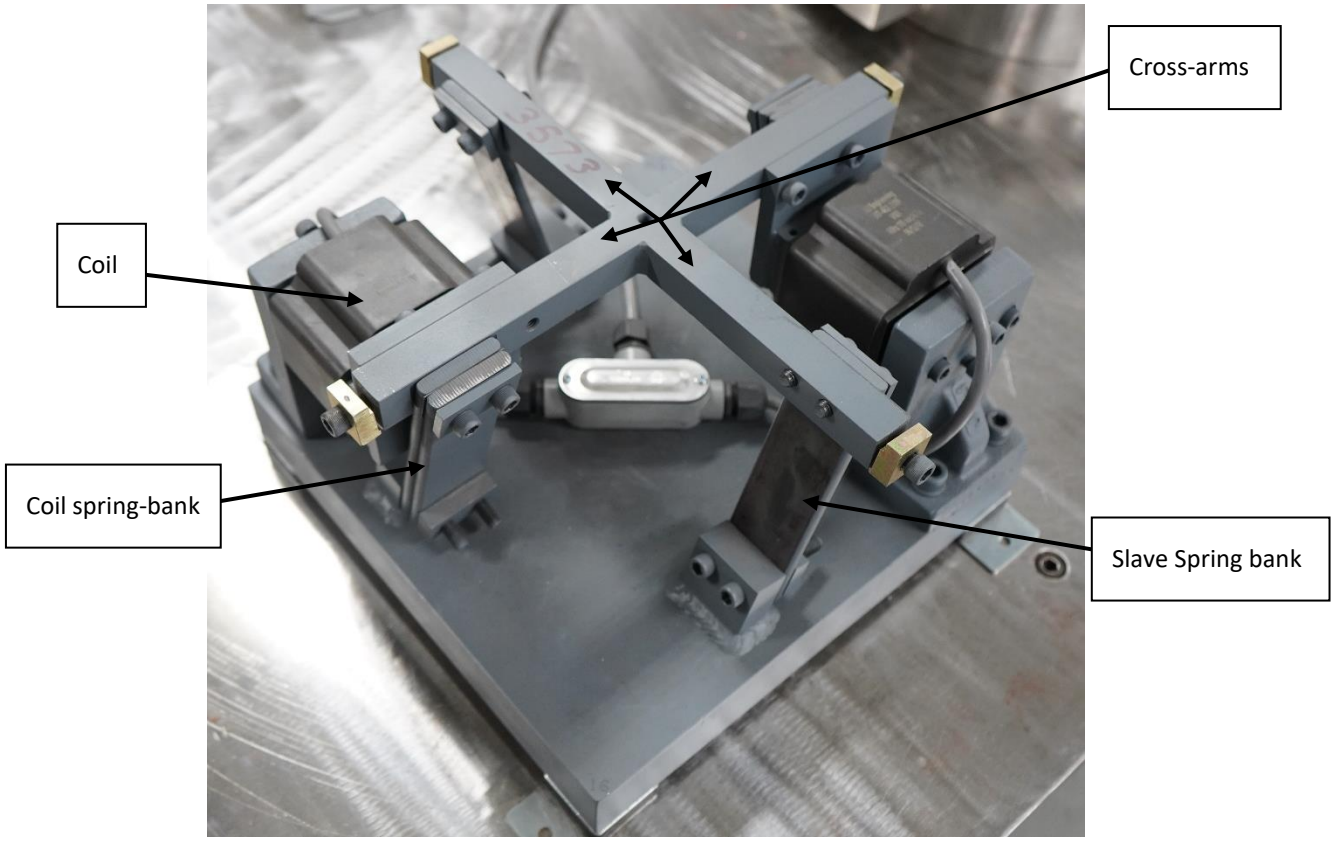
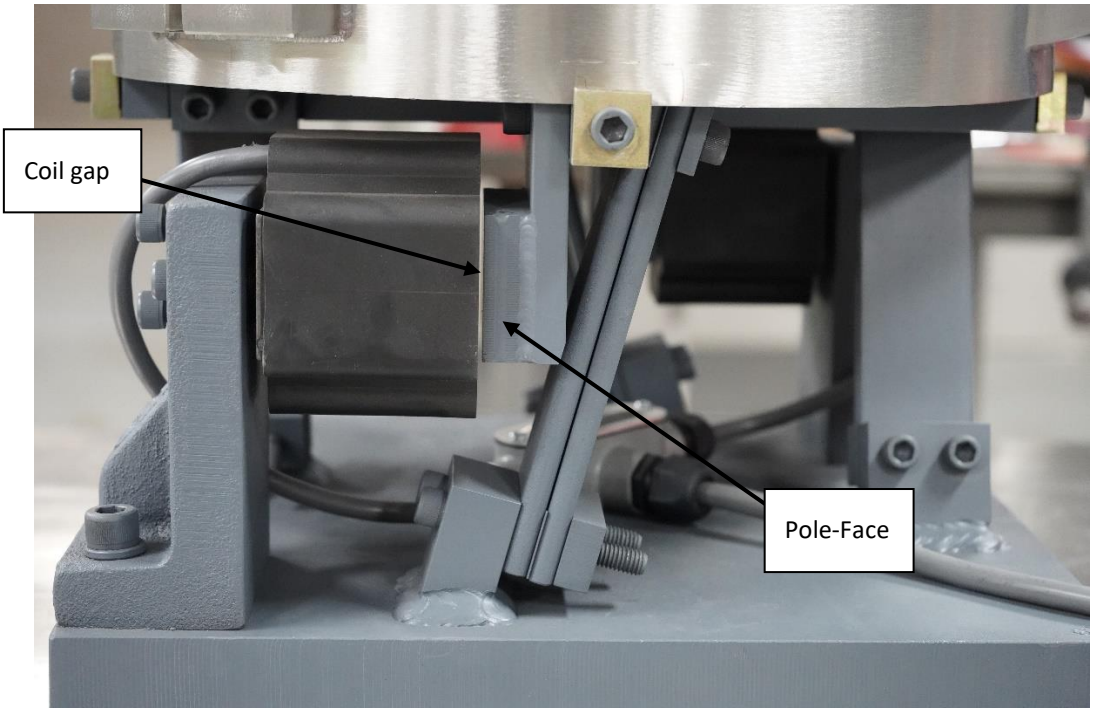
# How to Tune a Vibratory Feeder

**Drive Unit Diagram:**

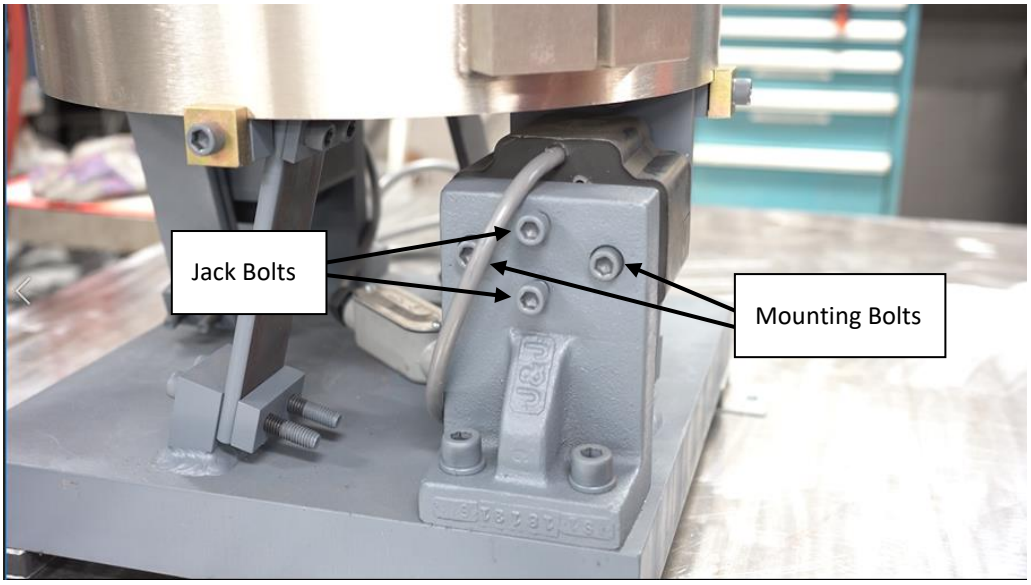



**Procedure:**

1. Verify all bolts on feeder bowl and drive unit are tight.
2. Check and set the electromagnetic coil gaps (diagram below).




a. Determine if your drive function is rectified or non-rectified. (Check the drive controller for the frequency at which your system is running)
    i. Rectified (60 Hz) requires 0.050 inch coil gap
    ii. Non-rectified (120 Hz) requires 0.025 inch coil gap
b. Locate coil mount plate. Loosen the jack bolts and the coil mounting bolts to make sure the coil is loose (shown below).




c. Insert a shim of appropriate thickness for your drive function between the coil and pole face and turn on the controller (this ensures the shim is flat against the coil face).
d. Tighten the jack bolts slightly until the shim is firmly and evenly wedged between the coil and pole face.
e. Tighten the coil mounting bolts to firmly hold the coil in place and turn off the bowl. The shim should be easily removed.
f. Repeat steps a-e for each coil on the drive unit.

3. Turn on your vibratory feeder bowl to run at normal speed, or between 40-80% of the maximum amplitude.
4. Locate the bolt or bolts on one end of one spring bank and begin to loosen.
5. As you loosen the bolts, check for (1) of (3) conditions:
    a. Oversprung – As you loosen the spring bank bolts, the bowl will surge to vibrate erratically and continue to run uncontrollably indicating one or more springs will need to be removed or changed to a thinner spring.

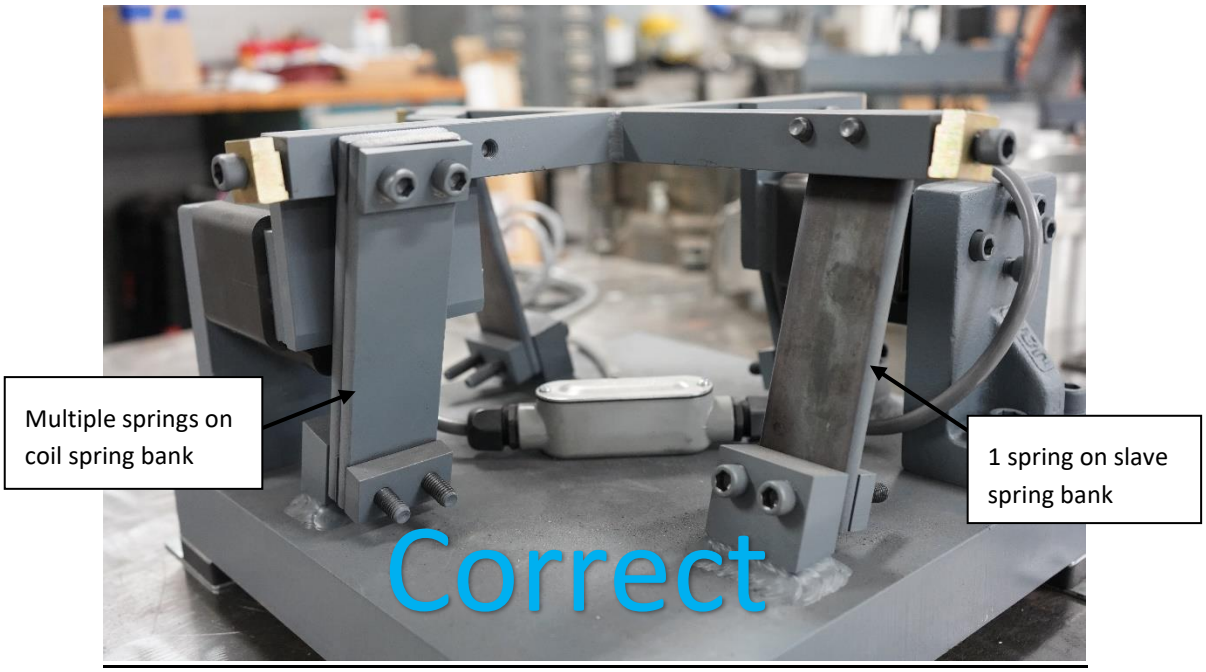
b. Undersprung – As you loosen the spring bank bolts, the bowl's vibration will drop significantly or stop indicating one or more springs will need to be added or changed to a thicker spring.

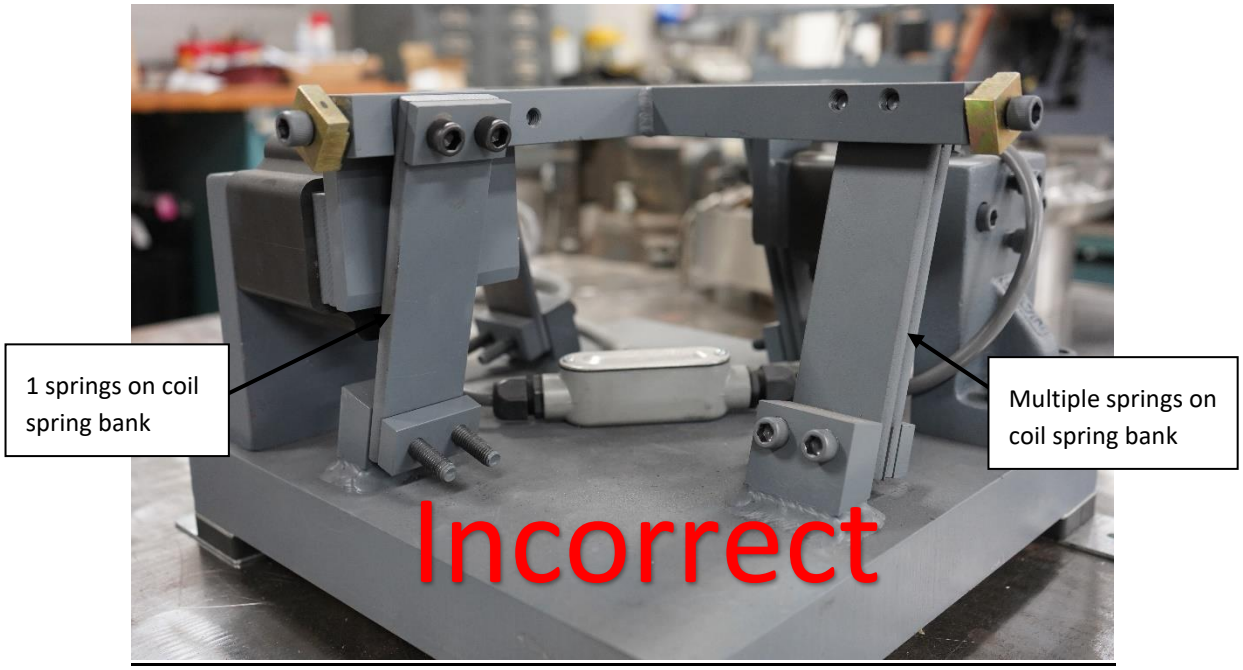
c. Tuned Correctly – As you loosen the spring bank bolts, the bowl will surge to vibrate erratically and then slow down as you continue to loosen indicating that changes to the springs are necessary.

6. NOTE:

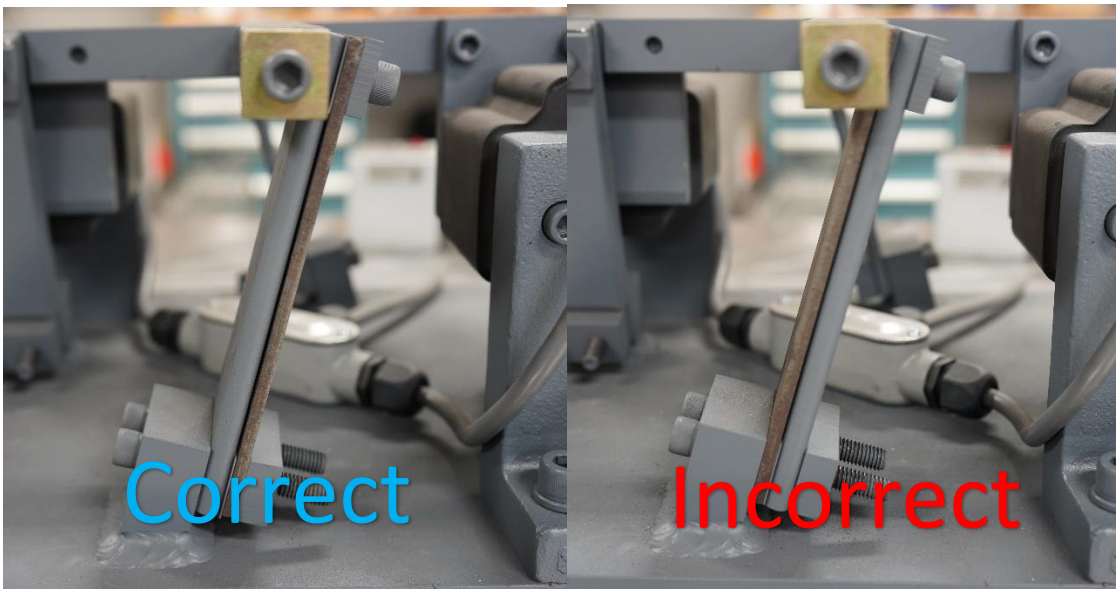
a. When adding or removing springs, equally distribute springs across all spring banks.

b. When an unequal number of springs is required for proper tuning, add first to the coil spring banks or remove from the slave spring banks. <u>Slave spring banks should never have more springs than a coil spring bank.</u>






c. When multiple thicknesses of springs are required to achieve proper tuning, always install thicker springs closer to the cross arms (example shown below).



7. Once the current tuning of the vibratory bowl is understood, add or remove one spring at a time, testing for tuning between each change.
    a. Be sure to include a spring spacer between each spring.


    b. Ensure all bolts are tight before each test.
8. Repeat the test as necessary until the condition for a properly tuned bowl is met.

Module Presented by:

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