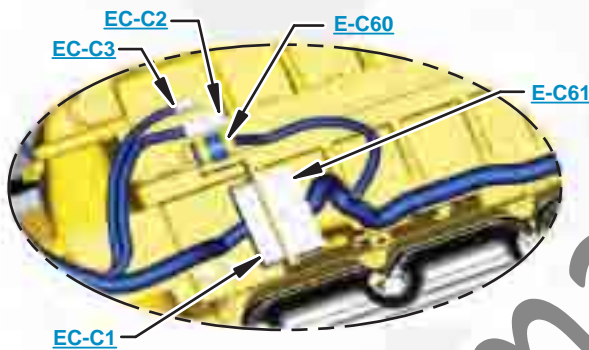


***This document is best viewed at a screen resolution of 1024 X 768.***

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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## 320C Excavator Hydraulic System

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BEA1-UP  
FBA1-UP  
GAA1-UP  
GLA1-UP  
MAA1-UP  
PAA1-UP  
ANB1-UP  
BCB1-UP  
BDB1-UP  
MAB1-UP  
PAB1-UP  
AMC1-UP  
BDC1-UP  
HBC1-UP  
CCD1-UP  
BDE1-UP  
ALF1-UP

DBG1-UP  
EAG1-UP  
GNG1-UP  
JTG1-UP  
AKH1-UP  
AXK1-UP  
BBL1-UP  
EGL1-UP  
BCN1-UP  
SBN1-UP  
BER1-UP  
BPR1-UP  
HKT1-UP  
RAW1-UP  
BRX1-UP  
BMZ1-UP

# COMPONENT LOCATION

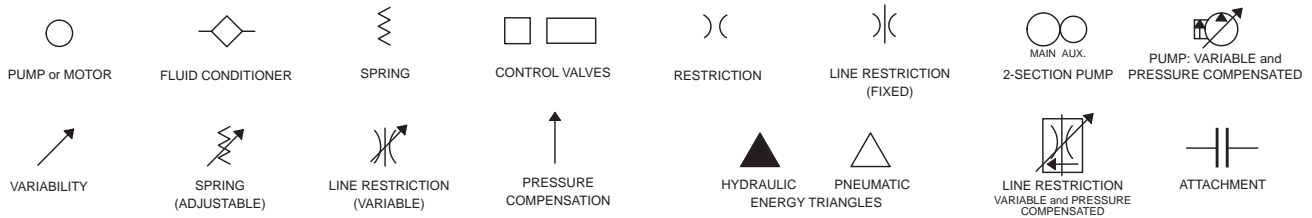


Description	Part Number	Machine Location	Schematic Location
Accumulator	199-7447	<a href="#">42</a>	<a href="#">B-5</a>
Attachment Control Valve	186-1228	<a href="#">20</a>	<a href="#">C-3</a>
Boom Cylinder	158-8989	<a href="#">8</a>	<a href="#">E-3</a>
Boom Drift Reduction Valve	264-9963	<a href="#">12</a>	<a href="#">D-2</a>
Boom I Control Valve	240-3021	<a href="#">22</a>	<a href="#">C-3</a>
Boom II Control Valve	240-3021	<a href="#">13</a>	<a href="#">C-6</a>
Bucket Control Valve	240-3021	<a href="#">21</a>	<a href="#">C-3</a>
Bucket Cylinder	158-8996	<a href="#">7</a>	<a href="#">E-3</a>
Bypass Check Valve	173-4672	<a href="#">52</a>	<a href="#">A-6</a>
Case Drain Filter	126-2075	<a href="#">57</a>	<a href="#">A-4</a>
Hydraulic Tank	142-7671	<a href="#">56</a>	<a href="#">A-4</a>
Left Pump	244-8483	<a href="#">49</a>	<a href="#">A-3</a>
Left Travel Control Valve	137-3725	<a href="#">16</a>	<a href="#">C-5</a>
Left Travel Motor	107-7029	<a href="#">2</a>	<a href="#">E-5</a>
Line Relief Valve (Boom Cylinder Rod End)	116-3600	<a href="#">31</a>	<a href="#">C-2</a>
Line Relief Valve (Bucket Cylinder Head End)	116-3600	<a href="#">32</a>	<a href="#">C-3</a>
Line Relief Valve (Bucket Cylinder Rod End)	116-3600	<a href="#">31</a>	<a href="#">C-3</a>
Line Relief Valve (Stick Cylinder Head End)	267-3727	<a href="#">28</a>	<a href="#">C-5</a>
Main Control Valve	250-2586	<a href="#">10</a>	<a href="#">C-5</a>
Main Relief Valve	171-0030	<a href="#">18</a>	<a href="#">C-4</a>
Negative Flow Control Relief Valve I	109-5152	<a href="#">24</a>	<a href="#">C-2</a>
Negative Flow Control Relief Valve II	109-5152	<a href="#">25</a>	<a href="#">C-6</a>
Oil Cooler	204-1013	<a href="#">55</a>	<a href="#">A-6</a>
Pilot Control Valve (Boom and Bucket)	206-3303	<a href="#">39</a>	<a href="#">C-7</a>
Pilot Control Valve (Swing and Stick)	206-3304	<a href="#">38</a>	<a href="#">B-7</a>
Pilot Control Valve (Travel)	158-8250	<a href="#">35</a>	<a href="#">C-7</a>
Pilot Filter	51-8670	<a href="#">59</a>	<a href="#">A-3</a>
Pilot Oil Manifold	215-5037	<a href="#">41</a>	<a href="#">A-5</a>
Pilot Pump	244-8483	<a href="#">50</a>	<a href="#">A-3</a>
Pilot Relief Valve	215-4909	<a href="#">58</a>	<a href="#">A-4</a>
Pressure Sensor (Left Pump)	157-3182	<a href="#">44</a>	<a href="#">B-3</a>
Pressure Sensor (Right Pump)	157-3182	<a href="#">60</a>	<a href="#">A-3</a>
Pressure Switch 1	167-3466	<a href="#">36</a>	<a href="#">C-7</a>
Pressure Switch 2	167-3466	<a href="#">37</a>	<a href="#">C-7</a>
Pressure Switch 3	167-3466	<a href="#">40</a>	<a href="#">B-7</a>
Reducing Valve (Boom/Swing Priority Mode)	232-4102	<a href="#">43</a>	<a href="#">B-4</a>
Return Filter	188-4140	<a href="#">53</a>	<a href="#">A-6</a>
Right Pump	244-8483	<a href="#">54</a>	<a href="#">A-3</a>
Right Travel Control Valve	137-3725	<a href="#">19</a>	<a href="#">C-4</a>
Right Travel Motor	107-7029	<a href="#">3</a>	<a href="#">E-4</a>
Slow Return Check Valve	173-4672	<a href="#">51</a>	<a href="#">A-6</a>
Solenoid Valve (Hydraulic Activation)	121-1491	<a href="#">48</a>	<a href="#">A-5</a>
Stick Cylinder	158-8992	<a href="#">4</a>	<a href="#">E-7</a>
Stick Drift Reduction Valve	264-9962	<a href="#">11</a>	<a href="#">D-5</a>
Stick I Control Valve	240-3021	<a href="#">14</a>	<a href="#">C-5</a>
Stick II Control Valve	240-3021	<a href="#">23</a>	<a href="#">C-2</a>
Stick Unloading Valve	158-8150	<a href="#">27</a>	<a href="#">C-5</a>
Straight Travel Control Solenoid	121-1491	<a href="#">17</a>	<a href="#">C-4</a>
Straight Travel Control Valve	231-6884	<a href="#">30</a>	<a href="#">C-4</a>
Swing Control Valve	240-3021	<a href="#">15</a>	<a href="#">C-5</a>
Swing Motor	158-8986	<a href="#">1</a>	<a href="#">E-6</a>
Swing Parking Brake Solenoid Valve	121-1491	<a href="#">46</a>	<a href="#">A-5</a>
Swivel	6V-9837	<a href="#">9</a>	<a href="#">D-4</a>
Travel Brake Valve (Left)	137-3718	<a href="#">5</a>	<a href="#">E-5</a>
Travel Brake Valve (Right)	137-3718	<a href="#">6</a>	<a href="#">E-4</a>
Travel Speed Solenoid Valve	121-1491	<a href="#">45</a>	<a href="#">A-5</a>
Variable Swing Priority Valve	153-5295	<a href="#">29</a>	<a href="#">C-5</a>

# FLUID POWER SYMBOLS



## BASIC COMPONENT SYMBOLS



## VALVE ENVELOPES

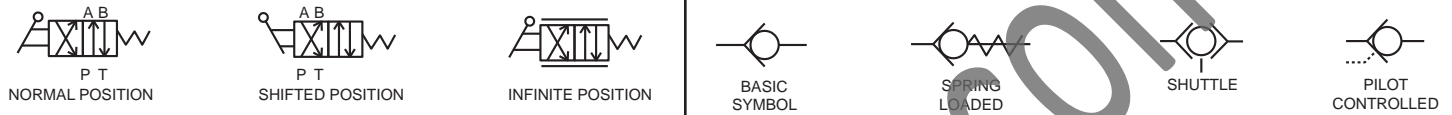
## VALVES

## VALVE PORTS



## CONTROL VALVES

## CHECK VALVES



## FLUID STORAGE RESERVOIRS



## MEASUREMENT

## ROTATING SHAFTS



## COMBINATION CONTROLS



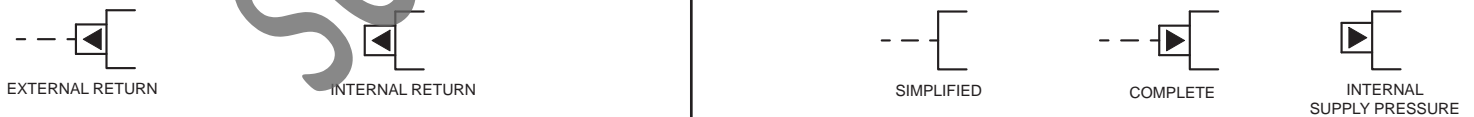
## MANUAL CONTROL SYMBOLS



## RELEASED PRESSURE

## PILOT CONTROL SYMBOLS

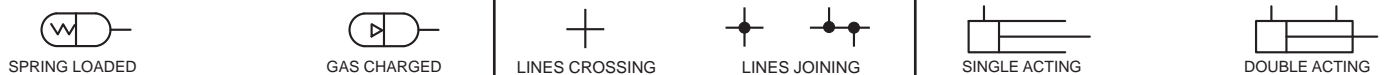
## REMOTE SUPPLY PRESSURE



## ACCUMULATORS

## CROSSING AND JOINING LINES

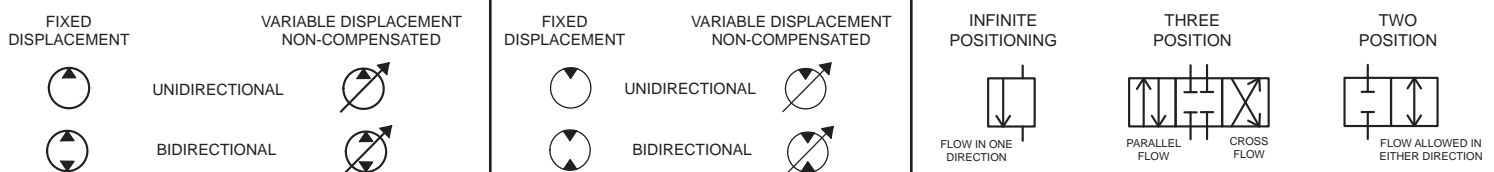
## HYDRAULIC AND PNEUMATIC CYLINDERS



## HYDRAULIC PUMPS

## HYDRAULIC MOTORS

## INTERNAL PASSAGEWAYS



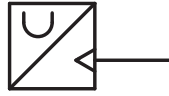
# ELECTRICAL SYMBOLS



## Hydraulic Symbols (Electrical)



Transducer  
(Fluid)



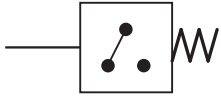
Transducer  
(Gas / Air)



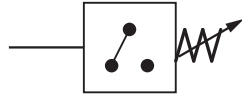
Generator



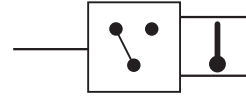
Electric Motor



Pressure Switch



Pressure Switch  
(Adjustable)

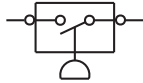


Temperature Switch

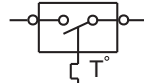


Electrical Wire

## Electrical Symbols (Electrical)



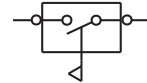
Pressure  
Symbol



Temperature  
Symbol



Level  
Symbol

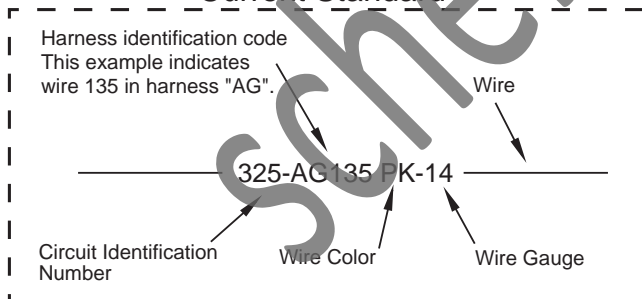


Flow  
Symbol

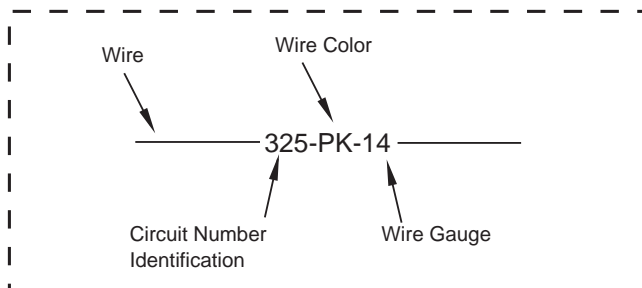
## Wire Number Identification Codes

### Electrical Schematic Example

#### Current Standard

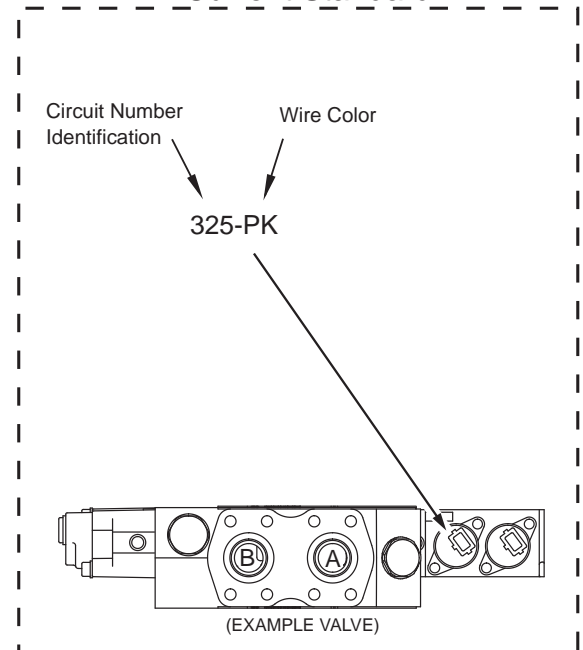


#### Previous Standard

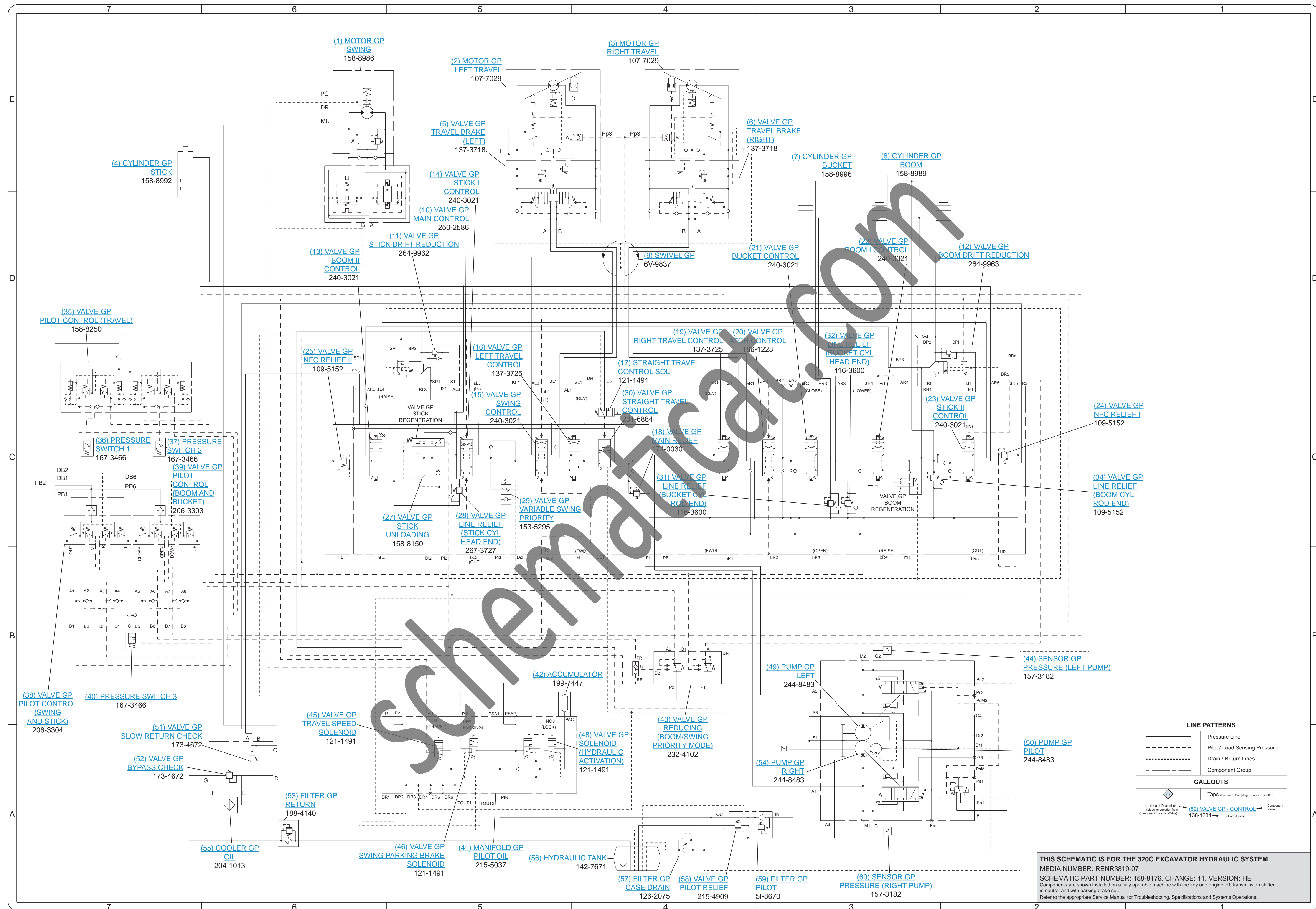


### Hydraulic Schematic Example

#### Current Standard







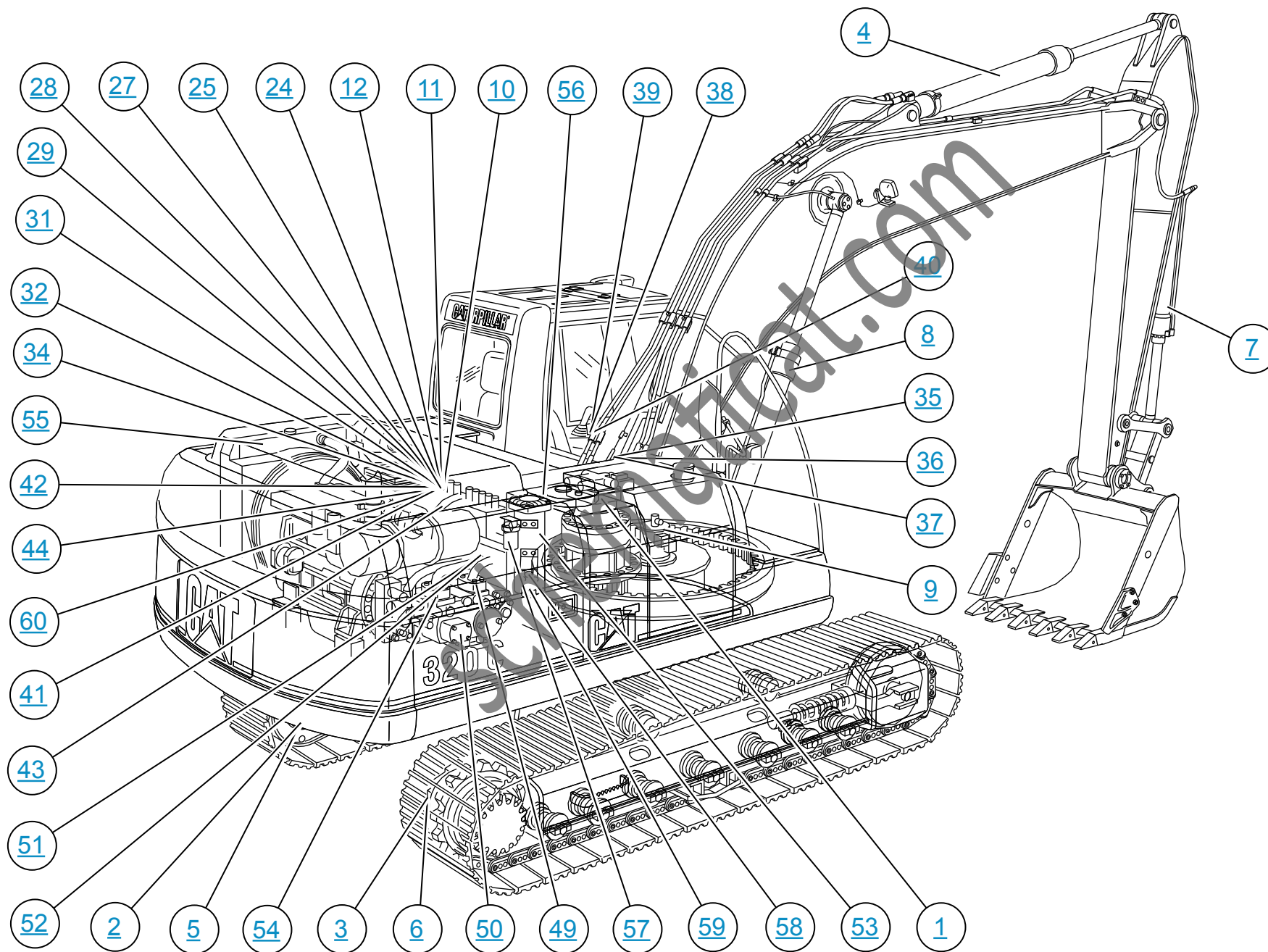
LINE PATTERNS	
	Pressure Line
	Pilot / Load Sensing Pressure
	Drain / Return Lines
	Component Group

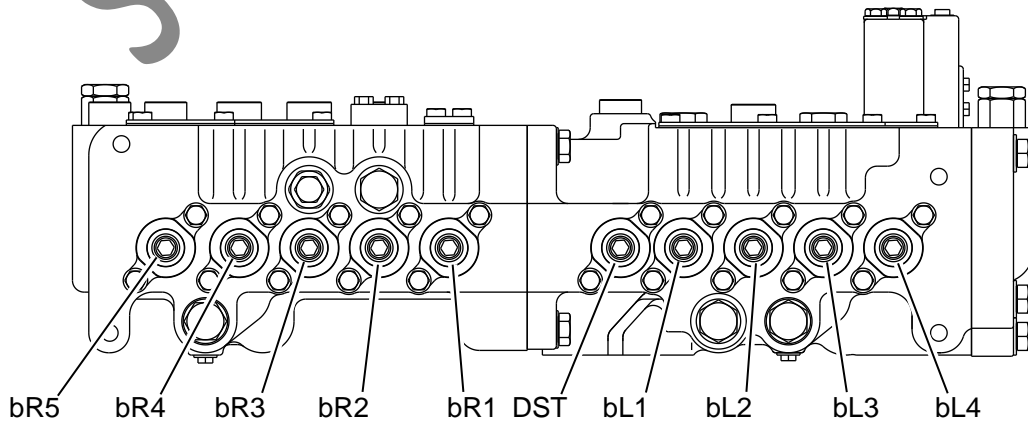
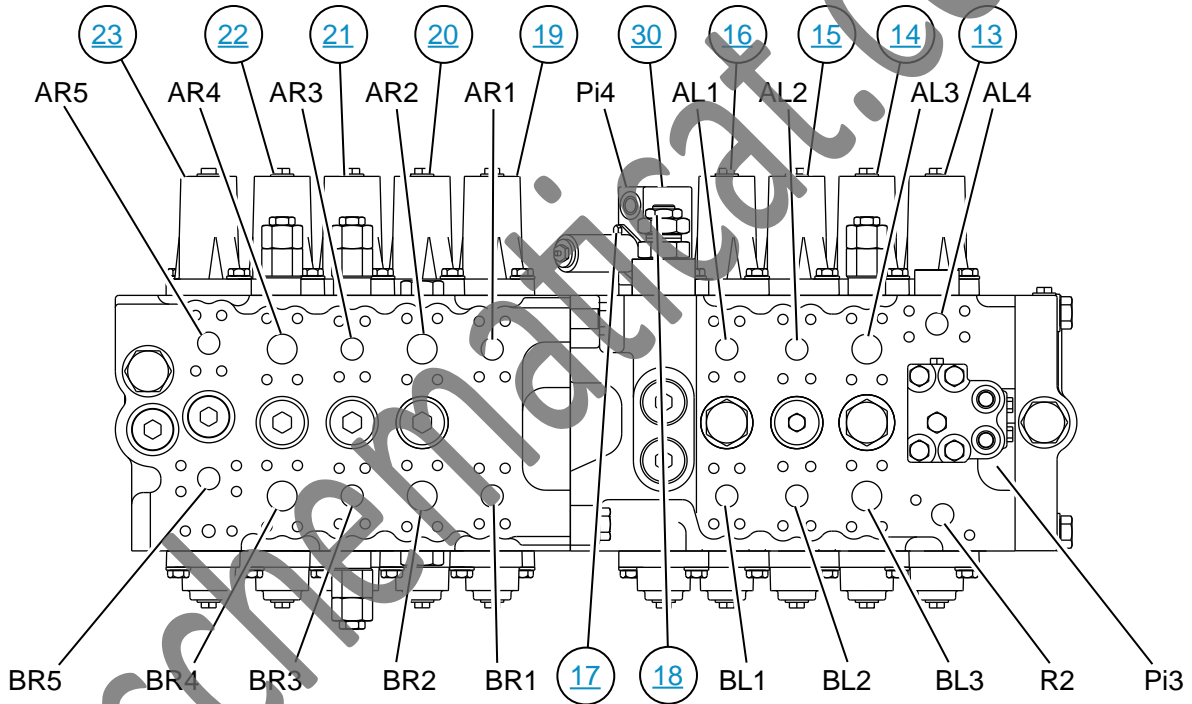
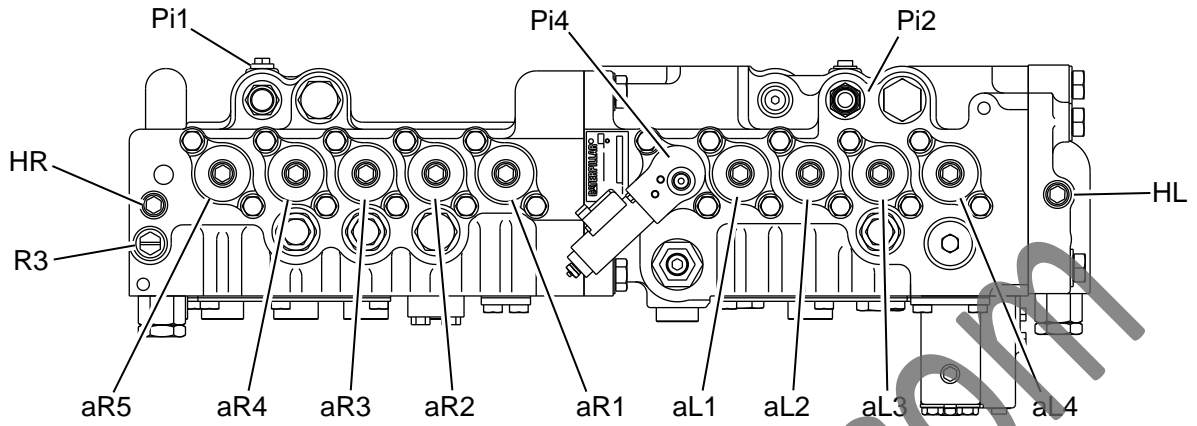
CALLOUTS	
	Tap/S Pressure Sensing Sensor (31-9830)
	Callout Number: Machine Location Item Component Location/Date
	(52) VALVE GP - CONTROL 138-1234
	Component Name Part Number

**THIS SCHEMATIC IS FOR THE 320C EXCAVATOR HYDRAULIC SYSTEM**  
 MEDIA NUMBER: RENR3819-07  
 SCHEMATIC PART NUMBER: 158-8176, CHANGE: 11, VERSION: HE  
 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.

# MACHINE COMPONENT LOCATIONS



# MAIN CONTROL VALVE





# PILOT OIL MANIFOLD

