



30in. 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# 49675



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 30-inch wide capacity 3-in-1 combination sheet metal 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 30 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
PRESS BRAKE	Bending length	30" (762mm)
	Max. Bend capacity in mild steel	0.04" (20 gauge; 1mm)
SLIP ROLL	Slip roll capacity in mild steel	0.04" (20 gauge; 1mm)
	Diameter rolls	1-1/2" (38mm)
	Wire grooves	11/64"(4-1/2mm)
SHEAR	Max. Shear capacity	0.04" (20 gauge; 1mm)
	Max. Cutting length	30" (762mm)
SIZE OF DIE SETS	30"	1 Female and 1", 2", 3", 4", 5", 6", 10" Male
SHIPPING WEIGHT	330 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 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.
- 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 in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Use ANSI-Z87.1 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.
- 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.

Assembly

Unpack the sheet metal machine and check that all parts are present. If any parts are missing, call the distributor at the number in the Replacement Parts section of this manual. When unpacking, remove the bolts that are used to mount the machine to the crate. Save these bolts for use when mounting to a stand or workbench.

Select a sturdy stand or workbench (not included), preferably a heavy-duty steel stand, and locate the machine so the operating handle will swing clear of the end of the stand. Securely bolt the machine to stand using 1-1/8" long hex head bolt with washers and nuts (not included). Position the machine clear of obstructions to permit access to all sides. The floor around the machine should be clean, and free of scraps, oil or grease. A suitable nonskid material should be applied to the floor around the work station.

Note: The handle assembly (18) 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. Loosen the handle adjustment knob (73) and slide the handle assembly 9e
2. Slide the handle assembly onto the opposite side and tighten the adjustment knob.
3. The handle assembly can be positioned in the eccentric bushing (20) as desired for appropriate torque.

Install the back gauge assembly (19, 20, 21, 43) in either the shear (the angle iron points down) or the press brake (the angle iron point up) position.

Lock the threaded rods (19) with the knob (43), provided in front in the shear position, in back in the brake position.

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. Then, the parts of this machine which are ground, such as the rolls, should be coated with a light film of oil to inhibit rust.

Before Each Use

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



WARNING:

The maximum capacity of this machine is 20 gauge mild steel. Exceeding the capacity of the machine may be hazardous to the operator.

Handle Adjustment

The handle is shipped mounted to the right side of the machine. If left hand operation is required, the handle can be moved to the opposite side of the machine:

1. Remove one of the handles (18).
2. Loosen the handle adjustment knob (73) and slide the handle arm out of the slot (35).
3. Slide the handle arm into the opposite side and tighten the handle adjustment knob.
4. Reattach the handle.
5. The handle arm can be positioned for the desired torque. The longer the handle arm, the greater amount of torque can be applied.

Shearing

For precision shearing up to 30" width, first attach the back measurement assembly (20, 21, 43) to the receiver holes in the back of the crossbeam:

1. To adjust the position of the back measurement assembly, first loosen the two knobs (43).
2. Move the assembly forward and back across the threaded rod (19). When the assembly is at the desired position, tighten the knobs to lock it into position.
3. If a precise 90° angle is desired, attach the guide (16) to the left side of the cutting table (2) using the two Allen screws (58).
4. Using the handle assembly (18), raise the upper cutting die (23) to the highest position. Slide the workpiece in between the cutting die (23) and the work surface.
5. Rotate the handle assembly to shear the workpiece at the desired location. During shearing operations, there are two conditions which may cause uneven cuts:
 1. Shear Bow. There is a tensioning adjustment on the shear plate which can create a bow necessary to cut certain materials. Adjust the tension on the bolt attached to the shear frame (22) adjustment bar. Tightening the bolt (47) will cause the ends of the shear to bow out, loosening the bolt (47) will cause them bow in.
 2. Shear Alignment. The two shearing bars (23) may need to be aligned with each other across their entire length. Lower the shear assembly all the way so the two shears are even with each other. If one side or the other does not meet, the cutting table needs to be realigned. Loosen the bolts (60) that hold the table, then tighten or loosen the adjustment screws (17) on the front underside until the cutting table is properly aligned. Tighten the holding bolts and double check the alignment.

Tips for shearing

- When shearing, the work should be squared against the squaring guide (16). The pressing plate (10) should be adjusted approximately 1/4" above the table when the shear blade is in the "up" position. As you move the blade downward, the pressing plate (10) should immediately rest against the workpiece and hold it in place.
- Do not reach around the machine to grab the cut-off piece. A large cut-off piece should be allowed to drop on a special table that is designated to catch cut-off pieces that are larger than the workbench.
- To prevent distortion when notching, "snap" the handle quickly to pierce the workpiece.

- To adjust the lower shear blade (23), loosen the screw (60) at the end of each table. Underneath the table, there are two adjustment screws (17) on the left and right side. By adjusting these screws in or out, the lower blade can be brought in contact with the upper shear so a fine cut can be made.
- Have the shear blades sharpened by a professional. This will lead to accurate and quality results.
- The shear blades are interchangeable. The upper shear mount has a 5° relief angle, so the upper blade does not exactly match the lower blade when installed correctly.

Pressing

Slide the plate brackets (11) on the press plate assembly into the receiver holes of the upper cutting die. Make sure the press plate is facing down.

Place the workpiece so that it is centered under the press plate. Rotate the handle with sufficient force to achieve the degree of pressing desired.

Braking

For precision braking from 2" to 10" lengthwise, first attach the back measurement assembly to the receiver holes in the back of the crossbeam:

1. To adjust the position of the back measurement assembly, first loosen the two knobs.
2. Move the assembly forward and back using the handwheel. When it is at the desired position, tighten the knobs to lock it into position.
3. Using the handle assembly (18), raise the cross beam (3) up to its highest position.
4. Insert the workpiece in between the upper and lower braking dies.
5. Rotate the handle assembly, using the appropriate amount of force to achieve the desired bending angle.
6. To bend only certain portions of your workpiece, simply loosen the bolts (53) that hold the upper braking die brackets (13) in place and add or remove the dies as required. For small increments, use the fractional dies included with the machine. You should notch the material appropriately before bending to achieve the good results. This means you will have to make a cut between the portion of the material to be bent and the portion you wish to remain straight.

The upper braking dies (12-1,2,3,4,5,6,7) may become uneven. This is best handled with a wooden gauge block that is the full length of the table and is the same height all the way across. Raise the crossbeam all the way and slide the block underneath the dies. Loosen the bolts (52) that hold the upper die bracket in place and allow the dies to drop slightly until they contact the block. Tighten the upper bracket bolts.

Rolling

In order to do rolling operations, move the cover back and out of the way.

1. Drop the rear roll bar (24) by loosening the adjustment knobs (25).
2. Insert just the leading edge of the workpiece between the upper and the lower roll bars (32,31), and tighten the roll bar gap adjustment keys (27) until the roll bars are barely snug against the workpiece.
3. Advance the adjustment knobs (25) as much as desired depending upon the tightness of the roll to be accomplished. The tighter the roll, the more the knobs should be advanced.
4. Rotate the handle assembly until the proper roll has been achieved. The material will feed itself through the rollers as the handle assembly is cranked.

Wire rolling is accomplished in the same manner, except the proper groove in the upper roll bar must be utilized depending upon the wire gauge being rolled.

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.
- Grease the crank arms (4) as necessary using a grease gun on the installed grease fittings. Do not over-grease.
- A light coating of oil on the area where the upper arm slides will also assure ease of movement.

Maintenance

Maintain your machine. 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 replacement parts that are recommended by the manufacturer for use with this machine.
- The parts of this machine which are ground should be coated with a light film of oil. A very light film of oil on the slip rolls will inhibit rust.

The shear blades (13, 23) are interchangeable. The 5 relief is always the upper blade cutting edge. The lower blade cutting edge has no relief and the blade is installed with the 5 relief against the table edge.

LUBRICATION

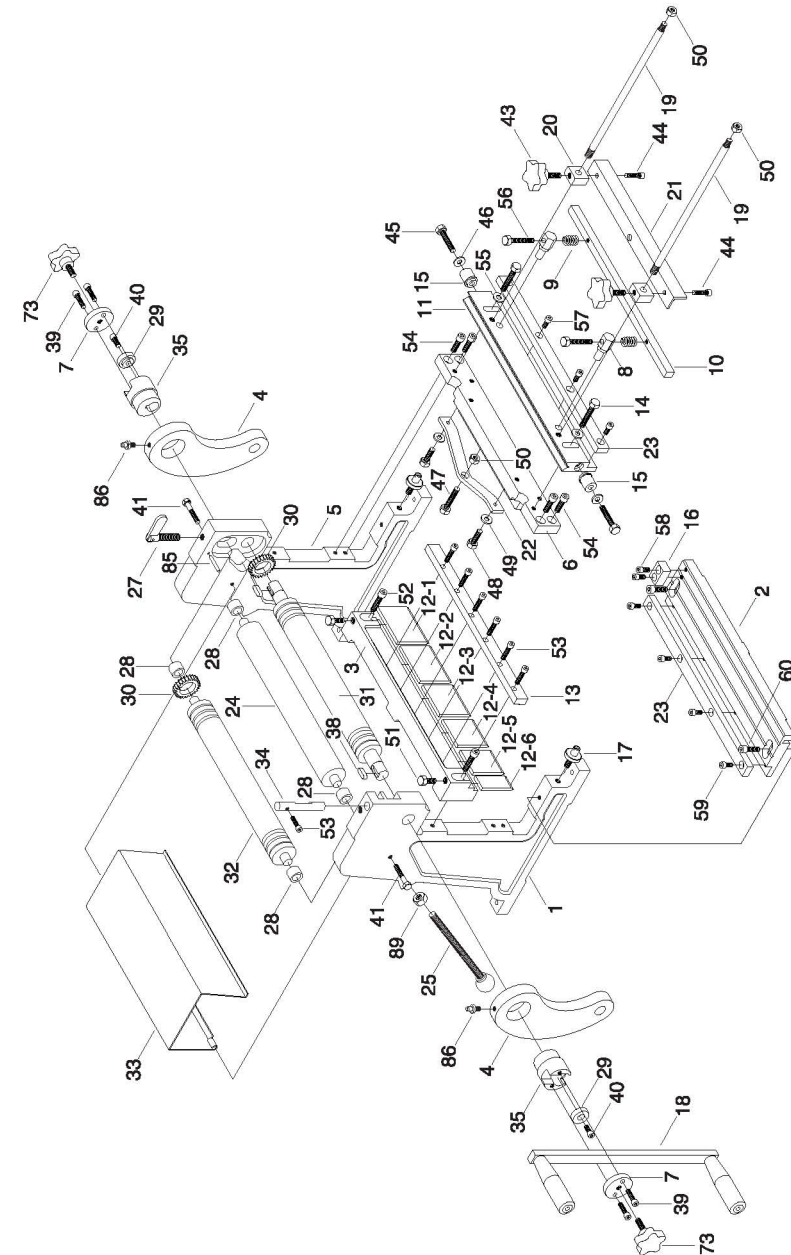
Grease should be kept on the roll gears on the end of the rolls (12 - 23).

Grease the surface between the shear blade support and the back spacer bar.

Grease the shear support beam bolt on the front side of the shear support beam.

Grease the bolts and plug on the shear material pressing plate (10)

Parts Diagram





Parts List

Part No.	Description	Part No.	Description
1	LEFT WALL	30	GEAR
2	WORK BENCH	31	LOWER PRESSING ROLL
3	CROSSBEAM	32	UPPER PRESSING ROLL
4	CRANK ARM	33	PROTECTING COVER
5	RIGHT WALL	34	ROTATION SHAFT
6	REAR FRAME	35	ECCENTRIC SHAFT
7	COVER	38	KEY 6 X 6 X 20
8	PRESS PLATE BRACKET	39	CAP SCREW M6-1.0 X 16
9	SPRING	40	CAP SCREW M6-1.0 X 8
10	PRESSING PLATE	41	HEX BOLT M6-1.0 X 44
11	MOVING CUTTER PLATE	43	KNOB
12-1	UPPER BREAKING DIE 10"	44	CAP SCREW M6-1.0 X 8
12-2	UPPER BREAKING DIE 8"	45	HEX BOLT M8-1.25 X 40
12-3	UPPER BREAKING DIE 6"	46	FLAT WASHER 8MM
12-4	UPPER BREAKING DIE 3"	47	HEX BOLT M8-1.25 X 40
12-5	UPPER BREAKING DIE 2"	48	HEX BOLT M8-1.25 X 24
12-6	UPPER BREAKING DIE 1"	49	FLAT WASHER 8MM
13	DIE CLAMPING PLATE	50	HEX NUT M8-1.25
14	HEX BOLT M8-1.25 X 40	51	HEX BOLT M10-1.5 X 16
15	ARM ROLLING WHEEL	52	CAP SCREW M8-1.25 X 30
16	POSITIONER	53	CAP SCREW M6-1.0 X 24
17	ADJUSTABLE BOLT	54	CAP SCREW M8-1.25 X 16
18	HANDLE ARM	55	FLAT WASHER 8MM
19	THREADED ROD	56	HEX BOLT M6-1.0 X 45
20	POSITIONING PIECE	57	CAP SCREW M6-1.0 X 10
21	POSITIONING PLATE	58	CAP SCREW M6-1.0 X 10
22	SUPPORTING PLATE	59	CAP SCREW M6-1.0 X 10
23	CUTTER	60	CAP SCREW M8-1.25 X 20
24	BACK PRESSING ROLL	73	HANDLE ADJUST KNOB
25	LOCK SCREW	85	PIN
27	ADJUSTABLE BOLT	86	GREASE FITTING 5/16"X1/4"
28	BUSHING	89	HEX NUT 10MM
29	PRESS COVER		



Troubleshooting

Problem	Probable Cause	Solution
Handle will not rotate 360 degrees	Upper shear blade bar may be loose.	Tighten bar locking screws firmly. Over tightening will cause stiff operation.
	The male and female die may be adjusted too close or on object between the male and female dies. This may be preventing rotation of the handle.	Readjust the male and female die.
	Top rolls may be locked by over-tightening adjustment knobs.	Readjust the knobs.
	The lower table may be set too close to plane of the nipper shear blade.	Reset the table to the proper position.

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.



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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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