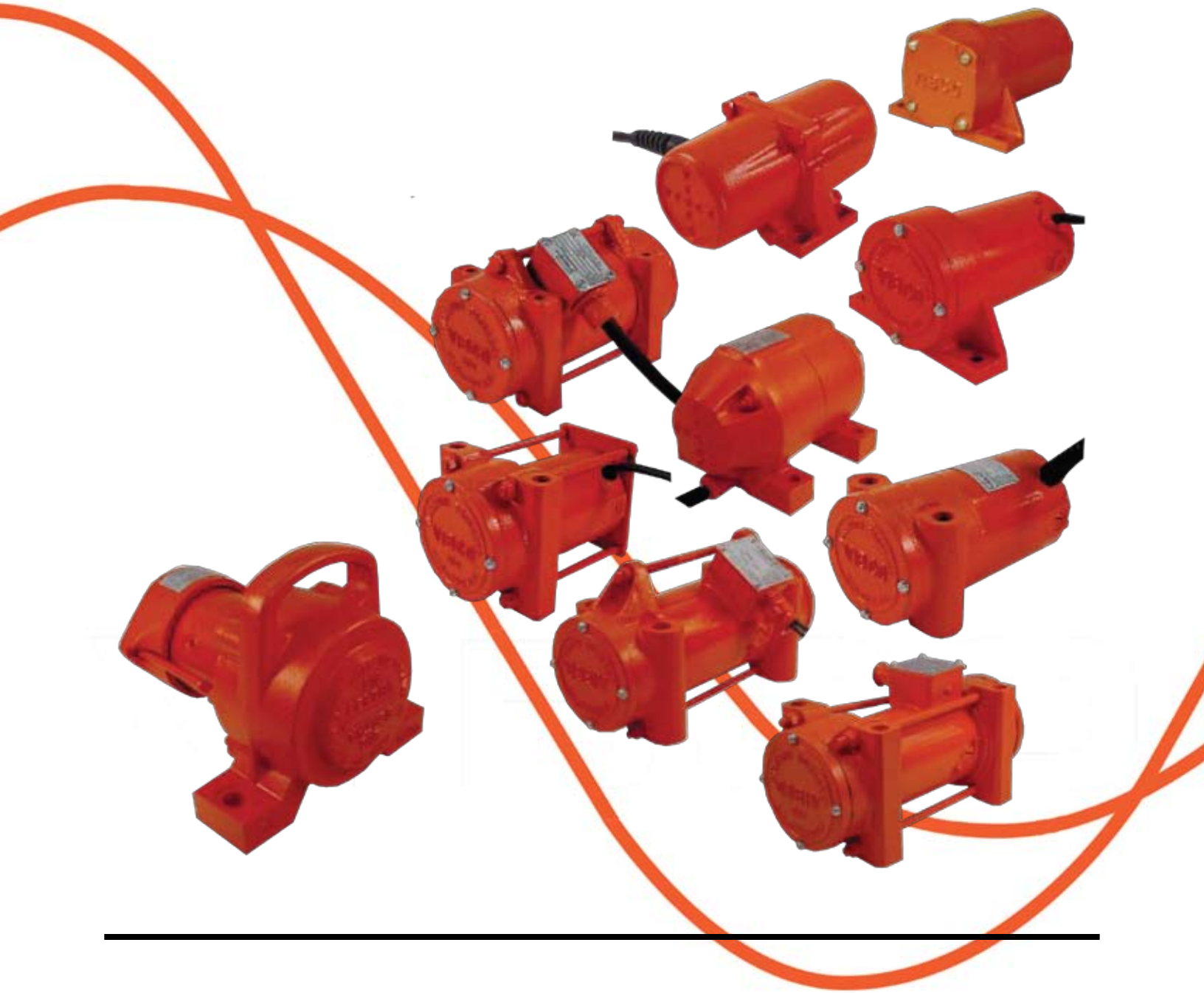
Model DC

12 & 24 Volt Battery Operated

Specifications • Mounting Instructions • Operating Instructions
Parts List • Dimensions • Maintenance •Technical Data



VIBCO® EXPERT
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WARNING: Failure to read and follow these installation instructions and safety precautions could result in personal injury, equipment damage, shortened service life or unsatisfactory equipment performance. All information in this document is vital to the proper installation and operation of the equipment. It is important that all personnel who will be coming in contact with this product thoroughly read and understand this manual.

Thank you for choosing VIBCO, Inc. for your vibration needs. You are now the owner of the finest 12 volt DC battery operated vibrator available today backed by complete manufacturer confidence in its quality and dependability. For reference please complete the information below about your new VIBCO vibrator.

Model Number: _____

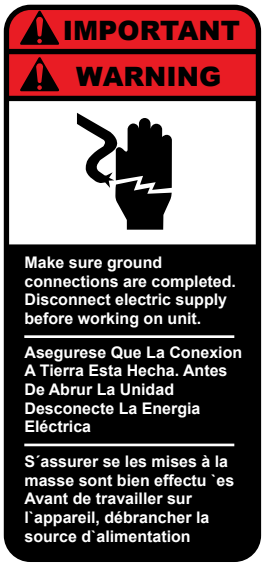
Serial Number: _____

Date of Purchase: _____

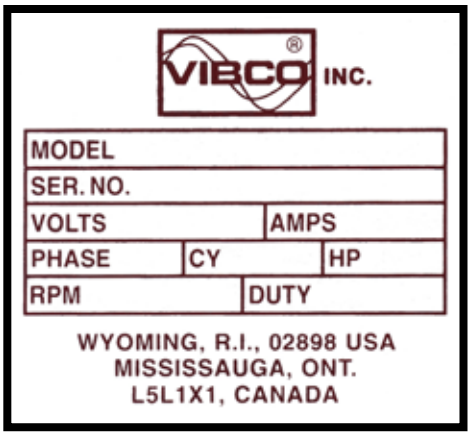
TABLE OF CONTENTS

WARNING LABELS AND SERIAL NUMBER TAGS

WARNING!
Do not operate with counterweight guards removed. Whenever the covers are removed make sure that the power is turned off and locked so it cannot be turned on accidentally.
Location: On body of vibrator.



WARNING!
Make sure ground connections are completed. Before working on unit, disconnect electric supply.
Location: Wrapped around end of cord.



Please have the information on this tag ready when ordering parts or contacting the technical service department at VIBCO.
Location: On top of conduit box.
DC-3500: Sticker on round motor.

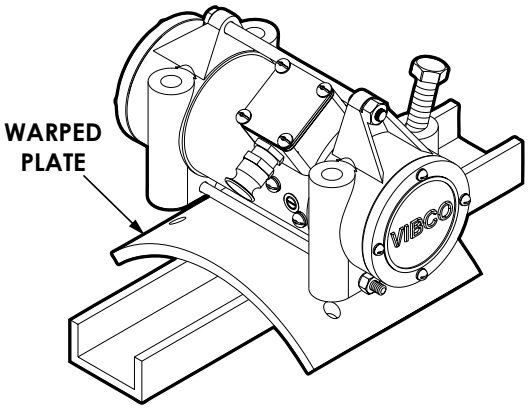
MOUNTING INSTRUCTIONS CHECKLIST

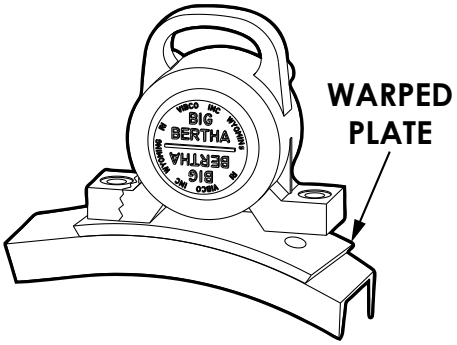
The warranty is void if vibrator is not properly installed. During installation follow and check off the following steps and your vibrator should provide you with years of trouble-free service.

- □ Determine the length of the channel iron.
- □ Select thickness of vibrator mounting plate and method of mounting.
- □ **STITCH** Weld mounting plate to channel iron.
- □ Determine where vibrator should be placed on the bin.
- □ **STITCH** Weld channel iron to bin.
- □ Place vibrator on mounting plate. It is important that you ***check the mounting plate for any warping***. Secure vibrator firmly.
- □ Install safety chain or wire.
- □ Connect electrical wiring.
- □ ***FILL OUT WARRANTY CARD!!!***

Important Safety Instructions

When installing vibrator, make sure that the rotary motion of the vibrator is in the direction of flow (the length of the vibrators body should be 90 degrees or perpendicular to the direction of flow). Secure one end of vibrator to the mounting plate using one or two bolts (depending on the model). If mounting plate is warped or bent due to welding, shim the opposite end of vibrator (over-shim slightly) and tighten remaining mounting bolt(s) to 260 ft-lbs. Remove end cover on vibrator and spin shaft with finger, it should spin freely - if not, re-shim vibrator (does not apply to DC-60, DC-500, or DC-3500). Retighten the bolts after the first 10-15 minutes of running, then check them periodically for tightness. When mounting the DC-3500 secure vibrator with one bolt (use Loctite 242 or equal), and lock washer. Shim opposite foot (overshim slightly), then tighten other bolt.





Note: A loose vibrator can cause damage to the bin and may also get electrically overloaded, which could cause motor burnout. Be sure to install a safety chain or cable to vibrator. Adhere to any other local, state or federal safety codes that may apply.

For no weld, bolt on installations contact the technical service department at VIBCO at 1-800- 633-0032.

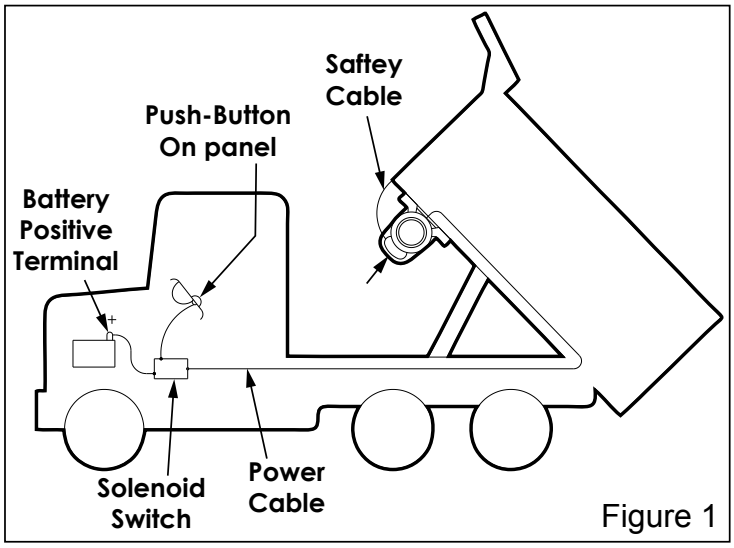


Figure 1

Flat Bed Dump Trucks and Tandem Trailers

The vibrator should be located underneath the body, preferably 1/4 the body length from the front, or as close to this as possible, and centered between sills or main beams (see Figures 1 & 2). Check to make sure the vibrator clears hydraulic tanks, gas tanks etc., when the body is in the down position. It is important to reinforce the truck body so it will be able to take the vibration created without causing damage. For large dump body trucks, the easiest and most effective way to mount the vibrator is to weld a 4 in. channel iron over at least three cross members. Weld vibrator mounting plate onto the channel iron, positioning the mounting plate on the channel iron over a stiffener (see Figure 3). For small dump body trucks, weld a 6 in. channel between cross members and to body (skip weld to body), and weld the vibrator mounting plate to the middle of the channel iron (see Figure 5). For aluminum body trucks, use an aluminum channel and weld it over at least three cross members, and weld an aluminum vibrator mounting plate to the middle of the channel iron, over the middle of a stiffener (see Figures 2 & 3). On front mounted telescopic hoist bodies, locate vibrator just outside either one of the long members.

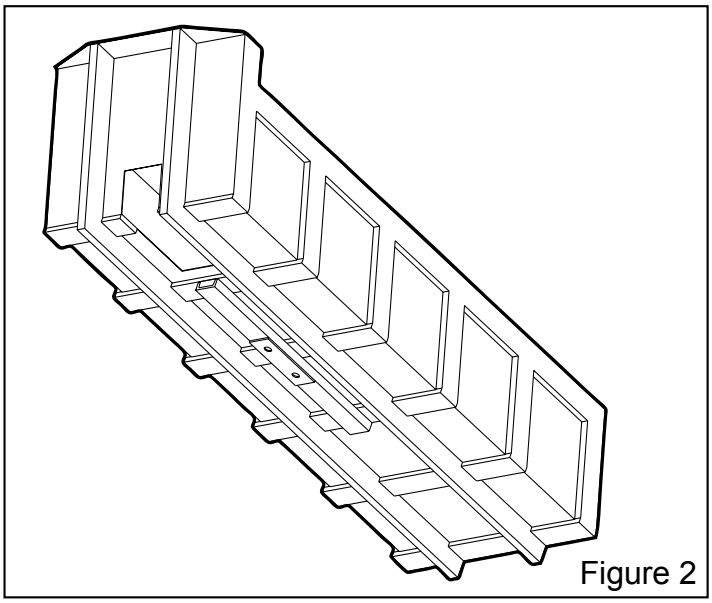


Figure 2

Weld sides and underneath channel to dump body stiffener. Place channel as close to the doghouse as possible.

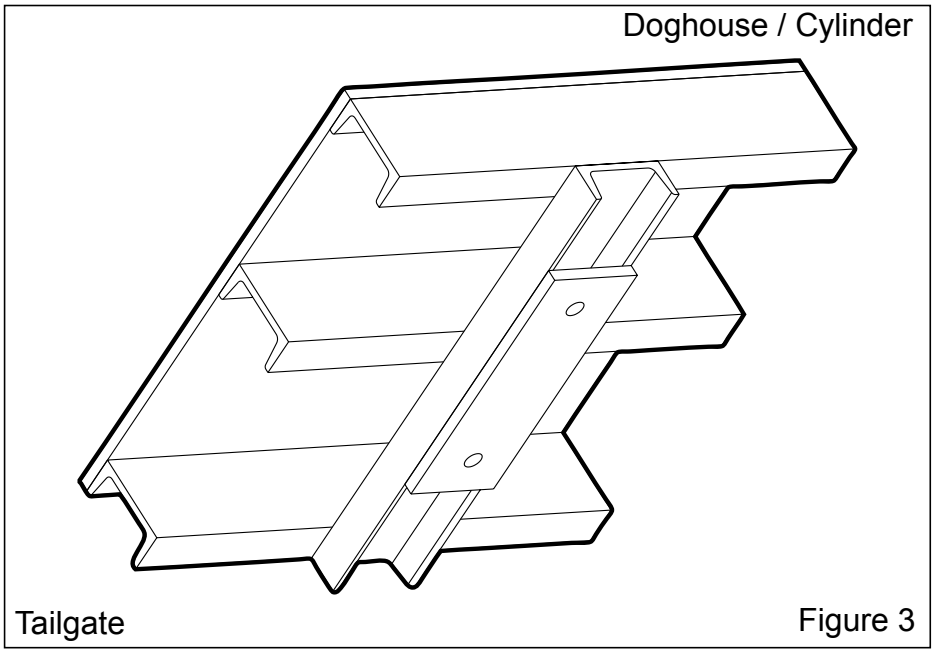


Figure 3

Weld 4 in. channel over at least 3 stiffeners. Then weld vibrator mounting plate to channel.

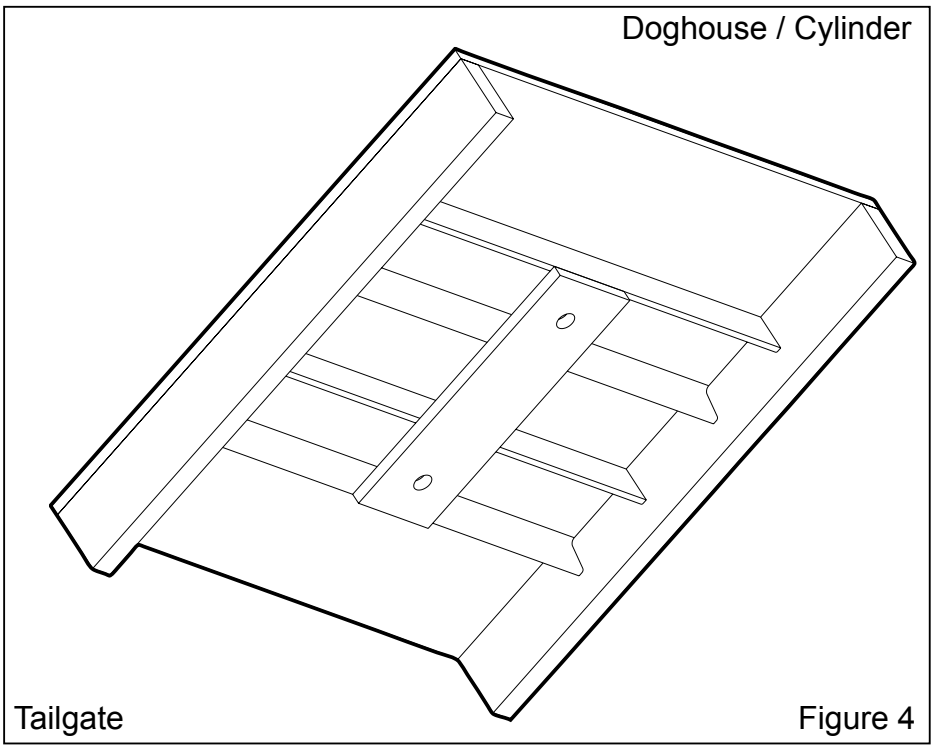


Figure 4

Weld 4 in. or 6 in. channel between main beams. Then weld sides and underneath of 5/8 in. x 4 in. or 6 in. x 12 in. long mounting plate. If channel is turned with legs to dump body, weld in threaded studs. If channel is turned as shown, use standard bolts.

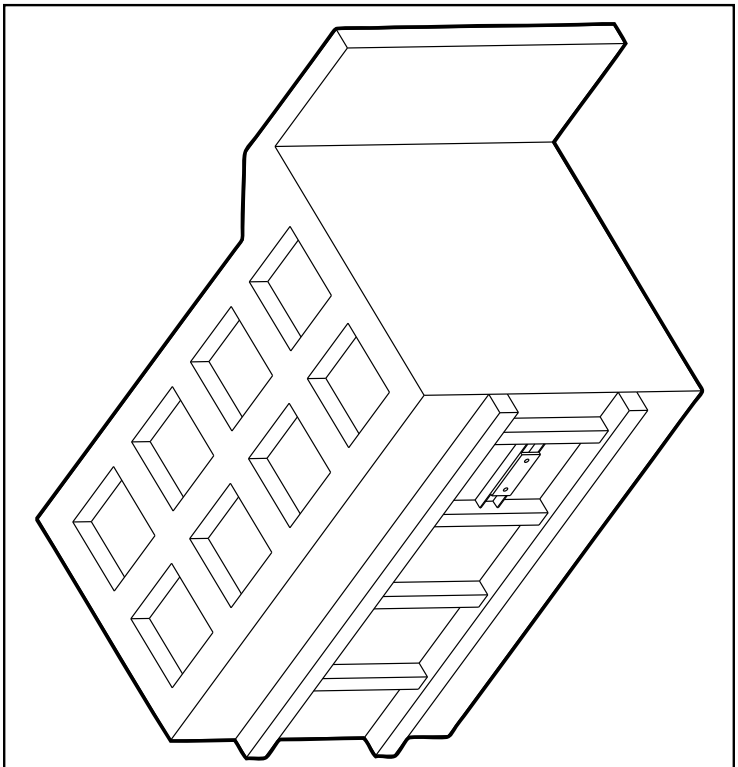


Figure 5

For smaller dump bodies ***stitch*** weld a 6 in. channel between cross members & to body (skip weld to body) & weld mounting plate to middle of channel iron.

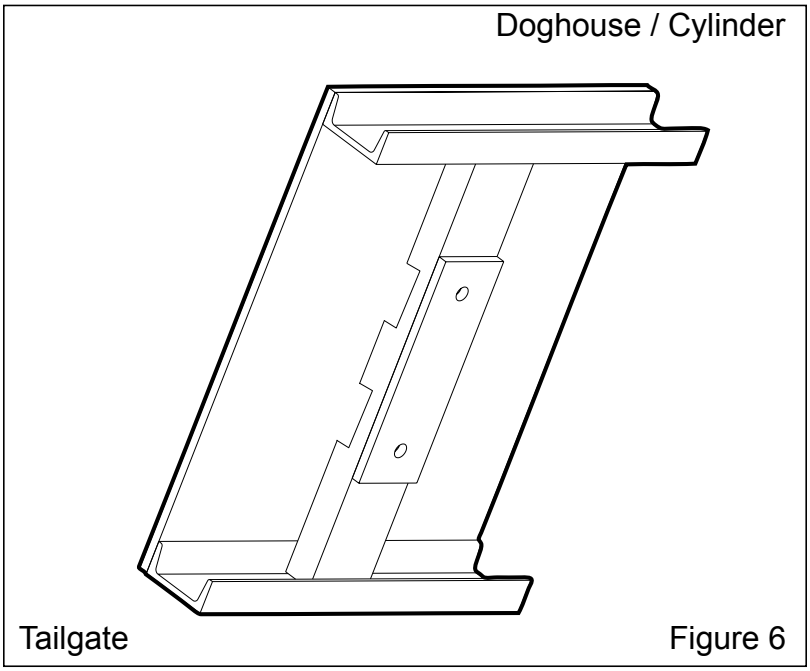
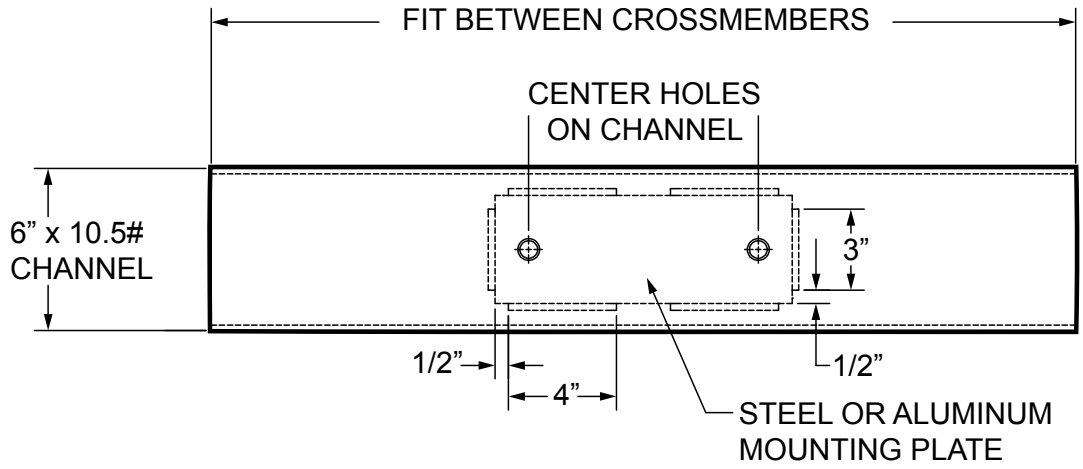
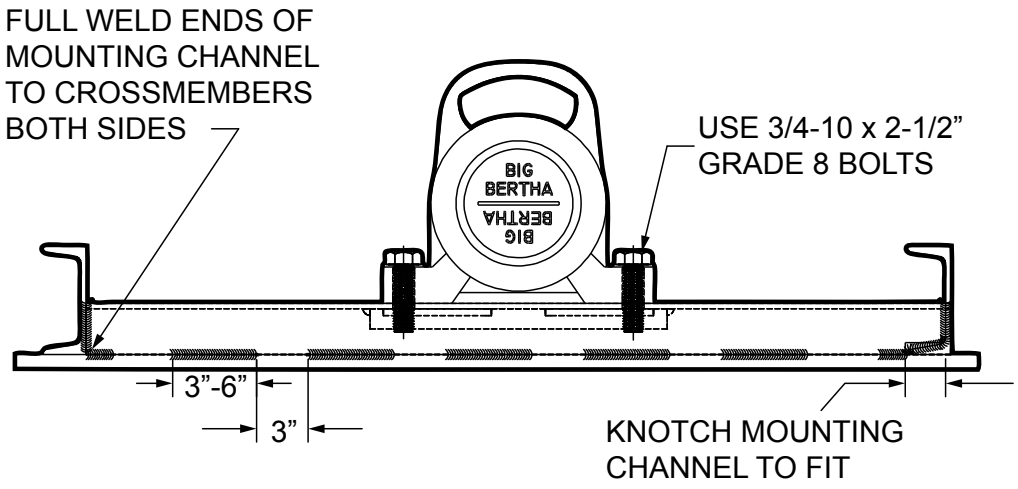


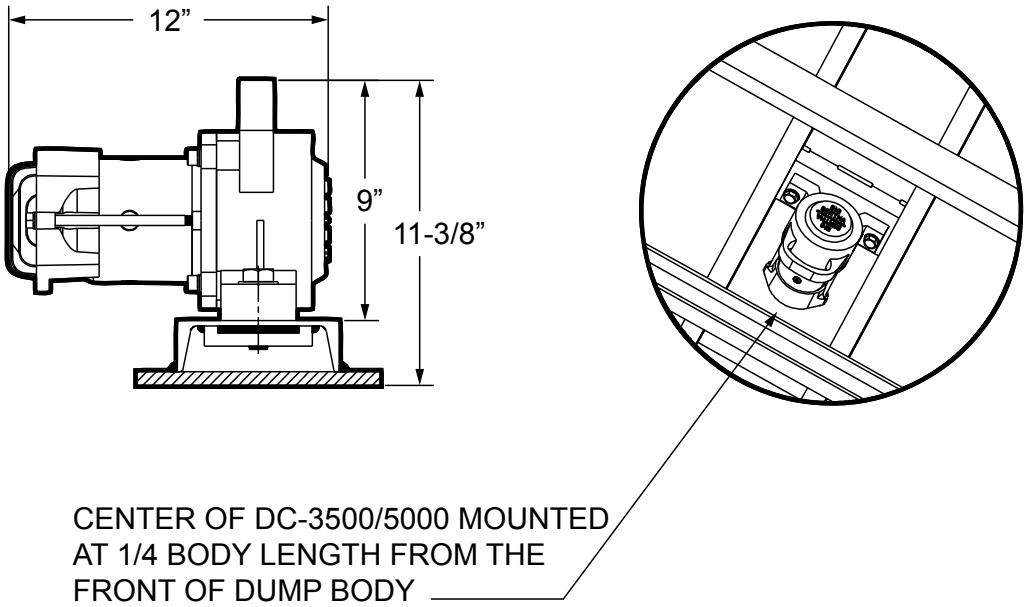
Figure 6

Weld 6 in. channel between cross members and to dump body (skip weld to body). Weld vibrator mounting plate to center of channel. Notch channel for mounting bolts or weld in bolts.

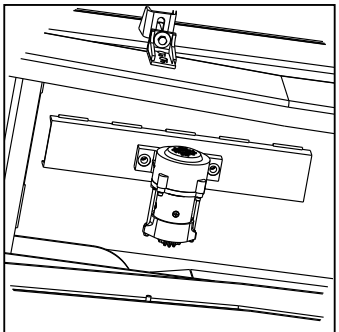
DC-3500/5000 MOUNTING INSTRUCTIONS







OTHER DC MOUNTING INSTRUCTIONS



DC-3500 Mount

Figure 9

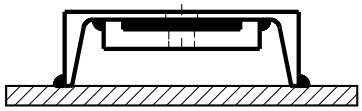


Plate Under Channel

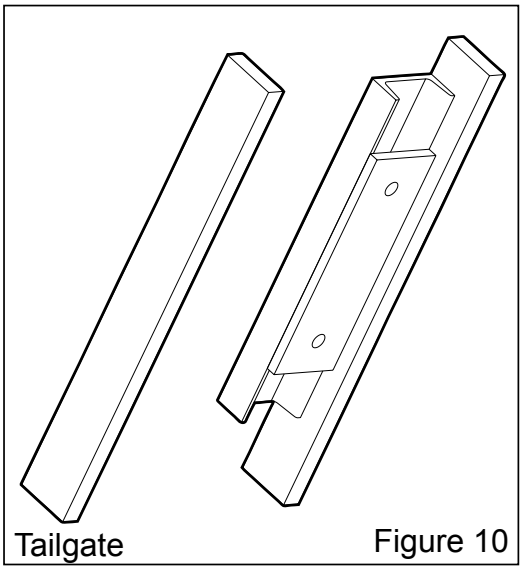
Figure 8

Cross Memberless Dump Body Mounting. Center of vibrator should always be mounted at 1/4 of the body length from the front of the dump body.

1. Align 13/16" holes in channel with the 3/4-10 tapped holes in 1500PF38 mounting plate. Stitch weld mounting plate to underside of channel iron (see Figure 8) starting 1/2" in from the ends leaving approximately 2" between welds.

2. Stitch weld channel iron to dump body starting 1" in from the ends and welding 3"-6" leaving 3" between welds (see Figure 9).

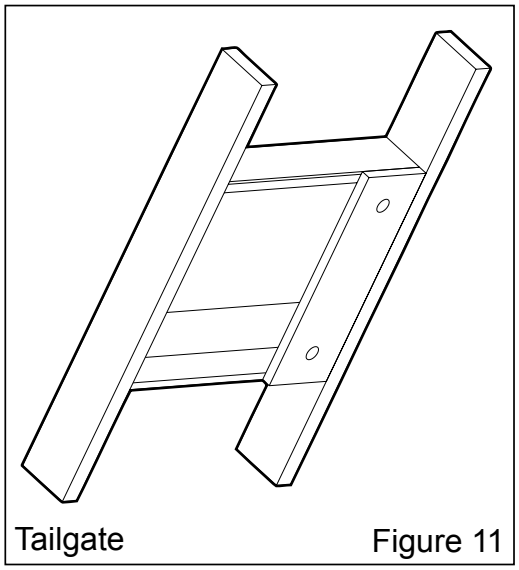
Doghouse / Cylinder



Tailgate

Figure 10

Doghouse / Cylinder



Tailgate

Figure 11

Heated Truck Body. Weld the mounting channel between the sills and to the skin of the heated body. Stop welds 1 in. from ends of channel.

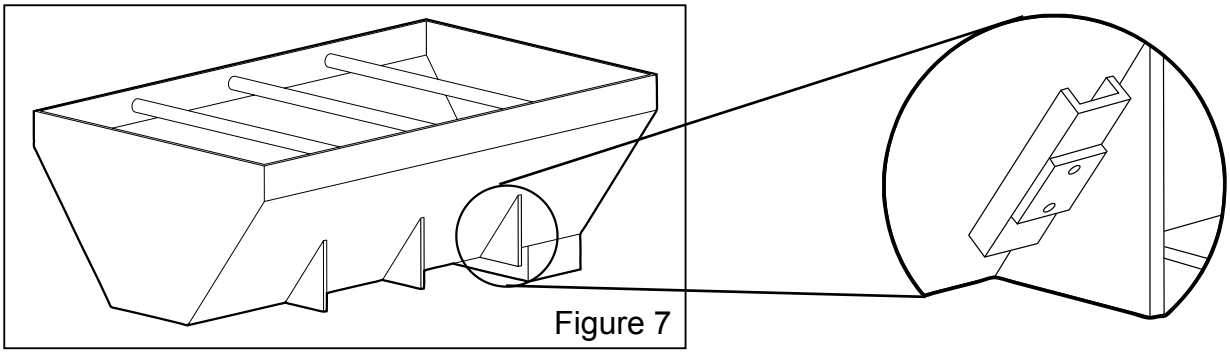


Figure 7

Hopper Trucks For Spreading Salt, Sand, Lime, etc. Locate the vibrator approximately 1/3 - 1/2 the overall length from the rear and 1/4 of the overall height of the bin. Add 4 in. channel to the side of the existing stiffener (see Figure 7). Weld mounting plate to the top of channel legs. Or skip weld 1/4 in. x 2-1/2 in. x 2-1/2 in. angle iron between the existing stiffeners and weld mounting plate on top (see Figure 8.)

OTHER DC MOUNTING INSTRUCTIONS

The Length of the Channel Iron is determined by the thickness of the bin plate. For 3/16 in. to 3/8 in. thick plate, use 3 ft. to 5 ft. long channel. If the bin plate is under 3/16 in. thick, use channel equal to the length of the bin or at least 6 ft. to 7 ft. long. If bin plate is over 3/8 in. thick use 2 ft. to 3 ft. long channel.

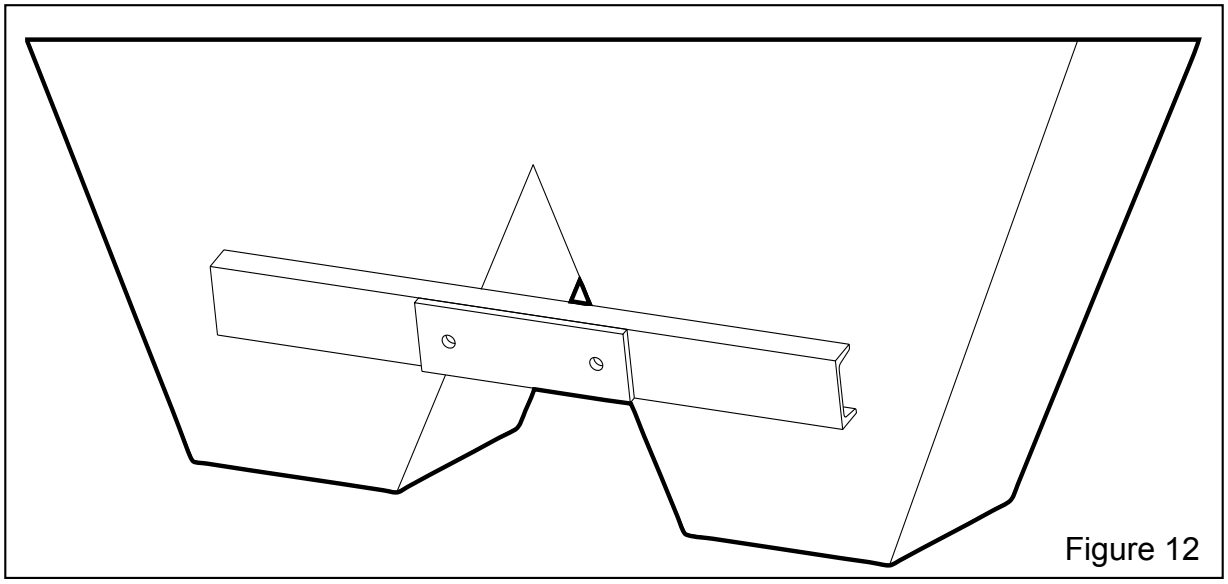


Figure 12

Trucks With Bottom Dump Hoppers. Between two bays use 4 in. or 6 in. channel long enough to cover at least 3/4 of each bay. Skip weld the channel in place stopping weld 1 in. from ends. Weld the vibrator mounting plate to the center of the channel, between the two bays.

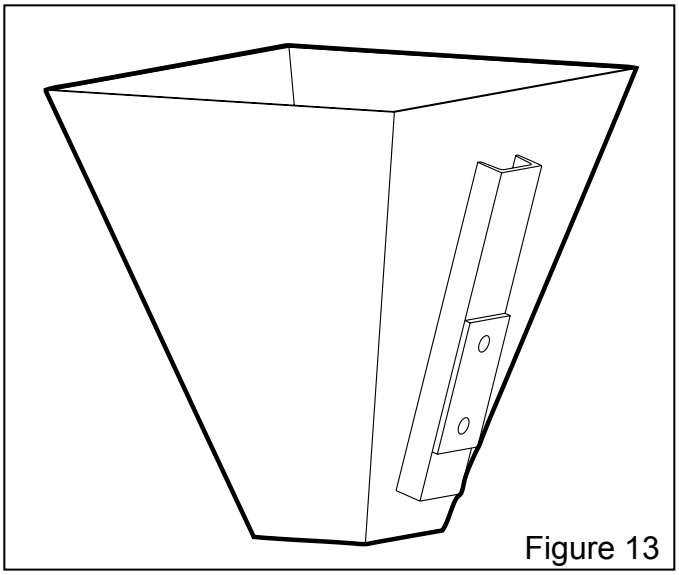


Figure 13

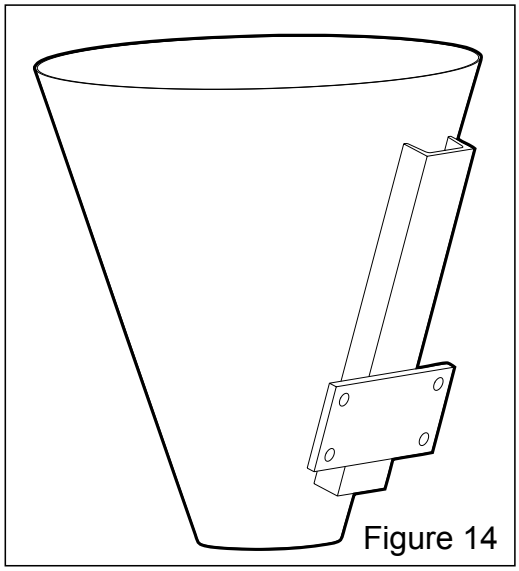


Figure 14

Location of Vibrator on Rectangular Bins. Skip weld 4 in. channel onto sloping side of bin stopping weld 1 in. from ends. Weld vibrator mounting plate to channel 1/4 - 1/3 of the distance from the bottom of the bin to the top of the slope.

Location of Vibrator on Conical Bins. Skip weld 4 in. channel onto side of bin stopping weld 1 in. from ends. Weld vibrator mounting plate to channel 1/4 - 1/3 of the distance from the bottom of the bin to the top of the slope.

OTHER DC MOUNTING INSTRUCTIONS

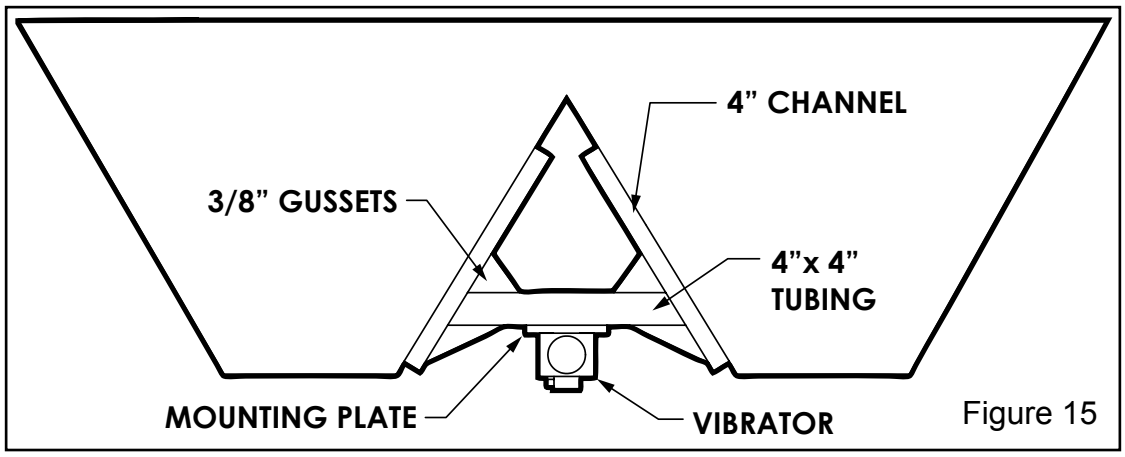


Figure 15

Double Hopper. Weld 4 in. channel to inside slopes of hoppers. Stop welds 1 in. from ends. Weld a 4 in. square piece of tubing between channel. Weld mounting plate to the center of the tubing and add 3/8 in. thick gussets for added strength.

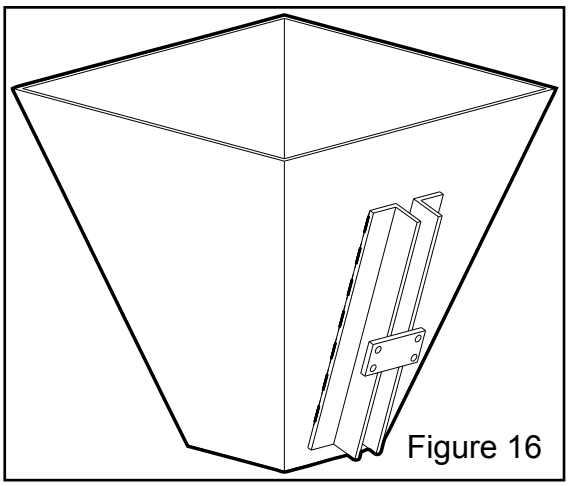


Figure 16

Angle Iron Stiffeners. Stitch weld 1/4 in. x 1-1/4 in. x 1-1/4 in. angle iron to hopper stopping welds 1 in. from ends. Weld vibrator mounting plate to angle iron 1/4 - 1/3 the distance from the bottom of the bin to the top of the slope.

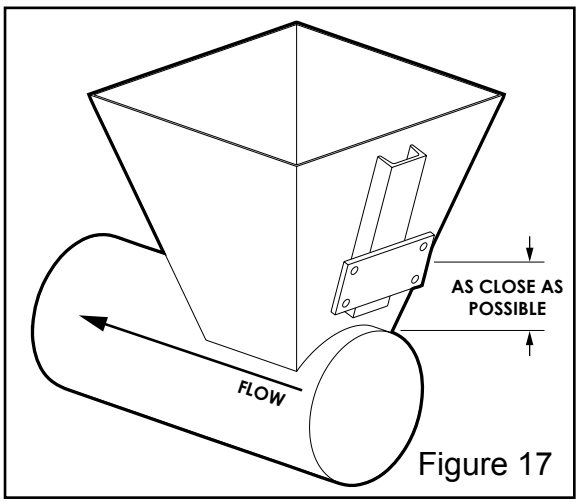


Figure 17

Short Screw Feeder. Stitch weld 4 in. channel to back or side of bin stopping welds 1 in. from ends. Weld vibrator mounting plate as close as possible to feeder.

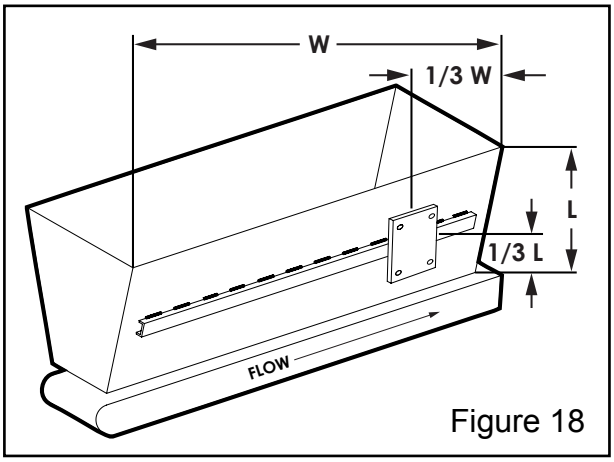


Figure 18

Long Bin. Stitch weld 4 in. channel 1/3 up the length of the bin side stopping welds 1 in. from ends. Weld vibrator mounting plate to top of channel 1/3 of the overall length of the bin from the front. If 2 vibrators are used mount second vibrator to opposite side as first and 1/3 of the overall length of the bin from the back. Do not run back vibrator until front of bin is empty and front vibrator is turned off.

OTHER DC MOUNTING INSTRUCTIONS

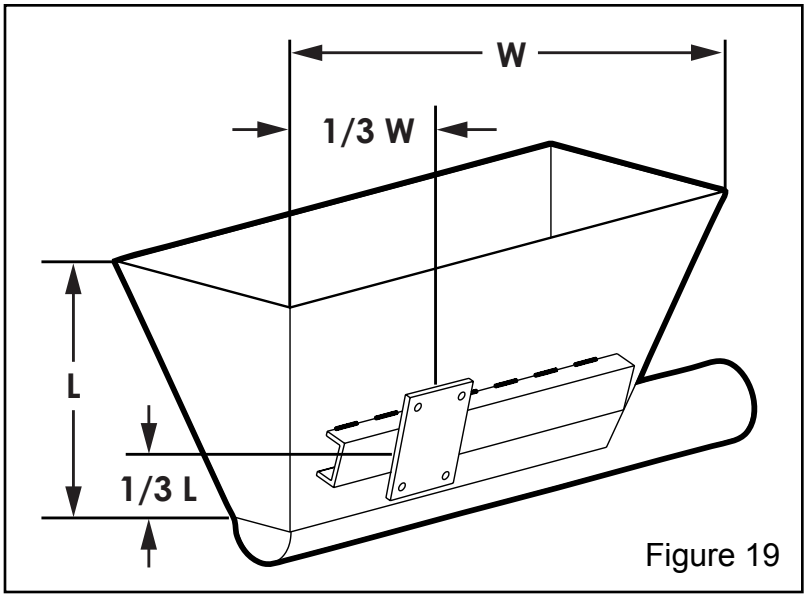


Figure 19

Screw Feeder. Feeds from front. Stitch weld 4 in. channel 1/3 up the length of the bin side stopping welds 1 in. from ends. Weld vibrator mounting plate to top of channel 1/3 of the overall length of the bin from the back. If 2 vibrators are used mount second vibrator to opposite side as first and 1/3 of the overall length of the bin from the front. Do not run front vibrator until back of bin is empty and back vibrator is turned off.

CUSTOM MOUNTING APPLICATIONS

VIBCO's application specialists provide general instructions and guidelines for the installation of our vibrators on customer equipment. These instructions and guidelines are based on the industries best practices and years of experience in applying vibrators. VIBCO specialists are available to review a customer's individual application to verify installation and make recommendations. These recommendations should not be considered as the Welding Procedure Specifications for the installation.

If Welding Procedure Specifications are required, they should be provided by a professional engineer who is familiar with the structure the vibrator is being mounted to, as well as all of the specifications of the materials being used, and any of the environmental details present at the application.

For more custom mounting applications call, email or fax.

OPERATING INSTRUCTIONS

Duty Cycle
VIBCO's 12 and 24 volt DC vibrators are rated for either continuous, intermittent or limited intermittent duty.

Models DC-20, DC-60, DC-100, DC-200, DC-300, DC-450 and DC-500 are rated for **continuous duty**. Be sure to use a continuous duty solenoid (VIBCO part number 1500PF56).

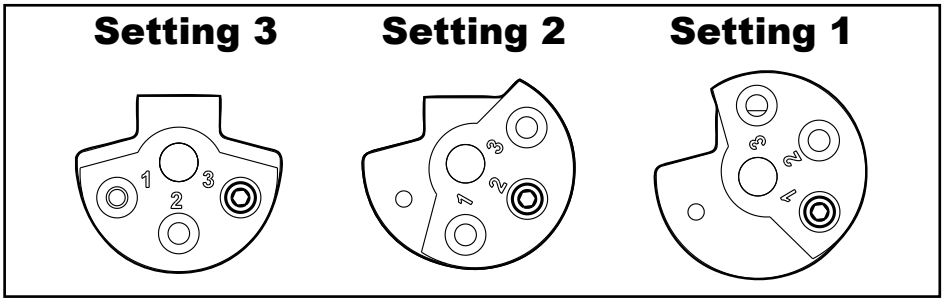
Models DC-700, DC-900 and DC-1600 are rated for **intermittent duty**. Running time for these vibrators should not exceed 30 minutes in any 60 minute period. Continuous duty solenoids (VIBCO part number SW-266) should be used with these units. Drilling holes in the end covers to provide the unit with ventilation can increase the duty cycle. The duty cycle must be determined in each particular application. A temperature test of the field casing can help to determine the duty cycle. Temperature should not exceed 180 degrees Fahrenheit. Longer duty cycles can considerably decrease brush life, and VIBCO's liability under the warranty does not cover duty cycles longer than those stated above.

Models DC-3500 and DC-5000 are rated for **limited intermittent duty only**. Maximum continuous running time should not exceed 30 seconds, with a minimum of one (1) minute off time. Total running time in any 60 minute period is 20 minutes.

Lubrication
All DC vibrator bearings are pre-lubricated to last for the life of the vibrator.

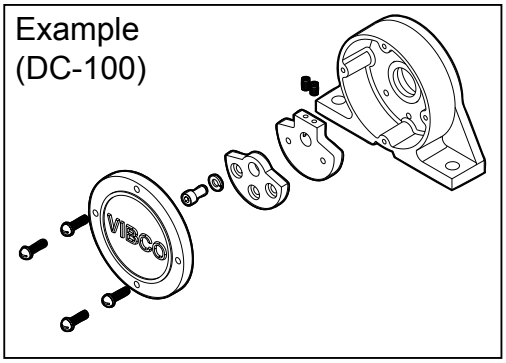
ADJUSTING ECCENTRICS

Models **DC-20, 50, 60, 450, 500, 700** have a fixed force settings and cannot be adjusted. **DC-100** has a single end for adjustment as shown below. **DC-200, DC-300, DC-900 and DC-1600** have eccentrics on both ends of the motor. Setting 3 is the maximum and is the rated force output. Setting 2 is the standard and is approximately 2/3 of the maximum force output. Setting 1 is approximately 1/2 of the maximum force output.



To change the eccentric setting, remove both end covers and the eccentric screws, place the eccentrics at the desired setting and replace the screws and end covers (see example) Be sure to set the eccentric on both sides of the vibrator to the same setting (see Figures 20 & 21).

ADJUSTING ECCENTRICS



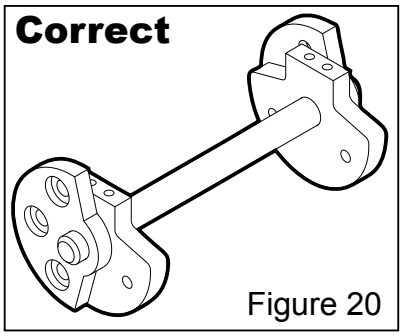


Figure 20

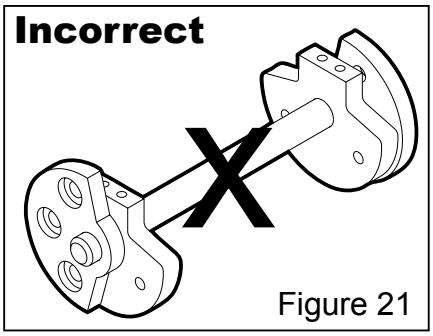


Figure 21

CHANGING/ADJUSTING ECCENTRICS DC-3500 & DC-5000

Model **DC-3500** also has adjustable eccentrics. For reference turn to page 14 for more detail.

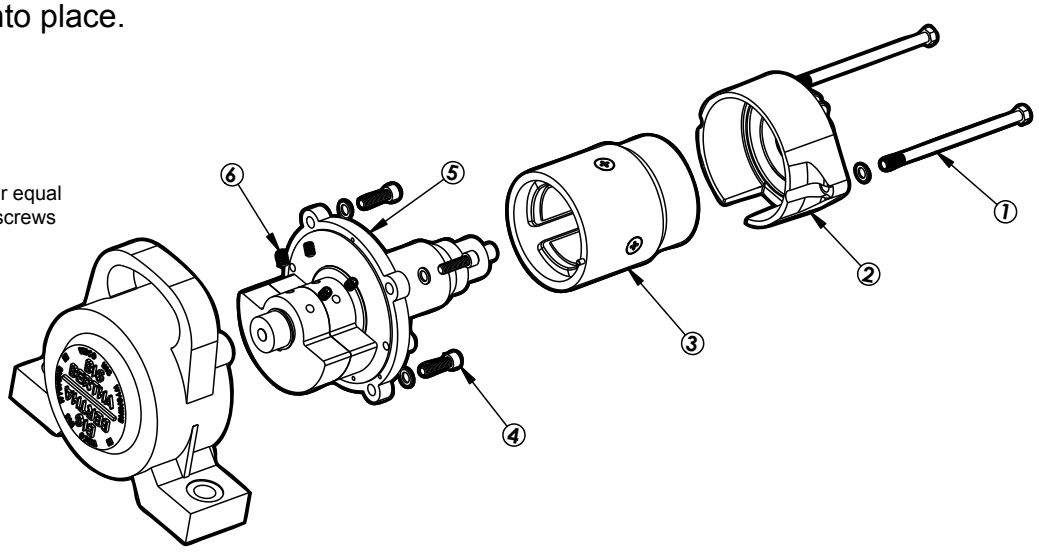
To change these eccentrics:

1. Unscrew (2) 3/8-16 x 6-1/2 hex head bolts.
2. Remove dust cover.
3. Pull motor field away from armature assembly.
4. Unscrew 3/8-16 x 1-1/4 socket head bolts.
5. Remove cover by unscrewing (3) 10-24 x 3/8" screws & using longer screws in (3) threaded holes in mounting cover, turn screws to draw motor assembly out of housing.
6. Loosen (2) 3/8-16 x 1/2 set screws on outer most eccentric and adjust to desired output according to chart on page 13.

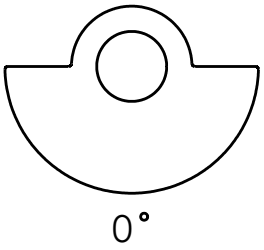
To reassemble:

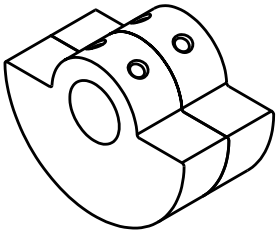
1. Put eccentric & armature assembly back onto housing using 3/8-16 x 1-1/4 socket head bolts with disk locks.
2. Make sure motor shaft spins freely before reassembling. If it doesn't, tap front of the mounting cover until it does.
3. Put motor field back on armature, spreading brushes over commutator. NOTE: be sure field pin lines up with center of mounting cover holes and terminal port is in center of feet of housing!
4. Put dust cover back on with (2) 3/8-16 x 6-1/2 hex head bolts & tighten evenly to draw back into place.

NOTE:
use Loctite 242 or equal
when replacing screws



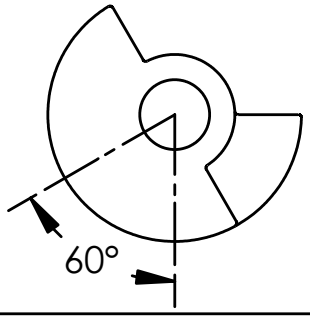
DC-3500 Eccentric Settings

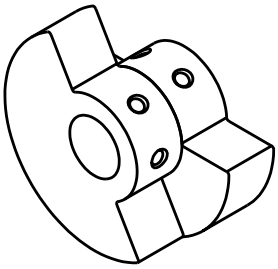




Factory Settings
Force = 3500 lbs

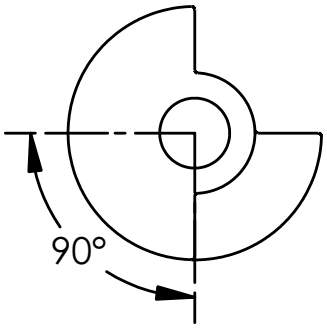
Dump body lengths
17 ft & up

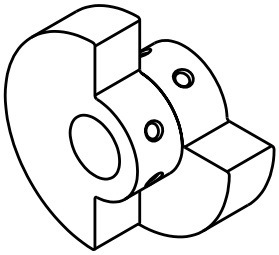




Force = 3000 lbs

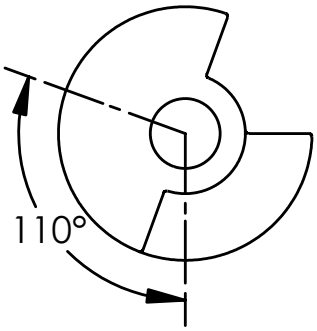
Dump body lengths
15 - 16 ft

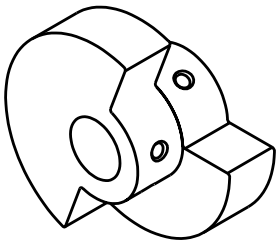




Force = 2500 lbs

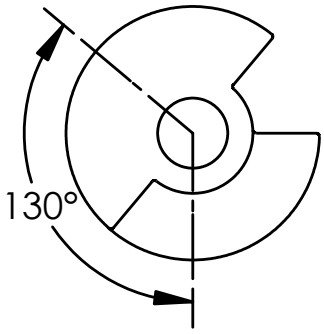
Dump body lengths
13 - 14 ft

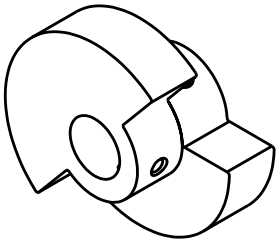




Force = 2000 lbs

Dump body lengths
11 - 12 ft





Force = 1500 lbs

Dump body lengths
up to - 10 ft

ELECTRICAL INSTALLATION

DC-20, DC-50,DC-60 JUNIOR™

The DC-20 vibrator is a low amperage unit that can be wired directly through a toggle switch. One lead connects to positive, the other to negative. One of the leads can be connected to the body on body grounded applications. To simplify installation, wiring kit number WK-3 is available and consists of:

(1) SPST	On/Off Toggle Switch
(30 ft.) 16 MTW	Wire
(2) BSV14X-L	#16 Butt Splices
(2) PV14-10R-M	Ring Terminal

Refer to Wiring Diagram 1.

DC-100, DC-200, DC-300, DC-450, DC-500 BULLDOG™, DC-700, DC-900 & DC-1600

These vibrators require a master current circuit, rated for the vibrators operating current and pilot circuit. One lead connects to positive, the other to negative. One of the leads can be connected to the body on body grounded applications. To simplify installation two wiring kits are available. WK-1 includes a maintained contact toggle switch, and WK-2 includes a momentary contact push button switch. The wiring kits consist of:

(1) SPST	On/Off Toggle Switch (WK-1 only)
(1) 1500PF55	Push Button Switch (WK-2 only)
(1) 1500PF56	Solenoid
(30 ft.) 10 MTW	Wire
(2) PV10-56R-M	Ring Terminals
(2) BSV10X-L	#10 Butt Splices
(20 ft.) 16 MTW	Wire
(4) PV14-10R-M	Ring Terminals
(1) PV14-56R-M	Ring Terminal

Refer to Wiring Diagram 2.

DC-3500

The DC-3500 requires a master current circuit and a pilot circuit. The DC-3500 is a body grounded unit. Only one power lead is necessary. The vibrator comes complete with the wiring and mounting hardware needed for installation which includes:

(1) CB12V	Circuit Breaker	(1) 1500PF56	Solenoid
(1) 1500PF55	Push Button Switch	(34 ft.) 4 AWG	Wire
(3) P4-56R	Ring Terminals	(1) PV14-56R-M	Ring Terminal
(20 ft.) 16 MTW	Wire	(2) 3/4LW	Lock Washers
(3) PV14-10R-M	Ring Terminals	(1) 1500PF38	Mounting Plate
(2) 3/4-10X2-1/4HH	Mounting Bolts	(2) N-7	Nylon Cable Brackets
(1) 10-24X3/8RH	Round Head Screw	(1) 10-24HN	Hex Nut
(12 ft.) 4AWGX12	Wire Assembly		

Note: For battery to vibrator distances greater than 50 ft. use 2 AWG Wire.

ELECTRICAL INSTALLATION PROCEDURE

The electrical hook-up consists of two circuits, a master circuit and a pilot circuit (except DC-20, see previous page). The master circuit supplies the motor with current and must be able to carry the vibrators rated amperage. The pilot circuit is the controlling circuit, and carries only a small current between the switch on the dashboard and the solenoid, connecting or disconnecting the master circuit. The supplies needed for hooking up each model are listed on the previous page.

Mount the solenoid in a convenient location. Note that the solenoid grounds through its body, so make sure that it is mounted to a well grounded surface.

Cut off enough large cable to run from the vibrator to one of the solenoids large terminals. On dump bodies, be sure to guide cable around the pivot so that it will not be pinched by the beds movement.

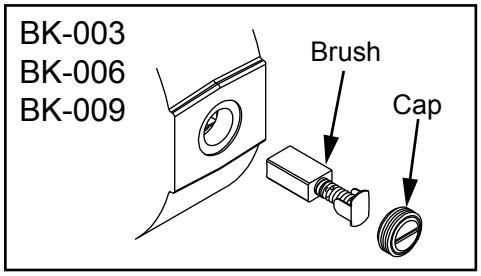
Run the balance of the large cable from the other large terminal to the positive battery terminal (if the truck is grounded from the positive terminal, connect cable to the negative battery terminal).

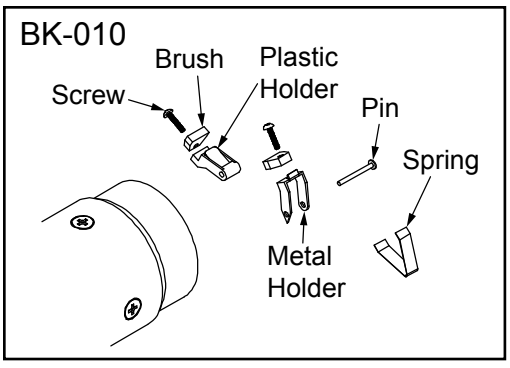
Select a convenient location on the truck dashboard for the switch. Using the small cable, connect one terminal on the switch to the small terminal on the solenoid (on solenoids with two small terminals, connect to the terminal marked “S”). Run another length of small cable from the other switch terminal to a power source. This cable can be connected to the ignition switch, so that when the ignition is turned off, the vibrator cannot be operated (see figure 1).

NOTE: Warranty will be void if circuit breaker is not installed.

BRUSH KIT REPLACEMENT

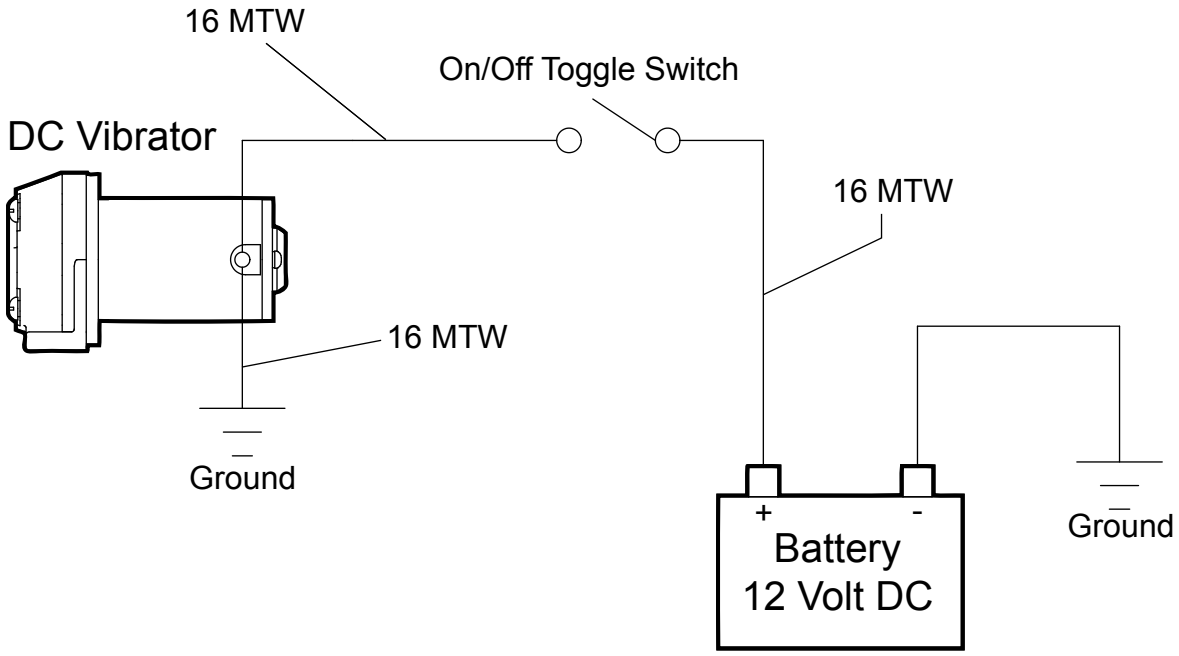
Model Number	Brush Kit	Parts in Kit Brushes, Caps & Accessories	Brush Length Replacement
DC-900 DC-1600	BK-003	(2)900-12-1B (2)900US10	5/16” or less
DC-100 DC-200 DC-300 DC-500	BK-006	(2)33DC014 (2)33DC016	3/8” or less
DC-450T DC-700	BK-009	(2)300US60-15 (2)300US59-13	5/16” or less
DC-3500 DC-5000	BK-010	(4)1500PF41 (2)1500PF42 (2)1500PF43 (4)1500PF44 (2)1500PF45 (2)1500PF46	5/16” or less





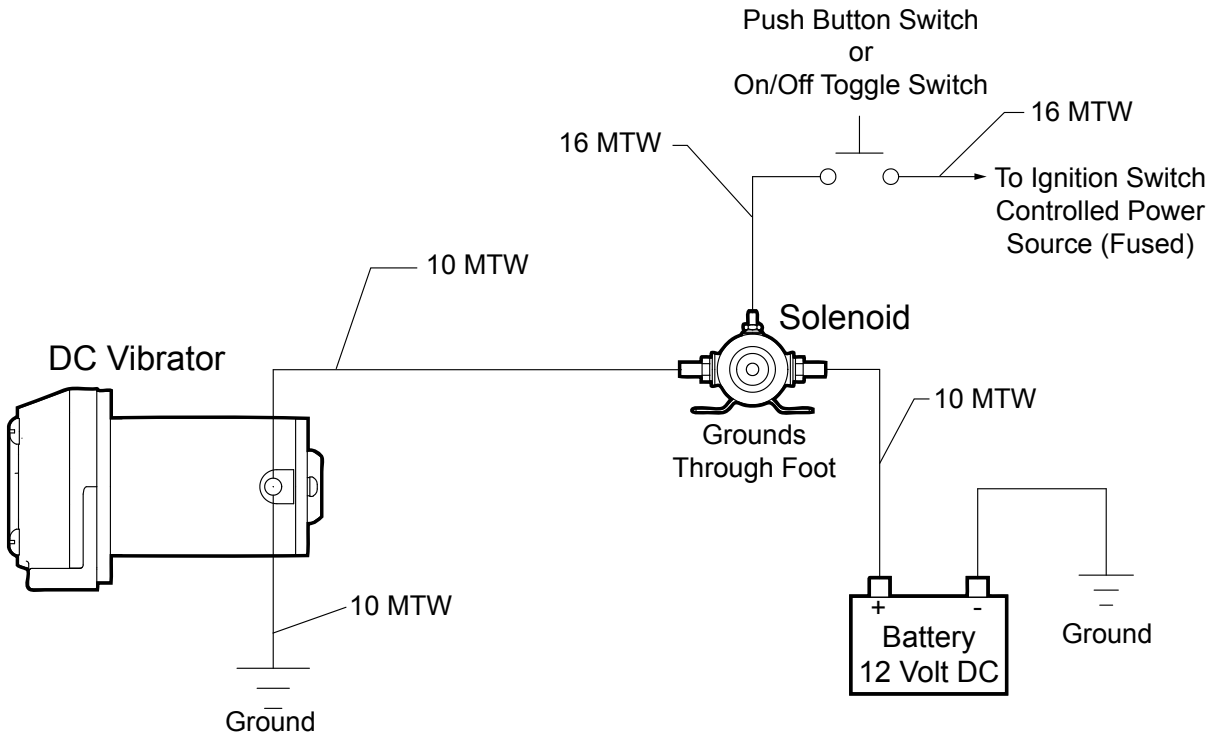
DC-20, DC-50 & DC-60

Wiring Diagram 1
WK-3

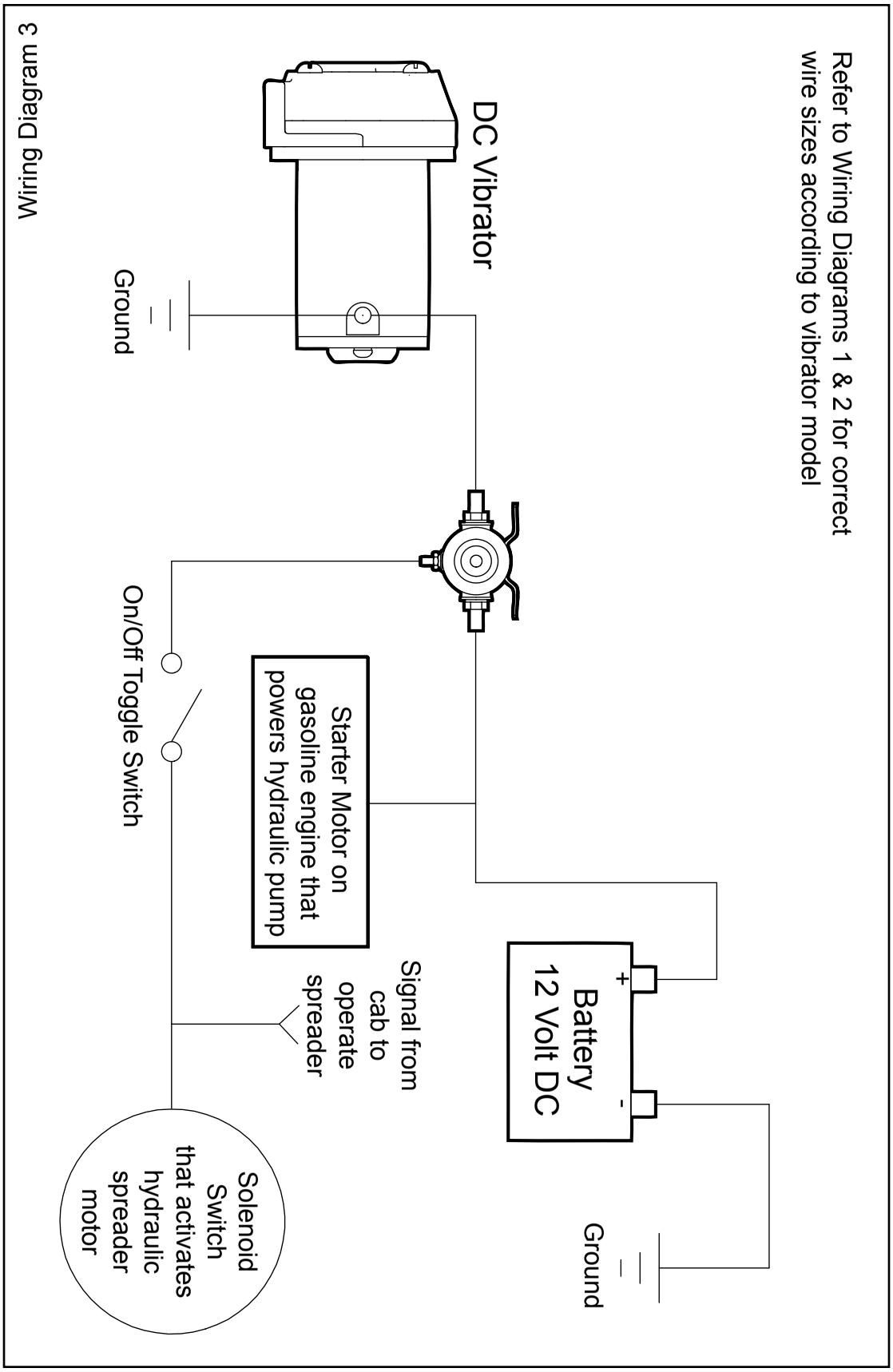


DC-100, DC-200, DC-300, DC-450
DC-500, DC-700, DC-900 & DC-1600

Wiring Diagram 2
WK-1, WK-2



TYPICAL SAND/SALT SPREADER WIRING



OVERLOAD CIRCUIT BREAKER INSTALLATION

For DC-3500 "Big Bertha" Dump Body Vibrators

The CB12V (figure 22) thermal overload circuit breakers are designed to be used in the main circuit of VIBCO's DC-3500 dump body vibrator to prevent operators from running the vibrator in excess of its maximum continuous running time of 30 seconds, which can cause premature failure. By wiring a push button to a fused ignition controlled power source, vibrator cannot be operated unless ignition switch is on.

When the CB12V is installed as shown (see Wiring Diagram 4), attempting to operate the vibrator for longer than 30 seconds will cause the circuit breaker to open, shutting down the vibrator. The circuit breaker will automatically reset in approximately 2 minutes.

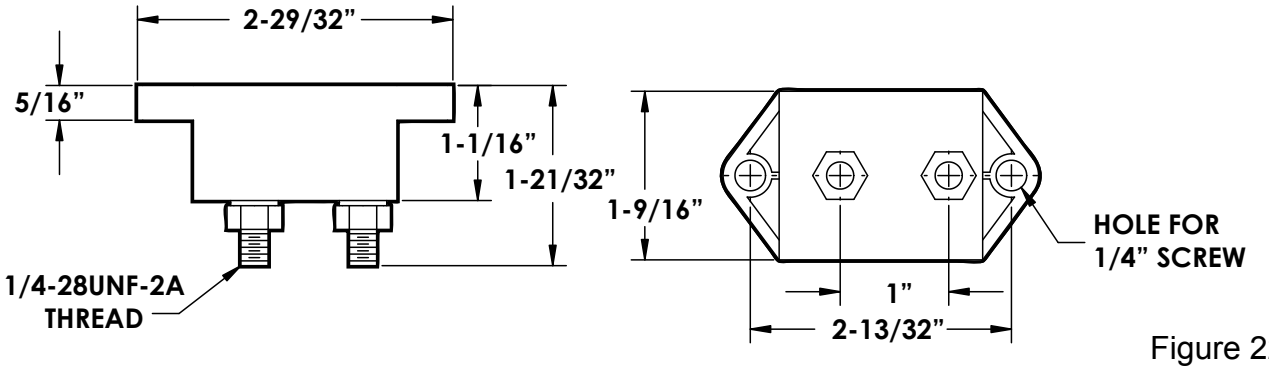
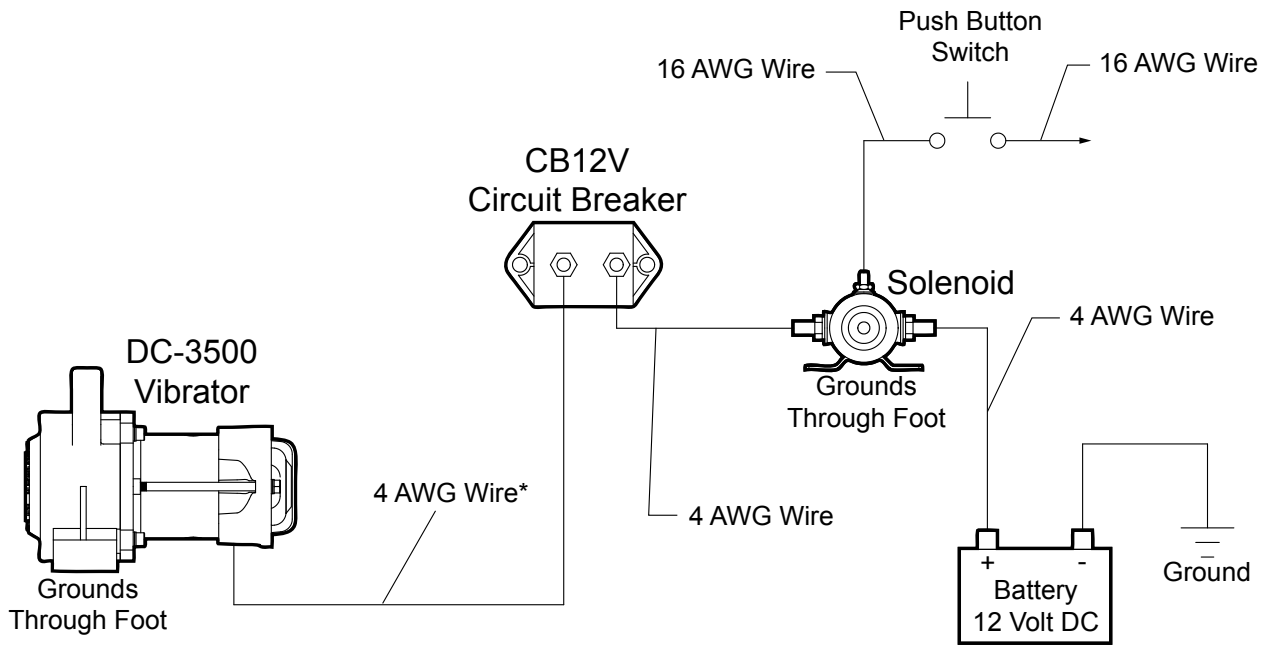


Figure 22

NOTE: WARRANTY WILL BE VOID IF CIRCUIT BREAKER IS NOT INSTALLED!

Wiring Diagram 4
WK-4



*For lengths exceeding 50 ft. use 2 AWG wire

TROUBLESHOOTING

1.) Vibrator doesn't start.

Make sure vibrator is getting power. Check fuses and make sure all connections are properly secured.

New installations should insure that the vibrator is properly grounded to the frame. If the vibrator is not mounted to the main frame, such as on a pivoted truck body, make sure the body is grounded to the main frame.

The vibrator is designed to ground through the foot. For more positive grounding, use the grounding strap provided in the wiring kit.

Make sure push button or on/off switch and solenoid are in proper working order. If damaged or non functioning, replace.

2.) Vibrator is running slow (loss of RPM).

Measure motor voltage. If less than 12 volts DC, wire size should be increased.

Check the brushes and change if necessary. The life of the brushes is approximately 1,000 hours. The brush life is dependent on the duty cycle.

3.) An unusual sound (banging) coming from the vibrator. This usually means that the mounting is cracked, or the vibrator is loose.

Check the vibrator mounting bolts for tightness.

Check the mounting structure.

New installations may be too weak. Reinforce mount area immediately by adding stiffeners-angle iron or channel iron.

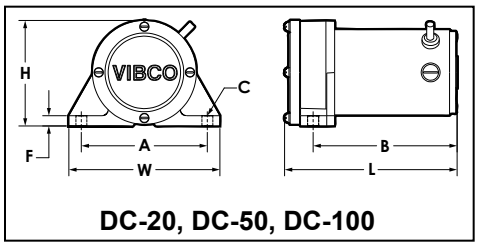
In existing installations look for cracks in mounting angle iron or plates. Also look for fatigued or cracked welds. Repair and reinforce immediately.

DIMENSIONAL DATA

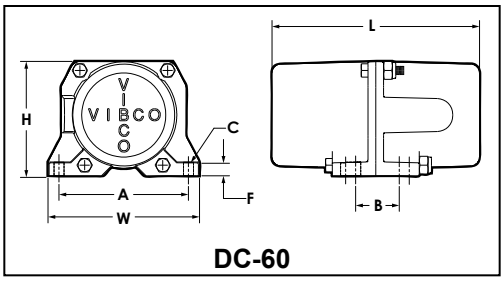
Model	A		B		C*		L		W		H		F		S	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
DC-20	4	102	4-1/4	108	3/8	10	5	128	5	128	3-1/2	89	3/8	10	-	-
DC-50	4	102	4-13/16	123	3/8	10	5-5/8	143	5	128	3-1/2	89	3/8	10	-	-
DC-60	3-5/8	93	1-5/16	34	1/4	7	6-3/8	162	5	128	3-1/4	83	3/8	10	-	-
DC-100	5	128	5-3/8	137	3/8	10	6-3/4	172	6	153	4-1/4	108	7/16	12	-	-
DC-200	3	77	5-5/8	143	5/16	8	8-7/8	226	4-1/8	105	5	128	3-5/8	93	-	-
DC-300	3	77	5-3/4	147	5/16	8	9	229	4-1/8	105	5	128	3-5/8	93	-	-
DC-450T	3-1/2	89	6-1/2	166	1/2	13	8-1/4	210	4-7/8	124	4-1/8	105	3-7/8	99	-	-
DC-500	5-1/4	134	4-1/2	115	7/16	12	9	229	6-1/4	159	5-1/2	140	13/16	21	-	-
DC-700	4-1/2	115	5-5/8	143	1/2	13	8	204	5-3/4	147	5	128	5-1/16	129	-	-
DC-900	3-1/2	89	6-3/4	172	1/2	13	11-1/8	283	5-1/2	140	6-1/4	159	4-5/16	110	-	-
DC-1600	4-1/2	115	7	178	1/2	13	11-1/4	286	5-5/8	143	6-1/4	159	5-1/8	131	-	-
DC-3500	8-1/2	216	9-1/4	235	3/4	20	12	305	10	255	9-1/2	242	1-3/8	35	7-3/8	188
DC-5000	8	204	2	51	5/8	16	13-1/2	343	10-3/4	274	6-13/16	174	1-1/2	39	-	-

*Bolt Size

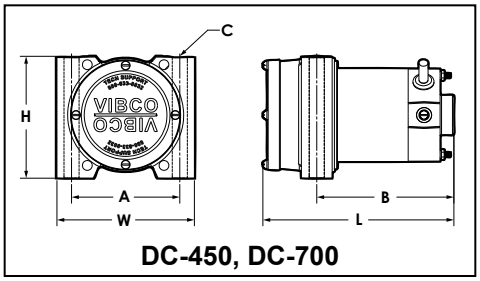
Note: Data and dimensions subject to change without notice.



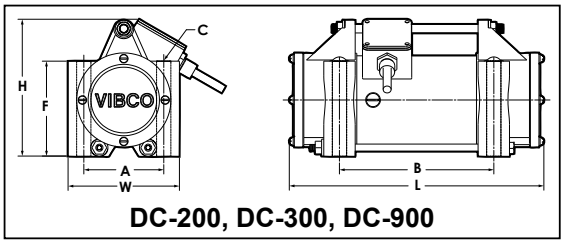
DC-20, DC-50, DC-100



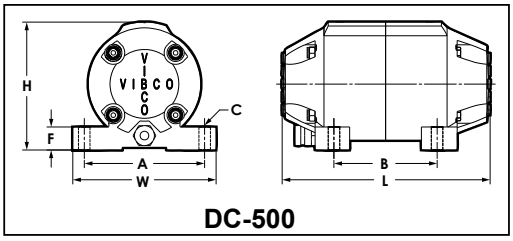
DC-60



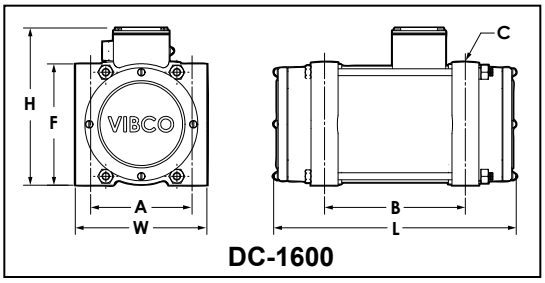
DC-450, DC-700



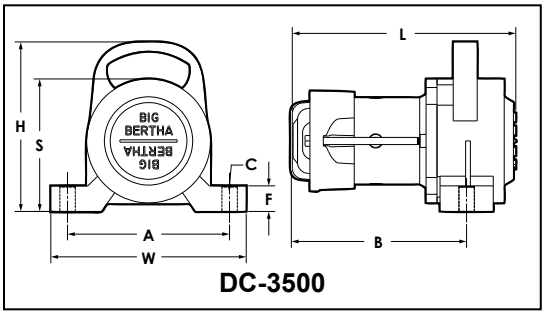
DC-200, DC-300, DC-900



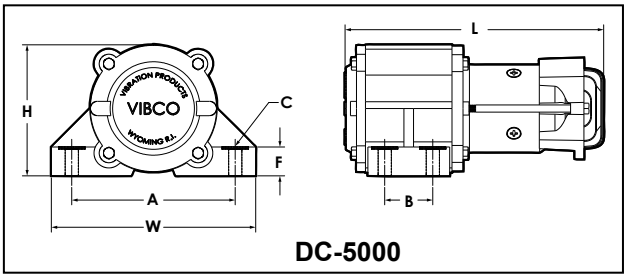
DC-500



DC-1600



DC-3500

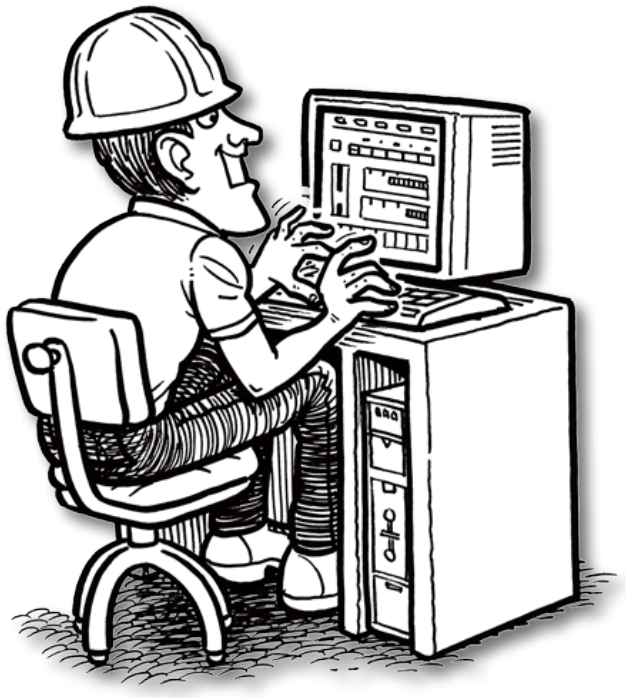


DC-5000

TECHNICAL DATA

Model	Force Impact		Volt	Amps*	VPM	Weight		dB**	Duty Cycle
	lbs	N				lbs.	kg.		
DC-20	20	102	12 & 24 DC	3.7	3500	4.5	2.0	68	CONT.
DC-50	50	223	12 & 24 DC	3.0	3600	4.5	2.0	71	CONT.
DC-60	85	378	12 & 24 DC	3.0	4000	6.0	2.7	68	CONT.
DC-100	100	445	12 & 24 DC	12.0	4000	10.2	4.6	72	CONT.
DC-200	300	1334	12 & 24 DC	14.0	4000	15.5	7.0	73	CONT.
DC-300	350	1557	12 & 24 DC	16.0	4000	15.5	7.0	74	CONT.
DC-450T	400	1780	12 & 24 DC	22.0	7000	14.5	6.5	75	CONT.
DC-500	450	2005	12 & 24 DC	16.0	4000	17.0	7.7	73	CONT.
DC-700	700	3115	12 & 24 DC	25.0	6000	18.8	8.5	75	INT.
DC-900	600	2669	12 & 24 DC	30.0	6000	27.0	12.2	78	INT.
DC-1600	1000	4450	12 & 24 DC	32.0	5000	30.0	13.6	82	INT.
DC-3500	3500	15572	12 & 24 DC	60.0	4000	36.0	16.3	70	SPECIAL
DC-5000	5000	22245	12 & 24 DC	70.0	4000	75.0	34.0	72	SPECIAL

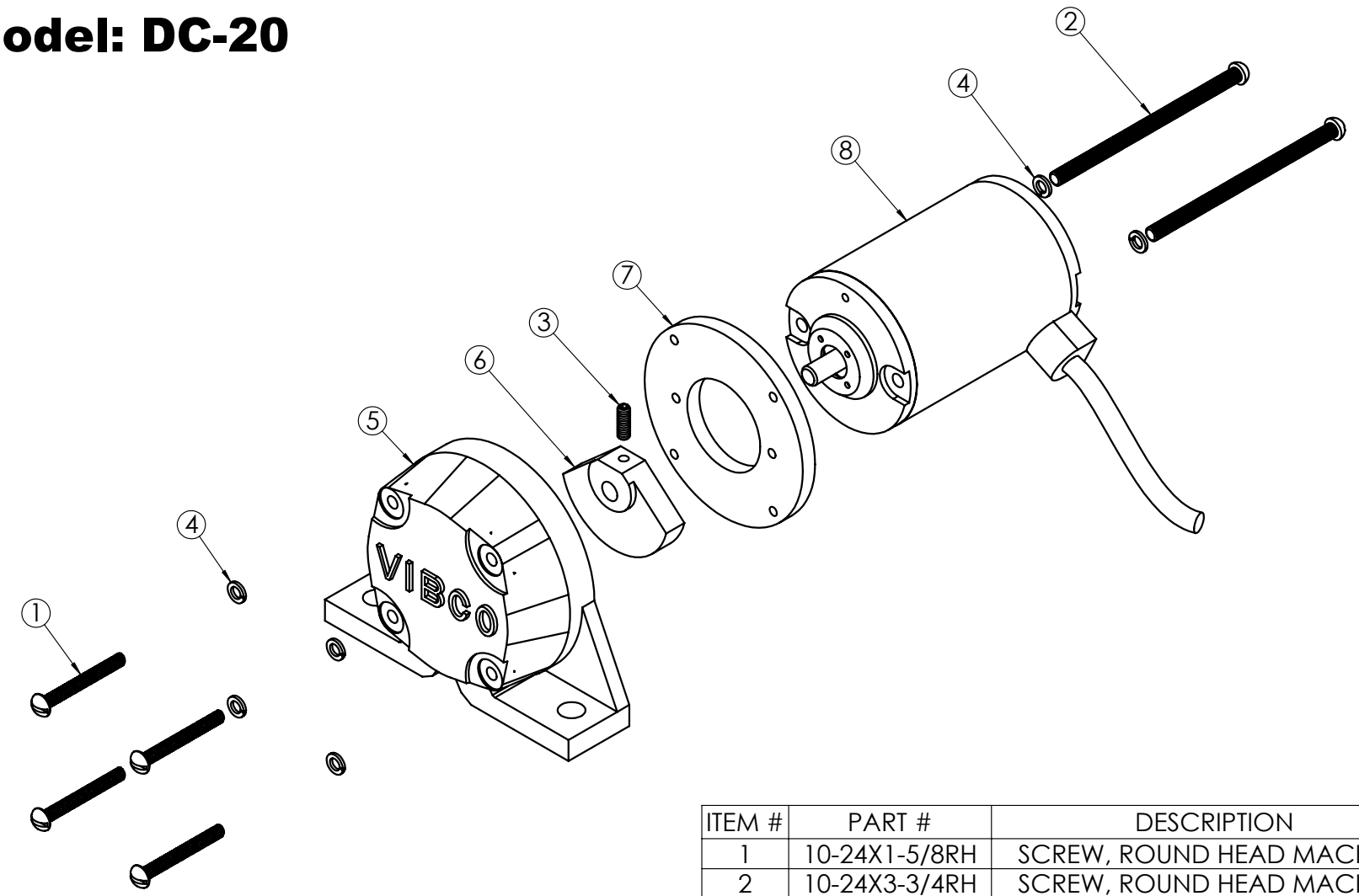
*Amps shown for 12 Volt DC (24 volt amps 1/2 of 12 volts, except DC-3500 & 5000)
**Decibel on A-scale at 3' (1 meter)
Note: Data and dimensions subject to change without notice.



NOTE: For more information visit VIBCO online at:

www.vibco.com

Model: DC-20



ITEM #	PART #	DESCRIPTION	QTY.
1	10-24X1-5/8RH	SCREW, ROUND HEAD MACHINE	4
2	10-24X3-3/4RH	SCREW, ROUND HEAD MACHINE	2
3	10-24X1/2SS	SCREW, SOCKET SET	1
4	10LW	#10 LOCKWASHER	6
5	20SPR06-1	HOUSING (SPR-20)	1
6	20SPR07	ECCENTRIC	1
7	50SCR03	MOTOR PLATE	1
8	60DC07-1-2	MOTOR (DC-20, 50; 12V)	1

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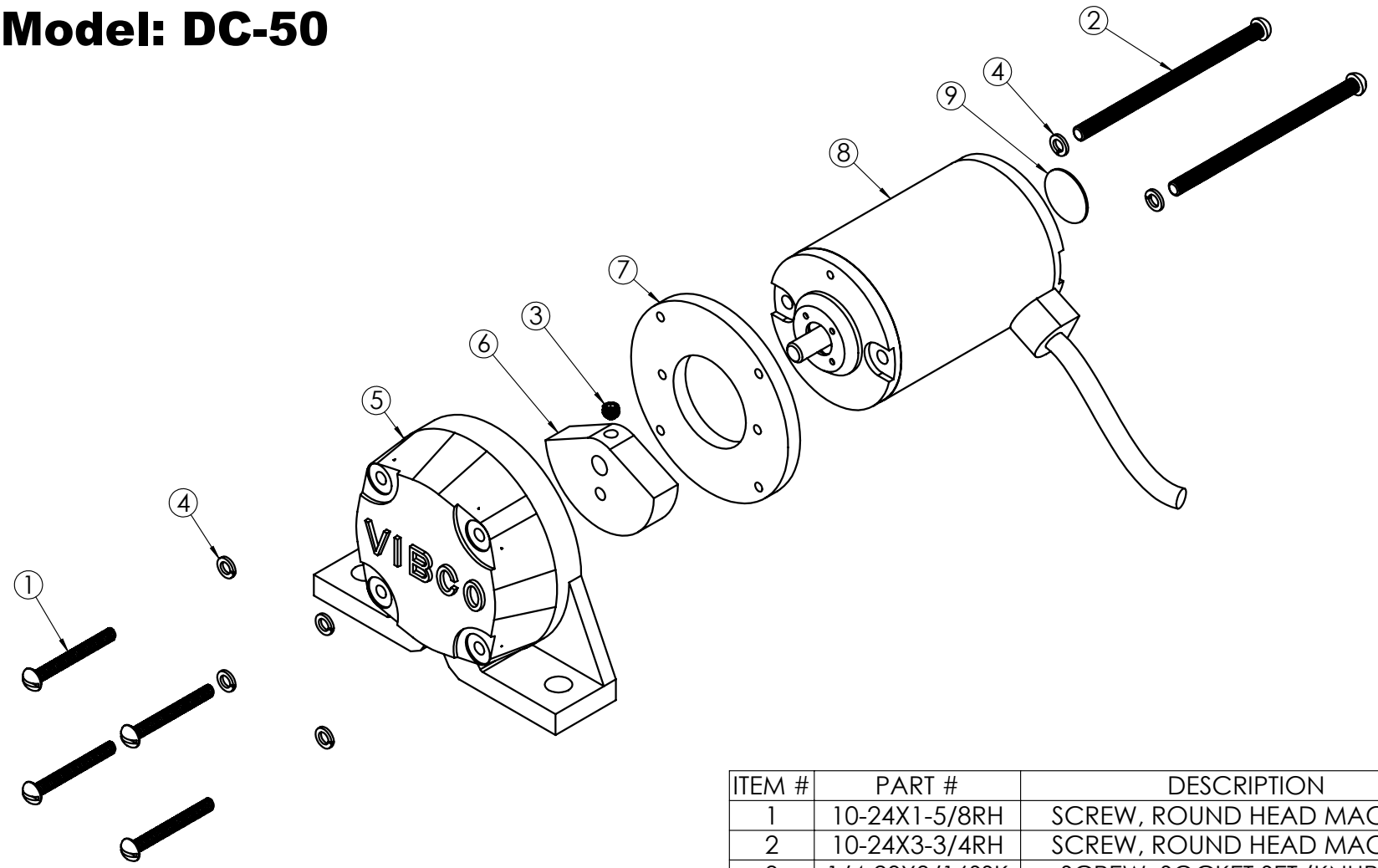
REV295-13

Model: DC-50



ITEM #	PART #	DESCRIPTION	QTY.
1	10-24X1-5/8RH	SCREW, ROUND HEAD MACHINE	4
2	10-24X3-3/4RH	SCREW, ROUND HEAD MACHINE	2
3	1/4-20X3/16SSK	SCREW, SOCKET SET (KNURLED)	1
4	10LW	#10 LOCKWASHER	6
5	20SPR06-1	HOUSING (SPR-20)	1
6	40SP035	ECCENTRIC (SPR-40, 20M)	1
7	50SCR03	MOTOR PLATE	1
8	60DC07-1-2	MOTOR (DC-20, 50; 12V)	1
9	60CE12	BEARING COVER	1

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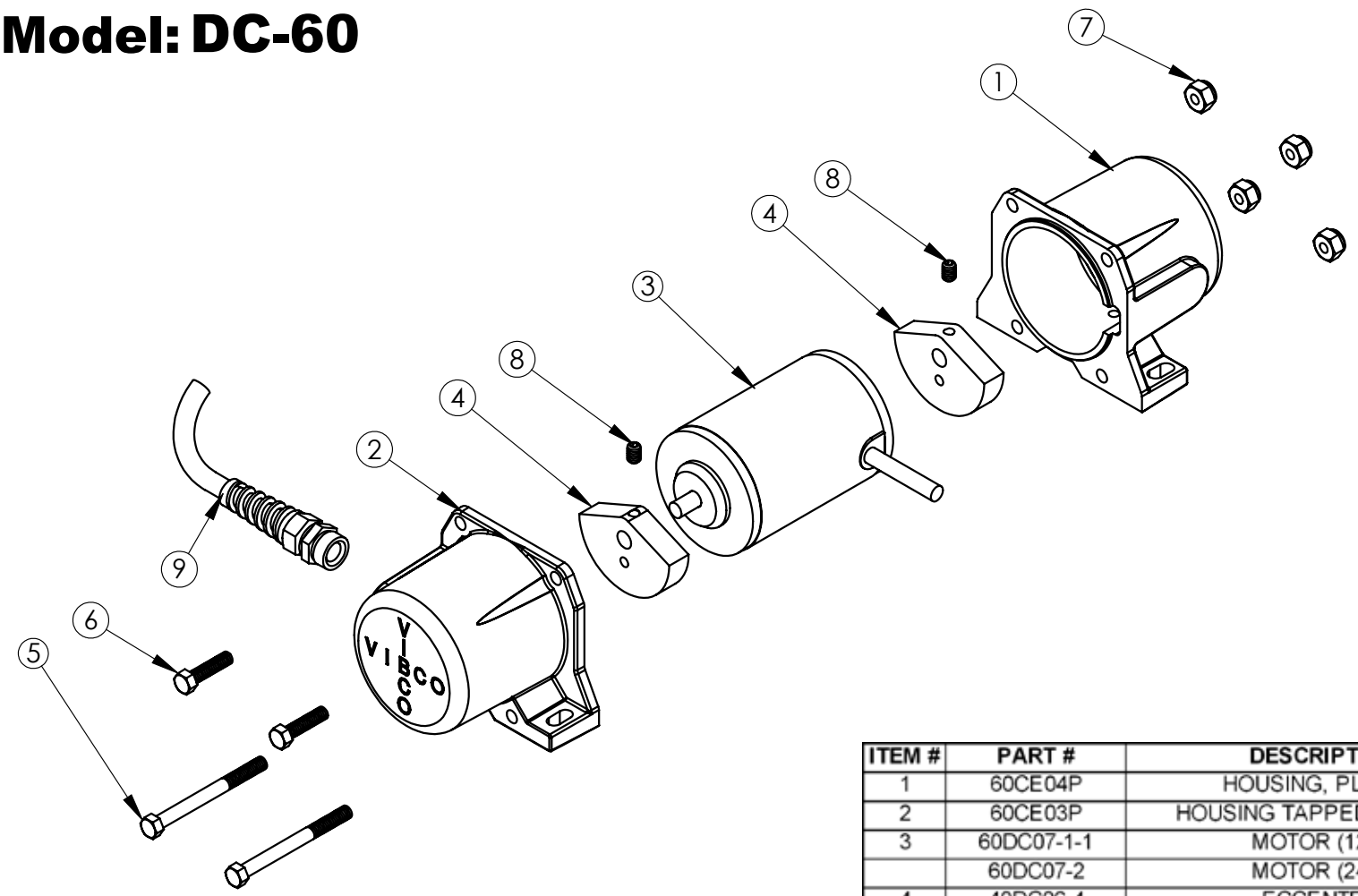
REV295-13

Model: DC-60



ITEM #	PART #	DESCRIPTION	QTY.
1	60CE04P	HOUSING, PLASTIC	1
2	60CE03P	HOUSING TAPPED, PLASTIC	1
3	60DC07-1-1	MOTOR (12 V)	1
	60DC07-2	MOTOR (24 V)	1
4	40DC06-4	ECCENTRIC	1, 2
	20SPR14	ECCENTRIC	1, 2
5	1/4-20X4-1/2HHS	SCREW, HEX HEAD CAP, S'STL	2
6	1/4-20X1HHS	SCREW, HEX HEAD S'STL	2
7	1/4-20LN	LOCKNUT	4
8	8-32X1/4SS	SCREW, SOCKET SET (NYLON)	1
9	3254	CABLE CONNECTOR, 3/8 NPT, FLEX	1

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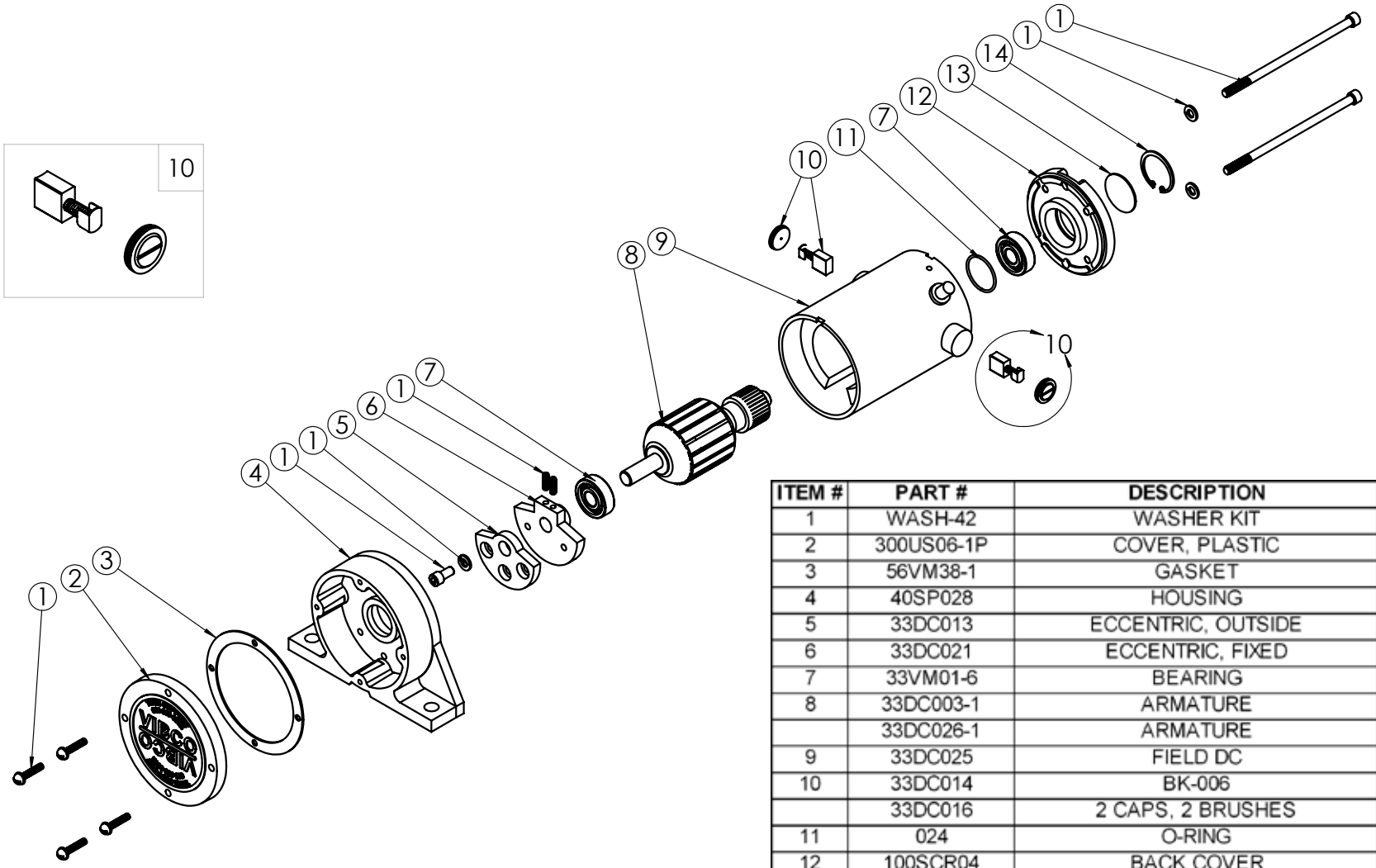
REV295-13

Model: DC-100



ITEM #	PART #	DESCRIPTION	QTY.
1	WASH-42	WASHER KIT	1
2	300US06-1P	COVER, PLASTIC	1
3	56VM38-1	GASKET	1
4	40SP028	HOUSING	1
5	33DC013	ECCENTRIC, OUTSIDE	1
6	33DC021	ECCENTRIC, FIXED	1
7	33VM01-6	BEARING	1
8	33DC003-1	ARMATURE	1
	33DC026-1	ARMATURE	1
9	33DC025	FIELD DC	1
10	33DC014	BK-006	2
	33DC016	2 CAPS, 2 BRUSHES	
11	024	O-RING	1
12	100SCR04	BACK COVER	1
13	100SCR05-5	SOLID FLAT WASHER	1
14	5000-125	SNAP RING	1

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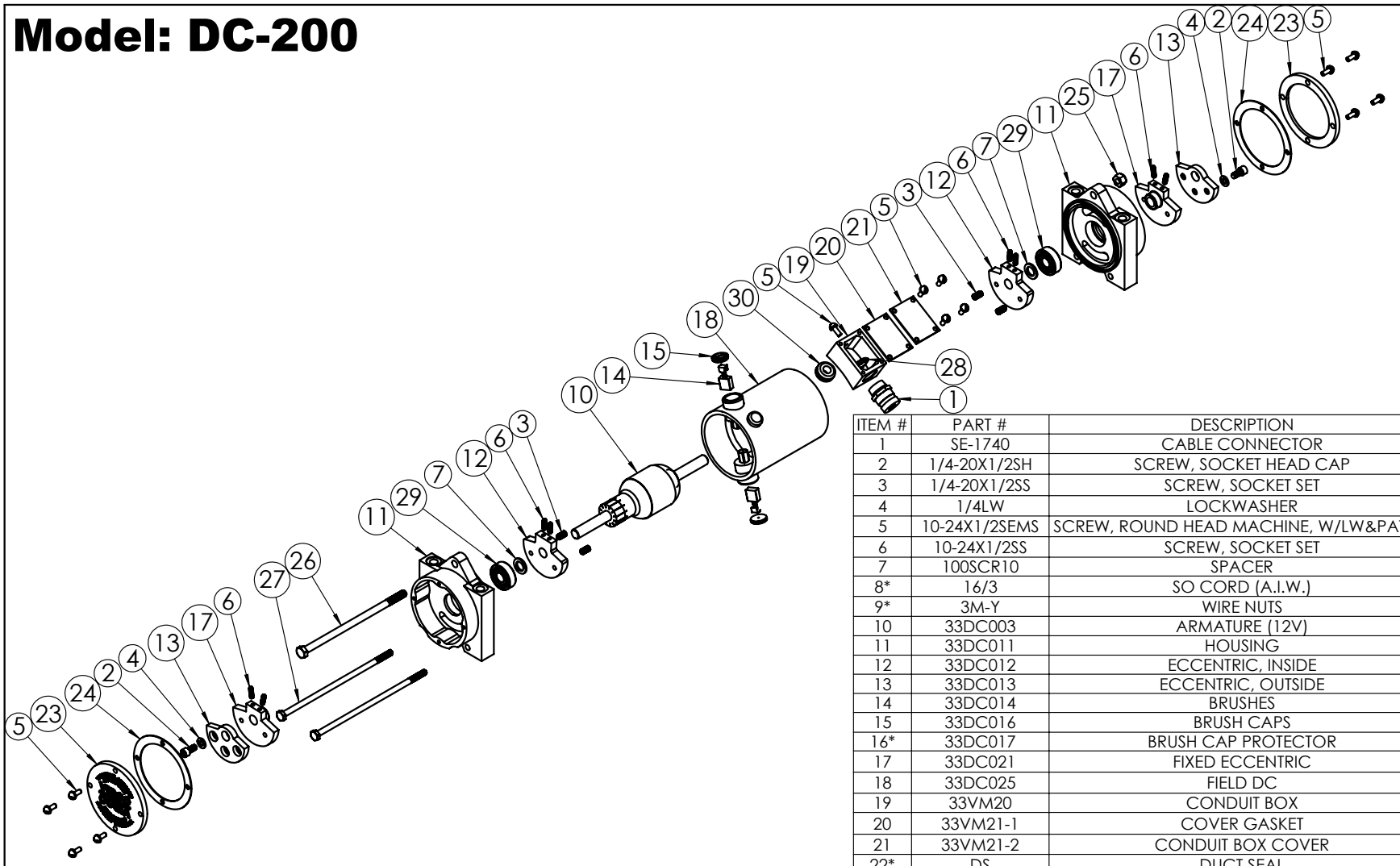
REV295-13

Model: DC-200



ITEM #	PART #	DESCRIPTION	QTY.
1	SE-1740	CABLE CONNECTOR	1
2	1/4-20X1/2SH	SCREW, SOCKET HEAD CAP	2
3	1/4-20X1/2SS	SCREW, SOCKET SET	8
4	1/4LW	LOCKWASHER	2
5	10-24X1/2SEMS	SCREW, ROUND HEAD MACHINE, W/LW&PATCH	13
6	10-24X1/2SS	SCREW, SOCKET SET	8
7	100SCR10	SPACER	2
8*	16/3	SO CORD (A.I.W.)	6
9*	3M-Y	WIRE NUTS	2
10	33DC003	ARMATURE (12V)	1
11	33DC011	HOUSING	2
12	33DC012	ECCENTRIC, INSIDE	2
13	33DC013	ECCENTRIC, OUTSIDE	2
14	33DC014	BRUSHES	2
15	33DC016	BRUSH CAPS	2
16*	33DC017	BRUSH CAP PROTECTOR	2
17	33DC021	FIXED ECCENTRIC	2
18	33DC025	FIELD DC	1
19	33VM20	CONDUIT BOX	1
20	33VM21-1	COVER GASKET	1
21	33VM21-2	CONDUIT BOX COVER	1
22*	DS	DUCT SEAL	.125 LB
23	33VM22P	COVER, PLASTIC	2
24	33VM23R	RUBBER GASKET	2
25	5/16-18LN	LOCKNUT	3
26	5/16-18X6-1/2HH	SCREW, HEX HEAD CAP	1
27	1/4-20X7HH	SCREW, HEX HEAD CAP	2
28	5262	1/2 IN. SEALING RING	1
29	33VM01-6	BEARING	2
30	875375	GROMMET (9600K47)	1

*NOT SHOWN

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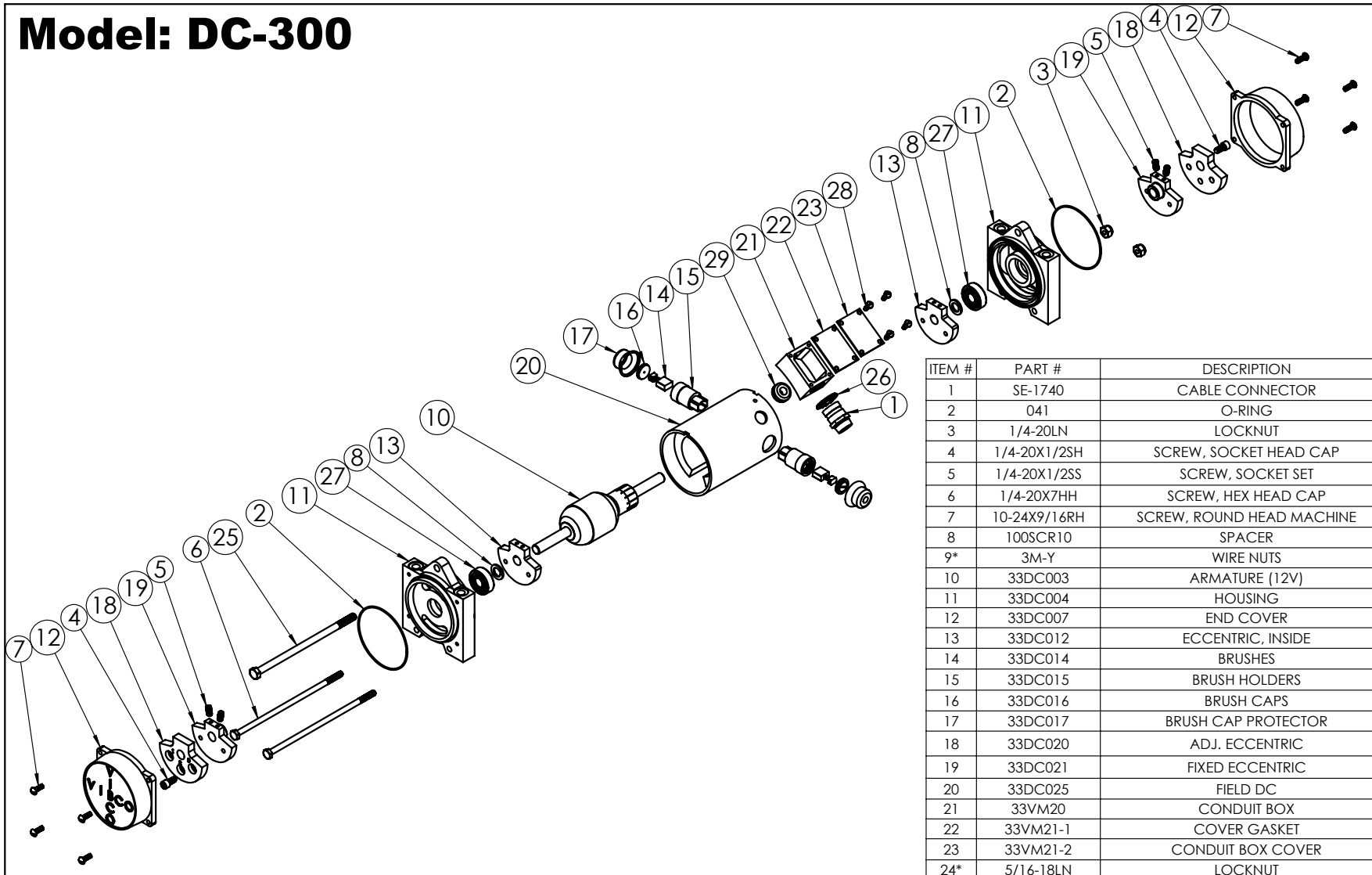
REV295-13

Model: DC-300



ITEM #	PART #	DESCRIPTION	QTY.
1	SE-1740	CABLE CONNECTOR	1
2	041	O-RING	2
3	1/4-20LN	LOCKNUT	2
4	1/4-20X1/2SH	SCREW, SOCKET HEAD CAP	2
5	1/4-20X1/2SS	SCREW, SOCKET SET	8
6	1/4-20X7HH	SCREW, HEX HEAD CAP	2
7	10-24X9/16RH	SCREW, ROUND HEAD MACHINE	8
8	100SCR10	SPACER	2
9*	3M-Y	WIRE NUTS	2
10	33DC003	ARMATURE (12V)	1
11	33DC004	HOUSING	2
12	33DC007	END COVER	2
13	33DC012	ECCENTRIC, INSIDE	2
14	33DC014	BRUSHES	2
15	33DC015	BRUSH HOLDERS	2
16	33DC016	BRUSH CAPS	2
17	33DC017	BRUSH CAP PROTECTOR	2
18	33DC020	ADJ. ECCENTRIC	2
19	33DC021	FIXED ECCENTRIC	2
20	33DC025	FIELD DC	1
21	33VM20	CONDUIT BOX	1
22	33VM21-1	COVER GASKET	1
23	33VM21-2	CONDUIT BOX COVER	1
24*	5/16-18LN	LOCKNUT	3
25	5/16-18X6-1/2HH	SCREW, HEX HEAD CAP	1
26	5262	1/2 IN. SEALING RING	1
27	33VM01-6	BEARING	2
28	8-32X1/2SEMS	SCREW, RD HD MACHINE W/LW & PATCH	4
29	875375	GROMMET (9600K47)	1
30*	DS	DUCT SEAL	.125 LB

*NOT SHOWN

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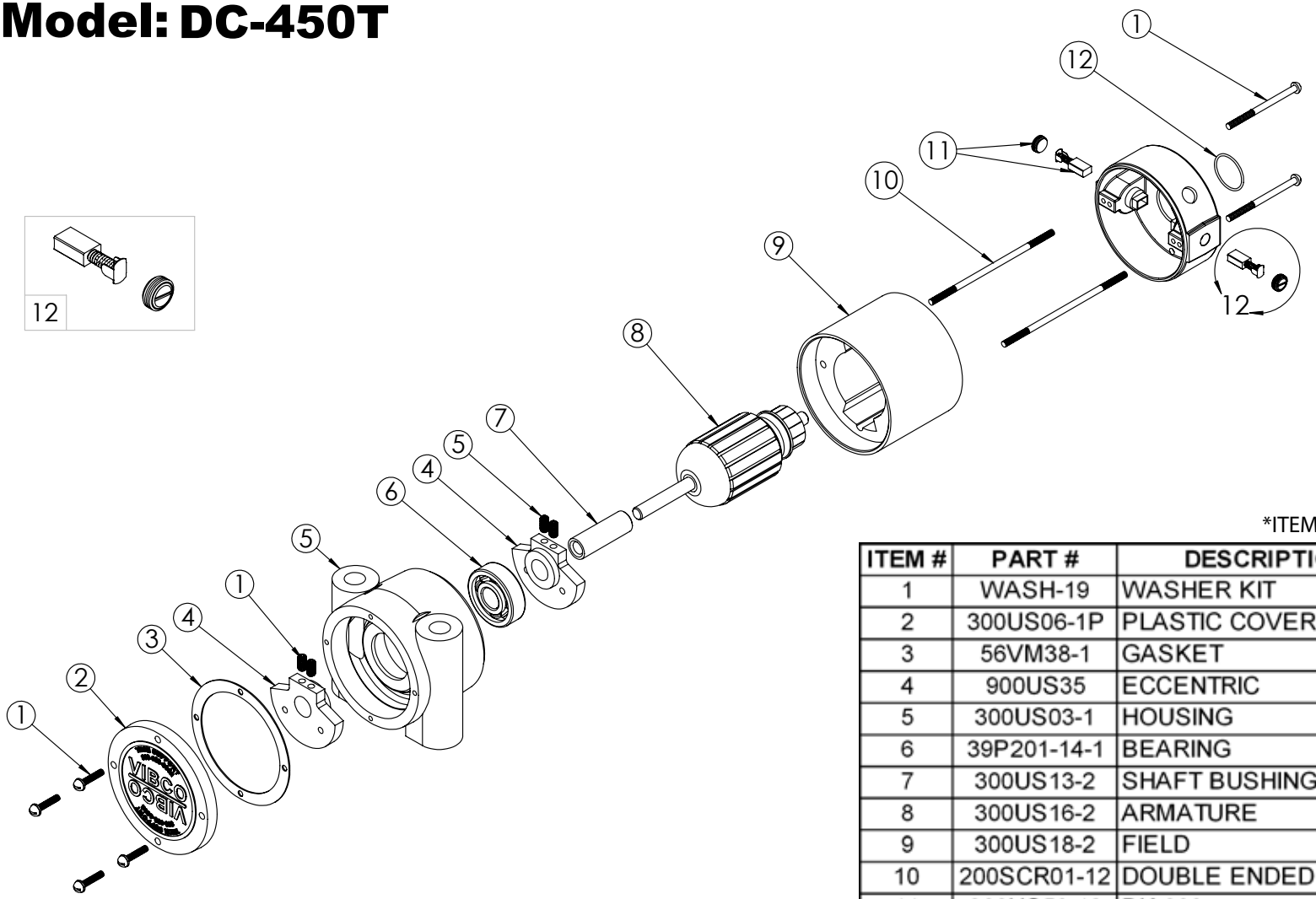
REV295-13

Model: DC-450T



*ITEM NOT SHOWN

ITEM #	PART #	DESCRIPTION	QTY.
1	WASH-19	WASHER KIT	1
2	300US06-1P	PLASTIC COVER	1
3	56VM38-1	GASKET	1
4	900US35	ECCENTRIC	2
5	300US03-1	HOUSING	1
6	39P201-14-1	BEARING	1
7	300US13-2	SHAFT BUSHING	1
8	300US16-2	ARMATURE	1
9	300US18-2	FIELD	1
10	200SCR01-12	DOUBLE ENDED STUD	2
11	300US59-13	BK-009	2
	300US60-15	2 CAPS, 2 BRUSHES	
12	023	O-RING	1
13*	SET-03	MOUNTING HARDWARE	1

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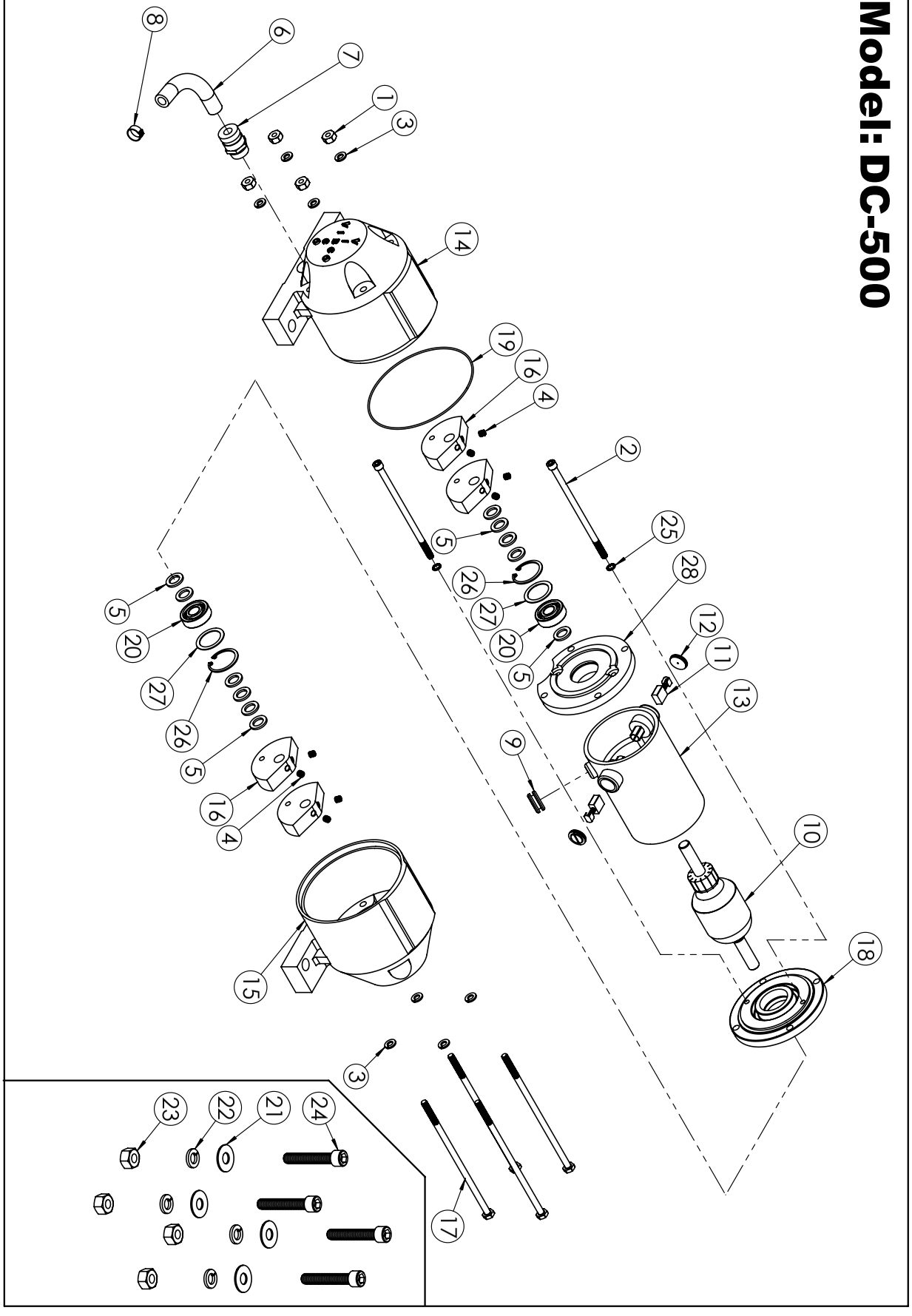
REV295-13


Model: DC-500
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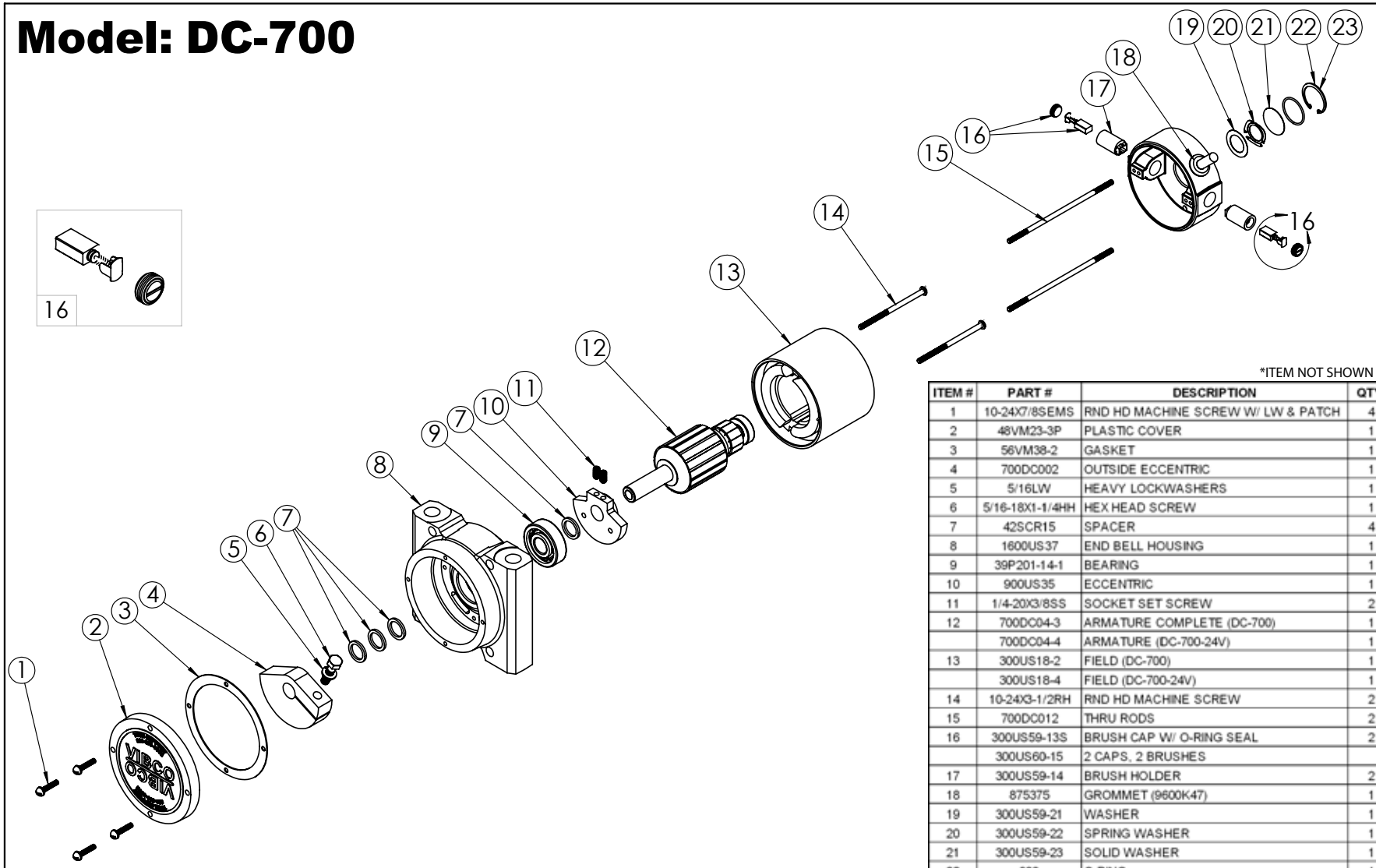
Model: DC-500 Begin Serial #: 030593

Item No.	Part No.	Description	No. Req.
1	1/4-20LN	LOCK NUT	4
2	1/4-20X5-1/4SH	SCREW, SOCKET HEAD CAP	2
3	1/4SW	SEAL WASHER	8
4	1/4-20X1/4SS	SCREW, SOCKET SET	8
5	100SCR10	SPACER	11
6	110-1996-100	PLASTIC CORD COVER (12V)	10FT
		(24V)	5FT
7	5331	CABLE CONN. STRGT. LIQUIDTITE	1
8	140	HOSE CLAMP (DIXON)	1
9	875375	GROMMET (9600K47)	1
10	33DC003	ARMATURE (12V)	1
	33DC026	ARMATURE (24V)	1
11	33DC014	BRUSHES	2
12	33DC016	BRUSH CAPS	2
13	33DC025	FIELD DC	1
14	40DC03	HOUSING MACHINING (MALE)	1
15	40DC04	HOUSING MACHINING (FEMALE)	1
16	40DC06-1	ECCENTRIC (DC-500)	4
17	1/4-20X6-1/2HH	SCREW, HEX HEAD CAP	4
18	40DC11	FLANGE COVER, (WITH MOTOR)	1
19	156	O-RING (VITON)	1
20	6201LLB-C3	BEARING	2
21	7/16FW	WASHER, FLAT	4
22	7/16LW	LOCKWASHER	4
23	7/16-14HN	HEX NUT	4
24	7/16-14X2-1/2SH	SCREW, SOCKET HEAD CAP	4
25	1/4BW	BELLVELLE WASHER	2
26	5000-125	SNAP RING	2
27	100SCR05-6	SPACER	2
28	40DC11C	FLANGE COVER W/CORD RELIEF	1

Model: DC-700



*ITEM NOT SHOWN

ITEM #	PART #	DESCRIPTION	QTY.
1	10-24X7/8SEMS	RND HD MACHINE SCREW W/ LW & PATCH	4
2	48VM23-3P	PLASTIC COVER	1
3	56VM38-2	GASKET	1
4	700DC002	OUTSIDE ECCENTRIC	1
5	5/16LW	HEAVY LOCKWASHERS	1
6	5/16-18X1-1/4HH	HEX HEAD SCREW	1
7	42SCR15	SPACER	4
8	1600US37	END BELL HOUSING	1
9	39P201-14-1	BEARING	1
10	900US35	ECCENTRIC	1
11	1/4-20X3/8SS	SOCKET SET SCREW	2
12	700DC04-3	ARMATURE COMPLETE (DC-700)	1
	700DC04-4	ARMATURE (DC-700-24V)	1
13	300US18-2	FIELD (DC-700)	1
	300US18-4	FIELD (DC-700-24V)	1
14	10-24X3-1/2RH	RND HD MACHINE SCREW	2
15	700DC012	THRU RODS	2
16	300US59-13S	BRUSH CAP W/ O-RING SEAL	2
	300US60-15	2 CAPS, 2 BRUSHES	
17	300US59-14	BRUSH HOLDER	2
18	875375	GROMMET (9600K47)	1
19	300US59-21	WASHER	1
20	300US59-22	SPRING WASHER	1
21	300US59-23	SOLID WASHER	1
22	023	O-RING	1
23	300US59-24	SNAP RING	1
24*	SET-15	MOUNTING HARDWARE	1
25*	BP10SN	PARALLEL BUTT CONNECTOR	1
26*	10SW	SEAL WASHER	2

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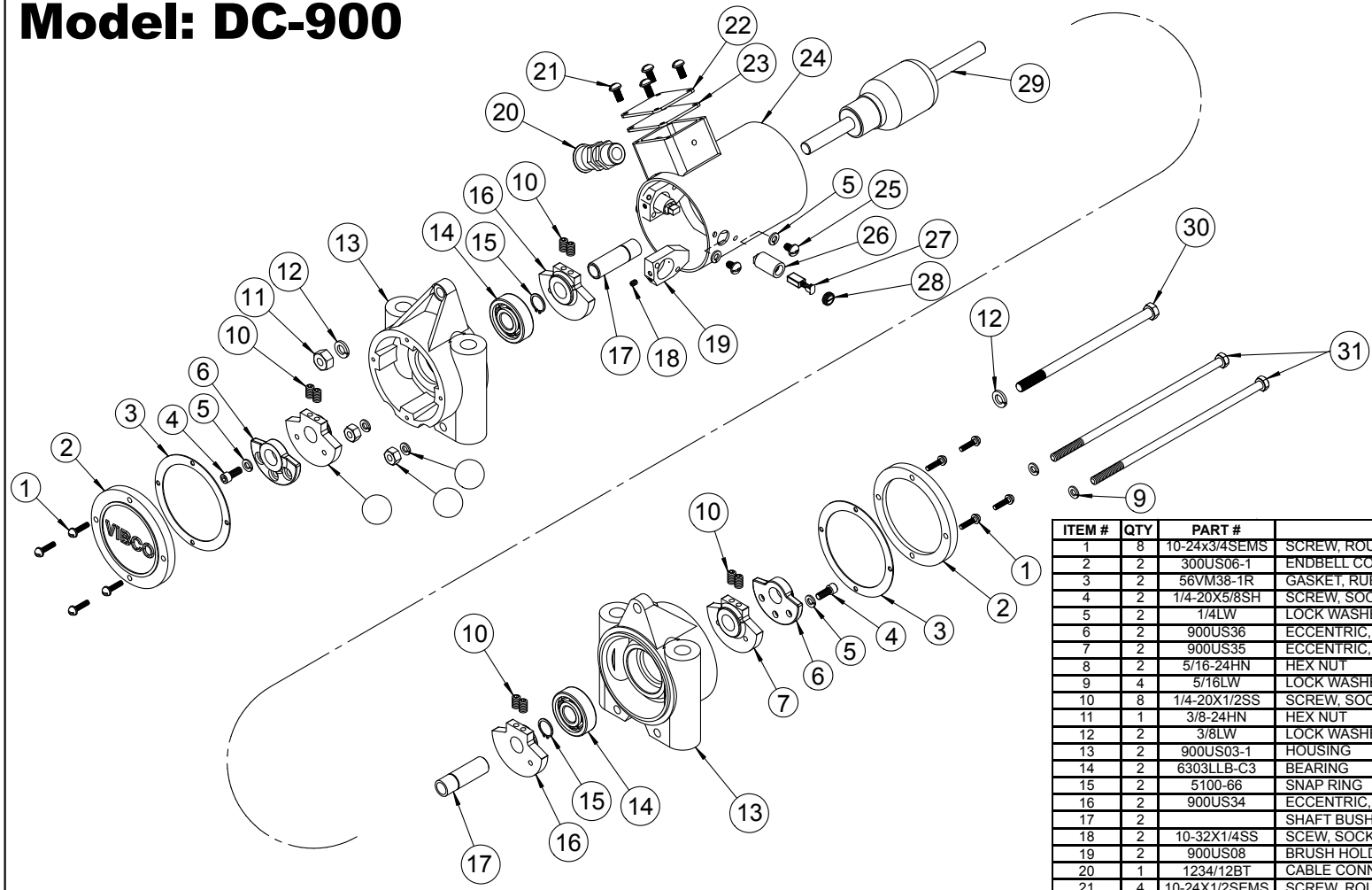
REV295-13

Model: DC-900



ITEM #	QTY	PART #	DESCRIPTION
1	8	10-24x3/4SEMS	SCREW, ROUND HEAD MACHINE
2	2	300US06-1	ENDBELL COVER
3	2	56VM38-1R	GASKET, RUBBER
4	2	1/4-20X5/8SH	SCREW, SOCKET HEAD CAP
5	2	1/4LW	LOCK WASHER
6	2	900US36	ECCENTRIC, NUMBERED
7	2	900US35	ECCENTRIC, OUTSIDE
8	2	5/16-24HN	HEX NUT
9	4	5/16LW	LOCK WASHER
10	8	1/4-20X1/2SS	SCREW, SOCKET SET
11	1	3/8-24HN	HEX NUT
12	2	3/8LW	LOCK WASHER
13	2	900US03-1	HOUSING
14	2	6303LLB-C3	BEARING
15	2	5100-66	SNAP RING
16	2	900US34	ECCENTRIC, INSIDE
17	2		SHAFT BUSHING (ARMATURE ASSEMBLY)
18	2	10-32X1/4SS	SCEW, SOCKET SET
19	2	900US08	BRUSH HOLDER BRACKET
20	1	1234/12BT	CABLE CONNECTOR
21	4	10-24X1/2SEMS	SCREW, ROUND HEAD MACHINE
22	1	42VM111-2	CONDUIT BOX COVER
23	1	42VM111-1	CONDUIT GASKET
24	1	900-12-1F-900	FIELD, DC-900
25	4	1/4-20X3/8RH	SCREW, ROUND HEAD MACHINE
26	2	900US09	BRUSH HOLDER
27	2	900-12-1B	BRUSH
28	2	900US10	BRUSH CAP
29	1	900-12-1A	ARMATURE ASSEMBLY
30	1	900US28	ROD 3/8-24X7HH
31	2	42VM109	ROD 5/16-24X9HH

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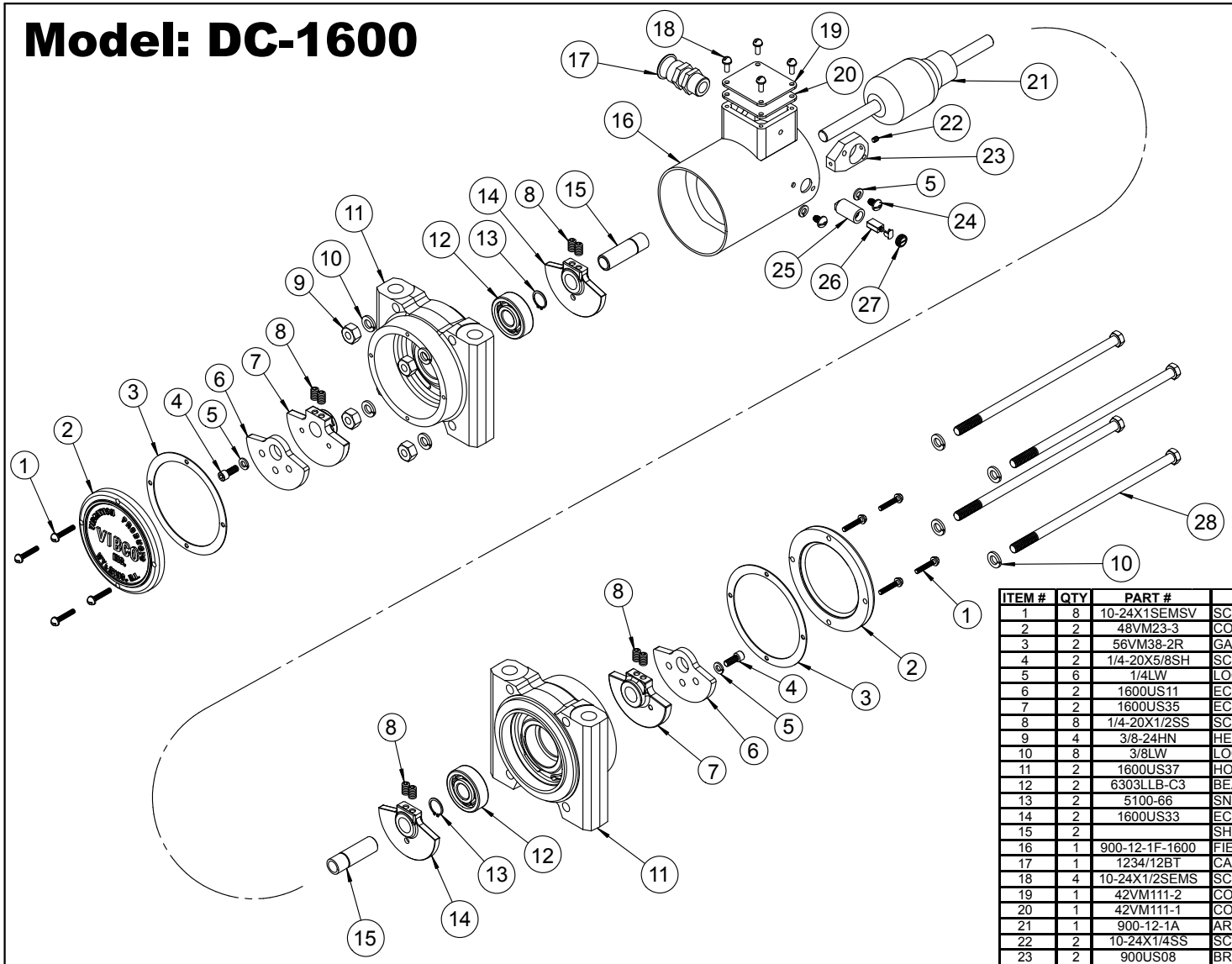
REV295-13

Model: DC-1600



ITEM #	QTY	PART #	DESCRIPTION
1	8	10-24X1SEMSV	SCREW, ROUND HEAD MACHINE
2	2	48VM23-3	COVER
3	2	56VM38-2R	GASKET, RUBBER
4	2	1/4-20X5/8SH	SCREW, SOCKET HEAD CAP
5	6	1/4LW	LOCK WASHER
6	2	1600US11	ECCENTRIC, ADJUSTABLE
7	2	1600US35	ECCENTRIC, OUTSIDE
8	8	1/4-20X1/2SS	SCREW, SOCKET SET
9	4	3/8-24HN	HEX NUT
10	8	3/8LW	LOCK WASHER
11	2	1600US37	HOUSING, END BELL
12	2	6303LLB-C3	BEARING
13	2	5100-66	SNAP RING
14	2	1600US33	ECCENTRIC, INSIDE
15	2		SHAFT BUSHING (ARMATURE ASSEMBLY)
16	1	900-12-1F-1600	FIELD, DC-1600
17	1	1234/12BT	CABLE CONNECTOR
18	4	10-24X1/2SEMS	SCEW, ROUND HEAD MACHINE
19	1	42VM111-2	CONDUIT BOX COVER
20	1	42VM111-1	COVER GASKET
21	1	900-12-1A	ARMATURE ASSEMBLY
22	2	10-24X1/4SS	SCREW, SOCKET SET
23	2	900US08	BRUSH HOLDER BRACKET
24	4	10-24X3/8RH	SCREW, ROUND HEAD MACHINE
25	2	900US09	BRUSH HOLDER
26	2	900-12-1B	BRUSH
27	2	900US10	BRUSH CAP

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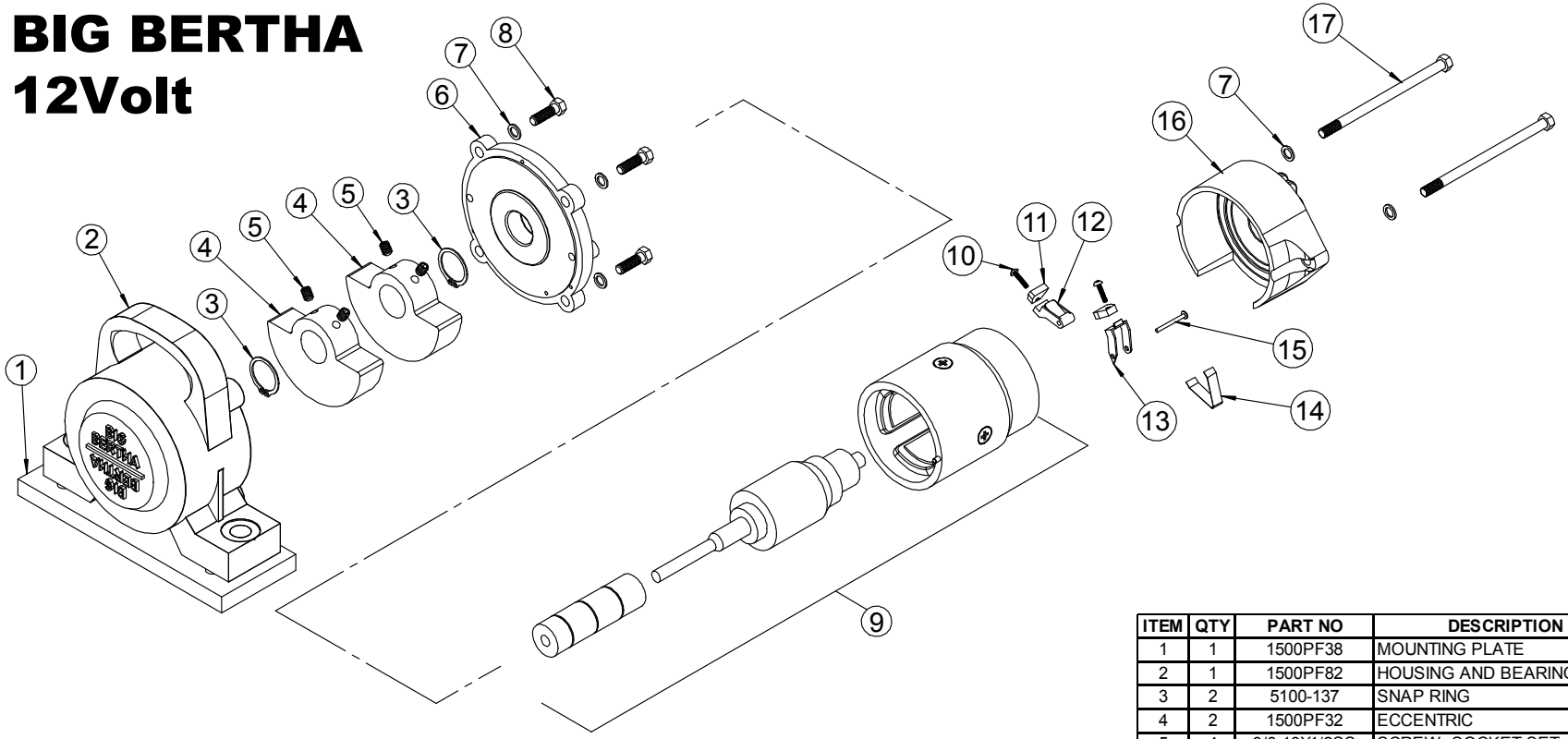
REV295-13

Model: DC-3500
BIG BERTHA
12Volt



ITEM	QTY	PART NO	DESCRIPTION
1	1	1500PF38	MOUNTING PLATE
2	1	1500PF82	HOUSING AND BEARING
3	2	5100-137	SNAP RING
4	2	1500PF32	ECCENTRIC
5	4	3/8-16X1/2SS	SCREW, SOCKET SET
6	1	1500PF83	MTG COVER WITH BEARING
7	12	3/8BW	BELLEVILLE WASHER
8	4	3/8-16X1-1/4HH	SCREW, HEX HEAD CAP
9	1	1500PF64	MOTOR ASSEMBLY
10*	4	1500PF44	SCREW
11*	4	1500PF41	BRUSH
12*	2	1500PF42	PLASTIC BRUSH HOLDER
13*	2	1500PF43	METAL BRUSH HOLDER
14*	2	1500PF45	SPRING
15*	2	1500PF46	PIN
16	1	1500PF36-1	DUST COVER AND BEARING
17	2	3/8-16X6-1/2HH	SCREW, HEX HEAD CAP

* INCLUDED WITH PART NO. 1500PF64 MOTOR ASSEMBLY

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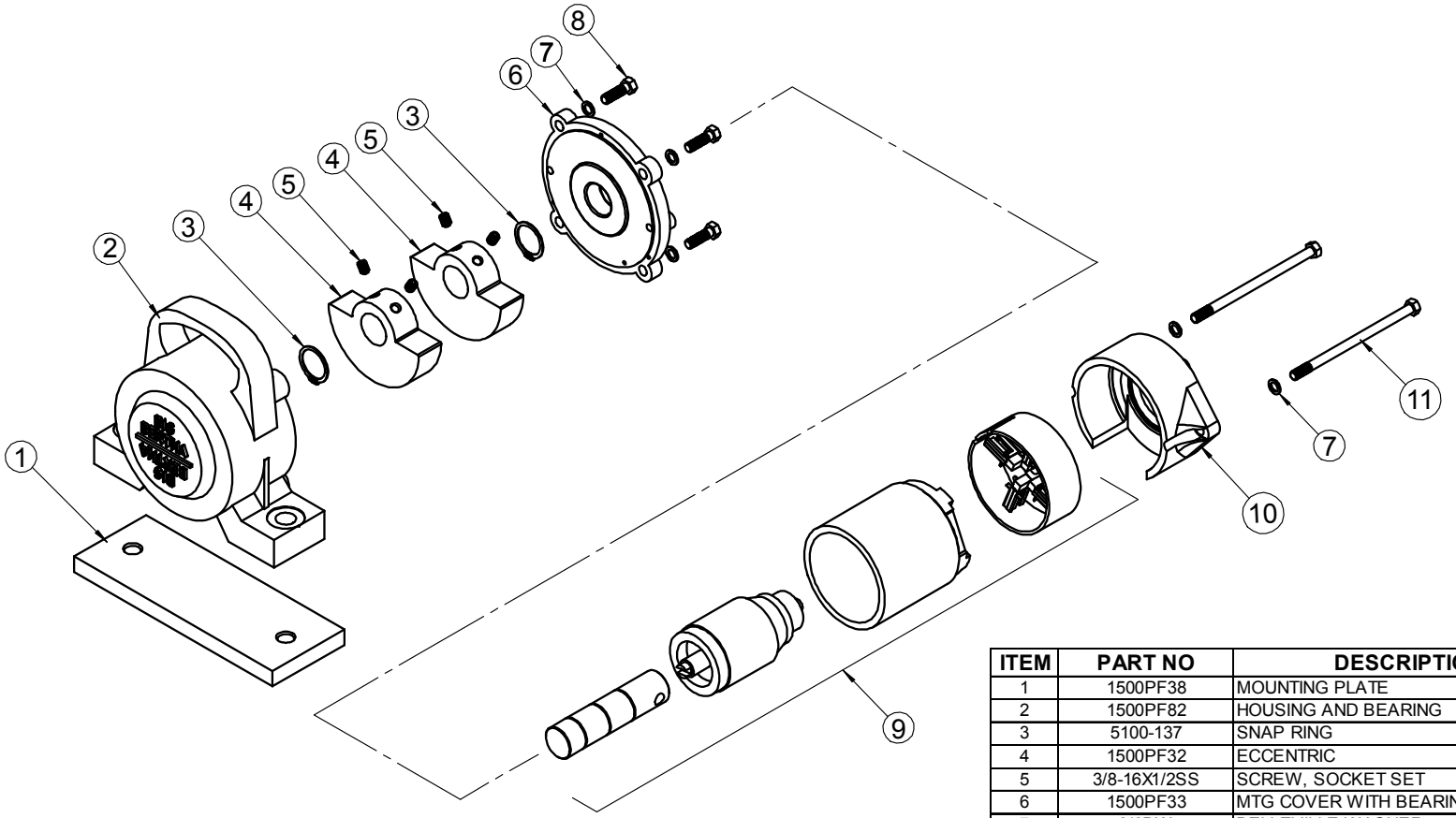
REV295-13

Model: DC-3500-24V
BIG BERTHA
24Volt



ITEM	PART NO	DESCRIPTION	QTY
1	1500PF38	MOUNTING PLATE	1
2	1500PF82	HOUSING AND BEARING	1
3	5100-137	SNAP RING	2
4	1500PF32	ECCENTRIC	2
5	3/8-16X1/2SS	SCREW, SOCKET SET	4
6	1500PF33	MTG COVER WITH BEARING	1
7	3/8BW	BELLEVILLE WASHER	6
8	3/8-16X1-1/4HH	SCREW, HEX HEAD CAP	4
9	1500PF50	MOTOR ASSEMBLY	1
10	1500PF36-4	DUST COVER (24 VOLT)	1
11	3/8-16X6-1/2HH	SCREW, HEX HEAD CAP	2

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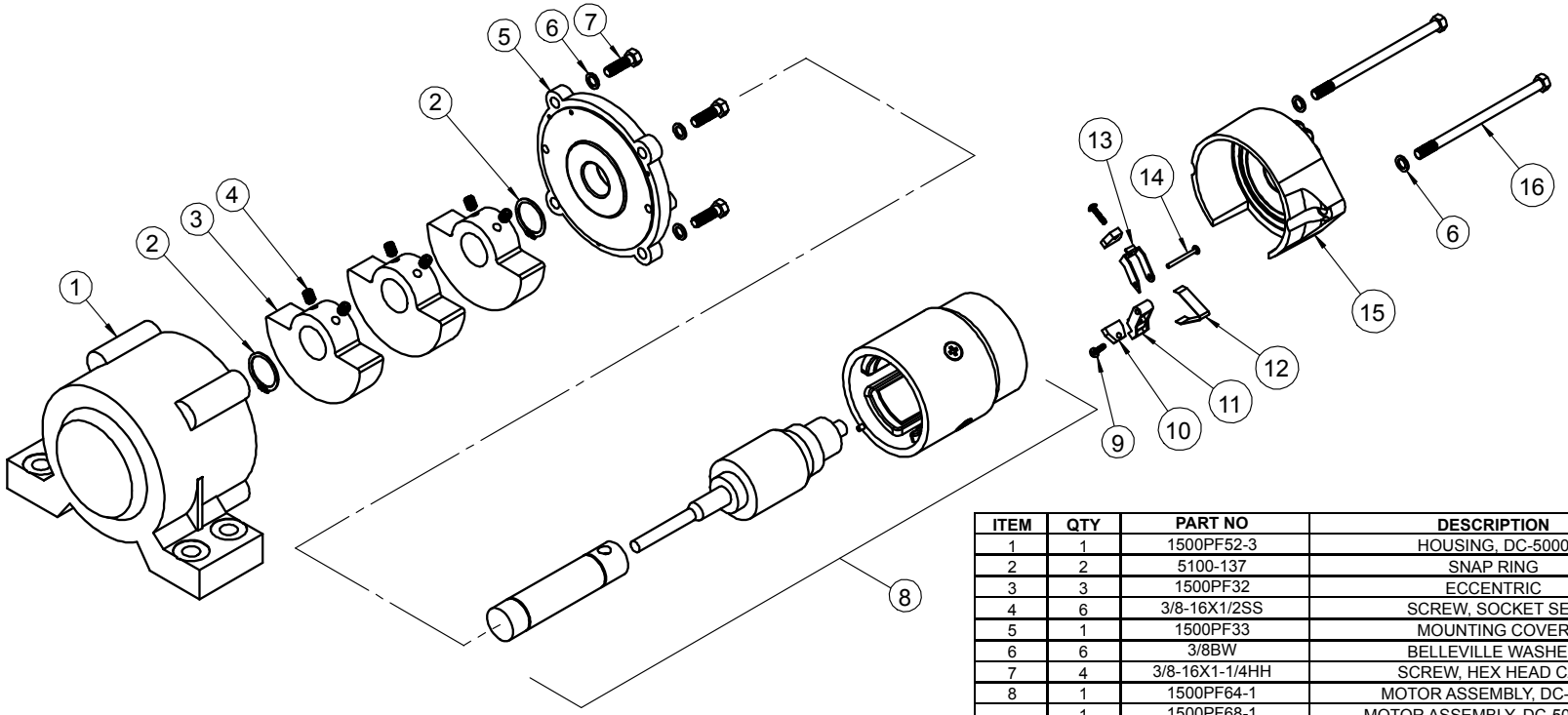
Model: DC-5000
XL BERTHA
12Volt



ITEM	QTY	PART NO	DESCRIPTION
1	1	1500PF52-3	HOUSING, DC-5000
2	2	5100-137	SNAP RING
3	3	1500PF32	ECCENTRIC
4	6	3/8-16X1/2SS	SCREW, SOCKET SET
5	1	1500PF33	MOUNTING COVER
6	6	3/8BW	BELLEVILLE WASHER
7	4	3/8-16X1-1/4HH	SCREW, HEX HEAD CAP
8	1	1500PF64-1	MOTOR ASSEMBLY, DC-5000
	1	1500PF68-1	MOTOR ASSEMBLY, DC-5000-24V
9*	4	1500PF44	MACHINE SCREW
10*	4	1500PF41	BRUSH
11*	2	1500PF42	PLASTIC BRUSH HOLDER
12*	2	1500PF45	SPRING
13*	2	1500PF43	METAL BRUSH HOLDER
14*	2	1500PF46	PIN
15	1	1500PF36	DUST COVER WITH BEARING
	1	1500PF36-4	DUST COVER (24 VOLT)
16	2	3/8-16X6-1/2HH	SCREW, HEX HEAD CAP
	2	3/8-16X7HH	SCREW, HEX HEAD CAP (24 VOLT)

***INCLUDED WITH 1500PF64-1 (MOTOR ASSEMBLY)**

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Warranty

All warranty claims must be submitted to VIBCO for approval prior to any repairs being done. Failure to do so will void any and all warranty coverage. All repairs will be done at the VIBCO factory.

Errors, Shortages & Complaints

Complaints concerning goods received or errors should be made at once. Claims must be made within five days after receipt of goods. Clerical errors are subject to correction. Damage during shipping must be reported to the carrier, not VIBCO.

Returning Parts

Parts should not be returned to VIBCO without prior authorization. Call VIBCO's customer service department at 800-633-0032 (800-465-9709 in Canada) for a Return Goods Authorization (RGA) number. A return authorization will be faxed to you. Use this as your packing slip**.** Return shipping must be prepaid. Material returned may be subject to a 10% restocking fee. All returned shipments should clearly display your name, address and original invoice number to ensure proper credit.

Orders for custom equipment built to customer's specifications are not returnable.

Product Changes

VIBCO reserves the right to make changes in pattern, design or materials when deemed necessary, without prior notice or obligation to make corresponding changes in previous models. To be sure of exact mounting dimensions, it is recommended that you obtain a certified dimensional drawing from the factory.

Ordering Spare Parts

Parts can be ordered through authorized distributors or from VIBCO's Spare Parts Department. The following data should be provided when placing your spare parts order:

From foot of housing:	Model of unit.
From spare parts list:	Reference number, part number, description and quantity required.
Shipping instructions:	Specify shipping point and method of shipping.

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