



## OPERATING INSTRUCTIONS FOR MODEL # 600 AUTOMATIC GEM DRILL

### INTRODUCTION

The model #600 drill is designed to drill medium to soft gemstone material. The drilling action is automatic and does not have to be manually controlled. The electronic field of the motor raises and lowers the chuck automatically 1/4 inch. The light downward pressure of the feed prevents damage to diamond coated drill bits, but it does result in longer drilling time.

### DESCRIPTION

1/50 HP, 115V, 60 Hz motor turns the drill bit at 3040 rpm. Unit comes with 1/4" Jacob chuck, 1-1/2 and 2 mm drill tubes, cleaner, plastic putty, grit ring (ferrule), and guarantee. Size: 6"L X 4"W X 13"H. Shipping weight approximately 10 lbs.



### INSTALLATION

Safety: Before plugging your drill into your electric supply, **read the Covington Safety Demand Sheet.** Your drill can be used portable. However, it is recommended that it be secured to a work bench during drilling.

### ADJUST DRILL TABLE

The electronic field of the motor raises and lowers the chuck automatically 1/4". Before setting the height table, run and stop the drill so that the chuck is in the retracted (high) position. Set the table on the vertical upright shaft with ample space above the table for the gemstone. It will later be necessary to make a final adjustment in the table height so that the stone to be drilled is just under the drill bit tip. When starting again, the bit will automatically drill to a depth of 1/4". If a hole deeper than 1/4" is desired, the above procedure is repeated and the table raised.

### USE OF DIAMOND COATED DRILL BITS

Select the bit size you want and insert one half its shank length into the chuck and tighten securely. The stone and drill bit must be kept cool. The best way to do this is to immerse the bit tip in water. Small Stones: Secure the stone to the drilling table with molding clay under and around the sides of the stone. If not in a pan, form a dam around the drilling area and fill with water. A drilling jig is recommended for drilling beads. Again, the tip of the bit should be covered with water. Diamond drill bits tend to chip the underside of the stone as they come through. This can be prevented by cementing the stone to a piece of glass if the bottom is flat.

### USE OF DRILL TUBES

First run the wire cleaner through the proper size drill tube to see that it is clean. Then install the tube with about 5/8" extending out of the chuck. Tighten chuck so that the tube won't be hammered back (upwards) while drilling.

Next, place the little grit ring (ferrule) over the center of where you want the hole in the stone. Press the molding clay around the ring so that it will stay in place and not leak water. Press two small pieces of molding clay on the back side of the stone, one on each side of where the drill tube will come through (to elevate the stone when in place on the drill table). Align the ring with the drill tube and press stone in place on the table.

## **USE OF DRILL TUBES CONTINUED:**

Fill the ring reservoir with water and then add #602 boron carbide grit. An eyedropper and flat toothpick are useful when adding water and grit. Don't use too much grit or it will plug the drill tube. Raise the table so that the stone to be drilled is just under the drill tube. The stone is now in position to be drilled automatically.

## **DRILLING**

Using tubes and grit, the drill will penetrate 1/32" to 1/8" in 15 minutes, depending on the hardness of the material. Larger sized drill tubes or diamond core drills cut faster.

When drilling action slows, it usually indicates that the tube is plugged up with core material or grit. In this event, stop the drill, drop the table down and then remove and examine the drill tube. Clean the tube with the cleaning pin and reinstall in the chuck. The drill will not operate satisfactorily if the tube is plugged up.

## **MAINTENANCE**

Keep the upright shaft well oiled. Oil the motor bearings located on each end of the motor with 1 drop of 3-in-1 oil every six months. **Caution: Do not over oil bearings.**

Lubricate the gears with grease each month. A multi-purpose white grease is a good type to use.

**WARNING: The motor has a normal working temperature that is too hot to touch.**

If the motor should stop, just give the drill chuck a turn to the right to restart it.

Caution: Keep grit away from the chuck, gears, and bearings.