Owner's Manual

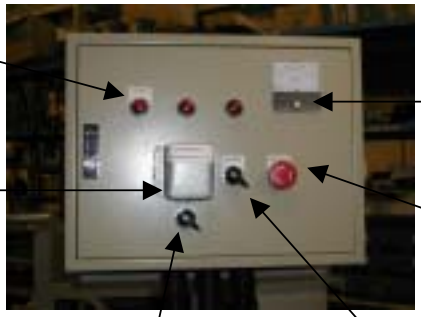
Van Ho Pug mill
Power Plus 200 Series

Van Ho De-Airing Pug mill

Van Ho Power Plus 200 Series		
	5 HP MODEL	**10 HP MODEL**
Main Motor	5HP, 7.5kw, 220V, 15.2 amps	10HP, 7.5kw, 220V, 28 amps
Phase	Single	Three
Speed Reducer Type	In-line	Gearhead
RPM	24	29
Nozzle Diameter	5.9 inches	5.9 inches
Cylinder inner diameter	8 inches / 200mm	8 inches / 200mm
Feed hopper opening at top of hopper at cylinder	 12.5 x 13.5 inches 8.5 x 10 inches	 12.5 x 13.5 inches 8.5 x 10 inches
Vacuum pump (300 liters)	1 HP, 0.4kw, 220V, 5 amps	1 HP, 0.4kw, 220V, 5 amps
Extruding Capacity	4,406 pounds per hour (Varies with clay firmness)	5,286 pounds per hour (Varies with clay firmness)
Clay firmness rating: (normal / firm / extra firm)	 Normal	 Extra Firm
Overall dimensions	40W x 76L x 55H	40W x 76L x 55H
Shipping Weight	2,325 lbs.	2,200 lbs.

- Dimension and weight varies with single or three phase.
- Dimension, weight, and colors can be changed without notice.

Illustration II - Control Panel



Power indicator lamp

The voltage gauge Indicates the voltage input to the pug mill.

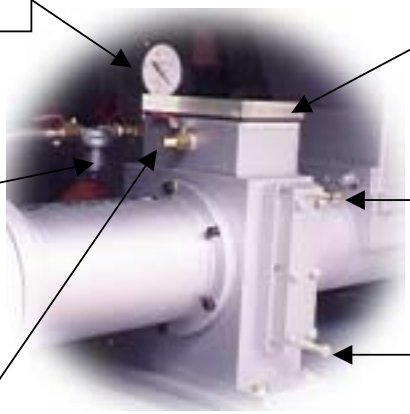
The override switch (labeled Normal) bypasses the safety micro-switch on the feed hopper and allows the feed blades and auger to operate with the hopper lid in the open position. **THIS IS NOT RECOMMENDED FOR SAFE, USE and has been rendered inoperative on your machine.**

On/Off & emergency stop switch. Push red button to stop. Turn clockwise to start.

Vacuum pump on/off switch

The standard safe mode switch activates the feed hopper, micro safety switch and prevents the feed blades and auger from operating while the hopper lid is raised. **For safety sake, it is recommended that this mode always be utilized.**

Illustration III



Vacuum gauge

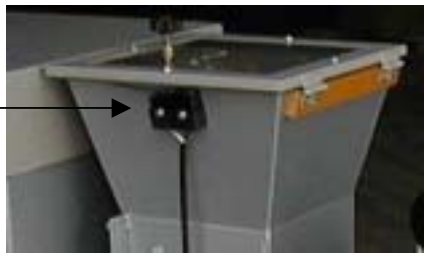
Vacuum chamber cover with rubber gasket

Air Filter w/drain

Shredder screen extractor bolts. To clean pug mill or replace screen, first remove the 6 securing bolts, then rotate the two extractor bolts clockwise to pull the screen from the vacuum chamber.

BF valve or "blow-off valve.
See Illustration I above

Illustration IV



Safety Micro Switch stops and starts feed blades and auger as hopper lid is opened and closed.

Prior to Operation

By purchasing your de-airing Van Ho extruder / pug mill you have added a valuable piece of equipment to your business. With proper care and maintenance your Van Ho will be a faithful and reliable partner for many years. Before using your new Van Ho, study its features and learn how it can best serve your needs.

Electrical

Your Van Ho was shipped without an electrical plug on the power cord. If you have purchased a 1-phase model you will most likely have it hard wired into your electrical service. If you are utilizing electrical service, which requires the use of a plug, select the drawing below which matches the outlet into which the Van Ho plug will be secured. Your local hardware store should be able to provide the correct plug. **Unless you are experienced in working with electrical wiring, you should contact a licensed electrician to perform either of the above described electrical connections.**

Common plug / receptacle configurations

Safety Micro Switch (Illustration IV)

The micro switch is essential for the safe operation of your Van Ho allowing the extrusion of clay only when the tamper lid is in the closed position. The auger will not turn when the tamper lid is open. **BEFORE USING YOUR VAN HO MAKE SURE THAT THE MOCRO SWITCH IS OPERATING PROPERLY.** Your pug mill includes a “normal” or “bypass” mode that bypasses the safety micro switch (Illustration II). For safety sake, this switch has been rendered inoperative.

Vacuum System

Proper Seal. In order to properly seal the vacuum chamber, first place the rubber gasket over the vacuum chamber access. Then place the 20mmthick acrylic panel on the gasket. Your Van Ho is an excellent de-airing machine, but **for proper de-airing it is absolutely essential that (1) the metal housing at the vacuum chamber access, (2) the gasket and (3) the acrylic panel all three be perfectly clean and without cuts or cracks.** Cracks in the rubber gasket, chips or cuts in the acrylic panel or any particles of clay or other foreign matter which might prevent a smooth and perfect seal between the metal housing, the gasket or the acrylic panel can cause air leakage and interfere with the de-airing process.

Vacuum Air Valve. Prior to operation, close the air valve on the Vacuum Chamber (Fig.1).

Vacuum Pump Oil Level. Vacuum pump oil should be filled to the center of the sight glass (Fig. 2) to ensure proper de-airing. If, during or after use, it becomes apparent that the level has risen significantly above the center of the sight glass, water has been introduced into the oil. See Vacuum Pump Maintenance below.

Vacuum Pump Maintenance. Humid air drawn from the clay passes through the air filter (Fig.3) during the de-airing process. The air filter separates most of the moisture from the air with the water settling into the air filter’s glass reservoir. As it accumulates the water needs to be drained through the valve at the base of the glass reservoir.

Also, residual moisture not captured within the air filter reservoir will migrate into the oil within the vacuum pump. That water needs to be drained through the valve at the base of the vacuum pump (Fig.4)

Basic Operation

1. Close the vacuum air valve (Illustration III)
2. Press the red On/Off Switch (Illustration II)
3. Turn on the Standard Safe Mode Switch (Illustration II)
4. Turn on the Vacuum Pump Switch (Illustration II)
5. Lift feed hopper lid.
6. Place moderate-sized lumps of moist clay in the feed hopper. (Jamming large blocks into the hopper will cause the clay to become wedged in the hopper and not feed easily into the auger chamber. Smaller chunks will be accepted quite rapidly.) The twin feed blades will force the clay into auger chamber. Do not under any circumstances put your hand into the hopper or auger chamber when the electrical power is switched on.
7. Close the feed hopper lid thereby activating the safety micro switch.
8. Check the vacuum pressure gauge (Illustration III). The reading indicates the number of centimeters of mercury being pulled; the higher the reading on the gauge the better the vacuum created and subsequently the better de-aired the clay. The vacuum pressure gauge will not indicate an accurate measurement of vacuum pressure until the chamber is fully charged with clay, it is recommended that the initial 100 pounds of clay of each run be recycled back through the pug mill/extruder to ensure that it is properly de-aired.
9. DURING THE INITIAL OPERATION IT IS RECOMMENDED THAT THE FIRST 100 POUNDS OR SO OF CLAY BE DISCARDED TO AVOID THE CONTAMINATION OF THE CLAY BY METAL SHAVINGS, ETC. WHICH MAY HAVE BEEN DEPOSITED DURING THE MANUFACTURING OF THE PUGMILL.
10. When finished, turn off the vacuum pump, safe mode switch, and red On/Off switch. Open the vacuum air valve.
11. Unless you plan to disassemble the pug mill for a total cleaning, cover both the feed hopper lid on the hopper and the nozzle opening securely with a heavy plastic wrap to seal out air and to maintain moist clay in the pug mill. This procedure should keep the clay moist for several days. It is extremely important that clay be prevented from drying hard in the pug mill, which could subsequently damage the main motor or prevent extruding operations all together.

Miscellaneous

Cleaning

A thorough cleaning of the pug mill requires essentially disassembling the auger chamber, hopper, etc. See Illustration III for instructions on removing the shredder screen.

Vacuum Oil

Use Shell brand “Spindle 10” or a comparable vacuum pump oil.

Trouble Shooting

PROBLEM	SOLUTION
No vacuum	**1. Check electric power connection.** **2. Check vacuum hose for secure connections and/or cracks or defects.** **3. Ensure that the air valve on the vacuum chamber is completely closed.** **4. Ensure that a good, clean seal is made between the housing. The rubber gasket and the acrylic cover over vacuum chamber.** **5. Ensure that the vacuum chamber and the feed chamber are fully charged with clay.**
Vacuum level is low	**1. Ensure that the air valve on the vacuum chamber is completely closed.** **2. Ensure that a good, clean seal is made between the housing, the rubber gasket and the acrylic cover over vacuum chamber.** **3. Without moist clay in the hopper, air can vent through the auger, reducing or eliminating vacuum. Ensure that the vacuum chamber and the feed chamber are fully charged with clay.**
Water in oil	**As the vacuum pump pulls moist air from your clay. Some of the water vapor is deposited in the oil chamber of the pump. After every 6-8 hours of use, drain the water through drain valve (Fig.4). The oil and water must have had adequate time to separate prior to draining off the water, and most operators find it advantageous to drain the water immediately prior to a new run rather than to wait for the water and oil to separate at the end of a run.**
Oil overflows from vent does stop vacuum pump.	**This should never happen if the pump is properly purged of water as described in "Water in oil" above.**
Motor is ON; augers do not turn	**Check belt tension (In case of V-belt type)**
1. Capacity reduced. **2. Foreign material clogs shredder screen.** **3. Clay hardens in mill.**	**1. Release 6 of bolts on the shredder screen.** **2. Extract shredder screen with 2of extraction bolts** **3. Clean out shredder screen.** **4. Turn on the auger switch without shredder screen and remove foreign material (vinyl, wooden pieces, etc.).** **5. Clean out all dried or hard clay.** **6. Assemble shredder screen carefully to ensure positive vacuum.**