# CONCRETE CONCRETE CONSOLIDATION

# **VIBRATORS FOR CONCRETE COMPACTION**



THE WORLDWIDE LEADER IN VIBRATION TECHNOLOGY





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# • Worldwide leader in vibration technology

#### OLI is the world's top selling manufacturer of Electric and Pneumatic Vibrators.

A high level of customer service is guaranteed through 20 OLI Trading Subsidiaries, 70+ local warehouses and 4 manufacturing plants worldwide.

# **OUR 3 DIVISIONS** PROVIDE CUSTOMERS WITH OPTIMAL SOLUTIONS FOR ALL REQUIREMENTS

INDUSTRIAL VIBRATORSFLOW AIDSCONCRETE CONSOLIDATIONImage: Descent of the state of t

Originally specialising in immersion vibrators for concrete consolidation, OLI is now the worldwide leader in vibration technology, with a **complete range of electric and pneumatic internal and external vibrators**.

By supplying **competitive**, **high quality products for wide-ranging applications**, OLI combines **performance** and **reliability** by adapting to the ever-changing market. A strong believer in innovation, OLI is constantly striving to be ahead of the opposition.

As a global player in industrial vibration technology, the key focus of OLI's business strategy is **rapid stock delivery, any time, anywhere in the world**. Excellent customer service is of pivotal importance: the company guarantees **quick order processing** and customers worldwide can enjoy access to the same high quality product and services.

OLI has access to credible expertise when it comes to finding suitable solutions to customers' requests. A team of engineers specialised in designing efficient, reliable, and safe solutions backed by **globally certified management**.

OLI provides their customers with state-of-theart equipment and the blueprint for the next generation of products is already in progress.



# The vibration of concrete

The freshly mixed concrete does not compact by itself because the poor fluidity is not able to overcome the internal friction; only by using the vibration it's possible to overcame such resistance and get the concrete compacted.

# THE VIBRATION CONTRIBUTES TO:

- The surfacing of the air trapped in the concrete;
- The **displacement of aggregates**, aligning them with one each other, with consequent reduction of cavities, conferring them high density and perfect homogeneity;
- The **adhesion** of the concrete to the bars of the reinforcement armatures or to any internal structural inserts, as well as to the basic anchorages.

#### **BENEFITS:**

- High mechanical resistance.
- Low porosity and thus low permeability to water and to aggressive substances contained therein.
- Absence of cracks within the concrete in the proximity of the reinforcement armatures' bars.
- **Complete filling** of the formwork.
- Increase in the life cycle of the concrete.
- High aesthetic result.





# INTERNAL ELECTRIC VIBRATORS

Flexible and easy-to-use vibrating systems are required whenever there is the construction of industrial floors, walls, columns, slabs, etc. In such cases high-frequency immersion vibrators are generally used, known as "poker" or simply "vibrating needles". They come into **direct contact with the concrete**; for this reason, we speak of internal direct vibration.

#### HOW THE VH VIBRATORS WORK

An eccentric mass is housed inside the vibrating head (or needle) which is fixed to a rotating shaft powered by a three-phase asynchronous AC motor.

During rotation, the eccentricity of the mass generates rotational movements to the vibrating head.

The **robustness** and the **constant rotation speed** are essential factors in the compaction of the concrete: drop in the speed and centrifugal force heavily reduce the quality of the manufactured article.

The VH is a robust and reliable product, which is suitable for compacting the concrete and it is appropriate for continuous operation.

#### Important:

The VH has to be operated by electric or electronic converters that convert the 50/60 Hz main frequencies to 200 Hz. This is necessary for the vibrating head in order to reach a vibration speed of 12,000 vpm, as it is ideal for the proper compaction.



- » No overheating
- » Easy maintenance
- » Long life of the vibrator head
- » 100% Water Proof



6

VH

# Internal electric high frequency vibrators





								DIMENSIONAL SPECIFICATIONS			
Model	CF	Rated current *	Rated power (42V)	Action diameter *	Amplitude	Noise level	Compaction power *	Head Diameter	Head Length	Head Weight	Total Weight
	N	А	Нр	in	in	dB A	CF/h	in	in	lb	lb
VHN 38	1,700	8	0.67	17.7	0.07	70	706	1.50	15.90	5.30	23.4
VHN 50	3,080	11	0.80	23.6	0.08	76	883	1.97	15.87	9.70	32.6
VHN 59	4,560	12	1.21	31.5	0.09	76	1,236	2.32	16.54	15.00	38.4
VHP 50	3,760	15	1.21	27.6	0.08	76	1,413	1.97	18.43	11.90	36.2
VHP 59	5,640	17	1.48	35.4	0.09	79	1,589	2.32	19.61	18.00	43.2
VHP 65	7,330	24	1.74	43.3	0.10	79	1,766	2.56	19.06	20.70	49.4
VHP-R 59 **	4,800	12	1.34	35.4	0.09	78	1,589	2.32	16.93	13.23	36.4
VHP-R 65 **	6,500	14	1.47	39.4	0.09	78	1,766	2.56	17.32	17.64	42.9

\* Measurements vary according to the quality and thickness of the concrete \*\* Equipped with roller bearings

# **VH - INTERNAL ELECTRIC HIGH FREQUENCY VIBRATORS**

APPLICATION	Concrete compaction
DESCRIPTION	Internal high frequency electric vibrators for concrete consolidation characterised by high performance, consistent speeds, and remarkable resistance to abrasion

#### FEATURES

DUTY CYCLE	Continuous S1
INPUT	42V - 3ph - 200Hz
NOMINAL FREQUENCY	12,000 vpm
INSULATION CLASS	F (T° max = 311 °F)
THERMAL SWITCHES	Inside the stator. Max T °C = 302 °F
WORKING TEMPERATURE	From -4 °F to +104 °F
HEAD	Ball bearing: n.2 VHN 50 / VHN 59 - n.4 VHN 38 and complete VHP range Roller bearing: VHP-R 59 / VHP-R65 Protection class IP68 Hardening treatment for VHN / VHP-R and chrome plating for VHP
SWITCH BOX	Polyamide (nylon +30% fiber glass) with gasket, cable protection, yellow colour IP66 protection Designed for continuous use and resistant to wear and tear
OPERATING HOSE	5 m SBR rubber hose with inner textile reinforcement
SUPPLY CABLE	10 m neoprene electric cable H07RN-F with 3 pin plug (42V – 3 phase, IP44)
FINISHING	VIBRATING HEAD: painted yellow Ral 1007 (VHN / VHP-R), chromate (VHP) SWITCH BOX: colour yellow Ral 1007
CERTIFICATIONS	C Community Directives and subsequent modifications: 2006/42/EC - 2006/95/EC Conformity verified according to the standard documents: IEC60745-1, IEC 60745-2-12, IEC 60034-1

OPTIONS Rubber cap





# **FREQUENCY AND VOLTAGE CONVERTERS**

The internal vibrating needles need to be powered via a threephase electric line at low voltage and high frequency, therefore it is necessary to use a voltage and frequency converter.

The electromechanical rotary converters consist of a motor and a generator, which are coupled together. The motor converts the electrical energy into mechanical energy; the generator converts the mechanical energy into electrical energy, thus generating the required voltage and frequency (42 Volt - 200 Hz). The converters of the CM range are designed to supply simultaneously and in a continuous cycle one or more highfrequency internal vibrators; they are reliable, durable and do not require maintenance.

The minimal design and the materials used **facilitate the external cleaning**, while the special internal air ducting system **avoids overheating**.

The range comprises several models, which are **capable of supplying from 1 to 4 immersion vibrators**.



INTERNAL VIBRATORS

CM (D)

# Frequency and voltage converters



CMM 11







CMM 25, CMT 25



CMT 55, CMT 85

						INPUI			001901	
Model	Frame	Outlets	Supply Electric Cable	Weight	Input Voltage and Frequency	Current	Power	Output Voltage and Frequency	Current	Power
	Туре	N°	in	lb	V / f	А	Нр	V / f	А	kVA
CMM 11	Handle	1	138	37.48	230V, 1ph, 50Hz 400V 3ph 50Hz	2.5	0.67	42V ± 10% 3ph 200Hz	11	0.8
CMM 15	Handle	1	138	52.91		6	1.48		14	1.0
CMM 25	Frame	2	138	74.96		10	2.41		25	1.8
CMT 25	Frame	2	138	72.75		5	2.95		25	1.8
CMT 35	Wheeled	3	197	81.57		6	3.75		36	2.6
CMT 55	Wheeled	3	197	114.64		9	5.90		55	4.0
CMT 85	Wheeled	4	197	127.87		12	8.85		85	6.2

	COMPATIBILITY TABLE						
		Maximum numb	per of vibrators that ca	an be connected			
CMM 11	1x VHN 38	1x VHN 50	-	-	-	-	
CMM 15	1x VHN 38	1x VHN 50	1x VHN 59	-	-	-	
CMM 25	2x VHN 38	2x VHN 50	2x VHN 59	1x VHP 50	1x VHP 59	1x VHP 65	
CMT 25	2x VHN 38	2x VHN 50	2x VHN 59	1x VHP 50	1x VHP 59	1x VHP 65	
CMT 35	3x VHN 38	3x VHN 50	3x VHN 59	2x VHP 50	2x VHP 59	1x VHP 65	
CMT 55	3x VHN 38	3x VHN 50	3x VHN 59	3x VHP 50	3x VHP 59	2x VHP 65	
CMT 85	4x VHN 38	4x VHN 50	4x VHN 59	4x VHP 50	4x VHP 59	3x VHP 65	

#### **CM - FREQUENCY AND VOLTAGE CONVERTERS**

APPLICATION	Concrete compaction
DESCRIPTION	Frequency and voltage converters equipped with permanent magnets, specifically designed to power high frequency concrete vibrators continuously

#### FEATURES

DUTY CYCLE	Continuous S1
INSULATION CLASS	F (T° Max = 311 °F)
PROTECTION	Overload protection
WORKING TEMPERATURE	From -4 °F to +104 °F
CONNECTION BOX	Polyamide (nylon + 30% fibre glass), complete with switch and sockets (42V three phase, IP44 protection)
SUPPLY CABLE	Neoprene electric cable H07RN-F with plug
FINISHING	Powder coating (body yellow Ral 1007; fan covers, wheels and frame black Ral 9007)
CERTIFICATIONS	C Community Directives and subsequent modifications: 2006/42/EC - 2006/95/EC Conformity verified according to the standard documents: EN 12100-1, EN 12100-2, CEI EN 60745-1
DESIGN	Smooth and robust cast aluminium body Forced ventilation

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# INTERNAL VIBRATORS WITH BUILT-IN CONVERTER

On construction sites, during the consolidation of the concrete, a light, flexible and easy-to-use tool is often required, which **can be connected directly to the common single-phase power lines** (230 or 110 Volt, 50/60 Hz).

The solution to fulfil this need is the **EWO** range: **high-frequency immersion vibrators equipped with an integrated electronic frequency converter** capable of transforming the single-phase input voltage (230V or 110V, 50/60 Hz) into the three-phase voltage (230 V, 200 Hz) necessary to obtain 12,000 vpm.

Compared to the common vibrating needles powered by electromechanical converters, the EWO vibrators have several advantages:

- they are light and flexible;
- the constant output frequency maintains the maximum centrifugal force and thus a high and consistent performance;
- there is a protection against short circuits, excessive temperature, overvoltage and overcurrent above or below the nominal values.



- » Reliable
- » Safe & easy to handle
- » No overheating
- » Easy maintenance



# **COMPACT SOLUTION**



**EWO** 

# Internal high frequency vibrators with built-in converter



EWO 50C EWO 59C EWO 65C



								DIMENSIONAL SPECIFICATIONS						
Model	CF	Rated Current*	Rated power (230V)	Action Diameter **	Amplitude	Noise Level ***	Compaction Power **	Head Diameter	Head Length	Head Weight	Total Weight**** lb			
	Ν	А	Нр	in	in	DB A	CF/h	in	in	lb				
EW0 38C	1,700	1.5	0.67	17.7	0.07	70	706	1.5	15.9	5.3	32			
EW0 50C	3,760	2.7	1.21	27.6	0.08	76	1,413	1.97	18.43	11.5	44.1			
EW0 59C	5,640	3.0	1.48	35.4	0.09	79	1,589	2.32	19.61	18.0	50.3			
EW0 65C	7,330	4.5	1.74	43.3	0.10	79	1,766	2.56	19.06	20.7	54.7			

\* Refer to centrifugal force for amperage assessment \*\* Measurements vary according to concrete quality and thickness \*\*\* Measured at 1 m distance \*\*\*\* Packaging included.

Model	Input Voltage	Input Frequency	Input Amperage
Converter 230	230V ±10% 1ph	50/60Hz	5.5 A

#### **EWO - INTERNAL HIGH FREQUENCY VIBRATORS WITH BUILT-IN CONVERTER**

APPLICATION	Concrete compaction
DESCRIPTION	Equipped with compact electronic frequency converters integrated into the supply cable, characterised by high centrifugal forces, constant speeds and high wear resistance
FEATURES	
DUTY CYCLE	Continuous S1
INPUT	230V or 115V ± 10% 50/60 Hz -1 ph
NOMINAL FREQUENCY	12.000 vpm
INSULATION CLASS	F (T° max = 311 °F)
PROTECTION CLASS	Head protection IP68 Converter protection IP66 The inverter is protected against overcurrent, overvoltage, excess temperature and short circuit. A LED light shows the presence of a fault
WORKING TEMPERATURE	From -4 °F to +104 °F
HEAD	Equipped with 4 ball bearings greased for life Hardening treatment (EWO 38C), chrome plating (EWO 50C, EWO 59C, EWO 65C)
SWITCH BUILT-IN	Complete with reinforced gasket
PROTECTION HOSE	5 m SBR rubber hose with textile reinforcement
SUPPLY CABLE	10 m neoprene electric cable H07RN-F with SCHUKO 220V 2P+1T 16A plug
CONVERTER	Sturdy cast aluminium box Ergonomic and lightweight (6.61 lb)
INVERTER	Tropicalised and protected against vibration, moisture and shocks with a special resin
FINISHING	Painted yellow RAL 1007 (EW0 38C) and chrome plating (EW0 50C - EW0 59C - EW0 65C)
CERTIFICATIONS	Ce Community Directives and subsequent modifications: 2006/42/EC, 2014/30/EU, 2014/35/EU Conformity verified according to the standard documents: CEI EN 60745-1, CEI EN 60745-2-12

OPTIONS Rubber cap

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# **INTERNAL VIBRATORS WITH PISTOL GRIP**

For Thin layers of concrete, such as floors or slabs, a short, light and manoeuvrable vibrator is needed. For all these cases, the ideal solution is to use a pistol grip poker.

Through a switch located in the pistol, the operator is able to activate and deactivate the vibrator as needed and move easily on the construction site.

The highest level of safety is ensured through a low voltage needle (42V) as well as perfect compaction and aesthetic results are obtained thanks to the high speed (12,000 vpm).

#### Important:

The VHPG has to be operated by electric and electronic converters that convert the 50/60 Hz mains frequency to 200 Hz, which is necessary in order for the vibrating head to reach a vibration speed of 12,000 vpm, as it is ideal for the proper compaction.



- **Compact solution** »
- Lightweight »
- Long life of the vibrator head »





VHPG

# Internal high frequency vibrators with pistol grip



								DIMENSIONAL SPECIFICATIONS						
Model	CF	Rated current *	Rated power (42V)	Action diameter *	Amplitude	Noise level	Compaction power *	Head Diameter	Head Length	Head Weight	Total Weight			
	Ν	А	Нр	in	in	dB A	CF/h	in	in	lb	lb			
VHPG 38	1,700	8	0.67	17.72	0.07	70	706.29	1.50	15.91	0.24	0.75			
VHPG 50	3,080	11	0.80	23.62	0.08	76	882.87	1.97	15.87	0.45	0.96			
VHPG 59	4,560	12	1.21	31.50	0.09	76	1,236.01	2.32	16.54	0.69	1.20			

\* Measurements vary according to the quality and thickness of the concrete.

\*\* Equipped with roller bearings

#### **VHPG - INTERNAL ELECTRIC HIGH FREQUENCY VIBRATORS WITH PISTOL GRIP**

APPLICATION	Concrete compaction
DESCRIPTION	High frequency internal electric vibrators for concrete consolidation characterised by high performance, consistent speeds, and remarkable resistance to abrasion.

FEATURES

DUTY CYCLE	Continuous S1
INPUT	42V - 3ph - 200Hz
NOMINAL FREQUENCY	12,000 vpm
INSULATION CLASS	F (T° max = 311 °F)
THERMAL SWITCHES	Inside the stator. Max T °C = 302 °F
WORKING TEMPERATURE	From -4 °F to +104 °F
HEAD	Ball bearing: n.2 VHPG 50 / VHPG 59 - n.4 VHPG 38
PLASTIC PISTOL	Grip with cable protection, green colour IP54 protection
OPERATING HOSE	0.8 m SBR rubber hose with inner textile reinforcement
SUPPLY CABLE	10 m neoprene electric cable H07RN-F with 3 pin plug (42V – 3 phase, IP44)
FINISHING	VIBRATING HEAD: painted yellow Ral 1007
CERTIFICATIONS	C Community Directives and subsequent modifications: 2006/42/EC - 2006/95/EC Conformity verified according to the standard documents: IEC60745-1, IEC 60745-2-12, IEC 60034-1

OPTIONS Rubber cap





# INTERNAL PNEUMATIC VIBRATORS

VHA is a reliable vibration system designed to provide high operating frequency with high working efficiency under safe conditions. For this reason it is ideal for every type of compaction: from lab tests to heavy infrastructure projects.

There are no moving parts inside the hose, this means less vibration on the hands and arms of the operator and an extended service life. As a pneumatic vibrator, VHA doesn't need electricity and can even work out of concrete without overheating. This means no work interruptions even in severe conditions.

Ease-of-use and maintenance-free make the VHA the perfect solution for compacting concrete when electricity is not available.



**INTERNAL VIBRATORS** 

VHA High f

# High frequency pneumatic immersion vibrators



					DIMEN	SIONAL SPECIFIC	ATIONS
Model	CF	Vibration	Working Pressure	Air Consumption	Head Diameter	Head Length	Total Weight
	Ν	vpm	psi	CF/min	in	in	lb
VHA 40	2,712	22,000	90	17.50	1.57	9.06	8.82
VHA 50	5,627	17,000	90	28.00	1.97	9.84	12.79
VHA 60	9,321	12,000	90	31.50	2.36	11.42	16.75
VHA 80	15,829	11,000	90	45.50	3.15	12.99	31.31

#### **VHA - HIGH FREQUENCY PNEUMATIC IMMERSION VIBRATORS**

APPLICATION	Concrete compaction
DESCRIPTION	High frequency internal pneumatic vibrators for concrete consolidation
FEATURES	
DUTY CYCLE	Continuous
WORKING PRESSURE	6 Bar
AIR SUPPLY QUALITY	5.4.4
WORKING TEMPERATURE	14°F/+140°F
MAX NOISE LEVEL	99 dB (A)
TECHNOLOGY	Eccentric rotor
HEAD MATERIAL	Steel
FINISHING	Painted yellow RAL 1007
OPERATING HOSE	2 m SBR rubber hose with inner textile reinforcement
CERTIFICATIONS	C Community Directives and subsequent modifications: 2006/42/EC - 2006/95/EC
OPTIONS	Different length of the hose (up to 236.22 in) Quick connect fittings with filter included



# EXTERNAL ELECTRIC VIBRATORS

High frequency electric vibrators are used in construction sites and in precast manufacturing plants to obtain highquality products (exposed concrete), with excellent aesthetic results and weather resistance. The vibration is transmitted to the concrete indirectly through formworks or mould. Just like the internal vibrators, the external ones are also based on the principle of the vibration produced by the rotation of an eccentric mass powered by a three phase electric motor.

Low speed vibration (3,000 rpm) is used on high-density and unreactive concretes mostly, as they allow a fast displacement of the aggregates.

High speed vibration (6,000 or 9,000 rpm) is recommended with low-density concretes and in applications where high surface quality is required.

The possibility to adjust both the frequency and the speed (from 0 up to 9,000 rpm) guarantees the achievement of the perfect operational frequency. It depends on the type of concrete to vibrate as well as the natural resonant frequency of the mould.

The OLI external electric vibrators are characterised by high operating efficiency and ease of installation. Specially designed attachment devices (quick-coupling clamps) reduce the time required for installing and repositioning.

This vibration system is recommended when:

- High construction elements and narrow walls (partitions, columns, beams) have to be compacted, which are difficult to vibrate with other systems.
- The reinforcement density inside the housing is high.



- Sturdy design, made to last »
- High operating efficiency »
- Easy to install »





# **MVE FOOT MOUNTED**

# External high frequency vibrators







Class II Div.2: Temp. Class **T4** ExII 3D Temp. Class: 135 °C



						ELECTRICAL SPECIFICATIONS							
Wm	Weigh		Centrifugal Force rpm		Input Power	Frequency		Nominal Current A Max.	COS Φ	Cable Gland			
in*lb		lb	lb		Нр	Hz	42V	220-240V/400-460V		Metric			
1.28	MVE 650/4N-HF-10A0	10,14	655	0-6,000	0.36	0-200	5	0.92/0.53	0.75	M20			
5.92	MVE 3000/4N-HF-38E0	26,46	3,027	0-6,000	1.34	0-200	15	2.80/1.62	0.89	M25			
6.35	MVE 3100/2N-HF-50A0	47,84	3,250	0-6,000	1.74	0-100	23	4.22/2.44	0.77	M25			
6.35	MVE 3100/2N-HF-53A0	66,14	3,250	0-6,000	1.74	0-100	23	4.22/2.44	0.77	M25			
6.35	MVE 4100/2N-HF-53A0	66,14	4,475	0-6,000	1.74	0-100	23	4.22/2.44	0.77	M25			
10.29	MVE 5340/4N-HF-53A0	66,14	5,254	0-6,000	2.15	0-200	24	4.38/2.53	0.91	M25			
4.08	MVE 4100/2N-HF-53A0	66,14	4,753	0-9,000	2.01	0-150	28	5.02/2.90	0.75	M25			

NOTE: All the vibrators can be used in variable frequency if connected to the electronic control panel of OLI.

				DIMENSIONAL SPECIFICATIONS (in)											
Model	Drawing	Size	С	М	А	В	ØG	Holes	D	E	F	Н	I	L	N
MVE 650/4N-HF-10A0	А	10A0	8.3	1.8	2.44-2.91 1.3	4.2 3.27-4.02	0.4-0.3	4	5.1	5.3	0.4	2.0	3.8	4.2	3.3
MVE 3000/4N-HF-38E0	В	38E0	10.0	1.7	3.5	6.1	0.7	4	7.4	7.7	4.8	3.5	6.9	6.7	6.1
MVE 3100/2N-HF-50A0	С	50A0	12.6	2.4	4.7	6.7	0.7	4	8.2	8.3	0.9	3.8	7.3	7.6	6.7
MVE 3100/2N-HF-53A0	С	53A0	15.4	3.8	3.9	7.1	0.7	4	9.3	8.3	0.9	3.8	7.3	7.4	6.7
MVE 4100/2N-HF-53A0	С	53A0	15.4	2.4	3.9	7.1	0.7	4	9.3	8.3	0.9	3.8	7.3	7.4	6.7
MVE 5340/4N-HF-53A0	С	53A0	15.4	3.8	3.9	7.1	0.7	4	9.3	8.3	0.9	3.8	7.3	7.4	6.7
MVE 4100/2N-HF-53A0	С	53A0	15.4	3.8	3.9	7.1	0.7	4	9.3	8.3	0.9	3.8	7.3	7.4	6.7

#### FOOT MOUNTED ELECTRIC VIBRATORS

APPLICATION Concrete compaction

DESCRIPTION High frequency electric vibrator, foot mounted, external application

#### FEATURES

DUTY CYCLE	Continuous S1								
MULTIVOLTAGE	3ph 42V - 3ph 230/400V (* voltage tolerance ± 10%)								
FREQUENCY	0-100Hz - 0-150Hz - 0-200Hz								
WORKING TEMPERATURE	14 °F / +104 °F								
MAX NOISE LEVEL	85 dB(A) at 1 meter distance								
MATERIAL	aluminium or iron								
FINISHING	Painted: orange RAL 2009								
CERTIFICATIONS	<ul> <li>II3D Ex tc IIIC Tx IP66 Equipment and protective system intended for use in potentially explosive atmospheres (Zone 22) - Directive 2014/34/UE Compliance with Essential Health and Safety Requirements EN 60079-0, EN 60079-31</li> <li>Declaration of conformity "type B" according to: 2014/35/UE - 2006/42/EC - EN 60034-1</li> </ul>								
UPTIONS	Power cable and plug terminal box fulfil of resin								
ACCESSORIES	Fixing brackets: CLW (Clamp for Wooden formworks); CLS (Clamp for Steel formworks) only for MVE 290/6N-HF-10A0								

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# MVE FOOT MOUNTED ELECTRIC VIBRATORS + BUILT-IN CONVERTER

# **External high frequency vibrators**





<br/> <br/>

11.0 A

										ELE	CTRICAL	SPECI	FICATIO	ONS				
Wm	Wm Model			Weight	Veight Centrifugal Force		Input Po	ower	Frequenc	:y	Nomina A I	l Curre Max.	nt	COS Φ	la / In		Cable Gland	
in*lb				lb	lb		Нр		Hz		230V						Metric	
1.28	8 MVE 650/4N-HF-10A0				655	6,000	0.36		200		0.91			0.75	2.0	2.00		
DIMENSIONAL										IAL SPECIFICATIONS (in)								
Model		Drawing	Size	С	м	А	В		ØG	Holes	D	E	F	н	I	L	N	
MVE 650/4N-HF-10A0 A 10A0		8.3	1.8	2.44-2.91 1.3	4.2 3.27-4	.02	0.4-0.3	4	5.1	5.3	0.4	2.0	3.8	4.2	3.3			
Madal								Innu	t Eroqu	ancy			Innut	Ampor	200			
Model Input Voltage					10% -15% 1nh		Input Frequency				mpu	5.5.Δ						

50/60Hz ± 5%

115V +10% -15% 1ph

APPLICATION Concrete formworks

DESCRIPTION High frequency electric vibrator, foot mounted, with built-in converter, external application

# FEATURES

Converter 115

DUTY CYCLE	Continuous S1								
MULTIVOLTAGE	1ph 230V - 1ph 115V (* voltage tolerance ± 10%)								
INPUT FREQUENCY	60 Hz								
WORKING TEMPERATURE	-10 °C / +40 °C								
MAX NOISE LEVEL	85 dB(A) at 1 meter distance								
MATERIAL	Cast aluminium								
FINISHING	Painted: orange RAL 2009								
CERTIFICATIONS	<ul> <li>II3D Ex tc IIIC Tx IP66 Equipment and protective system intended for use in potentially explosive atmospheres (Zone 22) - Directive 2014/34/UE Compliance with Essential Health and Safety Requirements EN 60079-0, EN 60079-31</li> <li>Declaration of conformity "type B" according to: 2014/35/UE - 2006/42/EC - EN 60034-1</li> <li>Conform to UL1446 and CSA 22.2 No 0-10</li> </ul>								
SUPPLY CABLE	10 m neoprene electric cable H07RN-F with SCHUKO 220V 2P+1T 16A plug								
CONVERTER	Sturdy cast aluminium box Ergonomic and lightweight (3 Kg)								
INVERTER	Tropicalised and protected against vibration, moisture and shocks with a special resin								
PROTECTION CLASS	Vibrator protection IP66 Converter protection IP66 The inverter is protected against overload, overvoltage, excess temperature and short circuit. A LED light shows the presence of a fault								
ACCESSORIES	Fixing brackets: CLW (Clamp for Wooden formworks); CLS (Clamp for Steel formworks)								

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# **MVE CRADLE MOUNTED**

External high frequency vibrators



MVE size 38



MVE size 50

Class II Div.2: Temp. Class **T4** ExII 3D Temp. Class: 135 °C

Technical drawings in the last page



							ELECTRICA	L SPECIFICATION	IS	
Wm	Model Weight Centrifugal Force rp		rpm	Input Power	Frequency	Nomin A	al Current Max.	COS Φ	Cable Gland	
in*lb		lb	lb		Нр	Hz	42V	230/400V		Metric
5.92	MVE 3000/4N-HC-38A0	26.46	3,027	0-6,000	1.34	0-200	15	2.80/1.62	0.89	M25
6.35	MVE 3100/2N-HC-50A0	61.73	3,250	0-6,000	1.74	0-100	23	4.22/2.44	0.77	M25
8.23	MVE 4100/4N-HC-50A0	61.73	4,204	0-6,000	1.74	0-100	23	4.22/2.44	0.77	M25
8.23	MVE 4100/4N-HC-50A0	61.73	4,204	0-6,000	2.15	0-200	24	4.38/2.53	0.91	M25
4.08	MVE 4100/2N-HC-50A0	61.73	4,753	0-9,000	2.01	0-150	28	5.02/2.90	0.75	M25

\* MVE 1300/6N-HC-50A0 comes with eccentric weights set at 50%. Wm and centrifugal force refer to 6,000 rpm.

			DIMENSIONAL SPECIFICATIONS (in)												
Model	Drawing	Size	С	М	А	В	ØG	Holes	D	E	F	Н	I	L	N
MVE 3000/4N-HC-38A0	Е	38A0	10.9	1.7	2.7	/	0.9	1	7.5	6.8	/	/	6.9	7.5	6.1
MVE 3100/2N-HC-50A0	Е	50A0	12.6	2.4	5.4	/	1.0	1	9.4	7.2	8.6	/	7.3	3.4	6.7
MVE 4100/4N-HC-50A0	Е	50A0	12.6	2.4	5.4	/	1.0	1	9.4	7.2	8.6	/	7.3	3.4	6.7
MVE 4100/4N-HC-50A0	Е	50A0	12.6	2.4	5.4	/	1.0	1	9.4	7.2	8.6	/	7.3	3.4	6.7
MVE 4100/2N-HC-50A0	Е	50A0	12.6	2.4	5.4	/	1.0	1	9.4	7.2	8.6	/	7.3	3.4	6.7

#### **CRADLE MOUNTED ELECTRIC VIBRATORS**

APPLICATION	Concrete formworks
DESCRIPTION	High frequency electric vibrator, cradle mounted, external application

#### **FEATURES**

DUTY CYCLE	Continuous S1						
MULTIVOLTAGE	oh 42V - 3ph 230/400V (voltage tolerance ± 10%)						
FREQUENCY	0-100Hz - 0-150Hz - 0-200Hz						
VARIABLE FREQUENCY	0÷100Hz						
WORKING TEMPERATURE	4 °F / +104 °F						
MAX NOISE LEVEL	35 dB(A) at 1 meter distance						
MATERIAL	Cast aluminium or iron						
FINISHING	Painted: orange RAL 2009						
CERTIFICATIONS	<ul> <li>II3D Ex tc IIIC Tx IP66 Equipment and protective system intended for use in potentially explosive atmospheres (Zone 22) - Directive 2014/34/UE Compliance with Essential Health and Safety Requirements EN 60079-0, EN 60079-31</li> <li>Declaration of conformity "type B" according to: 2014/35/UE - 2006/42/EC - EN 60034-1</li> <li>C C Sus Conform to UL1446 and CSA 22.2 No 0-10</li> </ul>						
OPTIONS	Power cable and plug terminal box fulfill of resin						

ACCESSORIES Fixing bracket: CRS (Cradle for Steel concrete moulds)





# The external pneumatic vibrators have **no electrical** components.

They are powered via **air compressor** that spins the rotors inside the vibrator at a very high speed (generally between 10,000 and 17,000 vpm). This generates a circular vibration that spreads in all directions.

The optimum frequency varies depending on the dimensions of the aggregates: a low frequency (approximately 10,000 vpm) favours the vibration of large granules (pebbles and gravel), while a high frequency (approximately 20,000 vpm) favours the vibration of fine granules (sand, cement and others). They are used especially in the construction of concrete segments for tunnels, viaducts and bridges.

The OLI pneumatic vibrators have a **solid and durable body** made of ductile cast iron. They are characterised by **high reliability and efficiency** as well as **compact size**.

Just like the electric vibrators, they may also be bolted or attached via quick-coupling clamps to formworks or moulds for the purpose of easy movement.



- » Easy handle
- » No electric component
- » No maintenance



# **EFFICIENT AND RELIABLE**



# External high frequency pneumatic vibrators









									DIN	1ENSIO	NALS	PECIF	ICATIO	)NS (ir	1)	
MODEL	awing	Working Pressure	Vibration	Centr. Force	Air Consump.	Noise Level	А	В	С	D	E	F	G	Н	IN	Weight
	Drä	bar	vpm	lb	CF/min	dB (A)	in	in	in	in	in	in	in	in	in	lb
HFP 600P		6	17,000	1,587	35	100	4.37	8.66	7.09	0.79	6.46	0.79	-	2.36	5/8"	13.9
HFP 1000P	G	6	16,500	2,474	39	100	4.37	8.66	7.09	0.79	6.46	0.79	-	2.36	5/8"	15.9
HFP 1400P		6	16,000	3,203	42	100	4.37	8.66	7.09	0.79	6.46	0.79	-	2.36	5/8"	16.1
HFP 600C		6	17,000	1,587	35	100	4.72	7.09	-	-	6.46	-	0.71	3.70	5/8"	13.9
HFP 1000C	Н	6	16,500	2,474	39	100	4.72	7.09	-	-	6.46	-	0.71	3.70	5/8"	15.9
HFP 1400C		6	16,000	3,203	42	100	4.72	7.09	-	-	6.46	-	0.71	3.70	5/8"	16.1
HFP 2700C		6	16,000	6,069	57	103	8.82	9.25	-	-	6.30	-	0.94	3.31	5/8"	30.9
HFP 4000C		6	15,200	8,993	64	103	8.82	9.25	-	-	6.30	-	0.94	3.31	5/8"	32.0
HFP 4500C	] '	6	8,500	10,112	63	103	8.82	9.37	-	-	6.30	-	0.94	3.31	5/8"	38.8
HFP 6000C		6	14,500	13,488	64	103	8.82	9.25	-	-	6.30	-	0.94	3.31	5/8"	36.0
HFP 4001C*	J	6	10,200	8,993	64	90	8.46	9.25	-	-	7.09	-	0.94	3.31	5/8"	39.7

\* Silent model; measured at 1 mt distance

# **HFP - PNEUMATIC VIBRATORS**

APPLICATION Concrete formworks on site Concrete moulds in precast industry	
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#### **FEATURES** WORKING PRESSURE 6 bar AIR SUPPLY QUALITY Class 5.4.4 WORKING TEMPERATURE 14°F / +140°F MAX NOISE LEVEL 103 dB(A) Silent version HFC 4001C: 90 dB(A) at 1 meter distance TECHNOLOGY Eccentric rotor MATERIALS Steel and cast iron FINISHING Painted yellow RAL 1007 CERTIFICATIONS Community Directive ATEX 2014/34/EU CE Conformity verified according to the standard documents: EN 12100-1, ISO 14121 ACCESSORIES Fastening systems: CLW (Clamp for Wooden formworks); CLS (Clamp for Steel formworks); CRS (Cradle for Steel concrete moulds).



HFP model I

on CRS

INTERNAL VIBRATORS

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# CLW CLAMP FOR WOODEN FORMWORKS

APPLICATION	Quick mounting of vibrators on wooden formworks
SAFETY BELT	Included
FINISHING	Galvanized

#### SUITABLE FOR (most common)

DOKA	H20, Top50, FF20
PERI	VT20K, GT24, VARIO GT24
MEVA	H20
PASCHAL	H20
NOE	H20
HÜNNEBECK	H20, R24, GF24, ES24



	DIMENSIONAL SPECIFICATIONS											
Madal	Length	Width	Height	Weight	nt Multiple Footprint (in)							
Model	in	in	in	lb			Pneumatic					
CLW 00102	15.31	11.46	4.8	14.10	2.68x4.17	5.31x4.53	3.54x4.92	7.09				

# CLS CLAMP FOR STEEL FORMWORKS

APPLICATION	Quick mounting of vibrators on steel formworks
SAFETY CABLE	Included
FINISHING	Galvanized

#### SUITABLE FOR (most common)

DOKA	Framax XLife, Alu Framax XLife
PERI	Trio
MEVA	StarTec, Mammut
NOE	NOEtop



	DIMENSIONAL SPECIFICATIONS							
Madal	Length	Width	Height	Weight	Multiple Footprint (in)			)
Model	in	in	in	lb	b Electric		Pneumatic	
CLS 00102	15.31	11.46	4.8	15.87	2.68x4.17	5.31x4.53	3.54x4.92	7.09

# CRS CRADLE FOR STEEL CONCRETE MOULDS

APPLICATION Quick mounting of vibrators on steel concrete moulds

#### SUITABLE FOR

STEEL CONCRETE MOULDS All OLI fastening systems are designed to be used with electric and pneumatic vibrators



	DIMENSIONAL SPECIFICATIONS					
Model	Length	Width	Height	Weight	Radius	
	in	in	in	lb	in	
CRS 055	7.09	4.13	5.51	7.7	2.17	
CRS 059	7.87	6.29	6.85	12.1	2.32	
CRS 080	9.06	3.35	7.24	11	3.15	

# <image><section-header><section-header><section-header><section-header><section-header><section-header>

# **MSP-4 - CONNECTED TO THE OLI CONVERTER CMT55**

Suitable to power up to 6 electric vibrators MVE 290/6



# MSP-4 - CONNECTED TO THE OLI CONVERTER CMT85

Suitable to power up to 8 electric vibrators MVE 290/6



# IMPORTANT

Never connect more vibrators than what suggested in the mounting schemes, even if there are unused output sockets. SWITCH BOX For a better functioning of the vibrator it is advisable to use the special push-button panel (to use the switch box), which can be purchased separately.



NTERNAL VIBRATORS





# SYSTEM DESIGN CONSULTANCY

Choosing OLI for the construction of concrete consolidation plants means being able to count on a dedicated technical office, with a long and extensive specific experience.

From the very first stages of design, OLI supports the customer by providing indications on how to fix and position the vibrators to obtain the best results in terms of duration and aesthetics of the finished product.

OLI is able to supply custom-designed systems (both electrical and pneumatic), which guarantee maximum operational efficiency.

# Stages of realization of a plant

- 1. Customer request analysis
- 2. Project development
- 3. Sizing

→ Supply of electrical system

Supply of pneumatic system



- A single interface for consulting » and product supply
- Improved management » and operational efficiency

TURNKEY **PROJECT** 

**COMPLETE PLANTS** 

# **ELECTRIC SYSTEM**

# Supply of complete system

Each construction site or precast plant have their own specificities and needs. After a detailed analysis of the production process, OLI supports the customer providing tailor-made solutions that optimize the productivity of the site.

# Systems offered by OLI:

- Mobile control panel with various output voltage and frequency, from 2 to 10 output
- Fix control panel with distribution boxes for a better cables distribution
- Fix control panel with remote control
- Fix control panel with PLC and software specifically designed for the application •

In addition, OLI designs and supplies fully automated solutions for precast plant, complying with the "Industry 4.0" legislation.



**PNEUMATIC SYSTEM** Supply of complete system

> OLI is able to study and supply air distribution systems (except the compressor) that guarantee the optimal air flow rate necessary to maximize the efficiency, both for construction sites and for precast plants that use pneumatic vibrators.

# Few examples of the possible solutions offered by OLI:

- Main distribution line
- Flexible pipes for connecting the vibrators
- Ball valves and fittings •
- Fully automated Electro-pneumatic control panels with solenoid valves and PLC with dedicated control software specifically designed for the application.



Solenoid valve



Main distribution line with ball valves and fittings

Control Panel + software



# Tips and recommendations for use

#### TIPS FOR CHOOSING THE INTERNAL VIBRATOR

#### Selection of the vibrating head length

It must never exceed the thickness of the concrete layer.

#### Selection of the needle diameter

Factors to be taken into consideration:

- composition of the concrete
- quantity of reinforcements (percentage of reinforcement inside the concrete element)
- size of the spaces between the various reinforcements (mesh sizes)
- thickness of the concrete layer

# TIPS FOR CHOOSING THE EXTERNAL VIBRATOR

#### Pneumatic or electric?

The choice depends on the type of power available (electricity or compressed air).

#### What type of fastening?

It depends on the construction material and on the shape of the profiles to which the vibrators have to be fastened.

#### Definition of the positioning

It depends on the size and the shape of the formwork or mold.\*

#### Definition of the operating cycle

The number of vibrators to run simultaneously depends on the size of the formwork or mold and on the pour rate of the plant.

#### MAIN RECOMMENDATIONS FOR USE

#### **Repeated vibration**

It means vibrating the already compacted concrete again. This technique is used to mix successive layers of concrete in order to improve the surface finish quality of columns and walls and to increase their strength and wear resistance.

#### Vibration inside the formwork

Make sure that the vibrating head does not touch the interior walls because, besides damaging them, it could generate depressions in the manufactured article, thus deteriorating the quality of the surfaces.

Vibrators with rubber tips may be used to reduce this problem.

The diameter to be used must allow the maneuver of the vibrator inside the reinforcement, without getting stuck in the mesh.

#### Definition of the operating tube length

It must be longer than the depth of the manufactured article in order to allow the vibration of the deeper layers.

It is important to run the vibrators only when the concrete is inside the formwork or mold in order to avoid resonance or vibration out of control.\*

#### Definition of the power supply

Standard frequency electric vibrators (3000RPM) can be connected DOL (Direct On Line).

High frequency electric vibrators (6000RPM) is recommended to connect to control panels according to the input voltage and frequency of the chosen vibrators.

Pneumatic vibrators for concrete consolidation must be connected to air supply as indicated in the catalogue.

\* For the right positioning and operating cycle please refer to OLI Technical support.

#### Insufficient vibration

It is the most common problem. Insufficient vibration can alter the structural properties, causing problems such as: lower resistance, higher abrasion, higher permeability, and consequently shorter duration and poor surface quality.

#### **Excessive vibration**

The use of oversized equipment generates the segregation of the aggregates, in addition to the damage incurred to the formwork and moulds.

**TECHNICAL DRAWINGS** 









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