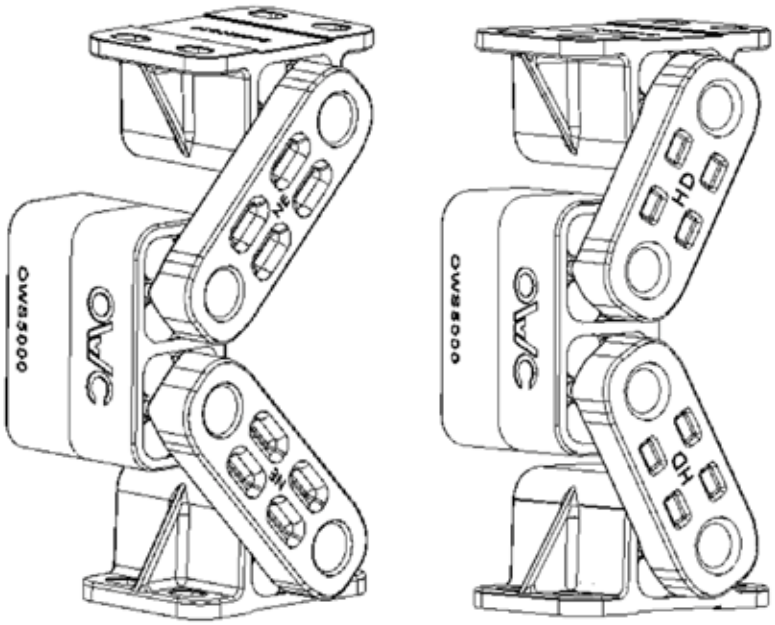
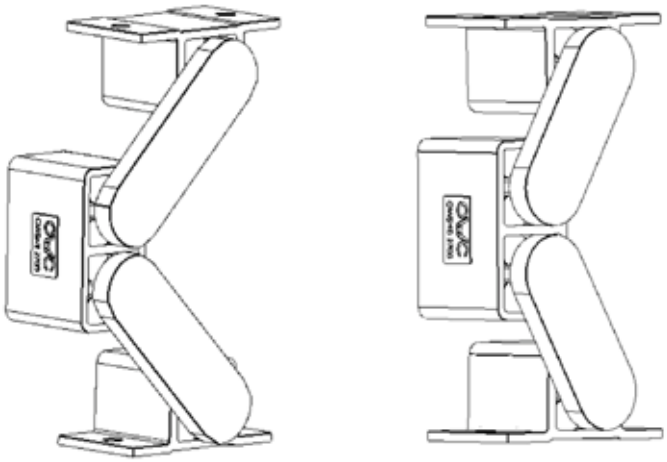
EN

OWS

OSCILLATING MOUNTS





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TRANSLATION OF ORIGINAL INSTRUCTIONS INTO ENGLISH

OWC Equipment s.r.l.
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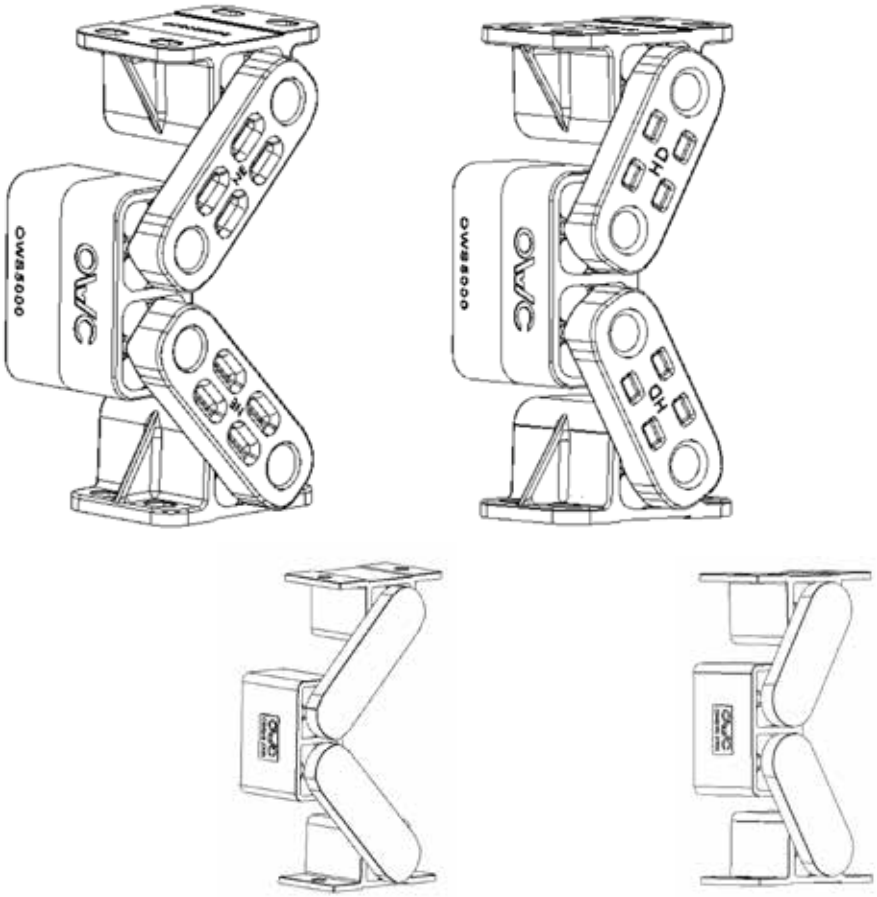
EN

OWS

OSCILLATING MOUNTS

1

TECHNICAL CATALOGUE



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1.1 Purpose and importance of the manual

This manual, compiled by the manufacturer, is an integral part of the oscillating mounts supply; as such, it must absolutely accompany the components until the dismantling thereof and it must be easy to find for a fast reference by interested operators on site.

If the component changes ownership, the manual must be handed over to the new owner. Before any operation with or on the component, the personnel concerned must have absolutely and mandatorily read this manual paying the utmost attention.

If the manual is lost, damaged or becomes illegible, download a new copy from the manufacturer's Internet site and check the date of the last update. This manual supplies warnings and instructions related to safety regulations to prevent work accidents. In any case, all operators must scrupulously observe safety rules that are incumbent with them from regulations in force.

Possible changes to safety regulations, as they may occur from time to time, must be adopted and updated.

Notwithstanding the essential characteristics of described components, the manufacturer reserves the right to bring changes to parts, details and accessories, as the manufacturer shall see fit for an improvement of the product or according to built and business requirements, at any time and without an obligation to immediately update this publication.

The updated version of this catalogue can be found on **www.owc-equipment.com**.

1.2 Symbols

Certain symbols have been adopted to highlight certain parts of the text, for safety reasons or to indicate some important

pieces of information and their meaning is given herein below.

Please comply with and scrupulously follow the information highlighted with the symbols.

Danger - Warning

It indicates serious hazards, which, if ignored, can seriously put to a risk human health and safety.

Caution

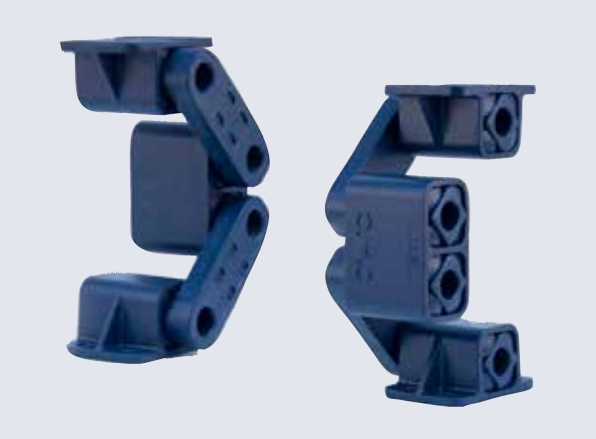
Indicates that an appropriate behaviour must be adopted to avoid jeopardizing human health and safety and to avoid material damages.

Important

It indicates some pieces of technical information that are of a special importance and must not be ignored.

1.3 Description

OWC OWSNE (Standard Edition) and OWSHD (Heavy Duty) oscillating mounts have been implemented to be installed on vibrating screens, vibrating feeders, vibrating dryers, compaction tables and vibrating machinery in general.



OWSNE

OWSHD

OWS oscillating mounts assure a high shock absorbing level owing to their special shape, featuring the interaction of four elastic torsional elements. Each insert is implemented by constraining two square profiles with four rubber inserts.

OWSNE5000 side view

Central torsional elastic insert

The four torsional elements are combined in a different manner in order to allow the implementation of two types of suspensions: “OWSNE” e “OWSHD”. The two models are similar, but they differ from one another as regards to the length and the opening angle of the arms. This difference entails a different kinematic mechanism and assures a higher level of stiffness for the OWSHD models, having the same overall dimensions; therefore, it allows a greater vertical maximum load, slightly decreasing elasticity.

Both types of oscillating mounts guarantee very low natural frequency values, close to 2 Hz, thus succeeding to achieve isolation levels from the supporting structure of the vibrating machine higher than 98%, even at minimum excitation frequencies.

Furthermore, they achieve a very low level of noise pollution and, if needed, they can be operated as close as possible in resonance state with the vibrating machine.

OWC oscillating mounts withstand pulse feed, they are maintenance-free and they can work in any type of ambient temperature.

The special kinematic mechanism as well as the features of the rubber insert allow to achieve a cross stiffness equal to about 10 times the longitudinal stiffness (feeding direction of the conveyed product). This results in an improved efficiency of the process, greater safety and the possibility to avoid side guides or additional devices to control the movement of the machine during turn-off transient state.

Important

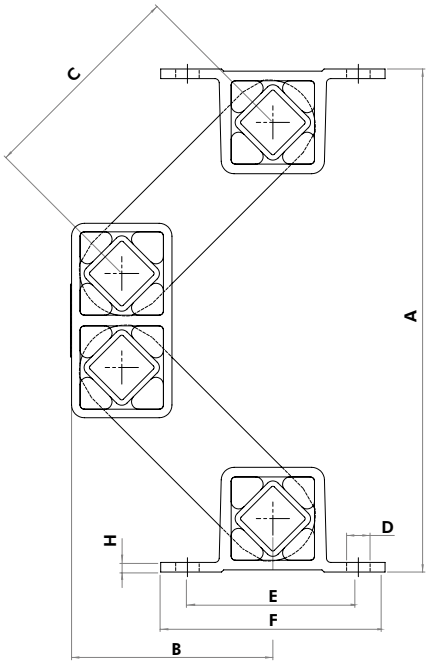
- **Operating temperature: from -40 °C to + 80 °C**

1.4 Oscillating mounts - Standard Edition (OWS NE)

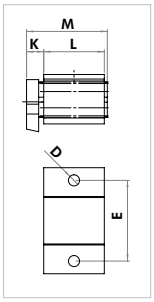
from NE 1500 to NE 3800

NE 4500

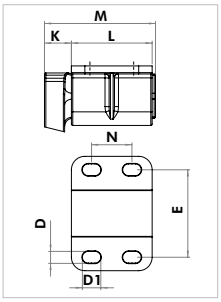
from NE 5000 to NE 5020



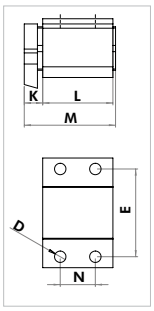
from NE 1500 to NE 2700



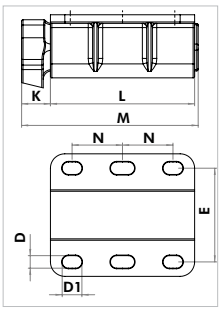
from NE 4500 to NE 5000



NE 3800



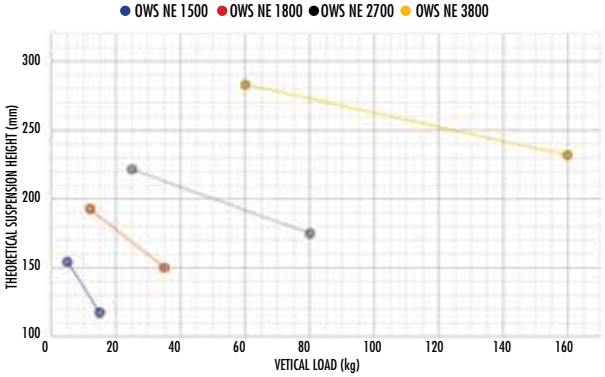
NE 5020



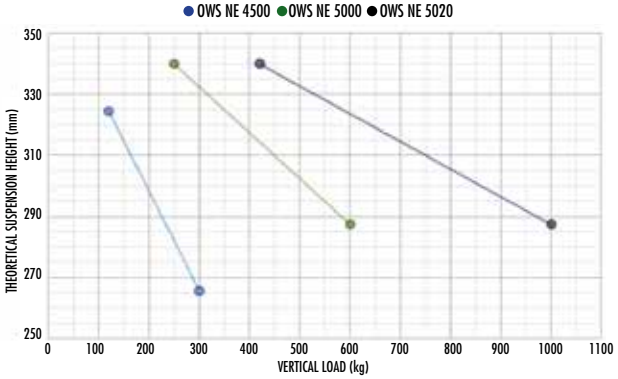
model	load capacity (kg)		A (mm)		B (mm)		dynamic limits						proper frequency (Hz)	
							8 poles		6 poles		4 poles			
	unload	max. load	unload	max. load	unload	max. load	max. stroke (mm)	a max (g)	max. stroke (mm)	a max (g)	max. stroke (mm)	a max (g)	unload	max. load
OWS NE 1500	5	15	168	117	70	87	14	4.1	12	6.2	8	9.3	4.0	2.8
OWS NE 1800	12	35	208	150	88	108	17	4.9	15	7.7	8	9.3	3.7	2.6
OWS NE 2700	25	80	235	175	94	113	17	4.9	14	7.2	8	9.3	3.7	2.7
OWS NE 3800	60	160	305	232	120	146	20	5.8	17	8.8	8	9.3	3.0	2.4
OWS NE 4500	120	300	354	266	139	168	21	6.1	18	9.3	8	9.3	2.8	2.3
OWS NE 5000	250	600	382	287	150	181	22	6.4	18	9.3	8	9.3	2.4	2.1
OWS NE 5020	420	1000	382	287	150	181	22	6.4	18	9.3	8	9.3	2.4	2.1

model	C	D / D1	E	F	H	K	L	M	N	weight	material		colour
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	arms	external frame	
OWS NE 1500	80	7	50	65	3	10	40	52	-	0.5	fabricated steel	aluminium frame	blue
OWS NE 1800	100	9	60	80	3.5	14	50	67	-	1.1	fabricated steel	aluminium frame	
OWS NE 2700	100	11	80	105	4.5	17	60	80	-	2.3	fabricated steel	aluminium frame	
OWS NE 3800	125	13	100	125	6	21	80	104	40	5.1	fabricated steel	aluminium frame	
OWS NE 4500	140	13x26	115	145	8	28	100	132	58	13.5	fabricated steel	nodular cast iron	
OWS NE 5000	150	17x27	130	170	12	40	120	165	60	22.5	nodular cast iron	nodular cast iron	
OWS NE 5020	150	17x27	130	170	12	40	200	245	70	33.2	nodular cast iron	nodular cast iron	

OWS NE Load vs Deflection



OWS NE Load vs Deflection



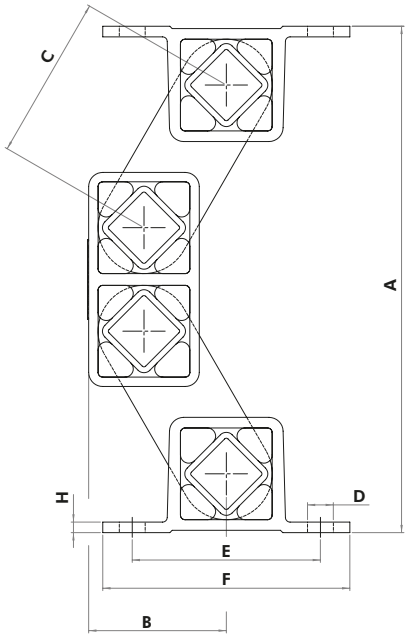
The height values shown in the graphs refer to suspensions already tested (use of 300 hours). The actual suspension height may vary depending on the operating temperature, type of material load, frequency and oscillation amplitude.

1.5 Oscillating mounts - Heavy Duty Edition (OWS HD)

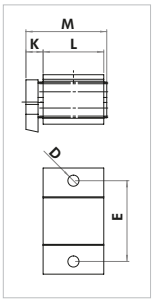
from HD 2700 to HD 3800

HD 4500

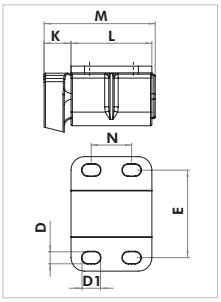
from HD 5000 to HD 5020



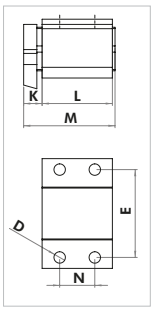
HD 2700



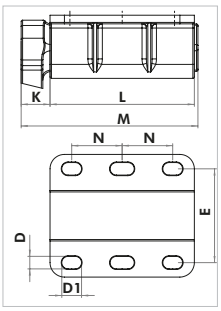
from HD 4500 to HD 5016



HD 3800



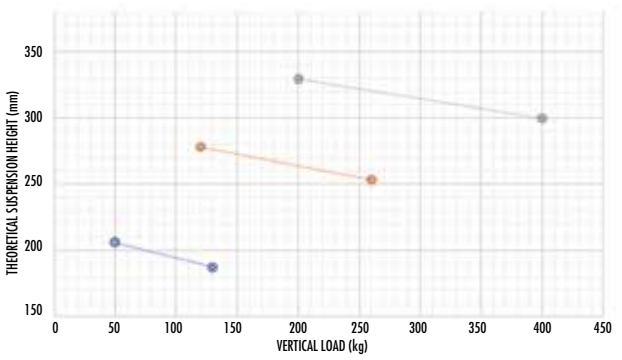
HD 5020



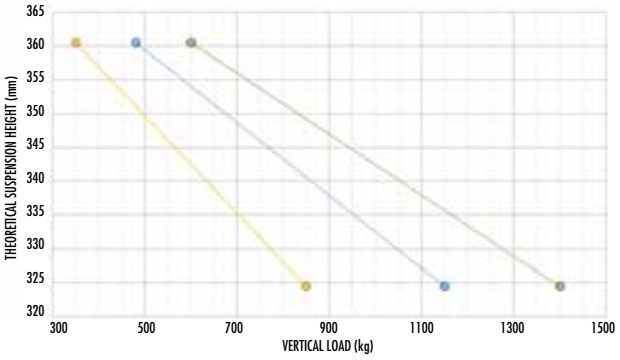
model	load capacity (kg)		A (mm)		B (mm)		dynamic limits						proper frequency (Hz)	
							8 poles		6 poles		4 poles			
	unload	max. load	unload	max. load	unload	max. load	max. stroke (mm)	a max (g)	max. stroke (mm)	a max (g)	max. stroke (mm)	a max (g)	unload	max. load
OWS HD 2700	50	130	215	187	59	74	12	3.5	10	5.2	8	9.3	4.8	3.1
OWS HD 3800	120	260	293	253	79	105	15	4.3	13	6.7	8	9.3	3.6	2.7
OWS HD 4500	200	400	347	300	96	125	17	4.9	14	7.2	8	9.3	3.3	2.5
OWS HD 5000	350	850	378	324	105	138	18	5.2	15	7.7	8	9.3	3.2	2.4
OWS HD 5016	480	1150	378	324	105	138	18	5.2	15	7.7	8	9.3	3.2	2.4
OWS HD 5020	600	1400	378	324	105	138	18	5.2	15	7.7	8	9.3	3.2	2.4

model	C	D / D1	E	F	H	K	L	M	N	weight	material		colour
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	arms	external frame	
OWS HD 2700	70	11	80	105	4.5	17	60	80	-	2.1	fabricated steel	aluminium frame	blue
OWS HD 3800	95	13	100	125	6	21	80	104	40	4.8	fabricated steel	aluminium frame	
OWS HD 4500	110	13x26	115	145	8	28	100	132	58	13.4	fabricated steel	nodular cast iron	
OWS HD 5000	120	17x27	130	170	12	40	120	165	60	21.9	nodular cast iron	nodular cast iron	
OWS HD 5016	120	17x27	130	170	12	40	160	208	70	27.3	nodular cast iron	nodular cast iron	
OWS HD 5020	120	17x27	130	170	12	45	200	250	70	33.4	nodular cast iron	nodular cast iron	

OWS HD Load vs Deflection



OWS HD Load vs Deflection



The height values shown in the graphs refer to suspensions already tested (use of 300 hours). The actual suspension height may vary depending on the operating temperature, type of material load, frequency and oscillation amplitude.

1.6 Instructions for use

Danger - Warning

Do not tamper with the oscillating mounts using any kind of device to achieve performances different from those designed. Any unauthorized modification can compromise human health, as well as the integrity of the suspension itself.

Operators must wear suitable protective clothing and personal protection equipment, as required by the standards on safety at the workplace and accident prevention.

Before use, make sure all safety devices are installed and they work properly.

Prevent the access of unauthorized persons in the work area when running the equipment.

Remove all obstacles or sources of hazard from the work area.

Oscillating mounts must be installed leaving a sufficient free space for mounting/unmounting and maintenance.

INTENDED USE

OWC OWSNE/OWSHD oscillating mounts have been implemented to be installed on vibrating screens, vibrating feeders, vibrating dryers, compaction tables and vibrating machinery in general.

Any other use will lead to the Manufacturer's disclaiming any responsibility.

CONTRAINDICATIONS FOR USE

There is no contraindication for use, if normal precautions for this type of components are observed, together with the indications stated in this manual.

It is the plant manager/fitter's responsibility to provide and install all precautions/protections to avoid human injuries and material damages.

1.7 Warnings

Danger - Warning

Before proceeding with the installation of the oscillating mounts, the plant manager/fitter must take care to check if the ordered model matches the one in their possession and that it shows no damages from transport and no abnormalities.

Oscillating mounts must be installed by following the instructions in this manual, by the fitter/plant manager who shall provide a functionality test and a check for proper positioning. Possible unmounting and mounting operations related to oscillating mounts are performed only for maintenance purposes and they may be conducted only by qualified and authorized personnel. The instructions needed to install the oscillating mounts are attached to the user's manual.

Caution

Before carrying out any intervention on the oscillating mounts, make sure they have been set in safety conditions.

The Manufacturer shall not accept responsibility for safety of persons or objects and operation failure of the device if the loading/unloading operations from trucks, transport, positioning on site, use, repairs, maintenance etc. have not been carried out in compliance with the warnings described in this Manual.

Similarly, the manufacturer shall reject any responsibility if the oscillating mounts are used:

- improperly;
- by unauthorized and/or insufficiently trained personnel;
- with the initial configuration changed;
- by inserting non-original spare parts;
- not in compliance with the regulations and laws in force;
- not in compliance with the recommendations in this manual.

The user must check, paying the utmost attention, before performing any operation, that the operating area is free from obstacles, persons, machines, possible sources of hazard.

Lifting, transport, installation on site, commissioning, stability and functionality inspections, routine and unscheduled maintenance etc. must be performed by qualified and authorized personnel who must work according to the instructions given in this manual and in compliance with safety regulations in force.

It is prohibited to perform maintenance, repairs or modifications if the oscillating mounts are in use.

Oscillating mounts do not require regular cleaning.

Nevertheless, in case there are particular plant requirements, the user must choose suitable products to clean the vibrating machine that cannot damage the oscillating mounts (for example: chemical products that are not compatible with rubber inserts)

CONDITIONS FOR THE SAFETY COMPONENT

Before carrying out any intervention on the component, make sure it has been set in safety conditions.

Light the area that surrounds the component (by supplying, for instance, the operators with suitable electric torches).

For any operation to be conducted on the component (maintenance etc.), operators must be provided with suitable personal protection equipment (PPE): safety footwear, protective clothing, helmets, cut-proof gloves, protective masks.

It is the plant manager/fitter's responsibility to provide and install all precautions/protections to avoid human injuries and material damages. For dangerous products, products that are harmful on contact and/or inhalation, flammable products, explosive products and products that pose bacteriological and/or viral threats, the plant manager and/or the fitter must provide suitable devices.

1.8 Warranty

Important

OWC Equipment S.r.l. recognizes a warranty period of 12 months for its products. The warranty period shall run from the date recorded on the transport document.

The warranty does not cover breaking and/or defects due to a wrong installation or misuse, or due to incorrect maintenance operations or changes that were not authorized by the manufacturer.

For the avoidance of doubts, the warranty shall be nul if the device:

- was tampered with or modified;
- was used incorrectly;
- was used without abiding by the limits stated in this manual and/or was subjected to excessive mechanical strains
- was damaged due to negligence during transport, installation and use;
- was inserted non-original spare parts.

Upon receiving the product, the recipient must check for defects or damages during transport and/or for completeness.

Possible defects, damages or incompleteness of the supply must be immediately reported to the manufacturer, by written complaint, countersigned by the carrier.

Returned products that are still covered by warranty must be returned CARRIAGE PAID to our offices.

1.9 Storage

1) STORAGE PRIOR TO INSTALLATION

- Avoid as much as possible salty and moist environments.

- Arrange the components on wooden platforms and keep them safe from weather conditions in a closed container.

- The equipment must not be stored in the open or in areas where vapours or substances incompatible with the construction materials of the oscillating mounts (even slightly corrosive substances) are present.

2) LONG SHUT-DOWNS OF COMPONENTS AFTER ASSEMBLY

- Set the components in safety condition before start-up.

- Before commissioning the components, check for integrity all parts for which a prolonged shut down could compromise their operation.

3) POSSIBLE REUSE AFTER LONG SHUT-DOWNS

- During component downtime, avoid salty and moist environments.

- Arrange the components on wooden platforms and keep them safe from weather conditions.

- Set the components in safety condition before start-up.

- The equipment must not be stored in the open or in areas where vapours or substances incompatible with the construction materials of the oscillating mounts (even slightly corrosive substances) are present.

- Before commissioning the components, check for integrity all parts for which a prolonged shut down could compromise their operation.

EN

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OSCILLATING MOUNTS

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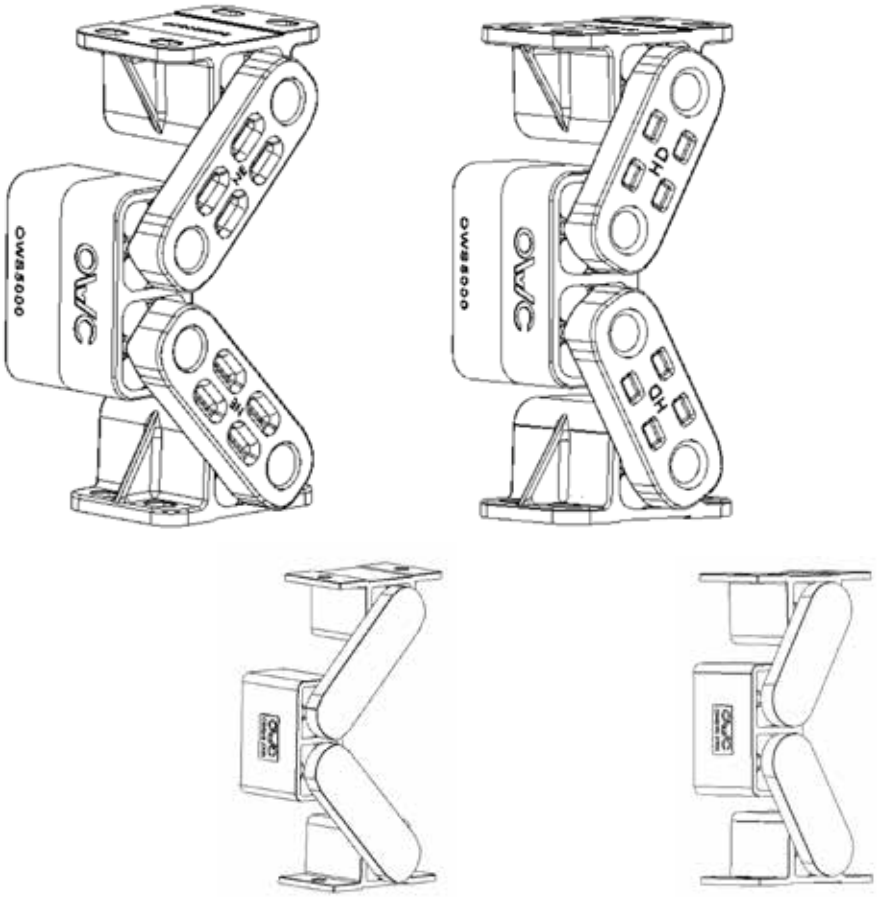
ASSEMBLY MAIN INSTRUCTIONS FOR USE AND MAINTENANCE



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2.1 Identification

For a correct identification of varied models, refer to the codes located on the oscillating mounts, as indicated here below, and to the codes to be found on the transport document, in the order confirmation and in the invoice.

Indication valid for sizes up to 3800, both NE and HD.

See the full code, example: OWSNE2700.

Indication valid for large sizes, up to 5020.

See the partial code on the central panel, for example: OWS5000.

See the partial code on the arms, for example: HD.

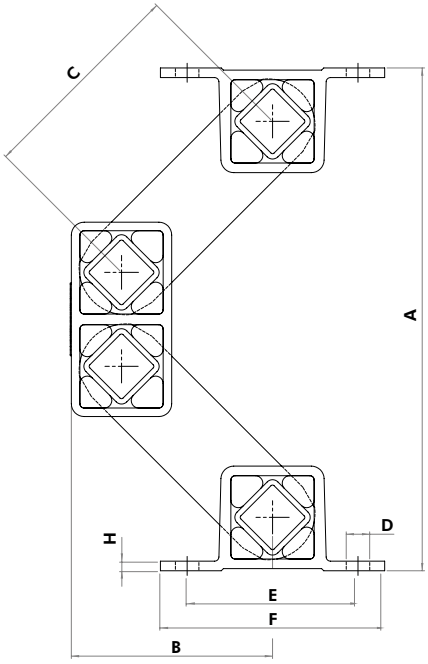
Full code, example: OWSHD5000.

Oscillating mounts - Standard Edition (OWS NE)

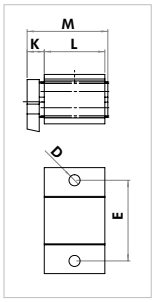
Da NE 1500 a NE 3800

NE 4500

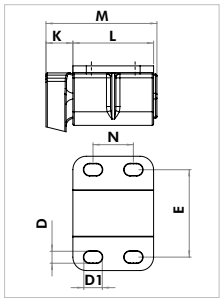
Da NE 5000 a NE 5020



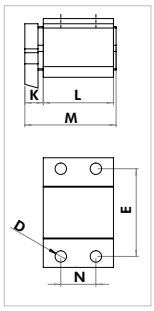
Da NE 1500 a NE 2700



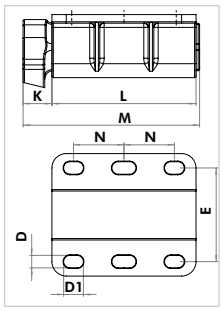
Da NE 4500 a NE 5000



NE 3800



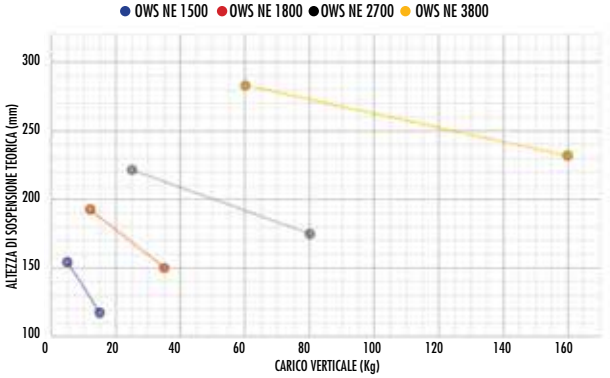
NE 5020



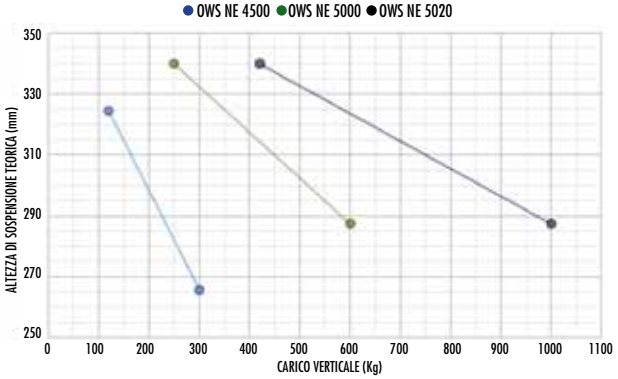
Modello	Capacità di carico (kg)		A (mm)		B (mm)		Limiti dinamici						Frequenza propria (Hz)	
							8 Poli		6 Poli		4 Poli			
	Scarico	Carico max	Scarico	Carico max	Scarico	Carico max	Corsa max (mm)	a max (g)	Corsa max (mm)	a max (g)	Corsa max (mm)	a max (g)	Scarico	Carico max
OWS NE 1500	5	15	168	117	70	87	14	4.1	12	6.2	8	9.3	4.0	2.8
OWS NE 1800	12	35	208	150	88	108	17	4.9	15	7.7	8	9.3	3.7	2.6
OWS NE 2700	25	80	235	175	94	113	17	4.9	14	7.2	8	9.3	3.7	2.7
OWS NE 3800	60	160	305	232	120	146	20	5.8	17	8.8	8	9.3	3.0	2.4
OWS NE 4500	120	300	354	266	139	168	21	6.1	18	9.3	8	9.3	2.8	2.3
OWS NE 5000	250	600	382	287	150	181	22	6.4	18	9.3	8	9.3	2.4	2.1
OWS NE 5020	420	1000	382	287	150	181	22	6.4	18	9.3	8	9.3	2.4	2.1

Modello	C	D / D1	E	F	H	K	L	M	N	Peso	Materiale		Colore
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Kg)	Bracketti	Quadri esterni	
OWS NE 1500	80	7	50	65	3	10	40	52	-	0.5	Carpenteria in acciaio	Profilo in alluminio	Verniciato in Blu
OWS NE 1800	100	9	60	80	3.5	14	50	67	-	1.1	Carpenteria in acciaio	Profilo in alluminio	
OWS NE 2700	100	11	80	105	4.5	17	60	80	-	2.3	Carpenteria in acciaio	Profilo in alluminio	
OWS NE 3800	125	13	100	125	6	21	80	104	40	5.1	Carpenteria in acciaio	Profilo in alluminio	
OWS NE 4500	140	13x26	115	145	8	28	100	132	58	13.5	Carpenteria in acciaio	Ghisa sferoidale	
OWS NE 5000	150	17x27	130	170	12	40	120	165	60	22.5	Ghisa sferoidale	Ghisa sferoidale	
OWS NE 5020	150	17x27	130	170	12	40	200	245	70	33.2	Ghisa sferoidale	Ghisa sferoidale	

OWS NE Carico vs Deflessione



OWS NE Carico vs Deflessione



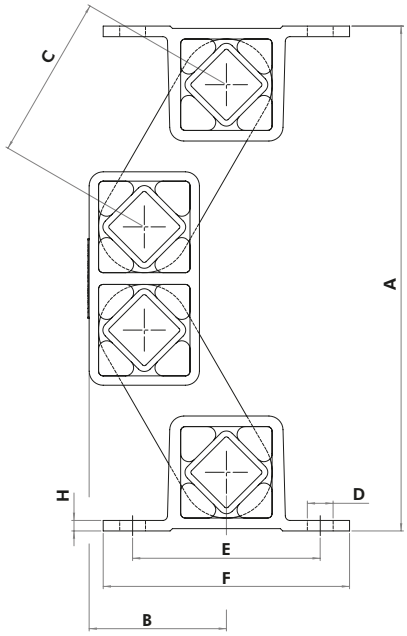
I valori di altezza riportati nei grafici si riferiscono a sospensioni già testate (utilizzo di 300 ore). L'altezza effettiva della sospensione può variare in base alla temperatura di esercizio, al tipo di carico del materiale, alla frequenza e all'ampiezza di oscillazione.

Oscillating mounts - Heavy Duty Edition (OWS HD)

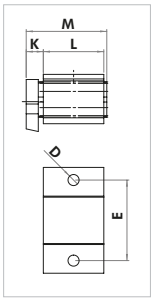
Da HD 2700 a HD 3800

HD 4500

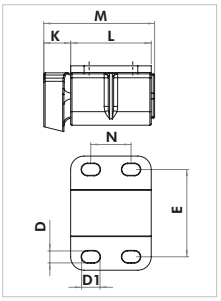
Da HD 5000 a HD 5020



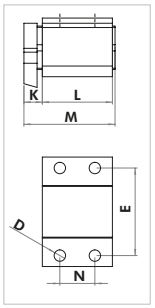
HD 2700



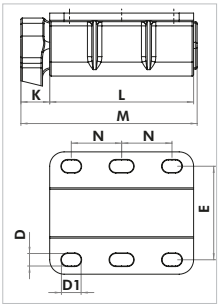
Da HD 4500 a HD 5016



HD 3800



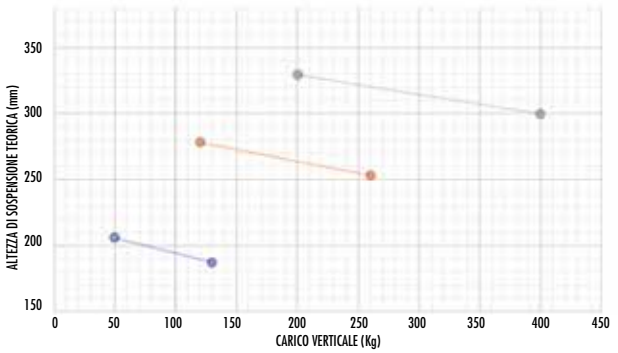
HD 5020



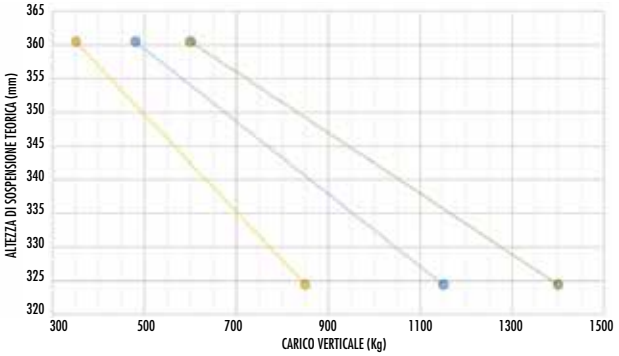
Modello	Capacità di carico (kg)		A (mm)		B (mm)		Limiti dinamici						Frequenza propria (Hz)	
							8 Poli		6 Poli		4 Poli			
	Scarico	Carico max	Scarico	Carico max	Scarico	Carico max	Corsa max (mm)	a max (g)	Corsa max (mm)	a max (g)	Corsa max (mm)	a max (g)	Scarico	Carico max
OWS HD 2700	50	130	215	187	59	74	12	3.5	10	5.2	8	9.3	4.8	3.1
OWS HD 3800	120	260	293	253	79	105	15	4.3	13	6.7	8	9.3	3.6	2.7
OWS HD 4500	200	400	347	300	96	125	17	4.9	14	7.2	8	9.3	3.3	2.5
OWS HD 5000	350	850	378	324	105	138	18	5.2	15	7.7	8	9.3	3.2	2.4
OWS HD 5016	480	1150	378	324	105	138	18	5.2	15	7.7	8	9.3	3.2	2.4
OWS HD 5020	600	1400	378	324	105	138	18	5.2	15	7.7	8	9.3	3.2	2.4

Modello	C	D / D1	E	F	H	K	L	M	N	Peso	Materiale		Colore
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Kg)	Braccetti	Quadri esterni	
OWS HD 2700	70	11	80	105	4.5	17	60	80	-	2.1	Carpenteria in acciaio	Profilo in alluminio	Verniciato in Blu
OWS HD 3800	95	13	100	125	6	21	80	104	40	4.8	Carpenteria in acciaio	Profilo in alluminio	
OWS HD 4500	110	13x26	115	145	8	28	100	132	58	13.4	Carpenteria in acciaio	Ghisa sferoidale	
OWS HD 5000	120	17x27	130	170	12	40	120	165	60	21.9	Ghisa sferoidale	Ghisa sferoidale	
OWS HD 5016	120	17x27	130	170	12	40	160	208	70	27.3	Ghisa sferoidale	Ghisa sferoidale	
OWS HD 5020	120	17x27	130	170	12	45	200	250	70	33.4	Ghisa sferoidale	Ghisa sferoidale	

OWS HD Carico vs Deflessione



OWS HD Carico vs Deflessione



I valori di altezza riportati nei grafici si riferiscono a sospensioni già testate (utilizzo di 300 ore). L'altezza effettiva della sospensione può variare in base alla temperatura di esercizio, al tipo di carico del materiale, alla frequenza e all'ampiezza di oscillazione.

2.2 Transport and packaging

Danger - Warning

SAFETY RECOMMENDATIONS FOR TRANSPORT AND HANDLING

All operations must be carried out by qualified and authorized personnel.

The personnel authorized for handling must possess the specific skills and experience to put into effect all necessary measures to ensure their own safety and the safety of others involved.

When choosing the features of lifting and handling equipment (crane, bridge crane, fork-lift truck etc.), take into consideration the load to be handled and overall dimensions.

For lifting, use only certified accessories such as lifting eyes, hooks, shackles, snap-hooks, clamps, slings, chains, ropes etc. suitable for the load to be lifted.

During handling, observe all applicable prescriptions for load handling and conduct all necessary movements slowly.

Avoid sudden movements, dangerous oscillations and rotations; if necessary, provide manual support for movement and lay the load carefully on the ground.

Avoid any damages during unloading and handling.

Always move the merchandise with care.

N.B.: When a component does not exceed an overall weight of 30 kg for adult male operators and 20 kg for adult female operators, transport can be manual (D.lgs 626/94)

CHECKS BEFORE SHIPMENT

When you receive the merchandise, check if the type and quantity match the data on the transport document, the invoice and the order confirmation.

Possible damages must be immediately notified in writing in the space provided for this purpose in the waybill. The driver must accept such complaints and must leave a copy thereof to the customer. If the shipment is carriage paid to destination, send your complaint to us; otherwise, direct it to the forwarder. If damages are not claimed immediately after the merchandise arrives, your complaint may not be accepted.

The installer is liable for the proper disposal of the packagings according to the legislation in force.

2.3 Installation

SAFETY REGULATIONS FOR INSTALLATION

Before any intervention, secure the components.

A safe place means an area where, when the components are running, there is a proper signage in place and there are no damageable plant parts or inflammable material deposits.

The user shall undertake the entire responsibility for the positioning of varied components as herein above indicated.

The components do not require particular lighting; the fitter of the vibrating machine must ensure a proper lightening of the area on the basis of the indications contained in the relevant legislation.

It is the fitter's duty to check the suitability of the site where the plant is positioned.

Depending on the component assembly height, provide the necessary PPE (personal protection equipment)

Important: In order to observe regulations in force on prevention it is absolutely necessary to avoid any possibility that the running component could be reached by hand. To this end, the fitter must provide obstacles (grids, protection nets etc.) and/or spacers that impede access.

It is strictly forbidden to touch oscillating mounts when the vibrating machine is running.

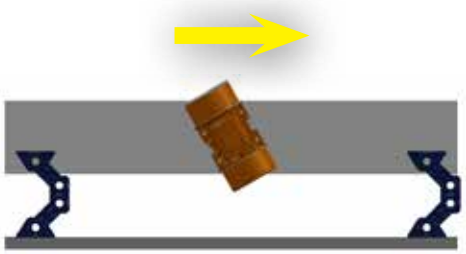
ASSEMBLY OF THE VIBRATING MACHINE WITH OWC OSCILLATING MOUNTS

During installation, it is essential to comply with the correct assembly position (direction).

For most vibrating machines, for correct operation, all the suspensions must be assembled with the "knee" turned towards the material feed direction.

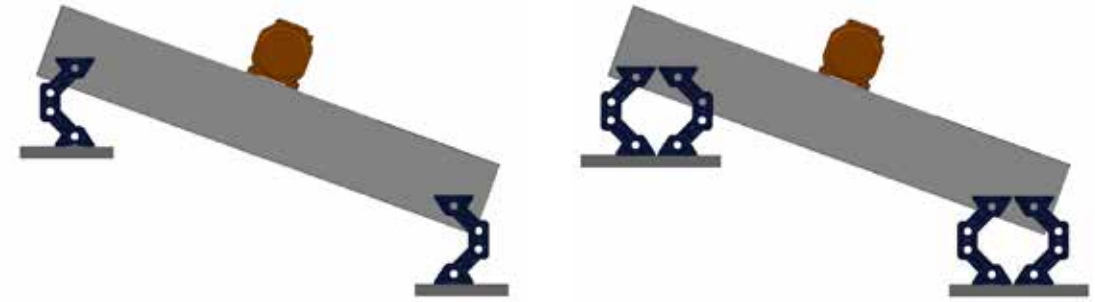
Installation of oscillating mounts, with arms pointing towards the outer side or towards the inner side of the vibrating machine does not involve any differences in terms of their operation.

Nonetheless, it is recommended to install oscillating mounts with their arms pointing towards the outer side of the vibrating machine, in order to facilitate mounting and possible replacement operations thereof.



Should the oscillating mounts be assembled in a "hanging" configuration (hanging screen, vibrating "hanging" feeder,...), the oscillating mounts must be assembled with the "knee" turned backwards compared to the material feeding direction.

If the vibrating machine is tilted, with an angle greater than 10°, it is necessary to select the "pantograph"-type assembly, where the "knee" of the oscillating mounts, on both axes, is turned towards the external part of the machine. Specularity shall be achieved compared to the centreline of the machine. This setup aims at preserving the duration of the suspensions.



This same assembly configuration ("pantograph" type) is also adopted for machines, where vibration is merely vertical, such as, for example, for compaction tables.

In order to achieve an optimal performance of the suspensions and of the vibrating machine, it is recommended to proceed as following during assembly:

- Lift the vibrating feeder with a crane/overhead crane (shall it not be feasible, use four jacks so to lift the feeder, parallel to the floor)
- Place the oscillating mounts on the machine support frame
- Tighten the bolts temporarily, in the lower position compared to the vibrating machine frame
- Place the vibrating feeder without pressing down/loading the oscillating mounts
- Tighten the bolts temporarily in the upper position compared to the vibrating feeder
- Slowly lower the vibrating feeder taking care of aligning the suspensions: it is important that they are parallel to the material feed direction (tolerance ±1° - keep the arms as reference)
- Tighten both the upper and the lower bolts

During measuring of the oscillating mounts, the theoretical centre of gravity of the vibrating feeder has been taken into account to define a setup, where the load is distributed equally on each support.

Nevertheless, in most cases, during assembly, it can be noted that it is not possible to obtain a perfect distribution of the loads, thus resulting in a different compression of the suspensions on the feed side and on the discharge side of the vibrating machine.

If it is important to keep a certain tilt or flatness of the vibrating feeder, it is possible to insert some metal sheet spacers between the oscillating mounts and the frame of the vibrating machine, until reaching the desired level.

STRAIN UNDER THE LOAD OF OWC OSCILLATING MOUNTS

It is important to take into account the height of the suspensions under the load and the consequent height of the actual machine, in order to place at the correct height the feeder and the discharge of the product requiring processing.

Previously, the graphs, showing the load/strain relation for each size of oscillating mount, have been reported. The curves described therein report average values, which may vary for a few millimetres compared to the actual values, as the actual height is affected by environmental factors; e.g. operation temperature, material feed mode, oscillation frequency and width.

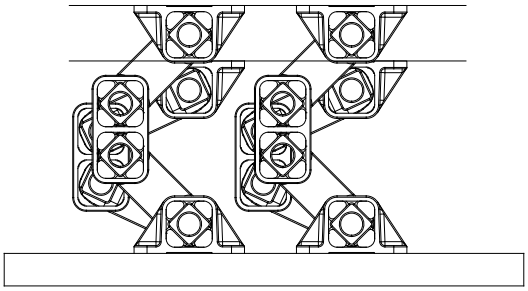
Furthermore, it must be taken into account that these values were obtained with the suspensions already set up.

The adjustment phase for oscillating mounts is completed within the first days of use and it involves a reduction in their height under the load of 10/25 mm, according to the model.

Complete adjustment requires a longer period but in terms of height, it is almost unnoticeable.

Such a phenomenon is natural and it is connected to the natural feature of the elastic rubber insert.

In case of two suspensions for each support point, it is necessary to take into account the strain/adjustment even as regards to overall length. Therefore, it is necessary to space out the two suspensions in order to avoid contacts between them during the operation of the vibrating machine (see the typical diagram below).



Therefore:

- read the estimated actual value of the oscillating mount height under load from the chart (increased estimate by a few mm for cold environments and moderate loads and, vice versa, decrease estimate for very hot environments and very large loads)
- take into account, during the sizing of material load/unload, that the height value of the vibrating machine during assembly will undergo a reduction of 10/25 mm during adjustment
- in case of assembly of 2 oscillating mounts per each support point, consider that during static or dynamic compressions, longitudinal dimensions increase, so, if not suitably spaced out, they may collide

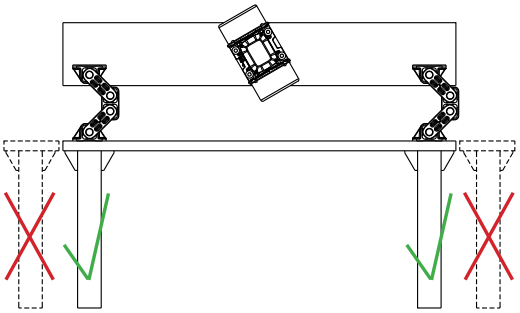
MATERIAL DEPOSITS / MECHANICAL SHUT DOWNS

in order to avoid damages to the oscillating mounts due to the overload of the vibrating machine (e.g.: the material load continues to operate once the vibrating feeder has stopped), it is necessary to consider the introduction of mechanical stops, which may avoid excessive compression.

UNDERLYING STRUCTURE / MACHINE FRAME

It is very important for the correct and efficient operation of the vibrating machine to have a stiff support, on which the suspensions are assembled.

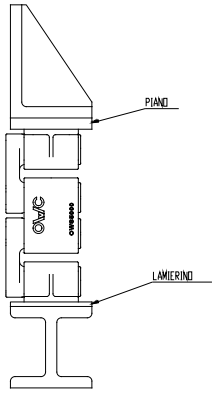
The optimal condition requires the assembly of the suspensions on a frame, featuring vertical beams at the positioning point of the same (see the typical diagram below).



If, due to system reasons, this is not possible, it is however essential that the underlying structure is sufficiently stiff so not to undergo strains or displacements caused by the vibrating mass. Every movement of the part underlying the oscillating mounts limits until deleting the performance of the process, by conveying unwanted vibrations, which spread inside the system, resulting in noise and structural failure.

SUPPORTING BRACKETS TO MOUNT OWC OSCILLATING MOUNTS

In order to calculate the height position of the supporting brackets needed to mount the oscillating mounts, please refer to the paragraph "DEFORMATION OF OSCILLATING MOUNTS UNDER LOAD" and it is recommended to take into account the height of the oscillating mounts under load so as to define the actual height of the vibrating feeder.



Connection points of the supporting brackets used to mount oscillating mounts on a vibrating feeder are one of the most strained areas of the machine.

Therefore, it is recommended to measure both the brackets and the walls of the vibrating feeder and the constraints (bolts or welding) with a high safety factor.

In order to achieve an optimal oscillation of the vibrating machine, it is recommended to assemble the suspensions in perfectly horizontal position (reference surface: bracket surface) and at the maximum distance possible from the centre of gravity of the vibrating feeder.

Where possible, in order for the vibrating machine to be perfectly balanced, please respect the equal distance of the suspensions on the feed and discharge side from the centre of gravity.

Vertically, instead, the upper bracket must be on the same surface of the centre of gravity of the vibrating feeder (this condition cannot be applied in case of tilted surface).

FIXING ELEMENTS TO ATTACH OWC OSCILLATING MOUNTS TO THE STRUCTURE OF THE VIBRATING MACHINE

Thread diameter	Tightening torque [Nm]		
	Resistance class **8.8**	Resistance class **10.9**	Resistance class **12.9**
M6	9.5	13.0	16.0
M8	23.0	32.0	39.0
M10	46.0	64.0	77.0
M12	80.0	110.0	135.0
M16	195.0	275.0	330.0

Minimum accepted resistance class of the hardware: 8.8

CHECKS TO BE PERFORMED AFTER THE OWC OSCILLATING MOUNTS ARE ASSEMBLED

After the first days of operation, the oscillating mounts undergo a natural adjustment, which entails a lowering of its own height under the load.

This phenomenon is connected to the feature of the rubber and does not absolutely jeopardise vibrating machine operation.

As it is affected by different factors, a different adjustment may occur between the feed end and the discharge end of the processed product.

Therefore, it is recommended to check the height of the suspensions on both axes and, if required, intervene with metal sheet spacers to correct the tilt of the vibrating feeder.

It is recommended to visually check the movement of the feeder and if it is not perfectly in line, measure the oscillation width at the support points.

After a short running period, check again the tightness of the fixtures that connect the OWC oscillating mounts to the structure

2.4 Limits of use

OPERATION

Accepted operating temperature: from -40 °C to +80 °C

CONTRAINDICATIONS FOR USE

There is no contraindication for use, if normal precautions for this type of components are observed.

2.5 Maintenance

Danger - Warning

OWC oscillating mounts must be handled, installed, commissioned, inspected, maintained and possibly dismantled only by qualified and authorized personnel in respect to regulations in force.

Before any maintenance intervention, secure the oscillating mounts and the vibrating machine to which they are connected.

MAINTENANCE OPERATIONS MUST BE PERFORMED ONLY BY QUALIFIED PERSONNEL, WITH THE VIBRATING MACHINE DISCONNECTED FROM THE POWER SOURCE.

To reach parts of the device that are located at a height, use a work platform that must be selected so as to avoid slipping, snagging and falling.

REPLACEMENT OF WORN PARTS

OWC oscillating mounts are not provided with single wearable parts that could be replaced: envisaged replacements mean new OWC oscillating mounts

LUBRICATION

Attention: Do not ever lubricate the oscillating mounts since this would lead to irreversible damages to the rubber inserts inside them.

REGULAR INSPECTIONS

Before any intervention, secure the components.

MONTHLY

- Check the height of every single oscillating mount installed on the vibrating machine. They must not reach the lower limit given in the tables included in the chapter "2.1 IDENTIFICATION - to section OWS NE Range & OWS HD Range", in column “A [mm] max load”.
- Check for abnormal noises due to the friction of metal parts or to the breaking of the OWC oscillating mounts.
- Check the tightness of the fixtures that connect the OWC oscillating mounts to the structure

CLEANING

Before any intervention, secure the components.

OWC oscillating mounts do not require regular cleaning. Nevertheless, in case there are particular plant requirements, the user must choose suitable products to clean the vibrating machine that cannot damage the OWC oscillating mounts (for example: chemical products that are not compatible with rubber inserts)

2.6 Residual risks

The fitter, based on the use of the oscillating mounts, must inform the operators, via suitable signals, on the following residual risks:

Mechanical hazards

For maintenance activities, it is the operator's obligation to always use personal protection equipment. Suitable sign plates located near the vibrating machine indicate what personal protection equipment is required.

Noise hazards

It is mandatory for the user and the employer to observe regulatory acts on the protection against the daily personal exposure of operators to noise (in Italy D.Lgs.277/91).

Presence of potentially dangerous and/or harmful dust

For routine and unscheduled maintenance, operators must be provided with suitable personal protection equipment and, in particular, must wear respiratory protective masks of a suitable class depending on the type of dust treated in the plant, as well as gloves and protective clothing. For major details, please refer to the safety diagram related to the product treated in the vibrating machine equipped with OWC oscillating mounts.

2.7 Scrapping

Operators in charge with disposal must wear suitable personal protection equipment.

For scrapping or dismantling the oscillating mounts at the end of their service life, take care to unmount the rubber parts and send them to the related collection centres.

The remaining parts must be sent to related collection centres for ferrous material recovery.

2.8 Troubleshooting common issues in the operation of vibrating machines

Minor problems can be solved without consulting a specialist.

Please find below a listing of some recommendations to solve the most frequent problems encountered in the use of oscillating mounts on vibrating machines

PROBLEM 1:

The vibrating machine does not have an even movement, but an uncontrolled one, generating side oscillations and the through-put is insufficient.

- Cause 1.1: The direction of rotation of the unbalanced motor is identical, that is not in opposite direction

Remedy 1.1: Correct the electric connections of the unbalanced motors by reversing the polarity as needed.

- Cause 1.2: The structure that joins the unbalanced motors to one another and the vibrating machine is too weak and, therefore, the stiffness of such a structure is not enough to guarantee a synchronization of the unbalanced motor weights or the unbalanced motors are spaced too much and thus cause the same inconvenience.

Remedy 1.2: Reinforce the connecting structure and/or reposition the motors by bringing them closer to one another.

PROBLEM 2:

The speed at which the product is conveyed on the vibrating machine is not enough and the amplitude of oscillations produced by the machine is lower than the expected one.

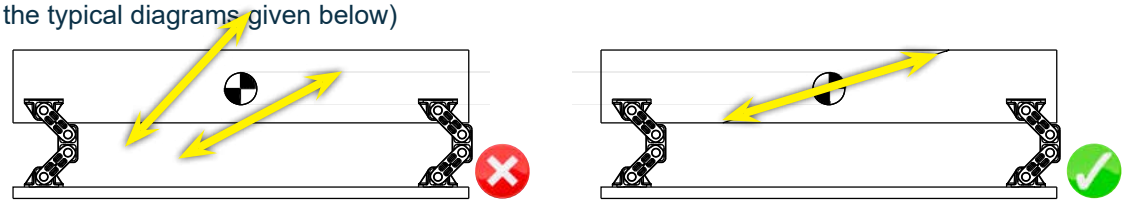
- Cause 2.1: The excitation force of the oscillation generator(s) is not enough in relation to the actual weight of the conveyed product.

Remedy 2.1: Increase the excitation force or choose more powerful motors and oscillation generators.

PROBLEM 3:

The material flow on the vibrating machine is not even and deposits are formed.

- Cause 3.1: The excitation force of the oscillation generator(s) does not pass through the centre of gravity of the vibrating machine; but it rather exceeds either the centre of gravity (either too low, or too high), thus causing a non-even acceleration on the overall length of the vibrating machine (see the typical diagrams given below)



Remedy 3.1: Change the inclination of the motor/oscillation generator on the supporting plane of the motor so that the excitation force would pass through the centre of gravity of the vibrating machine

- Cause 3.2: The carpentry of the vibrating machine that leans on the oscillating mounts is not rigid enough and the conveyed material does not have a constant flow.

Remedy 3.2: Reinforce the stands of the supporting frame for the oscillating mounts and intervene, where necessary, on the carpentry of the vibrating machine to stiffen its structure.

2.9 Declaration for the exclusion of the Machine Directive 2006/42/EC

Declaration for the exclusion of the Machine Directive 2006/42/EC
Declaration for the exclusion of the Machine Directive 2006/42/EC

We, the Manufacturer,

OWC Equipment s.r.l.
Strada Privata Oglio, 12/14/16
20098 San Giuliano Milanese (MI)

We declare under our sole responsibility that the following equipment

Oscillating mounts
Models OWSNE-OWSHD

, to which this declaration refers,

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are not included in the field of application of Machinery Directive n. 2006/42/EC

CE *and they are not subjected to marking* CE

This evaluation is based on the following documents:

- **----------**
- **----------**
- **Machinery Directive 2006/42/EC**
- **Guide to machinery directive 2006/46/CE (edition 2.1)**

---------- *The elastic elements can be used according the use conditions included into manufacturer documentation.*

San Giuliano Milanese, 04/11/2019

Luciano Ronci
General Manager

2.10 Spare parts

OWC oscillating mounts are not provided with single wearable parts that could be replaced: envisaged replacements mean new OWC oscillating mounts

To place a request for a new OWC oscillating mount, please specify the model that is found on the component, in the transport documents, in the invoice or the order confirmation.

N.B.: All data stated in this manual are not binding and may be subjected to variations at any time.