1650M
Tier 4A (interim)
Crawler Dozer

PIN NCDC16500 and above; PIN NDDC16500 and above
PIN NEDC16000 and above; PIN NFDC16000 and above

SERVICE MANUAL

Part number 47907868
2nd edition English
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CASE CONSTRUCTION

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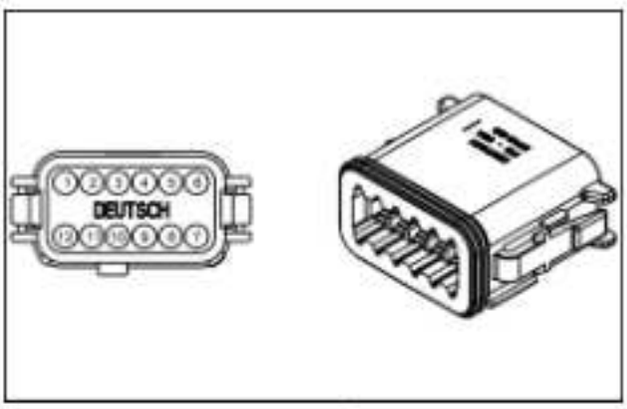
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CONNECTOR X-062 - TO MAIN HARNESS

CONNECTOR X-062 - TO MAIN HARNESS			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	S021 (OR)	REAR WIPER MOTOR SWITCHED +24V	
2	6014 (TN)	REAR WIPER SPEED SWITCHED +24V	
3	6012 (TN)	REAR WIPER PARK FEED SIGNAL	
4	G112 (BK)	RADIO GROUND	
5	5052 (RD)	CONVERTER +12V (KEY ON)	
6	5044 (RD)	12V BATT+ FUSED RADIO POWER	
7	4018 (WH)	A/C HIGH PRESSURE SW - A/C CLUTCH	
8	5047 (RD)	DOME LIGHT UNSWITCHED +24V	
9	-	-	
10	-	-	
11	-	-	
12	-	-	



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Temperature	Resistance (Approximately)
-65 °C (-85.0 °F)	150 Ω
0 °C (32.0 °F)	200 Ω
65 °C (149.0 °F)	250 Ω
133 °C (271.4 °F)	300 Ω
202 °C (395.6 °F)	350 Ω
272 °C (521.6 °F)	400 Ω
344 °C (651.2 °F)	450 Ω
418 °C (784.4 °F)	500 Ω
494 °C (921.2 °F)	550 Ω
572 °C (1061.6 °F)	600 Ω
652 °C (1205.6 °F)	650 Ω
735 °C (1355.0 °F)	700 Ω
821 °C (1509.8 °F)	750 Ω
909 °C (1668.2 °F)	800 Ω
1002 °C (1835.6 °F)	850 Ω

A. If both sensors test good, continue with step **4**.

B. If either sensor test fails, replace the sensor.

4. Check wire harness. Refer to product manual for wire harness testing.

A. If wire harness test fails, find and replace faulty wiring.

B. If wire harness tests is good, continue with step **5**.

5. Visually inspect the relevant harnesses and connectors for damage, bent or dislocated pins, corroded terminals or broken wires. Verify that the connectors are fully installed. Flex the harnesses involved to reveal intermittent breaks or shorts in the wiring concerned. Operate the machine while monitoring the Display.

A. If damage is found or other than normal display readings are indicated, repair the damage discovered during the inspection or locate and repair the other than normal display condition and verify that the error has been resolved.

B. If no damage or other than normal display readings are indicated, erase the fault code and continue operation.

Harnesses and connectors - Electrical schematic sheet 05 Exhaust Control (55.100-C.20.E.05)

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Schematic legend			
(1)	UCM connector X-016 Pin 5 L Pump FWD (Front A) Fault Codes 4111, 4112, 4113, 4114, and 4302	(6)	UCM connector X-016 Pin 22 REV Pump RTN (Both B) Fault Codes 4311, 4313 and 4312
(2)	UCM connector X-016 Pin 6 L Pump REV (Front B) Fault Codes 4131, 4132, 4133, 4134, and 4312	(7)	UCM connector X-016 Pin 19 R Pump FWD (Rear A) Fault Codes 4101, 4102, 4103, 4104, and 4302
(3)	UCM connector X-014 Pin 21 FWD Pump RTN (Both A) Fault Codes 4301, 4303, and 4302	(8)	UCM connector X-016 Pin 25 R Pump REV (Rear B) Fault Codes 4121, 4122, 4123, 4124, and 4312
(4)	Left Pump Connector X-115	(9)	Right Pump Connector X-114
(5)	Connector X-001/ X-090		

A. The connectors are secure and the harness is free of damage. Go to step **3**.

B. The connectors or the harness has damage. Repair or replace the harness or connectors as required. Return to step **1** to confirm elimination of fault.

3. Test the circuit.

Turn the ignition switch OFF.

Disconnect the right reverse solenoid and left reverse solenoid.

Fabricate a jumper wire that will connect between X-115 pin 2 and X-115 pin 1.

Connect the jumper wire between X-115 pin 2 and X-115 pin 1.

Fabricate a jumper wire that will connect between X-114 pin 2 and X-114 pin 1.

Connect the jumper wire between X-114 pin 2 and X-114 pin 1.

Turn the ignition switch ON.

Access the fault code screen on the EST.

Fault code 4311 should no longer be active. Fault code 4312 is now active. Fault codes 4101 and 4111 will also be active, ignore these fault codes.

A. Fault code 4311 is no longer active. Fault code 4312 is now active. Temporarily replace both solenoids and retest. Return to step **1** to confirm elimination of the fault.

B. Fault code 4311 is still present and active. Fault code 4312 did not become active. Go to step **4**.

4. Measure the resistance through the signal wires.

Leave the jumper wires installed in connector X-115 and X-114.

Turn the ignition switch OFF.

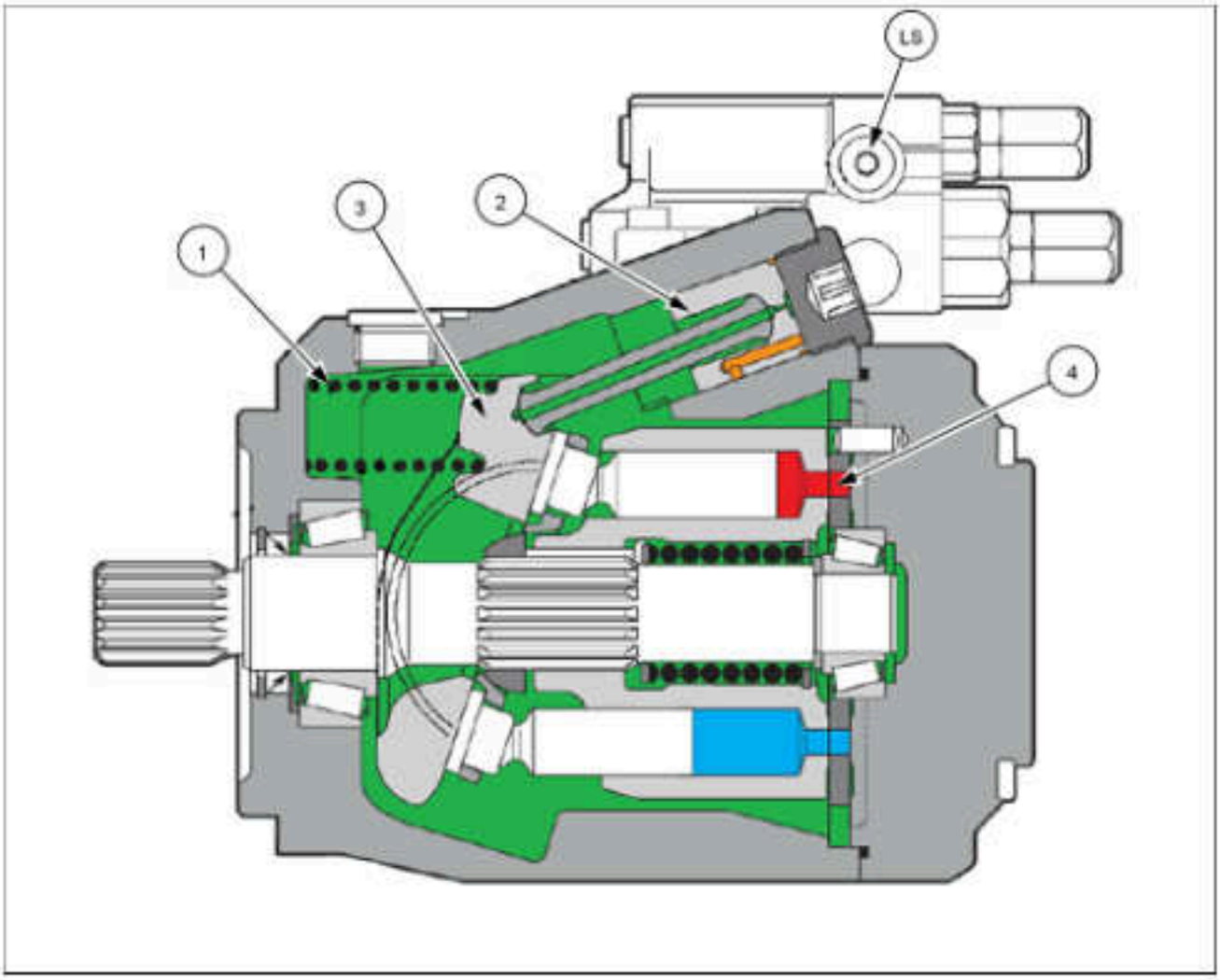
Disconnect UCM connector X-016.

Measure the resistance between X-016 pin 25 and X-016 pin 22. The resistance should be less than **10 Ω** Wiggle the harness during measurement to reveal an intermittent condition.

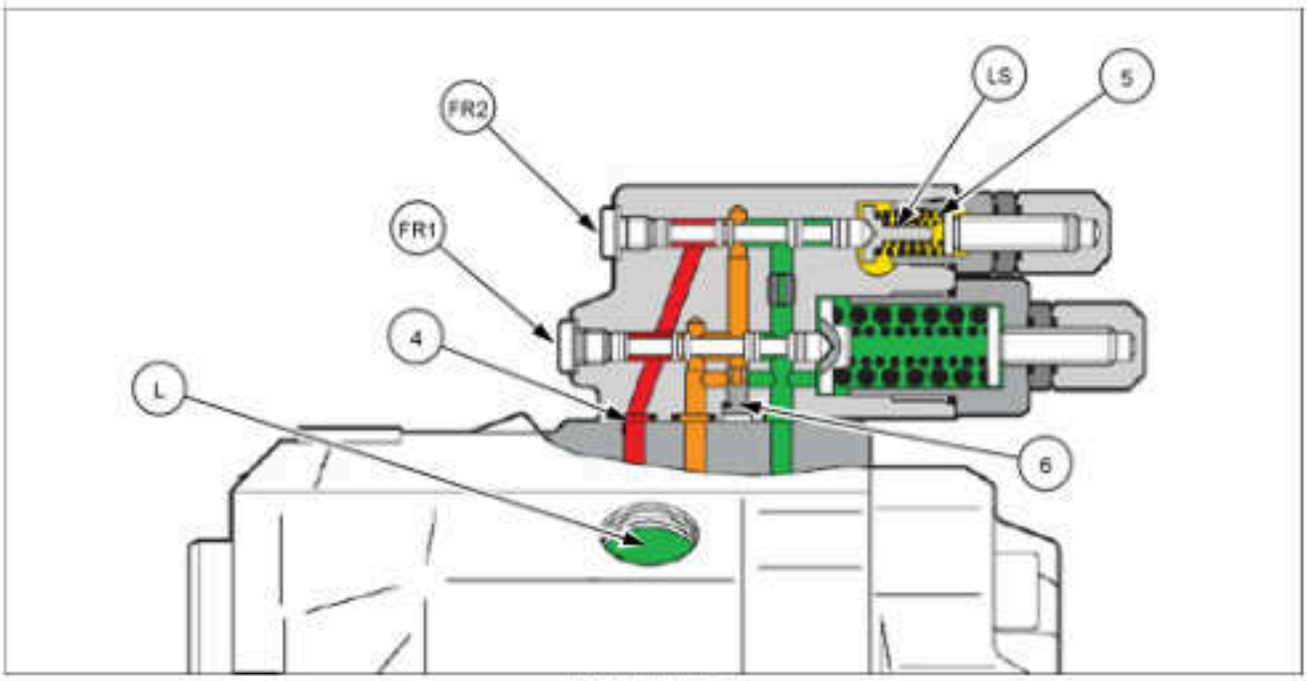
Measure the resistance between X-016 pin 6 and X-016 pin 22. The resistance should be less than **10 Ω** Wiggle the harness during measurement to reveal an intermittent condition.

A. Both resistance measurements are less than **10 Ω**. Temporarily replace the UCM and retest. Return to step **1** to confirm elimination of the fault.

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RCPH11WHL038GAN 2



RCPH11WHL038PAN 3

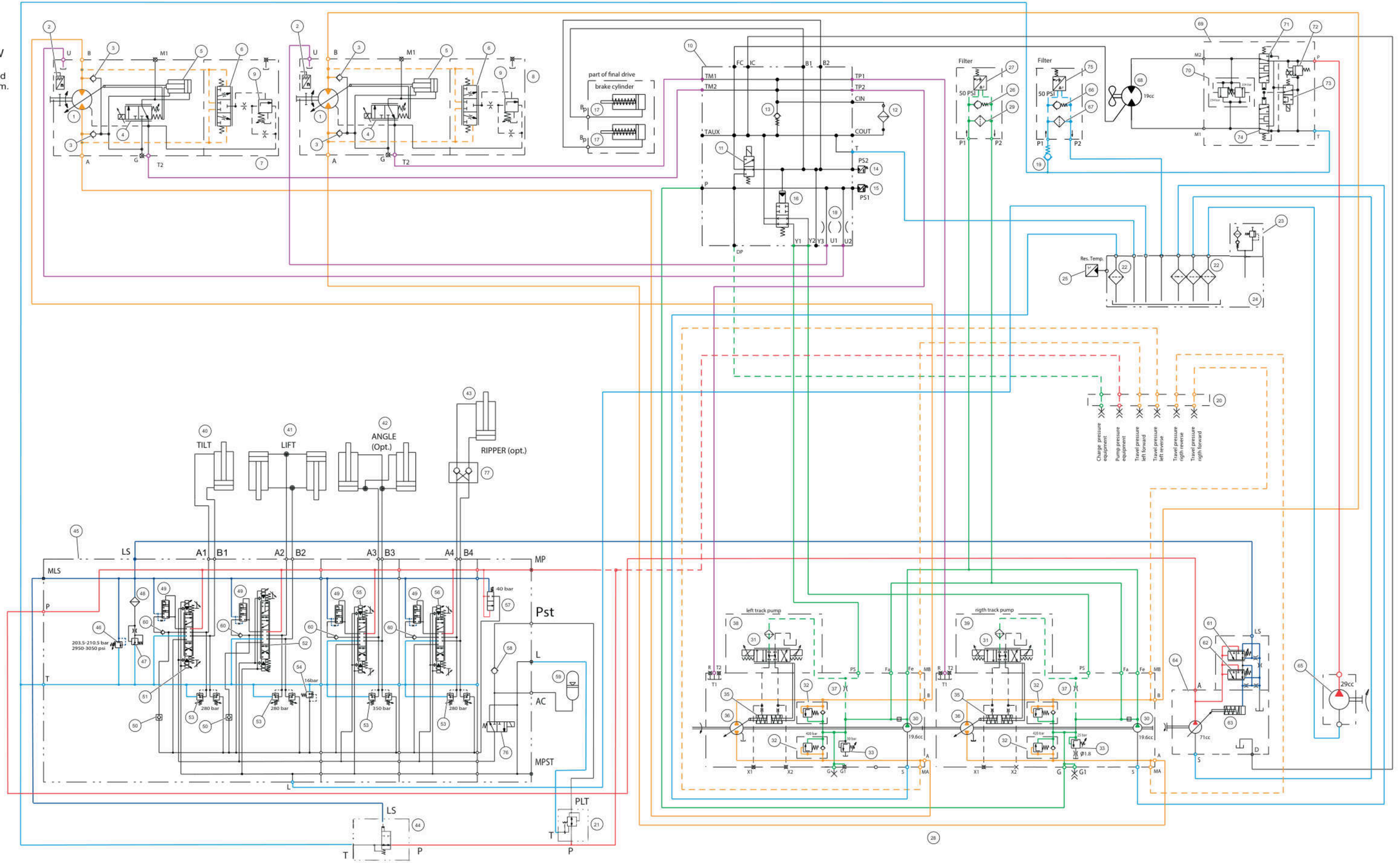
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HYDRAULIC SCHEMATIC
1650M DOZER
Tier 4A (interim)\Stage IIIB\Tier 2 - ROW

Additional copies of this Schematic can be ordered through Technical Publications Distribution System. Part # RAC 47907883 (replaces RAC 47714314)

LEGEND

- HYDRAULIC PRESSURE
- CHARGE PUMP PRESSURE
- RETURN TO TANK/ PUMP INLET
- TRACK DRIVE
- TRACK DRIVE CASE DRAIN
- LOAD SENSE



1	Track Drive Motor	13	Oil Cooler Bypass	25	Reservoir Temperature Sensor	37	Pump Speed Control Orifice	49	Flow Compensator Spool	61	Flow Control Spool	73	Fan Reverse Solenoid
2	Track Drive Motor Speed Sensor	14	Brake Release Pressure Switch	26	Charge Filter Bypass Valve	38	Left Track Pump Assembly	50	Regeneration Check Valve	62	High Pressure Cut-Off Spool	74	Forward Pilot Control Valve
3	Motor Control Check Valve	15	Charge Pressure Switch	27	Charge Filter Pressure Switch	39	Right Track Pump Assembly	51	Tilt Spool	63	Destroke Pistons	75	Hydraulic Filter Pressure Switch
4	Motor Control Solenoid Valve	16	Neutral Override Valve	28	Tandem Pump Assembly	40	Tilt Cylinder	52	Lift Spool	64	Equipment Hydraulic Pump	76	Pilot On/Off Solenoid Valve
5	Motor Speed Control Piston	17	Park Brake Release Piston	29	Charge Filter	41	Lift Cylinders	53	Circuit Relief w/ Anticavitation	65	Fan Drive Pump	77	Ripper Lock Check Valve
6	Motor Flushing Valve	18	Motor Cooling Orifice	30	Charge Pump	42	Angle Cylinders	54	Regeneration Relief Valve	66	Filter Bypass Valve		
7	Left Track Drive Motor Assembly	19	Backpressure Check Valve	31	Pump Control Solenoid Valve	43	Ripper Cylinder	55	Angle Spool	67	Hydraulic Filter		
8	Right Track Drive Motor Assembly	20	Hydraulic Test Points	32	High Pressure Relief/Check Valve	44	Pump Flushing Valve	56	Ripper Spool	68	Fan Drive Motor		
9	Motor Flushing Valve Flow Control	21	Pilot Pressure Reducing Valve	33	Charge Pressure Relief	45	Equipment Valve	57	Pressure Spike Clipper	69	Fan Reverse Valve		
10	Brake Release (Multi-function) Valve	22	Reservoir Suction Screen	34		46	Load Sense Relief Valve	58	Pilot Pressure Check Valve	70	Fan Reversing Pressure Relief		
11	Park Brake Release Solenoid	23	Reservoir Pressure Cap	35	Pump Control Piston	47	Signal Bleed Down Orifice	59	Pilot Accumulator	71	Reverse Pilot Control Valve		
12	Oil Cooler	24	Hydraulic Reservoir	36	Track Drive Pumps	48	Screen	60	Load Check Valve	72	Fan Speed Control Solenoid		

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