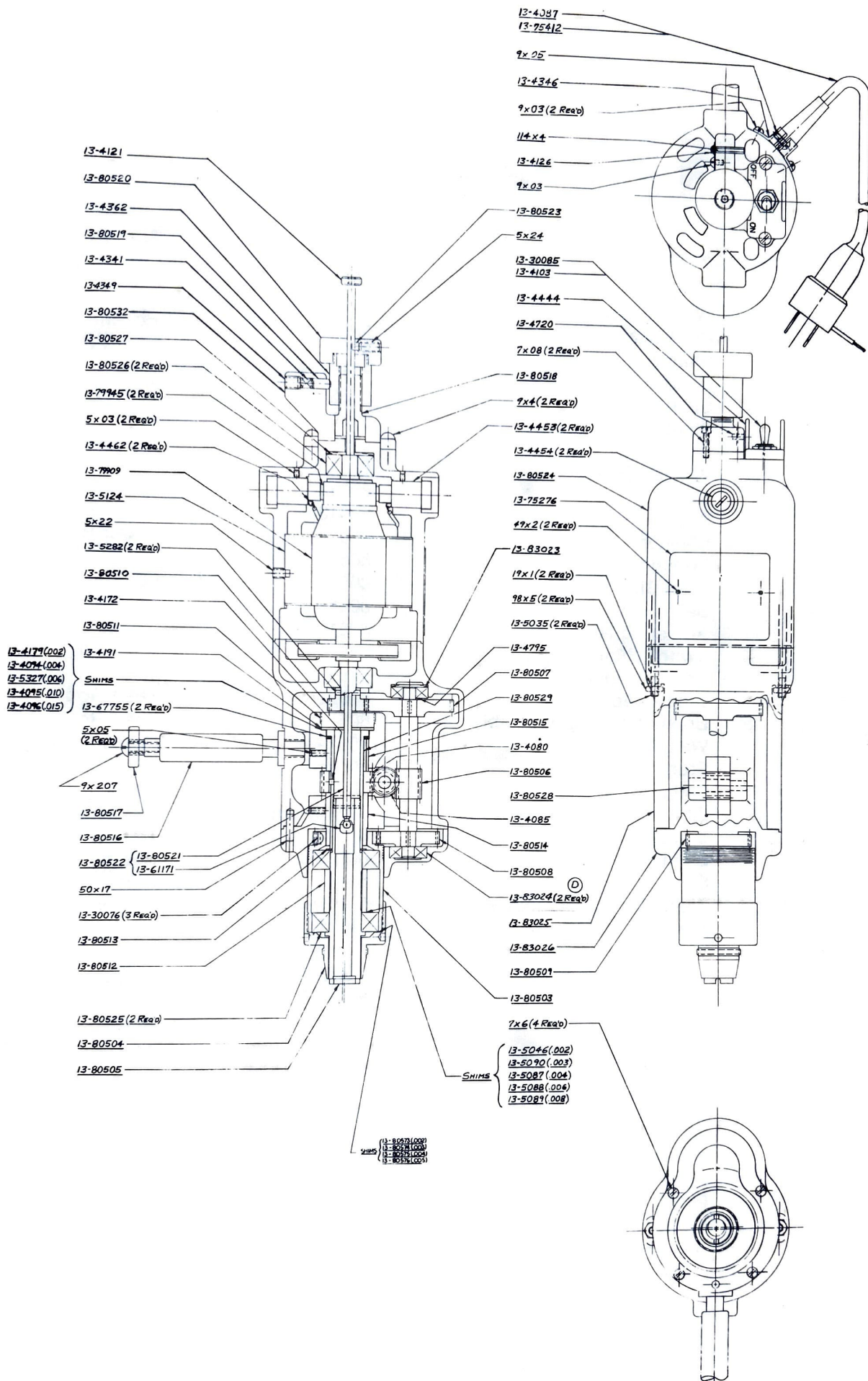


MODEL VIP ECCENTRIC VALVE SEAT GRINDER

INSTRUCTIONS



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VIP GRINDER PARTS LIST

Part No.	Name of Part	Part No.	Name of Part
4080	Gear	80503	H. S. Spindle
4085	Worm & Gear	80504	Stone End
4087	Cord Assembly	80505	Eccentric Shaft
4094	Shim	80506	Worm & Shaft
4095	Shim	80507	Gear
4096	Shim	80508	Gear
4103	Shield	80509	Gear
4121	Nut	80510	Drive Gear
4126	Wrench Clip	80511	Thrust Plug
4172	Key	80512	Spacer
4179	Shim	80513	Washer
4191	Washer	80514	Lower Bushing
4341	Spring	80515	Upper Bushing
4346	Cord Clip	80516	Locating Handle
4349	Set Screw	80517	Lock Screw
4362	Adjusting Nut	80518	Sleeve
4444	Switch Plate	80519	Adjusting Screw
4453	Brush Holder	80520	Cap
4454	Brush Cap	80522	Feed Rod Assembly
4455	Brush & Spring Assembly	80523	Feed Rod Lock Plug
4795	Washer	80524	Housing Body
5035	Stud	80525	Bearing
5046	Shim	80526	Bearing
5087	Shim	80527	Loading Spring
5088	Shim	80529	Eccentric Shaft Holder
5089	Shim	80532	Ratchet Cap
5090	Shim	5 x 3	Screw
5124	Field	5 x 22	Screw
5282	Pin	9 x 03	Screw
5326	Shim	9 x 05	Screw
30076	Key	7 x 08	Screw
30078	Spring	5 x 24	Screw
30085	Switch	7 x 6	Screw
83024	Bearing	49 x 2	Screw
67755	Loading Spring	9 x 207	Screw
75276	Name Plate	5 x 03	Screw
78342	Shim	9 x 4	Screw
78343	Shim	19 x 1	Washer
79909	Armature	98 x 5	Nut
79945	Field Clip	50 x 53	Pin
79965	Pin	50 x 17	Pin
83025	Center Gear Housing	114 x 4	Wrench
83026	Nose End		

GRINDING WHEELS

Proper dressing of the grinding wheel is accomplished as follows:

Clean taper on grinder spindle and inside taper of wheel insert. Screw wheel onto grinding spindle. Place the grinder in the saddle stand being certain to firmly locate the grinding wheel end of the spindle over the dresser stand. Tighten the screw of the handle so the grinder is held firmly. Properly locate the quadrant assembly to assure full diamond traverse across the angle of the wheel. Start the motor and pass the diamond back and forth across the face of the grinding wheel through the use of the lever. Continue this operation until the stone has been dressed across its entire width.

The operator must be certain that the valve seat angle matches the valve face angle in accordance with the engine manufacturer's specification. Final adjustment to a specific angle, for example 45°, is obtained by blueing the valve to show proper contact with the valve seat. This should be done when installing new valves as well as when refacing present valves. Slight final adjustment of dresser angle to obtain proper valve to valve seat blue-in contact may be necessary. Once adjusted, the setting is permanent until the dresser quadrant is moved to another angle.

PILOTS

Wipe pilot with a clean cloth before using. Do not use oil on pilots except to aid in cleaning them. Be certain to wipe free of oil. Oil on the pilot collects abrasive dust from the grinding operation thus forming a lapping compound. This wears out the pilot and eccentric shaft.

Place the pilot in the valve guide using the special wrench furnished with this equipment. Do not wring or wind the pilot into the guide - just set it against the taper gently. Expand the pilot by turning the knurled knob on the top of the wrench. Do not tighten this knob excessively - merely pull it up snug with thumb and finger.

SETTING THE GRINDER

Remove the grinder from the dressing stand and place it over the pilot installed in the valve guide. Loosen the allen set screw and push the feed rod down until it stops. This is then located on the top of the pilot. Tighten the set screw against the feed rod.

Turn the feed adjustment to the right (clockwise) as indicated by the arrow at "release" stamped on top, until the grinding wheel is free and clears the seat. Check this adjustment by rotating the grinder around the pilot. Another method sometimes used is to rotate the spindle by hand to check whether or not it is clear of the seat.

GRINDING THE SEAT

First, be certain that the valves are accurate and properly faced. The complete valve job is dependent on both accurate seats and accurate valves. Second, grind the seats with your Model VIP grinder according to the following procedure:

Start the motor. Hold handle. Turn the feed screw to the left (counter-clockwise) as indicated by the arrow at "Grind". Feed one notch at a time until the seat is cleaned up. Generally a show of sparks around the entire seat during one eccentric revolution indicates a finished, true seat. This is one of the many advantages of Hall-Toledo eccentric grinding. Allow the grinding wheel to continue running until it grinds itself free. Turn the feed screw to the right (clockwise) to release the grinding wheel. Shut off the motor and allow the grinder to stop before removing it from the pilot.

If the valve seat must be narrowed, this can be done by using the 30° grinding wheel on 45° seats, narrowed from the top. Use 15° narrowing the wheel on 30° seats. For "Choke" narrowing, or narrowing from the inside of the seat, use a 60° grinding wheel.

PREVENTIVE MAINTENANCE

The Model VIP is a grinder. As such there will necessarily be a certain amount of dry abrasive dust in the air when the tool is in operation. This abrasive dust will cause considerable damage and excessive wear if the tool and pilots are not cleaned frequently and well. After each job the pilot should be carefully washed in a SOLVENT solution and thoroughly wiped. This cleaning will prevent abrasive being carried into the eccentric shaft and avoid undue wear to either pilot or shaft. The eccentric shaft should be swabbed out occasionally with a clean cloth on the end of a stick or wire.

Pilots should always be kept clean and the collets should be removed from time to time from the pilot and thoroughly cleaned so that accurate centering is possible.

Grinding wheels, of course, should always be kept away from oil. If grinding wheels do become soaked, they will not cut properly. If by accident some wheels become soaked with oil, allow them to stand in carbon tetrachloride for a few minutes: then screw the wheel onto the grinder and let it spin dry. This should be repeated several times and, in most cases, the oil will be washed from the wheel so that it will again cut freely.

The Hall-Toledo Model VIP Eccentric Grinder is equipped with a fan mounted on the lower end of the armature which blows air through the motor case and keeps the machine cool. This is the first place to look for trouble when the operator notices the machine is beginning to heat excessively.

LUBRICATION

Do not add additional lubricant to the gear box if the machine begins to operate above normal temperature. Because of the high speed gear construction, excessive lubrication causes more heat to be generated. Each machine is sent out from the factory packed with lubricant to last approximately 1,000 hours of operation. If lubricant must be added to the gear chamber, only about a half teaspoon should be added, and then it should only be the special lubricant, Hall-Toledo No. 4475, No. 76 grease, furnished in 6 ounce tubes. This must be obtained from Hall-Toledo or your local jobber.

ECCENTRIC SHAFT REPLACEMENT

The eccentric shaft is very easily replaced in your shop simply by loosening the shaft with a flat piece of stock (or the spanner wrench supplied with the grinder) which will fit in the lower end of the eccentric shaft. The shaft and spindle assembly will then come out of the machine. To remove the eccentric shaft from the spindle, unscrew the stone end of the spindle, then the eccentric shaft is easily removed. This shaft is replacement part No. 80505.

When the eccentric shaft is replaced, it should be pulled up just snug and never tightened excessively. When the shaft is removed from the grinder, the entire grinding wheel spindle may be removed simply by lifting it out of the case. The gear on top of this spindle may appear almost dry. This is a normal condition as the gear operates only on a film of lubricant. The outside of the spindle should be dry at reassembly. If this spindle is coated with heavy oil or grease when reassembled, it will rub the housing and, because of the very close fit, cause heating. It is important to remember that the housing of this machine does not serve as a bearing for the spindle.

FACTORY REPAIRS

Sometimes it may be necessary to make repairs other than those described in the preceding pages. Our Maumee factory maintains complete service facilities with experienced workmen and special tools and test equipment. Your Model VIP may be returned through your jobber or by you directly for a free estimate of the cost of repair. Repairs to obtain new operating condition are made only following your authorization to proceed at the estimated cost. All shipments must be made on a postage or freight prepaid basis to our factory at 525 W. Sophia, Maumee, Ohio 43537-1847.