Torque Table

Tighten cap screws and nuts according to the table below if there are no other special instructions.

Cap Screw Name Size (Size)			M6	M8	M10	M12	M14	M16	M18	M20
Cap Screw	Spanner	[mm]	10	13	17	19	22	24	27	30
		[in.]	0.39	0.51	0.67	0.75	0.87	0.95	1.06	1.18
	Tightening torque	[Nm]	6.9	19.6	39.2	58.8	98.1	157.2	196.0	274.0
		[lb-ft]	5.1	14.5	29.0	43.4	72.5	116.0	144.6	202.4
Socket Head Cap Screw	Spanner	[mm]	5	6	8	10	12	14	14	17
		[in.]	0.20	0.24	0.32	0.39	0.47	0.55	0.55	0.67
	Tightening torque	[Nm]	8.8	21.6	42.1	78.4	117.6	176.4	245.0	343.0
		[lb-ft]	6.5	15.9	31.1	57.8	86.8	130.1	180.8	253.1

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SPECIFICATIONS

	CX330	CX350

Engine

Make	Isuzu	Isuzu
Model	6HK1XQB	

Type: Four stroke, water cooled with overhead valves, direct injection in-line cylinder (electronic control) with turbo-charger.

Number of cylinders	6
Bore and stroke	115 x 125 mm
Displacement	7790 cc

Operating conditions

Idle	900 rpm
Max speed	2000 rpm
Power ECC 1289	185.45 kW (248.6 HP)
Max torque	962.3 Nm at 1600 rpm

Capacities

Engine oil capacity	33 litres
Engine cooling circuit	42 litres
Capacity of only the radiator	21 litres
Fuel reservoir	580 litres
Hydraulic fluid reservoir capacity	175 litres
Total hydraulic circuit capacity	350 litres
Capacity of only the oil-cooler	16.5 litres
Travel reduction gear housing capacity	11 litres
Swing drive housing capacity	6 litres
Idler pulley capacity	250 cc
Upper roller capacity	245 to 250 cc
Lower roller capacity	280 cc

NOTE: *These capacities are given only for information purposes. To check the fluid levels, always use the oil gauge, visual gauges or the filler cap.*

Electrical system

Type of system	24 volts earth negative
Alternator amperage	50 amperes
Battery	
Number of batteries required	2
Voltage of each battery	12 volts
Capacity	140 Ah
Reserve	160 min
Cold startability at -17°	800 A
Load for load control	400 A
Starter	
Voltage	24 volts
Power	5 kW
Voltage regulator	built-in, without adjustment

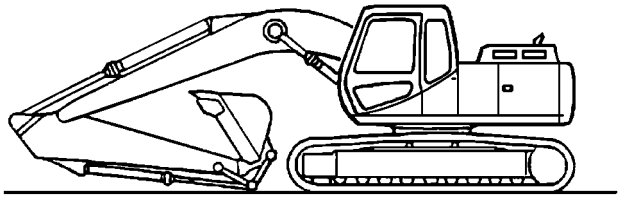
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ENGINE

Removal and installation

STEP 1



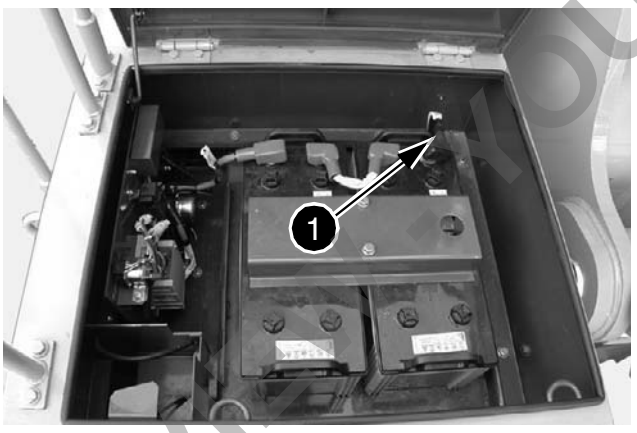
JS00163A

Park the machine on hard, flat ground. Lower the attachment to the ground.

STEP 2

Release pressure in the hydraulic system and in the hydraulic reservoir (see Section 8000).

STEP 3



CD01C162

Disconnect the battery ground (-) cable (1) from the battery.

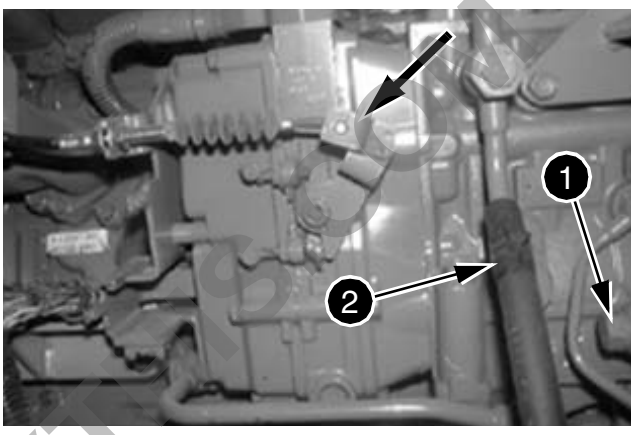
STEP 4

Refer to Section 8003 and remove the hydraulic pump.

STEP 5

Refer to Section 2001 and remove the radiator and oil-cooler assembly.

STEP 6

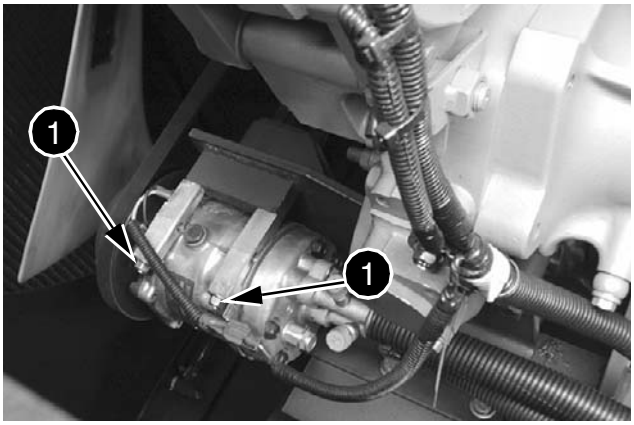


CD02C151

Remove the engine shutdown control (arrow).

Disconnect the fuel supply pipe (1) and the fuel return pipe (2) and plug them.

STEP 7



CD01D131

Remove the screws (1) from the compressor and put it away from the engine.

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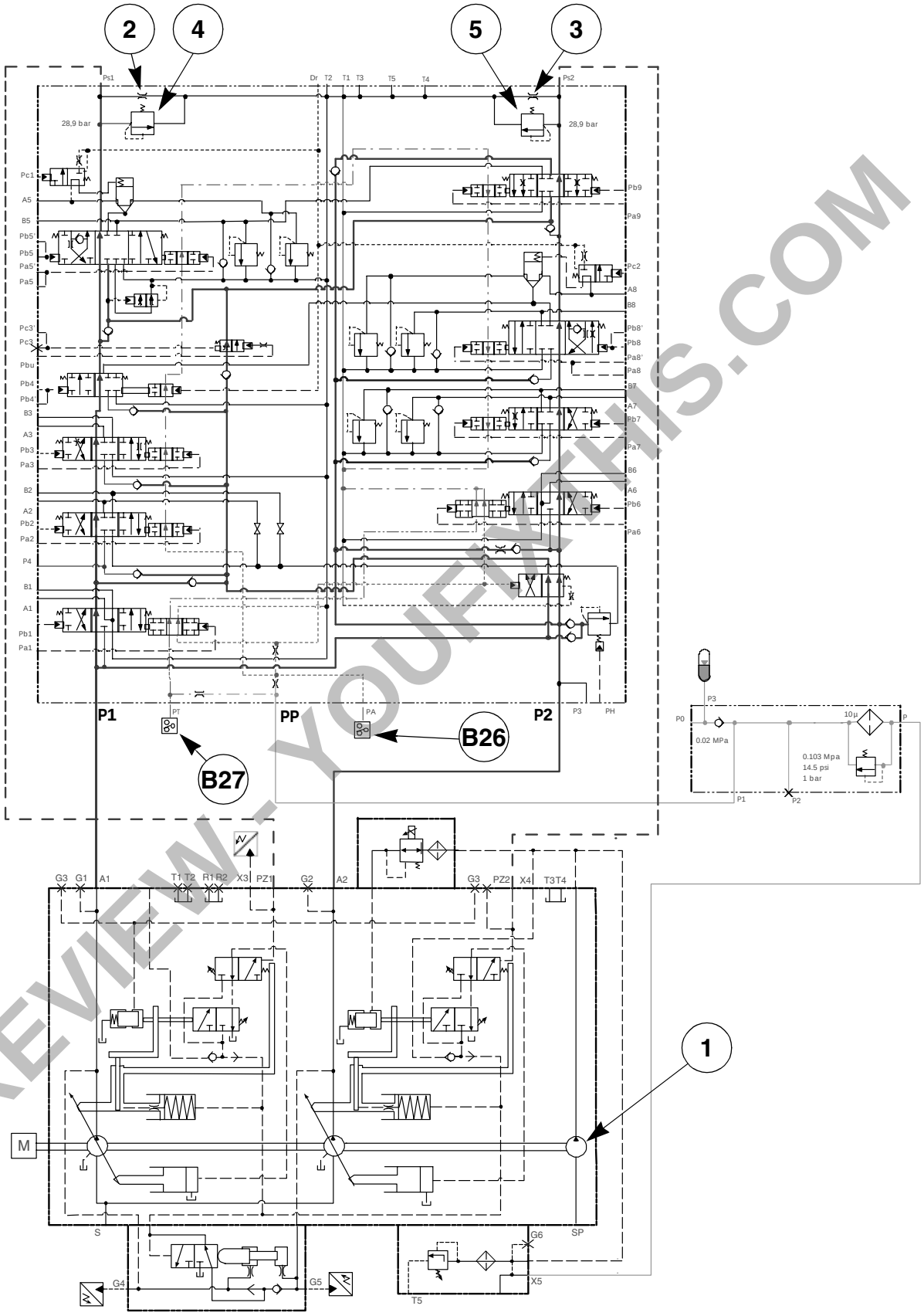
TROUBLESHOOTING

Prior inspections

Item	Target	Action
POINTS TO BE CHECKED WHEN STARTING		
Lubricants - Coolants		
1. Check the quantity of fuel	---	Add fuel
2. Check that fuel is not contaminated	---	Clean, drain
3. Check the quantity of hydraulic fluid	---	Fill with fluid
4. Inspect the hydraulic fluid filter	---	Drain, clean
5. Check the quantity of oil in each reduction gear	---	Fill with oil
6. Check the quantity of engine oil	---	Fill with oil
7. Check the quantity of coolant	---	Fill with coolant
8. Check the filter restriction indicator (dust)	---	Clean or replace
Electrical equipment		
9. Check the battery terminals and wiring for tightness and corrosion	---	Tighten or replace
10. Check the alternator terminals and wiring for tightness and corrosion	---	Tighten or replace
11. Check the starter motor terminals and wiring for tightness and corrosion	---	Tighten or replace
OTHER POINTS TO CHECK		
Hydraulic system - Mechanical equipment		
12. Abnormal noise or smell	---	Repair
13. Check for oil leaks	---	Repair
14. Air in the system	---	Bleed the air
Electrical system - Electrical equipment		
15. Check the battery voltage (with the engine shut down)	23-26 V	Replace
16. Check the quantity of fluid in the battery	---	Add or replace
17. Make sure that the cables are not discoloured, burnt or stripped	---	Replace
18. Check for missing or loose cable retaining clips	---	Repair
19. Check for damp on cables (especially on connectors and terminals)	---	Disconnect and dry if damp
20. Check fuses for condition and corrosion	---	Replace
21. Check the alternator voltage (with the engine speed above the throttle mid-point) (when battery charge is insufficient, there can be 25 V only at start up)	27.5-29.5 V	Replace
22. Noise from relay battery (with starter motor ON or OFF)	---	Replace

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CM02A024

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ITEM	DESCRIPTION
A1.	COMPUTER
A2.	ENGINE CONTROLLER
A3.	ELECTRONIC ACCELERATION
A4.	WIPER CONTROLLER
B1.	COOLANT TEMPERATURE SENSOR
B2.	HYDRAULIC OIL TEMPERATURE SENSOR
B21.	ENGINE OIL PRESSURE SWITCH
B22.	SWING PILOT PRESSURE SWITCH
B23.	BREAKER / CRUSHER PILOT PRESSURE SWITCH
B24.	SECOND OPTION PILOT CIRCUIT 2 PRESSURE SWITCH
B25.	BREAKER PILOT PRESSURE SWITCH
B26.	UPPER PILOT PRESSURE SWITCH (YELLOW BAND)
B27.	TRAVEL PILOT PRESSURE SWITCH
B28.	SECOND OPTION PILOT CIRCUIT 1 PRESSURE SWITCH
B41.	ENGINE RPM SENSOR
B42.	PUMP PRESSURE SENSOR (P1)
B43.	PRESSURE SENSOR (MEGA-CONT)
B44.	PUMP PRESSURE SENSOR (P2) (BLUE BAND)
B45.	OVERLOAD INDICATOR PRESSURE SWITCH
B61.	SUNLOAD SENSOR
B81.	HORN
E1.	WORKING LIGHT (UPPERSTRUCTURE)
E2.	WORKING LIGHT (ATTACHMENT)
E3.	WORKING LIGHT (CAB)
E4.	CAB LIGHT
ES1.	CIGARETTE LIGHTER
E52.	AIR CONDITIONER
F1.	FUSE 20A; ENGINE CONTROLLER
F10.	FUSE 10A; OPTION LINE AND LUBRICATOR CONNECTOR
F11.	FUSE 10A; BACK-UP
F12.	FUSE 10A; KEY SWITCH
F13.	FUSE 20A; HEATER / AIR CONDITIONER
F14.	FUSE 5A; AIR CONDITIONER COMPRESSOR
F15.	FUSE 15A; WORKING LIGHT
F16.	FUSE 15A; WORKING LIGHT (NOT USED)
F17.	FUSE 10A; DC-DC CONV (24V-12V) CONVERTER
F18.	FUSE 15A; WIPER AND WASHER
F19.	FUSE 10A; HORN
F2.	FUSE 20A; COMPUTER CONTROL INSTRUMENT PANEL AND DIAGNOSTIC TEST SOCKET
F20.	FUSE 15A; CIGARETTE LIGHTER AND CAB SEAT COMPRESSOR ADJUSTMENT
F21.	FUSE BOX
F22.	FUSE 20A; MAIN FUSE FOR F11 AND F12 CIRCUITS
F23.	FUSE 65A; MAIN FUSE FOR F3 TO F10 AND F13 TO F20 CIRCUITS
F24.	FUSE 20A; MAIN FUSE FOR F2 CIRCUIT
F25.	FUSE 20A; MAIN FUSE FOR F1CIRCUITS
F27.	FUSE 50A; SAFETY RELAY
F3.	FUSE 20A; COMPUTER POWER
F4.	FUSE 10A; HYDRAULIC FUNCTION CANCELLATION LEVER SWITCH
F5.	FUSE 10A; AIR CONDITIONER CONDENSER FAN
F6.	FUSE 10A; ROTARY LIGHT
F7.	FUSE 20A; FUEL FILLER PUMP
F8.	FUSE 15A; ENGINE STOP MOTOR
F9.	FUSE 30A; GLOW PLUG
G1.	BATTERY
G2.	ALTERNATOR
H1.	AUDIBLE WARNING DEVICE
K1.	RELAY-ENGINE EMERGENCY STOP
K2.	RELAY-GLOW PLUG
K3.	RELAY-HORN
K4.	RELAY-WORKING LIGHT
K5.	RELAY-ROTARY LIGHT
K6.	RELAY-AIR CONDITIONER CONDENSER FAN
K7.	RELAY BATTERY
K8.	RELAY SAFETY
M1.	STARTER MOTOR
M2.	ENGINE EMERGENCY STOP MOTOR
M3.	WIPER MOTOR
M4.	WASHER MOTOR
M5.	MOTOR (AIR CHANGING)
M6.	AIR VENT DIRECTION CONTROL MOTOR
M7.	MOTOR ACT (AIR-MIX)
M8.	BLOWER MOTOR
M9.	AIR CONDITIONER CONDENSER FAN MOTOR
P1.	INSTRUMENT PANEL
P2.	SWITCH PANEL (LEFT-HAND)
P3.	SWITCH PANEL (RIGHT-HAND)
P4.	MONITOR DISPLAY
P5.	HOURMETER
P6.	AIR CONDITIONER CONTROL PANEL
R1.	GLOW PLUG
R2.	FUEL FLOW ADJUSTMENT RESISTOR
R3.	THROTTLE VOLUME
R4.	THERMISTOR
R5.	FUEL SENSOR
S1.	KEY SWITCH
S10.	WORKING LIGHT SWITCH
S11.	WIPER SWITCH
S12.	WASHER SWITCH
S13.	OVERLOAD SWITCH
S14.	BREAKER / CRUSHER SWITCH
S15.	HORN SWITCH
S16.	ONE TOUCH IDLE
S2.	TRAVEL MODE SWITCH
S3.	WORK MODE SWITCH
S4.	AUTO MODE SWITCH
S5.	CUSHION CONTROL SWITCH
S51.	HYDRAULIC FUNCTION CANCELLATION LEVER SWITCH
S52.	AIR CONDITIONING COMPRESSOR CLUTCH SWITCH
S53.	DOOR LIMIT SWITCH
S54.	FRONT WINDOW LIMIT SWITCH
S55.	RESERVE TANK LSW
S6.	ROTARY LIGHT SWITCH
S7.	AUDIBLE ALARM CUT OUT SWITCH
S8.	SWING BRAKE SWITCH
S9.	ENGINE EMERGENCY STOP SWITCH
U1.	DC-DC (24V-12V) CONVERTER
W1.	ANTENNA
X1.	FUEL FILLER PUMP CONNECTOR
X2.	ROTARY LIGHT CONNECTOR
X3.	OPTINAL POWER CONNECTOR
X4.	ENGINE TEST POINT CONNECTOR
X5.	CONTROLLER TEST POINT CONNECTOR
X6.	CAB SEAT COMPRESSOR MOTOR CONNECTOR
X7.	LUBRICATOR CONNECTOR
X8.	RADIO CONNETOR
X9.	ANTI-THEFT SYSTEM CONNETOR
Y1.	SWING PILOT SHUT-OFF SOLENOID VALVE (GREEN BAND)
Y2.	PILOT PRESSURE SOLENOID VALVE (BLUE BAND)
Y3.	SWING BRAKE SOLENOID VALVE (PINK BAND)
Y4.	2 STAGE TRAVEL SOLENOID VALVE (RED BAND)
Y5.	POWER-UP SOLENOID VALVE (YELLOW BAND)
Y6.	CUSHION CONTROL SOLENOID VALVE (LIGHT GREEN BAND)
Y7.	MAIN PUMP PROPORTIONAL SOLENOID
Y8.	AIR CONDITIONER MAGNET CLUTCH
Y9.	CRUSHER/BREAKER OPTION TWO FLOW SOLENOID VALVE

LEGEND

- CONNECTED
- NOT CONNECTED
- BOOT GROUND
- CABLE GROUND
- SINGLE WIRE CONNECTOR
- HARNESS
- CONNECTOR (MALE)
- CONNECTOR (FEMALE)
- INSULATION AGAINST MAGNETISM
- INDICATES CONSTANT POWER
- INDICATES POWER WHEN KEY SWITCH IS ON

CONNECTOR NUMBER (IN CAB) — CN12 (R) — COLOR OF CONNECTOR (IF NOT INDICATED COLOR IS WHITE)

CONNECTOR LETTER LOCATED (OUTSIDE CAB)

AREA — 60 B 001 — CIRCUIT NUMBER

TABLE OF COLOR SYMBOLS

SYMBOL	COLOR
B	BLACK
W	WHITE
Br	BROWN
P	PINK
V	VIOLET
G	GREEN
O	ORANGE
R	RED
Y	YELLOW
Lg	LIGHT GREEN
Sb	SKY BLUE
L	BLUE
Gr	GRAY

NOTE :
1. "BR" INDICATES BLACK CABLE WITH RED STRIPE.
2. WATERPROOF CONNECTORS USED OUTSIDE OF CAB.

CX330 - CX350 EXCAVATOR ELECTRICAL SCHEMATIC

Part Number 9-35930

SAFETY

This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death.

To prevent injury always follow the Warning, Caution and Danger notes in this section and throughout the manual.

Place a “Do not operate“ tag on the starter switch key before carrying out any service or repair work on the machine.

.

WARNING: *Read the operator’s manual to familiarize yourself with the correct control functions.*

WARNING: *Operate the machine and equipment controls from the seat position only. Any other method could result in serious injury.*

WARNING: *This is a one man machine, no riders allowed.*

WARNING: *Before starting engine, study Operator’s Manual safety messages. Read all safety signs on machine. Clear the area of other persons. Learn and practice safe use of controls before operating.*
It is your responsibility to understand and follow manufacturers instructions on machine operation, service and to observe pertinent laws and regulations. Operator’s and Service Manuals may be obtained from your Case dealer.

WARNING: *If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hat, safety shoes, ear protection, eye or face protection, heavy gloves and reflector clothing.*

WARNING: *When working in the area of the fan belt with the engine running, avoid loose clothing if possible, and use extreme caution.*

WARNING: *When doing checks and tests on the equipment hydraulics, follow the procedures as they are written. DO NOT change the procedure.*

WARNING: *When putting the hydraulic cylinders on this machine through the necessary cycles to check operation or to remove air from a circuit, make sure all people are out of the way.*

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3) Mode selection switch

a) When the ignition switch is turned on, the "S" mode is selected by default (except if auto mode was selected at the time of turning off the ignition switch).

b) Each time the work mode switch (S3) is pressed, the mode changes:
S → H → L → S → H

c) If the auto mode switch (S4) is activated, the mode changes to auto mode. If the auto mode switch (S4) is pressed once again, the mode changes to "S" mode.

d) When auto mode is activated, if the work mode switch (S3) is pressed, the work mode does not change.

e) After turning off the ignition switch in auto mode, when the ignition switch is turned on again, the mode remains automatic.

4) Operation

1. The work mode (S3) and auto mode (S4) switches signal is managed by the computer (A1) that changes the mode according to the input signal.

2. The computer (A1) transmits the selected mode to the monitor display (P4) via series communication (2). The monitor display (P4) displays the selected mode.

3. The computer (A1) transmits the selected mode to the engine controller (A2) via CAN communications that control the electronic acceleration (A3).
The engine controller (A2) transmits the mode and the data concerning the rpm to the computer (A1) via CAN communications.

4. The computer (A1) calculates the main pump proportional solenoid (Y7) current based on the selected mode and the data on the actual rpm and the target rpm of the engine.

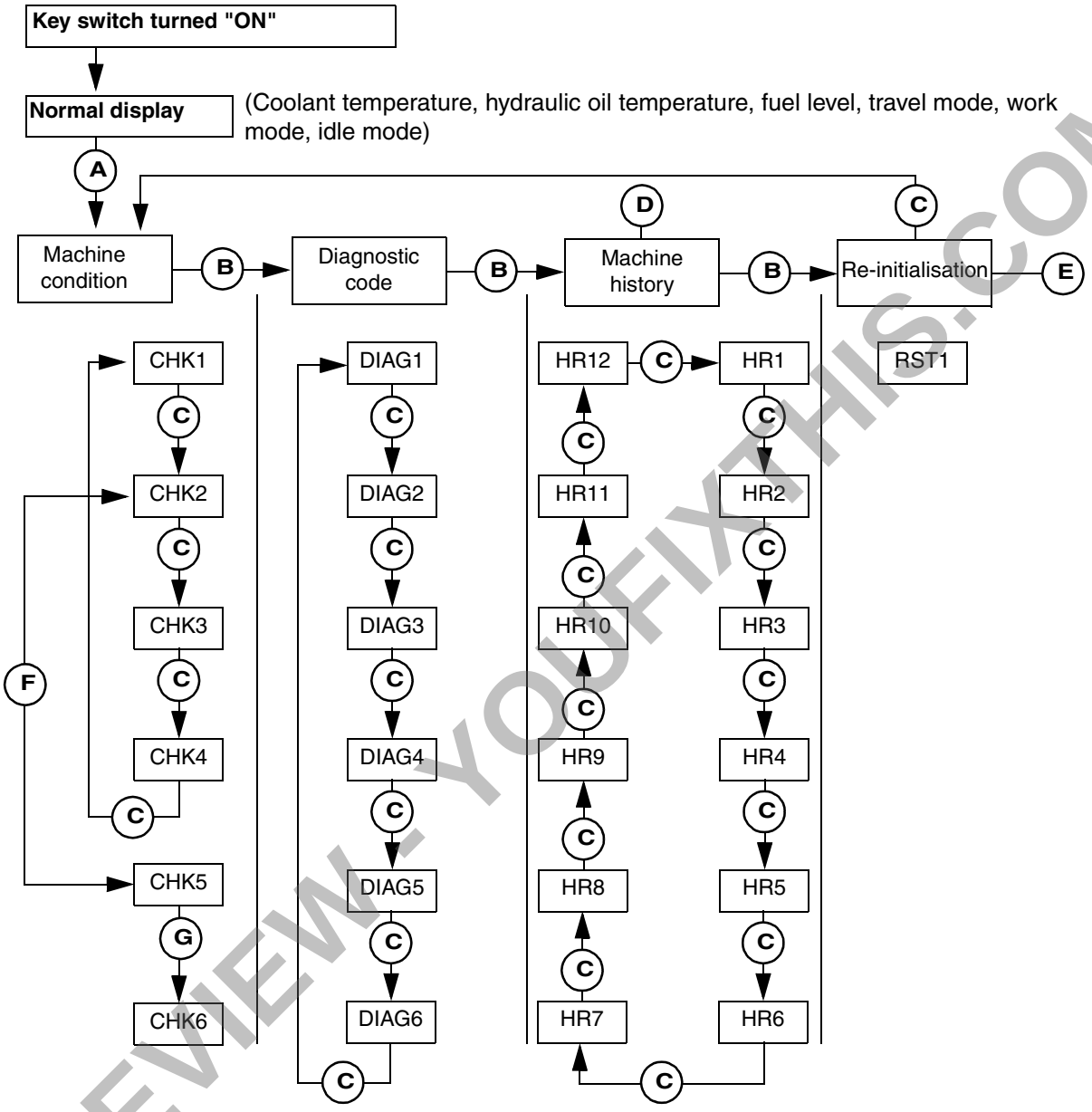
5. The computer (A1) transmits the new data to the monitor display (P4) via series communications.

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ACCESS AND CONTENTS OF MONITOR DISPLAYS (Diagnostic mode)

Access to monitor displays



A. Press the travel mode and work mode switches simultaneously for a minimum of 3 seconds.

B. Press the auto work mode switch.

C. Press the audible alarm cut out switch.

D. To erase the data, press the work mode switch for a minimum of 10 seconds and the audible warning device sounds.

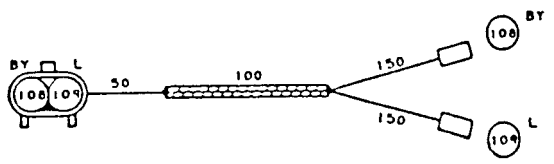
E. To re-initialise the system, press the audible alarm cut out switch.
To programme the system, press the travel mode switch.
To erase the data, press the work mode switch for a minimum of 10 seconds and the audible warning device sounds.

F. To initialise the automatic overload detection on the electrical circuit, press the travel mode switch.

G. To initialise the automatic detection of short-circuits, press the travel mode switch for a minimum of 10 seconds and the audible warning device sounds.

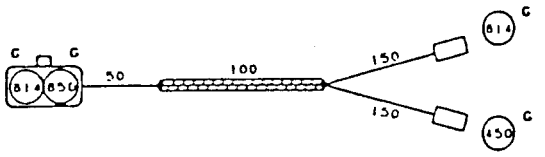
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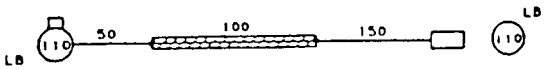
BS98F229

9. For harness end of pressure switch



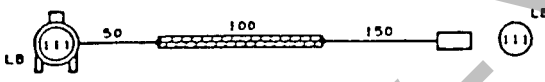
BS98F230

10. For air conditioning compressor clutch switch (2P)



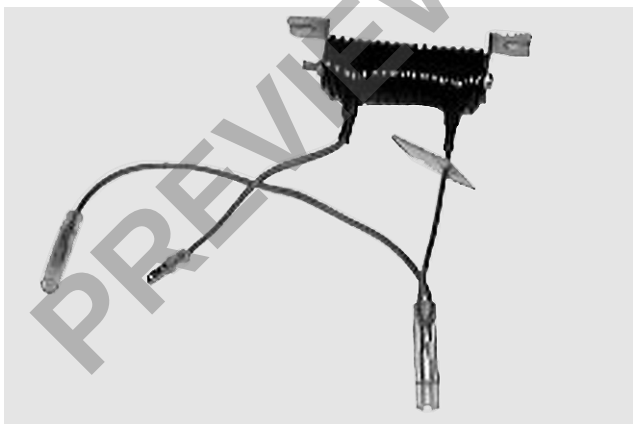
BS98F231

11. Not used



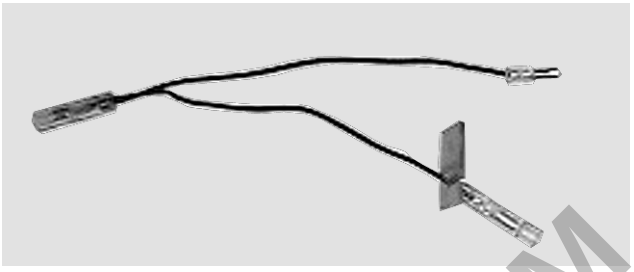
BS98F232

12. Not used



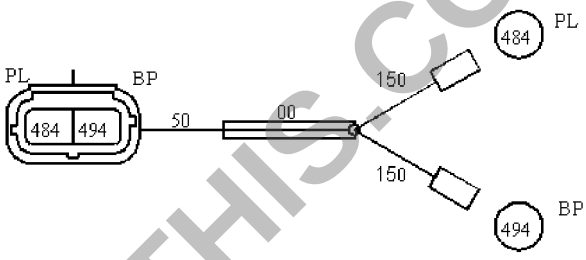
CD00N018

13. Not used



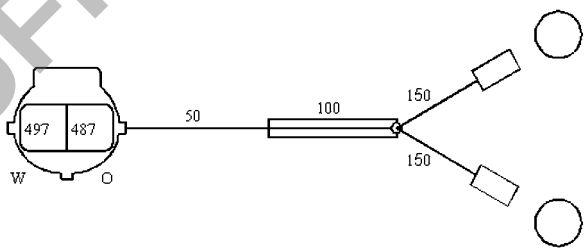
CD00N019

14. Not used



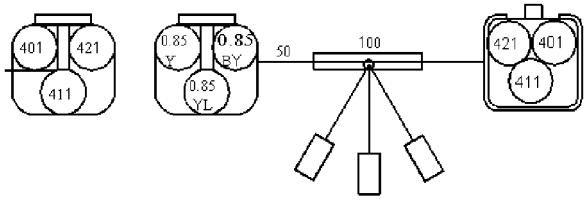
CS00E531

15. For hydraulic oil and coolant solution temperature sensor



CS00E530

16. For engine rpm sensor



CS00E532

17. For pressure sensor

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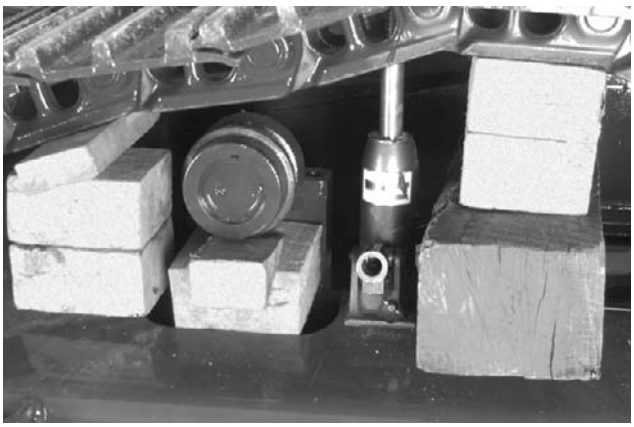
CHECKING FOR LEAKS 18

WARNING: *This symbol is used in this manual to indicate important safety messages. Whenever you see this symbol, carefully read the message which follows. Your safety depends on it.*

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Installation

STEP 1



JD00338A

Place the shims on the undercarriage, then install and support the upper roller.

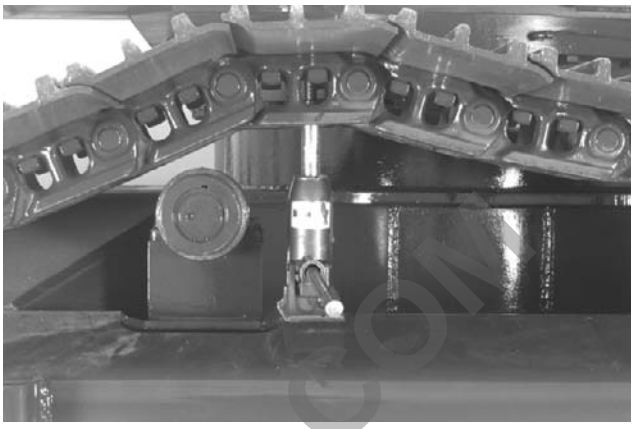
STEP 2



JD00319A

Apply Loctite 262 to the screw threads. Install two tempered washers and screws to fasten the upper roller bracket to the undercarriage. Tighten the screws to torque (see specifications).

STEP 3



JD00317A

Remove the wood blocks between the track pad and the undercarriage.

STEP 4

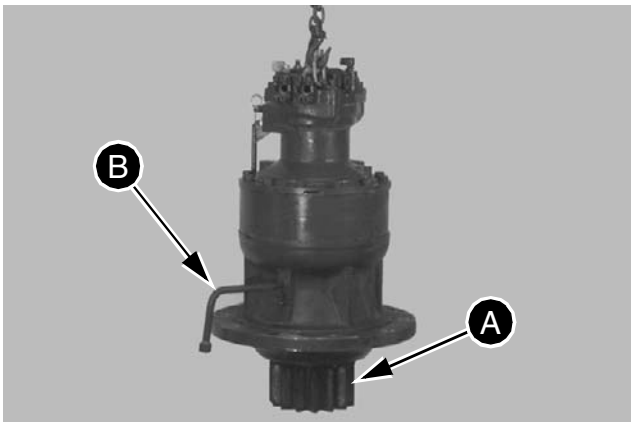
Operate the hydraulic jack to lower the track onto the upper roller. Remove the jack.

STEP 5

Refer to "Track tension setting" in section 5001.

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STEP 4

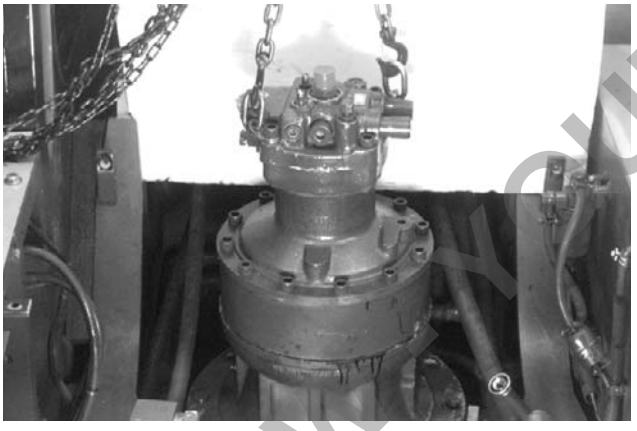


JD00437A

Raise the swing motor/reduction gear assembly off the ground. Apply No. 2 EP lithium grease over the pinion (A).

NOTE: *Before installing the swing motor/reduction gear assembly, check that the drain hose (B) is installed on the side of the reduction gear housing.*

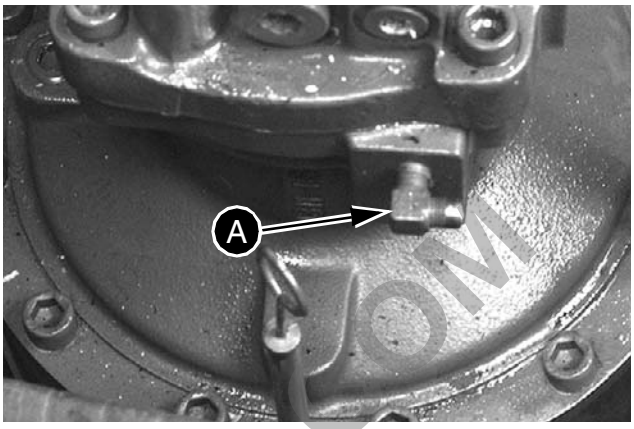
STEP 5



JD00385A

Raise the swing motor/reduction gear assembly and bring it into position above the upperstructure mating surface, ensuring that it is in line with the alignment marks previously made.

STEP 6



JD00473A

Connect the hand pump CAS-10090 to the swing motor brake release orifice (A).

STEP 7

Check that the hand pump is filled with fluid.

STEP 8

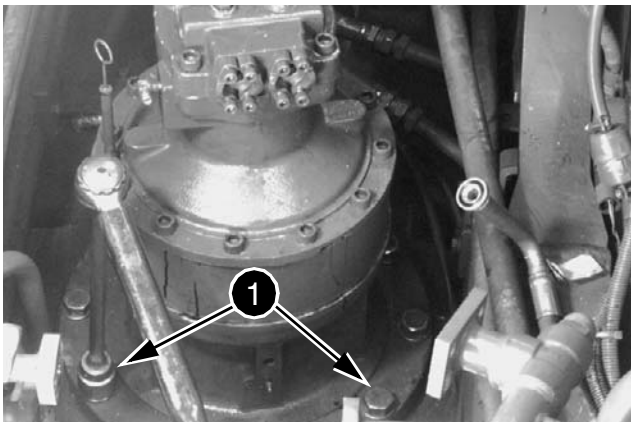
Operate the hand pump until the pressure gauge shows 29 bar. The swing motor brake should be released, thus allowing the reduction gear output shaft to turn.

STEP 9

Lower the swing motor/reduction gear assembly onto the upperstructure mating surface, using a dowel pin.

NOTE: *Make sure that the reduction gear output gear is correctly engaged in the upperstructure crown wheel.*

STEP 10



JD00449A

Apply Loctite 262 to the screw threads (1) and tighten them to the torque specified in Section 1002.

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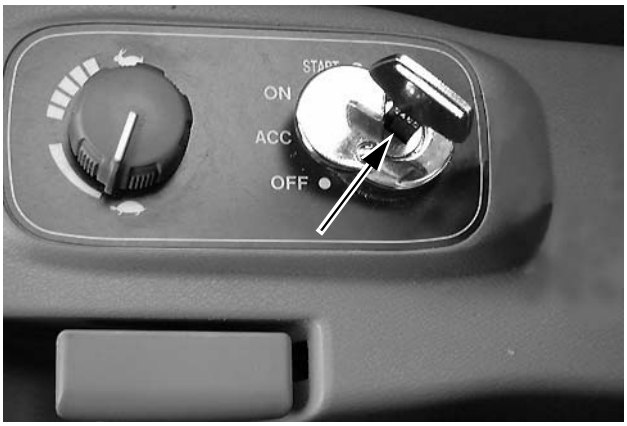
RELEASING PRESSURE IN THE HYDRAULIC SYSTEM

IMPORTANT: *Before carrying out any operation on the hydraulic system, the pressure in all the systems must be zero.*

STEP 1

Place the machine on flat, level ground, with the attachment lowered to the ground, then shut down the engine.

STEP 2



CD00E060

Turn the ignition key to the "ON" position (ignition).

STEP 3



CD00E006

Lower the function cancellation control arm (exit safety bar).

STEP 4



CD00E111

Operate the control levers ten times to the right and left and backwards and forwards.

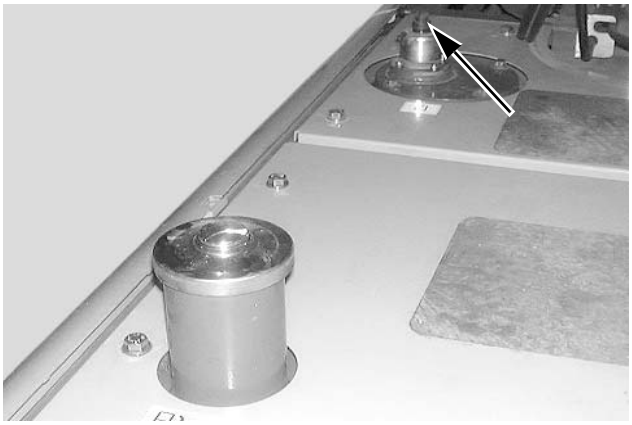
STEP 5



CD00E080

Turn the ignition key to the "OFF" position (shut down).

STEP 6



CD01K024

Press the button located above the breather to release any possible pressure.

PREVIEW ONLY

Not possible to select cushion control

No.	Tests	Results	Repairs
1	Check on monitor display "CHK3" if information displayed changes to "ON" when cushion control is selected/deselected	Information stays on "OFF"	Check the signal at the electronic input box: Below 5 volts: replace the electronic box 5 volts: replace the electronic box
2	Check the pilot pressure at the cushion control solenoid valve output (C4)	Pressure too low	Check the electrical supply and the solenoid valve coil (No. 3 and 4)
		Pressure correct (39 bar - 3.9 MPa)	Repair or replace the cushion control valve
3	Check the voltage at the electrical plug on the cushion control solenoid valve	Voltage < 24 V	Check the electrical harness
4	Check the cushion control solenoid valve coil	Infinite or 0 Ohm	Replace the solenoid valve
		About 40 Ohm	Replace the solenoid valve coil

The boom or the dipper does not lower

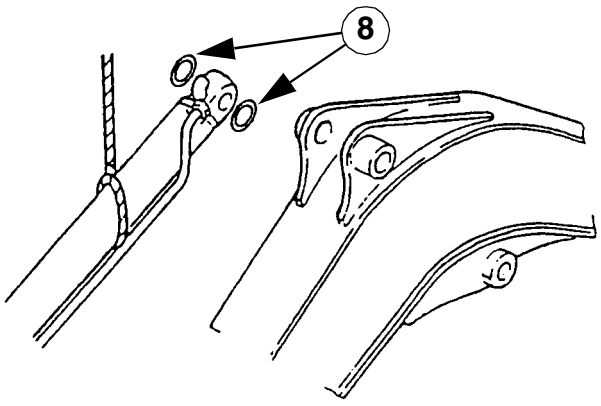
(No problems with other movements)

No.	Tests	Results	Repairs
1	Manually check the movement of the pilot spool	Difficult to move	Spool stuck or spring broken
2	Check the load holding operation	Sticking	Repair or replace the load holding valve
3	Check the pilot pressure at the control valve spool	Pressure below 30 bar (3.0 MPa)	Check the operation of the control lever spool, replace or repair

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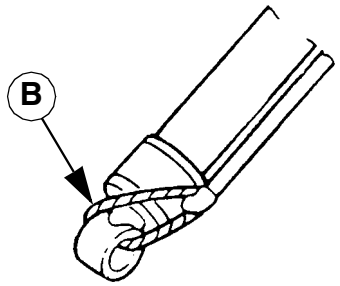
STEP 11



JS00602A

Carefully lift the dipper cylinder and move it away from the dipper. Remove the shims (8). Place the dipper cylinder on suitable supports.

STEP 12

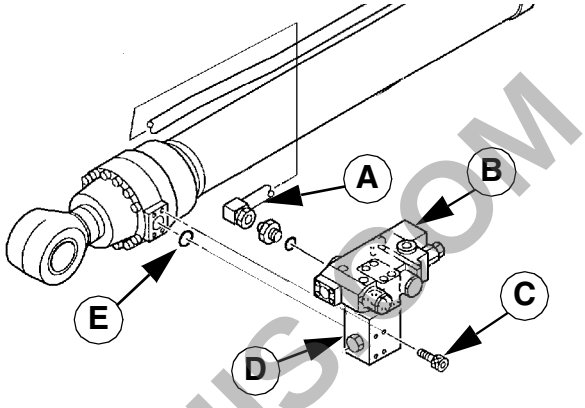


JS00586A

Remove the sling (B) that holds the cylinder rod to the cylinder barrel.

STEP 13

(Only if the machine is equipped with a safety valve)

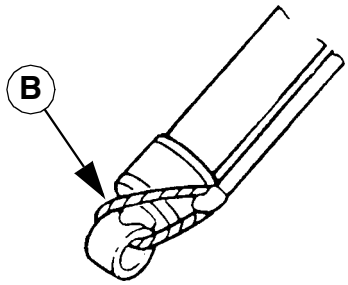


CS00G504

Disconnect the pipe (A) from the safety valve (B). Remove the screws (C), the base (D) and the safety valve (B) from the dipper cylinder. Scrap the O-ring (E).

Installation

STEP 1



JS00586A

Attach a suitable sling (B) to the dipper cylinder to hold the cylinder rod to the cylinder barrel.

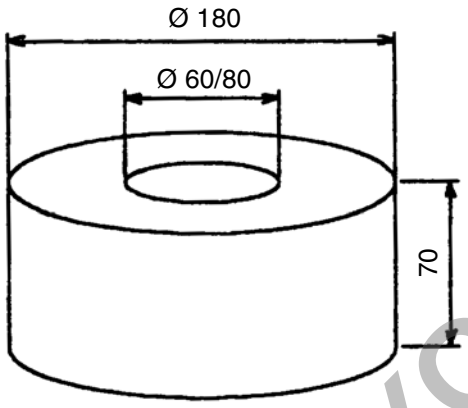
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SPECIAL TORQUE SETTINGS

Swash plate retaining screw	6.9 to 8.3 Nm
HP pump body retaining screw	310 to 390 Nm
LP pump body retaining screw	55 to 69 Nm
Balance relief valve retaining screw	28 to 35 Nm
Control block retaining screw	28 to 35 Nm
Pressure setting valve	74 to 88 Nm
Pressure setting block screw	6.9 to 8.3 Nm
DRE 4K cover screw	12 to 15 Nm
Counterbalance valve block screw	28 to 35 Nm
Safety valve block screw	28 to 35 Nm

TOOLS REQUIRED

Tool to be manufactured locally



Pump bracket (shaft side)
(Dimensions in mm)

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SPECIAL TORQUE SETTINGS

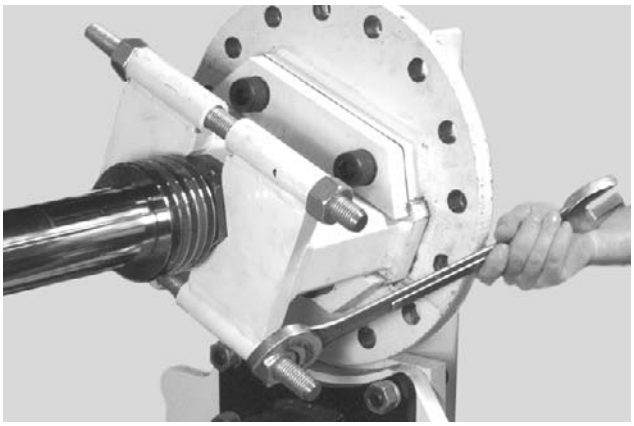
Spool assembly
- Screws (D) for spools (2) to (6) and (14) to (17) ..... 20 to 22 Nm
- Screws (22) for the spool (19) ..... 19 to 22 Nm

Load holding valve (67)
- Plug (N) and (B) ..... 147 to 157 Nm
- Plug (P) ..... 14 to 18 Nm
- Retaining screw (76) ..... 39 to 44 Nm

Control valve assembly
- Relief valve (68) ..... 78 to 88 Nm
- Safety valves (69) ..... 78 to 88 Nm
- Safety valves (70) ..... 103 to 113 Nm
- Retaining screws (77) of the control valve sections ..... 167 to 177 Nm
- Plugs (92) ..... 205 to 227 Nm
- Plug (46) ..... 107 to 117 Nm
- Plugs (72) ..... 73 to 79 Nm
- Plugs (87) ..... 78 to 88 Nm
- Plugs (24) and (60) ..... 103 to 113 Nm
- Plug (61) ..... 39 to 44 Nm
- Plug (63) ..... 14 to 18 Nm
- Plugs (72) ..... 73 to 79 Nm
- Cap retaining screws (37), (43) and (88) ..... 58 to 64 Nm
- Cap retaining screws (10), (12), (8) and (9) ..... 39 to 44 Nm
- Cap retaining screw (18) ..... 8.8 to 10.8 Nm
- Plugs (73), (97) and (91) ..... 19 to 22 Nm

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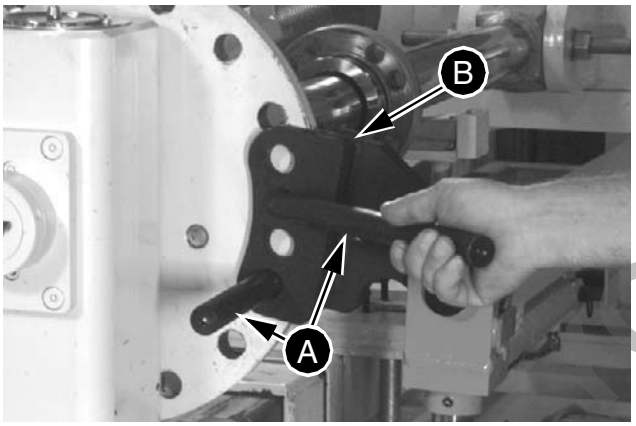
STEP 20



JD00637A

Loosen the tail stock chuck screws. Tighten the wrench nuts on the piston nut (22). Check that the wrench is centred by using the scale on the chuck.

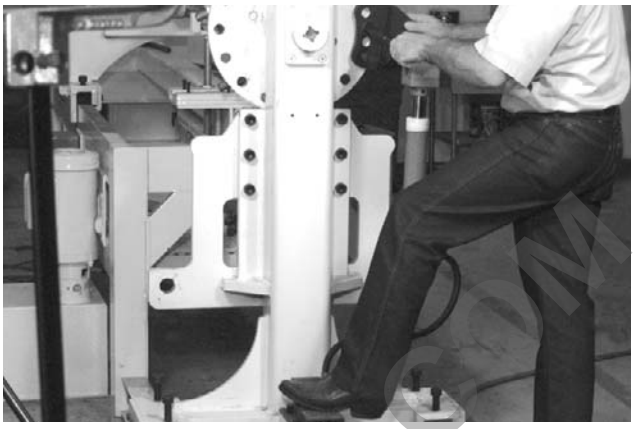
STEP 21



JD00638A

Lower the toggle assembly (B) as far as possible on the circular plate and install the stop bars (A).

STEP 22



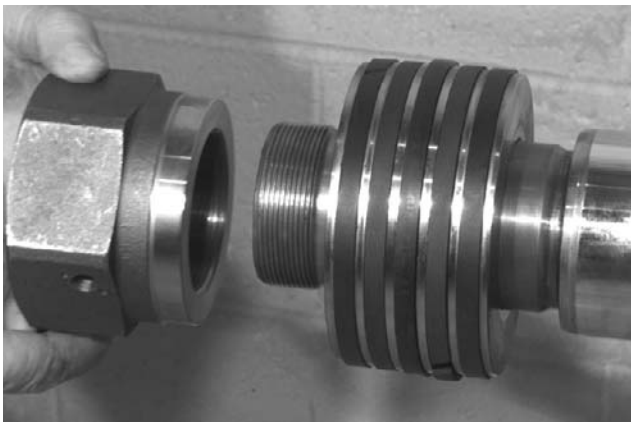
JD00639A

Start the hydraulic pump by pressing on the pedal to loosen the piston nut. At the end of the stroke, remove the two stop bars; if necessary, depress the rear of the pedal to retract the cylinder rod just enough to enable removal of the stop bars. Depress the rear of the pedal to retract the cylinder rod to lower the toggle assembly as far as possible on the circular plate then install the stop bars.

STEP 23

Repeat step 22, if necessary, until the piston nut has been loosened.

STEP 24

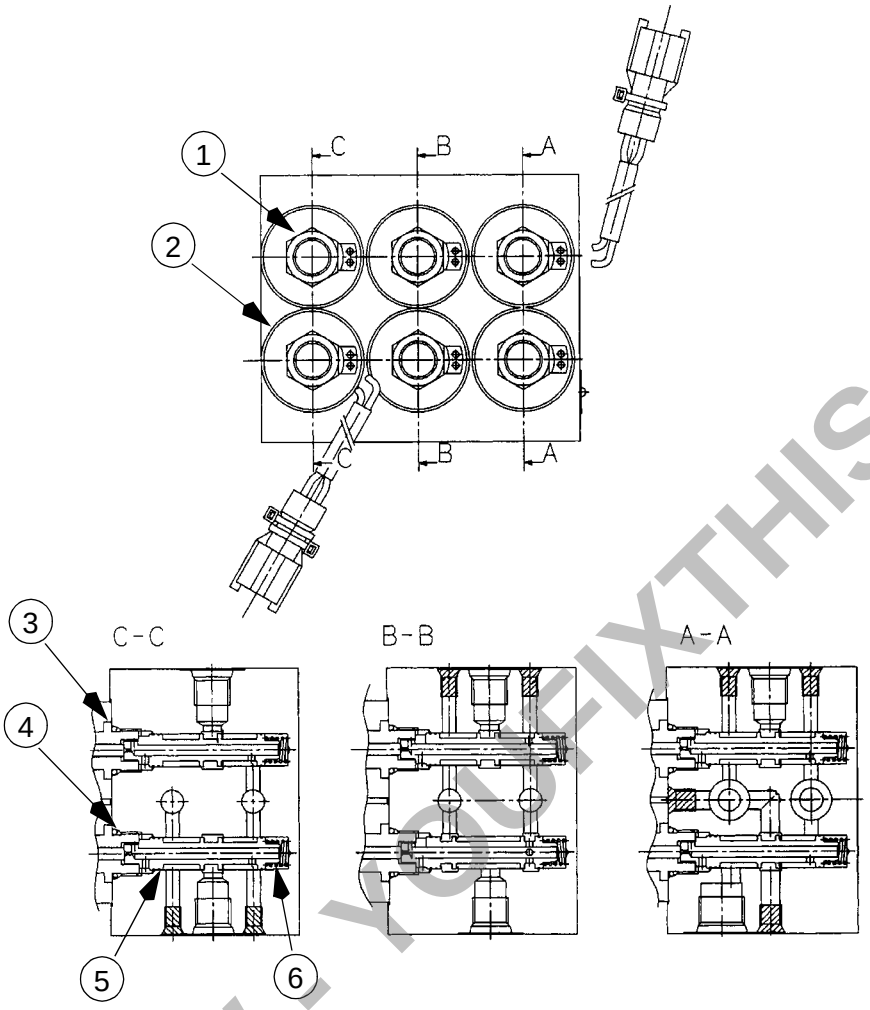


JD00640A

Remove the piston nut (22) from the rod.

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Section



CS01C521

1 NUT
2 COIL
3 CORE
4 O-RING
5 SPOOL
6 SPRING

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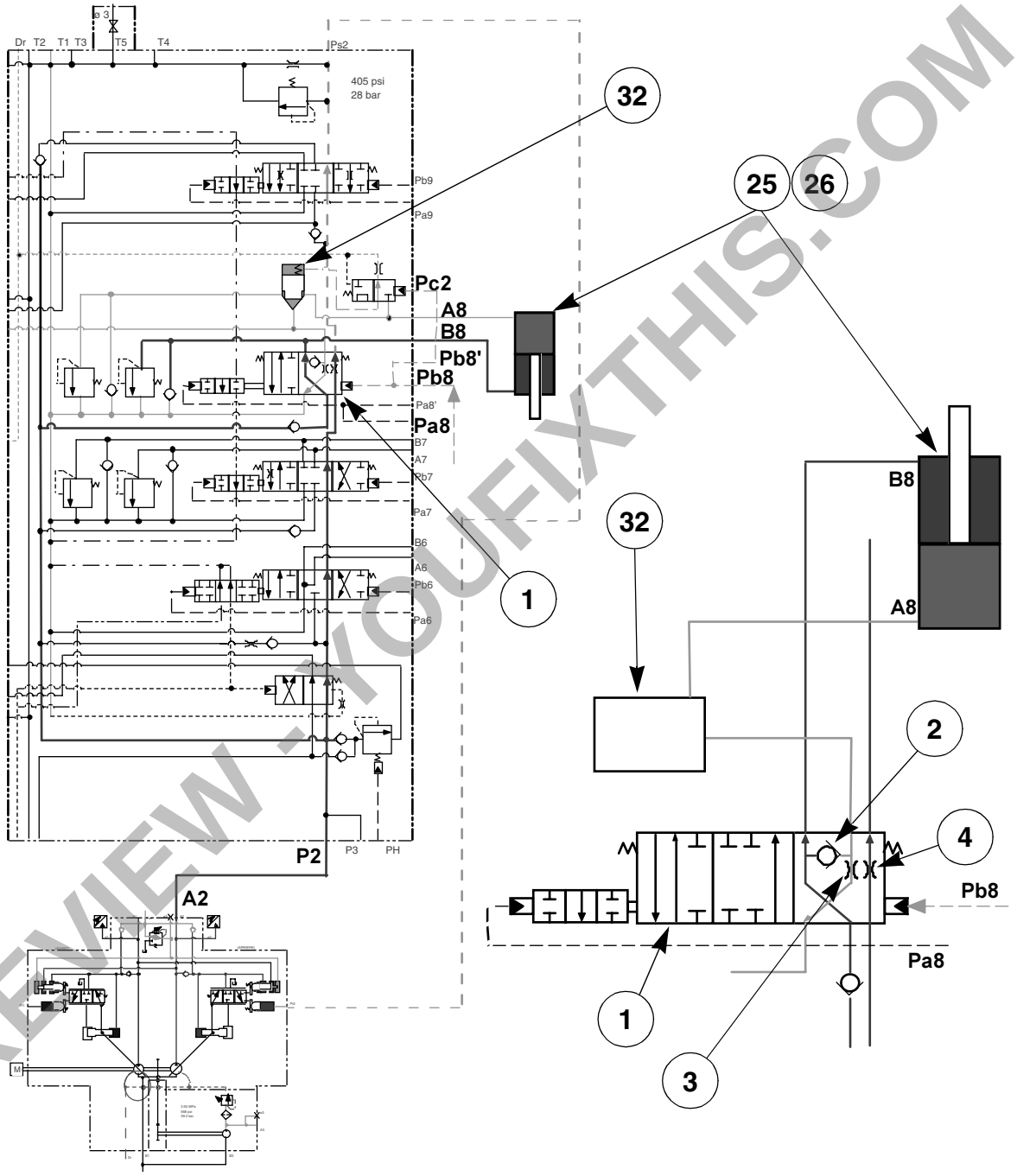
HYDRAULIC SWING MOTOR

Description

1 SLEEVE
2 SNAP RING
3 SPY JOINT
4 BEARING
5 BACKUP WASHER
6 PISTON FACE
7 THRUST PLATE
8 PISTON ASSEMBLY
9 FRICTION PLATE
10 DISK PLATE
11 O-RING
12 BRAKE PISTON
13 O-RING
14 SPRING
15 COVER
16 O-RING
17 PLUNGER ASSEMBLY
18 PISTON
19 WASHER
20 TEFLON RING
21 BUSHING
22 DISTRIBUTION PLATE
23 BEARING
24 CYLINDER
25 HOUSING
26 SPRING
27 BY-PASS VALVE
28 CHECK VALVE
29 SPRING
30 O-RING
31 BACKUP RING
32 NON RETURN CHECK VALVE
33 SPRING SEAT
34 CHECK VALVE
35 SPRING
36 O-RING
37 SHIM
38 VALVE HOUSING
39 PISTON
40 O-RING
41 BACKUP RING
42 O-RING
43 PLUNGER ASSEMBLY
44 SLEEVE
45 LINER
46 NUT
47 SAFETY VALVE ASSEMBLY
48 SCREW
49 BACKUP RING
50 O-RING
51 PLUNGER ASSEMBLY
52 STOPPING RING
53 SHIM

A SHOE
B BRAKE PILOT PORT

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CM00K019

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Removal

NOTE: *The numbers within brackets in the following steps refer to the schematic on page 10.*

STEP 1

Attach a suitable lifting device to the lifting rings of the counterweight (1). Use the total movement of the lifting device.

NOTE: *Refer to the specifications on page 2 for the weight of the counterweight.*

STEP 2

Remove the four screws (2) and the flat washers (3) that fasten the counterweight (1) to the undercarriage.

STEP 3

Raise the counterweight (1) and remove it from the machine. Place it on flat ground. Remove the lifting equipment.

STEP 4

Remove the shims (4) from the undercarriage anchorage points.

NOTE: *Count the number of shims (4), remove them from each anchorage point. Keep each set of shims (5) to facilitate reassembly.*

STEP 5

Check the state of the insulating material (5) installed on the counterweight. Change the insulating material if it is damaged.

Installation

NOTE: *The numbers within brackets in the following steps refer to the schematic on page 10.*

STEP 1

Attach a suitable lifting device to the lifting rings of the counterweight (1).

NOTE: *Refer to the specifications on page 2 for the weight of the counterweight.*

STEP 2

Install the same number of shims (4) as those removed in step 4 of removal, at each anchorage point of the counterweight on the undercarriage.

STEP 3

Move the counterweight (1) into position on the undercarriage. Align the ports of the counterweight with those on the undercarriage.

STEP 4

Install the four screws (2) as well as the flat washers (3) to attach the counterweight (1). Tighten to the torques specified on page 2.

STEP 5

Remove the lifting device from the lifting rings of the counterweight (1).

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