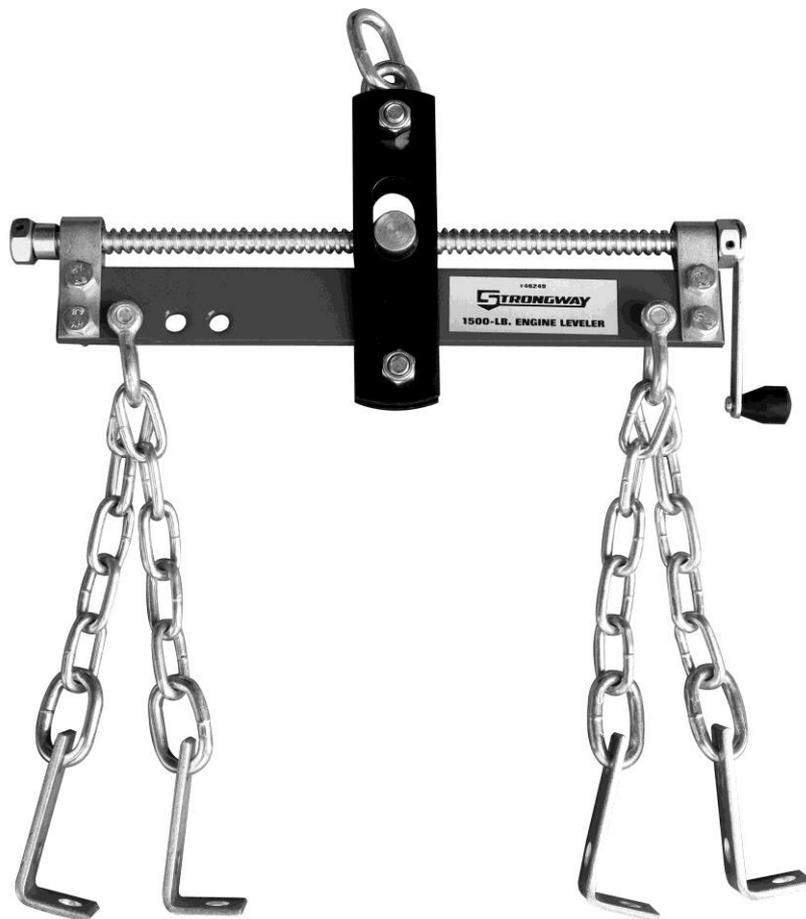




1500-LB. ENGINE LEVELER OWNER'S MANUAL



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# 46249

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

This universal engine leveler makes engine handling and positioning easier. Great for use with engine hoists or engine cranes. The swivel handle allows for easy adjusting. This equipment is specially designed to raise, lower and transport engines, differentials, transmissions, and other heavy loads with minimal effort. Tested for reliability and safety to meet ASME PALD standards.

TECHNICAL SPECIFICATIONS

	Description
Item	46249
Lifting Capacity (lbs.)	1,500

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 Hydraulic Engine Crane until they have read this manual and have developed a thorough understanding of how the Hydraulic Engine Crane 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 that cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY CONSIDERATIONS

GENERAL SAFETY RULES

- 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 manufacturer 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 for list of Authorized Service Centers).
- It is recommended that qualified personnel do an annual inspection.
- Labels and owner's manuals are available from manufacturer.
- 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 jack.



WARNING:

1. Study, understand, and follow all instructions before operating this device.
2. Do not exceed rated capacity.
3. Use only on hard, level surfaces.
4. Before moving, lower the load to the lowest possible point.
5. Use only slings or chains with a rated capacity greater than the weight of the load being lifted.
6. Do not allow load to swing or drop violently while lowering or moving.
7. No alterations shall be made to this product.
8. Make sure that boom is fully lowered before adding oil to unit reservoir.
9. Assure load is secured to the device.
10. To be used only with Shop Cranes and Engine Hoists.
11. Release load locking devices (if employed) slowly and carefully.
12. Do not use this crane for any use other than the manufacturer specified usage.
13. Failure to heed these markings may result in personal injury and/or property damage.

 **WARNING:**



OPERATING INSTRUCTIONS

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. Inspect before each use. Do not use if bent, broken or cracked components are noted.
⚠WARNING: DO NOT LOAD BEYOND RATED CAPACITY.

OPERATION

1. Block the vehicle's wheels for lifting stability. Set the Parking Brake in the vehicle.
2. Position the jack near desired lift point.
3. Attach the handle piece making sure to align with lowering valve, turn **CLOCKWISE** until tight.
4. Ensure application is compatible with product.
5. Read, understand and follow engine removal and installation instructions provided by vehicle manufacturer service or shop manual.
6. This leveler is only to be used with an appropriately rated engine crane.
7. Connect the mounting chain on the leveler to the engine crane boom hook.
8. Chains used in conjunction with this product shall have a rated capacity greater than the rated capacity of the product.
9. Secure the (4) Chain Mounting L-Bracket Assemblies to appropriate lifting points.
10. Refer to vehicle manufacturer service or shop manual for the location of appropriate lifting points.
11. Ensure load is centered.
12. Secure the load to prevent inadvertent shifting and movement.
13. Adjust the angle of leveler by turning the crank handle of the leveler. (Fulcrum may pivot when lifting; use caution when lifting.)
14. After removing engine, immediately transfer the engine to appropriate engine support device (engine stand).
15. Check to ensure stand is secure before working on or around.

The following operational instructions are recommended to prevent serious personal injury or damage. Never use this Engine Leveler with an engine hoist having a capacity of less than 1 ton!

OPERATOR SHOULD ALWAYS

1. Be familiar with Engine Leveler operating controls, procedures and warnings.
2. Make sure all connections to load are tight and secure.
3. Maintain firm footing when operating Engine Leveler.
4. Make sure that load is free to move and will clear all obstructions.
3. Take up slack carefully, check load balance, lift a few inches and check load holding action before continuing.
4. Avoid swinging of load.
5. Make sure that all persons stay clear of the suspended load.
6. Warn personnel of an approaching load.
7. Protect load chain from weld spatter or other damaging contaminants.
8. Promptly report to your supervisor or repair any malfunction, unusual performance, or damage of the Engine Leveler.
9. Inspect Engine Leveler regularly, replace damaged or worn parts, and keep appropriate records of maintenance.

OPERATOR SHOULD

1. **Never** lift more than rated load.
2. **Never** use damaged Engine Leveler or Engine Leveler that is not working correctly.
3. **Never** use the Engine Leveler with twisted, kinked, damaged or worn chain.
4. **Never** lift a load if any binding prevents equal loading on all supporting chains
5. **Never** allow the operators attention to be diverted from operating the Engine Leveler.
6. **Never** use Engine Leveler to lift, support or transport people.
7. **NEVER LIFT LOADS OVER PEOPLE!**
8. **Never** leave a suspended load unattended.
9. **Never** allow sharp contact between sling and obstructions.
10. **Never** allow the chain or link to be used as ground for welding.
11. **Never** allow the chain or link to be touched by a live welding electrode.
10. **Never** attempt to lengthen the load chain or repair damaged chain.
11. **Never** wire, clamp or otherwise disable the lift control to function by any means other than by using the operator's hand.



WARNING USE EXTREME CAUTION WHEN TURNING HANDLE. THE HANDLE MAY TURN RAPIDLY. FAILURE TO HEED THESE WARNINGS COULD CAUSE SERIOUS INJURY OR DEATH.

ADDITIONAL OPERATING INSTRUCTIONS:

To remove an auto or truck engine with transmission intact, first uncouple the transmission and remove motor mount bolts. With the Engine Leveler hooked to an overhead hoist above the engine, attach the L-shape connections at the end of the four (4) chains (choose one of two holes provided) to the engine head bolts - two at front, both sides, and two at rear, both sides. Using the engine hoist, take up slack in chain carefully. lift a few inches and check load balance. To reach the desired angle for load balance, adjust the position of the movable fulcrum in the beam by turning the handle or the 1" hex adjusting nut at end of the worm shaft with a ratchet wrench. Then carefully lift out the engine and transmission. By turning the handle one direction or the other, the suspended engine and transmission can then be tipped only enough to remove. Reverse the above steps to reinstall repaired engine transmission. For this and other types of loads, make sure all connections are tight and secure before operating the hoist.

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

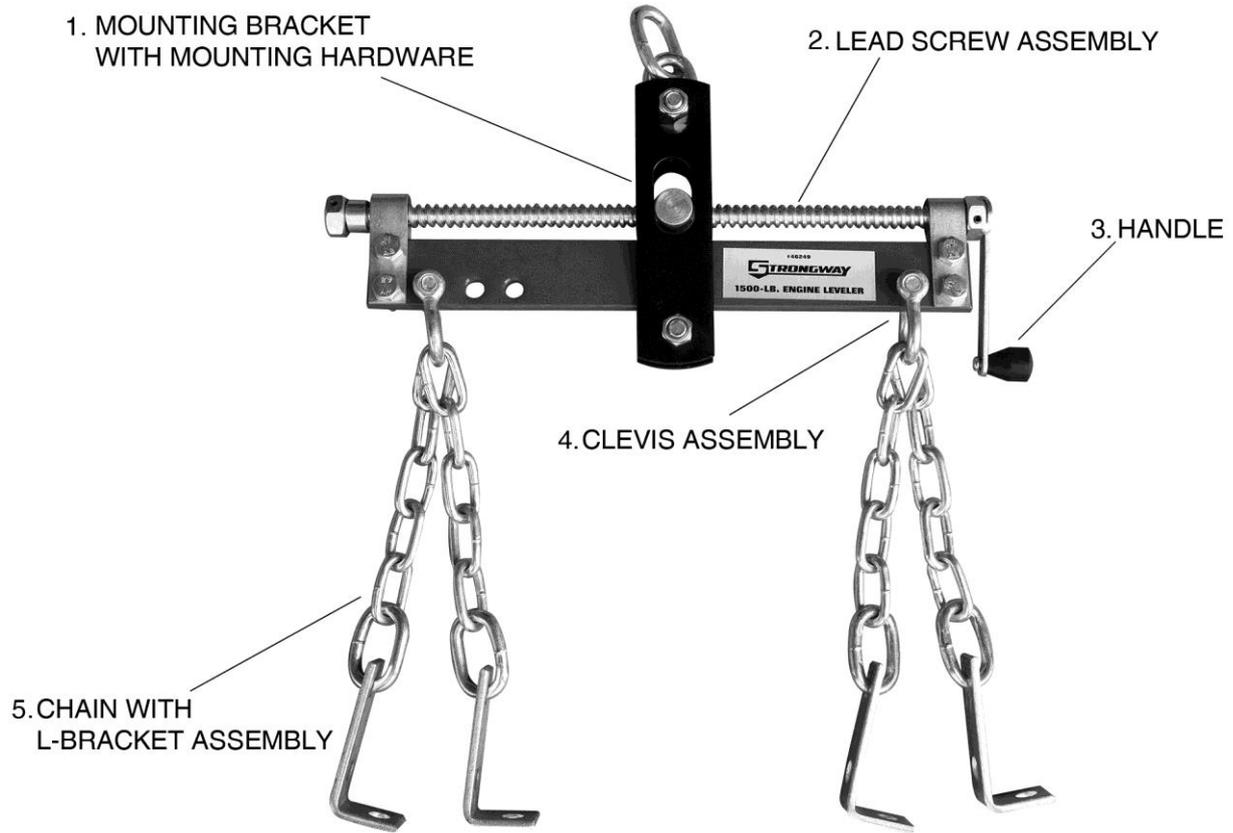
With release valve closed, an upward stroke of the jack handle draws oil from the reservoir tank into the plunger cavity. Hydraulic pressure holds the valve closed, which keeps the oil in the plunger cavity. A downward stroke of the jack handle releases oil into the cylinder, which forces the ram out. 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.

ASSEMBLY DIAGRAM



PARTS LIST

Part#	Description	Part No.	Qty.
1	Mounting Bracket with Mounting Hardware	TRF2750-001	1
2	Lead Screw Assembly	TRF2750-002	1
3	Handle	TRF2750-003	1
4	Clevis Assembly	TRF2750-004	1
5	Chain with L-Bracket Assembly	TRF2750-005	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

Limited Warranty

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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