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EXPANDABLE DRUM UNIT INSTRUCTIONS MODEL #454 & #592

DESCRIPTION

Expandable drum sander/polishers are designed to sand and polish glass or gemstone material using silicon carbide belts, for abrading, and cork or felt for polishing. All units are constructed of heavy-duty, cast-aluminum, powder coated pans and hoods. The angled expansion slots through the rubber rim of the expandable drum allow it to expand when rotated, thereby locking the belt in place. The drum surface flexes to the contours of the gemstone quickly removing grinding flats and scratches. Drums accept 3" x 25-7/32" sand belts. **Never** run drum without a belt on it. Water valves take 1/4" OD plastic tubing for gravity water flow or 1/4" copper tubing for pressure systems. Spray nozzles under the hood wet the entire wheel face. To drain, remove the drain plug and replace with grinder drain kit that includes six feet of flexible PVC and a 3/8" pipe adapter.



The 8" two-station unit is powered by a 1/3hp, dual-shafted motor. Drums are mounted on motor shafts and turn at 1725rpm.

The 8" four-station unit is powered by a 1/2hp, high-torque motor. Speed control allows gradual speed changes from 800rpm to 1725rpm. This unit allows the user to move through grinding stages without changing the wheels. Wheels are mounted to closed arbor.

INSTALLATION

Prior to using your machine, make sure that you have a clean, usable workspace with access to water and an electrical power source. Read the Covington Safety Demands. The unit should be placed on a sturdy, level bench to avoid vibration. The shaft turns down and toward the user.

Belt Installation-Replacement: Remove hood. Work the belt onto the drum a little at a time using care not to force or bend the belt.

Speed Control: Speed adjustment is done only while the motor is running. It is changed by turning the hand wheel in the front of the unit clockwise to increase rpm speed and counterclockwise to reduce.

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SANDING

Use the coarse belt (100g) for shaping the work piece; use the medium belt (220g) for refining the shape or removing ridgelines. A 400-grit silicon carbide belt will usually remove the bumps and scratches left by the coarser belts. Perform all sanding operations wet. A 1200-grit diamond belt is an excellent smoother for the final preparation of the work piece before polishing. Use to remove slight imperfections and hairline scratches. After sanding, dry the work piece and inspect it under a bright light. All scratches and blemishes must be removed during the sanding process.

POLISHING

The polishing operation does not remove any surface material. Some materials such as glass almost always require both pre-polish and polish steps. Pre-polish usually consists of 600-grit silicon carbide or in the case of glass, 2F or 4F pumice powder put on a cork belt. Cerium oxide with a felt belt provides good, general purpose polishing.

HELPFUL HINTS & HARMFUL ERRORS

Wear-out: A well-used belt will leave a finer finish than the same belt when new. A well-worn fine grit may be used as a pre-polish belt. Sanding belts do not lose their usefulness until the belt backing wears out.

Sanding: As a general rule, 80-grit abrades twice as fast as 220-grit; 220-grit abrades twice as fast as 400-grit and 400-grit faster than 600-grit. If the material being sanded is medium to soft, some sanding steps can be omitted.

Balance: Rotate drums and check for side wobble and round. It is important to install drums properly and avoid vibration. Should vibration occur, mark drums and loosen nuts; turn each of the two drums in the opposite direction 1/8 revolution and repeat check. This method of adjustment can improve balance, but is not a sure method of elimination. An out of round drum cannot be balanced and should be replaced.

Small Work Pieces: Prior to sanding, it is advisable to mount or “dop” the gemstone or work piece on a small, round, wood stick. Mounted in this fashion, the stone is much easier and safer to handle in sanding and polishing operations.

Melt some of the dop wax over a low flame while warming the stone. Dip the end of the stick into the melted wax and press onto the bottom of the stone to be worked.