SERVICE MANUAL

T8.320 / T8.350 / T8.380 / T8.410
T8.380 SmartTrax™ / T8.410 SmartTrax™
Powershift Transmission (PST)
Tractor

PIN ZERE08100 and above

Part number 47799440
1st edition English
November 2014

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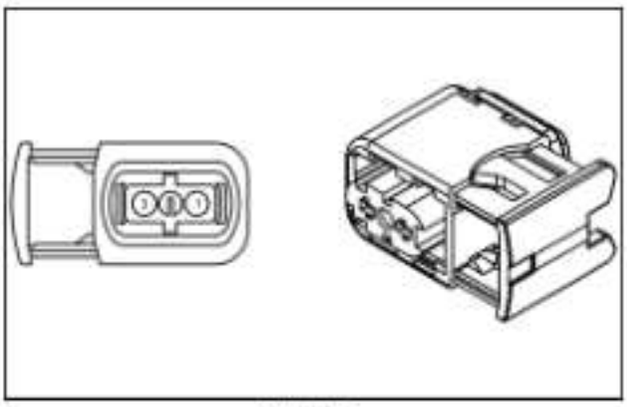
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Connector X-9018 - Exhaust gas absolute pressure sensor

CONNECTOR X-9018 - Exhaust gas absolute pressure sensor			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	EN-033	Sensor supply	**Wiring harnesses - Electrical schematic sheet 05 - Engine inputs/outputs (55.100)**
2	EN-034	Sensor ground	
3	EN-035	Sensor signal	



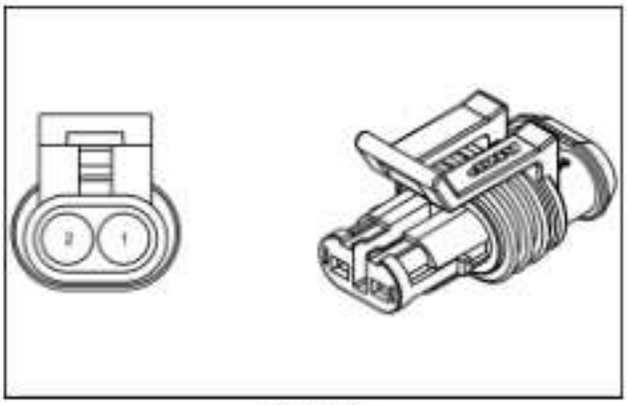
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Connector X-9019 - Fuel pre-filter clogging pressure sensor

CONNECTOR X-9019 - Fuel pre-filter clogging pressure sensor			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	EN-034B	Sensor ground	**Wiring harnesses - Electrical schematic sheet 05 - Engine inputs/outputs (55.100)**
2	-	-	
3	EN-037A	Sensor supply	**Wiring harnesses - Electrical schematic sheet 05 - Engine inputs/outputs (55.100)**
4	EN-036	Sensor signal	

Connector X-9020 - Fuel filter clogging sensor

CONNECTOR X-9020 - Fuel filter clogging sensor			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	EN-606	Ground	**Wiring harnesses - Electrical schematic sheet 05 - Engine inputs/outputs (55.100)**
2	EN-038	Signal	



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19070-Upstream SCR catalyst temperature too low

Context:
For information regarding the functional operation of the Selective Catalytic Reduction (SCR) system see **Selective Catalytic Reduction (SCR) electrical system - Dynamic description (55.988)**. The Engine Control Unit (ECU) **A-9000** monitors the SCR upstream exhaust gas temperature sensor **B-9107**. If the temperature upstream of he SCR catalyst is below **-40.04 °C** (**-40.07 °F**), this fault will occur.

Cause:
The ECU **A-9000** is sensing the upstream SCR catalyst temperature is below the lower threshold limit.

Possible failure modes:

1. Ambient air temperature, below **-40.04 °C** (**-40.07 °F**).
2. Faulty SCR upstream exhaust gas temperature sensor **B-9107**, internal failure.
3. Faulty SCR upstream exhaust gas temperature sensor **B-9107**, installation.
4. Faulty ECU **A-9000**, software.

Solution:

1. Verify fault is present and active.

   Use the Electronic Service Tool (EST) to check the status of this fault.

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

   B. If the fault is no longer present or in an inactive state, the fault may be intermittent and not currently active. Continue with Step **5**.

2. Determine ambient temperature.

   Establish if ambient temperature is appreciably greater or less than **-40.04 °C** (**-40.07 °F**).

   A. If the ambient temperature is less than **-40.04 °C** (**-40.07 °F**), this fault will be present and active. The machine will need to be started or moved to a warmer environment, ignore this fault and return the machine to service.

   B. If the ambient temperature is greater than **-40.04 °C** (**-40.07 °F**), continue with Step **3**.

3. Check the condition of the SCR upstream exhaust gas temperature sensor **B-9107**.

   Disconnect the vehicle (VE) harness from the SCR upstream exhaust gas temperature sensor **B-9107** at connector **X-9107**.

   With the keyswitch in the off position, use a multimeter to measure the resistance on the sensor:

From	To	Value
X-9107 pin 1	**X-9107 pin 2**	there should be greater than **169.7 Ω**
***NOTE:** To determine actual resistance values for various temperatures see **Selective Catalytic Reduction (SCR) temperature sensors - General specification (55.988)**.*		

   A. If there is greater than **169.7 Ω**, continue with Step **4**.

   B. If there is less than **169.7 Ω**, the SCR upstream exhaust gas temperature sensor **B-9107** has failed internally. Replace the sensor.

4. Verify proper sensor installation.

   Check the SCR upstream exhaust gas temperature sensor **B-9107** for correct mounting and the electrical connection. Refer to **Selective Catalytic Reduction (SCR) temperature sensors - General specification (55.988)** to locate or replace the sensor.

   A. If the sensor is not properly mounted or electrical connector integrity is questionable, remove and re-install, adjust, and/or replace, as required.

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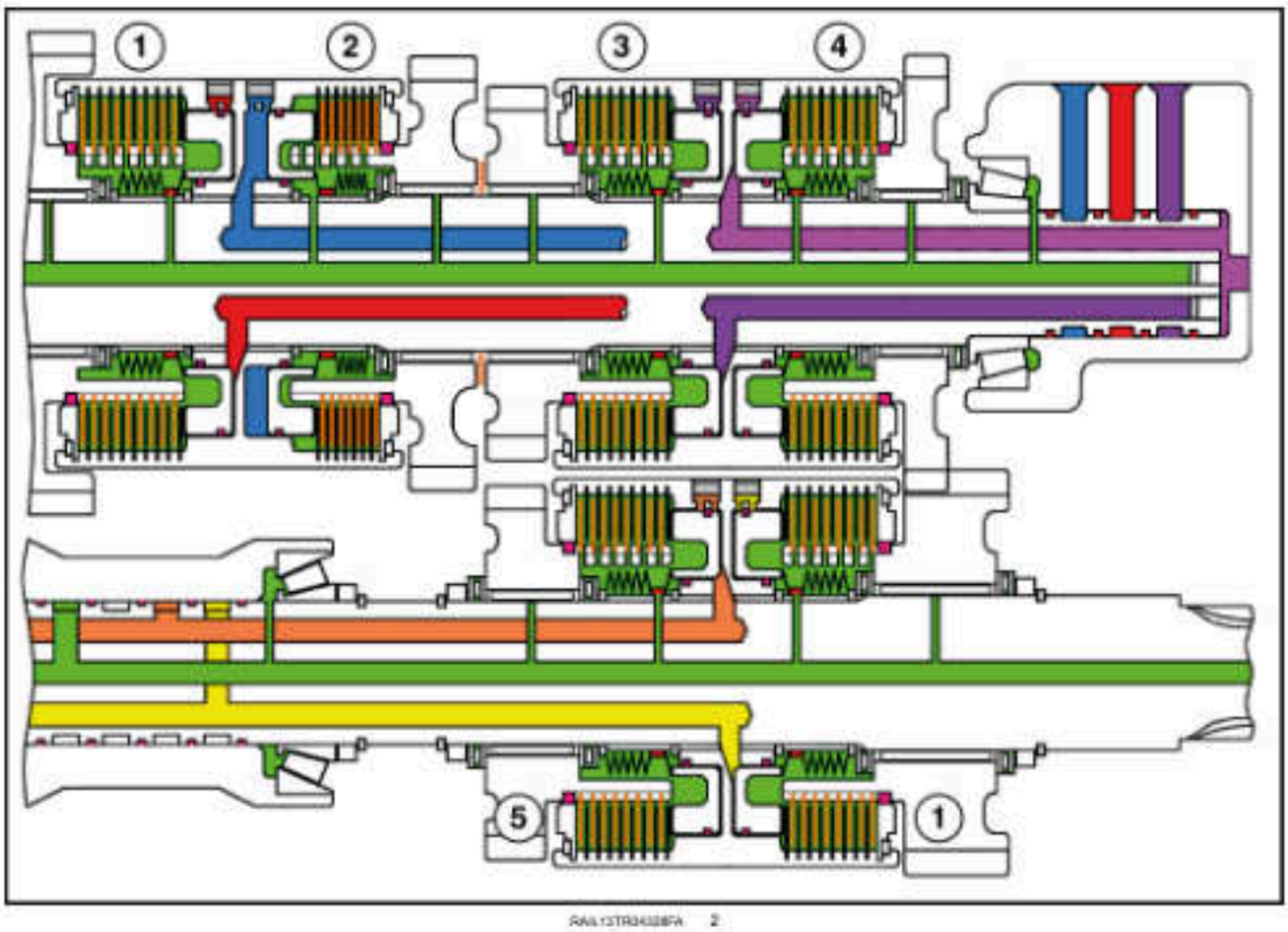
Retest system operation.

A. Error code follows the pilot head move. Replace the pilot head. Return unit to field operation.

B. Error code does not follow the pilot head move. Return the swapped pilot head to its original valve. Submit a concern to ASIST.

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Speed housing clutch oil supply



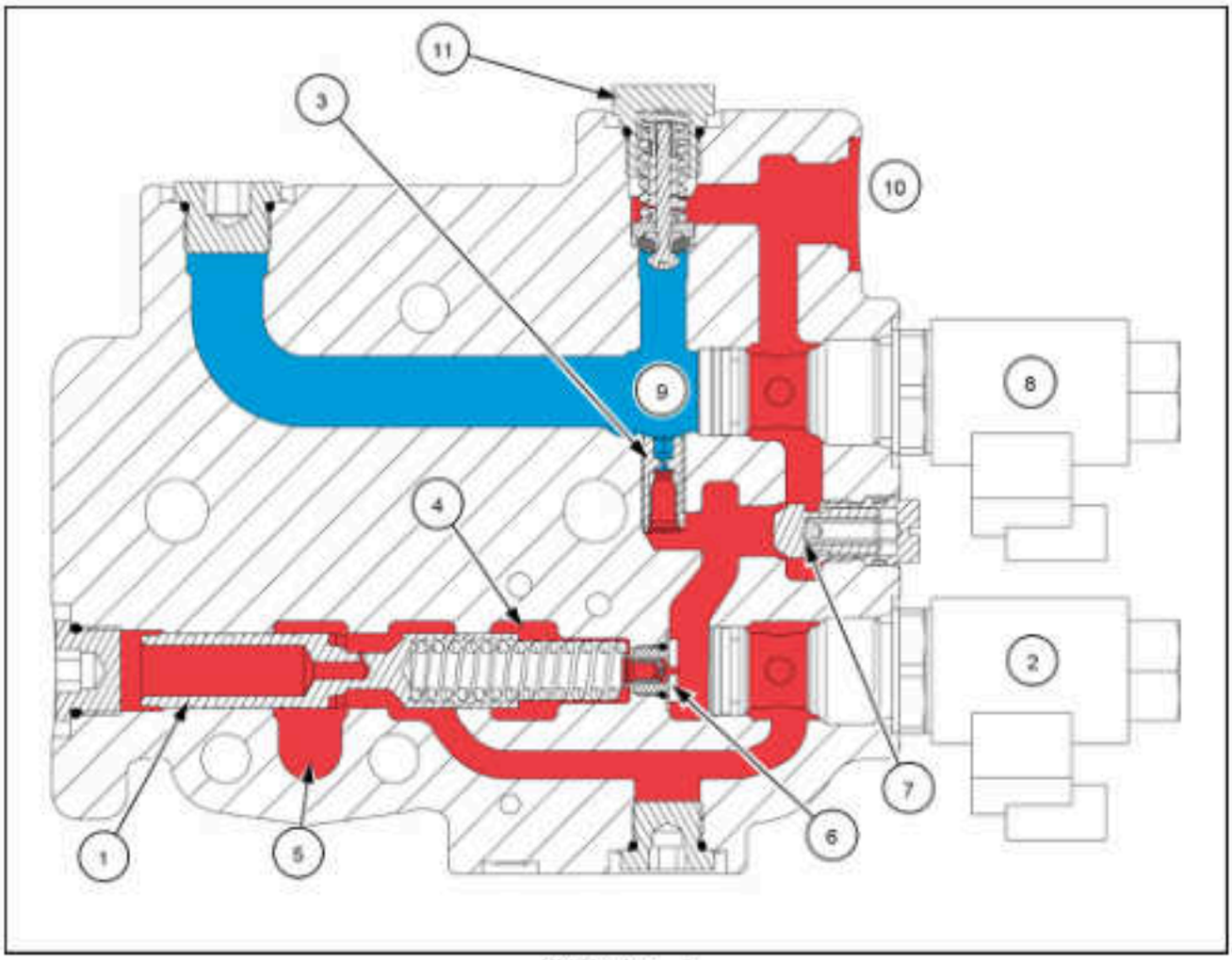
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Lubrication oil
Odd clutch supply
Even clutch supply
1-2 clutch supply
3-4 clutch supply
5-6 clutch supply
Reverse clutch supply

1. 1-2 clutch	4. Reverse clutch
2. 3-4 clutch	5. Odd clutch
3. 5-6 clutch	6. Even clutch

As oil is supplied to a clutch, the clutch locks and its gear is locked to the shaft. Torque is transmitted from the shaft through the clutch to the gear, or from the gear through the clutch to the shaft. Gears are in constant mesh, and the even gear is in mesh with the reverse gear/clutch and a countershaft gear. The even gear is used as an idler in some reverse gears and as direct drive to the reverse clutch in others. The master clutch is located between the speed output shaft and the range input shaft. All clutches are constantly supplied pressurized lubricating oil to keep them clean and cool.

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Raise position

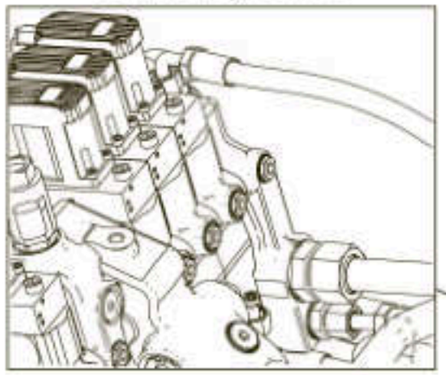
PFC pump pressure	Return to tank pressure
Trapped oil	
1. Flow control spool	7. Load check
2. Raise solenoid	8. Lower solenoid
3. Screened orifice plug	9. Return to tank
4. Pilot signal to compensator	10. Hitch cylinders
5. PFC pump supply	11. Relief valve
6. Check/orifice plug	

Lowering function

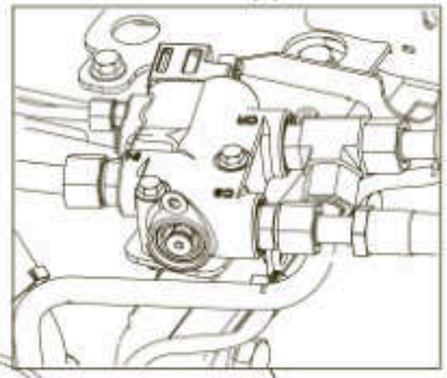
To lower the hitch, the lower proportional solenoid valve must be energized by the tractor control unit (TCU). The amount of spool movement depends on the amount of current supplied by the controller to the proportional solenoid. Once the lower solenoid is energized, the solenoid valve shifts, opening a flow path directly back to tank.

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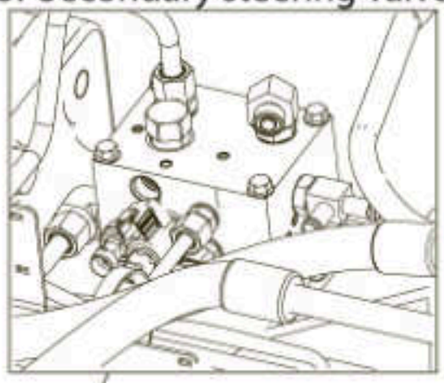
1. Priority valve



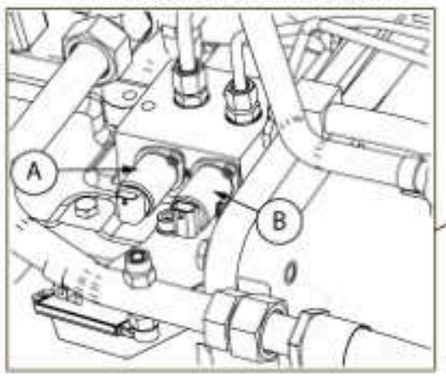
2. Oil cooler bypass valve

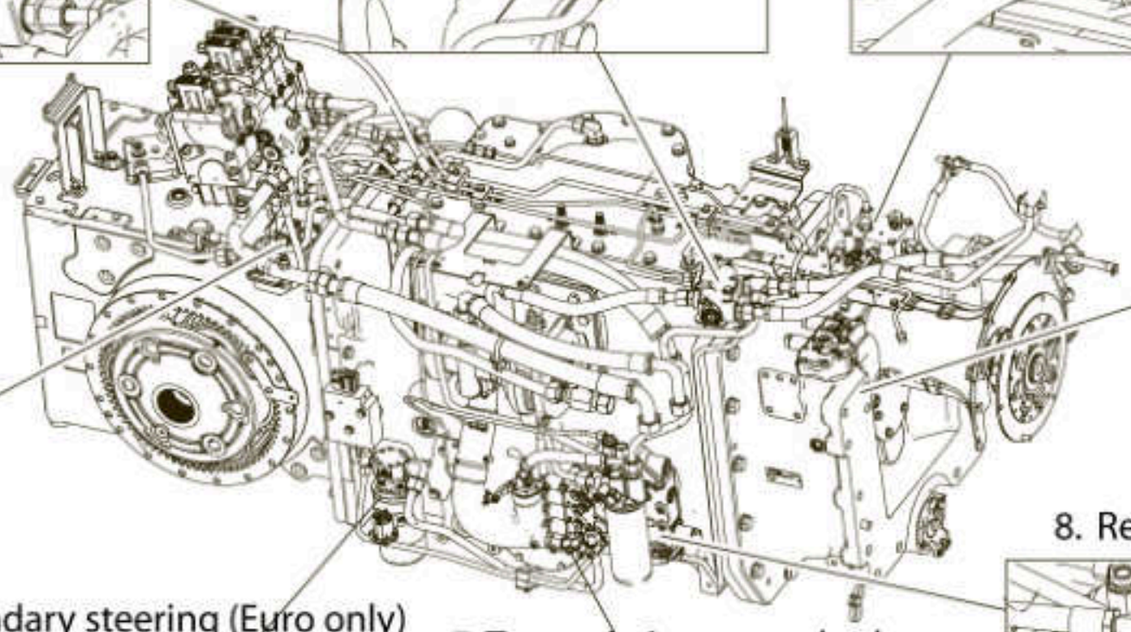


3. Secondary steering valve (Euro only)

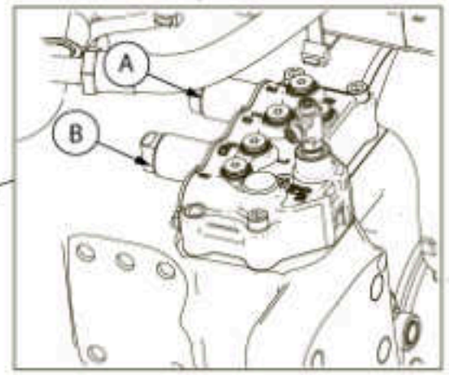


4. Rear PTO brake
MFD Differential lock

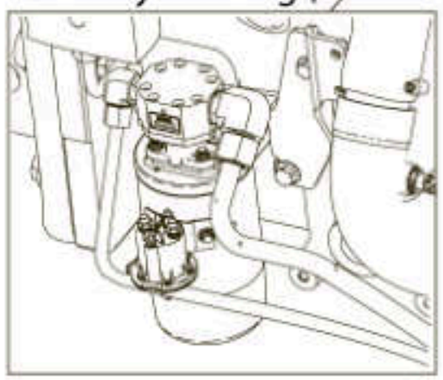




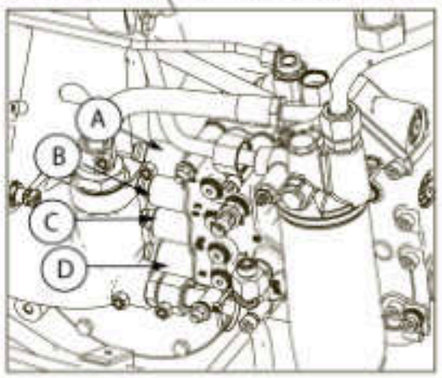
5. Forward/Reverse valve



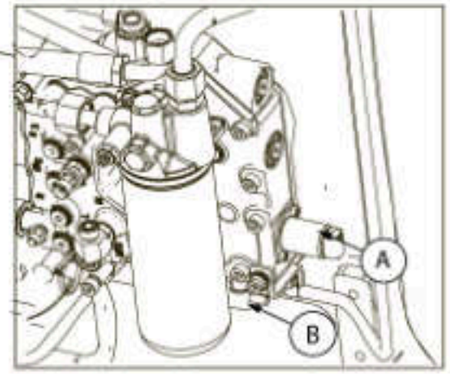
6. Secondary steering (Euro only)



7. Transmission control valve



8. Regulator valve



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