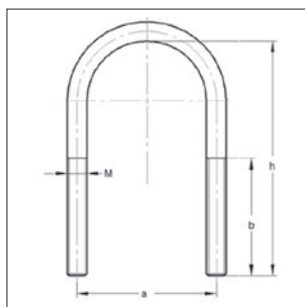


U-bolt



U-bolt



G 4940029*

Specification

OD: 21,3 up to 323,9 mm

Thread: M8, M10, M12, M20

- for direct installation of piping onto steel structures
- suitable for sprinkler
- suitable for push-through-assembling into profile rails
- bearing should be used with 4 nuts and 4 washers
- fixed bearing should be used with 2 nuts and 2 washers
- should not be used as fixpoint without required measures

Technical data:

Material:

steel

Surface:

galvanized¹⁾

Admission:

VdS-approval No.: G 4940029

- other dimensions according to VdS-2092 guideline "planning and installation"

¹⁾ U-bolts for outdoor application with zinc-nickel-coating see chapter 14

U-bolt differing from DIN 3570

without nuts

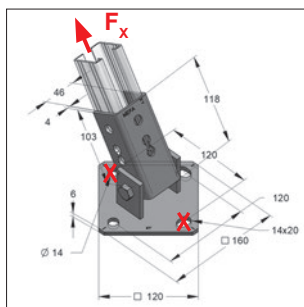
OD	Thread	Overall height	Center distance	Length of thread	Weight	Packing	Part-No.
[mm]	M	h	a	b	[kg/pc.]	[pcs.]	
21,3	M8	85	30	65	0,051	100	050702201
26,9	M8	85	35	65	0,058	100	050702801
33,7	M8	95	42	65	0,070	100	050703501
42,4	M8	105	51	75	0,078	100	050704201
48,3	M8	110	57	75	0,082	100	050704801
60,3	M10	125	71	75	0,154	100	050706001
76,1	M10	140	87	75	0,169	100	050707601
88,9	M10	155	100	75	0,187	50	050708901
108,0	M12	190	121	90	0,325	50	0507108
114,3	M12	200	126	95	0,348	50	050711401
133,0	M12	215	146	90	0,370	25	0507133
139,7	M12	225	152	95	0,394	25	050714001
159,0	M12	240	172	90	0,416	25	0507159
168,3	M12	255	180	95	0,449	25	050716801
219,1*	M12	300	233	95	0,525	25	0507219

U-bolt without nuts according to DIN 3570

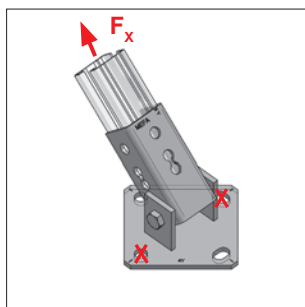
273,0	M20	313	302	70	1,663	10	0507273
323,9	M20	364	352	70	1,929	1	0507324

Joint holder with plate v/h

02



Joint holder horizontal
Necessary dowel holes at X



Joint holder vertical
Necessary dowel holes at X

Specification:

Profile rail type: rail system 45
Mounting method: on inclined roof- and bottom construction
stepless fixable

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

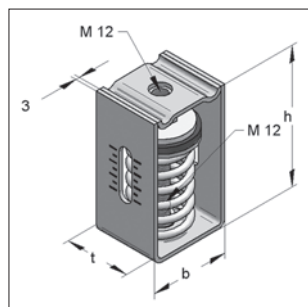
Recommended accessory:
1 x 2-hole tooth plate
2 x hexagon screw M12 x 25
2 x washer DIN 7089-12

Application area:
cross girder at various
angle up to 90°

¹⁾ loads referring to component, not to connection

Identification	Dimension plate [mm]	Tightening torque (M12) [Nm]	Load F_x ¹⁾ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint holder with plate v/h	120 x 120 x 6,0	50	10,0	1,43	10	08122601

Spring insulator FH 1 with one spring



Spring insulator FH1
Load range: up to 3000 N

Specification:

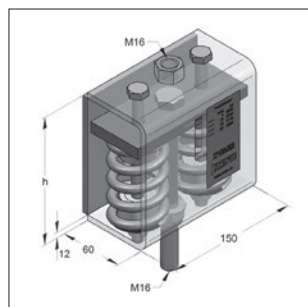
Number of springs: 1 piece
Load range: up to 3000 N
Spring deflection: up to 32 mm

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	Load range [N]	Spring deflection [mm]	Connection thread	Dimension			Weight [kg/pc.]	Packing [pc.]	Part-No.
				h [mm]	b [mm]	t [mm]			
FH 1 - 400	0 - 386	0 - 30,0	M12	105	60	50	0,591	1	0794040
FH 1 - 600	0 - 619	0 - 30,0	M12	105	60	50	0,551	1	0794060
FH 1 - 1000	0 - 1006	0 - 32,0	M12	105	60	50	0,575	1	0794100
FH 1 - 1300	0 - 1289	0 - 31,0	M12	130	80	60	0,950	1	0794130
FH 1 - 2100	0 - 2113	0 - 28,0	M12	130	80	60	1,148	1	0794210
FH 1 - 3000	0 - 3084	0 - 23,0	M12	130	80	60	1,188	1	0794300

Spring insulator FH 2 with two springs



Spring insulator FH2
Load range: up to 9300 N

Specification:

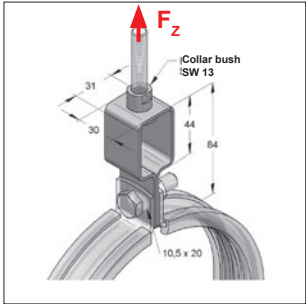
Number of springs: 2 pieces
Load range: up to 9545 N
Spring deflection: up to 28,5 mm

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	Load range [N]	Spring deflection [mm]	Connection thread	Dimension			Weight [kg/pc.]	Packing [pc.]	Part-No.
				h [mm]	width [mm]	Length [mm]			
FH 2 - 4300 plus	0 - 4301	0 - 28,5	M16	140	80	140	5,09	1	079170430
FH 2 - 6000 plus	0 - 6044	0 - 22,5	M16	140	80	140	5,11	1	079170600
FH 2 - 9300 plus	2386 - 9545	0 - 15,0	M16	140	80	140	5,13	1	079180930

■ Height-adjustable suspension



Height regulator

Specification:

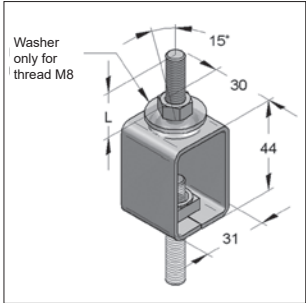
Application area: suitable for single mounting with threaded rods under ceiling; stepless height-adjustment

Technical data:

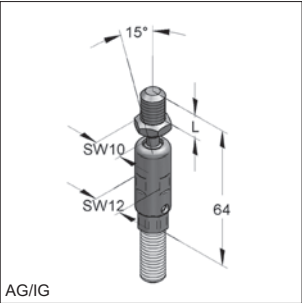
Material: steel
Material type: S235JR
Surface: galvanized

Identification	Load F_z [kN]	Adjustable height [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Height regulator M8	3,0	30	0,125	50	0780014

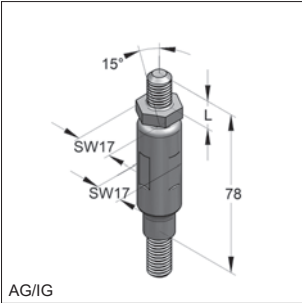
■ Pendular bolt joints



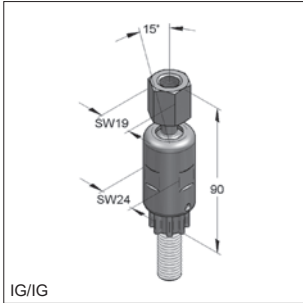
Pendulum hanger



Pendular bolt joint M8/M8



Pendular bolt joint M10/M10



Pendular bolt joint M12/M12

Specification:

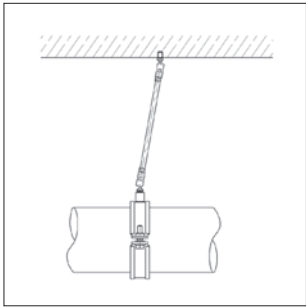
Pendular bolt joint with inspection hole to check the thread depth of threaded rods

Technical data:

Material: steel
Surface: galvanized

Pendulum hanger: height adjustment and pendulum function

Identification	Connection	Thread length L [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Pendulum hanger M8/M8	-	22	2,5	0,106	50	0784031
Pendulum hanger M10/M10	-	22	3,0	0,119	50	0784136
Pendulum hanger M12/M12	-	20	3,6	0,137	50	0784250
Pendular bolt joint M8/M8	AG / IG	15	2,5	0,030	50	0788088
Pendular bolt joint M10/M10	AG / IG	13	2,5	0,073	50	0788108
Pendular bolt joint M12/M12	IG / IG	-	5,0	0,125	50	0788128

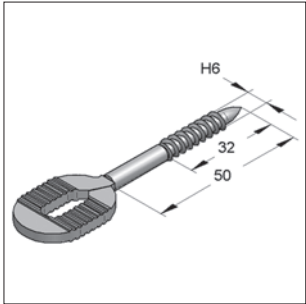


Remark:

For stainless pipe mounting always two pendulum joints are required

❗ max. absorbtional tube extension when using pendular bolt joint see chapter 15

Elongated hole screw

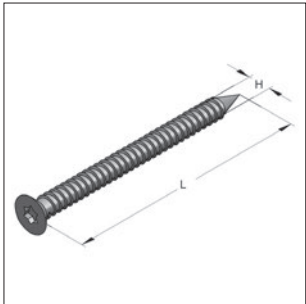


Elongated hole screw

Specification:		Technical data:	
Version:	with wood thread	Material:	steel
		Surface:	galvanized

Identification	Thread	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Elongated hole screw	H 6	0,018	100	1140019

Countersunk woodscrew

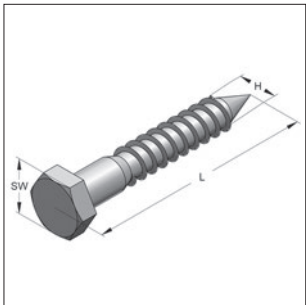


Countersunk woodscrew

Specification:		Technical data:	
Version:	Countersunk woodscrew with TX-drive	Material:	steel
		Surface:	galvanized

Identification	Dimension		TX-drive	Head Ø [mm]	Recommended anchor	Weight [kg/100]	Packing [pcs.]	Part-No.
	H [mm]	L [mm]						
Countersunk woodscrew	4,0	40	20	8,0	K2 5x25 K2 6x33	0,220	1000	372040040
Countersunk woodscrew	4,5	45	20	9,0	K2 6x33 K2 8x44	0,320	500	372045045
Countersunk woodscrew	5,0	50	25	10,0	K2 8x44	0,440	500	372050050
Countersunk woodscrew	6,0	60	30	12,0	K2 10x44 K2 10x60	0,750	200	372060060

Hexagon-woodscrew



Hexagon-woodscrew

Specification:		Technical data:	
according to DIN EN ISO 571		Material:	steel
Version:	With wood thread.	Surface:	galvanized

Identification	Thread		Wrench size SW	Suitable anchor K2	Weight [kg/pc.]	Packing [pcs.]	Part-No.
	H	L [mm]					
Hexagon-woodscrew	6	60	10	8x44	0,012	200	3100104
Hexagon-woodscrew	8	50	13	10x44	0,018	100	3100228
Hexagon-woodscrew	8	70	13	10x60	0,024	100	3100279

MEFA nylon dowel K2



MEFA nylon dowel K2

Specification:

Application area: Concrete- and masonry material, perforated brick, porous concrete, gas concrete

Mounting method: Wood- and chipboard screw

Technical data:

Material: plastic

Material type: polyamide PA 6 / nylon yellow

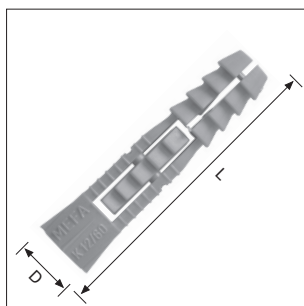
Color: yellow

Temperature resistance: - 40 °C up to + 100 °C

Installation advise: The screw should drive through the end of dowel

Size	Length	Drill diameter	Min. drilling depth	Screw OD	Weight	Packing	Part-no.
[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100]	[pcs.]	
5	25	5	30	2,5 - 4,0	0,038	100	2010011
6	33	6	40	3,5 - 5,0	0,076	100	2010038
8	44	8	64	4,5 - 6,0	0,162	100	2010046
10	44	10	64	6,0 - 8,0	0,246	50	2010054
10	60	10	80	6,0 - 8,0	0,304	50	2010062
12	60	12	80	8,0 - 10,0	0,472	25	2010070
14	80	14	100	8,0 - 12,0	0,748	25	2010089

Load values MEFA nylon dowel K2



Allowable tensile load and shear stress (in pressure zone)						
Type of dowel / length of dowel	[mm]	8/44	10/44	10/60	12/60	14/80
Screw size	[mm]	6/80	8/80	8/110	10/110	12/140
Drilling hole depth	[mm]	64	64	80	80	100
Min. depth of anchoring	[mm]	44	44	60	60	80
Tensile load						
Min. thickness of the component	[mm]	8,5	8,5	10,0	10,0	12,0
Admissible load (concrete quality B 25)	[kN]	0,65	1,30	2,00	2,40	3,40
Shear stress						
Min. thickness of the component	[mm]	20	20	20	20	20
Admissible load (concrete quality B 25)	[kN]	1,75	2,30	2,70	3,60	5,50

Inspected: Official research and material test establishment for building industry Otto-Graf-Institut at university Stuttgart

Brass expansion anchor



Brass expansion anchor

Specification:

Application area: Concrete, solid brick, natural stone, lime sand brick

Mounting method: Machine screw, threaded bolt

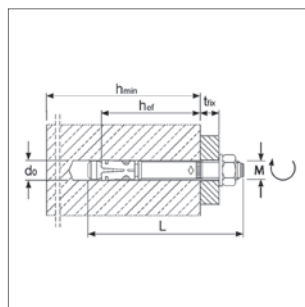
Technical data:

Material: brass

Installation advise: Length of screw should correspond exactly with length of anchor plus material thickness of attaching part.

Size	Length	Drill diameter	Drilling depth	Depth of anchoring	Weight	Packing	Part-no.
	[mm]	[mm]	[mm]	[mm]	[kg/100]	[pcs.]	
M8	27,5	11,0	34	30	0,690	100	2060043
M10	32,0	13,0	38	34	1,150	100	2060051
M12	40,0	18,0	44	40	2,360	50	2060078

Bolt anchor BZ plus



Bolt anchor BZ plus
Bolt anchor BZ plus A4

Specification:

Application area: Cracked and non-cracked concrete
C20/25 up to C50/60

Installation advise: Bolt anchor for pre-fabrication and
push-through-assembling
Brand: MKT

Technical data:

Material BZ plus: steel
Surface: galvanized
Material BZ plus A4: stainless steel V4A

Approval: ETA-99/0010

Application example: Anchorage for moderately heavy up to heavy loads in cracked and uncracked concrete:
Pillars, steel beams, handrail fittings, cable routes, wooden construction, consoles.

¹⁾ Applies only for standard anchorage depth.

Bolt anchor BZ plus, galvanized

Identification	Standard anchorage depth / Reduced anchorage depth								Seismic ¹⁾ C1 / C2	Anchoring depth	Seismic ¹⁾ C1 / C2	Anch- length	Thread	Weight	Packing	Part no.
	Clamping thickness t _{fix}		Drill-Ø x Drillhole depth		Setting- depth		Anchoring depth									
	[mm]		[mm]		[mm]		[mm]									
BZ 8 -10-21/75	10	21	8x60	8x49	52	41	46	35	yes	75	M8x32	2,99	100	221108010		
BZ 8 -30-41/95	30	41	8x60	8x49	52	41	46	35	yes	95	M8x52	3,60	100	221108030		
BZ 10 -10-30/90	10	30	10x75	10x55	68	48	60	40	yes	90	M10x42	5,88	50	221110010		
BZ 10 -30-50/110	30	50	10x75	10x55	68	48	60	40	yes	110	M10x62	6,88	50	221110030		
BZ 10 -50-70/130	50	70	10x75	10x55	68	48	60	40	yes	130	M10x82	7,90	50	221110050		
BZ 12 -15-35/110	15	35	12x90	12x70	80	60	70	50	yes	110	M12x51	10,20	25	221112015		
BZ 12 -30-50/125	30	50	12x90	12x70	80	60	70	50	yes	125	M12x66	11,36	25	22111203001		
BZ 12 -50-70/145	50	70	12x90	12x70	80	60	70	50	yes	145	M12x86	12,92	25	221112050		
BZ 12 -105-125/200	105	125	12x90	12x70	80	60	70	50	yes	200	M12x141	16,84	25	221112105		
BZ 16 -15-35/135	15	35	16x110	16x90	97	77	85	65	yes	135	M16x56	21,60	20	221116015		
BZ 16 -25-45/145	25	45	16x110	16x90	97	77	85	65	yes	145	M16x66	23,00	20	221116025		
BZ 16 -80-100/200	80	100	16x110	16x90	97	77	85	65	yes	200	M16x121	32,00	10	221116080		

Bolt anchor BZ plus A4, stainless steel

BZ 8 -10-21/75	10	21	8x60	8x49	52	41	46	35	yes	75	M8x32	3,02	100	222108010
BZ 8 -30-41/95	30	41	8x60	8x49	52	41	46	35	yes	95	M8x52	3,68	100	222108030
BZ 10 -10-30/90	10	30	10x75	10x55	68	48	60	40	yes	90	M10x42	5,94	50	222110010
BZ 10 -30-50/110	30	50	10x75	10x55	68	48	60	40	yes	110	M10x62	6,96	50	222110030
BZ 10 -50-70/130	50	70	10x75	10x55	68	48	60	40	yes	130	M10x82	8,04	50	222110050
BZ 12 -15-35/110	15	35	12x90	12x70	80	60	70	50	yes	110	M12x51	10,20	25	222112015
BZ 12 -30-50/125	30	50	12x90	12x70	80	60	70	50	yes	125	M12x66	11,36	25	222112030
BZ 12 -50-70/145	50	70	12x90	12x70	80	60	70	50	yes	145	M12x86	12,92	25	222112050
BZ 12 -105-125/200	105	125	12x90	12x70	80	60	70	50	yes	200	M12x141	16,84	25	222112105
BZ 16-25-45/145	25	45	16x110	16x90	97	77	85	65	yes	145	M16x66	23,16	20	222116025



Delivery time: 3 working days

Loads see on page Seite 7/10

assembly instruction see chapter 15