Cougar® 2000 Series Piston 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.
3. 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.

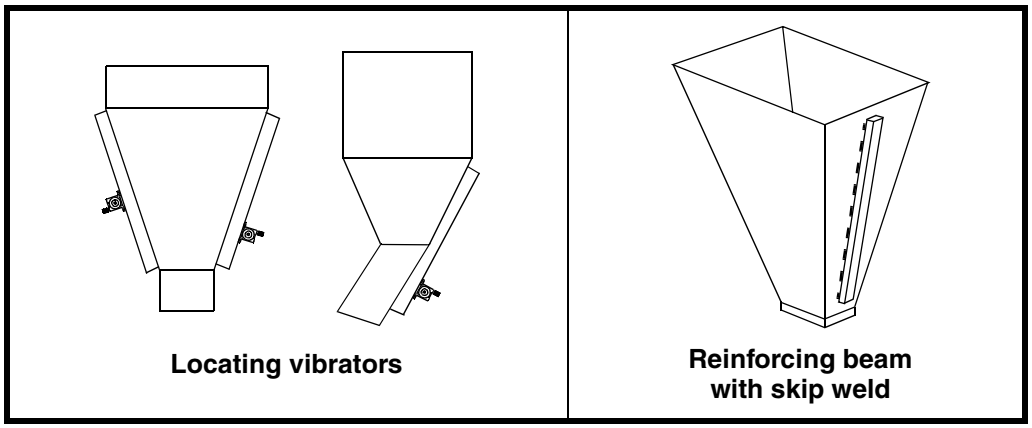

Figure 1. Locating Vibrators and Reinforcing Beams on Hoppers

Table I. Reinforcement Channel Selection

Model		Channel Size	
		Inch	Metric
2006/2006-AC 2008/2008-AC 2010/2010-AC 2206/2206-AC 2208/2208-AC 2210/2210-AC	2306/2306-AC 2408/2408-AC 2410/2410-AC 2608/2608-AC 2610/2610-AC	C3 x 5 lbs/ft	75 x 40 (5.9 kg/m)
2012/2012-AC 2016/2016-AC 2212/2212-AC 2216/2216-AC	2412/2412-AC 2416/2416-AC 2612/2612-AC	C4 x 5.4 lbs/ft	100 x 50 (8.3 kg/m)

⚠ CAUTION

If reinforcing beam is not skip welded, hopper may be damaged by operating vibrator.

4. 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.

5. Install mounting plate. Skip weld in place. (Mounting plate should be at least the size of vibrator base.)
6. Install vibrator onto mount using new cap screws, compression washers, and lock nuts. See Figure 2 for mounting bolt sizes and torque requirements.

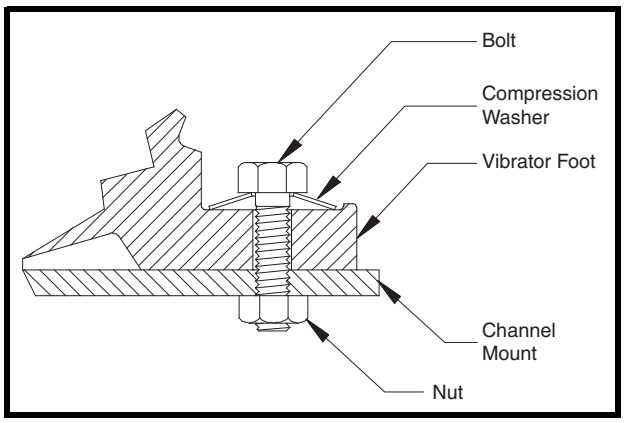

Figure 2. Bolt Torque Specifications*

Vibrator Model	Bolt Size	Dry	Lubricated
2006/2006-AC 2008/2008-AC 2206/2206-AC 2208/2208-AC	3/8-16	31 ft-lbs	23 ft-lbs
	M8	25.5 N•m	19.1 N•m
2010/2010-AC 2210/2210-AC 2306/2306-AC 2408/2408-AC 2608/2608-AC 2610/2610-AC	1/2-13	75 ft-lbs	57 ft-lbs
	M10	50.5 N•m	37.8 N•m
2012/2012-AC 2212/2212-AC 2410/2410-AC 2412/2412-AC 2612/2612-AC	5/8-11	150 ft-lbs	110 ft-lbs
	M16	226 N•m	170 N•m
2016/2016-AC 2216/2216-AC 2416/2416-AC	7/8-9	430 ft-lbs	370 ft-lbs
	M22	580 N•m	510 N•m

*Torque specifications are for reference only. Contact fastener manufacturer for specific information regarding bolt torque.

7. 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 3. Connect air line to ball valve (A) and Filter/Regulator/Lubricator (FRL) Kit (B).

⚠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).
   c. Connect air to vibrator. A section of flexible hose (F) should be used to keep from transmitting vibration to the rigid pipe.

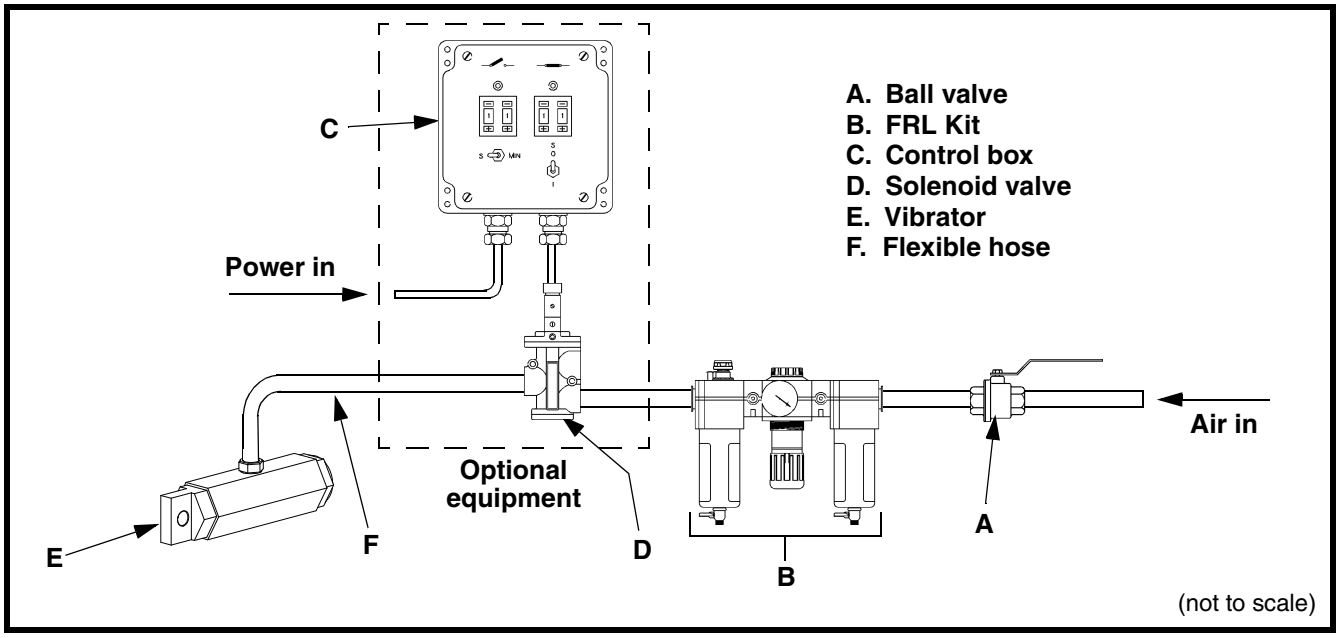

Figure 3. Connecting Air Lines to Vibrator

Plumbing Specifications				
Model		Minimum Hose Diameter		Inlet Port Thread
		Inch	Metric	
2006/2006-AC 2008/2008-AC 2206/2206-AC 2208/2208-AC	2306/2306-AC 2408/2408-AC 2608/2608-AC	1/4	6 mm	1/8 NPT
2010/2010-AC 2012/2012-AC 2016/2016-AC 2210/2210-AC 2212/2212-AC 2216/2216-AC	2410/2410-AC 2412/2412-AC 2416/2416-AC 2610/2610-AC 2612/2612-AC	3/8	10 mm	1/4 NPT

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

Air Volume cfm (cls)	Pipe Length—ft (m) 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

8. Start vibrator.
9. After 1 hour of operation, retighten mounting bolts.

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.
3. Check filter for clean/dry air.

Troubleshooting

Symptom	Corrective Action
Vibrator does not come up to speed.	Check air supply for cfm. Check air filter to insure there are no restrictions. Check muffler to insure there are no restrictions. Check mount for loose fit and/or broken welds.
Excess noise	Check mount for loose fit and/or broken welds.

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV = ISO 9001:2008 =

Form No. M3949-12/12

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