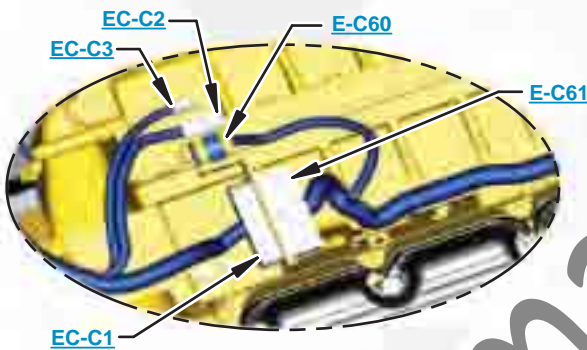




This document is best viewed at a screen resolution of 1024 X 768.

To set your screen resolution do the following:
RIGHT CLICK on the **DESKTOP**.
 Select **PROPERTIES**.
CLICK the **SETTINGS TAB**.
MOVE THE SLIDER under **SCREEN RESOLUTION** until it shows **1024 X 768**.
CLICK OK to apply the resolution.

The Bookmarks panel will allow you to quickly navigate to points of interest.



Click on any text that is BLUE and underlined. These are hyperlinks that can be used to navigate the schematic and machine views.

VIEW ALL CALLOUTS

When only one callout is showing on a machine view this button will make all of the callouts visible. This button is located in the top right corner of every machine view page.

HOTKEYS (Keyboard Shortcuts)		
	FUNCTION	KEYS
	Zoom In	"CTRL" / "+"
	Zoom Out	"CTRL" / "-"
	Fit to Page	"CTRL" / "0" (zero)
	Hand Tool	"SPACEBAR" (hold down)
	Find	"CTRL" / "F"



Schematic

D7R Series II Track-Type Tractor Power Train System

AEC1500-UP
ABJ1500-UP
BRM801-UP
AGN1500-UP
BPT701-UP
BNX901-UP

SchematicCat.com

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D7R Series II Track-Type Tractor Power Train System

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SchematicCat.com

COMPONENT LOCATION



Machine Location	Schematic Location	Part Number	Description
1	C-4	270-1763	POWER TRAIN OIL PUMP (3 SECTION)
2	A-5	260-7604	POWER TRAIN OIL FILTERS
3	D-5	158-8076	BRAKE CONTROL VALVE
4	E-4	263-9949	LUBE DIST. / TC INLET RELIEF MANIFOLD
5	N/A	183-3873	BREATHER
6	D-3	220-1418	TORQUE CONVERTER OUTLET RELIEF VALVE
7	B-1	161-4347	OIL COOLER
8	C-4	231-4166	PUMP INLET SCREEN / HOUSING GP.
9	E-5	223-2451	TRANSMISSION AR.
10	F-6	231-5968	LEFT DRIVE / BRAKE GP.
11	A-6	231-5990	RIGHT DRIVE / BRAKE GP.
12	B-2	273-4944	TORQUE CONVERTER / HOUSING GP.
13	N/A	273-4944	DIPSTICK (GAGE AS.)
14	N/A	N/A	OIL FILL TUBE

TAP LOCATION

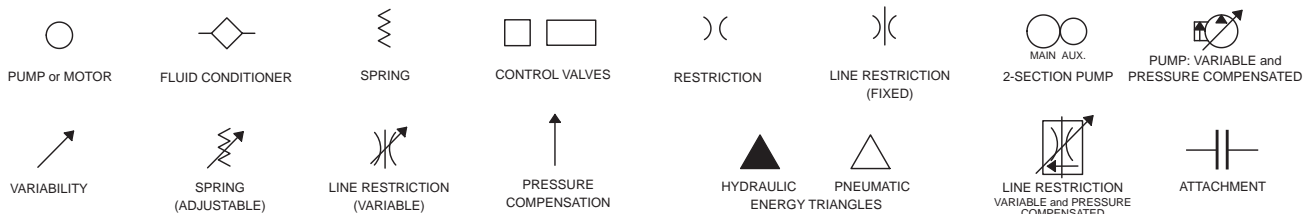


Tap Number	Schematic Location	Description
<u>B</u>	<u>D-6</u>	BRAKE PRESSURE
<u>P</u>	<u>D-8</u>	TRANS. MAIN RELIEF
<u>M</u>	<u>E-4</u>	T/C SUPPLY PRESSURE
<u>N</u>	<u>D-3</u>	T/C OUTLET PRESSURE
L2	<u>E-2</u>	FLYWHEEL LUBE PRESSURE
<u>L1</u>	<u>C-8</u>	TRANS. LUBE PRESSURE
<u>LB1</u>	<u>E-6</u>	L BRAKE LUBE PRESSURE
<u>LB2</u>	<u>A-6</u>	R BRAKE LUBE PRESSURE
<u>CL1</u>	<u>C-6</u>	TRANS. CLUTCH 1 PRESSURE
<u>CL2</u>	<u>C-7</u>	TRANS. CLUTCH 2 PRESSURE
<u>CL3</u>	<u>D-7</u>	TRANS. CLUTCH 3 PRESSURE
<u>CL4</u>	<u>D-7</u>	TRANS. CLUTCH 4 PRESSURE
<u>CL5</u>	<u>D-6</u>	TRANS. CLUTCH 5 PRESSURE
<u>AA</u>	<u>A-4</u>	PTO SAMPLING PORT (SOS)
<u>BB</u>	<u>A-5</u>	PTO PRESSURE

FLUID POWER SYMBOLS



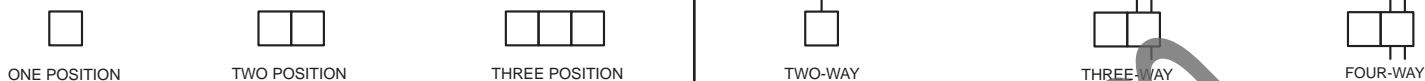
BASIC COMPONENT SYMBOLS



VALVE ENVELOPES

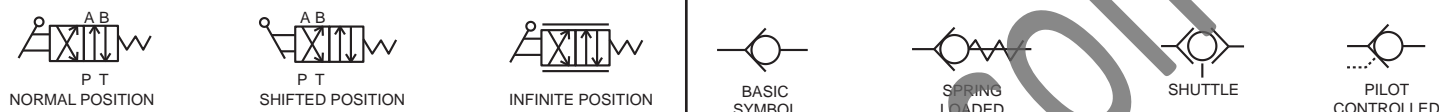
VALVES

VALVE PORTS



CONTROL VALVES

CHECK VALVES



FLUID STORAGE RESERVOIRS



MEASUREMENT

ROTATING SHAFTS



COMBINATION CONTROLS



MANUAL CONTROL SYMBOLS



RELEASED PRESSURE

PILOT CONTROL SYMBOLS

REMOTE SUPPLY PRESSURE



ACCUMULATORS

CROSSING AND JOINING LINES

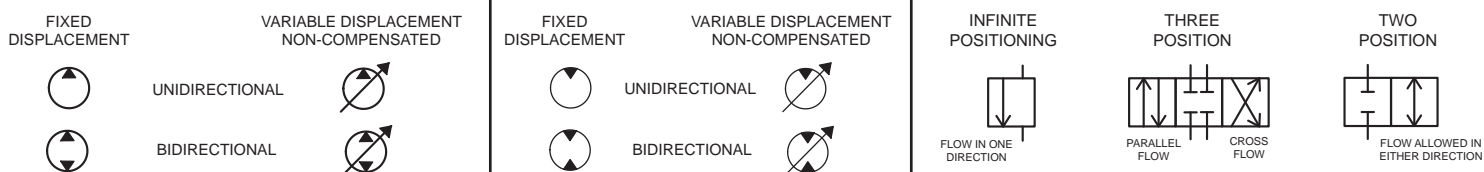
HYDRAULIC AND PNEUMATIC CYLINDERS



HYDRAULIC PUMPS

HYDRAULIC MOTORS

INTERNAL PASSAGEWAYS



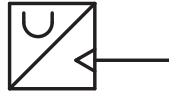
ELECTRICAL SYMBOLS



Hydraulic Symbols (Electrical)



Transducer
(Fluid)



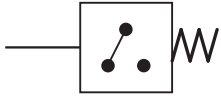
Transducer
(Gas / Air)



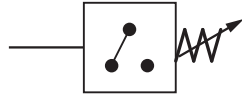
Generator



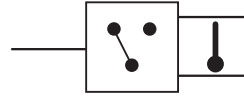
Electric Motor



Pressure Switch



Pressure Switch
(Adjustable)

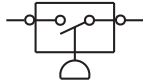


Temperature Switch

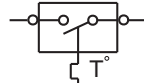


Electrical Wire

Electrical Symbols (Electrical)



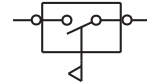
Pressure
Symbol



Temperature
Symbol



Level
Symbol

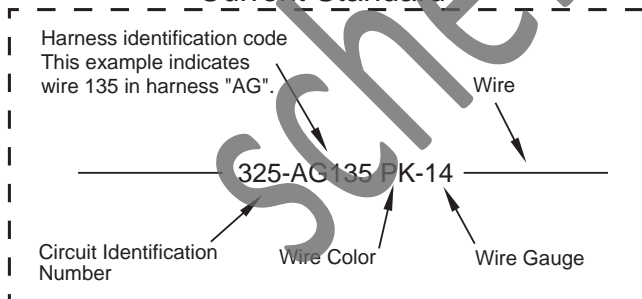


Flow
Symbol

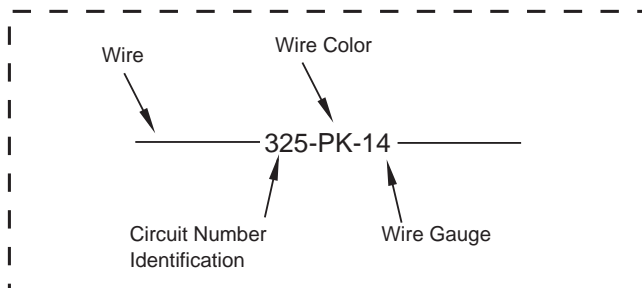
Wire Number Identification Codes

Electrical Schematic Example

Current Standard

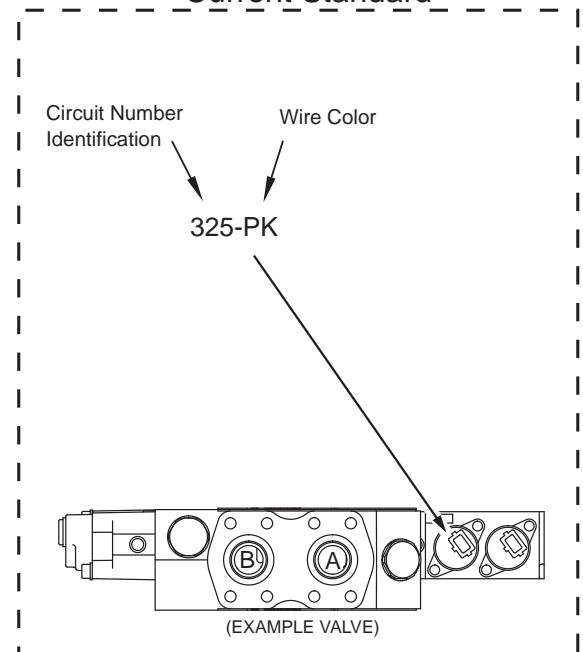


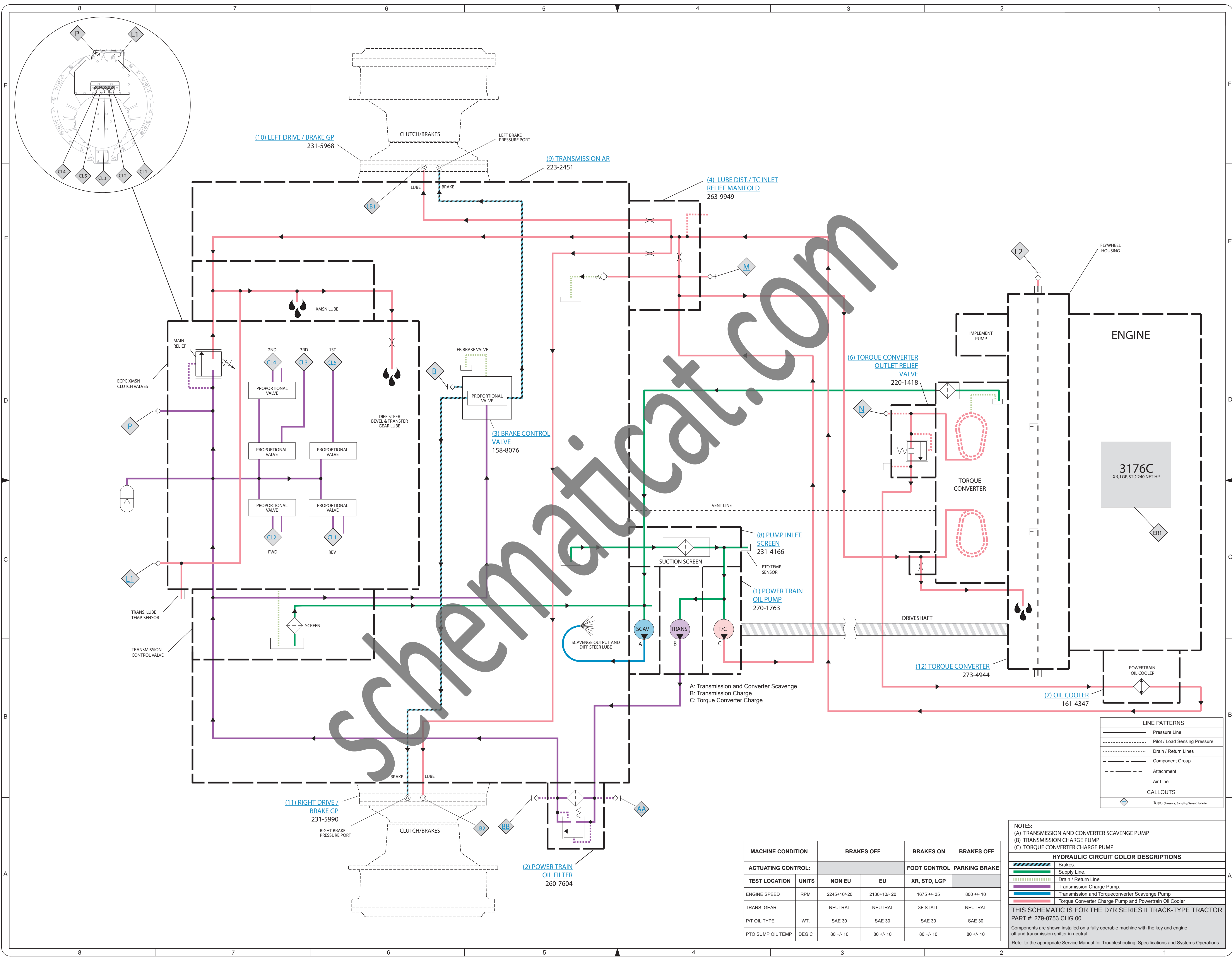
Previous Standard



Hydraulic Schematic Example

Current Standard





Schematics.com

LINE PATTERNS	
	Pressure Line
	Pilot / Load Sensing Pressure
	Drain / Return Lines
	Component Group
	Attachment
	Air Line
CALLOUTS	
	Taps (Pressure, Sampling, Sensor) by letter

NOTES:
 (A) TRANSMISSION AND CONVERTER SCAVENGE PUMP
 (B) TRANSMISSION CHARGE PUMP
 (C) TORQUE CONVERTER CHARGE PUMP

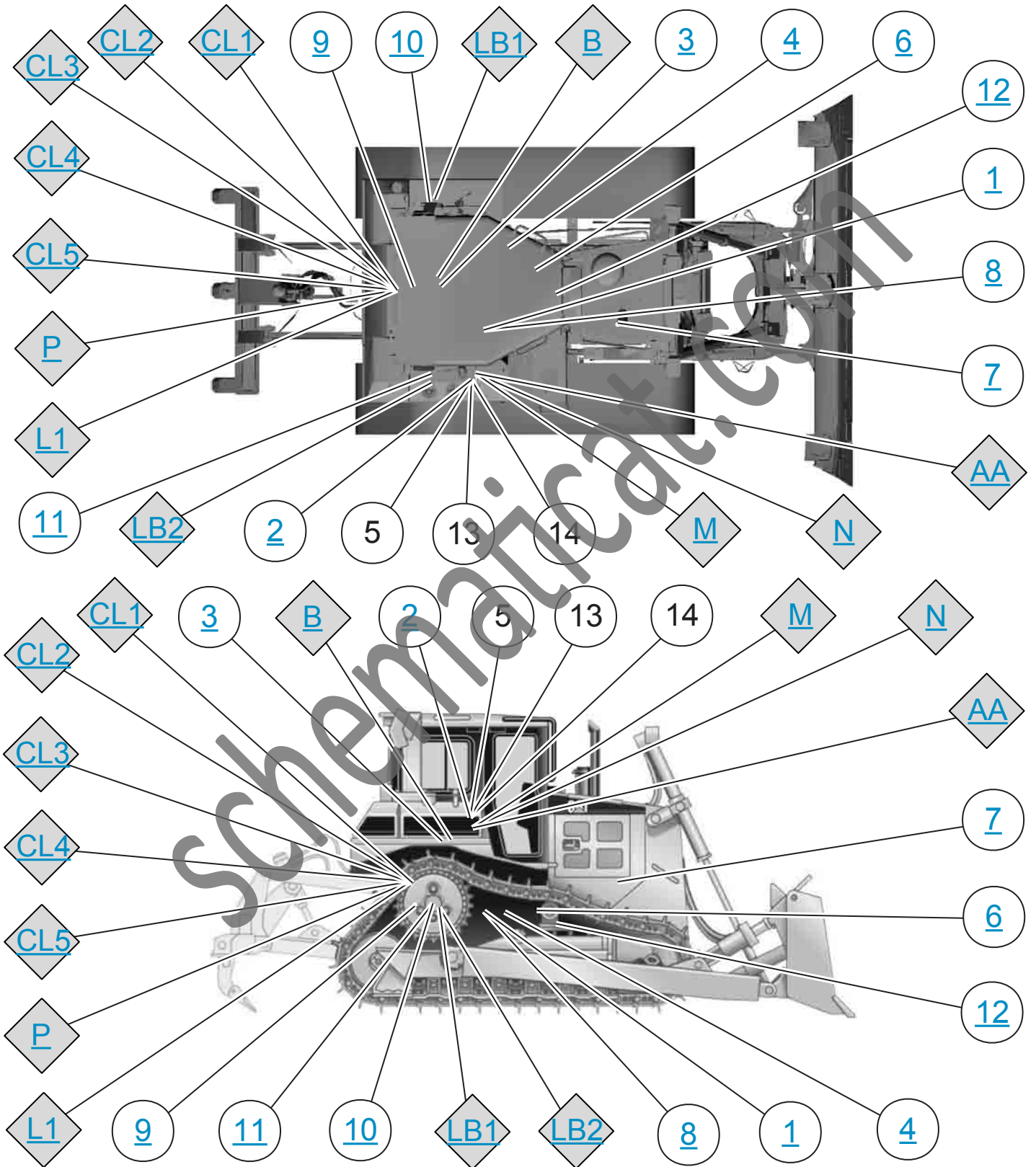
HYDRAULIC CIRCUIT COLOR DESCRIPTIONS

	Brakes
	Supply Line
	Drain / Return Line
	Transmission Charge Pump
	Transmission and Torqueconverter Scavenge Pump
	Torque Converter Charge Pump and Powertrain Oil Cooler

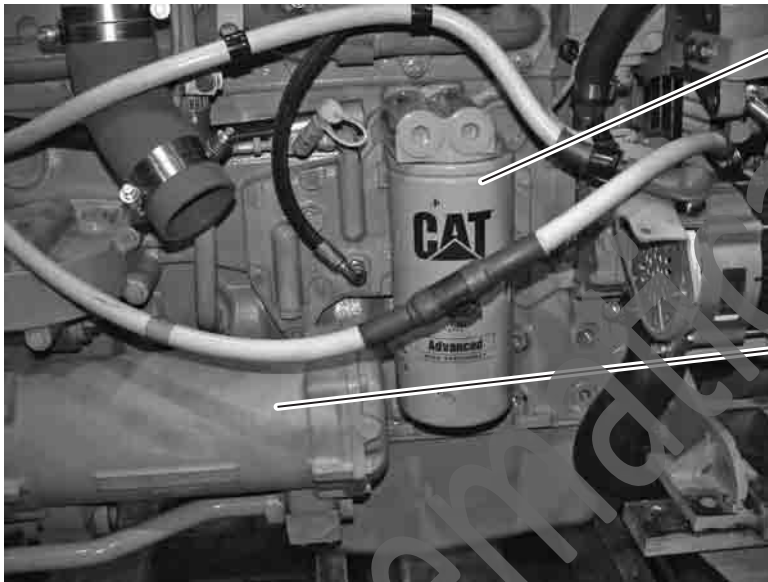
THIS SCHEMATIC IS FOR THE D7R SERIES II TRACK-TYPE TRACTOR PART #: 279-0753 CHG 00
 Components are shown installed on a fully operable machine with the key and engine off and transmission shifter in neutral.
 Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations

MACHINE CONDITION	BRAKES OFF		BRAKES ON	
	ACTUATING CONTROL:	NON EU	EU	XR, STD, LGP
TEST LOCATION	UNITS			
ENGINE SPEED	RPM	2245+10/-20	2130+10/-20	1675 +/- 35
TRANS. GEAR		NEUTRAL	NEUTRAL	3F STALL
PIT OIL TYPE	WT.	SAE 30	SAE 30	SAE 30
PTO SUMP OIL TEMP	DEG C	80 +/- 10	80 +/- 10	80 +/- 10

COMPONENT AND TAP LOCATIONS

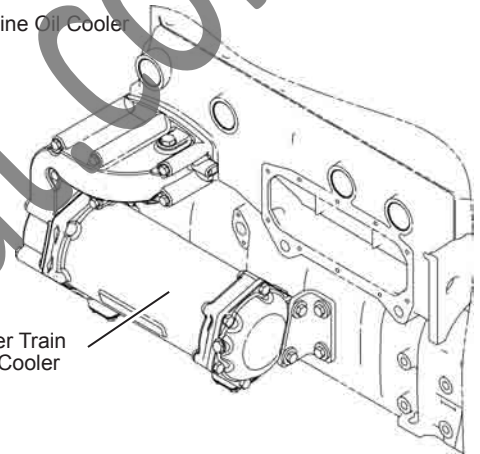


POWER TRAIN OIL COOLER

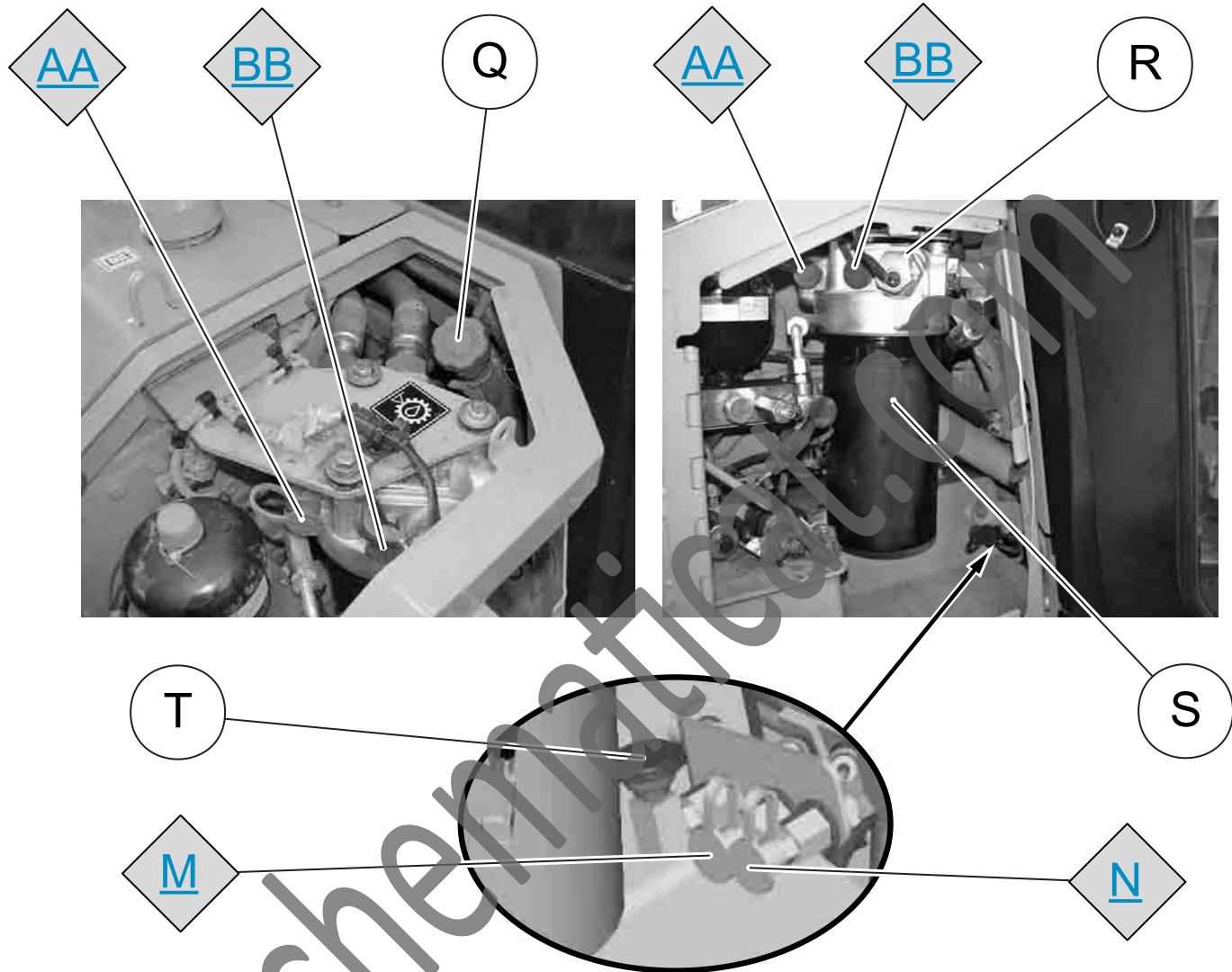


Engine Oil Cooler

Power Train
Oil Cooler



Below and to the rear of the engine oil cooler is the oil-to-water type power train oil cooler.



Opening the top door of the forward compartment on the right fender gains access to the combination power train oil fill tube and dipstick (Q).

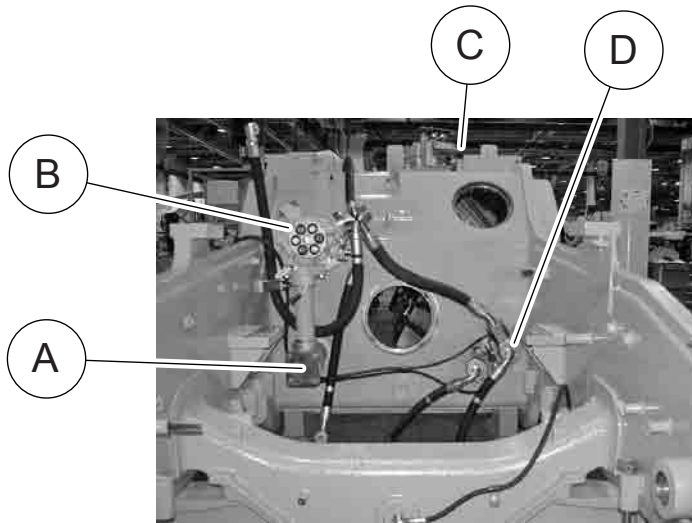
Opening the front door of the forward compartment on the right fender gains access to the power train oil filter (S). This spin-on type canister contains a replaceable 6-micron filter element. The filter base contains a filter bypass switch (R). This is a normally open switch that is held closed by the filter bypass valve spool. The bypass valve opens, allowing the switch to open, when the difference in pressure between the filter inlet and the filter outlet becomes great enough (approximately 50 psi). The switch is monitored by the Caterpillar Monitoring System and alerts the operator to the filter bypass condition.

The filter base also contains the power train oil sampling (AA) and a pressure test port (BB) for the transmission charging circuit. The pressure test port is situated downstream from the filter. The power train oil sampling port is situated upstream, or before the filter.

Also located in the forward compartment on the right fender and inboard from the power train oil filter canister are the following service points:

- (T). remote power train breather
- (M). remote pressure test port for torque converter inlet pressure
- (N). remote pressure test port for torque converter outlet pressure

POWER TRAIN OIL PUMP

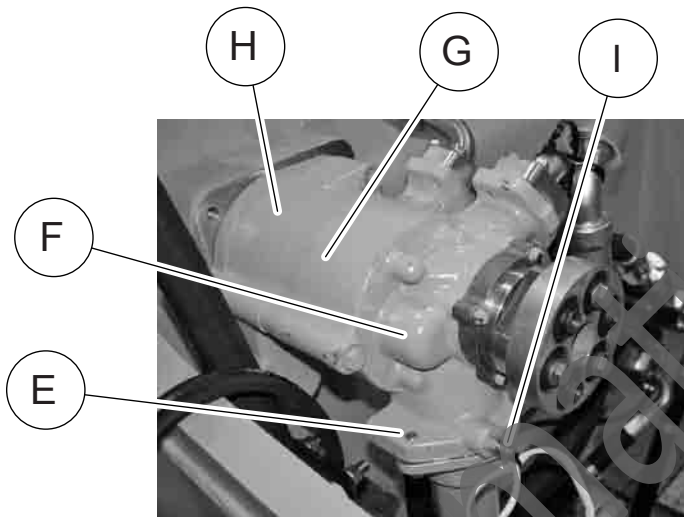


The screened main suction manifold (A) for the power train oil pump is located at the right front of the main case, near the bottom.

The three-section gear-type power train oil pump (B) is mounted to the front of the main case, at the upper right.

The electronic brake valve (C) is located on top of the main case, to the left of center.

The torque converter inlet relief valve and the lube distribution manifold are both incorporated into one housing (D). These two components are mounted to the left front of the main case, near the bottom.



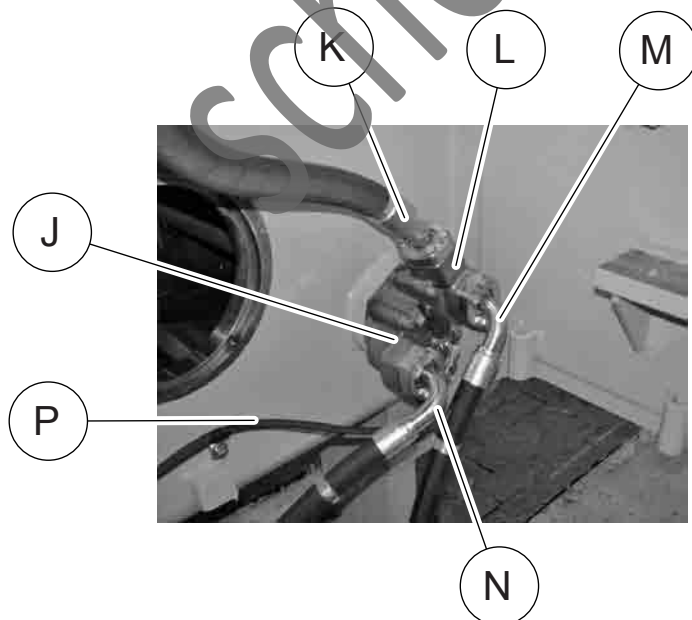
The power train oil pump draws oil for the torque converter charging circuit and for the transmission charging circuit from a screened suction manifold that connects to the pump at the pump inlet (E).

The torque converter charging section (F) of the power train oil pump supplies approximately 145 L/min. (38.3 US gal./min.) of oil to the torque converter circuit for operation of the torque converter and for lubrication purposes.

The transmission charging section (G) of the power train oil pump supplies approximately 54 L/min. (14.3 US gal./min.) of oil to the transmission and brakes circuit.

The transmission and torque converter scavenge section (H) of the power train oil pump draws approximately 125 L/min. (33 US gal./min.) from the torque divider case, and the transmission case.

The scavenge oil is used for lubrication of the steering differential. The power train oil temperature sensor (I) provides main sump oil temperature information to the Machine ECM. This is the temperature sensor that is considered when performing power train calibrations, such as brake touch-ups and transmission clutch fill calibrations.

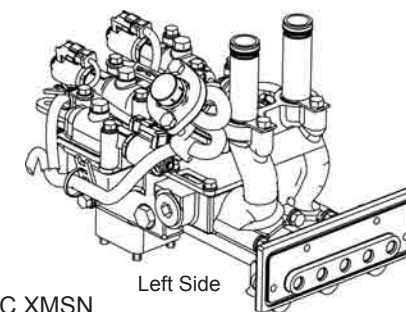
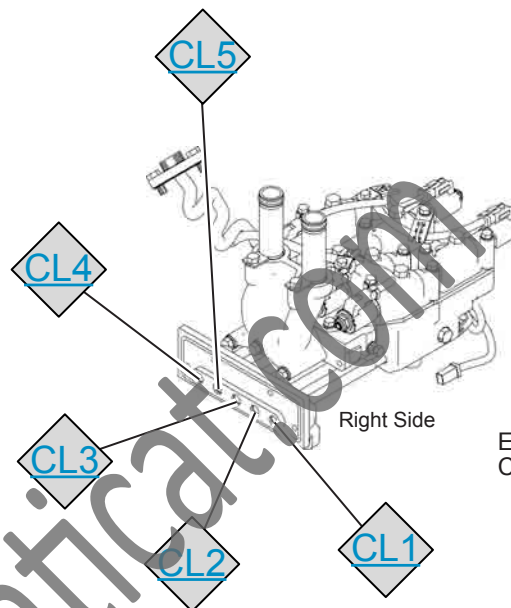
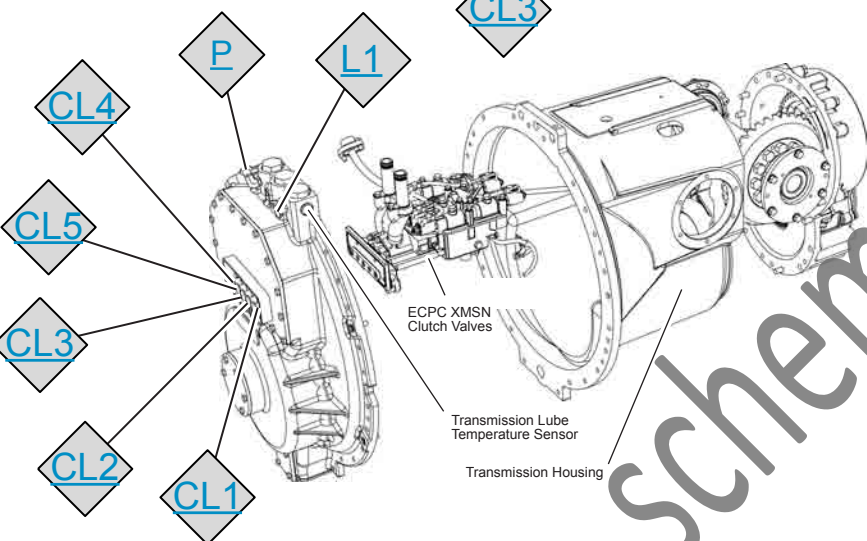
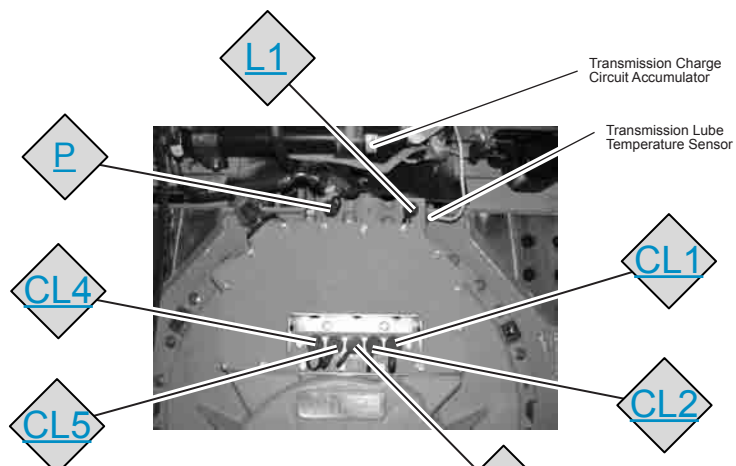


The torque converter inlet relief valve (J) and the lube distribution manifold (L) are both contained in one housing. Oil from the torque converter charging section of the power train oil pump is supplied to the torque converter inlet relief valve through the upper hose (K).

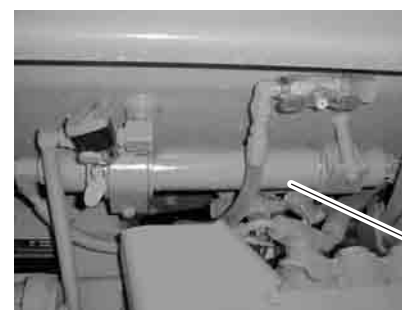
The torque converter inlet relief valve is installed in the housing. Excess oil flows past the inlet relief valve into the main sump through a port in the front of the case, and behind the housing. Oil flow to the torque converter inlet is through the hose on the right (N).

Cooled oil from the power train oil cooler is directed to the lube distribution manifold (L) through the hose on the left (M). The smaller hose (P) is the line leading to the remote pressure test port for torque converter inlet pressure (M). This remote pressure test port is located inside the front compartment on the right fender.

TRANSMISSION GROUP



ECPC XMSN Clutch Valves



The transmission charge circuit accumulator is mounted beneath the fuel tank and located above the transmission case.

This accumulator is pre-charged to approximately 1724 kPa (250 psi). It is used to help maintain transmission charge circuit pressure for short periods of time, such as when transmission clutches are filling (shifts) or at other times when the pressure in the transmission charging circuit may become too low (cold oil, low idle, etc.).

Located at the rear of the machine, on top of the the transmission case are the following service points:

1. Transmission main relief pressure test port (P)
2. Transmission lube pressure test port (L1)
3. Transmission lube temperature sensor

Pressure test ports for each of the five transmission clutches remain on the transmission cover. These pressure test ports are:

- (CL1). Transmission clutch (reverse clutch)
- (CL2). Transmission clutch (forward clutch)
- (CL3). Transmission clutch (speed 3)
- (CL5). Transmission clutch (speed 1)
- (CL4). Transmission clutch (speed 2)

Clutch engagement pressure calibrations are no longer required, with the common top pressure strategy. Proper adjustment of the transmission main relief valve will set the proper pressure for the operation of all five transmission clutches and the brakes. It is still necessary to perform transmission clutch fill calibrations and to perform brake touch-up calibrations.