SERVICE MANUAL

Wheel Loaders LW170 - LW190



NEW HOLLAND
CONSTRUCTION

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SECTION 1

ENGINE

TABLE OF CONTENTS

PARAGRAPH	SUBJECT	PAGE
1.1	IDENTIFICATION DATA	1
1.2	GENERAL SPECIFICATIONS OF SERIES "C" ENGINE	3
1.3	ENGINE SUPPORTS	6
1.4	DIAGRAMS OF SERIES "C" ENGINES	7

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SECTION 2

TRANSMISSION

TABLE OF CONTENTS

PARAGRAPH	SUBJECT	PAGE
2.1	GENERAL DESCRIPTION	1
2.2	TORQUE CONVERTER - TRANSMISSION	2
2.3	TORQUE CONVERTER	18
2.4	TRANSMISSION - TORQUE CONVERTER PUMP	20
2.5	TRANSMISSION	22
2.5.1	Power train diagram	26
2.5.2	Transmission control valve	30
2.6	OIL CIRCUIT	54
2.7	PROP-SHAFTS	56
2.8	FRONT AND REAR AXLES	58
2.8.1	Axle Description	58
2.8.2	Differential Description	63
2.8.3	Final drives Description	65
2.9	WHEELS	67
2.9.1	Tires	67

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SECTION 3

BRAKES SYSTEM

TABLE OF CONTENTS

PARAGRAPH	SUBJECT	PAGE
3.1	GENERAL DESCRIPTION	1
3.2	OPERATION	3
3.2.1	Operation conditions	3
3.3	DISC BRAKE	7
3.4	BRAKE PEDAL VALVE	8
3.4.1	Operation of circuit separation valve in the brake group	10
3.5	BRAKES/POWER SYSTEM PUMP	11
3.6	PARKING BRAKE CONTROL VALVE	12
3.7	PARKING BRAKE	13
3.7.1	Procedure for manual disengagement	13
3.7.2	Operation of discs parking brake	14
3.7.3	Disengagement of brake	14
3.8	OTHER COMPONENTS	15
3.8.1	Service brakes accumulator	15
3.8.2	Check valve	15
3.9	HYDRAULIC CONNECTIONS OF BRAKE PEDAL VALVE	16
3.10	TROUBLE SHOOTING - TESTS	17
3.10.1	Test of brakes actuation pressure	19
3.10.2	Setting of minimum and maximum accumulators recharge pressure	20
3.10.3	Inspection of parking brake engagement	21
3.10.4	Inspection of accumulator pre-charge	22
3.10.5	Instructions for the pre-charging of the service brakes accumulator	23
3.10.6	Air bleeding of brakes system	24
3.10.7	Check of brake discs wear	25

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2.3 TORQUE CONVERTER

The torque converter consists of a torque converter group, an hydraulic pump drive gear and a turbine shaft. The torque converter group is composed of a pump wheel and a turbine wheel, positioned one in front of the other, with an intermediate stator, located inside the torque converter housing, filled with oil.

The hydraulic pumps drive actuates the transmission power pump, the equipment pump and the steering pump, through the drive gear, mounted on the pumps drive hub.

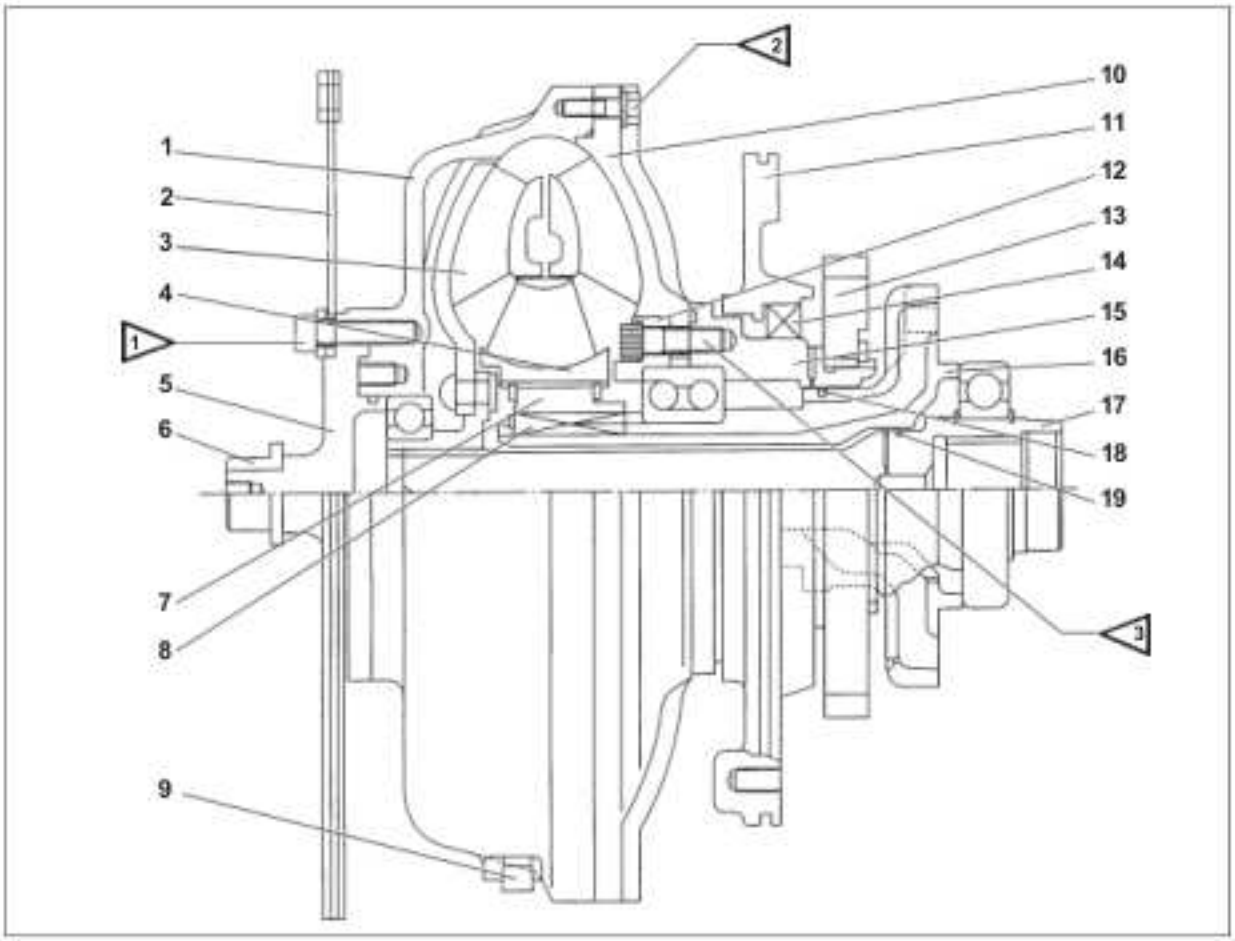


Fig. 2.9 Torque converter group LW170

Note - 1 5.5 ÷ 6.2 daNm (40 - 45 ft-lbs) 3 5.2 ÷ 5.9 daNm (38 - 43 ft-lbs)

2 4.0 ÷ 4.5 daNm (29 - 33 ft-lbs)

1. PUMP WHEEL COVER
2. DISC JOINT
3. TURBINE
4. STATOR
5. JOINT CENTERING HUB
6. BUSH
7. STATOR HUB
8. KEY
9. TAPER PLUG
10. PUMP
11. SEAL HOLDER COVER
12. PUMP HUB
13. HYDRAULIC PUMPS DRIVE GEAR
14. SEAL
15. HYDRAULIC PUMPS DRIVE HUB
16. HUBS SUPPORT (STATOR SUPPORT)
17. TURBINE SHAFT
18. OIL SEAL
19. OIL SEAL

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Brake system schematic

T_1. Front brakes delivery port. (P Max. 45 bar)

T_2. Rear brakes delivery port. (P Max 45 bar)

1. Rear axle brakes
2. Front axle brakes
3. Quick release pressure pick-up
4. Quick release pressure pick-up
5. Transmission cut-off pressure switch (setting = 15 bar)
6. Stop lights pressure switch (setting = 1.8 bar)
7. Brake pedal valve (operating pressure = 45 bar)
8. Accumulator control pressure switch (60 ± 5 bar)
9. Brake accumulator (capacity = 1.4 litres - pre-charge = 45 bar)
10. Brake accumulator (capacity = 1.4 litres - pre-charge = 45 bar)
11. Powering pump (for brake system)
12. Delivery oil filter
13. Check valve
14. Pressure relief valve (setting 30 bar)
15. Three way diverter, parking brake engagement/ disengagement control
16. Parking brake pressure switch (setting of pressure switch: OFF = 15 bar; ON = 10 bar)
17. Parking brake caliper cylinder
18. Brake disc
19. Heat exchanger
20. Accumulator (capacity 0.7 litres - pre-charge 19 bar)

WARNING - DANGER

Always disconnect and connect all fittings with the engine stopped and braking system disabled.
Accumulators keep some branches of the circuit under pressure even if the engine is stopped.
Pressure oil escaping from loose fittings may cause personal injury and damages to things.
Wear safety glasses with side shields.

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6.6 CYLINDERS

	LW170	LW190
Booms cylinders:		
Type	Kayaba double acting	Kayaba double acting
Q.ty	2	2
Inside diameter of cylinder	140 mm (5.5 in)	140 mm (5.5 in)
Diameter of rod	75 mm (3.0 in)	75 mm (3.0 in)
Cylinder rod stroke	760 mm (29.9 in)	930 mm (36.6 in)
Weight (unit)	116 kg (256 lbs)	130 kg (287 lbs)
Bucket cylinder:		
Type	Kayaba double acting	Kayaba double acting
Q.ty	1	1
Inside diameter of cylinder	170 mm (6.7 in)	190 mm (7.5 in)
Diameter of rod	85 mm (3.3 in)	95 mm (3.7 in)
Cylinder rod stroke	495 mm (19.5 in)	505 mm (19.9 in)
Weight (unit)	123 kg (271 lbs)	186 kg (410 lbs)

6.6.1 BOOMS CYLINDER

The two boom cylinders are double acting. The cylinders are extended or retracted, respectively to raise or lower the booms. The booms cylinder is composed of: cylinder sleeve, head, rod, piston and seal pack.

6.6.2 BUCKET TILT CYLINDER

The bucket tilt cylinder is double acting. Depending upon the extension or retraction of the cylinder, the bucket is rolled-in or tilted by the linkage composed of the strut and rod. The bucket cylinder is composed of: cylinder sleeve, head, rod, piston and seal pack.

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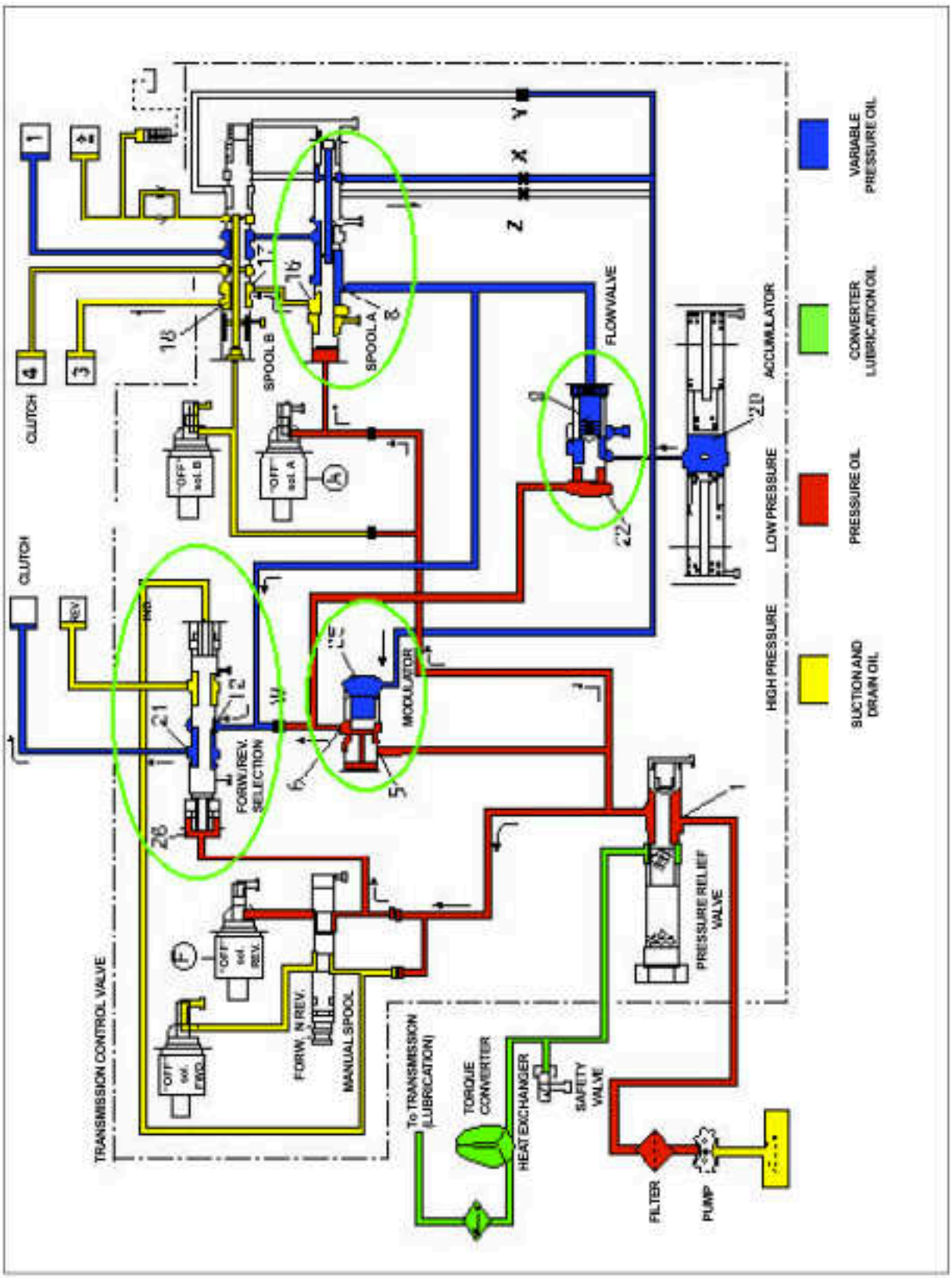


Fig. 2-29 Transmission in 1st Forward

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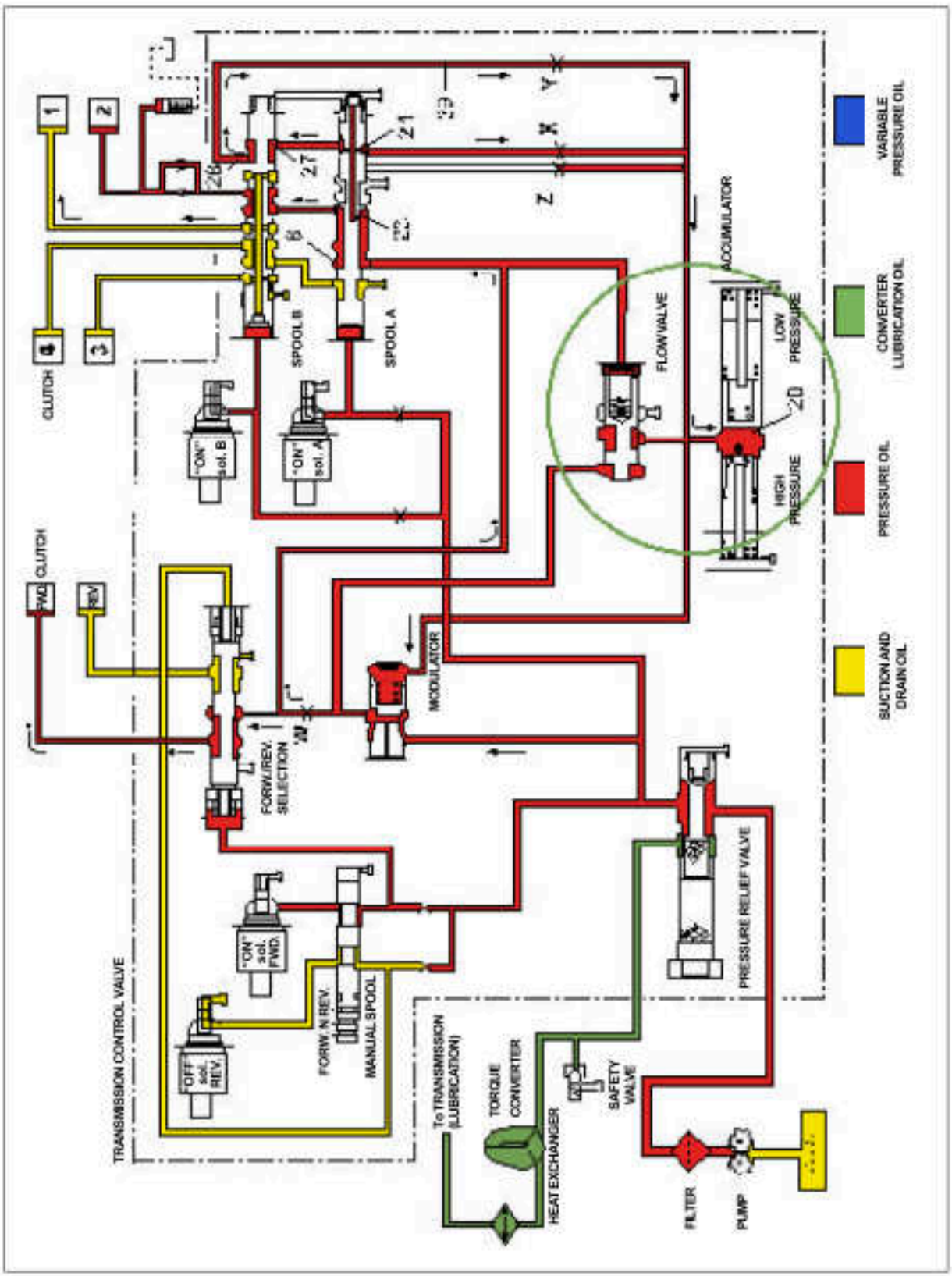


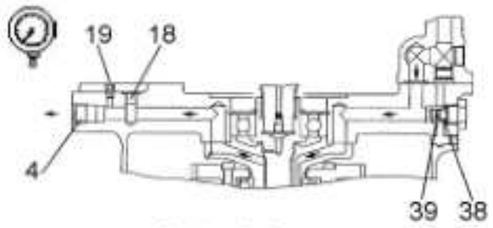
Fig. 2-32 Engagement of clutches (2nd speed Forward)

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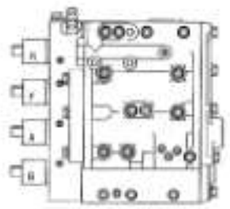
Clutch engagement oil pressure: 21 - 24 bar (299 - 342 psi)
Opening pressure of safety valve: 7.2 bar (102 psi)

daNm Value of tightening torque

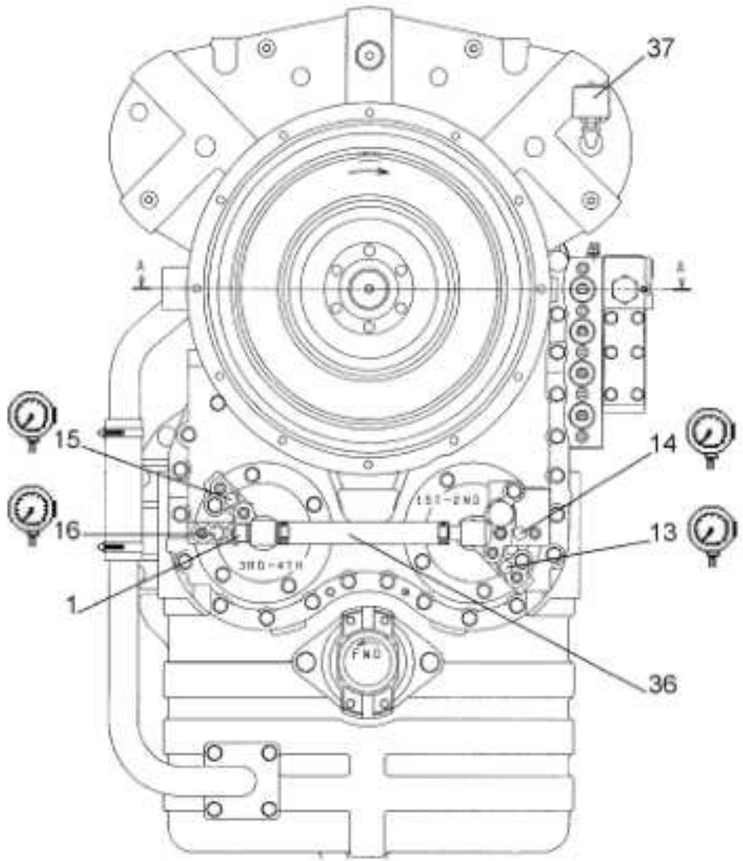
Pressure test point

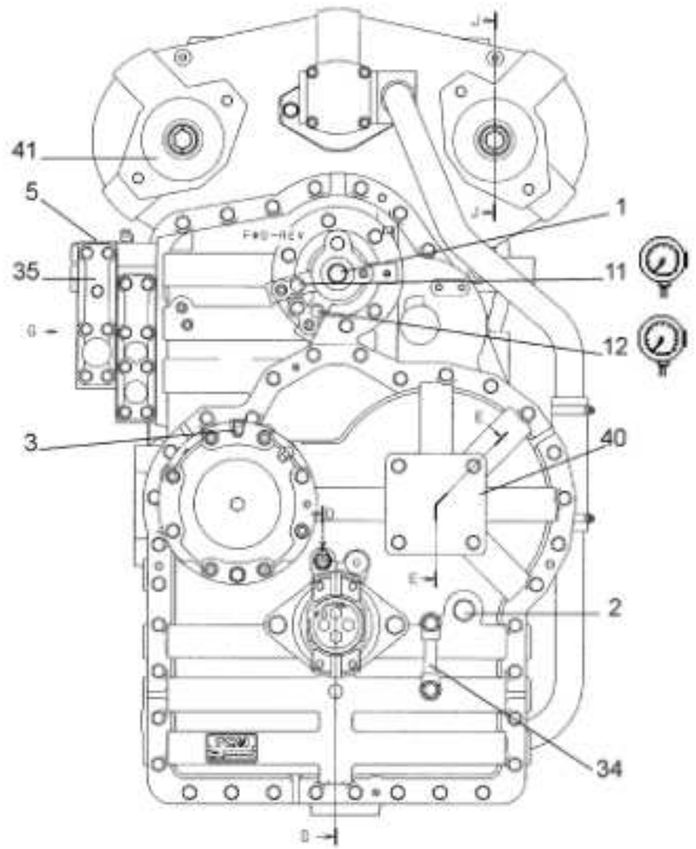


Section **A-A**



View from **G**





Note - For sections D-D, E-E, J-J, please refer to the page to follow.

Note:

1 Threaded part : LOCTITE 572

2 Energising table of transmission control valve solenoid valves

(● : Energised)

	sol. FWD.	sol. REV.	sol. A	sol. B
4ª FWD.	●			●
3ª FWD.	●			
2ª FWD.	●		●	●
1ª FWD.	●		●	
N				
1ª REV.		●	●	
2ª REV.		●	●	●
3ª REV.		●		
4ª REV.		●		●

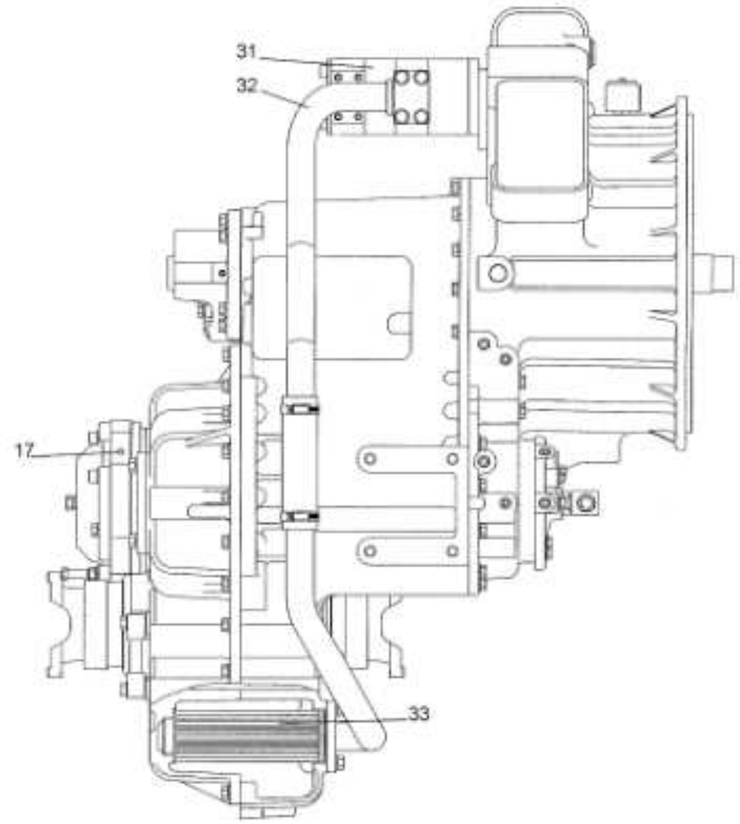


Fig. 2-7 Transmission - torque converter group of model LW190 (1)

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