



12-16TON PIPE BENDERS

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 #'s 49652, 49653, 49654



12-16TON PIPE BENDERS OWNER'S MANUAL

Thank you very much for choosing a Klutch product. For future reference, please complete the owner's record below:
Serial Number/Lot Date Code: _____ 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.

These 12 to 16 ton pipe benders are designed for certain applications only. Northern Tool and Equipment cannot be responsible for issues arising from modification or use of these products in an application for which they were not designed. We strongly recommend that these products not be modified and/or used for any application other than that for which they were designed.

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

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Intended Use

These pipe benders are designed for bending thick-walled pipes (schedule 40 and 80, including black or galvanized) but NOT designed for bending thin walled pipe (for example, conduit) or exhaust pipe. The benders include various size bending dies as given in the specifications below.

Technical Specifications

49652 - 12 Ton Hydraulic Pipe Bender

Property	Specification
Max. Capacity	12 Tons
Max. Bending Capacity	2" diameter Round
Max. Travel	9-1/2"
Hyd. Oil Reservoir Capacity	14 oz. (400 ml)
Hydraulic Oil	H32
Cast Iron Bends	1/2" 2" Pipes
Bending Applications	Black Pipe, Galvanized Pipe
Max. Pipe Wall Thickness	0.179"
Bending Die Diameters	1/2 in., 3/4 in., 1 in., 1-1/4 in., 1-1/2 in. and 2 in.
Dimensions, in.	24 x 6-1/4 x 20-1/2
Shipping Weight	95 lbs.

Bends up to 90 degrees

Size	Schedule 40	Schedule 80
1/2"	Yes	Yes
3/4"	Yes	Yes
1"	Yes	Yes
1-1/4"	Yes	No
1-1/2"	Yes	No
2"	Yes	No

49653 – 16 Ton Hydraulic Pipe Bender

Property	Specification
Max. Capacity	16 Tons
Max. Bending Capacity	3" Diameter Round
Max. Travel	9-1/2"
Hyd. Oil Reservoir Capacity	15 oz. (450 ml)
Hydraulic Oil	H32
Cast Iron Bends	1/2" 3" Pipes
Bending Applications	Black Pipe, Galvanized Pipe
Max. Pipe Wall Thickness	0.196"
Bending Die Diameters	1/2 in., 3/4 in., 1 in., 1-1/4 in., 1-1/2 in., 2 in., 2-1/2 in. and 3 in.
Dimensions, in.	24-3/4 x 8-3/4 x 22-1/2
Shipping Weight	163.0 lbs.

49654 - 16 Ton Air/Hydraulic Pipe Bender

Property	Specification
Max. Capacity	16 Tons
Max. Bending Capacity	3" diameter Round
Max. Travel	9 1/2"
Hyd. Oil Reservoir Capacity	22 oz. (650 ml)
Hydraulic Oil	H32
Cast Iron Bends	1/2" 3" Pipes
Bending Applications	Black Pipe, Galvanized Pipe
Max. Pipe Wall Thickness	0.196"
Operating Air Pressure	90 PSI
Bending Die Diameters	1/2 in., 3/4 in., 1 in., 1-1/4 in., 1-1/2 in., 2 in., 2-1/2 in. and 3 in.
Dimensions, in.	24-3/4 x 8-3/4 x 22-1/2
Shipping Weight	163.0 lbs.

Important Safety Information**⚠ WARNING:**

- Read and understand all instructions. Failure to follow all instructions may result in serious injury or property damage.
- The warnings, cautions, and instructions in this manual cannot cover all possible conditions or situations that could occur. Exercise common sense and caution when using this tool. Always be aware of the environment and ensure that the tool is used in a safe and responsible manner.
- Do not allow persons to operate or assemble the product until they have read this manual and have developed a thorough understanding of how it works.
- Do not modify this product in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the product. There are specific applications for which the product was designed.
- Use the right tool for the job. DO NOT attempt to force small equipment to do the work of larger industrial equipment. There are certain applications for which this equipment was designed. It will do the job better and more safely at the capacity for which it was intended. DO NOT use this equipment for a purpose for which it was not intended.
- Industrial or commercial applications must follow OSHA requirements.

⚠ WARNING:

- This product may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

⚠ WARNING:**WORK AREA SAFETY**

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well lit. Cluttered, wet, or dark work areas can result in injury. Using the tool in confined work areas may put you dangerously close to other cutting tools and rotating parts.
- Do not allow the product to come into contact with an electrical source. The tool is not insulated and contact will cause electrical shock.
- Keep children and bystanders away from the work area while operating the tool. Do not allow children to handle the tool.
- Be aware of all power lines, electrical circuits, water pipes, and other mechanical hazards in your work area. Some of these hazards may be hidden from your view and may cause personal injury and/or property damage if contacted.

PERSONAL SAFETY

- Stay alert, watch what you are doing, and use common sense when operating the tool. Do not use the tool while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.
- Dress properly. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Wear the proper personal protective equipment when necessary. Use ANSI Z87.1 compliant safety goggles (not safety glasses) with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.
- Do not overreach. Keep proper footing and balance at all times.
- Do not use the tool when tired or under the influence of drugs, alcohol or medication.
- Secure the work with clamps or a vise instead of your hand when practical. This safety precaution allows for proper tool operation using both hands.

Assembly

No Assembly required

Before Each Use

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well lit. Cluttered, wet, or dark work areas can result in injury. Using the tool in confined work areas may put you dangerously close to other cutting tools and rotating parts.
- Check for damaged parts before each use. Carefully check that the tool will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the tool with a damaged part.

Operating Instructions

49652 & 49653 – Hydraulic Pipe Benders

- The pipe bender must be placed on a smooth, level surface that is capable of supporting the weight of the pipe bender, pipe and all accessories.
- Do not exceed the maximum limit of the pipe bender posted on the frame and on the jack.
- Two person operation. For safety, when moving the Pipe Bender or bending large pieces of pipe, always involve two people. When bending large pipe, one person is needed to balance the pipe in the bending dies, while a second person operates the bottle jack's handle.

Bending a Pipe

1. Place the pipe bender on a solid, level floor or workbench.

NOTE: If a workbench is selected, use shop clamps to secure the bender in place and keep it from rocking.

2. Choose the proper size bending die and slip it on the end of the ram as shown in Figure 1.

3. Choose an angle to bend the pipe.

- 35-45 degree bend: place the rollers (#5) between the far outside holes on the frame (Figure 2).
- 90 degree bend: place the rollers (#5) further inside the frame to increase the bending angle.

4. To move the rollers, remove the hitch pins (#6) and roller shafts (#4) (Figure 2), and place the rollers between corresponding holes on each side of the frame.

5. Reinstall the roller shafts and hitch pins.

6. Place the pipe over the bending die.

NOTE: To account for pipe shortening during the bend, make sure the pipe extends beyond the rollers and, for short pipe, set the rollers closer together.

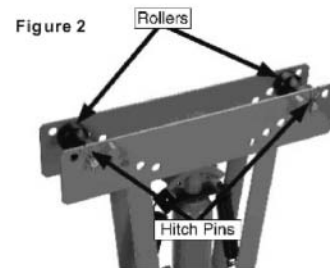
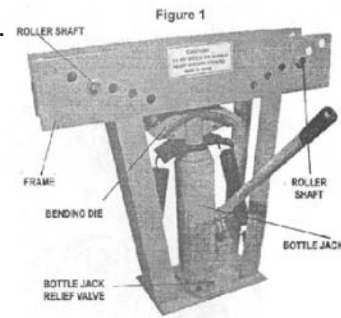
7. Insert the jack handle into the socket on the tube bender.

8. Make sure the release valve is closed, then use the jack handle to advance the die and bend the pipe.

9. When finished with the bend, release the pressure by opening the release valve on the jack. Close the valve after the ram has fully lowered.

OPERATION TIPS AND TECHNIQUES:

- The pipe bender is designed to bend water pipe and heavy-gauge galvanized pipe that is used in commercial applications. The bottle jack (#2) is a heavy-duty tool that should last through several years of use. The only parts that eventually wear out, during normal use, are the seals. If hydraulic fluid is found to be seeping from the ram of the bottle jack, you can fix the problem by installing a seal kit (not included).
- If the ram reaches the end of its stroke but still has not completed a desired bend, release pressure just enough to remove the pipe. Set the rollers either one or two holes farther in toward center to finish the bend.



- It is recommended that you make templates of accurate 45 and 90 angles. Compare these templates to an almost-finished pipe so you do not over- or under-bend. Using templates will speed up your work.
- If you pass the 45 angle mistakenly, you can sometimes reverse the pipe and slightly press it enough to reach the required 45.
- Bending any angle may thin and stress the walls of the pipe and narrow its center. If you need to make bends more than 100 degrees, it is recommended that you heat the pipe during bending. Generally, heat weakens the metal, but it also allows it to bend more freely.
- Pipes bent past 90 will flow into the bending die, making the pipe hard to remove after bending. Greasing the inside of the die will make this removal easier, or switching to a larger die for bending the last few degrees will eliminate this difficulty.
- For bends up to 90 degrees for 2 1/2" or 3" tubes, tightly fill the tube with sand and plug both ends.

49654 – Air/Hydraulic Pipe Bender

- The pipe bender must be placed on a smooth, level surface that is capable of supporting the weight of the pipe bender, pipe and all accessories.
- Do not exceed the maximum limit of the pipe bender posted on the frame and on the jack.
- Two person operation. For safety, when moving the Pipe Bender or bending large pieces of pipe, always involve two people. When bending large pipe, one person is needed to balance the pipe in the bending dies, while a second person operates the bottle jack's handle.
- Bender 49654 (air/hydraulic) should be used with compressed air only. Only use clean, dry and regulated compressed air. Never use Oxygen, carbon dioxide or any other bottled gas as a power source for this tool.

Bending a Pipe

1. Place the pipe bender on a solid, level floor or workbench.

NOTE: If a workbench is selected, use shop clamps to secure the bender in place and keep it from rocking.

2. Choose the proper size bending die and slip it on the end of the ram as shown in Figure 1.

3. Turn the bottom relief valve on the jack clockwise until it is tight to close it.

4. For hydraulic operation, insert the jack handle into the socket on the tube bender.

For air operation, connect the hose to the air compressor (see 49654, Using Air Pressure, below).

5. Choose an angle to bend your pipe.

35-45 degree bend: place the rollers (#5) between the far outside holes on the frame.

90 degree bend: place the rollers (#5) further inside the frame to increase the bending angle.

6. To move the rollers, remove the hitch pins (#6) and roller shafts (#5) (Figure 2), and place the rollers between corresponding holes on each side of the frame.

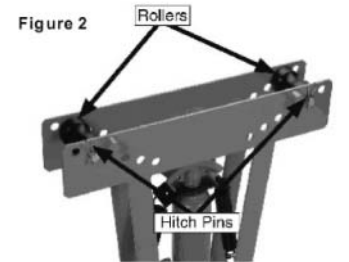
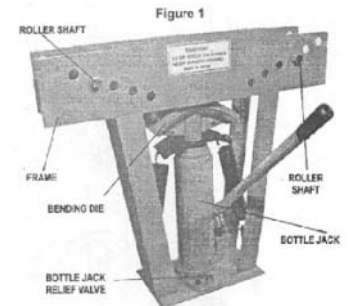
7. Reinstall the roller shafts and hitch pins.

8. Place the pipe over the bending die.

NOTE: To account for pipe shortening during the bend, make sure the pipe extends beyond the rollers and, for short pipe, set the rollers closer together.

10. Make sure the jack release valve is closed, then use the jack handle or air to advance the die and bend the pipe.

11. When finished with the bend, release the pressure by opening the release valve on the jack. Close the valve after the ram has fully lowered.



OPERATION TIPS AND TECHNIQUES:

- The pipe bender is designed to bend water pipe and heavy-gauge galvanized pipe that is used in commercial applications. The bottle jack (#2) is a heavy-duty tool that should last through several years of use. The only parts that eventually wear out, during normal use, are the seals. If hydraulic fluid is found to be seeping from the ram of the bottle jack, you can fix the problem by installing a seal kit (not included).
- If the ram reaches the end of its stroke but still has not completed a desired bend, release pressure just enough to remove the pipe. Set the rollers either one or two holes farther in toward center to finish the bend.
- It is recommended that you make templates of accurate 45 and 90 angles. Compare these templates to an almost-finished pipe so you do not over- or under-bend. Using templates will speed up your work.
- If you pass the 45 angle mistakenly, you can sometimes reverse the pipe and slightly press it enough to reach the required 45.
- Bending any angle may thin and stress the walls of the pipe and narrow its center. If you need to make bends more than 100 degrees, it is recommended that you heat the pipe during bending. Generally, heat weakens the metal, but it also allows it to bend more freely.
- Pipes bent past 90 will flow into the bending die, making the pipe hard to remove after bending. Greasing the inside of the die will make this removal easier, or switching to a larger die for bending the last few degrees will eliminate this difficulty.
- For bends up to 90 degrees for 2 1/2" or 3" tubes, tightly fill the tube with sand and plug both ends.

49654, Using Air Pressure

Follow the steps below when using air pressure with the 49654 pipe bender.

Pressurizing the System

1. Connect the air tube of the jack to a compressor.
2. Turn the pressure relief valve on the jack (figure 1) clockwise to close it.



3. Start the compressor to pressurize the jack.



Depressurizing the System

Follow the steps below to release the gas inside the oil cylinder:

1. Turn off the compressor and depressurize the air hose, then disconnect the hose from the pipe benderjack.
2. Rotate the pressure relief valve on the jack (Figure 1) counterclockwise to open it. When the ram has fully lowered, close the valve.



3. Pump the jack handle up and down by 10-20 times.



4. Open the pressure relief valve to release pressure, then close it again.



After Each Use

After use, release pressure by opening the release valve on the jack. Close the release valve after pressure is fully released and the ram is fully lowered.

Store idle equipment properly. When not in use, the jack should be stored in "closed" position after pressure is released and pipe bender stored in a dry location to reduce rust. Inspect the bender for good working condition prior to storage and again before re-use. For safety, store the pipe bender in a locked cabinet, out of reach of children.

Maintenance

Maintain your pipe bender. It is recommended that the general condition of any tool be examined before it is used. Keep your tool in good repair by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual.

- Keep handles dry, clean, and free from oil and grease.
- Use only identical parts with the pipe bender. Parts that may be suitable for one tool may create a risk of injury when used with another tool.

The pipe bender is basically maintenance free, however the oil level should be kept constant.

- Too much oil will force the surplus oil to leak from the bottle jack fill plug (Figure 3).
- Not enough oil will cause loss of power.

The oil capacity of the pipe benders is:

- 49652: about 15 ounces (450 ml)
- 49653: about 15 ounces (450ml)
- 49654: about 22 ounces (650 ml)

Adding Oil

1. Set the tube bender upright
2. Open the release valve on the bottom, front of the jack to retract the piston rod fully, then close the valve.
3. Remove the fill plug (Figure 3).
4. Fill the jack with oil to the level of the fill plug hole and replace the plug.
5. Fully extend the piston rod, and then retract it to expel air from the jack.
6. Remove the fill plug and repeat steps 3 -5 until all of the air is expelled.

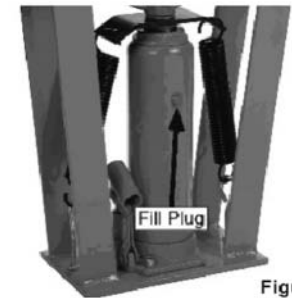
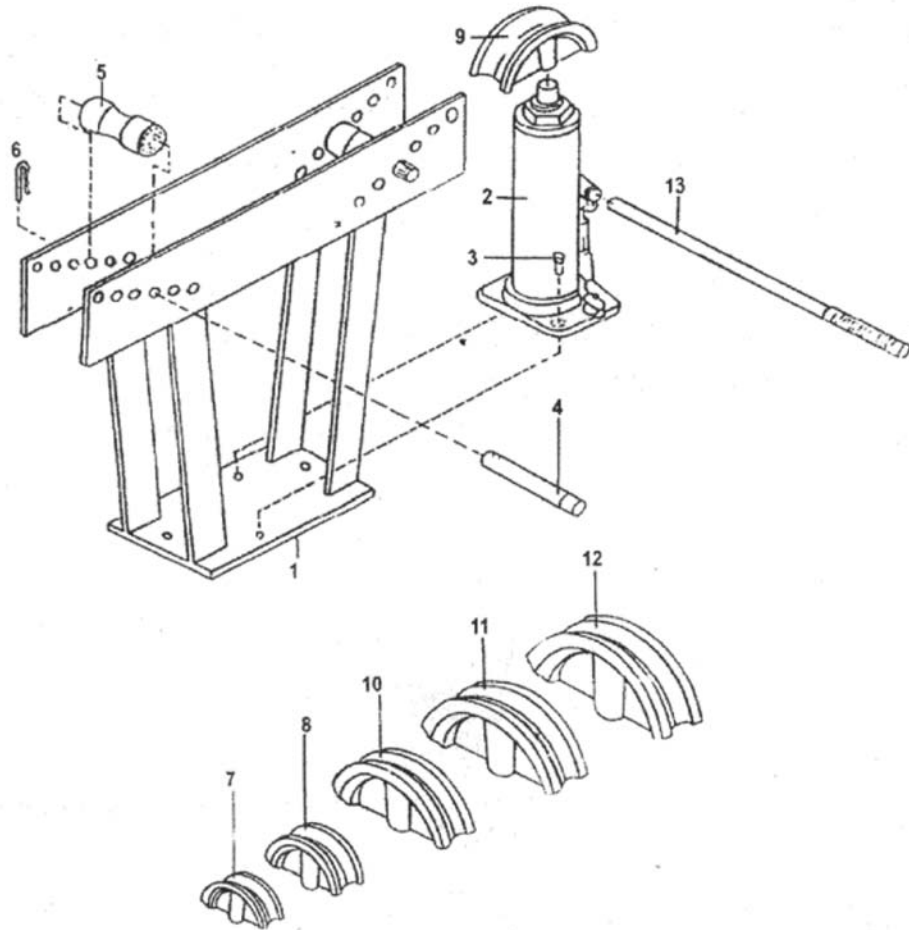


Figure 3

Replacement Parts

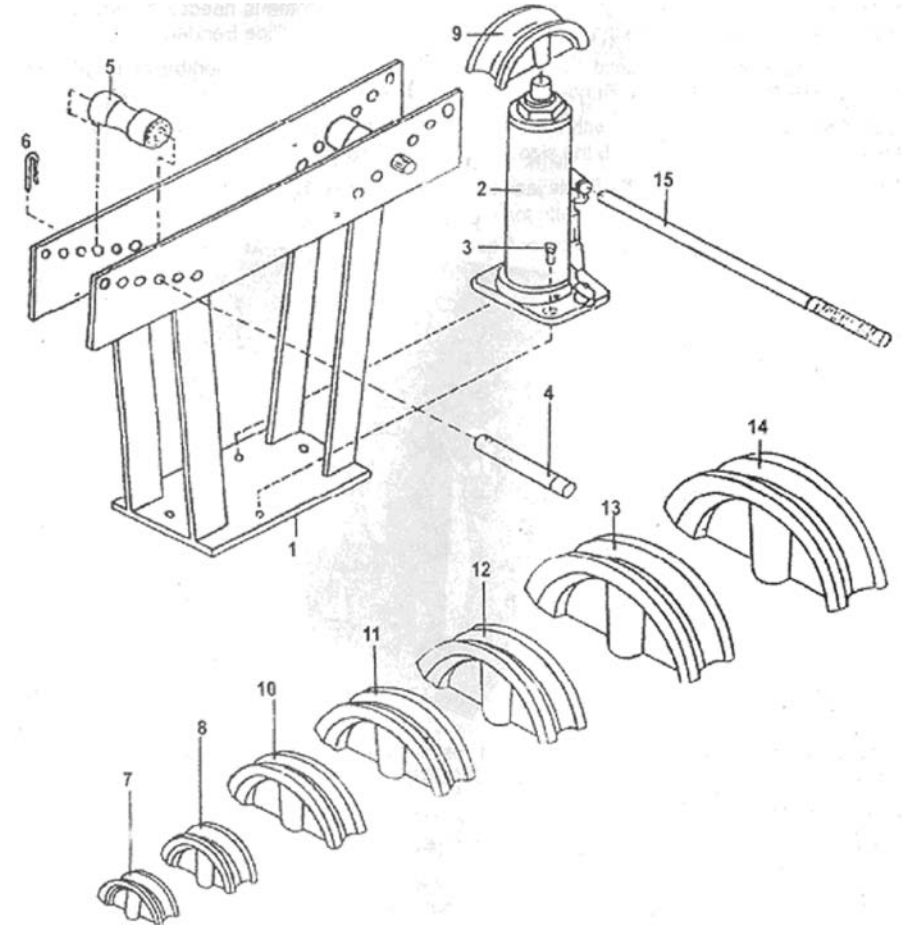
- For replacement parts and technical questions, please call Customer Service at 1-800-222-5381.
- Not all product components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts in the assembly sequence.
- When ordering parts, the following will be required: Model Number, Serial Number/Lot Date Code, and Description.
- The distributor reserves the rights to make design changes and or improvements to product lines and manuals without notice.

Parts Diagram & Part List - 49652



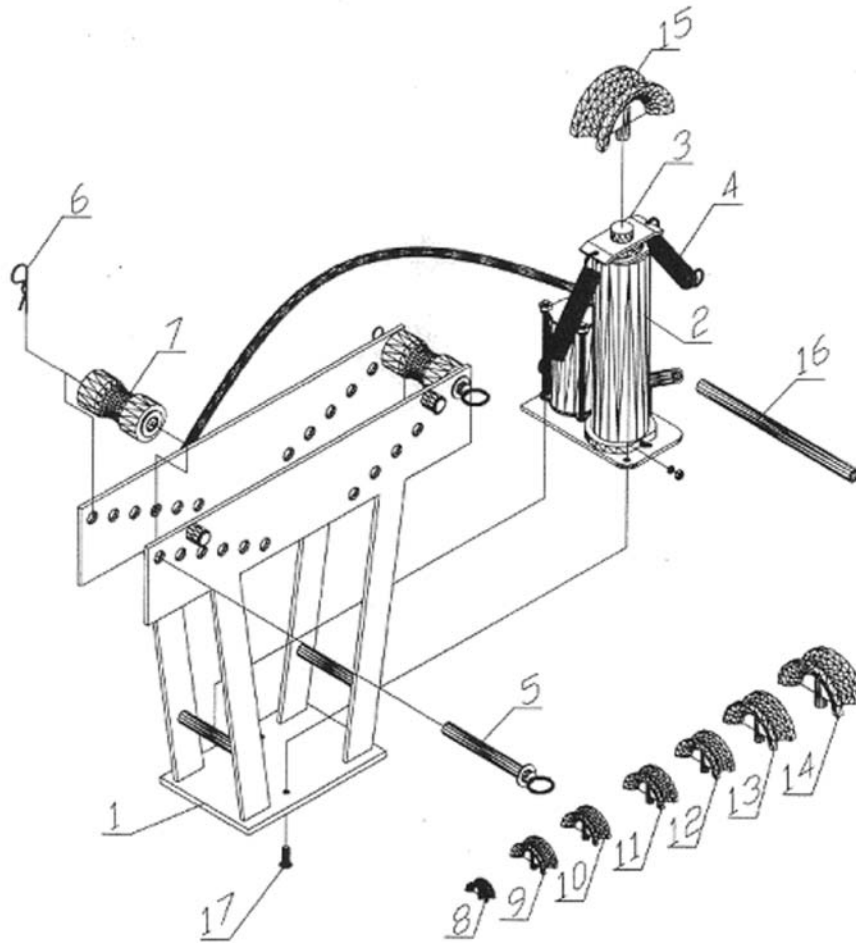
Part No.	Description	Q'ty	Part No.	Description	Q'ty
1	FRAME	1	8	3/4" BENDING DIE	1
2	JACK	1	9	1" BENDING DIE	1
3	HEX BOLT	2	10	1 1/4" BENDING DIE	1
4	ROLLER SHAFT	2	11	1 1/2" BENDING DIE	1
5	ROLLER	2	12	2" BENDING DIE	1
6	HITCH PIN	2	13	JACKHANDLE	1
7	1/2" BENDING DIE	1			

Parts Diagram & Part List - 49653



Part No.	Description	Q'ty	Part No.	Description	Q'ty
1	FRAME	1	9	1" BENDING DIE	1
2	JACK	1	10	1 1/4" BENDING DIE	1
3	HEX BOLT	2	11	1 1/2" BENDING DIE	1
4	ROLLER SHAFT	2	12	2" BENDING DIE	1
5	ROLLER	2	13	2 1/2" BENDING DIE	1
6	HITCH PIN	2	14	3" BENDING DIE	1
7	1/2" BENDING DIE	1	15	JACK HANDLE	1
8	3/4" BENDING DIE	1			

Parts Diagram & Part List - 49654



Part No.	Description	Q'ty	Part No.	Description	Q'ty
1	FRAME	1	10	1" BENDING DIE	1
2	BOTTLE JACK	1	11	1 1/4" BENDING DIE	1
3	SPRING PLATE	1	12	1 1/2" BENDING DIE	1
4	SPRING	2	13	2" BENDING DIE	1
5	ROLLER	2	14	2 1/2" BENDING DIE	1
6	HITCH PIN	2	15	3" BENDING DIE	1
7	ROLLER	1	16	JACK HANDLE	1
8	1/2" BENDING DIE	1	17	HEX BOLT M8 X18	2
9	3/4" BENDING DIE	1			

Limited Warranty

Northern Tool and Equipment Company, Inc. ("We" or "Us") warrants to the original purchaser only ("You" or "Your") that the Klutch 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 or product component 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 property 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 product component; 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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