

Thomas Scientific

Swedesboro, NJ 08085-0099 – U.S.A.



3379-K35 Variable Speed Digital ED-5 Wiley Mill

USE AND CARE OF:

3379-K35 Variable Speed Digital ED-5 Wiley Mill (115 V, 50/60 HZ)

Unpacking:

The ED-5 mill is shipped horizontally within its packing crate. Cut banding and remove the wood screws holding the top, lifting the top off the crate. Lift the mill crate onto its end, casters down. Remove internal packing and braces. Unlock the four wheels and roll the mill out of the crate.

**Save packing material in the event the mill must be returned.

Installation:

The mill may be rolled on the four independent castors. *Due to the high center of gravity be extremely careful when rolling the mill over uneven, cracked or pitted surfaces. Roll the mill backwards firmly holding onto the front chamber.*

Locate the mill near an appropriate electrical outlet. **DO NOT USE WITH AN EXTENSION CORD OR MULTIPLE OUTLET STRIP.** The mill should be plugged into an outlet with no other appliances on the circuit.

Lock all four castors prior to use.

Assembly:

Open the mill chamber by turning the chamber handwheel ccw. Lift the right arm of the support bracket away from the latch.

Insert the stem of the hopper into the opening on the top of the head. Seat hopper cover. Put rubber stopper into rear access hole to keep out dirt and dust.

To install sieve loosen the receiver assembly by turning the two sieve release handwheels at the bottom of the mill until the alignment pins disengage.

The standard mill is supplied with three sieves, one each of 0.5, 1 and 2 mm., along with shim plates that bring the sieve-shim thickness to approximately 1/16". Sieves with larger holes do not require the spacer. Insert the desired shim-sieve

combination, with the sieve on top, between the mill and receiver, align and lock in place.

Insert Mason jar into threaded collar at lower end of the receiver.

Latch door and tighten chamber handwheel. Attach power cord to rear of mill and plug into appropriate electrical socket.

FIRST TIME SETUP:

TURN ON POWER SWITCH AND LET MILL SIT FOR 2 HOURS PRIOR TO USE.

Operation:

After power is applied to the mill (see first time setup) rotation begins by pressing the green start button. Rotation ends by pressing the red stop button. Desired speeds are achieved by pressing the up/down arrows on the keypad. Speeds vary continuously between 600-1140 RPM.

Start the mill before adding sample. Materials, which do not flow freely, may be forced into the chamber with the plunger.

For optimum results feed material slowly so that the rate of feed approximates the rate of delivery of ground material. Do not overload or overfill the chamber. The chamber should not contain more material than can be agitated by the revolving blades. Overloading may result in heating, caking, or clogging.

Hard or tough materials should be reduced to small size before feeding into the mill. If jamming occurs stop the mill immediately (red stop button) and shut off power. Open the chamber door and remove the jamming particles.

Due to the static charge created when some plastics are ground best results are usually obtained at higher speeds, to take advantage of the fanning effect of the rotating knives.

A safety interlock prevents operation of the mill with the chamber open.

After each sample is ground, clean the chamber and receiver with a narrow, fairly stiff brush. Alternatively, a blast of clean, dry air is effective.

Knife Adjustment and Replacement:

For safety, the rotor must be removed from the chamber when replacing the rotating knives. Loosen square-head setscrew by turning it ccw with the 3/8" end of the open-end wrench supplied. Pull the rotor off the shaft. This removal usually requires the help of another person to tap on the end of the shaft with a wooden or plastic faced mallet. Remove knives from rotor by using the 7/16" end of the wrench to turn the hex-head screws ccw.

After removing old knives, clean the knife seats on the rotor. Mount the knives with the cutting edge down. Make certain that sides of knives do not project beyond either face of the rotor, and that the cutting edges of the knives face in a ccw direction (see illustration). Replace the rotor on the shaft. A clearance of approximately .004" must be left between rotor and rear wall of mill chamber. Use small pieces of paper to set this clearance. Remove these before tightening the rotor set screws.

To remove stationary knives, loosen knife clamping screws by turning ccw with the 3/16" Allen wrench supplied. These screws are in pairs on the outside periphery of the mill. They bear on half-round clamp bars that hold the knives.

To replace a stationary knife, place knife in slot of housing with cutting edge up on left side of mill and down on right side of mill. Insert clamp bar in hole next to knife, press knife firmly against washer on adjustment screw and tighten both knife clamping screws slightly. Adjust knives by means of the single 3/16" Allen-head knife adjusting screw in the recess at back of the each knife. Turning ccw moves the knife away from the rotor; cw movement moves knife towards the rotor.

Adjust the clearance between the knives by inserting a piece of paper approximately .004" thick between their edges. Adjust the knives until the passing of the rotor past the stationary knife just leaves an impression on the paper. Make certain that the edges of the knives are parallel and that the sides of the stationary knives do not protrude from the slots. It is possible that the cutting edge of one rotating knife may protrude slightly very slightly beyond the others. In this event, it is recommended that the stationary knives be adjusted with respect to this knife. After adjustment, tighten the knife clamping screws securely and recheck the clearances.

Backplate Adjustment:

If it is necessary to adjust the position of the backplate, clean any foreign material off the faces of the door, the rotor and the backplate.

Loosen the rotor and adjust the clearance between it and the door by closing the door on the rotor with a piece of paper approximately .004" thick between them. Lock the rotor in place.

Loosen the two 3/16" Allen-head screws on opposite sides of the rear mill housing. This will permit the spring-loaded backplate to be moved in or out. Press the backplate inward toward the rear of the mill. Place pieces of paper approximately .004" thick between the rear of the rotor and the backplate; allow the backplate to rest against the paper, and retighten the backplate lock screws. Remove the pieces of paper.

Lubrication & Maintenance:

Motor and rotor shaft have sealed ball bearings which are permanently lubricated.

The speed controller must be kept free of dirt and dust.

If the mill is not used for an extended period, the chamber and adjacent areas should be protected with commercially available rustproofing agents.

ILLUSTRATION - VARIABLE SPEED DIGITAL ED-5 WILEY HILL



