SR210 / SR240 / SV280
Tier 4B (final) and Stage IV
Alpha Series Skid Steer Loader

SR210 PIN NDM478026 and above; SR240 PIN NFM400756 and above; SV280 PIN NFM400877 and above

TR270 / TR310
Tier 4B (final) and Stage IV
Alpha Series Compact Track Loader

TR270 PIN NDM462224 and above; TR310 PIN NFM402749 and above

SERVICE MANUAL

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CASE CONSTRUCTION

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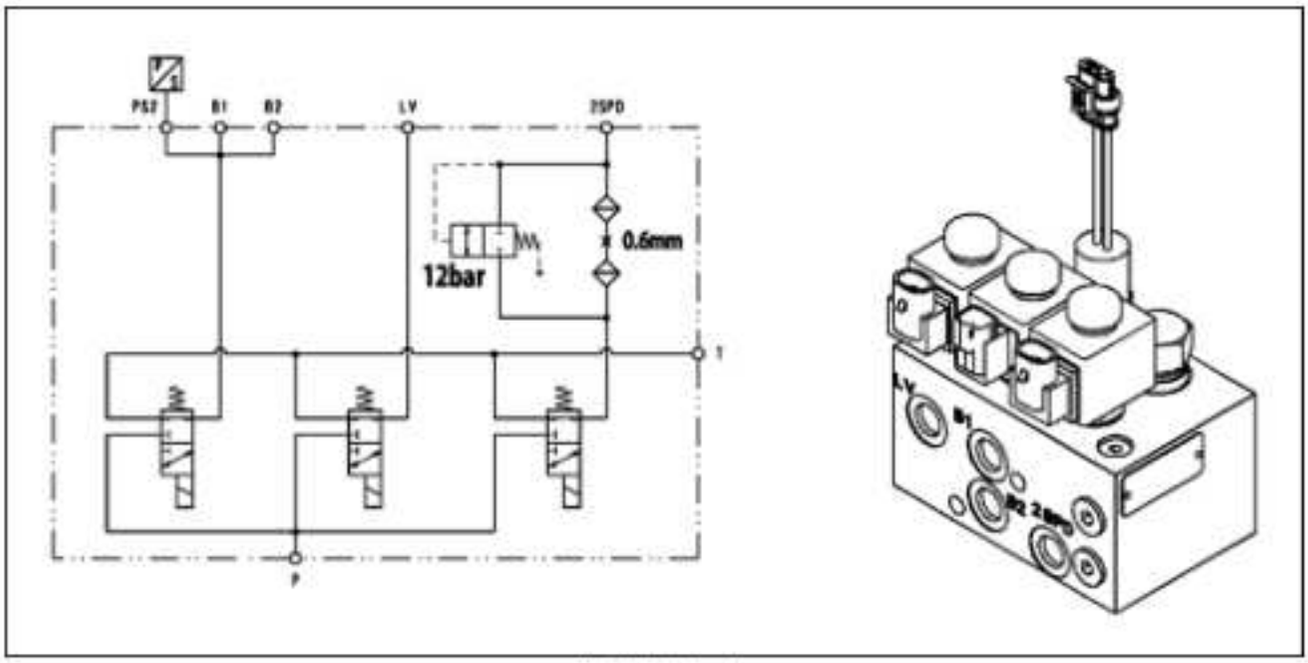
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Loader pilot interlock, brake, two speed valve

Hydraulic requirements	Charge pressure = **24 - 25.5 bar (350 - 370 psi)**
	Brake release pressure = **15 bar (218 psi)**
Sequence valve setting	**12 bar (174 psi)**
Filter rating	40 – 50 microns
Port identification	P - Supply inlet
	T - Tank return
	2SPD - Two speed shift
	B1 - Brake motor 1
	B2 - Brake motor 2
	LV - Electrohydraulic pilot pressure
	PS2 - Brake pressure switch

Control valve - General specification

TR270 TIER 4B (FINAL) [NDM462224 -]	WE Mechanical hydraulic controls
TR310 TIER 4B (FINAL) [NFM402749 -]	WE Mechanical hydraulic controls

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Wiring harnesses - Electrical schematic sheet 33 Multi-Function ON/OFF

SR210 TIER 4B (FINAL) [NDM478026 -]	WE Electro hydraulic controls
SR240	WE Electro hydraulic controls
SV280	WE Electro hydraulic controls
TR270 TIER 4B (FINAL) [NDM462224 -]	WE Electro hydraulic controls
TR310	WE Electro hydraulic controls

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A. Fault code **5232 - Loader Arm Valve (Directional) Solenoid Lower (B) Supply Shorted To Ground** is no longer active. Fault code **5231 - Loader Arm Valve (Directional) Solenoid Lower (B) Supply Open Circuit** is now active. Replace the solenoid and retest. Return to step **1** to confirm elimination of the fault.

B. Fault code **5232 - Loader Arm Valve (Directional) Solenoid Lower (B) Supply Shorted To Ground** is active. Fault code **5231 - Loader Arm Valve (Directional) Solenoid Lower (B) Supply Open Circuit** did not become active. Go to step **4**.

4. Measure the resistance of the solenoid wire to chassis ground.

   Turn the ignition switch OFF.

   Disconnect UCM connectors **CN3A** and **CN2B**.

   Disconnect solenoid connector X-27.

   Measure the resistance between **CN3A pin 22** and chassis ground. The resistance should be greater than **20,000 Ω**. Wiggle the harness during measurement to reveal an intermittent condition.

   Measure the resistance between **CN2B pin 7** and chassis ground. The resistance should be greater than **20,000 Ω**. Wiggle the harness during measurement to reveal an intermittent condition.

   Measure the resistance between **CN3A pin 22** and **CN2B pin 7**. The resistance should be greater than **20,000 Ω**. Wiggle the harness during measurement to reveal an intermittent condition.

   A. The resistance is greater than **20,000 Ω**. Temporarily replace the UCM and retest. Return to step **1** to confirm elimination of the fault.

   B. One or more resistance measurements are less than **20,000 Ω**. There is a short circuit in the wiring. Repair or replace the harness as required. Return to step **1** to confirm elimination of the fault.

Wiring harnesses - Electrical schematic sheet 20 Unit Control Module (55.100.DP-C.20.E.20)
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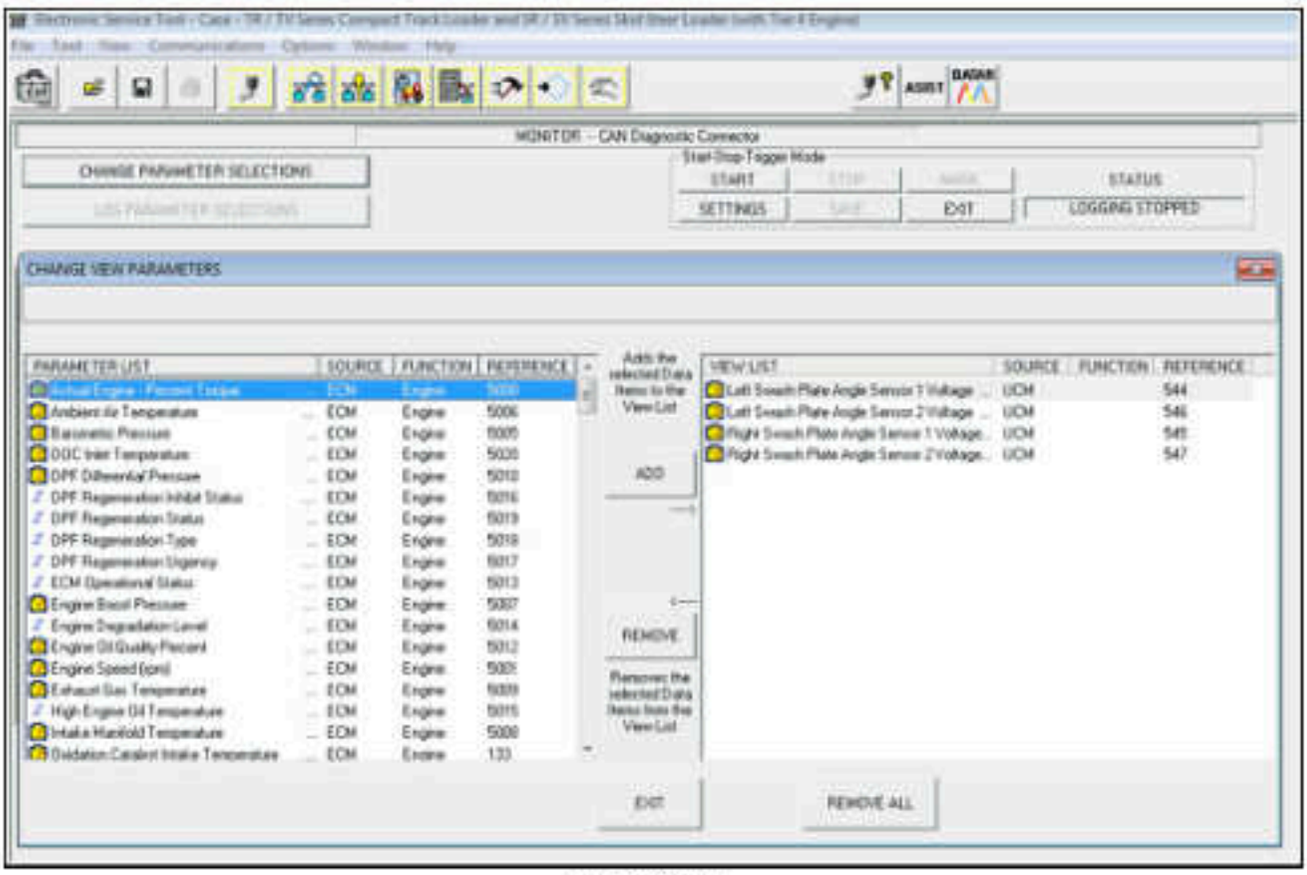
Hydrostatic drive control sensors - Test - Swash plate angle sensor test and centering procedure

SR210 TIER 4B (FINAL) [NDM478026 -]	WE
SR240 TIER 4B (FINAL) [NFM400756 -]	WE
SV280 TIER 4B (FINAL) [NFM400877 -]	WE
TR270	WE
TR310 TIER 4B (FINAL) [NFM402749 -]	WE

Prior operation:
Confirm that the joysticks are returning to the neutral position and there are no electrical issues with the joystick harness before checking the swash plate angle sensors.

Prior operation:
Place the machine on blocks or ensure that the machine is in an open area with adequate clearance to other objects.

NOTE: *This procedure is done using the Electronic Service Tool (EST) 'monitor' function.*

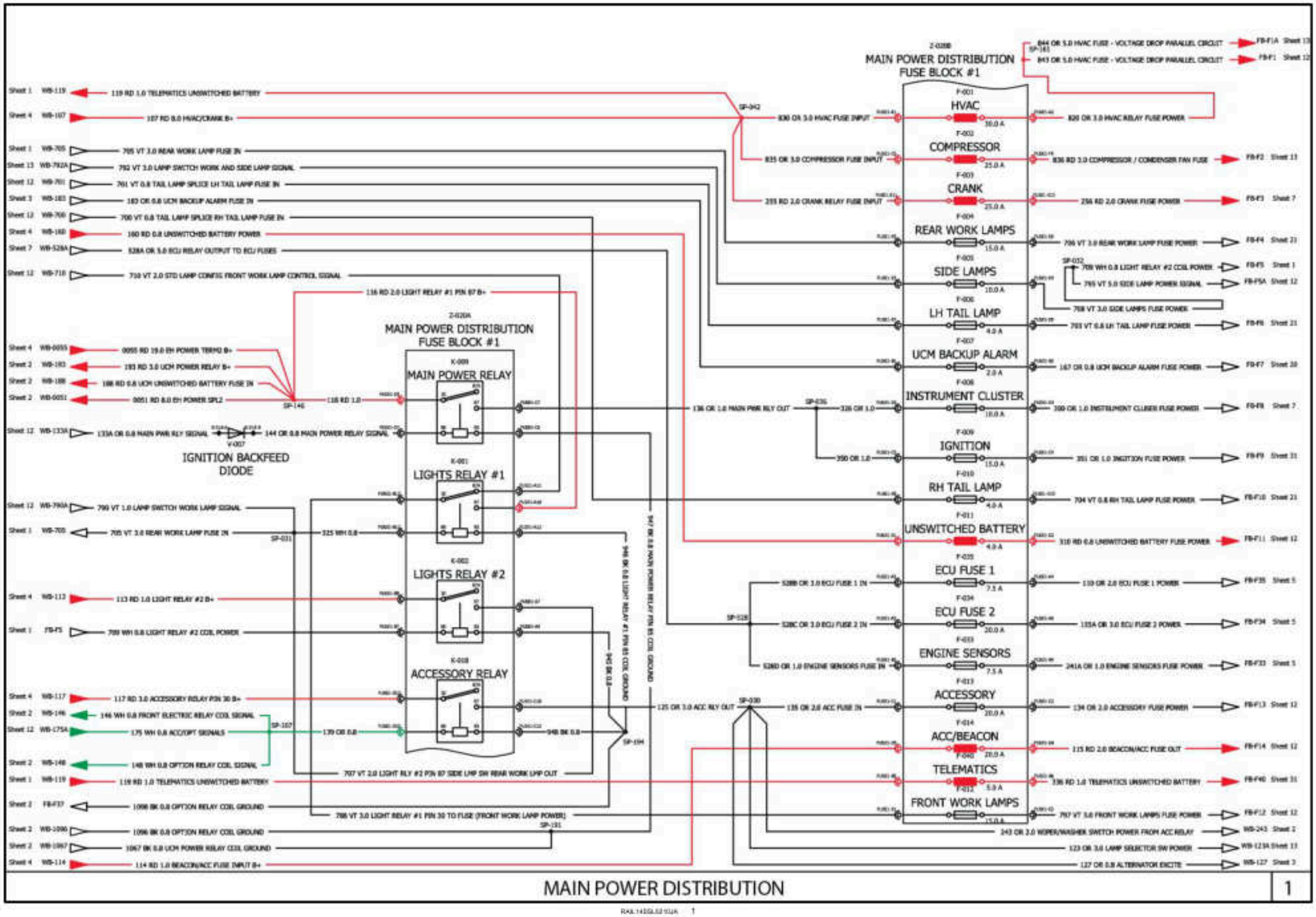


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EST View Parameters List

1. Connect the EST diagnostic connector to the test port of the machine to monitor the four Electro-Hydraulic (EH) parameters shown in the right-hand column of Figure 1.

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