

Operating Procedure for Ball miller

Note: Internal Timer has been modified to time for 9,999 minutes –Extended time. This ball mill was designed to run 15 minutes, Average Time. The original total time was 99.9 minutes maximum. Now it is 9,999 minutes I.e., 160 hours.

To operate longer times, two Cooling Fans have been installed and an external Duty-Cycle-Timer was also installed in order to operate the ball miller for 30 minutes “ON” and cools down for 30 minutes. For this purpose, **one should always set the timer twice the time needed for running the ball miller for the specific samples.**

- (1) Plug in Ball Mill, Fans and External Timer.
- (2) Turn both fans on “High Speed”
- (3) Turn power switch on the rear panel of ball miller “ON”.
- (4) Open Ball-mill door and install sample-balls and lock down.
- (5) Make sure to snug small plastic locking screw on clam screw.
- (6) Close door and lid latch.
- (7) Use up-arrows to set in a short time 1-3 min. as a test.
- (8) Advance the external timer to “ON” by moving the small blue wheel.
- (9) Green lamps turn on when the timer is “ON”.
- (10) Press start on the Ball mill. The ball miller should run for the set time of 1-3 minutes.
- (11) Now you are ready for a long run. Set in twice the time you needed for the specific sample. Suppose one needs to run the sample for 5 hours. In that case, timer should be set for 10 hours. It is because every 30 minutes, the ball miller will be in off condition for cooling down for another 30 minutes.
- (12) Turn gray temperature meter on to record the temperature of the motor. Thermocouple for this was attached on the motor. Reading should be near 25 degree Celsius to start.
- (13) Turn off the temperature meter to conserve the battery.
- (14) Record the starting time.
- (15) The temperature meter is connected to the motor which shakes. After 30 minutes, the motor temperature rises to 45 degree Celsius and the temperature inside the miller remains near 25 degree Celsius. The

plan is that after hours of running, the motor and sample temperature will remain cool and safe.

(16) After completing the experiment, turn off the ball miller by following the same procedure for turning it on.

Warning:

The manufacturer warns against un-attended operation. Someone should be in the room to turn it off if it overheats or fly-s apart. There is a mechanical danger of it tearing itself apart if something shakes loose. Caution is required by the operator. Monitor the noise level and the motor temperature. Turn off the ball miller if any problem arises.