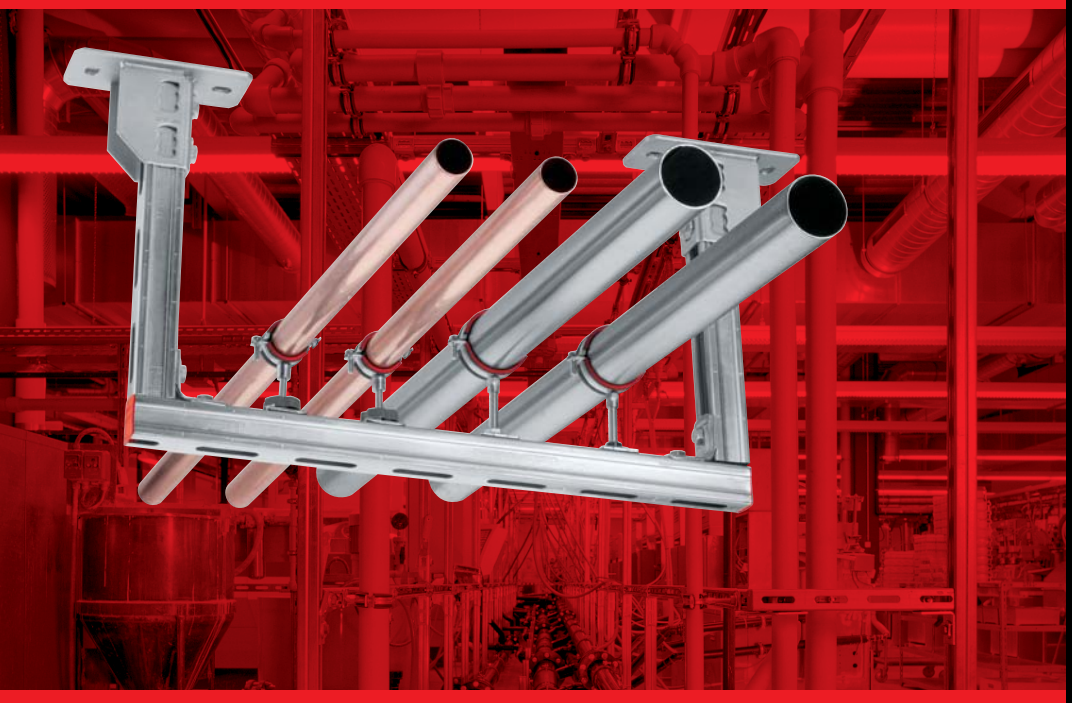
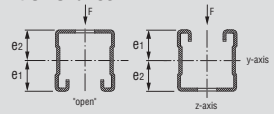
Technical documentation Hilti System MQ channel installation



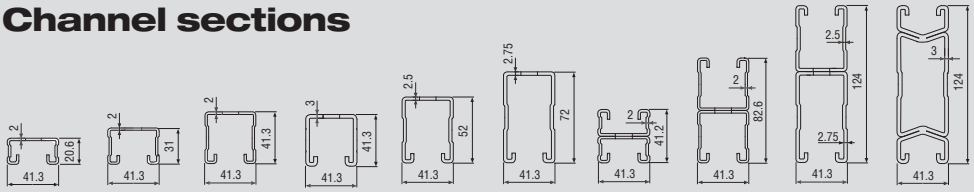
March 2006

Technical data

Definition of axes



Channel sections



		MQ-21	MQ-31	MQ-41	MQ-41/3	MQ-52	MQ-72	MQ-21 D	MQ-41 D	MQ-52-72 D	MQ-124X D
Channel wall thickness,	t [mm]	2.0	2.0	2.0	3.0	2.5	2.75	2.0	2.0	2.5/2.75	3.0
Cross-sectional area	A [mm²]	165.3	204.9	245.1	348.4	352.1	492.8	330.6	490.3	844.9	1237.2
Channel weight	[kg/m]	1.44	1.76	2.08	2.91	2.94	4.10	2.90	4.19	7.08	9.84
Delivered length	[m]	3/6	3/6	3/6	3/6	6	6	3/6	3/6	6	6
Material											
Permissible stress,	$\sigma_{perm.}$ [N/mm²]	188.3	181.8	175.3	188.3	181.8	175.3	188.3	175.3	175.3	162.3
Surface											
Sendzimir galvanised		●	●	●	●	●	●	●	●	●	●
Cross-section values											
Y-axis											
Axis of gravity "open" [1].	e_1 [mm]	10.84	16.01	21.13	21.52	26.67	36.79	20.60	41.30	62.02	62.00
Axis of gravity,	e_2 [mm]	9.76	14.99	20.17	19.78	25.33	35.22	20.60	41.30	61.99	62.00
Moment of inertia,	I_y [cm⁴]	0.92	2.60	5.37	7.02	11.41	28.70	4.98	30.69	115.41	188.04
Section modulus "open",	W_{y1} [cm³]	0.85	1.62	2.54	3.26	4.28	7.80	2.42	7.43	18.61	30.33
Section modulus,	W_{y2} [cm³]	0.94	1.73	2.66	3.55	4.50	8.15	2.42	7.43	18.62	30.33
Radius of gyration,	i_y [cm]	0.74	1.13	1.48	1.42	1.80	2.41	1.23	2.50	3.70	3.90
Permissible moment [2],	M_y [Nm]	159	295	446	614	778	1368	455	1303	3263	4923
Z-axis											
Moment of inertia,	I_z [cm⁴]	4.39	5.83	7.33	10.44	10.79	15.40	8.78	14.67	26.13	31.62
Section modulus,	W_z [cm³]	2.13	2.82	3.55	5.06	5.23	7.46	4.25	7.10	12.65	15.31
Radius of gyration	i_z [cm]	1.63	1.69	1.73	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. **(➔ Channel selection table).**
- The permissible stress in the steel and the max. deflection, L/200, are not exceeded with the given max. span widths, L (cm).
- The permissible stress σ_D / $\gamma_{G/Q}$ where γ = 1.4. σ_D results from the higher yield strength (point) resulting from cold forming as per DAST-RILI 016 dated 1992: $\sigma_D = f_{yk} / \gamma_M$ where γ_M = 1.1

Max. span width, L (cm) / deflection, f (mm)

F (kN)	MQ-21 L (cm)	MQ-21 f (mm)	MQ-31 L (cm)	MQ-31 f (mm)	MQ-41 L (cm)	MQ-41 f (mm)	MQ-41/3 L (cm)	MQ-41/3 f (mm)	MQ-52 L (cm)	MQ-52 f (mm)	MQ-72 L (cm)	MQ-72 f (mm)	MQ-21 D L (cm)	MQ-21 D f (mm)	MQ-41 D L (cm)	MQ-41 D f (mm)	MQ-52-72 D L (cm)	MQ-52-72 D f (mm)	MQ-124X D L (cm)	MQ-124X D f (mm)
0.25	133	6.7	218	10.9	306	15.3	337	16.8	419	20.9	599	29.9	288	14.4	614	30.7	936	46.8	1034	51.7
0.50	95	4.8	159	7.9	226	11.3	254	12.7	321	16.0	482	24.1	216	10.8	496	24.8	821	41.0	938	46.9
0.75	78	3.9	131	6.5	187	9.3	212	10.6	268	13.4	411	20.5	179	9.0	424	21.2	735	36.8	861	43.0
1.00	63	2.8	114	5.7	163	8.1	185	9.2	235	11.7	364	18.2	156	7.8	375	18.8	670	33.5	797	39.9
1.25	51	1.8	94	4.0	141	6.6	166	8.3	211	10.5	329	16.5	140	7.0	340	17.0	618	30.9	745	37.2
1.50	42	1.2	78	2.8	118	4.6	152	7.6	193	9.7	303	15.1	120	5.3	313	15.6	576	28.8	701	35.0
1.75	36	<1	67	2.0	101	3.4	139	6.7	175	8.3	282	14.1	103	3.9	288	14.1	541	27.0	663	33.1
2.00	32	<1	59	1.6	89	2.6	122	5.2	154	6.5	264	13.2	90	3.0	254	11.0	511	25.6	630	31.5
2.25	28	<1	52	1.2	79	2.1	108	4.1	137	5.1	238	10.8	80	2.4	227	8.9	486	24.3	601	30.1
2.50	25	<1	47	1.0	71	1.7	98	3.3	123	4.2	215	8.9	72	1.9	205	7.3	464	23.2	576	28.8
2.75	23	<1	43	<1	65	1.4	89	2.8	112	3.5	196	7.4	66	1.6	187	6.1	444	22.2	554	27.7
3.00	21	<1	39	<1	59	1.2	82	2.3	103	2.9	180	6.3	60	1.3	172	5.1	415	19.7	534	26.7
3.50	18	<1	34	<1	51	<1	70	1.7	88	2.2	155	4.6	–	–	148	3.8	360	15.0	499	24.9
4.00	16	<1	29	<1	44	<1	61	1.3	77	1.7	136	3.6	–	–	129	2.9	317	11.7	466	22.9
4.50	14	<1	26	<1	39	<1	54	1.0	69	1.3	121	2.8	–	–	115	2.3	284	9.4	418	18.7
5.00	12	<1	23	<1	36	<1	49	<1	62	1.1	109	2.3	–	–	104	1.9	256	7.7	380	15.5
6.00	10	<1	19	<1	30	<1	41	<1	52	<1	91	1.6	–	–	87	1.3	215	5.5	320	11.1
7.00	9	<1	17	<1	25	<1	35	<1	44	<1	78	1.2	–	–	–	–	185	4.0	276	8.3
8.00	7	<1	14	<1	22	<1	31	<1	39	<1	68	<1	–	–	–	–	162	3.1	243	6.5

Selection example:

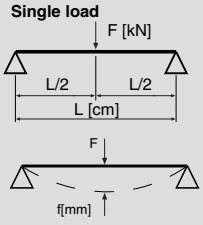
- 1.0 kN (≈100 kg) should be carried by a channel with a channel span width L = 100 cm (single span simply supported).

Solution:

- Select the line showing the load, F = 1.0 kN.
- The MQ-31 to MQ-124X D 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	–

Single load



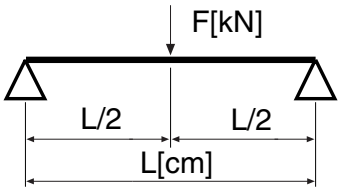
[1] The smaller value (W_{y1}, W_{y2}) is decisive for the calculated bending dimension ($W_{y1} = I_y/e_1$ or $W_{y2} = I_y/e_2$).

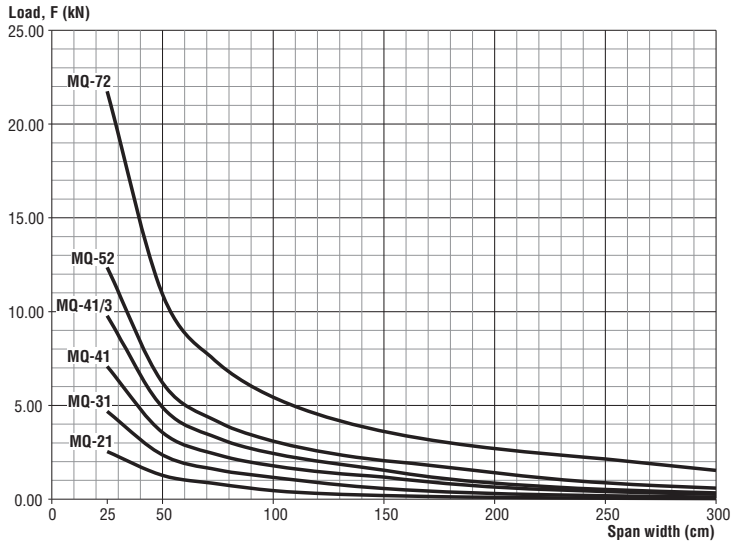
[2] Perm. $M_y = \sigma_{zul.}$ · min. (W_{y1}, W_{y2})

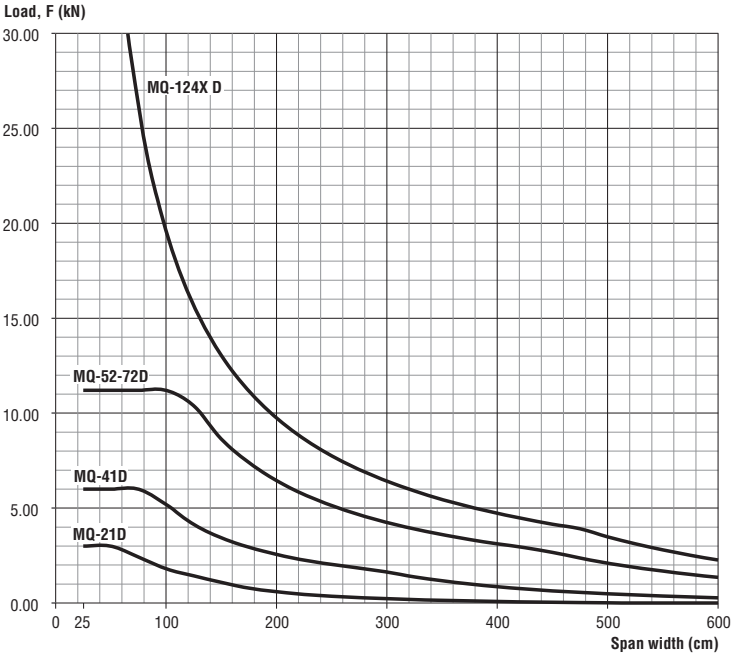
Channel selection diagram Single span (simply supported)

with single load at mid span, L/2

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

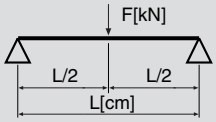


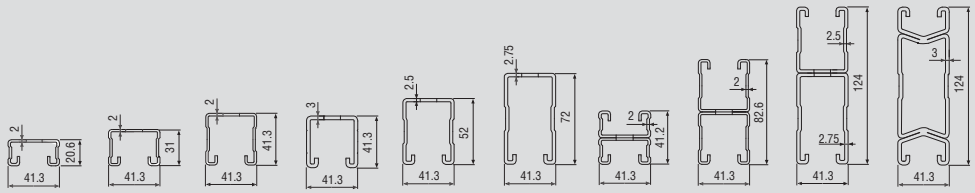




Channel selection table

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		MQ-31		MQ-41		MQ-41/3		MQ-52		MQ-72		MQ-21 D		MQ-41 D		MQ-52-72 D		MQ-124X D	
	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	F (kN) max.	f (mm) L/200	F (kN) max.	f (mm) L/200
25	2.53	<1	4.68	<1	7.08	<1	9.78	0.2	12.36	<1	21.75	<1	3.00	<1	6.00	<1	11.20	<1	78.33	<1
50	1.27	1.7	2.35	1.1	3.56	<1	4.90	0.9	6.20	<1	10.92	<1	3.00	<1	6.00	<1	11.20	<1	39.31	<1
75	0.82	3.8	1.56	2.5	2.37	1.9	3.26	2.0	4.13	1.5	7.27	1.1	2.42	2.0	6.00	<1	11.20	<1	26.21	<1
100	0.45	5.0	1.17	4.5	1.77	3.3	2.44	3.5	3.09	2.7	5.45	1.9	1.81	3.6	5.19	1.7	11.20	<1	19.64	1.0
125	0.28	6.3	0.82	6.3	1.41	5.2	1.95	5.4	2.47	4.2	4.35	3.0	1.44	5.7	4.14	2.6	10.39	1.8	15.69	1.6
150	0.19	7.5	0.57	7.5	1.17	7.4	1.54	7.5	2.05	6.1	3.62	4.3	1.09	7.5	3.44	3.8	8.65	2.5	13.05	2.3
175	0.14	8.8	0.41	8.8	0.86	8.8	1.12	8.8	1.75	8.3	3.09	5.8	0.79	8.8	2.94	5.2	7.39	3.4	11.17	3.2
200	0.10	10.0	0.31	10.0	0.65	10.0	0.85	10.0	1.40	10.0	2.69	7.6	0.59	10.0	2.56	6.8	6.45	4.5	9.75	4.2
225	0.07	11.3	0.23	11.3	0.51	11.3	0.66	11.3	1.09	11.3	2.39	9.6	0.46	11.3	2.27	8.6	5.72	5.7	8.64	5.3
275	0.05	12.5	0.18	12.5	0.40	12.5	0.52	12.5	0.87	12.5	2.14	11.9	0.36	12.5	2.03	10.6	5.13	7.0	7.75	6.5
300	0.04	13.8	0.14	13.8	0.32	13.8	0.42	13.8	0.71	13.8	1.84	13.8	0.28	13.8	1.84	12.8	4.65	8.5	7.03	7.9

Technical data for brackets

Bracket	Channel L (mm)	Type of load: uniform $F_1 = q \cdot i$, F_1 [N]			Type of load 2: single, F_1 [N]			Type of load 3, F_1 [N]			Type of load 4, F_2 [N]			Type of load 5, F_3 [N]		
		HVZ M12[1]	HST M12[2]	HUS 12,5[3]	HVZ M12[1]	HST M12[2]	HUS 12,5[3]	HVZ M12[1]	HST M12[2]	HUS 12,5[3]	HVZ M12[1]	HST M12[2]	HUS 12,5[3]	HVZ M12[1]	HST M12[2]	HUS12,5[3]
MQK-21/300	300	1050	1050	1050	1050	1050	1050	420	420	420	520	520	520	350	350	350
MQK-21/450	450	500	500	500	700	700	700	180	180	180	310	310	310	190	190	190
MQK-41/300	300	2950	2950	1460	2950	2950	1460	1480	1480	730	1470	1470	730	980	980	480
MQK-41/450	450	1960	1960	970	1960	1960	970	980	980	480	980	980	480	650	650	320
MQK-41/600	600	1470	1470	720	1470	1470	720	620	620	360	730	730	360	490	490	240
MQK-41/1000	1000	580	580	420	840	840	420	210	210	210	360	360	210	220	220	140
MQK-41/3/300	300	4070	3320	1460	4070	3320	1460	2040	1660	730	2030	1660	730	1350	1100	480
MQK-41/3/450	450	2710	2200	970	2710	2200	970	1350	1100	480	1350	1100	480	900	730	320
MQK-41/3/600	600	2020	1640	720	2020	1640	720	810	810	360	1010	820	360	670	540	240
MQK-41/600/4	600	1470	1470	1470	1470	1470	1470	620	620	620	730	730	730	490	490	490
MQK-41/1000/4	1000	580	580	580	840	840	840	210	210	210	360	360	360	220	220	220
MQK-72/450	450	6040	3180	1370	6040	3180	1370	3020	1590	680	3020	1590	680	2010	1060	450
MQK-72/600	600	4520	2380	1020	4520	2380	1020	2260	1190	510	2260	1190	510	1500	790	340
MQK-21 D/300	300	3010	3010	1460	3010	3010	1460	1510	1510	730	1500	1500	730	1000	1000	480
MQK-21 D/450	450	2000	2000	970	2000	2000	970	1000	1000	480	1000	1000	480	660	660	320
MQK-21 D/600	600	1490	1490	720	1490	1490	720	570	570	360	740	740	360	490	490	240
MQK-41 D/1000	1000	2560	1400	580	2560	1400	580	1270	700	290	1280	700	290	850	460	190

Technical data for brackets with angle brace

Bracket	L (mm)	Brace[5]	Type of load 1: uniform, $F_1 = q \cdot l$, F_1 [N][1]		Type of load 2: uniform, F_1 [N][1]		Type of load 3, F_1 [N][1]		Type of load 4, F_2 [N][1]		Type of load 5, F_3 [N][1]	
			Bracket[4]	HUS 12,5[3]	Bracket[4]	HUS 12,5[3]	Bracket[4]	HUS 12,5[3]	Bracket[4]	HUS 12,5[3]	Bracket[4]	HUS 12,5[3]
MQK-21/450	450	short	5460	5460	1410	1410	520	520	2440	2440	2130	2030
MQK-41/450	450	short	6390	6110	3960	3960	2750	2750	3190	3050	2130	2030
MQK-41/600	600	long	5690	5690	2960	2960	2840	2840	2840	2840	1890	1890
MQK-41/1000	1000	long	2250	2250	3400	3400	430	430	1700	1700	1130	1130
MQK-41/3/450	450	short	6380	6110	5450	5450	3190	2960	3190	3050	2120	2030
MQK-41/3/600	600	long	5680	5680	4080	4080	2840	2840	2840	2840	1890	1890
MQK-41/600/4	600	long	5690	5690	2960	2960	2840	2840	2840	2840	1890	1890
MQK-41/1000/4	1000	long	2250	2250	3400	3400	430	430	1700	1700	1130	1130
MQK-72/450	450	short	6380	6100	6380	6100	3190	2960	3190	3050	2120	2030
MQK-72/600	600	long	5680	5680	5680	5680	2840	2840	2840	2840	1890	1890
MQK-21 D/450	450	short	6380	6110	4040	4040	2810	2810	3190	3050	2120	2030
MQK-21 D/600	600	long	5680	5680	3030	3030	2840	2840	2840	2840	1890	1890
MQK-21 D/1000	1000	long	3380	3380	3380	3380	1690	1690	1690	1690	1120	1120

[1] Loading capacity of bracket (steel loading capacity) or with **HVZ M12** fastening, the loading capacity of the bracket is reached with the HVZ M12.
[2] Loading capacity of bracket fastened with **HST M12.**
[3] Loading capacity of bracket fastened with HUS H 12.5 or with HST M10 (bending figures for HST M10 taken into account)
[4] Loading capacity of bracket (steel loading capacity) or with HVZ M12 or HST M12 fastening (loading capacity of the bracket is reached with HVZM12/HSTM12)
[5] Short angle brace: MQK-SK / long angle brace: MQK-SL

Load values are for grade C20/25 concrete.
Alternatively, fastening in solid or hollow brick with HIT HY 50 and approval is possible (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.

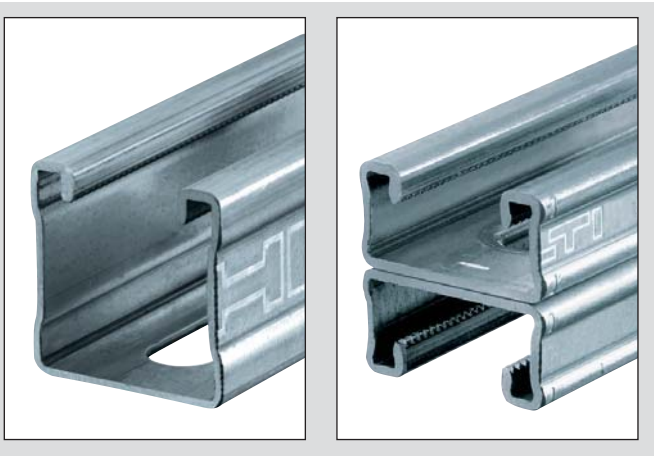
HVZ adhesive anchor M12 (Hole dia. 14 mm)

HST stud anchor M12 (Hole dia. 12 mm)

HUS-H screw anchor 12,5 (Hole dia. 10 mm)

Installation channels

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



Technical data

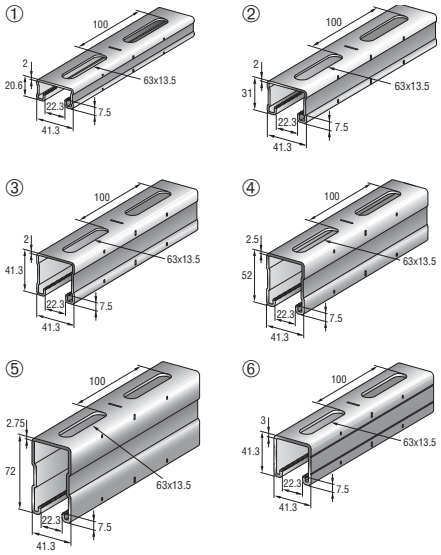
Material:	S 250 GD as per DIN EN 10147
Galvanising:	Sendzimir galvanised to approx. 20 microns (275 g/m²)

Single channels

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)		Ordering designation	Item no.
21	3	2	1.438	①	**MQ-21 3 m**	**369584**
21	6	2	1.438	①	**MQ-21 6 m**	**369585**
31	3	2	1.759	②	**MQ-31 3 m**	**369589**
31	6	2	1.759	②	**MQ-31 6 m**	**369590**
41	3	2	2.080	③	**MQ-41 3 m**	**369591**
41	6	2	2.080	③	**MQ-41 6 m**	**369592**
52	3	2.5	2.942	④	**MQ-52 3 m**	**373795**
52	6	2.5	2.942	④	**MQ-52 6 m**	**369598**
72	3	2.75	4.101	⑤	**MQ-72 3 m**	**373797**
72	6	2.75	4.101	⑤	**MQ-72 6 m**	**369599**
41	3	3	2.910	⑥	**MQ-41/3 3 m**	**369596**
41	6	3	2.910	⑥	**MQ-41/3 6 m**	**369597**

Channels ④ ⑤ and ⑥ firestop tested

IBMB no. 3897/1802-5



Double channels

Channel height (mm)	Length (m)	Metal thickness (mm)	Weight (kg/m)		Ordering designationg	Item no.
41	3	2	2.904	①	**MQ-21 D 3 m**	**369601**
41	6	2	2.904	①	**MQ-21 D 6 m**	**369602**
82	3	2	4.188	②	**MQ-41 D 3 m**	**369603**
82	6	2	4.188	②	**MQ-41 D 6 m**	**369604**
124	3	2.5/2.75	7.078	③	**MQ-52-72 D 3 m**	**373799**
124	6	2.5/2.75	7.078	③	**MQ-52-72 D 6 m**	**369605**
124	6	3	9.841	④	**MQ-124X D 6 m**	**369606**

Channels ② ③ and ④ firestop tested

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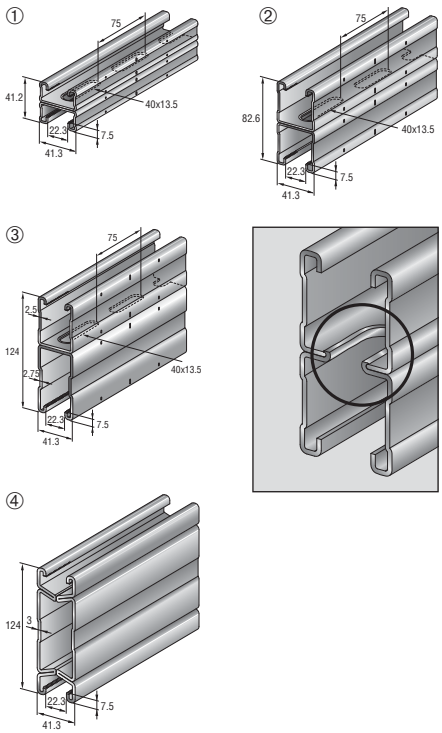
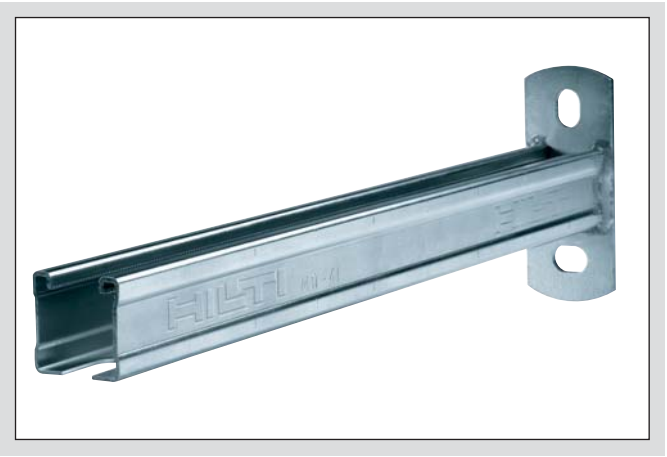


Brackets

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

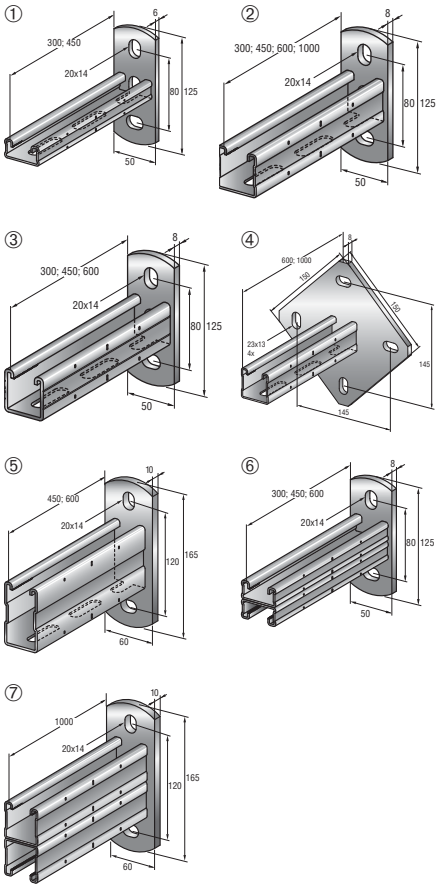


Technical data

Material:	S 235 JR as per DIN EN 10025
Galvanising:	galvanised, Fe/Zn 13 B as per DIN 50961

Brackets

Channel length (mm)	Channel section	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
300	MQ-21	670	10	①	**MQK-21/300**	**369607**
450	MQ-21	890	10	①	**MQK-21/450**	**369608**
300	MQ-41	950	10	②	**MQK-41/300**	**369609**
450	MQ-41	1260	10	②	**MQK-41/450**	**369610**
600	MQ-41	1570	10	②	**MQK-41/600**	**369611**
1000	MQ-41	2400	10	②	**MQK-41/1000**	**369612**
300	MQ-41/3	1190	10	③	**MQK-41/3/300**	**370595**
450	MQ-41/3	1630	10	③	**MQK-41/3/450**	**370596**
600	MQ-41/3	2060	10	③	**MQK-41/3/600**	**370597**
600	MQ-41	2540	6	④	**MQK-41/600/4**	**369613**
1000	MQ-41	3370	6	④	**MQK-41/1000/4**	**369614**
450	MQ-72	2510	6	⑤	**MQK-72/450**	**369615**
600	MQ-72	3130	6	⑤	**MQK-72/600**	**369616**
300	MQ-21-D	1250	10	⑥	**MQK-21 D/300**	**369617**
450	MQ-21-D	1720	10	⑥	**MQK-21 D/450**	**369618**
600	MQ-21-D	2190	10	⑥	**MQK-21 D/600**	**369619**
1000	MQ-41-D	5080	6	⑦	**MQK-41 D/1000**	**369620**



Brackets ② ③ and ⑤ firestop tested

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Brackets ③ ⑤ with VdS approval

VdS G 4970048

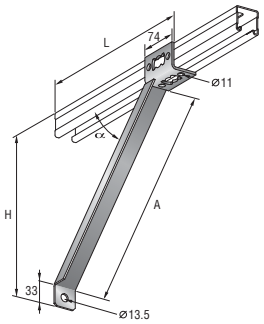
For VdS-approved installation see www.hilti.com/vds-installation

Angle brace

For fabricating wall brackets with individual stand-off lengths

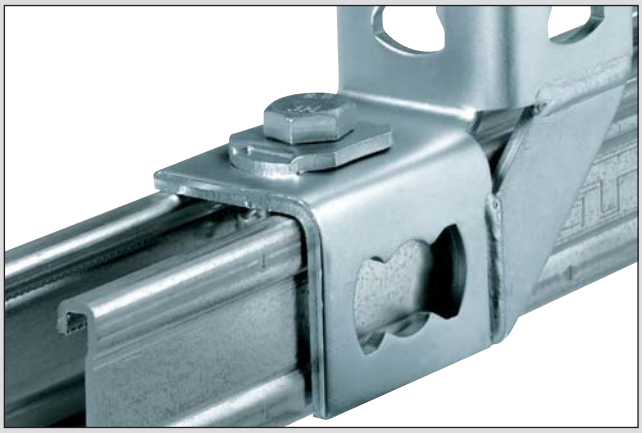
Material: S235 JR as per DIN EN 10025
Material width: 40 mm
Material thickness: 4 or 3 mm

	A	H	L	α	Packaging contents (pcs)	Ordering designation	Item no.
Angle brace, short	355	328	324	45°	10	**MQK-SK**	**369622**
Angle brace, long	635	528	524	45°	10	**MQK-SL**	**369621**



Channel nut

Features
- Simple, compact, time saving
- Single part
- Easy to use
- Universal: one and the same nut for all channels
- Simple removal

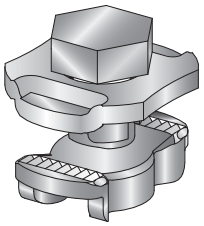


Technical data

Galvanising:	galvanised, Fe/Zn 13 B as per DIN 50961

Pushbutton

Bolt:	M10 material 8.8 as per DIN/ISO 898
Width across flats:	17 mm
Nut:	QStE 380 TM, SEW 92
Plate:	DD11, DIN EN 10111



Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
M10	66	50	300	**MQN**	**369623**

Item	Rec. tensile load, Z_{rec} (kN) **Channel I**	**Channel II**	Rec. shear load, Q_{rec} (kN)	Tightening torque, M_D (Nm)
MQN	5.0	8.0	5.0 [1]	40
Channel I:	MQ-21. MQ-31, MQ-41, MQ-21D, MQ-41D			
Channel II:	MQ-41/3, MQ-52, MQ-72, MQ-52-72D, MQ-124XD			

[1] Shear loading applies to single fastening. Q_{rec} (kN) 9.0 for two fastenings

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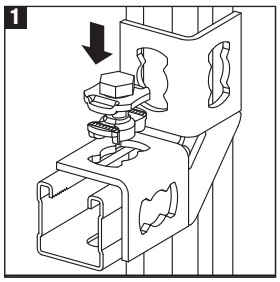
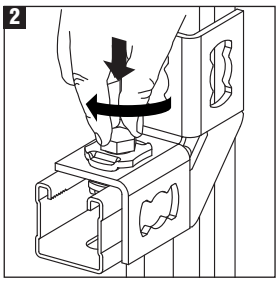
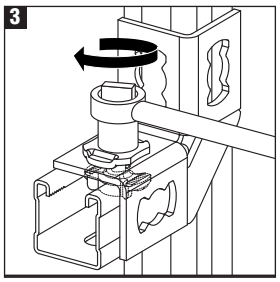


Put in position.



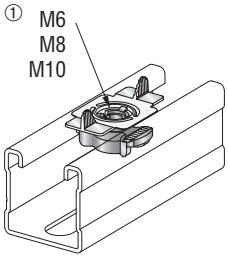
Press and turn.

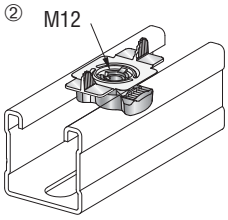


Tighten.

Wing nut

Nut, M6–M10:	QStE 380 TM, SEW 92
Nut, M12:	QStE 32-2 KGK as per DIN 1654
Plastic:	PA





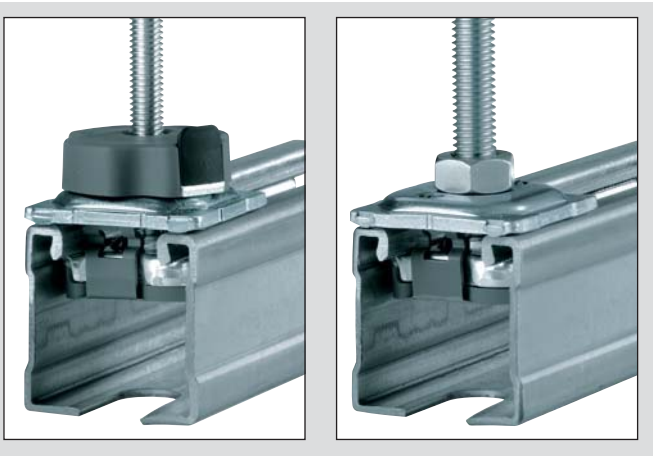
Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)		Ordering designation	Item no.
M 6	21	50	800	①	**MQM-M6**	**369624**
M 8	21	50	800	①	**MQM-M8**	**369698**
M10	21	50	800	①	**MQM-M10**	**369626**
M12	33	50	800	②	**MQM-M12**	**369627**

Item	Rec. tensile load, Z_{rec} (kN) **Channel I**	**Channel II**	Rec. shear load, Q_{rec} (kN) (bolt 8.8)	Tightening torque, M_D (Nm)
MQM-M 6	3.0	3.0	1.5	10
MQM-M 8	5.0	5.0	3.5	20
MQM-M10	5.0	8.0	5.0	40
MQM-M12	5.0	8.0	5.0	40
Channel I:	MQ-21, MQ-31, MQ-41, MQ-21D, MQ-41D			
Channel II:	MQ-41/3, MQ-52, MQ-72, MQ-52-72D, MQ-124XD			

Pipe ring saddle

Features of MQA-Q
- Quick push connection for extremely fast pipe installation
- No tool required for installation
- Integrated locknut
- Deburring of threaded rod not required
- Height adjustment of pipe when installed

Features of MQA
- Single part, simple and time-saving in use
- For all types of channels
- For threaded rods from M6 to M16 and ½″–¾″ in size



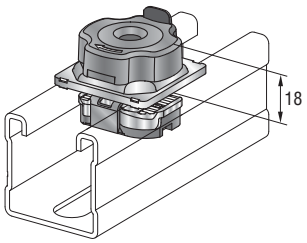
Technical data

Galvanising:	galvanised, Fe/Zn 13 B, as per DIN 50961

MQA-Q quick-release pipe ring saddle

with push connection for metric thread

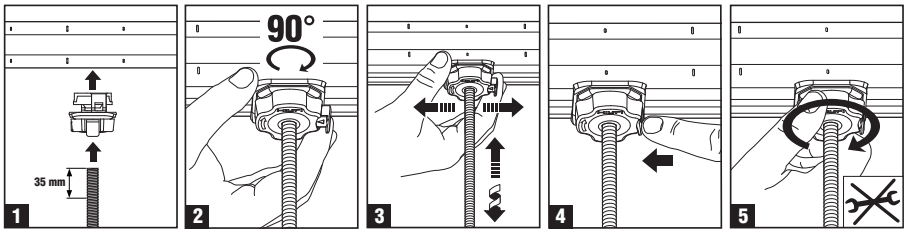
Nut:	QStE 380 TM, SEW 92
Plate:	DD11, DIN EN 10111
Plastic:	PA 6.6 or PP
Spring:	stainless steel



Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
M8	72	50	300	**MQA-Q8**	**369635**

Item	Rec. tensile load Z_{rec} (kN) Compression, F_{rec} (kN)	Tightening / manual torque, (Nm)
MQA-Q8	1.5 [1]	2.0

[1] Recommended static load when fitting pipes up to and including 2″ in diameter



Push in. Put in place. Locate. Lock. Tighten.

MQA pipe ring saddle

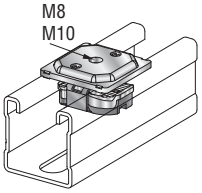
Nut: M6–M10: QStE 380 TM, SEW 92 M10 B–M16 B: GTW 45, DIN 1692
Plate: M6–M10: DD11, DIN EN 10111 M10 B–M16 B: S 235 JR, DIN EN 10025
Plastic: M6–M10: PA 6.6 M10 B–M16 B: PB

Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
M6	57	50	450	① **MQA-M 6**	**369628**
M8	56	50	450	① **MQA-M 8**	**369629**
M10	56	50	450	① **MQA-M10**	**369630**
For passive fire prevention					
M10	87	50	300	② **MQA-M10 B**	**372471**
M12	83	50	300	② **MQA-M12 B**	**369631**
M16	84	50	300	② **MQA-M16 B**	**369632**
For inch-size connection					
½″	184	25	150	③ **MQA-½″**	**369633**
¾″	210	25	150	③ **MQA-¾″**	**369634**

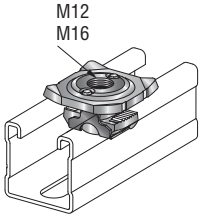
Item	Rec. tensile load, Z_{rec} (kN) Channel I	Channel II	Tightening torque, M_D (Nm)	Bending moment, threaded rod 4.6 (Nm) [1]
MQA-M 6	2.0	2.0	4	2.6
MQA-M 8	3.0	3.0	9	6.4
MQA-M10	4.0	4.0	18	12.8
MQA-M10 B	5.0	8.0	18	12.8
MQA-M12 B	5.0	8.0	31	22.4
MQA-M16 B	5.0	8.0	40	56.9
MQA-½″	5.0	8.0	31	22.4
MQA-¾″	5.0	8.0	31	100.0
Channel I:	MQ-21, MQ-31, MQ-41, MQ-21 D, MQ-41 D			
Channel II:	MQ-41/3, MQ-52, MQ-72, MQ-52-72 D, MQ-124X D			

[1] Calculation as per DIBt

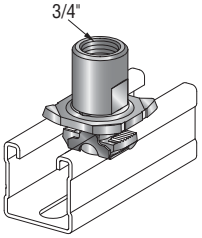
① M6 M8 M10



② M10 M12 M16



③ 1/2" 3/4"



Pipe ring saddle ② firestop tested

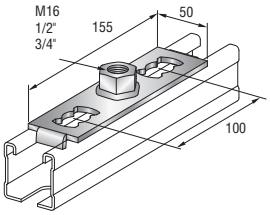
IBMB no. 3897/1802-5

MQG-2 baseplate

Material: S 235 JR as per DIN EN 10025
Galvanising: Fe/Zn 13 B as per DIN 50961

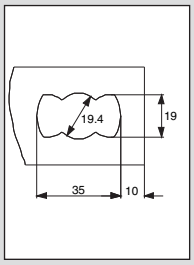
Connection thread	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
M16	180	20	–	**MQG-2-M16**	**369682**
½″	170	20	–	**MQG-2-½″**	**369683**
¾″	185	20	–	**MQG-2-¾″**	**369684**

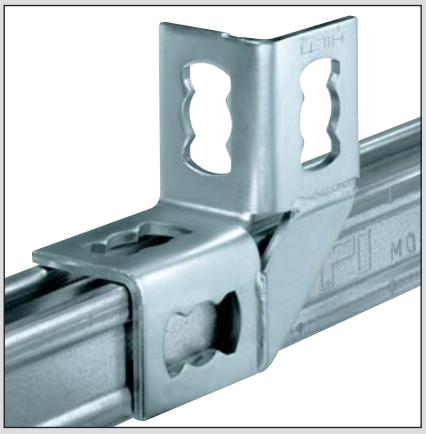
Item	Rec. tensile load, Z_{rec} (kN)	Rec. shear load, Q_{rec} (kN)	Tightening torque, M_D (Nm)	Bending moment, threaded rod 4.6 (Nm)
MQG-2-M16	6.0	9.0	40	56.9
MQG-2-½″	6.0	9.0	40	22.4
MQG-2-¾″	6.0	9.0	40	100.0



Angles, angle brackets, connectors

Features
- Universal: few parts for all applications
- Easy to use
- Three-dimensional, thus high strength



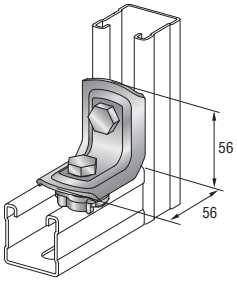


Technical data

Material:	S 235 JR as per DIN EN 10025
Material thickness	4 mm
Galvanising:	galvanised, Fe/Zn 13 B as per DIN 50961

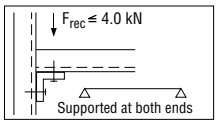
MQW-Q2 pre-assembled 90° angle

Features
- Pre-assembled for rapid installation
- Reliable keying action
- High strength

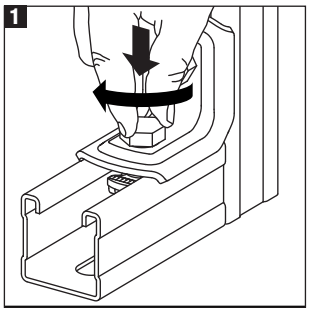


Technical data

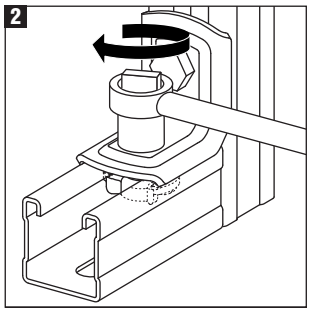
Tightening torque:	40 Nm
Material thickness:	3 mm
Bolt:	M10 material 8.8 as per DIN/ISO 898
Width across flats:	17 mm



	Weight each (g)	Packaging) contents (pcs)	Ordering designation	Item no.
90° angle	200	20	**MQW-Q2**	**369655**



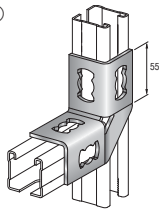
Press and turn.

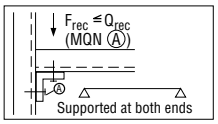


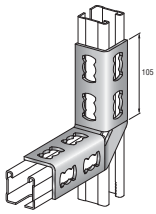
Tighten.

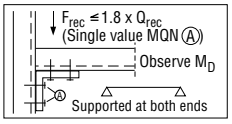
90° angle

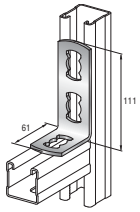
	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
Angle, 4 hole, 90°	220	10	①	**MQW-4**	**369658**
Angle, 8 hole, 90°	420	10	②	**MQW-8/90°**	**369659**
Angle, 3 hole, 90°	160	20	③	**MQW-3**	**369656**
Angle, 2 hole, 90°	160	10	④	**MQW-P2**	**369661**

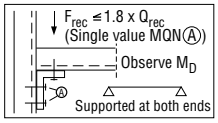
① 

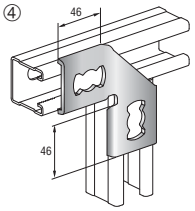


② 



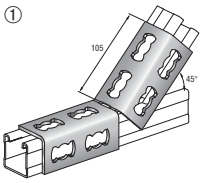
③ 

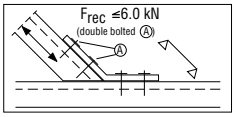


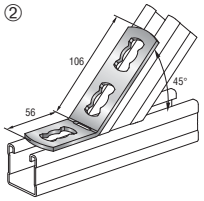
④ 

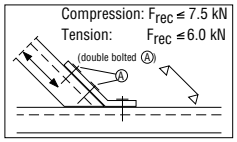
45° angle

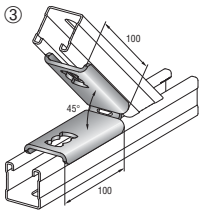
	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
Angle, 8 hole, 45°	410	10	①	**MQW-8/45°**	**369660**
Angle, 3 hole, 45°	155	20	②	**MQW-3/45°**	**369657**
Angle, 2 hole, 45°, inner	354	10	③	**MQW-2/45°**	**369662**

① 



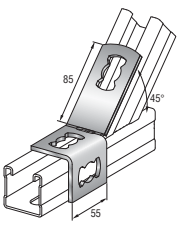
② 

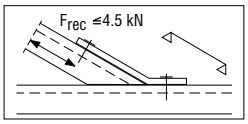


③ 

135° angle

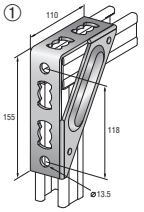
	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
Angle, 3 hole, 135°	210	10		**MQW-3/135°**	**369663**

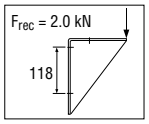




Angle bracket

	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
Angle bracket, one brace	460	10	①	**MQW-S/1**	**369664**
Angle bracket, two braces	1180	10	②	**MQW-S/2**	**369665**

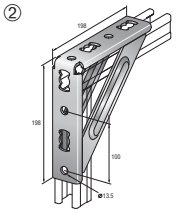


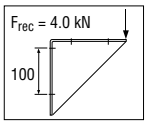


Angle bracket ② with VdS approval

VdS

VdS G 4960058

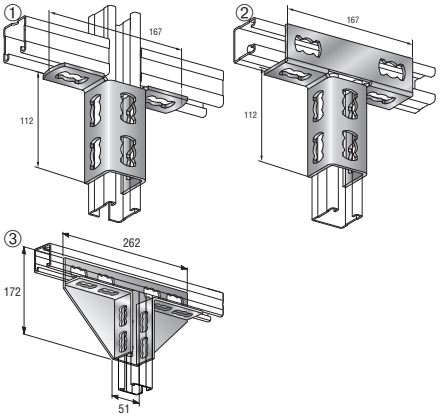




For VdS-approved installation see www.hilti.com/vds-installation

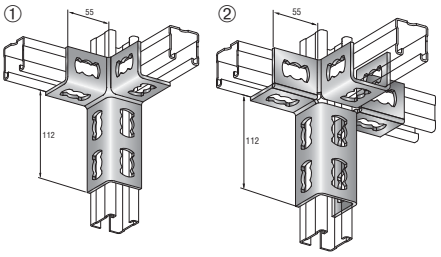
Connector, two dimensional

	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
Connector, double, two dimensional	438	10	①	**MQV-2/2D**	**369638**
Connector, triple, two dimensional	615	10	②	**MQV-3/2D**	**369640**
Connector, triple, two dimensional	1472	10	③	**MV-3/2D X**	**339590**



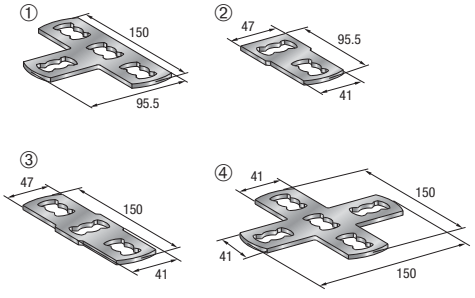
Connector, three dimensional

	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
Connector, triple, three dimensional	451	10	①	**MQV-3/3D**	**369641**
Connector, quadruple, three dimensional	770	10	②	**MQV-4/3D**	**369642**



Connector, flat

	Weight each (g)	Packaging contents (pcs)		Ordering designation		Item no.
Channel connector, 4 hole, flat T	196	10	①	**MQV-T**	①	**369645**
Channel connector, 2 hole, flat	100	10	②	**MQV-P2**	②	**370630**
Channel connector, 3 hole, flat	140	10	③	**MQV-P3**	③	**370629**
Channel connector, 5 hole, flat	240	10	④	**MQV-P5**	④	**370631**



In-line channel connector

Advantages
- Joints between MQ41, MQ41/3 and MQ72 channels have the full section modulus
- Joints between MQ41D and MQ52/72 channels using 2 connectors have the full section modulus
- Threaded rods can be connected through elongated holes in MQV 72

Technical Data

Material:	S235JRG2 (DIN EN 10025)
Material thickness:	4 mm
Galvanising:	galvanised, Fe/Zn 13 B As per DIN 50 961

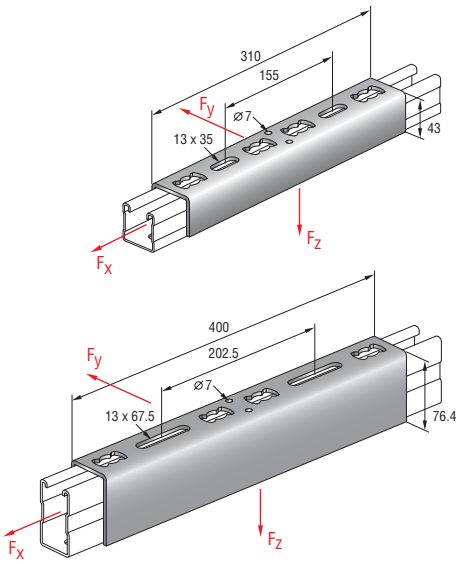
Load values apply when using 4 MQN pushbuttons per connector.

MQV in-line channel connector

For channel types	Weight each (kg)	Package contents	Ordering designation	Item no.
MQ-41, MQ-41/3	1.120	4	**MQV 41**	**286101**
MQ-72	2.300	4	**MQV 72**	**286102**

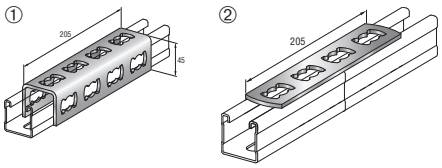
Channel type connected	Channel connector	Load reduction compared to continuous channel (%) Z-axis	Y-axis
MQ-41, MQ-41/3	1× MQV 41	0 %	0 %
MQ-52	1× MQV 41	30 %	10 %
MQ-72	1× MQV 72	0 %	15 %
MQ-41D	2× MQV 41	0 %	25 %
MQ-52/72	1× MQV 41 + 1× MQV 72	0 %	10 %
MQ-124XD	1× MQV 41 + 1× MQV 72	40 %	25 %

The general reduction value given applies to spans of up to 3.5 m.



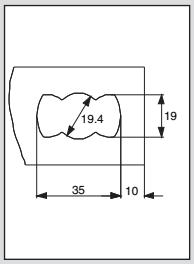
In-line channel connector

	Weight each (g)	Package contents		Ordering designation	Item no.
Channel connector, 12-hole	555	10	①	**MQV-12**	**369643**
Channel connector, 4-hole, flat	188	10	②	**MQV-P4**	**369644**



Channel base / Base material connector

Features
- Reliable and easy to use
- Connection of channels to any base material



Technical data

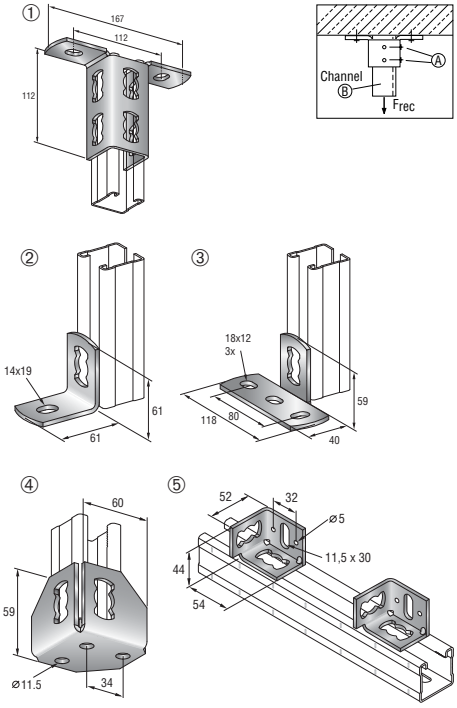
Material:	S 235 JR as per DIN EN 10025
Galvanising:	galvanised Fe/Zn 13 B as per DIN 50961

Separate design verification of the fastening on the base material must be provided.

Base material connector

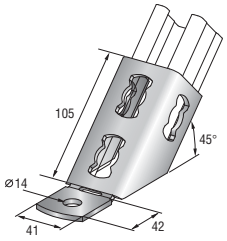
Suitable for channel	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
MQ-41, MQ-41/3, MQ-21 D	438	10	①	**MQV-2/2D-14**	**369639**
MQ-21, MQ-31, MQ-41, MQ-41/3	110	20	②	**MQP-1/1**	**369646**
MQ-21, MQ-31, MQ-41, MQ-41/3	190	20	③	**MQP-1/3**	**369647**
MQ-21, MQ-31, MQ-41, MQ-41/3	290	10	④	**MQP-2/3**	**369648**
MQ-21, MQ-31, MQ-41, MQ-41/3	135	10	⑤	**MQP-2/1**	**377731**

Item	F_{rec} (kN)	Channel (B)	Bolt (A)	Pushbutton	Tightening torque, M_D (Nm)
MQV-2/2D-14	7.8	MQ-41	Double	MQN	40
	8.4	MQ-21D	Quadruple	MQN	40



Base material connector 45°

For channel	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21, MQ-31, MQ-41, MQ-41/3	350	10	**MQP-45°**	**369649**



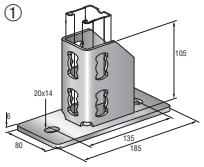
Channel base

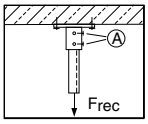
Suitable for channel	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
MQ-21–MQ-72	1150	12	①	**MQP-21-72**	**369651**
MQ-41 D	1880	8	②	**MQP-82**	**369652**
MQ-52-72 D, MQ-124X D	2730	6	③	**MQP-124**	**369653**

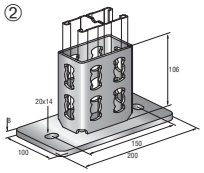
Item	F_{rec} (kN)	Bolt (A)	Pushbutton	Tightening torque, M_D (Nm)
MQP-21-72	9.0	Double	MQN	40
MQP-82	12.6	Quadruple	MQN	40
MQP-124	12.6	Quadruple	MQN	40

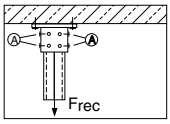
Channel base ① firestop tested

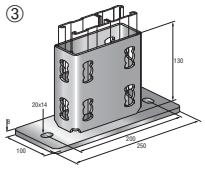
IBMB no. 3897/1802-5

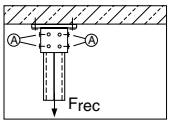








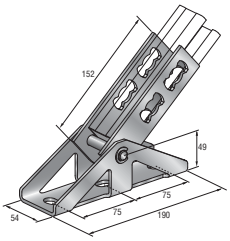




Pivot base

Suitable for channel	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21, MQ-31, MQ-41, MQ-41/3	1055	10	**MQP-G**	**369654**

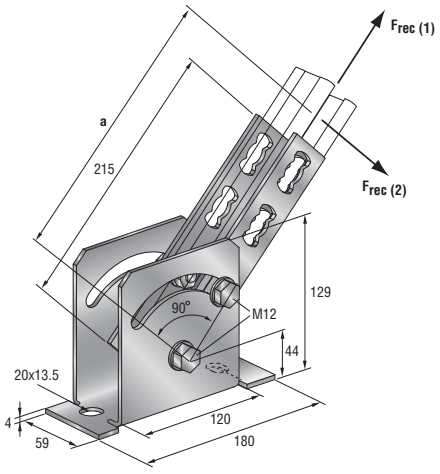
Item	F_{rec} (kN)	Bolt	Pushbutton	Tightening torque, M_D (Nm)
MQP-G	9.0	Double	MQN	40



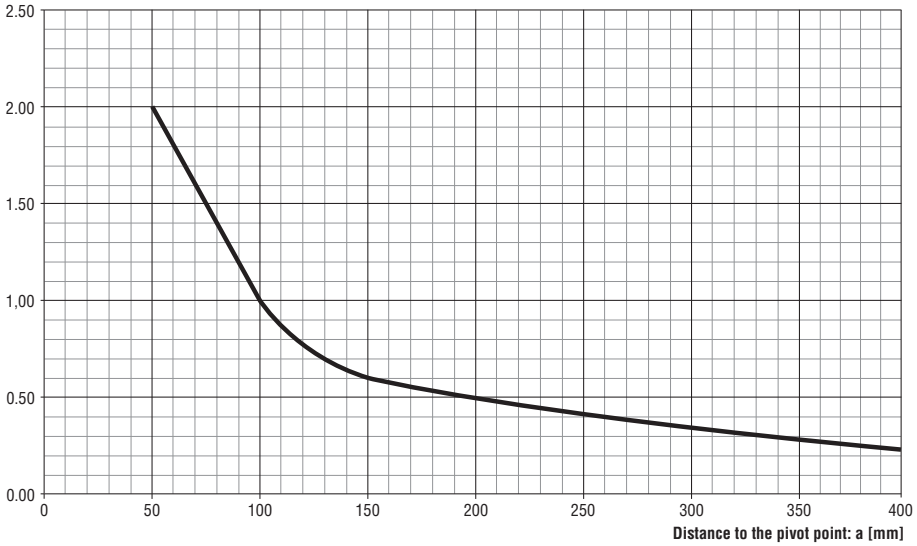
Adjustable pivot base MQP-FG

Suitable for channel	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
MQ-21, MQ-31, MQ-41, MQ-41/3, MQ-21D	2070	4	**MQP-FG**	**284240**

Item	$F_{rec\ (1)}$ (kN)	Bolt	Push-button	Tightening torque MQN M_D (Nm)	Tightening torque M12 clamping bolts M_D (Nm)
MQP-FG	8 kN	Double	MQN	40	80

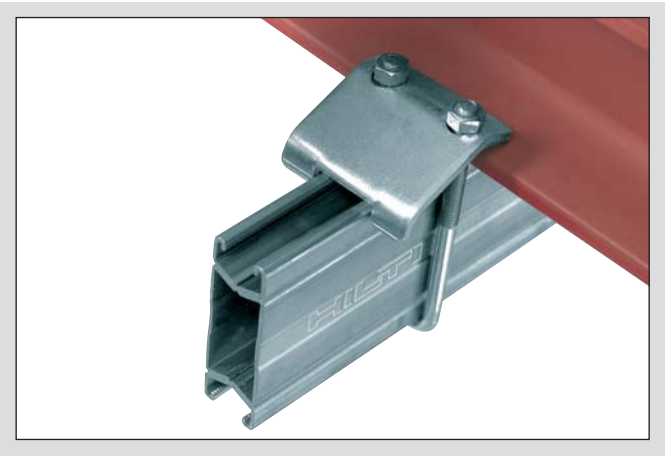


Load $F_{rec\ (2)}$ [kN]



Beam clamp

Features
- For connecting installation channels to steel beams without drilling or welding
- The clamp set fits all standard T-beams

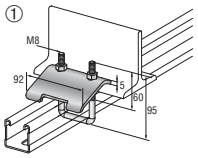


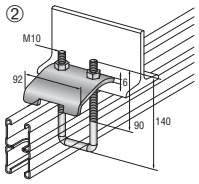
Technical data

Material:	
U-bolt:	S 235 JRG-2 as per DIN EN 10025
Claw plate:	S 235 JR as per DIN EN 10025
Nut:	as per DIN 934 8-A2K
Galvanising:	galvanised Fe/ZN 13 B as per DIN 50961

Beam clamp

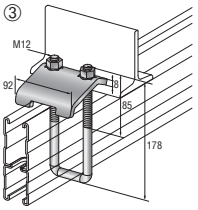
Suitable for channel	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
MQ-21, MQ-31, MQ-41, MQ-21 D	500	10	①	**MQT-21-41**	**369675**
MQ-41, MQ-41/3, MQ-52, MQ-72, MQ-41 D	650	10	②	**MQT-41-82**	**369676**
MQ-41 D, MQ-52-72 D, MQ-124X D	860	10	③	**MQT-82-124**	**369677**





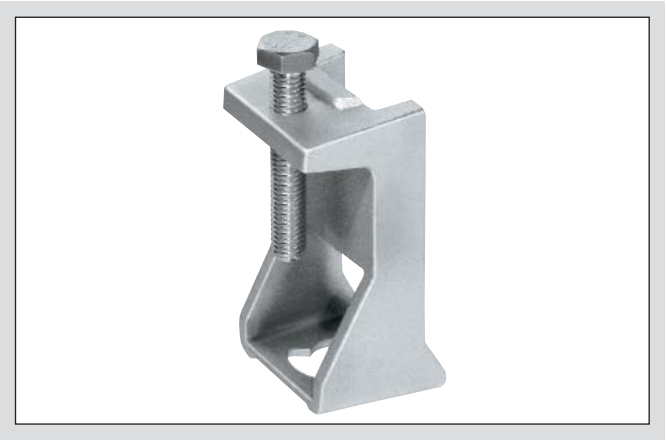
Beam clamp	Tightening torque, M_D (Nm)	Max. rec. load (kN)
MQT-21-41	10	3.0
MQT-41-82	20	4.5
MQT-82-124	30	5.0

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



Beam Clamp

Advantages
- For connecting installation channels to steel beams without drilling or welding
- The beam clamp fits all standard T-beams (flange thickness ≤ 30 mm)
- Massive design
- Shear loading possible



Technical Data

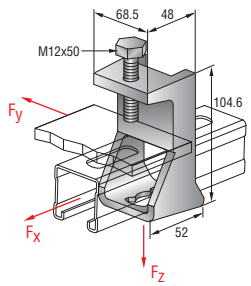
Material clamb:	EN-GJMB-350-10 (DIN EN 1562)
Material screw:	M12 steel 8,8-A2K (DIN 933)
Galvanising:	galvanised, Fe/Zn 13 B As per DIN 50 961

Beam Clamp MQT

For channel	Weight/pc. (kg)	Packaging (pcs)	Ordering designation	Item no.
MQ-21D, MQ-41, MQ-41/3	0.716	16	**MQT 41**	**286107**

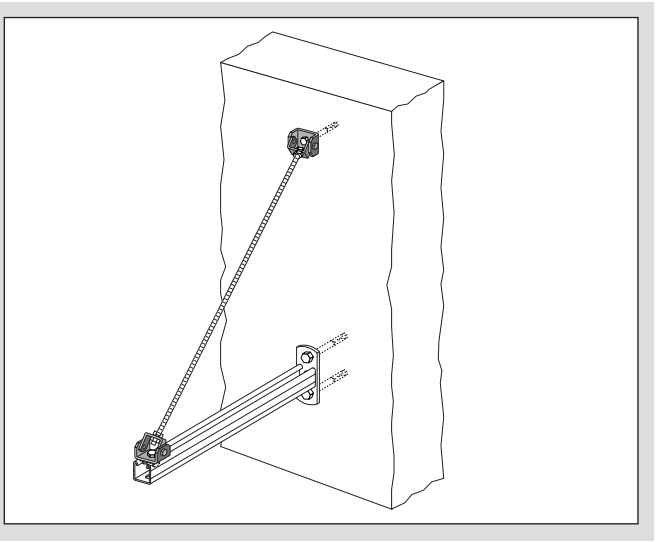
item	Max. rec. load per pair F_Z (kN)	F_X (kN)	Thightening torque M_D (Nm)
MQT41	20	9	20

Always use beam clamps in pairs. Channel loading values must be respected.
Load values do not apply on cantilever channel endings.



Universal joint MQP-U

Features:
- Universal fastening on inclined components.
- Direct connection on the building structure and on installation channels, especially suitable for bracings.
- Angle stepless fixable up to 90°.
- Easy handling and height adjustment of the threaded rod.



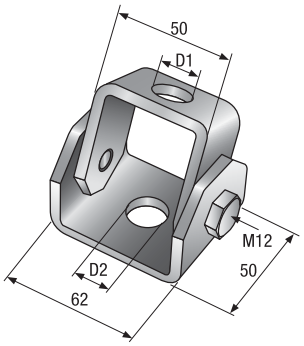
Technical data:

Material:	S235 JRG-2 as per DIN EN 10025
Material thickness:	5 mm
Galvanising:	galvanised, Fe / Zn 13 B as per DIN 50961

Separate design verification of the fastening on the base material or other installation components must be provided.

Universal joint MQP-U

Size	D1 (mm)	D2 (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
M12	12.5	12.5	390	10	**MQP-U M12**	**284248**
M16	16.5	16.5	390	10	**MQP-U M16**	**284249**



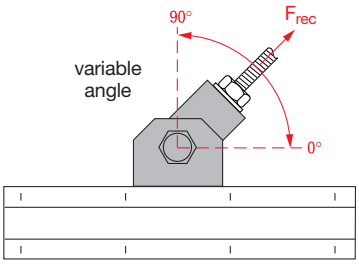
Item	Max. rec. load (kN)	Tightening torque M_D (Nm)
MQP-U M12	14	20
MQP-U M16	14	20

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

Angle	Max. recommended load F_{rec} (kN) **Channel I**	**Channel II**	Tightening torque M_D (Nm)
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, MQ-31, MQ-41, MQ-21 D, MQ-41 D
Channel II: MQ-41/3, MQ-52, MQ-72, MQ-52-72 D, MQ-124XD

Interim values of the angle can be interpolated linearly.



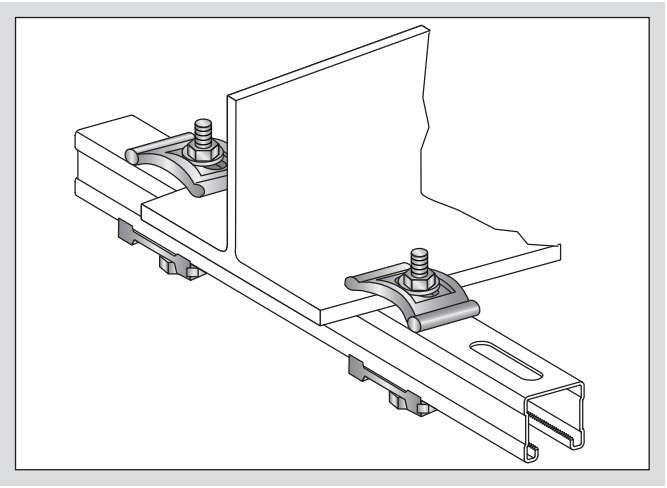
Beam clamps MQT

Features:
- For connecting installation channels to steel beams without drilling or welding.
- The clamp set fits all standard T-beams (max. clamping thickness ≤ 36 mm).

Technical data:

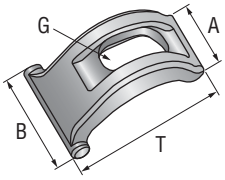
Material:	GJMW400-5
Galvanising:	galvanised Fe/Zn 13 B as per DIN 50961

Delivery without wing nut, nut, boss plate, washer and bolt.



Beam clamps MQT

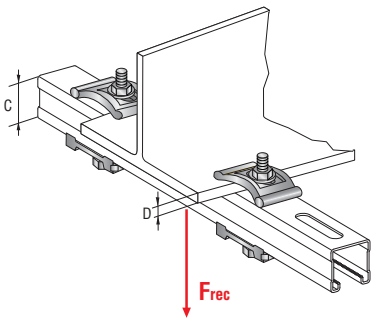
Size	Dimensions (mm) B	T	A	G	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
M10	52	68	30	23×11	160	20	**MQT-M10**	**284242**
M12	52	74	32	29×13	190	20	**MQT-M12**	**284243**
M16	52	75	36	32×17	215	10	**MQT-M16**	**284244**



Application case ①

Suitable for: MQ-21, MQ-31, MQ-41, MQ-41/3, MQ-52, MQ-72, MQ-21D, MQ-41D, MQ-52-72D

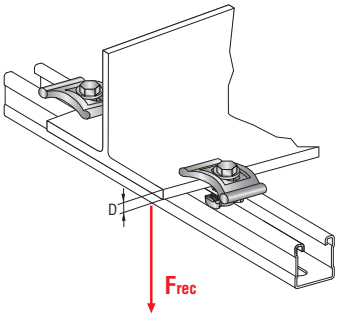
Item	Rec. tensile load (kN) **Channel I**	**Channel II**	Tightening torque M_D (Nm)	Necessary bolt length L (mm)
MQT-M10	10.0	10.0	40	L = 60 mm + D + C
MQT-M12	10.0	15.0	40	
Channel I: MQ-21, MQ-31, MQ-41, MQ-21 D, MQ-41 D Channel II: MQ-41/3, MQ-52, MQ-72, MQ-52-72 D				
Always use beam clamps in pairs. Channel loading values must be allowed for. The load values do not apply for cantilever channel endings.				



Application case ②

Suitable for: MQ-21, MQ-31, MQ-41, MQ-41/3, MQ-52, MQ-72, MQ-21D, MQ-41D, MQ-52-72D, MQ-124XD

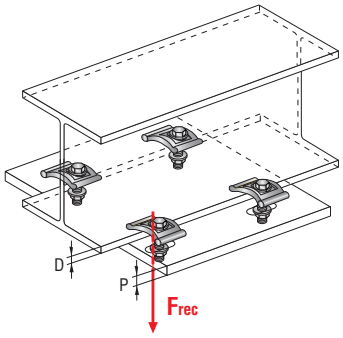
Item	Rec. tensile load (kN) **Channel I**	**Channel II**	Tightening torque M_D (Nm)	Necessary bolt length L (mm)
MQT-M10	10.0	10.0	40	L = 41 + 0.6 x D
MQT-M12	10.0	15.0	40	
Channel I: MQ-21, MQ-31, MQ-41, MQ-21 D, MQ-41 D Channel II: MQ-41/3, MQ-52, MQ-72, MQ-52-72 D, MQ-124X D				
Always use beam clamps in pairs. Channel loading values must be allowed for. The load values do not apply for cantilever channel endings.				



Application case ③

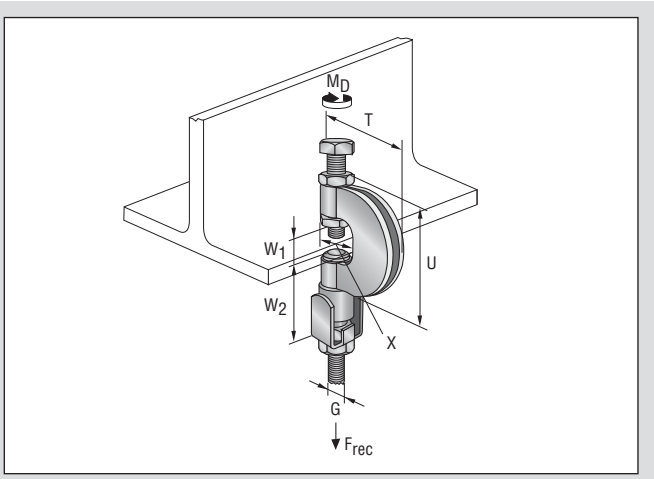
Suitable for: Connection of steel-plates

Item	Rec. tensile load (kN)	Tightening torque M_D (Nm)	Necessary bolt length L (mm)
MQT-M10	10.0	50	L = 60 mm + D + P
MQT-M12	15.0	80	
MQT-M16	20.0	120	
Always use four clamps. Steel-plate must be separately verified.			



Swivel beam clamp MQT-G

galvanised, 13 µm



Features

- Installation on steel beams without drilling or welding, also on inclined steel beams.
- No bending of threaded rods.
- The clamp set fits all standard T-beams (max. clamping thickness ≤ 17 mm).

Technical data

VdS:	Above pipe size DN 65, retaining straps are required !
VdS:	For the applications 1 and 4 retaining straps are required !

Item	F_{rec} (kN) (≤ 25°)	F_{rec} (kN) (> 25°)	Thightening torque M_D (Nm)
MQT-G M8:	2,5	1,5	18
MQT-G M10:	2,5	1,5	18

Loading: In accordance with the VdS and FM specifications

For VdS-approved installation see www.hilti.com/vds-installation

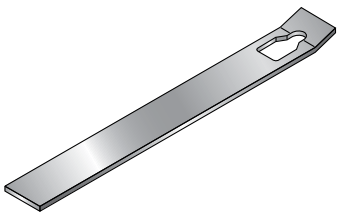
VdS G 402 1003

Factory Mutual

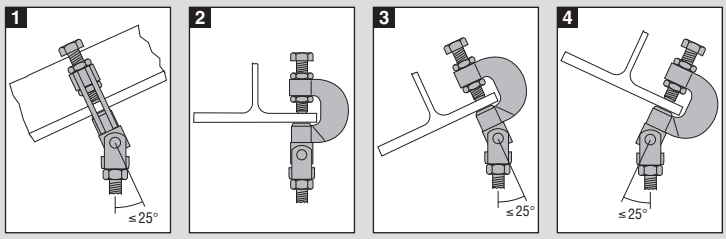
Size	Approval	Dimensions [mm] T	U	W1	W2	X	Weight each (g)	Packaging contents (pcs)	Outside packaging contents (pcs)	Ordering designation	Item no.
M8	VdS	53	58	17	55	27	266	20	40	**MQT-G M8**	**284238**
M10	VdS / FM	53	58	17	55	27	266	20	40	**MQT-G M10**	**284239**

Retaining strap for swivel beam clamp MQT-G

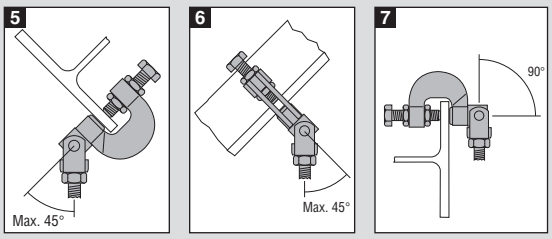
For swivel beam clamp	Dimensions [mm] Lenght	Width	Thickness	Packaging contents (pcs)	Ordering designation	Item no.
MQT-G M8, MQT-G M10	305	40	3	10	**MQT-S**	**284863**



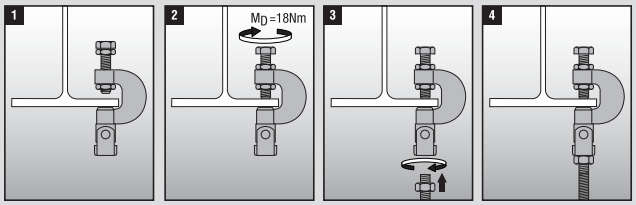
VdS and FM approved applications



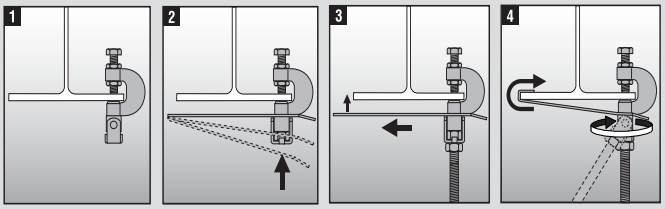
Non-VdS and FM approved applications



Installation instruction: swivel beam clamp



Installation instruction: retaining strap

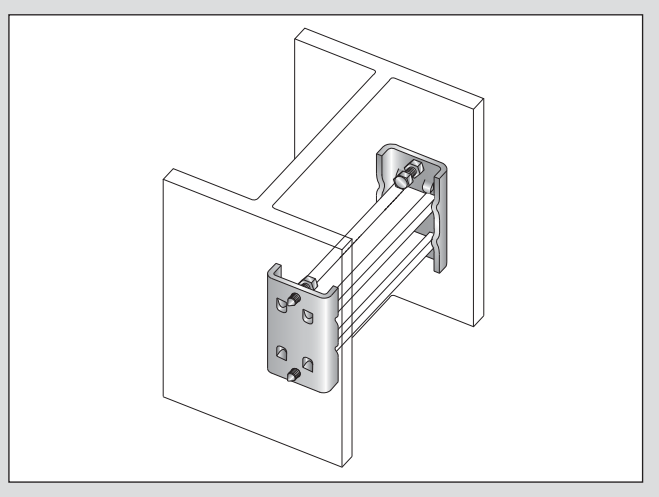


Clamping bracket MQT-K

Features:
- For connecting installation channels to steel beams without drilling or welding.
- The clamp set fits all standard double T-beams and U-beams.
- Easy installation of pipes on steel beams.

Technical data:

Material:	S235 JRG-2 as per DIN EN 10025
Material thickness:	5 mm
Galvanising:	galvanised, Fe/Zn 13 B as per DIN 50961

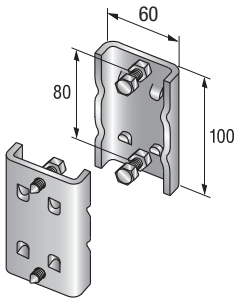


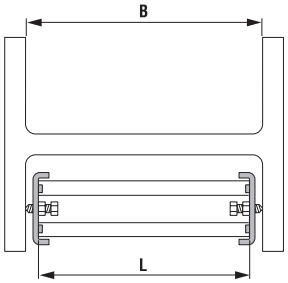
Clamping bracket MQT-K

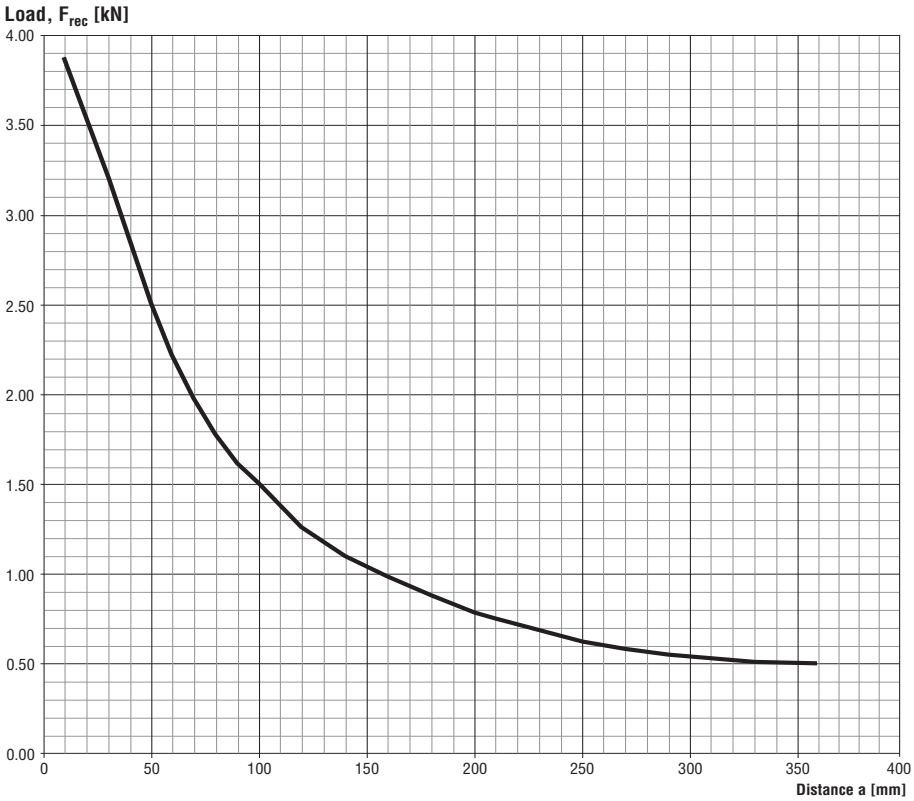
Consisting of 2 clamping plates.

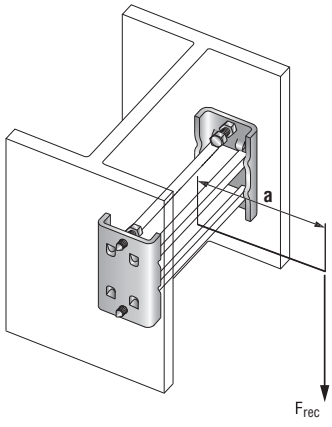
Suitable for channel	Weight / set (g)	Packaging contents (set)	Ordering designation	Item no.
MQ-41, MQ-41/3	720	5	**MQT-K**	**284241**

Item	Tightening torque M_D (Nm)	For beam flange widths B (mm)	Cut length L of the channel section (mm)
MQT-K	30	100 to 400 mm	L = B – 25 mm





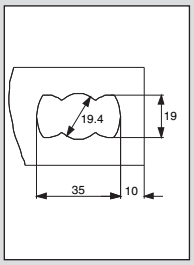


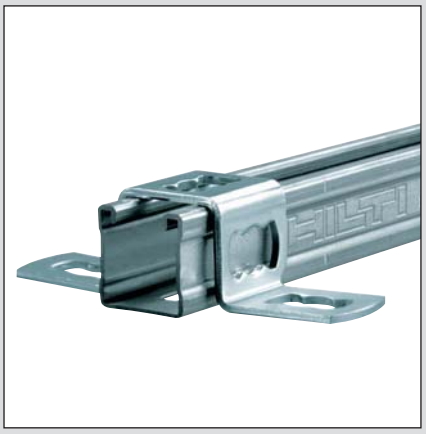


The design of the clamped channel and the steel beam must be separately verified.
The permissible bending moment of the threaded rod must be noted.

Clamp

Features
- Universal: few parts for all applications
- Easy to use



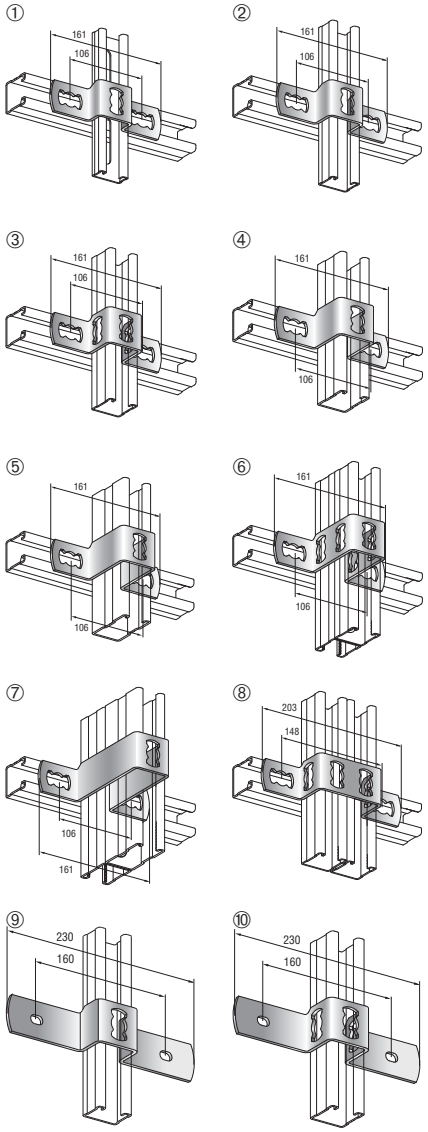


Technical data

Material:	S 235 JR as per DIN EN 10025
Material thickness:	4 mm
Galvanising:	galvanised Fe/Zn 13 B as per DIN 50961

Clamps

Suitable for channel	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
MQ-21	211	10	①	**MQB-21**	**369666**
MQ-31	220	10	②	**MQB-31**	**369667**
MQ-41, MQ-41/3, MQ-21 D	243	10	③	**MQB-41**	**369668**
MQ-52	340	10	④	**MQB-52**	**369669**
MQ-72	380	10	⑤	**MQB-72**	**369670**
MQ-41 D, MQ-41, MQ-41/3, MQ-21 D	340	10	⑥	**MQB-82**	**369671**
MQ-52-72 D, MQ-124X D	553	10	⑦	**MQB-124**	**369672**
MQ-41, MQ-41/3, MQ-41 D, MQ-21 D	295	10	⑧	**MQB-41×2**	**369673**
MQ-31	350	10	⑨	**MQB-G31**	**373800**
MQ-41, MQ-41/3, MQ-21 D	366	10	⑩	**MQB-G41**	**369674**



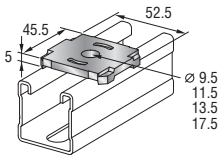
Accessories

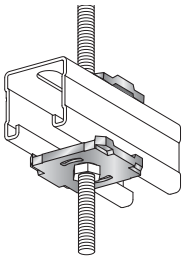
Features
■ Matching items in programme

Boss plate

Material: S 235 JR as per DIN EN 10025
Galvanised

Thread	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
M 8	92	20		**MQZ-L9**	**369678**
M10	88	20	①	**MQZ-L11**	**369679**
M12	84	20	①	**MQZ-L13**	**369680**
M16	80	20	①	**MQZ-L17**	**369681**





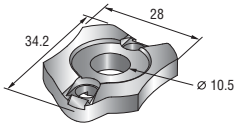
Boss plates ① firestop tested

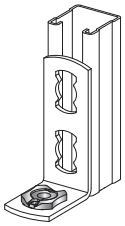
IBMB no. 3897/1802-5

Installation washer

Material: S 235 JR as per DIN EN 10025
Galvanised

Hole diameter (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
10.5	30	40	**MQZ-U**	**369692**

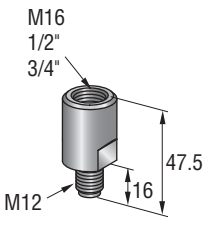




Adaptor

Material: 11 SMn 30 as per DIN EN 10087
Galvanised

Internal thread	External thread	Width across flats (mm)	Weight each (g)	Packaging contents (pcs)	Ordering designation	Item no.
M16	M12	19	92	20	**MQZ-A-M16**	**369687**
½″	M12	24	109	20	**MQZ-A-½″**	**369688**
¾″	M12	30	135	20	**MQZ-A-¾″**	**369689**

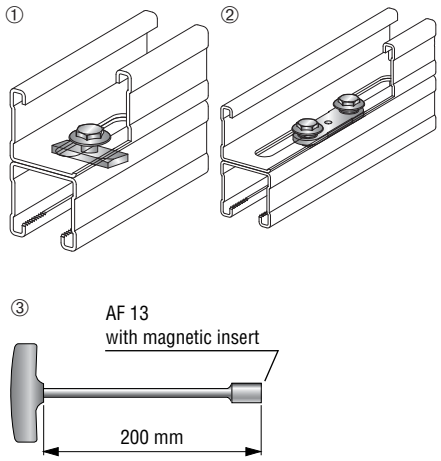


Channel tie

For accurate user-assembled double channels
Material: S235JR as per DIN EN 10025
Galvanised

Item	Connection thread	Width across flats (mm)	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
Channel tie	M8	13 mm AF	2.3	40	①	**MQZ-SV**	**369690**
Locking device	M10	13 mm AF	2.5	40	②	**MQZ-SS**	**369691**
Magnetic wrench		13 mm AF		1	③	**MQZ-SVS**	**369693**

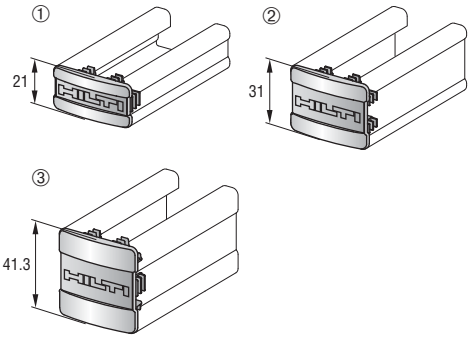
Item	Rec. tensile load, Z_{rec} (kN)	Rec. shear load, Q_{rec} (kN)	Tightening torque, M_D (Nm)
MQZ-SV	1.0	–	6
MQZ-SS	3.0	5.0	20



Channel endcap

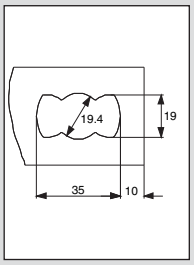
Made of polypropylene (PP), suitable for all installation channels

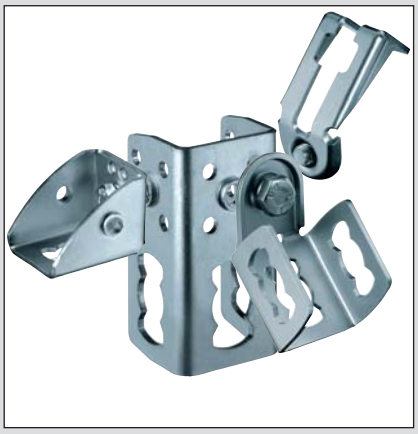
Suitable for channel	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
MQ-21, MQ-21 D	2	50	①	**MQZ-E21**	**370598**
MQ-31	2	50	②	**MQZ-E31**	**369686**
MQ-41, MQ-41/3, MQ-41 D	2	50	③	**MQZ-E41**	**369685**



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





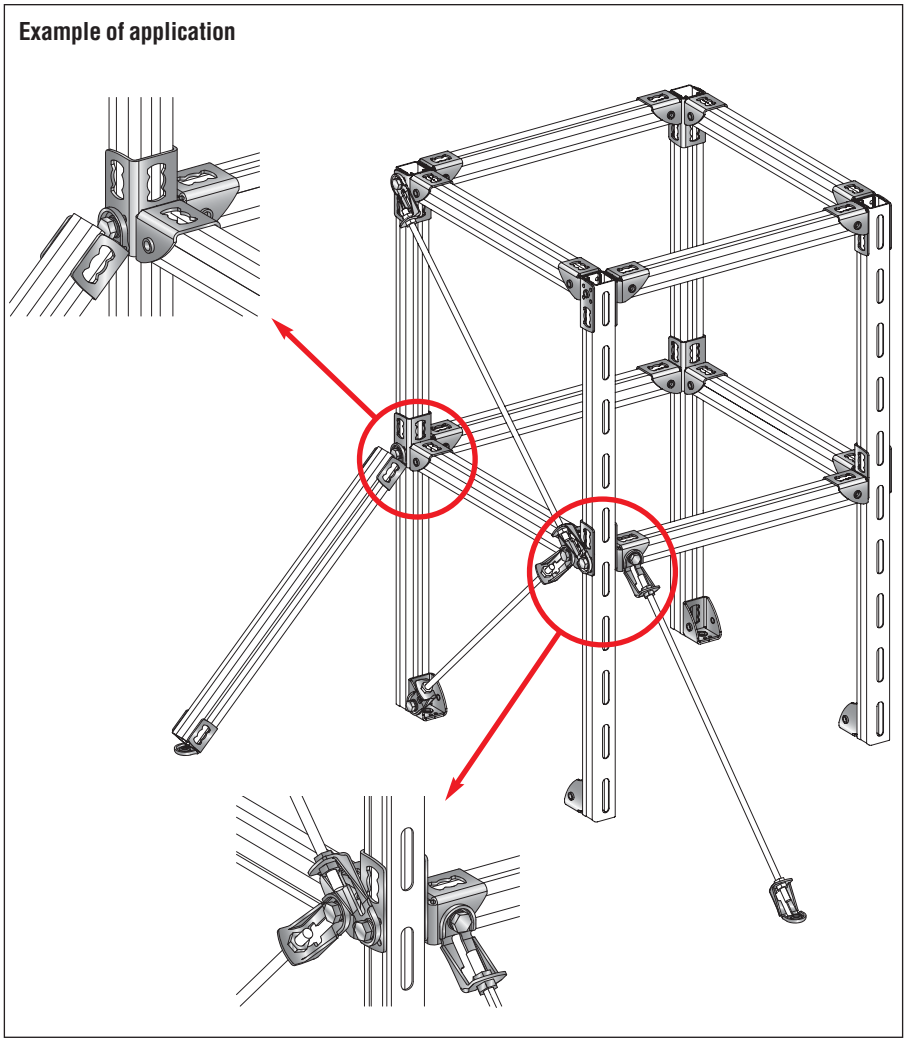
Technical data

Material:	① + ③: QStE 380 TM as per SEW 092 ② + ④: DD11 as per DIN EN 10111
Material thickness	3 mm
Galvanising:	galvanised Fe/Zn 13 B as per DIN 50961
Bolt:	M10 material 8.8 as per DIN/ISO 898
Width across flats:	17 mm
Tigthening torque:	40 Nm

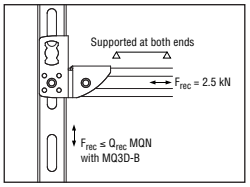
3D system

Description	Weight each (g)	Packaging contents (pcs)		Ordering designation	Item no.
Basic unit	206	20	①	**MQ3D-B**	**369694**
90° angle	212	20	②	**MQ3D-W90°**	**369695**
45° angle	153	16	③	**MQ3D-W45°**	**369696**
Brace	95	20	④	**MQ3D-A**	**369697**

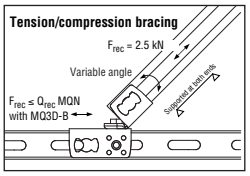
Example of application



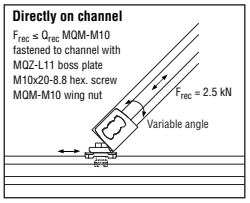
① 90 / 21.5



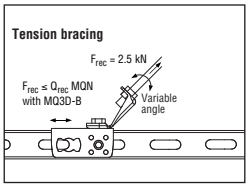
② 61 / 26

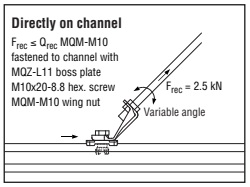


③ 50 / 45° / 30



④ 50 / 45° / 25

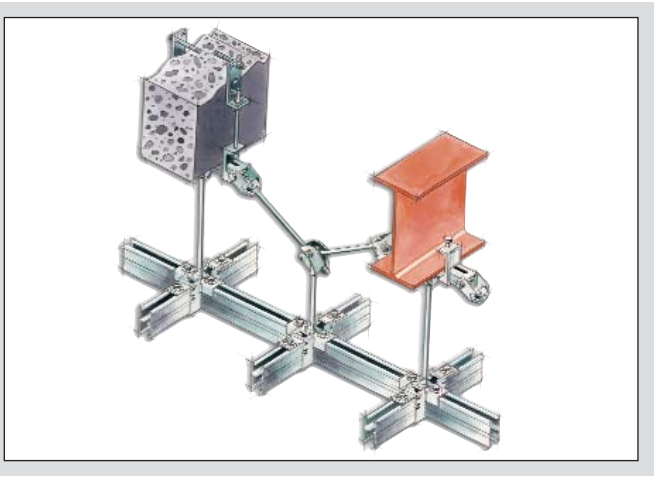




Note
The preassembled fastening screw must be replaced with a longer 8.8 grade M10 screw when the connecting parts (MQ3D-W90°, MQ3D-W45°, MQ3D-A) are fitted without other parts from the 3D system. The minimum thread engagement lengths must be observed.

MQ Grid Installation System

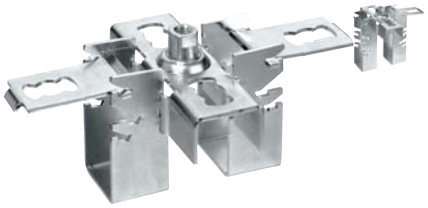
Application
For the flexible installation of different applications such as lights, cable trays, pipes and ducts for water, gas, ventilation, pressurized air, signs or catwalks for maintenance.

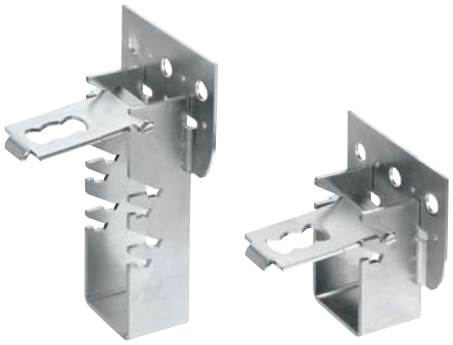


Advantages
- total flexibility
  simple to change – adaptable for all needs
- simple and fast
  matched system allows fast installation
- attractive
  well ordered appearance

Cross connector / Wall connector

Advantages
- Simple crosswise installation of channels
- Integrated M12 connection – height adjustable
- Combination of different channels possible
- One-man installation of channels possible
- Wall connection using DX or anchors





Technical Data

Material:	S235JRG2 (DIN EN 10025)
Nut:	9 SMnPb28
Material thickness:	3 mm
Galvanising:	galvanised, Fe/Zn 13 B As per DIN 50 961

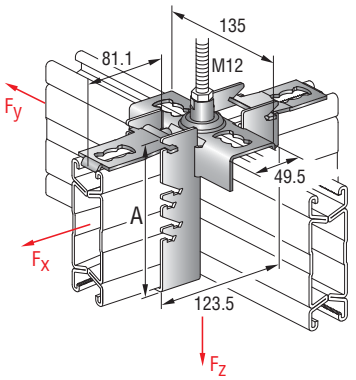
Separate design verification of the fastening on the base material must be provided.
For the fastening to the threaded rod a counter nut has to be used.

Cross Connector MQI-K

For main channel	A (mm)	Weight/pc (kg)	packaging pcs	Ordering designation	Item no.
MQ-41, MQ-41/3	59	0.625	8	**MQI-K41**	**286094**
MQ-52	75	0.688	8	**MQI-K52**	**286095**
MQ-72	90	0.760	8	**MQI-K72**	**286096**
MQ-41D	106	0.750	8	**MQI-K41D**	**286097**
MQ-52/72D, MQ124XD	142	1.125	8	**MQI-K124**	**286098**

item	Rec. load Fz vertical (kN)	Rec. load Fx horizontal (kN)
MQI-K	10	1.4

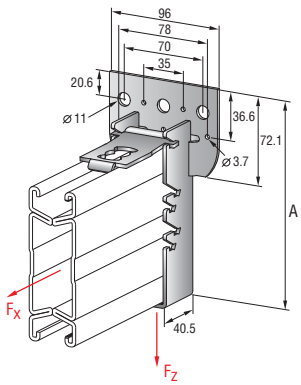
If main channel is not continuous at cross connector: max rec. MQN pushbutton loads apply
Max. rec. load from auxiliary channel: 5 kN



Wall Connector MQI-W

For channel	A (mm)	Weight/pc (kg)	packaging pcs	Ordering designation	Item no.
MQ-41, MQ-41/3, MQ-52	98	0.335	18	**MQI-W41-52**	**286099**
MQ-72, MQ-41D MQ-52/72D, MQ124XD	170	0.417	12	**MQI-W72-124**	**286100**

item	Rec. load Fz vertical (kN)	Rec. load Fx horizontal (kN)
MQI-W	5	1.4



Beam connector / Joint head

Advantages
- Fast installation without drilling or welding, also on inclined beams
- 3 Fastening points at one beam connector
- Fast connection of threaded rods
- Fits all standard steel T-beams and concrete beams (flange width max. 300mm, flange thickness max. 30mm)
- no bending of threaded rod

Technical Data

Material:	
Beam clamp, T-piece:	EN-GJMB-350-10 (DIN EN 1562)
Bolts:	M12 steel 8.8-A2K (DIN 933)
Nut:	M12 quality 8-A2K (DIN 985)
Clip:	S235JRG2 (DIN EN 10025)
Channel:	S250GD (DIN EN 10147)
End cap:	Polypropylen (PP)
Pushbutton MQN	
– Screw	M10 steel 8.8 (DIN/ISO 898):
– Nut	QStE 380 TM, SEW92:
– Plate	DD11, DIN EN10111
Jointhead:	EN-GJMB-350-10 (DIN EN 1562)
Galvanising:	galvanised, Fe/Zn 13 B As per DIN 50 961

(1) – (4) Delivery without threaded rod M12 and without nut M12
For the fastening to the threaded rod a counter nut has to be used.

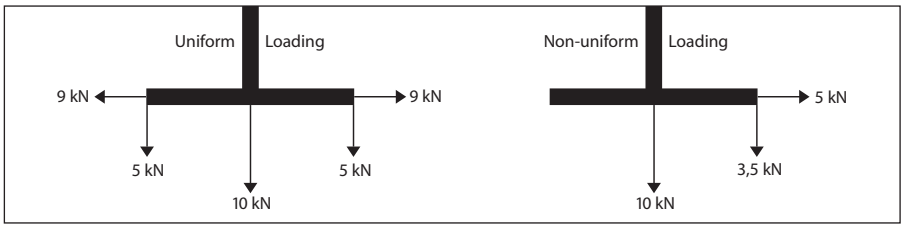
Beam connector MQI-AT

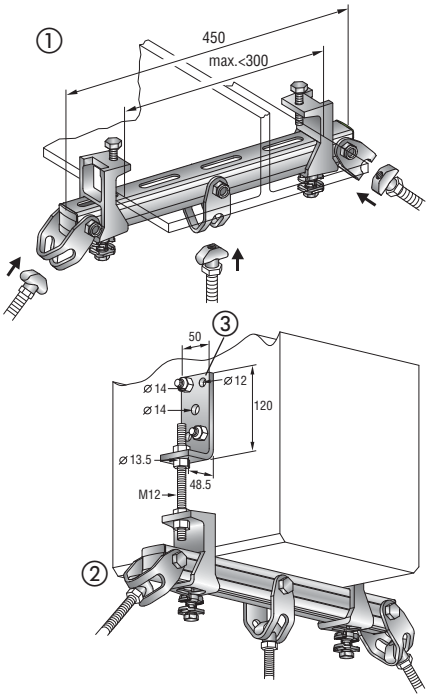
designation	Weight/pc. (kg)	Packaging (pcs)	Ordering designation		Item no.
Beam connector	3.700	6	**MQI-AT***	①	**286090**
Beam connector concrete	3.700	6	**MQI-AT/B ***	②	**286091**
Base connector concrete	0.400	20	**MQI-AT/BV**	③	**286092**

* Counter nut incl. washer must be used.

item	Max. rec. load per clip (kN) Inclination of beam < 10°	< 30°	< 45°	Tightening torque M_D (Nm)
MQI-AT	10 kN	5 kN	3.5 kN	20
MQI-AT/BV				40

Load values only apply for flange width > 210mm. Seperate design verification of the beam must be provided.

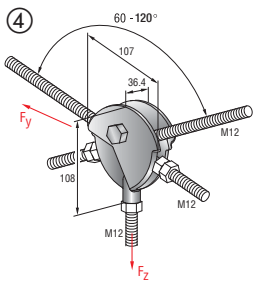




Joint head MQI-AV

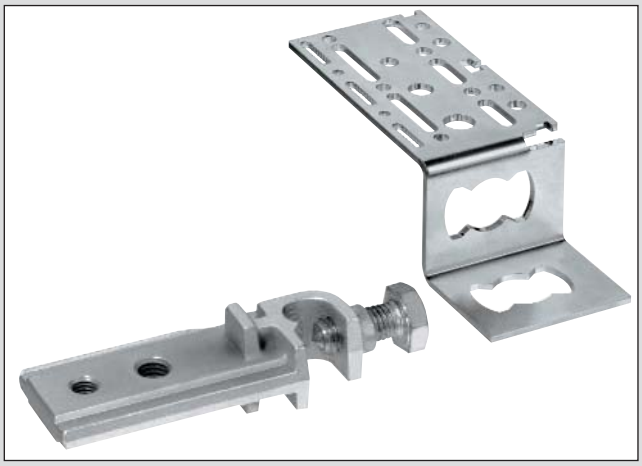
designation	Weight/pc. (kg)	Packaging (pcs)	Ordering designation		Item no.
Joint head	0.750	12	**MQI-AV**	④	**286093**

item	Rec. load Fz vertical (kN)	Tightening torque M_D (Nm)
MQI-AV	10	20



Accessories

Advantages
- Simple fastening of pipes parallel to the channel
- Fastening of channels parallel to walls
- Fastening of channels and piperings to a vertical threaded rod



Technical Data

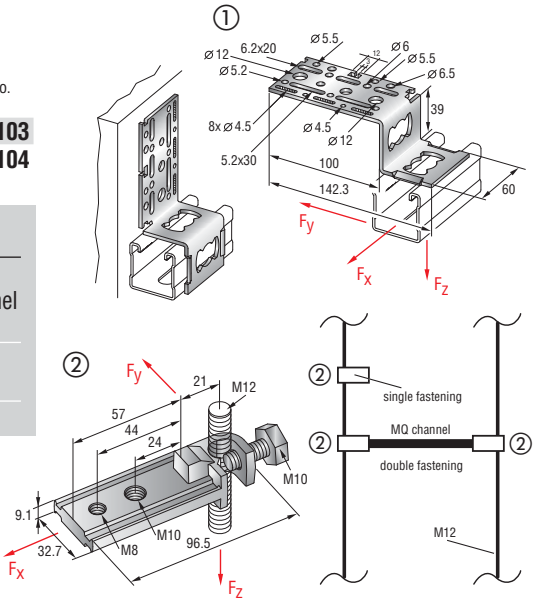
Material:	
Connector	S235JRG2 (DIN EN 10025)
– Material thickness	4mm
Clamping screw	EN-GJMB-350-10 (DIN EN 1562)
Nut	M10 steel 8.8-A2K (DIN 933)
Galvanising	galvanised, Fe/Zn 13 B As per DIN 50 961

Connector / Clamping Screw

designation	Weight/pc. (kg)	Packaging (pcs)	Ordering designation		Item no.
Connector	0.253	24	**MQI-LV150**	①	**286103**
Clamping Screw	0.220	8	**MQI-V/M12**	②	**286104**

item	Rec. load Fz (kN)	Tightening torque MD (Nm)
MQI-LV150	Fz = 0.1 kN, Fx = 0.5 kN Fy = 5 kN * * (only when used as wall connection)	Pay attention to torsion of the channel
MQI-V/M12	Single side fastened: Fz = 0.7 kN ** Both sides fastened: Fz = 1.5 kN **	5

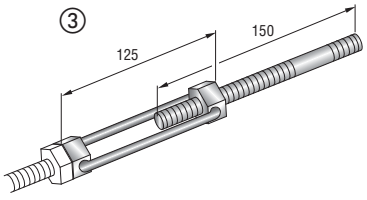
** Max. Loading capacity of threaded rod must be respected



Turnbuckle MQI-AS / M12

designation	Weight/pc. (kg)	Packaging (pcs)	Ordering designation		Item no.
turnbuckle	0.300	5	**MQI-AS/M12**	③	**286105**

item	Max. rec. load Fz (kN)
MQI-AS/M12	10



For the fastening to the threaded rod a counter nut has to be used on one side of the turnbuckle.

General safety information

As the Hilti MQ 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 system is combined with products from the MQ system, the load values for the MQ system apply exclusively.

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

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