



MINT ENGINEERING AND TRADE COMPANY LIMITED

Mint Engineering was established in 1987 choosing small scale construction machinery field as their main scope, in Ankara, Turkey.

During the first start-up years with the co-operation from US, Scandinavian, and German Companies, Mint has provided high-end products to the Turkish construction market.

In 1992, Mint has started collaboration with “**Netter Vibration GmbH**”, which is the Industry leader in the world for vibrators. With the collaboration, Mint Engineering has started to concentrate on vibrators and in time, the field of **Concrete and Industrial Vibrator**’s became the main scope.

Mint Engineering`’s main focus area of activity has been vibration in concrete, especially in **precast elements production** and using vibration in other industries for **sifting, compacting, eliminating bridging and conveying systems**.

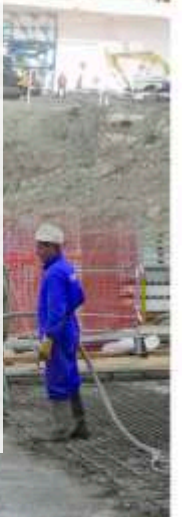
In 1995, Mint has started production of **frequency and voltage** convertors, which is one of the main parts of the concrete vibrators. With this Mint has been a pioneer and first in Turkey to produce **electronic frequency and voltage convertors**.

With the continuing efforts in Research and Development, Mint has started production of the **toroidal transformer** which is the minimum lightweight electronic frequency and voltage convertors in Europe in the year 2000. As an example, the **MFK 40** electronic frequency and voltage convertor which has 40 Amp. output only weighs 18 kg. Until today, this convertor is still the minimum weighing electronic frequency and voltage convertor produced in Europe.

In 2004, the implementation oriented design of the speed control device (invertors) has been finalized as part of the MFK electronic convertors and it is being used in improving the product ever since. Now the MFK series convertors, with the custom designed electronic frequency card, and the toroidal transformer with its cutting-edge technology has become the leading, lightweight, and powerful product in the sector. Like all other best in class products, the MFK convertors have been tried to be copied but they could not reach the same quality hence were not successful.

In 2009 with the production of **MEV** high frequency external vibrators and **MHV** pneumatic external vibrators, Mint has been indispensable for tunnel mold implementations, precast element production facilities. Also with the production of the complete line of products, application solutions, plans and after sale fast and economic maintenance services has been a leading company in the field.

Mint Engineering is celebrating its 25th year anniversary as a company and 20th year with co-operation with Netter in 2012. Having said this, we would like to take this opportunity to thank each and every Customer, Organization, and Individual; whom has supported, encouraged, pointed to the right direction by showing mistakes, and have been a milestone in Company history.





MINT High Frequency Internal Vibrators

NCZ / NCX (NETTER)

- Higher centrifugal forces than conventional vibrators
- Protection against burn-outs by thermal sensors
- Interchangeable elements, very easy to dismount
- Nominal frequency 12.000 min⁻¹
- Centrifugal force from 1.160 N to 6.000 N
- Compacting efficiency from 11m³/h to 60 m³/h
- 42 V to 48 V, 200 Hz





Mint High Frequency Internal Vibrators

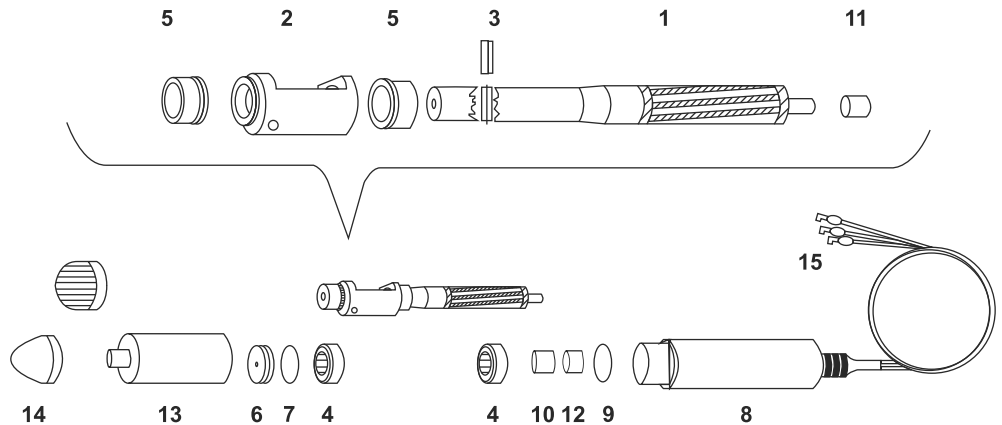
NCZ / NCX (NETTER)

NCZ / NCX		NCZ 300	NCX 380	NCX 480	NCX 580	NCX 660	NCZ 800
Head diameter	mm	32	39	49	59	66	80
Head length	mm	320	370	375	400	415	440
Total weight	kg	7,9	9,5	15,2	17,0	19,5	29,0
Hose length	mt	5	5	5	5	5	5
Cable length	mt	10	10	10	10	10	10
Vibration	1/min	12000	12000	12000	12000	12000	12000
Centrifugal force	N	1160	1200	3000	4800	6000	10470
Effective diameter	cm	40	40	55	65	85	160
Efficiency	m³/h	16	18	22	30	45	65
Current consumption	A	8	7	18	25	28	35
Voltage	V	42 - 48	42 - 48	42 - 48	42 - 48	42 - 48	42 - 48
Power	kW	0,60	0,50	1,3	1,8	2,0	2,5

The Netter modular design:
The interchangeable elements can be assembled without special tools on the construction site

NCX Part List

1	Rotor
2	Eccentric weight
3	Pin
4	Ball or roller bearing
5	Inner ring
6	Nut removal
7	O-ring
8	Stator
9	O-ring
10	Needle bearing
11	Needle bearing - inner ring
12	Nut removal
13	Body
14	Steel or vulcollan nosepiece
15	Connecting strip



The electric internal vibrators series NCX are particularly suitable for achieving high compaction performance with optimum extraction of air porosity, due to their enormous centrifugal forces. NCX vibrators thus fulfil the requirements of modern concrete technology



MANUFACTURERS OF ELECTRONIC FREQUENCY & VOLTAGE CONVERTERS
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MINT High Frequency Internal Vibrators

MIV
(MINT)

- High centrifugal forces
- Protection against burn-outs by thermal sensors
- Long operating life of the bearings
- 42V to 48 V, 200 Hz

MIV		MIV 36	MIV 50	MIV 58	MIV 65
Head diameter	mm	36	50	58	65
Head length	mm	350	375	430	400
Total weight	kg	12	14	15	18
Hose length	mt	5	5	5	5
Cable length	mt	10	10	10	10
Vibration	1/min	12000	12000	12000	12000
Centrifugal force	N	1500	3350	5650	7100
Effective diameter	cm	40	60	75	100
Efficiency	m³/h	20	30	35	40
Current consumption	A	8	12	16	22
Voltage	V	42	42	42	42
Power	kW	0,80	1,40	1,60	1,70



High Frequency Internal Vibrators With Integrated Electronic Micro-Converter



MINT High Frequency Internal Vibrators With Integrated Electronic Micro-Converter

MEKV

- Direct connection to 230 V
- Light weight, easy handling
- High centrifugal force
- Nominal frequency 12.000 min⁻¹
- Long operating hour of the bearings
- Voltage 230 V, 50/60 Hz, 1 phase

MEKV		MEKV 50	MEKV 58
Head diameter	mm	50	58
Head length	mm	375	430
Total weight	kg	22	24
Hose length	mt	5	5
Cable length	mt	10	10
Vibration	1/min	12000	12000
Centrifugal force	N	3350	5650
Effective diameter	cm	60	75
Current consumption	A	6,2	7,0
Voltage	V	220	220
Input voltage	V	220V - 50Hz	

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MINT Electronic Frequency Converters

Series MFK

For High Frequency
Internal Vibrators

- Unmatched light weight in all models
- Developed to best suit the site conditions
- Protected against overcurrent, overload, short-circuit, undervoltage and overtemperature
- Without any rotational parts, offer long economical life, ease of operation, reduced noise level, no service need
- Electronic card is covered by special resin for protection against water and mechanical damages

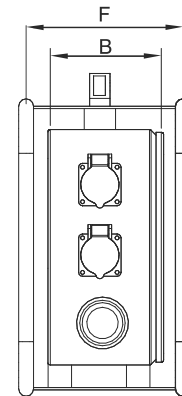
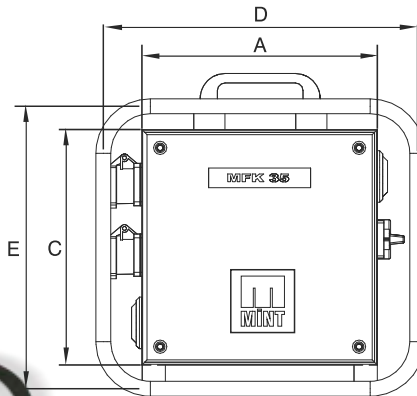
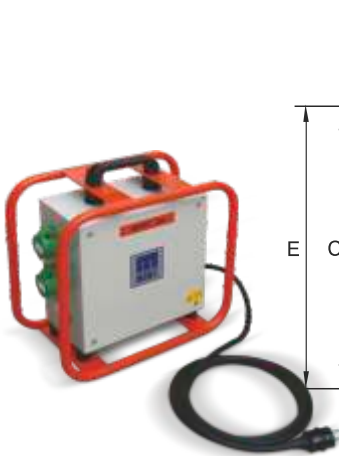
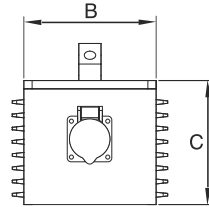
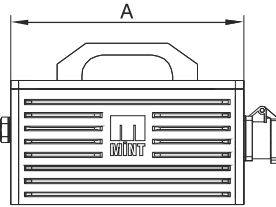
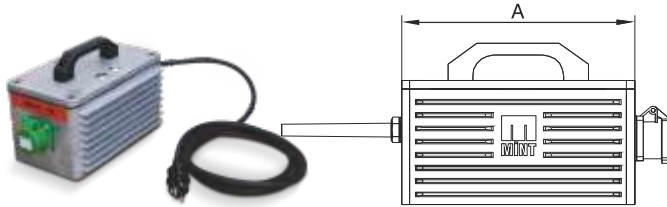


Mint Electronic Frequency Converters

Series MFK

**For High Frequency
Internal Vibrators**

MFK		MFK 16	MFK 35	MFK 40	MFK 60	MFK 75
INPUT						
* Voltage	V	220 V-50 Hz		380 V-50 Hz		
* Current	A	5	13	7	10	13
OUTPUT						
* Voltage	V	42 V-200 Hz		42 V-200 Hz		
* Current	A	16	35	40	60	75
Power	kVA	1,2	2,6	2,9	4,4	5,5
Quantity of sockets (32 A/42 V)		1	2	2	3	4
Dimention (L x W x H)	mm	285x160x150	430x385x220	430x385x220	430x385x220	460x385x320
Weight	kg	11	17	18	20	27



DIMENTION

mm	A	B	C	D	E	F
MFK 16	285	160	150	-	-	-
MFK 35	310	175	305	430	385	220
MFK 40	310	175	305	430	385	220
MFK 60	320	175	320	430	385	220
MFK 75	350	260	305	460	385	320

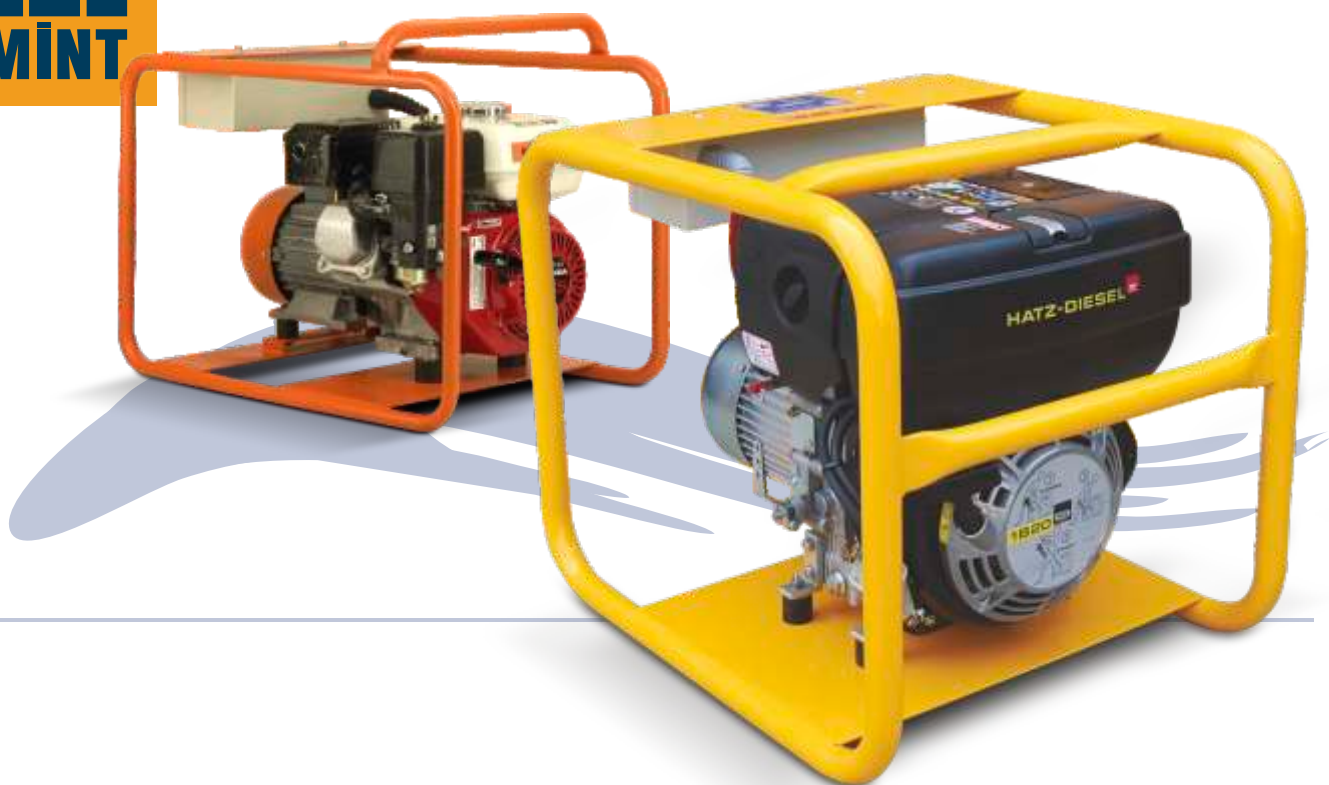
Handle height is 45 mm



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MINT Gasoline and Diesel Converters

MFK

For High Frequency
Internal Vibrators

- Designed for the use of high frequency vibrators on sites where there is no electricity supply
- Generators with permanent magnets (brushless)
- Engines designed for sites that requires the highest performances
- Makes of engine of recognized quality and durability, with accessible technical services
- Safety voltage 42 V

MFK	MFK 30B	MFK 30D
ENGINE	HONDA	HATZ
* Brand	GX 200	1B20
* Power	HP	6,5
		4,2
OUTPUT		
* Voltage	V	42 V-200 Hz
* Current	A	30
Quantity of sockets (32 A/42 V)		2
Dimentions (L x W x H)	mm	640x460x440
Weight	kg	45
		62





MINT Mass Concrete Compacting Unit Series NVI (NETTER)

- Compaction of mass concrete of biggest granulometry
- Variable mounting
- Driven by the hydraulic system of the carrier, independently of external power supplies

HYDRAULIC VIBRATOR

MODEL	NHR 150
Head diameter	mm 150
Head length	mm 550
Working speed	1/min 7000-8000
Centrifugal force	N 21630

MASS CONCRETE COMPACTING UNIT

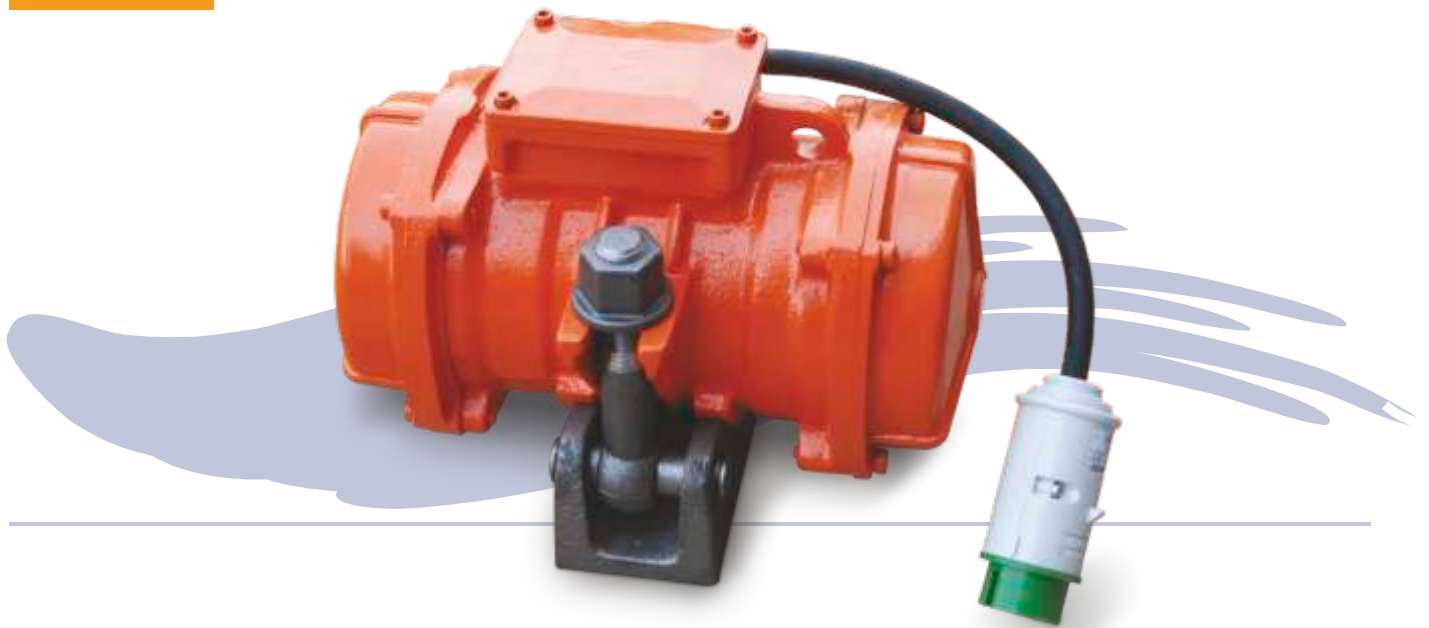
MODEL	NVI 2	NVI 3	NVI 4	NVI 6	NVI 8
Number of vibrators	2	3	4	6	8
Total weight	kg 660	730	850	1000	1300
Compacting capacity	m³ 70-100	105-150	140-200	210-300	240-400
Required force	kN 7,5	8,6	10,3	12,8	16,7
Required oil volume 1/min <small>185 bar</small>	32	48	64	96	128

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MINT High Frequency External Vibrators **Series MEV**

- High centrifugal force
- High operational safety
- Frequency 6000 min⁻¹
- Can be easily repositioned using quick release brackets MNVH 4
- Are suitable for operation with Mint MFK-P series electronic frequency and voltage converters
- MEV series vibrators were specially developed for concrete compaction in tunnel formworks and in the moulds used in pre-fabricated parts manufacturing plants

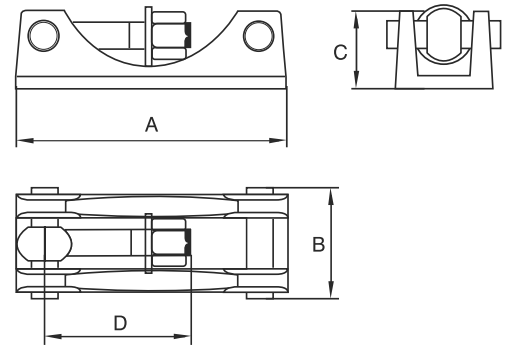
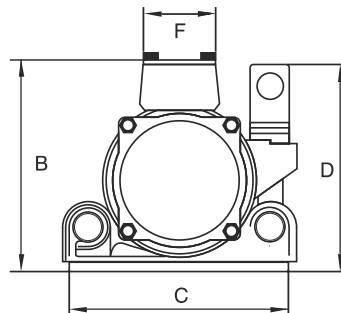
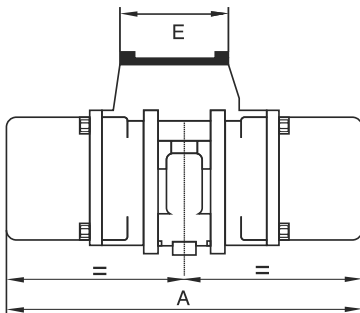




Mint High Frequency External Vibrators

Series MEV

MEV	MEV 6000/13	MEV 6000/15	HFV - mounted with 4 bolts	HFV 6000/8	HFV 6000/12
Frequency min ⁻¹	6000	6000	Centrifugal force N	8475	12700
Centrifugal force N	13550	16500	Power kW	0,85	1,25
Working moment cmkg	6,86	8,4	Current A	16,2	22,9
Power W	1000	1200	Weight kg	18	24,5
Current consumption 42 V-200 Hz A	18,5	22	HFC - mounted with quick-release bracket	HFC 6000/12	HFC 6000/15
Weight kg	28	29	Centrifugal force N	8475	12700
			Power kW	0,85	1,25
			Current A	16,2	22,9
			Weight kg	18	24,5
			quick-release bracket	MNVH-4	
			Weight kg	5,0	



DIMENTION

mm	A	B	C	D	E	F
MEV	333	198	252	200	126	139

DIMENTION

mm	A	B	C	D
MNVH-4	244	90	78	150



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MINT Electronic Frequency and Voltage Converters

Series MFK-P

For High Frequency
Electric External
Vibrators

- Designed to suit conditions of pre-fabricated parts manufacturing plants
- Being a mobile system, offers extensive operational flexibility
- Protected against overcurrent, overload, short-circuit, undervoltage and overtemperature
- Without any rotational parts, offer long economical life, ease of operation, reduced noise level, no service need
- Electronic card is covered by special resin for protection against water and mechanical damages
- Significantly reduced noise level
- Safe operating voltage range, 42 V



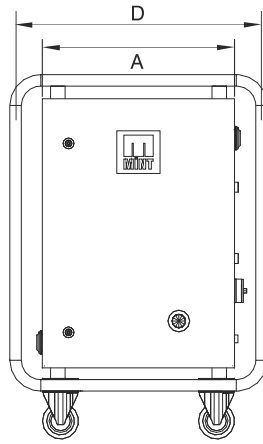
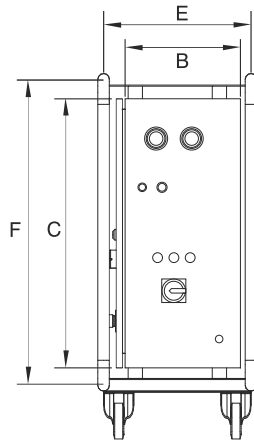
Mint Electronic Frequency and Voltage Converters

Series MFK-P

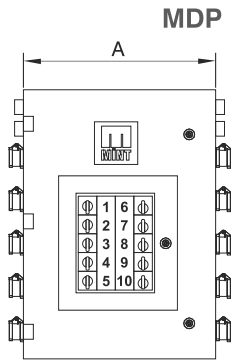
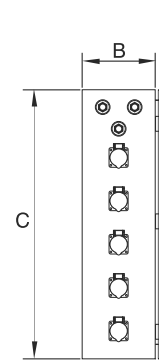
**For High Frequency
Electric External
Vibrators**

MFK-P	MFK 120	MFK 160	MFK 200	MDP	MDP 10	MDP 12
INPUT						
* Voltage	V	400 V 3ph 50-60 Hz			DISTRIBUTION PANEL	
* Current	A	17	25	32	Quantity of sockets (42 V/32A)	
OUTPUT					10	12
* Voltage	V	42-48 V 3ph 100...200 Hz			Dimensions (L x W x H) mm	
* Current	A	120	160	200	500x190x700	
Power	kVA	8,8	11,6	14,5	Weight kg	
Dimensions (L x W x H)	mm	500x510x700			30	
Weight	kg	100	130	155		

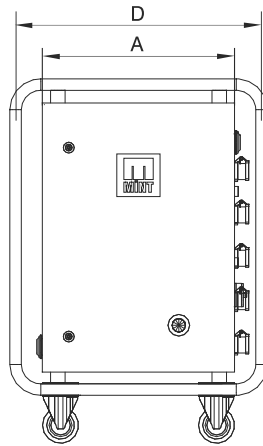
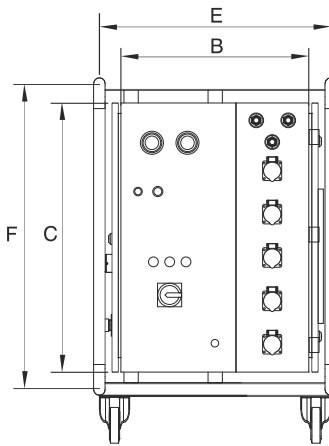
Custom made models with different capacities are also available upon request



MGU
Power Unit



MDP



MFK-P

DIMENSIONS

mm	A	B	C	D	E	F
MFK 120	500	510	700	645	610	810
MFK 160	500	510	700	645	610	810
MFK 200	500	510	700	645	610	810
MPD 10	500	190	700	-	-	-
MPD 12	500	190	700	-	-	-
MGU Power Unit	500	320	700	645	420	810



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Pneumatic Internal Vibrators /
Pneumatic External Vibrators



MINT Pneumatic Internal Vibrators / Pneumatic External Vibrators

Series **MHV**
(MINT)

Series **NVL**
NVR-NVG
NVT-NVG
(NETTER)

- Circular vibration
- Nominal frequency from 8.500 min^{-1} to 17.000 min^{-1}
- Frequency infinitely variable by air pressure
- No bearings
- Easily and quickly removable

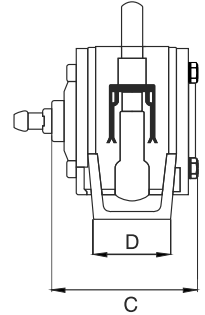
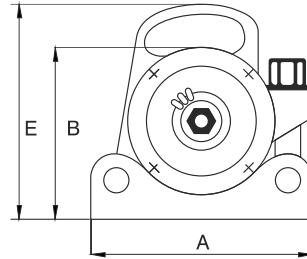




Mint Pneumatic Internal Vibrators / Pneumatic External Vibrators Series MHV (MINT)

MHV		MHV 62
Frequency	min ⁻¹	12000
Centrifugal force	N	42640
Air consumption	m ³ /min	1,80
Weight	kg	16,3
Weight with house	kg	22,0

technical data established at 6 bar



DIMENSIONS

mm	A	B	C	D	E
MHV 62	240	185	150	83	224

MINT Pneumatic Internal Vibrators / Pneumatic External Vibrators

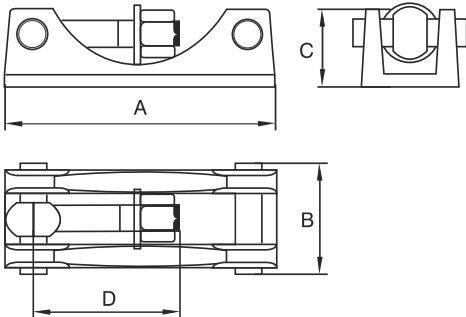
NVL NVR-NVG NVT-NVG (NETTER)

NVL		NVL 25	NVL 35	NVL 45	NVL 55	NVL 75	NVL 86	NVL 115S	NVL 140S
Head diameter	mm	25	35	45	55	75	87	115	140
Head Length	mm	254	270	321	353	398	415	425	520
Frequency	min ⁻¹	21000	18000	18000	17500	16000	14000	11000	9000
Centrifugal force	N	653	1665	3200	6602	14016	17750	24200	34300
Air consumption	lt/min	360	450	640	850	1200	1400	1600	2500
Weight	kg	2,3	5,5	5,3	7,3	12,5	17,3	23,0	36,0
Influenced zone -Ø	mm	340	400	500	760	1000	1100	2.400	3000

technical data established at 6 bar

NVR-NVG-NVT		NVR ¹ -NVG ²			NVT ¹ -NVG ²		NVT ¹ -NVG ²		
Type		49	55	61	82	113	84	87	105
Frequency	min ⁻¹	17000	16500	16000	9000	8500	16000	15200	14500
Centrifugal force	N	7130	11000	14250	15320	38830	27400	37500	62260
Air consumption	1/min	1,00	1,10	1,20	1,60	1,70	1,60	1,60	1,80
Weight	kg	6,6	7,0	7,6	14,9	16,9	14,0	14,4	16,3
Weight with house	kg	7,1	7,3	7,8	19,7	22,6	20,0	20,4	22,0

technical data established at 6 bar



DIMENSIONS

mm	A	B	C	D
MNVH-4	244	90	78	150



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NETTER Industrial Vibrators

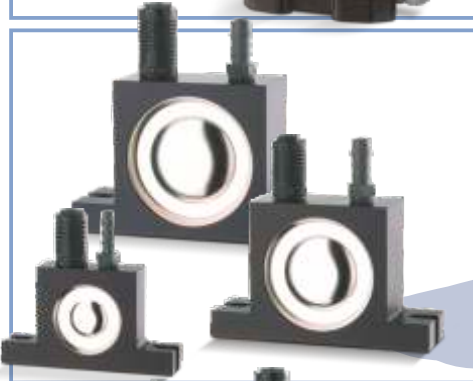
NEG
Electrical
External
Vibrators



NTP
Pneumatic
Piston
Vibrators



NCB
Pneumatic
Ball
Vibrators



NTS
Pneumatic
Piston
Vibrators



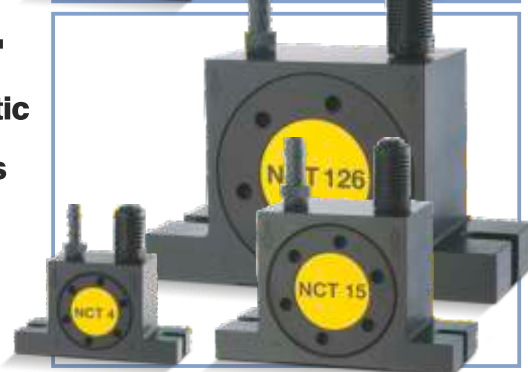
NCR
Pneumatic
Roller
Vibrators



NTS
Pneumatic
Linear
Vibrators



NCT
Pneumatic
Turbine
Vibrators



PKL
Pneumatic
Impactor



NTK
Pneumatic
Linear
Vibrators



VAC
Vacuum
Fixing
Devices for
Vibrators

