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**OPERATION & MAINTENANCE MANUAL**

**MODEL LDA**

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**IMPORTANT:** *Your Snowman Snowplow and the hydraulic power unit both have serial numbers. Record these numbers and keep them in a safe place so that you can refer to them later when obtaining service parts.*

## PREFACE

Welcome to the growing family of SNOWMAN SNOWPLOW operators. This manual will teach you how to operate and maintain your new SNOWMAN SNOWPLOW and will provide safety information. Please read this manual carefully and follow its recommendations.

When service is needed, your local SNOWMAN SNOWPLOW distributor knows your plow best. Return your snowplow to the distributor for maintenance service or any other assistance you may require.

SNOWMAN SNOWPLOW, INC. offers a one-year limited warranty for all snowplows and accessories. See separately printed page for this important information. SNOWMAN SNOWPLOW, INC. does not warranty any parts not manufactured by SNOWMAN SNOWPLOW, INC. or any damage caused by the use of these unauthorized items.



**SAFETY NOTE:** Whenever you see this symbol, it notes a **SAFETY WARNING**. To avoid serious injury to yourself or others, follow all warnings. Read this manual and plow labels before using your snowplow.

## **GETTING TO KNOW YOUR SNOWMAN PULL PLOW**

**MOLDBOARD** - Twelve gauge reinforced with 1/4" vertical ribs for added strength and rigidity.

**CUTTING EDGE** - Replaceable 1,080 high carbon steel; provides extra long operating life. Should be in direct contact with the ground in plowing position (can be higher when used on gravel drives).

**TRIP SPRINGS** - Allow moldboard to trip forward and ride over hidden obstructions, which helps protect the snowplow and vehicle from possible damage.

**POWDER COAT FINISH ON ARMS, MOLDBOARD & WINGS** - Your new blade is protected with a powder coat finish that resists cracking, corrosion, scratching and rust. The coating creates a smooth finish that can be touched up when necessary.

**ELECTRIC POWER UNIT** - Operates the SNOWMAN pull plow hydraulically - raises & lowers the moldboard and provides power up, power angle when plowing.

**HIGH LIFT CAPABILITY** - A lift height of up to 47" makes it possible to remove large drifts next to garage doors and tight areas.

**ADJUSTABLE ARMS** - Make the SNOWMAN pull plow compatible with different height vehicles.

**DUAL DOWN PRESSURE SPRINGS** - Plow follows the contour of the ground for a cleaner surface.

**HITCH PIN** - Provides fast mounting or dismounting of the SNOWMAN pull plow from the vehicle.

**VEHICLE HARNESS** - For easy mounting & dismounting of plow.

**REPLACEABLE FLAGS** - For improving operator visibility and blade control.

**SAFETY CHAIN** - Added safety feature.

**HITCH STOPS** - Provides a guide for easier hitch pin hook-up.



## SNOWMAN SNOWPLOW MODEL 65 LDA, 75 LDA, 85 LDA

All models are compatible with any existing 2" square receiver hitch that meets Snowman's class and tongue weight requirements as listed in the chart below.  
Model 65 LDA is recommended for downsize SUV's and downsize 2/4 WD trucks.  
Model 75 LDA is recommended for mid to full size SUV's and full size trucks.  
Model 85 LDA is recommended for extra wide vehicles.

### SPECIFICATIONS

<b>SNOWPLOW MODEL</b>	<b>65 LDA</b>	<b>75 LDA</b>	<b>85 LDA</b>
<b>Length of Moldboard</b>	6' 6"	7' 6"	8'6"
<b>Height of Moldboard</b>	23"	23"	23"
<b>Thickness of Moldboard</b>	12 GA.	12 GA.	12 GA.
<b>No. of Vertical Ribs</b>	6	6	8
<b>No. of Trip Springs</b>	2	2	2
<b>Cutting Edge Size</b>	3/8"X6"x6'6"	3/8"X6"x7'6"	3/8"X6"x8'6"
<b>Size of Lift Ram</b>	1½"X12"	1½"X12"	1½"X12"
<b>Size of Angle Ram</b>	1½"x6"	1½"x6"	1½"x6"
<b>Required Hitch Class</b>	Class 3	Class 3	Class 4
<b>Required Tongue Weight</b>	No less than 500#	No less than 500#	No less than 750#
<b>Approx. Inches From Bumper to End of Plow (In Down Position)</b>	36"	36"	36"

## MOUNTING SNOWMAN SNOWPLOW TO VEHICLE

For directions on installing all models of the SNOWMAN pull plow and accessories, see Installation Instructions in separate insert.

1. Check vehicle receiver hitch for loose bolts, cracks and defects before and after each use. Repair or replace before attaching if any problems are found.
2. For easiest hook-up, plow and vehicle should be on a level surface.
3. Back the vehicle within a few inches of the plow.
4. Check alignment of vehicle receiver hitch and plow T-mount. Adjust vehicle position until vehicle receiver hitch is in line with plow T-mount.
5. Once alignment is done, back the vehicle up until the receiver hitch comes in contact with hitch stop on the T-mount. (If hitch stop was not installed at time of plow installation, refer to installation instructions and install.)
6. Insert hitch pin and fasten with pin provided.
7. Plug the 3 ft. pump lead into the vehicle harness.
8. Raise the jack stand. Remove the jack from the T-mount.
9. Drape the safety chain over the lift cylinder. Bring the ends of the chain under the T-mount and hook them in the holes on the hitch (located on each side of the receiver). Pull the chains together under the cylinder & fasten with a cable tie.

## OPERATING YOUR SNOWMAN PULL PLOW



**W**ARNING: *Always raise the blade of your SNOWMAN pull plow and straighten the blade before backing your vehicle. The SNOWMAN pull plow is designed to be used only when the vehicle is moving in a forward direction.*

All SNOWMAN pull plows are designed to be used only when the vehicle is moving in a forward direction. Always raise your blade and straighten before backing to avoid damage to the plow or your vehicle.

### **LIGHT CHECK**

Before you begin plowing, always check the lights on your vehicle to see that they are operating properly.

### **CONTROLLING THE BLADE**

Dual spring down pressure is provided in order to obtain constant down pressure when plowing areas that have an uneven surface area. The trip springs help protect your plow and vehicle from damage when the blade comes in contact with hidden obstructions.

**NOTE:** See “trouble shooting” section for instructions on regulating the plow movements.

## ***TRANSPORTING PLOW***

Raise the SNOWMAN pull plow and adjust the blade height for maximum plow light illumination (approximately 18" above ground on roadway).

**WARNING:** It is recommended that your vehicle be equipped with plow backup lights and alarms. Be sure all lights are operating properly before traveling.

**WARNING:** Make sure blade does not block taillights.

**WARNING:** Never exceed posted road speeds. Under bad weather conditions or when driving on uneven surfaces such as railroad tracks or bumpy roads, reduce speed.

## ***PARKING THE VEHICLE WITH PLOW ATTACHED***

**WARNING:** Turn cab remote control off/neutral when not in use to prevent accidental activation of the plow.

Whenever you park your vehicle, lower the blade to the ground. **IMPORTANT! Do not back your vehicle when the plow is in the down position.**

## **PLOWING SNOW**

### ***GENERAL INSTRUCTIONS***

1. Before plowing, inspect the snow removal area for obstructions hidden beneath the snow, such as bumper stops in parking lots, curbs, sidewalk edges, pipes and objects that may be sticking up from the ground. Also take note of the location of shrubs and fences.

2. Only the driver should be in the vehicle when plow is attached to plowing.
3. Plow during the storm rather than letting snow accumulate.
4. 10 m.p.h. is a maximum snow plowing speed under ideal conditions, assuming the driver is familiar with the roadway or area to be cleared. Under unfamiliar or hazardous conditions, or if there is poor visibility, reduced speed and extreme caution are recommended.

**WARNING:** Make certain bystanders are clear of swing before operating the plow.

**CAUTION:** Flag any obstructions that are hard to locate.

**WARNING:** Always wear a seat belt when plowing snow. Hidden obstructions could cause the vehicle to stop suddenly, throwing you forward.

**WARNING:** Never plow with your head out of the vehicle window. Sudden stops or protruding objects could cause severe neck or head injuries.

**WARNING:** Never back the truck with the plow in the down position.

**VERY IMPORTANT:** Swith the remote control to "off" when unhooking from the plow (after lowering it to the ground); when the plow is not in use; and when the plow is in storage.

## **SPECIAL SNOW CONDITIONS**

### HARD PACKED SNOW

1. When removing hard packed snow, use lowest gear to place maximum power behind cutting edge.

### DEEP SNOW

1. With rear plow in raised position, back your vehicle to the point where you will start plowing. (Start in the middle of the area you want to clear if the snow can be positioned to either side.) After bringing your vehicle to a complete stop, lower the rear plow to the ground.
2. Drive forward, angling the blade so the snow is positioned to one side or the other. Continue until you reach the end of your plowing area. Stop the vehicle.
3. **Raise your plow and straighten blade until parallel with the vehicle.**
4. Begin your next pass by backing your vehicle in the cleared path and repeat steps 1-3.
5. Shear off top layers of snow by lowering the rear plow approximately one-half the depth of the snowfall. EXAMPLE: For a 24 inch snowfall, shear off 12 inches with the first pass, and another 12 inches in the second pass. Experience and "feel" are the best guides.
6. When plowing deep snow, be sure to keep the vehicle moving.
7. For increased traction use tire chains.

## **CLEARING DRIVEWAYS**

1. Back into the driveway with the rear plow in the raised position (stopping approximately 2-4 inches from garage door). Start at the opposite side of the drive that you want the snow to be positioned.
2. Lower the SNOWMAN pull plow to the surface of the drive and then pull forward, angling the blade so the snow is positioned to one side. Continue until you reach the end of your plowing area.
3. **Raise the plow before coming to a complete stop and straighten blade until parallel with the vehicle.** (If you are required to keep the snow on your property, make the complete stop when the blade is at the end of the drive)
4. Back your vehicle onto the cleared portion of the drive and repeat steps 1-3.
5. To clear snow left at the end of the drive, turn the vehicle around and pull the snow into the drive with the plow lowered and angled to one side. Repeat if necessary.



**W**ARNING: *Be sure you and others are a safe distance from the blade when it is being raised or lowered. Do not stand between the vehicle and blade or directly behind the blade. If the blade strikes you or drops on you, serious injury could result.*



## **REMOVING THE SNOWMAN PULL PLOW & STORAGE**

When not in use, it is recommended that the SNOWMAN pull plow be removed from the vehicle.

### ***STORAGE :***

1. Back the vehicle onto a level surface. Lower the plow to the surface.
2. **VERY IMPORTANT**--Switch the cab remote control to **OFF** to prevent the lift cylinder from collapsing and causing the plow to fall forward
3. Unhook the electrical cables.
4. Remove the safety chain.
5. Attach the jack to the T-mount. Lower the jack to the ground.
6. Remove the hitch pin from the T-mount and then adjust the jack pressure until the tension between the hitch's receiver and the plow's T-mount is released.
7. Return to the vehicle and pull forward slowly.

**IMPORTANT! -- The remote control switch should always be turned to the OFF position whenever the plow is not in use.**

## **MAINTENANCE**

### ***PRESEASON***

Scheduled vehicle maintenance should be performed as recommended by the manufacturer. Don't forget that in addition to keeping equipment in order:

- Equip vehicles with chains to be used where necessary.
- Wear appropriate clothing if severe weather and rubber gloves if handling snow-melting chemicals.

### **VEHICLE ELECTRICAL SYSTEM:**

For maximum efficiency, the vehicle supporting the snowplow must be properly serviced. The system should consist of at least a 70-amp/hr. battery and a 60-amp alternator per plow.

Be sure to check regularly:

1. Battery to assure it is in top condition; terminals to assure they are tight and corrosion free.
2. Electrical connections, to assure they are tight and corrosion-free. **Wash and spray dielectric contact cleaner, let dry, then replace dielectric grease after each use. (All electrical connections)** Use dielectric grease freely to help prevent corrosion. Heat shrink or taping may be called for. All wires must be held clear of moving or hot engine parts or sharp sheet metal.
3. Alternator and regulator, to assure maximum electrical output.

### **SNOW PLOW:**

**NOTE: ALWAYS LOWER THE MOLDBOARD TO THE GROUND WHEN THE VEHICLE IS PARKED.**

1. Check and maintain hydraulic fluid reservoir level at 2/3 to 3/4 full. Snowman Snowplow, Inc. recommends "Lubriplate Special Pour Hydraulic" oil. For dealer nearest you, call 419-691-2491. When ordering, ask for item no. 76757(four, 1-gallon containers). If Lubriplate is not available, whatever oil is recommended for your front plow will work fine.
2. Check entire hydraulic system for leaks. A significant drop in hydraulic fluid level is evidence of a leak, which must be corrected to prevent serious damage.
3. Keep the T-mount greased for easier on/off. Lubricate all pivot points with chassis lube.
4. Adjust trip spring tension by tightening top lock nut 4 turns beyond the point when spring coils begin to separate. Tighten bottom lock nut to hold eyebolt in position.
5. Replace the cutting edge as soon as it appears worn approximately 4". This will prevent permanent damage to the moldboard.
6. Retighten all mounting bolts each snowfall for the first plowing season and at regular intervals thereafter.
7. **Inspect the hitch and frame for loose bolts, cracks and defects before each use. Follow the recommendations for receiver hitch minimum class requirements.**
8. **Snowman recommends using Loctite and lock nuts on grade 8 bolts on your vehicle receiver hitch if not already being used.**
9. When the power unit is not used for extended periods, protect the chromed pistons by fully extending and coating it with chassis lubricant.

10. Regular cleaning, re-greasing (using dielectric grease) and sealing of all connections on pump, battery and breaker is necessary to maintain correct grounding and amp flow for optimum operating performance of the unit.

### ***POST SEASON***

1. When the snowplow is disconnected, extend the lift cylinder to the end of stroke and coat chrome rod with light grease. This fills the cylinder with hydraulic fluid and protects the interior and exterior from rust and corrosion.
2. Coat all pivot pins and other wear points with chassis lubricant.
3. Unplug all electrical connections at power unit. Coat all connections with a dielectric compound to prevent corrosion and plug into their corresponding weather plugs.

### **SELECTING EQUIPMENT**

Where you plan to plow, and the conditions under which you will be plowing determine to a great extent the type of vehicle you'll find most useful. In general, three types of vehicles are available as the power source of snow clearance. Each type has certain inherent advantages depending upon the particular situation.

Four-wheel drive UTILITY VEHICLES and TRUCKS have proven most effective in general snow plowing situations. They have excellent traction and maneuverability and are extremely easy to handle.

Two-wheel drive vehicles, particularly those of 1 ½ to 3 tons, are best for straight-line road clearance and in large open areas.

SNOWMAN'S custom design for specific vehicles provides the advantage of easy, fast attaching and detaching. This feature permits utilization of vehicle versatility as weather conditions and job requirements demand.

**Snowman recommends John Deere “Low-Viscosity Hy-Gard” oil for your Snowman plow.**

## TROUBLESHOOTING

MODEL	PROBLEM	POSSIBLE CAUSE	REMEDY
LDA	Plow will not raise (will not lower) No sound at motor	<ol style="list-style-type: none"> <li>1) Disconnected harness</li> <li>2) Corroded contacts at harness plug-in</li> <li>3) Corroded eyelets at pump</li> <li>4) Corroded eyelets at battery</li> <li>5) If breaker fuse has been installed, possibly blown breaker</li> </ol>	<ol style="list-style-type: none"> <li>1) Connect harness plug-in</li> <li>2) Clean &amp; apply dielectric grease</li> <li>3) Clean &amp; apply dielectric grease</li> <li>4) Clean &amp; apply dielectric grease</li> <li>5) Check for bare or exposed wire &amp; repair, replace fuse</li> </ol>
LDA	Plow will not raise (will not lower) Solenoid clicks	<ol style="list-style-type: none"> <li>1) Corroded contacts at harness</li> <li>2) Corroded eyelets at pump</li> <li>3) Corroded eyelets at battery</li> </ol>	<ol style="list-style-type: none"> <li>1) Take apart, clean &amp; apply dielectric grease</li> <li>2) Take apart, clean &amp; apply dielectric grease</li> <li>3) Take apart, clean &amp; apply dielectric grease</li> </ol>
LDA	Plows descends in jerking motion	<ol style="list-style-type: none"> <li>1) Oil weight is too light</li> <li>2) Air in system</li> <li>3) Possible internal bypassing in cylinder</li> </ol>	<ol style="list-style-type: none"> <li>1) Replace with <b>Lubriplate Special Pour Hydraulic oil</b> (See page 9)</li> <li>2) Remove air by raising the plow to its maximum height, then lower the plow until the lift cylinder ram is fully retracted; repeat until all air is removed</li> <li>3) Replace lift cylinder</li> </ol>

# TROUBLESHOOTING

MODEL	PROBLEM	POSSIBLE CAUSE	REMEDY
LDA	Plow descends too fast or slams down	1) Oil weight is too light  2) Air in system	1) Replace with <b>Lubriplate Special Pour Hydraulic oil (See pg. 9)</b>  2) Remove air by raising the plow to its maximum height, then lower the plow until the lift cylinder ram is fully retracted; repeat until all air is removed
LDA	Plow lowers and/or raises too slow	1) Incorrect fluid being used  2) Fitting is restricted	1) Flush & replace with <b>Lubriplate Special Pour Hydraulic oil (see pg. 9)</b>  2) Remove fitting, clean, replace & test; if necessary, repeat until system is flushed clean