



Operator's Manual

1½ TON ALUMINUM / STEEL RACING JACK

Model: 45396
3,000 lbs Capacity



Minimum Lift Height: 3.5 inch

Maximum Lift Height: 14.09 inch

Product Size: 21.81 X 9.72 X 5.85 inch

Weight: 34.2 lbs

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



This is the Safety Alert Symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Read this Manual and follow all the Safety Rules and Operating Instructions before using this product.

OWNER / USER RESPONSIBILITY

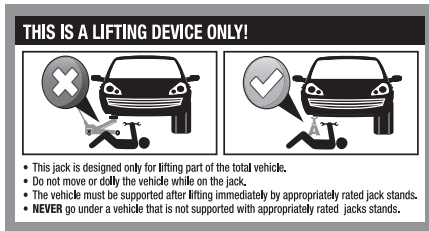
DO NOT OPERATE OR REPAIR THIS EQUIPMENT WITHOUR READING THIS MANUAL.

To maintain the Service Jack and User Safety, the responsibility of the owner is to read and follow these instructions. Follow all installation and operation instructions. Inspect the service jack for proper operation and function. Read and follow the safety instructions. Keep Instructions readily available for equipment operators. Make certain all equipment operators are properly trained, understand how to safely and correctly operate the unit, and are properly trained.

Allow unit operation only with all parts in place and operating safely. Use only genuine replacement parts. Service and maintain the unit only with authorized or approved replacement parts negligence will make the jack unsafe for use and void the warranty. Carefully inspect the unit on a regular basis and perform all maintenance as required. Store these instructions in the handle of your jack. Keep all decals on the unit clean and visible.

Warning Paragraph

Precautions and Safety should always be followed when Installing and Operating this lift. Store these instructions in the handle of your jack. Keep all decals on the unit clean and visible. Please be sure to make sure that ALL USERS read this manual before use and operation. Please read carefully the entire contents of this manual prior to installation and operation. By proceeding you agree that you fully understand and comprehend the full contents of this manual. Failure to operate this equipment as directed may cause injury or death. The manufacturer is not responsible for any damages or injury caused by improper use or neglect.



Always use Jack Stands!

DO NOT USE wood blocks or any other non-approved load sustaining devices. The manufacturer only permits loads to be sustained by jack stands that meet current ASME standards.

DO NOT USE wood blocks or any other non-approved lifting device in addition to a means of lifting with the jack and or load being raised. Failure to heed these warnings may cause injury or death

WARNING

Safety Markings

Safety markings shall conform to the ANSI Z535 series of standards.

- Study, understand, and follow all instructions before operating this device.
- Do not exceed rated capacity.
- Use only on hard level surface.
- Lifting device only. Immediately after lifting, support the vehicle with appropriate means.
- Do not move or dolly the vehicle while on the jack.
- Failure to heed these markings may result in personal injury and/or property damage.

Safety Messages

Additional safety messages include the following:

- Lift only on areas of the vehicle as specified by the vehicle manufacturer.
- No alterations shall be made to this product.

Additional Warnings

To avoid crushing and related injuries:

- Never work on, under or around a load supported only by hydraulic jack.
- Always use adequately rated jack stands.
- Chock each unlifted tire in both directions.
- Do not use this device to lift, level, lower, support nor move a house, mobile home, travel trailer, camper or any building structure.
- Be alert and sober when using this product. Do not operate under the influence of drugs or alcohol.





GENERAL SAFETY INSTRUCTIONS

Study, understand and follow all instructions in this manual before operating the jack. Failure to heed these warnings may result in loss of load, damage to the jack and/or jack failure resulting in personal injury or property damage.

* **Position the Jack**

Position the jack to only lift on the areas of the vehicle as specified by the vehicle manufacturer.

* **Always Use Support Stands**

After lifting the vehicle always support the load with appropriately rated vehicle supports stands before working on the vehicle.

* **Do Not Overload Jack**

Do not overload this jack beyond its rated capacity. Overloading this jack beyond its rated capacity can cause damage to or failure of the jack.

* **Always Use on Hard Level Surfaces**

This jack is designed only for use on hard level surfaces capable of sustaining the load. Use on unstable or other insufficient surfaces can result in jack instability and possible loss of load.

* **Center Load on Jack Saddle**

Center load on jack saddle before lifting vehicle. Off-center loads and loads lifted when the jack is not level can cause loss of load or damage to the jack.

* **Do not raise or lower the vehicle unless tools, materials and people are clear.**

Clean up grease and oil spills immediately. When the lift is being lowered, make sure everyone is standing at least six feet away. Be sure there are no tools or equipment, left under the jack before lowering.

* **Always lower the jack slowly.**

* **DO NOT USE THE JACK TO SUPPORT OR STABILIZE A LOAD.**

Using the jack to support or stabilize a load may result in unexpected movement and result in serious injury, being crushed and death. Always securely chock and block (stabilize) the load to be lifted. Never place any part of the body under a raised load without properly chocking and supporting the load.

* **Never use the jack on curved or tubular vehicle bumpers, this will result in the vehicle slipping off the jack and falling, causing serious injury or death. Use a Bumper Lift to lift most vehicles with curved bumpers or plastic bumpers.**

* **Wear ANSI-approved safety glasses and heavy duty work gloves during use.**

* **Do not adjust the safety valve.**

* **Do not move or dolly vehicle while jack is in use.**

* **Stay alert. Use caution and common sense when operating jack.** Do not use a jack when tired, incoherent, dizzy, under the use of drugs or alcohol.

Training

- Read this manual before use. Do not allow anyone who has not read this manual, and/or does not understand the requirements, use the jack.

Spectators

- Do not allow bystanders around the jack or under the load supported only by the jack.
- Do not allow anyone in the vehicle while the jack is in use. Keep all spectators away from vehicle when in use.

Inspection

- Inspect the jack carefully before each use. Ensure the jack is not damaged, excessively worn, or missing parts.
- Do not use the jack unless it is properly lubricated.
- Using a jack that is not in good clean working condition or properly lubricated may cause serious injury.

Chock and Block (Stabilize)

- Apply parking brake in vehicle before operating jack.
- A chock is a wedge for steadying an object and holding it motionless, or for preventing the movement of a wheel. Chock the wheel opposite the end being lifted.
- When you block a load, you secure and support a load that is being lifted. The block(s) or stabilizer(s) should have a weight capacity that is greater than the weight of the load which is being lifted.

Additional Notes:

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.

- **Do not modify** the jack 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 jack was designed.
- **Always check for damaged or worn** out parts before using the jack. Broken parts will affect the equipment operation. Replace or repair damaged or worn parts immediately.
- When jack 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.

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 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 air pressure or a stiff brush to clean. Use a non-flammable cleaning solvent or another good de-greaser 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 a light penetrating oil, silicon or teflon spray.

- Use a good Lubricant on all moving parts.
- For light duty use lubricate every once a month.
- For heavy and constant use lubrication recommended every week.

Rust Prevention:

- Check ram's and pump plunger's 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.

Grease Fittings

- Some Models contain grease fittings the will regularly need to be greases and lubricated.

How the Jack 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 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 the reservoir. This releases hydraulic pressure on the ram, which results in lowering the saddle.

Storing the Jack

1. Lower the Lifting Arm.
2. Place the handle in the upright position.
3. Store in a dry location, recommended indoors.

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

To Add Jack Oil:

1. Position the jack on level ground and lower the saddle.
2. Use a Phillips head screwdriver to remove the cover plate.
3. Remove the oil plug.
4. Fill the oil case until oil level is just beneath the lower rim of oil fill hole.
5. Replace oil plug.
6. Perform the Air Purge Procedure.

To Replace Jack Oil:

1. Fully open release valve by turning handle counter-clockwise.
2. Turn the jack over so that old oil will drain from the oil fill hole.
3. Refill through oil fill hole. Keep dirt and other material clear when pouring.
4. Fill just beneath lower rim of hole. Replace oil plug.
5. Perform Air Purge Procedure described below.

WARNING:

Do not use motor oil in the jack.

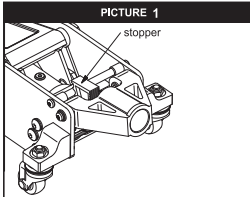
Only use Anti-Foaming Jack Oil.

We recommend "Black Jack", 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 AN UN-RECOMMENDED FLUID CAN CAUSE DAMAGE TO A JACK.

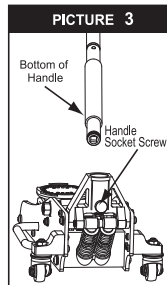
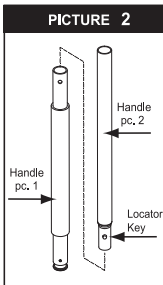
ASSEMBLY

1. Prior to assembly carefully remove the retaining clip attached to the handle socket. **CAUTION:** The socket will tend to spring upward when the clip is removed. To prevent possible injury, place one hand on the top of socket to control the upward motion when removing the retaining clip, while simultaneously removing the retaining clip. (picture 1).

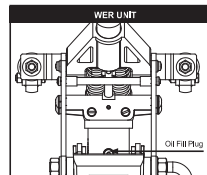
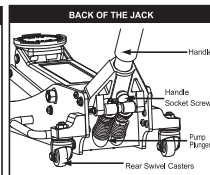
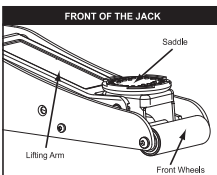


Clockwise

2. Refer to picture 2. When performing this step. Take off the screw located on handle piece 1; Attach handle pieces 1 and 2 making sure to align the holes on both sections. Reinsert the screw and tighten.



3. Fully unfasten the screw located in the Handle Socket to insert the assembled handle (picture 3).
4. Line up the square hole located at the bottom of the handle over the square bolt inside the Handle Socket.
5. Secure the handle in place by tightening the screw in the Handle Socket. Without any vehicle on the jack. Cycle the lift up and down several times to insure the hydraulic system is operating properly. (Refer to the Air Purge Procedure)



PREPARATION

Before Use

1. Verify that the product and application are compatible, in doubt call Customer Service.
2. Before use, read the operator's manual completely and familiarize yourself thoroughly with the product, all components and recognize the potential hazards associated with its use.
3. Insert handle to handle fork. Tighten the bolt on handle fork to prevent accidental removal of handle while in use.



Do not lift or carry jack by handle. Handle could dislodge and jack may fall, resulting in possible injury or property damage

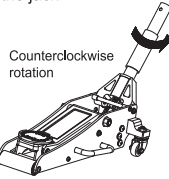
4. To familiarize yourself with the basic operation of the jack, locate and turn the release valve (handle):
 - a. Turn until firm resistance is felt until no further turning. This is the 'CLOSED' release valve position used to raise the load.
 - b. Counter-clockwise, but no more than 1/2 full turn from the closed position. This is the 'OPEN' release valve position used to lower the load.
5. With saddle fully lowered, locate and remove air vent screw. Pump the operating handle through 6 to 8 full strokes. Check the oil level. Ensure the oil level is within ~3/16" from the inner cylinder as viewed from the air vent screw hole.
6. Reinstall the air vent screw.
7. Check to ensure that the jack rolls freely. Raise and lower the unloaded saddle throughout the lift range before putting into service to ensure the pump and release valve operate smoothly.
8. Replace worn or damaged parts and assemblies with manufacturer replacement parts only. Lubricate as instructed in lubrication section.

SYSTEM AIR PURGE PROCEDURE

IMPORTANT: BEFORE FIRST USE, 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 handling. This step is to be completed without and weight on the jack.

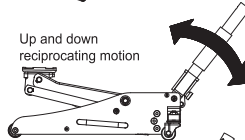
STEP 1:

Turn release valve counterclockwise on full turn to the open position.



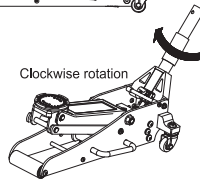
STEP 2:

Pump handle eight full strokes.



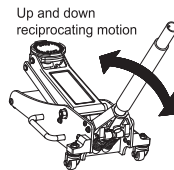
STEP 3:

Turn release valve clockwise to the closed position.



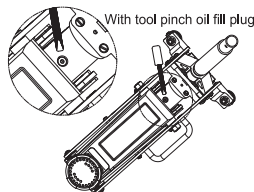
STEP 4:

Pump handle until the ram reaches maximum height and continue to pump several times to remove trapped air in the ram.



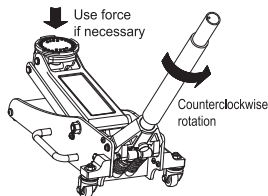
STEP 5:

Carefully and slowly pinch oil fill plug to release trapped air.



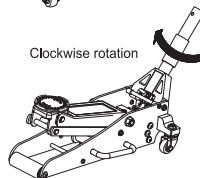
STEP 6:

Turn release valve counterclockwise to the open position one full turn and lower ram to the lowest position. Use force if necessary.



STEP 7:

Turn release valve clockwise to the closed position and check for proper pump action. It may be necessary to perform the above step more than once to assume air is evacuated totally.



DESCRIPTION

Model 45396 features a 3,000 lbs. maximum capacity. The jack features an overlaid valve bypass system to prevent jack damage and user injury.

Specifications:

Compact Design allows use in confined spaces
 Maximum Load Capacity...1.5 tons (3,000 lbs.)
 Minimum Lifting Height.....3.38 inch
 Maximum Lifting Height.....14.75 inch
 Weight.....34.2 lbs.

WARNING: This Product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

OPERATION

Raising the Jack

1. Block the vehicle's wheels for lifting stability.
2. Set the Parking Brake in the vehicle.
3. Close the release valve by turning the handle clockwise as far as it will go.
4. Refer to the vehicle manufacturer owner's manual to locate approved lifting points on the vehicle. Position the jack so that the saddle is centered and will contact the load lifting point firmly.
5. Before raising the vehicle double check and verify the saddle is centered and also has full contact with the lifting point.
6. Continue to pump the jack handle to lift the vehicle to the desired height. After lifting, support the load with appropriately rated vehicle support stands before working on the vehicle.

Lowering the Jack

1. Raise the load.
2. Remove support stands.
3. Grasp the handle firmly with both hands. Securely hold on to the jack handle so your hands do not slip and ensure the release valve does not rapidly lower.
4. Carefully open the Release Valve by slowly turning the handle counterclockwise. (Do not allow bystanders around the jack or under the load when lowering the jack.)

WARNING The jack handle may turn rapidly. Use extreme caution when lowering the jack; this can cause the release valve to lower rapidly. Failure to heed these warnings could cause serious injury or death.

TROUBLESHOOTING

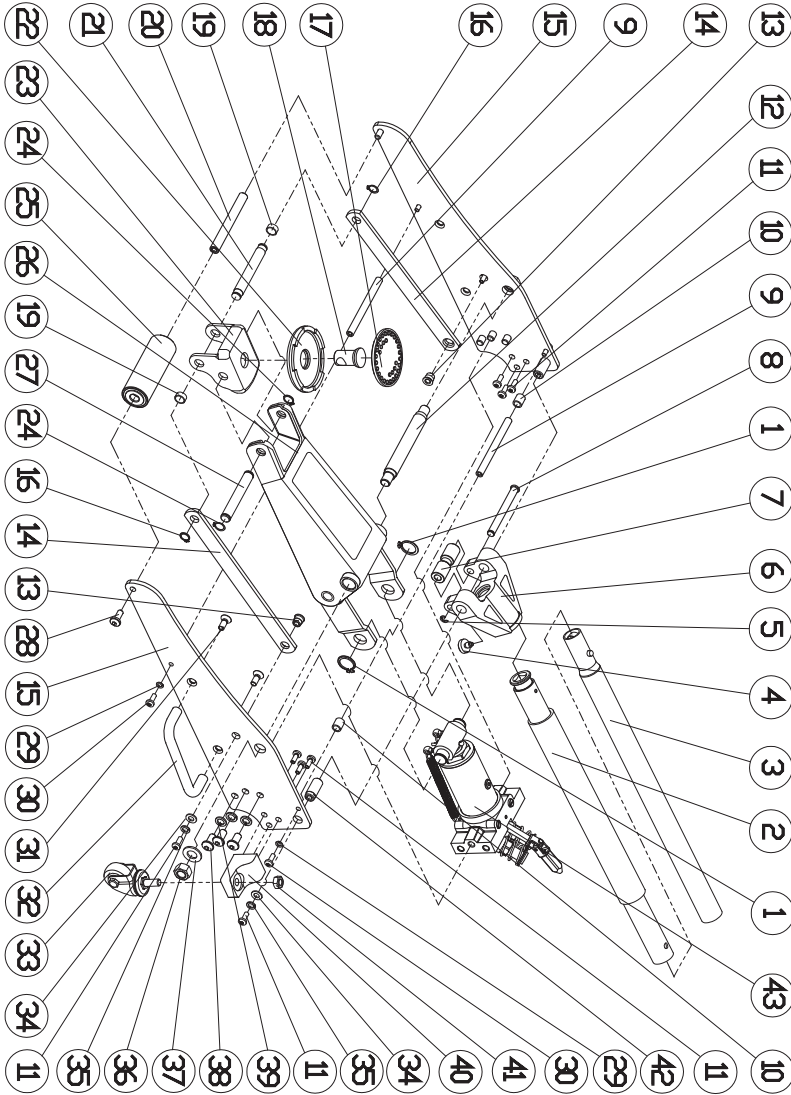
JACK WILL NOT LIFT LOAD	JACK WILL NOT HOLD LOAD	JACK WILL NOT LOWER	POOR JACK LIFTING	CAUSES AND SOLUTIONS
X				Release valve is not completely closed. Turn handle clockwise.
X			X	Air is in the hydraulics. Purge air from system.
X	X		X	Low oil level. Add oil as required.
		X		Oil reservoir is overfilled: Drain excessive oil. Lubricate moving parts.
X	X		X	Power unit malfunctioning. Replace the power unit.

PARTS LIST

No.	Part No.	Description	QTY	No.	Part No.	Description	QTY
1	GB894.1	Snap spring 19	2	31	GB70.3	Screw M8X20	2
2	T815016L.1	Front handle	1	32	T815016L.4-2	Handle	1
3	T815016L.1	Following handle	1	33	T815012L.8	Rear wheel assembly	2
4	T815012L-1	Handle screw	1	34	GB97.1	Flat washer 8	4
5	GB896	8 Snap spring 8	1	35	GB859	Spring washer 8	4
6	T815016L.2-3	Handle socket	1	36	GB6182	Nut M14	2
7	T815016L.2-2	roller	1	37	GB97.1	Flat washer 14	2
8	T815016L.2-1	Pin shaft	1	38	GB70.2	Screw M10X20	6
9	T815016L-2	Join shaft	2	39	GB859	Spring washer 10	6
10	T815012L-4	Rubber housing	2	40	T815016L.4-3	Rear wheel frame	2
11	GB70.2	Screw M8X16	10	41	GB889	Nut M10	2
12	T815016L-3	Supporting axle	1	42	T815016L-1	Pin shaft	2
13	T815016L-4	Join pin	2	43	T815016L.3	Power unit assembly	1
14	T815016L-7	Connecting rod	2				
15	T815016L.4-1	Slide plate	2				
16	GB894.1	Snap spring	2				
17	T815016L-5	rubber	1				
18	T815016L-12	Saddle shaft	1				
19	T815012L-15	Pin shaft cover	2				
20	T815016L-6	Front wheel shaft	1				
21	T815016L-8	Pin shaft	1				
22	T815016L-11	Saddle	1				
23	T815016L-10	Saddle support	1				
24	GB894.1	Snap spring 14	2				
25	T815016L.6	Front wheel assembly	1				
26	T815016L.7	Lift arm assembly	1				
27	T815016L-9	Pin shaft	1				
28	GB70.2	Screw M8X20	2				
29	GB859	Spring washer 6	4				
30	GB70.2	Screw M6X16	4				

ASSEMBLY DIAGRAMS

MODEL - 45936

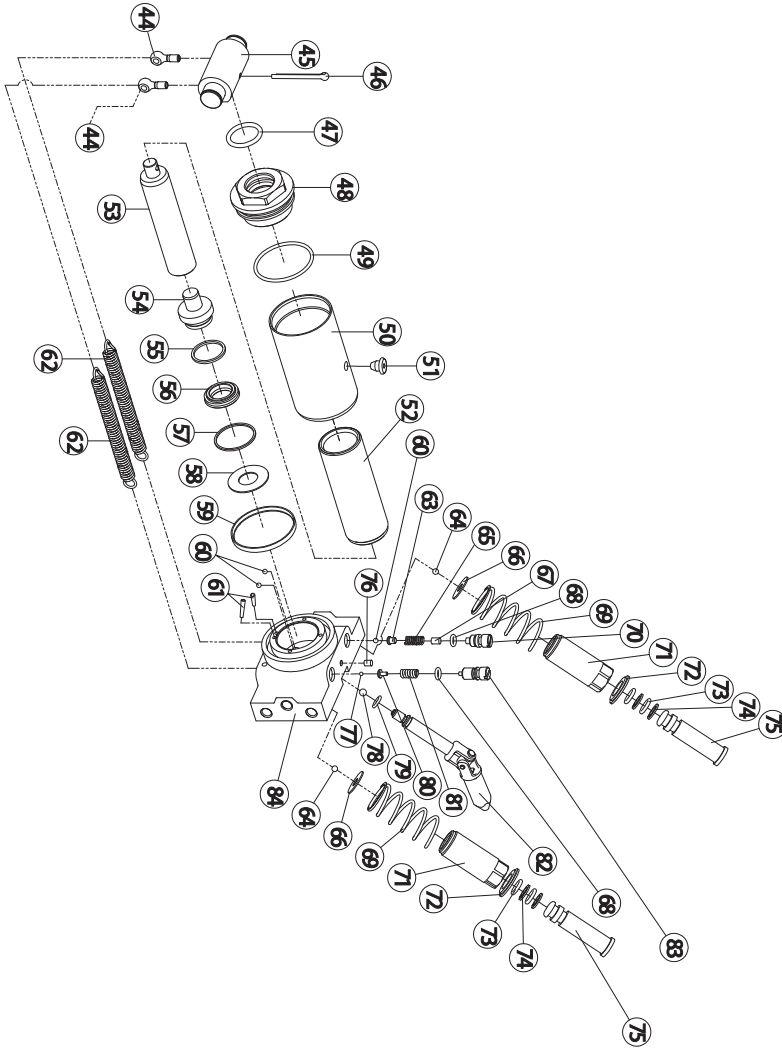


PARTS LIST

No.	Part No.	Description	QTY	No.	Part No.	Description	QTY
44	GB798	Screw M6X20	2	65	T815009L.1-19	The overflow valve spring	1
45	T815016L.3-9	Join block	1	66	T815016L.3-8	Copper washer	2
46	GB91	Cotter 4X45	1	67	T815009L.1-18	Rubber muffler	1
47	GB3452.1	O-ring 25X3.55	1	68	QLQ2.1-14	O-ring	2
48	T815016L.3-10	Top cap	1	69	T815016L.3-3	Spring	2
49	GB3452.1	O-ring 45X2.65	1	70	T815009L.1-11	Plug screw	1
50	T815016L.3-11	Reservoir	1	71	T815016L.3-4	Pump cylinder	2
51	TF1201C-29	Oil plug	1	72	T815016L.3-1	Spring base	2
52	T815016L.3-12	Cylinder	1	73	GB3452.1	O-ring 10X2.65	4
53	T815016L.3-14	Rod	1	74	T820010L.4-8	Rectangular ring	4
54	T815016L.3-15	Piston head	1	75	T815016L.3-2	Plunger	2
55	T815015L.3-7	Back-up ring	1	76	QYL8-11	Taper screw	1
56	T815005L.3-12	Y-ring	1	77	GB308	Ball Φ 3	1
57	T815016L.3-16	Rectangular ring	1	78	GB308	Ball Φ 6	1
58	T815016L.3-6	Copper washer	1	79	QLQ2.1-17	O-ring	1
59	T90304E-15	T-washer	1	80	QLQD2A.2-16	Spring base	1
60	GB308	Ball Φ 4	3	81	QLQ2.1-15	The safety valve spring	1
61	T815016L.3-13	Oil-filter pipe	2	82	T815016L.3.1	Universal joint shaft	1
62	T815016L.3-7	Pullback spring	2	83	QLQ2.1-13	The pressure adjusting screw	1
63	TA1001-10	Spring base	1	84	T815016L.3-5	Base plate	1
64	GB308	Ball Φ 5	2				

ASSEMBLY DIAGRAMS

MODEL - 45936 HYDRAULIC PUMP UNIT



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

REPLACEMENT PARTS

For replacement parts Customer Service at 1-888-448-6746, 8 a.m. - 5 p.m., PST, Monday - Friday. 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 manufacturer reserves the rights to make design changes and or improvements to product lines and manuals without notice.

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.

The logo for IRON TON is displayed in a large, bold, black-outlined font. The letters are white with a thick black border, giving it a three-dimensional, industrial appearance. The word "IRON" is on the left and "TON" is on the right, separated by a small gap.

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