



# OWNER'S MANUAL

## Straight Blades with Relay Electrical System



**SNOWPLOWS**

**⚠ CAUTION**

Read this manual before operating or servicing  
snowplow.

This document supersedes all editions with an earlier date.

## OWNER'S INFORMATION

Owner's Name: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Outlet Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Outlet Address: \_\_\_\_\_

Vehicle Model: \_\_\_\_\_ Year: \_\_\_\_\_

Snowplow Type (Model): \_\_\_\_\_ Year:\* \_\_\_\_\_

Blade Width: \_\_\_\_\_ Weight \_\_\_\_\_ LBS/KG

Ballast: No \_\_\_ Yes \_\_\_ Amount \_\_\_\_\_ LBS/KG

FloStat® Serial Number: \_\_\_\_\_

\* The year of manufacture is found on blade size label. Seven digit code has year of manufacture as third and fourth digits.

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# PREFACE

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## PREFACE

Welcome to the growing family of WESTERN® snowplow owners.

This manual provides safety, operation, maintenance and troubleshooting information for your new WESTERN® snowplow. To keep your snowplow in good condition, read and understand this manual and follow its recommendations. Failure to do so may affect your warranty.

When service is necessary, your local WESTERN® outlet knows your snowplow best. Contact your snowplow outlet for maintenance, service, or any other assistance you may require. We have enclosed a “Report Card” in your *Owner’s Manual* packet for your use.

Your WESTERN® snowplow FloStat® hydraulic unit has a serial number. Record this serial number on the Owner’s Information page at the front of this manual.

Before using your WESTERN® snowplow, make sure your vehicle is equipped with all the vehicle manufacturer’s and our required options for snowplowing.

## FACTORY ORIGINAL PRODUCTS

Your WESTERN® snowplow is a valuable investment. The best way to assure original equipment reliability and efficiency is to purchase only genuine **Factory Original parts and accessories**. “Will-fit” parts and accessories can alter your plow’s performance characteristics and may affect your product warranty.

Protect your investment by staying with the best—original WESTERN® parts and accessories from your local WESTERN® outlet.



# 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.

## WARNING/CAUTION & INSTRUCTION LABELS

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

### Warning and Caution Label

**⚠ WARNING**

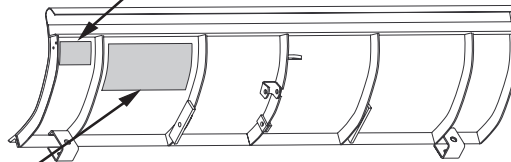
LOWER BLADE WHEN VEHICLE IS PARKED.  
REMOVE BLADE ASSEMBLY BEFORE PLACING VEHICLE ON HOIST.  
DO NOT EXCEED GVWR OR GAWR INCLUDING BLADE AND BALLAST.

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**⚠ 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.

67796



Instruction Label

UltraMount<sup>®</sup> INSTRUCTIONS

### MOUNTING PLOW (ON)

Read Owner's Manual for complete instructions.

STEP 1

After seating plow horns in receiver brackets, pull Handle up; Shoe will lift off the ground.

STEP 3

Push down top of Shoe; Shoe will be on the ground. Repeat steps 2 and 3 on other side of plow. Back vehicle away.

STEP 2

Pull and hold Lock Pin out; then rotate Handle UP and release Lock Pin. It must lock into UPPER hole. Stand Hook must grip Receiver Pin.

STEP 2

Pull and hold Lock Pin out; then rotate Handle DOWN and release Lock Pin. It must lock into LOWER hole.

STEP 3

Plug in electrical connections. Repeat steps 1 and 2 on other side of plow.

STEP 3

Push down top of Shoe; Shoe will be on the ground. Repeat steps 2 and 3 on other side of plow. Back vehicle away.

STEP 2

Pull and hold Lock Pin out; then rotate Handle DOWN and release Lock Pin. It must lock into LOWER hole.

STEP 1

After lowering blade and turning control off, disconnect electrical connections.

### REMOVING PLOW (OFF)

Read Owner's Manual for complete instructions.

Patents: US 4,280,062; 4,999,935; 5,420,480; RE 35,700; 6,145,222; 6,209,231; 6,253,470; CAN 2,060,425; patents pending.

67796

# SAFETY

## SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury, and/or equipment and property damage. Read and understand labels and the *Owner's Manual* before installing, operating, or making adjustments.

### 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

**Remove blade assembly before placing vehicle on hoist.**

### WARNING

**Do not exceed GVWR or GAWR including blade and ballast. The rating label is found on the driver-side vehicle door cornerpost.**

### CAUTION

**Read Owner's Manual before operating or servicing snowplow.**

### CAUTION

**Transport speed should not exceed 45 mph. Reduce speed under adverse travel conditions.**

### CAUTION

**Plowing speed should not exceed 10 mph.**

### CAUTION

**See your WESTERN® outlet for application recommendations.**

## 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.

## VENTILATION

### WARNING

**Vehicle exhaust contains deadly carbon monoxide (CO) gas. Breathing this gas, even in low concentrations, could cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.**

# SAFETY

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## HYDRAULIC SAFETY

### **⚠ WARNING**

**Hydraulic fluid under pressure can cause skin injection injury. If you are injured by hydraulic fluid, get medical attention immediately.**

- Always inspect hydraulic components and hoses before using. Replace any damaged or worn parts immediately.
- If you suspect a hose leak. DO NOT use your hand to locate it. Use a piece of cardboard or wood.

## 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.**

## NOISE

Airborne noise emission during use is below 70 dB(A) for the snowplow operator.



# VEHICLE APPLICATION INFORMATION

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## VEHICLE APPLICATION REQUIREMENTS

### **⚠ CAUTION**

See your WESTERN® outlet for application recommendations.

Vehicle application recommendations are based on the following:

- The vehicle with the snowplow installed must comply with applicable Federal Motor Vehicle Safety Standards (FMVSS).
- The vehicle with the snowplow installed must comply with the vehicle manufacturer's stated gross vehicle and axle weight ratings (found on the driver-side door cornerpost of the vehicle) and front and rear weight distribution ratio. In some cases, rear ballast may be required to comply with these requirements. See Ballast Requirements section.
- WESTERN® SELECTION LIST is based on available vehicle capacity for snowplow equipment on a representative vehicle equipped with options commonly used for snowplowing and with 300 lb. of front seat occupant weight.
- Weights of front seat occupants can be adjusted above 300 lb. but vehicle with snowplow must not exceed vehicle GVWR or GAWR.
- In some cases there may be additional limitations and requirements.
- Installation, modification, and addition of accessories must comply with published WESTERN® recommendations and instructions. Available capacity decreases as the vehicle is loaded with cargo or other truck equipment or snowplow accessories are installed.
- If there is uncertainty as to whether available capacity exists, the actual vehicle as configured must be weighed.

## BALLAST REQUIREMENTS

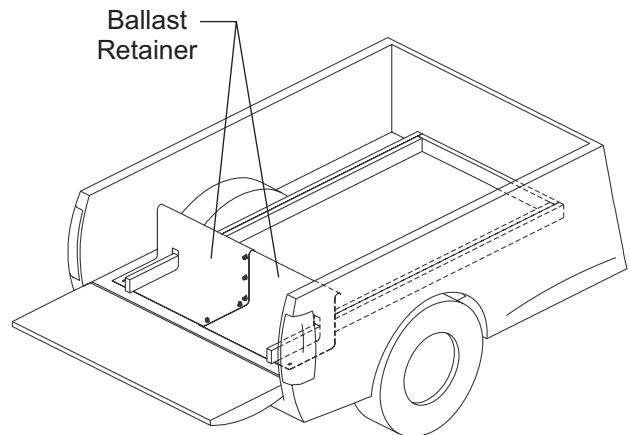
Ballast (additional weight) is an important part of qualifying vehicles for snowplow eligibility. Rear ballast must be used, when necessary, to remain in compliance with axle ratings and ratios as specified by the vehicle manufacturer.

If ballast is required, it is important that it be secured properly behind the rear axle. A ballast retainer kit is available from your WESTERN® outlet, PN 62849.

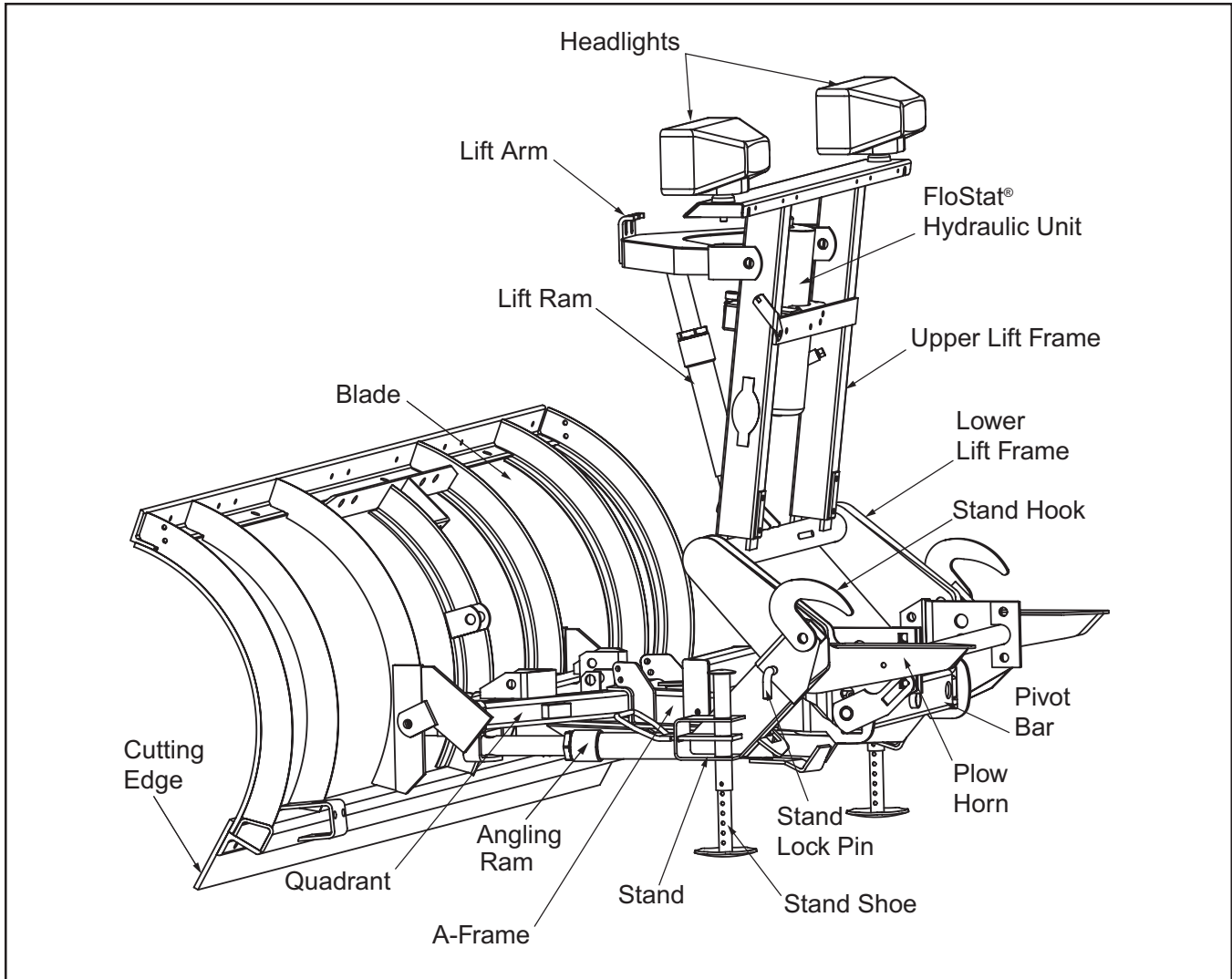
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**NOTE: The ballast retainer kit is for snowplow vehicles requiring ballast. See your WESTERN® outlet for the correct amount of ballast required. Include the weight of the retainer as part of the ballast requirement. Sand bags are recommended for use as ballast.**

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## GETTING TO KNOW YOUR SNOWPLOW



### UltraMount® SNOWPLOW

An UltraMount® snowplow consists of all the components that are readily removable from the vehicle as a unit. This includes the blade, quadrant, A-frame, lift frame, stands, hydraulic unit, and snowplow headlamps. The snowplow is ready and easy to mount when you need to plow snow. When plowing is completed, remove the snowplow.

The snowplow shall be installed according to instructions supplied. WESTERN® outlets are trained to provide this service and other services for this plow.

There is no need to unhook the chains or the hydraulic hoses. When the lift frame is pinned to the stands and locked in place (see blade label or snowplow removal section of this manual), the complete UltraMount® snowplow can easily be moved around on most hard surfaces.

### BLADE

WESTERN® snowplows with steel blades are constructed of heavy gauge steel. To increase rigidity and strength, the blade is reinforced with several vertical ribs. The top edge is formed for added strength and improved appearance.

WESTERN® snowplows with poly blades are constructed of a high molecular weight polyethylene sheet that is supported with structural steel. The blade comes equipped with a rubber snow deflector.

The exclusive Roll-Action™ blade is designed to roll snow ahead and to the side instead of just pushing snow. This action means you can move more snow and move it faster using less power, saving fuel and reducing wear and tear on both the vehicle and the snowplow.

# GETTING TO KNOW YOUR SNOWPLOW

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The blade has a replaceable high-carbon steel cutting edge bolted to the bottom. This cutting edge is reversible to equalize wear. Replace when it is worn to the bottom edge of the blade. (See the Maintenance section of this Owner's Manual.)

The blade also features large, adjustable disc-type skid shoes. These rotate 360° for longer wear and better blade flotation over all surfaces. For severe service, heavy-duty disc shoes are standard on all PRO-PLOW and PRO PLUS® snowplows.

Your new blade's steel components are protected with a baked-on powder finish that resists cracking, corrosion, scratching and rust. This coating — many times thicker than paint — will maintain its luster and glossy good looks. It can be touched up when necessary.

Blade guides are furnished with your complete snowplow. These help improve operator visibility and blade control.

## A-FRAME, QUADRANT, AND LIFT FRAME

The quadrant is attached to the back of the blade with heavy-duty trip springs and either bolts with locknuts or clevis pins with cotters. The trip springs allow the blade to trip forward and ride over obstacles such as low curbs, manhole covers, etc. without damaging the blade or the vehicle, or injuring the driver. See the Regular Maintenance and Adjustments section for Trip Spring Adjustment.

The quadrant is attached to the triangular A-frame with a pivot bolt. The pivot bolt allows the quadrant and blade to swing right or left.

The hydraulic unit is mounted on the front of the lift frame. The hoses remain connected to the hydraulic unit and the rams. The snowplow headlamps are also attached to the lift frame.

## SNOWPLOW HEADLAMPS

### WARNING

**Your vehicle must be equipped with snowplow headlamps and directional lights.**

The snowplow headlamps include a set of rectangular, dual-beam, halogen headlamps plus combination park and turn signals. A patented pre-wired harness with a plug-in module requires no headlamp wire splicing. The headlamps conform to Federal Motor Vehicle Safety Standards (FMVSS).

When the snowplow plugs are connected, the vehicle headlamps will automatically switch to the snowplow headlamps when they are turned on.

When the snowplow plugs are disconnected, the headlamps will automatically switch to vehicle headlamps when they are turned on.

Replacement 2E1 Sealed Beam headlamps are available through your local WESTERN® outlet.

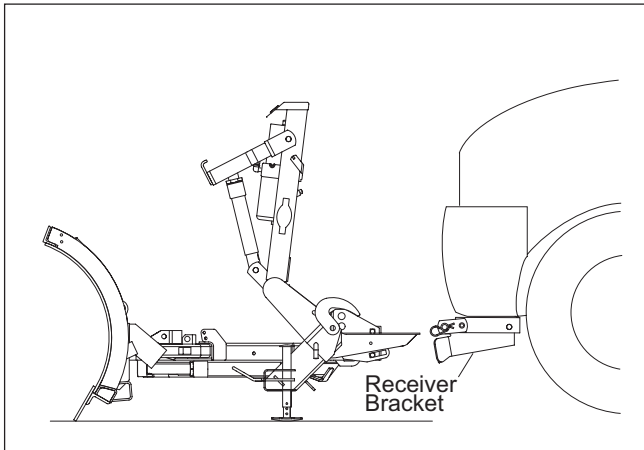
# GETTING TO KNOW YOUR SNOWPLOW

## VEHICLE MOUNT

WESTERN® has designed custom mounts for most vehicles. Due to differences between vehicle models, mounts are generally not interchangeable.

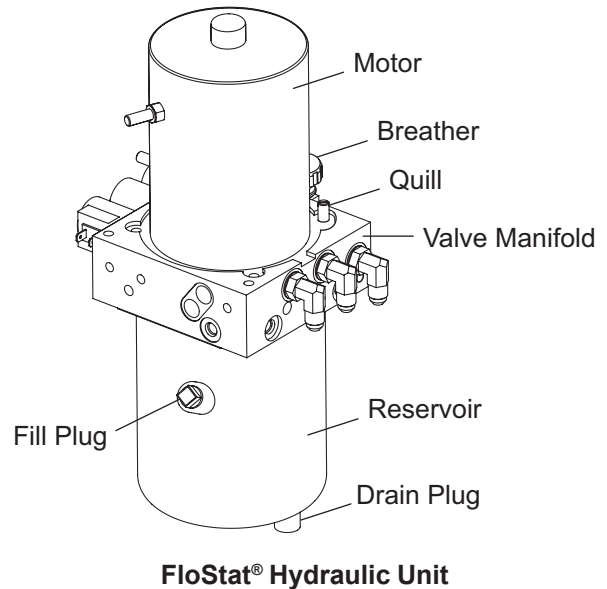
The mount is fastened to the underside of the vehicle frame and provides the primary connecting point between the snowplow and the vehicle.

Attached to the mount are two removable receiver brackets. The receiver brackets are attached to the mount with lock tabs and hairpin cotters. The receiver brackets are easily removed to provide even more road clearance during the non-plowing months of the year.



## FloStat® HYDRAULIC SYSTEM

Western Products' FloStat® hydraulic system provides a fast and uniform speed of lifting and angling. The system raises the blade in two seconds, and all angling functions are less than four seconds. For hydraulic fluid type and filling instructions, see Hydraulic System in the Maintenance section of this Owner's Manual.



## System Capacity

FloStat® unit reservoir 1-3/4 quarts  
FloStat® system total 2-3/8 to 2-3/4 quarts

## Pump Motor Specifications

| PRO PLUS®/PRO/STANDARD             |
|------------------------------------|
| 12 volt DC with +/- connection     |
| 1700-1800 psi pump relief valve    |
| 3950-4050 psi angling relief valve |
| 4.5" dia. 1.04 kw motor            |
| .000477 GAL/REV Pump               |
| Hydraulic Hose SAE 100R1           |

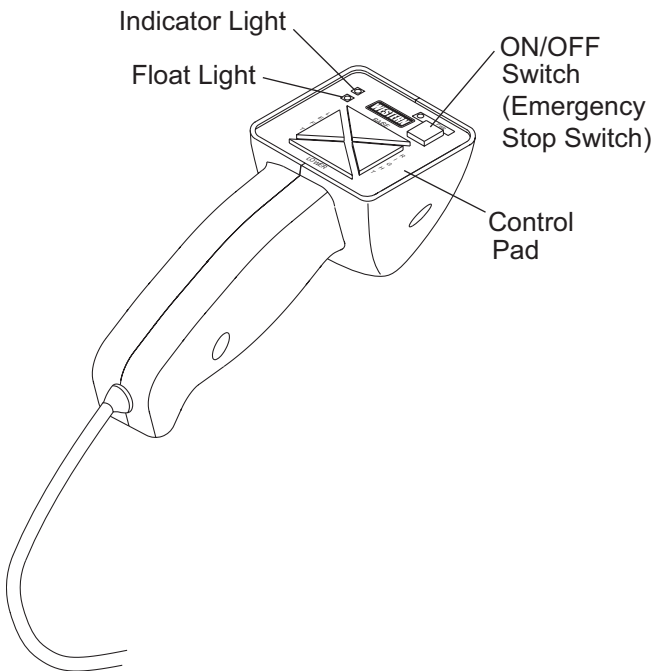
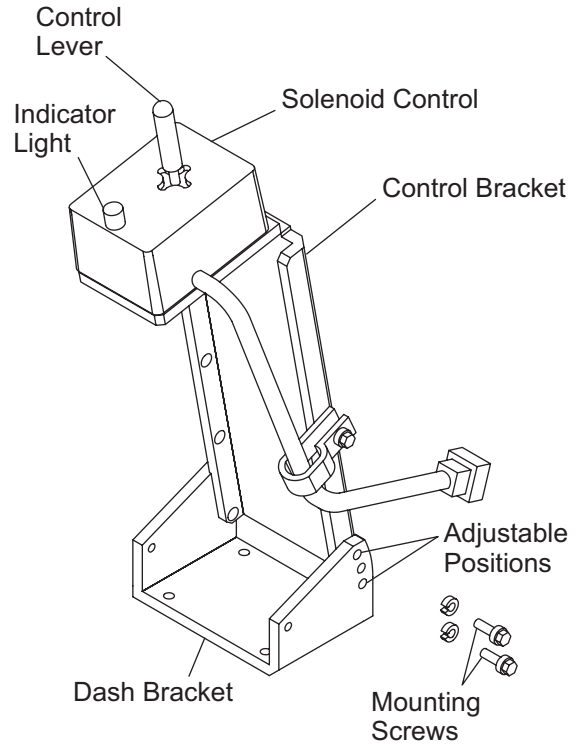
# GETTING TO KNOW YOUR SNOWPLOW

## CONTROLS

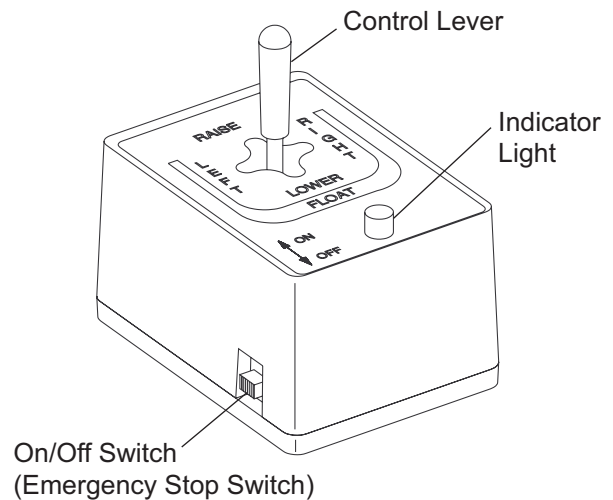
### **⚠ WARNING**

To prevent accidental movement of the blade, always turn the ON/OFF switch to OFF whenever the snowplow is not in use. The control indicator light will turn off.

The controls are electrically powered through the ignition (key) switch of your vehicle and are protected by a replaceable 6-amp in-line fuse. The ON/OFF switch allows you to turn off the control and prevent blade movement even when the ignition is on. **The ON/OFF switch operates as emergency stop when required.**



**CabCommand — Hand-Held Control**



**Solenoid Control and Mounting Bracket**

## ACCESSORIES AND OPTIONS

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### BLADE ACCESSORIES — OPTIONAL

#### **Snow Deflector**

The optional snow deflector, available in poly or reinforced rubber, helps keep snow off the windshield and away from the radiator. The deflector improves the Roll-Action™ feature and increases snowplow efficiency. The snow deflector is standard on poly snowplows.

#### **Rubber Cutting Edge**

The rubber cutting edge is made of resilient rubber compounds that allow for a longer lasting cutting edge. It adjusts easily to road surface irregularities without gouging and removes all types of snow, quickly and cleanly.

# MOUNTING SNOWPLOW TO VEHICLE

## MOUNTING SNOWPLOW (ON)

### **⚠ WARNING**

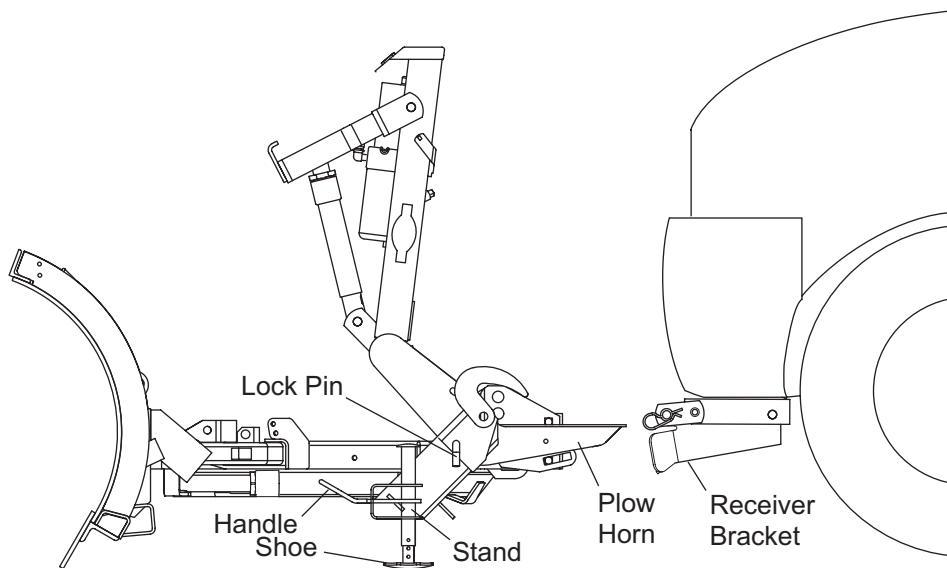
Keep 8' clear of the blade drop zone when it is being raised, lowered or angled. Do not stand between the vehicle and blade or directly in front of blade. If the blade hits you or drops on you, you could be seriously injured.

### **⚠ WARNING**

Inspect snowplow components and fasteners for wear or damage when mounting or removing the snowplow. Worn or damaged components could allow the snowplow to drop unexpectedly.

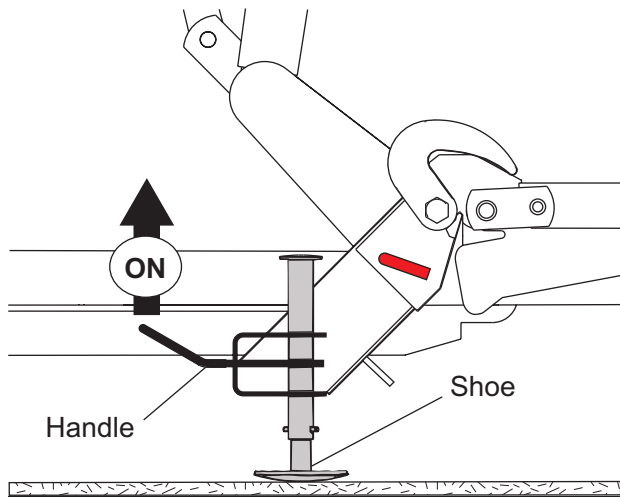
**NOTE:** Use dielectric grease to prevent corrosion on all connections.

- Remove the electrical covers from the plugs.
- Align vehicle receiver brackets with plow horns and drive vehicle slowly forward until plow horns fully seat inside receiver brackets.
- Turn vehicle ignition to off position.

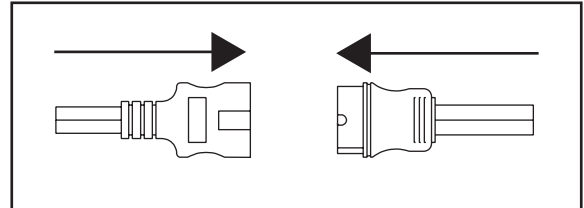


## MOUNTING SNOWPLOW TO VEHICLE

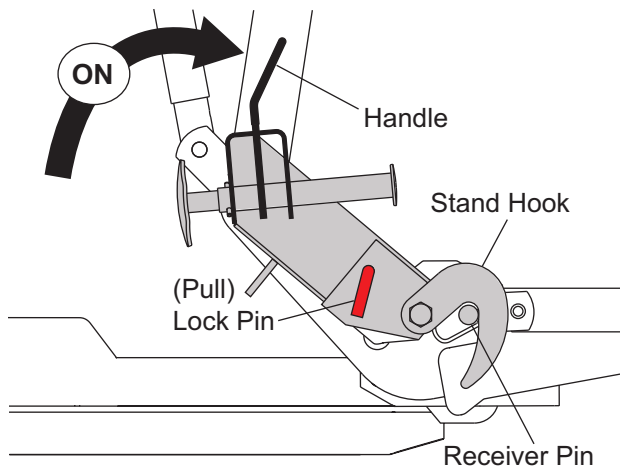
1. After seating plow horns in receiver brackets, pull handle up; shoe will lift off the ground.



3. Repeat steps 1 and 2 on other side of snowplow.
4. Connect electrical plugs.



2. Pull and hold lock pin out; then rotate handle UP and release lock pin. It must lock into UPPER hole. Stand hook must grip receiver pin.





# OPERATION

## SOLENOID CONTROL

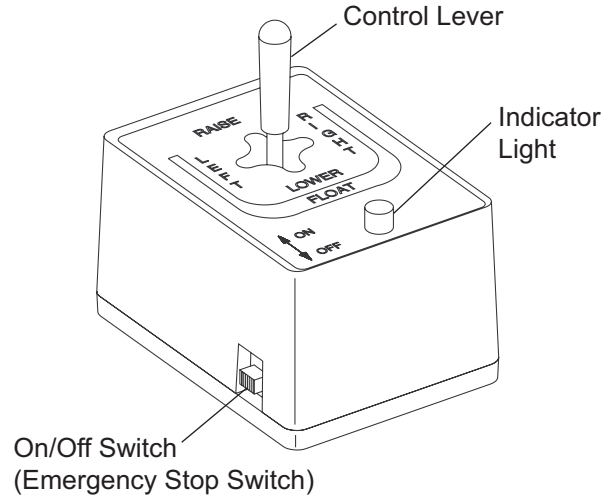
### ⚠ WARNING

To prevent accidental movement of the blade, always turn the ON/OFF switch to OFF whenever the snowplow is not in use. The control indicator light will turn off.

### ⚠ CAUTION

DO NOT hold control lever in RAISE, ANGLE LEFT or ANGLE RIGHT position after blade has reached desired position. To do so will cause extra current and overheat components.

Turn the vehicle ignition (key) switch to the ON or the ACCESSORY position. Move control ON/OFF switch to the ON position. The control indicator light (red) lights when the control ON/OFF and the ignition (key) are both turned on. **The ON/OFF switch operates as emergency stop, when required.**



| Action          | Description of Operation                                                                                                                                                                  |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ON/OFF          | Slide the control power switch ON to activate the hydraulic system. Turn the control OFF to lock the blade in place. This prevents accidental movement of the blade.                      |
| RIGHT           | Move the control lever right to angle the blade to the right.                                                                                                                             |
| LEFT            | Move the control lever left to angle the blade to the left.                                                                                                                               |
| RAISE           | Move the control lever up (forward) to raise the blade to the desired height.                                                                                                             |
| LOWER/FLOAT     | Move the control lever down (back) to lower the blade and activate the float mode, which allows the blade to move up and down to follow the contour of the surface being plowed.          |
| To Cancel Float | Cancel the float mode by momentarily placing the control in the RAISE position, turning the control off or turning the vehicle ignition off. Angling left or right does not cancel float. |

# OPERATION

## CabCommand CONTROL

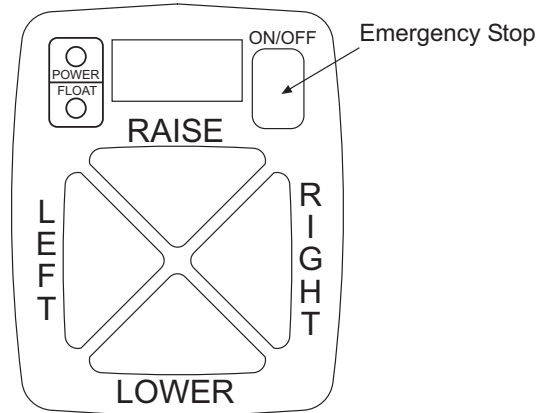
### **⚠ WARNING**

To prevent accidental movement of the blade, always push button to switch the control OFF whenever the snowplow is not in use. The control indicator light will turn off.

### **⚠ CAUTION**

DO NOT hold control button in RAISE, ANGLE LEFT or ANGLE RIGHT position after blade has reached desired position. To do so will use excess current and overheat components.

1. Turn the vehicle ignition switch to the ON or the ACCESSORY position. The controller logo area illuminates.
2. Press the ON/OFF button on the control. The control indicator light glows red indicating the control is on. The control indicator light glows red whenever the control ON/OFF switch and the vehicle ignition switch are both ON. **The ON/OFF switch operates as emergency stop when required.**
3. Press the LOWER button for 0.75 seconds to engage the FLOAT mode. The control indicator FLOAT light glows green. Cancel the FLOAT mode by momentarily pressing the RAISE button.



### Function Time Outs

Except for the LOWER function, all functions automatically time out, or stop, after a period of time. This helps prevent excessive battery drain.

The RAISE function time-out period is 4.8 seconds, while all others are 9.6 seconds.

### Automatic Shutdown

If the snowplow control is not used for 20 or more minutes, it will automatically turn off.

### Smooth Stop

The control automatically allows the blade to coast to a stop. This results in smoother operation, reduces the shock to the hydraulic system and increases hose and valve life.

| Button          | Description of Operation                                                                                                                                                                                                                                                                                                       |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ON/OFF          | Press this button to turn the control on and off. Turn the control off (power indicator light off) to lock the blade in place. This prevents accidental movement of the blade.                                                                                                                                                 |
| RIGHT           | Press this button to angle blade to the right.<br>NOTE: Plow automatically stops angling after 9.6 seconds.                                                                                                                                                                                                                    |
| LEFT            | Press this button to angle blade to the left.<br>NOTE: Plow automatically stops angling after 9.6 seconds.                                                                                                                                                                                                                     |
| RAISE           | Press this button to raise the plow and to cancel the float mode.<br>NOTE: Plow automatically stops raising after 4.8 seconds.                                                                                                                                                                                                 |
| LOWER/FLOAT     | Press this button to lower the plow. NOTE: After reaching the desired height, release the button. Holding the button down for more than 0.75 seconds activates the float mode, indicated by green FLOAT light.<br>NOTE: The float mode allows the blade to move up and down to follow the contour of the surface being plowed. |
| To Cancel Float | Cancel the float mode by pressing the RAISE button, turning control off or turning vehicle ignition off. Angling left or right momentarily cancels float.                                                                                                                                                                      |

# OPERATION

## SNOWPLOW HEADLAMP CHECK

With both snowplow plugs connected, check the operation of vehicle and snowplow headlamps.

| LIGHTS            | RESULTS                                       |
|-------------------|-----------------------------------------------|
| Parking Lamps     | Both vehicle and snowplow lamps should be on. |
| Right Turn Signal | Both vehicle and snowplow lamps should be on. |
| Left Turn Signal  | Both vehicle and snowplow lamps should be on. |

Connecting and disconnecting the snowplow plug should switch between the vehicle and snowplow headlamps as follows:

- Snowplow plugs DISCONNECTED—The vehicle headlamps should light up.
- Snowplow plugs CONNECTED—The snowplow headlamps should light up.

## Aiming the Headlamps

- Aim the snowplow headlamps with the snowplow mounted and raised in the transport position.
- Aim the vehicle headlamps with the snowplow removed from the vehicle.

## DISC SHOE ADJUSTMENT

*Recommended shoe adjustments:*

1. For gravel surfaces—bottom surface of shoe should be 1/4" to 1/2" below the cutting edge.
2. For hard surfaces (concrete or asphalt)—bottom surface of shoe should be even with the cutting edge.

*Adjustment Procedure:*

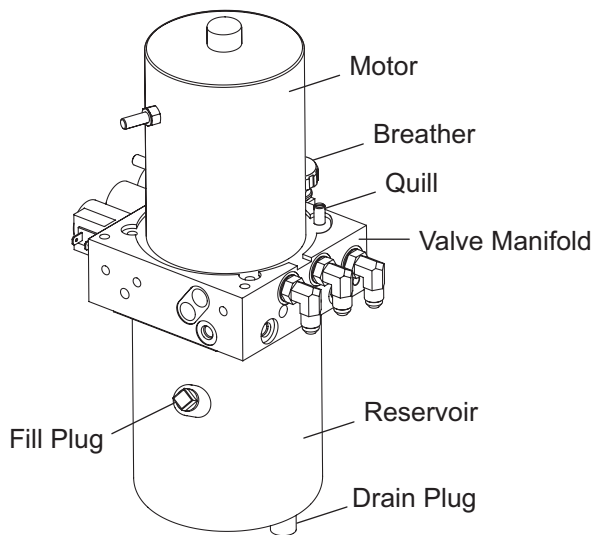
1. Raise blade and place on sturdy blocking at least 6" tall.
2. Remove the linchpin and slide the shoe down out of the bracket.
3. Remove one or more washers from the shoe stem and reinstall the shoe into the bracket.
4. Place the removed washers onto the shoe stem above the bracket.
5. Install the linchpin.

# OPERATION

## HYDRAULIC SYSTEM

The FloStat® Hydraulic Unit's valve manifold includes two cushion valves to prevent damage to the blade or vehicle if an obstacle is hit at either end of the blade. When force against the blade causes the pressure in **an extended ram** to exceed set limits, the cushion valve opens allowing hydraulic fluid to escape and the ram retracts. Fluid from the retracting ram flows into the opposite angle ram as it extends.

For hydraulic fluid type and filling instructions, see Hydraulic System in the Maintenance section of this Owner's Manual.



## BLADE DROP SPEED ADJUSTMENT

### ⚠ WARNING

Keep 8' clear of the blade drop zone when it is being raised, lowered or angled. Do not stand between the vehicle and blade or directly in front of blade. If the blade hits you or drops on you, you could be seriously injured.

The quill in the top of the valve manifold adjusts the blade drop speed.

1. Lower the blade to the ground before making adjustment.
2. Turn the quill IN (clockwise) to decrease drop speed. Turn the quill OUT (counterclockwise) to increase drop speed.
3. Stand 8' clear of the blade drop zone when checking adjustment.

## TRANSPORTING THE SNOWPLOW

### ⚠ WARNING

Position blade so it does not block headlamp beam.

Do not change blade position while traveling. You could suddenly lower blade accidentally.

### ⚠ CAUTION

Transport speed should not exceed 45 mph. Reduce speed under adverse travel conditions.

These instructions are for driving short distances to and from plowing jobs. Remove the snowplow from the vehicle for long trips and place in pickup box.

1. Completely raise the blade.
2. Adjust the blade height for maximum snowplow headlamp illumination.
3. Adjust the blade to the straight position.
4. Turn the control OFF to lock the blade in place.

**NOTE:** Overheating is unlikely under normal driving conditions, but occasionally the snowplow may be positioned where it deflects air away from the radiator. If this occurs, stop the vehicle and raise, lower, or angle the snowplow slightly to correct overheating.

**NOTE:** Only the driver should be in the vehicle cab when the snowplow is attached.

# OPERATION

## DRIVING AND PLOWING ON SNOW AND ICE

### **⚠ CAUTION**

Drinking then driving or plowing is very dangerous. Your reflex, perceptions, attentiveness and judgement can be affected by even a small amount of alcohol. You can have a serious or even fatal collision if you drive after drinking. Please, do not drink and then drive or plow.

Follow your vehicle owner's manual for driving in snow and ice conditions. Remember when you drive on snow or ice, your wheels will not get good traction. You cannot accelerate as quickly, turning is more difficult and you will need longer braking distance.

Wet and hard packed snow offers the worst tire traction. It is very easy to lose control. You will have difficulty accelerating. If you do get moving, you may have poor steering and difficult braking which can cause you to slide out of control.

Here are some tips for driving in these conditions:

- Drive defensively.
- Do not drink, then drive or plow snow.
- Plow or drive only when you have good visibility for operating a vehicle.
- If you cannot see well due to snow or icy conditions, you will need to slow down and keep more space between you and other vehicles.
- Slow down, especially on higher speed roads. Your headlamps can light up only so much road ahead.
- If you are tired, pull off in a safe place and rest.
- Keep your windshield and all glass on your vehicle clean to see around you.
- Dress properly for the weather. Wear layers of clothing. As you get warm you can take off layers.

## PLOWING SNOW

### **⚠ WARNING**

Never plow snow with head out the vehicle window. Sudden stops or protruding objects could cause personal injury.

### **⚠ CAUTION**

Wear a seatbelt when plowing snow. Hidden obstructions could cause the vehicle to stop suddenly resulting in personal injury.

### **⚠ CAUTION**

Flag any obstructions that are hard to locate under snow to prevent damage to product or property.

### **⚠ CAUTION**

Never stack snow with the blade angled. This could damage the snowplow or the vehicle bumper.

### **⚠ CAUTION**

Plowing speed should not exceed 10 mph.

**NOTE:** Only the driver should be in the vehicle cab when the snowplow is attached.

## General Instructions

1. Before plowing, make sure you know of any obstructions hidden beneath the snow such as bumper stops in parking lots, curbs, sidewalk edges, shrubs, fences, or pipes sticking up from the ground. If unfamiliar with the area to be plowed, have someone familiar with the area point out obstacles.
2. If possible, and you have good visibility, plow during the storm rather than letting snow accumulate.
3. Do not exceed 10 mph (16 kph) when plowing snow.
4. When you are stacking snow, begin raising the blade as you come close to the stack. This will let the blade ride up the stack.

# OPERATION

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## Hard-Packed Snow

1. Raise the disc shoes so that the cutting edge comes into direct contact with the pavement.
2. Use the lowest gear to place maximum power behind the cutting edge.
3. An angled blade is more effective for removing hard-packed snow.

## Deep Snow

1. Shear off top layers by plowing with the blade raised 3 to 4 inches for the initial pass.
2. Bite into the edges using only partial blade width until job is cut down to size for full blade plowing.

Rule of thumb:

- 6" of snow — plow with entire blade width;
- 9" of snow — plow with 3/4 of the blade; and
- 12" of snow — plow with 1/2 of the blade.

Experience and "feel" are the best guides.

3. When plowing deep snow, be sure to keep the vehicle moving.
4. Ballast is suggested for maximum traction. Secure ballast behind the rear wheels. Do not exceed vehicle's GVWR and GAWR.
5. For increased traction, use tire chains where legal.

## Clearing Driveways

1. Head into the driveway with the blade angled and plow snow away from buildings. Widen driveway by rolling snow away from buildings.
2. If the building is at the end of the driveway, plow to within a vehicle length of the building. Push as much snow as possible off the driveway.
3. With a raised blade, drive through remaining snow to building. Drop the blade and "back drag" snow away from the building one vehicle length. Repeat if necessary.
4. Back vehicle to the building and plow forward, removing the remaining snow from the driveway. Check municipal ordinances for proper disposal of snow.

## Clearing Parking Lots

1. Clear areas in front of buildings first. With blade raised, drive up to the building. Drop blade and "back drag" snow away from building. When snow is clear of the buildings, turn the vehicle around and push snow away from the buildings towards outer edges of lot.
2. Plow a single path down the center in the lengthwise direction.
3. Angle the snowplow towards the long sides, and plow successive strips lengthwise until the area is cleared and snow is "stacked" around the outer edges.
4. If snow is too deep to clear in the above manner, clear main traffic lanes as much as possible.

## PARKING WITH SNOWPLOW ATTACHED

### **⚠ WARNING**

**Lower blade when vehicle is parked. Keep 8' clear of blade drop zone. 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.**

Whenever you park your vehicle, completely lower the blade to the ground.

## TOWING DISABLED OR STUCK VEHICLE

DO NOT use any part of the snowplow assembly as an attachment point when retrieving, towing or winching a disabled or stuck vehicle.

# REMOVING SNOWPLOW FROM VEHICLE

## REMOVING SNOWPLOW (OFF)

### ⚠ WARNING

Keep 8' clear of the blade drop zone when it is being raised, lowered or angled. Do not stand between the vehicle and blade or directly in front of blade. If the blade hits you or drops on you, you could be seriously injured.

### ⚠ WARNING

Inspect snowplow components and fasteners for wear or damage when mounting or removing the snowplow. Worn or damaged components could allow the snowplow to drop unexpectedly.

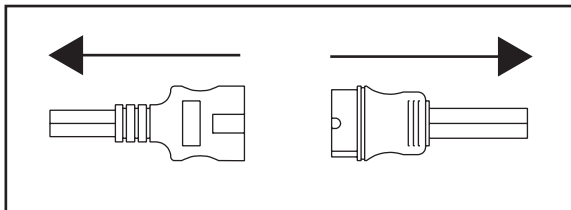
### ⚠ CAUTION

Store PRO PLUS® and PRO-PLOW A-frame in a horizontal position. This will prevent water from collecting and freezing in shock absorber.

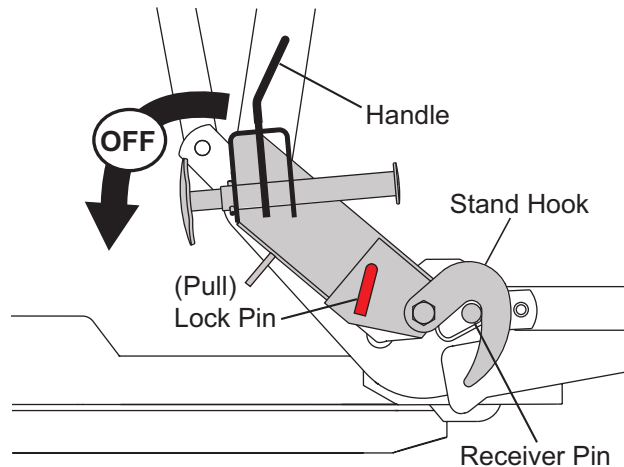
During the off season, the solenoid control and bracket can be removed from the dash/floor bracket. Disconnect the molded connector in the cab and remove the four mounting screws. Store the control and the bracket in the glovebox of the vehicle. The CabCommand control can also be disconnected and stored.

- Drive vehicle to desired plow storage location.
- Adjust blade to straight position.
- Lower blade to ground.
- Turn vehicle ignition to off position.

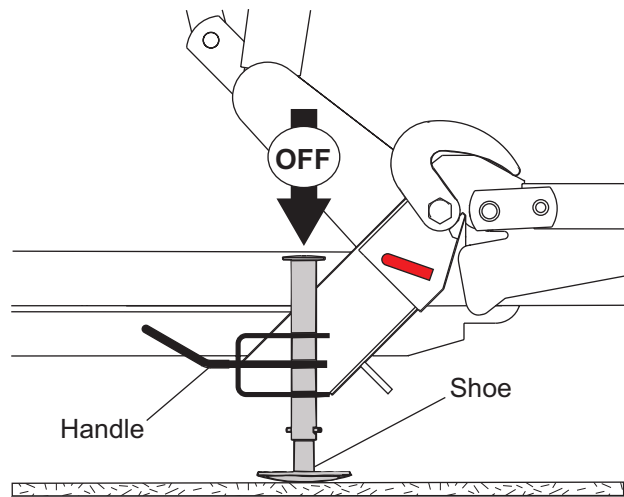
1. After lowering blade and turning control off, disconnect the electrical plugs.



2. Pull and hold lock pin out; then rotate handle DOWN and release lock pin. It must lock into LOWER hole.



3. Push down top of shoe; shoe will be on the ground. Repeat steps 2 and 3 on other side of plow. Back vehicle away.



**NOTE:** After each use of the snowplow, reapply dielectric grease to the electrical plugs to maintain the protective coating on the terminals.

4. Place electrical plugs in storage position. On the snowplow, insert both plugs into boot on lift frame. On the vehicle, cover plugs with attached boots.



# MAINTENANCE

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## PRESEASON CHECK

### 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.**

Before the snow season, check your equipment to make sure it's in working condition. Here are some tips for getting your equipment ready:

- Clean and tighten all electrical connections and coat with dielectric grease to prevent corrosion.
- Check hydraulic system for leaks and cracked or damaged hoses.
- Check hydraulic fluid condition and level. (See Fluid Level Check section in this Owner's Manual.)
- Replace any worn or damaged parts.
- Check all mounting points and tighten fasteners.
- Repaint blade assembly and attachments, as necessary, to protect the metal.
- Install auxiliary and flashing lights for safety in accordance with local regulations.
- Check headlamps, auxiliary lights, heater and windshield wipers for proper operation.
- Ballast may be necessary, or beneficial, on some vehicles to provide maximum traction, braking and handling.
- Any ballast material (such as sand and blocks) must be solidly secured to the vehicle preventing it from moving under plowing conditions.

## POSTSEASON MAINTENANCE

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**NOTE: Coat all electrical plugs with dielectric grease.**

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- Clean and paint blade assembly as needed.
- Be sure the lift ram is fully collapsed.
- For summer or long-term storage, apply general purpose petroleum grease to exposed chrome surfaces of the rams to prevent rust.
- Lubricate all pivot points with general-purpose petroleum grease (for example, stand lock pin assembly and lower spring anchor).
- Drain and flush hydraulic system and refill with WESTERN® High Performance Hydraulic Fluid. (See Annual Fluid Change section in this Owner's Manual.)



# MAINTENANCE

## MAINTENANCE AND ADJUSTMENT

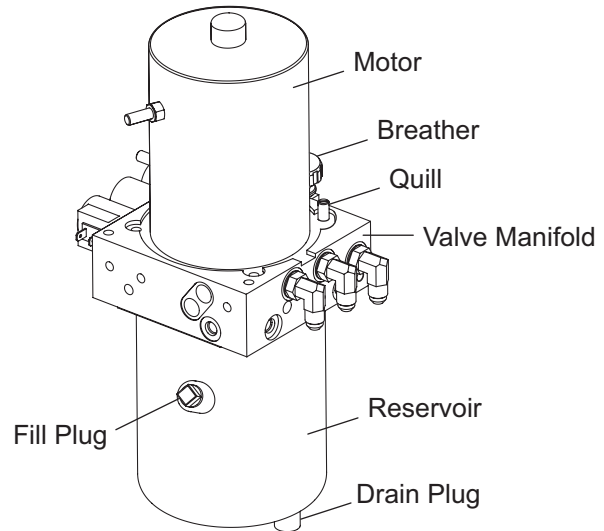
### **⚠ WARNING**

**Lower blade when vehicle is parked. Keep 8' clear of blade drop zone. 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.**

Your WESTERN® snowplow is designed for rugged, dependable service. Though, like the vehicle on which it is mounted, it needs regular care and maintenance. Check the following before and frequently during the plowing season:

1. Make sure all fasteners, mounting bolts, and hydraulic connections are tight. Pay particular attention to the pivot plate fasteners and to the 1" pivot bolt.
2. Make sure all electrical connections including grounds are clean, tight, free of rust or corrosion, and are coated with dielectric grease.
3. Check all plugs and seals for fluid leaks. Repair as necessary.
4. Cutting Edge  
To equalize wear, the cutting edge can be reversed. Replace the cutting edge when it is worn to the bottom of the blade.
  - Raise the blade and place blocking under the A-frame.
  - Remove the cutting edge and turn end for end.
  - Reinstall.
5. Trip Spring Adjustment  
To adjust trip spring tension, adjust the eyebolts located at the top of the blade.
  - Loosen the locknut (nut closest to the spring).
  - Tighten the adjusting nut (nut furthest from the spring) until the coils begin to separate. When tension is properly adjusted, a sheet of paper should pass between the second and third coils.
  - Tighten locknut.
6. Blade Finish
  - If the powder-coated finish is nicked or scratched, repair the surface and paint with WESTERN® red or black paint in aerosol or quart can.

## HYDRAULIC SYSTEM



### Fluid Level Check

#### **⚠ CAUTION**

**Do not mix different types of hydraulic fluid. Some fluids are not compatible and may cause performance problems and product damage.**

1. Perform this operation with the plow attached to the truck on a hard level surface.
2. Lower blade to ground.
3. Activate control float function and manually collapse lift ram all the way. Turn control off.
4. Fill reservoir to top of fill hole with new hydraulic fluid and replace fill plug.

#### **USE**

- WESTERN® High Performance Fluid to -25°F (-32°C)
- Automatic transmission fluid (ATF) DEXRON® III to -10°F (-23°C)
- Texaco 1537 Aircraft Hydraulic Fluid for temperatures below -25°F (-32°C)

# MAINTENANCE

## Annual Fluid Change

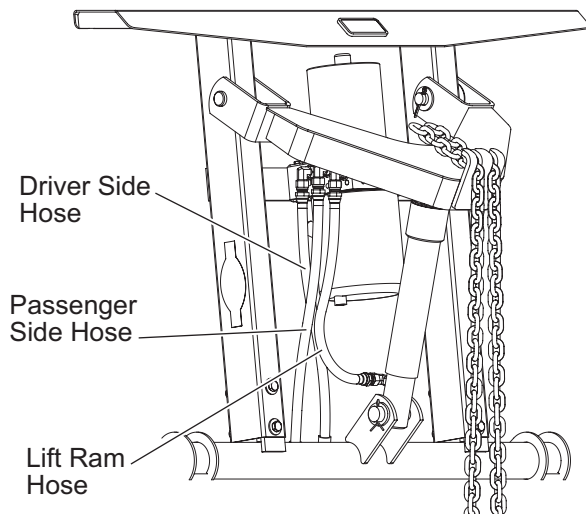
### ⚠ CAUTION

Change the fluid at the end of each plowing season. Failure to do this could result in condensation buildup during the non-snowplow season.

### ⚠ CAUTION

Do not mix different types of hydraulic fluid. Some fluids are not compatible and may cause performance problems and product damage.

1. Follow steps 1-3 of Fluid Level Check from the previous section.
2. Remove drain plug located in the bottom of the hydraulic reservoir. Drain fluid into drain pan or suitable container.
3. Completely drain reservoir and replace drain plug.
4. Remove the angle ram hoses from the fittings on the hydraulic unit and place in a drain pan or suitable container. (See illustration below and Hydraulic Hose or Fitting Replacement on the next page.)
5. Manually angle the blade fully in each direction to remove fluid from the angle rams. Do not allow the hose from the extending ram to take fluid back in.
6. Reconnect the angle ram hoses to the proper fittings. (See illustration above and Procedure for Installing Hydraulic Fittings and Hoses on the next page.)
7. Fill reservoir to top of fill hole with new hydraulic fluid and replace fill plug.



5. Manually angle the blade fully in each direction to remove fluid from the angle rams. Do not allow the hose from the extending ram to take fluid back in.

### USE

- WESTERN® High Performance Fluid to -25°F (-32°C)
- Automatic transmission fluid (ATF) DEXRON® III to -10°F (-23°C)
- Texaco 1537 Aircraft Hydraulic Fluid for temperatures below -25°F (-32°C)

### ⚠ WARNING

Keep 8' clear of the blade drop zone when it is being raised, lowered or angled. Do not stand between the vehicle and blade or directly in front of blade. If the blade hits you or drops on you, you could be seriously injured.

8. Activate control and angle blade fully to the left and right several times to remove air from the angle rams.

### ⚠ CAUTION

Do not raise blade during fill process as this may cause pump cavitation.

9. Turn off control and refill reservoir to top of fill plug hole. Replace fill plug.
10. Activate control and raise and lower plow several times to remove air from lift ram. Activate control float function and manually collapse lift ram all the way after each lowering of the blade. Turn control off.
11. Recheck fluid level with lift ram fully collapsed.

### ⚠ WARNING

To prevent accidental movement of the blade, always turn the ON/OFF switch to OFF whenever the snowplow is not in use. The control indicator light will turn off.

# MAINTENANCE

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## Hose or Fitting Replacement

DO NOT use thread sealant/tape on hoses or fittings. This could damage product. Follow recommended replacement procedures for fittings and hoses.

### **⚠ WARNING**

**Lower blade when vehicle is parked. Keep 8' clear of blade drop zone. 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.**

1. Lower plow completely and turn off control.
2. Loosen hoses or fittings slowly to bleed off any residual pressure.
3. To remove a hose, loosen and unscrew the hose flare nut from the fitting.
4. To remove a fitting, loosen the jam nut and unscrew the fitting from the port.
5. Using two wrenches, hold fitting body in position and tighten jam nut until the washer again contacts port face, then tighten an additional 1/8 to 1/4 turn to lock fitting in place. Final torque on the jam nut should be approximately 20 ft-lb.

### **Use the following procedure to install hydraulic hoses.**

1. Screw flare nut onto fitting flare and hand tighten.
2. Align hose so there are no twists or sharp bends.
3. Using two wrenches, hold the hose in position and tighten flare nut 1/8 to 1/4 turn beyond hand tight. Final torque on the flare nut should be approximately 20 ft-lb.

## Pump Inlet Filter Screen

Clean the pump inlet filter screen whenever the pump is removed. Replace the screen if it is damaged. Torque the pump mounting cap screws to 150-160 in-lbs.

## Procedure for Installing Hydraulic Fittings and Hoses

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**NOTE: Over torquing JIC hose fitting ends will result in a fractured fitting.**

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Do not use any type of sealant or tape on the fittings or hoses. This could damage product. Always use two wrenches to ensure proper tightening of fittings and hoses.

### **Use the following procedure to install SAE O-Ring fittings in valve block and rams.**

1. Turn jam nut on fitting as far back as possible.
2. Lubricate O-Ring with clean hydraulic fluid.
3. Screw fitting into port by hand until the washer contacts port face and shoulder of the jam nut threads.
4. Unscrew fitting to proper position no more than one full turn.

# MAINTENANCE

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## VEHICLE

The snowplow operating vehicle shall be maintained according to manufacturer's recommendations. Tire pressure shall be maintained according to manufacturer's recommendation.

## RECYCLE

When your snowplow has performed its useful life, the majority of its components can be recycled as steel or aluminum. Hydraulic fluid shall be disposed according to local regulations. Balance of parts made of plastic shall be disposed in customary manner.

## BLADE FINISH

If the powder-coated finish is nicked or scratched, repair the blade surface with WESTERN® red or black paint in aerosol or quart can from your WESTERN outlet. Clean and repaint parts as necessary.

## EMERGENCY PARTS

We suggest that you keep a WESTERN® Emergency Parts Kit (PN 67880) in your vehicle. This kit contains WESTERN hydraulic fluid, dielectric grease, common hoses, pins, clips, fasteners and motor relay.

Also keep the following items in your vehicle for emergency use:

- 10" Adjustable Wrench
- Pliers (Vice-grip, Channel Lock, etc.)
- Medium Screw Driver
- Miscellaneous Fasteners.

*Always use WESTERN® designed and tested replacement parts.*



## TROUBLESHOOTING GUIDE

This guide is arranged in the most likely correction order. Your WESTERN® outlet is trained to service your plow with Factory Original parts.

| CONDITION                                                                                      | POSSIBLE CAUSE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | CORRECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor does not run.                                                                            | <ol style="list-style-type: none"> <li>1. No power to the motor relay.</li> <li>2. No ground to the motor relay.</li> <li>3. Motor relay does not operate.</li> <li>4. Poor connections on snowplow battery cables.</li> <li>5. Motor is worn or damaged.</li> <li>6. Pump is seized.</li> </ol>                                                                                                                                                                                                                                           | <ol style="list-style-type: none"> <li>1. Repair or replace wiring, cab control or harness fuse.</li> <li>2. Repair wiring or connections.</li> <li>3. Replace motor relay.</li> <li>4. Clean and verify cable connections.</li> <li>5. Repair or replace motor.</li> <li>6. Replace pump.</li> </ol>                                                                                                                                                                                                                                                                                                                                                     |
| Motor will not shut off.                                                                       | <ol style="list-style-type: none"> <li>1. Motor relay is shorted.</li> <li>2. Vehicle wiring has a short.</li> <li>3. Cab control is malfunctioning.</li> <li>4. Open ground circuit.</li> </ol>                                                                                                                                                                                                                                                                                                                                           | <ol style="list-style-type: none"> <li>1. Replace motor relay.</li> <li>2. Repair the wiring.</li> <li>3. Repair or replace cab control.</li> <li>4. Repair ground.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Motor operates properly, but plow raises slowly, partially, not at all, and/or angles instead. | <ol style="list-style-type: none"> <li>1. There is excess weight on the A-frame and quadrant.</li> <li>2. Hydraulic fluid type or level is incorrect.</li> <li>3. Pump filter is clogged.</li> <li>4. Pump relief pressure is low.</li> <li>5. Pump and/or pump O-ring are damaged.</li> <li>6. Motor rpm is low.</li> <li>7. Vehicle battery is weak.</li> <li>8. Cartridge valve coils are not activating properly.</li> <li>9. Cartridge valves are contaminated or are sticking.</li> <li>10. Cartridge valves are damaged.</li> </ol> | <ol style="list-style-type: none"> <li>1. Remove built-up snow and ice or after-market accessories (excess weight).</li> <li>2. Fill with recommended fluid.</li> <li>3. Clean or replace filter and flush and refill the system.</li> <li>4. Adjust the pump relief screw.</li> <li>5. Replace pump and/or pump O-ring.</li> <li>6. Repair motor, electrical connections, or wiring.</li> <li>7. Replace battery and check charging system.</li> <li>8. Repair or replace coils, wiring, or cab control.</li> <li>9. Clean or replace valve. Find the cause of contamination. Flush and refill system.</li> <li>10. Replace cartridge valves.</li> </ol> |
| Snowplow will not stay in RAISED position or lowers by itself.                                 | <ol style="list-style-type: none"> <li>1. Cartridge valves are contaminated or are sticking.</li> <li>2. Cartridge valves are damaged.</li> <li>3. There are shorts or open connections in the wiring.</li> </ol>                                                                                                                                                                                                                                                                                                                          | <ol style="list-style-type: none"> <li>1. Clean or replace valves. Find the cause of contamination. Flush and refill system.</li> <li>2. Replace cartridge valves.</li> <li>3. Repair wiring.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Snowplow will not lower, lowers slowly, or will not float.                                     | <ol style="list-style-type: none"> <li>1. Incorrect hydraulic fluid for the temperature.</li> <li>2. Quill is adjusted in too far.</li> <li>3. Cartridge valve coils are not activating properly.</li> <li>4. Cartridge valves are contaminated and are sticking.</li> <li>5. Cartridge valves are damaged.</li> </ol>                                                                                                                                                                                                                     | <ol style="list-style-type: none"> <li>1. Use recommended hydraulic fluid. <b>(See page 22.)</b></li> <li>2. Turn quill out.</li> <li>3. Repair or replace coils, wiring or cab control.</li> <li>4. Clean or replace valves. Find the cause of contamination. Flush and refill system.</li> <li>5. Replace cartridge valves.</li> </ol>                                                                                                                                                                                                                                                                                                                  |

## TROUBLESHOOTING GUIDE

| CONDITION                                                                            | POSSIBLE CAUSE                                                                                                                                                                                                                                                                                                                                                                                                                                            | CORRECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor operates properly, but blade will not angle or angles slowly.                  | <ol style="list-style-type: none"> <li>1. Incorrect hydraulic fluid for the temperature.</li> <li>2. There is binding between A-frame and quadrant.</li> <li>3. Pump filter is clogged.</li> <li>4. Pump relief pressure is low.</li> <li>5. Pump and/or pump O-ring are damaged.</li> <li>6. Motor rpm is low.</li> <li>7. Cartridge valve coils are not activating properly.</li> <li>8. Cartridge valves are contaminated and are sticking.</li> </ol> | <ol style="list-style-type: none"> <li>1. Use recommended fluid. <b>(See page 22.)</b></li> <li>2. Repair or replace damaged parts.</li> <li>3. Clean or replace filter and flush and refill the system.</li> <li>4. Adjust the pump relief screw.</li> <li>5. Replace pump and/or pump O-ring.</li> <li>6. Repair motor, electrical connections, or wiring.</li> <li>7. Repair or replace coils, wiring, or cab control.</li> <li>8. Clean or replace valves. Find the cause of contamination. Flush and refill system.</li> </ol> |
| Motor operates properly, but plow angles wrong way, one way only, or raises instead. | <ol style="list-style-type: none"> <li>1. Angle ram hoses are reversed.</li> <li>2. Cartridge valve coils are not activating properly.</li> <li>3. Cartridge valves are contaminated and are sticking.</li> </ol>                                                                                                                                                                                                                                         | <ol style="list-style-type: none"> <li>1. Correct hose installation.</li> <li>2. Repair or replace coils, wiring, or cab control.</li> <li>3. Clean or replace valves. Find the cause of contamination. Flush and refill system.</li> </ol>                                                                                                                                                                                                                                                                                         |
| Blade will not hold side-to-side position.                                           | <ol style="list-style-type: none"> <li>1. Spool poppet valve is worn, damaged, or contaminated.</li> <li>2. Cushion valves are contaminated.</li> <li>3. Cushion valves are damaged, missing parts, or out of adjustment.</li> </ol>                                                                                                                                                                                                                      | <ol style="list-style-type: none"> <li>1. Clean or replace worn or damaged parts. Find the cause of contamination. Flush and refill system.</li> <li>2. Clean and adjust cushion valves. Find cause of contamination. Flush and refill system.</li> <li>3. Replace damaged or missing parts, or adjust cushion valves.</li> </ol>                                                                                                                                                                                                   |
| Fluid leaks from hydraulic power unit.                                               | <ol style="list-style-type: none"> <li>1. There is external damage to reservoir.</li> <li>2. There are loose O-ring plugs or fittings.</li> <li>3. Pump shaft seal is damaged.</li> </ol>                                                                                                                                                                                                                                                                 | <ol style="list-style-type: none"> <li>1. Repair or replace reservoir.</li> <li>2. Tighten O-ring plugs or fittings.</li> <li>3. Replace pump shaft seal.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                |





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



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