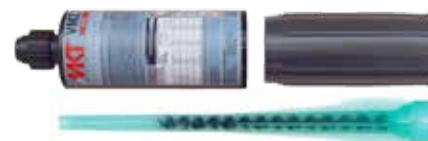


Injection System VMZ-IG



Conical Stud VMZ-IG
with internal thread



Cartridge VMZ 150
Coaxial Cartridge
for silicone guns
Content: 150ml



Cartridge VMZ 280
Coaxial Cartridge
for silicone guns
Content: 280ml, incl. 2
Static mixer on Cartridge



Cartridge VMZ 345
Side-by-side Cartridge
Content: 345ml



Cartridge VMZ 420
Coaxial Cartridge
Content: 420ml



**Cartridge VMZ 345
express**
Side-by-side Cartridge
Content: 345ml

Range of loading: 3,1 kN–51,9 kN
Range of concrete quality: C20/25–C50/60
Material: Steel, zinc plated, Stainless steel A4,
Stainless steel HCR

Description

The Injection System VMZ-IG consists of an internally threaded sleeve with conical expansion elements and a 2 component injection adhesive. This combination provides extremely high load bearing capacity even at minimum edge distance and spacing. The VMZ



system combines the benefits of bonded anchors and expansion anchors in a European technical approved fastening system for both cracked and uncracked concrete. The variety of screws, threaded studs and nuts that can be used for fastening opens up a wide range of application and design options. Hammer drills, diamond drills or suction drills can be used to create the drill holes. When using the hollow drill bit SB, contamination and fine dust exposure of the respiratory tract are reduced to a minimum and subsequent drill hole cleaning is not necessary.

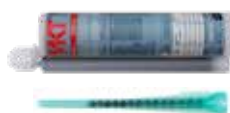
Advantages

- Approved in cracked and uncracked concrete
- Very high loads with low anchorage depths and component thicknesses
- No load reduction for wet or water-filled drill holes (drill holes $d_0=14\text{mm}$ and larger)
- Fire test report for all dimensions
- Fire test report according to ZTV tunnel temperature curve for threaded studs VMZ-IG M8 HCR-VMZ-IG M20 HCR
- Wide range of application and design options as various screws, threaded studs and nuts (galvanized steel: FKL ≥ 8.8 , stainless steel A4, HCR: FKL ≥ 70) can be used for fastening
- Also suitable for architecturally demanding applications
- No projection parts after de-installation of fixture
- Styrene-free 2 component adhesive on vinyl ester basis for approved processing from a substrate temperature of -15°C
- Styrene-free injection adhesive VMZ 345 express for fast curing
- Opened cartridges can be re-used with a new mixer nozzle
- Drill hole creation with hammer drill, diamant drill or suction drill

Applications

Heavy duty fastenings in cracked and uncracked concrete with standards screws or threaded studs: Steel structures, brackets, railings, posts, columns, ladders, gates

Injection Cartridge VMZ



- Two component cartridge, styrene-free
- Various cartridge systems
- Approved for cracked and uncracked concrete

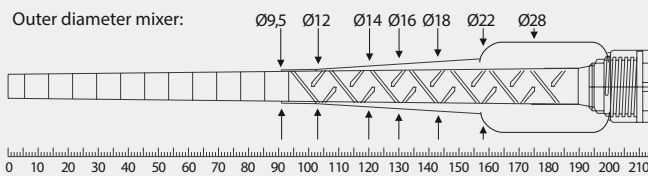
Description	Ref. No.	Content	Content of master box pcs.	Weight per master box kg	Weight per piece
					kg
Cartridge VMZ 150	28999301	150	12	4,32	0,36
Cartridge VMZ 280 ¹⁾	28252601	280	12	6,70	0,56
Cartridge VMZ 345	28255310	345	12	8,28	0,69
Cartridge VMZ 420	28254701	420	12	9,84	0,83
Cartridge VMZ 345 express	28254201	345	12	8,00	0,65
Static mixer VM-X (for all cartridge)	28305111	-	12	0,12	0,01
Mixer extension VM-XE 10/200 (200mm)	28306011	-	12	-	0,01
Installation wedge VMZ-MK	33300103	-	10	-	0,01

One static mixer VM-X comes with each cartridge.

¹⁾Cartridge VMZ 280 comes with 2 mixers.

Usable length Static mixer VM-X

Drill holes must always be filled from the bottom of the hole to ensure no air pockets are trapped in the adhesive. This is only possible when the tip of the mixing nozzle reaches the very bottom of the drill hole before injecting the adhesive. If the mixing nozzle does not reach the bottom of the drill hole, a mixer extension tube must be used.



Curing Time Injection Adhesive VMZ

→ Cartridge temperature when installing min. +5°C

Temperature (°C) of the base material	Gel time	Curing time	
		dry base material	wet base material
-15°C to -10°C	45 min	7 d	14 d ¹⁾
-9°C to -5°C	45 min	10:30 h	21:00 h ¹⁾
-4°C to -1°C ¹⁾	45 min	6:00 h	12:00 h ²⁾
0°C to +4°C	20 min	3:00 h	6:00 h
+5°C to +9°C	12 min	2:00 h	4:00 h
+10°C to +19°C	6 min	1:20 h	2:40 h
+20°C to +29°C	4 min	45 min	1:30 h
+30°C to +34°C	2 min	25 min	50 min
+35°C to +39°C	1,4 min	20 min	40 min
+40°C	1,4 min	15 min	30 min

¹⁾It must be ensured that icing does not occur in the drill hole.

Curing Time Injection Adhesive VMZ express

→ Cartridge temperature when installing min. +5°C

Temperature (°C) of the base material	Gel time	Curing time	
		dry base material	wet base material
-5°C to -1°C	20 min	4:00 h	8:00 h ¹⁾
0°C to +4°C	10 min	2:00 h	4:00 h
+5°C to +9°C	6 min	1:00 h	2:00 h
+10°C to +19°C	3 min	40 min	80 min
+20°C to +29°C	1 min	20 min	40 min
+30°C	1 min	10 min	20 min

¹⁾It must be ensured that icing does not occur in the drill hole.

Accessories for Injection System VMZ-IG

VMZ-IG Internally threaded anchor	Drill bit Ø mm	Blow-out pump ¹⁾ / Air gun ¹⁾	Cleaning brush RB ¹⁾	Extension tube	Dispenser
VMZ-IG M6	10	VM-AP 360 VM-ABP 200	RB 10 M6	VM-XE 10	VM-P 345 Standard, VM-P 345 Profi, VM-P 380 Standard, VM-P 380 Profi, VM-P 345 Akku, VM-P 380 Akku, VM-P 345 Pneumatic Eco, VM-P 380 Pneumatic Eco, VM-P 380 Pneumatic
VMZ-IG M8	12	VM-AP 360 VM-ABP 200	RB 12 M6 / RB 12 M8	VM-XE 10	
VMZ-IG M10	14	VM-AP 360 VM-ABP 200	RB 14 M6 / RB 14 M8	VM-XE 10	
VMZ-IG M12	18	VM-AP 360 VM-ABP 200 / 250 / 500	RB 18 M6 / RB 18 M8	VM-XE 10	
VMZ-IG 115 M16	22	VM-ABP 250 / 500	RB 22 M6	VM-XE 10	
VMZ-IG 170 M16	24	VM-ABP 250 / 500	RB 24 M6	VM-XE 10	
VMZ-IG M20	26	VM-ABP 250 / 500	RB 26 M6	VM-XE 10	
See page		172	173	174	175 / 176

¹⁾When using the hollow drill bit SB (see page 171), subsequent cleaning is no longer necessary. In the case of diamond drilled holes, the drill hole is rinsed with water and blown out with compressed air (see ETA-04/0092).

Conical Stud VMZ-IG

Steel, zinc plated



→ For use in structures subject to dry internal conditions

→ With internal thread, to be used with standard screws or threaded studs (steel strength 8.8)

Description	Ref. No.	Drill hole Ø x depth mm	Effective anchorage depth	Anchor length mm	Thread	Pkg. cont. pcs.	Weight per pkg. kg
VMZ-IG 40 M6	32802101	10x42	40	41	M6x12	10	0,15
VMZ-IG 50 M6	32804101	10x55	50	52	M6x15	10	0,18
VMZ-IG 60 M8	32812101	12x65	60	63	M8x16	10	0,28
VMZ-IG 75 M8	32814101	12x80	75	78	M8x19	10	0,47
VMZ-IG 70 M10	32822101	14x80	70	74	M10x20	10	0,57
VMZ-IG 80 M10	32824101	14x85	80	84	M10x23	10	0,63
VMZ-IG 90 M12	32832101	18x98	90	94	M12x24	10	1,26
VMZ-IG 105 M12	32834101	18x113	105	109	M12x27	10	1,45
VMZ-IG 125 M12	32836101	18x133	125	130	M12x30	10	1,69
VMZ-IG 115 M16	32852101	22x120	115	120	M16x32	5	1,12
VMZ-IG 170 M16	32854101	24x180	170	180	M16x32	5	2,22
VMZ-IG 170 M20	32862101	26x185	170	182	M20x40	5	2,44

Conical Stud VMZ-IG A4

Stainless steel A4 / 316



→ For use in structures subject to dry internal conditions or external atmospheric exposure

→ With internal thread, to be used with standard screws or threaded studs (steel strength 8.8)

Description	Ref. No.	Drill hole Ø x depth mm	Effective anchorage depth	Anchor length mm	Thread	Pkg. cont. pcs.	Weight per pkg. kg
VMZ-IG 40 M6 A4	32802501	10x42	40	41	M6x12	10	0,15
VMZ-IG 50 M6 A4	32804501	10x55	50	52	M6x15	10	0,18
VMZ-IG 60 M8 A4	32812501	12x65	60	63	M8x16	10	0,28
VMZ-IG 75 M8 A4	32814501	12x80	75	78	M8x19	10	0,47
VMZ-IG 70 M10 A4	32822501	14x80	70	74	M10x20	10	0,57
VMZ-IG 80 M10 A4	32824501	14x85	80	84	M10x23	10	0,63
VMZ-IG 90 M12 A4	32832501	18x98	90	94	M12x24	10	1,26
VMZ-IG 105 M12 A4	32834501	18x113	105	109	M12x27	10	1,45
VMZ-IG 125 M12 A4	32836501	18x133	125	130	M12x30	10	1,69
VMZ-IG 115 M16 A4	32852501	22x120	115	120	M16x32	5	1,12
VMZ-IG 170 M16 A4	32854501	24x180	170	180	M16x32	5	2,22
VMZ-IG 170 M20 A4	32862501	26x185	170	182	M20x40	5	2,44

HCR on demand.



Extract from Permissible Service Conditions of European Technical Assessment ETA-04/0092 for use in cracked and uncracked concrete (Option 1)

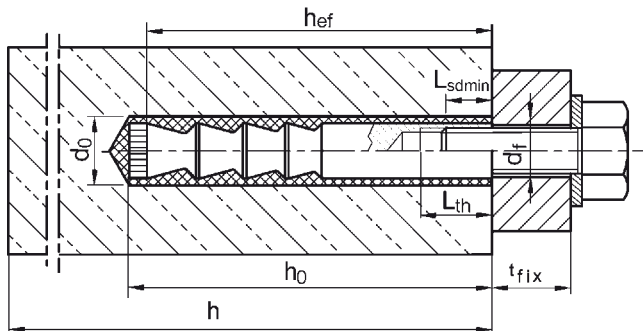
Approved loads according to EN 1992-4 for single anchors without the influence of spacing and edge distances in dry and wet concrete for temperature range -40°C to +50°C (short term temperature +80°C) . The total safety factor (γ_{m} und γ_{γ}) is included. For further details and temperature ranges see ETA.

Loads and performance data Injection System VMZ-IG, steel zinc plated and stainless steel A4 / HCR

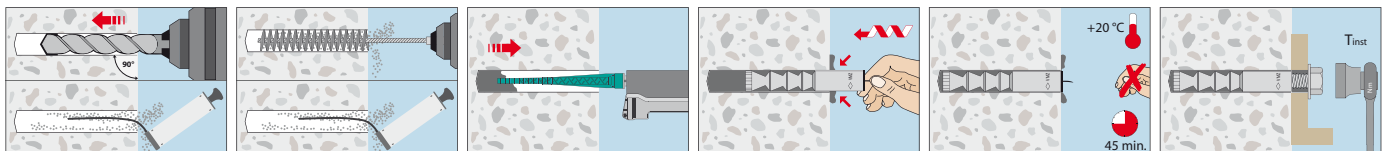


				40 M6	50 M6	60 M8	75 M8	70 M10	80 M10	90 M12	105 M12	125 M12	115 M16	170 M16	170 M20
VMZ-IG, steel zinc plated															
cracked concrete															
Approved loads, tension	C20/25	appr. N	[kN]	4,1	5,8	7,6	10,7	9,6	11,7	14,0	17,6	22,9	20,2	36,3	36,3
uncracked concrete															
Approved loads, tension	C20/25	appr. N	[kN]	4,3	7,6	9,0	13,8	13,7	16,7	20,0	25,2	31,9	24,8	51,9	51,4
cracked and uncracked concrete															
Approved loads, shear	\geq C20/25	appr. V	[kN]	4,6	4,6	5,4	8,6	10,3	10,3	19,4	19,4	19,4	14,9	36,0	30,9
Approved bending moments		appr. M	[Nm]	6,9	6,9	17,1	17,1	34,3	34,3	60,0	60,0	60,0	121,1	152,0	296,6
VMZ-IG, stainless steel A4 /HCR															
cracked concrete															
Approved loads, tension	C20/25	appr. N	[kN]	4,1	5,2	7,6	10,0	9,6	11,7	14,0	17,6	22,4	20,2	36,3	36,3
uncracked concrete															
Approved loads, tension	C20/25	appr. N	[kN]	4,3	5,2	9,0	10,0	13,7	15,7	20,0	22,4	22,4	28,9	41,9	44,8
cracked and uncracked concrete															
Approved loads, shear	\geq C20/25	appr. V	[kN]	3,1	3,1	5,4	5,7	9,1	9,1	13,7	13,7	13,7	18,3	25,1	26,9
Approved bending moments		appr. M	[Nm]	4,9	4,9	12,0	12,0	24,0	24,0	42,3	42,3	42,3	106,9	106,9	208,6
Spacing and edge distance															
Effective anchorage depth	h_{ef}	[mm]		40	50	60	75	70	80	90	105	125	115	170	170
Characteristic spacing	$s_{cr,N}$	[mm]		120	150	180	225	210	240	270	315	375	345	510	510
Characteristic edge distance	$c_{cr,N}$	[mm]		60	75	90	112,5	105	120	135	157,5	187,5	172,5	255	255
cracked concrete															
Minimum thickness of concrete slab	h_{min}	[mm]		80	80	100	110	110	110	130	150	170	160	230	230
Minimum spacing	s_{min}	[mm]		40	40	40	40	55	40	50	50	60	80	80	80
Minimum edge distance	c_{min}	[mm]		40	40	40	40	55	50	50	50	60	80	80	80
uncracked concrete															
Minimum thickness of concrete slab	h_{min}	[mm]		80	80	100	110	110	110	130	150	170	160	230	230
Minimum spacing	s_{min}	[mm]		40	40	50	50	55	55	50	60	60	80	80	80
Minimum edge distance	c_{min}	[mm]		40	40	50	50	55	55	50	60	60	80	80	80
Installation parameters															
Drill hole diameter	d_o	[mm]		10	10	12	12	14	14	18	18	18	22	24	26
Diameter of clearance hole in the fixture	d_f	[mm]		7	7	9	9	12	12	14	14	14	18	18	22
Depth of drill hole	h_o	[mm]		42	55	65	80	80	85	98	113	133	120	180	185
Installation torque	$T_{inst \leq}$	[Nm]		8	8	10	10	15	15	25	25	25	50	50	80
Minimum screwing depth	L_{sdmin}	[mm]		7	7	9	9	12	12	14	14	14	18	18	22
Maximum screwing depth	L_{th}	[mm]		12	15	16	19	20	23	24	27	30	32	32	40
Amount of adhesive per drill hole		[ml]		3,4	4,1	6,1	7,0	6,8	8,6	11,1	12,6	14,5	20,8	30,1	33,3
Drill holes per cartridge VMZ 150/VMZ 280		pcs.		31/70	26/58	18/39	15/34	16/35	12/27	9/21	8/19	7/16	5/11	3/7	3/7
Drill holes per cartridge VMZ 345		pcs.		88	73	49	43	44	34	27	23	20	14	10	9
Drill holes per cartridge VMZ 420		pcs.		111	92	62	54	55	44	34	30	26	18	12	11

For anchor designing an easy to operate CD-ROM is available on request or can be downloaded at www.mkt.de.



Installation



Hollow drill bit SB



Description

The hollow drill bit SB combines two steps in one: it drills and at the same time removes the drilling dust from the hole. As a result, it significantly reduces the dust created, resulting in a cleaner work space and reduces air contamination. Contamination in the work area is also avoided, making it the ideal hammer drill for indoors. Many MKT injection systems eliminate the need for additional cleaning, increasing efficiency and installation safety. Thanks to its SDS shank and its 38mm suction pipe connection, it can be used universally and flexibly with any SDS hammer drill and industrial vacuum cleaners.

Advantages

- 98% less air borne dust than during conventional drilling processes
- Permitted for use with approved anchors
- The separate cleaning of the drill hole can be omitted if this is permitted in the ETA
- Easy handling, insert in a hammer drill and connect to an industrial vacuum cleaner
- Efficient dust extraction and drilling thanks to extra large vacuum holes
- Optimum health and safety at the workplace, reduce respiratory complaints of dust particles by using an industrial vacuum cleaner of the M-Class
- Save money and time: there is no dirt generated, so no need to clean up afterwards
- Can be used with all standard SDS-max and SDS-plus hammer drills in conjunction with commercial industrial vacuum cleaners

Applications

For dust-free drilling in concrete, solid brick, solid lime and stone and natural stone indoors and outdoors.

Hollow drill bit with SDS-plus shank

→ 2-cutter with big vacuum holes for a fast drilling

Description	Ref.No.	Ø mm	Drilling depth mm	Total length mm	Adaptor	Type	Pkg. Content pcs.	Weight per pcs. kg
Hollow drill bit SB plus 8x270	50235501	8	150	270	SDS-plus	2-cutter	1	0,21
Hollow drill bit SB plus 10x270	50245501	10	150	270	SDS-plus	2-cutter	1	0,24
Hollow drill bit SB plus 12x320	50256001	12	200	320	SDS-plus	2-cutter	1	0,31
Hollow drill bit SB plus 14x370	50266501	14	250	370	SDS-plus	2-cutter	1	0,39
Hollow drill bit SB plus 16x370	50286501	16	250	370	SDS-plus	2-cutter	1	0,43
Hollow drill bit SB plus 18x370	50296501	18	250	370	SDS-plus	2-cutter	1	0,53
Hollow drill bit SB plus 20x370	50306501	20	250	370	SDS-plus	2-cutter	1	0,64
Hollow drill bit SB plus 24x370	50326501	24	250	370	SDS-plus	2-cutter	1	0,81

Hollow drill bit with SDS-max shank

→ Y-Cutter for more stable drilling

Description	Ref.No.	Ø mm	Drilling depth mm	Total length mm	Adaptor	Type	Pkg. Content pcs.	Weight per pcs. kg
Hollow drill bit SB max 18x600	50698001	18	400	600	SDS-max	Y-cutter	1	0,99
Hollow drill bit SB max 24x600	50728001	24	400	600	SDS-max	Y-cutter	1	1,21
Hollow drill bit SB max 25x600	50738001	25	400	600	SDS-max	Y-cutter	1	1,23
Hollow drill bit SB max 26x600	50748001	26	400	600	SDS-max	Y-cutter	1	1,25

Suction bell ASG



Description	Ref.No.	Connection diameter to a vacuum cleaner Ø [mm]	Suitable for drill hole Ø [mm]	Pkg. Content pcs.	Weight per pc. kg
Suction bell ASG	29980001	30-38	6-32	1	0,06

Description

For removing drilling dust when drilling or cleaning holes.

Advantages

- Easy handling, connection to a vacuum cleaner is sufficient
- No mounting is necessary, because the suction bell sticks tight to floor, wall and ceiling by a strong vacuum
- Prevents contamination and provides a clear visibility due to almost dust-free drilling
- Reduce respiratory complaints due to tiny dust particles by using a vacuum cleaner of the M-Class

Accessories for MKT Injection Systems

Blow-out pump VM-AP



→ For assessment-compliant drill hole cleaning of many anchor systems

→ For best drill hole cleaning, the hose must reach the bottom of the drill hole

Description	Ref. No.	For drill hole Ø mm	Max. drill hole depth ¹⁾ mm	Length mm	Pkg. cont. pcs.	Weight per piece kg
Blow-out pump VM-AP 270	29990002	12 - 20	200	270	1	0,22
Blow-out pump VM-AP 360	33200101	8 ²⁾ - 20	330	360	1	0,27

¹⁾For through fastening: Maximum drill hole depth through fixture

²⁾With extension tube Ø6 x 100mm

Air gun VM-ABP



→ For assessment-compliant drill hole cleaning with compressed air for drill holes with a diameter larger than 6 mm

→ For best drill hole cleaning, the nozzle of the air gun must reach the bottom of the drill hole

Description	Ref. No.	Nozzle-ø mm	For drill hole Ø mm	Max. drill hole depth ¹⁾ mm	Pkg. cont. pcs.	Weight per piece kg
VM-ABP 200	33090101	5	6-20	240	1	0,55
VM-ABP 250	33100101	16	18-40	240	1	1,00
VM-ABP 500	33106101	16	18-40	480	1	1,30

¹⁾For through fastening: Maximum drill hole depth through fixture

Air gun VM-ABP 1000



→ For assessment-compliant drill hole cleaning with compressed air for drill holes with a diameter larger than 16 mm

→ For best drill hole cleaning, the nozzle of the air gun must reach the bottom of the drill hole

Description	Ref. No.	Nozzle-ø mm	For drill hole Ø mm	Max. drill hole depth ¹⁾ mm	Pkg. cont. pcs.	Weight per piece kg
VM-ABP 1000	85806101	14	16-40	1000	1	0,32

¹⁾For through fastening: Maximum drill hole depth through fixture

Compressed Air System DLS

→ For blowing out drill holes up to 3 m deep

→ The connection set RS for connection to a compressor, an air hose RS and, for the injection system VME, the corresponding blow-out nozzle RD are required

Air Valve RS



→ Connection set RS with manual slide valve with air valve and connector for connection to a compressor

Air hose RS



→ Air hose RS, pre-assembled with connectors for connection between connection set RS and blow-out nozzle RD

Blow-out nozzle RD



→ Blow-out nozzles RD for optimum cleaning of the drill hole and the drill hole walls

→ Fits on the air hose RS

Description	Ref. No.	For drill hole Ø mm	Max. drill hole depth ¹⁾ mm	Length mm	Pkg. cont. pcs.	Weight per piece kg
Air hose RS	85890101	12 - 35	-	-	1	0,42
Air Valve RS 25	85802101	12 - 28	2000	2000	1	0,11
Air Valve RS 35	85804101	30 - 35	3000	3000	1	0,44
Blow-out nozzle RD 12/14	85852101	12 - 14	-	-	1	0,01
Blow-out nozzle RD 16/18	85854101	16 - 18	-	-	1	0,02
Blow-out nozzle RD 20/25	85856101	20 - 25	-	-	1	0,03
Blow-out nozzle RD 30/35	85858101	30 - 35	-	-	1	0,05

¹⁾For through fastening: Maximum drill hole depth through fixture

Cleaning Brush RB M6



- For machine cleaning of drill holes
- Stainless steel trim for a long service life
- With connection thread M6
- For drilling machines with keyed chuck
- SDS plus adapter for use in a hammer drill
- Use brush extensions according to the drilling depth. Several brush extensions can be screwed together for further extension.

Description	Ref. No.	Suitable for drill hole Ø mm	Length mm	Filling length mm	Pkg. cont. pcs.	Weight per piece kg
RB 10 M6	33510101	10	130	80	1	0,03
RB 12 M6	33512101	12	140	80	1	0,03
RB 14 M6	33514101	14	180	80	1	0,04
RB 16 M6	33516101	16	200	100	1	0,05
RB 18 M6	33518101	18	200	100	1	0,06
RB 20 M6	33520101	20	220	100	1	0,10
RB 22 M6	33522101	22	220	100	1	0,10
RB 24 M6	33524101	24	250	100	1	0,11
RB 26 M6	33526101	25 / 26	290	100	1	0,12
RB 28 M6	33528101	28	260	100	1	0,11
RB 30 M6	33530101	30	350	100	1	0,12
RB 32 M6	33532101	32	350	100	1	0,13
RB 35 M6	33535101	35	350	100	1	0,14
RB 40 M6	33537101	40	350	100	1	0,15
RB 45 M6	on request	45	-	-	1	-
RB 55 M6	on request	55	-	-	1	-
Brush extension RBL M6	33968101	-	150	-	1	0,09
SDS Plus adapter RBL M6 SDS	33350101	-	110	-	1	0,06

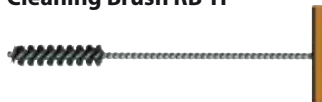
Cleaning Brush RB M8



- Extra sturdy construction for machine cleaning of particularly deep drill holes
- Stainless steel trim for a long service life
- With connection thread M8
- For drilling machines with keyed chuck
- SDS plus adapter for use in a hammer drill
- Use brush extensions according to the drilling depth. Several brush extensions can be screwed together for further extension.

Description	Ref. No.	Suitable for drill hole Ø mm	Length mm	Filling length mm	Pkg. cont. pcs.	Weight per piece kg
RB 12 M8	85812101	12	180	140	1	0,05
RB 14 M8	85814101	14	180	140	1	0,05
RB 16 M8	85816101	16	180	140	1	0,05
RB 18 M8	85818101	18	180	140	1	0,05
RB 20 M8	85820101	20	180	140	1	0,05
RB 25 M8	85825101	25	180	140	1	0,06
RB 32 M8	85832101	32	180	140	1	0,08
RB 35 M8	85835101	35	180	140	1	0,08
Brush extension RBL M8	85871101	-	550	-	1	0,32
SDS Plus adapter RBL M8 SDS	85881101	-	110	9	1	0,07

Cleaning Brush RB-H



- For manual drill hole cleaning of non-approved systems in solid and perforated masonry
- Nylon trim
- With wooden handle

Description	Ref. No.	Suitable for drill hole Ø mm	Length mm	Pkg. cont. pcs.	Weight per piece kg
RB-H 12/250	29914501	8-12	250	1	0,04
RB-H 18/250	29918501	10-18	250	1	0,04
RB-H 18/400	33618101	10-18	400	1	0,05
RB-H 28/280	29928501	20-28	280	1	0,05
RB-H 28/400	33628101	20-28	400	1	0,06

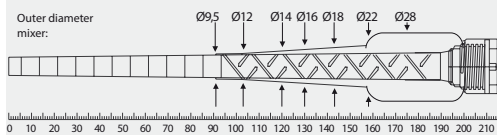
Static mixer

- To mix the two components of the injection adhesive
- Before each application, squeeze out an approx. 10cm long strand (initial strand). The initial strand is not suitable for fastening. (See European Technical Assessment and Installation Instructions)
- Usable length static mixer: Drill holes must always be filled from the bottom of the hole to ensure no air pockets are trapped in the adhesive. This is only possible when the tip of the mixing nozzle reaches the very bottom of the drill hole before injecting the adhesive. If the mixing nozzle does not reach the bottom of the drill hole, a mixer extension tube must be used.

VM-X



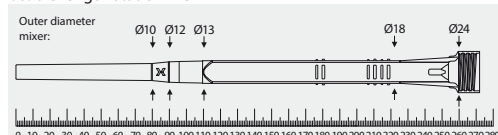
Usable length Static mixer VM-X



VM-XHP



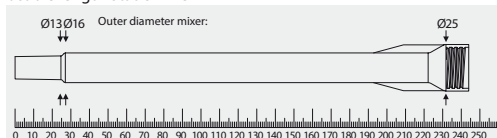
Usable length Static mixer VM-XHP



VM-XL



Usable length Static mixer VM-XL



Description	Ref. No.	Suitable for Injection Systems / Cartridges	Length mm	Package content pcs.	Weight per pkg. kg
VM-X	28305111	VMZ: all Cartridges, VMU plus : 150ml, 280ml, 300ml, 345ml, 410ml VMU plus Polar: all Cartridges VM-EA: all Cartridges	215	12	0,12
VM-XHP	28305301	VME plus : all Cartridges VME basic: all Cartridges VMH: all Cartridges	272	12	0,18
VM-XL ¹⁾	28305201	VMU plus : all Cartridges	245	10	0,28

¹⁾Static mixer VM-XL comes with a reducers / extension tube. Suitable for drill holes from 12mm diameter.

Extension tubes



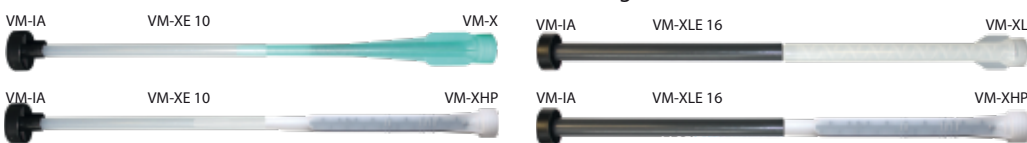
VM-XE 10



VM-XLE 16

- Extension tubes for deeper drill holes
- Extension tubes VM-XE and VM-XLE can be cut to the required length

Possible combinations static mixer / Extension tube / Retaining Washer:



Description	Ref. No.	Diameter mm	Length mm	Drill hole-Ø mm	Suitable for static mixer	Package content pcs.	Weight per pkg. kg
VM-XE 10/200	28306011	10	200	12 - 40	VM-X VM-XHP VM-XL	12	0,12
VM-XE 10/500	85951101	10	500	12 - 40		10	0,20
VM-XE 10/1000	85952101	10	1000	12 - 40		10	0,30
VM-XE 10/2000	85954101	10	2000	12 - 40		10	0,65
VM-XLE 16/250	85959101	16	250	18 - 55	VM-XHP VM-XL	10	0,30
VM-XLE 16/1000	85956101	16	1000	18 - 55		10	1,15
VM-XLE 16/2000	85958101	16	2000	18 - 55		10	3,50

Retaining Washer VM-IA



- For bubble-free filling of the drill hole
- Suitable for extension tubes VM-XE 10 and VM-XLE 16

Description	Ref. No.	Suitable for drill hole Ø mm	Pkg. cont. pcs.	Weight per pkg. kg
VM-IA 14	85914201	14	20	0,04
VM-IA 16	85916201	16	20	0,04
VM-IA 18	85918201	18	20	0,04
VM-IA 20	85920201	20	20	0,06
VM-IA 22	85922201	22	20	0,06
VM-IA 24	85924101	24	20	0,06
VM-IA 25	85925201	25 / 26	20	0,06
VM-IA 28	85928101	28	20	0,06
VM-IA 30	on request	30	-	-
VM-IA 32	85932201	32	20	0,08
VM-IA 35	85935201	35	20	0,10
VM-IA 40	85938201	40	20	0,10
VM-IA 45	on request	45	-	-
VM-IA 55	on request	55	-	-

Dispenser VM-P Standard



- For occasional use, metal version
- Piston rod with adjusting screw

Description	Ref. No.	Suitable for cartridge	Pkg. cont.	Weight per piece kg
VM-P 345 Standard	28350505	150ml, 280ml, 300ml, 345ml also suitable for silicone cartridges	1	1,00
VM-P 380 Standard	28353005	380ml, 410ml, 420ml	1	1,15
VM-P 585 Standard	28352151	385ml, 440ml, 585ml	1	1,60

Dispenser VM-P Profi



- Professional dispenser with an ideal center of gravity for more comfortable working
- Automatic pressure release for minimum adhesive overrun

Description	Ref. No.	Suitable for cartridge	Pkg. cont.	Weight per piece kg
VM-P 345 Profi	28350511	150ml, 280ml, 300ml, 345ml also suitable for silicone cartridges	1	1,00
VM-P 380 Profi	28351001	380ml, 410ml, 420ml	1	1,10

Dispenser VM-P 585 Profi



- Professional dispenser with an ideal center of gravity for more comfortable working
- Combi-tool for many different types of cartridges
- Automatic pressure release for minimum adhesive overrun

Description	Ref. No.	Suitable for cartridge	Pkg. cont.	Weight per piece kg
VM-P 585 Profi	28353201	280ml, 300ml, 330ml, 380ml, 385ml, 410ml, 420ml, 440ml, 585ml also suitable for silicone cartridges	1	1,67

Dispenser VM-P Akku



- Professional, solid battery cartridge dispenser
- Repeat function, for retrieving the last fill quantity
- Stepless variable pressing speed
- Overrun-quantity-stop by automatic return after release of the dispensing switch

Description	Ref. No.	Suitable for cartridge	Press-out force kN	Weight ¹⁾ kg	Dimensions ¹⁾ L x B x H mm	Pkg. cont.	Weight pro pcs. kg
VM-P 345 Akku	28350801	345ml	5,0	3,53	395 x 180 x 285	1	7,72
VM-P 380 Akku	28352601	380ml, 410ml, 420ml	3,95	3,62	375 x 180 x 285	1	7,80
VM-P 585 Akku	28353301	385ml, 440ml, 585ml	5,0	3,86	440 x 180 x 285	1	8,05
VM-P 825 Akku	28353501	825 ml	5,0	4,14	410 x 180 x 285	1	8,34
Accessories (for all models)							
Replacement battery	28352411		18V/2,0 Ah			1	1,00
Shoulder strap	28359991		adjustable			1	0,18

¹⁾ with Akku 18V/2,0 Ah

Dispenser VM-P Pneumatic



VM-P 345
Pneumatic Eco



VM-P 380 /
585 Pneumatic



VM-P 1400
Pneumatic

- Professional air tool with an optimum center of gravity and quick cartridge exchange
- Automatic pressure release system reduces adhesive overrun to a minimum
- Single-hand pressure regulation to adjust the piston speed
- With compressed air connection nipple
- VM-P 825 Pneumatic and VM-P 1400 Pneumatic with additional handle

Description	Ref. No.	Suitable for cartridge	Maximum working pressure bar	Maximum Luftverbrauch l/min	Maximum Press-out force kN	Pkg. cont. pcs	Weight per piece kg
VM-P 345 Pneumatic Eco	28351601	280 ml, 300 ml, 345 ml	6,8	40	2,2	1	2,55
VM-P 380 Pneumatic	28352002	380 ml, 410 ml, 420 ml	8	40	4,0	1	2,80
VM-P 380 Pneumatic Eco	28351701	380 ml, 410 ml, 420 ml	6,8	40	2,2	1	2,50
VM-P 585 Pneumatic	28352101	385 ml, 440 ml, 585 ml	8	40	4,0	1	3,20
VM-P 825 Pneumatic	28352110	825 ml	8	40	4,0	1	5,00
VM-P 1400 Pneumatic	28352201	1400 ml	8	40	8,3	1	7,00