

# HILTI

Technical  
documentation  
Hilti System MQ  
channel installation  
hot-dip galvanised /  
stainless steel



# Rust ?

No, not with the Hilti rapid installation system.

Extreme convenience during assembly and a high level of safety characterize Hilti's proven MQ channel installation system. This flexible modular system permits optimized protection against corrosion combined with the benefits of rapid channel assembly.



## Features of Hilti installation system:

- Simple selection of the ideal channel for an application.
- High strength and stability of a structure.
- Installation safety and simple working principle of the system.
- Easy and accurately positioned fitting of channels with the single-part, pre-connectable, rapid-installation pushbutton.
- Quick and easy connection of various channels thanks to total system modularity.

As a pioneer of fastening technology, Hilti is committed to continually improving the products through in-house research and development. An actual example is the MQ system in various materials – hot-dip galvanised, HDG plus and stainless steel.

When selecting a suitable system, allowance must be made for the conditions it will be used in. As a guide, the following general recommendations can be given for selecting the right use of materials and types of protection against corrosion:

	Hot-dip galvanised steel or <b>HDG plus</b> quality	A4/A5 stainless steel
Inside	Humid and poorly ventilated rooms, with occasional effects of condensation	Frequent or long-lasting effects of condensation due to high humidity or temperature fluctuations
Outside	Slightly corrosive atmosphere (rural atmosphere)	Corrosive atmosphere (moderate exposure to chlorides and sulfur dioxide)

Anchors made of stainless steel are recommended for fastening hot-dip galvanized-, HDG plus- and stainless-steel components.

Please contact our advisory engineers for further details.

# HILTI

Hilti System MQ  
Channel installation  
hot-dip galvanised

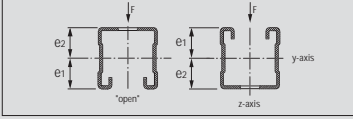


HDG plus –  
the longer lasting difference

Hilti. Outperform. Outlast.

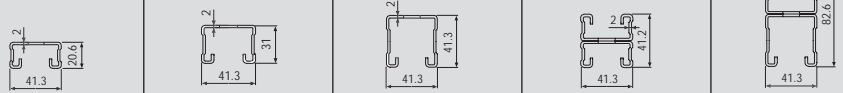
### Technical data

#### Definition of axes



Channel wall thickness	t [mm]	2.0
Cross-sectional area	A [mm <sup>2</sup> ]	165.3
Channel weight	[kg/m]	1.48
Delivered length	[m]	6
<b>Material</b>		
Permissible stress	$\sigma_{perm}$ [N/mm <sup>2</sup> ]	188.3
Cont. hot-dip galvanised (HDG plus), $\varnothing 70 \mu\text{m}$		●
Hot-dip galvanised, min. $45 \mu\text{m}$		
<b>Cross-section values</b>		
<b>Y-axis</b>		
Axis of gravity "open" <sup>1)</sup>	e <sub>1</sub> [mm]	10.84
Axis of gravity	e <sub>2</sub> [mm]	9.76
Moment of inertia	I <sub>y</sub> [cm <sup>4</sup> ]	0.92
Section modulus "open"	W <sub>y1</sub> [cm <sup>3</sup> ]	0.85
Section modulus	W <sub>y2</sub> [cm <sup>3</sup> ]	0.94
Radius of gyration	i <sub>y</sub> [cm]	0.74
Permissible moment <sup>2)</sup>	M <sub>y</sub> [Nm]	159
<b>Z-axis</b>		
Moment of inertia	I <sub>z</sub> [cm <sup>4</sup> ]	4.39
Section modulus	W <sub>z</sub> [cm <sup>3</sup> ]	2.13
Radius of gyration	i <sub>z</sub> [cm]	1.63

### Channel selections (HDG plus)



	MQ-21-HDG plus	MQ-31-HDG plus	MQ-41-HDG plus	MQ-21D-HDG plus	MQ-41D-HDG plus
Channel wall thickness	2.0	2.0	2.0	2.0	2.0
Cross-sectional area	165.3	204.9	245.1	330.6	490.3
Channel weight	1.48	1.80	2.13	2.98	4.29
Delivered length	6	6	6	6	6
<b>Material</b>					
Permissible stress	188.3	181.8	175.3	188.3	175.3
Cont. hot-dip galvanised (HDG plus), $\varnothing 70 \mu\text{m}$	●	●	●	●	●
Hot-dip galvanised, min. $45 \mu\text{m}$					
<b>Cross-section values</b>					
<b>Y-axis</b>					
Axis of gravity "open" <sup>1)</sup>	10.84	16.01	21.13	20.60	41.30
Axis of gravity	9.76	14.99	20.17	20.60	41.30
Moment of inertia	0.92	2.60	5.37	4.98	30.69
Section modulus "open"	0.85	1.62	2.54	2.42	7.43
Section modulus	0.94	1.73	2.66	2.42	7.43
Radius of gyration	0.74	1.13	1.48	1.23	2.50
Permissible moment <sup>2)</sup>	159	295	446	455	1303
<b>Z-axis</b>					
Moment of inertia	4.39	5.83	7.33	8.78	14.67
Section modulus	2.13	2.82	3.55	4.25	7,10
Radius of gyration	1.63	1.69	1.73	1.63	1.73

#### Selection of channel section:

- The given data is based on a single span (simply-supported beam) bearing a single load, F (kN), at mid-span, L/2.
- If several loads are acting on a single span (simply-supported beam), these may be summated and regarded as a single load acting at mid span. By taking this approach, the design calculation is on the safe side. (→ Cross section selection table).
- The permissible stress in the steel and the max. deflection, L/200, are not exceeded with the given max. span width, L (cm).
- The channel's own weight was taken into account.
- **HDG plus channels:** The permissible stress  $\sigma_D / \gamma_{M0}$  where  $\gamma = 1.4$ .  $\sigma_D$  results from the higher yield strength (point) resulting from cold forming as per DAST-RILI 016 from 1992:  $\sigma_D = f_{yk} / \gamma_M$  where  $\gamma_M = 1.1$

F (kN)	Max. span width, L (cm) / deflection f (mm) <sup>3)</sup>									
	L (cm)	f (mm)	L (mm)	f (mm)	L (cm)	f (mm)	L (cm)	f (mm)	L (cm)	f (mm)
0.25	133	6,7	218	10,9	306	15,3	288	14,4	614	30,7
0.50	95	4,8	159	7,9	226	11,3	216	10,8	496	24,8
0.75	78	3,9	131	6,5	187	9,3	179	9,0	424	21,2
1.00	63	2,8	114	5,7	163	8,1	156	7,8	375	18,8
1.25	51	1,8	94	4,0	141	6,6	140	7,0	340	17,0
1.50	42	1,2	78	2,8	118	4,6	120	5,3	313	15,6
1.75	36	<1	67	2,0	101	3,4	103	3,9	288	14,1
2.00	32	<1	59	1,6	89	2,6	90	3,0	254	11,0
2.25	28	<1	52	1,2	79	2,1	80	2,4	227	8,9
2.50	25	<1	47	1,0	71	1,7	72	1,9	205	7,3
2.75	23	<1	43	<1	65	1,4	66	1,6	187	6,1
3.00	21	<1	39	<1	59	1,2	60	1,3	172	5,1
3.50	18	<1	34	<1	51	<1	–	–	148	3,8
4.00	16	<1	29	<1	44	<1	–	–	129	2,9
4.50	14	<1	26	<1	39	<1	–	–	115	2,3
5.00	12	<1	23	<1	36	<1	–	–	104	1,9
6.00	10	<1	19	<1	30	<1	–	–	87	1,3
7.00	9	<1	17	<1	25	<1	–	–	–	–
8.00	7	<1	14	<1	22	<1	–	–	–	–

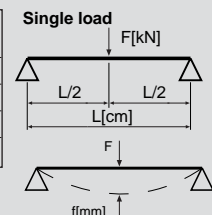
#### Selection example:

- 1.0 kN (≈100 kg) should be carried by a channel with a channel span width L = 100 cm (single span simply supported).

#### Solution:

- Select the line showing the load, F = 1.0 kN.
- The MQ-31-HDG plus to MQ-41D-HDG plus channels can be used because the permissible span width (tabulated value) is larger or equal to the required span, L = 100 cm.

Conversion	kp	kg	N	kN
1 kp	–	1	10	0,01
1 kg	1	–	10	0,01
1 N	0,1	0,1	–	0,001
1 kN	100	100	1000	–



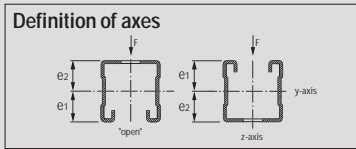
<sup>1)</sup> The smaller value (W<sub>y1</sub>, W<sub>y2</sub>) is decisive for the calculated bending dimension (W<sub>y1</sub> = I<sub>y</sub>/e<sub>1</sub> or W<sub>y2</sub> = I<sub>y</sub>/e<sub>2</sub>).

<sup>2)</sup> Perm. M<sub>y</sub> =  $\sigma_{perm} \cdot \min. (W_{y1}, W_{y2})$

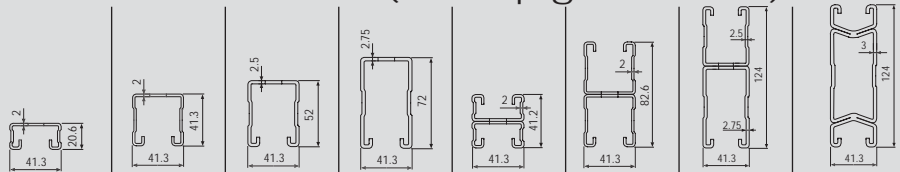
<sup>3)</sup> The channel length is max. 6.0 m. Contact Hilti technical staff about channels longer than 6.0 m!



Technical data



Channel selections (hot-dip galvanised)



Channel wall thickness	t [mm]	2.0	2.0	2.5	2.75	2.0	2.0	2,5/2.75	3.0
Cross-sectional area	A [mm <sup>2</sup> ]	165.3	245.1	352.1	492.8	330.6	490.3	844.9	1237.2
Channel weight	[kg/m]	1.48	2.13	3.01	4.20	2.97	4.29	7.26	10.09
Delivered length	[m]	3/6	3/6	3/6	3/6	3/6	3/6	6	6
<b>Material</b>									
Permissible stress	$\sigma_{perm}$ [N/mm <sup>2</sup> ]	152.6	152.6	152.6	152.6	152.6	152.6	152.6	152.6
Cont. hot-dip galvanised (HDG plus), $\varnothing$ 70 $\mu$ m									
Hot-dip galvanised, min. 45 $\mu$ m									
<b>Cross-section values</b>									
<b>Y-axis</b>									
Axis of gravity "open" <sup>1)</sup>	e <sub>1</sub> [mm]	10.84	21.13	26.67	36.79	20.60	41.30	62.02	62.00
Axis of gravity	e <sub>2</sub> [mm]	9.76	20.17	25.33	35.22	20.60	41.30	61.99	62.00
Moment of inertia	I <sub>y</sub> [cm <sup>4</sup> ]	0.92	5.37	11.41	28.70	4.98	30.69	115.41	188.04
Section modulus "open"	W <sub>y1</sub> [cm <sup>3</sup> ]	0.85	2.54	4.28	7.80	2.42	7.43	18.61	30.33
Section modulus	W <sub>y2</sub> [cm <sup>3</sup> ]	0.94	2.66	4.50	8.15	2.42	7.43	18.62	30.33
Radius of gyration	i <sub>y</sub> [cm]	0.74	1.48	1.80	2.41	1.23	2.50	3.70	3.90
Permissible moment <sup>2)</sup>	M <sub>y</sub> [Nm]	129	388	653	1190	369	1134	2840	4628
<b>Z-axis</b>									
Moment of inertia	I <sub>z</sub> [cm <sup>4</sup> ]	4.39	7.33	10.79	15.40	8.78	14.67	26.13	31.62
Section modulus	W <sub>z</sub> [cm <sup>3</sup> ]	2.13	3.55	5.23	7.46	4.25	7.10	12.65	15.31
Radius of gyration	i <sub>z</sub> [cm]	1.63	1.73	1.75	1.77	1.63	1.73	1.76	1.60

Selection of channel section:

- The given data is based on a single span (simply-supported beam) bearing a single load, F (kN), at mid-span, L/2.
- If several loads are acting on a single span (simply-supported beam), these may be summated and regarded as a single load acting at mid span. By taking this approach, the design calculation is on the safe side. (→ Cross section selection table).
- The permissible stress in the steel and the max. deflection, L/200, are not exceeded with the given max. span width, L (cm).
- The channel's own weight was taken into account.

F (kN)	Max. span width, L (cm) / deflection f (mm) <sup>3)</sup>															
	L (cm) / f (mm)		L (cm) / f (mm)		L (cm) / f (mm)		L (cm) / f (mm)		L (cm) / f (mm)		L (cm) / f (mm)		L (cm) / f (mm)		L (cm) / f (mm)	
0.25	133	6.7	306	15.3	419	20.9	599	29.9	288	14.4	614	30.7	936	46.8	1034	51.7
0.50	95	4.8	226	11.3	321	16.0	482	24.1	216	10.8	496	24.8	821	41.0	938	46.9
0.75	68	2.6	187	9.3	268	13.4	411	20.5	179	9.0	424	21.2	735	36.8	861	43.0
1.00	51	1.5	153	6.8	235	11.7	364	18.2	145	6.2	375	18.8	670	33.5	797	39.9
1.25	41	<1	123	4.4	204	9.5	329	16.5	116	4.1	340	17.0	618	30.9	745	37.2
1.50	34	<1	103	3.1	171	6.8	303	15.1	97	2.9	291	12.7	576	28.8	701	35.0
1.75	29	<1	88	2.3	147	5.0	264	11.7	84	2.1	252	9.6	541	27.0	663	33.1
2.00	26	<1	77	1.7	129	3.9	233	9.1	73	1.6	222	7.5	511	25.6	630	31.5
2.25	23	<1	69	1.4	115	3.1	208	7.3	65	1.3	198	6.0	470	22.2	601	30.1
2.50	20	<1	62	1.1	104	2.5	188	6.0	59	1.0	179	4.9	428	18.7	576	28.8
2.75	19	<1	56	<1	94	2.1	171	5.0	53	<1	163	4.1	393	15.8	554	27.7
3.00	17	<1	52	<1	87	1.8	157	4.2	49	<1	150	3.5	363	13.6	534	26.7
3.50	15	<1	44	<1	74	1.3	135	3.1	-	-	129	2.6	315	10.3	495	24.3
4.00	13	<1	39	<1	65	<1	118	2.4	-	-	113	2.0	277	8.1	439	19.4
4.50	11	<1	34	<1	58	<1	105	1.9	-	-	100	1.6	248	6.5	394	15.8
5.00	10	<1	31	<1	52	<1	95	1.5	-	-	90	1.3	224	5.3	358	13.1
6.00	8	<1	26	<1	43	<1	79	1.1	-	-	75	<1	187	3.7	301	9.4
7.00	7	<1	22	<1	37	<1	68	<1	-	-	-	-	161	2.8	260	7.0
8.00	6	<1	19	<1	32	<1	59	<1	-	-	-	-	141	2.1	228	5.4

Selection example:

- 1.0 kN (≈100 kg) should be carried by a channel with a channel span width L = 100 cm (single span simply supported).

Solution:

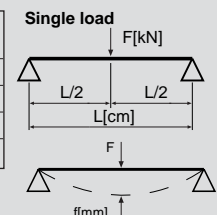
- Select the line showing the load, F = 1.0 kN.
- The MQ-41-F to MQ-124XD-F channels can be used because the permissible span width (tabulated value) is larger or equal to the required span, L = 100 cm.

<sup>1)</sup> The smaller value (W<sub>y1</sub>, W<sub>y2</sub>) is decisive for the calculated bending dimension (W<sub>y1</sub> = I<sub>y</sub>/e<sub>1</sub> or W<sub>y2</sub> = I<sub>y</sub>/e<sub>2</sub>).

<sup>2)</sup> Perm. M<sub>y</sub> =  $\sigma_{perm}$  · min. (W<sub>y1</sub>, W<sub>y2</sub>)

<sup>3)</sup> The channel length is max. 6.0 m. Contact Hilti technical staff about channels longer than 6.0 m!

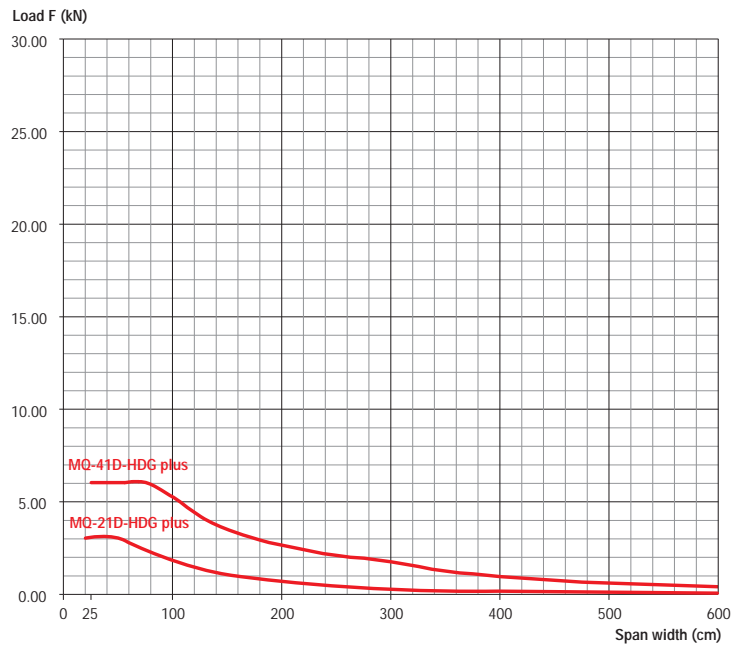
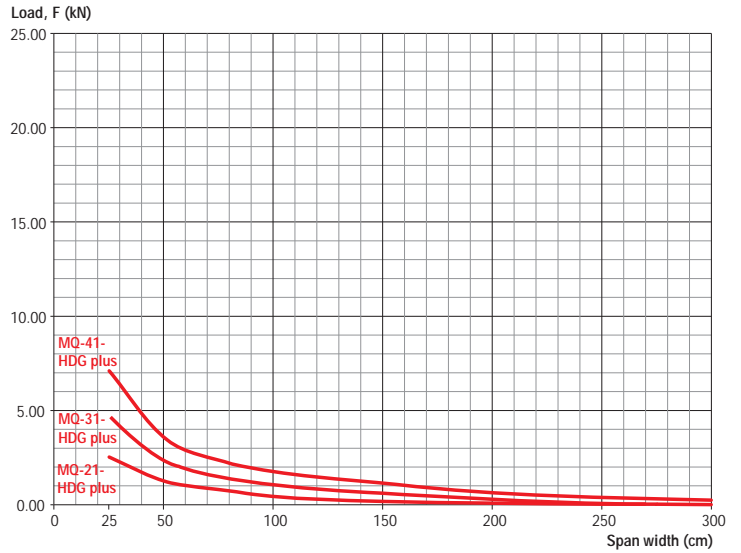
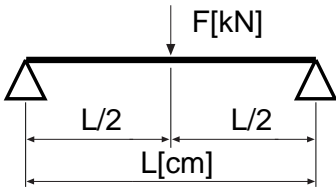
Conversion	kp	kg	N	kN
1 kp	-	1	10	0,01
1 kg	1	-	10	0,01
1 N	0,1	0,1	-	0,001
1 kN	100	100	1000	-



# Channel selection diagram (HDG-plus) Single span (simply supported)

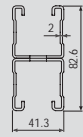
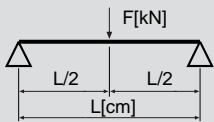
with single load at mid span,  $L/2$

All values were calculated for a permissible stress of  $\sigma_{perm}$ . (see technical data for channel selection) and a deflection of  $L/200$ .



## Channel selection table (HDG plus)

Single span (simply supported) with single load at mid span,  $L/2$



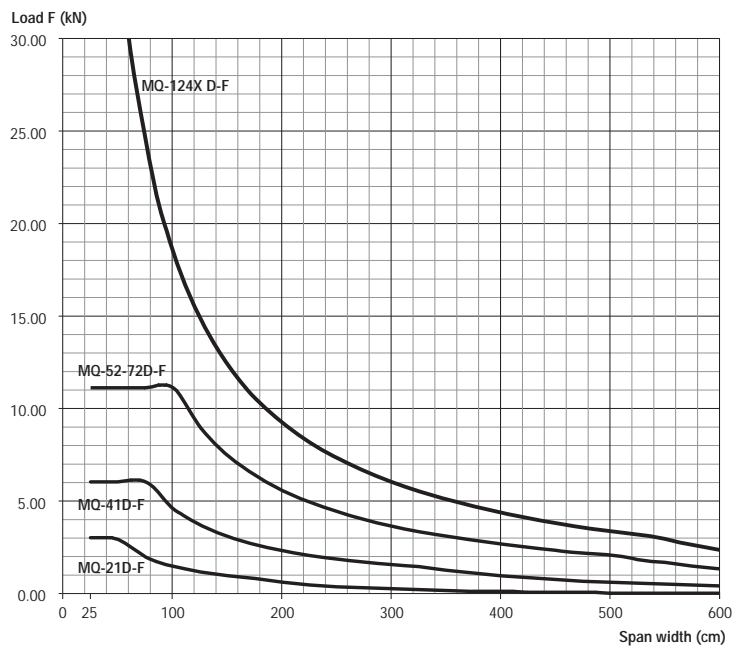
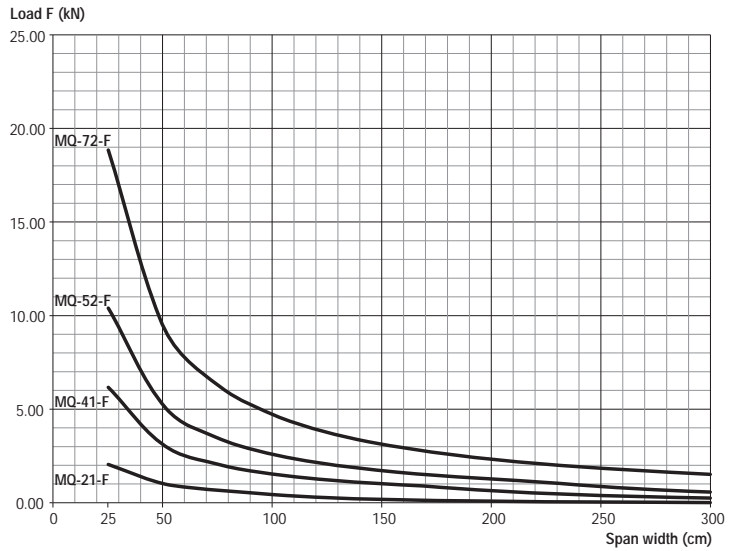
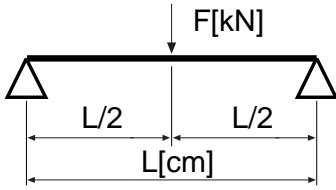
Max. load, F (kN) / deflection, f (mm)

Span width L (cm)	MQ-21-HDG plus		MQ-31-HDG plus		MQ-41-HDG plus		MQ-21 D-HDG plus		MQ-41 D-HDG plus	
	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200
25	2.53	<1	4.68	<1	7.08	<1	3.00	<1	6.00	<1
50	1.27	1.7	2.35	1.1	3.56	<1	3.00	<1	6.00	<1
75	0.82	3.8	1.56	2.5	2.37	1.9	2.42	2.0	6.00	<1
100	0.45	5.0	1.17	4.5	1.77	3.3	1.81	3.6	5.19	1.7
125	0.28	6.3	0.82	6.3	1.41	5.2	1.44	5.7	4.14	2.6
150	0.19	7.5	0.57	7.5	1.17	7.4	1.09	7.5	3.44	3.8
175	0.14	8.8	0.41	8.8	0.86	8.8	0.79	8.8	2.94	5.2
200	0.10	10.0	0.31	10.0	0.65	10.0	0.59	10.0	2.56	6.8
225	0.07	11.3	0.23	11.3	0.51	11.3	0.46	11.3	2.27	8.6
275	0.04	13.8	0.14	13.8	0.32	13.8	0.28	13.8	1.84	12.8
300	0.02	15.0	0.11	15.0	0.26	15.0	0.22	15.0	1.64	15.0

# Channel selection diagram (hot-dip galvanised) Single span (simply supported)

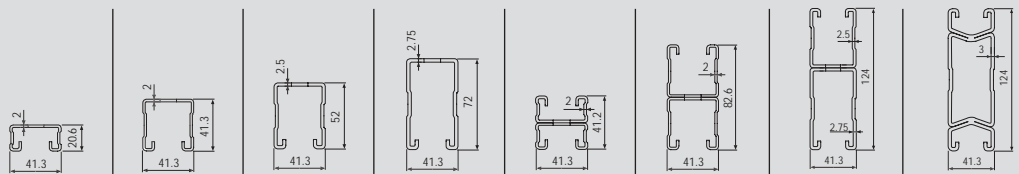
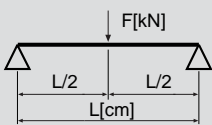
with single load at mid span, L/2

All values were calculated for a permissible stress of  $\sigma_{perm}$  (see technical data for channel selection) and a deflection of L/200.



## Channel selection table (hot-dip galvanised)

Single span (simply supported)  
with single load at mid span, L/2



Max. load, F (kN) / deflection, f (mm)

Span width L (cm)	MQ-21-F		MQ-41-F		MQ-52-F		MQ-72-F		MQ-21-D-F		MQ-41 D-F		MQ-52-72 D-F		MQ-124 XD-F	
	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200
25	2.05	<1	6.16	<1	10.37	0.1	18.93	<1	3.00	<1	6.00	<1	11.20	<1	73.63	<1
50	1.03	1.4	3.09	<1	5.21	0.6	9.5	<1	2.94	0.7	6.00	<1	11.20	<1	36.95	<1
75	0.68	3.1	2.06	1.6	3.47	1.3	6.33	<1	1.96	1.7	6.00	<1	11.20	<1	24.63	<1
100	0.45	5.0	1.54	2.9	2.59	2.3	4.74	1.6	1.46	2.9	4.51	1.5	11.20	1.0	18.46	1.0
125	0.28	6.3	1.23	4.5	2.07	3.6	3.78	2.6	1.16	4.6	3.60	2.3	9.04	1.5	14.75	1.5
150	0.19	7.5	1.02	6.5	1.72	5.1	3.14	3.7	0.96	6.6	2.99	3.3	7.52	2.2	12.27	2.2
175	0.14	8.8	0.86	8.8	1.47	7.0	2.68	5.1	0.79	8.8	2.55	4.5	6.43	3.0	10.49	3.0
200	0.10	10.0	0.65	10.0	1.28	9.1	2.34	6.6	0.59	10.0	2.23	5.9	5.61	3.9	9.16	3.9
225	0.07	11.3	0.51	11.3	1.09	11.3	2.07	8.4	0.46	11.3	1.97	7.5	4.97	5.0	8.12	5.0
275	0.04	13.8	0.32	13.8	0.71	13.8	1.68	12.5	0.28	13.8	1.59	11.2	4.03	7.4	6.60	7.4
300	0.02	15.0	0.26	15.0	0.58	15.0	1.53	15.0	0.22	15.0	1.45	13.3	3.68	8.8	6.02	8.8

## Technical data for brackets (hot-dip galvanised)

Bracket	Channel L (mm)	Type of load 1: uniform		Type of load 2: single		Type of load 3		Type of load 4		Type of load 5	
		$F_1 = q \cdot l$	$F_1$ [N]	$F_1$ [N]	$F_1$ [N]	$F_1$ [N]	$F_2$ [N]	$F_2$ [N]	$F_3$ [N]	$F_3$ [N]	
MQK-21/300-F	300	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>
MQK-21/450-F	450	850	850	850	850	420	420	420	420	280	280
MQK-41/300-F	300	500	500	560	560	180	180	280	280	180	180
MQK-41/450-F	450	2560	2560	2560	2560	1280	1280	1280	1280	850	850
MQK-41/600-F	600	1710	1710	1710	1710	850	850	850	850	570	570
MQK-41/600-F	600	1270	1270	1270	1270	620	620	630	630	420	420
MQK-41/1000-F	1000	580	580	750	750	210	210	360	360	220	220
MQK-41/600/4-F	600	1270	1270	1270	1270	620	620	630	630	420	420
MQK-41/1000/4-F	1000	580	580	750	750	210	210	360	360	220	220
MQK-72/450-F	450	5260	3180	5260	3180	2630	1590	2630	1590	1750	1060
MQK-72/600-F	600	3930	2380	3930	2380	1970	1190	1960	1190	1310	790
MQK-21 D/300-F	300	2430	2430	2430	2430	1220	1220	1210	1210	810	810
MQK-21 D/450-F	450	1620	1620	1620	1620	810	810	810	810	540	540
MQK-21 D/600-F	600	1210	1210	1210	1210	570	570	600	600	400	400
MQK-41 D/1000-F	1000	2220	1400	2220	1400	1110	700	1110	700	740	460

<sup>1)</sup> Loading capacity of the bracket (steel loading capacity) or with HVZ-R M12 fastening, the loading capacity of the bracket is reached with the HVZ-R M12.

<sup>2)</sup> Loading capacity of the bracket with HST-R fastening, alternatively, loading values with HIT-RTZ M12 are at least those with HST-R M12.

Load values are for grade C20/25 concrete (≈ B25).

Alternatively, fastening in solid or hollow brick with HIT HY 50 and approval is possible. Use stainless-steel anchor rods (loading values not given in this table).

The bracket's own weight has been allowed for.

**The loads apply only if the bracket is fastened away from a building component edge (fastenings made at component edges must be designed separately).**

Separate verification must be provided that forces are transferred to the respective base material, i.e. steel and concrete.

**The application guidelines in anchor approvals must be observed. Loading values according to approval status July 2005.**

The deflection (deformation) of L/150 was observed in all cases, this being measured at the point of load application.

HVZ-R adhesive anchor



HST-R stud anchor



## Technical data for brackets with angle brace (hot-dip galvanised)

Bracket	L (mm)	Brace	Type of load 1: uniform	Type of load 2: single	Type of load 3	Type of load 4	Type of load 5	
			$F_1 = q \cdot l$	$F_1$ [N] <sup>1)</sup>	$F_1$ [N] <sup>1)</sup>	$F_1$ [N] <sup>1)</sup>	$F_2$ [N] <sup>1)</sup>	$F_3$ [N] <sup>1)</sup>
MQK-21/450 -F	450	short		4420	1140	520	1970	1750
MQK-41/450-F	450	short		6390	3450	2390	3190	2130
MQK-41/600-F	600	long		5540	2580	2840	2510	1890
MQK-41/1000-F	1000	long		2250	3400	430	1700	1130
MQK-41/600/4-F	600	long		5540	2580	2840	2510	1890
MQK-41/1000/4-F	1000	long		2250	3400	430	1700	1130
MQK-72/450-F	450	short		6380	6380	3190	3190	2120
MQK-72/600-F	600	long		5680	5680	2840	2840	1890
MQK-21 D/450-F	450	short		6380	3280	2270	3190	2120
MQK-21 D/600-F	600	long		5260	2450	2840	2390	1870
MQK-41 D/1000-F	1000	long		3380	3380	1690	1690	1120

<sup>1)</sup> Loading capacity of the bracket (steel loading capacity) or the loading capacity of the bracket is reached with the HVZ-R, HIT-RTZ or HST-R M12 fastening.

Load values are for grade C20/25 concrete (≈ B25).

Alternatively, fastening in solid or hollow brick with HIT HY 50 and approval is possible. Use stainless-steel anchor rods (loading values not given in this table).

The bracket's own weight has been allowed for.

**The loads apply only if the bracket is fastened away from a building component edge (fastenings made at component edges must be designed separately).**

Separate verification must be provided that forces are transferred to the respective base material, i.e. steel and concrete.

**The application guidelines in anchor approvals must be observed. Loading values according to approval status July 2005.**

The deflection (deformation) of L/150 was observed in all cases, this being measured at the point of load application.



## Installation channels

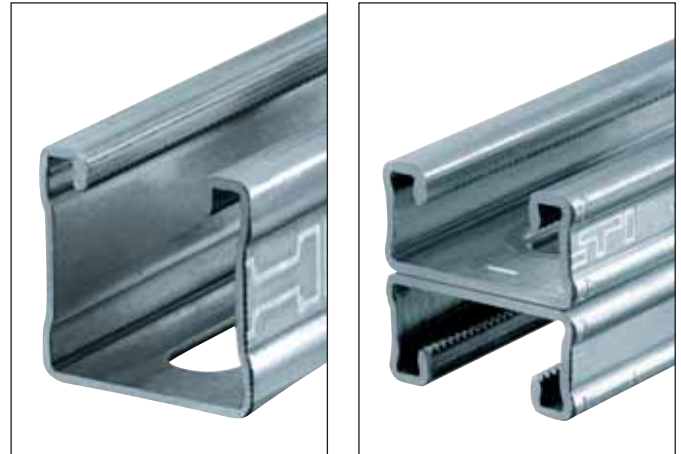
**Features:**

- Serrated C-section.
- Installation assisted by dimension marking.
- Great flexibility due to slots.
- Aesthetic appearance.
- Swage-joined double channel.

**Technical data:**

**Material:** Hot-dip galvanised single channels and HDG plus channels:  
S 235 JR as per DIN EN 10025  
Hot-dip galvanised double channels:  
S 250 GD as per DIN EN 10 326

**Galvanising:** HDG plus: continuous hot-dip galvanised with 1000 g/m<sup>2</sup>  
(approx. Ø 70 µm)  
MQ-F: hot-dip galvanised, min. 45 µm



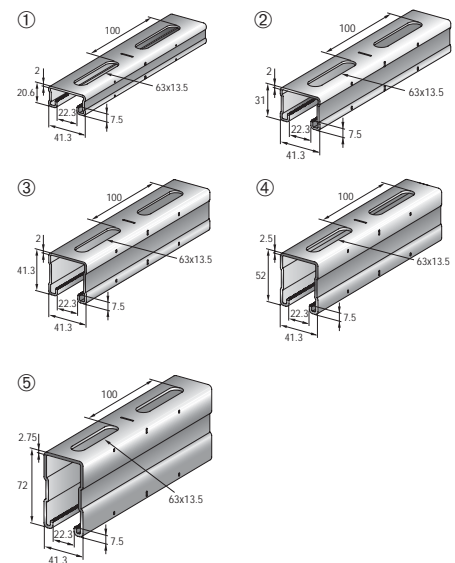
## Single channels

**HDG plus**

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)	Ordering designation	Item no.
21	6	2	1.48	① MQ-21-HDG plus 6 m	304098
31	6	2	1.80	② MQ-31-HDG plus 6 m	284530
41	6	2	2.13	③ MQ-41-HDG plus 6 m	304101

**Hot-dip galvanised**

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)	Ordering designation	Item no.
21	3	2	1.48	① MQ-21-F 3 m	304096
21	6	2	1.48	① MQ-21-F 6 m	304097
41	3	2	2.13	③ MQ-41-F 3 m	304099
41	6	2	2.13	③ MQ-41-F 6 m	304100
52	3	2,5	3.01	④ MQ-52-F 3 m	304102
52	6	2,5	3.01	④ MQ-52-F 6 m	304103
72	3	2,75	4.20	⑤ MQ-72-F 3 m	304104
72	6	2,75	4.20	⑤ MQ-72-F 6 m	304105



Channels ④ ⑤ firestop tested



IBMB no. 3897/1802-5

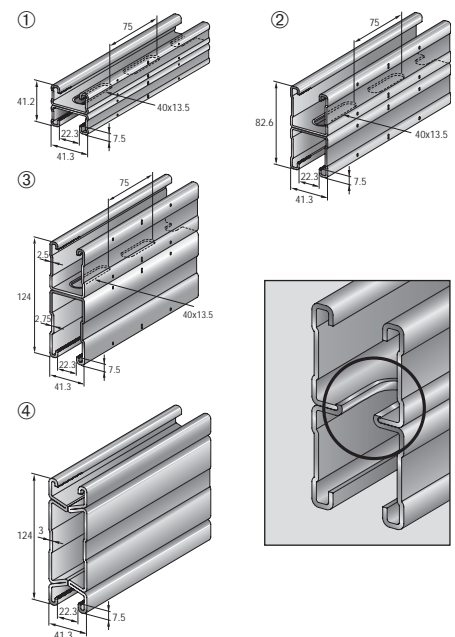
## Double channels

**HDG plus**

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)	Ordering designation	Item no.
41	6	2	2.98	① MQ-21D-HDG plus 6 m	284385
82	6	2	4.29	② MQ-41D-HDG plus 6 m	304111

**Hot-dip galvanised**

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)	Ordering designation	Item no.
41	3	2	2.97	① MQ-21D-F 3 m	304107
41	6	2	2.97	① MQ-21D-F 6 m	304108
82	3	2	4.29	② MQ-41D-F 3 m	304109
82	6	2	4.29	② MQ-41D-F 6 m	304110
124	6	2,5 / 2,75	7.26	③ MQ-52-72D-F 6 m	304112
124	6	3	10.09	④ MQ-124X D-F 6 m	370594



Channels ② ③ ④ firestop tested



IBMB no. 3897/1802-5

## Brackets

**Features:**

- Serrated C-section.
- Installation assisted by dimension marking.
- Great flexibility due to slots.
- Double-channel brackets welded all around.

**Technical data:**

Material channel:	S 250 GP as per DIN EN 10 326
Material base plate:	S 235 JR as per DIN EN 10025
Galvanising:	hot-dip galvanised, min. 56 µm



## Brackets (HDG)

Channel length (mm)	Channel section	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
300	MQ-21-F	670	10	① MQK-21/300-F	304113
450	MQ-21-F	890	10	① MQK-21/450-F	304114
300	MQ-41-F	950	10	② MQK-41/300-F	304115
450	MQ-41-F	1260	10	② MQK-41/450-F	304116
600	MQ-41-F	1570	10	② MQK-41/600-F	304117
1000	MQ-41-F	2400	10	② MQK-41/1000-F	304118
600	MQ-41-F	2540	6	③ MQK-41/600/4-F	304119
1000	MQ-41-F	3370	6	③ MQK-41/1000/4-F*	304120
450	MQ-72-F	2510	6	④ MQK-72/450-F	304122
600	MQ-72-F	3130	6	④ MQK-72/600-F	304123
300	MQ-21 D-F	1250	10	⑤ MQK-21 D/300-F	304124
450	MQ-21 D-F	1720	10	⑤ MQK-21 D/450-F	304125
600	MQ-21 D-F	2190	10	⑤ MQK-21 D/600-F	304126
1000	MQ-41 D-F	5080	6	⑥ MQK-41 D/1000-F	304127

\* Available on request

Brackets ② ③ ④ ⑥ firestop tested

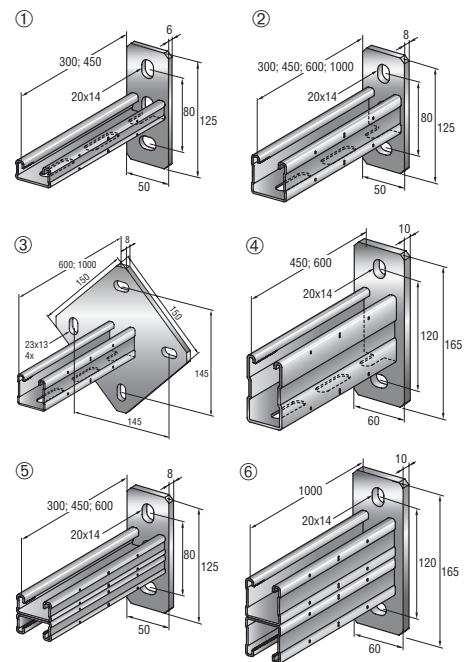
Bracket ④ with VdS approval



IBMB no. 3897/1802-5



For VdS-approved installation see [www.hilti.com/vds-installation](http://www.hilti.com/vds-installation)



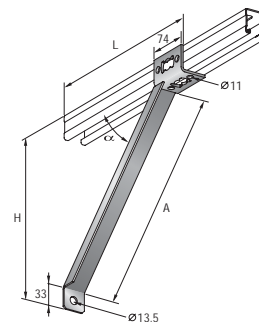
## Angle brace (HDG)

For fabricating wall brackets with individual stand-off lengths.

Material: S 235 JR as per DIN EN 10025  
 Material thickness: 4 or 3 mm

	A	H	L	α	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Angle brace, short	355	328	324	45°	650	10	MQK-SK-F	304129
Angle brace, long	635	528	524	45°	1060	10	MQK-SL-F	304128

(See technical data on page 8).



## Channel nut

**Features:**

- Simple, compact, time saving.
- Single part which can be prefitted.
- Easy to use.
- Universal: one and the same nut for all channels.



**Technical data:**

Galvanising: hot-dip galvanised, min. 56 µm

## Pushbutton (HDG)

Bolt: M10 material 8.8 as per DIN ISO 898  
 Width across flats: 17 mm  
 Nut: C4C as per DIN EN 10 263  
 Plate: S 235 JR as per DIN EN 10 025



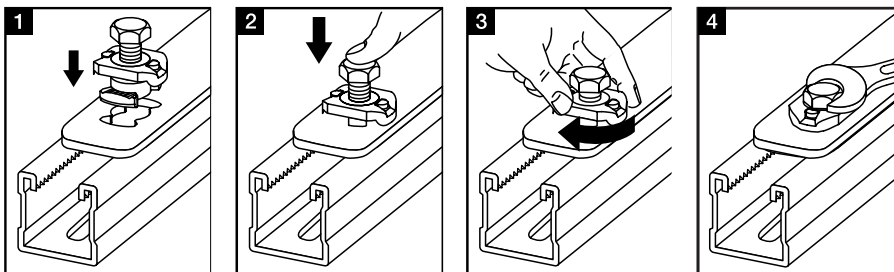
Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
<b>M10</b>	84	25	200	<b>MQN-F</b>	<b>304130</b>



IBMB no. 3897/1802-5

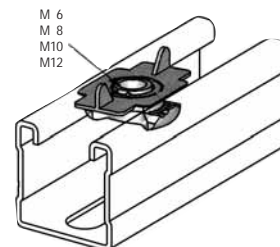
Item	Rec. tensile load, Z <sub>rec</sub> (kN)		Rec. shear load, Q <sub>rec</sub> (kN)		Tightening torque, M <sub>t</sub> (Nm)
	Channel I/II	Channel III	Channel I/III	Channel II	
MQN-F	5.0	8.0	3.0 <sup>1)</sup>	4.5 <sup>2)</sup>	40
Channel I:	MQ-21-F, MQ-41-F, MQ-21 D-F, MQ-41 D-F				
Channel II:	MQ-21-HDG plus, MQ-31-HDG plus, MQ-41-HDG plus, MQ-21D-HDG plus, MQ-41D-HDG plus				
Channel III:	MQ-52-F, MQ-72-F, MQ-52-72D-F, MQ-124XD-F				

<sup>1)</sup> Shear loading applies to single fastening. Q<sub>rec</sub> (kN) 5.4 for two fastenings  
<sup>2)</sup> Shear loading applies to single fastening. Q<sub>rec</sub> (kN) 8.1 for two fastenings



## Wing nut (HDG)

Nut M6–M12: C4C as per DIN EN 10 263  
 Plastic: PA



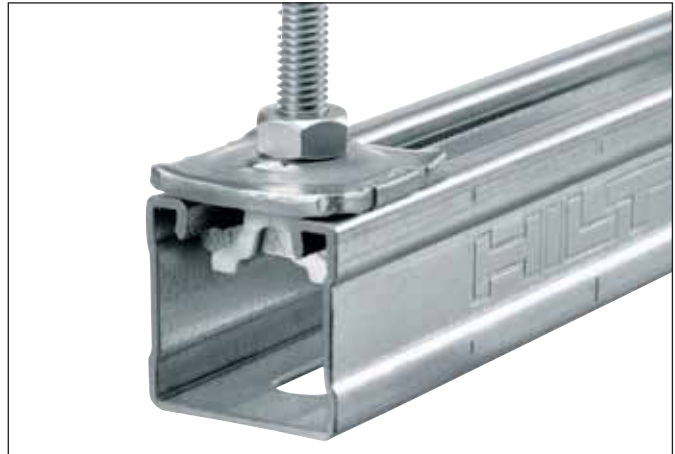
Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
<b>M 6</b>	40	25	500	<b>MQM-M6-F</b>	<b>304762</b>
<b>M 8</b>	40	25	500	<b>MQM-M8-F</b>	<b>304132</b>
<b>M 10</b>	38	25	500	<b>MQM-M10-F</b>	<b>304133</b>
<b>M 12</b>	36	25	500	<b>MQM-M12-F</b>	<b>304134</b>

Item	Rec. tensile load, Z <sub>rec</sub> (kN)		Rec. shear load, Q <sub>rec</sub> (kN) (bolt 8.8)		Tightening torque M <sub>t</sub> (Nm)
	Channel I/II	Channel III	Channel I/III	Channel II	
MQM-M 6-F	3.0	3.0	–	1.5	10
MQM-M 8-F	5.0	5.0	2.0	3.5	20
MQM-M10-F	5.0	8.0	3.0	4.5	40
MQM-M12-F	5.0	8.0	3.0	4.5	40
Channel I:	MQ-21-F, MQ-41-F, MQ-21 D-F, MQ-41 D-F				
Channel II:	MQ-21-HDG plus, MQ-31-HDG plus, MQ-41-HDG plus, MQ-21D-HDG plus, MQ-41D-HDG plus				
Channel III:	MQ-52-F, MQ-72-F, MQ-52-72D-F, MQ-124XD-F				

## Pipe ring saddle

**Features:**

- Single part, simple and time-saving in use.
- For all types of channels.
- For threaded roads from M8 to M16.



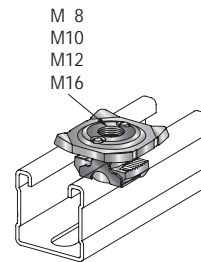
**Technical data:**

Galvanising: hot-dip galvanised, min. 56 µm

## MQA-F pipe ring saddle (HDG)

Nut: EN-GJMW-450-7 as per DIN EN 1562  
 Plate: S 235 JR as per DIN EN 10 025  
 Plastic: PB

Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
M8	75	25	200	① MQA-M 8-F	304138
M10	73	25	200	② MQA-M 10-F	304139
M12	71	25	200	② MQA-M 12-F	304140
M16	82	25	200	② MQA-M 16-F	304141



Item	Rec. tensile load Z <sub>rec</sub> (kN)		Tightening torque, M <sub>t</sub> (Nm)	Bending moment, threaded rod 4.6 (Nm) <sup>1)</sup>
	Channel I/II	Channel III		
MQA-M 8-F	3.0	3.0	9	6.4
MQA-M10-F	5.0	5.0	18	12.8
MQA-M12-F	5.0	8.0	31	22.4
MQA-M16-F	5.0	8.0	40	56.9
Channel I:	MQ-21-F, MQ-41-F, MQ-21 D-F, MQ-41 D-F			
Channel II:	MQ-21-HDG plus, MQ-31-HDG plus, MQ-41-HDG plus, MQ-21D-HDG plus, MQ-41D-HDG plus			
Channel III:	MQ-52-F, MQ-72-F, MQ-52-72 D-F, MQ-124X D-F			

<sup>1)</sup> Calculation as per DIBT

Pipe ring saddles ② firestop tested

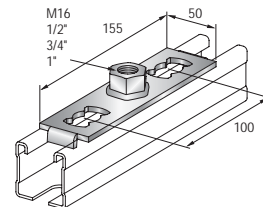


IBMB no. 3897/1802-5

## MQG-2-F baseplate (HDG)

Material: S 235 JR as per DIN EN 10 025  
 Galvanising: hot-dip galvanised, 56 µm

Connection thread	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
M16	180	20	MQG-2-M16-F	304146
1/2"	200	20	MQG-2-1/2"-F	304147
3/4"	210	20	MQG-2-3/4"-F	304148
1"	220	20	MQG-2-1"-F	304149

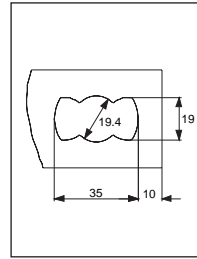


Item:	Rec. tensile load, Z <sub>rec</sub> (kN)	Rec. shear load, Q <sub>rec</sub> (kN)		Tightening torque M <sub>t</sub> (Nm)	Bending moment, threaded rod 4.6 (Nm)
		Channel I/III	Channel II		
MQG-2-M16-F	6.0	5.0	8.0	40	56.9
MQG-2-1/2"-F	6.0	5.0	8.0	40	22.4
MQG-2-3/4"-F	6.0	5.0	8.0	40	100.0
MQG-2-1"-F	6.0	5.0	8.0	40	193.0
Channel I:	MQ-21-F, MQ-41-F, MQ-21 D-F, MQ-41 D-F				
Channel II:	MQ-21-HDG plus, MQ-31-HDG plus, MQ-41-HDG plus, MQ-21D-HDG plus, MQ-41D-HDG plus				
Channel III:	MQ-52-F, MQ-72-F, MQ-52-72 D-F, MQ-124X D-F				

## Angles, angle brackets, connectors

**Features:**

- Universal: few parts for all applications.
- Easy to use.
- Three-dimensional, thus high strength.
- The MQN-F pushbutton can be prefitted



**Technical data:**

Material:	S 235 JR as per DIN EN 10025
Material thickness:	4 mm
Galvanising:	hot-dip galvanised, min. 56 µm

### 90° angle (HDG)

	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Angle, 2 hole, 90°	110	20	① MQW-2-F	304171
Angle, 4 hole, 90°	220	10	② MQW-4-F	304174
Angle, 8 hole, 90°	420	10	③ MQW-8/90°-F	304175
Angle, 3 hole, 90°	160	20	④ MQW-3-F	304172
Angle, 2 hole, 90°	160	10	⑤ MQW-P2-F	304177

①

②

③

④

⑤

### 45° angle (HDG)

	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Angle, 8 hole, 45°	410	10	① MQW-8/45°-F	304176
Angle, 3 hole, 45°	155	20	② MQW-3/45°-F	304173
Angle, 2 hole, 45° inner	354	10	③ MQW-2/45°-F	304178

①

②

③

### 135° angle (HDG)

	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Angle, 3 hole, 135°	210	10	MQW-3/135°-F*	304179

\* Available on request



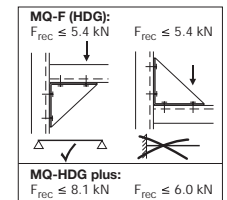
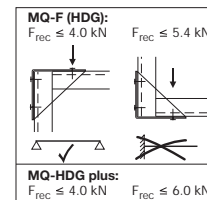
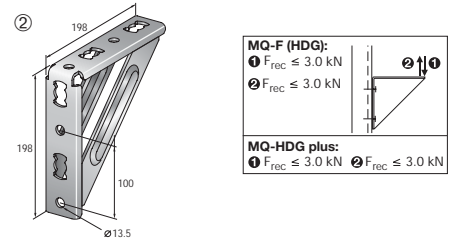
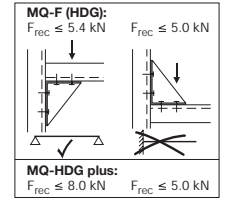
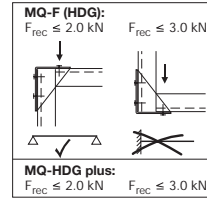
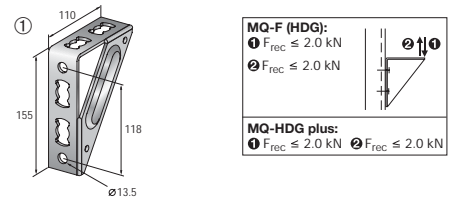
## Angle bracket (HDG)

	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Angle bracket, one brace	460	10	① MQW-S/1-F	304180
Angle bracket, two braces	1180	10	② MQW-S/2-F	304181

Angle bracket ④ with VdS approval

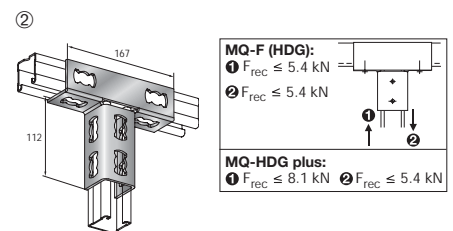
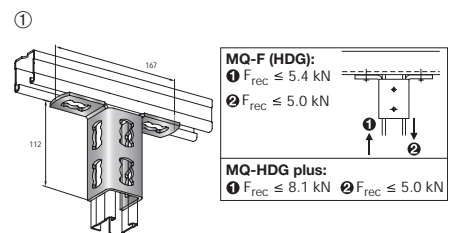


For VdS-approved installation see [www.hilti.com/vds-installation](http://www.hilti.com/vds-installation)



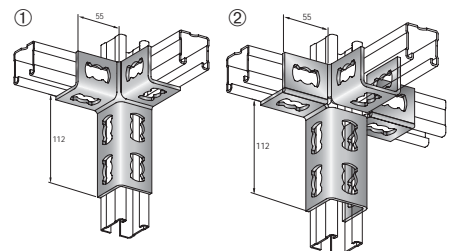
## Connector, two dimensional (HDG)

	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Connector, double, two dimensional	446	10	① MQV-2/2D-F	304150
Connector, triple, two dimensional	602	10	② MQV-3/2D-F	304152



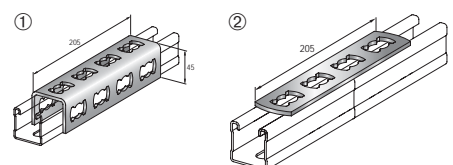
## Connector, three dimensional (HDG)

	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Connector, triple, three dimensional	451	10	① MQV-3/3D-F	304153
Connector, quadruple, three dimensional	770	10	② MQV-4/3D-F	304154



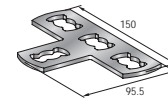
## Longitudinal channel connector (HDG)

	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Channel connector, 12 hole	583	10	① MQV-12-F	304155
Channel connector, 4 hole, flat	188	10	② MQV-P4-F	304156



## Connector, flat (HDG)

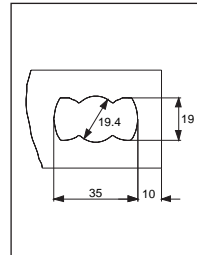
	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Channel connector, 4 hole, flat T	196	10	<b>MQV-T-F</b>	<b>304157</b>



## Channel base / Base material connector

**Features:**

- Reliable and easy to use.
- Connection of channels to any base material.
- The MQN-F pushbutton can be prefitted.



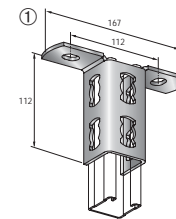
**Technical data:**

Material:	S 235 JR as per DIN EN 10025
Galvanising:	hot-dip galvanised, min. 56 µm
Separate design verification of the fastening on the base material must be provided.	

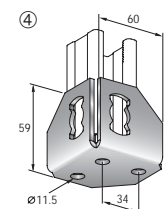
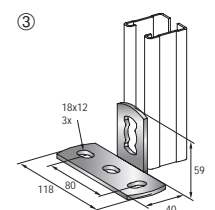
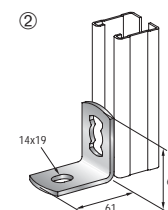
## Base material connector (HDG)

Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-41, MQ-21D	451	10	① <b>MQV-2/2D-14-F</b>	<b>304151</b>
MQ-21, MQ-31, MQ-41	110	20	② <b>MQP-1/1-F</b>	<b>304161</b>
MQ-21, MQ-31, MQ-41	190	20	③ <b>MQP-1/3-F</b>	<b>304162</b>
MQ-21, MQ-31, MQ-41	290	10	④ <b>MQP-2/3-F</b>	<b>304163</b>

Item	F <sub>rec</sub> (kN)	Channel (B)	Bolt (A)	Push-button	Tightening torque M <sub>t</sub> (Nm)
MQV-2/2D-14-F	5.0	MQ-41-F	Double	MQN-F	40
	7.8	MQ-41-HDG plus	Double	MQN-F	40

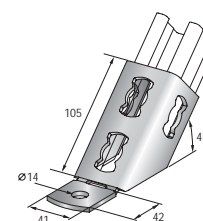


<b>MQ-F (HDG):</b>	
① F <sub>rec</sub> ≤ 5.4 kN	② F <sub>rec</sub> ≤ 5.0 kN
<b>MQ-HDG plus:</b>	
① F <sub>rec</sub> ≤ 8.1 kN	② F <sub>rec</sub> ≤ 5.0 kN



## Base material connector 45° (HDG)

Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21, MQ-31, MQ-41	350	10	<b>MQP-45°-F</b>	<b>304164</b>



<b>MQ-F (HDG):</b>	
① F <sub>rec</sub> ≤ 4.2 kN	② F <sub>rec</sub> ≤ 4.2 kN
<b>MQ-HDG plus:</b>	
① F <sub>rec</sub> ≤ 6.3 kN	② F <sub>rec</sub> ≤ 5.0 kN

## Channel base (HDG)

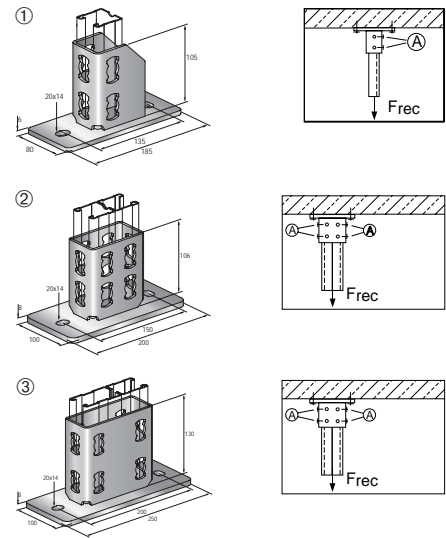
Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21 – MQ-72	1150	12	① MQP-21-72-F	304165
MQ-41D	1880	8	② MQP-82-F	304166
MQ-52-72D, MQ-124X D	2730	6	③ MQP-124-F	304167

Item	F <sub>rec</sub> (kN)	Channel I/III	Channel II	Bolt (A)	Push-button	Tightening torque M <sub>b</sub> (Nm)
MQP-21-72-F	5.0		8.0	Double	MQN-F	40
MQP-82-F	7.5		11.0	Quadruple	MQN-F	40
MQP-124-F	7.5		11.0	Quadruple	MQN-F	40
Channel I:	MQ-21-F, MQ-41-F, MQ-21 D-F, MQ-41 D-F					
Channel II:	MQ-21-HDG plus, MQ-31-HDG plus, MQ-41-HDG plus, MQ-21D-HDG plus, MQ-41D-HDG plus					
Channel III:	MQ-52-F, MQ-72-F, MQ-52-72 D-F, MQ-124X D-F					

Channel base ① firestop tested



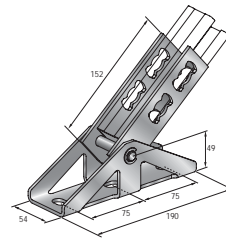
IBMB no. 3897/1802-5



## Pivot base (HDG)

Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21, MQ-31, MQ-41	1055	10	MQP-G-F	304168

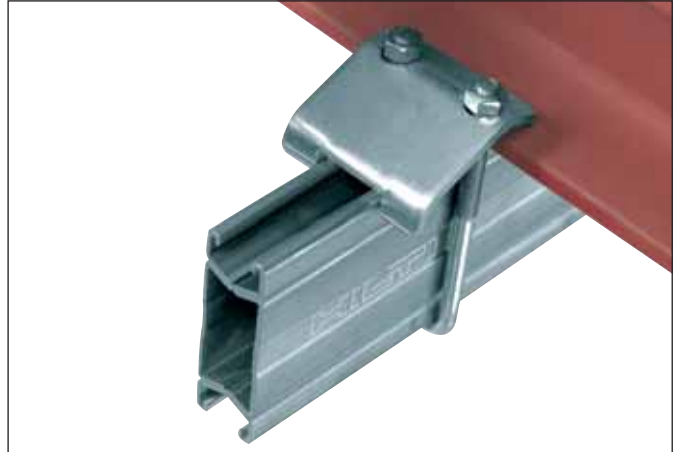
Item	F <sub>rec</sub> (kN)	Channel I	Channel II	Bolt (A)	Push-button	Tightening torque M <sub>b</sub> (Nm)
MQP-G-F	5.0		8.0	Double	MQN-F	40
Channel I:	MQ-21-F, MQ-41-F					
Channel II:	MQ-21-HDG plus, MQ-31-HDG plus, MQ-21D-HDG plus, MQ-41-HDG plus					



## Beam clamp

**Features:**

- For connecting installation channels to steel beams without drilling or welding.
- The clamp set fits all standard T-beams (max. clamping thickness ≤ 23 mm).



**Technical data:**

Galvanising: hot-dip galvanised, min. 56 µm

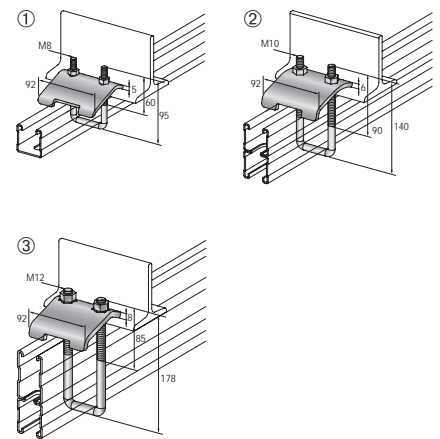
## MQT-F beam clamp (HDG)

U-bolt: S 235 JRG-2 as per DIN EN 10025

Claw plate: S 235 JR as per DIN EN 10025

Nut: M8-M12-8-HDG as per DIN 934

Suitable for channel height	Weight each (g)	Packing contents (pcs)	Ordering designation	Item no.
MQ-21, MQ-31, MQ-41, MQ-21 D	500	10	① MQT-21-41-F	304190
MQ-41, MQ-52, MQ-72, MQ-41 D	650	10	② MQT-41-82-F	304191
MQ-41 D, MQ-52-72D, MQ-124X D	860	10	③ MQT-82-124-F	304192



Beam clamp	Tightening torque $M_s$ (Nm)	Max. rec. load (kN)
MQT-21-41-F	10	3.0
MQT-41-82-F	20	4.5
MQT-82-124-F	30	5.0

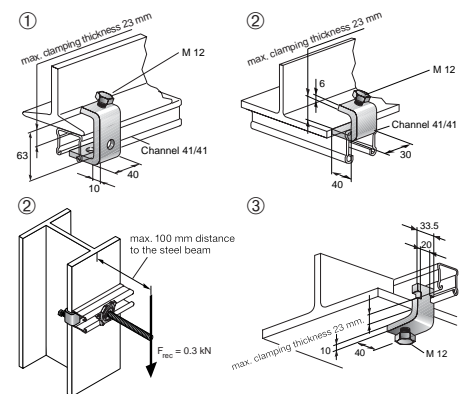
Always use beam clamps in pairs.  
Channel loading values must be allowed for.

## MQT-C-F beam clamp (HDG)

Clamp: S 275 JR as per DIN EN 10 025

Bolt: M12-8.8-HDG as per DIN 933

Suitable for channel height	Material thickness (mm)	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
MQ-41	10	455	4	32	① MQT-C21-F	304193
MQ-41	6	170	10	80	② MQT-C22-F	304194
MQ-21, MQ-31, MQ-41	10	260	6	48	③ MQT-C23-F	304195



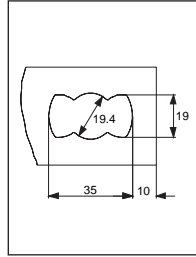
Beam clamp	Tightening torque $M_s$ (Nm)	Max. rec. load (kN)
MQT-C21-F	20	4.5
MQT-C22-F	5	2.5
MQT-C23-F	40	2.5

Always use beam clamps in pairs.  
Channel loading values must be allowed for.

# Clamp

**Features:**

- Universal: few parts for all applications.
- Easy to use.
- The MQN-F pushbutton can be prefitted.

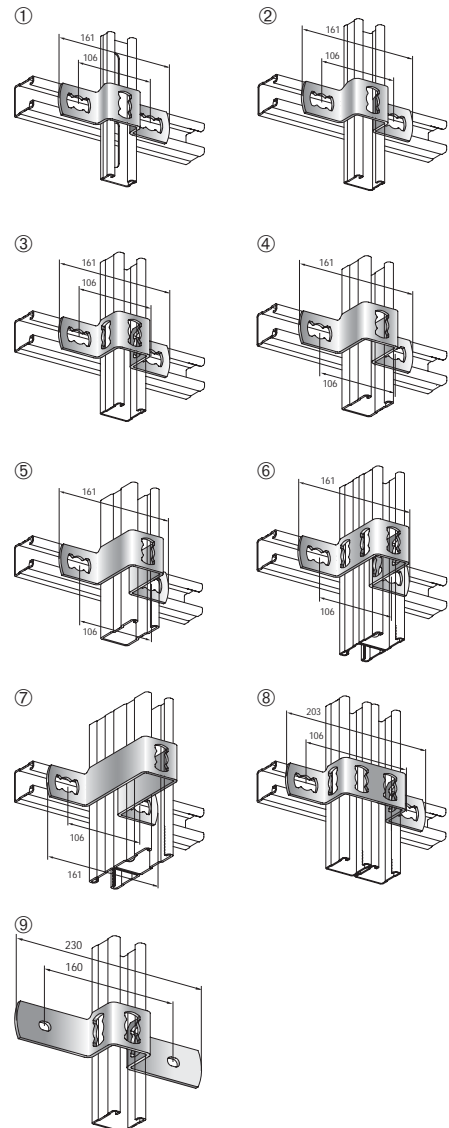


**Technical data:**

Material:	S 235 JR as per DIN EN 10025
Material thickness:	4 mm
Galvanising:	hot-dip galvanised, min. 56 µm

## Clamps (HDG)

Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21	211	10	① MQB-21-F	304182
MQ-31	220	10	② MQB-31-F	284531
MQ-41, MQ-21D	243	10	③ MQB-41-F	304183
MQ-52	340	10	④ MQB-52-F	304184
MQ-72	380	10	⑤ MQB-72-F	304185
MQ-41D, MQ-41, MQ-21D	340	10	⑥ MQB-82-F	304186
MQ-52-72D, MQ-124X D	553	10	⑦ MQB-124-F	304187
MQ-41, MQ-41D, MQ-21D	295	10	⑧ MQB-41×2-F	304188
MQ-41, MQ-21D	366	10	⑨ MQB-G41-F	304189





## Accessories

**Features:**

- Matching items in programme.



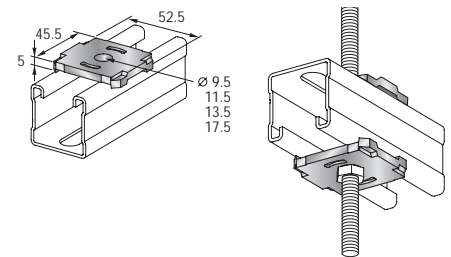
**Technical data:**

Galvanising: hot-dip galvanised, min. 56 µm

### Boss plate (HDG)

Material: S 235 JR as per DIN EN 10025

Thread	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
M 8	92	20	<b>MQZ-L9-F</b>	<b>304196</b>
M10	88	20	① <b>MQZ-L11-F</b>	<b>304197</b>
M12	84	20	① <b>MQZ-L13-F</b>	<b>304198</b>
M16	80	20	① <b>MQZ-L17-F</b>	<b>304199</b>



Boss plates ① firestop tested

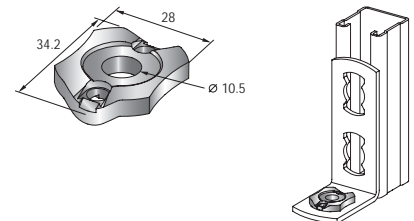


IBMB no. 3897/1802-5

### Installation washer (HDG)

Material: S 235 JR as per DIN EN 10025

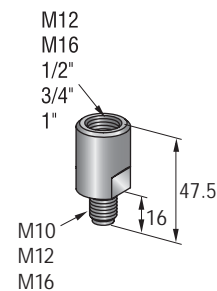
Hole diameter (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
<b>10,5</b>	<b>30</b>	<b>40</b>	<b>MQZ-U-F</b>	<b>304208</b>



### Adaptor (HDG)

Material: 11 SMn 30 as per DIN 10 087

Internal thread (mm)	External thread	Width across flats (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
<b>M12</b>	M10	18	41	25	<b>MQZ-A-M 12/M10-F</b>	<b>284386</b>
<b>M16</b>	M12	19	88	25	<b>MQZ-A-M 16/M12-F</b>	<b>304763</b>
<b>1/2"</b>	M16	24	110	25	<b>MQZ-A-1/2"/M16-F</b>	<b>304203</b>
<b>3/4"</b>	M16	30	140	25	<b>MQZ-A-3/4"/M16-F</b>	<b>304204</b>
<b>1"</b>	M16	36	180	25	<b>MQZ-A-1"/M16-F</b>	<b>304205</b>

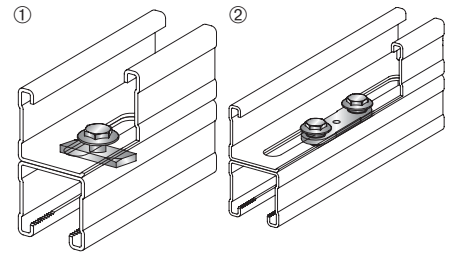


## Channel tie (HDG)

For accurate use-assembled double channels  
Material: S 235 JR as per DIN EN 10025

	Connection thread	Width across flats (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
<b>Channel tie</b>	M8	13	23	40	① MQZ-SV-F	<b>304206</b>
<b>Locking device</b>	M10	13	25	40	② MQZ-SS-F	<b>304207</b>

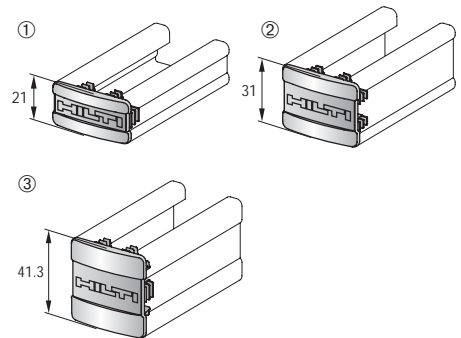
Item	Rec. tensile load, $Z_{rec}$ (kN)	Rec. shear load, $Q_{rec}$ (kN)	Tightening torque $M_{ts}$ (Nm)
MQZ-SV-F	1.0	–	6
MQZ-SS-F	3.0	5.0	20



## Channel endcap

Made of polypropylene (PP), suitable for all installation channels.

Suitable for channel height	Weight each (g)	Packaging contents (pcs.)	Ordering designation	Item no.
MQ-21, MQ-21D	2	50	① MQZ-E21	<b>370598</b>
MQ-31	2	50	② MQZ-E31	<b>369686</b>
MQ-41, MQ-41D	2	50	③ MQZ-E41	<b>369685</b>



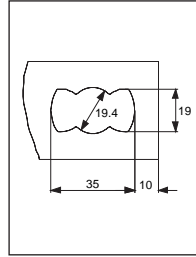
### 3D system

**Features:**

- Universal: few parts for all applications
- For installation of angles or connectors on site.
- Quick and easy to use.
- 45° angle and bracing with predetermined bending point.

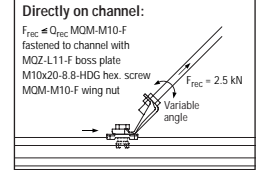
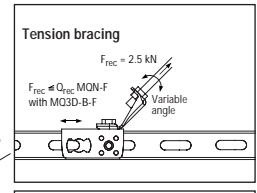
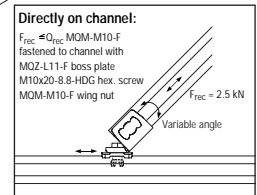
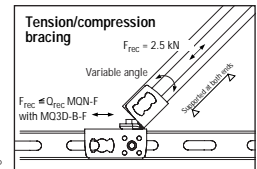
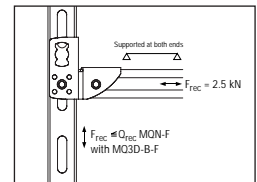
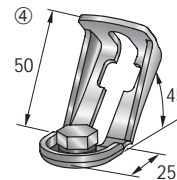
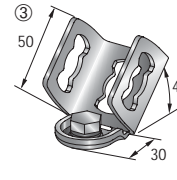
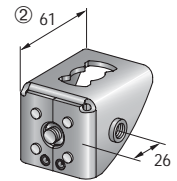
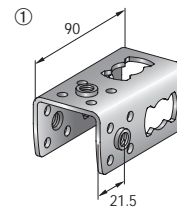
**Technical data:**

Material:	① + ③: QStE 380 TM as per SEW 092 ② + ④: DD 11 as per DIN EN 10111
Material thickness:	3 mm
Galvanising:	hot-dip galvanised, min. 45 µm
Bolt:	M10x10-10.9-HDG as per DIN 933
Width across flates:	17
Tightening torque:	40 Nm

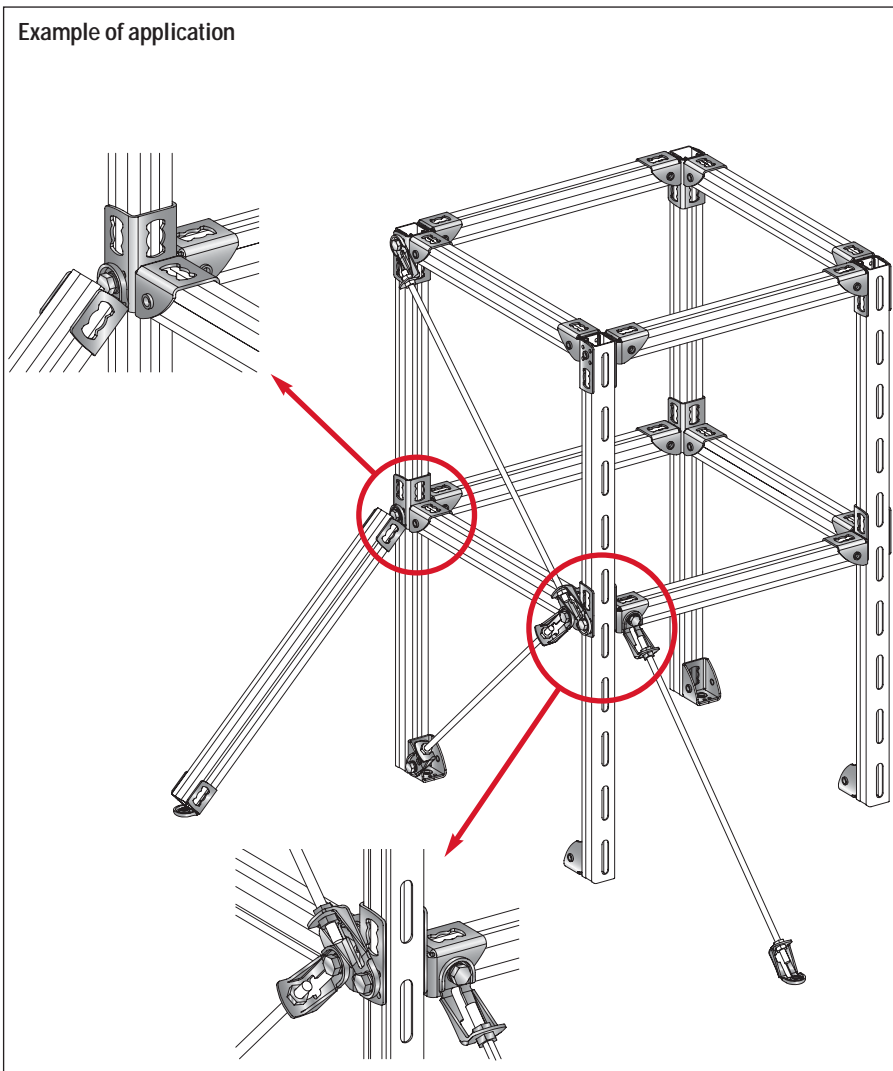


### 3D system (HDG)

Description	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Basic unit	214	20	① MQ3D-B-F	304209
90° angle	204	20	② MQ3D-W90°-F	304210
45° angle	131	16	③ MQ3D-W45°-F	304211
Brace	75	20	④ MQ3D-A-F	304212



**Example of application**



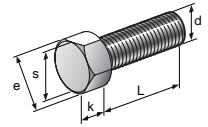
**Note:**

The preassembled fastening screw must be replaced with a longer 8.8 grade M10 screw or by an anchor when the connecting parts (MQ3D-W90°-F, MQ3D-W45°-F, MQ3D-A-F) are fitted without other parts from the 3D system. The minimum thread engagement lengths must be observed.

## Installation accessories

### Hexagon-head bolt DIN 933, grade 8.8, ISO-metric (HDG)

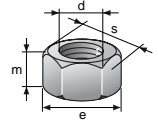
hot-dip galvanised, 45 µm



d	L [mm]	e [mm]	k [mm]	s [mm]	Weight each [g]	Packaging contents (pcs)	Ordering designation	Item no.
M 8	25	14.38	5,3	13	14	100	M8x25-F	304787
M10	25	18.90	6,4	17	23	100	M10x25-F	304788
M12	25	21.10	7,5	19	35	50	M12x25-F	304789
M12	30	21.10	7,5	19	38	50	M12x30-F	284387
M16	30	26.75	10,0	24	79	25	M16x30-F	304790

### Hexagon nut DIN 934, grade 8, ISO-metric (HDG)

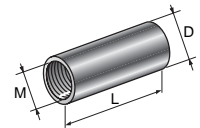
hot-dip galvanised, 45 µm



d	e [mm]	k [mm]	s [mm]	Weight each [g]	Packaging contents (pcs)	Ordering designation	Item no.
M 8	14.38	6.5	13	4	100	M8-F	304764
M10	18.90	8.0	17	10	100	M10-F	304765
M12	21.10	10.0	19	15	100	M12-F	304766
M16	26.75	13.0	24	33	50	M16-F	304767
M20	32.95	16.0	30	63	50	M20-F	304768

### Round threaded rod coupling, grade 8.8, ISO-metric (HDG)

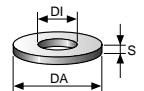
hot-dip galvanised, 45 µm



Thread size	Length [mm]	D [mm]	Weight each [g]	Packaging contents (pcs)	Ordering designation	Item no.
M8	25	11	10	50	M8x25-F	304791
M10	30	13	17	50	M10x30-F	304792
M12	40	16	24	50	M12x40-F	304793
M16	50	20	72	20	M16x50-F	304794

### Flat washer DIN 125 (HDG)

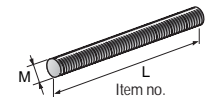
hot-dip galvanised, 45 µm



DA [mm]	DI [mm]	s [mm]	size	Weight each [g]	Packaging contents (pcs)	Ordering designation	Item no.
16	8.4	1.6	8	1	100	A8,4-F	304769
20	10.5	2.0	10	3	100	A10,5-F	304770
24	13	2.5	12	5	100	A13-F	304771
30	17	3.0	16	10	100	A17-F	304772

### Threaded rod DIN 267-10, grade 4.6, ISO-metric (HDG)

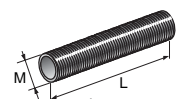
Type: rolled thread, hot-dip galvanised, 45 µm



Thread size	Length L [mm]	Weight each [g]	Packaging contents (pcs)	Ordering designation	Item no.
M10	1000	490	25	AM 10-F 1m	304773
M12	1000	711	20	AM 12-F 1m	304774
M12	2000	1421	15	AM 12-F 2m	304775
M16	1000	1311	10	AM 16-F 1m	304776
M16	2000	2622	10	AM 16-F 2m	304777
M20	1000	2052	5	AM 20-F 1m	304778
M20	2000	4104	1	AM 20-F 2m	304779

### Threaded pipe (HDG)

Type: rolled thread, hot-dip galvanised, 45 µm



Inch size	Length L [mm]	Weight each [g]	Packaging contents (pcs)	Ordering designation	Item no.
1/2"	1000	1700	10	GR-G 1/2"-F 1m	304780
3/4"	1000	2700	5	GR-G 3/4"-F 1m	304781
1"	1000	3500	5	GR-G 1"-F 1m	304782
1 1/4"	1000	4000	5	GR-G 1 1/4"-F 1m	304783

## MRG-F roll connector

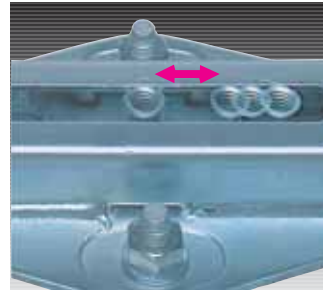
**Features:**

- For use suspended or standing without conversion
- Coordinated loading classes suitable for Hilti pipe rings
- Temperature resistant up to 300°C as no parts are of plastic.
- Stiffened base plate suitable for MQ channel installation system
- Slide can not pull out.

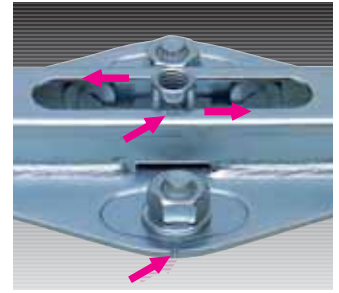
**Technical data:**

Galvanising: hot-dip galvanised, min. 45 µm

Delivery without nut, washer or bolt



Smooth rolling on coated rollers.  
Coefficient of friction:  $\mu_0=0.15$

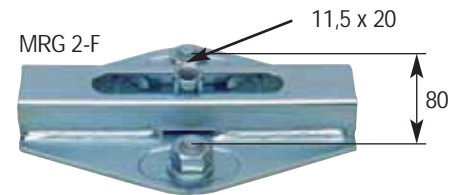


Large movement: MRG 2-F up to 80 mm, MRG-D6-F up to 116 mm.  
Center mark for setting to zero.

## MRG 2-F roll connector (HDG)

One connection boss

Connection boss/ double thread	F <sub>rec</sub> (kN)	Max. displacement axial (mm)	Max. displacement transverse (mm)	Packaging contents (pcs)	Ordering designation	Item no.
<b>M10 / M12</b>	1.5	80	–	5	<b>MRG 2-F</b>	<b>304213</b>



Roll connector MRG 2-R firestop tested

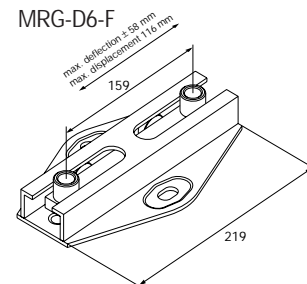


IBMB no. 3897/1802-5

## MRG-D6-F double roll connector (HDG)

Two connection bosses

Connection boss/ double thread	F <sub>rec</sub> (kN)	Max. displacement axial (mm)	Max. displacement transverse (mm)	Packaging contents (pcs)	Ordering designation	Item no.
<b>M12 / M16</b>	6.0	116	–	5	<b>MRG-D6-F</b>	<b>304214</b>

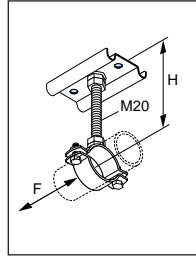
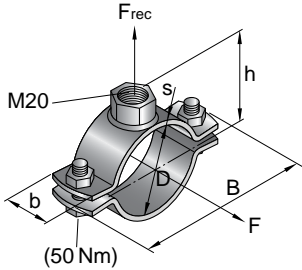




## MFP-L-F light-duty fixed point

**Features:**

- Verified loads and technical data.
- Quick installation using only 2 screws on the pipe ring.
- Narrow flange makes insulation easy.
- Close spacing possible.



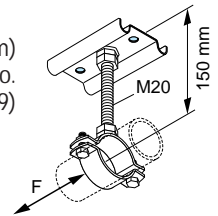
MFP-L-F with MFP-GP20-F

## MFP-L-F fixed point pipe ring (HDG)

Material: S 235 JR as per DIN EN 10025  
 Surface: hot-dip galvanised, min. 45 µm  
 Hexagon bolt: grade 8.8-HDG  
 Tightening torque: 50 Nm

Inch size	Clamping range D [mm]	Connection boss	Clamping screw	bxs [mm]	B [mm]	h [mm]	Packaging contents (pcs)	Max. load Frec [N]	Axial load at H=150 mm F [N]	Ordering designation	Item no.
1/2"	21-22	M20	M10x35	40x6	82	34	20	8000	1000*	MFP-L NW 15 M20-F	304232
3/4"	25-27	M20	M10x35	40x6	87	36	20	8000	1000*	MFP-L NW 20 M20-F	304233
1"	33-35	M20	M10x35	40x6	96	40	20	8000	1000*	MFP-L NW 25 M20-F	304234
1 1/4"	42-45	M20	M10x45	40x6	110	45	20	12000	1500*	MFP-L NW 32 M20-F	304235
1 1/2"	47-50	M20	M10x45	40x6	116	48	20	12000	1500*	MFP-L NW 40 M20-F	304236
2"	57-61	M20	M10x45	40x6	130	53	20	12000	1500*	MFP-L NW 50 M20-F	304237
	68-72	M20	M12x45	40x6	143	59	20	12000	2000*	MFP-L NW 68/72 M20-F	304238
2 1/2"	75-79	M20	M12x45	40x6	150	64	20	12000	2000*	MFP-L NW 65 M20-F	304239
3"	88-90	M20	M12x45	40x6	162	70	20	12000	2000*	MFP-L NW 80 M20-F	304240

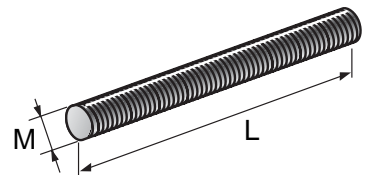
\* The loads given apply only in conjunction (at H=150 mm) with the MFP-GP20-F and HST-R M12x20 (item no. 71540/9)



## Threaded rod (HDG)

Material threaded rod: DIN 267-10, grade 4.6, ISO-metric rolled thread, hot-dip galvanised, 45 µm

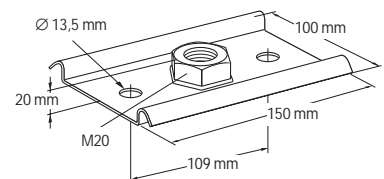
Thread size	Packaging contents (pcs)	Ordering designation	Item no.
M20	5	AM20-F 1m	304778
M20	1	AM20-F 2m	304779



## Base plate (HDG)

Material: S 235 JR as per DIN EN 10025  
 Type: hot-dip galvanised, min. 45 µm

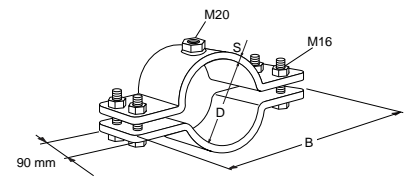
Thread size	Packaging contents (pcs)	Ordering designation	Item no.
M20	25	MFP-GP20-F	304251



## MFP-F heavy-duty fixed point

### MFP-F fixed point pipe ring (HDG)

Material: S 235 JR as per DIN EN 10025  
 Galvanising: hot-dip galvanised, min. 45 µm  
 Hexagon bolt: grade 8.8-HDG  
 Tightening torque: 80 Nm



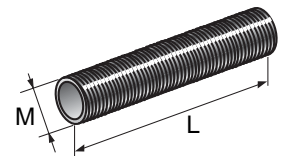
If the force at the fixed point is greater than 10 kN, weld stops on the bracing side of the pipe.

Pipe size (mm)	(inch)	Dimensions D [mm]	S [mm]	B [mm]	Packaging contents (pcs)	Ordering designation	Item no.
100		108-112	8	231.4	6	MFP-NW 100 M20-F	304241
	4"	110-115	8	234.6	6	MFP-4" M20-F	304242
125/127		125-127	8	245.1	6	MFP-NW 125/127 M20-F	304243
125	5"	133-140	8	262.0	6	MFP-125 M20-F	304244
150		158-162	8	282.5	6	MFP-NW 150 M20-F	304245
	6"	165-169	8	299.8	6	MFP-6" M20-F	304246
193/200		193-200	8	322.4	6	MFP-193/200 M20-F	304247
200	8"	219	8	342.8	6	MFP-NW 200 M20-F	304248
244/250		244-250	8	373.9	3	MFP-244/250 M20-F	304249
250		267-273	8	397.6	2	MFP-NW 250 M20-F	304250

### Fixed point support (HDG)

Type: rolled thread, hot-dip galvanised, 45 µm

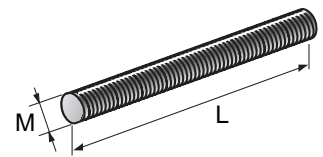
Inch size	Packaging contents (pcs)	Ordering designation	Item no.
1 1/4"	5	GR-G 1 1/4"-F 1m	304783



### Threaded rod (HDG)

Material threaded rod: DIN 267-10, grade 4.6, ISO-metric  
 Type: rolled thread, hot-dip galvanised, 45 µm

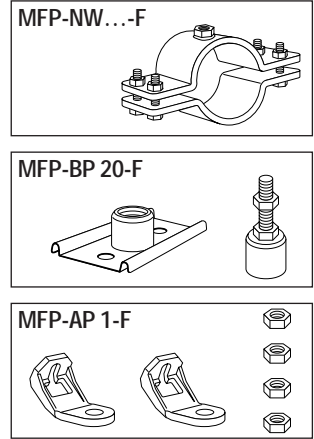
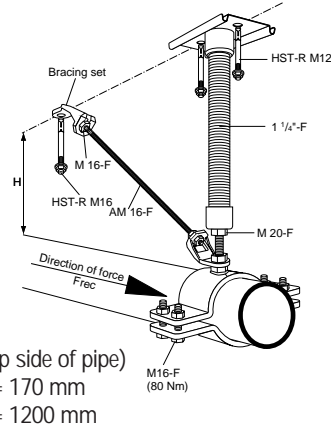
Thread size	Packaging contents (pcs)	Ordering designation	Item no.
M16	10	AM16-F 1m	304776
M16	10	AM16-F 2m	304777



### MFP 1-F fixed point set (HDG)

hot-dip galvanised, min. 45 µm  
up to  $F_{rec}$  3 kN

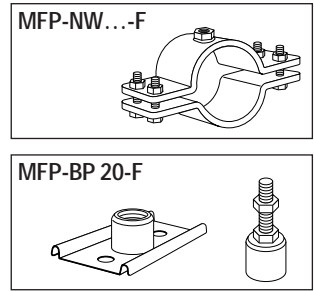
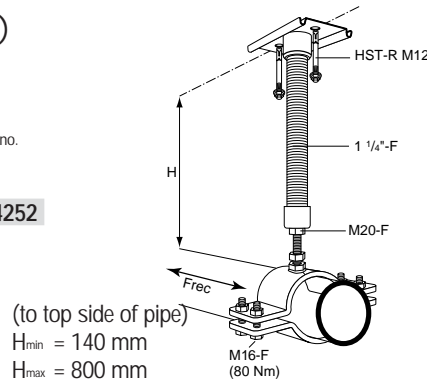
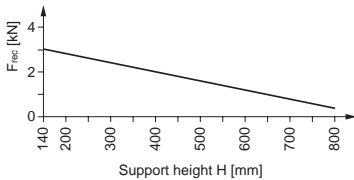
Ordering designation	Packaging contents (pcs)	Item no.
MFP-F pip ring as per desired pipe size		
MFP-BP 20-F basic set	1	304252
MFP-AP 1-F bracing set	1	304253



### MFP 1a-F fixed point set (HDG)

hot-dip galvanised, min. 45 µm  
up to  $F_{rec}$  3 kN without bracing

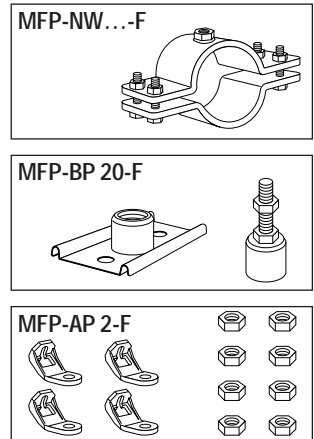
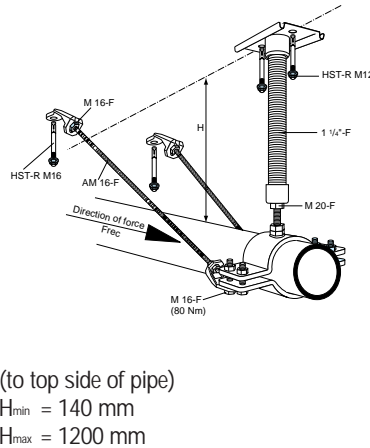
Ordering designation	Packaging contents (pcs)	Item no.
MFP-F pipe ring as per desired pipe size		
MFP-BP 20-F basic set	1	304252



### MFP 2-F fixed point set (HDG) (international version)

hot-dip galvanised, min. 45 µm  
up to  $F_{rec}$  10 kN

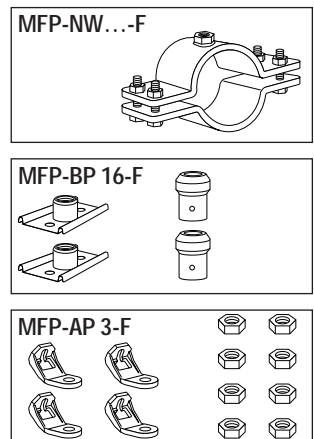
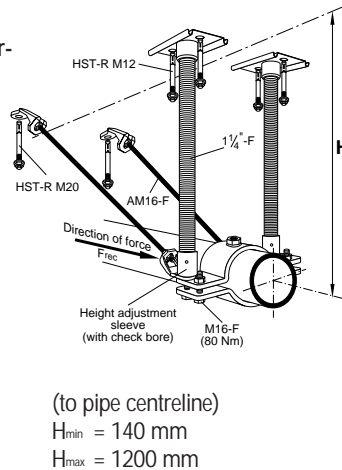
Ordering designation	Packaging contents (pcs)	Item no.
MFP-F pipe ring as per desired pipe size		
MFP-BP 20-F basic set	1	304252
MFP-AP 2-F bracing set	1	376022



### MFP 3-F fixed point set (HDG) (inter-national version)

hot-dip galvanised, min. 45 µm  
up to  $F_{rec}$  20 kN

Ordering designation	Packaging contents (pcs)	Item no.
MFP-F pipe ring as per desired pipe size		
MFP-BP16-F basic set	1	304255
MFP-AP 3-F bracing set	1	304257



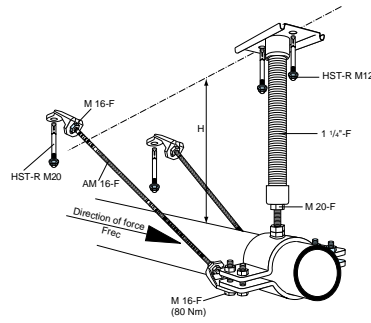
Given loads only apply if Hilti HST-R anchors are used.  
If the direction of force is not known, or changing, the fixed point must be braced on both sides.  
If the force at the fixed point is greater than 10 kN, weld stops on the bracing side of the pipe

## MFP 2D-F fixed point set (HDG)

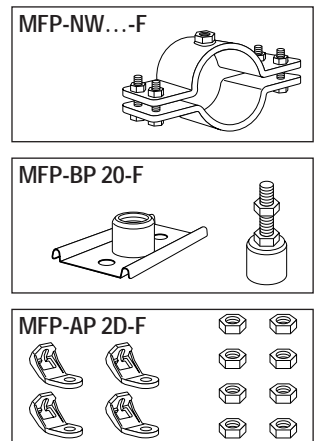
(German version, depending on anchor approval)

hot-dip galvanised, min. 45 µm  
up to  $F_{rec}$  10 kN

Ordering designation	Packaging contents (pcs)	Item no.
<b>MFP-F pipe ring</b> as per desired pipe size		
<b>MFP-BP 20-F</b> basic set	1	<b>304252</b>
<b>MFP-AP 2D-F</b> bracing set	1	<b>304254</b>



(to top side of pipe)  
 $H_{min}$  = 140 mm  
 $H_{max}$  = 1200 mm

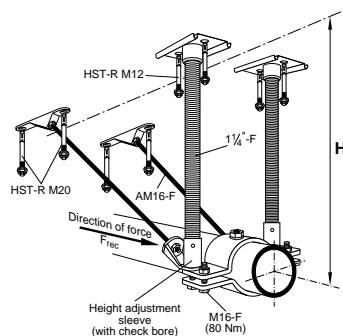


## MFP 3D-F fixed point set (HDG)

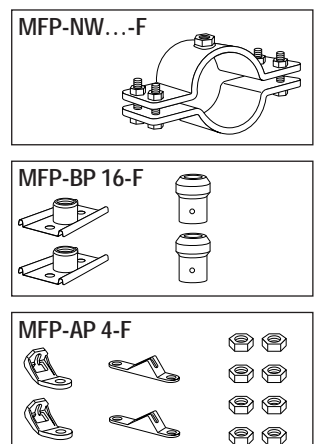
(German version, depending on anchor approval)

hot-dip galvanised, min. 45 µm  
up to  $F_{rec}$  20 kN

Ordering designation	Packaging contents (pcs)	Item no.
<b>MFP-F pipe ring</b> as per desired pipe size		
<b>MFP-BP16-F</b> basic set	1	<b>304255</b>
<b>MFP-AP 4-F</b> bracing set	1	<b>304256</b>



(to pipe centreline)  
 $H_{min}$  = 250 mm  
 $H_{max}$  = 1200 mm



Given loads only apply if Hilti HST-R anchors are used.  
If the direction of force is not known, or changing, the fixed point must be braced on both sides.  
If the force at the fixed point is greater than 10 kN, weld stops on the bracing side of the pipe.

## MP-MI/-M hot-dip galvanized

For installations exposed to moderate corrosiveness

**Use:**

- In humid inside rooms (moderate condensation)
- Outside in medium-corrosive surroundings

**Benefits:**

- Solid welded-on connection boss.
- Pipe ring hoops swaged for greater stiffness.
- Clamping screws secured against loss
- Good resistance to corrosion (HDG 45 µm).

**Technical data:**

Max. static load recommended for suspensions:

MP-MI-F / -M-F 1/2" up to 3" diameter  $F_{rec} = 3000N$

Pipe ring material: S 235 JR steel as per DIN EN 10025

Galvanising: 45 µm

Clamping screws: M8 with combination socket and separate nut

Rubber inlay material: EPDM

Temperature resistance: -50° C to + 120° C

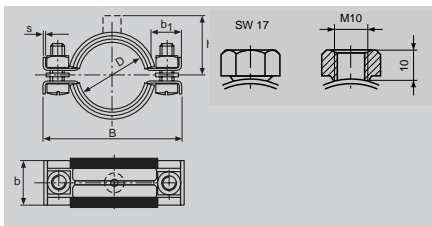
Shore A hardness (DIN 53 505) 50° ± 5°

Noise reduction: LA = 18 dB (A)

Stability: aging, ozone, weather and hot water



Firestop



## MP-MI-F (HDG)

Hot-dip galvanized pipe ring with metric connection boss and insulating inlay as per DIN 4109

Size [mm/inch]	Clamping range D [mm]	Connection thread/width across flats	Clamping bolts	Dimensions B [mm]	bxs [mm]	h [mm]	b1 [mm]	Packaging contents (pcs)	Ordering designation	Item no.
1/2"	20-25	M10/SW17	M8	69	24x2	28	21	25	MP-MI-F 1/2" M10	304258
3/4"	25-30	M10/SW17	M8	75	24x2	30	21	25	MP-MI-F 3/4" M10	304259
1"	32-38	M10/SW17	M8	83	24x2	34	21	25	MP-MI-F 1" M10	304260
1 1/4"	40-45	M10/SW17	M8	92	24x2	38	21	25	MP-MI-F 1 1/4" M10	304261
1 1/2"	48-54	M10/SW17	M8	101	24x2	42	21	25	MP-MI-F 1 1/2" M10	304262
54/57	54-57	M10/SW17	M8	107	24x2	47	21	10	MP-MI-F 54/57 M10	304263
2"	57-64	M10/SW17	M8	111	24x2	48	21	10	MP-MI-F 2" M10	304264
68/72	68-72	M10/SW17	M8	123	24x2	54	21	10	MP-MI-F 68/72 M10	304265
2 1/2"	70-77	M10/SW17	M8	130	24x2	51	21	10	MP-MI-F 2 1/2" M10	304266
78/84	78-84	M10/SW17	M8	139	24x2	58	21	10	MP-MI-F 78/84 M10	304267
3"	82-90	M10/SW17	M8	144	24x2	57	21	10	MP-MI-F 3" M10	304268

## MP-M-F (HDG)

Hot-dip galvanized pipe ring with metric connection boss without insulating inlay

Size [mm/inch]	Clamping range D [mm]	Connection thread/width across flats	Clamping bolts	Dimensions B [mm]	bxs [mm]	h [mm]	b1 [mm]	Packaging contents (pcs)	Ordering designation	Item no.
1/2"	20-25	M10/SW17	M8	69	24x2	25	21	25	MP-M-F 1/2" M10	304269
3/4"	25-30	M10/SW17	M8	75	24x2	28	21	25	MP-M-F 3/4" M10	304270
1"	32-38	M10/SW17	M8	83	24x2	32	21	25	MP-M-F 1" M10	304271
1 1/4"	40-45	M10/SW17	M8	92	24x2	35	21	25	MP-M-F 1 1/4" M10	304272
1 1/2"	48-54	M10/SW17	M8	101	24x2	39	21	25	MP-M-F 1 1/2" M10	304273
54/57	54-57	M10/SW17	M8	107	24x2	44	21	10	MP-M-F 54/57 M10	304274
2"	57-64	M10/SW17	M8	111	24x2	45	21	10	MP-M-F 2" M10	304275
68/72	68-72	M10/SW17	M8	123	24x2	51	21	10	MP-M-F 68/72 M10	304276
2 1/2"	70-77	M10/SW17	M8	130	24x2	50	21	10	MP-M-F 2 1/2" M10	304277
3"	82-90	M10/SW17	M8	144	24x2	55	21	10	MP-M-F 3" M10	304278

# MP-MXI-F pipe ring

for „extra“ heavy duty installations exposed to moderate corrosiveness

**Fields of applications:**

- Industrial pipe fitting
- Mechanical installations
- Process and control lines
- heavy-duty pipe runs

**Benefits:**

- Solid connection boss, welded all round
- Strong clamping bolts for high loads
- Non-slip, pre-fitted profiled rubber inlay
- Suitable for the installation of pipes under dynamic loading if used with vibration damping components.

**Technical data:**

Max permissible load for suspensions: up to 3"	max. F <sub>rec</sub> = 6000 N
from 4" up to 274 mm diameter	max. F <sub>rec</sub> = 10000 N
from 324 up to 406 mm diameter	max. F <sub>rec</sub> = 15000 N
from 457 up to 508 mm diameter	max. F <sub>rec</sub> = 17000 N
Pipe ring material:	STW 22 steel as per DIN EN 10111 (HDG 45 µm)
Rubber inlay material:	EPDM
Temperature resistance:	-50° C to +120° C
Shore A hardness:	50° ± 5° Shore-A
Noise reduction:	Δ L <sub>A</sub> = 16 dB (A)



Firestop



## Recommended guide values for dynamic loading of MP-MXI-F/MP-MX-F

**M16 connection boss,  
(max. F<sub>rec</sub> 6000 N)**

from pipe size 4" (108 mm) up to 274 mm

δ mm	L 100 mm	L 200 mm	L 300 mm	L 400 mm	L 500 mm	L 1000 mm
0.5	●	●	●	●	●	●
1	-	●	●	●	●	●
1.5	-	●	●	●	●	●
2	-	●	●	●	●	●
4	-	-	●	●	●	●
6 *	-	-	-	-	●*	●
8	-	-	-	-	●	●
10	-	-	-	-	-	●

The determined values apply only if the MFP-GP 16-F base plate and M16 threaded rod of the 8.8 grade are used.

**3/4" connection boss,  
(max. F<sub>rec</sub> 10000 N)**

from pipe size 2" (60 mm) up to 133 mm

δ mm	L 100 mm	L 200 mm	L 300 mm	L 400 mm	L 500 mm	L 1000 mm
0.5	●	●	●	●	●	●
1	-	●	●	●	●	●
1.5	-	●	●	●	●	●
2	-	-	●	●	●	●
4	-	-	-	●	●	●
6	-	-	-	-	●	●
8	-	-	-	-	●	●
10	-	-	-	-	-	●

The determined values apply only if the MFP-GP 3/4"-F base plate and GR-G 3/4"-F threaded pipe are used.

**1" connection boss,  
(max. F<sub>rec</sub> 10000 N)**

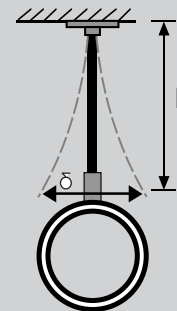
from pipe size 5" (137 mm) up to 274 mm

δ mm	L 100 mm	L 200 mm	L 300 mm	L 400 mm	L 500 mm	L 1000 mm
0.5	●	●	●	●	●	●
1	-	●	●	●	●	●
1.5	-	●	●	●	●	●
2	-	-	●	●	●	●
4	-	-	-	●	●	●
6	-	-	-	-	●	●
8	-	-	-	-	●	●
10	-	-	-	-	-	●

The determined values apply only if the MFP-GP 1"-F base plate and GR-G 1"-F threaded pipe are used.

● Fatigue strength (2x10<sup>6</sup> load cycles) as per the S-N curve.

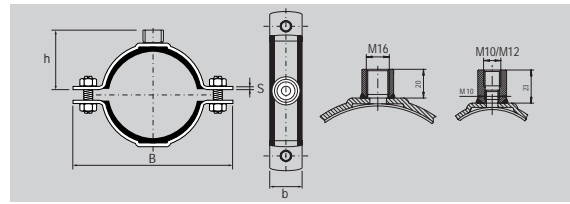
**\* Example:** Is the shown pipe fastening resistant to dynamic fatigue stressing?  
**Demand:** Known: Threaded base plate with M16 connection and anchor approved for tension zone. Distance between and ceiling or wall, L, 1500 mm. Max. side movement caused by vibration, δ, in mm = 6 mm.  
**Result:** Resistant to fatigue stressing (2x10<sup>6</sup> load cycles) allowing for dimension L = min. 500 mm.





## MP-MXI-F (HDG)

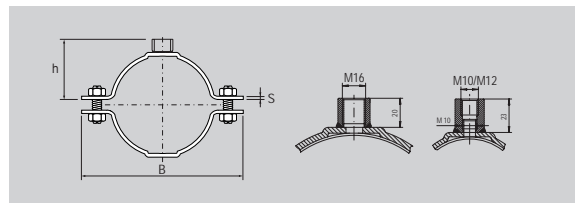
Pipe ring with metric connection boss and insulating inlay as per DIN 4109



Size [mm/inch]	Clamping range d [mm]	Connection thread	Clamping bolts	Dimensions			Packaging contents (pcs)	Ordering designation		Item no.
				B [mm]	s×b [mm]	h [mm]				
2"	60–65	M10/M12	M10	142	3×30	64	25	MP-MXI-F 2"	M10/M12	374897
2½"	73–78	M10/M12	M10	156	3×30	71	25	MP-MXI-F 2½"	M10/M12	374898
3"	88–93	M10/M12	M10	172	3×30	78	25	MP-MXI-F 3"	M10/M12	374899
4"	108–116	M16	M12	210	4×40	90	25	MP-MXI-F 4"	M16	374900
125	122–126	M16	M12	221	4×40	95	25	MP-MXI-F 125	M16	374901
133	131–137	M16	M12	231	4×40	100	10	MP-MXI-F 133	M16	374902
5"	139–144	M16	M12	238	4×40	104	10	MP-MXI-F 5"	M16	374903
159	159–166	M16	M12	261	4×40	115	10	MP-MXI-F 159	M16	374904
6"	163–170	M16	M12	265	4×40	117	10	MP-MXI-F 6"	M16	374905
177,8	177–182	M16	M16	284	4×40	123	10	MP-MXI-F 177,8	M16	374906
193,7	192–200	M16	M16	303	4×40	132	10	MP-MXI-F 193,7	M16	374907
210	210–218	M16	M16	321	4×40	141	10	MP-MXI-F 210	M16	374908
219	219–228	M16	M16	330	4×40	146	10	MP-MXI-F 219	M16	374909
244,5	244–253	M16	M16	355	4×40	158	10	MP-MXI-F 244,5	M16	374910
267/274	267–274	M16	M16	375	4×40	167	10	MP-MXI-F 267/274	M16	374911
275	275–282	M16	M16	384	4×40	173	10	MP-MXI-F 275	M16	374912
324	315–324	M16	M16	441	5×50	190	1	MP-MXI-F 324	M16	374913
326	325–330	M16	M16	445	5×50	192	1	MP-MXI-F 326	M16	374914
355	348–356	M16	M16	471	5×50	205	1	MP-MXI-F 355	M16	374915
368	364–372	M16	M16	488	5×50	213	1	MP-MXI-F 368	M16	374916
406	400–409	M16	M16	525	5×50	232	1	MP-MXI-F 406	M16	374917
457	454–462	M16	M16	586	6×70	259	1	MP-MXI-F 457	M16	374918
508	500–508	M16	M16	632	6×70	282	1	MP-MXI-F 508	M16	374919

## MP-MX-F (HDG)

Pipe ring with metric connection boss without insulating inlay

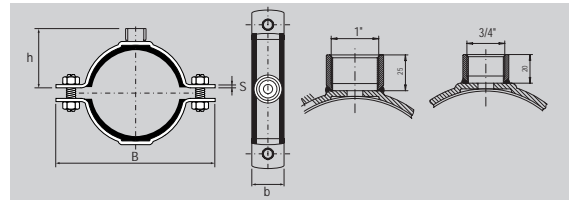


Size [mm/inch]	Clamping range d [mm]	Connection thread	Clamping bolts	Dimensions			Packaging contents (pcs)	Ordering designation		Item no.
				B [mm]	s×b [mm]	h [mm]				
2"	60–65	M10/M12	M10	132	3×30	60	25	MP-MX-F 2"	M10/M12*	374943
2½"	73–78	M10/M12	M10	146	3×30	67	25	MP-MX-F 2½"	M10/M12*	374944
3"	88–93	M10/M12	M10	161	3×30	74	25	MP-MX-F 3"	M10/M12*	374945
4"	108–116	M16	M12	198	4×40	84	25	MP-MX-F 4"	M16*	374946
125	122–128	M16	M12	210	4×40	89	25	MP-MX-F 125	M16*	374947
133	132–138	M16	M12	221	4×40	94	10	MP-MX-F 133	M16*	374948
5"	139–144	M16	M12	226	4×40	98	10	MP-MX-F 5"	M16*	374949
159	159–166	M16	M12	249	4×40	109	10	MP-MX-F 159	M16*	374950
6"	163–170	M16	M12	253	4×40	111	10	MP-MX-F 6"	M16*	374951
177,8	177–182	M16	M16	272	4×40	117	10	MP-MX-F 177,8	M16*	374952
193,7	192–200	M16	M16	290	4×40	126	10	MP-MX-F 193,7	M16*	374953
210	210–218	M16	M16	309	4×40	135	10	MP-MX-F 210	M16*	374954
219	219–228	M16	M16	318	4×40	140	10	MP-MX-F 219	M16*	374955
244,5	244–253	M16	M16	343	4×40	152	10	MP-MX-F 244,5	M16*	374956
267/274	267–274	M16	M16	363	4×40	162	10	MP-MX-F 267/274	M16*	374957
275	275–282	M16	M16	372	4×40	167	10	MP-MX-F 275	M16*	374958
324	315–324	M16	M16	429	5×50	184	1	MP-MX-F 324	M16*	374959
326	325–330	M16	M16	433	5×50	186	1	MP-MX-F 326	M16*	374960
355	348–356	M16	M16	460	5×50	199	1	MP-MX-F 355	M16*	374961
368	364–372	M16	M16	476	5×50	207	1	MP-MX-F 368	M16*	374962
406	400–409	M16	M16	514	5×50	226	1	MP-MX-F 406	M16*	374963
457	454–462	M16	M16	574	6×70	253	1	MP-MX-F 457	M16*	374964
508	500–508	M16	M16	620	6×70	276	1	MP-MX-F 508	M16*	374965

\* Available on request

## MP-MXI-F (HDG)

Pipe ring with inch connection boss and insulating inlay as per DIN 4109

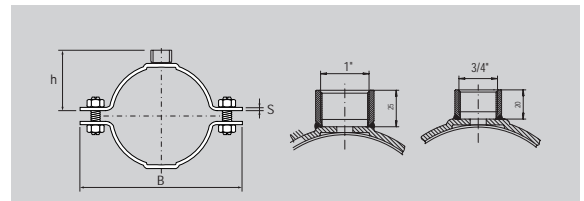


Size [mm/inch]	Clamping range d [mm]	Connection thread	Clamping bolts	Dimensions B [mm] s×b [mm] h [mm]	Packaging contents (pcs)	Ordering designation	Item no.	
2"	60– 65	3/4"	M10	142 3×30 64	25	MP-MXI-F 2"	3/4"*	374920
2 1/2"	73– 78	3/4"	M10	156 3×30 71	25	MP-MXI-F 2 1/2"	3/4"*	374921
3"	88– 93	3/4"	M10	172 3×30 78	25	MP-MXI-F 3"	3/4"*	374922
4"	108–116	3/4"	M12	210 4×40 90	25	MP-MXI-F 4"	3/4"*	374923
125	122–126	3/4"	M12	221 4×40 95	25	MP-MXI-F 125	3/4"*	374924
133	131–137	3/4"	M12	231 4×40 100	10	MP-MXI-F 133	3/4"*	374925
5"	139–144	1"	M12	238 4×40 104	10	MP-MXI-F 5"	1"*	374926
159	159–166	1"	M12	261 4×40 115	10	MP-MXI-F 159	1"*	374927
6"	163–170	1"	M12	265 4×40 117	10	MP-MXI-F 6"	1"*	374928
177,8	177–182	1"	M16	284 4×40 123	10	MP-MXI-F 177,8	1"*	374929
193,7	192–200	1"	M16	303 4×40 132	10	MP-MXI-F 193,7	1"*	374930
210	210–218	1"	M16	321 4×40 141	10	MP-MXI-F 210	1"*	374931
219	219–228	1"	M16	330 4×40 146	10	MP-MXI-F 219	1"*	374932
244,5	244–253	1"	M16	355 4×40 158	10	MP-MXI-F 244,5	1"*	374933
267/274	267–274	1"	M16	375 4×40 167	10	MP-MXI-F 267/274	1"*	374934
275	275–282	1"	M16	384 4×40 173	10	MP-MXI-F 275	1"*	374935
324	315–324	1"	M16	441 5×50 190	1	MP-MXI-F 324	1"*	374936
326	325–330	1"	M16	445 5×50 192	1	MP-MXI-F 326	1"*	374937
355	348–356	1"	M16	471 5×50 205	1	MP-MXI-F 355	1"*	374938
368	364–372	1"	M16	488 5×50 213	1	MP-MXI-F 368	1"*	374939
406	400–409	1"	M16	525 5×50 232	1	MP-MXI-F 406	1"*	374940
457	454–462	1"	M16	586 6×70 259	1	MP-MXI-F 457	1"*	374941
508	500–508	1"	M16	632 6×70 282	1	MP-MXI-F 508	1"*	374942

\* Available on request

## MP-MX-F (HDG)

Pipe ring with inch connection boss without insulating inlay



Size [mm/inch]	Clamping range d [mm]	Connection thread	Clamping bolts	Dimensions B [mm] s×b [mm] h [mm]	Packaging contents (pcs)	Ordering designation	Item no.	
2"	60– 65	3/4"	M10	132 3×30 60	25	MP-MX-F 2"	3/4"*	374966
2 1/2"	73– 78	3/4"	M10	146 3×30 67	25	MP-MX-F 2 1/2"	3/4"*	374967
3"	88– 93	3/4"	M10	161 3×30 74	25	MP-MX-F 3"	3/4"*	374968
4"	108–116	3/4"	M12	198 4×40 84	25	MP-MX-F 4"	3/4"*	374969
125	122–128	3/4"	M12	210 4×40 89	25	MP-MX-F 125	3/4"*	374970
133	132–138	3/4"	M12	221 4×40 94	10	MP-MX-F 133	3/4"*	374971
5"	139–144	1"	M12	226 4×40 98	10	MP-MX-F 5"	1"*	374972
159	159–166	1"	M12	249 4×40 109	10	MP-MX-F 159	1"*	374973
6"	163–170	1"	M12	253 4×40 111	10	MP-MX-F 6"	1"*	374974
177,8	177–182	1"	M16	272 4×40 117	10	MP-MX-F 177,8	1"*	374975
193,7	192–200	1"	M16	290 4×40 126	10	MP-MX-F 193,7	1"*	374976
210	210–218	1"	M16	309 4×40 135	10	MP-MX-F 210	1"*	374977
219	219–228	1"	M16	318 4×40 140	10	MP-MX-F 219	1"*	374978
244,5	244–253	1"	M16	343 4×40 152	10	MP-MX-F 244,5	1"*	374979
267/274	267–274	1"	M16	363 4×40 162	10	MP-MX-F 267/274	1"*	374980
275	275–282	1"	M16	372 4×40 167	10	MP-MX-F 275	1"*	374981
324	315–324	1"	M16	429 5×50 184	1	MP-MX-F 324	1"*	374982
326	325–330	1"	M16	433 5×50 186	1	MP-MX-F 326	1"*	374983
355	348–356	1"	M16	460 5×50 199	1	MP-MX-F 355	1"*	374984
368	364–372	1"	M16	476 5×50 207	1	MP-MX-F 368	1"*	374985
406	400–409	1"	M16	514 5×50 226	1	MP-MX-F 406	1"*	374986
457	454–462	1"	M16	574 6×70 253	1	MP-MX-F 457	1"*	374987
508	500–508	1"	M16	620 6×70 276	1	MP-MX-F 508	1"*	374988

\* Available on request

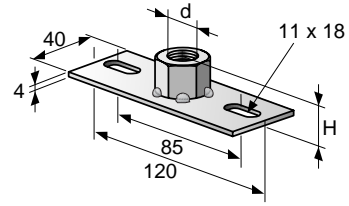
## Pipe rings accessories

### Base plate MGS 2-1/2" -F (HDG)

Material: S235 JRG2C  
 Type: hot-dip galvanised, min. 45 µm

d [Inch]	H [mm]	Fz <sub>rec</sub> [kN]	Packaging contents (pcs)	Ordering designation	Item no.
1/2"	19	5.0	10	<b>MGS 2-1/2"-F</b>	<b>202842</b>

The means of fastening to the base material, e.g. anchors, requires separate verification.

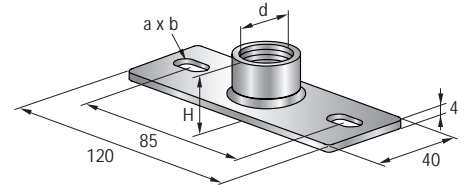


### Base plate MGM 2-F (fvz)

Material: S235 JRG2C  
 Type: hot-dip galvanised, min. 45 µm

d [mm/Inch]	H [mm]	a x b [mm]	Fz <sub>rec</sub> [kN]	Packaging contents (pcs)	Ordering designation	Item no.
<b>M16"</b>	20	13 x 18	8.2	10	<b>MGM 2-16-F</b>	<b>202839</b>
3/4"	21	13 x 18	8.2	10	<b>MGM 2-3/4"-F</b>	<b>202840</b>
1"	25	13 x 18	8.2	10	<b>MGM 2-1"-F</b>	<b>202841</b>

The means of fastening to the base material, e.g. anchors, requires separate verification.

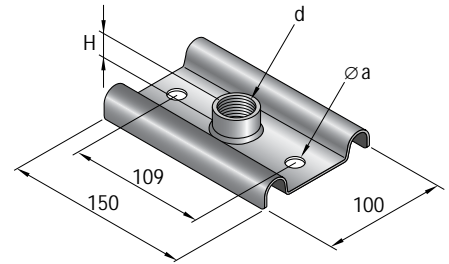


### Base plate MFP-GP 16-F (HDG)

Material: S 235 JR as per DIN EN 10025  
 Type: hot-dip galvanised, min. 45 µm

Connection boss d	Dimensions H [mm]	a [mm]	Max. load F <sub>rec</sub> [kN]	Shear load for (A = 150 mm) [kN]	Packaging contents (pcs)	Ordering designation	Item no.
<b>M16</b>	20	13.5	15.0	2.0	25	<b>MFP-GP 16-F</b>	<b>304279</b>

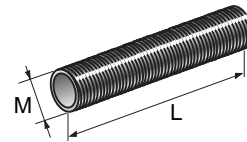
The means of fastening to the base material, e.g. anchors, requires separate verification.



### Threaded pipe GR-G-F (HDG)

Type: rolled thread, hot-dip galvanised, 45 µm

Inch size	Length L [mm]	Packaging contents (pcs)	Ordering designation	Item no.
3/4"	1000	5	<b>GR-G 3/4"-F 1 m</b>	<b>304781</b>
1"	1000	5	<b>GR-G 1"-F 1 m</b>	<b>304782</b>

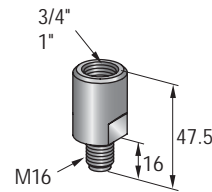


### Adaptor MQZ-A-F (HDG)

Suitable for MP-MXI-F / MP-MX-F pipe rings with M16 connection and MFP-GP 16-F base plate

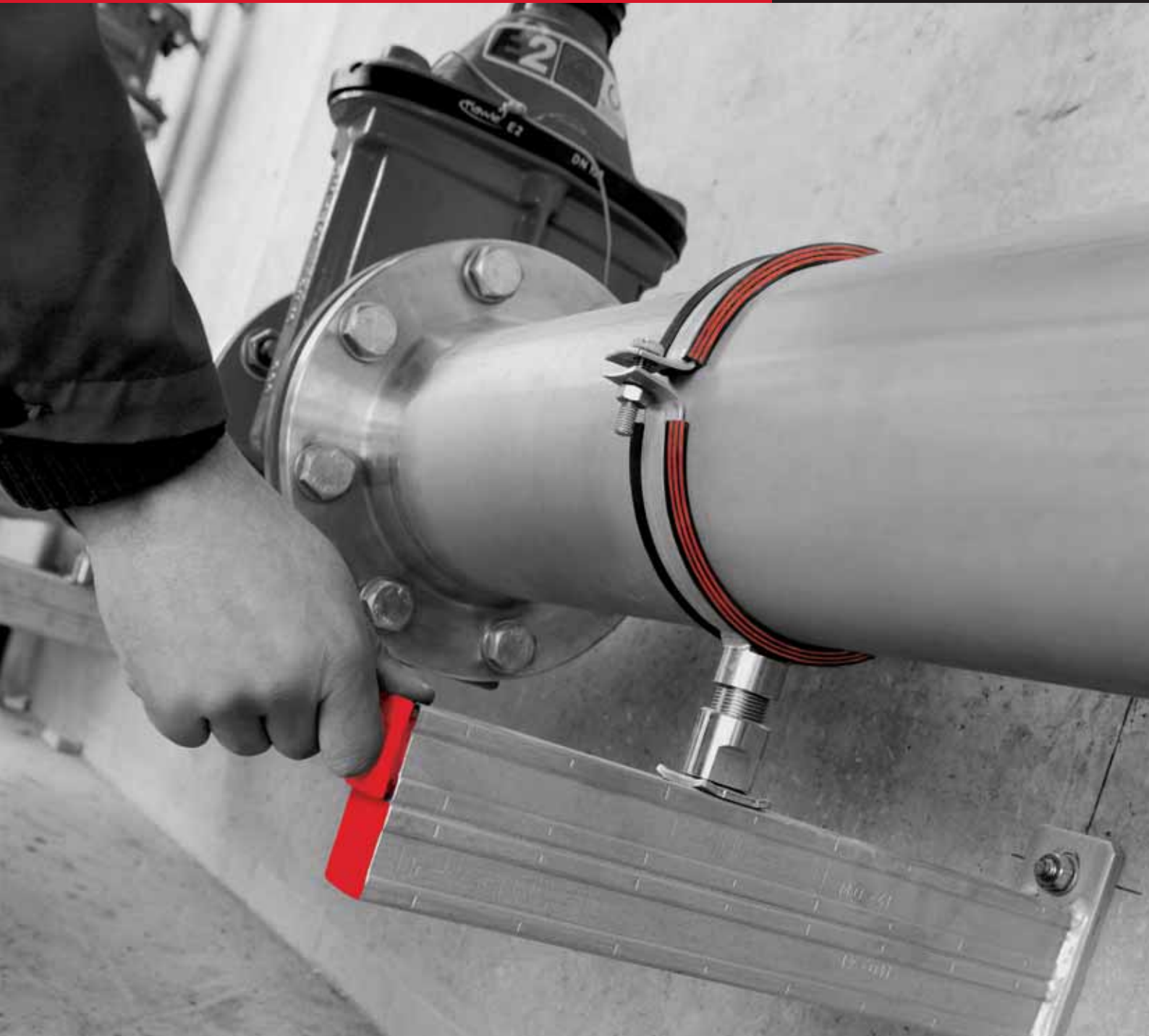
Type: hot-dip galvanised, 45 µm

Internal thread	External thread	Width across flats [mm]	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
3/4"	M16	30	140	25	<b>MQZ-A-3/4"/M16-F</b>	<b>304204</b>
1"	M16	36	180	25	<b>MQZ-A-1"/M16-F</b>	<b>304205</b>



# HILTI

Hilti System MQ  
Channel installation  
stainless steel

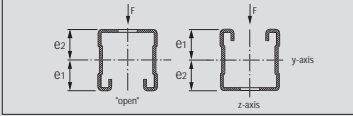


No more rusting!

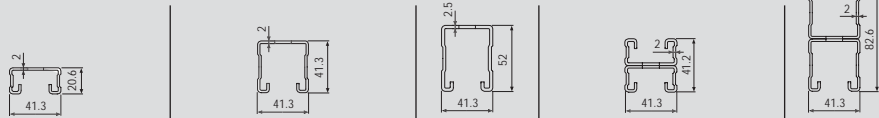
Hilti. Outperform. Outlast.

### Technical data

**Definition of axes**



### Channel sections (stainless steel)



	MQ-21-RA2	MQ-21-R	MQ-41-RA2	MQ-41-R	MQ-52-R	MQ-21D-RA2	MQ-21D-R	MQ-41D-R
Channel wall thickness	t [mm]	2.0	2.0	2.0	2.0	2.5	2.0	2.0
Cross-sectional area	A [mm <sup>2</sup> ]	165.3	165.3	245.1	245.1	352.1	330.6	490.3
Channel weight	[kg/m]	1.45	1.47	2.09	2.12	3.00	2.92	4.27
Delivered length	[m]	3/6	3/6	3/6	3/6	3/6	3/6	3/6
<b>Material</b>								
Permissible stress	$\sigma_{perm.}$ [N/mm <sup>2</sup> ]	142.9	155.8	142.9	155.8	155.8	142.9	155.8
Stainless steel A2 (1.4301)		●		●		●		
Stainless steel A5 (1.4571)			●		●		●	●
<b>Cross-section values</b>								
<b>Y-axis</b>								
Axis of gravity "open" <sup>1)</sup>	e <sub>1</sub> [mm]	10.84	10.84	21.13	21.13	26.67	20.60	41.30
Axis of gravity	e <sub>2</sub> [mm]	9.76	9.76	20.17	20.17	25.33	20.60	41.30
Moment of inertia	I <sub>y</sub> [cm <sup>4</sup> ]	0.92	0.92	5.37	5.37	11.41	4.98	30.69
Section modulus "open"	W <sub>y1</sub> [cm <sup>3</sup> ]	0.85	0.85	2.54	2.54	4.28	2.42	7.43
Section modulus	W <sub>y2</sub> [cm <sup>3</sup> ]	0.94	0.94	2.66	2.66	4.50	2.42	7.43
Radius of gyration	i <sub>y</sub> [cm]	0.74	0.74	1.48	1.48	1.80	1.23	2.50
Permissible moment <sup>2)</sup>	M <sub>y</sub> [Nm]	121	132	363	396	666	346	1158
<b>Z-axis</b>								
Moment of inertia	I <sub>z</sub> [cm <sup>4</sup> ]	4.39	4.39	7.33	7.33	10.79	8.78	14.67
Section modulus	W <sub>z</sub> [cm <sup>3</sup> ]	2.13	2.13	3.55	3.55	5.23	4.25	7.10
Radius of gyration	i <sub>z</sub> [cm]	1.63	1.63	1.73	1.73	1.75	1.63	1.73

**Selection of channel section:**

- The given data is based on a single span (simply-supported beam) bearing a single load, F (kN), at mid-span, L/2.
- If several loads are acting on a single span (simply-supported beam), these may be summated and regarded as a single load acting at mid span. By taking this approach, the design calculation is on the safe side. (→ Cross section selection table).
- The permissible stress in the steel and the max. deflection, L/200, are not exceeded with the given max. span width, L (cm).
- The channel's own weight was taken into account.

F (kN)	Max. span width, L (cm) / deflection, f (mm) <sup>3)</sup>															
	L (cm)	f (mm)	L (cm)	f (mm)	L (cm)	f (mm)	L (cm)	f (mm)	L (cm)	f (mm)	L (cm)	f (mm)	L (cm)	f (mm)	L (cm)	f (mm)
0.25	120	6.0	120	6.0	277	13.8	277	13.8	380	19.0	261	13.1	261	13.1	560	28.0
0.50	86	4.3	86	4.3	204	10.2	204	10.2	290	14.5	195	9.7	195	9.7	449	22.5
0.75	64	2.7	70	3.4	168	8.4	168	8.4	242	12.1	161	8.1	161	8.1	383	19.2
1.00	48	1.5	52	1.9	143	6.8	147	7.3	212	10.6	135	6.3	141	7.0	339	16.9
1.25	39	<1	42	1.2	115	4.4	125	5.7	190	9.5	109	4.1	119	5.3	307	15.3
1.50	32	<1	35	<1	96	3.1	105	4.0	174	8.7	91	2.9	99	3.7	282	14.1
1.75	27	<1	30	<1	83	2.3	90	3.0	150	6.5	78	2.1	85	2.7	257	12.3
2.00	24	<1	26	<1	72	1.8	79	2.3	132	5.0	69	1.6	75	2.1	226	9.6
2.25	21	<1	23	<1	64	1.4	70	1.8	118	4.0	61	1.3	67	1.7	202	7.7
2.50	19	<1	21	<1	58	1.1	63	1.5	106	3.3	55	1.1	60	1.4	182	6.3
2.75	17	<1	19	<1	53	<1	57	1.2	96	2.7	50	<1	55	1.1	166	5.3
3.00	16	<1	17	<1	48	<1	53	1.0	88	2.3	46	<1	50	<1	153	4.4
3.50	14	<1	15	<1	41	<1	45	<1	76	1.7	39	<1	43	<1	131	3.3
4.00	12	<1	13	<1	36	<1	39	<1	66	1.3	34	<1	38	<1	115	2.5
4.50	10	<1	11	<1	32	<1	35	<1	59	1.0	31	<1	33	<1	102	2.0
5.00	9	<1	10	<1	29	<1	32	<1	53	<1	27	<1	30	<1	92	1.6
6.00	8	<1	8	<1	24	<1	26	<1	44	<1	23	<1	25	<1	77	1.1
7.00	6	<1	7	<1	21	<1	22	<1	38	<1	19	<1	21	<1	66	<1
8.00	5	<1	6	<1	18	<1	20	<1	33	<1	17	<1	19	<1	58	<1

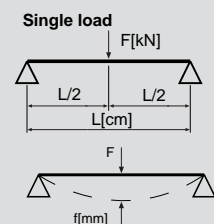
**Selection example:**

- 1.0 kN (=100 kg) should be carried by a channel with a channel span width L = 100 cm (single span simply supported).

**Solution:**

- Select the line showing the load, F = 1.0 kN.
- The MQ-41-RA2 to MQ-41D-R channels can be used because the permissible span width (tabulated value) is larger or equal to the required span, L = 100 cm.

Conversion	kp	kg	N	kN
1 kp	-	1	10	0.01
1 kg	1	-	10	0.01
1 N	0.1	0.1	-	0.001
1 kN	100	100	1000	-



<sup>1)</sup> The smaller value (W<sub>y1</sub>, W<sub>y2</sub>) is decisive for the calculated bending dimension (W<sub>y1</sub> = I<sub>y</sub>/e<sub>1</sub> or W<sub>y2</sub> = I<sub>y</sub>/e<sub>2</sub>).

<sup>2)</sup> Perm. M<sub>y</sub> =  $\sigma_{perm.} \cdot \min. (W_{y1}, W_{y2})$

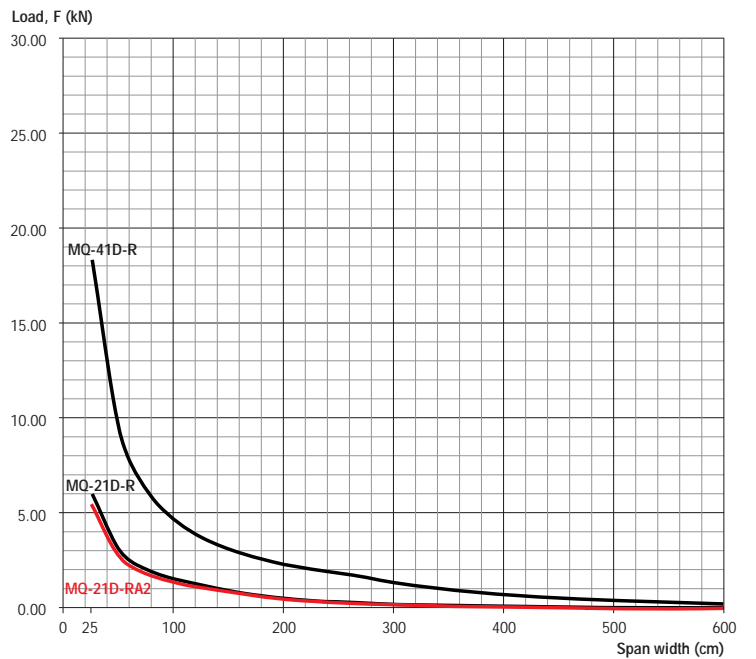
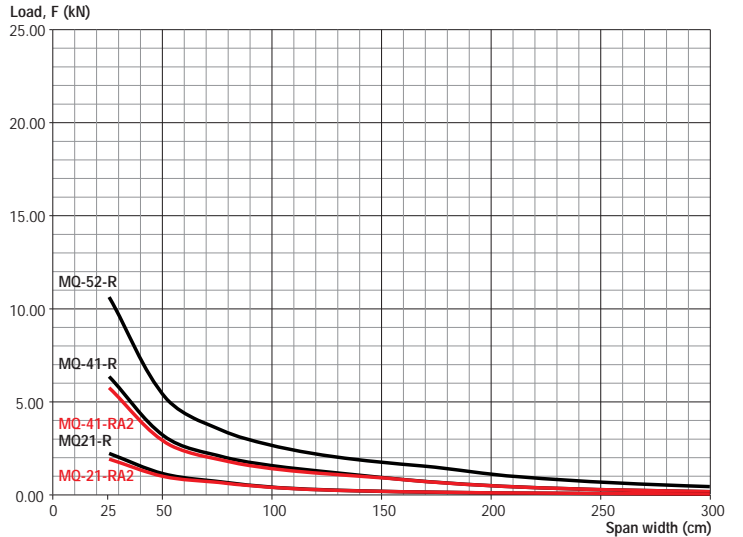
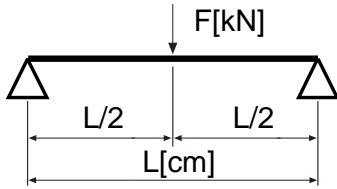
<sup>3)</sup> The channel length is max. 6.0 m. Contact Hilti technical staff about channels longer than 6.0 m!



### Channel selection diagram (stainless steel) Single span (simply supported)

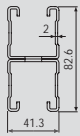
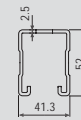
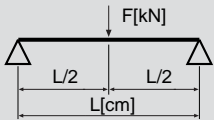
with single load at mid span, L/2

All values were calculated for a permissible stress of  $\sigma_{perm}$  (see technical data for channel selection) and a deflection of L/200.



### Channel selection table (stainless steel)

Single span (simply supported)  
with single load at mid span, L/2



Max. load, F (kN) / deflection, f (mm)

Span width L (cm)	MQ-21-RA2		MQ-21-R		MQ-41-RA2		MQ-41-R		MQ-52-R		MQ-21D-RA2		MQ-21D-R		MQ-41D-R	
	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200
25	1.92	<1	2.10	<1	5.77	<1	6.29	<1	10.59	<1	5.48	<1	5.98	<1	18.36	<1
50	0.96	1.6	1.05	1.8	2.90	<1	3.16	<1	5.32	<1	2.75	<1	3.00	<1	9.23	<1
75	0.64	3.6	0.66	3.8	1.93	1.9	2.10	2.0	3.54	1.6	1.83	1.9	2.00	2.1	6.15	1.0
100	0.37	5.0	0.37	5.0	1.44	3.3	1.57	3.6	2.65	2.9	1.37	3.4	1.49	3.7	4.61	1.9
125	0.23	6.3	0.23	6.3	1.15	5.2	1.25	5.7	2.11	4.5	1.09	5.3	1.19	5.8	3.68	2.9
150	0.15	7.5	0.15	7.5	0.95	7.5	0.95	7.5	1.75	6.5	0.88	7.5	0.88	7.5	3.06	4.2
175	0.11	8.8	0.11	8.8	0.69	8.8	0.69	8.8	1.49	8.8	0.63	8.8	0.63	8.8	2.61	5.7
200	0.08	10.0	0.08	10.0	0.52	10.0	0.52	10.0	1.13	10.0	0.47	10.0	0.47	10.0	2.27	7.4
225	0.05	11.3	0.05	11.3	0.40	11.3	0.40	11.3	0.88	11.3	0.36	11.3	0.36	11.3	2.01	9.4
275	0.02	13.8	0.02	13.8	0.25	13.8	0.25	13.8	0.56	13.8	0.22	13.8	0.22	13.8	1.58	13.8
300	0.01	15.0	0.01	15.0	0.20	15.0	0.20	15.0	0.46	15.0	0.17	15.0	0.17	15.0	1.31	15.0



## Technical data for brackets (stainless steel A5)

Bracket	Channel L (mm)	Type of load 1: uniform		Type of load 2: single		Type of load 3		Type of load 4		Type of load 5	
		$F_1 = q \cdot l$		$F_1$		$F_1$		$F_2$		$F_3$	
		HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>	HVZ-R M12 <sup>1)</sup>	HST-R M12 <sup>2)</sup>
MQK-21/300-R	300	870	870	870	870	340	340	430	430	290	290
MQK-21/450-R	450	400	400	570	570	150	150	250	250	150	150
MQK-41/300-R	300	2620	2620	2620	2620	1310	1310	1310	1310	870	870
MQK-41/450-R	450	1740	1740	1740	1740	870	870	870	870	580	580
MQK-41/600-R	600	1300	1300	1300	1300	500	500	650	650	430	430
MQK-21 D/450-R	450	1650	1650	1650	1650	830	830	820	820	550	550
MQK-41 D/750-R	750	3050	1890	3050	1890	1520	940	1520	940	1010	630

<sup>1)</sup> Loading capacity of the bracket (steel loading capacity) or with HVZ-R M12 fastening, the loading capacity of the bracket is reached with the HVZ-R M12.

<sup>2)</sup> Loading capacity of the bracket with HST-R fastening, alternatively, loading values with HIT-RTZ M12 are at least those with HST-R M12.

Load values are for grade C20/25 concrete (≈ B25).

Alternatively, fastening in solid or hollow brick with HIT HY 50 and approval is possible. Use stainless-steel anchor rods (loading values not given in this table).

The bracket's own weight has been allowed for.

The loads apply only if the bracket is fastened away from a building component edge (fastenings made at component edges must be designed separately).

Separate verification must be provided that forces are transferred to the respective base material, i.e. steel and concrete.

The application guidelines in anchor approvals must be observed. Loading values according to approval status July 2005.

The deflection (deformation) of L/150 was observed in all cases, this being measured at the point of load application.

HVZ-R adhesive anchor



HST-R stud anchor



## Technical data for brackets with angle brace (stainless steel A5)

Bracket	L (mm)	Brace	Type of load 1: uniform		Type of load 2: single		Type of load 3		Type of load 4		Type of load 5	
			$F_1 = q \cdot l$		$F_1$		$F_1$		$F_2$		$F_3$	
			F1 [N] <sup>1)</sup>	F1 [N] <sup>1)</sup>	F1 [N] <sup>1)</sup>	F1 [N] <sup>1)</sup>	F1 [N] <sup>1)</sup>	F2 [N] <sup>1)</sup>	F2 [N] <sup>1)</sup>	F3 [N] <sup>1)</sup>	F3 [N] <sup>1)</sup>	
MQK-21/450-R	450	short	4520	1170	420	2020	1780					
MQK-41/450-R	450	short	5360	3520	2440	2680	1780					
MQK-41/600-R	600	long	4060	2630	2030	2030	1350					
MQK-21 D/450-R	450	short	5360	3350	2320	2680	1780					
MQK-41 D/750-R	750	long	3220	3220	1610	1610	1070					

<sup>1)</sup> Loading capacity of the bracket (steel loading capacity) or the loading capacity of the bracket is reached with the HVZ-R, HIT-RTZ or HST-R M12 fastening.

Load values are for grade C20/25 concrete (≈ B25).

Alternatively, fastening in solid or hollow brick with HIT HY 50 and approval is possible. Use stainless-steel anchor rods (loading values not given in this table).

The bracket's own weight has been allowed for.

The loads apply only if the bracket is fastened away from a building component edge (fastenings made at component edges must be designed separately).

Separate verification must be provided that forces are transferred to the respective base material, i.e. steel and concrete.

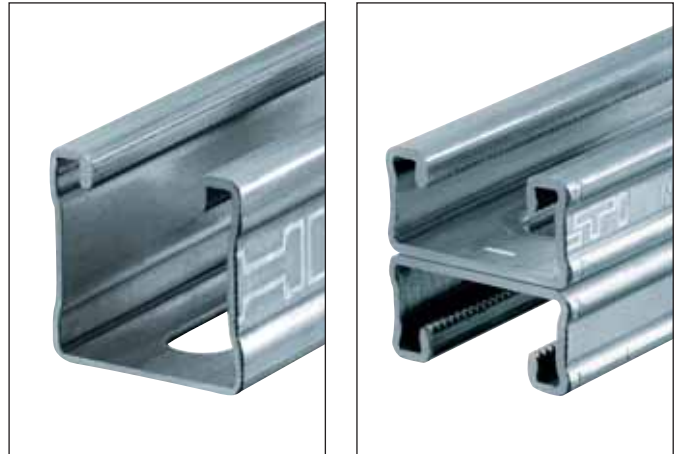
The application guidelines in anchor approvals must be observed. Loading values according to approval status July 2005.

The deflection (deformation) of L/150 was observed in all cases, this being measured at the point of load application.

## Installation channels

**Features:**

- Serrated C-section.
- Installation assisted by dimension marking.
- Great flexibility due to slots.
- Aesthetic appearance.
- Double channels laser welded along both sides.



**Technical data:**

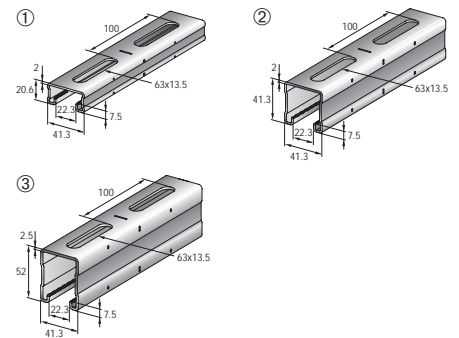
Material: Stainless steel, 1.4301(A2)  
 Stainless steel, 1.4571(A5)

## Single channels



**Stainless steel, 1.4301(A2)**

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)	Ordering designation	Item no.
21	3	2	1.45	① MQ-21-RA2 3 m	303990
21	6	2	1.45	① MQ-21-RA2 6 m	303991
41	3	2	2.09	② MQ-41-RA2 3 m	303994
41	6	2	2.09	② MQ-41-RA2 6 m	303995



**Stainless steel, 1.4571(A5)**

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)	Ordering designation	Item no.
21	3	2	1.47	① MQ-21-R 3 m	303988
21	6	2	1.47	① MQ-21-R 6 m	303989
41	3	2	2.12	② MQ-41-R 3 m	303992
41	6	2	2.12	② MQ-41-R 6 m	303993
52	3	2.5	3.00	③ MQ-52-R 3 m	303996
52	6	2.5	3.00	③ MQ-52-R 6 m	303997

Channels ③ firestop tested



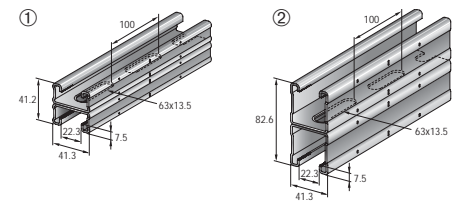
IBMB no. 3897/1802-5

## Double channels



**Stainless steel, 1.4301(A2)**

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)	Ordering designation	Item no.
41	3	2	2.92	① MQ-21D-RA2 3 m	304000
41	6	2	2.92	① MQ-21D-RA2 6 m	304001



**Stainless steel, 1.4571(A5)**

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)	Ordering designation	Item no.
41	3	2	2.96	① MQ-21D-R 3 m <sup>1)</sup>	303998
41	6	2	2.96	① MQ-21D-R 6 m <sup>1)</sup>	303999
82	3	2	4.27	② MQ-41D-R 3 m	304002
82	6	2	4.27	② MQ-41D-R 6 m	304003

<sup>1)</sup> Will initially be supplied as the MN-version.

Channels ② firestop tested



IBMB no. 3897/1802-5

## Brackets

**Features:**

- Serrated C-section.
- Installation assisted by dimension marking.
- Great flexibility due to slots.
- Double-channel brackets welded all around.

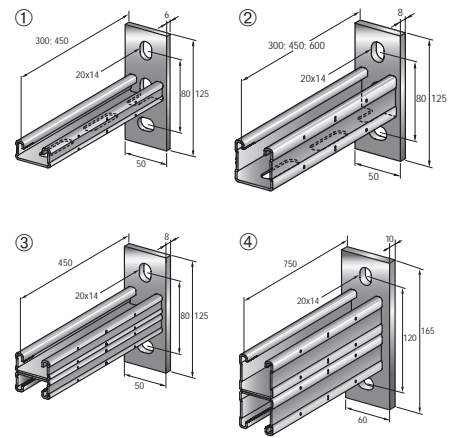


**Technical data:**

Material: Stainless steel, 1.4571 (A5)

## Brackets

Channel length (mm)	Channel section	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
300	MQ-21-R	670	10	① MQK-21/300-R	284388
450	MQ-21-R	890	10	① MQK-21/450-R	304004
300	MQ-41-R	950	10	② MQK-41/300-R	304005
450	MQ-41-R	1260	10	② MQK-41/450-R	304006
600	MQ-41-R	1570	8	② MQK-41/600-R	304007
450	MQ-21 D-R	1720	10	③ MQK-21 D/450-R	304008
750	MQ-41 D-R	2730	4	④ MQK-41 D/750-R	304009



Brackets ② ④ firestop tested



IBMB no. 3897/1802-5

## Angle brace

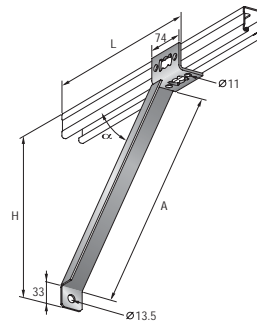


For fabricating wall brackets with individual stand-off lengths.

Material: 1.4571 (A5)  
Material thickness: 4 or 3 mm

	A	H	L	$\alpha$	Weight each (g)	Pakaging contents (pcs)	Ordering designation	Artikel-Nr.
Angle brace, short	355	328	324	45°	650	10	MQK-SK-R	304011
Angle brace, long	635	528	524	45°	1060	10	MQK-SL-R	304010

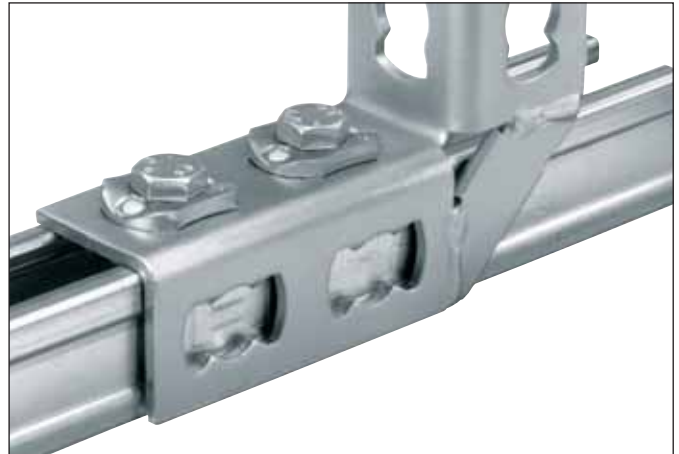
(See technical data on page 36)



## Channel nut

**Features:**

- Simple, compact, time saving.
- Single part which can be prefitted.
- Easy to use.
- Universal: one and the same nut for all channels.



**Technical data:**

Material: Stainless steel

## Pushbutton



Bolt: M10 material A4-70 as per DIN EN ISO 3506-1  
 Width across flats: 17 mm  
 Nut: 1.4581 as per DIN EN 10 283  
 Plate: 1.4401 (A4) as per DIN 17 440



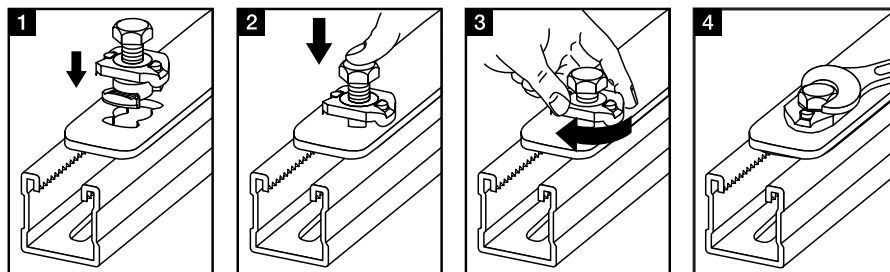
Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
<b>M10</b>	77	25	200	<b>MQN-R</b>	<b>304012</b>



IBMB no. 3897/1802-5

Item	Rec. tensile load, Z <sub>rec</sub> (kN)		Rec. shear load, Q <sub>rec</sub> (kN)	Tightening torque M <sub>i</sub> (Nm)
	Channel I	Channel II		
MQN-R	5.0	8.0	5.0 <sup>1)</sup>	40
Channel I:	MQ-21, MQ-41, MQ-21 D, MQ-41 D (stainless steel)			
Channel II:	MQ-52 (stainless steel)			

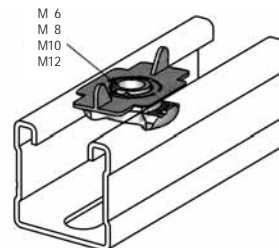
<sup>1)</sup> Shear loading applies to single fastening. Q<sub>rec</sub> (kN) 9.0 for two fastenings.



## Wing nut



Nut, M6–M12: 1.4581 as per DIN EN 10 283  
 Plastic: PA



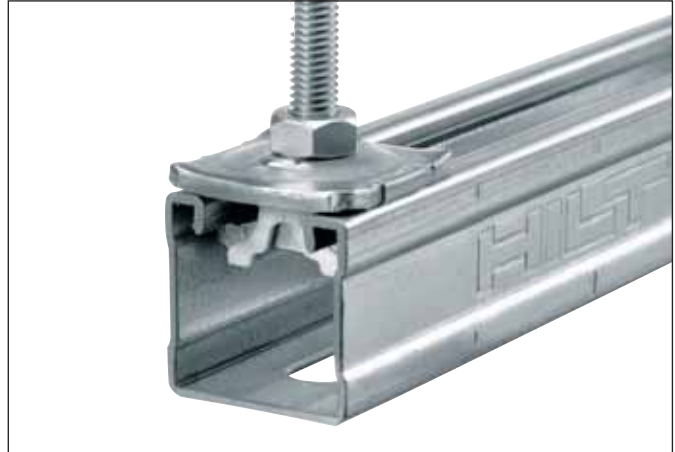
Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
<b>M 6</b>	29	25	500	<b>MQM-M6-R</b>	<b>304014</b>
<b>M 8</b>	27	25	500	<b>MQM-M8-R</b>	<b>304015</b>
<b>M10</b>	25	25	500	<b>MQM-M10-R</b>	<b>304016</b>
<b>M12</b>	23	25	500	<b>MQM-M12-R</b>	<b>304017</b>

Item	Rec. tensile load, Z <sub>rec</sub> (kN)		Rec. shear load, Q <sub>rec</sub> (kN) (bolt A4-70)	Tightening torque M <sub>i</sub> (Nm)
	Channel I	Channel II		
MQM-M 6-R	3.0	3.0	1.5	10
MQM-M 8-R	5.0	5.0	3.5	20
MQM-M10-R	5.0	8.0	5.0	40
MQM-M12-R	5.0	8.0	5.0	40
Channel I:	MQ-21, MQ-41, MQ-21 D, MQ-41 D (stainless steel)			
Channel II:	MQ-52 (stainless steel)			

## Pipe ring saddle

**Features:**

- Single part, simple and time-saving in use.
- For all types of channels.
- For threaded rods from M8 to M16.



**Technical data:**

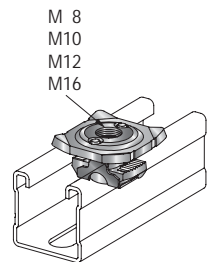
Material: Stainless steel

## MQA-R pipe ring saddle



Nut: 1.4581 as per DIN EN 10 283  
 Plate: 1.4401 (A4) as per DIN 17 440  
 Plastic: PB

Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
M8	75	25	200	① MQA-M 8-R	304021
M10	73	25	200	② MQA-M10-R	304022
M12	71	25	200	② MQA-M12-R	304023
M16	84	25	200	② MQA-M16-R	304024



Item	Rec. tensile load, Z <sub>rec</sub> (kN)		Tightening torque M <sub>0</sub> (Nm)	Bending moment, threaded rod A4-70 (Nm) <sup>1)</sup>
	Channel I	Channel II		
MQA-M 8-R	3.0	3.0	9	12.1
MQA-M10-R	5.0	7.0	18	24.1
MQA-M12-R	5.0	8.0	31	42.1
MQA-M16-R	5.0	8.0	40	100.0
Channel I:	MQ-21, MQ-41, MQ-21 D, MQ-41 D (stainless steel)			
Channel II:	MQ-52 (stainless steel)			

<sup>1)</sup> Calculation as per DIBt

Pipe ring saddles ② firestop tested



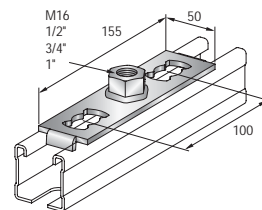
IBMB no. 3897/1802-5

## MQG-2-R base plate



Material: 1.4571 (A5)

Connection thread	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
M16	180	20	MQG-2-M16-R	304028
1/2"	170	20	MQG-2-1/2"-R	304029
3/4"	185	20	MQG-2-3/4"-R	304030
1"	205	20	MQG-2-1"-R	304031

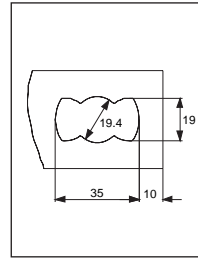


Item	Rec. tensile load, Z <sub>rec</sub> (kN)	Rec. shear load, O <sub>rec</sub> (kN)	Tightening torque M <sub>0</sub> (Nm)	Bending moment, threaded rod A4-70 (Nm)
MQG-2-M16-R	6.0	9.0	40	100.0
MQG-2-1/2"-R	6.0	9.0	40	42.1
MQG-2-3/4"-R	6.0	9.0	40	200.0
MQG-2-1"-R	6.0	9.0	40	200.0

## Angles, angle brackets, connectors

**Features:**

- Univesal: few parts for all applications.
- Easy to use.
- Three-dimensional, thus high strength.
- The MQN-R pushbutton can be prefitted.



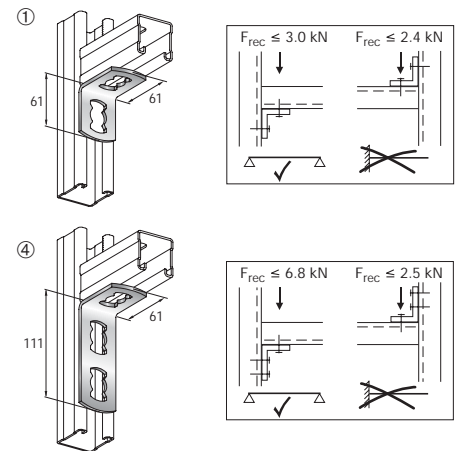
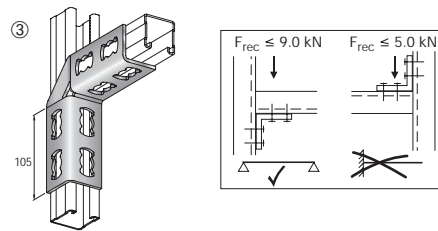
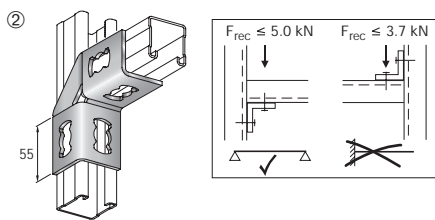
**Technical data:**

Material:	Stainless steel, 1.4571 (A5)
Material thickness:	4 mm

### 90° angle



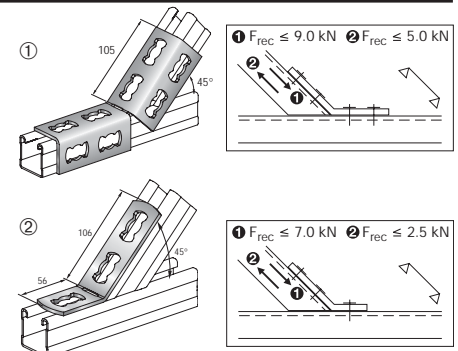
	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Angle, 2 hole, 90°	110	10	① MQW-2-R	304051
Angle, 4 hole, 90°	220	10	② MQW-4-R	304054
Angle, 8 hole, 90°	420	10	③ MQW-8/90°-R	304055
Angle, 3 hole, 90°	160	10	④ MQW-3-R	304052



### 45° angle



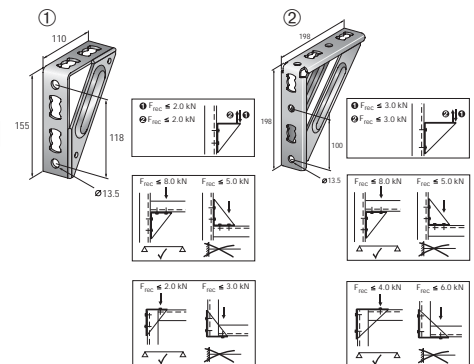
	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Angle, 8 hole, 45°	410	10	① MQW-8/45°-R	304056
Angle, 3 hole, 45°	155	10	② MQW-3/45°-R	304053



### Angle bracket



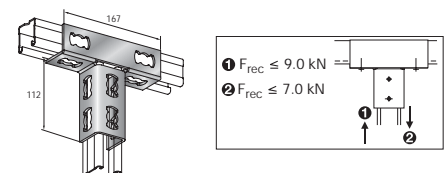
	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Angle bracket, one brace	460	10	① MQW-S/1-R	304058
Angle bracket, two braces	1180	10	② MQW-S/2-R	304059



### Connector, two dimensional

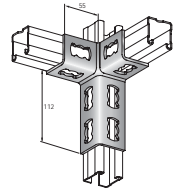


	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Connector, triple, two dimensional	602	10	MQV-3/2D-R	304034



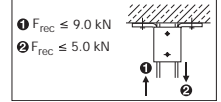
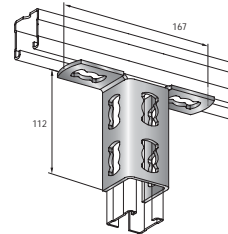


## Connector, three dimensional



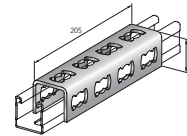
	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Connector, triple, three dimensional	451	10	MQV-3/3D-R	304035

## Connector, two dimensional



	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Connector, double, two dimensional	440	10	MQV-2/2D-R	304032

## Longitudinal channel connector

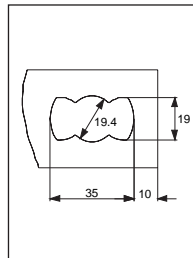


	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Channel connector, 12 hole	555	10	MQV-12-R	304037

## Channel base / Base material connector

### Features:

- Reliable and easy to use.
- Connection of channels to any base material.
- The MQN-R pushbutton can be prefitted.



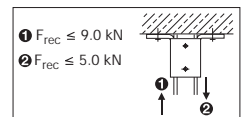
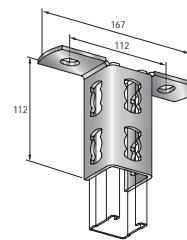
### Technical data:

Material: Stainless steel, 1.4571(A5)  
 Separate design verification of the fastening on the base material must be provided.

## Base material connector



Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-41, MQ-21 D	440	10	MQV-2/2D-14-R	304033

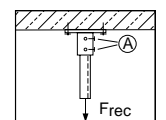
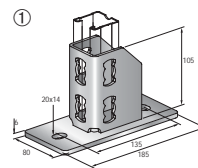


Item	F <sub>rec</sub> (kN)	Channel (B)	Bolt (A)	Pushbutton	Tightening torque M <sub>t</sub> (Nm)
MQV-2/2D-14-R	7.8	MQ-41-R	Double	MQN-R	40

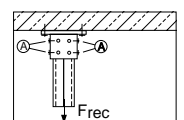
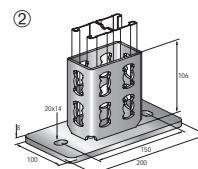
## Channel base



Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21 – MQ-72	1150	12	① MQP-21-72-R	304047
MQ-41 D	1880	8	② MQP-82-R	304048



Item	F <sub>rec</sub> (kN)	Bolt (A)	Pushbutton	Tightening torque M <sub>t</sub> (Nm)
MQP-21-72-R	9,0	Double	MQN-R	40
MQP-82-R	12,6	Quadruple	MQN-R	40



Channel base ① firestop tested

IBMB no. 3897/1802-5

## Beam clamp

**Features:**

- For connecting installation channels to steel beams without drilling or welding.
- The clamp set fits all standard T-beams (max. clamping thickness ≤ 23 mm).



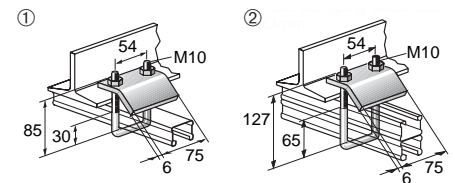
**Technical data:**

Material: Stainless steel

## MQT-R beam clamp



U-bolt: 1.4401 (A4)  
 Claw plate: 1.4401 (A4)  
 Nut: A4-70 as per DIN EN ISO 3506-2



Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21, MQ-41, MQ-21D	427	10	① MQT-21-41-R	304067
MQ-52, MQ-41D	471	10	② MQT-52-82-R	304068

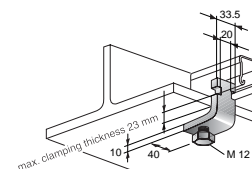
Beam clamp	Tightening torque M <sub>s</sub> (Nm)	Max. rec. load (kN)
MQT-21-41-R	10	3.0
MQT-52-82-R	20	4.5

Always use beam clamps in pairs.  
 Channel loading values must be allowed for.

## MQT-C-R beam clamp



Clamp: 1.4401 (A4)  
 Screw: M12, material A4-70 as per DIN EN ISO 3506-1



Suitable for channel height	Material thickness (mm)	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
MQ-21, MQ-41	10	260	6	48	MQT-C23-R	304069

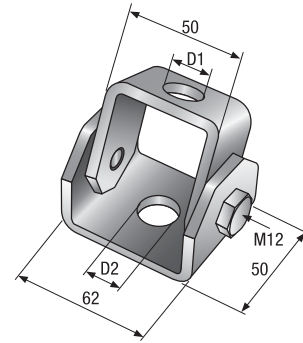
Beam clamp	Tightening torque M <sub>s</sub> (Nm)	Max. rec. load (kN)
MQT-C23-R	40	2.5

Always use beam clamps in pairs.  
 Channel loading values must be allowed for.

## Universal joint MQP-U (HDG)

Size	D1 (mm)	D2 (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
<b>M12</b>	12.5	12.5	390	10	<b>MQP-U M12-F</b>	<b>388359</b>
<b>M16</b>	16.5	16.5	390	10	<b>MQP-U M16-F</b>	<b>388360</b>

Item	Max. rec. load (kN)	Tightening torque $M_D$ (Nm)
MQP-U M12	14	20
MQP-U M16	14	20



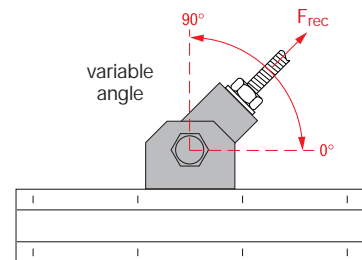
### Technical data for fastening the MQP-U-F universal joint to MQ channels

Angle	Max. recommended load $F_{rec}$ (kN)		Tightening torque $M_D$ (Nm)
	Channel I	Channel II	
90°	5.0	8.0	20
60°	4.0	8.0	20
30°	3.0	5.0	20
0°	3.0	5.0	20

Channel I: MQ-21-F, MQ-31-F, MQ-41-F, MQ-21D-F, MQ-41D-F

Channel II: MQ-52-F, MQ-72-F, MQ-52-72 D-F, MQ-124XD-F

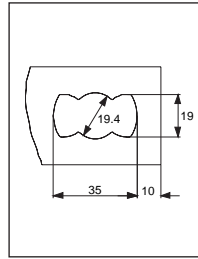
Interim values of the angle can be interpolated linearly.



# Clamp

**Features:**

- Universal: few parts for all applications.
- Easy to use.
- The MQN-R pushbutton can be prefitted.



**Technical data:**

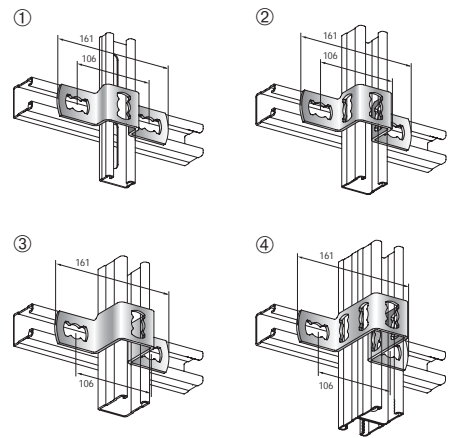
Material:	Stainless steel, 1.4571 (A5)
Material thickness:	4 mm

# Clamps



Suitable for channel height

Suitable for channel height	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21	210	10	① MQB-21-R	304060
MQ-41, MQ-21D	240	10	② MQB-41-R	304061
MQ-52	340	10	③ MQB-52-R	304062
MQ-41D, MQ-41, MQ-21D	340	10	④ MQB-82-R	304063



## Accessories

**Features:**

- Matching items in programme.

**Technical data:**

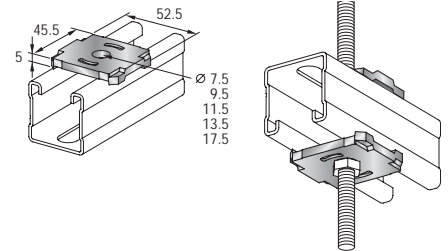
Material: Stainless steel, 1.4571 (A5)



### Boss plate



Thread	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
M 6	94	20	MQZ-L7-R	304070
M 8	92	20	MQZ-L9-R	304071
M10	88	20	① MQZ-L11-R	304072
M12	84	20	① MQZ-L13-R	304073
M16	80	20	① MQZ-L17-R	304074



Boss plates ① firestop tested

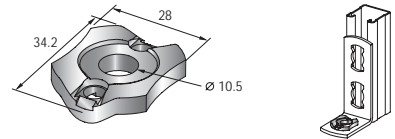


IBMB no. 3897/1802-5

### Installation washer



Hole diameter (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
10,5	30	40	MQZ-U-R	304084

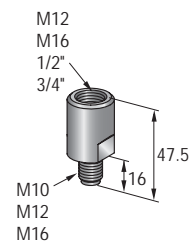


### Adaptor



Material: 1.4401 (A4)

Internal thread	External thread	Width across flats (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
M12	M10	18	41	25	MQZ-A-M 12/M10-R	284389
M16	M12	19	92	25	MQZ-A-M 16/M12-R	304079
1/2"	M16	24	109	25	MQZ-A-1/2"/M16-R	304080
3/4"	M16	30	135	25	MQZ-A-3/4"/M16-R	304081

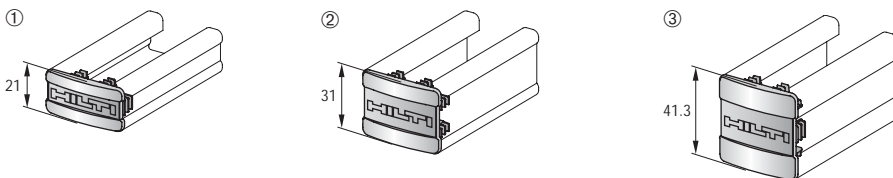


### Channel endcap

Made of polypropylene (PP), suitable for all installation channels.

Suitable for channel height	Weight each (g)	Packaging contents (pcs.)	Ordering designation	Item no.
MQ-21, MQ-21D	2	50	① MQZ-E21	370598
	2	50	② MQZ-E31*	369686
MQ-41, MQ-41D	2	50	③ MQZ-E41	369685

\* Usable for MQ-52- and MQ-72-channel sections.



### 3D system

**Features:**

- Bracing with predetermined bending point.

**Technical data:**

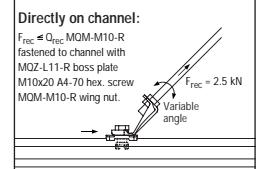
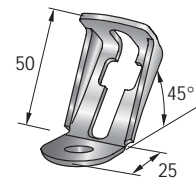
Material:	Stainless steel, 1.4571 (A5)
Material thickness:	3 mm
Width across flats:	17 mm
Tightening torque:	40 Nm



### 3D system



Description	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
Brace	73	20	MQ3D-A-R	304085

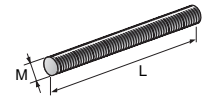


**Note:**

When installing the brace, an M10-screw of A4-70 grade must be used. The min. length of screw thread engagement must be observed.

### Installation Accessories

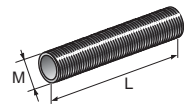
#### Threaded rod DIN 975



Material: A4-70 as per DIN 267-11

Thread size [M]	Length L [mm]	Weight each [g]	Packaging contents (pcs)	Ordering designation	Item no.
M8	1000	320	25	AM 8x1m	58666
M8	3000	960	25	AM 8x3m	58706
M10	1000	500	20	AM 10x1m	58670
M10	3000	1500	20	AM 10x3m	58707
M12	1000	730	10	AM 12x1m	58671
M12	3000	2190	15	AM 12x3m	58709
M16	1000	1330	5	AM 16x1m	58683
M16	3000	3990	10	AM 16x3m	58712
M20	1000	2100	5	AM 20x1m	58688
M20	3000	6300	1	AM 20x3m	58715

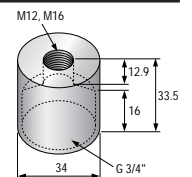
### GR-G threaded pipe



Material: Stainless steel, 1.4404 (A4-70)

Inch size	Length L (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
1/2"	2000	1800	10	GR-G 1/2"-A4x2 m	286862
3/4"	2000	2800	5	GR-G 3/4"-A4x2 m	286863
1"	2000	4880	5	GR-G 1"-A4x2 m	286864

### MQZ-A reducing socket



Material: Stainless steel, 1.4435 (A4)

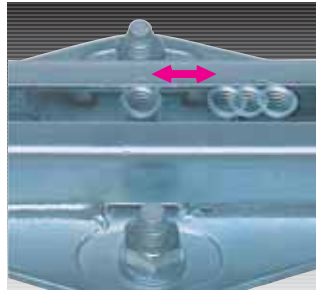
Internal thread inch size	Internal thread M	Length L (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
3/4"	M12	33.5	169	8	MQZ-A-IG 3/4" / IG M12-R	267710
3/4"	M16	33.5	161	8	MQZ-A-IG 3/4" / IG M16-R	267711



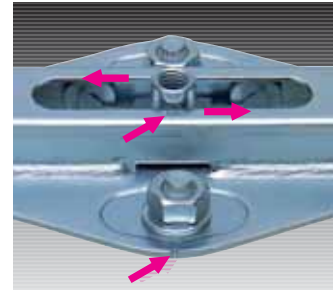
## MRG-R roll connector

**Features:**

- For use suspended or standing without conversion
- Coordinated loading classes suitable for Hilti pipe rings
- Temperature resistant up to 300°C as no parts are of plastic.
- Stiffened base plate suitable for MQ channel installation system
- Slide can not pull out.



Smooth rolling on coated rollers.  
Coefficient of friction:  $\mu_0=0.15$



Large movement: MRG 2-R up to 80 mm, MRG-D6-R up to 116 mm.  
Center mark for setting to zero.

**Technical data:**

Material: Stainless steel 1.4571 (A5)

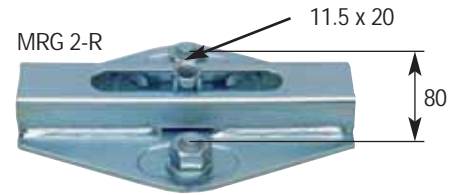
Delivery without nut, washer or bolt

## MRG 2-R roll connector



One connection boss

Connection boss/ double thread	F <sub>re</sub> (kN)	Max. displacement axial (mm)	Max. displacement transverse (mm)	Packaging contents (pcs)	Ordering designation	Item no.
M10 / M12	1.5	80	–	4	MRG 2-R	304086



Roll connector MRG 2-R firestop tested



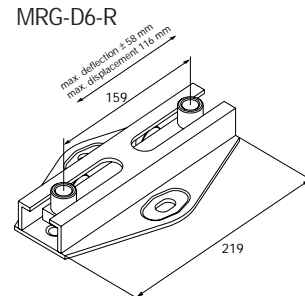
IBMB no. 3897/1802-5

## MRG-D6-R double roll connector



Two connection bosses

Connection boss/ double thread	F <sub>re</sub> (kN)	Max. displacement axial (mm)	Max. displacement transverse (mm)	Packaging contents (pcs)	Ordering designation	Item no.
M12 / M16	6.0	116	–	2	MRG-D6-R	304087



## MP-SRNI / MP-SRN pipe rings

For fastening pipes up to 64 mm  
in corrosive surroundings



### Fields of application:

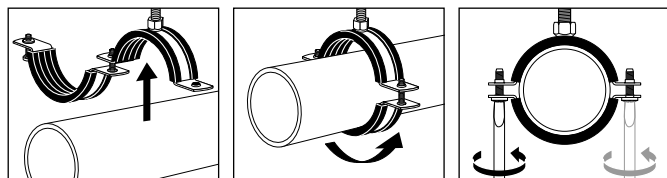
- Heating and industry
- Food industry (except production)
- Water treatment

### Benefits:

- Pipe ring with passive fire prevention verification as per DIN 4102, part 2
- Resistance-welded connection boss
- High resistance to corrosion (A5 stainless steel)
- Clamping bolt secured against loss
- Non-slip (bonded), pre-fitted rubber inlay

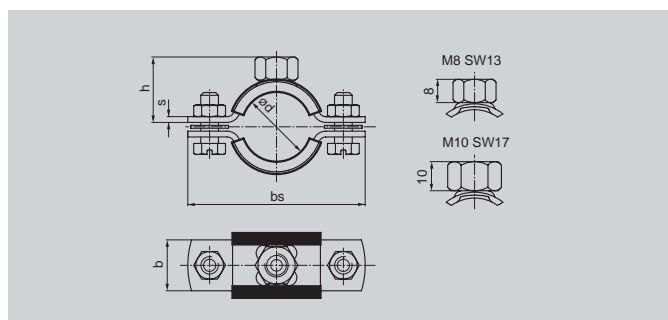
### Technical data:

Max permissible tensile load:		$F_{rec} = 1500 \text{ N}$
MP-SRNI / MP-SRN up to 64 mm diameter		
Pipe ring material:	A5 1.4571 / DIN 17441	
Clamping bolts:	slotted hexagon head	
Rubber inlay material:	EPDM	
Temperature resistance:	-50°C to +120°C	
Shore A hardness (DIN 53 505):	50 ± 5	
Noise reduction:	$\Delta L_A = 15 \text{ dB (A)}$	
Stability:	aging, ozone, weather and hot water resistant	



## MP-SRNI pipe ring

With metric connection boss  
and insulating inlay as per DIN 4109



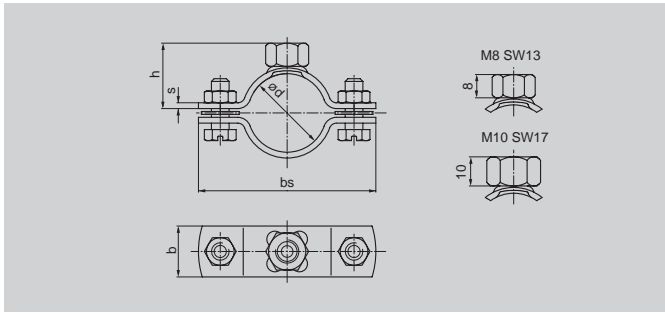
firestop



Size (mm/ inch)	Clamping range, d (mm)	Connection thread / width across flats	Clamping bolts	Dimensions bs (mm) b x s (mm)	h (mm)	Packaging contents (pcs)	Ordering designation	Item no.
3/8"	15.5–18.5	M8 / SW13	M6	55 17.5 x 2	19	25	MP-SRNI 17	374186
1/2"	19.5–22.5	M8 / SW13	M6	61 17.5 x 2	22	25	MP-SRNI 21	374187
3/4"	25.5–28.5	M8 / SW13	M6	68 17.5 x 2	25.5	25	MP-SRNI 27	374188
1"	33.0–37.0	M8 / SW13	M6	76 17.5 x 2	29.5	25	MP-SRNI 34/36	374189
1 1/4"	38.0–44.0	M10 / SW17	M8	82 17.5 x 2	34.5	25	MP-SRNI 38/42	374192
1 1/2"	48.0–52.0	M10 / SW17	M8	91 17.5 x 2	39	25	MP-SRNI 48/50	374193
57	54.0–58.0	M10 / SW17	M8	97 17.5 x 2	42	25	MP-SRNI 57	374194
2"	59.0–64.0	M10 / SW17	M8	102 17.5 x 2	44.5	10	MP-SRNI 60/63	374195

## MP-SRN pipe ring

With metric connection boss  
without insulating inlay



Size (mm/ inch)	Clamping range, d (mm)	Connection thread / width across flats	Clamping bolts	Dimensions bs (mm)	b × s (mm)	h (mm)	Packaging contents (pcs)	Ordering designation	Item no.
3/8"	15.5–18.5	M8 / SW13	M6	51	17.5 × 2	17	25	MP-SRN 17	254697
1/2"	19.5–22.5	M8 / SW13	M6	55	17.5 × 2	19	25	MP-SRN 21	254698
3/4"	25.5–28.5	M8 / SW13	M6	61	17.5 × 2	22	25	MP-SRN 27	254669
1"	32.5–35.5	M8 / SW13	M6	68	17.5 × 2	25.5	25	MP-SRN 34	254700
36	34.5–37.5	M10 / SW17	M6	70	17.5 × 2	28.8	25	MP-SRN 36	254701
38	36.5–39.5	M10 / SW17	M6	72	17.5 × 2	29.5	25	MP-SRN 38	254702
1 1/4"	40.5–43.5	M10 / SW17	M6	76	17.5 × 2	31.5	25	MP-SRN 42	254703
1 1/2"	46.5–51.5	M10 / SW17	M8	82	17.5 × 2	34.5	25	MP-SRN 48/50	254704
57	55.5–58.5	M10 / SW17	M8	91	17.5 × 2	39	25	MP-SRN 57	254705
2"	58.5–61.5	M10 / SW17	M8	94	17.5 × 2	40.5	10	MP-SRN 60	254706
63	61.5–64.5	M10 / SW17	M8	97	17.5 × 2	42	10	MP-SRN 63	254707

## MP-MRI / MP-MR pipe rings

For pipe fastenings in corrosive surroundings  
in the medium-duty diameter range from 2 1/2" to 219 mm



### Fields of application:

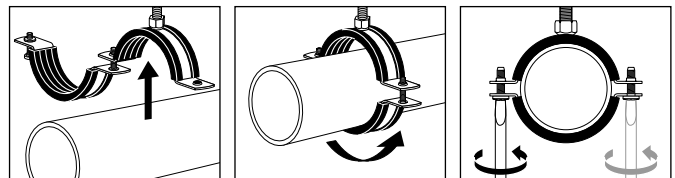
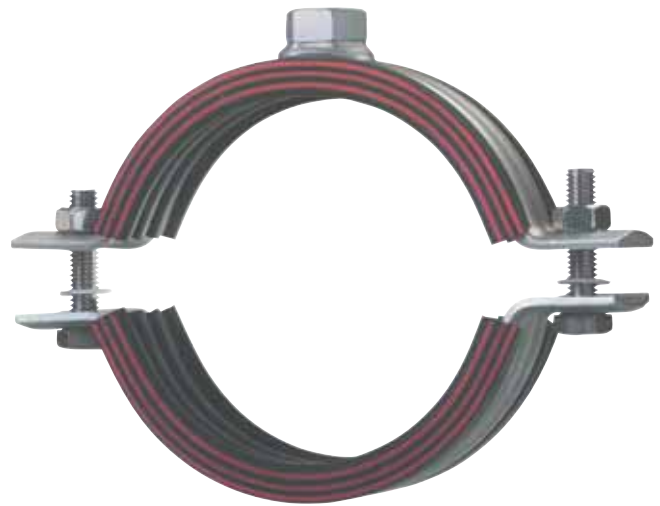
- Heating and industry
- Food industry (except production)
- Water treatment

### Benefits:

- Pipe ring with passive fire prevention verification as per DIN 4102, part 2
- Solid connection boss, welded all round
- Greater stiffness from profiled pipe ring steel band
- Material suitable for pipe diameter. Loads up to 5,000 N
- High resistance to corrosion (A5 stainless steel)
- Clamping bolt secured against loss
- Non-slip (bonded), pre-fitted rubber inlay

### Technical data:

Max permissible load for suspensions	
68 mm to 3" diameter,	F <sub>rec.</sub> = 3000 N
101.6 mm to 6" diameter,	F <sub>rec.</sub> = 4000 N
177.8 to 219.1 mm	F <sub>rec.</sub> = 5000 N
Pipe ring material:	A5 1.4571 / DIN 17441
Clamping bolts:	slotted hexagon head
Rubber inlay material:	EPDM
Temperature resistance:	-50 to +120°C
Shore A hardness (DIN53 505):	50± 5
Noise reduction:	ΔL <sub>A</sub> = 18 dB (A)
Stability:	aging, ozone, weather and hot water resistant

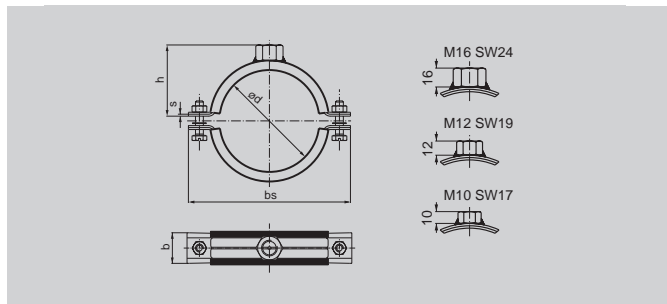


firestop



## MP-MRI pipe ring

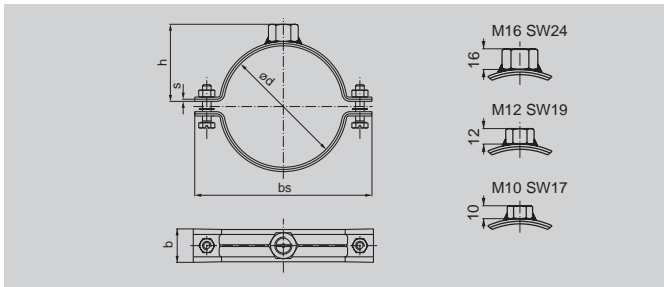
With metric connection boss  
and insulating inlay as per DIN 4109



Size (mm/ inch)	Clamping range, d (mm)	Connection thread / width across flats	Clamping bolts	Dimensions bs (mm) b x s (mm)	h (mm)	Packaging contents (pcs)	Ordering designation	Item no.
68/72	68– 72	M10 / SW17	M8	129 24 x 2.0	50	10	MP-MRI 68/72	372044
2 1/2"	70– 77	M10 / SW19	M8	136 24 x 2.0	48	10	MP-MRI 2 1/2"	372045
78/84	78– 84	M10 / SW19	M8	145 24 x 2.0	54	10	MP-MRI 78/84	372046
3"	82– 90	M10 / SW19	M8	150 24 x 2.0	53	10	MP-MRI 3"	372047
101.6	97–103	M12 / SW19	M8	172.5 30 x 2.5	64.5	5	MP-MRI 101.6	372048
4"	108–114	M12 / SW19	M8	183.5 30 x 2.5	70	5	MP-MRI 4"	372049
117	114–119	M12 / SW19	M8	189 30 x 2.5	73.5	5	MP-MRI 117	372050
125	122–127	M12 / SW19	M8	197 30 x 2.5	77.5	5	MP-MRI 125	372051
133	132–137	M12 / SW19	M8	207 30 x 2.5	82.5	10	MP-MRI 133	372052
5"	137–142	M16 / SW21	M8	212 30 x 2.5	89	10	MP-MRI 5"	372053
159	156–162	M16 / SW21	M8	232 30 x 2.5	97	10	MP-MRI 159	372054
6"	162–168	M16 / SW21	M8	238.5 30 x 2.5	101	10	MP-MRI 6"	372055
177.8	175–180	M16 / SW21	M8	252.5 30 x 3.0	109.5	10	MP-MRI 177.8	372056
193.7	190–200	M16 / SW21	M8	271 30 x 3.0	115	10	MP-MRI 193.7	372057
212	210–219	M16 / SW21	M8	291 30 x 3.0	125.5	10	MP-MRI 212	372058
219.1	217–224	M16 / SW21	M8	296 30 x 3.0	129.5	10	MP-MRI 219.1	372059

## MP-MR pipe ring

With metric connection boss  
without insulating inlay



Size (mm/ inch)	Clamping range, d (mm)	Connection thread / width across flats	Clamping bolts	Dimensions bs (mm)	b × s (mm)	h (mm)	Packaging contents (pcs)	Ordering designation	Item no.
68/72	68– 72	M10 / SW17	M8	117,5	24 × 2,0	43,5	10	MP-MR 68/72	374197
2½"	75– 80	M10 / SW17	M8	129	24 × 2,0	50	10	MP-MR 2½"	374198
3"	87– 93	M10 / SW17	M8	145	24 × 2,0	54	10	MP-MR 3"	374200
101,6	97–104	M12 / SW19	M8	160	30 × 2,5	60	5	MP-MR 101,6	374201
4"	109–114	M12 / SW19	M8	172,5	30 × 2,5	64,5	5	MP-MR 4"	374202
117	116–123	M12 / SW19	M8	180	30 × 2,5	70	5	MP-MR 117	374203
125	125–131	M12 / SW19	M8	189	30 × 2,5	73,5	5	MP-MR 125	374204
133	133–138	M12 / SW19	M8	197	30 × 2,5	77,5	10	MP-MR 133	374205
5"	139–145	M16 / SW21	M8	202,5	30 × 2,5	81,5	10	MP-MR 5"	374206
159	156–162	M16 / SW21	M8	226	30 × 2,5	94	10	MP-MR 159	374207
6"	162–168	M16 / SW21	M8	232	30 × 2,5	97	10	MP-MR 6"	374208
177,8	175–180	M16 / SW21	M8	242,5	30 × 3,0	106,5	10	MP-MR 177,8	374209
193,7	190–200	M16 / SW21	M8	262	30 × 3,0	112	10	MP-MR 193,7	374210
212	210–219	M16 / SW21	M8	281,5	30 × 3,0	122,5	10	MP-MR 212	374211
219,1	217–224	M16 / SW21	M8	286,5	30 × 3,0	126,5	10	MP-MR 219,1	374212

## MP-MRXI pipe ring

For pipe fastenings in corrosive surroundings  
in the diameter range 244 to 508 mm



### Fields of application:

- Heating and industry
- Food industry (except production)
- Water treatment

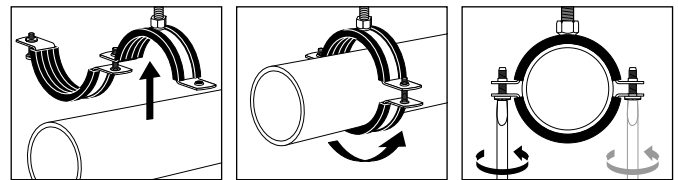
### Benefits:

- Solid connection boss, welded all round
- High loading capacity up to 13,000 N
- Strong half-rings (hoops) for high stability
- Strong clamping bolts (M16) for high loads
- High resistance to corrosion (A5 stainless steel)
- Non-slip (bonded), pre-fitted rubber inlay



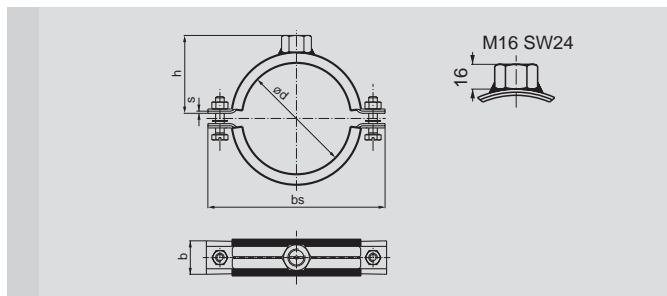
### Technical data:

Max permissible load for suspensions	
244.5 to 406 mm diameter,	$F_{rec.} = 10000 \text{ N}$
457 to 508 mm diameter,	$F_{rec.} = 13000 \text{ N}$
Pipe ring material:	A5 1.4571 / DIN 17441
Rubber inlay material:	EPDM
Temperature resistance:	-50 to +120°C
Shore A hardness (DIN53 505):	50 ± 5
Noise reduction:	$\Delta L_A = 16 \text{ dB (A)}$
Stability:	aging, ozone, weather and hot water resistant
Not for use in painting processes	



## MP-MRXI pipe ring

With metric connection boss  
and insulating inlay as per DIN 4109



Size (mm)	Clamping range, d (mm)	Connection thread / width across flats	Clamping bolts	Dimensions bs (mm) b x s (mm)	h (mm)	Packaging contents (pcs)	Ordering designation	Item no.
244.5	244–253	M16 / SW21	M16	355 50 x 4	147.5	10	MP-MRXI 244,5	374213
273	267–274	M16 / SW21	M16	372 50 x 4	156	10	MP-MRXI 273	374214
280	275–282	M16 / SW21	M16	384 50 x 4	162	10	MP-MRXI 280	374215
324	314–324	M16 / SW21	M16	441 50 x 4	182.5	1	MP-MRXI 324	374216
326	324–330	M16 / SW21	M16	445 50 x 4	184.5	1	MP-MRXI 326 *	374217
355	348–356	M16 / SW21	M16	471 50 x 4	197.5	1	MP-MRXI 355 *	374218
406	400–409	M16 / SW21	M16	524 50 x 4	224	1	MP-MRXI 406 *	374219
457	454–462	M16 / SW21	M16	585 70 x 5	251.5	1	MP-MRXI 457 *	374220
508	500–508	M16 / SW21	M16	631 70 x 5	274.5	1	MP-MRXI 508 *	374221

\* Available on request

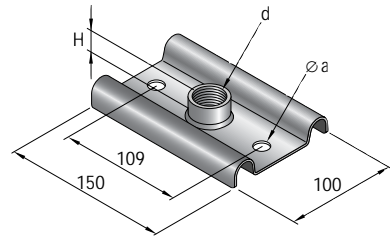


## Stainless steel accessories for pipe rings

### Base plate

Material: 1.4571 (A5) stainless steel

Version: Connection boss boss welded all round



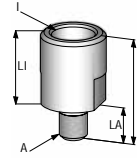
Connection boss [D]	H [mm]	a [mm]	Max. load F [kN]	Shear load for A = 150 mm [kN]	Package cont. (pcs)	Ordering designation	Item no.
M16 hex.	16	13.5	12.5	2.0	25	MFP-GP-R M16	376258
3/4" boss	17	13.5	12.5	2.0	25	MFP-GP-R 3/4"	376259

The means of fastening to the base material, e. g. anchors, requires separate verification.

### Adaptor

Material: 1.4401 (A4) stainless steel

Fits MP-MXRI / MP-MRI / MP-MR pipe rings with M16 or M12 boss and MFP-GP-R M16 and MFP-GP-R 3/4" base plates

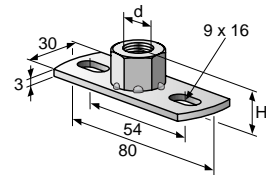


Outside thread [A]	Inside thread [I]	Wrench size [SW]	Length L [mm]	LA [mm]	LI [mm]	Outside dia. [mm]	Package contents (pcs)	Ordering designation	Item no.
M12 3/4"	30	39.5	11.5	28	34	25	25	MGA-R 3/4" IG / M12 AG	376256
M16 3/4"	30	43.5	15.5	28	34	25	25	MGA-R 3/4" IG / M16 AG	376257

### MGL 2-R base plate «light» (A5), metric two-hole version

Version: Spot-welded connection boss

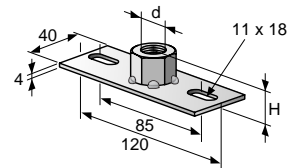
d [mm]	H [mm]	a×b [mm]	Fzrec [kN]	Package cont. (pcs)	Ordering designation	Item no.
M8	11	9×16	1.9	10	MGL 2-R-M8	246927



### MGS 2-R base plate «standard» (A5), metric two-hole version

Version: Spot-welded connection boss

d [mm]	H [mm]	a×b [mm]	Fzrec [kN]	Package cont. (pcs)	Ordering designation	Item no.
M10	14	11×18	2.0	10	MGS 2-R-M10	246931
M12	16	11×18	3.0	10	MGS 2-R-M12	247762
M16	20	11×18	3.5	10	MGS 2-R-M16	246932



### Suitable anchor systems:



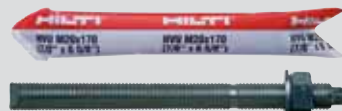
HKD-SR



HST-R



Hilti HIT



HVZ-R / HVA-R

## General safety information

As the Hilti MQ hot-dip galvanised/stainless steel system forms a technical unit, this system must not be used for purposes other than those recommended by Hilti or in combination with products that are not suitable for the purpose.

Deviation from the loads warranted by Hilti may result if the system is used in combination with products not recommended by Hilti. When the MN hot-dip galvanised/ stainless steel system is combined with products from the MQ hot-dip galvanised/stainless steel system, the load values for the MQ hot-dip galvanised/stainless steel system apply exclusively.

Hilti accepts no liability whatever for damage or loss that could result from failure to observe this safety information.

Hilti. Outperform. Outlast.

Hilti Corporation | 9494 Schaan | Liechtenstein | P +423-234 2111 | F +423-234 2965