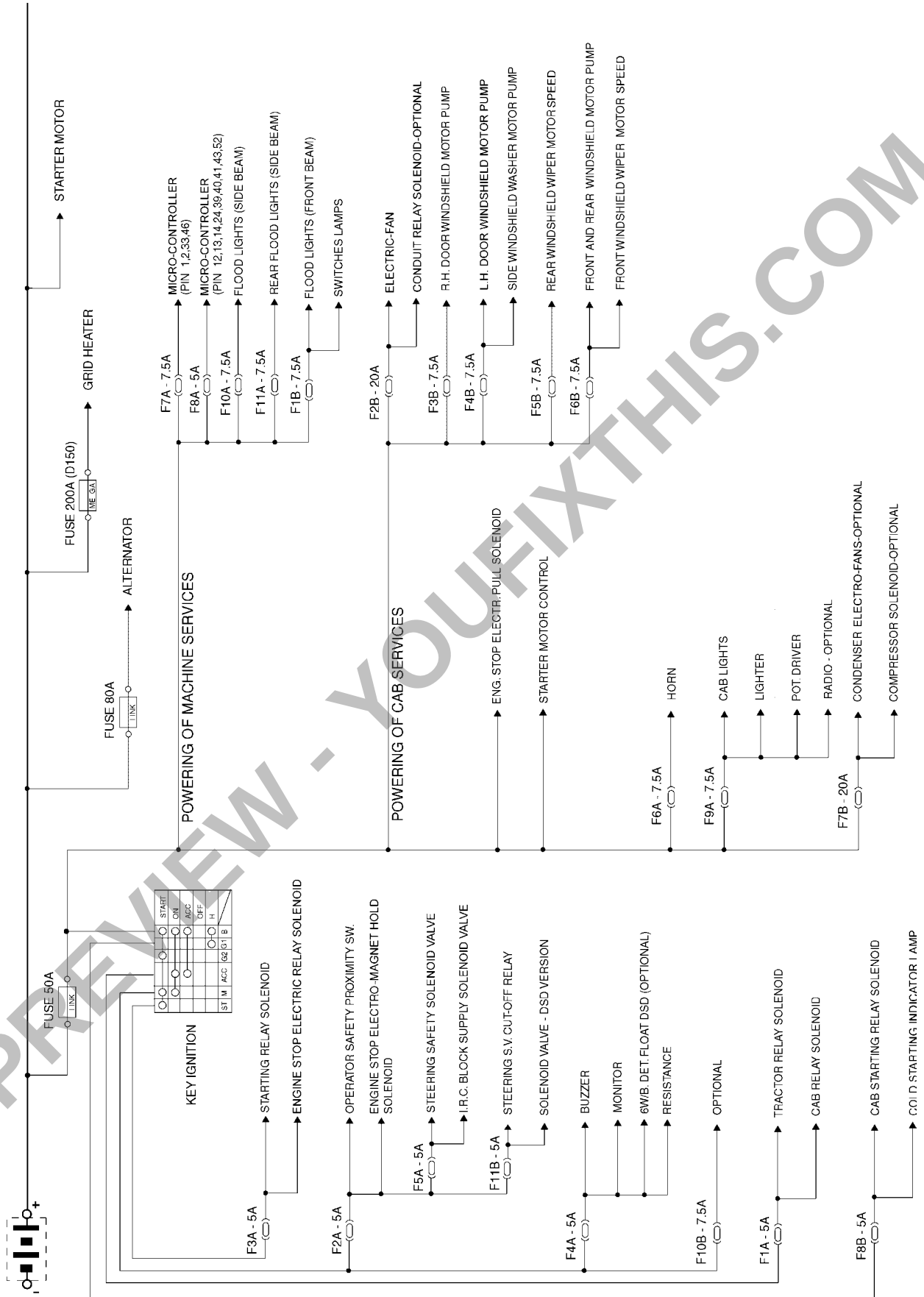


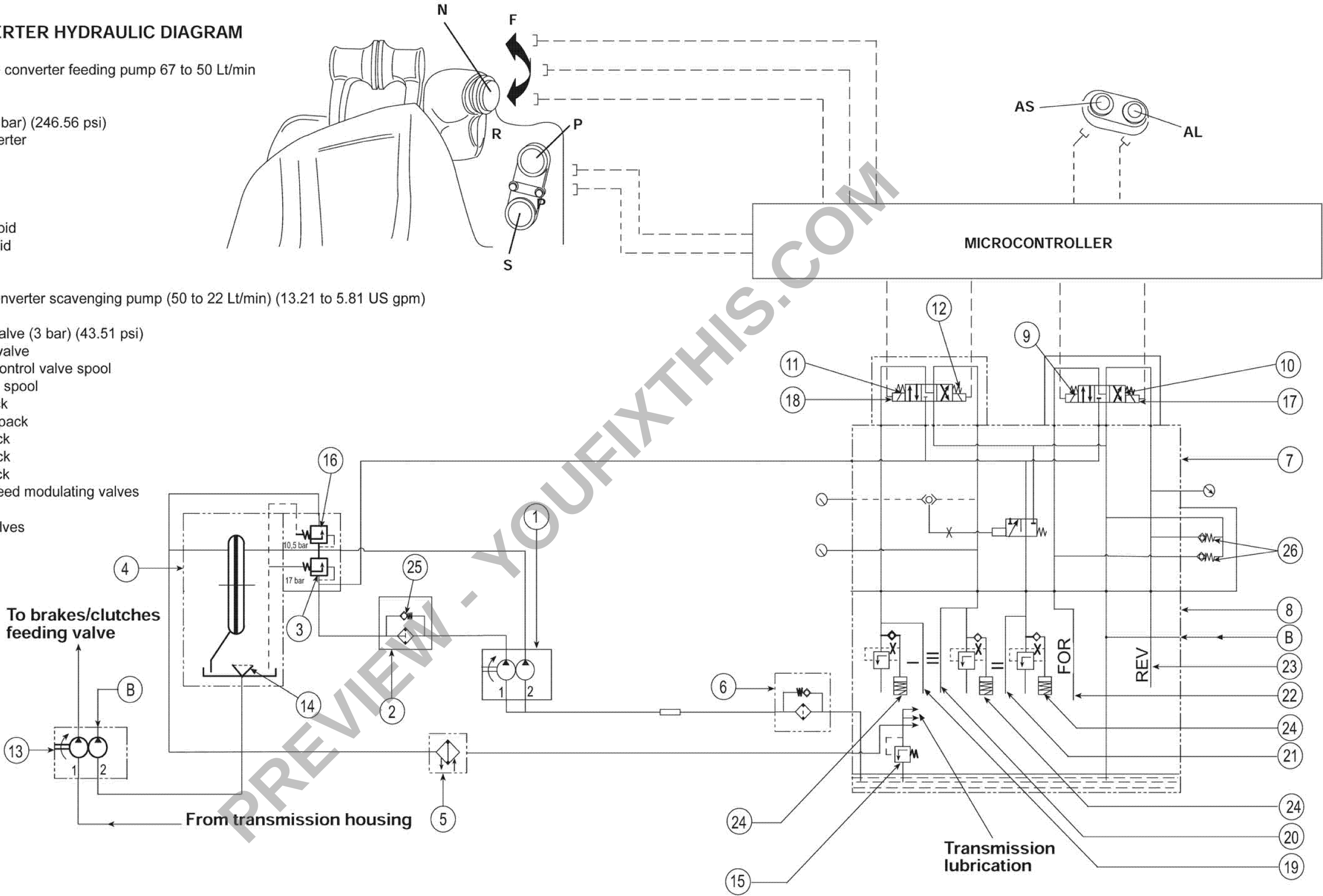
ELECTRICAL DIAGRAM OF PROTECTION TREE



Carefully read personal and machine SAFETY PRECAUTIONS at the beginning of this Manual

Fig. 1 TORQUE CONVERTER HYDRAULIC DIAGRAM

- 1. Dual transmission/torque converter feeding pump 67 to 50 Lt/min (17.70 to 13.21 US gpm)
- 2. Oil filter (delivery)
- 3. Pressure relief valve (17 bar) (246.56 psi)
- 4. TWIN-DISC torque converter
- 5. Heat exchanger
- 6. Oil filter (suction)
- 7. Control valve
- 8. Transmission housing
- 9. FORWARD speed solenoid
- 10. REVERSE speed solenoid
- 11. First speed solenoid
- 12. Third speed solenoid
- 13. Steering clutch/torque converter scavenging pump (50 to 22 Lt/min) (13.21 to 5.81 US gpm)
- 14. Mesh filter
- 15. Lube oil pressure relief valve (3 bar) (43.51 psi)
- 16. Torque converter safety valve
- 17. FORWARD/REVERSE control valve spool
- 18. First - Third control valve spool
- 19. To First speed clutch pack
- 20. To Third speed clutches pack
- 21. Second speed clutch pack
- 22. To FOR speed clutch pack
- 23. To REV speed clutch pack
- 24. First - Second - Third speed modulating valves
- 25. Filter clogging valve
- 26. FOR/REV modulating valves



TRANSMISSION
CONTROL BUTTONS

- B. To transmission housing
- F. Forward speed
- R. Reverse speed
- P. Upshifting
- S. Downshifting
- N. Neutral
- AS. Auto-shift function
- AL. Auto kick-down function

TABLE OF TIGHTENING TORQUES

In the event, the tightening torque of bolts and nuts is not specifically indicated in the single sections, the same can be found in the table listed here below:

NUTS (ZNT)					SCREWS (ZNT / DEIDR)		
Class of strength: 10 (R 80)					Class of strength: 10.9 (R 100)		
Diameter and pitch mm	normal daNm (ft lbs)	low type daNm (ft lbs)	with polyamide ring		Diameter and pitch mm	normal ZNT daNm (ft lbs)	autoblocc. ZNT daNm (ft lbs)
			normal daNm (ft lbs)	low type daNm (ft lbs)			
M6 x 1	1.3 (9.5)	1.2 (8.8)	-	-	M6 x 1	1.3 (9.5)	-
M8 x 1.25	3.2 (23.6)	2.6 (19.1)	3.9 (28.7)	3.2 (23.6)	M8 x 1.25	1.3 (9.5)	3.5 (25.8)
M10 x 1.25	7.2 (53.1)	5.2 (38.3)	8.2 (60.4)	6.2 (45.7)	M10 x 1.25	7.1 (52.3)	7.9 (58.2)
M10 x 1.5	6.5 (47.9)	5 (36.8)	7.7 (56.7)	6 (44.2)	M10 x 1.5	6.5 (47.9)	7 (51.6)
M12 x 1.25	13 (95.8)	8.7 (64.1)	14.5 (106.9)	10.2 (75.2)	M12 x 1.25	12.7 (93.6)	13.9 (102.5)
M12 x 1.75	11 (81.1)	8.1 (59.7)	12.9 (95.1)	9.6 (70.8)	M12 x 1.75	11 (81.1)	12 (88.5)
M14 x 1.5	19.5 (143.8)	13 (95.8)	21.6 (159.3)	15 (110.6)	M14 x 1.5	20 (147.5)	22 (162.2)
M14 x 2	18 (132.7)	12,5 (92.1)	20 (147.5)	14.6 (107.6)	M14 x 2	18 (132.7)	19 (140.1)
M16 x 1,5	30 (221.2)	17 (125.3)	34 (250.7)	20 (147.5)	M16 x 1.5	30 (221.2)	33 (243.3)
M16 x 2	-	-	-	-	M16 x 2	-	-
M18 x 1.5	45 (331.8)	25 (184.3)	50 (368.7)	29 (213.8)	M18 x 1.5	45 (331.8)	48 (354)
M18 x 2.5	-	-	-	-	M18 x 2.5	-	-
M20 x 1.5	60 (442.5)	30.5 (224.9)	64.5 (475.6)	35 (258.1)	M20 x 1.5	60 (442.5)	65 (479.3)
M20 x 2.5	-	-	-	-	M20 x 2.5	-	-
M22 x 1.5	80 (590)	41 (302.3)	-	-	M22 x 1.5	80 (590)	90 (663.7)
M22 x 2.5	-	-	-	-	M22 x 2.5	-	-
M24 x 2	100 (737.5)	47 (346.6)	108 (796.5)	52.5 (387.1)	M24 x 2	100 (737.5)	110 (811.2)
M24 x 3	-	-	-	-	M24 x 3	-	-
M27 x 2	95 (700.6)	40.1 (295.7)	-	-	M27 x 2	100 (737.5)	-
M30 x 2	130 (958.7)	49.9 (368)	-	-	M30 x 2	140 (1032.5)	-
M33 x 2	170 (1253.7)	-	-	-	M33 x 2	190 (1401.2)	-
M36 x 3	220 (1622.5)	-	-	-	M36 x 3	240 (1770)	-

Carefully read personal and machine SAFETY PRECAUTIONS (at the beginning of this manual)

Download full manual at youfixthis.com

2.4 PROCEDURES FOR THE REPAIR OF THE TORQUE CONVERTER

2.4.1 REMOVAL

Turn the main switch into position "OFF". Place a "DO NOT OPERATE" warning sign on the machine. Please refer to the Section "CAB" of this Manual to tilt the cab.

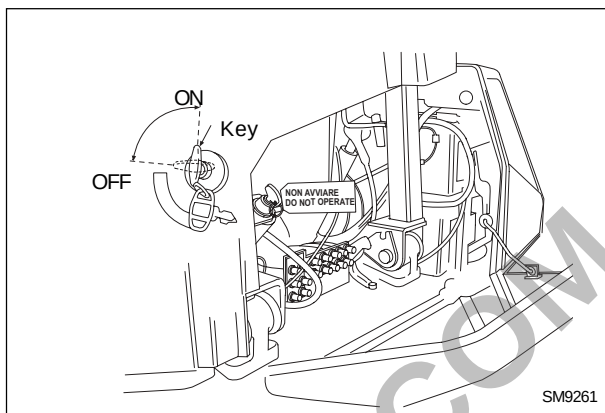


Fig.01

Remove the central lower guard.

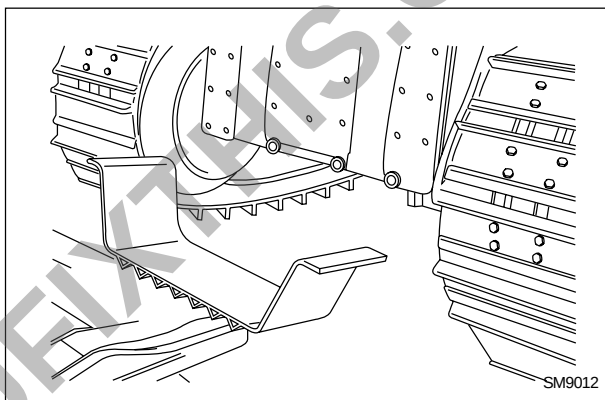


Fig.02

Drain the transmission oil through the draining plug.

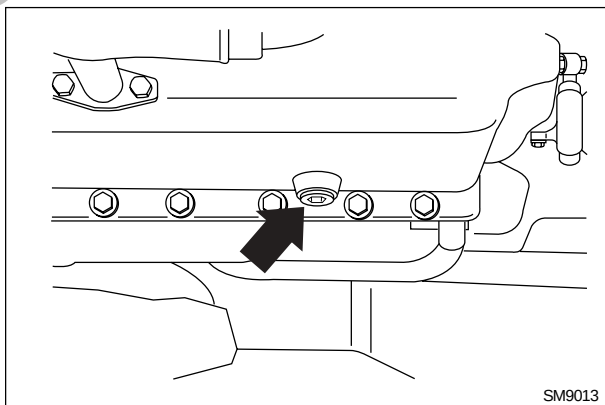


Fig.03

Drain the oil from the torque converter housing through the draining plug.

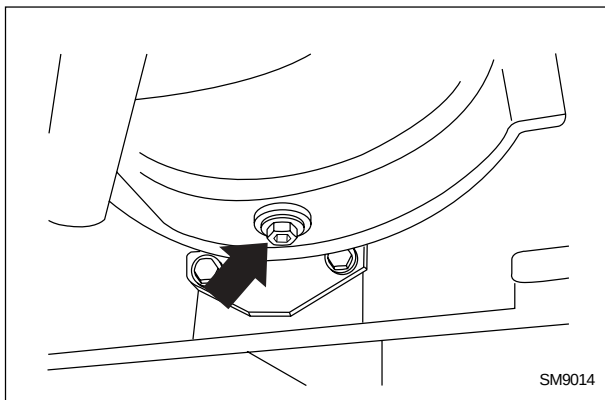


Fig.04

2.2 TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	TOOLS REQUIRED	TEST	SOLUTION
Low lube oil pressure. The indicator light is ON with engine running.	Transmission oil level low.	Instruction Manual	Pull out the dipstick and check the level	Toup oil up to prescribed level.
	Torque converter pump suction filter clogged			Clean the filter
	Outer crack allowing the seeping of air into the pump		If the oil is foaming, check if a crack is present	Eliminate the crack
	Hose defective		Suction pipe clog-ged	Change or clean the pipe
	Oil of a wrong type	Instruction Manual	Check oil speci-fications with data provided by Manufacturer	Drain the oil and change it with oil of the prescribed type

TABLE OF FLUID CAPACITIES

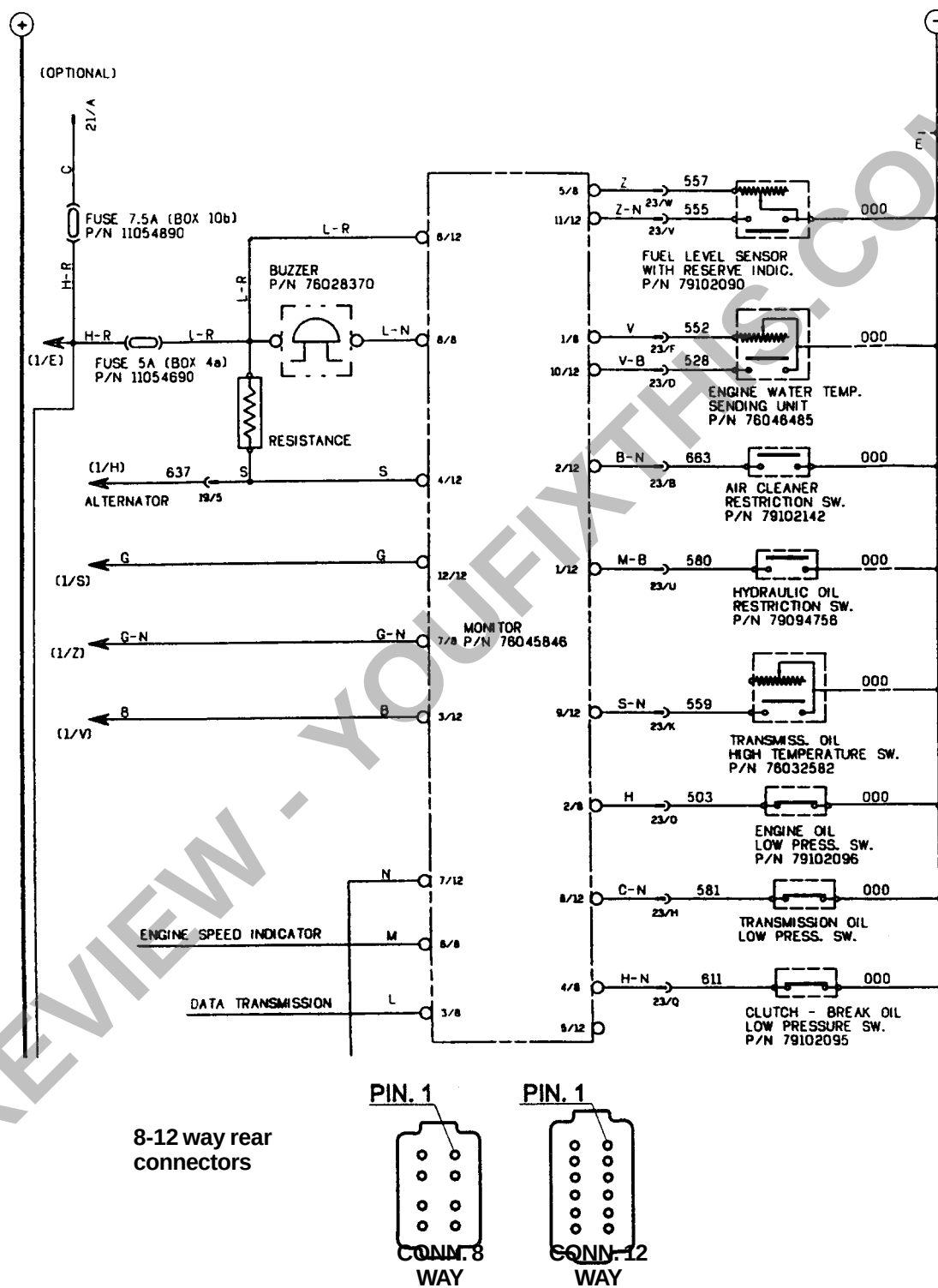
ITEM	QUANTITY (Litres)	Fluids and lubricants NEW HOLLAND CONSTRUCTION	VISCOSITY GRADE	Outdoortemperatures of reference	International Classification
Cooling system	18 5 US gal (20 lt/44.1 US gal)	PROPOLYNE GLYCOL	Agriflu mixed with 50 % water protects down to - 35 °C (- 31 °F)	Down to - 35 °C (- 31 °F)	Mixture of water and antifreeze at 50 %. The mixture provides oxidation, foaming, corrosion, scaling and freezing protection properties down to - 35 °C (- 31 °F).
Fuel reservoir	270 71.33 US gal	—	—	—	DIESEL FUEL ASTM No. 2D Grade TT of reputable quality and make
Engine	14.2 3.75 US gal (17 lt/37.4 US gal)	961328DS	SAE 15W - 40	- 15 to 40 °C (- 5 to 104 °F)	API CF-4/SG or CCMCD4 or MIL-L-2104E
			SAE 10W - 30	- 25 to 20 °C (- 13 to 68 °F)	
Torque converter Transmission	31 8.2 US gal (40 lt/88 US gal)	CNH Hy-Tran Ultra Fluid	SAE 10W	All season	ATF Type A Suffix A
Transmission housing steering/brakes	46 12.15 US gal (60 lt/132 US gal)	9613292DS	SAE 15W - 40	- 15 to 40 °C (- 5 to 10 °F)	API CF-4/SG or CCMCD4 or MIL-L-2104E
			SAE 10W - 30	- 25 to 20 °C (- 13 to 68 °F)	
Equipment hydraulic system	56 14.8 US gal (61 lt/134 US gal)	HI-TECH 46	ISO 46	- 20 °C to 50 °C (- 4 to 122 °F)	DIN 51524 PART - 1 DIN 51524 PART - 2 ISO VG 46
Final drives (each)	38 10.04 US gal	9613294DS	SAE 80W - 90	All season	API GL5 or MIL-L-2105
Idlers Rollers and track chains	4 1.06 US gal	9613292DS	SAE 15W - 40	- 15 to 40 °C (- 5 to 104 °F)	API CE or CCMCD4 or MIL-L-2104E
			SAE 10W - 30	- 25 to 20 °C (- 13 to 68 °F)	
Grease fittings		98618047DS	NLG12 consistency	All season	—
Cab tilting pump	0.5 0.13 US gal	CNH Hy-Tran Ultra Fluid	SAE 10W	All season	ATF Type A Suffix A

Note: Oil quantities indicated are those required for periodical changes.
- () First supply quantity.

If the content of sulphur of the fuel exceeds 0.5 %, change the engine oil as follows:

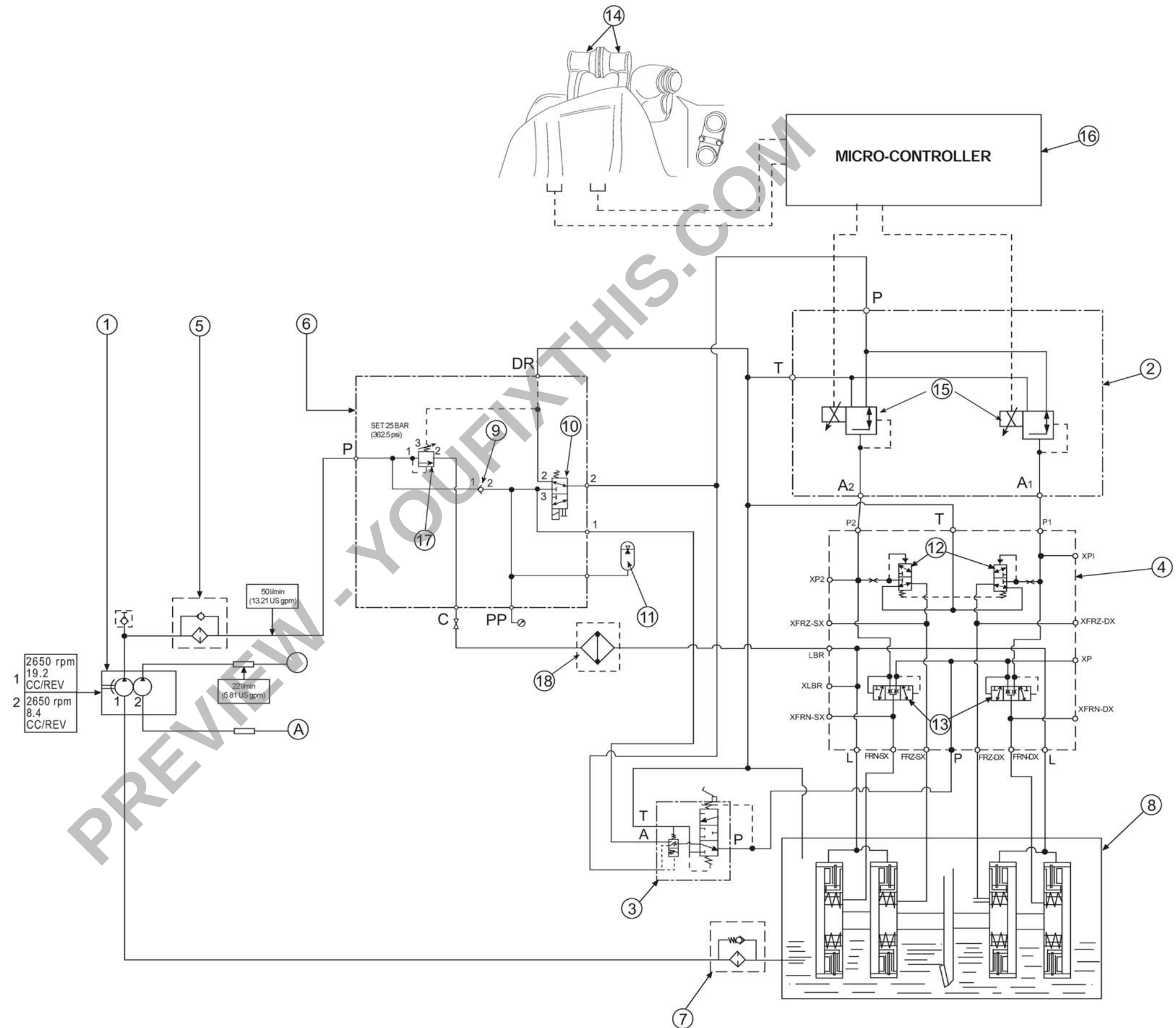
Down to 0.5 % sulphur	Periodical change
From 0.5 to 1 %	Half normal interval
Over 1 %	One quarter normal interval

ELECTRICAL DIAGRAM OF INSTRUMENT PANEL/MONITOR



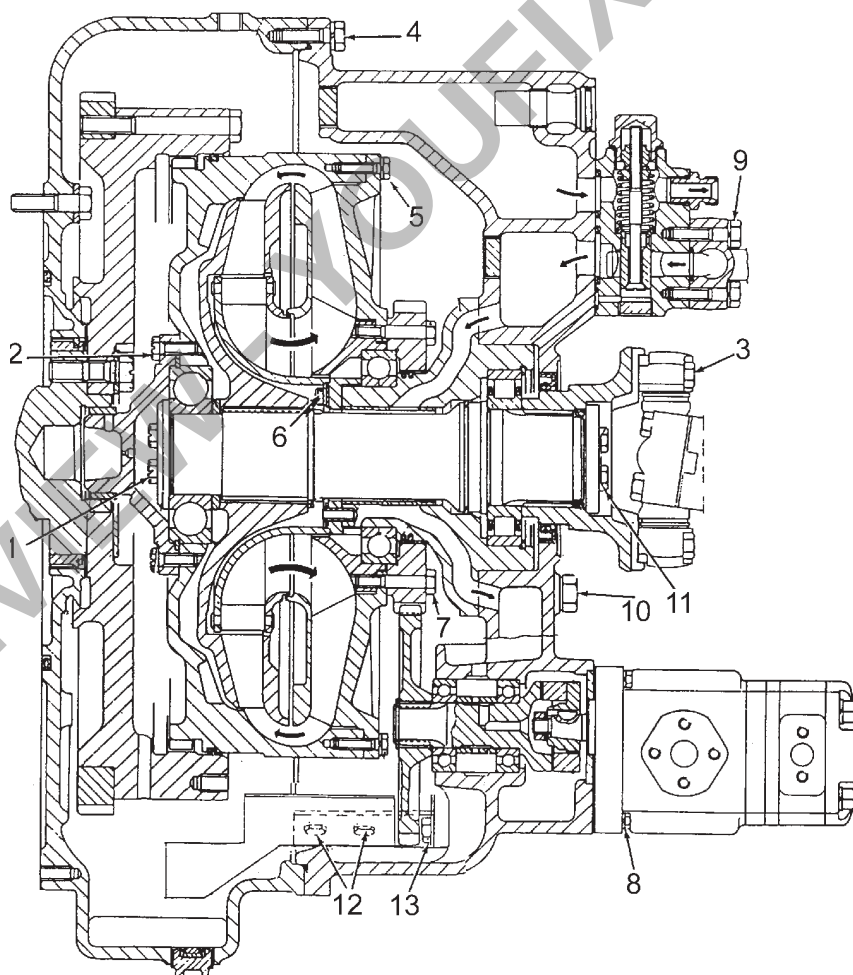
SM9513

1. Brakes and steering clutches feeding pump
 2. Proportional solenoid valves block
 3. Brake pedal valve block - 4. Brakes and steering clutches control valve
 - 5. Brakes and clutches delivery filter
 - 6. Feeding valve block
 - 7. Brakes and clutches suction filter
 - 8. Transmission housing
 - 9. Check valve
 - 10. Directional solenoid valve
 - 11. Accumulator
 - 12. Decompression valve
 - 13. Exchange valves
 - 14. Brakes and steering levers
 - 15. Proportional solenoid valves
 - 16. Micro-controller
 - 17. Pressure relief valve
 - 18. Housing oil radiator (air/oil)
- A. From torque converter
B. To transmission housing
- LBR-SX : Left brake/clutch lubrication
FRN-SX : Left brake control
FRZ-SX : Left clutch control
LBR-DX : Right brake/clutch lubrication
FRN-DX : Right brake control
FRZ-DX : Right clutch control



2.6.2 TIGHTENING TORQUES (TORQUE CONVERTER)

	DESCRIPTION	daNm (*)	ft lbs
1.	Securing screws, front bearing stop	4.1 to 4.9	30.24 to 36.14
2.	Securing screws, shaft hub stop	4.1 to 4.9	30.24 to 36.14
3.	Securing screws, drive shaft	10.8 to 11.7	79.65 to 86.29
4.	Securing screws, torque conv. housing	6.8 to 7.4	50.15 to 54.57
5.	Securing screws, rear wheel	2.3 to 2.8	16.96 to 20.65
6.	Securing screws, stator	3.4 to 3.9	25.07 to 28.76
7.	Securing screws, pump drive gear	4.1 to 4.9	30.24 to 36.14
8.	Securing screws, steering-brakes pump	1.2 to 1.4	8.85 to 10.32
9.	Securing screws, pressure relief valve	6.8 to 7.4	50.15 to 54.58
10.	Securing screws, rear bearing support	8.0 to 8.8	59 to 64.9
11.	Secur. screws, rear output flange stop	4.1 to 4.9	30.24 to 36.14
12.	Securing screws, oil deflector	3.0 to 3.3	22.13 to 24.34
13.	Securing screws, oil deflector support	6.8 to 7.4	50.15 to 54.57
	Screws, equipment. pump driven gear	7.5 to 8.3	55.31 to 61.21
	Sec. screws, transm./torque conv. pump	6.8 to 7.4	50.15 to 54.57
	Nut, pump drive hub	2.1 to 2.3	15.49 to 16.96
	Securety screws, hydraulic pump		



SM9259

Fig. 8 - Section view of torque converter housing

Carefully read personal and machine SAFETY PRECAUTIONS (at the beginning of this manual)

2.5 PROCEDURES FOR THE REPAIR OF THE TRANSMISSION

2.5.1 REMOVAL

Turn the main switch into position "OFF". Place a "DO NOT START" warning sign on the machine. Please refer to the Section "CAB" of this Manual to tilt the cab. Drain the transmission oil through the draining plug.

Remove the central lower guards.

Drain the oil from the torque converter housing through the drain plug.

Remove the drive shaft between torque converter and transmission housing.

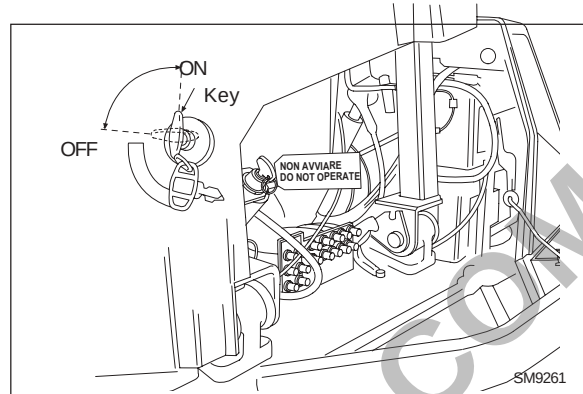


Fig.42

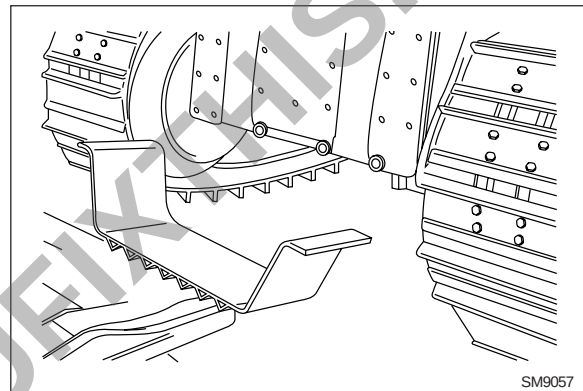


Fig.43

Disconnect the hydraulic pump pipes (delivery and return) to the distributor.

Disconnect the forward and Second speed pressure test pipes between transmission and test panel.

Disconnect and label the three pipes between the upper part of the control valve and the pilot valve.

Disconnect and label the four pipes on the rear side of the transmission control valve: two run to the test panel, one runs to the manual pilot valve and one runs to the brake unlocking valve.

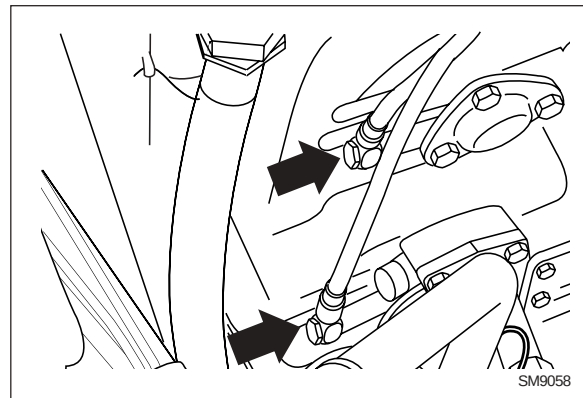


Fig.44

Lift and hold the transmission housing with an appropriate winch: its mass is about 450 kg (992.25 lbs).

4.2 TROUBLESHOOTING

STEERING CLUTCHES

Important - It is assumed that the oil level in the rear transmission housing has been checked (a few minutes after the engine has been cut-off) as well as the condition of the suction and delivery filters.

1. When both steering clutch and brake levers are fully actuated, the machine does not stop.

Install four pressure gauges on the brake and steering clutch control valve. Actuate gradually the clutch/brake control, first on one side and then on the other, measuring the pressure values at the brake outlet and then for the steering clutch. The reading values in the points indicated by the table must be those indicated in the table of paragraph 4.3 "TESTS".

1.1 In the event the pressures on both sides of the circuit are low, perform the following checks:

1.1.1 Suction filter not clogged.

1.1.2 The delivery of the steering pump must be 50 Lt/min (13.21 US gpm) with engine at 2000 rpm.

1.1.3 Safety valve (item 17 page 4-3) of the steering control valve is not seized open by some particle. Its setting directly defines the constant pressure in the system (25 bar) (362.5 psi).

2. When one of the two steering clutch and brake lever is fully actuated, the machine does not steer.

Install two pressure gauges on the brake and steering clutch control valve. Actuate gradually the clutch/brake control, first on one side and then on the other, measuring the pressure values at the brake outlet and then for the steering clutch.

3. When one of the two steering clutch and brake lever is released, the machine keeps steering.

3.1 Measure the piloting pressure, with controls in neutral. It must be less than 2 bar (29 psi).

4. When the brake central pedal is released, the machine hesitates to start.

4.1 Measure the flow of the transmission pump. This test can be performed by installing a flow meter between the torque converter and the heat exchanger. Refer to the table in the transmission section for the flow value.

4.2 Remove and inspect the brake valve (actuated by the brake central pedal). A stiffening of the mobile plungers or a fracture of the main spring could have occurred.

4.3 Check that the transmission safety lever is fully open. In fact, the flow for the disengagement of the parking brake could be limited.

5. A large amount of friction material is trapped by the oil suction filter.

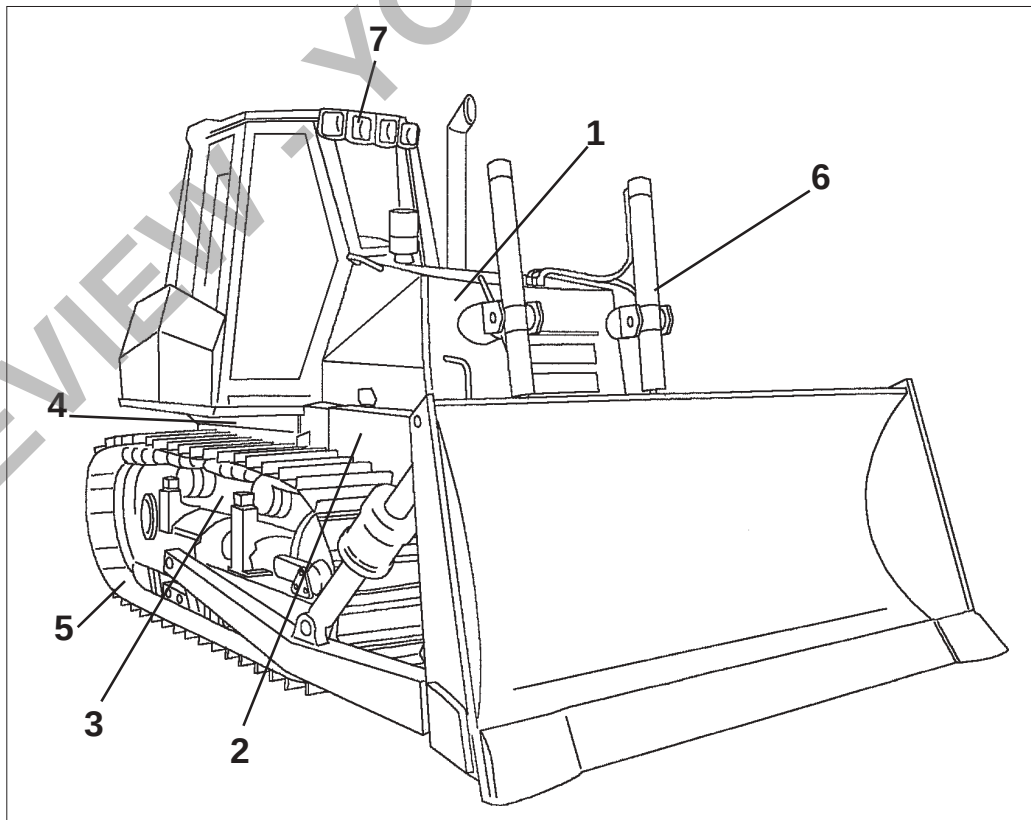
5.1 Check the clutch and brake control actuating pressure.

TABLES OF TECHNICAL DATA

DIMENSIONS	Total length (basic tractor)		153.14 in	3890 mm
	Total length (with HS blade)		187 in	4750 mm
	Total length (with semi-U HSU blade)		197.09 in	4930 mm
	Total length ("PAT" version)		195.07 in	4955 mm
	Total length (DC150LGP version)		209.25 in	5315 mm
	Total width (basic tractor with 550 mm shoes)		96.45 in	2450 mm
	Total width (with HS blade)		125.19 in	3180 mm
	Total width (with semi-U HSU blade)		125.19 in	3180 mm
	Total width ("PAT" version)		125.98 in	3200 mm
	Total width (DC150LGP version)		157.48 in	4000 mm
MASS	Total height (to top of exhaust pipe)		120.47 in	3060 mm
	Total height (with ROPS canopy)		120.47 in	3080 mm
	Gauge		74.80 in	1900 mm
	Ground clearance (SAE J1234)		14.56 in	370 mm
	Length of track chain on the ground		98.42 in	2550 mm
	Width of track shoe (standard)		19.68 in	500 mm
	Weight for shipment including ROPS, 500 mm shoes, lubricants, engine coolant, 10 % fuel)		26,878 lbs	12190 kg
	Weight in operation order (with "PAT" blade, ROPS cab, 500 mm shoes, lubricants, engine coolant, 100 % fuel and operator)		31,399 lbs	14240 kg
	DC150 LGP version with "PAT" blade		34,839 lbs	15800 kg
PERFORMANCE	SPEEDS/PULL	First forward 3.9 km/h (2.42 mph) Second forward 6.4 km/h (3.97 mph) Third forward 10 km/h (6.21 mph)	48,050 lbs 27,314 lbs 15,502 lbs	21360 daN 12140 daN 6890 daN
		First reverse 4.8 km/h (2.98 mph) Second reverse 7.8 km/h (4.84 mph) Third reverse 12 km/h (7.45 mph)	37,057 lbs 20,857 lbs 11,643 lbs	16470 daN 9270 daN 5175 daN
	SPECIFIC GROUND PRESSURE	(Standard shoes 500 mm (19.685 in) wide)		
		With "PAT" blade and ROPS cab	38700 psi	55 kpa
	CLIMBING CAPABILITY	(in First gear) 2.8 kmph (1.73 mph) (in Second gear) 4.7 kmph (2.92 mph) (in Third gear) 9.0 kmph (5.59 mph)		60% 30% 10%

SUMMARY

GENERALITIES	SECT. 0
ENGINE	SECT. 1
TRANSMISSION	SECT. 2
FINAL DRIVES	SECT. 3
STEERING CLUTCHES - BRAKES	SECT. 4
UNDERCARRIAGE	SECT. 5
DOZER EQUIPMENT HYDRAULIC SYSTEM	SECT. 6
ELECTRICAL SYSTEM	SECT. 7





SAFETY PRECAUTION INFORMATION

UNSAFE OPERATING PRACTICES AND IMPROPER USE OF THE MACHINE AND ITS ATTACHMENTS ON THE PART OF THE OPERATOR OR SERVICE TECHNICIAN CAN RESULT IN INJURIES. OBSERVE THE FOLLOWING SAFETY PRECAUTIONS AT ALL TIMES:

- 1. FOR SERVICING, THE MACHINE SHOULD BE ON LEVEL TERRAIN, ENGINE STOPPED WITH THE WHEELS BLOCKED OR THE ENTIRE MACHINE SOLIDLY SUPPORTED WITH THE WHEELS OFF THE GROUND BEFORE SERVICING ANY COMPONENT OF THE DRIVETRAIN.**
- 2. FOR SERVICING UNDER THE MOVABLE EQUIPMENT, SUCH AS OPERATOR'S SEAT, ENGINE HOODS, ETC. MOVE THE EQUIPMENT ASSEMBLY TO THE LATCHED POSITION AND SECURELY LATCH.**
- 3. DO NOT OPERATE THE MACHINE UNLESS ALL MOVABLE EQUIPMENT IS LATCHED IN THE OPERATE POSITION.**
- 4. DO NOT SERVICE THE MACHINE WITH A RAISED HYDRAULIC EQUIPMENT UNLESS THE HYDRAULIC EQUIPMENT IS RESTING ON LOCK PINS OR CYLINDER LOCKING TOOLS OR FIXTURES.**
- 5. DO NOT SERVICE THE MACHINE WITH THE ENGINE RUNNING UNLESS THE MACHINE IS PROPERLY AND SECURELY SUPPORTED WITH ALL FOUR WHEELS OFF THE GROUND.**
- 6. USE CAUTION WHEN SERVICING THE UNIT AROUND MOVING PARTS.**
- 7. DO NOT TILT ANY MOVABLE EQUIPMENT WITHOUT PROPER INSTRUCTION.**
- 8. DO NOT TILT ANY MOVABLE EQUIPMENT WITHOUT USING THE PROPER TOOLS.**
- 9. REINSTALL ALL SHIELDS REMOVED FOR SERVICE.**
- 10. NEVER LOOSEN ANY HYDRAULIC CONNECTIONS BEFORE RELIEVING THE PRESSURE IN THE HYDRAULIC SYSTEM.**
- 11. WEAR EYE PROTECTION SUCH AS GOGGLES, ETC.**
- 12. WEAR EAR PROTECTION SUCH AS EARPLUGS, ETC. WHEN YOU FEEL THE NOISE LEVEL IS UNCOMFORTABLE.**
- 13. IF ANY SERVICING OR ADJUSTMENTS REQUIRE THE BATTERY TO BE DISCONNECTED, DISCONNECT THE (-) NEGATIVE GROUND CABLE.**
- 14. WHEN SERVICING ELECTRICAL COMPONENTS, DISCONNECT THE (-) NEGATIVE GROUND CABLE.**
- 15. IF AN ELECTRONIC EQUIPMENT REQUIRES REMOVAL FROM THE DASH AREA OR THE MACHINE, DISCONNECT THE (-) NEGATIVE GROUND BATTERY CABLE. THIS WILL SHUT OFF POWER TO THE ELECTRICAL SYSTEM AND PREVENT DAMAGE TO THE ELECTRICAL SYSTEM.**
- 16. IF WELDING IS REQUIRED ON THE MACHINE, DISCONNECT THE (-) NEGATIVE GROUND CABLE. FAILURE TO DISCONNECT THE BATTERY MAY RESULT IN DAMAGE TO THE ELECTRICAL SYSTEM, MONITORING SYSTEM AND/OR OTHER ELECTRICAL COMPONENTS.**
- 17. IF WELDING IS REQUIRED ON AN ATTACHMENT, REMOVE THE ATTACHMENT FROM THE MACHINE.**

TO THE OWNER:

The warranty coverage that is extended to your machine is explained in the Warranty and Limitation of Liability form. Your dealer will provide you with a copy of the warranty and retain a copy which you have signed. After you read the warranty, ask your dealer to explain any points that you may not understand.

The machine was designed to power and propel itself. It is intended to move material in the normal and customary applications.

Do not modify or alter or permit anyone else to modify or alter this machine or any of its components mechanical function with first consulting an authorized New Holland Construction dealer. If you have any questions regarding machine modifications, contact New Holland Construction, 245 E. North Ave., Carol Stream, IL 60188.

Your safety and the safety of those around you depend upon the care and good judgment you use while operating this equipment. Read the safety precautions carefully.

After you have operated the machine for 50 hours, take your machine and this manual to your selling dealer. He will perform the factory recommended 50-hour service. You will be responsible for the cost of lubricants, fluids, filters and other items replaced as part of normal maintenance. Prior to taking the machine to your selling dealer for service, it is recommended that you contact them to determine any other charges for which you may be responsible.

All data given in this book is subject to product variations. Dimensions and weights are approximate only and the illustrations do not necessarily show machines in standard condition. For exact information about any particular machine, please consult your New Holland Construction dealer.



CAUTION: THIS SYMBOL IS USED THROUGHOUT THIS BOOK WHENEVER PERSONAL SAFETY IS INVOLVED. TAKE TIME TO READ AND FOLLOW THE INSTRUCTIONS. BE CAREFUL!

CAUTION: PICTURES IN THIS MANUAL MAY SHOW PROTECTIVE SHIELDING OPEN OR REMOVED TO BETTER ILLUSTRATE A PARTICULAR FEATURE OR ADJUSTMENT.

BE CERTAIN, HOWEVER, TO CLOSE OR REPLACE ALL SHIELDING BEFORE OPERATING THE MACHINE.

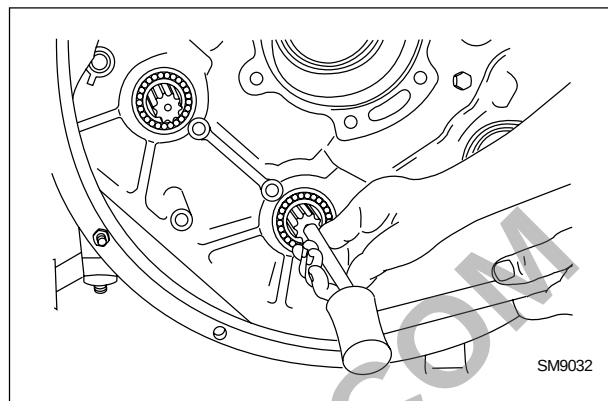
IMPROVEMENTS

New Holland Construction is continually striving to improve its products. We reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

Using an appropriate punch and a soft metal hammer, remove the pump drive shafts from the bearings.

**WARNING**

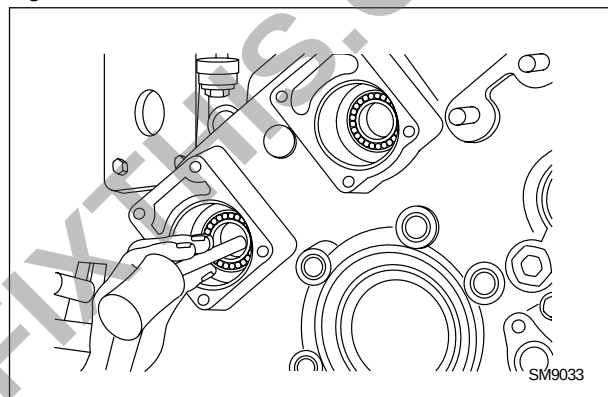
It is dangerous hitting hardened steel parts with tools different from hammers made of mild steel or non-ferrous metals. When these components are remove or installed, always wear safety glasses with side shields, heavy gloves, etc., to reduce the chances of injuries.

**Fig.18**

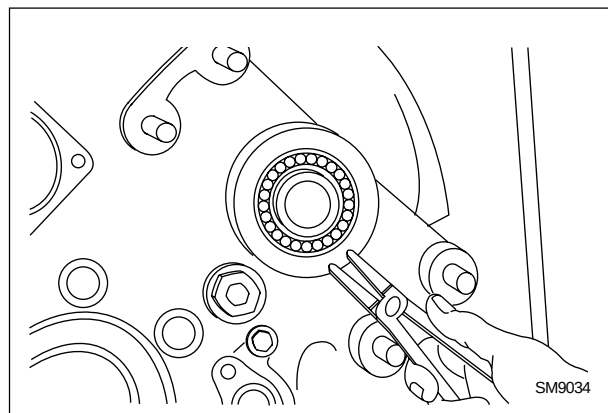
Remove the bearings and spacers from the housing.

**WARNING**

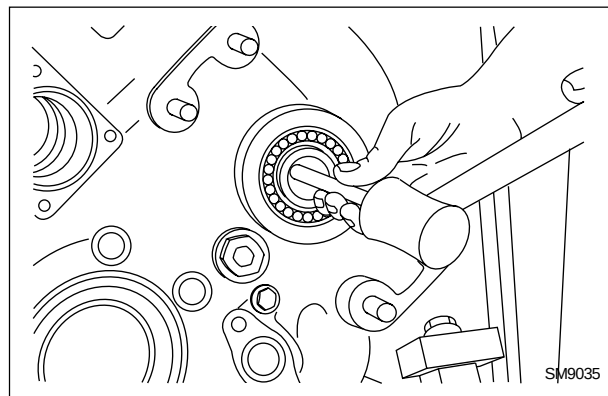
It is dangerous hitting hardened steel parts with tools different from hammers made of mild steel or non-ferrous metals. When these components are remove or installed, always wear safety glasses with side shields, heavy gloves etc., to reduce the chances of injuries

**Fig.19**

Remove the equipment pump drive shaft snap ring.

**Fig.20**

Pull out the shaft and bearing from the housing.

**Fig.21**

Carefully read personal and machine SAFETY PRECAUTIONS (at the beginning of this manual)

4.1 GENERAL DESCRIPTION OF THE CIRCUIT

The brakes and steering clutches circuit is mainly composed of:

- A) A dual circuit feeding pump (ref. **1**, hydraulic diagram)
- B) An oil filter on the suction line (metal) and one on the delivery line (paper) (ref. **7 - 5**)
- C) A circuit feed valve block (ref. **6**)
- D) The steering clutch levers (ref. **14**)
- E) A brake pedal valve (ref. **3**)
- F) An electronic micro-controller (ref. **16**)
- G) A proportional solenoid valves block (ref. **2**)
- H) A control valve (ref. **4**)
- I) The rear transmission housing (ref. **8**)
- L) A housing oil radiator [air - oil] (ref. **18**)

Feed pump (**1**) sucks the oil from rear transmission housing (**8**) through a mesh filter (**7**) sending it to port (**P**) of feed valve block (**6**).

Feed valve (**17**) ensures a pressure of 25 ± 2 bar (362.5 ± 29 psi) to the system and diverts it through directional solenoid valve (**10**). Accumulator (**11**) ensures the pressure in the system in case of an engine failure.

When actuating levers (**14**) located on the transmission and steering armrest (in the cab), an electric signal is sent (variable depending upon the stroke applied to the levers) to micro-controller (**16**).

The micro-controller sends an electric signal to proportional solenoid valves (**15**) which regulate the proportional oil flow through ports **A₁** and **A₂** bringing oil to control valve (**4**).

A brake valve (directly actuated by the pedal in the cab) directly activates the brakes, cutting-off pressure from the system. When the two steering levers are actuated simultaneously, the same braking effect on both track chains is obtained.

The rear transmission assembly (**8**) is composed of the bevel gear unit (receiving the motion directly from the transmission) and the oil-bath brake and steering clutch packs. The transmission housing operates as an oil reservoir used both for the piloting of the packs and the lubrication of all the components in the housing.

The engagement of steering clutch pack occurs when the system is fed and pressurized oil on the piston presses the steering clutch pack.

The brakes are engaged when pressure to the system is cut-off and the force of the springs locks the braking device on the brake disc pack.

An oil radiator cools off the lube oil flowing from the feeding valve block (port **C**) before entering the control valve (port **LBR**) to avoid an excessive overheating of the oil, when the machine is operating under heavy conditions.

Re-installation



WARNING

Handle all parts with extreme care. Never place hands and fingers between one piece and another. Wear approved personal protection equipment such as glasses, gloves and safety shoes.

1. Position the track chain so that the junction point is corresponding to the sprocket (Fig. 9).
2. Start the machine and move it slowly forward, guiding, at the same time, the track chain over the sprocket, using a strong bar placed through the holes of a link.
3. Place a wooden block under the rib of the shoe nearest the junction point. Connect half links (1), install the master shoe and tighten the screws to the prescribed torque indicated in Fig. 11.

Note: Before installing, degrease screws (C) and the treaded seats on master link (1). Apply LOCTITE Super Rapid 242 on the screw thread and tighten to the prescribed torque. Lubricate with engine oil the other screws and tighten to the same torque.

Tighten the master link screws with the shoes to a torque **C** = 21 to 30 daNm (154.87 to 221.25 ft lbs), plus a further 180° (half turn). For the screws securing the shoes, tighten to a torque **C1** = 46 to 54 daNm (339.25 to 398.25 ft lbs) plus a further 120° (1/3 turn).

4. Reset the correct track chain tension, making reference to section 5.3.1 TIGHTENING THE TRACK CHAIN.

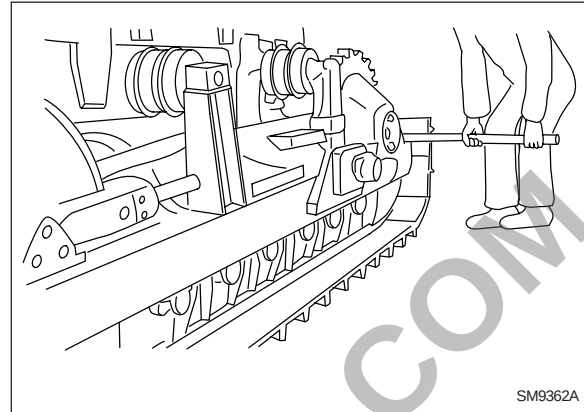


Fig. 9

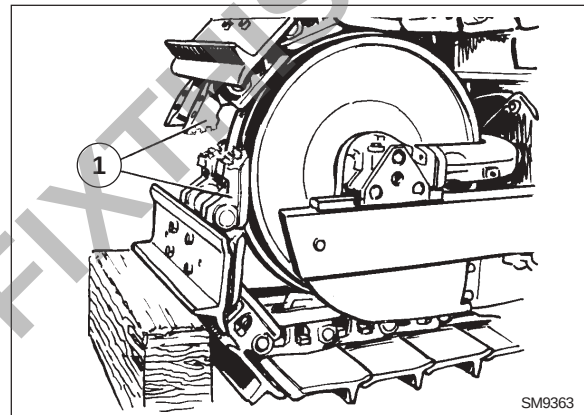


Fig. 10

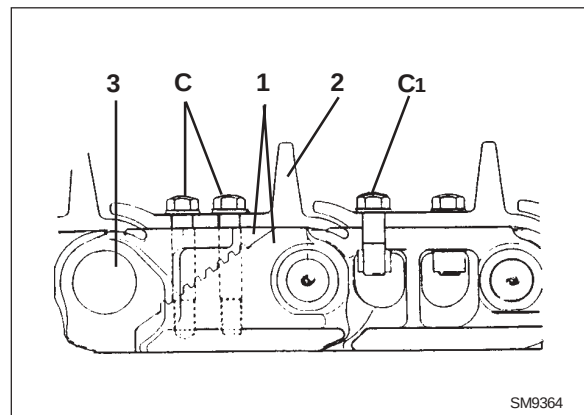


Fig. 11 - Track chain master link

- 1 - Master SPLIT link
- 2 - Master shoe
- 3 - Link pin
- C - Master link hinging securing screws (21 to 30 daNm + 1/2 turn) (154.87 to 221.25 ft lbs + 1/2 turn)
- C1 - Shoe and split link securing screws (21 to 54 daNm + 1/3 turn) (154.87 to 398.25 ft lbs + 1/3 turn)

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