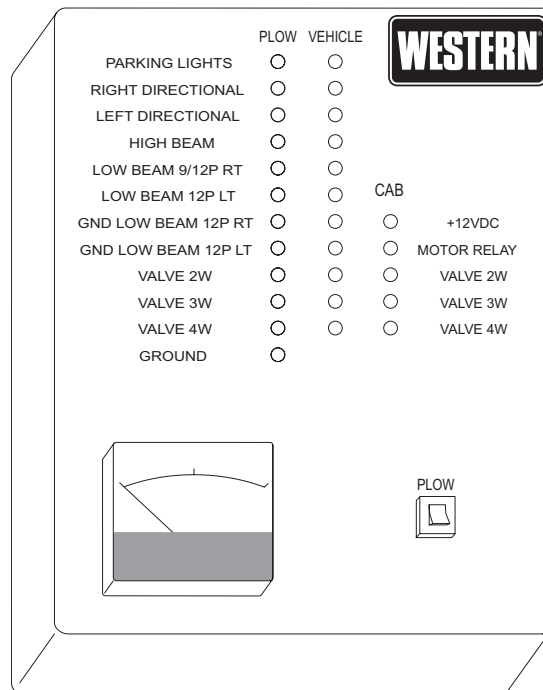




Electrical Tester Operator's Manual for Straight-Blade Snowplows with Isolation Module Electrical System



⚠ CAUTION

Read this document before testing any
WESTERN® snowplows.

⚠ CAUTION

See your WESTERN® outlet for application
recommendations. The Selection List has
specific vehicle and snowplow requirements.

SAFETY

SAFETY DEFINITIONS

WARNING

Indicates a potentially hazardous situation, that if not avoided, could result in death or serious personal injury.

CAUTION

Indicates a situation that, if not avoided, could result in damage to product or property.

NOTE: Identifies tips, helpful hints, and maintenance information the owner/operator should know.

BEFORE YOU BEGIN

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 can result in serious personal injury.

WARNING

The tester shall keep bystanders clear of the blade during this test. Do not stand between the vehicle and the blade. A moving or falling blade could cause personal injury.

CAUTION

Before starting any test, the snowplow must be properly attached to the vehicle.

- Park the vehicle on a level surface, place shift lever in PARK or NEUTRAL and set parking brake.

PERSONAL SAFETY

- Wear only snug-fitting clothing while working on your vehicle or snowplow.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

FIRE AND EXPLOSION

WARNING

Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

BATTERY SAFETY

CAUTION

Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.

Batteries contain sulfuric acid which burns skin, eyes and clothing.

Disconnect the battery before removing or replacing any electrical components.

FUSES

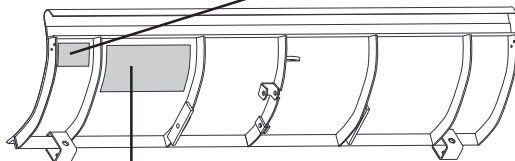
The vehicle control harness contains two automotive-style fuses. One fuse is for the snowplow park/turn lamp power and the other is for the snowplow control power. If a problem should occur and fuse replacement is necessary, the replacement fuse should be of the same value as the original. Installing a fuse of a larger value could damage the system.

SAFETY

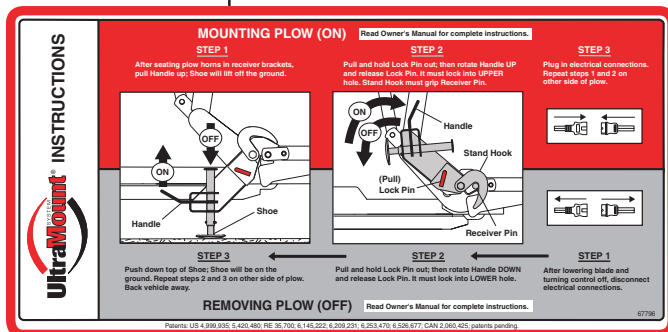
WARNING/CAUTION & INSTRUCTION LABELS

Become familiar with and inform users about the warning and instruction labels on the back of the blade.

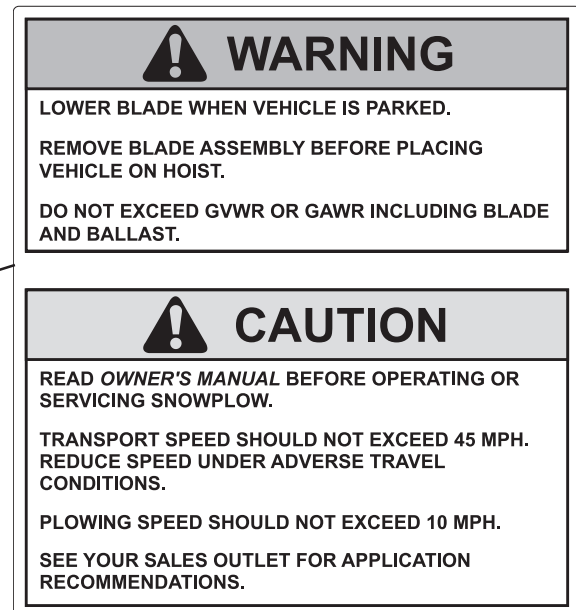
UltraMount® System



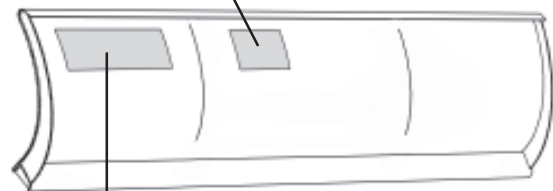
Instruction Label



Warning/Caution Label



UniMount® System



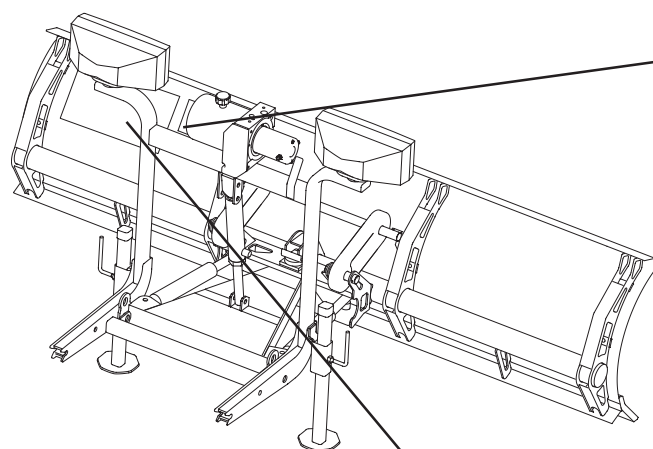
Instruction Label



SAFETY

Suburbanite™ Personal Plow

Warning/Caution Label



WARNING

LOWER BLADE WHEN VEHICLE IS PARKED.

REMOVE BLADE ASSEMBLY BEFORE PLACING VEHICLE ON HOIST.

DO NOT EXCEED GVWR OR GAWR INCLUDING BLADE AND BALLAST.



CAUTION

READ *OWNER'S MANUAL* BEFORE OPERATING OR SERVICING SNOWPLOW.

TRANSPORT SPEED SHOULD NOT EXCEED 45 MPH. REDUCE SPEED UNDER ADVERSE TRAVEL CONDITIONS.

PLOWING SPEED SHOULD NOT EXCEED 10 MPH.

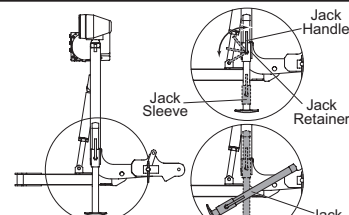
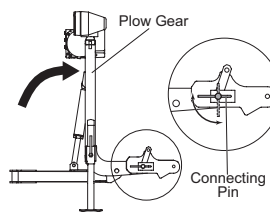
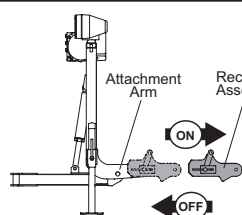
SEE YOUR SALES OUTLET FOR APPLICATION RECOMMENDATIONS.

Instruction Label

This snowplow is for personal/homeowner use only.

ATTACH INSTRUCTIONS

1. Make certain both **connecting pins** are fully retracted.
2. Drive vehicle slowly to completely insert **attachment arms** into **receiver assembly** slots.
3. Twist both **connecting pins** to release spring tension, then push **plow gear** toward vehicle so **connecting pins** fully engage holes in **attachment arms**.
4. Loosen one **jack handle** and slide **jack sleeve** down below **jack retainer**. Remove **jack** and retighten **jack handle**. Repeat for other **jack** and store them.
5. Connect all electrical cables from vehicle to snowplow.



U.S. Patents 4,999,935; 5,420,480; 6,253,470; RE35,700; CAN Patent 2,060,425; and other patents pending.

27155

5. Back vehicle away from snowplow.
6. See Owner's Manual for proper snowplow storage.

3. While pushing **plow gear** toward vehicle to release **connecting pin** tension, pull **connecting pin** out on one side and twist pin handle to keep pin retracted. Repeat procedure for other **connecting pin**.
4. Disconnect all electrical cables.

1. Put blade on ground using **LOWER/FLOAT** on snowplow control. Leave control **ON** and in **FLOAT**.
2. Attach **jacks**. Loosen **jack handle**, put **jack** on ground, and raise **jack sleeve** until fully engaging **jack retainer**. Tighten **jack handle**. Repeat for other **jack**.

DETACH INSTRUCTIONS

Read Owner's Manual for Complete Instructions

STRAIGHT BLADE ELECTRICAL TEST PROCEDURE

TEST PREPARATION

- Connect the Electrical Tester's red clip to the positive battery terminal and the black clip to the negative terminal. Connect the black clip last. When disconnecting, disconnect it first.
- If a tester LED does not come on, the fault could be an open lamp element, an open circuit, or both.
- The tester cannot verify that lamp elements wired in parallel are good.
- All vehicle lamps must be operational. An open lamp may cause false test results.
- **For CabCommand Control:** Automatically cancels float in angle right or left.

For Solenoid Control: After activating the LOWER function, valve 2W will remain activated until float is canceled. Before you test the ANGLE LEFT or the ANGLE RIGHT function, cancel float (and deactivate valve 2W) by momentarily activating the RAISE function.

- The Electrical Tester is protected by a circuit breaker. A tripped breaker indicates a direct short. Reset by pushing in the button located on the front panel.
- There are no user-serviceable parts inside the Electrical Tester. For repair, return the Electrical Tester to your sales outlet.

3. Use the amp meter adjusting screw to adjust the meter to zero.
4. Connect the tester leads to the vehicle battery.
 - **The tester +12VDC LED is ON.**
5. Turn the ignition to RUN. **Do not** start the engine.
6. Plug the cab control into the vehicle control harness.

For CabCommand Control: The LED* under the control logo is on. Press the power button.

For Solenoid Control: Turn the control power switch on. The control indicator LED is on.
7. Operate the cab controls. Refer to the chart below and verify the current draw. For all but the LOWER function, listen for a click as the motor relay energizes.
8. If required, repair or replace components, and retest.
9. The test is complete. Turn off the ignition and disconnect the tester.

* Early hand-held control models do not have logo or FLOAT LED's.

CURRENT DRAW TEST

A zero (0) reading indicates an open circuit. A low or high reading indicates a poor connection, a burned out bulb, a bad cartridge coil, or corrosion. The currents listed are approximate.

1. Connect the tester 2-pin connector to the plow battery cable.
2. Connect the plow control harness (3-pin) to the vehicle control harness. Connect the plow lighting harness (11-pin) to the vehicle lighting harness.

CONTROL – CURRENT DRAW (AMPS)

RAISE	1.5
LOWER*	1.5
ANGLE RIGHT	1.5
ANGLE LEFT	3.0

* After activating the LOWER function, cancel FLOAT by activating the RAISE function.

STRAIGHT BLADE ELECTRICAL TEST PROCEDURE

CAB CONTROL TEST

This procedure tests the cab control functions only.

1. Connect the tester leads to the vehicle battery.

- The tester +12VDC LED is ON.

2. Plug the cab control into the tester.

For CabCommand Control: The LED* under the control logo is ON. Press the power button. The POWER LED is ON.

For Solenoid Control: Turn the control power switch on. The control indicator LED is ON.

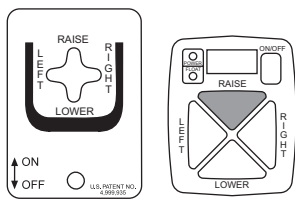
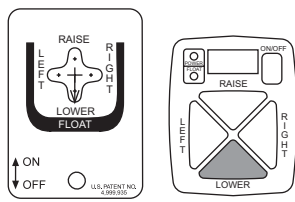
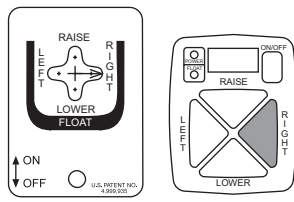
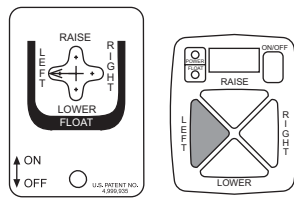
3. Operate the control, and refer to the charts below. Verify that the indicated Cab LED's come on. Cancel float after the LOWER function by activating the RAISE function.

4. **For CabCommand Control:** Verify the control time-outs. For all except the LOWER function, if you press and hold the buttons, the tester's Motor Relay and Valve LED's time out automatically. For the LEFT and RIGHT buttons the time-out is approximately 4-10 seconds. The time-out for the RAISE button is 2-5 seconds.

Press and hold the LOWER button – after .75 seconds the FLOAT LED* comes on. Cancel float by pressing the RAISE button.

5. If any LED does not come on, repair or replace components, and retest.
6. The test is complete. Disconnect the tester.

* Early hand-held control models do not have logo or FLOAT LED's.

RAISE	LOWER	ANGLE RIGHT	ANGLE LEFT
			
CAB ● +12VDC ● MOTOR RELAY ○ VALVE 2W ○ VALVE 3W ● VALVE 4W	CAB ● +12VDC ○ MOTOR RELAY ● VALVE 2W ○ VALVE 3W ○ VALVE 4W	CAB ● +12VDC ● MOTOR RELAY ○ VALVE 2W ● VALVE 3W ○ VALVE 4W	CAB ● +12VDC ● MOTOR RELAY ○ VALVE 2W ● VALVE 3W ● VALVE 4W

STRAIGHT BLADE ELECTRICAL TEST PROCEDURE

SNOWPLOW HARNESS TEST

This procedure tests continuity in the snowplow harnesses.

1. Connect the tester 12-pin connector to the **"Y" Adapter Cable** (part number 26482) 12-pin connector. Connect the **"Y" Adapter Cable's** 7 and 11-pin connectors to the snowplow harnesses.
2. Connect the **"Y" Adapter Cable** ORANGE/BLACK wire to a good vehicle ground. Connect the tester 2-pin connector to the snowplow battery cable.
3. Connect the tester leads to the vehicle battery.

- **The tester +12VDC LED is ON.**

NOTE: The tester 2-pin connection is not used for systems with a 7-pin plow harness.

4. Refer to the chart at right and verify the indicated snowplow LED's are ON.
5. If any LED is not ON, repair or replace components, and retest.
6. The test is complete. Disconnect the tester.

Isolation Module System	
	SNOWPLOW LED
PARKING LIGHTS	●
RIGHT DIRECTIONAL	●
LEFT DIRECTIONAL	●
HIGH BEAM	●
LOW BEAM 9/12P RT	●
LOW BEAM 12P LT	○
GND LOW BEAM 12P RT	○
GND LOW BEAM 12P LT	○
VALVE 2W	●
VALVE 3W	●
VALVE 4W	●
GROUND	●

STRAIGHT BLADE ELECTRICAL TEST PROCEDURE

VEHICLE CONTROL HARNESS TEST

This procedure tests continuity in the **vehicle control harness only**.

1. Disconnect the snowplow electrical connectors from the vehicle.
2. Connect the tester 12-pin connector to the **"straight" Adapter Cable** (part number 26483) 12-pin connector. Connect the **"straight" Adapter Cable** 7-pin connector to the vehicle control harness.
3. Connect the snowplow lighting harness to the vehicle lighting harness.
4. Connect the tester leads to the vehicle battery.
 - **The tester +12VDC LED is ON.**
5. Turn the ignition to RUN. **Do not start the engine.**

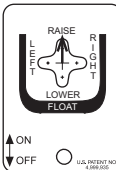
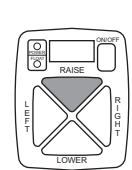
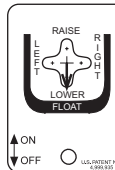
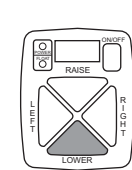
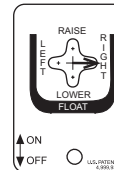
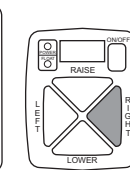
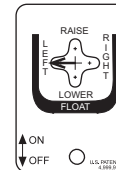
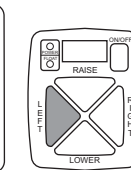
6. Plug the control into the vehicle.

For CabCommand Control: The LED* under the control logo is on. Press the power button. **The POWER LED is ON.**

For Solenoid Control: Turn the control power switch on. **The control indicator LED is ON.**

7. Refer to the control function charts and verify that the indicated vehicle LED's come on. For all but the LOWER function, listen for the click as the motor relay energizes.
8. If indicated LED does not come on or the motor relay does not energize (do not hear the click), repair or replace components, and retest.
9. The test is complete. Turn off the ignition and disconnect the tester.

* Early hand-held control models do not have logo or FLOAT LED's.

CAB CONTROL			
RAISE	LOWER**	ANGLE RIGHT	ANGLE LEFT
 	 	 	 
PLOW VEHICLE	PLOW VEHICLE	PLOW VEHICLE	PLOW VEHICLE
VALVE 2W ○ ○	VALVE 2W ○ ●	VALVE 2W ○ ○	VALVE 2W ○ ○
VALVE 3W ○ ○	VALVE 3W ○ ○	VALVE 3W ○ ●	VALVE 3W ○ ●
VALVE 4W ○ ●	VALVE 4W ○ ○	VALVE 4W ○ ○	VALVE 4W ○ ●
GROUND ○	GROUND ○	GROUND ○	GROUND ○

** After activating the LOWER function, cancel float by activating the RAISE function.



WESTERN PRODUCTS
P.O. BOX 245038
MILWAUKEE, WI 53224-9538

 A DIVISION OF DOUGLAS DYNAMICS, L.L.C.

Copyright © 2003 Douglas Dynamics, L.L.C. All rights reserved. This material may not be reproduced or copied, in whole or in part, in any printed, mechanical, electronic, film or other distribution and storage media, without the written consent of Western Products. Authorization to photocopy items for internal or personal use by Western Products outlets or snowplow owner is granted.

Western Products 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. Western Products and the vehicle manufacturer may require and/or recommend optional equipment for snow removal. Do not exceed vehicle ratings with a snowplow. Western Products offers a limited warranty for all snowplows and accessories. See separately printed page for this important information. The following are registered (®) and unregistered (™) trademarks of Douglas Dynamics, L.L.C.: UltraMount®, UniMount®, Suburbanite™, WESTERN®.

Printed in USA

Lit. No. 64428

April 28, 2003