



SNOWPLOW OWNER'S MANUAL



⚠ CAUTION

Read this manual before operating
or servicing snowplow.

This document supersedes all editions with an earlier date.

OWNER'S INFORMATION

Owner's Name: _____

Date Purchased: _____

Outlet Name: _____ Phone: _____

Outlet Address: _____

Vehicle Model: _____ Year: _____

Snowplow Type (Model): _____ Year:* _____

Blade Width: _____ Weight _____ LBS/KG

Ballast: No ___ Yes ___ Amount _____ LBS/KG

FloStat® Serial Number: _____

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

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PREFACE

PREFACE

Welcome to the growing family of WESTERN® snowplow owners.

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

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

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

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

FACTORY ORIGINAL PRODUCTS

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

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



SAFETY

SAFETY DEFINITIONS

⚠ WARNING

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

⚠ CAUTION

Indicates a situation that, if not avoided, could result in minor personal injury and/or damage to product or property.

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

WARNING/CAUTION & INSTRUCTION LABELS

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

Warning/Caution Label

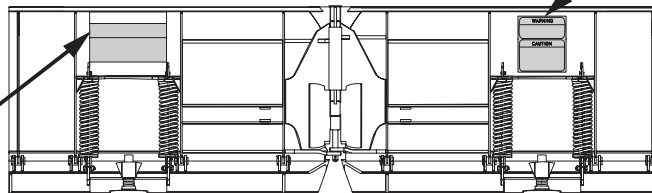
⚠ WARNING

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

⚠ CAUTION

READ *OWNER'S MANUAL* BEFORE OPERATING OR SERVICING SNOWPLOW.
TRANSPORT SPEED SHOULD NOT EXCEED 45 MPH. REDUCE SPEED UNDER ADVERSE TRAVEL CONDITIONS.
PLOWING SPEED SHOULD NOT EXCEED 10 MPH.
SEE YOUR WESTERN OUTLET FOR APPLICATION RECOMMENDATIONS.

59900



Instruction Label

⚠ WARNING: TO AVOID PERSONAL INJURY, FOLLOW STEPS IN SEQUENCE.

Unimount INSTRUCTIONS

Patents
4,280,062, 4,999,935
RE 35,700 & 5,420,490

REMOVING PLOW			
<p>STEP 1</p> <ul style="list-style-type: none"> Adjust blade to straight position. Place cab control in "LOWER". Push lift channel down. Disconnect electrical plugs. Pull stand pin and lock pin to release stand from A-frame. 	<p>STEP 2</p> <ul style="list-style-type: none"> Place stand shoe on ground. If necessary, raise stand slightly to align hole in stand with hole in lift frame. Insert stand pin to attach stand to lift frame. 	<p>STEP 3</p> <ul style="list-style-type: none"> Remove hairpin from lift frame stud. Push lift frame toward vehicle to relieve tension on link arm, now slide link arm off stud. Repeat above steps on other side. 	<p>STEP 4</p> <ul style="list-style-type: none"> Pull 2 hitch pins to release A-frame from vehicle. (Move lift frame to relieve hitch pin tension) Rotate lift frame toward blade. Use lock pin to lock stand to A-frame. Move plow away from vehicle. Install electrical covers.
<p>STEP 4</p> <ul style="list-style-type: none"> Rotate stand to storage position. Use stand pin and lock pin to attach stand to A-frame. Connect electrical plugs. 	<p>STEP 3</p> <ul style="list-style-type: none"> Pull stand pin to release stand from lift frame. 	<p>STEP 2</p> <ul style="list-style-type: none"> Rotate lift frame toward vehicle and swing link arm up to position link arm hole over lift frame stud. Now slide link arm onto stud. Install hairpin onto stud. Repeat above steps on other side. 	<p>STEP 1</p> <ul style="list-style-type: none"> Remove electrical covers. Position plow close to vehicle. Pull lock pin to unlock stand from A-frame. Rotate lift frame toward vehicle to align hitch pin holes. Attach A-frame to vehicle using 2 hitch pins.

MOUNTING PLOW

61740

SAFETY

SAFETY PRECAUTIONS

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

WARNING

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

WARNING

Remove blade assembly before placing vehicle on hoist.

WARNING

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

CAUTION

Read owner's manual before operating or servicing snowplow.

CAUTION

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

CAUTION

Plowing speed should not exceed 10 mph.

CAUTION

See your WESTERN® outlet for application recommendations.

PERSONAL SAFETY

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

FIRE AND EXPLOSION

WARNING

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

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

VENTILATION

WARNING

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

SAFETY

HYDRAULIC SAFETY

⚠ WARNING

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

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

BATTERY SAFETY

⚠ CAUTION

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

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

Disconnect the battery before removing or replacing any electrical components.

NOISE

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

VEHICLE APPLICATION INFORMATION

VEHICLE APPLICATIONS

⚠ CAUTION

See your WESTERN® outlet for application recommendations.

Vehicle application recommendations are based on the following:

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

BALLAST REQUIREMENTS

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.

Ballast (additional weight) is an important part of qualifying vehicles for snowplow eligibility. Rear ballast must be used when required 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, PN 62849, is available from Western Products.

See Figure 1 for ballast retainer example.

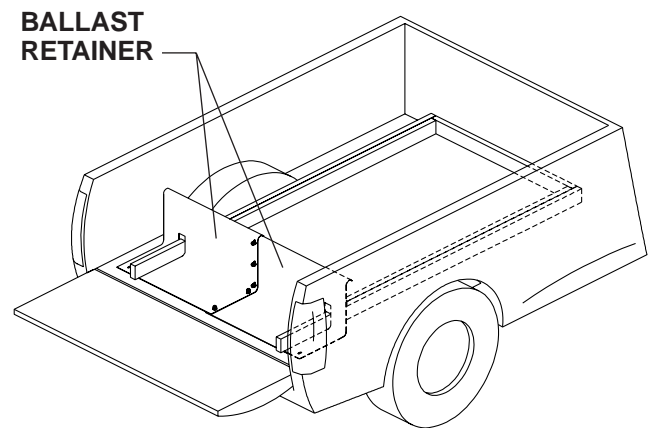


Figure 1

GETTING TO KNOW YOUR WESTERN® SNOWPLOW

The MVP® snowplow consists of all the components that are readily removable from the vehicle as a unit. This includes the blade wings, lift frame, A-Frame, hydraulic unit, and the snowplow headlamps.

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

There is no need to unhook the chain or the hydraulic hoses. When the lift frame is pinned to the stand and locked in place (see blade label or snowplow removal section of this manual), the complete UniMount® snowplow can be removed.

STEEL BLADE WINGS

The blade wings on your new snowplow are constructed of heavy gauge steel. To increase rigidity and strength, the blade wings are reinforced with several vertical ribs. The top edges are formed for added strength and improved appearance.

The blade comes equipped with a reinforced rubber snow deflector. This helps keep snow off the windshield and away from the radiator.

Each of the blade wings has a trip edge. Two heavy-duty compression springs hold each trip edge in the plowing position. The springs are a safety device which allow the trip edge to rotate back and ride over obstacles such as low curbs, manhole covers, etc. without damaging the snowplow, vehicle, or injuring the driver. The trip springs need no adjustment and offer protection in all blade wing positions.

Each wing has a replaceable high carbon steel cutting edge bolted to the trip angle. These cutting edges should be replaced when they are worn within 1" of the carriage bolts.

The blade also features large, adjustable disc-type skid shoes. These rotate 360° for longer wear and better blade flotation over all surfaces.

Your new blade's steel components are protected with a PRO-GUARD™ coating—a baked-on powder finish that resists cracking, corrosion, scratching, and rust. It can be touched up when necessary.

Blade guides with replaceable flags are included with your complete snowplow. These help the operator to visualize the edges of the blade and aid in blade positioning.

A-FRAME AND LIFT FRAME

The wings are attached to the triangular A-frame with a hinge pin, which allows the wings to extend and retract. Heavy 1" diameter hitch pins are used to secure the A-frame ears to the vehicle mount.

The lift frame is hinged to the rear angle of the A-frame with clevis pins. The hydraulic unit is mounted on the lift frame. The hoses are permanently connected to the hydraulic unit and Hydra-Turn™ rams. The snowplow lights are also attached to the lift frame.

VEHICLE MOUNT

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

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

The mounts have two pinned (normally attached to the mount) link arms. **(See Figure 2.)**

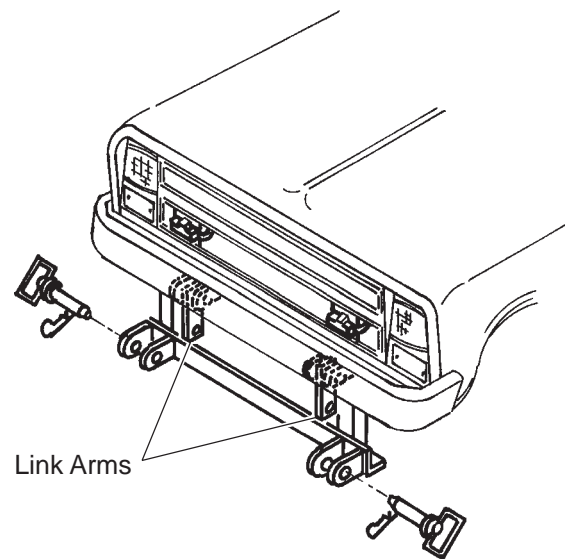


Figure 2

The link arms attach to two studs on the lift frame when the snowplow assembly is attached to the vehicle.

GETTING TO KNOW YOUR WESTERN® SNOWPLOW

SNOWPLOW HEADLAMPS

⚠ WARNING

Your vehicle must be equipped with snowplow headlights and directional lights. Verify the snowplow and vehicle lights are operating properly before traveling. Position blade so it does not block headlamp beam. Do not change blade position while traveling, you could suddenly lower blade accidentally.

The headlamps include a set of rectangular, dual-beam, halogen headlamps plus combination park and turn signals.

A patented pre-wired harness with a plug-in module requires no headlamp wire splicing. The lamps conform to federal motor vehicle safety standards.

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

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

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

FLOSTAT® HYDRAULIC SYSTEM

NOTE: The Fill Plug must be installed at all times or damage to the FloStat® Hydraulic Unit will result.

Western Products' FloStat® hydraulic system (See **Figure 3**) provides a fast and uniform speed of lifting and angling. The system raises the blade in 2 seconds, and all angling functions are less than 4 seconds. For fluid type and filling instructions, see Fluid Change on page 22.

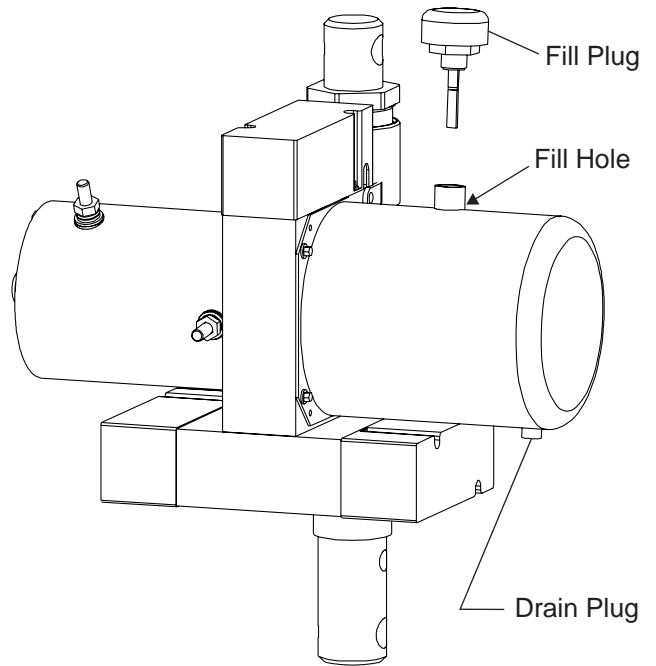


Figure 3

PUMP MOTOR SPECIFICATIONS

12 volt DC with +/- connection
1450-2100 psi pump relief valve
2500-3800 psi angling relief valve
4.5" dia. 1.04 kw motor
.000477 GAL/REV Pump
Hydraulic Hose SAE 100R

GETTING TO KNOW YOUR WESTERN® SNOWPLOW

HYDRA-TURN™ ANGLING

⚠ WARNING

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

Hydra-Turn™ power angling gives you full control of the snowplow from within the cab of the vehicle. A double-acting hydraulic ram moves each blade wing independently or together. The rams are operated by the CabCommand hand-held control.

The FloStat® hydraulic unit valve manifold has four relief valves built in to prevent damage to the snowplow or the vehicle if obstacles are hit. These valves are preset at the factory and do not need any adjustments unless the valve manifold is serviced. When the force against the blade causes pressure in an extended ram to exceed set limits, the relief valve opens allowing oil to escape, and the ram plunger retracts. (See Figure 4.)

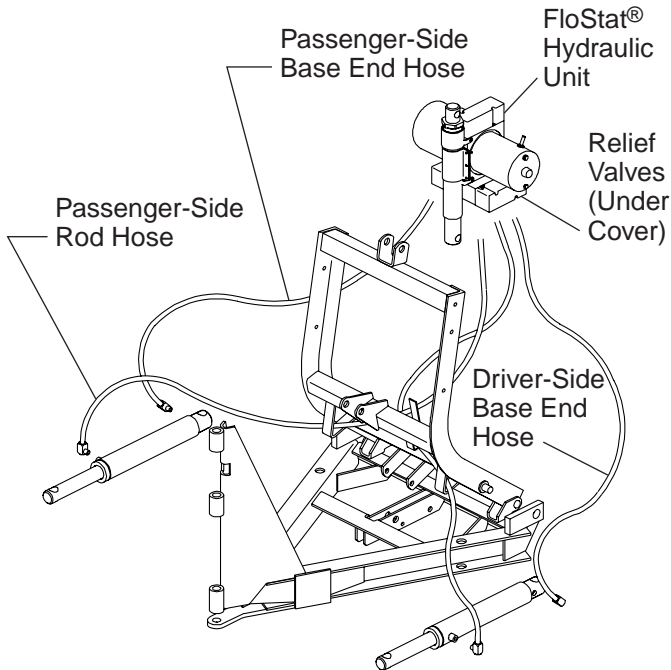


Figure 4

CABCOMMAND HAND-HELD CONTROL

The CabCommand control is electrically powered through the ignition switch of your vehicle, and is protected by a replaceable 10-amp in-line fuse. The ON/OFF switch allows you to turn off the control and prevent blade movement even when the ignition is on. The ON/OFF Switch operates emergency stop when required. (See Figure 5.)

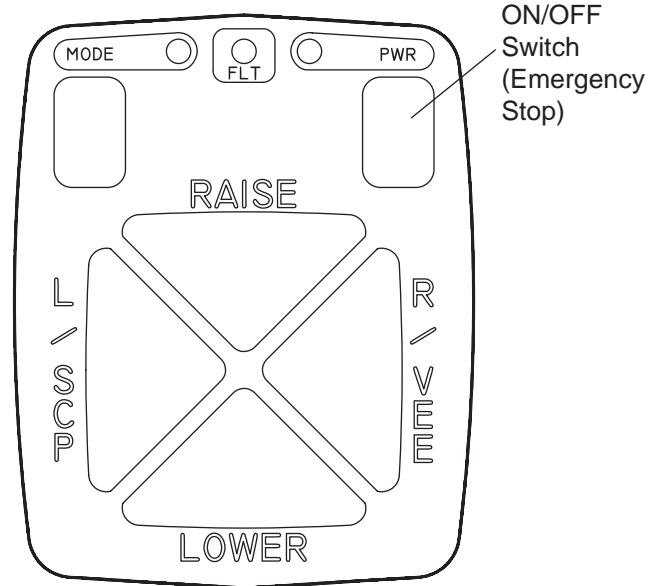


Figure 5

FUSES

This control contains two 5AFB printed circuit board (PCB) mounted fuses. These fuses are to protect the solid state output devices that provide the current to the six solenoid valves and the motor relay coil. If the control does not function and the 10AFB 3AG in-line fuse is not blown, one or both of these 5AFB PCB mounted fuses may be blown.

OPTIONAL EQUIPMENT

Adapter Cable (PN 66760K)

The MVP® adapter cable modifies the MVP® harness to allow you to use a straight blade UniMount® snowplow with a straight blade control (either a CabCommand or solenoid control).

MOUNTING THE SNOWPLOW TO THE VEHICLE

⚠ WARNING

Keep hands and feet clear of the blade and A-frame when mounting or removing the snowplow. Moving or falling assemblies could cause personal injury.

⚠ WARNING

To avoid personal injury, follow steps in sequence.

⚠ WARNING

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

⚠ CAUTION

Never use a finger to check an alignment. If the snowplow moves, your finger could be crushed.

NOTE: The blade must be in the straight blade position when mounting or removing the snowplow.

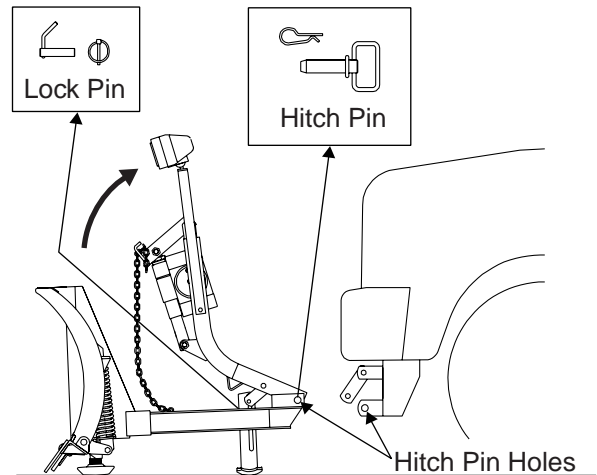


Figure 6

(For Steps 1-5, see Figure 6.)

1. Remove the electrical covers.
2. Position the vehicle close to the snowplow and align A-Frame lugs to vehicle mount.
3. Pull the lock pin to unlock the stand from the A-frame. Lift frame can rotate towards blade. Place lock pin on ground.
4. Rotate the lift frame toward the vehicle to align the hitch pin holes.
5. Attach the A-frame to the vehicle using two hitch pins.

(continued on next page)

MOUNTING THE SNOWPLOW TO THE VEHICLE

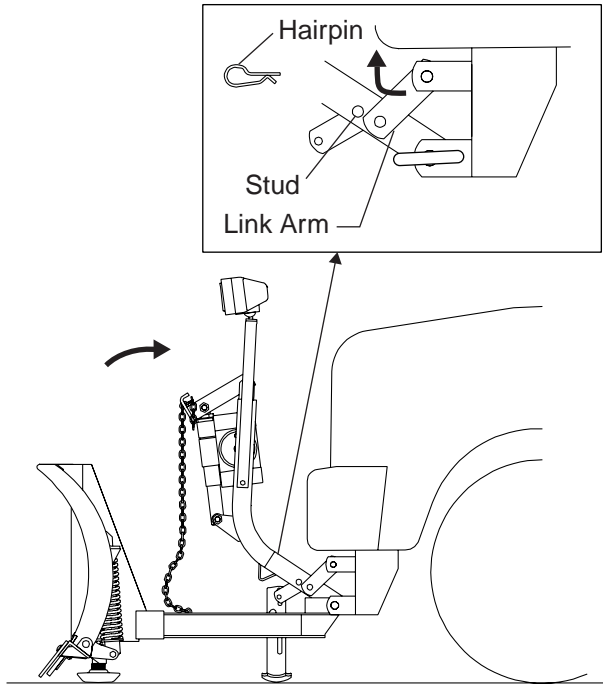


Figure 7

⚠ WARNING

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

(For Steps 6-9, see Figure 7.)

6. Rotate the lift frame toward the vehicle and swing the link arm up to position the link arm hole over the lift frame stud.
7. Slide the link arm onto the stud.
8. Install the hairpin onto the stud.
9. Repeat above steps on the other side.
10. Pull the stand pin to release the stand from the lift frame. (See Figure 8.)

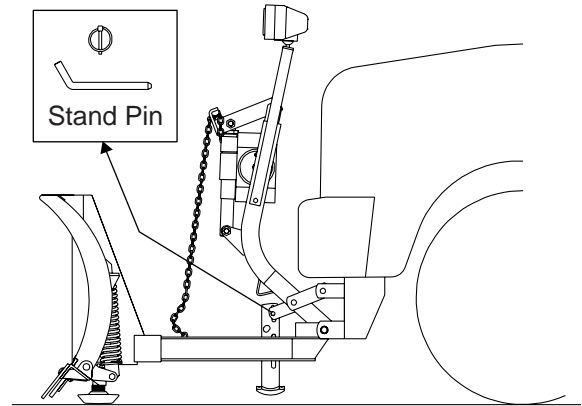


Figure 8

(For Steps 11-13, see Figure 9.)

11. Rotate the stand to the storage position.
12. Use the stand pin and the lock pin to attach the stand to the A-frame.

NOTE: Use dielectric grease to prevent corrosion on all connections. Fill receptacles and lightly coat ring terminals and blades before assembly.

13. Connect the electrical plugs.

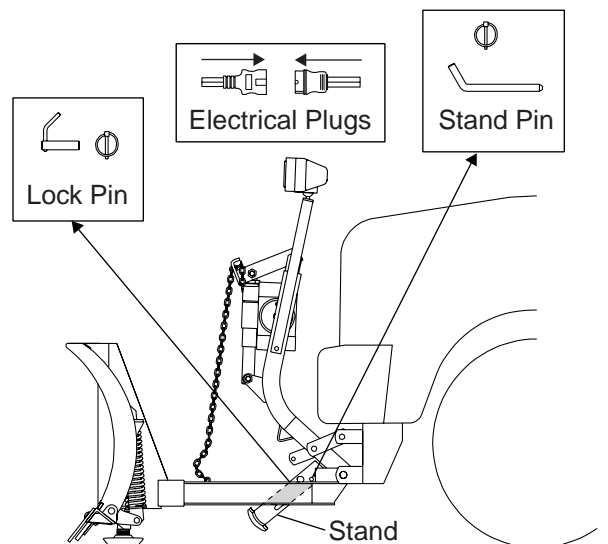


Figure 9

OPERATION

DRIVING AND PLOWING ON SNOW AND ICE

⚠ CAUTION

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

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

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

Here are some tips for driving in these conditions:

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

BLADE CONTROL—HAND-HELD CONTROL

⚠ WARNING

The driver shall keep bystanders clear of the blade when it is being raised, lowered or angled. Do not stand between the vehicle and the blade or within 8 feet of a moving blade. A moving or falling blade could cause personal injury.

1. Turn the vehicle ignition switch to the ON or the ACCESSORY position.
2. Press the ON/OFF switch on the control. The control indicator light will glow red indicating the control is turned on. The control indicator light will glow red whenever the control ON/OFF switch and the vehicle's ignition switch are both turned ON. The ON/OFF switch operates as emergency stop when required. **(See Figure 10.)**

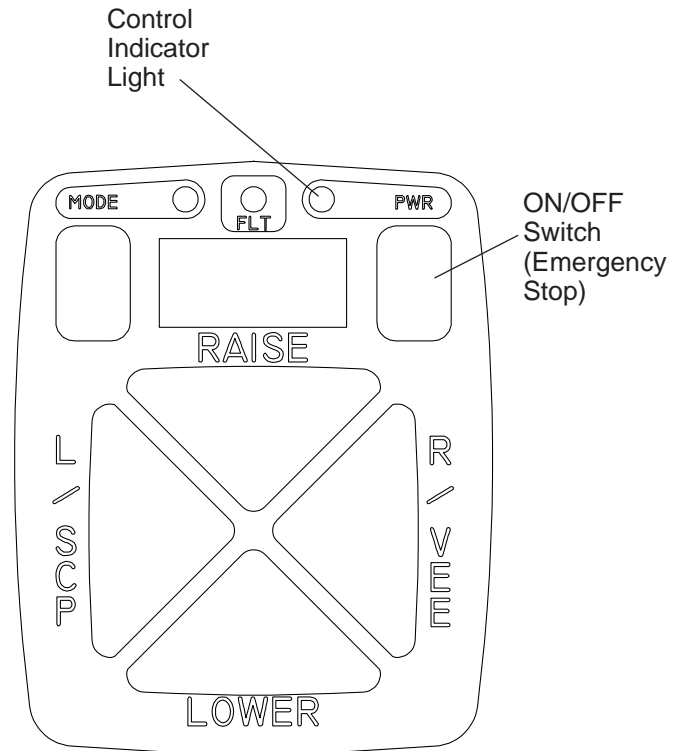


Figure 10

OPERATION

STRAIGHT BLADE MODE (Default)

⚠ WARNING

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

When the control is turned on, it automatically defaults to the straight blade mode. When the control is in the straight blade mode, the yellow MODE LAMP near the MODE key in the upper left corner of the keypad is not illuminated or flashing.

The following functions are performed in the straight blade mode:

STRAIGHT BLADE MODE	
BUTTON	DESCRIPTION OF OPERATION
RAISE	Press this button to raise the snowplow and to cancel the float mode. NOTE: Snowplow will automatically stop raising after 2.5 seconds. To resume raising the snowplow, release the button and press again.
LOWER	Press this button to lower the snowplow. NOTE: After reaching the desired height, release the button. Holding the button down for more than 3/4 second will activate the float mode (indicated by green FLT LAMP).
L/SCP	Press this button to angle both wings to the left.
R/VEE	Press this button to angle both wings to the right.

VEE/SCOOP MODE

To put the control into the vee/scoop mode, quickly press and release the MODE key. The yellow MODE LAMP near the upper left corner of the keypad will light. Quickly pressing and releasing the MODE key will toggle the control between straight blade mode and vee/scoop mode.

The following functions are performed in the vee/scoop mode:

VEE/SCOOP MODE	
BUTTON	DESCRIPTION OF OPERATION
RAISE	Press this button to raise the snowplow and to cancel the float mode. NOTE: Snowplow will automatically stop raising after 2.5 seconds. To resume raising the snowplow, release the button and press again.
LOWER	Press this button to lower the snowplow. NOTE: After reaching the desired height, release the button. Holding the button down for more than 3/4 second will activate the float mode (indicated by green FLT LAMP).
L/SCP	Press this button to extend both wings to the scoop position.
R/VEE	Press this button to retract both wings to the Vee position.

OPERATION

WING MODE

To put the control into the wing mode, press and hold the MODE key for about two seconds until the yellow MODE LAMP near the upper left corner of the keypad is flashing. The L/SCP and R/VEE keys are used to activate the four functions of the wing mode. The RAISE and LOWER keys retain the same functions as the other modes.

The following functions are performed in the wing mode:

WING MODE	
BUTTON	DESCRIPTION OF OPERATION
RAISE	<p>Press this button to raise the snowplow and to cancel the float mode.</p> <p>NOTE: Snowplow will automatically stop raising after 2.5 seconds. To resume raising the snowplow, release the button and press again.</p>
LOWER	<p>Press this button to lower the snowplow.</p> <p>NOTE: After reaching the desired height, release the button. Holding the button down for more than 3/4 second will activate the float mode (indicated by green FLT LAMP).</p>
L/SCP	<p>Pressing this button the first time will retract the left wing. Pressing this button the next time will extend the left wing.</p>
R/VEE	<p>Pressing this button the first time will retract the right wing. Pressing this button the next time will extend the right wing.</p>

To deactivate the wing mode, quickly press and release the MODE key. This will put the control in the straight blade mode.

FUNCTION TIME OUTS

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

The RAISE function time-out period is 2.5 seconds, while all others are 4.25 seconds.

AUTOMATIC SHUTDOWN

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

SMOOTH STOP

The control automatically allows the blade to coast to a stop. This results in a smoother operational “feel” and reduces shock to the hydraulic system, resulting in longer hose and valve life.

LIGHTS

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

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

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

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

OPERATION

Aiming the Headlamps

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

PARKING WITH SNOWPLOW ATTACHED

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

⚠ WARNING

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

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

PLOWING SNOW

⚠ WARNING

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

⚠ CAUTION

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

⚠ CAUTION

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

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

Before plowing snow, identify and mark any hidden obstructions 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 area to be plowed, have someone familiar with area indicate location of obstructions such as curbs, speed bumps, etc.

Plow during the storm to avoid snow accumulation.

When stacking snow, begin raising the blade as you come close to the stack. This will let the blade and the snow ride up onto the stack.

⚠ CAUTION

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

OPERATION

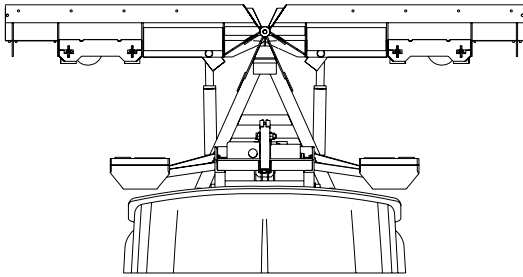
BLADE POSITIONS

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

The MVP® snowplow can be used in five basic plowing positions:

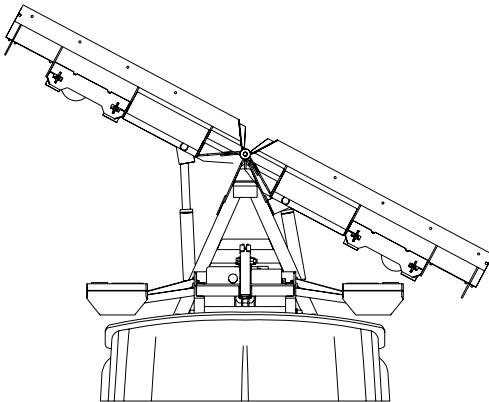
Straight Blade

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



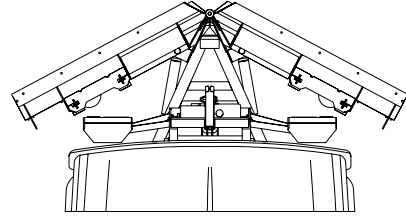
Angled Blade

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



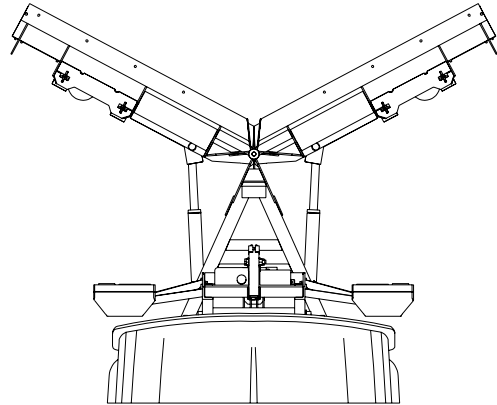
Vee Blade

Move both wings “IN” towards the vehicle for initial break through plowing and plowing paths or walkways.



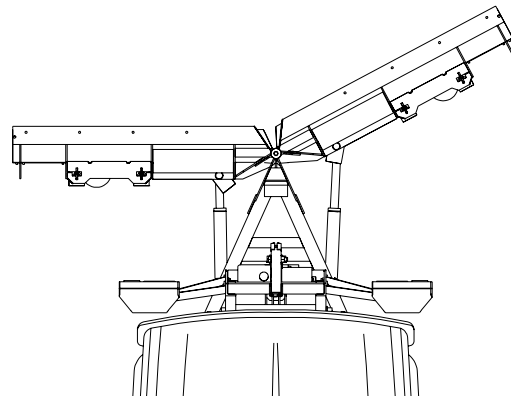
Scoop Blade

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.



OPERATION

SPECIAL SNOW CONDITIONS

Hard-Packed Snow

1. Raise the disc shoes so that the cutting edge comes into direct contact with the pavement.
2. Use the lowest gear to place maximum power behind the cutting edge.
3. Use an angled blade or the Vee position to more effectively remove hard-packed snow.

Deep Snow

1. Move the blade into the Vee position and make an initial pass.
2. Bite into the edges using only partial blade width until job is cut down to size for full blade plowing. Continue to move the snow using angle, scoop, and/or dogleg positions.

Rule of thumb:

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

Experience and "feel" are the best guides.

3. When plowing deep snow, be sure to keep the vehicle moving.
4. Secure ballast behind the rear wheels. See the Selection List (contact your WESTERN® outlet) for the correct amount of ballast requirement for each specific vehicle.
5. Use tire chains where legal for increased traction.

CLEARING DRIVEWAYS

1. Head into drive with the blade in the angle position and roll snow away from the building. Stay to the building side of the drive. Widen drive by rolling snow away from building.
2. If building is at the end of the driveway, plow up to within a vehicle length of the building, then push as much snow as possible off the driveway.
3. With a raised, straight blade, drive through the remaining snow to the building. Drop the blade and "back drag" snow away from the building door at least one vehicle length. Repeat if necessary.
4. Back the vehicle to the building door and plow forward toward the street removing the remaining snow from the driveway. Check municipal ordinances for disposal of snow.

CLEARING PARKING LOTS

1. Clear areas in front of buildings first. With blade raised, drive up to the building. Drop blade and "back drag" snow away from building. When snow is clear of the buildings, turn the vehicle around and push snow away from the buildings towards outer edges of lot.
2. Plow a single path down the center in the lengthwise direction with the blade in the Vee position.
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 outer edges.
4. If the snow pile becomes too deep for the truck to push, scoop away the edges of the pile until it can be pushed by the truck.

TRANSPORTING THE SNOWPLOW

⚠ WARNING

Your vehicle must be equipped with snowplow headlights and directional lights. Verify the snowplow and vehicle lights are operating properly before transport. Position blade so it does not block headlamp beam. Do not change blade position while traveling, you could suddenly lower blade accidentally.

⚠ CAUTION

Transport speed should not exceed 45 mph. Reduce speed under adverse travel conditions. Never exceed posted road speeds.

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 to correct overheating.

(continued on next page)

OPERATION

TRANSPORTING THE SNOWPLOW (Continued)

NOTE: Use care when driving or entering driveways with the snowplow in the vee position. The outer ends of the cutting edges could contact the ground.

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

1. Raise the blade completely.
2. Place the blade half way between the Vee and the straight positions. This configuration allows:
 - Full light illumination,
 - Ample vehicle cooling, and
 - Ample travel height.
3. Verify the blade does not block the headlamp beams.
4. Press the CabCommand hand-held control ON/OFF switch (red control indicator light turns off) to lock the blade in place.

TOWING DISABLED OR IMMOBILE VEHICLES

DO NOT use the snowplow blade wings, A-frame, lift channel, lift frame (frame holding hydraulic unit) or vehicle mount as an attaching point when retrieving, towing, or winching a disabled or immobile vehicle.

DISC SHOE ADJUSTMENT

Recommended shoe adjustments:

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

Adjustment Procedure:

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

⚠ CAUTION

Do not store unused spacers on top of the shoe holder. This could damage the blade.

NOTE: Store unused washers in glovebox.

4. Install the linchpin.

OPERATION

HYDRAULIC SYSTEM

NOTE: The Fill Plug must be installed at all times or damage to the FloStat® Hydraulic Unit will result.

With the snowplow assembly mounted to the vehicle in a Vee position, the lift channel pushed all the way down, and the blade in the Vee position, remove the fill plug located on top of the reservoir. Fill the reservoir through the fill plug hole. DO NOT exceed the fill level. Replace the fill plug. See fluid recommendations in Step 3 of Fluid Change. (See Figure 11.)

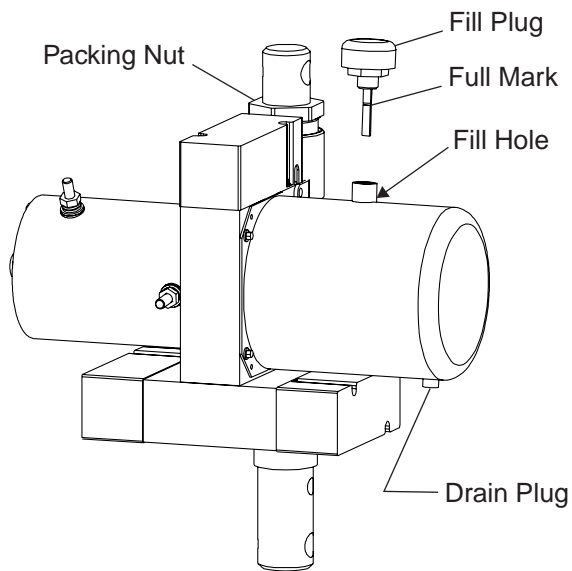


Figure 11

SNOWPLOW REMOVAL

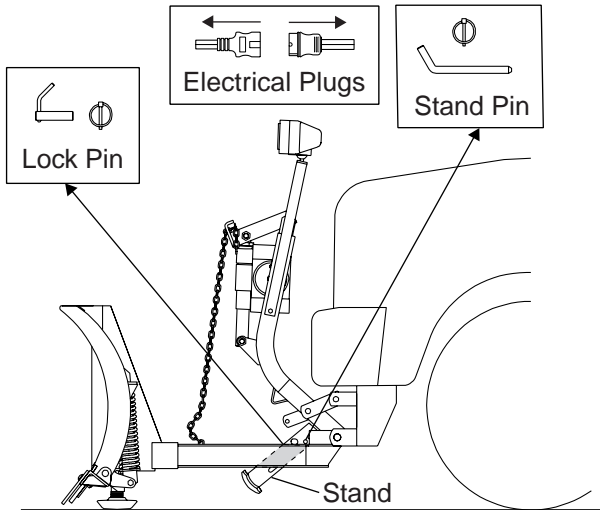


Figure 12

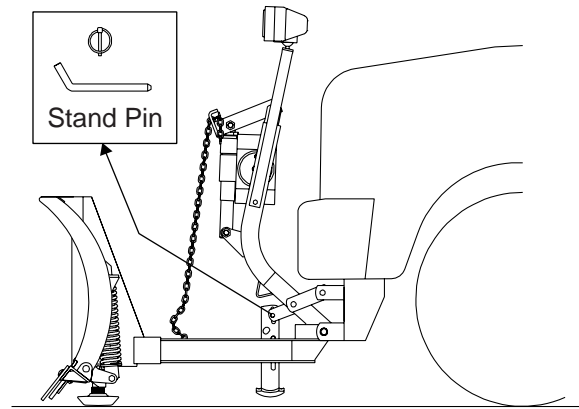


Figure 13

⚠ WARNING

To avoid personal injury, follow steps in sequence.

⚠ WARNING

Stand must be lowered and pinned to lift frame before removing link arms. Falling assemblies could cause personal injury.

⚠ WARNING

Keep hands and feet clear of the blade and A-frame when mounting or removing the snowplow. Moving or falling assemblies could cause personal injury.

⚠ WARNING

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

NOTE: The blade must be in the straight blade position when mounting or removing the snowplow.

(For Steps 1-5, see Figure 12.)

1. Position the wings so they are straight and parallel to the front of the vehicle.
2. Press the LOWER button until the FLOAT mode light turns on.
3. Push the lift channel down.
4. Disconnect the electrical plugs.
5. Pull the stand pin and lock pin to release the stand from the A-frame. Place lock pin on ground until used in Step 14.

(For Steps 6-7, see Figure 13.)

6. Place the stand shoe on the ground. If necessary, raise the stand slightly to align the hole in the stand with the hole in the lift frame.
7. Insert the stand pin to attach the stand to the lift frame.

(continued on next page)

SNOWPLOW REMOVAL

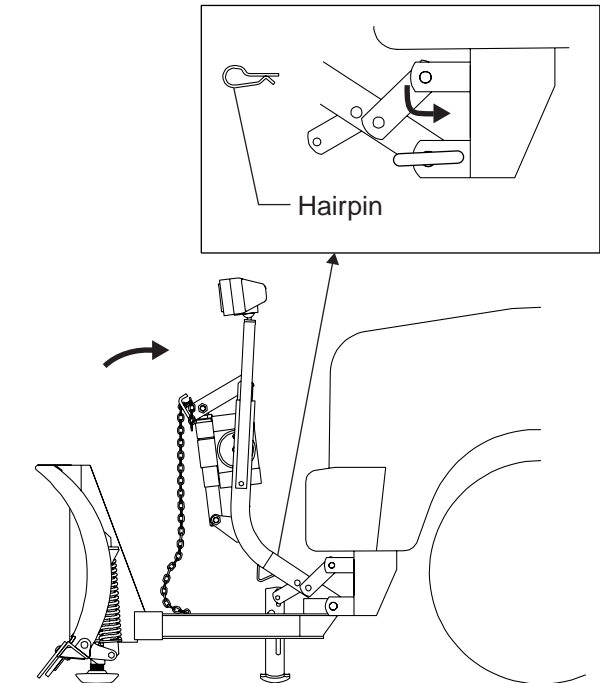


Figure 14

(For Steps 8-11, see Figure 14.)

8. Remove the hairpins holding the link arms in place from the lift frame stud.
9. Push the lift frame towards the vehicle to relieve the link arm tension.
10. Pull the link arm off of the stud to release the lift frame from the vehicle.
11. Repeat for the other side. Allow lift frame to rotate towards blade until stopped.

(For Steps 12-17, see Figure 15.)

12. Pull the two hitch pins to release the A-frame from the vehicle.

NOTE: Move the lift frame slightly to relieve hitch pin tension.

13. Rotate the lift frame towards the blade.
14. Use the lock pin to lock the stand to the A-frame.
15. Move the vehicle away from the snowplow.

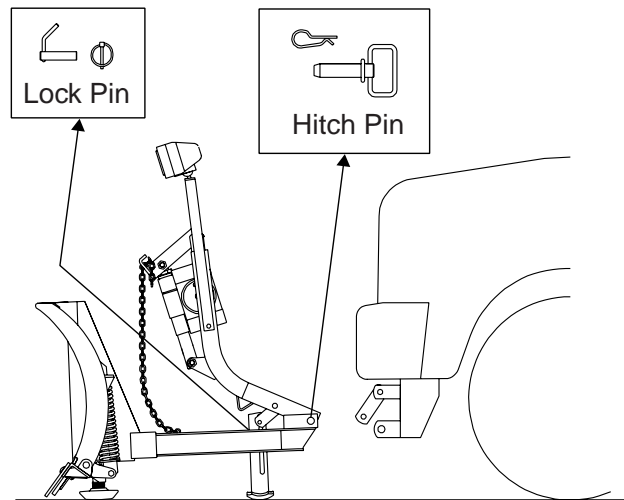


Figure 15

NOTE: Use dielectric grease to prevent corrosion on all connections. Fill receptacles and lightly coat ring terminals and blades before assembly.

16. Install the electrical plug covers on the vehicle harness connectors.
17. Place the snowplow plugs into the boot on the lift frame.
18. Vehicle can now be moved.

STORAGE

NOTE: For long-term storage, apply general purpose petroleum grease to exposed chrome surfaces of the Hydra-Turn™ angling rams to prevent rust.

During the off season, the CabCommand control and the bracket can be removed from the dash by removing the four mounting screws.

Before storing, touch up mounts and blade with WESTERN® red or black paint available in aerosol or quart can from your WESTERN® outlet.

MAINTENANCE

EMERGENCY PARTS

We suggest that you keep a WESTERN® MVP® Emergency Parts Kit (PN 49360) in your vehicle. This kit contains WESTERN® hydraulic fluid, dielectric grease and common hoses, pins, clips, bolts and relay.

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

- 10" Adjustable Wrench
- Pair of Pliers
- Medium Screw Driver
- Miscellaneous Fasteners

Always use WESTERN® designed and tested replacement parts.



PRE-SEASON CHECK

Before the snow falls, check your plowing equipment and make sure it is ready for action. Here is a checklist of items to be done with the snowplow disconnected. This checklist will make sure your equipment is ready for the plowing season.

- Check the oil level with the snowplow mounted to the vehicle in the Vee position and the lift channel pushed all the way down.
- Check the vehicle mount and tighten any loose fasteners.
- Check the snowplow assembly and tighten any loose fasteners. Verify all cotter pins are in place.

NOTE: Use dielectric grease to prevent corrosion on all connections. Fill receptacles and lightly coat ring terminals and blades before assembly.

- Disassemble and clean all electrical connections including grounds. Apply dielectric grease (PN 56099 or PN 49326) to all connections and the snowplow plugs.
- Inspect and test your battery and recharge or replace if necessary. Suggested MINIMUM vehicle electrical system:
70 amp hr./600 CCA battery, 105 amp alternator.
- Repaint mount with rust resistant, high grade enamel. Touch up blade with WESTERN® red paint available in aerosol or quart can (PN 59515 or PN 49135).
- Secure ballast behind rear wheels. See the Selection List (contact your WESTERN® outlet) for the correct amount of ballast requirement for each specific vehicle.

MAINTENANCE

REGULAR MAINTENANCE/ADJUSTMENTS

⚠ WARNING

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

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

⚠ WARNING

Remove blade assembly before placing vehicle on hoist.

Your snowplow is designed for rugged, dependable service. But like the vehicle on which it is mounted, it needs a certain amount of regular care and maintenance.

Check the following before and frequently during the plowing season:

- Verify fasteners, mounting bolts, hydraulic and electrical connections are tight.
- Check all plugs and seals for oil leaks. Repair as necessary.

CUTTING EDGE

⚠ CAUTION

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

Replace the cutting edge(s) on your MVP® blade when worn to within 1" of the carriage bolts.

FLUID CHANGE

⚠ CAUTION

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

⚠ CAUTION

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

1. Remove the drain plug located in the bottom of the reservoir. (See Figure 11 on page 18.)
2. Completely drain the hydraulic reservoir. Replace drain plug.
3. Refill through fill hole with the new fluid.

USE

- WESTERN® High Performance Fluid to -25° F (-32° C)
Part No. 49311 - Quart
Part No. 49330 - Gallon
- Automatic Transmission Fluid (ATF) DEXRON® III to -10° F (-23° C)
- Texaco 1537 Aircraft Hydraulic Oil for temperatures below -25° F (-32° C)

4. Recycle used oil or dispose of according to national and local requirements.

MAINTENANCE

FILLING THE HYDRAULIC UNIT

NOTE: Add oil when all cylinders are retracted.

1. Fill the reservoir to dipstick level with WESTERN® oil or automatic transmission fluid (ATF) while in the Vee position with the snowplow lowered.
2. Extend and retract the driver-side wing several times. Return to the retracted position.
3. Screw dipstick in completely to read fill level. Fill with fluid according to dipstick reading.
4. Extend and retract the passenger-side wing several times. Return to the retracted position.
5. Screw dipstick in completely to read fill level. Fill with fluid according to dipstick reading.
6. Raise and lower the snowplow several times. Return to the lower position retracting the cylinder completely.
7. With angling cylinders and the lift cylinder retracted, refill the system through the fill hole. Use the dipstick to indicate the level. Fill to full.

SYSTEM CAPACITY

APPLICATION	CAPACITY IN QUARTS
FloStat® Hydraulic Unit Reservoir	1-3/4
Reservoir plus 10" Hydraulic Rams	2-1/2

PACKING NUT ADJUSTMENT FOR LIFT RAM

⚠ CAUTION

Do not over tighten the packing nut. Over tightening affects the operation and shortens life of the packing.

Periodically verify the lift ram packing nut is tight. If the packing nut is loose or leakage appears while lifting the snowplow, tighten 1/4 turn maximum after you feel the packing nut contact the packing. **(See Figure 11 on page 18.)**

Packings not used for a period of time may show signs of oil weep. This will usually stop after use.

BLADE DROP SPEED ADJUSTMENT

The quill in the bottom left corner of the main valve manifold adjusts the blade drop speed.

(See Figure 16.)

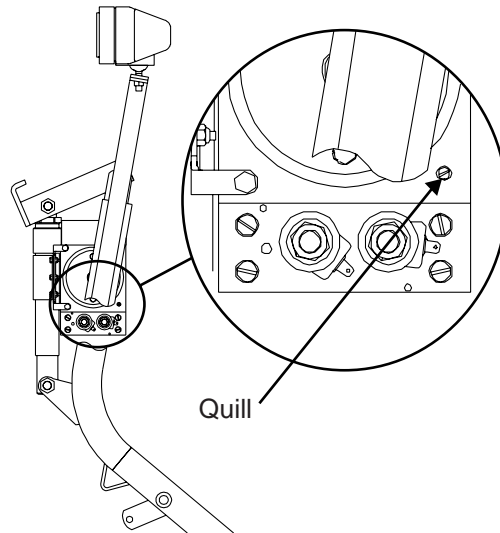


Figure 16

MAINTENANCE

PRO-GUARD™ BLADE FINISH

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

VEHICLE

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

FUSE REPLACEMENT

This control contains two 5AFB printed circuit board (PCB) mounted fuses. If the control does not function and the 10AFB 3AG in-line fuse is not blown, one or both of these 5AFB PCB mounted fuses may be blown. They can be removed by pulling them out of the PCB SMD holders with a small needle-nose pliers. They should be replaced with 5AFB SMD fuses.

(See Figure 17.)

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.

RECYCLE

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

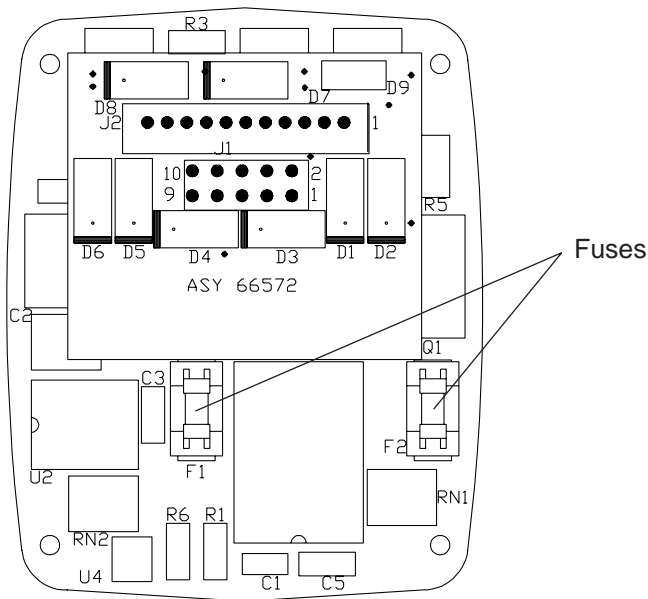


Figure 17

TROUBLESHOOTING GUIDE

This guide is arranged in the most likely correction order. Remember, your WESTERN® outlet is trained to service your plow with factory original parts.

CONDITION	POSSIBLE CAUSE	CORRECTION
Motor does not run.	<ol style="list-style-type: none"> 1. Snowplow wire harnesses not connected. 2. Harness or cab control fuses blown. 3. Cab control malfunction or fault in wiring. 	<ol style="list-style-type: none"> 1. Properly connect both wire harnesses. See page 10. 2. Replace blown fuses. See pages 8 and 24. 3. See WESTERN® outlet for repair information.
Motor will not shut off.	Motor relay or cab control malfunction or fault in wiring.	See WESTERN® outlet for repair information.
Snowplow will not raise or raises slowly or partially.	<ol style="list-style-type: none"> 1. Excess weight on the blade and A-frame. 2. Hydraulic fluid level low or wrong fluid is used. 3. Quill adjusted in too far. 4. Lift ram packing nut too tight. 5. Blown fuse in harness or cab control. 6. Vehicle battery weak or charging system malfunction. 7. Motor worn or damaged or fault in wiring. 8. Pump filter clogged, worn or damaged pump, or hydraulic system malfunction. 	<ol style="list-style-type: none"> 1. Remove built-up snow and ice or after-market accessories (excess weight). 2. Fill reservoir to proper level with recommended fluid. See pages 18, 22 and 23. 3. Adjust quill out. See page 23. 4. Adjust lift ram packing nut. See page 23. 5. Replace blown fuse. See pages 8 and 24. 6. Replace battery and/or check charging system. 7. See WESTERN® outlet for repair information. 8. See WESTERN® outlet for repair information.
Snowplow angles or wings move slowly or partially.	<ol style="list-style-type: none"> 1. Hydraulic fluid level low or wrong fluid is used. 2. Vehicle battery weak or charging system malfunction. 3. Air in angle cylinders. 4. Angle cylinders damaged or leaking internally. 5. Motor worn or damaged or fault in wiring. 6. Pump filter clogged, worn or damaged pump, or hydraulic system malfunction. 	<ol style="list-style-type: none"> 1. Fill reservoir to proper level with recommended fluid. See pages 18, 22, and 23. 2. Replace battery and/or check charging system. 3. Cycle wings to remove air from cylinders. 4. See WESTERN® outlet for repair information. 5. See WESTERN® outlet for repair information. 6. See WESTERN® outlet for repair information.

TROUBLESHOOTING GUIDE

CONDITION	POSSIBLE CAUSE	CORRECTION
Snowplow will not lower, lowers slowly, or will not float.	<ol style="list-style-type: none"> 1. Hydraulic fluid not correct for outside temperature. 2. Quill adjusted in too far. 3. Lift ram packing nut too tight. 4. Blown fuse in cab control. 5. Cab control or hydraulic system malfunction or fault in wiring. 	<ol style="list-style-type: none"> 1. Use recommended fluid. See page 22. 2. Adjust quill out. See page 23. 3. Adjust lift ram packing nut. See page 23. 4. Replace blown fuse. See pages 8 and 24. 5. See WESTERN® outlet for repair information.
Snowplow lowers by itself or will not stay in raised position.	<ol style="list-style-type: none"> 1. Lift cylinder packing nut loose. 2. Hydraulic fittings or hoses loose or damaged. 3. Cab control or hydraulic system malfunction. 	<ol style="list-style-type: none"> 1. Tighten lift cylinder packing nut. 2. Tighten or replace components or see WESTERN® outlet for repair information. 3. See WESTERN® outlet for repair information.
Wings will not lock hydraulically or hold position.	<ol style="list-style-type: none"> 1. Hydraulic fittings or hoses loose or damaged. 2. Air in angle cylinders. 3. Angle cylinders damaged or leaking internally. 4. Cab control or hydraulic system malfunction, or fault in wiring. 	<ol style="list-style-type: none"> 1. Tighten or replace components or see WESTERN® outlet for repair information. 2. Check fluid level and cycle wings to remove air from cylinders. 3. See WESTERN® outlet for repair information. 4. See WESTERN® outlet for repair information.
Snowplow does not perform the selected function or performs a different function.	<ol style="list-style-type: none"> 1. Hydraulic hose routing incorrect. 2. Cab control or hydraulic system malfunction, or fault in wiring. 	<ol style="list-style-type: none"> 1. See WESTERN® outlet for repair information. 2. See WESTERN® outlet for repair information.

TROUBLESHOOTING GUIDE

CONDITION	POSSIBLE CAUSE	CORRECTION
Oil leaks from hydraulic power unit.	<ol style="list-style-type: none"> 1. Reservoir overfilled. 2. Loose or damaged hydraulic fittings, hoses, plugs, or hardware. 	<ol style="list-style-type: none"> 1. Drain excess oil and verify proper oil level. 2. Tighten loose components, see WESTERN® outlet for repair information.
Oil leaks from angle or lift cylinders.	<ol style="list-style-type: none"> 1. Angle or lift cylinder packing nut loose. 2. Hydraulic fittings or hoses loose or damaged. 3. Angle or lift cylinders damaged. 	<ol style="list-style-type: none"> 1. Adjust lift cylinder packing nut. 2. Tighten or replace components, or see WESTERN® outlet for repair information. 3. See WESTERN® outlet for repair information.
Snowplow wire harness or cab control fuses blown.	Motor relay or cab control malfunction, or fault in wiring.	See WESTERN® outlet for repair information.
Vehicle fuse blows.	Circuit overloaded, or fault in wiring.	See WESTERN® outlet for repair information.
Excessive load on vehicle electrical system while using snowplow.	<ol style="list-style-type: none"> 1. Hydraulic fluid not correct for outside temperature. 2. Quill adjusted in too far. 3. Lift cylinder packing nut too tight. 4. Vehicle battery weak or charging system malfunction. 5. Worn or damaged motor or pump, or fault in wiring. 	<ol style="list-style-type: none"> 1. Use recommended fluid. See page 22. 2. Adjust quill out. See page 23. 3. Adjust lift cylinder packing nut. 4. Replace battery and/or check charging system. 5. See WESTERN® outlet for repair information.
Vehicle battery loses charge when snowplow is not being used.	<ol style="list-style-type: none"> 1. Vehicle battery weak. 2. Fault in wiring. 	<ol style="list-style-type: none"> 1. Replace battery. 2. See WESTERN® outlet for repair information.

TROUBLESHOOTING GUIDE

CONDITION	POSSIBLE CAUSE	CORRECTION
Snowplow headlamps operate irregularly or not at all (snowplow attached).	<ol style="list-style-type: none"> 1. Snowplow wire harnesses not connected. 2. Blown fuse. 3. Burned out bulbs or corroded sockets. 4. Light relays not operating or fault in wiring. 	<ol style="list-style-type: none"> 1. Properly connect both wire harnesses. 2. See WESTERN® outlet for repair information. 3. Replace bulbs, clean contacts. 4. See WESTERN® outlet for repair information.
Vehicle headlamps operate irregularly or not at all (snowplow removed).	<ol style="list-style-type: none"> 1. Burned out bulbs. 2. Blown fuse. 3. Fault in wiring. 	<ol style="list-style-type: none"> 1. Replace bulbs. 2. See WESTERN® outlet for repair information. 3. See WESTERN® outlet for repair information.
Vehicle daytime running lights (DRL) do not work (snowplow removed).	<ol style="list-style-type: none"> 1. Parking brake on. 2. Power in DRL circuit has been interrupted. 	<ol style="list-style-type: none"> 1. Fully release parking brake. 2. Turn light and/or ignition switch on and off to cycle the DRL circuitry.

NOTE: For further information regarding diagnosis and repair of your WESTERN® snowplow, refer to the MVP® Mechanic's Guide available from your WESTERN® outlet. Your WESTERN® outlet is trained to service this snowplow with factory original parts.



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for European Union

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