

# *Operating Instructions*

High Energy Vibratory Finishing Bowl

**Model FCV-150ULE-2**

# **VIBRA FINE™**

**FCV-150ULE-2**



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## IMPORTANT: READ BEFORE OPERATING UNIT

1. **SHIPPING BOLTS AND SPACERS MUST BE REMOVED BEFORE WIRING** the Variable AC Motor Drive or operating the machine. Damage will occur to unit and motor if operated without removing the shipping bolts and spacers.
2. Shut off and lock out power before removing any machine guards or doors.
3. All doors and guards must be kept in place at all times during operation of the machine to avoid exposure to parts rotating at high speeds. Severe injury can occur if hands or feet reach inside unit while power is on.
4. To avoid electric shock, attach ground lead, labeled "0" in power cord to ground. NEVER REMOVE grounding strap to bowl unit.
5. Securely tighten all bolts/nuts on vibrating unit according to instructions in this manual. Special attention must be paid to motor mounting bolts. If a motor vibrates loose, damage to power cord and structure may result as well as risk of personal injury.
6. When maintaining or adjusting eccentric weights, extreme caution must be used to correctly attach all keys, retainers and fasteners. Failure to lock weights securely in place can result in parts being thrown from machine at high speed, endangering personnel.
7. Higher amplitudes occur during machine start up and shut down. Caution should be taken to provide adequate clearance from accessory equipment to avoid contact during these cycles.



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## SPECIFICATIONS: (FCV-150-ULE-2)

Working Capacity (Cu. Ft.)	5.3
Channel Width (Inches)	10.2
Bowl Outside Diameter (Inches)	44.3
Bowl Height (Inches)	38.2
Discharge Height (Inches)	32.3
Overall Dimensions (Inches)	L-52" x W-52" x H-38"
Weight (Lbs.)	1200
Maximum Load (Lbs.)	660
Motor Power	1.5 KW 2.0 HP



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## IMPORTANT: Installation Tips

The machine should be installed on a smooth and level concrete floor. All mounting feet must touch floor or should be shimmed with steel shims.

### **BEFORE STARTING THE MACHINE, REMOVE SHIPPING BOLTS AND SPACERS BETWEEN BOWL AND BASE.**

The machine is equipped with an AC Tech Variable Speed AC Motor Drive. The variable speed drives are either 240 volt or 480 volt drives. The proper input voltage for the variable speed drive is shown on the nameplate on the side of the unit. **CONNECTING THE VARIABLE SPEED DRIVE TO THE WRONG VOLTAGE WILL DAMAGE THE UNIT.** If the machine was shipped with a variable speed drive for the wrong voltage, contact your distributor to obtain the correct unit and instructions for changing the unit.

The electric power should be supplied to the AC Tech Variable Speed AC Motor Drive according to local and national codes. Refer to the AC Tech Installation and Operation Manual for proper connection and operation of the variable speed AC motor drive. When power is on the motor should run counter clockwise. The media load should run clockwise and from outside the channel to inside the channel.



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## IMPORTANT: Pre-Operating Machine Adjustments

There are three adjustments possible on the machine, (1) the variable speed drive, (2) the lead angle and (3) the weights on the machine drive. All machines are preset in the factory before shipment to handle the media and processing conditions specified by the customer. Only minor adjustments should be necessary unless media or processing requirements are changed.

The Variable Speed Drive or inverter adjusts vibration frequency and amplitude. This is the easiest adjustment and usually the only adjustment needed and therefore should be tried first. By pressing the UP or DOWN button the speed can be altered between 1800 and 0 RPM. This speed shows on the display in terms of Hertz, 60 Hz being top speed and 0 Hz, stopped.

Increasing the lead angle will increase the forward motion of the media resulting in faster unloading. Increasing the lead angle may also decrease deburring action. Lead angle is adjusted by changing the angle between the upper and lower motor weights. The bottom weight should lead the top weight running in a counter-clockwise direction. This angle is normally between 90 and 180 degrees.

To change the lead angle: **First, TURN OFF ALL POWER TO THE MACHINE AND LOCK OUT THE MACHINE**, then remove the bolts and open the cover on top of the bowl and the access door on the base of the machine. While holding the bottom weights, loosen the bolts holding the top weights to the shaft. Reset the weights to the desired angle and retighten bolts. (This operation may require two people). Reattach covers; turn on power and test the adjustment. Repeat this process if necessary.

Weights may also be added or removed from either the top or bottom of the motor. The motor weights are preset before shipment to provide the best performance for the specified operating conditions. **DO NOT CHANGE THE MOTOR WEIGHTS WITHOUT CONSULTING WITH YOUR DISTRIBUTOR OR THE MASTER DISTRIBUTOR.** Changing the motor weights will make significant changes in amplitude, finishing, and unloading of the machine.



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**IMPORTANT: Read this section prior to machine operation.**

1. Before starting, place the discharge dam in the run position.
2. Load the media selected for the job. The amount of media is usually 3 to 5 times the volume of the work pieces. The more delicate the parts the greater the media-to-parts ratio. The machine should always be loaded to 100 percent capacity for ultimate performance.
3. Start the water/compound flow, usually 1-2 gallon flow per hour for each cubic foot of mass. Compound is usually used at about 2 oz. per gallon of water, less for cutting, more for polishing. Let machine run for one minute to allow all the media to be wet ted thoroughly.

**THE MACHINE DRAIN SHOULD BE OPEN AT ALL TIMES FOR CLEANER OPERATION. ALL PARTS SHOULD BE FREE OR OILS BEFORE LOADING.**

4. Add the work pieces and run until the desired work is accomplished. Note cycle time and set cycle timer, if one is installed, if more of the same parts are to be processed.
5. Raising the discharge dam while the machine is running discharges the parts and separates the media. The parts and media rise over the separation screen. The media will fall through the screen and the parts will continue on to the end of the screen for collection. If the media does not fall through the screen, the screen must be changed to a larger hole size.



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### IMPORTANT: Key tips for proper maintenance & service

1. Keep all parts of the machine clean and oil free.
2. Once a month, check the tightness of all bolts.
3. Every 500 hours add 30 to 40 grams of high-temperature, Polyrex EM lubricant.
4. Check the motor mounting bolts after 50 hours of operation to insure that they are securely fastened.



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