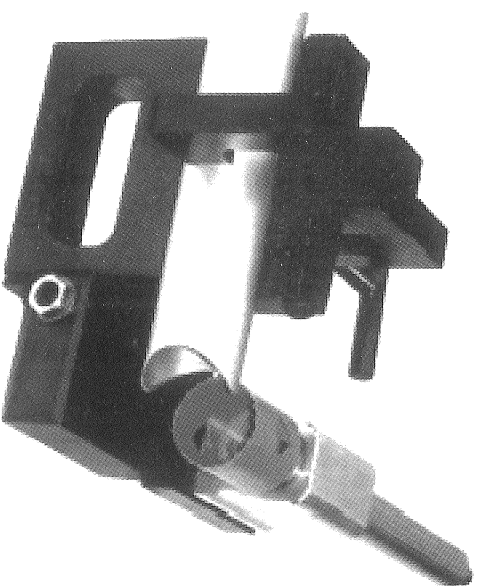


TUBE & PIPE NOTCHER

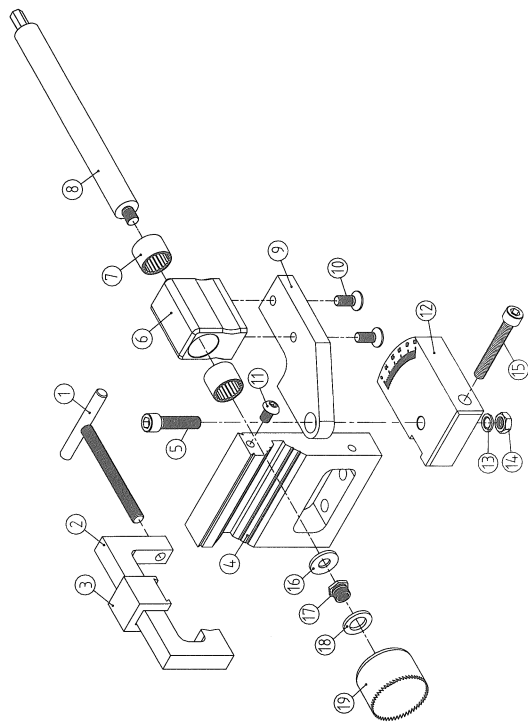
Model: PNM-1-1/2"(A)



Note: This manual is only for your reference. We reserve the right to improve the machine without notice. Please note the local voltage for operating this electric machine.

Operation Manual

Exploded View



PARTS LIST:

Item #	Spec.	Description	Q'ty	Item #	Spec.	Description	Q'ty
1		T-Handle	1	9		Swivel Plate	1
2		Tube Clamp	1	10	M10X2.5	Bolt	2
3		Tube Clamp Slider	1	11	M10X16	Bolt	1
4		Frame	1	12		Nut	1
5	M12X50	Bolt	1	13	12	Bushing	1
6		Bearing Block	1	14	M12	Nut	1
7	25 (HK23524)	Needle Bearing	2	15	M12X7.5	Bolt	1
8		Shaft	1				

screw, a 1/2" machine bushing and a 1/2" jam nut. Adjust to zero degrees and tighten.

- Using page 6 as a guide for part orientation, slide the tube clamp into the tube clamp slider. Install the tube clamp slider onto the notcher from the bearing block side. Install the last stop bolt into the side of the frame. Install the T-handle into the rear of the Tube clamp.

Mounting

The notcher may be mounted in one if four ways.

- Simply c-clamp it to your work table.
- Using the frame's bottom two 1/2" holes, it may be bolted to your work table. The bolts will need to be installed head down so that the nuts will be visible in the frame's rectangular opening.
- Clamp it into a vise.
- Using the tube clamp and V-groove, clamp it directly to the tubing or pipe. This last method may be used to perform a notch in an existing structure.

Always place the 1/2" SAE Washer onto the shaft before either the adapter or hole saw, it prevents the shaft from entering the bearing block too far and allowing dirt and debris to enter the bearing.

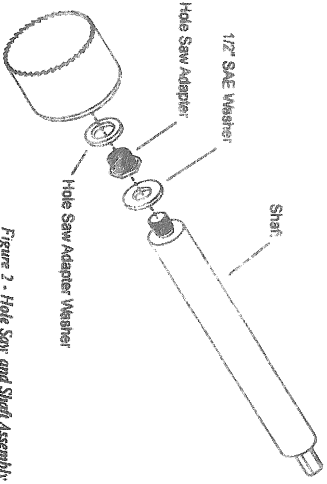


Figure 2 - Hole Saw and Shaft Assembly

Hole saws come in two sizes of mounting threads. Most hole saws require the use of the adapter and adapter washer. Install the hole saw onto the shaft as shown in figure 2. The washer is very important as it prevents the hole saw's threads from stripping during operating.

Operation

The notcher requires a 1/2" hand drill for operation. The shaft has been milled on 3 sides to prevent the chunk from slipping and therefore works great with a keyless chuck.

STRAIGHT AND ANGLE NOTCHING

Adjust the notcher to the angle desired. Place the tube into the V-groove and slide the tube clamp as close as possible to the hole saw without cutting into the tube clamp itself. Tighten the tube clamp securely. As a general rule, try not to notch through the whole tube at one time. Place the tube into the notcher so that as the hole saw cuts through the tubing it barely misses the middle of the tube's end when cutting.

This can easily be seen in figure 5. This allows the first half to break off before the hole saw cuts the second half. If you must cut through the entire tube you will probably bottom out the hole saw. This occurs when you notch angles. Simply retract the hole saw and using a pair of pliers bend back the cut piece so the saw may continue cutting. Don't worry, it's easier then it sounds. If the notcher is cutting slightly off center you can adjust the slider vertically to correct the problem. Keep in mind that as you change blade sizes, the cutting forces also change usually resulting in a very slight alignment error. However, once the tube is welded in place you will never notice it. Use a spray lubricant while cutting and feed the hand drill with a

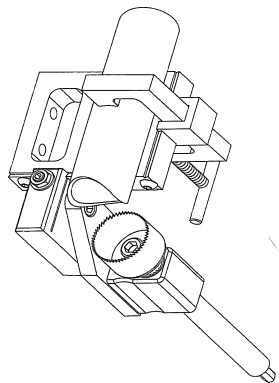


Figure 3

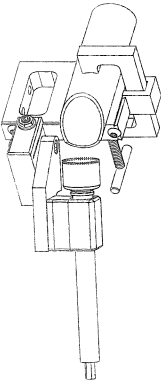


Figure 4

steady but unforced feed. Usually a notch can be made in 7-11 seconds.

Always hold the drill firmly and never use excessive force when pushing. Do not forget that the hold saw could hang up in the tube if forced too hard and kick back the drill in the opposite direction. This can sprain your wrist or worse. This is a trait of all hole saws even when not used in a notcher. Also needless to say the hole saw is exposed, so keep your clothing and all body parts clear of it when cutting and wear eye protection. Jewelry, especially neck wear is also a potential danger around rotating machinery. **PLEASE BE CAREFULL.**

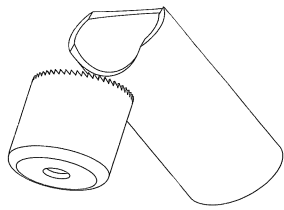


Figure 5 --- Proper amount of tubing to remove. Notice that the middle of the tube is not cut

A major feature of the notch master is that the swivel mount adjust for the angle of cut. This is a huge advantage over other notchers. In this case, no matter what the angle of cut tubing is always in the same position. This allows simple fixture to be made to hold the tube horizontal if it's a long piece and also to precisely locate the tube for multiple pieces. It also allows the notcher to be mounted closer to walls. Because the long length of tube never rotate it saves shop space.

Assembly

After unpacking the notcher it will need final assembly. The completely assembled notcher is shown in the Figure 1. Refer to the exploded view drawing on page 7 to help identify the parts and their orientation.

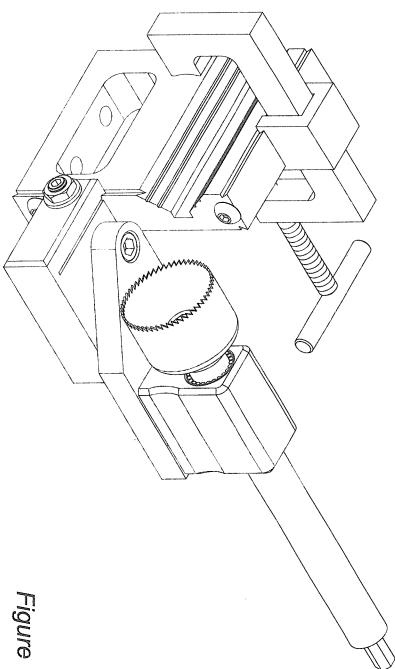


Figure 1
Complete Assembled Notcher

- 1) Starting with the bare frame, install the slider onto the frame's side dovetail with the degree scale facing up. Install the stop bolt into the side of the frame. If the stop bolt's head is too large to allow the slider to return to zero you may need to slightly sand it's o.d. to size. Install the 1/2" – 20 set screw into the slider and tighten. Place a 1/2" machine bushing and jam nut onto the set screw and tighten until the slider is secured. Be careful not too over tighten.
- 2) The bearing blocks are shipped with the bearings and shaft pre-assembled. Using two 3/8" flat head bolts, attach the bearing block to the swivel plate. Verify the bolt heads are below the surface of the swivel plate.
- 3) Install the swivel plate onto the slider using the 1/2" socket head cap