

INSTALLATION AND OPERATING INSTRUCTIONS METALFAB BIN ACTIVATORS

Description

1. Upper hanger (suspension arm) brackets are pre-assembled, at the factory, to a flanged cylindrical section. It insures proper alignment of the suspension arms and sleeve clamping surfaces.
2. Flanged mounting ring may be provided with bolt holes for bolting to a mating flange on the bin.

Note: Nuts, bolts and gasketing for the mating flanges are not supplied by Metalfab. Use high strength, grade 5 bolts and locknuts.

3. When being installed on a conical section of a bin, it can also be welded directly to the bin cone. The cone may be butted against the horizontal or inside diameter of the flange and seal welded.
4. Before doing any welding, remove the vibrator from the Bin Activator.
5. In all cases, regardless of installation procedures, the mounting flange must not be distorted or bent during installation.
6. Even though the locating of suspension brackets is done with special equipment, it is recommended that mating parts be maintained, i.e., do not interchange mounting flanges from one serial numbered unit with another serial numbered unit.
7. To insure proper fit and alignment, plan view orientation of the hopper mounting flange with relation to the Bin Activator must not be changed.
8. In most cases, generally 3 foot through 8 foot diameter units, the mounting flange is shipped pre-assembled to the Bin Activator. For 10 foot diameter and larger, the mounting flange is split in half and shipped on the same skid as the Bin Activator or separately. A metal brace may be welded to each half section to prevent distortion during shipment. If so, remove after installation.

Installation _ Assembly

1. Specific sequence of installing a **Metalfab Bin Activator** can be changed to suit individual requirements. Most important is the end result, i.e., proper alignment and tightness of nuts, bolts and sleeve clamps.
2. Plan view orientation of the vibrator location with respect to the storage bin is not critical. It can be located to suit.
3. For units provided with bolt holes, the bolt holes can be pre-drilled in the mating bin flange. Care must be taken to make certain that the flange is not warped or not distorted. If the bin flange is warped, distorted or not level, transfer bolt holes from the mounting flange at the time of installation. Shim, with metal, as required before bolting mating flanges.
4. The mating flanges can also be welded, continuous internal and intermittent or continuous external.
5. When bolting the mating flange, it is good practice to use a sealant such as Permatex, Silastic or similar material between the flanges to prevent leakage of fine particle size products. A thin, approximately 1/8" gasket of resilient material may be used in place of a sealant. Sealant by others.
6. After installing the completely assembled Bin Activator and tightening all bolts, run the unit empty for approximately ten minutes. Then recheck the suspension arm bolts, vibrating mounting bolts and sleeve clamps for tightness. Suspension arm bolts are Grade 5 and must be torqued to 466 foot pounds; vibrator mounting bolts as follows:

3 / 8" BOLT.....GRADE 5	35 FOOT POUNDS
1 / 2" BOLT.....GRADE 5	125 FOOT POUNDS
5 / 8" BOLT.....GRADE 5	160 FOOT POUNDS
3 / 4" BOLT.....GRADE 8	310 FOOT POUNDS
7 / 8" BOLT.....GRADE 8	473 FOOT POUNDS
1" BOLT.....GRADE 8	540 FOOT POUNDS

7. **Metalfab** 10 foot and 12 foot diameter Bin Activators and special units are shipped unassembled, in some cases the mounting flange is split in half for shipping purposes.

8. When installing units not completely assembled, the correct procedure is to completely assemble the unit at grade with the following procedure:
 - A. Stand or support the Bin Activator in a level position (discharge outlet facing down).
 - B. If applicable, join the two (2) halves of the upper mounting flange and tighten securely or weld.
 - C. If not already in position, place the flexible sleeve and two (2) complete sleeve clamps on the Bin Activator*****leave clamps loose.
 - D. Position the assembled mounting flange on the Bin Activator.
 - E. Install all suspension arms, insert high strength bolts in upper and lower holes and snug up each elastic stop nut and bolt. After all nut bolts are installed snug, tighten to the correct torque specifications.
 - F. Check placement of the flexible sleeve to mounting flange and Bin Activator. A sealant material such as Silastic or Permatex may be used between the sleeve and metal surfaces.
 - G. Position the upper and lower sleeve clamps close to the beaded edge of the flexible sleeve. After seating and adjusting clamps, tighten both securely.

Note: When tightening the clamps, be sure to support the far side tube with vise grip pliers when turning nut. Failure to do so, may cause a twisting action on strapping which may lead to damage of clamp.

9. Run the unit as noted previously and tighten bolts as required, including sleeve clamps.

Vibrator Installation

1. This unit imparts vibration to the Bin Activator. It must be securely bolted to the unit (torque mounting bolts according to previous instructions), and all bolts must be retightened after the first ten minutes of operation and again during the second day of operation. All nuts and bolts, especially vibrator mounting bolts, should be retightened every three (3) months or more frequently depending on the amount of usage.

2. Because the Bin Activator and the motor vibrate, the electrical connections must be made with flexible lead. Braided neoprene covered cable is recommended.
3. Refer to wiring diagram in motor conduit box for wiring instructions.

Vibrator Force Adjustment

Warning: Vibrator must be electrically locked-out before any adjustment or maintenance can be performed.

1. The centrifugal force setting of the vibrator is set at the factory for the minimum force level that will produce flow of product. If flow is not instantaneous or continuous, it may be necessary to increase the centrifugal force. To do so, the following procedure should be followed:
 - 1) Remove the bolts of both the upper and lower end covers.
 - 2) Remove end covers exposing the four (4) eccentric weights.

Note: The (2) OUTER weights on the *INVICTA* Explosion Proof and the *METALFAB TENV* Vibrators are the weights to be adjusted. The (2) INNER weights on the *INVICTA TENV* Vibrators are the weights to be adjusted.

2. To increase the force setting, loosen the clamping bolt on the two (2) weights that will be adjusted. (See note above).
3. Refer to the applicable vibrator operation and maintenance instructions for force settings and technical information.
4. As the centerline of the adjusted weights approach the centerline of the fixed weights, the centrifugal force is increased. When the weights centerline is opposed, the centrifugal force decreases. If the centerlines of all four (4) weights are completely aligned, you will develop the maximum force available for that size vibrator.
5. Regardless of which vibrator you have, when you have completed your force adjustment, the OUTER weights should be in line with each other and the INNER weights should be in line with each other. ANY OTHER ARRANGEMENT WILL RESULT IN A MOTION THAT CAN DAMAGE THE VIBRATOR AND BE VERY DETRIMENTAL TO THE APPLICATION, WELDS OF THE BIN ACTIVATOR AND SUPPORT STRUCTURES.
6. Assemble the unit by reversing the procedure outline as above.

Note: Bin Activator vibrator should be electrically interlocked with down stream feed devices, i.e., when screw, belt, rotary, etc. feeder stops _ vibrator should also stop.

Full Load and Starting Current

See Vibrator Instruction Manual and Motor Nameplate Data.

Secondary Baffle

1. The secondary baffle has been positioned by **Metalfab** engineering for your application requirements. Its position will allow for the proper flow of product through the Bin Activator outlet.
2. The position of the secondary baffle is maintained by an Esna type lock nut. The secondary baffle can be repositioned vertically by using a deep socket type wrench to loosen the lock nut, thereby, allowing the secondary baffle to be turned, possibly by hand, on the threaded section of the extended rod, to a higher or lower position. Since the secondary baffle is located near the outlet, it is easily accessible from the outlet.
3. If flow problems occur, the secondary baffle could be repositioned to help eliminate the problem. Before making any adjustments, it is advisable to check with **Metalfab** engineering for advise as to what new position might be helpful.

Maintenance Instructions

1. **Vibrator Lubrication**

The vibrators are lubricated as supplied. The lubrication is good for 2,000 to 5,000 hours. See vibrator instructions.

2. **Flexible Sleeve**

Aside from checking the clamp tightness, there is no maintenance required on the sleeve. Periodic visual checks should be made to see if there is damage caused by chemical attack or mechanical damage to the elastomer.

Note: Standard sleeve is Neoprene with a maximum temperature rating of 210°F. Optional sleeves are NORDEL with a maximum temperature rating of 325°F and VITON with a maximum temperature rating of 400°F.

WARNING: *Because of the elastomeric seals required on vibrated equipment, the Bin Activator WILL NOT CONTAIN A FIRE OR EXPLOSION. If a fire is in the Bin, THE AREA SHOULD BE EVACUATED AND AVOIDED!*

3. **Isolators**

The isolators should give years of use barring chemical attack or severe overloading.

WHEN INQUIRING ABOUT ANY BIN ACTIVATOR, ALWAYS REFER TO THE SERIAL NUMBER STAMPED ON THE METALFAB NAMEPLATE.

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