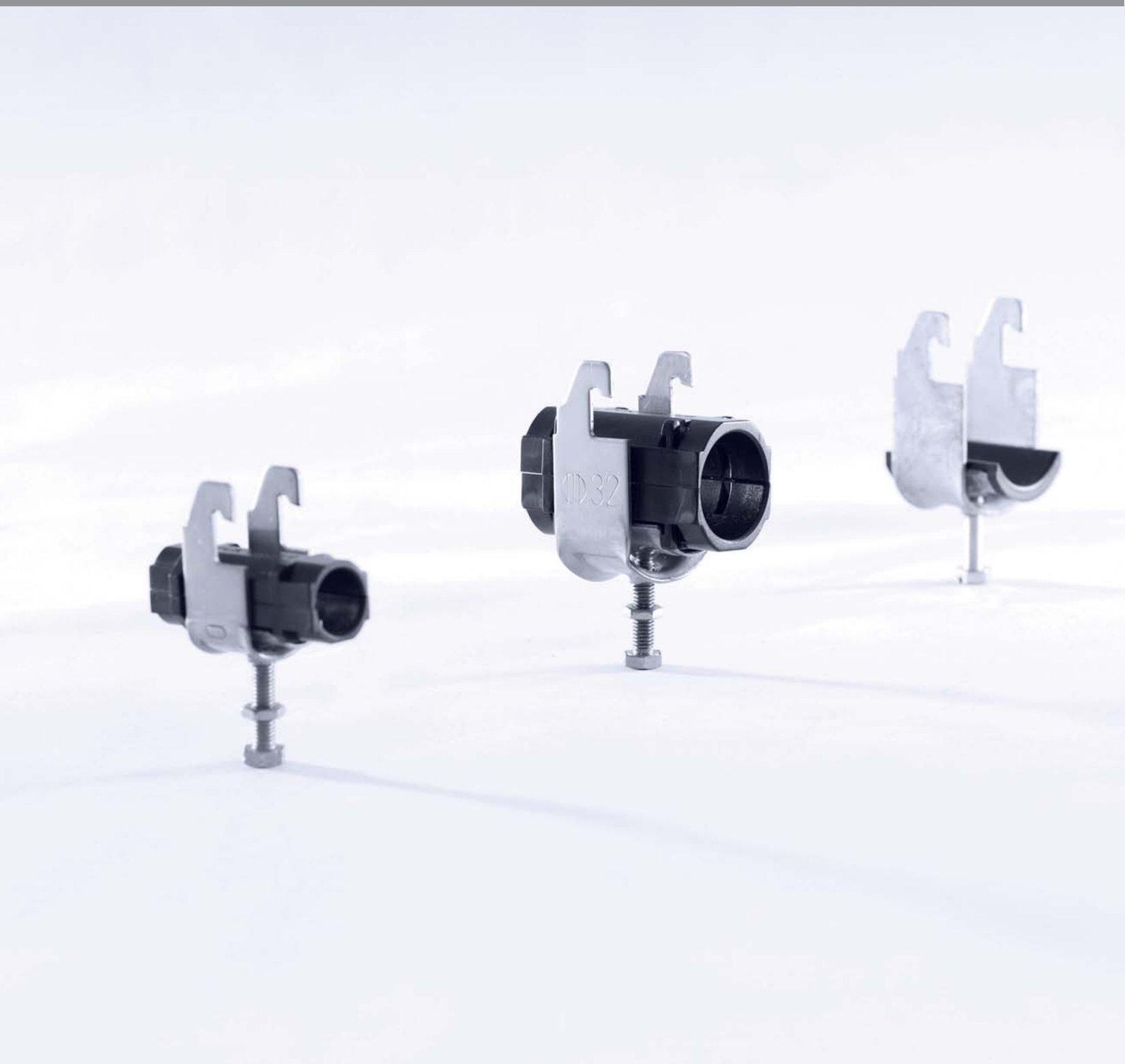
FILO form

connect ▸ seal ▸ protect ▸

CABLE CLAMPS



CABLE CLAMPS

CABLE CLAMPS

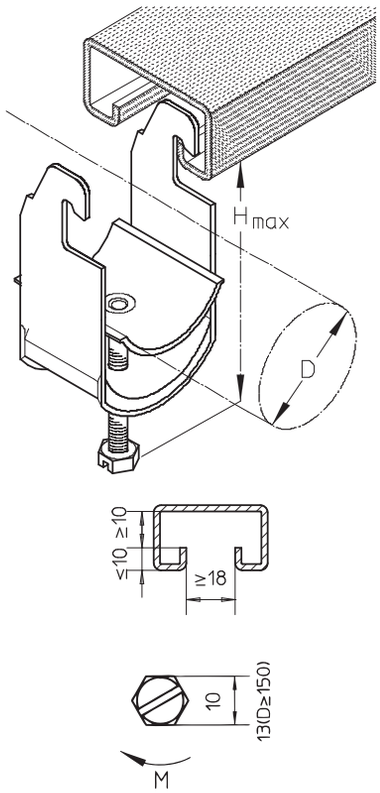
NUMERICAL INDEX

CABLE CLAMPS

AC cable clamp, Cable clamp, fastening to C-profiles

Articles with a diameter of 12-56mm are also available in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).
For an application example, see the chapter assembly.

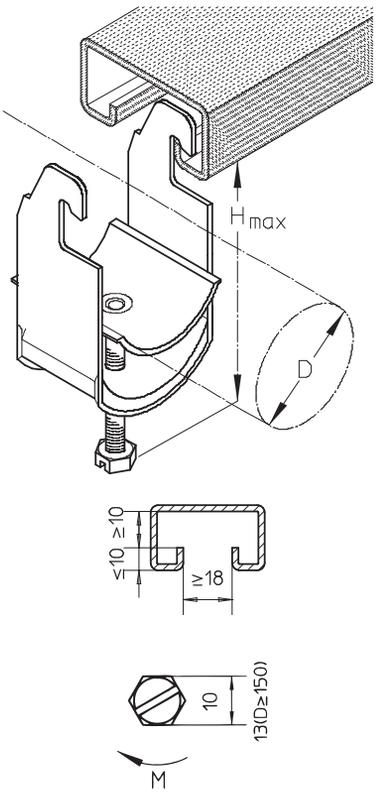
	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 AC	8-12	41	2,0	1	2,7
16 AC	12-16	46	2,0	1	3,1
20 AC	16-20	50	2,0	1	3,5
24 AC	20-24	54	2,0	1	3,7
28 AC	24-28	58	2,0	1	4,2
32 AC	28-32	63	2,0	1	6,4
36 AC	32-36	67	2,0	1	6,7
40 AC	36-40	71	2,0	1	7,5
44 AC	40-44	81	4,0	1	9,6
48 AC	44-48	85	4,0	1	9,8
52 AC	48-52	90	4,0	1	10,7
56 AC	52-56	94	4,0	1	11,5
60 AC	56-60	98	4,0	1	15,1
64 AC	60-64	102	4,0	1	15,9
70 AC	64-70	109	4,0	1	16,9
76 AC	70-76	113	4,0	1	23,3
82 AC	76-82	119	4,0	1	25,8
88 AC	82-88	125	4,0	1	27,3
94 AC	88-94	131	4,0	1	29,6
100 AC	94-100	137	4,0	1	32,0
110 AC	100-110	157	4,0	1	35,0
120 AC	110-120	167	4,0	1	37,4
150 AC	145-150	203	6,0	1	104,6
175 AC	170-175	228	6,0	1	130,3
12/2 AC	8-12	58	2,0	2	3,5
16/2 AC	12-16	67	2,0	2	4,0
20/2 AC	16-20	75	2,0	2	4,6
24/2 AC	20-24	84	2,0	2	5,0
28/2 AC	24-28	92	2,0	2	5,7
32/2 AC	28-32	101	2,0	2	8,9
36/2 AC	32-36	109	2,0	2	9,9
40/2 AC	36-40	117	2,0	2	11,4
44/2 AC	40-44	127	4,0	2	13,1
48/2 AC	44-48	135	4,0	2	14,2
52/2 AC	48-52	144	4,0	2	15,7
56/2 AC	52-56	152	4,0	2	15,9
12/3 AC	8-12	71	2,0	3	4,3
16/3 AC	12-16	85	2,0	3	5,1
20/3 AC	16-20	97	2,0	3	5,9
24/3 AC	20-24	110	2,0	3	6,7
28/3 AC	24-28	122	2,0	3	7,4



optional:
A 41 C-rail, not perforated, 41x41 mm (catalog Cable trays)
A 2 C-rail, not perforated, 50x31 mm (catalog Cable trays)
A 4 C-rail, not perforated, 48x26 mm (catalog Cable trays)
A 9 C-rail, not perforated, 40x25 mm (catalog Cable trays)
A 8 C-rail, not perforated, 40x22 mm (catalog Cable trays)
A 7 C-rail, not perforated, 40x22 mm (catalog Cable trays)

AC cable clamp, Cable clamp, fastening to C-profiles

Articles with a diameter of 12-56mm are also available in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).
For an application example, see the chapter assembly.



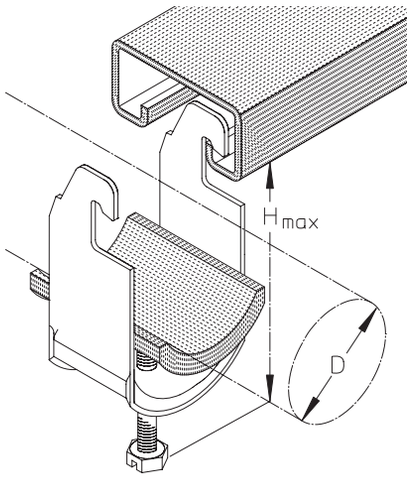
	D mm	Hmax mm	m Nm	number of cables	G kg/100
E					
12 AC-E	8-12	41	2,0	1	2,6
16 AC-E	12-16	46	2,0	1	2,9
20 AC-E	16-20	50	2,0	1	3,2
24 AC-E	20-24	54	2,0	1	3,6
28 AC-E	24-28	58	2,0	1	4,1
32 AC-E	28-32	63	2,0	1	4,8
36 AC-E	32-36	67	2,0	1	5,8
40 AC-E	36-40	71	2,0	1	6,6
44 AC-E	40-44	81	4,0	1	8,6
48 AC-E	44-48	85	4,0	1	9,1
52 AC-E	48-52	90	4,0	1	9,8
56 AC-E	52-56	94	4,0	1	10,8
12/2 AC-E	8-12	58	2,0	2	3,4
16/2 AC-E	12-16	67	2,0	2	3,8
20/2 AC-E	16-20	75	2,0	2	4,3
24/2 AC-E	20-24	84	2,0	2	5,0
28/2 AC-E	24-28	92	2,0	2	5,4
32/2 AC-E	28-32	101	2,0	2	7,3
36/2 AC-E	32-36	109	2,0	2	8,1
40/2 AC-E	36-40	117	2,0	2	9,7
44/2 AC-E	40-44	127	4,0	2	11,7
48/2 AC-E	44-48	135	4,0	2	12,9
52/2 AC-E	48-52	144	4,0	2	14,0
56/2 AC-E	52-56	152	4,0	2	14,9
AL					
12 AC-AL	8-12	41	1,5	1	1,2
16 AC-AL	12-16	46	1,5	1	1,4
20 AC-AL	16-20	50	1,5	1	1,6
24 AC-AL	20-24	54	1,5	1	1,8
28 AC-AL	24-28	58	1,5	1	2,0
32 AC-AL	28-32	63	1,5	1	3,3
36 AC-AL	32-36	67	1,5	1	3,6
40 AC-AL	36-40	71	1,5	1	4,0
44 AC-AL	40-44	81	3,0	1	4,3
48 AC-AL	44-48	85	3,0	1	4,6
52 AC-AL	48-52	90	3,0	1	5,3
56 AC-AL	52-56	94	3,0	1	5,6

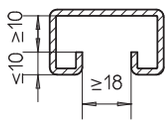
optional:
A 41 C-rail, not perforated, 41x41 mm (catalog Cable trays)
A 2 C-rail, not perforated, 50x31 mm (catalog Cable trays)
A 4 C-rail, not perforated, 48x26 mm (catalog Cable trays)
A 9 C-rail, not perforated, 40x25 mm (catalog Cable trays)
A 8 C-rail, not perforated, 40x22 mm (catalog Cable trays)
A 7 C-rail, not perforated, 40x22 mm (catalog Cable trays)

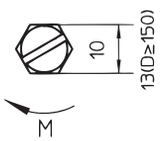
AC-IW cable clamp, Cable clamp with additional insulating vat

	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 AC-IW	8-12	42,5	2	1	2,8
16 AC-IW	12-16	47,5	2	1	3,2
20 AC-IW	16-20	51,5	2	1	3,6
24 AC-IW	20-24	55,7	2	1	4,2
28 AC-IW	24-28	59,7	2	1	4,5
32 AC-IW	28-32	65,0	2	1	7,1
36 AC-IW	32-36	69,0	2	1	7,5
40 AC-IW	36-40	73,0	2	1	8,2
44 AC-IW	40-44	83,0	4	1	10,2
48 AC-IW	44-48	87,0	4	1	10,6
52 AC-IW	48-52	92,5	4	1	11,6
56 AC-IW	52-56	96,5	4	1	12,2
60 AC-IW	56-60	100,5	4	1	15,9
64 AC-IW	60-64	104,5	4	1	17,5
70 AC-IW	64-70	111,5	4	1	18,6

optional:
A 41 C-rail, not perforated, 41x41 mm (catalog Cable trays)
A 2 C-rail, not perforated, 50x31 mm (catalog Cable trays)
A 4 C-rail, not perforated, 48x26 mm (catalog Cable trays)
A 9 C-rail, not perforated, 40x25 mm (catalog Cable trays)
A 8 C-rail, not perforated, 40x22 mm (catalog Cable trays)
A 7 C-rail, not perforated, 40x22 mm (catalog Cable trays)



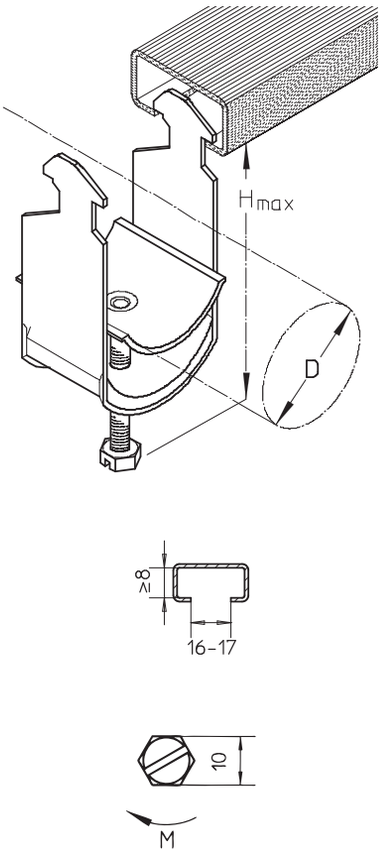




H cable clamp, Cable clamp, fastening to C-profiles

Articles with a diameter of 12-56mm are also available in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 H	8-12	41	2,0	1	2,7
16 H	12-16	46	2,0	1	3,2
20 H	16-20	50	2,0	1	3,6
24 H	20-24	54	2,0	1	3,9
28 H	24-28	58	2,0	1	4,4
32 H	28-32	63	2,0	1	6,3
36 H	32-36	67	2,0	1	7,0
40 H	36-40	71	2,0	1	7,5
44 H	40-44	81	4,0	1	9,8
48 H	44-48	85	4,0	1	10,2
52 H	48-52	90	4,0	1	10,6
56 H	52-56	94	4,0	1	11,3
60 H	56-60	98	4,0	1	15,8
64 H	60-64	102	4,0	1	16,5
70 H	64-70	109	4,0	1	17,1
12/2 H	8-12	58	2,0	2	3,5
16/2 H	12-16	67	2,0	2	4,0
20/2 H	16-20	75	2,0	2	4,8
24/2 H	20-24	84	2,0	2	5,3
28/2 H	24-28	92	2,0	2	6,0
32/2 H	28-32	101	2,0	2	8,9
36/2 H	32-36	109	2,0	2	9,6
40/2 H	36-40	117	2,0	2	10,8
44/2 H	40-44	127	4,0	2	13,3
48/2 H	44-48	135	4,0	2	13,9
52/2 H	48-52	144	4,0	2	15,2
56/2 H	52-56	152	4,0	2	16,2
E					
12 H-E	8-12	41	2,0	1	2,7
16 H-E	12-16	46	2,0	1	3,2
20 H-E	16-20	50	2,0	1	3,6
24 H-E	20-24	54	2,0	1	3,9
28 H-E	24-28	58	2,0	1	4,4
32 H-E	28-32	63	2,0	1	5,4
36 H-E	32-36	67	2,0	1	6,1
40 H-E	36-40	71	2,0	1	6,5
44 H-E	40-44	81	4,0	1	8,7
48 H-E	44-48	85	4,0	1	9,0
52 H-E	48-52	90	4,0	1	9,3
56 H-E	52-56	94	4,0	1	9,9
12/2 H-E	8-12	58	2,0	2	3,5
16/2 H-E	12-16	67	2,0	2	4,0
20/2 H-E	16-20	75	2,0	2	4,8
24/2 H-E	20-24	84	2,0	2	5,3
28/2 H-E	24-28	92	2,0	2	6,0
32/2 H-E	28-32	101	2,0	2	7,7



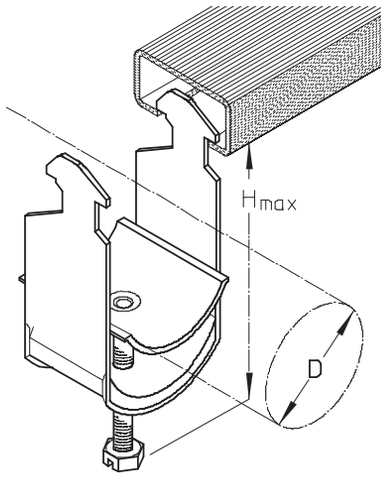
optional:
B 7 profile rail, not perforated, 30x15 mm (catalog Cable trays)

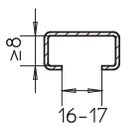
H cable clamp, Cable clamp, fastening to C-profiles

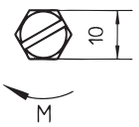
Articles with a diameter of 12-56mm are also available in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

	D mm	Hmax mm	m Nm	number of cables	G kg/100
AL					
12 H-AL	8-12	41	1,5	1	2,1
16 H-AL	12-16	46	1,5	1	2,5
20 H-AL	16-20	50	1,5	1	2,9
24 H-AL	20-24	54	1,5	1	3,3
28 H-AL	24-28	58	1,5	1	3,6
32 H-AL	28-32	63	1,5	1	5,0
36 H-AL	32-36	67	1,5	1	5,5
40 H-AL	36-40	71	1,5	1	5,9
44 H-AL	40-44	81	3,0	1	7,6
48 H-AL	44-48	85	3,0	1	8,3
52 H-AL	48-52	90	3,0	1	10,2
56 H-AL	52-56	94	3,0	1	10,6

optional:
B 7 profile rail, not perforated, 30x15 mm (catalog Cable trays)



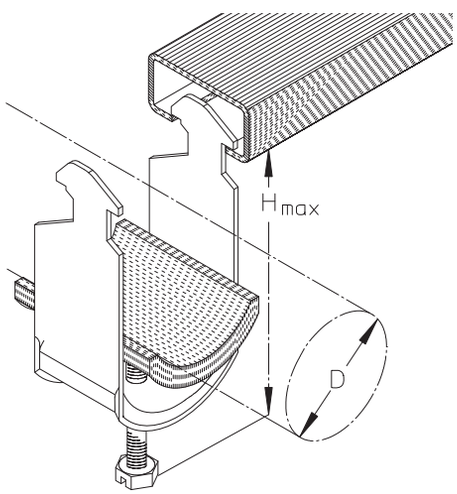


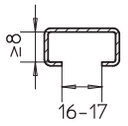


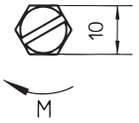
H-IW cable clamp, Cable clamp with additional insulating vat

	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 H-IW	8-12	42,5	2	1	2,7
16 H-IW	12-16	47,5	2	1	3,1
20 H-IW	16-20	51,5	2	1	3,5
24 H-IW	20-24	55,7	2	1	3,9
28 H-IW	24-28	59,7	2	1	4,3
32 H-IW	28-32	65,0	2	1	6,6
36 H-IW	32-36	69,0	2	1	7,1
40 H-IW	36-40	73,0	2	1	7,8
44 H-IW	40-44	83,0	4	1	9,5
48 H-IW	44-48	87,0	4	1	10,1
52 H-IW	48-52	92,5	4	1	11,6
56 H-IW	52-56	96,5	4	1	12,2
60 H-IW	56-60	100,5	4	1	15,4
64 H-IW	60-64	104,5	4	1	16,6
70 H-IW	64-70	111,5	4	1	16,9

optional:
B 7 profile rail, not perforated, 30x15 mm (catalog Cable trays)

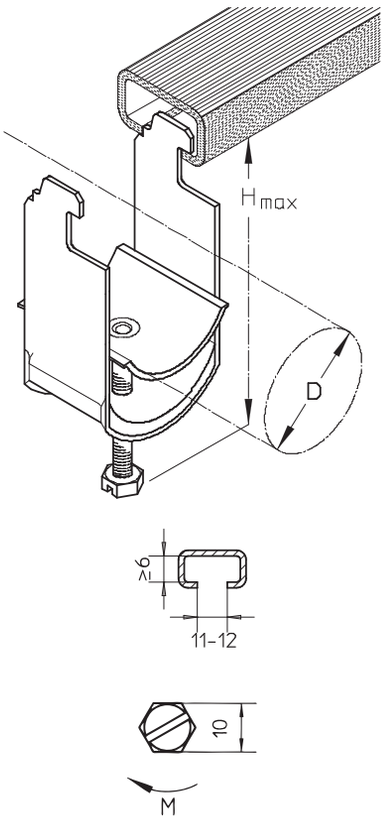






B cable clamp, Cable clamp for fastening to profile rails

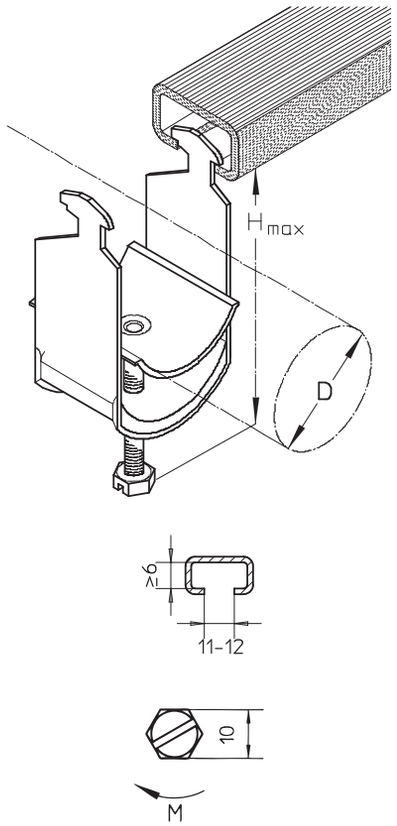
	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 B	8-12	41	2	1	2,5
16 B	12-16	46	2	1	2,8
20 B	16-20	50	2	1	3,2
24 B	20-24	54	2	1	3,5
28 B	24-28	58	2	1	3,9
32 B	28-32	63	2	1	6,1
36 B	32-36	67	2	1	6,6
40 B	36-40	71	2	1	7,9
44 B	40-44	81	4	1	9,2
48 B	44-48	85	4	1	9,7
52 B	48-52	90	4	1	10,7
56 B	52-56	94	4	1	11,4
60 B	56-60	98	4	1	14,1
64 B	60-64	102	4	1	15,0
70 B	64-70	109	4	1	16,8
12/2 B	8-12	58	2	2	3,3
16/2 B	12-16	67	2	2	4,0
20/2 B	16-20	75	2	2	4,7
24/2 B	20-24	84	2	2	5,2
28/2 B	24-28	92	2	2	5,7
32/2 B	28-32	101	2	2	8,6
36/2 B	32-36	109	2	2	9,3
40/2 B	36-40	117	2	2	9,9
44/2 B	40-44	127	4	2	13,2
48/2 B	44-48	135	4	2	13,9
52/2 B	48-52	144	4	2	14,8
56/2 B	52-56	152	4	2	15,6



optional:
B 3 profile rail, not perforated, 28x12 mm (catalog Cable trays)
B 6 profile rail, not perforated, 28x15 mm (catalog Cable trays)

HB cable clamp, Cable clamp for fastening to profile rails

	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 HB	8-12	41	2,0	1	2,5
16 HB	12-16	46	2,0	1	2,8
20 HB	16-20	50	2,0	1	3,2
24 HB	20-24	54	2,0	1	3,8
28 HB	24-28	58	2,0	1	4,1
32 HB	28-32	63	2,0	1	5,8
36 HB	32-36	67	2,0	1	6,7
40 HB	36-40	71	2,0	1	7,4
44 HB	40-44	81	4,0	1	9,3
48 HB	44-48	85	4,0	1	9,8
52 HB	48-52	90	4,0	1	10,4
56 HB	52-56	94	4,0	1	11,1
60 HB	56-60	98	4,0	1	14,7
64 HB	60-64	102	4,0	1	15,4
70 HB	64-70	109	4,0	1	17,1
12/2 HB	8-12	58	2,0	2	3,2
16/2 HB	12-16	67	2,0	2	3,9
20/2 HB	16-20	75	2,0	2	4,4
24/2 HB	20-24	84	2,0	2	5,1
28/2 HB	24-28	92	2,0	2	5,7
32/2 HB	28-32	101	2,0	2	8,7
36/2 HB	32-36	109	2,0	2	9,8
40/2 HB	36-40	117	2,0	2	10,5
44/2 HB	40-44	127	4,0	2	12,9
48/2 HB	44-48	135	4,0	2	13,5
52/2 HB	48-52	144	4,0	2	13,7
56/2 HB	52-56	152	4,0	2	16,1
AL					
12 HB-AL	8-12	41	1,5	1	1,7
16 HB-AL	12-16	46	1,5	1	1,9
20 HB-AL	16-20	50	1,5	1	2,5
24 HB-AL	20-24	54	1,5	1	2,9
28 HB-AL	24-28	58	1,5	1	3,2
32 HB-AL	28-32	63	1,5	1	4,2
36 HB-AL	32-36	67	1,5	1	4,5
40 HB-AL	36-40	71	1,5	1	4,8
44 HB-AL	40-44	81	3,0	1	6,4
48 HB-AL	44-48	85	3,0	1	7,0
52 HB-AL	48-52	90	3,0	1	9,8
56 HB-AL	52-56	94	3,0	1	10,4

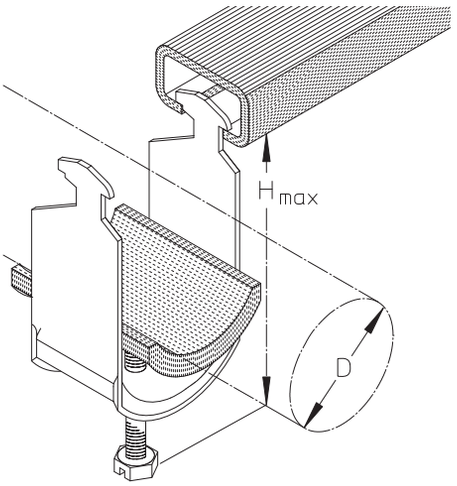


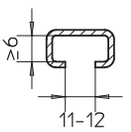
optional:
B 3 profile rail, not perforated, 28x12 mm (catalog Cable trays)
B 6 profile rail, not perforated, 28x15 mm (catalog Cable trays)

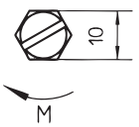
HB-IW cable clamp, Cable clamp with additional insulating vat

	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 HB-IW	8-12	42,5	2	1	2,7
16 HB-IW	12-16	47,5	2	1	3,0
20 HB-IW	16-20	51,5	2	1	3,4
24 HB-IW	20-24	55,7	2	1	4,0
28 HB-IW	24-28	59,7	2	1	4,5
32 HB-IW	28-32	65,0	2	1	6,2
36 HB-IW	32-36	69,0	2	1	7,1
40 HB-IW	36-40	73,0	2	1	7,9
44 HB-IW	40-44	83,0	4	1	9,9
48 HB-IW	44-48	87,0	4	1	10,1
52 HB-IW	48-52	92,5	4	1	11,1
56 HB-IW	52-56	96,5	4	1	11,7
60 HB-IW	56-60	100,5	4	1	15,4
64 HB-IW	60-64	104,5	4	1	16,1
70 HB-IW	64-70	111,5	4	1	17,8

optional:
B 3 profile rail, not perforated, 28x12 mm (catalog Cable trays)
B 6 profile rail, not perforated, 28x15 mm (catalog Cable trays)

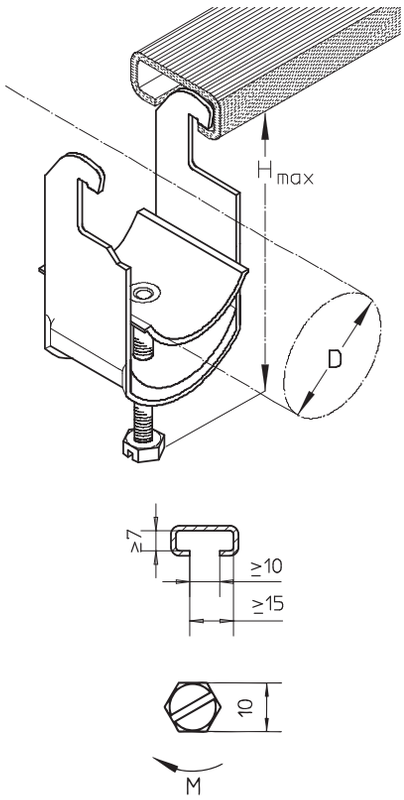






ACF-E cable clamp, Cable clamp, fastening to C-profiles

	D mm	Hmax mm	m Nm	number of cables	G kg/100
E					
12 ACF-E	8-12	41	2	1	2,4
16 ACF-E	12-16	46	2	1	2,8
20 ACF-E	16-20	50	2	1	3,1
24 ACF-E	20-24	54	2	1	3,5
28 ACF-E	24-28	58	2	1	3,9
32 ACF-E	28-32	63	2	1	4,9
36 ACF-E	32-36	67	2	1	5,8
40 ACF-E	36-40	71	2	1	6,5
44 ACF-E	40-44	81	4	1	7,4
48 ACF-E	44-48	85	4	1	8,9
52 ACF-E	48-52	90	4	1	9,9
56 ACF-E	52-56	94	4	1	10,2
12/2 ACF-E	8-12	58	2	2	3,1
16/2 ACF-E	12-16	67	2	2	3,7
20/2 ACF-E	16-20	75	2	2	4,2
24/2 ACF-E	20-24	84	2	2	4,8
28/2 ACF-E	24-28	92	2	2	5,5
32/2 ACF-E	28-32	101	2	2	7,3
36/2 ACF-E	32-36	109	2	2	8,1
40/2 ACF-E	36-40	117	2	2	9,4
44/2 ACF-E	40-44	127	4	2	11,7
48/2 ACF-E	44-48	135	4	2	12,8
52/2 ACF-E	48-52	144	4	2	13,8
56/2 ACF-E	52-56	152	4	2	15,4

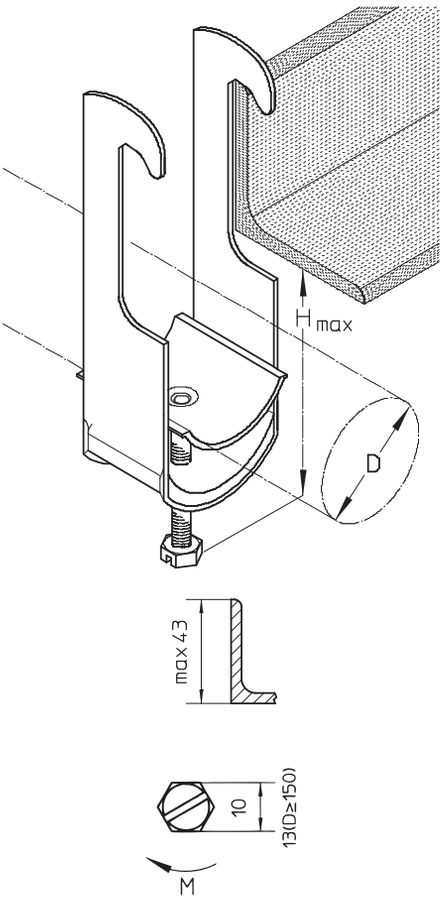


optional:

B 3 profile rail, not perforated, 28x12 mm (catalog Cable trays)
B 6 profile rail, not perforated, 28x15 mm (catalog Cable trays)
A 41 C-rail, not perforated, 41x41 mm (catalog Cable trays)
A 2 C-rail, not perforated, 50x31 mm (catalog Cable trays)
A 4 C-rail, not perforated, 48x26 mm (catalog Cable trays)
A 9 C-rail, not perforated, 40x25 mm (catalog Cable trays)
A 8 C-rail, not perforated, 40x22 mm (catalog Cable trays)
A 7 C-rail, not perforated, 40x22 mm (catalog Cable trays)

S cable clamp, Cable clamp for fastening to angle profiles

Articles with a diameter of 12-56mm are also available in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

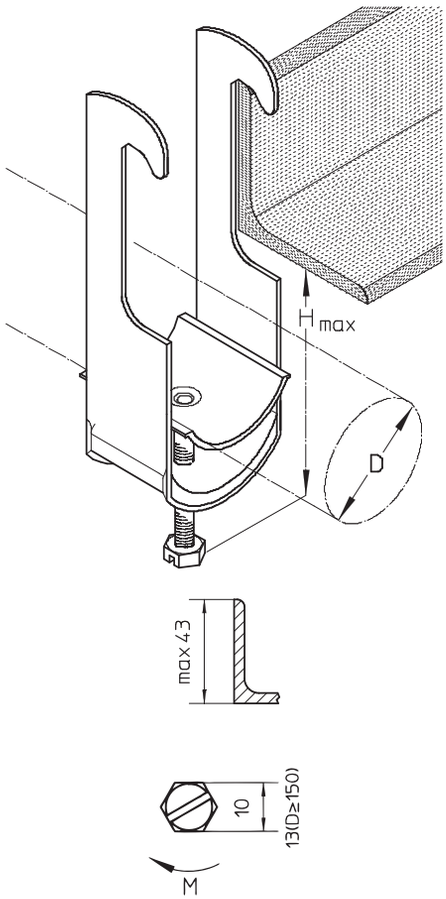


	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 S	8-12	41	2,0	1	3,6
16 S	12-16	46	2,0	1	4,1
20 S	16-20	50	2,0	1	4,6
24 S	20-24	54	2,0	1	4,8
28 S	24-28	58	2,0	1	5,3
32 S	28-32	63	2,0	1	7,9
36 S	32-36	67	2,0	1	8,4
40 S	36-40	71	2,0	1	9,0
44 S	40-44	81	4,0	1	11,2
48 S	44-48	85	4,0	1	11,7
52 S	48-52	90	4,0	1	12,4
56 S	52-56	94	4,0	1	12,9
60 S	56-60	98	4,0	1	17,2
64 S	60-64	102	4,0	1	17,7
70 S	64-70	109	4,0	1	18,6
76 S	70-76	113	4,0	1	25,3
82 S	76-82	119	4,0	1	28,5
88 S	82-88	125	4,0	1	29,4
94 S	88-94	131	4,0	1	33,2
100 S	94-100	137	4,0	1	34,8
110 S	100-110	157	4,0	1	38,2
120 S	110-120	167	4,0	1	40,3
150 S	145-150	203	6,0	1	107,7
175 S	170-175	228	6,0	1	128,0
12/2 S	8-12	58	2,0	2	4,2
16/2 S	12-16	67	2,0	2	4,9
20/2 S	16-20	75	2,0	2	5,7
24/2 S	20-24	84	2,0	2	6,2
28/2 S	24-28	92	2,0	2	6,7
32/2 S	28-32	101	2,0	2	10,3
36/2 S	32-36	109	2,0	2	11,3
40/2 S	36-40	117	2,0	2	12,0
44/2 S	40-44	127	4,0	2	15,2
48/2 S	44-48	135	4,0	2	16,6
52/2 S	48-52	144	4,0	2	16,9
56/2 S	52-56	152	4,0	2	18,2
12/3 S	8-12	71	2,0	3	5,2
16/3 S	12-16	85	2,0	3	5,9
20/3 S	16-20	97	2,0	3	6,6
24/3 S	20-24	110	2,0	3	7,5
28/3 S	24-28	122	2,0	3	8,4
E					
12 S-E	8-12	41	2,0	1	3,5
16 S-E	12-16	46	2,0	1	3,8
20 S-E	16-20	50	2,0	1	4,2
24 S-E	20-24	54	2,0	1	4,6
28 S-E	24-28	58	2,0	1	5,0
32 S-E	28-32	63	2,0	1	6,6
36 S-E	32-36	67	2,0	1	7,5
40 S-E	36-40	71	2,0	1	8,4
44 S-E	40-44	81	4,0	1	9,6
48 S-E	44-48	85	4,0	1	10,5
52 S-E	48-52	90	4,0	1	11,5
56 S-E	52-56	94	4,0	1	12,2

S cable clamp, Cable clamp for fastening to angle profiles

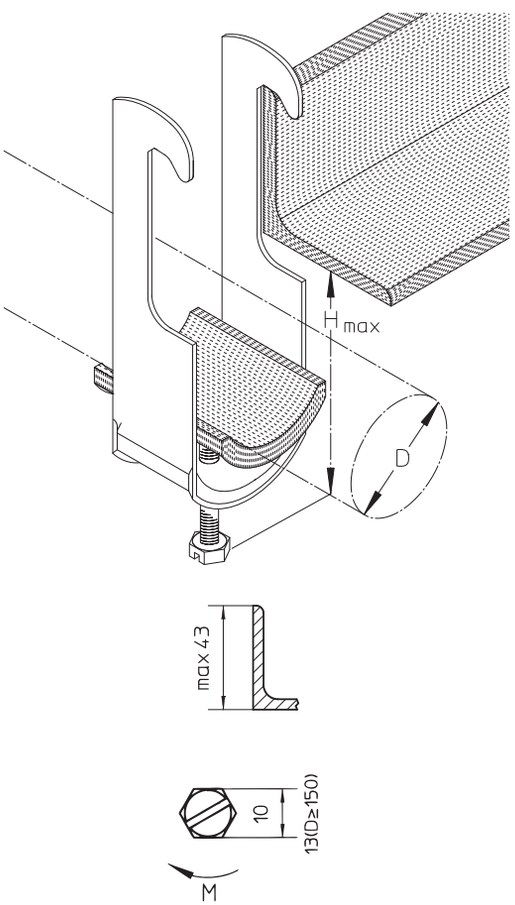
Articles with a diameter of 12-56mm are also available in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

	D mm	Hmax mm	m Nm	number of cables	G kg/100
AL					
12 S-AL	8-12	41	1,5	1	2,2
16 S-AL	12-16	46	1,5	1	2,6
20 S-AL	16-20	50	1,5	1	3,2
24 S-AL	20-24	54	1,5	1	3,6
28 S-AL	24-28	58	1,5	1	3,9
32 S-AL	28-32	63	1,5	1	5,5
36 S-AL	32-36	67	1,5	1	6,3
40 S-AL	36-40	71	1,5	1	6,9
44 S-AL	40-44	81	3,0	1	7,5
48 S-AL	44-48	85	3,0	1	8,1
52 S-AL	48-52	90	3,0	1	10,4
56 S-AL	52-56	94	3,0	1	11,2



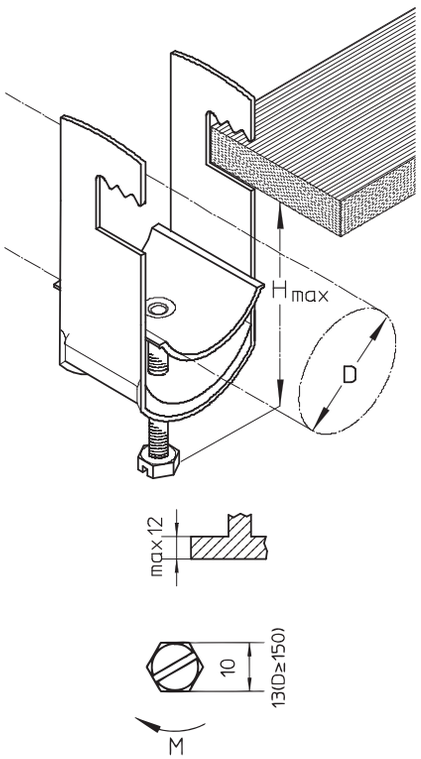
S-IW cable clamp, Cable clamp with additional insulating vat

	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 S-IW	8-12	42,5	2	1	3,8
16 S-IW	12-16	47,5	2	1	4,3
20 S-IW	16-20	51,5	2	1	4,8
24 S-IW	20-24	55,7	2	1	5,1
28 S-IW	24-28	59,7	2	1	5,5
32 S-IW	28-32	65,0	2	1	8,3
36 S-IW	32-36	69,0	2	1	8,9
40 S-IW	36-40	73,0	2	1	9,3
44 S-IW	40-44	83,0	4	1	11,8
48 S-IW	44-48	87,0	4	1	12,4
52 S-IW	48-52	92,5	4	1	13,3
56 S-IW	52-56	96,5	4	1	14,0
60 S-IW	56-60	100,5	4	1	18,4
64 S-IW	60-64	104,5	4	1	19,1
70 S-IW	64-70	111,5	4	1	20,2



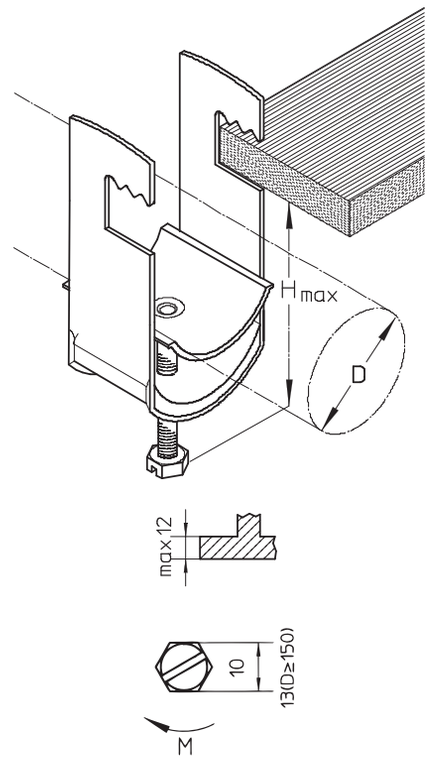
U cable clamp, Cable clamp for fastening to flat sections

	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 U	8-12	41	2,0	1	3,1
16 U	12-16	46	2,0	1	3,4
20 U	16-20	50	2,0	1	3,8
24 U	20-24	54	2,0	1	4,3
28 U	24-28	58	2,0	1	4,5
32 U	28-32	63	2,0	1	7,1
36 U	32-36	67	2,0	1	7,5
40 U	36-40	71	2,0	1	8,1
44 U	40-44	81	4,0	1	10,5
48 U	44-48	85	4,0	1	10,8
52 U	48-52	90	4,0	1	11,5
56 U	52-56	94	4,0	1	12,2
60 U	56-60	98	4,0	1	16,8
64 U	60-64	102	4,0	1	17,4
70 U	64-70	109	4,0	1	18,5
76 U	70-76	113	4,0	1	24,8
82 U	76-82	119	4,0	1	27,2
88 U	82-88	125	4,0	1	28,3
94 U	88-94	131	4,0	1	31,0
100 U	94-100	137	4,0	1	33,6
110 U	100-110	157	4,0	1	35,6
120 U	110-120	167	4,0	1	38,4
150 U	145-150	203	6,0	1	108,2
175 U	170-175	228	6,0	1	133,1
12/2 U	8-12	58	2,0	2	3,9
16/2 U	12-16	67	2,0	2	4,4
20/2 U	16-20	75	2,0	2	5,0
24/2 U	20-24	84	2,0	2	5,7
28/2 U	24-28	92	2,0	2	6,1
32/2 U	28-32	101	2,0	2	9,7
36/2 U	32-36	109	2,0	2	10,6
40/2 U	36-40	117	2,0	2	11,5
44/2 U	40-44	127	4,0	2	13,4
48/2 U	44-48	135	4,0	2	14,9
52/2 U	48-52	144	4,0	2	15,8
56/2 U	52-56	152	4,0	2	17,0
12/3 U	8-12	71	2,0	3	4,5
16/3 U	12-16	85	2,0	3	5,4
20/3 U	16-20	97	2,0	3	6,2
24/3 U	20-24	110	2,0	3	7,1
28/3 U	24-28	122	2,0	3	7,9
E					
12 U-E	8-12	41	2,0	1	2,9
16 U-E	12-16	46	2,0	1	3,3
20 U-E	16-20	50	2,0	1	3,7
24 U-E	20-24	54	2,0	1	4,0
28 U-E	24-28	58	2,0	1	4,4
32 U-E	28-32	63	2,0	1	5,4
36 U-E	32-36	67	2,0	1	6,7
40 U-E	36-40	71	2,0	1	7,6
44 U-E	40-44	81	4,0	1	9,3
48 U-E	44-48	85	4,0	1	9,9
52 U-E	48-52	90	4,0	1	11,0
56 U-E	52-56	94	4,0	1	11,3



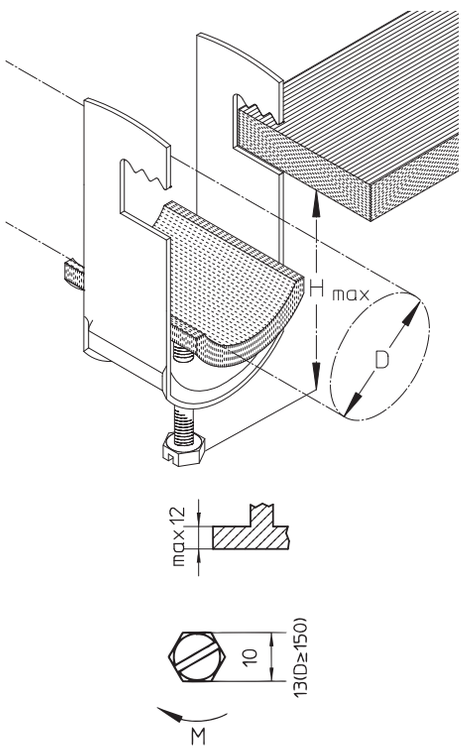
U cable clamp, Cable clamp for fastening to flat sections

	D mm	Hmax mm	m Nm	number of cables	G kg/100
AL					
12 U-AL	8-12	41	1,5	1	2,0
16 U-AL	12-16	46	1,5	1	2,6
20 U-AL	16-20	50	1,5	1	3,0
24 U-AL	20-24	54	1,5	1	3,1
28 U-AL	24-28	58	1,5	1	3,4
32 U-AL	28-32	63	1,5	1	4,5
36 U-AL	32-36	67	1,5	1	4,9
40 U-AL	36-40	71	1,5	1	5,3
44 U-AL	40-44	81	3,0	1	6,0
48 U-AL	44-48	85	3,0	1	6,4
52 U-AL	48-52	90	3,0	1	9,9
56 U-AL	52-56	94	3,0	1	10,7



U-IW cable clamp, Cable clamp with additional insulating vat

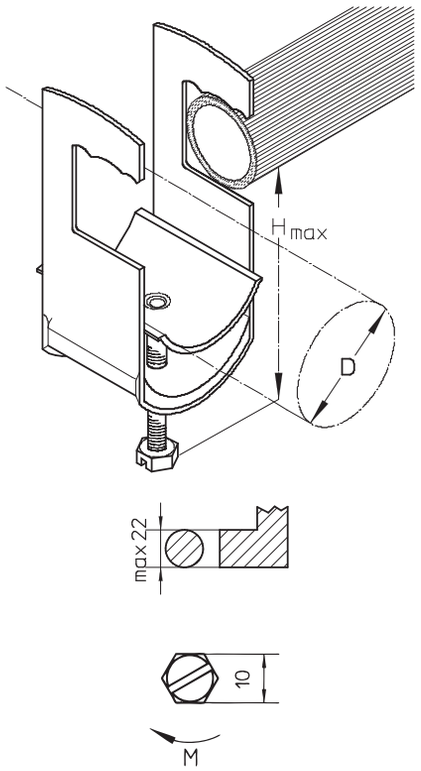
	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
12 U-IW	8-12	42,5	2	1	3,3
16 U-IW	12-16	47,5	2	1	3,6
20 U-IW	16-20	51,5	2	1	4,1
24 U-IW	20-24	55,7	2	1	4,6
28 U-IW	24-28	59,7	2	1	4,8
32 U-IW	28-32	65,0	2	1	7,5
36 U-IW	32-36	69,0	2	1	7,9
40 U-IW	36-40	73,0	2	1	8,7
44 U-IW	40-44	83,0	4	1	11,1
48 U-IW	44-48	87,0	4	1	11,7
52 U-IW	48-52	92,5	4	1	12,6
56 U-IW	52-56	96,5	4	1	13,2
60 U-IW	56-60	100,5	4	1	17,5
64 U-IW	60-64	104,5	4	1	18,3
70 U-IW	64-70	111,5	4	1	19,6



RU cable clamp, Cable clamp for fastening to round sections

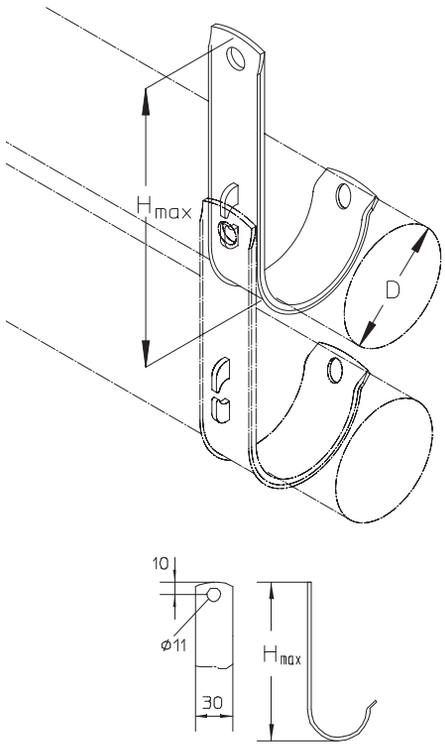
For an application example, see the chapter assembly.

	D mm	Hmax mm	m Nm	number of cables	G kg/100
Z					
14 RU	8-14	48	2	1	4,3
20 RU	14-20	54	2	1	4,9
26 RU	20-26	60	2	1	5,9
32 RU	26-32	67	2	1	9,2
38 RU	32-38	74	2	1	10,5
44 RU	38-44	82	4	1	12,0
52 RU	44-52	91	4	1	14,3
60 RU	52-60	99	4	1	16,4
70 RU	64-70	109	4	1	18,4
14/2 RU	8-14	63	2	2	5,6
20/2 RU	14-20	75	2	2	6,8
26/2 RU	20-26	88	2	2	8,1
32/2 RU	26-32	101	2	2	12,5



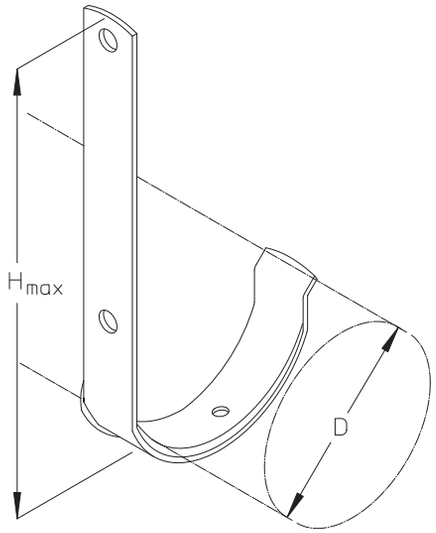
HK 30-70 cable hook

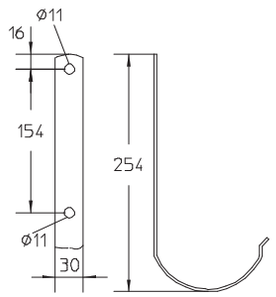
	D mm	Hmax mm	number of cables	G kg/100
F				
HK 30	≤ 30	105	1	9,8
HK 40	≤ 40	110	1	11,0
HK 50	≤ 50	130	1	13,1
HK 60	≤ 60	150	1	15,1
HK 70	≤ 70	170	1	16,2



HK 100 cable hook, Ø 100 mm

	D mm	Hmax mm	number of cables	G kg/100
F				
HK 100	≤ 100	252	1	25,5



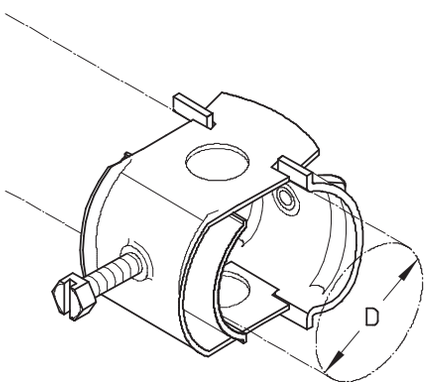


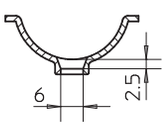
W cable clamp, Cable clamp for wall fastening

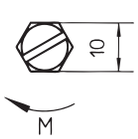
For an application example, see the chapter assembly.

	D mm	m Nm	G kg/100
Z			
16 W	12-16	2	4,4
20 W	16-20	2	5,4
24 W	20-24	2	5,8
28 W	24-28	2	6,3
32 W	28-32	4	8,5
36 W	32-36	4	9,1
44 W	36-44	4	13,5
52 W	44-52	4	16,5
60 W	52-60	4	19,5

optional:
SSV countersunk head screw (page D06)

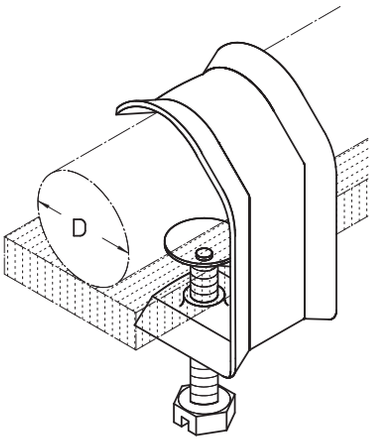


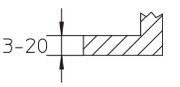


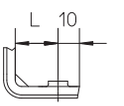


KH cable support

Z	D mm	L mm	G kg/100
KH 12	≤ 12	15	4,2
KH 16	≤ 16	20	4,9
KH 20	≤ 20	20	5,2
KH 24	≤ 24	20	5,3
KH 28	≤ 28	20	5,6
KH 32	≤ 32	20	6,6







VATS

VATS

B03-B05

D

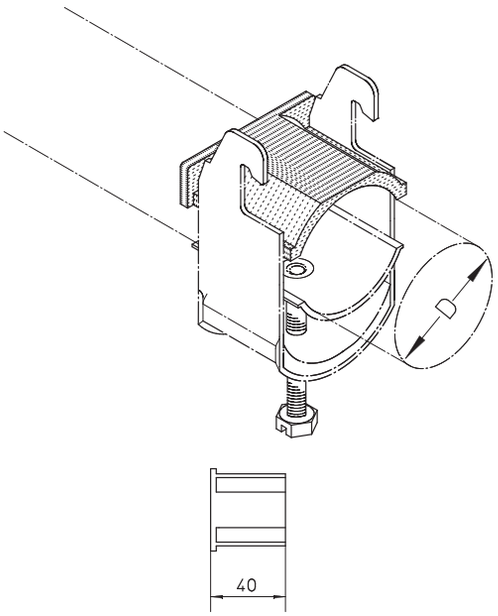
G

H

L

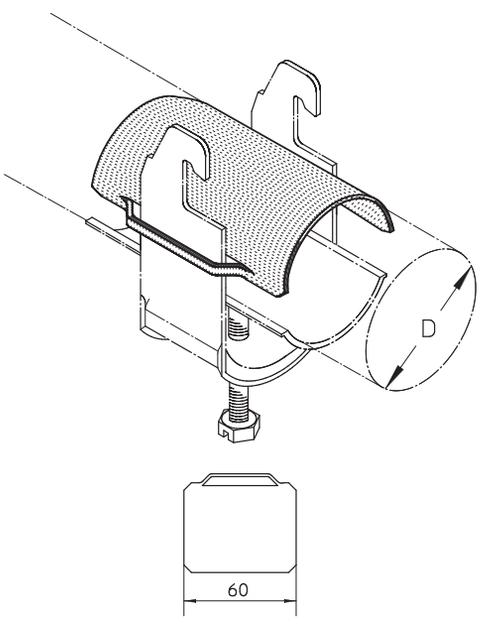
GW 12-70 counter vat, Ø 12-70 mm

PE	D mm	G kg/100
GW 12	9-12	0,12
GW 16	13-16	0,16
GW 20	17-20	0,26
GW 24	21-24	0,28
GW 28	25-28	0,32
GW 32	29-32	0,40
GW 36	33-36	0,44
GW 40	37-40	0,57
GW 48	41-48	0,66
GW 56	49-56	0,75
GW 64	57-64	0,95
GW 70	65-70	1,60



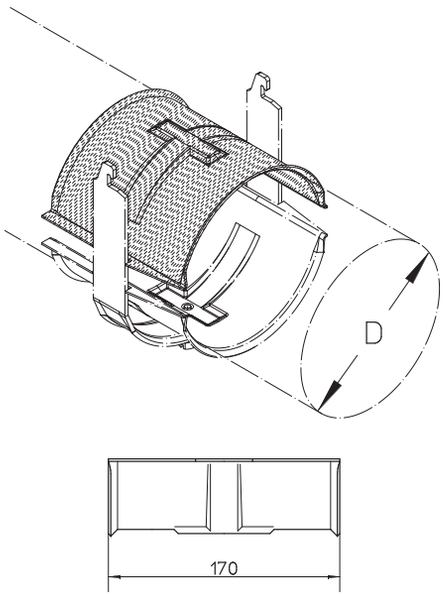
GW 76-120 counter vat, Ø 76-120 mm

S	D mm	G kg/100
GW 76	71-76	6,0
GW 82	77-82	6,4
GW 88	83-88	6,8
GW 94	89-94	12,3
GW 100	95-100	13,2
GW 110	101-110	14,6
GW 120	111-120	16,3



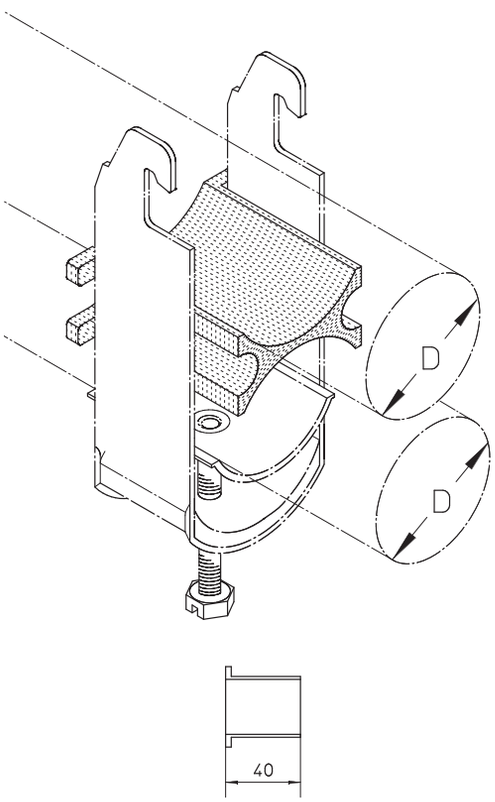
GW 150-175 counter vat, Ø 150-175 mm

F	D mm	G kg/100
GW 150	121-150	47,1
GW 175	151-175	67,2



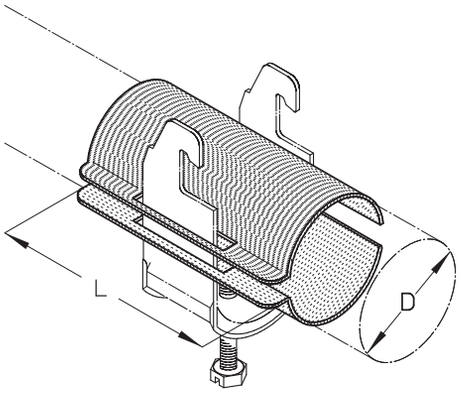
DW double vat

PE	D mm	G kg/100
DW 14	9-14	0,13
DW 22	15-22	0,28
DW 30	23-30	0,60
DW 38	31-38	0,74
DW 48	39-48	0,85
DW 56	49-56	1,00



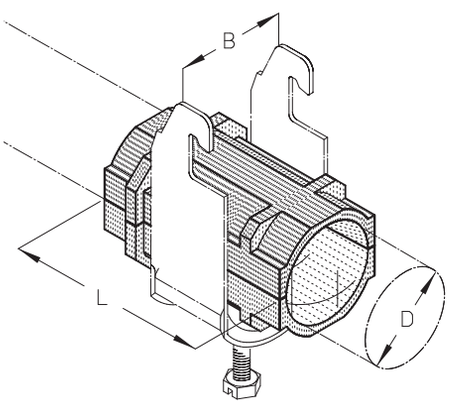
LW extended counter vat

	D mm	L mm	G kg/100
S			
LW 12	9-12	70	0,88
LW 16	13-16	70	1,16
LW 20	17-20	70	1,43
LW 24	21-24	70	1,71
LW 28	25-28	70	2,04
LW 32	29-32	70	2,31
LW 36	33-36	70	2,57
LW 40	37-40	70	2,88
LW 44	41-44	70	3,14
LW 48	45-48	70	3,32
LW 52	49-52	70	3,66
LW 56	53-56	70	3,90
LW 60	57-60	70	9,23
LW 64	61-64	70	9,84
LW 70	65-70	70	10,76
LW 76	71-76	70	11,69
LW 82	77-82	100	12,61
LW 88	83-88	100	13,54
LW 94	89-94	100	14,44
LW 100	95-100	100	15,38
LW 110	101-110	100	16,91
LW 120	111-120	100	18,46
E			
LW 12E	9-12	70	0,88
LW 16E	13-16	70	1,16
LW 20E	17-20	70	1,43
LW 24E	21-24	70	1,71
LW 28E	25-28	70	2,04
LW 32E	29-32	70	2,35
LW 36E	33-36	70	2,64
LW 40E	37-40	70	2,94
LW 44E	41-44	70	3,21
LW 48E	45-48	70	3,48
LW 52E	49-52	70	3,66
LW 56E	53-56	70	3,90



HW HF vat

	B mm	D mm	L mm	G kg/100
PS				
HW 20-1/2	20	17 (1/2")	55	0,46
HW 32-7/8	32	29 (7/8")	60	1,10
HW 44-1 1/4	44	39 (1 1/4")	60	1,85
HW 56-1 5/8	56	51 (1 5/8")	60	2,66



HF-CABLE CLAMPS

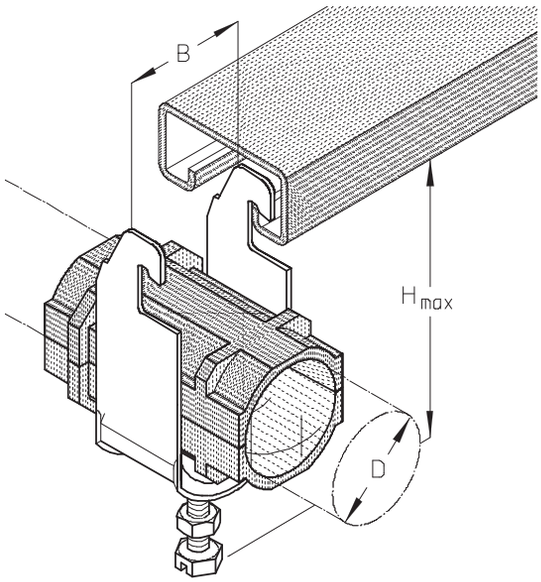
NUMERICAL INDEX

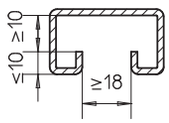
HF-CABLE CLAMPS

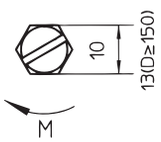
AC-HW HF cable clamp, Cable clamp, fastening to C-profiles

For an application example, see the chapter assembly.

	B mm	D customs	Hmax mm	number of cables	G kg/100
Z					
20 AC-HW	20	1/2	53	1	4,42
32 AC-HW	32	7/8	68	1	8,60
44 AC-HW	44	1 1/4	83	1	10,20
56 AC-HW	56	1 5/8	106	1	16,82
20/2 AC-HW	20	1/2	73	2	6,44
32/2 AC-HW	32	7/8	102	2	13,30
44/2 AC-HW	44	1 1/4	129	2	20,50
56/2 AC-HW	56	1 5/8	164	2	26,54
20/3 AC-HW	20	1/2	93	3	8,66
32/3 AC-HW	32	7/8	136	3	18,00
44/3 AC-HW	44	1 1/4	176	3	28,60
E					
20 AC-HW-E	20	1/2	53	1	4,12
32 AC-HW-E	32	7/8	68	1	7,00
44 AC-HW-E	44	1 1/4	83	1	12,30
56 AC-HW-E	56	1 5/8	106	1	16,10
20/2 AC-HW-E	20	1/2	73	2	6,14
32/2 AC-HW-E	32	7/8	102	2	11,70
44/2 AC-HW-E	44	1 1/4	129	2	19,10
56/2 AC-HW-E	56	1 5/8	164	2	25,50
20/3 AC-HW-E	20	1/2	93	3	7,65
32/3 AC-HW-E	32	7/8	136	3	15,90
44/3 AC-HW-E	44	1 1/4	176	3	26,00

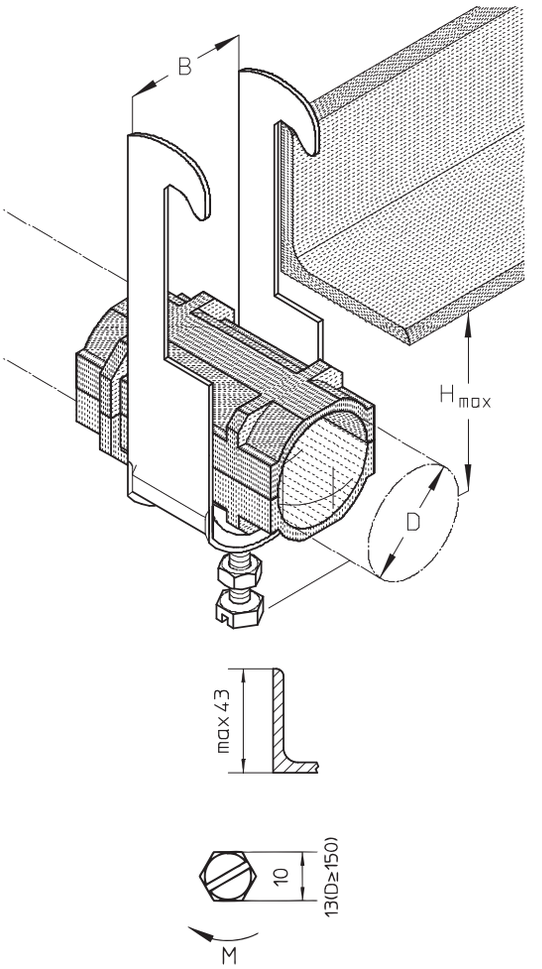






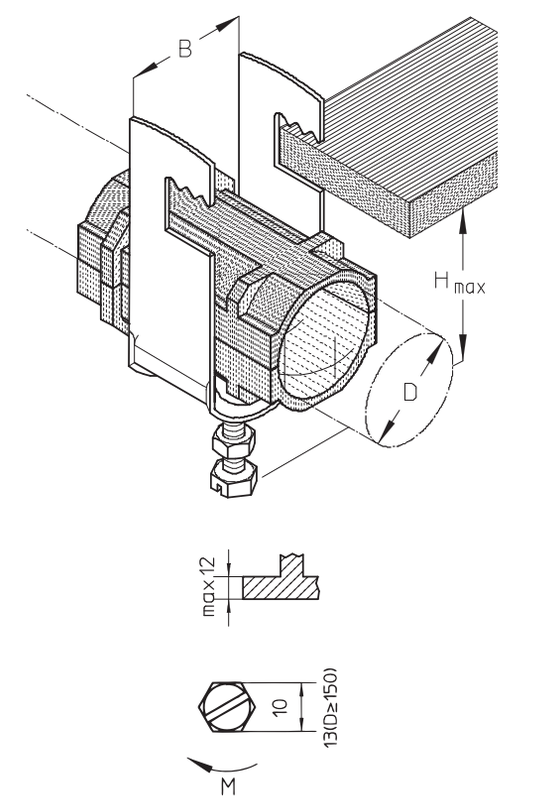
S-HW HF cable clamp, Cable clamp for fastening to angle profiles

	B mm	D mm	D customs	Hmax mm	number of cables	G kg/100
Z						
20 S-HW	20	20	1/2	53	1	5,52
32 S-HW	32	32	7/8	68	1	8,60
44 S-HW	44	44	1 1/4	83	1	14,90
56 S-HW	56	56	1 5/8	106	1	18,22
20/2 S-HW	20	20	1/2	73	2	6,44
32/2 S-HW	32	32	7/8	102	2	13,30
44/2 S-HW	44	44	1 1/4	129	2	22,60
56/2 S-HW	56	56	1 5/8	164	2	28,84
20/3 S-HW	20	20	1/2	93	3	8,66
32/3 S-HW	32	32	7/8	136	3	18,00
44/3 S-HW	44	44	1 1/4	176	3	33,10
E						
20 S-HW-E	20	20	1/2	53	1	5,12
32 S-HW-E	32	32	7/8	68	1	8,80
44 S-HW-E	44	44	1 1/4	83	1	13,30
56 S-HW-E	56	56	1 5/8	106	1	17,50
20/2 S-HW-E	20	20	1/2	73	2	7,44
32/2 S-HW-E	32	32	7/8	102	2	13,50
44/2 S-HW-E	44	44	1 1/4	129	2	20,10
56/2 S-HW-E	56	56	1 5/8	164	2	26,80
20/3 S-HW-E	20	20	1/2	93	3	9,30
32/3 S-HW-E	32	32	7/8	136	3	17,70
44/3 S-HW-E	44	44	1 1/4	176	3	26,90



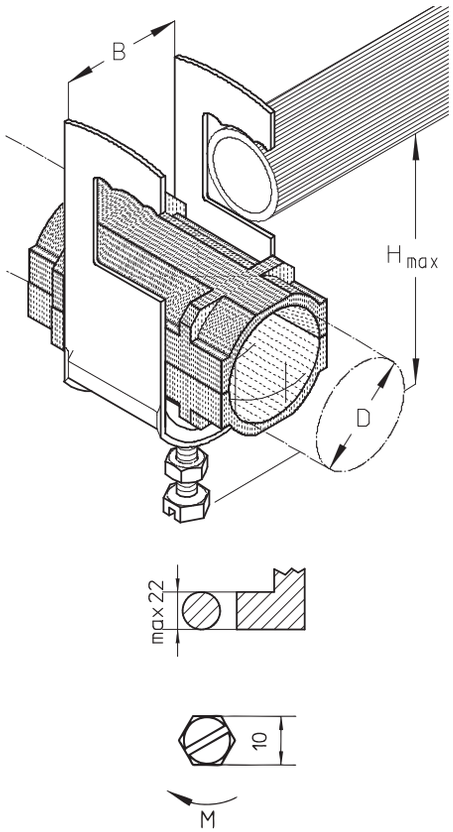
U-HW HF cable clamp, Cable clamp for fastening to flat sections

	B mm	D customs	Hmax mm	number of cables	G kg/100
Z					
20 U-HW	20	1/2	53	1	4,72
32 U-HW	32	7/8	68	1	9,30
44 U-HW	44	1 1/4	83	1	14,20
56 U-HW	56	1 5/8	106	1	17,52
20/2 U-HW	20	1/2	73	2	6,84
32/2 U-HW	32	7/8	102	2	14,10
44/2 U-HW	44	1 1/4	129	2	21,80
56/2 U-HW	56	1 5/8	164	2	27,64
20/3 U-HW	20	1/2	93	3	8,96
32/3 U-HW	32	7/8	136	3	21,80
44/3 U-HW	44	1 1/4	176	3	33,20
E					
20 U-HW-E	20	1/2	53	1	4,62
32 U-HW-E	32	7/8	68	1	8,50
44 U-HW-E	44	1 1/4	83	1	13,00
56 U-HW-E	56	1 5/8	106	1	16,60
20/2 U-HW-E	20	1/2	73	2	6,64
32/2 U-HW-E	32	7/8	102	2	12,50
44/2 U-HW-E	44	1 1/4	129	2	19,90
56/2 U-HW-E	56	1 5/8	164	2	26,60
20/3 U-HW-E	20	1/2	93	3	8,60
32/3 U-HW-E	32	7/8	136	3	16,80
44/3 U-HW-E	44	1 1/4	176	3	26,80



RU-HW HF cable clamp, Cable clamp for fastening to round sections

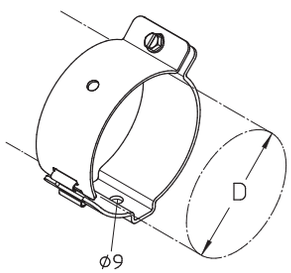
	B mm	D customs	Hmax mm	number of cables	G kg/100
Z					
20 RU-HW	20	1/2	53	1	5,82
32 RU-HW	32	7/8	68	1	11,40
44 RU-HW	44	1 1/4	83	1	15,70
56 RU-HW	56	1 5/8	106	1	21,72
20/2 RU-HW	20	1/2	73	2	8,64
32/2 RU-HW	32	7/8	102	2	16,90
44/2 RU-HW	44	1 1/4	129	2	23,24
56/2 RU-HW	56	1 5/8	164	2	29,24
20/3 RU-HW	20	1/2	93	3	12,80
32/3 RU-HW	32	7/8	136	3	25,00
44/3 RU-HW	44	1 1/4	176	3	34,40
E					
20 RU-HW-E	20	1/2	53	1	5,72
32 RU-HW-E	32	7/8	68	1	11,10
44 RU-HW-E	44	1 1/4	83	1	14,60
56 RU-HW-E	56	1 5/8	106	1	18,50
20/2 RU-HW-E	20	1/2	73	2	7,94
32/2 RU-HW-E	32	7/8	102	2	16,70
44/2 RU-HW-E	44	1 1/4	129	2	22,60
56/2 RU-HW-E	56	1 5/8	164	2	29,30
20/3 RU-HW-E	20	1/2	93	3	10,40
32/3 RU-HW-E	32	7/8	136	3	22,10
44/3 RU-HW-E	44	1 1/4	176	3	30,60



HF-EL 1-4 HF-cable clamp for wall fastening

For an application example, see the chapter assembly.

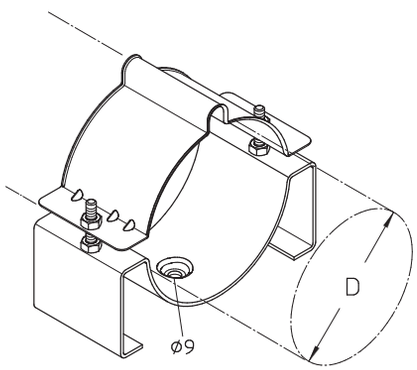
	D mm	G kg/100
Z		
HF-EL 1	37 (E 108/19-220)	12,7
HF-EL 2	50 (E 75-100)	14,1
HF-EL 3	62 (E 48-70)	16,1
HF-EL 4	100 (E 38-46)	23,2



HF-EL 5-6 HF-cable clamp for wall fastening

For an application example, see the chapter assembly.

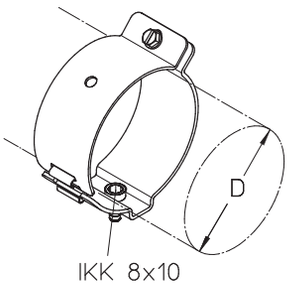
	D mm	G kg/100
Z		
HF-EL 5	128 (E 26-30)	85,0
HF-EL 6	160 (E 20)	99,8



C

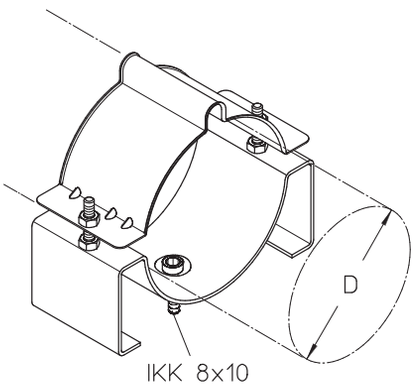
HF-EM 8 1-4 HF-cable clamp for wall fastening

Z	D mm	G kg/100
HF-EM 8 1	37 (E 108/19-220)	13,4
HF-EM 8 2	50 (E 75-100)	14,8
HF-EM 8 3	62 (E 48-70)	16,9
HF-EM 8 4	100 (E 38-46)	24,0



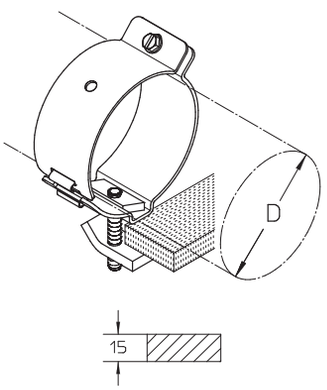
HF-EM 8 5-6 HF-cable clamp for wall fastening

Z	D mm	G kg/100
HF-EM 8 5	128 (E 26-30)	85,8
HF-EM 8 6	160 (E 20)	100,5



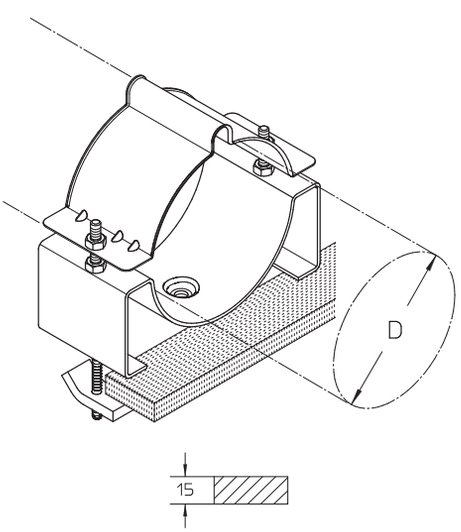
HF-EU 1-4 HF-cable clamp for flat-steel profile fastening

Z	D mm	G kg/100
HF-EU 1	37 (E 108/19-220)	22,8
HF-EU 2	50 (E 75-100)	24,2
HF-EU 3	62 (E 48-70)	26,2
HF-EU 4	100 (E 38-46)	33,3



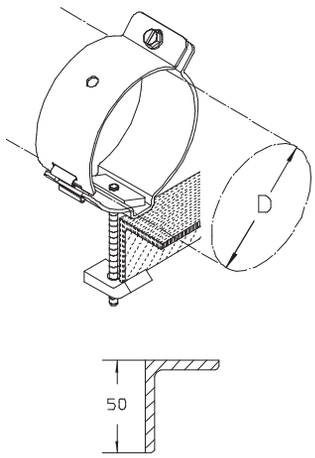
HF-EU 5-6 HF-cable clamp for flat-steel profile fastening

Z	D mm	G kg/100
HF-EU 5	128 (E 26-30)	102,0
HF-EU 6	160 (E 20)	117,7



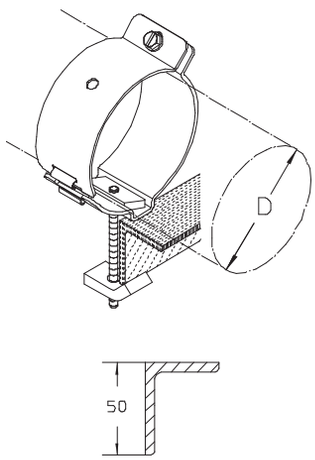
HF-ES 50 1-4 HF-cable clamp for angular profile fastening

Z	D mm	G kg/100
HF-ES 50 1	37 (E 108/19-220)	23,9
HF-ES 50 2	50 (E 75-100)	25,3
HF-ES 50 3	62 (E 48-70)	27,3
HF-ES 50 4	100 (E 38-46)	34,5



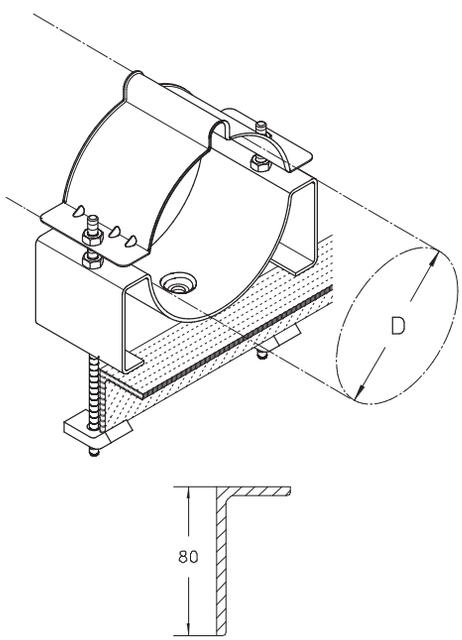
HF-ES 50 5-6 HF-cable clamp for angular profile fastening

Z	D mm	G kg/100
HF-ES 50 5	128 (E 26-30)	104,2
HF-ES 50 6	160 (E 20)	120,0



HF-ES 80 1-4 HF-cable clamp for angular profile fastening

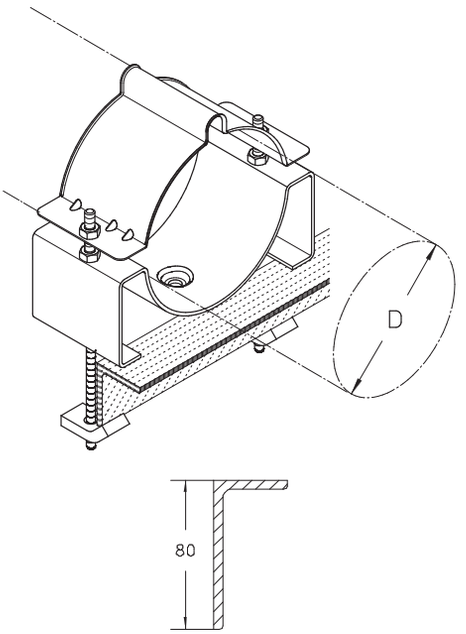
Z	D mm	G kg/100
HF-ES 80 1	37 (E 108/19-220)	24,9
HF-ES 80 2	50 (E 75-100)	26,3
HF-ES 80 3	62 (E 48-70)	28,3
HF-ES 80 4	100 (E 38-46)	35,4



C

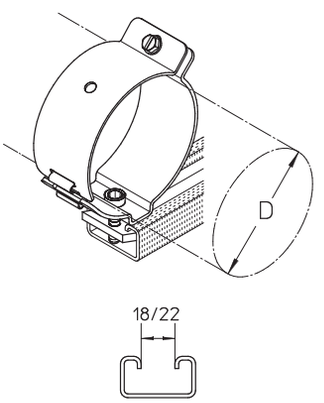
HF-ES 80 5-6 HF-cable clamp for angular profile fastening

Z	D mm	G kg/100
HF-ES 80 5	128 (E 26-30)	106,1
HF-ES 80 6	160 (E 20)	121,9



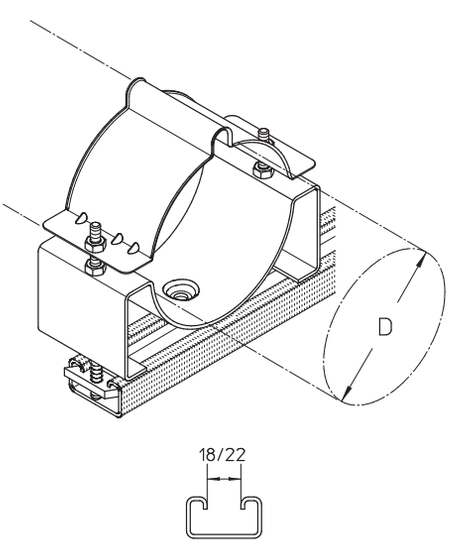
HF-EAC 1-4 HF-cable clamp for fastening on C-rails

Z	D mm	G kg/100
HF-EAC 1	37 (E 108/19-220)	17,2
HF-EAC 2	50 (E 75-100)	18,6
HF-EAC 3	62 (E 48-70)	20,7
HF-EAC 4	100 (E 38-46)	27,8



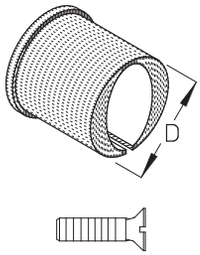
HF-EAC 5-6 HF-cable clamp for fastening on C-rails

Z	D mm	G kg/100
HF-EAC 5	128 (E 26-30)	96,6
HF-EAC 6	160 (E 20)	112,6



HF-EE HF-clamp lining

Z	D mm	G kg/100
HF-EE 190	37 (E 190)	8,1
HF-EE 150	37 (E 150)	8,0
HF-EE 130	37 (E 130)	7,9
HF-EE 105	50 (E 105)	10,0
HF-EE 78	50 (E 78)	9,7
HF-EE 70	62 (E 70)	15,2
HF-EE 65	62 (E 65)	14,9
HF-EE 60	62 (E 60)	14,8
HF-EE 46	100 (E 46)	28,6
HF-EE 38	100 (E 38)	30,0



FASTENINGS

FASTENINGS

D03-D07

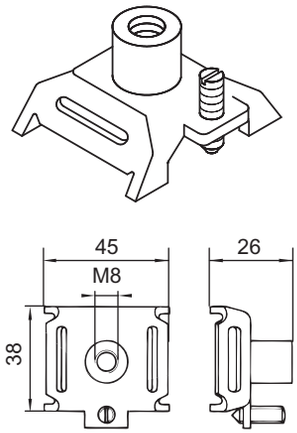
NUMERICAL INDEX

FASTENINGS

GP base plate

For an application example, see the chapter assembly.

F	G kg
GP	0,07

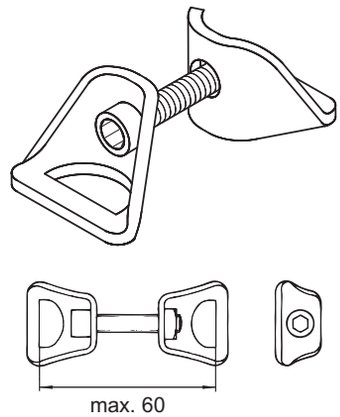


SC tightening clip

For an application example, see the chapter assembly.

F	G kg
SC	0,07

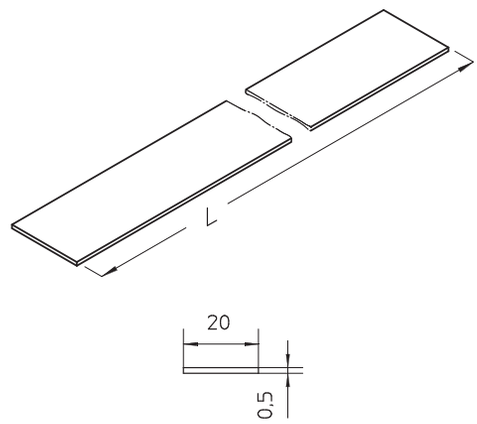
included:
1 x **IK 8x40E** Hexagon socket head screw, DIN 912 (page D06)



SD E fastening strip

For an application example, see the chapter assembly.

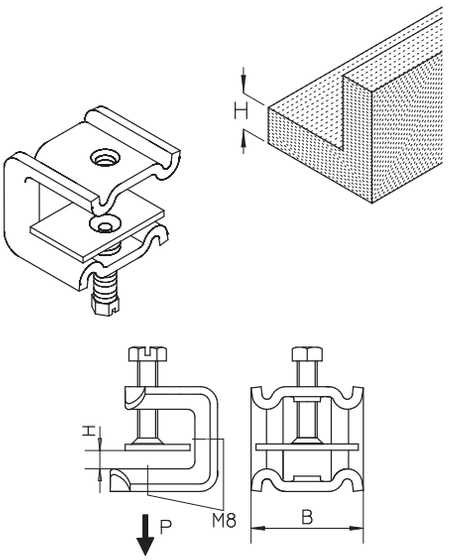
E	L mm	Pzul kN	G kg
SD E	1000	< 2	0,08
SD E 50M	50000	< 2	4,00



MKD beam clamp

For an application example, see the chapter assembly.

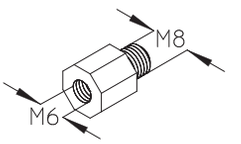
	H mm	B mm	P kN	G kg
F				
MKD 21	6-21	44	1,5	0,19
MKD 40	20-40	44	1,3	0,22
E				
MKD 21E	6-21	44	1,5	0,19
MKD 40E	20-40	44	1,3	0,22



RGW reducing bolt

For an application example, see the chapter assembly.

	G kg
Z	
RGW 8/6	0,01
E	
RGW 8/6E	0,01



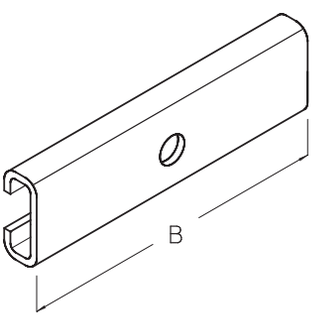
AN support

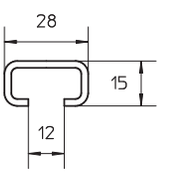
For an application example, see the chapter assembly.

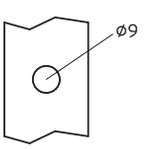
	B mm	G kg
F		
AN 100	100	8,00

optional:

B Cable clamp for fastening to profile rails (page A08)
HB Cable clamp for fastening to profile rails (page A09)
ACF-E Cable clamp, fastening to C-profiles (page A11)



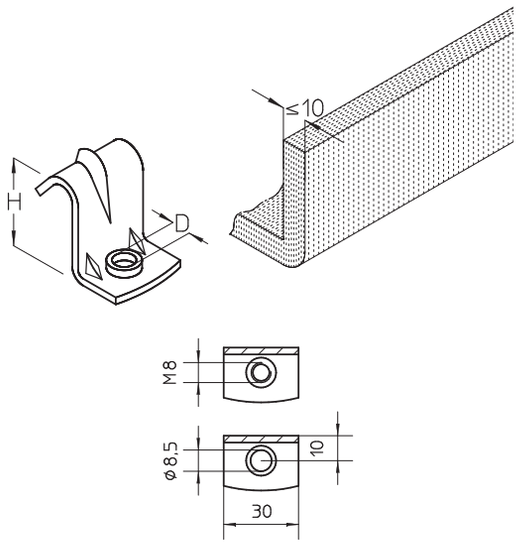




SN beam clamp

For an application example, see the chapter assembly.

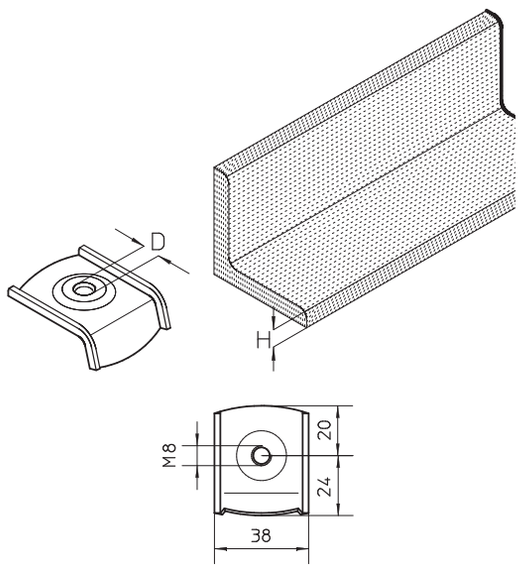
	H mm	D mm	G kg
F			
SN 25 M/G	25	M 8	0,04
SN 35 M/G	35	M 8	0,05
SN 25 O/G	25	8,5	0,04
SN 35 O/G	35	8,5	0,05



SK clamping claw

For an application example, see the chapter assembly.

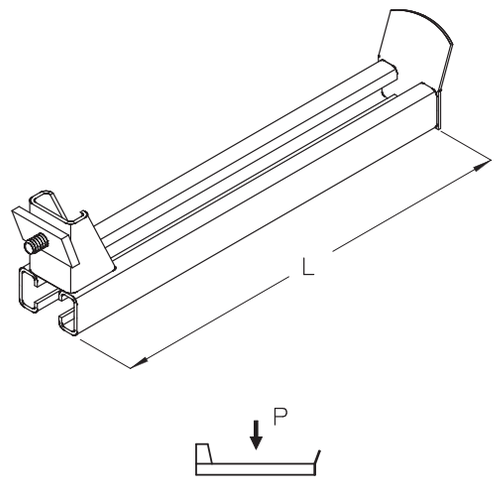
	H mm	D mm	G kg
F			
SK 4 M8	4	M 8	0,04
SK 6 M8	6	M 8	0,04
SK 8 M8	8	M 8	0,04
SK 10 M8	10	M 8	0,04
SK 12 M8	12	M 8	0,04



T bracket

For an application example, see the chapter assembly.

	L mm	P kN	G kg
F			
T 20/AM18	200	3,0	0,50
T 25/AM18	250	2,4	0,58
T 30/AM18	300	2,0	0,66
T 35/AM18	350	1,7	0,74
T 40/AM18	400	1,5	0,84
T 45/AM18	450	1,4	0,93
T 50/AM18	500	1,2	1,00
T 60/AM18	600	1,0	1,18

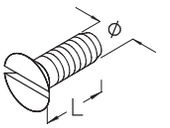


included:
1 x **SES 8x20** Hexagon head bolt, DIN 933 (page D07)
1 x **AMA18 M8F** channel nut, A7/ A8 (catalog Cable trays)

optional:
AC Cable clamp, fastening to C-profiles (page A03)
RU Cable clamp for fastening to round sections (page A16)

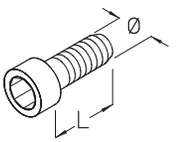
SSV countersunk head screw

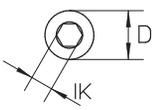
	Ø mm	L mm	G kg/100
Z			
SSV 6x10	6	10	0,3
SSV 6x25	6	25	0,5
SSV 6x40	6	40	0,8
E			
SSV 6x10E	6	10	0,3
SSV 8x10E	8	10	0,5



IK Hexagon socket head screw, DIN 912

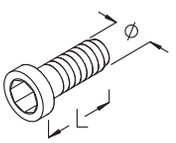
	Ø mm	D mm	L mm	IK mm	G kg/100
E					
IK 8x10E	8	13,3	10	6	1,0
IK 8x20E	8	13,3	20	6	1,3
IK 8x25E	8	13,3	25	6	1,3
IK 8x30E	8	13,3	30	6	1,7
IK 8x40E	8	13,3	40	6	2,1
IK 8x50E	8	13,3	50	6	2,5
IK 10x20E	10	16,3	20	8	2,3
IK 10x25E	10	16,3	25	8	2,5
IK 10x30E	10	16,3	30	8	2,8
IK 10x40E	10	16,3	40	8	3,3
IK 12x20E	12	18,3	20	10	3,2
IK 12x25E	12	18,3	25	10	3,6
IK 12x30E	12	18,3	30	10	3,9
IK 12x40E	12	18,3	40	10	4,7
IK 12x50E	12	18,3	50	10	5,5
GV					
IK 6x20	6	10,2	20	5	0,7
IK 8x20	8	13,3	20	6	1,3
IK 8x25	8	13,3	25	6	1,5
IK 8x30	8	13,3	30	6	1,7
IK 8x40	8	13,3	40	6	2,1
IK 10x20	10	16,3	20	8	2,3
IK 10x25	10	16,3	25	8	2,5
IK 10x30	10	16,3	30	8	2,8
IK 10x40	10	16,3	40	8	3,3
IK 12x20	12	18,3	20	10	3,2
IK 12x25	12	18,3	25	10	3,6
IK 12x30	12	18,3	30	10	3,9
IK 12x40	12	18,3	40	10	4,7
IK 12x50	12	18,3	50	10	5,5

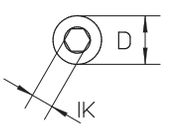




IKK hexagon socket head screw, DIN 7984

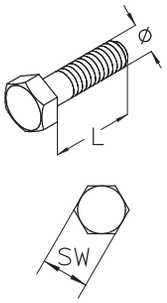
	Ø mm	D mm	L mm	IK mm	G kg/100
E					
IKK 8x10E	8	13	10	5	1,03





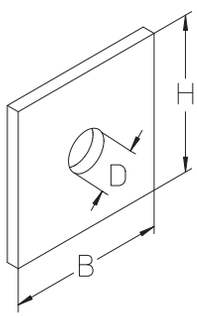
SES Hexagon head bolt, DIN 933

	Ø mm	L mm	SW mm	G kg/100
F				
SES 10x20F	10	20	17(16)	2,1
SES 10x25F	10	25	17(16)	2,4
SES 10x30F	10	30	17(16)	2,6
SES 10x55F	10	55	17(16)	3,9
SES 10x75F	10	75	17(16)	4,9
SES 10x90F	10	90	17(16)	5,6
SES 10x100F	10	100	17(16)	6,1
SES 12x20F	12	20	19(18)	3,1
SES 12x30F	12	30	19(18)	3,8
SES 12x40F	12	40	19(18)	4,5
SES 12x50F	12	50	19(18)	5,2
SES 12x70F	12	70	19(18)	6,6
E				
SES 6x16E	6	16	10	0,5
SES 8x16E	8	16	13	1,1
SES 6x20E	6	20	10	0,6
SES 8x20E	8	20	13	1,2
SES 8x25E	8	25	13	1,4
SES 10x20E	10	20	17	2,1
SES 10x30E	10	30	17	2,6
E4				
SES 8x20E4	8	20	13	1,2
SES 10x75E4	10	75	17(16)	4,9
GV				
SES 6x16	6	16	10	0,5
SES 6x20	6	20	10	0,6
SES 6x25	6	25	10	0,7
SES 6x30	6	30	10	0,8
SES 8x16	8	16	13	1,1
SES 8x20	8	20	13	1,2
SES 8x25	8	25	13	1,4
SES 8x30	8	30	13	1,6
SES 8x40	8	40	13	1,9
SES 8x110	8	110	13	4,1
SES 10x20	10	20	17(16)	2,1
SES 10x25	10	25	17(16)	2,4
SES 10x30	10	30	17(16)	2,6
SES 10x40	10	40	17(16)	3,1
SES 10x90	10	90	17(16)	5,6
SES 10x100	10	100	17(16)	6,1
SES 12x20	12	20	19(18)	3,1
SES 12x25	12	25	19(18)	3,4
SES 12x30	12	30	19(18)	3,8
SES 12x40	12	40	19(18)	4,5
SES 12x50	12	50	19(18)	5,2



RUS 40 square washer

	H mm	B mm	D mm	G kg/100
F				
RUS 40-L7F	40	40	7	1,88
RUS 40-L9F	40	40	9	1,85



PLANNING

The technical information is provided to

· inform you about protective measures against corrosion
· help you find the suitable products for your application
· inform you about available, specially designed products.

In order to make the use of this catalogue easier for you we use tokens andsymbols. You find the explanations on the inner pocket of the back side page. The symbols used in this part of the catalogue will be explained subsequently.

If you should have any technical questions or requests about available non-standard products we are glad to help you from our headquarters in Berlin or our branch offices at any time.

Subject to technical modifications.

LAYING TECHNIQUE

Cable clamps
(clips) allow for easy and fast laying of single or bundled cables. They are used to fix cables to supporting profiles (lengthwise or transverse) or with plugs and screws against walls and ceilings.

For the passing of several parallel cables we recommend the use of **console support rails**. They can be anchored to walls and ceilings, resp. be clamped to support profile. If drilling is prohibited, the fastening points can be made using the tension band system (see chapter „Assembly Ins-tructions“).

If the available wall or ceiling area is not sufficient for the laying of cables in one layer, upright crossbars can be used for provision of additional fastening points (see chapter „Assembly Instructions“). Thus a multilayer passing of cables becomes possible.

For fastening of single conductor cables cable clamps made out of amagnetic aluminium or high-grade steel have to be used, marked by the symbols AL esp. E.

In order to avoid deformation of cables through exceeding pressure of cable clamp fastening, it is recommended to use form stabilizing **counter- and double trays**
as a basic principle (see chapter B). For especially sensitive cables or frag ragile plastic tubes we provide metal long trays that minimize the pressure effectively.

Highly sensitive radiofrequency cables can be passed safely with standard cable clamps if the clamps are equipped with high frequency counter beds (see chapter B). These are two sturdy half shells made of plastic. They enclose the cable completely and make sure that in spite of relatively high fastening tension and screwing force the „armed“ cable is only held with a defined lower fastening pressure. Signal reflections and modulations are minimized; damage to the cable is out of question.

Complete armatures containing cable clamps, high frequency counter beds, as well as counter bolts for secure screw joints under stress of vibrations (for example for installation of transmission poles) can be found in chapter C. There you can find special clamps for fastening of other sizes and types of radiofrequency cables. For various elliptic cables Neopreninlays (notation EE) have to be used.

SPECIAL MODELS

In addition to our catalogue program, we provide you on request with:

Cable clamps
- of other sizes (inter sizes)
- high-grade steel nuts and bolts for exclusion of corrosion
- in aggressive environments with counter bolts for secure screw joints under stress of vibrations and shock
- made of stainless steel, material number 1.4571, marked with the symbol E4.

CORROSION PREVENTION

Prior to choosing materials for the passing of cables it is recommended to take a look at the corrosive environmental conditions at the construction site and to determine the corrosion prevention accordingly.

For installations in regular environment, zinc coatings have proven to be protective for steel against corrosion. However, the protective zinc coat is being reduced by various climatic influences throughout the years. The following table shows the loss of coating per year:

Environmental influence and corrision risk

Corrosion-categorie	Loss of thickness µm/year	Typical environment outdoors	indoors
C1 inconsi-derable	≥0,1	-	Heated buildings like offices, stores, schools, hotels
C2 slight	>0,1 until 0,7	Little pollution, like rural areas	Not heated buil-dings with formation of con-densate like store houses
C3 moderate	>0,7 until 2,1	City and industrial environments with moderate pollution	Production plants with high humidity, like laundry, brewery and dairy
C4 strong	>2,1 until 4,2	Industrial areas and coastlines with moderate salt impact	Chemical plants, swimming pools
C5-I very strong (industrial)	>4,2 until 8,2	Industrial environ-ment with high humidity and aggressive atmosphere	Buildings or areas with almost permanent condensation and pollution
C5-M very strong (ocean)	>4,2 until 8,2	Coastlines and offshore areas with high salt impact	Buildings or areas with almost permanent condensation and pollution

(Source: EN ISO 12944-2)

The loss of thickness per year multiplied with the expected life span of the construction determins the necessary thickness of zinc coating. There are mainly three zinc coatings that differ in thickness of coating, adhesive strength and appearance.

Galvanic zinc (EN ISO 4042)
The small parts are zinced by means of electrolysis bath in which the zinc ions apply very evenly to the metal. The zinc coat is app. 5 µm thick, light glossy, and has an additional protection by succeeding bichromium conditioning against abrasion.

Nuts and bolts (marked with GV) in the PUK catalogue are galvanic zinc coated. They are used for connecting Sendzimir zinc coated construction elements.

Hot galvanized according to the Sendzimir proce dure (EN 10346)
The steel strapping (thickness up to 2 mm) is coated in the steel-mill with zinc (flow path procedure). Theresult is an evenly spread and highly adhesive zinc coat with an average thickness of 19 µm.
Damage to the zinc coat caused by cutting, punching or drilling does not result in progressing corrision because the neighbouring zinc is dissolving under the impact of (air-) humidity and builds a protective, brown coating layer of zinc hydroxide over the blanc metal. The „migration“ of zinc ions protects free areas up until app. 2 mm width.

These articles are marked with the symbol S.

Hot dip galvanized (EN ISO 1461)
The parts are hot dip galvanized after processing in liquid zinc (app. 450 C). Chemical reactions lead to various zinc-iron alloys, which are especially firmly connected to the steel core. These alloys are usually coated with a „pure zinclayer“. Depending on the speed of the reaction, steel composition, time of dipping, cooling process etc., a „growing through“ to the surface of the zinc-iron alloy is possible as well.

Therefore the appearance of the surface varies from dull dark grey to light glossy. This is no indication of thickness of zinc coating or quality of corrosion prevention. Humid environment can also cause a forming of zinc-hydroxide-carbonate (so called white rust). This does not influence the efficiency of the corrosion prevention.

Cutting edges need to be protected with cold zinc paint (see catalogue cable trays, chapter A).

According to EN ISO 1461 the average local thickness of the coating is at least
45 µm for material thicknesses up to 1,5 mm
55 µm for material thicknesses from 1,5 up to 3 mm
70 µm for material thicknesses from 3 up to 6 mm

The EN ISO 1461 complies basically with
BS EN ISO 1461 in Great Britain
EN ISO 1461 in France
NEN EN 1461 in USA

All types of cable trays and medium-heavy/heavy support systems are deliverable conditional of manifactoring in hot dip galvanized. This program is marked with the symbol F.

The cable clamps marked with the symbol Z contain construction parts of various zinc coatings.
- galvanized (cable diameter ≤ 40 mm) or hot dip galvanized rivet shank screws (cable diameter ≥ 44 mm)
- sendzimir coated counter bed
- hot dip galvanized clips.

High-grade steel
Considering the aspects of high corrosion resistance, easily cleanable surface, ability of recycling, and fire-resistance, high-grade steel becomes increasingly the material of first choice. Especially for the chemical, paper, textile and food industry, in sewages, refineries, car tunnels and in off-shore areas it is being commonly used.
Regarding the long lasting life cycle of such constructions high grade steel is often times the economically advantageous solution in spite of the higher initialinvestment. In case of insufficient corrosion resis tance the investments are accelerated because of business interruption, rearrangement of cable loads, exchange of structural components.

Compared to various plastic materials high-grade steel features through high firmness, resistance against fire and heat, as well as the emission free mannor in case of fire and mechanical processing.

Assignment to recent and outdated norms:
EN 10088-2 : 1.4301 X5CrNi 18-10
AISI : 304
UNS : S 30400
BS : 304 S15- 304 S31
AFNOR : Z7CN 18-09
DIN : 17441

PUK offers a complete high-grade steel program made of this material: Bracket supports, brackets, cable trays, ladders, vertical ladders, channels and cable clamps.
Nuts and bolts comply to steel-group A2 (according to ISO 3506).
This is indicated with the symbol E.

The high-grade steel program is available on request in material No. 1.4571 with the short appellation X6CrNiMoTi17-12-2 (according to EN 10088-2) and has been also certified by the German Institute for Construction Engineering in Berlin.
Nuts and bolts comply to steel-group A4 (according to ISO 3506)

Assignment to recent and outdated norms:
EN 10088-2 : 1.4571 X6CrNiMoTi17-12-2
AISI : 316 Ti
UNS : S 31635
BS : 320 S31
AFNOR : Z6CNDT 14-12
DIN : 17441

This program is marked with E4. Other materials of the same corrosion category available on request.

For special applications (light- and cable support constructions in car tunnels according to ZTV-ING) the high alloyed material No. 1.4529 is available.

PLASTIC

Counter beds and double beds are made of HDPE (high
density polvethylene). This material is indicated with the symbo PE.

Vicat-softening temperature:	70-75 °C
Deformation resistance B (0,45 N/mm²):	75-80 °C
Area of melting temperatures:	130-135 °C
Coldness resistance:	app. -40 °C

Lichtstabilisiert und erhöhte UV-Beständigkeit durch Spezialrußzusatz. Beständig gegen Laugen, Salzlösungen und organische Säuren. Nicht beständig gegen starke Oxidationsmittel (Nitriersäure, konz. Salpetersäure etc.) und Halogene.

ILight stabilized and increased UV-resistance through special carbon black additive. Resistant against brine, saline solution and organic acid. Not resistant against strong oxidants (nitration acid, concentrated saltpetre acid) and halogens.

Isolation and high frequency beds are made of polystyrene, impact resistant (SB). This material is indicated with thesymbol PS.

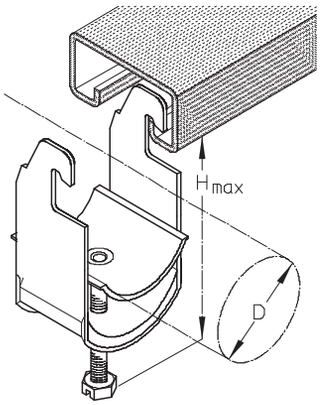
Vicat-softening temperature:	75-80 °C
Deformation resistance B (0,45 N/mm²):	74-81°C
Area of melting temperatures:	≤ 55 °C
Coldness resistance:	-40 °C

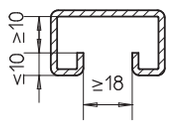
Light stabilized and increased UV-resistance through special carbon black additive. Resistant against saline solution, brine, humidity and non oxidizing acid. Not resistant against aromatic and chlorinated hydrocarbon, ester, ketone, petrol, ethereal oil and some flavouring agents.

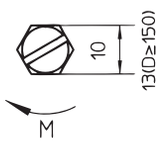
CABLE SUPPORT SYSTEMS WITH INTEGRATED CIRCUIT INTEGRITY MAINTENANCE IN CASE OF FIRE

Fire tested cable clamps and other support systems for the passing of security lines (E 30-E 90) as well as advice for installation can be found in our catalogue “Fire Prevention”.

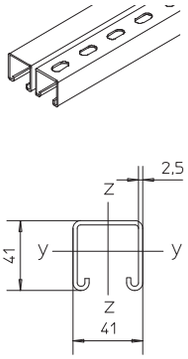
AC Mounting on c-profiles



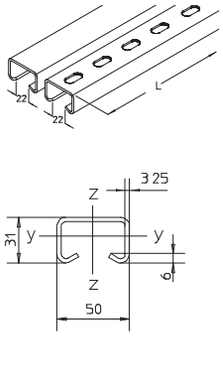




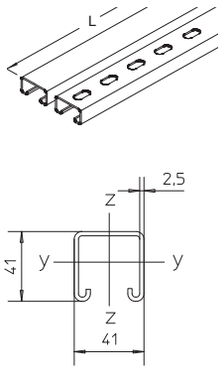
A 41 / KHA 41



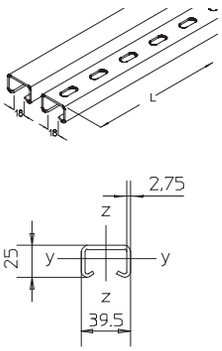
/ KHA 2



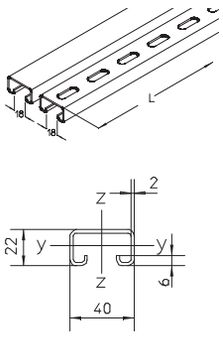
A 4 / KHA 4



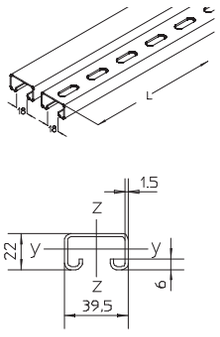
A 9 / KHA 9



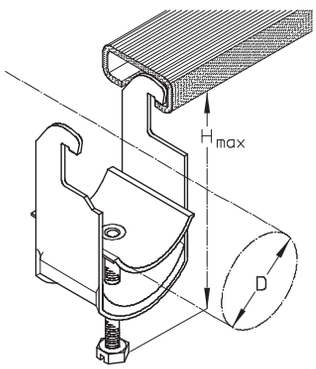
A 8 / KHA 8

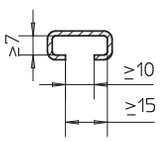


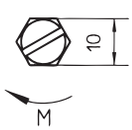
A 7 / KHA 7



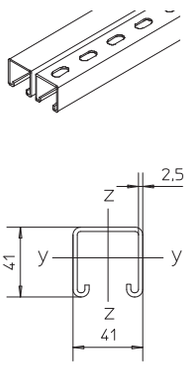
ACF-E Mounting on c-profiles



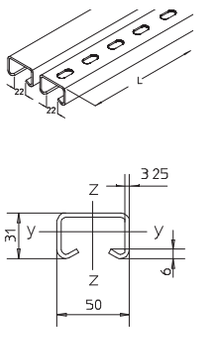




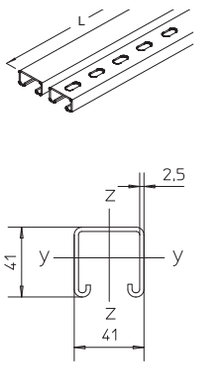
A 41 / KHA 41



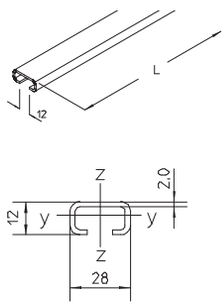
A 2 / KHA 2



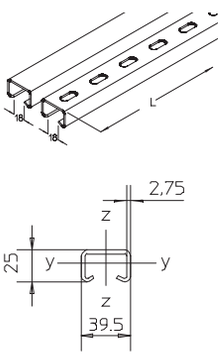
A 4 / KHA 4



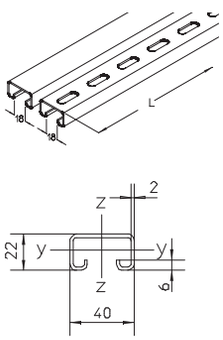
B3



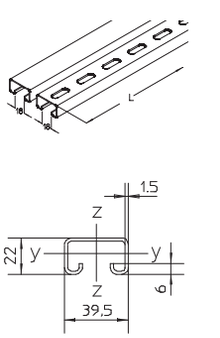
A 9 / KHA 9



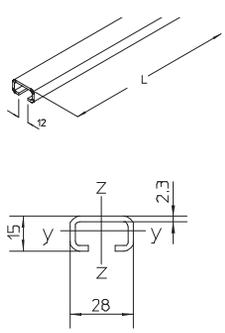
A 8 / KHA 8



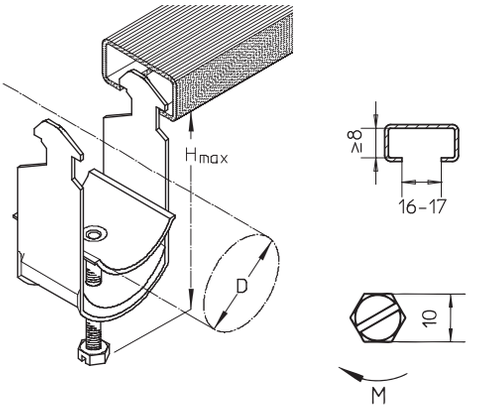
A 7 / KHA 7



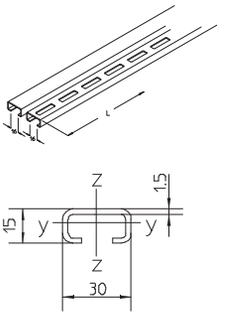
B 6



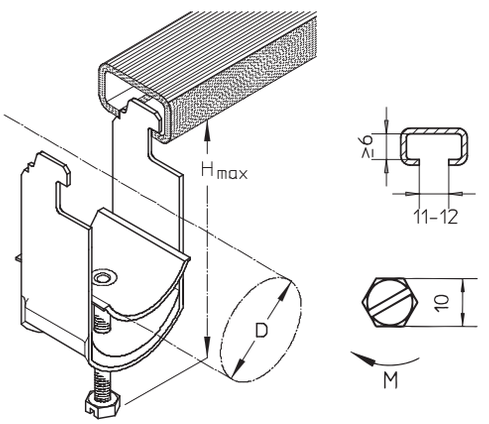
H Mounting on c-profiles



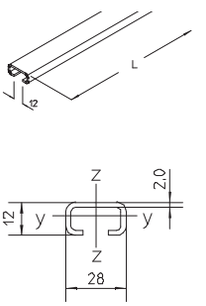
B 7 / KHB 7



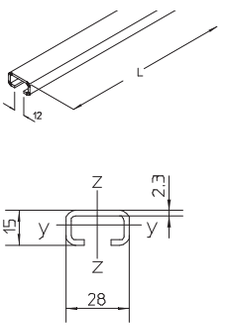
B Mounting on profiles



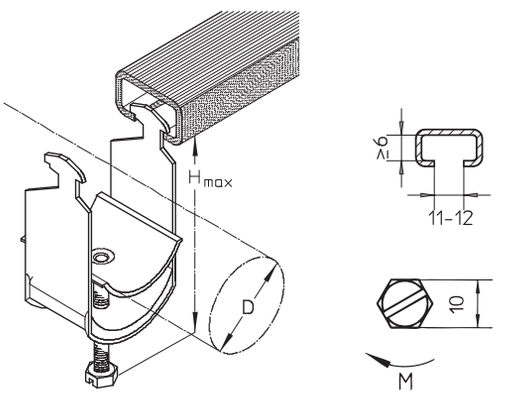
B 3



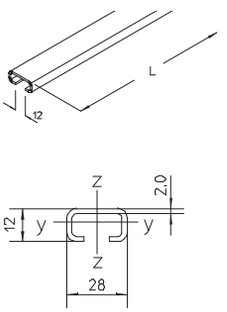
B 6



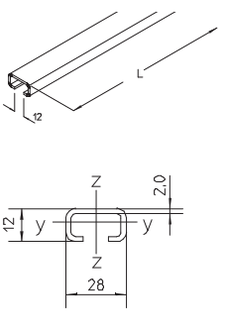
HB Mounting on profiles



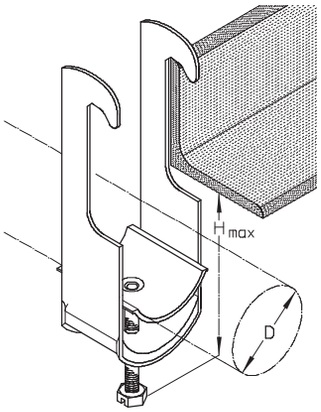
B 3



B 6

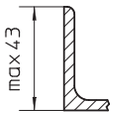


S Mounting on angle profile

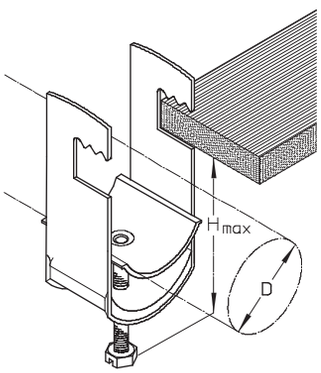


Wrench size 13 when diameter ≥ 150

Angle profile

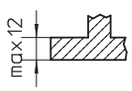


U Mounting on flat section

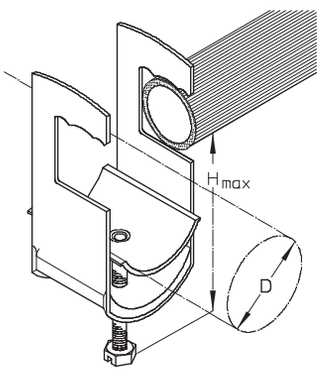


Wrench size 13 when diameter ≥ 150

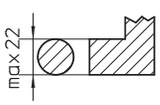
Flat section



RU Mounting on round profiles



Flat- and round profiles



ASSEMBLY

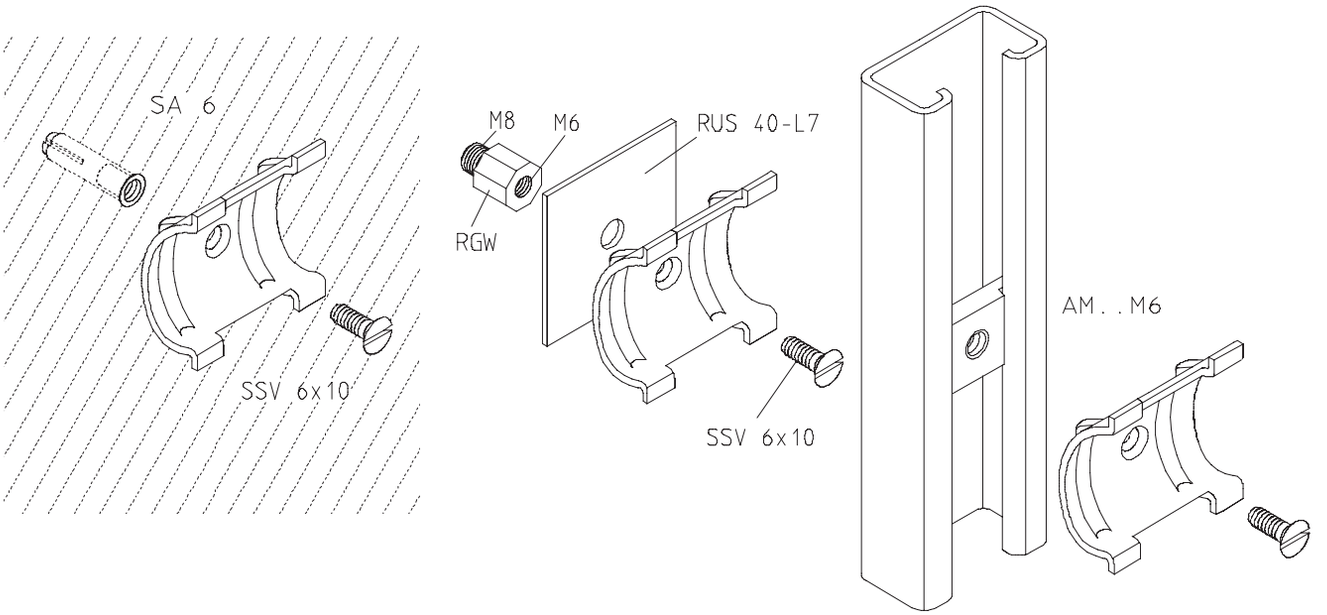
EXAMPLES FOR MOUNTING
CABLE CLAMPS

F02-F03

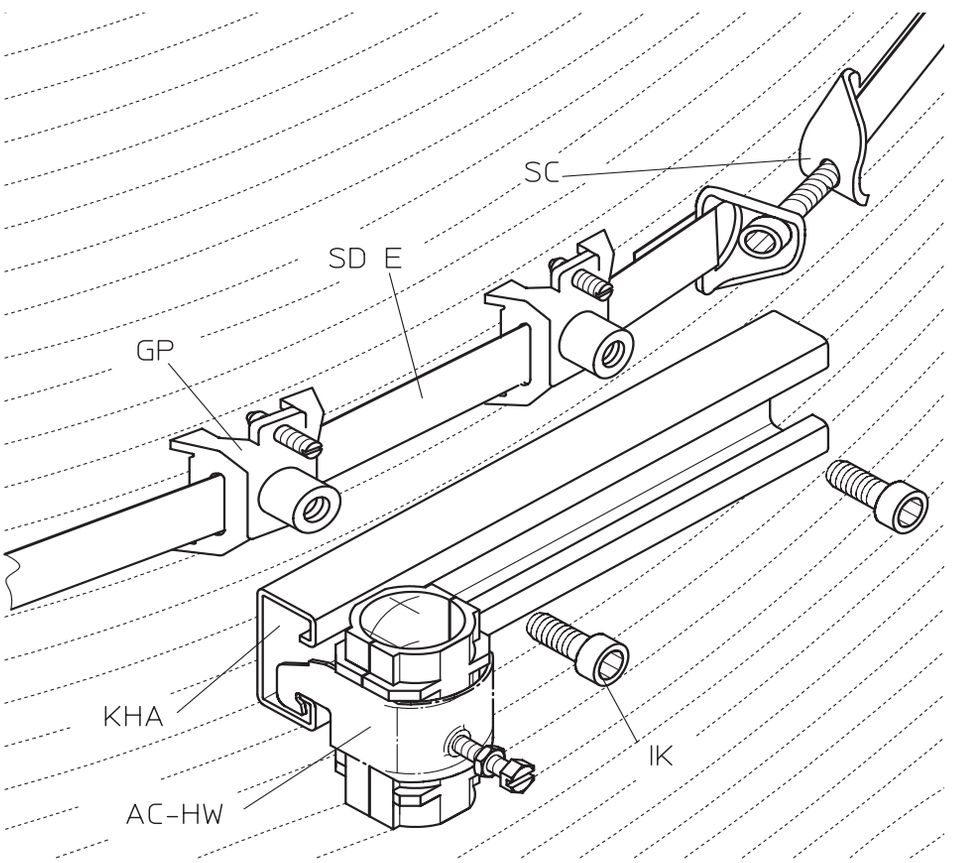
EXAMPLES FOR MOUNTING CABLE CLAMPS

APPLICATION EXAMPLES

Cable clamp type W for mounting on c-profiles or directly on the wall



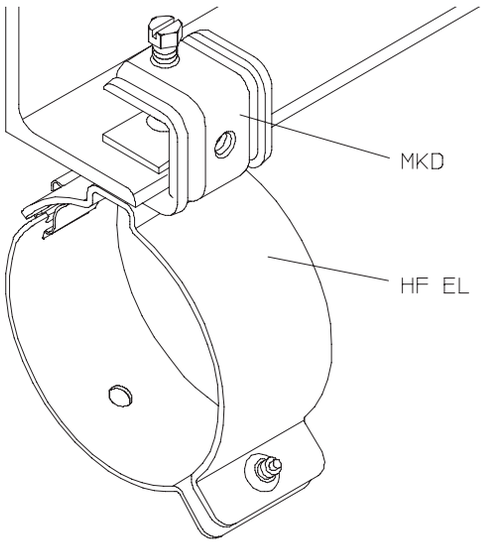
Fastening strip type SD for mounting on round or flat profiles

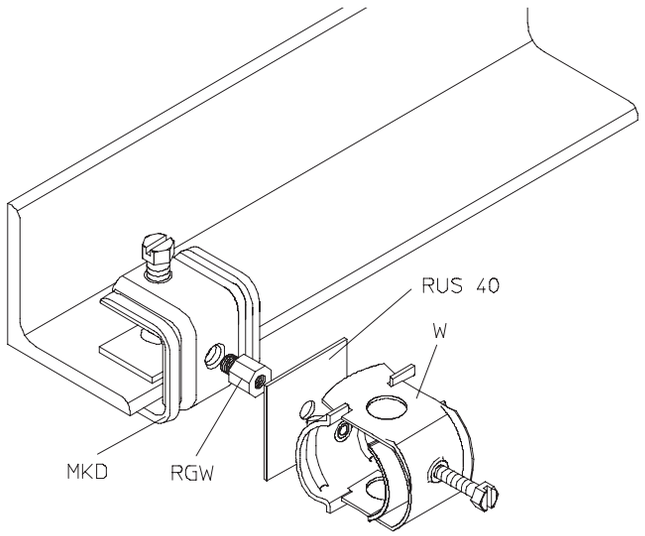


EXAMPLES FOR MOUNTING CABLE CLAMPS

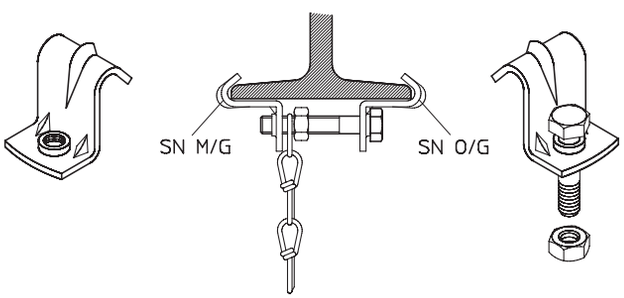
APPLICATION EXAMPLES

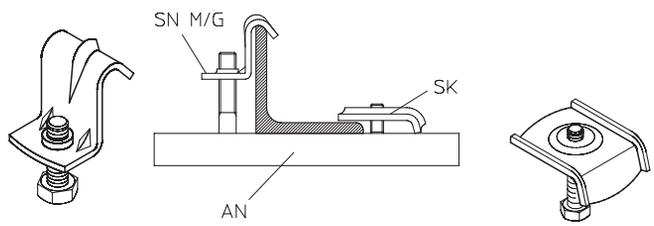
Cable clamp type MKD, mounted on a steel beam



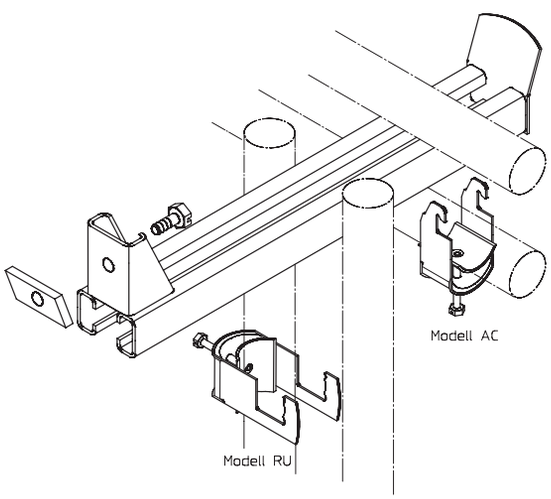


Beam clamp type SN / SK, mounted on steel beams





Traverse type T for multiple installations of cable clamps



A

CABLE CLAMPS A03-A18

B

VATS B03-B05

C

HF-CABLE CLAMPS C03-C09

D

FASTENINGS D03-D07

Legend

B	Width
D | Ø	Diameter
G	Weight per piece
H	Height
Hmax	Maximum height
IK	Internal hexagon
L	Length
M	Torque
P	Bracket load
Pzul	Permissible load
SW	Wrench size
AL	Aluminium
E	Stainless steel, material no. 1.4301 (ANSI 304) (V2A)
E4	Stainless steel, material no. 1.4571 (ANSI 316 Ti) / 1.4404 (ANSI 316 L) (V4A)
F	Hot-dip galvanized, according to EN ISO 1461
GV	Fastenings galvanized, according to ISO 4042
PE	Polyethylen
PS	Polystyrene
S	Continously hot galvanized (Sendzimir process) (EN 10346) (10244-2 for wire)
Z	Zinc coated