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NETTER

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Эл. почта ntg@nt-rt.ru || Сайт: https://netter.nt-rt.ru/

NetterVibration

NetterVibration
Accessories

- Electronic and pneumatic controls
- Brackets and fastening sets
- Electric and compressed air installation components
- Control and maintenance units
- Measuring and switching units
- Frequency converters and valves

Serving industry with vibration

NetterVibration

Accessories
for vibrators and vibration systems

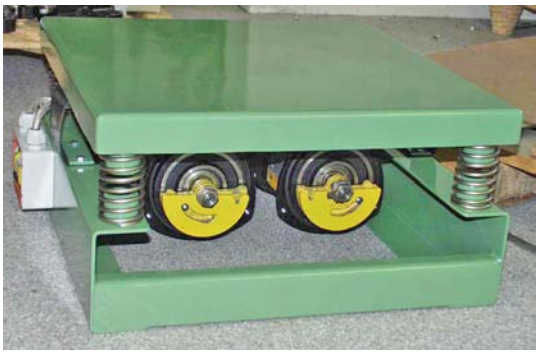
Vacuum fixing device with
NCT 29 on container

Maintenance unit with ball valve and manifold

Maintenance unit, on/off switch and frequency control at the vibrating table

Frequency measurement with
Vibro*Scanner* at the vibrating table

Vibration monitoring system at conveyor
with blade springs



CC unbalances on 2 NEGs at vibrating table
Coil springs made of stainless steel

Applications
Netter*Vibration* accessories will be used on all devices.
The applications range from simple fixing components, control and switching devices to complete control and maintenance units.
A special facet of the accessories is measuring systems for rotational speed, frequency and acceleration measurement, the values of which are used for process control.
The reduction of the noise level and ernergy savings are always top priorities.
In addition to standard accessories ***Netter*** *Vibration* offers a wide range of special solutions, adapted to suit the individual requirements of the client.

Netter*Vibration* has a worldwide staff of experienced application engineers and field representatives. We would be pleased to offer advice on site and to help optimize your applicationsusing vibration technology.

We would be pleased to prove our consulting competence in connection with a free trial of our test units.

Netter provides solutions.
Contact our experienced application technicians.

NetterVibration

Accessories

Unit description		Applications	Leaflet
Control systems			
– Electronic timer	AP 116	– Electronic control of vibrators	
– Pneumatic time control	PAP 115	– Pneumatic control, exact to the second	
– Pneumatic time control	PAP 116	– Pneumatic control, exact to the minute	
– Sequence control	NAS	– Control of duty, pause and waiting time	
– Control cabinet	NSS	– Pneumatic controls	Page 5 - 8
Fastening devices			
– Vacuum fixing device	VAC	– Installation of vibrators without fixed mounting	
– Fastening set	NBS	– Impactors and electric external vibrators	
– Quick-release bracket	NVH	– Pneumatic external vibrators	
– Quick-release clamp	SVS	– Pneumatic and electric vibrators	
– Weld-on bracket	ASB	– Fastening devices for PKL and NEG	Page 9 - 22
Maintenance components			
– Supply unit	NVE	– Compressed air supply with controls	
– Maintenance unit	NWE	– Especially for Netter pneumatic vibrators	
– Lubricator	NOE	– Continuous oil atomization	
– Regulator	NFR	– Compliance with the required compressed air quality	
– Fan or heater		– Cooling or heating at extreme temperatures	Page 23 -24
Frequency converter			
– Adjustable frequency controls	SRF	– Continous speed control	
– Adjustable frequency controls	ATV	– Speed control for installation in a switch cabinet	
– Adjustable frequency controls	NFU	– Speed control for wall mounting	
– Electronic frequency converter	NFC	– Power supply of the electric vibrators	
– Terminal box	NEG – NFU	– Connection of several vibrators	Page25-30
Control elements			
– ***Vibro****Monitor*	NVM	– Vibration monitoring system	
– Timer		– Electronic time relay	
– Braking device	BZ	– Switching off vibrators without them running on	
– Motor protection circuit-breaker		– Overload protection for electric vibrators	
– Group switching		– Switching between vibration groups	Page 31 - 36
Measuring devices			
– Vibration measuring system ***Vibro****Scanner*		– Acceleration and frequency measurement	
– Hand-held LED stroboscope		– Contactless measurement of speed and frequency	
– Sirometer		– Measurement of speed of rotation	
– Measuring labels		– Measurement of vibration	
– Incremental rotary encoder		– Conversion of rotary motion into electric signals	
Operating, switching and display elements			Page 37 - 40
– Touch panel		– Operation of the frequency control	
– Main switch,mushroom button, light barrier		– On-off or emergency-off	
– Weighing controller		– Analysis of weighing cells	
– Remote control		– Operation from an external place	
– Large-scale display		– Large-size display of the vibration frequency	
Valves		Connections	
– 3/2-way solenoid valve	HVI	– 1/8“ and 1/4“	
– 3/2-way air valve	LVI	– 1/4“, 1/8“ and 1/2“	
– 3/2-way solenoid valve	MVI, MVH, MVF	– 1/4“ and 1/2“	
– 2/2-way and mini ball valve	KH	– Manual operation	
– Throttle check valve	EAS	– 1/8“ to 2“	Page 41 - 42
Bearing elements			
– Coil springs made of stainless steel	NVD	– Elastic bearing and support	
– Leaf springs	NJ, NK, NL,NN	– Design of conveyor systems	
– Rubber buffers	NRE, NTE, NOF, NAP	– Damping and isolation of vibrations	
– Pneumatic spring bellows		– Maintenance-free bearing and height adjustment	
– Connecting element	***Flexi****Link*	– Mounting element vibrator – conveyor	Page 43 - 44

Serving industry with vibration

NetterVibration

Leaflet		Unit description		Applications
		**Safety accessories**		
		– Silencer made of plastic, sintered metal, ceramics		– Use depending on temperature
		– Protective caps, bellows		– Accident prevention and dust protection
		– Soundproof hood		– Reduction of noise level
		– Elastomer inlay	EE kit	– For silenced impacts
		– Safety rope	NSE	– Protection against falling down
		– Power choke and filter, sinus filter		– Filtering out power faults or interfering signals
		**Accessories for electric external vibrators**		
		– CC unbalances with 2 different settings		– Unbalance setting of 25% to 100%
		– Special unbalances according to customer specification		– Customized unbalance setting
		– Spacer		– Compensation of removed unbalances
		– PTC resistor		– For safe operation of vibrators
		– Ball and roller bearing		– Maintenance of vibrators
		**Installation accessories**		
		Rubber and plastic hoses for different temperature ranges		
		– Hose clamps		
		– Screw connections, nozzles, L-, T- and double nipples		
		– High-temperature hoses for synchronous operation and HT ranges		
		– O-rings and gaskets		
		– Automatic control PKL, ST kit for continuous impact sequence		
Page 45 - 54		**General accessories**		
		– Fastening screws, lock washers, self-locking screws and nuts,		
		– Locking fluid		
		– Glue for mounting screws, sealant for air supply lines		
		– Pneumatic oil, hydraulic oil, filter inserts, bearing grease, cable lugs		
		– Weights, additional weights to change the working moment		

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Netter Timer
Type AP 117 and Series PAP

- Adjustment exact to the second
- Dust and water-splash protected
- For the control of electric and pneumatic vibrators

AP 117

PAP 115

PAP 116

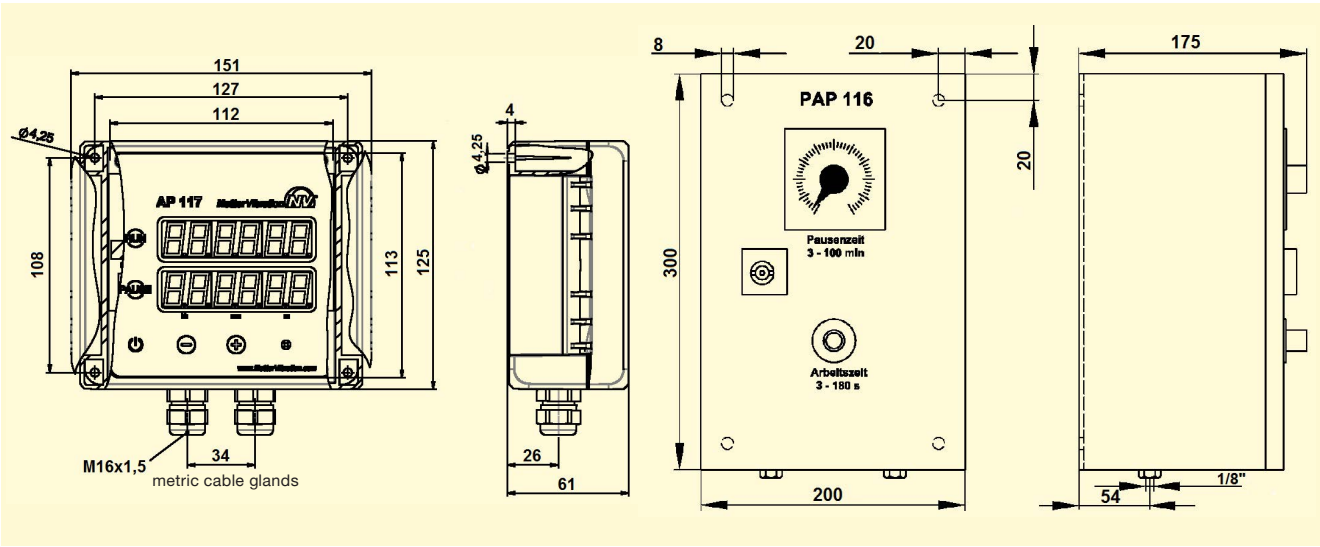
Serving industry with vibration

NetterVibration

Netter Timer
Type AP 117 and Series PAP

Type	AP 117	PAP 115	PAP 116
Operation mode	electric, non-contact	pneumatic	pneumatic
Adjustment	digital	analogue	analogue
Duty time	hh : mm : ss, 1 s to 99 h	3 s to 180 s (down)	3 s to 180 s (down)
Pause time	hh : mm : ss, 1 s to 99 h	3 s to 180 s (up)	3 min to 100 min (up)
Switching current	AC / DC: 1,25 A	–	–
Own consumption	2 VA (in operation), 0,25 VA (standby)	–	–
Input/output*	AC 90 V – 240 V (50/60 Hz) DC 24 V – 48 V ± 5 %	1/8"	1/8“
Operation pressure	–	minimum 3 bar	minimum 3 bar
Ambient temperature	– 20°C to 60°C	– 10°C to 60°C	– 10°C to 60°C
Protection	IP 65, radio interference suppression	IP 66	IP 66
Housing	polycarbonate	Al	Al

*Input voltage = output voltage



AP 117
Applications

The electronic timer AP 117 is used to control pneumatic and electric vibrators. The advantages of temporary vibrator application are noise level reduction energy saving.

Construction and Working Principle

The electronic timer is used to operate solenoid valves or motor overheating protection at freely selectable intervals.
The sequence begins with the duty time, which can be adjusted from 1 s to 99 h.
During this time the supply voltage is applied to the consuming device being controlled. When the duty time ends, the pause time of 1 s to 99 h runs, then the duty time, etc.
Moreover, the electronic timer AP 117 provices an interval mode in which the duty time is divided into clock duty times (pulses) and clock pulse times with an adjustable length of 1 to 59 s each.
The elapsed time is visible on the display. The AP 117 can be used separately or integrated in a switching cabinet.

PAP 115 and PAP 116
Applications

Series PAP pneumatic time controls are suitable for interval control of vibrators, as well as the control of impactors (PKL). The times can be continuously adjusted.

Construction and Working Principle

Activation (on/off) with a directional control valve. The PAP can actuate all directional valves, but is not sufficient for the direct activation of consuming devices. It must be ensured that enough adequately sized actuation valves are provided for vibrators, etc.
The pause time of the PAP 115 can be adjusted exact to the second, that of the PAP 116 exact to the minute. Use filtered (filter $\leq$ 5 µm) compressed air. Constant pressure guarantees reproducible times.

***Netter**Vibration* offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

NetterVibration

Sequence Controls / Control Cabinets
Series NAS / NSS

- **Controlling and standardising production processes, ensuring quality**
- Individual duty, pause and idle time settings
- Automatic recognition of connected components
- Maintenance-free
- Dust and splash-water protected

NASmini 8 AC/DC

NASmini 16 AC/DC

NSS

Serving industry with vibration

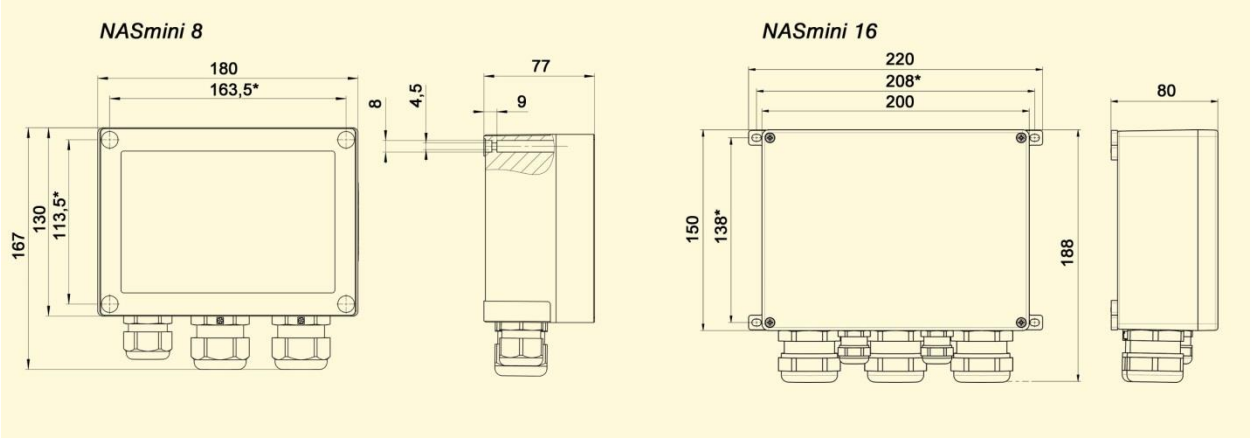
NetterVibration

Sequence Controls / Control Cabinets

Series NAS / NSS

Type	NASmini 8	NASmini 16	NSS
Mains voltage	90 V to 260 V AC or 24 V DC	100 V to 240 V AC or 24 V DC	Control cabinets of the series NSS can be manufactured according to customer requirements.
Output voltage	24 V DC ± 10 % (short-circuit protected)	24 V DC ± 10 % (short-circuit protected)	
Own consumption	3 W	max. 30 W (24 V DC); 30 VA (100 – 240 V AC)	
Duty time	0,5 s to 30 s	1 s to 99 s	
Pause time	2 s to 540 s	1 s to 999 s	
Idle time	-	0 to 999 min	
Number of sequences	0 to 9	0 to 9	
Number of outputs	1 to 8	1 to 16, with an extension up to 64	
Ambient temperature	-20 °C to 50 °C	-20 °C to 50 °C	
Dimensions B×H×T	180 × 130 × 77 mm	200 × 150 × 80 mm	
Housing / IP code	Makrolon® housing / IP 65	Makrolon® housing / IP 65	

Dimensions of NASmini 16 und NASmini 8 [mm]



*mounting dimensions

Netter Sequence Controls Series NAS

Applications:
Wherever processes are standardised and continuously high quality must be guaranteed, the Netter Sequence Control Series NAS is applied. This enables processing of sequential procedures.
Appropriately selected intervals for duty and pause times of the vibrators optimise operational processes by saving drive energy and lowering continuous sound level.

Design and working principle:
The sequence controls actuate solenoid valves or motor contactors at freely definable intervals.
The duty times of the vibrators, the pause times between the duty times and the number of sequences are adjustable.
NAS sequence controls can run control tasks in NSS control cabinets.

Features:
The NASmini 16 includes the function of the AP 117 and is, with extensions, able to actuate up to 64 devices.

Netter Control Cabinets Series NSS

Application fields:
The control cabinets of the series NSS are used for clocked control of pneumatic and/or electric vibrators.

Design and working principle:
Idle, pause and duty times can be chosen freely. A cyclical repetition of duty times and vibration monitoring can be integrated in the controls as required by the customer.
We manufacture control cabinets of the series NSS according to your requirements.

Netter*Vibration* offers suitable accessories for assembly, installation, actuation and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

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Netter Vacuum Fixing Devices for Vibrators
Series VAC

- Quick mounting without bolting or welding
- Strong connection due to high vacuum
- Can also be used on curved or uneven surfaces
- Optional air economizer
- ATEX conform and stainless steel versions available
- Costomized versions possible

VAC 10 with NCT 4

VAC 15 with PKL 740 ST

VAC 30 with NTS 50/04

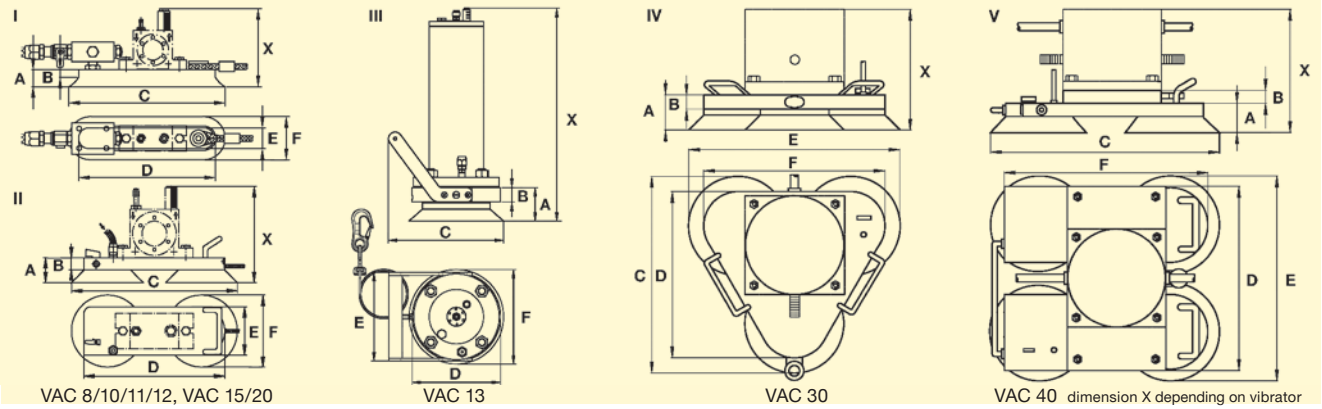
NetterVibration

Netter Vacuum Fixing Devices for Pneumatic Vibrators
Series VAC

Type + Hose set	Air consumption without vibration [l/min]		Weight	Minimum-Ø for round containers	Suitable vibrators						
	4 bar	6 bar	[kg]	[mm]	NCB	NCR	NCT	NTK	NTS	NTP	PKL
VAC 8 +HG 10 N	40	60	0,95	110	1, 2		1, 2	8 AL, 15 X	120 HF, 120NF*	25**	
VAC 8 +HG 10 S	20	22	1,20					16, 18 AL	180HF, 180NF*		
VAC 10+HG 10 N	40	60	1,05	110	1, 2, 3	3	3, 4	15X, 18AL	180HF, 180NF*	25**	190**
VAC 10+HG 10 S	20	22	1,30						250HF, 250NF*		
VAC 11+HG 10 N	40	60	1,25	110	3, 5	10	5, 10	18 AL	180HF, 180NF		190**
VAC 11+HG 10 S	20	22	1,50						250HF, 250 NF		450**
VAC 12+HG 15 N	60	122	2,85	350	10, 20	22	15, 29	25 AL	350HF, 350 NF	25**, 32**, 48**	450**
VAC 12+HG 15 S	29	36	3,20						100/01, 75/01**, 50/01**		740**
VAC 13+HG 15 N	110	170	4,20	850	10, 20	22	15, 29		75/01, 50/01 70/02*	32**	740, 2100
VAC 13+HG 15 S	41	52	4,55								5000
VAC 15+HG 15 N	110	170	3,40	650	10, 20	22	15, 29	18 AL, 25	250HF, 250NF, 350HF, 350NF	32, 48*	740
VAC 15+HG 15 S	41	52	3,75		50, 70	57*	55, 108*		75/01, 50/01, 70/02*		
VAC 20+HG 15 N	110	170	7,25	850		57	55, 108		70/02, 54/02, 50/04*	32, 48	2100
VAC 20+HG 15 S	41	52	7,60								5000
VAC 30+HG 30 N	110	170	11,50	1.500		120	126, 250		50/04, 50/08*	NVG 49, 55, 61	5000
VAC 30+HG 30 S	49	60	12,00							NVG 82, 84*	
VAC 40+HG 40 N	220	340	20,00	1.500					50/08*, 50/10*		

The technical data are comparative values and can vary depending on the application. Additional data available upon request. Subject to technical changes.
*Depending on application, please consult ***Netter**Vibration*. **Adapter plate necessary, please include in order!

Type	Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Type	Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
VAC 8	I	19	8	150	127	30	55	VAC 13	III	70	30	186	241	195	197
VAC 10	I	22	8	200	175	26,5	55	VAC 15	II	56	25	345	290	100	150
VAC 11	I	20	5,5	300	276	26	55	VAC 20	II	70	30	425	370	150	200
VAC 12	I	25	10	300	268	68	100	VAC 30	IV	70	30	396	339	426	370
								VAC 40	V	70	25	426	375,6	425	370



VAC 8/10/11/12, VAC 15/20 — VAC 13 — VAC 30 — VAC 40 dimension X depending on vibrator

Application
The vacuum fixing devices VAC are designed to allow quick attachment of vibrators to smooth or, under circumstances, uneven and curved surfaces. A special feature of the vacuum fixing is the ease of attachment, which requires no welding or bolting.

Construction and working principle
The appropriate vibrator is screwed to the vacuum fixing and connected to the supply hose leading to the hand valve.
As soon as the vacuum fixing is connected to the compressed air supply, the unit is sucked tightly to the mounting surface, thus ensuring a strong connection between the vibrator and the surface.
The air economizer “S” creates a reduced vacuum, which is sufficient to clamp the vibrator when it is not running and which reduces the air consumption by over 30%.

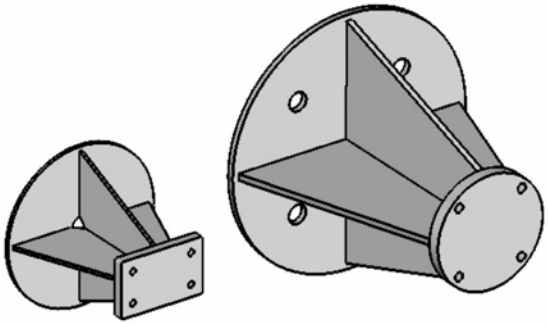
ATEX conform vacuum fixings series VAC and units with stainless steel plate are available.
When the vibrator starts, the fixing device automatically produces the full vacuum.

Permissible operating conditions Drive medium:
Compressed air or nitrogen (Filter ≤ 5 µm)
Operating pressure:
2 bar to 6 bar
Ambient temperature:
-10°C to 60°C

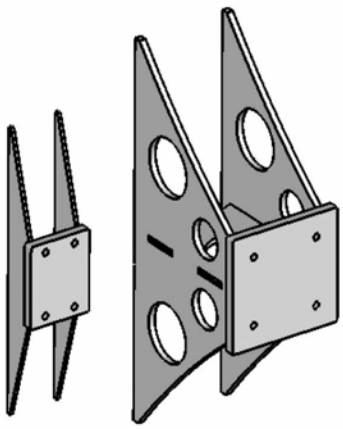
***Netter**Vibration* offers the accessories required for mounting, installation, control and monitoring of vibrators and impactors.
Netter provides solutions.
Consults our experienced application technicians.

Weld-on Brackets
Series ASB

- Fixing devices for pneumatic impactors and vibrators
- For Mounting at round and square containers
- The impulse will be spread over evenly
- Greatest possible protection of the weld



ASB R round



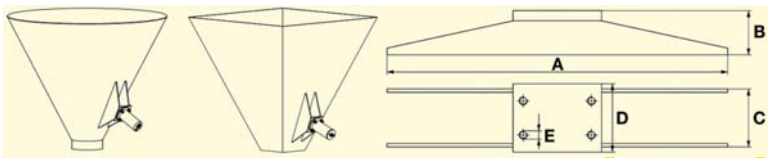
ASB G straight

NetterVibration

Weld-on Brackets
Series ASB

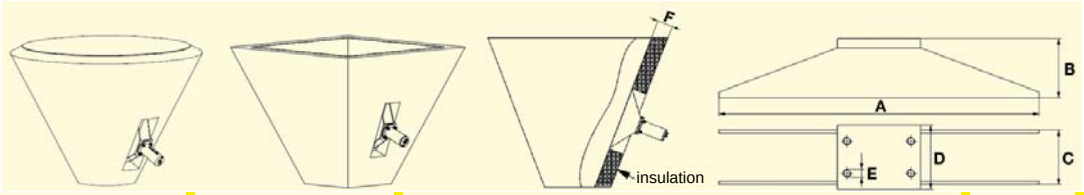
Weld-on Brackets straight
Series ASB G

For round and square containers **without insulation**



Type	for Impactors	Dimensions [mm] A	B	C	D	E	Material
ASB – G 190	PKL 190	350	46	38	40	M 8	Steel
ASB – G 190 S	PKL 190	350	46	38	40	M 8	Stainless Steel
ASB - G 450	PKL 450	450	60	60	80	M 12	Steel
ASB - G 450 S	PKL 450	450	60	60	80	M 12	Stainless Steel
ASB - G 740	PKL 740	450	65	85	100	M 12	Steel
ASB - G 740 S	PKL 740	450	65	85	100	M 12	Stainless Steel
ASB - G 740 AL	PKL 740	450	65	99	120	Ø 12,5	Aluminium
ASB - G 2100	PKL 2100	600	65	169	180	M 12	Steel
ASB - G 2100 S	PKL 2100	600	65	169	180	M 12	Stainless Steel
ASB – G-5000	PKL 5000	600	70	169	190	M 16	Steel
ASB – G-5000 S	PKL 5000	600	70	169	190	M 16	Stainless Steel

For round and square containers **with heat and sound insulation**

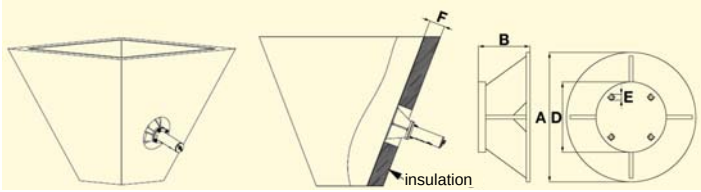


Type	For Impactors	Designation	Dimensions [mm] A	B	C	D	E	F	Material
ASB - G 740	PKL 740	ASB - G 740-200 ASB - G 740-250 ASB - G 740-300 ASB - G 740-350 ASB - G 740-400	450	200 250 300 350 400	85	100	M 12	180 230 280 330 380	Steel
ASB - G 740 S	PKL 740	ASB - G 740 S-200 ASB - G 740 S-250 ASB - G 740 S-300 ASB - G 740 S-350 ASB - G 740 S-400	450	200 250 300 350 400	85	100	M 12	180 230 280 330 380	Stainless Steel
ASB - G 2100	PKL 2100	ASB - G 2100-200 ASB - G 2100-250 ASB - G 2100-300 ASB - G 2100-350 ASB - G 2100-400	600	200 250 300 350 400	160	180	M 12	180 230 280 330 380	Steel
ASB - G 2100 S	PKL 2100	ASB - G 2100 S-200 ASB - G 2100 S-250 ASB - G 2100 S-300 ASB - G 2100 S-350 ASB - G 2100 S-400	600	200 250 300 350 400	160	180	M 12	180 230 280 330 380	Stainless Steel
ASB – G-5000	PKL 5000	ASB – G-5000-200 ASB – G-5000-250 ASB – G-5000-300 ASB – G-5000-350 ASB – G-5000-400	600	200 250 300 350 400	169	190	M 16	180 230 280 330 380	Steel
ASB – G-5000 S	PKL 5000	ASB – G-5000 S-200 ASB – G-5000 S-250 ASB – G-5000 S-300 ASB – G-5000 S-350 ASB – G-5000 S-400	600	200 250 300 350 400	169	190	M 16	180 230 280 330 380	Stainless Steel

Weld-on Brackets
Series ASB

Weld-on Brackets round
Series ASB R

For square containers **with heat and sound insulation**



Type	For Impactors	Designation	Dimensions [mm] A	B	D	E	F	Material
ASB – R 740	PKL 740	ASB – R 740-200	250	200	160	M 12	180	Steel
		ASB – R 740-250	250	250			230	
		ASB – R 740-300	350	300			280	
		ASB – R 740-350	350	350			330	
		ASB – R 740-400	350	400			380	
		ASB – R 740-450	450	450			430	
		ASB – R 740-500	450	500			480	
ASB – R 740 S	PKL 740	ASB – R 740 S-200	250	200	160	M 12	180	Stainless Steel
		ASB – R 740 S-250	250	250			230	
		ASB – R 740 S-300	350	300			280	
		ASB – R 740 S-350	350	350			330	
		ASB – R 740 S-400	350	400			380	
		ASB – R 740 S-450	450	450			430	
		ASB – R 740 S-500	450	500			480	
ASB – R 2100	PKL 2100	ASB – R 2100-200	300	200	180	M 12	180	Steel
		ASB – R 2100-250	300	250			230	
		ASB – R 2100-300	400	300			280	
		ASB – R 2100-350	400	350			330	
		ASB – R 2100-400	400	400			380	
		ASB – R 2100-450	500	450			430	
		ASB – R 2100-500	500	500			480	
ASB – R 2100 S	PKL 2100	ASB – R 2100 S-200	300	200	180	M 12	180	Stainless Steel
		ASB – R 2100 S-250	300	250			230	
		ASB – R 2100 S-300	400	300			280	
		ASB – R 2100 S-350	400	350			330	
		ASB – R 2100 S-400	400	400			380	
		ASB – R 2100 S-450	500	450			430	
		ASB – R 2100 S-500	500	500			480	
ASB – R 5000	PKL 5000	ASB – R 5000-200	350	200	180	M 16	180	Steel
		ASB – R 5000-250	350	250			230	
		ASB – R 5000-300	400	300			280	
		ASB – R 5000-350	400	350			330	
		ASB – R 5000-400	450	400			380	
		ASB – R 5000-450	450	450			430	
		ASB – R 5000-500	500	500			480	
ASB – R 5000 S	PKL 5000	ASB – R 5000 S-200	350	200	180	M 16	180	Stainless Steel
		ASB – R 5000 S-250	350	250			230	
		ASB – R 5000 S-300	400	300			280	
		ASB – R 5000 S-350	400	350			330	
		ASB – R 5000 S-400	450	400			380	
		ASB – R 5000 S-450	450	450			430	
		ASB – R 5000 S-500	500	500			480	

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Weld-on Brackets
Series ASB

Weld-on Brackets
Series ASB G
For Vibrators

Type	for Vibrators	Dimensions [mm] A	B	C	D	E	Material
ASB – G	PKL 190 NCT 3, NCT 4 NTS 180, NTS 250, NTS 350	220	40	50	–	M 8	steel
ASB – G S	PKL 190 NCB 1, NCB2, NCB 3, NCB 5 NCT 3, NCT 4 NCR 3 NTS 180, NTS 250, NTS 350	220	40	50	–	M 8	stainless steel
ASB – G NCB	NCB 3, NCB 4	400	60	80			stainless steel
ASB - G NTP 25 S	NTP 25	220	48	50	60	M 6	stainless steel
ASB - G NTP 32	NTP 32	450 220	65 150	75 –	85 □75	M 10 M 10	steel
ASB - G NTP 32 S	NTP 32	450 220	65 150	75 –	85 □75	M 10 M 10	stainless steel
ASB - G NTP 48	NTP 48	600	65	86	100	M 12	steel
ASB - G NTP 48 S	NTP 48	600	65	86	100	M 12	stainless steel
ASB - G NTS	NTS 50/01, NTS 75/01	450	60	100	110	M 8	steel
ASB – G NTS	NTS 50/04 NTS 54/02	300 550	200 60	160 116	180 125	M 12 M 8	steel
ASB – G NTS S	NTS 50/01, NTS 75/01 NTS 50/04	450 450	60 65	100 106	110 150	M 8 M 12	stainless steel

Applications:
The Weld-on Brackets series ASB are secure fastening devices for Netter pneumatic impactors series PKL.
Due to the special design of the Weld-on Brackets, the impulse of the PKL will be spread over evenly across the container wall for loosening the bulk materials, with the greatest possible protection of the weld.

Weld-on brackets are welded directly to the container walls.

PKL impactors will be screwed on plane stiffening profiles, weld-on brackets or weld-on plates (± 0,1 mm planeness).

Welding plates are welded on stiffening profiles or previously mounted on intermediate layers (1.5 times the plate thickness of the container).

The assembly of the impactors is then made with NBS kits on these devices.

***Netter**Vibration* offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

Netter Fastening Sets for Electric External Vibrators
Series NBS

- Safe and solid attachment of the Electric External Vibrators
- Versions for threaded or clearance bores

NBS G

NBS D

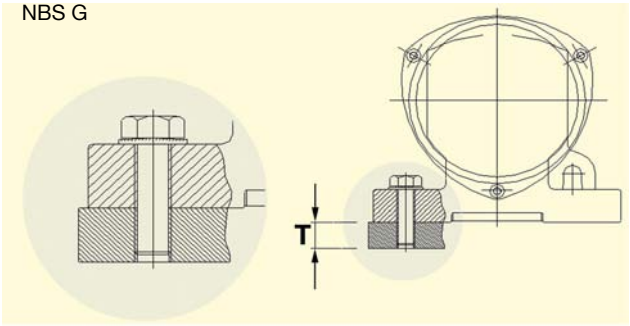
NetterVibration

Netter Fastening Sets for Electric External Vibrators

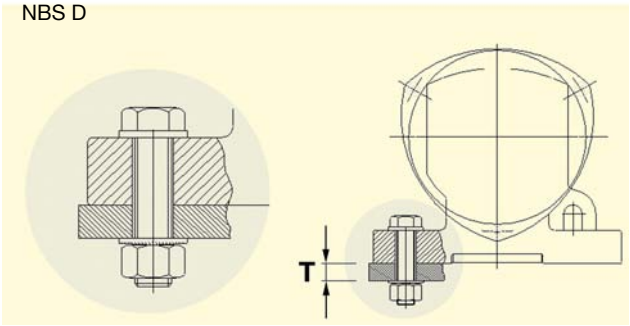
Series NBS

Vibrator Type	NBS Type	Fastening plates T [mm]
NEA 504	NBS G 5/20	10
	NBS D 5/30	8
NEA 5020 **NEA 5050**	NBS G 6/20	10
	NBS D 6/30	8
NEA 5060	NBS G 8/30	15
	NBS D 8/45	10
NEA 50120 **NEA 50200** **NEA 50300**	NBS G 12/45	20
	NBS D 12/60	12
NEA 50550	NBS G 16/55	25
	NBS D 16/80	15
NEA 50770	NBS G 16/70	25
	NBS D 16/90	15
NED 50100	NBS G 8/30	15
	NBS D 8/45	10
NED 50500	NBS G 12/40	25
	NBS D 12/50	15
NED 601110	NBS G 16/65	40
	NBS D 16/100	

NBS G



NBS D



Vibrator Type		NBS Type	Fastening plates T [mm]
NEG 5060		NBS G 8/30	15
		NBS D 8/45	10
NEG 5020	**NEG 5050**	NBS G 6/20	10
		NBS D 6/30	8
NEG 1630 **NEG 1690** **NEG 2530** **NEG 2570**	**NEG 25210** **NEG 50120** **NEG 50200** **NEG 50300**	NBS G 12/45	20
		NBS D 12/60	12
NEG 12460 **NEG 12640** **NEG 16810** **NEG 161130** **NEG 161420** **NEG 251410**	**NEG 251800** **NEG 252060** **NEG 502020** **NEG 502270** **NEG 501540** **NEG 501800**	NBS G 16/50	25
		NBS D 16/70	15
NEG 12100 **NEG 16190** **NEG 25420**	**NEG 25540** **NEG 50550**	NBS G 16/55	25
		NBS D 16/80	15
NEG 12230 **NEG 12930** **NEG 16410**	**NEG 16500** **NEG 50980** **NEG 501140**	NBS G 16/60	25
		NBS D 16/80	15
NEG 16310 **NEG 12180**	**NEG 50770** **NEG 25700**	NBS G 16/70	25
		NBS D 16/90	15
NEG 121430 **NEG 12900** **NEG 161610** **NEG 162110** **NEG 162550** **NEG 163030**	**NEG 252370** **NEG 253050** **NEG 253720** **NEG 254310** **NEG 503400** **NEG 503820**	NBS G 20/60	30
		NBS D 20/80	20
NEG 122150 **NEG 122640** **NEG 163820**	**NEG 164700** **NEG 254900**	NBS G 24/55	35
		NBS D 24/90	25
NEG 122920 **NEG 123530** **NEG 124440** **NEG 165190** **NEG 166270** **NEG 167890**	**NEG 168500** **NEG 256460** **NEG 258040** **NEG 506220** **NEG 508830**	NBS G 24/70	35
		NBS D 24/95	25
NEG 127640 **NEG 166670**	**NEG 258260**	NBS G 36/85	50
		NBS D 36/120	35
NEG 128520 **NEG 1217670** **NEG 1612060**	**NEG 2511210** **NEG 2513850**	NBS G 42/100	60
		NBS D 42/130	40
NEG 1211070 **NEG 1213160**	**NEG 1613890** **NEG 1617000**	NBS G 42/105	60
		NBS D 42/140	40

Applications:
The NBS fixing sets provide a safe and solid attachment of the NEA, NED bzw. NEG vibrators.

Netter*Vibration* provides on request, these NBS fixing sets (screws, springs, matching washers).

Netter*Vibration* offers the accessories required fort the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

Netter Fastening Sets for Pneumatic Linear Vibrators
Series NBS

- Safe and solid attachment of the Linear Vibrators
- Versions for threaded or clearance bores

NBS G

NBS D

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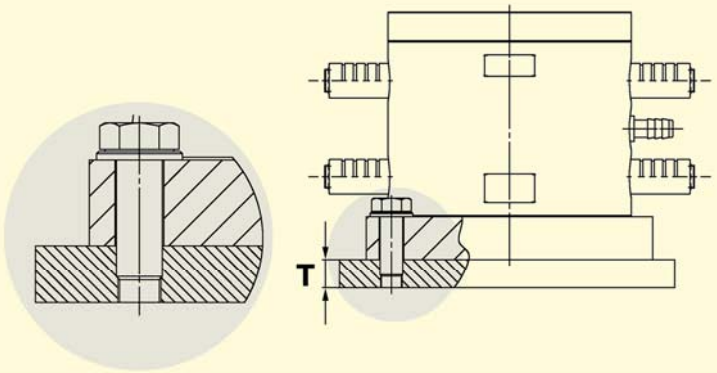
Netter Fastening Sets for Pneumatic Linear Vibrators

Series NBS

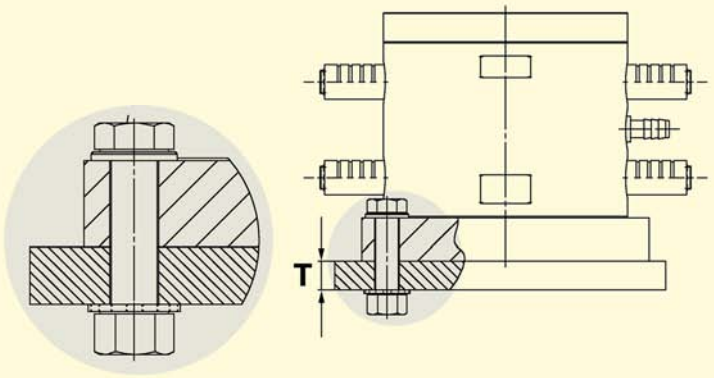
Vibrator Type	NBS Type	Fastening plate T [mm]
NTS 75/01 **NTS 50/01** **NTS 70/02** **NTS 54/02**	NBS G 8/30 NBS D 8/45	15
NTS 21/04	NBS G 12/35	15
	NBS D 12/55	20
NTS 50/10 **NTS 30/10**	NBS G 16/35 NBS D 16/55	20
NTS 50/08	NBS G 16/45 NBS D 16/65	20
NTS 50/15 **NTS 50/20** **NTS 30/20** **NTS 24/20**	NBS G 20/50 NBS D 20/70	20
NTS 50/40 **NTS 20/40**	NBS G 24/65 NBS D 24/80	20

Vibrator Type	NBS Type	Fastening plate T [mm]
NTP 25	NBS G 6/25 NBS D 6/40	15
NTP 32	NBS G 10/30 NBS D 10/50	15
NTP 25	NBS G 12/35	15
	NBS D 12/50	20
NTP 48	NBS G 12/40 NBS D 12/60	15

NBS G



NBS D



Applications:
The NBS fixing sets provide a safe and solid attachment of the NTS and NTP Vibrators.

Netter*Vibration* provides on request, these NBS fixing sets (screws, springs, matching washers).

Netter*Vibration* offers the accessories required fort the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

Netter Fastening Sets for PKL
Series NBS

- Safe and solid attachment of the PKL impactors
- Versions for threaded or clearance bores

NBS 740 for PKL 740

NBS 2100 for PKL 2100
or NBS 5000 for PKL 5000

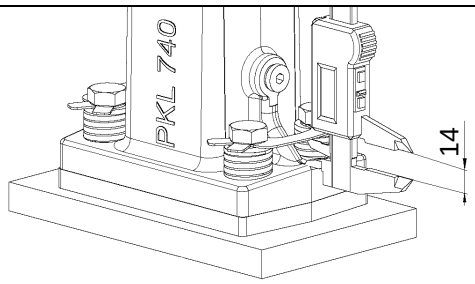
NetterVibration

Netter Fastening Set for PKL

Series NBS

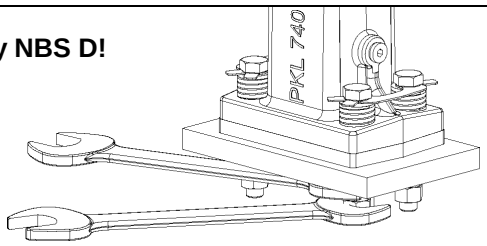
Impactor Type	NBS Type	Fastening screws	Fastening plates thickness [mm]
PKL 740	**NBS 740**		
PKL 740	**NBS G 740**	M12x60	15
PKL 740	**NBS D 740**	M12x90	15
PKL 2100	**NBS 2100**		
PKL 2100	**NBS G 2100**	M12x50	15
PKL 2100	**NBS D 2100**	M12x90	15
PKL 5000	**NBS 5000**		
PKL 5000	**NBS G 5000**	M16x75	20
PKL 5000	**NBS D 5000**	M16x110	20

Mounting procedure using the example of the NBS 740 D on a PKL 740



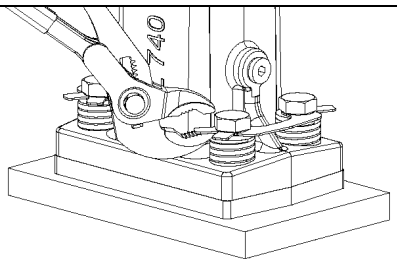
Tighten the 4 bolts evenly crosswise until the distance is 14 mm between locking plate and housing center.

Only NBS D!

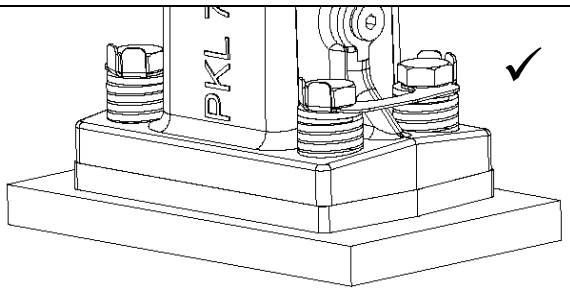


When using NBS D, the nuts must be locked after adjusting the distance.

The included screws are suitable for mounting plates with a thickness up to 15 mm.



Bend the locking tabs of the locking plate to the head of the screw, to secure the screw against rotation.



Correctly mounted fastening set NBS

Applications:
The NBS fixing sets provide a safe and solid attachment of the PKL impactors.

Netter*Vibration* provides on request, these NBS fixing sets (screws, springs, matching washers).

Netter*Vibration* offers the accessories required fort the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

Netter Quick-Clamping Devices
Series SVS

- Fast attachment to different containers
- Economic use of vibrators
- Low weight, easy handling
- Suitable for pneumatic or electric vibrators

SVS 4 S

SVS 4 D

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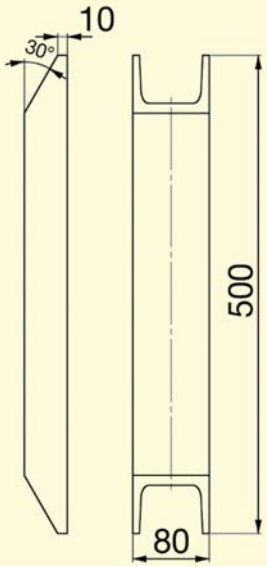
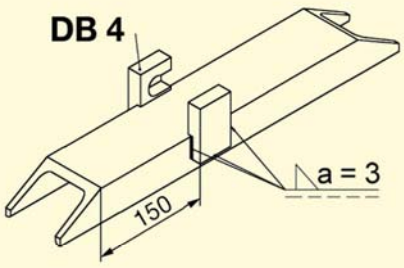
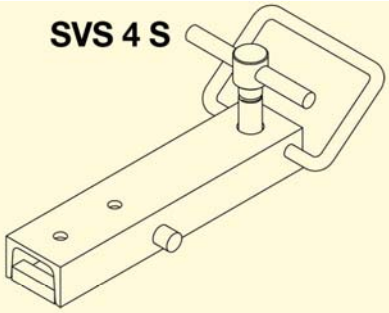
Netter Quick-Clamping Devices
Series SVS

Type	Version	Usable vibrators
SVS 4 S (T)	With toggle screw	Pneumatic vibrators: NCT, NCB, NCR, NVG, NTK, NTS and NTP
SVS 4 D (T)	With pressure can	Electric vibratos up to approx. 3000 N at 3000/min. up to approx. 1500 N at 1500/min.

T version with carrier plate. Versions made of stainless steel can be supplied.







Design:
The quick-clamping devices series SVS consist of 2 components.
The vibrator is mounted to the carrier plate with the clamping device (tommy lever or pressure can)
The end supports DB 4 have to be welded onto a U 80 profile.


SVS 4 ST with NEA


SVS 4 S with NCR


SVS 4 D with NTS

Applications:
Due to its low weight the quick-clamping device can be easily inserted into the end supports. For reinforcement we recommend to weld the U-profile with a fine welding seam onto the entire length of the trough.
The quick-clamping device SVS 4 S is inserted into the carrier plates's end supports up to the stop and fastened with the toggle screw.
A force-locking connection between device and end supports is obtained. Now the vibrator can be started.

In version SVS-4 D the clamping occurs automatically when the compressed air supply is switched on.

***Netter**Vibration* offers the required accessories for mounting, installation, control and monitoring of the vibrators and impactors.

Netter provides solutions.
Contact our experienced application technicians.

Pneumatic Maintenance Units
Series NWE

- For use in the ATEX zones 1, 2, 21 and 22
- Preparation of compressed air especially for pneumatic vibrators
- Ensures compressed air of consistently high quality
- With grade of filtration 5 µm as standard for pure compressed air
- Continuous oil atomization

Lubricator NOE ¼, NOE ½

Filter regulator NFR ¼, NFR ½

Maintenance unit NWE 1

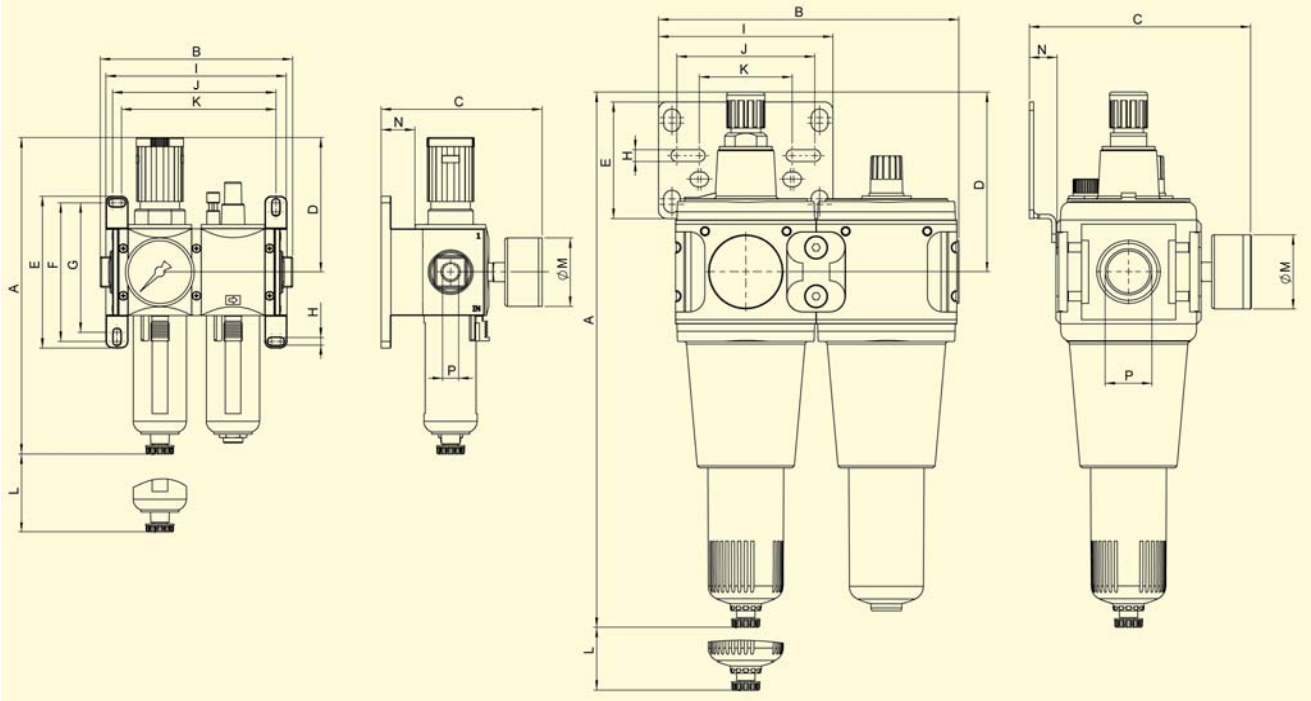
NetterVibration

Pneumatic Maintenance Units
Series NWE

Dimensions in mm

Type	Ordering number	Nominal width/ connection P	Pressure range [bar]	Inlet pressure max. [bar]	Flow rate [l/min]	Weight [kg]	Filter [µm]	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Maintenance units																					
NWE 1/4	81881114	G¼	0.5 - 10	10	1,750	1.20	5	226	137	114	96	108	99	92	5.4	128	116	110	50	49	24
NWE 1/2	81881112	G½	0.5 - 10	10	3,500	2.00	5	257	163	144	110	120	108	100	6.4	155	141	132	35	49	41
NWE 1	81881110	G1	0.5 - 10	10	10,500	4.55	5	382	214	157	128	83	-	-	8.4	124	98	66	20	61	19
Filter regulators																					
NFR 1/4	81885114	G¼	0.5 - 10	10	1,750	0.90	5	226	85	109	96	108	99	92	5.4	76	64	58	50	49	24
NFR 1/2	81885112	G½	0.5 - 10	10	3,500	1.47	5	257	101	139	110	120	108	100	6.4	92	77	69	36	49	41
NFR 1	81886110	G1	0.5 - 10	10	11,000	2.53	5	382	124	164	128	83	-	-	8.4	-	98	66	20	61	19
Lubricators																					
NOE 1/4	81882114	G¼	0.5 - 10	10	1,750	0.72	-	186	85	76	64	108	99	92	5.4	76	64	58	80	-	24
NOE 1/2	81882112	G½	0.5 - 10	10	3,500	1.20	-	210	100	106	70	120	108	100	6.9	92	77	69	90	-	41
NOE 1	81882110	G1	0.5 - 10	10	18,000	2.03	-	358	124	122	85	83	-	-	8.4	-	98	66	30	-	19

All maintenance units with manual drain, pressure gauge, mounting plate or bracket and filter



NWE ¼ and NWE ½ NWE 1

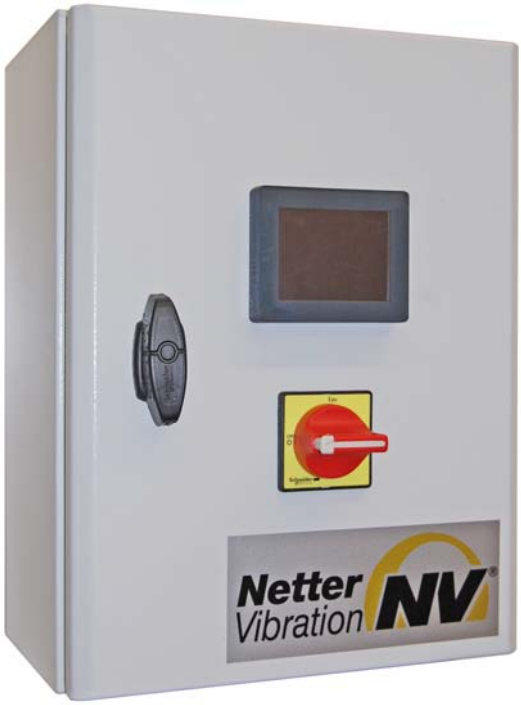
Applications:
The maintenance units and their individual components supply pneumatic vibrators with pure lubricated compressed air. They improve the reliability and service life of pneumatic equipment.
NWE, NFR and NOE are especially suitable for pneumatic piston vibrators. The pressure variations caused by piston vibrators have no influence on the function of the components (regulator, lubricator).
The maintenance units guarantee the trouble-free operation of all air-operated vibrators by continuously atomizing the oil.
The maintenance units are suitable for the use in hazardous areas of zone 1, 2, 21 and 22.

Design and functioning principle:
The pneumatic maintenance units consist of the filter regulator (filter, manometer, manual drain, mounting plate) and the lubricator.

The 5 µm filter inside the filter regulator (condensate reservoir) cleans the compressed air. At the same time the required pressure can be adjusted.
The lubricator atomizes the pneumatic oil. The compressed air leaves the maintenance unit clean and sufficiently lubricated (oil quantity adjustable).
The table shows the technical data of maintenance units and their individual components which work reliably in continuous and intermittent operation.

Admissible operating conditions
Drive media:
Compressed air or nitrogen
Operating pressure:
0,5 bar to 10 bar
Ambient temperature:
0°C to 50°C

Netter*Vibration* offers the accessories required for mounting, installation, control and monitoring of vibrators and impactors.
Netter provides solutions.
Consult our experienced application technicians.



36

Netter Static Adjustable Frequency Controls
Series SRF / NFU / ATV

- Infinitely adjustable speed control of electric external and internal vibrators
- Parallel connection of multiple vibrators
- Simple and robust design
- Clearly arranged menu navigation
- Special versions according to customer

Serving industry with vibration

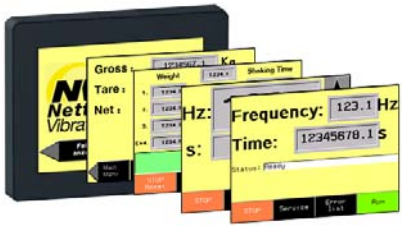
NetterVibration

Netter Static Adjustable Frequency Controls
Series SRF

Type	Supply Voltage	Max. Motor- Power Input [kW]	Max. Motor- Current [A]	Dimensions (W x H x D) [mm]
SRF 1-007/4,8	1~ 200..240V 50/60Hz	0,75	4,8	300 × 400 × 200
SRF 1-011/6,9		1,10	6,9	300 × 400 × 200
SRF 1-022/11		2,20	11,0	400 × 500 × 250
SRF 2-007/2,3	3~ 380..415V 50/60Hz	0,75	2,3	400 × 500 × 250
SRF 2-015/4,1		1,50	4,1	
SRF 2-022/5,5		2,20	5,5	
SRF 2-040/9,5		4,00	9,5	
SRF 2-055/14,3		5,50	14,3	600 × 600 × 300
SRF 2-075/17		7,50	17,0	
SRF 2-110/27,7		11,00	27,7	
SRF 2-150/33		15,00	33,0	

Switch Cabinet
As a standard, the frequency control systems of the series SRF are mounted in switch cabinets. These switch cabinets are suitable for wall mounting and provide protection against dust and splash water (Protection type IP54). Netter SRF are also available as switch cabinet with socket, with frame and as desk version.

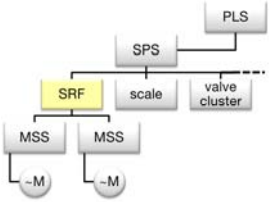
The standard color is light grey. (RAL 7035), other colors or a stainless steel enclosure are available. The motor outputs are connected to a terminal strip or, if requested by the customer, the housing of the switch cabinet is provided with plug connections.
The dimensions of the switch cabinet depend on the size of the frequency converter.



Operation
As a standard, the SRF can be operated and controlled using a 3.5“ color touch panel.
The vibration process can be started and stopped by this panel.
By buttons or a keyboard the operator can enter the desired frequency and shaking time, readable on large displays.
As languages G/E/F can be selected.

The CC unbalance function (big/small working moment) and a control group for two vibrating tables are stored in the program and can be activated if required. Error messages and alarms are displayed in separate windows which simplifies maintenance and service. Depending on the customer’s requests, the size of the touch panel and the program of the SRF can be adjusted to suit the requirements on site.

Configuration
If requested, ***Netter****Vibration* can configure additional inputs and outputs on the SRF, therewith safety devices or external operating units can be connected to the SRF. An optional mini control system allows complex monitoring and control tasks.



Bus Communication
Netter SRF can be used for all kinds of communication configurations in industrial plants.
The communication via Modbus, CANopen and other bus systems is possible after consultation with ***Netter****Vibration.*

When the SRF is integrated into an existing production process, it communicates with the central process control system.

Avoiding Uncontrolled Resonances
The integrated braking function in the frequency converter helps to prevent uncontrolled oscillation when decelerating the vibrators. This might have a negative effect on the vibration result.

Depending on the application and for the control of multipole vibrators with high working moments we recommend the use of separate brake resistors.

Netter Static Adjustable Frequency Converter
Series NFU

Type	Supply Voltage	Max. Motor- Power Input [kW]	Max. Motor- Current [A]	Dimensions (W x H x D) [mm]
NFU 1-004/3,3	1~ 200..240V 50/60Hz	0,4	3,3	210 × 240 × 163
NFU 1-007/4,8		0,75	4,8	
NFU 1-011/6,9		1,1	6,9	215 × 297 × 192
NFU 1-015/8		1,5	8,0	
NFU 1-022/11		2,2	11,0	230 × 340 × 208
NFU 2-004/1,5	3~ 380..415V 50/60Hz	0,4	1,5	215 × 297 × 192
NFU 2-007/2,3		0,75	2,3	
NFU 2-011/3		1,1	3,0	
NFU 2-015/4,1		1,5	4,1	
NFU 2-022/5,5		2,2	5,5	230 × 340 × 208
NFU 2-040/9,5		4,0	9,5	

Netter frequency converters series NFU with motor output in the IP 54 housing for wall-mounting are equipped with an on-off switch, direction switch and potentiometer for frequency setting.

A display at the device shows the output frequency of the converter. The NFU can also communicate with other devices via Modbus or CANopen. The NFU offers the possibility to connect one vibrator. In case two or more vibrators are required, it is necessary to connect an external motor terminal box as well as a motor protection relay.

Optionally, a brake resistor can be mounted and connected to prevent uncontrolled vibrations in critical applications if required. The NFU is pre-adjusted and ready for installation.

Design
Depending on the application a reserve should be calculated when designing the frequency converter, as bigger vibrators have a higher starting current.
If multi-pole vibrators (4 or 6-pole) are required, we recommend using Netter frequency converters with three-phase supply.

Netter Static Adjustable Frequency Converter
Series ATV

Type	Supply Voltage	Max. Motor- Power Input [kW]	Max. Motor- Current [A]	Dimensions (W x H x D) [mm]
ATV-320U07M2C	1~ 200..240V 50/60Hz	0,75	4,8	72 × 143 × 138
ATV-320U11M2C		1,10	6,9	105 × 142 × 158
ATV-320U22M2C		2,20	11,0	105 × 142 × 158
ATV-320U07N4C	3~ 380..415V 50/60Hz	0,75	2,3	105 × 143 × 158
ATV-320U15N4C		1,50	4,1	
ATV-320U22N4C		2,20	5,5	140 × 184 × 158
ATV-320U40N4C		4,00	9,5	
ATV-320U55N4B		5,50	14,3	150 × 232 × 232
ATV-320U75N4B		7,50	17,0	
ATV-320D11N4B		11,00	27,7	180 × 330 × 232
ATV-320D15N4B		15,00	33,0	

ATV frequency converters are mounted in an IP 2x housing for installation in a customer's existing switch cabinet. The performance data correspond to those of the series SRF.

Netter*Vibration* provides application-specific parameter settings on request.

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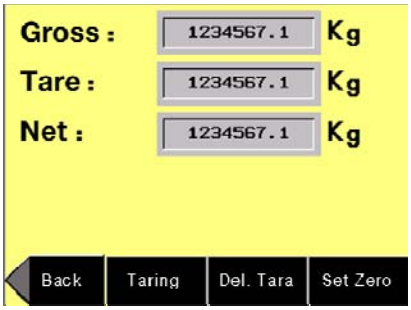
Netter Static Adjustable Frequency Controls
Special version of the series SRF



Integrated Weighing Mechanism
If required, ***Netter****Vibration* offers the SRF with integrated weighing mechanism. It is possible to simultaneously compact and weigh bulk material by mounting weighing cells at the vibration table. The current weight is shown on the touch panel of the SRF. Also weight-dependent shaking applications are possible.

Pre-adjusted and ready for Installation
All required parameters, such as starting and stopping time, run-up ramp, maximum motor and pulse frequency, slip compensation and U/K characteristic will be pre-adjusted and tested depending on the application by ***Netter****Vibration* before delivery.
After installation and connection at the customers' site the SRF is ready for operation.

Explosion-proof Control Systems
In dialogue with the user ***Netter****Vibration* implements control systems which fulfil all requirements of the ATEX directive.
These control systems comply with the Equipment Group II. Depending on the version it can be used in hazardous areas of the zones 1, 2, 21 or 22.


SRF with vibrating table


Integrated weighing system


SRF and vibrating table made of stainless steel


Vibrating table with roller track

Applications
The frequency control of the series SRF and the frequency converters of the series ATV and NFU are used for speed regulation of electric vibrators.
Special applications require frequencies which cannot be achieved with normal vibrators at line frequency. These frequency converters are characterized by their simple and robust design.

Design and Functioning Principle
Low-loss power electronics allows the operation at input voltages with high tolerances. The frequency converters generate three-phase voltages with variable frequencies of 0 Hz to 500 Hz, what makes it possible to easily adjust the speed. The permissible temperature range is 0 °C to +40 °C.

All required parameters such as starting and stopping time, run-up ramp, maximum motor and pulse frequency, slip compensation and U/F characteristic are defined by ***Netter****Vibration*.
Optionally a brake resistor can be used for time-critical applications. The brake resistor permits a fast braking within a few revolutions in order to avoid unwanted resonance vibrations.

Netter*Vibration* offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

Accessories for SRF

Unit description

Switch cabinets as desk version or made of stainless steel
Depending on the customer specification we can also supply the SRF control system in other switch boxes and cabinets including versions made of stainless steel or plastic, versions as floor-standing cabinet or simply on a mounting plate.

External operating elements
For external operation of the frequency controls e.g. from a remote panel or direct operating elements at the unit.

Braking resistor
To prevent uncontrolled vibration amplitudes when the vibrator stops after being switched off. Ready-mounted in the switch cabinet.

Touch panel
The standard 3.5" color TFT touch screen panel will be replaced by a larger 5.7" color TFT touch screen panel.
The Netter static adjustable frequency controls of the series SRF can be operated via the touch panel.

Group switching
To switch between 2 or several vibration groups at a vibrating table or between 2 or several vibrating tables. Depending on the size of the frequency converter it is possible to operate only a single group or all groups together.

Motor protection circuit breaker in the motor feeder
For protection of the electric vibrators against thermal overload and failure of a single or two outer conductors.

Safety functions
Depending on the application it may become necessary to assess safety functions such as emergency-off mushroom buttons, protection doors or light barriers in order to be able to brake and stop the vibrators in dangerous situations.

Remote control
To start and stop vibration, to reduce or increase the shaking time and to switch the vibration groups.

Power choke and filter
Power chokes and filters protect against system overvoltage and reduce the current harmonics generated by the converter. They filter out power faults caused by other consumers and compensate voltage asymmetries between the phases. In addition, they save money (up to 20%), as they limit the mains current without reducing performance.

NetterVibration

Leaflet	Unit description
	**Sinus filter** Sinus filters reduce electric interfering signals on the motor line which can interfere with other consumers. They must always be used for unshielded motor lines.
	**Integrated weighing controller** Weighing cells integrated in the system will be analyzed by means of weighing controllers in the SRF control system. The current weight value is shown on the touch panel.
	**Fan / heater** For cooling or heating of the built-in switch cabinet elements at extreme environmental temperatures.
	**Large-sized displays** For large-scale display of the current vibration frequency e.g. in a production hall.

Netter On / Off Switches

- Direct or decentralized switching on and off the system
- Main switch lockable
- Large operator pushbuttons

On / off switch

On / off switch with motor protection circuit-breaker

Main switch

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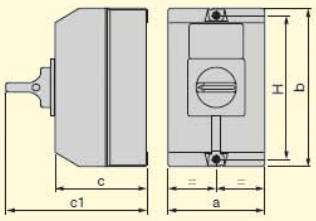
Netter On / Off Switch
Series

Type	Main switch	On / off switch	On / off switch with motor protection circuit-breaker	On / off switch with motor protection circuit-breaker
Housing material	Polycarbonate	Polycarbonate	Polycarbonate	Sheet steel
Protection class	IP 65	IP 65	IP 65	IP 55
Operating temperature	-20°C to 50°C	-5°C to 40°C	-5°C to 40°C	-5°C to 40°C
Voltage range		3 × 400 V~ 1 × 230 V~	1 × 400 V~	1 × 400 V~
Nominal current		9 to 35 A		
Thermal nominal current	16 to 63 A		Adjustable 0.16 to 23 A	Adjustable 0.16 to 10 A
Operation	Emergency off main switch lockable	Start pushbutton green Stop pushbutton red	Emergency off main switch, lockable Start pushbutton white Stop pushbutton black	Emergency off main switch, lockable Start pushbutton green Stop pushbutton red
Pre-punched holes	At the top: 2 M20/25	On the top: 2 M20/25	At the top: 2 PG 13,5 and 2 PG 16	
Cable glands:	At the bottom: 2 M20/25	At the bottom: 2 M20/25 2 motor outputs at the bottom of the housing	At the bottom: 2 PG 13,5 and 2 PG 16	At the bottom: 3 M20 × 1,5
Connectable:	Up to 2 NEG or NEA	Up to 2 NEG or NEA	1 NEG	Up to 2 NEG

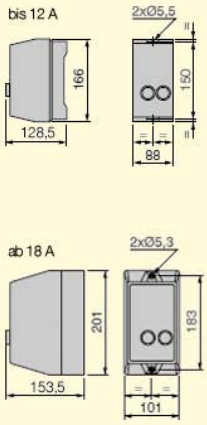
Dimensions [mm]

Main switch

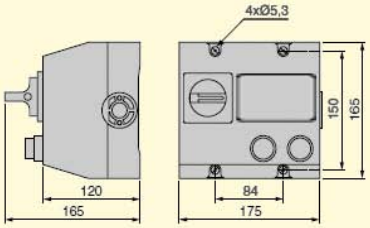


	a	b	c	c1	H
16 A to 32 A	90	146	85	131	130
63 A	150	170	106	152	164

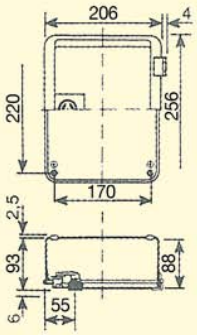
On / off switch



On / off switch 1 NEG



On / off switch 2 NEG



Permissible operating conditions
Ambient temperature:
-5°C to 50°C

Netter*Vibration* offers the required accessories for mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Contact our experienced application technicians.

Netter Vibration Monitoring System
Series *VibroMonitor*

- Monitoring the operation of vibrators and impactors
- Constant checkup of vibration systems
- Control unit mounted on M36-DIN rail

NVM C1W

NVM C4

NVM S10

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Netter Vibration Monitoring System
Series *Vibro*Monitor

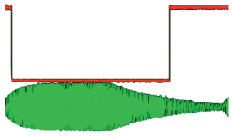
*Vibro*Monitor	NVM C1W Control unit	NVM C4W Control unit	NVM C4 Control unit	NVM S10 Sensor
				
Sensor inputs	1 ■ unpolarised	4 ■ unpolarised	4 ■ unpolarised	
Relay outputs	1 × potential free change-over	4 × potential free change-over	–	Cylindrical sensor made of stainless steel with 4-pin socket for round connectors M12 × 1 with cap nut and interlock.
Digital outputs	1 ■ sensor status, NPN, max. 1 A		4 ■ sensor status, NPN, max. 8 mA	**Shock acceleration** max. 981 m/s²
Setting	–	2 ■ SET inputs	–	
Status-LEDs	1 ■ operating voltage control		1 operating voltage control, 4 ■ sensor status	
	1 ■ sensor status	8 ■ sensor status		**Cable length** between sensor and control unit: max. 250 m
Fault	1 ■ Fault output (cable break or short circuit)		4 ■ visual indicators	
Dimensions H × W × D	70 × 35 × 90 mm	70 × 70 × 90 mm	70 × 70 × 90 mm	Ø 12 × 40, thread (plug) M12 ■ 1 × 1
Mounting	M36-DIN-standard rail (EN50022)			

Accessories

1 Sensor clamp support in plastic or rubberised stainless steel pipe clamp.

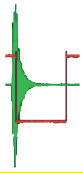
2 Elbow connector M12 × 1 or sensor connector cable with cast elbow connector M12 × 1

Vibrator monitoring



The ***Vibro**Monitor output (red)* shows the acceleration (green) exceeding the switching threshold* of 9,81 m/s².
*Can be adjusted in the factory.

Impactor monitoring



The ***Vibro**Monitor output (red)* holds its status for at least 450 ms. and therefore reliably records even short impacts (green). This signal length is treatable by standard commercial SPCs.

Applications
The vibration monitoring system series ***Vibro**Monitor* is used for the constant monitoring of impactors, vibrators and vibrating systems.

The ***Vibro**Monitor* system reliably monitors the operation of vibrators and impactors, even in locations with difficult access.

Design and function
The vibration monitoring system consists of sensor, connector cable and control unit. The control unit ensures the safe transmission of the sensor signal up to a maximum cable length of 250 m. Depending on the version up to 4 sensors can be supplied by a control unit.

The system displays two operating status informations per sensor: "Vibration" or "No vibration".

Permissible operating conditions
Operating voltage:
24 V DC (+20% / -10%), < 5% residual ripple
Ambient temperature:
C1W and C4W: 0°C to 40°C
C4 and S10: -20°C to 40 °C

***Netter**Vibration* offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

Netter Braking Device
Series BZ

- Immediate standstill of electric external vibrators
- Powerfull braking moment
- Compact dimensions

BZ 30

BZ 70

BZ 200

NetterVibration

Netter Braking Devices
Series BZ

Braking devices	BZ30	BZ 70	BZ 200
			
Max. braking current	30 A	60 A	200 A
Dimensions H×W×D	68 × 55 × 110 mm	185 × 158 × 110 mm	270 × 145 × 180 mm
Weight	0.5 kg	1.1 kg	7.5 kg
External prefuse	16 A slow-blow	Approx. 150 % of the motor nominal current	
Mounting	M36 DIN standard rail (EN50022)	For mounting in a switch cabinet	
Mains voltage (AC)		3~ 380 V bis 430 V	
Braking voltage (DC)	160 V		
Mains frequency		50 Hz to 60 Hz	
Ambient temperature	0°C to 40°C during operation		
Braking time		0 s to 12 s	

Applications:
Braking devices serve to brake one or two Netter electric external vibrators.

Design and functioning principle:
Netter braking devices generate a powerful braking torque. The braking effect is initiated by an adjustable direct current flowing through the motor winding.

A standing magnetic field prevents the motor shaft from moving.

Netter*Vibration* offers the accessories required for mounting, installation, control and monitoring of vibrators and impactors.

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Consult our experienced application technicians.

Netter Vibration Measuring System
Series ***Vibro***Scanner

- Acceleration measurements
- Frequency measurements
- Process control

Probe tips

Sensor

Scanner

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Netter Vibration Measuring System
Series *VibroScanner*

VibroScanner

Metering		Root mean square (RMS)
Ranges	**Acceleration measurement** **Frequency measurement** **Amplitude measurement**	–15 … 15 g_e (–147 … 147 m/s²) 5 … 800 Hz / +/– 0,1 Hz +/– 0,1 mm (at sinus)
Resolution		+/– 0,1 g_e (+/– 1 m/s²)
Measuring accuracy		+/– 3 %
Damping		–2 dB at 800 Hz

Standard equipment:

Probe tips | Sensor | Cable | Scanner | Carrying case

Applications
The ***VibroScanner*** is used to measure the acceleration and the dominant frequency of mechanical vibrations by means of an acceleration sensor.
Possible applications are the measurement of the operational parameters of vibration systems, e.g. frequencies and effective accelerations in vibration feeders and conveyors, vibration compactors or vibration test systems. Thereby, the ***VibroScanner*** permits a quantitative process control on a regular basis, thus contributing essentially to the long successful operation of the vibration system. Moreover, it makes it possible for plant manufacturers to perform batch controls in vibration drives in order to ensure a consistent product quality.

Design and function
The sensor used is a capacitive micro-mechanical (MEMS) sensor characterized by high mechanical strength. The signal processing takes place directly in the sensor housing, thus reducing considerably the sensitivity to electrical interference.

Admissible operating conditions
Operating voltage:
9 V battery
Ambient temperature:
-20°C to 40°C

NetterVibration offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.

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Netter Hand-Held LED Stroboscope

- Speed and frequency measurement with up to 300.000 flashes per minute
- Control of resonance and vibration performance of vibrating systems
- Visualization of vibrations

NetterVibration

Netter Hand-Held LED Stroboscope

Flash frequency	30 to 300.000 FPM (flashes per minute)
Accuracy	0.02 % (± 1 digit)
Flash power	1500 Lux at 6000 FPM / 20 cm
Dimensions	191 × 82 × 60 mm
Temperature	0°C to 45°C

All adjustments can be made by actuating the pushbuttons with your thumb (one-handed operation).
The multi-line display shows the measured results and the respective units.
Effortless measuring or checking of rotating and vibrating objects.
Generation of still images for quality tests or monitoring of fast-clocked processes.
Vibration of components at different rotational speeds can be made visible.
General contactless speed or frequency measurement of moving objects.
Testing and controlling of resonance and vibration characteristics.
For installation, monitoring and diagnosis in running systems.

Netter*Vibration* offers the accessories required for mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

Directional valves
Series HVI, LVI and MVI

- For manual operation of pneumatic vibrators and interval impactors
- Easily exchangeable system
- Compact design

HVI

MVI

LVI

NetterVibration

Directional valves
Series HVI, LVI und MVI

Type	Solenoid valves MVI 1/4“, MVI 1/2“	Air valves LVI 1/8“, LVI 1/4“, LVI 1/2“	Manual valves HVI 1/8“, 1/4“
Connection	1/4“, 1/2“	1/8“, 1/4“, 1/2“	1/8“, 1/4“
Operating pressure	1/4“ – 2.5 to 10 bar, 1/2“ – 1.5 to 10 bar	0 to 10 bar	2.5 to 10 bar
Flow rate	1/4“ - 1.400 Nl/min, 1/2“ -2,000	1/8“ - 850	1/8“ – 900, 1/4“- 1,200
Switching frequency	800 min^{-1}	-	-
Material	Housing: Aluminium die casting Seals: Rubber NBR	Lacquered zinc die casting Rubber NBR	Zinc die casting Rubber NBR
Voltage	24 V – 230 V AC, 50/60 Hz or 24 V DC		Hand lever, incremental switch or contact switch
Power consumption	AC: Switching power: 7.5 VA Holding power 3.5 VA DC: 2.5 W		
Weight			

Duty time: 100%
Protection: IP 65
Maintenance: The valves are maintenance-free
Mounting: By means of bores in the housing

Applications:
Mechanically or electronically actuated directional valves serve to actuate pneumatic vibrators and impactors.

Solenoid valves permit the controlled, timed activation of the connected pneumatic vibrators and impactors by electric control signals.

Permissible operating conditions
Drive medium:
Filtered compressed air or nitrogen with or without pneumatic oil
Operating pressure:
2.5 bar to 10 bar
Ambient temperature:
-15°C to 50°C

Netter*Vibration* offers the accessories required for mounting, installation, control and monitoring of vibrators and impactors.

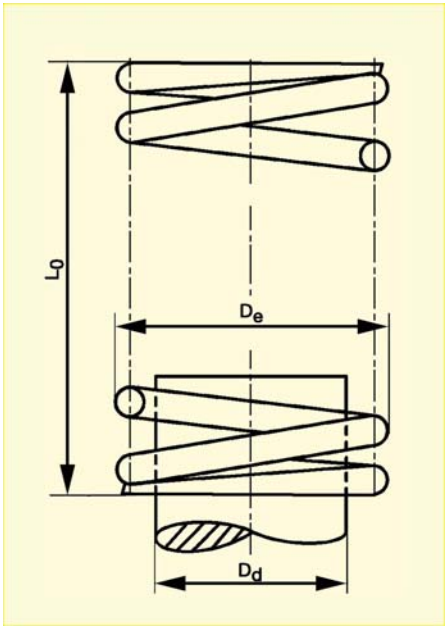
Netter provides solutions.
Consult our experienced application technicians.

Coil Springs made of stainless steel

- Elastic support of conveyors and vibrating tables
- Long service life due to additional glass pearl blasting
- Always in stock

Coil Springs made of stainless steel

Type	Load per coil spring stroke 7,5 mm [kg]		max	Outer Ø (D_e) [mm]	unloaded(L_0) [mm]	Guide Ø (D_d) [mm]
NVD 2,1/3,1	2,0	to	3,0	27	58	22,3
NVD 3,8/5	3,7	to	5,0	33	50	26,6
NVD 5,2/7,2	3,1	to	6,8	43,2	82	35,8
NVD 7/9,5	3,4	to	9,4	49	103	39,8
NVD 11/16	9,5	to	15,5	36	61	27,1
NVD 13/18	6,6	to	16,7	50	95	38,7
NVD 16/22	14,9	to	21,3	36	53,5	27,1
NVD 18/24	6,9	to	23,5	60	128	47,5
NVD 23/32	11,9	to	30,2	45	95,5	34,0
NVD 30/40	14,6	to	49,7	75	102	59,0
NVD 38/51	24,1	to	51,4	56,3	80	42,6
NVD 39/53	20,1	to	52,6	81	98	63,2
NVD 53/70	12,9	to	70,5	71	205	53,6
NVD 60/80	31,3	to	79,3	71	95	53,6
NVD 85/115	37,3	to	114,5	90	115	68,0
NVD 110/150	50,7	to	150,0	63	111	43,0
NVD 130/180	48,6	to	175,1	73	135	51,0
NVD 145/195	76,4	to	195,7	73	96	51,0



Feeders and discharge troughs need a flexible support, for example coil springs. All springs mounted beneath a feeder tray must be loaded equally to allow constant conveying. It is absolutely necessary to take into consideration the exact position of the centre of gravity of the conveyor tray.
Resonance frequency of the system feeder - springs should be approximately 1/5 of the operating frequency of the vibrator so that the natural frequency of the springs (uncontrolled deflection) is quickly passed through.
The max. load per spring can be found in the table. The stroke of the coil spring should be 7,5 mm or more. Twin supports by several pairs of coil springs are also possible.
In the table you will find coil springs that are suitable for the flexible support of conveyors and are always in stock.

For selection of the suitable coil spring you have to divide the weight of the moving mass by the number of springs in order to know the load per coil spring. You can then choose the corresponding coil spring in the table.
The coil springs are made of stainless steel wire and the surface is specially treated so that a longer service life can be provided.

Netter*Vibration* offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.

Pneumatic Spring Bellows
40, 80, 100, 200 and 330

- Elastic support of vibration systems
- Low friction
- Maintenance-free even under rough environmental conditions

40-1

80-3B

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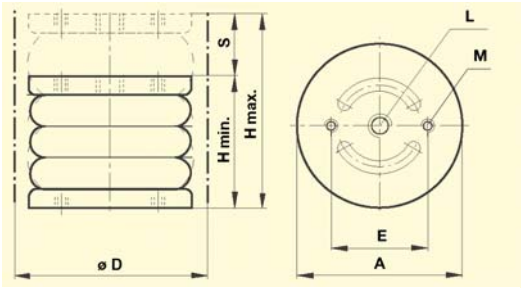
Pneumatic Spring Bellows

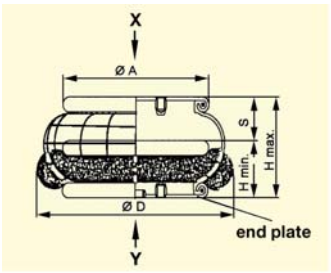
40, 80, 100, 200 and 330

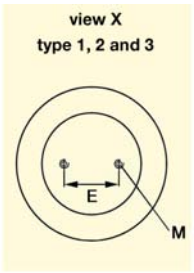
Type	H min. [mm]	H max. [mm]	S max. [mm]	Support load* at [kN] 4 bar	[mm] H	ØD [mm]	End plates** [mm] Type	ØA	E	F	L	M
40-1	60	100	40	1,5	100	160	1	90	20,0	10,0	G 1/8	M 8 × 15
100-1	60	130	70	4,0	115	225	2	114	44,5	-	G 1/4	M 8 × 15
200-1	60	125	65	8,0	110	265	3	161	89,0	38,1	G 3/4	M 8 × 15
330-1	60	140	80	15,0	120	340	3	228	157,5	73,0	G 3/4	M 8 × 15
80-3B	100 with 10 kg load	-	50 at 4 bar	0,5 at max 4 bar	150 with 10 kg load	95	3B	78	36,0	-	G 1/4	M 6

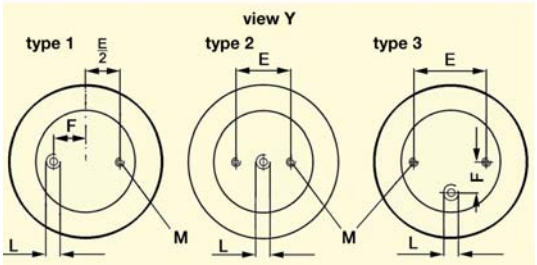
* Support load and stroke are interdependent values.

** The end plate is equipped with a compressed air port.



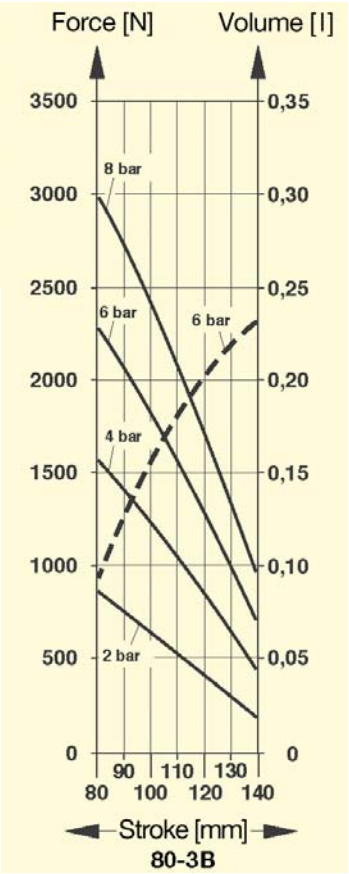






40 to 330

The pneumatic spring bellows 40, 100, 200 and 330 are made of reinforced elastomer multilayers. The steel end plates are securely joined to the bellow walls by means of beading and are pressure-tight. A lateral displacement of up to max. 10 mm is permissible. Up to 30° inclination of the end plates is possible, provided H min. and H max. are observed.



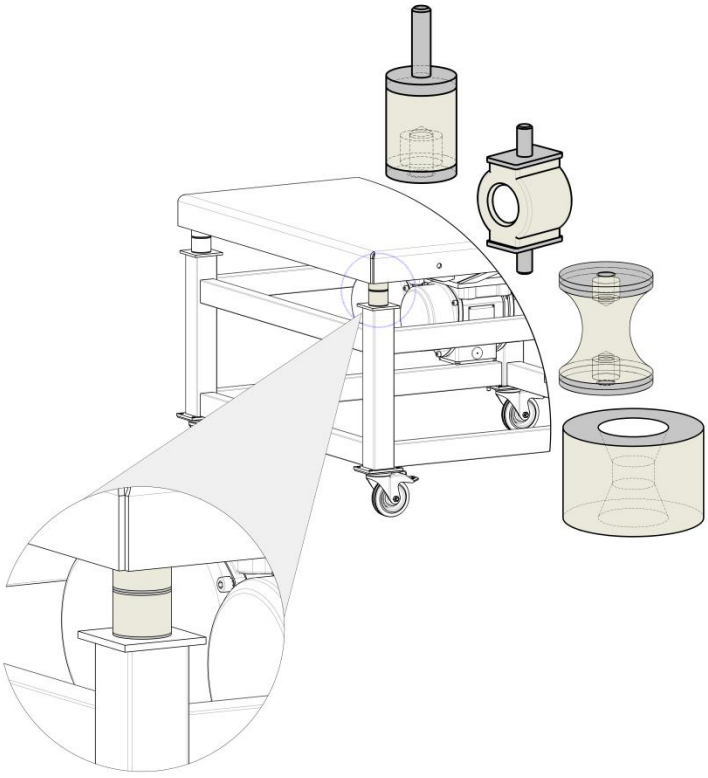
80-3B

The walls of the spring bellows 80 consist of high quality elastomer layers and are reinforced by two layers of nylon cord. The end plates are securely joined to the bellow walls by means of beading and are pressure-tight. Up to 25° inclination of the end plates is possible, provided H min. and H max. are observed.

Permissible operating conditions
Drive medium:
Compressed air or nitrogen
Operating pressure:
4 bar to 6 bar
Ambient temperature:
-40°C to 70°C

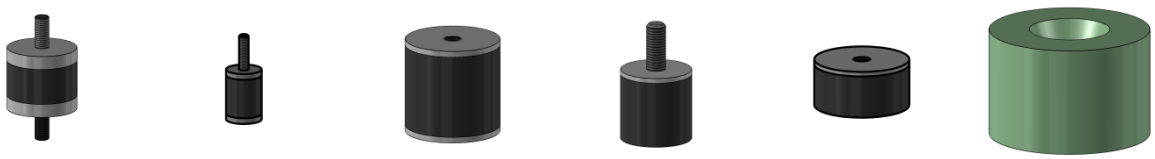
Netter*Vibration* offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our experienced application technicians.



Rubber elements, anti-vibration elements
Series NRE, NTE, NOF and NAP

- **Reliable vibration isolation of mechanical components**
- High static and dynamic load capacity
- Elastic support of vibration equipment
- Good insulation and damping properties due to low Shore-hardness



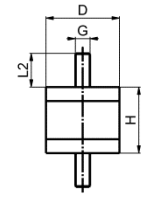
Version A | Version B | Version C | Version D | Version E | Version F

NetterVibration

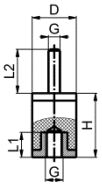
Rubber elements, anti-vibration elements
Series NRE, NTE, NOF und NAP

Typ	D [mm]	H [mm]	G	Version	L1 [mm]	L2 [mm]	Hardness [°sh]	Max. compression [mm]	Max. stat. load capacity [kg]
Round elements									
NRE 15/25	15	25	M4	B	4	15	43	3,4	8
NRE 20/30	20	30	M6	B	5	18	45	3,9	16
NRE 25/30	25	30	M6	B	6	18	43	3,9	20
NRE 30/40	30	40	M8	B	9,5	21	45	5,1	31
NRE 40/40	40	40	M8	B	8	23	43	5,4	60
NRE 40/40	40	40	M8	C	8	-	43	5,4	53
NRE 50/40	50	40	M10	B	10	28	43	5,1	86
NRE 50/40	50	40	M10	C	10	-	43	5,1	100
NRE 50/50	50	50	M10	B	10	28	43	6,6	95
NRE 50/50	50	50	M10	C	10	-	43	6,6	80
NRE 70/45	70	45	M10	C	10	-	43	5,9	190
NRE 75/55	75	55	M12	C	12	-	43	7,4	225
NRE 100/55	100	55	M16	C	16	-	43	7,1	465
NRE 150/55	150	55	M16	C	16	-	43	6,8	1.480
NRE 200/100	200	100	M20	C	17,5	-	55	13	2.360
Waist elements									
NTE 40/50	40	48	M8	C	8	-	57	6,6	33
O-shaped elements									
NOF 22/30	22	30	M5	A	-	10,0	60	Z-direction: 3	5
								X-direct.: 12	4
NOF 28/38	28	38	M6	A	-	9,5	60	Z-direction: 3	10
								X-direct.: 14	16
Bump stops									
NAP 30/15	30	15	M8	D	-	20	45	1,4	25
NAP 30/30	30	30	M8	D	-	20	45	4,5	40
NAP 40/20	40	20	M8	E	-	-	55	3,0	70

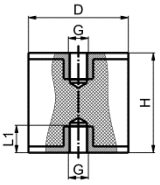
Type	D [mm]	H [mm]	G [mm]	Version	Min. compression [mm]	Min. stat. load capacity [kg]	Max. compression [mm]	Max. stat. load capacity [kg]
Anti-vibration elements								
NRE 100/100s	100	100	32	F	5	135	40	1.090
NRE 150/150be	150	100	45	F	5	660	25	3.310
NRE 150/100g	150	100	45	F	5	335	15	1.010
NRE 150/100hg	150	100	45	F	5	390	25	1.960
NRE 150/100s	150	100	45	F	5	800	25	4.000
NRE 200/170be	200	170	72	F	5	400	25	2.010
NRE 200/170hbl	200	170	72	F	5	240	25	1.200
NRE 250/250be	250	250	51	F	5	370	50	3.720
NRE 250/250hbl	250	250	51	F	5	285	50	2.830



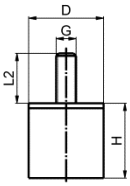
Version A



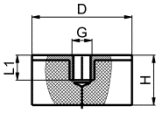
Version B



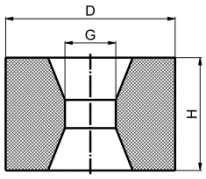
Version C



Version D

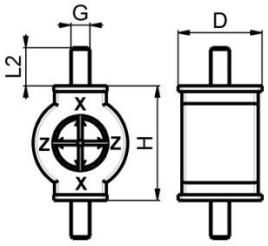


Version E

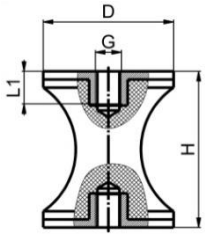


Version F

O-shaped elements (version A)



Waist elements (version C)



Applications:
Rubber buffers are used for the vibration isolation of mechanical components and the support of vibration equipment.

Compression, shear, torsional stresses or a combination of these can be exerted on rubber elements. The elements isolate and damp very well due to their low Shore-hardness when used properly.

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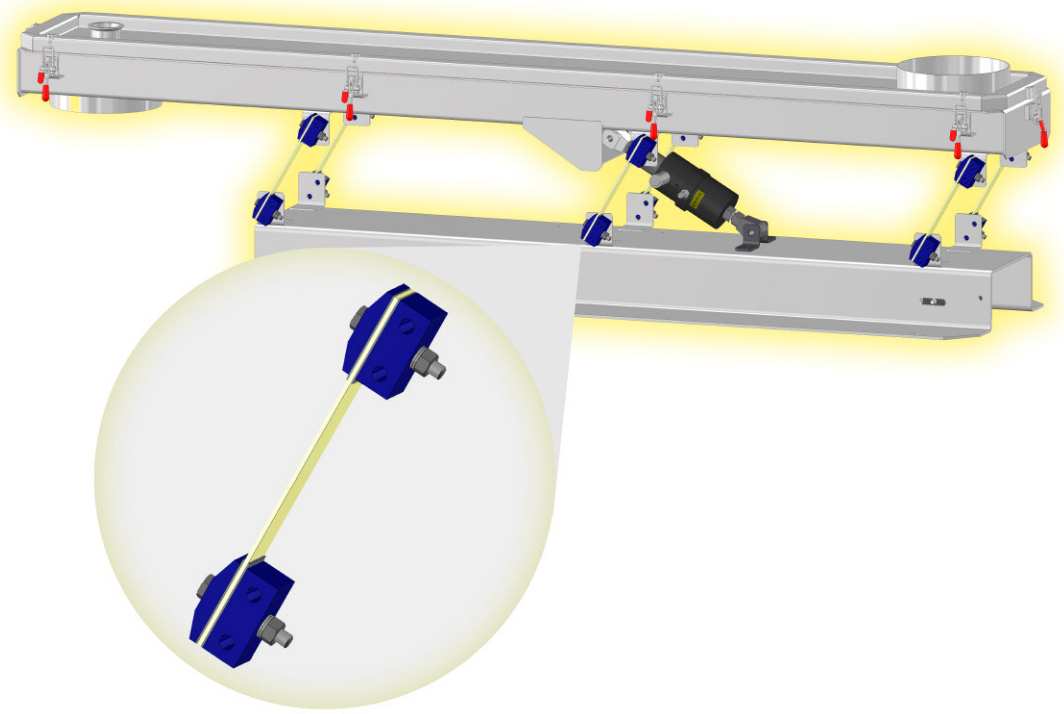
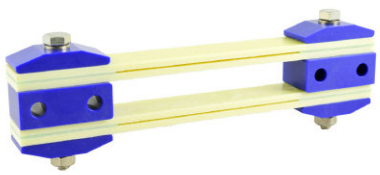


50

Fibreglass Epoxy Resin Blade Spring Combinations
Series BA - EC

- **Quick and simple conveyor system construction**
- Suitable for conveyor troughs with a low tare weight
- Large variety of possible combinations
- High conveying speed or large amplitude possible

BA to BE

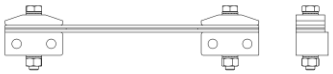


EA to EC

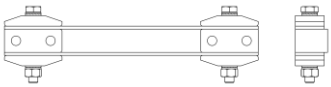
Fibreglass Epoxy Resin Blade Springs Combinations
Series BA - EC

Type	Resonance weight [kg] at 400 min^{-1}	Resonance weight [kg] at 600 min^{-1}	Blade spring combinations comprising: 2 x inner block, 2 x screw, nut, lock, 2 x outer block and in addition	Type of spring	Dimensions [mm]	Free length [mm]	Max. amplitude [mm]
BA	2.30	1.02	1 x blade spring	NJ	2.5 x 25 x 220	120	19
BB	3.87	1.72		NK	3.0 x 25 x 220	120	16
BC	8.28	3.68		NL	4.0 x 25 x 220	120	12
BD	10.29	4.57		NM	5.0 x 25 x 220	160	19
BE	11.15	4.96		NN	6.0 x 25 x 220	160	14
CA	5.48	2.44	2 x intermediate layer, 2 x blade spring	NJ	The number of blade springs required is given by the formula: weight of trough/resonance weight = number of springs required. The natural resonance of a blade spring depends on its support weight. Therefore, the natural resonance is given for all spring types.		
CB	7.88	3.50		NK			
CC	16.28	7.24		NL			
DA	4.71	2.09	2 x blade spring 2x outer block	NJ			
DB	8.45	3.76		NK			
DC	17.02	7.56		NL			
DE	29.84	13.26		NN			
FA	7.17	3.17	2x intermediate layer 3 x blade spring 2 x outer block	NJ			
FB	12.13	5.39		NK			
FC	25.41	11.29		NL			
EA	9.57	4.25	4 x intermediate layer 4 x blade spring 2 x outer block	NJ			
EB	16.63	7.39		NK			
EC	37.87	16.83		NL			

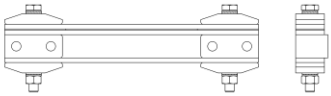
blade spring combination BA to BE



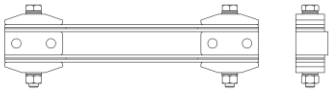
blade spring combination CA to CC



blade spring combination DA to DE

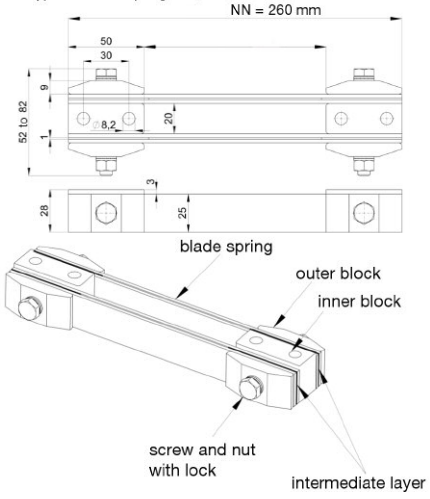


blade spring combination FA to FC



blade spring combination EA to EC

Types of blade springs NJ, NK, NL = 220 mm
NN = 260 mm



Application areas:
Conveyor systems with a low tare weight can be quickly and easily built with blade spring combinations. These include, among other things, transport chutes, conveyor troughs for dosing, and sieves. The low tare weight of the conveyor system saves energy. Resonance conveyor systems with large amplitudes are suitable for drying or airing bulk materials.

Design and function:
The arrangement of the blade springs may be linear or circular. In a linear arrangement, the distance between the positions should not exceed 1 m. The attachment of the vibrator to the conveyor system is variable due to the steering duct of the blade springs.

Special features:
Optionally available are FDA-compliant, blue blade springs made of fibreglass with blue clamping blocks, which ensure good detectability in the food industry. Black blade spring combinations made of carbon fibres enable use in potentially explosive areas according to the ATEX directive.

Ambient temperature:
Maximum 70 °C.

***Netter**Vibration* offers the accessories required for the mounting, installation, control and monitoring of conveyor systems.

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Consult our experienced application technicians.

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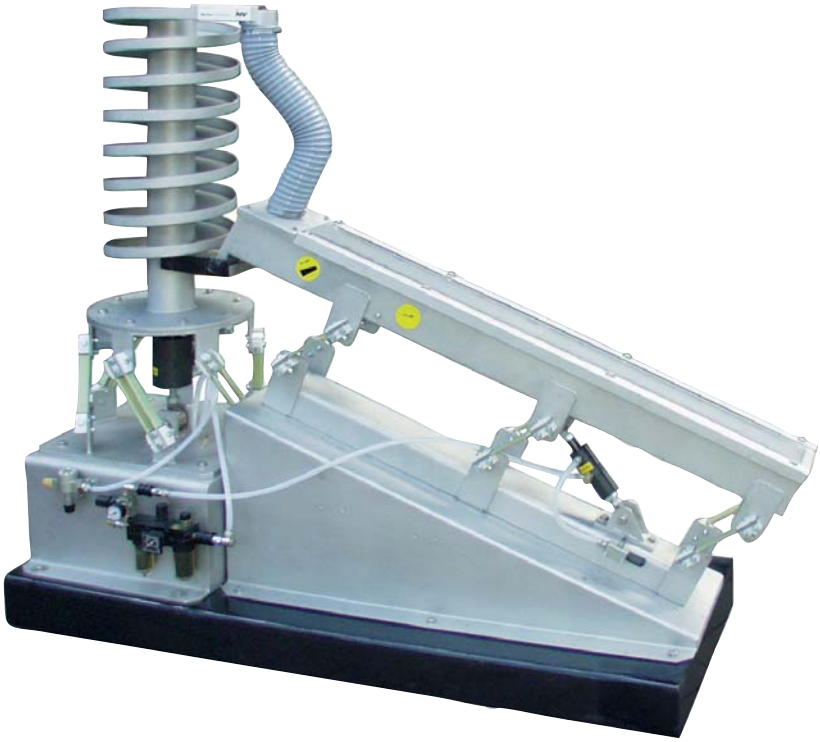


Netter Resonance Conveyor System
Series ***Flexi****Link*

- High conveying performance by use of spring resonance
- Low air consumption
- Immediate starting and stopping
- Low unit weight

FlexiLink Element

NTK

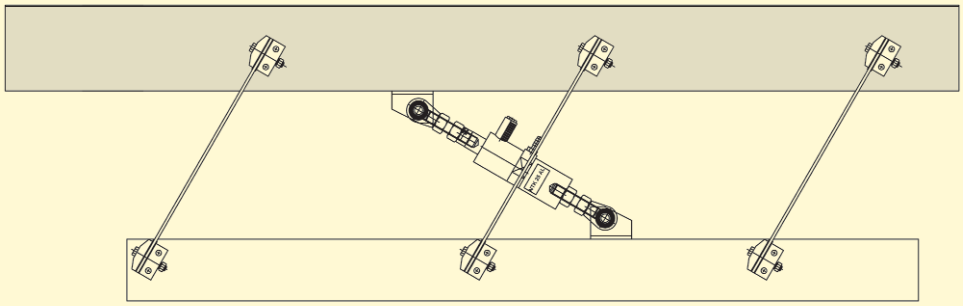
Conveyor with **Flexi**Link and NTK

Serving industry with vibration

NetterVibration

Netter Resonance Conveyor System
Series ***Flexi**Link*

Netter resonance conveyor systems in the FlexiLink series consist of:

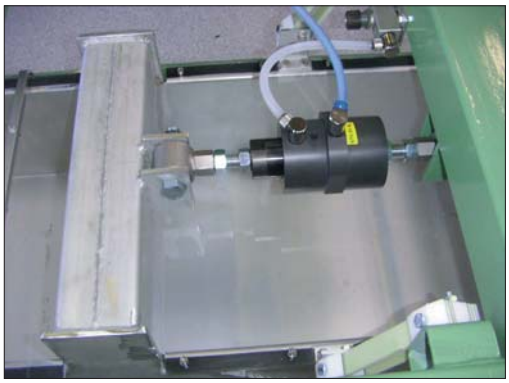


A conveyer trough, manufactured either by the client or as per the client's requirements

blade springs,

a pneumatic linear vibrator series NTK with the ***Flexi**Link* connecting element

and the counter-weight (frame/floor)



Applications
Conveyor systems of the ***Flexi**Link* series serve to convey bulk material efficiently and gently.

Design and functioning principle
The feeder system consists of a pneumatic linear vibrator of series NTK, blade springs and the ***Flexi**Link* connecting element.
This system uses the natural resonance of the springs in order to convey bulk materials. Once the trough starts to vibrate at the resonance frequency, very little additional energy is required to maintain the vibration. Even with varying loads, the trough continues to vibrate in resonance.
The amplitude can be adjusted by means of an optional exhaust throttle.
In addition to driving classic feeder troughs, the ***Flexi**Link* system can also be used to drive spiral feeders. The blade springs are then arranged in a circle in order to accommodate the spiral feeder.
In addition to the standard versions, customized variants of the ***Flexi**Link* series are also available. Furthermore, components can be supplied separately.

Permissible operating conditions: Drive Medium:
Compressed air or nitrogen (filter ≤ 5 µm), preferably with oil mist
Operating pressure:
2 bar to 6 bar
Ambient temperature:
5°C to 60°C

***Netter**Vibration* offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.
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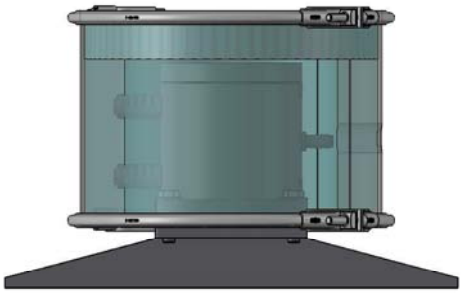
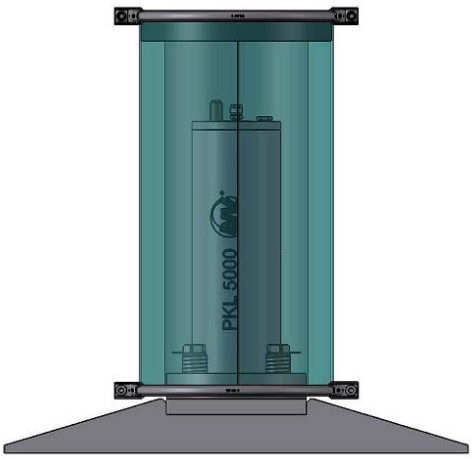
Netter Sound Protection Hood

- Sound reduction
- Insulation of the sound level
- Complete isolation of the source of sound



Sound protection hood for NHK
with weld-on bracket



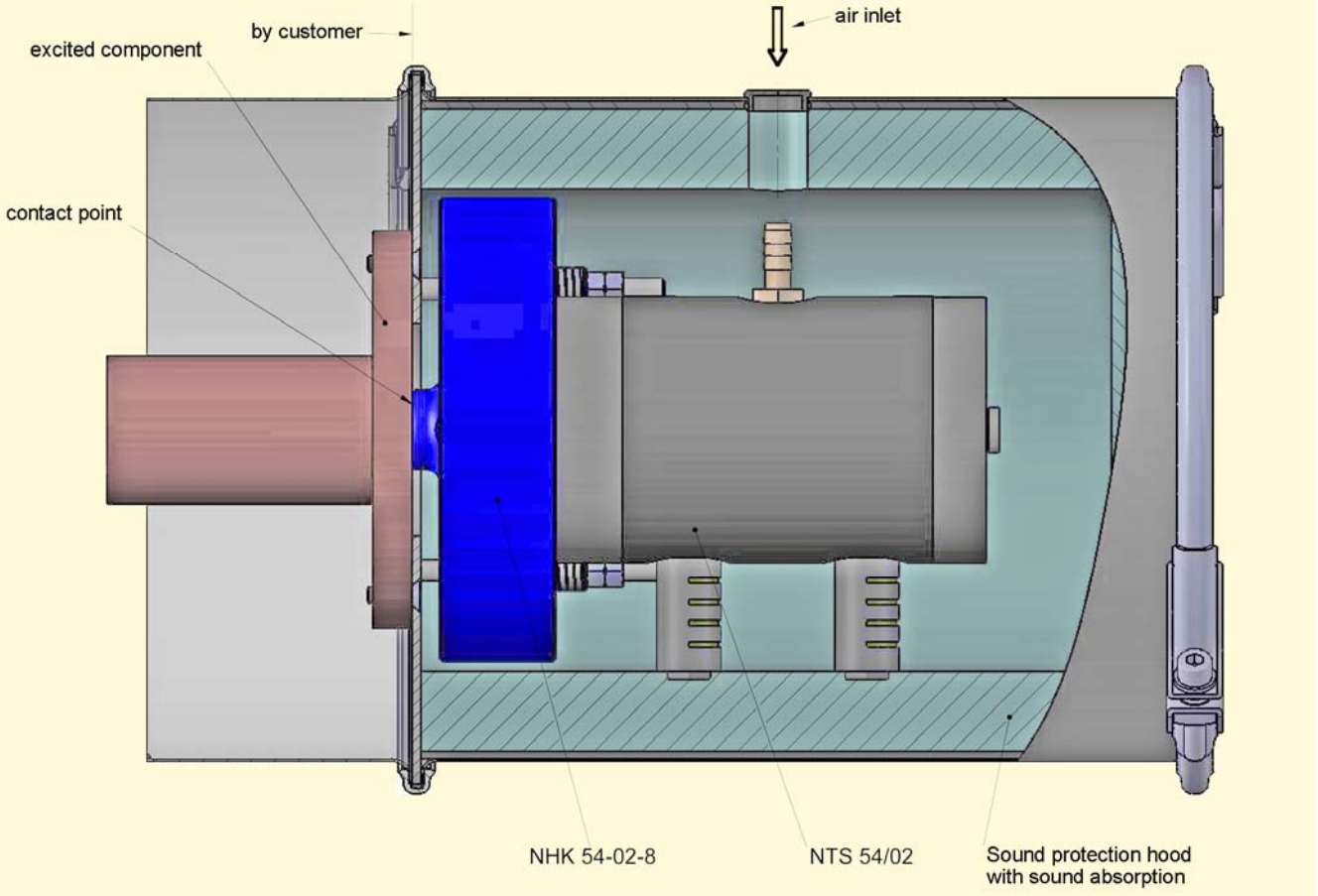
Sound protection hood for
PKL 2100 or PKL 5000
with weld-on bracket

NetterVibration

Netter Sound Protection Hood

Vibrator or impactor type		Sound protection hood type	max. Diameter [mm]	max. Hight [mm]
PKL 190 PKL 450 PKL 740	NTS 50/01 NTS 75/01 NTS 100/01	Sound protection hood 200/280	265	302
PKL 2100 PKL 5000		Sound protection hood 250/500	315	508
NTS 50/04 NTS 54/02	NTS 70/02	Sound protection hood 300/201	365	226
NHK 50-04		Sound protection hood 302/500	365	700

Example for mounting an NHK with sound protection hood:



Applications
Sound protection hoods for vibrators and impactors are intended to reduce the sound effectively. To reduce the sound effectively, the impacted plates have also be insulated (eg thermal insulation).

The lining consists of acoustic enclosures
- one noise-absorbent mat and
- one absorption foam mat.

Operating temperatur:
max. 100°C (HT version on request).

Material:
Stainless steel sheet. (Other materials on request).

We pleased to offer sound protection hoods for other vibrators and impactors.

Netter*Vibration* offers the accessories required for the mounting, installation, control and monitoring of vibrators and impactors.

Netter provides solutions.
Consult our exprienced application technicians.

По вопросам продаж и поддержки обращайтесь:

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Брянск (4832)59-03-52
Владивосток (423)249-28-31
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