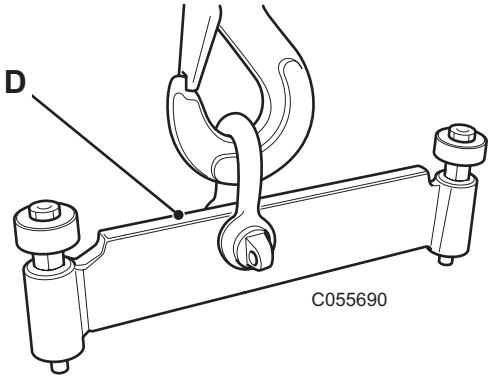
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break seal caused by gasket compound used on assembly. Lift casing clear.

Replacement

Note: *Replacement is a reverse of dismantling with the following precautions.*

1 Ensure joint faces of casings are clean, oil free and all dried gasket compound removed. Grease new 'O' rings and fit to gearbox joint flange. Run a bead of JCB Super Black Gasket B574 compound to joint face.



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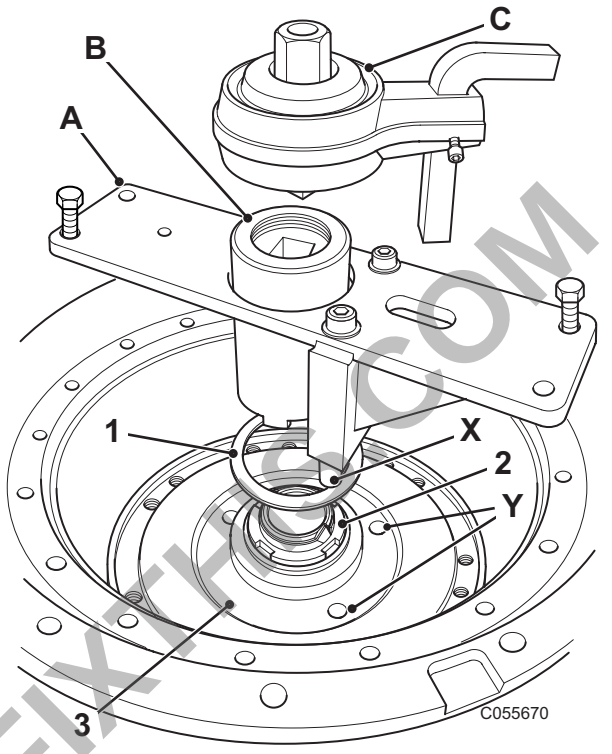
Fig 224.

2 Use spreader bar **D** to lift casing in a horizontal attitude. Position casing over transmission ensuring it is phased correctly. Insert new Verbus rip bolts and progressively torque tighten to 75Nm (7.6 kgf/m., 55 lbf/ft).

3 Reposition wet clutch drive plate **3** engaging splines on quill shaft **6**. Run new ring nut **2** down threads of nut.

4 Engage spigots **X** on special tool **A** with drillings **Y** in drive plate **3**. Bolt tool **A** to transmission flange and install ring nut socket **B** engaging castellation tabs with ring nut. Tighten ring nut to 1000Nm (102 kgf/m., 737 lbf/ft) using torque multiplier **C**. Stake flange of ring nut **2** into recesses in quill shaft **6**.

5 Install new plastic bearing ring **1**.



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Fig 225.

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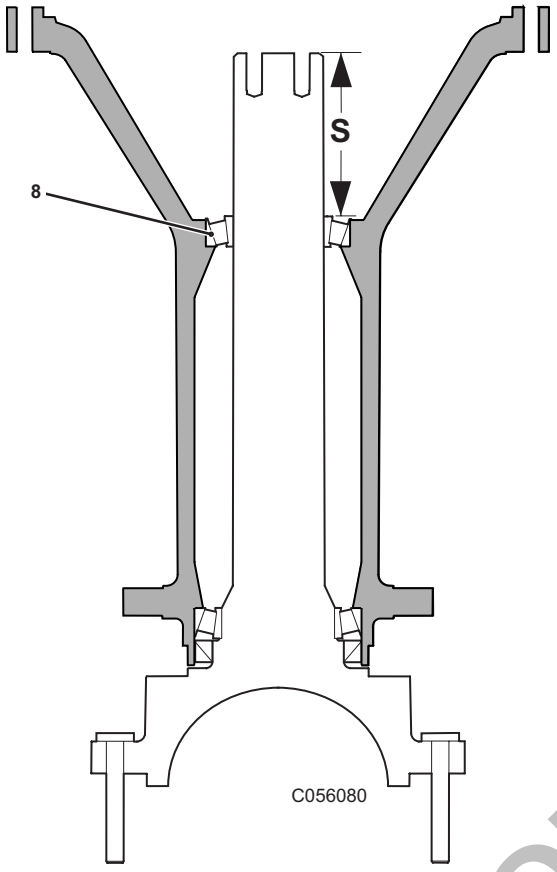


Fig 300.

22 Position epicyclic planet carrier **9** on a surface table. Using depth micrometer accurately measure distance **T** from face of clamp plate to surface table.

Note: *Later epicyclic planet carriers 9 have deviation figure etched on top face of planet pin at* ***U****.*

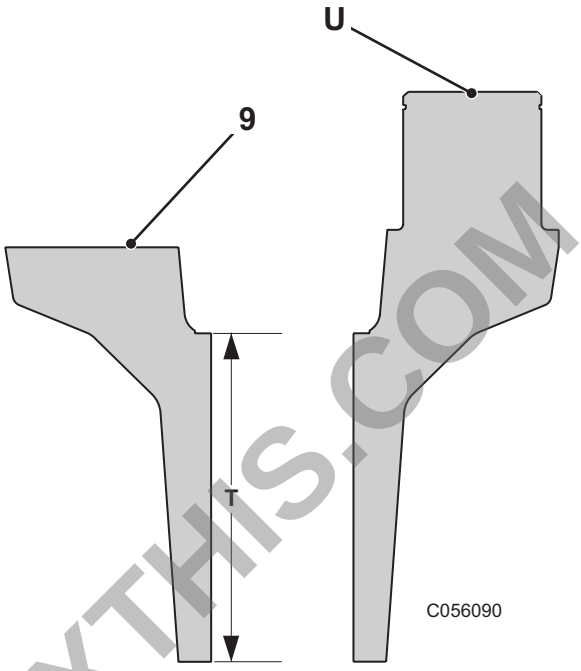


Fig 301.

23 Subtract dimension **T** from dimension **S**. Add to this figure the bearing pre-load factor of 0.1mm noted on the setting calculation Excel sheet available from JCB Technical Service. The result equals the thickness of bearing shim **12** to be placed on top of bearing as shown.

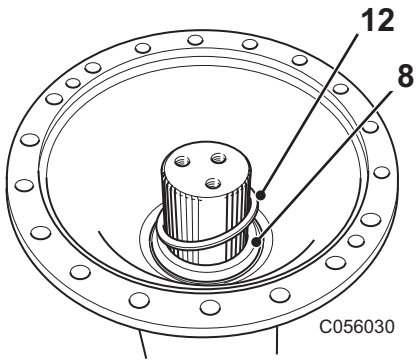


Fig 302.

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Dismantling and Assembly

The numerical sequences on the illustration are intended as a guide to dismantling.

Assembly is the reverse of dismantling.

Note: *To replace the desiccant canister (see 1000 Hour Service Schedule, Section 3) unscrew item* ***A1****. Secure the replacement canister hand tight.*

Note: *Items* ***E1*** *to* ***E9*** *- all are held in place by circlip* ***E1****. After releasing the circlip, take care to prevent the rest of the components flying apart.*

Note: *Items* ***F1*** *to* ***F22*** *-* ***F1*** *is a push fit into the base of the air dryer body.*

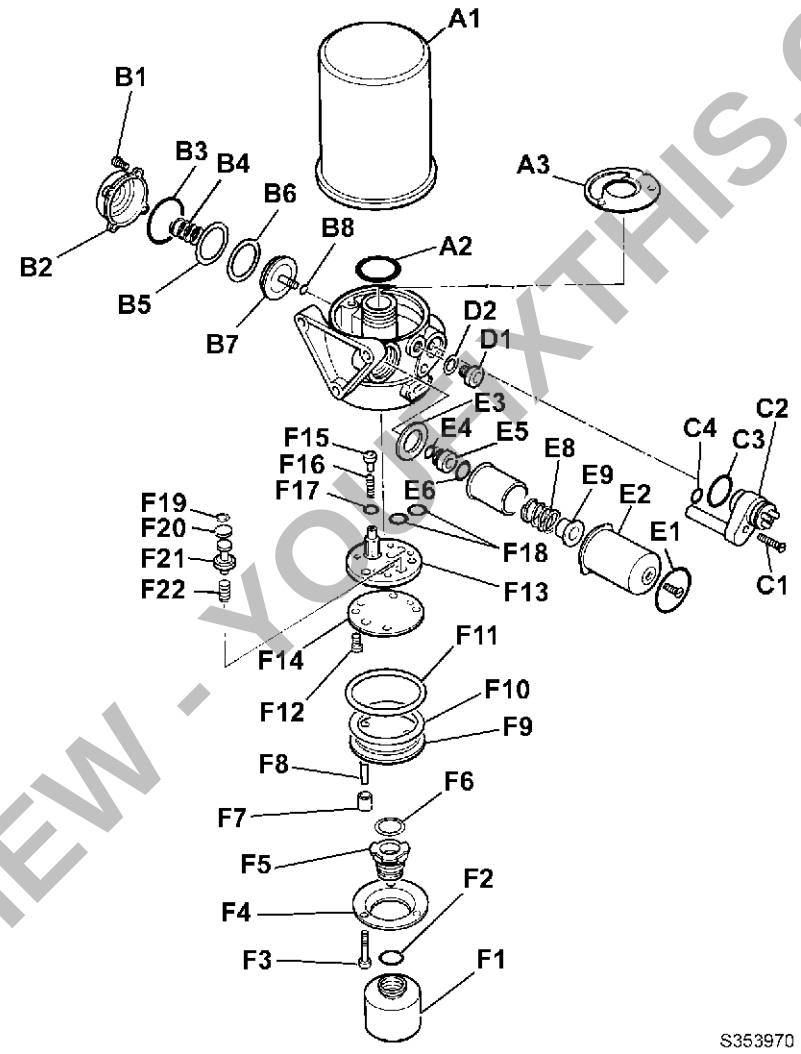


Fig 21.

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