

Installation, Operation and Maintenance Instructions



ERV
Electric
Rotary
Vibrators

ERIEZ MAGNETICS HEADQUARTERS: 2200 ASBURY ROAD, P.O. BOX 10608, ERIE, PA 16514-0608 U.S.A.
WORLD AUTHORITY IN ADVANCED TECHNOLOGY FOR MAGNETIC, VIBRATORY and METAL DETECTION APPLICATIONS

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ERIEZ ELECTRIC EXTERNAL MOTOVIBRATORS

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Scope and Importance of the Manual Description

The range of ERV vibrators is the result of 40 years of experience in the field of vibration with applications in the building and industrial sectors, both at national and international level. Care in the choice of components and high precision machining guarantee long life of the electric vibrator with extremely simple and minimum maintenance operations.

Scope and Importance of the Manual Description

This Manual, prepared by the manufacturer, is an integral part of the electric vibrator kit; it must therefore accompany the electric vibrator right up to its demolition and must be always available, ready at hand, for consultation by the operators concerned and the work-site manager. If the machine changes ownership, the Manual must be handed over to the new owner.

Before carrying out any operation with, or on the electric vibrator, the personnel concerned must have read this Manual carefully.

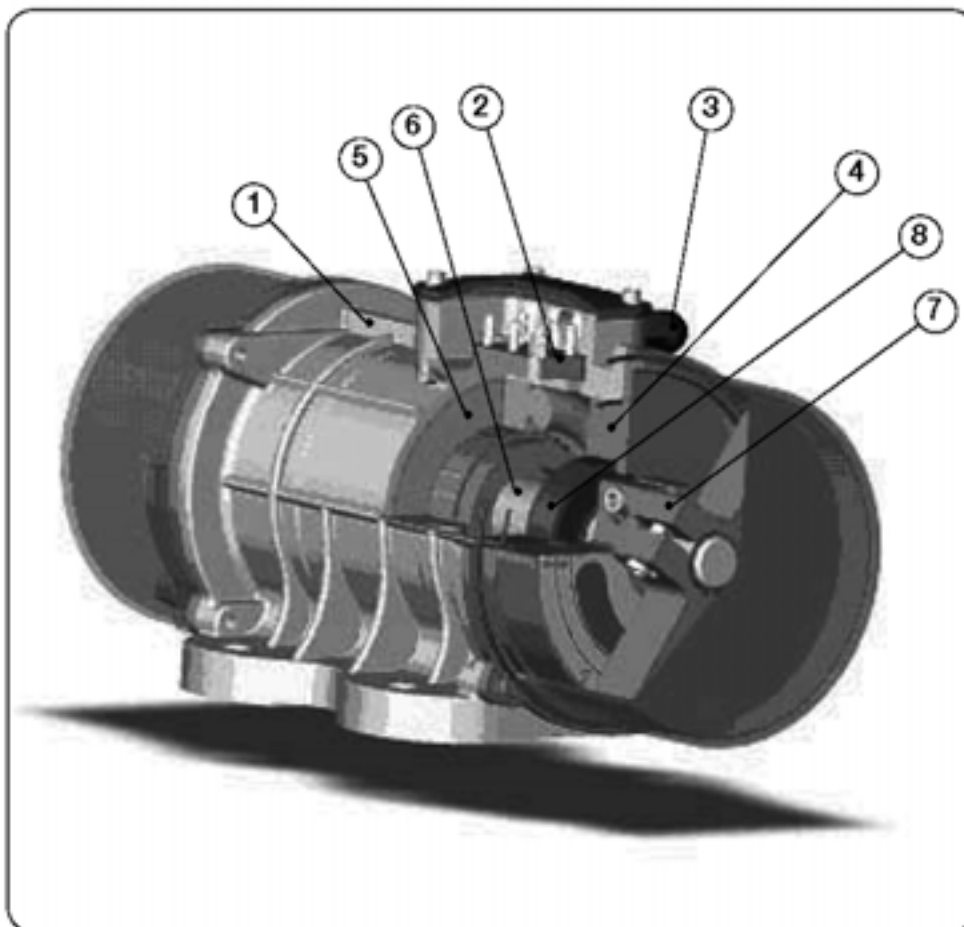
If the Manual is lost, damaged or illegible, contact Eriez for the latest update.

This Manual provides warnings and indications regarding the safety regulations for preventing accidents at the worksite.

In any case, the various operators must strictly follow the safety rules imposed on them by applicable regulatory standards.

Modifications, if any, to the safety regulations must be incorporated and implemented.

DESCRIPTION



| | |
|---|-----------------------|
| 1 | Vibrator body |
| 2 | Terminal |
| 3 | Cable gland |
| 4 | Bearing holder flange |
| 5 | Stator |
| 6 | Rotor shaft |
| 7 | Weights |
| 8 | Bearing |

- ERV electric vibrators are designed and constructed in accordance with the following applicable standards:
 - CEI EN 60034-1: 2000-10
 - EN 50281-1-1:1999
 - Conformity to Directive 94/9 CE
 - according to category 3D
- The general features of the ERV series of electric vibrators are listed below:
 - - Insulation Class F
 - - Standard tropicalization
 - - Protection IP 65
 - - Operating temperature: -4°F to 104°F (-20°C to + 40°C)

Indications for the Use

Connect the vibrator to the electric mains by means of cables having an operating temperature corresponding to that indicated on the electric vibrator rating plate. (212°F (100°C) up to size 50; 275°F (135°C) from size 60 to size 90).

ERV electric vibrators are supplied with cable glands conforming to Directive 94/9 CE according to category 3D; for replacement, use cable glands having the same characteristics.

The electric vibrator described in this Manual is designed and tested for use in potentially explosive zones classified as zone 22 according to standard EN 50281-3 and in accordance with ATEX Directive 94/9/CE.

The user must make sure that the workplace in which the electric vibrator is installed is set in safety condition from the point of view of risk of explosion.

In the order phase, it is necessary for the customer to specify the characteristics of the powders handled and the process temperature.

IMPORTANT: the ATEX version of the electric vibrator is designed for handling powders that do not release gases considered to be explosive during treatment.

FOLLOW THE INDICATIONS GIVEN ON THE RATING PLATE:

D = dust

To operate in safe conditions, check to **make sure the dusts handled have an ignition temperature at least 2/3 that of the surface temperature indicated on the electric vibrator rating plate (EN 50281-3).**

(The maximum temperatures indicated in this Manual and on the electric vibrator rating plate are calculated without taking into consideration the presence of layers of dust, if any, on the surface).

The electric vibrator must be installed with sufficient clearance around it to allow assembly/disassembly, cleaning and maintenance operations.

Warning

Before proceeding with installation of the electric vibrator, the plant technician/installer must check to make sure that the model received corresponds to that ordered (value on rating plate), and check it for faults and damage during transport.

Installation of the electric vibrator must be done in accordance with the instructions given in this Manual by the plant technician/installer who must carry out functional checks, adjustments and check the correct positioning.

Disassembly and assembly of parts of the electric vibrator must only be done for maintenance or cleaning and must be performed only by qualified operators authorized for these operations: the indications necessary for assembly/disassembly of certain parts of the electric vibrator are attached to the User Manual.

Before carrying out any operation on the electric vibrator, check to make sure it is in safe condition.

IMPORTANT: in this Manual we shall use the expression “setting the electric vibrator and the apparatus on which it is installed in safe condition” to indicate the following operations:

Before carrying out any maintenance operation, the machine must be set in safety condition, as it is hazardous to operate inside the junction box of the electric vibrator, so the electric supply must be disconnected by turning the main switch off.

It is forbidden to operate on the electric vibrator while the appliance on which it is installed (such as vibrating bin, screen, etc. ...) is operating. If the appliance is controlled from a main panel, the latter must be provided with a safety key to prevent accidental start up, and the key must be kept in the custody of the person responsible for maintenance operations.

The area around the electric vibrator must be well lighted (if necessary, the operators must be equipped with electric lamps suitable for zone 22 cat. II 3 D).

Before acting on the electric vibrator, carefully clean the layers of dust deposited on it using only a damp cloth, taking care to avoid throwing up dust clouds.

For carrying out any sort of operation on the electric vibrator (maintenance and cleaning), the operators must use the special personal protection devices necessary (PPD):

- Antistatic safety footwear (certified)
- Antistatic safety clothing (certified)
- Antistatic cut-proof gloves
- Safety masks
- Safety goggles

All the electrical equipment used for maintenance or cleaning on the outside of the electric vibrator must be ATEX certified cat. II 3 D for zone 22.

The maximum temperature value indicated on the rating plate is relative to measurements made in normal operating conditions.

There is a possibility of overheating caused by variation in the environmental temperature if the electric vibrator is installed in a closed or poorly ventilated place.

Always use genuine spare parts for replacement.

Make sure objects do not fall on or knock against the electric vibrator, damaging it.

THE ELECTRIC VIBRATOR MUST BE USED IN POTENTIALLY EXPLOSIVE ENVIRONMENTS (FOR ZONE 22 ACCORDING TO STANDARD EN50281-3 AND IN ACCORDANCE WITH ATEX DIRECTIVE 94/9 CE) BY MEANS OF INVERTER ONLY IF SPECIAL THERMISTORS ARE USED IN THE COILS WITH OPERATING TEMPERATURE EQUAL TO THAT SHOWN IN THE TABLE BELOW.

IF THE LIMIT VALUES ARE REACHED THE ELECTRIC VIBRATOR MUST BE STOPPED BY MEANS OF SPECIAL CONTROL INSTRUMENTS AND THE ACTION MUST BE OF THE “FAIL SAFE” TYPE (REDUNDANT).

THE APPLICATION OF THERMISTORS FOR THESE APPLICATIONS MUST BE COMPULSORILY REQUESTED AT THE TIME OF PLACING THE ORDER. THE APPLICATION OF THERMISTORS BY COMPANIES NOT ACCREDITED BY OLI SRL WILL FREE THE MANUFACTURER OF ALL LIABILITY.

| | Mains Application | Converter Application |
|-----------------------------|--|--|
| Ambient temperature range | -4°F to 104°F (-20°C to + 40°C) | |
| Maximum surface temperature | 212°F (100°C) from size 10 to size 50; 215°F (135°C) from size 60 to size 90 | |
| Shut of sensor temperature | | 212°F (100°C) from size 10 to 50 215°F (135°C) from size 60 to 90 |
| Maximum Current | 17A (50Hz); 18A (60Hz) | |
| Maximum Volage | 460V | 600V |
| Centrifugal force range | 8.8 Lbs to 28.600 Lbs (4 to 13000 Kg) | |

Warranty Conditions

Eriez acknowledges a warranty period of 12 months on our products, valid starting from the date of shipment.

The warranty is not applicable in the event of breakage and/or defects caused by incorrect installation or use, or incorrect maintenance or modifications made without the Manufacturer's authorization.

The warranty does not extend to parts subjected to normal use and to electrical parts.

In other words, the warranty and conformity to standards lapse if the electric vibrator:

- has been tampered with or modified;
- has been used incorrectly;
- has been used without respecting the limits indicated in this Manual and/or has been subjected to excessive mechanical stresses; has not been subjected to the necessary maintenance or the maintenance operations have been carried out only partly and/or incorrectly or by personnel who have NOT BEEN TRAINED CORRECTLY;

- has been damaged during transport, installation or use;
- has been fitted with spare parts that are not genuine;
- has been exposed to acid environment;
- has been exposed to potentially explosive areas other than the ones covered by the ATEX Standard, as stated on our label.

On receiving the goods, the consignee must check to make sure there are no defects and/or damage deriving from transport and/or the incompleteness of the supply.

Defects, damage or incompleteness must be immediately notified to the Manufacturer in writing and countersigned by the haulage contractor.

The products returned for repair during the warranty period must be shipped pre-paid to our factory.

Storage

1) STORAGE BEFORE INSTALLATION

- Avoid damp, salty environments, if possible.
- Place the electric vibrator on wooden pallets, protected from unfavourable weather conditions (do not stack).
- Do not store the appliance in the open or in areas in the presence of vapours or substances incompatible with the material of which the electric vibrator is made (even weakly corrosive substances).
- Avoid storage in temperatures below -4°F (-20°C).

2) PROLONGED MACHINE SHUTDOWNS AFTER ASSEMBLY

- Before starting operations with the electric vibrator, set it in safety condition.
- Before starting operations with the electric vibrator, check the condition of parts for which prolonged shutdowns can affect the working.

3) POSSIBLE REUSE AFTER SHUTDOWN

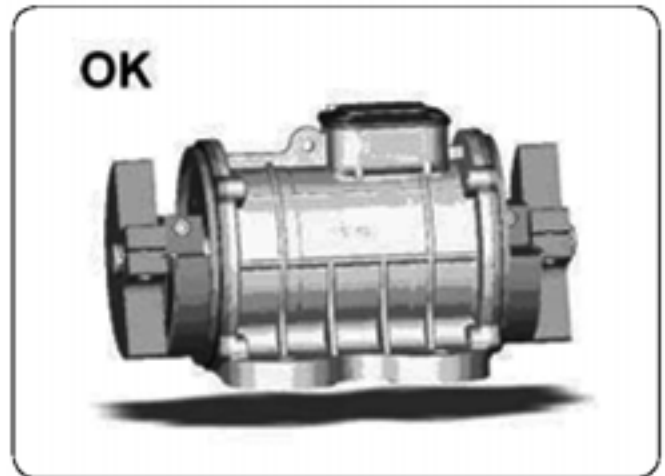
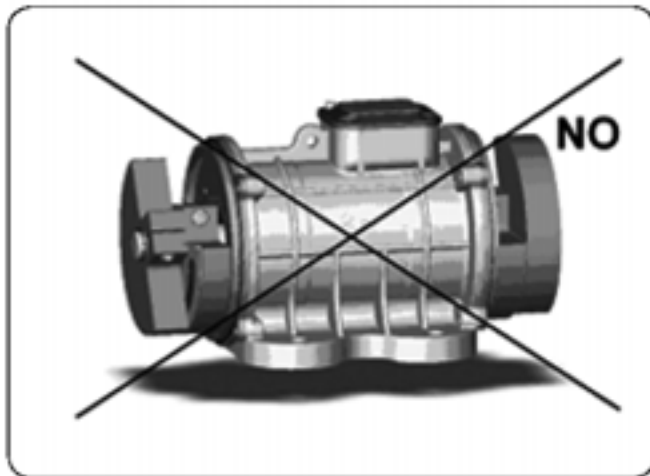
- Avoid damp, salty environments during machine shutdowns.
- Place the electric vibrator on wooden pallets, protected from unfavourable weather conditions.
- Do not store the appliance in the open or in areas in the presence of vapours or substances incompatible with the material of which the electric vibrator is made (even weakly corrosive substances).
- Before starting operations with the electric vibrator, set it in safety condition.
- Before starting operations with the electric vibrator, check the condition of parts for which prolonged shutdowns can affect the working.
- Before starting operations with the electric vibrator, clean it thoroughly according to the safety chart of the powder handled by the plant.
- If the electric vibrator is used in conditions and with materials different from the previous application, check the compatibility of this use with the indications given in the INDICATIONS FOR USE section.

Adjusting the Intensity of Vibrations

This operation must be performed exclusively by qualified personnel, after disconnecting the power supply.

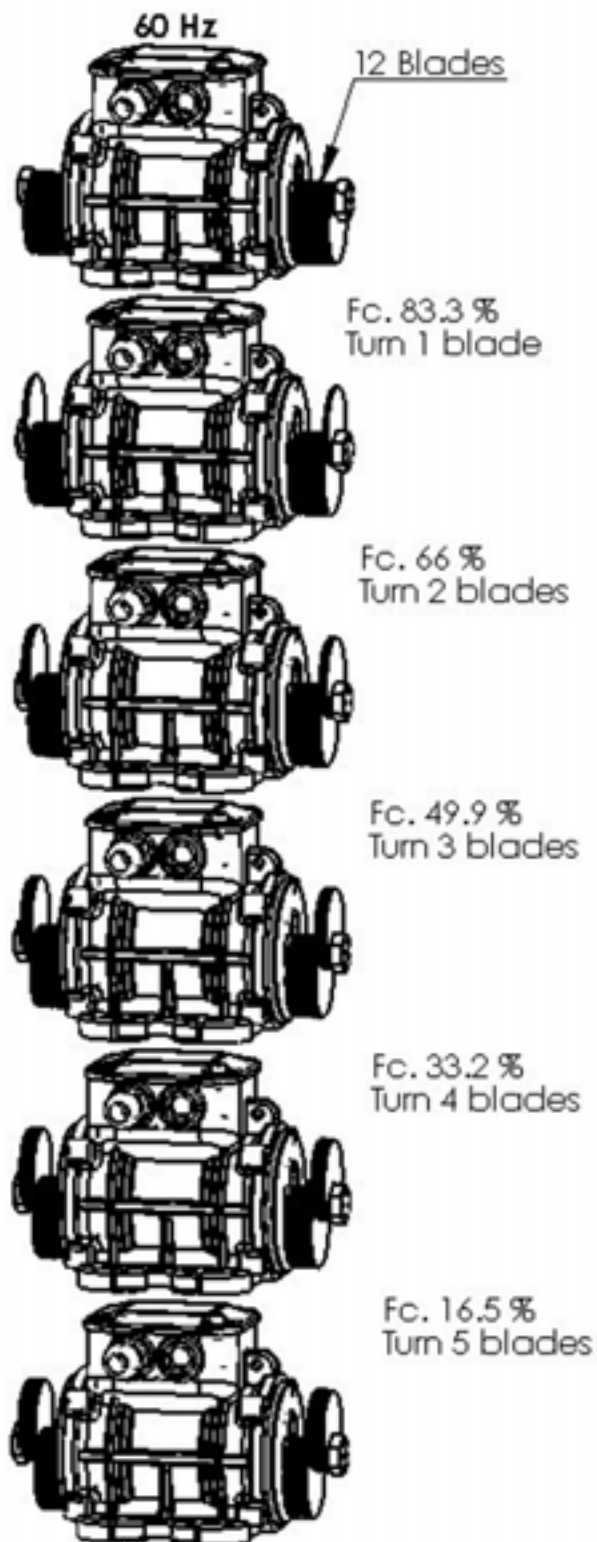
- Remove the side covers
- Unscrew the screws used for locking the movable weight (for Size 10 unscrew the locking nut on the shaft)
- Bring the eccentric weights to the required value (for Size 10 turn the number of weights required) as indicated in the following drawings

- It is necessary to make sure the weights are adjusted in the same direction at both ends
- Once the weights are brought to the required value, lock the screws using the dynamometric wrench (lock nut for Size 10)
- After carrying out the operation on both sides, refit the covers using the same screws and washers taking care to make sure the gaskets are fitted correctly in their seats.

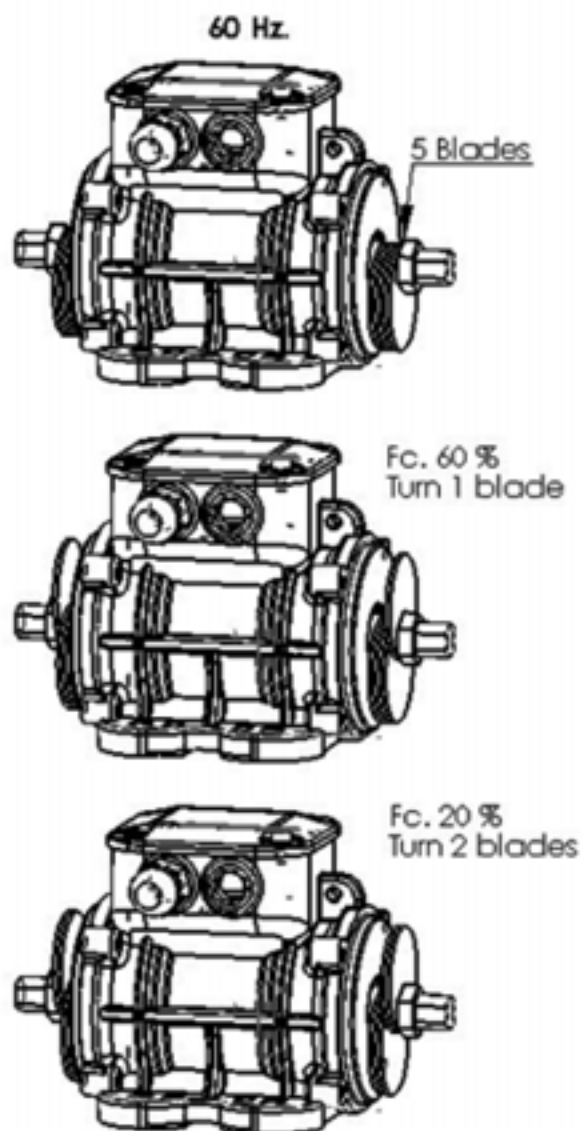


Adjusting the Intensity of Vibrations

ERV 70/4



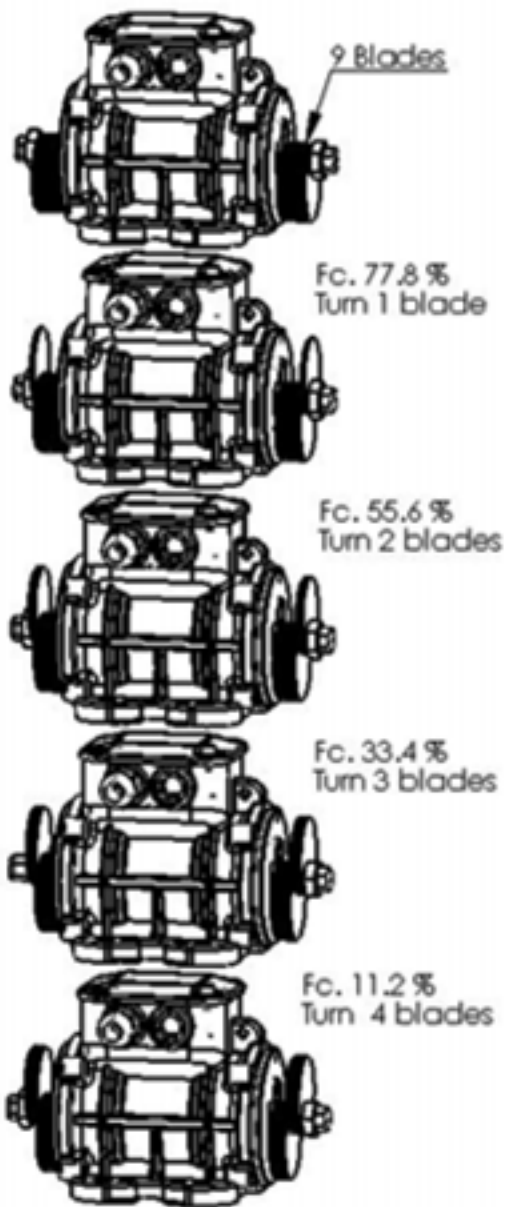
ERV 160/2



Adjusting the Intensity of Vibrations

ERV 220/2

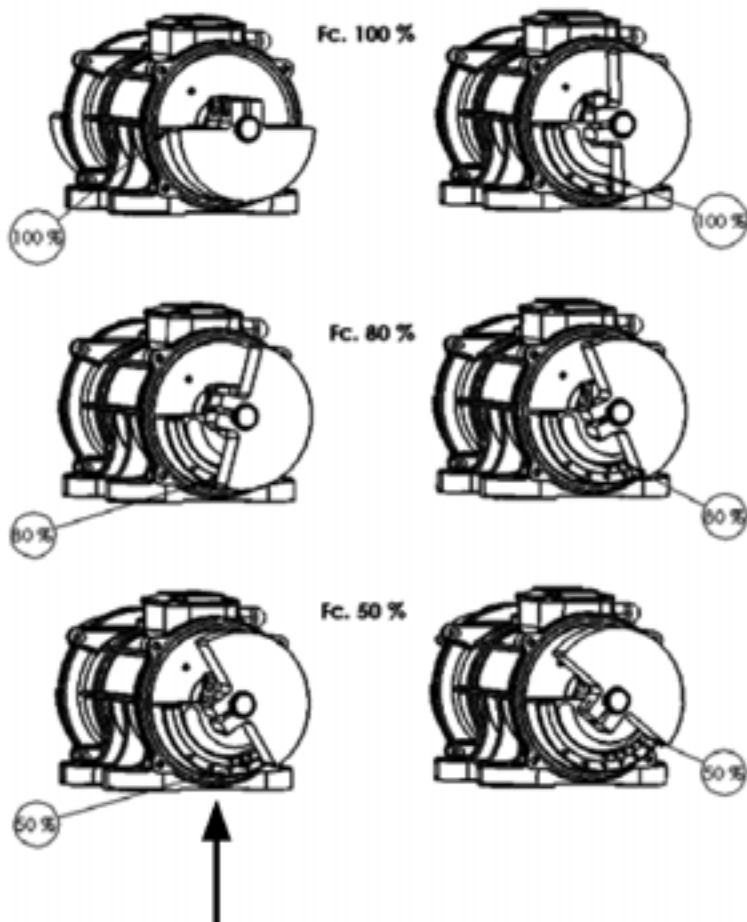
60 Hz.



ERV SIZE 20-50

50 Hz

60 Hz



Valid also for adjusting intensity of vibration size 60 .. 90 at 50/60 Hz.

2 POLE

3600 rpm 230/460 V 60Hz Three phase

| Type | Size | ELECTRICAL DATA | | | | | | | Power Input | | Mounting bolts | |
|----------------------|------|-----------------|---------------|---------|------|-------------------|-------------------|------------|-------------|-----------|----------------|-----------------|
| | | Max Power Hp | Max current A | | RPM | Working(*) Moment | Centrifugal Force | Weight lbs | conduit | Cord grip | screw | Clamping torque |
| | | | 230V(□) | 460V(Y) | | in*lbs | lbs | | type | size | | |
| 230/460 V -60 Hz 3PH | | | | | | | | | | | | |
| ERV 160/2 | 10 | 0,11 | 0,36 | 0,18 | 3600 | 0,71 | 131 | 9,26 | 18-4c | M16 | M8 : 5/16" | 16,5 |
| ERV 220/2 | | 0,13 | 0,36 | 0,18 | 3600 | 1,31 | 243 | 10,14 | 18-4c | | M6 : 1/4" | 6,5 |
| ERV 440/2 | 20 | 0,24 | 0,70 | 0,35 | 3600 | 2,26 | 417 | 15,43 | 18-4c | M16 | M8 : 5/16" | 16,5 |
| ERV 690/2 | | 0,36 | 0,90 | 0,45 | 3600 | 3,86 | 712 | 21,61 | 16-4c | | M10 : 3/8" | 33 |
| ERV 890/2 | 30 | 0,40 | 1,20 | 0,60 | 3600 | 4,91 | 907 | 22,71 | 16-4c | M16 | M12 : 1/2" | 58 |
| ERV 1200/2 | | 0,67 | 1,94 | 0,97 | 3600 | 6,38 | 1179 | 34,83 | 16-4c | | M10 : 3/8" | 33 |
| ERV 1700/2 | 40 | 0,89 | 2,48 | 1,24 | 3600 | 9,14 | 1688 | 36,38 | 16-4c | M20 | M12 : 1/2" | 58 |
| ERV 1800/2 | | 1,01 | 3,00 | 1,50 | 3600 | 9,57 | 1766 | 45,42 | | | | |
| ERV 2300/2 | 50 | 1,27 | 3,90 | 1,95 | 3600 | 12,11 | 2236 | 47,62 | 16-4c | M20 | M16 : 5/8" | 137 |
| ERV 3100/2 | | 1,74 | 4,50 | 2,25 | 3600 | 16,31 | 3012 | 48,50 | | | | |
| ERV 3500/2 | 60 | 2,11 | 5,22 | 2,61 | 3600 | 19,22 | 3548 | 112,88 | 14-4c | M25 | M16 : 5/8" | 137 |
| ERV 4100/2 | | 2,68 | 6,84 | 3,42 | 3600 | 23,88 | 4408 | 114,64 | | | | |
| ERV 5100/2 | 75 | 3,22 | 7,88 | 3,94 | 3600 | 27,57 | 5090 | 113,76 | 12-4c | M32 | M24 : 15/16" | 513 |
| ERV 7600/2 | | 3,89 | 9,22 | 4,61 | 3600 | 37,97 | 7009 | 223,55 | | | | |
| ERV 8900/2 | 85 | 3,89 | 9,22 | 4,61 | 3600 | 48,43 | 8941 | 228,84 | 12-4c | M32 | M24 : 15/16" | 513 |
| ERV 11500/2 | | 5,36 | 12,56 | 6,28 | 3600 | 60,35 | 11141 | 233,25 | | | | |
| 460/796 V -60 Hz 3PH | | Hp | 460V(□) | 796V(Y) | | in*lbs | lbs | lbs | | | | |
| ERV 14400/2 | 85 | 7,38 | 8,00 | 4,62 | 3600 | 78,32 | 14459 | 506,19 | 12-4c | M32 | M27 : 1" | 645 |
| ERV 20100/2 | | 13,41 | 18,00 | 10,40 | 3600 | 112,07 | 20689 | 517,43 | | | | |

4 POLE

1800 rpm 230V/460V 60Hz Three phase

| Type | Size | ELECTRICAL DATA | | | | | | | | Power Input | | Mounting bolts | |
|----------------------|------|-----------------|---------------|---------|------|-------------------|-------------------|----------------|--------|-------------|-----------|----------------|-----------------|
| | | Max Power Hp | Max current A | | RPM | Working(*) Moment | Centrifugal Force | Weight | Weight | conduit | Cord grip | screw | Clamping torque |
| | | | 230V(□) | 460V(Y) | | in*lbs | lbs | kg | lbs | | | | |
| | | | | | | type | size | metric:english | ft.lb | | | | |
| 230/460 V -60 Hz 3PH | | | | | | | | | | | | | |
| ERV 70/4 | 10 | 0,05 | 0,62 | 0,31 | 1800 | 1,72 | 79 | 4,6 | 10,14 | 18-4c | M16 | M8 : 5/16" | 16,5 |
| ERV 200/4 | 20 | 0,12 | 0,50 | 0,25 | 1800 | 3,63 | 168 | 7,4 | 16,31 | 18-4c | M16 | M8 : 5/16" | 16,5 |
| ERV 400/4 | 30 | 0,21 | 1,00 | 0,50 | 1800 | 9,37 | 432 | 11,8 | 26,01 | 16-4c | M16 | M10 : 3/8" | 33 |
| | | | | | | | | | | | | M12 : 1/2" | 58 |
| | | | | | | | | | | | | M10 : 3/8" | 33 |
| | | | | | | | | | | | | M10 : 3/8" | 33 |
| ERV 860/4 | 40 | 0,40 | 1,72 | 0,86 | 1800 | 20,22 | 933 | 19,5 | 42,99 | 16-4c | M20 | M12 : 1/2" | 58 |
| ERV 1150/4 | | 0,47 | 2,18 | 1,09 | 1800 | 24,29 | 1121 | 21,0 | 46,30 | | | | |
| ERV 1530/4 | 50 | 0,83 | 2,82 | 1,41 | 1800 | 34,05 | 1571 | 27,4 | 60,41 | 16-4c | M20 | M16 : 5/8" | 137 |
| ERV 2300/4 | | 0,87 | 3,40 | 1,70 | 1800 | 53,65 | 2476 | 35,8 | 78,93 | 16-4c | M20 | M16 : 5/8" | 137 |
| ERV 3100/4 | 60 | 1,21 | 3,56 | 1,78 | 1800 | 66,37 | 3063 | 58,2 | 128,31 | 14-4c | M25 | M16 : 5/8" | 137 |
| ERV 3880/4 | | 1,54 | 4,18 | 2,09 | 1800 | 79,57 | 3672 | 59,4 | 130,96 | | | | |
| ERV 5340/4 | | 2,15 | 6,40 | 3,20 | 1800 | 118,82 | 5484 | 62,0 | 136,69 | | | | |
| ERV 5700/4 | 70 | 2,41 | 6,80 | 3,40 | 1800 | 117,34 | 5416 | 84,0 | 185,19 | 14-4c | M25 | M20:13/16" | 275 |
| ERV 6840/4 | | 2,55 | 7,60 | 3,80 | 1800 | 146,84 | 6777 | 87,0 | 191,80 | | | | |
| ERV 8400/4 | 75 | 2,95 | 8,30 | 4,15 | 1800 | 177,11 | 8174 | 118,4 | 261,03 | 12-4c | M32 | M22 : 7/8" | 411 |
| ERV 9480/4 | | 3,35 | 11,60 | 5,80 | 1800 | 208,43 | 9620 | 123,6 | 272,49 | | | | |
| ERV 12260/4 | 80 | 4,83 | 13,20 | 6,60 | 1800 | 262,75 | 12127 | 190,0 | 418,88 | 12-4c | M32 | M24:5/16" | 513 |
| 460/796 V -60 Hz 3PH | | | | | | | | | | | | | |
| | | Hp | 460V(□) | 796V(Y) | | in*lbs | lbs | kg | lbs | | | | |
| ERV 15850/4 | 85 | 6,71 | 9,41 | 5,44 | 1800 | 343,70 | 15863 | 246,6 | 543,66 | 12-4c | M32 | M27 : 1" | 645 |
| ERV 19800/4 | | 10,06 | 12,00 | 6,94 | 1800 | 431,45 | 19913 | 257,8 | 568,36 | | | | |
| ERV 21000/4 | 90 | 10,46 | 13,00 | 7,51 | 1800 | 508,91 | 23488 | 297,4 | 655,66 | 12-4c | M32 | M36 : 13/8" | 1370 |

(*) Dynamic Working moment = static moment x 2

Note: for category 3 electrical appliances used in powder/air explosive atmospheres, it is the user's responsibility to take into consideration the fact that all surfaces that can come into contact with dust clouds must not, in normal operation, be more than two thirds the minimum ignition temperature in °C of the dust cloud.

The maximum surface temperatures indicated in this Manual and on the electric vibrator rating plates have been calculated without taking into consideration the layer of dust deposited on the surfaces.

6 POLE

1200 rpm 230V/460V 60Hz Three phase

| Type | Size | ELECTRICAL DATA | | | | | | | | Power Input | | Mounting bolts | | |
|----------------------|------|-----------------|---------------|---------|------|-------------------|-------------------|--------|--------|--------------|----------------|----------------|-----------------|----------------|
| | | Max Power Hp | Max current A | | RPM | Working(*) Moment | Centrifugal Force | Weight | Weight | conduit type | Cord grip size | screw | Clamping torque | |
| | | | 230V(□) | 460V(Y) | | In*lbs | lbs | kg | lbs | | | | | metric:english |
| 230A60 V -60 Hz 3PH | | | | | | | | | | | | | | |
| ERV 90/6 | 30 | 0,16 | 0,80 | 0,40 | 1200 | 5,70 | 117 | 10,4 | 22,93 | 16-4c | M16 | M10 : 3/8" | 33 | |
| ERV 220/6 | | 0,16 | 0,80 | 0,40 | 1200 | 11,40 | 234 | 12,2 | 26,90 | | | M12 : 1/2" | 58 | |
| ERV 410/6 | 40 | 0,24 | 1,02 | 0,51 | 1200 | 20,22 | 415 | 19,6 | 43,21 | | | M20 | M12 : 1/2" | 58 |
| ERV 680/6 | 50 | 0,47 | 1,28 | 0,64 | 1200 | 28,94 | 594 | 26,6 | 58,64 | | | 16-4c | M20 | M16 : 5/8" |
| ERV 1100/6 | | 0,47 | 2,30 | 1,15 | 1200 | 51,53 | 1057 | 34,0 | 74,96 | | | | | |
| ERV 1730/6 | 60 | 0,91 | 2,52 | 1,26 | 1200 | 93,93 | 1927 | 59,4 | 130,96 | 14-4c | M25 | M16 : 5/8" | 137 | |
| ERV 2350/6 | | 1,01 | 2,64 | 1,32 | 1200 | 118,78 | 2436 | 73,0 | 160,94 | | | | | |
| ERV 3090/6 | 70 | 1,48 | 4,00 | 2,00 | 1200 | 169,99 | 3487 | 76,5 | 168,65 | 14-4c | M32 | M20:13/16" | 275 | |
| ERV 3580/6 | | 1,48 | 6,44 | 3,22 | 1200 | 176,01 | 3610 | 89,0 | 196,21 | | | | | |
| ERV 4740/6 | 75 | 2,01 | 6,00 | 3,00 | 1200 | 215,17 | 4414 | 100,5 | 221,57 | 12-4c | M32 | M22 : 7/8" | 411 | |
| ERV 5690/6 | | 2,63 | 6,76 | 3,38 | 1200 | 265,31 | 5442 | 131,5 | 289,91 | | | | | |
| ERV 6620/6 | 80 | 2,95 | 8,60 | 4,30 | 1200 | 328,47 | 6738 | 137,8 | 303,80 | 12-4c | M32 | M24 : 5/16" | 513 | |
| ERV 8450/6 | | 3,35 | 9,76 | 4,88 | 1200 | 378,38 | 7761 | 194,8 | 429,46 | | | | | |
| ERV 10370/6 | 85 | 4,29 | 12,00 | 6,00 | 1200 | 505,34 | 10366 | 212,4 | 468,27 | 12-4c | M32 | M27 : 1" | 645 | |
| ERV 11500/6 | | 5,10 | 12,72 | 6,36 | 1200 | 566,24 | 11615 | 264,2 | 582,47 | | | | | |
| ERV 14360/6 | 85 | 5,77 | 15,62 | 7,81 | 1200 | 712,77 | 14621 | 280,7 | 618,84 | | | | | |
| 460/796 V -60 Hz 3PH | | Hp | 460V(□) | 796V(Y) | | In*lbs | lbs | kg | lbs | | | | | |
| ERV 17750/6 | 85 | 9,52 | 11,60 | 6,71 | 1200 | 804,33 | 16499 | 290,0 | 639,35 | 12-4c | M32 | M27 : 1" | 645 | |
| ERV 19120/6 | | 10,06 | 12,60 | 7,28 | 1200 | 1007,98 | 20676 | 307,6 | 678,15 | | | | | |
| ERV 21400/6 | 90 | 10,19 | 12,70 | 7,34 | 1200 | 1072,65 | 22002 | 359,3 | 792,13 | 12-4c | M32 | M36 : 3/8" | 1370 | |
| ERV 28660/6 | | 13,41 | 16,00 | 9,25 | 1200 | 1425,10 | 29232 | 375,6 | 828,06 | | | | | |

(*) Dynamic Working moment = static moment x 2

Note: for category 3 electrical appliances used in powder/air explosive atmospheres, it is the user's responsibility to take in to consideration the fact that all surfaces that can come into contact with dust clouds must not, in normal operation, be more than two thirds the minimum ignition temperature in °C of the dust cloud.

The maximum surface temperatures indicated in this Manual and on the electric vibrator rating plates have been calculated without taking into consideration the layer of dust deposited on the surfaces.

8 POLE

900 rpm 230V/460V 60Hz Three phase

| Type | Size | ELECTRICAL DATA | | | | | | | | Power input | | Mounting bolts | |
|----------------------|------|-----------------|----------------------|---------|-----|-------------------|-------------------|--------|--------|-------------|-----------|----------------|-----------------|
| | | Max Power Hp | Max current A | | RPM | Working(*) Moment | Centrifugal Force | Weight | Weight | conduit | Cord grip | screw | Clamping torque |
| | | | | | | | | | | | | | |
| | | | 230/460 V -60 Hz 3PH | | | | | | | | | | |
| ERV 330/8 | 40 | 0,31 | 2,28 | 1,14 | 900 | 28,88 | 333 | 21,4 | 47,18 | 16-4c | M20 | M12:1/2" | 58 |
| ERV 550/8 | 50 | 0,47 | 2,30 | 1,15 | 900 | 49,54 | 572 | 29,5 | 65,04 | 16-4c | M20 | M16:5/8" | 137 |
| ERV 880/8 | | 0,47 | 2,30 | 1,15 | 900 | 72,68 | 839 | 35,0 | 77,16 | | | | |
| ERV 1430/8 | 60 | 0,67 | 2,40 | 1,20 | 900 | 118,78 | 1371 | 64,7 | 142,64 | 14-4c | M25 | M16:5/8" | 137 |
| ERV 2000/8 | | 0,87 | 2,58 | 1,29 | 900 | 162,39 | 1874 | 71,0 | 156,53 | | | | |
| ERV 2900/8 | 70 | 1,34 | 3,66 | 1,83 | 900 | 259,17 | 2990 | 99,8 | 220,02 | 14-4c | M25 | M20:13/16" | 275 |
| ERV 4620/8 | 75 | 2,01 | 5,78 | 2,89 | 900 | 404,33 | 4665 | 150,4 | 331,58 | 12-4c | M32 | M22:7/8" | 411 |
| ERV 6820/8 | 80 | 2,88 | 7,54 | 3,77 | 900 | 588,53 | 6791 | 212,2 | 467,82 | 12-4c | M32 | M24:5/16" | 513 |
| ERV 8360/8 | | 3,35 | 12,00 | 6,00 | 900 | 725,29 | 8368 | 230,2 | 507,51 | | | | |
| ERV 9240/8 | 85 | 3,89 | 13,00 | 6,50 | 900 | 804,27 | 9280 | 284,5 | 627,22 | 12-4c | M32 | M27:1" | 645 |
| ERV 11660/8 | | 5,36 | 16,00 | 8,00 | 900 | 1007,98 | 11630 | 305,0 | 672,42 | | | | |
| ERV 14300/8 | | 6,71 | 20,00 | 10,00 | 900 | 1242,08 | 14331 | 324,4 | 715,19 | | | | |
| 460/796 V -60 Hz 3PH | | Hp | 460V(□) | 796V(Y) | | in*lbs | lbs | kg | lbs | | | | |
| ERV 22000/8 | 90 | 9,12 | 12,50 | 7,23 | 900 | 1903,49 | 21963 | 422,2 | 930,80 | 12-4c | M32 | M36:13/8" | 1370 |

(*) Dynamic Working moment = static moment x 2

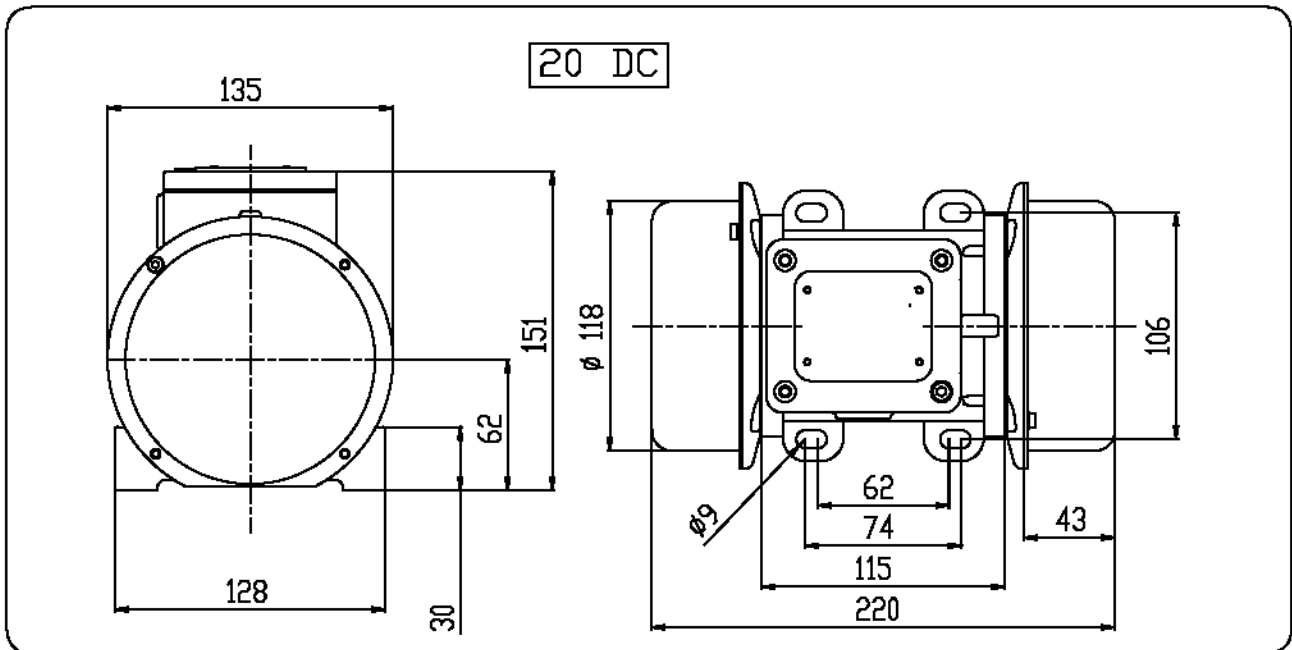
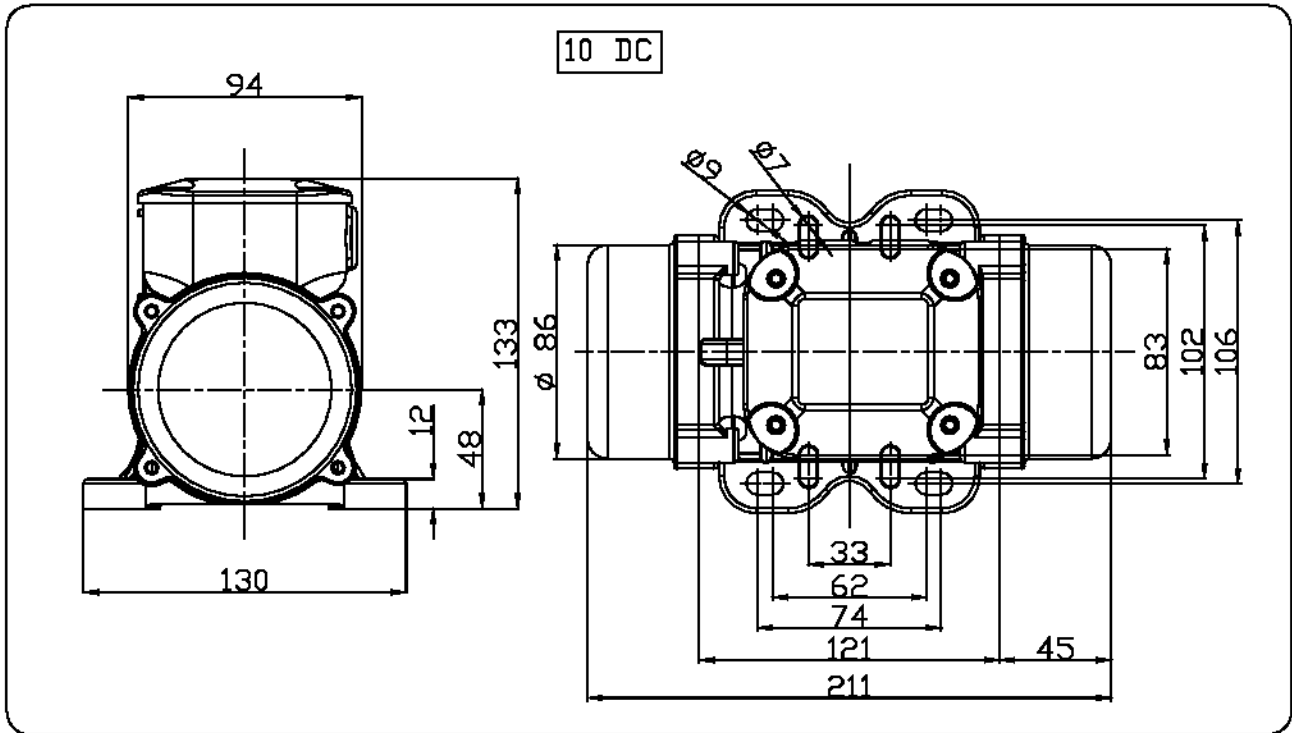
Note: for category 3 electrical appliances used in powder/air explosive atmospheres, it is the user's responsibility to take in to consideration the fact that all surfaces that can come into contact with dust clouds must not, in normal operation, be more than two thirds the minimum ignition temperature in °C of the dust cloud.

The maximum surface temperatures indicated in this Manual and on the electric vibrator rating plates have been calculated without taking into consideration the layer of dust deposited on the surfaces.

MICRO

| Type | Drawing | TECHNICAL CHARACTERISTICS | | | | | | | |
|----------|---------|---------------------------|-------------------|-------|-------------|----------------|--------|------------|----------------|
| | | Working moment | Centrifugal force | Power | Max current | | Weight | Screw | Clamping force |
| | | | | | 1ph | 3ph | | | |
| | | | | | 115V | 460V | | | |
| 60Hz | 60Hz | 60Hz | 60Hz | 60Hz | lbs | metric:english | ft*lb | | |
| ERV 4 M | MICRO | 0,10 | 13,2 | 0,036 | 0,60 A | | 3,09 | M5 : 3/16" | 4 |
| ERV 20 M | | 0,34 | 70,5 | 0,072 | 0,23 A | | 3,31 | M5 : 3/16" | 4 |
| ERV 40 M | | 0,47 | 88,2 | 0,126 | 0,80 A | | 3,75 | M5 : 3/16" | 4 |
| ERV 20 | | 0,34 | 70,5 | 0,072 | | 0,12 A | 3,31 | M5 : 3/16" | 4 |
| ERV 40 | | 0,47 | 88,2 | 0,126 | | 0,25 A | 3,75 | M5 : 3/16" | 4 |

ERV DC



| TECHNICAL CHARACTERISTICS | | | | | | | | | | |
|---------------------------|---------------|-----------------------|-----------------------|------|----------------|---------------|----------|------------|----------------------|------------------------|
| Drawing | Type | Centrifugal force lbs | Working moment in*lbs | RPM | Power supply V | Max current A | Power Hp | Weight lbs | Screw metric:english | Clamping torque ft*lbs |
| 20 DC | ERV 200 DC 24 | 412 | 4.172 | 3000 | 24 | 2 | 0.21 | 14.3 | M8 : 5/16" | 15.5 |
| 20 DC | ERV 200 DC 12 | 412 | 4.172 | 3000 | 12 | 4 | 0.21 | 14.3 | M8 : 5/16" | 15.5 |
| 10 DC | ERV 50 DC 24 | 110 | 1.412 | 3000 | 24 | 1 | 0.032 | 9.7 | M6-M8:1/4"-5/16" | 6.5 - 16.5 |
| 10 DC | ERV 50 DC 12 | 110 | 1.612 | 3000 | 12 | 2 | 0.032 | 9.7 | M6-M8:1/4"-5/16" | 6.5 - 16.8 |

Installation

The user must make sure the plant in which the electric vibrator is installed is set in safe condition from the point of view of risk of explosion before it is started up and that the "document on protection against explosions" is also prepared, as required by ATEX Directive 99/92/CE.

The machine does not require special lighting; the machine installer is however required to make sure there is uniform lighting in the area according to the relevant standards.

The Electric Vibrator Must Be Installed Exclusively By Specialist Personnel.

- Before installation, especially if the apparatus has remained for long in the warehouse (exceeding 24 months), remove one of the side covers from the weights and check to make sure the shaft turns freely.

- Also check the motor isolation, using a "Rigidity Test", at a voltage of approx. 2



Fig. 1

- kV for a maximum time of 5 seconds between phases and 10 seconds between phase and earth. (fig. 1)
- In the event of faults, contact the manufacturer.
- The ERV electric vibrator can be installed in any position.
- Fix the electric vibrator on a rigid area to avoid induced vibrations causing breakage or cracks; if this is not possible, use plates and ribbing for reinforcement.
- Cutting and welding procedures must be carried out by qualified personnel.
- Suitable Hot- Works, (like cutting, welding...) and LOTO lockout/tagout: procedure for disconnecting the machine (electrical and mechanical segregation), must be applied for safe installation of the electric vibrator. Authorization for Hot works MUST be given by specialist trained personnel familiar with the risk of explosion of powders (capable of checking residual risk, the suitability of tools and familiarity with the procedures).
- The fixing surface must be level so that the vibrator feet rest uniformly and perfectly in contact with the fixing surface, to avoid internal stresses which can lead to breakage of the vibrator feet (fig.2 - 3).



Fig. 2

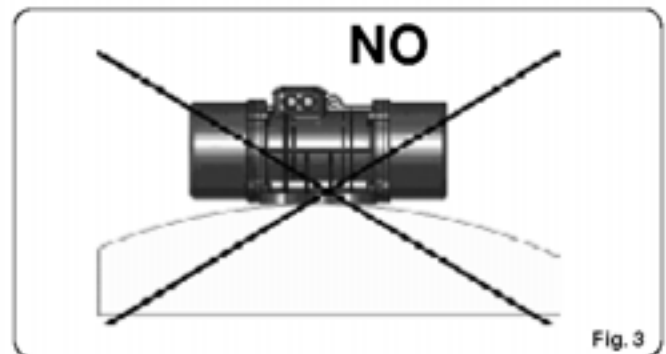


Fig. 3

- To fix the electric vibrator, use (quality 8.8) DIN 931 or DIN 933 bolts and (quality 8.8) DIN 934 nuts.
- Use a dynamometric wrench adjusted according to the indications in the Table on page. M12.
- Remember that most faults and breakdowns are due to incorrect fixing and locking.
- Anchor the electric vibrator using a chain having a length and cross section suitable for supporting the electric vibrator with a maximum fall of 15 cm (6 inches), in case of accidental detachment. (fig.4)

Before start up and after the first 24 hours of operation check:

- the electric vibrator fixing bolts and the welding of the reinforcing plates and ribbing;
- the anchoring cable or chain;
- the power cable;



Fig. 4

The Electrical Connections Must Be Made Exclusively by Qualified Personnel, with the Power Supply Disconnected. Earthing is Compulsory.

The power supply mains and connection of the electric vibrators must be in conformity to the safety standards established by the competent authorities of the place in which the operations are carried out.

Check to make sure the mains voltage is the same as that indicated on the electric vibrator rating plate.

Disconnect the line before carrying out maintenance or while adjusting the weights. For single phase electric vibrators, wait for at least one minute before opening the junction box to allow the condenser to discharge. All repairs or replacement of components must be carried out exclusively by specialist personnel.

For single phase electric vibrators, it is necessary to check the condenser to make sure it corresponds to that indicated on the rating plate; connection for the condenser must be provided in a safe or unclassified

zone; if this is not possible, make sure the condenser conforms to Directive 94/9/CE according to category II3D. (Always check to make sure the condenser enclosure bears the II3D marking).

Use a flexible power cable with 4 wires, one of which is yellow-green (green only for the U.S.A.) used for earthing. While connecting the electric vibrator to the line, the yellow-green earth wire must always be longer to prevent it breaking first, in the event of yielding.

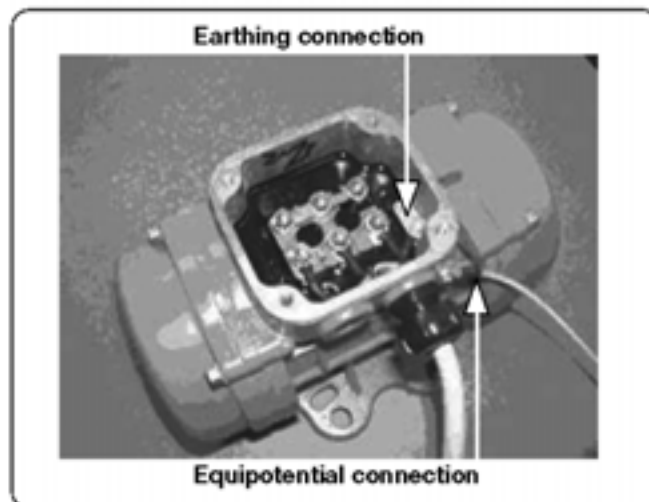
The elements for the earth connection or for equipotential connection of the weights must allow effective connection of at least one wire having cross section as indicated in the Table below.

For replacing cable glands, the new cable gland used **MUST** conform to ATEX Directive II3 G/D

MINIMUM CROSS-SECTION OF SAFETY WIRES

| Transverse cross-section area of installation phase wires S lach. | Transverse cross-section area of corresponding safety wire S mm ² |
|--|---|
| S ≤ 0.63 | S |
| 0.63 < S ≤ 1.38 | 16 |
| S > 1.38 | 0.5S |

Apart from respecting these prescriptions, the connecting elements for earthing or equipotential connection of the weights on the outside of the electrical structure must allow for effective connection of a wire at least 4 mm².

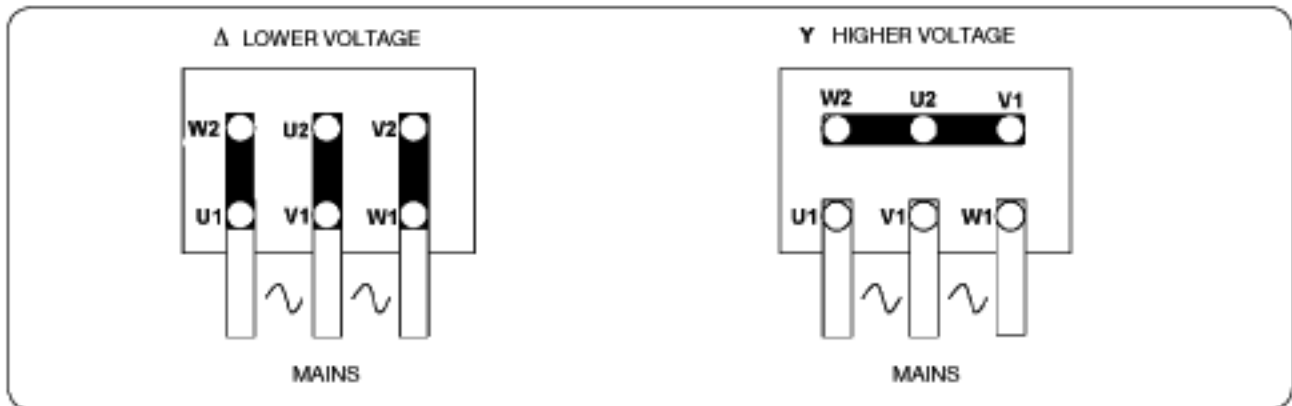


Terminal board nut tightening torque

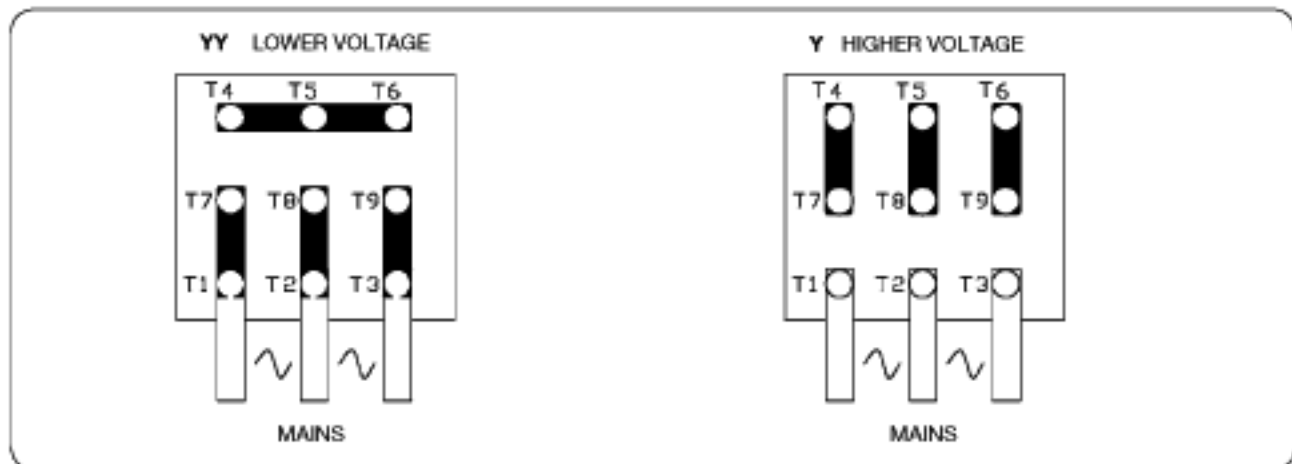
| | kpm | ft/lb |
|-----|------|-------|
| M 4 | 0.12 | 0.87 |
| M 5 | 0.20 | 1.45 |
| M 6 | 0.30 | 2.17 |
| M 8 | 0.65 | 4.70 |

Electrical Connections

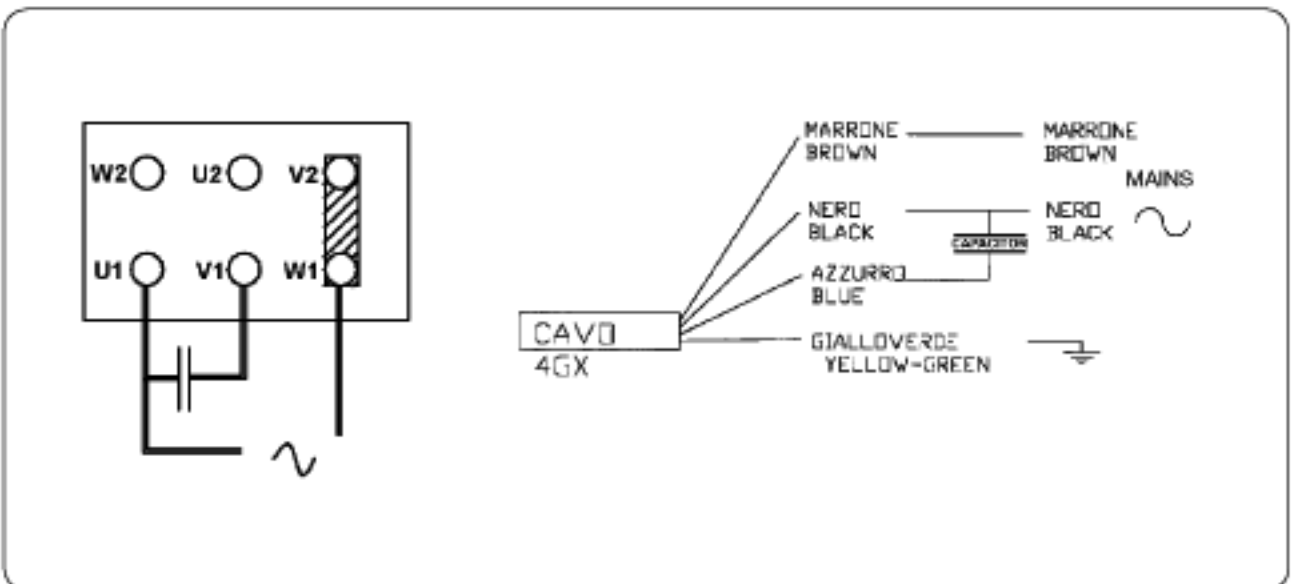
THREE-PHASE CONNECTION (Y STAR - Δ TRIANGLE)



THREE-PHASE CONNECTION (Y STAR-Y STAR/STAR)




SINGLE-PHASE CONNECTION



Electrical Connections

Fixing Power Cable to Terminal Board

- Insert the power cable through the cable gland. The wire terminals must have eyelets, must be pre-insulated, with holes suitable for the terminal pins.
- Use wires having a suitable cross-section to avoid overheating.
- Check to make sure there is no fraying as this can result in a short circuit.
- Connection to the terminal board must be done according to the layouts (see pages 24 and 25).
- Position the washers before the nuts to prevent slackening.
- The pin nuts must be locked using the tightening torques indicated in the Table.

 Remember to fix the earth cable (compulsory connection).

Refit the cover after placing the gasket and lock the cable gland to secure the power cable perfectly.

 **Electrical Connections must be Made Exclusively by Qualified Personnel with the Power Supply Switched Off**

Check to make sure the voltage and frequency correspond to the values indicated on the electric vibrator identification plate.

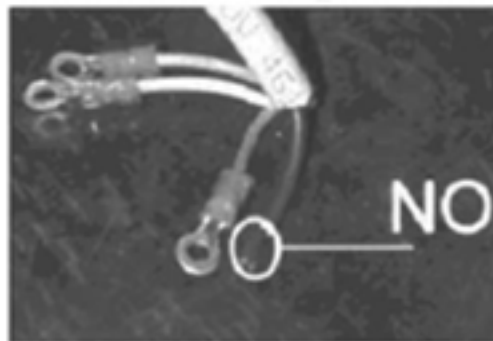
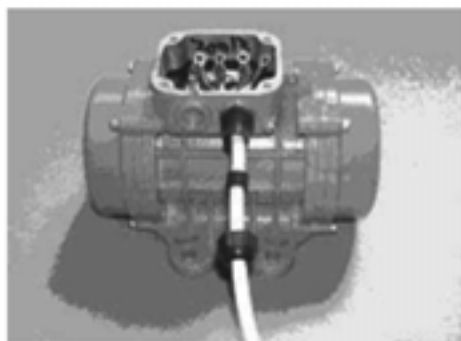
When electric vibrators are installed in pairs, each of these must have its own external overload protection, and the two must be interlocked to prevent working of a single vibrator if the other stops accidentally. Always use delayed-action magnetothermal cut-outs to prevent activation during the start up phase, when the power draw can reach very high levels (especially at low temperatures). Overload protection NOT HIGHER THAN 10% of the plate data, failing which the warranty will lapse!

All the electrical components the installer intends installing in the electric vibrator (such as overload protection, sensors...) must conform to ATEX Directive 94/ 9/CE.

Category II 3 D or greater for the outdoors (for zone 22).

For connecting the electric vibrator in equipotential, connect the machine to earth using the special clamp provided on the body.

NOTE: Check to make sure the terminal board cover gasket is positioned correctly, as incorrect positioning can alter the degree of protection.



Startup Procedure

Limits of Use

Startup Procedure

Set the electric vibrator and the appliance to which it is connected in safety condition.

This operation must be performed exclusively by qualified personnel.

During operations involved in disassembly and reassembly of protective parts (covers, weights and terminal board cover), disconnect power supply to the electric vibrator.

Checking the power draw:

Power the electric vibrator and using an ammeter pliers, check all phases to make sure the power draw does not exceed the value indicated on the rating plate. If this is not the case, ensure that the structure or the flexible system on which the electric vibrator is fitted confirms to the rules for correct application.

Never touch the electric vibrator when it is working.

Never start up the electric vibrator without the safety cover on the weights and the terminal board cover.

After a brief period of operation, check the elements fixing the electric vibrator to the structure to ensure they are secured perfectly.

Limits of Use

FOLLOW THE INDICATIONS ON THE ELECTRIC VIBRATOR RATING PLATE.

The noise level of the electric vibrators measured IS NEVER greater than 76 dB(A)*

*Measured in normal operating conditions in accordance with standard ISO 6081/ 86, with simulated load consisting of a spring-mounted iron bench.

It is however COMPULSORY for the manufacturer of the machinery on which the electric vibrator is inserted to measure final noise levels on the finished plant or machinery, and it is likewise obligatory for the employer to measure the noise levels in the work place where the plant or machinery in which the electric vibrator is inserted is installed.

These measurements must be made before starting working of the plant.

It is compulsory to use personal protection devices and provide training as per L.D. 626.

IN ADDITION TO WHAT HAS BEEN SAID ABOVE, IT IS NECESSARY TO RESPECT THE STANDARDS APPLICABLE IN THE COUNTRY WHERE THE MACHINERY IS BEING USED.


The environmental temperature where the machine is used is between -4°F to 104°F (-20°C and +40°C).

It is the user's responsibility to ensure compliance with the regulations regarding workplaces where there is risk of explosion due to the presence of combustible powders (EN 50281-3:2003).

Maintenance

Follow the standards for connection and use of electrical equipment in potentially explosive atmospheres.

Electric vibrators must be handled, installed, commissioned, inspected, maintained, repaired and scrapped only by qualified trained personnel with reference to the standards indicated above. These operations must always be carried out in the absence of potentially explosive atmospheres.

 Before carrying out any maintenance operation, set the electric vibrator and the appliance on which it is connected in safe condition.

MAINTENANCE MUST BE CARRIED OUT EXCLUSIVELY BY QUALIFIED PERSONNEL, WITH THE POWER SUPPLY DISCONNECTED. Before acting on the appliance, check to make sure the electric vibrator temperature does not exceed 104°F (40°C°).

Special Features

The machine has provision for connection in equipotential to the mains earthing.

Lubrication

All electric vibrators are lubricated by the manufacturer.


Electric vibrators which use ball bearing (prelubricated and shielded) do not require lubrication. In models with roller bearings, the used grease needs replacement after 5000 hours of operation if the electric vibrator is positioned horizontally, and after 3000 hours of operation if it is placed vertically.

Electric vibrators with roller bearings are however provided with lubrication channels accessible from the outside; so the user can decide to resort to "periodic relubrication" which must be done every 1000 hours of operation; the quantity of grease required is shown

in pages M.34 and M.35. Use exclusively SKF LGHP2 grease.

- For dismantling the bearings, refer to the "Replacement of bearings" paragraph.
- Clean the bearings to remove used grease.
- Apply new grease in the quantity specified in the Table, making sure the grease penetrates the rolling parts.
- Great care must be taken to avoid impurities entering the bearing during relubrication; the grease must be protected.
- Do not mix different types of grease even if they have similar features.
- Excessive amount of grease can overheat the bearings and damage them.

Replacing The Bearings

 **Bearings Must Be Replaced Exclusively On The Work Bench By Qualified Personnel, With The Power Supply Deactivated.**

- Disconnect the power supply to the electric vibrator
- Dismantle the electric vibrator and place it on the bench
- Remove the side covers
- Remove the eccentric weights
- Remove the bearing holder flanges through the threaded extraction holes
- Remove the bearing using the special extractor
- Fit a new bearing the bearing
- Reassemble the electric vibrator.
- During re-assembly, keep all parts perfectly square to avoid misalignment as this can damage the bearings and bearing holders permanently.
- Check all screws, washers and gaskets to make sure there is no damage.
- Replace, if necessary.

| CLAMPING TORQUE | | | | | | |
|-----------------|--------------------|-------|---------------|-------|----------------|-------|
| SCREW | Size 10-50 | | Size 60-90 | | | |
| | COVER-FLANGE-FRAME | | COVER -FLANGE | | FLANGE - FRAME | |
| | Nm | ft-lb | Nm | ft-lb | Nm | ft-lb |
| M 5 | 3.5 | 2.6 | | | | |
| M 6 | 6.5 | 4.8 | 8 | 5.9 | | |
| M 8 | 15.5 | 11.4 | | | | |
| M 10 | | | | | 50 | 36.9 |
| M 12 | | | | | 85 | 62.7 |
| M 14 | | | | | 135 | 99.6 |
| M 16 | | | | | 211 | 155.6 |

Maintenance: Periodic Checks

Before carrying out any maintenance, set the electric vibrator and the appliance on which it is fitted in safe condition.

Before each work shift:

- Depending on the operating conditions, wipe off the layers of dust deposited taking care to avoid throwing up clouds of dust.
- The dust layers must never be more than 5mm thick! (5").
- Check for abnormal noise due to rubbing or breakage of the electric vibrator.

Every month:

- Check the identification plate and if it is damaged contact the manufacturer for a copy.
- Check the pictograms and replace those that are damaged.
- Check to make sure all the fixing screws of the electric vibrator are secured properly.
- Check the condition of the safety cable or rope.
- Have a specialist technician check the continuity to the earth circuit.

Cleaning

Before carrying out any maintenance or cleaning on the machine, make sure it is set in safe conditions.

- While removing the dust that may be present on the electric vibrator, take care to avoid its dispersal in the surroundings.
- Dust deposits must never exceed a thickness of 5mm! (5")
- Use only a damp cloth to remove the dust.
- Frequency of cleaning operations depends on the type of product handled by the appliance in which the electric vibrator is inserted.
- Do not direct high pressure water jets on the electric vibrator.

Residual Risk

Depending on the use of the electric vibrator, it is necessary to use special signals to warn the operators of the following residual risks:

1. Mechanical hazards

- For maintenance operations, the operator must always use personal protection devices.
- Special warning notices near the machine indicate the personal protection devices that must be used compulsorily:



2. Presence of potentially hazardous powders

- For carrying out routine and extraordinary maintenance operations, the operators must use special personal protection devices, and a mask, in particular, to protect the respiratory tract belonging to a Class suitable for the type of powder handled, in addition to protective gloves or clothing.
- For more details, consult the safety chart of the powder handled by the appliance in which the electric vibrator is inserted.



3. Presence of harmful dusts

- If the operator is required to work in the presence of harmful substance while handling the powders, for carrying out routine and special operations, he must use suitable protective equipment as indicated in the safety chart of the product handled by the appliance in which the electric vibrator is inserted.



Life of Bearings

| 3600 rpm 230/460 Volt 60 Hz | | | | | | | | | |
|-----------------------------|------|------------|-----------------|-------|--------|--------------------------|------|-------------------------|-------|
| 3600 rpm | Size | Bearing | Life time (hrs) | | | Additional grease (Q.ty) | | Grease replacing (Q.ty) | |
| | | | 100% | 80% | 50% | (gr.) | (Oz) | (gr.) | (Oz) |
| ERV 160/2 | 10 | 6202 2RS | 29827 | 58255 | 238614 | --- | --- | --- | --- |
| ERV 220/2 | 10 | 6202 2RS | 9103 | 17779 | 72821 | --- | --- | --- | --- |
| ERV 440/2 | 20 | 6302 2RS | 4616 | 9015 | 36926 | --- | --- | --- | --- |
| ERV 690/2 | 30 | 6303 2RS | 1584 | 3093 | 12668 | --- | --- | --- | --- |
| ERV 890/2 | 30 | 6304 2RS | 1260 | 2460 | 10078 | --- | --- | --- | --- |
| ERV 1200/2 | 40 | 6305 2RS | 1542 | 3011 | 12332 | --- | --- | --- | --- |
| ERV 1700/2 | 40 | 6306 2RS | 1067 | 2083 | 8533 | --- | --- | --- | --- |
| ERV 1800/2 | 50 | 6306 2RS | 928 | 1812 | 7424 | --- | --- | --- | --- |
| ERV 2300/2 | 50 | 6306 2RS | 458 | 894 | 3661 | --- | --- | --- | --- |
| ERV 3100/2 | 50 | NJ 306 C3 | 2728 | 5739 | 27494 | 7 | 0,24 | 14 | 2,06 |
| ERV 3500/2 | 60 | NJ 2308 C3 | 21831 | 45931 | 220044 | 18 | 0,63 | 35 | 6,01 |
| ERV 4100/2 | 60 | NJ 2308 C3 | 9943 | 20920 | 100223 | 18 | 0,63 | 35 | 6,01 |
| ERV 5100/2 | 60 | NJ 2308 C3 | 6507 | 13690 | 65584 | 18 | 0,63 | 35 | 6,01 |
| ERV 7600/2 | 75 | NJ 2311 C3 | 14550 | 30613 | 146658 | 26 | 0,91 | 52 | 11,71 |
| ERV 8800/2 | 75 | NJ 2311 C3 | 7100 | 14939 | 71567 | 26 | 0,91 | 52 | 11,71 |
| ERV 11500/2 | 75 | NJ 2311 C3 | 3448 | 7254 | 34751 | 26 | 0,91 | 52 | 11,71 |
| ERV 14400/2 | 85 | NJ 2315 C3 | 7455 | 15884 | 75138 | 70 | 2,47 | 150 | 23,68 |
| ERV 20100/2 | 85 | NJ 2315 C3 | 2509 | 5279 | 25291 | 70 | 2,47 | 150 | 31,60 |

| 1800 rpm 230/460 Volt 60 Hz | | | | | | | | | |
|-----------------------------|------|------------|----------------|---------|---------|--------------------------|------|-------------------------|------|
| 1800 rpm | Size | Bearing | Lifetime (hrs) | | | Additional grease (Q.ty) | | Grease replacing (Q.ty) | |
| | | | 100% | 80% | 50% | (gr.) | (Oz) | (gr.) | (Oz) |
| ERV 70/4 | 10 | 6202 2RS | 952954 | 1861238 | 7623629 | --- | --- | --- | --- |
| ERV 200/4 | 20 | 6302 2RS | 143092 | 279476 | 1144735 | --- | --- | --- | --- |
| ERV 400/4 | 30 | 6303 2RS | 14347 | 28021 | 114776 | --- | --- | --- | --- |
| ERV 860/4 | 40 | 6305 2RS | 6195 | 12100 | 49562 | --- | --- | --- | --- |
| ERV 1150/4 | 40 | 6305 2RS | 3585 | 7002 | 28682 | --- | --- | --- | --- |
| ERV 1530/4 | 50 | 6306 2RS | 2552 | 4985 | 20419 | --- | --- | --- | --- |
| ERV 2300/4 | 50 | NJ 306 C3 | 10480 | 22049 | 105828 | 7 | 0,25 | 14 | 0,49 |
| ERV 3100/4 | 60 | NJ 2307 C3 | 38703 | 81430 | 390106 | 15 | 0,53 | 30 | 1,06 |
| ERV 3880/4 | 60 | NJ 2307 C3 | 17694 | 37228 | 178348 | 15 | 0,53 | 30 | 1,06 |
| ERV 5340/4 | 60 | NJ 2307 C3 | 6242 | 13133 | 62915 | 15 | 0,53 | 30 | 1,06 |
| ERV 5700/4 | 70 | NJ 2308 C3 | 9169 | 19290 | 92415 | 18 | 0,63 | 35 | 1,23 |
| ERV 6840/4 | 70 | NJ 2308 C3 | 4703 | 9895 | 47403 | 18 | 0,63 | 35 | 1,23 |
| ERV 8400/4 | 75 | NJ 2311 C3 | 16535 | 34789 | 166664 | 26 | 0,92 | 52 | 1,82 |
| ERV 9480/4 | 75 | NJ 2311 C3 | 11363 | 23906 | 114527 | 26 | 0,92 | 52 | 1,82 |
| ERV 12280/4 | 80 | NJ 2315 C3 | 26232 | 55191 | 264402 | 70 | 2,47 | 150 | 5,29 |
| ERV 15850/4 | 85 | NJ 2315 C3 | 10433 | 21950 | 105155 | 70 | 2,47 | 150 | 5,29 |
| ERV 19600/4 | 85 | NJ 2315 C3 | 5028 | 10578 | 50676 | 70 | 2,47 | 150 | 5,29 |
| ERV 21000/4 | 90 | NJ 2317 C3 | 6367 | 13438 | 64379 | 90 | 3,17 | 180 | 6,35 |

NOTE: For the type of grease to be used, refer to the "LUBRICATION" paragraph on page M.28.

Life of Bearings

| 1200 rpm 230/460 Volt 60 Hz | | | | | | | | | |
|-----------------------------|------|------------|----------------|---------|---------|--------------------------|------|--------------------------|------|
| 1200 rpm | Size | Bearing | Lifetime (hrs) | | | Additional grease (Qty.) | | Grease replacing (Qty.) | |
| | | | 100% | 80% | 50% | (gr.) | (Oz) | (gr.) | (Oz) |
| ERV 90/6 | 30 | 6303 2RS | 1055431 | 2061388 | 8443445 | --- | --- | --- | --- |
| ERV 220/6 | 30 | 6303 2RS | 135734 | 265106 | 1085874 | --- | --- | --- | --- |
| ERV 410/6 | 40 | 6305 2RS | 105286 | 205637 | 842291 | --- | --- | --- | --- |
| ERV 680/6 | 50 | 6306 2RS | 73213 | 142995 | 585707 | --- | --- | --- | --- |
| ERV 1100/6 | 50 | 6306 2RS | 13003 | 25396 | 104024 | --- | --- | --- | --- |
| ERV 1730/6 | 60 | NJ 2307 C3 | 395583 | 832283 | 3987228 | 15 | 0,53 | 30 | 1,06 |
| ERV 2350/6 | 60 | NJ 2307 C3 | 139750 | 294025 | 1408590 | 15 | 0,53 | 30 | 1,06 |
| ERV 3090/6 | 60 | NJ 2307 C3 | 34826 | 73271 | 351020 | 15 | 0,53 | 30 | 1,06 |
| ERV 3580/6 | 70 | NJ 2308 C3 | 56561 | 119000 | 570097 | 18 | 0,63 | 35 | 1,23 |
| ERV 4740/6 | 70 | NJ 2308 C3 | 27240 | 57311 | 274560 | 18 | 0,63 | 35 | 1,23 |
| ERV 5690/6 | 75 | NJ 2311 C3 | 90858 | 191159 | 915787 | 26 | 0,92 | 52 | 1,82 |
| ERV 6620/6 | 75 | NJ 2311 C3 | 56050 | 117927 | 584952 | 26 | 0,92 | 52 | 1,82 |
| ERV 8450/6 | 80 | NJ 2315 C3 | 134664 | 283324 | 1357325 | 70 | 2,47 | 150 | 5,29 |
| ERV 10370/6 | 80 | NJ 2315 C3 | 67146 | 141271 | 676788 | 70 | 2,47 | 150 | 5,29 |
| ERV 11500/6 | 85 | NJ 2315 C3 | 47537 | 100015 | 479144 | 70 | 2,47 | 150 | 5,29 |
| ERV 14360/6 | 85 | NJ 2315 C3 | 22410 | 47149 | 225875 | 70 | 2,47 | 150 | 5,29 |
| ERV 17750/6 | 85 | NJ 2315 C3 | 11167 | 23494 | 112554 | 70 | 2,47 | 150 | 5,29 |
| ERV 19120/6 | 85 | NJ 2315 C3 | 7780 | 16370 | 78422 | 70 | 2,47 | 150 | 5,29 |
| ERV 21400/6 | 90 | NJ 2317 C3 | 9793 | 20605 | 98712 | 90 | 3,17 | 180 | 6,35 |
| ERV 26600/6 | 90 | NJ 2317 C3 | 4056 | 8534 | 40882 | 90 | 3,17 | 180 | 6,35 |

| 900 rpm 230/460 Volt 60 Hz | | | | | | | | | |
|----------------------------|------|------------|----------------|---------|----------|--------------------------|------|-------------------------|------|
| 900 rpm | Size | Bearing | Lifetime (hrs) | | | Additional grease (Qty.) | | Grease replacing (Qty.) | |
| | | | 100% | 80% | 50% | (gr.) | (Oz) | (gr.) | (Oz) |
| ERV 330/8 | 40 | 6305 2RS | 266627 | 520757 | 2133019 | --- | --- | --- | --- |
| ERV 550/8 | 50 | 6306 2RS | 108948 | 208879 | 855566 | --- | --- | --- | --- |
| ERV 880/8 | 50 | 6306 2RS | 33862 | 66137 | 270896 | --- | --- | --- | --- |
| ERV 1430/8 | 60 | NJ 2307 C3 | 1066242 | 2243309 | 10747043 | 15 | 0,53 | 30 | 1,06 |
| ERV 2000/8 | 60 | NJ 2307 C3 | 375955 | 790986 | 3789385 | 15 | 0,53 | 30 | 1,06 |
| ERV 2900/8 | 70 | NJ 2308 C3 | 152280 | 320388 | 1534886 | 18 | 0,63 | 35 | 1,23 |
| ERV 4620/8 | 75 | NJ 2311 C3 | 244578 | 514578 | 2465196 | 26 | 0,92 | 52 | 1,83 |
| ERV 6820/8 | 80 | NJ 2315 C3 | 362517 | 762714 | 3653943 | 70 | 2,47 | 150 | 5,29 |
| ERV 8360/8 | 80 | NJ 2315 C3 | 180659 | 380095 | 1820926 | 70 | 2,47 | 150 | 5,29 |
| ERV 9240/8 | 85 | NJ 2315 C3 | 127997 | 269298 | 1290130 | 70 | 2,47 | 150 | 5,29 |
| ERV 11660/8 | 85 | NJ 2315 C3 | 60309 | 126887 | 607880 | 70 | 2,47 | 150 | 5,29 |
| ERV 14300/8 | 85 | NJ 2315 C3 | 30064 | 63253 | 303025 | 70 | 2,47 | 150 | 5,29 |
| ERV 22000/8 | 90 | NJ 2317 C3 | 13207 | 27787 | 133120 | 90 | 3,17 | 180 | 6,35 |

NOTE: For the type of grease to be used, refer to the "LUBRICATION" paragraph on page M.28.

Troubleshooting

| PROBLEM | CAUSE PROBABLE | SOLUTION |
|-------------------------------------|---|--|
| The vibrator does not function | 1) No connection 2) Mechanical block | 1) Check mains supply Check wiring 2) Check shaft movement |
| Increased temperature (overheating) | 1) Vibrating structure oversized 2) Incorrect supply voltage 3) Operating at room temp. | 1) Check selection criteria of motovibrator and reduce weights adjustment 2) Check voltage with that on rating plate 3) Restore room temperature within limits |
| Increased noise | 1) Fixing bolts slackened 2) Bearing noise | 1) Check locking of bolts 2) Re-grease bearings and replace them if necessary |



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