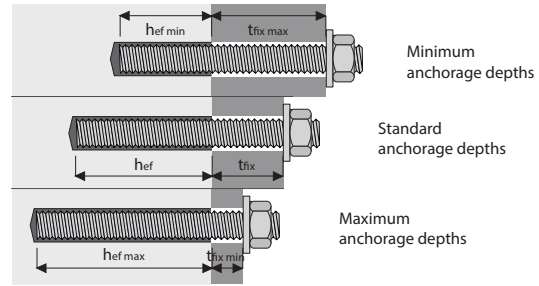


# Threaded Studs, Perfo Sleeves and Tension Anchors for MKT Injection Systems

**Threaded Studs for the Injection Systems VMH, VMU plus, VME plus, VME basic and VM-EA in concrete and brickwork: A flexible system means less inventory**

The flexible anchoring depths of the Injection Systems VMH, VMU plus, VME plus, VME basic and VM-EA in concrete make it possible to adjust the setting depths to the required load. This allows at low loads, the use of shorter anchor rods with correspondingly shorter drilling depths, high loads can be supported by correspondingly deeper anchorage depths.



hef + tfix = Usable length of the threaded rod (without nut and washer)

## Threaded Stud VMU-A

Steel, zinc plated 5.8



- For use in structures subject to dry internal conditions
- Steel, zinc plated grade 8.8 on demand or as threaded studs VM-A

## Threaded Stud VMU-A fvz

Steel, hot dip galvanized 5.8



- For use in structures subject to dry internal conditions

## Threaded Stud VMU-A A4

Stainless steel A4-70



- For use in structures subject to dry internal conditions or external atmospheric exposure
- Stainless steel HCR on request

Description	Ref. No.			Use in										Package content	Weight per package		
				Concrete <sup>1)</sup>			Solid base material without Perfo Sleeve			Solid and hollow base material with VM-SH <sup>2)</sup>							
				Usable length	Drill hole Ø x depth	Maximum fixture thickness t <sub>fix</sub>	12x80	16x85	16x130	20x85	20x130	20x200	pcs.			kg	
	Steel, zinc plated 5.8	Steel, hot dip galvanized 5.8	Stainless steel A4-70	mm	mm	mm	Maximum fixture thickness t <sub>fix</sub> mm										
VMU-A 8x100	31510101	-	31510501	90	10x80	10	10	5	-	-	-	-	-	10	0,42		
VMU-A 8x110	31515101	31515201	31515501	100	10x80	20	20	15	-	-	-	-	-	10	0,46		
VMU-A 8x130	31525101	-	31525501	120	10x80	40	40	35	-	-	-	-	-	10	0,52		
VMU-A 8x145	31528101	-	31528501	135	10x80	55	55	50	5	-	-	-	-	10	0,55		
VMU-A 8x160	31530101	-	31530501	150	10x80	70	70	65	20	-	-	-	-	10	0,60		
VMU-A 8x205	31550101	-	31550501	195	10x80	115	115	110	65	-	-	-	-	10	0,74		
VMU-A 10x110	31605101	-	31605501	100	12x90	10	-	15	-	-	-	-	-	10	0,75		
VMU-A 10x130	31625101	31625201	31625501	120	12x90	30	-	35	-	-	-	-	-	10	0,85		
VMU-A 10x150	31630101	31630201	31630501	140	12x90	50	-	55	10	-	-	-	-	10	0,95		
VMU-A 10x165	31635101	-	31635501	155	12x90	65	-	70	25	-	-	-	-	10	1,02		
VMU-A 10x190	31645101	31645201	31645501	180	12x90	90	-	95	50	-	-	-	-	10	1,15		
VMU-A 10x260	31655101	-	31655501	250	12x90	160	-	165	120	-	-	-	-	10	1,50		
VMU-A 12x120	31717101	-	31717501	105	14x100	5	-	-	-	20	-	-	-	10	1,14		
VMU-A 12x130	31718101	-	31718501	115	14x100	15	-	-	-	30	-	-	-	10	1,21		
VMU-A 12x135	31710101	-	31710501	120	14x100	20	-	-	-	35	-	-	-	10	1,25		
VMU-A 12x155	31720101	31720201	31720501	140	14x100	40	-	-	-	55	10	-	-	10	1,42		
VMU-A 12x175	31730101	31730201	31730501	160	14x100	60	-	-	-	75	30	-	-	10	1,54		
VMU-A 12x185	31734101	-	31734501	170	14x100	70	-	-	-	85	40	-	-	10	1,63		
VMU-A 12x210	31740101	31740201	31740501	195	14x100	95	-	-	-	110	65	-	-	10	1,82		
VMU-A 12x225	31748101	-	31748501	210	14x100	110	-	-	-	125	80	10	-	10	1,89		
VMU-A 12x250	31750101	-	31750501	235	14x100	135	-	-	-	150	105	35	-	10	2,13		
VMU-A 12x265	31757101	-	31757501	250	14x100	150	-	-	-	165	120	50	-	10	2,18		
VMU-A 12x300	31760101	-	31760501	285	14x100	185	-	-	-	200	155	85	-	10	2,50		
VMU-A 16x160	31810101	-	31810501	140	18x100	40	-	-	-	55	10	-	-	10	2,65		
VMU-A 16x175	31815101	31815201	31815501	155	18x100	55	-	-	-	70	25	-	-	10	2,85		
VMU-A 16x205	31820101	31820201	31820501	185	18x100	85	-	-	-	100	55	-	-	10	3,25		
VMU-A 16x235	31830101	-	31830501	215	18x100	115	-	-	-	130	85	15	-	10	3,65		
VMU-A 16x300	31840101	-	31840501	280	18x100	180	-	-	-	195	150	80	-	10	4,53		
VMU-A 20x240	31910101	-	31910501	220	-	-	-	-	-	-	-	-	-	10	5,85		
VMU-A 20x260	31915101	-	-	240	-	-	-	-	-	-	-	-	-	10	6,30		
VMU-A 20x285	31920101	-	31920501	265	-	-	-	-	-	-	-	-	-	10	6,75		
VMU-A 20x300	31925101	-	31925501	280	-	-	-	-	-	-	-	-	-	10	7,15		
VMU-A 20x350	31930101	-	-	330	-	-	-	-	-	-	-	-	-	10	8,10		
VMU-A 20x400	31935101	-	-	380	-	-	-	-	-	-	-	-	-	10	9,10		
VMU-A 24x290	31960101	-	31960501	265	-	-	-	-	-	-	-	-	-	5	4,95		
VMU-A 24x350	31965101	-	31965501	325	-	-	-	-	-	-	-	-	-	5	5,85		
VMU-A 24x400	31970101	-	31970501	375	-	-	-	-	-	-	-	-	-	5	6,60		
VMU-A 30x370	31990101	-	31990501 <sup>3)</sup>	340	-	-	-	-	-	-	-	-	-	5	9,90		

<sup>1)</sup>Drill hole Ø and drill depth depend on selected injection system and anchorage depth

<sup>2)</sup>Drill hole Ø and drill depth see Perfo Sleeves on page 176

<sup>3)</sup>Stainless steel A4-50

**Threaded Stud V-A**



- For use in structures subject to dry internal conditions
- Steel, zinc plated 5.8

**Threaded Stud V-A A4**



- For use in structures subject to dry internal conditions or external atmospheric exposure
- Stainless steel A4-70

**Threaded Stud V-A 8.8**



- For use in structures subject to dry internal conditions
- Steel, zinc plated 8.8

**Threaded Stud V-A HCR**



- For use in particularly corrosive environments
- High corrosion resistant steel 1.4529 (HCR)

**Threaded Stud V-A fvz**



- For use in structures subject to dry internal conditions
- Steel 5.8, hot dip galvanized  $\geq 50 \mu\text{m}$  (average plating thickness according to EN ISO 10684)

Description	Ref. No.					Use in										Package content	Weight per package
	Steel, zinc plated 5.8	Steel, zinc plated 8.8	Steel, hot dip galvanized 5.8	Stainless steel A4-70	Stainless steel HCR-70	Concrete <sup>1)</sup>	Solid base material without Perfo Sleeve		Solid and hollow base material with VM-SH <sup>2)</sup>								
						Usable Length	Drill hole $\varnothing$ x depth	Maximum fixture thickness $t_{fix}$	12x80	16x85	16x130	20x85	20x130	20x200			
V-A 8-20/110	21101101	21101171	21101201	21101501	21101651	100	10x80	20	20	15	-	-	-	-	10	0,43	
V-A 8-60/150	21105101	21105171	-	21105501	-	140	10x80	60	60	55	-	-	-	-	10	0,53	
V-A 10-15/115	21202101	21202171	-	21202501	-	105	12x90	15	-	20	-	-	-	-	10	0,73	
V-A 10-30/130	21203101	21203171	21203201	21203501	21203651	120	12x90	30	-	35	-	-	-	-	10	0,81	
V-A 10-65/165	21207101	21207171	-	21207501	-	155	12x90	65	-	70	25	-	-	-	10	0,98	
V-A 10-90/190	21210101	21210171	21210201	21210501	-	180	12x90	90	-	95	50	-	-	-	10	1,11	
V-A 10-150/250	21216101	-	-	21216501	-	240	12x90	150	-	155	110	-	-	-	10	1,42	
V-A 10-200/300	21221101	-	-	21221501	-	290	12x90	200	-	205	160	-	-	-	10	1,71	
V-A 12-10/135	21304101	21304171	-	21304501	-	120	12x90	20	-	-	-	35	-	-	10	1,19	
V-A 12-35/160	21306101	21306171	21306201	21306501	21306651	145	14x100	45	-	-	-	60	15	-	10	1,37	
V-A 12-55/180	-	-	-	21309501	-	165	14x100	65	-	-	-	80	35	-	10	1,51	
V-A 12-85/210	21312101	21312171	-	21312501	-	195	14x100	95	-	-	-	110	65	-	10	1,73	
V-A 12-95/220	21313101	-	-	21313501	-	205	14x100	105	-	-	-	120	75	5	10	1,82	
V-A 12-125/250	21316101	21316171	-	21316501	-	235	14x100	135	-	-	-	150	105	35	10	2,02	
V-A 12-175/300	21321101	21321171	-	21321501	-	285	14x100	185	-	-	-	200	155	85	10	2,40	
V-A 16-5/150	-	-	-	21505501	-	130	18x100	30	-	-	-	45	-	-	10	2,38	
V-A 16-20/165	21507101	21507171	21507201	21507501	-	145	18x100	45	-	-	-	60	15	-	10	2,77	
V-A 16-45/190	21510101	21510171	21510201	21510501	21510651	170	18x100	70	-	-	-	85	40	-	10	2,96	
V-A 16-65/210	-	-	21512201	21512501	-	190	18x100	90	-	-	-	105	60	-	10	3,20	
V-A 16-85/230	21514101	21514171	-	21514501	-	210	18x100	110	-	-	-	125	80	10	10	3,65	
V-A 16-105/250	21516101	21516171	-	21516501	-	230	18x100	130	-	-	-	145	100	30	10	3,91	
V-A 16-155/300	21521101	21521171	-	21521501	-	280	18x100	180	-	-	-	195	150	80	10	4,58	
V-A 20-20/220	21613101	21613171	21613201	21613501	-	190	-	-	-	-	-	-	-	-	10	5,56	
V-A 20-60/260	21617101	21617171	21617201	21617501	-	230	-	-	-	-	-	-	-	-	10	6,39	
V-A 20-100/300	21621101	21621171	-	21621501	-	270	-	-	-	-	-	-	-	-	10	7,23	
V-A 24-15/260	21717101	21717171	21717201	21717501	-	225	-	-	-	-	-	-	-	-	5	4,89	
V-A 24-55/300	21721101	21721171	21721201	21721501	-	265	-	-	-	-	-	-	-	-	5	5,54	
V-A 30-70/380 <sup>2)</sup>	21829101	-	-	21829501 <sup>4)</sup>	-	350	-	-	-	-	-	-	-	-	5	10,00	

<sup>1)</sup>Drill hole  $\varnothing$  and drill depth depend on selected injection system and anchorage depth.

<sup>2)</sup>Drill hole  $\varnothing$  and drill depth see Perfo Sleeves on page 176

<sup>3)</sup>Setting tool V-A 30-70/380 ref. no. 27805160 to be ordered separately.

<sup>4)</sup>Stainless steel A4-50

Other lengths on demand.

### Threaded Stud VM-A

Steel, zinc plated 5.8



→ Threaded studs, of 1 meter length, to be cut to the required length

→ Comes with manufacturer's certificate (3.1 EN 10204 ) in every package

Description	Ref. No.	Threaded Studs	Length mm	Package content pcs.	Weight per package kg
VM-A 8x1000	31199101	M8	1000	10	3,91
VM-A 10x1000	31299101	M10	1000	10	5,5
VM-A 12x1000	31399101	M12	1000	10	7,76
VM-A 16x1000	31599101	M16	1000	10	13,6
VM-A 20x1000	31699101	M20	1000	5	10,8
VM-A 24x1000	31799101	M24	1000	5	15,35

### Threaded Stud VM-A 8.8

Steel, zinc plated 8.8



→ Threaded studs, of 1 meter length, to be cut to the required length

→ Comes with manufacturer's certificate (3.1 EN 10204 ) in every package

Description	Ref. No.	Threaded Studs	Length mm	Package content pcs.	Weight per package kg
VM-A 8x1000 8.8	31199181	M8	1000	10	3,91
VM-A 10x1000 8.8	31299181	M10	1000	10	5,5
VM-A 12x1000 8.8	31399181	M12	1000	10	7,76
VM-A 16x1000 8.8	31599181	M16	1000	10	13,6

### Internally Threaded Sleeve VMU-IG

Steel, zinc plated 5.8



→ For use in structures subject to dry internal conditions

### Threaded Stud VM-A A4

Stainless steel A4-70



→ Threaded studs, of 1 meter length, to be cut to the required length

→ Comes with manufacturer's certificate (3.1 EN 10204 ) in every package

Description	Ref. No.	Threaded Studs	Length mm	Package content pcs.	Weight per package kg
VM-A 8x1000 A4	31199501	M8	1000	10	3,77
VM-A 10x1000 A4	31299501	M10	1000	10	5,43
VM-A 12x1000 A4	31399501	M12	1000	10	8,03
VM-A 16x1000 A4	31599501	M16	1000	10	13,95
VM-A 20x1000 A4	31699501	M20	1000	5	11,0
VM-A 24x1000 A4	31799501	M24	1000	5	15,6

### Internally Threaded Sleeve VMU-IG A4

Stainless steel A4-70



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

Description	Ref. No.	Use in			Outer Ø x Length	Thread depth min / max	Package content	Weight per package
		Concrete	Solid base material without Perfo Sleeve	Solid and hollow base material with VM-SH <sup>2)</sup>				
		Steel, zinc plated 5.8	Stainless steel A4	mm	mm	mm	pcs.	kg
VMU-IG M6x80	31502101	31502501		12 x 80	-	VM-SH 16x85	10	0,38
VMU-IG M6x90	31503101	31503501		12 x 90	12x90	-	10	0,42
VMU-IG M8x80	31562101	31562501		14 x 80	-	VM-SH 20x85	10	0,52
VMU-IG M8x100	31563101	31563501		14 x 100	14x100	-	10	0,66
VMU-IG M10x80	31601101	31601501		18 x 80	-	VM-SH 20x85	10	0,92
VMU-IG M10x100	31602101	31602501		18 x 100	18x100	-	10	1,18
VMU-IG M12x125	31652101	31652501		22/24 <sup>1)</sup> x 125	-	-	10	2,51
VMU-IG M16x170	31702101	31702501		28 x 170	-	-	5	2,41
VMU-IG M20x200	31802101	31802501		35 x 200	-	-	5	4,18

<sup>1)</sup>Drill hole Ø depend on selected injection system

<sup>2)</sup>Drill hole Ø and drill depth see Perfo Sleeves on page 176

### Internally Threaded Anchor Rod VZ-IG

Steel, zinc plated 8.8



→ For use in structures subject to dry internal conditions

### Internally Threaded Anchor Rod VZ-IG A4

Stainless steel A4-70



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

Description	Ref. No.		Drill hole Ø x depth	Outer Ø x Length	Internal thread	Thread depth min / max	Package content	Weight per package
	Steel, zinc plated 8.8	Stainless steel A4						
VZ-IG M6	24406171	24406501	12 x 90	10 x 90	M6 x 20	8 / 20	10	0,42
VZ-IG M8	24408171	24408501	14 x 110	12 x 110	M8 x 20	8 / 20	10	0,72
VZ-IG M10	24410171	24410501	18 x 125	16 x 125	M10 x 25	10 / 25	10	1,53
VZ-IG M12	24412171	24412501	22 x 170	20 x 170	M12 x 30	12 / 30	10	3,18
VZ-IG M16	24416171	24416501	28 x 210	24 x 210	M16 x 32	12 / 32	5	2,41

A setting tool is included with each package.

**Internally Threaded Sleeve V-IG**


- Steel, zinc plated 5.8
- Flush with concrete surface; with internal thread
- For fastenings not subject to approval

Description	Ref. No.	Suitable for capsule	Outer-Ø x Length mm	Drill hole Ø x depth mm	Thread mm	Package content pcs.	Weight per package kg
V-IG M 8	24105101	VZ-P 10	12 x 90	14 x 90	M8 x 25	10	0,50
V-IG M 10	24205101	VZ-P 12	14 x 90	16 x 90	M10 x 30	10	0,65
V-IG M 12	24305101	VZ-P 12	16 x 100	18 x 100	M12 x 35	10	1,00
V-IG M 16	24505101	VZ-P 20 s	22 x 120	25 x 120	M16 x 40	10	1,65

A setting tool is included with each internally threaded sleeve package.

**Internally Threaded Sleeve V-IG A4**


- Stainless steel A4
- Flush with concrete surface; with internal thread
- For fastenings not subject to approval

Description	Ref. No.	Suitable for capsule	Outer-Ø x Length mm	Drill hole Ø x depth mm	Thread mm	Package content pcs.	Weight per package kg
V-IG M 8 A4	24105501	VZ-P 10	12 x 90	14 x 90	M8 x 25	10	0,50
V-IG M 10 A4	24205501	VZ-P 12	14 x 90	16 x 90	M10 x 30	10	0,65
V-IG M 12 A4	24305501	VZ-P 12	16 x 100	18 x 100	M12 x 35	10	1,00
V-IG M 16 A4	24505501	VZ-P 20 s	22 x 120	25 x 120	M16 x 40	10	1,65

A setting tool is included with each internally threaded sleeve package.

**Internally Threaded Sleeve VM-IG**


- Steel, zinc plated
- Installation in hollow base material
- For fastenings not subject to approval

Description	Ref. No.	Suitable for perfo sleeve	Internal thread	Outer Ø mm	Length mm	Package content pcs.	Weight per package kg
VM-IG M 6	28101001	VM-SH 12 / 16	M 6	8	45	10	0,11
VM-IG M 8	28102001	VM-SH 16 / 22	M 8	12	80	10	0,38
VM-IG M 10	28103001	VM-SH 20 / 22	M 10	14	80	10	0,45
VM-IG M 12	28104001	VM-SH 22	M 12	16	80	10	0,52

**Perfo Sleeve VM-SH**


- Material: Polypropylene
- Installation in hollow base material

Description	Ref. No.	Drill hole Ø x depth mm	suitable for		Amount of mortar per 100 mm drill hole depth ml	Package content pcs.	Weight per package kg
			Threaded Studs	Threaded Sleeve			
VM-SH 12 x 50 <sup>1)</sup>	28151001	13 x 55	M8	-	7,5	10	0,01
VM-SH 12 x 80	28151201	12 x 85	M8	-	11,9	10	0,02
VM-SH 16 x 85	28152001	16 x 90	M8 / M10	VMU-IG M6x80	24,9	10	0,03
VM-SH 16 x 130	28153001	16 x 135	M8 / M10	-	38,0	10	0,04
VM-SH 16 x 130/330 <sup>2)</sup>	28153201	16 x 135 + tfix <sup>2)</sup>	M8 / M10	-	96,5	10	0,16
VM-SH 20 x 85	28154001	20 x 90	M12 / M16	VMU-IG M8x80 / M10x80	41,1	10	0,04
VM-SH 20 x 130	28154301	20 x 135	M12 / M16	-	62,9	10	0,07
VM-SH 20 x 200	28154601	20 x 205	M12 / M16	-	96,7	10	0,10

<sup>1)</sup>For fastenings not subject to approval

<sup>2)</sup>VM-SH 16 x 130/330 is only approved in combination with VM-EA. tfix = shortened length perfo sleeves -130 mm

**Perfo Sleeve VM-SH**


- Steel, zinc plated
- Metal, to be cut to required length
- Installation in hollow base materials

Description	Ref. No.	Drill hole Ø x depth mm	suitable for		Amount of mortar per 100 mm drill hole depth ml	Package content pcs.	Weight per package kg
			Threaded Studs	Threaded Sleeve			
VM-SH 12 x 1000	28403001	12	M6 / M8	VM-IG M6	15,0	50	2,88
VM-SH 16 x 1000	28404001	16	M10	VM-IG M6 / M8	29,3	50	3,38
VM-SH 22 x 1000	28405001	22	M12 / M16	VM-IG M8 - M12	68,4	25	2,70

## Tension Anchor ZA



**Thread:** M12, M16, M20  
**Range of Concrete Quality:** C12/15–C50/60  
**Material:** Stainless steel A4  
**On request:** Stainless steel HCR

### Description

The Tension Anchor ZA consists of a connection thread made of stainless steel A4 or HCR which is welded to a reinforcement bar B 500 B. It is part of the European Technical Assessments for post-installed reinforcement connections of the injections systems VMH, VMU **plus**, VME **plus** and VME **basic** and may be used in cracked and uncracked concrete. The absorbable tensile force or the required anchorage length can be determined according to EN 1992-1 (EC2). If the full anchorage depth is not required, the reinforcement bar end can be shortened.

### Applications

- Connection of structural elements to reinforced concrete
- Introduction of highest tensile loads with minimal edge distances
- Fastening of brackets, canopies, traffic signs, stairs

### Tension Anchor ZA



- Stainless steel A4
- Approved for cracked and uncracked concrete

Description	Ref. No.	Drill-hole-Ø mm	max. setting depth mm	Fixture thickness $t_{ix}$ mm	Anchor length mm	Weight per piece kg
ZA M12-60/975 A4	85306501	16	900	60	975	0,9
ZA M12-200/1115 A4	85320501	16	900	200	1115	1,0
ZA M16-60/1180 A4	85506501	20	1100	60	1180	1,9
ZA M16-200/1320 A4	85520501	20	1100	200	1320	2,1
ZA M20-60/1485 A4	85606501	25	1400	60	1485	3,7
ZA M20-200/1625 A4	85620501	25	1400	200	1625	4,0

Stainless steel HCR and other lengths on demand.

## 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

## 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 <sup>1)</sup> 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 <sup>2)</sup> - 20	330	360	1	0,27

<sup>1)</sup>For through fastening: Maximum drill hole depth through fixture

<sup>2)</sup>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 <sup>1)</sup> mm	Pkg. cont. pcs.	Weight per piece kg
VM-ABP 200	33090101	5	6-20	240	1	0,55
VM-ABP 250	33100101	16	18-55	240	1	1,00
VM-ABP 500	33106101	16	18-55	480	1	1,30

<sup>1)</sup>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 <sup>1)</sup> mm	Pkg. cont. pcs.	Weight per piece kg
VM-ABP 1000	85806101	14	16-55	1000	1	0,32

<sup>1)</sup>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 <sup>1)</sup> 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 - 55	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

<sup>1)</sup>For through fastening: Maximum drill hole depth through fixture

**Cleaning Brush RB M6**

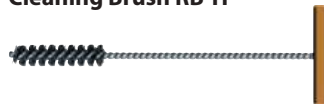

- For machine cleaning of drill holes
- Stainless steel trim for a long service life
- With connection thread M6
- For drilling machines with keyed chuck
- SDS plus adapter for use in a hammer drill
- Use brush extensions according to the drilling depth. Several brush extensions can be screwed together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



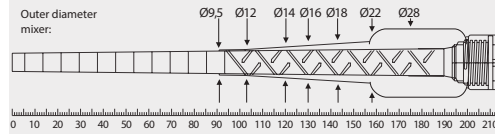
Static mixer

- ➔ 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



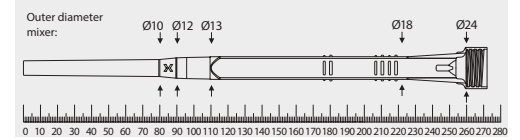
Usable length Static mixer VM-X



VM-XHP



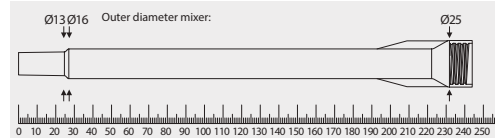
Usable length Static mixer VM-XHP



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: 165ml, 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 <sup>1)</sup>	28305201	VMU plus: all Cartridges	245	10	0,28

<sup>1)</sup>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

- ➔ For extending the static mixer for deep boreholes
- ➔ 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		12	0,12
VM-XE 10/500	85951101	10	500	12 - 40	VM-X	10	0,20
VM-XE 10/1000	85952101	10	1000	12 - 40	VM-XHP VM-XL	10	0,30
VM-XE 10/2000	85954101	10	2000	12 - 40		10	0,65
VM-XLE 16/250	85959101	16	250	18 - 55		10	0,30
VM-XLE 16/1000	85956101	16	1000	18 - 55	VM-XHP VM-XL	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



VM-P 345 /  
380 / 585 Akku



VM-P 825 Akku

- Professional, solid battery cartridge dispenser
- Stepless variable pressing speed
- Overrun-quantity-stop by automatic return after release of the dispensing switch
- Two rechargeable batteries included in the set <sup>1)</sup>
- Supplied in a practical plastic case

Description	Ref. No.	Suitable for cartridge	Press-out force kN	Weight <sup>2)</sup> kg	Dimensions <sup>2)</sup> L x B x H mm	Pkg. cont.	Weight pro pcs. kg
VM-P 345 Akku	28360801	280ml, 300ml, 345ml	4,5	1,7	410 x 81 x 220	1	2,7
VM-P 380 Akku	28362601	380ml, 410ml, 420ml	4,5	1,7	400 x 82 x 220	1	2,7
VM-P 585 Akku	28363301	385ml, 440ml, 585ml	4,5	1,7	430 x 82 x 220	1	2,7
VM-P 825 Akku	28362601	825 ml	6,5	4,0	450 x 85 x 230	1	5,5
Accessories (for all models)							
Replacement battery 7,2 V	28362411	suitable for MKT VM-P 345 / 380 / 585 Akku				1	0,5
Replacement battery 14,4 V	28363411	suitable for MKT VM-P 825 Akku				1	1,0

<sup>1)</sup>For the 345 battery, 380 battery and 585 battery models

<sup>2)</sup>Tool with battery

### 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

NEW

Chemical Anchors

## Filling Washer VS



Filling Washer VS

### Description

The VS filling washer is used for subsequent filling of the annular gap between fastening element (wedge anchor, concrete screw or anchor rod) and attachment. For the wedge anchors BZ3 and BZ plus as well as for the concrete screw BSZ, the VS filling washer is installed in addition, for the chemical anchor VZ and for the injection systems in replacement for the original washers of the threaded studs. After assembly, injection adhesive (VMZ, VMH, VMU plus or VME plus) is injected into the cross-section drill hole with the enclosed mixer reduction, until adhesive emerges.

### Advantages

The filling washer enables filling of the annular gap as the final step to set the anchor.

- Larger holes are possible in the item being attached
- Increased allowable shear loads under seismic loading

### Application

For fastenings made using the MKT Wedge Anchors BZ3 and BZ plus, the Concrete screw BSZ, as well as the MKT Injection Systems VMZ, VMH, VMU plus or VME plus.

### Note

When choosing an anchor, observe that the fixture thickness of the anchor must be reduced by up to 6mm.

## Filling Washer VS

→ Steel, zinc plated

→ Every 20-pack includes 10, every 10-pack includes 5 and every 4-pack includes 2 mixer tips

Description	Ref. No.	Suitable for thread	Internal-Ø mm	Outer-Ø mm	Filling Washer VS thickness mm	Reduction of fixture thickness t <sub>fix</sub> by		Package content pcs.	Weight per package kg
						BZ3, BZ plus, BSZ mm	VMZ, VMH, VMU plus, VME plus mm		
VS M8	56084101	M8	9	23	5	5	3,4	20	0,32
VS M10	56104101	M10	12	26	5	5	3	20	0,37
VS M12	56124101	M12	14	28	5	5	2,5	20	0,40
VS M16	56164101	M16	17	34	5	5	2	10	0,30
VS M20	56204101	M20	21	41	5	5	2	10	0,41
VS M24	56244101	M24	25	48	6	6	2	4	0,30

## Filling Washer VS A4



→ Stainless Steel A4

→ Every 20-pack includes 10, every 10-pack includes 5 and every 4-pack includes 2 mixer tips

Description	Ref. No.	Suitable for thread	Internal-Ø mm	Outer-Ø mm	Filling Washer VS thickness mm	Reduction of fixture thickness t <sub>fix</sub> by		Package content pcs.	Weight per package kg
						BZ3 A4, BZ plus A4, BSZ2 A4 mm	VMZ, VMH, VMU plus, VME plus mm		
VS M8 A4	56084501	M8	9	23	5	5	3,4	20	0,32
VS M10 A4	56104501	M10	12	26	5	5	3	20	0,37
VS M12 A4	56124501	M12	14	28	5	5	2,5	20	0,40
VS M16 A4	56164501	M16	17	34	5	5	2	10	0,30
VS M20 A4	56204501	M20	21	41	5	5	2	10	0,41
VS M24 A4	56244501	M24	25	48	6	6	2	4	0,30

## WHG washer



WHG washer

### Description

The WHG washer is used to mark the compliance of the anchoring with the WHG (Water Resources Act). According to §62 WHG, LAU facilities (facilities for storage, filling and handling) must be designed in such a way that they do not adversely affect the water. This means in particular that the structure must be tight, and this must also be taken into account for concrete fixings. General type approvals (aBG) certify the compliance of the anchoring with the WHG. The aBG for the VMH injection mortar allows the use for liquid-tight concrete surfaces (FD/FDE concrete). For the use of the VME injection mortar plus for coated concrete surfaces, there are aBGs for different coating systems.

### Advantages

The WHG washer enables a clear marking of WHG-compliant anchoring. It is simply placed underneath the regular washer. Nothing else is required. In particular, the VMH and VME plus mortars do not require the post-grouting of the anchoring otherwise often necessary.

### Application

For permanently marking WHG-compliant anchoring with VMH and VME plus mortars, the abbreviation "WHG" is engraved in the WHG washer.

### Note

The WHG washer is made of aluminum and is 1.5 mm thick.

### WHG washer

→ Aluminium

→ 10 WHG washers each package

Description	Ref. No.	Suitable for thread	Washer thickness	Package content	Weight per package
			mm	pcs.	kg
WHG M8	56308001	M8	1.5	10	0,01
WHG M10	56310001	M10	1.5	10	0,01
WHG M12	56312001	M12	1.5	10	0,02
WHG M16	56316001	M16	1.5	10	0,03
WHG M20	56320001	M20	1.5	10	0,05