



# 52in. 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# 49679**



## 52in. W Capacity 3-in-1 Combination Sheet Metal Machine 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.

This 52-inch wide capacity 3-in-1 combination sheet metal machine is designed for certain applications only. The distributor 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.

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### Intended Use

This 52-inch wide capacity 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
Effective width	52 inches (1320mm)
Maximum shearing thickness	20 gauge (1mm) low carbon plate
Maximum braking thickness	20 gauge (1mm) low carbon plate
Maximum rolling thickness	20 gauge (1mm) low carbon plate
Minimum internal diameter of the roll	1.97 inches (50mm)
Dies	1 female, 9 male
Dimensions (LxWxH)	65.7" x 25.6" x 18.9" (1670 x 650 x 480mm)
Net weight of machine tool	617 lbs. (280kg)

**Important Safety Information****WARNING:**

- 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. 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 modify the product in any way. Unauthorized modification may impair the function and/or safety that 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 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:**

- 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.
- 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.
- 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.

**CAUTION****PRODUCT USE AND CARE**

- Do not force the tool. Tools do a better and safer job when used in the manner for which they are designed. Plan your work, and use the correct tool for the job.
- 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.
- Store the tool when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the tool for good working condition prior to storage and before re-use.
- Use only accessories that are recommended by the manufacturer for use with your tool. Accessories that may be suitable for one tool may create a risk of injury when used with another tool. Never use an accessory that has a lower operating speed or operating pressure than the tool itself.
- Keep guards in place and in working order. Never operate the product without the guards in place.
- Do not leave the tool running unattended.

**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**

When unpacking the sheet metal machine, check that all items are present.

- The 52 inch combination sheet metal machine
- Allen keys (5mm and 12mm Allen wrenches)
- 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 securing the machine in its working location. The machine must be secured in place in order to avoid any unintended movement during operation.

The sheet metal machine is coated at the factory with a rust inhibitor. To ensure proper fit and operation, remove the coating before first use. The coating is easily removed with a mild solvent, such as mineral spirits, and a soft cloth.

Note: The handle is shipped mounted to the right side of the machine. If you wish to move the handle 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 (62) 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 shaft (35) as desired for appropriate torque.

**Before Each Use:**

Check for damaged parts before each use. Replace damaged or worn parts immediately. Never operate the machine with a damaged part. Any part that is damaged should be properly repaired or replaced by an authorized service technician.

Carefully check that the machine will operate properly and perform its intended function. Visually check for debris or scraps of metal in the machine mechanism.

**Operating Instructions****Back-measure plate (Angle iron)**

1. The back gauge (#19-21, 43) is used for shearing and braking. When it's in the place of braking condition, please screw two long bars (#19) into the nut of concave mould plate (#21).
2. Ensure that the bars (#19) pass through the front part of the concave mould plate (#21), tighten up the nut and then back-measure plate (19-21, 43) and concave mould plate (#21) can move mould plate can move up and down in company.
3. When it is in the place of shearing condition, before putting the bars (#19) into the positioning plate (#21), screw a 2-m12 nut into the positioning plate, and then followed the bar (#19) which was fixed by the nut in the end. In these two kinds of position, the circular adjustable knob (#43) was installed at the back of angle iron.

**Adjustment of the braking installation****Adjustment of the upper die:**

1. Loosen the screw bolt; the upper die will come off the machine. If you don't want the upper die to come off the machine or you are willing to install another new mould plate, you can put a piece of hard wood (25, 25, 160mm) or the other similar materials on the concave mould plate.
2. Turn the handle and raise the concave mould plate until the wooden piece getting in touch with the upper die (form plunger). After putting up the new die, all the fasten bolts of the die should be tightened up. In some cases, especially the using of narrow die it is necessary to put a piece thin paper between the upper die and the lower die.

**Adjustment of the cross girder**

To make the braking work go on smoothly, and to separate the formed metal that between the upper die and the lower die from being blocked, you must adjust the crossbeam.

1. First, you put a steel plate (its width echo the demand of the machine and its thickness is 1mm) on the concave mould plate.
2. Then, turn the handle carefully to raise concave mould plate.
3. Loosen the fasten bolt of the crossbeam when the upper die (form plunger) getting in touch with the processing metal plate, after that, in order to fix the crossbeam, you can adjust the screw which on the crossbeam.
4. At last, tighten up all the fasten screws. During this period, the handle is not fixed to turn an angle of 360 degrees, brake a piece of metal plate that with same width and thickness on both side of the braking system, their angles should be similar, the job should be excessively braked when you turn the handle and fully brake the job.

**Adjustment of the shearing installation**

You should adjust the zero-clearance of the upper cutter and the lower cutter. Adjustment of the lower cutter:

1. Unload the pressing plate, loosen the fasten screw and the two adjustable screws of the working table.
2. Turn the handle make the upper cutter near the cutter on the working table, tighten the fasten table room moving back when the machine is used.
3. Install the pressing plate once again and ensure that it run parallel to the upper cutter.

**Adjustment of the positioning plate:**

During the period of the shearing, there will be a powerful strengthen produced at the middle of the cutter, in order to avoid the clearance that between the upper and lower cutter, you should adjust the central screw that behind the positioning plate. If the adjustment was not suitable, the metal plate will be folded in the middle of the two cutters when shearing is executed. If the lower cutter and upper cutter still press close together after the adjustment, two parts must be examined:

1. First, the fasten screw of the lower cutter, you can fully tighten the cutter up,
2. Then loosen the screw about 1/8 circle. Second, the contact face of the cover mould plate and the positioning plate. In most cases this contact face and lubricate.

**Adjustment of the rolling installation**

This rolling installation can roll straight, roll taper or metal ring with the help of the liner channel roller.

When a job was finished, turn the pin to right, the left side of the roller can be taken off the machine, the job will be taken out with ease.

When you operate the slide roller, you must give enough pressure to roller for the purpose of suitable import of the job.

Adjust the clearance of the upper roller have the same clearance.

**After Each Use**

When the machine will not be used for a while, remove any debris or scraps of metal, clean it, and spread a thin coat of oil on the unpainted surfaces to prevent rust.

**Maintenance**

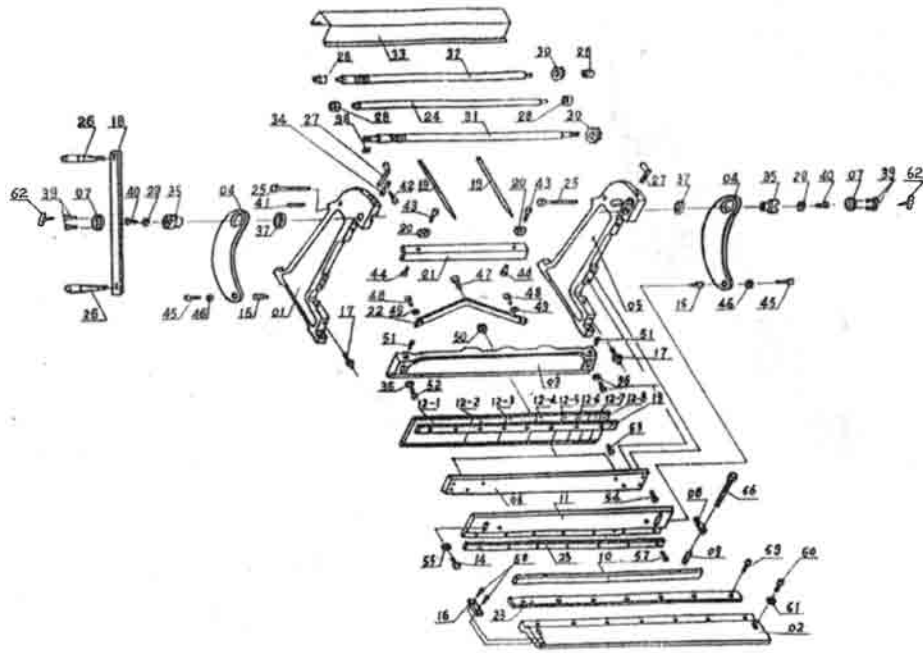
Maintain your tool. It is recommended that the general condition of any tool be examined before it is used. Keep your tool in good repair by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual.

- Keep all cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- Keep handles dry, clean, and free from oil and grease.
- Use only accessories that are recommended by the manufacturer for use with your tool. Accessories that may be suitable for one tool may create a risk of injury when used with another tool.

**LUBRICATION**

- 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 as necessary.
- Oil the eccentric shafts daily.

### Parts Diagram



### Parts List

Part No.	Description	Q'ty	Part No.	Description	Q'ty
1	Left wall	1	32	Upper pressing roll	1
2	Work bench	1	33	Protecting cover	1
3	Crossbeam	1	34	Rotation shaft	2
4	Crank arm	2	35	Eccentric shaft	2
5	Right wall	1	36	Gasket(washer)	2
6	Bear frame	1	37	Jacket	2
7	Cover	2	38	Flat key	2
8	Bear frame	2	39	Hexagon head bolts	4
9	Spring	2	40	Hexagon screws	2
10	Pressing plate	1	41	Hexagon head cap bolts	2
11	Moving cutter plate	1	42	Hexagon screws	2
12	Upper braking die	1	43	Hexagon head screw	2
13	Pressing plate	1	44	Hexagon head screw	2
14	Bolt	4	45	Hexagon screw	2
15	Cranking arm rolling wheel	2	46	Gasket (washer)	2
16	Positioner	1	47	Hexagon head bolts	1
17	Adjustable bolt	2	48	Hexagon head bolts	2
18	Handle arm	2	49	Gasket(washer)	2
19	Screw	2	50	Hexagon nuts	1
20	Position piece	2	51	Hexagon head bolts	2
21	Position plate	1	52	Hexagon screws	2
22	Support plate	1	53	Hexagon screws	15
23	Cutter	2	54	Hexagon screws	2
24	Back pressing	1	55	Gasket(washer)	4
25	Screw	1	56	Hexagon head bolts	2
26	Handle jacket	2	57	Hexagon screws	9
27	Adjustable bolt	2	58	Hexagon screws	9
28	Jacket	4	59	Hexagon screws	2
29	Press cover	2	60	Hexagon screws	2
30	Gear	2	61	Gasket (Washer)	2
31	Lower pressing roll	1	62	Knob	2

## Troubleshooting

### Shear Bow

During operation, the shear frame (11) may come out of alignment causing uneven cuts. To correct this problem, tighten or loosen the bolt(47) 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 is further away from the upper shear than the other, the work surface (2) needs adjustment.
3. Loosen the bolts (60) that secure the work surface to the frames (2& 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 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.

## 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 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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Northern Tool and Equipment Company, Inc.  
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