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fischer FIXING SYSTEMS

Installation Systems Main Catalogue

Installation Systems Main Catalogue

SaMontec
E-fix

fischer FIXING SYSTEMS

The information in this catalogue is intended for general guidance only and is given without engagement. Additional information and advice on specific applications is available from our Technical Support Team. For this however, we require a precise description of your particular application.
All the data in this catalogue concerning work with our fixing elements must be adapted to suit local conditions and the type of materials in use.
If no detailed performance specifications are given for certain articles and types, please contact our Technical Service Department for advice.

fischerwerke GmbH & Co. KG
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fischer
FIXING SYSTEMS

Dear Partners,

Technical requirements for buildings are increasing steadily. Today, more and more installations are needed to ensure the optimum functioning of a building. The secure guidance and attachment of all types of media lines plays a particularly important role here.

With this in mind, we have expanded our range of installation and fastening elements for structural engineering. We have taken a lot of comments from practice on board and incorporated them into our systems development. Part of our special service is to offer practical solutions that will make your everyday work easier.

In our new main catalogue for installation systems, we are pleased to present the SaMontec (HVAC installations), E-fix (electrical fastenings) and sanitary ware fastening ranges in a clearly laid out format. The new user-orientated chapter structure puts all the different articles for one system together and simplifies the search for the elements you need.

Our complete range now also fulfils the highest requirements for fixing heavy loads. The fischer universal rail system FUS has been expanded significantly and the addition of new material qualities to the stainless steel range gives you further major usage benefits.

We want to offer you the most useful products possible for your daily work. With our expanded range, we can offer you installation systems that are incredibly easy to use and extremely cost-effective. Please continue to support us with your comments so that we can continue to improve our systems and processes. We look forward to continuing our successful cooperation.

Yours sincerely,

Klaus Fischer

Worldwide

Service-Net

for fixings questions.

In the field of fixings, when it comes to competence and service availability fischer knows no bondaries.

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- Product descriptions with advantages/benefits overview
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- Application aids
- Detailed technical data
- Fundamentals of fastening technology

In short: everything that the professional needs to know about fastening.

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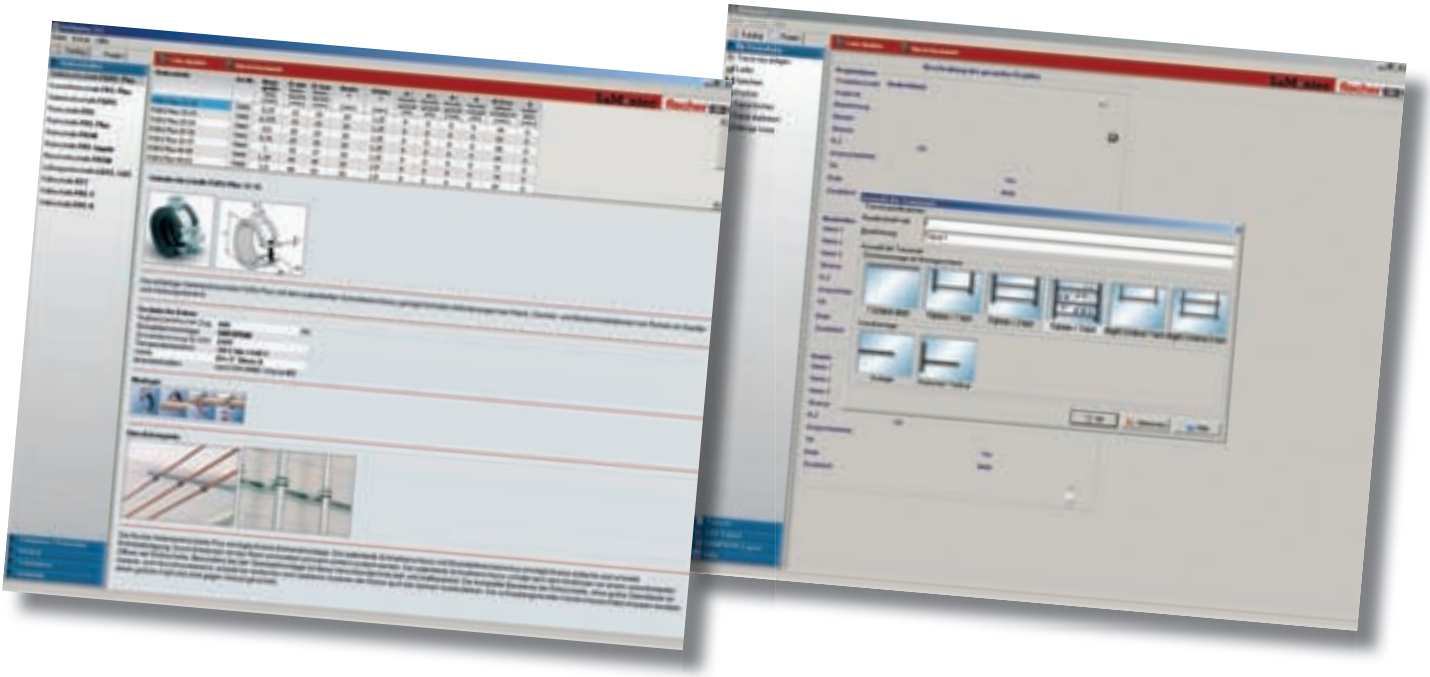
Fixing Systems – Products heading

Services that connect us

fischer SaMontec 3.2 Calculation software



fischer SaMontec 3.2

YOUR ADVANTAGES

- All necessary data are input under consideration of current DIN values (nominal width, insulation thicknesses etc.).
- Continuous planning control using continuous background calculation.
- Project arrangement using an integrated project database.
- The current version is always available on the Internet using live update.
- Multiple language function that can be switched (calculate in one language, print out in another).

APPLICATION

- Calculation of complete pipelines in the installation area.
- Layout of various designs.
- Technical layout of the fischer SaMontec system (pipe clamps, rails etc.)

Order now, free of charge, at:

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Units and formulas

BASIC VARIABLES AND BASIC UNITS

Basic variable	Length	Weight	Time	electrical current intensity	Thermodynamic temperature	Substance quantity	Light intensity
Formula symbol	l	m	t	I	T	n	I_v
Basic unit	Meter	Kilogram	Second	Ampere	Kelvin	Mol	Candela
Unit symbol	m	kg	s	A	K	mol	cd

VARIABLES AND UNITS

Size	Formula symbol	Unit SI	others	related	Note
Length	l	m		1 m = 10 dm = 100 cm = 1.000 mm 1 mm = 1.000 µm 1 km = 1.000 m	1 inch = 1 Zoll = 25.4 mm
Area	A, S	m^2	a, ha	1 m^2 = 10.000 cm^2 = 1.000.000 m^2 1 a = 100 m^2 1 ha = 100 a = 10.000 m^2	
Volume	V	m^3	l	1 m^3 = 1.000 dm^3 = 1.000.000 cm^3 1 l = 1 dm^3 = 0.001 m^3 1 ml = 1 cm^3	
Time	t	s	min, h, d	1 min = 60 s 1 h = 60 min = 3.600 s 1 d = 24 h	
Frequency	f	Hz		1 Hz = 1/s	
Speed	v	m/s	m/s, km/h	1 m/s = 3.6 km/h	
Acceleration	a, g	m/s^2		g = 9.81 m/s^2	Formula symbol g for gravity only
Weight	m	kg	g, t	1 kg = 1.000 g 1 t = 1.000 kg	
Density	ρ	kg/m^3		1.000 kg/m^3 = 1 t/m^3 = 1 kg/dm^3	
Moment of inertia, 2nd degree	J	kg • m^2			Previously: mass moment of inertia
Force	F	N		1 N = 1 kg • m/s^2	Previously: kp (Kilopond) 1 kp = 9.80665 kgm/s^2 = 9.81 N
Torque	M	N • m			
Bending moment	M_b	N • m			
Torsion moment	T	N • m			
Mechanical tension	σ, τ	N/m^2			
Area-wise moment, 2nd degree	I	m^4			Previously: area moment of inertia
Energy, work	E, W	J		1 J = 1 N • m = 1 W • s	in former times: cal (Calorie) 1 cal = 4.1868 Ws = 4.19 J
Power	P	W		1 W = 1 J/s = 1 N • m/s	in former times: PS (Horse power) 1 PS = 75 kpm/s = 75 • 9.81 N/ms = 0.736 kW
Thermodynamic temperature	T	K		0 °C = 273 K; -273 C = 0 K	
Heat quantity	Q	J	(Wh)	1 J = 1 W • s = 1 N • m	
Specific heat value	H	J/kg			
Substance quantity	n	mol		1 mol corresponds to approx. 6 • 10^{23}	
Light intensity	I_v	cd			

CARBON STEEL QUALITIES CORRESPONDANCE BETWEEN EUROPEAN AND AMERICAN STANDARDS

	DIN EN ISO		ASTM
Description	Material no.		
DD11	1.0332	DIN EN 10111	A 569
DC01	1.0330	DIN EN 10130	A 366
St 22	1.0320	DIN 1614-1	n/a
DX51D+Z 275 MA-C	1.0226+Z	DIN EN 10327	A 653/CQ
S235JR	1.0037	DIN EN 10025	A 283
S 355 MC	1.0976	DIn EN 10149	n/a
4.6; 4,8; 8,8	DIN EN ISO 898-1		F 568M

SaMontec advertising material

Art. No. 68422

Art. No. 45177 (international),
Art. No. 78609 (german)

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Pipe Clamps

A complete range for installation of piping systems like:

- heating, ventilation, air conditioning
- sanitary and waste water
- compressed air, technical gases, production liquids
- gas
- sprinkler
- steam pipelines
- medical fluids
- electrical conduits
- cooling

One screw

FGRS Plus Page 16

Two screws

FRS Plus Page 20

Heavy duty

FRSM metric nut Page 26

Insulated

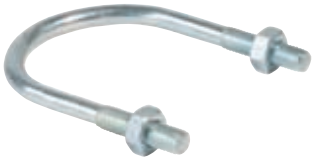
KFT Page 30

Sprinkler

FRSP Page 34

Others

ETR Page 35



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FRSM/FRSM N inch nut **Page 28**

FRS K **Page 32**

SGS **Page 36**

Pipe Clamps

BOILER PIPE ACC. TO DIN 2448 / DIN EN 10220

DN	Size	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Pipe weight water filled + insulated 1) [kg/m]	Support widths [m]
8	1/4"	13.5	0.5	0.6	1.4	2.00
10	3/8"	17.2	0.7	0.8	1.9	2.25
15	1/2"	21.3	1.0	1.2	2.2	2.75
		25.0	1.1	1.5	2.8	2.75
20	3/4"	26.9	1.4	1.8	3.1	3.00
		30.0	1.8	2.3	4.0	3.00
		31.8	1.9	2.4	4.2	3.00
25	1"	33.7	2.0	2.6	4.7	3.50
		38.0	2.3	3.1	5.2	3.50
32	1 1/4"	42.4	2.6	3.7	5.7	3.75
		44.5	2.7	3.9	6.9	3.75
40	1 1/2"	48.3	3.0	4.4	7.4	4.25
		51.0	3.1	4.8	7.7	4.40
		57.0	3.9	6.0	10.0	4.60
50	2"	60.3	4.1	6.5	10.5	4.75
		63.5	4.4	7.0	11.0	4.75
		70.0	4.8	8.1	13.4	4.75
65	2 1/2"	76.1	5.3	9.2	14.8	5.50
		82.5	6.3	10.9	19.2	5.75
80	3"	88.9	6.8	12.2	20.4	6.00
		101.6	8.8	15.8	27.0	6.00
		108.0	9.3	17.3	29.1	6.00
100	4"	114.3	9.9	18.9	30.6	6.00
		127.0	12.2	23.3	36.1	6.00
		133.0	12.8	25.1	37.8	6.00
125	5"	139.7	13.5	27.1	40.3	6.00
		152.4	16.5	32.7	47.1	6.00
		159.0	17.3	34.9	49.2	6.00
150	6"	165.1	17.9	37.1	52.0	6.00
		168.3	18.3	38.2	53.0	6.00
		177.8	21.4	43.6	58.1	6.00
		193.7	25.2	51.5	68.0	6.00
200	8"	219.1	31.2	65.0	83.3	6.00
		244.5	37.2	79.5	98.6	6.00
		267.0	40.8	91.6	112.7	6.00
250	10"	273.0	41.6	94.9	117.7	6.00
300	12"	323.9	55.6	131.0	156.6	6.00

STAINLESS STEEL PIPE ACC. TO DIN EN ISO 1127

DN	Size	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Pipe weight water filled + insulated 1) [kg/m]	Support widths [m]
10		17.2	0.6	0.8	1.8	1.3
15		21.3	1.0	1.2	2.3	1.5
20		26.9	1.3	1.7	2.9	2.0
25		33.7	1.6	2.3	4.3	2.3
32		42.4	2.0	3.2	5.2	2.8
40		48.3	2.3	3.9	6.8	3.0
50		60.3	2.9	5.4	9.5	3.5
65		76.1	3.7	7.8	13.5	4.3
80		88.9	4.4	10.0	18.2	4.8
100		114.3	7.3	16.6	28.3	5.0
125		139.7	8.9	23.1	36.4	5.0
150		168.3	13.2	34.1	48.9	5.0
200		219.1	17.3	52.8	71.2	5.0
250		273.0	21.6	80.1	100.9	5.0
300		323.9	25.7	108.1	132.0	5.0
400		406.4	32.3	162.0	190.6	5.0
500		508.0	40.4	243.1	279.8	5.0

1) Heat insulation: density 120 kg/m³ + sheet metal jacket: density 7865 kg/m³
2) Heat insulation: density 120 kg/m³
The corresponding pipe manufacturer's data are to be considered.

THREADED PIPE ACC. TO DIN 2440 / DIN EN 10255

DN	Size	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Pipe weight water filled + insulated 1) [kg/m]	Support widths [m]
8	1/4"	13.5	0.7	0.7	1.6	2.00
10	3/8"	17.2	0.9	1.0	2.0	2.25
15	1/2"	21.3	1.2	1.4	2.5	2.75
20	3/4"	26.9	1.6	2.0	3.2	3.00
25	1"	33.7	2.4	3.0	5.1	3.50
32	1 1/4"	42.4	3.1	4.2	6.2	3.75
40	1 1/2"	48.3	3.6	5.0	8.0	4.25
50	2"	60.3	5.1	7.3	11.4	4.75
65	2 1/2"	76.1	6.5	10.2	15.9	5.50
80	3"	88.9	8.5	13.6	21.8	6.00
100	4"	114.3	12.1	20.8	32.5	6.00
125	5"	139.7	16.2	29.5	42.7	6.00
150	6"	165.1	19.2	38.2	53.1	6.00

COPPER PIPE ACC. TO DIN EN 1057

DN	Size	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Pipe weight water filled + insulated 2) [kg/m]	Support widths [m]
8	10 x 1	10	0.3	0.3	0.4	1.00
10	12 x 1	12	0.3	0.4	0.5	1.25
12	15 x 1	15	0.4	0.5	0.8	1.25
15	18 x 1	18	0.5	0.7	1.0	1.50
20	22 x 1	22	0.6	0.9	1.3	2.00
25	28 x 1.5	28	1.1	1.6	2.4	2.25
32	35 x 1.5	35	1.4	2.2	3.1	2.75
40	42 x 1.5	42	1.7	2.9	4.4	3.00
50	54 x 2	54	2.9	4.9	7.3	3.50
	64 x 2	64	3.5	6.3	9.8	4.00
65	76.1 x 2	76.1	4.1	8.2	14.0	4.25
80	88.9 x 2	88.9	4.9	10.5	16.4	4.75
100	108 x 2.5	108	7.4	15.7	27.5	5.00

STAINLESS STEEL PRESSURE SYSTEM

DN	Size	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Pipe weight water filled + insulated 2) [kg/m]	Support widths [m]
12	15 x 1	15	0.3	0.5	0.8	1.50
15	18 x 1	18	0.4	0.6	1.0	1.50
20	22 x 1.2	22	0.6	0.9	1.3	2.50
25	28 x 1.2	28	0.8	1.3	2.4	2.50
32	35 x 1.5	35	1.2	2.0	3.1	3.50
40	42 x 1.5	42	1.5	2.7	4.4	3.50
50	54 x 1.5	54	2.0	4.0	7.3	3.50
65	76.1 x 2	76.1	3.6	7.6	14.0	5.00
80	88.9 x 2	88.9	4.2	9.8	16.4	5.00
100	108 x 2	108	5.1	13.5	27.5	5.00

METAL COMPOSITE PIPE

DN	Size	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Pipe weight water filled + insulated 2) [kg/m]	Support widths [m]
10	14 x 2	14	0.1	0.2	0.4	1.0
12	16 x 2.25	16	0.1	0.2	0.5	1.0
15	20 x 2.5	20	0.2	0.4	0.7	1.0
20	26 x 3	26	0.3	0.6	0.9	1.5
25	32 x 3	32	0.4	0.9	1.2	2.0
32	40 x 3.5	40	0.6	1.5	2.1	2.0
40	50 x 4	50	0.9	2.3	3.2	2.5
50	63 x 4.5	63	1.3	3.6	5.2	2.5

DRAIN PIPE, CAST IRON, SML, DIN EN 877

DN	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Support widths [m]
40	48	3.1	4.5	1)
50	58	4.3	6.4	1)
70	78	5.9	9.9	1)
80	83	6.1	10.6	1)
100	110	8.4	17.7	1)
125	135	11.8	24.5	1)
150	160	14.1	32.3	1)
200	210	23.1	54.6	1)
250	274	33.3	87.7	1)
300	326	43.2	120.8	1)
400	429	60.0	193.3	1)
500	532	82.6	290.1	1)

DRAIN PIPE, GA, DIN 19500

DN [mm]	Pipe outer-Ø [mm]	Wall thickness [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Support widths [m]
50	60	3.5	5.19	7.39	1)
70	80	3.5	7.02	11.21	1)
100	112	4.0	11.33	19.83	1)
125	137	4.0	13.96	27.03	1)
150	162	5.0	20.59	38.74	1)
200	212	6.0	32.42	63.84	1)

DRAIN PIPE, PVC-U, DIN 8062

DN	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Support widhts 20° [m]	40° [m]
40	50	0.8	1.3	0.8	0.6
50	63	1.3	2.0	1.1	0.7
65	75	1.8	3.9	1.3	0.8
80	90	2.6	3.9	1.3	0.8
100	110	3.9	8.0	1.6	1.0
125	125	5.0	12.4	1.8	1.1
150	160	8.2	18.0	2.2	1.2

LORO-X STEEL DRAIN PIPE

DN	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Support widths [m]
40	42	1.5	2.7	1)
50	53	2.2	4.2	1)
70	73	3.3	7.1	1)
80	89	4.1	9.9	1)
100	102	5.8	13.3	1)
125	133	9.6	22.5	1)
150	159	11.5	30.1	1)
200	219	21.5	57.2	1)
250	273	22.5	78.5	1)
300	324	25.0	104.4	1)

DRAIN PIPE, PE, DIN 19535

DN	Pipe outer-Ø [mm]	Pipe weight empty [kg/m]	Pipe weight water filled [kg/m]	Support widths [m]
25	32	0.3	0.8	0.5
32	40	0.3	1.3	0.5
40	50	0.4	2.0	0.8
50	56	0.5	2.5	0.8
57	63	0.6	3.1	0.8
70	75	0.7	4.4	0.8
80	90	1.0	6.4	0.9
100	110	1.4	9.5	1.1
125	125	1.8	12.3	1.3
125	140	2.3	15.4	1.4
150	160	3.0	20.1	1.6
200	200	3.8	31.5	2.0
250	250	6.0	49.2	2.0

Note:
The values for the max. support widths are based on the permissible deflection under load of the pipes and the corresponding recommendations from the pipe manufacturer. The permissible loads of the pipe fasteners and mountings are not taken into consideration.

1) approx. 1.50 m – 2.00 m.
According to the manufacturer's data, each pipe length should be supported in at least two places.

The corresponding data from the pipe manufacturer are to be taken into consideration.

Hinged pipe clamp FGRS Plus

OVERVIEW

FGRS Plus

FGRS Plus
M8/M10

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut (FGRS Plus)	Resistance welded, M 8, SW 13
Connecting nut (FGRS Plus M 8/M 10)	Resistance welded, M 8/M 10, SW 13
Locking screw	Flat head screw with combination recessed head
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Sound insulation	According to DIN 4109
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore A
Fire behavior	DIN 4102: class B2

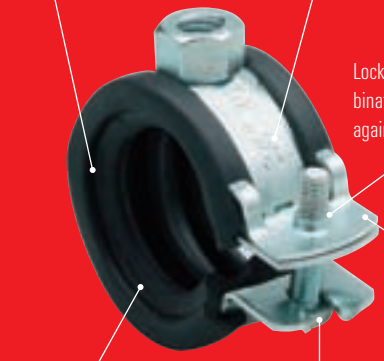
DESCRIPTION

- Hinged pipe clamp with patented rapid locking and readjusting mechanism.

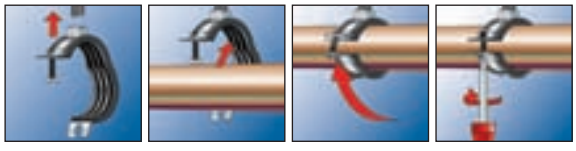
Advantages / Benefits

- Compact design for close installation and easy pipe insulation.
- Time and energy saving insertion of the pipe in overhead installation.
- Quick locking for fast installation with one hand.

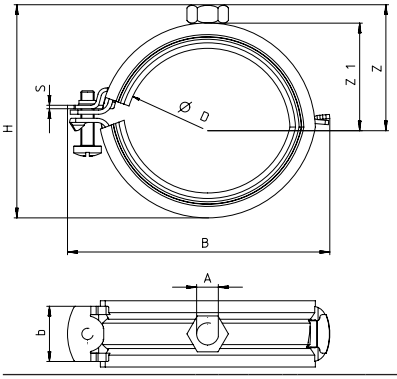
ADVANTAGES AT A GLANCE



INSTALLATION

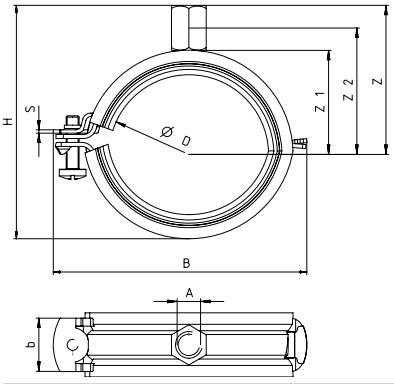


TECHNICAL DATA



FGRS Plus

Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension) $N_{recom.}$	Size	Clamping range D	Locking screw	Thread A	Connecting nut height	Width x thickness clamp band	Width B	Height H	Height Z	Height Z1
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FGRS Plus 12 - 15	**079400**	100	0.65	1/4"	12 - 15	M 5 x 25	M 8	6.8	20 x 1.25	48	35	21	14
FGRS Plus 15 - 19	**079401**	100	0.65	3/8"	15 - 19	M 5 x 25	M 8	6.8	20 x 1.25	52	40	24	17
FGRS Plus 20 - 24	**079402**	100	0.65	1/2"	20 - 24	M 5 x 25	M 8	6.8	20 x 1.25	58	45	26	19
FGRS Plus 25 - 30	**079403**	100	0.65	3/4"	25 - 30	M 5 x 25	M 8	6.8	20 x 1.25	63	49	28	21
FGRS Plus 32 - 37	**079404**	100	0.65	1"	32 - 37	M 5 x 25	M 8	6.8	20 x 1.25	72	57	32	25
FGRS Plus 40 - 45	**079405**	50	0.90	1 1/4"	40 - 45	M 5 x 30	M 8	6.8	20 x 1.5	79	66	37	30
FGRS Plus 48 - 53	**079406**	50	0.90	1 1/2"	48 - 53	M 5 x 30	M 8	6.8	20 x 1.5	88	76	42	35
FGRS Plus 54 - 58	**079407**	50	0.90	–	54 - 58	M 5 x 30	M 8	6.8	20 x 1.5	94	82	45	38
FGRS Plus 59 - 63	**079408**	50	0.90	2"	59 - 63	M 5 x 30	M 8	6.8	20 x 1.5	99	85	46	39



FGRS Plus M8/M10

Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension) $N_{recom.}$	Size	Clamping range D	Locking screw	Thread A	Connecting nut height	Width x thickness clamp band	Width B	Height H	Height Z	Height Z1	Height Z2
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FGRS Plus 12 - 15 M8/M10	**079430**	100	0.65	1/4"	12 - 15	M 5 x 25	M 8 / M 10	17	20 x 1.25	48	46	31	14	24
FGRS Plus 15 - 19 M8/M10	**079431**	100	0.65	3/8"	15 - 19	M 5 x 25	M 8 / M 10	17	20 x 1.25	52	51	34	17	27
FGRS Plus 20 - 24 M8/M10	**079432**	100	0.65	1/2"	20 - 24	M 5 x 25	M 8 / M 10	17	20 x 1.25	58	56	36	19	29
FGRS Plus 25 - 30 M8/M10	**079433**	100	0.65	3/4"	25 - 30	M 5 x 25	M 8 / M 10	17	20 x 1.25	63	60	38	21	31
FGRS Plus 32 - 37 M8/M10	**079434**	100	0.65	1"	32 - 37	M 5 x 25	M 8 / M 10	17	20 x 1.25	72	68	42	25	35
FGRS Plus 40 - 45 M8/M10	**079435**	50	0.90	1 1/4"	40 - 45	M 5 x 30	M 8 / M 10	17	20 x 1.5	79	76	47	30	40
FGRS Plus 48 - 53 M8/M10	**079436**	50	0.90	1 1/2"	48 - 53	M 5 x 30	M 8 / M 10	17	20 x 1.5	88	86	52	35	45
FGRS Plus 54 - 58 M8/M10	**079437**	50	0.90	–	54 - 58	M 5 x 30	M 8 / M 10	17	20 x 1.5	94	92	55	38	48
FGRS Plus 59 - 63 M8/M10	**079438**	50	0.90	2"	59 - 63	M 5 x 30	M 8 / M 10	17	20 x 1.5	99	95	56	39	49

Hinged pipe clamp FGRS

OVERVIEW

FGRS

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut	Resistance welded, M 8, SW 13
Locking screw	Flat head screw with combination recessed head
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Sound insulation	for DIN 4109
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore
Fire behavior	DIN 4102: class B2

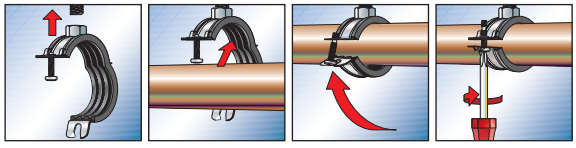
DESCRIPTION

- Hinged pipe clamp for quick connection.

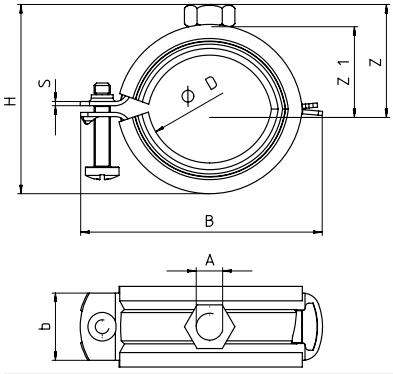
Advantages / Benefits

- Time saving insertion of the pipes in overhead installation.
- Compact construction for simple insulation of the pipes.
- Locking screw with large combination recessed slot secures against loss.

INSTALLATION



TECHNICAL DATA



FGRS

Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension)	Size	Clamping range	Locking screw	Thread	Connecting nut height	Width x thickness clamp band	Width	Height	Heigh	Height
			$N_{recom.}$		D		A			B	H	Z	Z1
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FGRS 12 - 15	**079420**	100	0.65	1/4"	12 - 15	M 5 x 25	M 8	6.8	20 x 1.25	48	35	21	14
FGRS 15 - 19	**079421**	100	0.65	3/8"	15 - 19	M 5 x 25	M 8	6.8	20 x 1.25	52	40	24	17
FGRS 20 - 24	**079422**	100	0.65	1/2"	20 - 24	M 5 x 25	M 8	6.8	20 x 1.25	58	45	26	19
FGRS 25 - 30	**079423**	100	0.65	3/4"	25 - 30	M 5 x 25	M 8	6.8	20 x 1.25	63	49	28	21
FGRS 32 - 37	**079424**	100	0.65	1"	32 - 37	M 5 x 25	M 8	6.8	20 x 1.25	72	57	32	25
FGRS 40 - 45	**079425**	50	0.90	1 1/4"	40 - 45	M 5 x 35	M 8	6.8	20 x 1.5	79	66	37	30
FGRS 48 - 53	**079426**	50	0.90	1 1/2"	48 - 53	M 5 x 35	M 8	6.8	20 x 1.5	88	76	42	35
FGRS 54 - 58	**079427**	50	0.90	-	54 - 58	M 5 x 35	M 8	6.8	20 x 1.5	94	82	45	38
FGRS 59 - 63	**079428**	50	0.90	2"	59 - 63	M 5 x 35	M 8	6.8	20 x 1.5	99	85	46	39

Plastic hinged pipe clamp FKS Plus

OVERVIEW

FKS Plus

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut	Resistance welded, M 8, SW 13
Locking screw	Flat head screw with combination recessed head
Sound insulation insert	Material: NR/SBR/EPDM
Sound insulation	for DIN 4109
Temperature range	-50° to +110°C
Hardness	60 ± 5° Shore
Fire behavior	DIN 4102: class B2

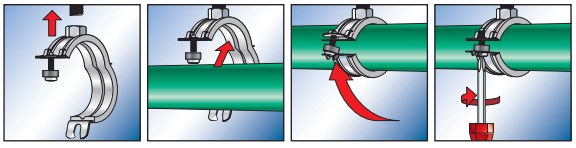
DESCRIPTION

- Hinged pipe clamp.
- For plastic and metal composite pipes.

Advantages / Benefits

- Removable spacer sleeve for changeover from sliding to clamping function of the clamp.
- Quick connecting for a fast installation with one hand.
- The pipe can be preinstalled and adjusted simply.
- Time saving insertion of the pipes in overhead installation.
- Compact construction for simple insulation of the pipes.

INSTALLATION



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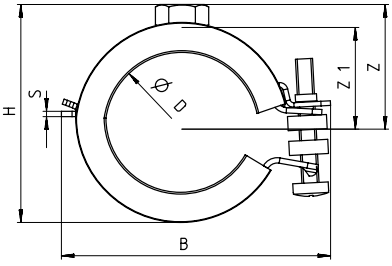
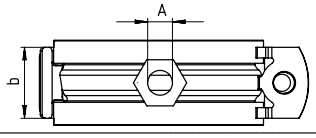


FKS Plus



Type	Art. No.	Qty. per box pcs.	Max. recom. static load (centr. tension) $N_{recom.}$ [kN]	Size [inch]	Clamping range D [mm]	Locking screw	Thread A	Connecting nut height [mm]	Width x thickness clamp band b x s [mm]	Width B [mm]	Height H [mm]	Height Z [mm]	Height Z1 [mm]
FKS Plus 15 - 19	**079470**	100	0.65	3/8"	15 - 19	M 5 x 25	M 8	6.8	20 x 1.25	52	40	24	17
FKS Plus 20 - 24	**079471**	100	0.65	1/2"	20 - 24	M 5 x 25	M 8	6.8	20 x 1.25	58	45	26	19
FKS Plus 25 - 30	**079472**	100	0.65	3/4"	25 - 30	M 5 x 25	M 8	6.8	20 x 1.25	63	49	28	21
FKS Plus 32 - 37	**079473**	100	0.65	1"	32 - 37	M 5 x 25	M 8	6.8	20 x 1.25	72	57	32	25
FKS Plus 40 - 45	**079474**	50	0.90	1 1/4"	40 - 45	M 5 x 30	M 8	6.8	20 x 1.5	79	66	37	30
FKS Plus 48 - 53	**079475**	50	0.90	1 1/2"	48 - 53	M 5 x 30	M 8	6.8	20 x 1.5	88	76	42	35
FKS Plus 54 - 58	**079476**	50	0.90	-	54 - 58	M 5 x 30	M 8	6.8	20 x 1.5	94	82	45	38
FKS Plus 59 - 63	**079477**	50	0.90	2"	59 - 63	M 5 x 30	M 8	6.8	20 x 1.5	99	85	46	39

Pipe clamp FRS Plus

OVERVIEW

FRS Plus

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut	Resistance welded, M 8/M 10, SW 13
Locking screw	Flat head screw with combination recessed head
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Sound insulation	for DIN 4109
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore
Fire behavior	DIN 4102: class B2

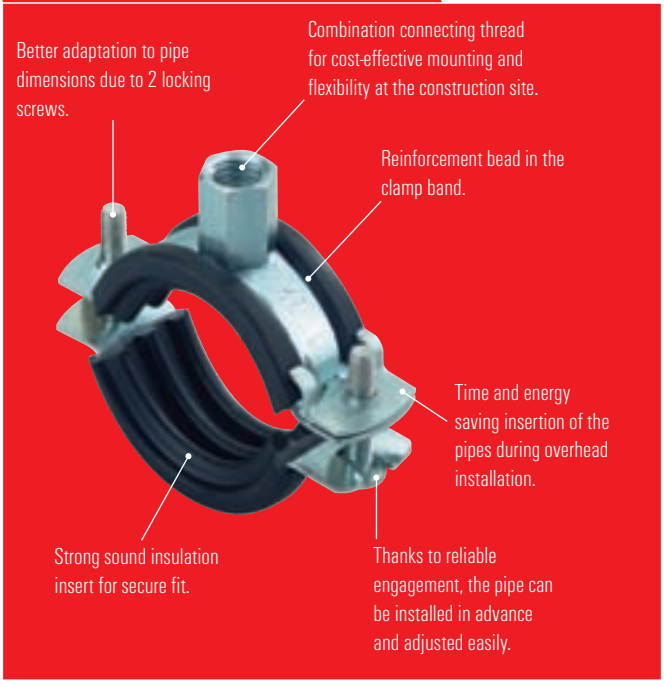
DESCRIPTION

- Two-screw pipe clamp with patented rapid locking and readjusting mechanism.
- Connecting nut with combination thread M8 / M10.

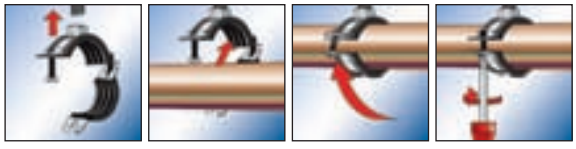
Advantages / Benefits

- Quick-locking permits simple and fast installation.
- Large opening angle for easy insertion of the pipes.
- Because of reliable click mechanism, the pipe can be preinstalled and adjusted easily.
- Time and energy saving insertion of the pipes for overhead installation.

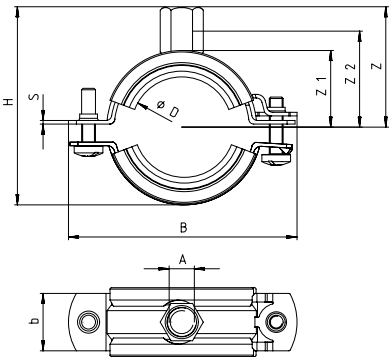
ADVANTAGES AT A GLANCE



INSTALLATION



TECHNICAL DATA



FRS Plus

Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension) $N_{recom.}$	Size	Clamping range D	Locking screw	Thread A	Connecting nut height	Width x thickness clamp band	Width B	Height H	Height Z	Height Z1	Height Z2
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FRS Plus 12 - 15	**079440**	100	0.8	1/4"	12 - 15	M 5 x 20	M 8 / M 10	17	20 x 1.25	58	48	32	15	25
FRS Plus 15 - 19	**079441**	100	0.8	3/8"	15 - 19	M 5 x 25	M 8 / M 10	17	20 x 1.25	61	51	34	17	27
FRS Plus 20 - 24	**079442**	100	0.8	1/2"	20 - 24	M 5 x 25	M 8 / M 10	17	20 x 1.25	66	56	36	19	29
FRS Plus 25 - 30	**079443**	100	0.8	3/4"	25 - 30	M 5 x 25	M 8 / M 10	17	20 x 1.25	72	62	39	22	32
FRS Plus 32 - 37	**079444**	100	0.8	1"	32 - 37	M 5 x 25	M 8 / M 10	17	20 x 1.25	79	67	42	25	35
FRS Plus 40 - 45	**079445**	50	0.8	1 1/4"	40 - 45	M 5 x 30	M 8 / M 10	17	20 x 1.5	86	78	48	31	41
FRS Plus 48 - 53	**079446**	50	0.8	1 1/2"	48 - 53	M 5 x 30	M 8 / M 10	17	20 x 1.5	94	83	50	33	43
FRS Plus 54 - 58	**079447**	50	0.8	-	54 - 58	M 5 x 30	M 8 / M 10	17	20 x 1.5	101	89	53	36	46
FRS Plus 59 - 63	**079448**	50	1.5	2"	59 - 63	M 6 x 30	M 8 / M 10	17	25 x 2.0	114	96	57	40	50
FRS Plus 62 - 64	**079449**	25	1.5	-	62 - 64	M 6 x 30	M 8 / M 10	17	25 x 2.0	114	96	57	40	50
FRS Plus 68 - 73	**079450**	25	1.5	-	68 - 73	M 6 x 30	M 8 / M 10	17	25 x 2.0	124	108	63	46	56
FRS Plus 74 - 78	**079451**	25	1.5	2 1/2"	74 - 78	M 6 x 30	M 8 / M 10	17	25 x 2.0	129	113	65	48	58
FRS Plus 80 - 86	**079452**	25	1.5	-	80 - 86	M 6 x 30	M 8 / M 10	17	25 x 2.0	133	115	66	49	59
FRS Plus 89 - 92	**079453**	25	1.5	3"	89 - 92	M 6 x 30	M 8 / M 10	17	25 x 2.0	142	125	71	54	64
FRS Plus 95 - 103	**079454**	25	1.5	-	95 - 103	M 6 x 30	M 8 / M 10	17	25 x 2.0	156	140	79	62	72
FRS Plus 108 - 116	**079455**	20	1.5	4"	108 - 116	M 6 x 35	M 8 / M 10	17	25 x 2.0	169	154	86	69	79

Pipe clamp FRS

OVERVIEW

FRS

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut (up to FRS 60 - 64)	Resistance welded, M 8, SW 13
Connecting nut (up to FRS 108 - 116)	Resistance welded, M 10, SW 17
Connecting nut (from FRS 59 - 63 M 8/M 10)	Resistance welded, M 8/M 10, SW 13
Connecting nut (from FRS 121 - 127 M 8/M 10)	Resistance welded, M 8/M 10, SW 17
Locking screw	Flat head screw with combination recessed head
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Sound insulation	for DIN 4109
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore
Fire behavior	DIN 4102: class B2

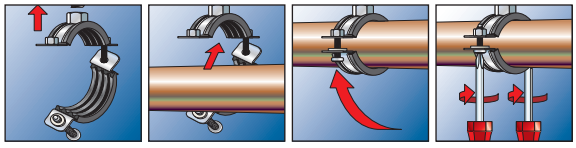
DESCRIPTION

- Two-screw pipe clamp with rubber inlay.
- Connecting nut with combination thread M8 / M10 (for FRS M8 / M10 only).

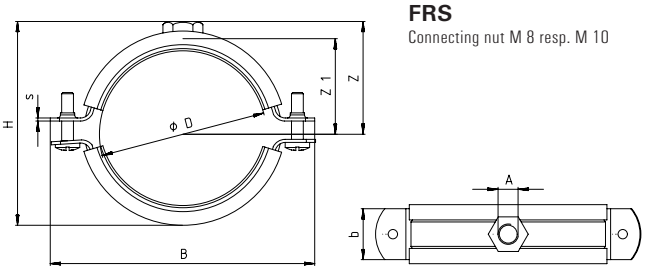
Advantages / Benefits

- Simple installation due to large opening angle.
- Locking screw secured against loss.
- Combination connecting thread for cost-effective warehousing and flexibility at the construction site (for FRS M8/ M10 only).

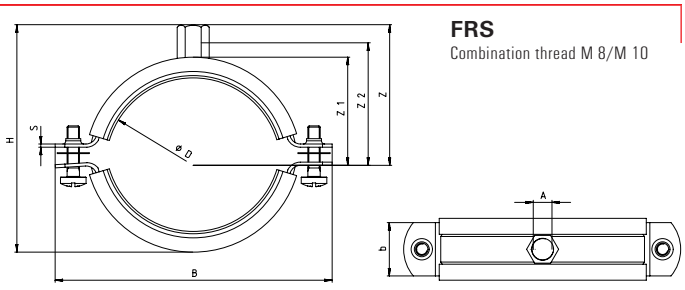
INSTALLATION



TECHNICAL DATA



FRS
Connecting nut M 8 resp. M 10



FRS
Combination thread M 8/M 10

Type	Art. No.	Qty. per box pcs.	Max. recom. static load (centr. tension) $N_{recom.}$ [kN]	Size [inch]	Clamping range D [mm]	Locking screw	Thread A	Connecting nut height [mm]	Width x thickness clamp band b x s [mm]	Width B [mm]	Height H [mm]	Height Z [mm]	Height Z1 [mm]	Height Z2 [mm]
Connecting nut M 8 resp. M 10														
FRS 12 - 15	**077592**	100	1.0	1/4"	12 - 15	M 5 x 20	M 8	6.8	20 x 1.25	59	35	21	14	-
FRS 15 - 19	**077682**	100	1.0	3/8"	15 - 19	M 5 x 20	M 8	6.8	20 x 1.25	62	38	23	16	-
FRS 20 - 24	**077593**	100	1.0	1/2"	20 - 24	M 5 x 20	M 8	6.8	20 x 1.25	68	44	26	19	-
FRS 25 - 30	**077594**	100	1.0	3/4"	25 - 30	M 5 x 20	M 8	6.8	20 x 1.25	75	50	29	22	-
FRS 32 - 37	**077596**	100	1.0	1"	32 - 37	M 5 x 20	M 8	6.8	20 x 1.25	80	56	32	25	-
FRS 40 - 45	**077597**	50	1.0	1 1/4"	40 - 45	M 5 x 20	M 8	6.8	20 x 1.25	90	64	36	29	-
FRS 48 - 53	**077598**	50	1.0	1 1/2"	48 - 53	M 5 x 20	M 8	6.8	20 x 1.25	97	74	41	34	-
FRS 54 - 59	**077599**	50	1.0	-	54 - 59	M 5 x 20	M 8	6.8	20 x 1.25	104	83	45	38	-
FRS 60 - 64	**077600**	50	1.0	2"	60 - 64	M 5 x 20	M 8	6.8	20 x 1.25	110	89	48	41	-
FRS 72 - 78	**077601**	25	1.3	2 1/2"	72 - 78	M 6 x 30	M 10	8	25 x 1.5	130	103	56	48	-
FRS 87 - 92	**077602**	25	1.3	3"	87 - 92	M 6 x 30	M 10	8	25 x 1.5	144	112	60	52	-
FRS 102 - 116	**077603**	20	2.0	4"	102 - 116	M 6 x 30	M 10	8	25 x 2.0	172	142	75	67	-
Combination thread M 8/M 10														
FRS 60 - 64 M8/M10	**091488**	50	1.0	2"	60 - 64	M 5 x 20	M 8 / M 10	17	20 x 1.25	110	100	58	41	51
FRS 72 - 78 M8/M10	**091489**	25	1.3	2 1/2"	72 - 78	M 6 x 25	M 8 / M 10	17	25 x 1.5	130	112	65	48	58
FRS 87 - 92 M8/M10	**091505**	25	1.3	3"	87 - 92	M 6 x 25	M 8 / M 10	17	25 x 1.5	144	121	69	52	62
FRS 102 - 116 M8/M10	**091506**	20	2.0	4"	102 - 116	M 6 x 30	M 8 / M 10	17	25 x 2.0	172	151	84	67	77
FRS 121 - 127 M8/M10	**079456**	10	2.0	-	121 - 127	M 8 x 30	M 8 / M 10	21	25 x 2.5	192	175	98	77	87
FRS 133 - 141 M8/M10	**079457**	10	2.0	5"	133 - 141	M 8 x 35	M 8 / M 10	21	25 x 2.5	198	180	101	80	90
FRS 159 - 162 M8/M10	**079458**	8	2.0	-	159 - 162	M 8 x 30	M 8 / M 10	21	25 x 2.5	218	206	114	93	103
FRS 165 - 168 M8/M10	**079459**	8	2.0	6"	165 - 168	M 8 x 35	M 8 / M 10	21	25 x 2.5	226	212	117	96	106

Silicone pipe clamp FRSH

OVERVIEW

FRSH

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut (up to FRSH 59 - 63)	Resistance welded, M 8, SW 13
Locking screw	Flat head screw with combination recessed head
Sound insulation insert	Material: silicone
Sound insulation	for DIN 4109
Temperature range	-50° to +220°C
Hardness	60 ± 5° Shore A
Fire behavior	DIN 4102: class B2

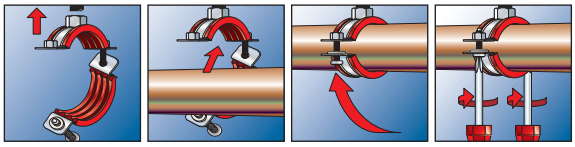
DESCRIPTION

- Two-screw pipe clamp with high temperature resistant sound insulation insert.

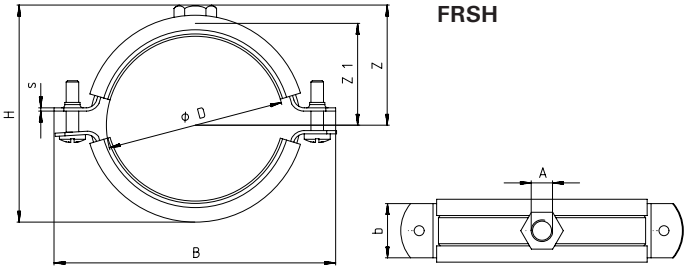
Advantages / Benefits

- Use for steam up to max. +220 °C.
- Simple installation due to large opening angle.
- Locking screw secured against loss.
- Reinforcement bead in clamp band.

INSTALLATION



TECHNICAL DATA



Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension)	Size	Clamping range	Locking screw	Thread	Connecting nut height	Width x thickness clamp band	Width	Height	Height	Height
			$N_{recom.}$		D		A		b x s	B	H	Z	Z1
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FRSH 15 - 19	**063490**	100	1.00	3/8"	15 - 19	M 5 x 20	M 8	6.8	20 x 1.25	62	38	23	16
FRSH 20 - 24	**063492**	100	1.00	1/2"	20 - 24	M 5 x 20	M 8	6.8	20 x 1.25	68	44	26	19
FRSH 25 - 30	**063494**	100	1.00	3/4"	25 - 30	M 5 x 20	M 8	6.8	20 x 1.25	75	50	29	22
FRSH 32 - 37	**063495**	100	1.00	1"	32 - 37	M 5 x 20	M 8	6.8	20 x 1.25	80	56	32	25
FRSH 40 - 45	**063498**	50	1.00	1 1/4"	40 - 45	M 5 x 20	M 8	6.8	20 x 1.25	90	64	36	29
FRSH 48 - 53	**063499**	50	1.00	1 1/2"	48 - 53	M 5 x 20	M 8	6.8	20 x 1.25	97	74	41	34
FRSH 54 - 59	**063500**	50	1.00	-	54 - 59	M 5 x 20	M 8	6.8	20 x 1.25	104	83	45	38
FRSH 60 - 64	**063502**	50	1.00	2"	60 - 64	M 5 x 20	M 8	6.8	20 x 1.25	110	89	48	41
FRSH 68 - 73	**063504**	25	1.30	-	68 - 73	M 6 x 25	M 10	8.4	25 x 1.5	124	98	51	43
FRSH 72 - 78	**063505**	25	1.30	2 1/2"	72 - 78	M 6 x 30	M 10	8.4	25 x 1.5	129	103	56	48
FRSH 80 - 86	**063511**	25	1.30	-	80 - 86	M 6 x 30	M 10	8.4	25 x 1.5	133	110	58	50
FRSH 89 - 92	**063513**	25	1.30	3"	89 - 92	M 6 x 25	M 10	8.4	25 x 1.5	142	112	60	52
FRSH 95 - 103	**063518**	25	1.30	-	95 - 103	M 6 x 25	M 10	8.4	25 x 1.5	156	120	68	60
FRSH 102 - 116	**063520**	20	2.00	4"	102 - 116	M 6 x 30	M 10	8.4	25 x 2.0	172	142	75	67
FRSH 121 - 127	**063525**	10	2.00	-	121 - 127	M 8 x 30	M 8 / M 10	21	25 x 2.5	192	175	85	77
FRSH 133 - 141	**063537**	10	2.00	5"	133 - 141	M 8 x 35	M 8 / M 10	21	25 x 2.5	198	180	88	80
FRSH 159 - 162	**091507**	8	2.00	-	159 - 162	M 8 x 30	M 8 / M 10	21	25 x 2.5	218	206	101	93
FRSH 165 - 168	**091508**	8	2.00	6"	165 - 168	M 8 x 30	M 8 / M 10	21	25 x 2.5	226	212	104	96

Pipe clamp FRSN

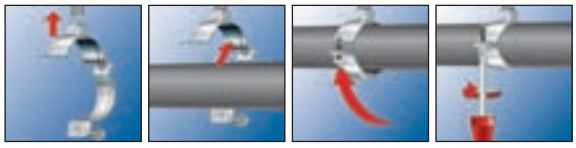
OVERVIEW

FRSN

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut	Resistance welded, M 8/M 10, SW 13, M 10/M 12, SW 17
Locking screw	Flat head screw with combination recessed head

INSTALLATION



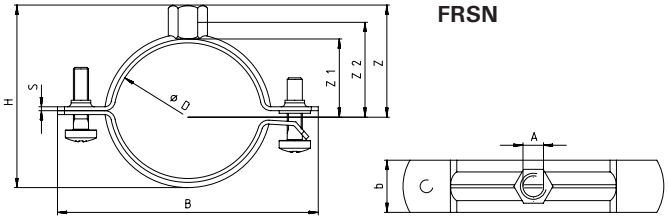
DESCRIPTION

- Two-screw pipe clamp without rubber insert.
- Connecting nut with combination thread M8/M10 or M10/M12.

Advantages / Benefits

- Simple installation due to large opening angle.
- Compact construction for simple and clean insulation of the pipes.
- Locking screw secured against loss.

TECHNICAL DATA



FRSN

Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension)	Size	Clamping range	Locking screw	Thread	Connecting nut height	Width x thickness clamp band	Width	Height	Height	Height	Height
			$N_{recom.}$		D		A		b x s	B	H	Z	Z1	Z2
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FRSN 15 - 19 M8/M10	**049459**	100	1.50	3/8"	15 - 19	M 6 x 16	M 8 / M 10	15	20 x 1.5	56	30	23	6	15
FRSN 21 - 23 M8/M10	**049789**	100	1.50	1/2"	21 - 23	M 6 x 16	M 8 / M 10	15	20 x 1.5	60	36	25	9	17
FRSN 25 - 28 M8/M10	**049790**	100	1.50	3/4"	25 - 28	M 6 x 16	M 8 / M 10	15	20 x 1.5	67	40	27	11	19
FRSN 32 - 36 M8/M10	**049793**	100	1.50	1"	32 - 36	M 6 x 16	M 8 / M 10	15	20 x 1.5	73	47	29	15	22
FRSN 38 - 43 M8/M10	**049794**	50	1.50	1 1/4"	38 - 43	M 6 x 16	M 8 / M 10	15	20 x 1.5	79	53	34	18	27
FRSN 44 - 49 M8/M10	**049902**	50	1.50	1 1/2"	44 - 49	M 6 x 16	M 8 / M 10	15	20 x 1.5	88	59	36	21	29
FRSN 57 - 61 M8/M10	**049944**	50	1.50	2"	57 - 61	M 6 x 16	M 8 / M 10	15	20 x 1.5	98	72	43	27	35
FRSN 63 - 70 M8/M10	**049945**	50	1.50	-	63 - 70	M 6 x 16	M 8 / M 10	15	20 x 1.5	105	78	46	30	39
FRSN 70 - 77 M8/M10	**049947**	25	1.50	2 1/2"	70 - 77	M 6 x 16	M 8 / M 10	15	20 x 1.5	112	85	49	34	42
FRSN 80 - 83 M8/M10	**049948**	25	1.50	-	80 - 83	M 6 x 16	M 8 / M 10	15	20 x 1.5	115	95	53	39	45
FRSN 83 - 91 M8/M10	**049979**	25	2.50	3"	83 - 91	M6 x 20	M 8 / M 10	15	20 x 2.0	127	98	55	40	48
FRSN 93 - 99 M8/M10	**050005**	25	2.50	-	93 - 99	M6 x 20	M 8 / M 10	15	20 x 2.0	136	108	59	45	52
FRSN 100 - 106 M8/M10	**050006**	25	2.50	-	100 - 106	M6 x 20	M 8 / M 10	15	20 x 2.0	144	115	64	49	56
FRSN 108 - 114 M8/M10	**050008**	25	2.50	4"	108 - 114	M6 x 20	M 8 / M 10	15	20 x 2.0	156	123	67	53	60
FRSN 118 - 122 M8/M10	**500744**	25	2.50	-	118 - 122	M6 x 20	M 8 / M 10	15	20 x 2.0	160	133	75	58	68
FRSN 123 - 128 M8/M10	**050009**	25	2.50	-	123 - 128	M 6 x 30	M 8 / M 10	15	25 x 2.5	165	138	79	60	72
FRSN 131 - 136 M8/M10	**050010**	25	2.50	-	131 - 136	M 6 x 30	M 8 / M 10	15	25 x 2.5	175	146	82	64	75
FRSN 137 - 146 M8/M10	**050023**	25	2.50	5"	137 - 146	M 6 x 30	M 8 / M 10	15	25 x 2.5	180	152	82	67	75
FRSN 159 - 165 M10/M12	**500747**	25	2.50	6"	159 - 165	M 6 x 30	M 10 / M 12	21	25 x 2.5	203	181	102	82	91
FRSN 166 - 175 M10/M12	**500748**	20	2.50	-	166 - 175	M 8 x 30	M 10 / M 12	21	25 x 2.5	211	181	97	82	89
FRSN 176 - 179 M10/M12	**500749**	15	2.50	-	176 - 179	M 8 x 30	M 10 / M 12	21	25 x 2.5	221	191	102	87	94
FRSN 185 - 191 M10/M12	**500750**	15	2.50	-	185 - 191	M 8 x 30	M 10 / M 12	21	25 x 2.5	233	200	106	91	99
FRSN 200 - 206 M10/M12	**500751**	10	2.50	-	200 - 206	M 8 x 30	M 10 / M 12	21	25 x 2.5	248	215	114	99	106
FRSN 210 - 219 M10/M12	**500752**	10	2.50	8"	210 - 219	M 8 x 40	M 10 / M 12	21	25 x 2.5	261	225	119	104	111

Pipe clamp FRS triple / FRSN triple

OVERVIEW

FRS triple

FRSN triple

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 3 µm
Connecting nut	Resistance welded, M 8 / M 10 / 1/2"
Locking screw	Flat head screw with combination recessed head
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Sound insulation	for DIN 4109
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore A
Fire behavior	DIN 4102: class B2

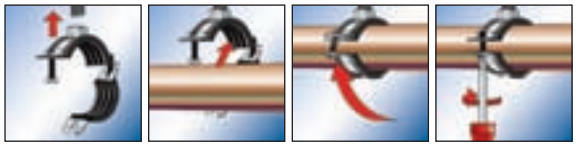
DESCRIPTION

- Two-piece pipe clamp with sound insulation insert.
- Triple connecting thread M8, M10, 1/2".

Advantages / Benefits

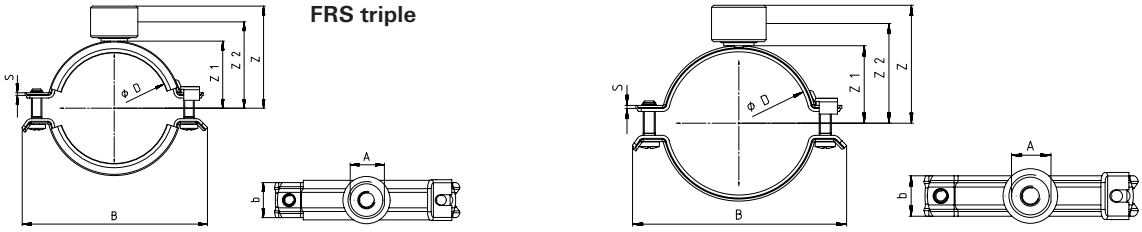
- Simple pipe installation due to large opening angle.
- Large usage range due to triple combination connecting thread.

INSTALLATION



TECHNICAL DATA

FRS triple



Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension)	Size	Clamping range	Thread	Connecting nut height	Width x thickness clamp band	Width	Height
			$N_{recom.}$		D	A		b x s	B	Z
		pcs.	[kN]	[inch]	[mm]		[mm]	[mm]	[mm]	[mm]
Pipe clamp FRS triple										
FRS triple 15 - 19	**500698**	100	1.00	3/8"	15 - 19	M 8 / M 10 / 1/2"	18	20 x 1.5	63	35
FRS triple 21 - 23	**500699**	100	1.00	1/2"	21 - 23	M 8 / M 10 / 1/2"	18	20 x 1.5	68	38
FRS triple 26 - 28	**500700**	100	1.00	3/4"	26 - 28	M 8 / M 10 / 1/2"	18	20 x 1.5	74	42
FRS triple 32 - 35	**500701**	100	1.00	1"	32 - 35	M 8 / M 10 / 1/2"	18	20 x 1.5	82	44
FRS triple 40 - 43	**500702**	50	1.00	1 1/4"	40 - 43	M 8 / M 10 / 1/2"	18	20 x 1.5	88	46
FRS triple 48 - 56	**500703**	50	1.00	1 1/2"	48 - 56	M 8 / M 10 / 1/2"	18	20 x 1.5	98	50
FRS triple 57 - 63	**500704**	50	1.00	2"	57 - 63	M 8 / M 10 / 1/2"	18	20 x 1.5	108	53
FRS triple 63 - 70	**500705**	25	1.00	-	63 - 70	M 8 / M 10 / 1/2"	18	20 x 1.5	116	57
FRS triple 74 - 80	**500706**	25	1.00	2 1/2"	74 - 80	M 8 / M 10 / 1/2"	18	20 x 1.5	130	63
FRS triple 83 - 91	**500707**	25	1.00	3"	83 - 91	M 8 / M 10 / 1/2"	18	20 x 1.5	137	68
FRS triple 100 - 105	**500708**	10	1.50	-	100 - 105	M 8 / M 10 / 1/2"	18	23 x 2.0	158	75
FRS triple 108 - 114	**500709**	10	1.50	4"	108 - 114	M 8 / M 10 / 1/2"	18	23 x 2.0	167	82
FRS triple 115 - 125	**500710**	10	1.50	-	115 - 125	M 8 / M 10 / 1/2"	18	23 x 2.0	182	85
FRS triple 127 - 135	**500711**	10	1.50	-	127 - 135	M 8 / M 10 / 1/2"	18	23 x 2.0	190	92
FRS triple 135 - 140	**500712**	10	1.50	5"	135 - 140	M 8 / M 10 / 1/2"	18	23 x 2.0	195	95
FRS triple 159 - 169	**500713**	10	1.50	6"	159 - 169	M 8 / M 10 / 1/2"	18	23 x 2.0	220	103
Pipe clamp FRSN triple										
FRSN triple 15 - 19	**500714**	100	1.00	3/8"	15 - 19	M 8 / M 10 / 1/2"	18	20 x 1.5	63	35
FRSN triple 21 - 23	**500715**	100	1.00	1/2"	21 - 23	M 8 / M 10 / 1/2"	18	20 x 1.5	68	38
FRSN triple 26 - 28	**500716**	100	1.00	3/4"	26 - 28	M 8 / M 10 / 1/2"	18	20 x 1.5	74	42
FRSN triple 32 - 35	**500717**	100	1.00	1"	32 - 35	M 8 / M 10 / 1/2"	18	20 x 1.5	82	44
FRSN triple 40 - 43	**500718**	50	1.00	1 1/4"	40 - 43	M 8 / M 10 / 1/2"	18	20 x 1.5	88	46
FRSN triple 48 - 56	**500719**	50	1.00	1 1/2"	48 - 56	M 8 / M 10 / 1/2"	18	20 x 1.5	98	50
FRSN triple 57 - 62	**500720**	50	1.00	2"	57 - 62	M 8 / M 10 / 1/2"	18	20 x 1.5	108	53
FRSN triple 63 - 70	**500721**	50	1.00	-	63 - 70	M 8 / M 10 / 1/2"	18	20 x 1.5	116	57
FRSN triple 74 - 80	**500722**	25	1.00	2 1/2"	74 - 78	M 8 / M 10 / 1/2"	18	20 x 1.5	130	63
FRSN triple 83 - 91	**500723**	25	1.00	3"	83 - 91	M 8 / M 10 / 1/2"	18	20 x 1.5	137	68
FRSN triple 100 - 105	**500724**	10	1.00	-	100 - 105	M 8 / M 10 / 1/2"	18	23 x 2.0	158	75
FRSN triple 108 - 114	**500725**	10	1.50	4"	108 - 114	M 8 / M 10 / 1/2"	18	23 x 2.0	220	82

On request

Heavy duty pipe clamp FRSM M10 / M12 / M16

OVERVIEW

FRSM M10 / M12 / M16

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut	M10/M12 = SW 17, M12/M16 = SW 22, M16 = SW 24
Locking screw	Flat head screw with combination recessed head
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore A
Fire behavior	DIN 4102: class B2

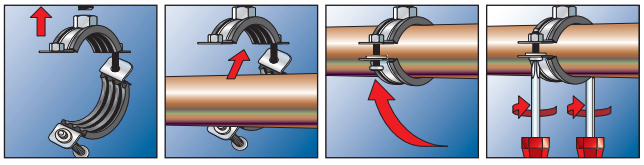
DESCRIPTION

- Massive clamp with sound insulation insert for medium to high load range.
- Connecting nut with combinations thread M10/M12, M12/M16 or M16.

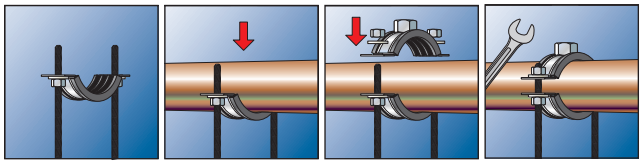
Advantages / Benefits

- Simple installation due to large opening angle.
- Locking screw secured against loss.
- From 124 mm diameter installation with two threaded rods on sides is possible.

INSTALLATION

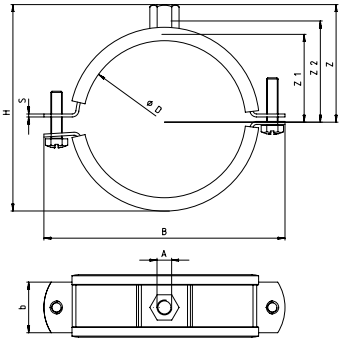


Standard installation



From 124 mm diameter, installation with two rods on side is possible

TECHNICAL DATA



FRSM M10 / M12 / M16

Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension)	Size	Clamping range	Locking screws	Thread	Connecting nut height	Width x thickness clamp band	Width	Height	Height	Height	Height
			$N_{recom.}$	D			A		b x s	B	H	Z	Z1	Z2
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FRSM 1/2" M10/M12	**504589**	50	2.5	1/2"	19 - 23	M6	M10 / M12	20	25 x 2.5	76	47	38	18	26.5
FRSM 3/4" M10/M12	**504590**	50	2.5	3/4"	24 - 29	M6	M10 / M12	20	25 x 2.5	82	53	41	21	29.5
FRSM 1" M10/M12	**504591**	50	2.5	1"	33 - 36	M6	M10 / M12	20	25 x 2.5	89	60	44.5	24.5	33
FRSM 1 1/4" M10/M12	**504592**	20	2.5	1 1/4"	40 - 45	M6	M10 / M12	20	25 x 2.5	98	69	49	29	37.5
FRSM 1 1/2" M10/M12	**093700**	20	2.5	1 1/2"	47 - 52	M6	M10 / M12	20	25 x 2.5	105	76	52.5	32.5	41
FRSM 53 - 58 M10/M12	**093701**	20	2.5	-	53 - 58	M6	M10 / M12	20	25 x 2.5	111	82	55.5	35.5	44
FRSM 2" M10/M12	**093702**	20	2.5	2"	60 - 65	M6	M10 / M12	20	25 x 2.5	118	89	59	39	47.5
FRSM 2 1/2" M10/M12	**093703**	20	3.0	2 1/2"	73 - 78	M8	M10 / M12	20	30 x 3.0	136	105	68.5	48.5	57
FRSM 79- 85 M10/M12	**504593**	20	3.0	-	79 - 85	M8	M10 / M12	20	30 x 3.0	144	112	72	52	60.5
FRSM 3" M10/M12	**093704**	20	3.0	3"	88 - 93	M8	M10 / M12	20	30 x 3.0	152	120	76	56	64.5
FRSM 102 M10/M12	**093705**	20	3.0	-	100 - 106	M8	M10 / M12	20	30 x 3.0	166	133	82.5	62.5	71
FRSM 4" M10/M12	**093707**	20	3.0	4"	108 - 116	M8	M10 / M12	20	30 x 3.0	175	143	87.5	67.5	76
FRSM 124 - 129 M10/M12	**093709**	20	3.0	-	124 - 129	M8*	M10 / M12	20	30 x 3.0	194	154	94	74	82.5
FRSM 133 M10/M12	**093710**	20	3.0	-	131 - 137	M8*	M10 / M12	20	30 x 3.0	202	162	98	78	86.5
FRSM 5" M10/M12	**093711**	20	3.0	5"	138 - 145	M8*	M10 / M12	20	30 x 3.0	210	170	102	82	90.5
FRSM 160 M10/M12	**093712**	20	3.0	-	156 - 162	M8*	M10 / M12	20	30 x 3.0	227	187	111	90.5	99
FRSM 6" M10/M12	**093713**	20	3.0	6"	165 - 171	M8*	M10 / M12	20	30 x 3.0	255	193	115	95	103.5
FRSM 7" M10/M12	**093714**	10	3.0	7"	188 - 194	M8*	M10 / M12	20	30 x 3.0	278	216	127	107	115.5
FRSM 200 M10/M12	**093715**	10	3.0	-	196 - 203	M8*	M10 / M12	20	30 x 3.0	287	225	131	111	119.5
FRSM 212 M12/M16	**505453**	10	6.0	-	205 - 214	M12*	M12 / M16	30	40 x 4.0	289	244	149	119	127.5
FRSM 8" M12/M16	**505454**	10	6.0	8"	219 - 225	M12*	M12 / M16	30	40 x 4.0	300	255	154	124	132.5
FRSM 250 M12/M16	**505455**	10	6.0	-	244 - 250	M12*	M12 / M16	30	40 x 4.0	325	280	167	137	145.5
FRSM 10" M12/M16	**505456**	10	6.0	10"	267 - 273	M12*	M12 / M16	30	40 x 4.0	348	303	178	148	156.5
FRSM 300 M12/M16	**505457**	10	6.0	-	297 - 304	M12*	M12 / M16	30	40 x 4.0	379	334	194	164	172.5
FRSM 12" M12/M16	**505458**	10	6.0	12"	320 - 328	M12*	M12 / M16	30	40 x 4.0	403	358	206	176	184.5
FRSM 348-356 M16	**504594**	1	10.0	-	348 - 356	M16*	M16	24	50 x 5.0	480	394	213	189	-
FRSM 364-372 M16	**504595**	1	10.0	-	364 - 372	M16*	M16	24	50 x 5.0	496	410	221	197	-
FRSM 400-409 M16	**504596**	1	10.0	-	400 - 409	M16*	M16	24	50 x 5.0	533	447	240	216	-
FRSM 454-462 M16	**504597**	1	10.0	-	454 - 462	M16*	M16	24	50 x 5.0	586	500	266	242	-
FRSM 500-508 M16	**504598**	1	10.0	-	500 - 508	M16*	M16	24	50 x 5.0	632	546	289	265	-

* seperate nut on locking screws (installation with two rods on side is possible).

Heavy duty pipe clamp FRSM / FRSM N inch nut

OVERVIEW

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 5 - 9 µm
Connecting nut	Resistance welded
Locking screw	Flat head screw with combination recessed head and/or hexagonal screw starting at 1"
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Sound insulation	for DIN 4109
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore A
Fire behavior	DIN 4102: class B2

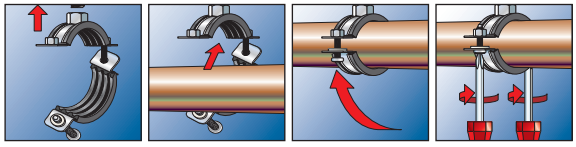
DESCRIPTION

- Two-piece pipe clamp with and without sound insulation insert for medium to high load range.
- Inch thread connection 1/2" and 3/4".

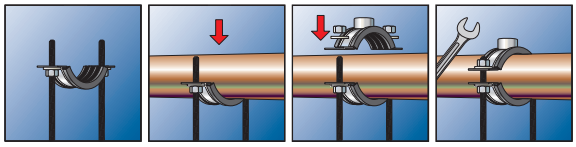
Advantages / Benefits

- Thread with large combination recessed slot, from 1" with additional outer hexagon.
- Locking screws secured against loss.
- Locking screws can be replaced by threaded rods (from 2"), thus a 2-point fastening is possible.

INSTALLATION

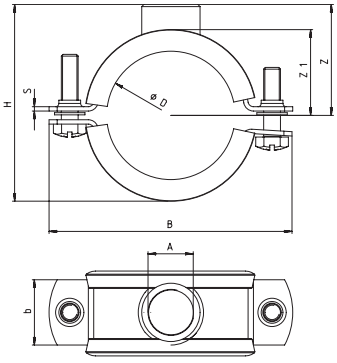


Standard installation

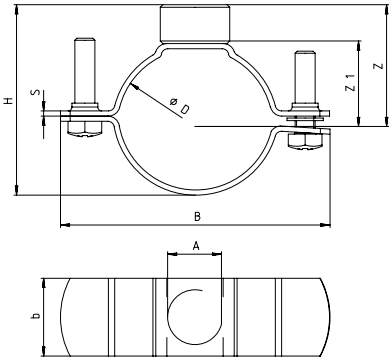


From 2" diameter, installation with two rods on side is possible

TECHNICAL DATA



FRSM inch nut



FRSM N inch nut

Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension) $N_{recom.}$	Size	Clamping range D	Locking screw	Thread A	Connecting nut height	Width x thickness clamp band b x s	Width B	Height H	Height Z	Height Z1
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Heavy duty pipe clamp FRSM													
FRSM 16 - 20	**024593**	50	2.0	3/8"	16 - 20	M 6 x 25	1/2"	15	30 x 2.0	67	43	29	14
FRSM 21 - 23	**024594**	50	2.0	1/2"	21 - 23	M 6 x 25	1/2"	15	30 x 2.0	71	48	32	17
FRSM 24 - 28	**024595**	50	2.0	3/4"	24 - 28	M 6 x 25	1/2"	15	30 x 2.0	79	55	35	20
FRSM 33 - 36	**024596**	50	2.0	1"	33 - 36	M 6 x 25	1/2"	15	30 x 2.0	89	63	39	24
FRSM 40 - 45	**024597**	25	2.0	1 1/4"	40 - 45	M 8 x 25	1/2"	15	30 x 2.0	92	71	43	28
FRSM 48 - 50	**024598**	25	2.0	1 1/2"	48 - 50	M 8 x 25	1/2"	15	30 x 2.0	104	79	47	32
FRSM 58 - 60	**047068**	50	2.0	2"	58 - 60	M 8 x 25	1/2"	15	30 x 2.0	112	87	51	36
FRSM 74 - 78	**047069**	10	3.0	2 1/2"	74 - 78	M 8 x 25	1/2"	15	34 x 2.0	138	103	59	44
FRSM 89 - 92	**047089**	10	3.0	3"	89 - 92	M 8 x 25	1/2"	15	34 x 2.0	142	122	68	53
FRSM 106 - 108	**015395**	10	3.0	-	106 - 108	M 8 x 25	3/4"	17	34 x 2.0	162	139	78	61
FRSM 114 - 117	**047112**	10	5.0	4"	114 - 117	M 8 x 25	3/4"	17	34 x 3.0	178	149	83	66
FRSM 125 - 127	**047113**	10	5.0	-	125 - 127	M 8 x 25	3/4"	17	34 x 3.0	180	157	87	70
FRSM 133 - 137	**047114**	10	5.0	-	133 - 137	M 8 x 30	3/4"	17	34 x 3.0	187	162	90	73
FRSM 139 - 140	**047117**	10	5.0	5"	139 - 140	M 8 x 30	3/4"	17	34 x 3.0	192	179	98	81
FRSM 150 - 152	**047118**	10	5.0	-	150 - 152	M 8 x 30	3/4"	17	34 x 3.0	202	184	101	84
FRSM 159 - 160	**047119**	10	5.0	-	159 - 160	M 8 x 30	3/4"	17	34 x 3.0	220	193	105	88
FRSM 165 - 168	**047122**	10	5.0	6"	165 - 168	M 8 x 30	3/4"	17	34 x 3.0	228	201	109	92
FRSM 177 - 178	**047129**	10	5.0	-	177 - 178	M 8 x 30	3/4"	17	34 x 3.0	238	212	114	97
FRSM 185 - 187	**047277**	10	5.0	-	185 - 187	M 8 x 30	3/4"	17	34 x 3.0	247	219	118	101
FRSM 193 - 194	**047278**	10	5.0	-	193 - 194	M 8 x 30	3/4"	17	34 x 3.0	254	235	126	109
FRSM 200 - 202	**047279**	10	5.0	-	200 - 202	M 8 x 30	3/4"	17	34 x 3.0	262	237	127	110
FRSM 210 - 212	**047297**	10	5.0	-	210 - 212	M 8 x 30	3/4"	17	34 x 3.0	272	247	132	115
FRSM 219 - 220	**047298**	10	5.0	8"	219 - 220	M 8 x 30	3/4"	17	34 x 3.0	280	256	137	120
Heavy duty pipe clamp FRSM N													
FRSM N 1/2"	**024600**	50	2.0	1/2"	19 - 23	M 6 x 25	1/2"	15	30 x 2.0	60	39	27	12
FRSM N 3/4"	**024601**	50	2.0	3/4"	25 - 29	M 6 x 25	1/2"	15	30 x 2.0	64	46	31	16
FRSM N 1"	**024602**	50	2.0	1"	32 - 35	M 6 x 25	1/2"	15	30 x 2.0	70,5	53	34	19
FRSM N 1 1/4"	**024603**	50	2.0	1 1/4"	40 - 42	M 8 x 25	1/2"	15	30 x 2.0	79	60	38	23
FRSM N 1 1/2"	**024604**	50	2.0	1 1/2"	48 - 50	M 8 x 25	1/2"	15	30 x 2.0	92	70	43	28
FRSM N 54MM	**024605**	50	2.0	-	53 - 54	M 8 x 25	1/2"	15	30 x 2.0	96	75	45	30
FRSM N 2"	**024606**	50	2.0	2"	59 - 60	M 8 x 25	1/2"	15	30 x 2.0	104	79	47	32
FRSM N 2 1/2"	**024607**	50	3.0	2 1/2"	74 - 78	M 8 x 25	1/2"	15	34 x 2.0	126	97	56	41
FRSM N 3"	**024608**	50	3.0	3"	89 - 91	M 8 x 25	1/2"	15	34 x 2.0	138	109	62	47
FRSM N 4"	**024609**	10	3.0	4"	112 - 114	M 8 x 25	1/2"	15	34 x 2.0	159	135	75	60
FRSM N 123 - 126	**024610**	10	5.0	-	123 - 126	M 8 x 25	1/2"	15	34 x 3.0	178	147	81	66
FRSM N 133 - 137	**024611**	10	5.0	-	133 - 137	M 8 x 30	1/2"	15	34 x 3.0	180	155	85	70
FRSM N 5"	**024612**	10	5.0	5"	140 - 141	M 8 x 30	1/2"	15	34 x 3.0	192	165	90	75
FRSM N 159 - 162	**024613**	10	5.0	-	159 - 162	M 8 x 30	1/2"	15	34 x 3.0	214	185	100	85
FRSM N 6"	**024614**	10	5.0	6"	166 - 168	M 8 x 30	1/2"	15	34 x 3.0	213	188	102	87

Refrigeration pipe clamp KFT

OVERVIEW

KFT

Properties:

Material	Closed polyurethane system
Diffusion resistance	2500 K
Density	250 kg/m³
Compressive strength	2.3 N/mm²
Heat conductivity (at 10 °C)	0.044 W/(m*K)
Temperature range	- 160 °C to + 130 °C
Fire behavior	DIN 4102: class B2

DESCRIPTION

- Two-piece refrigerant pipe clamp made from closed PUR-foam with integrated steel clip for highest insulation characteristics and high loads.
- Connecting nut with M8/M10 combination thread and ½″ or ¾″ external thread.
- Pipe clamp with offset and glued rubber inlay as sealing.

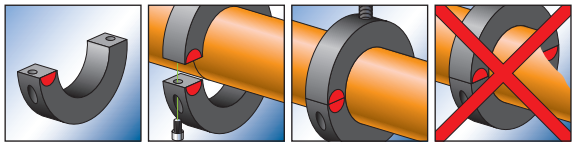
Advantages/Benefits

- Offset, glued rubber inlay on the two parts of the pipe clamp for optimal insulation and user-friendly assembling.
- Integrated steel clip for high load transmission.
- Time and material saving assembling by installation without sealing paste.
- Form-fitting contact surfaces prevent formation of condensation between pipe and pipe clamp.
- Combination connection nut for cost-effective stock keeping and flexibility on the building site.
- Locking screw secured against loss.

INSTALLATION

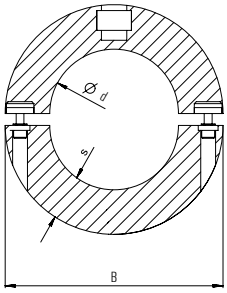
Installation tip

- Insert pipe, screw clamp parts together.

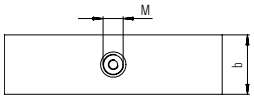


Refrigeration pipe clamp KFT

TECHNICAL DATA



KFT



Type	Art. No.	Sales unit	Qty. per box	Max. recom. static load (centr. tension)	Steel sheet thickness	Locking screw	Terminal thread	Width x thickness	Width	Inner diameter horizontal tolerance	Height connecting nut
				$N_{recom.}$				b x S	B	d	
		pcs.	pcs.	[kN]	[mm]			[mm]	[mm]	[mm]	[mm]
KFT 9.5*	**00505576**	1*	10	0.13	30	M 6 x 20	1/2 ˝/M10/M8	40 x 38	87.0	12.5	14/20/9
KFT 12.7	**00505577**	1	10	0.15	30	M 6 x 20	1/2 ˝/M10/M8	40 x 37	87.0	13.5	14/20/9
KFT 15.8*	**00505578**	1*	10	0.19	30	M 6 x 20	1/2 ˝/M10/M8	40 x 35	87.0	17.5	14/20/9
KFT 17.2*	**00505579**	1*	10	0.19	30	M 6 x 20	1/2 ˝/M10/M8	40 x 34	87.0	18	14/20/9
KFT 18.0	**00505580**	1	10	0.21	30	M 6 x 20	1/2 ˝/M10/M8	40 x 33	87.0	20	14/20/9
KFT 19.5*	**00505581**	1*	10	0.21	30	M 6 x 20	1/2 ˝/M10/M8	40 x 32	87.0	20.5	14/20/9
KFT 21.3	**00505582**	1	10	0.26	30	M 6 x 20	1/2 ˝/M10/M8	40 x 31	87.0	23.3	14/20/9
KFT 22.0	**00505583**	1	10	0.26	30	M 6 x 20	1/2 ˝/M10/M8	40 x 31	87.0	24	14/20/9
KFT 26.9	**00505584**	1	10	0.32	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	87.0	28.9	14/20/9
KFT 28.0	**00505585**	1	10	0.32	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	87.0	31	14/20/9
KFT 33.7	**00505587**	1	10	0.40	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	95.0	35.7	14/20/9
KFT 35.0	**00505588**	1	10	0.42	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	95.0	37	14/20/9
KFT 40.0*	**00505589**	1*	10	0.42	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	100	41.5	14/20/9
KFT 41.2*	**00505591**	1*	10	0.51	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	100	42.5	14/20/9
KFT 42.4	**00505592**	1	10	0.51	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	103.0	44.4	14/20/9
KFT 44.5*	**00505593**	1*	10	0.51	30	M 6 x 20	1/2 ˝/M10/M8	40 x 29	103.0	46.4	14/20/9
KFT 48.3	**00505594**	1	10	0.58	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	108.0	50.3	14/20/9
KFT 50.0*	**00505595**	1*	10	0.60	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	108.0	53	14/20/9
KFT 54.0	**00505596**	1	10	0.62	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	117.0	57	14/20/9
KFT 57.0	**00505597**	1	10	0.65	30	M 6 x 20	1/2 ˝/M10/M8	40 x 30	117.0	60	14/20/9
KFT 60.3	**00505598**	1	10	0.72	30	M 6 x 25	1/2 ˝/M10/M8	50 x 30	120.0	63.3	14/20/9
KFT 64.0	**00505599**	1	10	0.77	30	M 6 x 25	1/2 ˝/M10/M8	50 x 30	120.0	66.5	14/20/9
KFT 70.0	**00505901**	1	10	1.26	30	M 8 x 25	1/2 ˝/M10/M8	50 x 31	136.0	72	14/20/9
KFT 74.0*	**00505902**	1*	10	1.26	30	M 8 x 25	1/2 ˝/M10/M8	50 x 31	136.0	76	14/20/9
KFT 76.1	**00505903**	1	10	1.37	30	M 8 x 25	1/2 ˝/M10/M8	50 x 30	136.0	78	14/20/9
KFT 80.0*	**00505904**	1*	10	1.37	30	M 8 x 25	1/2 ˝/M10/M8	50 x 28	136.0	82	14/20/9
KFT 84.0*	**00505905**	1*	5	1.60	30	M 8 x 25	1/2 ˝/M10/M8	50 x 32	149.0	85.9	14/20/9
KFT 88.9	**00505906**	1	5	1.60	30	M 8 x 25	1/2 ˝/M10/M8	50 x 30	149.0	90.9	14/20/9
KFT 92.1*	**00505907**	1*	5	1.60	30	M 8 x 25	1/2 ˝/M10/M8	50 x 28.5	149.0	94	14/20/9
KFT 101.0*	**00505908**	1*	5	2.59	40	M 8 x 25	1/2 ˝/M10/M8	60 x 40	188.0	102	14/20/9
KFT 104.0*	**00505909**	1*	5	2.59	40	M 8 x 25	1/2 ˝/M10/M8	60 x 40	188.0	107	14/20/9
KFT 108.0	**00505910**	1	5	2.59	40	M 8 x 25	1/2 ˝/M10/M8	60 x 40	188.0	109	14/20/9
KFT 114.3	**00505911**	1	5	2.74	40	M 8 x 25	1/2 ˝/M10/M8	60 x 40	194.0	116.3	14/20/9
KFT 129.0*	**00505914**	1*	5	3.19	40	M 8 x 25	1/2 ˝/M10/M8	60 x 43	218.0	132.2	14/20/9
KFT 133.0	**00505915**	1	5	3.19	40	M 8 x 25	1/2 ˝/M10/M8	60 x 41	219.0	133.5	14/20/9
KFT 139.7	**00505916**	1	5	3.35	40	M 8 x 25	1/2 ˝/M10/M8	60 x 40	219.0	141.5	14/20/9
KFT 154.0*	**00505917**	1*	4	3.83	40	M 10 x 25	1/2 ˝/M12	60 x 40	236.8	157.5	14/27
KFT 159.0*	**00505918**	1*	4	3.83	40	M 10 x 25	1/2 ˝/M12	60 x 40	239.0	162	14/27
KFT 168.3*	**00505919**	1	4	4.04	40	M 10 x 25	1/2 ˝/M12	60 x 40	248.0	170.3	14/27
KFT 193.7	**00505920**	1	–	5.26	60	M 10 x 35	3/4 ˝/M16	100 x 72	340.0	195.7	14/28
KFT 204.0	**00505921**	1	–	5.20	60	M 10 x 35	3/4 ˝/M16	100 x 66	340.0	207	14/28
KFT 219.1*	**00505922**	1*	–	5.26	60	M 10 x 35	3/4 ˝/M16	100 x 60	340.0	222.1	14/28

* Delivery time on request, and full boxes.

Refrigerant pipe clamp FRS K

OVERVIEW

FRS K

Properties:

Material	Closed-cell polyurethane foam
Diffusion resistance	7000 K
Density	80 kg/m³
Compressive strength	0.6 N/mm²
Heat conductivity (at 10°C)	0.036 W/(m*K)
Locking screw	Flat head screw with combination recessed head
Temperature range	- 45 °C to + 105 °C
Fire behavior	DIN 4102: class B2

DESCRIPTION

- Pipe clamp with insulation made by elastomer with PU hard foam shell which is glued on the clamp.
- On the bigger diameters a foamed load distribution plate allows high load bearing capacity.
- Insulation with self-adhesive lock.
- Combination nut M8/M10.

Advantages / Benefits

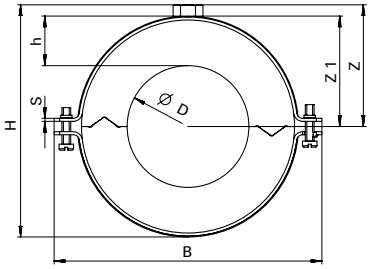
- PU- insulation body for high insulation, coordinated to standard insulation layer thicknesses.
- Partly compression-proof PU-hard foam body with foamed load distribution sheet for high load absorption and higher approvable loads.
- High durability.
- Step-shaped sealing at the insulation for better sealing of the small sizes.
- Simple installation due to large opening angle and glued insulation.
- Locking screw with large combination recessed is secured against loss.

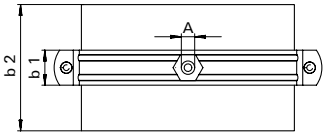
INSTALLATION

Installation tip

- Insert pipe, pull protective film from insulation, glue and screw together clamp parts.
- On front side, glue sealing insulation to refrigeration clamp.

TECHNICAL DATA





FRS K

Type	Art. No.	Sales unit	Qty. per box	Size	Load distribution sheet (on both sides)	Max. recom. static load (centr. tension)	Thread	Width across flats	Connecting nut height	Width	Width	Width	Thickness	Height	Height	Height	Height
								A/F		B	b1	b2	S	h	H	Z1	Z
		pcs.	pcs.	[Inch]		[kN]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FRS K12/13	**00506486**	1	15	–	no	0.10	M8/M10	13	13.5	77	20	50	1.5	13	57.5	19.5	33
FRS K15/13	**00506487**	1	15	1/4"	no	0.11	M8/M10	13	13.5	85	20	50	1.5	13	62	22	35.5
FRS K17-18/13	**00506488**	1	15	3/8"	no	0.12	M8/M10	13	13.5	86	20	50	1.5	13	62	22	35.5
FRS K21-22/13	**00506489**	1	10	1/2"	no	0.13	M8/M10	13	13.5	90.5	20	50	1.5	13	67	25	38
FRS K27-28/13	**00506490**	1	10	3/4"	no	0.15	M8/M10	13	13.5	98.5	20	50	1.5	13.5	76	29	44
FRS K34-35/13	**00506491**	1	10	1"	no	0.17	M8/M10	13	18	105	20	50	1.5	14	86	32	52
FRS K42/13	**00506492**	1	14	1 1/4"	yes	0.36	M8/M10	13	18	115	20	50	1.5	14	99	37.5	55.5
FRS K48-49/13	**00506493**	1	14	1 1/2"	yes	0.39	M8/M10	13	18	118	20	50	1.5	14	105	40.5	59
FRS K54/13	**00507699**	1	14	–	yes	0.42	M8/M10	13	18	125	20	50	1.5	14	109.5	43	62
FRS K60/13	**00506494**	1	14	2"	yes	0.45	M8/M10	13	18	132	20	50	1.5	15	119	47	65.5
FRS K12/19*	**00506495**	1	14	–	no	0.14	M8/M10	13	13.5	90	20	50	1.5	19	69	25	39
FRS K15/19*	**00506496**	1	14	1/4"	no	0.15	M8/M10	13	13.5	90.5	20	50	1.5	19	72	27	40.5
FRS K17-18/19	**00506497**	1	10	3/8"	no	0.15	M8/M10	13	13.5	99	20	50	1.5	19.5	75	28	42
FRS K21-22/19	**00506498**	1	10	1/2"	no	0.16	M8/M10	13	13.5	99	20	50	1.5	19.5	75	28	42
FRS K27-28/19	**00506499**	1	10	3/4"	no	0.18	M8/M10	13	18	106	20	50	1.5	20	93	35	53
FRS K34-35/19	**00506500**	1	10	1"	no	0.20	M8/M10	13	18	115	20	50	1.5	20.3	100	38	56
FRS K42/19	**00506501**	1	14	1 1/4"	yes	0.42	M8/M10	13	18	125	20	50	1.5	21.5	112	44	62
FRS K48-49/19	**00506502**	1	14	1 1/2"	yes	0.45	M8/M10	13	18	132	20	50	1.5	21.5	119	47.5	65.5
FRS K54/19	**00507700**	1	14	–	yes	0.48	M8/M10	13	18	143	20	50	1.5	22	126	50.5	68.5
FRS K60/19	**00506503**	1	17	2"	yes	0.51	M8/M10	13	18	147	20	50	1.5	22	132	54	72
FRS K64/19*	**00506504**	1	17	–	yes	0.53	M8/M10	13	18	149	20	50	1.5	22	136.5	56	74
FRS K70/19*	**00506505**	1	17	–	yes	0.56	M8/M10	13	18	161	20	50	1.5	22	145	59.5	78
FRS K76/19	**00506506**	1	14	2 1/2"	yes	0.60	M8/M10	13	18	162.5	20	50	1.5	22	150	62	80
FRS K89/19	**00506508**	1	14	3"	yes	0.66	M8/M10	17	18	188	30	50	2	22	165	63.5	81.5
FRS K102/19*	**00506509**	1	5	–	yes	1.69	M8/M10	17	18	199	30	100	2	22.5	180	68.5	86.5
FRS K108/19*	**00506510**	1	5	–	yes	1.77	M8/M10	17	18	204	30	100	2	22.5	185	76.5	94.5
FRS K114/19	**00506511**	1	5	4"	yes	1.84	M12/M16	20	30	228	40	100	3	22.5	201	78	97
FRS K133/19*	**00507786**	1	4	–	yes	2.07	M12/M16	20	30	247	40	100	3	23	221	82	112
FRS K139/19	**00507787**	1	4	5"	yes	2.14	M12/M16	20	30	255	40	100	3	23	227	92.5	122
FRS K168/19	**00507788**	1	4	6"	yes	2.49	M12/M16	20	30	281	40	100	3	23	256	95	125

* Delivery time on request and full boxes.

Sprinkler clamp FRSP

OVERVIEW

FRSP

Properties:

Material	Steel DX51D+Z 275 MA-C (material no. 1.0226+Z) acc. to DIN EN 10327
Zinc plating	Sendzimir zinc-plated, approx. 20 µm

DESCRIPTION

- Sprinkler loop with height adjustment nut.

Advantages/Benefits

- Simple, quick installation.
- Simple subsequent height adjustment using adjustable nut.

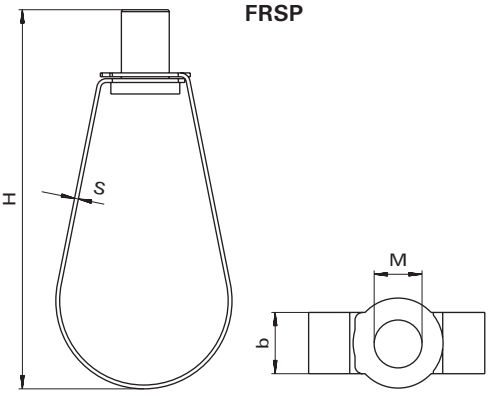
INSTALLATION

Installation instructions

- Insert pipe into the loop.
- Close clamp using adjustable nut.
- Tighten threaded rod.

TECHNICAL DATA

FRSP



Type	Art. No.	Qty. per box pcs.	Max. recom. static load (centr. tension) $N_{recom.}$ [kN]	Thread M	Width x thickness clamp band b x s [mm]	Height H [mm]
FRSP 1/2"	**047125**	100	1.8	M 10	16 x 1	92
FRSP 3/4"	**047126**	100	1.8	M 10	16 x 1	92
FRSP 1"	**047127**	100	1.8	M 10	16 x 1	95
FRSP 1 1/4"	**047128**	100	1.8	M 10	16 x 1	109
FRSP 1 1/2"	**047167**	100	1.8	M 10	16 x 1	111
FRSP 2"	**047168**	100	1.8	M 10	16 x 1	123
FRSP 2 1/2"	**047169**	50	2.7	M 10	22 x 2	135
FRSP 3"	**047170**	50	2.7	M 10	22 x 2	148
FRSP 4"	**047172**	25	4.5	M 10	22 x 2	180
FRSP 5"	**047173**	20	4.5	M 12	25 x 3,0	233
FRSP 6"	**047174**	15	5.6	M 12	25 x 3,0	254
FRSP 8"	**047226**	10	5.6	M 12	25 x 3,0	319

U-Bolt ETR

OVERVIEW

ETR

Properties:

Material	Steel with min. tensile strength of 360 N/mm²
Zinc plating	Electro zinc plated

DESCRIPTION

- U-bolt, electro zinc plated with metric thread.
- Hexagonal nuts are enclosed loose.

Advantage / Benefit

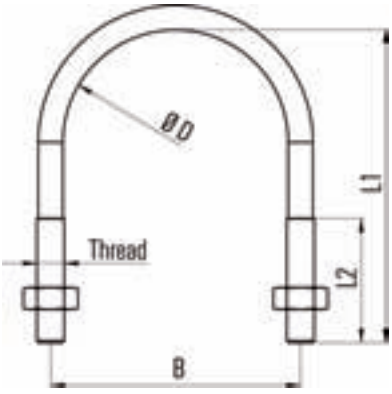
- Good for use as a guide mounting.

INSTALLATION

Installation tip

- U-bolt will be exposed to no bending stress.
- When used as pipe guiding mounting, the pipe should continue to move freely.

TECHNICAL DATA



ETR

Type	Art. No.	Qty. per box pcs.	Outer carton pcs.	Thread M	Size [inch]	Width B [mm]	length L1 [mm]	length L2 [mm]
ETR 8 - 13	**024415**	10	100	M 6	1/4"	20	30	18
ETR 12 - 17	**024416**	10	100	M 6	3/8"	24	35	18
ETR 15 - 21	**024417**	10	100	M 6	1/2"	28	40	22
ETR 20 - 27	**024418**	10	50	M 8	3/4"	36	50	30
ETR 26 - 34	**024419**	10	50	M 8	1"	43	55	30
ETR 33 - 42	**024420**	10	50	M 8	1 1/4"	51	68	35
ETR 40 - 49	**024421**	10	50	M 8	1 1/2"	58	70	35
ETR 50 - 60	**024422**	10	50	M 8	2"	69	80	35
ETR 60 - 70	**024423**	10	50	M 10	-	82	100	38
ETR 66 - 76	**024424**	10	50	M 10	2 1/2"	88	110	45
ETR 70 - 82	**024425**	10	50	M 10	-	94	115	45
ETR 80 - 90	**024426**	10	50	M 10	3"	102	115	45
ETR 90 - 102	**024427**	5	50	M 12	3 1/2"	116	145	50
ETR 100 - 108	**024428**	5	50	M 12	-	122	150	50
ETR 102 - 114	**024429**	5	50	M 12	4"	128	156	55
ETR 121 - 127	**024430**	5	50	M 12	-	141	170	55
ETR 126 - 133	**024431**	5	50	M 12	-	147	180	65
ETR 131 - 140	**024432**	5	25	M 14	5"	156	185	65
ETR 143 - 153	**024433**	5	25	M 14	-	169	193	65
ETR 150 - 159	**024434**	5	25	M 14	-	175	200	65
ETR 168	**024435**	5	25	M 14	6"	184	210	65
ETR 193,7	**024436**	5	25	M 14	-	209	232	65
ETR 219	**024437**	5	25	M 14	8"	236	270	65

Hose clamp SGS

OVERVIEW

SGS

Properties:

Abbreviation	Worm	Housing	Band
W 1	DIN EN 10269	Zinc-plated steel or equivalent steel	Zinc-plated steel with minimum tensile strength of 400 N/mm²
W 2	DIN EN 10269	Chromium steel 1.4016 acc. to DIN EN 10088 or equivalent corrosion-resistant steel	

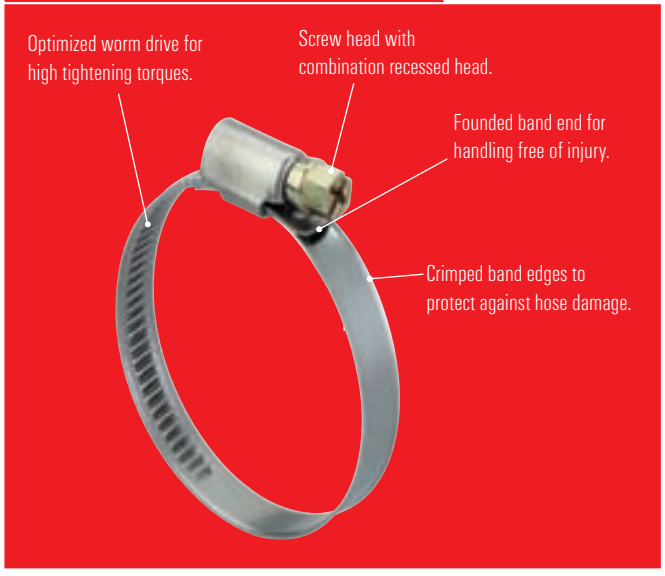
DESCRIPTION

- Hose clamps for large clamping ranges with crimped band edges and rounded housing base.
- Versions W 1 zinc plated and W 2 stainless steel.
- W 1 quality obtainable in 9 mm and 12 mm width.

Advantages / Benefits

- Flexible band for optimal seat and sealing even with out-of-round connections and hoses.
- Short housing base for optimal adaptation and high uniformly distributed radial forces.

ADVANTAGES AT A GLANCE



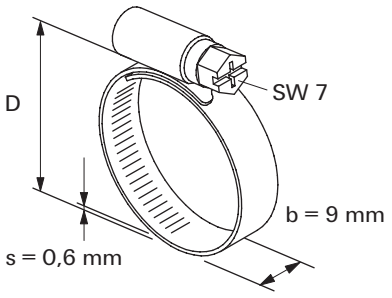
INSTALLATION

Installation tip

- The optimal tightening torque depends on hose diameter and hose material.
- The tightening torques are to be observed in accordance with the specified values.

- **Caution!** If the tightening torque is above the optimal value, the seal is endangered.

TECHNICAL DATA



SGS

Type	Art. No.	Qty. per box pcs.	Static tightening torque [Nm]	Clamping range D [mm]	Width x thickness clamp band b x s [mm]
SGS 9 W1					
SGS 9 W1 8 - 12	**045501**	100	2.0	8 - 12	9.0 x 0.6
SGS 9 W1 10 - 16	**045502**	100	2.0	10 - 16	9.0 x 0.6
SGS 9 W1 12 - 20	**045503**	100	3.0	12 - 20	9.0 x 0.6
SGS 9 W1 16 - 27	**045504**	100	3.0	16 - 27	9.0 x 0.6
SGS 9 W1 20 - 32	**045505**	100	3.0	20 - 32	9.0 x 0.6
SGS 9 W1 25 - 40	**045506**	100	3.0	25 - 40	9.0 x 0.6
SGS 9 W1 32 - 50	**045507**	100	3.0	32 - 50	9.0 x 0.6
SGS 9 W1 40 - 60	**045508**	25	3.0	40 - 60	9.0 x 0.6
SGS 9 W1 50 - 70	**045509**	25	3.0	50 - 70	9,0 x 0,6
SGS 9 W1 60 - 80	**045510**	25	3.0	60 - 80	9.0 x 0.6
SGS 9 W1 70 - 90	**045511**	25	3.0	70 - 90	9.0 x 0.6
SGS 9 W1 80 -100	**045512**	25	3.0	80 - 100	9.0 x 0.6
SGS 9 W1 90 -110	**045513**	25	3.0	90 - 110	9.0 x 0.6
SGS 9 W1 100 -120	**045514**	25	3.0	100 - 120	9.0 x 0.6
SGS 9 W1 110 -130	**045515**	25	3.0	110 - 130	9.0 x 0.6
SGS 9 W1 120 -140	**045516**	25	3.0	120 - 140	9.0 x 0.6
SGS 12 W1					
SGS 12 W1 25 - 40	**094684**	100	5.0	25 - 40	12 x 0.6
SGS 12 W1 32 - 50	**094685**	100	5.0	32 - 50	12 x 0.6
SGS 12 W1 40 - 60	**094686**	25	5.0	40 - 60	12 x 0.6
SGS 12 W1 50 - 70	**094687**	25	5.0	50 - 70	12 x 0.6
SGS 12 W1 60 - 80	**094688**	25	5.0	60 - 80	12 x 0.6
SGS 12 W1 70 - 90	**094689**	25	5.0	70 - 90	12 x 0.6
SGS 12 W1 80 - 100	**094690**	25	5.0	80 - 100	12 x 0.6
SGS 12 W1 90 - 110	**094691**	25	5.0	90 - 110	12 x 0.6
SGS 12 W1 100 - 120	**094692**	25	5.0	100 - 120	12 x 0.6
SGS 12 W1 110 - 130	**094693**	25	5.0	110 - 130	12 x 0.6
SGS 9 W2					
SGS 9 W2 8 - 12	**045517**	100	2.0	8 - 12	9.0 x 0.6
SGS 9 W2 10 - 16	**045518**	100	2.0	10 - 16	9.0 x 0.6
SGS 9 W2 12 - 20	**045519**	100	3.0	12 - 20	9.0 x 0.6
SGS 9 W2 16 - 27	**045520**	100	3.0	16 - 27	9.0 x 0.6
SGS 9 W2 20 - 32	**045521**	100	3.0	20 - 32	9.0 x 0.6
SGS 9 W2 25 - 40	**045522**	100	3.0	25 - 40	9.0 x 0.6
SGS 9 W2 32 - 50	**045523**	100	3.0	32 - 50	9.0 x 0.6
SGS 9 W2 40 - 60	**045524**	25	3.0	40 - 60	9.0 x 0.6
SGS 9 W2 50 - 70	**045525**	25	3.0	50 - 70	9,0 x 0,6
SGS 9 W2 60 - 80	**045526**	25	3.0	60 - 80	9,0 x 0,6
SGS 9 W2 70 - 90	**045527**	25	3.0	70 - 90	9,0 x 0,6
SGS 9 W2 80 -100	**045528**	25	3.0	80 - 100	9.0 x 0.6
SGS 9 W2 90 -110	**045529**	25	3.0	90 - 110	9.0 x 0.6
SGS 9 W2 100 -120	**045530**	25	3.0	100 - 120	9.0 x 0.6
SGS 9 W2 110 -130	**045531**	25	3.0	110 - 130	9.0 x 0.6
SGS 9 W2 120 -140	**045532**	25	3.0	120 - 140	9.0 x 0.6

Installation System MS-L

A complete installation system suitable for:

- **electrical installation, like cable trays, data lines etc.**
- **heating and sanitary supply pipes**
- **air duct and ventilation**

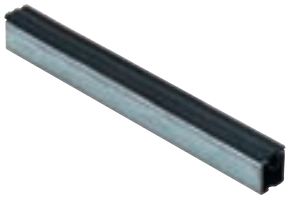
Channels
MS 27/18, MS 28/30 **Page 40**

Cantilever
ALK **Page 42**

Connectors
FHS Clix **Page 45**

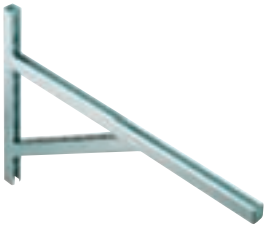
Channel connectors
SF **Page 49**

EMS Page 44



GLK Page 44

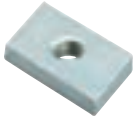
ALKS Page 42



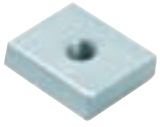
HS Page 48

Clix MK Page 48

HG Page 47



SM Page 48



MW Page 50

TKR Page 51

SV Page 44

Channel MS-L

OVERVIEW

MS 27/18

MS 28/30

Properties:

Material	Steel DX51D+Z 275 MA-C (material no. 1.0226+Z) acc. to DIN EN 10327
Zinc plating	Sendzimir zinc plated, approx. 20 µm

DESCRIPTION

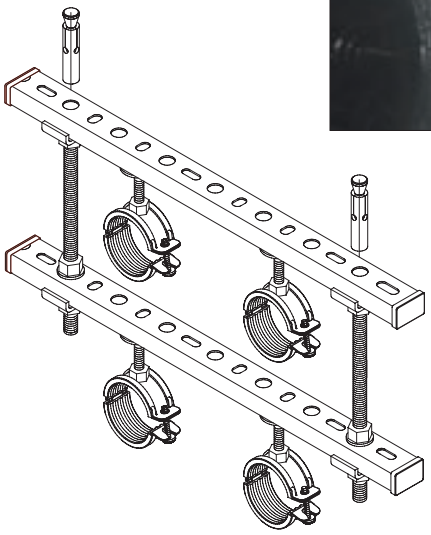
- C profiled channel for horizontal and vertical installation.

Advantages / Benefits

- High installation flexibility due to different hole geometries.
- Specially synchronised connection parts allow for assembly of simple, safe and versatile constructions.
- Simple cutting and installation due to stamped grid dimensions on the rail side.

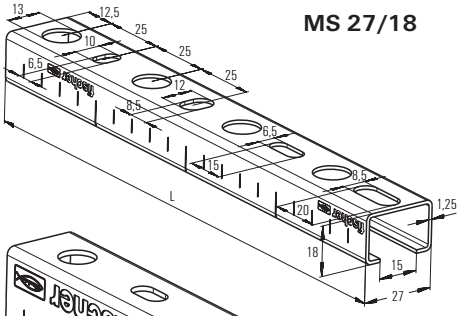
INSTALLATION

- Mechanical, electrical and ventilation systems.

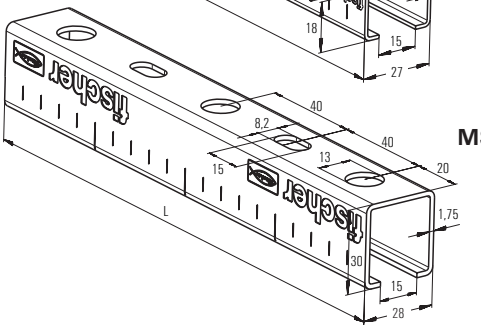


TECHNICAL DATA

MS 27/18

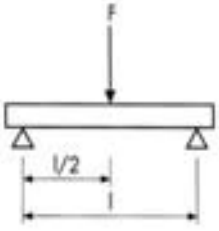


MS 28/30



Type	Art. No.	Qty. per box pcs.	Length L [mm]	Weight [kg/m]
MS 27/18/1.25 - 2 m	**079560**	1	2000	0.66
MS 27/18/1.25 - 3 m	**079557**	1	3000	0.66
MS 28/30/1.75 - 2 m	**079561**	1	2000	1.25
MS 28/30/1.75 - 3 m	**079558**	1	3000	1.25

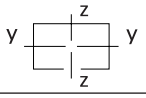
LOADS



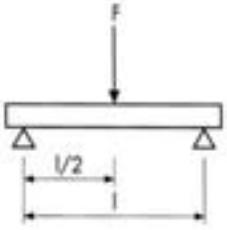
Type		Span l 0.5 m	0.75 m	1 m
MS 27/18/1.25	admissible load F [kN]	0.43	0.29	0.19
MS 28/30/1.75	admissible load F [kN]	1.30	0.87	0.65

Load-bearing capacity of MS-L channels

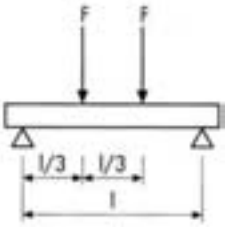
TECHNICAL VALUES

Profile	Profile weight	Profile cross section	Moment of inertia		Section modulus	
		Δ	I_y	I_z	W_y	W_z
	[kg/m]	[cm²]	[cm⁴]	[cm⁴]	[cm³]	[cm³]
Channel MS						
27/18	0.66	0.84	0.36	0.96	0.34	0.71
28/30	1.25	1.59	1.77	2.09	1.02	1.49

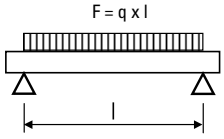
LOAD CASE 1



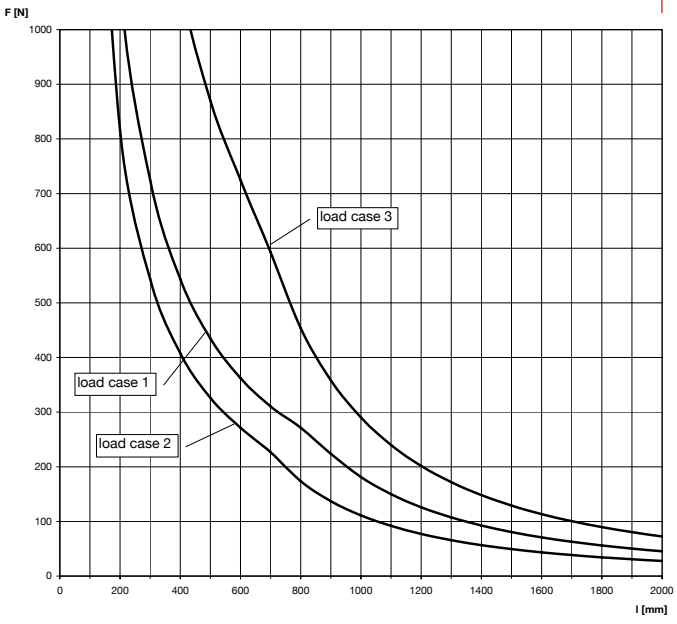
LOAD CASE 2



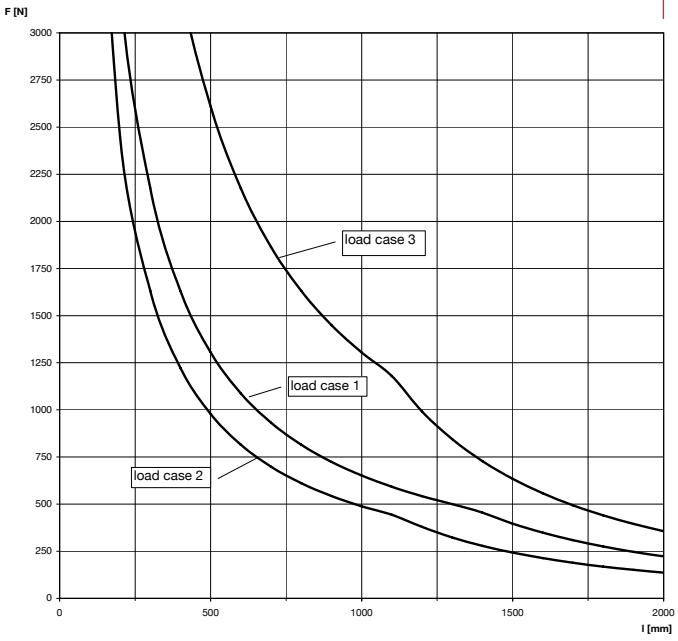
LOAD CASE 3



MS 27/18



MS 28/30



For the load curves, the permissible steel strain $\sigma_{adm.}$ = 160 N/mm and the maximum deflection under load l/200 are not exceeded.

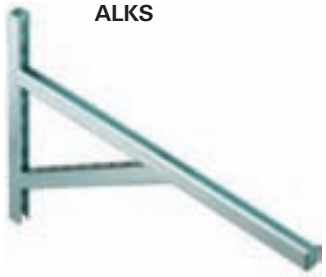
Fixings and screw fastenings must be calculated accordingly.

Cantilever arm ALK

OVERVIEW

ALK

ALKS



Properties:

Material	Base plate: steel DC01 (material no. 1.0330) acc. to DIN EN 10111 Channel: steel S235JR (material no. 1.0037) acc. to DIN EN 10143
Zinc plating	Electro zinc plated, min. 8 µm

DESCRIPTION

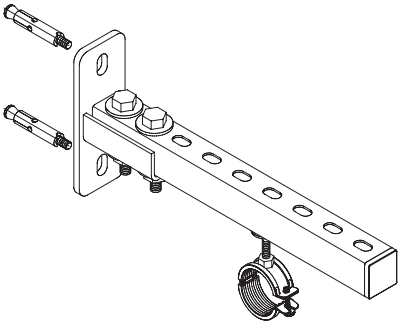
- Cantilever arms made of C profiled channels.

Advantages / Benefits

- Slots in the rail offer versatile installation possibilities.
- Versatile usage possibilities for stepped lengths.

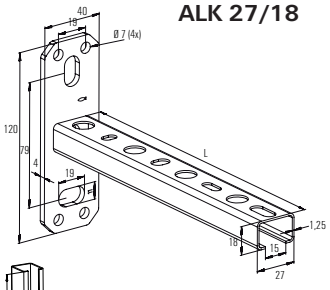
INSTALLATION

- Good fastening possibilities using suitable fixing.
- Slots in the base plate offer good height adjustment.

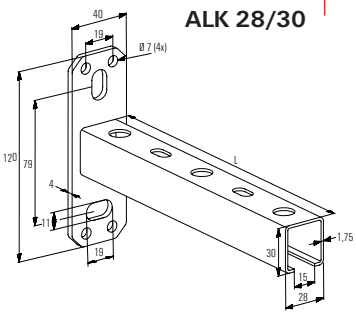


TECHNICAL DATA

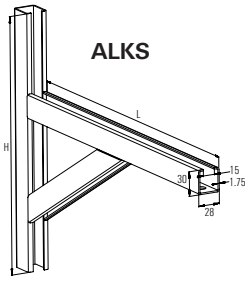
ALK 27/18



ALK 28/30



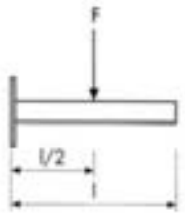
ALKS



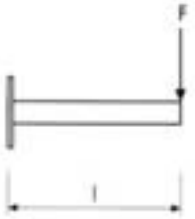
Type	Art. No.	Qty. per box pcs.	Profile	Height H H [mm]	Length L [mm]
Cantilever arm ALK					
ALK 27/18 - 200	**079575**	20	27/18	-	200
ALK 27/18 - 300	**079576**	20	27/18	-	300
ALK 28/30 - 200	**079577**	10	28/30	-	200
ALK 28/30 - 320	**079578**	10	28/30	-	320
ALK 28/30 - 440	**079579**	10	28/30	-	440
Cantilever arm ALKS					
ALKS 28/30 - 400	**063581**	5	28/30	315	400
ALKS 28/30 - 600	**063594**	5	28/30	400	600

Load-bearing capacity of ALK cantilever brackets

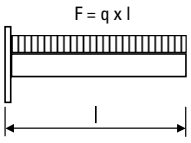
LOAD CASE 1



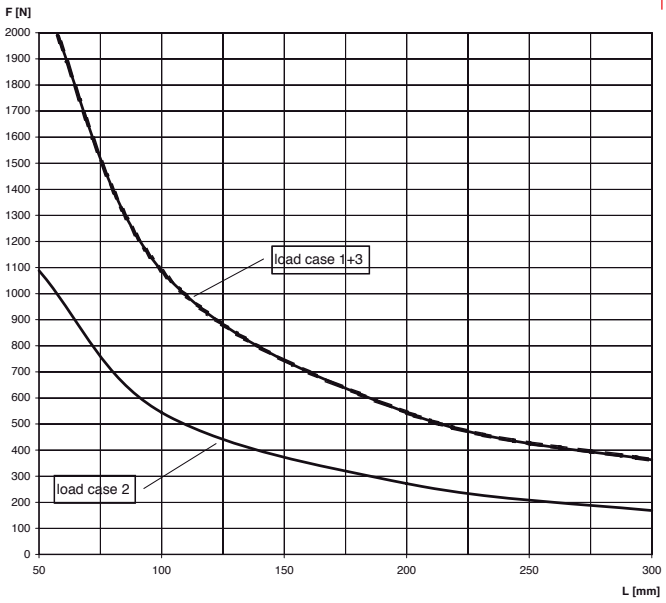
LOAD CASE 2



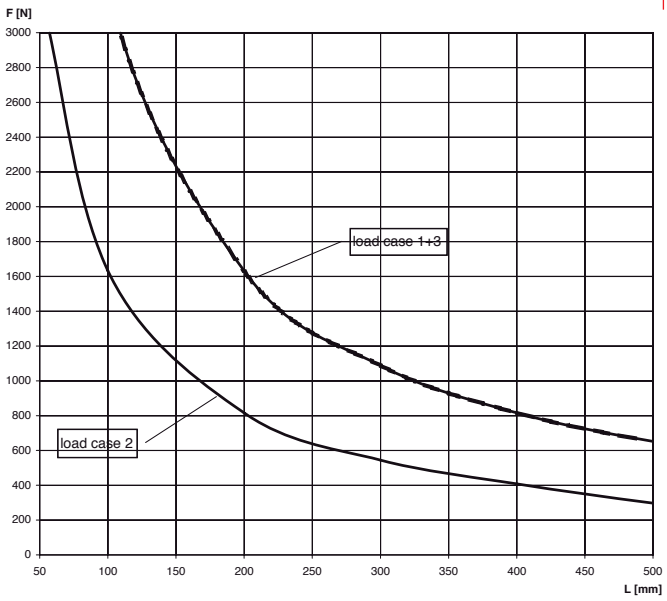
LOAD CASE 3



ALK 27/18



ALK 28/30

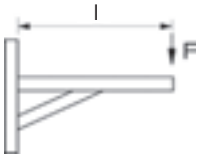


For the load curves, the permissible steel strain $\sigma_{adm.}$ = 160 N/mm and the maximum deflection under load l/150 are not exceeded.

Fixings and screw fastenings must be calculated accordingly.

Load-bearing capacity of ALKS cantilever brackets

LOADS



Cantilever arm ALKS 28/30-400		
Length l in mm	200	400
Max recom. load F_{rec} in kN	5.0	1.3

Cantilever arm ALKS 28/30-600		
Length l in mm	300	600
Max recom. load F_{rec} in kN	5.0	0.9

Cover cap AK

OVERVIEW

AK

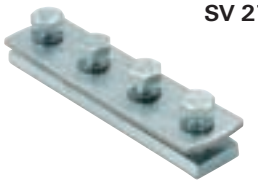
Type	Art. No.	Qty. per box pcs.	for profile
AK 27/18	**079565**	100	27/18
AK 28/30	**079566**	100	28/30

Properties:

Material	Polyethylene, black

Channel connector SV

OVERVIEW



SV 27

Properties:

Material	Steel DC01 (material no. 1.0330) acc. to DIN EN 10130
Zinc plating	Electro zinc plated, 8 µm

DESCRIPTION

- Quick and pre-assembled with washer and screws.

Advantages / Benefits

- Pre-assembled with screws and special washers.

INSTALLATION

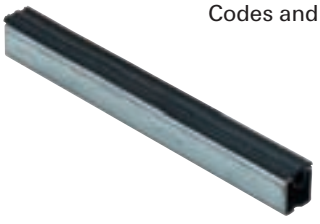
TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.
SV 27	**079660**	20

Sliding insert GLK

Codes and characteristics see on page 114

Rubber inlay EMS



Codes and characteristics see on page 125

T-head bolt FHS Clix

OVERVIEW

FHS Clix

FHS Clix-N

Properties:

Material	Steel S235 JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 8 µm
Material thread	4.8

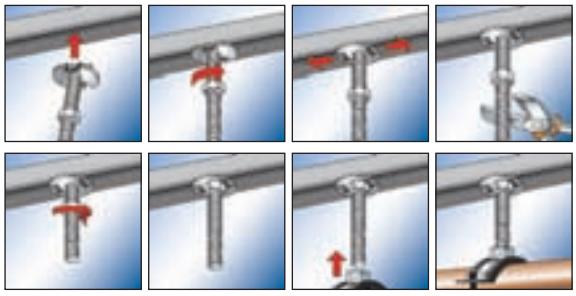
DESCRIPTION

- Quick lock hammer head bolt.
- FHS Clix-N: patented T-head threaded bolt with grooved pin.
- Grooved pin can be shortened using bolt cutter BOL N.

Advantages / Benefits

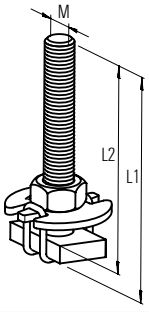
- Simple, fast and effective installation.
- Retrofitting in rails possible.
- Simple alignment in the rail.
- FHS Clix-N: simple height correction due to grooved pin.
- Fits in all the usual rail profiles with 15 mm slot width.

INSTALLATION

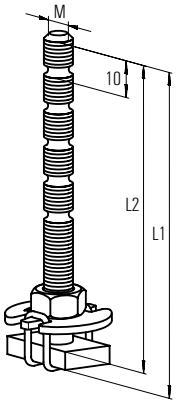


TECHNICAL DATA

FHS Clix

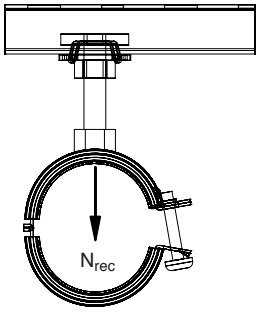


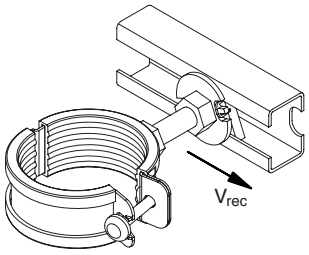
FHS Clix-N



Type	Art. No.	Qty. per box pcs.	Thread M	Length (L1) [mm]	Length (L2) [mm]
T-head bolt FHS Clix					
FHS Clix 8 x 20	**079620**	100	M 8	25	20
FHS Clix 8 x 30	**079621**	100	M 8	30	25
FHS Clix 8 x 40	**079622**	100	M 8	40	35
FHS Clix 8 x 60	**079624**	100	M 8	60	55
FHS Clix 8 x 80	**079626**	50	M 8	80	75
FHS Clix 8 x 100	**079628**	50	M 8	100	95
FHS Clix 10 x 30	**079635**	100	M 10	30	25
FHS Clix 10 x 40	**079636**	100	M 10	40	35
FHS Clix 10 x 60	**079637**	100	M 10	60	55
FHS Clix 10 x 100	**505554**	50	M 10	100	95
T-head bolt FHS Clix-N					
FHS Clix-N M 8 x 90	**079605**	50	M 8	90	85
FHS Clix-N M 8 x 140	**079606**	50	M 8	140	135

LOADS





Type	Profile	Max. recom. load (tension) $N_{rec.}$ [kN]	Max. recom. load (shear) $V_{rec.}$ [kN]	Tightening torque [Nm]
T-head bolt FHS Clix				
M 8	27/18	1.7	0.2	5
	28/30	2.0	0.2	5
M 10	27/18	2.0	0.3	8
	28/30	2.2	0.3	8
T-head bolt FHS Clix-N				
M 8	27/18	1.7	0.2	5
	28/30	2.0	0.2	5

Bolt cutter BOL N

OVERVIEW

BOL N

DESCRIPTION

- Suitable for cutting threaded rods and FHS Clix-N to size.

Type	Art. No.	Qty. per box pcs.
BOL N	**079821**	1

Channel washer HK 27

OVERVIEW

HK 27

Properties:

Material	Steel (material no 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

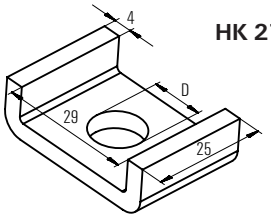
- Can be used for proper fastening of channels with a fixing, e.g. fischer anchor bolt.
- Used to secure connections.

Advantage / Benefit

- Prevents the rail from bending.

TECHNICAL DATA

HK 27



Type	Art. No.	Qty. per box pcs.	Hole D [mm]
HK 27	**079650**	50	11.5

Channel nut HG 27

OVERVIEW

HG 27

Properties:

Material	Steel (material no 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- Threaded plate fitting in to the channel MS 27/18 and MS 28/30.

Advantages / Benefits

- Simple installation.
- Retrofitting in rails possible.

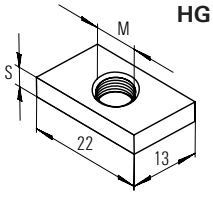
INSTALLATION

Installation tip

- After alignment, the threaded plate should be secured with the nut and washer.

TECHNICAL DATA

HG 27



Type	Art. No.	Qty. per box pcs.	Thread M	Thickness S [mm]
HG 27 M 6	**049480**	200	M 6	4
HG 27 M 8	**079595**	100	M 8	5
HG 27 M 10	**079596**	100	M 10	5

LOADS

Type	Profile	Max. recom. load (tension) $N_{rec.}$ [kN]	Max. recom. load (shear) $V_{rec.}$ [kN]	Tigthening torque [Nm]
HG 27 M 6	27/18	1.7	0.2	5
	28/30	2.0	0.2	5
HG 27 M 8	27/18	1.7	0.4	8
	28/30	2.0	0.4	8
HG 27 M 10	27/18	2.0	0.5	10
	28/30	2.2	0.5	10

Female channel connector Clix MK

OVERVIEW

Clix MK

Properties:

Material	Steel (material no 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 3 µm

DESCRIPTION

- Female channel connector for threaded road and pipe clamp installations.

Advantages / Benefits

- Simple, fast and effective installation.
- Retrofitting in rails possible.

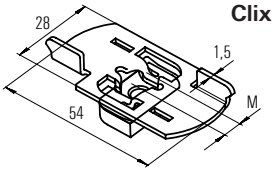
INSTALLATION

Installation tips

- Introduce fischer Clix MK into the rail or bracket and turn 90°.
- After alignment, the threaded plate should be secured with nut and washer.

TECHNICAL DATA

Clix MK



Type	Art. No.	Qty. per box pcs.	Thread M		
Clix MK 6	**063692**	100	M 6		
Clix MK 8	**063693**	100	M 8		
Clix MK 10	**063694**	100	M 10		

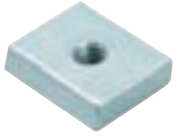
LOADS

Type	Profile	Max. recom. load (tension) $N_{rec.}$ [kN]	Max. recom. load (shear) $V_{rec.}$ [kN]	Tightening torque [Nm]
Clix MK M 6	27/18	1.7	0.3	8
	28/30	2.0	0.4	8
Clix MK M 8	27/18	1.7	0.3	8
	28/30	2.0	0.4	8
Clix MK M 10	27/18	2.0	0.3	8
	28/30	2.2	0.4	8

T-head bolt HS 38

Codes and characteristics see on page 61

Sliding nut SM



Codes and characteristics see on page 62

Saddle flange SF

OVERVIEW

SF Q 27

SF L 27

Properties:

Material	Base plate: Steel DD11 (material no. 1.0332) acc. to DIN EN 10111 U-Profil: S235JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 8 µm

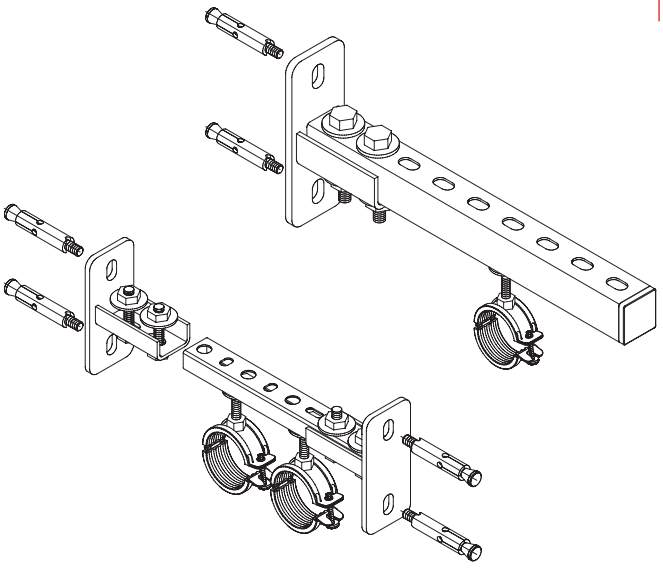
DESCRIPTION

- Connection element between fischer channels and building and channels with channels.

Advantages / Benefits

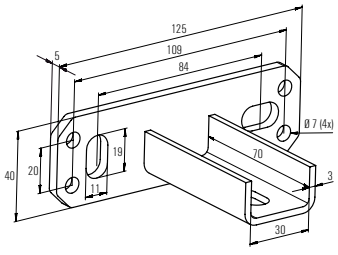
- Solid connecting element for load-bearing constructions.
- Simple installation by inserting the mounting rail in the saddle.

INSTALLATION

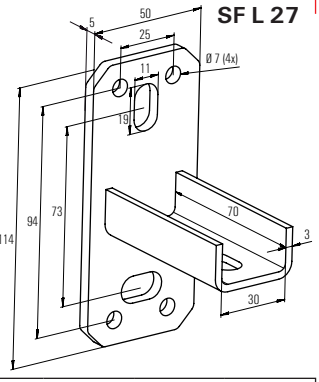


TECHNICAL DATA

SF Q 27



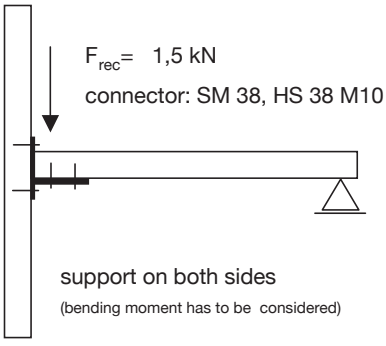
SF L 27



Type	Art. No.	Qty. per box pcs.	Version
SF Q 27	**079409**	15	horizontal
SF L 27	**079585**	15	vertical

LOADS

For connection channel – channel



Installation angle bracket MW

OVERVIEW

MW 27–45°

MW 27–90°

Properties:

Material	Steel DD 11 (material no. 1.0332) acc. to DIN EN 1.0111
Zinc plating	Electro zinc plated, min. 8 µm

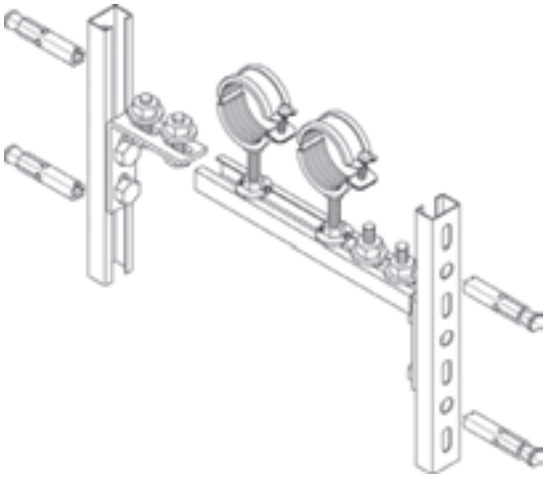
DESCRIPTION

- Angle brackets for connection of channels.

Advantages / Benefits

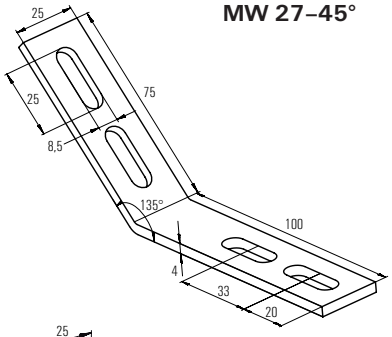
- Installation advantages in producing load-bearing constructions in connection with fischer mounting rails.
- Variable installation possibilities.

INSTALLATION

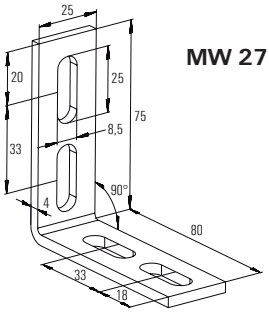


TECHNICAL DATA

MW 27–45°



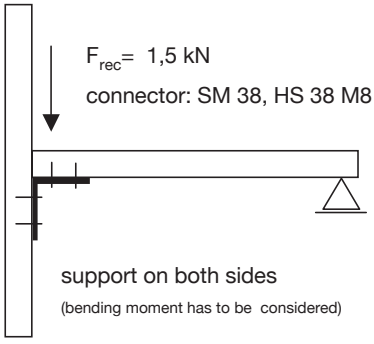
MW 27–90°



Type	Art. No.	Qty. per box pcs.
MW 27-45°	**079656**	25
MW 27-90°	**079655**	25

LOADS

For connection channel – channel



Beam clamp TKR

OVERVIEW

TKR 27/18

Properties:

Material	Material plate: Steel DD11 (material no. 1.0332) acc. DIN EN 10111 Material U-bolt pipe hanger: Steel (material no. 10037) acc. DIN EN 10025 Hexagon nut: Material: Steel acc. to ISO 898-2 table 4, resistance min. 4
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

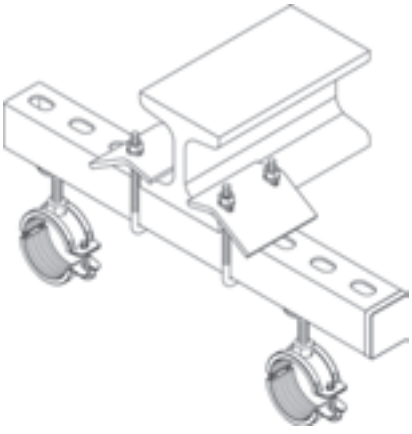
- Stirrup for fastening profile rails to steel girders.

Advantages / Benefits

- No drilling or welding necessary.
- Adjustment is possible at any time.
- Due to the different lengths of the claw sides, the fischer clamp supporter can be fastened to all standard T-beams.

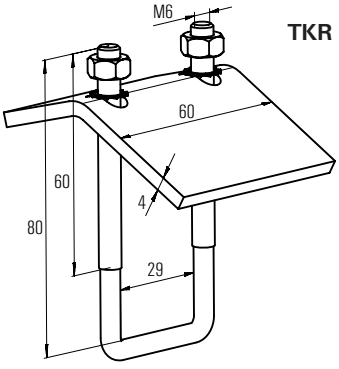
INSTALLATION

- Two clamp supports are necessary for fastening to the steel gird.



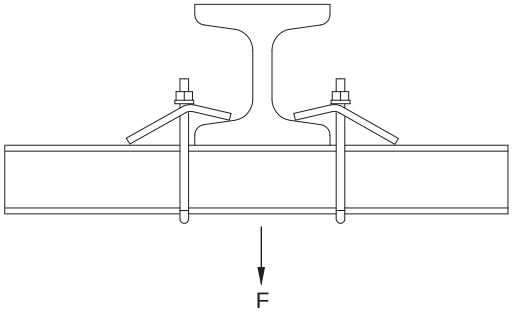
TECHNICAL DATA

TKR 27/18



Type	Art. No.	Qty. per box	Fixing thickness	for profile
		pcs.	[mm]	
TKR 27/18	**079411**	25	0 – 29	27/18 + 28/30

LOADS



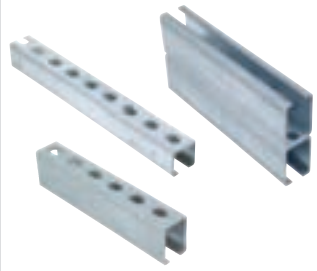
Type	Thread	Max. recom. load / pair $F_{rec.}$ [kN]	Tightening torque [Nm]
TKR 27/18	M6	2.8	10

Installation System MS

A complete installation system suitable for:

- industrial piping
- heating and sanitary supply pipes
- ventilation, air duct
- electrical installation, like cable trays, data lines etc.
- solar panels installations

Channels
MS 38/40, MS 40/60, MS 40/120 **Page 54**



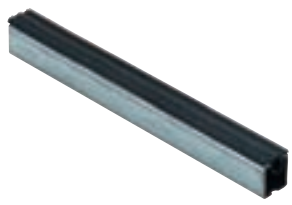
Cantilever
ALK /ALK Q **Page 56**

Connectors
FHS Clix S **Page 60**

Channel connectors
SF **Page 65**

UWS **Page 68**

EMS **Page 59**



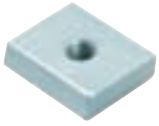
GLK **Page 59**

AK **Page 58**

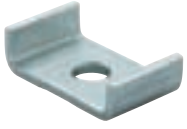
HS **Page 61**

HG **Page 63**

SM **Page 62**



HK **Page 64**



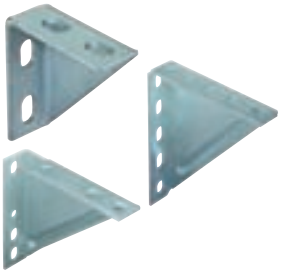
MW **Page 67**

TKR **Page 72**

SV **Page 58**

TSF **Page 66**

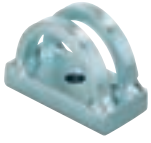
WK **Page 69**



FSB 45° **Page 59**

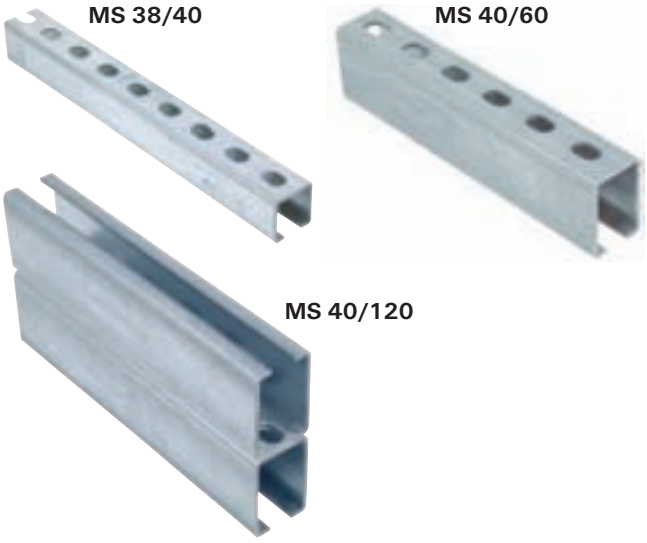
VB **Page 59**

UHRS **Page 59**



Channel MS

OVERVIEW



Properties:

Material	Steel DX51D+Z 275 MA-C (material no. 1.0226+Z) acc. to DIN EN 10327
Zinc plating	Sendzimir zinc-plated, approx. 20 µm

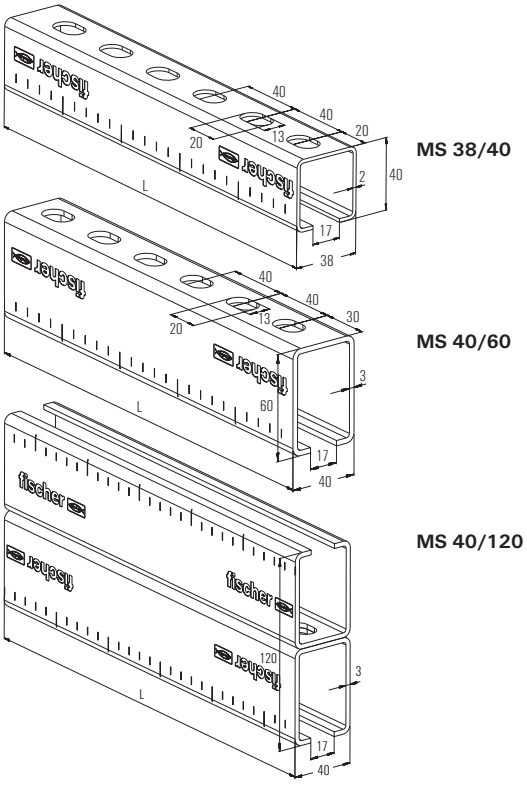
DESCRIPTION

- C-profiled Channel for horizontal and vertical installation.
- Fast and streamlined fastening of pipe tracks and load-bearing constructions.

Advantages / Benefits

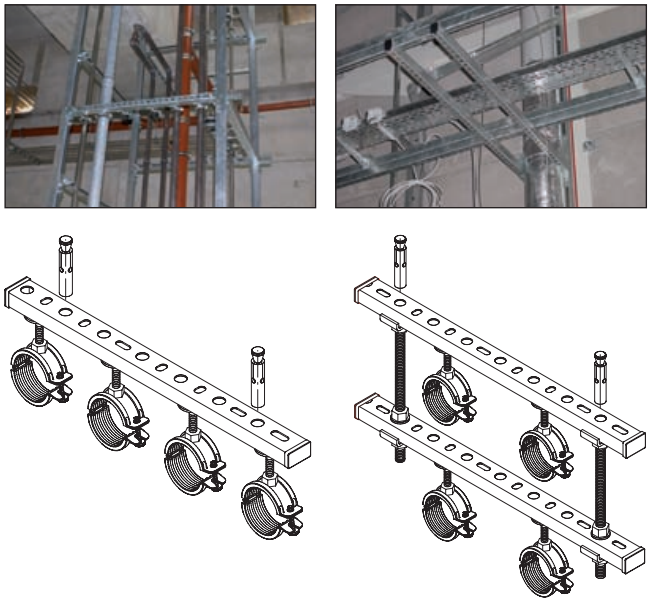
- Versatile options for wall, floor and ceiling installation.
- Specially synchronized connection parts allow for assembly of simple, safe and versatile load bearing constructions.
- Simple cutting and installation due to stamped grid dimensions on the rail side.

TECHNICAL DATA

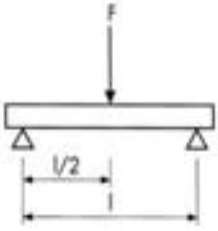


Type		Qty. per box	Length L	Profile cross section	Weight
		pcs.	[mm]	[cm²]	[kg/m]
MS 38/40/2.00 - 2 m	**079562**	1	2000	2.55	2.00
MS 38/40/2.00 - 3 m	**079559**	1	3000	2.55	2.00
MS 38/40/2.00 - 4 m	**093281**	1	4000	2.55	2.00
MS 38/40/2.00 - 6 m	**030075**	1	6000	2.55	2.00
MS 40/60/3.00 - 4 m	**093282**	1	4000	4.98	3.91
MS 40/60/3.00 - 6 m	**014314**	1	6000	4.98	3.91
MS 40/120/3.00 - 6 m	**014315**	1	6000	9.96	7.82

INSTALLATION



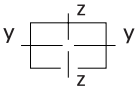
LOADS



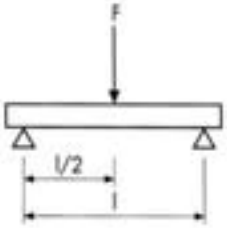
Type		Span l		
		1.0 m	2.0 m	3.0 m
MS 38/40/2.00	admissible load F [kN]	1.53	0.68	0.3
MS 40/60/3.00	admissible load F [kN]	4.21	2.10	1.21
MS 40/120/3.00	admissible load F [kN]	12.48	6.23	4.14

Load-bearing capacity of MS channels

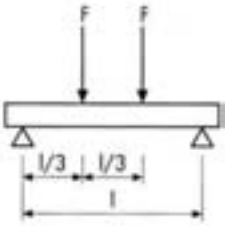
TECHNICAL VALUES

Profile	Profile weight	Profile cross section	Moment of inertia		Section modulus	
		Δ	I_y	I_z	W_y	W_z
	[kg/m]	[cm²]	[cm⁴]	[cm⁴]	[cm³]	[cm³]
Channel MS						
38/40	2.00	2.55	5.39	6.18	2.40	3.25
40/60	3.91	4.98	21.56	13.54	6.58	6.77
40/120	7.82	9.96	117.08	27.08	19.51	13.54

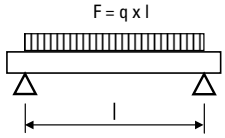
LOAD CASE 1



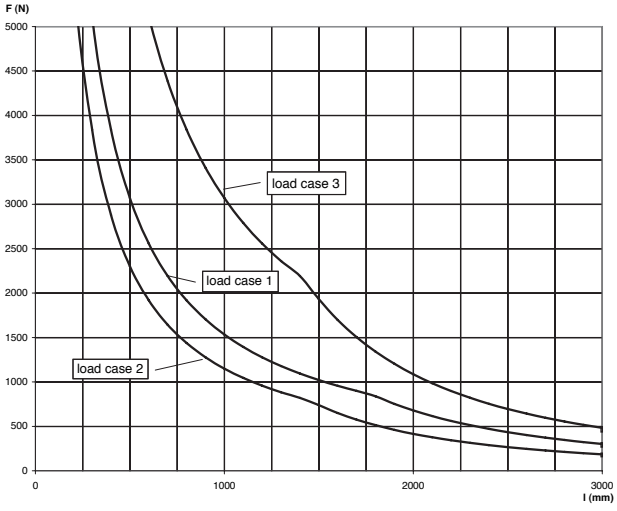
LOAD CASE 2



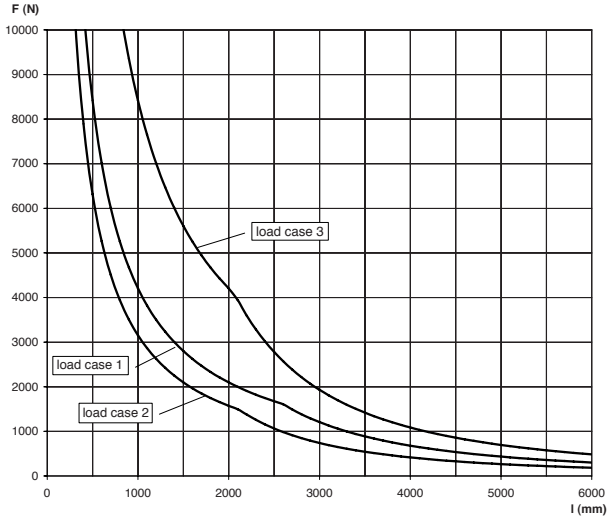
LOAD CASE 3



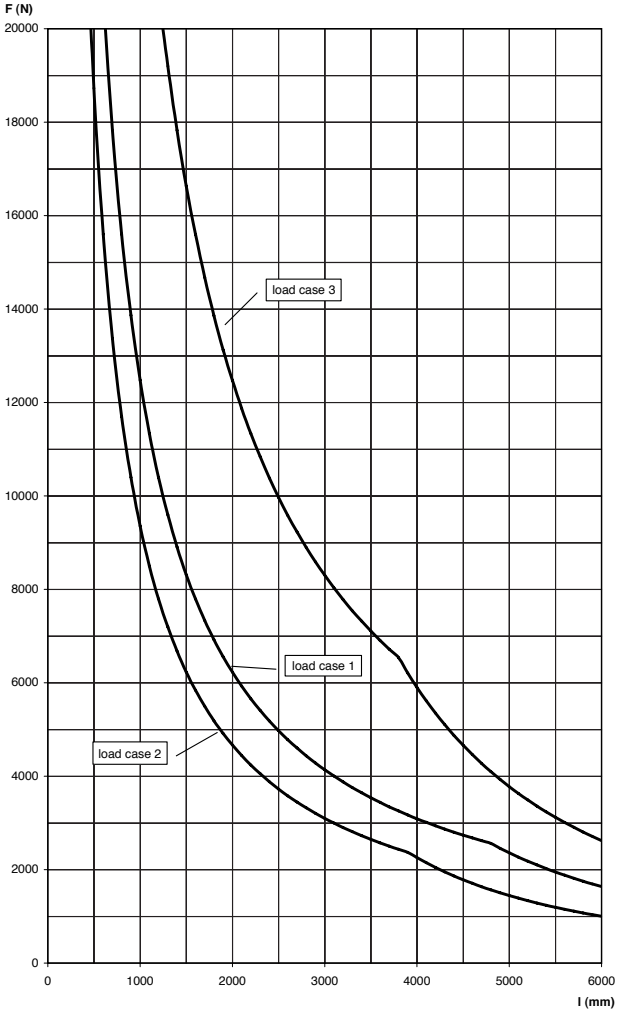
MS 38/40



MS 40/60



MS 40/120



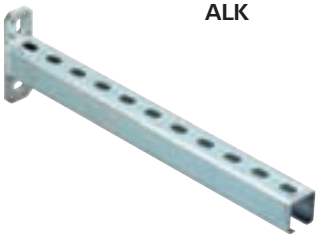
For the load curves, the permissible steel strain $\sigma_{adm.}$ = 160 N/mm and the maximum deflection under load l/200 are not exceeded.

Fixings and screw fastenings must be calculated accordingly.

Cantilever arm ALK / ALK Q

OVERVIEW

ALK



Properties:

Material	Base plate: steel DC01 (material no. 1.0330) acc. to DIN EN 10111 Channel: steel S235JR (material no 1.0037) acc. DIN EN 10025
Zinc plating	Electro zinc plated, min. 8 µm

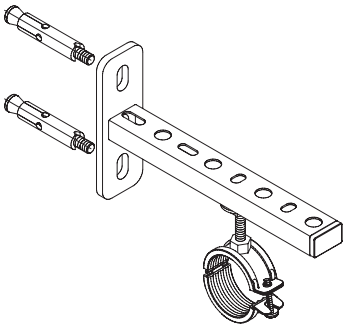
DESCRIPTION

- Cantilever arms made of C profiled channels.

Advantages / Benefits

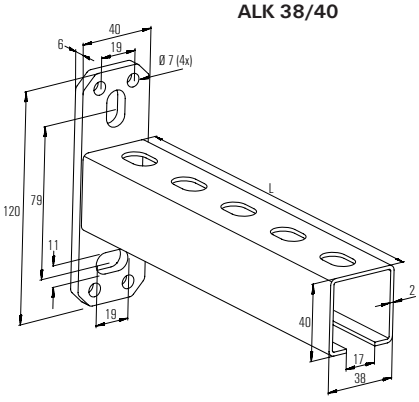
- Versatile usage possibilities for stepped lengths.
- Slots in the rail offer versatile installation possibilities.

INSTALLATION

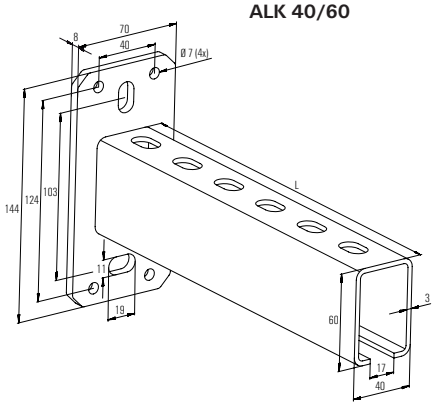


TECHNICAL DATA

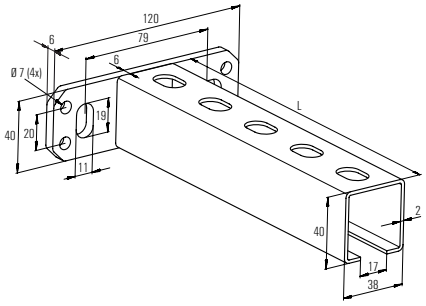
ALK 38/40



ALK 40/60



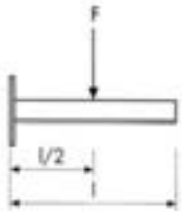
ALK Q 38/40



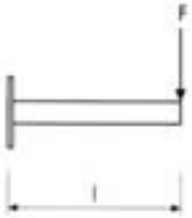
Type	Art. No.	Qty. per box pcs.	Profile	Length L [mm]
ALK 38/40 - 200	**079580**	10	38/40	200
ALK 38/40 - 360	**079581**	10	38/40	360
ALK 38/40 - 440	**063560**	10	38/40	440
ALK 38/40 - 520	**079582**	10	38/40	520
ALK 38/40 - 600	**020929**	10	38/40	600
ALK 38/40 - 800	**040399**	1	38/40	800
ALK 38/40 - 1000	**040400**	1	38/40	1000
ALK 40/60 - 600	**063561**	5	40/60	600
ALK 40/60 - 800	**063562**	1	40/60	800
ALK 40/60 - 1000	**063563**	1	40/60	1000
ALK Q 38/40 - 440	**040401**	10	38/40	440
ALK Q 38/40 - 600	**040402**	10	38/40	600

Load-bearing capacity of cantilever arm ALK / ALK Q

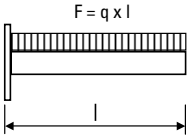
LOAD CASE 1



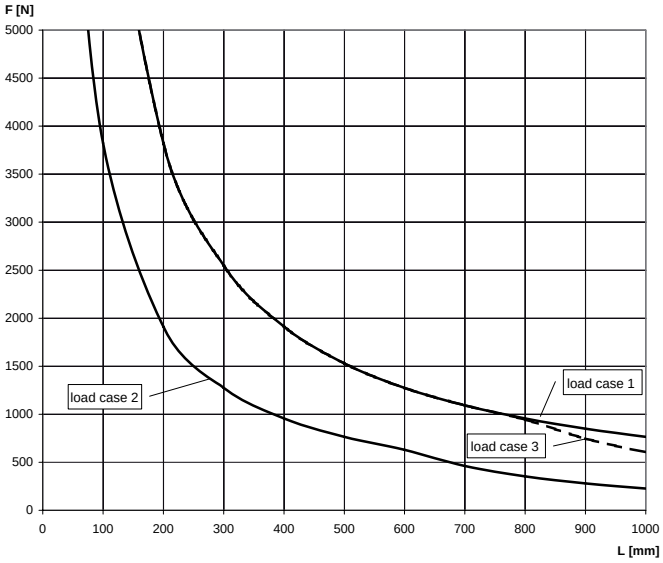
LOAD CASE 2



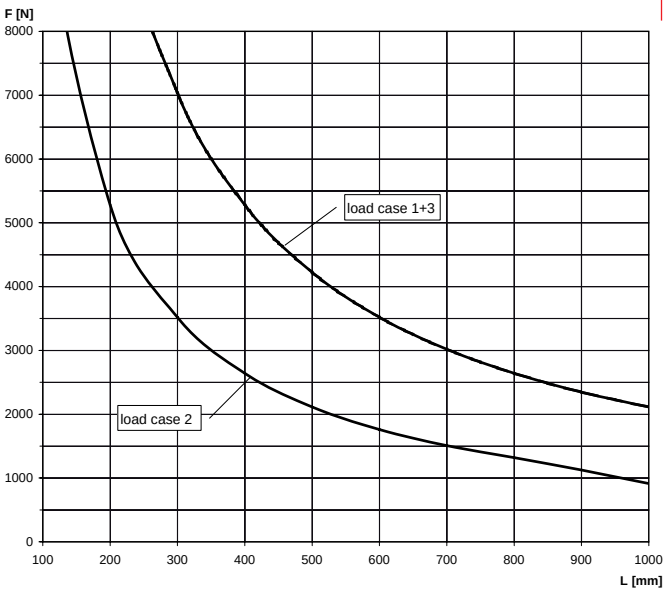
LOAD CASE 3



ALK 38/40



ALK 40/60



For the load curves, the permissible steel strain $\sigma_{adm.}$ = 160 N/mm and the maximum deflection under load l/150 are not exceeded.

Fixings and screw fastenings must be calculated accordingly.

Cover cap AK

OVERVIEW

AK

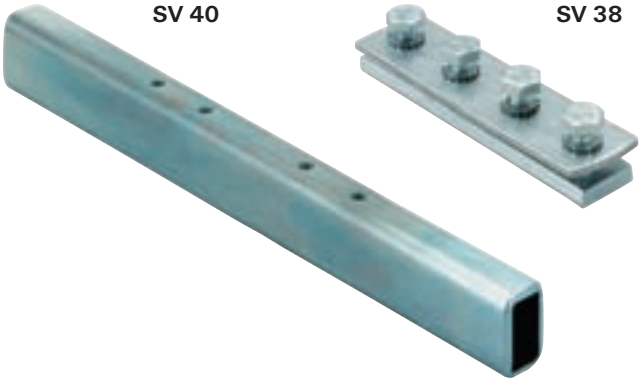
Type	Art. No.	Qty. per box pcs.	For profile
AK 38/40	**079567**	50	38/40
AK 40/60	**048841**	25	40/60 + 40/120

Properties:

Material	Polyethylene, black

Channel connector SV

OVERVIEW



SV 40 **SV 38**

Properties:

Material SV 38	Steel DC01 (material no. 1.0330) acc. to DIN EN 10130
Material SV 40	S235JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, 8 µm

DESCRIPTION

- Connectors for C-channels.

Advantages / Benefits

- SV 38 pre-assembled with screws and washers (special).

INSTALLATION

The channel connector SV 38 is inserted into the rail ends and then screwed tight.

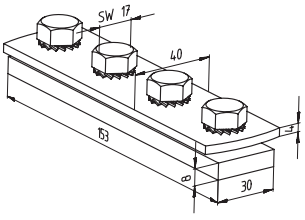
The channel connector SV 40 is introduced into the rails to be connected (MS 40/60 or MS 40/120) and then secured and screwed together using 4 location clamps HK 40.

Installation tips

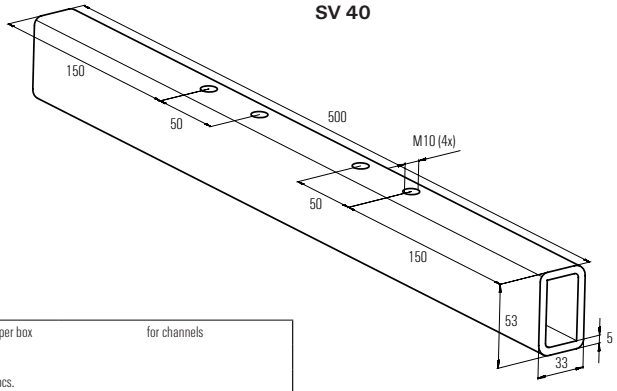
- HK 40 and SKS 10 x 20 and U 10 x 28 are not included.

TECHNICAL DATA

SV 38

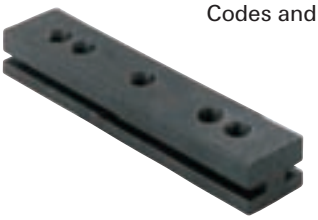


SV 40



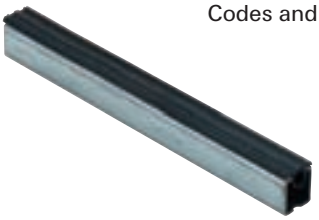
Type	Art. No.	Qty. per box pcs.	for channels
SV 38	**079661**	10	38/40
SV 40	**063643**	1	40/60 + 40/120

Sliding insert GLK 38



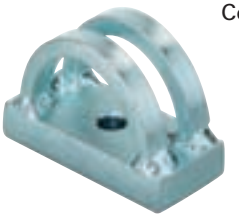
Codes and characteristics see on page 114

Rubber inlay EMS



Codes and characteristics see on page 125

Universal mounting UHRS



Codes and characteristics see on page 91

Variable bracket VB

Codes and characteristics see on page 92

Threaded rod bracket FSB 45°

Codes and characteristics see on page 94

T-head bolt FHS Clix S

OVERVIEW

FHS Clix-S

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 5 µm

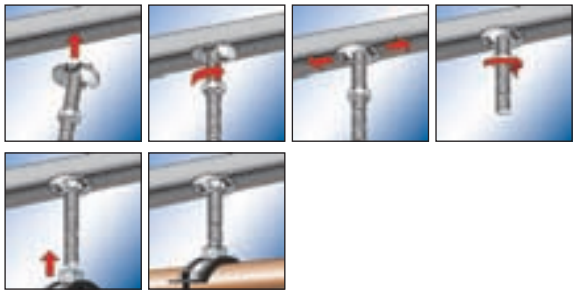
DESCRIPTION

- Quick lock hammer head bolt.

Advantages / Benefits

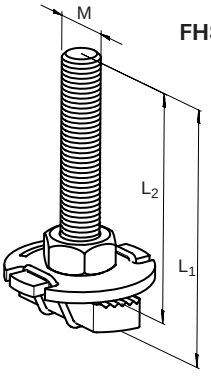
- Simple, fast and effective installation.
- Retrofitting in rails possible.
- Simple alignment in the rail.
- Fits to FUS and MS channels as well.

INSTALLATION



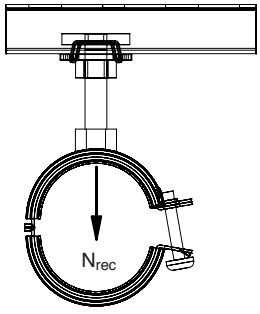
TECHNICAL DATA

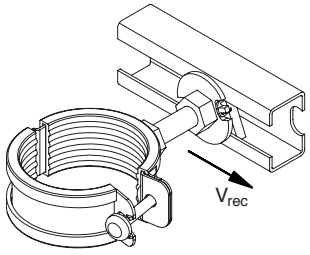
FHS Clix-S



Type	Art. No.	Qty. per box pcs.	Thread M	Length L_1 [mm]	Length L_2 [mm]
FHS CLIX S 8 x 30	**020914**	50	M 8	36	30
FHS CLIX S 8 x 40	**020915**	50	M 8	46	40
FHS CLIX S 8 x 60	**020916**	50	M 8	66	60
FHS CLIX S 10 x 30	**020917**	50	M 10	37	30
FHS CLIX S 10 x 40	**020918**	50	M 10	47	40
FHS CLIX S 10 x 60	**020919**	50	M 10	67	60
FHS CLIX S 12 x 30	**020969**	50	M 12	38	30
FHS CLIX S 12 x 40	**047316**	50	M 12	48	40
FHS CLIX S 12 x 60	**504320**	50	M 12	68	60

LOADS





Type	Profile	Max. recom. static load (tension) N_{rec} [kN]	Max. recom. static load (shear) V_{rec} [kN]	Thightening torque [Nm]
M8	38/40	5.0	0.8	15
	40/60	6.5	0.8	
M10	38/40	5.0	2.0	20
	40/60	7.5	2.0	
M12	38/40	5.0	2.5	25
	40/60	8.5	2.5	

T-head bolt HS 38

OVERVIEW

HS 38

Properties:

Base plate material	Steel (material no. 1.0037) acc. to DIN EN 10025
Thread rod	Steel 4.8 acc. DIN 976
Hex-nut	Steel acc. ISO 898-2 Tab. 4 resistance min. 4
Washer	Steel (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- T-head bolt for all standard rail profiles with 15 mm and 17 mm slot width.

Advantages / Benefits

- Simple, fast and effective installation.
- Fewer individual parts than with traditional fixings.
- Simple alignment in the rail.

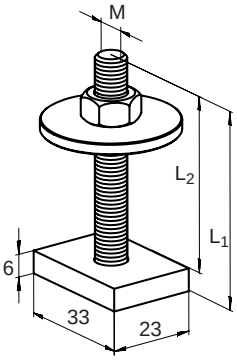
INSTALLATION

Installation tips

- Introduce the fischer T-head bolt into the rail or bracket from the side.
- After alignment, the T-head bolt should be secured with the nut.

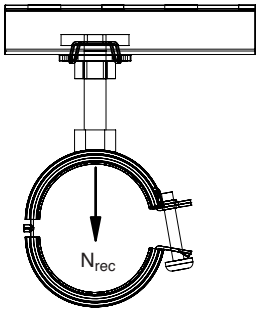
TECHNICAL DATA

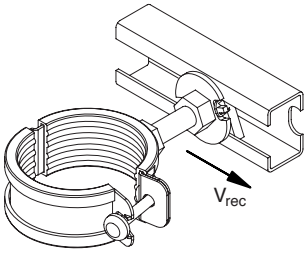
HS 38



Type	Art. No.	Qty. per box pcs.	Thread M	Length L_1 [mm]	Length L_2 [mm]
HS 38 M 8 x 30	**079610**	50	M 8	30	24
HS 38 M 8 x 40	**079611**	50	M 8	40	34
HS 38 M 8 x 60	**079612**	50	M 8	60	54
HS 38 M 10 x 25	**063956**	50	M 10	25	19
HS 38 M 10 x 30	**079615**	50	M 10	30	24
HS 38 M 10 x 40	**079616**	50	M 10	40	34
HS 38 M 10 x 60	**079617**	50	M 10	60	54

LOADS



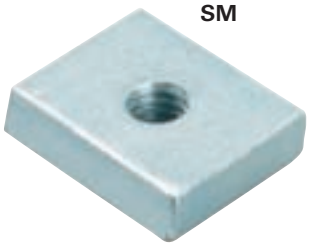


Type	Profile	Max. recom. static load (tension) N_{rec} [kN]	Max. recom. static load (shear) V_{rec} [kN]	Thightening torque [Nm]
HS 38 M8	38/40	6.0	0.8	15.0
	40/60	7.5	0.8	
HS 38 M10	38/40	6.0	1.0	25.0
	40/60	7.5	1.0	

Sliding nut SM

OVERVIEW

SM



Properties:

Material	Steel (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- Threaded plate fitting to MS channels.

Advantages / Benefits

- Simple installation and alignment in the rail.

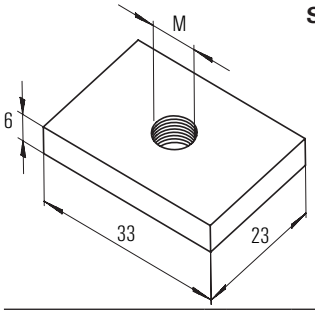
INSTALLATION

Installation tip

- Introduce the fischer SM nut into the rail or bracket from the side.
- After alignment, the threaded plate should be secured with a nut.

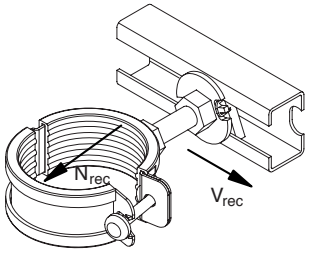
TECHNICAL DATA

SM



Type	Art. No.	Qty. per box pcs.	Thread M
SM 38 M 8	**079600**	50	M 8
SM 38 M 10	**079601**	50	M 10

LOADS



Type	Profile	Max. recom. static load (tension) N_{rec} [kN]	Max. recom. static load (shear) V_{rec} [kN]	Thightening torque [Nm]
SM 38 M8	38/40	6.0	0.8	15.0
	40/60	7.5	0.8	15.0
SM 38 M10	38/40	6.0	1.0	25.0
	40/60	7.5	1.0	25.0

Channel nut HG 38

OVERVIEW

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- Threaded plate fitting to MS channels.

Advantages / Benefits

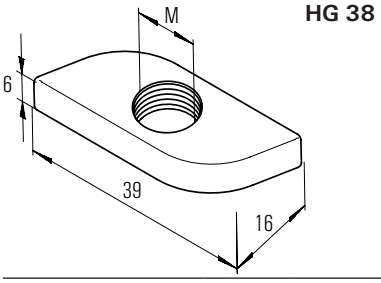
- Simple installation.
- Retrofitting in rails possible.

INSTALLATION

Installation tip

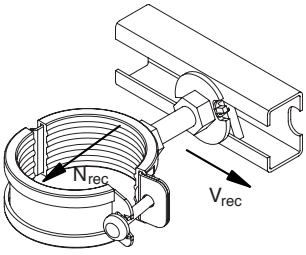
- Insert in to the channel and rotate 90°.

TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Thread M		
HG 38 M 6	**077667**	100	M 6		
HG 38 M 8	**024687**	100	M 8		
HG 38 M 10	**024688**	100	M 10		

LOADS

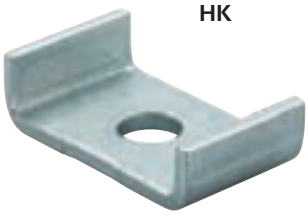


Type	Profile	Max. recom. static load (tension) N_{rec} [kN]	Max. recom. static load (shear) V_{rec} [kN]	Thightening torque [Nm]
HG 38 M6	38/40	3.5	0.5	5.0
	40/60	5.5	0.5	
HG 38 M8	38/40	3.5	0.7	10.0
	40/60	5.5	0.7	
HG 38 M10	38/40	3.5	0.8	15.0
	40/60	5.5	0.8	

Channel washer HK

OVERVIEW

HK



Properties:

Material	Steel (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

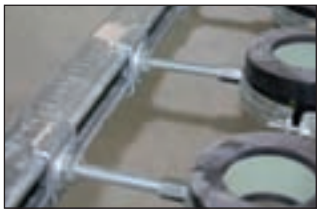
DESCRIPTION

- The channel washer can be used for proper fastening with a fixing, e.g. fischer anchor bolt.
- Used to secure connections.

Advantages / Benefits

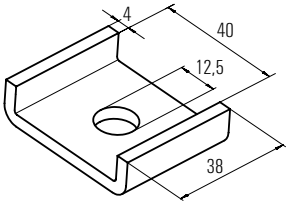
- Prevents the rail from deformation.

INSTALLATION

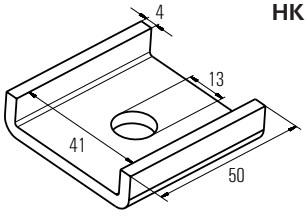


TECHNICAL DATA

HK 38



HK 40



Type	Art. No.	Qty. per box	for profile							
		pcs.								
HK 38	**079651**	50	38/40							
HK 40	**020946**	100	40/60; 40/120							

Saddle flange SF

OVERVIEW

SF Q

SF L

Properties:

Material	Base plate: Steel DC01 – min. 340 (material no. 1.0037) acc. to DIN EN 10139 U-Profil: S235JR (material no. 10037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 8 µm

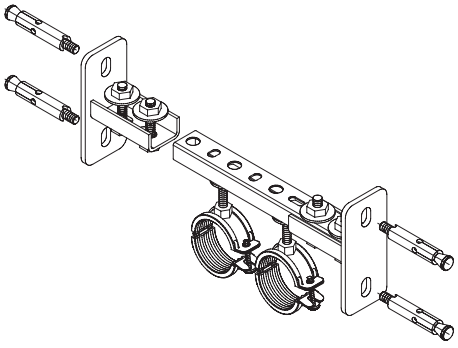
DESCRIPTION

- Connection element between the fischer channels and building.

Advantages / Benefits

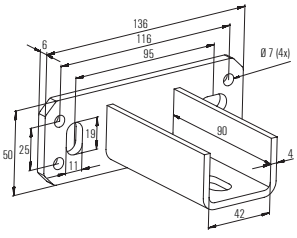
- Solid connecting element for load-bearing constructions.
- Simple installation by inserting the mounting rail in the saddle.

INSTALLATION

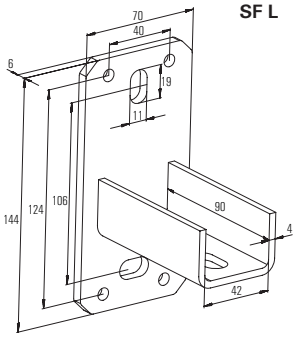


TECHNICAL DATA

SF Q



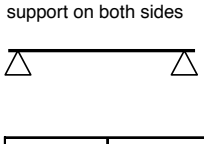
SF L



Type	Art. No.	Qty. per box	Version	for channel
		pcs.		
SF Q 38	**079410**	10	horizontal	38/40 + 40/60 + 40/120
SF L 38	**079586**	8	vertical	38/40 + 40/60 + 40/120

LOADS

support on both sides



Connector	Channel	double	Torque
		[kN]	[Nm]
HG 38 M10	38/40	1,5	15
	40/--	1,5	15
SM / HS M10	38/40	2	25
	40/--	2	25
FHS Clix S 10	38/40	4	20
	40/--	4	20

Telescopic flange TSF

OVERVIEW

TSF Q

TSF L

Properties:

Material	Base plate: Steel DD11 (material no. 1.0332) acc. to DIN EN 10111 / U-Profil: S235JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 3 µm

DESCRIPTION

- Ideal, flexible connecting element for producing constructions in connection with the fischer mounting rails.

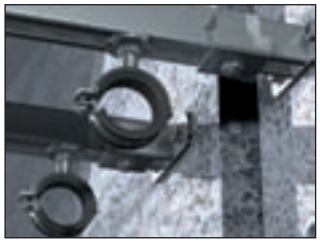
Advantages / Benefits

- Simple and fast installation using the T-head bolt FHS Clix S.
- Height and length differences up to 5 cm can be compensated quickly and easily.
- Can be used ideally in tight application areas using telescopic function.
- Free rail opening, e.g. for pipe connections.

INSTALLATION

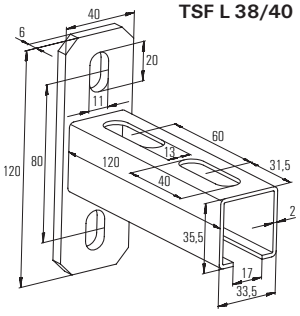
Installation tips

- Installation is carried out by sliding into the mounting rail and the fastening by means of FHS Clix S or by screwing.
- Good fixing possibility using suitable anchor.
- Good height adjustment due to long slots in the base plate.

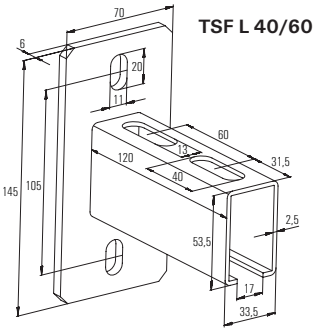


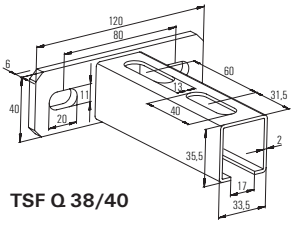
TECHNICAL DATA

TSF L 38/40

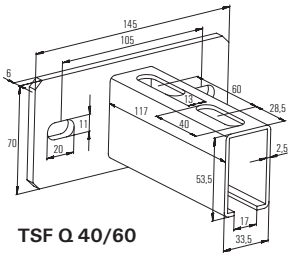


TSF L 40/60





TSF Q 38/40

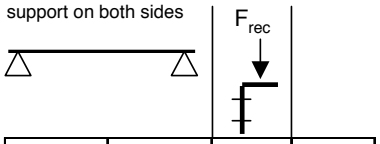


TSF Q 40/60

Type	Art. No.	Qty. per box pcs.	for profile	Version
TSF L 38/40	**063611**	15	38/40	vertical
TSF Q 38/40	**063621**	15	38/40	horizontal
TSF L 40/60	**063624**	15	40/60 + 40/120	vertical
TSF Q 40/60	**063629**	15	40/60 + 40/120	horizontal

LOADS

support on both sides



Connector	Channel	double [kN]	Torque [Nm]
HG 38 M10	38/40	1,5	15
	40/--	1,5	15
SM / HS M10	38/40	2	25
	40/--	2	25
FHS Clix S 10	38/40	4	20
	40/--	4	20

Installation angle bracket MW

OVERVIEW

MW 38-45°

MW L2 38-90°

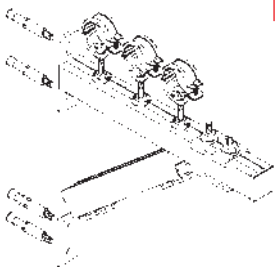
MW 38-90°

MW L3 38-90°

Properties:

Material	Steel S235 JR (material no. 1.0332) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 8 µm

INSTALLATION



DESCRIPTION

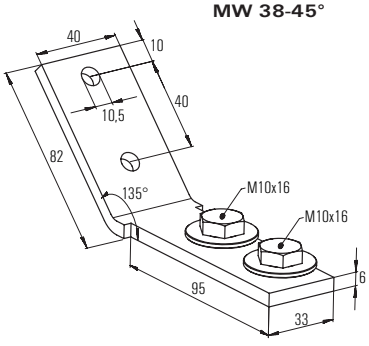
- Angle brackets for connection of channels.

Advantages / Benefits

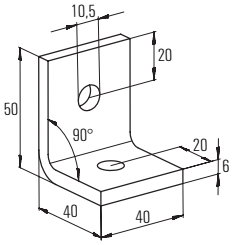
- Installation advantages in producing load-bearing constructions in connection with fischer mounting rails.
- Variable installation possibilities.
- MW 38-45° is supplied with pre-mounted clamping screw.

TECHNICAL DATA

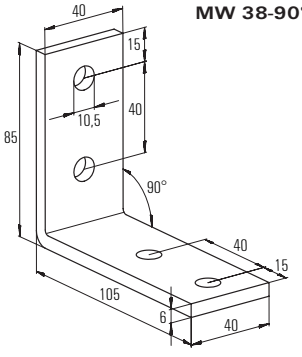
MW 38-45°



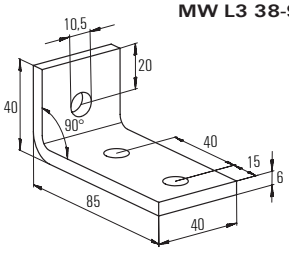
MW L2 38-90°



MW 38-90°



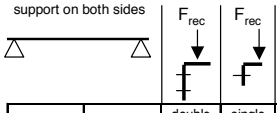
MW L3 38-90°



Type	Art. No.	Qty. per box pcs.	Angle
MW 38-45°	**079658**	10	45°
MW 38-90°	**079657**	20	90°
MW L2 38-90°	**063599**	20	90°
MW L3 38-90°	**063597**	20	90°

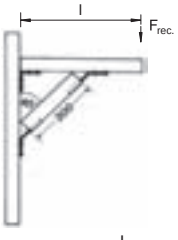
LOADS

MW L2, MW L3, MW 38-90

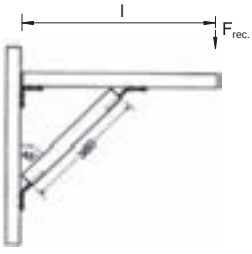


Connector	Channel	double [kN]	single [kN]	Torque [Nm]
HG 38	38/40	1,5	0,8	15
M10	40/--	1,5	0,8	15
SM / HS	38/40	2	1	25
M10	40/--	2	1	25
FHS	38/40	4	2	20
Clix S 10	40/--	4	2	20

Load case: Brackets made of MS 38/40 + MW 38–45° + MW 38–90°



Length l in mm	140	280
Max. Load $F_{rec.}$ in kN:	3.9	1.7



Length l in mm	125	250	470
Max. Load $F_{rec.}$ in kN:	2.4	3.9	1.4

Universal bracket UW S

OVERVIEW

UW S

Properties:

Material	Steel DD11 (material no. 10332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- Stable angle bracket for reinforcing load-bearing constructions.

Advantages / Benefits

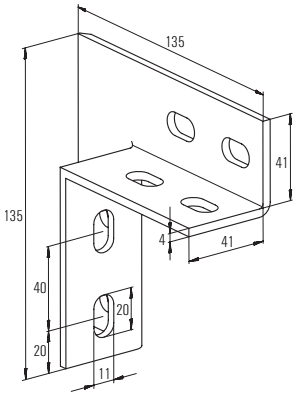
- Ideal, flexible construction element due to the option of horizontal and vertical alignment.
- In combination with fischer mounting rails, the universal bracket produces a load-bearing construction with very high stability and safety.

INSTALLATION

Installation tip

- The universal bracket should be used in pairs.

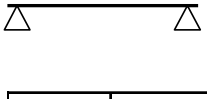
TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.
UW S	**49479**	10

LOADS

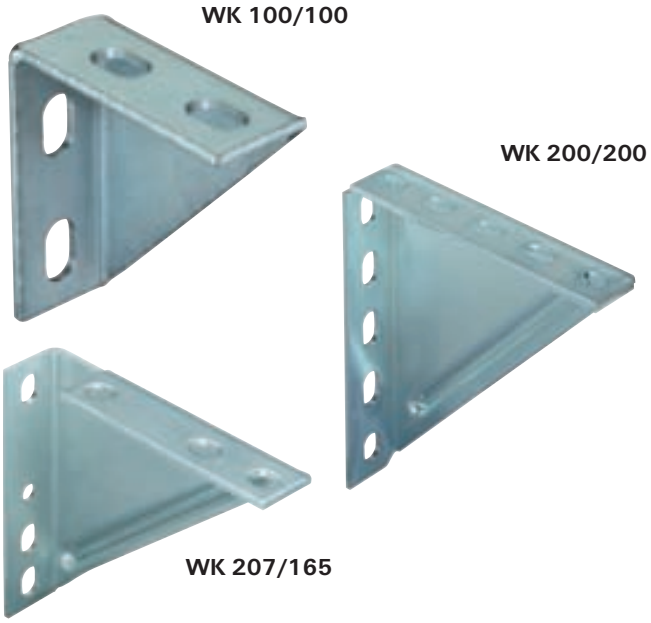
support on both sides



Connector	Channel	double [kN]	single [kN]	Torque [Nm]
HG 38	38/40	1,5	0,8	15
M10	40/--	1,5	0,8	15
SM / HS	38/40	2	1	25
M10	40/--	2	1	25
FHS	38/40	4	2	20
Clix S 10	40/--	4	2	20

Angle bracket WK

OVERVIEW



Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 8 µm

DESCRIPTION

- Stable angle bracket for fixing pipe lines and components.
- The angle bracket acts as a reinforcement for load-bearing consructions.

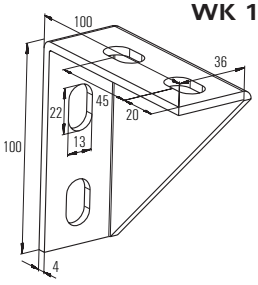
Advantages / Benefits

- Versatile possibilities for wall, floor and ceiling installation, can be used in shafts and also free-standing.
- In combination with fischer mounting rails, the universal bracket produces a load-bearing construction with very high stability and safety.

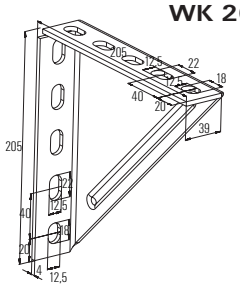
INSTALLATION

TECHNICAL DATA

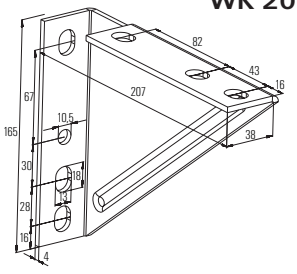
WK 100/100



WK 200/200

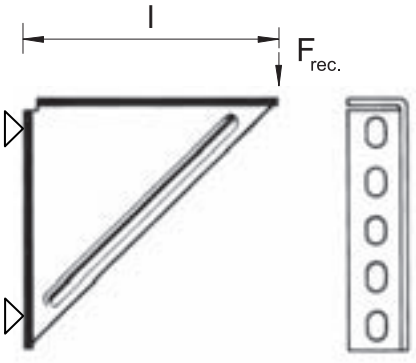


WK 207/165



Type	Art. No.	Qty. per box pcs.											
WK 100/100	**63559**	5											
WK 200/200	**79570**	5											
WK 207/165	**79571**	6											

Load-bearing capacity of the angle brackets



ANGLE BRACKET WK

Angle bracket WK 100

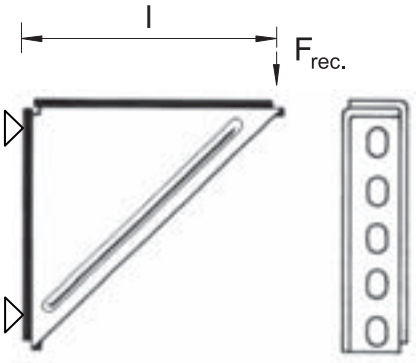
Length l in mm		80	
Max. recom. static load in kN:		4.0	

Angle bracket WK 200/200

Length l in mm		100	180
Max. load $F_{rec.}$ in kN:		4.0	1.8

Angle bracket WK 207/160

Length l in mm			150
Max. load $F_{rec.}$ in kN:			1.8



ANGLE BRACKET WK, DOUBLE-MOUNTED

Angle bracket WK 200/200. double-mounted

Length l in mm		100	180
Max. load $F_{rec.}$ in kN:		8.0	6.0

Rail hanger SB

OVERVIEW

Properties:

Material	S355 MC (material no. 1.0976) acc. to DIN EN 10149 Alternatively: DD11 (material no. 1.0332) acc. to EN 10111
Zinc plating	Electro zinc plated, min. 8 µm

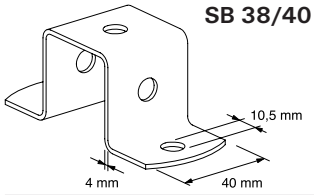
DESCRIPTION

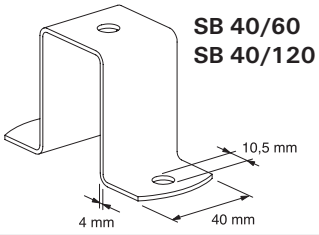
- Universal crosswise connection for channels.

Advantages / Benefits

- Static connection without rotation.
- Variable installation possible due to hole pattern.

TECHNICAL DATA





Type	Art. No.	Qty. per box	for profile									
		pcs.										
SB 38/40	**20926**	25	38/40									
SB 40/60	**20927**	25	40/60									
SB 40/120	**20928**	25	40/120									

Beam clamp TKR

OVERVIEW

TKR

Properties:

Material	Plate: Steel S235 JR (material no. 10037) acc. DIN EN 10025 U-bolt pipe hanger: Steel S235 JR (material no. 10037) acc. DIN EN 10025 Hexagon nut: Steel acc. ISO 898-2 resistance min. 4
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

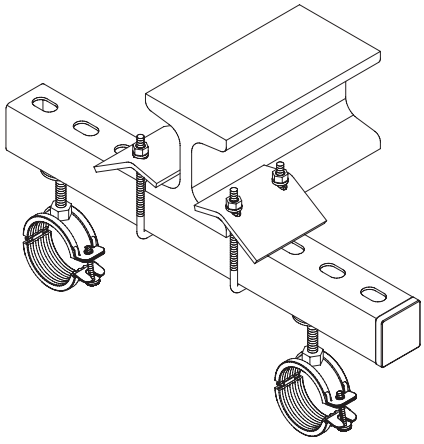
- Stirrup for fastening profile rails to steel beams.

Advantages / Benefits

- Easy to add on.
- No drilling or welding necessary.
- Adjustment is possible at any time.
- Due to the different lengths of the claw sides, the fischer clamp support can be fastened to all standard T-beams.

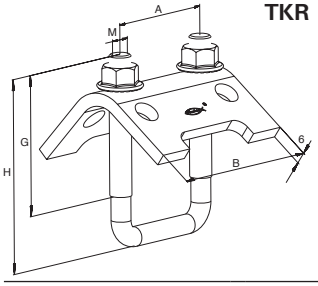
INSTALLATION

- Two clamp supporters are necessary for fastening to the steel beam.



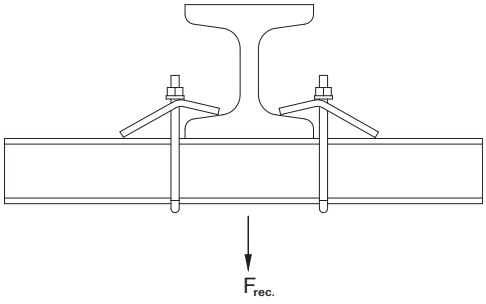
TECHNICAL DATA

TKR



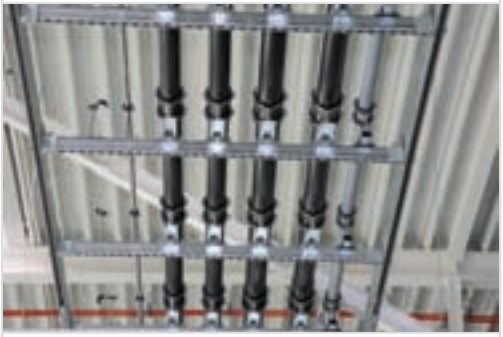
Type	Art. No.	Qty. per box	For profile MS	Width B	Height H	Height G	Thread M	Width A
		pcs.		[mm]	[mm]	[mm]	[mm]	[mm]
TKR 21-42	**504363**	20	38/40	79	97	48	8	52
TKR 82	**504366**	20	40/60	79	80	137	10	54
TKR 124	**504367**	10	40/120	79	80	179	10	54

LOADS



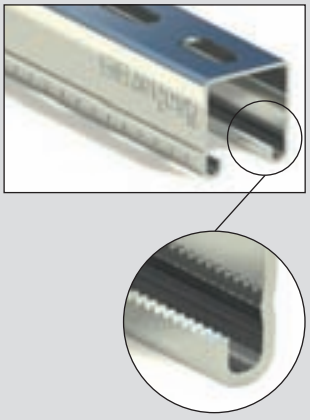
Type	Fits profile	Thread	max. load $F_{rec.}$ [kN]	Tightening torque [Nm]
TKR 21/42	38/40	M8	5.00	15
TKR 82	40/60	M10	10.00	20
TKR 124	40/120	M10	10.00	20

Installation System FUS



A complete installation system suitable for:

- industrial piping
- heating and sanitary supply pipes
- ventilation, air duct
- electrical installation, like cable trays, data lines etc.
- solar panels installations



- The serration in the channel gives shear load benefits e.g. in vertical installation.

Channels
FUS 21, FUS 41, FUS 62 Page 76

Cantilever
FCA Page 80

Connectors
FCN Clix P Page 84

Channel connectors
SF Page 88

Channel connectors
VB Page 92

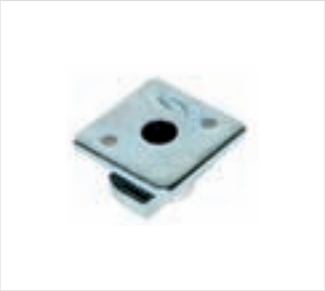
FUS 21 D, FUS 41 D, FUS 62 D **Page 76**

EMS 41 **Page 83**

FEC **Page 83**

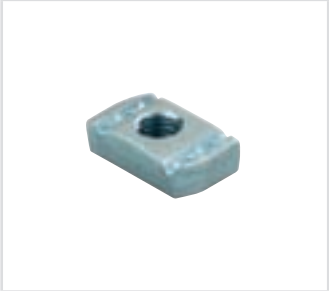
FCAM **Page 82**

FCN Clix M **Page 84**



FHS Clix S **Page 85**

FCN **Page 86**



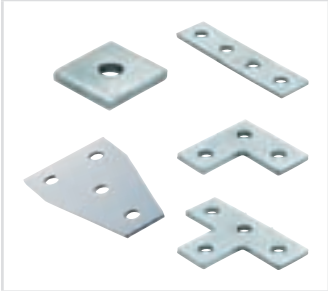
HK 41 **Page 87**

UWS **Page 89**

FAF **Page 96**

FUF **Page 97**

FFF **Page 95**



FSB 45° **Page 94**

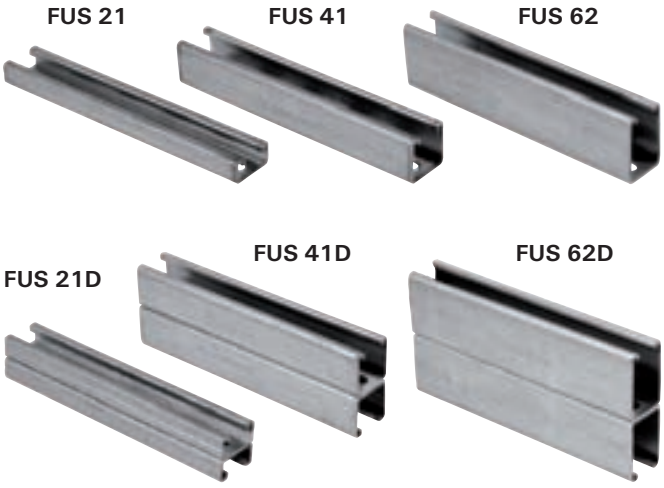
UHRS **Page 91**

TKR **Page 93**

FUF OC **Page 83**

Channel FUS

OVERVIEW



Properties:

Material	Steel DX51D+Z 275 MA-C (material no. 1.0226+Z) acc. to DIN EN 10327
Zinc plating	Sendzimir zinc plated, approx. 20 µm

INSTALLATION

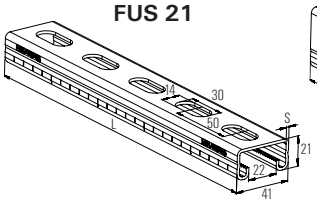
DESCRIPTION

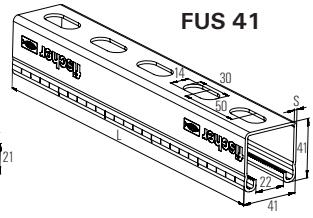
- U-profiled channel for horizontal and vertical installation.
- Fast and streamlined fastening of pipe tracks and load-bearing constructions.

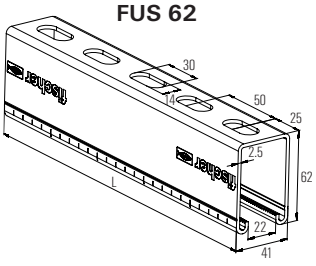
Advantages / Benefits

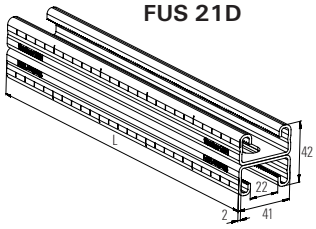
- High bending and tear-out strength due to optimized profile cross section.
- Serration in the rail for secure hold of channel nut FCN and FHS Clix S.
- Versatile options for wall, floor and ceiling installation.
- Simple cutting to size and installation due to the stamped grid dimension on the rail side.

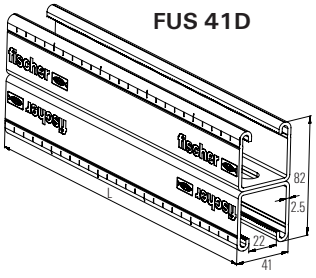
TECHNICAL DATA

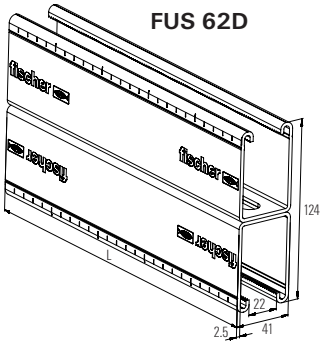








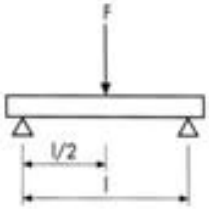




Type	Art. No.	Qty. per box pcs.	Length L [m]	Thickness S [mm]	Weight [kg/m]
FUS 21/2.0 - 2 m	**40391**	1	2	2.0	1.44
FUS 21/2.0 - 3 m	**97660**	1	3	2.0	1.44
FUS 21/2.5 - 2 m	**92867**	1	2	2.5	1.67
FUS 21/2.5 - 3 m	**77349**	1	3	2.5	1.67
FUS 21/2.5 - 6 m	**77541**	1	6	2.5	1.67
FUS 41/2.0 - 2 m	**40390**	1	2	2.0	2.06
FUS 41/2.0 - 3 m	**97658**	1	3	2.0	2.06
FUS 41/2.0 - 6 m	**97659**	1	6	2.0	2.06
FUS 41/2.5 - 2 m	**92295**	1	2	2.5	2.45
FUS 41/2.5 - 3 m	**77347**	1	3	2.5	2.45
FUS 41/2.5 - 6 m	**77537**	1	6	2.5	2.45
FUS 62/2.5 - 6 m	**504457**	1	6	2.5	3.27
FUS 21D/2.0 - 3m	**504458**	1	3	2.0	2.87
FUS 41D/2.5 - 6m	**504459**	1	6	2.5	4.89
FUS 62D/2.5 - 6 m	**504460**	1	6	2.5	6.55

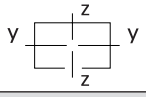
Technical data FUS

LOADS



Type		Span l		
		1 m	2 m	3 m
FUS 21/2.0	admissible load F [kN]	0.49	0.12	0.05
FUS 21/2.5	admissible load F [kN]	0.52	0.13	0.06
FUS 41/2.0	admissible load F [kN]	1.65	0.67	0.30
FUS 41/2.5	admissible load F [kN]	1.82	0.76	0.34
FUS 62/2.5	admissible load F [kN]	3.59	1.79	0.99
FUS 21D/2.0	admissible load F [kN]	1.67	0.69	0.31
FUS 41D/2.5	admissible load F [kN]	5.60	2.79	1.85
FUS 62D/2.5	admissible load F [kN]	11.45	5.72	3.80

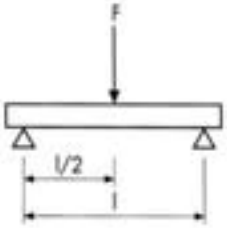
TECHNICAL VALUES FOR FISCHER CHANNELS

Profile	Profile weight	Profile cross section	Moment of inertia		Section modulus	
		Δ	I_y	I_z	W_y	W_z
	[kg/m]	[cm²]	[cm⁴]	[cm⁴]	[cm³]	[cm³]
FUS 21/2.0	1.44	1.72	0.97	4.66	0.89	2.27
FUS 21/2.5	1.67	1.99	1.03	5.28	0.93	2.58
FUS 41/2.0	2.06	2.52	5.33	7.69	2.58	3.75
FUS 41/2.5	2.45	3.00	6.00	8.99	2.85	4.38
FUS 62/2.5	3.27	4.05	17.70	12.90	5.62	6.29
FUS 21D/2.0	2.87	3.44	5.49	9.31	2.61	4.54
FUS 41D/2.5	4.89	6.00	35.01	17.90	8.76	8.78
FUS 62D/2.5	6.55	8.09	111.00	25.80	17.90	12.58

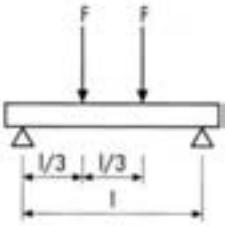
Technical data FUS

LOAD-BEARING CAPACITY OF CHANNELS

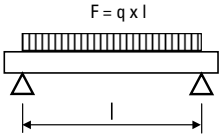
Load case 1



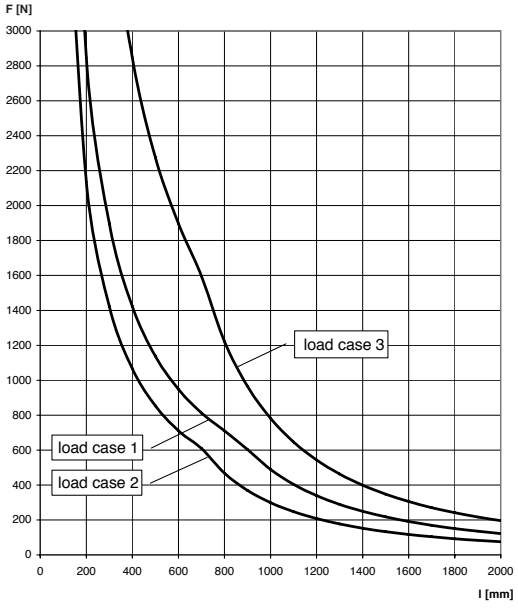
Load case 2



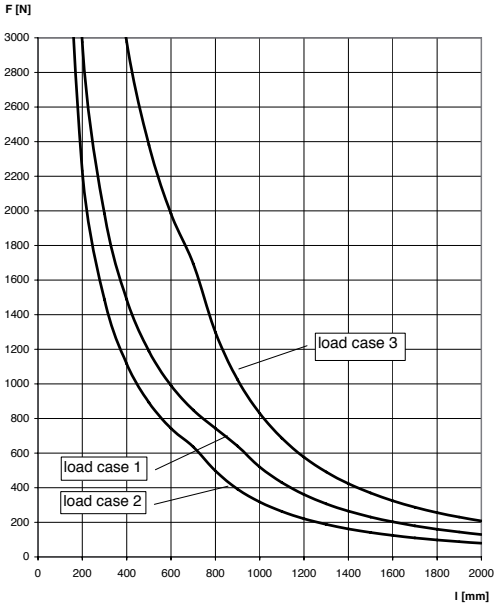
Load case 3



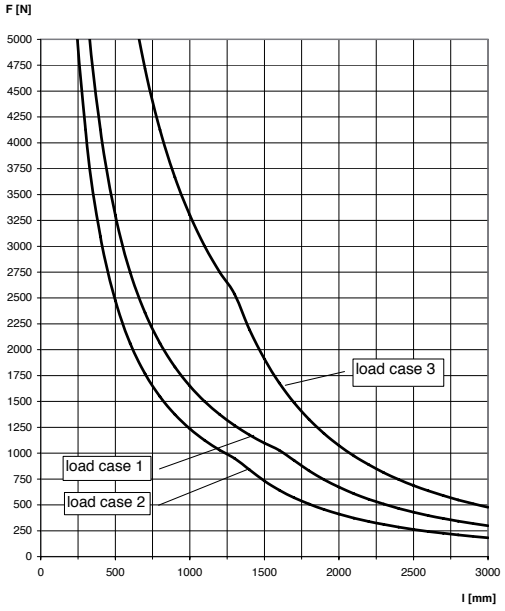
FUS 21/2.0



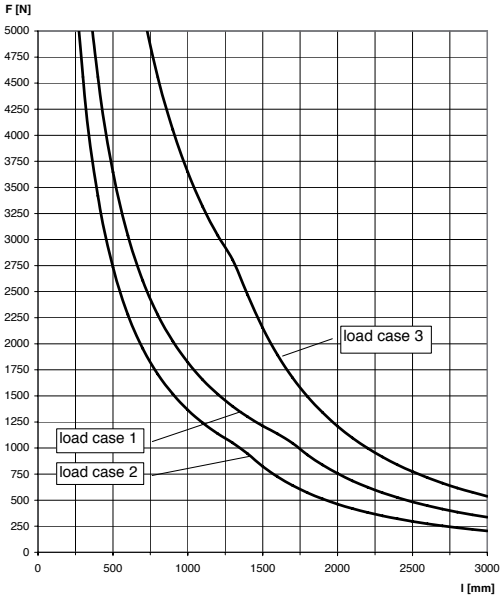
FUS 21/2.5



FUS 41/2.0



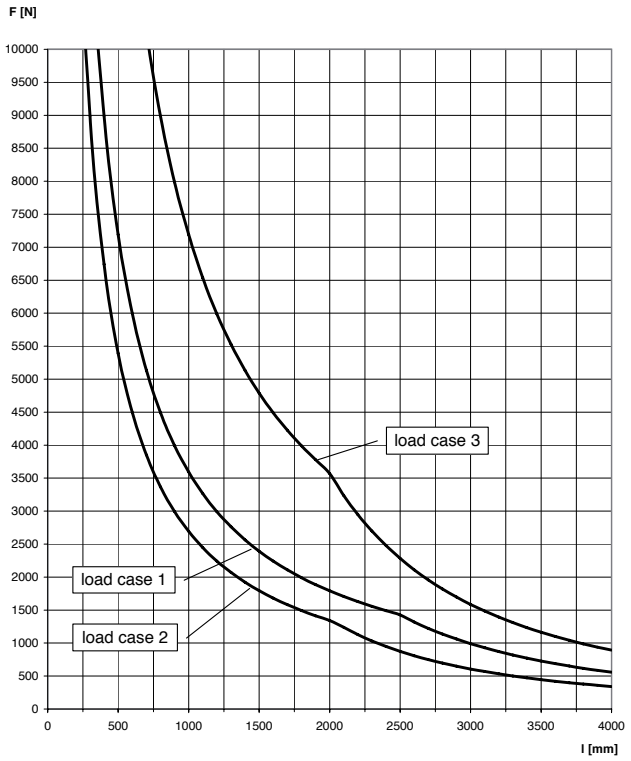
FUS 41/2.5



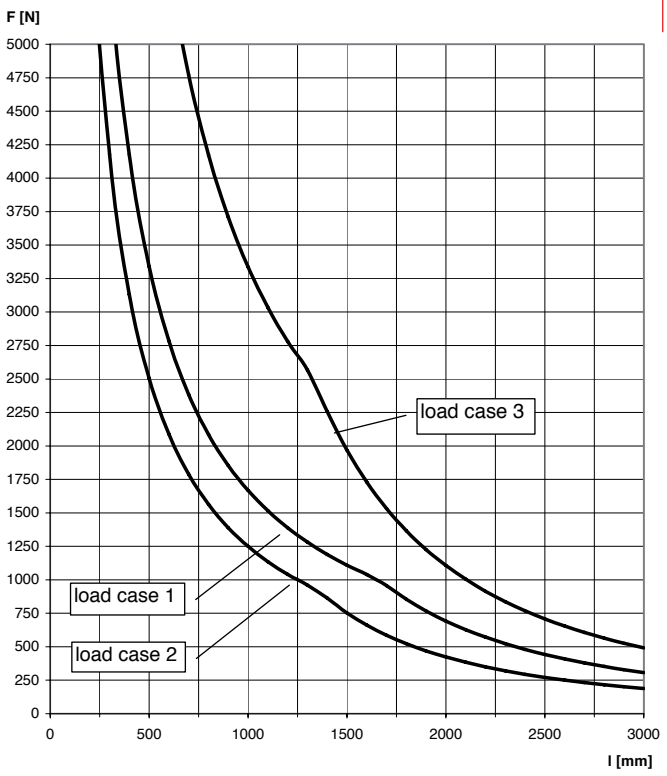
For the load curves, the permissible steel strain $\sigma_{adm.}$ = 160 N/mm and the maximum deflection under load l/200 are not exceeded.
Fixings and screw fastenings must be calculated accordingly.

LOAD-BEARING CAPACITY OF CHANNELS

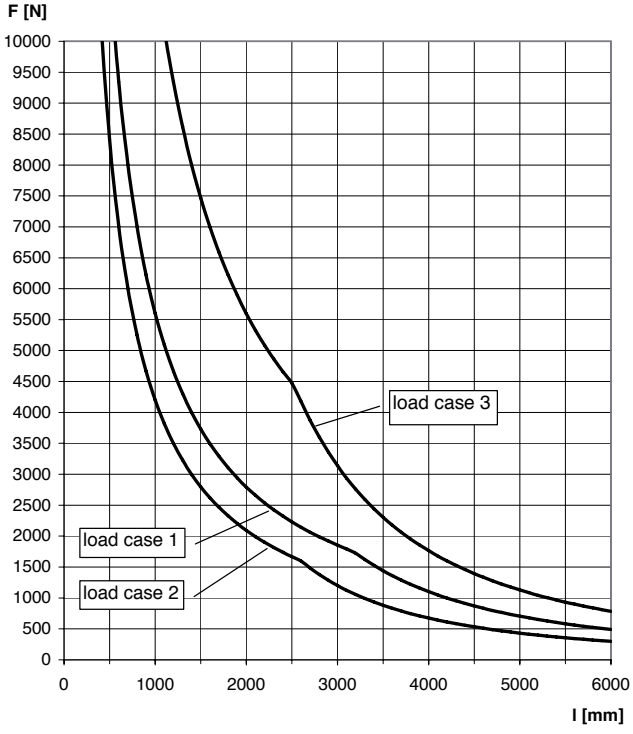
FUS 62/2.5



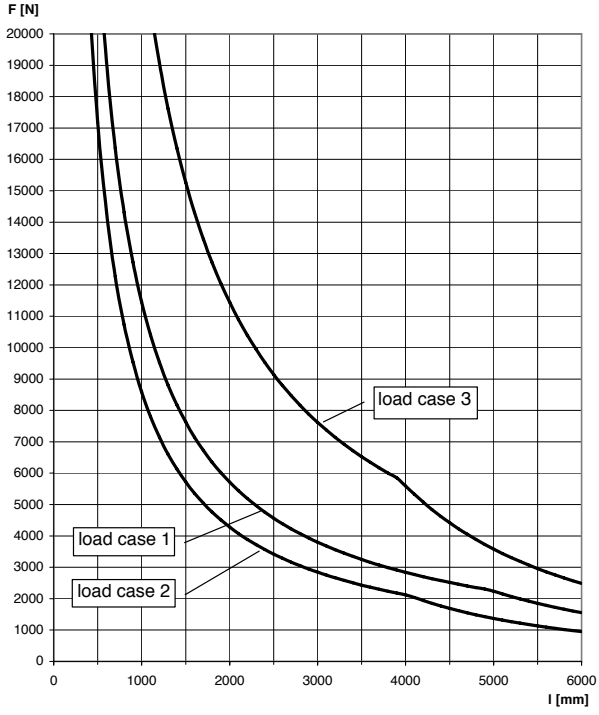
FUS 21D/2.0



FUS 41D/2.5



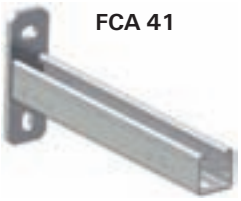
FUS 62D/2.5



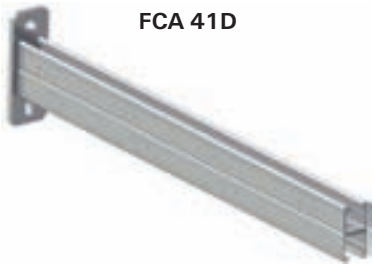
For the load curves, the permissible steel strain $\sigma_{adm.}$ = 160 N/mm and the maximum deflection under load l/200 are not exceeded.
Fixings and screw fastenings must be calculated accordingly.

Cantilever arm FCA

OVERVIEW



FCA 41



FCA 41D

FCA 62

Properties:

Material	Base plate: Steel (material no. 1.0330), DC01 acc. DIN EN 10139 Channel: Steel S235 JR acc. DIN EN 10025, material no. 10037
Zinc plating	Electro zinc plated min. 13 µm

DESCRIPTION

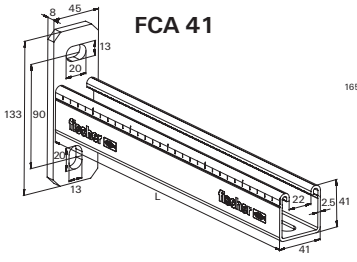
- Cantilever arms made of U profiled channels.

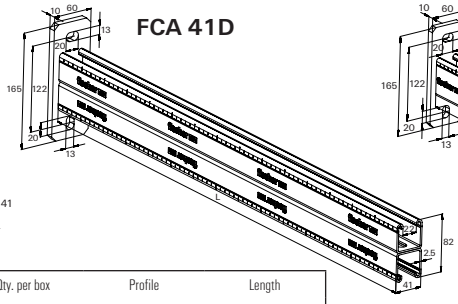
Advantages / Benefits

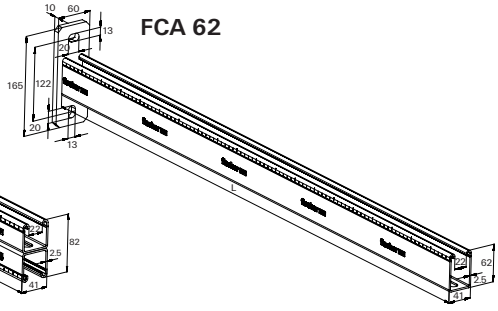
- Serration for secure hold of channel nut FCN Clix and FHS Clix S.
- Robust base plate for load-bearing constructions.
- Versatile usage possibilities through stepped lengths.
- Long slots in the rail offer versatile installation possibilities.

INSTALLATION

TECHNICAL DATA





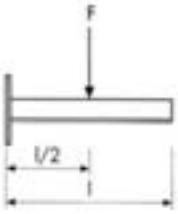


Type	Art. No.	Qty. per box pcs.	Profile	Length L [mm]
FCA 300	**077359**	1	41/2.5	300
FCA 450	**077361**	1	41/2.5	450
FCA 600	**077363**	1	41/2.5	600
FCA 750	**077365**	1	41/2.5	750
FCA 62-1000	**504315**	1	62/2.5	1000
FCA 41D 750	**504317**	1	41D/2.5	750
FCA 41D 1000	**504319**	1	41D/2.5	1000

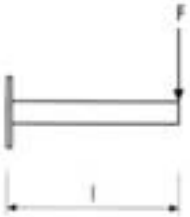
Technical data FCA

LOAD-BEARING CAPACITY OF CANTILEVER BRACKETS

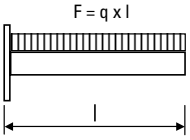
Load case 1



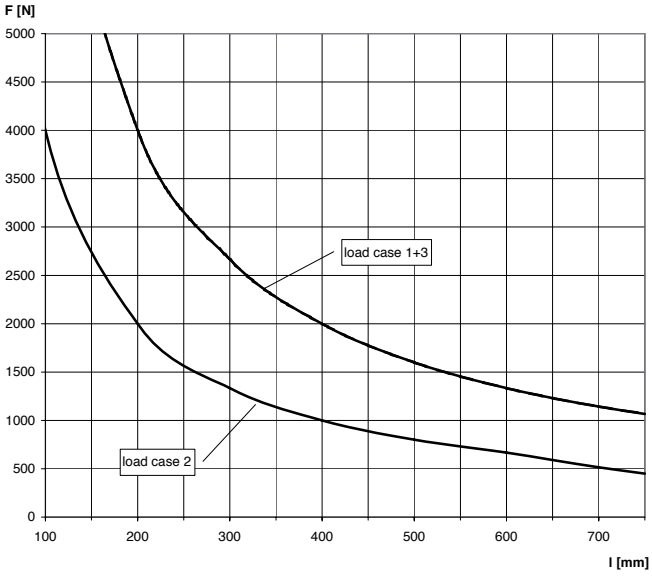
Load case 2



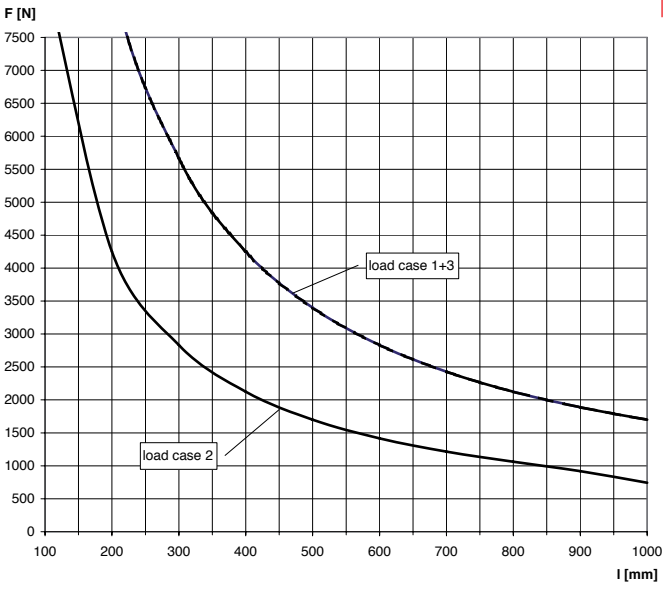
Load case 3



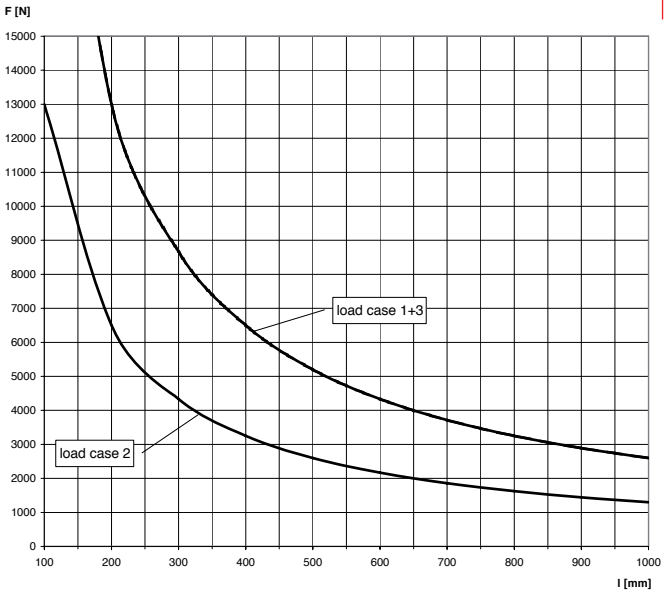
FCA 41



FCA 62



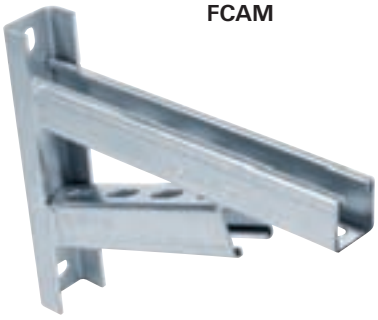
FCA 41 D



For the load curves, the permissible steel strain $\sigma_{adm.}$ = 160 N/mm and the maximum deflection under load l/150 are not exceeded. Fixings and screw fastenings must be calculated accordingly.

Massive Cantilever arm FCAM

OVERVIEW



Properties:

Material	Steel DD11 (material no. 10332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 13 µm

DESCRIPTION

- Massive cantilever as U profile with welded base-plate.
- Mainly for heavy pipe mounting directly to the wall but also for fixings and constructions to ceilings and floor areas.

Advantages / Benefits

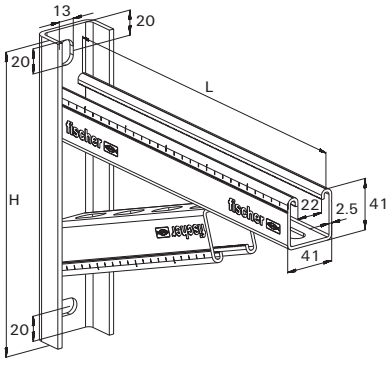
- Robust base plate for load-bearing constructions.
- Slots in the rail offer versatile installation possibilities.

INSTALLATION

Installation tips

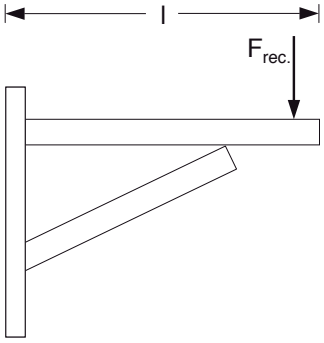
- Good fixing possibilities using suitable anchors.
- Long slots in the base plate offer good adjustment.
- Fastening FHS Clix S or FCN possible.

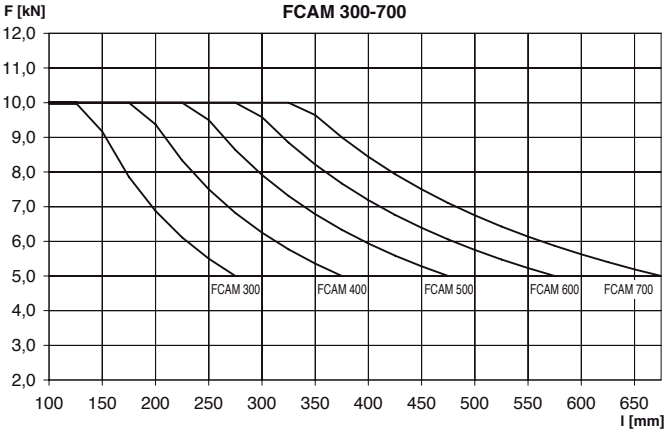
TECHNICAL DATA



Type	Art. No.	Qty. per box	Profile	Profile thickness	Length
		pcs.		[mm]	[mm]
FCAM 300	**504477**	1	FUS 41	2.5	246
FCAM 400	**504479**	1	FUS 41	2.5	270
FCAM 500	**504480**	1	FUS 41	2.5	284
FCAM 600	**504482**	1	FUS 41	2.5	319
FCAM 700	**505460**	1	FUS 41	2.5	343

LOADS





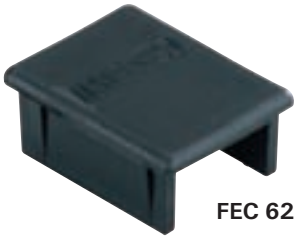
Fixings and screw fastenings must be calculated accordingly.

Cover cap FEC

OVERVIEW

FEC 21 B

FEC 41 B


FEC 62 B

Properties:

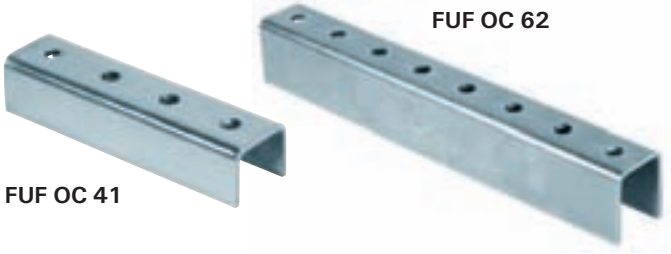
Material	Polyethylene, black

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.
FEC 21 B	**077357**	100
FEC 41 B	**077355**	100
FEC 62 B	**505551**	100

Channel connector FUF

OVERVIEW


FUF OC 62

FUF OC 41

Properties:

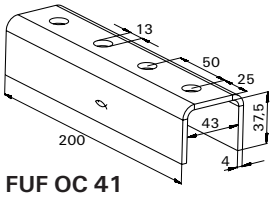
Material	Steel DD11 acc. to DIN EN 10111
Zinc plating	Electro zinc plated min. 5 µm

DESCRIPTION

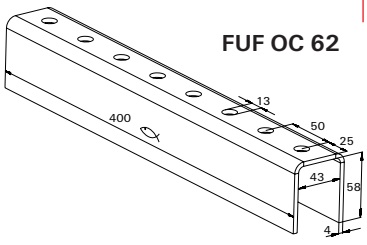
Advantages / Benefits

- Easy to install with FCN Clix P.

TECHNICAL DATA



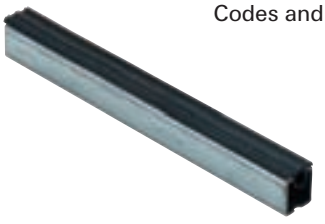
FUF OC 41



FUF OC 62

Type	Art. No.	Qty. per box pcs.	Thickness [mm]	Length [mm]
FUF OC 41	**504517**	20	4	200
FUF OC 62	**504518**	10	4	400

Rubber inlay EMS 41

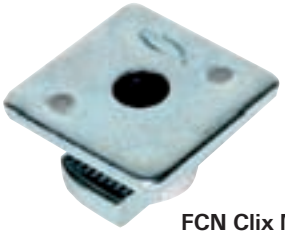


Codes and characteristics see on page 125

Channel nut FCN Clix

OVERVIEW

FCN Clix P



FCN Clix M

Properties:

Material	Steel S235 JR acc. DIN EN 10025, material no. 10037, plastic nylon PA6
Zinc plating	Electro zinc plated, min. 5 µm

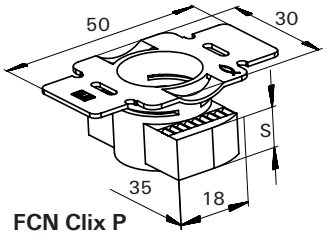
DESCRIPTION

- Fast connecting nut fitting to the FUS channel.
- FCN Clix P suitable for connecting channel and fittings.
- FCN Clix M suitable for connecting clamps with a threaded rod.
- To be used in connection with threaded rod G or GS, see page 132.

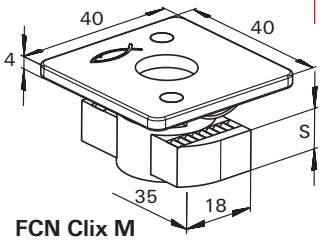
Advantages / Benefits

- Easy and precise positioning in the channel.
- Serration for secure hold in the FUS channel.

TECHNICAL DATA



FCN Clix P



FCN Clix M

Type	Art. No.	Qty. per box pcs.	Thread M	Thickness S [mm]
FCN Clix P 6	**504326**	100	M 6	6
FCN Clix P 8	**504327**	100	M 8	6
FCN Clix P 10	**504329**	100	M 10	8
FCN Clix P 12	**504331**	100	M 12	9.5
FCN Clix M 6	**504344**	100	M 6	6
FCN Clix M 8	**504345**	100	M 8	6
FCN Clix M 10	**504346**	100	M 10	8
FCN Clix M 12	**504347**	100	M 12	9.5

INSTALLATION

- Insert in to the channel and rotate 90°.

LOADS

FCN Clix P

Type	Max recom. load (tension) $N_{rec.}$ FUS 2.0 mm [kN]	FUS 2.5 mm [kN]	Max recom. load (shear) $V_{rec.}$ [kN]	Tightening torque screw quality 8.8 [Nm]
M6	3.0	3.0	1.0	10
M8	4.0	4.0	2.0	20
M10	5.0	8.0	2.5	40
M12	5.0	8.0	3.0	50

FCN Clix M

Type	Max recom. load (tension) N_{rec} FUS 2.0 mm [kN]	FUS 2.5 mm [kN]	Tightening torque screw quality 4.6 [Nm]
M6	3.0	3.0	5
M8	4.0	4.0	10
M10	5.0	8.0	15
M12	5.0	8.0	20

T-head bolt FHS Clix S

OVERVIEW

FHS Clix-S

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 5 µm

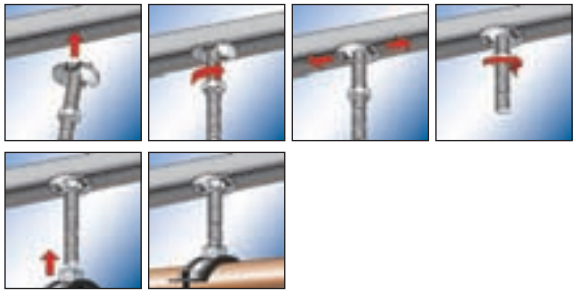
DESCRIPTION

- Quick lock hammer head bolt.

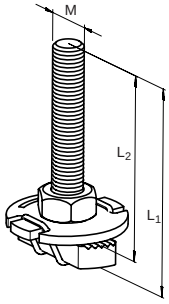
Advantages / Benefits

- Simple, fast and effective installation.
- Retrofitting in rails possible.
- Simple alignment in the rail.
- Fits to FUS and MS channels as well.

INSTALLATION

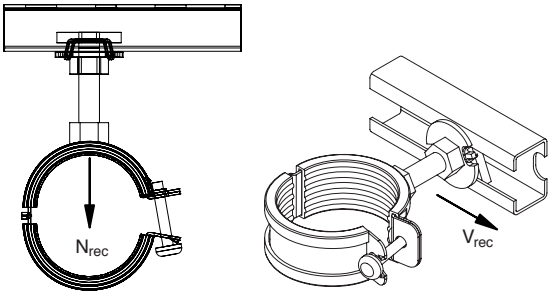


TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Thread D	Length L_1 [mm]	Length L_2 [mm]
FHS Clix S 8 x 30	**020914**	50	M 8	36	30
FHS Clix S 8 x 40	**020915**	50	M 8	46	40
FHS Clix S 8 x 60	**020916**	50	M 8	66	60
FHS Clix S 10 x 30	**020917**	50	M 10	37	30
FHS Clix S 10 x 40	**020918**	50	M 10	47	40
FHS Clix S 10 x 60	**020919**	50	M 10	67	60
FHS Clix S 12 x 30	**020969**	50	M 12	38	30
FHS Clix S 12 x 40	**047316**	50	M 12	48	40
FHS Clix S 12 x 60	**504320**	50	M 12	68	60

LOADS



Type	Max recom. load (tension) $N_{rec.}$ FUS 2.0 mm [kN]	FUS 2.5 mm [kN]	Max recom. load (shear) $V_{rec.}$ [kN]	Tightening torque [Nm]
M8	4.0	4.0	1.0	5
M10	4.0	5.0	1.2	10
M12	4.0	5.0	1.5	10

Channel nut FCN

OVERVIEW

FCN

Properties:

Material	Steel 1.1121 / 1.0310, SAE 1010
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- Threaded plate fitting to the FUS channels.

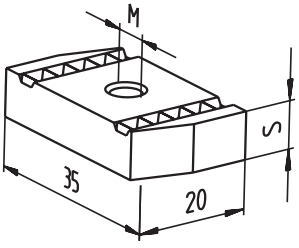
Advantages / Benefits

- Simple installation.
- Retrofitting in rails possible.

INSTALLATION

- Insert in to the channel and rotate 90°.

TECHNICAL DATA



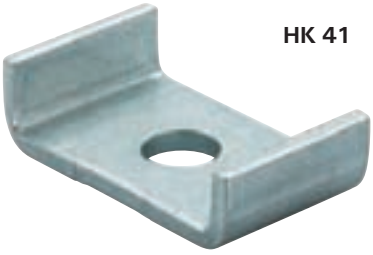
Type	Art. No.	Qty. per box pcs.	Thread M	Thickness S [mm]
FCN 6	**77405**	100	M 6	6
FCN 8	**77407**	100	M 8	6
FCN 10	**77409**	100	M 10	8
FCN 12	**77411**	100	M 12	9

LOADS

Type	Max recom. load (tension) $N_{rec.}$ FUS 2.0 mm [kN]	FUS 2.5 mm [kN]	Max recom. load (shear) $V_{rec.}$ [kN]	Tightening torque screw quality 8.8 [Nm]
M6	3.0	3.0	1.0	10
M8	4.0	4.0	2.0	20
M10	5.0	8.0	2.5	40
M12	5.0	8.0	2.5	50

Channel washer HK 41

OVERVIEW



HK 41

Properties:

Material	Steel S235 JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

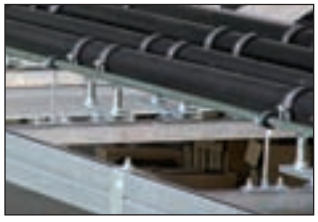
DESCRIPTION

- The channel washer can be used for proper fastening with a fixing, e.g. fischer anchor bolt.
- Used to secure connections.

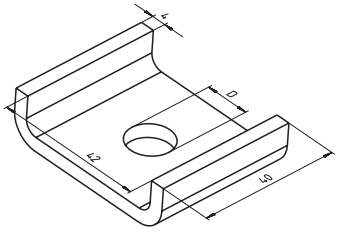
Advantages / Benefits

- Prevents the rail from deformation.

INSTALLATION



TECHNICAL DATA



Type	Art. No.	Qty. per box	D
		pcs.	[mm]
HK 41 8,5	**504348**	50	8.5
HK 41 10,5	**504349**	50	10.5
HK 41 12,5	**504354**	50	12.5

Saddle flange SF

OVERVIEW

Properties:

Material	Base plate: steel 10330, DC01 acc. DIN EN 10139 Channel: S235JR acc. to DIN EN 10025, material no. 10037
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

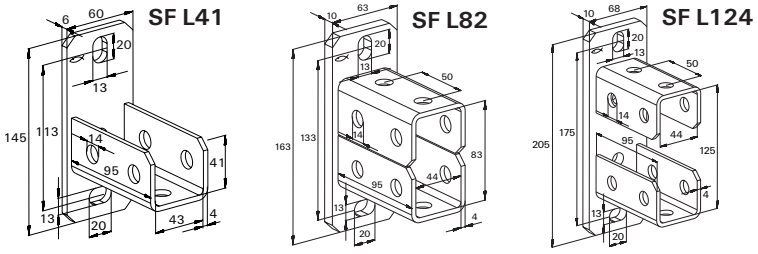
- Connecting element for producing robust constructions in connection with the fischer channels.

Advantages / Benefits

- Solid connecting element for load-bearing constructions.
- Simple installation by inserting the mounting rail in the saddle.

INSTALLATION

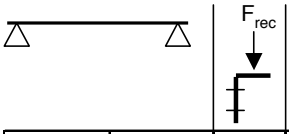
TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	For profile FUS
SF L 41	**504355**	10	21; 41; 21D; 62
SF L 82	**504357**	5	41D
SF L 124	**504358**	5	62D

LOADS

support on both sides



Connector	Channel	double [kN]	Torque [Nm]
FCN P M12	41/21-2	6	50
	41/21-2.5	6	50
	41/41-2	6	50
	41/41-2.5	6	50
	41/62-2.5	6	50

Universal bracket UW S

OVERVIEW

UW S

Properties:

Material	Steel DD 11 acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- Stable angle bracket for reinforcing load-bearing constructions.

Advantages / Benefits

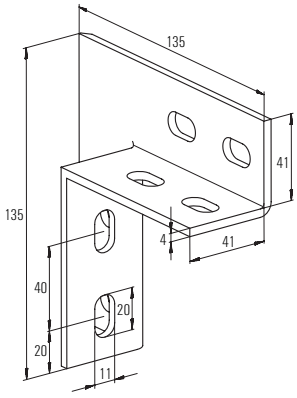
- Ideal, flexible construction element due to the option of horizontal and vertical alignment.
- In combination with fischer mounting rails, the universal bracket produces a load-bearing construction with very high stability and safety.

INSTALLATION

Installation tip

- The universal bracket should be used in pairs.

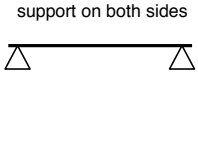
TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.
UW S	**49479**	10

LOADS

support on both sides

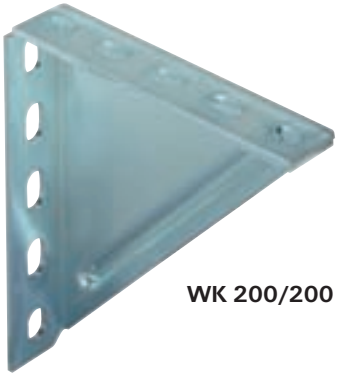


Connector	Channel	double [kN]	single [kN]	Torque [Nm]
FCN P M10	41/21-2	5	2,5	40
	41/21-2,5	5	2,5	40
	41/41-2	5	2,5	40
	41/41-2,5	5	2,5	40
	41/62-2,5	5	2,5	40

Angle bracket WK

OVERVIEW

WK 100/100



WK 200/200

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 8 µm

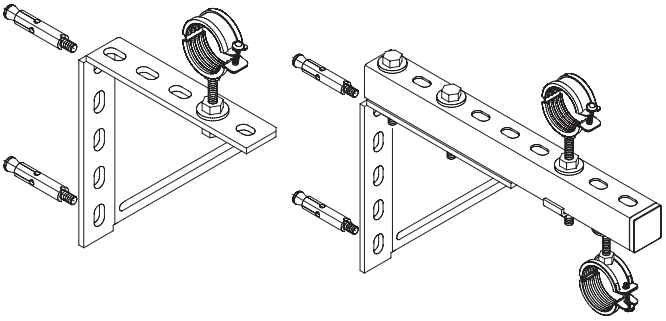
DESCRIPTION

- Stable angle bracket for fixing pipe lines and components.
- The angle bracket acts as a reinforcement for load-bearing constructions.

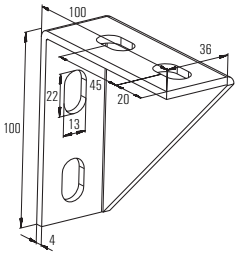
Advantages / Benefits

- Versatile possibilities for wall, floor and ceiling installation, can be used in shafts and also free-standing.
- In combination with fischer mounting rails, the universal bracket produces a load-bearing construction with very high stability and safety.

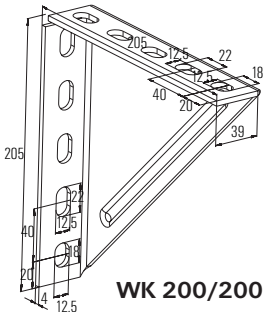
INSTALLATION



TECHNICAL DATA



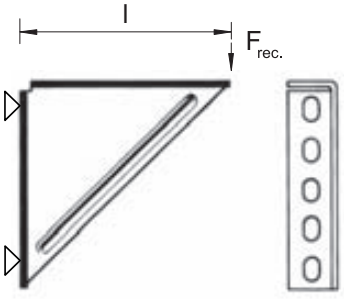
WK 100/100



WK 200/200

Type	Art. No.	Qty. per box pcs.
WK 100/100	**63559**	5
WK 200/200	**79570**	5

LOADS



Angle bracket WK 100

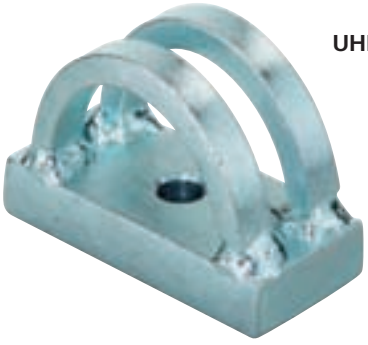
Length l in mm	80	
max. load $F_{rec.}$ in kN:	4.0	

Angle bracket WK 200/200

Length l in mm	100	180
max. load $F_{rec.}$ in kN:	4.0	1.8

Universal mounting UHRS

OVERVIEW



UHRS

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 3 µm

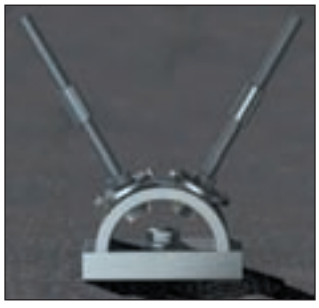
DESCRIPTION

- Variable angle bracket for bracing with threaded rods.

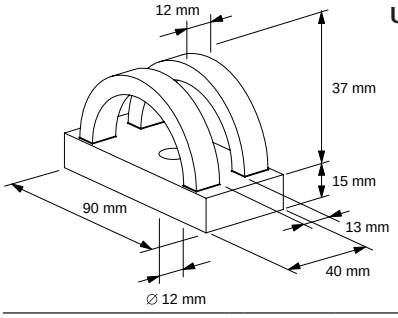
Advantages / Benefits

- Fits to FHS Clix S M12.

INSTALLATION



TECHNICAL DATA

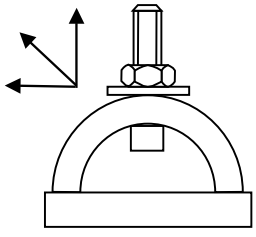


UHRS

Type	Art. No.	Qty. per box pcs.
UHRS	**63938**	6

LOADS

F_{rec} = 8.3 kN



Variable bracket VB

OVERVIEW

VB

Properties:

Material	Steel DD11 acc. to DIN EN 10111
Zinc plating	Electro zinc plated min. 5 µm

DESCRIPTION

- Bracket for MS and FUS channel installations from 45° till 90°.

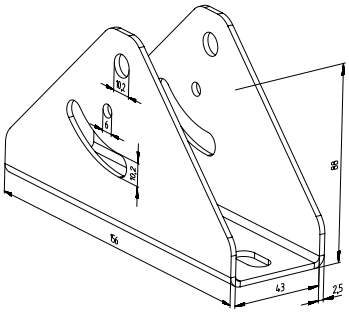
Advantages / Benefits

- Very flexible in angle.
- Ideal for bracings.

INSTALLATION

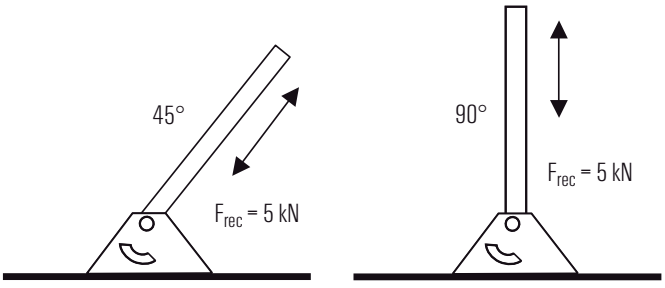
TECHNICAL DATA

VB



Type	Art. No.	Qty. per box pcs.
VB	**04850**	4

LOADS



Beam clamp TKR

OVERVIEW

TKR

Properties:

Material	Plate: Steel S235 JR (material no. 10037) acc. DIN EN 10025 U-bolt pipe hanger: Steel S235 JR (material no. 10037) acc. DIN EN 10025 Hexagon nut: Steel acc. ISO 898-2 resistance min. 4
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

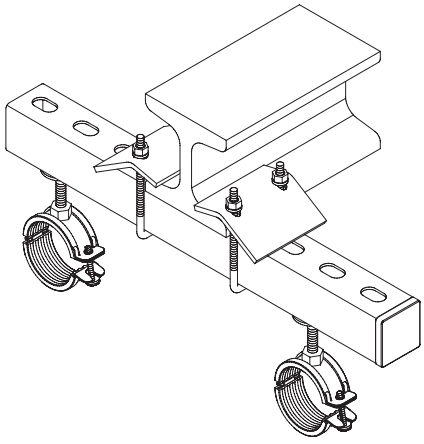
- Stirrup for fastening profile rails to steel beams.

Advantages / Benefits

- Easy to add on.
- No drilling or welding necessary.
- Adjustment is possible at any time.
- Due to the different lengths of the claw sides, the fischer clamp support can be fastened to all standard T-beams.

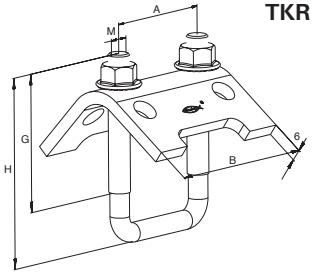
INSTALLATION

- Two clamp supporters are necessary for fastening to the steel beam.



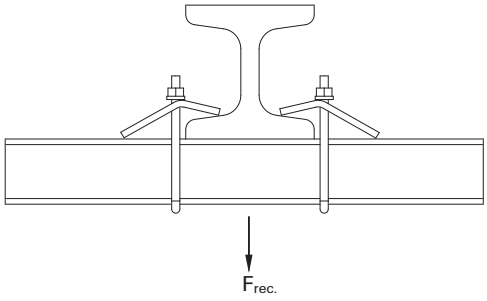
TECHNICAL DATA

TKR



Type	Art. No.	Qty. per box	For profile FUS	Width B	Height H	Height G	Thread M	Width A
		pcs.		[mm]	[mm]	[mm]	[mm]	[mm]
TKR 21-42	**504363**	20	21, 41, 21D	79	97	48	8	52
TKR 82	**504366**	20	62, 41D	79	80	137	10	54
TKR 124	**504367**	10	62D	79	80	179	10	54

LOADS



Type	Fits profile	Thread	Max recom. load / pair	Tightening torque
			$F_{rec.}$ [kN]	[Nm]
TKR 21-42	21, 41, 21 D	M8	5.0	15
TKR 82	62, 41 D	M10	10.0	20
TKR 124	62 D	M10	10.0	20

Threaded rod bracket FSB 45°

OVERVIEW

FSB 45°

Properties:

Material	Steel DD11 acc. to DIN EN 10111
Zinc plating	Electro zinc plated min. 5 µm

DESCRIPTION

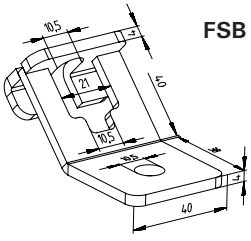
- 45° angle bracket for bracing with M10 threaded rod.

Advantages / Benefits

- Quick inserting of pre-assembled threaded rod and nuts.

INSTALLATION

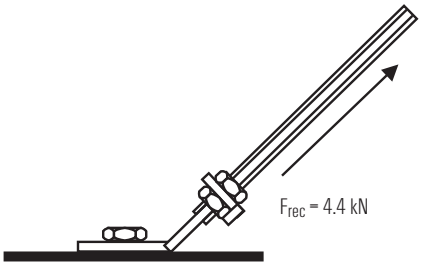
TECHNICAL DATA



FSB 45°

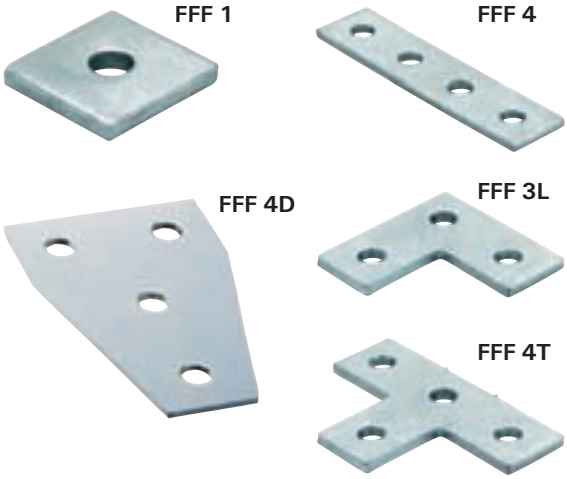
Type	Art. No.	Qty. per box pcs.
FSB 45°	**71269**	20

LOADS



Flat fittings FFF

OVERVIEW



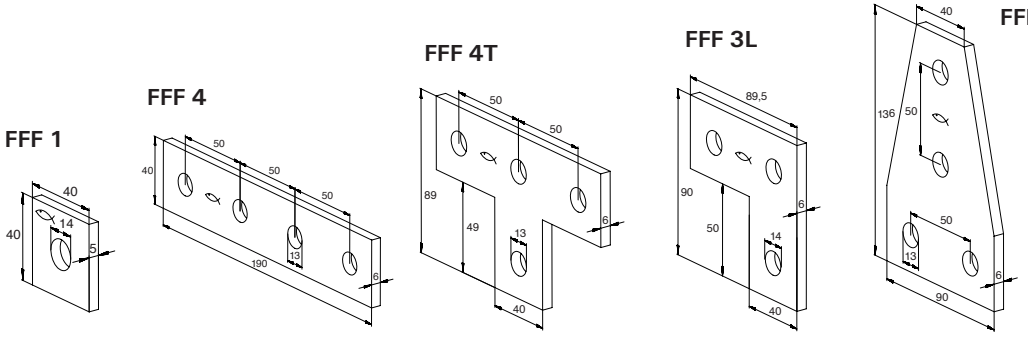
Properties:

Material	Steel DD11 acc. to DIN EN 10111
Zinc plating	Electro zinc plated min. 5 µm

DESCRIPTION

- For plane installations with FUS channels.

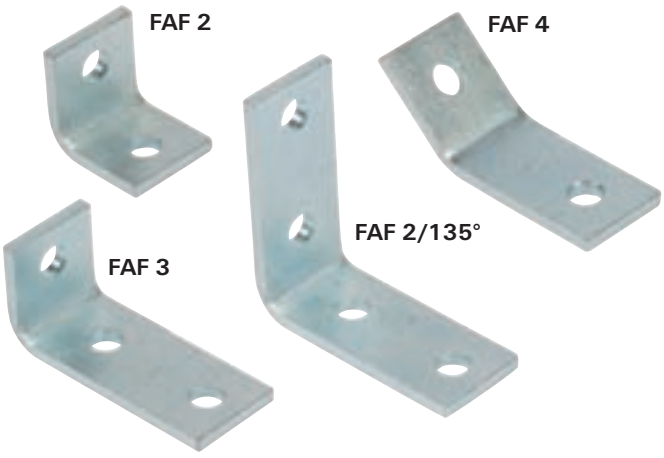
TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.
FFF 1 - Flat fitting	**504494**	25
FFF 3L - Flat fitting	**504498**	25
FFF 4 - Flat fitting	**504499**	25
FFF 4T - Flat fitting	**504500**	25
FFF 4D - Flat fitting	**504368**	25

Angle fittings FAF

OVERVIEW



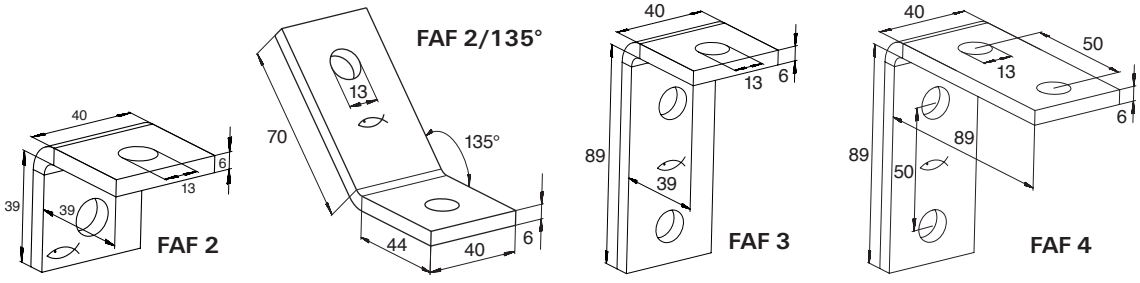
Properties:

Material	Steel DD11 acc. to DIN EN 10111
Zinc plating	Electro zinc plated min. 5 µm

DESCRIPTION

- For plane and frame installations with FUS channels.

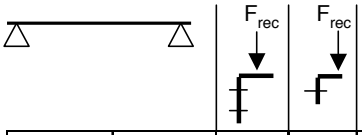
TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.
FAF 2 - angle fittings	**504501**	25
FAF 3 - angle fittings	**504506**	25
FAF 4 - angle fittings	**504509**	25
FAF 2/135° - angle fittings	**504369**	25

LOADS

support on both sides



Connector	Channel	double [kN]	single [kN]	Torque [Nm]
FCN P M12	41/21-2	6	3	50
	41/21-2,5	6	3	50
	41/41-2	6	3	50
	41/41-2,5	6	3	50
	41/62-2,5	6	3	50

FUS 3D flanges FZF, FUF

OVERVIEW

FZF 21

FZF 41

FUF 21

FUF 41

FUF 180°R

FUF 180°L

FUF 4Y

FUF 8T

Properties:

Material	Steel DD11 acc. to DIN EN 10111
Zinc plating	Electro zinc plated min. 5 µm

DESCRIPTION

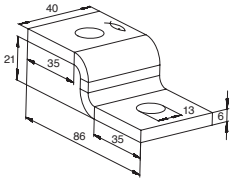
- Connecting elements for 3D frame installations with FUS channels.

Advantages / Benefits

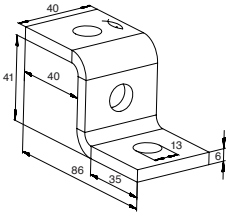
- Quick installation by using FCN Clix P.

TECHNICAL DATA

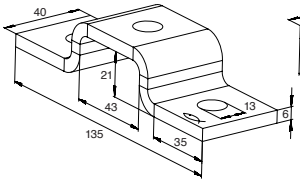
FZF 21



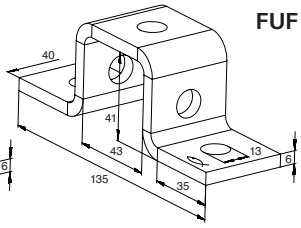
FZF 41



FUF 21

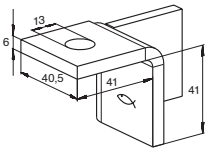


FUF 41

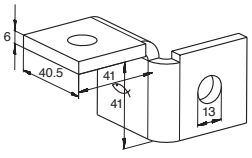


Type	Art. No.	Qty. per box pcs.
FZF 21	**504375**	25
FZF 41	**504515**	25
FUF 21	**504376**	25
FUF 41	**504377**	25

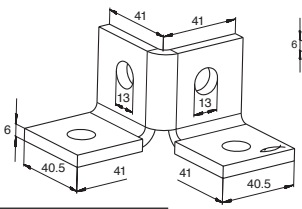
FUF 180°R



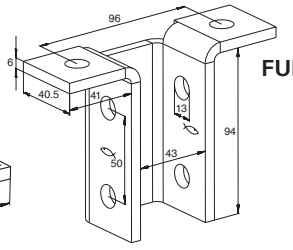
FUF 180°L



FUF 4Y

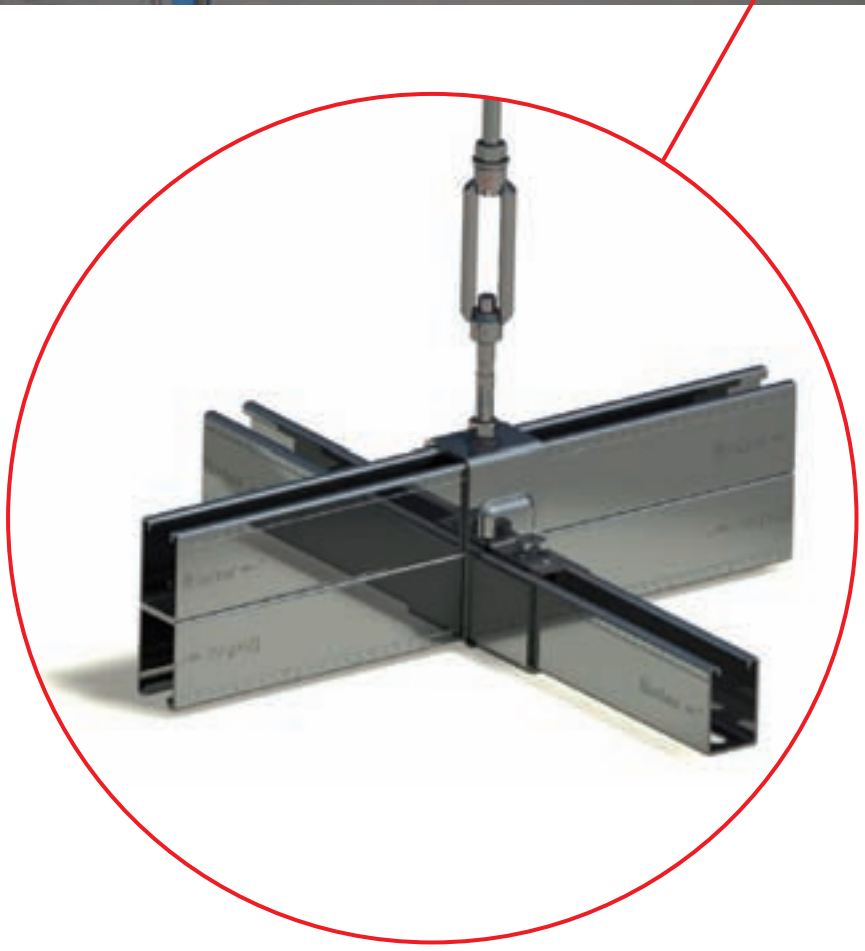


FUF 8T



Type	Art. No.	Qty. per box pcs.
FUF 4Y	**504378**	20
FUF 180°L	**504379**	20
FUF 180°R	**504383**	20
FUF 8T	**504387**	10

Installation Grid



Fit for today's and tomorrow's demands

Planning for the future means constantly being prepared to meet new requirements. That is why the fischer Installation Grid is the installation system for modern and future supply technology in industrial buildings. Its strengths are:

- quick installation and consequent low costs
- high flexibility and adaptability to change utilization of buildings
- good order and organization in media supply
- new design perspectives
- highly economical over the entire duration of utilization
- clear calculation of time and cost thanks to modular construction
- support in planning and installation provided by fischer engineers

backed up by the entire know-how and experience of a leading manufacturer of fixing systems.

Effective installation with the fischer Installation Grid

Cealing

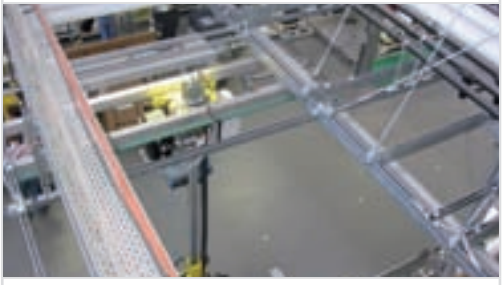
Installation Grid and all media supply

Production area

Floor

A separate level for the installation of media-supply equipment is constructed under the ceiling using a system of rails and special fixing elements from the fischer SaMontec program. This Installation Grid can be specially adapted for any building.

Installation Grid



By means of fischer Installation Grid, media of all kind can be supplied to any point in the production area.

- Pipes for ventilation, heating, air conditioning and water.
- Supply pipes for compressed air, technical gases and the removal of exhaust fumes or for the supply of liquids to the production area.
- Ducts and supports for power cables, data lines etc.
- Electrical installation like cable trays.
- Lamps, lightening strips.
- Overhead heating systems.
- Noise-damping elements.
- Industrial construction.

Channels
FUS Page 103

Connectors
FCN Clix P Page 105

Channel Connectors
FVS Page 102

UHRS, FHS Clix-S **Page 104**

FSB 45° **Page 105**

VM **Page 104**

SPS / BLR **Page 104**

FUF OC 62 **Page 103**

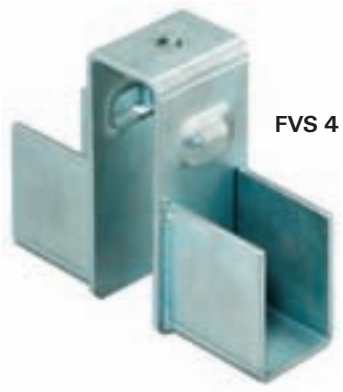
TKR **Page 104**

Cross connector FVS

OVERVIEW

FVS 3

FVS 4



Properties:

Material	Steel material no. 1.0037 acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- 90° cross connector to be assembled between channels FUS 41/62 and FUS 41/124.

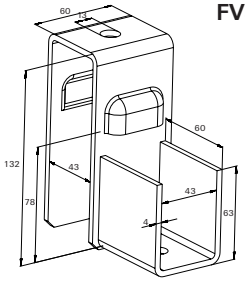
Advantages / Benefits

- Simple and time-saving production of a channel grid.
- Easy suspension to the ceiling with M12 threaded rod.
- Installation possible by one man worker.

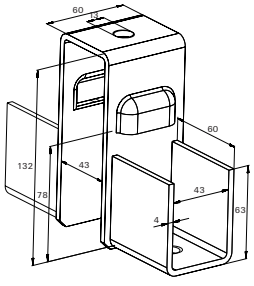
INSTALLATION

TECHNICAL DATA

FVS 3



FVS 4



Type	Art. No.	Qty. per box	for profile
		pcs.	
FVS 3	**505549**	8	FUS 62 + FUS 62D
FVS 4	**505550**	5	FUS 62 + FUS 62D

FUS

Type	Art. No.	Qty. per box pcs.			
FUS 62/2,5 - 6 m	**504457**	1			
FUS 62D/2,5 - 6 m	**504460**	1			

Codes and characteristics see on page 76

FUF OC

Type	Art. No.	Qty. per box pcs.	Holes	Thinness	Length
FUF OC 62	**504518**	10	14	4	400

Codes and characteristics see on page 83

Channel washer HK 41

Type	Art. No.	Qty. per box pcs.			
HK 41 12,5	**504354**	50			

Codes and characteristics see on page 87

Threaded rod G

Type	Art. No.	Qty. per box pcs.	Length [mm]		
G M12/3	**064056**	5	3000		

Codes and characteristics see on page 132

Hexagonal nut MU / Washer U

Type	Art. No.	Qty. per box pcs.			
MU 12	**024650**	100			
U 12 x 40	**024649**	100			

Codes and characteristics see on pages 137 and 138

Hexagonal connector VM

Type	Art. No.	Qty. per box pcs.
VM M12	**020971**	100

Codes and characteristics see on page 138

Turnbuckle SPS / Bolt left-hand/right hand BLR

Type	Art. No.	Qty. per box pcs.
SPS	**064090**	25
BRL	**064091**	25

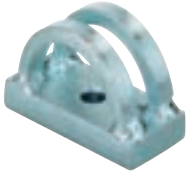
Codes and characteristics see on page 135

Beam clamp TKR

Type	Art. No.	Qty. per box pcs.
TKR 124	**504367**	10

Codes and characteristics see on pages 93

Universal mounting UHRS / T-head bolt FHS Clix-S



Type	Art. No.	Qty. per box pcs.
UHRS	**063938**	6
FHS Clix-S 12 x 30	**020969**	50

Codes and characteristics see on pages 85 and 91

Cover cap FEC

FEC 62 B

Type	Art. No.	Qty. per box pcs.	for Profil	Material
FEC 62 B	**505551**	100	FUS 62	polyethylene

Codes and characteristics see on page 83

Threaded rod bracket FSB 45°

Type	Art. No.	Qty. per box pcs.
FSB 45°	**072169**	20

Codes and characteristics see on page 94

Clix channel nut FCN Clix

Type	Art. No.	Qty. per box pcs.	Thread M [mm]	Thickness S
FCN Clix P 12	**504331**	100	M 12	9.5

Codes and characteristics see on page 84

Channel nut FCN

Type	Art. No.	Qty. per box pcs.	Thread M	Thickness S [mm]
FCN 12	**77411**	100	M 12	9

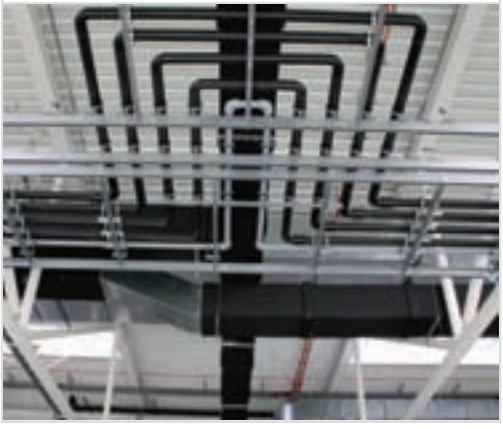
Codes and characteristics see on page 86

Hexagonal screw SKS

Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread D	Width across nut SW
SKS 12 x 20	**077610**	100	20	M 12	19

Codes and characteristics see on page 137

Fixpoint and Sliding Elements



A complete range of products suitable for controlling the thermal expasion of pipes in systems like:

- heating
- cooling
- industrial process fluids

fix point is also suitable to keep the load of rising pipes.

Fix point
FFPS Page 109

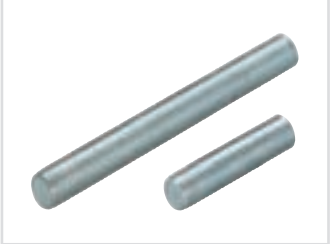
Sliding elements
GL, GLL Page 111

PDH Page 116

FFPK **Page 109**

GPS, GPL, GPR **Page 110**

G, GS **Page 11**



SBS **Page 112**

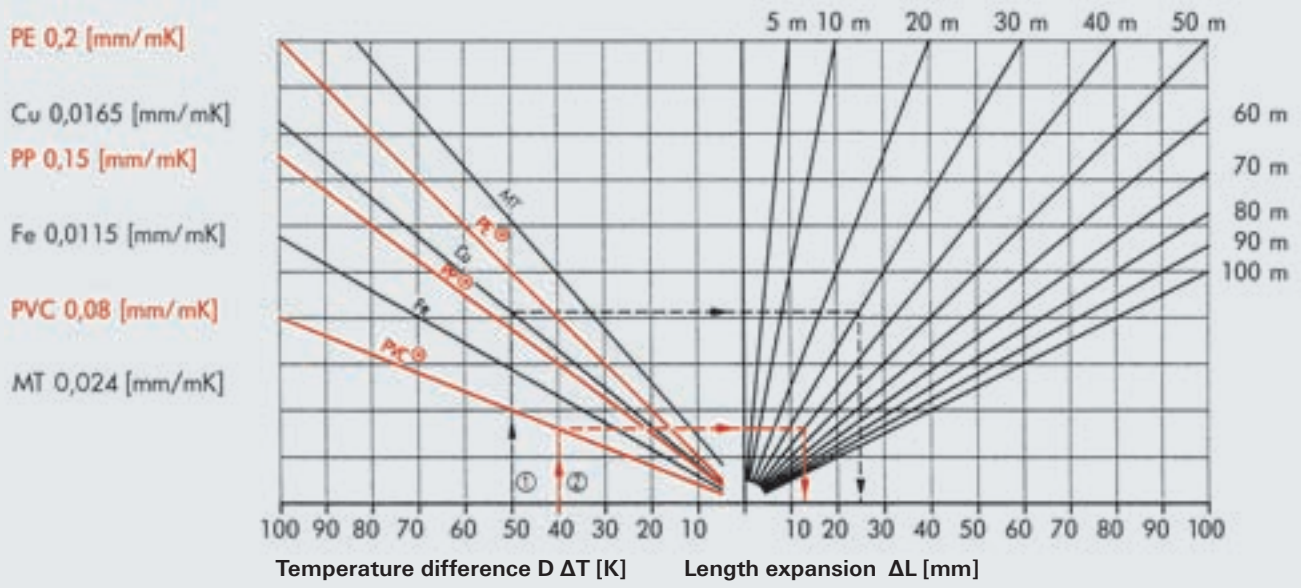
FSC 1 **Page 113**

GLK **Page 114**

SB **Page 115**

Expansion diagram of pipe materials

Metals and plastics shrink in cold and expand in heat. This physical condition must be taken into consideration for pipe lines in the heating area that are subjected to continuous temperature fluctuation because of thermostat control. Tension forces are prevented by the use of suitable pipe fasteners that can swing or slide.



Note:
For plastic pipes (PE, PP, PVC), the length expansionread from the diagram is to be multiplied by a factor of 10.

Example:
① Copper pipe, Cu – Length of pipe span 30 m
Temperature difference △T = 50 K
Length expansion △ L= 24,75 mm

② PVC pipe – Length of pipe span L = 40 m
Temperature difference △ T = 40 K
Length expansion △ L = 128 mm (table value x10)

Length expansion calculation formula

$$\triangle L = L \cdot \triangle T \cdot \alpha$$

[mm] [m] [K] [mm/m K]

△ L = Change in length
L = Length of the pipe span/section
△ T = Temperature difference
α = Length expansion coefficient

Fixpoint Clamp FFPS and saddle FFPK

OVERVIEW

FFPS

FFPK

Properties:

Material	Steel DD 11 (material no. 1.0322 acc. to DIN EN 10111)
Zinc plating	Electro zinc plated, min. 5 µm

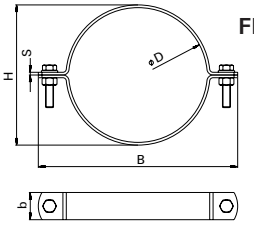
DESCRIPTION

- Fixpoints keep unwanted movements between pipes and buildings and drive expansion in the desired direction.

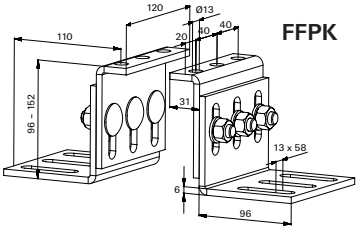
Advantages / Benefits

- It's a modular system, so it can be built-up according to the loads.
- High loads are possible.
- Saddle allows a good height and inclination adjustment.
- Clamps and brackets are complete with all screws, washers and damps.

TECHNICAL DATA



FFPS

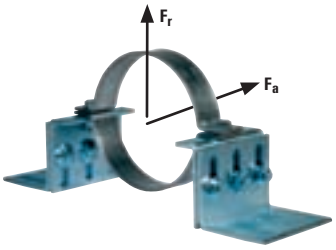


FFPK

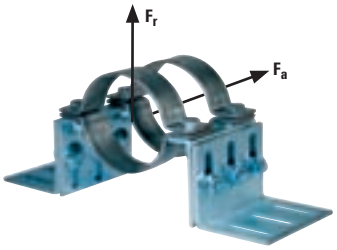
Type	Art. No.	ID	Qty. per box pcs.	Size [inch]	Width B [mm]	Locking screw	Width x thickness clamp band brs [mm]	Clamping range D [mm]
FFPS								
FFPS 2"	**48510**	1	1	2"	137	M 12	40 x 4	56 - 61
FFPS 2 1/2"	**48511**	8	1	2 1/2"	156	M 12	40 x 4	75 - 80
FFPS 3"	**48512**	5	1	3"	170	M 12	40 x 4	88 - 93
FFPS 4"	**48513**	2	1	4"	191	M 12	40 x 4	108 - 115
FFPS 5"	**48660**	3	1	5"	217	M 12	40 x 4	133 - 140
FFPS 159 - 166	**48662**	7	1	159 - 166	243	M 12	40 x 4	159 - 166
FFPS 6"	**48663**	4	1	6"	250	M 12	40 x 4	167 - 172
FFPS 8"	**48664**	1	1	8"	303	M 12	40 x 4	219 - 225
FFPS 10"	**48665**	8	1	10"	351	M 12	40 x 4	267 - 274
FFPK								
FFPK	**48666**	5	1	-	-	-		

Fixpoint Clamp FFPS and saddle FFPK

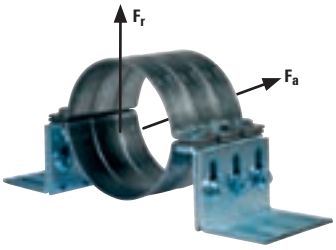
LOADS



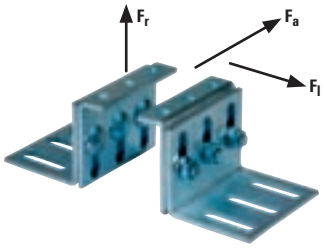
Fixpoint 1 clamp
Max. recom. load
axial F_a = 8000 N
radial F_r = 4660 N



Fixpoint 2 clamps
Max. recom. load
axial F_a = 16000 N
radial F_r = 9320 N



Fixpoint 3 clamps
Max. recom. load
axial F_a = 24000 N
radial F_r = 13980 N



FFPK
Saddle max. recom. loads
radial F_r = 42000 N
lateral F_l = 17500 N

Base plate GPL / GPS / GPR

GPL, GPS

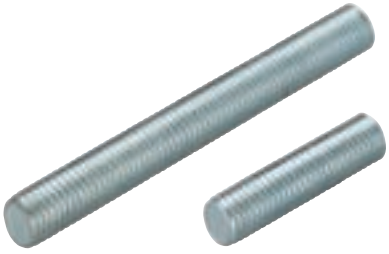
GPR

Codes and characteristics see on page 128

Rods and studs G / GS

G

GS



Codes and characteristics see on page 130

Sliding element GL

OVERVIEW

Properties:

Material	Steel S235 JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 13 µm
Sliding strips material	Polyamid 6.6
Adhesion friction factor	0.27 – 0.3
Sliding friction factor	0.13 – 0.17
Thermal load capacity	up to +130

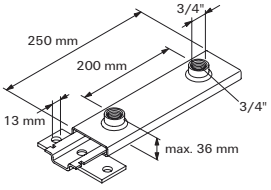
DESCRIPTION

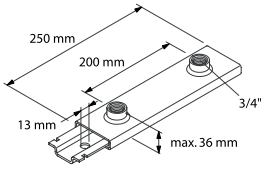
- Sliding element with a maximum sliding length of 165 mm for absorbing axial length changes of pipe lines.

Advantages / Benefits

- Low construction height.
- No sliding out possible and secure due to double pipe support.
- Large sliding distance.

TECHNICAL DATA





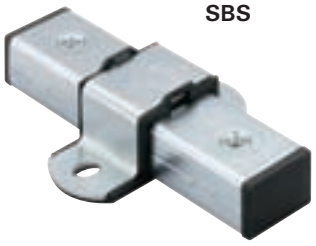
Type	Art. No.	Qty. per box pcs.				
GLL 3/4“	**064038**	5				
GL 3/4“	**064041**	5				

LOADS

Type	Max. recom. load (tension) [kN]	Max. recom. load (compression) [kN]	Max. recom. length of pipe nipple [mm]	Max. recom. pipe-Ø	
GLL 3/4“	3.50	4.00	200	up to DN 200	
GL 3/4“	3.50	4.00	200	up to DN 200	

Sliding saddle SBS

OVERVIEW


SBS

SBS 12/16

Properties:

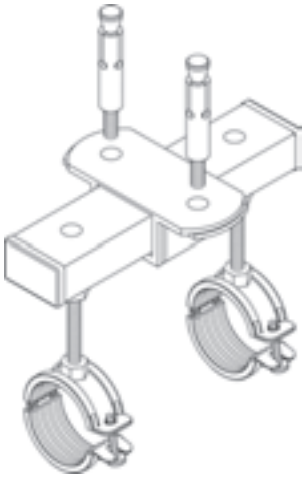
Material	Steel S 235 JR (material no. 1.0037) acc. to DIN EN 10025 / PA GF 20
Zinc plating	Electro zinc plated, min. 5 µm
Adhesion friction factor	0.25 - 0.30
Sliding friction factor	0.16 - 0.18
Temp. range	-40 °C - +100 °C

DESCRIPTION

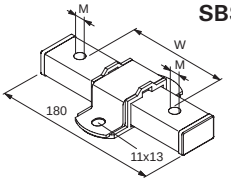
Advantages / Benefits

- No sliding out possible.
- Secure due to double pipe support.
- Low construction height.

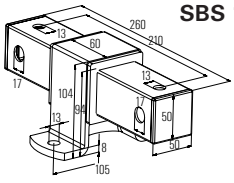
INSTALLATION



TECHNICAL DATA



SBS



SBS 12/16

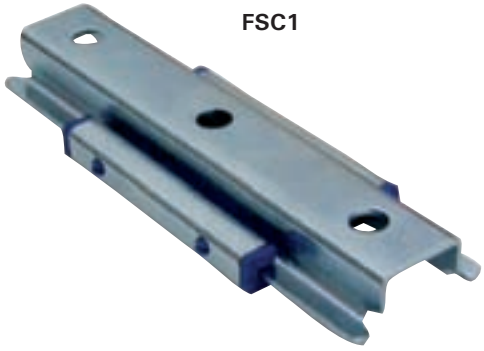
Type	Art. No.	Qty. per box	Max. recom. length between pipe and sliding elements	Max. recom. pipe-Ø	Thread-Ø	Sliding distance
					M	W
		pcs.	[mm]		[mm]	[mm]
SBS M 8	**079685**	8	70	up to DN 80	M 8	60
SBS M 10	**079686**	8	70	up to DN 80	M 10	55
SBS 12/16	**047726**	1	140		12/16	125

LOADS

Type	Max. recom. load (compression)	Max. recom. load (tension)
	[kN]	[kN]
SBS M 8	1.50	1.50
SBS M 10	1.50	1.50
SBS 12/16	7.80	7.80

Slip of sliding FSC1

OVERVIEW



Properties:

Material	Steel DD 11 (material no. 1.0322 acc. to DIN EN 10111)
Zinc plating	Electro zinc plated, min. 5 µm
Temp. range	-30 °C - +120 °C

DESCRIPTION

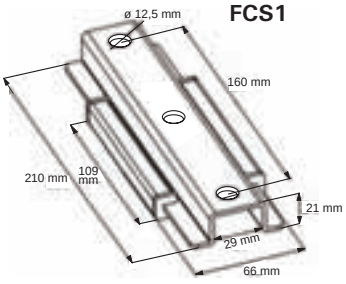
- Sliding element with a max. sliding distance of 100 mm for absorbing axial length changes of pipe lines.

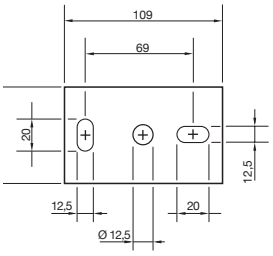
INSTALLATION

Installation tip

- Bend the 4 features on baseplate to stop the max. sliding.

TECHNICAL DATA





Type	Art. No.	Qty. per box	Max. recom. length between pipe and sliding elements	Max. recom. pipe-Ø	Sliding distance W
		pcs.	[mm]		[mm]
FCS1	**507866**	12	140	up to DN 100	100

LOADS

Type	Max. recom. load (tension)	Max. recom. load (compression)
	[kN]	[kN]
FSC 1	1.3	1.0

Sliding insert GLK

OVERVIEW

GLK 27

GLK 38

Properties:

Material	PA 6 GF 25
Adhesion friction factor	0.25 – 0.30
Sliding friction factor	0.16 – 0.18
Temp. range	-40 °C – +120 °C

DESCRIPTION

- Sliding element with a long distance for absorbing axial length changes of pipe lines.

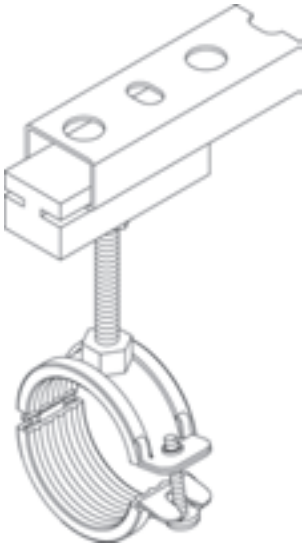
Advantages / Benefits

- Absorption of axial and radial length expansions of pipe lines possible in combination with two sliding elements.
- Large sliding distance possible.

INSTALLATION

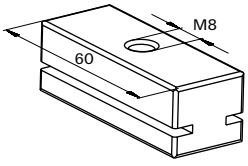
Installation tip

- Threaded pin must be screwed completely through the sliding element.
- Projecting thread length during use with a pipe clamp must not exceed 70 mm (M8) and/or 100 mm (M10).

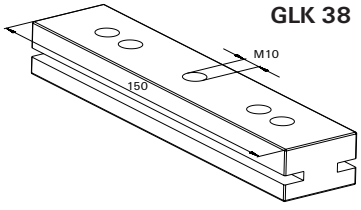


TECHNICAL DATA

GLK 27



GLK 38



Type	Art. No.	Qty. per box pcs.	for profile	Thread A	Max. recom. length pipe nipple [mm]	Max. recom. pipe-Ø
GLK 27	**079683**	50	27/18 + 28/30	M8	70	up to DN 50
GLK 38	**079684**	20	38/40 + 40/60 + 40/120	M10	100	up to DN 80

LOADS

Type	Max. recom. load (compression) [kN]	Max. recom. load (tension) [kN]
GLK 27	1.00	0.80
GLK 38	1.00	1.00

Sliding hanger SB

OVERVIEW

SB

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 3 µm

DESCRIPTION

- Sliding element with a long distance for absorbing axial length changes of pipe lines.

Advantages / Benefits

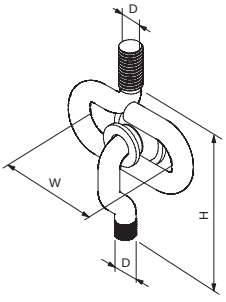
- Secure, moves freely and runs quietly.
- Absorbs axial length expansions of pipe lines.

INSTALLATION

Installation tip

- Install sliding element according to the expected length expansion, so that no sliding distance is lost and sliding is not impeded.

TECHNICAL DATA



Type	Art. No.	Qty. per box	Thread A	Sliding distance	Overall height
		pcs.		[mm]	[mm]
SB M 8	**079680**	25	M 8	30	75
SB M 10	**079681**	25	M 10	30	90

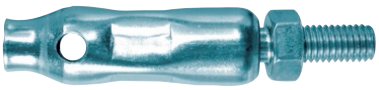
LOADS

Type	Max. recom. load [kN]			
SB M 8	0.40			
SB M 10	0.65			

Pendulum hanger PDH / PDH K

OVERVIEW

PDH



Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- Individual fastening with flexible pendulum effect for absorbing length changes of pipe lines.

Advantages / Benefits

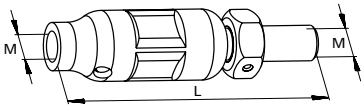
- Degree of freedom 360°
- Max. pendulum effect is 12°.
- Good height adjustability.
- High tensile strength.

INSTALLATION

Installation tip

- For movable pipes, the pendulum hangers must be installed in pairs for secure guiding free of tipping.
- Secure threaded rod with lock nut to prevent loosening.

TECHNICAL DATA

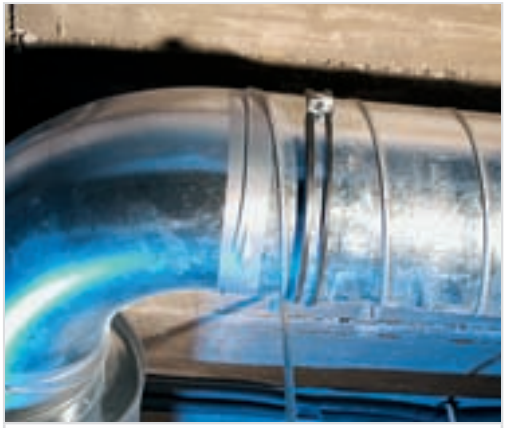


Type	Art. No.	Qty. per box	Thread (internal/ external)	Length L	Level control
		pcs.		[mm]	[mm]
PDH M 8	**079676**	50	M 8	74	25
PDH M 10	**079677**	50	M 10	78	25
PDH M 12	**064037**	25	M 12	89	25
PDH K M 8	**068267**	50	M 8	48	-
PDH K M 10	**068269**	50	M 10	52	-

LOADS

Type	Max. recom. static load (centr. tension) $N_{recom.}$ [kN]			
PDH M 8	2.40			
PDH M 10	3.00			
PDH M 12	3.50			
PDH K M 8	2.40			
PDH K M 10	3.00			

Air duct and Metal roof fixings



Fixing systems for air ducts

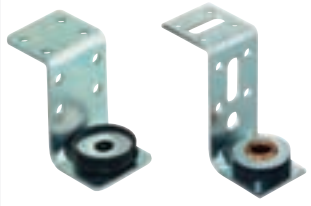
Clamp
LGS Page 121

Duct hanger
LKH / LKHN Page 123

Fixing systems on trapez ceiling

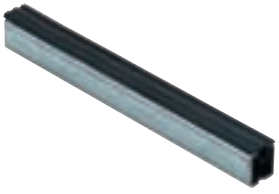
Metal roof hanger
TZ Page 126

ZKH / ZKHN **Page 123**



LRB **Page 124**

EMS **Page 125**



TZH **Page 126**

LZ **Page 127**

LST **Page 127**

Dimensions, weights of ventilation ducts

WEIGHTS OF GALVANIZED VENTILATION DUCTS IN KG/M WITHOUT INSULATION

Sheet metal 0.75			Sheet metal 0.88						Sheet metal 1.0						Sheet metal 1.13						Sheet metal 1.25				
200	224	250	280	315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400	1600	1800	2000	2240	2500	2800	3150	◄B ▼H
6.6	7.0	7.4	9.3	10.0	10.7	11.6	12.6	13.6	16.7	18.3	20.0	22.0	24.2	26.4	32.8	36.0	39.8	44.7	49.7	54.7	70.2	77.6	86.3	96.3	200
	7.4	7.8	9.8	10.4	11.2	12.1	13.0	14.0	17.2	18.8	20.5	22.5	24.7	26.9	33.4	36.6	40.4	45.3	50.3	55.3	70.8	78.3	86.9	97.0	224
		8.3	10.3	10.9	11.7	12.6	13.6	14.5	17.8	19.4	21.1	23.1	25.3	27.5	34.1	37.3	41.0	46.0	51.0	55.9	71.6	79.1	87.7	97.8	250
			10.8	11.5	12.3	13.2	14.1	15.1	18.5	20.0	21.8	23.8	26.0	28.2	34.8	38.0	41.8	46.7	51.7	56.7	72.5	79.9	88.6	98.6	280
				12.2	13.0	13.8	14.8	15.8	19.3	20.8	22.6	24.5	26.7	28.9	35.7	38.9	42.6	47.6	52.6	57.6	73.5	80.9	89.6	99.6	315
					13.7	14.6	15.6	16.6	20.1	21.7	23.4	25.4	27.6	29.8	36.7	39.9	43.6	48.6	53.6	58.5	74.6	82.1	90.7	100.8	355
						15.5	16.5	17.4	21.1	22.7	24.4	26.4	28.6	30.8	37.8	41.0	44.7	49.7	54.7	59.7	75.9	83.4	92.0	102.1	400
							17.4	18.4	22.2	23.8	25.5	27.5	29.7	31.9	39.0	42.3	46.0	51.0	55.9	60.9	77.3	84.8	93.4	103.5	450
								19.4	23.3	24.9	26.6	28.6	30.8	33.0	40.3	43.5	47.2	52.2	57.2	62.2	78.8	86.3	94.9	104.9	500
									24.6	26.2	27.9	29.9	32.1	34.3	41.8	45.0	48.7	53.7	58.7	63.6	80.5	88.0	96.6	106.7	560
										27.6	29.5	31.5	33.7	35.9	43.5	46.7	50.5	55.4	60.4	65.4	82.5	90.0	98.6	108.7	630
											31.2	33.2	35.4	37.6	45.5	48.7	52.5	57.4	62.4	67.4	84.4	92.3	100.9	111.0	710
												35.2	37.4	39.6	47.7	51.0	54.7	59.7	64.6	69.6	87.4	94.9	103.5	113.6	800
													39.6	41.8	50.2	53.4	57.2	62.2	67.1	72.1	90.3	97.8	106.4	116.4	900
														44.0	52.7	55.9	59.7	64.6	69.6	74.6	93.2	100.6	109.3	119.3	1000
															55.7	58.9	62.6	67.6	72.6	77.6	96.6	104.1	112.7	122.8	1120
																62.2	65.9	70.9	75.8	80.8	100.3	107.8	116.4	126.5	1250
																	69.6	74.6	79.6	84.5	104.7	112.1	120.8	130.8	1400
																		79.6	84.5	89.5	110.4	117.9	126.5	136.6	1600
																			89.5	94.5	116.2	123.6	132.3	142.3	1800
																				99.4	121.9	129.4	138.0	148.1	2000
																					128.8	136.3	144.9	155.0	2240
																						143.8	152.4	162.4	2500
																							161.0	171.1	2800
																								181.5	3150

WEIGHTS OF GALVANIZED VENTILATION DUCTS IN KG/M WITH INSULATION

Sheet metal 0.75			Sheet metal 0.88						Sheet metal 1.0						Sheet metal 1.13						Sheet metal 1.25				
200	224	250	280	315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400	1600	1800	2000	2240	2500	2800	3150	◄B ▼H
29.0	30.7	32.6	32.9	35.3	38.0	41.1	44.5	48.0	52.1	56.9	62.3	68.5	75.4	82.2	85.1	93.5	103.2	116.1	129.0	141.9	161.3	178.5	198.3	221.4	200
	32.5	34.4	34.5	36.9	39.7	42.7	46.2	49.6	53.7	58.5	64.0	70.1	77.0	83.8	86.7	95.1	104.7	117.6	130.5	143.4	162.9	180.1	199.9	223.0	224
		36.3	36.3	38.7	41.4	44.5	48.0	51.4	55.5	60.3	65.8	71.9	78.8	85.6	88.4	96.8	106.4	119.3	132.2	145.1	164.6	181.8	201.6	224.7	250
			38.4	40.8	43.5	46.6	50.0	53.4	57.5	62.3	67.8	74.0	80.8	87.7	90.3	98.7	108.4	121.3	134.2	147.1	166.6	183.8	203.6	226.7	280
				43.2	45.9	49.0	52.4	55.8	59.9	64.7	70.2	76.4	83.2	90.1	92.6	100.9	110.6	123.5	136.4	149.3	168.9	186.1	205.9	229.0	315
					48.6	51.7	55.1	58.6	62.7	67.5	73.0	79.1	86.0	92.8	95.1	103.5	113.2	126.1	139.0	151.9	171.5	188.7	208.5	231.7	355
						54.8	58.2	61.7	65.8	70.6	76.0	82.2	89.1	95.9	98.0	106.4	116.1	129.0	141.9	154.8	174.5	191.7	211.5	234.7	400
							61.7	65.1	69.2	74.0	79.5	85.6	92.5	99.3	101.3	109.7	119.3	132.2	145.1	158.0	177.8	195.0	214.8	238.0	450
								68.5	72.6	77.4	82.9	89.1	95.9	102.8	104.5	112.9	122.6	135.5	148.4	161.3	181.1	198.3	218.1	241.3	500
									76.7	81.5	87.0	93.2	100.0	106.9	108.4	116.7	126.4	139.3	152.2	165.1	185.1	202.3	222.1	245.2	560
										86.3	91.8	98.0	104.8	111.7	112.9	121.3	130.9	143.8	156.7	169.6	189.7	206.9	226.7	249.9	630
											97.3	103.4	110.3	117.1	118.0	126.4	136.1	149.0	161.9	174.8	195.0	212.2	232.0	255.1	710
												109.6	116.5	123.3	123.8	132.2	141.9	154.8	167.7	180.6	200.9	218.1	238.0	261.1	800
													123.3	130.2	130.3	138.7	148.4	161.3	174.2	187.1	207.6	224.7	244.6	267.7	900
														137.0	136.7	145.1	154.8	167.7	180.6	193.5	214.2	231.4	251.2	274.3	1000
															144.5	152.9	162.5	175.4	188.3	201.2	222.1	239.3	259.1	282.2	1120
																161.3	170.9	183.8	196.7	209.6	230.7	247.9	267.7	290.8	1250
																	180.6	193.5	206.4	219.3	240.6	257.8	277.6	300.8	1400
																		206.4	219.3	232.2	253.8	271.0	290.8	314.0	1600
																			232.2	245.1	267.0	284.2	304.1	327.2	1800
																				258.0	280.3	297.5	317.3	340.4	2000
																					296.1	313.3	333.1	356.3	2240
																						330.5	350.3	373.5	2500
																							370.2	393.3	2800
																								416.4	3150

SPIRAL LOCK SEAM PIPE, ROUND, ACC. TO DIN EN12237

DN	71	80	90	100	112	125	140	150	160	180	200	224	250	280	300	315	355	400	450	500	560	600	630	710	800	900	1000	1120	1250
Pipe outer-Ø [mm]	75	84	94	105	117	130	145	155	165	185	205	229	255	285	307	322	362	407	457	507	567	609	639	719	810	1012	1012	1132	1262
Sheet thickness [mm]	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2
Pipe weight empty [kg/m]	0.8	0.9	1.0	1.7	1.9	2.1	2.4	2.6	2.7	3.1	3.4	3.8	4.2	4.7	5.2	7.1	8.0	9.0	10.2	11.3	12.6	13.5	17.7	20.0	22.5	25.4	34.9	39.1	43.7

The weights listed above are reference values. The weights can deviate, depending on the sheet metal thickness and type of flange used.

Ventilation duct clamp LGS

OVERVIEW

LGS

Properties:

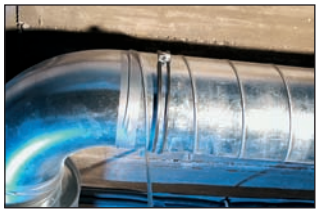
Material	Steel DX51D+Z 275 NA-C (material no. 1.0226+Z) acc. to DIN EN 10327
Zinc plating	Sendzimir zinc plated, approx. 20 µm
Connecting nut	Resistance welded, domed nut M 8/ M 10. SW 13
Locking screw	Oval head screw with combination recessed head
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Sound insulation	for DIN 4109
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore A
Fire behavior	DIN 4102: class B2

DESCRIPTION

- Two-piece pipe clamp with sound insulation insert.
- Connecting nut with combination thread M 8/M 10.

Advantages / Benefits

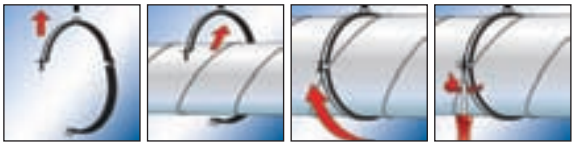
- Simple installation due to large opening angle.
- Locking screw with large combination recessed head is secured against loss.
- Stable sound insulation insert for firm fit.
- Better adaptation to different pipe cross sections due to 2 locking screws.
- From 450 mm diameter installation with two threaded rods on sides is possible.



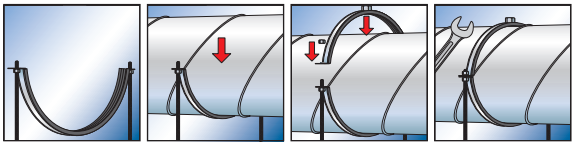
INSTALLATION

Installation tip

- Insert pipe, screw clamp parts together.



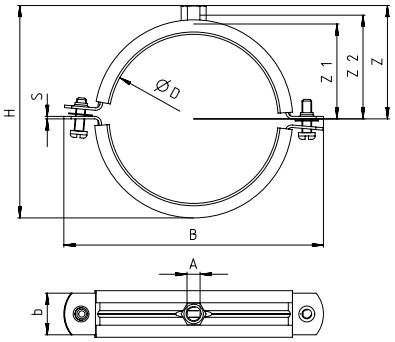
Standard installation from LGS 80 to LGS 1250



Two rods possible installation from LGS 450 to LGS 1250

Ventilation duct clamp LGS

TECHNICAL DATA



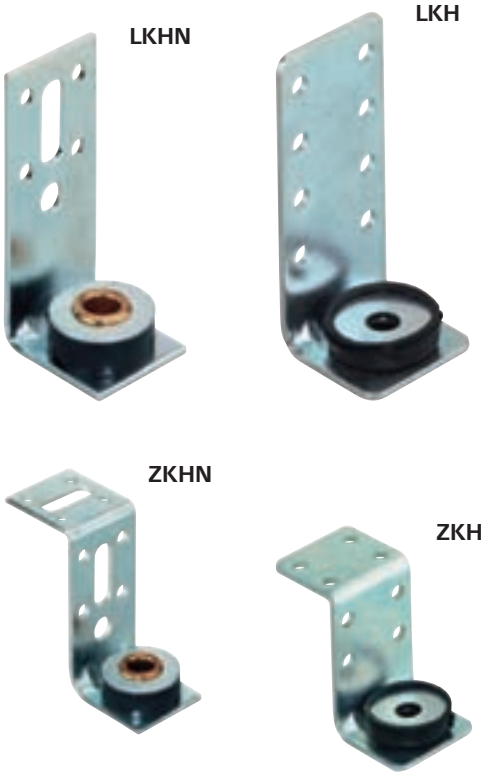
LGS

Type	Art. No.	Qty. per box	Max. recom. static load single rod installation	Max. recom. static load two rods installation	Size	Locking screw	Thread	Connecting nut height	Width x thickness clamp band	Width	Height	Height	Height	Height
					Ø D		A		b x s	B	H	Z	Z_1	Z_2
		pcs.	[kN]	[kN]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
LGS 80	**079491**	25	0.6		80	M 6	M 8 / M 10	17	25 x 1.5	124	106	62	45	55
LGS 90	**079492**	25	0.6		90	M 6	M 8 / M 10	17	25 x 1.5	134	120	69	52	62
LGS 100	**079493**	20	0.6		100	M 6	M 8 / M 10	17	25 x 1.5	145	131	74	57	67
LGS 112	**079494**	20	0.6		112	M 6	M 8 / M 10	17	25 x 1.5	157	143	80	63	73
LGS 125	**079495**	10	0.6		125	M 6	M 8 / M 10	17	25 x 1.5	170	157	87	70	80
LGS 140	**079496**	10	0.6		140	M 6	M 8 / M 10	17	25 x 1.5	185	168	93	76	86
LGS 150	**079497**	10	0.6		150	M 6	M 8 / M 10	17	25 x 1.5	195	180	99	82	92
LGS 160	**079498**	10	0.6		160	M 6	M 8 / M 10	17	25 x 1.5	205	192	104	87	98
LGS 180	**079499**	10	0.6		180	M 6	M 8 / M 10	17	25 x 1.5	225	211	114	97	107
LGS 200	**079500**	15	0.6		200	M 6	M 8 / M 10	17	25 x 1.5	245	230	123	106	117
LGS 224	**079501**	15	0.6		224	M 6	M 8 / M 10	17	25 x 1.5	269	257	137	120	130
LGS 250	**079502**	10	0.6		250	M 6	M 8 / M 10	17	25 x 1.5	295	253	135	118	128
LGS 280	**079503**	10	0.6		280	M 6	M 8 / M 10	17	25 x 1.5	325	311	164	147	157
LGS 300	**079504**	10	0.6		300	M 6	M 8 / M 10	17	25 x 1.5	347	325	171	154	164
LGS 315	**079505**	10	0.6		315	M 6	M 8 / M 10	17	25 x 1.5	362	345	181	164	174
LGS 355	**079506**	10	0.6		355	M 6	M 8 / M 10	17	25 x 1.5	402	381	199	182	192
LGS 400	**079507**	10	0.6		400	M 6	M 8 / M 10	17	25 x 1.5	447	431	224	207	217
LGS 450*	**024637**	1	0.8	1.6	450	M 10	M 8 / M 10	17	25 x 2.5	497	480	249	232	242
LGS 500*	**024638**	1	0.8	1.6	500	M 10	M 8 / M 10	17	25 x 2.5	547	526	272	255	265
LGS 560*	**024639**	1	0.8	1.6	560	M 10	M 8 / M 10	17	25 x 2.5	607	594	306	289	299
LGS 600*	**024640**	1	0.8	1.6	600	M 10	M 8 / M 10	17	25 x 2.5	649	618	318	301	311
LGS 630*	**024641**	1	0.8	1.6	630	M 10	M 8 / M 10	17	25 x 3.0	679	664	341	324	334
LGS 710*	**024642**	1	0.8	1.6	710	M 10	M 8 / M 10	17	25 x 3.0	759	743	380	363	373
LGS 800*	**024643**	1	0.8	1.6	800	M 10	M 8 / M 10	17	25 x 3.0	850	833	425	408	418
LGS 900*	**024644**	1	0.8	1.6	900	M 10	M 8 / M 10	17	30 x 3.0	950	939	478	461	471
LGS 1000*	**024645**	1	0.8	1.6	1000	M 10	M 8 / M 10	17	30 x 3.0	1052	1053	535	518	528
LGS 1120*	**024646**	1	0.8	1.6	1120	M 10	M 8 / M 10	17	30 x 3.0	1172	1174	595	578	589
LGS 1250*	**024647**	1	0.8	1.6	1250	M 10	M 8 / M 10	17	30 x 3.0	1302	1319	668	651	661

* Installation with two rods on side is possible.

Duct hanger L- and Z-type

OVERVIEW



Properties:

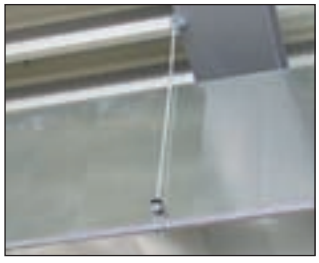
Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 3 µm
Sound insulation	for DIN 4109
Temperature range	-50° to +110 °C
Hardness	45 ± 5° Shore A
Fire behavior	DIN 4102: class B2

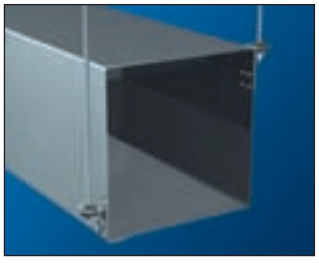
DESCRIPTION

- Fastening component with sound insulation part in riveted and inserted design.

Advantages / Benefits

- Multiple holes for simple and quick fastening with drilling screws or rivets.
- Decrease in vibration and streaming noises.
- High stability with the riveted version.
- Simple alignment and level adjustment.



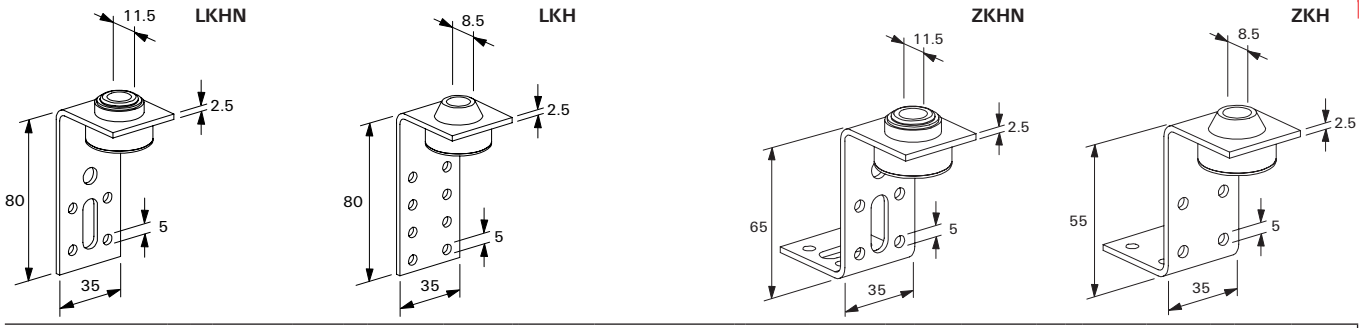


INSTALLATION

Installation tips

- Fastening with self tapping screws or rivets.
- Suspension using threaded rods.

TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Max. recom. static load (centr. tension) $N_{recom.}$ [kN]	Version	for thread
LKHN	**024666**	50	0.90	riveted	M 8 / M 10
LKH	**024671**	50	0.50	inserted	M 8
ZKHN	**024672**	50	0.90	riveted	M 8 / M 10
ZKH	**024674**	50	0.50	inserted	M 8

Spiral duct hanger LRBN / LRB

OVERVIEW

LRB

LRBN

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 5 µm
Sound insulation	for DIN 4109
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore A
Fire behavior	DIN 4102: class B2

DESCRIPTION

- Fastening component with sound insulation part in riveted and inserted design.

Advantages / Benefits

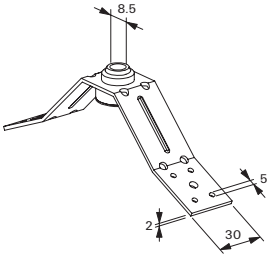
- Multiple holes for simple and quick fastening with drilling screws or rivets.
- Decrease in vibration and streaming noises.
- High stability with the riveted Version.
- Alternative usage possibility as sound uncoupling profile hanger.
- Ideal adaptation due to target bending point.
- Simple alignment and level adjustment.

INSTALLATION

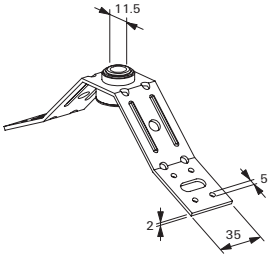
Installation tips

- Fastening with drilling screws or rivets.
- Suspension using threaded rods.

TECHNICAL DATA



LRB

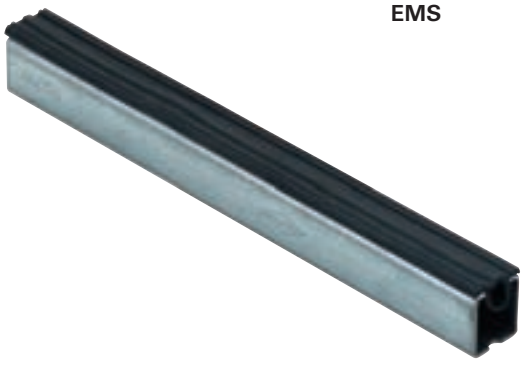


LRBN

Type	Art. No.	Qty. per box pcs.	Max. recom. static load (centr. tension) $N_{recom.}$ [kN]	Version	for thread
LRB	**024675**	50	0.50	inserted	M 8
LRBN	**077613**	50	0.90	riveted	M 8 / M 10

Rubber inlay EMS

OVERVIEW



EMS

Properties:

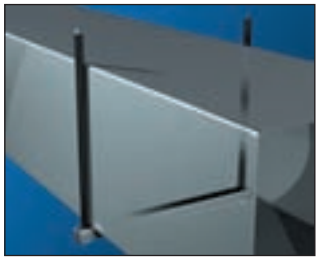
Sound insulation insert	Material: SBR/EPDM; chlorine-free; silicone-free
Sound insulation	special noise-absorbing lining
Temperature range	-50° to +110°C
Hardness	45 ± 5° Shore A
Fire behavior	DIN 4102: class B2

DESCRIPTION

- Profile rubber insert to place in mounting rails.
- Sound insulation for threaded rods.

Advantages / Benefits

- Sound decoupling and insulation between components.
- No noise bridges.

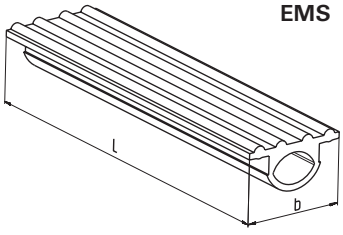


INSTALLATION

Installation tips

- Simple insertion in the mounting rail MS and FUS rails.
- Threaded rods can be slided easily into the profile.

TECHNICAL DATA



EMS

Type	Art. No.	Qty. per box pcs.	For profile	For threaded rod up to	Length L [m]	b [mm]
EMS 27	**024664**	1	27/18 + 28/30	M 8	25	27
EMS 38	**024665**	1	38/40 + 40/60	M 12	25	38
EMS 41	**550806**	1	all FUS channels	M 14	6	41

Profile hanger TZ / TZH

OVERVIEW

TZ

TZH

Properties:

Material TZ M 8/TZ M 10	DX51D+Z 140-275, (material no. 1.0226+Z) acc. to DIN EN 10327
Material TZH M 8/TZH M 10	DC01, material no. 1.0330 acc. to DIN EN 10130
Zinc plating	Electro zinc plated, ≥ 8 µm

DESCRIPTION

- Fastening element for trapezoidal sheeting available in two Versions.

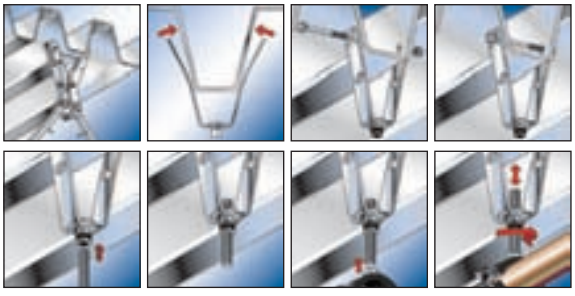
Advantages / Benefits

- Easy adaptation to any trapezoidal sheeting shape due to target bending points.
- Simple post level adjustment with the TZH due to regulating nuts.

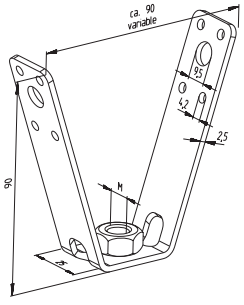
INSTALLATION

Installation tips

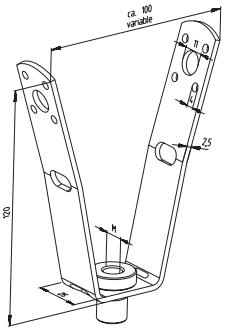
- Hole punching in trapezoidal sheeting using hole punch LZ.
- Fastening with a screw SKS M8x100 or fastening with sheet metal screws or steel blind rivets is recommended.
- For mounting sprinkler systems, the use of sheet metal screws or steel blind rivets is not permitted.



TECHNICAL DATA



TZ



TZH

Type	Art. No.	Qty. per box	Thread	Max. recom. static load (centr. tension)
		pcs.	M	$N_{recom.}$ [kN]
TZ M 8	**064094**	25	M 8	0.80
TZH M 8	**079825**	25	M 8	1.30
TZ M 10	**064095**	25	M 10	0.80
TZH M 10	**079826**	25	M 10	1.30

Hole punch LZ, hole stamp LST

OVERVIEW

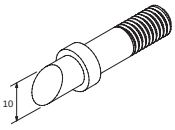
LZ

LST

DESCRIPTION

- Tool for punching holes in trapezoidal sheeting.

TECHNICAL DATA



LST

Type	Art. No.	Qty. per box	Trapezodial sheeting thickness
		pcs.	[mm]
LZ	**079830**	1	1.25
LST 10	**079829**	2	–

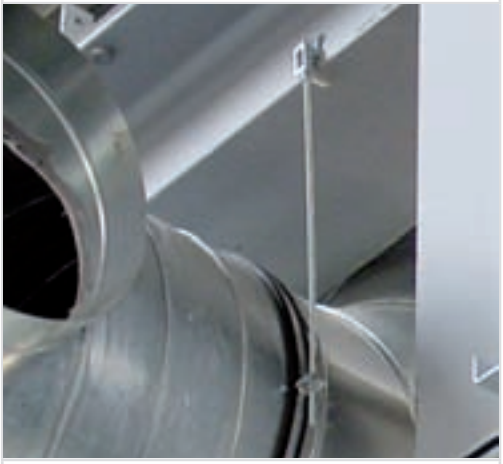
Hexagonal screw SKS

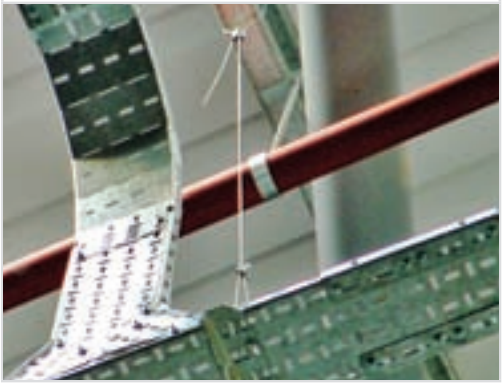
SKS

Type	Art. No.	Qty. per box	Thread D	Width across nut SW
		pcs.		
SKS M 8 x 100	**079827**	100	M 8	13

Codes and characteristics see on page 162

Accessories





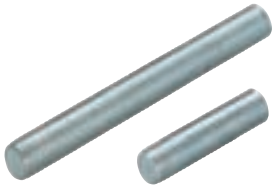
The accessories range allows several kind of connection possibilities together with fischer pipe clamps and installation system MS-L, MS and FUS.

Base plate
GPL, GPS Page 130

Steel work connectors
TKL Page 131

Level adjustment
SPS / BLR Page 135

Threaded connectors
G / GS Page 132

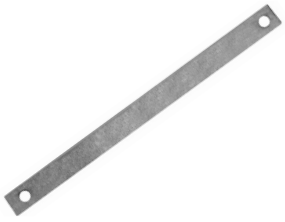


Straps
GWB Page 145

Wireclip
WIC Page 148

GPR **Page 130**

SS-TKL **Page 131**



PV **Page 135**

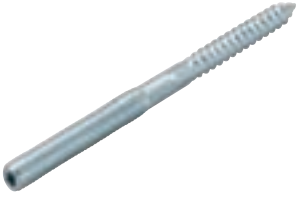
AHB **Page 136**

MU / U **Pages 137 / 138**

RD / RDM / GRD / VM **Pages 138 / 140**

SKS **Page 137**

STST **Page 143**



LBV **Page 146**

LBK **Page 146**

ED / SZE **Page 147**

WI **Page 149**

WIZ **Page 149**

Base plate GPL

OVERVIEW

GPL, GPS

GPR

Properties:

Material (GPS and GPR)	S 355 MC (material no. 1.0976) acc. to DIN EN 10149 Alternative: DD11 (material no. 1.0332) acc. to EN 10111
Material (GPL)	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating (GPL, GPS)	Electro zinc plated, min. 8 µm
Zinc plating (GPR)	Electro zinc plated, min. 5 µm

DESCRIPTION

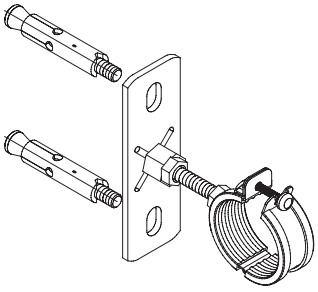
- Base plate in light, heavy and round design, with welded threaded nut.

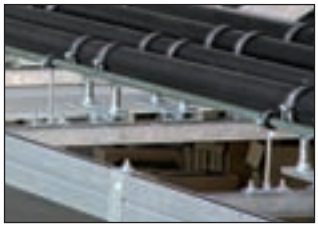
Advantage / Benefit

- Slots make simple alignment possible.

INSTALLATION

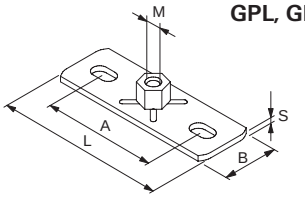
- During wall stand-off-installation, the permissible bending moment and the maximum load on the base plate must be observed.



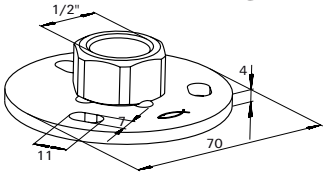


TECHNICAL DATA

GPL, GPS



GPR



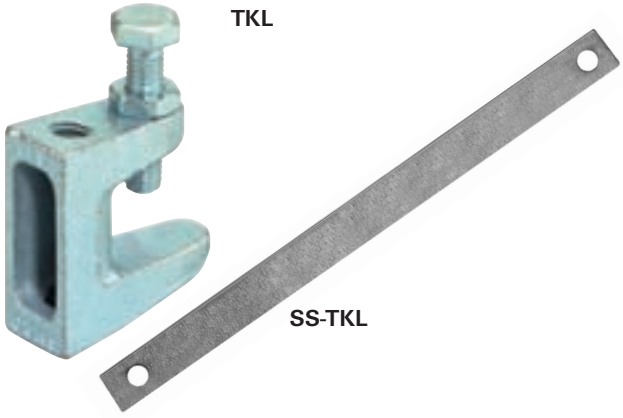
Type	Art. No.	Qty. per box	Thread	Length	Width	Hole spacing	Long slot (LL a x b)	Thickness
			M	L	B	A		S
		pcs.		[mm]	[mm]	[mm]	[mm]	[mm]
GPL								
GPL M 8	**079665**	25	M 8	80	30	54	9 x 16	3
GPL M 10	**079666**	25	M 10	80	30	54	9 x 16	3
GPL 1/2"	**079667**	25	1/2"	80	30	54	9 x 16	3
GPS								
GPS M 10	**079671**	25	M 10	120	40	79	11 x 19	4
GPS M 12	**040398**	25	M 12	120	40	79	11 x 19	4
GPS M 16	**504408**	25	M 16	120	40	79	11 x 19	4
GPS 1/2"	**079672**	25	1/2"	120	40	79	11 x 19	4
GPS 3/4"	**020968**	25	3/4"	120	40	79	11 x 19	4
GPR								
GPR 1/2"	**037289**	25	1/2"	-	-	-	11 x 7	4

LOADS

Type	Max. rec. static load (tension) N_{rec} [kN]
GPL M 8	2.4
GPL M 10	2.4
GPL 1/2"	2.4
GPS M 10	4.0
GPS M 12	4.0
GPS M 16	4.0
GPS 1/2"	4.0
GPS 3/4"	4.0
GPR 1/2"	4.0

Clamp hanger TKL

OVERVIEW



Properties:

Material TKL	Malleable cast iron EN-GJMB-350-10 acc. to DIN 1562 Material bolt: Steel 8.8 acc. ISO 4017 Material nut: Steel acc. ISO 4035, resistance min. 4
Material SS-TKL	Steel DX51D acc. to EN 10214, material no. 1.0226
Zinc plating	Electro zinc plated, min. 5 µm

VdS

DESCRIPTION

- Clamp hanger makes simple fastening possible by clamping to steel beams.

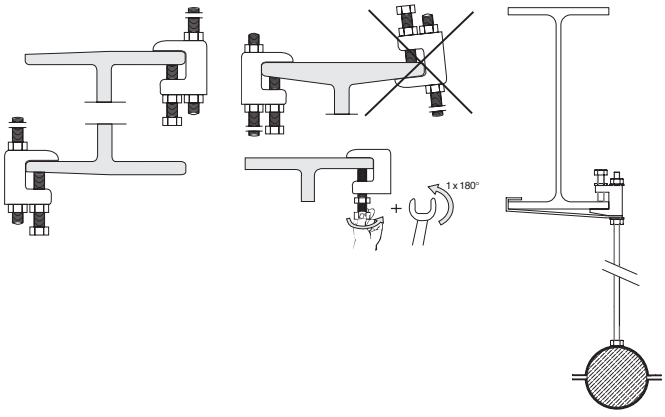
Advantages / Benefits

- High load-bearing capability.
- Simple and fast level adjustment.
- Level adjustment is also possible later with through-hole.
- VdS approval.
- Fastening on steel beam without welding and drilling.
- No slipping of the clamp from the steel beam.

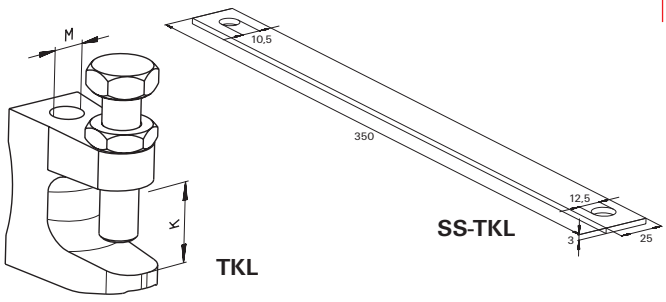
INSTALLATION

Installation tip

- SS-TKL necessary for VdS systems starting from pipe > DN 65.

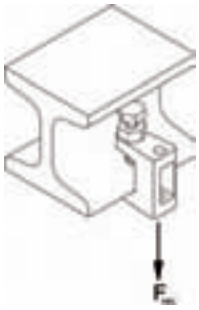


TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Clamping range K [mm]	Eye Ø D	Stamp on item
TKL L M8	**064055**	50	0 – 18	M 8	TK M 8
TKL M8	**079687**	50	0 – 23	M 8	TK 10
TKL Ø 9	**077605**	50	0 – 18	9	TK N 8
TKL M10	**079688**	50	0 – 20	M 10	TK N 10
TKL Ø 11	**079689**	50	0 – 20	11	TK N 10
TKL M12	**020949**	50	0 – 26	M 12	TK 12
TKL Ø 13	**043275**	50	0 – 26	13	TK 12
SS-TKL M10/M12	**048154**	25	–	10/12	SS-TKR

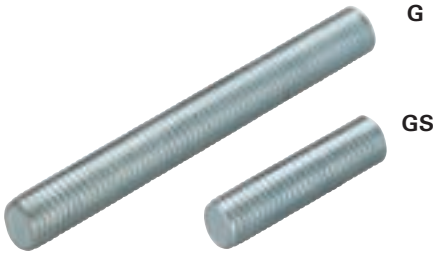
LOADS



Type	Hole-Ø	Max. recom. static load (tension) $N_{recom.}$
TKL L M8	M8	1.20
TKL M8	M8	2.50
TKL Ø 9	Ø 9	1.20
TKL M10	M10	2.50
TKL Ø 11	Ø 11	2.50
TKL M12	M12	3.50
TKL Ø 13	Ø 13	3.50

Threaded rod G / Threaded stud GS

OVERVIEW



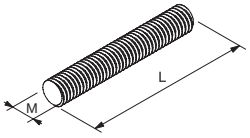
Properties threaded rod G:

Material (G 6 – G 24)	DIN 976 Steel 4.6 acc. to DIN EN ISO 898-1
Material (G 1/2" – G 3/4")	Steel S235 JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, 3 - 8 µm

Properties threaded stud GS:

Material	DIN 976 Steel 4.6 acc. to DIN EN ISO 898-1
Zinc plating	Electro zinc plated, 3 - 8 µm

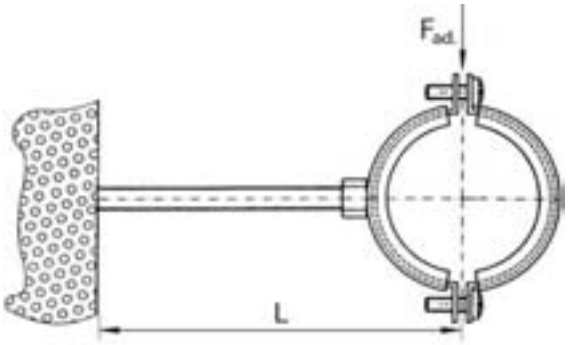
TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread M
Threaded rod G				
G 6	**020956**	50	1000	M 6
G 8	**079740**	25	1000	M 8
G 10	**079744**	25	1000	M 10
G 12	**020957**	20	1000	M 12
G 16	**020958**	10	1000	M 16
G 20	**557295**	5	1000	M 20
G 24	**557270**	5	1000	M 24
G 8/2	**079741**	25	2000	M 8
G 10/2	**079745**	25	2000	M 10
G 12/2	**579746**	25	2000	M 12
G 10/3	**557092**	5	3000	M 10
G 12/3	**064056**	5	3000	M 12
G 1/2"	**064093**	10	2000	1/2"
G 3/4"	**077580**	5	2000	3/4"
Threaded stud GS				
GS 8/25	**079750**	100	25	M 8
GS 8/40	**079751**	100	40	M 8
GS 8/50	**079752**	100	50	M 8
GS 8/60	**079753**	100	60	M 8
GS 8/70	**079754**	100	70	M 8
GS 8/80	**079755**	100	80	M 8
GS 8/100	**079757**	100	100	M 8
GS 8/150	**079758**	50	150	M 8
GS 8/200	**079759**	50	200	M 8
GS 10/25	**079765**	100	25	M 10
GS 10/40	**079766**	100	40	M 10
GS 10/60	**079767**	100	60	M 10
GS 10/80	**079768**	100	80	M 10
GS 10/100	**079769**	100	100	M 10
GS 10/120	**079770**	50	120	M 10
GS 10/150	**079771**	50	150	M 10
GS 10/200	**079772**	50	200	M 10
GS 12/40	**091442**	100	40	M 12
GS 12/60	**091443**	100	60	M 12
GS 12/80	**091444**	100	80	M 12
GS 12/100	**091461**	100	100	M 12
GS 12/120	**091462**	50	120	M 12
GS 12/150	**091463**	50	150	M 12
GS 12/200	**091464**	50	200	M 12

Load and bend values for threaded rods

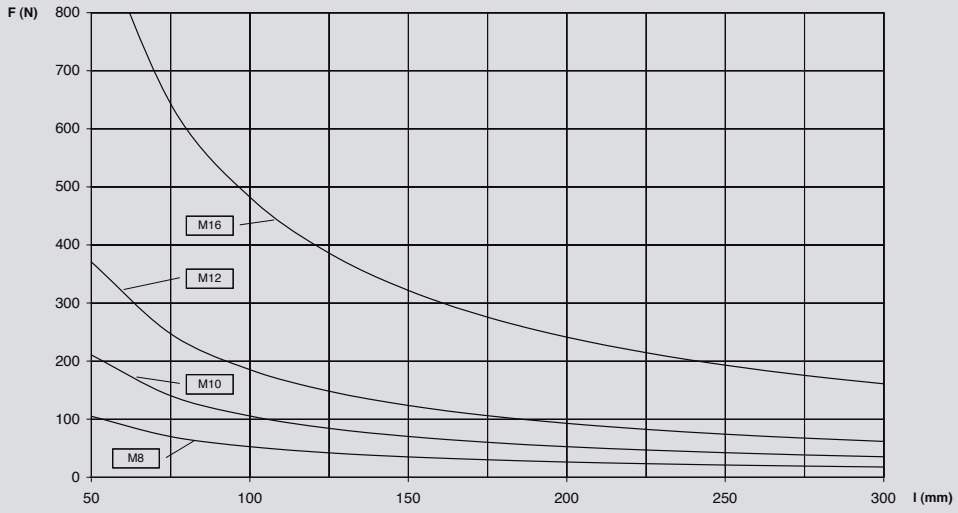
RECOMMENDED LOAD



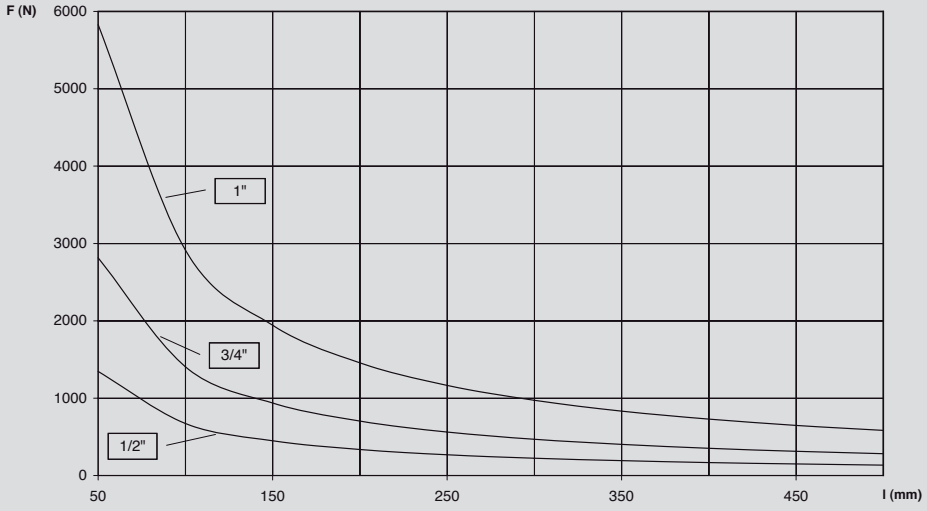
Maximum deflection under load: f_{max} = < 3 mm
Permissible steel tension: $\sigma_{ad.}$ = 160 N/mm²

When fastening with fixings, the permissible bending moment has to be taken into consideration!

THREADED RODS (4.6)



THREADED PIPES



The permissible load of the pipe clamp is not considered!

Installation tool for stud screw HED

OVERVIEW

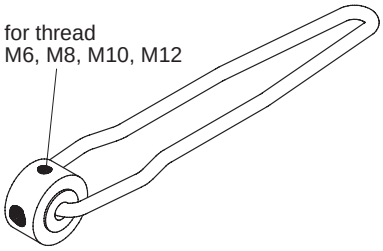
HED

DESCRIPTION

- Tool for installing stud screws
- 4 thread sizes in 1 tool

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Thread D
HED	**079831**	1	M 6, M 8, M 10, M 12



Fixing set for gas meter BFG

OVERVIEW

BFG

DESCRIPTION

- Fixing set for secure fastening of gas meters.

Advantage / Benefit

- Complete fixing set with fixing according to TRGI.

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Fixing set consisting of
BFG 200	**45500**	1	2 x Cantilever bracket 27/18/200, 2 x cover cap AK 27/18 2 x FHS Clix 8x30, 2 x FRS Plus 32-37 4 x Hexagonal bolt 8x70, 4 x washer 8,4 DIN 125 4 x FMD 8x60

Parallel connector PV

OVERVIEW

PV

Properties:

Material	diecasting

DESCRIPTION

- Simple and quick connector for extending and/or connecting threaded rods.

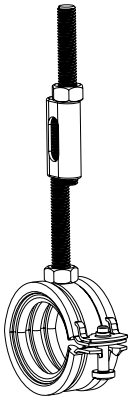
Advantages / Benefits

- Fast installation.
- Simple level adjustment possible.
- Level adjustment even in installed position.

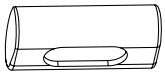
INSTALLATION

Installation tip

- Hold threaded parts together, slide parallel connector over.
- Secure using lock nut.
- Level adjustment is possible by turning the threaded rod.



TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	for thread
PV M 6	**020947**	100	M 6
PV M 8	**079678**	100	M 8

LOADS

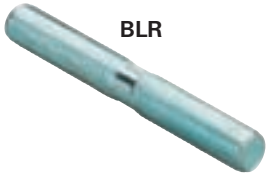
Type	Max. recom. static load (centr. tension) $N_{recom.}$ [kN]
PV M 6	0.30
PV M 8	2.00

Accessories

Turnbuckle SPS and Bolt left-hand/right-hand BLR

OVERVIEW

SPS

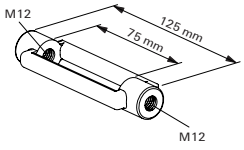


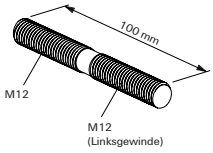
BLR

Properties:

Material SPS	Steel ≥ 330 N/mm² acc. to DIN 1480
Material BLR	Steel acc. to DIN 976, resistance 4.6
Zinc plating	Electro zin plated, min. 5 µm

TECHNICAL DATA





Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread M
SPS M 12	**064090**	25	125	M 12
BLR 100	**064091**	25	100	M 12

LOADS

Type	Max recom. load (tension) [kN]
SPS M 12	9.3
BLR 100	9.0

Support hanger AHB

OVERVIEW

AHB

Properties:

Material	Steel DD11 (material no. 1.0332) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, 6 - 8 µm

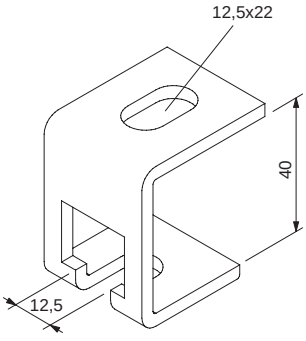
DESCRIPTION

- Component for level adjustment.
- Due to the stamped opening, a component can be hung simply using threaded rod and nut and adjusted.

Advantages / Benefits

- Components can be aligned precisely and construction dimension tolerances can be compensated.

TECHNICAL DATA

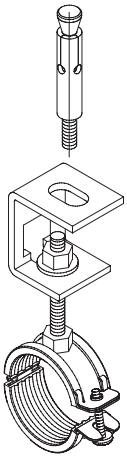


Type	Art. No.	Qty. per box	For thread	Adjustable height
		pcs.		[mm]
AHB	**79675**	25	M8, M10, M12	36

INSTALLATION

Installation tip

- If threaded rods of size M8 are used, a washer should be used.



LOADS

Type	Max. recom. static load (centr. tension) $N_{recom.}$ [kN]
AHB	1.20

Hexagonal screw SKS

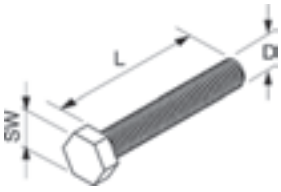
OVERVIEW

SKS

Properties:

Material	DIN-EN-ISO 4017, steel 8.8
Zinc plating	Electro zinc plated, 3 – 8 µm

TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread D	Width across nut SW
SKS 6 x 20	**079711**	100	20	M 6	10
SKS 8 x 16	**079415**	100	16	M 8	13
SKS 8 x 30	**079713**	100	30	M 8	13
SKS 8 x 45	**079714**	100	45	M 8	13
SKS 8 x 55	**079715**	100	55	M 8	13
SKS 8 x 100	**079827**	100	100	M 8	13
SKS 10 x 20	**079416**	100	20	M 10	17
SKS 10 x 30	**079417**	100	30	M 10	17
SKS 10 x 55	**079721**	100	55	M 10	17
SKS 10 x 85	**505552**	100	85	M 10	17
SKS 12 x 20	**077610**	100	20	M 12	19
SKS 12 x 55	**077611**	100	55	M 12	19
SKS 12 x 85	**505553**	100	80	M 12	19

Washer U

OVERVIEW

U

Properties:

Material	Steel DD11 (material no. 1.0139) acc. to DIN EN 10111
Zinc plating	Electro zinc plated, min. 3 µm

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Thickness S [mm]	External Ø A [mm]	Hole Ø [mm]
U 8 x 17	**091477**	100	1.6	17	8.4
U 8 x 28	**079725**	100	2	28	8.4
U 8 x 40	**079729**	100	3	40	8.4
U 10 x 21	**091478**	100	2	21	10.5
U 10 x 28	**079726**	100	2	28	10.5
U 10 x 40	**079730**	100	3	40	10.5
U 12 x 24	**557301**	100	2,5	24	12.5
U 12 x 40	**024649**	100	3	40	12.5
U 16 x 30	**557303**	50	3	30	16.5

Hexagonal nut MU

OVERVIEW

MU

Properties:

Material	acc. DIN EN 20898-2; min. strength category 04
Zinc plating	Electro zinc plated, min. 5 µm

According DIN 934

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Thread D [mm]	Width across nut SW
MU M 6	**079733**	100	M 6	10
MU M 8	**079734**	100	M 8	13
MU M 10	**079735**	100	M 10	17
MU M 12	**024650**	100	M 12	19
MU M 16	**557297**	50	M 16	24

Hexagonal connector VM

OVERVIEW

VM

Properties:

Material	9SMnPb28k (material no. 1.0718) acc. to DIN EN 10087
Zinc plating	Electro zinc plated, 3 - 8 µm

INSTALLATION

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread D [mm]	Width across nut SW
VM M 6	**014319**	100	25	M 6	10
VM M 8	**079690**	100	30	M 8	11
VM M 10	**079691**	100	30	M 10	13
VM M 12	**020971**	100	40	M 12	17
VM M 12 S*	**077623**	100	30	M 12	17
VM M16	**508833**	50	40	M 16	24

* with two safety side holes

LOADS

Type	Max. recom. static load (tension) $N_{recom.}$ [kN]
VM M 6	6.0
VM M 8	8.3
VM M 10	10.0
VM M 12	13.0
VM M 12 S*	-

Eyebolt AG

OVERVIEW

AG

Properties:

Material	Steel S235 JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, 3 - 8 µm

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Length L [mm]	External thread D	Eye Ø A [mm]
AG 8 x 25	**079696**	100	25	M 8	8.5
AG 10 x 25	**079697**	100	25	M 10	10.5

LOADS

Type	Max. recom. static load (tension) $N_{recom.}$ [kN]
AG 8 x 25	5.0
AG 10 x 25	8.0

Thread hanger RAH

OVERVIEW

RAH

Properties:

Material	Annealed cast iron GTS 35 acc. to DIN 1692
Zinc plating	Electro zinc plated, 3 - 8 µm

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Internal thread D	Eye Ø A [mm]
RAH M 8	**079698**	50	M 8	12.0
RAH M 10	**079699**	50	M 10	12.0

LOADS

Type	Max. recom. static load (tension) $N_{recom.}$ [kN]
RAH M 8	4.0
RAH M 10	4.0

Reduction piece RD

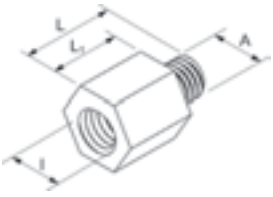
OVERVIEW

RD

Properties:

Material	9SMnPb28k (material no. 1.0718) acc. to DIN EN 10087
Zinc plating	Electro zinc plated, 3 – 8 µm

TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Internal thread l	External thread A	Length L1 [mm]	Length L [mm]	Width across nut SW
RD M 6 / M 8	**079694**	100	M 6	M 8	12	20	9
RD M 8 / M 6	**020936**	100	M 8	M 6	12	19	11
RD M 10 / M 8	**079692**	50	M 10	M 8	15	23	13
RD M 12 / M 10	**079693**	100	M 12	M 10	15	25	17
RD M 12 / M 16	**504397**	50	M 12	M 16	18	32	19
RD M 16 / M 12	**504399**	50	M 16	M 12	22	32	24
RD 1/2" / M 10	**079695**	10	1/2"	M 10	19	29	17

Reduction socket RDM and GRD

OVERVIEW

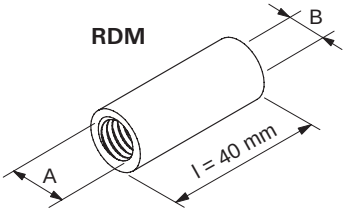
RDM

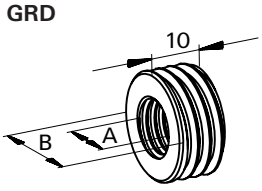
GRD

Properties:

Material	11SMnP630 (material no. 1.0718) acc. to DIN EN 10277
Zinc plating	Electro zinc plated, 3 – 8 µm

TECHNICAL DATA





Type	Art. No.	Qty. per box pcs.	Thread A	Thread B
RDM M 10 / M 8	**079413**	50	M 10	M 8
RDM M 12 / M 10	**079414**	100	M 12	M 10
GRD 1/2" / M 10	**077609**	100	M 10	1/2"
GRD 1/2" / M 12	**077608**	100	M 12	1/2"
GRD 3/4" / M 10	**077607**	100	M 10	3/4"
GRD 3/4" / M 12	**077606**	100	M 12	3/4"

Multi connector MW

OVERVIEW

MW

Properties:

Material	diecasting

DESCRIPTION

- Cube with four threaded holes for variable use.

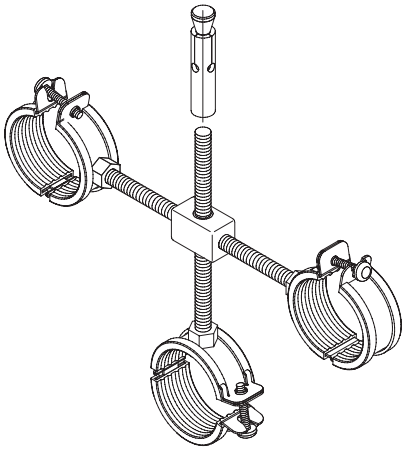
Advantages / Benefits

- Up to 3 pipe lines can be fastened.
- One fastening point in the wall.

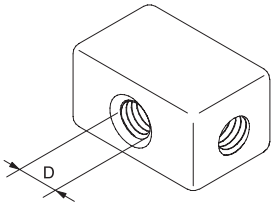
INSTALLATION

Installation tip

- Threaded pins and bolt connectors are suitable as connecting elements.



TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Thread D
MW M 8	079717	50	M 8

LOADS

Type	Max. recom. static load $N_{recom.}$ [kN]
MW M 8	2.50

Flat eye screw LLS

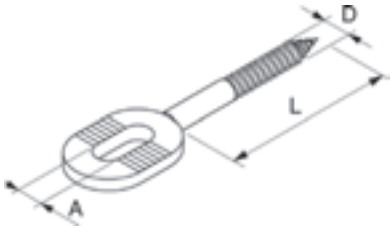
OVERVIEW

LLS

Properties:

Material	Steel S235 JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Length L [mm]	Wood thread D [mm]	Eye Ø A [mm]
LLS 6 x 50	**079700**	100	50	6	6.5
LLS 8 x 50	**079701**	100	50	8	8.5

Hexagon socket head screw IK and IM

OVERVIEW

IK

IM

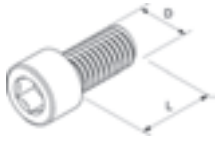
Properties:

Material	Steel 18Mn84 (material no. 1.5521) acc. to DIN EN 10263
Zinc plating	Electro zinc plated, min. 5 µm

Properties:

Material	DIN 912 steel 8.8
Zinc plating	Electro zinc plated, min. 5 µm

TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Thread D	Wood thread D [mm]	Length L [mm]	Hexagonal recess [mm]
IK 6 x 50	**079710**	100	-	6	50	-
IM 8 x 12	**079712**	100	M 8	-	12	8
IM 10 x 16	**079720**	100	M 10	-	16	6

Stud screw STST with bit head and Hex shank

OVERVIEW

STST

Properties:

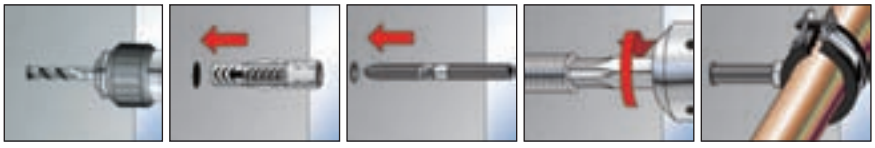
Material	Steel 4.6
Zinc plating	Electro zinc plated, min. 8 µm

DESCRIPTION

- Double thread screw for direct installation of clamps on wall.

INSTALLATION

- Insertion in the plug or in the wood wall can be done by using the Hex shank or the Torx head.

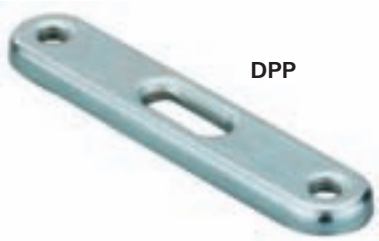


TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread D [mm]	Drive
STST 6 x 60	**504400**	100	60	M 6	T15
STST 6 x 80	**077714**	100	80	M 6	T15
STST 8 x 50	**079780**	100	50	M 8	T25
STST 8 x 60	**079781**	100	60	M 8	T25
STST 8 x 80	**079782**	100	80	M 8	T25
STST 8 x 100	**079783**	100	100	M 8	T25
STST 8 x 120	**079784**	100	120	M 8	T25
STST 8 x 140	**079785**	50	140	M 8	T25
STST 8 x 180	**079786**	50	180	M 8	T25
STST 10 x 60	**077689**	100	60	M 10	T25
STST 10 x 80	**077707**	100	80	M 10	T25
STST 10 x 100	**077708**	100	100	M 10	T25
STST 10 x 120	**077709**	100	120	M 10	T25
STST 10 x 140	**077711**	50	140	M 10	T25
STST 10 x 180	**077712**	50	180	M 10	T25

Double connector plate DPP, DPF

OVERVIEW



DPP

DPF

Properties:

Material	Steel DC04 (material no. 1.0338) acc. to DIN EN 10130
Zinc plating	Electro zinc plated, min. 5 µm

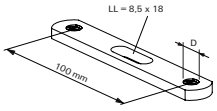
DESCRIPTION

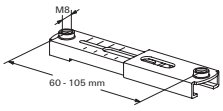
- Fastening element for installation of two parallel pipe lines with only one fastening point.

Advantages / Benefits

- Only one fastening point for two pipe lines.
- Very good for visible installation.
- Adjusting possibility due to slot.
- Variable pipe spacing with double connecting plate DPF.

TECHNICAL DATA





Type	Art. No.	Qty. per box pcs.	Thread distance [mm]	Thread D
DPP 65	**79702**	50	65	M 8
DPP 85	**79703**	50	85	M 8
DPP 105	**79704**	50	105	M 8
DPF 60 - 105	**24648**	50	105	M 8

LOADS

Type	Max. recom. static load $N_{recom.}$ [kN]
DPP 65	1.5
DPP 85	1.0
DPP 105	0.75
DPF 60 - 105	1.5 - 0.5

Bolt connector SBB

SBB

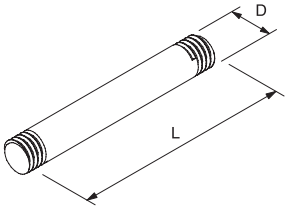
Properties:

Material	Steel S235 JR (material no. 1.0037) acc. to DIN EN 10025
Zinc plating	Electro zinc plated, min. 5 µm

DESCRIPTION

- Ideal connecting element for double connector plates and multi-connectors.

TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread D
SBB 35	**79705**	100	35	M 8
SBB 45	**79706**	100	45	M 8
SBB 55	**79707**	100	55	M 8

Textile web strapping GWB

OVERVIEW

GWB

Properties:

Material	Polypropylene yarn with polyester additive

DESCRIPTION

- Textile band for simple and load-bearing installation.

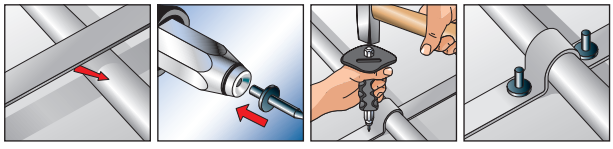
Advantages / Benefits

- Tear resistant.
- Economical, simple installation possible.
- Universal fastening possible
- Flexible length selection.

INSTALLATION

Installation tip

- Floor fastening using the fischer impact nail ED.



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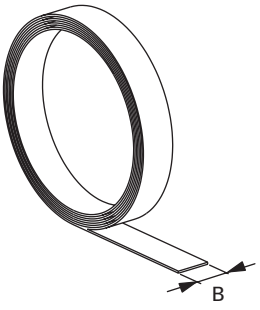


Type	Art. No.	Qty. per box pcs.	Total length l [mm]	Width B [mm]	Thickness S [mm]	to be fastend with
GWB	**20959**	10	10.000	15	1.1	ED 15, ED 18, ED 22

Perforated steel banding LBV / LBK

OVERVIEW

LBV

LBK

Properties:

Material	Steel DX51 D+Z (material no. 1.0226) acc. to DIN EN 10327
Zinc plating	sendzimir zinc plated, approx. 20 µm
Protective shroud (LBK)	PE

DESCRIPTION

- Steel band with stamped holes for simple installation, in zinc-plated or plastic coated version.

Advantages / Benefits

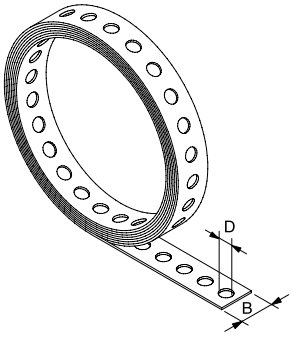
- Advantageous, simple installation possible.
- Universal fastening possible.
- Flexible length selection.

INSTALLATION

Installation tips

- Simple cutting to size possible with sheet metal shears.
- Floor fastening using the fischer impact nail ED.
- For ceiling suspension in concrete, the fischer nail anchor FNA is recommended.
- Fastening with fischer thread hanger RAH.

TECHNICAL DATA



Type	Art. No.	Qty. per box pcs.	Total length l [m]	Width B [mm]	Thickness S [mm]	Eye Ø D [mm]	to be fastened with
LBV 12	**79549**	10	10	12	0.75	5	ED 15, ED 18, ED 22
LBV 17	**79550**	10	10	17	0.75	6.5	ED 15, ED 18, ED 22
LBV 25	**79551**	8	10	25	0.88	8.5	ED 15, ED 18, ED 22
LBK 14	**79553**	10	10	14	2.6	5	ED 15, ED 18, ED 22
LBK 19	**79554**	8	10	19	2.4	6.5	ED 15, ED 18, ED 22
LBK 27	**79555**	5	10	27	2.4	8.5	ED 15, ED 18, ED 22

LOADS

Type	Max. recom. static load $N_{recom.}$ [kN]
LBV 12	0.60
LBV 17	0.95
LBV 25	1.50
LBK 14	0.60
LBK 19	0.95
LBK 27	1.50

Impact nail ED

OVERVIEW

ED

Properties:

Material	Steel C60D (material no. 1.0610) acc. to EN 10016-2
Surface	Hardened; bare

DESCRIPTION

- Impact nail ED for fixing of BSM or BSMD conduit clips, to concrete, without pre-drilling.

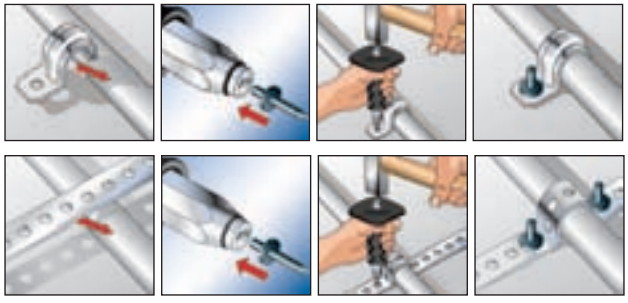
Advantages/benefits

- Simple and quick installation.
- No pre-drilling required.
- Perforated steel band LBV, LBK
- Textile web strapping GWB

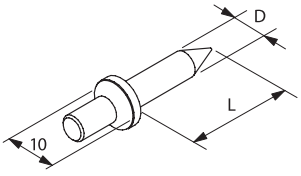
INSTALLATION

Installation tips

- Knocked directly into concrete with the SZE setting tool.
- Comply with accident prevention regulations when installing.



TECHNICAL DATA



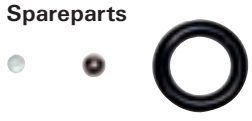
Type	Art. No.	Qty. per box pcs.	Length L [mm]	Diameter D [mm]	max. fixing thickness t_{fix} [mm]
ED 15	**48212**	200	15	4.2	2
ED 18	**79815**	200	18	4.2	6
ED 22	**14570**	200	22	4.2	10

Impact nail setting tool SZE

TECHNICAL DATA

SZE

Spareparts



Type	Art.-No.	Qty. per box pcs.
SZE	**79820**	1
Spareparts for SZE	**49365**	4

Wireclip

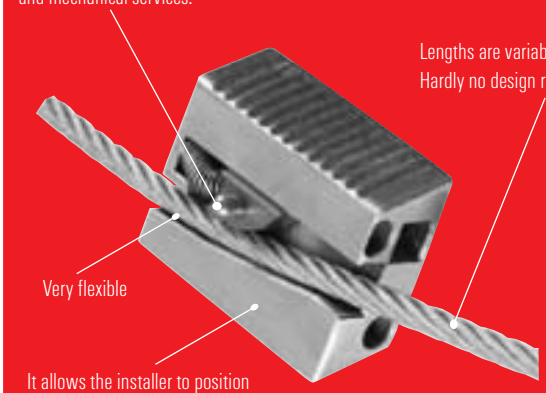
OVERVIEW

WIC 2/3/4

Suitable for:
- Suspension of loads in the HVAC industries.

For suspension of:
- Lighting
- Trunking
- Busbar
- Fan coil units
- Ducting

ADVANTAGES AT A GLANCE



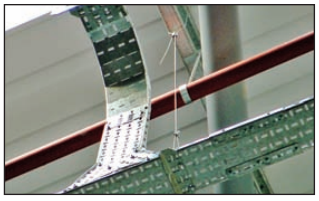
(Cross section)

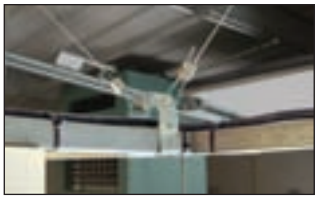
DESCRIPTION

- The Wireclip Cable Lock System is designed as a fast and reliable method to suspend all static loads within the mechanical, electrical and HVAC industries.

Advantages / Benefits

- Cable locks provide a fast, strong and lightweight solution to the task of hanging electrical and mechanical services.
- Its time saving qualities have been shown to increase productivity by up to six times compared to traditional hanging methods.
- Installation requires no specialized training.
- Cable locks are made of durable metal alloys and stainless steel and combine these qualities with the strength of high tensile wire rope.
- It allows the installer to position the hangers vertically or at an angle to the suspended object.
- The Wireclip system is lightweight. It is easy to carry and reduces the risk of injury due to the accidental drop of materials during aerial installations.
- No pre-site visit required to calculate drop lengths.





Wireclip

INSTALLATION

Installation tips

- Only use the special fischer wire cutter WIZ to prevent damaged cable ends.
- Do not use for loads outside the stated range of the product.
- Do not exceed the safe working load of the product.
- Do not use on coated wire rope.
- Do not apply paint or other coating.
- Do not apply lubricant.
- Do not use for lifting.
- Keep the product clean and free from dirt.
- Remove damaged cable end prior to inserting into the cable lock.
- Do not use in chlorinated atmospheres.

Cable lock WIC 4

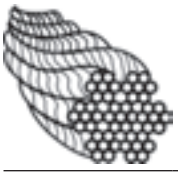
Cable lock WIC 2 & 3

TECHNICAL DATA

WIC 2

WIC 3

WIC 4



Wire 7 x 7

WIZ

Type	Art. No.	Qty. per box	for wire diameter	Length on roll	Type
		pcs.	[mm]	[m]	
WIC 2 VE20	**44559**	20	2 - 2.5	-	-
WIC 2 VE100	**44560**	100	2 - 2.5	-	-
WIC 3 VE20	**44561**	20	2.5 - 3.5	-	-
WIC 3 VE100	**44562**	100	2.5 - 3.5	-	-
WIC 4 VE10	**44563**	10	3 – 4	-	-
WIC 4 VE50	**44564**	50	3 – 4	-	-
WI Ø 2 mm	**44565**	-	2	200	7 x 7
WI Ø 2.5 mm	**44566**	-	2.5	200	7 x 7
WI Ø 3 mm	**44567**	-	3	100	7 x 7
WI Ø 4 mm	**44568**	-	4	100	7 x 7
WIZ	**44721**	1	wire cutter for rope up to 4 mm		

Only available in Europe except U.K. and Spain.

LOADS

Recommended loads N_{rec} [kN].

Cable lock size	Wire diameter [mm]	N_{rec} [kN]
WIC 2	2	0.6
WIC 2	2.5	1.0
WIC 3	3	1.2
WIC 4	4	2.3

Stainless Steel Installation System

A complete installation system resistant to out door and aggressive environment conditions, suitable for:

- industrial piping like e.g. medical and food production
- outdoor heating and sanitary supply pipes
- ventilation, air duct
- solar panels installations

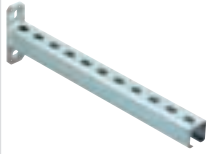
Pipe clamps
FRS A2 / FRS A4 Page 152

MS-L A2
MS 27/18 Page 153

FUS A2/A4
FUS Page 156

Accessories A2/A4
STS Page 159

ALK **Page 153**

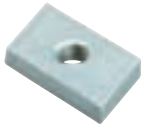


FHS-Clix **Page 154**

MW **Page 155**

SF **Page 155**

HG **Page 154**

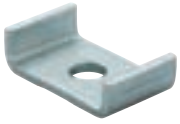


FCA **Page 156**

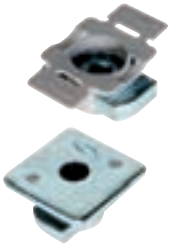
SF **Page 157**

TKR **Page 158**

HK **Page 158**

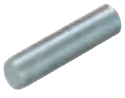


FCN Clix **Page 159**



G **Page 160**

GS **Page 160**



VM **Page 161**

U **Page 161**

MU **Page 162**

SKS **Page 162**

Pipe clamp FRS A2/A4

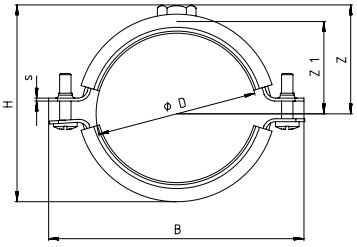
OVERVIEW

FRS A2 / A4

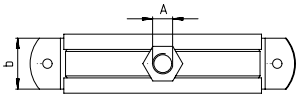
Properties:

Material	Stainless steel of the corrosion resistance class II, e.g. A2 Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA



FRS A2 / A4



Type	Art. No.	Qty. per box	Max. recom. static load (centr. tension)	Nominal size	Clamping range	Locking screw	Connecting thread	Connecting nut height	Width x thickness clamp band	Width	Height	Height	Height
			$N_{recom.}$		D		A		b x s	B	H	Z	Z1
		pcs.	[kN]	[inch]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Stainless steel A2													
FRS 3/8" A2	**64290**	100	1.0	3/8"	15 - 19	M 5 x 20	M 8	6.8	20 x 1.25	62	38	23	16
FRS 1/2" A2	**64536**	100	1.0	1/2"	20 - 24	M 5 x 20	M 8	6.8	20 x 1.25	68	44	26	19
FRS 3/4" A2	**64639**	100	1.0	3/4"	25 - 30	M 5 x 20	M 8	6.8	20 x 1.25	75	50	29	22
FRS 1" A2	**64646**	100	1.0	1"	31 - 38	M 5 x 20	M 8	6.8	20 x 1.25	80	56	32	25
FRS 1 1/4" A2	**64669**	50	1.0	1 1/4"	40 - 46	M 5 x 20	M 8	6.8	20 x 1.25	90	64	36	29
FRS 1 1/2" A2	**64673**	50	1.0	1 1/2"	48 - 54	M 5 x 20	M 8	6.8	20 x 1.25	97	74	41	34
FRS 54 - 59 A2	**64674**	50	1.0		54 - 59	M 5 x 20	M 8	6.8	20 x 1.25	104	83	45	38
FRS 2" A2	**64675**	50	1.0	2"	60 - 64	M 5 x 20	M 8	6.8	20 x 1.25	110	89	48	41
FRS 67 - 71 A2	**64688**	25	1.3		67 - 71	M 5 x 20	M 10	8	25 x 1.5	124	98	51	43
FRS 2 1/2" A2	**64689**	25	1.3	2 1/2"	72 - 78	M 6 x 30	M 10	8	25 x 1.5	129	103	56	48
FRS 81 - 86 2	**64693**	25	1.3		81 - 86	M 6 x 30	M 10	8	25 x 1.5	133	110	58	50
FRS 3" A2	**64694**	25	1.3	3"	87 - 92	M 6 x 30	M 10	8	25 x 1.5	142	112	60	52
FRS 95 - 103 A2	**64695**	25	1.3		95 - 103	M 6 x 30	M 10	8	25 x 1.5	156	120	68	60
FRS 4" A2	**64697**	20	2.0	4"	102 - 116	M 6 x 30	M 10	8	25 x 2.0	172	142	75	67
FRS 121 - 127 A2	**64709**	10	2.0		121 - 127	M 8 x 30	M 10	8	25 x 2.0	192	162	85	77
FRS 133 - 141 A2	**64713**	10	2.0	5"	133 - 141	M 8 x 30	M 10	8	25 x 2.0	198	167	88	80
FRS 159 - 168 A2	**64714**	8	2.0	6"	159 - 169	M 8 x 30	M 10	8	25 x 2.0	226	199	104	96
Stainless steel A4													
FRS 3/8" A4	**64864**	100	1.0	3/8"	15 - 19	M 5 x 20	M 8	6.8	20 x 1.25	62	38	23	16
FRS 1/2"4 A4	**64865**	100	1.0	1/2"	20 - 24	M 5 x 20	M 8	6.8	20 x 1.25	68	44	26	19
FRS 3/4" A4	**64866**	100	1.0	3/4"	25 - 30	M 5 x 20	M 8	6.8	20 x 1.25	75	50	29	22
FRS 1" A4	**64868**	100	1.0	1"	31 - 38	M 5 x 20	M 8	6.8	20 x 1.25	80	56	32	25
FRS 1 1/4" A4	**64869**	50	1.0	1 1/4"	40 - 46	M 5 x 20	M 8	6.8	20 x 1.25	90	64	36	29
FRS 1 1/2" A4	**64870**	50	1.0	1 1/2"	48 - 54	M 5 x 20	M 8	6.8	20 x 1.25	97	74	41	34
FRS 54 - 59 A4	**64873**	50	1.0		54 - 59	M 5 x 20	M 8	6.8	20 x 1.25	104	83	45	38
FRS 2" A4	**64874**	50	1.0	2"	60 - 64	M 5 x 20	M 8	6.8	20 x 1.25	110	89	48	41
FRS 67 - 71 A4	**64875**	25	1.3		67 - 71	M 5 x 20	M 10	8	25 x 1.5	124	98	51	43
FRS 2 1/2" A4	**64879**	25	1.3	2 1/2"	72 - 78	M 6 x 30	M 10	8	25 x 1.5	129	103	56	48
FRS 81 - 86 A4	**64892**	25	1.3		81 - 86	M 6 x 30	M 10	8	25 x 1.5	133	110	58	50
FRS 3" A4	**64893**	25	1.3	3"	87 - 92	M 6 x 30	M 10	8	25 x 1.5	142	112	60	52
FRS 95 - 103 A4	**64894**	25	1.3		95 - 103	M 6 x 30	M 10	8	25 x 1.5	156	120	68	60
FRS 4" A4	**64898**	20	2.0	4"	102 - 116	M 6 x 30	M 10	8	25 x 2.0	172	142	75	67
FRS 121 - 127 A4	**64899**	10	2.0		121 - 127	M 8 x 30	M 10	8	25 x 2.0	192	162	85	77
FRS 133 - 141 A4	**64901**	10	2.0	5"	133 - 141	M 8 x 30	M 10	8	25 x 2.0	198	167	88	80
FRS 159 - 168 A4	**64903**	8	2.0	6"	159 - 169	M 8 x 30	M 10	8	25 x 2.0	226	199	104	96

MS-L Channel A2

OVERVIEW

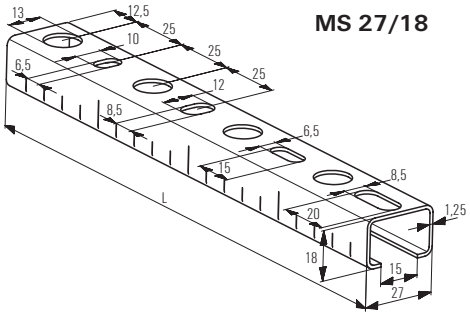
MS 27/18

Properties:

Material	Stainless steel of the corrosion resistance class II, e.g. A2

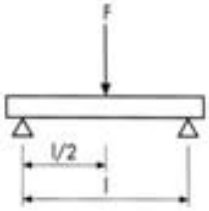
TECHNICAL DATA

MS 27/18



Type	Art. No.	Qty. per box	Length	Profile cross section	Weight
			L		
		pcs.	[mm]	[cm²]	[kg/m]
MS 27/18 A2 - 2 m	**64905**	1	2000	0.84	0.66

LOADS



Type		Span			
		0.5 m	1 m	1.5 m	2 m
MS 27/18/1.25	admissible load F [kN]	0.44	0.16	0.07	0.04

Cantilever arm ALK A2

OVERVIEW

ALK 27/18

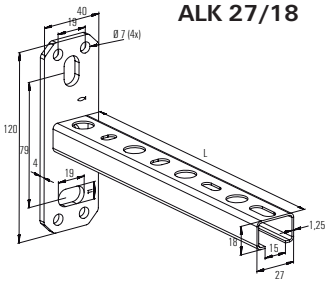
Properties:

Material	Stainless steel of the corrosion resistance class II, e.g. A2

TECHNICAL DATA

Type	Art. No.	Qty. per box	Length
			L
		pcs.	[mm]
ALK 27/18 - 200 A2	**65101**	20	200

ALK 27/18



T-head bolt FHS Clix A2

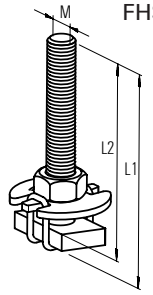
OVERVIEW

FHS Clix

Properties:

Material	Stainless steel of the corrosion resistance class II, e.g. A2

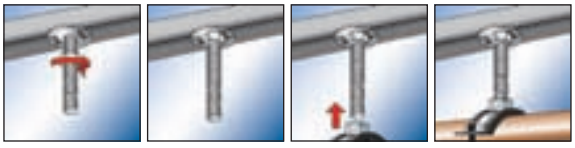
TECHNICAL DATA



FHS Clix

Type	Art. No.	Qty. per box pcs.	Thread M	Length L1 [mm]	Length L2 [mm]
FHS CLIX 8 x 30 A2	**77634**	100	M 8	30	25
FHS CLIX 10 x 30 A2	**64975**	100	M 10	30	25

INSTALLATION



LOADS

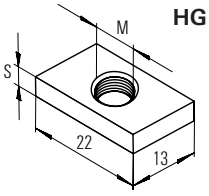
Type		Max. recom. load (tension) $N_{rec.}$ [kN]	Max recom. load (shear) $V_{rec.}$ [kN]	Tightening torque [Nm]
FHS Clix M 8		1.7	0.2	5
FHS Clix M 10		2.0	0.3	8

Channel nut HG A2

OVERVIEW

HG

TECHNICAL DATA



HG

Type	Art. No.	Qty. per box pcs.	Thread M	Thickness S [mm]
HG 27 M 8 A2	**77636**	100	M 8	4
HG 27 M 10 A2	**64977**	100	M 10	4

LOADS

Type	Profile	Max. recom. load (tension) $N_{rec.}$ [kN]	Max recom. load (shear) $V_{rec.}$ [kN]	Tightening torque [Nm]
HG 27 M 8	27/18	1.7	0.4	8
HG 27 M 10	27/18	2.0	0.5	10

Installation angle bracket MW A2

OVERVIEW

MW 27–45°

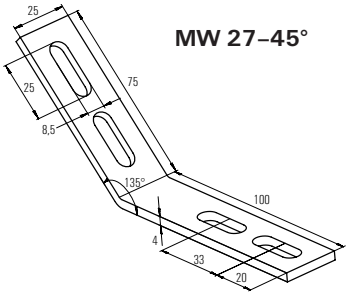
MW 27–90°

Properties:

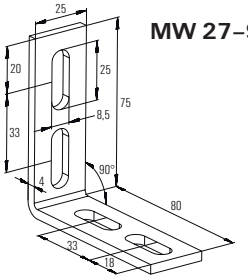
Material	Stainless steel of the corrosion resistance class II, e.g. A2

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.
MW 27-45° A2	**77626**	25
MW 27-90° A2	**77625**	25



MW 27–45°



MW 27–90°

Saddle flange SF A2

OVERVIEW

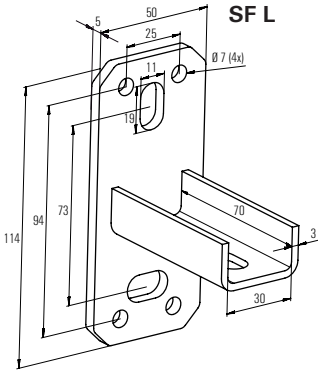
SF L

Properties:

Material	Stainless steel of the corrosion resistance class II, e.g. A2

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Version
SF L 27	**77615**	15	vertical



SF L

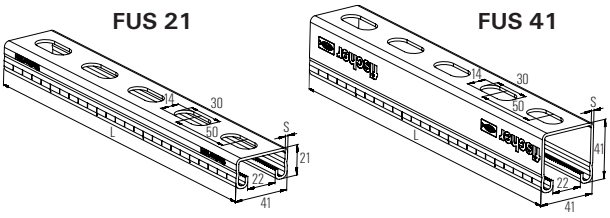
FUS Channel A2/A4

OVERVIEW

Properties:

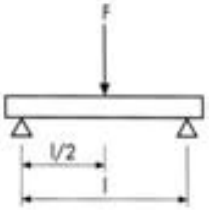
Material A2	Stainless steel of the corrosion resistance class II, e.g. A2
Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA



Type	Art. No.	Qty. per box	Length L	Thickness	Weight
		pcs.	[mm]	[mm]	[kg/m]
A2					
FUS 21/2.0 A2 - 2 m	**504466**	1	2000	2.0	1.44
FUS 41/2.0 A2 - 2 m	**504468**	1	2000	2.0	2.06
FUS 41/2.5 A2 - 2 m	**504470**	1	2000	2.5	2.45
A4					
FUS 21/2.0 A4 - 2 m	**504472**	1	2000	2.0	1.44
FUS 41/2.0 A4 - 2 m	**504474**	1	2000	2.0	2.06
FUS 41/2.5 A4 - 2 m	**504475**	1	2000	2.5	2.45

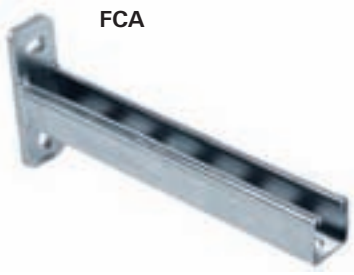
LOADS



Type		Span			
		0.5 m	1 m	1.5 m	2 m
FUS 21/2.0 2m A2/A4	admissible load F [kN]	1.14	0.44	0.20	0.11
FUS 41/2.0 2m A2/A4	admissible load F [kN]	3.30	1.65	1.08	0.61
FUS 41/2.5 2m A2/A4	admissible load F [kN]	3.65	1.82	1.21	0.68

Cantilever arm FCA A4

OVERVIEW

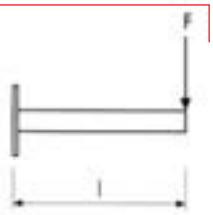


Properties:

Material A4:	Stainless steel of the corrosion resistance class III, e.g. A4

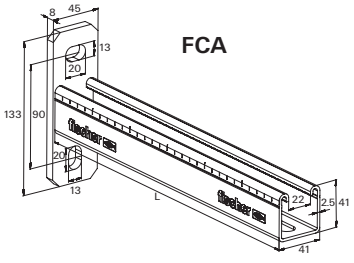
LOADS

Type	Max. rec. load [kN]
FCA 41 A4 - 300	1.33
FCA 41 A4 - 450	0.90
FCA 41 A4 - 600	0.67



TECHNICAL DATA

Type	Art. No.	Qty. per box	Length
		pcs.	m
FCA 41 A4 - 300	**505487**	1	300
FCA 41 A4 - 450	**505488**	1	450
FCA 41 A4 - 600	**505489**	1	600



Saddle flange SF L A4

OVERVIEW

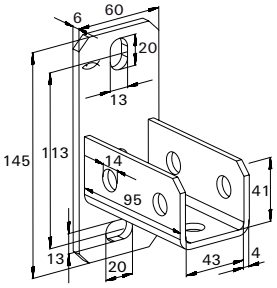
SF L 41

Properties:

Material A4:	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

Type	Art. No.	Qty. per box	For profile
		pcs.	
SF L 41 A4	**504522**	10	FUS 21 + FUS 41



SF L 41

Bracket FAF A4

OVERVIEW

FAF 2

FAF 4

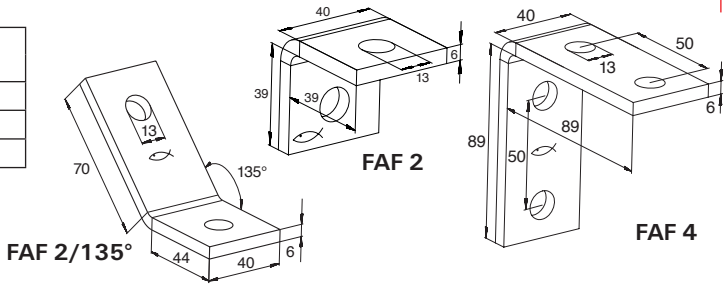
FAF 2/135°

Properties:

Material A4:	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

Type	Art. No.	Qty. per box
		pcs.
FAF 2 A4	**504519**	25
FAF 4 A4	**504520**	25
FAF 2/135° A4	**504521**	25



Beam clamp TKR A4

OVERVIEW

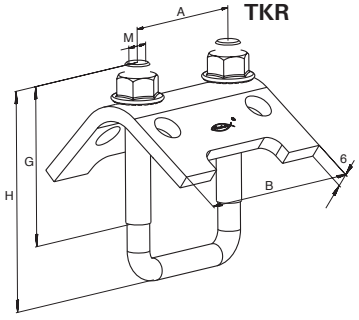
TKR

Properties:

Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

Type	Art. No.	Qty. per box	For profile MS
		pcs.	
TKR 21 - 42 A4	**504476**	20	FUS 21 - FUS 42



Channel washer HK 41

OVERVIEW

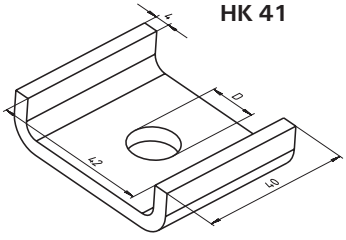
HK 41

Properties:

Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

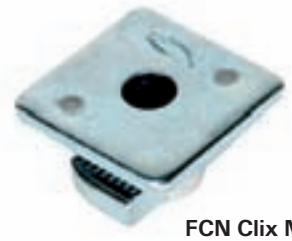
Type	Art. No.	Qty. per box	For profile	Hole D
		pcs.		mm
HK 41 12.5 - A4	**504489**	50	all FUS channels	12.5



Clix channel nut FCN Clix A4

OVERVIEW

FCN Clix P



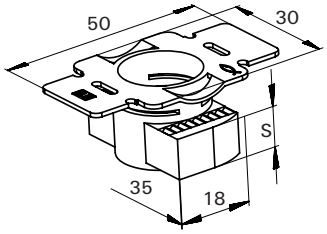
FCN Clix M

Properties:

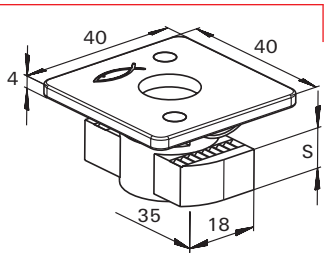
Material A4	Stainless steel of the corrosion resistance class III, e.g. A4
Plastic	Nylon PA 6

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Thread M	Thickness S [mm]
FCN Clix P A4				
FCN Clix P 8 A4	**504436**	100	M 8	6
FCN Clix P 10 A4	**504437**	100	M 10	8
FCN Clix P 12 A4	**504439**	100	M 12	9.5
FCN Clix M A4				
FCN Clix M 8 A4	**504440**	100	M 8	6
FCN Clix M 10 A4	**504447**	100	M 10	8



FCN Clix P

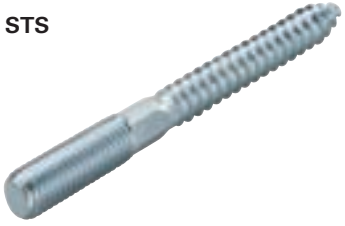


FCN Clix M

Stud screw STS A2/A4

OVERVIEW

STS

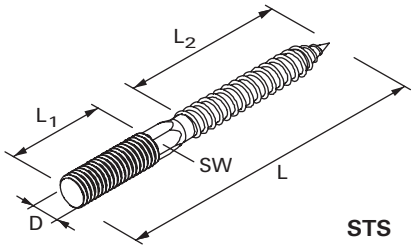


Properties:

Material A2	Stainless steel of the corrosion resistance class II, e.g. A2
Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

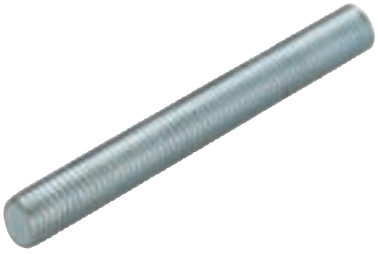
Type	Art. No.	Qty. per box pcs.	Length mm	Thread
A2				
STS 8 x 80 A2	**65132**	100	80	M 8
STS 8 x 100 A2	**77643**	100	100	M 8
STS 10 x 100 A2	**65153**	100	100	M 10
A4				
STS 8 x 100 A4	**77715**	100	100	M 8
STS 10 x 100 A4	**77716**	100	100	M 10



STS

Threaded rod G A2/A4

OVERVIEW



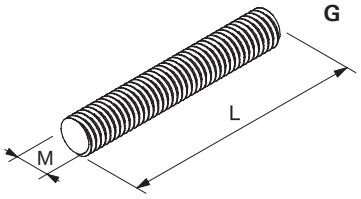
G

Properties:

Material A2	Stainless steel of the corrosion resistance class II, e.g. A2
Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

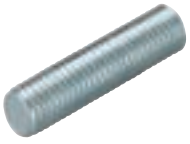
TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread M
Stainless Steel A2				
G 8 A2	**77644**	5	1000	M 8
G 10 A2	**65173**	5	1000	M 10
Stainless Steel A4				
G 8 A4	**77645**	5	1000	M 8
G 10 A4	**65174**	5	1000	M 10



Threaded stud GS A4

OVERVIEW



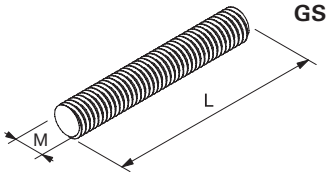
GS

Properties:

Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread M
GS 8/40 A4	**505536**	100	40	M 8
GS 8/60 A4	**505537**	100	60	M 8
GS 10/40 A4	**505538**	100	40	M 10
GS 10/60 A4	**505539**	100	60	M 10



Hexagonal connector VM

OVERVIEW

VM

Properties:

Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Length L [mm]	Thread D [mm]	Width across nut SW
VM M8 A4	**505540**	100	30	M 8	11
VM M10 A4	**505541**	100	30	M 10	13

VM

Washer U A4

OVERVIEW

U

Properties:

Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Thickness S [mm]	External Ø A [mm]	Hole Ø [mm]
U 8 x 28 A4	**505542**	100	2	28	8.4
U 8 x 40 A4	**505543**	100	3	40	8.4
U 10 x 28 A4	**505544**	100	2	30	10.5
U 10 x 40 A4	**505545**	100	3	40	10.5
U 12 x 24 A4	**505546**	100	2	24	12.5

Hexagonal nut MU A4

OVERVIEW

MU

Properties:

Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

According: DIN 934

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Thread D [mm]	Width across nut SW
Stainless steel A4				
MU M 8 A4	**77642**	100	M 8	13
MU M 10 A4	**77641**	100	M 10	17

MU

Hexagonal screw SKS A4

OVERVIEW

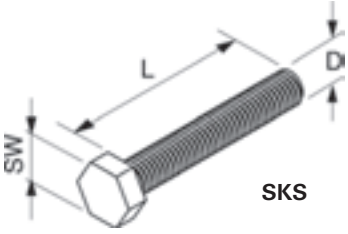
SKS

Properties:

Material A4	Stainless steel of the corrosion resistance class III, e.g. A4

TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Thread D	Width across nut SW
Stainless steel A4				
SKS M 10 x 30 A4	**505547**	100	M 10	17
SKS M 12 x 30 A4	**505548**	100	M 12	19



SKS

CORROSION RESISTANCE CLASSES

Steel Grade				Designation of the Steel Group	Corrosion	
Material No.	Short Name	AISI	UNS	with	Resistance Class	Exposure and Typical Applications
1.4305	X8CrNiS18-9	303	S 30300	A1	I / light	Indoor climate except damp location.
1.4301	X5CrNi18-10	304	S 30400	A2	II / moderate	Accessible constructions without nameable content of chlorides or sulfur dioxide, except industrial atmosphere.
1.4362	X2CrNiN23-4	–	S32304	A4	III / medium	Constructions with moderate chloride and sulfur dioxide exposure and inaccessible constructions.
1.4401	X5CrNiMo17-12-2	316	S 31600			
1.4404	X2CrNiMo17-12-2	316 L	S 31603	A4L		
1.4571	X6CrNiMoTi17-12-2	316 Ti	S 31635	A5		
1.4529	X1NiCrMoCuN25-20-7	–	N 08926	1.4529	IV / strong	High corrosion exposure due to chlorine, chloride and/or sulfur dioxide, high humidity as well as accumulation of hazardous substances.

Air conditioner fixings

Air conditioner fixing

MCE LP/LPH	MCE PT/PTH	MCE TT
Page 166	Page 166	Page 166

Air conditioner fixing MCE

OVERVIEW

For fixing of:
- Air conditioner on wall
- Air conditioners on pitched roofs (MCE TT)

MCE LP/LPH

MCE PT/PTH

MCE TT

DESCRIPTION

MCE LP/LPH
- Pre-assembled brackets zinc-plated and powder coated.
- Colour RAL 9002.
- Bracket MCE LPH and PTH is 50 cm high, for fixing in the case of non solid brickwork.

MCE PT/PTH
- Pre-assembled.
- Bracket with horizontal channel, zinc-plated and powder coated.
- Colour RAL 9002.

MCE TT
- Bracket zinc-plated and powder coated for fixing on pitched roof.
- Colour RAL 9002.

Advantages / Benefit

MCE LP/LPH
- Pre-assembled bracket to shorten installation time.
- Brackets including anti vibration dumper.
- Including 4 plugs SX12 and 4 zinc-plated screws.

MCE PT/PTH
- The horizontal rails allow for positioning and adjustment of the bracket.
- Complete assembled bracket with anti vibration dumper.
- The bracket is preassembled there the installation time is reduced.
- Including 5 plug SX12 and 5 zinc-plated screws.

MCE TT
- Complete system including anti vibration dumper.
- Adjustable angle of the bracket for roofs with a pitched of 10° – 40°.

INSTALLATION

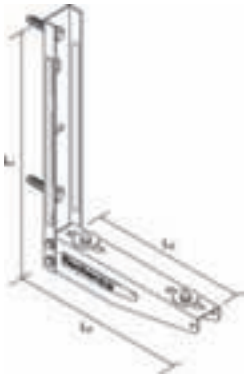
- To ensure the load bearing capacity the quality and condition of the substrate should be checked.

MCE LP/LPH

MCE PT/PTH

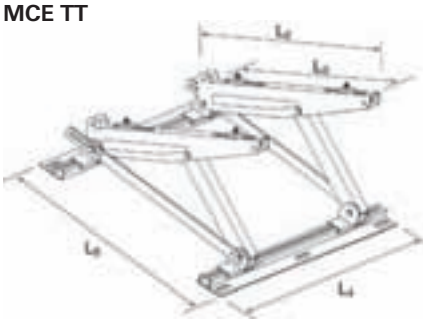
TECHNICAL DATA

MCE LP/LPH



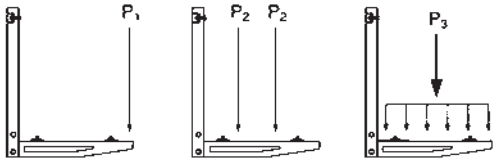
MCE PT/PTH

MCE TT



Type	Art. No.	Qty. per box pcs.	Length L_1 [mm]	Length L_2 [mm]	Length L_3 [mm]	Length L_4 [mm]	Length L_5 [mm]
MCE 380 LP	**046464**	1	400	380	330	86	37
MCE 450 LP	**046736**	1	400	450	400	86	34
MCE 450 LPH	**046758**	1	500	450	400	89	31
MCE 380 PT	**046768**	1	400	380	330	850	29
MCE 450 PT	**046805**	1	400	450	400	850	30
MCE 450 PTH	**046808**	1	500	450	400	850	32
MCE 450 TT	**046860**	1	-	450	420	850	450 + 555

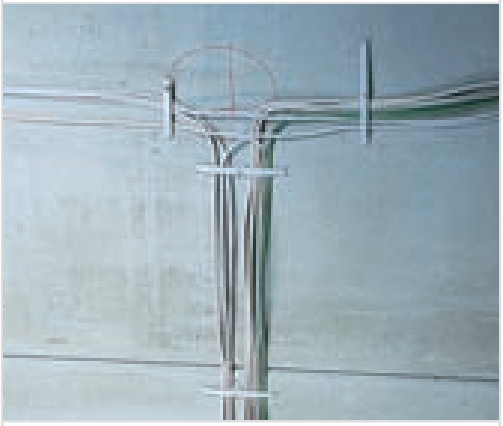
LOADS

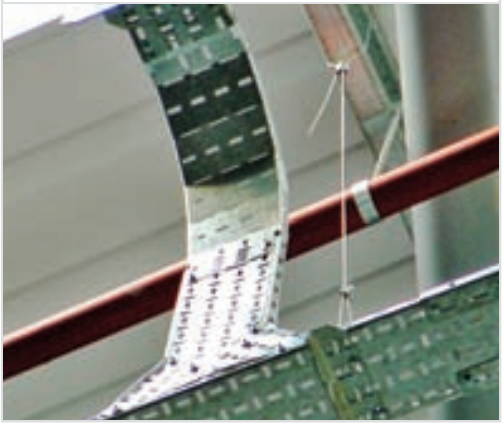


	Rec. loads per single beam		
	P_1 [kN]	P_2 [kN]	P_3 [kN]
MCE 380 LP	0.5	0.5	1.0
MCE 450 LP	0.5	0.5	1.0
MCE 450 LPH	0.5	0.5	1.0
MCE 380 PT	0.5	0.5	1.0
MCE 450 PT	0.5	0.5	1.0
MCE 450 PTH	0.5	0.5	1.0
MCE 450 TT	loads see extra table		

	P_2 [kN]
α > 15°	0.3
α > 20°	0.37
α > 25°	0.47
α > 30°	0.6

Electrical fixings





fischer E-fix consist of a smart range of fixings for cable and pipes in electrical systems

Cable clip/cable tie
LS **Page 170**

Pipe clip
RC **Page 179, 180**

Metal pipe clip
AM **Page 184**

Straps
GWB **Page 186**

Installation tools
SZE **Page 186**

ES, ZS, SD Page 171, 172

KB. SHA Page 173, 175

NS, NSB Page 176, 177

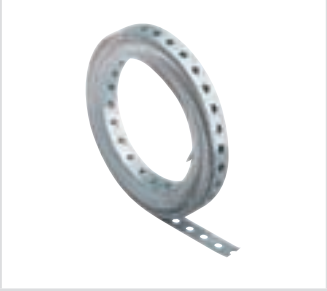
BN, UBN Page 178

FC Page 181

SCH Page 182

BSM Page 185

LBV Page 186



LBK Page 186

ED Page 186

ClipFix plus cable strap LS

OVERVIEW

SF plus LS

Suitable for:
- Concrete
- Natural stone, dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete

For fixing of:
- Conduits
- Flexible pipes

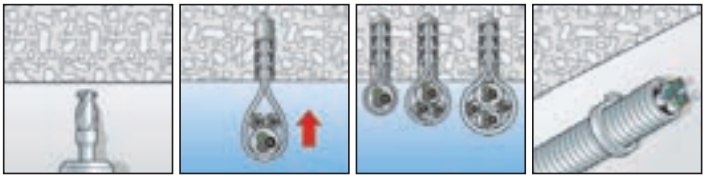
DESCRIPTION

- Cable strap for direct fixing of individual cables and cable bundles of 3 to 40 mm diameter.

Advantages/benefits
- One piece fixing – saves plug, clamp and screw.
- Simple and quick one-hand installation reduces work involved by up to 80 %.
- High quality material permits year-round application, even when exposed to frost.
- Temperature-resistant from –20 °C to +80 °C.
- UV-stabilised material for variable applications, specifically for external use.
- Halogen-free and flame resistant for increased safety in the event of fire.
- Silicone-free.

INSTALLATION

Type of installation
- Plug-fitting installation.



TECHNICAL DATA

SF plus LS

Type	Art. No.	Drill-hole d_0 [Ø mm]	Min. drill hole depth t [mm]	Clamping range D [mm]	Qty. per box pcs.
SF plus LS 3/13	**058155**	6	50	3 - 13	100
SF plus LS 8/28	**058156**	6	50	8 - 28	100
SF plus LS 20/40	**058157**	6	50	20 - 40	100

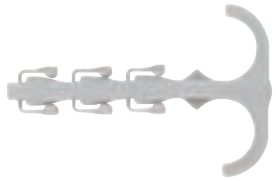
Min. drill hole depth for the smallest given cable cross-section.

Breaking loads in concrete

Drill diameter across cutting edges [mm]	Breaking load/ failure loads [kN]
6.0	0.41
6.1	0.36
6.2	0.32
6.3	0.27
6.4	0.23

ClipFix plus single clamp ES / Twin clamp ZS

OVERVIEW



SF plus ZS

SF plus ES

Suitable for:
- Concrete
- Natural stone, dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete

For fixing of:
- Conduits
- Flexible and rigid plastic pipes

DESCRIPTION

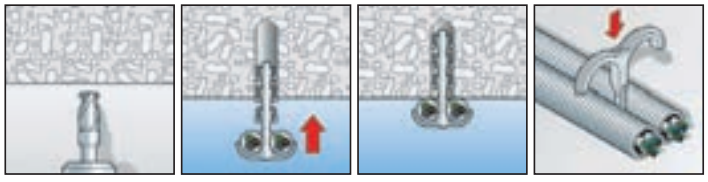
- Complete fixing element for simple and time-saving plug-fitting of conduits or flexible pipes.
- For wall, floor and ceiling installation.

Advantages/benefits
- One piece fixing – saves plug, clamp and screw.
- Simple and quick one-hand installation reduces work involved by up to 80 %.
- Temperature-resistant from –20 °C to +80 °C.
- High quality material permits year-round application, even when exposed to frost.
- UV-stabilised material for variable applications, specifically for external use.
- Halogen-free and flame-resistant for increased safety in the event of fire.
- Silicone-free.

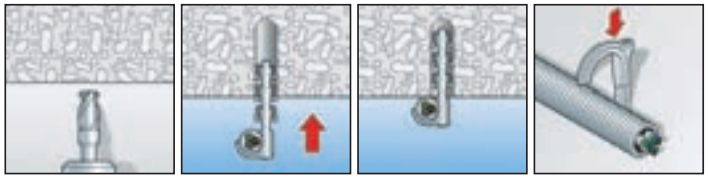
INSTALLATION

Type of installation
- Plug-fitting installation.

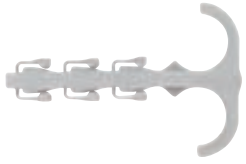
ClipFix plus twin clamp ZS



ClipFix plus single clamp ES



TECHNICAL DATA



SF plus ZS

SF plus ES

Type	Art. No.	Drill-hole d_0 [Ø mm]	Drill hole depth h_0 [mm]	Clamping range D [mm]	Qty. per box pcs.
SF plus ZS 10	**058184**	6	35 - 45	3 - 12	100
SF plus ZS 18	**048161**	6	40 - 50	10 - 25	100
SF plus ZS 28	**048162**	6	40 - 55	15 - 31	75
SF plus ES 10	**048151**	6	40 - 45	3 - 12	100
SF plus ES 18	**048152**	6	40 - 45	10 - 25	100
SF plus ES 28	**058183**	6	40 - 45	15 - 31	100

Breaking loads in concrete

Drill diameter across cutting edges [mm]	Breaking load/ failure loads [kN]
6.0	0.60
6.1	0.56
6.2	0.52
6.3	0.48
6.4	0.42

ClipFix plus clip fixing SD

OVERVIEW

SF plus SD

Suitable for:
- Concrete
- Natural stone, dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete

For fixing of:
- Cable channels
- Strips
- Profiles
- Flat building components
- Cable clasp KB
- Installation base SHA MS

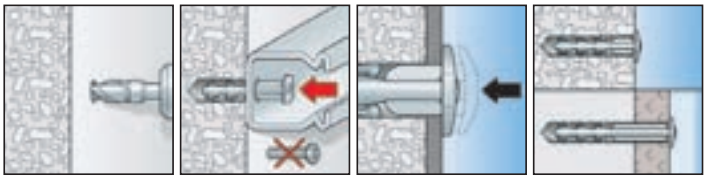
DESCRIPTION

- Nylon fixing pin

Advantages/benefits
- The complete element combines plug and screw.
- Simple and quick one-hand installation reduces work involved.
- Temperature-resistant from –20 °C to +80 °C.
- High quality material permits year-round application, even when exposed to frost.
- Halogen-free and flame resistant for increased safety in the event of fire.
- Long version specifically designed for bridging non-load bearing layers.
- Silicone-free.

INSTALLATION

Type of installation
- Push-through installation.



TECHNICAL DATA

SF plus SD

Type	Art. No.	Drill-hole d_0 [Ø mm]	min. drill hole depth t [mm]	Usable length d_a [mm]	Qty. per box pcs.
SF plus SD 30	**058178**	6	35	4	200
SF plus SD 40	**058179**	6	35	15	100

Breaking loads in concrete

Drill diameter across cutting edges [mm]	B Fits reaking load/ failure loads [kN]
6.0	0.6
6.1	0.56
6.2	0.52
6.3	0.47
6.4	0.43

ClipFix plus cable clasp KB / Cable clasp KB

OVERVIEW

SF plus KB

KB

Suitable for:
- Concrete
- Natural stone, dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete

For fixing of:
- Electric conduits

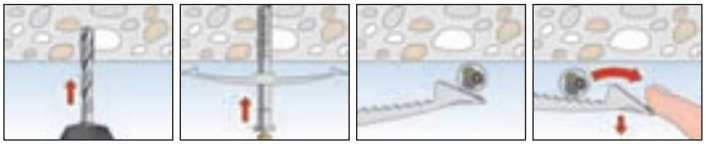
DESCRIPTION

- Cable clasp for simple and time-saving fixing of electrical cables (optional without pre-fitted fixing pin).
- For ceiling, wall and floor installation.
- Available in RAL 7035 cable-grey and RAL 7030 dark grey (flame-resistant version).
- The pre-fitted fixing pin SD can be removed.
- The Cable clasp KB (without plug-fixing) is designed for installation with the Hammerfix N 6 (see fischer fixings catalogue).

Advantages/benefits
- The complete element combines clasp, plug and screw.
- Simple and quick one-hand installation reduces work involved by up to 80 %.
- Temperature-resistant from –20 °C to +80 °C.
- High quality material permits year-round application, even when exposed to frost.
- Halogen-free and flame-resistant for increased safety in the event of fire.
- The shallow design of the clasp makes it ideal for use in confined spaces i.e. intermediate ceilings.
- UV-stabilised material for variable applications, specifically for external use.
- Different colouring for differentiation from flame-resistant version.
- Silicone-free.

INSTALLATION

Type of installation
- Plug-fitting installation
- Hammer-in fixing – with Hammerfix N6



ClipFix plus cable clasp KB / Cable clasp KB

TECHNICAL DATA

SF plus KB 8

SF plus KB 16

Type	Art. No.	max. number of ducts	Drill-hole d_0 [Ø mm]	Drill hole depth h_0 [mm]	Qty. per box pcs.
SF plus KB 8	**048171**	8 ducts NYM 3 x 1.5	6	35	50
SF plus KB 16	**048172**	16 ducts NYM 3 x 1.5	6	35	25

Breaking loads in concrete

Drill diameter across cutting edges [mm]	Breaking load/ failure loads [kN]
6	0.6
6.1	0.56
6.2	0.52
6.3	0.47
6.4	0.43

KB 8

KB 16

Type	Art. No.	max. number of ducts	Dimensions [mm]	Dimension of slot [mm]	Qty. per box pcs.
KB 8	**058135**	8 ducts NYM 3 x 1.5	15 x 133	6 x 10	50
KB 16	**058136**	16 ducts NYM 3 x 1.5	15 x 230	6 x 10	50

Cable harness SHA

OVERVIEW

SHA, MS + KP

SF plus MS

Suitable for:
- Concrete
- Natural stone, dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete

For fixing of:
- Conduits
- Flexible and rigid plastic pipes

DESCRIPTION

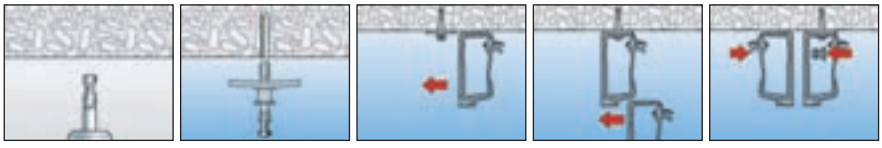
- Cable harness for direct installation with plug and screw or the Installation base MS.
- Available in RAL 7035 cable-grey and RAL 7030 dark grey (flame-resistant version).

Advantages/benefits
- Simple and quick installation with Installation base MS and Connection piece KP.
- Temperature-resistant from –20 °C to +80 °C.
- High quality material permits year-round application, even when exposed to frost.

- UV-stabilised material for variable applications, specifically for external use.
- Different colouring to distinguish from flame-resistant version.

INSTALLATION

Installation tips
- Using the Connection piece SHA KP, two cable harnesses can be installed back-to-back with a single connection point.
- A clip-in base makes it possible to use a series of harnesses, mounted one below the other.
- Must not be installed more than 80 cm apart.



TECHNICAL DATA

SHA

SHA MS

SHA KP

SF plus MS

Type	Art. No.	max. number of ducts	Dimensions [mm]	Qty. per box pcs.
SHA 15	**058139**	15 ducts NYM 3 x 1.5	92 x 63	50
SHA 30	**058140**	30 ducts NYM 3 x 1.5	127 x 79	25
SHA MS	**058141**	installation base	28 x 42	50
SHA KP	**058142**	connection piece	–	50
SF plus MS	**048181**	installation base with clip-plug	–	50

Nail clip NS / MNS

OVERVIEW

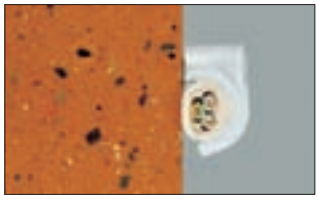
NS

Suitable for:
- Wood
- Hardboard
- Chipboard
- Plywood
- Aerated concrete
- Plaster wall

For fixing of:
- Conduits

DESCRIPTION

- Nail clip with pre-assembled hardened nail for the efficient installation of conduits.

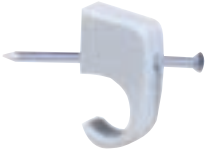


Advantages/benefits
- Simple and quick installation.
- Pre-assembled nail reduces installation time.
- Nail clip MNS for electric conduits with a wide diameter range.

TECHNICAL DATA

NS

Type	Art. No.	For cable [Ø mm]	Length of nail [mm]	Qty. per box pcs.
NS 7	**058173**	7	27	100
NS 8	**058174**	8	27	100
NS 9	**058175**	9	27	100
NS 10	**058176**	10	30	100
NS 12	**058177**	12	35	100



MNS

Type	Art. No.	Clamping range D [mm]	Length of nail [mm]	Qty. per box pcs.
MNS 5-7	**094673**	4 - 7	25	100
MNS 7-12	**094674**	7 - 12	30	100
MNS 10-14	**094675**	10 - 14	35	100

Nail disc NSB

OVERVIEW

NSB

Suitable for:
- Wood
- Hard board
- Chipboard
- Plywood
- Aerated concrete
- Plaster wall

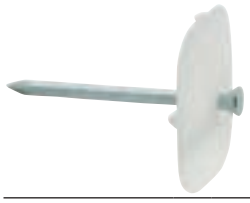
For fixing of:
- Cables in wall slots

DESCRIPTION

- Polypropylen high-strength nail disc.

Advantages/benefits
- Only 1 disc for 2 slot widths.
- With the dimensions 27 mm and 34 mm the disc fits the most common slot widths.
- Pre-vaulted comb structure for optimum contact pressure.

TECHNICAL DATA



NSB

Type	Art. No.		Dimensions [mm]	Qty. per box pcs.
NSB 2/40	**048308**	2 x 40	27 x 34	200
NSB 2/50	**048309**	2 x 50	27 x 34	150
NSB 2/60	**048310**	2 x 60	27 x 34	100
NSB 3/40	**048311**	3 x 40	27 x 34	150
NSB 3/50	**048312**	3 x 50	27 x 34	150
NSB 3/60	**048313**	3 x 60	27 x 34	100

Cable tie BN

OVERVIEW

BN

UBN

For fixing of:
- Conduits
- flexible and rigid plastic pipes
- Metal conduits

DESCRIPTION

- Cable tie to bundle pipes and conduits.
- Self-extinguishing in compliance with UL 94 Class V2.

Advantages/benefits

- The chamfered end ensures it can be easily tightened in a simple operation.
- Temperature resistant from –40 °C bis +80 °C.
- High quality nylon permits year-round application, even when exposed to frost.
- UV-stabilised material (only UBN, black), specifically for external use.
- Silicone and halogen-free and self-extinguishing, thereby increased safety in case of fire.
- Different colouring for differentiation from flame-resistant version.

TECHNICAL DATA

BN

UBN

Type	Art. No.	Dimensions [mm]	Qty. per box pcs.
BN 2.5 x 100	087478	2.5 x 100	100
BN 2.5 x 120	087479	2.5 x 120	100
BN 2.5 x 200	087480	2.5 x 200	100
BN 3.6 x 150	087481	3.6 x 150	100
BN 3.6 x 200	019802	3.6 x 200	100
BN 3.6 x 300	037490	3.6 x 300	100
BN 4.6 x 200	087484	4.6 x 200	100
BN 4.8 x 250	037582	4.8 x 250	100
BN 4.8 x 280	087485	4.8 x 280	100
BN 4.8 x 350	037653	4.8 x 350	100
BN 4.8 x 370	037583	4.8 x 370	100
BN 4.8 x 430	037708	4.8 x 430	100
BN 7.6 x 350	087487	7.6 x 350	100
BN 7.6 x 450	037996	7.6 x 450	100
BN 7.6 x 550	037997	7.6 x 550	100
BN 8.8 x 760	037998	8.8 x 760	100
BN 8.8 x 810	038000	8.8 x 810	100
BN 8.8 x 1168	038002	8.8 x 1168	100
UBN 2.5 x 100	087488	2.5 x 100	100
UBN 2.5 x 120	087489	2.5 x 120	100
UBN 2.5 x 200	087490	2.5 x 200	100
UBN 3.6 x 150	087491	3.6 x 150	100
UBN 3.6 x 200	037573	3.6 x 200	100
UBN 3.6 x 300	069364	3.6 x 300	100
UBN 4.6 x 200	087494	4.6 x 200	100
UBN 4.8 x 250	069367	4.8 x 250	100
UBN 4.8 x 280	087495	4.8 x 280	100
UBN 4.8 x 350	069368	4.8 x 350	100
UBN 4.8 x 370	069369	4.8 x 370	100
UBN 4.8 x 430	069370	4.8 x 430	100
UBN 7.6 x 350	087497	7.6 x 350	100
UBN 7.6 x 450	069374	7.6 x 450	100
UBN 7.6 x 550	069375	7.6 x 550	100
UBN 8.8 x 760	069376	8.8 x 760	100
UBN 8.8 x 810	069377	8.8 x 810	100
UBN 8.8 x 1168	069379	8.8 x 1168	100

ClipFix plus pipe clip RC

OVERVIEW

SF plus RC

Suitable for:
- Concrete
- Natural stone, dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete

For fixing of:
- Plastic pipes according to DIN 49016. 49017 and IEC 423 (former DIN 49026).

DESCRIPTION

- Pipe clip with pre-fitted fixing pin for simple and time-saving plug-fitting of plastic insulation pipes.
- The pre-fitted fixing pin SD can be removed.

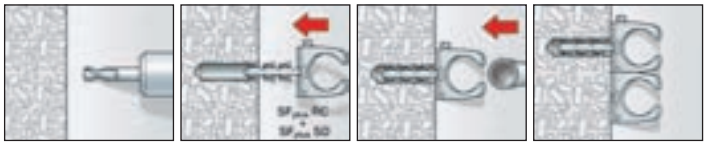
Advantages/benefits
- The complete element combines clip, plug and screw.
- Simple and quick one-hand installation reduces work involved by up to 80 %.
- Temperature resistant from –20 °C to +80 °C.
- High quality material permits year-round application, even when exposed to frost.
- Halogen-free for increased safety in the event of fire.

- UV-stabilised material for variable applications, specifically for external use.
- Silicone-free

INSTALLATION

Type of installation
- Plug-fitting installation.

Installation tips
- Interlocking base clips allow two additional pipe clips to be added in series.
- Only one fixing point for up to three pipes in a multiple installation is necessary.



TECHNICAL DATA

SF plus RC

Type	Art. No.	Drill-hole d_0 [Ø mm]	suitable for IEC	Clamping range D [mm]	Qty. per box pcs.
SF plus RC IEC 12	**048190**	6	12	12 - 13	100
SF plus RC IEC 16	**048191**	6	16	15 - 16	100
SF plus RC IEC 20	**048193**	6	20	20 - 21	100
SF plus RC IEC 25	**048197**	6	25	24 - 25	50
SF plus RC IEC 32	**048198**	6	32	31 - 32	25
SF plus RC IEC 40	**048199**	6	40	38 - 40	25

Further sizes and dimensions upon request.

Breaking loads in concrete

Drill diameter across cutting edges [mm]	Breaking load/ failure loads [kN]
6.0	0.6
6.1	0.56
6.2	0.52
6.3	0.47
6.4	0.43

Pipe clip RC

OVERVIEW

RC

For fixing of:
- Plastic pipes according to DIN 49016. 49017 and IEC 423 (former DIN 49026)

DESCRIPTION

- Polyamid pipe clip for simple and time-saving installation of plastic insulation pipes.

Advantages/benefits
- High quality material permits year-round application, even when exposed to frost.
- Temperature resistant from –20 °C to +80 °C.
- Halogen-free for increased safety in the event of fire.
- UV-stabilised material for variable applications, specifically for external use.
- Silicone-free

INSTALLATION

Type of installation
- 6 mm oblong hole for easy installation with 6 mm hammerfix.
- Can be inserted into C-profiled channels with 11 mm slot width.

Installation tips
- Interlocking base clips allow two additional pipe clips to be added in series.
- Only one fixing point for up to three pipes in a multiple installation is necessary.

TECHNICAL DATA

RC

Type	Art. No.	suitable for IEC	Clamping range D [mm]	Dimension of slot [mm]	Qty. per box pcs.
RC IEC 12	**058194**	12	12 - 13	6 x 10	100
RC IEC 16	**058120**	16	15 - 16	6 x 10	100
RC IEC 20	**058122**	20	20 - 21	6 x 10	100
RC IEC 25	**058198**	25	24 - 25	6 x 10	50
RC IEC 32	**058199**	32	31 - 32	6 x 10	40
RC IEC 40	**058200**	40	39 - 40	6 x 10	40
RC IEC 50*	**079194**	50	50 - 51	6 x 10	20
RC IEC 63*	**079196**	63	62 - 64	6 x 10	15

* not addable in series

Pipe clip FC

OVERVIEW

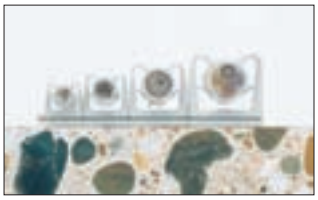
FC

For fixing of:
- Conduits
- Flexible and rigid plastic pipes

DESCRIPTION

- Pipe Clip for efficient running of cables and pipelines.

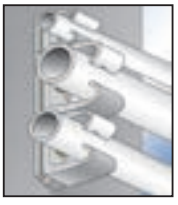
Advantages/benefits
- Simple „snap-fit" system reduces installation time.
- Elastic properties allow for temperature-related changes in pipe lengths.
- High load-bearing capacity coupled with great flexibility.
- Temperature-resistant from –40 °C bis +80 °C.
- Elastic material permits year-round application, even when exposed to frost.



- UV-stabilised material for variable applications, particularly for external use.
- Only four sizes for the 6 to 20 mm diameter range.
- Silicone-free.

INSTALLATION

Installation tips
- Interlocking base clips allow two additional clip brackets to be added in series.
- Can be inserted into C-shaped profile-rails with 11 mm wide slot.



TECHNICAL DATA

FC

Type	Art. No.	for cables and pipes from / to d_{min} - d_{max} [Ø mm]	Qty. per box pcs.
FC 6 - 9 GR	**068060**	6 - 9	100
FC 9 - 12 GR	**068062**	9 - 12	100
FC 12 - 16 GR	**068064**	12 - 16	50
FC 16 - 20 GR	**068066**	16 - 20	25

Nylon saddle SCH

OVERVIEW

SCH

For fixing of:
- Conduits
- Flexible and rigid plastic pipes

DESCRIPTION

- Nylon saddle clip for efficient running of cables and pipelines with different diameters.

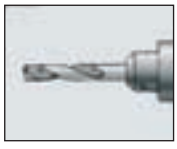
Advantages/benefits

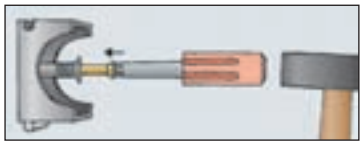
- Spring pressure of internal tongues enables running of cables and pipes of different diameters.
- Temperature-resistant from –40 °C to +80 °C.
- High quality elastic material permits year-round application, even when exposed to frost.
- UV-stabilised material for variable applications, particularly for external use.
- Silicone-free.

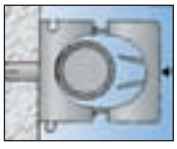
INSTALLATION

Installation tips

- Base interlocking system allows individual or multiple saddles SCH to be used together with varying sizes.







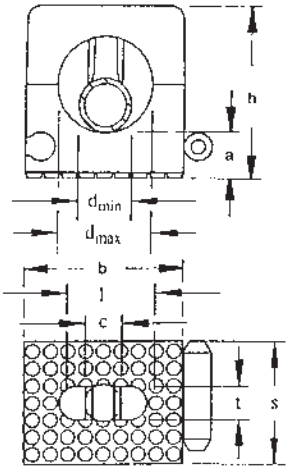
LOADS

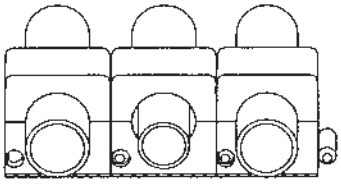
Mean ultimate loads in [kN]
of upper part of clip to tensile force. An appropriate safety coefficient should be applied.

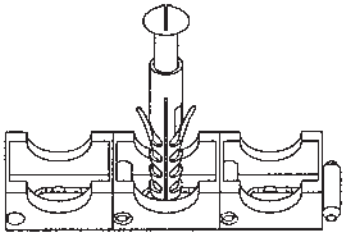
Type	kN
SCH 812	0,09
SCH 1216	0,2
SCH 1619	0,2
SCH 1623	0,2
SCH 2332	0,3

Important dimensions of fischer Saddle SCH for the installer

Type	Clamping range	h	b	s	a	l	t	c
SCH 812	8-12 Ø	23.1	21.5	16.5	6.1	12	4.5	5.1
SCH 1216	12-16 Ø	28.7	27.5	16.5	6.7	16	4.5	5.1
SCH 1619	16-19 Ø	37.6	32.5	16.5	8.0	18	4.5	5.1
SCH 1623	16-23 Ø	37.6	36.0	16.5	7.6	18	4.5	5.1
SCH 2332	23-32 Ø	50.0	46.5	16.5	10.0	28	4.5	5.1







TECHNICAL DATA

SCH
Nylon transparent

SCH
grey RAL 7035

Type	Art. No.	for cables and pipes from / to d_{min} - d_{max} [Ø mm]	Dimension of insulated pipes
Colour: nylon transparent			
SCH 812	**060012**	8 - 12	6 x 1 - 8 x 1
SCH 1216	**060016**	12 - 16	10 x 1 - 12 x 1
SCH 1619	**069019**	16 - 19	-
SCH 1623	**060023**	16 - 23	15 x 1 - 18 x 1
SCH 2332	**060032**	23 - 32	22 x 1 - 22 x 1.5
SCH 3242	**060042**	32 - 42	22 x 1 - 22 x 1.5
Colour: grey RAL 7035			
SCH 812 GR	**068012**	8 - 12	6 x 1 - 8 x 1
SCH 1216 GR	**068016**	12 - 16	10 x 1 - 12 x 1
SCH 1619 GR	**068019**	16 - 19	-
SCH 1623 GR	**068023**	16 - 23	15 x 1 - 18 x 1
SCH 2332 GR	**068032**	23 - 32	22 x 1 - 22 x 1.5

Metal two-piece pipe clamp AM

OVERVIEW

AM

For fixing of:
- Metal conduits according to DIN 49020.

DESCRIPTION

Product description
- Metal clamp with M6 internal thread for stand-off installations of metal conduits according to DIN 49020.

Advantages/benefits
- Half-open locking latch allows easy opening without completely removing the screw.
- Pre-fitted with either a slotted or recessed screw head that promotes reduced installation time.
- Galvanised surface for corrosion protection.

INSTALLATION

Installation tips
- Can only be installed by using M6 bolt recess.

TECHNICAL DATA

AM

Type		Art. No.			Dimension IEC	suitable for [Ø mm]	Qty. per box pcs.	
AM 8		**60185**			-	8	50	
AM 10		**60186**			-	10	50	
AM 12		**60187**			12	12	50	
AM 14		**60188**			-	14	50	
AM 15/16		**60189**			16	15/16	50	
AM 18		**60190**			-	18	50	
AM 20		**60191**			20	20	50	
AM 22		**60192**			-	22	50	
AM 24		**60193**			-	24	50	
AM 25/26	1)	**60194**			25	25/26	50	
AM 28		**60195**			-	28	50	
AM 30		**60196**			-	30	50	
AM 32		**60209**			32	32	25	
AM 34		**60210**			-	34	25	
AM 37		**60211**			37	37	20	
AM 40		**90849**			40	40	15	
AM 50		**90850**			50	50	10	
AM 63		**90851**			63	63	10	

1) Art. No. 60194 suitable for Ø 25 mm and Ø 26 mm
Further sizes and dimensions upon request.

Conduit clip BSM

OVERVIEW

BSM

For fixing of:
- Conduits
- Flexible and rigid plastic pipes
- Metal conduits

DESCRIPTION

- Conduit metal clip with 1 or 2 fixing points.

Advantages/benefits
- Simple and quick installation.
- Galvanised surface ensures corrosion protection.

INSTALLATION

Installation tips
- When fixing to concrete, we recommend the Impact nail ED 15, 18 or 22 (see installation accessories).

TECHNICAL DATA

BSM

BSMD

BSMZ

Type	Art. No.	Dimension IEC	suitable for [Ø mm]	Qty. per box pcs.
BSM 16	**060149**	16	16	50
BSM 18	**060150**	-	18	50
BSM 20	**060151**	20	20	50
BSM 22	**060152**	-	22	50
BSM 24	**060153**	-	24	50
BSM 25	**090839**	25	25	50
BSM 28	**060155**	-	28	50
BSM 32	**090840**	32	32	50
BSM 37	**060158**	-	37	25
BSM 40	**090841**	40	40	25
BSM 50	**090842**	50	50	20
BSM 63	**090843**	63	63	15
BSMD 16	**060169**	16	16	50
BSMD 18	**060170**	-	18	50
BSMD 20	**060171**	20	20	50
BSMD 22	**060172**	-	22	50
BSMD 25	**090844**	25	25	50
BSMD 28	**060175**	-	28	25
BSMD 32	**090845**	32	32	25
BSMD 37	**060178**	-	37	25
BSMD 40	**090846**	40	40	25
BSMD 50	**090847**	50	50	15
BSMD 63	**090848**	63	63	10
BSMZ 20	**079535**	20	20	50
BSMZ 24	**079536**	-	24	50
BSMZ 28	**079537**	-	28	50

Textile web strappin GWB

Codes and characteristics see on page 145

Perforated steel banding LBV / LBK

Codes and characteristics see on page 146

Installation tools

Codes and characteristics see on page 147

Wireclip

Codes and characteristics see on page 148

Sanitary fixings

Fixing sets
for sanitary installations like:

- **wash basin and urinal**
- **WC and bidet**
- **boiler and electrical equipment**
- **accessoires**

Wash basin/Urinal fixings
WD **Page 190**

WC and sanitary fixings
WCN **Page 193**

Accessories
UX **Page 196**

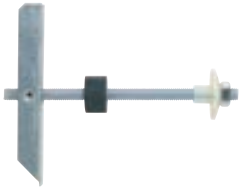
Wall-hung WC/Bidet fixings
L-Plus **Page 198**

WST, WST 140 FIP **Page 190**

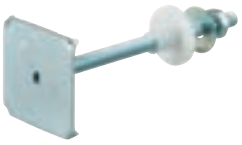
UST **Page 190**

BO **Page 190**

KM **Page 190**



WDKM **Page 190**



S8D **Page 193**

S8RD **Page 193**

WL **Page 193**

WB5N **Page 195**

BUM **Page 196**

AKM **Page 196**

LC-Plus **Page 198**

Premium **Page 198**

Wash basin and urinal fixings

Complete fixing sets.

OVERVIEW

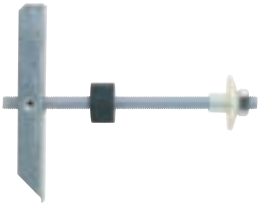
WD – Wash basin and urinal fixing

WST – Wash basin fixings

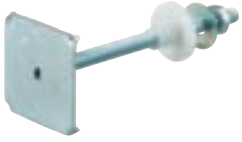
WST 10 x 140 FIP
– Wash basin fixings for use with Injection mortar FIS V 150 C e.g. for hollow materials

UST – Urinal fixing

BO – Boiler fixing



Gravity toggle KM 10
– Wash basin and urinal fixing



WDP – Wash basin and urinal fixing

DESCRIPTION

WD, WST, UST, BO

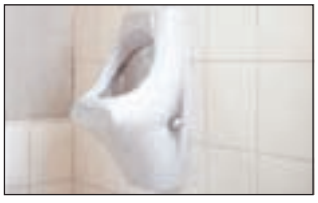
- Fixing sets consisting of UX-Plugs, stud screws, nylon nuts or flanged bushes with hexagon nut.

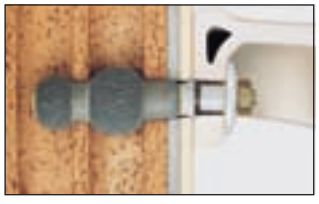
KM and WDP

- Specially designed for fixing washstands and urinals to plumbing units and cavity walls.

Advantages/benefits

- Simple and quick installation.
- High-strength nylon nuts and flanged bushes are resistant to ageing, chemicals and guarantees that the fitting will not damage the porcelain.
- Cover caps with a high-quality chrome finish ensure the fixture remains visually attractive for a long period of time.

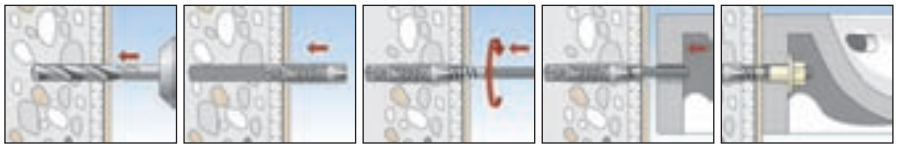




INSTALLATION

Type of installation

- Flush or stud-bolt installation



Installation tips

- For hollow building materials and aircrete, we recommend anchoring with the FIS VS 150 C injection system in the combination with the WST 10 x 140 FIP.
- Maximum load-bearing capacity is only achieved if the screw projects through the tip of the plug by at least 1 x screw diameter and the plug expands in the load-bearing anchoring base with its whole anchoring depth.
- Tiles and plaster are not classed as load-bearing.

TECHNICAL DATA

WD

Type	Art. No.	Contents per plastic bag pcs.	Qty. per box pcs.
WD 8 x 90	**080659**	2 wall plugs UX 10 x 60, 2 stud screws M 8x90 zinc-plated, 2 flanged nuts BU M8, installation instructions	50
WD 8 x 110	**080658**	2 wall plugs UX 10 x 60, 2 stud screws M 8x110 zinc-plated, 2 flanged nuts BU M8, installation instructions	50
WD 10 x 120	**080655**	2 wall plugs UX 14 x 75, 2 stud screws M 10x120 zinc-plated, 2 flanged nuts BU M10, installation instructions	50
WD 10 x 140	**080656**	2 wall plugs UX 14 x 75, 2 stud screws M 10x140 zinc-plated, 2 flanged nuts BU M10, installation instructions	50

BO

Type	Art. No.	Contents per plastic bag pcs.	Qty. per box pcs.
BO 120	**080654**	4 wall plugs UX 14 x 75, 4 stud screws M 10 x 120 zinc-plated, 4 flanged nuts BU M 10, installation instructions	25

WST

WST 10 x 140 FIP

Type	Art. No.	Contents per plastic bag pcs.	Qty. per box pcs.
WST 10 x 140	**080660**	2 wall plugs UX 14 x 75, 2 stud screws M 10x140 zinc-plated, 2 flanged nuts BDH M10, 2 hexagon nuts M10, installation instructions	50
WST 10 x 140 FIP	**060435**	2 plastic sleeves FIP H 16 x 85, 2 stud screws M 10 x 140, 2 hexagon nuts M 10, 2 flanged bushes BDH M 10, installation instructions	10
WST 12 x 150	**080661**	2 wall plugs UX 14 x 75, 2 stud screws M 12 x 150 zinc-plated, 2 hexagon nuts M 12 zinc-plated, 2 flanged bushes BDH M 12, installation instructions	50
WST 12 x 180	**080662**	2 wall plugs UX 14 x 75, 2 stud screws M 12 x 180 zinc-plated, 2 hexagon nuts M 12 zinc-plated, 2 flanged bushes BDH M 12, installation instructions	50

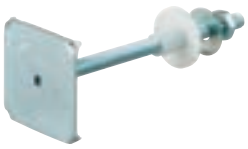
Wash basin and urinal fixings

TECHNICAL DATA

UST 8 x 110

UST 10 x 120

Type	Art. No.	Contents per plastic bag pcs.	Qty. per box pcs.
UST 8 x 110	**083578**	2 wall plugs UX 10 x 60, 2 stud screws M 8 x 110, 2 washers B 8.4 DIN 125, 2 plastic washer 8.4 x 20 x 1.5, 2 cap nuts FA 8, 2 cover caps chrome plated	50
UST 10 x 120	**080668**	2 wall plugs UX 14, 2 stud screws M 10 x 120, 2 flanged nuts BU M 10, 2 cover caps AKM 10 CR	10



WDP

Type	Art. No.	Thread M	Length L [mm]	Qty. per box pcs.
WDP 10 x 170	**014320**	M 10	170	10

KM 10

Type	Art. No.	Drill d_0 [mm]	Anchor length l [mm]	Min. cavity depth a [mm]	Max. panel thickness d_p [mm]	Screw d_s x l_s [mm]	Qty. per box pcs.
KM 10	**050326**	30	240	140	90	M 10 x 180	25

LOADS

Recommended loads N_{rec} [kN]

Anchor type	**UX 14 + Stud screw M10**
Building material	N_{rec}
Concrete ≧ C20/25	1,0
Solid pumice brick ≧ V2	0,1

WC and sanitary fixings

OVERVIEW

WCN

S 8 D 70 WCR

S 8 RD WCR

WL

DESCRIPTION

WCN
- Standard WC fixing with chrome or white coloured cap.
- Brass screw with hexagon head and slot.
- A large snap-fit sleeve compensates for fairly large or slightly mis-formed holes drilled through the porcelain.
- Also suitable for fixing mirrors and ceramic shelves.

S 8 D 70
- WC fixing with white and chrome-coloured cap.
- Brass screw with hexagon head and slot.

S 8 RD
- Standard WC fixing with white and chrome-coloured cap.
- Brass screw with hexagon head and slot.
- The plug's collar cleanly closes off the drill hole and enables the cap to fit securely into place.

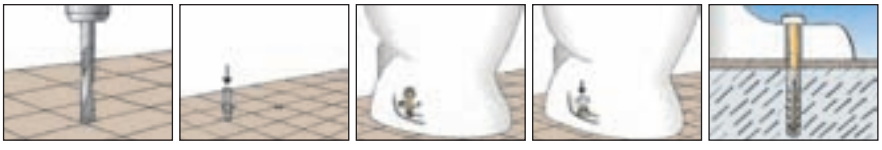
WL
- Fixing set consisting of S-Plug, wood screw and washer.

Advantages/benefits
- Simple and quick installation.
- Shapely designed and easy to clean.
- Snap-fit sleeve ensures that the cap is seated securely and permanently.

INSTALLATION

Type of installation
- **WCN** and **S 8 D** prefered pre-positioned and push-through installation.
- **S 8 RD** for push-through installation.
- **WL** for pre-positioned installation.

WCN



S 8 RD

WC and sanitary fixing

TECHNICAL DATA

WCN

Type	Art. No.	Contents per plastic bag pcs.	Qty. per box pcs.
WCN 1	**060561**	2 wall plugs S 8, 2 brass screws 6 x 70 hex. head, 2 cover caps white, 2 snap-fit sleeves	50
WCN 2	**060562**	2 wall plugs S 8, 2 brass screws 6 x 70 hex. head, 2 cover caps chrome, 2 snap-fit sleeves	50

S 8 D 70 WCR

Type	Art. No.	Contents per plastic bag pcs.	Qty. per box pcs.
S 8 D 70 WCR	**060564**	2 wall plugs S 8, 2 brass screws 6 x 70 hex. head, 2 cover caps chrome and white, 2 snap-fit sleeves	50

S 8 RD WCR

Type	Art. No.	Contents per plastic bag pcs.	Qty. per box pcs.
S 8 RD 60 WCR	**060570**	2 wall plugs S 8 RD 60, 2 brass screws 6 x 65 hex. head, 2 cover caps chrome and white	50
S 8 RD 80 WCR	**060568**	2 wall plugs S 8 RD 80, 2 brass screws 6 x 85 hex. head, 2 cover caps chrome and white	50
S 8 RD 80 W	**094694**	2 wall plugs S 8 RD 80, 2 screws 6 x 85 hex. head. DIN 571 zinc-plated, 2 cover caps white	50

WL

Type	Art. No.	Contents per plastic bag pcs.	Qty. per box pcs.
WL 7 x 60	**080651**	2 wall plugs S 10, 2 screws 7 x 65 hex. head zinc-plated, 2 washers zinc-plated	100
WL 8 x 70	**080652**	2 wall plugs S 10, 2 screws 8 x 70 hex. head DIN 571 zinc-plated, 2 washers zinc-plated	100
WL 10 x 70	**080650**	2 wall plugs S 12, 2 screws 10 x 70 hex. head DIN 571 zinc-plated, 2 washers zinc-plated	50

WC fixing WB

OVERVIEW

WB 5N

DESCRIPTION

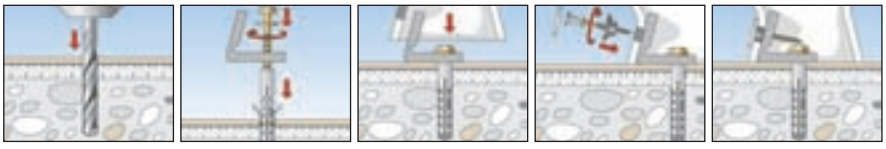
- The toilet fixing WB 5 N is an invisible fixing for standing WC's and bidets.

Advantages / Benefit

- The nylon flanged sleeves prevent direct contact between ceramic and screw therefore protecting the ceramic.
- Corrosion resistant material.

INSTALLATION

- The drill hole should be carefully cleaned



TECHNICAL DATA

Type	Art. No.	Qty. per box pcs.	Drill d_0 [mm]	min. drill hole depth t [mm]	Contents
WB 5N	**018652**	50	10	70	2 plugs SX 10, 2 screws 7 x 60 zinc-plated, with welded washer, 2 nylon angles, 2 screws 5 x 45, A2 stainless steel, 2 flanged sleeves, 2 cover caps chrome

Accessories for sanitary fixings

OVERVIEW

UX 14 x75

BUM H

AKM

TECHNICAL DATA

Type	Art. No.	Drill d_0 [mm]	min. drill hole depth t [mm]	effect. anchorage depth h_{ef} [mm]	Screw-Ø [mm]	Qty. per box pcs.
UX 14 x 75	**062757**	14	95	75	10 / 12	20

UX

Type	Art. No.	Thread M	Width across nut SW	Washer [min]	Fits	Qty. per box pcs.
BU M 8 MH	**060200**	M 8	17	40	STST M 8	25
BU M 10 MH	**060201**	M 10	17	40	STST M10	25
BU M 12 MH	**060204**	M 12	19	40	STS M 12	25

BUM H

Type	Art. No.	Colour	Fits	Qty. per box pcs.
AKM 10 W	**080972**	white	BU M10 MH	20
AKM 10 CR	**080951**	chrome	BU M10 MH	100
AKM 12 CR	**080952**	chrome	BU M12 MH	100

AKM

Installation tool HED for stud screw

OVERVIEW

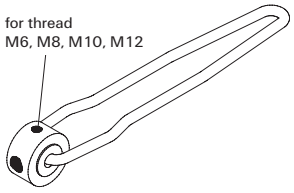
HED

DESCRIPTION

- Tool for installing stud screws.
- 4 thread sizes in one tool.

TECHNICAL DATA

Type	Art. No.	Thread	Qty. per box pcs.
HED	**079831**	M 6, M 8, M 10, M 12	1

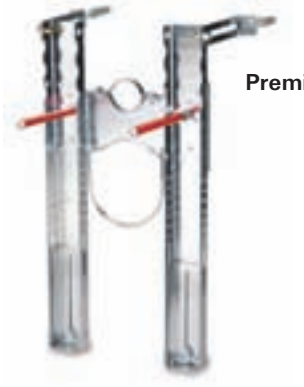


On wall installation frames

OVERVIEW

L Plus

LC Plus



Premium

For fixing of:
- Wall hung toilets and bidets
- Pre-assembled, universal system

DESCRIPTION

- The system is pre-assembled and of zinc-plated steel.
- L plus – also suitable for externally placed cistern.
- LC plus – with waste pipe leading vertically to the cistern.
- Premium – the brackets for the waste and inflow pipes and the fixing rail correspond to the Norm UNI EN 36–38.
- Premium – supplied in single package complete with screws, clamps and adjustable floor distance screws.

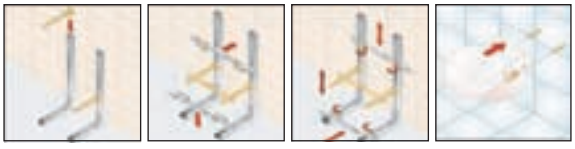
Adavantages / Benefit

- Complete fixing set BUAK: 2 eccentric flanged bushes, 2 large washers, 2 hexagon nuts M12, 2 white cover caps.
- System is pre-assembled with an axial space of 180 mm and can easily be adjusted to a space of 230 mm.
- System includes M12 threaded rods.
- Can be replaced on the floor without protruding fixing screws.
- Tested with a load of 400 kg according to the Norms UNI 8949/2 und 8950/2.

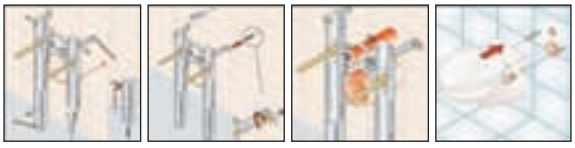
Premium
- Indentations on the carrier beam ensure improved adhesion of the mortar.
- With distancing and mounting clamp.
- Fixing clamps available for toilet and bidet pipes.
- Includes SX-plug.

INSTALLATION

L Plus, LC Plus



Premium



TECHNICAL DATA

L Plus, LC Plus

Premium

Type	Art. No.	Distance between axles [mm]	Length L_1 [mm]	Length L_2 [mm]	Qty. per box pcs.
L Plus	**046326**	180 / 230	600	200	1
LC Plus	**046462**	180 / 230	600	200	1
Premium	**046463**	180 / 230	600	200	1

Radiator fixings

Radiator fixings

TF 8	TF 10/70 BP	TF 7
Page 202	Page 202	Page 202

Radiator fixing TF

OVERVIEW

TF 8

TF 10/70 BP

TF 7

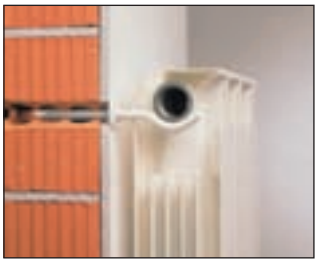
For fixing of:
- Aluminium, cast iron and steel radiators.

DESCRIPTION

TF 8
- Brackets with a diameter of 8.8 mm and Ø 12 plug.
- For installation of aluminium radiators.

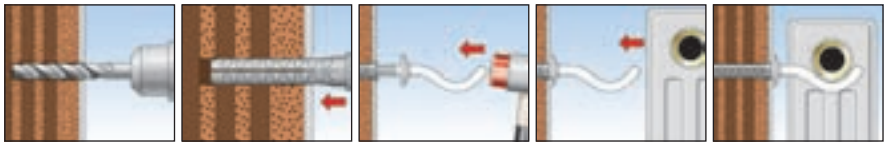
TF 10/70 BP
- Brackets made of 7 mm and Ø 10 plug.
- For aluminium radiators with flat insertion section measuring 3 mm.

TF 7
- Brackets with a diameter of 11,8 mm and a Ø 16 plug.
- For the installation of 2 to 6 column cast iron and steel radiators.



Advantages / Benefit
- Quick hammer-in installation.
- The distance of the radiator from the wall can be adjusted thanks to the special thread.

INSTALLATION



TECHNICAL DATA

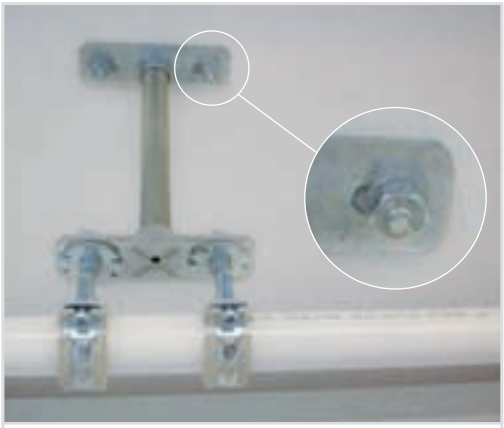
TF 8/... B

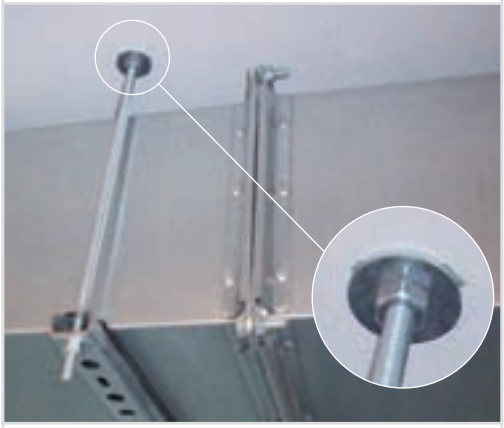
TF 10/70 BP

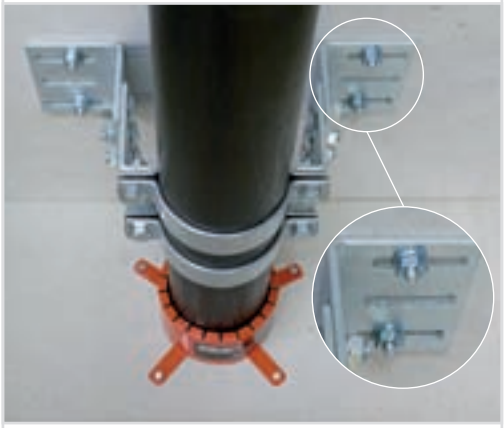
TF 7/... B

Type	Art. No.	Drill d_0 [mm]	Usable length d_a [mm]	Min. drill hole depth t [mm]	Colour	Qty. per box pcs.
TF 8/70 B	**046875**	12	70	85	RAL 9010	50
TF 8/100 B	**046876**	12	100	85	RAL 9010	50
TF 10/70 BP	**046877**	10	70	85	RAL 9010	50
TF 7/75 B	**046878**	16	75	100	RAL 9010	50
TF 7/100 B	**046879**	16	100	100	RAL 9010	50
TF 7/125 B	**047123**	16	125	100	RAL 9010	50

Plugs and Anchors







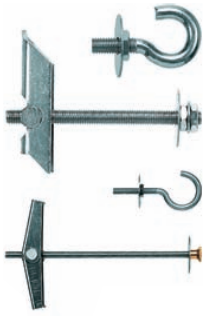
A selection from the fischer fixings range, ideal to be used with the fischer Installation Systems, for mechanical and electrical applications.

Plugs
UX Page 206

Metal anchors
FAZ II Page 210

Chemical
FIS VS 300 T Page 236

Cavity Fixings
KD Page 238



fischer FIXING SYSTEMS

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FBN **Page 215**

FZEA II **Page 220**

EA II **Page 223**

FNA II **Page 227**

FHY **Page 230**

FBS **Page 232**

FIS VT 380 C **Page 236**

FIS VS 300 T **Page 236**

FIS P 380 C **Page 236**

K **Page 238**

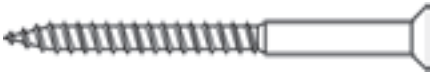
Universal plug UX

The universal fixing for a perfect grip in all walls.

OVERVIEW

Universal plug **UX**

Universal plug **UX-R** with collar



Wood screw

Chipboard screw

Suitable for:
- Concrete
- Prestressed hollow-core concrete slabs
- Natural stone with dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete
- Aircrete
- Solid panel made from gypsum
- Vertical perforated brick
- Perforated sand-lime brick
- Hollow block made from lightweight concrete
- Slabs made of perforated bricks
- Hollow concrete blocks etc.
- Gypsum plasterboard and gypsum fibreboards
- Chip boards

For fixing of:
- Pictures
- Motion detectors
- Lamps
- Skirting
- Electric switches
- Small wall-mounted shelves
- Towel rails
- Lightweight mirror cabinets
- Letter boxes
- Hanging baskets
- Curtain rails

DESCRIPTION

- Nylon universal fixing
- Expansion in solid building materials, reliable knot formation in all cavities.
- Use UX 6 long versions with fischer spacing screws for maximum load-bearing capacity in perforated materials, double-skinned plasterboard and for bridging non-load-bearing layers.

Advantages/Benefits

- The unique design enables use in almost all building materials.
- Diagonal connection ridges for optimum screw guidance.
- New saw-tooth anti-rotation lock prevents the fixing rotating in the drill hole.
- Low turning and high tightening torque – the first universal fixing that really "holds".
- Can be used with wood and chipboard screws from 4 mm to 12 mm.
- Integral drive-in lock enables – if pre-assembled screw – optimal push-through installation.
- The collar of the UX R prevents it slipping into the drill hole.

INSTALLATION

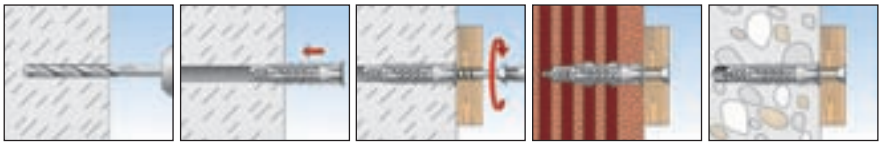
Type of installation

- Pre-positioned and push-through installation.

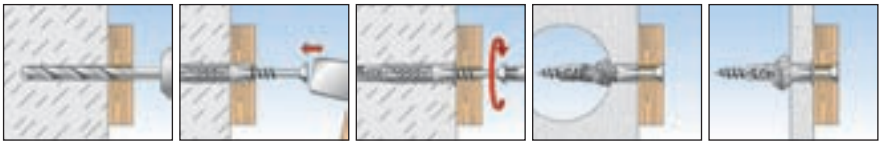
Installation information

- With push-through installation, use the largest possible screw diameter.
- Drill only in a rotary motion (switch off hammer) in perforated and hollow brick and aircrete, and use a metal bit for plasterboard.
- If using hook screws and eye screws in cavity bricks, it is essential that they have a collar, so that the screw can be tightened enough to knot the plug completely.
- The required screw length is given by the fixing length + thickness of the item being attached + 1 x screw diameter.
- For safety relevant applications under permanent tensile load, nylon plugs are not allowed. Therefore nylon plugs may not be used for suspensions from the ceiling like lightnings.

Pre-positioned installation



Push-through installation



TECHNICAL DATA

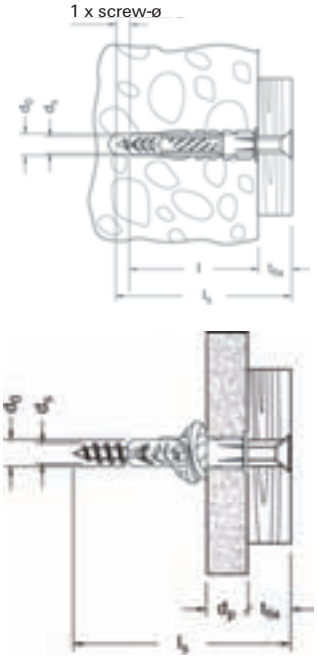
UX - without collar

UX R - with collar

UX S - with chipboard screw

Type	Art.-No.	ID	drill-Ø d_0 [mm]	min. drill hole depth t [mm]	min. panel thickness d_p [mm]	anchor length l [mm]	usable length d_a [mm]	chipboard screw d_s x l_s [Ø mm]	qty. per box pcs.
UX 5 x 30	**94721**	0	5	40	9.5	30	-	3 - 4	100
UX 5 x 30 R	**94722**	7	5	40	9.5	30	-	3 - 4	100
UX 6 x 35	**62754**	9	6	45	9.5	35	-	4 - 5	100
UX 6 x 35 R	**62756**	3	6	45	9.5	35	-	4 - 5	100
UX 6 x 50	**72094**	3	6	60	9.5	50	-	4 - 5	100
UX 6 x 50 R	**72095**	0	6	60	9.5	50	-	4 - 5	100
UX 8 x 50	**77869**	2	8	60	9.5	50	-	4.5 - 6	100
UX 8 x 50 R	**77870**	8	8	60	9.5	50	-	4.5 - 6	100
UX 10 x 60	**77871**	5	10	75	12.5	60	-	6 - 8	50
UX 10 x 60 R	**77872**	2	10	75	12.5	60	-	6 - 8	50
UX 12 x 70	**62758**	7	12	85	-	70	-	8 - 10	25
UX 14 x 75	**62757**	0	14	95	-	75	-	10 - 12	20
UX 6 x 35R S/20	**94758**	6	6	60	9.5	35	20	4.5 x 60	25
UX 6 x 50R S/20	**94759**	3	6	75	9.5	50	20	4,5 x 75	25
UX 8 x 50R S/15	**94762**	3	8	70	9.5	50	15	5 x 70	25
UX 8 x 50R S/25	**94760**	9	8	80	9.5	50	25	5 x 80	25
UX 10 x 60 S/20	**94761**	6	10	85	12.5	60	20	6 x 85	10

1 x screw-ø



Plug SX

Expands in 4 directions - for an unbeatably firm grip in solid building materials.

OVERVIEW

Plug **SX**

Wood screw

Chipboard screw

Universal spacing screw **ASL**

Suitable for:
- Concrete
- Prestressed hollow-core concrete slabs
- Natural stone with dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete
- Aircrete
- Solid panel made from gypsum
- Vertically perforated brick
- Perforated sand-lime block
- Hollow block made from lightweight concrete
- Slabs made of perforated bricks
- Hollow concrete blocks etc.

For fixing of:
- Pictures
- Motion detectors
- Lamps
- Skirting
- Electric switches
- Small wall-mounted shelves
- Towel rails
- Lightweight mirror cabinets
- Letter boxes
- Hanging baskets
- Curtain rails

DESCRIPTION

- Nylon expansion fixing
- For use with wood, chipboard and self-tapping screws and ASL spacing screws.
- SX long versions for higher anchoring depth in perforated building materials, aircrete and to bridge plaster.

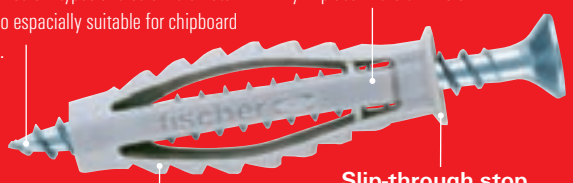
Advantages/Benefits

- 4-way expansion form lock guarantees highest grip.
- Anti-rotation lugs prevent the plug rotating in the drill hole.
- The special spread-free neck prevents demage of tiles and plaster.
- Simple and quick push-through installation reduces installation time.
- Integrated hammer-in-stop enables – with pre-assembled screw – push-through installation.
- The fixing´s collar prevents it slipping deeper into the drilled hole.
- Temperature-resistant from -40° to +80 °C.
- The plug´s geometry allows the use of wood and chipboard screws between 2 and 12 mm.

SX – ADVANTAGES AT A GLANCE

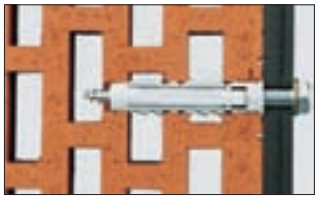
Screw tolerance
The SX can be safely used with a wide range of screw types and screw diameter. It is also espacially suitable for chipboard screws.

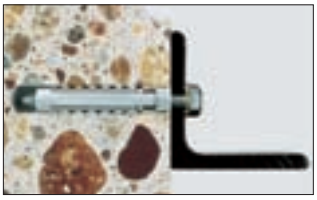
Turning stop
The robust turning stop holds the SX plug firmly in place in the drill hole.



4-way expansion
The new 4-way expansion guarantees top retaining values.

Slip-through stop
The wide plug rim prevents the SX plug slipping into the drill hole.





INSTALLATION

Type of installation

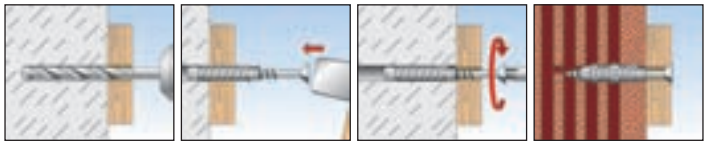
- Pre-positioned and push-through installation.

Installation information

- The required screw length is given by the anchorage depth + the thickness of the fixture and the screw diameter.
- Push-through installation requires the largest possible screw diameter.
- Drill only in a rotary motion (hammer switched off) in perforated and hollow bricks and aerated concrete.
- For safety relevant applications under permanent tensile load, nylon plugs are not allowed. Therefore nylon plugs may not be used for suspensions from the ceiling like lightnings.

Pre-positioned installation

Push-through installation

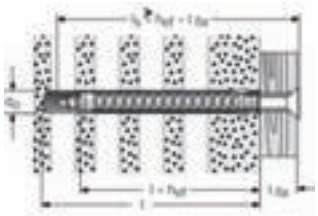


fischer FIXING SYSTEMS

TECHNICAL DATA

Plug **SX**

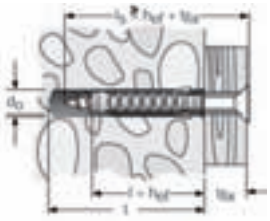
Plug **SX** - long version



Type	Art.-No.	ID	drill d_0 [mm]	min. drill hole depth t [mm]	plug length = min. anchoring depth $l = h_{ef}$ [mm]	chipboard screw $d_s \times l_s$ [Ø mm]	qty. per box pcs.
SX 4 x 20	**70004**	4	4	25	20	2 - **3**	200
SX 5 x 25	**70005**	1	5	35	25	3 - **4**	100
SX 6 x 30	**70006**	8	6	40	30	4 - **5**	100
SX 6 x 50 *	**24827**	0	6	60	50	4 - **5**	100
SX 6 x 50 R	**78185**	2	6	60	50	4 - **5**	100
SX 8 x 40	**70008**	2	8	50	40	4,5 - **6**	100
SX 8 x 65	**24828**	7	8	75	65	4,5 - **6**	50
SX 10 x 50	**70010**	5	10	70	50	6 - **8**	50
SX 10 x 80	**24829**	4	10	95	80	6 - **8**	25
SX 12 x 60	**70012**	9	12	80	60	8 - **10**	25
SX 14 x 70	**70014**	3	14	90	70	10 - **12**	20
SX 16 x 80	**70016**	7	16	100	80	12 (**1/2"**)	10

* without collar

Plug **SX** with chipboard screw



Type		Art.-No.	ID	drill d_0 [mm]	min. drill hole depth t [mm]	plug length = min. anchoring depth $l = h_{ef}$ [mm]	max. usable length t_{fix} [mm]	chipboard screw $d_s \times l_s$ [Ø mm]	qty. per box pcs.
SX 6 x 30 S/10	1)	**70021**	1	6	40	30	10	4,5 x 40	50
SX 8 x 40 S/20	1)	**70022**	8	8	50	40	20	5 x 60	50

1) Fixing set consisting of fixing and chipboard screw.

LOADS

Recommended loads N_{rec} [kN] and mean ultimate loads N_u [kN]. These values apply to the use of wood screws with the given screw diameter. When use chipboard screws these values should be reduced by 30%.

Fixing type	SX 5 x 25		SX 6 x 30		SX 6 x 50 SX 6 x 50 R		SX 8 x 40		SX 8 x 65		SX 10 x 50		SX 10 x 80		SX 12 x 60		SX 14 x 70		SX 16 x 80	
Wood screw diameter [mm]	4		5		5		6		6		8		8		10		12		12	
Substrate	N_{rec}	N_u	N_{rec}	N_u	N_{rec}	N_u	N_{rec}	N_u	N_{rec}	N_u	N_{rec}	N_u	N_{rec}	N_u	N_{rec}	N_u	N_{rec}	N_u	N_{rec}	N_u
Concrete ≧ C12/C15	0.3	2.0	0.7	4.9	0.8	5.8	0.7	8.5	0.7	5.0	1.2	8.5	1.2	8.5	1.7	12.0	2.0	14.1	2.6	18.0
Solid brick ≧ Mz12 (DIN 105)	0.3	1.6	0.3	2.2	0.6	4.4	0.65	4.5	0.6	4.1	0.65	4.5	1.2	8.5	0.7	5.0	0.8	5.6	0.9	6.9
Solid sand-lime brick ≧ KS12 (DIN 106)	0.3	2.0	0.5	3.5	0.8	5.4	1.2	8.5	0.6	4.2	1.2	8.5	1.2	8.5	1.7	12.0	2.0	14.1	2.6	18.0
Vertical perforated brick ≧ Hlz12 (ρ ≧ 1.0 kg/dm³, DIN 105)	0.07	0.5	0.07	0.5	–1)	–1)	0.17	1.2	0.17	1.2	0.17	1.2	0.5	3.5	0.26	1.8	0.4	3.1	0.6	4.1
Perforated sand-lime brick ≧ KSL12 (DIN 106)	0.17	1.2	0.3	2.1	0.3	2.7	0.3	2.0	0.35	2.3	0.3	2.0	0.8	5.5	0.3	2.0	0.3	2.2	0.4	2.8
Aerated concrete ≧ PB2	0.03	0.2	0.03	0.2	–1)	–1)	0.09	0.6	0.04	0.3	0.09	0.6	0.2	1.4	0.14	1.0	0.3	2.2	0.4	2.8
Aerated concrete ≧ PB4	0.09	0.6	0.09	0.6	0.15	1.0	0.3	2.0	0.14	1.0	0.3	2.0	0.6	4.2	0.45	3.1	0.5	3.4	0.6	4.0

1) Due to large range of scatter of the test results not suitable, the failure of the substrate varies so greatly that no reproducible values can be given.

Distance from component edges (edge and corner distance a_r) in concrete

Fixing	Screw diameter [mm]	Edge/corner distance [mm]
SX 6 x 30	5	35
SX 8 x 40	6	40
SX 10 x 50	8	50
SX 12 x 60	10	65

Anchor bolt FAZ II

Millionfold proven anchor bolt and the strongest in its class.

OVERVIEW

Anchor bolt **FAZ II**, zinc-plated steel

Anchor bolt **FAZ II A4**, stainless steel of the corrosion resistance class III, e.g. A4

Anchor bolt **FAZ II C**, highly corrosion-resistant steel of the corrosion resistance class IV, e.g. 1.4529

Approved for:
- Cracked and non-cracked concrete C20/25 to C50/60

Also suitable for:
- Concrete C12/15
- Natural stone with dense structure

For fixing of:
- Steel constructions
- Railings
- Consoles
- Ladders
- Cable trays
- Machines
- Staircases
- Gates
- Facades
- Window elements
- Wood constructions

FM APPROVED from M10

Shock approval by the Federal Office for Civil Defense, Bonn.

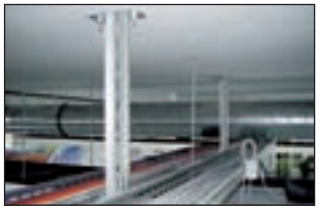
Fire resistance classification R 120

DESCRIPTION

- Anchor bolt for push-through installation.
- When the hexagonal nut is tightened, the tapered bolt is pulled into the expansion clip and expands it against the drill hole wall.
- Version FAZ II made of stainless steel of the corrosion-resistance class III e.g. A4 for outdoor applications and for damp rooms. Highly corrosion-resistant steel of the corrosion resistance class IV, e.g. 1.4529 for applications in aggressive atmospheres.
- FAZ-GS with large pre-assembled washer for fixings in oblong holes.

Advantages/benefits

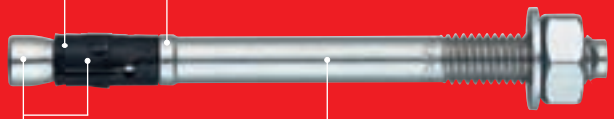
- Optimised expansion clip ensures uniform load distribution for high permissible loads and small edge distances and axial spacings with structural elements, as well as secure expansion, even in cracked concrete.
- Installation-friendly, since only a few revolutions are necessary to apply the torque.



FAZ II - ADVANTAGES AT A GLANCE

The black expansion clip
is the identification sign: the FAZ II is only real if it has the black belt, so it's easy to distinguish from its predecessor.

The distinctive collar
ensures that the clip stays in its position even when reinforcements are hit or there are unfavourable holes when it is driven in.



The unit of cone and expansion clip
increases the tensile strength by up to 38 % in comparison to its predecessor and provides smallest edge distances and axial spacings, easy driving-in and a short tightening distance.

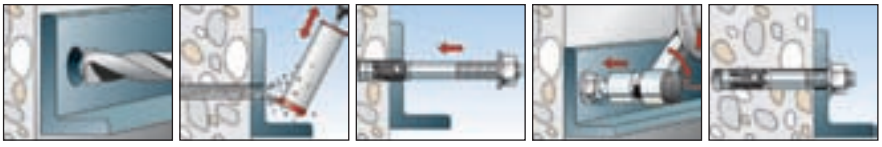
The optimised shaft
allows shear forces that are up to 96 % higher than those of the predecessor product. With its optimised diameter, it can be driven in easily and if necessary can also be aligned afterwards.

- Highest tensile and shear loads, that means: more safety with fewer total fixing points and thus lower costs
- Can be used in extremely thin concrete panels, starting at 8 cm thickness
- Smallest edge distances and axial spacings for more application options
- Low driving-in energy, small tightening distance and thus extremely handy for installation work
- High steel ductility enables subsequent alignment using a hammer

INSTALLATION

Type of installation

- Push-through and pre-positioned installation



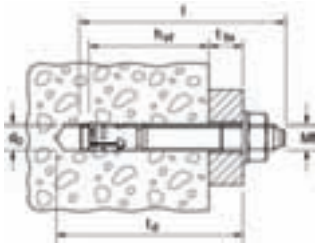
Installation tips

- For series installation we recommend the anchor bolt setting tool FABS to reduce installation time.
- Before driving in, the hexagon nut should be brought into the optimal installation position (the bolt projects by 2 to 3 mm).

TECHNICAL DATA

Anchor bolt **FAZ II**, zinc-plated steel

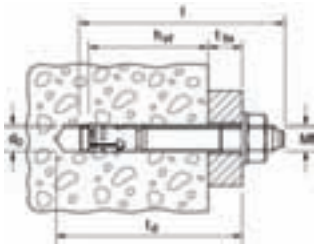
Type	Art.-No.	approval	Imprint on head	drill	min. drill-hole depth for through fixings	effect. anchoring depth	anchor length	max. usable length	thread	width across nut	Washer (outer diameter x thickness)	Qty. per box
		■ ETA		d_0	t_d	h_{ef}	l	t_{fix}		○ SW		
				[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]		[mm]	pcs.
FAZ II 8/10	**094871**	■	(B)	8	65	45	75	10	M 8 x 21	13	16 x 1,6	50
FAZ II 8/30	**094877**	■	(F)	8	85	45	95	30	M 8 x 41	13	16 x 1,6	50
FAZ II 8/50	**094878**	■	(K)	8	105	45	115	50	M 8 x 61	13	16 x 1,6	50
FAZ II 8/100	**094879**	■	(P)	8	155	45	165	100	M 8 x 100	13	16 x 1,6	25
FAZ II 8/160	**503251**	■	(T)	8	215	45	225	160	M 8 x 100	13	16 x 1,6	20
FAZ II 10/10	**094981**	■	(B)	10	85	60	95	10	M 10 x 24	17	20 x 2	50
FAZ II 10/20	**094982**	■	(D)	10	95	60	105	20	M 10 x 34	17	20 x 2	25
FAZ II 10/30	**094983**	■	(F)	10	105	60	115	30	M 10 x 44	17	20 x 2	25
FAZ II 10/50	**094984**	■	(K)	10	125	60	135	50	M 10 x 64	17	20 x 2	20
FAZ II 10/80	**094985**	■	(N)	10	155	60	165	80	M 10 x 94	17	20 x 2	20
FAZ II 10/100	**094986**	■	(P)	10	175	60	185	100	M 10 x 100	17	20 x 2	20
FAZ II 10/160	**503252**	■	(T)	10	235	60	245	160	M 10 x 100	17	20 x 2	20
FAZ II 12/10	**095419**	■	(B)	12	100	70	110	10	M 12 x 27	19	24 x 2,5	20
FAZ II 12/20	**095420**	■	(D)	12	110	70	120	20	M 12 x 37	19	24 x 2,5	20
FAZ II 12/30	**095421**	■	(F)	12	120	70	130	30	M 12 x 47	19	24 x 2,5	20
FAZ II 12/50	**095446**	■	(K)	12	140	70	150	50	M 12 x 67	19	24 x 2,5	20
FAZ II 12/80	**095454**	■	(N)	12	170	70	180	80	M 12 x 97	19	24 x 2,5	20
FAZ II 12/100	**095470**	■	(P)	12	190	70	200	100	M 12 x 100	19	24 x 2,5	20
FAZ II 12/160	**503253**	■	(T)	12	250	70	260	160	M 12 x 100	19	24 x 2,5	10
FAZ II 12/200	**095605**	■	(V)	12	290	70	300	200	M 12 x 100	19	24 x 2,5	10
FAZ II 16/25	**095836**	■	(E)	16	135	85	148	25	M 16 x 47	24	30 x 3	10
FAZ II 16/50	**095864**	■	(K)	16	160	85	173	50	M 16 x 72	24	30 x 3	10
FAZ II 16/100	**095865**	■	(P)	16	210	85	223	100	M 16 x 100	24	30 x 3	10
FAZ II 16/160	**503254**	■	(T)	16	270	85	283	160	M 16 x 100	24	30 x 3	10
FAZ II 16/200	**095967**	■	(V)	16	315	85	323	200	M 16 x 100	24	30 x 3	10
FAZ II 16/250	**095968**	■	(W)	16	365	85	373	250	M 16 x 100	24	30 x 3	10
FAZ II 16/300	**096188**	■	(X)	16	410	85	423	300	M 16 x 100	24	30 x 3	10
FAZ II 20/30	**046632**	■	(F)	20	155	100	172	30	M 20 x 54	30	37 x 3	5
FAZ II 20/60	**046633**	■	(L)	20	185	100	202	60	M 20 x 84	30	37 x 3	5
FAZ II 20/160	**503255**	■	(T)	20	285	100	302	160	M 20 x 100	30	37 x 3	5
FAZ II 24/30	**046635**	■	(F)	24	185	125	205	30	M 24 x 58	36	44 x 4	5
FAZ II 24/60	**046636**	■	(L)	24	215	125	235	60	M 24 x 88	36	44 x 4	5



Anchor bolt FAZ II

TECHNICAL DATA

Anchor bolt **FAZ II-GS**
(with large washer), zinc-plated steel



Type		Art.-No.	approval	Imprint on head	drill	min. drill-hole depth for through fixings	effect. anchoring depth	anchor length	max. usable length	thread	width across nut	Washer (outer diameter x thickness)	Qty. per box
			■ ETA		d_0	t_d	h_{ef}	l	t_{fix}	M	SW		
					[mm]	[mm]	[mm]	[mm]	[mm]			[mm]	pcs.
FAZ II 8/10 GS	1)	**094872**	■	(B)	8	65	45	75	10	M 8 x 21	13	22 x 2,5	50
FAZ II 8/30 GS	1)	**096189**	■	(F)	8	85	45	95	30	M 8 x 41	13	22 x 2,5	50
FAZ II 10/10 GS	1)	**096291**	■	(B)	10	85	60	95	10	M 10 x 24	17	25 x 3	50
FAZ II 10/30 GS	1)	**096297**	■	(F)	10	105	60	115	30	M 10 x 44	17	25 x 3	25
FAZ II 12/10 GS	1)	**096303**	■	(B)	12	100	70	110	10	M 12 x 27	19	30 x 3	20
FAZ II 12/30 GS	1)	**096340**	■	(F)	12	120	70	130	30	M 12 x 47	19	30 x 3	20
FAZ II 12/120 GS	1)	**096367**	■	(R)	12	210	70	220	120	M 12 x 100	19	30 x 3	20
FAZ II 16/160 GS	1)	**503261**	■	(T)	16	270	85	283	160	M 16 x 100	24	56 x 5	10
FAZ II 16/200 GS	1)	**096370**	■	(V)	16	310	85	323	200	M 16 x 100	24	56 x 5	10

1) GS = large washer.

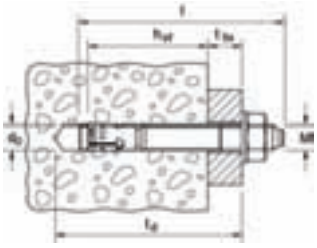
Anchor bolt **FAZ II A4**
- stainless steel of the corrosion resistance class III, e.g. A4

Type	Art.-No.	approval	Imprint on head	drill	min. drill-hole depth for through fixings	effect. anchoring depth	anchor length	max. usable length	thread	width across nut	Washer (outer diameter x thickness)	Qty. per box
		■ ETA		d_0	t_d	h_{ef}	l	t_{fix}		SW		
				[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]		[mm]	pcs.
FAZ II 8/10 A4	**501396**	■	(B)	8	65	45	75	10	M 8 x 21	13	16 x 1,6	50
FZA II 8/10 A4 (1.4571)	**501397**	■	(B)	8	65	45	75	10	M 8 x 21	13	16 x 1,6	50
FAZ II 8/30 A4	**501399**	■	(F)	8	85	45	95	30	M 8 x 41	13	16 x 1,6	50
FAZ II 8/50 A4	**501401**	■	(K)	8	105	45	115	50	M 8 x 61	13	16 x 1,6	50
FAZ II 10/10 A4	**501403**	■	(B)	10	85	60	95	10	M 10 x 24	17	20 x 2	50
FZA II 10/10 A4 (1.4571)	**501404**	■	(B)	10	85	60	95	10	M 10 x 24	17	20 x 2	50
FAZ II 10/20 A4	**501406**	■	(D)	10	95	60	105	20	M 10 x 34	17	20 x 2	50
FAZ II 10/30 A4	**501407**	■	(F)	10	105	60	115	30	M 10 x 44	17	20 x 2	50
FAZ II 10/50 A4	**501409**	■	(K)	10	125	60	135	50	M 10 x 64	17	20 x 2	20
FAZ II 10/70 A4	**501410**	■	(M)	10	145	60	155	70	M 10 x 84	17	20 x 2	20
FAZ II 10/100 A4	**501411**	■	(P)	10	175	60	185	100	M 10 x 100	17	20 x 2	20
FAZ II 10/160 A4	**501412**	■	(T)	10	235	60	245	160	M 10 x 100	17	20 x 2	20
FAZ II 12/10 A4	**501413**	■	(B)	12	100	70	110	10	M 12 x 27	19	24 x 2,5	20
FAZ II 12/20 A4	**501415**	■	(D)	12	110	70	120	20	M 12 x 37	19	24 x 2,5	20
FAZ II 12/30 A4	**501416**	■	(F)	12	120	70	130	30	M 12 x 47	19	24 x 2,5	20
FAZ II 12/50 A4	**501419**	■	(K)	12	140	70	150	50	M 12 x 67	19	24 x 2,5	20
FAZ II 12/60 A4	**501420**	■	(L)	12	150	70	160	60	M 12 x 77	19	24 x 2,5	20
FAZ II 12/100 A4	**501421**	■	(P)	12	190	70	200	100	M 12 x 100	19	24 x 2,5	20
FAZ II 12/160 A4	**503180**	■	(T)	12	250	70	260	160	M 12 x 100	19	24 x 2,5	20
FAZ II 16/25 A4	**501423**	■	(E)	16	135	85	148	25	M 16 x 47	24	30 x 3	20
FAZ II 16/50 A4	**501424**	■	(K)	16	160	85	173	50	M 16 x 72	24	30 x 3	20
FAZ II 16/100 A4	**501425**	■	(P)	16	210	85	223	100	M 16 x 100	24	30 x 3	10
FAZ II 20/30 A4	**501426**	■	(F)	20	155	100	172	30	M 20 x 54	30	37 x 3	4
FAZ II 20/60 A4	**503183**	■	(L)	20	185	100	202	60	M 20 x 84	30	37 x 3	4
FAZ II 24/30 A4	**501427**	■	(F)	24	185	125	205	30	M 24 x 58	36	44 x 4	4
FAZ II 24/60 A4	**503184**	■	(L)	24	215	125	235	60	M 24 x 88	36	44 x 4	4

fischer FIXING SYSTEMS

TECHNICAL DATA

Anker bolt **FAZ II-GS A4**
(with large washer)
- stainless steel of the corrosion resistance class III, e.g. A4



Type		Art.-No.	approval	Imprint on head	drill	min. drill-hole depth for through fixings	effect. anchoring depth	anchor length	max. usable length	thread	width across nut	Washer (outer diameter x thickness)	Qty. per box
			■ ETA		d_0	t_d	h_{ef}	l	t_{fix}		SW		
					[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]		[mm]	pcs.
FAZ II 8/10 GS A4	1)	**501398**	■	(B)	8	65	45	75	10	M 8 x 21	13	22 x 2,5	50
FAZ II 8/30 GS A4	1)	**501400**	■	(F)	8	85	45	95	30	M 8 x 41	13	22 x 2,5	50
FAZ II 10/10 GS A4	1)	**501405**	■	(B)	10	85	60	95	10	M 10 x 24	17	25 x 3	50
FAZ II 10/30 GS A4	1)	**501408**	■	(F)	10	105	60	115	30	M 10 x 44	17	25 x 3	50
FAZ II 12/10 GS A4	1)	**501414**	■	(B)	12	100	70	110	10	M 12 x 27	19	30 x 3	20
FAZ II 12/30 GS A4	1)	**501418**	■	(F)	12	120	70	130	30	M 12 x 47	19	30 x 3	20
FAZ II 12/160 GS A4	1)	**503181**	■	(T)	12	250	70	260	160	M 12 x 100	19	44 x 4	20
FAZ II 16/160 GS A4	1)	**503182**	■	(T)	16	270	85	283	160	M 16 x 100	24	56 x 5	4

1) GS = with large washer

Anchor bolt **FAZ II C**
- highly corrosion-resistant steel of the corrosion resistance class IV, e.g. 1.4529

Type	Art.-No.	approval	Imprint on head	drill diameter	min. drill-hole depth for through fixings	effect. anchoring depth	anchor length	max. usable length	thread	width across nut	Washer (outer diameter x thickness)	Qty. per box
		■ ETA		d_0	t_d	h_{ef}	l	t_{fix}		SW		
				[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]		[mm]	pcs.
FAZ II 8/10 C	**501428**	■	(B)	8	65	45	75	10	M 8 x 21	13	16 x 1,6	10
FAZ II 8/30 C	**501429**	■	(F)	8	85	45	95	30	M 8 x 41	13	16 x 1,6	10
FAZ II 10/10 C	**501430**	■	(B)	10	85	60	95	10	M 10 x 24	17	20 x 2	10
FAZ II 10/30 C	**503185**	■	(F)	10	105	60	115	30	M 10 x 44	17	20 x 2	10
FAZ II 12/10 C	**503186**	■	(B)	12	100	70	110	10	M 12 x 27	19	24 x 2,5	10
FAZ II 12/30 C	**501431**	■	(F)	12	120	70	130	30	M 12 x 47	19	24 x 2,5	10
FAZ II 16/25 C	**501432**	■	(E)	16	135	85	148	25	M 16 x 47	24	30 x 3	10
FAZ II 16/50 C	**503187**	■	(K)	16	160	85	173	50	M 16 x 72	24	30 x 3	10

Anchor bolt FAZ II

LOADS

Mean ultimate loads. design resistant and recommended loads for single anchors of fischer Anchor bolt FAZ II with large axial spacing and edge distance

					Non-cracked concrete						Cracked concrete					
Anchor size					**M 8**	**M 10**	**M 12**	**M 16**	**M 20**	**M 24**	**M 8**	**M 10**	**M 12**	**M 16**	**M 20**	**M 24**
Effective anchorage depth		h_{ef}	[mm]		**45**	**60**	**70**	**85**	**100**	**125**	**45**	**60**	**70**	**85**	**100**	**125**
Drill hole depth		$h_1 \geqq$	[mm]		55	75	90	110	125	155	55	75	90	110	125	155
Drill hole diameter		d_0	[mm]		8	10	12	16	20	24	8	10	12	16	20	24
Mean ultimate loads N_u and V_u [kN]																
Tensile	0°	N_u	[kN]	gvz/A4/C	15.9	26.4	38.6	52.9	67.5	94.3	13.8	22.0	27.7	37.0	47.3	66.0
Shear	90°	V_u	[kN]	gvz/A4/C	20.7	29.5*	43.0*	78.5*	91.1*	110.0*	20.7*	29.5*	43.0*	78.5*	91.1*	110.0*
Design resistant loads N_{Rd} and V_{Rd} [kN]																
Tensile	0°	N_{Rd}	[kN]	gvz/A4/C	6.0	10.7	16.7	26.3	33.6	47.0	3.3	6.0	10.7	18.8	24.0	33.5
Shear	90°	V_{Rd}		gvz/A4/C	9.6*	16.0*	23.6*	44.0*	56.0*	68.8*	9.6*	16.0*	23.6*	44.0*	56.0*	68.8*
Recommended loads N_{rec} and V_{rec} [kN]																
Tensile	0°	N_{rec}	[kN]	gvz/A4/C	4.3	7.6	11.9	18.8	24.0	33.5	2.4	4.3	7.6	13.4	17.1	24.0
Shear	90°	V_{rec}	[kN]	gvz/A4/C	6.9*	11.4*	16.9*	31.4*	40.0*	49.1*	6.9*	11.4*	16.9*	31.4*	40.0*	49.1*
Recommended bending moment M_{rec} [Nm]																
		M_{rec}	[Nm]	gvz/A4/C	14.9	33.1	52.6	133.1	278,3	439,4	14.9	33.1	52.6	133.1	278.3	439.4
Component dimensions, minimum axial spacings and edge distances																
Standard structural component thickness ($\geqq 2 \times h_{ef}$)		$h_{min,1}$	[mm]		100	120	140	170	200	250	100	120	140	170	200	250
Minimum spacing[1)]		s_{min}	[mm]	gvz/A4/C	40	40	50	60	95	100	35	40	45	60	95	100
		for c ≧	[mm]	gvz/A4/C	50	60	70	95	180	200	50	55	70	95	140	170
Minimum edge distance[1)]		c_{min}	[mm]	gvz/A4/C	40	45	55	65	95	135	40	45	55	65	85	100
		for s ≧	[mm]	gvz/A4/C	100	80	110	150	190	235	70	80	110	150	190	220
Reduced structural component thickness ($< 2 \times h_{ef}$)		$h_{min,2}$	[mm]		80	100	120	140	160	200	80	100	120	140	160	200
Minimum spacing[1)]		s_{min}	[mm]	gvz/A4/C	35	40	50	80	125	150	35	40	50	80	125	150
		for c ≧	[mm]	gvz/A4/C	70	100	90	130	220	230	70	100	90	130	220	230
Minimum edge distance[1)]		c_{min}	[mm]	gvz/A4/C	40	60	60	65	125	135	40	60	60	65	125	135
		for s ≧	[mm]	gvz/A4/C	100	90	120	180	230	235	100	90	120	180	230	235
Required torque		T_{inst}	[Nm]		20	45	60	110	200	270	20	45	60	110	200	270

* Steel failure decisive

1) For min. spacing and min. edge distance the above described loads have to be reduced! (See "Technical Handbook" or design software "CC-Compufix")

All load values apply for concrete C20/25 without edge or spacing influences.

Design resistant loads: material safety factor γ_M is included.

Recommended loads: material safety factor γ_M and safety factor for load γ_L = 1.4 are included.

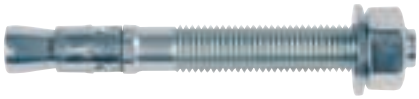
The conditions of application may differ from those given in the European Technical Approval.
For further detailed information about European Technical Approvals please contact the responsible fischer representation in your country.

fischer FIXING SYSTEMS

Bolt FBN II

Proven million times and flexible - in price and performance.

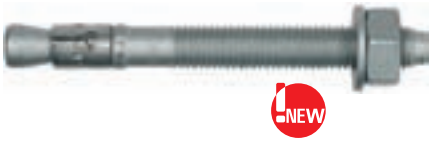
OVERVIEW



Bolt **FBN II**
- zinc-plated steel

Bolt **FBN II K**
- ,zinc-plated steel

Bolt anchor
FBN II A4
- stainless steel of the corrosion resistance class III, e.g. A4



Bolt anchor
FBN II fvz*
- hot-dip galvanised

Bolt **FBN II-GS**
with large washer,
- zinc-plated steel

Approved for:
- Non-cracked concrete C20/25 to C50/60

Also suitable for:
- Concrete C12/15
- Natural stone with dense structure

For fixing of:
- Steel constructions
- Railings
- Consoles
- Ladders
- Cable trays
- Machines
- Staircases
- Gates
- Facades
- Window elements
- Wood constructions

* not part of the approval

DESCRIPTION

- Anchor bolt for push-through and pre-positioned installation.
- When the hexagon nut is tightened, the tapered bolt is pulled into the expansion clip and expands it against the drill hole wall.
- Stainless steel version of the corrosion resistance class III, e.g. A4, for outdoor use and in damp conditions.
- GS version with large washer for timber construction.

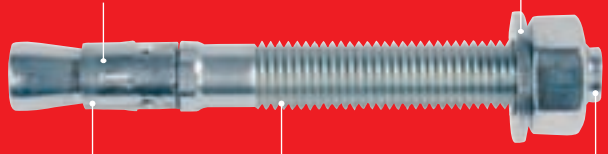
Advantages/benefits

- FBN II offers maximum load-bearing capacity in non-cracked concrete – anchoring base can not bear higher loads - is totally utilised.
- Reduced anchorage depth reduces drill time – this saves time and reduces reinforcement hits during drilling.
- Long thread allows stand-off installations and variable usable lengths.
- Diameter 8 to 20 mm also for reduced anchorage depths, e.g. for small loads or if reinforcement is hit.
- Embossed letter on the head for subsequent control of the installation as it indicates the setting depth.

FBN II - ADVANTAGES AT A GLANCE

Twice as good.
Each anchor size can be installed with **standard anchorage depth** or with a second **reduced anchorage depth****.

The washer
The FBN II is available with large and small washer.



The unity of the expansion clip and the cone provides maximum tensile load capacity at very small spacing and edge distances and imparts a good setting feeling.

The long thread is ideal for stand-off fixings and provides best adjusting possibility.

The drive-in pin: It avoids the damage of the thread and prossesses a head-marking for the control of the anchorage depth.

** The short version FBN II K is offered with short anchorage depth only.

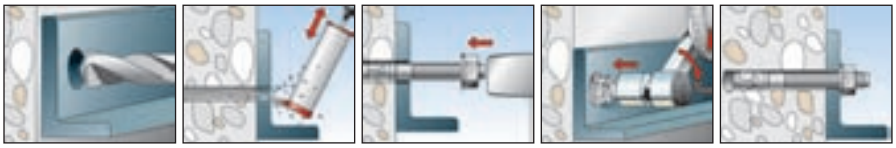
- For highest tensile load bearing capacity and shear load bearing capacity (concrete cone failure - anchoring base can not bear higher loads) documented by the European Technical Approval (Option 7) for non-cracked concrete therefore useable for security-relevant fixings.
- Fire resistance class F 120.
- Additional to the standard range (to set with standard or reduced anchorage depth) an assortment of short versions (marked with the letter K) is offered only with short anchorage depth. Available in 3 materials: zinc-plated steel, hot-dip galvanised and stainless steel of the corrosion resistance class III, e.g. A4.
- Smallest spacing and edge distances for anchorages near the edge and small anchor plates.
- With head-marking for the control of the anchorage depth.
- High installation comfort: The anchor can be set with a few hammer blows. Just a few rotations of the nut and - the anchor is thightened!

Bolt FBN II

INSTALLATION

Type of installation

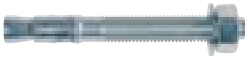
- Push-trough and pre-positioned installation



Installation tips

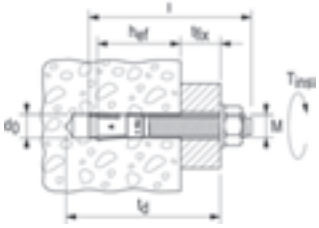
- For series installation we recommend the Anchor bolt setting tool FABS (see page 123) to reduce installation time.
- Before driving in, the hexagon nut should be brought into the optimal installation position (the bolt projects by 2 to 3 mm).

TECHNICAL DATA



Bolt **FBN II**,
- zinc-plated steel

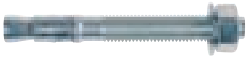
Type		Art.-No.	Approval	Imprint on head	Drill	Max. usable length $h_{ef,stand}/h_{ef,red}$	Anchoring depth $h_{ef,stand}/h_{ef,red}$	Min. drill-hole depth for through fixings	Anchor length	Thread	Washer (outer diameter x thickness)	Qty. per box
			■ ETA		d_0	t_{fix}	h_{ef}	t_d	l			
					[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]	[mm]	pcs.
FBN II 6/5	1)	**505526**	■	A	6	5/-	30 / -	45	50	M 6 x 12	12 x 1,6	100
FBN II 6/10	1)	**505527**	■	B	6	10/ -	30 / -	50	55	M 6 x 17	12 x 1,6	100
FBN II 6/30	1)	**505528**	■	F	6	30/-	30 / -	70	75	M 6 x 35	12 x 1,6	100
FBN II 8/5		**040662**	■	A	8	5/15	40 / 30	61	66	M 8 x 34	16 x 1,6	50
FBN II 8/10		**040664**	■	B	8	10/20	40 / 30	66	71	M 8 x 39	16 x 1,6	50
FBN II 8/20		**040669**	■	D	8	20/30	40 / 30	76	81	M 8 x 49	16 x 1,6	50
FBN II 8/30		**040700**	■	F	8	30/40	40 / 30	86	91	M 8 x 59	16 x 1,6	50
FBN II 8/50		**040771**	■	K	8	50/60	40 / 30	106	111	M 8 x 79	16 x 1,6	50
FBN II 8/70		**040777**	■	M	8	70/80	40 / 30	126	131	M 8 x 99	16 x 1,6	20
FBN II 8/100		**040783**	■	P	8	100/110	40 / 30	156	161	M 8 x 129	16 x 1,6	20
FBN II 10/10		**040827**	■	B	10	10/20	50 / 40	78	86	M 10 x 46	20 x 2	50
FBN II 10/20		**040851**	■	D	10	20/30	50 / 40	88	96	M 10 x 56	20 x 2	50
FBN II 10/30		**040854**	■	F	10	30/40	50 / 40	98	106	M 10 x 66	20 x 2	50
FBN II 10/50		**040855**	■	K	10	50/60	50 / 40	118	126	M 10 x 86	20 x 2	20
FBN II 10/70		**040931**	■	M	10	70/80	50 / 40	138	146	M 10 x 106	20 x 2	20
FBN II 10/100		**040943**	■	P	10	100/110	50 / 40	168	176	M 10 x 136	20 x 2	20
FBN II 10/140		**040944**	■	S	10	140/150	50 / 40	208	216	M 10 x 176	20 x 2	20
FBN II 10/160		**040945**	■	T	10	160/170	50 / 40	228	236	M 10 x 196	20 x 2	20
FBN II 12/10		**040950**	■	B	12	10/25	65 / 50	95	106	M 12 x 59	24 x 2,5	20
FBN II 12/20		**044558**	■	D	12	20/35	65 / 50	105	116	M 12 x 69	24 x 2,5	20
FBN II 12/30		**045263**	■	F	12	30/45	65 / 50	115	126	M 12 x 79	24 x 2,5	20
FBN II 12/50		**045264**	■	K	12	50/65	65 / 50	135	146	M 12 x 99	24 x 2,5	20
FBN II 12/80		**045265**	■	N	12	80/95	65 / 50	165	176	M 12 x 129	24 x 2,5	20
FBN II 12/100		**045266**	■	P	12	100/115	65 / 50	185	196	M 12 x 149	24 x 2,5	20
FBN II 12/120		**045267**	■	R	12	120/135	65 / 50	205	216	M 12 x 169	24 x 2,5	20
FBN II 12/140		**045268**	■	S	12	140/155	65 / 50	225	236	M 12 x 189	24 x 2,5	20
FBN II 12/160		**045269**	■	T	12	160/175	65 / 50	245	256	M 12 x 189	24 x 2,5	20
FBN II 16/25		**045564**	■	E	16	25/40	80 / 65	129	145	M 16 x 89	30 x 3	10
FBN II 16/50		**045565**	■	K	16	50/65	80 / 65	154	170	M 16 x 114	30 x 3	10
FBN II 16/80		**045566**	■	N	16	80/95	80 / 65	184	200	M 16 x 144	30 x 3	10
FBN II 16/100		**045567**	■	P	16	100/115	80 / 65	204	220	M 16 x 164	30 x 3	10
FBN II 16/140		**045568**	■	S	16	140/155	80 / 65	244	260	M 16 x 190	30 x 3	10
FBN II 16/160		**045569**	■	T	16	160/175	80 / 65	264	280	M 16 x 190	30 x 3	10
FBN II 16/200		**045570**	■	V	16	200/215	80 / 65	304	320	M 16 x 100	30 x 3	10
FBN II 20/30		**045573**	■	F	20	30/55	105 / 80	165	184	M 20 x 90	37 x 3	10
FBN II 20/60		**045574**	■	L	20	60/85	105 / 80	195	214	M 20 x 90	37 x 3	10
FBN II 20/80		**045575**	■	M	20	80/105	105 / 80	215	234	M 20 x 90	37 x 3	10
FBN II 20/120		**045576**	■	R	20	120/145	105 / 80	255	274	M 20 x 90	37 x 3	10



1) Use restricted to anchoring of structural components which are statically indeterminate.

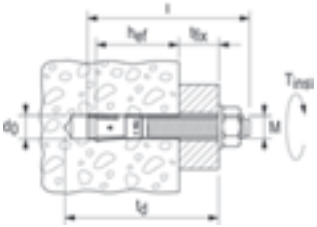
fischer FIXING SYSTEMS

TECHNICAL DATA



Bolt **FBN II**,
- zinc-plated steel

Bolt **FBN II-GS** with large washer,
- zinc-plated steel



Type	Art.-No.	Approval	Imprint on head	Drill	Max. usable length $h_{ef,stand}/h_{ef,red}$	Anchoring depth $h_{ef,stand}/h_{ef,red}$	Min. drill-hole depth for through fixings	Anchor length	Thread	Washer (outer diameter x thickness)	Qty. per box
		■ ETA		d_0	t_{fix}	h_{ef}	t_d	l			
				[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]	[mm]	pcs.
FBN II 8/5 K	**040806**	■	-A-	8	5/-	30 / -	51	56	M 8 x 24	16 x 1,6	50
FBN II 8/10 K	**040807**	■	-B-	8	10/ -	30 / -	56	61	M 8 x 29	16 x 1,6	50
FBN II 10/5 K	**040946**	■	-A-	10	5/-	40 / -	63	71	M 10 x 31	20 x 2	50
FBN II 10/10 K	**040947**	■	-B-	10	10/ -	40 / -	68	76	M 10 x 36	20 x 2	50
FBN II 12/5 K	**045272**	■	-A-	12	5/-	50 / -	75	86	M 12 x 39	24 x 2,5	20
FBN II 12/10 K	**045273**	■	-B-	12	10/ -	50 / -	80	91	M 12 x 44	24 x 2,5	20
FBN II 12/30 K	**045274**	■	-F-	12	30/-	50 / -	100	111	M 12 x 64	24 x 2,5	20
FBN II 16/15 K	**045571**	■	-C-	16	15/-	65 / -	104	120	M 16 x 64	30 x 3	10
FBN II 16/25 K	**045572**	■	-E-	16	25/-	65 / -	114	130	M 16 x 74	30 x 3	10
FBN II 20/10 K	**045577**	■	-B-	20	10/ -	80 / -	120	139	M 20 x 50	37 x 3	10
FBN II 12/80 GS	**045578**	■	N	12	80/95	65 / 50	165	176	M 12 x 129	44 x 2,5	20
FBN II 12/100 GS	**045579**	■	P	12	100/115	65 / 50	185	196	M 12 x 149	44 x 2,5	20
FBN II 12/120 GS	**045580**	■	R	12	120/135	65 / 50	205	216	M 12 x 169	44 x 2,5	20
FBN II 12/140 GS	**045581**	■	S	12	140/155	65 / 50	225	236	M 12 x 189	44 x 2,5	10
FBN II 12/160 GS	**045583**	■	T	12	160/175	65 / 50	245	256	M 12 x 189	44 x 2,5	10
FBN II 12/180 GS	**045584**	■	U	12	180/195	65 / 50	265	276	M 12 x 100	44 x 2,5	10
FBN II 12/200 GS	**045585**	■	V	12	200/215	65 / 50	285	296	M 12 x 100	44 x 2,5	10
FBN II 12/250 GS	**045586**	■	W	12	250/265	65 / 50	335	346	M 12 x 100	44 x 2,5	10
FBN II 16/100 GS	**045588**	■	P	16	100/115	80 / 65	204	220	M 16 x 164	56 x 3	10
FBN II 16/140 GS	**045590**	■	S	16	140/155	80 / 65	244	260	M 16 x 190	56 x 3	10
FBN II 16/160 GS	**045591**	■	T	16	160/175	80 / 65	264	280	M 16 x 160	56 x 3	10
FBN II 16/200 GS	**045593**	■	V	16	200/215	80 / 65	304	320	M 16 x 190	56 x 3	10
FBN II 16/250 GS	**052192**	■	W	16	250/265	80 / 65	354	370	M 16 x 100	56 x 3	10
FBN II 16/300 GS	**052204**	■	X	16	300/315	80 / 65	404	420	M 16 x 100	56 x 3	10

Bolt anchor **FBN II A4,**
- stainless steel of the corrosion resistance class III, e.g. A4

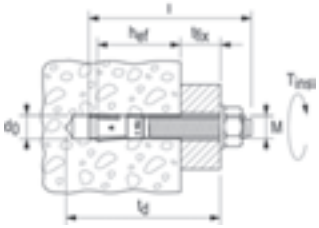
Type		Art.-No.	Approval	Imprint on head	Drill	Max. usable length $h_{ef,stand}/h_{ef,red}$	Anchoring depth $h_{ef,stand}/h_{ef,red}$	Min. drill-hole depth for through fixings	Anchor length	Thread	Washer (outer diameter x thickness)	Qty. per box
			■ ETA		d_0	t_{fix}	h_{ef}	t_d	l			
					[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]	[mm]	pcs.
FBN II 6/10 A4	1)	**505532**	■	B	6	10/ -	30 / -	50	55	M 6 x 17	12 x 1,6	100
FBN II 6/30 A4	1)	**505535**	■	F	6	30/-	30 / -	70	75	M 6 x 35	12 x 1,6	100
FBN II 8/10 A4		**507555**	■	B	8	10/20	40 / 30	66	71	M 8 x 39	16 x 1,6	50
FBN II 8/30 A4		**507556**	■	F	8	30/40	40 / 30	86	91	M 8 x 59	16 x 1,6	50
FBN II 8/50 A4		**507557**	■	K	8	50/60	40 / 30	106	111	M 8 x 79	16 x 1,6	50
FBN II 10/10 A4		**507558**	■	B	10	10/20	50 / 40	78	86	M 10 x 46	20 x 2	50
FBN II 10/20 A4		**507559**	■	D	10	20/30	50 / 40	88	96	M 10 x 56	20 x 2	50
FBN II 10/30 A4		**507560**	■	F	10	30/40	50 / 40	98	106	M 10 x 66	20 x 2	50
FBN II 10/50 A4		**507561**	■	K	10	50/60	50 / 40	118	126	M 10 x 86	20 x 2	20
FBN II 10/100 A4		**507562**	■	P	10	100/110	50 / 40	168	176	M 10 x 136	20 x 2	20
FBN II 12/10 A4		**507563**	■	B	12	10/25	65 / 50	95	106	M 12 x 59	24 x 2,5	20
FBN II 12/20 A4		**507564**	■	D	12	20/35	65 / 50	105	116	M 12 x 69	24 x 2,5	20
FBN II 12/20 A4		**507565**	■	F	12	30/45	65 / 50	115	126	M 12 x 79	24 x 2,5	20
FBN II 12/20 A4		**507566**	■	K	12	50/65	65 / 50	135	146	M 12 x 99	24 x 2,5	20
FBN II 12/100 A4		**507567**	■	P	12	100/115	65 / 50	185	196	M 12 x 149	24 x 2,5	20
FBN II 16/10 A4		**507568**	■	B	16	10/25	80 / 65	114	130	M 16 x 74	30 x 3	10
FBN II 16/25 A4		**507569**	■	E	16	25/40	80 / 65	129	145	M 16 x 89	30 x 3	10
FBN II 16/50 A4		**507570**	■	K	16	50/65	80 / 65	154	170	M 16 x 105	30 x 3	10
FBN II 20/30 A4		**507571**	■	F	20	30/55	105 / 80	165	184	M 20 x 90	37 x 3	10
FBN II 20/60 A4		**507572**	■	L	20	60/85	105 / 80	195	214	M 20 x 90	37 x 3	10

1) Use restricted to anchoring of structural components which are statically indeterminate.

Bolt FBN II

TECHNICAL DATA

Bolt anchor **FBN II A4,**
- stainless steel of the corrosion resistance class III, e.g. A4



Type	Art.-No.	Approval	Imprint on head	Drill	Max. usable length $h_{ef,stand}/h_{ef,red}$	Anchoring depth $h_{ef,stand}/h_{ef,red}$	Min. drill-hole depth for through fixings	Anchor length	Thread	Washer (outer diameter x thickness)	Qty. per box
		■ ETA		d_0	t_{fix}	h_{ef}	t_d	l			
				[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]	[mm]	pcs.
FBN II 8/5 K A4	**508007**	■	-A-	8	5/-	30 / -	51	56	M 8 x 24	16 x 1,6	50
FBN II 10/5 K A4	**508010**	■	-A-	10	5/-	40 / -	63	71	M 10 x 31	20 x 2	50
FBN II 12/5 K A4	**508011**	■	-A-	12	5/-	50 / -	75	86	M 12 x 39	24 x 2,5	20
FBN II 16/15 K A4	**508745**	■	-C-	16	15/-	65 / -	104	120	M 16 x 64	30 x 3	10

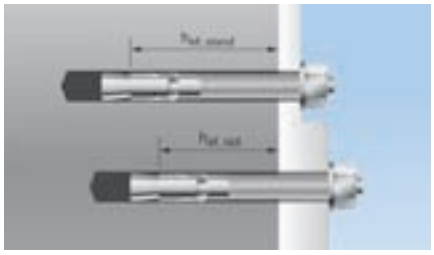
1) Use restricted to anchoring of structural components which are statically indeterminate.

Bolt anchor **FBN II fvz**,
- hot-dip galvanised

Type	Art.-No.	Imprint on head	Drill	Max. usable length $h_{ef,stand}/h_{ef,red}$	Anchoring depth $h_{ef,stand}/h_{ef,red}$	Min. drill-hole depth for through fixings	Anchor length	Thread	Washer (outer diameter x thickness)	Qty. per box
			d_0	t_{fix}	h_{ef}	t_d	l			
			[mm]	[mm]	[mm]	[mm]	[mm]	[Ø x length]	[mm]	pcs.
FBN II 8/10 fvz	**507575**	B	8	10/20	40 / 30	66	71	M 8 x 39	16 x 1,6	50
FBN II 8/30 fvz	**507576**	F	8	30/40	40 / 30	86	91	M 8 x 59	16 x 1,6	50
FBN II 8/50 fvz	**507577**	K	8	50/60	40 / 30	106	111	M 8 x 79	16 x 1,6	20
FBN II 8/70 fvz	**507578**	M	8	70/80	40 / 30	126	131	M 8 x 99	16 x 1,6	50
FBN II 10/10 fvz	**507579**	B	10	10/20	50 / 40	78	86	M 10 x 46	20 x 2	50
FBN II 10/30 fvz	**507580**	F	10	30/40	50 / 40	98	106	M 10 x 66	20 x 2	20
FBN II 10/50 fvz	**507582**	K	10	50/60	50 / 40	118	126	M 10 x 86	20 x 2	20
FBN II 10/100 fvz	**507583**	P	10	100/110	50 / 40	168	176	M 10 x 136	20 x 2	20
FBN II 12/10 fvz	**507589**	B	12	10/25	65 / 50	95	106	M 12 x 59	24 x 2,5	20
FBN II 12/30 fvz	**507591**	F	12	30/45	65 / 50	115	126	M 12 x 79	24 x 2,5	20
FBN II 12/50 fvz	**507592**	K	12	50/65	65 / 50	135	146	M 12 x 99	24 x 2,5	20
FBN II 12/100 fvz	**507596**	P	12	100/115	65 / 50	185	196	M 12 x 149	24 x 2,5	10
FBN II 16/25 fvz	**507598**	E	16	25/40	80 / 65	129	145	M 16 x 89	30 x 3	10
FBN II 16/50 fvz	**507553**	K	16	50/60	80 / 65	154	170	M 16 x 105	30 x 3	10
FBN II 16/100 fvz	**507554**	P	16	100/115	80 / 65	204	220	M 16 x 164	30 x 3	10
FBN II 20/30 fvz	**508015**	F	20	30/55	105 / 80	165	184	M 20 x 90	37 x 3	10
FBN II 8/5 K fvz	**508012**	-A-	8	5/-	30 / -	51	56	M 8 x 24	16 x 1,6	50
FBN II 10/5 K fvz	**508013**	-A-	10	5/-	40 / -	63	71	M 10 x 31	20 x 2	50
FBN II 12/5 K fvz	**508014**	-A-	12	5/-	50 / -	75	86	M 12 x 39	24 x 2,5	20
FBN II 16/15 K fvz	**507597**	-C-	16	15/-	65 / -	104	120	M 12 x 64	30 x 3	10

EXAMPLE FBN II 12/30

- Highest Load: standard anchorage depth $h_{ef,\ stand}$ = 65 mm.
  Possible useable length up to 30 mm at a permissible tensile load of 12,6 kN.
- Optimum flexibility: reduced anchorage depth $h_{ef,\ red}$ = 50 mm.
  Possible useable length up to 45 mm at a reduced tensile load of 8,5 kN.



TECHNICAL DATA

Setting tool **FABS**

Type	Art.-No.	Fits anchor	Qty. per box
			pcs.
FABS	**077937**	FAZ II, FBN II, EXA from M6 - M12	1

fischer FIXING SYSTEMS

LOADS

Permissible loads[1] of single anchors in normal-weight concrete C20/25[2].
For the design the complete approval ETA-07/0211 (FBN II gvz) resp. ETA-02/0037 (FBN A4) is to be observed.

Anchor type			FBN II M6 [3]		FBN II M8				FBN II M10			
			gvz	A4	gvz		A4		gvz		A4	
Effective anchorage depth	h_{ef}	[mm]	30	30	30[3]	40	30[3]	40	40	50	40	50
Permissible tensile load N_{perm} of one single anchor without edge influence, i.e. edge distance c ≥ 1.5 × h_{ef} and axial spacing s ≥ 3 × h_{ef}												
in non-cracked concrete C20/25[2]	N_{perm}	[kN]	2,9	2,9	2,9[3]	6,1	2,9[3]	6,1	6,1	8,5	6,1	8,5
Permissible shear load V_{perm} of one single anchor without edge influence, i.e. edge distance c ≥ 10 × h_{ef} and axial spacing s ≥ 3 × h_{ef}												
in non-cracked concrete C20/25[2]	V_{perm}	[kN]	2,7	3,0	4,0[3]	6,1	4,0[3]	6,1	6,1	8,5	6,1	8,5
Permissible bending moment	M_{perm}	[Nm]	4,0	4,6	10,9[3]	13,1	12,0	14,9	25,1	25,7	26,9	29,7
Anchor characteristics												
Characteristic axial spacing	$s_{cr,N}$	[mm]	90		90[3]	120	90[3]	120	120	150	120	150
Characteristic edge distance	$c_{cr,N}$	[mm]	45		45[3]	60	45[3]	60	60	75	60	75
Minimum axial spacing	s_{min}	[mm]	50		40[3]	40	50[3]	40	50	50	50	70
Minimum edge distance	c_{min}	[mm]	100		40[3]	40	45[3]	45	80	50	80	55
Minimum structural component thickness	h_{min}	[mm]	100		100				100			
Nominal drill diameter	d_0	[mm]	6		8				10			
Drill hole depth	h_1 ≧	[mm]	40		46[3]	56	46[3]	56	58	68	58	68
Clearance-hole in fixture to be attached	d_f ≦	[mm]	7		9				12			
Installation torque	T_{inst}	[Nm]	4		15		10		30		20	

Anchor type			FBN II M12				FBN II M16				FBN II M20			
			gvz		A4		gvz		A4		gvz		A4	
Effective anchorage depth		[mm]	50	65	50	65	65	80	65	80	80	105	80	105
Permissible tensile load N_{perm} of one single anchor without edge influence, i.e. edge distance c ≥ 1.5 × h_{ef} and axial spacing s ≥ 3 × h_{ef}														
in non-cracked concrete C20/25[2]	N_{zul}	[kN]	8,5	12,6	8,5	12,6	12,6	17,2	12,6	17,2	17,2	25,8	17,2	25,8
Permissible shear load V_{perm} of one single anchor without edge influence, i.e. edge distance c ≥ 10 × h_{ef} and axial spacing s ≥ 3 × h_{ef}														
in non-cracked concrete C20/25[2]	V_{zul}	[kN]	8,5	12,0	8,5	15,7	22,9	22,9	25,2	29,1	34,4	38,3	34,4	49,1
Permissible bending moment	M_{zul}	[Nm]	45,1		48,6		114,3		123,4		199,4	241,1	201,7	259,4
Anchor characteristics														
Characteristic axial spacing		[mm]	150	195	150	195	195	240	190	240	240	315	240	315
Characteristic edge distance		[mm]	75	97,5	75	97,5	97,5	120	97,5	120	120	157,5	120	157,5
Minimum axial spacing		[mm]	70	70	70	70	90	90	90	120	120	120	140	120
Minimum edge distance		[mm]	100	70	100	70	120	90	120	80	120	120	120	120
Minimum structural component thickness		[mm]	100	120	100	120	120	160	120	160	160	200	160	200
Nominal drill diameter		[mm]	12				16				20			
Drill hole depth		[mm]	70	85	70	85	89	104	89	104	110	135	110	135
Clearance-hole in fixture to be attached		[mm]	14				18				22			
Installation torque		[Nm]	50		35		100		80		200		150	

Note: With the fischer Design Software COMPUFIX you can use the full performance of the fischer Bolt FBN and you are able to do designs under individual application conditions.

1) The partial safety factors for resistance and the partial safety factor for load with γ_F = 1,4 are considered.
Please observe the design method A (ETAG, annex C) if combined tensile and shear loads, edge influences and influences of spacings of anchor groups are to be considered.

2) The concrete is considered to be normally reinforced or non-reinforced; For higher concrete strength classes an increase in performace of up to 55 % is possible.

3) Use restricted to anchoring of structural components which are statically indeterminate.

Zykon hammerset anchor FZEA II

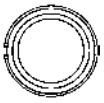
The internally-threaded anchor with low edge distances and axial spacings for the tension zone.

OVERVIEW

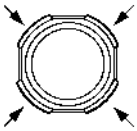
Zykon hammerset anchor **FZEA II**, zinc-plated steel

Zykon-hammerset anchor **FZEA II A4*** or **FZEA II C****

Before expansion



After the correct expansion



4 imprints for visual check

The anchor is set correctly if the anchor sleeve is flush with the surface of the concrete and the 4 imprints are visual.

Approved for:
- Cracked and non-cracked concrete C20/25 to C50/60.

Also suitable for:
- Concrete C12/15
- Natural stone with dense structure
- Solid brick
- Solid sand-lime brick

For fixing of:
- Pipes
- Ventilation systems
- Sprinkler systems
- Consoles
- Steel constructions
- Railings
- Cable trays
- Gates
- Facades
- Suspended ceilings

Fire resistance classification R 120

Shock approval by the Federal Office for Civil Defense, Bonn.

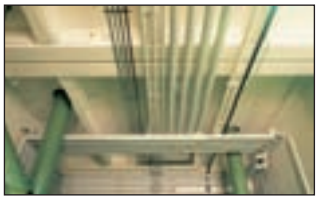
FM APPROVED from M10

M8 - M12

* stainless steel of the corrosion resistance class III e.g. A4
** highly corrosion-resistant steel of the corrosion resistance class IV e.g. 1.4529

DESCRIPTION

- Undercut anchor with internal thread for pre-positioned installation.
- A cylindrical conical hole with an undercut is produced with the drill bit FZUB in one work process.
- When the internal expansion pin is driven in with the setting tool, the anchor sleeve expands to fill the undercut hole with a positive fit.
- FZEA II version made of stainless steel of the corrosion resistance class III, e.g A4 for outdoor use and in damp conditions. Highly corrosion-resistant steel of the corrosion resistance class IV, e.g. 1.4529 for applications in aggressive atmospheres.



Advantages/benefits

- Positive fit in the undercut gives additional safety.
- Virtually expansion-free operation allows cost-efficient fixing with small edge distances and axial spacings.
- Single-step drilling process simultaneously produces the undercut, saving installation time.
- Simple visual control reduces installation effort: no test loading necessary to check whether properly set.
- Internal thread for high flexibility using threaded rods or screws of different lengths and types.
- Only a few hammer blows needed for installation, saves time and money.

INSTALLATION

Type of installation

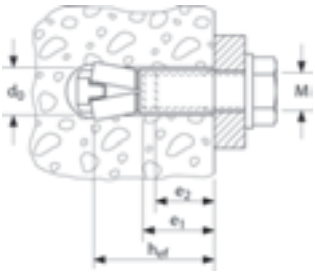
- Pre-positioned installation

fischer FIXING SYSTEMS

TECHNICAL DATA

Zykon hammerset anchor
FZEA II, zinc-plated steel

Zykon-hammerset anchor
FZEA II A4, stainless steel of the corrosion resistance class III, e.g. A4 or **FZEA II C** highly corrosion-resistant steel of the corrosion resistance class IV, e.g. 1.4529



Type	Art.-No.	approval	drill	anchorage depth	internal thread	min. bolt penetration	max. bolt penetration	Qty. per box
		■ ETA	d_0 [mm]	h_{ef} [mm]	d_s	e_2 [mm]	e_1 [mm]	pcs.
FZEA II 10 x 40 M 8	**047303**	■	10	40	M 8	11	17	100
FZEA II 12 x 40 M10	**047304**	■	12	40	M 10	13	19	100
FZEA II 14 x 40 M12	**047305**	■	14	40	M 12	15	21	50
FZEA II 10 x 40 M 8 A4	**047306**	■	10	40	M 8	11	17	100
FZEA II 12 x 40 M10 A4	**047307**	■	12	40	M 10	13	19	100
FZEA II 14 x 40 M12 A4	**047308**	■	14	40	M 12	15	21	50
FZEA II 10 x 40 M 8 C	**047309**	■	10	40	M 8	11	17	100
FZEA II 12 x 40 M10 C	**047310**	■	12	40	M 10	13	19	100
FZEA II 14 x 40 M12 C	**047311**	■	14	40	M 12	15	21	50

The correct installation of fischer Zykon anchors in accordance with the approval is possible only with the following original fischer Zykon tools.

Drilling and setting tools	Type	Art.-No.	**fits fischer Zykon hammerset anchor**	**name**	qty per box [pcs.]
	FZUB 10 x 40	**060622**	FZEA II 10 x 40	**Drill bit FZUB**	1
	FZUB 12 x 40	**060623**	FZEA II 12 x 40		1
	FZUB 14 x 40	**060624**	FZEA II 14 x 40		1
	FZED 10 Plus	**044642**	FZEA II 10 x 40	**Setting mandrel FZED Plus**	1
	FZED 12 Plus	**044643**	FZEA II 12 x 40		1
	FZED 14 Plus	**044644**	FZEA II 14 x 40		1

Zykon hammerset anchor FZEA II

LOADS

Mean ultimate loads. design resistant and recommended loads for single anchors of fischer Zykon hammerset anchor FZEA with large axial spacing and edge distance

					Non-cracked concrete			Cracked concrete		
Anchor type					**FZEA 10 x 40 M 8**	**FZEA 12 x 40 M 10**	**FZEA 14 x 40 M 12**	**FZEA 10 x 40 M 8**	**FZEA 12 x 40 M 10**	**FZEA 14 x 40 M 12**
Effective anchorage depth		h_{ef}	[mm]		**40**	**40**	**40**	**40**	**40**	**40**
Mean ultimate loads N_u and V_u [kN]										
Tensile	0°	N_u	[kN]	gvz	9.6*	17.0*	17.1	9.6*	12.0	12.0
				A4/C	12.2*	17.1	17.1	12.0	12.0	12.0
Shear	90°	V_u	[kN]	gvz	10.2*	17.1*	23.4*	10.2*	17.1*	23.4*
				A4/C	15.1*	19.5*	26.0*	15.1*	19.5*	26.0*
Design resistant loads N_{Rd} and V_{Rd} [kN]										
Tensile	0°	N_{Rd}	[kN]	gvz	6.4	8.0	8.0	5.7	6.0	6.1
				A4/C	8.0 (5.5)[1)]	8.0	8.0	5.7 (5.5)[1)]	6.0	6.1
Shear	90°	V_{Rd}	[kN]	gvz	6.6 (5.2)[2)]	10.9 (8.5)[2)]	12.2 (11.9)[2)]	6.6 (5.2)[2)]	7.9	7.9
				A4/C	8.0 (3.8)[1)]	12.0 (5.8)[1)]	12.2 (7.9)[1)]	7.9 (3.8)[1)]	7.9 (5.8)[1)]	7.9
Recommended loads N_{rec} and V_{rec} [kN]										
Tensile	0°	N_{rec}	[kN]	gvz	4.6	5.7	5.7	4.0	4.3	4.3
				A4/C	5.7 (4.0)[1)]	5.7	5.7	4.0	4.3	4.3
Shear	90°	V_{rec}	[kN]	gvz	4.7 (3.7)[2)]	7.8 (6.1)[2)]	8.7 (8.5)[2)]	4.7 (3.7)[2)]	5.6	5.6
				A4/C	5.7 (2.7)[1)]	8.6 (4.1)[1)]	8.7 (5.7)[1)]	5.6 (2.7)[1)]	5.6 (4.1)[1)]	5.6
Recommended bending moment M_{rec} [Nm]										
		M_{rec}	[Nm]	gvz	8.6 (7.7)[2)]	13.1 (11.7)[2)]	17.7 (15.8)[2)]	8.6 (7.7)[2)]	13.1 (11.7)[2)]	17.7 (15.8)[2)]
			[Nm]	A4/C	10.9 (5.4)[1)]	16.6 (8.3)[1)]	22.3 (11.1)[1)]	10.9 (5.4)[1)]	16.6 (8.3)[1)]	22.3 (11.1)[1)]
Component dimensions, minimum axial spacings and edge distances										
Characteristic axial spacing		$s_{cr,N}$	[mm]		= 3 x h_{ef}			= 3 x h_{ef}		
Characteristic edge distance		$c_{cr,N}$	[mm]		= 1.5 x h_{ef}			= 1.5 x h_{ef}		
Min. axial spacing [3)]		s_{min}	[mm]		40	45	50	40	45	50
Min. edge distance [3)]		c_{min}	[mm]		40	45	50	40	45	50
Min. structural component thickness		h_{min}	[mm]		80	80	80	80	80	80
Min. screw penetration depth		min l_s	[mm]		11	13	15	11	13	15
Max. screw penetration depth		max l_s	[mm]		17	19	21	17	19	21
Clearance-hole in fixture to be attached		d_f	[mm]		9	12	14	9	12	14
Installation torque		T_{inst}	[Nm]		≦ 10	≦ 15	≦ 20	≦ 10	≦ 15	≦ 20
Universal drill bit FZUB [4)]			[-]		FZUB 10 x 40	FZUB 12 x 40	FZUB 14 x 40	FZUB 10 x 40	FZUB 12 x 40	FZUB 14 x 40
Setting mandrel FZED [5)]			[-]		FZED 10 x 40	FZED 12 x 40	FZED 14 x 40	FZED 10 x 40	FZED 12 x 40	FZED 14 x 40
Machine setting tool FZEM [5)]			[-]		FZEM 10 x 40	FZEM 12 x 40	FZEM 14 x 40	FZEM 10 x 40	FZEM 12 x 40	FZEM 14 x 40

* Steel failure value.
1) Values in brackets apply to the use of a fixing screw resp. threaded rod of the minimum strength class A50.
2) Values in brackets apply to the use of a fixing screw resp. threaded rod of the minimum strength class 5.6.
3) For minimum spacing and minimum edge distance the above described loads have to be reduced (See "Technical Handbook" or design software "CC-Compufix")!
4) For drilling obligatory.
5) For installation of FZEA II the setting mandrel FZED or alternatively the setting tool FZEM is obligatory.
All load values apply for concrete C20/25 without edge or spacing influences.
Design resistant loads: material safety factors γ_M are included. Material safety factor γ_M depends on type of anchor.
Permissible loads: material safety factors γ_M and safety factor for load γ_L = 1.4 are included.

The conditions of application differ from those given in the European Technical Approval.
For further detailed information about European Technical Approvals please contact the fischer technical service department.

fischer FIXING SYSTEMS

Hammerset anchor EA II

Proven a million times over – now with rim.

OVERVIEW

Hammerset anchor **EA II**, zinc-plated steel

Hammerset anchor **EA II A4**, stainless steel of the corrosion resistance class III, e.g. A4

Approved for:
- Non-cracked concrete B25 to B55 and C20/25 to C50/60
- Use as (redundant) multiple fixings of non-structural systems in cracked concrete C12/15 to C50/60

Also suitable for:
- Concrete B15
- Natural stone with dense structure

For fixing of:
- Pipelines
- Ventilation pipes
- Sprinkler systems
- Gratings
- Cable trays
- Suspended ceilings

Fire resistance classification R 120

FM APPROVED from M10

M8 - M12

DESCRIPTION

- Hammerset anchor with internal thread for pre-positioned installation.
- When driving in the expansion cone with the impact setting tool EAW H Plus, the anchor sleeve is spread and thus expanded against the drill hole wall.
- EA II A4 made of stainless steel of the corrosion resistance class III, e.g. A4, for outdoor applications and in wet rooms.

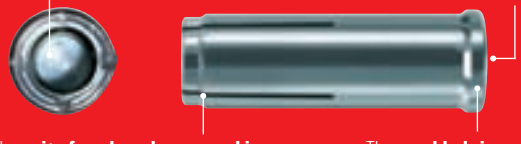
Advantages/benefits

- Maximum load-bearing capacity: the EA II uses the maximum load-bearing capacity of the (non-cracked) concrete. The EA II thus has the maximum possible safety reserves.
- Suitable for all screws or threaded bolts with metric thread.
- Low setting depth reduces drilling time and facilitates cost-effective mounting.
- Surface-flush anchor permits multiple releasing and fixing of the fixture.
- So far common test loadings are no longer necessary.
- Machine setting tool EA II S-SDS for time-saving serial installation.

EA II - ADVANTAGES AT A GLANCE

Simple setting check:
When the hammerset tool EAW H Plus is used for mounting, the EA II is spread apart and the rim is automatically given an easily visible embossing.

The **internal thread** facilitates the use of threaded rods or screws with metric thread.



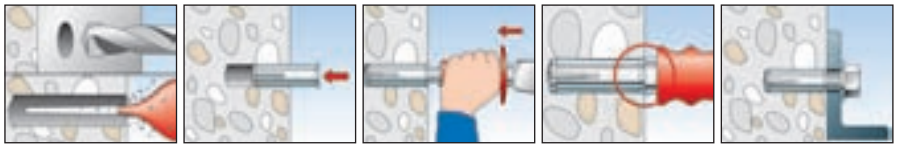
The **unit of anchor sleeves and inner spread cone** results in maximum load-bearing capacities in non-cracked concrete. The anchor sleeve is forged, making it particularly resistant.

The **moulded rim** prevents the anchor slipping down if the drillhole has been drilled too deeply and ensures that the fixation point looks better.

INSTALLATION

Type of installation

- Pre-positioned installation



Installation tips

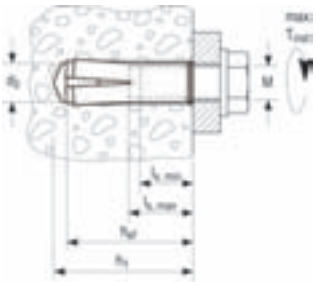
- When selecting the screw, the minimum and maximum screw-in depth needs to be observed.
- For the fixation of core drilling machines and diamond saws, use the special EA II M 12 D with stronger anchor sleeve or the special fixing device FDBB.
- The EA II M 10 x 30 for M 10 thread diameter and reduced drill depth (e.g. because of probable reinforcement hits)
- Type EA II M 8 x 40 with bigger anchorage depth, espacially for (single) fixings for them a well-priced M8 thread diameter is sufficient, but a bigger load bearing capacity is needed.

Hammerset anchor EA II

TECHNICAL DATA

Hammerset anchor **EA II**, zinc-plated steel. **Not suitable for core drilling machines and diamond saws.**

Hammerset anchor **EA II A4**, stainless steel of the corrosion resistance class III e.g. A4. **Not suitable for core drilling machines and diamond saws.**



Type	Art.-No.	approval	drill	min. drill hole depth	effect. anchoring depth	anchor length	thread	min. bolt penetration	max. bolt penetration	Qty. per box
		■ ETA	d_0	h_1	h_{ef}	l	M	$l_{s,min}$	$l_{s,max}$	
			[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	pcs.
EA II M 6	**048264**	■	8	32	30	30	M 6	8	12	100
EA II M 8	**048284**	■	10	33	30	30	M 8	10	13	100
EA II M 8 x 40	**048323**	■	10	43	40	40	M 8	10	13	50
EA II M 10 x 30	**048332**	■	12	33	30	30	M 10	12	12	50
EA II M 10	**048339**	■	12	43	40	40	M 10	12	16	50
EA II M 12	**048406**	■	15	54	50	50	M 12	14	22	25
EA II M 16	**048408**	■	20	70	65	65	M 16	18	28	20
EA II M 20	**048409**	■	24	85	80	80	M 20	23	34	10
EA II M 6 A4	**048410**	■	8	32	30	30	M 6	8	12	100
EA II M 8 A4	**048411**	■	10	33	30	30	M 8	10	13	100
EA II M 8 x 40 A4	**048412**	■	10	43	40	40	M 8	10	13	50
EA II M 10 A4	**048414**	■	12	43	40	40	M 10	12	16	50
EA II M 12 A4	**048415**	■	15	54	50	50	M 12	14	22	25
EA II M 16 A4	**048416**	■	20	70	65	65	M 16	18	28	20
EA II M 20 A4	**048417**	■	24	85	80	80	M 20	23	34	10
EA II M 6 A4 (1.4571)	**045711**	■	8	32	30	30	M 6	8	12	100
EA II M 8 A4 (1.4571)	**045712**	■	10	33	30	30	M 8	10	13	100
EA II M10 A4 (1.4571)	**045713**	■	12	43	40	40	M 10	12	16	50

Hammerset anchor **EA II M12 D**, zinc-plated steel, **Suitable for core drilling machines and diamond saws.**

Type	Art.-No.	approval	drill	min. drill hole depth	effect. anchoring depth	anchor length	thread	min. bolt penetration	max. bolt penetration	Qty. per box
		■ ETA	d_0	h_1	h_{ef}	l	M	$l_{s,min}$	$l_{s,max}$	
			[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	pcs.
EA II M 12 D	**048407**	■	16	54	50	50	M 12	12	22	25

Machine setting tool **EA II S-SDS**

Type		Art.-No.		clamping system of hammer drill	fits	Qty. per box
						pcs.
EA II S-SDS 6	1)	**048065**		SDS plus	EA II M6*, EA M 6 N	1
EA II S-SDS 8	1)	**048066**		SDS plus	EA II M 8*, EA M 8 N	1
EA II S-SDS 8 x 40	1)	**048067**		SDS plus	EA II M 8 x 40*	1
EA II S-SDS 10 x 30	1)	**048068**		SDS plus	EA II M 10 x 30	1
EA II S-SDS 10	1)	**048070**		SDS plus	EA II M 10*, EA M 10 N	1
EA II S-SDS 12	1)	**048071**		SDS plus	EA II M 12, EA II M 12*, EA M 12 N, EA M 12 N D	1
EA II S-SDS-m 16	1)	**048072**		SDS max	EA II M 16*, EA M 16 N	1
EA II S-SDS-m 20	1)	**048073**		SDS max	EA II M 20*, EA M 20 N	1

1) without embossing tool

* zinc-plated and stainless steel

Setting tool **EAW H Plus** with hand impact protection for your safety and embossing tool.

Type	Art.-No.		fits	Qty. per box
				pcs.
EAW H 6 Plus	**044630**		EA II M6	1
EAW H 8 Plus	**044631**		EA II M 8	1
EAW H 8 x 40 Plus	**044632**		EA II M 8 x 40	1
EAW H 10 x 30 plus	**048487**		EA II M 10 x 30	1
EAW H 10 Plus	**044633**		EA II M 10	1
EAW H 12 Plus	**044634**		EA II M 12, EA II M 12 D	1
EAW H 16 Plus	**044635**		EA II M 16	1
EAW H 20 Plus	**044636**		EA II M 20	1

LOADS

Mean ultimate loads, design resistant and recommended loads for single anchors of fischer Hammerset anchor EA II with large spacing and edge distance

Anchor type			EA II M6[2]					EA II M8[2]					EA II M8 x 40					EA II M10 x 30[4]					EA II M10				
			gvz				A4	gvz				A4	gvz				A4	gvz				A4	gvz				A4
Quality of the used screw			4,6	5,6	5,8	8,8	A4-70	4.6	5.6	5.8	8.8	A4-70	4.6	5.6	5.8	8.8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70
Effective embedment depth	h_{ef}	[mm]	30					30					40					30					40				
Drill hole depth	$h_1 \geqq$	[mm]	32					33					43					33					43				
Nominal drill hole diameter	d_0	[mm]	8					10					10					12					12				
Mean ultimate loads N_u and V_u [kN]																											
Tensile	0° N_u	[kN]	8.0*	10.1*		11.1	11.1	11.1				11.1	14.6*	17.1			17.1	11.1				11.1	17.1				17.1
Shear	90° V_u	[kN]	4.0*	5.0*		6.8*	7.7*	7.3*	8.6*			9.8*	7.3*	8.6*			9.8*	10.9*				12.4*	10.9*				12.4*
Design resistant loads N_{Rd} and V_{Rd} [kN]																											
Tensile	0° N_{Rd}	[kN]	4.0	5.1	5.5		5.5	5.5				5.5	7.3	8.5			8.5	5.5				5.5	8.5				8.5
Shear	90° V_{Rd}	[kN]	2.0	3.0	4.0	5.4	4.5	4,4	5,5			5.5	4.4	5.5	6.9		7.8	5.5				5.5	6.9	8.5			8.5
Recommended loads N_{rec} and V_{rec} [kN]																											
Tensile	0° N_{rec}	[kN]	2.9	3.6	3.9		3.9	3.9				3.9	5.2	6.1			6.1	3.9				3.9	6.1				6.1
Shear	90° V_{rec}	[kN]	1.7	2.1	2.9	3.9	3.2	3.1	3.9			3.9	3.1	3.9	4.9		5.6	3.9				3.9	5.0	6.1			6.1
Recommended bending moment M_{rec} [Nm]																											
	M_{rec}	[Nm]	2.6	3.3	4.3	6.9	5.0	6.4	8.1	10.9	17.1	11.9	6.4	8.1	10.9	17.1	11.9	12.8	15.8	21.1	34.3	23.8	12.8	15.8	21.1	34.3	23.8
Anchor characteristics																											
Characteristic spacing	$s_{cr,N}$	[mm]	= 3 x h_{ef}																								
Characteristic edge distance	$c_{cr,N}$	[mm]	= 1,5 x h_{ef}																								
Minimum spacing[1]	s_{min}	[mm]	65					95					95					85					95				
Minimum edge distance[1]	c_{min}	[mm]	115					140					140					140					160				
Minimum structural component thickness	h_{min}	[mm]	100					100					100					120					120				
Minimum screw penetration depth	min l_s	[mm]	6					8					8					10					10				
Maximum screw penetration depth	max l_s	[mm]	13					13					13					13					17				
Clearance-hole in fixture to be attached	$d_f \leqq$	[mm]	7					9					9					12					12				
Maximum torque	max T_{inst}	[Nm]	4					8					8					15					15				

Anchor type			EA II M12					EA II M12 D					EA II M16					EA II M20				
			gvz				A4	gvz				A4	gvz				A4	gvz				A4
Quality of the used screw			4.6	5.6	5.8	8.8	A4-70	4.6	5.6	5.8	8.8	A4-70	4,6	5,6	5,8	8,8	A4-70	4.6	5.6	5.8	8.8	A4-70
Effective embedment depth	h_{ef}	[mm]	50					50					65					80				
Drill hole depth	$h_1 \geqq$	[mm]	54					54					70					85				
Nominal drill hole diameter	d_0	[mm]	15					16					20					25				
Mean ultimate loads N_u and V_u [kN]																						
Tensile	0° N_u	[kN]	23.9				23.9	23.9				23.9	35.4				35.4	48.3				48.3
Shear	90° V_u	[kN]	16.9*	19.8*			22.6*	16.9*	21.1*			30.4*	31.3	32.4*			36.9*	49.0*	51.4*			58.6*
Design resistant loads N_{Rd} and V_{Rd} [kN]																						
Tensile	0° N_{Rd}	[kN]	11.9				11.9	11.9				11.9	17.6				17.6	24.0				24.0
Shear	90° V_{Rd}	[kN]	10.1	11.9			11.9	10.1	11.9			11.9	18.6	23.4	52.6		29.6	29.3	36.5	40.8		47.2
Recommended loads N_{rec} and V_{rec} [kN]																						
Tensile	0° N_{rec}	[kN]	8.5				8.5	8.5				8.5	12.6				12.6	17.2				17.2
Shear	90° V_{rec}	[kN]	7.2	8.5			8.5	7.2	8.5			8.5	13.3	16.7	18.3		21.1	21.0	26.1	29.1		33.7
Recommended bending moment M_{rec} [Nm]																						
	M_{rec}	[Nm]	22.2	28.2	37.7	60.0	42.1	22.2	28.2	37.7	60.0	42.1	56.9	71.0	94.9	152.0	106.2	110.8	138.6	185.1	295.4	207.9
Anchor characteristics																						
Characteristic spacing	$s_{cr,N}$	[mm]	= 3 x h_{ef}																			
Characteristic edge distance	$c_{cr,N}$	[mm]	= 1,5 x h_{ef}																			
Minimum spacing[1]	s_{min}	[mm]	145					142					180					190				
Minimum edge distance[1]	c_{min}	[mm]	200					200					240					280				
Minimum structural component thickness	h_{min}	[mm]	120					120					160					200				
Minimum screw penetration depth	min l_s	[mm]	12					12					16					20				
Maximum screw penetration depth	max l_s	[mm]	22					22					28					34				
Clearance-hole in fixture to be attached	$d_f \leqq$	[mm]	14					14					18					22				
Maximum torque	max T_{inst}	[Nm]	35					35					60					120				

All values apply for concrete C20/25 without edge or spacing influences.
Design resistant loads: material safety factor γ_M is included. Material safety factor γ_M depends on the type of anchor.
Recommended loads: material safety factor γ_M and safety factor for load γ_L = 1.4 are included.
* Steel failure decisive.
1) For minimum spacing and minimum edge distance the above described loads have to be reduced (See "fischer Technical Handbook" or design software "CC-COMPUFIX")!
2) Use restricted to anchoring of structural components which are statically indeterminate.

Hammerset anchor EA II

LOADS

Mean ultimate loads, design resistant and recommended loads for single anchors of fischer Hammerset anchor EA II for a multiple fixing with large spacing and edge distance

Anchor type			EA II M6					EA II M8					EA II M8 x 40				
			gvz				A4	gvz				A4	gvz				A4
Quality of the used screw			4,6	5,6	5,8	8,8	A4-70	4.6	5.6	5.8	8.8	A4-70	4.6	5.6	5.8	8.8	A4-70
Effective embedment depth	h_{ef}	[mm]	30					30					40				
Drill hole depth	$h_1 \geqq$	[mm]	32					33					43				
Nominal drill hole diameter	d_0	[mm]	8					10					10				
Mean ultimate load F_u 1) of a single anchor of a multiple fixing without edge influence																	
Tension, shear or combined tension and shear	F_u	[kN]	7.6				7.6	7.6				7.6	11.6				11.6
Design resistant load F_{Rd} of a single anchor of a multiple fixing without edge influence																	
Tension, shear or combined tension and shear	F_{Rd}	[kN]	1.4				1.4	2.3				2.3	2.3				2.3
Recommended load F_{rec} 1) of a single anchor of a multiple fixing without edge influence																	
Tension, shear or combined tension and shear	F_{rec}	[kN]	1.0				1.0	1.7				1.7	1.7				1.7
Recommended bending moment M_{rec} [Nm]																	
	M_{rec}	[Nm]	2,6	3,3	4,3	6,9	5,0	6,4	8,1	10,9	17,1	11,9	6.4	8.1	10.9	17.1	11.9
Anchor characteristics																	
Characteristic spacing	s_{cr}	[mm]	90					90					120				
Characteristic edge distance	c_{cr}	[mm]	45					45					60				
Minimum structural component thickness	h_{min1}	[mm]	100 2)					100 2)					100 2)				
Minimum spacing 1)	s_{min1}	[mm]	65 2)					95 2)					95 2)				
Minimum edge distance 1)	c_{min1}	[mm]	115 2)					140 2)					140 2)				
Minimum structural component thickness	h_{min2}	[mm]	80 2)					80 2)					80 2)				
Minimum spacing 1)	s_{min2}	[mm]	200 2)					200 2)					200 2)				
Minimum edge distance 1)	c_{min2}	[mm]	150 2)					150 2)					150 2)				
Minimum screw penetration depth	min l_s	[mm]	6					8					8				
Maximum screw penetration depth	max l_s	[mm]	13					13					13				
Clearance-hole in fixture to be attached	$d_f \leqq$	[mm]	7					9					9				
Maximum torque	max T_{inst}	[Nm]	4					8					8				

Anchor type			EA II M10 x 30					EA II M10					EA II M12				
			gvz				A4	gvz				A4	gvz				A4
Quality of the used screw			4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70
Effective embedment depth	h_{ef}	[mm]	30					40					50				
Drill hole depth	$h_1 \geqq$	[mm]	33					43					54				
Nominal drill hole diameter	d_0	[mm]	12					12					15				
Mean ultimate load F_u 1) of a single anchor of a multiple fixing without edge influence																	
Tension, shear or combined tension and shear	F_u	[kN]	7.6				7.6	11.6				11.6	16.3				16.3
Design resistant load F_{Rd} of a single anchor of a multiple fixing without edge influence																	
Tension, shear or combined tension and shear	F_{Rd}	[kN]	2.3				2.3	3.5				3.5	5.0				5.0
Recommended load F_{rec} 1) of a single anchor of a multiple fixing without edge influence																	
Tension, shear or combined tension and shear	F_{rec}	[kN]	1.7				1.7	2.5				2.5	3.6				3.6
Recommended bending moment M_{rec} [Nm]																	
	M_{rec}	[Nm]	12.8	15.8	21.1	34.3	23.8	12.8	15.8	21.1	34.3	23.8	22.2	28.2	37.7	60.0	42.1
Anchor characteristics																	
Characteristic spacing	s_{cr}	[mm]	90					200					300				
Characteristic edge distance	c_{cr}	[mm]	45					100					150				
Minimum structural component thickness	h_{min1}	[mm]	120 2)					120 2)					120 2)				
Minimum spacing 1)	s_{min1}	[mm]	85 2)					95 2)					145 2)				
Minimum edge distance 1)	c_{min1}	[mm]	140 2)					160 2)					200 2)				
Minimum structural component thickness	h_{min2}	[mm]	80 2)					80 2)					100 2)				
Minimum spacing 1)	s_{min2}	[mm]	200 2)					250 2)					300 2)				
Minimum edge distance 1)	c_{min2}	[mm]	150 2)					200 2)					300 2)				
Minimum screw penetration depth	min l_s	[mm]	10					10					12				
Maximum screw penetration depth	max l_s	[mm]	13					17					22				
Clearance-hole in fixture to be attached	$d_f \leqq$	[mm]	12					12					14				
Maximum torque	max T_{inst}	[Nm]	15					15					35				

All values apply for single anchors of a multiple fixing of a non-strucural component in cracked and non-cracked concrete C20/25 to C50/60 without edge or spacing influences.
Design resistant loads: material safety factor γ_M is included. Material safety factor γ_M depends on the type of anchor.
Recommended loads: material safety factor γ_M and safety factor for load γ_L = 1.4 are included.
1) For minimum spacing and minimum edge distance the above described loads have to be reduced (See European technical approval ETA-07/0142)!
2) The minimum structural component thickness h_{min1} are valid along with the minimum spacing and edge distance s_{min1} bzw. c_{min1}; the minimum structural component thickness h_{min2} are valid along with the minimum spacing and edge distance s_{min2} bzw. c_{min2}.

fischer FIXING SYSTEMS

Nail anchor FNA II with nail head

Highest tensile loads at the lowest anchorage depth.

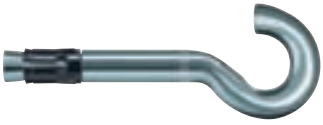
OVERVIEW

FNA II with nail head
- zinc-plated steel

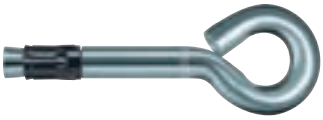
FNA II A4* resp.
FNA II C**
with nail head

FNA II M6 with thread
- zinc-plated steel

FNA II M6 A4* resp.
FNA II M6 C**
with thread



FNA II-H*
with hook
- zinc-plated steel



FNA II-OE with eye
- zinc-plated steel

Approved for:

- For the (redundant) multiple fixing of non-loadbearing systems in cracked concrete C12/15 to C50/60

For fixing of:

- Battens
- Metal profiles
- Wire and nonious hangers
- Punched tapes
- Fire partitions
- Fire protection boards
- Ventilation systems
- Substructures made of wood and metal
- Ceilings
- Metal clamps
- Plasterboards

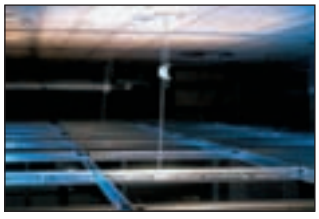
Also suitable for:

- Concrete C12/15
- Natural stone with dense structure
- Solid sand-lime brick
- Prestressed hollow-core concrete slabs

* stainless steel of the corrosion resistance class III, e.g. A4
** highly corrosion-resistant steel of the corrosion resistance class IV, e.g. 1.4529
*** Not part of the approval

DESCRIPTION

- The FNA II nail anchor combines the advantages of the active principle of a bolt anchor with those of the simple hammerset installation, no tightening torque for expansion of the anchor.
- The installed FNA II nail anchor expands automatically under load, pulls the cone into the expansion clip and expands against the hole wall.
- The FNA II is approved for redundant multiple fastening, also in the cracked tensile zone.
- The FNA II is used to attach suspended ceilings, pipelines, cable ducts, wall panels, windows, fire protection boards, etc.



Advantages/benefits

- Very easy to set: Drill, hammer in - done!
- Little hammering force: 2-4 hammer blows and the FNA II is set.
- Smallest anchorage depth of only 25 mm reduces drilling time, saving time and reducing reinforcement hits.
- Highest tensile loads up to 1.6 kN permitted.
- Small axial spacings and edge distances for applications even with small component dimensions.
- For component thicknesses from 8 cm.
- Alternating loads tested up to 7 million cycles at reduced load.
- First ceiling anchor with European Technical Approval in lowstrength concrete C12/15 (B15).

FNA II - ADVANTAGES AT A GLANCE

The unit of cone and expansion clip leads to the highest tensile loadbearing at the lowest anchoring depths - even in cracked concrete on the ceiling.

Simple hammerset installation: No torque necessary for expanding the anchor, "tightening" of the anchor is no longer required!

The black expansion clip is the sign of maximum performance and makes it easy to distinguish between the stainless steel and zinc-plated version.

The FNA II offers the advantages of a bolt anchor: Shaft cross-section equals the drill diameter.

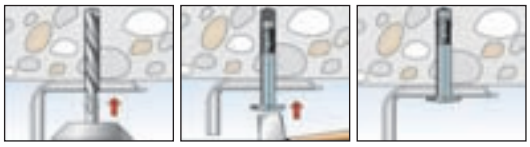
Nail anchor FNA II with nail head

INSTALLATION

Installation

- Push-through installation
- Pre-positioned installation

Pre-positioned installation

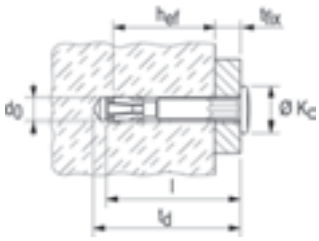


Push-through installation

TECHNICAL DATA

Nail anchor **FNA II** with nail head - zinc-plated steel

Nail anchor **FNA II A4** resp. **FNA II C** with nail head - stainless steel of the corrosion resistance class III e.g. A4 resp. highly corrosion-resistant steel of the corrosion resistance class IV e.g. 1.4529

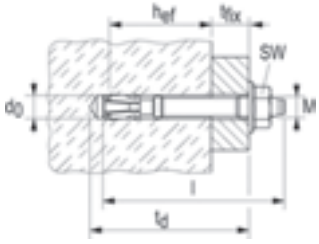


Type		Art.-No.	Zulassungen ■ ETA	drill diameter d_0 [mm]	min. drill-hole depth for through fixings t_d [mm]	effect. anchoring depth h_{ef} [mm]	anchor length l [mm]	max. usable length t_{fix} [mm]	head diameter [Ø mm]	Qty. per box pcs.
FNA II 6 x 25/5	1)	**044121**	■	6	40	25	35	5	13	100
FNA II 6 x 30/5	1)	**044115**	■	6	45	30	40	5	13	100
FNA II 6 x 30/30		**044116**	■	6	70	30	65	30	13	50
FNA II 6 x 30/50		**044117**	■	6	90	30	85	50	13	50
FNA II 6 x 30/75		**044118**	■	6	115	30	110	75	13	50
FNA II 6 x 30/100		**044119**	■	6	140	30	135	100	13	50
FNA II 6 x 30/120		**044120**	■	6	160	30	155	120	13	50
FNA II 6 x 30/5 A4		**044122**	■	6	45	30	40	5	13	100
FNA II 6 x 30/30 A4		**044123**	■	6	70	30	65	30	13	50
FNA II 6 x 30/50 A4	2)	**046024**	■	6	90	30	85	50	13	50
FNA II 6 x30/5 C		**044124**	■	6	45	30	40	5	13	25
FNA II 6 x30/30 C		**044125**	■	6	70	30	65	30	13	25
FNA II 6 x 30/50 C	2)	**500569**	■	6	90	30	85	50	13	50
FNA II 6 x 30/75 C	2)	**500573**	■	6	115	30	110	75	13	50
FNA II 6 x 30/100 C	2)	**500574**	■	6	140	30	135	100	13	50
FNA II 6 x 30/120 C	2)	**500575**	■	6	160	30	155	120	13	50

1) with hexagon below the nail head for anti-rotation lock of hole and wire hangers (for example) and centring for optional setting tool FNA-S
2) delivery on request

Nail anchor **FNA II** with thread - zinc-plated steel

Nail anchor **FNA II A4** resp. **FNA II C** with thread - stainless steel of the corrosion resistance class III, e.g. A4, resp. highly corrosion-resistant steel of the corrosoin resistance class IV, e.g. 1.4529



Type		Art.-No.	approval ■ ETA	drill diameter d_0 [mm]	min. drill-hole depth for through fixings t_d [mm]	effect. anchoring depth h_{ef} [mm]	anchor length l [mm]	max. usable length t_{fix} [mm]	thread M	width across nut SW	required torque [Nm]	Qty. per box pcs.
FNA II 6 x 25 M6/5		**044111**	■	6	40	25	45	5	M 6	10	4	100
FNA II 6 x 30 M6/5		**044109**	■	6	45	30	50	5	M 6	10	4	100
FNA II 6 x 30 M6/10		**046022**	■	6	45	30	55	10	M 6	10	4	100
FNA II 6 x 30 M6 x 43	1)	**044110**	■	6	40	30	43	-	M 6	-	4	100
FNA II 6 x 30 M8/5		**044114**	■	6	45	30	50	5	M 8	13	4	50
FNA II 6 x 30 M6/5 A4		**044112**	■	6	45	30	50	5	M 6	10	4	50
FNA II 6 x 30 M6/5 C		**044113**	■	6	45	30	50	5	M 6	10	4	25

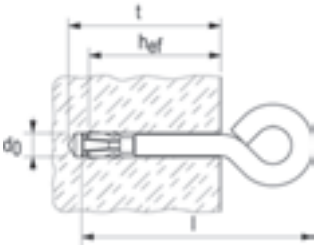
1) without nut; e.g. for fixing of pipe clamps

fischer FIXING SYSTEMS

TECHNICAL DATA

Nail anchor **FNA II-H** with hook - zinc-plated steel

Nail anchor **FNA II-OE** with eye - zinc-plated steel



Type	Art.-No.	approval	drill diameter	min. drill hole depth	effect. anchoring depth	anchor length	inner diameter of the hook/eye	opening space of the hook	Qty. per box
		■ ETA	d_0	t	h_{ef}	l			
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	pcs.
FNA II 6 x 25 H	**044126**		6	35	25	54	10	6.5	50
FNA II 6 x 25 OE	**044127**	■	6	35	25	54	10	-	50

Machine setting tool **FNA S-SBO**

Machine setting tool **FNA S-SDS**

Hand setting tool **FNA S-H**

Type	Art.-No.	contents	Qty. per box
			pcs.
for FNA II with nailhead			
FNA S-SBO	**061548**	optimum setting tool for mounting on the drill - for effortless and speedy installation	1
FNA S-SDS	**061547**	optimum professional setting tool with SDS fixture - the ideal setting tool for series installation	1
for FNA II M6 with thread			
FNA S-H	**095990**	hand setting tool with outer diameter of 15 mm for installation of installation channels	1

LOADS

Mean ultimate loads, design resistant and recommended loads of one fixing point 2) in normal-weight concrete C12/15 to C50/60

				Non-cracked concrete			Cracked concrete					
Anchor type				**FNA II 6 x 30**			**FNA II 6 x 25**	**FNA II 6 x 30**	**FNA II 6 x 25 OE**	**FNA II 6 x 30**		
				gvz	**A4**	**C**	**gvz**	**gvz**	**gvz**	**gvz**	**A4**	**C**
Effective anchorage depth		h_{ef}	[mm]	30			25	25	25	30		
Drill hole depth		$h_1 \geqq$	[mm]	40			35	35	35	40		
Nominal drill hole diameter		d_0	[mm]	6			6	6	6	6		
Mean ultimate loads $N_{u,m}$ $V_{u,m}$												
Concrete C12/15	0°	$N_{u,m}$	[kN]	5.4	6.5		4.6	4.6	4.6	4.8	5.3	
	90°	$V_{u,m}$	[kN]	6.0*	7.0*		4.0*	4.0*	–	4.0*	6.0	
Concrete C20/25	0°	$N_{u,m}$	[kN]	7.2	8.7		5.9	5.9	5.9	6.2	6.8	
	90°	$V_{u,m}$	[kN]	6.0*	7.0*		4.0*	4.0*	–	4.0*	7.0*	
Design resistant loads N_{Rd} and V_{Rd} of one fixing point 2) for c ≧ 100 mm and a ≧ 200 mm 3)												
Concrete C12/15	0°	N_{Rd}	[kN]	3.0	3.6		1.4 1)	1.4 1)	0.8 1)	1.7 1)		
	90°	V_{Rd}	[kN]	4.0	5.1							
Concrete C20/25 to C50/60	0°	N_{Rd}	[kN]	4.0	4.8		1.7 1)	1.7 1)	0.8 1)	2.2 1)		
	90°	V_{Rd}	[kN]	4.0	5.1							
Design resistant loads $F_{Rd,min}$ of one fixing point 2) for c ≧ 50 mm and a ≧ 100 mm 3)												
Concrete C12/15		$F_{Rd,min}$	[kN]	1.2 1)	1.3 1)		0.7 1)	0.7 1)	0.7 1)	0.7 1)		
Concrete C20/25 to C50/60		$F_{Rd,min}$	[kN]	1.5 1)	1.7 1)		0.7 1)	0.7 1)	0.7 1)	0.8 1)		
Recommended loads N_{rec} and V_{rec} of one fixing point 2) for c ≧ 100 mm and a ≧ 200 mm 3)												
Concrete C12/15	0°	N_{rec}	[kN]	3.0	3.6		1.0 1)	1.0 1)	0.6 1)	1.2 1)		
	90°	V_{rec}	[kN]	4.0	5.1							
Concrete C20/25 to C50/60	0°	N_{rec}	[kN]	4.0	4.8		1.2 1)	1.2 1)	0.6 1)	1.6 1)		
	90°	V_{rec}	[kN]	4.0	5.1							
Recommended loads $F_{rec,min}$ of one fixing point 2) for c ≧ 50 mm and a ≧ 100 mm 3)												
Concrete C12/15		$F_{rec,min}$	[kN]	0.9 1)	0.9 1)		0.5 1)	0.5 1)	0.5 1)	0.5 1)		
Concrete C20/25 to C50/60		$F_{rec,min}$	[kN]	1.1 1)	1.2 1)		0.5 1)	0.5 1)	0.5 1)	0.6 1)		
Recommended bending moment M_{rec}												
		M_{rec}	[Nm]	4.0	4.6		4.0	4.0	4.0	4.0	4.6	
Anchor characteristics												
Minimum structural component thickness		h_{min}	[mm]	80			80	80	80	80		
Clearance-hole in fixture to be attached		$d_f \leqq$	[mm]	7 4)			7 4)	7 4)	–	7 4)		
Maximum torque		$T_{inst} \leqq$	[Nm]	4 5)			4 5)	4 5)	–	4 5)		

All above values apply for one fixing point 2) in normal-weight concrete C12/15 to C50/60

Note:
Design resistant loads: material safety factors included.
Recommended loads: material safety factors and safety facor for load γ_L = 1.4 included.

* Steel failure decisive.

1) The loads are valid for tension, shear and combined tension and shear.

2) A fixing point can consist of a single anchor, a group of two anchors with $s_1 \geq 50$ mm or a group of four anchors with $s_1 = s_2 \geq 50$ mm.

3) c is the distance of the outermost anchor of a fixing point to the concrete edge; a is the distance between the outer anchors of neighboured fixing points.

4) For FNA II 6 M8: $d_f \leq 9$ mm.

5) Only for FNA II 6 M6 and FNA II 6 M8.

Hollow-ceiling anchor FHY

Specially for fixings in prestressed hollow-ceiling slabs.

OVERVIEW

Hollow-ceiling anchor **FHY**, zinc-plated steel

Hollow-ceiling anchor **FHY A4***), stainless steel of the corrosion resistance class III e.g. A4

*) not part of the approval

Approved for:
- Pre-stressed hollow-core concrete slabs C50/60 (only zinc-plated version)

Also suitable for:
- Concrete C12/15 to C50/60
- Natural stone with dense structure

For fixing of:
- Pipes
- Ventilation systems
- Sprinkler systems
- Consoles
- Steel constructions
- Gratings
- Cable trays
- Gates
- Suspended ceilings

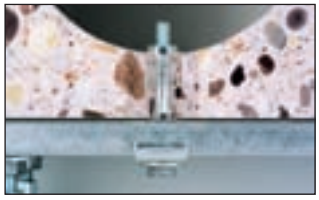
ab M8

DESCRIPTION

- Sleeve anchor with internal thread specially for anchoring in prestressed concrete hollow ceilings
- When the screw or hexagon nut is tightened, the cone is pulled into the sleeve and expands it into the cavity or expands it in the solid material against the hole wall.
- Stainless steel version of the corrosion resistance class III e.g. A4 for outdoor use or in damp conditions (not part of the approval).

Advantages/benefits

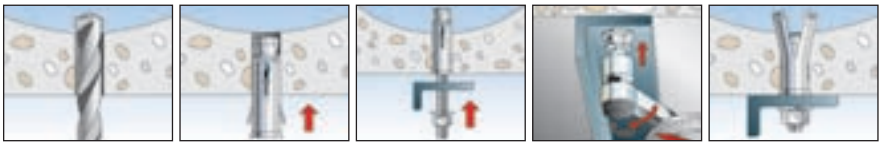
- Suitable for cavities and solid zones of prestressed concrete hollow ceilings.
- Suitable for screws or studs with metric threads.
- The anchor can also be installed outside the cavity axis up to 5 cm from the tensioning wire.
- No special tools necessary.



INSTALLATION

Type of installation

- Pre-positioned installation
- Stand-off installation



Installation tips

- Suitable bolts and studs can be found in the SaMontec specialist catalogue.
- Observe the required screw-in depth e_2 in the fixing when determining the bolt length l_s:
  Minimum screw-in depth e_2
  + Thickness of building component t_{fix}
  + Thickness of washer
  = Screw length

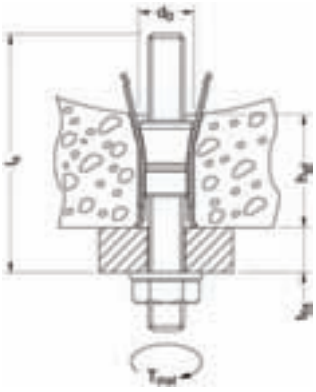
fischer FIXING SYSTEMS

TECHNICAL DATA

Hollow-ceiling anchor **FHY**, zinc-plated steel

Hollow-ceiling anchor **FHY A4**, stainless steel of the corrosion resistance class III e.g. A4

Type	Art.-No.	approval ● DIBt	drill-Ø d_0 [mm]	min. drill hole depth t [mm]	effect. anchorage depth h_{ef} [mm]	anchor length l [mm]	thread M	min. bolt penetration e_2 [mm]	max. bolt penetration e_1 [mm]	qty. per box pcs.
FHY M 6	**030138**	●	10	50	30	37	M 6	37	45	50
FHY M 8	**030146**	●	12	60	35	43	M 8	43	55	25
FHY M10	**030148**	●	16	65	40	52	M 10	52	60	20
FHY M 6 A4	**030139**		10	50	30	37	M 6	37	45	50
FHY M 8 A4	**030147**		12	60	35	43	M 8	43	55	25
FHY M10 A4	**030151**		16	65	40	52	M 10	52	60	20



LOADS

Safe working loads1) fixing parameters and component dimensions for tension, shear and diagonal load at any angle in hollow-slab floors of prestressed concrete of strength class ≥ C50/60. When dimensioning, observe the approval Z–21.1–1711 in its entirety.

Fixing type			**FHY M 6**			**FHY M 8**			**FHY M 10**	
Web thickness	d_u	[mm]	≧ 25 < 30	≧ 30 < 40	≧ 40	≧ 25 < 30	≧ 30 < 40	≧ 40	≧ 30 < 40	≧ 40
Drill hole depth	h_1 ≧	[mm]	50			60			65	
Drill hole diameter		[mm]	10			12			16	
Single fixing										
Perm. F2) with	$c \geq c_{cr1.2}$	[kN]	0.7	0.9	2.0	0.7	0.9	2.0	1.2	3.0
Perm. F2) with	$c = c_{min1.2}$	[kN]	0.35	0.8	1.8	0.35	0.8	1.8	1.0	2.7
Axial spacing2)	$c_{cr1.2}$ ≧	[mm]	150							
Min. edge distance2)	$c_{min1.2}$ ≧	[mm]	100							
Axial spacing	$s_{cr1.2.}$ ≧	[mm]	300							
Pairs of fixings3)										
Perm. F with	$c \geq c_{cr1.2}$	[kN]	0.7	1.4	2.6	0.7	1.4	2.6	2.0	4.8
Perm. F with	$c = c_{min}$	[kN]	0.35	1.25	2.35	0.35	1.25	2.35	1.8	4.3
Min. axial spacing	$S_{min1.2}$ ≧	[mm]	70	80	100	70	80	100	80	100
Edge distance	$c_{cr1.2}$ ≧	[mm]		150			150		150	
Min. edge distance	$c_{min1.2.}$ =	[mm]		100			100		100	
Safe working bending moment										
Grade 4.6		[Nm]	–			6.4			12.8	
Grade 5.8		[Nm]	4.4 4)			10.7 4)			21.4 4)	
Grade 5.8		[Nm]	7.0 4)			17.1 4)			34.2 4)	
Length of hexagon-head screw5)	min l_s ≧	[mm]	39 + t_{fix}			45 + t_{fix}			54 + t_{fix}	
Length of threaded bolt	min l_B ≧	[mm]	62 + t_{fix}			68 + t_{fix}			77 + t_{fix}	
Installation torque	T_{inst}	[Nm]	10			10			20	
Through-hole in the component to be attached	d_f ≦	[mm]	7			9			12	

1) The anchorage of the Cavity Fixing FHY is permissible only in hollow-slab ceilings of prestressed concrete, the width of whose cavities is not more than 4.2 times the web width. The fixing may also be used as multiple fastening **for anchoring lightweight ceiling coverings and underceilings** to DIN 18168 on hollow-slab ceilings of prestressed concrete, **and for statically similar anchorages up to 1.0 kN/m²**. When external loads are suspended from the prestressed-concrete hollow-slab ceilings, **the shearing loadbearing capacity must be reduced**. For fastening lightweight ceiling coverings and underceilings, to DIN 18168, this reduction is not necessary.

2) For edge distances $c_{min} < c \leq c_{cr}$ the permissible loads may be determined by linear interpolation.

3) The permissible load applies for a pair of fixings. The permissible load for the most highly stressed fixing must not exceed the values stated for the single fixing.
For pairs of fixings with min axial distances of $s_{min1.2} < s_{1.2} < s_{cr1.2}$ the permissible load may be interpolated linearly.
The linear value at $s_{1.2} = s_{cr1.2}$ for the pair of fixings with tensile load applied, may be assumed to be twice the permissible load for the single fixing.

4) Only threaded rods marked in accordance with the approval may be used.

5) With hexagon bolts with shaft to DIN EN 24014, the shaft length must be ≦ t_{fix}.

Concrete screw FBS

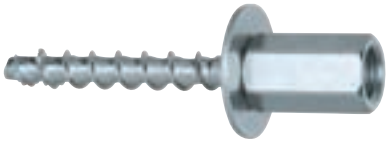
The simple and time-saving threaded concrete screw for the cracked or tension zone.

OVERVIEW

FBS-P, panhead
- zinc-plated steel

FBS-SK, countersunk head,
- zinc-plated steel

FBS-M8, outside diameter M8
- zinc-plated steel



FBS-M8/M10, internal thread M8/M10
- zinc-plated steel

FBS-US, hexagon head with integrated washer
- zinc-plated steel

FBS-S, hexagon head
- zinc-plated steel

Approved for:
- Cracked and non-cracked concrete C20/25 to C50/60
- Lightweight ceilings and suspended ceilings according to DIN 18168 and statically comparable fixings

Also suitable for:
- Concrete C12/15
- Natural stone with dense structure
- Solid brick,
- Solid sand-lime brick

For fixing of:
- Handrails
- Consoles
- Ladders
- Cable trays
- Machines
- Gates
- Facades
- Window elements
- Battens
- Metal profiles
- Wire hangers
- Chains
- Cables
- Punched tapes
- Ventilation pipes
- Substructures made of wood and metal
- Ceilings

only type FBS 10/... S A4

DESCRIPTION

- Self-tapping concrete screw for push-through and prior insertion installation
- When the concrete screw is screwed into the hole, the thread taps into the concrete and creates a positive fit anchorage.
- Stainless steel version of the corrosion resistance class III, e.g. A4, for outdoor use or in damp conditions.

Advantages/benefits

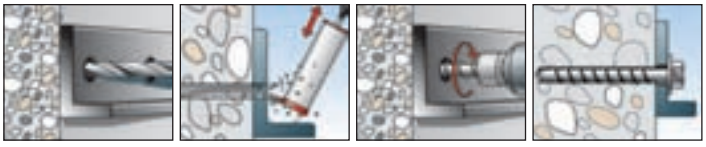
- Setting and installation in one working operation saves time.
- Completely removable anchor, therefore particularly suitable for temporary fixings (e.g. shuttering supports).
- Virtually expansion-free operation allows cost-efficient fixing with small axial spaces and edge distances.
- Serrations on the thread makes the screws easy to screw in.
- Re-usability of the screws reduces costs.
- Fixing with different head designs for different areas of application.

fischer FIXING SYSTEMS

INSTALLATION

Type of installation

- Pre-positioned installation
- Push-through installation



Installation tips

- We recommend use of an impulse wrench with tangential impact (see the table for power output).

Installation of concrete screws

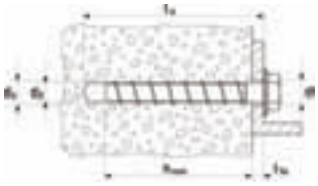
Concrete screw	recommended nominal torque of the tangential impact wrench*)	maximum tightening torque with torque wrench resp. ratch ≦
	[Nm]	[Nm]
FBS 5	100	10
FBS 6	150	15
FBS 8	200	40
FBS 10	300	40

*) Use nuts (black) which fit percussion power screwdrivers!
The conversion of nominal output into effective tightening torque varies from machine to machine – always therefore use torque control.

TECHNICAL DATA

Concrete screw **FBS-P** panhead, zinc-plated steel

Concrete screw **FBS-SK**, countersunk head, zinc-plated steel



Type	Art.-No.	approval	drill	drill-hole diameter in object	screw diameter	drill hole depth	anchorage depth	max. usable length	actuation	Qty. per box
		● DIBt	d_0	d_f	d_s	h_0	h_{ef}	t_{fix}		
			[mm]	[Ø mm]	[mm]	[mm]	[mm]	[mm]		pcs.
FBS 5/5 P	**066774**	●	5	7	6,5	65	55	5	T30	100
FBS 6/5 SK	**066935**	●	6	8	7,6	65	55	5	T30	100
FBS 6/5 P	**066939**	●	6	8	7,6	65	55	5	T30	100
FBS 6/25 P	**066948**	●	6	8	7,6	85	55	25	T30	100

Concrete screw **FBS-M8**, outside diameter M8

Concrete screw **FBS-M8/M10**, internal thread M8/M10

Type	Art.-No.	approval	drill	drill-hole diameter in object	screw diameter	min. drill-hole depth for through fixings	anchorage depth	thread	width across nut	Qty. per box
		● DIBt	d_0	d_f	d_s	t_d	h_{ef}	M	SW	
			[mm]	[Ø mm]	[mm]	[mm]	[mm]			pcs.
FBS 6 M8	**066949**	●	6	8	7,6	60	55	M 8	SW10	100
FBS 6 M8/M10I 1)	**066950**	●	6	8	7,6	60	55	M 8	SW13	100

1) internal thread M8/M10

Concrete screw **FBS-US**, hexagon head with integrated washer

Concrete screw **FBS-S**, hexagon head

Type	Art.-No.	approval	drill-Ø	drill-hole diameter in object	screw diameter	drill hole depth	min. srew-in depth	max. usable length	actuation	Qty. per box
		● DIBt	d_0	d_f	d_s	h_0	h_{nom}	t_{fix}		
		■ ETA	[mm]	[Ø mm]	[mm]	[mm]	[mm]	[mm]		pcs.
FBS 8/5 US	**066956**	●	8	12	10,5	90	75	5	T40/SW13	100
FBS 8/25 US	**066957**	●	8	12	10,5	110	75	25	T40/SW13	100
FBS 8/15 S	**066958**	●	8	12	10,5	100	75	15	SW 16	100
FBS 10/5 S	**067062**	●	10	14	12,5	100	85	5	SW 18	50
FBS 10/15 S	**067063**	●	10	14	12,5	110	85	15	SW 18	50
FBS 10/25 S	**067168**	●	10	14	12,5	120	85	25	SW 18	50
FBS 10/15 S A4	**047465**	■	10	14	12,5	105	85	10	SW 17	50
FBS 10/20 S A4 1)	**098336**	●	10	14	12,5	115	85	20	SW 17	50

1) available as long as stock lasts

Concrete screw FBS

LOADS

Design resistant and recommended loads for single anchors of fischer Concrete screw FBS with large spacing and edge distance

				Non-cracked concrete					
Anchor type				**FBS 5[1]** gvz	**FBS 6[1]** gvz	**FBS 8** gvz	**FBS 10** gvz	**FBS 10** A4	**FBS 10** A4
Design according to approval			[-]	Z-21.1-1718	Z-21.1-1718	Z-21.1-1717	Z-21.1-1717	Z-21.1-1716	ETA-06/0125
Effective anchorage depth		h_{ef}	[mm]	50	60	50	60	60	64
Drill hole depth		$\geq h_1$	[mm]	85	95	85	95	95	95
Nominal drill diameter		d_0	[mm]	8	10	8	10	10	10
Design resistant load N_{Rd} and V_{Rd}									
Tensile	0°	N_{Rd}	[kN]	0.4[2]	1.1[2]	7.4	9.3	9.3	14.3
Shear	90°	V_{Rd}	[kN]	0.4[2]	1.1[2]	10.3	16.9	19.1	14.0
Permissible load N_{perm} and V_{perm}									
Tensile	0°	N_{perm}	[kN]	0.3[2]	0.8[2]	5.3	6.6	6.6	10.2
Shear	90°	V_{perm}	[kN]	0.3[2]	0.8[2]	7.4	12.0	13.6	10.0
Permissible bending moment M_{perm}									
		M_{perm}	[Nm]	-	-	19.0	40.0	36.8	26.7
Anchor characteristics									
Characteristic spacing		$s_{cr,N}$	[mm]	-	-		= 3 x h_{ef}		= 3 x h_{ef}
Characteristic edge distance		$c_{cr,N}$	[mm]	-	-		= 1.5 x h_{ef}		= 1.5 x h_{ef}
Minimum spacing[3]		s_{min}	[mm]	50	50	50	60	60	70
Minimum edge distance[3]		c_{min}	[mm]	100	100	60	65	65	70
Minimum structural component thickness		h_{min}	[mm]	110	110	120	130	130	130
Screw penetration depth		$\geq h_{nom}$	[mm]	55	55	75	85	85	85
Clearance-hole in fixture to be attached		$\leq d_f$	[mm]	7	8	12	14	14	14

				Cracked concrete					
Anchor type				**FBS 5[1]** gvz	**FBS 6[1]** gvz	**FBS 8** gvz	**FBS 10** gvz	**FBS 10** A4	**FBS 10** A4
Design according to approval			[-]	Z-21.1-1718	Z-21.1-1718	Z-21.1-1717	Z-21.1-1717	Z-21.1-1716	ETA-06/0125
Effective anchorage depth		h_{ef}	[mm]	50	60	50	60	60	64
Drill hole depth		$\geq h_1$	[mm]	85	95	85	95	95	95
Nominal drill diameter		d_0	[mm]	8	10	8	10	10	10
Design resistant load N_{Rd} and V_{Rd}									
Tensile	0°	N_{Rd}	[kN]	0.4[2]	1.1[2]	3.5	5.6	5.6	8.9
Shear	90°	V_{Rd}	[kN]	0.4[2]	1.1[2]	10.3	16.9	18.6	14.0
Permissible load N_{perm} and V_{perm}									
Tensile	0°	N_{perm}	[kN]	0.3[2]	0.8[2]	2.5	4.0	4.0	6.3
Shear	90°	V_{perm}	[kN]	0.3[2]	0.8[2]	7.4	12.0	13.3	10.0
Permissible bending moment M_{perm}									
		M_{perm}	[Nm]	-	-	19.0	40.0	36.8	26.7
Anchor characteristics									
Characteristic spacing		$s_{cr,N}$	[mm]	-	-		= 3 x h_{ef}		= 3 x h_{ef}
Characteristic edge distance		$c_{cr,N}$	[mm]	-	-		= 1.5 x h_{ef}		= 1.5 x h_{ef}
Minimum spacing[3]		s_{min}	[mm]	50	50	50	60	60	70
Minimum edge distance[3]		c_{min}	[mm]	100	100	60	65	65	70
Minimum structural component thickness		h_{min}	[mm]	110	110	120	130	130	130
Screw penetration depth		$\geq h_{nom}$	[mm]	55	55	75	85	85	85
Clearance-hole in fixture to be attached		$\leq d_f$	[mm]	7	8	12	14	14	14

All values apply for single anchors in cracked and non-cracked concrete C20/25 without edge or spacing influences.
Design resistant loads: material safety factor γ_M is included. Material safety factor γ_M depends on the type of anchor.
Recommended loads: material safety factor γ_M and safety factor for load γ_L = 1.4 are included.
1) FBS 5 and FBS 6 must only be used for multiple fixings of non-structural components
2) For FBS 5 and FBS 6 the above load values apply to tension, shear and combined tension and shear in concrete C20/25 to C50/60.
3) For minimum axial spacing and minimum edge distance the above described loads have to be reduced (See "fischer Technical Handbook" or design software "CC-Compufix")!

Chemical fixings

The complete fischer range of chemical fixings for every need, is listed in the page aside.
All informations and characteristics are described in the fischer fixing catalogue (see on page 6).

Main application with Installation Systems are done with:

- FIS VS 300 T (for silicon gun)
- FIS VT 380 C
- FIS P 300 T (for silicon gun)
- FIS P 380 C

fischer FIXING SYSTEMS

fischer Injection systems – Overview and application

Injection system	Kind of mortar	Profi Shuttle cartridge	Semi professional cartridge	Standard cartridge	Masonry	Concrete	Reinforcement	VBS FWS Renovation system	Content	Scale unit on cartridge
FIS V 360 S **FIS V 950 S**	Vinyl ester Hybrid	✔			●	●	●	●	360 ml 950 ml	180 500
FIS VS 300 T	Vinyl ester Hybrid			✔	●	●	●	○	300 ml	150
FIS VW 360 S	Vinyl ester Hybrid	✔			●	●	○	○	360 ml	180
FIS VT 380 C	Vinyl ester		✔		○	●	○	○	380 ml	190
FIS VS 150 C	Vinyl ester Hybrid			✔	●	●	○	○	145 ml	70
FIS VS 100 P	Vinyl ester Hybrid			✔	●	●	○	○	100 ml	50
FIS EM 390 S	Epoxy resin	✔				○	○		390 ml 1100 ml	180
FIS P 300 T	Polyester			✔	○				300 ml	150
FIS P 380 C	Polyester		✔		○				380 ml	190

● = approved for ○ = suitable for

INFORMATION

■ **FIS = fischer Injection System**

FIS V
= Vinyl ester hybrid

FIS VW
= Vinyl ester hybrid winter version (reduced curing time)

FIS VS
= Vinyl ester hybrid summer version (extended curing time)

FIS EM
= Epoxy resin

FIS VT
= Vinyl ester semi hybrid

FIS P
= Polyester for secondary application in masonry

■ **Profi-shuttle-cartridge**

For building professionals, requires little energy. Special press gun required (manual, battery-driven or pneumatic).

■ **Standard-cartridge**

For processing with stable standard press guns for sealants. No special accessories required.

■ **What is hybrid mortar?**
This is a combination of normal organic components and a mineral additive.
Hybrid systems combine the advantages of organic and mineral mortar. This improves properties such as temperature and chemical resistance and load level.

■ **Semi professional coaxial cartridge**
For application with FIS AC special despenser.

Toggle fixings K, KD, KDH, KDR, KM

The powerful and universal fixing for cavity-space fixing.

OVERVIEW

Toggle fixings
K, KD, KDH, KM

KDR

Suitable for:
- Prestressed hollow-core concrete slabs
- Gypsum plasterboard and gypsum fibreboards
- Chip boards and slabs made of perforated bricks
- Hollow concrete blocks etc.

For fixing of:
- Pictures
- Lamps
- Electric switches
- Key boxes
- Small wall-mounted shelves
- Towel rails
- Lightweight mirror cabinets
- Curtain rails
- Cable and pipe clips
- Cable trays

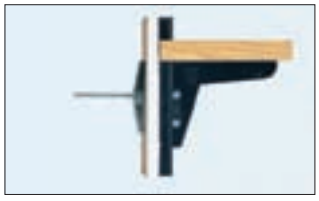
DESCRIPTION

Nylon toggle K 54
- Cavity fixing with a tilting crosspiece for woodscrews, 4 mm diameter

Spring toggle KD/ KDH 3/4
- Expands by spring force into any cavity.

Gravity toggle KD/ KDH 5/6/8
- Has a tilting crosspiece which automatically locks itself in cavities.

KM 10
- Specially designed for fixing washstands and urinals to plumbing units and cavity walls.

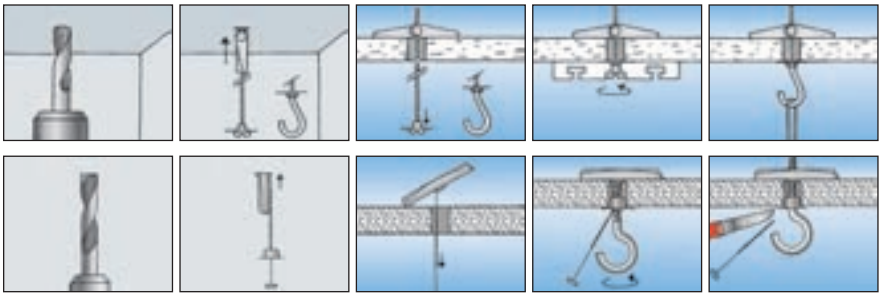


Advantages/benefits
- Surface-flush Nylon toggle K54 allows the attached item to be removed and refitted several times.
- KD and KDH toggles are specially designed for small cavity depths.
- All KD and KDH are fully zinc-plated and yellow chromated for good corrosion protection.
- Long threaded rods allow large wall thicknesses to be bridged.

INSTALLATION

Type of installation
- Pre-positioned installation

Installation tips
- Observe the cavity depth and board thickness (see the table).
- KD 5 to 8, KDH 5 to 8 and KM 10 toggles cannot be installed pointing downwards (e.g. floor).



fischer FIXING SYSTEMS

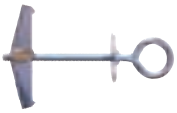
TECHNICAL DATA

Nylon toggle **K 54**

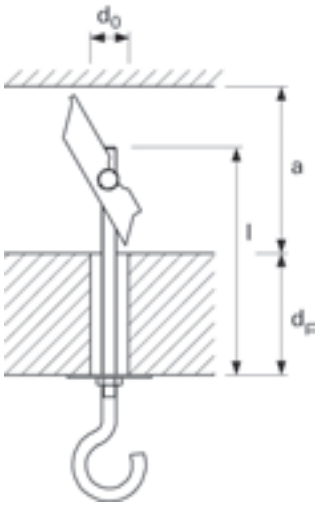
Type	Art.-No.	ID	drill d_0 [mm]	max. panel thickness d_p [mm]	min. cavity depth a [mm]	anchor length l [mm]	thread M	qty. per box pcs.
K 54	**50323**	2	10	65	58	125	woodscrew 4mm	25

Spring toggle
KD 3 + 4

Spring toggle
KDH 3 + 4



Spring toggle
KDR 4



Type	Art.-No.	ID	drill d_0 [mm]	max. panel thickness d_p [mm]	min. cavity depth a [mm]	anchor length l [mm]	thread M	Qty. per box pcs.
KD 3	**80181**	9	12	65	27	95	M 3 x 90	50
KDH 3	**80182**	6	12	51	27	105	M 3 x 80	25
KD 3 B	**80192**	5	12	65	27	95	M 3 x 90	10
KD 4	**80183**	3	14	69	34	105	M 4 x 100	25
KDH 4	**80184**	0	14	35	34	95	M 4 x 70	25
KD 4 B	**80193**	2	14	69	34	105	M 4 x 100	10
KDR 4	**26437**	9	14	35	34	95	M 4 x 70	25

Gravity toggle
KD 5 + 6 + 8

Gravity toggle
KDH 5 + 6 + 8

Gravity toggle
KDR 5 / KDR 6

Type	Art.-No.	ID	drill d_0 [mm]	max. panel thickness d_p [mm]	min. cavity depth a [mm]	anchor length l [mm]	thread M	Qty. per box pcs.
KD 5	**80187**	1	16	63	70	100	M 5 x 100	25
KDH 5	**80188**	8	16	60	70	130	M 5 x 90	20
KDR 5	**26438**	6	16	35	70	130	M 5 x 70	20
KD 6	**80185**	7	16	63	70	100	M 6 x 100	25
KDH 6	**80186**	4	16	60	70	130	M 6 x 100	20
KDR 6	**26439**	3	16	35	70	130	M 6 x 100	20
KD 8	**80178**	9	20	55	75	100	M 8 x 100	20
KDH 8	**80179**	6	20	55	75	130	M 8 x 100	20

Gravity toggle **KM 10**

Type	Art.-No.	ID	drill-Ø d_0 [mm]	max. panel thickness d_p [mm]	min. cavity depth a [mm]	anchor length l [mm]	screw d_s x l_s [mm]	Qty. per box pcs.
KM 10	**50326**	3	30	90	140	240	M 10 x 180	25

LOADS

Recommended loads F_{rec} [kN] (F_{rec} includes safety factor 4)

K 54 *	failure of the nylon thread	0,11
KD 3		0,14
KD 4		0,29
KD 5		0,43
KD 6		0,50
KD 8		1,93
KM 10		1,86

* safety factor 7

Recommended loads F_{rec} [kN] (F_{rec} includes safety factor 4)

KDH 3 **	the hook bends open	0,05
KDH 4 **		0,20
KDH 5 **		0,30
KDH 6 **		0,50
KDH 8 **		0,75

** safety against bend open.

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