

Frequently Asked Questions - Hi-Cap

1. Machine does not have sufficient air - At least half of the problems with machines can be traced to backward rotation of the fans. If it seems insufficient air is the problem, check fan rotation. When viewed from the motor end of a Hi-Cap Gravity Separator, the fans and all shafts should run clockwise. Do not assume the fans are rotating correctly simply because the machine has been in service for some time. Many times we have experienced situations where the entire plant's electric polarity has changed causing all electric motors in the facility to reverse their rotation.

If fans are running correctly, remove the deck and clean it. Over a period of time the bottom of the deck can become plugged. A good maintenance procedure is to air wash the deck frequently. With compressed air blow the dirt and chaff out from the top downward, while the machine is running product.

The air filters on the side of the machine are designed to screen dirt out of the air before it enters the machine. If they become plugged, the fans cannot pull enough air through them to provide proper separation. Air filters can be cleaned by removing them and gently tapping them on floor. A more effective way may be to blow them with compressed air or a shop vacuum to clean off the accumulated dirt from the screen.

2. My machine doesn't make the separation it used to - The deck overcover provides the friction that pushes the heavier layers of material up the deck. Therefore, this screen must have a rough surface texture to do that job efficiently. If the screen feels smooth to the touch it is worn out, and needs to be replaced. Generally, mild steel screens will process approximately 1 million pounds of material before they need to be replaced. Coated overcovers will last 5-7 times longer than mild steel on most products. It is a good idea to check the condition of your overcover every 100 hours of operation time.

Also, a cover must be selected that will perform well with a specific product. Using the wrong cover will cause poor separation quality and low capacity. Sometimes the use of the wrong cover will cause sufficient damage to require the deck be rebuilt. A screen should be selected with openings as large as possible without allowing material to fall through or stick in the mesh.

3. I am feeling some excessive vibration or movement in my machine - Although most gravity separators produced today are counterbalanced, they should be attached to a secure foundation. A six-inch concrete slab is best, but not essential. It is important that a Hi-Cap be supported equally at each corner and installed flat and level. There should not be any peaks or valleys in the floor surface where you install your machine. If the floor is not flat the machine will be placed in a bind when bolted down. This can cause bearing and or shaft failure.

If the machine is installed properly and vibration can be felt in the floor, the foundation is probably too weak. Weak foundations lower the quality of separation because the foundation absorbs some of the oscillating action intended for separation.

Vibrations caused by mechanical problems are usually accompanied with a strange noise, or an unnatural visual movement of the machine deck or eccentrics. Check for loose or broken deck clamps, toggle leaf springs, or deck carriage breakage. Loose clamps can also cause false vibrations.

4. Separation pattern is not consistent or cannot be established - The most common cause of this problem is belt slippage. New belts have a tendency to stretch slightly and should be checked. To check a belt, turn off the machine and lock out the electrical power. Then apply pressure to the back of the belt midway between the two pulleys. The belt should deflect 1/2 inch.

Irregular power can also cause this problem. This does not happen often, but in some rural areas power surges can be a problem. Also, feed irregularities will cause a poor or wavy separation pattern. Check to assure your machine is being fed in a consistent manner with no surges in the flow of material coming to the machine.

5. I am an inexperienced operator - The solution is more experience. Do not be afraid to adjust the machine. Make a change. Wait a couple of minutes to determine the effect of the change. Then decide if it is good or bad. If the effect is good, try for further improvement. If the effect is bad, simply return to the original setting. Remember to make all adjustments in small increments and one at a time. It is better to approach the final setting through several small steps than to make one adjustment that might be too large.

The final pattern will vary depending on the product being processed. However, for most products overall pattern will be similar. We suggest an average depth of material of from 1-2 inches for particles ranging from 1/4 to 3/8 inch in diameter, from 1/2 to 1 inch for particles the size of 1/8 to 1/4 inch, from 1/4 to 1/2 inch for particles size of 1/16 to 1/8 inch and a bed depth of 1/4 inch for particles with a diameter less than 1/16 inch. As a general rule, the product depth along the high side of the machine should be from one to three times the depth along the low side of the deck. The average depth of material at the feed end should be two to four times the average depth at the discharge end. Of course these guidelines will not be correct for all products. However, these conditions on the deck surface will cause separation. Fine tune from this point to optimize your separation.

Finally, if you cannot get the separation you require call the factory at (719) 254-7814 or toll free at 1 888 254-7813. Our staff will be glad to assist you. For your convenience, we maintain a laboratory where we can process your sample. There is no charge for this service. We respectfully ask that you pay all freight costs.