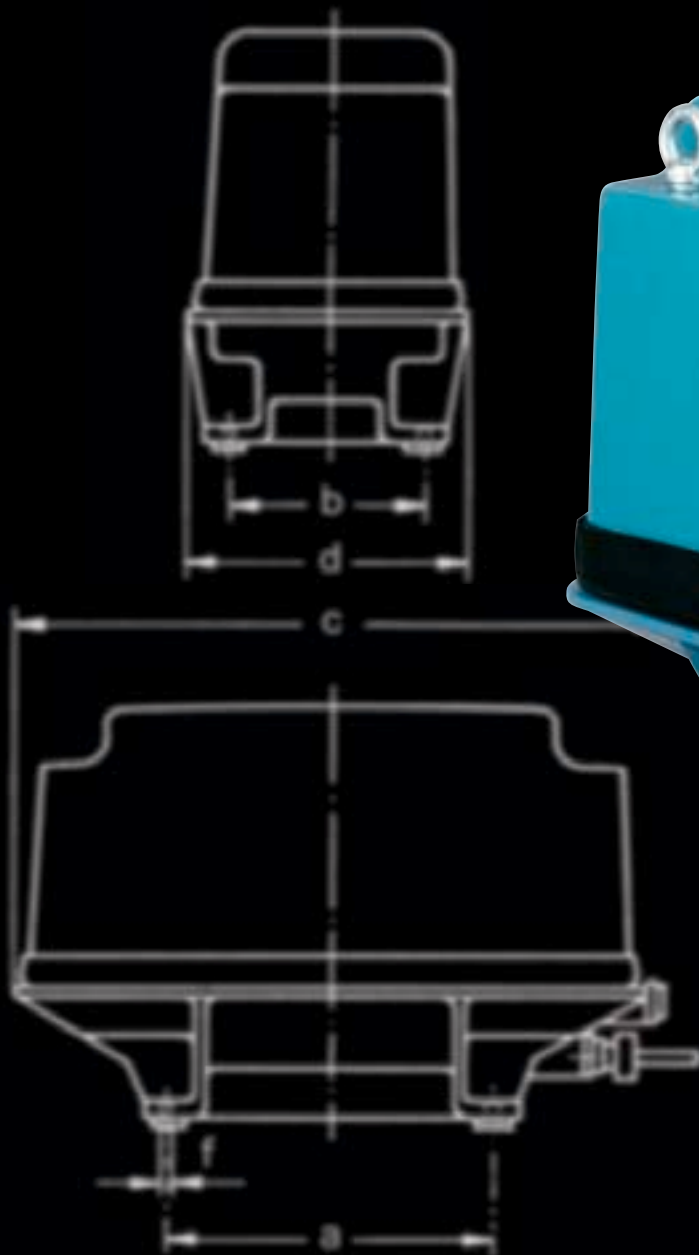


## Magnetic Vibrators— Perfection in Controlled Drives



We move  
you forward.

# Magnetic Vibrators in Applications



A reversible tubular conveyor distributes milk powder alternately in two directions. The 100% turnaround in the material flow is achieved by electrical switching, without complicated flap mechanisms

## Fields of Application

Almost all bulk materials can be transported on conveyor equipment driven by magnetic vibrators. High throughput for small device sizes, a long service life, rugged design, low power consumption and the latest advances in production techniques – all reasons behind the profitability of AVITEQ-magnetic vibrators.

Magnetic vibrators enable the continuous adjustment of the throughput during operation. They reach full power at once after being switched on. Switch-off occurs in a fraction of a second and stops the material flow immediately. All this with almost unlimited service life, wear-free and without additional moving parts.

Whether bunker discharge, de-watering, classifying, dust removal or screening, whether conveying large volumes or in special tasks in chemical engineering, such as for example, compacting, dosing, charging, cooling, heating and drying, AVITEQ-magnetic vibrators perform their allotted tasks reliably.

Whether in the mining or processing of raw materials, in the chemical and pharmaceutical industries, in the production of foodstuffs or in mechanical and plant engineering, our magnetic vibrators provide the ideal, economical drive solution. Make use of our many years of experience in all fields of vibrating conveyor techniques.

Magnetic vibrators are suitable as drives for trough and tubular vibrating conveyors, vibrating and bar-grate screens, de-watering devices, helical conveyors and vibrating tables. Vibrators ensure a trouble-free flow of material as impact vibrators for silos, bunkers, shake-out grids, fall pipes, slides, filters and filling machines.

Magnetic vibrators offer distinct advantages in chemical engineering due to the continuous adjustment of the throughput, e.g. during cooling, heating or tunnel drying. Reversible transporting equipment enables the flow to be easily reversed without complicated mechanical arrangements.

Even underground discharge from storage bunkers using explosionproof and flameproof drives is possible. Large equipment can be cut down into segments for easy installation underground



Vibrating tables with continuously adjustable magnetic vibrators ensure perfect material compaction in production and during packing



Continuous charging of ingredients for glass manufacture with feeding into the melting end takes place with finely controlled conveyor troughs with maintenance-free magnetic drives. Additional impact vibrators on the bunker walls prevent the material from caking to the sides and from forming bridges

#### Quality

All components and modules are already inspected during manufacture after each intermediate step using the latest measurement equipment. The effective quality from goods reception through to final acceptance guarantees that you receive reliable products and ensures reliable operation. Each drive is routinely tested under load by us before shipment – in this way we make sure of correct functioning and safe operation in your system. The simple construction, a strong cast housing, a coil with large thermal reserves and the magnet, which is completely cast in resin, together with springs designed for the highest demands ensure a long service life and operation that is absolutely maintenance-free. Of course, AViTEQ-magnetic vibrators can also be supplied in explosion-proof, tropicalised and wet-room versions.

#### Service

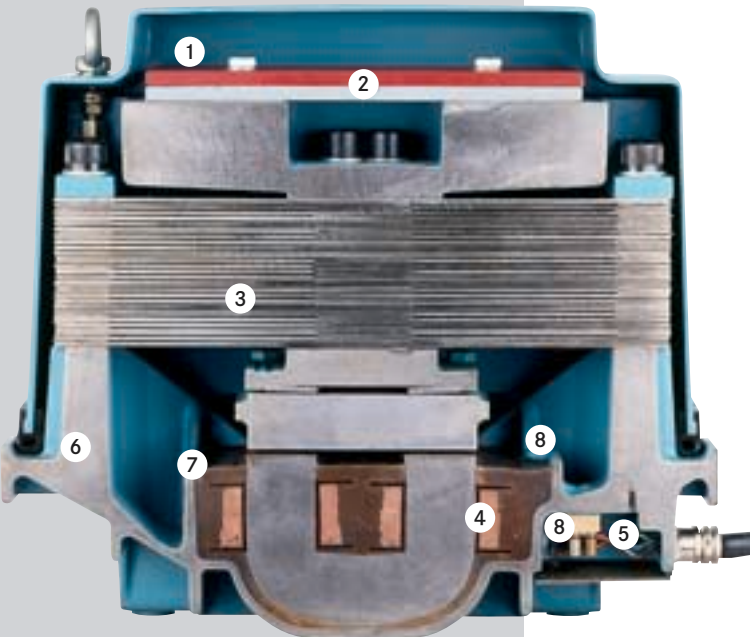
An excellent, fast service for our customers, provided by our technical team, is a matter of course for us. In this way we reduce your downtimes and help you to save costs. We would also be pleased to assist you in the planning of your application. Our engineers are ready to help you with their extensive process and plant experience.



In the vibration fluidised bed, plastic granulate, for example, passes over a microsieve. Hot air dries precisely to the specified remaining moisture content. A close-loop control circuit regulates the speed of flow in dependence on the degree of drying, using simply voltage control on the drives

# The Engineering

High throughput for economical procurement and operating costs – these are reasons for specifying AVITEQ-magnetic vibrators. Our magnetic vibrators are well-known for long-lasting service, for rugged design and for highest quality in production. Their simple mechanical construction without wearing parts, the surface-treated operating springs and a completely encapsulated electromagnet guarantee long service life and highest operational reliability. Continuous testing in our own experimental laboratories back up the on-going development and optimisation of our products.



## 1 Cover, ring bolts

Glass fibre reinforced plastic; easy fitting; protected from dust and water by profiled rubber seals.

*Advantages: Reliable in operation; safe handling.*

## 2 Supplementary weights

For adaptation to the weight of the working device.

*Advantages: Drive replaceable at any time and adaptable to different working devices; low storage and procurement costs.*

## 3 Spring set

With special surface treatment.

*Advantages: Wear-free; low maintenance costs; continuous operation at 100% power.*

## 4 Electromagnet

Core and winding cast in epoxy resin; insensitive to moisture and dust; fully encapsulated.

*Advantages: Reliable operation in harsh environments; explosion-proof and wet-room versions available.*

## 5 Cable entry gland, ready-fitted cable

Simple electrical connection; kink protection.

*Advantages: Less installation effort; reliable in operation.*

## 6 Housing

High feet provide the mounting bolts with long strain lengths; mounting in any position possible; multi-ribbed casing for high stresses.

*Advantages: Reliable in operation; long service life.*

## 7 Vibration stroke transducer (PAL)

Performance optimisation through to the limit range; permanent drive monitoring.

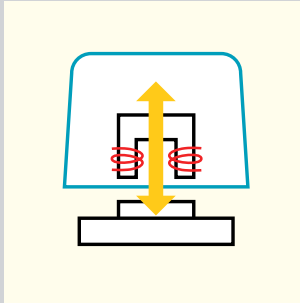
*Advantages: protection against hard-knocking, digital display.*

## 8 Thermistor, terminal board

PTC thermistor protection optional/standard; trouble-free operation via connection unit; 5-pole terminal board; voltages up to 1,000 V without additional insulation; encapsulated.

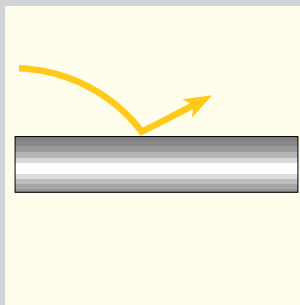
*Advantages: Protected drives; universal application; solid mounting; no risk of vibration fracture.*

# The Operating Principle of the Vibration Technique



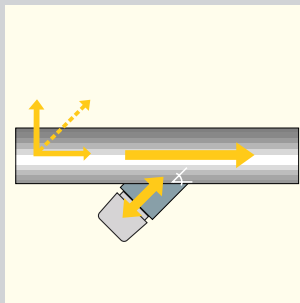
Magnetic vibrators are spring/mass systems that pass a linear, aligned vibration to the working device (e.g. tube or trough) which is supported on springs and mounted at a defined angle

Magnetic vibrators are spring/mass systems which always exploit small clearance to resonance of the complete vibration system (drive and working device). The vibration produced on the drive side by the exciter current is transferred directly to a working device (e.g. screen, trough or tube). Belts, shafts, frames, fans, drives and eccentrics are not required for operation. Erroneous operation is impossible and additional protective measures are unnecessary.



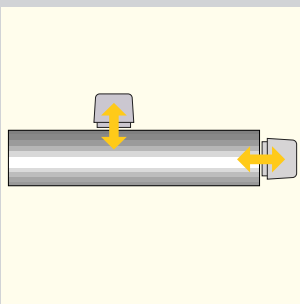
The bulk material is transported with a micro-throw motion by the device vibration

Magnetic vibrators produce aligned, linear oscillating movements on the working device. The direction of oscillation is always at a certain "oscillation angle" to the horizontal. The "effective vibration stroke" corresponds to double the amplitude of the complete system. It defines the maximum height of the micro-throw and therefore the theoretical possible transportation velocity. The actual transported capacity is also largely determined by the conveyor cross-sectional area and the density of the bulk material.



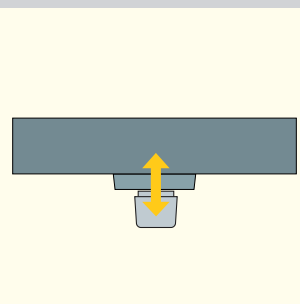
The transport direction is given by the vibration angle and the resulting force

Magnetic vibrators are continuously adjustable via the connection voltage. They immediately give full feeding capacity and the disturbing start-up and run-down effects of motorised drives do not exist. This is particularly important with dosing and charging tasks and for process applications.



Reversible transport equipment needs drives which are arranged at right angles. The transport direction is changed simply by phase reversal

Reversible transporting equipment, which moves the bulk material in alternating directions, can be realised without further constructional effort by simply switching the drive connection between the phases of the mains. Complicated flap mechanisms and similar distribution aids are not required.



For compaction or impact vibration the drives are positioned at right angles to the vibration surface

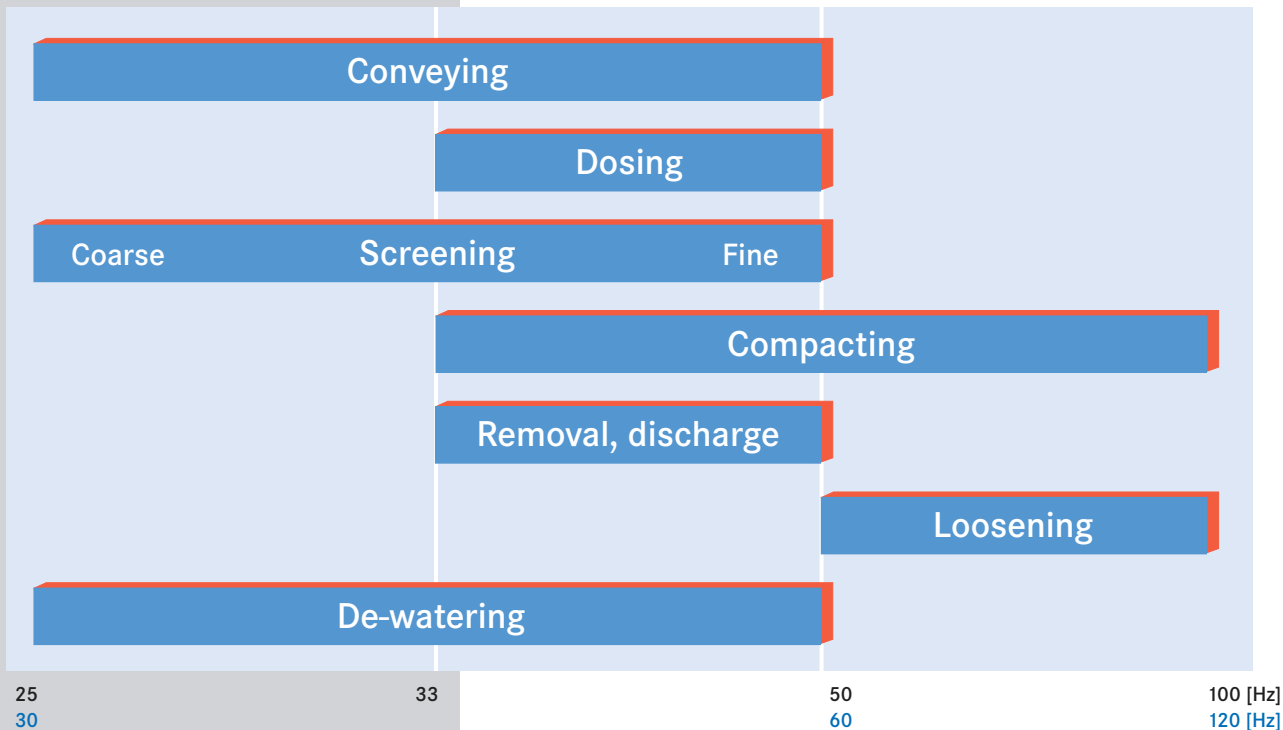
Continuous measurement of the internal vibration stroke is possible with an additional vibration transducer integrated into the magnetic vibrator, providing a method of conveyor system control through the use of a closed-loop control circuit. This improves the efficiency and prevents damage which might occur due to possible hard-knocking operation of the vibrator, caused by clinging material or overloads.

# Design and Vibrator Selection

## Design

The vibration stroke and the required effective weight of the transporting device are the main parameters for the computation of the operating characteristics of magnetic vibrators. The transporting velocity and the theoretical transported capacity result from these in dependence on the conveyor cross-sectional area and the density of the bulk material.

The forces produced by the drives and acting on the working device can be most simply calculated from the acceleration quantities at the relevant working frequencies and from the vibration stroke. The effective vibration stroke for all magnetic vibrators in dependence on the effective weights can be taken quite simply from the following characteristic graphs. This enables you to quickly find the best drive.



Vibration strokes suitable for various applications and the resulting throughput values depend on the operating frequency in the relevant net

### Summary of Performance Data

- Vibration stroke: Max. 1.9 mm at 50 Hz operating frequency  
Max. 3.8 mm at 33 Hz operating frequency  
Max. 4.5 mm at 25 Hz operating frequency
  - Rated frequency: 25, 33, 50 Hz in 50 Hz net  
30, 40, 60 Hz in 60 Hz net
  - Working weight: from 2.2 to 1,800 kg
  - Capacity: From a few kg/h to many thousands of t/h
  - Main connection: Alternating current, 50 or 60 Hz
  - Voltages:\* 230, 400, 500 V/220, 380, 440, 480 V
  - Ambient temperature:\* From -25 °C to +40 °C
  - Protection: IP 55, IP 65 to DIN EN 60529
  - Optional: Tropic-proof insulation, explosion-proof
- \*Other designs on request

# Electrical Connection and Initial Operation

## Performance characteristics for VIBTRONIC® controls

AVITEQ has the right control for all standardized voltages in 50 and 60 Hz nets. Moreover, we offer special models for other voltages if required.

Features	SRA(E)...	SC(E)...	SA(E)...	SD(E)...
Vibrator currents, maximum	6 A	15 A	25 or 43 A	25 or 50 A
Main voltage in 50/60 Hz nets (Special voltages available on request)	105...115 V 220...240 V	220...240 V 380...420 V 440...480 V 500...520 V	220...240 V <sup>1</sup> 380...420 V 440...480 V 460...500 V	220...240 V <sup>1</sup> 380...420 V 420...460 V 480...520 V
Vibration frequencies in 50 Hz nets	50 or 100 Hz	25 or 50 Hz	25, 33 or 50 Hz	25, 33 or 50 Hz
Vibration frequencies in 60 Hz nets	60 or 120 Hz	30 or 60 Hz	30, 40 or 60 Hz	30, 40 or 60 Hz
Signal processing	analog	analog	analog	digital
Voltage regulation	●	●	●	●
Amplitude regulation with impact supervision			●	
Limited regulation with impact supervision				●
Effective amplitude regulation			●	●
Temperature monitoring for magnetic vibrator directly connectable			●	●
External guide values directly connectable (0-10 VDC; 4-20 mA or 0-20 mA)	●	●	●	●
Set value switchable between potentiometer (local) and external guide value	(●) <sup>2</sup>	●	●	●
Amplitude approximate proportional to setting	●	●	●	●
External actual value display connectable			●	●
Enable (switch on/off) via	Switch, opto-coupler, voltage signal + 24 V DC	Switch, opto-coupler, voltage signal + 24 V DC	Switch, button, opto-coupler	Switch, button, opto-coupler
Integrated status relay	1 relay	1 relay	1 relay	2 relay
Display of operating status via	Illuminated power switch	2 LED's	7 LED's	2 LED's and 4-digit display
Actual value output, maximum value at maximum amplitude			+ 10,0 V DC	+ 8,0 V DC <sup>3</sup> +10,0 V DC
Master/slave integrated (for multiple drive)				●
Reversing mode integrated				●
Power supply output			+ 5,0 V DC	+ 5,0 V DC
Configuration adjustable with	Trimmer, jumpers	Trimmer	Trimmer, DIP switch	Service module, keyboard
Operating data for several AVITEQ magnetic vibrators stored and selectable				●
EMC resistance (EMC Guideline 89/336/EEC)	EN 50081-1 EN 50082-2	EN 50081-2 EN 50082-2	EN 50081-2 EN 50082-2	EN 50081-2 EN 50082-2
Cabinet version (standard) (Height x Width x Depth mm)	170x120x92	300x300x210	300x380x155(25A) 380x380x210(43A)	600x380x350

Special versions available for explosion-hazard areas and for multiple drives or reversing mode on request.

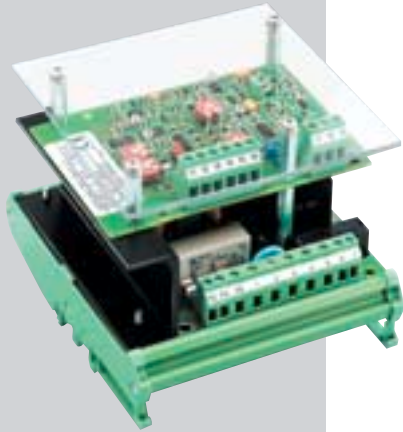
<sup>1)</sup> 25 A version

<sup>2)</sup> Only possible for 0-10 V DC

<sup>3)</sup> Adjustable via software, in addition with 2 voltages the lower limit can be increased from 0 to +2.0 V via software

● integrated

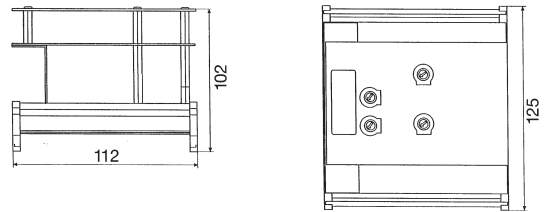
# Controllers



## Series SRA(E)...

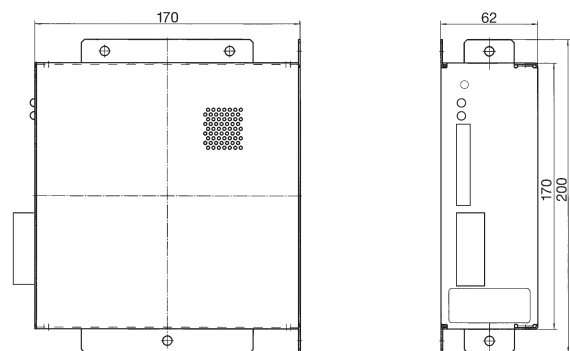
Compact, voltage-controlled, analog control for current range of 0.05 to 6.0 A. The control has an integrated relay output (changeover contact) for remote monitoring or linkage with a master automation system. This control is distinguished by amplitude adjustment virtually proportional to the setting and adjustability of the minimum and maximum vibrator voltage via integrated trimmer.

The open frame device is designed for a Clip-On installation on a standard C-bar according to EN 50020.



## Series SC(E)...

Compact, voltage-controlled, analog control for current range of 0.8 to 15.0 A. The control has an integrated relay output (changeover contact) for remote monitoring or linkage with a master automation system. This control is distinguished by an amplitude adjustment approximately proportional to the setting.

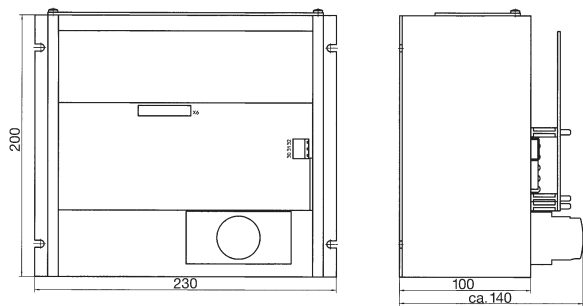






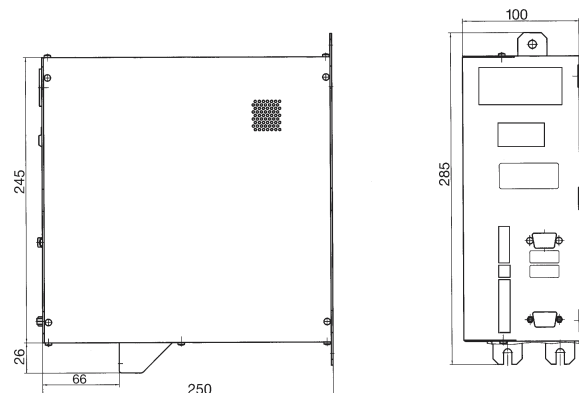
#### Series SA(E)...

Compact, voltage-controlled analog control for current range of 2.0 to 43.0 A. The control has an integrated relay output (changeover contact) for remote monitoring or linkage with a master automation system. This control is distinguished by amplitude adjustment virtually proportional to the setting and operating mode with releasing control as impact supervision or effective amplitude regulation with external oscillation pick-up.



#### Series SD(E)...

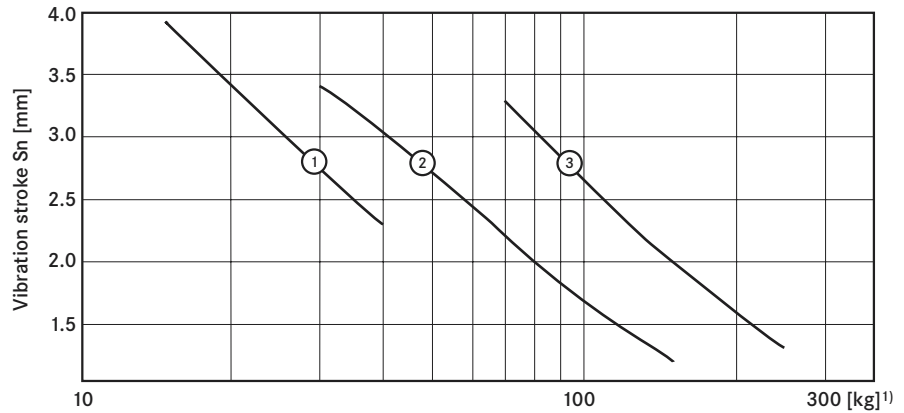
Voltage-regulated, digital control for current range from 2.0 to 50.0 A. This control has two integrated relay outputs for remote monitoring or linkage with master automation system. This control is distinguished by an amplitude adjustment approximately proportional to the setting, an integrated possibility for reversing mode and multiple drive as master or slave, operation with limitation control as impact supervision or effective amplitude regulation with external oscillation pick-up as well as selection possibility for operating data for a variety of AVITEQ magnetic vibrators stored in the software.



# The Quick Way to the Right Drive

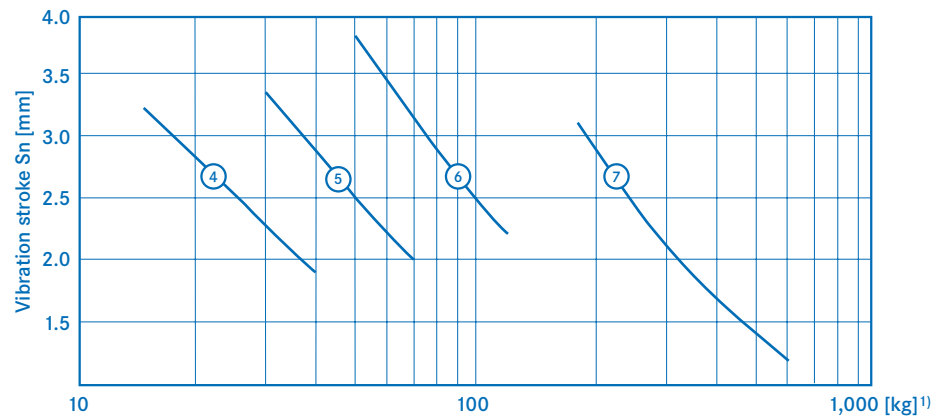
Performance graphs for magnetic vibrators with 25 Hz vibration frequency in a 50 Hz net.

- 1 = MV C 25-4
- 2 = MV D 25-4
- 3 = MV E 25-4



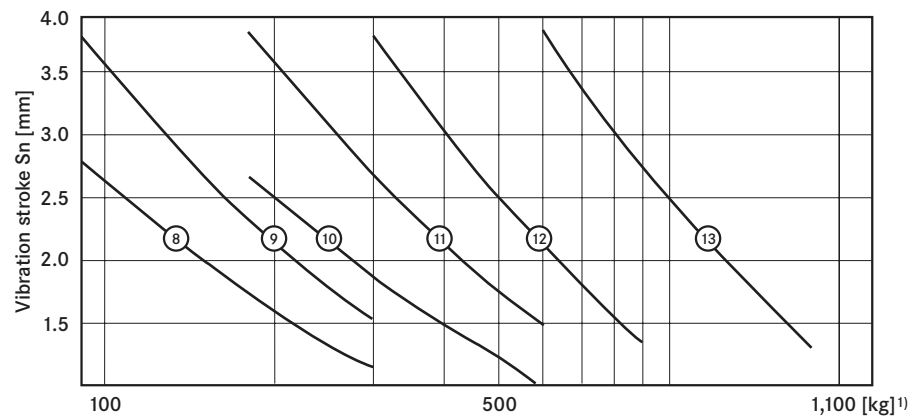
Performance graphs for magnetic vibrators with 30 Hz vibration frequency in a 60 Hz net.

- 4 = MV C 30-4
- 5 = MV D 30-3
- 6 = MV E 30-3
- 7 = MV F 30-4



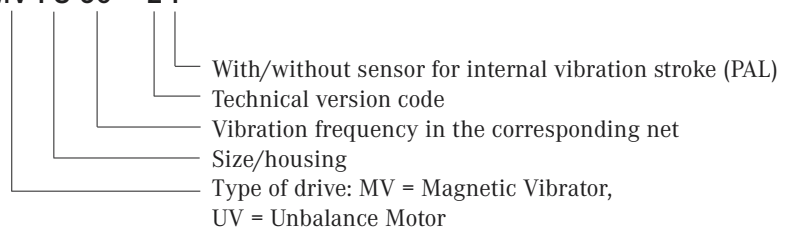
Performance graphs for magnetic vibrators with 33 Hz vibration frequency in a 50 Hz net.

- 8 = MV ES 33-1
- 9 = MV ES 33-1P
- 10 = MV FS 33-1
- 11 = MV FS 33-1P
- 12 = MV G 33-1
- 13 = MV H 33-1



The coding in the type designation has the following meaning:

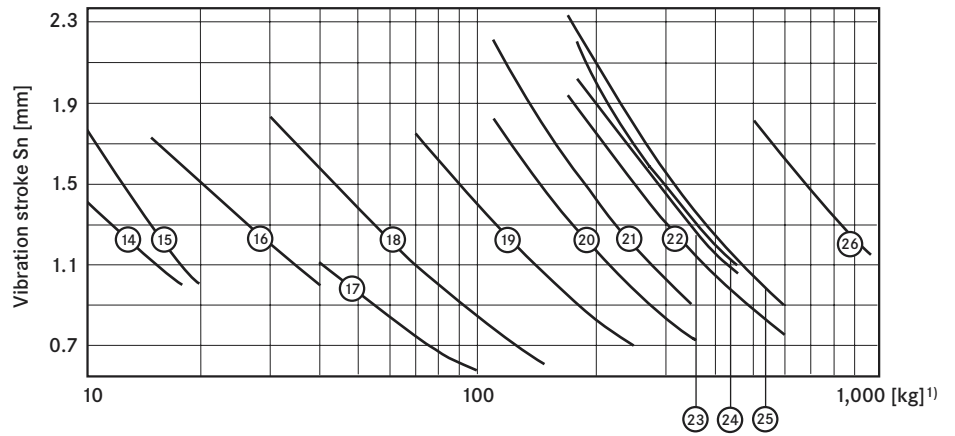
**MV FS 50 - 2 P**



<sup>1)</sup>Working weight Gn [kg]

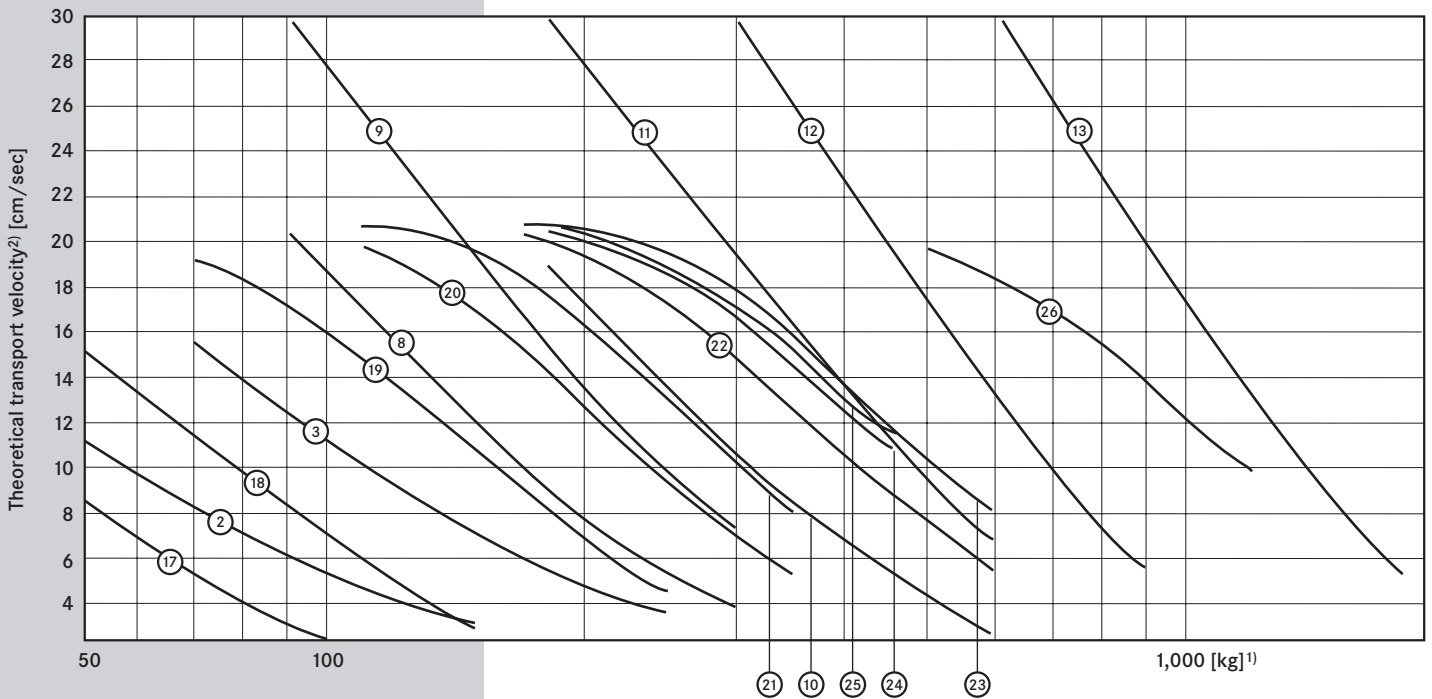
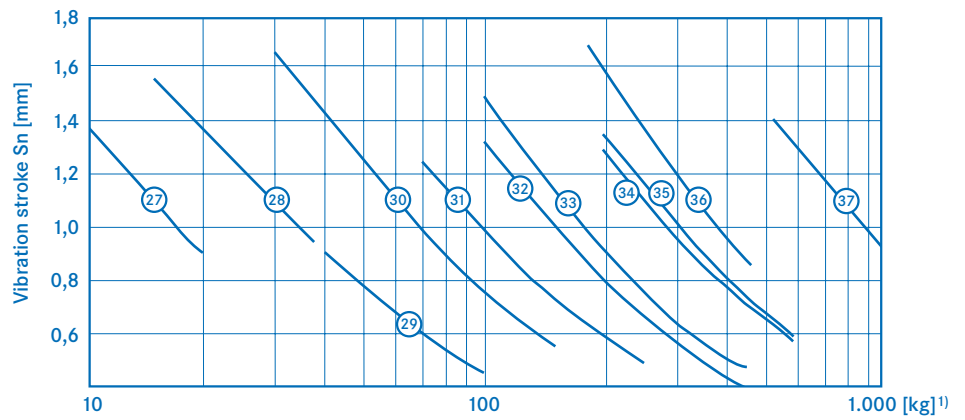
**Performance graphs for magnetic vibrators with 50 Hz vibration frequency in a 50 Hz net.**

- |                  |                  |
|------------------|------------------|
| 14 = MV 12/50-3  | 21 = MV ES 50-1P |
| 15 = MV B 50-4   | 22 = MV FS 50-2  |
| 16 = MV C 50-4   | 23 = MV FS 50-2P |
| 17 = MV C 50-4.1 | 24 = MV G 50-2   |
| 18 = MV D 50-4   | 25 = MV G 50-11  |
| 19 = MV E 50-4   | 26 = MV H 50-1   |
| 20 = MV ES 50-1  |                  |



**Performance graphs for magnetic vibrators with 60 Hz vibration frequency in a 60 Hz net.**

- |                  |                  |
|------------------|------------------|
| 27 = MV 12/60-3  | 33 = MV ES 60-1P |
| 28 = MV C 60-4   | 34 = MV FS 60-2  |
| 29 = MV C 60-4.1 | 35 = MV FS 60-2P |
| 30 = MV D 60-4   | 36 = MV G 60-2   |
| 31 = MV E 60-4   | 37 = MV H 60-2   |
| 32 = MV ES 60-1  |                  |



<sup>1)</sup> Working weight  $G_n$  [kg]

<sup>2)</sup> Theoretical transport velocity referred to defined reference bulk material (sand) with the following parameters: material density 1.6 t/m<sup>3</sup>, grain size 3-10 mm, 8% product moisture, with approx. cubic grains, at 200 mm layer height, without bunker pressure, in horizontal device mounting

# Magnetic Vibrators with Vibration Frequency of 25/30 Hz

Type	Main voltage [V]	Protection to EN 60529	Range of working weight [kg]		Vibration <sup>1)</sup> stroke [mm]		Transport velocity <sup>1)+2)</sup> [cm/sec]		Rated current [A]	Active power <sup>3)</sup> [W]
			from	to	from	to	from	to		
<b>25 Hz (in a 50 Hz net)</b>										
MV C 25-4	220-240	IP 55	15	40	3.90	2.30	19.6	8.8	4.8	40
	380-420	IP 55	15	40	3.90	2.30	19.6	8.8	2.9	40
	480-520	IP 55	15	40	3.90	2.30	19.6	8.8	2.2	40
MV D 25-4	220-240	IP 55	35	150	3.40	1.20	16.2	3.0	8.0	50
	380-420	IP 55	35	150	3.40	1.20	16.2	3.0	4.8	50
	480-520	IP 55	35	150	3.40	1.20	16.2	3.0	3.8	50
MV E 25-4	220-240	IP 55	70	250	3.30	1.30	15.5	3.5	14.0	85
	380-420	IP 55	70	250	3.30	1.30	15.5	3.5	8.0	85
	480-520	IP 55	70	250	3.30	1.30	15.5	3.5	6.1	85

## 30 Hz (in a 60 Hz net)

MV C 30-4	220-240	IP 55	15	40	3.30	1.90	21.3	9.4	4.8	40
	380-420	IP 55	15	40	3.30	1.90	21.3	9.4	2.4	40
	440-480	IP 55	15	40	3.30	1.90	21.3	9.4	2.4	40
MV D 30-3	220-240	IP 55	35	70	3.40	1.20	20.4	10.3	6.8	50
	380-420	IP 55	35	70	3.40	1.20	20.4	10.3	4.1	50
	440-480	IP 55	35	70	3.40	1.20	20.4	10.3	4.0	50
MV E 30-3	220-240	IP 55	50	120	3.80	2.20	26.0	6.9	11.4	150
	380-420	IP 55	50	120	3.80	2.20	26.0	6.9	6.8	150
	440-480	IP 55	50	120	3.80	2.20	26.0	6.9	5.8	150
MV F 30-4	380-420	IP 55	190	600	3.05	1.20	19.3	4.6	18.0	250
	440-480	IP 55	190	600	3.05	1.20	19.3	4.6	18.0	250

<sup>1)</sup> For operation with an AViTEQ-controller

<sup>2)</sup> Theoretical transport velocity referred to defined reference bulk material (sand) with the following parameters:  
material density 1.6 t/m<sup>3</sup>, grain size 3-10 mm, 8% product moisture,  
with approx. cubic grains, at 200 mm layer height, without bunker pressure, in horizontal device mounting

<sup>3)</sup> The specified real power refers to vibrating conveyor without the influence of the material to be conveyed. The real power may increase by a factor of 5 depending on the type and height of the load

<sup>4)</sup> PAL is a sensor integrated into the magnetic vibrator; together with an appropriate controller, it forms a closed-loop control circuit for the internal vibration stroke, enabling performance optimisation

All magnetic vibrators are sprayed in a standard colour of RAL 5018

PAL <sup>4)</sup>	Possible controller	Weight [kg]	Dimensions							
			[mm]							Screws
			a	b	c	d	e	∅ f		
	A B C E	42	210	125	420	180	280	11.5	M10	
	B C E	42	210	125	420	180	280	11.5	M10	
	B C E	42	210	125	420	180	280	11.5	M10	
	B C E	61	210	125	445	220	332	11.5	M10	
	B C E	61	210	125	445	220	332	11.5	M10	
	B C E	61	210	125	445	220	332	11.5	M10	
	B C E	110	300	190	480	225	425	18.0	M16	
	B C E	110	300	190	480	225	425	18.0	M16	
	B C E	110	300	190	480	225	425	18.0	M16	
	A B C E	42	210	125	420	180	280	11.5	M10	
	B C E	42	210	125	420	180	280	11.5	M10	
	B C E	42	210	125	420	180	280	11.5	M10	
	B C E	61	210	125	445	220	332	11.5	M10	
	B C E	61	210	125	445	220	332	11.5	M10	
	B C E	61	210	125	445	220	332	11.5	M10	
	B C E	115	300	190	480	225	425	18.0	M16	
	B C E	115	300	190	480	225	425	18.0	M16	
	B C E	115	300	190	480	225	425	18.0	M16	
	C E	250	350	240	640	340	545	22.0	M20	
	C E	250	350	240	640	340	545	22.0	M20	

- = PAL (vibration stroke transducer) integrated
- A = Controller (Series SRA)  
analog, with compensation of fluctuations in the main voltage
- B = Controller (Series SC)  
analog, with compensation of fluctuations in the main voltage
- C = Controller (Series SA)  
analog, with compensation of fluctuations in the main voltage,  
effective amplitude control in connection with external oscillation pick-up (PA) possible
- D = Controller (Series SA)  
analog, with compensation of fluctuations in the main voltage,  
control of the total internal amplitude with integrated oscillation pick-up (PAL) possible
- E = Controller (Series SD)  
digital, with compensation of fluctuations in the main voltage,  
effective amplitude control with external oscillation pick-up (PA) possible
- F = Controller (Series SD)  
digital, with compensation of fluctuations in main voltage,  
control of the total internal amplitude with integrated oscillation pick-up (PAL) possible

# Magnetic Vibrators with Vibration Frequency of 33/100/120 Hz

Type	Main voltage	Protection to EN 60529	Range of working weight		Vibration <sup>1)</sup> stroke		Transport velocity <sup>1)+2)</sup>		Rated current	Active power <sup>3)</sup>
			[V]	[kg] from	to	[mm] from	to	[cm/sec] from		
<b>33 Hz (in a 50 Hz net)</b>										
MV ES 33-1	220-240	IP 55	90	300	2.80	1.20	20.3	2.8	17.0	150
	380-420	IP 55	90	300	2.80	1.20	20.3	2.8	10.0	150
	480-520	IP 55	90	300	2.80	1.20	20.3	2.8	10.0	150
MV ES 33-1P	220-240	IP 55	90	300	3.80	1.50	29.8	7.2	17.0	150
	380-420	IP 55	90	300	3.80	1.50	29.8	7.2	11.0	150
	480-520	IP 55	90	300	3.80	1.50	29.8	7.2	11.0	150
MV FS 33-1	380-420	IP 55	190	600	2.10	1.10	18.0	2.5	15.0	200
	480-520	IP 55	190	600	2.10	1.10	18.0	2.5	15.0	200
MV FS 33-1P	380-420	IP 55	190	600	3.70	1.50	28.8	6.7	15.0	200
	480-520	IP 55	190	600	3.70	1.50	28.8	6.7	15.0	200
MV G 33-1	380-420	IP 55	300	900	3.80	1.50	29.6	5.5	21.0	300
	480-520	IP 55	300	900	3.80	1.50	29.6	5.5	21.0	300
MV H 33-1	380-420	IP 55	600	1,800	3.80	1.50	30.0	5.0	37.5	550
	480-520	IP 55	600	1,800	3.80	1.50	30.0	5.0	30.0	550
	1000	IP 55	600	1,800	3.80	1.50	30.0	5.0	15.0	550

## 100 Hz (in a 50 Hz net)

MV 1/100-4	220-240	IP 65	0.2	3	0.60	0.25	Impact vibrator	0.3	10
MV 6/100-5	220-240	IP 65	1	6	0.60	0.30	Impact vibrator	0.7	25
MV C 100-4	220-240	IP 55	18	40	0.62	0.40	Impact vibrator	3.4	55

## 120 Hz (in a 60 Hz net)

MV 1/120-4	220-240	IP 65	0.1	1	0.35	0.18	Impact vibrator	0.3	10
MV 6/120-4	220-240	IP 65	1	6	0.45	0.25	Impact vibrator	0.7	25

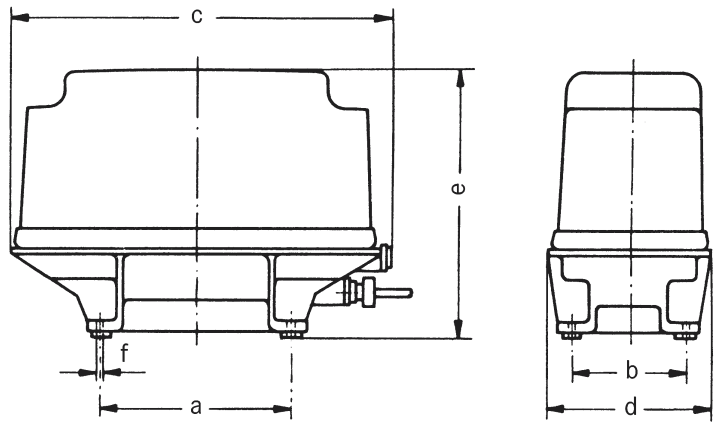
<sup>1)</sup> For operation with an AViTEQ-controller

<sup>2)</sup> Theoretical transport velocity referred to defined reference bulk material (sand) with the following parameters: material density 1.6 t/m<sup>3</sup>, grain size 3-10 mm, 8% product moisture, with approx. cubic grains, at 200 mm layer height, without bunker pressure, in horizontal device mounting

<sup>3)</sup> The specified real power refers to vibrating conveyor without the influence of the material to be conveyed. The real power may increase by a factor of 5 depending on the type and height of the load

<sup>4)</sup> PAL is a sensor integrated into the magnetic vibrator; together with an appropriate controller, it forms a closed-loop control circuit for the internal vibration stroke, enabling performance optimisation

All magnetic vibrators are sprayed in a standard colour of RAL 5018



PAL<sup>4)</sup> Possible controller Weight Dimensions

		[kg]	[mm]					∅ f	Screws
			a	b	c	d	e		
	B C E	125	300	190	535	255	425	18.0	M16
	C E	125	300	190	535	255	425	18.0	M16
	C E	125	300	190	535	255	425	18.0	M16
●	D F	125	300	190	535	255	425	18.0	M16
●	D F	125	300	190	535	255	425	18.0	M16
●	D F	125	300	190	535	255	425	18.0	M16
	C E	250	350	240	640	340	545	22.0	M20
	C E	250	350	240	640	340	545	22.0	M20
●	D F	250	350	240	640	340	545	22.0	M20
●	D F	250	350	240	640	340	545	22.0	M20
●	D F	340	500	280	746	360	690	27.0	M24
●	D F	340	500	280	746	360	690	27.0	M24
●	D F	680	420	420	901	665	710	33.0	M30
●	D F	680	420	420	901	665	710	33.0	M30
●	D F	680	420	420	901	665	710	33.0	M30
	A	3.1	200		220	107	125	8.0	M8
	A	6.5	240		265	138	140	11.0	M10
	A	46.0	210	125	420	180	280	11.5	M10
	A	3.1	200		220	107	125	8.0	M8
	A	6.5	240		265	138	140	11.0	M10

- = PAL (vibration stroke transducer) integrated
- A = Controller (Series SRA)  
analog, with compensation of fluctuations in the main voltage
- B = Controller (Series SC)  
analog, with compensation of fluctuations in the main voltage
- C = Controller (Series SA)  
analog, with compensation of fluctuations in the main voltage,  
effective amplitude control in connection with external oscillation pick-up (PA) possible
- D = Controller (Series SA)  
analog, with compensation of fluctuations in the main voltage,  
control of the total internal amplitude with integrated oscillation pick-up (PA) possible
- E = Controller (Series SD)  
digital, with compensation of fluctuations in the main voltage,  
effective amplitude control with external oscillation pick-up (PA) possible
- F = Controller (Series SD)  
digital, with compensation of fluctuations in main voltage,  
control of the total internal amplitude with integrated oscillation pick-up (PA) possible

# Magnetic Vibrators with Vibration Frequency of 50 Hz

Type	Main voltage	Protection to EN 60529	Range of working weight		Vibration <sup>1)</sup> stroke		Transport velocity <sup>1)+2)</sup>		Rated current	Active power <sup>3)</sup>
	[V]		[kg] from	to	[mm] from	to	[cm/sec] from	to	[A]	[W]
50 Hz (in a 50 Hz net)										
MV 6/50-1	220-240	IP 65	1	6	1.05	0.60	Impact vibrator		0.5	25
MV 12/50-3	220-240	IP 55	6	18	1.75	0.95	19.8	9.7	2.4	50
MV B 50-4	220-240	IP 55	10	20	1.80	1.00	19.7	9.7	2.0	30
MV C 50-4	220-240	IP 55	15	40	1.75	1.00	19.1	9.7	3.5	55
	380-420	IP 55	15	40	1.75	1.00	19.1	9.7	2.1	55
	480-520	IP 55	15	40	1.75	1.00	19.1	9.7	1.6	55
MV C 50-4.1	220-240	IP 55	40	100	1.15	0.55	11.6	2.5	3.5	55
	380-420	IP 55	40	100	1.15	0.55	11.6	2.5	2.1	55
	480-520	IP 55	40	100	1.15	0.55	11.6	2.5	1.6	55
MV D 50-4	220-240	IP 55	35	150	1.70	0.60	18.9	2.8	6.8	65
	380-420	IP 55	35	150	1.70	0.60	18.9	2.8	4.0	65
	480-520	IP 55	35	150	1.70	0.60	18.9	2.8	2.9	65
MV E 50-4	220-240	IP 55	70	250	1.75	0.70	19.3	4.4	12.7	125
	380-420	IP 55	70	250	1.75	0.70	19.3	4.4	6.8	125
	480-520	IP 55	70	250	1.75	0.70	19.3	4.4	5.3	125
MV ES 50-1	220-240	IP 55	115	350	1.85	0.75	19.1	5.1	17.0	220
	380-420	IP 55	115	350	1.85	0.75	19.1	5.1	10.0	220
	480-520	IP 55	115	350	1.85	0.75	19.1	5.1	10.0	220
MV ES 50-1P	220-240	IP 55	115	350	2.00	0.90	20.7	7.9	17.0	220
	380-420	IP 55	115	350	2.00	0.90	20.7	7.9	10.0	220
	480-520	IP 55	115	350	2.00	0.90	20.7	7.9	10.0	220
MV FS 50-2	380-420	IP 55	170	600	1.95	0.75	20.1	5.3	16.0	280
	480-520	IP 55	170	600	1.95	0.75	20.1	5.3	16.0	280
MV FS 50-2P	380-420	IP 55	170	600	2.30	0.90	20.7	7.9	16.0	280
	480-520	IP 55	170	600	2.30	0.90	20.7	7.9	16.0	280
MV G 50-2	380-420	IP 55	180	450	2.10	1.00	20.4	10.9	21.0	280
	480-520	IP 55	180	450	2.10	1.00	20.4	10.9	16.0	280
MV G 50-11	380-420	IP 55	180	450	2.20	1.10	20.6	11.4	21.0	300
	480-520	IP 55	180	450	2.20	1.10	20.6	11.4	16.0	300
MV H 50-1	380-420	IP 55	520	1,200	1.80	1.00	19.4	9.7	41.0	630
	480-520	IP 55	520	1,200	1.80	1.00	19.4	9.7	32.0	630
	1,000	IP 55	520	1,200	1.80	1.00	19.4	9.7	17.0	630

<sup>1)</sup> For operation with an AViTEQ-controller

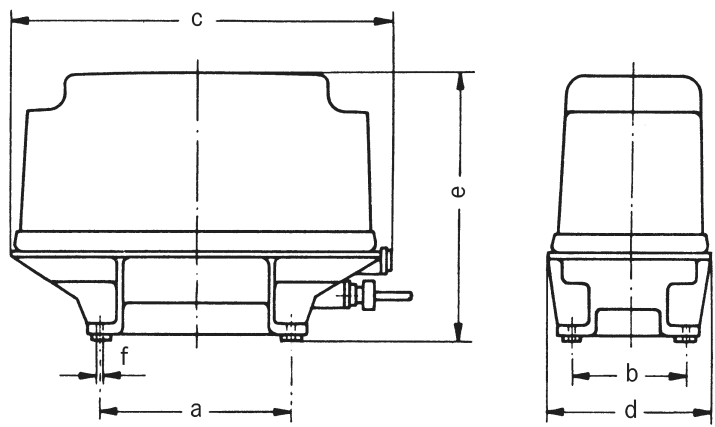
<sup>2)</sup> Theoretical transport velocity referred to defined reference bulk material (sand) with the following parameters: material density 1.6 t/m<sup>3</sup>, grain size 3-10 mm, 8% product moisture, with approx. cubic grains, at 200 mm layer height, without bunker pressure, in horizontal device mounting

<sup>3)</sup> The specified real power refers to vibrating conveyor without the influence of the material to be conveyed. The real power may increase by a factor of 5 depending on the type and height of the load

<sup>4)</sup> PAL is a sensor integrated into the magnetic vibrator; together with an appropriate controller, it forms a closed-loop control circuit for the internal vibration stroke, enabling performance optimisation

All magnetic vibrators are sprayed in a standard colour of RAL 5018





PAL<sup>4)</sup> Possible controller Weight Dimensions

		[kg]	[mm]					Ø f	Screws
			a	b	c	d	e		
	A B C E	6.5	240	-	265	138	140	11.0	M10
	A B C E	18	210	125	300	198	227	11.0	M10
	A B C E	14	Sidewise mounting		238	140	150	-	M12
	A B C E	39	210	125	420	180	280	11.5	M10
	B C E	39	210	125	420	180	280	11.5	M10
	B C E	39	210	125	420	180	280	11.5	M10
	A B C E	42	210	125	420	180	280	11.5	M10
	B C E	42	210	125	420	180	280	11.5	M10
	B C E	42	210	125	420	180	280	11.5	M10
	B C E	63	210	125	445	220	332	11.5	M10
	B C E	63	210	125	445	220	332	11.5	M10
	B C E	63	210	125	445	220	332	11.5	M10
	B C E	99	300	190	480	225	425	18.0	M16
	B C E	99	300	190	480	225	425	18.0	M16
	B C E	99	300	190	480	225	425	18.0	M16
	C E	125	300	190	535	255	425	18.0	M16
	B C E	125	300	190	535	255	425	18.0	M16
	B C E	125	300	190	535	255	425	18.0	M16
●	D F	125	300	190	535	255	425	18.0	M16
●	D F	125	300	190	535	255	425	18.0	M16
●	D F	125	300	190	535	255	425	18.0	M16
	C E	250	350	240	640	340	545	22.0	M20
	C E	250	350	240	640	340	545	22.0	M20
●	D F	250	350	240	640	340	545	22.0	M20
●	D F	250	350	240	640	340	545	22.0	M20
	C E	310	500	280	925	340	550	27.0	M24
	C E	310	500	280	925	340	550	27.0	M24
	C E	270	500	280	855	345	520	27.0	M24
	C E	270	500	280	855	345	520	27.0	M24
	C E	700	420	420	1,000	570	665	33.0	M30
	C E	700	420	420	1,000	570	665	33.0	M30
	C E	700	420	420	1,000	570	665	33.0	M30

- = PAL (vibration stroke transducer) integrated
- A = Controller (Series SRA)  
analog, with compensation of fluctuations in the main voltage
- B = Controller (Series SC)  
analog, with compensation of fluctuations in the main voltage
- C = Controller (Series SA)  
analog, with compensation of fluctuations in the main voltage,  
effective amplitude control in connection with external oscillation pick-up (PA) possible
- D = Controller (Series SA)  
analog, with compensation of fluctuations in the main voltage,  
control of the total internal amplitude with integrated oscillation pick-up (PA) possible
- E = Controller (Series SD)  
digital, with compensation of fluctuations in the main voltage,  
effective amplitude control with external oscillation pick-up (PA) possible
- F = Controller (Series SD)  
digital, with compensation of fluctuations in main voltage,  
control of the total internal amplitude with integrated oscillation pick-up (PA) possible

# Magnetic Vibrators with Vibration Frequency of 60 Hz

Type	Main voltage	Protection to EN 60529	Range of working weight		Vibration <sup>1)</sup> stroke		Transport velocity <sup>1)+2)</sup>		Rated current	Active power <sup>3)</sup>
	[V]		[kg] from	to	[mm] from	to	[cm/sec] from	to	[A]	[W]
60 Hz (in a 60 Hz net)										
MV 12/60-2	220-240	IP 55	10	18	1.50	0.90	17.4	11.6	2.7	50
MV C 60-4	220-240	IP 55	15	40	1.55	0.90	18.6	10.5	3.5	55
	380-420	IP 55	15	40	1.55	0.90	18.6	10.5	2.1	55
	440-480	IP 55	15	40	1.55	0.90	18.6	10.5	1.6	55
MV C 60-4.1	220-240	IP 55	40	100	0.90	0.45	10.5	2.8	3.5	55
	380-420	IP 55	40	100	0.90	0.45	10.5	2.8	2.1	55
	440-480	IP 55	40	100	0.90	0.45	10.5	2.8	1.6	55
MV D 60-4	220-240	IP 55	35	150	1.60	0.60	18.4	4.4	6.8	75
	380-420	IP 55	35	150	1.60	0.60	18.4	4.4	4.1	75
	440-480	IP 55	35	150	1.60	0.60	18.4	4.4	4.0	75
	550-600	IP 55	35	150	1.60	0.60	18.4	4.4	3.2	75
MV E 60-4	220-240	IP 55	70	250	1.25	0.50	15.8	3.4	11.4	140
	380-420	IP 55	70	250	1.25	0.50	15.8	3.4	6.8	140
	440-480	IP 55	70	250	1.25	0.50	15.8	3.4	5.8	140
	550-600	IP 55	70	250	1.25	0.50	15.8	3.4	4.6	140
MV ES 60-1	220-240	IP 55	110	450	1.25	0.40	15.8	2.0	16.0	240
	380-420	IP 55	110	450	1.25	0.40	15.8	2.0	9.2	240
	440-480	IP 55	110	450	1.25	0.40	15.8	2.0	8.0	240
MV ES 60-1P	220-240	IP 55	110	450	1.25	0.40	15.8	2.0	16.0	240
	380-420	IP 55	110	450	1.25	0.40	15.8	2.0	9.2	240
	440-480	IP 55	110	450	1.25	0.40	15.8	2.0	8.0	240
MV FS 60-2	380-420	IP 55	210	600	1.25	0.55	15.8	3.9	12.0	300
	440-480	IP 55	210	600	1.25	0.55	15.8	3.9	10.5	300
MV FS 60-2P	380-420	IP 55	220	600	1.25	0.58	15.8	4.2	12.0	300
	440-480	IP 55	220	600	1.25	0.58	15.8	4.2	10.5	300
MV G 60-2	380-420	IP 55	180	450	2.10	1.05	19.1	10.4	19.5	320
	440-480	IP 55	180	450	2.10	1.05	19.1	10.4	15.5	320
	550-600	IP 55	180	450	2.10	1.05	19.1	10.4	12.6	320
MV H 60-2	380-420	IP 55	520	1,200	1.45	0.82	17.4	8.8	34.0	700
	440-550	IP 55	520	1,200	1.45	0.82	17.4	8.8	27.0	700

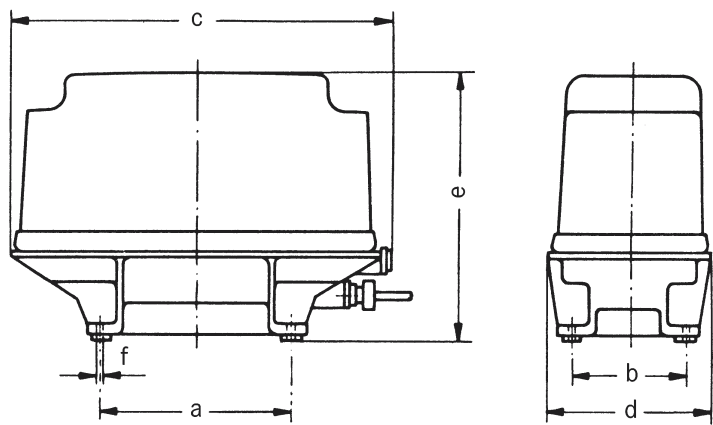
<sup>1)</sup> For operation with an AViTEQ-controller

<sup>2)</sup> Theoretical transport velocity referred to defined reference bulk material (sand) with the following parameters:  
material density 1.6 t/m<sup>3</sup>, grain size 3-10 mm, 8% product moisture,  
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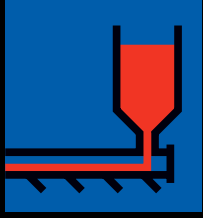


PAL<sup>4)</sup> Possible controller Weight Dimensions

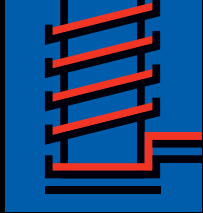
		[kg]	[mm]							Screws
			a	b	c	d	e	∅ f		
	A B C E	18	210	125	300	198	277	11.0	M10	
	A B C E	41	210	125	420	180	280	11.5	M10	
	B C E	41	210	125	420	180	280	11.5	M10	
	B C E	41	210	125	420	180	280	11.5	M10	
	A B C E	45	210	125	420	180	280	11.5	M10	
	B C E	45	210	125	420	180	280	11.5	M10	
	B C E	45	210	125	420	180	280	11.5	M10	
	B C E	60	210	125	445	220	332	11.5	M10	
	B C E	60	210	125	445	220	332	11.5	M10	
	B C E	60	210	125	445	220	332	11.5	M10	
	B C E	60	210	125	445	220	332	11.5	M10	
	B C E	98	300	190	480	225	425	18.0	M16	
	B C E	98	300	190	480	225	425	18.0	M16	
	B C E	98	300	190	480	225	425	18.0	M16	
	B C E	98	300	190	480	225	425	18.0	M16	
	C E	125	300	190	540	255	425	18.0	M16	
	C E	125	300	190	540	255	425	18.0	M16	
	C E	125	300	190	540	255	425	18.0	M16	
●	D F	125	300	190	540	255	425	18.0	M16	
●	D F	125	300	190	540	255	425	18.0	M16	
●	D F	125	300	190	540	255	425	18.0	M16	
	C E	250	350	240	640	340	545	22.0	M20	
	C E	250	350	240	640	340	545	22.0	M20	
●	D F	250	350	240	640	340	545	22.0	M20	
●	D F	250	350	240	640	340	545	22.0	M20	
	C E	310	500	280	925	340	550	27.0	M24	
	C E	310	500	280	925	340	550	27.0	M24	
	B C E	310	500	280	925	340	550	27.0	M24	
	C E	780	420	420	1,000	570	665	33.0	M30	
	C E	780	420	420	1,000	570	665	33.0	M30	

- = PAL (vibration stroke transducer) integrated
- A = Controller (Series SRA)  
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analog, with compensation of fluctuations in the main voltage
- C = Controller (Series SA)  
analog, with compensation of fluctuations in the main voltage,  
effective amplitude control in connection with external oscillation pick-up (PA) possible
- D = Controller (Series SA)  
analog, with compensation of fluctuations in the main voltage,  
control of the total internal amplitude with integrated oscillation pick-up (PA) possible
- E = Controller (Series SD)  
digital, with compensation of fluctuations in the main voltage,  
effective amplitude control with external oscillation pick-up (PA) possible
- F = Controller (Series SD)  
digital, with compensation of fluctuations in main voltage,  
control of the total internal amplitude with integrated oscillation pick-up (PA) possible

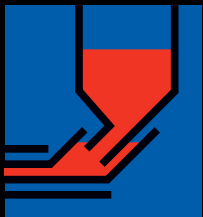
# Vibration technology applications



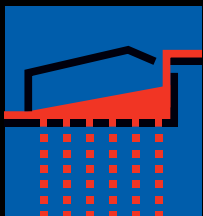
Horizontal conveying  
Troughs: 1–1,500 m<sup>3</sup>/h  
Tubes: 1–80 m<sup>3</sup>/h



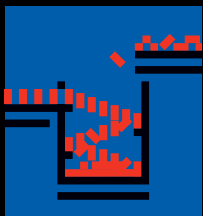
Elevating  
Helical conveyors: up to 30 m<sup>3</sup>/h



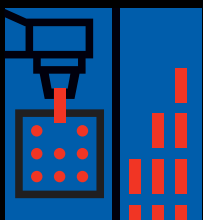
Discharging and charging  
Troughs: 1–5,000 m<sup>3</sup>/h  
Tubes: 1–100 m<sup>3</sup>/h



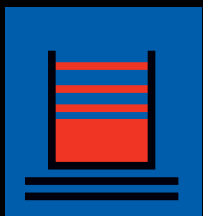
Screening, sorting, de-watering  
Vibrating screens: from a few kg/h to 1,000 t/h  
Bar grid screens: 24 to 1,000 m<sup>3</sup>/h



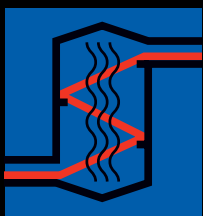
Orienting, dosing, storing  
Bowl feeder from 100 to 1,000 mm dia.  
Small-parts conveyor from a few g/h to 25 m<sup>3</sup>/h



Feeding, handling  
Feeding systems, separating equipment & positioning equipment  
Practice oriented solutions based on economical system components



Compacting  
Vibrating tables with surface areas from 160 x 250 mm to 3,000 x 5,000 mm



Cooling, heating, drying, chemical reactions  
Conveyor troughs, conveyor tubes, helical conveyors, vibration conveyor trough installations

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