12in. W Capacity 3-in-1 Combination Sheet Metal Machine

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# 49678

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.

This12-inch wide capacity 3-in-1 combination sheet metal machine is designed for certain applications only. Northern Tool and Equipment cannot be responsible for issues arising from modification or use of this product in an application for which it was not designed. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed

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

Table of Contents

Intended Use

This 12-inch 3-in-1 combination sheet metal machine is a versatile combination unit that allows cutting, bending and shaping mild steel sheet metal as well as other metals. It is designed for precision shearing, braking, and rolling tubes, cones or rings according to the specifications below.

Technical Specifications

Property	Specification
Capacity	12 inches (305 mm) wide, 20gauge (1mm) thick
Roller	1-1/2 inch (38mm)
Die set sizes	4-inch (101.6mm)
	3-inch (76.2mm)
	2-inch (50.8mm)
	1-inch (25.4mm)
Weight	120lbs.(46kg)
Dimensions (L x W x H)	23" x 13" x 20"

Important Safety Information

⚠ WARNING:

- Read and understand all instructions. Failure to follow all instructions may result in serious injury.
- 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 this product until they have read this manual and have developed a thorough understanding of how the product works.
- DO NOT modify the product in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the product. Keep guards in place and in working order. Never operate the tool without the guards in place.
- Use the right tool for the job. DO NOT attempt to force a 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 use the tool where there is a risk of causing a fire or an explosion; e.g., in the presence of flammable liquids, gases, or dust. The tool can create sparks, which may ignite the dust or fumes.
- Do not allow the tool to come into contact with an electrical source. Contact will cause a 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 below the work surface hidden from your view and may cause personal harm or property damage if unintentionally 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.
- Use ANSI-Z 87.1 compliant safety goggles or 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.
- 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.

KLUTCH®
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Sheet Metal Machine OWNER'S MANUAL

Specific Operation Warnings

⚠ WARNING:

- **Cut hazard. Keep fingers clear of the area in front and rear of the shear blades.**
- **Pinch point hazard. Keep hands clear of roller.**
- **Do not exceed the maximum shear capacity of 20 gauge mild steel.**
- **Do not exceed the maximum bending capacity of 22 gauge mild steel.**

Assembly

UNPACKING

Your sheet metal machine comes completely assembled; however, check to make sure the followingaccessories have been included:

- Two hex key wrenches.
- Two hex key bolts (57).
- This manual

If any pieces are missing, call the distributor at the number in the Replacement Parts section of this manual.When unpacking, you must remove the bolts that are used to mount the machine to the crate.Save these bolts for use when mounting to a workbench.

Note: The handle is shipped mounted to the right side of the machine. If you wish to move thehandle to the left side of the machine, proceed with the following instruction.

1. Remove one of the handles (26).
2. Loosen the handle adjustment knob (60) and slide the handle arm (18) out.
3. Slide the handle arm onto the opposite side and tighten the adjustment knob.
4. Re-attach the handle to the handle arm.
5. The handle arm can be positioned in the eccentric bushing (35) as desired for appropriate torque.

Before Each Use

Check for alignment of moving parts, binding, broken parts,mounting, and other conditions that may affect the machine's operation. Any part that is damaged shouldbe properly repaired or replaced by an authorized service technician. Never operate the machine with a damaged part.

Operating Instructions

Shearing

1. Attach the backmeasurement assembly (19-21,42, 43) to the receiver holes in the back of the crossbeam(3).
2. If necessary, adjust the position of the back measurement assembly: first loosen the two hex key screws (42), move the assembly forward and back to the desired position, retighten thescrews.
3. If a precise 90' angle is desired, attach the guide (16) to the left side of the work surface (2)using the two hex key screws (57).
4. Using the handle assembly (18&26), raise the lowerbrakingdie (11) to the highest position.
5. Insertthe workpiece between the braking die and the work surface (2).
6. Turn the handle assembly (18&26) to shear the workpiece.

Pressing

1. Slide the press plate brackets (8) of the press plate assembly(8-10,55) into the receiver holes ofthe lower braking die(11).
   Note: the press plate (10) should be facing down.
2. Place the workpiece so that it is centered under the press plate.
3. Turn the handle assembly(18&26) to press the workpiece.

Braking

1. Attach the backmeasurement assembly(19-21,42,43) to the receiver holes in the back of the crossbeam(3).
2. If necessary, adjust the position of the back measurement assembly: first loose the two hex key screws (42), movethe assembly forward and back to the desired position, retighten the screws.
3. Using the handle assembly (18&26), raise the crossbeam(3) up to its highest position.
4. Insert the workpiece between the upper (12) and lower(11) braking dies.
5. Turn the handle assembly (18&26) until the proper roll has been achieved. The materialshould feed itself through the rollers as you crank the handle assembly.

Rolling

1. Lift the front Cover (33) and flip backward, out of the way.
2. Drop the Rear Roll Bar (24) by loosening the Adjustment Knob (25).
3. Insert only the leading edge of the sheet metal between the Upper Roll Bar (32) andthe Lower Roll Bar (31), tighten the Adjustment Keys (27) until the Roll Bars are justsnug against the sheet metal.
4. Advance the Adjustable Bolt (25) to the desired tightness for the roll.The more the Adjustable Bolt (25) is advanced, the tighter the roll.
5. Turn the Handle Arm (18) until the desired roll is achieved.
   The sheet metal should feed itself through the rollers as the Handle Arm (18) is turned

Wire Rolling

1. Use the proper groove in the lower roll bar (#24、#31) depending upon the gauge of the wire beingrolled.
2. Follow steps 2 through 5 (above), under Rolling.

After Each Use

- Clean the surface of the Roll Bar (24, 31, 32) after use. Keep it clean and free of rust.
- Check Dies (12) and Shears (23)not damaged after use.
- Grease the crank arms(4) as necessary using agrease gun on the installed grease fittings. Do notover-grease.
- A light coating of oil on the area where the upperarm slides will also assure ease of movement.

Maintenance

Maintain your tool. 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.

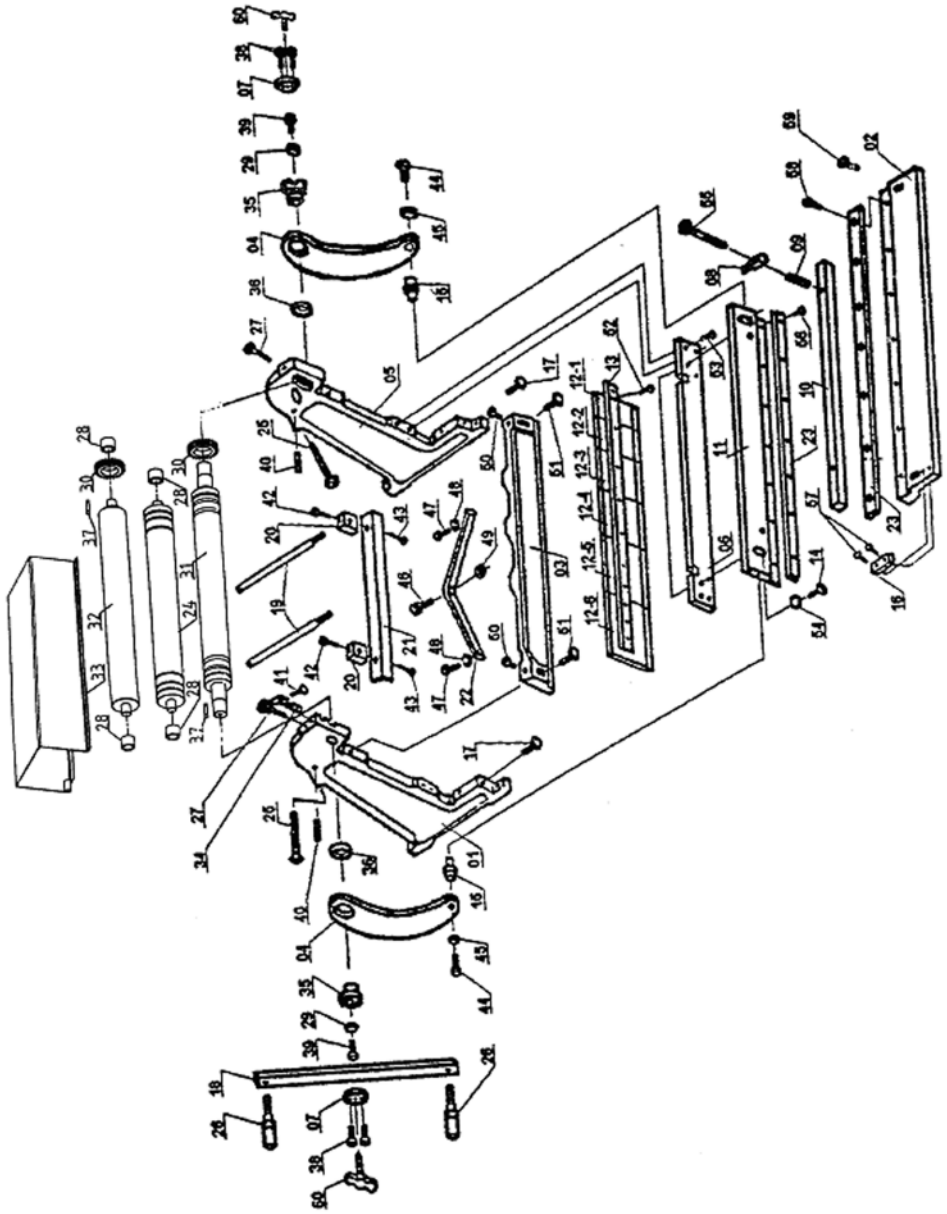
- Keep all cutting components sharp and clean. Properly maintained cutting components with sharp cutting edges are less likely to bind and are easier to control.
- Keep handles dry, clean, and free from oil and grease.
- REPLACEMENT PARTS AND ACCESSORIES. When servicing, use only identicalreplacement parts. Parts that may be suitable for one machine may create a risk of injury when used with another machine. Approvedaccessories are available from the distributor.

LUBRICATION

- Before using this machine, certain parts coated with rust inhibitor must be first cleanedusing varnish thinner.
- Lubricate the eccentric mechanism daily with machine oil.
- Periodically check all nuts, bolts, and screws for tightness.
- Periodically lubricate the rollers surface with a clean rag and machine oil.
- Place the Cover over the rollers when not in use
- Grease the cranking arms(4) as necessary using a grease gun with zerk fittings.
- Grease the bolt holes in sliding areas after take down the Hex key screw(14&51) as necessary.

KLUTCH®
12in. W Capacity 3-in-1 Combination
Sheet Metal Machine OWNER'S MANUAL

Parts Diagram



Parts List

Part No.	Description	Q'ty	Part No.	Description	Q'ty
1	Left frame	1	31	Lower roll bar	1
2	Work surface	1	32	Upper roll bar	1
3	Cross beam	1	33	Cover	1
4	Cranking arm	2	34	Eccentric shaft	1
5	Right frame	1	35	Eccentric bushing	2
6	Shear frame	1	36	Washer	1
7	Bushing cover	2	37	Key	2
8	Press plate bracket	2	38	Hex key screw	4
9	Spring	2	39	Hex key screw	2
10	Press plate	1	40	Bolt	2
11	Lower braking die	1	41	Hex key screw	1
12	Dies	1	42	Hex key screw	2
13	Upper die bracket	1	43	Hex key screw	2
14	Hex key screw	2	44	Hex key screw	2
15	Handle arm roll	2	45	Washer	2
16	Guide	1	46	Bolt	1
17	Adjustment screw	2	47	Hex key screw	2
18	Handle arm	1	48	Washer	2
19	Support rod	2	49	Nut	1
20	Support block	2	50	Bolt	2
21	Backstop	1	51	Hex key screw	2
22	Adjustment bar	1	52	Hex key screw	4
23	Shears	2	53	Hex key screw	4
24	Rear roll bar	1	54	Washer	2
25	Adjustment knob	2	55	Bolt	2
26	Handle	2	56	Hex key screw	4
27	Adjustment keys	2	57	Hex key screw	2
28	Bushing	4	58	Hex key screw	4
29	Washer	2	59	Hex key screw	2
30	Gear	2	60	knob	2

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Troubleshooting

Shear Bow

During operation, the shear frame (6) may come out of alignment causing uneven cuts. To correct this problem, tighten or loosen the bolt(46) attached to the shear frame adjustment bar(22) as necessary.Tightening the bolt will cause the ends of the shear to bow out, loosening will cause them to bow in.

Shear Alignment

1. Lower the shear assembly (23) all of the ways so that the two shears (23) are even with each other.
2. If one side of the lower shear(23)is further away from the upper shear (23)than the other, the work surface (2) needs adjustment.
3. Loosen the bolts (59) that secure the work surface to the frames (1& 5).
4. Tighten or loosen either of the adjustment screws (17) on the front underside of the work surface as necessary to make the two shears meet properly.

Upper Braking Die

The upper braking die (12) may become uneven. The best way to correct this problem is to cut a gauge from hard wood. Make sure the gauge is even all of the way across its length.

1. Raise the crossbeam (3) all of the way.
2. Place the hardwood gauge underneath the die.
3. Loosen the bolts(52) that hold the upper braking die bracket(13) in place and allow the die to drop so that it contacts the gauge.
4. Tighten the upper braking die bracket bolts.

Replacement Parts

- For replacement parts and technical questions, please call Customer Service at 1-800-222-5381.
- Not all components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts.
- The following are required when ordering parts: 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.

Limited Warranty

Northern Tool and Equipment Company, Inc. ("We'' or '"Us'') warrants to the original purchaser only ("You'' or "Your") that the Ironton Air Tool 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) accessories both consumable and durable; (c) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (d) damage from misapplication, overloading, or improper installation; (e) improper maintenance and repair; and (f) 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 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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NorthernTool.com
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