



WESTERN STATES

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Troubleshooting Continuous Centrifuge Vibration

First try machine with no load to see if there is or there is not vibration. If there is vibration it is a mechanical problem, or some foreign object trapped in the backing screen. Maybe the frame is not firm enough. Check it.

If machine starts to be loaded and vibration occurs then:

Check clearance between basket slinger and windage ring. Check for proper clearance completely around 360 degrees. You should be able to fit three fingers into the space. If not, cut off the windage ring leaving only one inch. Sugar hits the windage ring and bounces back into the basket. Visually verify sugar is not hitting the windage ring.

If machine is fed from a round header, and machine is positioned at the end of the header, and the header in turn is fed away from the machine, there might be air pockets trapped there. Place a purging valve in the header. If machine is placed in the middle of the battery and header is fed at both ends, air pockets could also be formed.

If machine is fed from a very high tank, or crystallizer, and they cannot control its feed properly, machine will vibrate. Solution here is to place another valve to “break” the head. This second valve should be placed giving a head of 12-14 ft.

If incoming massecuite has many lumps or is too cold, feeding will act as being intermittent and machine will vibrate. Solution will be to increase temperature to an ideal of 56-57 C (135 F). When massecuite is too cold, lumps are caused by uneven reheating or bad mixing of molasses with massecuite and heating later on. Problem is a bad design of the system.

If the machine is operating at the wrong speed, purging will create vibrations. On a CC6 running C massecuite (52-57 % purity), speed must be 1960 rpm. If purity of massecuite is near 60-64, then decrease speed to eliminate vibration. This is done by changing the motor pulley.

If screens have most of their slots clogged, (take screen and look into a light) the machine will vibrate. Solution: replace screens. You can also have a lot of bagasillo at the backing screens making it vibrate. Solution: use high-pressure water with filter screen removed. Carbonized sugar crystals (because of use of high temperature steam), carbonized bagasillo, and impurities can clog the back of filter screens. Bagasillo (small pieces of bagasse) appears when processing raw sugar.

Water rod must be centered in the feed pipe; otherwise massecuite will fall into inside wall and fly out at lower end, wearing out screens and causing machine to vibrate.

If water from rod is not mixing with massecuite, check its pressure. Pressure must be equal to or less than 14.5 psi. Solution: place a water pressure regulator for water going to the guide rod and decrease its pressure until you see very thick molasses. You can see water is not mixing properly by using a stroboscope light and watching the screen clamp zone; you will see water there. Normally, 6 - 10 psi at the pressure regulator, works just fine.



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Machine can also vibrate if lower conveyor is too close to the machine, or if the frame is not firm enough. Paint (mark) the foundations and check if the frame legs are loose or moving. It might need some cross bracing.

If screen clamp is too shallow, machine will vibrate: solution is to change it. This only happens with low-grade massecuite.

If machine was not leveled properly, machine will also vibrate.

Missing belts will cause vibrations upon loading.

Bad suspension or a bad bearing might cause vibration upon loading.

Massecuite with many uneven size crystals, conglomerates, or dextran will cause vibrations.

A broken or missing part of the backing screen will also make machine vibrate upon loading.