SERVICE MANUAL

Guardian™ SP.300F / Guardian™ SP.345F / Guardian™ SP.400F Tier 4B (final)

Sprayer

Guardian™ SP.300F - PIN YGYM01022 and above; Guardian™ SP.345F - PIN YGYM01022 and above; Guardian™ SP.400F - From PIN YFYM00909 to YGYM01021; PIN YGYM01022 and above

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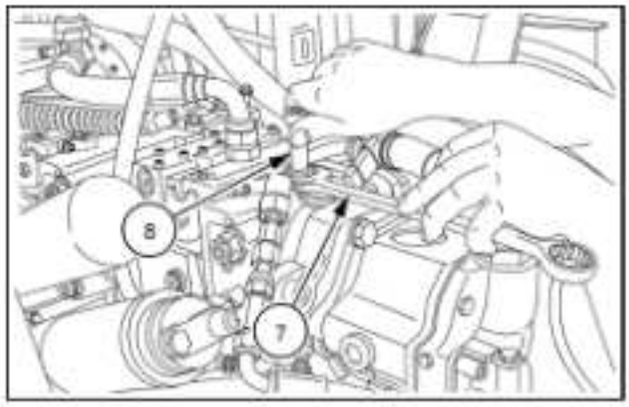
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4. With an open end wrench **(7)**, loosen (counterclockwise) the locking collars located on top of the hydrostatic pumps. Using a socket **(8)**, adjust clockwise to increase pressure, and adjust counterclockwise to decrease pressure.

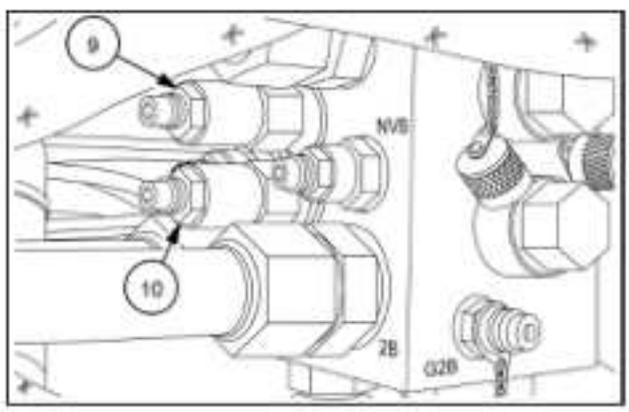


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5. Model SP.295F - Adjust pressure to **28 - 32 bar** (**410 - 460 psi**). Lock retaining collar clockwise once pressure is set. Repeat procedure for the second pump.
6. Model SP.300F- Adjust pressure to **36 - 39 bar** (**515 - 565 psi**). Lock retaining collar clockwise once pressure is set. Repeat procedure for second pump.
7. To adjust shuttle valve loop flush pressure drop, loosen locking jam nuts **(9) (10)**. With a hex wrench, adjust counterclockwise to increase or adjust clockwise to decrease the pressure drop. Operate vehicle at high idle and with park brake on, in high range third for three range units, or in fifth for five range models. With wheels blocked, bring each pump on stroke, viewing the reduction (drop) of charge pressure while on stroke. Adjust until the following settings for your model is correct:

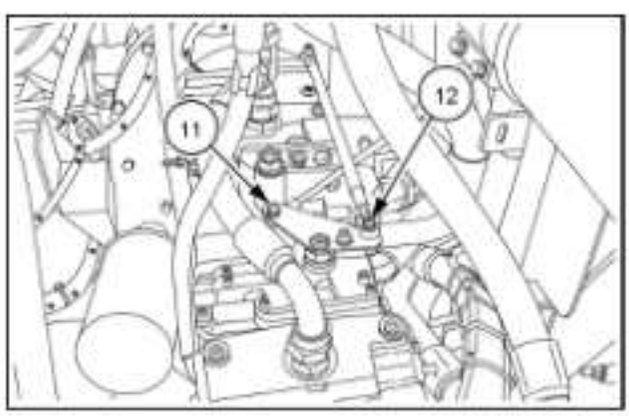
   SP.295F - Charge pressure drop **4.8 - 5.5 bar** (**70.0 - 80.0 psi**)

   SP.300F- Charge pressure drop **5.9 - 6.6 bar** (**85.0 - 95.0 psi**)



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8. Before checking and setting the high pressure of the hydrostatic pumps, disconnect cable from dual linkage connection **(11) (12)** as shown to allow individual operation of each hydrostatic pump during setting procedure.

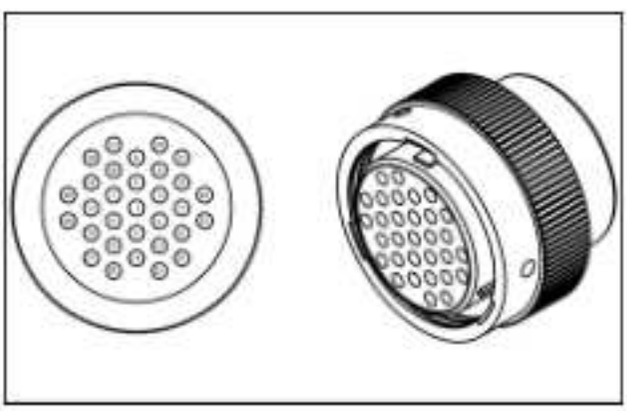


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CONNECTOR T105A 3rd Party harness to main chassis harness

PIN Number	Wire gauge/color	Circuit reference	Electrical schematic frame
1	18/PINK	BOOM 1	**SHEET 18**
2	18/PINK	BOOM 2	
3	18/PINK	BOOM 3	
4	18/PINK	BOOM 4	
5	18/PINK	BOOM 5	
6	18/PINK	BOOM 6	
7	18/PINK	BOOM 7	
8	18/PINK	BOOM 8	
9	18/PINK	BOOM 9	
10	18/PINK	BOOM 10	
11	18/PINK	BOOM 11	
12	18/PINK	BOOM 12	
13	18/PINK	BOOM 13	
14	18/PINK	BOOM 14	
15	18/PINK	BOOM 15	
16	18/PINK	BOOM 16	
17	14/ORANGE	NODE SWT PWR	
18	18/BLACK	SECTION ACTIVE	
19	18/GREEN	FLOW CTRL DEC	
20	18/YELLOW	FLOW CTRL INC	
21	18/RED	PRES TRANS(+)	
22	18/SS	PRES TRANS(-)	
23	18/BLACK	PRS TRNS SIG	
24	18/ORANGE	SW LOGIC PWR(+)	
25	SHIELD J1939	RAV CAN SH	
26	20 J1939/GREEN	RAV CAN LO	
27	20 J1939/YELLOW	RAV CAN HI	
28	14 TXL/GREEN	GND	
29	18 SHIELDED/BLACK	FLOW SIGNAL	
30	SHIELD	FLOW MTR GND(-)	
31	18 SHIELDED/RED	FLOW MTR + 5VDC	



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Engine starting system - Overview - Starter troubleshooting and circuit

SP.300F	
SP.345F	
SP.400F	

Refer to the Cummins Engine Operation and Maintenance Manual for problems not covered in this manual.

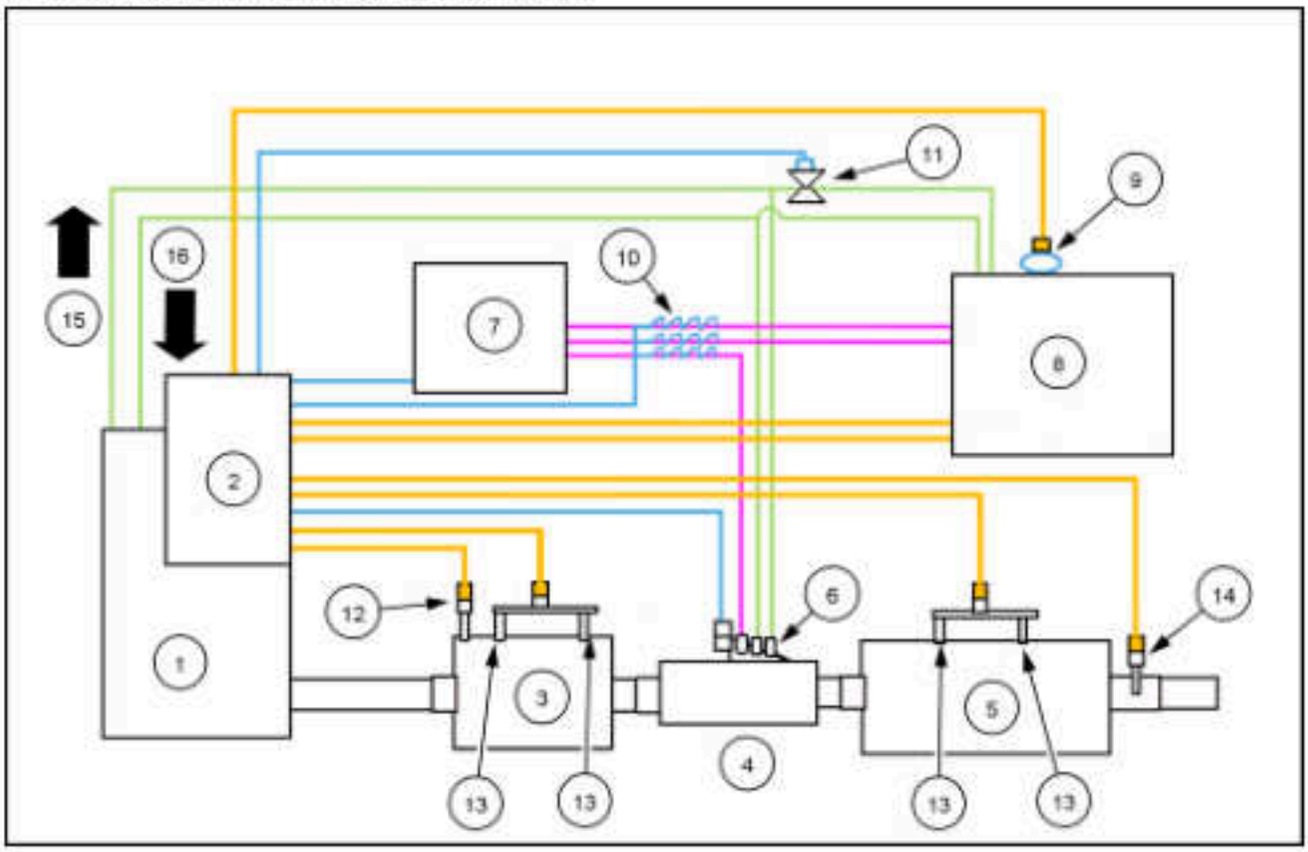
Engine will not crank	Check that the drive control lever is in Neutral.
	Check that Neutral start switch is working properly.
	Check that starter relays are working properly.
Coolant temperature too high	Clean air inlet screens.
	Clean debris out of radiator, oil cooler, CAC, and AC condenser fins.
	Check coolant level.

STARTING CIRCUIT

Refer to the following illustration for circuit path of the starting system.

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During engine operation, the exhaust gasses from the engine enter the DOC where the exhaust gas hydrocarbons are oxidized to carbon dioxide. The exhaust gasses then travel through the DRT where Diesel Exhaust Fluid is sprayed into the chamber. The exhaust gasses and DEF mixture pass through a mixer plate and the mixture turns into an ammonia and iso-cyanic acid. This mixture then passes into the SCR chamber and through the SCR catalyst. The exhaust gasses then exit the exhaust pipe as nitrogen and water vapor.
The following figure shows the system components.



Item	Description
1	Engine
2	Engine control module
3	Diesel Oxidation Catalyst (DOC)
4	Decomposition Reactor Tube (DRT)
5	Selective Catalyst Reduction (SCR)
6	Diesel Exhaust Fluid (DEF) Dosing Module
7	DEF Supply Module
8	DEF Tank
9	DEF quality sensor
10	DEF line heaters
11	Coolant flow control valve
12	NOx Sensor — Engine exhaust gasses out
13	Temperature sensor
14	NOx Sensor — System exhaust gasses out
15	Engine coolant supply line
16	Engine coolant return line
	Analog signal/Wiring harness
	Diesel Exhaust Fluid (DEF) lines
	Analog signal/Wiring harness
	Engine coolant lines

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SEE ARMREST 21-5202 PAGE 2

SEE CRENLO CAB HARNESSES PAGE 3

SEE SUPER NODE HARNESS ON PAGE 4

SEE BOOM HARNESSESSES PAGE 4

See 4 Wheel Steer on page 4

SEE ENGINE HARNESS ON PAGE 2

GUARDIAN SPRAYER MODELS:
SP.300F, SP.333F SP.345F, SP.365F, SP.400F
Tier 3 and Tier 4B with Planetary Drive
ELECTRICAL SCHEMATIC
SERIAL NUMBER YGYM01022 AND ABOVE
RAC 48001085

48001085S1S1

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