

OPERATIONS MANUAL

VOLUMETRIC SCREW FEEDER

AUGER Feeders, LTD



MODEL VF-1

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1. PRE-INSTALLATION INSTRUCTIONS:

1.1. RECEIVING:

The Auger Feeders, LTD series VF-1 dry material volumetric screw feeder is normally shipped via motor freight as a complete assembly bolted to a skid package. If a stand assembly is provided, the feeder is generally mounted to the stand and the stand is bolted to the skid package. Other accessories, such as dissolver tanks, weight platforms, extension hoppers, etc. will be bolted to skid package(s) as required. Upon receipt of the skid package(s) from the common carrier, all components should be securely mounted to the skid(s). If a component has broken loose or the skid is damaged, check for component damage. If damage is evident, open the package immediately and check the contents. If damage is evident notify the carrier for credit and Auger Feeders, LTD for repair or replacement of the equipment.

Note: If the package is damaged and no physical damage is apparent to the equipment, write on the carrier's paperwork "PACKAGE DAMAGED" to protect your rights to collect for possible future discovered damage at startup.

AUGER FEEDERS, LTD WILL ONLY REPAIR OR REPLACE DAMAGED GOODS FREE TO THE CUSTOMER FOR MATERIAL REIMBURSED BY THE CARRIER.

1.2. STORAGE:

If the equipment is not to be installed upon time of arrival, it is best to leave the feeder mounted to its shipping skid in a climate controlled environment until such time as the feeder is ready to be installed. If the temperature in this storage area is such that condensation may develop in the drive controller package, it is advantageous to move the unit to a dry location.



1.3. LOCATION:

The location for the feeder should be such as the area is clean and dry and without excessive drafts that will blow fine material into the air and cause a dusting problem for both personnel and other equipment in the area. Damp locations can cause some materials to absorb moisture, which can affect the handling properties of the material and therefore affect the feed rate. Be certain that there is sufficient space beside the feeder for normal maintenance and especially room enough to remove the auger and mixer (if supplied).

1.4. UNPACKING:

Remove all strapping and packing material from the feeder assembly. If furnished with a scale, remove the shipping spacer from beneath the scale plate.

2. INSTALLATION INSTRUCTIONS:

Move the feeder assembly to the desired location and orientation. Secure to floor.

CAUTION

This system may be in contact with water. Make certain it is grounded properly.

CAUTION

Plumbing and electrical must be connected following all required building codes and regulations.



3. STARTUP:

3.1. CHECK SCREW ROTATION:

Once the wiring is complete and before material is added to the feeder hopper, check the rotation of the drive screw to make sure the screw is rotating in the correct direction. Start the feeder and look into the feeder hopper to observe the screw flight. If the flight appears to be advancing toward the discharge spout, the screw is rotating clockwise. If you are not sure, drop a small amount of material (enough to cover the flight) in the center of the feeder hopper and observe which way the flight draws the material. If the material moves toward the discharge spout, all is well. If the material moves toward the drive end of the screw, the flight is rotating backward. Stop the motor, remove the AC power from the SCR controller and reverse the two armature wires connected to the SCR terminals (4 & 5). If the wiring reversal is required, check that the flight is fully threaded into the drive shaft (left hand thread), then re-apply the power to the SCR and start the motor and check the rotation again. Once the rotation has been proven to be correct and the flight is fully secured to the drive shaft, you are ready to fill the hopper with material.

3.2. DETERMINE ACTUAL FEED RATES:

Actual feed rates vary in accordance with the material density, material flow characteristics and ambient environmental influences. For accurate results it is important that you determine the actual feed rates you can expect at different settings of the speed potentiometer and, in the case of a feeder equipped with the remote analog speed control option, different control input levels. This is best accomplished with an accurate portable scale and a timing device. Recording the weight of material fed over a reasonable period of time at various settings will allow you to develop a very accurate feed rate table for your particular conditions.

3.3. OPERATION:

To begin operation, place the product into the hopper. Only fill the hopper half way at initial startup. Put the potentiometer to the setting determined during feed rate setting. Switch the feeder on using the switch on the control panel. This will start the feeder and the vibrator. The vibrator is set by a timer to come on and off as needed. Observe the operation. Adjust the potentiometer as needed to adjust the feed rate. Fill the remainder of the hopper with product. Place the lid on the hopper.



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3.4. CONTROL PANEL

- 1 POWER ON/OFF SWITCH: Switches main power to the controller, feeder drive motor and any optional device from the controller.
- 2 FEEDER MANUAL/SIGNAL SWITCH (OPTIONAL): The "MANUAL" setting allows local operation of the feeder drive motor via the controller mounted speed dial. The "SIGNAL" setting allows the feeder to be control from a 4-20 mA signal supplied to the controller (speed dial must be set on 100)
- 3 FEEDER SPEED POTENTIOMETER: Controls feeder speed as a percentage of full rated speed.



For more detail on drive go to www.minarikdrives.com search MM23401C, PCM23401A

4. MAINTENANCE:

4.1. DRIVE:

All bearings and critical drive components are sealed and require no periodic lubrication. The drive hub assembly, located on the drive side of the feeder hopper, houses the sealed bearings that support the screw flight and the seal that prevents material from migrating from the inside of the hopper to the bearings. The seal may wear over time and should be replaced periodically to prevent damage to the bearings.



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4.2. GEAR REDUCER:

The oil in the gear reducer should be checked periodically to insure it is full. Replace oil if low with Mobil SHC-634.

4.3. AUGER AND OVERWIND:

If auger or overwind show any wear or stress replace. To remove the auger and the overwind, remove the sanitary clamp and discharge tube. Remove the auger by turning clockwise (left hand thread) after removal of the auger the overwind should pull off the drive shaft. To replace reverse the procedure.

CAUTION

If the feeder is used intermittently and allowed to be idle for long periods, the system should be flushed thoroughly with fresh water and drained.

Be aware that some chemicals will absorb water and become a solid mass and no longer a powder capable of being fed. Depending on the chemical the feeder hopper should be cleaned of all chemical if the feeder is to be idle for an extended period of time.



5. PARTS

The feeder parts consist mainly of fabricated stainless steel parts, which Auger Feeders, LTD either stocks or has made to order. A request for a specific part will enable us to determine the status of the part. Some parts such as the SCR motor controller, gear reducer, bearings and hardware are commercial parts we stock and are available throughout the country by authorized distributors.

5.1. SPARE PARTS:

Feeder Motor Only	P/N BP-10049-00
Gear Reducer Only	P/N AP-10054-00
DC Drive	P/N AP-10100-01
Drive Shaft	P/N BD-10051-00
Snap Ring for Drive Shaft	P/N AP-10099-00
Teflon Washer for Drive Shaft	P/N AD-10047-00
Bearing Housing	P/N BD-10050-00
Bearing, Cartridge (2 req'd)	P/N AP-10048-00
Shaft Seal	P/N AP-10045-00
Stainless Steel Drive Coupling	P/N AP-10046-00
Plastic Insert for Drive Coupling	P/N AP-10046-01