Webac Gesellschaft für
Vibrationstechnik mbH
Albert-Latz-Str. 3
D-53879 Euskirchen

Operating Instructions

for

WEBAC Vibrator Motors

Series EAW und EAO

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Operating Instructions - WEBAC Vibrator Motors

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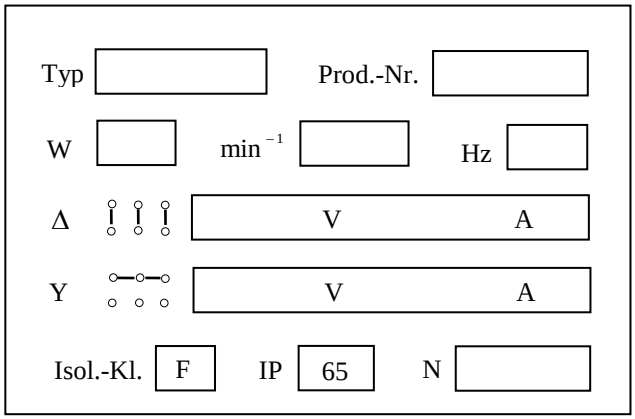
Part 1 - General Information

These instructions concern the general use of the WEBAC Vibrator Motors and not their numerous applications. The WEBAC Vibrator Motor models are identified on the nameplate as follows:



The WEBAC Vibrator Motors can produce vibratory movements in patterns described as circular, elliptical or linear.

Single drive application with its gravity center coincident with the structure - gravity center creates circular movement, positioned outside the center of gravity, it produces an elliptical movement which varies at different points on the structure (Figure 1).

Double drive application with two identical WEBAC Vibrator Motors with their axes in the same plane rotating in opposite directions produces a linear vibratory movement (Figure 2).

In consequence, the two asynchronous motors automatically become synchronized on account of the law of mass (Figure 3).

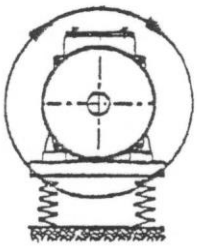


Figure 1.
Rotational
Vibration

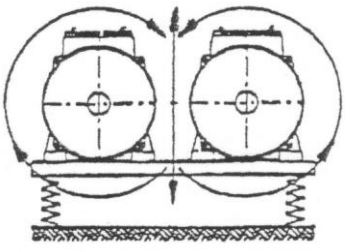


Figure 2.
Linear
Vibration

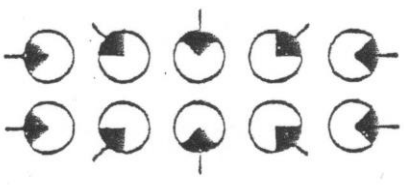


Figure 3.
Law of Mass

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Part 2 - Design

The WEBAC Vibrator Motors are asynchronous motors with short circuit armature. Table 1 and Table 2 list technical data for WEBAC Vibrator Motors. All WEBAC Vibrator Motors conform to IP 65 according to DIN 40050 specifications.

The stator with its coils is mounted vibration - proof inside a cast iron body (Figure 4, #1). The shaft has the rotor shrunk on it (Figure 4, #7) and is supported by two heavy - duty bearings (Figure 4, #11) which are mounted on either side in bearing housings (Figure 4, #2). The bearing housings (Figure 4, #2) are tightly fitted to the body (Figure 4, #1). The bearing outer races are tightly fitted to the bearing housings and the inner races are loosely fitted to the shaft allowing to slide with eventually axial force. The WEBAC Vibrator Motors are equipped with seal rings (Figure 4, #21 - Figure 4, #22 - Figure 4, #23) to prevent foreign matter from getting inside.

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Table 1 - WEBAC Vibrator Motors

Model No.	Speed (50 Hz) (RPM)	Static Moment (kgmm)	Centrifug. Force (N)	Motor Power (W)	Full-Load Current (A) 50 Hz, 230 / 400 V	Weight (kg)
EAW 2/01	3000	15	1500	120	0,83 / 0,48	5,2
EAW 2/02	3000	23	2300	120	0,83 / 0,48	5,6
EAW 2/03	3000	32	3200	275	1,32 / 0,76	16
EAW 2/05	3000	54	5400	550	2,34 / 1,35	22
EAW 2/10	3000	90	9000	550	2,31 / 1,33	23
EAW 2/15	3000	160	16000	900	3,46 / 2,0	34
EAW 2/25	3000	240	24000	1600	5,76 / 3,33	50
EAW 2/40	3000	410	41000	2600	9,05 / 5,23	85
EAW 4/01	1500	23	570	90	0,55 / 0,32	5,6
EAW 4/02	1500	32	800	90	0,55 / 0,32	5,9
EAW 4/03	1500	69	1700	100	0,66 / 0,38	16
EAW 4/04	1500	146	3600	220	0,99 / 0,57	24
EAW 4/08	1500	308	7600	470	2,14 / 1,24	37
EAW 4/15	1500	607	15000	920	3,62 / 2,09	55
EAW 4/27	1500	1134	28000	1720	6,42 / 3,71	93
EAW 4/50	1500	2025	50000	3070	10,21 / 5,89	167
EAW 4/80	1500	3300	82500	5070	16,29 / 9,41	300
EAW 6/10	1000	909	10000	610	3,13 / 1,81	61
EAW 6/20	1000	1636	18000	1100	4,78 / 2,76	102
EAW 6/35	1000	3000	33000	2030	8,40 / 4,85	178
EAW 6/55	1000	5000	55000	3380	13,50 / 7,79	320
EAW 6/100	1000	9100	99000	6080	21,40 / 12,35	615
EAW 6/130	1000	12000	132000	7500	26,33 / 15,20	650

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Table 2 - WEBAC Vibrator Motors

Model No.	Speed (50 Hz) (RPM)	Static Moment (kgmm)	Centrifug. Force (N)	Motor Power (W)	Full - Load Current (A) 50 Hz, 230 / 400 V	Weight (kg)
EAO 2/02	3000	27	2500	180	0,70 / 0,40	12,8
EAO 2/07	3000	70	6410	370	1,34 / 0,77	25,5
EAO 2/15	3000	140	12910	750	2,64 / 1,52	47
EAO 2/20	3000	200	19020	2000	6,75 / 3,90	65
EAO 4/02	1500	60	1300	120	0,66 / 0,38	13
EAO 4/05	1500	225	4870	370	1,65 / 0,95	30
EAO 4/10	1500	450	9950	750	2,97 / 1,71	54
EAO 4/20	1500	750	16820	1400	4,94 / 2,85	77
EAO 4/25	1500	1000	23695	1500	5,43 / 3,14	101
EAO 4/40	1500	1750	40630	2700	9,55 / 5,51	152
EAO 4/75	1500	3200	74290	4500	16,13 / 9,31	255
EAO 4/100	1500	4250	99345	6500	21,40 / 12,35	349
EAO 6/05	1000	450	4360	250	1,29 / 0,75	37
EAO 6/10	1000	900	8905	550	2,39 / 1,38	65
EAO 6/17	1000	1600	16170	1100	4,12 / 2,38	96
EAO 6/25	1000	2150	22185	1500	6,09 / 3,52	127
EAO 6/40	1000	3170	38175	2500	10,04 / 5,80	189
EAO 6/75	1000	7000	71485	4500	17,28 / 9,98	324
EAO 6/110	1000	10000	105320	6500	23,37 / 13,49	438
EAO 8/04	750	693	3950	250	1,74 / 1,0	46
EAO 8/30	750	4800	26910	2100	8,89 / 5,13	209
EAO 8/60	750	9600	55335	4200	16,46 / 9,50	388
EAO 8/100	750	17000	99345	6500	25,18 / 14,54	518

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Figure 4

Parts Diagrams and Parts List

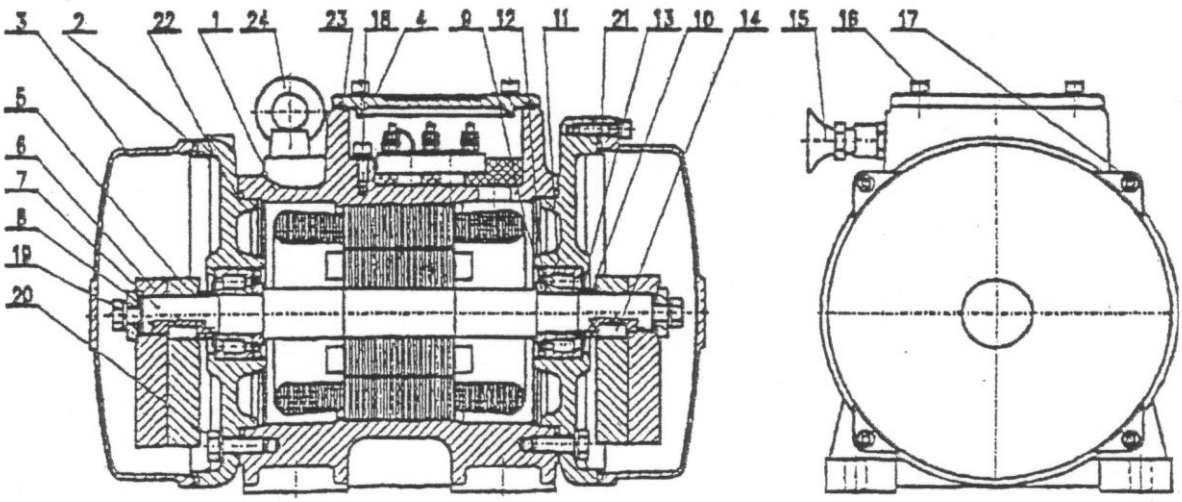

Figure 4.1

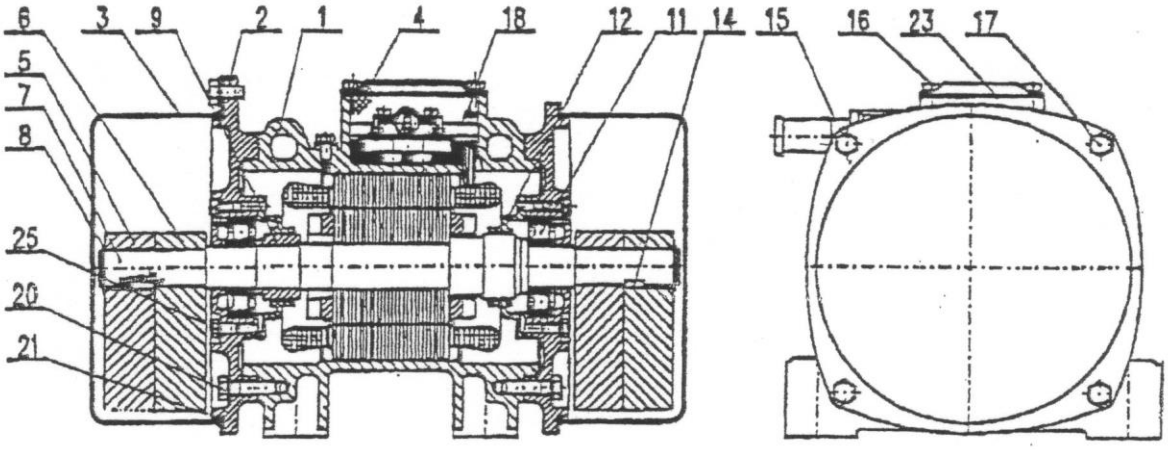

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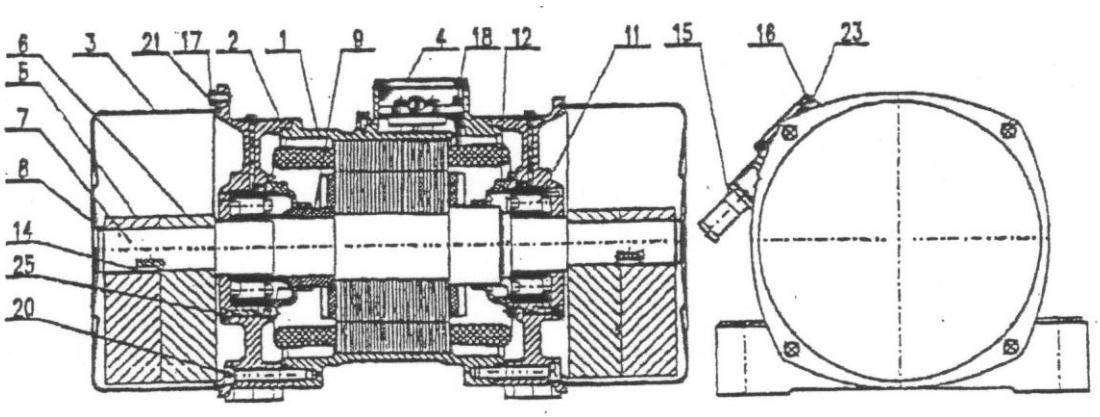
Figure 4.2



Position	Description	No. Pieces
1	Body with stator	1
2	Bearing housings	2
3	Cover	2
4	Terminal box cover	1
5	Fixed counterweight	2
6	Adjustable counterweight	2
7	Shaft with rotor	1
8	Lock washer	2
9	Spacer (1)	2
10	Spacer (1)	2
11	Bearings	2
12	Inner lubricant guard (1)	2
13	Outer lubricant guard (1)	2
14	Key	2
15	Cable press	1
16	Screw with elastic washer	4
17	Screw with washer	8
18	Screw with washer	1
19	Screw with washer	2
20	Screw with washer	6
21	O-ring gasket	2
22	O-ring gasket	2
23	O-ring gasket	1
24	Eye-screw (2)	1
25	Screw with elastic washer	8

Notes: (1) - means not existing in the sizes EAW 2/01, 2/02, 2/03
(2) - means not existing in the sizes EAW 2/01, 2/02

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Part 3 - Installation and Operation

3.1 Installation and Screws Retightening

All WEBAC Vibrator Motors can be installed in any position. The fixation area should generally be rigid, in order to avoid that the induced vibrations might cause breakages due to stress; otherwise plates and reinforcement ribs are required.

The connection surface, furthermore, must be a flat plane, allowing for perfect contact of the fixing feet, otherwise breakage of support legs or loosening of screws may occur. Once these conditions have been insured, securely install the WEBAC Vibrator Motors using screws of min. quality 8.8 and self-locking nuts of quality 8. These must be tightened using a torque wrench to prevent screw loosening, because even one looses can cause an accident.

All fixing screws should be retightened after the WEBAC Vibrator Motors have gone into operation. Although no loose screws may be found when retightening, periodically check them for looseness.

Retighten the screws as for initial installation after the WEBAC Vibrator Motor has been reinstalled.

The WEBAC Vibrator Motors with 3000 RPM can be installed on almost all structures, while the motors with 1500, 1000 and 750 RPM which generate considerable amplitude, can be installed only on suspended masses.

It is important to keep in mind that sometimes, due to certain ratios between the work frequency and natural frequency of the applied elastic system, the WEBAC Vibrator Motors do not reach nominal RPM, instead stabilizing in a lower RPM. In such case, in order to avoid damages to the WEBAC Vibrator Motors electrical parts it is necessary to modify the elastic system characteristic.

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Table 3 gives the tightening torques for fixing screws of quality 8.8, unlubricated.

Table 3 - Tightening Torques

Mounting Screw	Tightening Torque (Nm)
M 8	30
M 10	50
M 12	88
M 14	140
M 16	210
M 20	410
M 24	710
M 27	1060
M 30	1350
M 33	1910
M 36	2450

3.2 Electrical Connection

Each electrical connection should be carried out according to the relevant safety rules and electrical codes.

The WEBAC Vibrator Motors are generally supplied with windings as follows:

230/400 or 240/415 V +/- 5%, 50 Hz, 3 phase - Fig 5.1
230/400 or 255/440 V +/- 5%, 60 Hz, 3 phase - Fig 5.1

200/400 V +/- 5%, 50 Hz - Fig 5.2
230/460 V +/- 5%, 60 Hz - Fig 5.2

or for special voltage by request.

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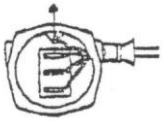
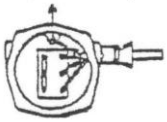
Before starting the WEBAC Vibrator Motors carry out the following steps:

Step 1: Ensure that the rating plate data corresponds to the requested voltage, and that the net tension is within the prescribed limits. Too low voltage could cause a difficult starting or even prevent the Webac Vibrator Motors reaching the standard speed and damaging the stator winding.

Step 2: Check and make sure that the terminal box is connected to the corresponding line voltage according to the schemes indicated in Figure 5.1 or Figure 5.2.

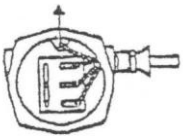


Delta connection
for low voltage

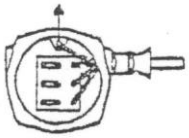


Star connection
for high voltage

Figure 5.1



Star-Star connection
for low voltage



Star connection
for high voltage

Figure 5.2

Step 3: For the electrical connection of the motors must be used highly flexible cable (for instance "Titanex"). Connect the electrical cable through the cable press, ensuring that the single wire is as short as possible. The cable must be quadripole so as to have available also the conductor or the earth connection which has to be fixed to the right screw (Figure 4, #18).

Step 4: Ensure that the terminal box sealing gasket (Figure 4, #23) is properly placed on the terminal box cover (Figure 4, #04).

Step 5: Firmly tighten all the screws of the terminal box cover, taking care to always insert the split washers.

Step 6: Always insert three phases on the mains and drive the WEBAC Vibrator Motors through a switch or a 3 - phase remote control switch with thermal delayed protections to avoid intervention at the start, when current increases from 8 to 10 times the standard values indicated in the Tables 1 & 2.

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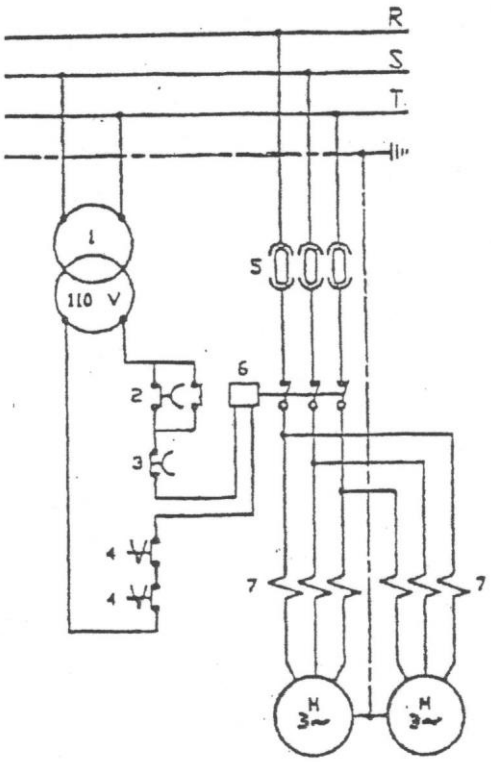
Step 7: When two WEBAC Vibrator Motors must counterrotate, the electric connection scheme is shown in Figure 6. The same scheme is valid also for only one WEBAC Vibrator Motor excluding the other electric connection.



1 - Transformer
2 – Starting push button
3 – Stopping push button
4 – Thermal relay contact
5 - Fuses
6 - Contactor
7 – Thermal relay

Electric scheme for the connection of 2 counterrotating Webac Vibrator Motors

Figure 6

Step 8: The electrical cable must have the outer diameter bigger than the inner diameter of cable press, otherwise the protection IP 65 is missing.

Step 9: To calculate the size of electrical cable follow the details indicated below for distances up to 50 meters; for longer distances increase the section of cables proportionally.

For instance for models EAW 2/01 and 2/02 use cable 4 x 0,75 mm^2 having an outer diameter not less than 8 mm. For instance for models EAW 2/03 to 2/15 use cable 4 x 1,5 mm^2 having an outer diameter not less than 10 mm, and the same for models EAO 2/02 to 2/20. For instance for models EAW 2/25 and 2/40 use cable 4 x 2,5 mm^2 having an outer diameter not less than 13 mm, and the same for models EAO 4/40 to 4/100.

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3.3 Vibrating Force Adjustment

The vibrating force of the vibrator motors can be adjusted by displacing the counterweights positioned at the two extremities of the shaft, as further described. Diagrams 1 and 2 show the percentage of the maximum centrifugal force of the motors dependent on the displacement of the counterweights. Therefore, if with overlapped counterweights (displacement of 0°) there is for instance a development of 900 N of centrifugal force of a motor with 1500 rpm and the vibratory machine reacts with a peak-to-peak amplitude of 5 mm, by displacing the adjustable counterweights to 120°, in relation to fixed counterweights, the new centrifugal force will be reduced to 450 N and the motion amplitude, for the same vibratory machine, will be 2,5 mm. The reference notches on the fixed weights have 20° intervals. The reference index on the adjustable weights shows the direction of the angular displacement (See Figure 7.).

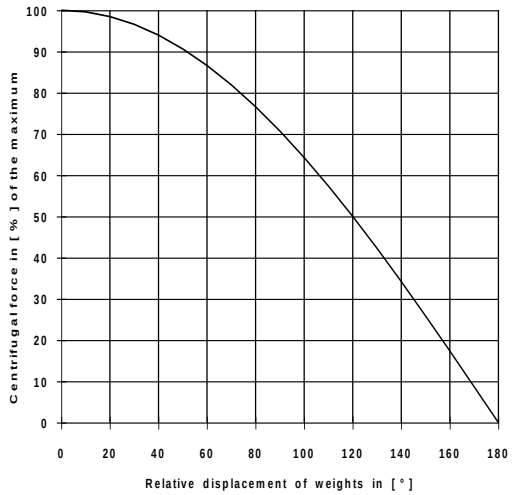


Diagram 1 - 3000 & 1500 RPM Models

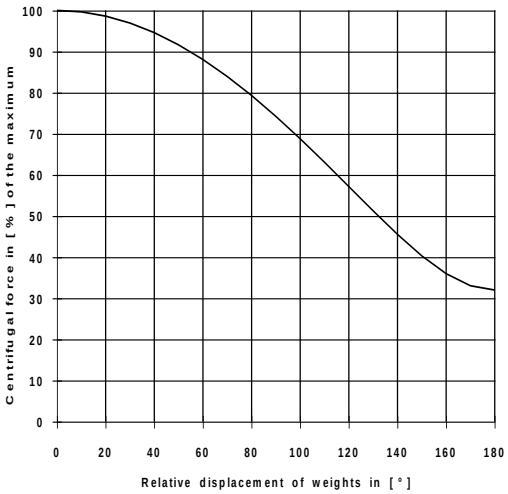
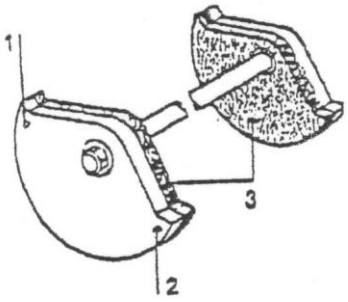


Diagram 2 - 1000 RPM Models

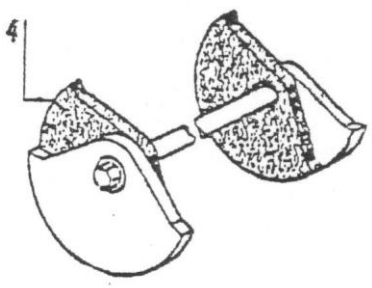
Centrifugal Force Adjustment from 100% (0°) to 87% (60°)
of the Maximum Value

Displacement Weights 0°



1) Reference Index
2) Adjustable Weights

Displacement Weights 60°



3) Fixed Weights
4) Reference Notch

Figure 7

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To adjust WEBAC Vibrator Motor intensity, it is necessary to accomplish the following steps (Please refer to Figures 4, 4.1 & 4.2):

Step 1: Take out the two caps (# 3) loosening the screws (# 17).

Step 2: Loosen both adjustable counterweights and place in the required displacement (refer to Figure 7) according to the corresponding percentage of the maximum centrifugal force, referring to **Diagram 1 or 2**.

Remarks:

1. All the adjustable counterweights must be with the same displacement. Otherwise the forces and moment resulting could possibly damage the WEBAC Vibrator Motor(s) or the structure where they are placed.

2. When the WEBAC Vibrator Motor is used for a feeder or screen, the current supplied to the WEBAC Vibrator Motor usually does not exceed the rated value, because the effects of spring constant and damping coefficient are small. However, the current may exceed rated values depending upon the application. If so, adjustment of the position of the counterweights is necessary to reduce the vibrating force and current below the rated value.

Step 3: Firmly fix the adjustable counterweights and reassemble the covers with corresponding gaskets.

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Part 4 - Maintenance

Periodically check that the fixing screws are well-tightened according to the torque indicated in **Table 3**. This check is essential before starting and after first 3 hours of operation.

The bearings for each model are indicated in **Table 4**. For instance for models EAW 2/01, 2/02 and 2/03 plus EAO 2/02 the bearing types used are lubricated for life. Once their useful life is over they must be replaced.

For instance for models EAW 2/05 through EAW 2/40 they are lubricated for the bearing life and therefore they require no lubrication during any short intervals. However, should bearings still be in good condition after 24 months of WEBAC Vibrator Motor operation an integral replacement of lubricant will be necessary. Recommended lubricant type is Isoflex NBU 15 Klüber for EAW-type and LV-2 EP for EAO-type. For instance for models EAW 6/55, 6/100 and 6/130 grease nipples are provided for regular regreasing. For maximum interval for grease supply refer to **Table 4**.

For models EAW and EAO apply the specified amount of grease at the specified intervals through the grease nipples replacing the plugs (screws M 6 x 12), referring to **Table 4**. A small amount of grease should be applied at short intervals, because a large amount of grease applied at once may increase resistance to movement, affecting not only the smooth operation and starting of the WEBAC Vibrator Motor but also causing excessive heat due to grease agitation which accelerates grease deterioration.

Table 4 shows only the maximum amount of grease which can be applied at once in a corresponding interval. It is recommended to the customer to reduce the amount of grease applied as necessary and / or shorten the intervals accordingly. For example, if you reduce the amount of grease to 1/2 or 1/3 of the amount shown in **Table 4**, you must correspondingly reduce the intervals shown in **Table 4** by the same 1/2 or 1/3. When the room temperature is low, decrease the amount of grease as described below without changing the intervals shown in **Table 4**.

Room temperature:	10°C to 0°C	1/2 of the amount
	0°C to - 10°C	1/4 of the amount

It is recommended to make your own grease supply plan, taking into consideration the WEBAC Vibrator Motor operating hours.

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The bearings or the exhausted lubricant replacement is facilitated by simplified assembly and disassembly of the WEBAC Vibrator Motor by components within their work tolerances. For instance, the inner ring of bearing is half-free on the rectified shaft. At the exhaustion point of the lubricant it is advisable to clean the bearings and any nearby points containing any lubricant. After the bearings have been cleaned or replaced, apply grease referring to **Table 4** and fill the bearing covers and labyrinths.

Periodically check that the temperature of the outer WEBAC Vibrator Motor surface and its noise remain constant. An unjustified increase in any of these items indicates that the bearings are worn and require a checking and probable replacement.

Remarks:

1. Never run the WEBAC Vibrator Motor without the counterweight and outlet box cover to prevent accidents and avoid the lubricant losing any of its properties.

2. If you need to remove WEBAC Vibrator Motor from its installation make sure that it is switched off and then disconnect the electric cable and loosen the fixing screws. Then lift it using a hook on the eye-screw (Figure 4, #24) or for models not having an eye-screw lift it by hand.

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Table 4 - Bearing and Relubrication Data

Model Number	Speed (50 Hz) (RPM)	Static Moment (kgmm)	Centrifugal Force (N)	Bearing Type	Bearing Life (hours)	Assembly Grease Req. (g)	Relubrication Amount (g)	Relubrication Interval (hours)
EAW 2/01	3000	15	1500	6302-2RS-C3	14000	-	-	-
EAW 2/02	3000	23	2300	6302-2RS-C3	2900	-	-	-
EAW 2/03	3000	32	3200	6304-2RS-C3	3400	-	-	-
EAW 2/05	3000	54	5400	NJ2204E-C3	9800	12	-	Brg. Life
EAW 2/10	3000	90	9000	NJ2204E-C3	1800	12	-	Brg. Life
EAW 2/15	3000	160	16000	NJ2305E-C3	1700	15	-	Brg. Life
EAW 2/25	3000	240	24000	NJ2306E-C3	1000	20	-	Brg. Life
EAW 2/40	3000	410	41000	NJ2309E-C3	1400	25	-	Brg. Life
EAW 4/01	1500	23	570	6302-2RS-C3	100000	-	-	-
EAW 4/02	1500	32	800	6302-2RS-C3	100000	-	-	-
EAW 4/03	1500	69	1700	6304-2RS-C3	45000	-	-	-
EAW 4/04	1500	146	3600	NJ2204E-C3	75000	12	-	Brg. Life
EAW 4/08	1500	308	7600	NJ2305E-C3	42000	15	-	Brg. Life
EAW 4/15	1500	607	15000	NJ2206E-C3	10000	20	-	Brg. Life
EAW 4/27	1500	1134	28000	NJ2309E-C3	10000	25	-	Brg. Life
EAW 4/50	1500	2025	50000	NJ2212E-C3	7500	55	-	Brg. Life
EAW 4/80	1500	3300	82500	NJ2316E-C3	6500	90	40	900
EAW 6/10	1000	909	10000	NJ2206E-C3	55000	20	-	Brg. Life
EAW 6/20	1000	1636	18000	NJ2309E-C3	60000	25	-	Brg. Life
EAW 6/35	1000	3000	33000	NJ2212E-C3	44000	55	-	Brg. Life
EAW 6/55	1000	5000	55000	NJ2316E-C3	37000	90	60	2500
EAW 6/100	1000	9100	99000	NJ2318E-C3	13000	90	70	2000
EAW 6/130	1000	12000	132000	NJ2318E-C3	9000	120	80	1100

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Model Number	Speed (50 Hz) (RPM)	Static Moment (kgmm)	Centrifugal Force (N)	Bearing Type	Bearing Life (hours)	Assembly Grease Req. (g)	Relubrication Amount (g)	Relubrication Interval (hours)
EAO 2/02	3000	27	2500	6303-2RS-C3	4200	-	-	-
EAO 2/07	3000	70	6410	NJ305E-C3	9300	15	6	1500
EAO 2/15	3000	140	12910	NJ2307E-C3	13000	20	10	1000
EAO 2/20	3000	200	19020	NJ2308E-C3	7500	25	15	1000
EAO 4/02	1500	60	1300	NJ204E-C3				
EAO 4/05	1500	225	4870	NJ305E-C3	39500	15	6	3000
EAO 4/10	1500	450	9950	NJ2307E-C3	54500	20	15	2500
EAO 4/20	1500	750	16820	NJ2308E-C3	19500	25	18	2500
EAO 4/25	1500	1000	23695	NJ2310E-C3	26000	40	25	2000
EAO 4/40	1500	1750	40630	NJ2314E-C3	23000	70	45	1500
EAO 4/75	1500	3200	74290	NJ2318E-C3	13000	100	70	1000
EAO 4/100	1500	4250	99345	NJ2320E-C3	13590	120	90	1000
EAO 6/05	1000	450	4360	NJ305E-C3	92000	15	6	5000
EAO 6/10	1000	900	8905	NJ2307E-C3	123000	20	15	4000
EAO 6/17	1000	1600	16170	NJ2308E-C3	35000	25	18	4000
EAO 6/25	1000	2150	22185	NJ2310E-C3	46500	40	25	3000
EAO 6/40	1000	3170	38175	NJ2314E-C3	72500	70	45	2500
EAO 6/75	1000	7000	71485	NJ2318E-C3	23000	100	70	2000
EAO 6/110	1000	10000	105320	NJ2320E-C3	18000	120	90	1500
EAO 8/04	750	693	3950	NJ305E-C3				
EAO 8/30	750	4800	26910	NJ2314E-C3	160500	70	45	3500
EAO 8/60	750	9600	55335	NJ2318E-C3	70000	100	70	3000
EAO 8/100	750	17000	99345	NJ2320E-C3	27000	120	90	2500

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Part 5 - Overhaul and Bearing Replacement

The bearing must be of high-load (E) type with a gap C3 and to withstand vibrating force at high speed use a copper alloy or pressed steel cage with outer raceway riding.

Bearing Replacement

Take care not to damage the bearings because a little flaw may affect performance. Bearings are delivered coated in rust-preventing grease, which may be used without removing if the bearing is new, but if it has hardened it should be removed. Never use rusty bearings. Gradually insert the bearing outer race into the bearing body by pressing it with a metal disk. Never tap the bearings as damage may occur.

The inner race must be assembled before in the bearing and after assembling the shaft. This is possible because the inner race of bearing is half-free on the rectified shaft.

Bearing Lubrication

When the breaking-in process begins, if the grease does not spread enough, the rollers may come into direct contact with the inner and outer race, damaging the roller bearings due to insufficient lubrication. Extreme care is required since it is difficult for the roller bearings to spread grease to the outer race and retainer. Apply grease to the rollers, then rotate the rollers to spread the grease to the outer and inner races and to the cage. Put grease in the grooves of bearing covers and bearing bodies and labyrinths. The grease functions also as a dust seal.

Breaking-In

After reassembly of the WEBAC Vibrator Motor rotate the shaft 50 to 60 turns by hand with the weights balanced to spread the grease to the inner and outer races, cage and rollers. Adjust the vibrating force from 20% to 30% of the maximum value, then break in the WEBAC Vibrator Motor for one to two hours. When the WEBAC Vibrator Motor is breaking in, suspend it by a spring or put it on a used tire. At the beginning of the breaking-in process, the current can be greater than the rated value due to the grease resistance to spread. The current will drop in a short time. Adjust the vibrating force to the desired value, then assemble the WEBAC Vibrator Motor.

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Part 6 - Disassembly (Refer to Figures 4, 4.1 & 4.2)

When you must disassemble the WEBAC Vibrator Motor follow the steps below:

Step 1: Loosen the screws (17), then remove the weight covers (3).

Step 2: Loosen the screws (19), take out the lock ring (8), then remove the weights (6 & 5), keys (14) and (if existing) the outer spacers (10).

Step 3: Loosen the screws (20), then remove only one side of bearing housings (2), then remove the shaft with rotor (7) and then remove the other side of the bearing housings (2).

Step 4: Remove the bearings (11) and (if existing) the inner and outer lubricant guards (12 & 13) from the bearing housings (2). In case of EAO-models, loosen the screws (25), then remove the inner lubricant guards and then remove the bearings (11).

Part 7 - Reassembly (Refer to Figures 4, 4.1 & 4.2)

When you are reassembling the WEBAC Vibrator Motor reverse the steps while observing the following precautions:

1. Gradually press the bearing outer race (11) into the bearing housings (2) using a metal disk (never tap the bearings), and then assemble the inner race, and (if existing) the inner and outer lubricant guards (12 & 13). See **Part 5 - Overhaul and Bearing Replacement**.

2. When inserting the bearing housings (2) into the body (1) make sure that the O-ring gasket is well positioned.

3. During shaft (7) assembly, verify that the inner spacers (9) are well placed (if existing).

4. After assembling the second bearing housing (2) and all the screws have been well - tightened, verify that the axial gap of shaft (7) is within 0,4 to 0,6 mm.

5. After total assembly follow the breaking-in described in **Part 5**.

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Part 8 - Periodic Inspection

Interval	Points to Check	Procedures & Criteria
Daily	Load Current	The measured load current should be less than the rated value.
	Bearing Noise	Check the bearing noise using a rod. Bearings should not generate intermittent or metallic noise.
Monthly	Fixing Screws	Check screws for looseness. Screws should be tightened to the specific torque.
	Cables	Visually inspect the cables, ensuring that there is no damage.
Annually	Coil Insulation	Insulation should be minimum 5 M Ω.

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Part 9 - Troubleshooting

Trouble	Probable Cause	Inspection Procedure	Solution
WEBAC Vibrator Motor does not start	Two WEBAC Vibrator Motor cables or two coil phases are broken	Measure the voltage drop across the two phases of the coils	Replace the cables or rewind the coil
WEBAC Vibrator Motor moans and does not accelerate	Single phasing	Same as above and check cables for looseness.	Same as above or securely connect the cables
	Room temperature is too low or there is an excessive amount of grease	Remove the counterweight covers, then rotate the shaft 30 to 50 turns by hand	Adjust the vibrating force from 20% to 30% of the max. value then break in the WEBAC Vibrator Motor
Thermal relay is tripped	Room temperature is too low or there is an excessive amount of grease	Remove the counterweight covers, then rotate the shaft 30 to 50 turns by hand	Adjust the vibrating force from 20% to 30% of the max. value then break in the WEBAC Vibrator Motor
	WEBAC Vibrator Motor takes too long to start	Measure time required for WEBAC Vibrator Motor to start with the thermal relay adjusted to 120% of the rated current	If the WEBAC Vibrator Motor takes five seconds or more to start, replace the thermal relay with a slow activation
	Short circuit between phases of the coils	Compare resistance between phases of coils if there is a large difference	Rewind the coil
	Loose screws	Check screws for looseness	Tighten screws
	Abnormal vibration	Verify the rotation direction and look for structural defects	Correct the rotation direction or repair the defect
	Load is too large	Measure load current	Decrease vibrating force
	Damaged bearing	Rotate the shaft by hand and check the bearing	Replace bearings
Noise Increase	Damaged bearing	Check bearing noise using a rod	Replace bearings
Temperature Increase	Room temperature is too high	Check room temperature	Decrease room temperature to maximum 40°C
	WEBAC Vibrator Motor surface is too dirty	Check surface of WEBAC Vibrator Motor	Clean the surface
	Missing grease	Check Lubrication Plan compliance	Lubricate and follow the plan

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Warranty Certificate

General Conditions:

The WEBAC Vibrator Motor is backed by a six month limited warranty from the date of purchase.

The warranty does not apply in the following cases:

- when the product was being used for the purpose other than the intended use and not according to the operator manual instructions
- when the product technical parameters or design were changed without prior approval from the manufacturer
- the product was damaged due to improper handling in storage or during transport

Quality Certificate

The manufacturer hereby declares that:

- the product was manufactured according to approved documentation and according to appropriate technological procedures for production and assembly
- the product was tested and the results complied to the required standard
- the product is complete and complies to the conditions stated in the technical instructions