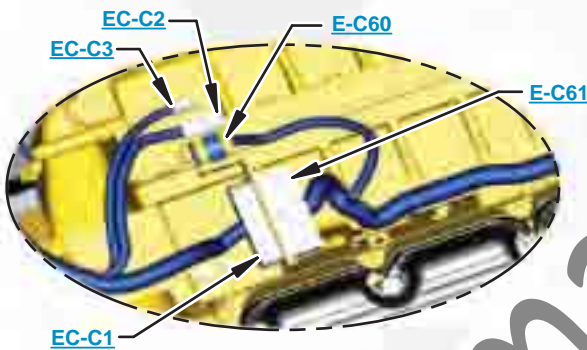




***This document is best viewed at a screen resolution of 1024 X 768.***

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

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## **785C Off-Highway Truck Hydraulic System**

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APX451-UP  
5AZ400-UP

SchematicCat.com

# COMPONENT LOCATION

Page 1 of 2



Description	Part Number	Machine Location	Schematic Location
Accumulator Gp APX451-UP, 5AZ400-UP	241-3147	<a href="#">64</a>	<a href="#">B-12</a>
Accumulator Gp - Steering	219-2539	<a href="#">8</a>	<a href="#">I-5</a>
Adjuster Gp - Front Service Brake Slack	205-0557	<a href="#">43</a>	<a href="#">B-7</a>
Adjuster Gp - Rear Service Brake Slack	205-0559	<a href="#">46</a>	<a href="#">C-12</a>
Brake Gp - Service and Park (LF)	5T-3280	<a href="#">44</a>	<a href="#">D-7, I-7</a>
Brake Gp - Service and Park (LR)	6G-9385	<a href="#">47</a>	<a href="#">D-12, F-12</a>
Brake Gp - Service and Park (RF)	5T-3280	<a href="#">44</a>	<a href="#">E-7, F-7</a>
Brake Gp - Service and Park (RR)	6G-9385	<a href="#">47</a>	<a href="#">A-12, F-12</a>
Breather Gp	6G-0078	<a href="#">50</a>	<a href="#">D-3</a>
Control Gp - Park Brake / AETA	9G-9208	<a href="#">49</a>	<a href="#">B-11</a>
Converter - Torque	117-3357	<a href="#">52</a>	<a href="#">C-8, H-8</a>
Cooler Gp - Brake APX451-UP, 5AZ400-UP	200-5975	<a href="#">35</a>	<a href="#">F-11, I-8</a>
Cooler Gp - Transmission	7W-1713	<a href="#">25</a>	<a href="#">D-4</a>
Cylinder Gp - Hoist	4T-5931	<a href="#">19</a>	<a href="#">E-11</a>
Cylinder Gp - Service Brake	8W-3406	<a href="#">45</a>	<a href="#">C-7, C-12</a>
Cylinder Gp - Steering	1U-3182	<a href="#">11</a>	<a href="#">I-2</a>
Drive Gp - Gear	2A-6516	<a href="#">40</a>	<a href="#">B-4, F-4, G-8</a>
Filter Gp - Brake Retract	6P-4603	<a href="#">24</a>	<a href="#">D-9, I-10</a>
Filter Gp - Converter Charge	4T-4760	<a href="#">31</a>	<a href="#">I-9</a>
Filter Gp - Hoist Tank Breather	8X-4575	<a href="#">23</a>	<a href="#">H-8</a>
Filter Gp - Steer Return	4J-6064	<a href="#">9</a>	<a href="#">F-4</a>
Filter Gp - Transmission Charge & Lube	6P-4603	<a href="#">30</a>	<a href="#">C-5</a>
Fitting - Orifice (Steer Pressure)	8X-7851	<a href="#">54</a>	<a href="#">H-4</a>
Manifold Gp - Hoist	186-6317	<a href="#">38</a>	<a href="#">F-8</a>
Plate Gp - Orifice	8W-5002	<a href="#">57</a>	<a href="#">G-7</a>
Plug Gp - Orifice	122-7765	<a href="#">42</a>	<a href="#">D-11</a>
Pump Gp - Converter (Charge)	6T-6148	<a href="#">28</a>	<a href="#">D-9, H-9</a>
Pump Gp - Converter (Park Brake Retract)	6T-6148	<a href="#">29</a>	<a href="#">D-9, H-9</a>
Pump Gp - Converter (Scavenge)	6T-6148	<a href="#">27</a>	<a href="#">D-9, H-9</a>
Pump Gp - Dead Engine Lower (Electric)	5T-1060	<a href="#">48</a>	<a href="#">B-11</a>
Pump Gp - Hoist	211-6626	<a href="#">13</a>	<a href="#">B-5, F-4, H-8</a>
Pump Gp - Metering	9T-4247	<a href="#">3</a>	<a href="#">G-2</a>
Pump Gp - Steering	190-2279	<a href="#">7</a>	<a href="#">B-4, F-2, G-8</a>
Pump Gp - Transmission (Charge)	3T-0259	<a href="#">20</a>	<a href="#">B-4, F-4, G-9</a>
Pump Gp - Transmission (Lube)	3T-0259	<a href="#">21</a>	<a href="#">B-4, F-4, G-9</a>
Pump Gp - Transmission (Scavenge)	3T-0259	<a href="#">22</a>	<a href="#">B-4, F-4, G-9</a>
Screen Gp	6E-5065	<a href="#">15</a>	<a href="#">D-11</a>
Screen Gp - Brake Cooling	6E-6640	<a href="#">37</a>	<a href="#">F-11</a>
Screen Gp - Converter	9T-3838	<a href="#">61</a>	<a href="#">B-9, G-9</a>
Screen Gp - Converter	186-6434	<a href="#">36</a>	<a href="#">I-8</a>

Always check component part numbers with Parts Manual for your specific machine.

# COMPONENT LOCATION

## Page 2 of 2



Description	Part Number	Machine Location	Schematic Location
Screen Gp - Hoist	9T-3850	<a href="#">62</a>	<a href="#">A-4</a>
Screen Gp - Hoist	6E-5471	<a href="#">16</a>	<a href="#">F-8</a>
Screen Gp - Hoist Pump	9T-3850	<a href="#">62</a>	<a href="#">G-9</a>
Switch As - Filter Bypass	116-9933	<a href="#">53</a>	<a href="#">I-9</a>
Switch As - Low Steer Pressure	3E-7812	<a href="#">55</a>	<a href="#">H-4</a>
Switch Gp - Bypass Charge, Lube, Brake	164-7577	<a href="#">59</a>	<a href="#">C-5, D-9, I-10</a>
Tank Gp - Hydraulic Brake Make Up	6E-1851	<a href="#">41</a>	<a href="#">E-11</a>
Tank Gp - Hydraulic and Transmission	161-0536	<a href="#">12</a>	<a href="#">A-4, B-9, G-10</a>
Tank Gp - Steering	155-4127	<a href="#">10</a>	<a href="#">E-3</a>
Valve Gp - Brake Retract	113-1543	<a href="#">39</a>	<a href="#">D-11, I-11</a>
Valve Gp - Check	138-4733	<a href="#">14</a>	<a href="#">D-11, H-11</a>
Valve Gp - Check, Brake Accum. APX451-UP, 5AZ400-UP	9T-3752	<a href="#">5</a>	<a href="#">B-11</a>
Valve Gp - Check, Steering	176-6448	<a href="#">4</a>	<a href="#">I-4</a>
Valve Gp - Check, Tow Pump	9T-3096	<a href="#">63</a>	<a href="#">B-11</a>
Valve Gp - Converter Lock-Up Clutch	8E-6146	<a href="#">51</a>	<a href="#">I-9</a>
Valve Gp - Counterbalance	132-7102	<a href="#">18</a>	<a href="#">E-9</a>
Valve Gp - Cross Over Relief	3G-4667	<a href="#">1</a>	<a href="#">H-2</a>
Valve Gp - Front Brake Cooler Diverter	105-0170	<a href="#">34</a>	<a href="#">I-8</a>
Valve Gp - Hoist	132-2048	<a href="#">17</a>	<a href="#">F-9</a>
Valve Gp - Hydraulic ARC APX451-UP, 5AZ400-UP	177-8840	<a href="#">2</a>	<a href="#">A-11</a>
Valve Gp - Relief, Breaker	6E-3528	<a href="#">58</a>	<a href="#">F-5</a>
Valve Gp - Relief, Solenoid	6E-6298	<a href="#">6</a>	<a href="#">H-4</a>
Valve Gp - Shuttle APX451-UP, 5AZ400-UP	8J-6173	<a href="#">60</a>	<a href="#">C-7, C-12</a>
Valve Gp - T/C Inlet Relief	3P-0348	<a href="#">32</a>	<a href="#">I-9</a>
Valve Gp - T/C Outlet Relief	3P-0349	<a href="#">33</a>	<a href="#">I-8</a>
Valve Gp - Transmission Cooler Inlet Relief	2P-2859	<a href="#">26</a>	<a href="#">D-4</a>

Always check component part numbers with Parts Manual for your specific machine.

# TAP LOCATION

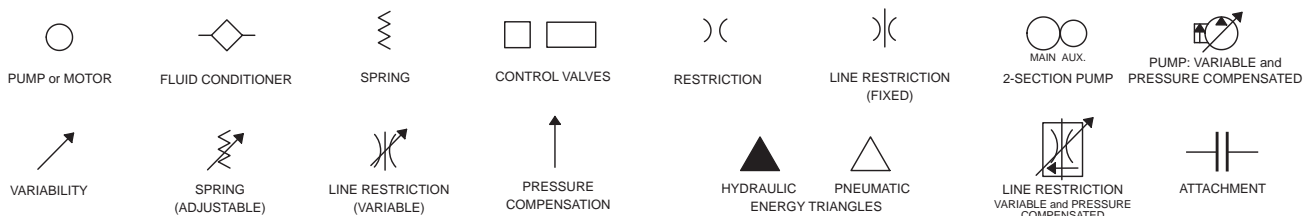


Tap Number	Description	Schematic Location
<a href="#">AA</a>	Right Rear Park Brake Pressure Tap	<a href="#">A-12</a>
<a href="#">BB</a>	Right Brake Pressure Tap	<a href="#">B-11</a>
<a href="#">CC</a>	Rear Service Brake Pressure Tap	<a href="#">B-12</a>
<a href="#">DD</a>	Left Rear Park Brake Pressure Tap	<a href="#">D-12</a>
<a href="#">EE</a>	Left Brake Pressure Tap	<a href="#">C-11</a>
<a href="#">GG</a>	Front Service Brake Pressure Tap	<a href="#">C-7</a>
<a href="#">HH</a>	Transmission Charge Pressure Tap	<a href="#">D-5</a>
<a href="#">II</a>	Transmission Lube Pressure Tap	<a href="#">D-4</a>
<a href="#">JJ</a>	Oil Sample Tap	<a href="#">C-4</a>
<a href="#">KK</a>	Steering Pressure Tap	<a href="#">H-5</a>
<a href="#">LL</a>	Auxiliary Power Unit Tap	<a href="#">I-4</a>
<a href="#">MM</a>	Oil Sample Tap	<a href="#">H-4</a>
<a href="#">NN</a>	Right Cylinder Pressure Tap	<a href="#">H-2</a>
<a href="#">OO</a>	Left Cylinder pressure Tap	<a href="#">H-1</a>
<a href="#">PP</a>	Auxiliary Power Unit Tap	<a href="#">E-3</a>
<a href="#">QQ</a>	Rear Brake Cooling Pressure Tap	<a href="#">I-12</a>
<a href="#">SS</a>	Torque Converter Charge Pressure Tap	<a href="#">I-9</a>
<a href="#">TT</a>	Auxiliary Power Unit Tap	<a href="#">F-11</a>
<a href="#">UU</a>	Torque Con. Lock-Up Clutch Press. Tap	<a href="#">I-9</a>
<a href="#">VV</a>	Torque Con. Outlet Pressure Tap	<a href="#">I-8</a>
<a href="#">WW</a>	Hoist Pump Pressure Test Tap	<a href="#">H-8</a>

# FLUID POWER SYMBOLS



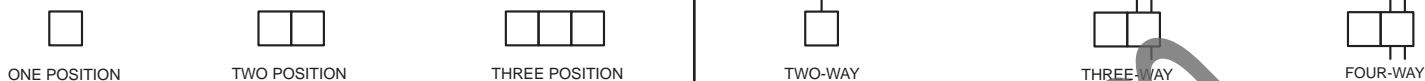
## BASIC COMPONENT SYMBOLS



## VALVE ENVELOPES

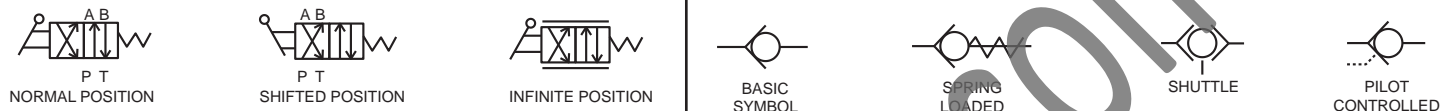
## VALVES

## 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

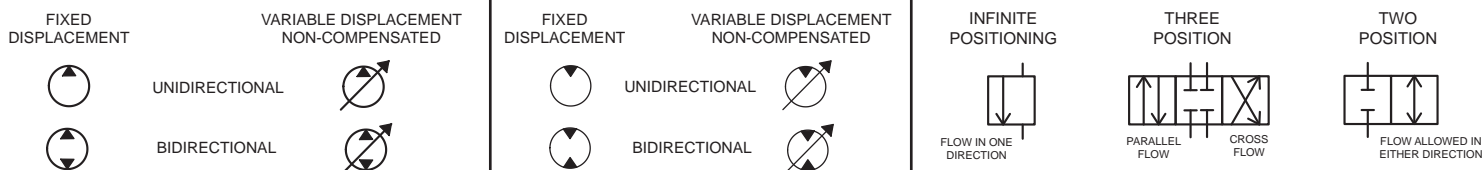
## HYDRAULIC AND PNEUMATIC CYLINDERS



## HYDRAULIC PUMPS

## HYDRAULIC MOTORS

## INTERNAL PASSAGEWAYS



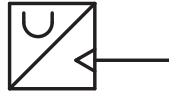
# ELECTRICAL SYMBOLS



## Hydraulic Symbols (Electrical)



Transducer  
(Fluid)



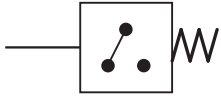
Transducer  
(Gas / Air)



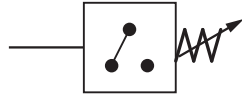
Generator



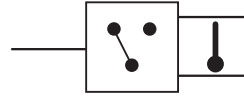
Electric Motor



Pressure Switch



Pressure Switch  
(Adjustable)

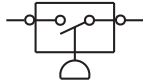


Temperature Switch

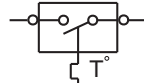


Electrical Wire

## Electrical Symbols (Electrical)



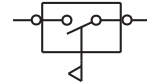
Pressure  
Symbol



Temperature  
Symbol



Level  
Symbol

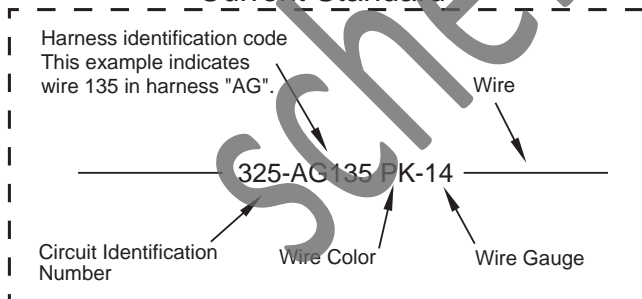


Flow  
Symbol

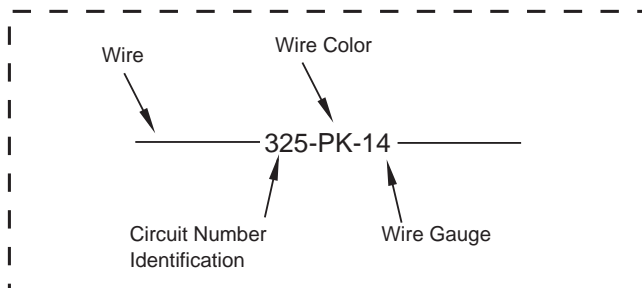
## Wire Number Identification Codes

### Electrical Schematic Example

#### Current Standard

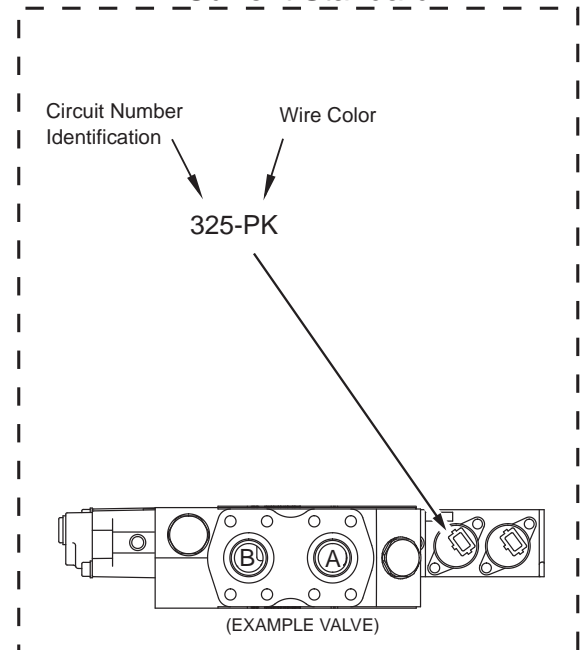


#### Previous Standard

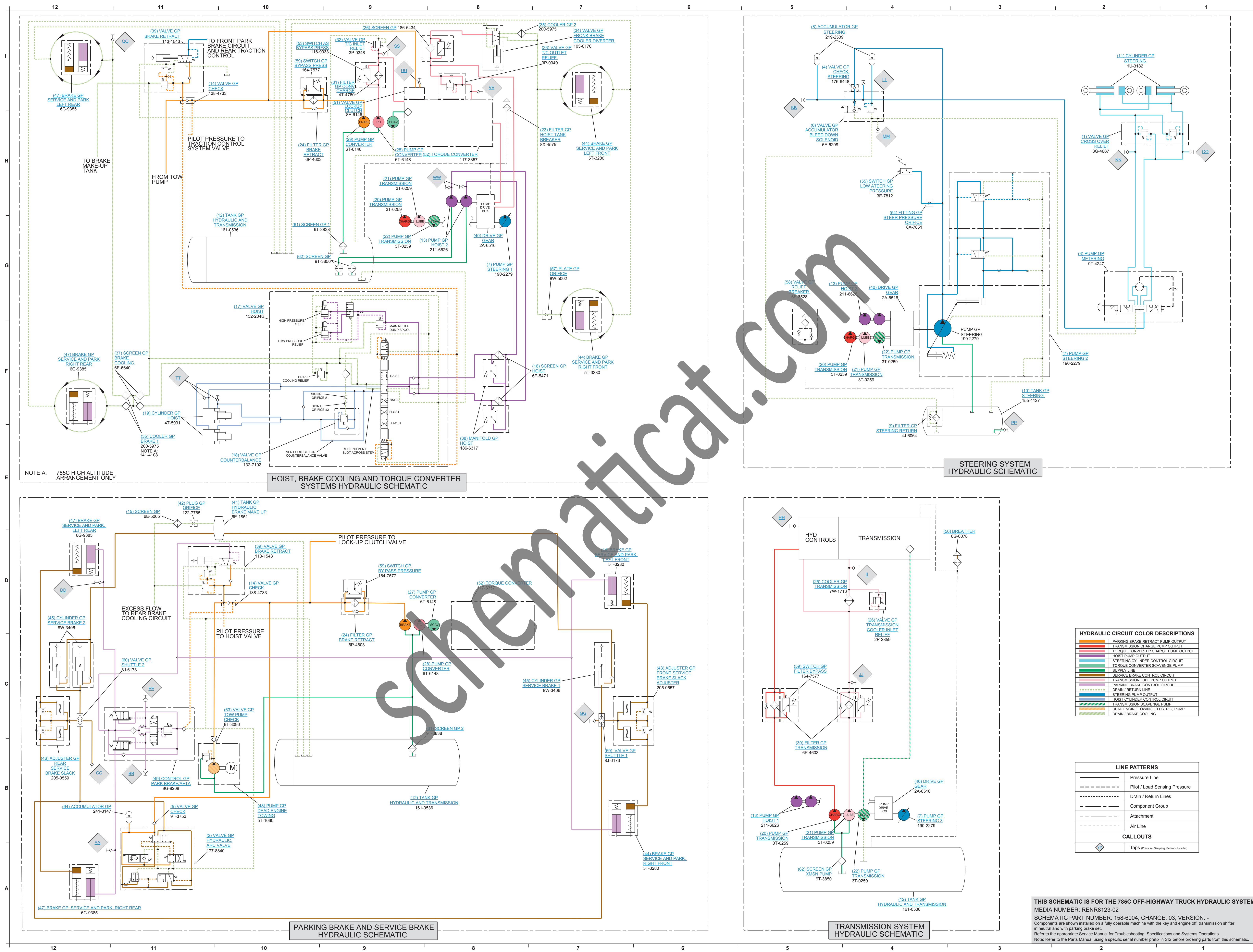


### Hydraulic Schematic Example

#### Current Standard







NOTE A: 785C HIGH ALTITUDE ARRANGEMENT ONLY

HOIST, BRAKE COOLING AND TORQUE CONVERTER SYSTEMS HYDRAULIC SCHEMATIC

STEERING SYSTEM HYDRAULIC SCHEMATIC

PARKING BRAKE AND SERVICE BRAKE HYDRAULIC SCHEMATIC

TRANSMISSION SYSTEM HYDRAULIC SCHEMATIC

**HYDRAULIC CIRCUIT COLOR DESCRIPTIONS**

- PARKING BRAKE RETRACT PUMP OUTPUT
- TRANSMISSION CHARGE PUMP OUTPUT
- TORQUE CONVERTER CHARGE PUMP OUTPUT
- HOIST PUMP OUTPUT
- STEERING CYLINDER CONTROL CIRCUIT
- TORQUE CONVERTER SCAVENGE PUMP
- SUPPLY LINE
- SERVICE BRAKE CONTROL CIRCUIT
- TRANSMISSION LUBE PUMP OUTPUT
- PARKING BRAKE CONTROL CIRCUIT
- DRAIN / RETURN LINE
- STEERING PUMP OUTPUT
- HOIST CYLINDER CONTROL CIRCUIT
- TRANSMISSION SCAVENGE PUMP
- DEAD ENGINE TOWING (ELECTRIC) PUMP
- DRAIN / BRAKE COOLING

**LINE PATTERNS**

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

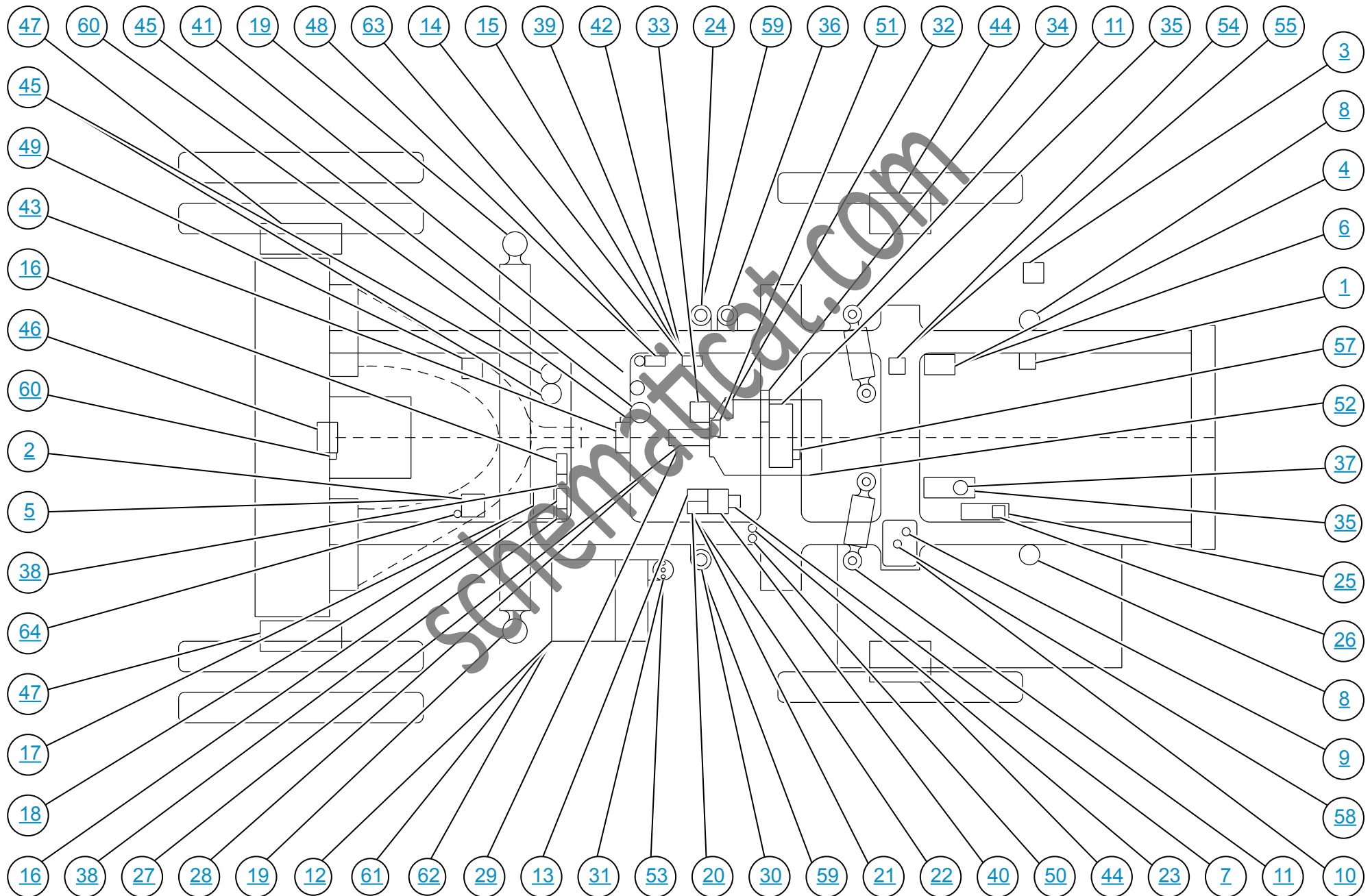
**CALLOUTS**

- TT Taps (Pressure, Sampling, Sensor, Inhibitor)

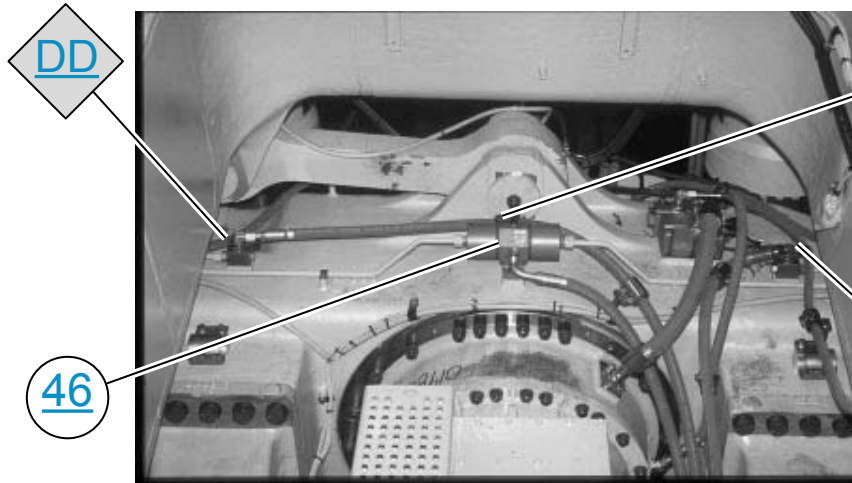
THIS SCHEMATIC IS FOR THE 785C OFF-HIGHWAY TRUCK HYDRAULIC SYSTEM  
 MEDIA NUMBER: RENR8123-02  
 SCHEMATIC PART NUMBER: 458-0004, CHANGE: 03, VERSION: -  
 Components are shown installed on a fully operable machine with the key and engine off. Transmission shifter in neutral and with parking brake set.  
 Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.  
 Note: Refer to the Parts Manual using a specific serial number prefix in SIS before ordering parts from this schematic.



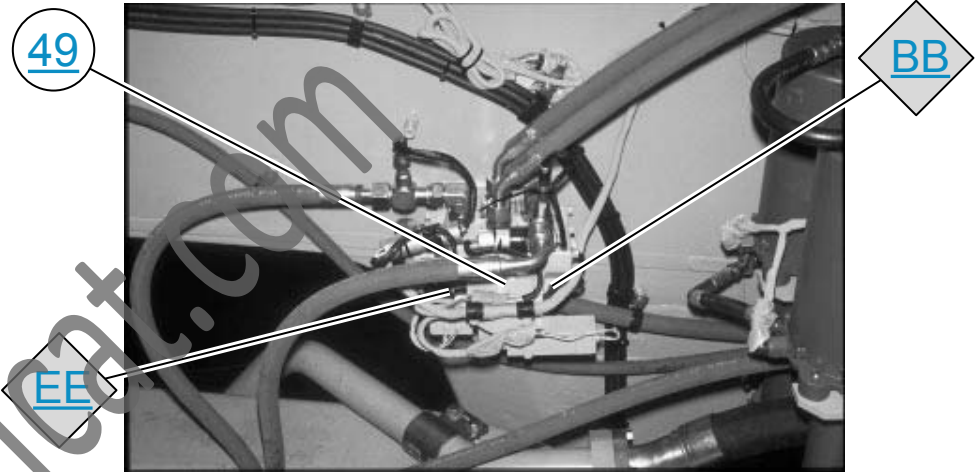
# MACHINE COMPONENT LOCATIONS



# BRAKE SYSTEM TAP LOCATIONS



Area of Rear Brake Slack Adjuster

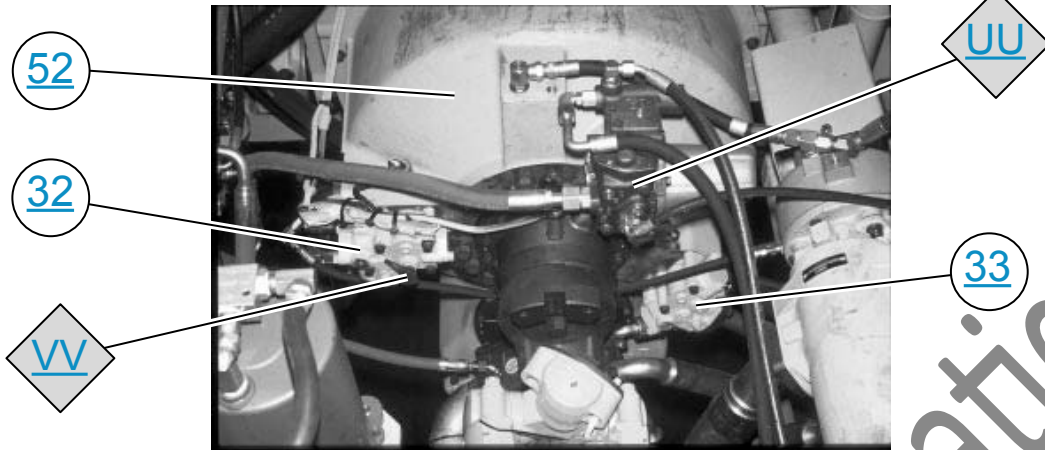


TCS Valve Inside Rear of the Left Frame Rail

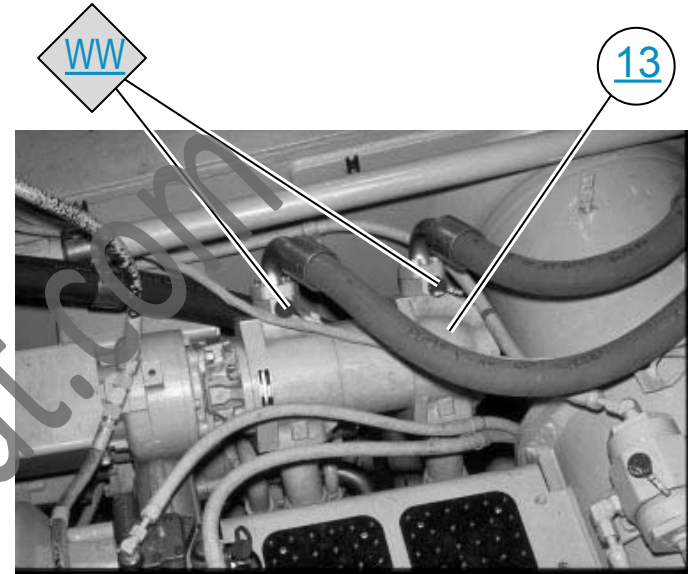


Oil Makeup Tank Area

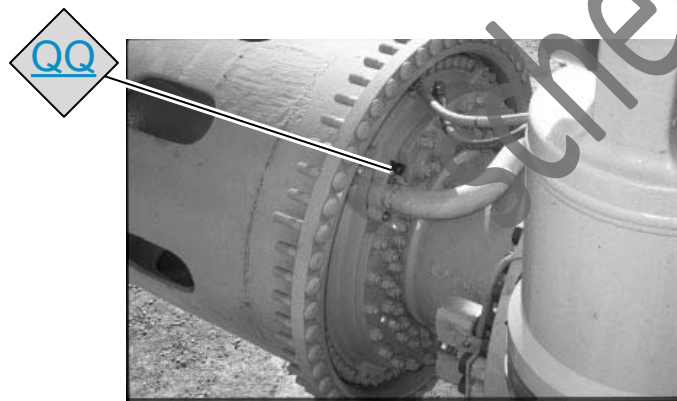
# HOIST, BRAKE COOLING AND TORQUE CONVERTER TAP LOCATIONS



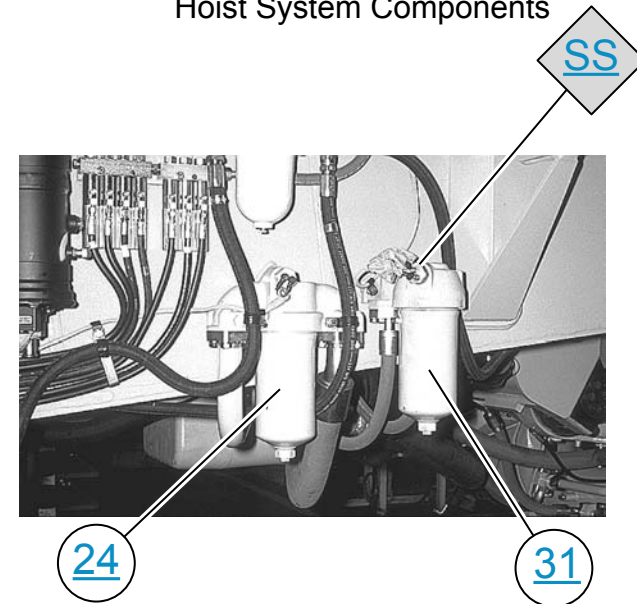
Torque Converter Area



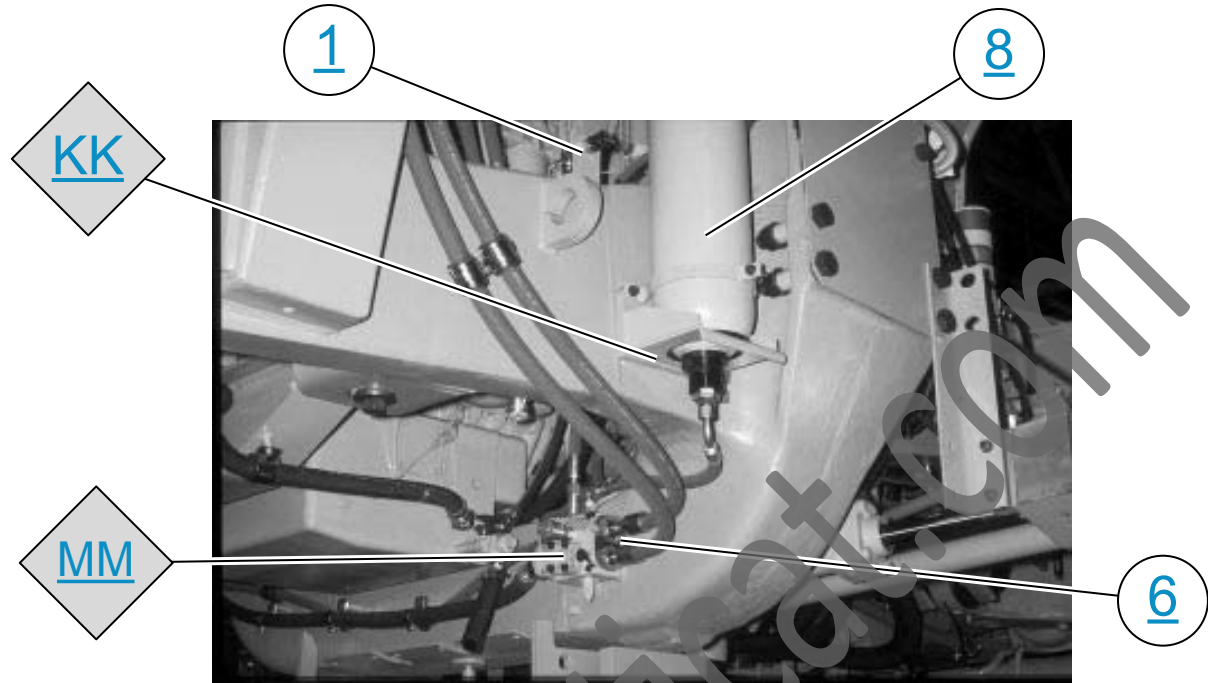
Hoist System Components



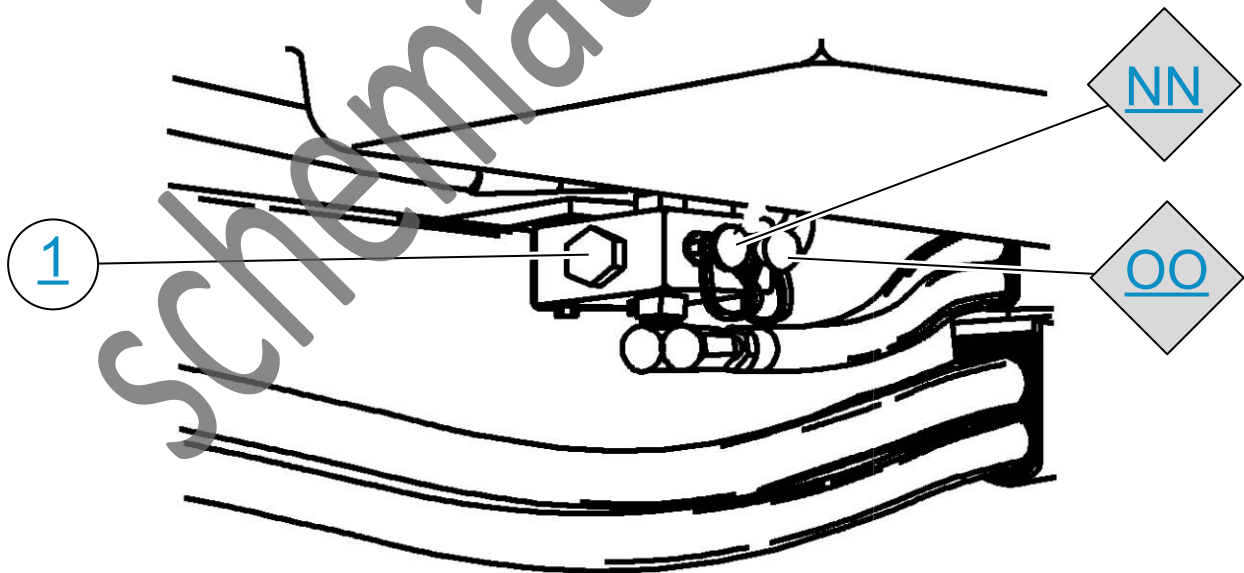
Left Rear Brake Housing



# SYSTEM STEERING TAP LOCATIONS

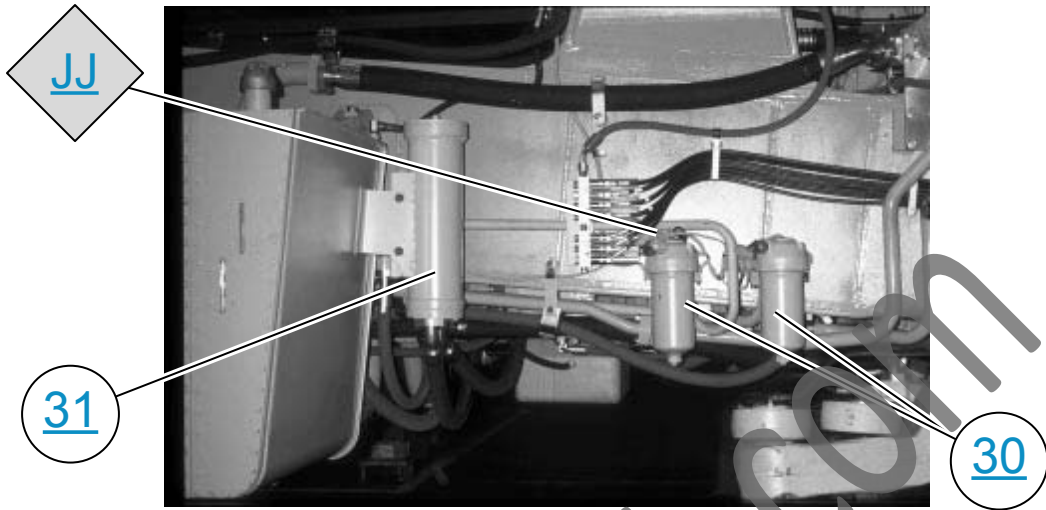


Left Steering Accumulator Area

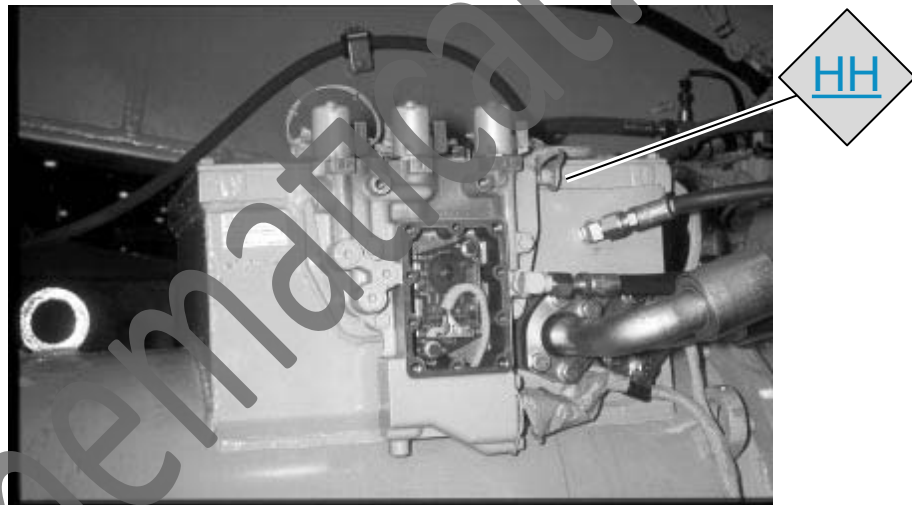




# TRANSMISSION SYSTEM TAP LOCATIONS



Area Aft of the Right Front Tire



Transmission System Components

