

# Cougar<sup>®</sup> Vibrotor<sup>™</sup> CCR Vibrator Installation Instructions



## **⚠ DANGER**

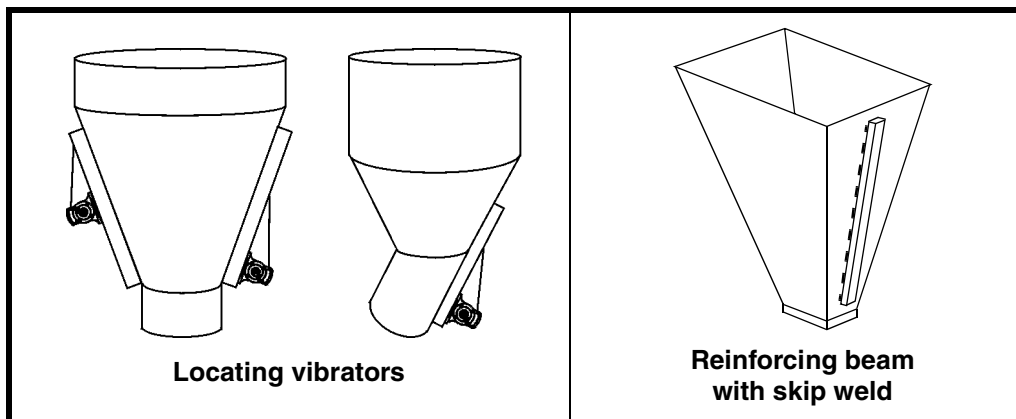
Before installing equipment, turn off and lock out/tag out all energy sources to the hopper, conveyor, and/or conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.

1. Turn off and lock out/tag out energy source according to American National Standards Institute (ANSI) z244.1-1982 and Federal Register, Volume 54, Number 169, Part IV, 29 CFR Part 1910.
2. Make sure mounting surface and vibrator are clean and free of debris.

## **IMPORTANT**

**Vibrator must be mounted with exhaust port facing down or to the side.**

3. If using an existing mount, ensure vibrator exhaust port is facing down or to the side. If exhaust will be facing up in final location, disassemble the vibrator and reassemble as follows:
  - a. Remove all bolts holding vibrator together.
  - b. Remove end caps and shaft.
  - c. Rotate end caps and shaft 180° and reinstall onto vibrator, making sure shaft maintains its original position between the end caps.
  - d. Torque all bolts to 53 ft-lbs (72 N•m).
4. See Figure 1. Locate vibrator in lower 1/4 to 1/3 of structure slope length. If second vibrator is needed, mount 180 degrees from first vibrator and halfway up slope.



**Figure 1. Locating Vibrators and Reinforcing Beams on Hoppers**

5. If necessary, install reinforcing beam to strengthen chute wall (see Figure 1). Skip weld beam in place: Weld 3 in. (76 mm) then skip 2 in. (51 mm). Repeat for entire perimeter of beam. Do not weld last 1 in. (25 mm) of either end of beam or any corner. Make sure beam extends at least 3/4 the length of structure from top to bottom.
6. Install mounting plate. Skip weld in place. (Mounting plate should be at least the size of vibrator bracket base.)
7. Install vibrator onto mount using new cap screws, compression washers, and lock nuts. See Table I for mounting bolt sizes and torque requirements.

## IMPORTANT

Use High Grade Air Motor Oil.

S.A.E. No. 10 non-detergent oil may be used if no air motor oil is available.

8. Run a lubricated air line (supplied by the customer) to the intake on the vibrator as follows. (See Table II for recommended pipe sizes.)
  - a. See Figure 2. Connect air line to ball valve (A) and Filter/Regulator/Lubricator (FRL) Kit (B) set to feed 2 to 4 drops per minute.

## WARNING

Wire control box and solenoid in accordance with National Electrical Code Article 430. Have wiring installed by a qualified electrician only.

- b. If using, connect power to control box (C) and solenoid valve (D). Run lubricated air lines through solenoid valve to vibrator (E).
- c. Connect air to vibrator.

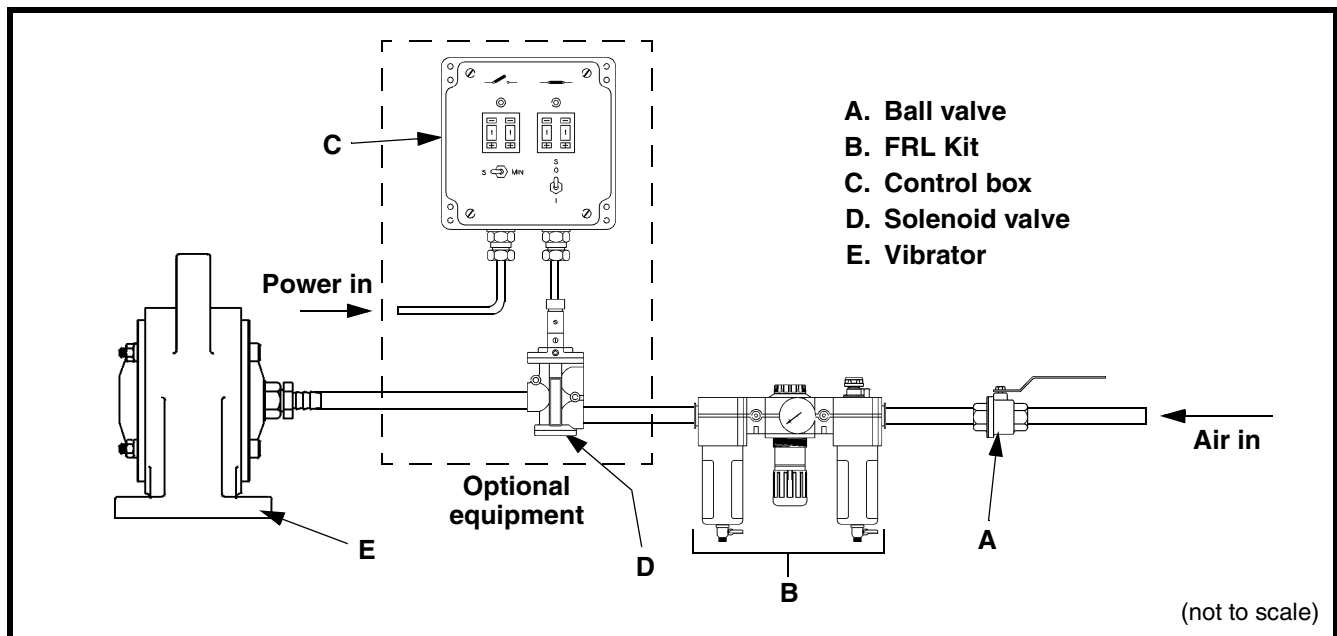


Figure 2. Connecting Air Lines to Vibrator

**Table II. Recommended Pipe Size for Compressed Air Flow to 125 psi (8.62 bar)**

| Air Volume<br>cfm (cls) | Pipe Length—ft (m)<br>Nominal Pipe Diameter |         |         |          |          |          |          |           |            |
|-------------------------|---|---------|---------|----------|----------|----------|----------|-----------|------------|
|                         | 25 (8)                                      | 50 (15) | 75 (23) | 100 (31) | 150 (46) | 200 (61) | 300 (92) | 500 (152) | 1000 (305) |
| 6 (2.8)                 | 1/2   | 1/2     | 1/2     | 1/2      | 1/2      | 1/2      | 1/2      | 3/4       | 3/4        |
| 18 (8.5)                | 1/2   | 1/2     | 1/2     | 3/4      | 3/4      | 3/4      | 3/4      | 1         | 1          |
| 30 (14.2)               | 3/4   | 3/4     | 3/4     | 3/4      | 1        | 1        | 1        | 1-1/4     | 1-1/4      |
| 45 (21.3)               | 3/4   | 3/4     | 1       | 1        | 1        | 1        | 1-1/4    | 1-1/4     | 1-1/4      |
| 60 (28.3)               | 3/4   | 1       | 1       | 1        | 1-1/4    | 1-1/4    | 1-1/4    | 1-1/2     | 1-1/2      |
| 90 (42.5)               | 1   | 1       | 1-1/4   | 1-1/4    | 1-1/4    | 1-1/4    | 1-1/2    | 1-1/2     | 2          |
| 120 (56.6)              | 1   | 1-1/4   | 1-1/4   | 1-1/4    | 1-1/2    | 1-1/2    | 1-1/2    | 2         | 2          |
| 150 (70.8)              | 1-1/4                                       | 1-1/4   | 1-1/4   | 1-1/2    | 1-1/2    | 2        | 2        | 2         | 2-1/2      |
| 180 (85)                | 1-1/4                                       | 1-1/2   | 1-1/2   | 1-1/2    | 2        | 2        | 2        | 2-1/2     | 2-1/2      |
| 240 (113.3)             | 1-1/4                                       | 1-1/2   | 1-1/2   | 2        | 2        | 2        | 2-1/2    | 2-1/2     | 3          |
| 300 (141.6)             | 1-1/2                                       | 2       | 2       | 2        | 2        | 2-1/2    | 2-1/2    | 3         | 3          |
| 360 (170)               | 1-1/2                                       | 2       | 2       | 2        | 2-1/2    | 2-1/2    | 2-1/2    | 3         | 3          |

9. Start vibrator.
10. After 1 hour of operation, tighten mounting bolts while vibrator is operating to fully seat vibrator.

### ***Weekly Maintenance***

1. Turn off and lock out/tag out energy source according to ANSI standards (see “Installation”).
2. Make sure fasteners are tight. Tighten if necessary.

### ***Troubleshooting***

| Symptom                             | Corrective Action  |
|-------------------------------------|--|
| Condensation freezing in air lines. | Add a metal bowl oiler downstream from present FRL and fill with alcohol.          |
| Oil too thick in cold temperatures. | Thin with kerosene or light fuel oil. Mix half and half in a well-ventilated area. |

## Part Numbers and Specifications

Performance Chart and Part Numbers for Vibrotor™ Vibrators

| Model     | Part Number | Unbalance<br>lb—in. | 20 psi (1.38 bar) |                  |                    | 40 psi (2.76 bar) |                  |                    | 60 psi (4.14 bar) |                  |                    | 80 psi (5.52 bar) |                  |                    | Max. lb (kg)<br>Material in<br>Slope of Bin |
|-----------|-------------|---------------------|-------------------|------------------|--------------------|-------------------|------------------|--------------------|-------------------|------------------|--------------------|-------------------|------------------|--------------------|---|
|           |             |                     | vpm*              | Force<br>lb (kg) | cfm**<br>(lit/min) | vpm*              | Force<br>lb (kg) | cfm**<br>(lit/min) | vpm*              | Force<br>lb (kg) | cfm**<br>(lit/min) | vpm*              | Force<br>lb (kg) | cfm**<br>(lit/min) |   |
| CCR-4400  | 29725       | .441                | 7200              | 649 (294)        | 35 (991)           | 11500             | 1655 (751)       | 53 (1501)          | 13500             | 2281 (1035)      | 65 (1841)          | 15000             | 2816 (1277)      | 73 (2067)          | 28160 (12773)                               |
| CCR-5500† | 28848       | 1.262               | 6600              | 1560 (708)       | 32 (906)           | 10000             | 3582 (1625)      | 42 (1189)          | 12500             | 5596 (2538)      | 55 (1558)          | 14000             | 7020 (3184)      | 58 (1643)          | 70200 (31843)                               |
| CCR-6500  | 29905       | 2.344               | 5800              | 2238 (1015)      | 25 (708)           | 8500              | 4806 (2180)      | 35 (991)           | 10700             | 7616 (3455)      | 44 (1246)          | 12500             | 10395 (4715)     | 50 (1416)          | 103950 (47152)                              |

\*Vibrations per minute.

\*\*Cubic feet per minute.

†For replacement parts, order CCR 5500 Repair Kit, P/N 30483. (Kit includes rollers, plates, shaft, and vane.)