

# Smart Support Frame & Sifter Box Leveling Instructions

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## Items you will need:

- 3 foot Level
- Minimum of (2) hydraulic jacks
- (4) Adjustable jackstands (to support sifter box)
- ½" Ratchet & socket set (*US*)
- ½" foot/pound Torque wrench

## Getting started:

- 1) Turn off the power to the sifter unit, and use standard tag/lockout procedures to ensure that no electrical power is available to the sifter while the repair work is being done. Do not start this procedure until you are certain the power is disconnected. Loosen the clamps and remove the socks from the sifter outlet hoppers, then lay them down over the sifter knees and secure the ends so that no foreign material can enter the socks.
- 2) Place the hydraulic jacks below the sifter (on one side) and raise it up to take the load off of the support cables. Place the jackstands under the corners of the raised side of the sifter, and lower the hydraulic jacks down until the sifter rests on the jackstands. If the support cables tighten up and will not allow the sifter rest onto the jackstands, then you will have to raise the sifter more and adjust the jackstands higher before lowering the box onto the stands. The support cables must have a small amount of slack in them while the sifter box is resting on the jackstands. Repeat this procedure on the opposite side of the sifter box, taking care not to allow the sifter box to slip off of the jackstands when lifting the other side of the box. The sifter should be as level as possible on the stands, with the corners close to or at the same height.
- 3) Once the sifter is solidly supported on the jackstands, you can place the 3 foot level on top of the upper horizontal support frame tubes and check to see if the frame is level. This step needs to be done on all four sides. If frame is level, move on to step #4. If not, adjust the jack bolts at the feet of the support frame up or down until all four sides of the sifter support frame are level. If necessary, place shims or grout

below the feet to better support the load at each corner of the sifter support frame, as the jack bolts are designed to help level the frame, but the feet need to support it.

- 4) Now that the support frame is level, it is time to level up the sifter box. Using the hydraulic jacks, raise the sifter box at one corner at a time, and lower the jackstands a few inches. Once all four jackstands are lowered, then lower the hydraulic jacks. The sifter box should now be supported by the steel cables at all four corners. Raise the jackstands slightly until there is about  $\frac{3}{4}$  of an inch of clearance between the top of the stand and the bottom of the sifter rails at each corner. This is done in order to keep the sifter box from rocking over inside the support frame when the cables are adjusted. Safety First! Always use jackstands below the corners of the sifter box when adjusting the support cables. Place the level across the top of the sifter box at the front (above the door) and check to see if the box is level side to side. Repeat this at the top of all four sides of the sifter box. If the box is level and the steel support cables are tight on all four corners, then the sifter is level, and is nearly ready to be put back into operation. Check the clearance between the top of the sifter box and the bottom of the upper frame support tubes. There should be 1" of vertical clearance between the top of the box and the bottom of the frame tube on all four sides. To allow for some variance, there can be no less than  $\frac{1}{2}$ " vertical clearance, and absolutely no more than 1- $\frac{1}{4}$ " vertical clearance at this location. If the vertical clearance is within these parameters and the box is level, proceed to step #6. If it is not level, or the cables on one corner seem to be looser than the others, then you will have to adjust one or more of the support cables to level up the sifter &/or tighten the cables.
- 5) If the sifter is not level, use the 3 foot level on top of the box as described in step #4 to find the lowest corner (or side). Determine how much the box needs to be raised, and using the hydraulic jack(s), raise that corner (or side) until the box is slightly above level ( $\frac{1}{16}$ "). Loosen the bolts that attach the lower cable clamps on the corner you raised, pull the cables down tight, and hold them down while re-tightening the cable clamp bolts finger tight. Lower the hydraulic jack until the sifter box is level, and tighten the clamp bolt to 70 ft/lbs. Check the box to see if it is level, and if not, repeat the process until the sifter hangs level on all 4 sides. Make sure and check the vertical clearance between the top of the box and the bottom of the upper support frame tube as described in step #4 each time you make an adjustment to the height of the sifter box. Leveling the sifter box may take several tries to get it right. Once the box is level, check the tightness of the cables by pinching them together halfway between the upper & lower clamps to check the tension on the cables. If one or more cables are loose compared to the others, it will need to be adjusted in the same way you tightened the cables to level the sifter. The tension should be the same on all four corners. Once again, place a hydraulic jack below the corner with the loose cable and

raise the sifter box 1/16". Loosen the lower cable clamp on that corner and pull the loose cable(s) down, then tighten the clamp bolt finger tight. Lower the jack until the box is level, and tighten the clamp bolt to 70 ft/lbs. Check the cable tension on that corner to see if it has improved. Make sure the sifter box is still level, and check the tension again at all four sets of support cables. Repeat this process until all the cables are tensioned equally and the sifter box is level with the proper clearance between the top of the sifter box and the bottom of the upper frame tube. Once the box is level and the cables are tightened evenly, torque all of the cable clamp bolts to 90 ft/lbs.

- 6) Remove the hydraulic jacks and jackstands from below the sifter. Re-attach the socks from the sifter knees to the outlet hoppers below the sifter and tighten the clamps.
- 7) Check around the sifter and make sure all the tools have been removed from the work area. Reverse the tag/lockout procedure for the power supply to the Smart Sifter. Start the sifter and run it for 10 minutes to see if it is operating properly and swinging with the correct circle size. Note that the circle will not be perfectly round, so you must measure the long and short side of the circle and use the average of the two measurements. Use a pencil attached vertically to the lower side rail with the end sticking out below the sifter. Once the sifter is running for 10 minutes, you can carefully lift a notepad up to the pencil and trace out a circle out on the page. The Smart sifter should now be ready to place back into service.



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