

MARTINDALE

MINIATURE GRINDING TOOL INSTRUCTIONS

CAUTION: All Grinder Supports **MUST BE INSULATED** from electrically live circuits and tested for absence of current at the Grinder, before beginning work.

NEW GRINDER SET-UP:

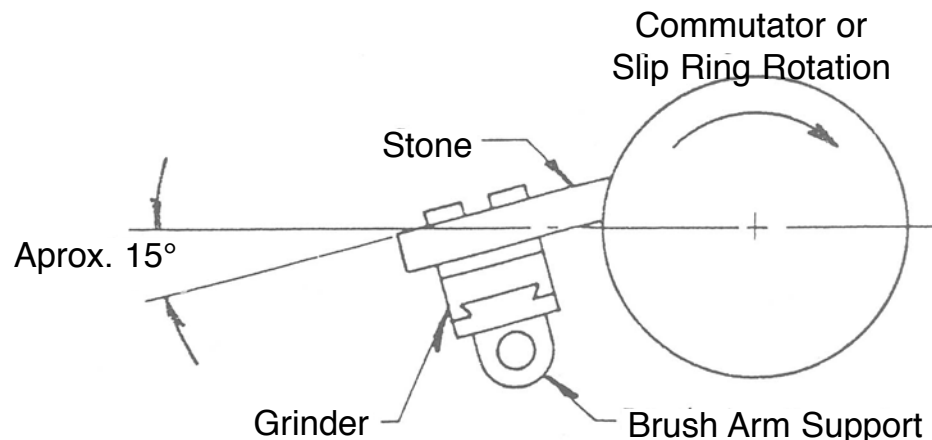
Install the operating handle(s) to complete the grinder assembly, according to model. Thoroughly clean the new grinder with kerosene to remove preservatives. When dry, lubricate all moving parts with a dry type lubricant.

ADJUSTMENT:

The grinder base, cross-slide and carriage are provided with wide, precision ground "V" ways which may be tightened by adjusting the gibs. All parts should move freely but be tight enough to eliminate any excessive play.

INSTALLATION:

The grinder mounts directly to brush arm supports, to the motor-generator frame, or in other ways improvised to secure a rigid mount. When a brush arm is to be used, remove all brush holders from the arm. The grinder should be positioned so the



resurfacers trail at 15 degrees off perpendicular in relation to the commutator face, in the direction of machine rotation. The grinder is mounted parallel to the axis of the generator or motor, and to the face of the commutator (unless tapered), and as close as possible.

The grinder should have adequate clearance to allow complete travel across the entire face of the commutator without stopping. Canting the resurfacers at a slight



outward angle gives up to an additional 1" effective cutting width on a commutator.

A dust collector should be mounted in conjunction with the grinder, as near to the resurfacer and commutator face as practical.

HELPFUL TIPS:

Before grinding begins, take the following precautions:

1. Be sure the commutator or slip rings are clean. If oily or greasy, wipe dry, and clean with solvent.
2. On generators, remove all brushes; on motors, remove as many brushes as possible. Run the machine at its normal speed, at no load, and reduce voltage when possible.
3. Do not resurface under conditions in excess of 440 volts. Always use insulating materials, such as floor mats, protective gloves, etc.
4. As a further safety precaution, the circuit breaker or fuse should be set to open at slightly above starting current.
5. On high voltage machines, or where the machine may not be removed from operation, the armature should be brought up to its highest speed and the switch thrown. The grinding is done as the machine "free wheels" to a stop. Repeat as needed.
6. Whenever possible, grind on electrically dead machines. Devise outside power sources to eliminate any possibility of accidental grounding.
7. Always protect the eyes with appropriate safety glasses or a face shield, and wear a dust mask.

OPERATION:

Start the grind at the outside edge of the commutator, and traverse the entire face, maintaining uniform in-feed pressure, contacting only the high points of the commutator on the first pass. Return the carriage to the starting position, and again traverse the face of the commutator. Repeating this procedure will gradually increase the duration of contact with the commutator until it is truly concentric. Additional time may be required for removal of all ridges, flat spots, or burns.

Maintain sufficient in-feed pressure to assure good cutting, but never attempt to speed up the operation by excessive pressure. The resurfacers may fracture, or they may set up a pattern of chatter that will counter the intended results.

MAINTENANCE:

Keep the grinder clean and free of resurfacer and metal residue. Lubricate freely and frequently with dry type lubricant.

This diagram shows an exploded view of a mechanical assembly. The components are numbered as follows:

- 1: A small cylindrical pin or plug.
- 2: A large cylindrical component, possibly a piston or a main shaft.
- 3: A small circular washer or spacer.
- 4: A small circular washer or spacer.
- 5: A small circular washer or spacer.
- 6: A small circular washer or spacer.
- 7: A small circular washer or spacer.
- 8: A small circular washer or spacer.
- 9: A small circular washer or spacer.
- 10: A small circular washer or spacer.
- 11: A small circular washer or spacer.
- 12: A small circular washer or spacer.
- 13: A small circular washer or spacer.
- 14: A small circular washer or spacer.
- 15: A small circular washer or spacer.
- 16: A small circular washer or spacer.
- 17: A small circular washer or spacer.
- 18: A small circular washer or spacer.
- 19: A small circular washer or spacer.

1375 Hird Ave., Cleveland, OH 44107 • Phone (216) 521-8567 • Fax Local 521-9476 / USA & Canada (800) 344-9191
E-Mail: sales@martindaleco.com • Website: www.martindaleco.com