

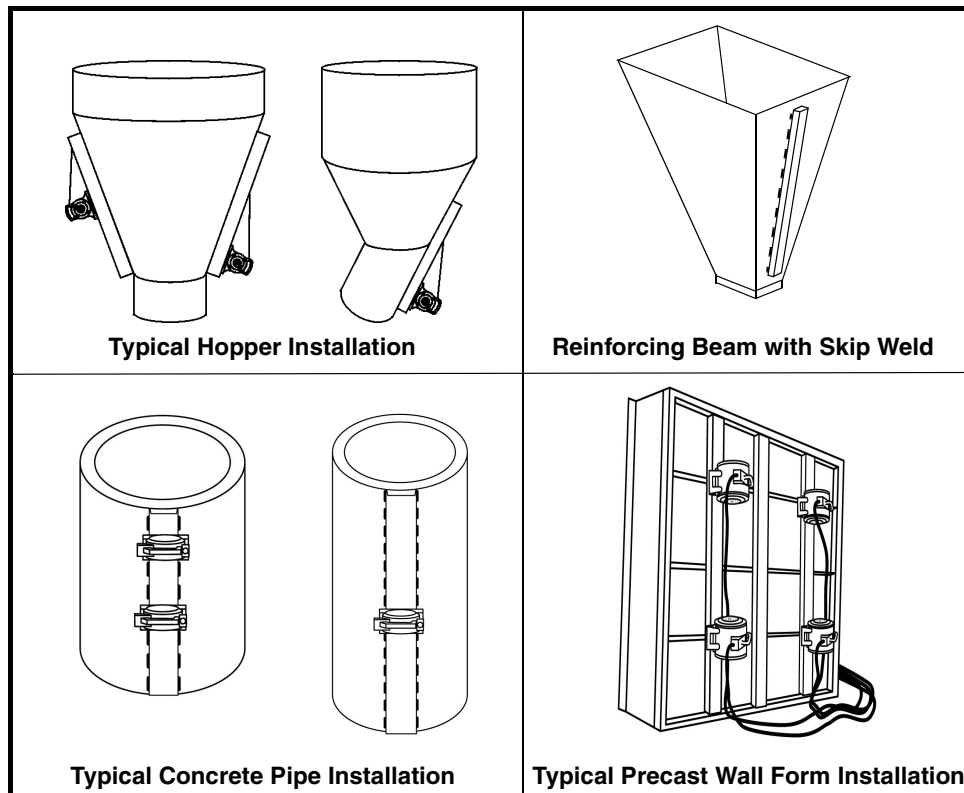
## Cougar® ATU Pneumatic Turbine Vibrator Series Installation Instructions



### **⚠ 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**

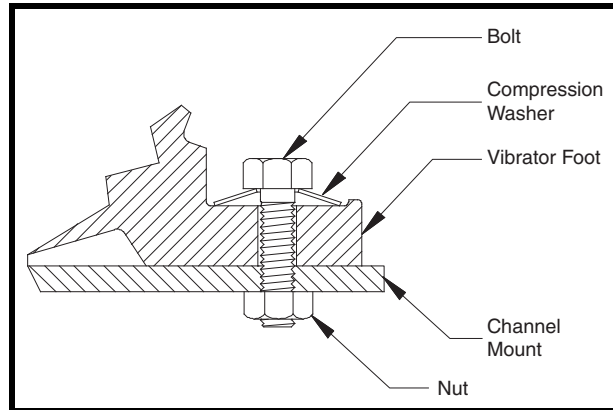
**Table I. Reinforcement Channel Selection**

Model	Channel Size	
	Inch	Metric
ATU- 21, 22, 23	C3 x 5 lbs/ft	75 x 40 (5.9 kg/m)
ATU- 31, 32, 33, 41, 42, 43	C3 x 5 lbs/ft	75 x 40 (5.9 kg/m)
ATU- 51, 52, 53, 61, 62, 63	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**

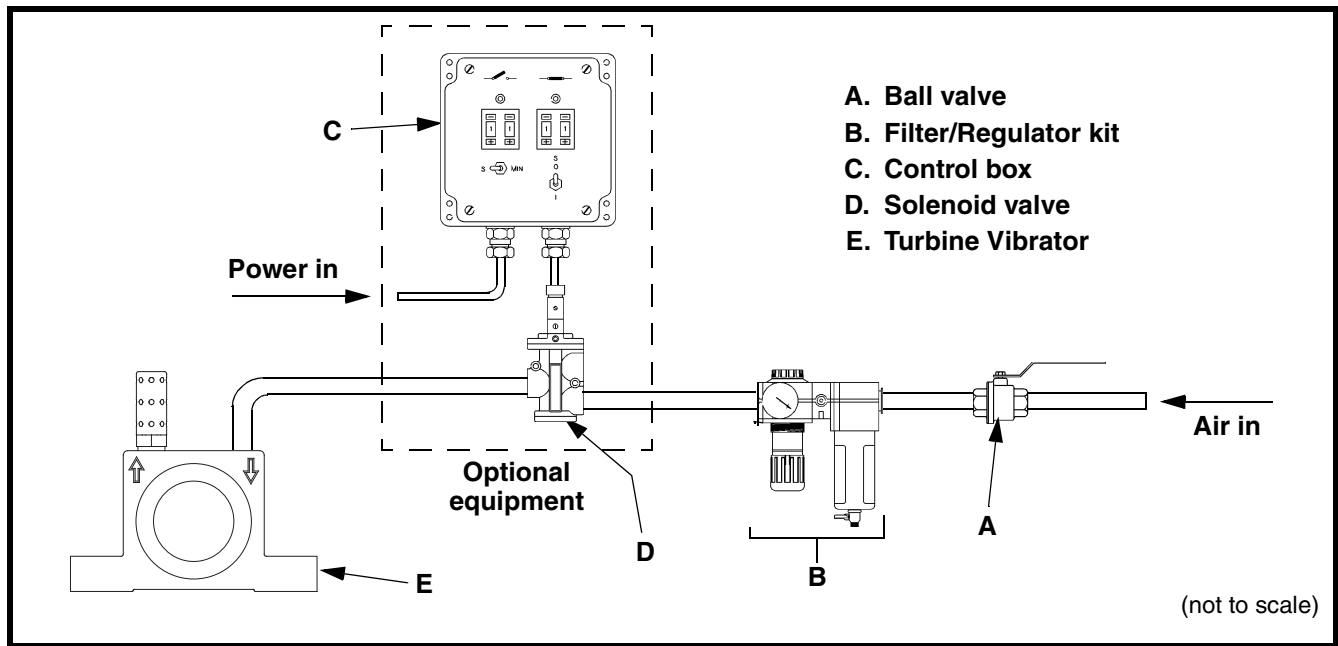
Vibrator Model	Bolt Size	Dry	Lubricated
ATU- 21, 22, 23	1/4"-20	100 in-lbs	75 in-lbs
	M6	10.5 N•m	7.9 N•m
ATU- 31, 32, 33, 41, 42, 43	3/8"-16	31 ft-lbs	23 ft-lbs
	M8	25.5 N•m	19.1 N•m
ATU- 51, 52, 53	1/2"-13	75 ft-lbs	57 ft-lbs
	M10	50.5 N•m	37.8 N•m
ATU- 61, 62, 63	5/8"-11	266 ft-lbs	200 ft-lbs
	M16	226 N•m	170 N•m

7. Run 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 Kit (B). No lubrication is required.

## ⚠ 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.



**Figure 3. Connecting Air Lines to Vibrator**

Plumbing Specifications				
Model	Minimum Hose Diameter		Inlet Port Thread*	Exhaust Port Thread*
	Inch	Metric		
ATU- 21, 22, 23	1/4"	6 mm	1/8" NPT	1/8" NPT
ATU- 31, 32, 33, 41, 42, 43	3/8"	10 mm	1/4" NPT	1/4" NPT
ATU- 51, 52, 53, 61, 62, 63	1/2"	12 mm	3/8" NPT	3/8" NPT

\*will accept BSP

**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

## IMPORTANT

**A new vibrator may require 15 to 30 minutes run time for break-in after installation.**

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

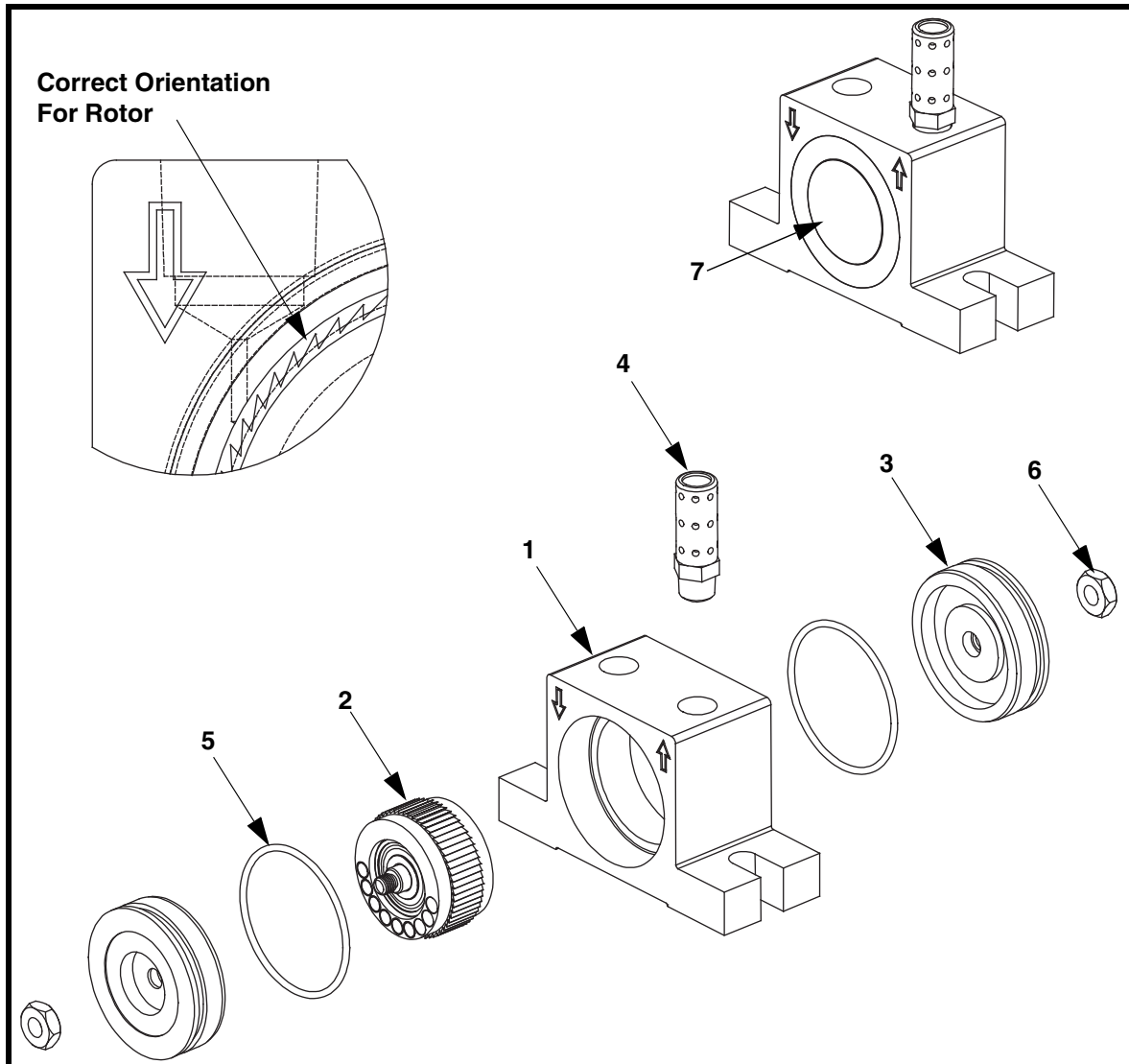
### ***Weekly Maintenance***

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.	Allow 15 to 30 minutes break-in for new unit. 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.

# Part Numbers



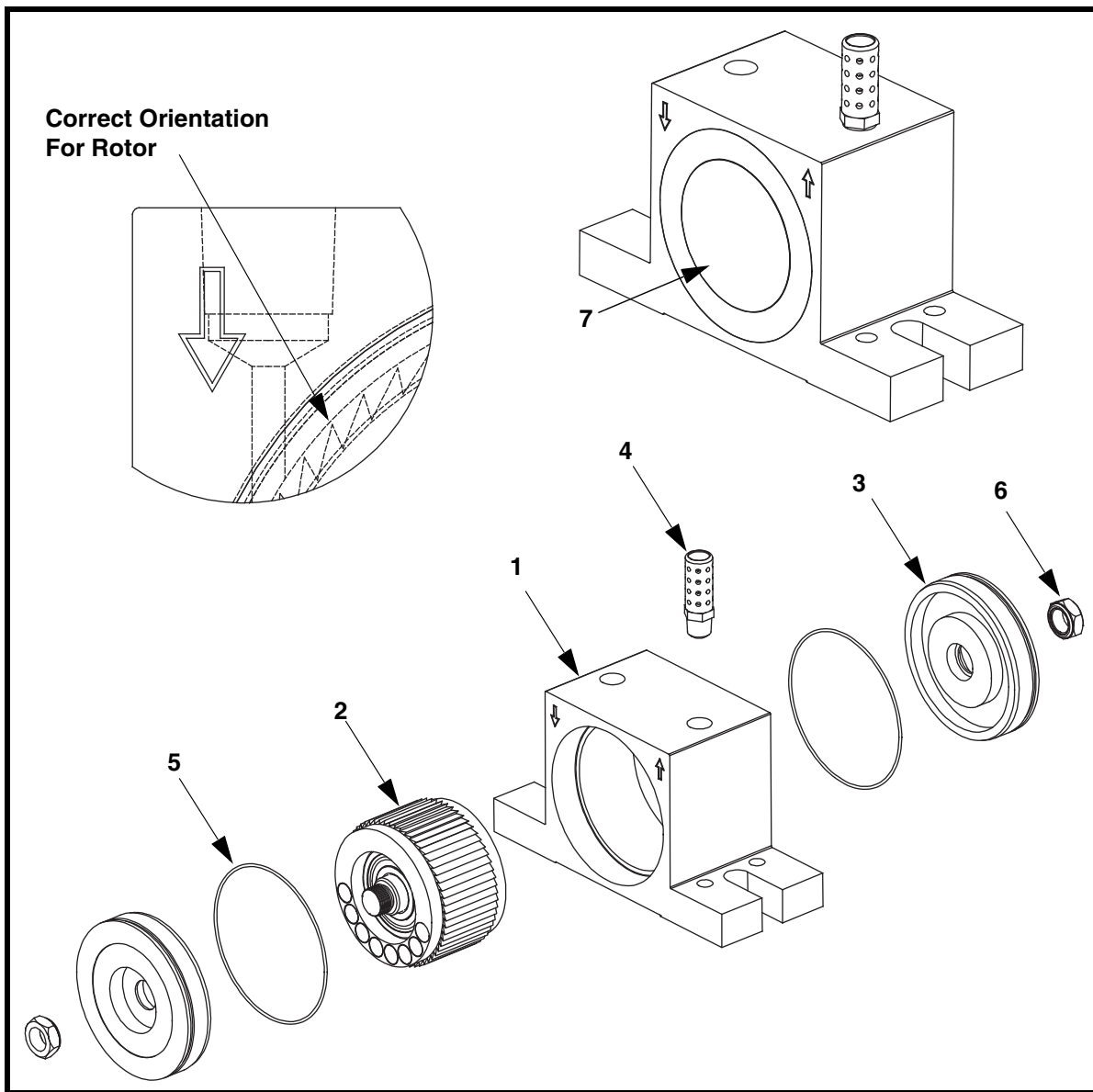
**Figure 4. Cougar® ATU Pneumatic Turbine Vibrator, P/N ATU-XXX**

Item	Description	Part Number	Qty
1	Housing	Table III	1
2	Rotor Assembly	155037-XX*	1
3	End Bell	Table III	2
4	Muffer	Table III	1
5	O-Ring	Table III	2
6	Nut Hex	Table III	2
7	Label	CG-100342-XX*	2
8	Caplug	Table III	2
9	Operator's Manual	M3870	1

\*XX indicates vibrator size.

**Table III. Cougar® ATU Pneumatic Turbine Vibrator Part Numbers**

<b>Assembly Part No.</b>	<b>Part No. Item 1</b>	<b>Part No. Item 3</b>	<b>Part No. Item 4</b>	<b>Part No. Item 5</b>	<b>Part No. Item 6</b>	<b>Part No. Item 8</b>
ATU-21X	110503	120501	210314	603022	519199	606011
ATU-22X	110503	120501	210314	603022	519199	606011
ATU-23X	110503	120501	210314	603022	519199	606011
ATU-31X	110505	120502	210315	603023	518012	606012
ATU-32X	110505	120502	210315	603023	518012	606012
ATU-33X	110505	120502	210315	603023	518012	606012
ATU-41X	110507	120503	210315	603024	518013	606012
ATU-42X	110507	120503	210315	603024	518013	606012
ATU-43X	110507	120503	210315	603024	518013	606012
ATU-51X	110509	120504	210316	603025	518014	606013
ATU-52X	110509	120504	210316	603025	518014	606013
ATU-53X	110509	120504	210316	603025	518014	606013
ATU-61X	110513	120505	210316	603026	518015	606013
ATU-62X	110513	120505	210316	603026	518015	606013
ATU-63X	110513	120505	210316	603026	518015	606013



**Figure 5. Cougar® ATU Pneumatic Turbine Vibrator, P/N ATU-XXX-VX**

Item	Description	Part Number	Qty
1	Housing	Table IV	1
2	Rotor Assembly	155037-XX*	1
3	End Bell	Table IV	2
4	Muffler	Table IV	1
5	O-Ring	Table IV	2
6	Nut Hex	Table IV	2
7	Label	Table IV	2
8	Caplug	Table IV	2
9	Operator's Manual	M3870	1

\*XX indicates vibrator size.

**Table IV. Cougar<sup>®</sup> ATU Pneumatic Turbine Vibrator Part Numbers**

<b>Assembly Part No.</b>	<b>Part No. Item 1</b>	<b>Part No. Item 3</b>	<b>Part No. Item 4</b>	<b>Part No. Item 5</b>	<b>Part No. Item 6</b>	<b>Part No. Item 7</b>	<b>Part No. Item 8</b>
ATU-42X-V	110515	120503	210315	603024	518013	CG-100342-42V	606012
ATU-43X-V	110515	120503	210315	603024	518013	CG-100342-43V	606012
ATU-52X-V	110516	120504	210316	603025	518014	CG-100342-52V	606013
ATU-61X-V1	110518	120505	210316	603026	518015	CG-100342-61V1	606013
ATU-61X-V2	110519	120505	210316	603026	518015	CG-100342-61V2	606013

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

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