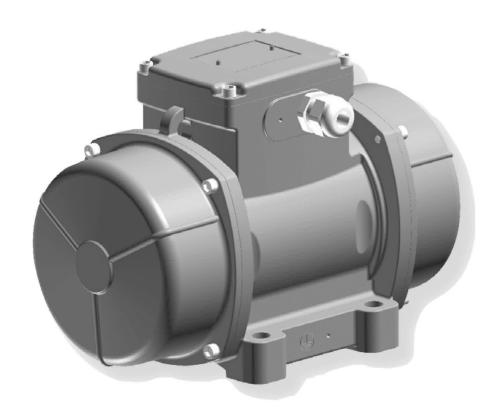


INDUSTRIAL ELECTRIC VIBRATORS

INSTRUCTION MANUAL



MODEL MVSI



24 Hour Emergency Service and Parts 610-821-0210 ASGCO Mfg., Inc. 730 Bangor Rd., Nazareth, PA 18064 800-344-4000 FAX 610-778-8991

Table of Contents

Sec	tion Title	Page
Tab	les and Figures Index	.Belov
Intro	oduction	. 1
Inst	allation Design Tips	.2
For	ce Output Adjustment	. 11
Lub	rication requirements	13
Elec	ctric Vibrator Repair & Maintenance	.15
Арр	pendix	
Elec	ctric Vibrator Item Numbers	.A1
Elec	ctric Vibrator Torque Requirements	A2
Elec	ctric Vibrator Dimensions	.A3
Elec	ctric Vibrator Parts List Diagrams	A4-6
Fig	ures	
Fig	ure#	Page
1	Electric Vibrator Mounting Examples	2
2	Safety Cable Installation	3
3	Mounting Bolt Torque Sequence	.4
4	Wiring Diagrams	5
5	Distance Between Flats	7
6	Proper Wiring Arrangement/Positioning	.7
7	Terminal Block Hardware Installation	.8
8	Wiring Block Assembly	.8
9	Ground Bonding Screw	.10
10	Eccentric Weight Adjust	11
11	Setting Sets of Eccentric Weights to Mirror Images	11
Tab	les	
Tab	le	Page
I	Mounting Bolt & Torque Requirements	4
II	Wiring Diagram Identification	. 6
Ш	Cord Grip Chart	.6
IV	Lubrication Schedule for Each Bearing	.13-14
V	Vibrator Item Number By Frame	A1-2
VI	Vibrator Nut & Screw Torque Requirements	
VII	Vibrator Dimensions By Frame	A3

Installation

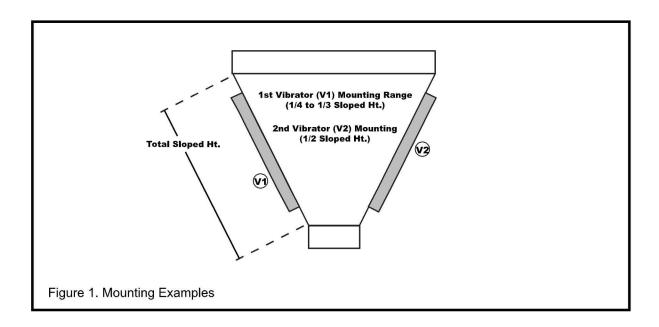
Before installing the vibrator, make sure that you have everything that you will need and that there is no shipping damage. Any product damage should be reported to the delivery service immediately. Standard metric hand tools will be needed. Carefully handle the electric vibrator. Dropping or impacting the electric vibrator may damage the bearings.

Welding – Never weld on a bin, hopper or machine with the electric vibrator mounted to it since the welding may damage the vibrator bearings or electrical circuits. When you do weld, especially in an enclosed area, make sure that the area is known to be nonhazardous and that there are no flammable or explosive levels of gases, vapors or dusts.

Mounting Surface – The object of vibration on bins and hoppers is to transmit vibration energy through the structure to the material within. The mounting surface must be rigid and strong for this transfer of energy to take place. The mounting surface must also be clean, flat (0.010 in. across mounting feet maximum), free of paint and have a minimum thickness equal to the major diameter of the mounting bolt. Also make sure that the electric vibrator feet are clean and free of debris.

Mounting Plate

he mounting plate should be at least the overall size of the electric vibrator feet. It should be located on the bin and hopper wall at a height of $\frac{1}{4}$ to $\frac{1}{3}$ of the sloped wall height. The mounting plate or bracket should extend at least $\frac{3}{4}$ the length of the sloped wall. Reference Figure 1. If a second electric vibrator is to be installed to the bin or hopper, install it at a height of $\frac{1}{2}$ of the sloped wall height and 180° from the first vibrator. Weld the mounting plate or bracket to the structure wall with skip welds that are 3 in. long then skip 2 in. then 3 in. long weld, etc. Do not weld at corners of mounting plate within 1 in. of the corner.



Introduction

ASGCO® Mfg. industrial electric vibrators have been designed and manufactured in accordance with the most exacting international industrial standards and requirements. ASGCO® Mfg industrial electric vibrators are designed for long life at continuous duty and maximum force output. The electric vibrators are suitable for operation in ambient from -86°F to 104°F (operation outside of this range needs engineering consideration).

ASGCO® Mfg. industrial electric vibrators have been evaluated for installation throughout the world. Standard ratings include CSA (Canadian Standards Association) Approval, the CE (European Directive) Mark, EX Approval for Zone 21 (ATEX II2D tD A21 Ip66), Russian GOST Mark and IECEx Approval (II2D tD A21 IP66). Check the electric vibrator nameplate for the exact ratings and Approvals for the specific Model.

The electric vibrator can be referred to by its Model or Type designation or by its Item number. The vibrator Model or Type designations referred to in this manual are as follows:

MVSI - Continuous duty industrial electric vibrator, single or three phase.

The electric vibrator may optionally be CSA Approved for Class I, Division 2, Group A, B, C and D hazardous locations, or it may be marked as being suitable for Class II, Division 2, Group F and G hazardous locations. Applications and installations requiring Division 1 equipment shall use Italvibras' CDX explosion-proof and dust-ignition-proof industrial electric vibrators.

General Safety requirements

Read this entire manual before proceeding. Compliance with all company, local and OSHA regulations is essential. Any electrical work must be done in accordance with all applicable local and national codes and must be performed only by qualified, licensed and authorized personnel. Always follow lockout and tag out procedures and requirements and always wear ear protection when in close proximity to operating vibratory equipment. Comprehensive adherence to these documents at a minimum is required – The National Electrical Code NFPA 70, ANSI z244.1 the American National Standard for Personnel Protection

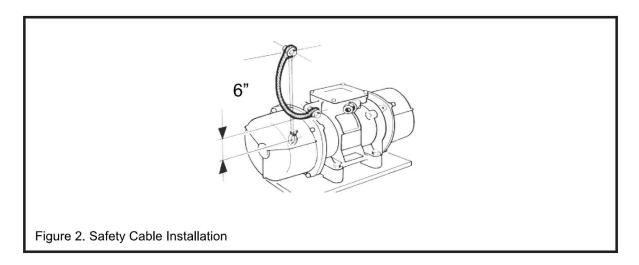
Lockout/Tag out of Energy Sources – Minimum Safety Requirements, CFR 29 Part 1910 –
 Control of Hazardous Energy Sources (Lockout/Tag out) Final Rule and CFR 29 Part 1910.15
 Occupational Noise Exposure.

Storage

Storage of the electric vibrator should be in an ambient not less than 41°C with a relative humidity not more than 60%. If the vibrator has been stored for longer than two years, the vibrator should be evaluated by authorized and trained personnel to ensure that the grease is intact, that there is no bearing damage such as brinelling and that the ground insulation is sound and not damaged from condensation.

Safety Cable

Always install a safety cable metal rope from the electric vibrator to a reliable support should the vibrator become free from its mount and fall more than 6 in. The metal rope should be taut and positioned above the electric vibrator. Reference Figure 2.



Mounting Kits

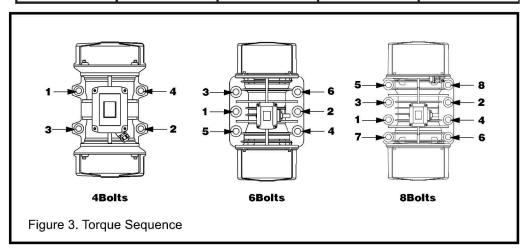
Mounting kits are available from ASGCO® Mfg. for frame sizes 00, 01, 10, 20, 30, 40 and 50. The mounting kits include a channel mount with integral mounting plate, mounting screws and washers and safety cable kit.

Mounting Hardware & Torque

Always use new bolts, nuts and compression washers. The bolts should be Grade 5 or 8 (equivalent international designation is 8.8 and 12.9, respectively). Grade 5 bolts are suitable for a majority of applications. Do not use split lock washers. Use only compression washers. Table I offers suggested mounting bolt torque values. Always check with the bolt manufacturer for recommended torque values. Torque the mounting bolts in the proper sequence as shown in figure 3 so as not to damage casting. After operating vibrator for 15 minutes, disconnect, lockout/tag out, and torque the mounting bolts a second time. Periodically check the mounting bolt torque thereafter.

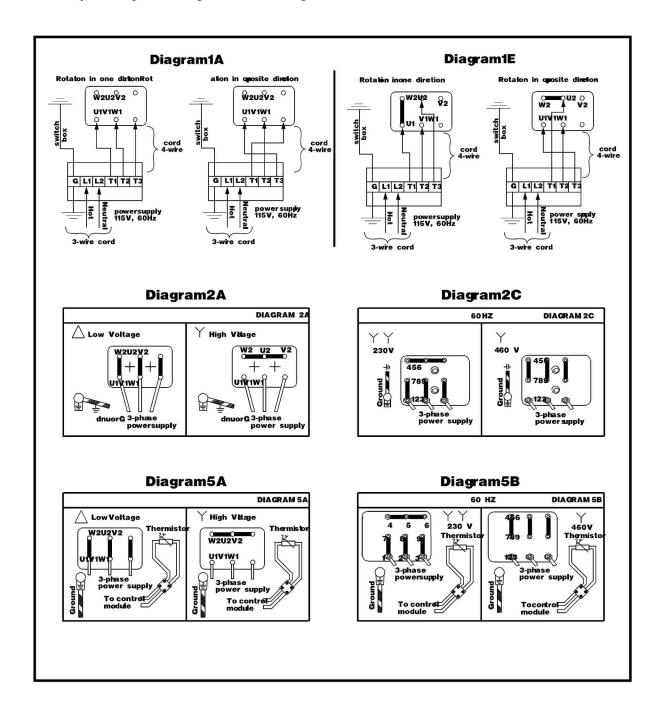
Table I. Mounting Bolts & Torque Requirements

	Bri	tish	Metric			
Frame Size	Bolt Size	Dry Torque Grade 5	Bolt Size	Dry Torque Grade 8.8		
00, 01	5/16 in-18 NC	16.5	M 8	2.3		
10, 20	1/2 in-13 NC	58	M12	8		
30, 33, 35 ,40, 50	5/8 in-11 NC	137	M16	19		
60	3/4 in -10 NC	288	M20	38		
70	7/8 in -9 NC	430	M24	71		
80	1 in-8 NC	645	M24	71		
90, 95	1 in-8 NC	645	M27	89		
97	1-3/8 in-8 NC	1370	M36	190		
100, 105, 110	1-5/8 in-8 NC	2090	M42	290		



Wiring Electric Vibrator

It is mandatory to comply with the National Electrical Code, NFPA 70, and all applicable local codes. Identify which wiring diagram is applicable by referencing the Diagram designation on the nameplate or by referring to Table II. Remove the four screws with washers securing the wiring box cover along with the foam rubber block and set aside. Identify the wiring diagram by referencing the predetermined Diagram noted on the wiring diagram found within the wiring box or by referring to the Diagrams shown in Figure 4.



Wiring Electric Vibrator Cont.

Table II. Wiring Diagram Identification

00 through 01, single-phase, 3600 rpm	Diagram 1A
10 through 30, single phase, 3600 rpm	Diagram 1E
00 through 60, three -phase,1200,1800 & 3600 rpm; MVSI 9 -590; & 575-volt 900 rpm	Diagram 2A
40 through 60, three -phase, 900 rpm except 575V	Diagram 2C
70 through 110, three -phase, 1200, 1800 & 3600 rpm; & 575V 900 rpm	Diagram 5A
70 through 110, three -phase, 900 rpm except 575V	Diagram 5B

Select a cord type that has a voltage rating not less than the power supply voltage, that has a minimum temperature rating of 221°F, and that has an overall jacket diameter within the range specified in Table III. This table also details the cord provided by the factory for reference. We recommend Coleman black portable cord SEOOW Seoprene rated 600 V and 221°F. Coleman Cable Inc. can be reached by phone at 847-672-2300 or at www.colemancable.com.

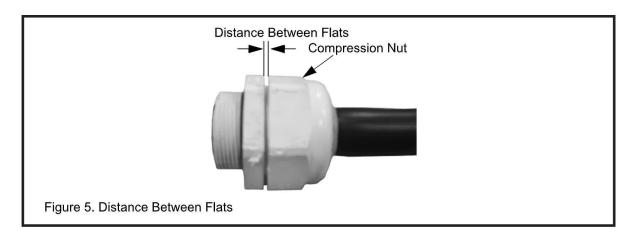
Table III. Cord Grip Chart

Furna Cina	Size	Ham Na	Suitable Cord	Cord Provided By Factory					
Frame Si ze	mm x 1.5	Item No.	Diamete r Range, mm	Size	Nominal Diamete r, in.	Distance Between Flats, in.			
00, 01, 10	M20	511596	6.5-12	16/4	0.42	1/16 to 1/8			
20-70	M25	511597	9-16	14/4	0.575	1/16 to 1/8			
80-95	M32	511598	13-21	10/4	0.705	1/16 to 1/8			
97-110	M32	511598	13-21	8/4	0.807	3/32 to 5/32			
Thermistor Circuit Cord	M20	511596	6.5-12	16/3	0.39	1/16 to 1/8			

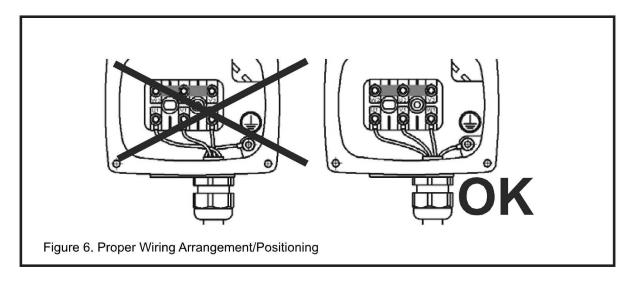
When wiring the electric vibrator, leave enough slack in the cord so that the cord does not become taut during operation causing stress on the connections. It is always best to position the cord down so that should there be any moisture present the moisture would tend to run down instead of into the vibrator wiring box.

Trim the cord by removing the jacket exposing the conductors and ground wire for approx. 6 in. Be careful not to cut the conductor or ground wire insulation. Loosen the compression nut from the cord fitting assembled to the side wall of the wiring box on the electric vibrator. Position the compression nut on the cord and insert the cord through the opening in the side wall of the wiring compartment. Position the jacket of the cord approx. ½ in beyond the inside wall of the wiring box wall and secure the compression nut by threading it to a position equal to the "Distance Between Flats" noted in Table III. Reference figure 5. which pictorially defines "Distance Between Flats"

Wiring Electric Vibrator Cont.



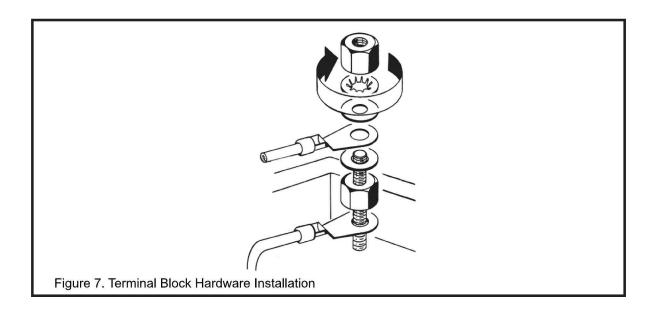
Trim the conductors within the wiring box leaving plenty of slack. Next, strip the conductor insulation for 1/4 in. to 3/8 in. Crimp on closed loop wire connectors. Use only the intended crimping tool as designated by the wire connector manufacturer. The conductors should be neatly arranged on the floor of the wiring box. The wires should not cross over each other. See figure 6.



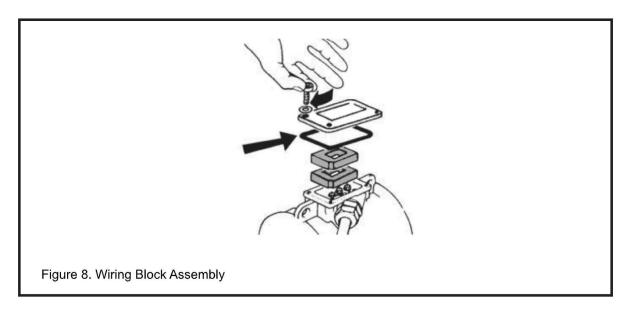
Secure the wire connectors and the shorting bars to the terminal block in the positions shown on the wiring diagram using the hardware provided. It is essential that the hardware be positioned as shown in Figure 7.

Note that the closed loop wire connectors provided on the power supply cord are positioned between the two flat washers. A drop or two of thread sealant such as Locktite is recommended. Do not use permanent thread sealant because the terminal block will be damaged should you wish to remove and replace the power supply cord. The terminal block nuts should not be over tightened since the possibility of damaging the plastic insulating body is high. Reference table VI in the Appendix for torque values. Make the connections hand-tight followed by a ½ turn but never put a ratchet on these nuts.

Wiring Electric Vibrator Cont.



For wiring diagrams 1A, 1E, 2A and 2C (Fig.4), reinstall the rubber block over the power supply conductors and install the wiring box cover being careful not to pinch the O-ring. Screw torque is specified in the Appendix. See figure 8.



For wiring diagrams 5A and 5B, you will note that there is a small 2-pole terminal block in the wiring box. This is the thermistor circuit. Proceed to Thermistor Wiring.

Thermistor Wiring

Electric vibrators with Diagram 5A and 5B have thermistor circuits installed in the winding. These devices are intended to protect the winding from over-temperature. Connect the thermistors to the motor starter using a thermistor control module such as Siemens 3RN1012-

1CK00. Never apply line voltage to the thermistor circuit. It is a low voltage +/- 5V dc circuit. The thermistor control module is connected to the motor starter control circuit which commonly operates at 120 Vac. Follow the wiring diagram provided with the thermistor control module.

The thermistors are rated 266°F. There are three PTC thermistors wired in series that are installed in the vibrator winding and connected to blue or grey leads. These leads are secured to the small 2-pole terminal block mounted in the wiring box.

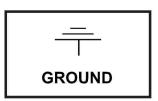
To assemble the thermistor cord, remove the threaded metal plug assembled in the side wall of the wiring box and install a M20 cord grip. Select a cord type that has a voltage rating not less than the power supply voltage, that has a minimum temperature rating of 221°F, and that has an overall jacket diameter within the range specified in Table III. This table also details the cord provided by the factory for reference. We recommend Coleman black portable cord SEOOW Seoprene rated 600 V and 221°F. Coleman Cable Inc. can be reached by phone at 847-672-2300 or at www.colemancable.com.

Trim the cord by removing the jacket exposing the conductors for approx. 6 in. Be careful not to cut the conductor wire insulation. Loosen the compression nut from the cord fitting assembled to the side wall of the wiring box on the electric vibrator. Position the compression nut on the cord and insert the cord through the opening in the side wall of the wiring compartment. Position the jacket of the cord approx. ½ in beyond the inside wall of the wiring box wall and secure the compression nut by threading it to a position equal to the "Distance Between Flats" noted in Table III. Reference figure 5 which pictorially defines "Distance Between Flats".

Trim the conductors within the wiring box leaving plenty of slack. Next, strip the conductor insulation for $\frac{1}{4}$ in. to $\frac{3}{8}$ in. The conductors should be neatly arranged on the floor of the wiring box. The wires should not cross over each other. Secure the wires to the 2-pole terminal block by tightening the compression screws. Reinstall the rubber block over the power supply and thermistor circuit conductors and install the wiring box cover being careful not to pinch the O-ring. Screw torque is specified in the Appendix. Reference figure 8.

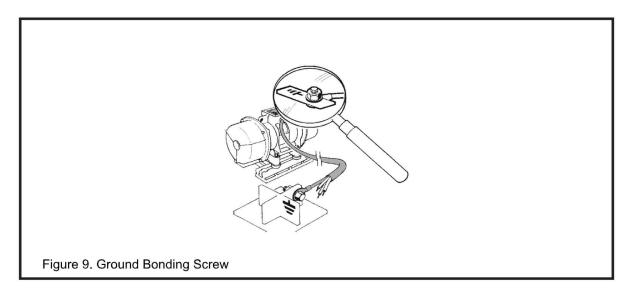
Grounding & Bonding

The electric vibrator must be grounded using the ground wire provided in the cord. The ground wire shall be connected to a closed loop wire connector which is then connected to the ground terminal located within the wiring box (See figure 6). The ground terminal is identified by the international symbol.



It may be necessary to bond the electric vibrator to ground using the external ground screw as shown in figure 9. The external ground terminal is identified by the international symbol. Use a wire size no smaller than the internal ground wire

Grounding & Bonding Cont.



Overload, Short-Circuit & Ground-Fault Protection

In the USA, The National Electrical Code, NFPA 70, and all applicable local codes, govern how to properly size, select and install overload protection (sometimes called heaters) and short-circuit and ground-fault protection (fuses or circuit breakers). Proper selection and installation of these devices is required and essential for not only protection of the electric vibrator and the power supply circuit but also for protection of personnel.

If the overload or short-circuit and ground fault protection operate, have qualified personnel locate and fix the problem before resetting.

When operating two electric vibrators, the vibrators should be controlled with a single motor starter that has overload protection dedicated to each electric vibrator. The overloads shall be electrically interlocked such that should there be a fault with one electric vibrator, both electric vibrators will be de-energized.

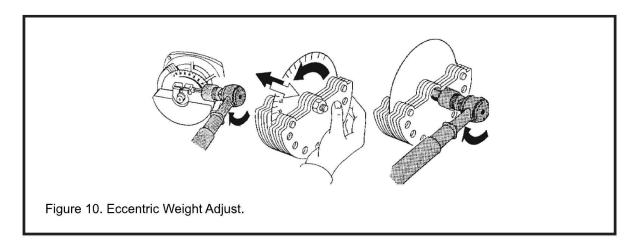
Variable Frequency Inverter

The electric vibrators may be supplied with a variable frequency inverter. Never operate the vibrators above the maximum frequency noted on the nameplate. If operating two vibrators, use one variable frequency inverter along with overload protection dedicated to each electric vibrator. The overloads shall be electrically interlocked such that should there be a fault with one electric vibrator, both electric vibrators will be de-energized.

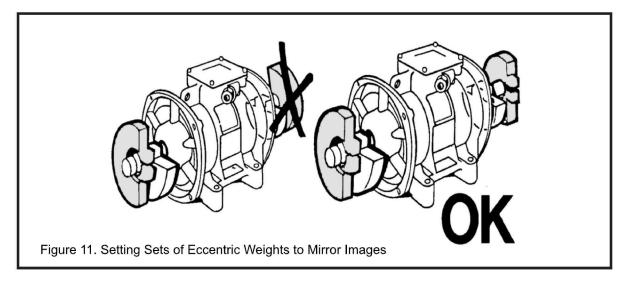
The nameplate current should never be exceeded throughout the entire frequency range.

Eccentric Weight Adjustment

The eccentric weights may be adjusted to produce the desired centrifugal force output. It is always best to operate the electric vibrator at the lowest weight setting that produces the desired result. This will result in lower energy expense and extend the bearing life. The factory setting is 50% which would result in 50% of the centrifugal force noted on the nameplate. To adjust the force output, lockout/tag out the electric vibrator. Remove each weight cover and set it and the screws, washers and O-rings aside. The outer adjustable weight clamping screw or the shaft nut may be loosened and then the adjustable weights may be rotated to the desired position. Reference Figure 10.



The eccentric weights must be adjusted to mirror images of each other at the same setting number as shown in Figure 11.



Properly torque the clamping screw or shaft nut to secure the weights in position. Torque values are outlined in the Appendix. Reinstall the weight covers making sure not to pinch the O-rings.

Eccentric Weight Adjustment

Check shaft rotation before replacing weight covers. Start vibrator for 1 second, stop and lockout/tag out. Observe direction of rotation. If desired to reverse the direction of rotation, switch two of the three power supply leads in the wiring box or at the motor starter for 3-phase electric vibrators. For 1-phase electric vibrators, refer to the wiring diagram for changing the direction of shaft rotation.

Replace weight covers using screws and washers being careful not to pinch the O-rings. The screw torque is outlined in the Appendix. Never operate the electric vibrator without weight covers in place. They provide a degree of protection for the bearings and a shield for the rotating eccentric weights. Always replace broken weight covers immediately. Do not operate electric vibrator with weight covers removed or with damaged weight covers.

Starting Up

After making sure that the power supply voltage matches the voltage marked on the nameplate, that the mounting bolts are properly secured, that all covers are in place and secured, and that the motor starter is properly installed and adjusted, turn the electric vibrator on. Excessive noise would indicate a problem but slight bearing noise is normal due to the type of bearing used. After a few hours of operation, check each line current and verify that it does not exceed nameplate current. If the line current exceeds the nameplate current, then the mount needs to stiffened, the vibrator weights need to be reduced or the vibrator needs to be moved to a more rigid location. Never operate the vibrator above nameplate current.

After the first 8 hours of operation, check the line current to make sure that it does not exceed nameplate and check mounting bolt torque. See MOUNTING HARDWARE AND TORQUE.

Electric Vibrator Lubrication

All electric vibrators are lubricated at the factory. If there are no external grease fittings, then the vibrator construction is lubricated for life. No grease ever need be added to these electric vibrators. If external grease fittings are provided, then it is intended that the bearings be periodically lubricated. The lubrication schedule is outlined in Table IV.

Table IV. Lubrication Schedule For Each Bearing Lubricate every 2000 hours unless specified otherwise.

00 Fr	00 Frame 01 Frame 10 Frame		ame	20 Frame		30 Frame		33 Frame			
Model	Grease, g	Model	Grease, g	Model	Grease, g	Model	Grease, g	Model	Grease, g	Model	Grease, g
MVSI 36-380	Life	MVSI 36-480	Life	MVSI 36-660	Life	MVSI 36-1050	Life	MVSI 36-1680	Life	MVSI 36-2900	Life
MVSI 18-100	Life	MVSI 18-180	Life	MVSI 18-480	Life	MVSI 36-1500	Life	MVSI 18-1690	Life	MVSI 36-3500	9
		MV3 18-250	Life	MVSI 12-110	Life	MVSI 18-920	Life	MVSI 18-2280	Life		
				MVSI 12-300	Life	MVSI 18-1310	Life	MVSI 12-760	Life		
						MVSI 12-580	Life	MVSI 9-590	Life		
						MVSI 9-340	Life				

35 Fr	ame	40 Frame		50 Frame		60 Frame		70 Fr	ame	80 Frame	
Model	Grease, g	Model	Grease, g	Model	Grease, g						
MVSI 36-2530	7	MVSI 18-3190	9	MVSI 36-3280	9	MVSI 18-5380	19	MVSI 36-6860	26	MVSI 18-10900	40
MVSI 18-2150	7	MVSI 12-1990	Life	MVSI 36-4080	Life	MVSI 18-6850	19	MVSI 36-8240	26	MVSI 18-13400	40
MVSI 12-1630	Life	MVSI 9-1440	Life	MVSI 36-4100	16	MVSI 12-3410	Life	MVSI 36-11000	30*	MVSI 12-8450	30
MVSI 12-1660	Life			MVSI 36-4910	16	MVSI 12-4700	Life	MVSI 18-8300	26	MVSI 12-10400	40
MVSI 9-910	Life			MVSI 18-3870	16	MVSI 9-2920	Life	MVSI 18-9420	26	MVSI 12-11400	40
MVSI 9-1160	Life			MVSI 18-4500	16	MVSI 9-3850	Life	MVSI 12-6050	18	MVSI 9-6830	30
				MVSI 12-2540	Life			MVSI 12-6600	18	MV3 9-8400	40
				MMSI 12-3110	Life			MV3I 9-4640	18		
				MVSI 9-2030	Life						

^{* -} Lubricate Every 750 Hours ** - Lubricate Every 200 Hours

<u>Table IV. Lubrication Schedule For Each Bearing Cont.</u> <u>Lubricate every 2000 hours unless specified otherwise</u>

90 Fr	ame	95 Fr	95 Frame 97 Frame		100 F	rame	105 F	rame	110 Frame		
Model	Grease, g	Model	Grease, g	Model	Grease, g	Model	Grease, g	Model	Grease, g	Model	Grease, g
I/I/SI 36-14000	20**	MVSI 36-20000	25**	MVSI 18-19700	90	MVSI 18-25300	130	MVSI 12-31000	150	I/I/SI 12-45000	220
I/I/SI 18-14500	60	MVSI 18-17600	80	MVSI 12-14500	60	MVSI 18-32900	150	MVSI 12-37000	180	MVSI 12-55000	TBD
MVSI 12-11700	50	MVSI 12-17600	80	MVSI 12-20100	90	MVSI 12-26500	130	MVSI 12-40000	180	MVSI 9-49000	220
MVSI 12-12300	50	MVSI 12-19100	80	MVSI 12-24400	90	MV9 9-24800	130	MVSI 9-31000	150	MVSI 9-57000	TBD
MVSI 12-14400	60	MVSI 9-14400	80	MVSI 12-29000	130			MVSI 9-38000	180		
MVSI 12-15400	60			MVSI 9-14500	60						
MVSI 9-9310	50			MVSI 9-21900	90						
MVSI 9-11700	60										

120 Frame									
Model	Grease, g								
MVSI 12-67000	260								
MVSI 9-671000	260								

^{* -} Lubricate Every 750 Hours

The lubrication frequency is every 2000 hours of operation unless specified otherwise in the table. There is an exception - 3600 rpm electric vibrators operating continuously or for long periods of time should be lubricated in $\frac{1}{2}$ the time specified using $\frac{1}{2}$ the grease volume specified. For all other vibrators, follow the table except when the operating temperature exceeds 194°F. If the operating temperature exceeds 194°F, reduce the lubrication frequency and lubrication volume by 50% for every 50°F increment above 194°F. If the electric vibrator operating temperature exceeds 212°F, contact ASGCO® at 800-344-4000. The electric vibrator should never operate above 248°F.

When adding grease through the grease fitting, make sure to clean the fitting so as not to introduce dirt into the bearing. Add the specified amount of grease. Experiment with your grease gun to determine how many grams are introduced with each pump. Never over-grease a bearing since this will damage the bearing and cause high operating temperature.

Always use the correct grease. Never mix greases. Use Kluber NBU 15 grease in all MVSI 36 electric vibrators. All other electric vibrators are lubricated with Kluber NBU 8EP grease. Kluber grease may be purchased direct from Kluber Lubrication by calling 800-447-2238.

^{** -} Lubricate Every 200 Hours

Electric Vibrator Maintenance

Every quarter, we recommend a thorough inspection of the electric vibrator. After lockout/tag out, do the following:

- 1.) Inspect the cord for any visible damage or wear. Replace the cord if there are any signs of damage or wear. This holds true for both the power supply cord and the thermistor circuit cord.
- 2.) Remove the wiring box cover and inspect for any foreign matter or liquid.

Vacuum any foreign matter. If wet, remove electric vibrator from service and have the ground insulation tested by a trained, qualified and licensed technician.

- 3.) Before replacing the wiring box cover, make sure the electrical connections are tight (do not over-tighten) and inspect the cover O-ring and rubber compression block. If the O-ring or rubber compression block is damaged or if they have lost their compression set, replace them.
- 4.) Remove each weight cover and inspect for foreign matter. Vacuum if necessary.

Replace O-rings if they are damaged or if they have lost their compression set.

- 5.) Check the mounting bolt torque.
- 6.) Replace any broken parts.

Appendix

Electric Vibrator Item Numbers

The table below outlines a list of electric vibrator Model/Type designations next to their respective Item No. The information is sorted by frame size. Please reference the Model/Type designation and Item No. when ordering electric vibrators or their parts.

Table V. Vibrator Item Numbers By Frame

00 Fr	ame	01 Fr	ame	10 Fr	10 Frame		20 Frame		ame	33 Frame	
Mode I	Item No.	Model	Item No.	Model	Item No.	Model	Item No.	Model	Item No.	Model	Item No.
MVSI 36-380	600311	MVSI 36-480	600312	MVSI 36-660	600313	MVSI 36-1050	600314	MVSI 36-1680	600381	MVSI 36-2900	600491
MVSI 18-100	601340	MVSI 18-180	601341	MV3 18-480	601367	MVSI 36-1500	600366	MVSI 18-1690	601408	MV3 36-3500	600504
		MVSI 18-250	601366	MVSI 12-110	602296	MVSI 18-920	601372	MVSI 18-2280	601513		
				MV3 12-300	602297	MVSI 18-1310	601373	MNSI 12-760	602314		
						MVSI 12-580	602298	MVSI 9-590	602575		
						MVSI 9-340	602568				

35 Fr	ame	40 Fr	ame	50 Fr	ame	60 Frame		70 Fr	ame	80 Fr	ame
Model	Item No.	Model	Item No.	Model	Item No.						
MVSI 36-2530	600513	MVSI 18-3190	601217	MVSI 36-3280	600502	MVSI 13-5380	601220	MV3 36-6860	600470	MVSI 18-10900	601211
MVSI 18-2150	601524	MVSI 12-1990	602380	MVSI 36-4080	600503	MVSI 18-6850	601268	MVSI 36-8240	600471	MVSI 18-13400	601447
MVSI 12-1630	602402	MVSI 9-1440	602609	MVSI 36-4100	600256	MVSI 12-3410	602406	MVSI 36-11000	600472	MVSI 12-8450	602154
MVSI 12-1660	602403			MVSI 36-4910	600257	MVSI 12-4700	602407	MVSI 18-8300	601221	MVSI 12-10400	602204
MVSI 9-910	602615			MVSI 18-3870	601219	MVSI 9-2920	602618	MVSI 18-9420	601269	MVSI 12-11400	602350
MVSI 9-1160	602616			MVSI 18-4500	601267	MVSI 9-3850	602619	MVSI 12-6050	602167	MVSI 9-6830	602884
				MVSI 12-2540	602381			MVSI 12-6600	602230	MVSI 9-8400	602515
				MVSI 12-3110	602382			MVSI 9-4640	602891		
				MWSI 9-2030	602610						

Electric Vibrator Item Numbers Cont.

Table V. Vibrator Item Numbers By Frame Cont.

90 Fr	ame	95 Fr	ame	97 Fr	97 Frame		rame	105 Fi	rame	110 Frame	
Model	Item No.										
MVSI 36-14000	600276	MVSI 36-20000	600201	MVSI 18-19700	601204	MVSI 18-25300	601205	MVSI 12-31000	602142	MVSI 12-45000	602144
MVSI 18-14500	601165	MVSI 18-17600	601166	MVSI 12-14500	602136	MVSI 18-32900	601271	MVSI 12-37000	602143	MVSI 12-55000	602273
MVSI 12-11700	602138	MVSI 12-17600	602092	MVSI 12-20100	602137	MVSI 12-26500	602134	MVSI 12-40000	602244	MVSI 9-49000	602873
MVSI 12-12300	602351	MVSI 12-19100	602093	MVSI 12-24400	602349	MVSI 9-24800	602863	MVSI 9-31000	602871	MVSI 9-57000	602535
MVSI 12-14400	602091	MVSI 9-14400	602827	MVSI 12-29000	602227			MV3 9-38000	602872		
MVSI 12-15400	602352			MVSI 9-14500	602551						
MVSI 9-9310	602862			MVSI 9-21900	602870						
MVSI 9-11700	602826										

120 Frame								
Model	Item#							
MVSI 12-67000	602336							
MVSI 9-671000	602589							

Electric Vibrator Torque Requirments

Table V. Vibrator Nut & Screw Torque Requirements

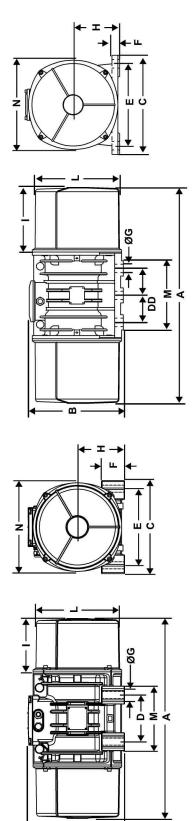
Cap Screws	ft/lb (kgm)
M 6	7 (1)
M 8	16.5 (2.3)
M10	35 (4.8)
M12	58 (8)
M14	95 (13)
M16	137 (19)
M18	195 (27)
M 20	275 (38)

Shaft Nuts	ft/lb (kgm)
M13x1	22 (3)
M15x1	36 (5)
M20x1	72 (10)
M25x1.5	123 (17)
M30x1.5	246 (34)
M45x1.5	360 (50)

Terminal Block Nuts	ft/lb (kgm)
M4	0.87 (0.12)
M5	1.45 (0.20)
M6	2.17 (0.30)
M8	4.70 (0.65)
M10	9.80 (1.35)

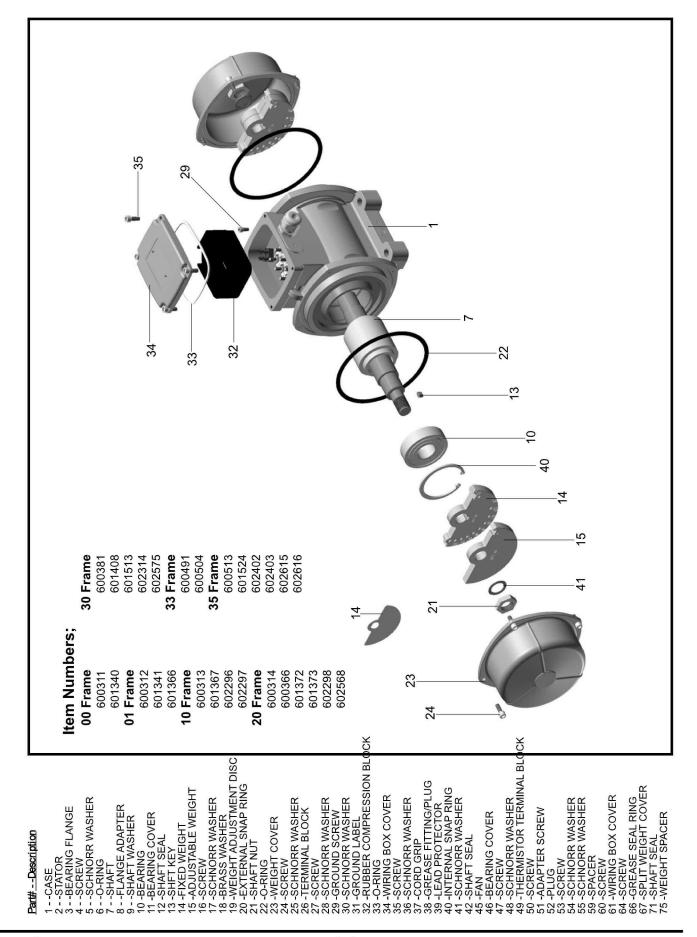
Electric Vibrator Dimensions (in/mm)

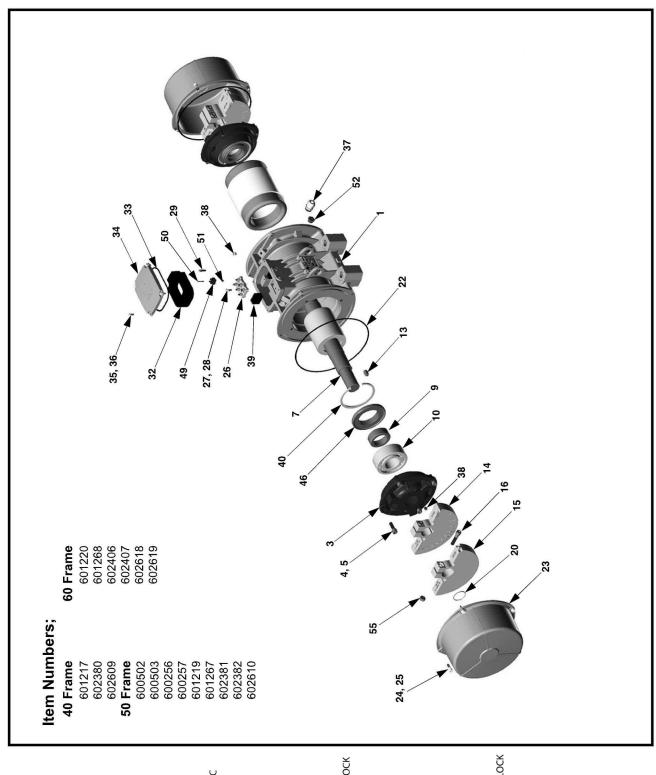
Table VII. Vibrator Dimensions By Frame



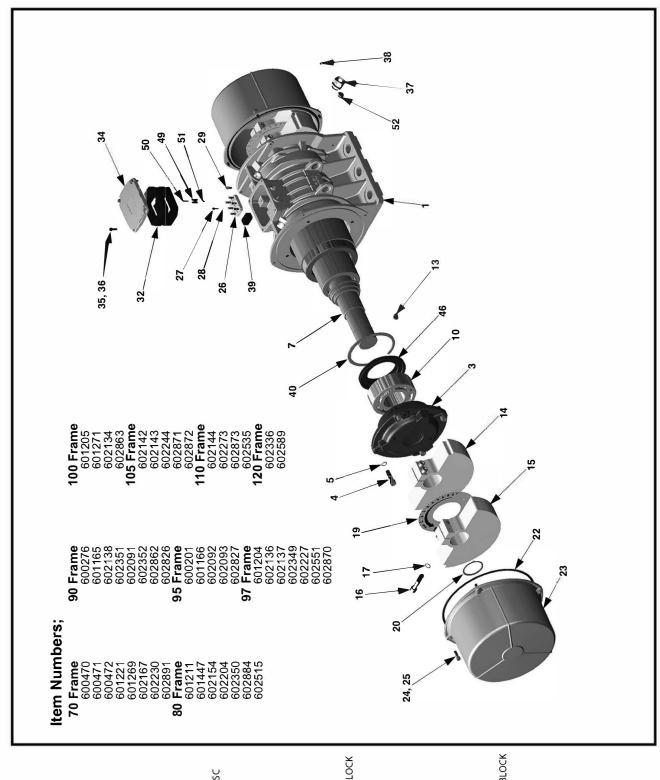
920	n			L	L						•	2
		د	a	ш	L	øe	No.	E	-	_	Σ	z
	6.02 (153)	4.92 (125)	2.44-2.84 (62-72)	4.17 (106)	0.94 (24)	0.35 (9)	4	2.40 (61)	1.83 (47)	4.06 (103)	3.94 (100)	4.61 (117)
	6.02 (153)	4.92 (125)	2.44-2.84 (62-72)	4.17 (106)	0.94 (24)	0.35 (9)	4	2.40 (61)	2.28 (58)	4.06 (103)	3.94 (100)	4.61 (117)
	7.05 (179)	5.98 (152)	3.54 (90)	4.92 (125)	1.10 (28)	0.51 (13)	4	2.87 (73)	3.03 (77)	5.00 (127)	5.04 (128)	5.55 (141)
	7.99 (203)	6.57 (167)	4.13 (105)	5.51 (140)	1.18 (30)	0.51 (13)	4	3.25 (83)	3.68 (94)	5.71 (145)	5.51 (140)	6.30 (160)
	8.27 (210)	8.07 (205)	4.72 (120)	6.69 (170)	1.77 (45)	0.67 (17)	4	3.60 (91)	3.46 (88)	6.61 (168)	6.30 (160)	6.93 (176)
	8.39 (213)	8.46 (215)	3.94 (100)	7.09 (180)	1.54 (39)	0.67 (17)	4	3.60 (91)	2.56 (65)	6.30 (160)	5.51 (140)	6.89 (175)
	9.17 (233)	8.07 (205)	4.72 (120)	6.69 (170)	2.13 (54)	0.67 (17)	4	4.11 (104)	4.63 (118)	7.36 (187)	6.38 (162)	7.99 (203)
	9.75 (248)	9.06 (230)	5.51 (140)	7.48 (190)	2.13 (54)	0.67 (17)	4	4.57 (116)	5.28 (134)	8.27 (210)	7.09 (180)	8.86 (225)
	9.69 (246)	9.06 (230)	5.51 (140)	7.48 (190)	2.13 (54)	0.67 (17)	4	4.57 (116)	6.61 (168)	8.27 (210)	7.09 (180)	8.86 (225)
	10.94 (278)	10.83 (275)	6.10 (155)	8.86 (225)	2.76 (70)	0.87 (22)	4	5.31 (135)	6.97 (177)	9.37 (238)	8.07 (205)	9.96 (253)
	12.64 (321)	12.20 (310)	6.10 (155)	10.04 (255)	3.03 (77)	0.93 (24)	4	6.18 (157)	7.01 (178)	10.91 (277)	8.46 (215)	11.61 (295)
80 28.74 (730)	13.66 (347)	13.39 (340)	7.09 (180)	11.02 (280)	3.15 (80)	1.02 (26)	4	6.50 (165)	7.87 (200)	12.01 (305)	9.45 (240)	12.60 (320)
90 29.13 (740)	14.57 (370)	15.35 (390)	7.87 (200)	12.60 (320)	3.78 (96)	1.10 (28)	4	7.56 (192)	9.45 (240)	12.99 (330)	10.63 (270)	13.78 (350)
95 34.25 (870)	15.55 (395)	15.43 (392)	7.87 (200)	12.60 (320)	4.13 (105)	1.10 (28)	4	7.56 (192)	10.04 (255)	13.98 (355)	10.63 (270)	14.76 (375)
97 39.45 (1002)	17.17 (436)	18.11 (460)	4.92 (125)	14.96 (380)	1.38 (35)	1.50 (38)	9	8.46 (215)	11.81 (300)	16.30 (414)	12.60 (320)	17.52 (445)
100 42.13 (1070)	17.87 (454)	20.87 (530)	5.51 (140)	17.32 (440)	1.50 (38)	1.73 (44)	9	9.06 (230)	11.02 (280)	17.64 (448)	14.57 (370)	18.39 (467)
105 44.09 (1120)	20.71 (526)	22.44 (570)	5.51 (140)	18.90 (480)	1.61 (41)	1.77 (45)	**8	10.55 (265)	11.02 (280)	19.49 (495)	20.08 (510)	20.31 (516)
110 45.28 (1150)	23.90 (607)	24.02 (610)	5.51 (140)	20.47 (520)	1.50 (38)	1.77 (45)	**8	11.69 (297)	11.71 (297)	21.34 (542)	21.85 (555)	22.91 (582)

*Dimensions given are maximum for e ach frame size and will vary depending on the rpm of the vibrator. **105 and 110 frame vibrators have 8 mounting holes (not pictured).





-SCHNORR WASHER -THERMISTOR TERMINAL BLOCK -GROUND SCREW
-SCHNORR WASHER
-GROUND LABEL
-RUBBER COMPRESSION BLOCK 8 -BRASS WASHER 9 -WEIGHT ADJUSTMENT DISC 0 -EXTERNAL SNAP RING 1 -SHAFT NUT 3 -GREAD FITTING/PLUG 9 -LEAD PROTECTOR 0 -INTERNAL SNAP RING 1 -SCHNORR WASHER 3 -SHFT KEY 4 -FIXED WEIGHT 5 -ADJUSTABLE WEIGHT -GREASE SEAL RING -SPLIT WEIGHT COVER 1 --CASE 2 --STATOR 3 --BEARING FLANGE 4 --SCREW 5 --SCHNORR WASHER 5 --ORING 1 -SCHNORR WASHER 5 -SCHNORR WASHER 1 -SPACER -SCREW
-WIRING BOX COVER -O-RING -WIRING BOX COVER -SCHNORR WASHER -SCREW -SCHNORR WASHER 8 --FLANGE ADAPTER 9 --SHAFT WASHER 10 -BEARING 11 -BEARING COVER -SCHNORR WASHER -TERMINAL BLOCK -SCHNORR WASHER -SCREW
-ADAPTER SCREW -BEARING COVER -SHAFT SEAL -WEIGHT SPACER Part# - - Description -WEIGHT COVER -CORD GRIP -SCREW -SCREW -SCREW --SHAFI



1 --CASE
2 --STATOR
3 --BEARING FLANGE
4 --SCRW
5 --SCHNORR WASHER
6 --O-RING
7 --SHAFT
8 --FIANGE ADAPTER
9 --SHAFT WASHER
11 --BEARING COVER
12 --SHAFT WASHER
13 --SHAFT SEAL
13 --SHAFT SEAL
14 -FIXED WEIGHT
15 --SHAFT SEAL
17 --SCRW
18 --SCRW
19 --WEIGHTADJUSTMENT DISC
20 -EXTERNAL SNAP RING
21 --SHAFT NUT
22 --O-RING
23 --WEIGHT COVER
24 --SCREW
25 --SCRW
26 --GROUND SCREW
27 --SCREW
28 --SCHNORR WASHER
29 --GROUND SCREW
29 --SCREW
31 --GROUND SCREW
20 --SCREW
31 --SCREW
31 --SCREW
32 --CHNORR WASHER
34 --WIRING BOX COVER
35 --SCREW
35 --SCREW
36 --SCRINORR WASHER
40 --INTERNAL SNAP RING
41 --SCREW
41 --SCREW
42 --SCREW
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48 --SCHNORR WASHER
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48 --SCHNORR WASHER
48 --SCHNORR WASHER
49 --THERMISTOR TERMINAL BLOCK
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Part# - -Description

Order Information

when ordering, please specify the following	j:
Vibrator Model	
Series	
Serial Number	
Voltage, frequency & number of phases	

1	CASE		RUBBER COMPRESSION BLOCK
2			O-RING
3	BEARING FLANGE	34	WIRING BOX COVER
4			SCREW
5	SCHNORR WASHER	36	SCHNORR WASHER
6	O-RING	37	CORD GRIP
7	SHAFT	38	GREASE FITTING/PLUG
8	FLANGE ADAPTER	39	LEAD PROTECTOR
9	SHAFT WASHER	40	INTERNAL SNAP RING
10	BEARING	41	SCHNORR WASHER
11	BEARING COVER	42	SHAFT SEAL
12	SHAFT SEAL	45	FAN
13	SHFT KEY	46	BEARING COVER
14	FIXED WEIGHT	47	SCREW
15	ADJUSTABLE WEIGHT	48	SCHNORR WASHER
16	SCREW	49	THERMISTOR TERMINAL BLOCK
17	SCHNORR WASHER	50	SCREW
18	BRASS WASHER	51	ADAPTER SCREW
19	WEIGHT ADJUSTMENT DISC	52	PLUG
20	EXTERNAL SNAP RING	53	SCREW
21	SHAFT NUT	54	SCHNORR WASHER
			SCHNORR WASHER
23	WEIGHT COVER	59	SPACER
24	SCREW	60	SCREW
25	SCHNORR WASHER	61	WIRING BOX COVER
26	TERMINAL BLOCK	64	SCREW
27	SCREW	66	GREASE SEAL RING
28	SCHNORR WASHER	67	SPLIT WEIGHT COVER
29	GROUND SCREW	71	SHAFT SEAL
			WEIGHT SPACER
31	GROUND LABEL		

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