



## OWNER'S MANUAL

*Original Instructions*

March 15, 2013  
Lit. No. 49513, Rev. 01



### ⚠ CAUTION

Read this manual before operating or servicing snowplow.

This document supersedes all editions with an earlier date.

**FLEETFLEX**  
ELECTRICAL SYSTEM

# SNOWPLOW OWNER DATA SHEET

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***Register your snowplow online at [www.westernplows.com](http://www.westernplows.com)***

Owner Name: \_\_\_\_\_

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

Dealer Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Dealer Address: \_\_\_\_\_

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

Snowplow Model/Year: \_\_\_\_\_

Snowplow Type/Size: \_\_\_\_\_ Weight: \_\_\_\_\_ lb/kg

Ballast: No \_\_\_\_\_ Yes \_\_\_\_\_ Amount \_\_\_\_\_ lb/kg

FloStat® Hydraulic Unit Serial Number: \_\_\_\_\_

Blade Serial Number: \_\_\_\_\_

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# PREFACE

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## PREFACE

Welcome to the growing family of WESTERN® snowplow owners.

This manual provides safety, operation and maintenance 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 coverage.

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.

Your WESTERN snowplow FloStat® hydraulic unit has a serial number. Record this serial number on the Snowplow Owner Data Sheet 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 plowing.

## 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 snowplow'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

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## SAFETY DEFINITIONS

### **⚠ WARNING**

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

### **⚠ CAUTION**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

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**NOTE:** Indicates a situation or action that can lead to damage to your snowplow and vehicle or other property. Other useful information can also be described.

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## WARNING/CAUTION & INSTRUCTION LABELS

Become familiar with and inform users about the warning/caution, serial number and instruction labels on the back of the blade.

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**NOTE: If labels are missing or cannot be read, see your sales outlet.**

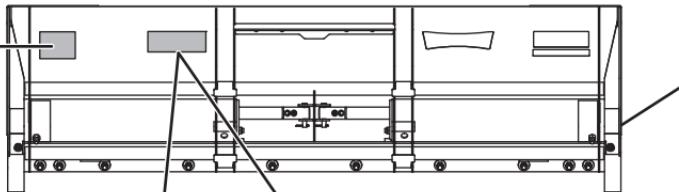
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# SAFETY

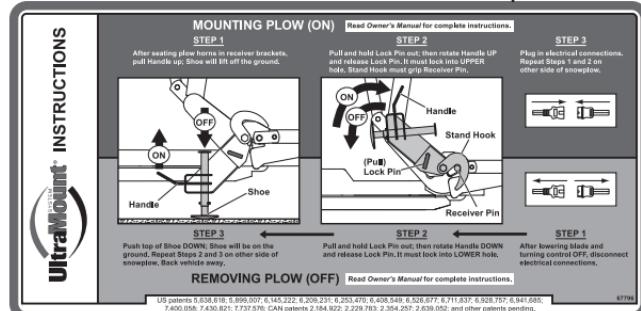
## Warning/Caution Label



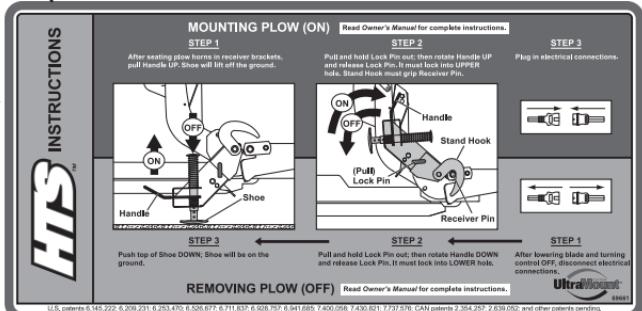
## Multiple Pinch Points Label



## Instruction Label



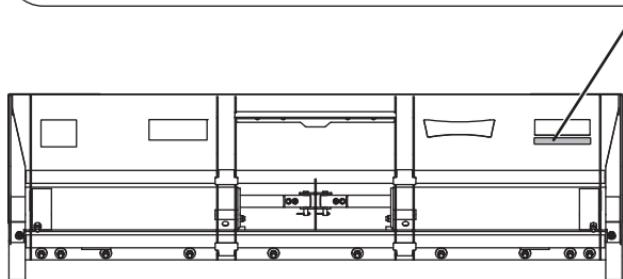
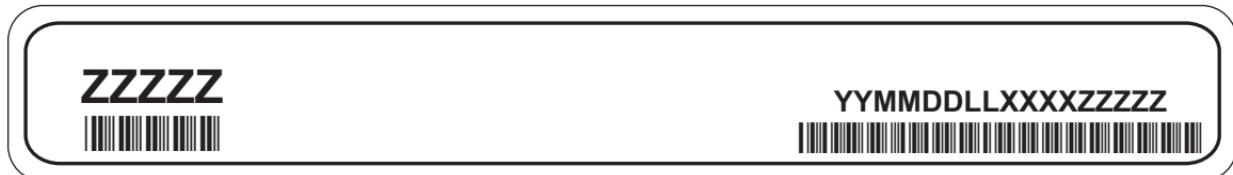
OR



# SAFETY

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## Serial Number Label



Code	Definition
YY	2-Digit Year
MM	2-Digit Month
DD	2-Digit Day
LL	2-Digit Location Code
XXXX	4-Digit Sequential Number
ZZZZZ	5- to 7-Digit Blade Assembly PN

## 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 could result in serious personal injury.



### ⚠ WARNING

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

### ⚠ WARNING

Remove blade assembly before placing vehicle on hoist.

### ⚠ CAUTION

Read Owner's Manual before operating or servicing snowplow.

### ⚠ CAUTION

Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.

### ⚠ CAUTION

Plowing speed should not exceed 10 mph (16 km/h).

### ⚠ CAUTION

See your WESTERN® outlet for application recommendations.

## 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.

## FUSES

The WESTERN® electrical and hydraulic systems contain several automotive blade-style fuses. If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the

original. Installing a fuse with a higher rating can damage the system and could start a fire. Fuse Replacement, including fuse ratings and locations, is located in the Maintenance section of this Owner's Manual.

## PERSONAL SAFETY

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

# SAFETY

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## 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.

## CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate Mobile Communication Equipment such as cell phones, text messaging devices, pagers or two-way radios.

## VENTILATION

### ⚠ WARNING

**Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.**

## 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.

## VIBRATION

Operating snowplow vibration does not exceed 2.5 m/s<sup>2</sup> to the hand-arm or 0.5 m/s<sup>2</sup> to the whole body.

# VEHICLE APPLICATION INFORMATION

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## CAUTION

**See your WESTERN® outlet/Web site for specific vehicle application recommendations before installation. The Selection List has specific vehicle and snowplow requirements.**

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 the front and rear weight distribution ratio. In some cases, rear ballast may be required to comply with these requirements. See "Ballast Requirements" later in this section.
- WESTERN Selection List/Quick Match is based on available vehicle capacity for snowplow equipment on a representative vehicle equipped with options commonly used for plowing 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.

# VEHICLE APPLICATION INFORMATION

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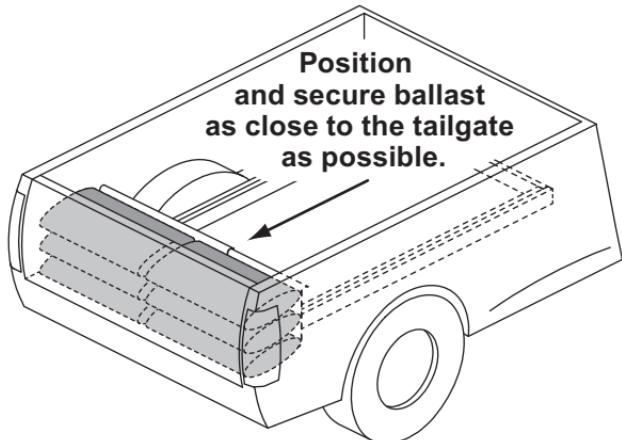
**NOTE: The ballast retainer kit is for snowplow vehicles requiring ballast. See your WESTERN outlet for the correct amount of ballast required. Include the weight of the retainer as part of the ballast requirement. Sand bags are recommended for use as ballast.**

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**NOTE: Ballast recommended and its weight calculations assume the entire width of the bed is filled as close to tailgate as possible.**

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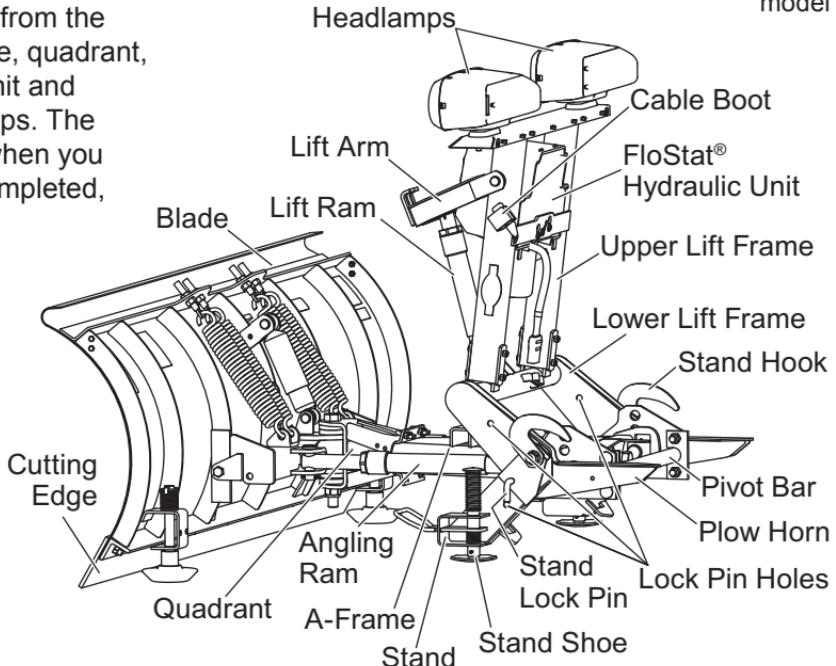
# GETTING TO KNOW YOUR SNOWPLOW

## UltraMount® SNOWPLOW

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

UltraMount snowplows have through holes in the lower lift frame and stand leg. The holes will accept 1/2" trailer hitch pin locks, which are available at most auto supply or trailer equipment stores. These holes, used with locks, may be used to secure the snowplow assembly on or off the truck to deter theft.

Actual configuration varies by model



# GETTING TO KNOW YOUR SNOWPLOW

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

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 be easily moved around on most hard surfaces.

## BLADES

WESTERN® snowplows with steel blades are constructed of heavy-gauge steel. To increase rigidity and strength, the blades are reinforced with several vertical ribs. The top edges are 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.

WESTERN blades have replaceable high-carbon steel cutting edges bolted to the bottom. Straight blade and WIDE-OUT™ cutting edges should be replaced when worn to the bottom edge of the blade. MVP PLUS™ cutting edges should be replaced when they are worn within 1" of the carriage bolts. (See Maintenance section in this manual.)

Your new blade's steel components are protected with a baked-on ULTRAFINISH™ powder coat

# GETTING TO KNOW YOUR SNOWPLOW

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over a base primer coat 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 included with your complete snowplow. These help the operator to visualize the edges of the blade and aid in blade positioning.

## Straight Blades

WESTERN® straight blades with their exclusive Roll-Action™ design 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.

Large, adjustable disc-type skid shoes are standard on some models. 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® Series 2 and PRO PLUS® snowplows.

## HTS™ Blades

HTS, the half-ton snowplow. The HTS blade is a full-size, full-featured snowplow designed exclusively for half-ton pickup trucks. It handles light commercial, institutional and extended-use homeowner applications, providing rugged, pro-like performance without the extra weight. Available in 7-1/2' mild steel.

# GETTING TO KNOW YOUR SNOWPLOW

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## MIDWEIGHT™ Blades

The 7-1/2' MIDWEIGHT snowplow is a high-performance snowplow designed for personal and light commercial use. The MIDWEIGHT blade is available in ULTRAFINISH™ powder-coated steel or high-density polyethylene. The poly option offers exceptional snow-rolling action and a maintenance-free surface.

## PRO-PLOW® Series 2 Blades

Leave it to the pros. Designed to meet the requirements of the professional snow plow, the 7-1/2' and 8' PRO-PLOW Series 2 models are available in both ULTRAFINISH™ powder-coated steel and poly. The 8-1/2' model is offered in steel only.

## PRO PLUS® Blades

Big, tough and built to last. Contractors continue to be impressed with the strength, durability and versatility of the PRO PLUS blade. Designed for heavy-duty commercial and light municipal applications, the 8', 8-1/2' and 9' PRO PLUS line fits a wide range of vehicles, from 3/4-ton to F-550-size trucks.

# GETTING TO KNOW YOUR SNOWPLOW

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## MVP PLUS™ Blades

Each of the MVP PLUS blade wings has a trip edge. Heavy-duty compression springs hold each trip edge in the plowing position (2 springs per blade wing for 7-1/2' and 8-1/2', 3 for 9-1/2'). The springs are a safety device that allow the trip edge to rotate back and ride over obstacles such as low curbs, manhole covers, etc., without damaging the snowplow or vehicle, or injuring the driver. The trip springs need no adjustment and offer protection in all blade wing positions. Available accessories include a rubber deflector, bolt-on disc shoes, blade wing extensions, blade stops and a back drag edge.

## WIDE-OUT™ Blades

The WESTERN® WIDE-OUT snowplow provides you the ability to extend the width of your blade hydraulically, allowing you to carry up to 40% more snow for increased plowing efficiency. Positions include a retracted 8' width, 10' expanded width and a scoop width of nearly 9'. The WIDE-OUT blade can fully angle in the scoop position, increasing the snow-carrying capacity while effectively maneuvering around obstacles or turning corners. Its dual power bar design and six vertical ribs provide exceptional strength, while the durable polyurethane cutting edge on each wing reduces wear and helps protect the blade when tripping. Available accessories include a rubber snow deflector, bolt-on shoe kit and a back drag edge.

# GETTING TO KNOW YOUR SNOWPLOW

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## A-FRAME/T-FRAME, QUADRANT AND LIFT FRAME

### Straight and WIDE-OUT™ Blades

The quadrant is attached to the back of the blade with heavy-duty trip springs and either cap screws 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 Maintenance 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.

## MVP PLUS™ Blades

The wings are attached to the T-frame with a hinge pin, which allows the wings to extend and retract.

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.

# GETTING TO KNOW YOUR SNOWPLOW

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## Snowplow Weights

Size	Blade Assembly	Wt (lb)	Wt (kg)	Size	Blade Assembly	Wt (lb)	Wt (kg)
7-1/2'	HTS™ Snowplow	412	187	7-1/2'	PRO PLUS® Snowplow	789	358
7-1/2'	MIDWEIGHT™ Snowplow	540	245	8'	PRO PLUS Snowplow	805	365
7-1/2'	MIDWEIGHT Snowplow (Poly)	532	241	8-1/2'	PRO PLUS Snowplow	821	372
7-1/2'	PRO-PLOW® Series 2 Snowplow	653	296	9'	PRO PLUS Snowplow	837	380
7-1/2'	POLY PRO-PLOW® Series 2 Snowplow	677	307	7-1/2'	MVP PLUS™ Snowplow	827	375
8'	PRO-PLOW Series 2 Snowplow	668	303	7-1/2'	MVP PLUS Snowplow (Poly)	799	362
8'	POLY PRO-PLOW Series 2 Snowplow	690	313	8-1/2'	MVP PLUS Snowplow	880	399
8-1/2'	PRO-PLOW Series 2 Snowplow	686	311	9-1/2'	MVP PLUS Snowplow (Poly)	847	384
				9-1/2'	MVP PLUS Snowplow	988	448
				8'-10'	MVP PLUS Snowplow (Poly)	946	429
					WIDE-OUT™ Snowplow	940	426

# GETTING TO KNOW YOUR SNOWPLOW

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## NIGHTHAWK™ SNOWPLOW HEADLAMPS

### **WARNING**

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

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

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

Replacement parts are available through your local WESTERN® outlet.

# GETTING TO KNOW YOUR SNOWPLOW

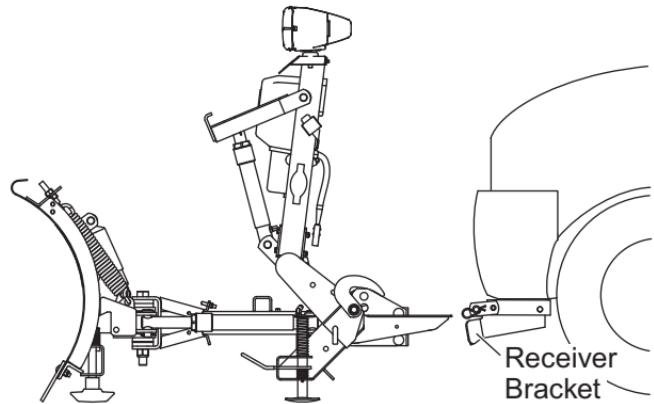
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## VEHICLE MOUNT

Western Products has designed custom mounts for most vehicles. Due to differences among 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 using pins and hairpin cotters. The receiver brackets are easily removed to provide even more road clearance during the non-plowing months of the year.



# GETTING TO KNOW YOUR SNOWPLOW

## FloStat® HYDRAULIC SYSTEM

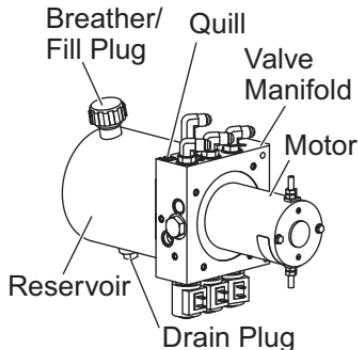
The FloStat hydraulic unit delivers fast and uniform speed for lifting and angling.

The HTS™ hydraulic unit has blade scrape lock circuitry built into it. This feature resists a snowplow's tendency to "float up" as large amounts of snow build up in front of it while

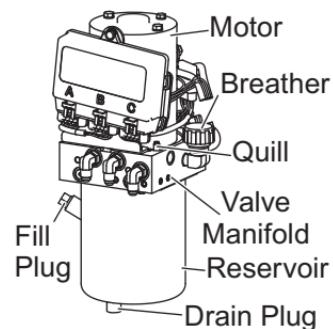
plowing deep snow or stacking snow into piles. This feature is activated when the blade is in FLOAT, and is factory set. See your sales outlet for adjustment. The HTS blade is raised in approximately 4 seconds and angled side to side in approximately 3 seconds.

**Straight blades** are raised in approximately 2 seconds and angled side to side in approximately 4 seconds.

### HTS Blades



### Straight Blades



# GETTING TO KNOW YOUR SNOWPLOW

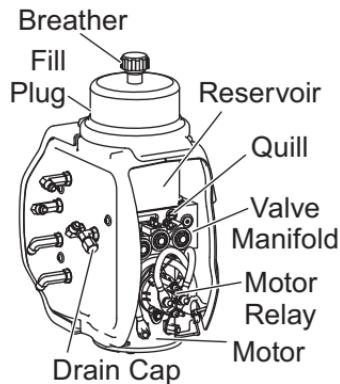
The **MVP PLUS™** blades are both raised and angled side to side in approximately 2 seconds.

The **WIDE-OUT™** blade is both raised and angled side to side in approximately 2 seconds. Each wing individually extends and retracts in approximately 2 seconds. Both wings together

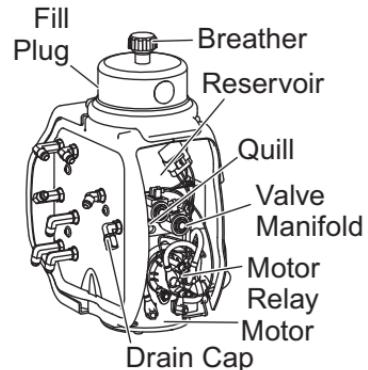
extend in approximately 4 seconds and retract in approximately 3 seconds.

For hydraulic fluid type and filling instructions, see "Annual Fluid Change" under "Hydraulic System" in the Maintenance section of this manual.

**MVP PLUS Blades**



**WIDE-OUT Blades**



# GETTING TO KNOW YOUR SNOWPLOW

## System Capacity

- FloStat® Unit Reservoir ..... 1-3/4 quarts
- FloStat System Total.....2-3/8 to 2-3/4 quarts

## Pump Motor Specifications

### HTS™ Blades

12 V DC with +/- Connection
1600–1700 psi Pump Relief Valve
4000 psi Angling Relief Valve
3" dia 0.8 kW Motor
0.000477 gal/rev Pump
Hydraulic Hose SAE 100R1

### Straight Blades

12 V DC with +/- Connection
1700–1800 psi Pump Relief Valve
4000 psi Angling Relief Valve
4.5" dia 1.5 kW Motor
0.000477 gal/rev Pump
Hydraulic Hose 1/4 SAE 100R1 and 3/8 SAE 100R17

### MVP PLUS™ Blades

12 V DC with +/- Connection
2200–2300 psi Pump Relief Valve
4550–4650 psi Plowing Relief Valve
3650–3750 psi Back Dragging Relief Valve
4.5" dia 1.5 kW Motor
0.000652 gal/rev Pump
Hydraulic Hose 1/4 SAE 100R1 and 3/8 SAE 100R17

### WIDE-OUT™ Blades

12 V DC with +/- Connection
2200–2300 psi Pump Relief Valve
4000 psi Plowing Relief Valve
1500 & 1700 psi Wing Plowing Relief Valves
4.5" dia 1.5 kW Motor
0.000652 gal/rev Pump
Hydraulic Hose 1/4 SAE 100R1 and 3/8 SAE 100R17

# GETTING TO KNOW YOUR SNOWPLOW

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## CAB CONTROLS

### WARNING

To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.

WESTERN® snowplows come equipped with one of two special controls: the CabCommand hand-held control or a joystick-style control.

The MVP PLUS™ controls allow you to go from a V-plow, to a scoop, to a standard straight-blade snowplow, all at the touch of a button or single-lever movement.

The WIDE-OUT™ controls allow you to go from a retracted position to a scoop position, in addition to all the standard straight-blade positions, at the touch of a button.

Each control has its own ON/OFF switch with an indicator light to show when the control is powered up. Your vehicle ignition (key) switch controls a fused circuit that powers your cab control directly from the battery.

The ON/OFF switch on the cab control allows you to turn OFF the control and prevent blade movement even when the ignition switch is ON.

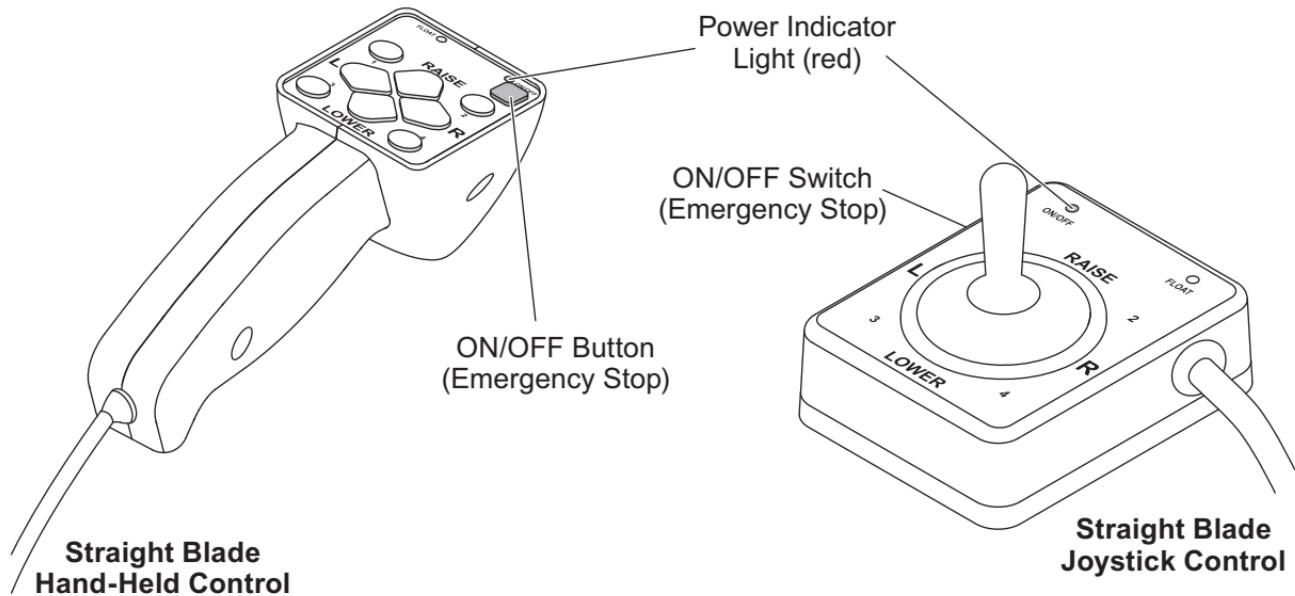
**The control ON/OFF switch serves as an emergency stop if required.**

All controls are protected by a replaceable fuse located in the under hood snowplow electrical system. See "Fuse Replacement" in the Maintenance section of this Owner's Manual.

# GETTING TO KNOW YOUR SNOWPLOW

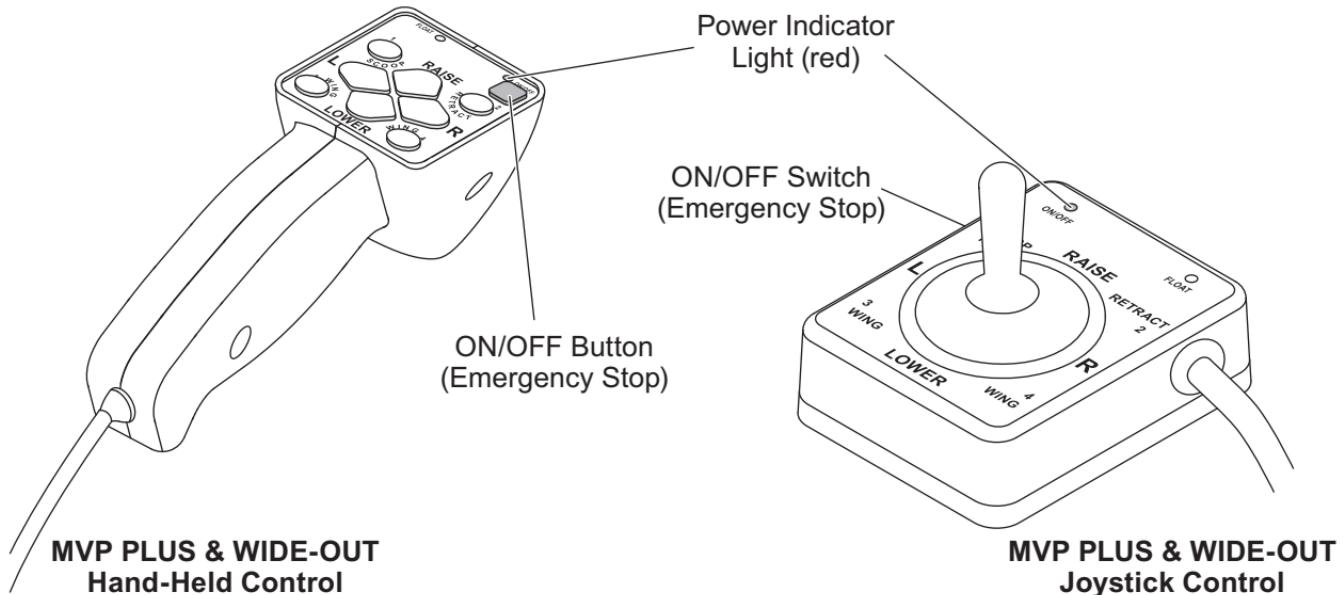
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## Straight Blade Controls with FLEET FLEX System



# GETTING TO KNOW YOUR SNOWPLOW

## MVP PLUS™ & WIDE-OUT™ Blade Controls with FLEET FLEX System



# ACCESSORIES AND OPTIONS

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## **SNOW DEFLECTOR**

The optional snow deflector, available in poly (straight blades only) 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.

## **STRAIGHT BLADE RUBBER CUTTING EDGE**

The rubber cutting edge is available for certain straight blade models only. It 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.

## **CURB GUARD KIT**

Designed to fit on the ends of the cutting edges, these guards protect against scraping the bottom edge of the blade against curbs and sidewalks.

The kit is available for straight blades and all MVP PLUS™ blades.

## **WING EXTENSION KIT**

These optional wings add up to 30 percent more carrying capacity to your blade. The single-pin design allows for quick and easy attach/detach; no installation required. Available for the MVP PLUS (8-1/2' and 9-1/2' models only) and PRO PLUS® blades.

## **DIELECTRIC GREASE**

Specially formulated dielectric grease protects electrical connections in severe winter conditions. Western Products recommends that snowplow owners apply dielectric grease to all electrical connections on a regular basis.

For a complete listing of available options and accessories for your snowplow model, please visit [www.westernplows.com](http://www.westernplows.com).

# MOUNTING SNOWPLOW TO VEHICLE

## MOUNTING SNOWPLOW (ON)

### ⚠ WARNING

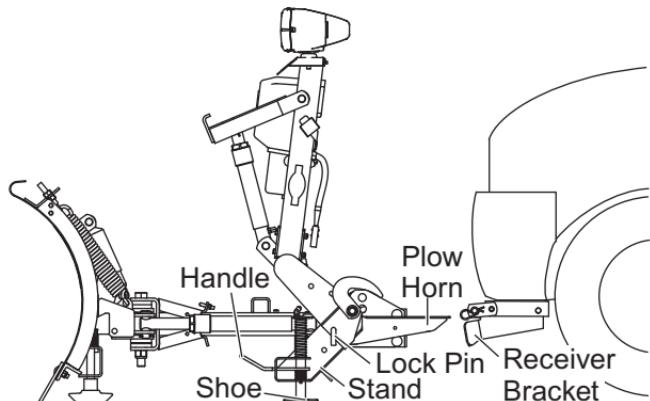
Keep 8' clear of the blade when it is being raised, lowered or angled. Do not stand between vehicle and blade or directly in front of the blade. If the blade hits or drops on you, you could be seriously injured.

### ⚠ WARNING

Inspect snowplow components and bolts for wear or damage whenever attaching or detaching the snowplow. Worn or damaged components could allow the snowplow to drop unexpectedly.

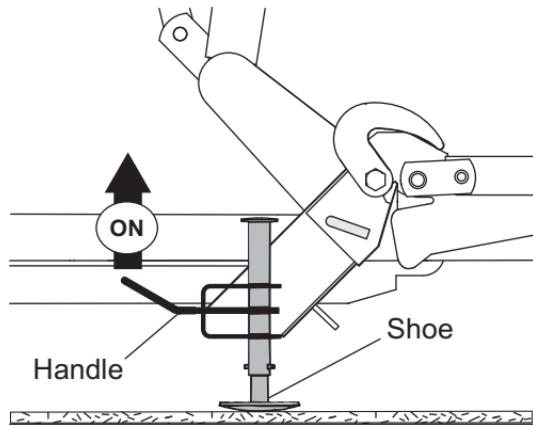
**NOTE:** Use dielectric grease to prevent corrosion on all connections.

- Remove the electrical plug and disconnect electrical plugs from storage position.
- Align the vehicle receiver brackets with the snowplow horns and drive the vehicle slowly forward until the snowplow horns fully seat inside the receiver brackets.
- Turn the vehicle ignition to the "OFF" position.

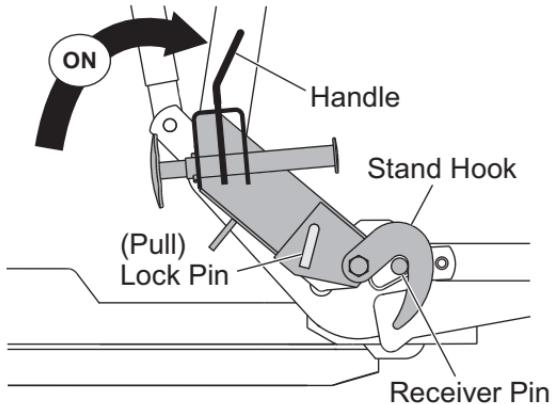


# MOUNTING SNOWPLOW TO VEHICLE

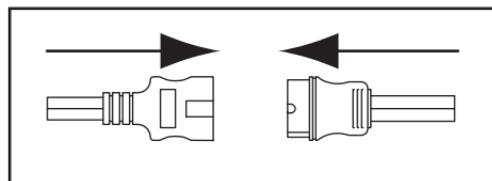
1. After seating the snowplow horns in the receiver brackets, pull the handle up; the shoe will lift off the ground.



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



3. Repeat Steps 1 and 2 on other side of snowplow. (Not required for HTS™ blades.)
4. Connect the electrical plugs.



# OPERATING YOUR SNOWPLOW

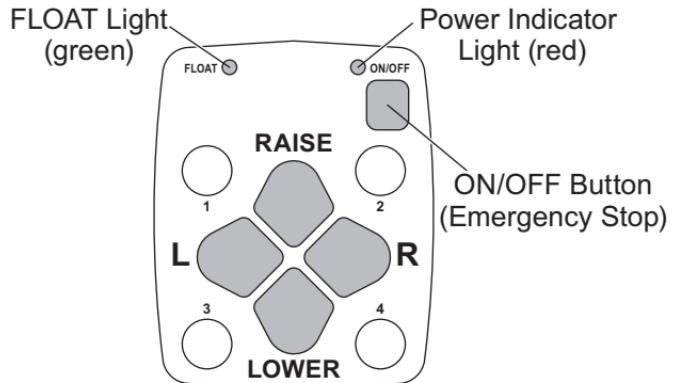
## STRAIGHT BLADE CabCommand HAND-HELD CONTROL

### ⚠ WARNING

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

1. Turn the vehicle ignition switch to the "ON" or "ACCESSORY" position.
2. Press the ON/OFF button on the control. The power indicator light glows red, indicating that the control is ON. The power indicator light glows red whenever the control and vehicle ignition switch are both ON and the electrical connections to the snowplow are completed.

The ON/OFF button operates as an emergency stop, if required.



## Function Time-Outs

All control functions, except LOWER/FLOAT, time out (stop) automatically after a period of time. This is to limit the amount of electrical energy required from the vehicle.

**NOTE: If a control function times out before the desired blade movement is complete, release the button and press it again.**

# OPERATING YOUR SNOWPLOW

## Automatic Shutdown

The control will automatically turn OFF after being idle for 20 minutes. To reactivate the control after a shutdown, press the ON/OFF button.

## Smooth Stop

The control automatically allows the blade to coast to a stop when the button is released. This results in smoother operation, reduces the shock to the hydraulic system and increases hose and valve life. See "FLEET FLEX Electrical System" in this section for more information.

## Control Functions

### Raise, Lower, Float, Angle

The four diamond-shaped buttons in the center of the control face, when pressed, will result in the blade movements described in the table.

Function	Description of Operation
<b>RAISE</b>	Press this button to raise the snowplow and cancel the FLOAT mode. Function times out after 3.0 seconds.
<b>LOWER</b>	Press this button to lower the snowplow. Release the button to stop blade at desired height.
<b>FLOAT<sup>†</sup></b>	Press the <b>LOWER</b> button and hold 3/4 second to activate this mode. The FLOAT light in the upper left corner of the control face will illuminate. The blade will lower to the ground surface and follow the contour of the surface as it dips or rises. This function does not time out, but the control will shut down after 20 minutes of nonuse.  Press the <b>RAISE</b> button momentarily to cancel FLOAT. Angling left or right will not interrupt (stop) the FLOAT function.

<sup>†</sup> FLOAT mode activates immediately when the one-touch FLOAT feature is enabled. See "One-Touch FLOAT" in this section for more information.

# OPERATING YOUR SNOWPLOW

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Function	Description of Operation
L (Angle Left)	Press this button to angle the blade to the left. Function times out after 5.5 seconds.
R (Angle Right)	Press this button to angle the blade to the left. Function times out after 5.5 seconds.

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**NOTE: If a control function times out before the desired blade movement is complete, release the button and press it again.**

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## SECURITY GUARD™ System (1, 2, 3, 4)

The four round buttons located to the left and right of the LOWER and RAISE buttons will operate the SECURITY GUARD system. See "SECURITY GUARD System" in this section for more information.

# OPERATING YOUR SNOWPLOW

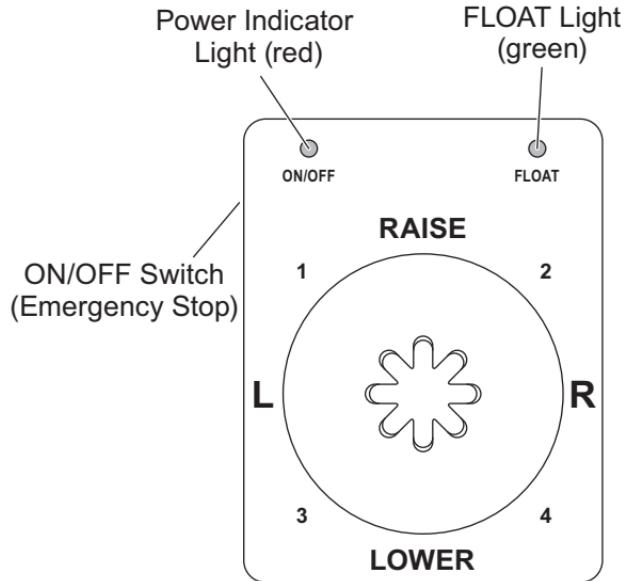
## STRAIGHT BLADE JOYSTICK CONTROL

### ⚠ WARNING

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

1. Turn the vehicle ignition switch to the "ON" or "ACCESSORY" position.
2. Move the ON/OFF switch on the side of the control to the "ON" position. The power indicator light glows red, indicating that the control is ON. The indicator light glows red whenever the control and the vehicle ignition switch are both ON and the electrical connections to the snowplow are completed.

The ON/OFF switch operates as an emergency stop, if required.



**NOTE: If a control function times out before the desired blade movement is complete, release the lever to the center position, then move it back into the desired function.**

# OPERATING YOUR SNOWPLOW

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## Function Time-Outs

All control functions, except LOWER/FLOAT, time out (stop) automatically after a period of time. This is to limit the amount of electrical energy required from the vehicle.

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**NOTE: If a control function times out before the desired blade movement is complete, release the lever to the center position, then move it back into the desired function.**

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## Automatic Shutdown

The control will automatically turn OFF after being idle for 20 minutes. To reactivate the control after a shutdown, move the ON/OFF switch to OFF, then back to ON.

## Smooth Stop

The control automatically allows the blade to coast to a stop when the lever returns to center position. This results in smoother operation, reduces the shock to the hydraulic system and increases hose and valve life. See "FLEET FLEX Electrical System" in this section for more information.

## Control Lever Movement

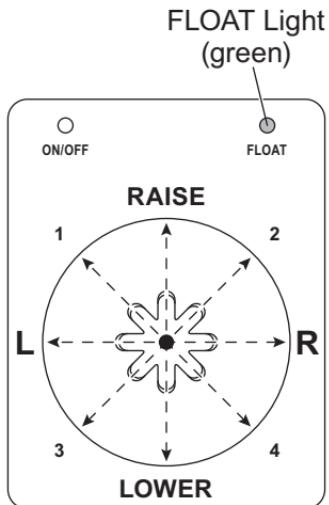
From the center position, the control lever can be moved in one of eight directions to control various movements of the snowplow blade. To change from one movement of the blade to another, the control lever must be moved back to the center position before selecting the desired function. Whenever the lever is released, it should spring back into the center position to stop any blade movement.

# OPERATING YOUR SNOWPLOW

## Control Functions

### Raise, Lower, Float, Angle

Moving the control lever straight up and down or from side to side on the control body will result in the blade movements described in the following tables.



Function	Description of Operation
RAISE	Move the control lever toward the top of the control body to raise the snowplow and cancel the FLOAT mode. Function times out after 3.0 seconds.
LOWER	Move the control lever toward the bottom of the control body to lower the snowplow. Release the lever to stop blade at desired height.
FLOAT <sup>†</sup>	Move the control lever to the LOWER position and hold 3/4 second to activate this mode. The FLOAT light in the upper right corner of the control face will illuminate. The blade will lower to the ground surface and follow the contour of the surface as it dips or rises. This function does not time out, but the control will shut down after 20 minutes of nonuse.
	Move the lever to the RAISE position momentarily to cancel FLOAT. Angling left or right will not interrupt (stop) the FLOAT function.

<sup>†</sup> FLOAT mode activates immediately when the one-touch FLOAT feature is enabled. See "One-Touch FLOAT" in this section for more information.

# OPERATING YOUR SNOWPLOW

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Function	Description of Operation
L (Angle Left)	Move the control lever straight to the left to angle the blade left. Function times out after 5.5 seconds.
R (Angle Right)	Move the control lever straight to the right to angle the blade right. Function times out after 5.5 seconds.

**NOTE: If a control function times out before the desired blade movement is complete, release the lever to the center position, then move it back into the desired function.**

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## SECURITY GUARD™ System (1, 2, 3, 4)

Moving the control lever diagonally from the center position toward any of the four digits on the face of the control body will operate the SECURITY GUARD system. See "SECURITY GUARD System" in this section for more information.

# OPERATING YOUR SNOWPLOW

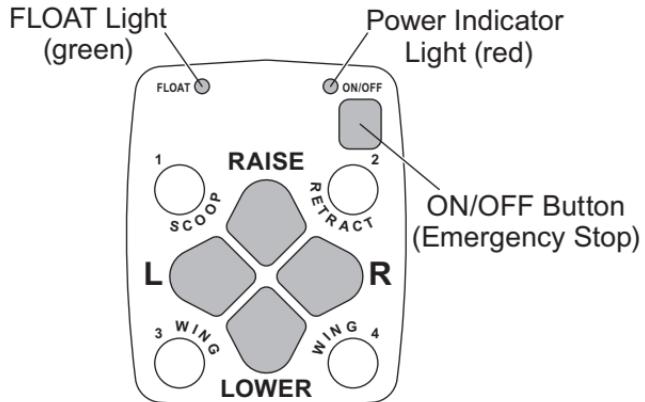
## MVP PLUS™ & WIDE-OUT™ CabCommand HAND-HELD CONTROL

### ⚠ WARNING

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

1. Turn the vehicle ignition switch to the "ON" or "ACCESSORY" position.
2. Press the ON/OFF button on the control. The power indicator light glows red, indicating that the control is ON. The power indicator light glows red whenever the control and vehicle ignition switch are both ON and the electrical connections to the snowplow are completed.

The ON/OFF button operates as an emergency stop, if required.



### Function Time-Outs

All control functions, except LOWER/FLOAT, time out (stop) automatically after a period of time. This is to limit the amount of electrical energy required from the vehicle.

**NOTE: If a control function times out before the desired blade movement is complete, release the button and press it again.**

# OPERATING YOUR SNOWPLOW

## Automatic Shutdown

The control will automatically turn OFF after being idle for 20 minutes. To reactivate the control after a shutdown, press the ON/OFF button.

## Smooth Stop

The control automatically allows the blade to coast to a stop when the button is released. This results in smoother operation, reduces the shock to the hydraulic system and increases hose and valve life. See "FLEET FLEX Electrical System" in this section for more information.

## Control Functions

### Raise, Lower, Float, Angle

The four diamond-shaped buttons in the center of the control face, when pressed, will result in the blade movements described in the table.

Function	Description of Operation
<b>RAISE</b>	Press this button to raise the snowplow and cancel the FLOAT mode. Function times out after 4.0 (MVP PLUS™) or 3.5 (WIDE-OUT™) seconds.
<b>LOWER</b>	Press this button to lower the snowplow. Release the button to stop blade at desired height.
<b>FLOAT<sup>†</sup></b>	Press the <b>LOWER</b> button and hold 3/4 second to activate this mode. The FLOAT light in the upper left corner of the control face will illuminate. The blade will lower to the ground surface and follow the contour of the surface as it dips or rises. This function does not time out, but the control will shut down after 20 minutes of nonuse.  Press the <b>RAISE</b> button momentarily to cancel FLOAT. Angling left or right will not interrupt (stop) the FLOAT function.

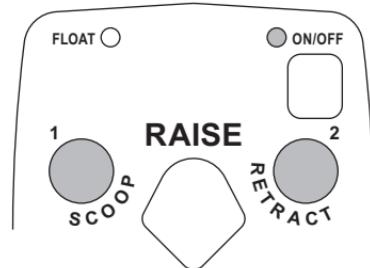
<sup>†</sup> FLOAT mode activates immediately when the one-touch FLOAT feature is enabled. See "One-Touch FLOAT" in this section for more information.

# OPERATING YOUR SNOWPLOW

Function	Description of Operation
L (Angle Left)	With wings in a straight line, press the L button to move both wings to the angle left position to cast snow to the driver's left side. The left wing retracts while the right wing extends (MVP PLUS™). Function times out after 3.0 (MVP PLUS) or 3.25 (WIDE-OUT™) seconds.
R (Angle Right)	With wings in a straight line, press the R button to move both wings to the angle right position to cast snow to the driver's right side. The right wing retracts while the left wing extends (MVP PLUS). Function times out after 3.0 (MVP PLUS) or 3.25 (WIDE-OUT) seconds.

**NOTE: If a control function times out before the desired blade movement is complete, release the button and press it again.**

## Scoop/Retract Blade Position

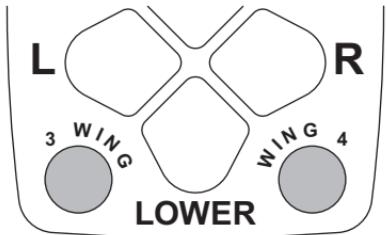


The two round buttons located to the left and right of the RAISE button move both wings at the same time into the blade positions described in the following table.

Function	Description of Operation
SCOOP	Press this button to extend both wings forward into the scoop position. Function times out after 5.0 (MVP PLUS) or 5.5 (WIDE-OUT) seconds.
RETRACT	Press this button to draw both wings into the fully retracted (vee) position. Function times out after 3.0 (MVP PLUS) or 4.5 (WIDE-OUT) seconds.

# OPERATING YOUR SNOWPLOW

## Wing Positions



The two round buttons located to the left and right of the LOWER button move either wing independently of the other as described in the following table.

**NOTE: If a control function times out before the desired blade movement is complete, release the button and press it again.**

## SECURITY GUARD™ System (1, 2, 3, 4)

The four round buttons located to the left and right of the LOWER and RAISE buttons will also operate the SECURITY GUARD system. See "SECURITY GUARD System" in this section for more information.

Function	Description of Operation
L WING	Press this button on the left side of the control to move the left wing. The first time the button is pressed after the control is turned ON or another function is used, the wing will extend. Repeated use of the same button, without using another function, results in movement in the opposite direction from the previous movement. Function times out after 3.0 (MVP PLUS™), 3.25 (WIDE-OUT™—IN) or 3.75 (WIDE-OUT—OUT) seconds.
R WING	Press this button on the right side of the control to move the right wing. The first time the button is pressed after the control is turned ON or another function is used, the wing will extend. Repeated use of the same button, without using another function, results in movement in the opposite direction from the previous movement. Function times out after 3.0 (MVP PLUS), 3.25 (WIDE-OUT—IN) or 3.75 (WIDE-OUT—OUT) seconds.

# OPERATING YOUR SNOWPLOW

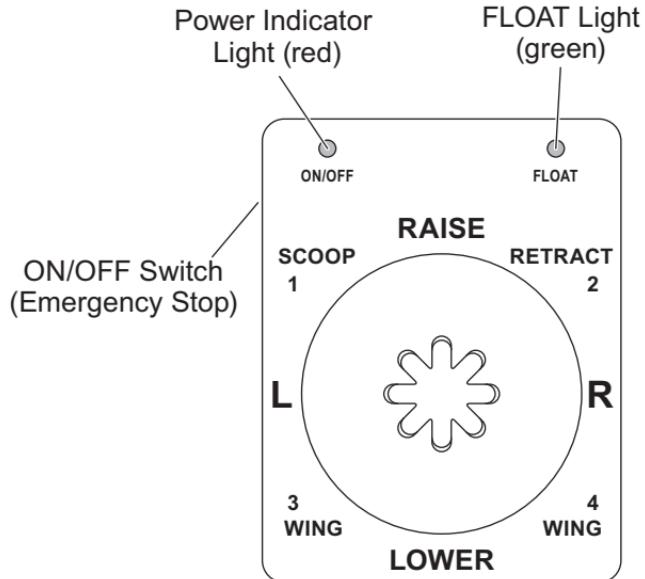
## MVP PLUS™ & WIDE-OUT™ JOYSTICK CONTROL

### ⚠ WARNING

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

1. Turn the vehicle ignition switch to the "ON" or "ACCESSORY" position.
2. Move the ON/OFF switch on the side of the control to the "ON" position. The power indicator light glows red, indicating that the control is ON. The indicator light glows red whenever the control and the vehicle ignition switch are both ON and the electrical connections to the snowplow are completed.

The ON/OFF switch operates as an emergency stop if required.



**NOTE:** If a control function times out before the desired blade movement is complete, release the lever to the center position, then move it back into the desired function.

# OPERATING YOUR SNOWPLOW

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## Function Time-Outs

All control functions, except LOWER/FLOAT, time out (stop) automatically after a period of time. This is to limit the amount of electrical energy required from the vehicle.

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**NOTE: If a control function times out before the desired blade movement is complete, release the lever to the center position, then move it back into the desired function.**

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## Automatic Shutdown

The control will automatically turn OFF after being idle for 20 minutes. To reactivate the control after a shutdown, move the ON/OFF switch to OFF, then back to ON.

## Smooth Stop

The control automatically allows the blade to coast to a stop when the lever returns to center position. This results in smoother operation, reduces the shock to the hydraulic system and increases hose and valve life. See "FLEET FLEX Electrical System" in this section for more information.

## Control Lever Movement

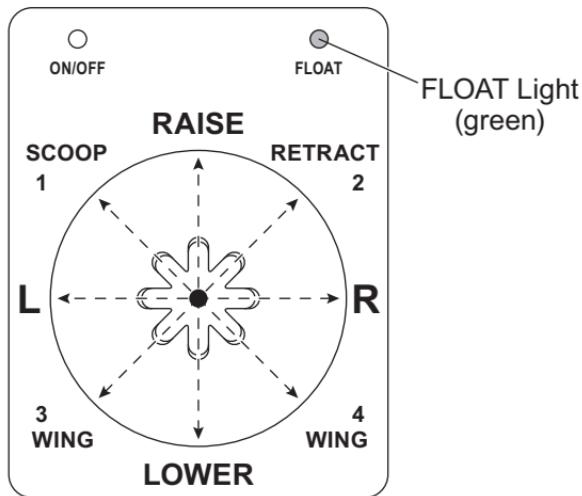
From the center position, the control lever can be moved in one of eight directions to control various movements of the snowplow blade. To change from one movement of the blade to another, the control lever must be moved back to the center position before selecting the desired function. Whenever the lever is released, it should spring back into the center position to stop any blade movement.

# OPERATING YOUR SNOWPLOW

## Control Functions

### Raise, Lower, Float, Angle

Moving the control lever straight up and down or from side to side on the control body will result in the blade movements described in the following tables.



Function	Description of Operation
RAISE	Move the control lever toward the top of the control body to raise the snowplow and cancel the FLOAT mode. Function times out after 3.0 (MVP PLUS™) or 3.5 (WIDE-OUT™) seconds.
LOWER	Move the control lever toward the bottom of the control body to lower the snowplow. Release the lever to stop blade at desired height.
FLOAT†	Move the control lever to the LOWER position and hold 3/4 second to activate this mode. The FLOAT light in the upper right corner of the control face will illuminate. The blade will lower to the ground surface and follow the contour of the surface as it dips or rises. This function does not time out, but the control will shut down after 20 minutes of nonuse.
	Move the lever to the RAISE position momentarily to cancel FLOAT. Angling left or right will not interrupt (stop) the FLOAT function.

† FLOAT mode activates immediately when the one-touch FLOAT feature is enabled. See "One-Touch FLOAT" in this section for more information.

# OPERATING YOUR SNOWPLOW

Function	Description of Operation
L (Angle Left)	With wings in a straight line, move the control lever straight to the left to move both wings to the angle left position to cast snow to the driver's left side. The left wing retracts while the right wing extends. Function times out after 3.0 (MVP PLUS™) or 3.25 (WIDE OUT™) seconds.
R (Angle Right)	With wings in a straight line, move the control lever straight to the right to move both wings to the angle right position to cast snow to the driver's right side. The right wing retracts while the left wing extends. Function times out after 3.0 (MVP PLUS) or 3.25 (WIDE-OUT) seconds.

## Scoop/Retract Blade Position

Moving the control lever from the center position toward the word SCOOP or RETRACT on the face of the control body will cause both wings to move at the same time into the following blade positions.

Function	Description of Operation
SCOOP	Move the control lever toward the word SCOOP on the control face to extend both wings forward into the scoop position. Function times out after 5.0 (MVP PLUS) or 5.5 (WIDE-OUT)seconds.
RETRACT	Move the control lever toward the word RETRACT on the control face to draw both wings into the fully retracted (vee) position. Function times out after 3.0 (MVP PLUS) or 4.5 (WIDE-OUT) seconds.

# OPERATING YOUR SNOWPLOW

## Wing Positions

Moving the control lever from the center position toward the word WING on either side of the face of the control body will cause either wing to move independently of the other, as described in the following table.

**NOTE: If a control function times out before the desired blade movement is complete, release the lever to the center position, then move it back into the desired function.**

## SECURITY GUARD™ System (1, 2, 3, 4)

Moving the control lever from the center position toward any of the four digits on the face of the control will also operate the SECURITY GUARD system. See "SECURITY GUARD System" in this section for more information.

Function	Description of Operation
L WING	Move the control lever to the left of LOWER on the control face to move the left wing. The first time the lever is moved into the slot after the control is turned ON or another function is used, the wing will extend. Repeated use of the lever in the same slot, without using another function, results in movement in the opposite direction from the previous movement. Function times out after 3.0 (MVP PLUS™); 3.25 (WIDE-OUT—IN) or 3.75 (WIDE-OUT—OUT) seconds.
R WING	Move the control lever to the right of LOWER on the control face to move the right wing. The first time the lever is moved into the slot after the control is turned ON or another function is used, the wing will extend. Repeated use of the lever in the same slot, without using another function, results in movement in the opposite direction from the previous movement. Function times out after 3.0 (MVP PLUS); 3.25 (WIDE-OUT—IN) or 3.75 (WIDE-OUT—OUT) seconds.

## FLEET FLEX ELECTRICAL SYSTEM

Your UltraMount® system snowplow comes standard with user-controlled programmable features. These include:

- SECURITY GUARD™ electrical anti-theft system
- Smooth Stop
- One-Touch FLOAT

This section provides more information about each feature, as well as instructions on how to enable or disable them. These features are offered to give you the ability to secure your snowplow and customize your plowing experience.

## SECURITY GUARD™ System

### Activation & Establishing a 4-Digit Security Code

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**NOTE: The snowplow must be attached to the vehicle, and all the electrical connections must be connected prior to activating the security code function.**

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The SECURITY GUARD feature was developed as an electrical anti-theft system. The system provides a deterrent from theft and/or non-permitted use by allowing you to electronically lock the snowplow's hydraulic functions.

All multiplex snowplow controls come equipped with the SECURITY GUARD system. To use this function, you must complete the "Activation" process.

1. Turn the vehicle ignition switch to the "ON" or "ACCESSORY" position. (It is not necessary to start the vehicle.)
2. Verify the control power indicator is OFF. If the power indicator light is red, the control is ON. Move the ON/OFF switch to "OFF" or push the ON/OFF button to turn the control OFF.
3. To activate the SECURITY GUARD mode, move the control lever to the #1 position or press the #1 button four consecutive times, and then to the #4 position or the #4 button four consecutive times (sequence: 1, 1, 1, 1, 4, 4, 4, 4). The green FLOAT light will flash quickly and the red power indicator light will turn ON, indicating the system is ready to accept your 4-digit security code.

Enter your 4-digit security code by moving the control lever to (or pressing the button for) any of the eight following positions: UP, DOWN, LEFT, RIGHT, 1, 2, 3 or 4.

Once you have entered your 4-digit security code, the FLOAT light will stop flashing and The power indicator light will turn OFF. This indicates that your 4-digit security code is entered and stored in the SECURITY GUARD™ system.

4. Once a 4-digit security code is established, the SECURITY GUARD system will recognize any control that has been programmed with the same 4-digit security code. If a control not programmed with the correct 4-digit security code is connected to the system, the established security code will have to be entered manually before the snowplow can be activated (see the Manual Unlock procedure).

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**NOTE: If the control is turned ON prior to completing the programming procedure, your 4-digit security code will be cancelled.**

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## Manual Unlock

If the SECURITY GUARD system is activated and you are using a control with a different 4-digit code than the established security code, you will be required to manually enter the 4-digit security code before operating a locked snowplow.

1. Turn the vehicle ignition to the "ON" or "ACCESSORY" position.
2. Move the ON/OFF switch to the "ON" position or push the ON/OFF button to switch the control ON.
3. The power indicator light will flash rapidly, indicating that the snowplow is locked.
4. Enter the 4-digit security code.

5. After entering the correct security code, the power indicator light will change from flashing rapidly to a solid light to indicate the snowplow has been successfully unlocked.
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**NOTE: If the plow/vehicle electrical connection is lost or disconnected, the SECURITY GUARD™ system will reset, requiring any control that is not programmed with the established 4-digit security code to manually re-enter the security code to activate the snowplow.**

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#### **Clearing an Established 4-Digit Security Code**

1. Turn the vehicle ignition switch to the "ON" or "ACCESSORY" position.
2. If the snowplow is locked (the control power indicator light will be flashing at a fast rate), unlock the snowplow by following the Manual Unlock procedure.

3. Move the ON/OFF switch to the "OFF" position or push the ON/OFF button to switch the control OFF. Verify that the power indicator light is OFF.
  4. With the control OFF, move the control lever to the #2 position or press the #2 button four consecutive times, and then to the #3 position or the #3 button four consecutive times. This sequence (2, 2, 2, 2, 3, 3, 3, 3) will clear the 4-digit security code from the SECURITY GUARD system. The FLOAT light will flash to indicate that the 4-digit security code was cleared.
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**NOTE: To enter a new 4-digit security code see Activation & Establishing a 4-Digit Security Code.**

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## Light Flash Indicators

POWER – Red	Function
OFF	Control is OFF
Solid ON	Control is ON and active
Slow Flash	No communication
Fast Flash	Snowplow is locked—enter 4-digit security code to unlock

FLOAT – Green	Function
Solid ON	FLOAT function is active
Fast Flash	Security code activation in progress

## Additional Notes

- The SECURITY GUARD™ system requires any control (other than the one with the assigned 4-digit security code) to enter the security code before the snowplow can be activated. Once the security code

is established, the SECURITY GUARD system recognizes that a control with the same security code is attached, and does not require a manual unlock to activate the snowplow. The system will recognize the control as "safe" and will automatically unlock.

- The SECURITY GUARD system is only fully functional with joystick controls PN 96800 & 96700 and hand-held controls PN 96900 & 96600.
- In the event that a snowplow is locked and cannot be manually unlocked or reset, contact your Authorized Dealer.
- REMINDER: Record your security code for future reference.

## **Smooth Stop**

Smooth stop, or "soft" stop, allows the blade to coast to a stop when the button/lever is released. The result is smoother operation, reduction in shock to the hydraulic system and an increase in hose and valve life.

While there are advantages to having this feature, there are also advantages to temporarily disabling this feature. For example, to allow for more precise movements of the blade while operating in close distances to buildings and other obstacles.

All controls come standard with this feature ENABLED. To enable/disable this feature, perform the following steps. Performing the sequence multiple times will toggle the feature between enabled and disabled.

## **Enable/Disable Procedure**

1. Turn the vehicle ignition switch to the "ON" or "ACCESSORY" position. (It is not necessary to start the vehicle.)
2. Verify that the control power indicator is OFF. If the power indicator light is red, the control is ON. Move the ON/OFF switch to "OFF" or push the ON/OFF button to turn the control OFF.
3. Move and hold the control lever to the R position or press and hold the R button while turning the control ON. The power indicator light will turn ON and the FLOAT light will flash, indicating the status of the feature.

## **Light Flash Indicators**

<b>Light</b>	<b>Description</b>
POWER – Red	Solid ON = Control is ON
FLOAT – Green	1 Flash = Smooth Stop Enabled 2 Flashes = Smooth Stop Disabled

## One-Touch FLOAT

One-touch FLOAT immediately activates the FLOAT mode and releases the blade to the ground, without having to hold the button or lever in LOWER. This can improve transition time when backing up to plow forward again, eliminating the time spent holding the control and waiting for the blade to fully drop.

All controls come standard with this feature DISABLED. To enable/disable this feature, perform the following steps. Performing the sequence multiple times will toggle the feature between enabled and disabled.

## Enable/Disable Procedure

1. Turn the vehicle ignition switch to the "ON" or "ACCESSORY" position. (It is not necessary to start the vehicle.)
2. Verify that the control power indicator is OFF. If the power indicator light is red, the control is ON. Move the ON/OFF switch to "OFF" or push the ON/OFF button to turn the control OFF.
3. Move and hold the control lever to the LOWER position or press and hold the LOWER button while turning the control ON. The power indicator light will turn ON and the FLOAT light will flash, indicating the status of the feature.

## Light Flash Indicators

Light	Description
POWER – Red	Solid ON = Control is ON
FLOAT – Green	1 Flash = One-touch FLOAT Disabled 2 Flashes = One-touch FLOAT Enabled

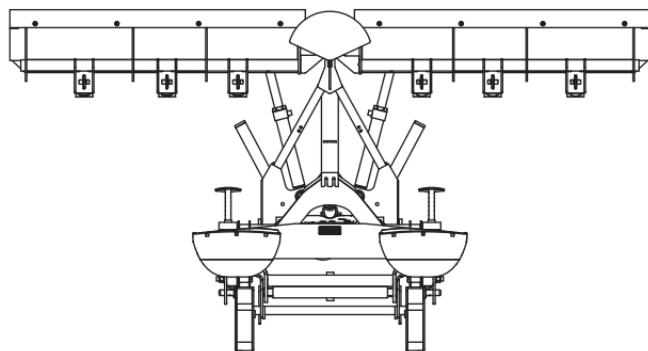
## MVP PLUS™ BLADE POSITIONS

**NOTE: For best road clearance during transport, place the blade halfway between the straight and retracted (vee) positions. The scoop position is NOT RECOMMENDED during transport.**

The MVP PLUS snowplow can be used in five basic plowing positions.

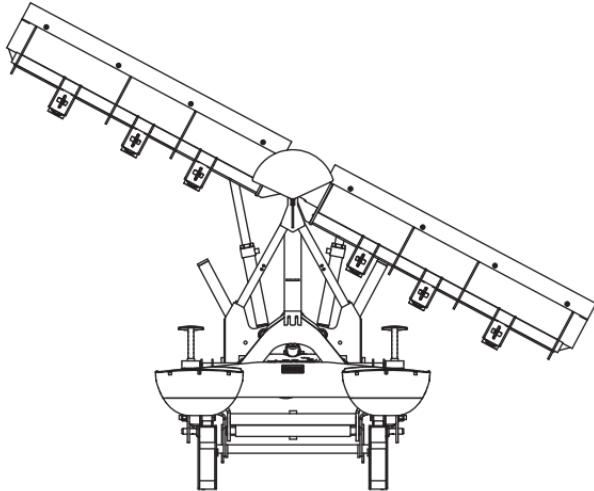
### Straight Blade

Move both wings to form a straight blade for wide-path plowing or stacking snow.



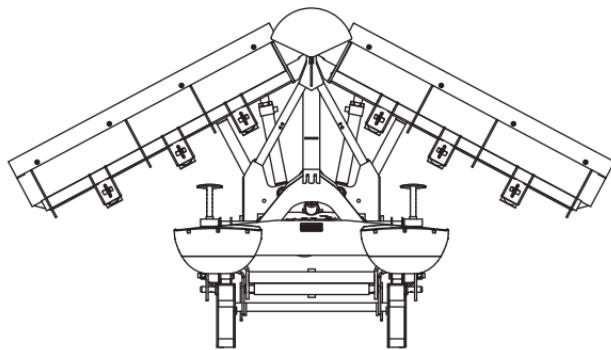
## Angled Blade

Move one wing "OUT" and the other wing "IN" to form an angled blade in either direction for general plowing and widening.



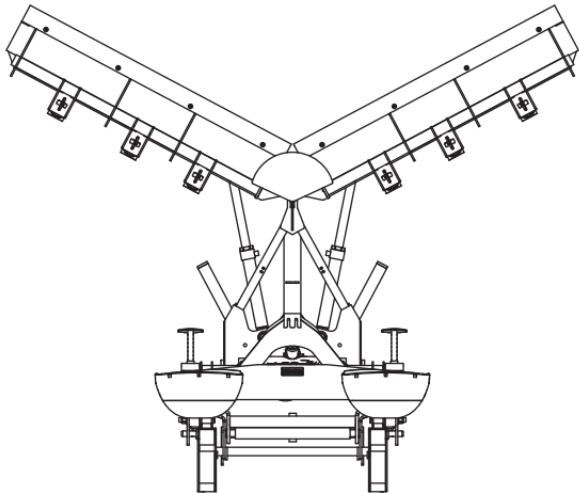
## Retracted (Vee) Blade

Move both wings "IN" toward the vehicle for initial break through plowing and plowing paths or walkways.



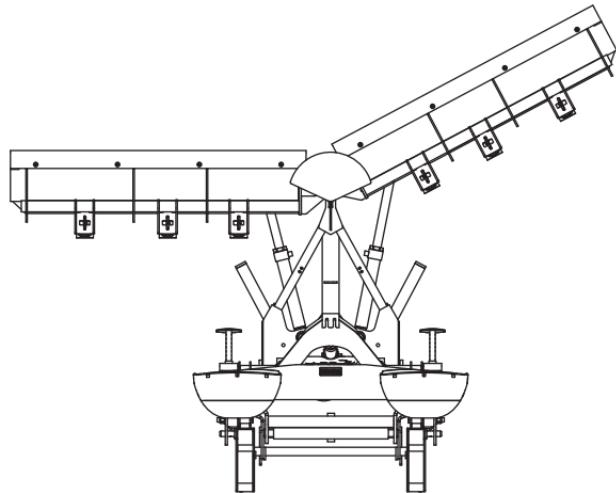
## Scoop Blade

Move both wings "OUT" away from the vehicle to form a scoop to carry snow with minimum spilloff.



## Dogleg Blade

Move one wing to straight blade position and the other "OUT" to scoop blade position for clean-up of windrows.





## WIDE-OUT™ BLADE POSITIONS

The WIDE-OUT snowplow can be used in four basic plowing positions.

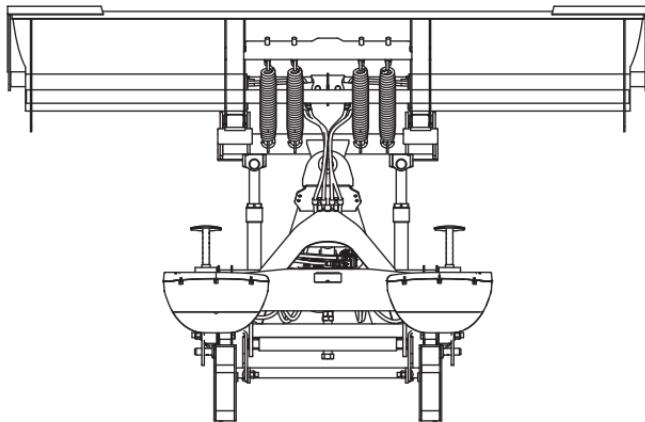
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**NOTE: Always transport the WIDE-OUT snowplow with both wings fully retracted.**

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## Retracted Blade

Move both wings "IN" to form a straight blade.

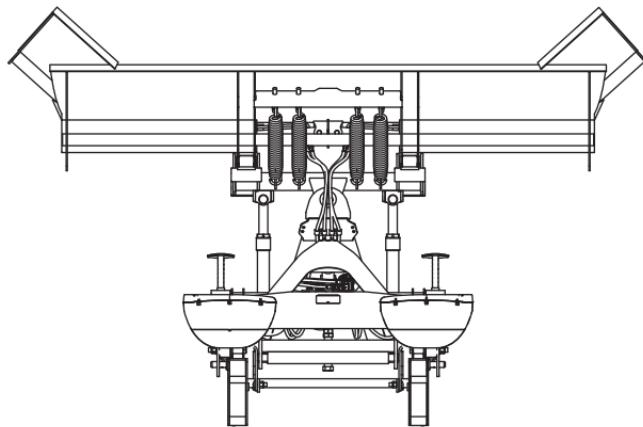




# OPERATING YOUR SNOWPLOW

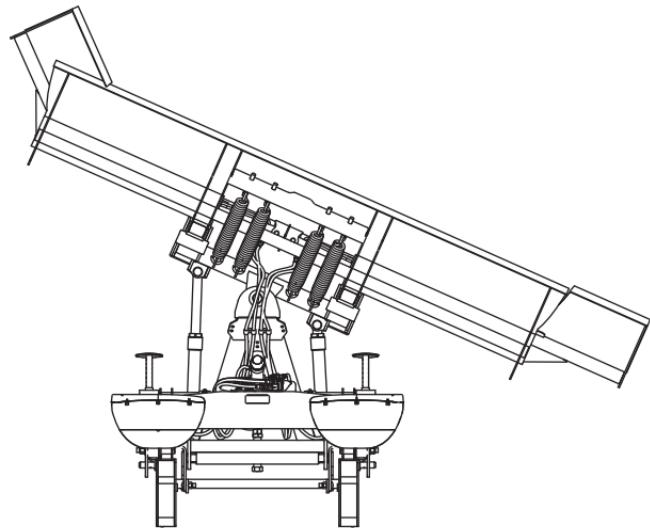
## Scoop Blade

Move both wings "OUT" and ahead of the vehicle to form a scoop to carry snow with minimum spilloff.



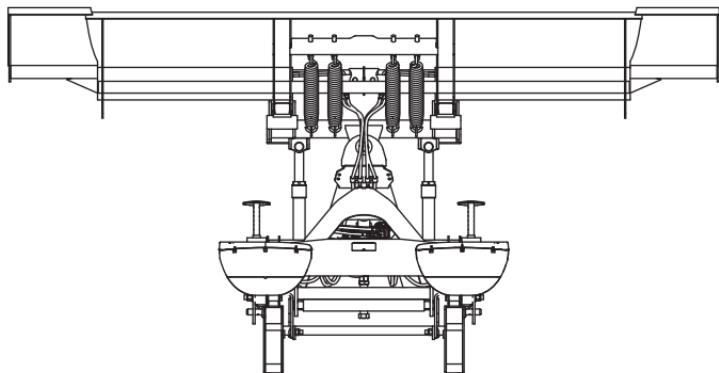
## Dogleg Blade

Move one wing to extended position and the other "OUT" to scoop blade position for clean up of windrows.



## Extended Blade

Move both wings "OUT" straight for an extra-wide blade for clearing large areas.



# OPERATING YOUR SNOWPLOW

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## SNOWPLOW HEADLAMP CHECK

With all electrical 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 electrical plugs should switch between the vehicle and snowplow headlamps as follows:

- Electrical plugs DISCONNECTED—Vehicle headlamps function normally.
- Electrical plugs CONNECTED—Vehicle headlamp functions transfer to the snowplow headlamps. On some DRL systems, both the vehicle and snowplow headlamps will function.

## Aiming the Headlamps

- Aim the snowplow headlamps with the snowplow mounted and raised in the transport position. See "Aiming Headlamp Beams" in the Maintenance section for instructions.
- Aim the vehicle headlamps with the snowplow removed from the vehicle.

## SHOE ADJUSTMENT

### ⚠ WARNING

**Blade can drop unexpectedly. Place blade on jack stands. Failure to do so could result in serious personal injury.**

## Recommended Shoe Adjustments

**For gravel surfaces:** The bottom surface of the shoe should be 1/4"-1/2" below the cutting edge.

**For hard surfaces (concrete or asphalt):** The bottom surface of the shoe should be even with the cutting edge.

## Adjustment Procedure

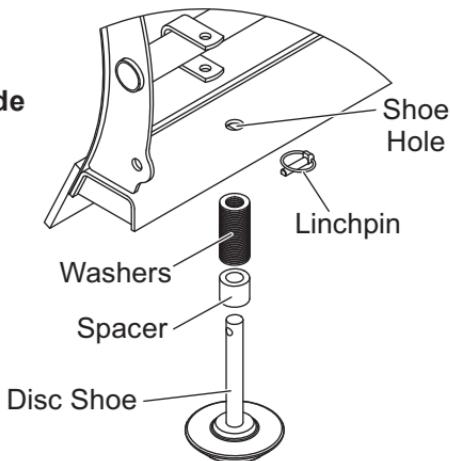
1. Raise the blade one foot off the road surface, turn the control OFF, and from in front of the blade, place jack stands or sturdy blocking under the cutting edge.
2. Turn the control ON and lower the blade onto the jack stands or blocking. Turn the control and vehicle ignition OFF.
3. Remove the linchpin and slide the shoe down and out of the shoe hole (straight blades) or shoe holder (MVP PLUS™ and WIDE-OUT™ blades).
4. Remove one or more washers from the shoe stem and reinstall the shoe into the shoe hole/holder.
5. Place the removed washers onto the shoe stem above the shoe hole/holder.

# OPERATING YOUR SNOWPLOW

6. Reinstall the lynchpin.
7. Turn the vehicle ignition to the "ON" position, and turn the control ON. Raise the blade slightly from the jack stands. Turn the control OFF, and remove the jack stands.
8. Stand 8 feet clear of the blade when checking the height adjustment of the cutting edge to the road surface.

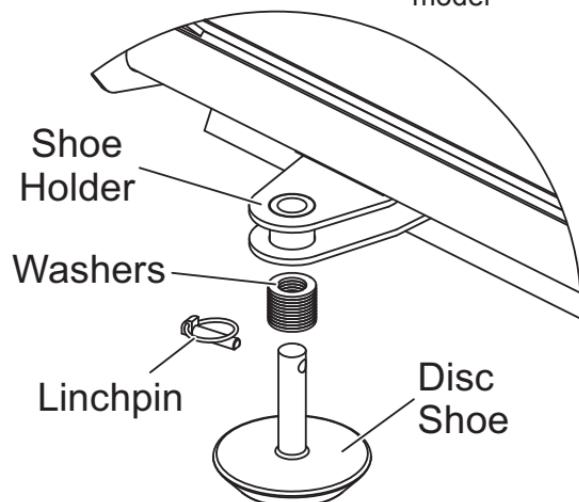
## Straight Blade

Actual configuration varies by model



## Optional MVP PLUS™ & WIDE-OUT™ Disc Shoe Kit

Actual configuration varies by model



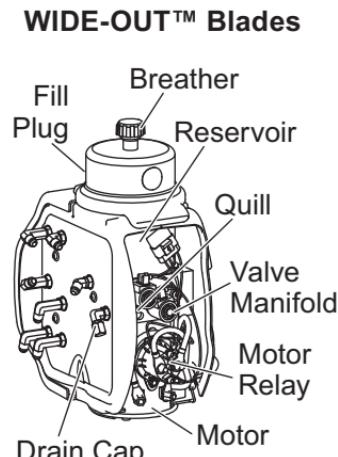
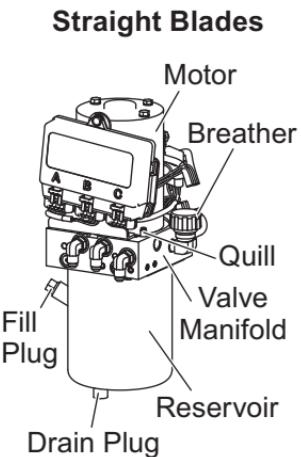
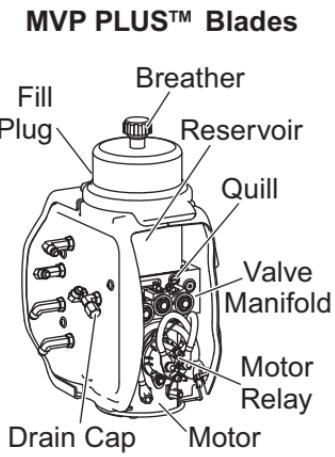
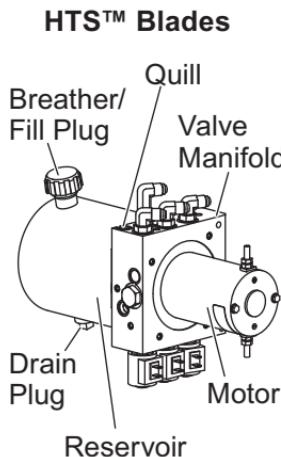
# OPERATING YOUR SNOWPLOW

## HYDRAULIC SYSTEM

The FloStat® hydraulic unit's valve manifold includes relief valves to prevent damage to the blade or vehicle if an obstacle is hit at either end of the blade. The valves are preset at the factory and do not need any adjustments unless the valve manifold is serviced. When force against the

blade causes the pressure **in an extended ram** to exceed set limits, the relief valve opens, allowing fluid to escape and the ram retracts.

For hydraulic fluid type and filling instructions, see "Annual Fluid Change" under "Hydraulic System" in the Maintenance section of this manual.



# OPERATING YOUR SNOWPLOW

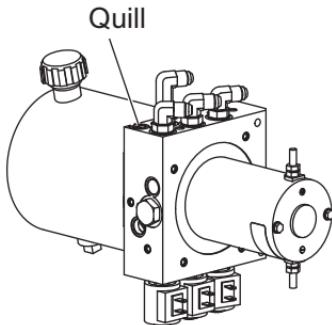
## BLADE DROP SPEED ADJUSTMENT

### ⚠ WARNING

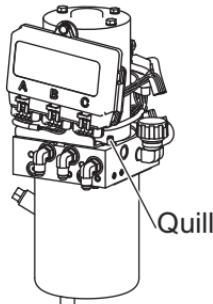
Keep 8' clear of the blade when it is being raised, lowered or angled. Do not stand between vehicle and blade or directly in front of the blade. If the blade hits or drops on you, you could be seriously injured.

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

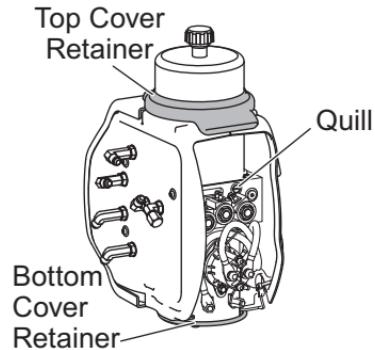
HTS™ Blades



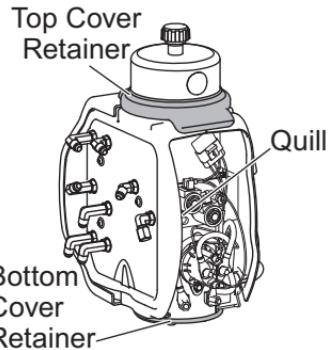
Straight Blades



MVP PLUS™ Blades



WIDE-OUT™ Blades



# OPERATING YOUR SNOWPLOW

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## Adjustment Procedure

1. Lower the blade to the ground before making any adjustment.
2. Remove the hydraulic unit cover according to the instructions for your blade:

**HTS™ Blades:** Remove the hydraulic unit cover.

**Straight Blades:** Follow the "Straight Blade Hydraulic Unit Cover – Remove and Replace" procedure in the Maintenance section of this manual.

**MVP PLUS™ and WIDE-OUT™ Blades:** Lift the hydraulic unit top cover retainer, remove the bottom cover retainer and remove the side cover.

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 when checking adjustment.
4. Repeat Step 2 to reinstall the cover.

# OPERATING YOUR SNOWPLOW

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## TRANSPORTING THE SNOWPLOW

### **⚠ WARNING**

Position the blade so it does not block the headlamp beam.

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

### **⚠ CAUTION**

Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.

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**NOTE:** For MVP PLUS™ blades, use care when driving or entering driveways with the snowplow in the retracted (vee) position. The outer ends of the cutting edges could contact the ground.

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**NOTE:** Always transport the WIDE-OUT™ snowplow with both wings fully retracted.

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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.

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**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.

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

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# OPERATING YOUR SNOWPLOW

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## DRIVING AND PLOWING ON SNOW AND ICE

### CAUTION

Drinking then driving or plowing is very dangerous. Your reflexes, 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.

Refer to vehicle owner's manual instructions 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 or ice 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.

# OPERATING YOUR SNOWPLOW

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- 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 seat belt 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.

# OPERATING YOUR SNOWPLOW

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## 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  
(16 km/h).

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

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## 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 you are 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 km/h) 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.

# OPERATING YOUR SNOWPLOW

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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 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. For straight blades, shear off top layers by plowing with the blade raised 3"-4" for the initial pass. For MVP PLUS™ blades, move the blade into the fully retracted (vee) position and make an initial pass.
2. Bite into the edges using only partial blade width until the 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 blade width;  
12" of snow — plow with 1/2 of the blade.

For WIDE-OUT™ blades in Scoop position, plow all depths with entire blade width.

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 the vehicle's GVWR and GAWR.
5. For increased traction use tire chains where legal.

# OPERATING YOUR SNOWPLOW

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## Clearing Driveways

1. Head into the driveway with the blade angled and plow the snow away from any buildings. Widen the driveway by rolling snow away from any buildings.
2. If a 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 the building. Drop the blade and "back drag" snow away from the building at least one vehicle length. Repeat if necessary.
4. Back the 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 the blade raised, drive up to the building. Drop the blade and "back drag" the snow away from the building. When the snow is clear of the buildings, turn the vehicle around and push the snow away from the buildings toward the outer edges of the lot. Back drag edges are available as an accessory for select snowplow models.
2. Plow a single path down the center in the lengthwise direction.
3. With the blade in the scoop, angle or dogleg position, plow successive strips lengthwise until the area is cleared and snow is stacked around the outer edges.
4. If the snow is too deep to clear in the above manner, clear the main traffic lanes as much as possible.

# OPERATING YOUR SNOWPLOW

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## PARKING WITH SNOWPLOW ATTACHED

### WARNING

Lower the blade when the vehicle is parked. Keep 8' clear of the blade. 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.

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

## TOWING A DISABLED OR STUCK VEHICLE

Do not use any snowplow components as an attaching point when retrieving, towing or winching a disabled or stuck vehicle.

# REMOVING SNOWPLOW FROM VEHICLE & STORAGE

## REMOVING SNOWPLOW (OFF)

### ⚠ WARNING

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

### ⚠ WARNING

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

### ⚠ CAUTION

Store PRO PLUS®, PRO-PLOW® Series 2 and MIDWEIGHT™ A-frame in a horizontal position. This will prevent water from collecting and freezing in shock absorber.

During the off-season, the control can be removed. Disconnect the connector in the cab and store the control in the glove box of the vehicle.

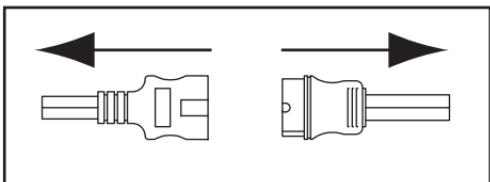
1. Drive the vehicle to the desired snowplow storage location on firm, level surface.
2. Adjust straight and WIDE-OUT™ blades to the straight position, or MVP PLUS™ blades to the fully retracted (vee) position.
3. Lower the blade to the ground.
4. Turn the vehicle ignition to the "OFF" position.

# REMOVING SNOWPLOW FROM VEHICLE & STORAGE

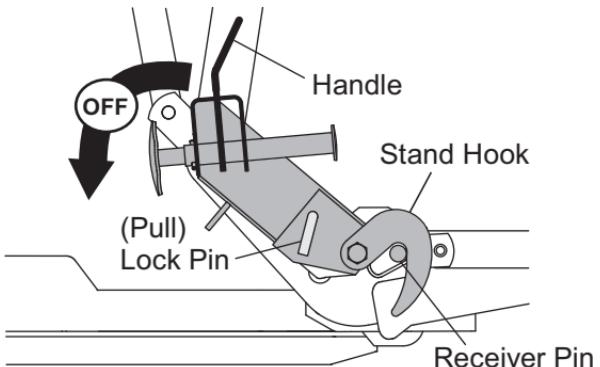
## ⚠ CAUTION

On 2-plug electrical systems, plug covers shall be used whenever snowplow is disconnected. Vehicle Battery Cable is 12V unfused source.

- After lowering the blade and turning the control OFF, disconnect the electrical plugs.



- Pull and hold the lock pin out, then rotate the handle DOWN and release the lock pin. It must lock into the LOWER hole.

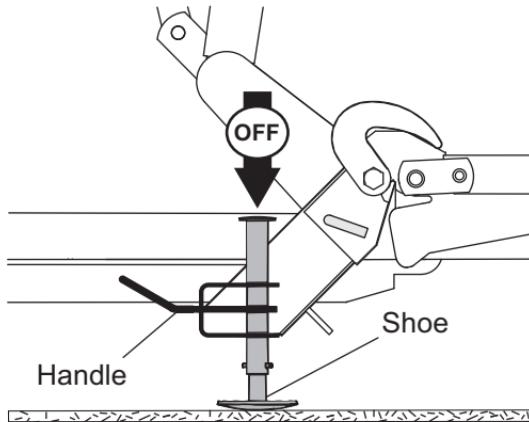


**NOTE:** After each use of the snowplow, reapply dielectric grease to the electrical plugs to maintain the protective coating on the terminals.

# REMOVING SNOWPLOW FROM VEHICLE & STORAGE

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7. Push down on the top of the shoe; the shoe will be on the ground. Repeat Steps 2 and 3 on the other side of the snowplow (not required for HTS™ blades). Back the vehicle away.
8. Place electrical plugs in storage position. Insert the plow cable and headlamp harness into the cable boot on the lift frame. Install plug covers on the vehicle cable and headlamp harness.



## STORAGE

Your snowplow is designed to be moved into a storage location using your vehicle and plow attaching system. For easier attaching of the snowplow, store it on a hard, level surface.

## AIMING HEADLAMP BEAMS

Tighten headlamp fasteners to 45 ft-lb once correct visual aim is achieved.

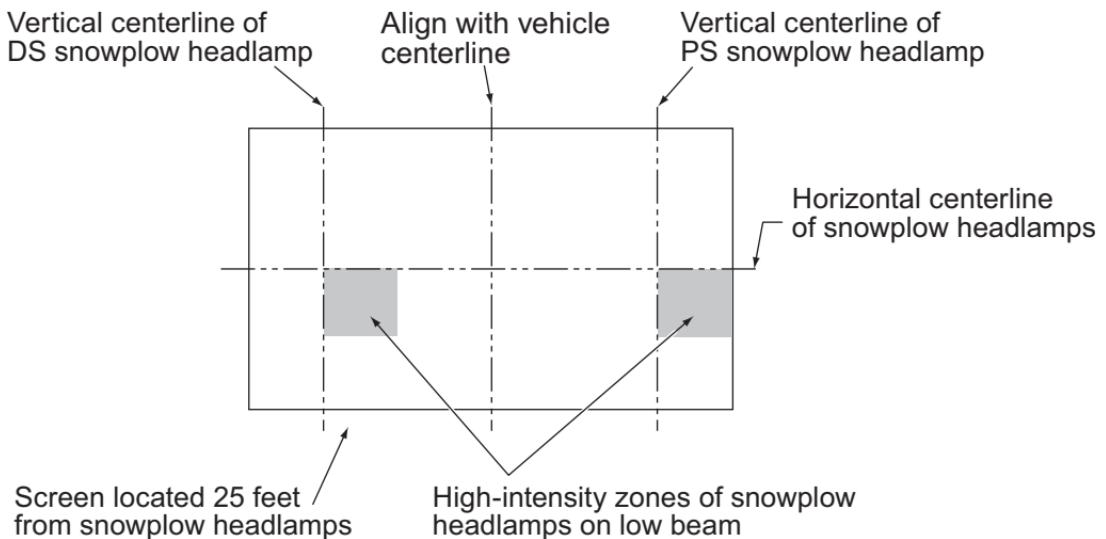
1. Park the vehicle on a level surface 25 feet in front of a matte-white screen, such as a garage door. The screen should be perpendicular both to the ground and to the vehicle centerline.
2. The vehicle should be equipped for normal operation. The snowplow blade should be in place and in raised position. Below are the steps listed by the Society of Automotive Engineers (SAE) pertinent to headlamp aiming in specification #SAE J599d.

3. Prepare the vehicle for headlamp aim or inspection. Before checking beam aim, the inspector will:
  - a. Remove ice or mud from under fenders.
  - b. Set tire inflation pressures to the values specified on vehicle information label.
  - c. Check springs for sag or broken leaves.
  - d. See that there is no load in the vehicle other than the driver and ballast as specified in the Selection List.
  - e. Check the functioning of any automatic vehicle leveling systems and specific manufacturer's instructions pertaining to vehicle preparation for headlamp aiming.
  - f. Clean the lenses.
  - g. Check for bulb burnout and proper beam switching.
  - h. Stabilize the suspension by rocking the vehicle sideways.

# MAINTENANCE

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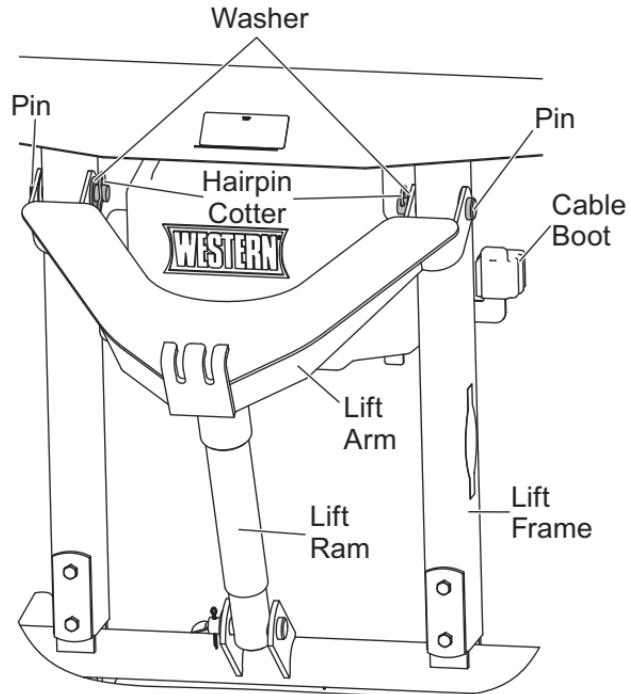
4. Mark (or tape) the vertical centerline of the snowplow headlamps and the vertical centerline of the vehicle on the screen. Mark the horizontal centerline of the snowplow headlamps on the screen (distance from ground to snowplow headlamp centers).
5. Align the top edge of the high-intensity zone of the snowplow lower beam below the horizontal centerline and the left edge of the high intensity zone on the vertical centerline for each snowplow headlamp. (Refer to diagram below.)



## STRAIGHT BLADE HYDRAULIC UNIT COVER – REMOVE AND REPLACE

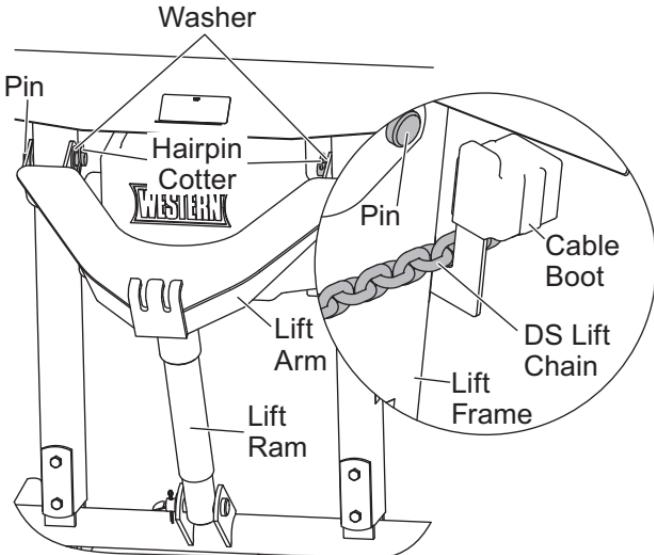
### Snowplow Attached to Vehicle

1. Lower the blade to the ground. Place the control in FLOAT, fully collapsing lift ram. Turn the control OFF.
2. Remove the two hairpin cotter, washers and pins attaching the lift arm to the lift frame.
3. Pivot the lift arm and lift ram forward and remove or replace the cover.
4. Reassemble the lift arm to the lift frame with the pins, washers and hairpin cotters removed in Step 2.



## Snowplow Not Attached to Vehicle

1. Tilt the lift frame forward to create slack in the lift chains. On the driver-side lift chain, mark the link attaching it to the lift arm.
2. Unhook the driver-side lift chain from the lift arm, remove the slack and hook the chain in the slot between the cable boot and the driver's side of the lift frame.
3. Remove the two hairpin cotter, washers and pins attaching the lift arm to the lift frame.
4. Pivot the lift arm and lift ram forward and remove or replace the cover.
5. Reassemble the lift arm to the lift frame with the pins, washers and hairpin cotters removed in Step 3.



6. Unhook the driver-side lift chain from the lift frame and hook the marked chain link onto the lift arm.

## PRESEASON CHECK

### ⚠ WARNING

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

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.
- Check hydraulic system for leaks and cracked or damaged hoses.
- Drain the hydraulic system and refill with recommended hydraulic fluid. For hydraulic fluid type and filling instructions, see "Annual Fluid Change" under "Hydraulic System" in the Maintenance section of this manual.
- Replace worn or damaged parts.
- Check all mounting points and tighten fasteners, on both snowplow and vehicle. Verify that all cotter pins are in place.
- Repaint blade assembly and attachments, as necessary, to protect the metal.
- Install auxiliary and flashing lights for compliance and visibility in accordance with local regulations.
- Check headlamps, auxiliary lights, heater and windshield wipers for proper operation.
- Inspect and test your battery. Recharge or replace as necessary.

- 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 to prevent it from moving under harsh plowing conditions.

## POSTSEASON MAINTENANCE

### **⚠ CAUTION**

**Servicing the MVP PLUS™ trip springs without special tools and knowledge could result in personal injury. See your authorized WESTERN® outlet for service.**

- Coat all electrical connections with dielectric grease.
- Clean and paint blade and components as needed.

- Always store MVP PLUS snowplows with blades in retracted (vee) position. This exposes the minimum amount of angle ram rod, and captures the least amount of hydraulic fluid in the system.
- Be sure the lift ram is fully collapsed so the rod is not exposed. (Not required for HTS™ blades.)
- Apply general purpose petroleum grease to exposed chrome surfaces of the rams to prevent rust.
- Lubricate all pivot points (for example, the stand lock pin assembly and lower spring anchor) with general purpose petroleum grease.

# MAINTENANCE

## MAINTENANCE AND ADJUSTMENT

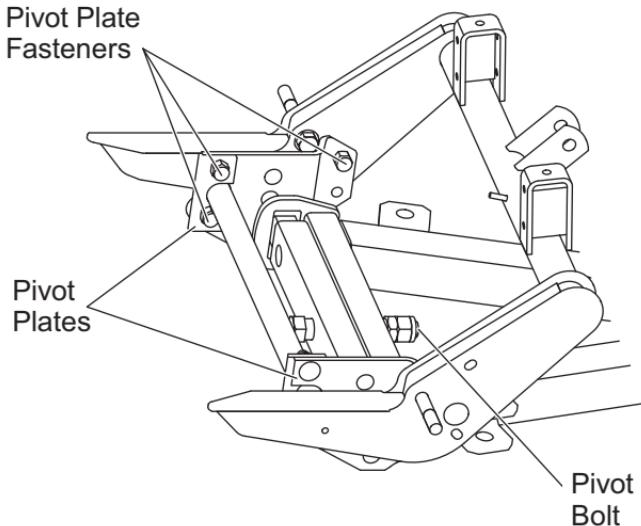
### ⚠ WARNING

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

Your WESTERN® snowplow is designed for rugged, dependable service. However, 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 the 1" pivot bolt.



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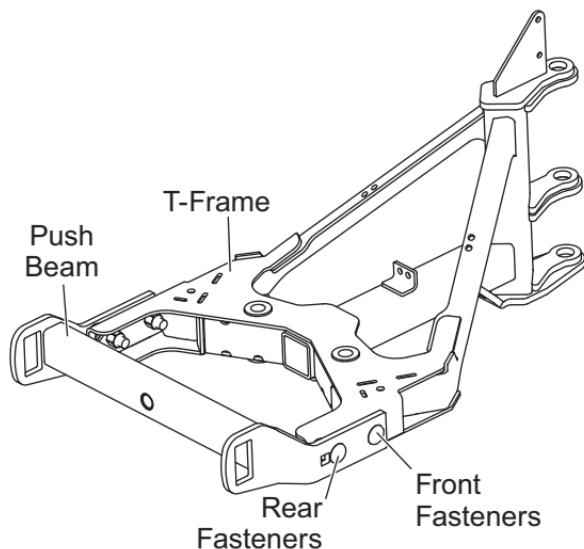
2. Make sure all electrical connections, including grounds, are clean, tight, free of rust or corrosion and coated with dielectric grease.
  3. Check all plugs and seals for hydraulic fluid leaks. Repair as necessary.
  4. Replace the cutting edge when it is worn to the bottom of the blade.
- MVP PLUS™ Cutting Edge:** To equalize wear, refer to the leveling adjustment procedure in the following cutting edge section.
5. **Straight Blade and WIDE-OUT™ 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), and tighten the adjusting nut (nut farthest 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. When the proper tension is reached, tighten the locknut.
  6. **Blade Finish:** If the powder-coat finish is nicked or scratched, repair the surface and paint with WESTERN® red or black paint in aerosol or quart can.

## MVP PLUS™ CUTTING EDGE WEAR AND LEVELING ADJUSTMENT

After the snowplow has been installed on the vehicle in the correct configuration, a fine adjustment can be made to bring the cutting edges of the snowplow in full contact with the ground across the entire cutting edge. This adjustment feature should be used as the cutting edges begin to wear in order to maintain an even wear pattern across both cutting edges and provide good scraping action.

1. Snowplow must be installed on a properly ballasted vehicle, in the correct configuration.
2. Vehicle and snowplow must be on a level surface.
3. If the optional shoe kit has been installed on the blade, remove the shoes during this adjustment procedure.

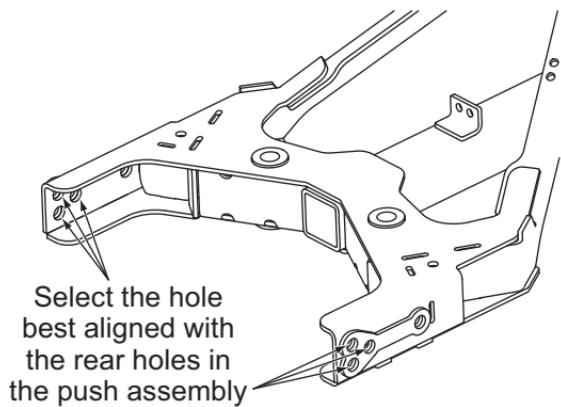
4. Place the blade wings in scoop position on the ground with no tension on the lift chains.
5. Remove the rear fasteners holding pushbeam to T-frame. Loosen the front fasteners and allow the blade to find a level position.



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6. Select the hole in the rear of the T-frame that is best aligned with the rear hole in the push beam and reinstall the rear fasteners. Tighten all four fasteners to 250 ft-lb.



7. Raise and lower the blade several times. The cutting edge should be contacting the level surface across the full length of the cutting edge.
8. Verify that the cutting edges remain in full contact with the ground while the wings are shifted from the scoop position to the retracted (vee) position. Reinstall the blade shoes if they were removed in Step 3.

Complete this procedure as often as required to provide even cutting edge wear. Replace the cutting edge(s) on your MVP PLUS™ blade when they are worn to within 1" of the carriage bolts.

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## HYDRAULIC SYSTEM

### Fluid Level

#### ⚠ CAUTION

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

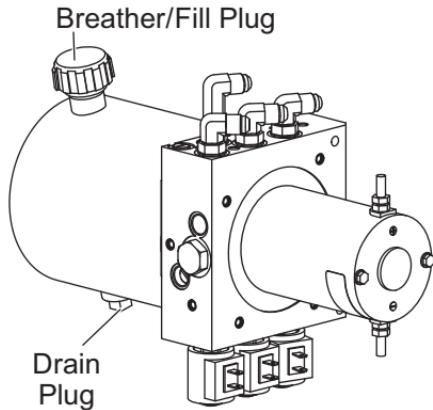
**NOTE:** On MVP PLUS™ and WIDE-OUT™ blades, add fluid only when all rams are retracted.

**NOTE:** Remove the fill plug slowly to relieve any pressure in the reservoir.

- With the UltraMount® system attached to the vehicle, activate the control.

- For straight blades any angle will do, but for MVP PLUS and WIDE-OUT blades, move the blade wings to the fully retracted (vee) position.
- Activate the control FLOAT function and manually collapse the lift ram all the way.

### HTS™ Blades



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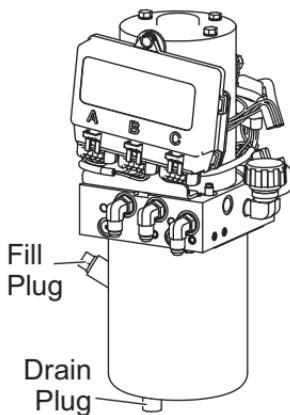
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4. Turn the control OFF.
5. Remove the fill plug.
6. **HTS™ Blades:** Fill the reservoir to within 2-1/2" from the top of the fill hole and replace the fill plug.

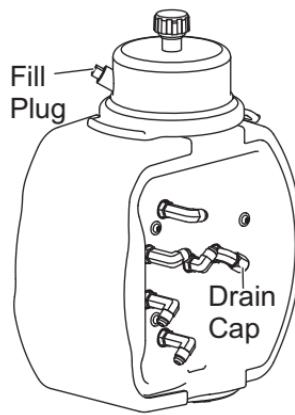
**Straight Blades, MVP PLUS™ and WIDE-OUT™ Blades:** Fill the reservoir to the top of the fill hole and replace the fill plug.

For fluid recommendations see the following "Annual Fluid Change" section.

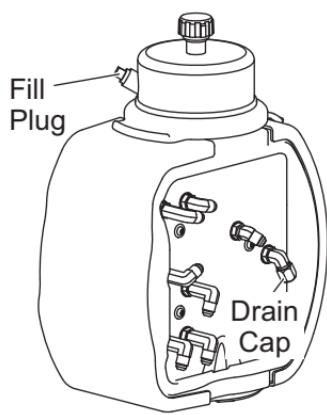
**Straight Blades**



**MVP PLUS Blades**



**WIDE-OUT Blades**



## Annual Fluid Change

### **⚠ CAUTION**

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

### **⚠ CAUTION**

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

Perform this operation with the snowplow attached to the vehicle on a hard, level surface.

1. Lower the blade to the ground.
2. Activate the control FLOAT function and manually collapse the lift ram all the way (not required for HTS™ blades). Turn the control OFF.

3. **HTS Blades and Straight Blades:** Remove the hydraulic unit cover as described in the Blade Drop Speed Adjustment procedure in the Operating Your Snowplow section.

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**NOTE: Loosen the fill plug slowly to relieve any pressure in the reservoir.**

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4. Remove the drain plug located in the bottom of the hydraulic reservoir for straight blades, or the drain cap located on the fitting side of the hydraulic unit for MVP PLUS™ and WIDE-OUT™ snowplows. (See the illustrations on the previous page.)
5. Completely drain the reservoir and replace the drain plug/cap.
6. Carefully note hose routing and position of any protective hose wraps for proper reassembly.
7. Remove the angle ram hoses from the fittings on the hydraulic unit and place them in a drain pan or suitable container. **(See the following**

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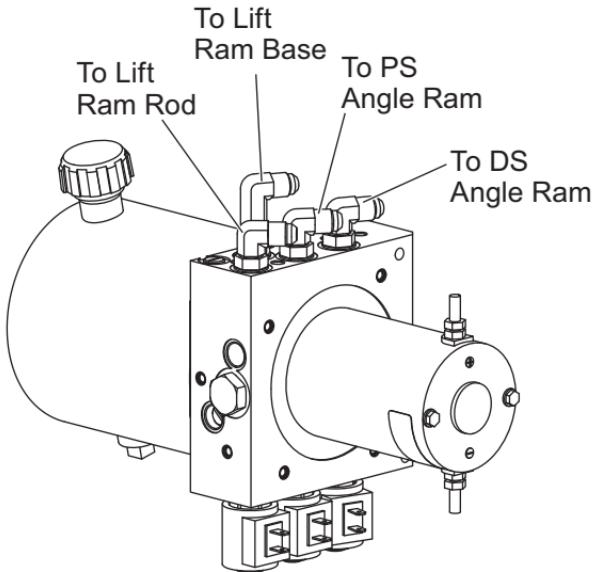
Hose Routing illustrations and the Hose or Fitting Replacement instructions later in this section.)

8. Manually angle the blade fully in each direction to remove fluid from the angle rams. Do not allow the hose(s) from the extending ram or the opposite side of the ram (MVP PLUS™ blades only) to take fluid back in.
9. Reconnect the angle ram hoses to the proper fittings. Reinstall all protective hose wraps in their original positions. (See the following illustrations for your snowplow type and the Hose or Fitting Replacement instructions later in this section.)

## ⚠ WARNING

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

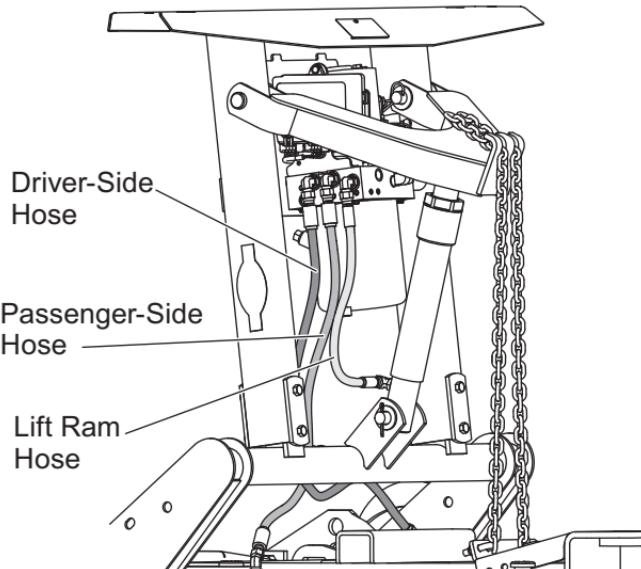
## Hose Routing for HTS™ Blades



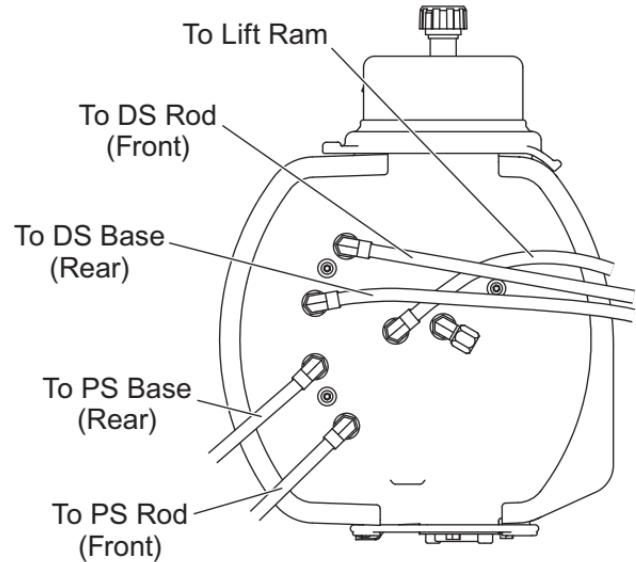
# MAINTENANCE

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## Hose Routing for Straight Blades

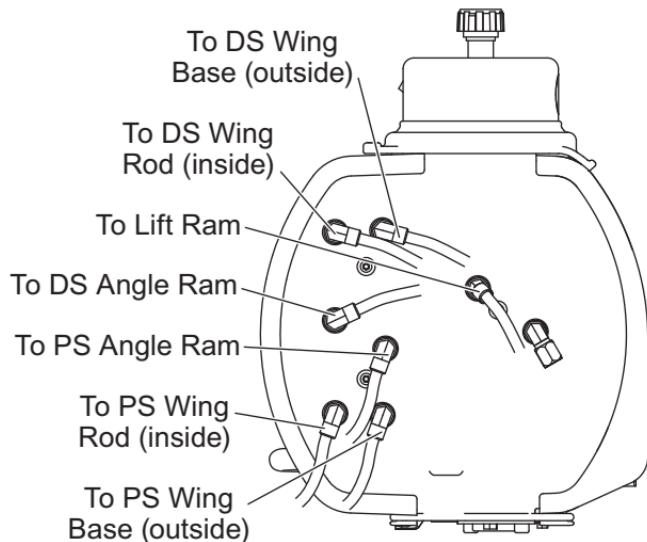


## Hose Routing for MVP PLUS™ Blades



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## Hose Routing for WIDE-OUT™ Blades



### ⚠ CAUTION

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

10. For straight blades, any angle will do, but MVP PLUS™ and WIDE-OUT blades must be in the fully retracted (vee) position. With the lift ram fully retracted, fill the reservoir with WESTERN® High Performance Hydraulic Fluid to  $-40^{\circ}\text{F}$  ( $-40^{\circ}\text{C}$ ), or other fluid conforming to Military Specification MIL-H-5606A, such as Mobil Aero HFA or Shell AeroShell® Fluid 4. Replace the fill plug.

**NOTE: On MVP PLUS and WIDE-OUT blades, add fluid only when all rams are retracted.**

AeroShell® is a registered (®) trademark of Shell Oil Company.

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## Air Removal – HTS™ & Straight Blades

11. Turn the control ON and completely angle blade to the left and right several times. Turn the control OFF.
12. Fill the reservoir to the top of the fill hole and replace the fill plug.

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**NOTE: Loosen the fill plug slowly to relieve any pressure in the reservoir.**

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13. Turn the control ON and raise and lower the snowplow several times. Activate the control FLOAT function and manually collapse the lift ram all the way after each lowering of the blade. Turn the control OFF.

14. **Straight blades:** Fill the reservoir to the top of the fill hole and replace the fill plug.

**HTS blades:** Fill to within 2-1/2" from the top of the fill hole and replace the plug.

### **WARNING**

To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.

# MAINTENANCE

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## Air Removal – MVP PLUS™ Blades

11. Turn the control ON and completely extend and retract the driver-side wing several times. With all rams fully retracted, turn the control OFF.
12. Fill the reservoir to the top of the fill hole and replace the fill plug.

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**NOTE: Loosen the fill plug slowly to relieve any pressure in the reservoir.**

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13. Repeat Steps 11 and 12 for the passenger-side wing.

14. Turn the control ON and raise and lower the snowplow several times. Activate the control FLOAT function and manually collapse the lift ram all the way after each lowering of the blade. With all rams fully retracted, turn the control OFF.
15. Fill the reservoir to the top of the fill hole and replace the fill plug.

**⚠ WARNING**

To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.

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## Air Removal – WIDE-OUT™ Blades

11. Turn the control ON and completely extend and retract the driver-side wing several times. Repeat for the passenger-side wing. With the wing and lift rams fully retracted, turn the control OFF.
12. Fill the reservoir to the top of the fill hole and replace the fill plug.

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**NOTE: Loosen fill plug slowly to relieve any pressure in the reservoir.**

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13. Turn the control ON. Angle blade fully left and right and raise and lower the snowplow several times. Activate the control FLOAT function and manually collapse the lift ram all the way after each lowering of the blade. With all rams fully retracted, turn the control OFF.
14. Fill the reservoir to the top of the fill hole and replace the fill plug.

### **WARNING**

**To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.**

## Hose or Fitting Replacement

### WARNING

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

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

1. Lower the snowplow completely, and turn the control OFF.

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**NOTE:** Loosen the fill plug slowly to relieve any pressure in the reservoir.

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2. Carefully note the hose routing and position of any protective hose wraps for proper reassembly.
3. Loosen hoses or fittings slowly to relieve any residual pressure.
4. To remove a hose, loosen and unscrew the hose flare nut from the fitting.
5. To remove a fitting, loosen the jam nut and unscrew the fitting from the port.

## Procedure for Installing Hydraulic Fittings and Hoses

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**NOTE:** Overtorquing 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.

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**Use the following procedure to install SAE O-ring fittings in valve block and rams:**

1. Turn the jam nut on the fitting as far back as possible.
2. Lubricate the O-ring with clean hydraulic fluid.
3. Screw the fitting into the port by hand until the washer contacts the port face and shoulder of the jam nut threads.
4. Unscrew the fitting to the proper position, no more than one full turn.
5. Using two wrenches, hold the fitting body in position and tighten the jam nut until the washer again contacts the port face, then tighten an additional 1/8–1/4 turn to lock the 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 the flare nut onto the fitting flare and hand tighten.
2. Align the hose so there are no twists or sharp bends and so it will not be pinched or pulled by moving parts.
3. Using two wrenches, hold the hose in position and tighten the flare nut 1/8–1/4 turn beyond hand tight. Final torque on the flare nut should be approximately 20 ft-lb.
4. Reinstall any protective hose wraps in their original positions.

## FUSE REPLACEMENT

The vehicle control harness contains two automotive blade-style fuses. The snowplow park/turn power and control power are covered by individual 10-amp fuses. The control fuse is "hot" when the vehicle ignition switch is ON and the electrical connections to the snowplow are completed.

See the Harness Diagram at the end of this manual for fuse locations.

The MVP PLUS™ hydraulic unit harness system contains four automotive blade-style mini fuses. The 3-solenoid harness (to Port B on the hydraulic unit module) and 8-solenoid harness (to Port C) each contain two 4-amp mini fuses.

The WIDE-OUT™ hydraulic unit harness system contains four automotive blade-style mini fuses. The 2-solenoid harness (to Port B on the hydraulic

unit module) and 6-solenoid harness (to Port C) each contain two 4-amp mini fuses.

The straight blade and HTS™ hydraulic unit harness systems contain two 4-amp automotive blade-style mini fuses in the 3-solenoid harness (to Port B on the hydraulic unit module).

If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire.

## VEHICLE

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

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## 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. The balance of parts made of plastic shall be disposed of in a customary manner.

## BLADE FINISH

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

## EMERGENCY PARTS/TOOLS

We suggest that you keep an Emergency Parts Kit for HTS™ blades (PN 69600) or UltraMount® blades with the FLEET FLEX system (PN 99100) in your vehicle. This kit contains WESTERN hydraulic fluid, common hoses, pins, fittings, fasteners and a motor relay.

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

- 10" adjustable wrench
- Pliers
- Medium screwdriver
- Miscellaneous fasteners

*Always use WESTERN  
designed and tested  
replacement parts.*



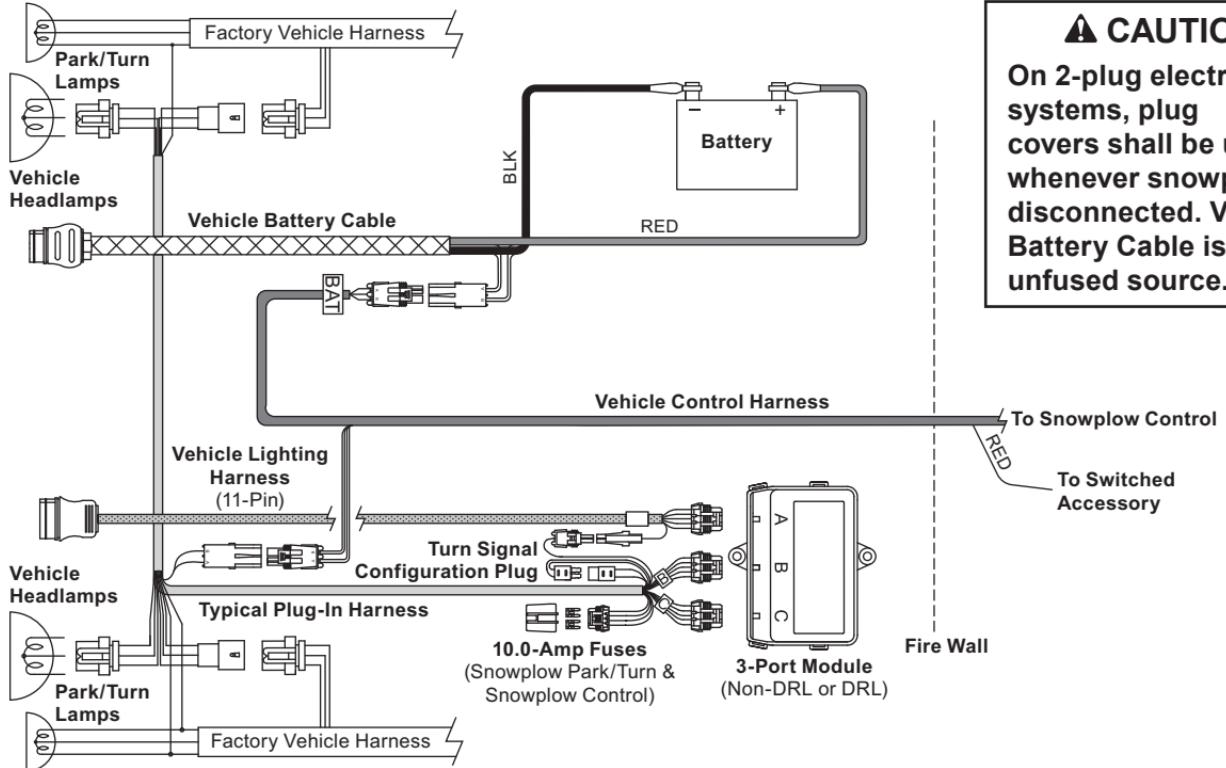
## TROUBLESHOOTING

If you have followed all of the guidelines in the Maintenance section of this manual and cannot resolve issues with the operation of your WESTERN® snowplow, contact one of our authorized outlets for repair information, or visit us online at [www.westernplows.com](http://www.westernplows.com). Our Web site has a complete listing of authorized outlets in your area as well as a complete library of Parts Lists, Mechanic's Guides and service information to assist the qualified mechanic with repair.

Western Products does not recommend repairs by other than our factory-trained outlets. Failure to use an authorized outlet could affect the warranty coverage on your snowplow.

# HARNESS DIAGRAM

## 3-PORT, 2-PLUG SYSTEM – ALL BLADES





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 A DIVISION OF DOUGLAS DYNAMICS, LLC



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