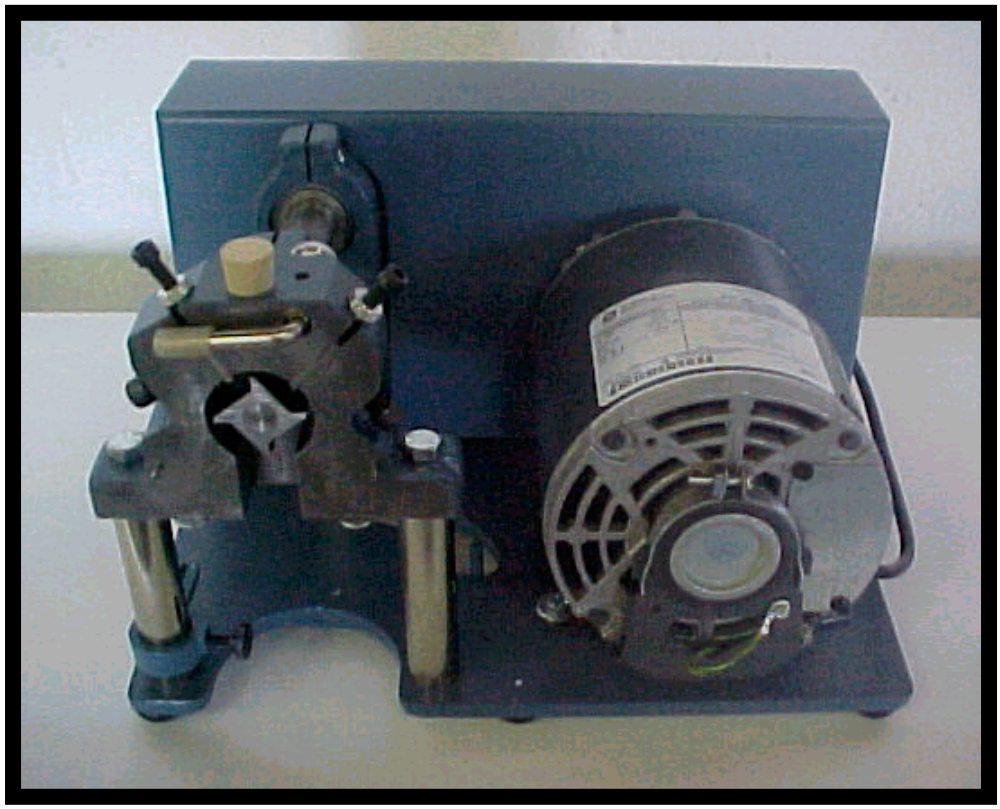
Thomas Scientific

Swedesboro, NJ 08085-0099 – U.S.A.



Wiley Mini Mill
3383-L10 (115 V, 60 HZ)

USE AND CARE OF CATALOG NUMBER:
3383-L10 Wiley Mini Mill (115 V, 60 HZ)

PRELIMINARY

1. Mill has been properly adjusted at the factory. However, clearance between stationary and rotor knives should be checked manually before power is turned on, to prevent possible damage caused if either of the stationary knives has shifted during shipment. Check for tip-to-tip clearance between all rotor blades and the two stationary knives by placing a piece of paper of average thickness (.002 to .003 in.) against each stationary knife in turn and turning the rotor shaft by hand counterclockwise so that all four rotor blades pass the stationary knives. Knives should touch the paper but not cut it. Greater clearance will interfere with the action of the mill.

   CAUTION

   Exercise extreme care in any operation involving mill knives. Knife-edges are sharp and dangerous if handled carelessly.

2. The cutting chamber and rotor have been covered with a protective coating to protect against corrosion during storage and shipment. Remove this coating with kerosene or other petroleum solvent before putting mill into operation.

3. Mill speed is adjustable by changing the pulley ratio; this allows 2, 1 or 1/2 times the nominal R.P.M. of the motor. For access to the pulleys, remove the two screws from the rear of the belt guard and lift off.

4. The Wiley mill has been used successfully for a wide variety of materials. Samples should be free of hard inorganic material, although a small amount of such material, smaller than 24 mesh, usually will not interfere with milling. Washing such material from samples will, however, prevent any problem and protect the mill.

   NOTE

   If there is any doubt about the suitability of the mill for preparing any specific material for analysis, a sample of the material in question may be sent to us for milling. We expect that the customer will determine, before submitting samples, whether material will ignite or explode as a result of milling.

5. Samples containing excessive moisture or oil cannot be satisfactorily run through the mill since they tend to cling to the walls of the chamber. It is recommended that these

samples be dried or given preliminary extraction with suitable solvents before milling.

OPERATION

1. Attach the desired delivery unit to the mill assembly. The mill is furnished with three delivery tubes, each with an integral gauze top of 20, 40 or 60 mesh. Selection of mesh will depend on coarseness of material needed; finer and coarser meshes are available.

    a. If only small quantities of material are being handled, insert the bottom of selected delivery tube into the square receiver (receiver makes a friction fit). Insert delivery tube and receiver into slot in front of mill, raising tube until it hits the stop pin located on the back plate of the grinding chamber, which will bring its sieve surface flush with the circumference of the chamber. Do not force the delivery tube beyond this stop pin. Raise the sliding side-arm support (located on the left leg of the mill) until its groove engages the side arm on the side of the delivery tube, and tighten knurled nut, securing the side-arm support in this position.

    b. If larger quantities of material are required, a screw-top jar receiver must be used. Attach the receiving adapter and adapter lid to a screw-top jar; insert the selected delivery tube into the adapter. Insert delivery tube into slot in front of mill as in paragraph (a) above, and pull out the swing-out platform (located beneath the mill chamber) to support the delivery tube and the attached jar. Raise the sliding side arm support and engage the delivery tube side arm and secure as in paragraph (a) above.

2. Turn rotor shaft by hand counterclockwise to check for sieve clearance and adjust height of sieve if necessary.

3. Position glass plate over face of the milling chamber and fasten it in place with the adjustable rod clamp.

4. Insert the hopper into the upper milling chamber opening.

5. Attach the line cord to power source and press cord switch to start operation. Feed sample into the hopper slowly enough so that the mill does not slow down or become jammed. Optimum feed rate will vary with the type of material being ground. Materials such as leaves, which do not pass freely, may be forced into the chamber by using the plunger. Press cord switch to stop operation.

CAUTION

Do not feed any material into the mill until after the power is turned on, to avoid jamming. Do not allow the chamber to become overfilled.

REPLACEMENT OF THE ROTOR AND STATIONARY BLADES

1. Remove the glass front plate. Remove the screw that fastens the small metal disc to the face of the rotor. Remove the small metal disc by carefully inserting a thin metal probe or screwdriver into the screw hole and gently prying the disc out.

2. Using suitable Allen wrenches supplied, loosen the two screws (one adjustment screw and one clamping screw) securing each of the stationary blades and carefully remove the blades.

   NOTE

   When removing blades, observe the direction of chamfer and approximate clearance, as a guide for repositioning when blades are replaced.

3. Remove belt guard by unfastening the two screws at back and lifting off.

4. Remove the motor drive belt. Loosen the setscrew in the pulley and remove the pulley.

5. Loosen the two bearing clamp screws.

6. Using Allen wrench supplied, loosen the screw securing the rear closure plate. (This is the circular metal plate that forms the rear of the grinding chamber, not visible in illustration.)

7. Using a mallet, drive out the shaft (with the bearings, rear closure plate, and rotor attached to it) toward the front of the mill by tapping on the pulley end of the shaft.

   NOTE

   It may be necessary to wedge open the two bearing housings to allow passage of the bearings.

8. Fasten the shaft in a vise. The rotor is screwed onto the shaft with a right-hand thread. Using wrench with padded jaws, remove the rotor. Attach replacement rotor and tighten onto shaft.

9. Replace shaft (with attachments) in the mill, using the mallet tapping carefully on rotor. When alignment in nearly correct, insert a sheet of paper against the face of the

grinding chamber, replace glass plate over the paper, and secure the glass plate by tightening the retaining arm.

10. Turn rotor shaft by hand to check clearance of rotor blades. Blades should touch the paper but not cut it. If clearance is not correct, remove glass plate and adjust by tapping either end of the shaft with the mallet.

11. Using a screwdriver as a lever to align and press into position, adjust the rear closure so that it is flush with the back of the grinding chamber. Make certain that the pin on the inside of the rear closure plate is at lowermost possible position, centered at the bottom of the grinding chamber. Using the Allen wrench supplied, secure the rear closure plate in position by tightening the setscrew.

12. Tighten the two bearing clamp screws.

13. Replace the two stationary knives in the same position as before removal, adjusting position of each knife by use of its related setscrews.

    NOTE

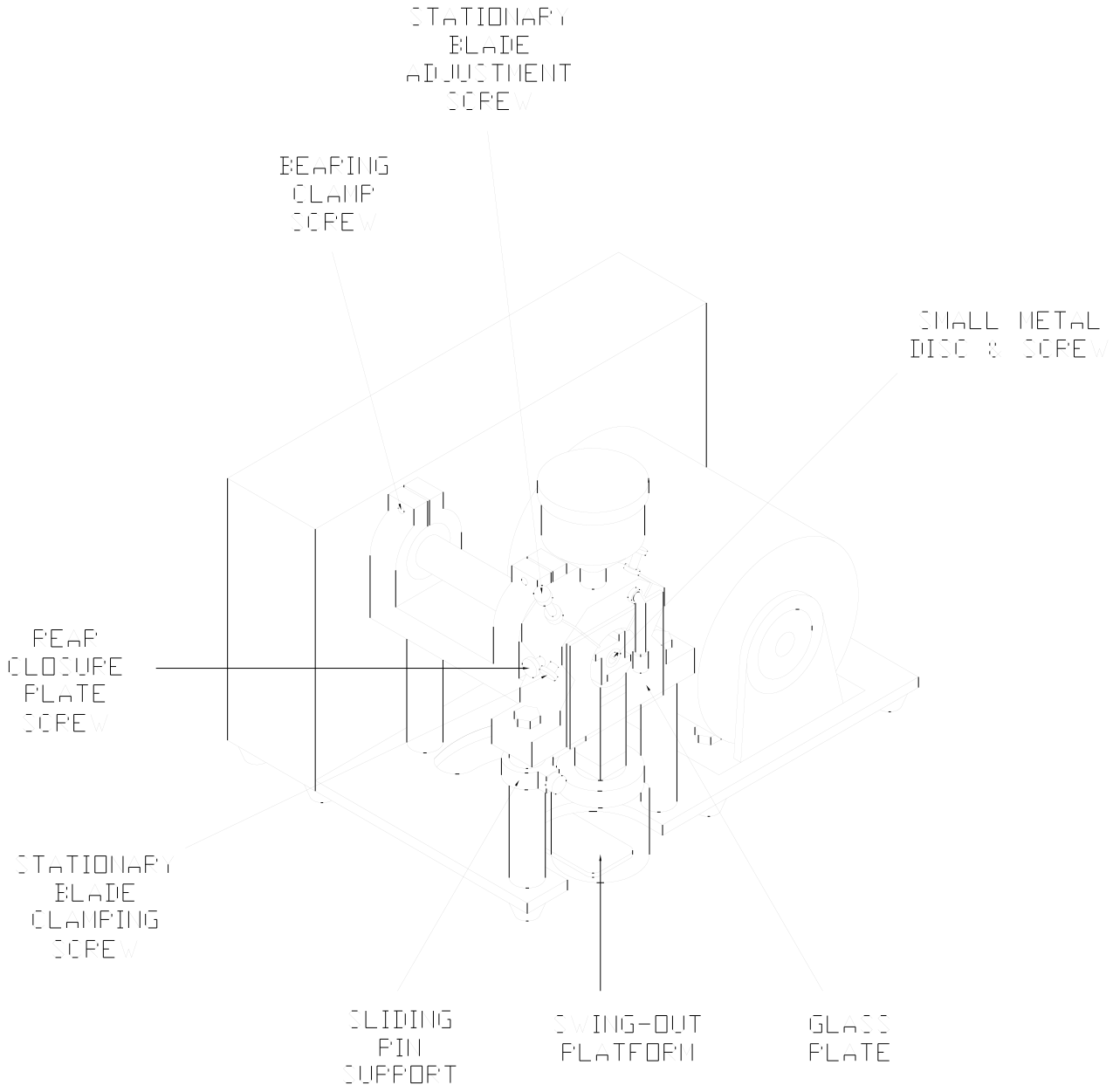
    It is recommended that the stationary knives be replaced at the same time the rotor is replaced. Stationary blades and rotor may be resharpened, but this requires considerable skill and resharpened blades are usually not as satisfactory as new ones.

14. Replace pulley on shaft, making certain that it is aligned with the pulley on the motor shaft, that pulleys are in correct order, and that setscrew bears on the flat of the shaft. Tighten setscrew. Replace motor drive belt.

MAINTENANCE

1. The motor and rotor shaft assembly have sealed ball bearings which are permanently lubricated.

2. To clean mill, remove the delivery unit and the glass plate. Thoroughly remove any particles remaining in the chamber using the fine brush provided; chamber may also be cleaned with a blast of dry air.


STATIONARY
BLADE
ADJUSTMENT
SCREW
BEARING
CLAMP
SCREW
SMALL METAL
DISC & SCREW
REAR
CLOSURE
PLATE
SCREW
STATIONARY
BLADE
CLAMPING
SCREW
SLIDING
PIN
SUPPORT
SWING-OUT
PLATFORM
GLASS
PLATE