



10 TON HYDRAULIC CYLINDER RAM

GENERAL HYDRAULIC PORTABLE RAM KIT

OWNER'S MANUAL



WARNING:

Read carefully and understand all **ASSEMBLY AND OPERATION INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item# 46276

Thank you very much for choosing a Strongway product! For future reference, please complete the owner's record below:

Model: _____ Purchase Date: _____

Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This machine is designed for certain applications only. The distributor cannot be responsible for issues arising from modification. We strongly recommend this machine not be modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted the distributor to determine if it can or should be performed on the product.

For technical questions please call **1-800-222-5381**.

INTENDED USE

Portable Power Kits are designed to be used for pushing, spreading, and pressing of vehicle body panels as well as various component parts and assemblies.

TECHNICAL SPECIFICATIONS

	Description
Item	46276
Capacity	10 Ton
Rated (PSI)	8,939
Min. Lift Height	14-15/16 in
Max Lift Height	20-13/16 in
Cylinder Rod Stroke	5.9 in
Dimensions L x W x H	14 15/16 x 3 5/8 x 2 ¼

Safe Operating Temperature is between 40°F – 105°F (4°C - 41°C)

GENERAL SAFETY RULES



WARNING: Read and understand all instructions. Failure to follow all instructions listed below may result in serious injury.



CAUTION: Do not allow persons to operate or assemble this Product until they have read this manual and have developed a thorough understanding of how the Product works.



WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY CONSIDERATIONS

PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFETY INSTRUCTIONS AND WARNING. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE OF WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE TO PROPERTY AND/OR SERIOUS PERSONAL INJURY. PLEASE KEEP THIS INSTRUCTION MANUAL SAFE FOR FUTURE USE.

We've done all we can to assure this equipment offers the outmost in safety, but you have to do your part. No amount of warning can take the place of your good judgment, so make sure it's the first thing you bring to any job. Beyond that here are some obvious tips:

- Steel and other materials can shatter, so always use ANSI approved impact safety goggles, full-face impact safety shield and heavy-duty work gloves when operating.
- Contain loose fitting clothing. Remove ties, watches, rings and other loose jewelry and contain long hair.
- Keep proper balance and footing, do not over-reach and wear nonskid footwear.
- Do not operate the when you are tired or under the influence of alcohol, drugs or an intoxicating medication.
- Keep hands and feet away from work area at all times.
- Do not allow untrained persons to operate the equipment.
- If you detect anything that may indicate imminent structural failure, stop using the product immediately and inspect it thoroughly.
- Do not use to compress springs or any other item that could disengage and cause a potential flying hazard.
- Use this equipment for the purpose for which it is intended. Do not use it for any other purpose it is not designed to perform.
- Keep children and unauthorized persons away from the work area.
- Only use this equipment on a surface that is stable, level, dry and not slippery, and capable of sustaining the load. Keep the surface clean, tidy and free from unrelated materials and ensure that there is adequate lighting.
- Inspect before each use. Do not use if bent, broke, cracked, leaking or otherwise damaged.
- Use extreme caution when working around any parts that are subjected to a shock load.
- Check to ensure that all applicable bolts and nuts are firmly tightened.
- Ensure that work piece is center-loaded and secure.
- Do not make any modifications to the equipment.
- Do not use brake fluid or any other improper fluid and avoid mixing different types of oil when adding hydraulic oil. Only good quality hydraulic jack oil can be used in equipment.
- Do not expose the equipment to rain or any other kind of bad weather.
- If the equipment needs repairing and/or there are any parts that need to be replaced, have it repaired by authorized technicians and only use the replacement parts supplied by the manufacturer.

-  **WARNING:** To reduce the risk of personal injury and/or property damage, ensure that the rated working pressure of each pressurized attachment be equal to or greater than the rated working pressure developed by the hydraulic pump.
- Always check connections before using. Alteration of these products is strictly prohibited. Use only those adapters and attachments provided and approved by the manufacturer.
- Note: when extension tubes and/or offset attachments are used, the rated capacity is always reduced by 50% for each tube or offset attachment connected.

Manufacturer does not assume any liability for use of this product to any property or damaged caused. Use of this item is completely determined by user. Manufacturer has included example uses for items included in kit. User will assume all responsibility of possible property or damage caused.

RAM KIT USE AND CARE

- **Do not modify the ram kit in any way.** Unauthorized modification may impair the function and/or safety and could affect the life of the equipment. There are specific applications for which the **Ram Kit** was designed.
- **Always check of damaged or worn out parts before using the Ram Kit.** Broken parts will affect the **Ram Kit** operation. Replace or repair damaged or worn parts immediately.
- **Store idle.** When **Ram Kit** is not in use, store it in a secure place out of the reach of children. Inspect it for good working condition prior to storage and before re-use.
- **Not for use by children** or people with reduced mental capacity.
- **Do not use under the influence of drugs or alcohol.**
- **Ensure children and other bystanders** are kept at a safe distance when using Ram Kit.

INSPECTION

- Inspect the Ram Kit carefully before each use. Ensure the Product is not damaged, excessively worn, or missing parts.
- Do not use the Ram Kit unless it is properly lubricated.
- Using a Ram Kit that is not in good clean working condition or properly lubricated may cause serious injury.
- Inspect the work area before each use. Make sure it is free and clear of any potential hazards.

GENERAL SAFETY RULES

- Save these instructions.
- For your safety, read, understand, and follow the information provided with and on this product before using.
- The owner and/or operator of this equipment shall have an understanding of safe use/operating procedures before attempting to use.
- The owner and/or operator shall be aware that the use of this product may require special skills and knowledge.
- Instructions and safety information shall be conveyed in the operator's native language before use of this device is authorized.
- If any doubt exists as to the safe and proper use of this product as outlined in this factory authorized manual, remove from service immediately.
- Inspect before each use.
- Do not use if broken, bent cracked, or damaged parts (including labels) are noted.
- If the product appears damaged in any way, operates abnormally or is missing parts, it should be removed from service immediately and the distributor should be notified.
- If you suspect that the product was subjected to a shock load (a load suddenly dropped unexpectedly upon it), immediately discontinue use until product has been clocked by a factory authorized service center (contact distributor or manufacturer for list of Authorized Service Centers).
- It is recommended that an annual inspection be done by qualified personnel.
- Labels and owner's manuals are available from the distributor.

SAFETY MARKINGS



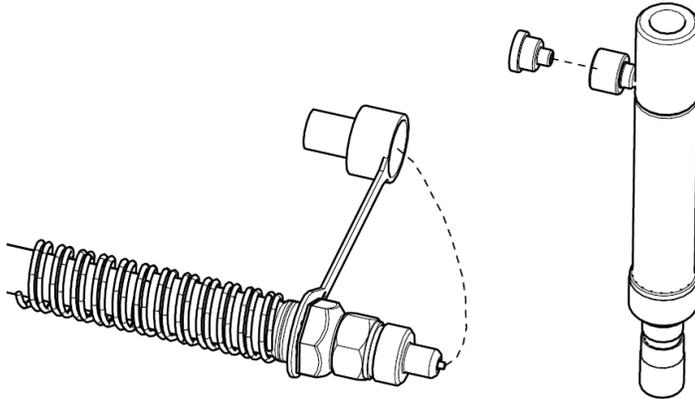
WARNING

1. Study, understand, and follow all instructions before operating this device.
2. Wear eye protection that meets ANSI Z87.1 and OSHA standards.
3. Do not exceed the rated capacity.
4. Use a pressure gauge that indicates pounds of force applied.
5. Inspect before each use.
6. Do not subject the hose to extreme cold, heat, sharp surfaces, abrasion, or impact.
7. Do not allow the hose to kink, twist, curl, or bend so tightly that it restricts fluid flow.
8. Make sure setup is stable and secure before performing any work.
9. No alterations or modifications shall be made to this product.
10. Use only with Northern Tool hydraulic kits.
11. Do not use this product for any use other than the manufacturer specified usage.
12. Failure to heed these markings may result in personal injury, property damage, or both.

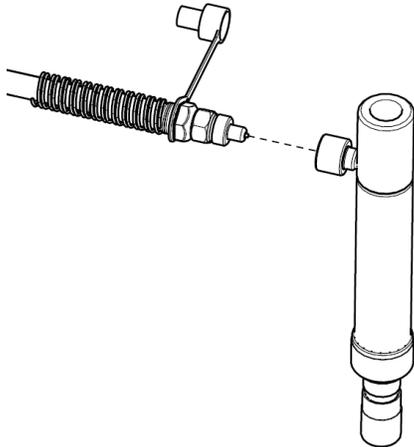
ASSEMBLY

To assemble Hydraulic Ram, Pump Unit, and Attachments

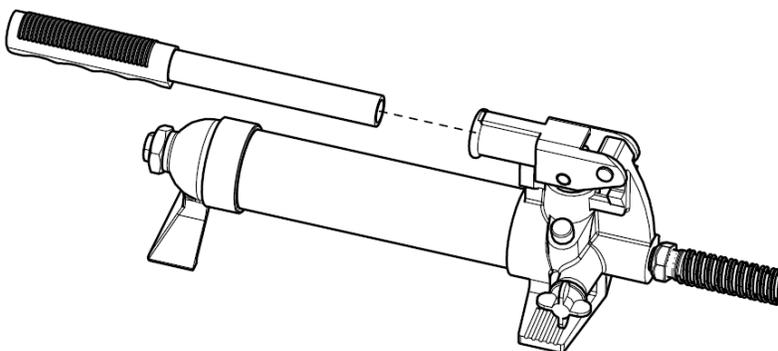
1. Unscrew and save the End Plugs located on the ends of the Hose and Hydraulic Ram.



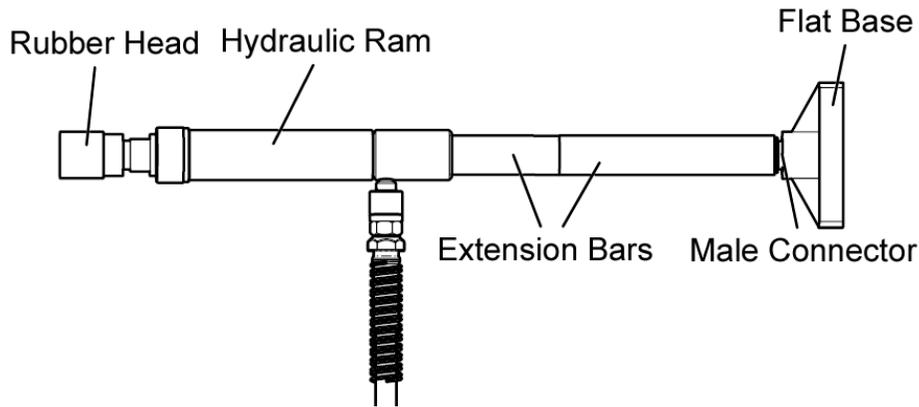
2. Securely screw the Hose into the Hydraulic Ram.



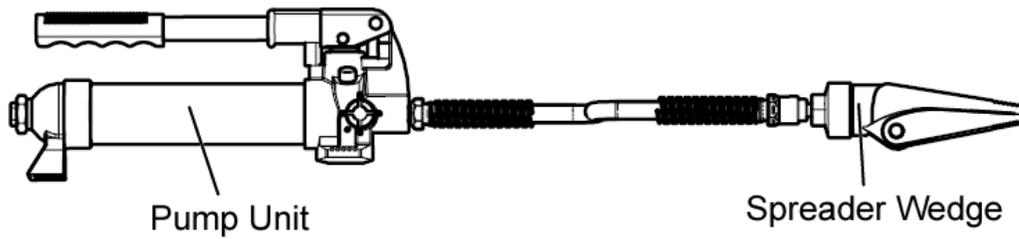
3. Insert the Pump Handle into the receptacle located at the top of the Pump Unit.



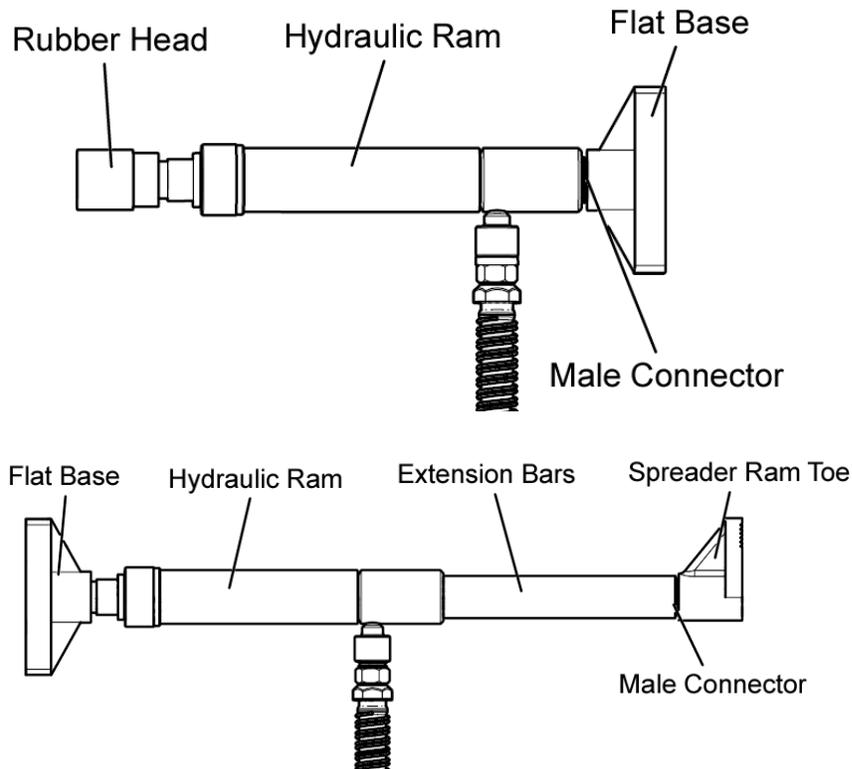
4. To attach the Rubber Head, the Extension Bars, the Male Connector, and the Flat Base to the Hydraulic Ram.



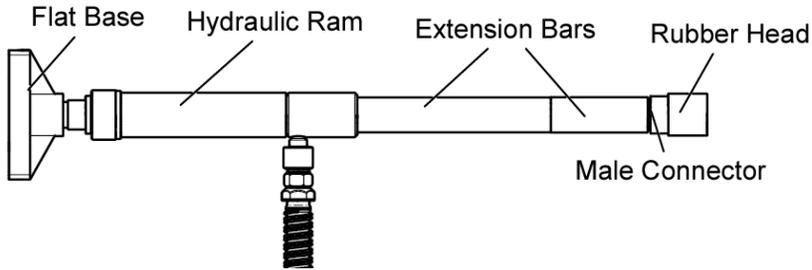
5. To attach the Spreader Wedge to the Pump Unit.



6. For other attachment combinations.



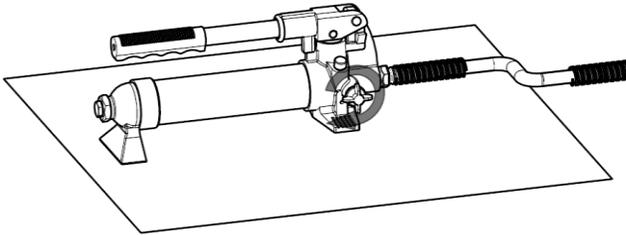
6. Cont.; For other attachment combinations.



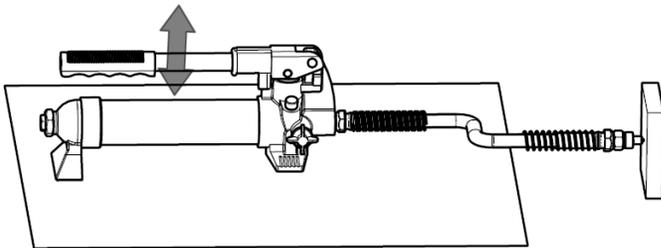
HYDRAULIC PUMP SYSTEM AIR PURGE PROCEDURE

Perform the following Air Purge Procedure to remove any air that may have been introduced into the hydraulic system as a result of product shipment and handing. This step is to be completed without any load pressure.

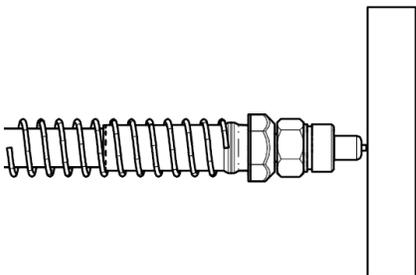
1. Firmly close the Release Valve by turning it clockwise.



2. Press the tip of the Hydraulic Hose Coupling against a hard surface and pump the pump handle.

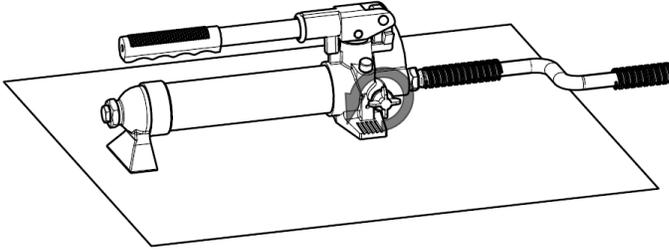


3. Continue pumping until the hydraulic fluid coming out from the end of the coupler tip is free of air bubbles.



4. Check the oil level and add oil if necessary. (See instruction in Maintenance Section "To Add Oil".)

5. Turn the Release Valve counter-clockwise to release the pressure in the pump and hose.



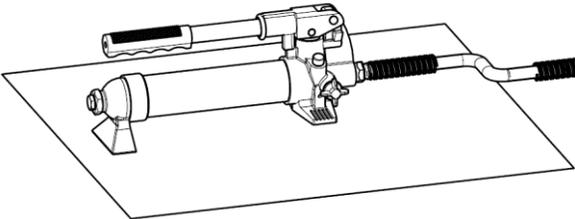
BEFORE USE

1. Before using this product, read the owner's manual completely and familiarize yourself thoroughly with the product and the hazards associated with its improper use.
2. Perform the air purge procedure. (See previous instructions for system purge procedure.)
3. Inspect before each use. Do not use if bent, broken or cracked components are noted.

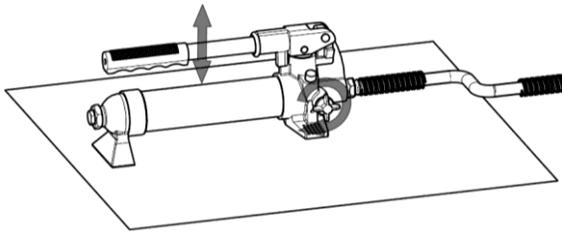
OPERATION

To Operate the Hydraulic Pump Unit

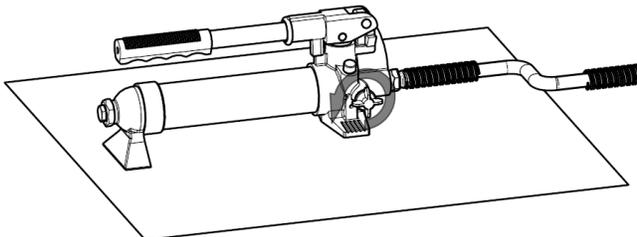
1. Position the Pump Unit on a stable, flat and level surface.



2. Close the release valve by turning it clockwise until it is firmly closed.
 - Pump Handle to apply pressure.



3. Turn the Release Valve Stem counterclockwise to release the pressure.

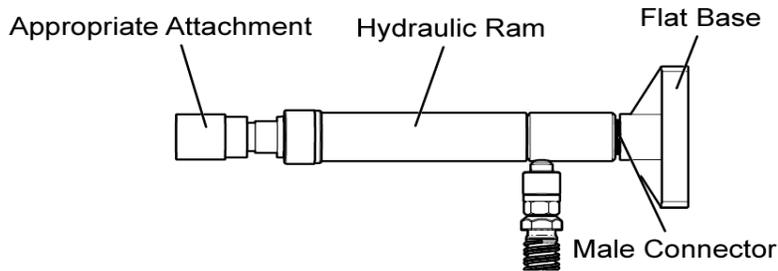


Note:

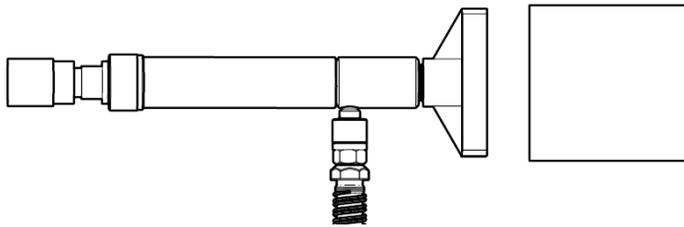
- The Pump Unit may be positioned horizontally or vertically.
- When using the Hydraulic Unit in a vertical position, always keep the Hose end of the Hydraulic Unit downward.

Example: To Repair Frame Damage

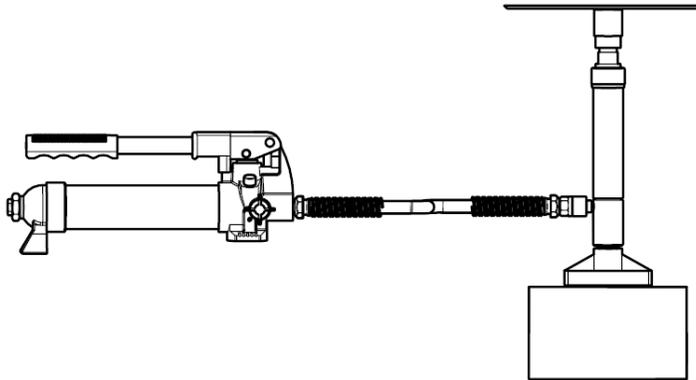
1. Determine which direction the frame needs to be straightened.
2. Remove any obstructions that could be damaged or are in the way.
3. Connect the Flat Base to the stationary side of the Hydraulic Ram and connect the appropriate attachment to the pushing end of the Stroke Ram.



4. Position the Hydraulic Ram so that the Flat Base is resting against a frame member opposite the damaged area. It must also be in line with the direction in which the damaged area needs to be pushed.

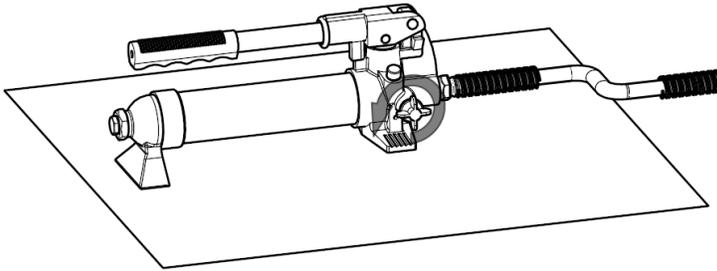


5. Aim the pushing end towards the area that needs to be repaired and slowly apply pressure with the Pump Unit. Once contact has been made on both points of contact, step away as far as possible and continue to slowly apply pressure to the damaged area until the desired bend has been made.



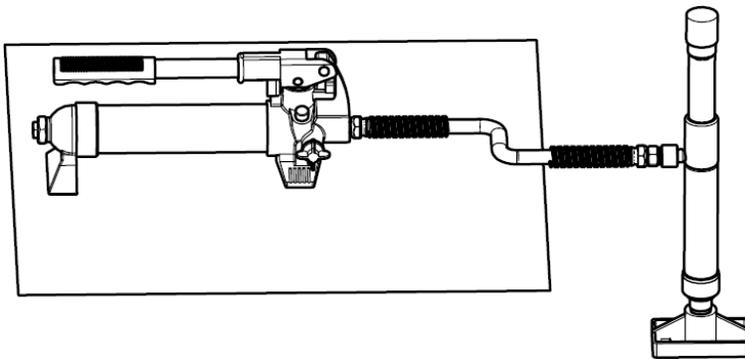
 **CAUTION:** Keep hands away from contact areas and tight spaces. The Portable Power Kit may slip and cause injury.

- When the damaged area has been bent to the desired position, slowly turn the Release Valve on the Pump Unit in a counterclockwise direction to release the hydraulic pressure and cautiously remove the Hydraulic Ram.



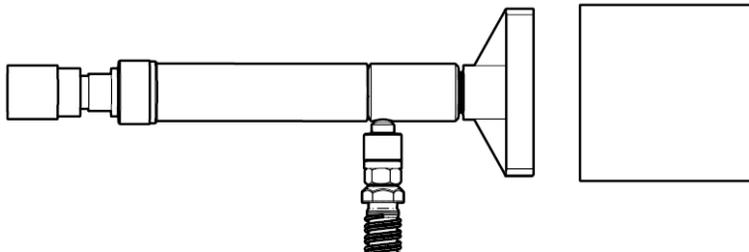
Example: To Repair Sheet Metal Damage

- Determine which direction the body panel should be moved.
- Remove any obstructions that could be damaged or are in the way.
- Connect the appropriate attachments to the Hydraulic Ram.

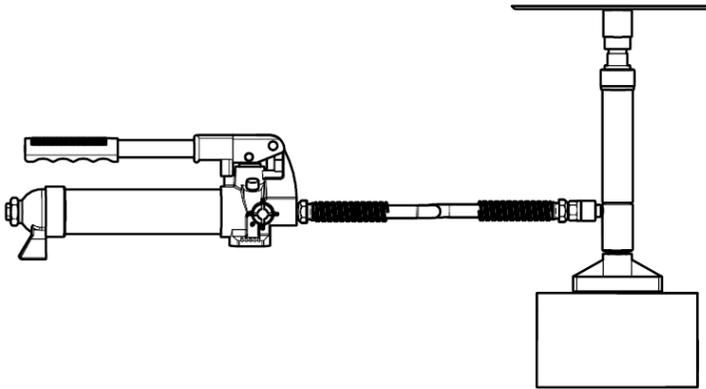


Note: When repairing larger body panel dents such as a piece of sheet metal, dented door, fender or suggested use is the Rubber Head.

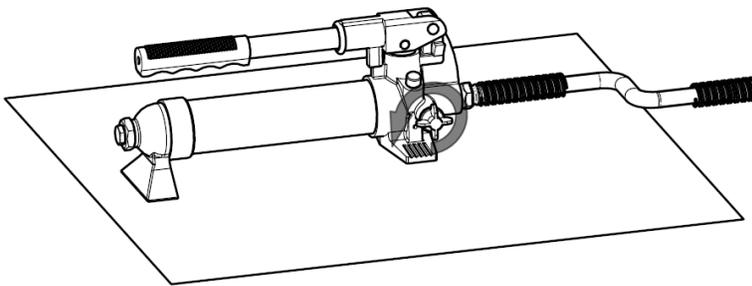
- Attachment must also be in line with the direction in which the damaged area needs to be pushed. A hard secure surface will be required for to apply pressure on opposing sides.
 - A block of wood or a towel may be used to protect the sheet metal.



5. Aim the pushing end towards the area that needs to be repaired and slowly apply pressure with the Pump Unit. Once contact has been made on both points of contact, step away as far as possible and continue to slowly apply pressure to the damaged area until the desired bend has been made.

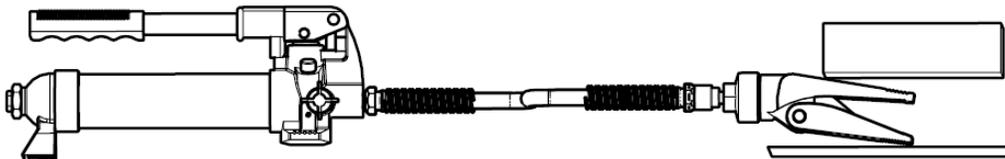


6. When the damaged area has been bent to the desired position, slowly turn the Release Valve on the Pump Unit in a counter-clockwise direction to release the hydraulic pressure and remove the Hydraulic Ram.

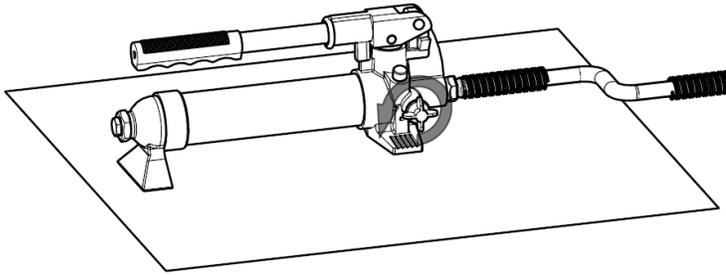


Example: To Use the Spreader Wedge

1. Determine which direction part needs to be bent.
2. Remove any obstructions that could be damaged or are in the way.
3. Place Spreader Wedge so that the hinged arm is resting against the part to be moved and the stationary arm is resting against a non-movable base. Hold the Spreader Ram in position and apply the Pump Unit pressure. Once contact on either end has been made, step away as far as possible and continued to slowly apply pressure to the damaged area until the desired bend has been made.



4. When the damaged area has been bent to the desired position, slowly turn the Release Valve Stem on the Pump Unit in a counterclockwise direction to release the hydraulic pressure and remove the Hydraulic Ram.



MAINTENANCE INSTRUCTIONS

If you use and maintain your equipment properly, it will give you many years of service. Follow the maintenance instructions carefully to keep your equipment in good working condition. Never perform any maintenance on the equipment while it is under a load.

Inspection

You should inspect the product for damage, wear, broken or missing parts (e.g.: pins) and that all components function before each use. Follow lubrication and storage instructions for optimum product performance.

Binding

If the product binds while under a load, use equipment with equal or a larger load capacity to lower the load safely to the ground. After un-binding; clean, lubricate and test that equipment is working properly. Rusty components, dirt, or worn parts can be causes of binding Clean and lubricate the equipment as indicated in the lubrication section. Test the equipment by lifting without a load. If the binding continues, contact Customer Service.

Cleaning

If the moving parts of the equipment are obstructed, use cleaning solvent or another good degreaser to clean the equipment. Remove any existing rust, with a penetrating lubricant.

Lubrication

This equipment will not operate safely without proper lubrication. Using the equipment without proper lubrication will result in poor performance and damage to the equipment. Some parts in this equipment are not self-lubricating inspect the equipment before use and lubricate when necessary. After cleaning, lubricate the equipment using light penetrating oil or lubricating spray.

-Use a good lubricant on all moving parts.

-For light duty use, lubrication is needed once a month.

-For heavy and constant use, lubrication is recommended every week.

-NEVER USE SANDPAPER OR ABRASIVE MATERIAL ON THESE SURFACES!

Rust Prevention:

-Check rams and pump plungers on the power unit assemblies daily for any signs of rust or corrosion.

Without a load lift the equipment as high as it goes and look under and behind the lifting points. If signs of rust are visible clean as needed.

How the Equipment Operates

With release valve closed, an upward stroke of the jack handle draws oil from the reservoir tank into the plunger cavity. Hydraulic pressure holds the valve closed, which keeps the oil in the plunger cavity. A downward stroke of the jack handle releases oil into the cylinder, which forces the ram out. This raises the saddle. When the ram reaches maximum extension, oil is bypassed back into the reservoir to prevent an over extended ram stroke and possible damage to the jack. Opening the release valve allows oil to flow back into reservoir. This releases hydraulic pressure on the ram, which results in lowering the saddle.

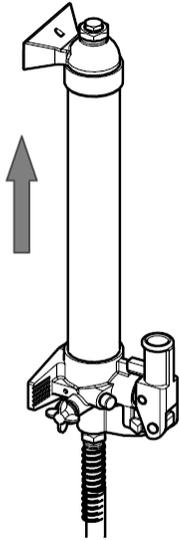
Storing the Jack

1. Lower to the lowest resting position.
2. Place the handle in the resting position.
3. Store in a dry location, recommended indoors.

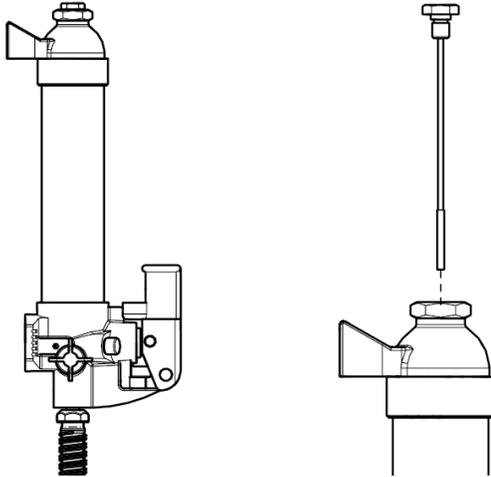
Note: If the equipment is stored outdoors, be sure to lubricate all parts before and after use to ensure the equipment stays in good working condition.

TO ADD OIL TO HYDRAULIC PUMP UNIT:

1. Set Pump Unit upright on a level surface.



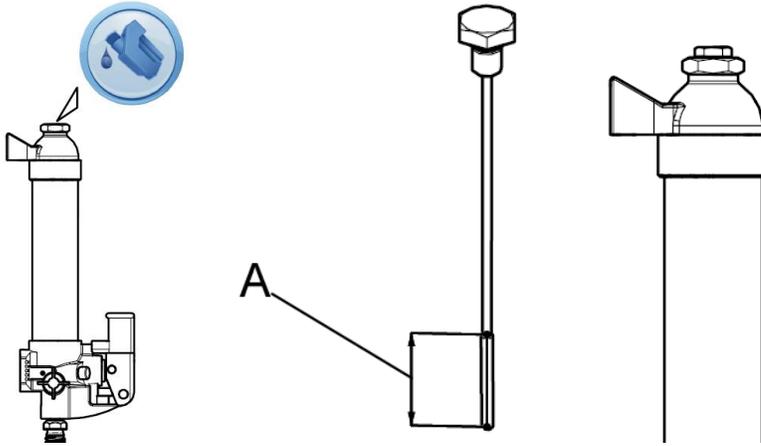
2. Remove the Screw with its attached dipstick.



3. Add (0.24 Qts / 220ML 4 ton Model) (0.67 Qts / 630ML 10 Ton Model) of oil. The oil level should be near position A. Use a high grade anti-foaming hydraulic oil.

KEEP DIRT AND OTHER MATERIALS CLEAR WHEN POURING.

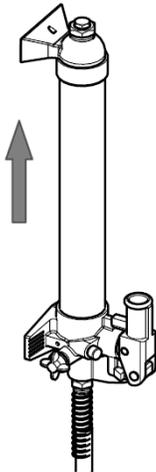
4. Replace the Oil Fill Screw.



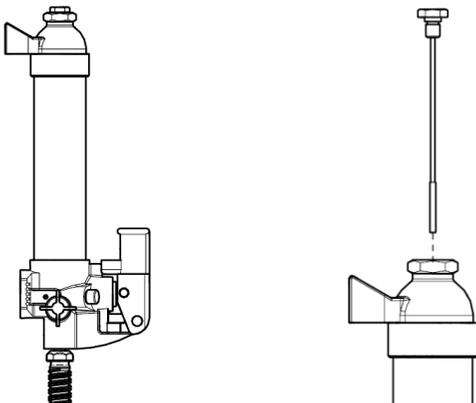
5. Perform the Air Purge Procedure.

TO REPLACE OIL TO HYDRAULIC PUMP UNIT :

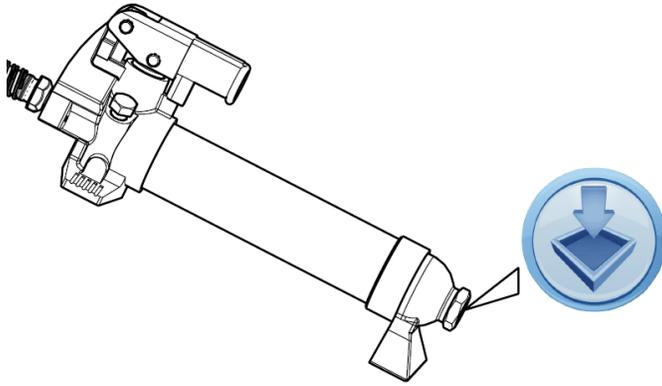
1. Set Pump Unit flat on a level surface.



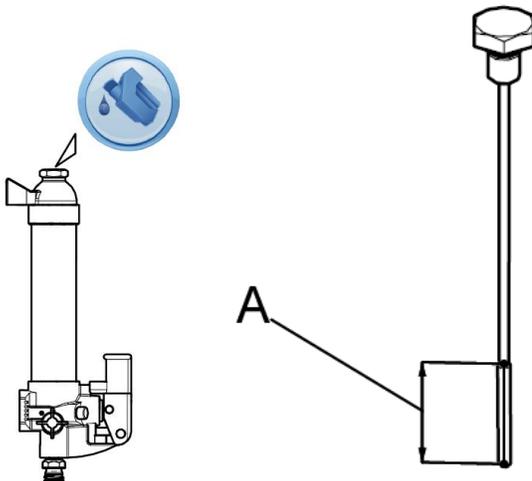
2. Remove the Screw with its attached dipstick.



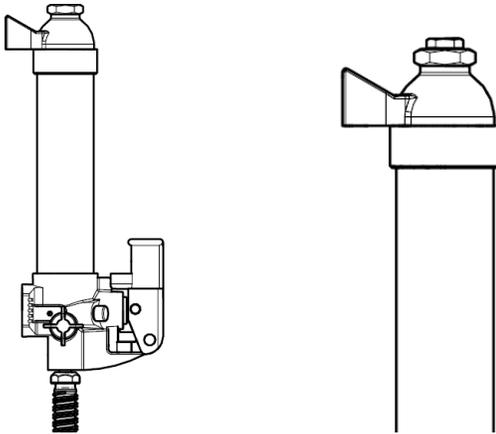
3. Turn the Pump Unit on its side so that old oil will drain from the oil fill hole.



4. Add (0.24 Qts / 220ML 4 ton Model) (0.67 Qts / 630ML 10 Ton Model) of oil. The oil level should be near position A. Use a high grade anti-foaming hydraulic oil.
KEEP DIRT AND OTHER MATERIALS CLEAR WHEN POURING.



5. Replace the Oil Fill Screw.



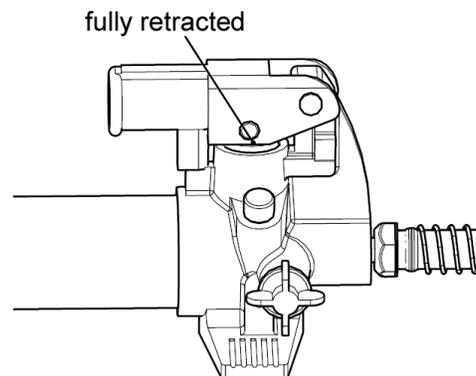
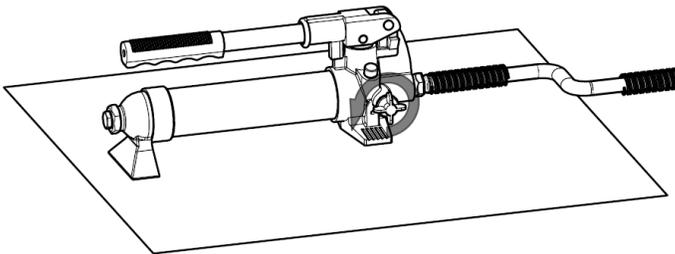
6. Perform the Air Purge Procedure.

ADDITIONAL WARNINGS:

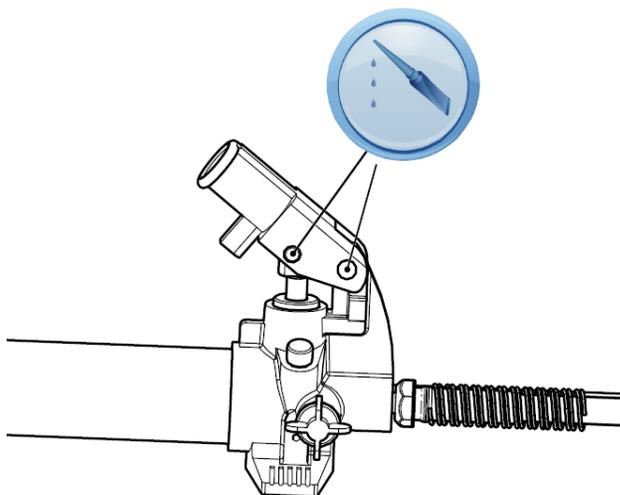
- DO NOT USE MOTOR OIL IN THE JACK.
- ONLY USE ANTI-FOAMING JACK OIL.
- ALWAYS USE A GOOD GRADE HYDRAULIC JACK OIL.
- DO NOT USE HYDRAULIC BRAKE FLUID, ALCOHOL, GLYCERINE, DETERGENT, MOTOR OIL OR DIRTY OIL.
- USE OF A NON-RECOMMENDED FLUID CAN CAUSE DAMAGE TO A JACK.
- AVOID MIXING DIFFERENT TYPES OF FLUID AND NEVER USE BRAKE FLUID, TURBINE OIL, TRANSMISSION FLUID, MOTOR OIL OR GLYCERIN. IMPROPER FLUID CAN CAUSE PREMATURE FAILURE OF THE JACK AND THE POTENTIAL FOR SUDDEN AND IMMEDIATE LOSS OF LOAD.
- DISPOSE OF HYDRAULIC FLUID IN ACCORDANCE WITH LOCAL REGULATIONS.

LUBRICATION

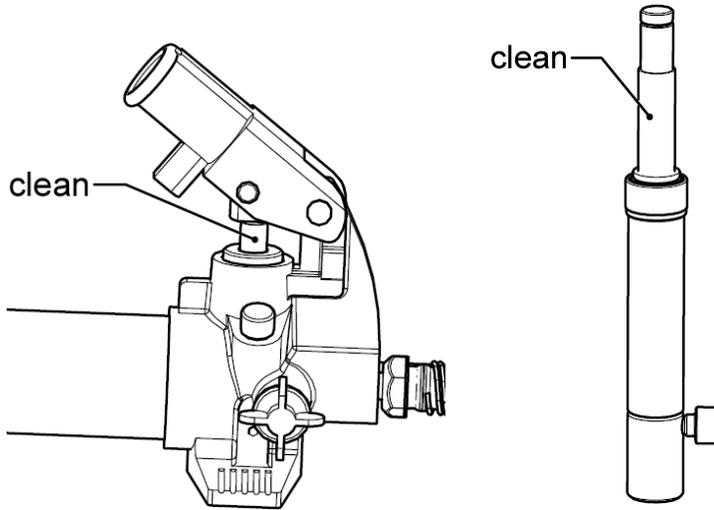
1. When not in use, the Pump Unit should be stored with the Release Valve open and the Pump Piston fully retracted.



2. A coating of light lubricating oil to pivot points. Axles and hinges will help to prevent rust.

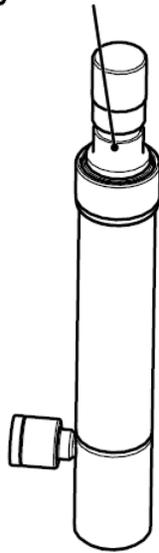


3. Periodically check the Pump Piston and Rams for signs of rust or corrosion. Clean as needed and wipe with a soft non-abrasive clean cloth.



4. When Cylinder Rams are not in use, store ram fully retracted. Clean as needed and wipe with a soft non-abrasive clean cloth.

fully retracted

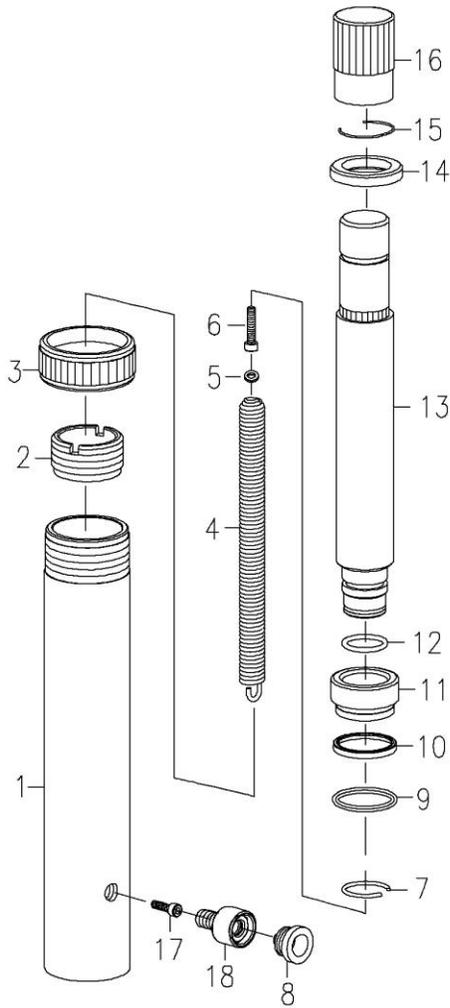


TROUBLESHOOTING

Ram won't lift load	Ram won't maintain hold	Ram won't lower after unloading	Ram won't extend to full stroke	Poor performance	CAUSES AND SOLUTIONS
x	x		x		Releases valve not tightly closed. Firmly close release valve.
x					Weight Capacity Exceeded.
x				x	Air is in the hydraulics. Purge air from system.
x			x	x	Low oil level. Add oil as required.
		x			Oil reservoir is overfilled: Drain excessive oil. Lubricate moving parts.
x	x	x	x	x	Hydraulic unit malfunction. Replace ram and / or pump.

HYDRAULIC CYLINDER RAM ASSEMBLY

HYDRAULIC CYLINDER RAM PARTS LIST



Index #	Description	Part No.	Qty.
1	Cylinder	QF10.1	1
2	Retainer Nut M48X1.5	QF10-14	1
3	Protecting Cap	QF10-15	1
4	Spring	T71003LT-5	1
5	Nut M6	GB41-86	1
6	Screw M6X30	GB70-85	1
7	Ring Snap	T71003LT-8	1
8	Dust Cup	QF4-34	1
9	Y-Ring	TF1008G-10	1
10	Seal Cap	TF1008G-11	1
11	Piston Cup	T71003LT-7	1
12	O-Ring 24.5X3.1	QF10-9	1
13	Ram	T71003LT-6	1
14	Spacing Ring	T71003LT-9	1
15	Ring Snap	QF10-12	1
16	Protecting Cap	QF10-11	1
17	Screw M6X20	GB70-85	1
18	Coupling Valve	QF4.6	1

Safe Operating Temperature is between 40°F – 105°F (4°C - 41°C)

REPLACEMENT PARTS

For replacement parts Customer Service at **1-800-222-5381**. Not all equipment components are available for replacement; illustrations provided are a convenient reference of location and position in the assembly sequence. When ordering parts the following will be required: Model Number, Serial Number and Description.

The distributor reserves the rights to make design changes and or improvements to product lines and manuals without notice.

For replacement parts and technical questions, please call 1-800-222-5381.

Limited Warranty

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Northern Tool and Equipment Company, Inc. ("We" or "Us") warrants to the original purchaser only ("You" or "Your") that the Strongway product purchased will be free from material defects in both materials and workmanship, normal wear and tear excepted, for a period of one year from date of purchase. The foregoing warranty is valid only if the installation and use of the product is strictly in accordance with product instructions. There are no other warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose. If the product does not comply with this limited warranty, Your sole and exclusive remedy is that We will, at our sole option and within a commercially reasonable time, either replace the product without charge to You or refund the purchase price (less shipping). This limited warranty is not transferable.

Limitations on the Warranty

This limited warranty does not cover: (a) normal wear and tear; (b) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (c) damage from misapplication, overloading, or improper installation; (d) improper maintenance and repair; and (e) product alteration in any manner by anyone other than Us, with the sole exception of alterations made pursuant to product instructions and in a workmanlike manner.

Obligations of Purchaser

You must retain Your product purchase receipt to verify date of purchase and that You are the original purchaser. To make a warranty claim, contact Us at 1-800-222-5381, identify the product by make and model number, and follow the claim instructions that will be provided. The product and the purchase receipt must be provided to Us in order to process Your warranty claim. Any returned product that is replaced or refunded by Us becomes our property. You will be responsible for return shipping costs or costs related to Your return visit to a retail store.

Remedy Limits

Product replacement or a refund of the purchase price is Your sole remedy under this limited warranty or any other warranty related to the product. We shall not be liable for: service or labor charges or damage to Your trailer incurred in removing or replacing the product; any damages, including, without limitation, damages to tangible personal property or personal injury, related to Your improper use, installation, or maintenance of the product; or any indirect, incidental or consequential damages of any kind for any reason.

Assumption of Risk

You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at Your own risk.

Governing Law

This limited warranty gives You specific legal rights, and You also may have other rights, which vary from state to state. Some states do not allow limitations or exclusions on implied warranties or incidental or consequential damages, so the above limitations may not apply to You. This limited warranty is governed by the laws of the State of Minnesota, without regard to rules pertaining to conflicts of law. The state courts located in Dakota County, Minnesota shall have exclusive jurisdiction for any disputes relating to this warranty.



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Burnsville, Minnesota 55306
NorthernTool.com
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