**BURR MANUFACTURING CO., 8931 VENICE BLVD., LOS ANGELES, CALIF.**
**INSTRUCTIONS FOR OPERATING THE BURR AUTOMATIC RETOOTHER**

## SET-UP

Your Burr Automatic Retoother is shipped in a solid wooden box, carefully packed, and bound with steel strapping. Every precaution is taken to insure your shipment reaching you in perfect condition.

In case your Burr Automatic Retoother has been damaged while in the hands of the transportation company, immediately notify your local agent of the damage. He will then be able to inspect the damage and file the proper claim against the transportation company. If parts are broken or damaged beyond repair, also notify the factory so that replacement parts may be furnished you while you are waiting for your claim to be adjusted.

After carefully unpacking your Burr Automatic Retoother, select a sturdy work bench and set the machine on the left end. This will put the retoother over a leg and will give good support. Be sure that you have approximately three feet of clear space on each side of the machine. If the automatic retoother is turned approximately 15 degrees counter clockwise on the bench, the saw will travel approximately parallel to the front edge of the bench. It is not necessary to fasten the retoother to the bench. Hand holds are provided at each end of the baseboard so that the machine may be picked up and put out of the way when it is not in use.

If you have purchased your Burr Automatic Retoother complete with motor, it will be set up and ready to run when you receive it. However, if you have ordered your retoother less motor and wish to mount your own motor, this is easily done. The proper motor pulley and belt is furnished. The pulley will fit any motor with a 1/2" shaft. Your motor should have about 1725 RPM for proper speed. Any I/k HP or 1/6 HP motor will operate the machine. The motor should turn clockwise when the shaft extends away from you. Fasten the pulley securely on the motor shaft and place the motor on the baseboard to the right of the retoother with the pulley to the rear. Slip the belt over the flywheel and over the motor pulley. Be sure the belt is in the groove all the way around. Next, shift the motor to the right until you have the proper tension on the belt and fasten in place with the four wood screws and washers provided. Be sure the belt, flywheel and motor pulley are in proper alignment. This will prevent excessive wear on the belt.

The machine has been thoroughly oiled during assembly at the factory but should be oiled again before using. One or two drops in each of the three oil cups is sufficient. These should be oiled once a week. An occasional drop of oil should be put on the rocker arm and feed pawl. If the machine is given very heavy use, it should be oiled daily. A good grade of auto oil of #30 weight is recommended.

## OPERATION

Your Burr Automatic Retoother is now set up and ready to operate. At this

time you should check the alignment of the punch and die. If the punch does not enter the die properly (about .001" clearance on each side), read the next section, "How to Adjust Punch and Die". Also check to see if the two cap screws holding the die plate to the base are tight.

The Index bars are marked with two numbers. The left hand number indicates the teeth that will be cut if we feed one tooth at a time on the index bar. The right hand number indicates the teeth that will be cut if we feed two teeth at a time. Thus each index bar cuts two sizes. For instance, the bar marked 9-5 vill punch a nine point saw if fed one notch at a time, or a five point saw if fed two notches at a time.

It is not necessary to cut or grind off the old teeth. These fall off in chips. After removing the handle, side joint or file off the set on the old teeth. This prevents excessive drag as the saw is fed through the machine. Lay the saw on the bench with the handle end of the saw to the right and the teeth away from you. Select the proper index bar and place in the slot in the saw carrier. Be sure the index bar butts firmly against the stop in the carrier. Now place the carrier on top of the saw. Allow about 3/8" of the saw to project beyond the carrier, and this will be about: right to form new teeth. This can be done by using one of the index bars as a gauge. Let the old teeth show beyond the gauge. Use the two "C" clamps to hold the saw on the carrier.

The left hand "C"'clamp must not be put any deeper on the carrier than neces-sary. Otherwise it may strike the end of the swinging plate as it feeds by.

By loosening the two large handwheels the swinging plate may be rotated. With this plate rotated all the way to the left, a rip tooth will be formed. Ro-tated half way gives a cross cut tooth. Select the hook angle you wish to punch and tighten the two hand wheels.

Insert the carrier, with the saw, from the left side, under the brass tension clips. To get the proper tension on the springs, turn the screws until loose, then tighten about two turns.

Now take hold of the flywheel and rock it back and forth about half a turn. This will cause the feed pawl to move the index bar. Adjust the thumb screw so that one or two teeth are fed at a time. This will depend on the size you wish to cut (see paragraph above on index bars). Be sure to tighten the wing nut on thumb screw. Turn on motor.

## ADJUSTMENTS

A. Sharpening Punch and Die.

1. Remove the two handwheels and bolts and lift the swinging plate out of the retoother.
2. Turn ram down and loosen set screw on punch.
3. Turn ram up and remove punch.
4. Loosen set screw on die and remove.

5- Punch and die may be sharpened by grinding lightly on ends only. Never grind sides of punch or die. As the temper is drawn at 450°, you should be careful not to overheat them in grinding. Punch and die 'should be dipped in cold water while grinding to prevent burning.

B. Adjusting Ram.

It is important to keep the ram adjusted to prevent play between punch and die. Proper adjustment of ram will increase life of punch and die. This is accomplished in the following manner.

1. Slip the belt off the flywheel.
2. Loosen jam nuts on gib screws (beside nameplate on coverplate of machine).
3. Tighten gib screws until slight drag can be felt on flywheel.
4. Tighten jam nuts, locking gib screws. BE SURE THESE ARE TIGHT.
5- Replace belt and oil the ram through upper oil cup.

C. Adjusting punch and die.

1. Put punch in ram and tighten set screw Just enough so that the punch will not drop out. (Add washers behind shoulder of punch to make up for metal ground off in sharpening).
2. Put die in die plate and adjust height to level with .swinging plate. Jam nut must be tight on elevating screw.
3. Lay a 12" steel scale (or straight edge) on die plate and hold against rear corners of die. Rotate die until scale lines up with two threaded holes in die plate. Tighten set screw on die.
4. Place die plate in machine and while pressing firmly against the punch, rotate slightly until holes line up through base of machine. Tighten set screw on punch.
5. Now place a small strip of cellophane about 1/2" wide on each side of punch. While pressing the die (and die plate) firmly against the punch, tighten the two bolts that hold the die plate in place. This will give about .001" clearance between punch and die.

The punch and die should now be properly aligned. You can check this by laying a piece of cellophane on each side of the die and bringing the punch slowly down. The punch should crease but not shear the cellophane.