



INSTALLATION & OPERATING GUIDE

NORTHMAN 2300 SERIES SNOWPLOW

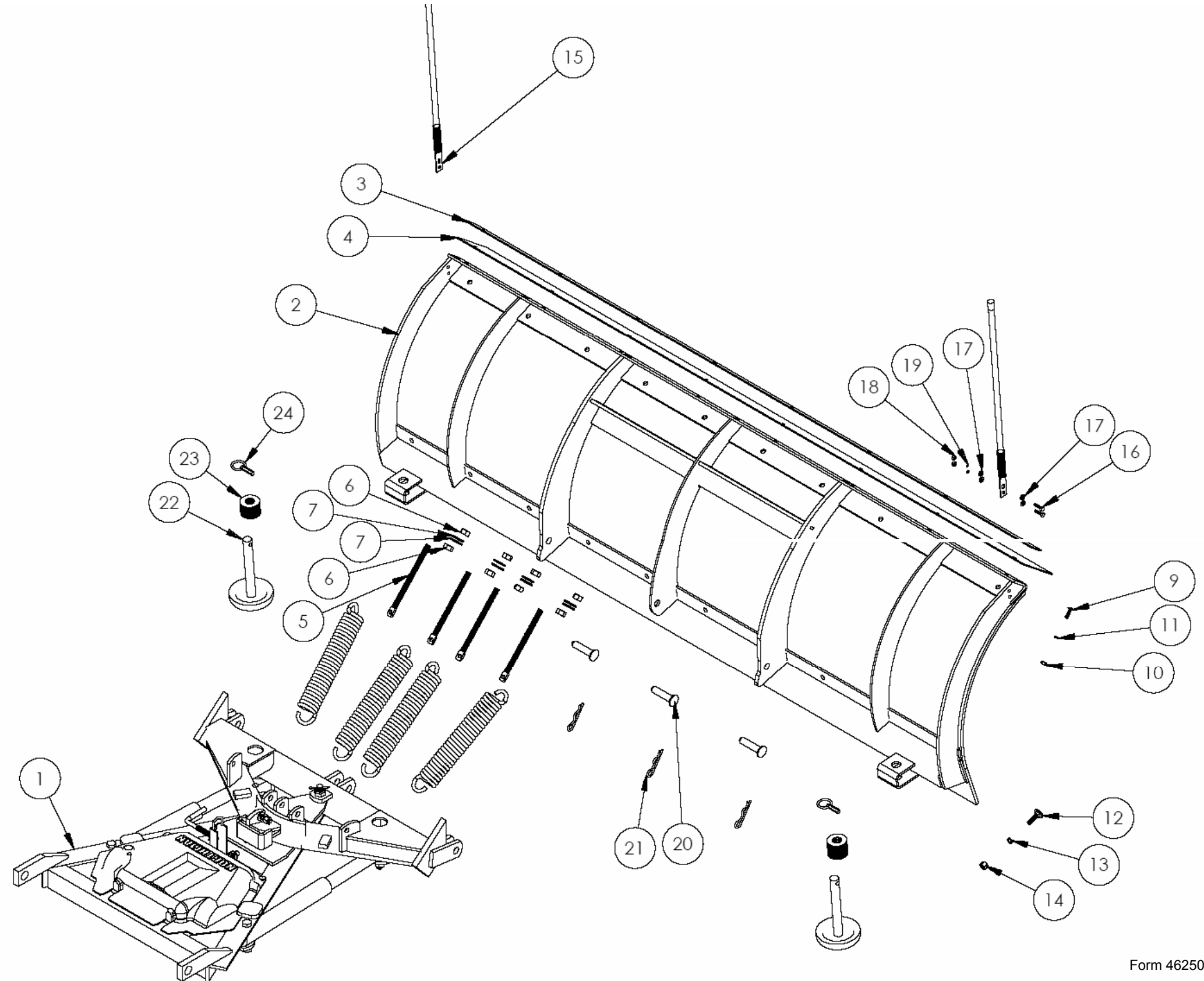
STRAIGHT BLADE APPLICATIONS

STEEL OR POLY MOLDBOARDS



NORTHMAN MODEL 2300 ASSEMBLY DIAGRAM

ITEM NO.	QTY.	PART NO.
1	1	2300 PushFrame-Sector-Moldboard
2	1	90 Moldboard Frame
3	1	Deflector Strap
4	1	90 deflector
5	4	8" Eyebolt
6	8	5/8" Nut
7	8	5/8" Washer
8	4	Trip Spring
9	1	3/8" Carriage Bolt
10	1	3/8" Nut
11	1	3/8" Lock Washer
12	1	1/2" Carriage Bolt
13	1	1/2" Lock Washer
14	1	1/2" Nut
15	2	guide wond
16	2	1/4" Bolt
17	4	1/4" Washer
18	2	1/4" Nut
19	2	1/4" Lock Washer
20	3	3/4" Pin
21	3	Clinch pin
22	2	Round Skid Shoe
23	15	1" Washer
24	2	Linch Pin





NORTHMAN

Snow Plows

THE PROFESSIONAL CHOICE

WARNING

This vehicle may be equipped with air bags. DO NOT under any circumstances disable, remove or relocate any sensors or other components related to the operation of the air bags.

Vehicle Front Gross Axle Weight Rating (FGAWR), Rear Gross Axle Weight Rating (RGAWR), and the Gross Vehicle Weight Rating (GAWR) must not be exceeded at any time to maintain compliance with Federal Regulations and assure a safe vehicle. It is the operator's responsibility to verify that these ratings are not exceeded.

Consult your vehicle operation manual for additional specifications and warnings.

Make sure plow is properly attached before operating vehicle.

Always disconnect battery prior to beginning the installation.

Thank You for your purchase of a quality Northman product! At Northman, our mission is to design and manufacture products that provide years of trouble free service at the best possible value. All Northman products are designed and fully tested to meet the needs of the serious professional. And our products are backed up with a knowledgeable customer service and support network.

Please take a few minutes to review this manual and learn the basics of your new Northman plow. Take important note of all warnings and maintenance requirements. If you have further questions, your contact your Northman dealer for the latest product and service information.

Snowplow Assembly & Setup

Unpack all components and familiarize yourself with the various parts and assemblies included in your new plow package. Mountings, electrical, and hydraulic assemblies may have independent instructions and manuals specifically related to those products.

Basic Assembly

1. Assemble the Power Angling Assembly (1) to the moldboard assembly using three Pivot Pins (20) and Cotter Pins (21). Install Trip Springs to sector ears. Thread 5/8" Hex Nut on Spade Bolts (5) nearly to the bottom of threads. Loop spade bolt holes through trip spring ends and insert threads through moldboard bracket holes. Secure spade bolts with 5/8" flat washer and nuts. Adjust initial spring tension by tightening 4 complete turns beyond taut. Tighten the lower jam nut against the moldboard bracket to lock in place. Insert the Jackstand Assembly into the pushframe bracket and engage the stand so that the assembly sits level.
2. Remove Pump Cover from the power angling assembly. Install Left and Right Power Angling Hoses to Hydraulic Pump Unit and Power Angling Cylinders. Consult hydraulic and pump schematics for specific hookup information. Use Teflon pipe sealant to insure proper hydraulic sealing.
3. Install the end link of the Lift Chain to the Push Frame using a 1/2" X 2" cap screw, two 1/2" flat washers, and 1/2" locknut. Install the Safety Chain as shown using the same procedure.
4. Attach the vehicle mounting kit to the vehicle. Consult the vehicle specific instructions for the required steps.
5. Install the Front Lift to the lower inside ears on the vehicle mounting assembly using Push Frame Pins and secure using Hairpin Clips. Install Front Lift Attachment Bars provided in vehicle mounting kit to the upper ears on the vehicle mounting assembly using Attachment Bar Pins and Hairpin Clips. Rotate the Front Lift such that the free end of the Attachment Bars aligns over the pins on the Front Lift. Secure using Hairpin Clips.
6. Attach the Lift Channel to the Front Lift using upper attachment ears as shown. Assemble the female Quick Coupler and the 90 deg Hydraulic Elbow to the Lift Cylinder using Teflon pipe sealant to insure proper hydraulic sealing. Position the Lift Cylinder between the lower attachment ears of the Front Lift and Lift Channel. Secure using hardware as shown. NOTE – DO NOT OVERTIGHTEN LOCKNUTS. Insert the Lift Chain into the Lift Channel slot.

7. Assemble the Right and Left Lower Light Bar Brackets and Right and Left Lower Light Bar Brackets to the Front Lift. Do not tighten at this time. Install Headlight Assemblies to the Upper and Lower Light Bar Brackets using hardware provided. Once again, leave assembly loose for level adjustment later.
8. Carefully position the plow Push Frame Mounting Ears between the outer ears of the vehicle mounting assembly. Insert Push Frame Pins through the Push Frame and vehicle mounting and secure using Clips. Raise the Jackstand once the pins are secured.
9. Install the Hydraulic Male Coupler to the Lift Hose and assemble to the Pump using Teflon pipe sealant to insure proper hydraulic sealing. Consult hydraulic and pump schematics for specific hookup information. Connect the Hydraulic Coupler to the Lift Cylinder.
10. Install the electrical wiring and harnesses per the schematics and instructions provided for your specific application.
11. Fill the oil reservoir to within 3/4" inches from the top. Test the operation of the plow by cycling all cylinders. NOTE – STAND CLEAR OF THE PLOW WHILE OPERATING. Lower the lift cylinder completely and recheck the reservoir oil level. Fill to within 3/4" inches from the top if necessary. Replace the Pump Cover once completed. Attach Safety Chain to Front Lift to transport. Adjust the headlights per the instructions provided.
12. Check the skidshoe height in relation to the cutting edge. Adjust if necessary.

Mounting Procedure

- Carefully position the plow push frame mounting ears between the outer ears of the vehicle mounting assembly.
- Insert push frame pins through the push frame and vehicle mounting and secure using Clips.
- Raise the jackstand once the pins are secured.
- Remove dust caps and connect the lift hose coupler to the lift cylinder.
- Locate the power and controls harnesses on the vehicle and the plow. Remove the protective covers on each side.
- Connect the controls harness and power cable harness by pushing together. Position the plugs behind the bumper once connected.

Caution:

Make certain push frame pins are fully engaged and secured with clips and jackstand is raised prior to operating plow. Failure to do so could cause damage and/or injury.

Removal Procedure

- Plow should ideally be removed on a hard, level surface. Straighten the power angle and lower the plow. Lower the jackstand until the foot contacts the floor surface. Lift slightly on the vehicle bumper if necessary to engage the jack pin.
- Unplug the power and controls harnesses and install protective covers.
- Disconnect lift chain and remove from lift channel. Unplug hydraulic coupler from the lift cylinder and install dust caps.
- Remove clips and pull push frame pins from the vehicle mount.
- Slowly back vehicle away from plow.

Plow Maintenance

The following simple procedures will help insure years of trouble-free service.

- Monitor hydraulic fluid level regularly. Add when necessary.
- Inspect all hoses, electrical cables, harnesses, and electrical connections on a regular basis for wear. Replace if necessary.

- Apply dielectric grease to electrical connections prior to and after storage, and monthly during the snow season.
- Check for leaks from hydraulic fittings and seals.
- Monitor cutting edge and skid shoe wear frequently.
- Check all fasteners regularly for tightness.
- Keep hydraulic cylinder shafts lubricated during storage to prevent corrosion.