

COUGAR[®]

INDUSTRIES, INC.

INSTALLATION, OPERATING and MAINTENANCE INSTRUCTION



Throughout the world COUGAR Vibrators are providing cost effective solutions to material handling problems.

More than 35 years of design and manufacturing experience has given COUGAR INDUSTRIES INC. the ability to provide material handling solutions for practically every application.

Read and follow these instructions to ensure the proper installation, operation and maintenance of your COUGAR vibrator. If you have any questions about your new COUGAR vibrator, installation or the accessories included, contact your COUGAR dealer, distributor or the factory.

COUGAR[®]

INDUSTRIES, INC.

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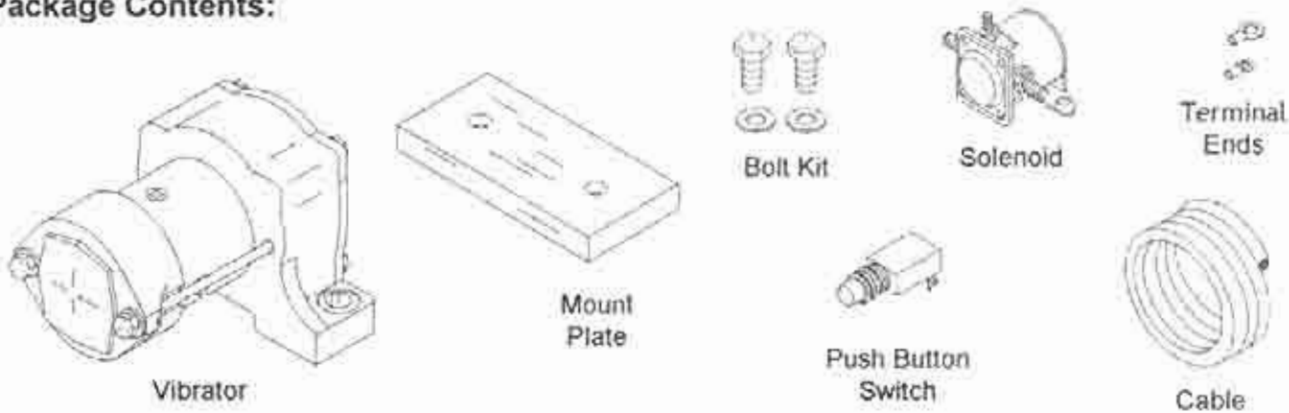
INSTALLATION

Receiving and Storage:

Cougar vibrators have been thoroughly inspected and tested before shipping. However, the package should be inspected when received and any shipping damage or missing parts should be reported to the carrier immediately.

If the vibrator is to be stored before installation, keep it in a protected area away from excessive heat, moisture or dust.

Package Contents:



NOTICE

The most common cause of vibrator failure is weak, poorly reinforced mounting!!

Welding Mount Reinforcement :

- Welding should be done by a certified welder.
- Area to be welded must be free of dirt, grease, paint, etc.
- Weld with E70S-3 mig wire or low hydrogen rod for steel or 5356 aluminum mig wire for aluminum.
- Use skip welding procedure (Fig. 1).

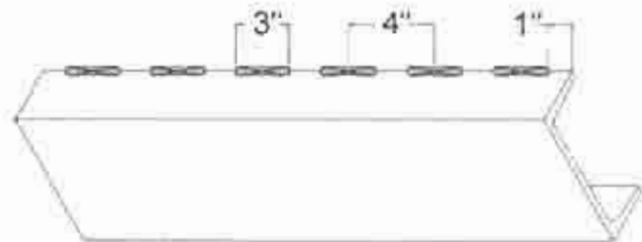


Fig. 1

Welding Mount Plate:

- Use skip welding procedure (Fig. 1).
- Mount plate must be flat after welding (Fig. 2).

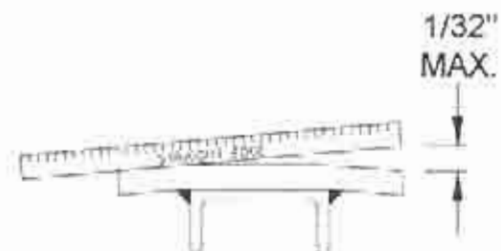


Plate flatness checking procedure.

Fig. 2

NOTE:

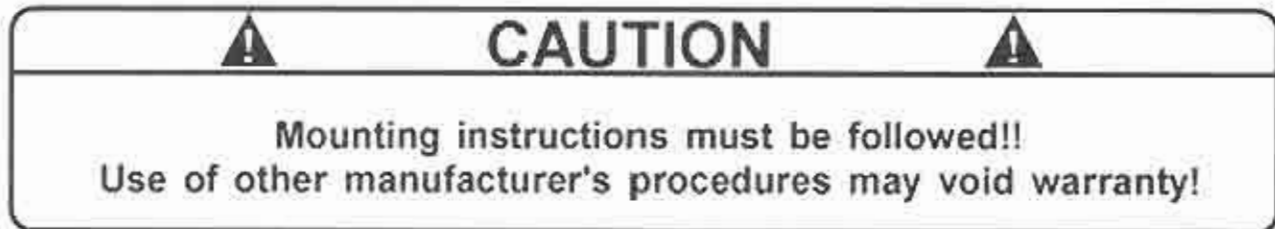
If plate is not flat after welding, a hydraulic press or other means should be used to flatten plate.

INSTALLATION

Mounting:

Proper mounting of the vibrator is the most important part of the installation.

Reinforce vibrator mount on the truck box by tying into the frame members of the box. This will distribute vibration evenly to the entire truck box and promote efficient material flow. **The more rigid the mount, the more effective and efficient your vibrator will be.**



Dump Boxes & Large Tandem Trailers:

Position vibrator between the long frame rails of the box in the area the flow problem occurs. The common position is immediately behind the dog house and to the rear of the hydraulic cylinder.

Mount the vibrator with the motor running across the width of the truck box as shown in Fig. 3. See pages 4 and 5 for more specific mounting instructions.

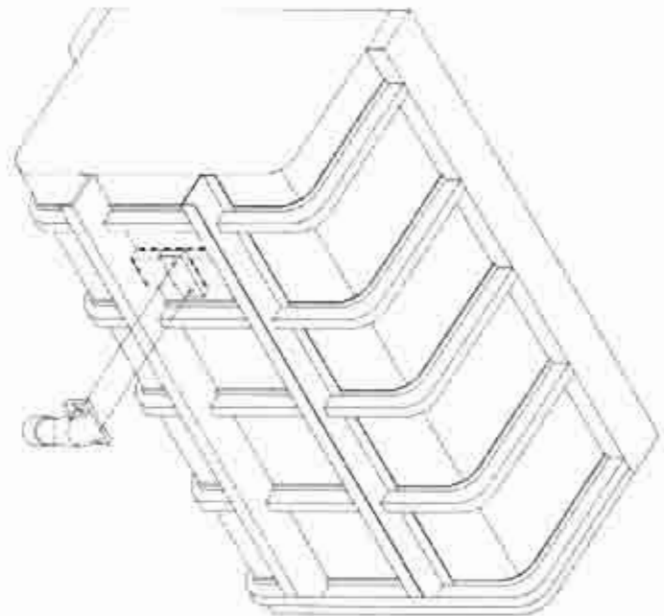


Fig. 3

Dump Box Spreaders:

Mount vibrator as low on the slope area as possible and towards the rear of the box.

Hopper Type Spreaders:

Mount the vibrator 2/3rds of the way towards the rear and as low on the side of the box as possible (Fig. 4).

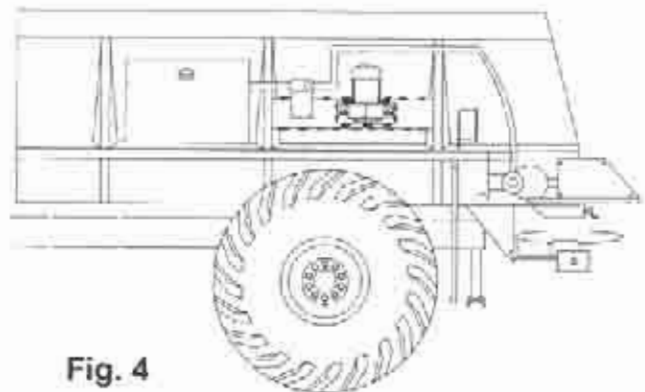


Fig. 4

INSTALLATION

STEEL TRUCK BOX REINFORCEMENT:



CAUTION



Truck box must be supported by means other than the truck lift system during vibrator installation. Failure to do so may result in personal injury or death. (Use truck box prop if available)

Reinforce vibrator mount on the truck box by tying into the two long frame rails that run the length of the box. This will ensure even distribution of vibration to the entire truck box.

Always mount the vibrator where it will not conflict with truck frame when box is lowered.

1. Refer to the illustration that closely matches your truck (Fig. 5 or 6).
2. Position channel between the two long frame rails in the area where material becomes lodged. (Use 8" x 13.5 lb./ft. channel or similar).
3. Cut channel to length, and notch if necessary, to permit full contact with box and frame members.
4. Position the mount plate where the vibrator will not interfere when the box is lowered.
5. Skip weld mount plate to channel with E70S-3 mig wire or low hydrogen rod as shown in Fig.5 or 6
6. Skip weld channel legs to the truck box using same procedure as in Step 5.

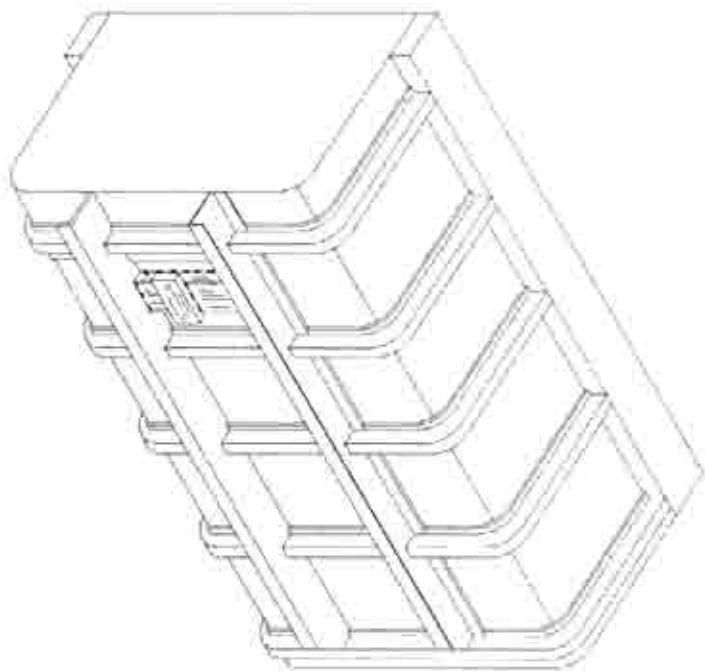


Fig. 5

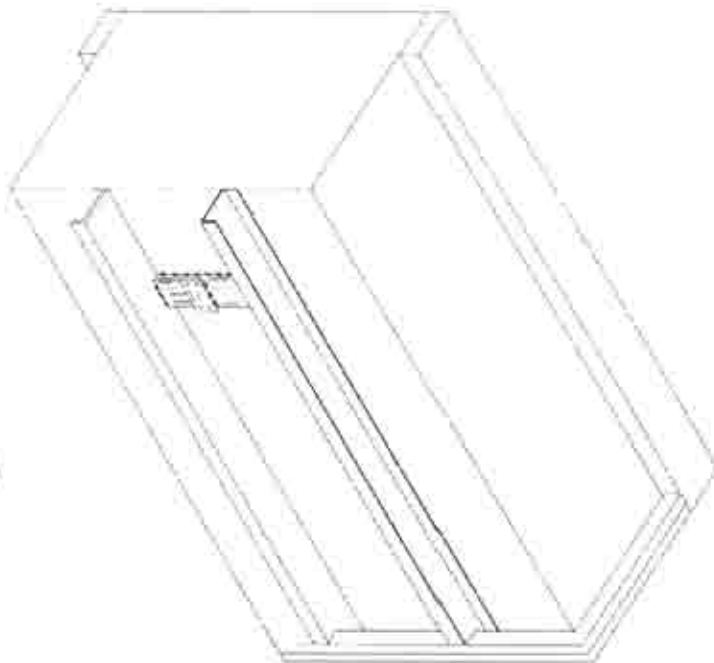


Fig. 6

INSTALLATION

ALUMINUM TRUCK BOX REINFORCEMENT:

⚠	CAUTION	⚠
Truck box must be supported by means other than the truck lift system during vibrator installation. Failure to do so may result in personal injury or death. (Use truck prop if available)		

Reinforce vibrator mount on the truck box as illustrated to ensure even distribution of vibration to the entire truck box.

Always mount the vibrator where it will not conflict with truck frame when box is lowered.

1. Refer to the illustration that closely matches your truck (Fig. 7 or 8).
2. Position channel between the two long frame rails in the area where material becomes lodged. (Use 8" x 6.4 lb./ft. aluminum channel or similar 3/4ths the length of box. For boxes or trailers over 20 ft. in length, use a minimum of 15 ft. of channel.)
3. Cut channel to length, and notch if necessary, to permit full contact with box and frame members.
4. Position the mount plate where the vibrator will not interfere when the box is lowered.
5. Skip weld mount plate to channel with 5356 aluminum mig wire or low hydrogen rod as shown in Fig. 7 or 8.
6. Skip weld channel legs to the truck box using same procedure as in Step 5.

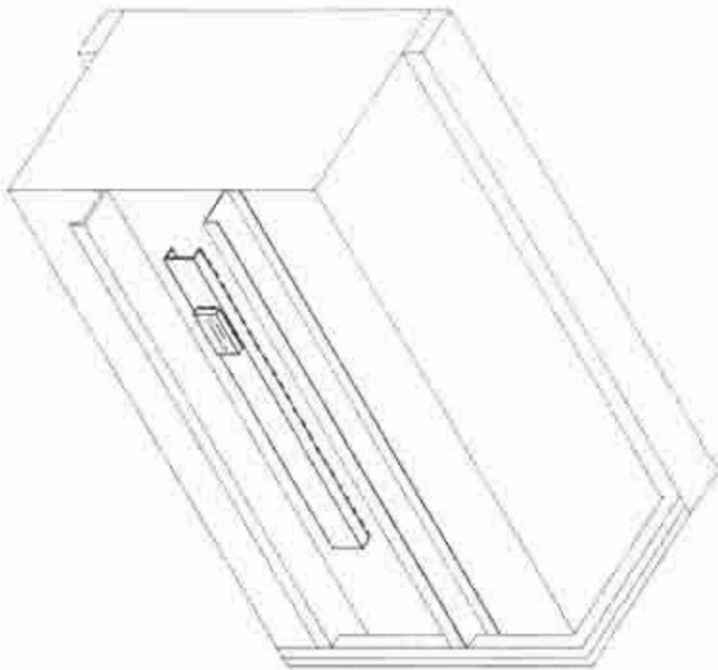


Fig. 7

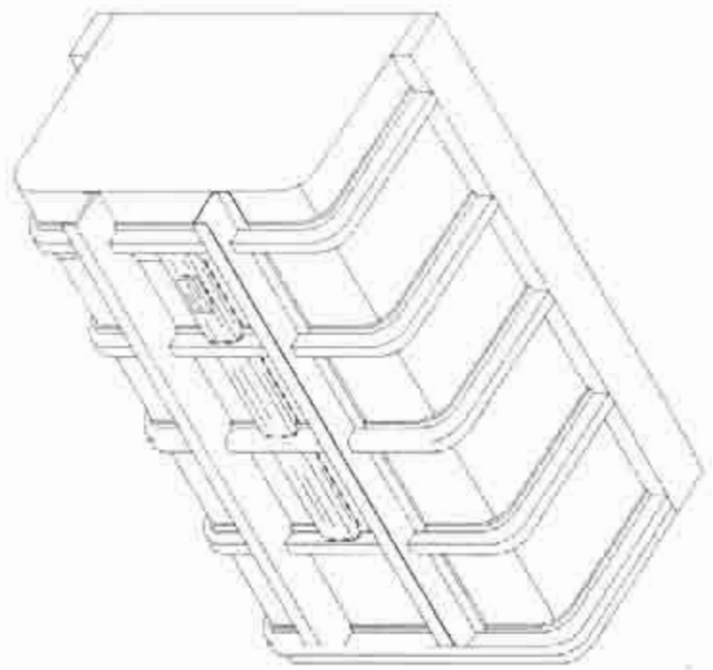


Fig. 8

INSTALLATION

BOTTOM DUMP TRAILERS:

1. Position channel as close to outlet as possible without interfering with operation of gate. For double bottom dump trailers, extend up to contact adjacent hopper. If adequate clearance is not available use Option 2 (see Fig. 9). (Use 8" x 6.4 lb./ft. aluminum channel on aluminum trailers or C8x8.2 lb./ft. on steel trailers.)
2. Cut channel to length, and notch if necessary, to permit full contact with hopper and stiffeners.
3. Position mount plate and vibrator towards the upper middle section of the hopper slope.
4. Skip weld steel mount plate to channel with E70S-3 mig wire or low hydrogen rod, aluminum plate with 5356 aluminum mig wire as shown in Fig. 9.
5. Skip weld channel legs to the hopper using same procedure as in Step 4.

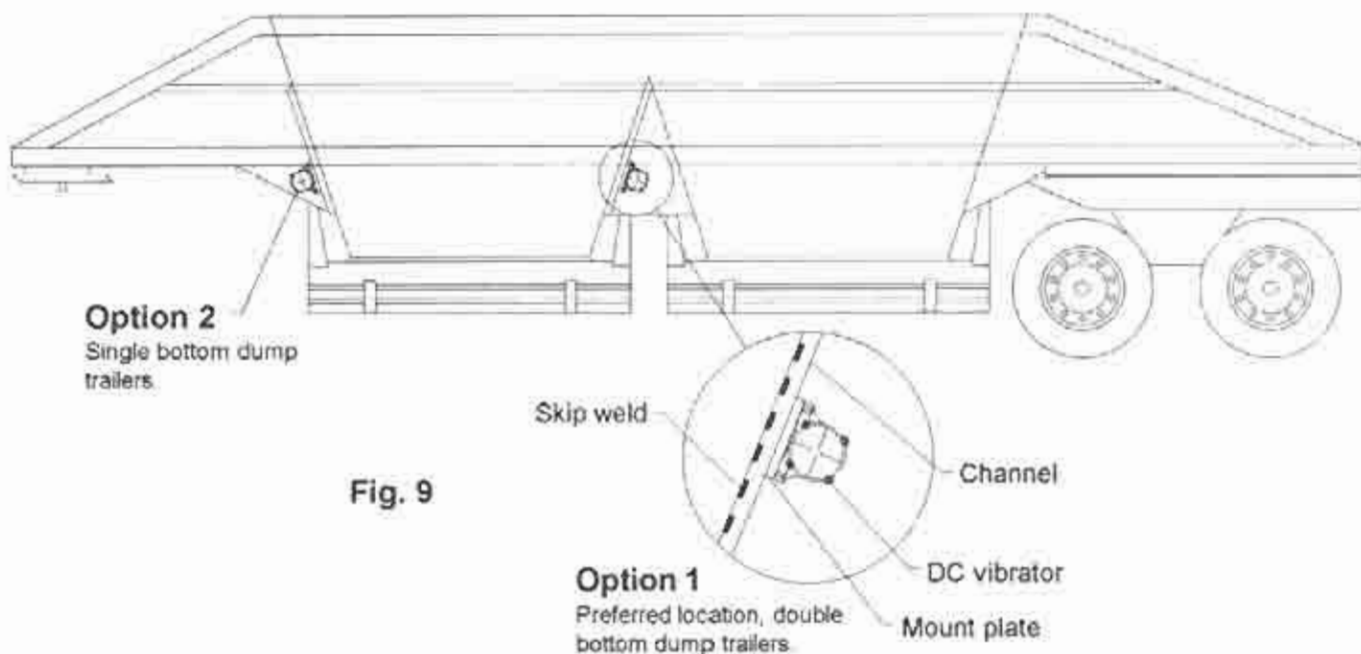


Fig. 9

Bolting vibrator to mount plate:

Before placing vibrator on the mount plate, make certain mounting surface is flat (see Pg. 3, Fig. 2) and free of dirt, grease and weld slag. Install compression washers properly, with center cone next to the bolt head as shown in Fig. 10. Then draw bolts down tight to flatten compression washer. Check bolts periodically for tightness. Refer to chart below for torque specifications.

BOLT TORQUE SPECIFICATIONS (ft./lbs)

	Dry	Lube
3/8" Bolts	31	23
1/2" Bolts	75	57
5/8" Bolts	150	115

Correct position of compression washer.
Note: Cone up.



Fig. 10

INSTALLATION

Electrical Connections:

The DC truck vibrators are designed to be operated by the truck's electrical system. A push button switch, solenoid and large cable are provided for the electrical installation.

Ignition wire (#16), 4 wire terminals and miscellaneous hand tools will also be needed during installation.

12 or 24 VOLT

1. Position the push button switch on the truck's dash where it will be convenient to install and operate.
2. Attach the solenoid to a grounded surface on the fire wall or other convenient surface in the truck's engine compartment. (For 24V solenoid, use one (1) of the two small terminals for ground.)
3. Connect the push button switch to the solenoid with #16 ignition wire. (See Fig. 11.)
4. Cut a piece from the cable (furnished) long enough to reach from the positive battery terminal to the solenoid.
5. Remove 1/2" of the cable insulation and install terminal ends by crimping and soldering.
6. Connect the positive battery terminal to the solenoid.
7. Crimp and solder one terminal end to the remaining cable and attach solidly to the vibrator.
8. Run the cable down the truck box and around the pivot point (Fig. 12) in a position where the cable will not be pinched or pulled when the box is raised and lowered.
9. Continue running the cable from the pivot point (Fig. 12) along the frame to the solenoid. Cut cable to length, crimp and solder terminal end on and connect to solenoid.

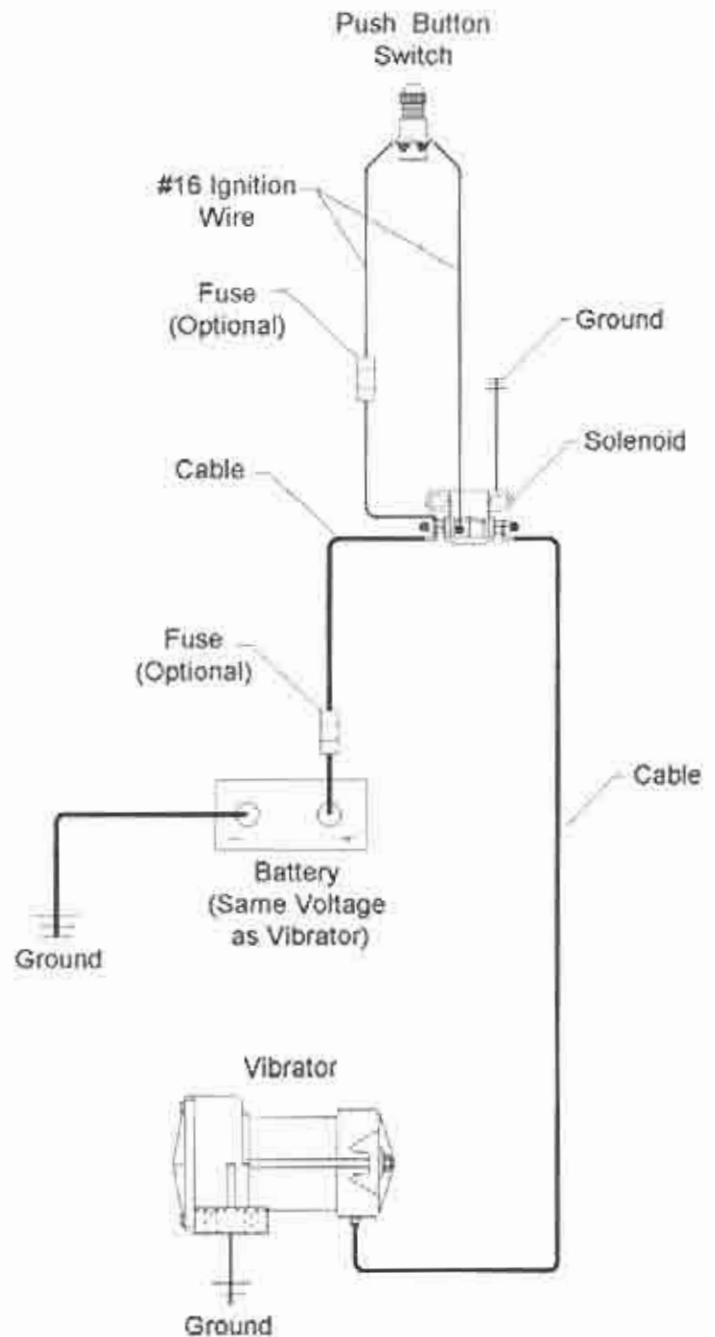


Fig. 11

(continued on page 8)

INSTALLATION

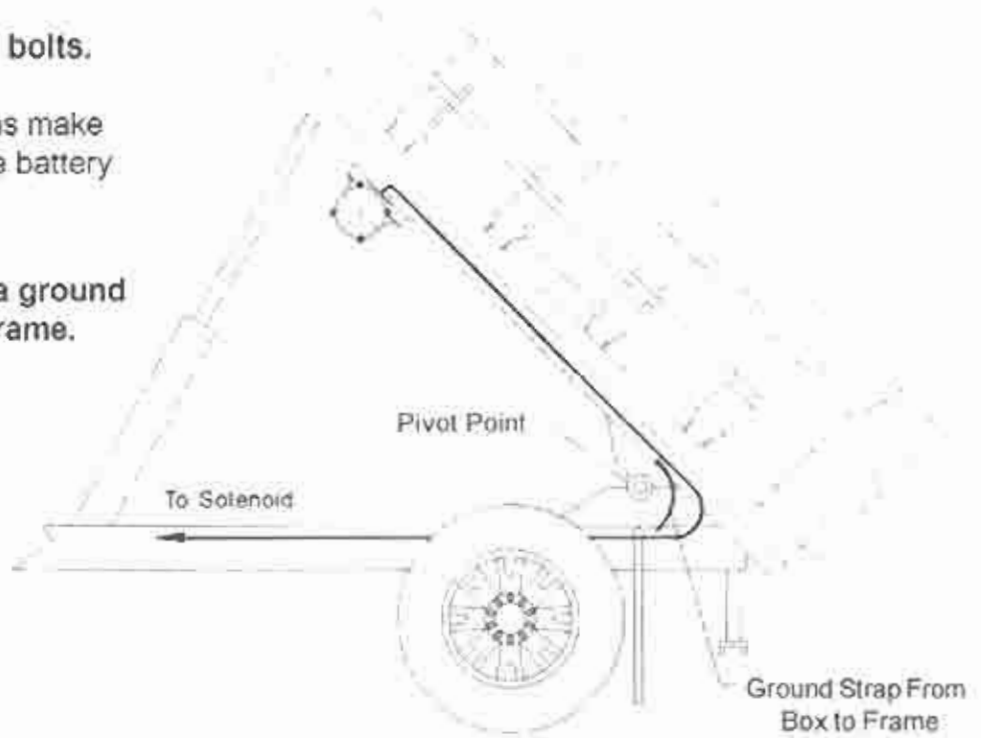
(continued from page 7)

10. Clip or wire tie cable in place along the body and frame.
11. Test run the vibrator by briefly pushing the "Push Button Switch".
12. **Re-torque vibrator mounting bolts.**

NOTE: For positive ground systems make connections to the negative battery terminal.

NOTE:

It may be necessary to connect a ground strap from the box to the truck frame. See Fig 12.



OPERATION

OPERATING INSTRUCTIONS:

COUGAR vibrators are designed to help move stubborn materials when they bridge over feeding chains or resist flow during a dumping or spreading operation.

Follow the simple instructions below to end material flow problems:

1. Begin unloading truck in normal manner.
2. Push "RUN" button briefly (30 seconds or less) when material stops flowing during unloading cycle.

NOTE: Only run vibrator when truck gate is open or material will be compacted.

3. Push "RUN" button again to clean truck box at the end of the unloading cycle.

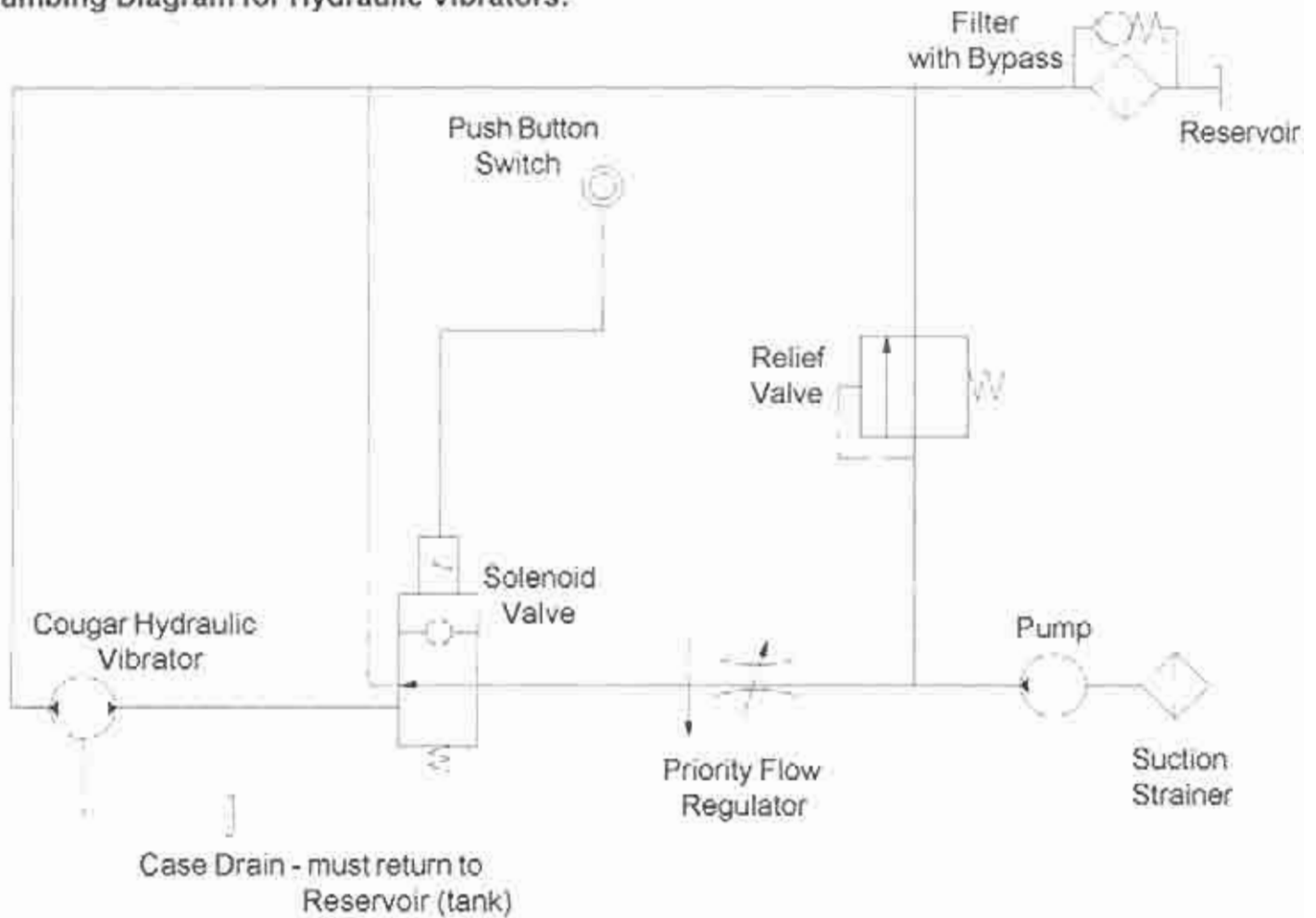
Maintenance:

Re-torque mounting bolts after the first week of operation; then once a month to ensure efficient operation and maximum vibrator life.

No regular vibrator maintenance is required.

INSTALLATION

Plumbing Diagram for Hydraulic Vibrators:



CAUTION:

When connecting a hydraulic vibrator to a hydraulic system:

1. Connect the pressure line to the motor port marked "IN".
2. Protect the vibrator from over-revving. Refer to name plate or literature for maximum allowable G.P.M.
3. Protect the vibrator from pressure surges above 2000 PSI.
4. Filter oil using a ten micron or better filter.

When replacing a coupling or a hydraulic motor:

1. Torque motor attaching bolts to 15 ft. lbs
2. Avoid any impact or thrust load to the motor shaft.
3. Center the drive ring on the motor shaft key.

NOTE:

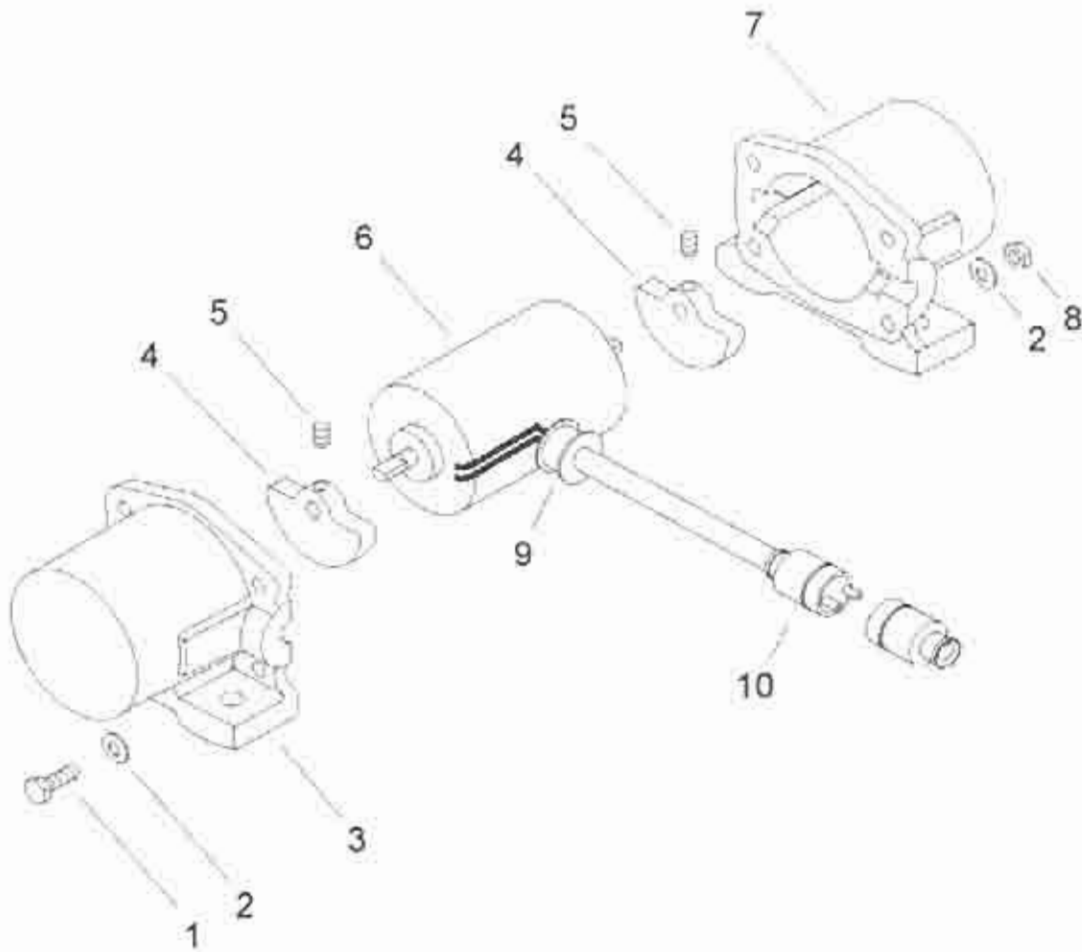
The case drain serves two purposes:

1. To provide shaft and seal cooling.
2. To flush contaminants that enters the shaft seal area.

TROUBLE SHOOTING

Symptom	Possible Causes
	(Suggested Action)
1. Vibrator will not run.	A. Power source not connected to vibrator. (Check all connections.) B. Push button or solenoid not functioning. (Replace component.) C. Vibrator not grounded properly. (DC Only) (Remove vibrator from mount and clean any paint, heavy rust, etc. from mounting surface. Add ground strap from truck box to frame.) D. Vibrator failure. (Contact dealer or factory for replacement or repair.)
2. Vibrator noisy.	A. Vibrator mounting bolts loose. (Re-torque mounting bolts.) B. Broken welds on mounting assembly. (Repair welds.) C. Motor brushes (DC Only) or bearings worn. (Contact dealer or factory for replacement or repair.)
3. Fluid leakage. (Hydraulic Only)	A. Loose fittings. (Check all connections and replace if necessary.)
4. Fluid in housing. (Hydraulic Only)	A. Motor seal failure. (Contact dealer or factory for replacement or repair.)
5. Excessive Back Pressure (Hydraulic Only)	A. Running equipment on return line (Run dedicated return line.) B. Return line too small (Use 3/4" or larger line.) C. Case drain not used (Run 1/2" or larger line to tank from case drain.)
6. Pressure Spikes (Hydraulic Only)	A. Running equipment from pressure line. B. Turning on pressure with oil flow set on max. C. Running system without a pressure relief valve before vibrator, or instant start when vibrator is cold. (Run dedicated pressure line for vibrator with flow control valve and follow plumbing diagram, page 9.)
7. Over-speeding (Hydraulic Only)	A. Running system without controlling oil flow to vibrator. (Set max. oil flow to vibrator at or below max. rated G.P.M.)

Repair Parts



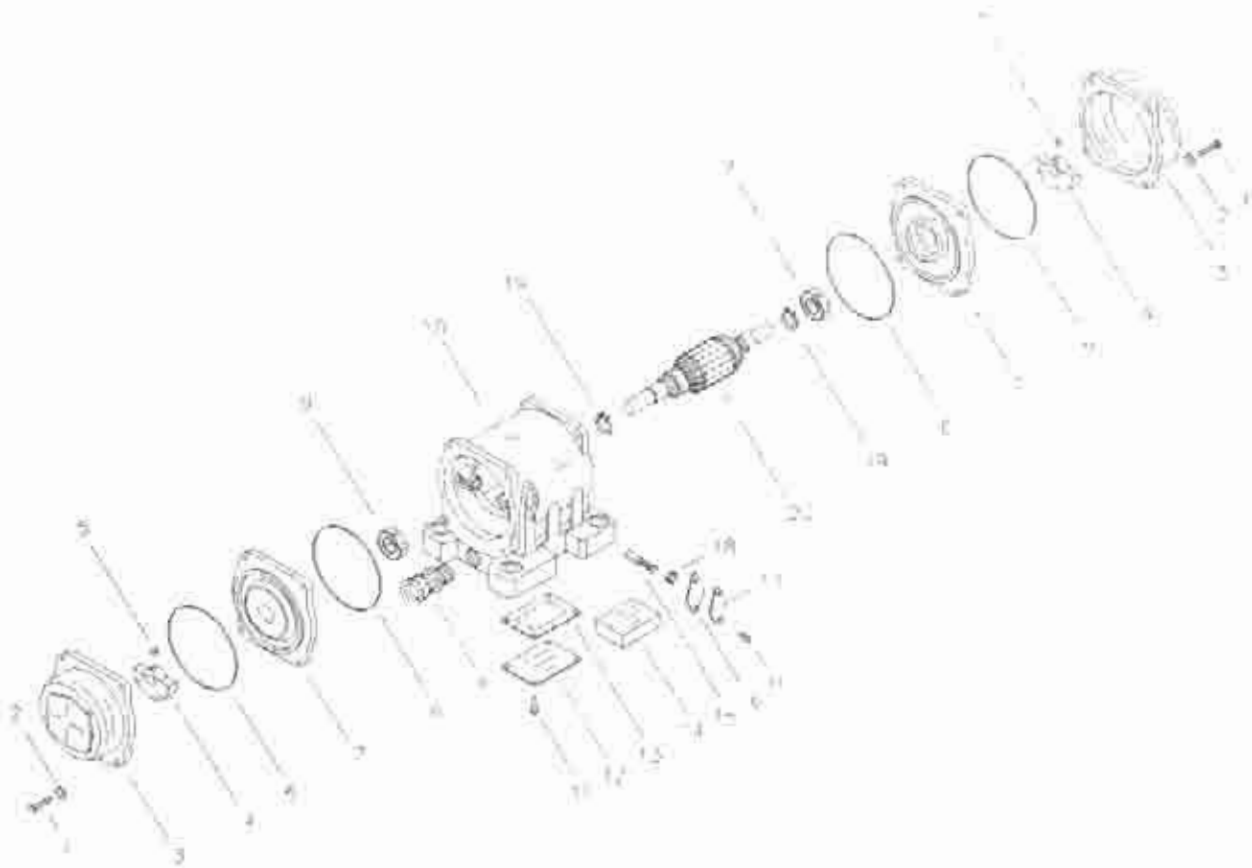
NOTE:

Have Model Number and Serial Number of vibrator available when ordering parts
(Serial number located on under side of housing between feet)

DC-80

1. Hex bolt
2. Washer
3. L. H. housing
4. Weight
5. Set screw
6. Motor w/cord
7. R. H. housing
8. Hex nut
9. Grommet
10. Plug

Repair Parts



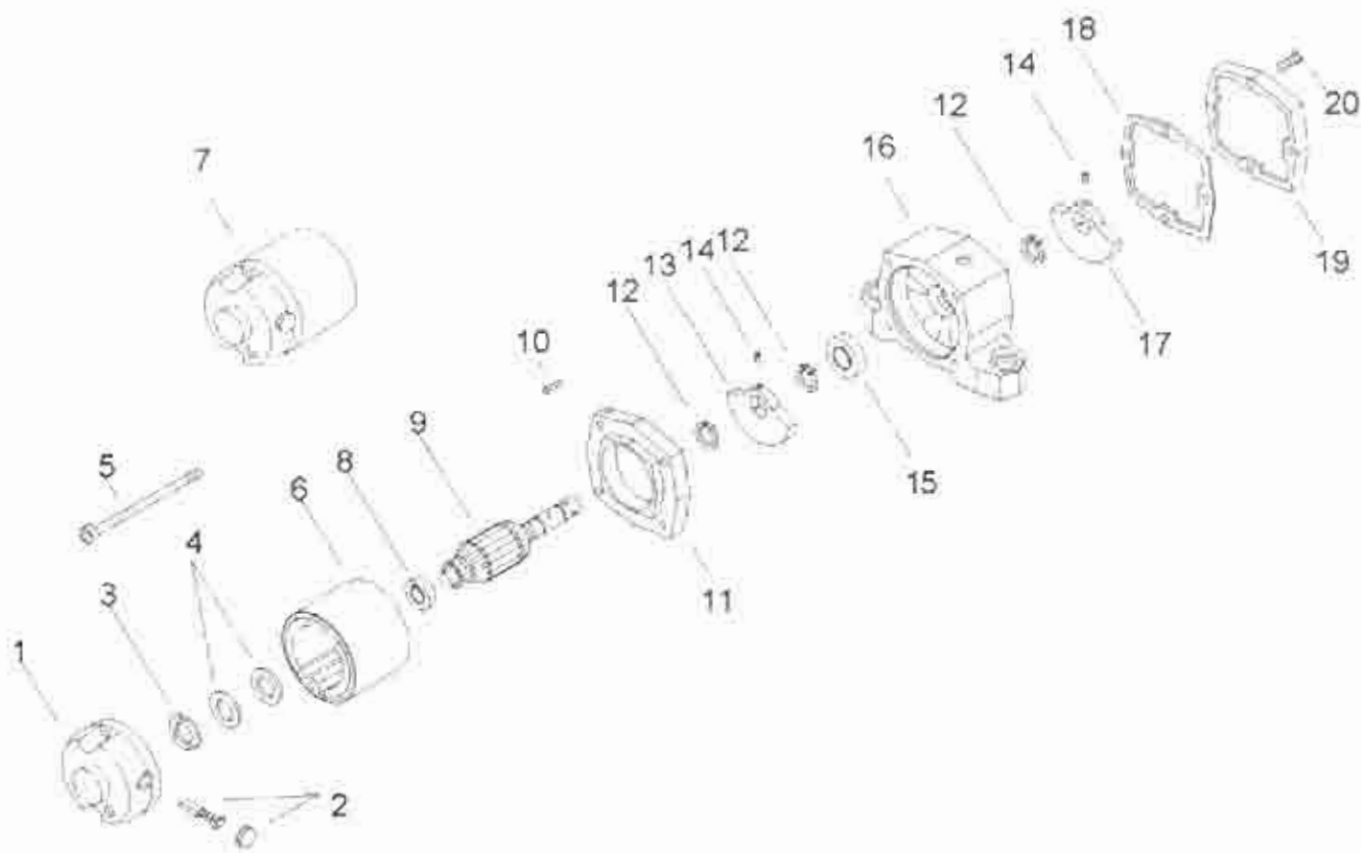
NOTE:

Have Model Number and Serial Number of vibrator available when ordering parts
(Serial number located on under side of housing between feet)

DC1-400

- | | |
|----------------------|--------------------------|
| 1. Bolt (end cap) | 11. Screw |
| 2. Lock washer | 12. Box cover |
| 3. End cap | 13. Gasket (box cover) |
| 4. Weight | 14. Foam packing |
| 5. Set screw | 15. Brushes (2 ea.) |
| 6. "O" ring | 16. Gasket (brush cover) |
| 7. End bell | 17. Brush cover |
| 8. Cord holder | 18. Brush cap |
| 9. Bearing | 19. Snap ring |
| 10. Housing assembly | 20. Armature assembly |

Repair Parts



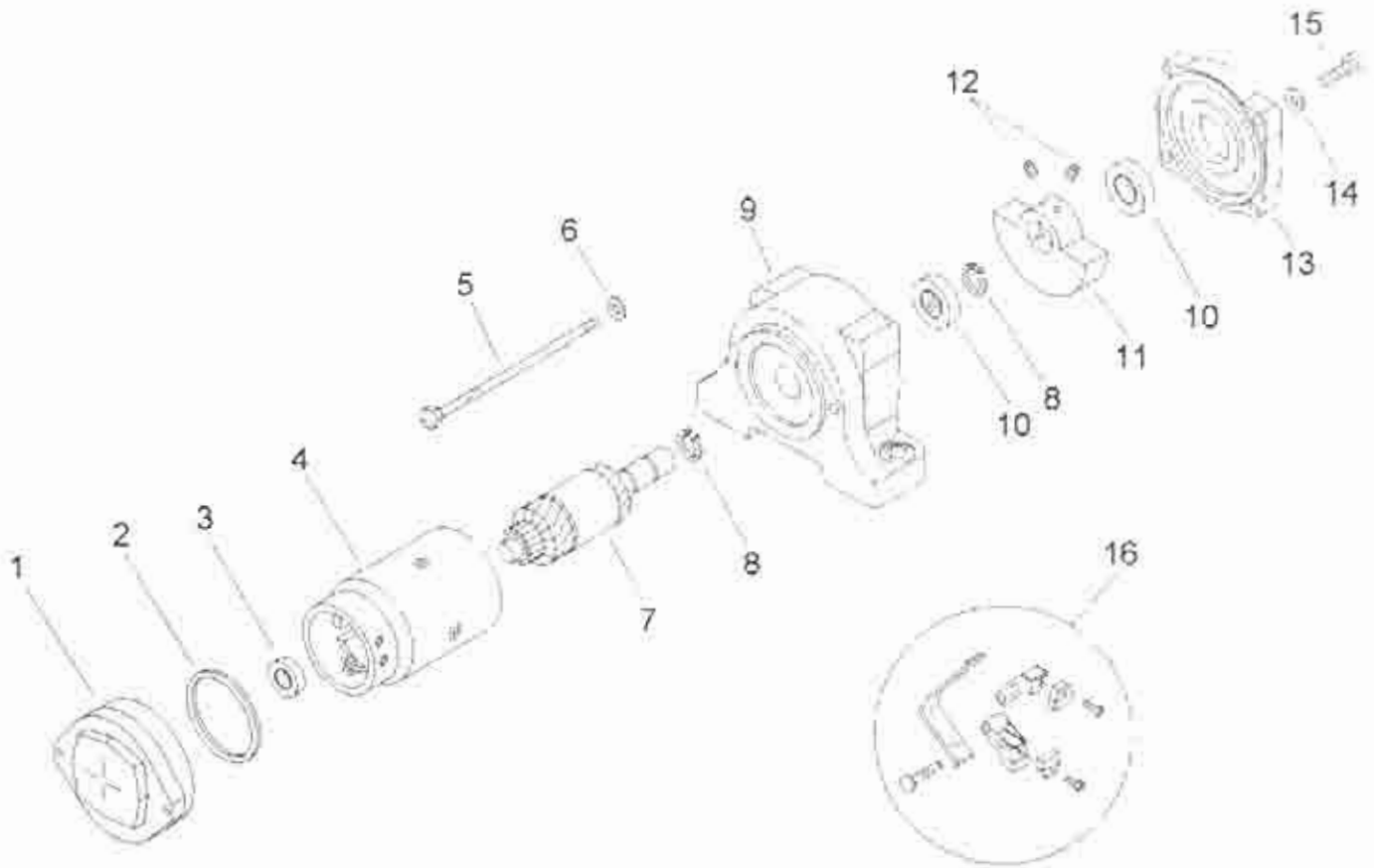
NOTE:

Have Model Number and Serial Number of vibrator available when ordering parts
(Serial number located on under side of housing between feet)

DC-1000

- | | |
|-----------------------|-----------------------|
| 1. Cap | 11. Face plate |
| 2. Brush kit | 12. Snap ring |
| 3. Spring washer | 13. Weight |
| 4. Washer | 14. Set screw |
| 5. Bolt (cap) | 15. Bearing (housing) |
| 6. Field | 16. Housing |
| 7. Stator assembly | 17. Weight |
| 8. Bearing (cap) | 18. Gasket |
| 9. Armature | 19. End cap |
| 10. Bolt (face plate) | 20. Bolt (end cap) |

Repair Parts



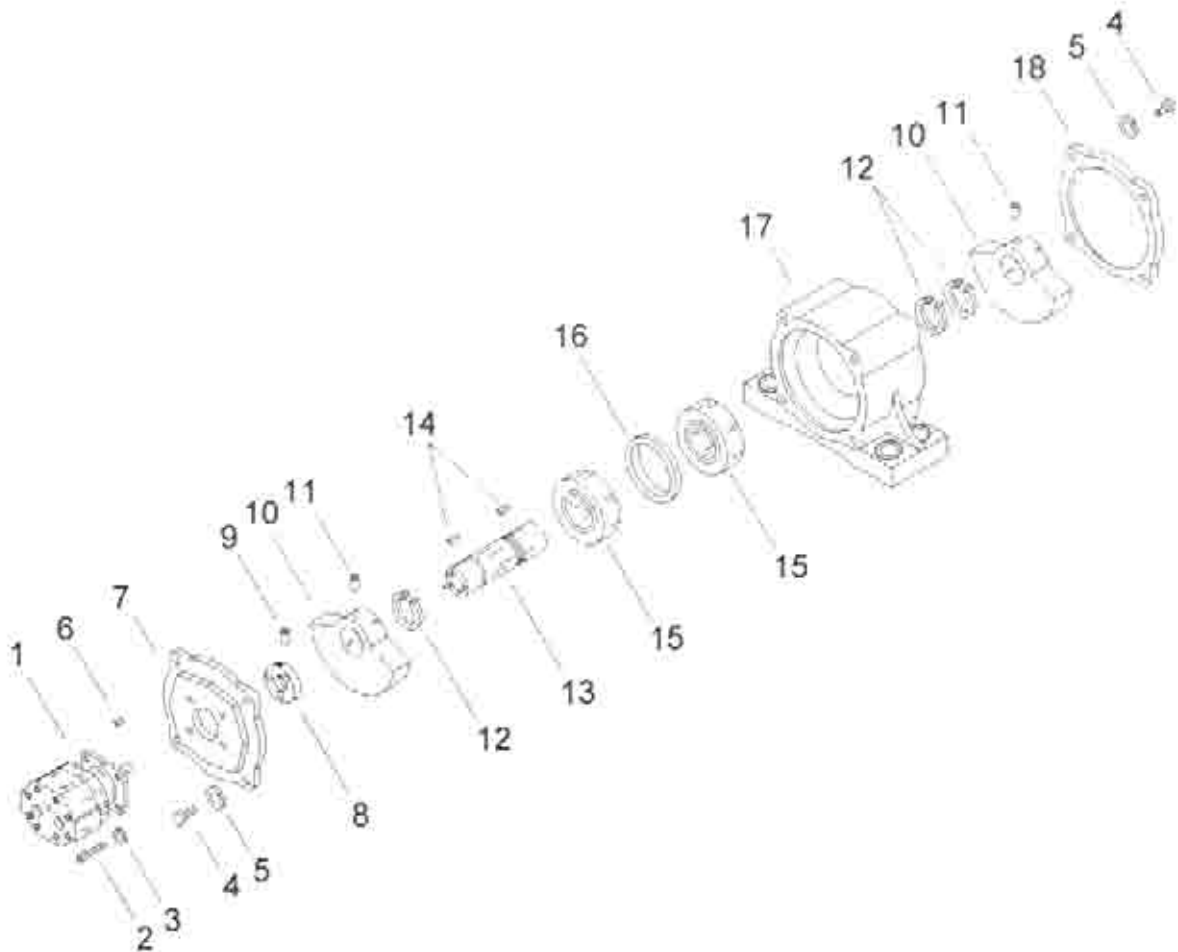
NOTE:

Have Model Number and Serial Number of vibrator available when ordering parts
(Serial number located on under side of housing between feet)

DC-1100 DC-1600 DC-2500 DC-2700 DC-3200

- | | |
|------------------|---------------------|
| 1. Cap | 9. Housing |
| 2. Gasket | 10. Bearing |
| 3. Bearing (cap) | 11. Weight |
| 4. Field | 12. Set screw |
| 5. Bolt (cap) | 13. End bell |
| 6. Washer | 14. Washer |
| 7. Armature | 15. Bolt (end bell) |
| 8. Snap ring | 16. Brush kit |

Repair Parts



NOTE:

Have Model Number and Serial Number of vibrator available when ordering parts
(Serial number located on under side of housing between feet)

HT-3200

- | | |
|--------------------------------------|--------------------------|
| 1. Motor | 10. Weight |
| 2. Bolt (motor) | 11. Set screw (weight) |
| 3. Lock washer (motor) | 12. Snap ring |
| 4. Bolt (face plate, end cap) | 13. Shaft |
| 5. Flat washer (face plate, end cap) | 14. Woodruff key (shaft) |
| 6. Woodruff key (motor) | 15. Bearing |
| 7. Face plate | 16. Spacer |
| 8. Drive ring | 17. Housing |
| 9. Set screw (drive ring) | 18. Endcap |

PERFORMANCE 12 & 24 VOLT

MODEL	AMPS (12V)	AMPS (24V)	RPM	FORCE
DC-80	5		4000	80
DC1-400	15	7.5	3800	410
DC-1000	22	11	5000	1000
DC-1100	70	55	5000	1100
DC-1600	70	55	5000	1600
DC-2500	72	55	5000	2500
DC-2700	75	55	4500	2700
DC-3200	85	62	4000	3200

HYDRAULIC

MODEL	G.P.M. (Max.)	P.S.I. (Max.)	RPM	FORCE
HT-3200	5.6	*	4000	3200

*UNDER NORMAL CONDITIONS VIBRATOR DOES NOT REQUIRE MORE THAN 1000 PSI FOR OPERATION.
Test performed on a 1,047 lb. test stand, field performances may vary.

ACCESSORIES 12, 24 VOLT and HYDRAULIC

MODEL NUMBER	MOUNT PLATE		BOLT KIT		CABLE (by the foot)	SWITCH	SOLENOID		BREAKER	
	STEEL	ALUMINUM	FOR STEEL PLATE	FOR ALUM PLATE			12 VOLT	24 VOLT	12 VOLT	24 VOLT
DC-80	220506		221622-01							
DC1-400	220505		221538							
DC-1000	220512	220580	221521	221531	195106					
DC-1100	220525	220581	221522	221536	195103	193501	193751	193752	193215	193218
DC-1600										
DC-2500										
DC-2700										
DC-3200	220526	220582	221537	221534	N/A	N/A	N/A	N/A	N/A	N/A
HT-3200										

WARRANTY

All Cougar industries Inc. products are covered by a one year limited warranty. Ask for details.

Also available from Cougar Industries:

Air Vibrators

Ball Vibrators

Hydraulic Vibrators



ELECTRIC VIBRATORS