

# Caterpillar Electronic Technician 2011B v1.0

## Product Status Report

4/7/2018 10:25 AM

320

### Product Status Report

Parameter	Value
Product ID	0
Equipment ID	
Comments	

### Hyd Pump Control 320C

Parameter	Value
Product ID	0
ECM Part Number	1573165-03
ECM Serial Number	00206246EG
Software Group Part Number	1958918-00
Software Group Release Date	FEB2001
Software Group Description	320C HEX CONTROL
Active Diagnostic Codes Present	No

### Logged Diagnostic Codes [Diagnostic Clock = Unavailable hours] - Hyd Pump Control 320C

Code	Description	Occ.	First	Last
No Logged Diagnostic Codes				

### Logged Event Codes [Diagnostic Clock = Unavailable hours] - Hyd Pump Control 320C

Code	Description	Occ.	First	Last
E100	Low Engine Oil Pressure Warning	1	0	0

### Active Diagnostic Codes - Hyd Pump Control 320C

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Code	Description
No Active Codes	

### Current Totals - Hyd Pump Control 320C

Description	Value	Unit
Engine Maintenance Hours	8072	hours
Engine Oil Hours	5356	hours
Engine Oil Filter Hours	5356	hours
Engine Coolant Hours	5356	hours
Fuel/ Water Separator Hours	0	hours
Fuel Filter Hours	1773	hours
Secondary Fuel Filter Hours	Unavailable	hours
Hydraulic Pump Hours	8072	hours
Hydraulic Pilot Oil Filter Hours	5356	hours
Hydraulic Case Drain Oil Filter Hours	5356	hours
Return Hydraulic Oil Filter Hours	5356	hours
Hydraulic Oil Hours	5356	hours
Final Drive Oil Hours	5356	hours
Swing Drive Oil Hours	5356	hours
Travel Motor Hours	656	hours
Tool #1 Hours	0	hours
Tool #2 Hours	0	hours
Tool #3 Hours	0	hours
Tool #4 Hours	0	hours
Tool #5 Hours	0	hours

### Configuration - Hyd Pump Control 320C

Description	Value	Unit
Product ID	0	
Hydraulic Oil Type	Mineral Oil	
Travel Alarm Installation Status	Installed	
Water Separator Level Switch Configuration	Normally Open	
Fuel Filter Differential Pressure Switch Config	Not Installed	
Secondary Fuel Filter Differential Pressure Switch Config	Not Installed	
High Pressure Hydraulic Oil Filter Switch Config	Not Installed	

Auto Lube System Installation Status	Not Installed	
Machine Overload Pressure Sensor Installation	Not Installed	
Machine Overload Pressure Threshold	Disabled or Not Installed	psi
Machine Application Configuration	Bucket	
Attachment Tool ECM Installation Status	Not Installed	
Main Pump Flow Limitation Pres Sol Installation	Not Installed	
Attachment Valve #1 Configuration	F2 - One Way or Two Way	
Attachment Valve #2 Configuration	F2 - One Way or Two Way	
Attachment Valve #3 Configuration	F4 - One Way or Two Way	
Attachment Valve #4 Configuration	F3 - One Way or Two Way	
Attachment Valve #1 Combiner Configuration	Valve #2 Combined with Valve #1	
Variable Relief Valve #1 Configuration	Disabled or Not Installed	
Variable Relief Valve #2 Configuration	Disabled or Not Installed	
F2 Type Valve Load Sense Pres Sensor Installation	Disabled or Not Installed	
Left Joystick Switch #1 Installation Status	Disabled or Not Installed	
Left Joystick Switch #2 Installation Status	Disabled or Not Installed	
Right Joystick Switch #1 Installation Status	Disabled or Not Installed	
Right Joystick Switch #2 Installation Status	Disabled or Not Installed	
Attachment Switch #1 Installation Status	Disabled or Not Installed	
Attachment Switch #2 Installation Status	Disabled or Not Installed	
Attachment Switch #3 Installation Status	Disabled or Not Installed	
Attachment Switch #4 Installation Status	Disabled or Not Installed	
Left Joystick Thumbwheel Installation Status	Disabled or Not Installed	
Right Joystick Thumbwheel Installation Status	Disabled or Not Installed	
Left Attachment Pedal Installation Status	Disabled or Not Installed	
Right Attachment Pedal Installation Status	Disabled or Not Installed	
Travel Speed Shift Low Delay	0.4	sec
Travel Speed Shift High Delay	0.4	sec
Travel Speed Shift Low Pres	2418	psi
Travel Speed Shift High Pressure	4622	psi
One Touch Engine Speed Setting	1020	rpm
AESC Setting	1300	rpm
AESC Delay Time	3.0	sec
Throttle Dial Position 1 Engine Speed	900	rpm
Throttle Dial Position 2 Engine Speed	1020	rpm
Throttle Dial Position 3 Engine Speed	1160	rpm
Throttle Dial Position 4 Engine Speed	1300	rpm

Throttle Dial Position 5 Engine Speed	1470	rpm
Throttle Dial Position 6 Engine Speed	1590	rpm
Throttle Dial Position 7 Engine Speed	1700	rpm
Throttle Dial Position 8 Engine Speed	1800	rpm
Throttle Dial Position 9 Engine Speed	1870	rpm
Throttle Dial Position 10 Engine Speed	1980	rpm
Throttle Dial Position 1 Hydraulic Power	46.2	%
Throttle Dial Position 2 Hydraulic Power	56.7	%
Throttle Dial Position 3 Hydraulic Power	68.5	%
Throttle Dial Position 4 Hydraulic Power	81.2	%
Throttle Dial Position 5 Hydraulic Power	86.4	%
Throttle Dial Position 6 Hydraulic Power	86.4	%
Throttle Dial Position 7 Hydraulic Power	86.4	%
Throttle Dial Position 8 Hydraulic Power	86.4	%
Throttle Dial Position 9 Hydraulic Power	86.4	%
Throttle Dial Position 10 Hydraulic Power	105.0	%
Engine Oil Recommended Maintenance Interval	500	hours
Engine Oil Filter Recommended Maintenance Interval	500	hours
Engine Coolant Recommended Maintenance Interval	3000	hours
Fuel/ Water Separator Recommended Maint Interval	0	hours
Fuel Filter Recommended Maint Interval	500	hours
Secondary Fuel Filter Recommended Maint Interval	Unavailable	hours
Hydraulic Pilot Oil Filter Recommended Maintenance Interval	1000	hours
Hydraulic Case Drain Oil Filter Recommended MI	1000	hours
Return Hyd Oil Filter Recommended Maint Interval	1000	hours
Final Drive Oil Recommended Maintenance Interval	2000	hours
Hydraulic Oil Recommended Maintenance Interval	2000	hours
Swing Drive Oil Recommended Maintenance Interval	1000	hours

### Tool Configuration - Hyd Pump Control 320C

Description	Value	Unit
Tool Program Name	0	Active
Maximum Throttle Dial	10	
Throttle Dial Flow Control	On	
Underspeed Enable	Enabled	
Two Pump Flow Combine Enable	Disabled	

Initial Med Pres Circuit Main Pump Power Reduction	5	%
Total Med Pres Circuit Main Pump Power Reduction	30	%
One Way/ Two Way Valve Mode	Disabled or Not Installed	
Variable Relief Valve #1 Pressure	Disabled or Not Installed	psi
Variable Relief Valve #2 Pressure	Disabled or Not Installed	psi
Main Pump Bypass Flow	Disabled or Not Installed	gal/min
F1 Type Valve Maximum Flow Derate	Disabled or Not Installed	%
F1 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F1 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
F2 Type Valve Max Flow Derate Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Flow Setting	42	gal/min
Attachment Valve #1 Multi-Oper. Additional Flow	0	gal/min
Valve #1 Nominal Pressure	2321	psi
Attachment Valve #1 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Open Time	Disabled or Not Installed	sec
Attachment Valve #1 Close Time	Disabled or Not Installed	sec
Attachment Valve #2 Flow Setting	Disabled or Not Installed	gal/min
Attachment Valve #2 Multi-Oper. Additional Flow	Disabled or Not Installed	gal/min
Valve #2 Nominal Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Open Time	Disabled or Not Installed	sec
Attachment Valve #2 Close Time	Disabled or Not Installed	sec
Attachment Valve #3 Flow Setting	11	gal/min
Attachment Valve #3 Multi-Oper. Additional Flow	0	gal/min
Valve #3 Nominal Pressure	2321	psi
Attachment Valve #3 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Open Time	Disabled or Not Installed	sec
Attachment Valve #3 Close Time	Disabled or Not Installed	sec
Attachment Valve #4 Flow Setting	53	gal/min
Attachment Valve #4 Multi-Oper. Additional Flow	0	gal/min
Valve #4 Nominal Pressure	2321	psi
Attachment Valve #4 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Maximum Retract Pressure	Disabled or Not Installed	psi

Attachment Valve #4 Open Time	Disabled or Not Installed	sec
Attachment Valve #4 Close Time	Disabled or Not Installed	sec
Left Joystick Switch #1 Control Mode	Disabled or Not Installed	
Left Joystick Switch #2 Control Mode	Disabled or Not Installed	
Right Joystick Switch #1 Control Mode	Disabled or Not Installed	
Right Joystick Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #1 Control Mode	Disabled or Not Installed	
Attachment Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #3 Control Mode	Disabled or Not Installed	
Attachment Switch #4 Control Mode	Disabled or Not Installed	
Left Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Right Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Left Attachment Pedal Control Mode	Disabled or Not Installed	
Right Attachment Pedal Control Mode	Disabled or Not Installed	

### Tool Configuration - Hyd Pump Control 320C

Description	Value	Unit
<b>Tool Program Name</b>	0	
Maximum Throttle Dial	10	
Throttle Dial Flow Control	On	
Underspeed Enable	Enabled	
Two Pump Flow Combine Enable	Enabled	
Initial Med Pres Circuit Main Pump Power Reduction	5	%
Total Med Pres Circuit Main Pump Power Reduction	30	%
One Way/ Two Way Valve Mode	Disabled or Not Installed	
Variable Relief Valve #1 Pressure	Disabled or Not Installed	psi
Variable Relief Valve #2 Pressure	Disabled or Not Installed	psi
Main Pump Bypass Flow	Disabled or Not Installed	gal/min
F1 Type Valve Maximum Flow Derate	Disabled or Not Installed	%
F1 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F1 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
F2 Type Valve Max Flow Derate Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Flow Setting	42	gal/min
Attachment Valve #1 Multi-Oper. Additional Flow	0	gal/min
Valve #1 Nominal Pressure	2321	psi

Attachment Valve #1 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Open Time	Disabled or Not Installed	sec
Attachment Valve #1 Close Time	Disabled or Not Installed	sec
Attachment Valve #2 Flow Setting	Disabled or Not Installed	gal/min
Attachment Valve #2 Multi-Oper. Additional Flow	Disabled or Not Installed	gal/min
Valve #2 Nominal Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Open Time	Disabled or Not Installed	sec
Attachment Valve #2 Close Time	Disabled or Not Installed	sec
Attachment Valve #3 Flow Setting	11	gal/min
Attachment Valve #3 Multi-Oper. Additional Flow	0	gal/min
Valve #3 Nominal Pressure	2321	psi
Attachment Valve #3 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Open Time	Disabled or Not Installed	sec
Attachment Valve #3 Close Time	Disabled or Not Installed	sec
Attachment Valve #4 Flow Setting	53	gal/min
Attachment Valve #4 Multi-Oper. Additional Flow	0	gal/min
Valve #4 Nominal Pressure	2321	psi
Attachment Valve #4 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Open Time	Disabled or Not Installed	sec
Attachment Valve #4 Close Time	Disabled or Not Installed	sec
Left Joystick Switch #1 Control Mode	Disabled or Not Installed	
Left Joystick Switch #2 Control Mode	Disabled or Not Installed	
Right Joystick Switch #1 Control Mode	Disabled or Not Installed	
Right Joystick Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #1 Control Mode	Disabled or Not Installed	
Attachment Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #3 Control Mode	Disabled or Not Installed	
Attachment Switch #4 Control Mode	Disabled or Not Installed	
Left Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Right Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Left Attachment Pedal Control Mode	Disabled or Not Installed	
Right Attachment Pedal Control Mode	Disabled or Not Installed	

**Tool Configuration - Hyd Pump Control 320C**

<b>Description</b>	<b>Value</b>	<b>Unit</b>
<b>Tool Program Name</b>	<b>0</b>	
Maximum Throttle Dial	10	
Throttle Dial Flow Control	On	
Underspeed Enable	Enabled	
Two Pump Flow Combine Enable	Enabled	
Initial Med Pres Circuit Main Pump Power Reduction	5	%
Total Med Pres Circuit Main Pump Power Reduction	30	%
One Way/ Two Way Valve Mode	Disabled or Not Installed	
Variable Relief Valve #1 Pressure	Disabled or Not Installed	psi
Variable Relief Valve #2 Pressure	Disabled or Not Installed	psi
Main Pump Bypass Flow	Disabled or Not Installed	gal/min
F1 Type Valve Maximum Flow Derate	Disabled or Not Installed	%
F1 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F1 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
F2 Type Valve Max Flow Derate Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Flow Setting	42	gal/min
Attachment Valve #1 Multi-Oper. Additional Flow	0	gal/min
Valve #1 Nominal Pressure	2321	psi
Attachment Valve #1 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Open Time	Disabled or Not Installed	sec
Attachment Valve #1 Close Time	Disabled or Not Installed	sec
Attachment Valve #2 Flow Setting	Disabled or Not Installed	gal/min
Attachment Valve #2 Multi-Oper. Additional Flow	Disabled or Not Installed	gal/min
Valve #2 Nominal Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Open Time	Disabled or Not Installed	sec
Attachment Valve #2 Close Time	Disabled or Not Installed	sec
Attachment Valve #3 Flow Setting	11	gal/min
Attachment Valve #3 Multi-Oper. Additional Flow	0	gal/min
Valve #3 Nominal Pressure	2321	psi
Attachment Valve #3 Maximum Extend Pressure	Disabled or Not Installed	psi

Attachment Valve #3 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Open Time	Disabled or Not Installed	sec
Attachment Valve #3 Close Time	Disabled or Not Installed	sec
Attachment Valve #4 Flow Setting	53	gal/min
Attachment Valve #4 Multi-Oper. Additional Flow	0	gal/min
Valve #4 Nominal Pressure	2321	psi
Attachment Valve #4 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Open Time	Disabled or Not Installed	sec
Attachment Valve #4 Close Time	Disabled or Not Installed	sec
Left Joystick Switch #1 Control Mode	Disabled or Not Installed	
Left Joystick Switch #2 Control Mode	Disabled or Not Installed	
Right Joystick Switch #1 Control Mode	Disabled or Not Installed	
Right Joystick Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #1 Control Mode	Disabled or Not Installed	
Attachment Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #3 Control Mode	Disabled or Not Installed	
Attachment Switch #4 Control Mode	Disabled or Not Installed	
Left Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Right Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Left Attachment Pedal Control Mode	Disabled or Not Installed	
Right Attachment Pedal Control Mode	Disabled or Not Installed	

### Tool Configuration - Hyd Pump Control 320C

Description	Value	Unit
<b>Tool Program Name</b>	0	
Maximum Throttle Dial	10	
Throttle Dial Flow Control	On	
Underspeed Enable	Enabled	
Two Pump Flow Combine Enable	Enabled	
Initial Med Pres Circuit Main Pump Power Reduction	5	%
Total Med Pres Circuit Main Pump Power Reduction	30	%
One Way/ Two Way Valve Mode	Disabled or Not Installed	
Variable Relief Valve #1 Pressure	Disabled or Not Installed	psi
Variable Relief Valve #2 Pressure	Disabled or Not Installed	psi
Main Pump Bypass Flow	Disabled or Not Installed	gal/min
F1 Type Valve Maximum Flow Derate	Disabled or Not Installed	%

F1 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F1 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
F2 Type Valve Max Flow Derate Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Flow Setting	42	gal/min
Attachment Valve #1 Multi-Oper. Additional Flow	0	gal/min
Valve #1 Nominal Pressure	2321	psi
Attachment Valve #1 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Open Time	Disabled or Not Installed	sec
Attachment Valve #1 Close Time	Disabled or Not Installed	sec
Attachment Valve #2 Flow Setting	Disabled or Not Installed	gal/min
Attachment Valve #2 Multi-Oper. Additional Flow	Disabled or Not Installed	gal/min
Valve #2 Nominal Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Open Time	Disabled or Not Installed	sec
Attachment Valve #2 Close Time	Disabled or Not Installed	sec
Attachment Valve #3 Flow Setting	11	gal/min
Attachment Valve #3 Multi-Oper. Additional Flow	0	gal/min
Valve #3 Nominal Pressure	2321	psi
Attachment Valve #3 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Open Time	Disabled or Not Installed	sec
Attachment Valve #3 Close Time	Disabled or Not Installed	sec
Attachment Valve #4 Flow Setting	53	gal/min
Attachment Valve #4 Multi-Oper. Additional Flow	0	gal/min
Valve #4 Nominal Pressure	2321	psi
Attachment Valve #4 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Open Time	Disabled or Not Installed	sec
Attachment Valve #4 Close Time	Disabled or Not Installed	sec
Left Joystick Switch #1 Control Mode	Disabled or Not Installed	
Left Joystick Switch #2 Control Mode	Disabled or Not Installed	
Right Joystick Switch #1 Control Mode	Disabled or Not Installed	
Right Joystick Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #1 Control Mode	Disabled or Not Installed	

Attachment Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #3 Control Mode	Disabled or Not Installed	
Attachment Switch #4 Control Mode	Disabled or Not Installed	
Left Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Right Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Left Attachment Pedal Control Mode	Disabled or Not Installed	
Right Attachment Pedal Control Mode	Disabled or Not Installed	

### Tool Configuration - Hyd Pump Control 320C

Description	Value	Unit
<b>Tool Program Name</b>	<b>0</b>	
Maximum Throttle Dial	10	
Throttle Dial Flow Control	On	
Underspeed Enable	Enabled	
Two Pump Flow Combine Enable	Enabled	
Initial Med Pres Circuit Main Pump Power Reduction	5	%
Total Med Pres Circuit Main Pump Power Reduction	30	%
One Way/ Two Way Valve Mode	Disabled or Not Installed	
Variable Relief Valve #1 Pressure	Disabled or Not Installed	psi
Variable Relief Valve #2 Pressure	Disabled or Not Installed	psi
Main Pump Bypass Flow	Disabled or Not Installed	gal/min
F1 Type Valve Maximum Flow Derate	Disabled or Not Installed	%
F1 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F1 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
F2 Type Valve Max Flow Derate Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate Start Pressure	Disabled or Not Installed	psi
F2 Type Valve Flow Derate End Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Flow Setting	42	gal/min
Attachment Valve #1 Multi-Oper. Additional Flow	0	gal/min
Valve #1 Nominal Pressure	2321	psi
Attachment Valve #1 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #1 Open Time	Disabled or Not Installed	sec
Attachment Valve #1 Close Time	Disabled or Not Installed	sec
Attachment Valve #2 Flow Setting	Disabled or Not Installed	gal/min
Attachment Valve #2 Multi-Oper. Additional Flow	Disabled or Not Installed	gal/min
Valve #2 Nominal Pressure	Disabled or Not Installed	psi

Attachment Valve #2 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #2 Open Time	Disabled or Not Installed	sec
Attachment Valve #2 Close Time	Disabled or Not Installed	sec
Attachment Valve #3 Flow Setting	11	gal/min
Attachment Valve #3 Multi-Oper. Additional Flow	0	gal/min
Valve #3 Nominal Pressure	2321	psi
Attachment Valve #3 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #3 Open Time	Disabled or Not Installed	sec
Attachment Valve #3 Close Time	Disabled or Not Installed	sec
Attachment Valve #4 Flow Setting	53	gal/min
Attachment Valve #4 Multi-Oper. Additional Flow	0	gal/min
Valve #4 Nominal Pressure	2321	psi
Attachment Valve #4 Maximum Extend Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Maximum Retract Pressure	Disabled or Not Installed	psi
Attachment Valve #4 Open Time	Disabled or Not Installed	sec
Attachment Valve #4 Close Time	Disabled or Not Installed	sec
Left Joystick Switch #1 Control Mode	Disabled or Not Installed	
Left Joystick Switch #2 Control Mode	Disabled or Not Installed	
Right Joystick Switch #1 Control Mode	Disabled or Not Installed	
Right Joystick Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #1 Control Mode	Disabled or Not Installed	
Attachment Switch #2 Control Mode	Disabled or Not Installed	
Attachment Switch #3 Control Mode	Disabled or Not Installed	
Attachment Switch #4 Control Mode	Disabled or Not Installed	
Left Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Right Joystick Thumbwheel Control Mode	Disabled or Not Installed	
Left Attachment Pedal Control Mode	Disabled or Not Installed	
Right Attachment Pedal Control Mode	Disabled or Not Installed	

## Monitor

Parameter	Value
ECM Serial Number	162E0017EE
Personality Module Part Number	2602161-00



Bill To:  
Vernon Pierson

Jobsite:  
Vernon Pierson

Account Number	Invoice Number	Customer PO	Division		
5209350	INV000994		CM		
Document Number	Payment Terms	Service Call Date	Service Writer		
SC001412	15th Day of Following Month	09/03/2014	Christopher L Williams		
Make	Model	Serial Number	Customer Equipment Number	Equipment Number	Last Meter
AA	320C	ANB01184		EQN000818	0

Workscope	Extended Price

### Troubleshoot - Electric System

#### Parts

1	3095769	SWITCH AS-PR
1	1211491	VALVE G
1	3095769	SWITCH AS-PR
-1	1211491	VALVE G
-6	3095769	SWITCH AS-PR
1	1211491	VALVE G
1	3095769	SWITCH AS-PR
2	3095769	SWITCH AS-PR
1	3095769	SWITCH AS-PR

#### Labor

Total Labor

#### Miscellaneous

1	FRT
1	FRT

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Total Segment Parts  
Total Segment Labor  
Total Segment Miscellaneous

Segment Total 1,070.54

### Repair - Electric System

#### Parts

1	1552270	PLUG KIT	4.16	4.16
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Workscope	Extended Price
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2 1261768 SOCKET

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Total Segment Parts  
Total Segment Labor  
Total Segment Miscellaneous

**Segment Total**

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Total Invoice Parts  
Total Invoice Labor  
Total Invoice Miscellaneous  
Total Tax

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X-----  
Please make payment by \_\_\_\_\_ or payment.  
X-----

Please Pay This Amount: \$1,154.17

Bill To:  
Service Rework

Jobsite:  
Vernon Pierson

320C  
Long Beach

Account Number	Invoice Number	Customer PO	Division		
NMC0026	INV016545		CM		
Document Number	Payment Terms	Service Call Date	Service Writer		
SC008397	Internal Customers	09/29/2014	Ryan S Morgan		
Make	Model	Serial Number	Customer Equipment Number	Equipment Number	Last Meter
AA	320C	ANB01184		EQN000818	0

Workscope	Extended Price

### Troubleshoot - Bucket Cylinder

Customer complaint: Cylinder leaking between the gland and barrel.

Resultant damage: Possibly pressure spikes or clearance issue with the seals.

Cause of failure: REFERENCE WO 0079809

Repair process comments: Placed cylinder on the bench to be disassembled. Once apart I inspected everything for any damages. Found that the o-ring and back up ring had blown out of its grooves. Checked the outside diameter of the gland and inside diameter of the barrel to make sure everything was round. I then removed the seals and placed the parts in the washer to be cleaned. I then honed the inside of the barrel and washed it out using the cylinder washer. Finally replaced the seals and assembled the cylinder back together.

#### Parts

1	1U5517	DISC
1	HERMRTU-70X90X12	U SEAL
2	HERMHP26-110	SEAL
1	HERMSWE-70X82X7	WIPER
1	HERMBT-110X5X1.9	BACK UP RING
1	HERMOR-109.6X5.7-90D	O RING

#### Labor

Total Labor

Workscope

Extended Price

Total Segment Parts  
Total Segment Labor  
Total Segment Miscellaneous

**Segment Total**

Total Invoice Parts  
Total Invoice Labor  
Total Invoice Miscellaneous  
Total Tax

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payment.



Please Pay This Amount:

\$265.40

Bill To:  
Vernon Pierson

Jobsite:  
Vernon Pierson

Account Number	Invoice Number	Customer PO	Division		
5209350	INV018968		CM		
Document Number	Payment Terms	Service Call Date	Service Writer		
SC013563	15th Day of Following Month	10/24/2014	Merlin J Stewart		
Make	Model	Serial Number	Customer Equipment Number	Equipment Number	Last Meter
AA	320C	ANB01184		EQN000818	7527

Workscope	Extended Price
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### Machine/Grind/Mill - Hydraulic Cylinders

Customer complaint: Rod had nicks in the surface.

Resultant damage: There were deep nicks in the surface that would not polish out.

Repair process comments: I first had to get the measurements of the rod. I then placed the rod in the band saw and cut the old eye off. I then had to grind away all the extra weld on the eye. I then cut 48" of 70mm rod stock. I placed the new rod material in the lathe and machined the area where the piston would sit and then machined the threads for the nut. I then turned the rod material around and machined a j-hook to allow the eye to be welded onto the rod. Finally I welded the eye onto the newly machined rod.

#### Parts

48 2206992 BAR-BULK 70M 6.29

#### Labor

Total Labor

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Total Segment Parts  
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Total Segment Miscellaneous

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Segment Total

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Total Invoice Parts  
Total Invoice Labor  
Total Invoice Miscellaneous  
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With your payment.

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Account Number	Invoice Number	Customer PO	Division		
5209350	INV029919		CM		
Document Number	Payment Terms	Service Call Date	Service Writer		
SC029644	15th Day of Following Month	01/20/2015	Daryl L Buckman		
Make	Model	Serial Number	Customer Equipment Number	Equipment Number	Last Meter
AA	320C	ANB01184		EQN000818	7527

Workscope	Extended Price
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#### Line Bore/Auto Weld - Bucket

Customer complaint: LINE BORE STICK NOSE AND BORES ON BUCKET (3 SET UPS)

Resultant damage: BORES WERE EGG SHAPED AND OUT OF SPEC. CUSTOMER WANTED TO BORE FOR OVER SIZED PINS AND BEARINGS.

Repair process comments: STICK NOSE WAS BORED FOR OVER SIZE BEARINGS. SHOULDER WAS REMOVED INSIDE STICK NOSE THAN BORE WAS MACHINED OUT TO .005" UNDER NEW BEARING SIZE. NEW BEARINGS WERE PRESSED IN AND PIN WAS CHECKED FOR PROPER FIT.

TWO SET UPS ON BUCKET WERE DONE. UPPER BORES WOULD NOT CLEAN UP AND NEEDED THE BORING BAR PULLED SO THE TOP SIDES OF THE BORES COULD BE WELDED BY HAND TO BUILD THEM UP. UPPER AND LOWER BORES ON BUCKET WERE MACHINED TOO .003" OVER THE NEW PIN DIAMETER. BORES WERE THEN POLISHED AND CHECKED FOR PROPER FIT WITH THE NEW PINS. EVERYTHING CHECKED OUT GOOD.

#### Labor

Total Labor

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Total Segment Parts  
Total Segment Labor  
Total Segment Miscellaneous

#### Segment Total

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Total Invoice Parts  
Total Invoice Labor  
Total Invoice Miscellaneous  
Total Tax

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1 your payment.

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\$2,003.58

Bill To:  
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Jobsite:  
Vernon Pierson

Account Number	Invoice Number	Customer PO	Division		
5209350	INV131982		CM		
Document Number	Payment Terms	Service Call Date	Service Writer		
SC142064	15th Day of Following Month	07/29/2016	Christopher L Williams		
Make	Model	Serial Number	Customer Equipment Number	Equipment Number	Last Meter
AA	320C	ANB01184		EQN000818	7847

Workscope	Extended Price

### Troubleshoot - Electric System

Customer complaint: The customer said when he parked the machine it was working fine and a few days later when he went to use it the batteries was dead. After he charged them he found the front lights was on and he could not shut them off. He also found the panel that turns the lights on and off was not all working. He also found that the display monitor was not working as well.

Resultant damage: You could not read the engine gages and you could not control some of the machine functions.

Cause of failure: The customer said there was a storm that moved through the area where the machine was sitting so there is a good chance the machine was struck by lightning. That would explain why the there was two electronic devices that was bad.

Repair process comments: I first looked at the monitor and found it was shorting out the cat data link. When it was plugged in I did not have the correct voltage. When I unplugged it the voltage in the data link wires went back to normal. Then I looked at the switch panel and found it was not putting out the correct voltage and it would not change when you would hit a button. The monitor and the switch panel both need replaced.

#### Labor

Total Labor

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Total Segment Parts  
Total Segment Labor  
Total Segment Miscellaneous

Segment Total

### Replace - Electronic Monitoring System/Panel

Customer complaint: Lighting struck the machine when the customer was not using it and shorted out the monitor and the switch panel.

Resultant damage: Shorted out the monitor and the switch panel.

Cause of failure: Lighting strike

Repair process comments: I had to take the hole side of the right hand console covers off to put the switch panel in and the monitor in. I put a updated plug on where the monitor plugs in so dirt and moisture could not corrode the pins and sockets in the plug. I test ran the machine and cleared the codes and put the console back together.

#### Parts

1	2602160	MONITOR GP
1	1636701	PANEL AS
2	1717420	CLIP
4	1282135	SCREW
8	9X3401	PIN
1	1552274	PLUG KIT-CON
1	1028805	RECPTACLE KI
8	9X3402	SOCKET

#### Labor

Total Labor

Workscope	Extended Price
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**Miscellaneous**

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Total Segment Parts  
 Total Segment Labor  
 Total Segment Miscellaneous

**Segment Total**


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Total Invoice Parts  
 Total Invoice Labor  
 Total Invoice Miscellaneous  
 Total Tax

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/our payment.



Please Pay This Amount:

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Bill To:  
Vernon Pierson

Jobsite:  
Vernon Pierson

Account Number	Invoice Number	Customer PO	Division		
5209350	INV134100		CM		
Document Number	Payment Terms	Service Call Date	Service Writer		
SC144214	15th Day of Following Month	08/10/2016	Christopher L Williams		
Make	Model	Serial Number	Customer Equipment Number	Equipment Number	Last Meter
AA	320C	ANB01184		EQN000818	7864

Workscope	Extended Price
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#### Troubleshoot - Travel Speed

Customer complaint: The two speed did not work.

Resultant damage: It shorted out the pump pressure sensors.

Cause of failure: Lighting hit the machine.

Repair process comments: A few weeks ago I went out and worked on this machine because it got hit by lighting. I put a monitor in it and a control panel in it for the two speed, lights, wipers, and engine speed. I got the machine done and I thought I had it all fixed but when the customer went to use it the two speed did not work. I put cat E/T on and found the pressure sensors for both pumps was shorted out and that is how the two speed knows when to change back to low. So if they do not read pump pressure the two speed will not work. I put two new pressure sensors in and then the two speed worked good.

#### Parts

2	4343436	SENSOR AS-PR
1	3669313	HARNESS AS
1	3669313	HARNESS AS

#### Labor

Total Labor

Workscope	Extended Price
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Total Segment Parts  
Total Segment Labor  
Total Segment Miscellaneous

**Segment Total**

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Total Invoice Parts  
Total Invoice Labor  
Total Invoice Miscellaneous  
Total Tax

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payment.

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\$1,814.00