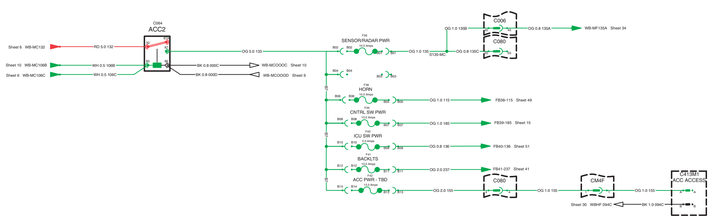
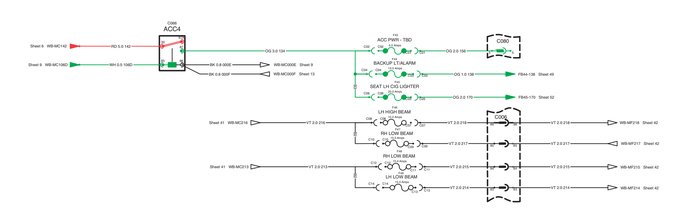


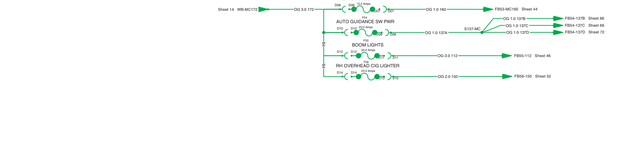
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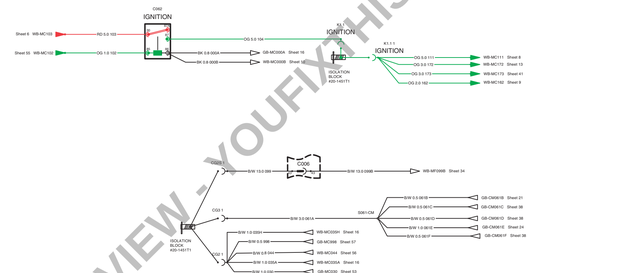


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FUSES 43-49 | 12

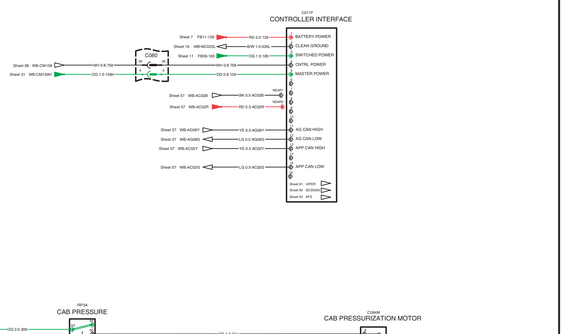




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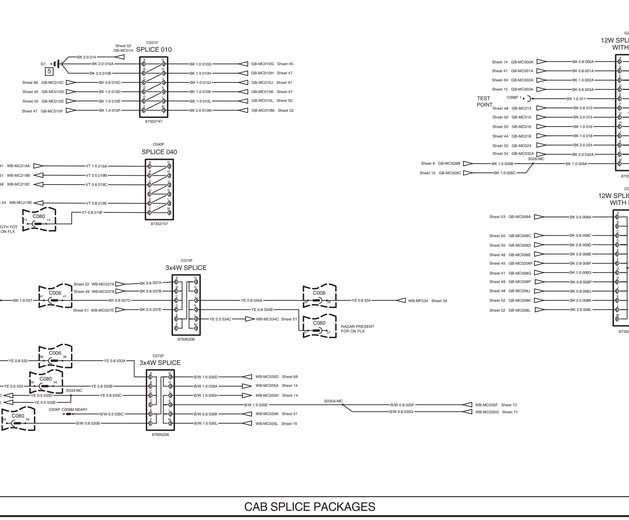
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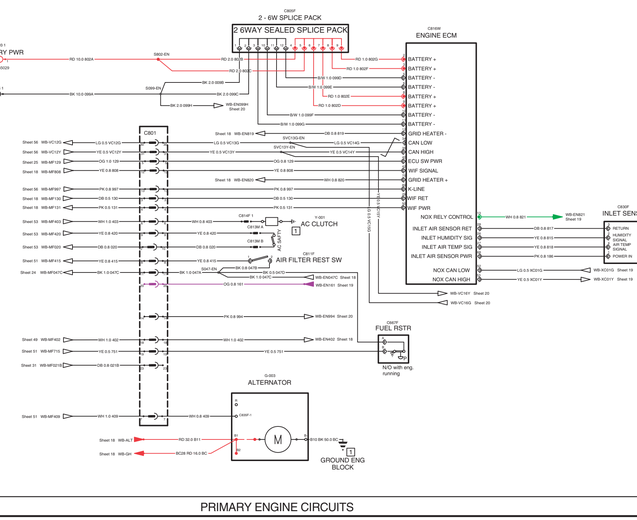




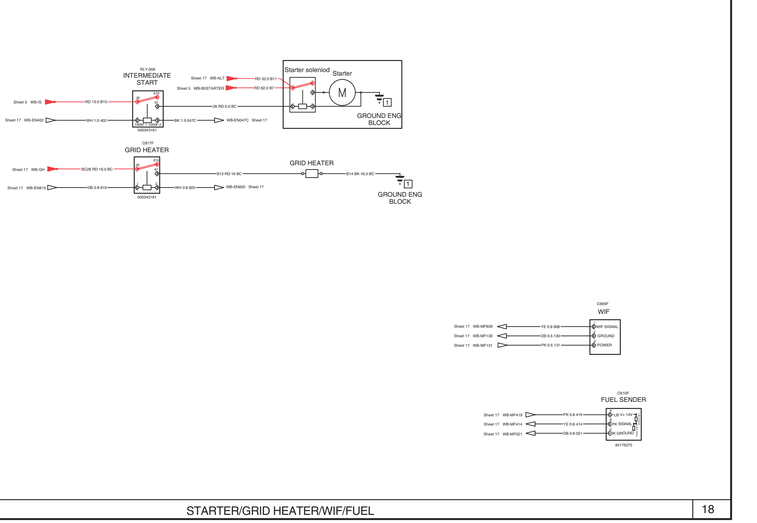
CAB PRESSURIZATION AND CONTROLLER INTERFACE | 15



CAB SPLICE PACKAGES | 16

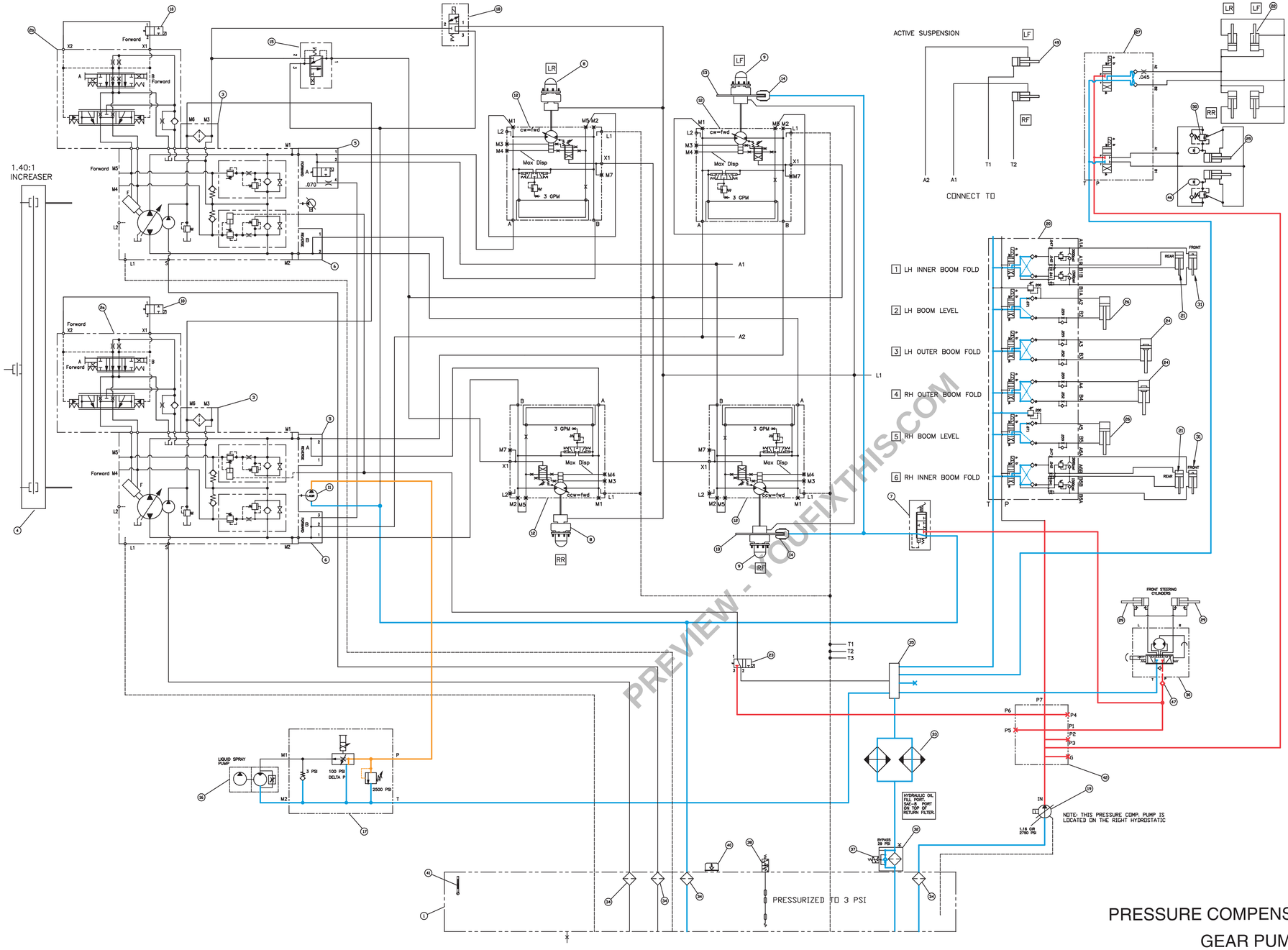


PRIMARY ENGINE CIRCUITS | 17



STARTER/GRID HEATER/WIF/FUEL | 18

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ITEM	DESCRIPTION
1	RESERVOIR, HYDRAULIC OIL
2a	PUMP, HYDROSTATIC - 90 SERIES W/11T
2b	PUMP, HYDROSTATIC - 90 SERIES W/13T
3	FILTER ASSY., CHARGE PUMP
4	2 PUMP DRIVE, GEAR INCREASER-1.40:1
4	
5	TEE BLOCK W/ TRACTION ASSIST CARTRIDGE
6	TEE BLOCK
7	DYNAMIC BRAKE PEDAL
8	REAR HUB W/ LOBED BRAKE - 28.4:1
9	FRONT HUB W/ LOBED BRAKE - 21.2:1
10	VALVE SHUNT
11	GEAR PUMP (PRODUCT PUMP)
12	WHEEL MOTOR - 51 SERIES (SUNSTRAND)
13	DISK BRAKE ROTOR (FRONT)
14	BRAKE CALIPERS
15	CONTROL VALVE
16	SPRAY PUMP W/ HYD. MOTOR
17	PRESSURE COMP PUMP
18	PARK BRAKE
19	6 BANK VALVE , 90/100 FT CUSHIONED
20	VALVER REVERSE PRESSURE LIMITER
21	CYL., RH & LH INNER BOOM FOLD
22	CYL., AXLE ADJUST
23	CYL., OUTER BOOM FOLD CUSHIONED
24	CYL., PARALLEL LINK
25	CYL., RH & LH BOOM LEVEL
26	2 - SECTION VALVE BANK, AXLE ADJUST, BOOM HEIGHT
27	
28	
29	CYL., STEERING
30	STEERING CONTROL UNIT
31	CYL., RH & LH INNER BOOM FOLD CUSHIONED
32	FILTER ASSY. COMPLETE, RETURN AUXILIARY FLOW
33	OIL COOLER, (HEAT EXCHANGER)
34	STRAINER, SUCTION
35	HYDRAULIC RETURN MANIFOLD
36	
37	INDICATOR, AUX FILTER, PRESSURE SWITCH - N/C 25 PSI TO OPEN
38	MULTI-LEVEL, HYD. OIL TEMP. - N/C 200 DEGREE F TO OPEN
39	SWITCH, CHARGE PRESSURE -
40	BREATHER, SPIN 3 PSI
41	INDICATOR, SIGHT GUAGE / TEMP. GUAGE, HYD. OIL
42	VALVE MANIFOLD
43	
44	CYLINDER, LADDER FOLD
45	
46	ACCUMULATOR
47	CHECKVALVE
48	ORIFICE, .042
49	CYLINDER, ACTIVE SUSPENSION
50	VALVE, C'BALANCE SET @ 2200 PSI

LEGEND

PRESSURE COMPENSATED PISTON PUMP SUPPLY

GEAR PUMP (PRODUCT PUMP) SUPPLY

RETURN TO TANK/SUMP

PATRIOT 4430 SPRAYER HYDRAULIC SCHEMATIC RAC 84534620

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TRANSMISSION Hydrostatic - Torque

NOTICE: *Plugs or fittings installed into aluminum housings should always be torqued to the lower values specified for internal hex plugs of the same size.*

NOTE: *If any plugs or fittings are removed from the pump or motor during servicing, they should be torqued as indicated below.*

NOTE: *Always install new O-rings before reinstalling the plugs or fittings.*

Hydrostatic pump drive

Description	Torque
Flex plate mounting bolts	**40.7 N·m** (**30 lb ft**)
Pump drive to isomount mounting bolts	**219.6 - 242.7 N·m** (**162 - 179 lb ft**)

Hydrostatic pumps

Description	Torque
Pump/Fitting 7/16-20 O-ring	**20 N·m** (**14.8 lb ft**)
Pump/Fitting 9/16-18 O-ring	**37 N·m** (**27.3 lb ft**)
Pump/Fitting 3/4-16 O-ring	**68 N·m** (**50.2 lb ft**)
Pump/Fitting 7/8-14 O-ring	**95 N·m** (**70.1 lb ft**)
Pump/Fitting 1-1/16-12 O-ring	**163 N·m** (**120.2 lb ft**)
Pump/Fitting 1-5/16-12 O-ring	**190 N·m** (**140.1 lb ft**)
Mounting Pad Bolts	**256 N·m** (**188.8 lb ft**)
Charge Pump Cover Retainer Bolts	**13.5 N·m** (**10.0 lb ft**)
Control Mounting Screws	**16 N·m** (**11.8 lb ft**)
Pressure Control Pilot Screws	**5.4 N·m** (**4.0 lb ft**)
Orifice Plugs	**3 N·m** (**2.2 lb ft**)
Charge Relief Valve Lock Nut	**52 N·m** (**38.4 lb ft**)
Pressure Adjusting Screw Lock	**20 N·m** (**14.8 lb ft**)
Bypass Actuator	**41 N·m** (**30.2 lb ft**)
Neutral Adjusting Screw Lock	**7 N·m** (**5.2 lb ft**)
Seal Carrier Retainer Plate Screws	**16 N·m** (**11.8 lb ft**)
Multi-function Valve Cartridge	**89 N·m** (**65.6 lb ft**)
Hydrostatic Pump Mounting Bolts	**67.8 - 74.6 N·m** (**50.0 - 55.0 lb ft**)

TRANSMISSION Hydrostatic - General specification - Hydrostatic system pressures

Description	Specification
Hydrostatic pump charge pressure • Pressure checked at **1300 RPM**. • Gauge pressure reading equal to charge relief setting plus case pressure.	**24.8 - 26.2 bar** (**360 - 380 psi**)
Pressure limiter setting /system pressure • Pressure checked at **2200 RPM**. • Gauge pressure reading equal to pressure limiter setting **420 bar** (**6090 psi**) plus charge pressure.	**444.8 bar** (**6450 psi**)

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General specification

Item	Specification	
Engine	**8.7 l** (**530 in³**) Case IH Cursor Emission level (tier) 2 or 4 (as equipped)	
Drive	Hydrostatic with full-time, 4-wheel drive. Infinitely variable speed control returns wheel motor swash plates to maximum angle each time hydro lever is returned to neutral, allowing maximum torque for each start.	
Wheel Adjustment	**305 - 399 cm** (**120 - 157 in**) hydraulically adjusted from the cab with manual stops at **2.5 cm** (**1 in**) increments per wheel.	
Suspension	Spring and shock absorber trailing arm suspension that acts independently at each wheel standard. Active suspension optional.	
Steering	Hydraulic power steering. Orbital with master/slave rephasing cylinders.	
Cab	Summer/winter climate control and activated charcoal fresh air filter	
	Optima air seat with swivel, lumbar, ride firmness, side to side and fore/aft shock isolation adjustment	
	Three speed front windshield wiper/washer (intermittent, low, high)	
	Wired for radio includes antenna, 4 speakers.	
	Tilt/telescoping steering column with soft grip automotive type steering wheel	
	Full instrumentation	
	Lighted controls with red spectrum right hand console lighting, map light and two dome lights.	
	Dynamic dry disc service brakes on the front wheels with brake pedal in the cab. Hydraulic wet disc type all wheel parking brakes.	
Travel speed	Up to **48 km/h** (**30 mph**).	
Dimensions	Dry weight	**12256 kg** (**27020 lb**) (380/85 R46 tires, 90 foot boom)
	Tank size	**4542 l** (**1200 US gal**)
	Nozzle spacing	**51 cm** (**20 in**) preset, others available
	Overall length	**8.9 m** (**350 in**)
	Overall width	**3.5 m** (**138 in**) (retracted)
		4.5 m (**175 in**) (extended)
	Overall height	**3.7 m** (**144 in**)
	Wheel base	**4 m** (**160 in**)
	Ground clearance	**137 cm** (**54 in**) (tank empty)
		132 cm (**52 in**) (tank full)
Tire sizes	380/90 R46	
	650/65 R38	
	320/90 R46 (optional)	
	620/70 R38	
Turning Radius	**7.1 m** (**23.3 ft**) 23 feet 3 inches (7.1 meters) from centerline of rear axle	
Boom	Boom length	**18.3 - 27.4 m** (**60 - 90 ft**)
		18.3 - 30.5 m (**60 - 100 ft**)
		36.6 m (**120 ft**)
	Boom tip breakaway	**27.4 m** (**90 ft**) boom — **1.7 m** (**66 in**)
		30.5 m (**100 ft**) boom — **3.2 m** (**126 in**)
		36.6 m (**120 ft**) boom — **2.74 m** (**108 in**)
Product System	Hydraulically driven centrifugal liquid pump with (PWM) electronic control	
	76.2 mm (**3 in**) fill system	
	Full length sparge tube with electric valve control	
	Product strainer - 10 mesh	
	Boom strainers - 50 mesh	
Foam marker	**208 l** (**55 US gal**) - High volume foam marker system. air supply taken from turbocharger or optional engine-driven air compressor.	
Rinse tank	**265 l** (**70 US gal**)	

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TRANSMISSION Hydrostatic - Overview - Drive circuit troubleshooting chart

Drive Circuit Troubleshooting Chart

Symptom	Possible Cause	Corrective Action
Machine will not move.	Hydraulic oil level low.	Fill hydraulic tank to proper level.
	Park brake switch is ON.	Turn off park brake switch.
	Park brake failed to release.	Release park brake.
	Neutral safety switch out of adjustment or faulty	Adjust or replace neutral safety switch.
	Power train control module fuse faulty	Test power train control module. Repair or replace as required
	Power train control module relay faulty.	
	Power train control module faulty.	
	Power train control module wiring faulty	
	Park brake switch faulty. Park brake valve faulty	Test park brake valve and park brake valve. Repair or replace faulty component.
	Motor control valve is faulty.	Test motor control valve. Replace if required.
	Shunt valve is faulty.	Test shunt valve. Replace if required.
	Suction strainers clogged	Clean or replace suction strainer.
	Hydrostatic pump failure.	Test hydrostatic pump. Replace hydrostatic pump if required.
	Pump drive is faulty.	Repair or replace.
Machine only operates in one direction. (forward or reverse).	EDC wiring faulty.	Test the EDC. Repair or replace faulty component.
	EDC coil faulty.	
	High pressure relief valves are faulty.	Adjust multifunction valve. Replace multifunction valve if required.
	Power train control module is faulty.	Test Power train control module. Replace if required.
Drive system will not maintain a constant speed.	Motor control valve wiring faulty	Test motor control valve. Repair or replace faulty component
	Motor control valve faulty.	
	Speed control knob faulty.	Test speed control knob. Replace if required.
The machine wants to move when in the neutral position.	Neutral switch out of adjustment.	Adjust neutral safety switch.
	Neutral safety switch faulty.	Neutral safety switch faulty. Test neutral safety switch.
	Shunt valve faulty.	Repair or replace valve.
Park brake will not engage or disengage.	Wiring faulty.	Test park brake system. Repair or replace faulty component.
Park brake will not engage or disengage	Switch faulty.	Test park brake system. Repair or replace faulty component.
	Fuse faulty.	
	Park brake valve faulty.	
Machine will not slow down or stop properly.	Service brake switch faulty.	Test service brake. Repair or replace faulty component.
	Service brake valve faulty.	
	Service brake wiring faulty.	
Axles will not extend or retract properly.	Axle adjustment switch faulty.	Test axle adjust. Repair or replace faulty component.
	In/out switch faulty.	
	In/out solenoid faulty.	Test axle adjust. Repair or replace faulty component.
	Wiring faulty.	

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SPRAYING - Overview - AIM Command troubleshooting chart

Symptom	Probable Cause	Corrective Action
End Nozzle Valves quit pulsing at higher pressures.	Excessive voltage drop in the system.	The end nozzle valves are most susceptible to voltage drop because they are the farthest from the modules. Check voltages at the end valves, if voltage is below **10.5 V**, there is excessive voltage drop in the system. Check the connections from the battery to the valves and repair any damage or corrosion. Check for minor corrosion at each connector and replace the wiring harnesses if necessary. Check the alternator output and replace alternator if necessary.
Some or all of the valves quit pulsing at high pressures.	Voltages lower than **13.5 V**.	Check the charging system.
	Worn valves.	Disassemble solenoid valves and check the valve poppets for wear. NOTE: If the poppets have deep groves worn into the plunger seal, they should be replaced to return the valves to the normal pressure rating.
Pressure control is unstable or sluggish.	Pressure control needs to be tuned.	If the pressure fluctuates more than **34.45 kPa** (**5.0 psi**) above and below the pressure set point, tune the pressure control so that the response is slower.
	Faulty application system.	Troubleshoot application system. See Application Troubleshooting Chart.
Can't set P1 and/or P2.	Failed pressure sensor.	Remove the sensor and check for material caked in the cavity and clean carefully if necessary. Replace pressure sensor if necessary.
	The pressure sensor has lost connection.	Check the pressure sensor for damaged wires and loose connections and repair if necessary.
	The P1/P2 switch is failed.	Check for a bad switch or wires between the switch and the AIM Command modules and replace or repair as necessary.
The rate controller cannot hold target rate.	Unstable pressure control.	Tune the pressure control.
	Faulty application system.	Troubleshoot application system. See Application Troubleshooting Chart.
All the valves lock open and spray continuously.	The Valve Type in the rate controller is set to PWM.	Change Valve Type to AIM Command (CASE IH AGRICULTURE SCS 4600 or CASE IH AGRICULTURE Viper).

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ENVIRONMENT CONTROL Heating, ventilation and air-conditioning E.40.D

FRAME POSITIONING ..... F

TRAVELLING Towing F.10.D

STABILISING Static levelling F.20.C

STABILISING Working stabilising F.20.D

HITCH AND WORKING TOOL ..... H

BOOM Lift H.20.B

BOOM Tilt H.20.C

BOOM Unfold H.20.G

BOOM Stabilising H.20.J

FIELD PROCESSING L

SPRAYING L.20.A

SPRAYING Plumbing system L.20.B

SPRAYING Pressure system L.20.C

SPRAYING End marker L.20.D

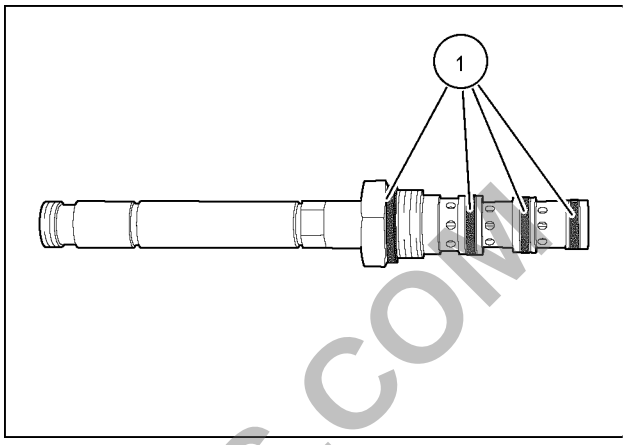
RINSING L.22.A

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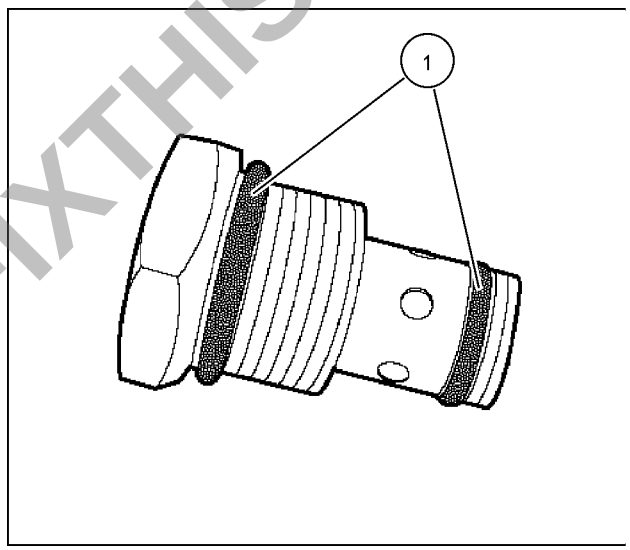
Valve block - Assemble - Six section valve bank

1. Inspect solenoids for any damage. Replace a valve if damaged. Replace all O-rings **(1)**.



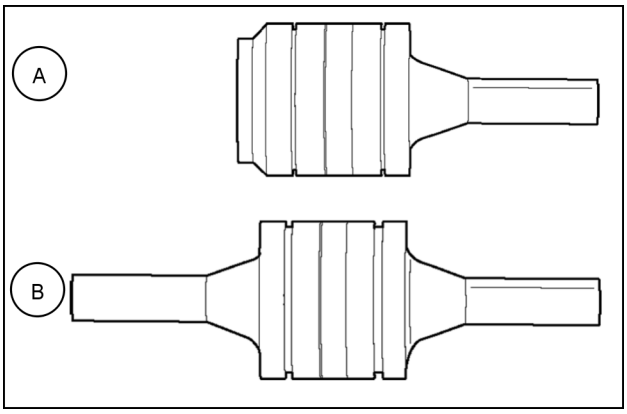
RCPH11BEN317BAU 1

2. Inspect the check valve for damage. Replace if necessary. Replace the O-rings **(1)**.



RCPH11BEN326BAU 2

3. Inspect the pilot piston for damage or excessive wear. If necessary, replace the nylon ring. Single pilot piston **(A)** Double pilot piston **(B)**.



RCPH11BEN328BAU 3

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CONNECTOR C104F - AIM CMD PRESS INC/DEC

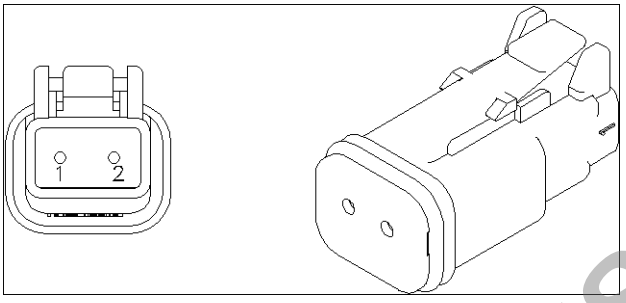
CONNECTOR C104F - AIM CMD PRESS INC/DEC			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	CN884 (GY)	AIM CMD DECREASE	
2	CN159M (OR) CN159N (OR)	MASTER PWR ON MASTER PWR ON	
3	CN883 (WH)	AIM CMD INCREASE	

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CONNECTOR CC511F - RH BOOM SECT #7 CAP PLUG ONTO J511 BEFORE SHIPPING

CONNECTOR CC511F - RH BOOM SECT #7 CAP PLUG ONTO J511 BEFORE SHIPPING			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	-	-	
2	-	-	



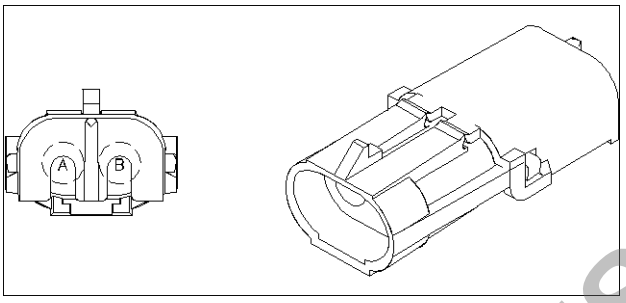
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CONNECTOR C923M - AIM CMD MANUAL

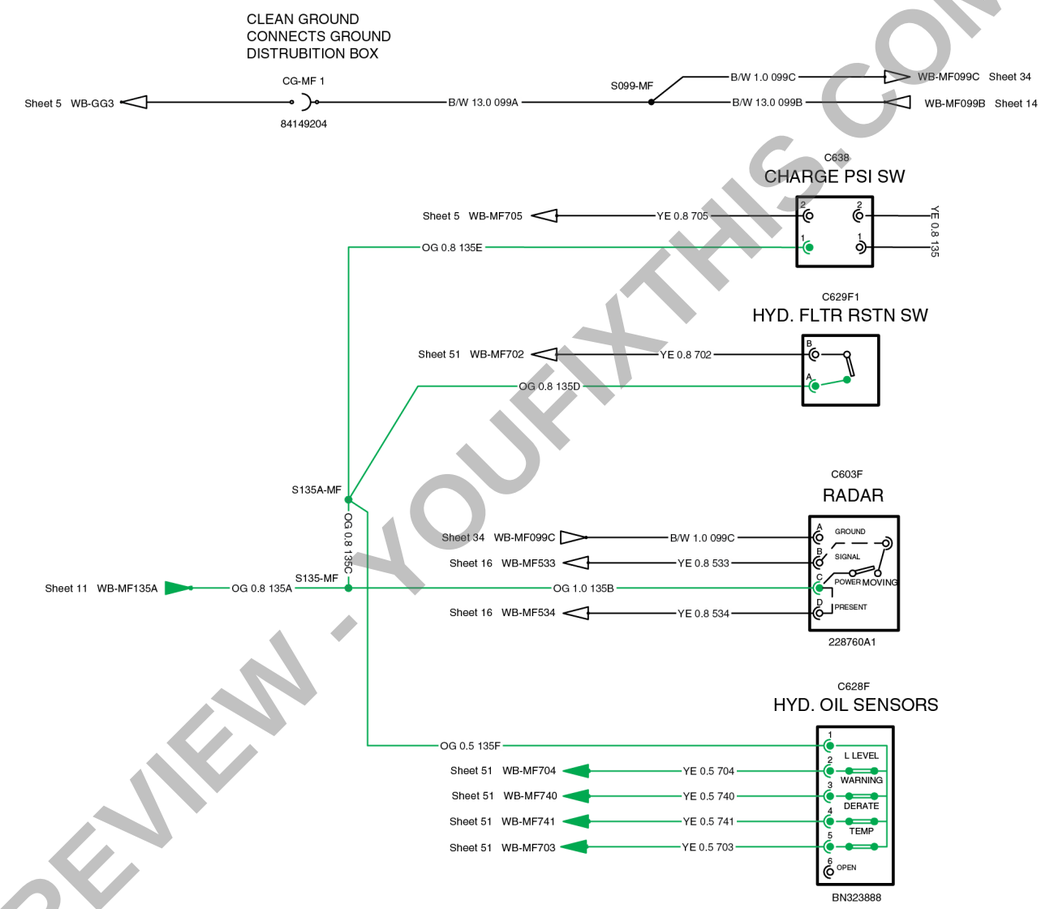
CONNECTOR C923M - AIM CMD MANUAL			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
A	AM138D (OR)	AIM CMD MANUAL	
B	AM852J (BK)	GND	



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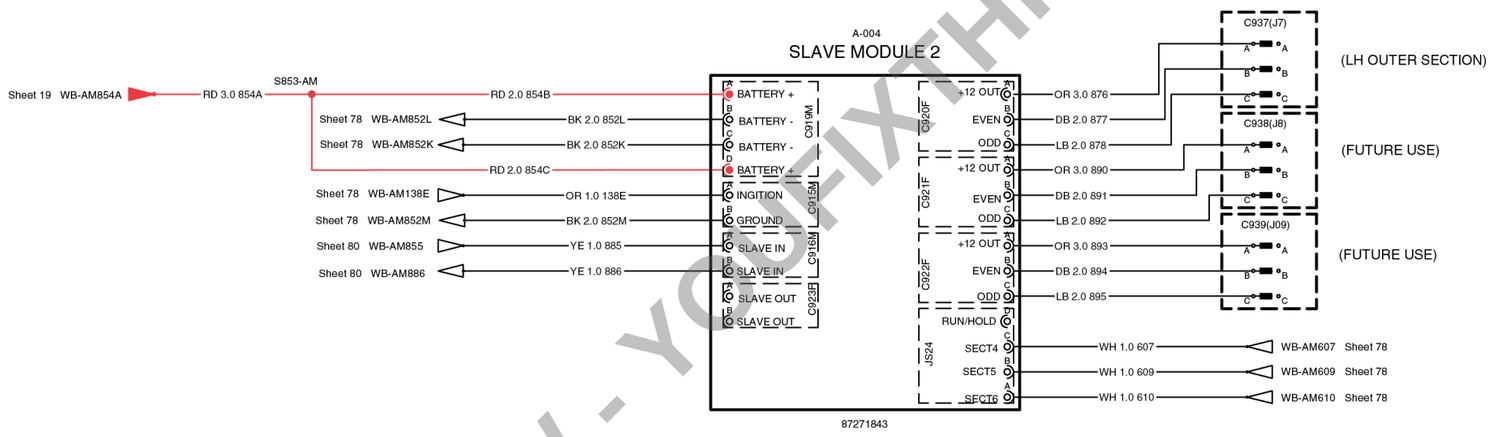
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HYDRAULIC SENSORS

34

RCPH11BEN034HAM 1

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AIM COMMAND SLAVE 2

81

RCPH11BEN081HAM 1

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19083-Voltage supply 3 - coolant control valve and reverting valve (UB3) electrical - open circuit to UB3 - P20A0 vent valve (reductant purge control valve) - open circuit

Context:
The denox module/supply module has sensed a fault with the voltage supply for the coolant control valve and the reverting valve, located in the denox module/supply module. Ensure all connectors are secured properly on the denox module/supply module and all lines are in operable condition. If the fault does not reset or reoccurs, replace the denox module/supply module.

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Test Type	From	To	Expected Results
1. Continuity	Oil temp / press sensor connector (Pin: 1)	connector on engine wiring harness (Pin: 24)	Approx. **0 - 0.10 ohms**
2. Continuity	Oil temp / press sensor connector (Pin: 2)	connector on engine wiring harness (Pin: 28)	Approx. **0 - 0.10 ohms**
3. Continuity	Oil temp / press sensor connector (Pin: 3)	connector on engine wiring harness (Pin: 32)	Approx. **0 - 0.10 ohms**
4. Continuity	Oil temp / press sensor connector (Pin: 4)	connector on engine wiring harness (Pin: 27)	Approx. **0 - 0.10 ohms**
5. Short Circuit	connector on engine wiring harness (Pin: 28)	connector on engine wiring harness (Pin: 24, 27, 32)	Open Circuit
6. Short Circuit	connector on engine wiring harness (Pin: 24)	connector on engine wiring harness (Pin: 27, 32)	Open Circuit
7. Short Circuit	connector on engine wiring harness (Pin: 27)	connector on engine wiring harness (Pin: 32)	Open Circuit

A. If continuity/shorts test is successful, go to step **4**.

B. If continuity/shorts test is unsuccessful, find and repair the damaged section(s) of the wiring harness.

4. Operation: Check for ECU Voltages and Ground Continuity.
Vehicle Status (when removing connector ECU connector): Key Off Engine Off.
Vehicle Status (when performing test): Key On Engine Off.
Vehicle Status (when replacing connector ECU connector): Key Off Engine Off.

Use product schematic for a reference, remove connector from the ECU and check for voltage and continuity at the appropriate pins defined in the test table below. Use the **0.4 mm** (**0.017 in**) diameter test probes from the Tier II (NEF) Diagnostic Repair Kit **380040185** when connecting the DMM to the ECU connector. Make sure the DMM's test lead resistance is taken into account when making any continuity measurements.

Important Note:
Check and verify that the Vehicle Status is correct for each operation. Potential ECU damage could result when removing and replacing main ECU connectors if this is not followed.

Test Type	From	To	Expected Results
1. Voltage	ECU connector (Pin 2, 3, 8, 9, 40)	Ground (engine block)	Approx. **12 volts**
2. Continuity	ECU connector (Pin 5, 6, 10, 11)	Ground (engine block)	Approx. **0 - 0.10 ohms**

A. If the voltages and ground paths are correct and the Oil temp / press sensor was not replaced on a prior diagnostic of this type, replace the sensor.

B. If the voltages and ground paths are correct and the Oil temp / press sensor was replaced on a prior diagnostic of this type, re-initialize the ECU as if it was blank (new) and load the appropriate data-set.

C. If the voltages and ground paths are correct and the ECU was re-initialized on a prior diagnostic of this type, replace the ECU.

D. If the voltages and ground paths are not correct, refer to schematic and determine root cause of power or continuity problem(s).

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3192-Cylinder 2 warning - Open Load

Context:
The engine control unit (ECU) has determined that an open circuit condition exists in the Cylinder 2 injector circuit. A power stage component energizes the unit injection system transistors and simultaneously observes the current flow in the high-side and low-side switching branch by sensing resistors. If there is a deviation from the expected current flow the component detects specific errors and reports them to the ECU. This error message is then rearranged so it holds information on performed injections, errors of cylinders on the same bank, bank specific errors and cylinder specific errors. The rearranged error message is then compared to applicable error patterns and if there is a match the failure corresponding to the matched pattern is output. If an error message doesn't match any pattern the defect is treated as an unclassifiable error. Monitoring is performed once per camshaft revolution. This error is the result of an open circuit failure being present for over 3 camshaft revolutions. As a result of this error an individual cylinder or bank is shut off, based on parameters established in the ECU. Certain parameters, as currently applied, are permanent (without a healing possibility, once tested by switching on the component to see if the defect is still present). and others evoke an irreversible or reversible shut off of the engine to be executed.

Cause:
The Engine Control Unit (ECU) has determined that there is a fault associated with the current monitoring of the Cylinder 2 injector output power driver stage.

Possible failure modes:

1. Faulty injection valve or open solenoid windings.
2. Faulty electrical wiring, open circuit (damaged wiring).
3. Faulty ECU, hardware or software.

Solution:

1. Verify this error code is still present and in an active state.

   A. If the error is still present and active, continue with step **2**.

   B. If the error is no longer present or is in an inactive state, continue with step **5**.
2. Carefully disconnect the engine injector harness from the ECU at connector. Use a multi-meter to check the resistance, on the engine injector harness side of connector between pins 6 and 11. There should be **0.4 - 0.5 Ω**.

   A. If the resistance is within range, the ECU may have failed. Try reloading the ECU software and if the fault reoccurs, replace the ECU.

   B. If the resistance was significantly greater than maximum range, continue with step **3**
3. Disconnect the engine injector harness from the injector (valve) cover at connector. Use a multi-meter to check resistance on the injector (valve) cover side of connector from pin 1 to pin 2. There should be **0.4 - 0.5 Ω**.

   A. If a small amount of resistance exists, there is open circuit condition in the engine injector harness between connector and valve cover connector. Locate and repair the broken conductor.

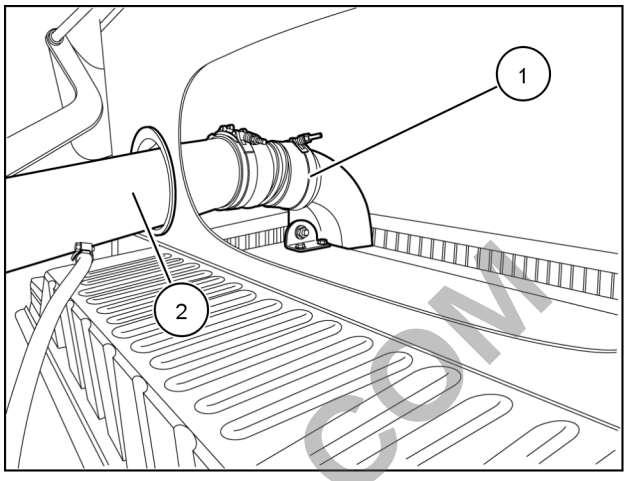
   B. If the resistance was significantly greater than maximum range, continue with step **4**
4. Remove the injector (valve) cover and disconnect the injector harness from the Cylinder 2 injector at connector terminal 1 (high side ring terminal) Use a multi-meter to check resistance, on the Cylinder 2 injector, from terminal 1 to terminal 2. There should be **0.4 - 0.5 Ω**.

   A. If the resistance is within range, there is an open circuit condition in the injector harness, between valve cover connector and injector 2 connector. Locate and repair the broken conductor.

   B. If the resistance was significantly greater than maximum range, the Cylinder 2 injector solenoid coil has failed. Replace the injector.

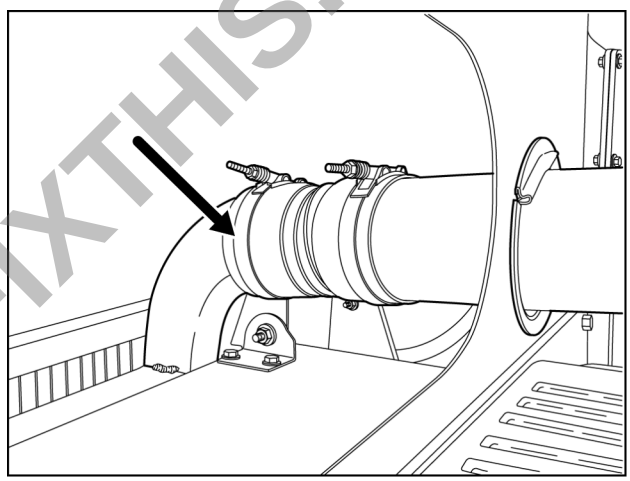
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13. Loosen clamp **(1)** and remove the air to air tube **(2)**.



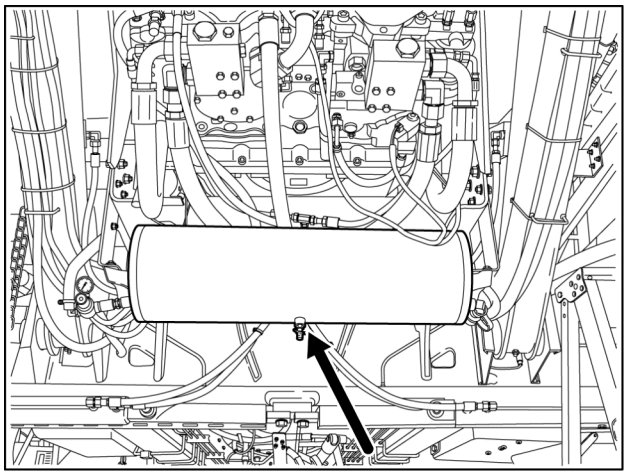
RCPH11SPR039BAC 13

14. Loosen clamp.



RCPH11SPR040BAC 14

15. Slowly release pressure from air tank.



RCPH11SPR072BAC 15

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ENGINE AND PTO IN - B

ENGINE COOLANT SYSTEM - 50.A

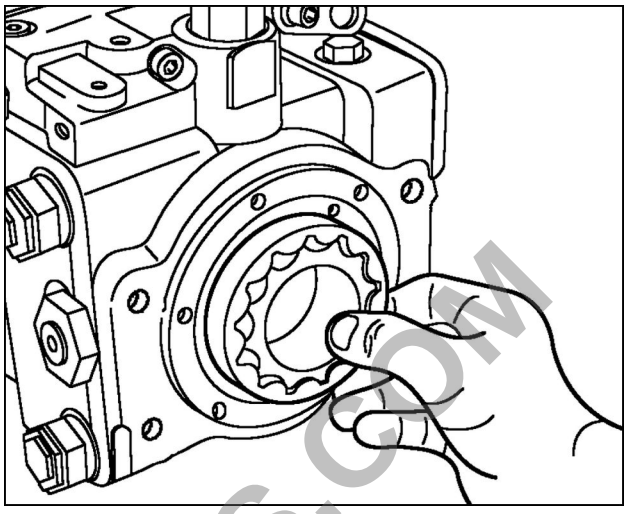
Patriot 4430

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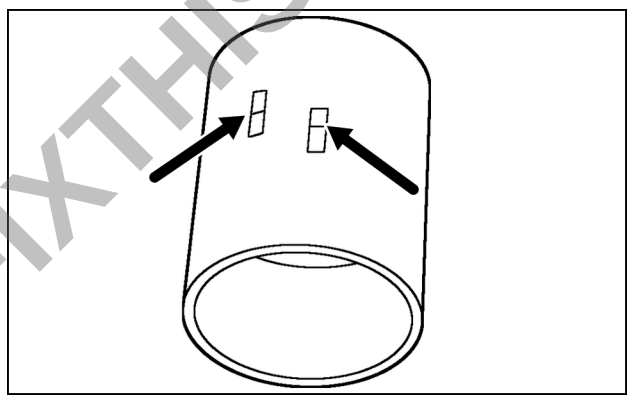
4. Install the gerotor assembly.

NOTE: *Prior to installation, apply petroleum jelly to the I.D., O.D., and side faces of the gerotor assembly to provide initial lubrication.*



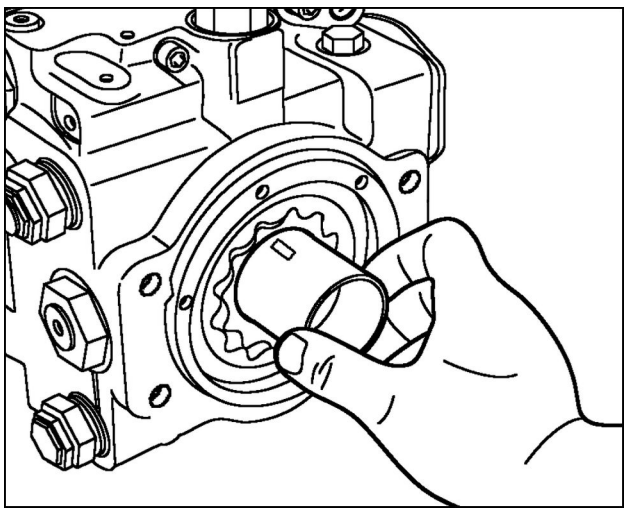
RCPH11BEN070BAS 4

5. Install the charge pump drive key into the charge pump shaft and retain with petroleum jelly.



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6. Install the charge pump shaft. The internally splined end of the shaft must engage the main pump shaft.



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Gland Nut	Metric Value	U.S. Value
Axle Adjust	**305 N·m**	**225 lb ft**
Boom Level 60 ft. 90 ft. 100 ft. Boom	**373 N·m**	**275 lb ft**
Boom Level 120 ft Boom	**373 N·m**	**275 lb ft**
Inner Boom Fold 60 ft. 90 ft. 100 ft. Boom	**305 N·m**	**225 lb ft**
Inner Boom Fold 120 ft Boom	**373 N·m**	**275 lb ft**
Ladder	**14 N·m**	**10.5 lb ft**
Mid Boom Fold 120 ft Boom	**217 N·m**	**160 lb ft**
Outer Boom Fold 60 ft. 90 ft. 100 ft. Boom	**203 N·m**	**150 lb ft**
Parallel Link	**305 N·m**	**225 lb ft**
Steering	**305 N·m**	**225 lb ft**

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3. Slide cylinder rod into upper suspension arm and install the following components:

   E. Spring washer

   F. Urethane bushing - (red)

   G. Retainer washer

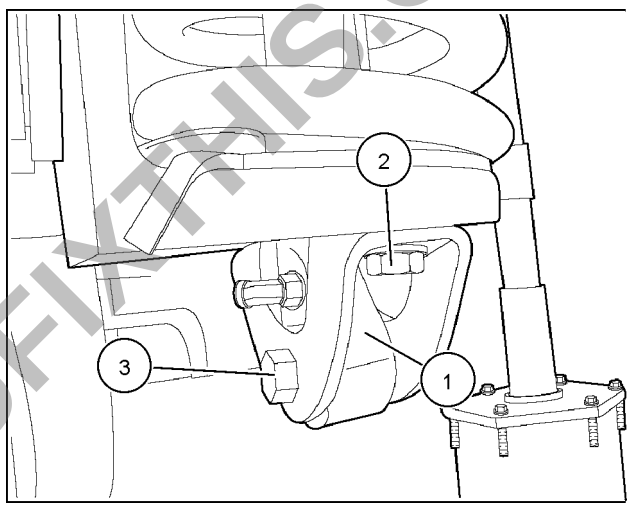
   H. Spring washer

   I. Two nuts

   J. Tighten to compress rubber and urethane to achieve a dimension of **17 mm** (**0.67 in**) from top of cylinder rod to top of jam nut.

NOTE: *Apply anti-seize to cylinder rod end threads before assembly of nuts.*

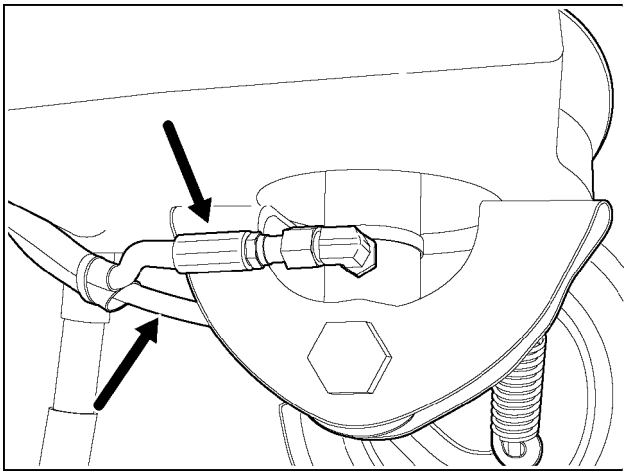
4. Apply thread sealant primer and removable Loctite® 243-31 onto bolts and nut prior to installing. Install the lower shock bracket **(1)** with two bolts **(2)**. Install lower cylinder nut and bolt **(3)** and torque to **292 - 332 N·m** (**215 - 245 lb ft**).



RCPH11BEN395BAU 3

5. Install two hydraulic hoses onto lower cylinder end and tighten to specifications.

NOTE: *Only on the front axles.*



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6. Install the wheel. Refer to **WHEELS AND TRACKS Wheels - Install — Wheels (D.50.C)** for procedure.

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FRAME AND CAB - E

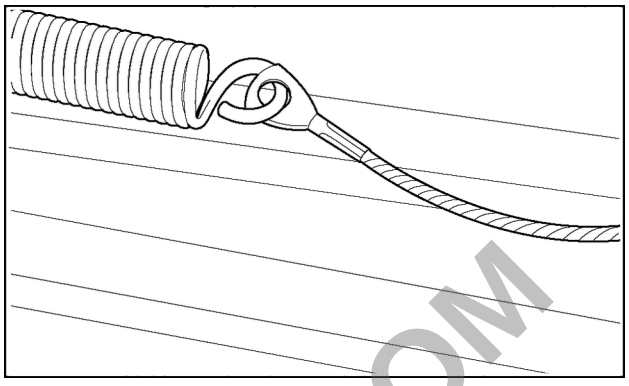
USER CONTROLS AND SEAT Operator seat - 32.C

USER CONTROLS AND SEAT Operator seat - Assemble 18
USER CONTROLS AND SEAT Operator seat - Disassemble 7
USER CONTROLS AND SEAT Operator seat - Install 29
USER CONTROLS AND SEAT Operator seat - Remove 5
USER CONTROLS AND SEAT Operator seat - Tilt 3

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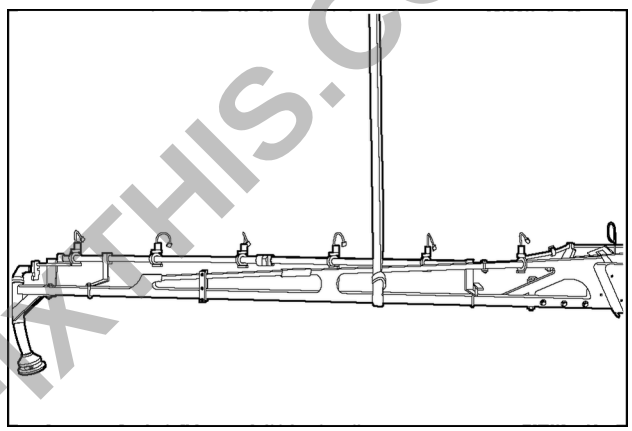
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16. Push the boom breakaway tip over center in the other direction and remove the other cable end from the spring.



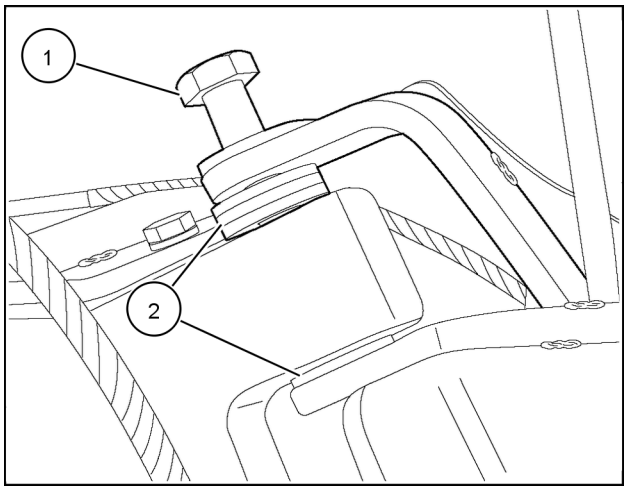
RCPH11BEN002AAR 9

17. Attach proper lifting device to the boom breakaway tip.



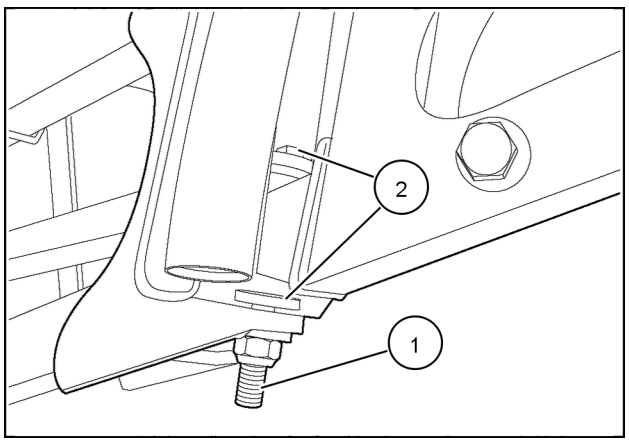
RCPH11BEN031BAR 10

18. Remove upper hinge bolt **(1)**, nut and nylon washers **(2)**.



RCPH11BEN035BAR 11

19. Remove lower hinge bolt **(1)**, nut and nylon washers **(2)**. Remove the boom breakaway tip.



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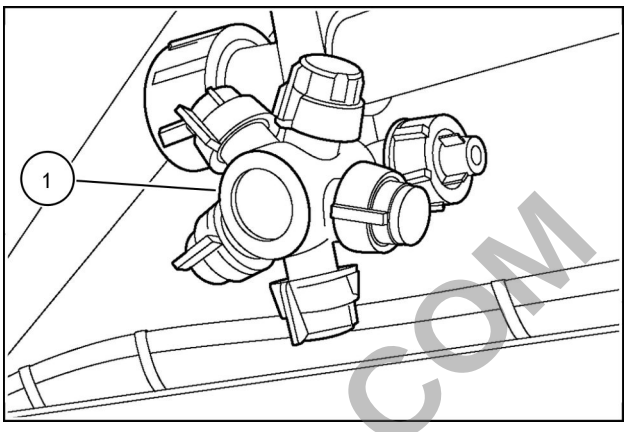
Symptom	Probable Cause	Corrective Action
A single boom section will not pulse or spray.	Faulty fuse.	Check fuses in machine fuse panel and AIM Command modules and replace as necessary.
	Faulty wiring.	Repair wires or replace boom harness.
	Shorted solenoid.	Identify shorted coil by unplugging the valve from the harness and check the resistance across the two-pin connector. The normal resistance should be near **21 - 23.5 Ω** . If a valve shows significantly less resistance, replace the coil.
Every other valve on the boom is not working.	AIM Command modules have been damaged by a voltage spike in the system.	Check the outputs at the module. If no outputs are present the module is faulty and needs replacement.
AIM Command valves will not pulse.	Short in the wiring to the AIM Command modules or in the modules.	Check AIM Command fuses located in the power wires at the battery connection. If blown fuse is found, repair wiring then replace fuse.
A single nozzle valve will not pulse.	Valve contaminated with debris.	Disassemble valve to remove the debris and clean the valve. If several valves in a boom section plug, check the boom strainer for damage and replace if necessary.
	Failed valve coil.	Check the valve coil by placing a screwdriver near the coil housing. A working valve coil will create a magnetic field strong enough to attract the screwdriver when on. Replace valve coil if necessary.
Nozzle valve drips or doesn't shut off.	Nozzle contaminated with debris.	Disassemble and clean the nozzle. NOTE: If several valves in a boom section plug, check the boom strainer for damage and replace if necessary.
Several valve solenoids have failed.	Starting the machine with AIM Command in the AUTO or the MANUAL mode. IMPORTANT: Starting the machine with AIM Command in the AUTO or the MANUAL mode can send voltage spikes through the system that can damage valve coils.	Replace failed solenoids. Turn OFF AIM Command when shutting down machine to prevent further damage.
	High or low voltage to the nozzle valves.	Check nozzle valves.

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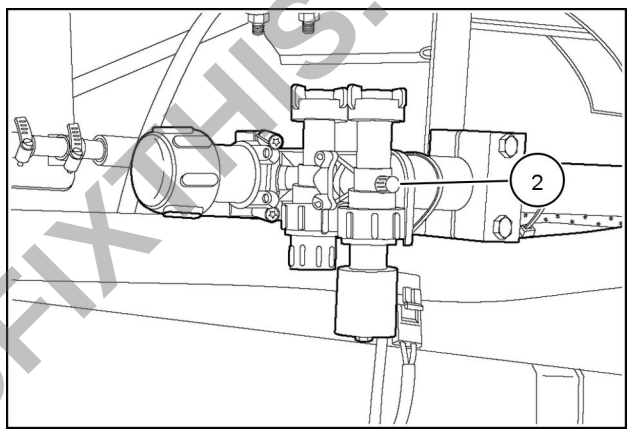
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Nozzle - Dynamic description - Nozzle bodies

This machine can be fitted with either the 5-way Arag nozzle body **(1)**, a single body Combo-Rate or a dual body Combo-Rate nozzle **(2)**. It is critical to know what nozzle body the unit is equipped with when ordering replacement parts for the AIM Command system (if equipped. Each nozzle body is unique and the AIM Command solenoid valves are not interchangeable. As a result they will not seal if the valve and nozzle body aren't matched (for example a Tee-Jet Aim Command valve cannot be installed on an Arag body without experiencing seal problems/leaks).



RCPH11BEN058BAR 1



RCPH11BEN050BAR 2

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