SERVICE MANUAL

T8.275 / T8.300 / T8.330 / T8.360 / T8.390

Tractor

from PIN ZBRC07000 and above

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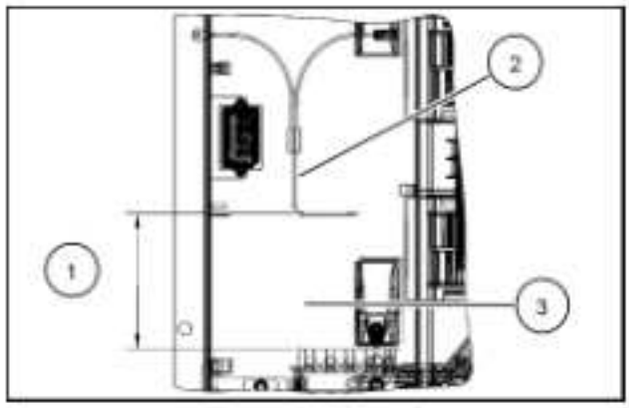
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Temperature sensor Evaporator temperature sensor - Dynamic description

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Background

The evaporator temperature sensor **(2)**, sometimes called the "freeze" or "core" sensor, is located in the evaporator/heater assembly **(3)**. The sensor measures the effectiveness of system response to the current demand for heating or cooling.



RCPH87CCHH06ABC 1

Freeze control

The evaporator sensor **(2)** also prevents the system from operating in low ambient temperatures where damage to the system might occur. When temperature sensed at the evaporator falls to **0 °C** (**32 °F**), the controller cycles the compressor clutch Off. When temperature sensed at the evaporator rises to **3 °C** (**37 °F**), the controller cycles the clutch back On. In Defog mode or in Automatic mode at the maximum cooling setting where the compressor runs continuously, the freeze range controls the cycling of the compressor Off or On.

Sensor location

Proper location of the evaporator sensor **(2)** is essential to system performance. The evaporator temperature sensor must be installed **147 mm** (**5.8 in**) from the right end (heater valve end) of the coil **(1)**. The sensor must be installed on the third row up, between the refrigeration tube row, at a **30 °** downward angle. Insert the sensor in the evaporator core up to the angled section, being careful not to kink the sensor.

Electrical test

The sensors should measure **10000 - 25000 Ω** at room temperature for normal operation.

The sensor is a thermistor – thermal resistor. With this thermistor the colder the environment, the greater the electrical resistance; and the warmer the environment, the less electrical resistance.

If fault codes 115 or 116 are active, the most likely problem is wiring to the sensor. The out of range values are so high or low – **82 °C** (**180 °F**) and **-19 °C** (**-2 °F**) – that occurrence is unlikely except as noted below in the fault code explanations.

More importantly, this sensor can fail without generating a fault code. Measure the resistance of the sensor and the ambient temperature at the sensor, and compare the readings to the temperature versus resistance table at **Temperature sensor Evaporator temperature sensor - General specification - Temperature versus resistance (55.050)**. If the readings are not within a minus or plus **2.5 %** range, replace the sensor.

NOTE: *For the test to be valid, the thermometer used must be accurate, and the temperature recorded must be the temperature at the sensor.*

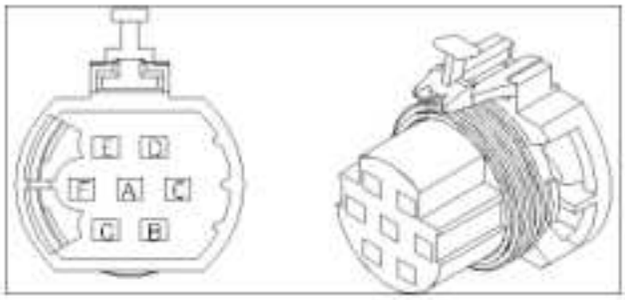
Power circuit

Minimal voltage is fed to the sensor: about **0.5 V** at **21 °C** (**70 °F**), and voltage drops as the temperature increases. Current is fed to the evaporator sensor connector **ATC_J6B** from pin 23 of connector **ATC_CM**.

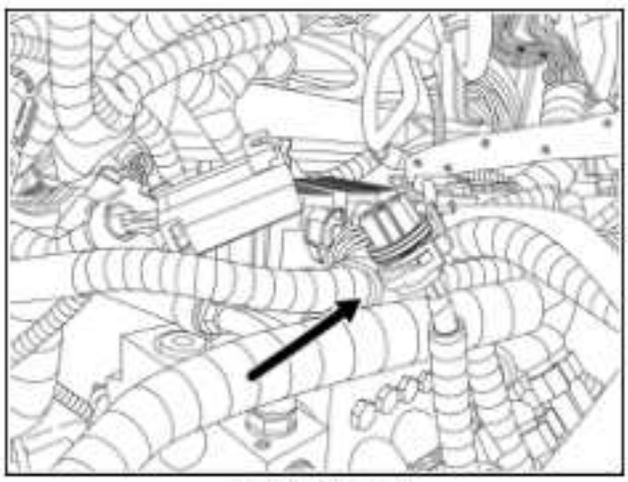
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CONNECTOR X-147F - TO CHASSIS HARNESS

CONNECTOR X-147F - TO CHASSIS HARNESS			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
A	784X (OR)	FIELD LIGHTS	
B	754X (VT)	LEFT TURN	
C	752M (VT)	RIGHT TURN	
D	703H (OR)	LED BACKLIGHT B+	
E	707X (OR)	TAIL LIGHTS	
F	-	-	
G	-	-	



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18053-Joystick 1 proportional rocker switch - voltage too low

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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:
Voltage from sensor too low (below **0.2 V**) as measured inside the armrest by the control module

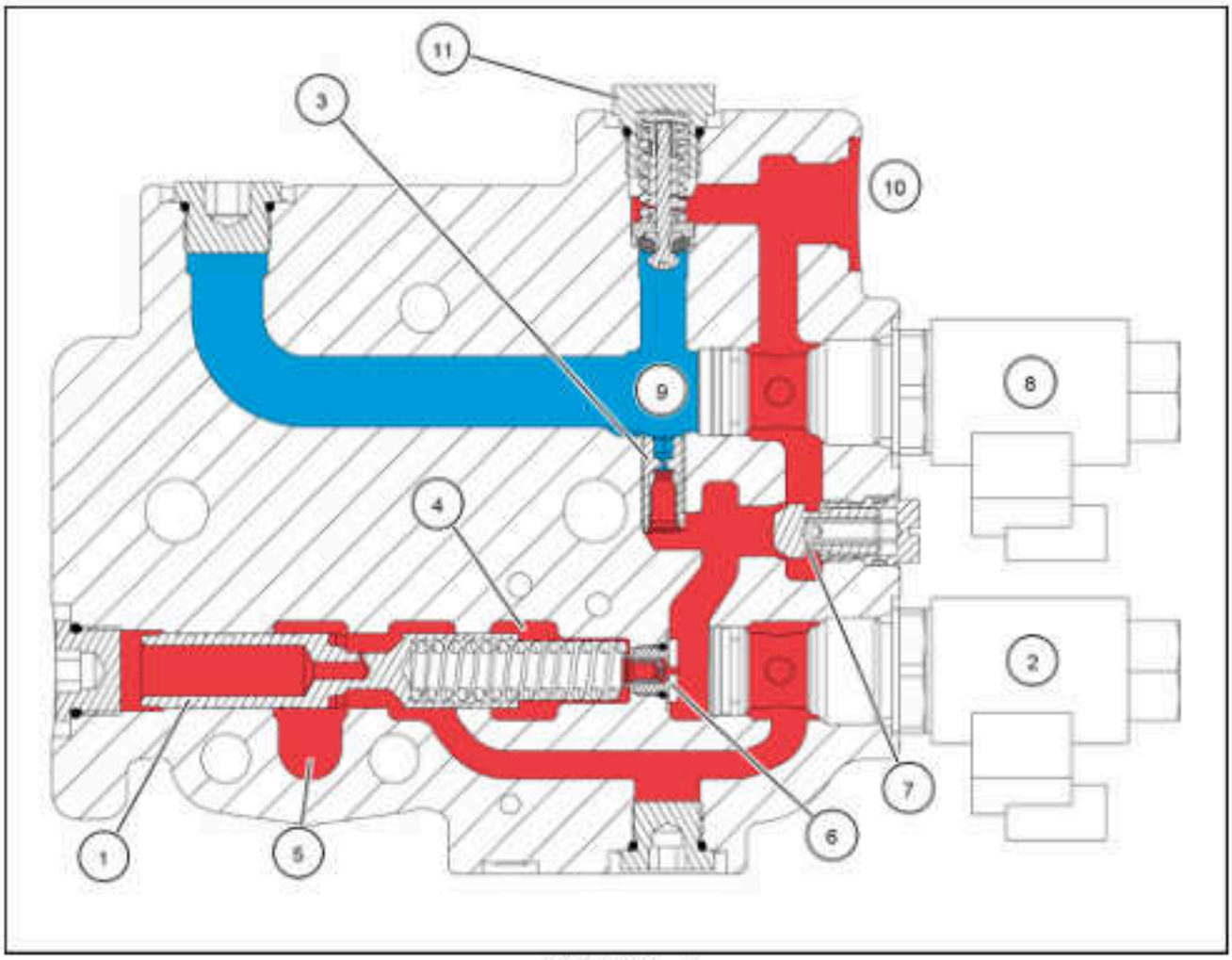
Possible failure modes:

1. Faulty joystick 1
2. Incorrect armrest configuration
3. Faulty connector
4. Swapped connectors
5. Faulty armrest controller

Solution:

1. Check if the fault code is still active. Clear all fault codes. Operate the tractor under normal conditions.
   A. Fault code does not redisplay. Return unit to field operation and monitor for continuing problems.
   B. Fault code redisplays. Continue to step **2**.
2. Use the monitor screen function on the electronic service tool (EST) to check the joystick 1 proportional rocker switch operation. Refer to the EST user guide.
   A. Rocker switch not operating correctly. Continue with step **3**.
   B. Rocker switch operating correctly. Return unit to field operation and monitor for problem.
3. Check the armrest controller connectors.

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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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Hydraulic systems - Hydraulic schematic frame 01

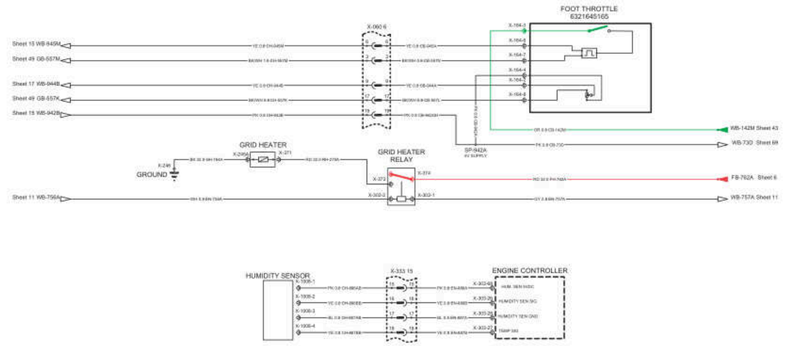
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Hydraulic schematic 84414791

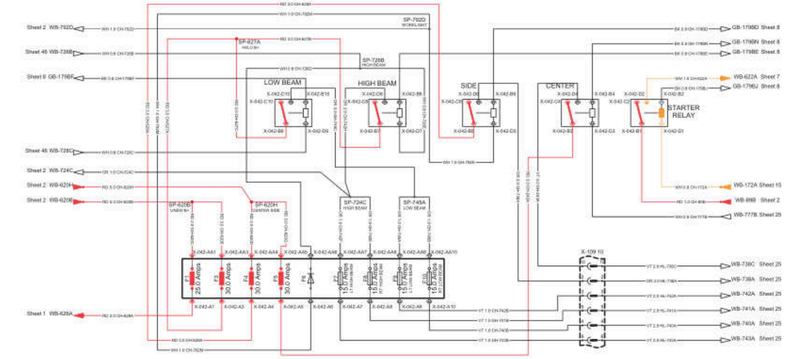
	PFC PISTON PUMP
	CHARGE LUBE/LUBE PUMP FLOW
	REGULATED CIRCUIT PRESSURE
	RETURN TO TANK/SUMP
	OIL COOLER/FILTRATION, AUX CHARGE PUMP FLOW

1. Remote section	31. Transmission control valves
2. Load sense diagnostic	32. Park clutch
3. Pilot/hitch drain	33. Inlet regulator
4. Pilot supply	34. Priority regulator valve
5. Return	35. Thermal bypass valve
6. Supply	36. Oil cooler
7. Hitch valve	37. Lube regulator
8. Category 4 hitch	38. Piston pump
9. Hitch cylinders	39. Filter
10. Return	40. PTO lube
11. Supply	41. Odd/even lube
12. Signal	42. Drop box lube
13. Case drain	43. Creep drive lube
14. Power beyond	44. Master clutch lube
15. PTO/differential lock valve	45. Right brake/differential lube
16. PTO clutch/brake	46. MFD/range lube
17. Differential lock clutch	47. Left brake/differential lube
18. Bevel pinion lube	48. To park brake valve
19. Lube supply	49. Service brake
20. MFD clutch	50. Master clutch
21. Low clutch	51. Inlet
22. Medium clutch	52. Master clutch inching valve
23. Hitch clutch	53. Park/emergency brake
24. Reverse clutch	54. Brake release pump
25. Fifth clutch	55. Steering hand pump
26. Third clutch	56. Steering cylinders
27. First clutch	57. Bypass valve
28. Even clutch	58. Brake valve
29. Odd clutch	59. NOTE: Switch is opened when pedal reaches full stroke when hydraulic power is lost.
30. Creeper clutch	

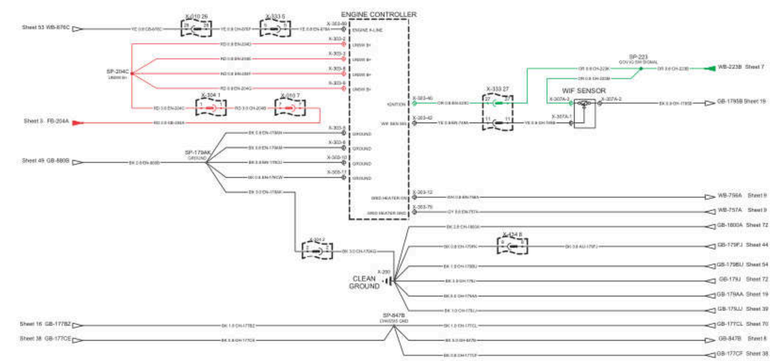
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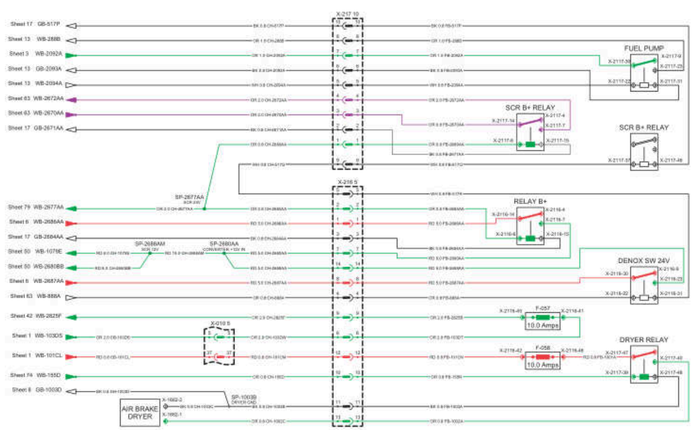
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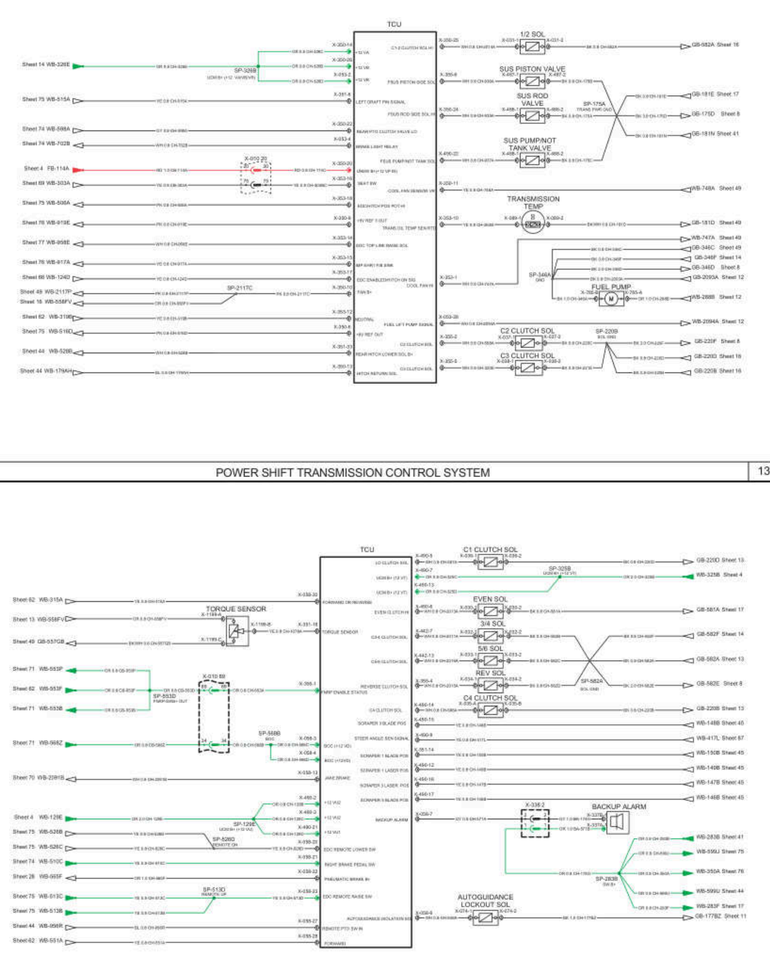
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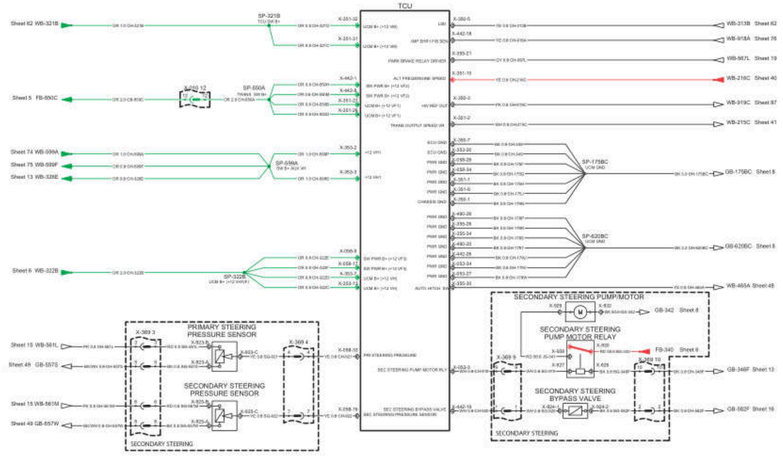
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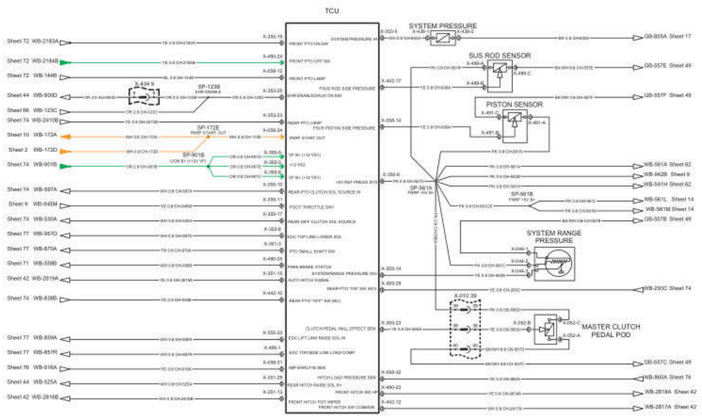
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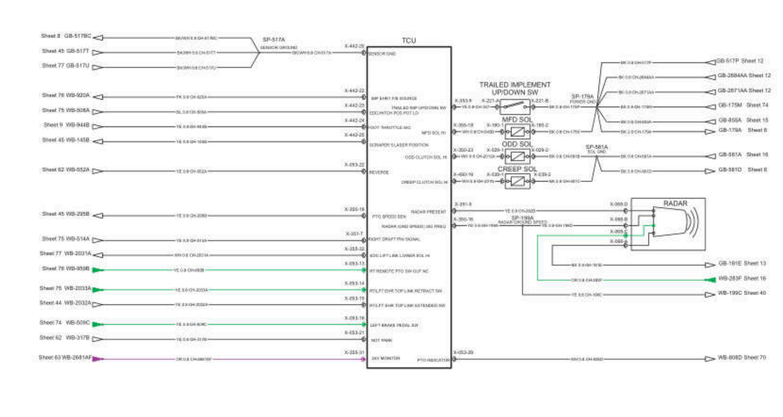


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POWER SHIFT TRANSMISSION CONTROL SYSTEM | 16



POWER SHIFT TRANSMISSION CONTROL SYSTEM | 17

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