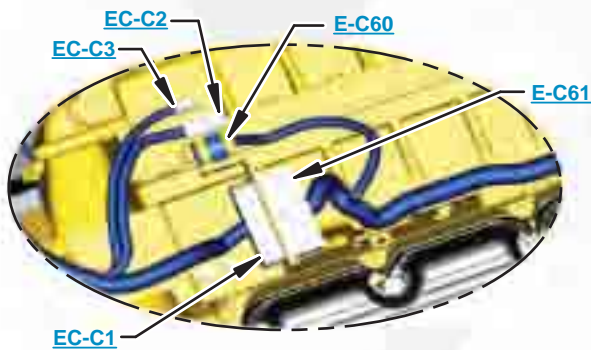




This document is best viewed at a screen resolution of 1024 X 768.

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

950H, 962H, and IT62H Wheel Loader Hydraulic System

950H:**N1A1-4396****JAD1-409****M1G1-2110****J5J1-UP****K5K1-2760****962H:****N4A1-2115****M3G1-678****J6J1-UP****K6K1-516****MAL1-122****IT62H:****M5G1-467**

COMPONENT LOCATION



Description	Part Number	Schematic Location	Machine Location
HMU STEERING CIRCUIT			
Hand Metering Unit	230-4176	A-4	1
Connector - Orifice	122-2340	B-3	2
Cylinder Gp - Steer	163-0324	B-1	3
Valve Gp - Neutralizer	146-7571	B-3	4
Valve Gp - Steer	142-4000	B-2	5
COMMAND CONTROL STEERING			
Valve Gp - Neutralizer	8J-1553	D-3	6
Valve Gp - Steer	124-8635	D-1	7
Cylinder Gp - Steer	163-0324	E-1	8
Valve Gp - Check	111-7775	D-3	9
Valve Gp - Pilot	147-1790	D-4	10
Valve Gp - Shuttle	8J-6875	C-4	11
Screen Gp	154-2883	E-2	12
MAIN SCHEMATIC			
Pump Gp - Steering	241-9299	A-6	13
Pump Gp - Implement	254-4108	A-7	14
Cylinder - Tilt	242-4220	F-8	15
Cylinder - Tilt (Mid Lift)	247-0497		
Cylinder - Tilt (High Lift)	245-7491		
Cylinder - Tilt (Logger)	245-7487		
Cylinder - Lift (LH)	242-4272	F-7	20
Cylinder - Lift (RH)	242-4271	F-7	21
Valve - Choke Check	276-9072	N/A	22
Valve Gp - Manual Lowering	112-1817	F-9	23
Accumulator - Pilot Oil	245-2975	F-5	24
Pump Gp - Fan	254-5146	B-8	25
Motor Gp - Fan	246-6152	B-8	26
Valve Gp - Cooler Bypass	244-1426	B-9	27
Filter Gp - Return Oil	244-1031	B-9	28
Manifold Gp - Fan & Brake Charge	242-1307	C-8	30
Filter Gp - Case Drain	249-2334	A-8	31
Valve Gp - Breaker Relief	220-0814	A-8	32
Tank Gp - Hydraulic Oil	237-2742	A-8	33
Valve Gp - Secondary Steer Diverter	141-2597	B-5	34
Pump Gp - Secondary Steer	275-8544	A-6	35
Valve Gp - Control (2 Function Standard)	261-4171	D-5	36
Valve Gp - Control (2 Function W/RC)	261-3682		
Valve Gp - Control (3 Function)	261-4172		
Valve Gp - Control (2 Function W/RC)	261-3683		
Valve Gp - Control (Snow Removal) (3 Function W/RC)	274-8055		
Accumulator - Ride Control (RC)	245-2973	F-6	41
Valve Gp - Control & Relief	263-5832	N/A	42
Motor Gp - Reversing Fan	228-8527	N/A	43
Valve Gp - Quick Coupler	180-8585	C-9	54
Cylinder Gp - Quick Coupler	237-0946	C-9	55
Valve Gp - Manual	112-1817	C-9	56
BRAKE SYSTEM			
Pump Gp - Fan	254-5146	F-2	25
Manifold Gp - Fan & Brake Charge	242-1307	F-2	30
Control Gp - Foot Brake	193-1448	F-3	45
Switch As - Foot Brake Limit	105-6117	F-3	46
Sensor Gp - Foot Brake	214-4863	F-3	47
Valve Gp - Foot Brake	215-3687	F-3	48
Accumulator - Service Brake	213-8773	F-2	49
Actuator As - Parking Brake	129-8090	F-1	50
Valve Gp - Parking Brake	106-1774	F-2	51
Switch As - Parking Brake Pressure	174-4312	F-1	52
Switch As - Brake Pressure	175-3244	F-3	53

TAP LOCATION

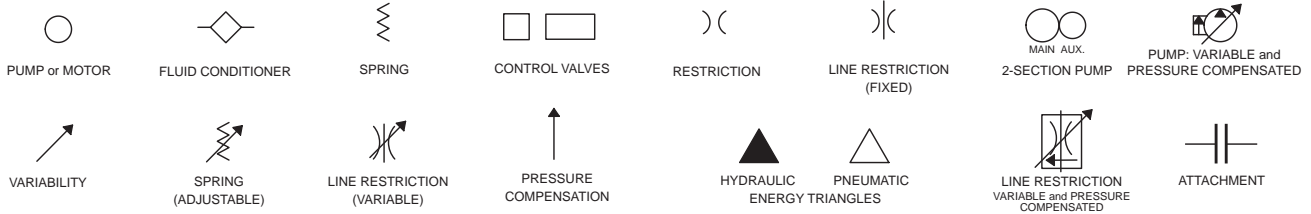


Tap Location	Description	Schematic Location
<u>AA</u>	Fan Pump Discharge Pressure	<u>B-8</u>
<u>CC</u>	Implement Pump Charge Pressure	<u>E-9</u>
<u>DD</u>	Implement Pump Load Sense Pressure	<u>B-7</u>
<u>EE</u>	Steer Pump Pressure	<u>B-7</u>
<u>FF</u>	Steer Pump Load Sense Pressure	<u>A-4, C-4</u>
<u>GG</u>	Pilot Supply Pressure	<u>E-5</u>
<u>HH</u>	Fan Pump Load Sense Pressure	<u>B-8</u>
<u>KK</u>	Command Control Right Steer Pilot Pressure	<u>D-2</u>
<u>LL</u>	Command Control Left Steer Pilot Pressure	<u>D-2</u>
<u>MM</u>	Command Control Steering Neutral Pilot Press	<u>D-3</u>
<u>NN</u>	Command Control Steering Supply Pressure	<u>D-4</u>
<u>PP</u>	Service Brake Pressure	<u>F-3</u>
<u>QQ</u>	Front Service Brake Pressure	<u>F-4</u>
<u>RR</u>	Rear Service Brake Pressure	<u>F-4</u>
<u>XX</u>	Tilt Cylinder Rod End Pressure	<u>F-8</u>
<u>YY</u>	Tilt Cylinder Head End Pressure	<u>F-8</u>
<u>SOS</u>	Hydraulic Oil Sampling Port	<u>B-9</u>

FLUID POWER SYMBOLS



BASIC COMPONENT SYMBOLS



VALVE ENVELOPES

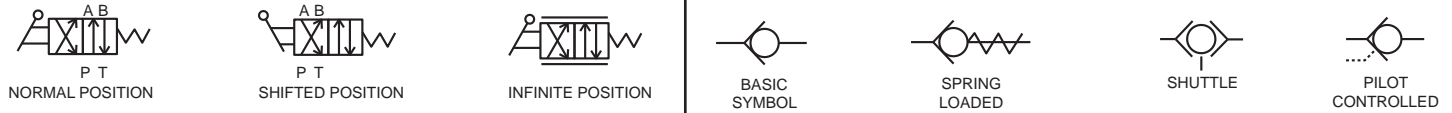
VALVES

VALVE PORTS



CONTROL VALVES

CHECK VALVES

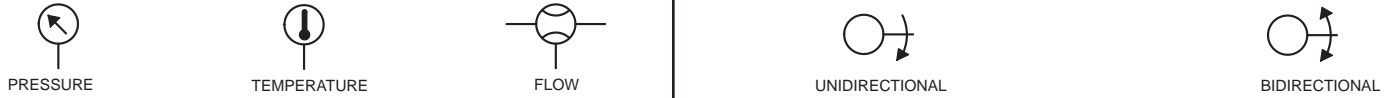


FLUID STORAGE RESERVOIRS



MEASUREMENT

ROTATING SHAFTS



COMBINATION CONTROLS



MANUAL CONTROL SYMBOLS



RELEASED PRESSURE

PILOT CONTROL SYMBOLS

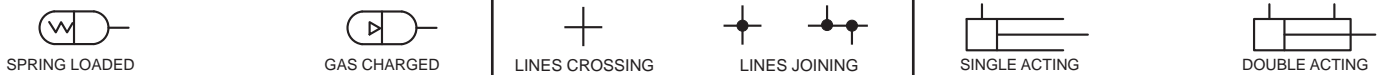
REMOTE SUPPLY PRESSURE



ACCUMULATORS

CROSSING AND JOINING LINES

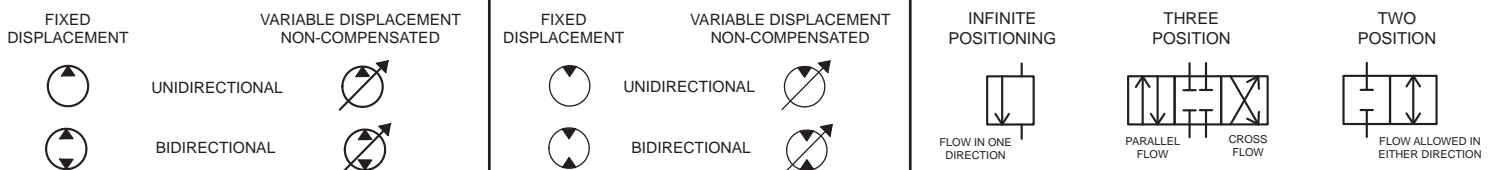
HYDRAULIC AND PNEUMATIC CYLINDERS



HYDRAULIC PUMPS

HYDRAULIC MOTORS

INTERNAL PASSAGEWAYS



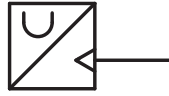
ELECTRICAL SYMBOLS



Hydraulic Symbols (Electrical)



Transducer
(Fluid)



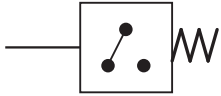
Transducer
(Gas / Air)



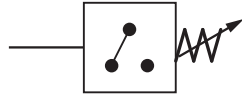
Generator



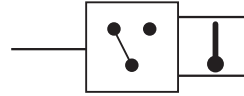
Electric Motor



Pressure Switch



Pressure Switch
(Adjustable)

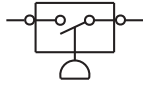


Temperature Switch

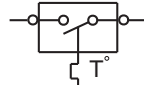


Electrical Wire

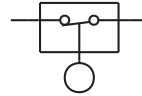
Electrical Symbols (Electrical)



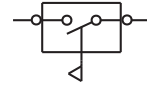
Pressure
Symbol



Temperature
Symbol



Level
Symbol

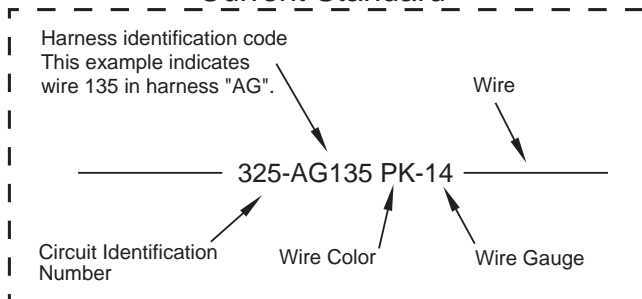


Flow
Symbol

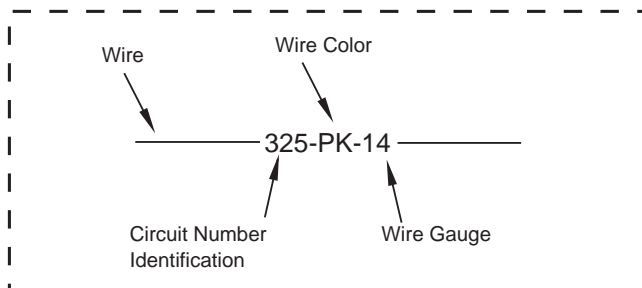
Wire Number Identification Codes

Electrical Schematic Example

Current Standard

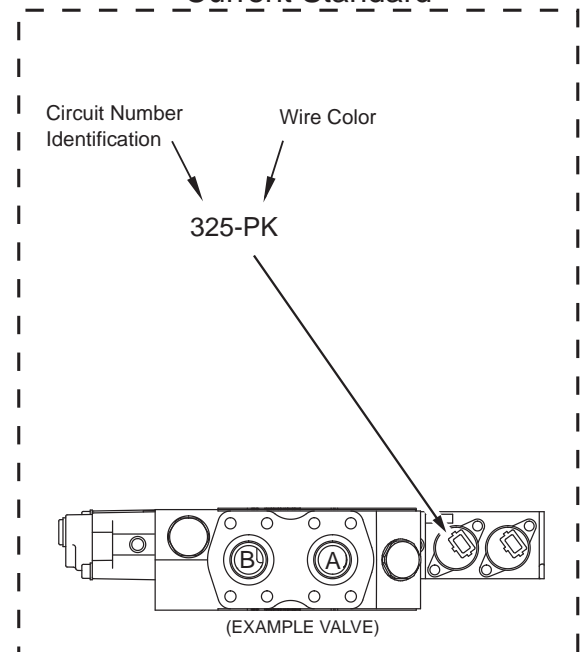


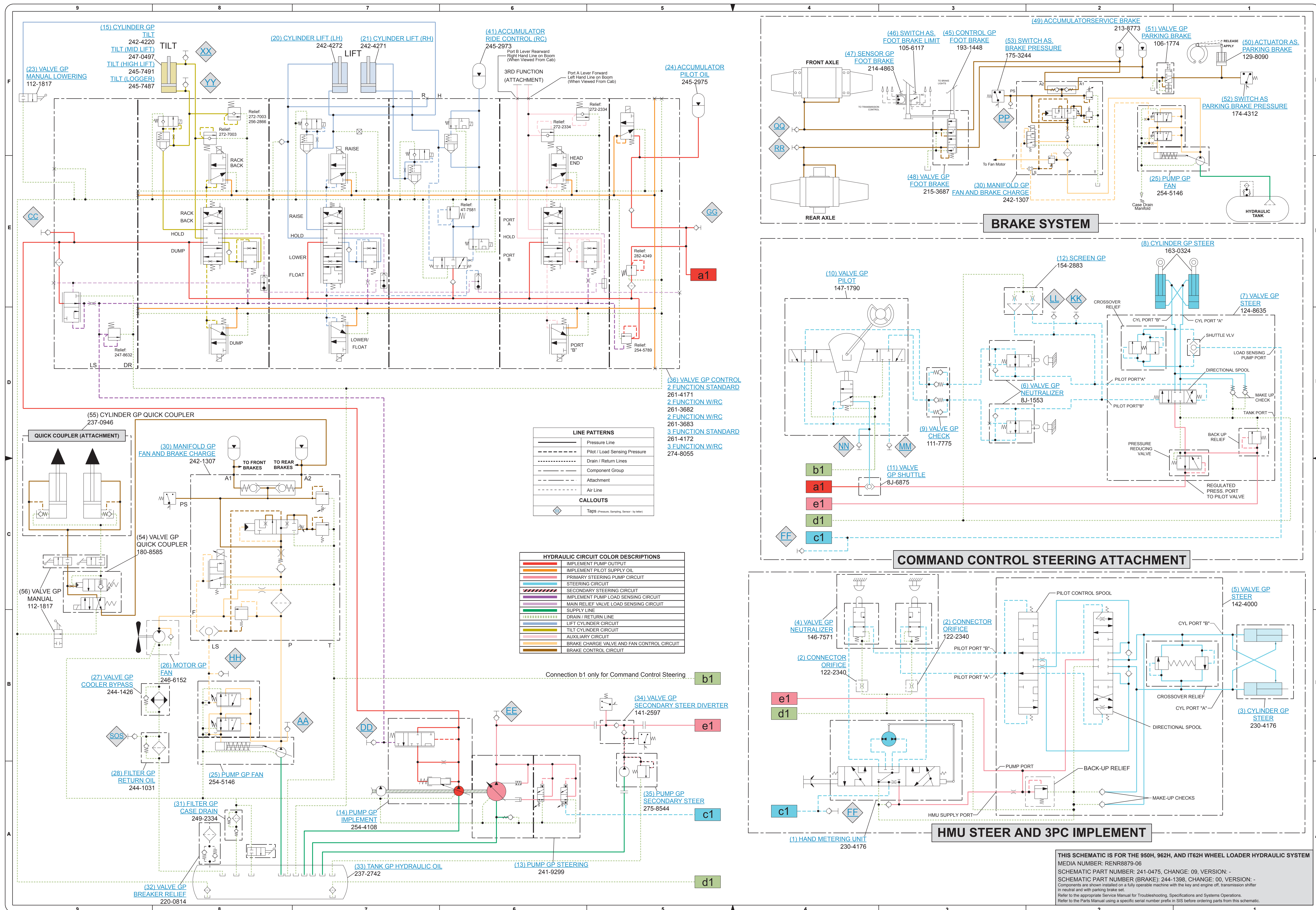
Previous Standard



Hydraulic Schematic Example

Current Standard





LINE PATTERNS

—	Pressure Line
- - -	Pilot / Load Sensing Pressure
---	Drain / Return Lines
---	Component Group
---	Attachment
---	Air Line

CALLOUTS

◆	TAPS (Pressure, Sampling, Sensor - by letter)
---	---

HYDRAULIC CIRCUIT COLOR DESCRIPTIONS

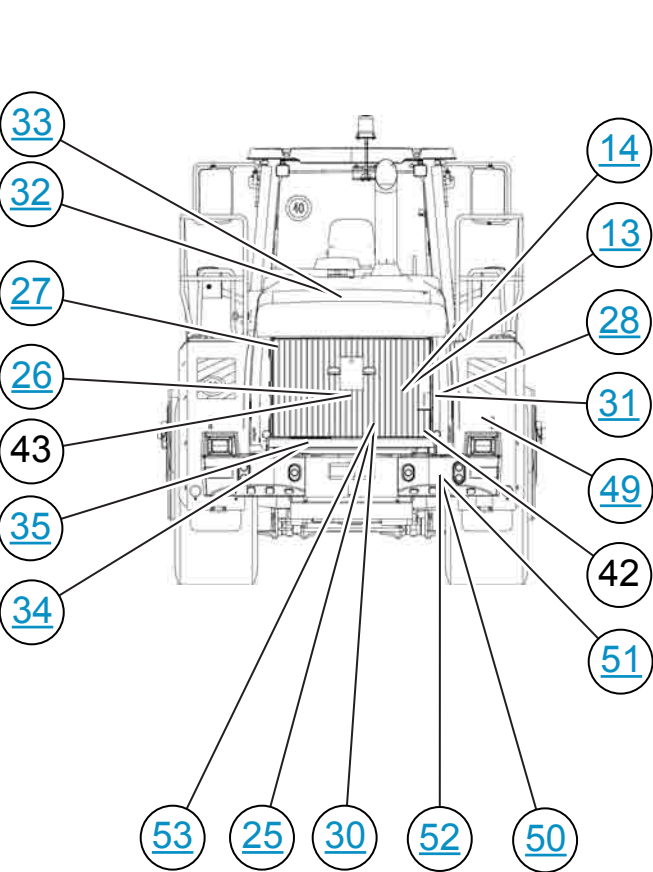
Red	IMPLEMENT PUMP OUTPUT
Orange	IMPLEMENT PILOT SUPPLY OIL
Yellow	PRIMARY STEERING PUMP CIRCUIT
Green	STEERING CIRCUIT
Blue	SECONDARY STEERING CIRCUIT
Purple	IMPLEMENT PUMP LOAD SENSING CIRCUIT
Light Blue	MAIN RELIEF VALVE LOAD SENSING CIRCUIT
Dark Blue	SUPPLY LINE
Light Green	DRAIN / RETURN LINE
Light Yellow	LIFT CYLINDER CIRCUIT
Light Orange	TILT CYLINDER CIRCUIT
Light Purple	AUXILIARY CIRCUIT
Light Blue	BRAKE CHARGE VALVE AND FAN CONTROL CIRCUIT
Light Green	BRAKE CONTROL CIRCUIT

THIS SCHEMATIC IS FOR THE 950H, 962H, AND IT62H WHEEL LOADER HYDRAULIC SYSTEM
 MEDIA NUMBER: RENR8879-06
 SCHEMATIC PART NUMBER: 241-0475, CHANGE: 09, VERSION: -
 SCHEMATIC PART NUMBER (BRAKE): 244-1398, CHANGE: 00, VERSION: -
 Components are shown installed on a fully operable machine with the key and engine off, transmission shifter in neutral and with parking brake set.
 Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.
 Refer to the Parts Manual using a specific serial number prefix in SIS before ordering parts from this schematic.

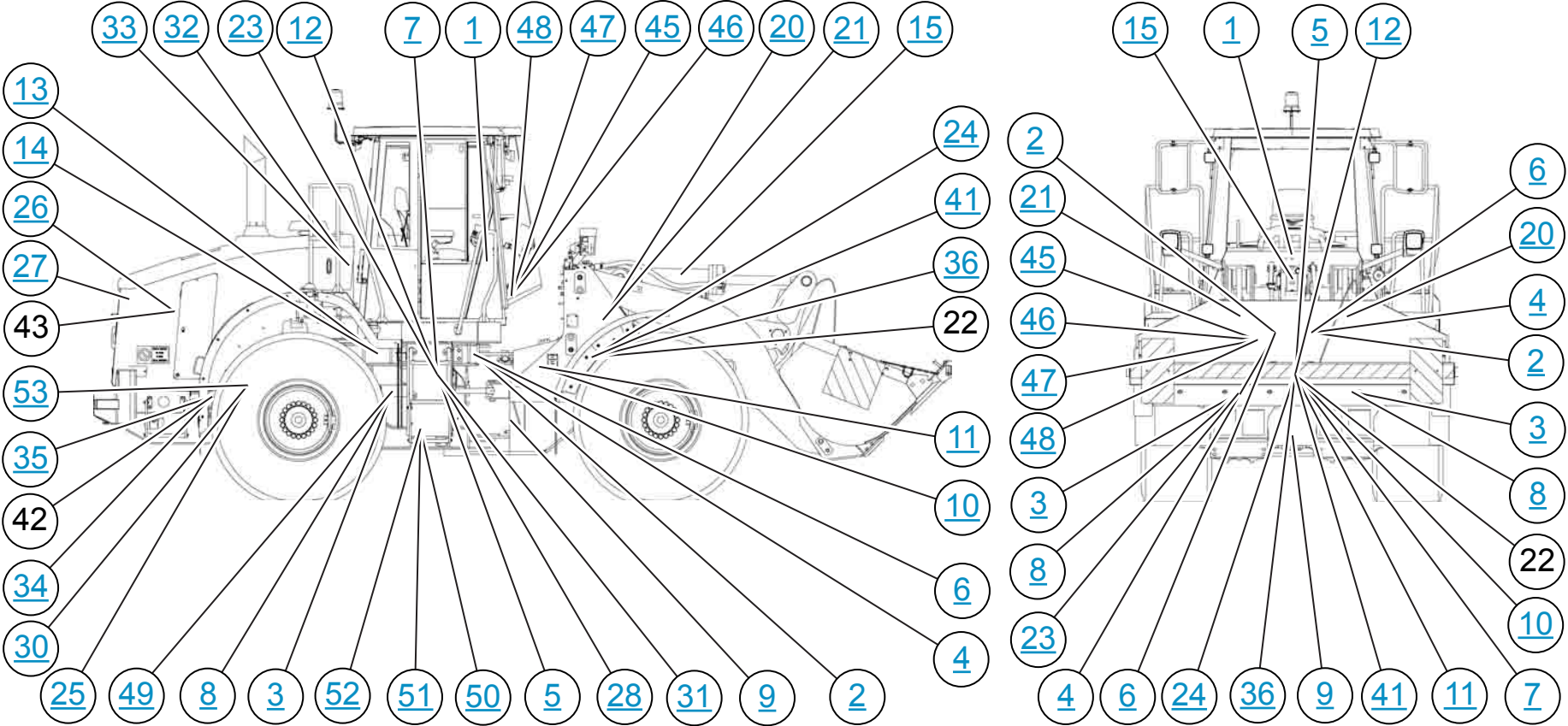
MACHINE COMPONENT LOCATIONS

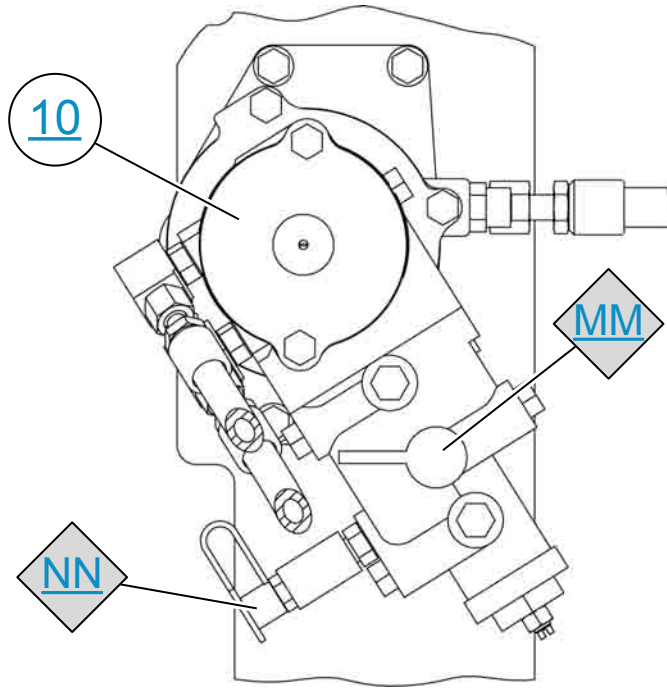


REAR VIEW

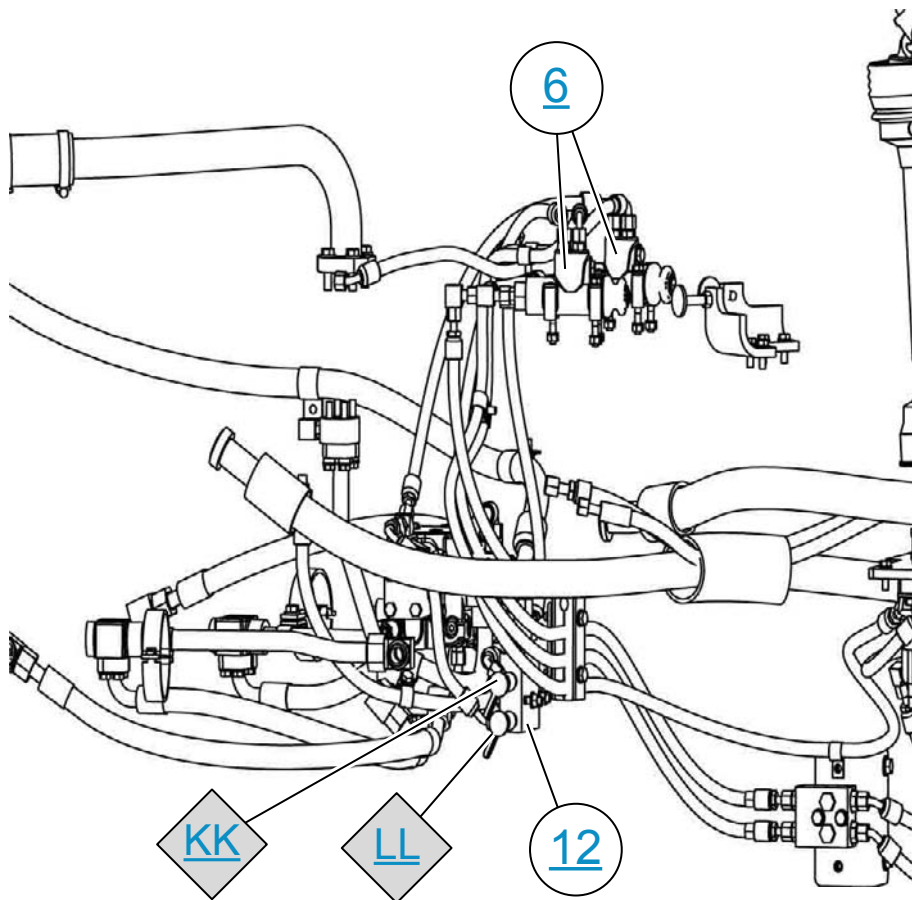


FRONT VIEW

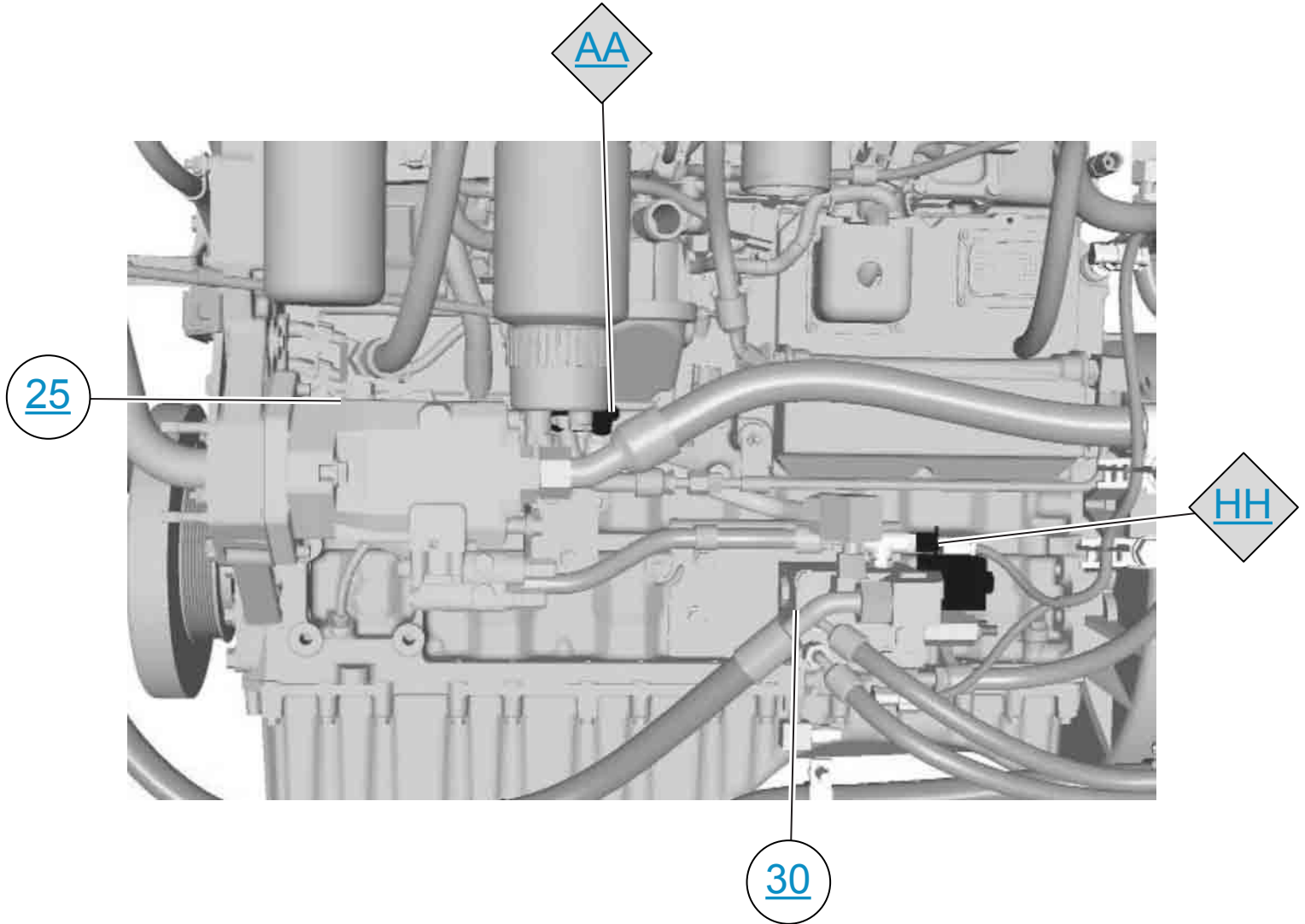




BOTTOM VIEW



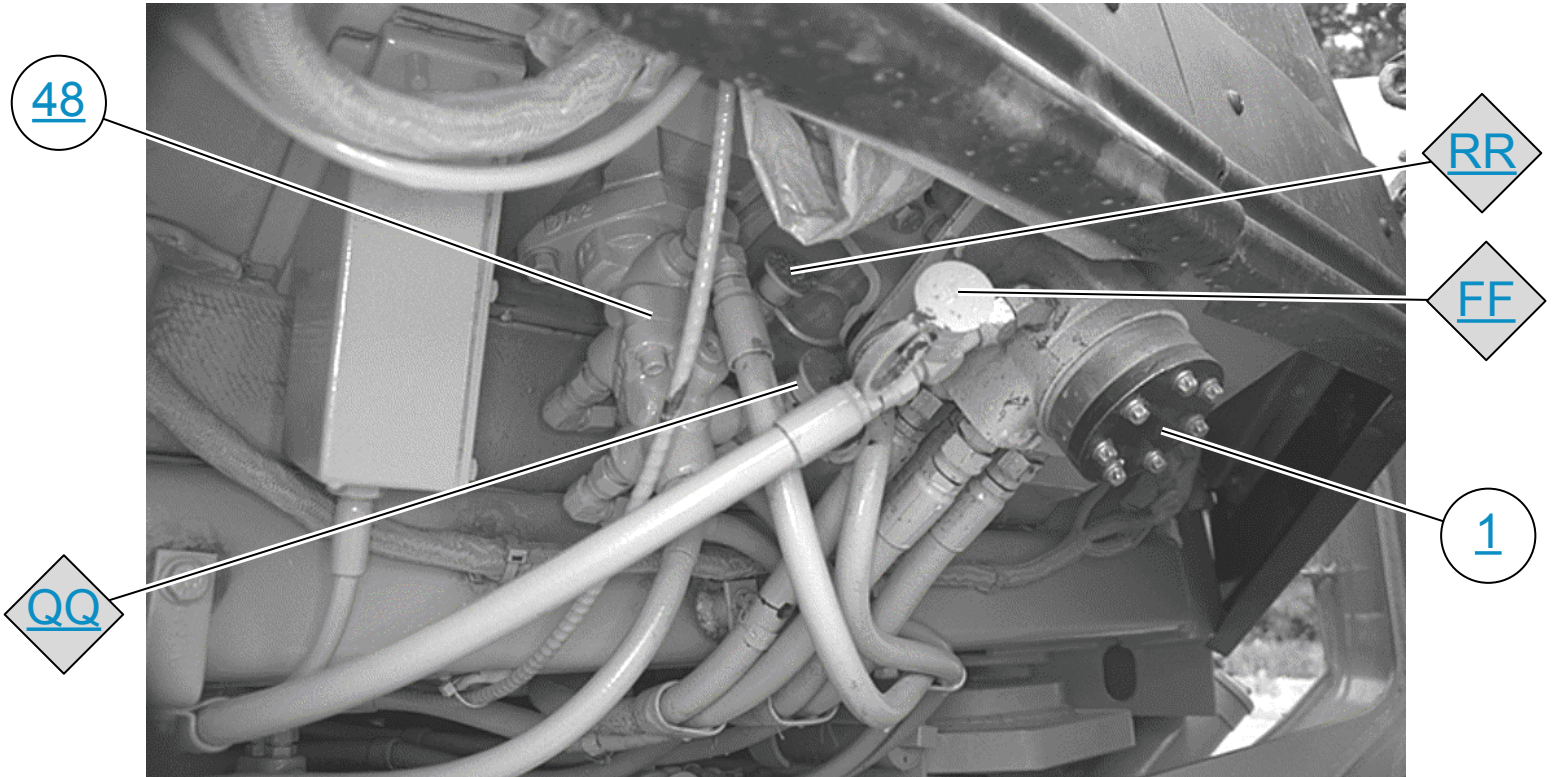
RIGHT SIDE MACHINE VIEW



FAN AND BRAKE HYDRAULIC SYSTEM

The fan and brake pump (25) is located on the front gear train of the engine, on the right side of the machine. The fan and brake pump provides oil flow for the electronic demand fan system and the brake hydraulic system. The outlet pressure tap (AA) is located on the fan and brake pump.

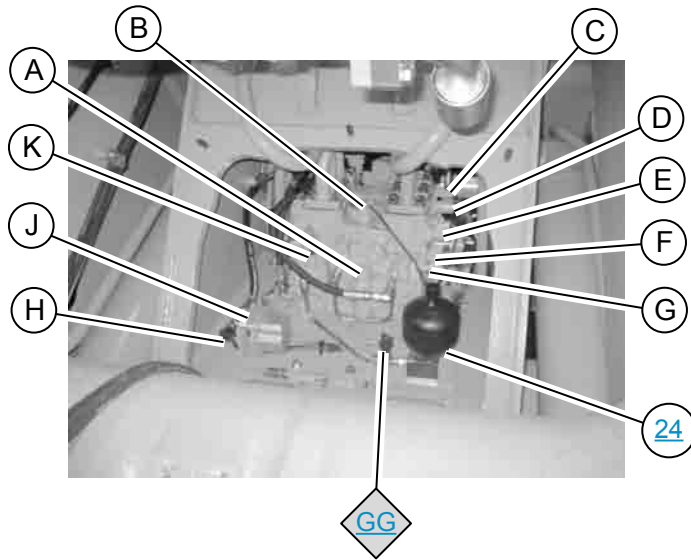
Also located on the engine on the right side of the machine is the fan control and brake accumulator charging valve (30). The fan pump load sense pressure tap (HH) is located above the brake charging valve.



The following components are located under the front of the cab.

- Hand metering unit (1)
- Foot service brake valve (48)
- Steer pump load sense test port (FF)
- Front service brake test port (QQ)
- Rear service brake test port (RR)

IMPLEMENT CONTROL VALVE

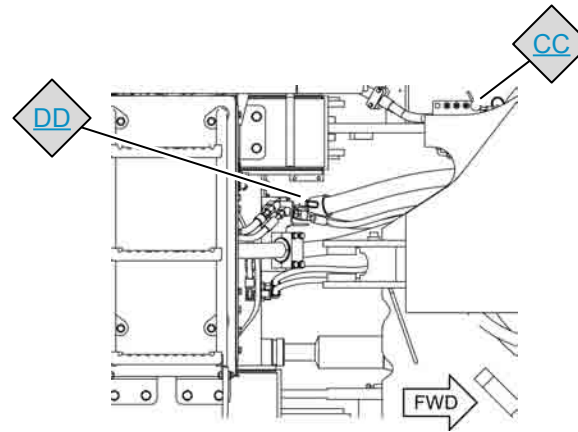


This photo shows a front view of the implement control valve (36) in the loader frame. The following components can be seen in this view:

- Pilot accumulator (24)
- Pilot supply pressure tap (GG)

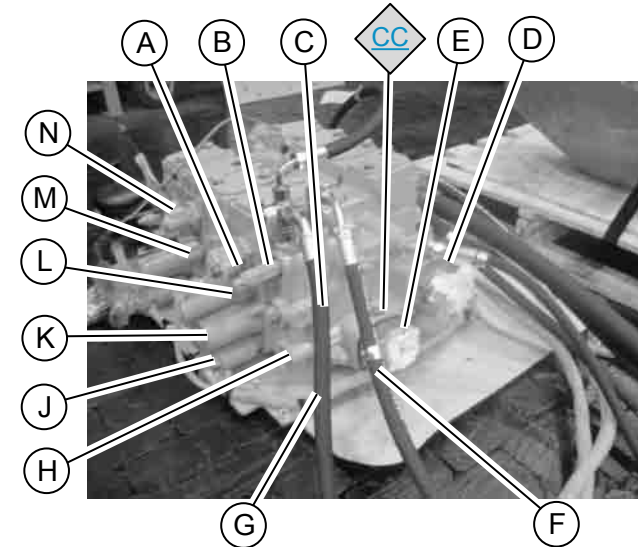
The Following components are not referenced on the Hydraulic System Schematic:

- Pressure differential relief valve (A)
- Head end solenoid valve (ride control) (B)
- Signal relief valve (C)
- Tilt anti-drift valve (D)
- Rod end solenoid valve (ride control) (E)
- Ride control balance solenoid valve (F)
- Pilot pressure reducing valve (G)
- Lift cylinder head end pressure tap (H)
- Lift cylinder head end pressure sensor for Payload Control System and Autodig (J)
- Hydraulic lockout solenoid valve (K)



This drawing shows a right side view of the wheel loader. The following components can be seen in this view:

- Implement pump pressure tap (CC)
- Implement pump load Sense pressure tap (DD)

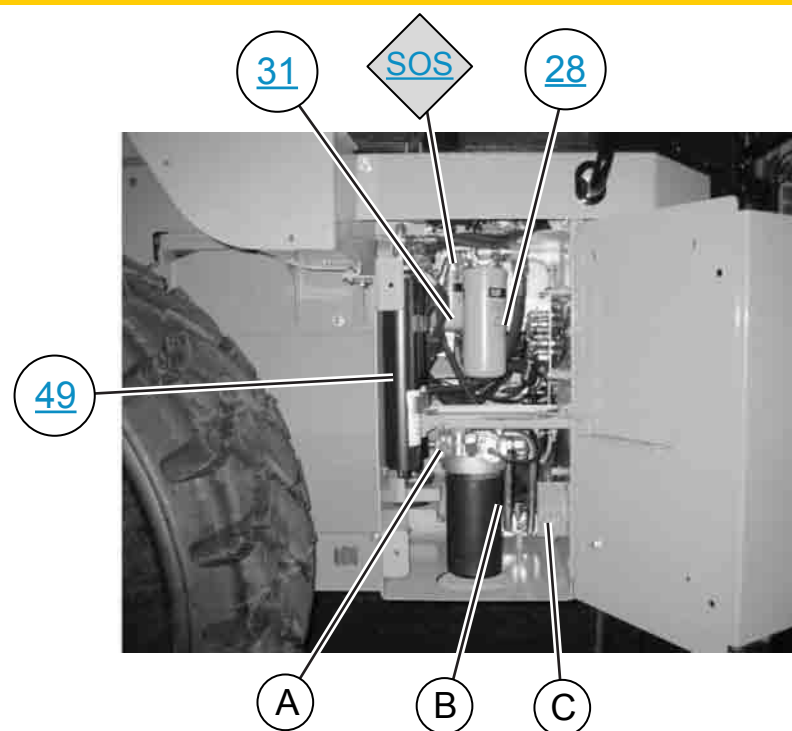
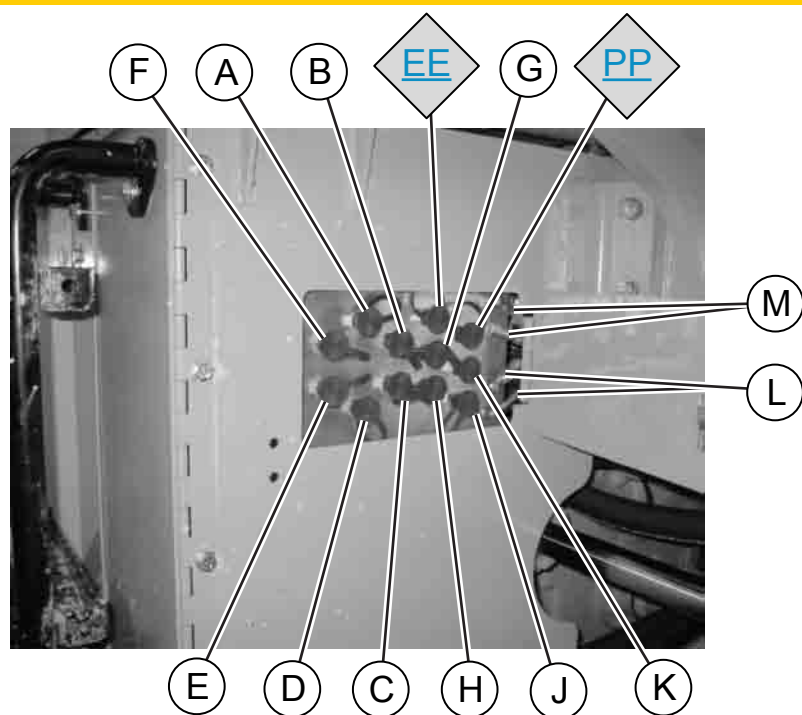


This photo shows a left rear view of the implement control valve (36). The following components can be seen in this view:

- Implement control valve supply pressure tap (GG)

The Following components are not referenced on the Hydraulic System Schematic:

- Tilt anti-drift valve (A)
- Signal relief valve (B)
- Signal duplication valve (C)
- Return to tank port (D)
- Supply port from pump (E)
- Signal line to pump (F)
- Tank line (G)
- Screen (H)
- Tilt back pilot solenoid valve (J)
- Tilt back pilot (K)
- Tilt cylinder rod end line relief (L)
- Ride control balance solenoid valve (M)
- Rod end solenoid valve (ride control) (N)



The following remote pressure taps are located inside the panel on the frontside of the service center:

- Steering pump outlet pressure (EE)
- Brake system accumulator pressure (PP)

The Following components are not referenced on the Hydraulic System Schematic:

- Transmission reverse clutch (A)
- Transmission forward clutch (B)
- Transmission fourth speed clutch (C)
- Transmission third speed clutch (D)
- Transmission second speed clutch (E)
- Transmission first speed clutch (F)
- Torque converter inlet pressure (G)
- Transmission lubrication pressure (H)
- Transmission pump outlet pressure (J)
- Torque converter outlet pressure (K)
- Steering cylinder rod end grease fittings (L)
- Rear axle oscillation bearing grease fittings (M)

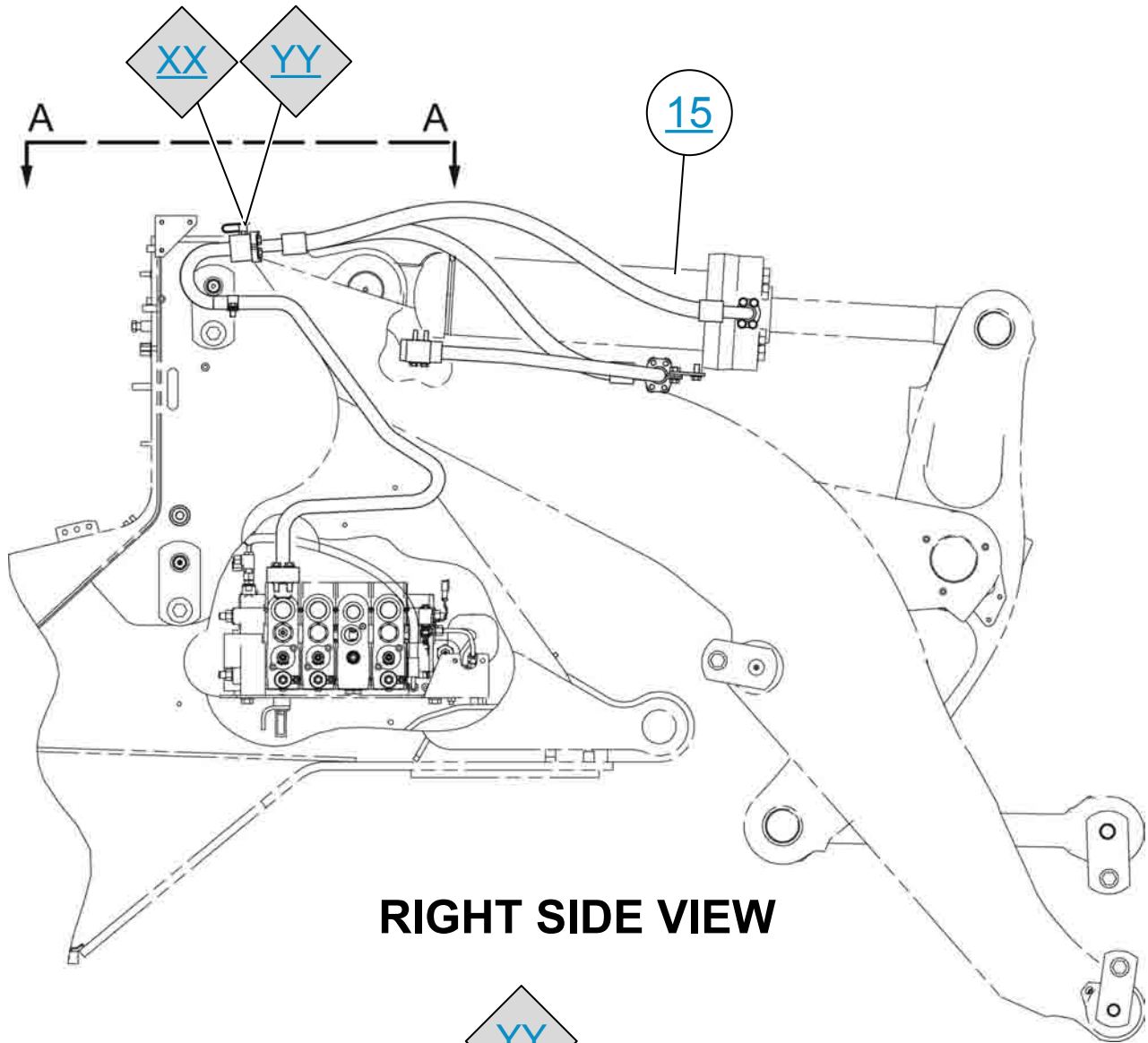
The service center is located on the right side of the machine below the cab. The Following components are located in the service center:

- Case drain filter (31)
- Hydraulic oil fluid sampling valve (SOS)
- Hydraulic systems kidney loop filter (28)
- Brake system accumulators (49)

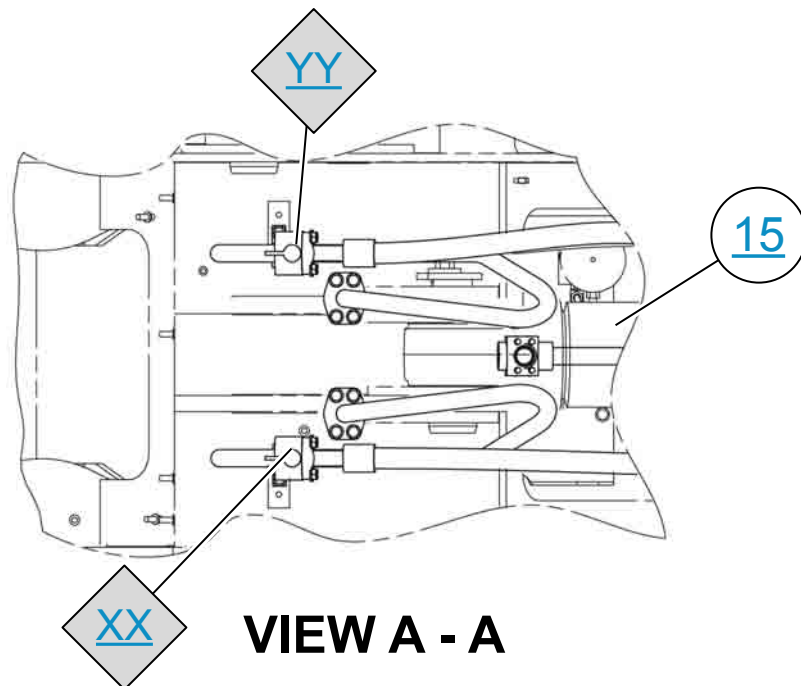
The Following components are not referenced on the Hydraulic System Schematic:

- Power train oil fluid sampling valve (A)
- Power train oil filter (B)
- Ecology drain for the hydraulic tank (C)

TILT CYLINDER LINES GROUP



RIGHT SIDE VIEW



VIEW A - A