821G
921G
Tier 4B (final)
Wheel Loader

SERVICE MANUAL

Part number 48083737
1st edition English
December 2016

CASE CONSTRUCTION

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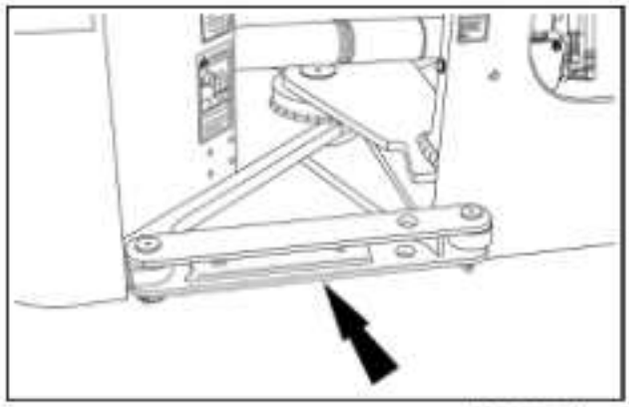
Hydraulic steering system - Service instruction

921G WHEEL LOADER XR-EH, NEW CAB TIER4B NA	NA
921G WHEEL LOADER ZBAR-EH, NEW CAB TIER4B NA	NA

A. Pressure setting test

1. Install the articulation lock.

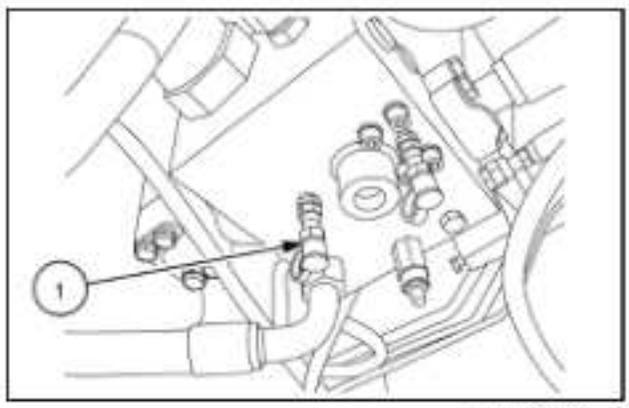
NOTICE: *when performing the following pressure check and adjustment, the articulation lock must be installed. Use caution when working in or near the articulation area.*



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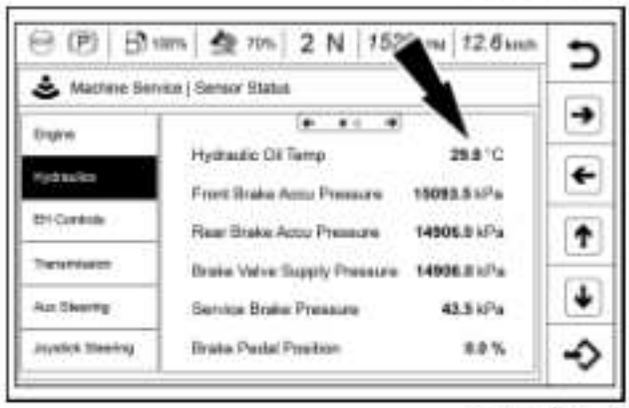
2. Remove the dust cap from the test port **(1)** located on the steering priority valve. Connect a **345 bar** (**5002 psi**) test gauge to the test port **(1)**.

NOTE: *make sure when you connect the pressure gauge that you do so in a manner that you can read the pressure gauge while sitting on the operator seat.*



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3. Make sure that the temperature of the hydraulic oil is **54 - 57 °C** (**129 - 135 °F**). The procedure to heat the hydraulic oil is the following.
   • Check the oil temperature through the display in the cab (access to "Machine service – Sensor Status – Hydraulics" screens).
   • Heat the hydraulic oil:
   A. Start the engine and run at full throttle.
   B. Hold the bucket control lever in the ROLLBACK position while raising and lowering the lift arms from ground level to full height.
   C. Continue this procedure until the hydraulic oil temperature is **54 - 57 °C** (**129 - 135 °F**). After heating oil to the operating temperature, lower the bucket to the ground.
4. Run the engine at full throttle.
5. Steer hard in either direction over the relief pressure.
6. Record the reading on the test gauge.



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20245-(DTC 4F15)-Water in fuel sensor or sensor circuit failure

NOTE: *this fault code is for the Water in Fuel sensor with black connector housing. If the connector housing of the sensor is white take care that the pins 2 and 3 are reversed.*

Context:
The water in fuel sensor provides a diagnostic self-test signal (less than **3.9 V** for **2.5 s +/- 20%**) at key-ON. If the Engine Control Unit (ECU) does not sense the diagnostic self-test signal, this fault will occur and there will be no monitoring of water content in the fuel supply.

Cause:
The ECU has not received an acceptable water in fuel sensor self-test signal.

Possible failure modes:

1. Faulty water in fuel sensor circuit wiring, damaged.
2. Faulty water in fuel sensor, internal failure.
3. Faulty software of the ECU.

Solution:

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

   Use the Easy Engine software provided on the Electronic Service Tool (EST) to check the fault status.

   A. If the fault is still present and active, continue with Step **2**.

   B. If the fault is no longer present or is in an inactive state, Continue with Step **7**.
2. Use the EST to check the status of the related fault

   17429 - (DTC 4415)-Water in fuel detected or water in fuel circuit failure

   A. If fault **17429 - (DTC 4415)-Water in fuel detected or water in fuel circuit failure** is active, resolve fault **17429 - (DTC 4415)-Water in fuel detected or water in fuel circuit failure**, then determine if this fault is also resolved.

   B. If fault **17429 - (DTC 4415)-Water in fuel detected or water in fuel circuit failure** is not active,continue with Step **3**.
3. Check the water in fuel sensor for the initial self-test voltage pulse.

   Carefully back probe the water in fuel sensor at connector **X-WIF** pin 1.

   With the help of an assistant, use a multimeter to perform the following test at Key-ON:

From	To	Value
Connector **X-WIF** pin 1	Ground	There should be less than **3.9 V** for **2.5 s +/- 20%**
NOTE: *the signal line should switch to battery voltage after the self-test period.*		

   A. If the self-test is successful, continue with Step **4**.

   B. If the self-test is not successful, the water in fuel sensor has failed internally. Replace the sensor.
4. Check for open, short and grounded circuit conditions in the water in fuel sensor circuit.

   Disconnect the water in fuel sensor at connector **X-WIF**.

   Disconnect the vehicle (VE) harness from the ECU at the connector **X-ECU**.

   Disconnect the connector **X-ENG** from the connector **X-CAB_E**.

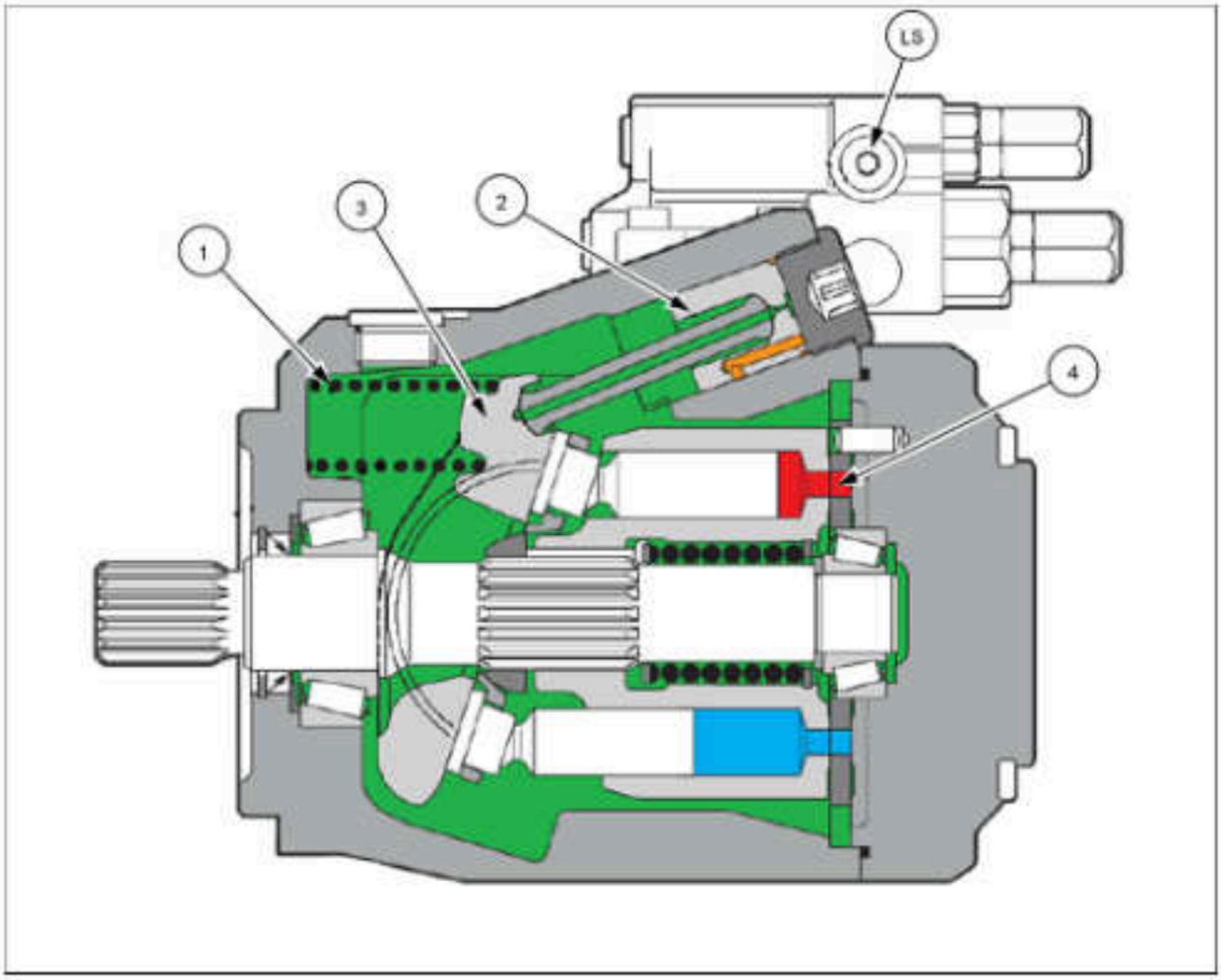
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From	To	Value
Connector **A-SFB** pin OUT_09_H	Chassis ground	There should be Short Circuit

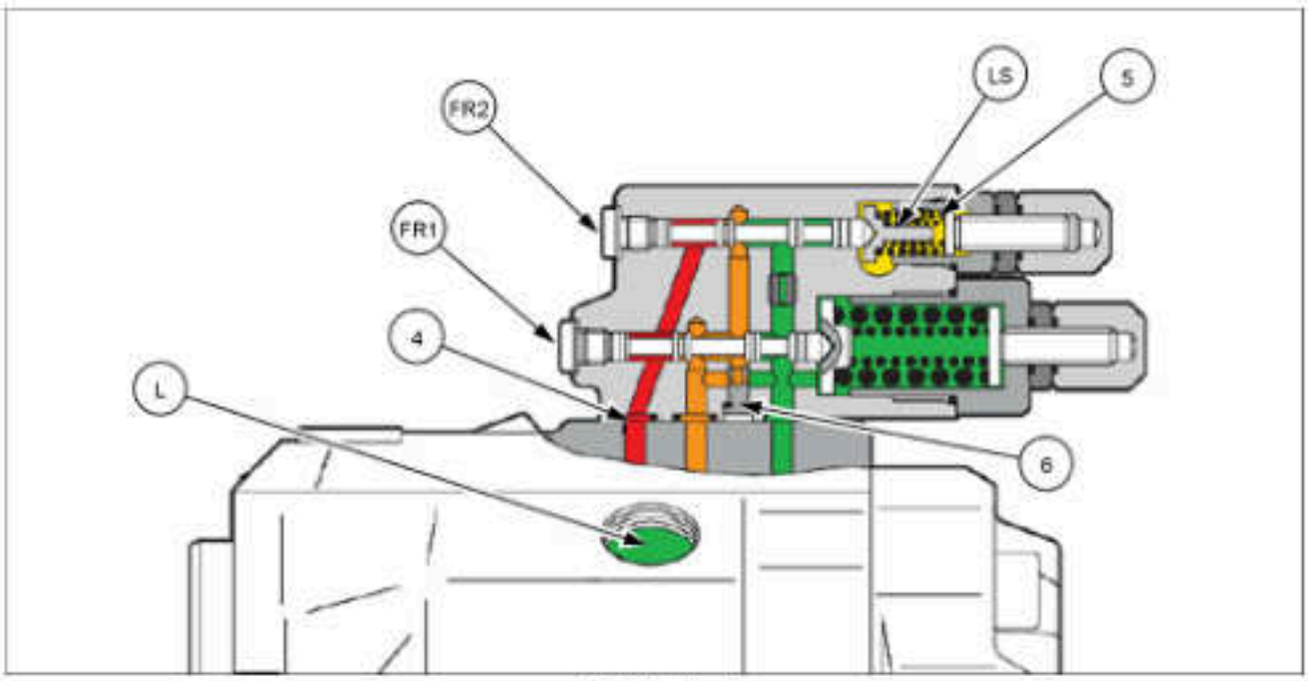
A. If there is a Short Circuit, replace the Smart Fuse Box.

Wiring harnesses - Electrical schematic sheet 03 (55.100)

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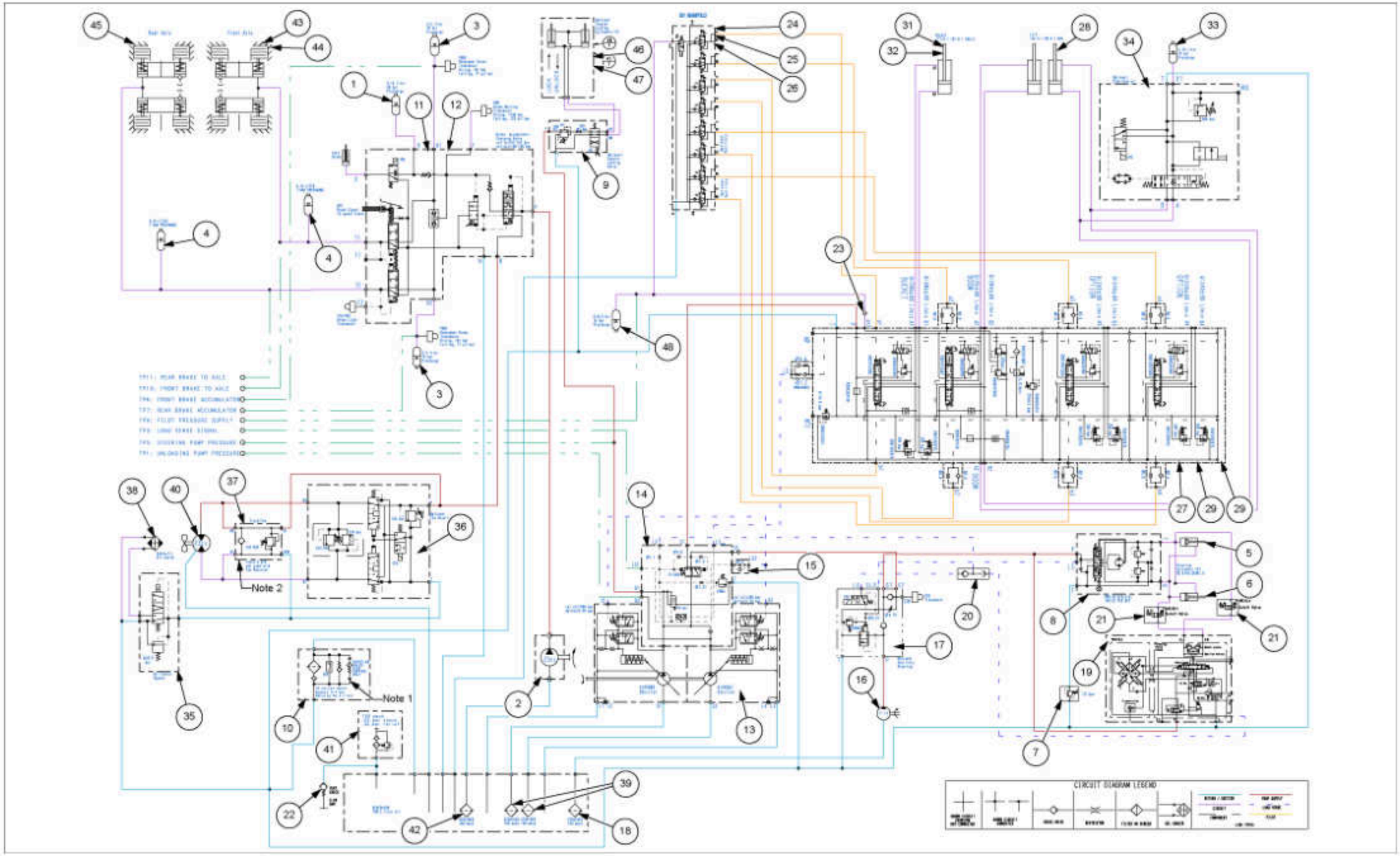


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RDPH11WHLE88PAN 3

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