SERVICE MANUAL

T8.275 / T8.300 / T8.330 / T8.360 / T8.390 Powershift Transmission (PST)

Tractor

PIN ZCRC02583 and above

Part number 47533594
1st edition English
April 2013

MidWestTech | New Holland T8.275, T8.300, T8.330, T8.360, T8.390 PST Tractor Service Manual | Publication 47533594

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Trailer brake valve - Dynamic description - Western Europe

T8.275, T8.300, T8.330, T8.360, T8.390

The pneumatic trailer brake control system includes:

- an engine-driven compressor
- air reservoirs (tanks) **(5)** **(6)**,
- pressure unloading/regulator valve **(10)**,
- trailer control valve **(4)**,
- double check valve **(8)**,
- solenoid valves **(9)**,
- and air brake couplers **(1)** **(2)** **(3)**.

The compressor is located on the forward side of the engine. The air tanks are located on the left **(5)** and right **(6)** side of the rear axle carriers. The control valves are located on top of the transmission/rear frame, and the couplers are located at the rear of the tractor above the hydraulic couplers.

The pneumatic trailer brake control system for Western European tractors is a combined single and dual line, high pressure braking system. There are three couplers in this system. The black coupler (single line system) **(3)** is on the right side, the red coupler (dual line system) **(2)** is in the center and the yellow coupler (dual line system) **(1)** is on the left side.

System pressure cycle

The trailer brake valve is set to regulate pressure to a maximum of **8.5 bar** (**123.3 psi**). However, pressure will not always be at **8.5 bar** (**123.3 psi**); pressure will vary by use and will frequently fall to **7.5 bar** (**108.8 psi**).

The pressure cycle starts when pressure in the main reservoirs reaches the minimum pressure of **7.5 bar** (**108.8 psi**). At that point, the dryer charges the purge tank which normally takes a few seconds. System pressure remains at **7.5 bar** (**108.8 psi**) until the purge tank is full. When the purge tank is full, the main reservoirs are repressurized to **8.5 bar** (**123.3 psi**). When the main reservoirs are fully charged, the purge tank purges the dryer's desiccant cartridge with the contents of the purge tank. System pressure in the main reservoirs gradually falls as the brakes are used until it reaches the minimum level, where the cycle starts over.

Dual line braking system

With dual line systems, air pressure increases to apply positive braking force. When the brake system is not activated, the brake lines have no pressure.

From the compressor, compressed air is supplied to the air reservoirs at a pressure limited to **8.1 - 8.5 bar** (**117 - 123 psi**) by an unloading regulator valve **(10)**. Compressed air is supplied from the reservoirs to the inlet port of the dual line control valve **(7)**, to the inlet of the emergency brake solenoid valve and to the red coupling, providing full operating pressure to that couplers at all times.

When the tractor brakes (either service or emergency) are not actuated and the transmission is not in Park, there should be no pressure at the yellow coupling. When the tractor service brakes are actuated, air pressure, proportional to the service brake pressure, is supplied from the trailer brake control valve to the yellow coupler. The maximum pressure at the yellow coupler is **8.1 - 8.5 bar** (**117 - 123 psi**). This provides a braking force for the trailer dependent on the tractor service brake force (tractor brake pressure). When the tractor emergency brake is actuated, the same process applies. The pressure at the yellow coupler raises continuously to the maximum system operating pressure of **8.1 - 8.5 bar** (**117 - 123 psi**). When the service brakes are released or the emergency brake is disengaged, the pressure drops to 0 (zero).

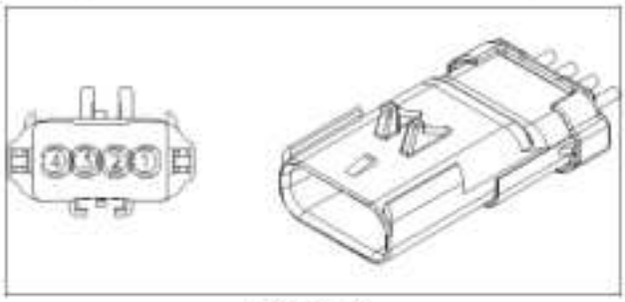
Single line braking system

With single line systems, air pressure decreases to apply positive braking force, typically with a spring-loaded brake. When the brake system is not activated, the brake lines are fully pressurized to maintain the trailer brakes in a released state.

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CONNECTOR X-1021A - TO CHASSIS HARNESS

CONNECTOR X-1021A - TO CHASSIS HARNESS			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	-	-	
2	526FB (YE)	HITCH SWITCH LOWER	
3	599FB (OR)	HITCH SWITCH CENTER (B+)	
4	513FB (YE)	HITCH SWITCH RAISE	



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4121-Rear remote no. 2 - spool movement too high

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NOTE: *When the cause of the error code has been rectified, clear the error code and test the system for normal operation.*

Cause:
See above.

Possible failure modes:

1. Incorrect hydraulic pressure
2. Faulty EHR valve

Solution:

1. Check for other EHR error code(s).

   Make a note of the error code(s), clear the error code(s) and test the system for normal operation.

   A. Fault code does not re-display. Return unit to field operation and monitor.

   B. Fault codes re-displays. Continue to step **2**.
2. Check the regulated circuit hydraulic pressures, for further information refer to hydraulic testing in service manual.

   A. If the pressures are incorrect, repair or replace component(s) as required.

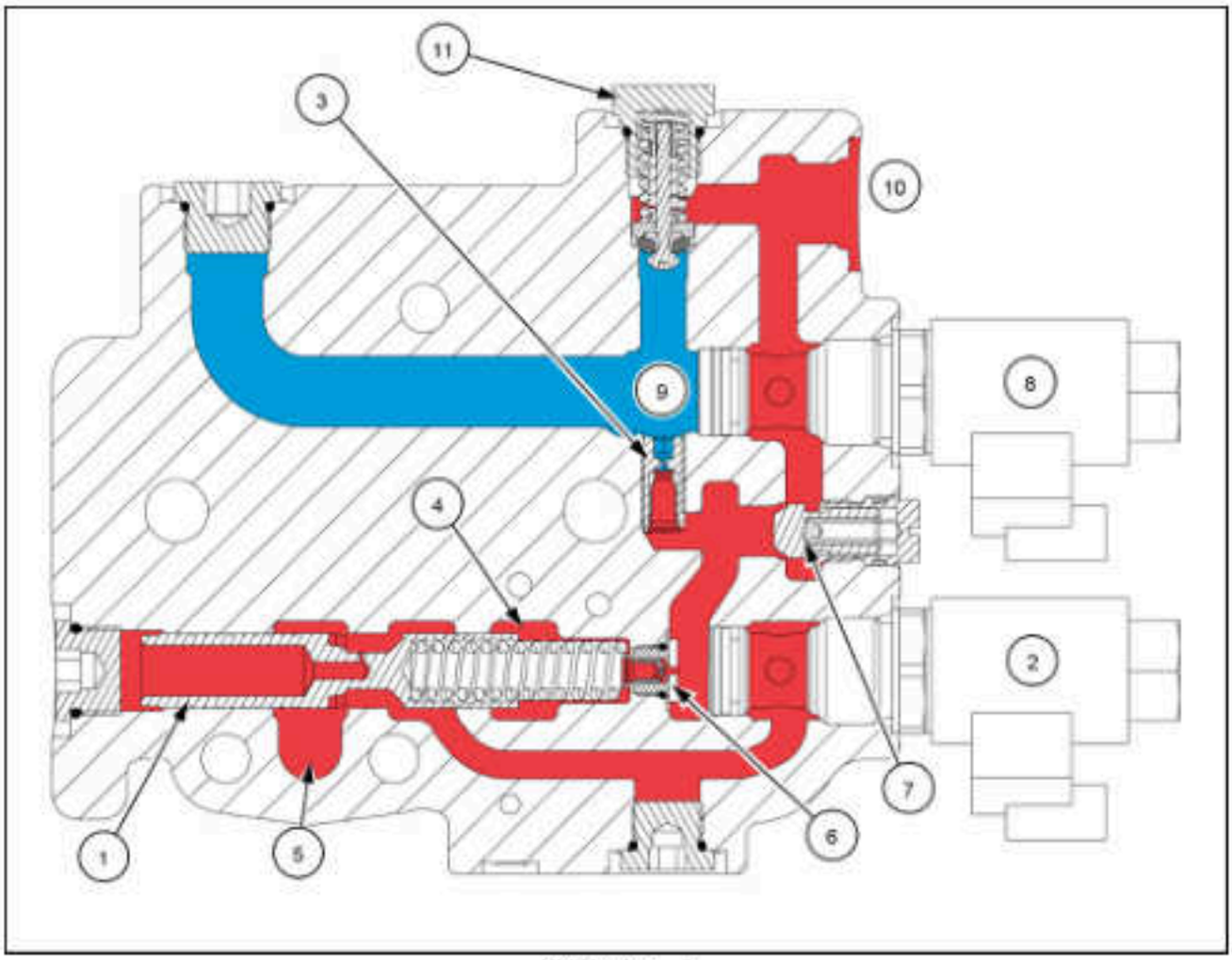
   B. If the pressures are correct, continue to step **3**.
3. Download the correct level of software into the EHR valve and configure the EHR valve.

   Test valve operation.

   A. Fault code does not re-display. Return unit to field operation.

   B. Fault code re-displays. Install and configure a new EHR valve section.

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RCIL08CCH014GAE 7

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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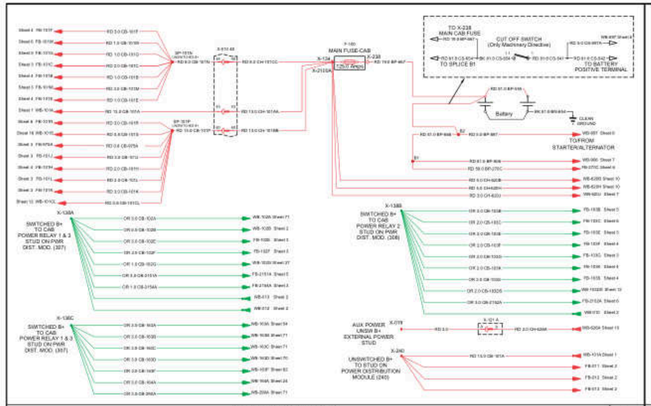
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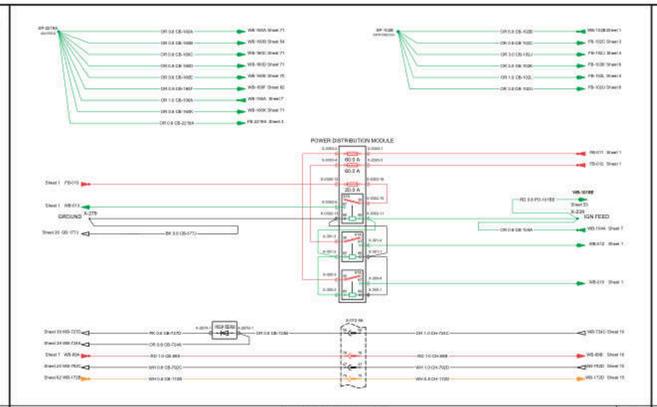
Color legend

	INDICATES CONSTANT POWER
	INDICATES POWER WHEN THE KEY SWITCH IS ON
	INDICATES POWER WHEN THE KEY SWITCH IS IN THE START POSITION
	INDICATES 24V CIRCUIT

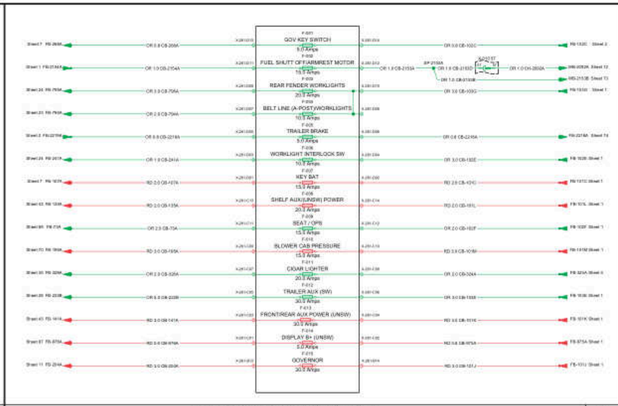
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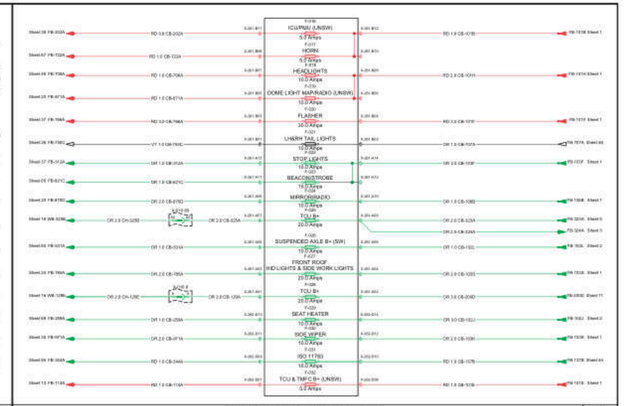
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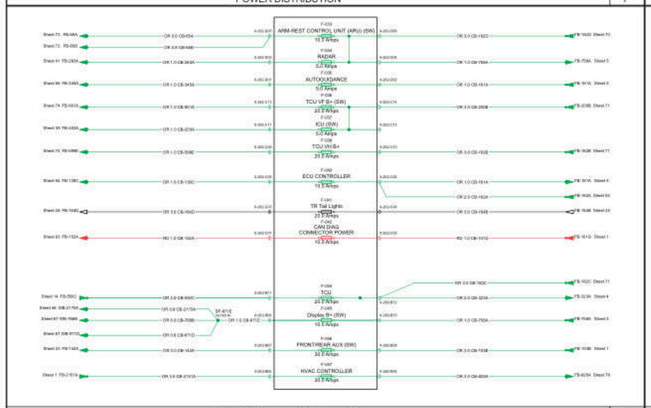
POWER DISTRIBUTION | 2



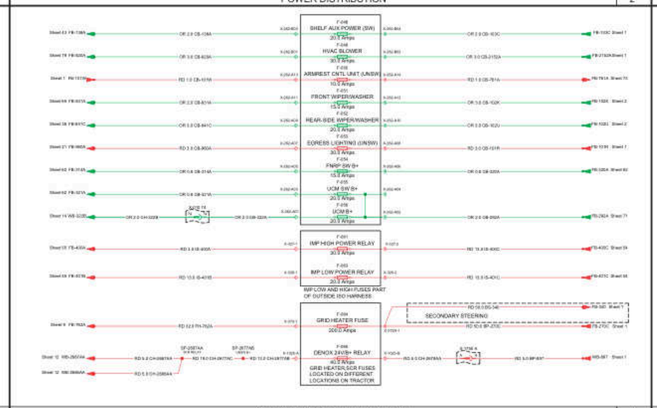
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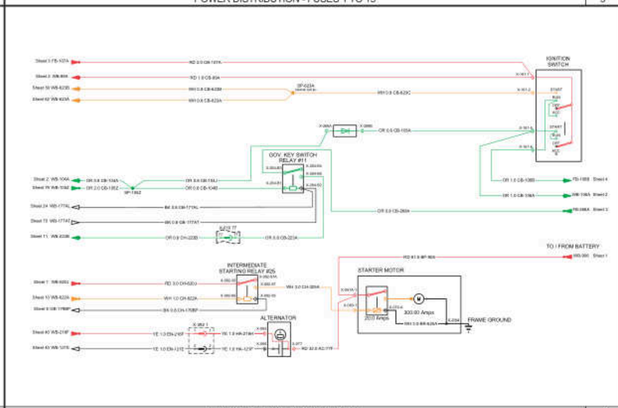
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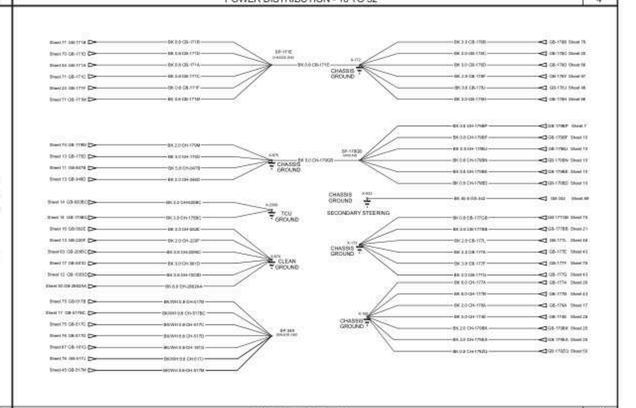
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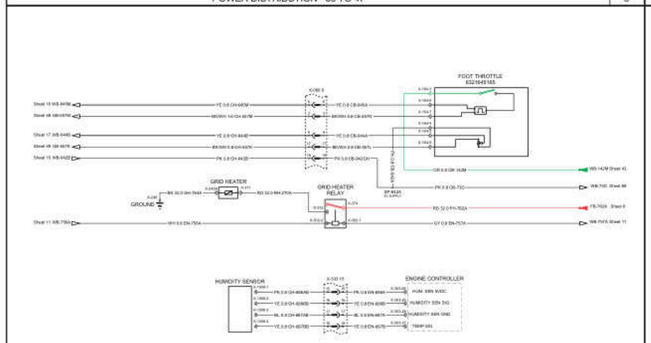
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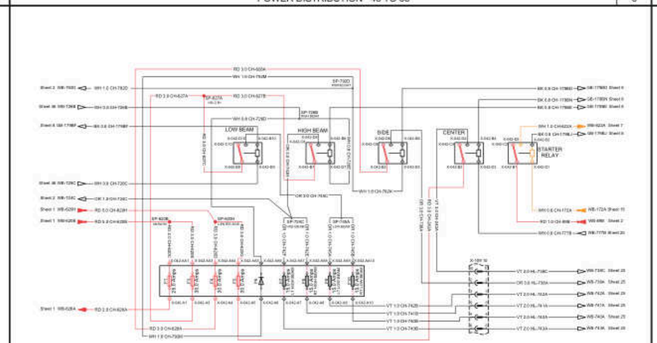
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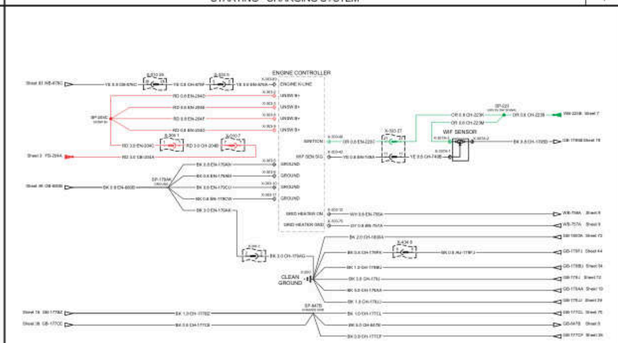
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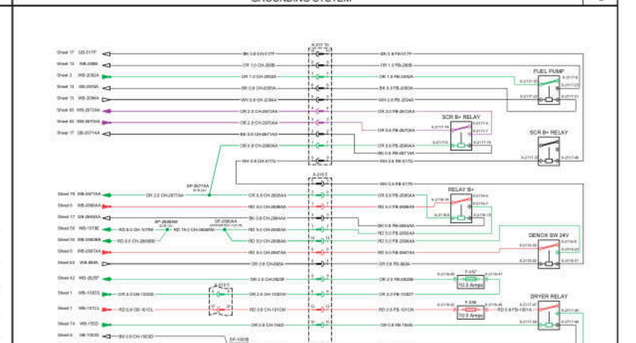
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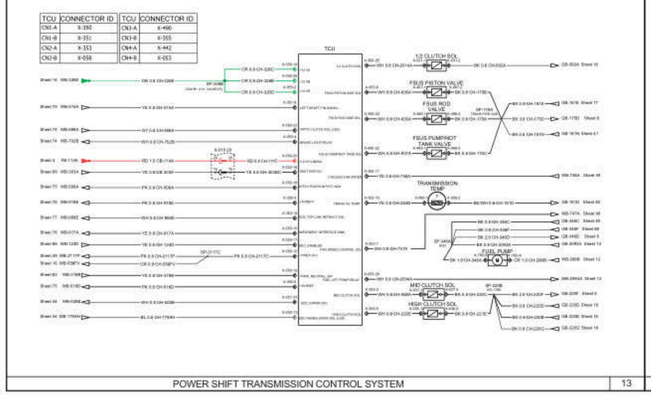
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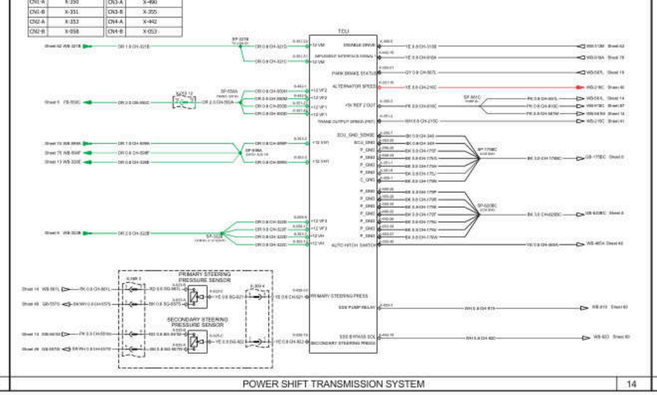
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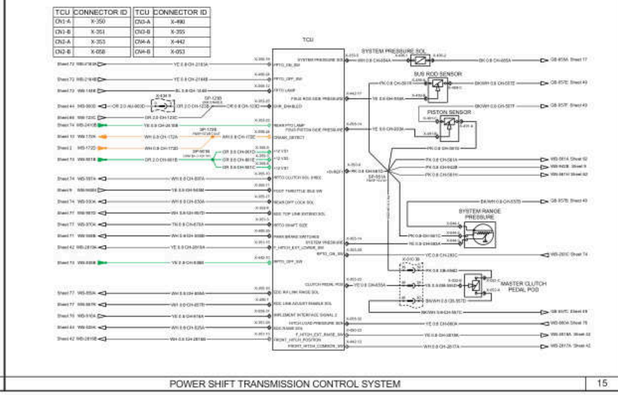
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T8.275, T8.300, T8.330, T8.360 AND T8.390
TRACTOR SERIES WITH
POWER SHIFT TRANSMISSION
P.I.N. ZDRC02583 AND AFTER
ELECTRICAL SCHEMATIC
RAC 47516261

LEGEND

INDICATES CONSTANT POWER

INDICATES POWER WHEN KEY SWITCH IS ON

INDICATES POWER WHEN KEY SWITCH IS IN START POSITION

INDICATES 24 VOLT CIRCUIT

RAC47516261S1S1

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