

Installation Instructions

NOTE: This diagnostic harness kit can be used with or without the snowplow connected to a vehicle. Follow the appropriate instructions for each testing situation. See *Mechanic's Guide* for detailed testing safety notices, theory and instruction.

V-PLOW

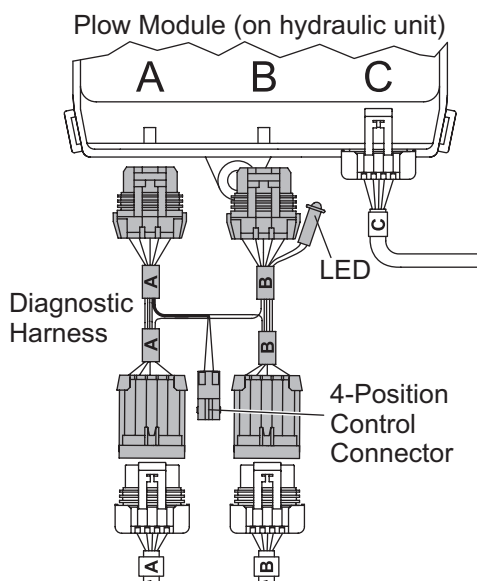
On-Truck Testing

⚠ WARNING

Lower blade when vehicle is parked. Temperature changes could change hydraulic pressure, causing the blade to drop unexpectedly or damaging hydraulic components. Failure to do this could result in serious personal injury.

Remove the vehicle ignition key and put the vehicle in park or in gear to prevent others from starting the vehicle during testing.

1. Disconnect the snowplow and vehicle battery cables, then remove the hydraulic unit covers.
2. Remove the short red cable from the motor relay.
3. Unplug the snowplow connectors from Ports A and B of the Plow Module.
4. Connect the diagnostic harness connectors A and B to the matching ports on the Plow Module (A to A and B to B).



5. Plug the connectors removed from the Plow Module into the matching connectors on the diagnostic harness (A to A and B to B).
6. Connect the snowplow control into the 4-position control connector either in the cab of the vehicle or on the diagnostic harness.
7. Reconnect the snowplow and vehicle battery cables.

NOTE: If you connect the control inside the cab of the vehicle, the engine does not need to be running, but the vehicle ignition key must be turned to the "ON" position before proceeding. If you connect the control to the diagnostic harness, the key should be left out of the ignition.

8. Turn the snowplow control ON and perform a Solenoid Coil Activation Test (SCAT). See the chart below for solenoid numbers and functions. See a *Mechanic's Guide* for instructions on performing a SCAT test.

Solenoid Coil Activation Test (SCAT) Chart	
Control Function	Solenoid Coil(s) Activated
Raise	S2, Motor Relay
Lower	S3
Angle Right	S5, S8, S10, Motor Relay
Angle Left	S4, S6, S9, Motor Relay
Scoop	S4, S7, S8, S11, Motor Relay
Retract (Vee)	S1, S4, S6, S8, S10, Motor Relay
Wing (Right – Out)	S8, S11, Motor Relay
Wing (Right – In)	S1, S8, S10, Motor Relay
Wing (Left – Out)	S4, S7, Motor Relay
Wing (Left – In)	S1, S4, S6, Motor Relay

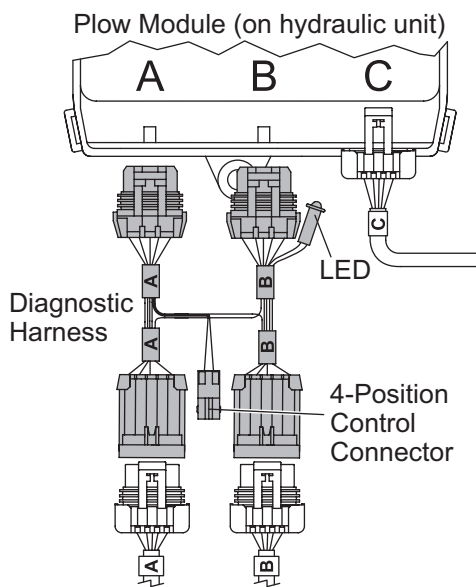
NOTE: The green LED on the diagnostic harness will illuminate when the motor relay function is activated. This light only tests the Plow Module's motor relay output. Refer to a *Mechanic's Guide* for instructions on properly testing a motor relay.

9. After completing the SCAT test, turn the snowplow control and the vehicle ignition OFF, then disconnect the snowplow and vehicle battery cables.
10. Perform any required repairs and retest as needed. Always disconnect the snowplow and vehicle battery cables before removing the diagnostic harness.
11. Reconnect the short red cable assembly to the motor relay.



Off-Truck Testing

1. Remove the hydraulic unit covers.
2. Remove the short red cable from the motor relay.
3. Unplug the snowplow connectors from Ports A and B of the Plow Module.
4. Connect the diagnostic harness connectors A and B to the matching ports on the Plow Module (A to A and B to B).



5. Plug the connectors removed from the Plow Module into the matching connectors on the diagnostic harness (A to A and B to B).
6. Connect the snowplow control into the 4-position control connector on the diagnostic harness.
7. Connect a 12V power source to the snowplow battery cable (POSITIVE [+] 12V to the red wire and NEGATIVE [-] to the black wire). Turn ON the power source.

8. Turn the snowplow control ON and perform a Solenoid Coil Activation Test (SCAT). See the chart below for solenoid numbers and functions. See a Mechanic's Guide for instructions on performing a SCAT test.

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Retract (Vee)	S1, S4, S6, S8, S10, Motor Relay
Wing (Right – Out)	S8, S11, Motor Relay
Wing (Right – In)	S1, S8, S10, Motor Relay
Wing (Left – Out)	S4, S7, Motor Relay
Wing (Left – In)	S1, S4, S6, Motor Relay

NOTE: The green LED on the diagnostic harness will illuminate when the motor relay function is activated. This light only tests the Plow Module's motor relay output. Refer to a Mechanic's Guide for instructions on properly testing a motor relay.

9. After completing the SCAT test, turn the snowplow control OFF and disconnect the power source.
10. Perform any required repairs and retest as needed. Always disconnect the snowplow and vehicle battery cables before removing the diagnostic harness.
11. Reconnect the short red cable assembly to the motor relay.

ADJUSTABLE-WINGED SNOWPLOW

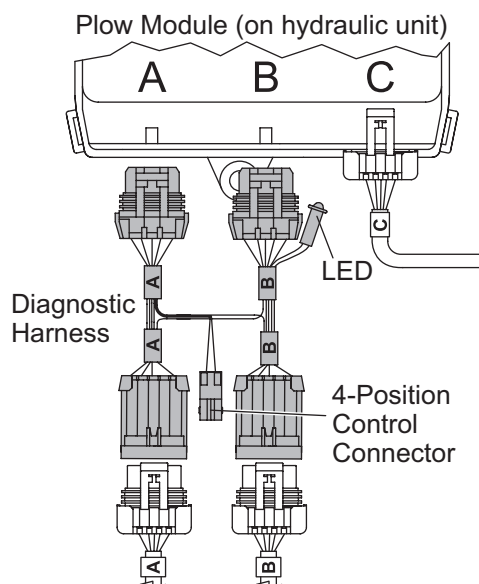
On-Truck Testing

Remove the vehicle ignition key and put the vehicle in park or in gear to prevent others from starting the vehicle during testing.

⚠ WARNING

Lower blade when vehicle is parked. Temperature changes could change hydraulic pressure, causing the blade to drop unexpectedly or damaging hydraulic components. Failure to do this could result in serious personal injury.

1. Disconnect the snowplow and vehicle battery cables, then remove the hydraulic unit covers.
2. Remove the short red cable from the motor relay.
3. Unplug the snowplow connectors from Ports A and B of the Plow Module.
4. Connect the diagnostic harness connectors A and B to the matching ports on the Plow Module (A to A and B to B).



5. Plug the connectors removed from the Plow Module into the matching connectors on the diagnostic harness (A to A and B to B).

6. Connect the snowplow control into the 4-position control connector either in the cab of the vehicle or on the diagnostic harness.
7. Reconnect the snowplow and vehicle battery cables. Do not connect the short cable assembly at this time.

NOTE: If you connect the control inside the cab of the vehicle, the engine does not need to be running, but the vehicle ignition key must be turned to the "ON" position before proceeding. If you connect the control to the diagnostic harness, the key should be left out of the ignition.

8. Turn the snowplow control ON and perform a Solenoid Coil Activation Test (SCAT). See the chart below for solenoid numbers and functions. See a Mechanic's Guide for instructions on performing a SCAT test.

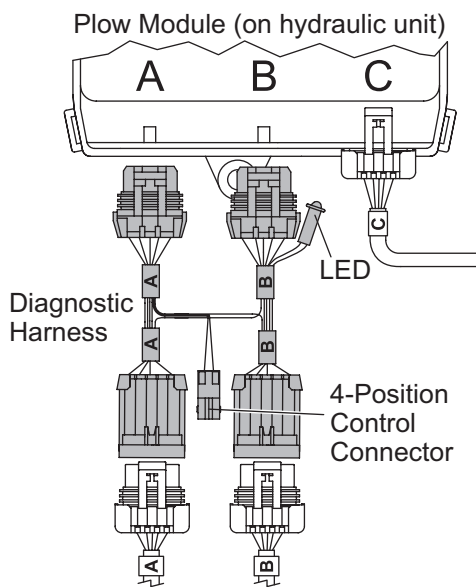
Solenoid Coil Activation Test (SCAT) Chart	
Control Function	Solenoid Coil(s) Activated
Raise	S1, Motor Relay
Lower	S2
Angle Right	S5, Motor Relay
Angle Left	S6, Motor Relay
Scoop	S8, S10, Motor Relay
Retract (Both)	S7, S9, Motor Relay
Wing (Right – Out)	S10, Motor Relay
Wing (Right – In)	S9, Motor Relay
Wing (Left – Out)	S8, Motor Relay
Wing (Left – In)	S7, Motor Relay

NOTE: The green LED on the diagnostic harness will illuminate when the motor relay function is activated. This light only tests the Plow Module's motor relay output. Refer to a Mechanic's Guide for instructions on properly testing a motor relay.

9. After completing the SCAT test, turn the snowplow control and the vehicle ignition OFF, then disconnect the snowplow and vehicle battery cables.
10. Perform any required repairs and retest as needed. Always disconnect the snowplow and vehicle battery cables before removing the diagnostic harness.
11. Reconnect the short red cable assembly to the motor relay.

Off-Truck Testing

1. Remove the hydraulic unit covers.
2. Remove the short red cable from the motor relay.
3. Unplug the snowplow connectors from Ports A and B of the Plow Module.
4. Connect the diagnostic harness connectors A and B to the matching ports on the Plow Module (A to A and B to B).



5. Plug the connectors removed from the Plow Module into the matching connectors on the diagnostic harness (A to A and B to B).
6. Connect the snowplow control into the 4-position control connector on the diagnostic harness.

7. Connect a 12V power source to the snowplow battery cable (POSITIVE [+] 12V to the red wire and NEGATIVE [-] to the black wire). Turn ON the power source.
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Angle Right	S5, Motor Relay
Angle Left	S6, Motor Relay
Scoop	S8, S10, Motor Relay
Retract (Both)	S7, S9, Motor Relay
Wing (Right – Out)	S10, Motor Relay
Wing (Right – In)	S9, Motor Relay
Wing (Left – Out)	S8, Motor Relay
Wing (Left – In)	S7, Motor Relay

NOTE: The green LED on the diagnostic harness will illuminate when the motor relay function is activated. This light only tests the Plow Module's motor relay output. Refer to a Mechanic's Guide for instructions on properly testing a motor relay.

9. After completing the SCAT test, turn the snowplow control OFF and disconnect the power source.
10. Perform any required repairs and retest as needed. Always disconnect the snowplow and vehicle battery cables before removing the diagnostic harness.
11. Reconnect the short red cable assembly to the motor relay.

The company reserves the right under its product improvement policy to change construction or design details and furnish equipment when so altered without reference to illustrations or specifications used. This equipment manufacturer or the vehicle manufacturer may require or recommend optional equipment for snow removal. Do not exceed vehicle ratings with a snowplow. The company offers a limited warranty for all snowplows and accessories. See separately printed page for this important information.

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