

Hammer Mill: Standard Operating Procedures

1. Hammer mill must not be operated solo. At least two workers must be present when the mill is in use. Operators must wear eye and hearing protection as well as nuisance dust masks at all times when operating the mill. Operators must inform project leader when mill will be used.
2. Before each use, check the coolant and oil level of the diesel motor. Visually check that all bolts are tightened on the frame and that belts are tight.
3. Roll the mill outside away from any building air intakes. Set the casters with wheel chocks. Be aware that the mill will move slightly on the casters as it runs.
5. Tie a catch bag onto the output tube and cover the top mill opening with another catch bag to minimize loss of fine materials. Use woven mesh feed bags as catch bags.
5. Connect the battery and start the motor. The throttle should remain in the ½ open position.
6. Detach the battery so that as the mill moves slightly the battery cables are not broken.
7. Carefully feed hand-full size bundles of material into the hopper. All material must be dry – moist material will clog the screen.
8. Keep fingers and arms well away from hopper.
9. Feed only at a rate that the mill can process material.
10. If machine does not seem to be operating in its usual way, turn it off and report the problem to the project leader.
11. One worker should monitor the contents of the catch bag that the material is blown into. When it appears that the bag will be full with the material presently in the mill, s/he should notify the operator who is feeding the material to stop feeding material. The operator at the output chute then should then remove the full bag and tie on a new bag, then inform the other operator that s/he can resume feeding material. When changing bags, try to keep release of fine materials to a minimum.
12. Upon completing a work session, turn the motor off, clean up worksite, allow motor to cool down and roll the mill back into its storage location.
13. Log hours of use on equipment log.
14. Grease all fittings, check battery electrolyte level, recharge the battery with a trickle charger, and apply belt dressings as needed.

Pellet press: Standard Operating Procedures

1. Pellet press should not be operated solo by student staff. At least two workers must be present when the mill is in use. Operators must wear eye and hearing protection as well as nuisance dust masks at all time when operating the press. Operators must inform project leader when press will be used.
2. One operator should always be within reach of the PTO control to turn it off quickly if necessary.
3. Inspect pellet press to be sure dies are open.
4. Be sure pellet mill is securely on the ground and tractor brake is set. Be sure PTO connections are secure and all PTO guards are in place. Operators must stay clear of PTO shaft.
5. Start the tractor. With all personnel clear from PTO, engage PTO. Ensure that the PTO guards are not turning. Be sure press rotor is turning. Set tractor throttle to 540 RPM for the PTO shaft. If press and/or tractor do not appear to be operating normally, turn tractor off and report problems to project leader.
6. The press requires approximately 15 minutes to reach operating temperature. During warm-up time, feed material slowly. Pellets will not be pressed well but operators may run those pellets back through the press.
7. Once press reaches operating temperature, feed material at a rate the press can keep up with. As the material is processed, it will get hot enough to emit water vapor. Keep hands away from the rotors. If material needs to be freed, turn off the PTO, wait until the rotors stop and use a wooden stick to free material.
8. Pellets can be caught in a 5 gallon bucket. When the bucket is about 1/3 full, place it aside, tipped up to expose as many pellets to the air and allow pellets to cool (approximately 30 minutes). When pellets reach air temperature, they can be placed in a plastic bag or in a bucket with a lid.
9. If material does not form pellets well, it may be too moist, too dry, or have insufficient binder. Operators should inform the project leader if the material is not forming pellets.
10. When finished with a work session, run a few handfuls of sunflower seeds through the press to clean the dies and to leave it ready for the next work session. Disengage the PTO and allow it to stop turning. Turn off the tractor.
11. Log hours of operation on the equipment log for the purposes of periodic maintenance.