



QUAKER CITY MILL -- 04186-00

IMPORTANT -- READ INSTRUCTIONS BEFORE OPERATING MILL

This mill has been thoroughly inspected and carefully packaged before shipping. Please inspect for damage immediately and report any problems to your supplier.

ASSEMBLY

Attached to the drive unit you will find a vent plug and instruction tag. This plug must be used to replace the uppermost solid plug in the gear housing. Operation of the mill without the vent plug in place can result in permanent damage to the oil seals. Retain the solid plug for future use to prevent lubricant loss during shipment.

Remove the masking tape from the front of the bearing casting and be sure the square tubular coupling is in place on the motor shaft adapter.

Insert grinding unit into bearing casting and rotate grinding plate by hand to engage square end with square tubular coupling.

Secure grinding unit by tightening black plastic knob, being sure end of screw enters indent in grinding unit shank.

OPERATION

To regulate grind, turn thumb screw in cover to right for fine grinding to the left for coarser grind. Jam nut lever must always be tightened to maintain desired adjustment.

For extra fine grinding of some materials, best results may be obtained by first grinding with a coarse setting, then regrinding at a closer plate setting.

DO NOT OVER-TIGHTEN THE PLATES. The mill must be free to turn when empty.

If gear unit ever requires added lubricant, use SAE #90 type EP differential oil.

CAUTION

1. Follow all electrical and safety codes when using this equipment. Motor must be securely and adequately grounded.
2. To prevent eye injury, always wear safety glasses when mill is in operation.

Maintenance

DISASSEMBLY

1. Drain oil by removing drain plug and tilting gearmotor forward. Remove upper plug to act as a vent; this will speed up draining procedure.
2. Remove the four (4) main bolts from the output side of the unit.
3. With the output shaft down, pry off the motor and cover assembly. This will destroy the gasket. Use care to avoid scratching or nicking the gasket surface.
4. With the housing disassembled, the gears can be removed. Before pulling output stage gear shaft through the bearings, remove burrs to avoid damaging bearing and seals.
5. Remove motor shaft pinion gear by driving out the roll pin. Support gear to avoid bearing damage.
6. Motor can now be disassembled by removing the four (4) thru bolts from the back end of the motor. Remove the motor adapter by gently tapping with a mallet.
7. Oil seals can be removed by prying out with a screwdriver. Clean the cavity and press the new seal squarely in place, lip edge toward gear cavity until seal is flush. Apply pressure to the metal retainer only!
8. Sleeve bearings can be replaced by drilling out with a suitably sized drill, and replaced by pressing in with an arbor press. Use suitable arbors to avoid bearing damage. When replacing bearings, care should be exercised that the new ball bearings are pressed on straight and that they properly seat against the shaft shoulder. Apply pressure to the inner race only! Sleeve bearings should be pressed to the same axial location as bearing being removed.

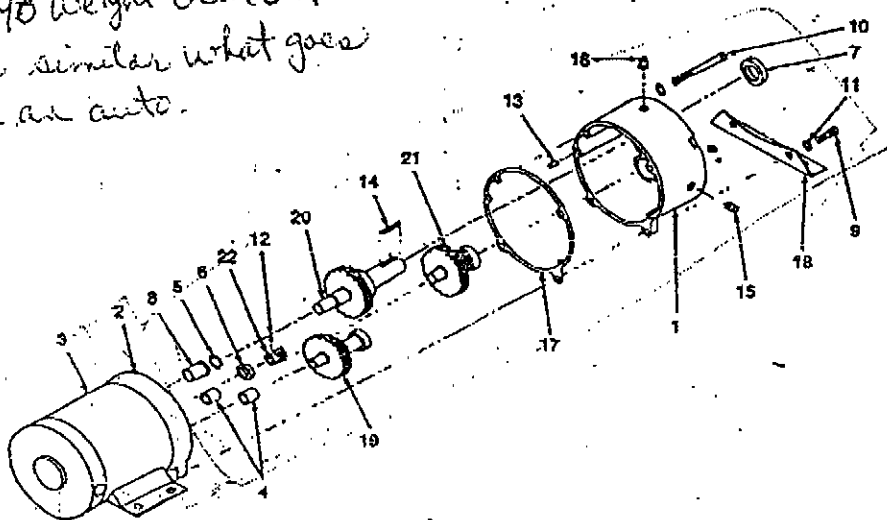
REASSEMBLY

1. Oil output shaft assembly and insert it through output shaft bore. Use tape on the shaft to protect output seal upon reassembly. Replace intermediate stage gear assembly.
2. Replace rotor by inserting shaft through seal and replacing pinion gear. Drive roll pin into hole until flush. Support pinion on wood block to avoid bearing damage. Pin must be tight.
3. If removed, slide stator over rotor, base down. Slide endshield on rotor shaft. Check to insure that leads are clear of rotor and other moving parts. Align thru bolts from endshield end. Tighten thru bolts. Rotor should turn freely.
4. Clean gasket surfaces and coat gasket with a suitable sealer. Reassemble gearhousing to backplate. With motor base sitting flat assemble gearhousing base and tighten four (4) 5/16" bolts uniformly.
5. Add oil thru filler/vent hole in top until it flows from oil level hole in side of gearhousing. Replace level and vent plugs. Do not operate unit without venting the gear box. Failure to vent will cause lubricant leakage.
6. Start and stop the motor. The gearing should turn freely and coast slightly as the motor comes to a stop.

Replacement Parts List

REF. NO.	DESCRIPTION	QTY.
1	Gearhousing	1
2	Motor adaptor	1
3	Motor	1
	Bearing shaft end •	1
	Bearing opposite shaft •	1
	Internal fan •	1
	Stationary switch •	1
	Rotary switch •	1
	Endbell opposite shaft •	1
	Base assembly •	1
	Conduit box cover •	1
4	Sleeve bearing	1**
5	Output shaft shim	1
6	Input seal	1
7	Output seal	1
8	Flange sleeve bearing	1
9	Cap screw, 5/16-18x1"	2
10	Cap screw, 5/16-18x3/4"	2
11	Lockwasher, 5/16"	4
12	Roll pin	1
13	Pin, 1/4" dia.	2
14	Key, 3/16" square	1
15	Pipe plug	3
16	Vent plug	1
17	Gasket	1
18	Gearmotor foot	1
19	High speed gear assembly	1
20	Low speed gear assembly	1
21	Intermediate gear assembly	1
22	High speed pinion	1

*90 weight Gear Oil
or similar what goes
in an auto.*



TO: OPERATOR OF THE : 04186-00

Part Number E-S9, Square Tubular Coupling, serves as a form of mechanical "fuse" in the mill. This part is designed to fail first if the mill becomes overloaded, thus protecting more expensive components from damage.

Failure of this coupling signifies that the grinding load should be reduced. This can be done in one of the following ways:

1. Start with the plates adjusted farther apart. This will initially grind the material to a relatively uniform size.

The material may now be fed through the mill with the plates set closer together to achieve the desired particle size.

2. If the material is quite hard and the initial size of the sample particles is large, it may be necessary to prepare the sample so that the particles are 1/4 inch or smaller. Grinding according to Step 1 is then recommended.