



**Fisher Engineering**

**27500, 28000, 28100-1, 28500,  
29000, 29100-1, 74000**

50 Gordon Drive, Rockland, Maine 04841-2139 • www.fisherplows.com

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## **XBLADE™ & HD Series Skid Steer Snowplows**

**XBLADE Blade Assembly 28100-1, 29100-1  
HD Series Blade Assembly 27500, 28000, 28500, 29000  
A-Frame/Attachment Plate & Hydraulics 74000**

**Owner's Manual**  
*Original Instructions*

**⚠ CAUTION**

Read this manual before operating or  
servicing snowplow.

This manual supersedes all editions with an earlier date.



# SNOWPLOW OWNER DATA SHEET

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

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

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

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

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

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

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

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

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

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



# TABLE OF CONTENTS

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<b>PREFACE</b> .....	6	<b>MAINTENANCE</b> .....	18
<b>SAFETY INFORMATION</b> .....	7	Preseason Check.....	18
<b>SNOWPLOW WEIGHTS AND VEHICLE APPLICATION INFORMATION</b> .....	10	Postseason Maintenance.....	18
<b>GETTING TO KNOW YOUR SNOWPLOW</b> .....	11	Maintenance and Adjustment .....	19
Unpacking and Inspection .....	11	Hydraulic Hose and Fitting Replacement .....	20
Hydraulics Guide.....	11	Vehicle .....	21
Accessories .....	12	Recycle .....	21
<b>ATTACHING &amp; DETACHING INSTRUCTIONS</b> .....	13	Blade finish .....	21
<b>OPERATING YOUR SNOWPLOW</b> .....	14	Tools .....	21
Antiwear Shoe Adjustment – HD blades.....	14	Parts.....	21
Transporting Snowplow .....	15	Troubleshooting .....	21
Driving and Plowing on Snow and Ice .....	15		
Plowing Snow .....	16		
Parking with Snowplow Attached .....	17		
Towing a Disabled or Stuck Vehicle.....	17		

## PREFACE

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Congratulations on purchasing the most advanced skid steer snowplow available! FISHER® snowplows are clearing new trails for innovative design, rugged durability, quality craftsmanship and superior performance. Our innovative products are tested all over the snowbelt.

This manual provides safety, operation and maintenance information for your new FISHER 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 FISHER distributor knows your snowplow best. Contact your FISHER outlet for maintenance, service or any other assistance you require.

If you have not already done so, please visit [www.fisherplows.com](http://www.fisherplows.com) to register your new snowplow!

Your FISHER snowplow is a valuable investment. The best way to assure original equipment reliability and efficiency is to purchase only **Genuine FISHER 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 FISHER parts and accessories from your local FISHER 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 potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**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.

## WARNING/CAUTION & INSTRUCTION LABELS

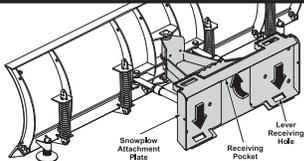
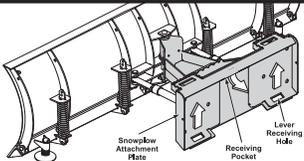
Become familiar with and inform users about the warning and instruction labels on the back of the blade.

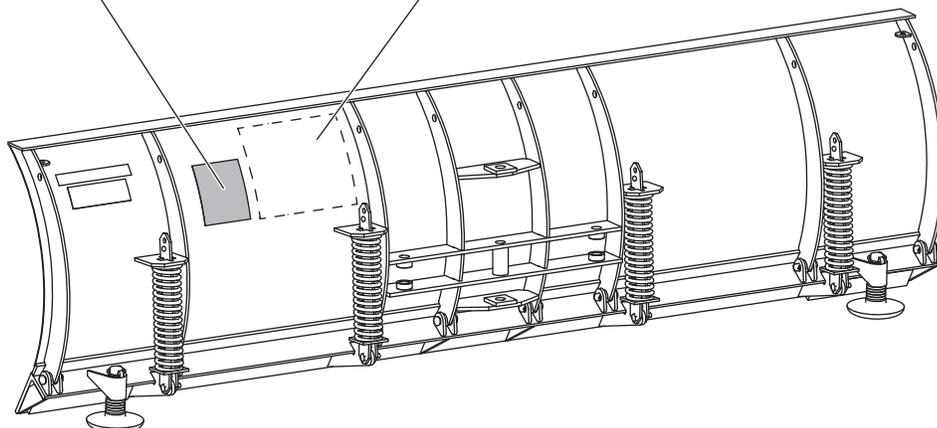
**NOTE:** If labels are missing or cannot be read, see your sales outlet.

### Warning/Caution Label

<b>⚠ WARNING</b>	
	Lower blade when vehicle is parked.
	Do not exceed GVWR or GAWR including blade and ballast.
<b>⚠ CAUTION</b>	
	Read Owner's Manual before operating or servicing snowplow.
	Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.
	Plowing speed should not exceed 10 mph (16 km/h).
	See your sales outlet/Web site for specific vehicle application recommendations.

### Instruction Label (to be applied by snowplow installer)

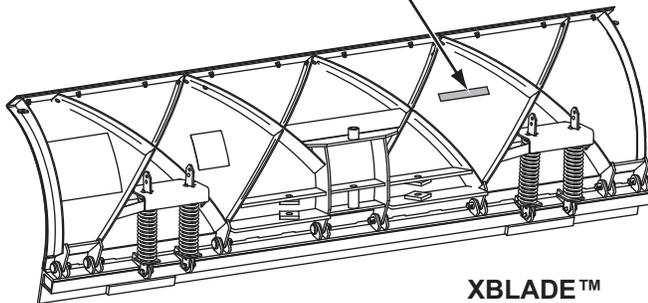
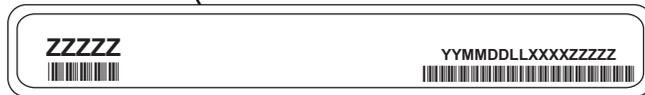
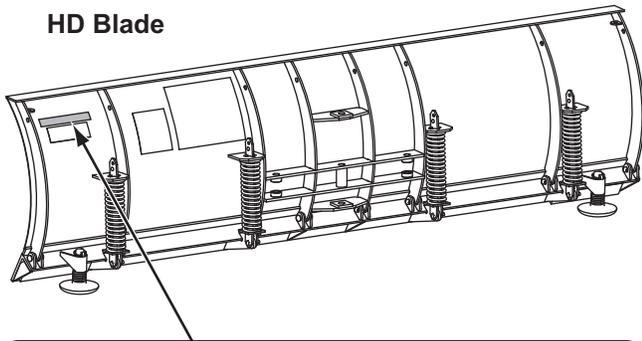
Attach	Detach
Read Owner's Manual for Complete Instructions.	Read Owner's Manual for Complete Instructions.
	
<b>Follow skid steer labeling and Owner's Manual instructions.</b>	<b>WARNING: Keep fingers away from snowplow and skid steer pinch points.</b>
<ul style="list-style-type: none"> <li>Position the skid steer close to the snowplow and align the mount points on the skid steer plate with the snowplow attachment plate.</li> <li>Tilt the skid steer plate forward and position the top edge of the plate under the receiving pocket on the top edge of the snowplow attachment plate.</li> <li>Slowly raise the arms on the skid steer and tilt the skid steer plate toward the cab until the snowplow attachment plate is flush with the skid steer plate. Turn the engine OFF.</li> <li>Engage both locking levers on the skid steer by rotating each handle 90° into a horizontal position. The skid steer locking levers shall insert into the snowplow lever receiving holes.</li> <li>Attach all hydraulic hoses on the snowplow to the auxiliary hydraulic connections located on the skid steer. On some skid steer models, it may be necessary to initiate an auxiliary hydraulic switch on the skid steer prior to operating the snowplow.</li> </ul>	<ul style="list-style-type: none"> <li>Lower the snowplow on a flat, level surface and turn the engine OFF.</li> <li>Disconnect all hydraulic hoses on the snowplow from the auxiliary hydraulic connections located on the skid steer.</li> <li>Disengage both locking levers on the skid steer by rotating each handle 90° into a vertical position. The skid steer locking levers shall withdraw from the snowplow lever receiving holes.</li> <li>Turn the engine ON. Slowly lower the arms on the skid steer and tilt the skid steer plate forward away from the cab until the top edge of the skid steer plate clears the receiving pocket on the top edge of the snowplow attachment plate.</li> <li>Back the skid steer away slowly.</li> </ul>
	
<small>U.S. Patents 5,638,616; 5,899,007; 6,253,470; 6,408,546; 6,944,076; 7,400,026; 7,481,324; 7,727,576; 7,797,859; CAN Patents 2,184,922; 2,229,743; 2,306,036; 2,632,102; and other patents pending.</small>	



# SAFETY

## Blade Serial Number Label

**HD Blade**



**XBLADE™**

Code	Definition
YY	2-Digit Year
MM	2-Digit Month
DD	2-Digit Day
LL	2-Digit Location Code
XXXX	4-Digit Sequential Number
ZZZZZZ	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 the blade when the 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**

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

### **⚠ WARNING**



Do not exceed vehicle operative capacity including the blade. See vehicle rating label.

### **⚠ WARNING**

Never stand, work or reach under lift arms or lift cylinders without employing a lift arm stop or stand.

### **⚠ CAUTION**

Read Owner's Manual before operating or servicing snowplow.

### **⚠ CAUTION**

Transport speed should not exceed vehicle manufacturer's recommendations. Further reduce speed under adverse travel conditions.

### **⚠ CAUTION**

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

# SAFETY

## 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.

## PERSONAL SAFETY

- Remove 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.

## FIRE AND EXPLOSION

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

**⚠ 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.**

## 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.

# SNOWPLOW WEIGHTS / VEHICLE APPLICATION INFORMATION

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## SNOWPLOW BLADE ASSEMBLY WEIGHTS

Size	Blade Assembly	Wt (lb)	Wt (kg)
8'	XBLADE™	778	353
9'	XBLADE	825	374
7'-6"	HD Series	670	304
8'	HD Series	689	313
8'-6"	HD Series	708	321
9'	HD Series	727	330

## VEHICLE APPLICATIONS

### CAUTION

See your FISHER® outlet for specific vehicle application recommendations before installation.

Vehicle application recommendations are based on the following:

- The vehicle with the snowplow installed must comply with the vehicle manufacturer's stated gross vehicle and axle weight ratings and the front and rear weight distribution ratio.
- In some cases there may be additional limitations and requirements.
- Installation, modification and addition of accessories must comply with published FISHER® recommendations and instructions. Available capacity decreases as the vehicle is loaded with cargo or other equipment or snowplow accessories are installed.
- If there is uncertainty as to whether available capacity exists, the actual vehicle as configured must be weighed.

# GETTING TO KNOW YOUR SNOWPLOW

## UNPACKING AND INSPECTION

Your skid steer snowplow has been packaged to withstand transit and weather related damage. Fully inspect all components upon receipt of your snowplow. In the event of shipping damage or missing parts, immediately contact our customer support department at 1-877-299-2735.

Begin unpacking and inspection in the following order:

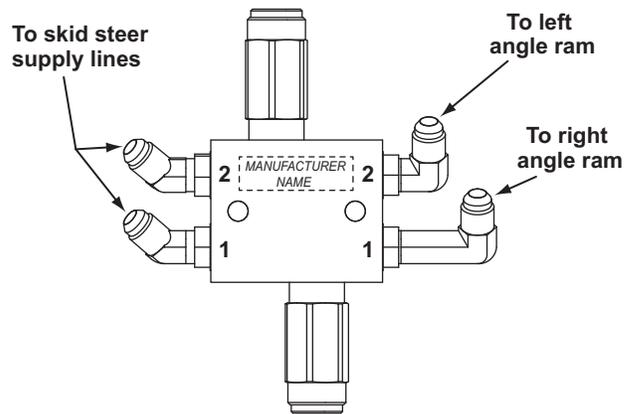
1. Remove the shipping document from the end panel of the pallet wrap. Retain all documentation for your records.
2. All wood framing and polyethylene material should be removed from the pallet for easy access to the snowplow.
3. Due to the odd-shaped components and size of several assembly parts, various cable ties and corrugated material are used for scratch resistance and package orientation. Please remove these items prior to assembly.
4. Place the main blade assembly on a flat, level surface.

Once you have inspected all parts and removed all packaging materials, your snowplow is ready to be fully assembled as described in the Installation Instructions document.

**Retain a copy of the Snowplow Owner Data Sheet on page 3 for your records.**

## HYDRAULICS GUIDE

### Hydraulic Hose Port Guide – Skid Steer



TORQUE SPECIFICATIONS	
Relief valves	19 – 21 ft-lb
Fitting jam nuts	19 – 21 ft-lb

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## ACCESSORIES

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### **SnoFoil® ASSEMBLY**

A rigid curved extension attached to the top of your snowplow blade deflects light snow away from the windshield. It improves your plowing visibility and efficiency. The SnoFoil assembly bolts onto the 7-1/2', 8', 8-1/2' and 9' HD series straight blades.

### **STEEL DEFLECTOR**

This deflector for HD series blades keeps fluffy snow from flowing over the top of the blade. Easily installed and attractively priced.

### **RUBBER DEFLECTOR**

Attached to the XBLADE™ snowplow, this flexible deflector keeps fluffy snow from flowing over the top of the blade. Easily installed and attractively priced.

### **REPLACEABLE CARBON STEEL CUTTING EDGE**

These cutting edges made of high-carbon steel bolt onto the base angle for maximum blade life. Available for both XBLADE and HD series blades. Depending on the blade series, cutting edges are 3/8" or 1/2" thick, and 6" or 8" wide.

### **WEAR/CURB SHOE KIT**

Available for the XBLADE, these shoes offer two different types of wear protection. The flat bottom section protects the cutting edge surface from wear against rough surfaces. A radial edge that extends beyond the edge of the snowplow also protects the ends of the bottom trip edge from scraping against curbing and sidewalks.

### **CURB GUARD KIT**

Designed to fit on the ends of the trip edge, these guards protect against scraping the bottom edge of the blade against curbs and sidewalks. The kit is available for 7-1/2', 8', 8-1/2' and 9' HD series straight blades.

### **TOUCH-UP PAINT**

FISHER® touch-up paint is available to keep your snowplow protected from rust.

# ATTACHING & DETACHING INSTRUCTIONS

## ⚠ WARNING

Keep 8 feet 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

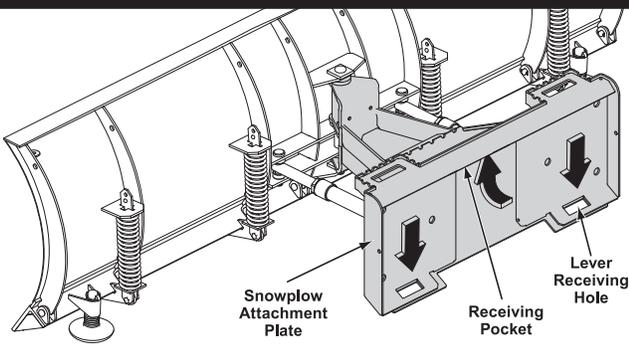
Inspect snowplow components and fasteners for wear or damage whenever mounting or removing the snowplow. Worn or damaged components could allow the snowplow to drop unexpectedly.

Prior to operating your snowplow, review the Attach/Detach Instructions label (shown below) on the back left side of the moldboard.

**NOTE:** If at any time the Attach/Detach Instructions label or any other label attached to your snowplow becomes illegible, promptly replace it.

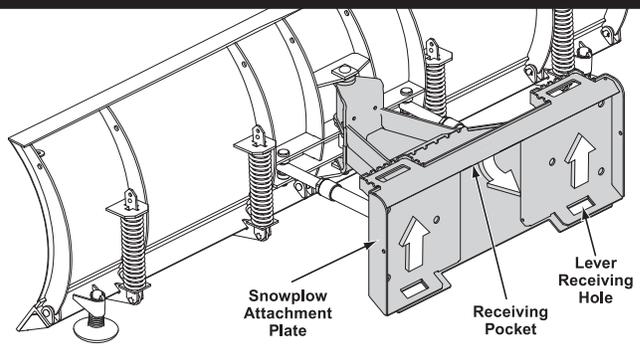
## Attach

Read Owner's Manual for Complete Instructions.



## Detach

Read Owner's Manual for Complete Instructions.



Follow skid steer labeling and Owner's Manual instructions.

- Position the skid steer close to the snowplow and align the mount points on the skid steer plate with the snowplow attachment plate.
- Tilt the skid steer plate forward and position the top edge of the plate under the receiving pocket on the top edge of the snowplow attachment plate.
- Slowly raise the arms on the skid steer and tilt the skid steer plate toward the cab until the snowplow attachment plate is flush with the skid steer plate. Turn the engine OFF.
- Engage both locking levers on the skid steer by rotating each handle 90° into a horizontal position. The skid steer locking levers shall insert into the snowplow lever receiving holes.
- Attach all hydraulic hoses on the snowplow to the auxiliary hydraulic connections located on the skid steer. On some skid steer models, it may be necessary to initiate an auxiliary hydraulic switch on the skid steer prior to operating the snowplow.



**WARNING:** Keep fingers away from snowplow and skid steer pinch points.



- Lower the snowplow on a flat, level surface and turn the engine OFF.
- Disconnect all hydraulic hoses on the snowplow from the auxiliary hydraulic connections located on the skid steer.
- Disengage both locking levers on the skid steer by rotating each handle 90° into a vertical position. The skid steer locking levers shall withdraw from the snowplow lever receiving holes.
- Turn the engine ON. Slowly lower the arms on the skid steer and tilt the skid steer plate forward away from the cab until the top edge of the skid steer plate clears the receiving pocket on the top edge of the snowplow attachment plate.
- Back the skid steer away slowly.

U.S. Patents 5,638,618; 5,899,007; 6,253,470; 6,408,549; 6,944,978; 7,400,058; 7,681,334; 7,737,576; 7,797,859; CAN Patents 2,184,922; 2,229,783; 2,356,036; 2,632,102; and other patents pending.

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# OPERATING YOUR SNOWPLOW

## ANTIWEAR SHOE ADJUSTMENT – HD BLADES

### ⚠ WARNING

Blade can drop unexpectedly. Place blade on stand assembly. Failure to do so could result in serious personal injury.

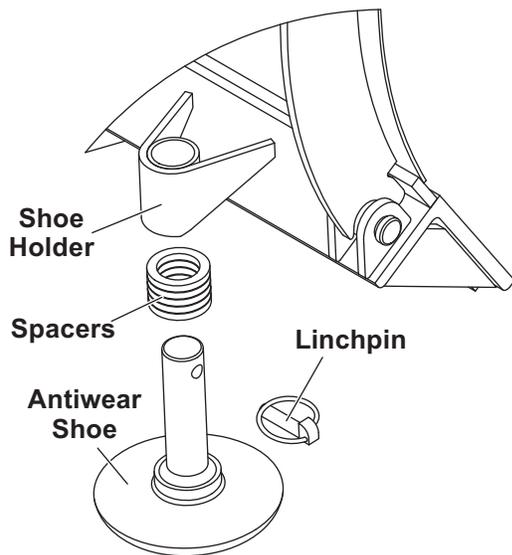
### Recommended Shoe Adjustments

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

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

1. Raise the blade one foot off the road surface. From in front of the blade, place jack stands or sturdy blocking under the cutting edge.
2. Lower the blade onto jack stands or blocking.
3. Remove the linchpin and slide the antiwear shoe down and out of the shoe holder.

4. Remove one or more spacers from the shoe stem, and reinstall the shoe into the shoe holder.
5. Reinstall the linchpin.
6. Raise the blade slightly. Remove the stand assembly or blocking.
7. Stand 8 feet clear of the blade when checking the height adjustment of cutting edge to road surface.
8. **DO NOT** store unused spacers on top of the shoe holder.



# OPERATING YOUR SNOWPLOW

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## TRANSPORTING SNOWPLOW

### **⚠ WARNING**

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

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

### **⚠ CAUTION**

Transport speed should not exceed vehicle manufacturer's recommendations. Further reduce speed under adverse travel conditions.

These instructions are for driving short distances to and from plowing jobs. For longer trips, remove the snowplow from the vehicle, following recommended mechanical lifting cautions and procedures.

1. Completely raise the blade.
2. Adjust the blade height for maximum vehicle headlamp illumination.
3. Adjust the blade to the straight position.

## 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 traction. It is very easy to lose control. You will have difficulty accelerating. If you do get moving, you may have poor steering and difficult braking, which can cause you to slide out of control.

Here are some tips for driving in these conditions:

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

# OPERATING YOUR SNOWPLOW

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## PLOWING SNOW

### 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.

### CAUTION

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

### 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 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.

## Hard-Packed Snow

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

## Deep Snow

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

Experience and "feel" are the best guides.

3. When plowing deep snow, be sure to keep the vehicle moving.
4. 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 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 building. Drop blade and "back drag" snow away from the building at least one vehicle length. Repeat if necessary.
4. Back vehicle to the building and plow forward, removing the remaining snow from the driveway. Check municipal ordinances for proper disposal of snow.

## Clearing Parking Lots

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

## PARKING WITH SNOWPLOW ATTACHED

### **⚠ WARNING**

**Lower the blade when the vehicle is parked. Keep 8 feet clear of the blade when it is being raised, lowered or angled. 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.

# MAINTENANCE

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## PRESEASON CHECK

### **⚠ WARNING**

**Lower the blade when the vehicle is parked. Keep 8 feet clear of the blade when it is being raised, lowered or angled. 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:

- 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 vehicle 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, preventing it from moving under harsh plowing conditions.

## POSTSEASON MAINTENANCE

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

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- Clean and paint blade and components as needed.
- Apply general purpose petroleum grease to exposed chrome surfaces of the rams to prevent rust.
- Lubricate all pivot points with general purpose petroleum grease.

# MAINTENANCE

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## MAINTENANCE AND ADJUSTMENT

### **WARNING**

**Lower the blade when the vehicle is parked. Keep 8 feet clear of the blade when it is being raised, lowered or angled. 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 FISHER® 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 1" pivot bolt.
2. Check all plugs and seals for hydraulic fluid leaks. Repair as necessary.
3. **Blade Finish:** If the powder-coated finish is nicked or scratched, repair the surface and paint with FISHER yellow or black paint (available in aerosol or quart cans).

# MAINTENANCE

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## HYDRAULIC HOSE AND FITTING REPLACEMENT

### **⚠ WARNING**

**Lower the blade when the vehicle is parked. Keep 8 feet clear of the blade when it is being raised, lowered or angled. 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 product. Follow recommended replacement procedures for fittings and hoses.

1. Lower the snowplow completely.
2. Carefully note hose routing 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: Overtightening JIC hose fitting ends will result in a fractured fitting.**

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

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

1. Turn jam nut on fitting as far back as possible.
2. Lubricate O-ring with clean hydraulic fluid.
3. Screw fitting into port by hand until the washer contacts the port face and shoulder of the jam nut threads.
4. Unscrew fitting to proper position, no more than one full turn.
5. Using two wrenches, hold fitting body in position and tighten jam nut until the washer again contacts port face, then tighten an additional 1/8 to 1/4 turn to lock fitting in place. Final torque on the jam nut should be approximately 20 ft-lb.

**Use the following procedure to install hydraulic hoses:**

1. Screw flare nut onto fitting flare and hand tighten.
2. Align hose so there are no twists or sharp bends and so it will not be pinched or pulled by moving parts.
3. Using two wrenches, hold the hose in position and tighten flare nut 1/8 to 1/4 turn beyond hand tight. Final torque on the flare nut should be approximately 20 ft-lb.
4. Reinstall any protective hose wraps in their original positions.

Once all parts are installed, top off the hydraulic fluid level as recommended by the skid steer manufacturer.

# MAINTENANCE

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## VEHICLE

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

## RECYCLE

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

## BLADE FINISH

If the powder-coated finish is nicked or scratched, repair the blade surface with FISHER® yellow or black paint (available in aerosol or quart cans from your FISHER outlet). Clean and repaint parts as necessary.

## TOOLS

We suggest that you keep the following items in your vehicle for emergency use:

- 10" adjustable wrench
- Pliers (locking, adjustable, etc.)
- Medium screwdriver
- 11/16" open-end wrench
- 3/4" open-end wrench
- Miscellaneous fasteners

## PARTS

***Always use FISHER designed and tested replacement parts.***

## TROUBLESHOOTING

If you have followed all the guidelines listed in the Maintenance Section of this manual and cannot resolve issues with the operation of your FISHER snowplow, contact one of our authorized outlets for repair information, or visit us online at [www.fisherplows.com](http://www.fisherplows.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.

Fisher Engineering 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.





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*This product conforms to EU Machinery Directive 2006/42/EC and Directive 2011/65/EC (RoHS2).*

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