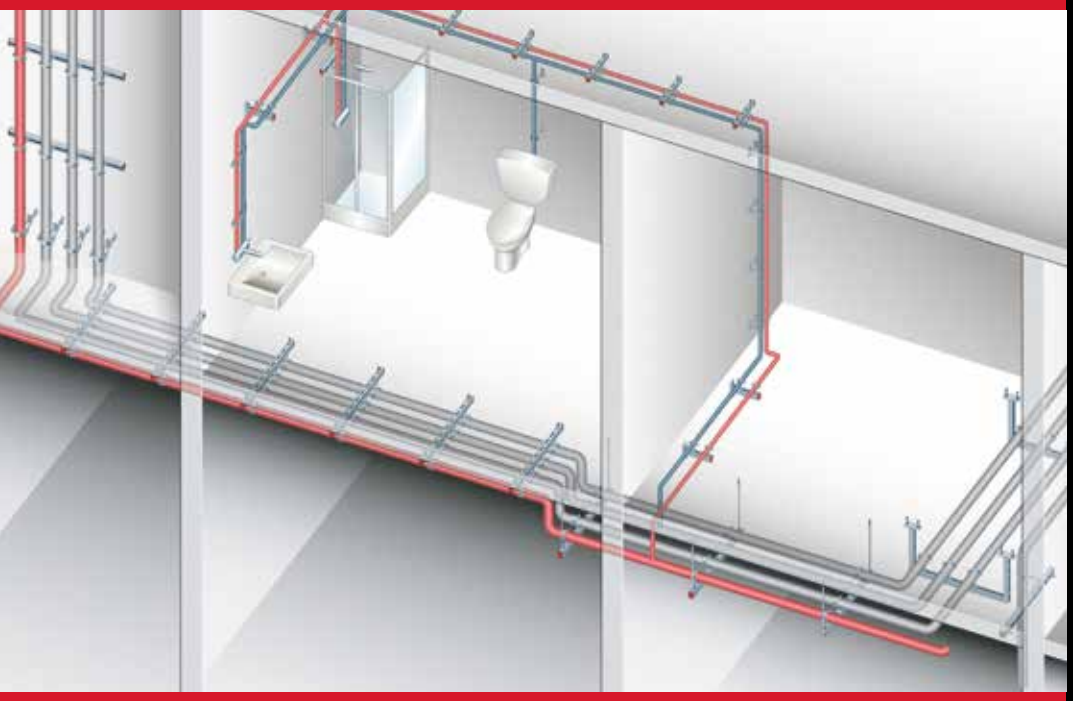
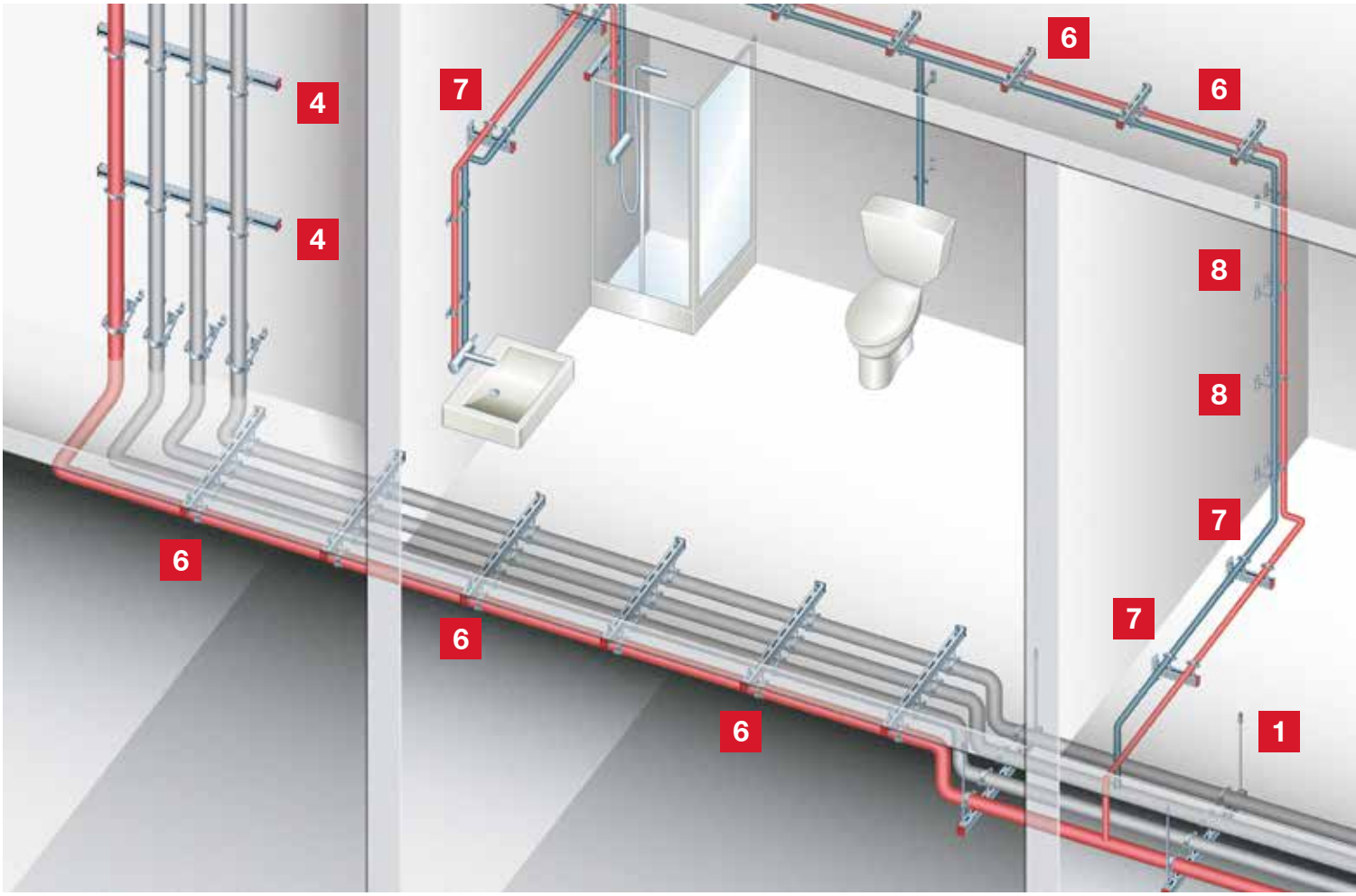
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Installation Technical Manual

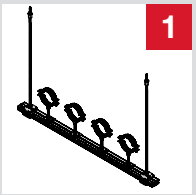
Typical Plumbing Applications



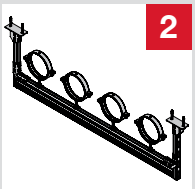


Plumbing is the general term applied to the piping systems used to distribute hot and cold water through a building to facilities such as:

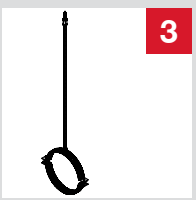
Bathroom washbasins
Kitchen washbasins
Baths and showers
Plant rooms – other piping systems for water supply
Toilets
Kitchen dishwashers
Plant rooms – boilers



1 Trapeze hanger
A length of channel suspended on two or more threaded rods supporting a group of suspended pipes.



2 Trapeze frame support
A length of channel fastened to two or more vertical upright channels supporting a group of suspended pipes.

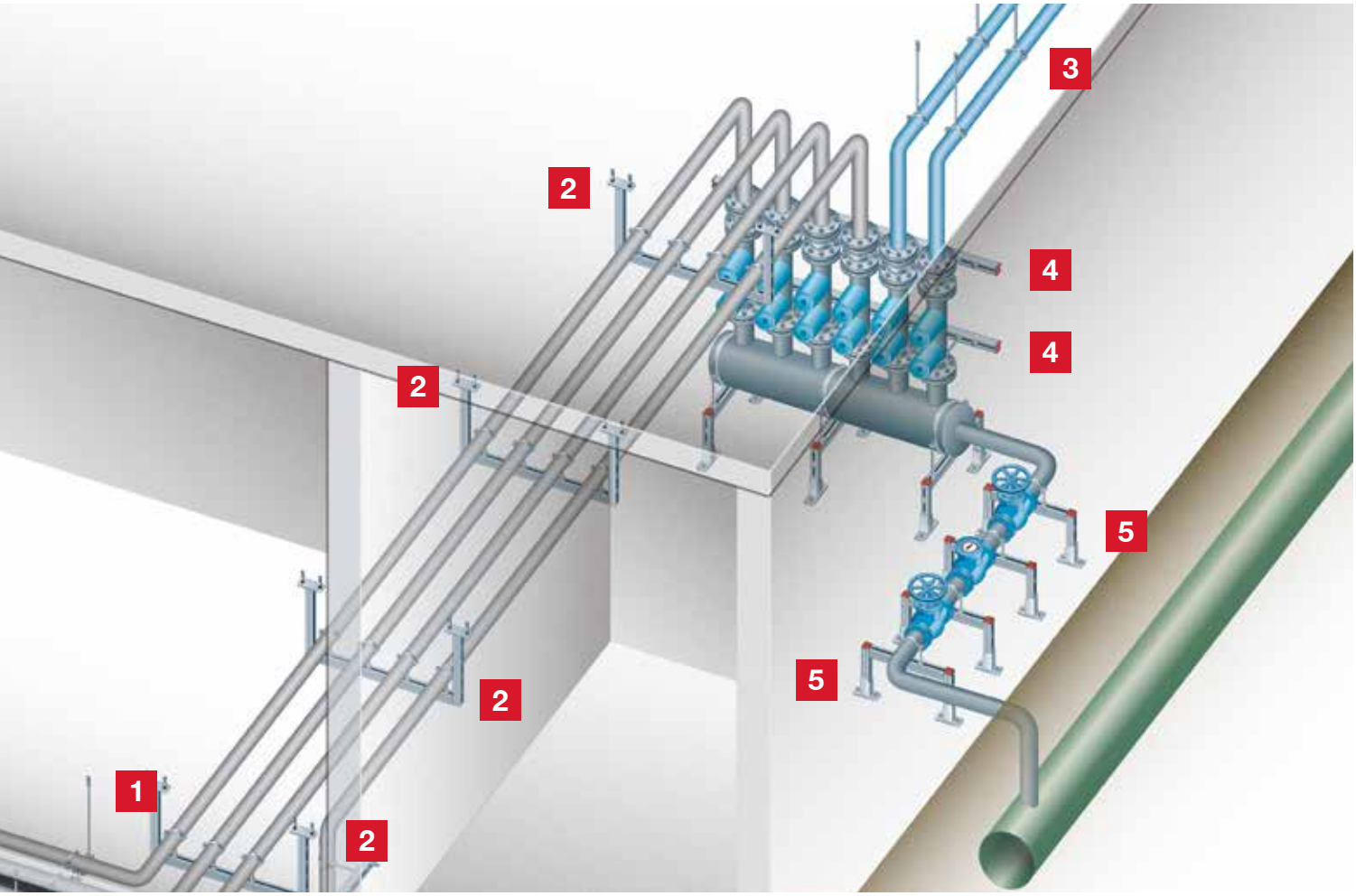


3 Single fastening
A pipe ring hanger suspended on a threaded rod anchored to the base material either directly using an internally threaded anchor or from a base plate anchored to the base material.

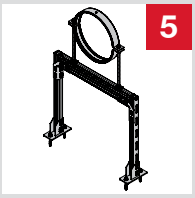


4 Wall rail
A length of channel directly attached to the wall by way of through-bolts screwed into anchors set in the base material. The channel is used to support rising pipes from the splitter. It has a mainly stabilizing function.

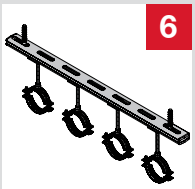
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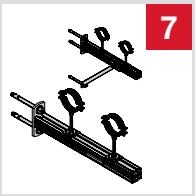
Fresh water is taken from the public distribution network and it then passes through measuring and regulation devices.
The water then goes to a device called a splitter which splits the water distribution system into many branches.
Each branch has a set of two valves and a pump on outlets from the splitter. Branches in the form of backbone pipes usually then go to pipe corridors where they have either common or individual supports. Pipes in small sizes, in pairs for hot and cold, branch off from the backbone pipe with the purpose of distributing water to the places of final consumption. The hot water system is not directly connected to the public network and starts at the boiler before going to a splitter – which is different from the fresh water splitter but works in a very similar way. In most cases these lie parallel to the fresh water splitter.
The plumbing is installed in pipe corridors on common supports together with other services.



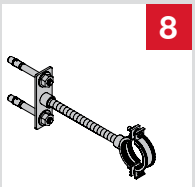
5 Goal post frame
A frame made of channels supporting either measuring and regulation devices at the connection to the public network or supporting a splitter where the system is split into different branches.



6 Head rail
A length of channel directly attached to the ceiling by way of through-bolts screwed into anchors set in the base material. The pipes are suspended from the channel on threaded rods.



7 Braced / unbraced wall bracket
Cantilever arm supporting pipes (standing or suspended) in the form of a preassembled / pre-welded unit or assembled from individual parts, with or without brace.



8 Wall spot fixture
A pipe ring supported by a threaded rod anchored to the base material either directly using an internally threaded anchor or on a base plate anchored to the base material.

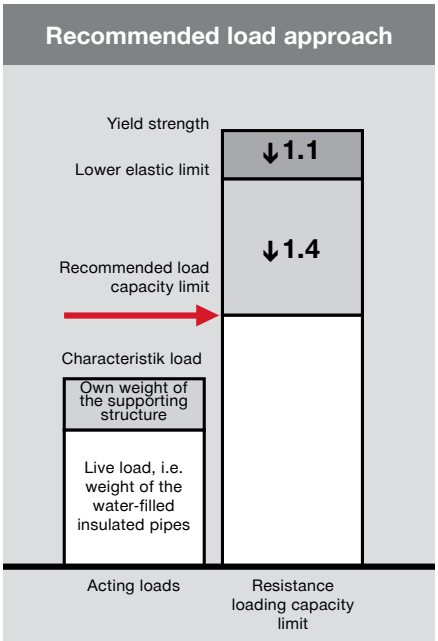
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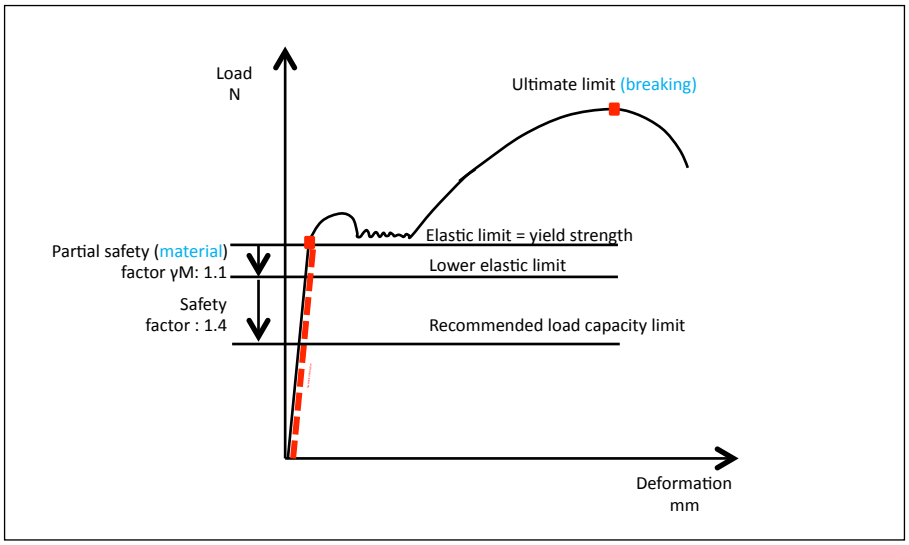
Terms of common cooperation / Legal disclaimers

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Loading capacity limit:

All loading capacity limits in this manual are to be considered as recommended values. Recommended values are calculated from the elastic limit equal to yield strength, with an applied material safety factor of 1.1 and an applied additional safety factor of 1.4.





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Contents and overview of this manual

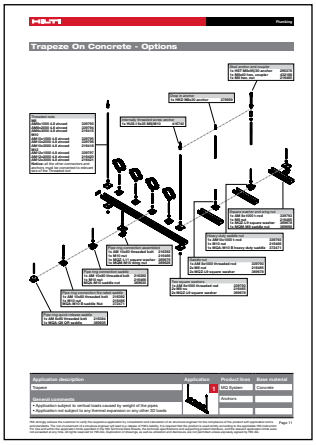
Page

Introduction to the plumbing sub-trade
- Principle
- Applications **2 - 4**

Technical background and the application design process
- Design guidelines
- Design process overview and references **6 - 8**

Applications 1 - 8

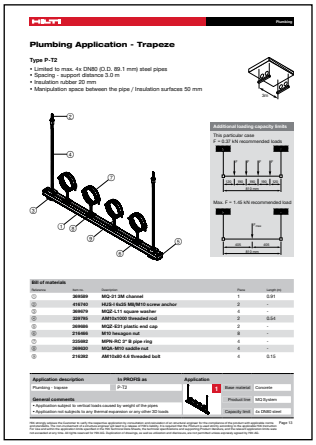
For each application:
- Application options



• The pipe support combinations in most widespread use
• Fastening to various base materials

11 - 138

- Typical applications - examples



• Practical examples for the most common pipe sizes
• Options for each application

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Plumbing Applications - Application Options

An explanation of the information provided on each page

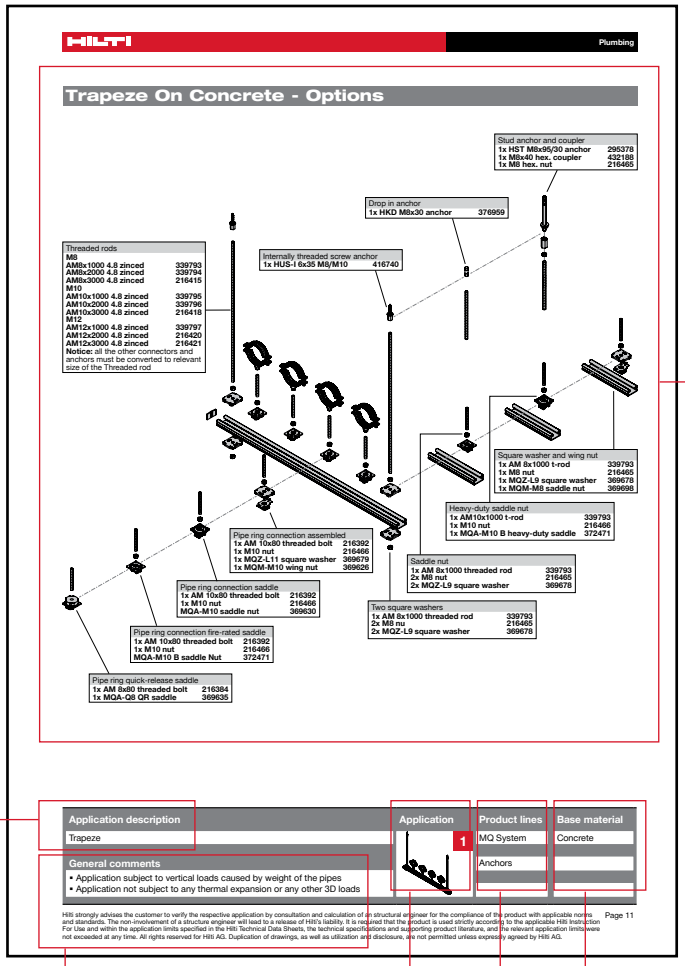


Illustration showing options for the application
Shows the different possible combinations including the bill of materials for each solution. Some of the solutions include practical tips, e.g. tools required for installation.

Application description
The general name of the application and a list of the typical situations it covers.

General comments and disclaimers

Type of application
Illustration showing the type of application.

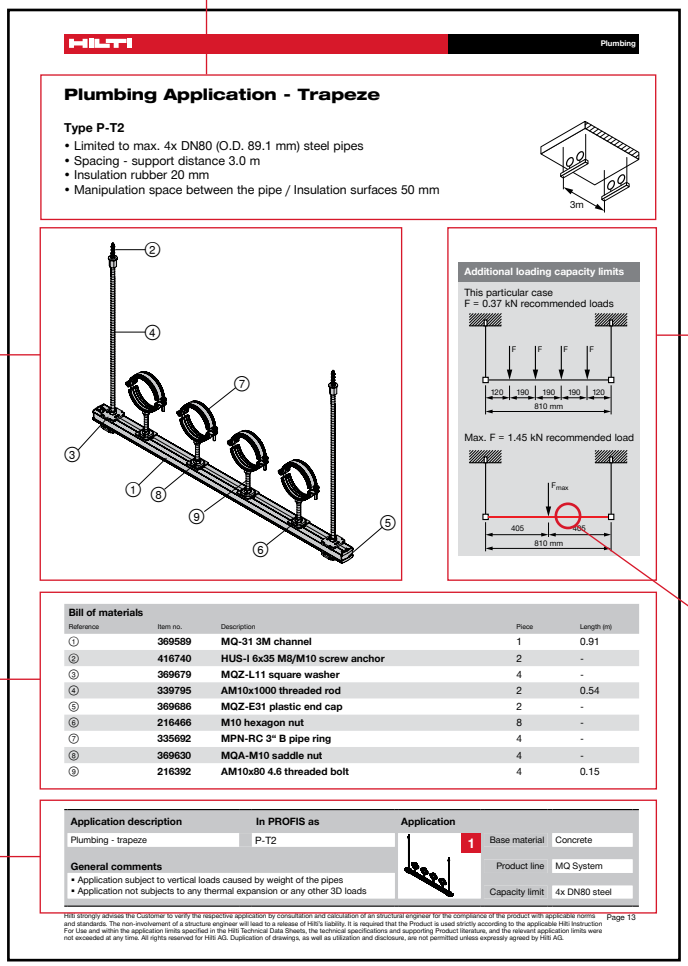
Product lines
The main products used for this application.

Base material limitations
This combination of products may be used only on the base materials listed.

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Plumbing Applications - Typical Applications - Examples

Type and limitations of the application
Max. sizes of particular pipes associated with the span and size of channel used.
Enter the name of the type in the Hilti online search function and find the PROFIS Installation file.



ACAD 3D design
with references to the bill of materials.

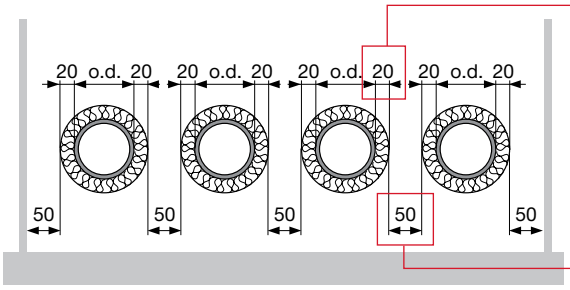
Loading capacity information
- Typical loading case
- Maximum loading capacity of the same structure with a single load acting in the center of the span

Red color indicates the part that limits the entire application when maximum capacity is reached.

Bill of materials for 1 unit
All item numbers and number of pieces of each item necessary to assemble 1 unit for this application.

Data for the typical situation
Name, reference in PROFIS Installation, base material, system capacity limit.

General design rules for typical situations



Insulation thickness
rubber 20 mm

Manipulation space 50 mm
- for welding the pipe
- for wrapping the insulation around

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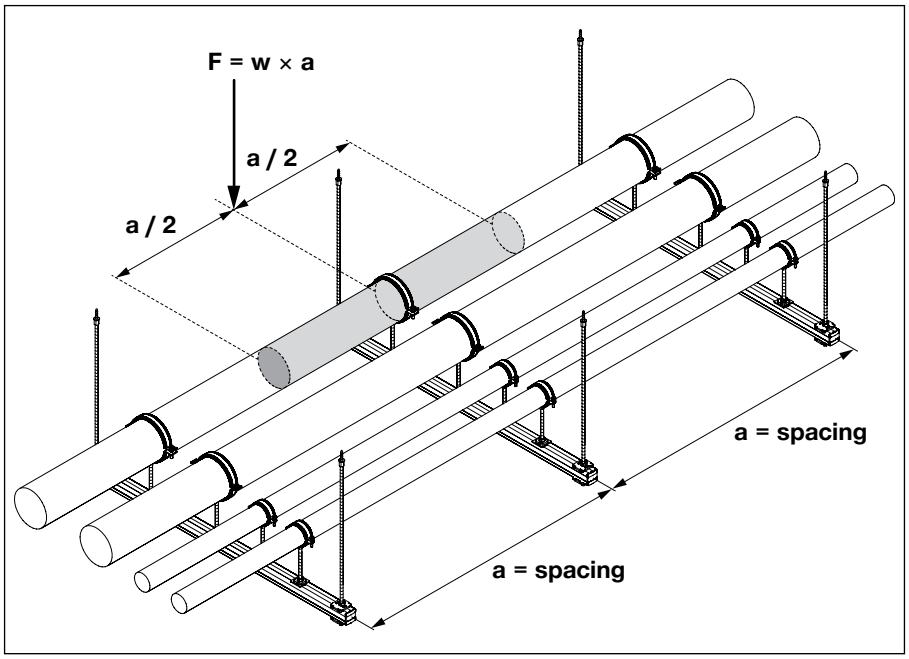
Technical background information

Technical challenges and how these dictate the product requirements

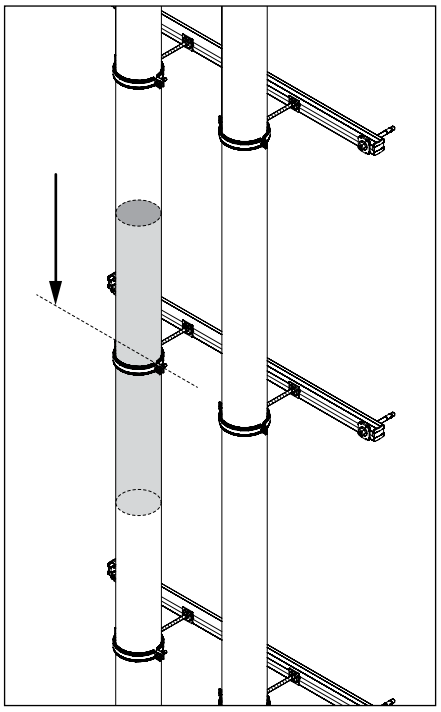
Plumbing

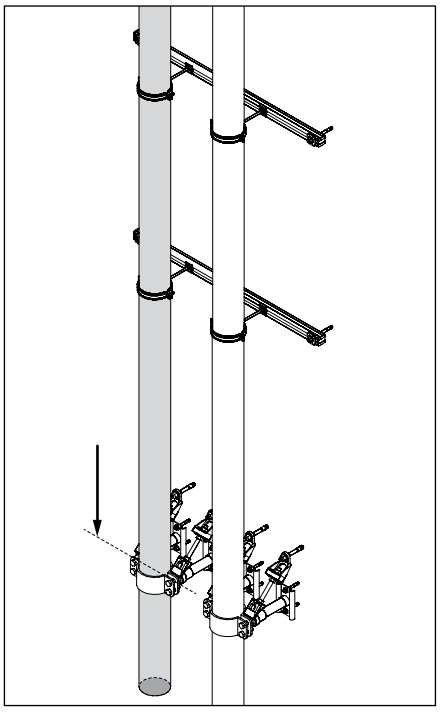
The major challenge when fastening pipes is to successfully transfer the weight of the pipe to the base material while preventing or reducing noise transmission (vibration, flow noises...).

The weight may act as follows:



It is also necessary to find a balance between the classical solution and the need for loadbearing fixed points.





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Design guidelines – examples

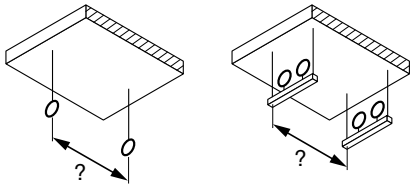
1. Spacing

Distance between pipe supports

a. Usual spacing - every 2.5 - 3 m (might not be suitable for all plastic pipes)

b. Max. spacing - (spacing of common supports defined by pipe with shortest max. spacing)

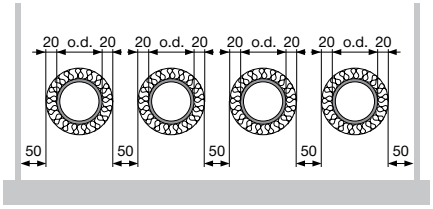


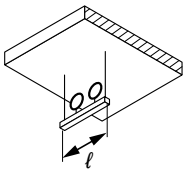


2. Span

Span of the pipe support (length of the channel).

Taking into account all pipe outer diameters, insulation thicknesses and manipulation space e.g. for welding and wrapping the insulation around the pipe.



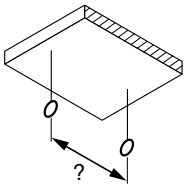


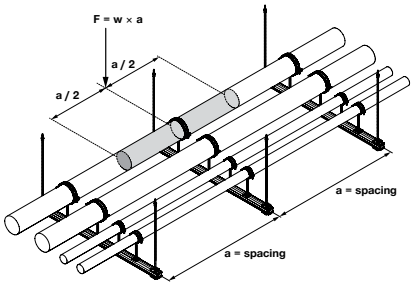
3. Loads

Loads acting on the pipe support are based on the weight of 1 meter of pipe multiplied by the spacing.

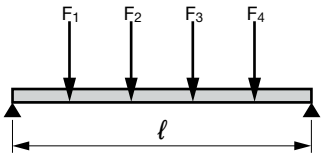


F = w (weight in kg/m) x a (spacing in m)





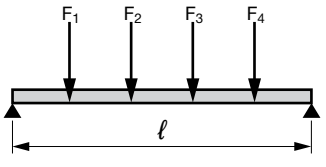
4. Defining the loading case

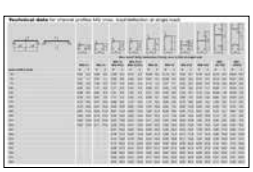


5. Finding (calculating) the appropriate channel size

Simple on-site assessment:

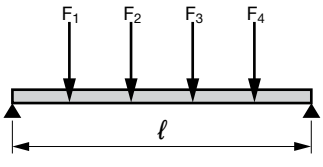
Simplifying the case and using various selection tables from the catalog.





Precise calculation:

Using the channel module in the PROFIS Installation PC application for evaluation of the channel.

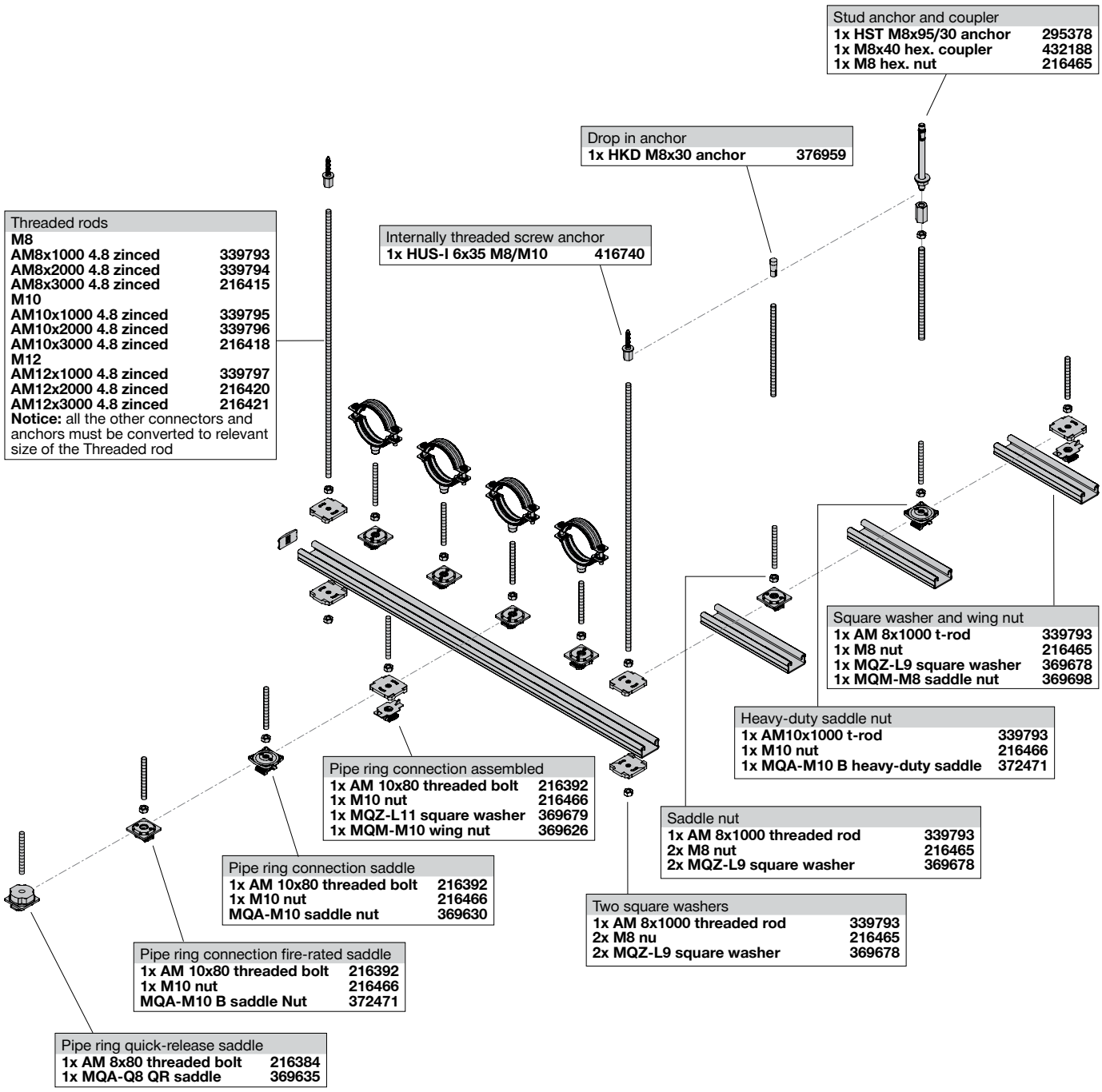




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Trapeze On Concrete - Options



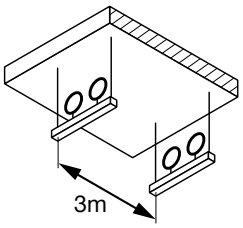
Application description	Application	Product lines	Base material
Trapeze	1	MQ System	Concrete
General comments		Anchors	
▪ Application subject to vertical loads caused by weight of the pipes ▪ Application not subject to any thermal expansion or any other 3D loads			

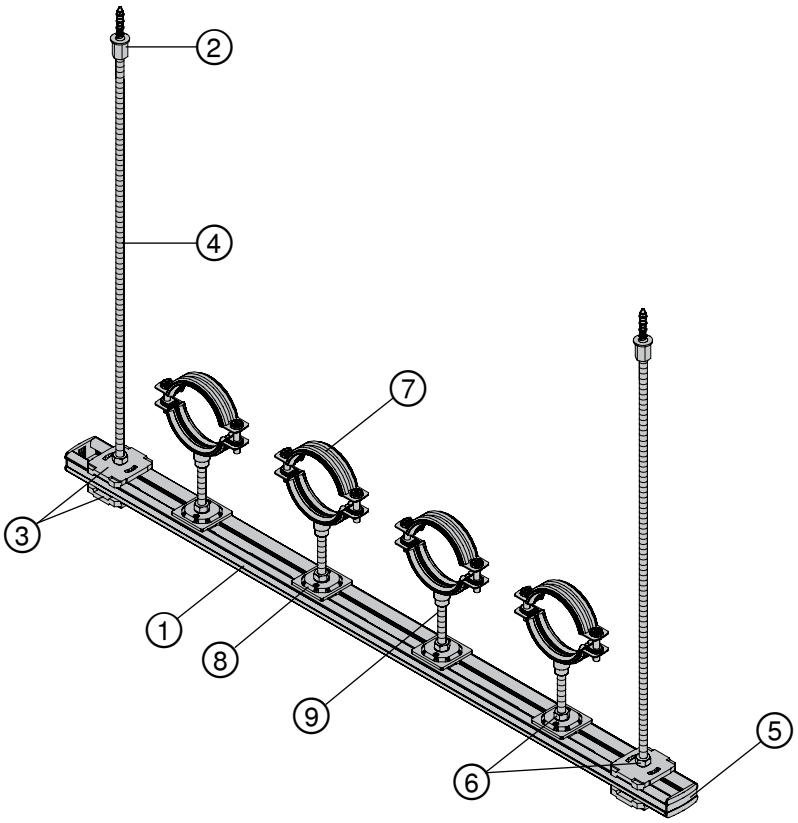
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Plumbing Application - Trapeze

Type P-T1

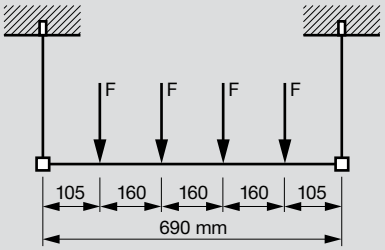
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50mm



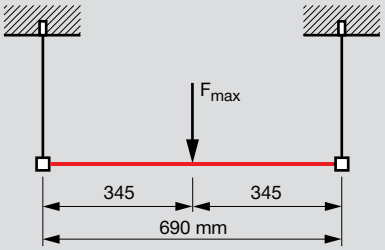


Additional loading capacity limits

This particular case
F = 0.20 kN rec. loads



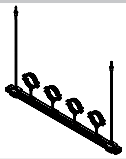
F_{max} = 0.90 kN rec. load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3M channel**	1	0.79
②	**416740**	**HUS-I 6x35 M8/M10 screw anchor**	2	-
③	**369678**	**MQZ-L9 square washer**	4	-
④	**339793**	**AM8x1000 4.8 threaded rod**	2	0.53
⑤	**370598**	**MQZ-E21 plastic endcap**	2	-
⑥	**216465**	**M8 hex. nut**	8	-
⑦	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	-
⑧	**369629**	**MQA-M8 saddle nut**	4	-
⑨	**216384**	**AM8x80 4.6 threaded bolt**	4	-

Application description	In PROFIS as	Application
Plumbing - trapeze	P-T1	1



Base material	Concrete
Product line	MQ System
Capacity limit	4x DN50 steel

General comments

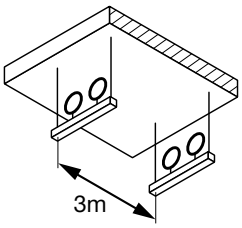
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

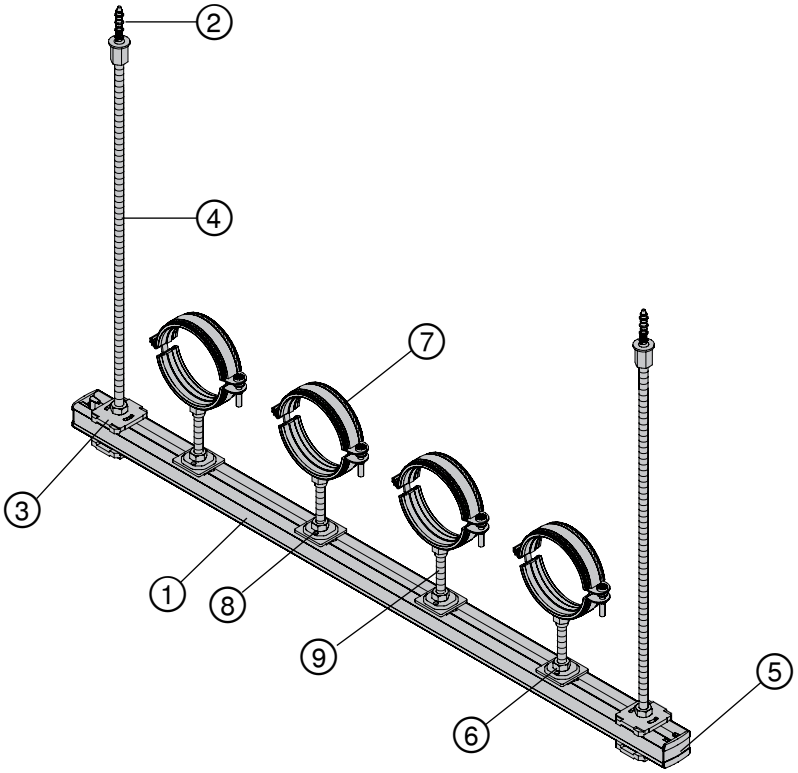
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Plumbing Application - Trapeze

Type P-T2

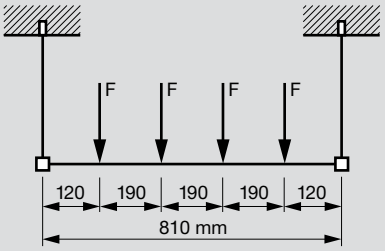
- Limited to max. 4x DN 80 (O.D. 89.1 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



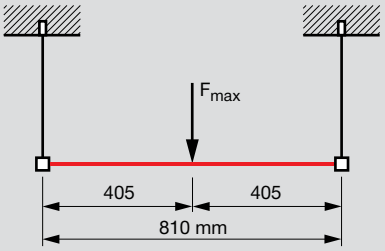


Additional loading capacity limits

This particular case
F = 0.37 kN recommended loads



Max. F = 1.45 kN recommended load



Bill of materials

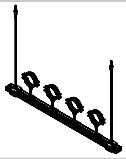
Reference	Item no.	Description	Piece	Length (m)
①	**369589**	**MQ-31 3M channel**	1	0.91
②	**416740**	**HUS-I 6x35 M8/M10 screw anchor**	2	-
③	**369679**	**MQZ-L11 square washer**	4	-
④	**339795**	**AM10x1000 threaded rod**	2	0.54
⑤	**369686**	**MQZ-E31 plastic end cap**	2	-
⑥	**216466**	**M10 hexagon nut**	8	-
⑦	**335692**	**MPN-RC 3“ B pipe ring**	4	-
⑧	**369630**	**MQA-M10 saddle nut**	4	-
⑨	**216392**	**AM10x80 4.6 threaded bolt**	4	0.15

Application description	In PROFIS as
Plumbing - trapeze	P-T2

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

Application 1



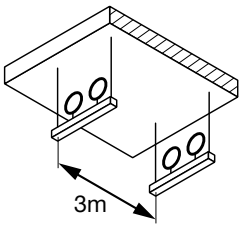
Base material	Concrete
Product line	MQ System
Capacity limit	4x DN80 steel

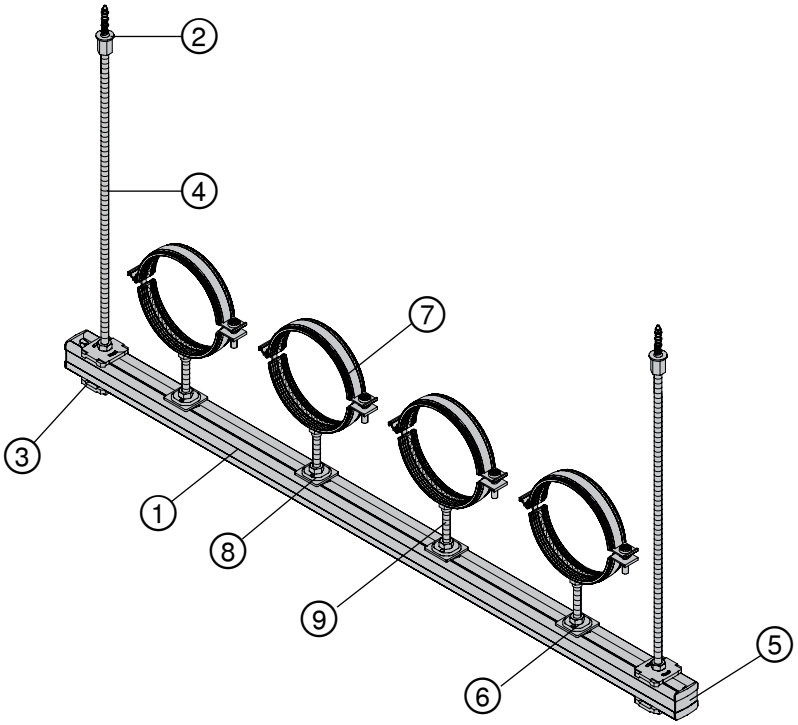
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Plumbing Application - Trapeze

Type P-T3

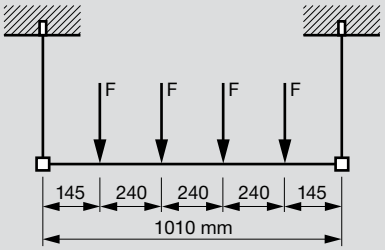
- Limited to max. 4x DN 125 (O.D. 133 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



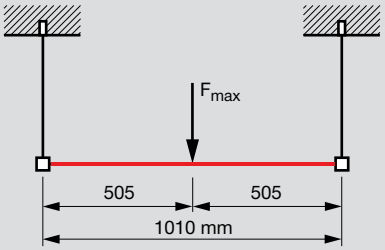


Additional loading capacity limits

This particular case
F = 0.75 kN recommended loads



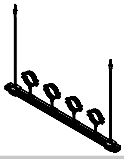
Max. F = 1.75 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369591**	**MQ-41 3M channel**	1	1.11
②	**416740**	**HUS-I 6x35 M8/M10 screw anchor**	2	-
③	**369679**	**MQZ-L11 square washer**	4	-
④	**339795**	**AM10x1000 threaded rod**	2	0.54
⑤	**369685**	**MQZ-E41 plastic end cap**	2	-
⑥	**216466**	**M10 hexagon nut**	8	-
⑦	**335702**	**MPN-RC 133 B pipe ring**	4	-
⑧	**369630**	**MQA-M10 saddle nut**	4	-
⑨	**216392**	**AM10x80 4.6 threaded bolt**	4	0.18

Application description	In PROFIS as	Application
Plumbing - trapeze	P-T3	1



Base material	Concrete
Product line	MQ System
Capacity limit	4x DN125 steel

General comments

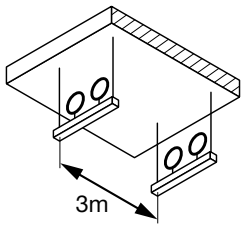
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

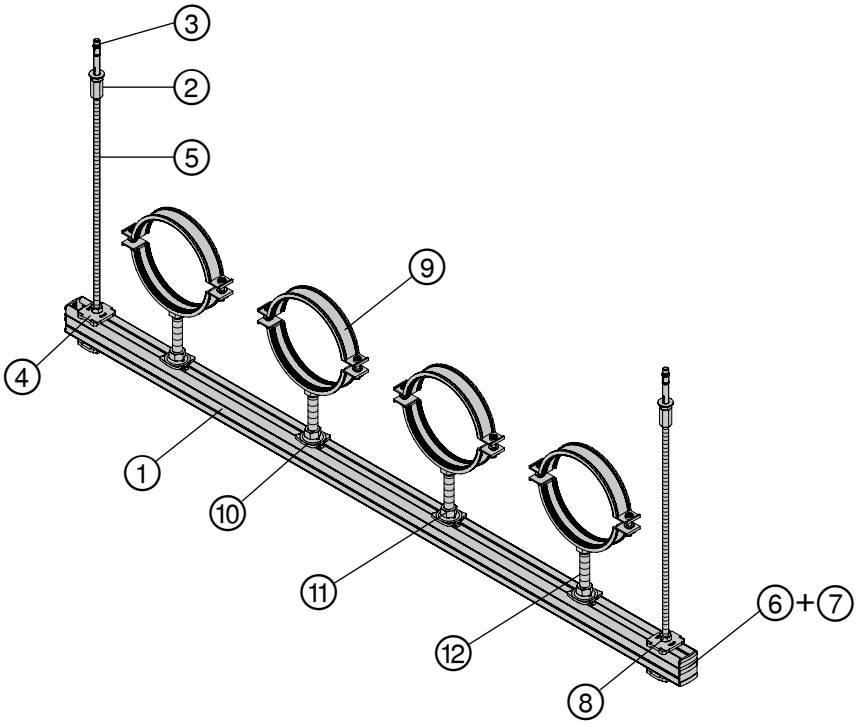
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Plumbing Application - Trapeze

Type P-T4

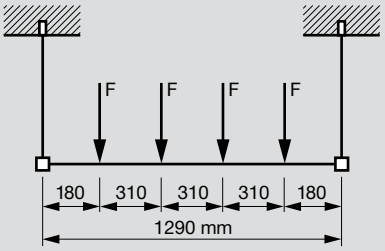
- Limited to max. 4x DN 150 (O.D. 159 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 50 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



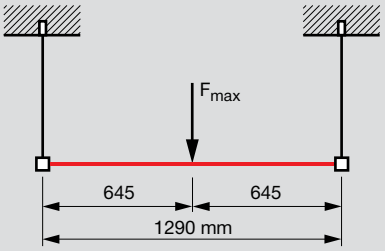


Additional loading capacity limits

This particular case
F = 1.08 kN recommended loads



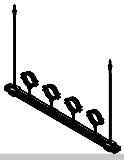
Max. F = 2.30 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369598**	**MQ-52 6M channel**	1	1.4
②	**216704**	**M10x30 coupler**	2	0
③	**371584**	**HST M10X90/10 stud anchor**	2	0
④	**369679**	**MQZ-L11 square washer**	4	0
⑤	**339795**	**AM10x1000 threaded rod**	2	0.55
⑥	**370598**	**MQZ-E21 plastic end cap**	2	0
⑦	**369686**	**MQZ-E31 plastic end cap**	2	0
⑧	**216466**	**M10 hexagon nut**	4	0
⑨	**229087**	**MP-MI 159 C pipe ring**	4	0
⑩	**369632**	**MQA-M16-B saddle nut**	4	0
⑪	**216468**	**M16 hexagon nut**	4	0
⑫	**216422**	**AM16x1000 threaded rod**	4	0.22

Application description	In PROFIS as	Application
Plumbing - trapeze	P-T4	1



Base material	Concrete
Product line	MQ System
Capacity limit	4x DN150 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Trapeze On Steel - Options

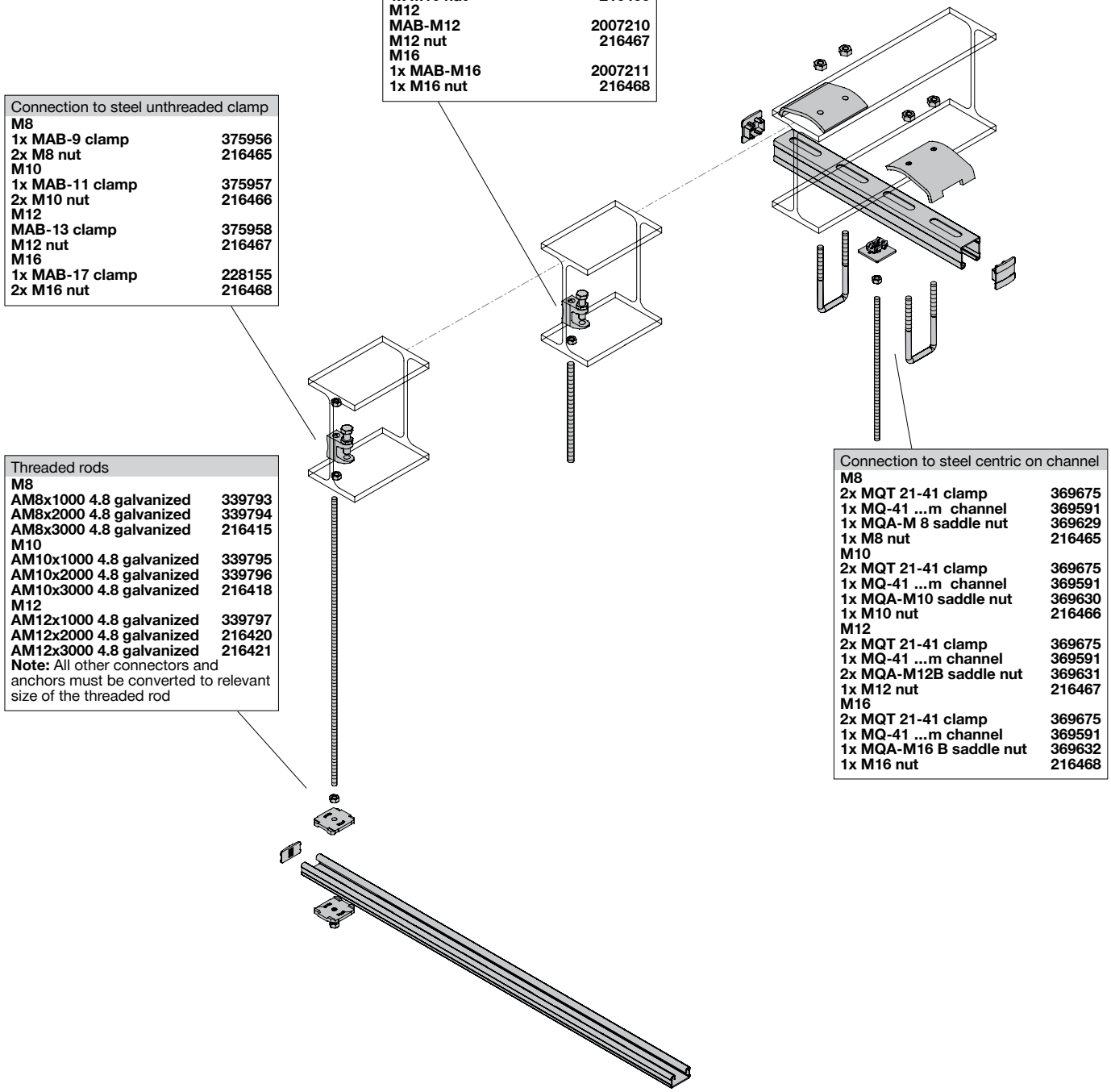
Connection to steel threaded clamp	
M8	
1x MAB-M8	**2006878**
1x M8 nut	**216465**
M10	
1x MAB-M10	**2006879**
1x M10 nut	**216466**
M12	
MAB-M12	**2007210**
M12 nut	**216467**
M16	
1x MAB-M16	**2007211**
1x M16 nut	**216468**

Connection to steel unthreaded clamp	
M8	
1x MAB-9 clamp	**375956**
2x M8 nut	**216465**
M10	
1x MAB-11 clamp	**375957**
2x M10 nut	**216466**
M12	
MAB-13 clamp	**375958**
M12 nut	**216467**
M16	
1x MAB-17 clamp	**228155**
2x M16 nut	**216468**

Threaded rods	
M8	
AM8x1000 4.8 galvanized	**339793**
AM8x2000 4.8 galvanized	**339794**
AM8x3000 4.8 galvanized	**216415**
M10	
AM10x1000 4.8 galvanized	**339795**
AM10x2000 4.8 galvanized	**339796**
AM10x3000 4.8 galvanized	**216418**
M12	
AM12x1000 4.8 galvanized	**339797**
AM12x2000 4.8 galvanized	**216420**
AM12x3000 4.8 galvanized	**216421**

Note: All other connectors and anchors must be converted to relevant size of the threaded rod

Connection to steel centric on channel	
M8	
2x MQT 21-41 clamp	**369675**
1x MQ-41 ...m channel	**369591**
1x MQA-M 8 saddle nut	**369629**
1x M8 nut	**216465**
M10	
2x MQT 21-41 clamp	**369675**
1x MQ-41 ...m channel	**369591**
1x MQA-M10 saddle nut	**369630**
1x M10 nut	**216466**
M12	
2x MQT 21-41 clamp	**369675**
1x MQ-41 ...m channel	**369591**
2x MQA-M12B saddle nut	**369631**
1x M12 nut	**216467**
M16	
2x MQT 21-41 clamp	**369675**
1x MQ-41 ...m channel	**369591**
1x MQA-M16 B saddle nut	**369632**
1x M16 nut	**216468**



Application description	Application	Product lines	Base material
Trapeze	1	MQ System	Steel
		Clamps	

General comments

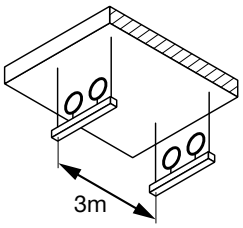
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

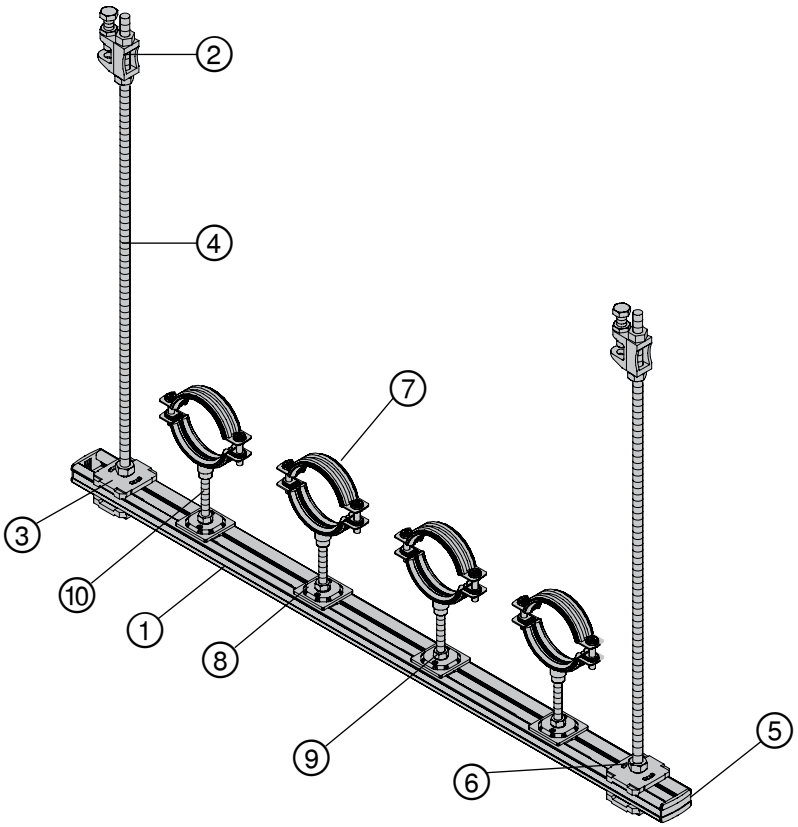
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Plumbing Application - Trapeze

Type P-T20

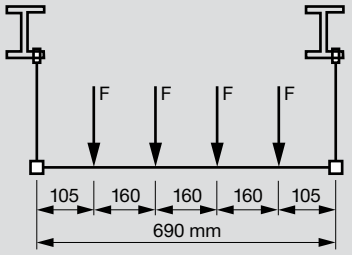
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



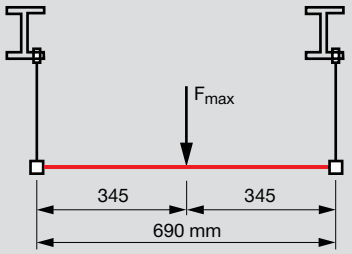


Additional loading capacity limits

This particular case
F = 0.20 kN recommended loads



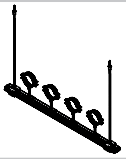
Max. F = 0.9 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3M channel**	1	0.79
②	**375957**	**MAB-11 beam clamp**	2	0
③	**369679**	**MQZ-L11 square washer**	4	0
④	**339796**	**AM10x2000 threaded rod**	2	0.59
⑤	**370598**	**MQZ-E21 plastic end cap**	2	0
⑥	**216466**	**M10 hexagon nut**	8	0
⑦	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑧	**369629**	**MQA-M8 saddle nut**	4	0
⑨	**216465**	**M8 hexagon nut**	4	0
⑩	**339793**	**AM8x1000 threaded rod**	4	0.11

Application description	In PROFIS as	Application
Plumbing - trapeze	P-T20	1



Base material	Steel
Product line	MQ System
Capacity limit	4x DN50 steel

General comments

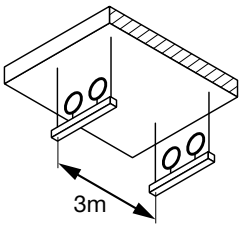
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

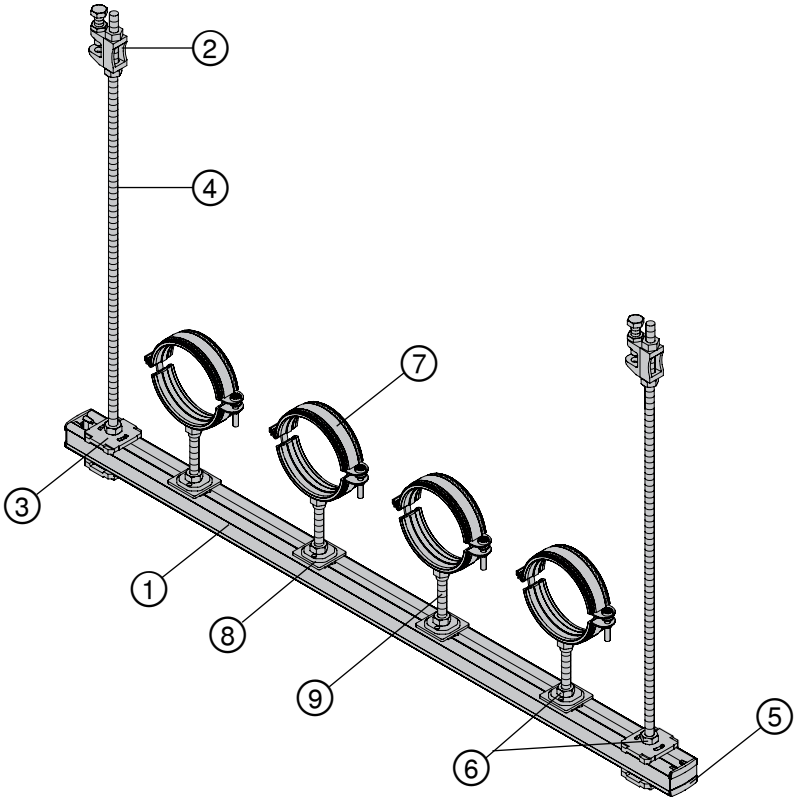
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Plumbing Application - Trapeze

Type P-T21

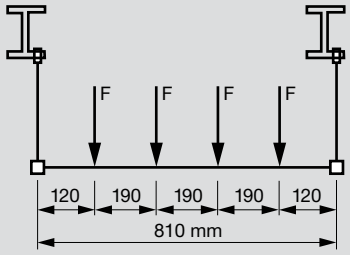
- Limited to max. 4x DN 80 (O.D. 89.1 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



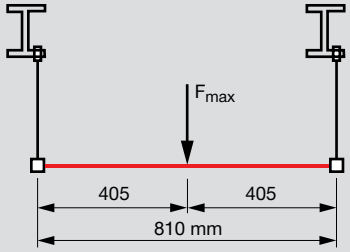


Additional loading capacity limits

This particular case
F = 0.37 kN recommended loads



Max. F = 1.45 kN recommended load



Bill of materials

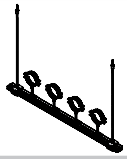
Reference	Item no.	Description	Piece	Length (m)
①	**369589**	**MQ-31 3M channel**	1	0.90
②	**375957**	**MAB-11 beam clamp**	2	0
③	**369679**	**MQZ-L11 square washer**	4	0
④	**339796**	**AM10x2000 threaded rod**	2	0.60
⑤	**369686**	**MQZ-E31 plastic end cap**	2	0
⑥	**216466**	**M10 hexagon nut**	12	0
⑦	**335692**	**MPN-RC 3" B pipe ring**	4	0
⑧	**369630**	**MQA-M10 saddle nut**	4	0
⑨	**339795**	**AM10x1000 threaded rod**	4	0.12

Application description	In PROFIS as
Plumbing - trapeze	P-T21

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

Application



1

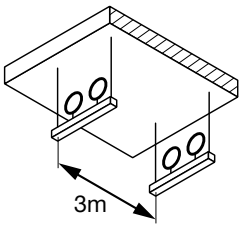
Base material	Steel
Product line	MQ System
Capacity limit	4x DN80 steel

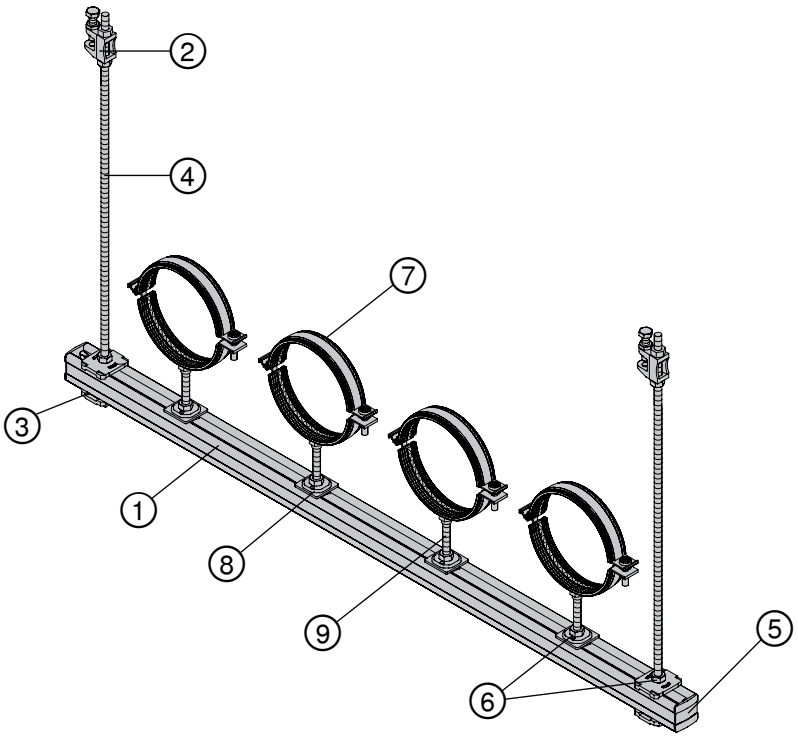
Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

Plumbing Application - Trapeze

Type P-T22

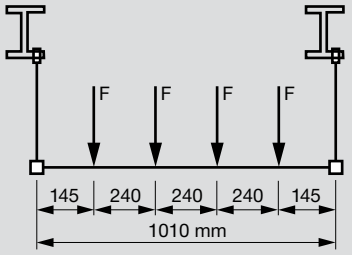
- Limited to max. 4x DN 125 (O.D. 133 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



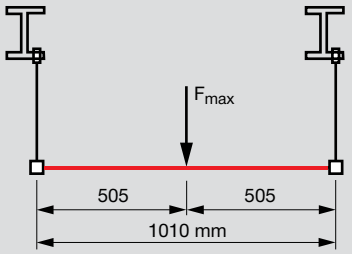


Additional loading capacity limits

This particular case
F = 0.75 kN recommended loads

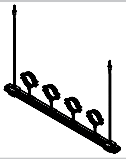


Max. F = 1.75 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369591**	**MQ-41 3M channel**	1	1.11
②	**375957**	**MAB-11 beam clamp**	2	0
③	**369679**	**MQZ-L11 square washer**	4	0
④	**339796**	**AM10x2000 threaded rod**	2	0.6
⑤	**369685**	**MQZ-E41 plastic end cap**	2	0
⑥	**216466**	**M10 hexagon nut**	12	0
⑦	**335702**	**MPN-RC 133 B pipe ring**	4	0
⑧	**369630**	**MQA-M10 saddle nut**	4	0
⑨	**216392**	**AM10x80 threaded bolt**	4	0.18

Application description	In PROFIS as	Application		
Plumbing - trapeze	P-T22	 1	Base material	Steel
			Product line	MQ System
			Capacity limit	4x DN125 steel

General comments

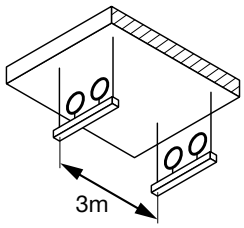
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

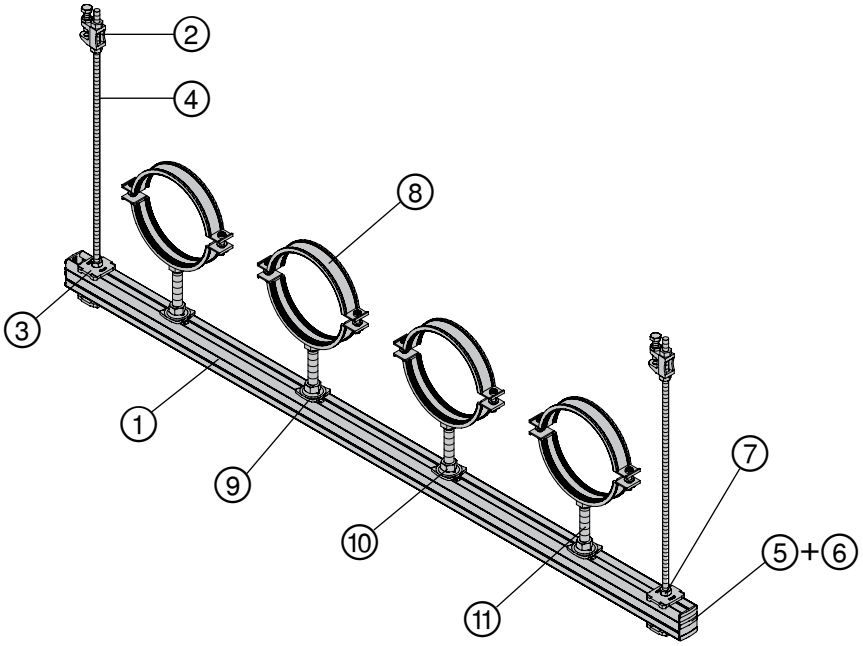
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Plumbing Application - Trapeze

Type P-T23

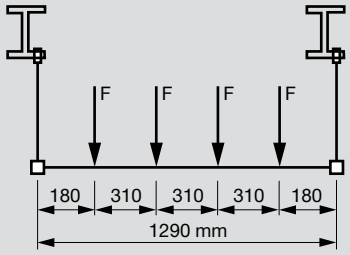
- Limited to max. 4x DN 150 (O.D. 159 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 50 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



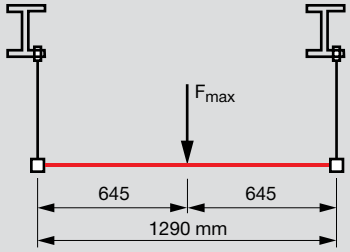


Additional loading capacity limits

This particular case
F = 0.75 kN recommended loads



Max. F = 1.75 kN recommended load



Bill of materials

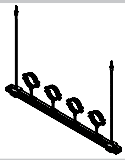
Reference	Item no.	Description	Piece	Length (m)
①	**369598**	**MQ-52 6M channel**	1	1.39
②	**375957**	**MAB-11 beam clamp**	2	0
③	**369679**	**MQZ-L11 square washer**	4	0
④	**339796**	**AM10x2000 threaded rod**	2	0.61
⑤	**370598**	**MQZ-E21 channel end cap**	2	0
⑥	**369686**	**MQZ-E31 channel end cap**	2	0
⑦	**216466**	**M10 hexagon nut**	8	0
⑧	**229087**	**MP-MI 159 C heavy-duty pipe ring**	4	0
⑨	**369632**	**MQA-M16-B saddle nut**	4	0
⑩	**216468**	**M16 hexagon nut**	4	0
⑪	**216422**	**AM16x1000 4.8 threaded rod**	4	0.19

Application description	In PROFIS as
Plumbing - trapeze	P-T23

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

Application



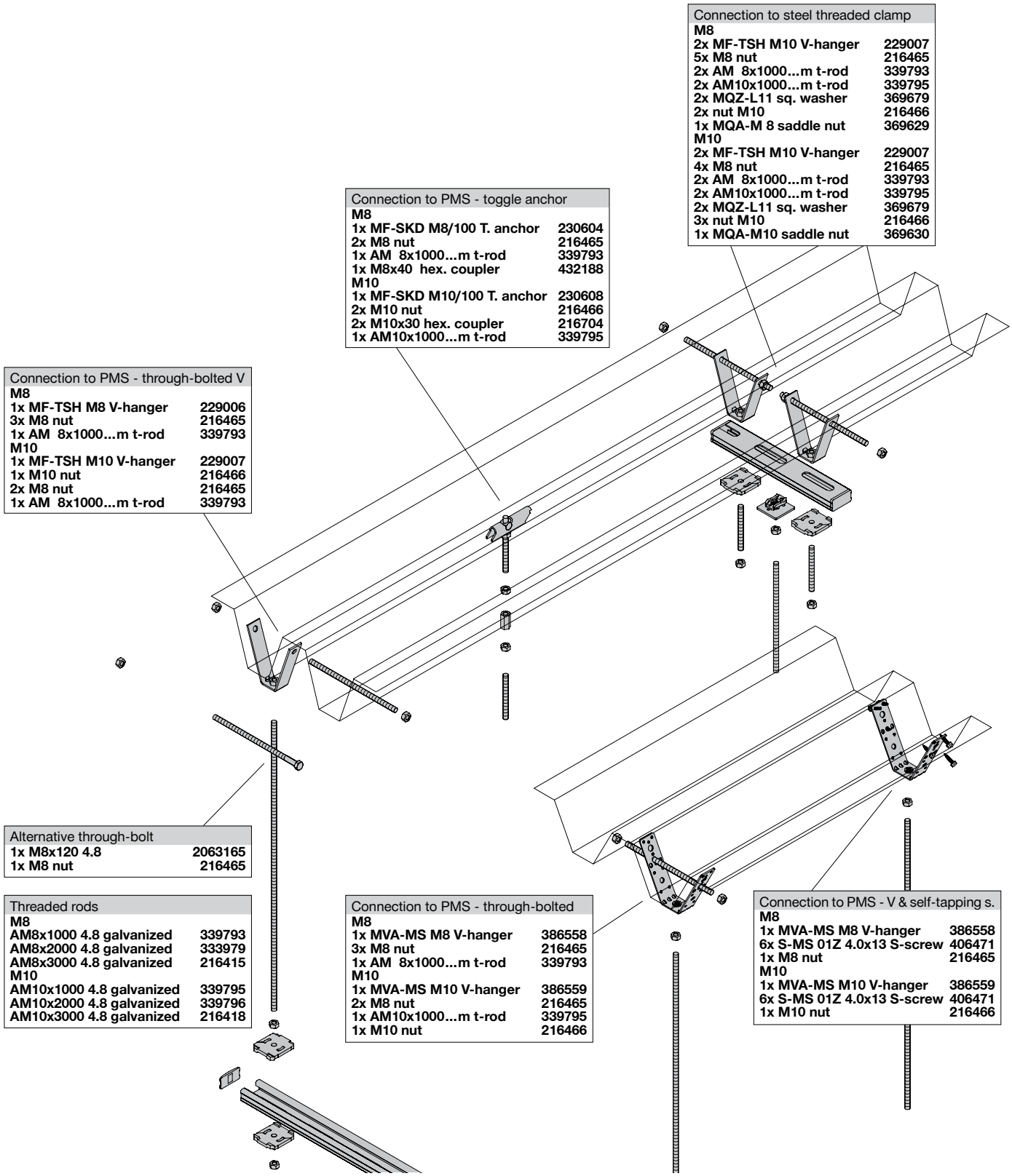
1

Base material	Steel
Product line	MQ System
Capacity limit	4x DN150 steel

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

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Trapeze On Profiled Metal Sheet - Options



Connection to steel threaded clamp	
M8	
2x MF-TSH M10 V-hanger	229007
5x M8 nut	216465
2x AM 8x1000...m t-rod	339793
2x AM10x1000...m t-rod	339795
2x MQZ-L11 sq. washer	369679
2x nut M10	216466
1x MQA-M 8 saddle nut	369629
M10	
2x MF-TSH M10 V-hanger	229007
4x M8 nut	216465
2x AM 8x1000...m t-rod	339793
2x AM10x1000...m t-rod	339795
2x MQZ-L11 sq. washer	369679
3x nut M10	216466
1x MQA-M10 saddle nut	369630

Connection to PMS - toggle anchor	
M8	
1x MF-SKD M8/100 T. anchor	230604
2x M8 nut	216465
1x AM 8x1000...m t-rod	339793
1x M8x40 hex. coupler	432188
M10	
1x MF-SKD M10/100 T. anchor	230608
2x M10 nut	216466
2x M10x30 hex. coupler	216704
1x AM10x1000...m t-rod	339795

Connection to PMS - through-bolted V	
M8	
1x MF-TSH M8 V-hanger	229006
3x M8 nut	216465
1x AM 8x1000...m t-rod	339793
M10	
1x MF-TSH M10 V-hanger	229007
1x M10 nut	216466
2x M8 nut	216465
1x AM 8x1000...m t-rod	339793

Alternative through-bolt	
1x M8x120 4.8	2063165
1x M8 nut	216465

Threaded rods	
M8	
AM8x1000 4.8 galvanized	339793
AM8x2000 4.8 galvanized	333979
AM8x3000 4.8 galvanized	216415
M10	
AM10x1000 4.8 galvanized	339795
AM10x2000 4.8 galvanized	339796
AM10x3000 4.8 galvanized	216418

Connection to PMS - through-bolted	
M8	
1x MVA-MS M8 V-hanger	386558
3x M8 nut	216465
1x AM 8x1000...m t-rod	339793
M10	
1x MVA-MS M10 V-hanger	386559
2x M8 nut	216465
1x AM10x1000...m t-rod	339795
1x M10 nut	216466

Connection to PMS - V & self-tapping s.	
M8	
1x MVA-MS M8 V-hanger	386558
6x S-MS 01Z 4.0x13 S-screw	406471
1x M8 nut	216465
M10	
1x MVA-MS M10 V-hanger	386559
6x S-MS 01Z 4.0x13 S-screw	406471
1x M10 nut	216466

Application description	Application	Product lines	Base material
Trapeze	1	MQ System	PMS
		V-hangers	
		Toggle anchors	

General comments

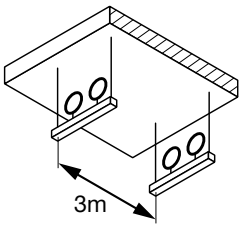
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

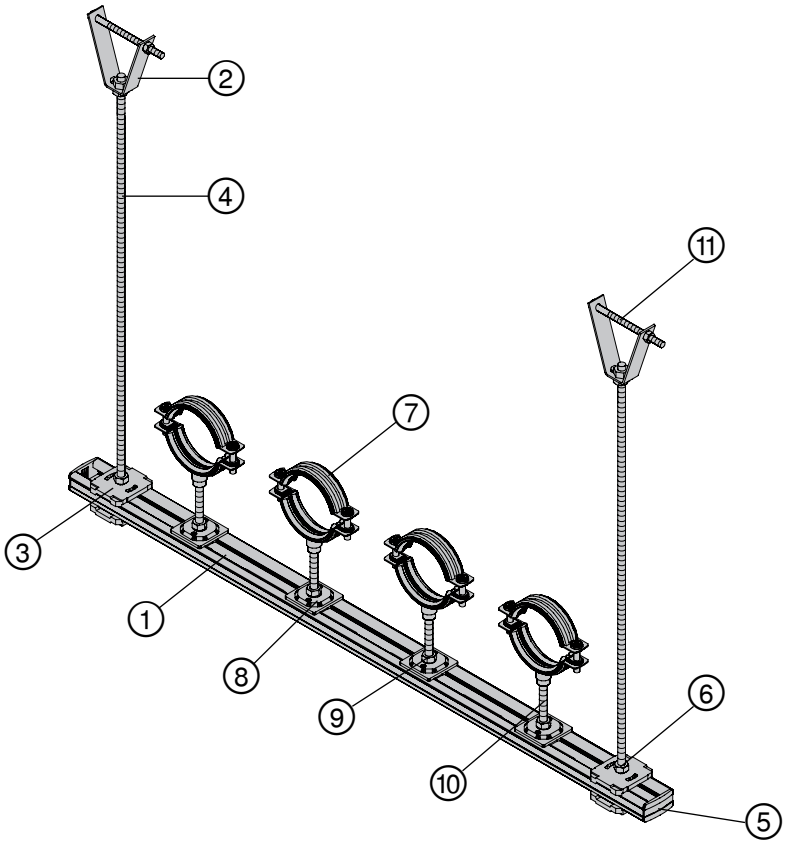
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Plumbing Application - Trapeze

Type P-T40

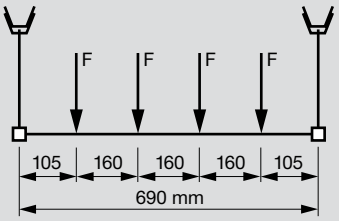
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



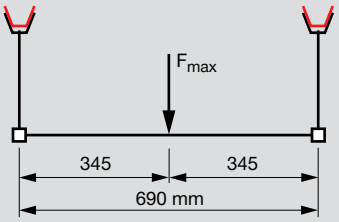


Additional loading capacity limits

This particular case
F = 0.20 kN recommended loads



Max. F = 0.9 kN recommended load



The limiting factor is almost always the spot loading capacity of the PMs approx. 0.8 kN.

Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3M channel**	1	0.79
②	**229007**	**MF-TSH M10 V-hanger**	2	0
③	**369679**	**MQZ-L11 square washer**	4	0
④	**339796**	**AM10x2000 threaded rod**	2	0.59
⑤	**370598**	**MQZ-E21 plastic end cap**	2	0
⑥	**216466**	**M10 hexagon nut**	6	0
⑦	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑧	**369629**	**MQA-M8 saddle nut**	4	0
⑨	**216465**	**M8 hexagon nut**	6	0
⑩	**339793**	**AM8x1000 threaded rod**	4	0.11
⑪	**2063165**	**M8x120 hex. head screw**	2	0

Application description	In PROFIS as	Application
Plumbing - trapeze	No reference	1

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

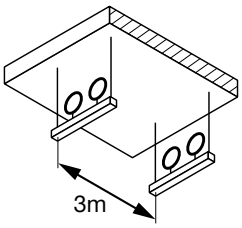
Base material	PMS
Product line	MQ System
Capacity limit	4x DN50 steel

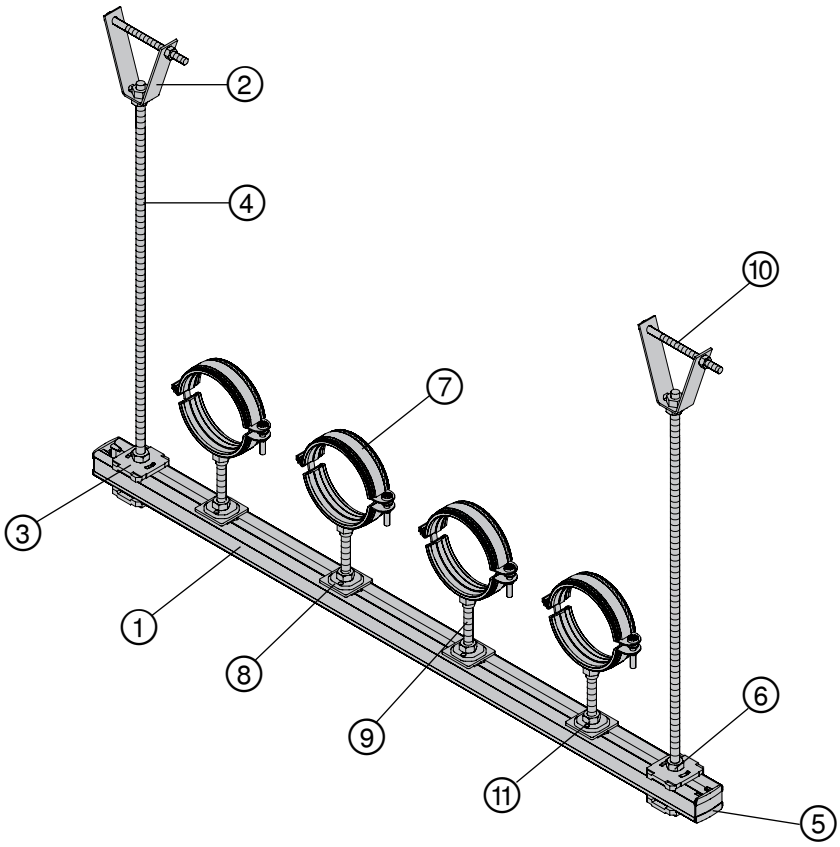
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Plumbing Application - Trapeze

Type P-T41

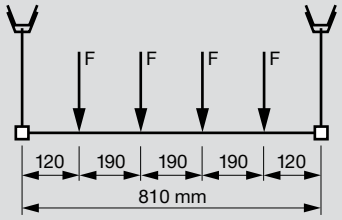
- Limited to max. 4x DN 80 (O.D. 89.1 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



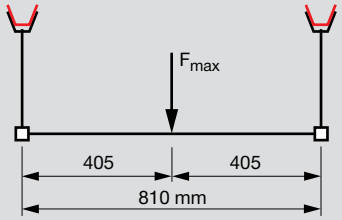


Additional loading capacity limits

This particular case
F = 0.37 kN recommended loads



Max. F = 1.45 kN recommended load

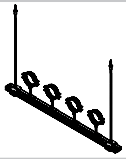


The limiting factor is almost always the spot loading capacity of the PMs approx. 0.8 kN.

Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369589**	**MQ-31 3M channel**	1	0.9
②	**229007**	**MF-TSH M10 V-hanger**	2	0
③	**369679**	**MQZ-L11 square washer**	4	0
④	**339796**	**AM10x2000 threaded rod**	2	0.6
⑤	**369686**	**MQZ-E31 plastic end cap**	2	0
⑥	**216466**	**M10 hexagon nut**	10	0
⑦	**335692**	**MPN-RC 3" B pipe ring**	4	0
⑧	**369630**	**MQA-M10 saddle nut**	4	0
⑨	**339795**	**AM10x1000 threaded rod**	4	0.12
⑩	**2063165**	**M8x120 hex. head screw**	2	0
⑪	**216465**	**M8 hexagon nut**	2	0

Application description	In PROFIS as	Application
Plumbing - trapeze	No reference	1



Base material	PMS
Product line	MQ System
Capacity limit	4x DN80 steel

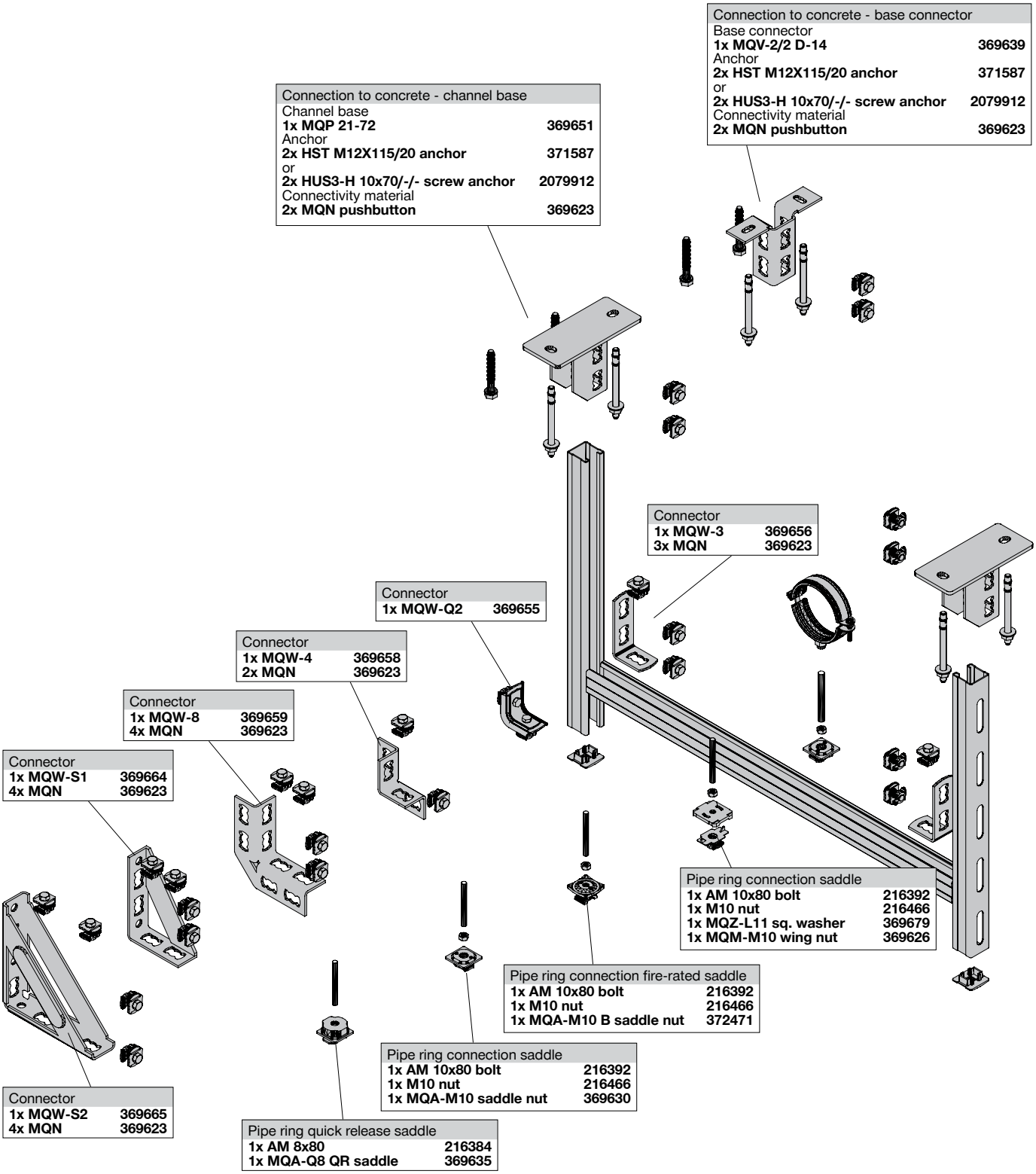
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Trapeze Frame On Concrete - Options



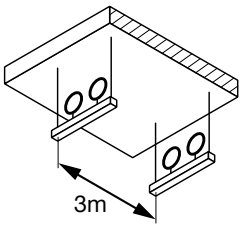
Application description	Application	Product lines	Base material
Trapeze frame	2	MQ System	Concrete
General comments		Anchors	
▪ Application subject to vertical loads caused by weight of the pipes ▪ Application not subject to any thermal expansion or any other 3D loads			

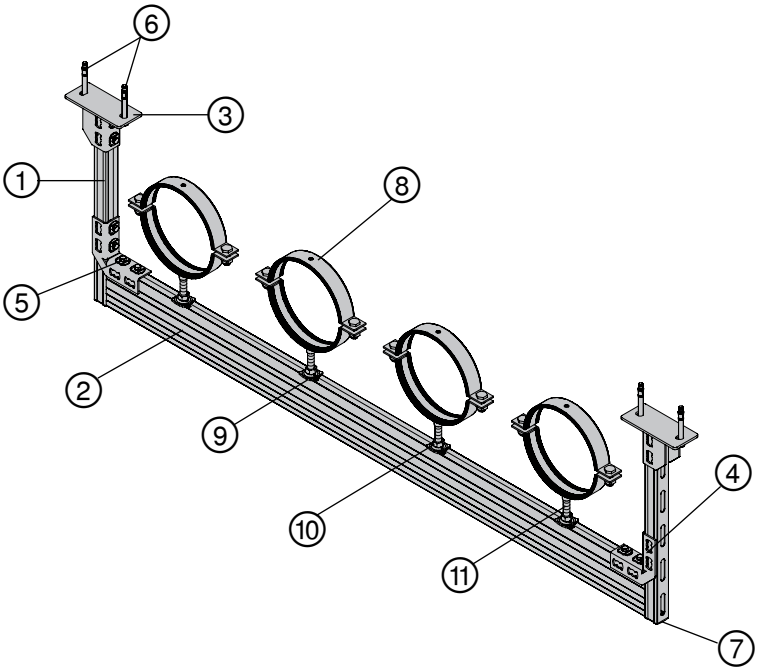
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Plumbing Application - Trapeze Frame

Type P-TF1

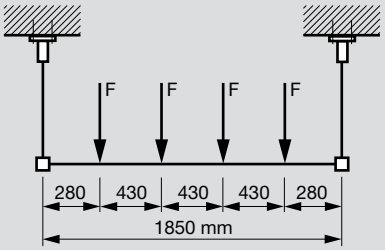
- Limited to max. 4x DN 200 (O.D. 219.1 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



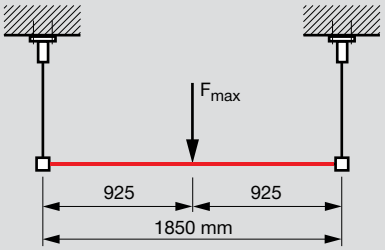


Additional loading capacity limits

This particular case
F = 2.08 kN recommended loads



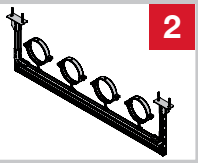
Max. F = 6.5 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369591**	**MQ-41 3M channel**	2	0.56
②	**369605**	**MQ-52-72 D 6M channel**	1	1.81
③	**369651**	**MQP-21-72 channel base**	2	0
④	**369659**	**MQW-8/90 8-hole angle**	2	0
⑤	**369623**	**MQN pushbutton**	12	0
⑥	**371587**	**HST M12X115/20 stud anchor**	4	0
⑦	**369685**	**MQZ-E41 plastic end cap**	2	0
⑧	**372238**	**MP-MXI 219 M16 pipe ring**	4	0
⑨	**369632**	**MQA-M16-B saddle nut**	4	0
⑩	**216468**	**M16 hexagon nut**	4	0
⑪	**216422**	**AM16x1000 threaded rod**	4	0.28

Application description	In PROFIS as	Application
Plumbing - trapeze frame	P-TF1	2



Base material	Concrete
Product line	MQ System
Capacity limit	4x DN200 steel

General comments

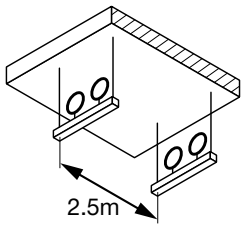
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

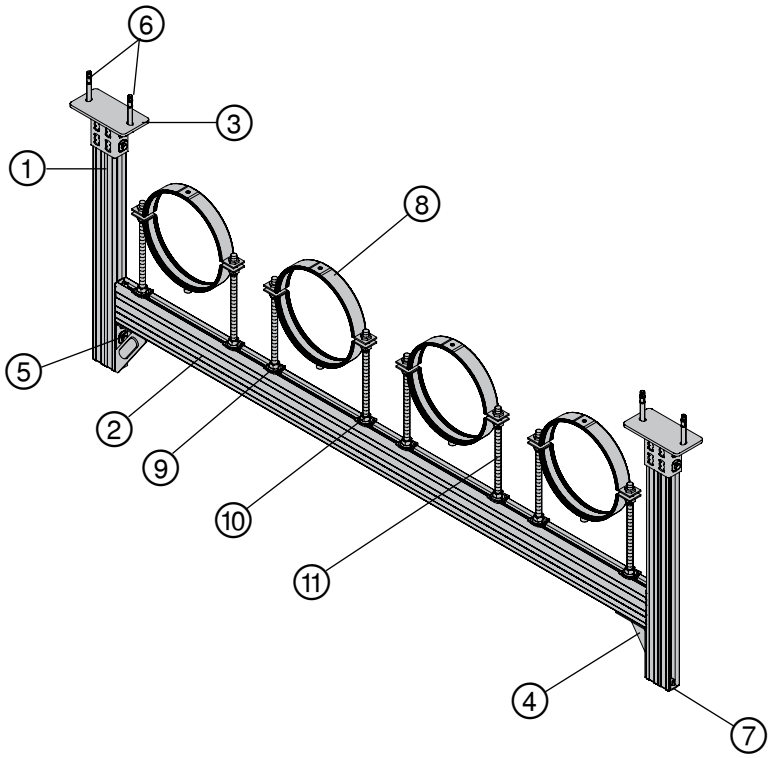
Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

Plumbing Application - Trapeze Frame

Type P-TF2

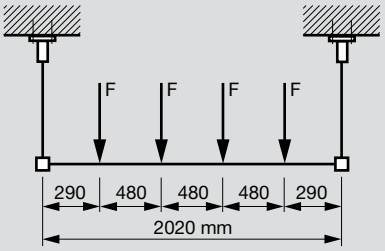
- Limited to max. 4x DN 250 (O.D. 273.3 mm) steel pipes
- Spacing - support distance 2.5 m
- Insulation rubber 80 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



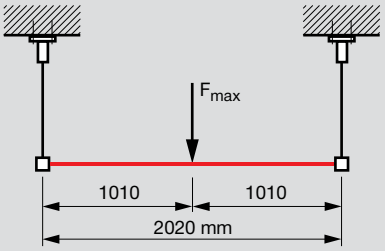


Additional loading capacity limits

This particular case
F = 2.08 kN recommended loads



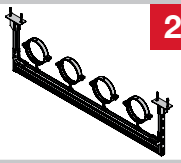
Max. F = 6.5 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369603**	**MQ-41 D 3m channel**	2	0.79
②	**369605**	**MQ-52-72 D 6M channel**	1	1.94
③	**369652**	**MQP-82 channel base**	2	0
④	**369664**	**MQW-S1 connector**	2	0
⑤	**369623**	**MQN pushbutton**	16	0
⑥	**371587**	**HST M12X115/20 stud anchor**	4	0
⑦	**369685**	**MQZ-E41 plastic end cap**	4	0
⑧	**372240**	**MP-MXI 267/274 M16 pipe ring**	4	0
⑨	**369632**	**MQA-M16-B saddle nut**	8	0
⑩	**216468**	**M16 hexagon nut**	8	0
⑪	**216422**	**AM16x1000 threaded rod**	8	0.28

Application description	In PROFIS as	Application
Plumbing - trapeze frame	P-TF2	2



Base material	Concrete
Product line	MQ System
Capacity limit	4x DN250 steel

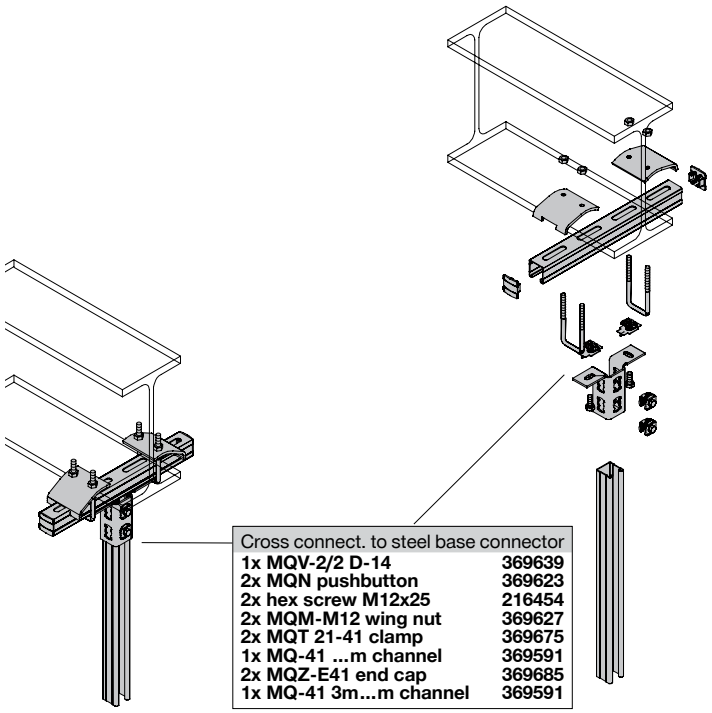
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

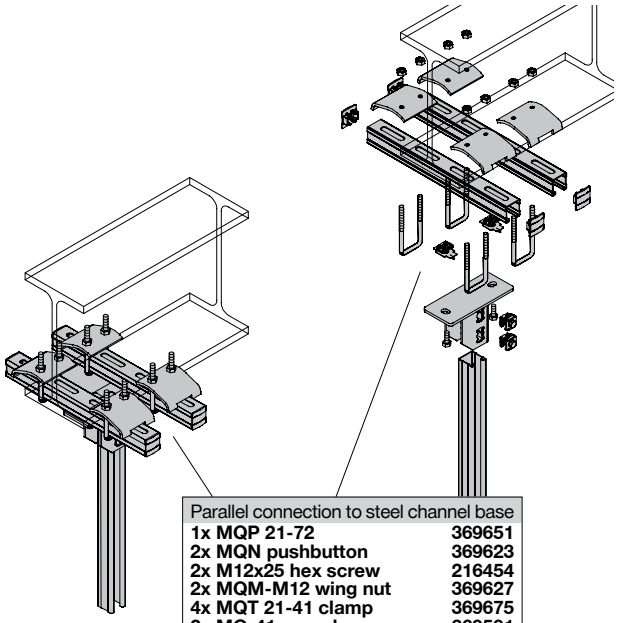
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Trapeze Frame On Steel - Options 1



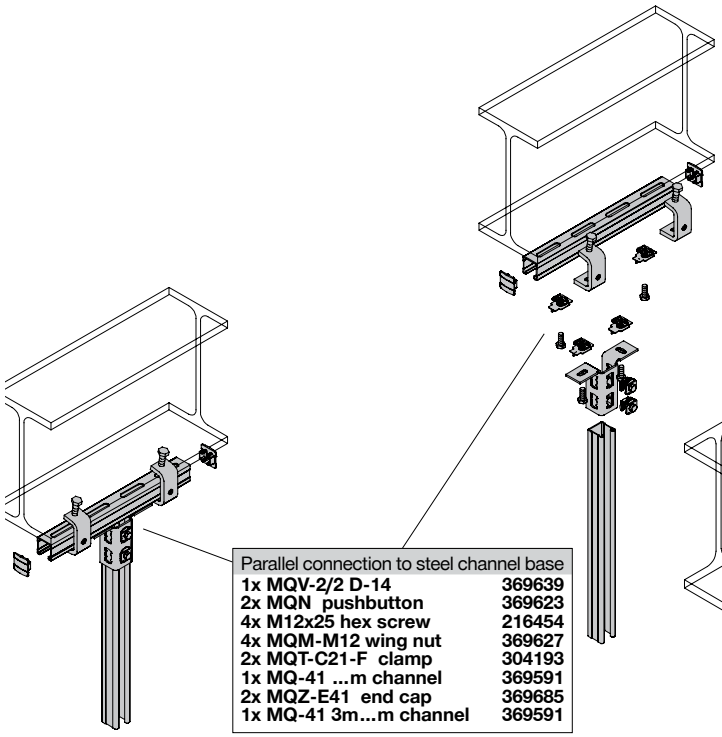
Cross connect. to steel base connector

1x MQV-2/2 D-14	369639
2x MQN pushbutton	369623
2x hex screw M12x25	216454
2x MQM-M12 wing nut	369627
2x MQT 21-41 clamp	369675
1x MQ-41 ...m channel	369591
2x MQZ-E41 end cap	369685
1x MQ-41 3m...m channel	369591



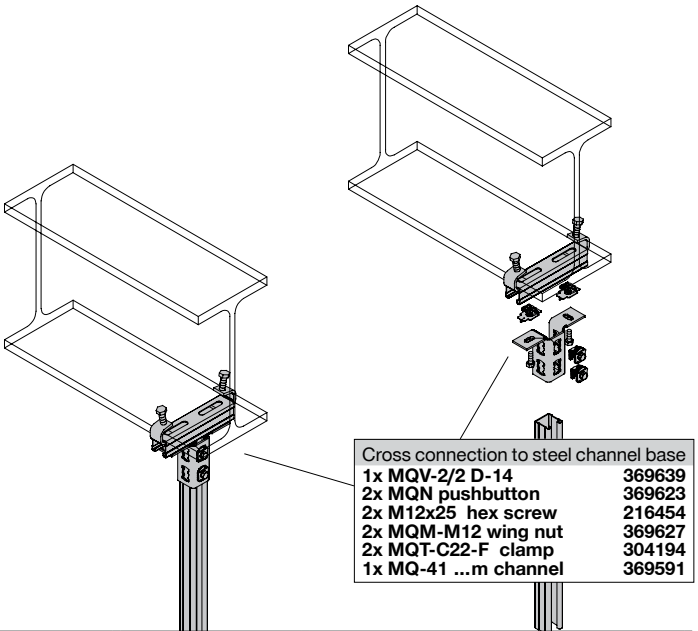
Parallel connection to steel channel base

1x MQP 21-72	369651
2x MQN pushbutton	369623
2x M12x25 hex screw	216454
2x MQM-M12 wing nut	369627
4x MQT 21-41 clamp	369675
2x MQ-41 ...m channe	369591
4x MQZ-E41 end cap	369685
1x MQ-41 3m...m channel	369591



Parallel connection to steel channel base

1x MQV-2/2 D-14	369639
2x MQN pushbutton	369623
4x M12x25 hex screw	216454
4x MQM-M12 wing nut	369627
2x MQT-C21-F clamp	304193
1x MQ-41 ...m channel	369591
2x MQZ-E41 end cap	369685
1x MQ-41 3m...m channel	369591



Cross connection to steel channel base

1x MQV-2/2 D-14	369639
2x MQN pushbutton	369623
2x M12x25 hex screw	216454
2x MQM-M12 wing nut	369627
2x MQT-C22-F clamp	304194
1x MQ-41 ...m channel	369591

Application description	Application	Product lines	Base material
Trapeze frame	2	MQ System	Steel
		Clamps	

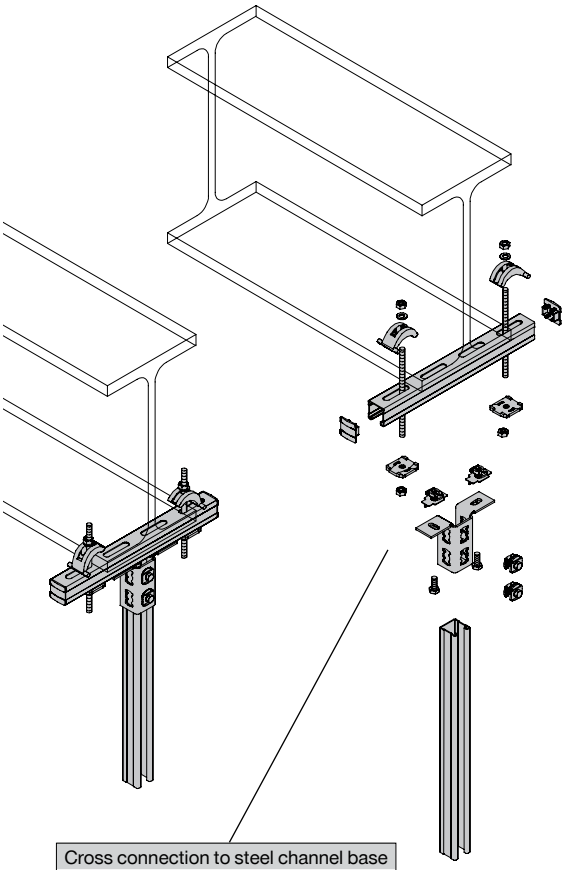
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

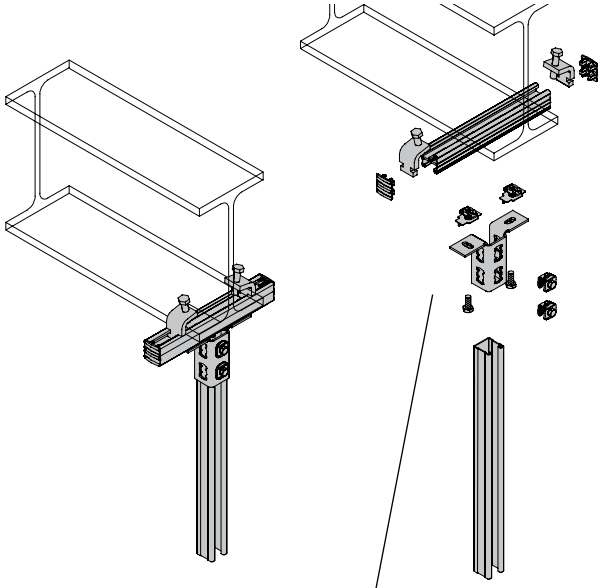
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Trapeze Frame On Steel - Options 2



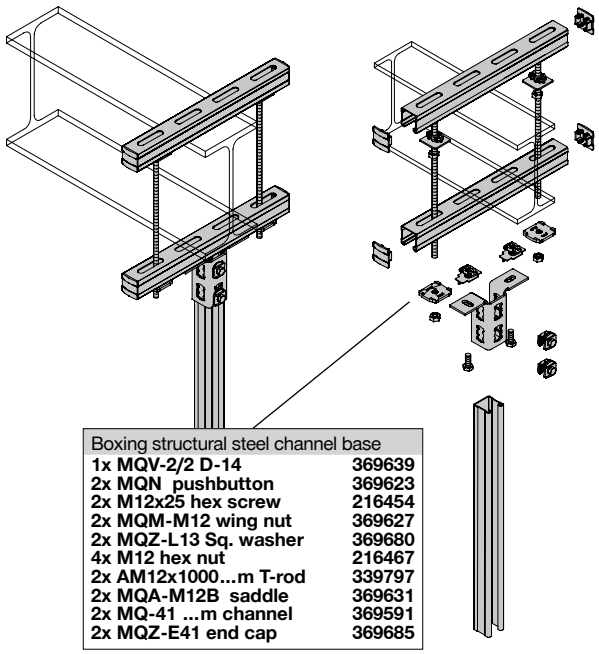
Cross connection to steel channel base

1x MQV-2/2 D-14	369639
2x MQN pushbutton	369623
2x M12x25 hex screw	216454
2x MQM-M12 wing nut	369627
2x MQZ-L13 Sq. washer	369680
4x M12 hex nut	216467
2x AM12x1000...m T-rod	339797
2x MQT-M12 clamp	284243
1x MQ-41 ...m channel	369591
2x MQZ-E41 end cap	369685



Cross connection to steel channel base

1x MQV-2/2 D-14	369639
2x MQN pushbutton	369623
2x M12x25 hex screw	216454
2x MQM-M12 wing nut	369627
2x MQT-C23-F clamp	304195
1x MQ-21D ...m channel	369601
4x MQZ-E21 end cap	370598



Boxing structural steel channel base

1x MQV-2/2 D-14	369639
2x MQN pushbutton	369623
2x M12x25 hex screw	216454
2x MQM-M12 wing nut	369627
2x MQZ-L13 Sq. washer	369680
4x M12 hex nut	216467
2x AM12x1000...m T-rod	339797
2x MQA-M12B saddle	369631
2x MQ-41 ...m channel	369591
2x MQZ-E41 end cap	369685

Application description	Application	Product lines	Base material
Trapeze frame	2	MQ System	Steel
		Clamps	

General comments

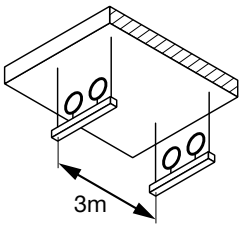
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

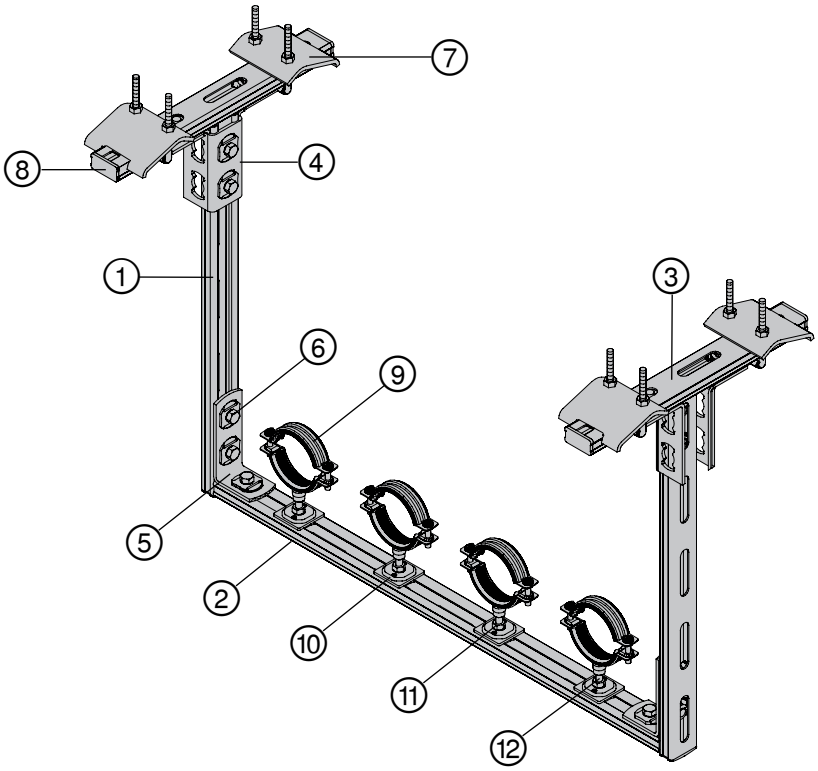
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Plumbing Application - Trapeze Frame

Type P-TF20

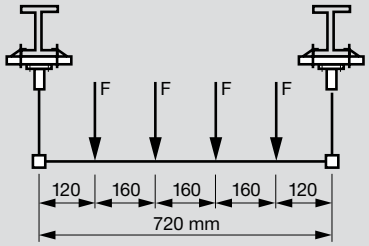
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



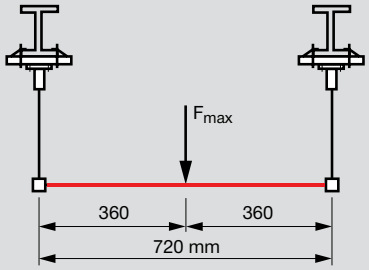


Additional loading capacity limits

This particular case
F = 0.2 kN recommended loads



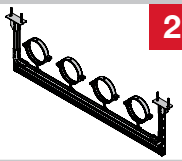
Max. F = 0.82 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3m channel**	2	0.50
②	**369584**	**MQ-21 3m channel**	1	0.70
③	**369584**	**MQ-21 3m channel**	2	0.35
④	**369638**	**MQV-2/2 D connector**	2	0
⑤	**369656**	**MQW-3 3-hole angle**	2	0
⑥	**369623**	**MQN pushbutton**	14	0
⑦	**369651**	**MQP-21-72 beam clamp**	4	0
⑧	**370598**	**MQZ-E21 plastic end cap**	6	0
⑨	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑩	**369629**	**MQA-M8 saddle nut**	4	0
⑪	**216465**	**M8 hexagon nut**	4	0
⑫	**216384**	**AM8x80 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - trapeze frame	No reference	2



Base material	Steel
Product line	MQ System
Capacity limit	4x DN50 steel

General comments

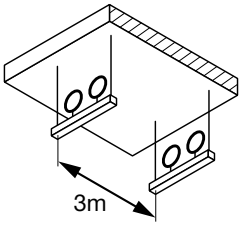
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

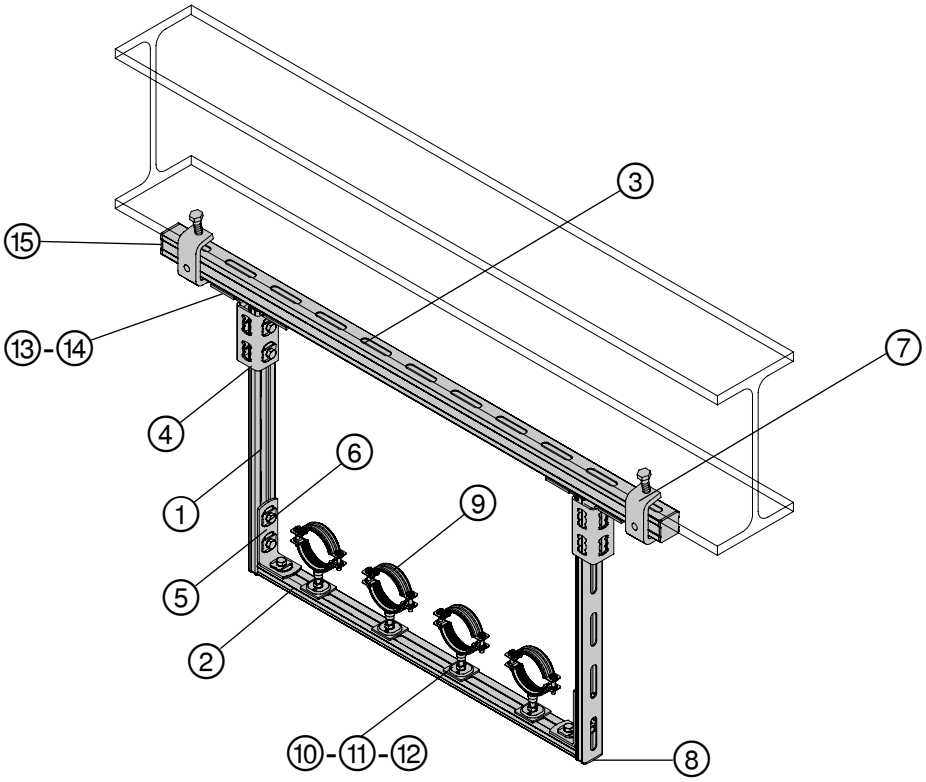
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Plumbing Application - Trapeze Frame

Type P-TF21

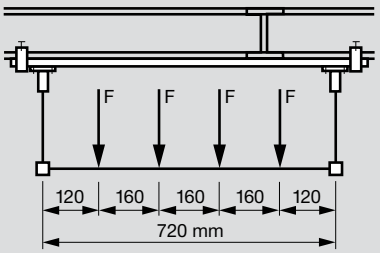
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



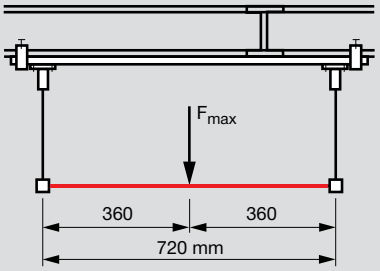


Additional loading capacity limits

This particular case
F = 0.2 kN recommended loads



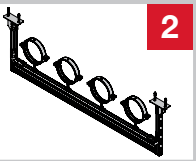
Max. F = 0.82 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3m channel**	2	0.50
②	**369584**	**MQ-21 3m channel**	1	0.70
③	**369591**	**MQ-41 3m channel**	1	1.1
④	**369638**	**MQV-2/2 D connector**	2	0
⑤	**369656**	**MQW-3 3-hole angle**	2	0
⑥	**369623**	**MQN pushbutton**	14	0
⑦	**304193**	**MQT-C21-F beam clamp**	2	0
⑧	**370598**	**MQZ-E21 plastic end cap**	2	0
⑨	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑩	**369629**	**MQA-M8 saddle nut**	4	0
⑪	**216465**	**M8 hexagon nut**	4	0
⑫	**216384**	**AM8x80 threaded bolt**	4	0
⑬	**369627**	**MQM-M12 wing nut**	2	0
⑭	**216454**	**M12x25 hex screw**	2	0
⑮	**369685**	**MQZ-E41 plastic end cap**	2	0

Application description	In PROFIS as	Application
Plumbing - trapeze frame	No reference	2



Base material	Steel
Product line	MQ System
Capacity limit	4x DN50 steel

General comments

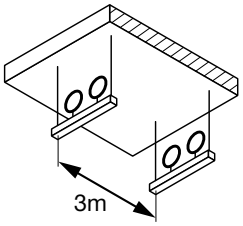
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

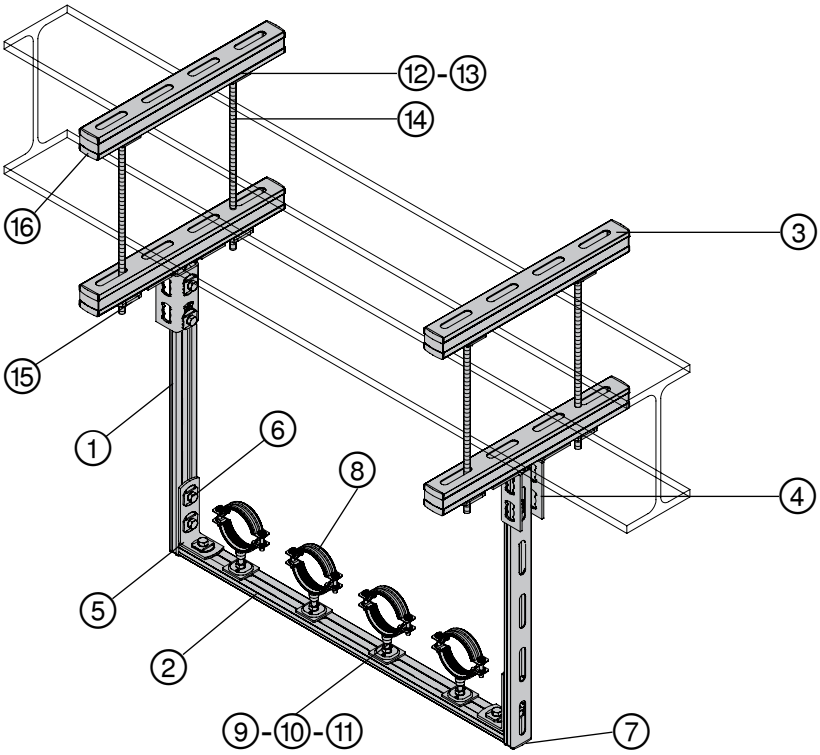
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Plumbing Application - Trapeze Frame

Type P-TF22

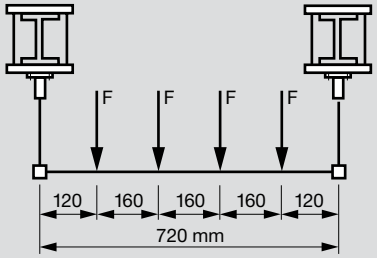
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm
- Manipulation space between the pipe / Insulation surfaces 50 mm



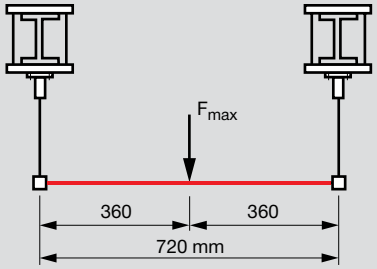


Additional loading capacity limits

This particular case
F = 0.2 kN recommended loads



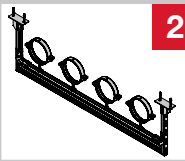
Max. F = 0.82 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3m channel**	2	0.50
②	**369584**	**MQ-21 3m channel**	1	0.70
③	**369591**	**MQ-41 3m channel**	4	0.4 depends on required distance
④	**369638**	**MQV-2/2 D connector**	2	0
⑤	**369656**	**MQW-3 3-hole angle**	2	0
⑥	**369623**	**MQN pushbutton**	14	0
⑦	**370598**	**MQZ-E21 plastic end cap**	2	0
⑧	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑨	**369629**	**MQA-M8 saddle nut**	4	0
⑩	**216465**	**M8 hexagon nut**	4	0
⑪	**216384**	**AM8x80 threaded bolt**	4	0
⑫	**369680**	**MQZ-L13 sq. washer**	4	0
⑬	**216487**	**M12 hex nut**	8	0
⑭	**339797**	**AM12x1000...m T-rod**	4	0.35 depends on required distance
⑮	**369631**	**MQA-M12B saddle**	4	0
⑯	**369685**	**MQZ-E41 plastic end cap**	8	0

Application description	In PROFIS as	Application
Plumbing - trapeze frame	No reference	2



Base material	Steel
Product line	MQ System
Capacity limit	4x DN50 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Single Fastening On Concrete - Options M8, M10, M12

M8 stud anchor	
1x HST M8x95/30 anchor	295378
1x M8x25 coupler	216703
1x M8 nut	216465

M8 screw anchor	
1xHUS-I 6x35 M8/M10 anchor	416740
1x M8 nut	216465

M8 drop-in anchor	
1x HKD M8x30 anchor	376959
1x A 8,4/16 washer	282850
1x M8 nut	216465

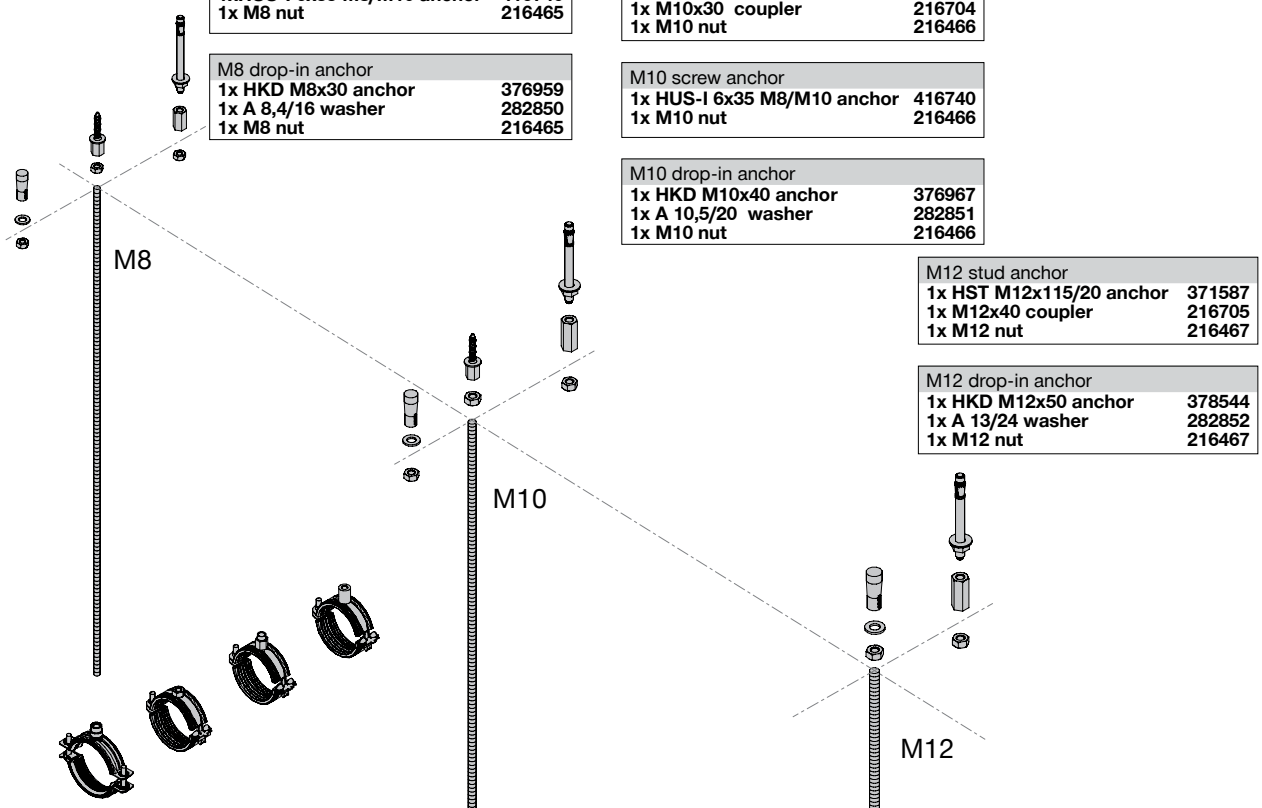
M10 stud anchor	
1x HST M10x90/10 anchor	371584
1x M10x30 coupler	216704
1x M10 nut	216466

M10 screw anchor	
1x HUS-I 6x35 M8/M10 anchor	416740
1x M10 nut	216466

M10 drop-in anchor	
1x HKD M10x40 anchor	376967
1x A 10,5/20 washer	282851
1x M10 nut	216466

M12 stud anchor	
1x HST M12x115/20 anchor	371587
1x M12x40 coupler	216705
1x M12 nut	216467

M12 drop-in anchor	
1x HKD M12x50 anchor	378544
1x A 13/24 washer	282852
1x M12 nut	216467



M8 pipe rings	
MP-LHI	Sizes 8mm- 2“
MP-HI	Sizes 8mm- 6“
MPN-LI	Sizes 8mm- 2“
MPN-RC	Sizes 8mm- 6“
MPN-QRC M8	Sizes 8mm- 2“

M8 threaded rods	
AM8x1000	339793
AM8x2000	339794
AM8x3000	216415

M10 pipe rings	
MP-HI	Sizes 8mm-6“
MPN-RC	Sizes 8mm-6“
MPN-QRC M10	Sizes 8mm-4“
MP-MI ..G	Sizes 3/8“ - 6“
MP-MXI M10/M12	Sizes 2“- 3“

M10 threaded rods	
AM10x1000	339795
AM10x2000	339796
AM10x3000	216418

M12 pipe rings	
MP-MI ..G	Sizes 3/8“ - 6“
MP-MXI M10/M12	Sizes 2“- 3“

M12 threaded rods	
AM12x1000	339797
AM12x2000	216420
AM12x3000	216421

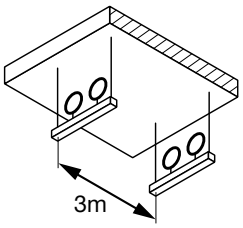
Application description	Application	Product lines	Base material
Single fastening application	3	Anchors	Concrete
General comments		Pipe rings	
▪ Application subject to vertical loads caused by weight of the pipes ▪ Application not subject to any thermal expansion or any other 3D loads			

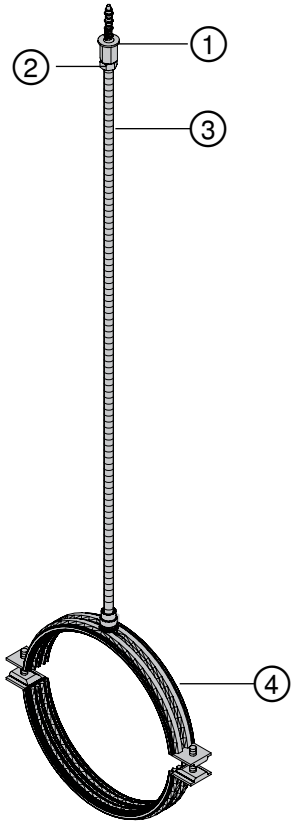
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Plumbing Application - Single Fastenting Point

Type P-SFP1

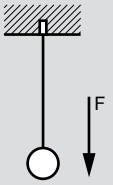
- Limited to max. 1x DN 150 (O.D. 168.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



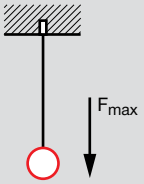


Additional loading capacity limits

This particular case
F = 1.15 kN recommended loads



Max. F = 1.5 kN recommended load
General limit of sizes larger than
DN 100 of MP-HI



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**416740**	**HUS-I 6x35 M8/M10 anchor**	1	0
②	**216465**	**M8 nut**	1	0
③	**339793**	**AM8x1000**	1	1 Depends on required distance
④	**386423**	**MP-HI 163-172 M8/M10 pipe ring**	1	0

Application description	In PROFIS as	Application		
Plumbing - single fastening	P-SFP1	 3	Base material	Concrete
			Product line	Pipe rings
			Capacity limit	1x DN150 steel

General comments

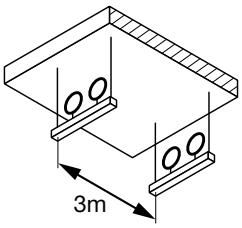
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

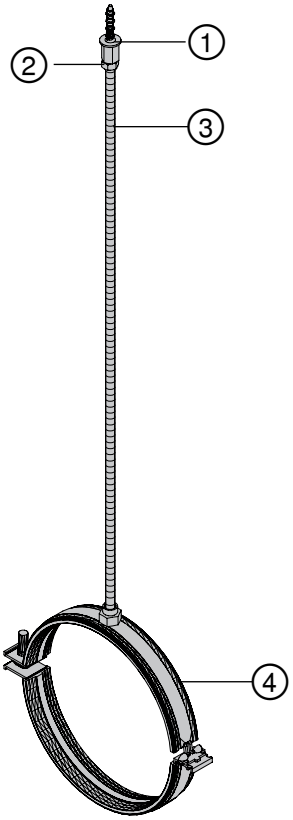
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Plumbing Application - Single Fastenting Point

Type P-SFP2

- Limited to max. 1x DN 150 (O.D. 168.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



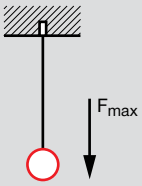


Additional loading capacity limits

This particular case
F = 1.15 kN recommended loads



Max. F = 1.8 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**416740**	**HUS-I 6x35 M8/M10 anchor**	1	0
②	**216465**	**M8 nut**	1	0
③	**339793**	**AM8x1000**	1	1 Depends on required distance
④	**335708**	**MPN-RC 6” B pipe ring**	1	0

Application description	In PROFIS as	Application			
Plumbing - single fastening	P-SFP2		3	Base material	Concrete
				Product line	Pipe rings
				Capacity limit	1x DN150 steel

General comments

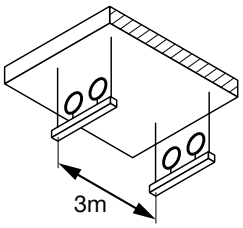
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

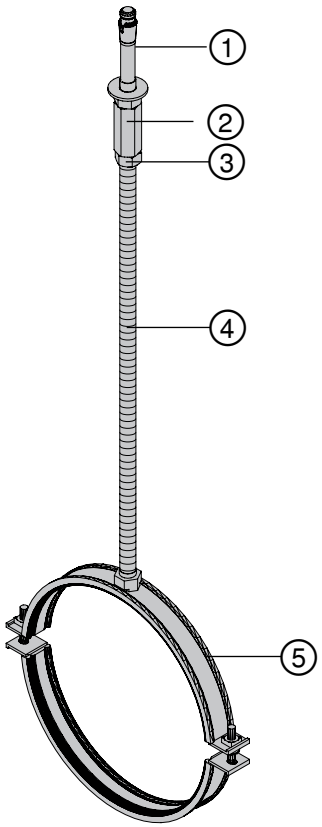
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Plumbing Application - Single Fastenting Point

Type P-SFP3

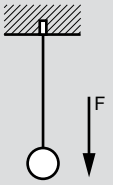
- Limited to max. 1x O.D. 244.5 mm steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



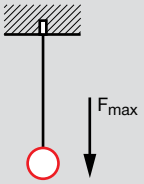


Additional loading capacity limits

This particular case
F = 2.4 kN recommended loads



Max. F = 4.5 kN recommended load
General limit of MP-MI pipe rings bigger than 177mm



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**2085452**	**HST M16x130/15 anchor**	1	0
②	**216706**	**M16x40 coupler**	1	0
③	**216468**	**M16 nut**	1	0
④	**216422**	**AM16x1000 threaded rod**	1	1 depends on distance
⑤	**20898**	**MP-MI 244.5 C pipe ring**	1	0

Application description	In PROFIS as	Application
Plumbing - single fastening	P-SFP3	3



Base material	Concrete
Product line	Pipe rings
Capacity limit	1x DN244 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Single Fastening On Concrete - Options M16, ½", ¾", 1"

M16 base plate	
1x MFP-GP M16 Base plate	373203
1x M16 nut	216468
screw anchor	
2x HUS3-10x60 5/-/-	2079911
stud anchor	
2x HST M12X115/20 anchor	371587

M16 light and medium 2 hole base plate	
1x MGS 2-M16 base plate	246915
1x M16 nut	216468
screw anchor	
2x HUS3-H 8x55/-/-	2079794
stud anchor	
2x HST M10X90/10 anchor	371584
or	
1x MGM 2-M16 base plate	373202
Screw anchor	
2x HUS3-10x60 5/-/-	2079911
stud anchor	
HST M12X115/20 anchor	371587

M16 stud anchor	
1x HST M16x130/15 anchor	2085452
1x M16x40 coupler	216706
1x M16 nut	216468

M16 drop-in anchor	
1x HKD M16x65 anchor	382941
1x A 17/30 washer	282853
1x M16 nut	216468

M16 threaded rods	
AM16x1000	216422
AM16x2000	216423
AM16x3000	216424

M16 pipe rings	
MP-MI ..C	Sizes 4" - 244.5mm
MP-MXI M16	Sizes 4" - 508 mm

½" heavy-duty 2-hole base plate	
1x MFP-GP 1/2"	310318
screw anchor	
2x HUS3-10x60 5/-/-	2079911
stud anchor	
2x HST M12X115/20 anchor	371587

½" light and medium 2 hole base plate	
1x MGL 2-1/2" base plate	246912
2x HST M8x95/30 anchor	295378
or	
1x MGS 2-1/2" base plate	246916
Screw anchor	
2x HUS3-H 8x55/-/-	2079794
stud anchor	
2x HST M10X90/10 anchor	371584

3/4" heavy-duty 2 -hole base plate	
1x MFP-GP 3/4"	screw anchor
2x HUS3-10x60 5/-/-	2079911
stud anchor	
2x HST M12X115/20 anchor	371587

3/4" light and medium 2-hole base plate	
1x MGS 2-3/4" base plate	246917
screw anchor	
2x HUS3-H 8x55/-/-	2079794
stud anchor	
2x HST M10X90/10 Anchor	371584
or	
1x MGM 2-3/4"	246919
screw anchor	
2x HUS3-10x60 5/-/-	2079911
stud anchor	
2x HST M12X115/20 anchor	371587

1" heavy-duty 4-hole base plate	
1x MGZ 4-1"	246926
screw anchor	
4x HUS3-H 8x55/-/-	2079794
stud anchor	
4x HST M10X90/10 anchor	371584

1" heavy-duty 2-hole base plate	
1x MFP-GP 1"	372614
screw anchor	
2x HUS3-10x60 5/-/-	2079911
stud anchor	
2x HST M12X115/20 anchor	371587

½" threaded tubes	
GR-G 1/2"x2000 4.6 Zn	56428

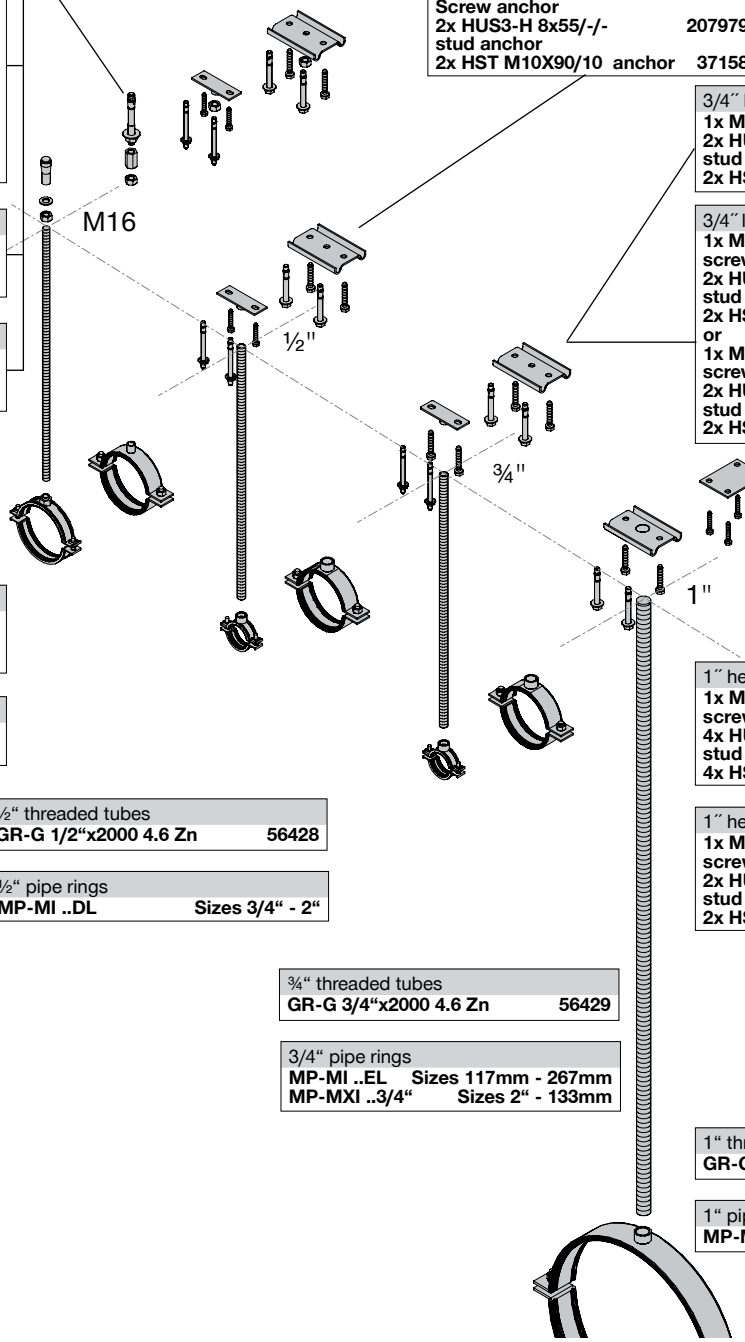
½" pipe rings	
MP-MI ..DL	Sizes 3/4" - 2"

¾" threaded tubes	
GR-G 3/4"x2000 4.6 Zn	56429

3/4" pipe rings	
MP-MI ..EL	Sizes 117mm - 267mm
MP-MXI ..3/4"	Sizes 2" - 133mm

1" threaded tubes	
GR-G 1"x2000 4.6 Zn	56430

1" pipe rings	
MP-MXI ..1"	Sizes 5" - 508mm



Application description	Application	Product lines	Base material
Single fastening	3	Base plates	Concrete
		Anchors	
		Pipe rings	

General comments

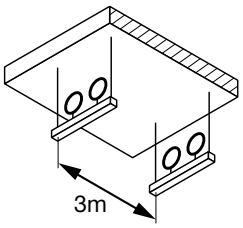
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

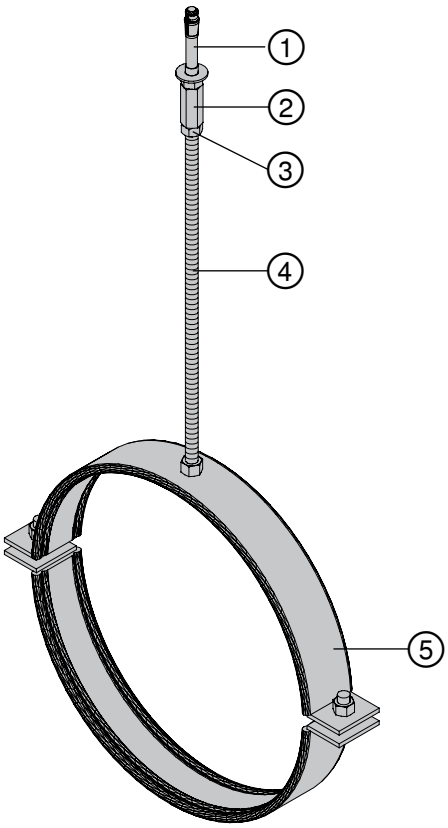
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Plumbing Application - Single Fastening Point

Type P-SFP4

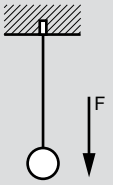
- Limited to max. 1x DN 450 (O.D. 457.0 mm) steel pipes
- Spacing - support distance 3.0m
- Insulation rubber 40 mm



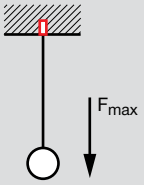


Additional loading capacity limits

This particular case
F = 7.81 kN recommended loads



Max. F = 9.5 kN recommended load
General recommended limit of HST M16 anchor - no edge, no distance influence. Concrete C20/25



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**2085452**	**HST M16x130/15 anchor**	1	0
②	**216706**	**M16x40 coupler**	1	0
③	**216468**	**M16 nut**	1	0
④	**216422**	**AM16x1000 threaded rod**	1	depends on distance
⑤	**372247**	**MP-MXI 457 M16**	1	0

Application description	In PROFIS as	Application		
Plumbing - single fastening	P-SFP4	3	Base material	Concrete
			Product line	Pipe rings
			Capacity limit	1x DN 450 steel

General comments

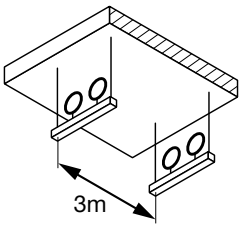
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

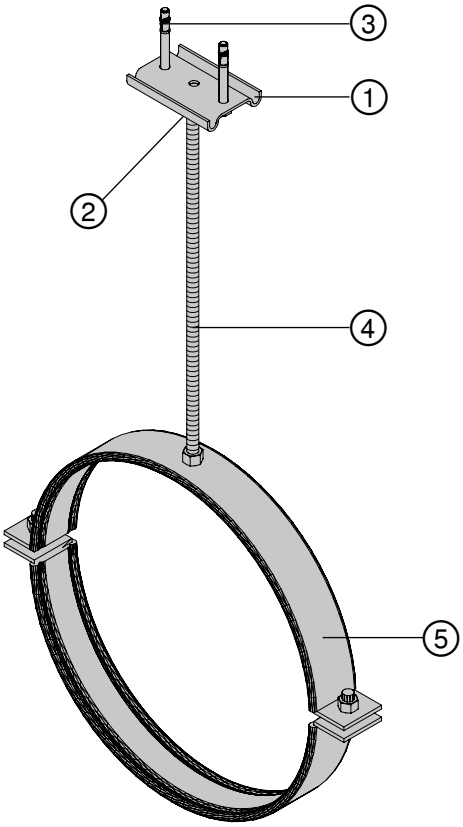
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Plumbing Application - Single Fastening Point

Type P-SFP5

- Limited to max. 1x DN 500 (O.D. 508.0 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 40 mm



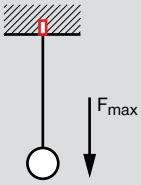


Additional loading capacity limits

This particular case
F = 9.59 kN recommended loads



Max. F = 11.4 kN recommended load
General recommended limit of
HST M12 anchor - no edgeinfluence,
distance 109 mm. Concrete C20/25



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**373203**	**MFP-GP M16 base plate**	1	0
②	**216468**	**M16 nut**	1	0
③	**371587**	**HST M12x115/20 anchor**	2	0
④	**216422**	**AM16x1000 threaded rod**	1	0
⑤	**372248**	**MP-MXI 508 M16**	1	0

Application description	In PROFIS as	Application			
Plumbing - single fastening	P-SFP5		3	Base material	Concrete
				Product line	Pipe rings
				Capacity limit	1x DN 500 steel

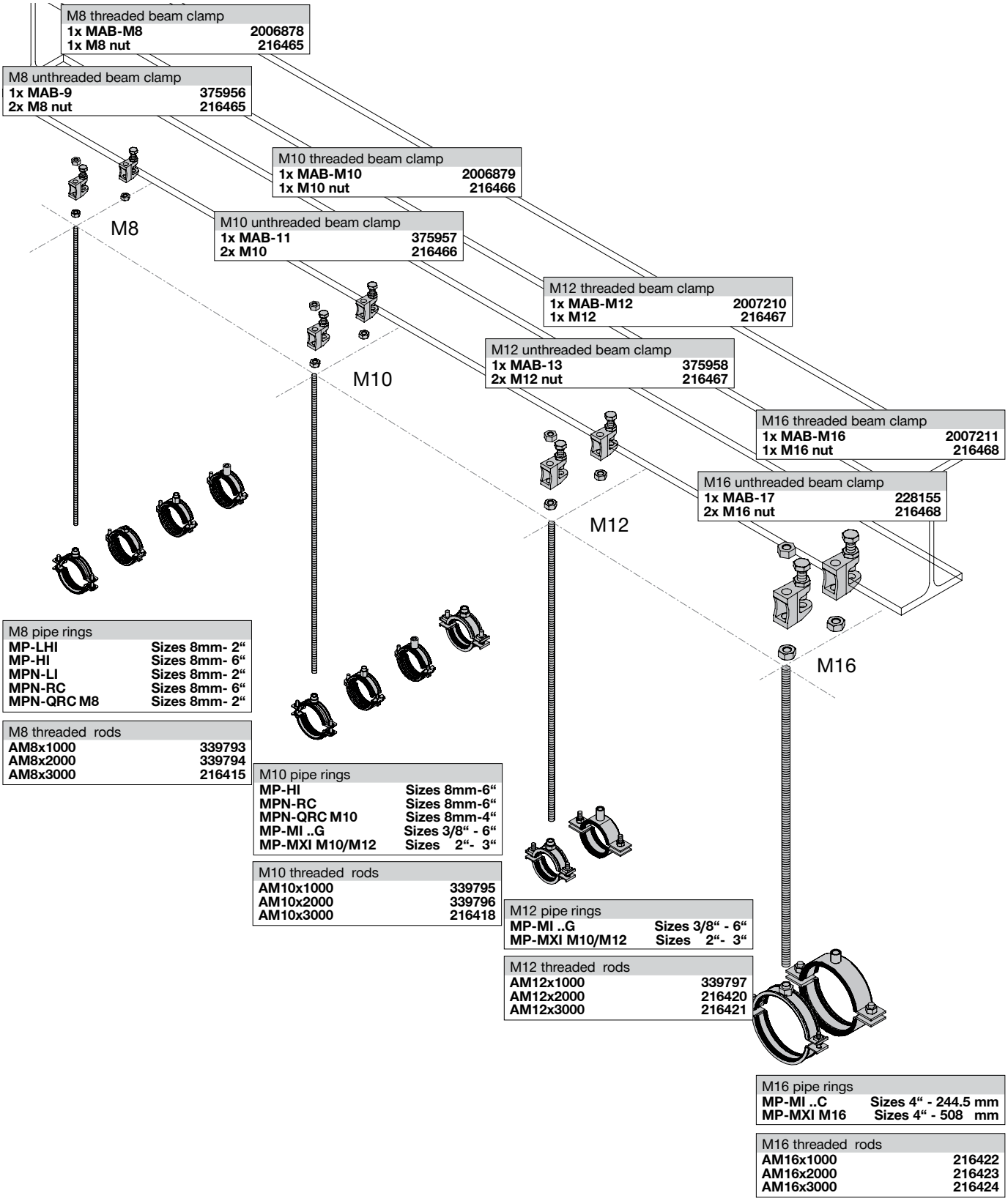
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

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Single Fastening On Steel - Options M8, M10, M12, M16



Application description	Application	Product lines	Base material
Single fastening	3	Beam clamps	Steel
		Pipe rings	

General comments

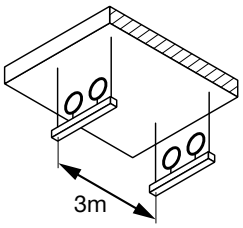
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

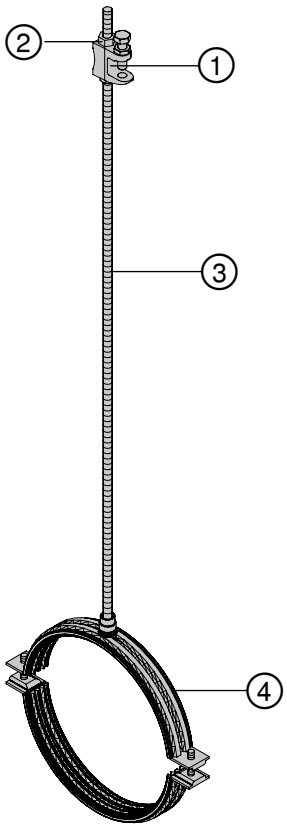
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Plumbing Application - Single Fastening Point

Type P-SFP20

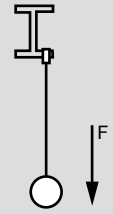
- Limited to max. 1x DN 150 (O.D. 168.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



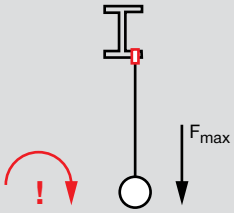


Additional loading capacity limits

This particular case
F = 1.15 kN recommended loads



Max. F = 1.2 kN recommended load
Limited by the MAB M8 beam clamp
I-beam is subject to eccentricity.
It has to be checked for eccentricity and torsion



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**375956**	**MAB-9**	1	0
②	**216465**	**M8 nut**	2	0
③	**339793**	**AM8x1000**	1	1 Depends on required distance
④	**386423**	**MP-HI 163-172 M8/M10 pipe ring**	1	0

Application description	In PROFIS as	Application		
Plumbing - single fastening	P-SFP20	 3	Base material	Steel
			Product line	Pipe rings
			Capacity limit	1x DN 150 steel

General comments

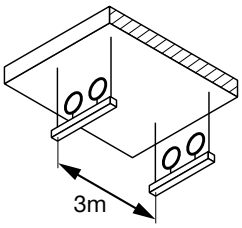
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

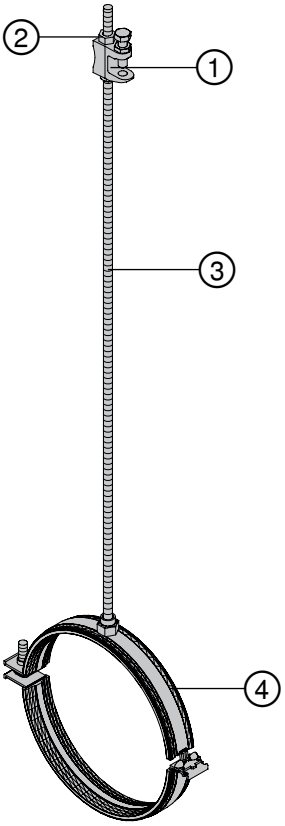
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Plumbing Application - Single Fastening Point

Type P-SFP21

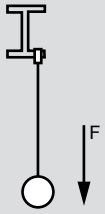
- Limited to max. 1x DN 150 (O.D. 168.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



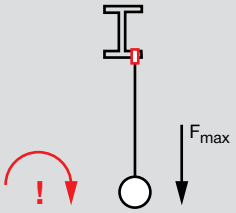


Additional loading capacity limits

This particular case
F = 1.15 kN recommended loads



Max. F = 1.2 kN recommended load
Limited by the MAB M8 beam clamp
I-beam is subject to eccentricity.
It has to be checked for eccentricity and torsion



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**375956**	**MAB-9**	1	0
②	**216465**	**M8 nut**	2	0
③	**339793**	**AM8x1000**	1	1 Depends on required distance
④	**335708**	**MPN-RC 6” B pipe ring**	1	0

Application description	In PROFIS as	Application			
Plumbing - single fastening	P-SFP21		3	Base material	Steel
				Product line	Pipe rings
				Capacity limit	1x DN 150 steel

General comments

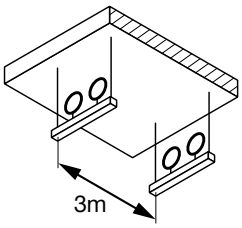
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

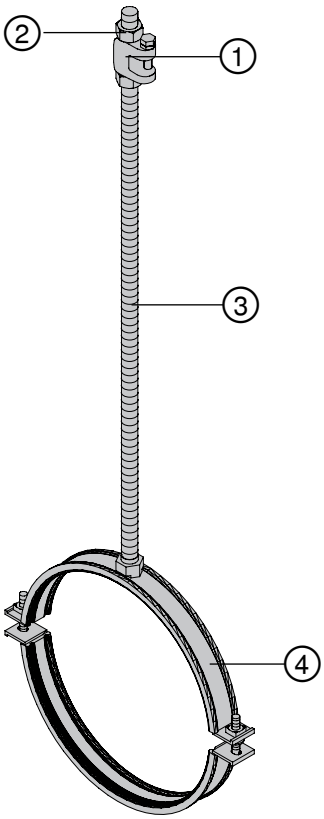
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Plumbing Application - Single Fastening Point

Type P-SFP23

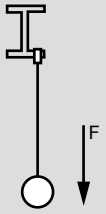
- Limited to max. 1x O.D. 244.5 mm steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 40 mm



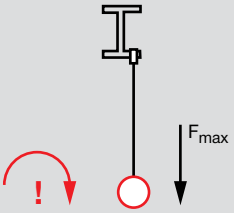


Additional loading capacity limits

This particular case
F = 2.4 kN recommended loads



Max. F = 4.5 kN recommended load
Limited by the MAB M8 beam clamp
I-beam is subject to eccentricity.
It has to be checked for eccentricity and torsion



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**228155**	**MAB-17**	1	0
②	**216468**	**M16 nut**	2	0
③	**216422**	**AM16x1000 threaded rod**	1	1 Depends on distance
④	**20898**	**MP-MI 244.5 C pipe ring**	1	0

Application description	In PROFIS as	Application		
Plumbing - single fastening	P-SFP23	 3	Base material	Steel
			Product line	Pipe rings
			Capacity limit	1x DN 244 steel

General comments

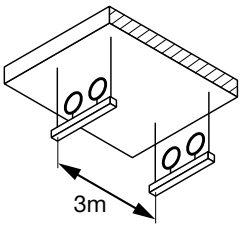
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

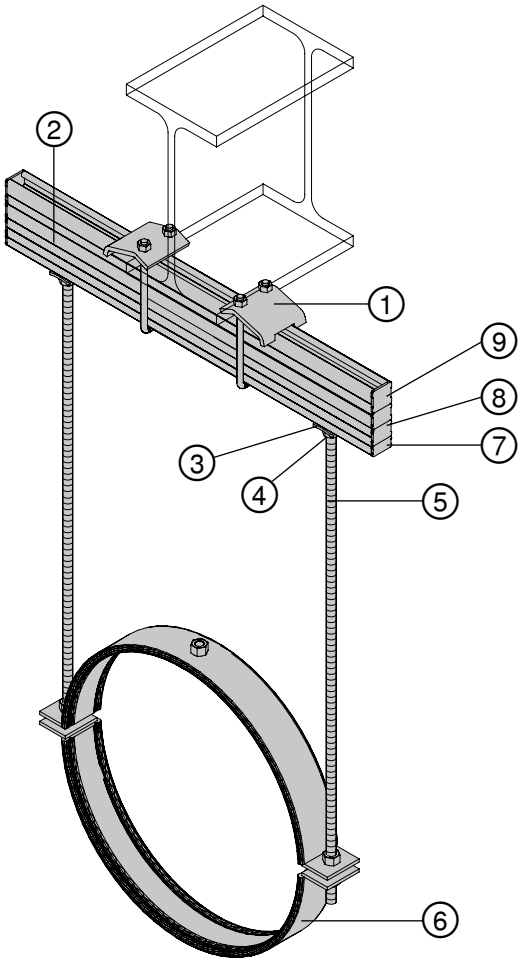
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Plumbing Application - Single Fastening Point

Type P-SFP24

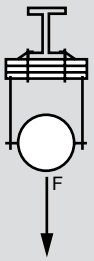
- Limited to max. 1x DN 500 (O.D. 508.0 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 40 mm



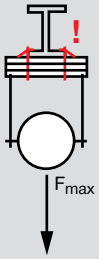


Additional loading capacity limits

This particular case
F = 9.59 kN recommended loads



Max. F = 10 kN recommended load
Limited by pair of beam clamps
I-beam has to be checked to carry the loads



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369677**	**MQT-82-124 beam clamp**	2	0
②	**373799**	**MQ-52-72 D 3M**	1	0.8m
③	**369632**	**MQA-M16-B**	2	0
④	**216468**	**M16 Nut**	6	0
⑤	**216422**	**AM16x1000 threaded rod**	1	0 Depends on the distance
⑥	**372248**	**MP-MXI 508 M16**	1	0
⑦	**370598**	**MQZ-E21**	2	0
⑧	**369686**	**MQZ-E31**	4	0
⑨	**369685**	**MQZ-E41**	2	0

Application description	In PROFIS as	Application
Plumbing - single fastening	P-SFP24	3



Base material	Steel
Product line	Pipe rings
Capacity limit	1x DN 500 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

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Single Fastening On Profiled Metal Sheet - Options M8, M10

M8 connect. to PMS – self-tapping screws	
1x MVA-MS M8 V-hanger	386558
6x S-MS 01Z 4.0x13 S-screw	406471
1x M8 nut	216465

M8 connection to PMS - toggle anchor	
M8	
1x MF-SKD M8/100 toggle anchor	230604
2x M8 nut	216465

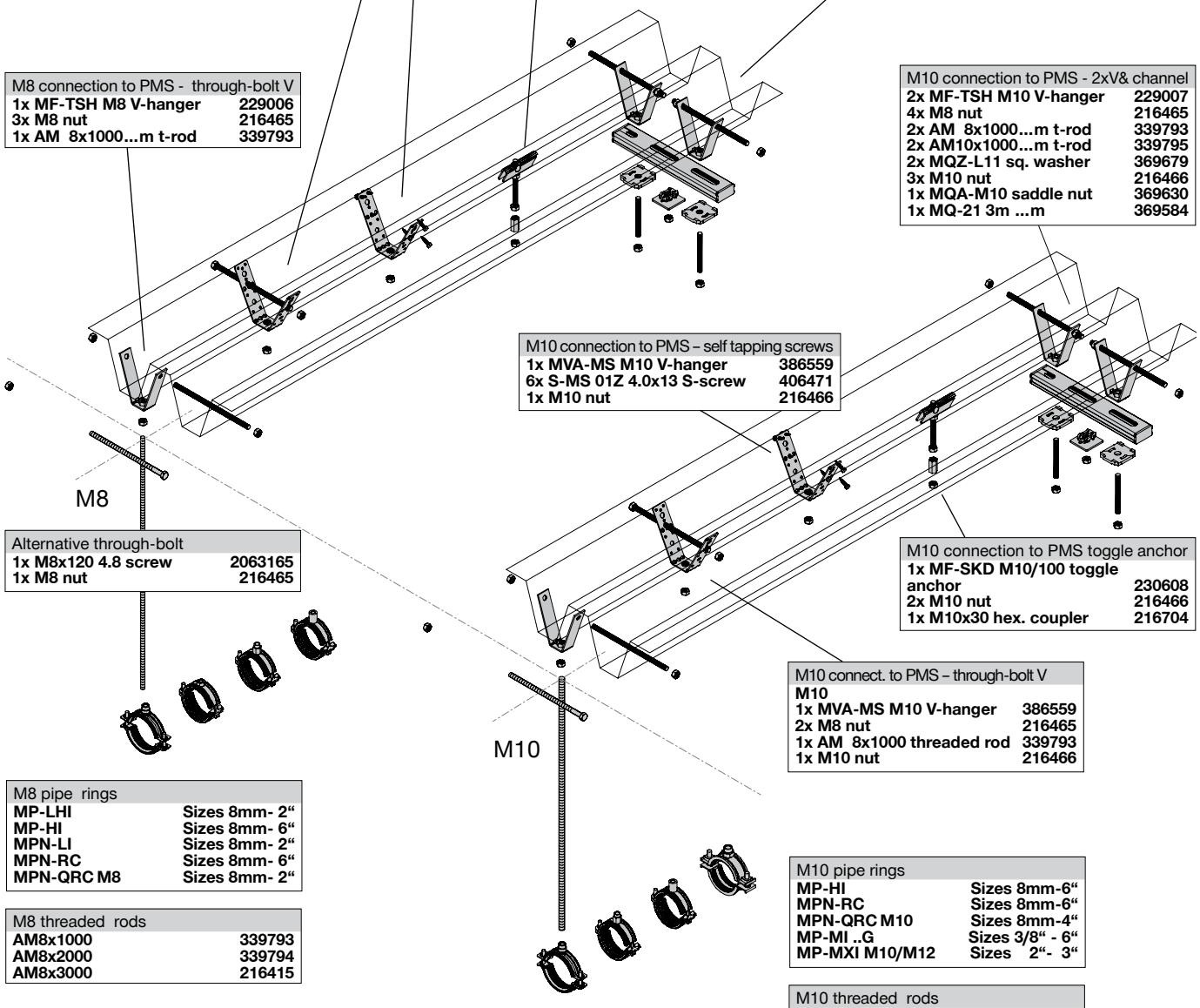
M8 connection to PMS - 2xV and channel	
2x MF-TSH M10 V-hanger	229007
5x M8 nut	216465
2x AM 8x1000...m t-rod	339793
2x AM10x1000...m t-rod	339795
2x MQZ-L11 sq. washer	369679
2x M10 nut	216466
1x MQA-M 8 saddle nut	369629
1x MQ-21 3m ...m	369584

M8 connection to PMS - through-bolt V	
1x MVA-MS M8 V-hanger	386558
3x M8 nut	216465
1x AM 8x1000...m t-rod	339793

M8 connection to PMS - through-bolt V	
1x MF-TSH M8 V-hanger	229006
3x M8 nut	216465
1x AM 8x1000...m t-rod	339793

M10 connection to PMS - 2xV& channel	
2x MF-TSH M10 V-hanger	229007
4x M8 nut	216465
2x AM 8x1000...m t-rod	339793
2x AM10x1000...m t-rod	339795
2x MQZ-L11 sq. washer	369679
3x M10 nut	216466
1x MQA-M10 saddle nut	369630
1x MQ-21 3m ...m	369584

M10 connection to PMS – self tapping screws	
1x MVA-MS M10 V-hanger	386559
6x S-MS 01Z 4.0x13 S-screw	406471
1x M10 nut	216466



Alternative through-bolt	
1x M8x120 4.8 screw	2063165
1x M8 nut	216465

M10 connection to PMS toggle anchor	
1x MF-SKD M10/100 toggle anchor	230608
2x M10 nut	216466
1x M10x30 hex. coupler	216704

M10 connect. to PMS – through-bolt V	
M10	
1x MVA-MS M10 V-hanger	386559
2x M8 nut	216465
1x AM 8x1000 threaded rod	339793
1x M10 nut	216466

M8 pipe rings	
MP-LHI	Sizes 8mm- 2“
MP-HI	Sizes 8mm- 6“
MPN-LI	Sizes 8mm- 2“
MPN-RC	Sizes 8mm- 6“
MPN-QRC M8	Sizes 8mm- 2“

M10 pipe rings	
MP-HI	Sizes 8mm-6“
MPN-RC	Sizes 8mm-6“
MPN-QRC M10	Sizes 8mm-4“
MP-MI ..G	Sizes 3/8“ - 6“
MP-MXI M10/M12	Sizes 2“- 3“

M8 threaded rods	
AM8x1000	339793
AM8x2000	339794
AM8x3000	216415

M10 threaded rods	
AM10x1000	339795
AM10x2000	339796
AM10x3000	216418

Application description	Application	Product lines	Base material
Single fastening	3	V-hangers	PMS
		Pipe rings	

General comments

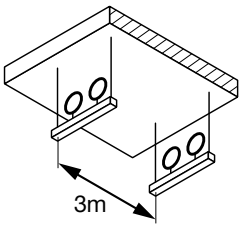
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

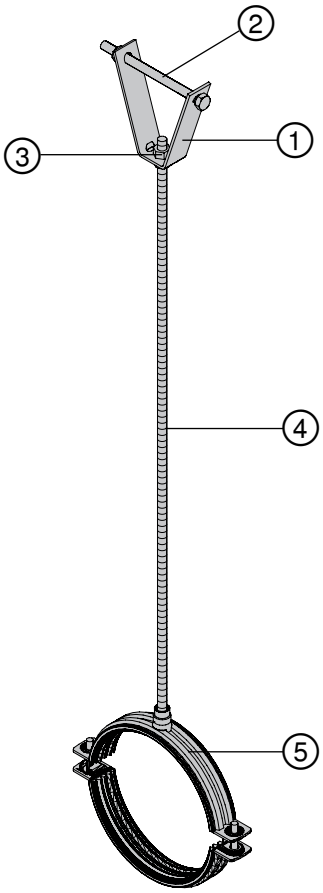
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Plumbing Application - Single Fastening Point

Type P-SFP40

- Limited to max. 1x DN 125 (O.D. 133 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



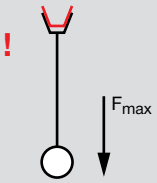


Additional loading capacity limits

This particular case
F = 0.75 kN recommended loads
Notice: check the limitation below



Max. F= ~ 0.8 kN recommended load
This application is always limited by the spot loading capacity of the PMS (profiled metal sheet).
0.8 kN is perceived as most common, but every particular case must be verified according to the particular spot loading capacity of the particular type of PMS.



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**229006**	**MF-TSH M8 V-hanger**	1	0
②	**2063165**	**M8x120 4.8 hex. head screw**	1	0
③	**216465**	**M8 nut**	2	0
④	**339793**	**AM8x1000**	1	1 Depends on required distance
⑤	**386419**	**MP-HI 129-137 M8/M10 pipe ring**	1	0

Application description	In PROFIS as	Application		
Plumbing - single fastening	No reference	 3	Base material	PMS
			Product line	Pipe rings
			Capacity limit	1x DN 125 steel

General comments

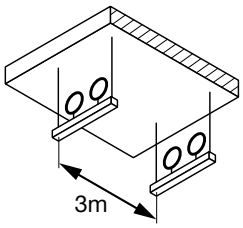
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

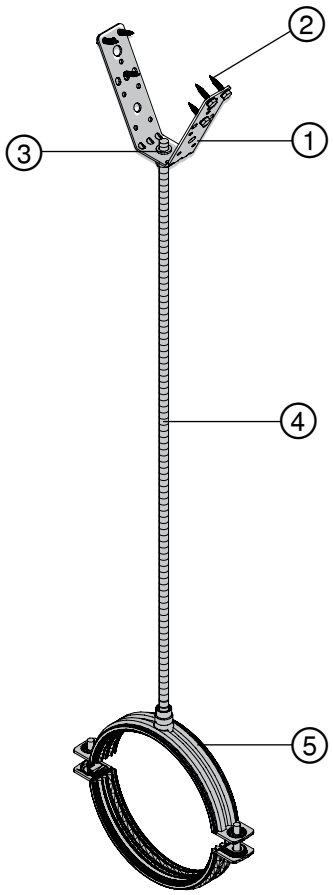
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Plumbing Application - Single Fastening Point

Type P-SFP41

- Limited to max. 1x DN 125 (O.D. 133 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



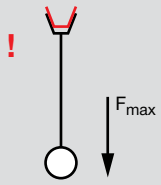


Additional loading capacity limits

This particular case
F = 0.75 kN recommended loads
Notice: check the limitation below



Max. F= ~ 0.8 kN recommended load
This application is always limited by the spot loading capacity of the PMS (profiled metal sheet).
0.8 kN is perceived as most common, but every particular case must be verified according to the particular spot loading capacity of the particular type of PMS.



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**386558**	**MVA-MS M8 V-hanger**	1	0
②	**406471**	**S-MS 01Z 4.0x13 S screw**	6	0
③	**216465**	**M8 nut**	1	0
④	**339793**	**AM8x1000**	1	1 Depends on required distance
⑤	**386419**	**MP-HI 129-137 M8/M10 pipe ring**	1	0

Application description	In PROFIS as	Application
Plumbing - single fastening	No reference	3



Base material	PMS
Product line	Pipe rings
Capacity limit	1x DN 125 steel

General comments

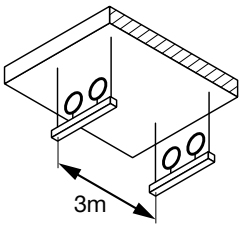
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

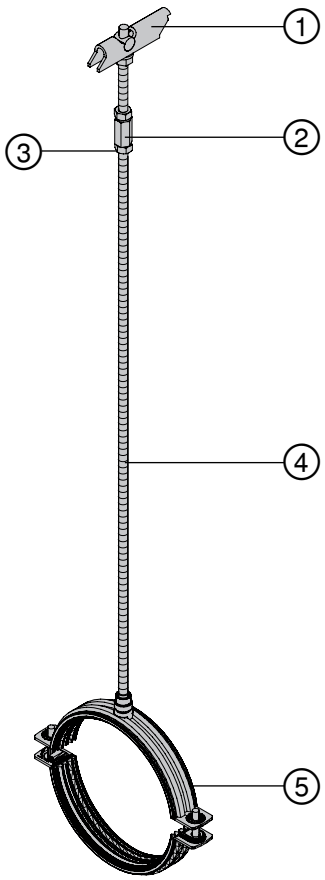
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Plumbing Application - Single Fastening Point

Type P-SFP42

- Limited to max. 1x DN 125 (O.D. 133 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



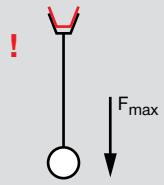


Additional loading capacity limits

This particular case
F = 0.75 kN recommended loads
Notice: check the limitation below



Max. F= ~ 0.8 kN recommended load
This application is always limited by the spot loading capacity of the PMS (profiled metal sheet).
0.8 kN is perceived as most common, but every particular case must be verified according to the particular spot loading capacity of the particular type of PMS.



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**230604**	**MF-SKD M8/100 T. Anchor**	1	0
②	**432188**	**M8x40 hex. Coupler**	1	0
③	**216465**	**M8 nut**	2	0
④	**339793**	**AM8x1000**	1	1 Depends on required distance
⑤	**386419**	**MP-HI 129-137 M8/M10 pipe ring**	1	0

Application description	In PROFIS as	Application		
Plumbing - single fastening	No reference	 3	Base material	PMS
			Product line	Pipe rings
			Capacity limit	1x DN 125 steel

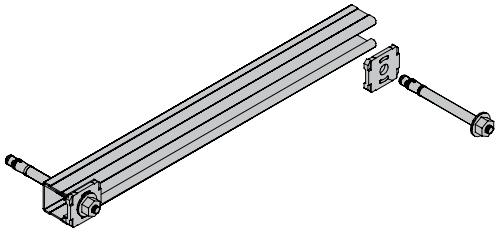
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

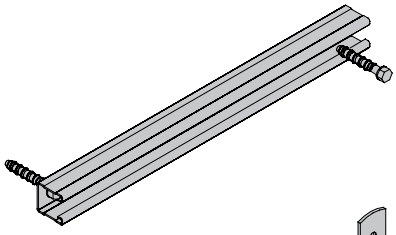
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Wall Rail On Concrete - Options 1

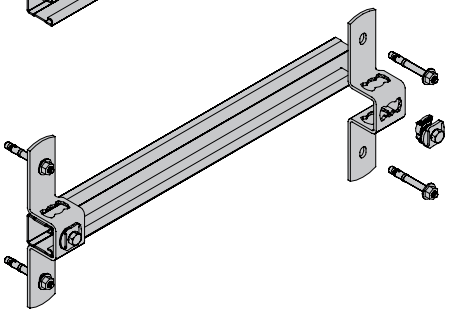
Using 41mm x 41 channel



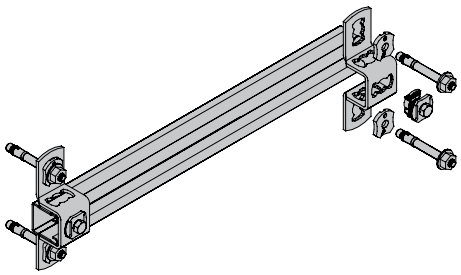
Through-bolted with M12 stud anchor	
1x HST M12X145/50	**371588**
1x MQZ-L13 sq. washer	**369680**



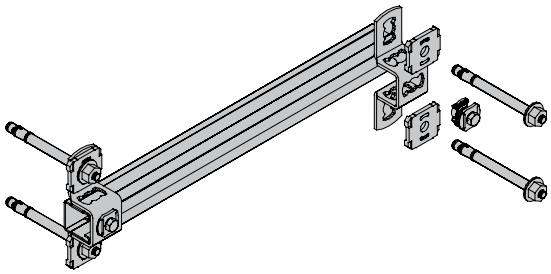
Screw anchor with HUS3 for channel back	
1x HUS3-H 10x70/-/- screw anchor	**2079912**



Clamp MQB channel to concrete	
1x MQB-G41 clamp	**369674**
1x MQN pushbutton	**369623**
2x HST M10x90/10 anchor	**371584**

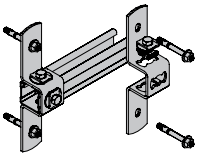


Clamp MQB channel to concrete	
For M10 only	
1x MQB-41 clamp	**369668**
1x MQN pushbutton	**369623**
2x MQZ-U reduction	**369692**
2x HST M10x90/10 anchor	**371584**

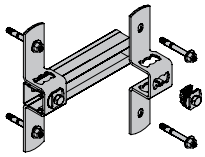


Clamp MQB to channel as to concrete	
For M8	
1x MQB-41 clamp	**369668**
1x MQN pushbutton	**369623**
2x MQZ-L9 sq. washer	**369678**
2x HST M8x75/10 anchor	**371581**
For M10	
1x MQB-41 clamp	**369668**
1x MQN pushbutton	**369623**
2x MQZ-L11 sq. washer	**369679**
2x HST M10x90/10 anchor	**371584**
For M12	
1x MQB-41 clamp	**369668**
1x MQN pushbutton	**369623**
2x MQZ-L13 sq. washer	**369680**
2x HST M12x105/10 anchor	**2085451**
for M16	
1x MQB-41 clamp	**369668**
1x MQN pushbutton	**369623**
MQZ-L17 Sq. washer	**369681**
2x HST M16x130/15 anchor	**2085452**

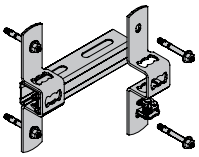
All the clamps allow different positions of the channel in the clamp or even using back-to-back channels of the same format in the clamp.



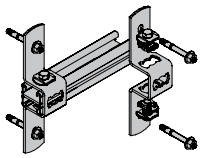
MQ-41 or MQ-41/3 open up



MQ-41 or MQ-41/3 open to side



MQ-41 or MQ-41/3 open down



MQ-21D
Option to use
2x MQN pushbutton
for greater stability

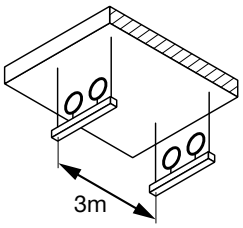
Application description	Application	Product lines	Base material
Wall rail	4	MQ System	Concrete
General comments		Anchors	
▪ Application subject to vertical loads caused by weight of the pipes ▪ Application not subject to any thermal expansion or any other 3D loads			

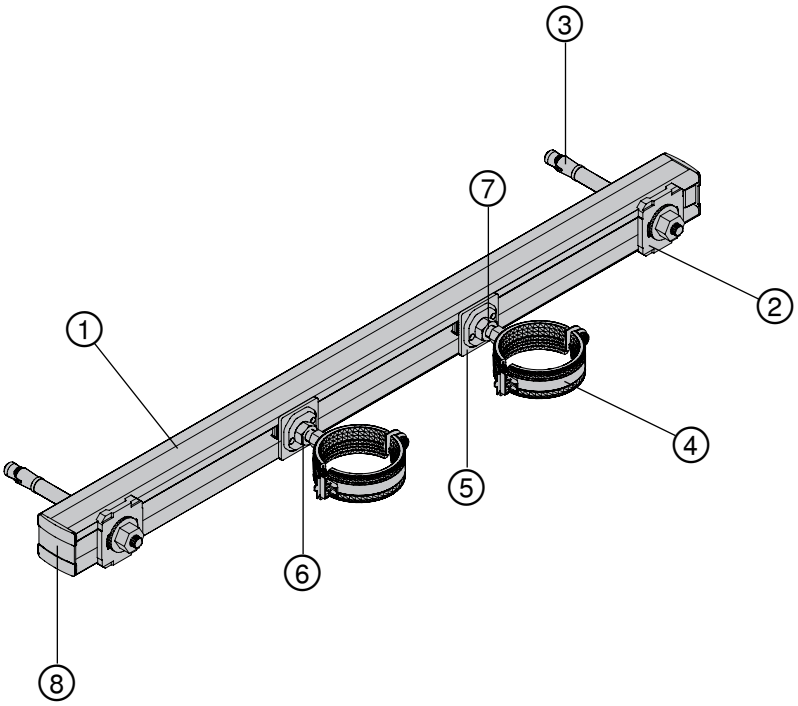
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Plumbing Application - Wall Rail

Type P-WR1

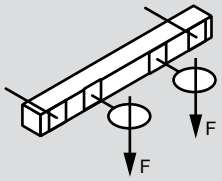
- Limited to max. 1x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



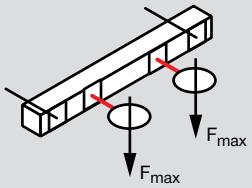


Additional loading capacity limits

This particular case
F= 0.2 kN recommended loads
Notice: check the limitation below



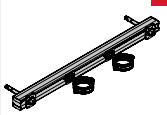
Max. F = 0.2 kN recommended load. This application is in most cases limited by the bending moment acting on the threaded rod. Combined shear load and torsion moment acting on the channel can also be an important limiting factor.



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369596**	**MQ-41/3 3M channel**	1	0.65
②	**369680**	**MQZ-L13 square washer**	2	0
③	**371588**	**HST M12X145/50 stud anchor**	2	0
④	**335683**	**MPN-RC 2" A pipe ring**	2	0
⑤	**369630**	**MQA-M10 saddle nut**	2	0
⑥	**216466**	**M10 nut**	2	0
⑦	**216390**	**AM10x40 threaded bolt**	2	0
⑧	**369685**	**MQZ-E41 plastic end cap**	2	0

Application description	In PROFIS as	Application
Plumbing - wall rail	P-WR1	4



Base material	Concrete
Product line	MQ System
Capacity limit	2x DN 50 steel

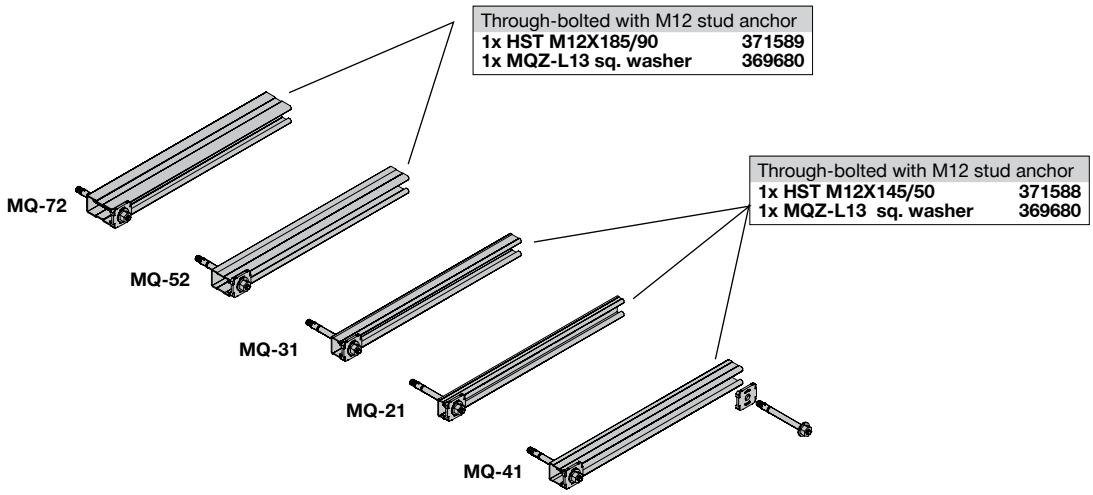
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

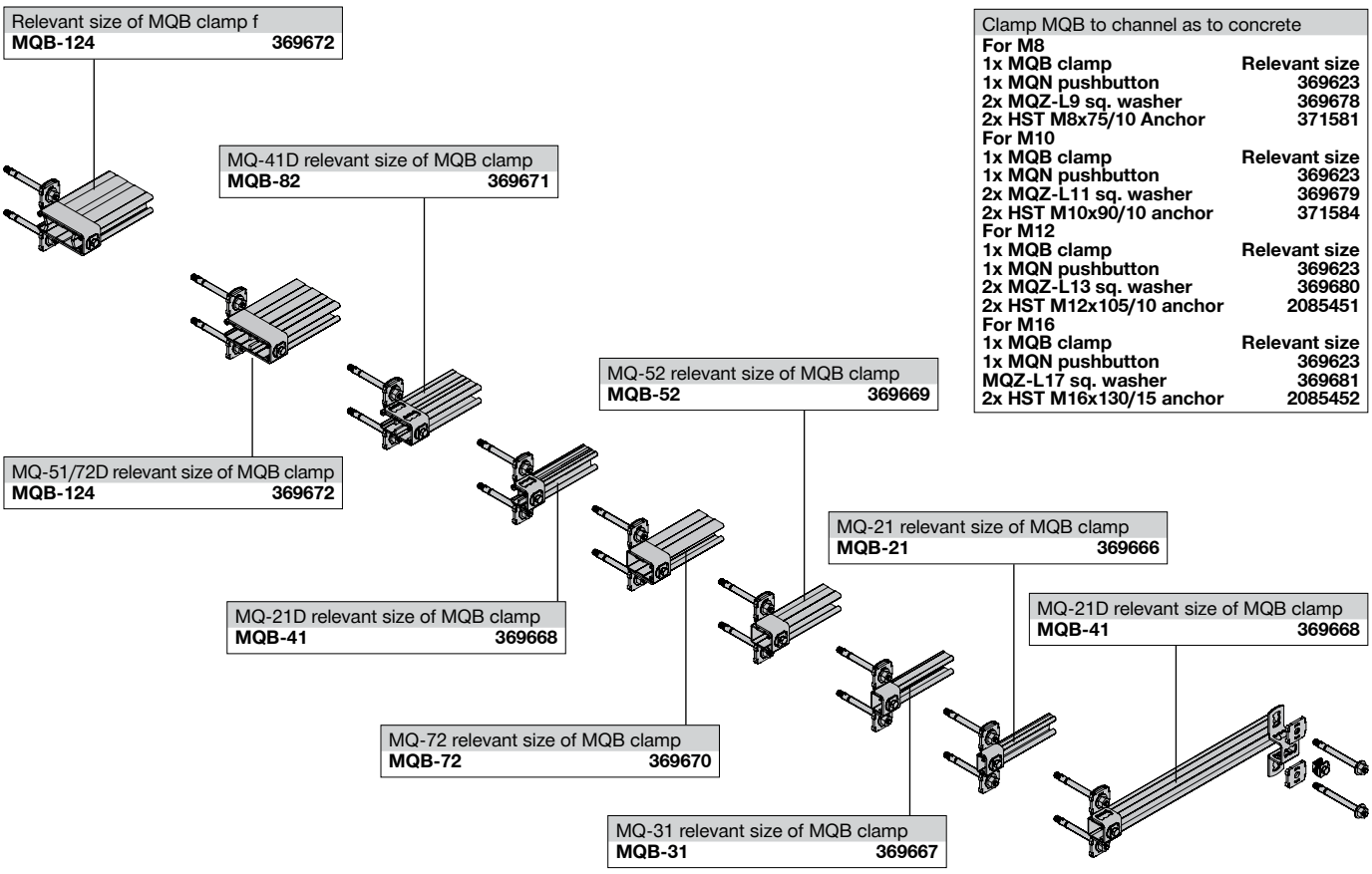
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Wall Rail On Concrete - Options 2

Using all sizes of single channel



Using all sizes of channel



Application description	Application	Product lines	Base material
Wall rail	4	MQ System	Concrete
		Anchors	

General comments

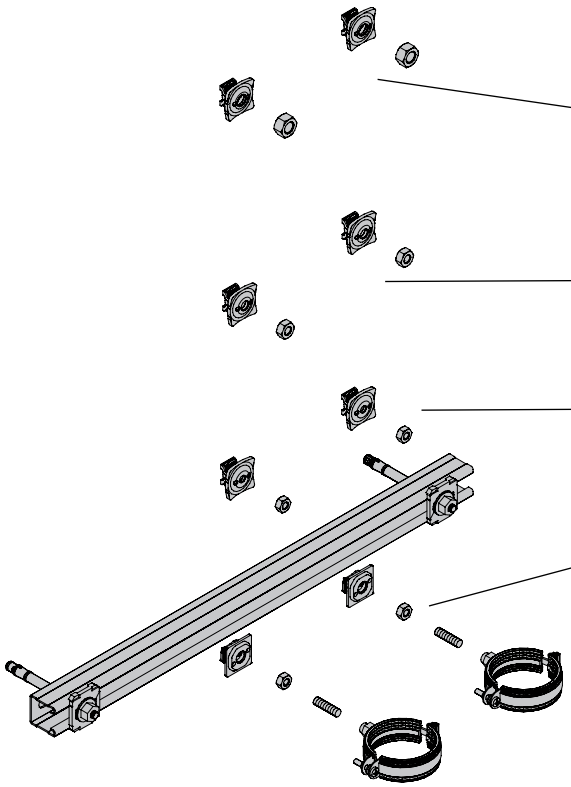
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

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Wall Rail On Concrete - Options 3

Fastening pipes on wall rails



M16 pipe ring connection saddle	
1x MQA-M16-B saddle nut	369632
1x AM16x1000...m t-rod	216422
1x M16 nut	216468

M16 pipe rings	
MP-MI ..C	Sizes 4“ - 244.5mm
MP-MXI M16	Sizes 4“ - 508 mm

M12 pipe ring connection saddle	
1x MQA-M12-B saddle nut	369631
1x AM12x50 bolt	216397
1x M12 nut	216467

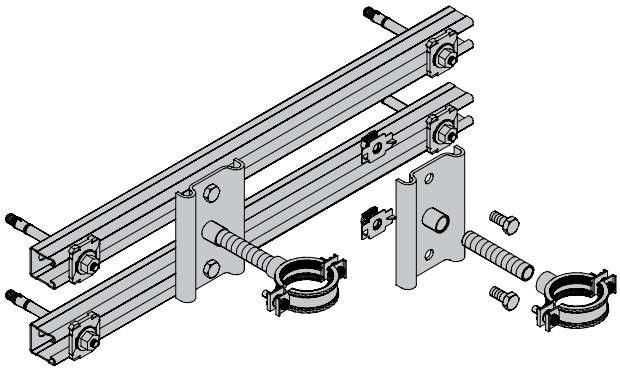
M12 pipe rings	
MP-MI ..G	Sizes 3/8“ - 6“
MP-MXI M10/M12	Sizes 2“ - 3“

M10 pipe ring connection saddle	
1x MQA-M10 B saddle nut	372471
1x AM10x60 bolt	216391
1x M10 nut	216466

M10 pipe rings	
MP-HI	Sizes 8mm - 6“
MPN-RC	Sizes 8mm - 6“
MPN-QRC M10	Sizes 8mm - 4“
MP-MI ..G	Sizes 3/8“ - 6“
MP-MXI M10/M12	Sizes 2“ - 3“

M10 pipe ring connection saddle	
1x MQA-M10 saddle nut	369630
1x AM10x60 bolt	216391
1x M10 nut	216466

Special solution for fastening pipes on wall rails



M16 base plate	
1x MFP-GP M16 base plate	373203
2x MQM-M12 wing nut	369627
2x M12x25 hex. screw	216458
1x AM16x1000...m t-rod	216422

M16 pipe rings	
MP-MI ..C	Sizes 4“ - 244.5mm
MP-MXI M16	Sizes 4“ - 508 mm

½“ heavy-duty 2-hole base plate	
1x MFP-GP 1/2“	310318
2x MQM-M12 wing nut	369627
2x M12x25 hex. screw	216458
1x GR-G 1/2“x2000...m t-rod	56428

½“ pipe rings	
MP-MI ..DL	Sizes 3/4“ - 2“

3/4“ heavy-duty 2-hole base plate	
1x MFP-GP 3/4“	310319
2x MQM-M12 wing nut	369627
2x M12x25 hex. screw	216458
1x GR-G 3/4“x2000...m t-rod	56429

3/4“ pipe rings	
MP-MI ..EL	Sizes 117mm - 267mm
MP-MXI ..3/4“	Sizes 2“ - 133m

1“ heavy-duty 2-hole base plate	
1x MFP-GP 1“	372614
2x MQM-M12 wing nut	369627
2x M12x25 hex. screw	216458
1x GR-G 1“x2000...m thr. tube	56430

1“ pipe rings	
MP-MXI ..3/4“	Sizes 5“ - 508mm

Application description	Application	Product lines	Base material
Wall rail	4	MQ System	Concrete

General comments

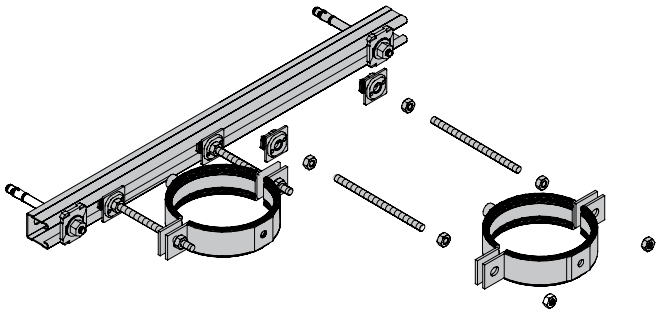
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

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Wall Rail On Concrete - Options 4

Special solution for fastening pipes on wall rails



M16 pipe ring connection saddle	
1x MQA-M16-B saddle nut	369632
1x AM16x100...m t-rod	16422
1x M16 nut	216468

M16 pipe rings	
MP-MXI	Sizes 177mm - 508mm
MP-MX (m)	Sizes 177mm - 508mm
MP-MX (")	Sizes 177mm - 508mm

M12 pipe ring connection saddle	
2x MQA-M12-B saddle nut	369631
1x AM12x1000...m t-rod	339797
6x M12 nut	216467

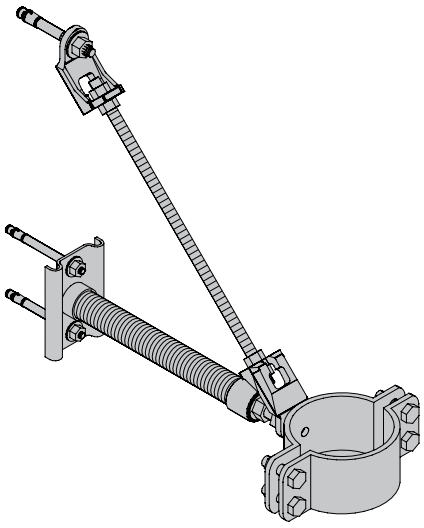
M12 pipe rings	
MP-MXI	Sizes 177mm - 508mm
MP-MX (m)	Sizes 177mm - 508mm
MP-MX (")	Sizes 177mm - 508mm

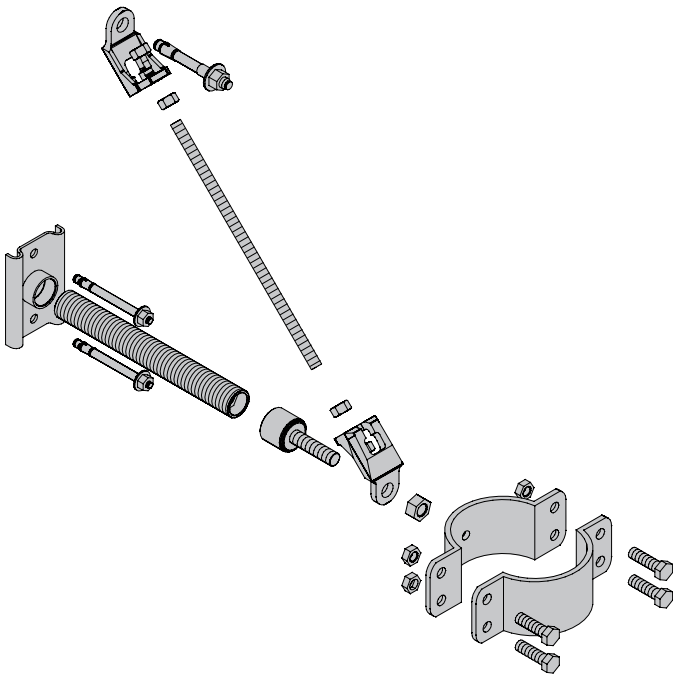
M10 pipe ring connection saddle	
1x MQA-M10 B saddle nut	372471
1x AM10x1000...m t-rod	339795
6x M10 nut	216466

M10 pipe rings	
MP-MX (")	Sizes 60mm - 93mm
MP-MXI M10/M12	Sizes 2“- 3“

M10 pipe ring connection saddle	
2x MQA-M10 saddle nut	369630
1x AM10x1000...m t-rod	339795
6x M10 nut	216466

Load-bearing fixed points – please refer to heating sub-trade section for more details





Application description	Application	Product lines	Base material
Wall rail	4	MQ System	Concrete

General comments

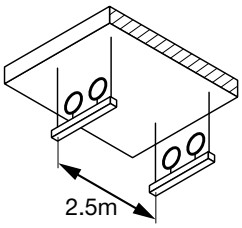
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

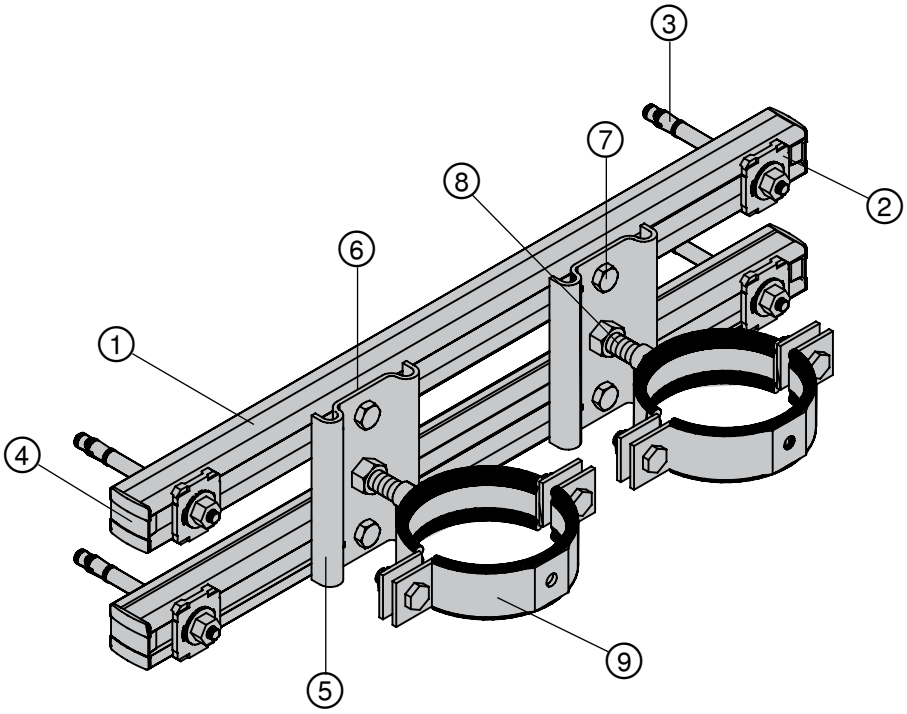
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Plumbing Application - Wall Rail

Type P-WR2

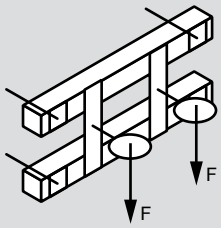
- Limited to max. 2x DN 100 (O.D. 108 mm) steel pipes
- Spacing - support distance 2.5 m
- Insulation rubber 20 mm



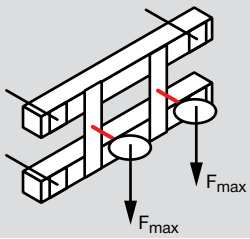


Additional loading capacity limits

This particular case
F = 0.44 kN recommended loads
Notice: check the limitation below



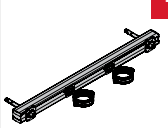
Max. F = Depends on many factors and must be calculated under the particular load combinations using manual approach or with software
In this case limiting factor is the M16 threaded rod Fmax = 0.44 kN



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369591**	**MQ-41 3M channel**	2	0.9
②	**369680**	**MQZ-L13 square washer**	4	0
③	**371588**	**HST M12X145/50 stud anchor**	4	0
④	**369685**	**MQZ-E41 plastic end cap**	4	0
⑤	**373203**	**MFP-GP M16 base plate**	2	0
⑥	**369627**	**MQM-M12 wing nut**	4	0
⑦	**216458**	**M12x25 hex. screw**	4	0
⑧	**216422**	**AM16x1000m threaded rod**	2	0.06 m
⑨	**372229**	**MP-MXI 4” M16 pipe ring**	2	0

Application description	In PROFIS as	Application
Plumbing - wall rail	P-WR2	4



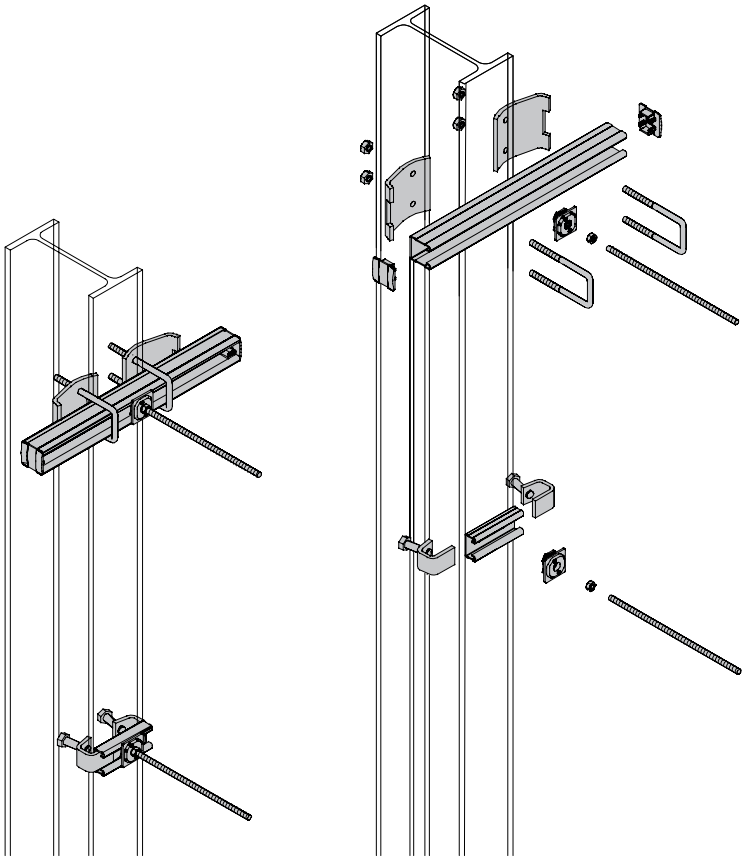
Base material	Concrete
Product line	MQ System
Capacity limit	2x DN 100 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

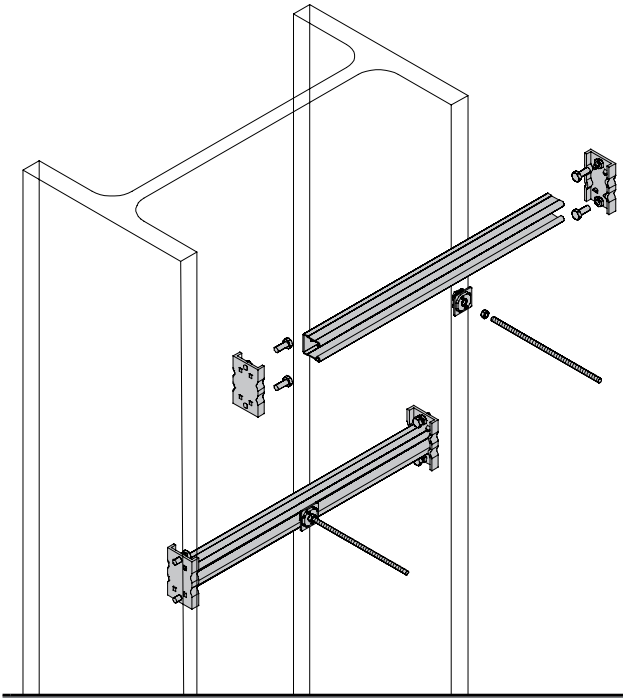
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Wall Rail On Steel - Options



Wall rail with independent length	
2x MQT 21-41 clamp	369675
1x MQ-41 ...m channel	369591
2x MQZ-E41 end cap	369685
1x MQA-M10 saddle nut	369630
1x M10 nut	216466
1x AM10x1000...m	339795

Wall rail with flange length	
2x MQT-C22-F clamp	304194
1x MQ-41 ...m channel	369591
2x MQZ-E41 end cap	369685
1x MQA-M10 saddle nut	369630
1x M10 nut	216466
1x AM10x1000...m	339795



Wall rail fits between the flanges	
2x MQT-K	284241
1x MQ-41 ...m channel	369591
1x MQA-M10 saddle nut	369630
1x M10 nut	216466
1x AM10x1000...m	339795

Application description	Application	Product lines	Base material
Wall rail	4	MQ System	Steel
		Clamps	

General comments

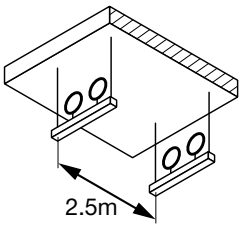
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

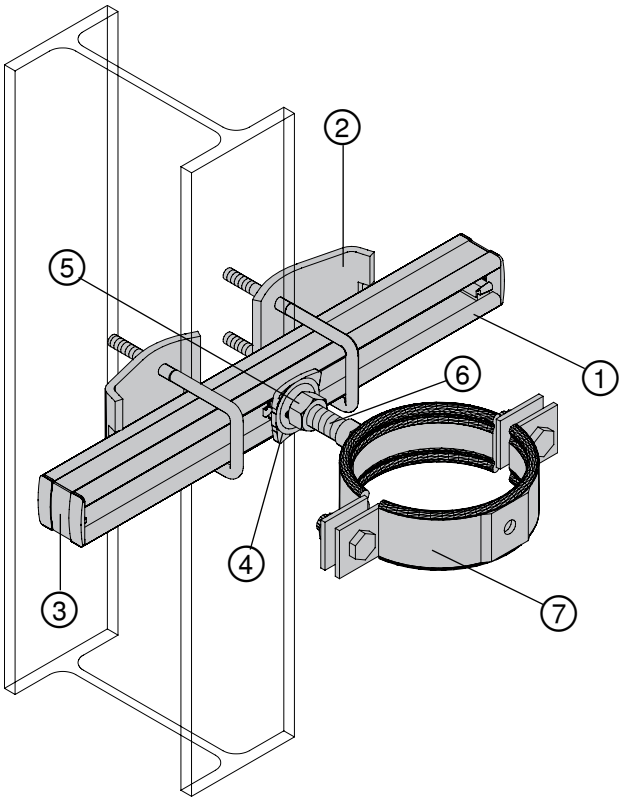
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Plumbing Application - Wall Rail

Type P-WR20

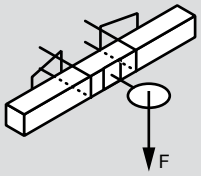
- Limited to max. 1x DN 100 (O.D. 108 mm) steel pipes
- Spacing - support distance 2.5 m
- Insulation rubber 20 mm



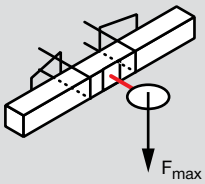


Additional loading capacity limits

This particular case
F= 0.44 kN recommended loads
Notice: check the limitation below



Max. F = Depends on many factors and must be calculated for the particular load combinations using the manual approach or with software. In this case the limiting factor is the M16 threaded rod Fmax = 0.44 kN.



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369591**	**MQ-41 3M channel**	1	0.3 max.
②	**369675**	**MQT 21-41 clamp**	2	0
③	**369685**	**MQZ-E41 end cap**	2	0
④	**369632**	**MQA-M16 saddle nut**	1	0
⑤	**216468**	**M16 hex. Nut**	1	0
⑥	**216422**	**AM16x1000m thredaded rod**	1	0.06
⑦	**372229**	**MP-MXI 4” M16 pipe ring**	1	0

Application description	In PROFIS as	Application		
Plumbing - wall rail	P-WR20	4	Base material	Steel
			Product line	MQ System
			Capacity limit	1x DN 100 steel

General comments

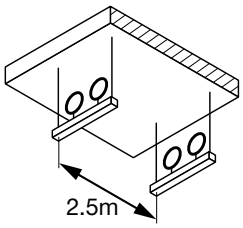
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

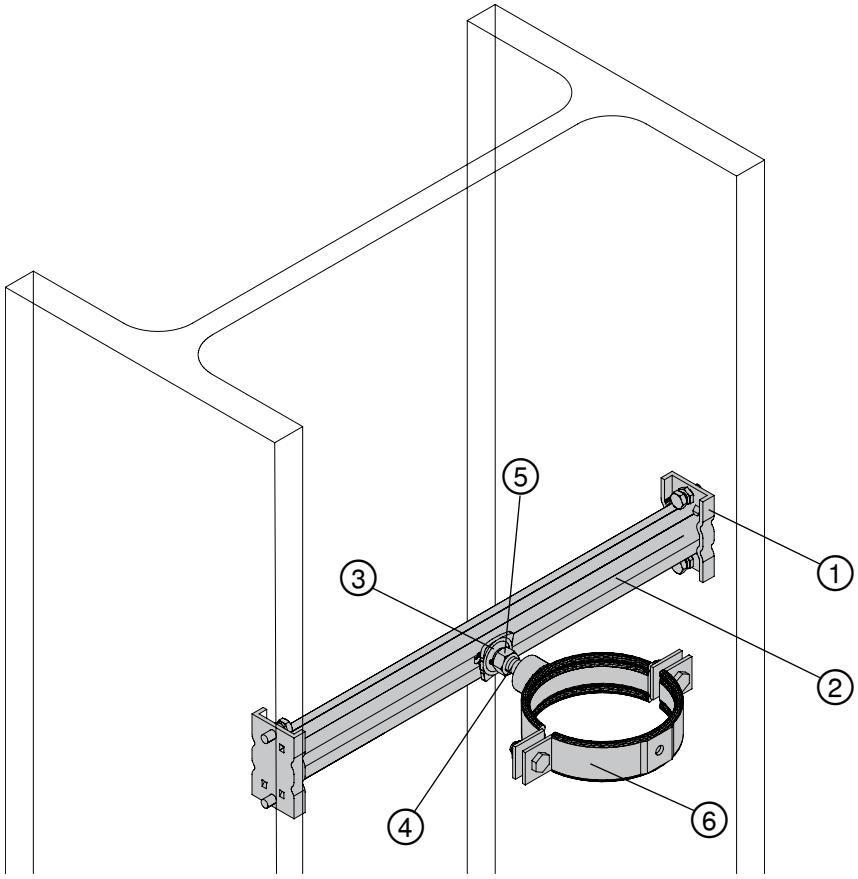
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Plumbing Application - Wall Rail

Type P-WR21

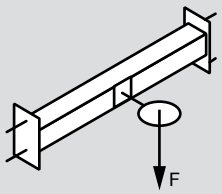
- Limited to max. 1x DN 100 (O.D. 108 mm) steel pipes
- Spacing - support distance 2.5 m
- Insulation rubber 20 mm



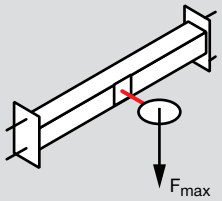


Additional loading capacity limits

This particular case
F= 0.44kN recommended loads
Notice: check the limitation below



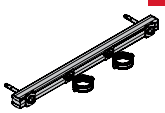
Max. F = 0.44 kN recommended load
This application is in most cases limited by the bending moment acting on the threaded rod.
Combined shear load and torsion moment acting on the channel can also be an important limiting factor.



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**284241**	**MQT-K bracing clamp**	1 (pair)	0
②	**369591**	**MQ-41 3m channel**	1	max. 0.365
③	**369632**	**MQA-M16 saddle nut**	1	0
④	**216422**	**AM16x1000 threaded rod**	1	0.045
⑤	**216468**	**M16 hex. Nut**	1	0
⑥	**372229**	**MP-MXI 4" M16 pipe ring**	1	0

Application description	In PROFIS as	Application
Plumbing - wall rail	P-WR21	4



Base material	Steel
Product line	MQ System
Capacity limit	1x DN 100 steel

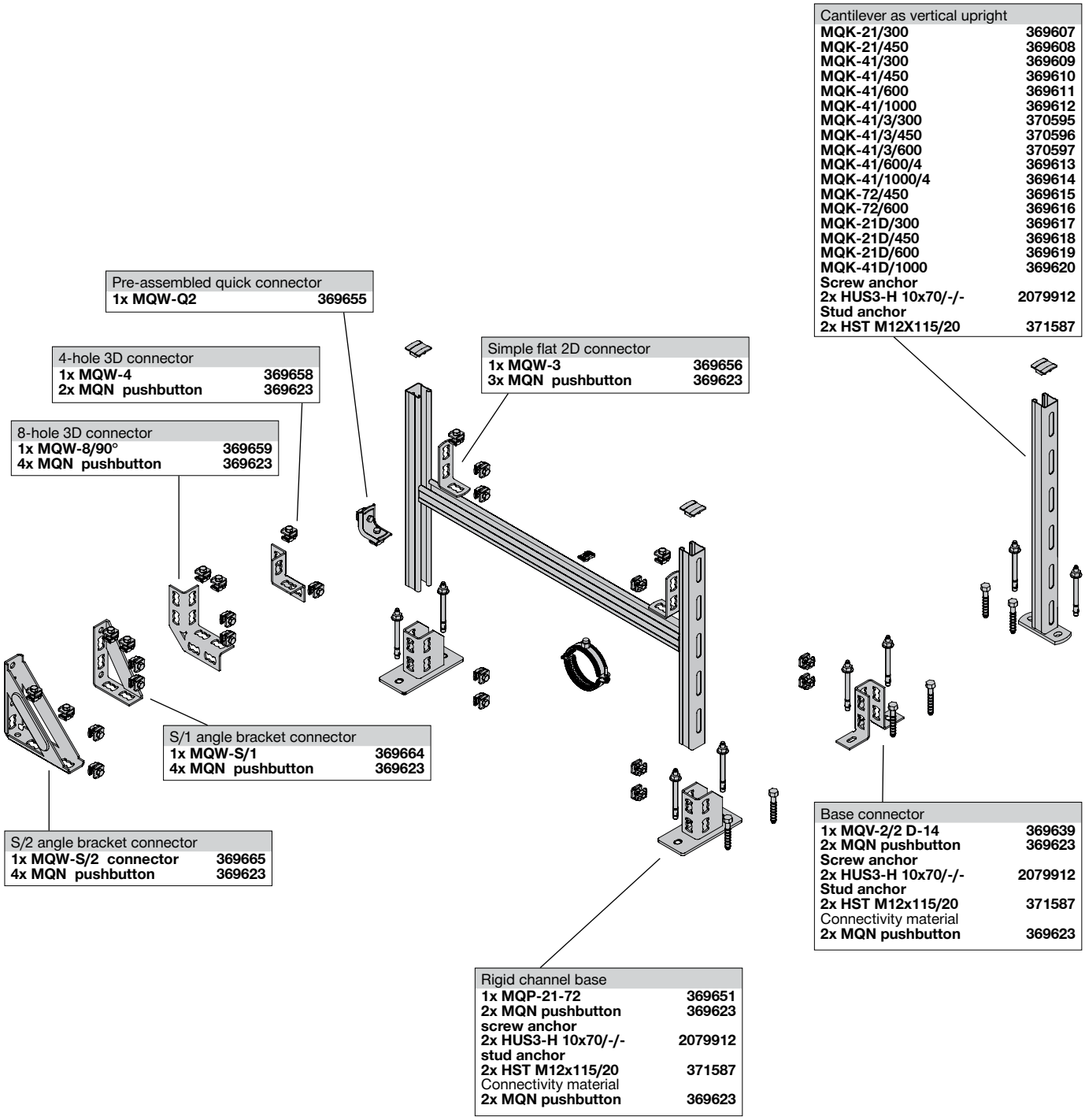
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Goal Post Frame On Concrete - Options 1



Cantilever as vertical upright	
MQK-21/300	**369607**
MQK-21/450	**369608**
MQK-41/300	**369609**
MQK-41/450	**369610**
MQK-41/600	**369611**
MQK-41/1000	**369612**
MQK-41/3/300	**370595**
MQK-41/3/450	**370596**
MQK-41/3/600	**370597**
MQK-41/600/4	**369613**
MQK-41/1000/4	**369614**
MQK-72/450	**369615**
MQK-72/600	**369616**
MQK-21D/300	**369617**
MQK-21D/450	**369618**
MQK-21D/600	**369619**
MQK-41D/1000	**369620**
Screw anchor	
2x HUS3-H 10x70/-/-	**2079912**
Stud anchor	
2x HST M12X115/20	**371587**

Pre-assembled quick connector	
1x MQW-Q2	**369655**

4-hole 3D connector	
1x MQW-4	**369658**
2x MQN pushbutton	**369623**

8-hole 3D connector	
1x MQW-8/90°	**369659**
4x MQN pushbutton	**369623**

Simple flat 2D connector	
1x MQW-3	**369656**
3x MQN pushbutton	**369623**

S/1 angle bracket connector	
1x MQW-S/1	**369664**
4x MQN pushbutton	**369623**

S/2 angle bracket connector	
1x MQW-S/2 connector	**369665**
4x MQN pushbutton	**369623**

Base connector	
1x MQV-2/2 D-14	**369639**
2x MQN pushbutton	**369623**
Screw anchor	
2x HUS3-H 10x70/-/-	**2079912**
Stud anchor	
2x HST M12x115/20	**371587**
Connectivity material	
2x MQN pushbutton	**369623**

Rigid channel base	
1x MQP-21-72	**369651**
2x MQN pushbutton screw anchor	**369623**
2x HUS3-H 10x70/-/- stud anchor	**2079912**
2x HST M12x115/20	**371587**
Connectivity material	
2x MQN pushbutton	**369623**

Application description	Application	Product lines	Base material
Goal post	5	MQ System	Concrete

General comments

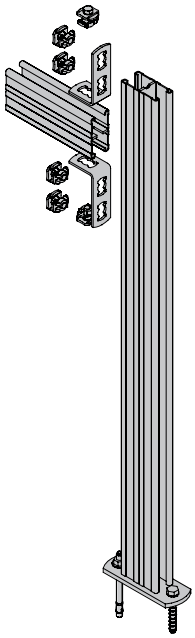
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

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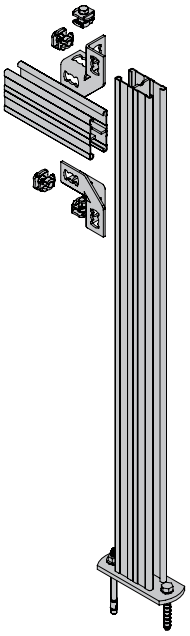
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Goal Post Frame On Concrete - Options 2

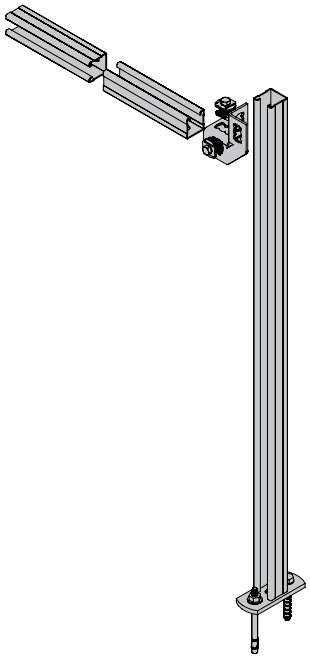
Doubled connector for any double channel	
2x MQW-3	**369656**
6x MQN pushbutton	**369623**



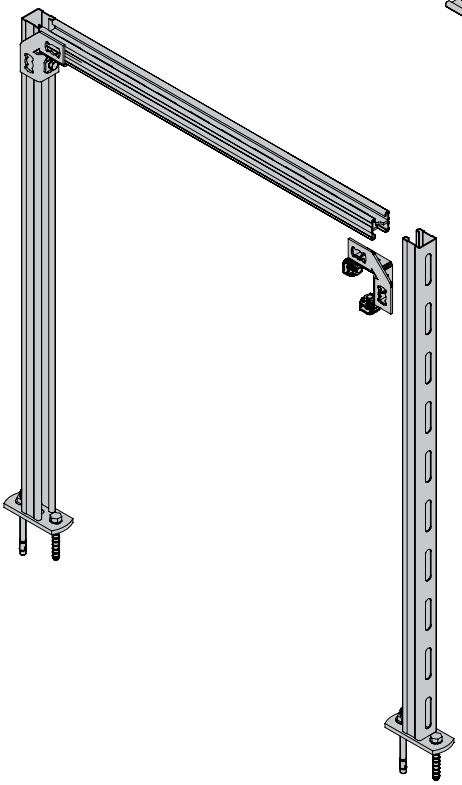
Doubled connector for 41D or bigger	
2x MQW-4	**369658**
4x MQN pushbutton	**369623**



Different rotations of the channel	
1x MQW-4	**369658**
2x MQN pushbutton	**369623**



Connection for double channel	
1x MQW-4	**369658**
2x MQN pushbutton	**369623**



Application description	Application	Product lines	Base material
Goal post	5	MQ System	Concrete

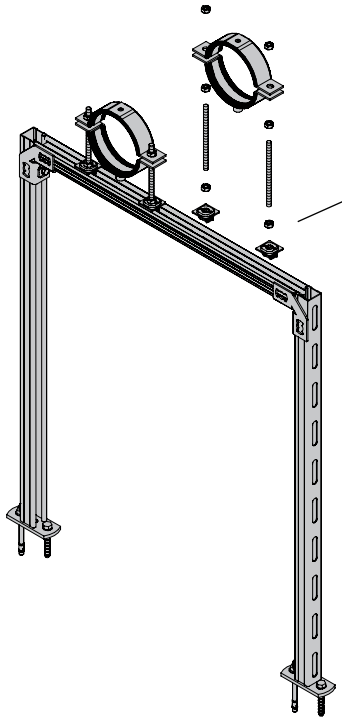
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

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Goal Post Frame On Concrete - Options 3



M16 pipe ring connection fire rated saddle	
2x MQA-M16-B saddle nut	369632
2x AM16x100...m t-rod	216422
6x M16 nut	216468

M16 pipe rings	
MP-MXI	Sizes 177mm - 508mm
MP-MX (m)	Sizes 177mm - 508mm
MP-MX (")	Sizes 177mm - 508mm

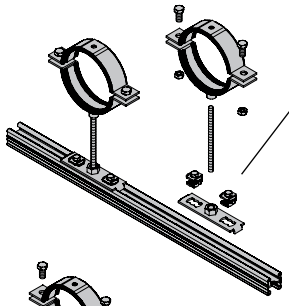
M12 pipe ring connection fire rated saddle	
2x MQA-M12-B saddle nut	369631
2x AM12x1000...m t-rod	339797
6x M12 nut	216467

M12 pipe rings	
MP-MX	Sizes 60mm - 170mm
MP-MX (m)	Sizes 60mm - 170mm
MP-MX (")	Sizes 108mm - 170mm

M10 pipe ring connection fire rated saddle	
2x MQA-M10 B saddle nut	372471
2x AM10x1000...m t-rod	339795
6x M10 nut	216466

M10 pipe rings	
MP-MX (")	Sizes 60mm - 93mm
MP-MXI M10/M12	Sizes 2"- 3"

M10 pipe ring connection saddle	
2x MQA-M10 saddle nut	369630
2x AM10x1000...m t-rod	339795
6x M10 nut	216466



¾" pipe ring connection saddle	
1x MQG-2-3/4" base plate	369684
2x MQN pushbutton	369623
1x GR-G 3/4« threaded tube	56429

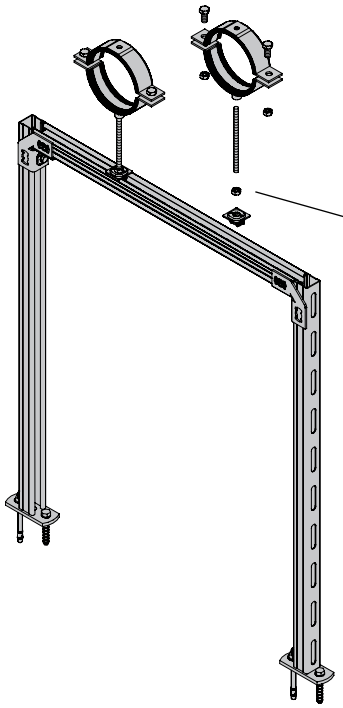
¾" pipe rings	
MP-MI ..EL	Sizes 117mm - 267mm
MP-MXI ..3/4"	Sizes 2" - 133mm

½" pipe ring connection saddle	
1x MQG-2-1/2" base plate	369683
2x MQN pushbutton	369623
1x GR-G 1/2«...m t-tube	56428

½" pipe rings	
MP-MI ..DL	Sizes 3/4" - 2"

M16 pipe ring connection saddle	
1x MQG-2-M16 base plate	369682
2x MQN pushbutton	369623
1x AM16x1000...m t-tube	216422

M16 pipe rings	
MP-MI ..C	Sizes 4" - 244.5mm
MP-MXI M16	Sizes 4" - 508 mm



M16 pipe ring connection fire rated saddle	
1x MQA-M16-B saddle nut	369632
1x AM16x1000...m t-tube	216422
1x M16 nut	216468

M12 pipe ring connection fire rated saddle	
1x MQA-M12-B saddle nut	369631
1x AM12x50 bolt	216397
1x M12 nut	216467

M12 pipe rings	
MP-MI ..G	Sizes 3/8" - 6"
MP-MXI M10/M12	Sizes 2"- 3"

M10 pipe ring connection fire rated saddle	
1x MQA-M10 B saddle nut	372471
1x AM10x60 bolt	216391
1x M10 nut	216466

M10 pipe rings	
MP-HI	Sizes 8mm - 6"
MPN-RC	Sizes 8mm - 6"
MPN-QRC M10	Sizes 8mm - 4"
MP-MI ..G	Sizes 3/8" - 6"
MP-MXI M10/M12	Sizes 2"- 3"

M10 pipe ring connection saddle	
1x MQA-M10 saddle nut	369630
1x AM10x60 bolt	216391
1x M10 nut	216466

Application description	Application	Product lines	Base material
Goal post	5	MQ System	Concrete

General comments

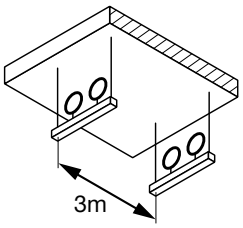
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

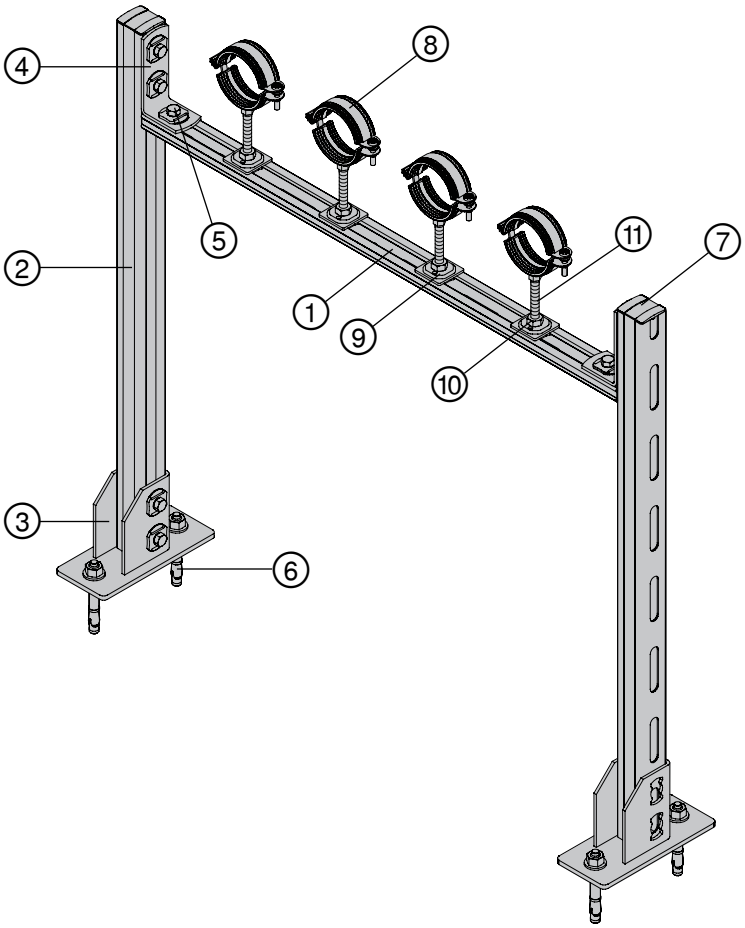
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Plumbing Application - Goal Post

Type P-GP1

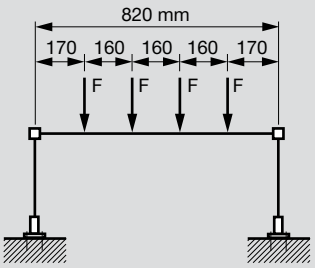
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



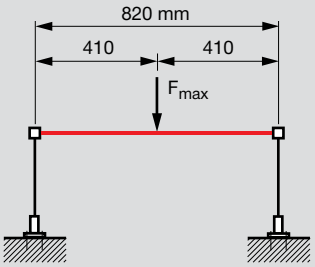


Additional loading capacity limits

This particular case
F = 0.20 kN recommended loads



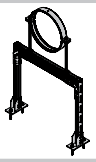
Max. F = 0.67 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3m channel**	1	0.78
②	**369591**	**MQ-41 3m channel**	2	0.78 Depends on distance
③	**369651**	**MQP-21-72 channel base**	2	0
④	**369656**	**MQW-3 angle**	2	0
⑤	**369623**	**MQN pushbutton**	10	0
⑥	**2004155**	**HSA M12 20/5/- stud anchor**	4	0
⑦	**369685**	**MQZ-E41 plastic end cap**	2	0
⑧	**335684**	**MPN-RC 60/66 A pipe ring**	4	0
⑨	**369630**	**MQA-M10 saddle nut**	4	0
⑩	**216466**	**M10 hex. nut**	4	0
⑪	**216392**	**AM 10x80 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - goal post	P-GP1	5



Base material	Concrete
Product line	MQ System
Capacity limit	4 x DN 50 steel

General comments

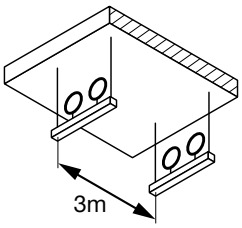
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

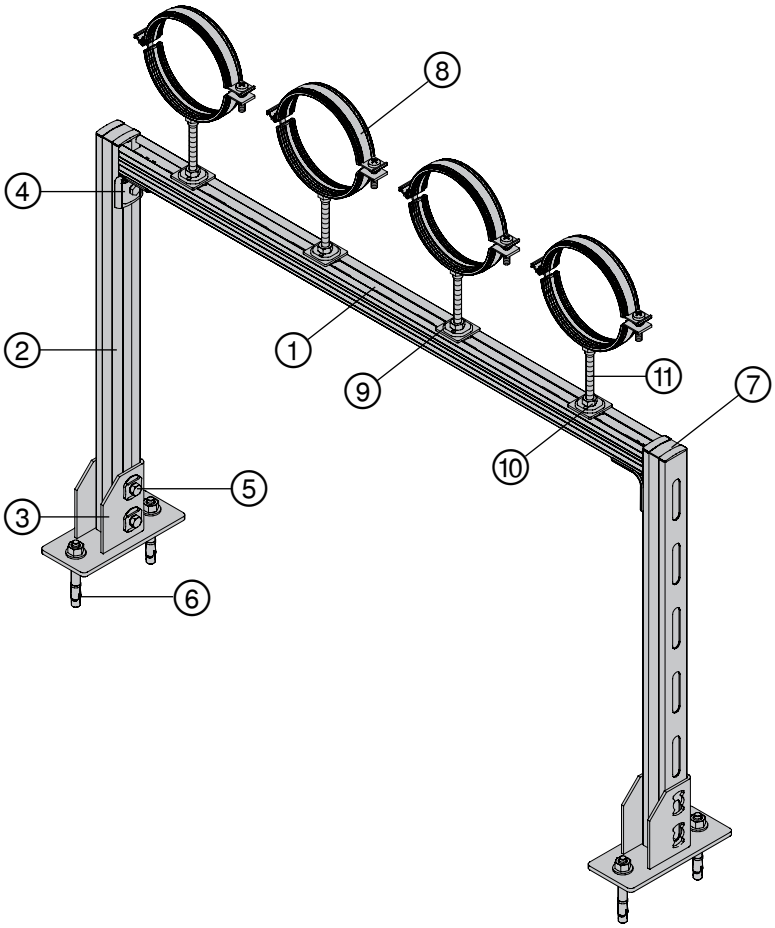
Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

Plumbing Application - Goal Post

Type P-GP2

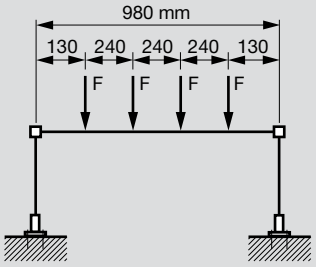
- Limited to max. 4x DN 125 (O.D. 133 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



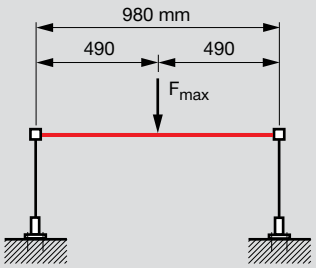


Additional loading capacity limits

This particular case
F = 0.75 kN recommended loads



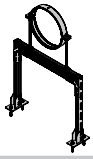
Max. F = 1.7 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369601**	**MQ-21 D 3M channel**	1	0.94
②	**369591**	**MQ-41 3M channel**	2	0.62 Depends on distance
③	**369651**	**MQP-21-72 channel base**	2	0
④	**369655**	**MQW-Q2 pre-assembled angle**	2	0
⑤	**369623**	**MQN pushbutton**	4	0
⑥	**2004155**	**HSA M12 20/5/- stud anchor**	4	0
⑦	**369685**	**MQZ-E41 plastic end cap**	2	0
⑧	**335702**	**MPN-RC 133 B pipe ring**	4	0
⑨	**369630**	**MQA-M10 saddle nut**	4	0
⑩	**216466**	**M10 hex. nut**	4	0
⑪	**216392**	**AM10x80 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - goal post	P-GP2	5



Base material	Concrete
Product line	MQ System
Capacity limit	4 x DN 125 steel

General comments

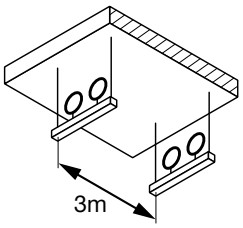
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

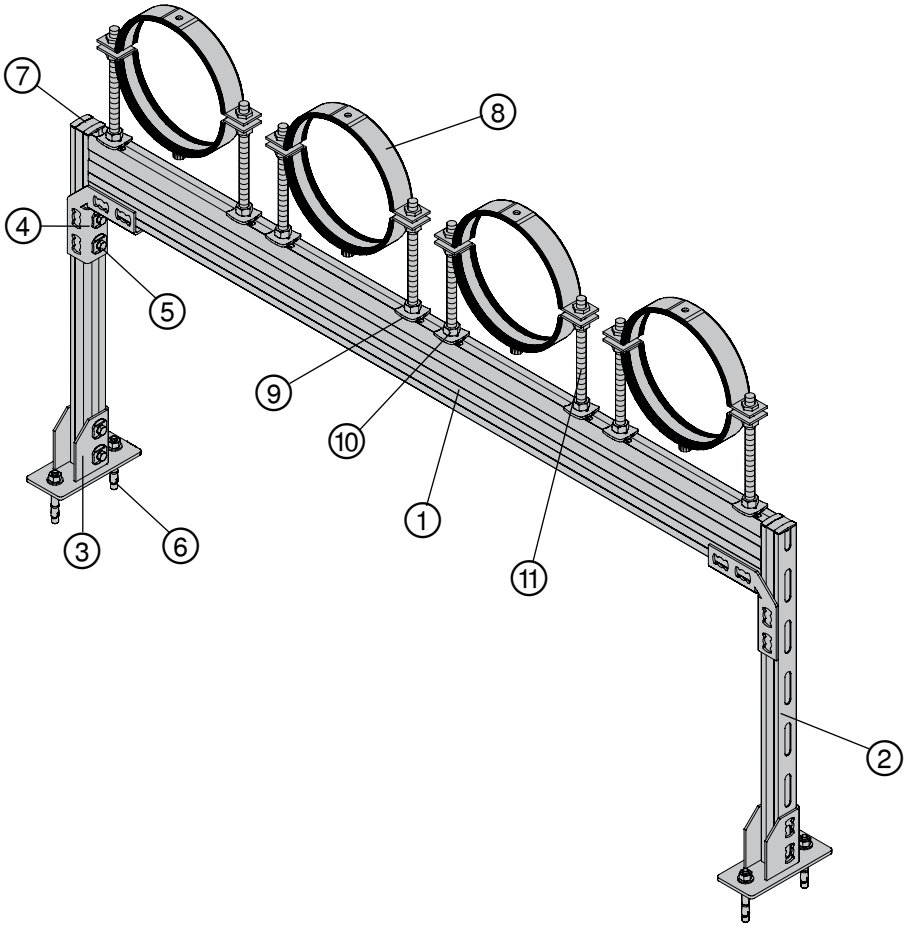
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Plumbing Application - Goal Post

Type P-GP3

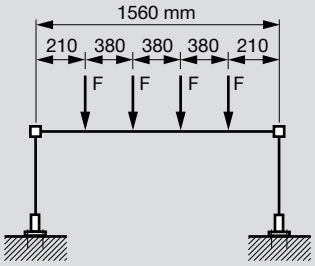
- Limited to max. 4x DN 200 (O.D. 219.1 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 40 mm



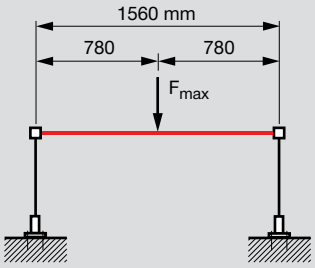


Additional loading capacity limits

This particular case
F = 2.02 kN recommended loads



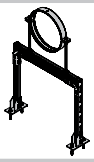
Max. F = 8.3 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369605**	**MQ-52-72 D 6M channel**	1	1.52
②	**369591**	**MQ-41 3M channel**	2	0.66 Depends on distance
③	**369651**	**MQP-21-72 channel base**	2	0
④	**369659**	**MQW-8/90 8-hole angle**	2	0
⑤	**369623**	**MQN pushbutton**	12	0
⑥	**2004155**	**HSA M12 20/5/- stud anchor**	4	0
⑦	**369685**	**MQZ-E41 plastic end cap**	2	0
⑧	**372238**	**MP-MXI 219 M16 pipe ring**	4	0
⑨	**369632**	**MQA-M16-B saddle nut**	8	0
⑩	**216468**	**M16 hex nut**	8	0
⑪	**216422**	**AM16x1000 threaded rod**	8	0.25

Application description	In PROFIS as	Application
Plumbing - goal post	P-GP3	5



Base material	Concrete
Product line	MQ System
Capacity limit	4 x DN 200 steel

General comments

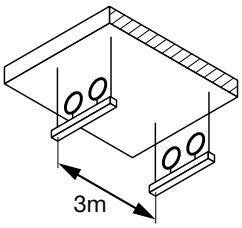
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

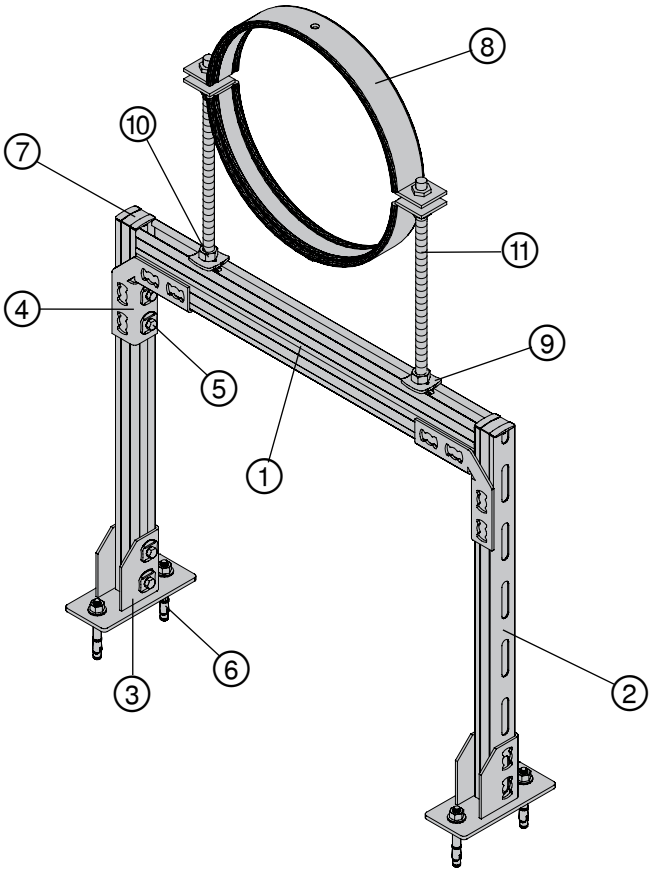
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Plumbing Application - Goal Post

Type P-GP4

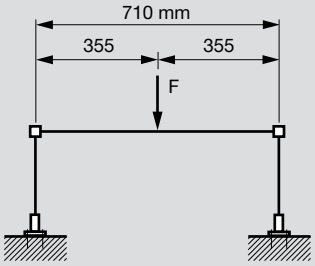
- Limited to max. 1x DN 350 (O.D. 355.6 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



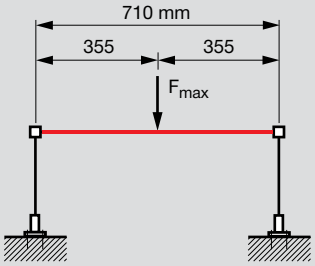


Additional loading capacity limits

This particular case
F = 4.76 kN recommended load



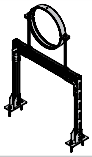
Max. F = 7.2 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369603**	**MQ-41 D 3M channel**	1	0.67
②	**369591**	**MQ-41 3M channel**	2	0.64 Depends on distance
③	**369651**	**MQP-21-72 channel base**	2	0
④	**369659**	**MQW-8/90 8-hole angle**	2	0
⑤	**369623**	**MQN pushbutton**	12	0
⑥	**2004155**	**HSA M12 20/5/- stud anchor**	4	0
⑦	**369685**	**MQZ-E41 plastic end cap**	2	0
⑧	**372244**	**MP-MXI 355 M16 pipe ring**	1	0
⑨	**369632**	**MQA-M16-B saddle nut**	2	0
⑩	**216468**	**M16 hex. nut**	2	0
⑪	**216422**	**AM16x1000 threaded rod**	2	0.36

Application description	In PROFIS as	Application
Plumbing - goal post	P-GP4	5



Base material	Concrete
Product line	MQ System
Capacity limit	1 x DN 350 steel

General comments

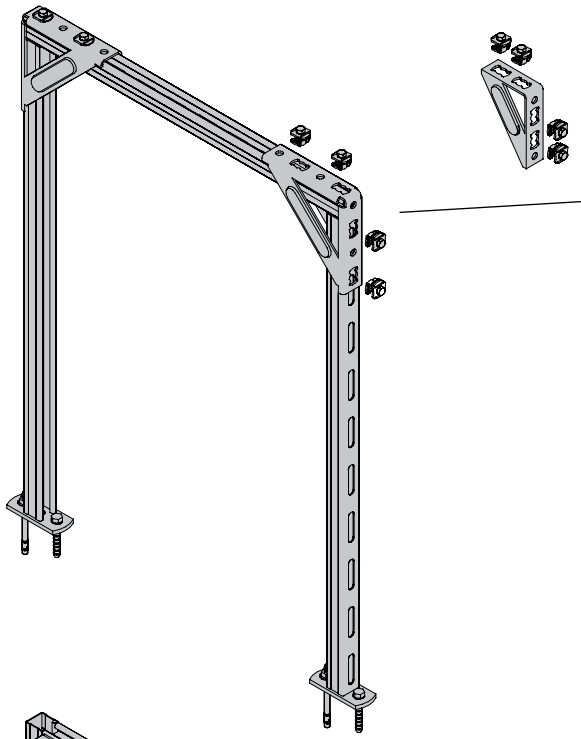
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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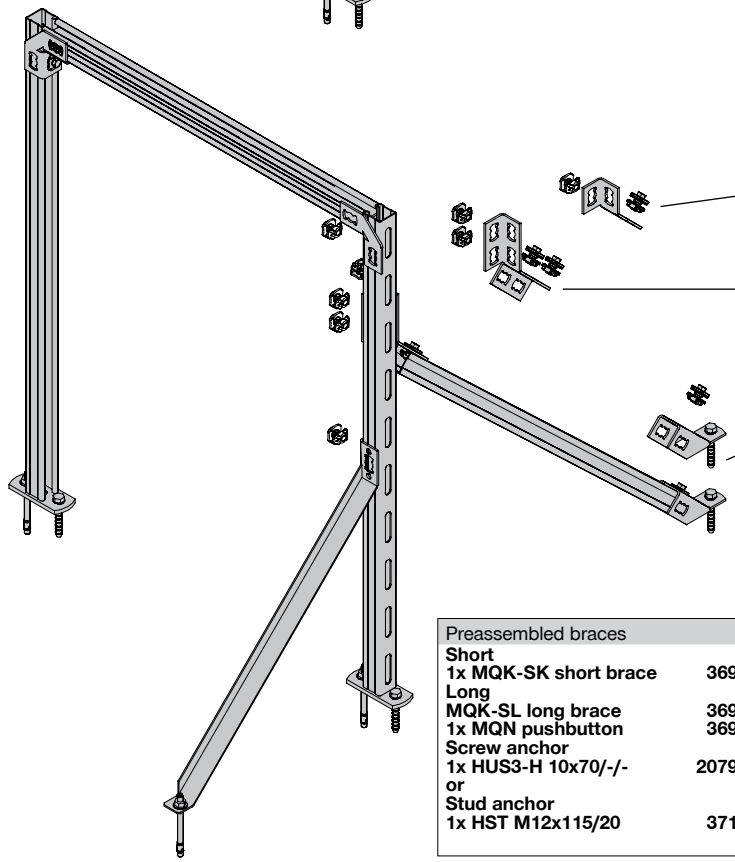
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Goal Post Frame On Concrete - Options 4

Stiffening options



S/2 angle bracket connector	
1x MQW-S/2 connector	**369665**
4x MQN pushbutton	**369623**



MQW-3/135 connector	
1x MQW-3/135 connector	**369663**
2x MQN pushbutton	**369623**

MQW-8/45 connector	
1x MQW-8/45 connector	**369660**
4x MQN pushbutton	**369623**

Anchoring the braces	
Brace connector	
MQP-45 brace connector	**369649**
Screw anchor	
1x HUS3-H 10x70/-/-	**2079912**
or	
Stud anchor	
1x HST M12x115/20	**371587**

Preassembled braces	
Short	
1x MQK-SK short brace	**369622**
Long	
MQK-SL long brace	**369621**
1x MQN pushbutton	**369623**
Screw anchor	
1x HUS3-H 10x70/-/-	**2079912**
or	
Stud anchor	
1x HST M12x115/20	**371587**

Application description	Application	Product lines	Base material
Goal post	5	MQ System	Concrete

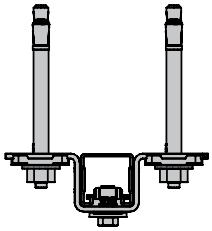
General comments

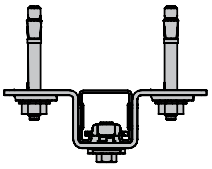
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

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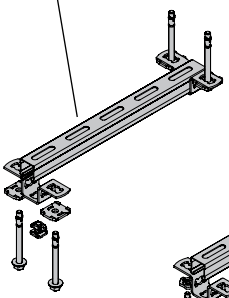
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Head Rail On Concrete - Options

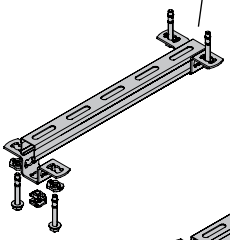


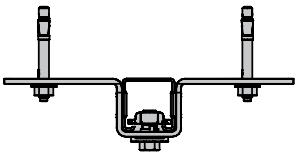


Clamp MQB to channel as to concrete	
Examples for 41 mm channel format	
For M8	
2x MQB-41 clamp	**369668**
2x MQN pushbutton	**369623**
4x MQZ-L9 Sq. washer	**369678**
4x HST M8x75/10 anchor	**371581**
For M10	
2x MQB-41 clamp	**369668**
2x MQN pushbutton	**369623**
4x MQZ-L11 sq. washer	**369679**
4x HST M10x90/10 anchor	**371584**
For M12	
2x MQB-41 clamp	**369668**
2x MQN pushbutton	**369623**
4x MQZ-L13 sq. washer	**369680**
4x HST M12x105/10 anchor	**2085451**
For M16	
2x MQB-41 clamp	**369668**
2x MQN pushbutton	**369623**
4x MQZ-L17 Sq. washer	**369681**
4x HST M16x130/15 anchor	**2085452**

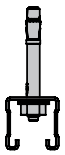


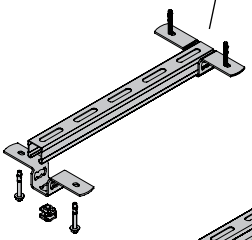
Clamp MQB to channel as to concrete	
For M10 only	
2x MQB-41 clamp	**369668**
2x MQN pushbutton	**369623**
4x MQZ-U reduction	**369692**
Screw anchor	
4x HUS3-H 8x55/-/-	**2079794**
or	
Stud anchor	
4x HST M10x90/10	**371584**



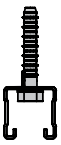


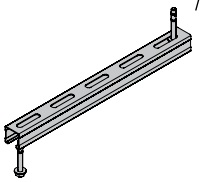
Wall clamp	
For 41 mm channel format only	
2x MQB-G41 clamp	**369674**
2x MQN pushbutton	**369623**
Screw anchor	
4x HUS3-H 8x55/-/-	**or**
Stud anchor	
4x HST M10x90/10	**371584**



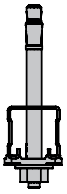


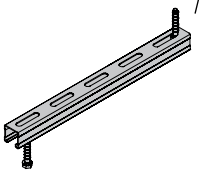
Channel back fastening - stud anchor	
Independent of channel format	
stud anchor	
1x HST M10x90/10	**371584**
Tip:	
Wrench to fit 41 mm channel :	
SI-S 1/2"-13 L	**2070402**



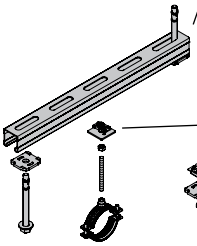


Channel back fastening - screw anchor	
Independent of channel format	
2x HUS3-10x60 5/-/-	
screw anchor	**2079911**

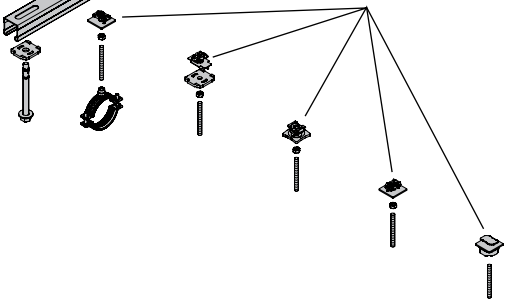




through-bolting channel	
41mm channel format	
2x MQZ-L13 sq. washer	**369680**
2x HST M12x145/50	**371588**
52 - 72 mm channel format	
2x MQZ-L13 sq.washer	**369680**
2x HST M12x185/90	**371589**



Pipe fastening: please see trapeze application



Application description	Application	Product lines	Base material
Head rail	6	MQ System	Concrete

General comments

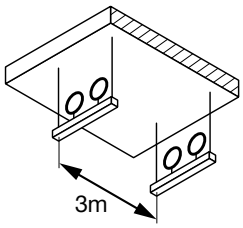
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

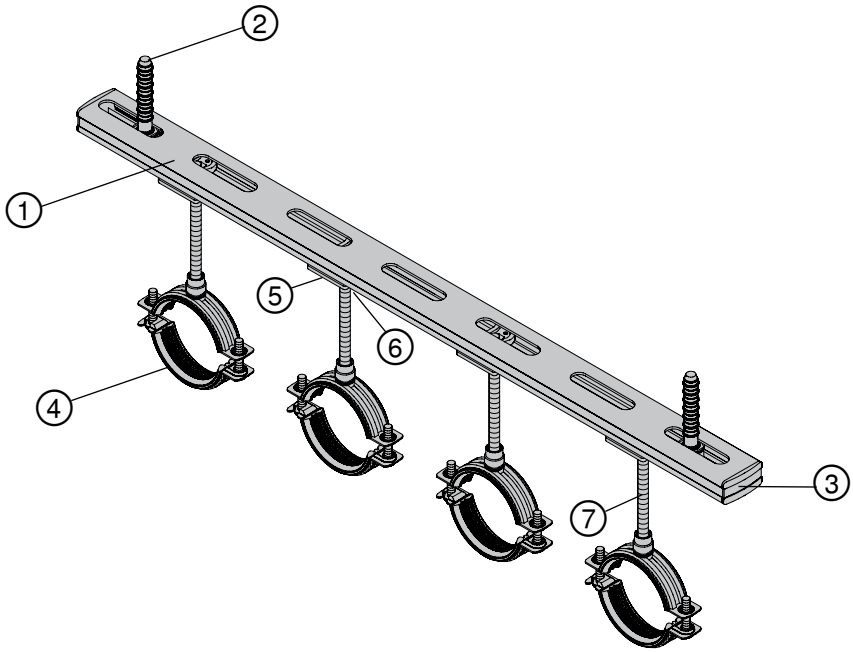
Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

Plumbing Application - Head Rail

Type P-HR1

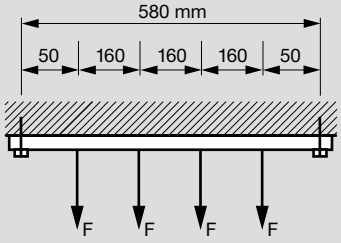
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



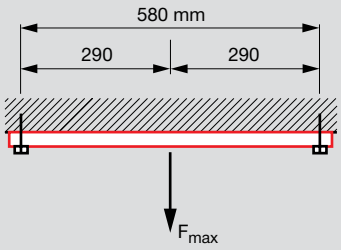


Additional loading capacity limits

This particular case
F= 0.2 kN recommended loads



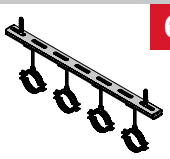
Max. F = 1.1 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3M channel**	1	0.68
②	**2079911**	**HUS3-10x60 5/-/- screw anchor**	2	0
③	**370598**	**MQZ-E21 plastic end cap**	2	0
④	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑤	**369629**	**MQA-M8 saddle nut**	4	0
⑥	**216465**	**M8 hex. Nut**	4	0
⑦	**216385**	**AM8x100 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - head rail	P-HR1	6



Base material	Concrete
Product line	MQ System
Capacity limit	4 x DN 50 steel

General comments

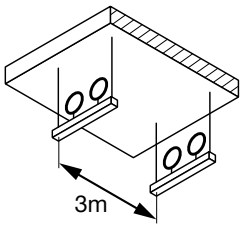
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

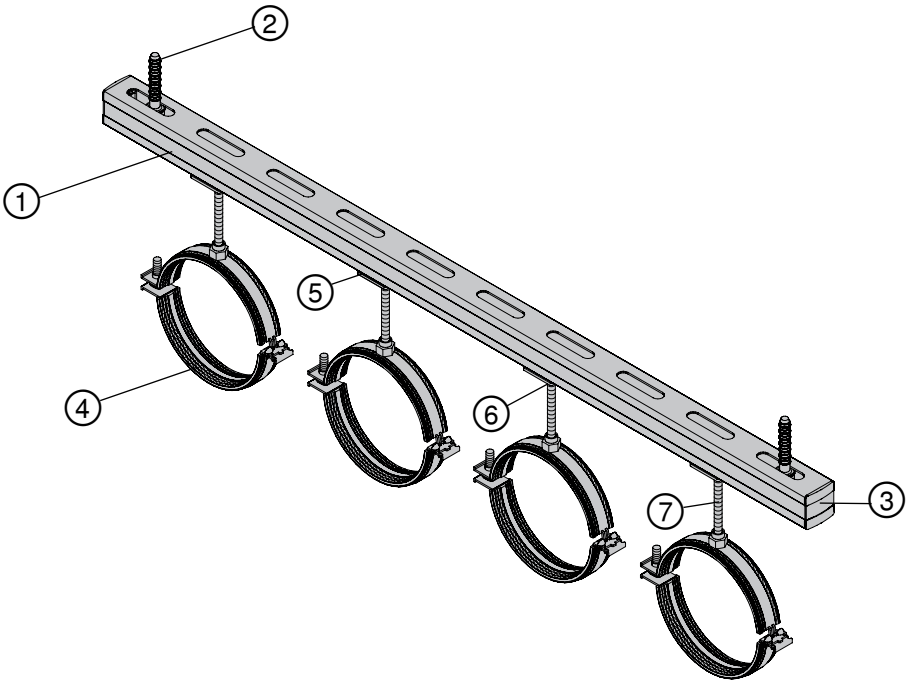
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Plumbing Application - Head Rail

Type P-HR2

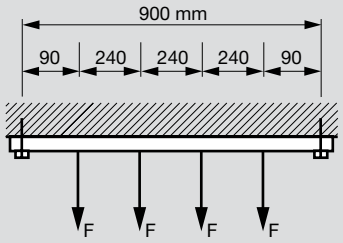
- Limited to max. 4x DN 125 (O.D. 133 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



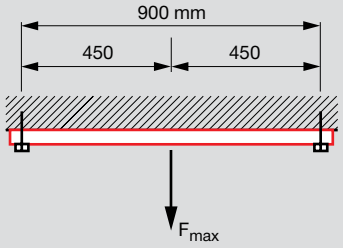


Additional loading capacity limits

This particular case
F= 0.75 kN recommended loads



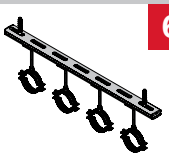
Max. F = 1.95 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369591**	**MQ-41 3M channel**	1	1.0
②	**2079911**	**HUS3-10x60 5/-/- screw anchor**	2	0
③	**369685**	**MQZ-E41 plastic end cap**	2	0
④	**335702**	**MPN-RC 133 B pipe ring**	4	0
⑤	**369629**	**MQA-M8 saddle nut**	4	0
⑥	**216465**	**M8 hex. Nut**	4	0
⑦	**216385**	**AM8x100 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - head rail	P-HR2	6



Base material	Concrete
Product line	MQ System
Capacity limit	4 x DN 125 steel

General comments

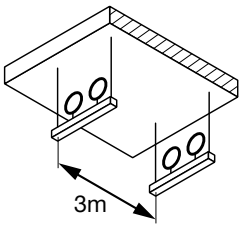
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

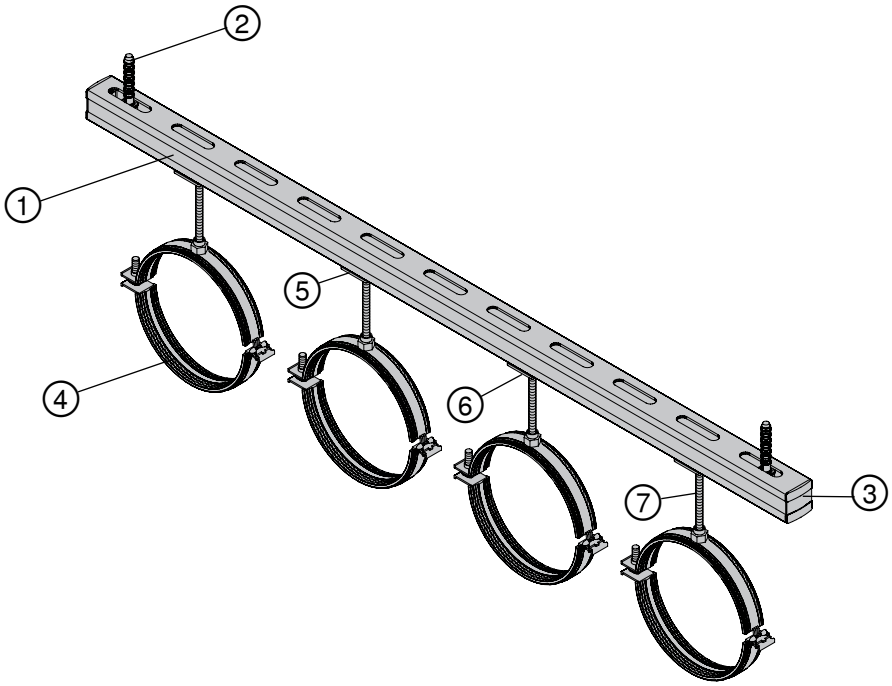
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Plumbing Application - Head Rail

Type P-HR3

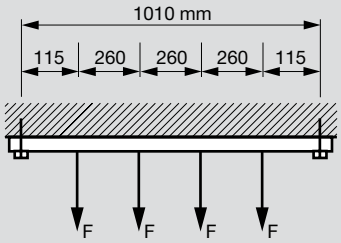
- Limited to max. 4x DN 150 (O.D. 159 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



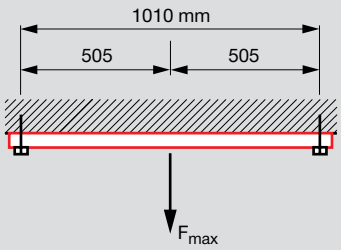


Additional loading capacity limits

This particular case
F= 1.05 kN recommended loads



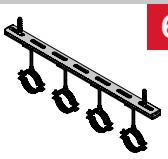
Max. F = 2.4 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369596**	**MQ-41/3 3M channel**	1	1.11
②	**2079911**	**HUS3-10x60 5/-/- screw anchor**	2	0
③	**369685**	**MQZ-E41 plastic end cap**	2	0
④	**335706**	**MPN-RC 160 B pipe ring**	4	0
⑤	**369629**	**MQA-M8 saddle nut**	4	0
⑥	**216465**	**M8 hex. Nut**	4	0
⑦	**216385**	**AM8x100 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - head rail	P-HR3	6



Base material	Concrete
Product line	MQ System
Capacity limit	4 x DN 150 steel

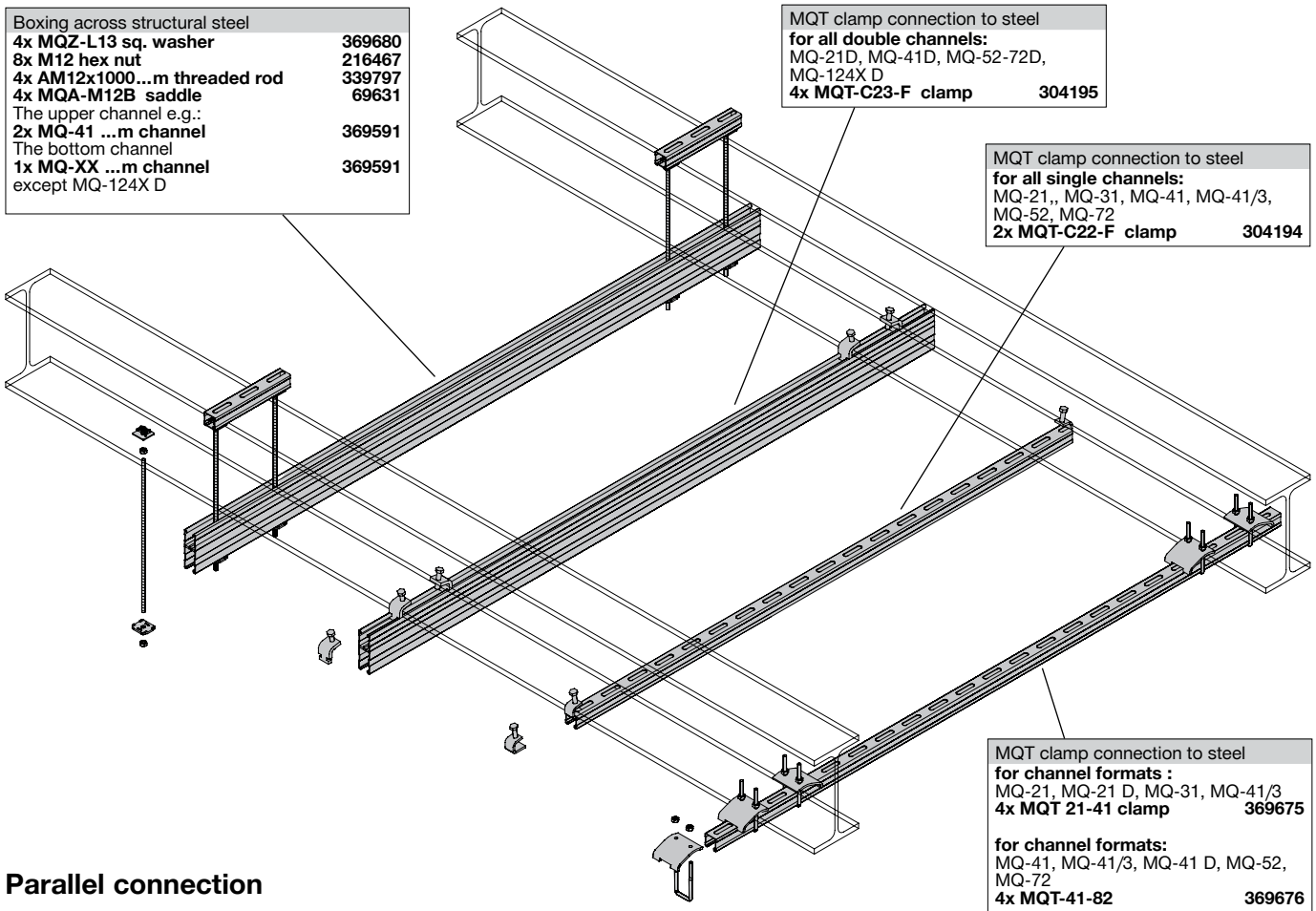
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Head Rail On Steel - Options

Cross connection



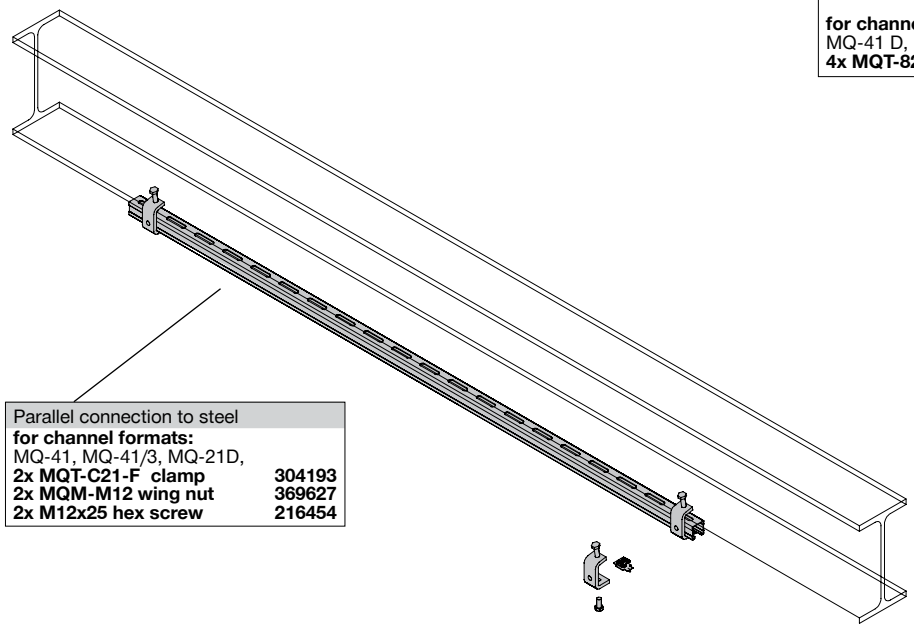
Boxing across structural steel	
4x MQZ-L13 sq. washer	**369680**
8x M12 hex nut	**216467**
4x AM12x1000...m threaded rod	**339797**
4x MQA-M12B saddle	**69631**
The upper channel e.g.:	
2x MQ-41 ...m channel	**369591**
The bottom channel	
1x MQ-XX ...m channel	**369591**
except MQ-124X D	

MQT clamp connection to steel	
for all double channels:	
MQ-21D, MQ-41D, MQ-52-72D, MQ-124X D	
4x MQT-C23-F clamp	**304195**

MQT clamp connection to steel	
for all single channels:	
MQ-21,, MQ-31, MQ-41, MQ-41/3, MQ-52, MQ-72	
2x MQT-C22-F clamp	**304194**

MQT clamp connection to steel	
for channel formats :	
MQ-21, MQ-21 D, MQ-31, MQ-41/3	
4x MQT 21-41 clamp	**369675**
for channel formats:	
MQ-41, MQ-41/3, MQ-41 D, MQ-52, MQ-72	
4x MQT-41-82	**369676**
for channel formats:	
MQ-41 D, MQ-52-72 D, MQ-124X D	
4x MQT-82-124	**369677**

Parallel connection



Parallel connection to steel	
for channel formats:	
MQ-41, MQ-41/3, MQ-21D,	
2x MQT-C21-F clamp	**304193**
2x MQM-M12 wing nut	**369627**
2x M12x25 hex screw	**216454**

Application description	Application	Product lines	Base material
Head rail	6	MQ System	Steel

General comments

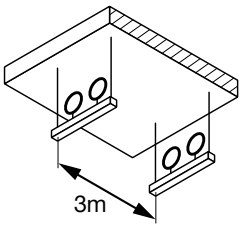
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

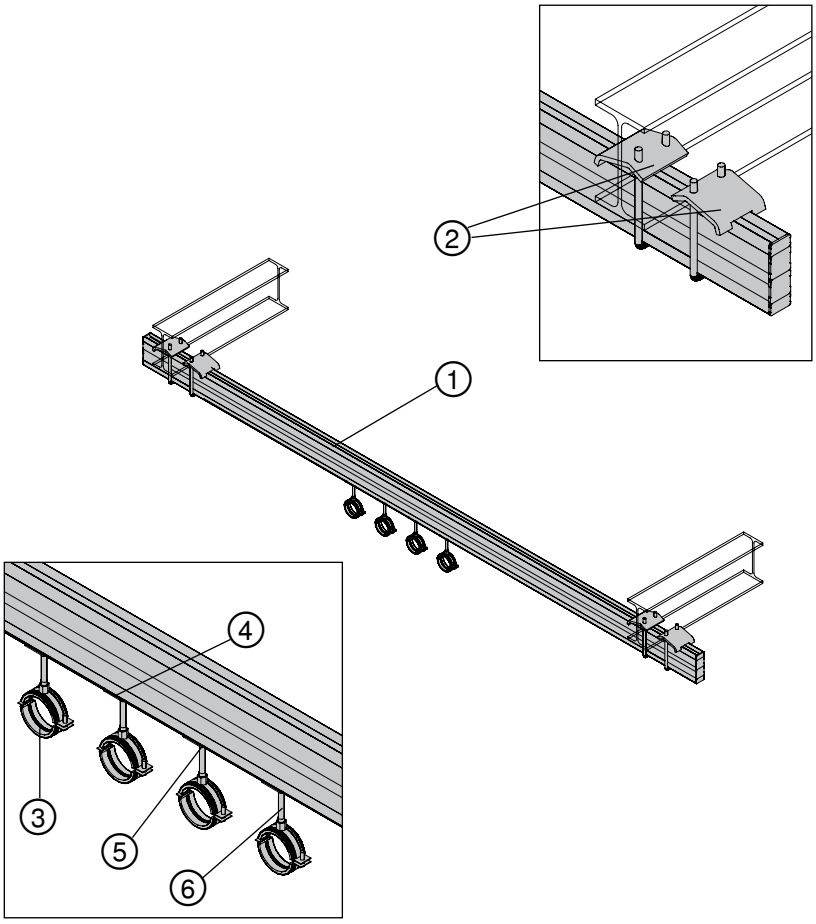
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Plumbing Application - Head Rail

Type P-HR20

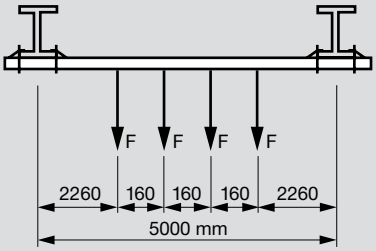
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm





Additional loading capacity limits

This particular case
F = 0.19 kN recommended loads

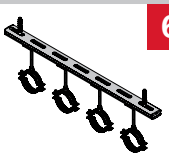


Max. F = depends on many factors and must be calculated for the particular load combinations either manually or with the aid of Hilti PROFIS Installation.

Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369606**	**MQ-124X D 6M channel**	1	5.2
②	**369677**	**MQT-82-124 beam clamp**	4	0
③	**335683**	**MPN-RC 2" A pipe ring**	4	0
④	**369629**	**MQA-M8 saddle nut**	4	0
⑤	**216465**	**M8 hex. Nut**	4	0
⑥	**339793**	**AM8x1000 threaded rod**	4	0

Application description	In PROFIS as	Application
Plumbing - head rail	P-HR20	6



Base material	Steel
Product line	MQ System
Capacity limit	4 x DN 50 steel

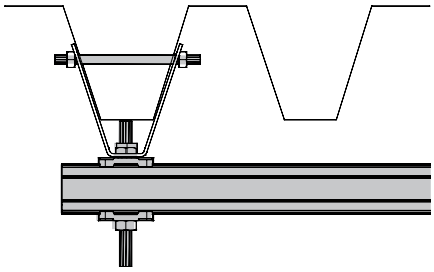
General comments

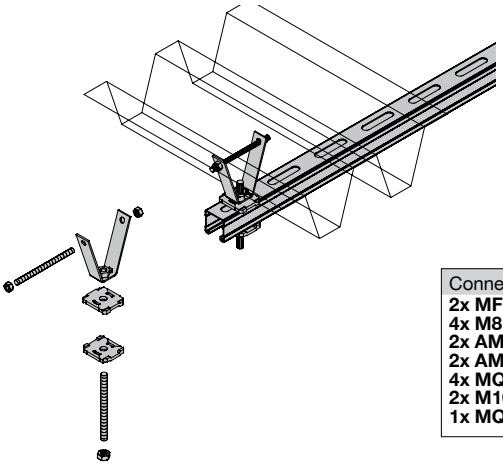
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- Application not subjects to any thermal expansion or any other 3D loads

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Head Rail On Profiled Metal Sheet - Options

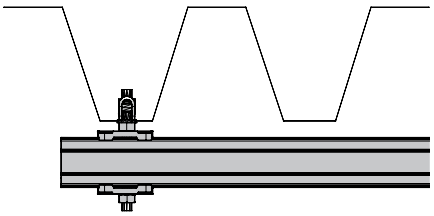


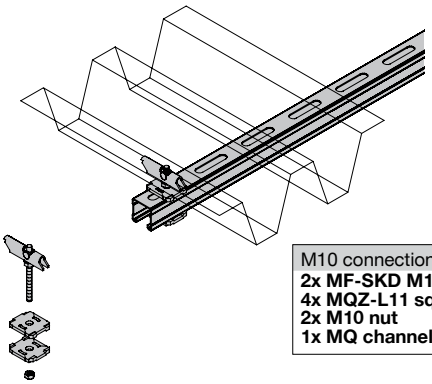




Connection to PMS - channel on 2xV	
2x MF-TSH M10 V-hanger	**229007**
4x M8 nut	**216465**
2x AM 8x1000...m t-rod	**339793**
2x AM10x1000...m t-rod	**339795**
4x MQZ-L11 sq. washer	**369679**
2x M10 nut	**216466**
1x MQ channel	







M10 connection to PMS toggle anchor	
2x MF-SKD M10/100 toggle anchor	**230608**
4x MQZ-L11 sq. washer	**369679**
2x M10 nut	**216466**
1x MQ channel	

Application description	Application	Product lines	Base material
Head rail	6	MQ System	PMS

General comments

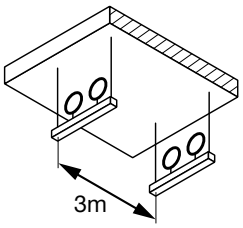
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

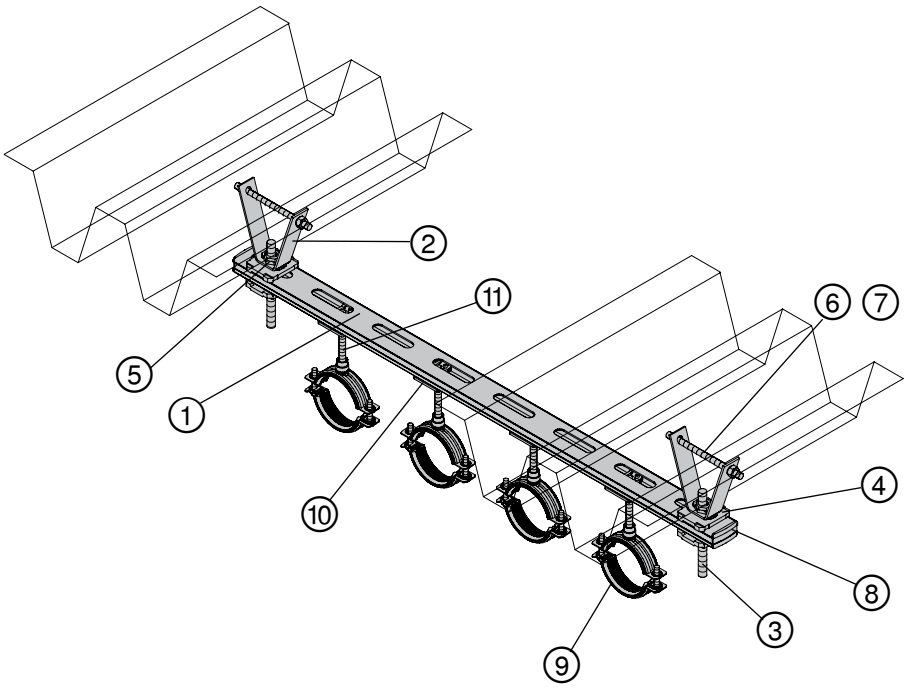
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Plumbing Application - Head Rail

Type P-HR40

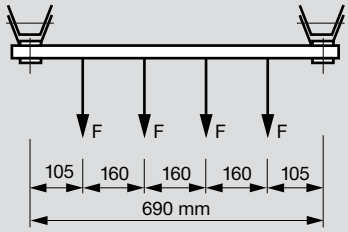
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



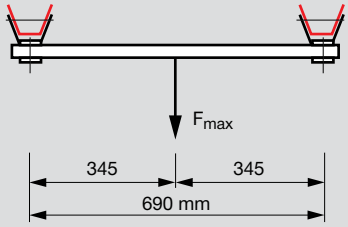


Additional loading capacity limits

This particular case
F = 0.2 kN recommended loads



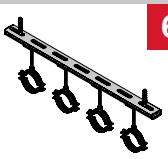
Max. F = always depends on the spot loading capacity of the PMS, typically 0.6 - 0.8 kN



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3M channel**	1	0.79
②	**229007**	**MF-TSH M10 V-hanger**	2	0
③	**216393**	**AM10x100 threaded bolt**	2	0.10
④	**369679**	**MQZ-L11 sq. washer**	4	0
⑤	**216466**	**M10 hex. Nut**	2	0
⑥	**2063165**	**M8x120 4.8 hex. Screw**	2	0
⑦	**216465**	**M8 nut**	6	0
⑧	**370598**	**MQZ-E21 plastic end cap**	2	0
⑨	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑩	**369629**	**MQA-M8 saddle nut**	4	0
⑪	**216385**	**AM8x100 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - head rail		6



Base material	PMS
Product line	MQ System
Capacity limit	4 x DN 50 steel

General comments

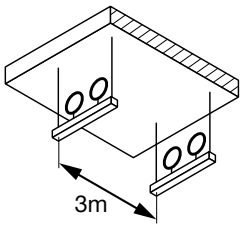
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

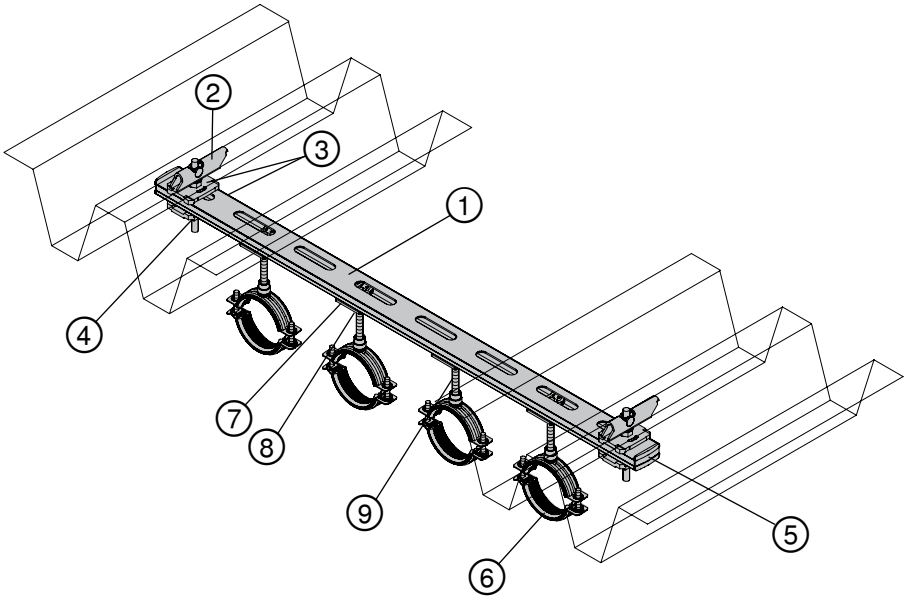
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Plumbing Application - Head Rail

Type P-HR41

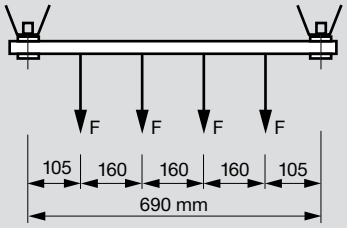
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



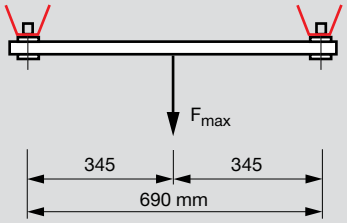


Additional loading capacity limits

This particular case
F = 0.2 kN recommended loads



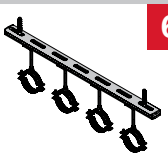
Max. F = always depends on the spot loading capacity of the PMS, typically 0.6 - 0.8 kN



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369584**	**MQ-21 3M channel**	1	0.79
②	**230608**	**MF-SKD M10/100 toggle anchor**	2	0
③	**369679**	**MQZ-L11 sq. washer**	4	0
④	**216466**	**M10 hex. Nut**	2	0
⑤	**370598**	**MQZ-E21 plastic end cap**	2	0
⑥	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑦	**369629**	**MQA-M8 saddle nut**	4	0
⑧	**216465**	**M8 hex. nut**	4	0
⑨	**216385**	**AM8x100 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - head rail		6



Base material	PMS
Product line	MQ System
Capacity limit	4 x DN 50 steel

General comments

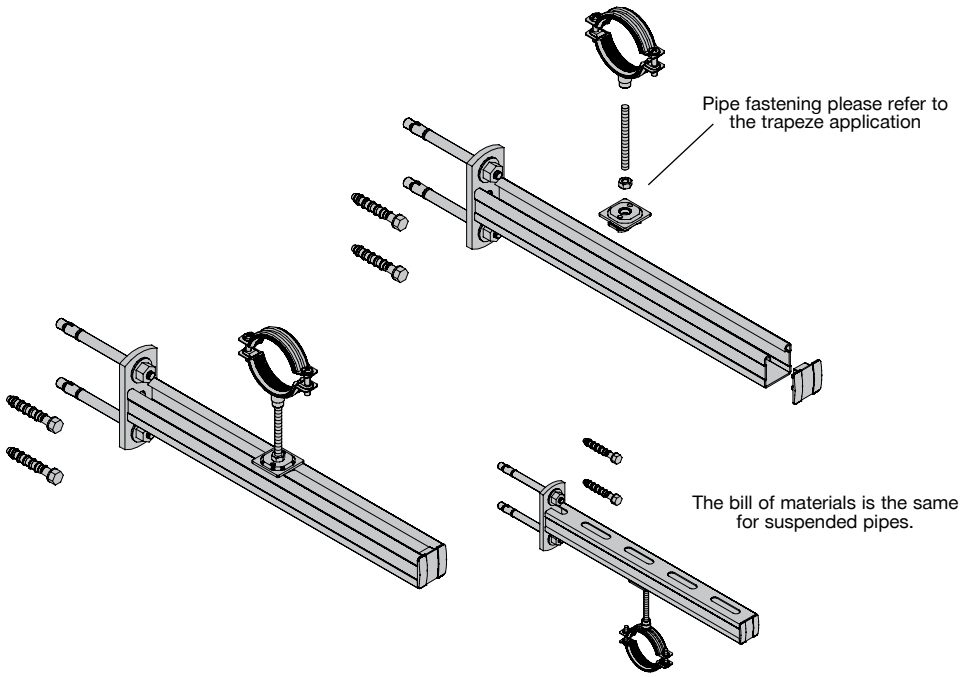
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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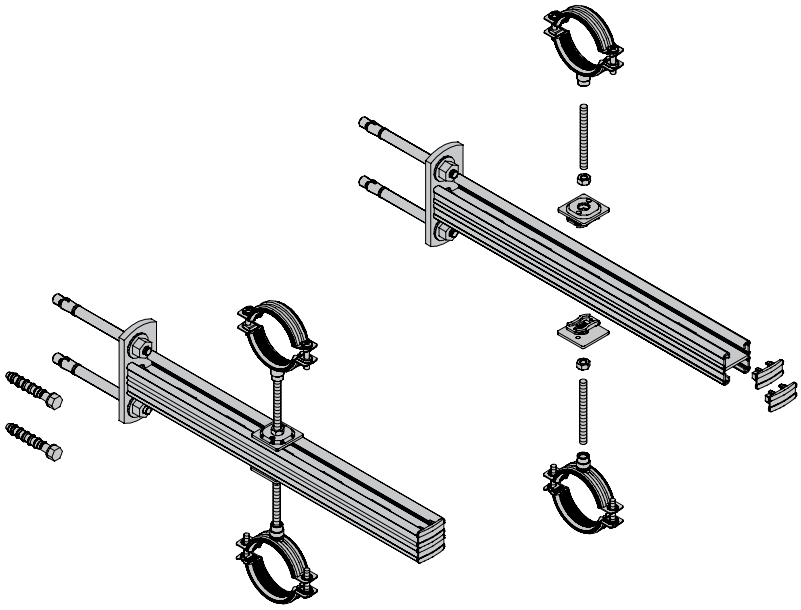
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Cantilever Arm On Concrete - Options 1

Single and double brackets



Single brackets	
MQK-21/300	**369607**
MQK-21/450	**369608**
MQK-41/300	**369609**
MQK-41/450	**369610**
MQK-41/600	**369611**
MQK-41/1000	**369612**
MQK-41/3/300	**370595**
MQK-41/3/450	**370596**
MQK-41/3/600	**370597**
MQK-41/600/4	**369613**
MQK-41/1000/4	**369614**
MQK-72/450	**369615**
MQK-72/600	**369616**
Screw anchor	
2x HUS3-H 10x70/-/-	**2079912**
Stud anchor	
2x HST M12X115/20	**371587**



Double brackets	
MQK-21D/300	**369617**
MQK-21D/450	**369618**
MQK-21D/600	**369619**
MQK-41D/1000	**369620**
Screw anchor	
2x HUS3-H 10x70/-/-	**2079912**
Stud anchor	
2x HST M12X115/20	**371587**

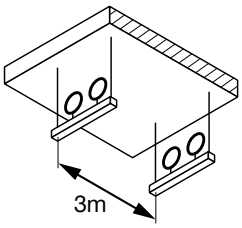
Application description	Application	Product lines	Base material
Cantilever arm	7	MQ System	Concrete
General comments		Pipe rings	
▪ Application subject to vertical loads caused by weight of the pipes ▪ Application not subject to any thermal expansion or any other 3D loads			

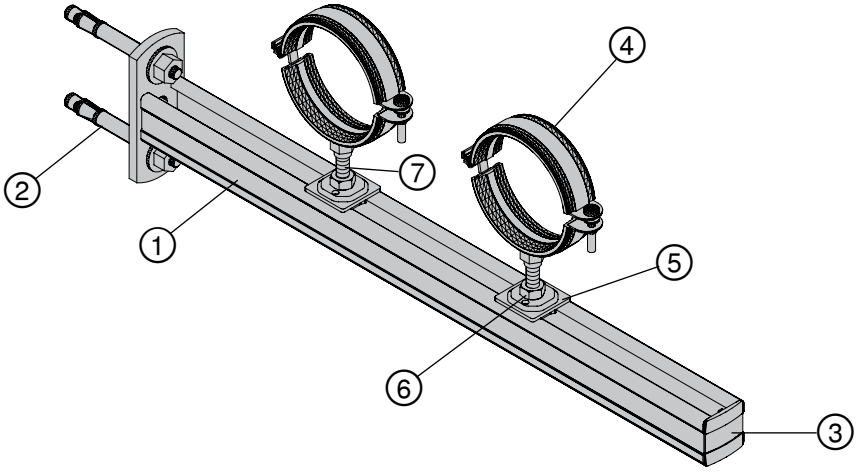
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Plumbing Application - Cantilever Arm

Type P-CA1

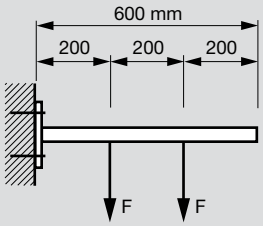
- Limited to max. 2x DN 80 (O.D. 89 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



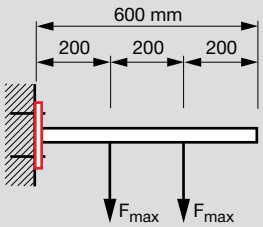


Additional loading capacity limits

This particular case
F = 0.37 kN recommended loads

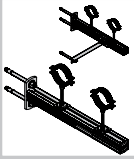


Max. F = 0.42 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369611**	**MQK-41/600 bracket**	1	0
②	**371587**	**HST M12X115/20 stud anchor**	2	0
③	**369685**	**MQZ-E41 end cap**	1	0
④	**335692**	**MPN-RC 3" B pipe ring**	2	0
⑤	**369630**	**MQA-M10 saddle nut**	2	0
⑥	**216466**	**M10 hex. nut**	2	0
⑦	**216393**	**AM10x100 threaded bolt**	2	0

Application description	In PROFIS as	Application		
Plumbing - cantilever arm	P-CA1	 7	Base material	Concrete
			Product line	MQ System
			Capacity limit	2 x DN 80 steel

General comments

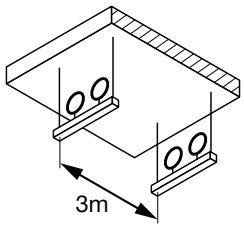
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

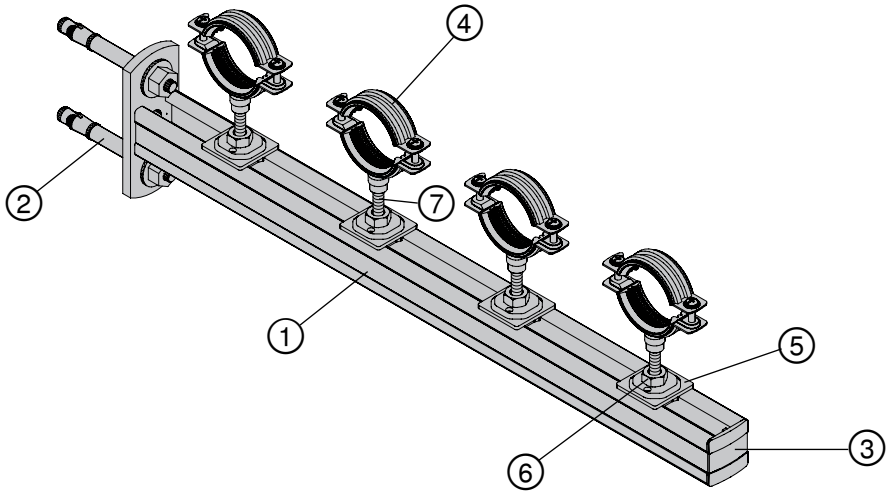
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Plumbing Application - Cantilever Arm

Type P-CA2

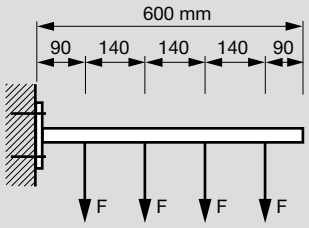
- Limited to max. 2x DN 40 (O.D. 48.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



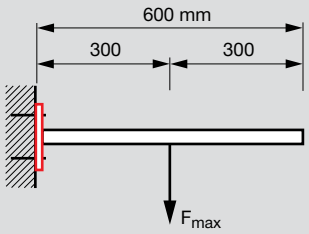


Additional loading capacity limits

This particular case
F = 0.14 kN recommended loads



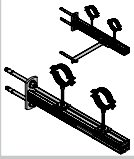
Max. F = 0.84 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369611**	**MQK-41/600 bracket**	1	0
②	**371587**	**HST M12X115/20 stud anchor**	2	0
③	**369685**	**MQZ-E41 end cap**	1	0
④	**386409**	**MP-HI 45-52 M8/M10 pipe ring**	4	0
⑤	**369629**	**MQA-M8 saddle nut**	4	0
⑥	**216465**	**M 8 hex. Nut**	4	0
⑦	**216382**	**AM8x60 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - cantilever arm	P-CA2	7



Base material	Concrete
Product line	MQ System
Capacity limit	4 x DN 40 steel

General comments

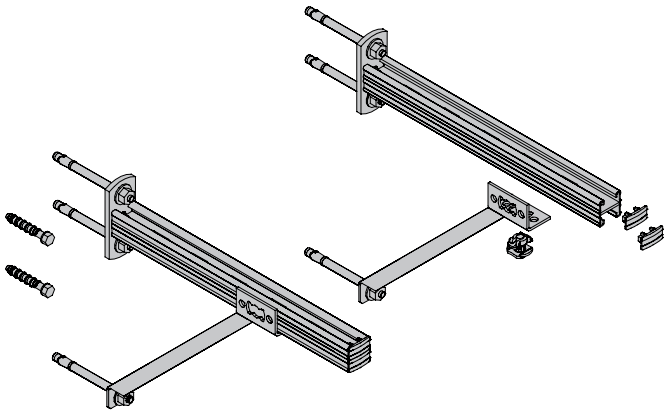
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

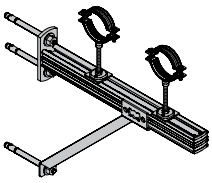
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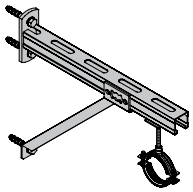
Cantilever Arm On Concrete - Options 2

Bracket with short pre-assembled brace



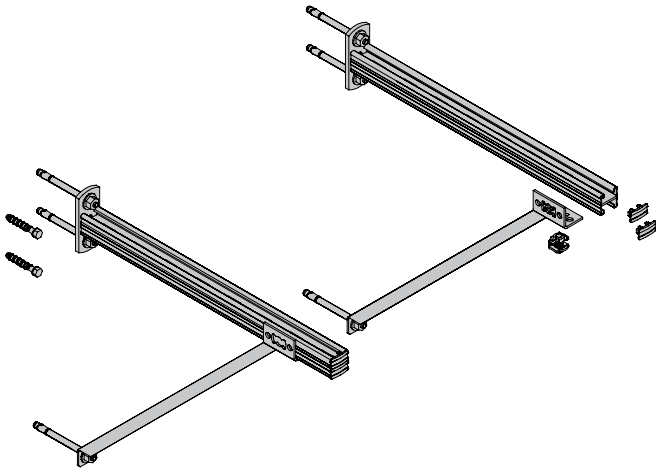


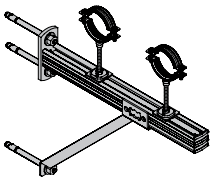
For double brackets min. arm 450 mm	
MQK-21D/450	369618
MQK-21D/600	369619
MQK-41D/1000	369620
Brace short	
MQK-SK short brace	369622
Pushbutton	
1x MQN pushbutton	369623
Screw anchor	
3x HUS3-H 10x70/-/-	2079912
or	
Stud anchor	
3x HST M12X115/20	371587



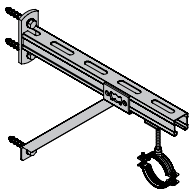
For single brackets min. arm 450 mm	
MQK-21/450	369608
MQK-41/450	369610
MQK-41/600	369611
MQK-41/1000	369612
MQK-41/3/450	370596
MQK-41/3/600	370597
MQK-41/600/4	369613
MQK-41/1000/4	369614
MQK-72/450	369615
MQK-72/600	369616
Brace short	
MQK-SK short brace	369622
Pushbutton	
1x MQN pushbutton	369623
Screw anchor	
3x HUS3-H 10x70/-/-	2079912
or	
Stud anchor	
3x HST M12X115/20	371587

Bracket with long pre-assembled brace

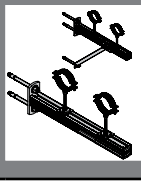




For double brackets min. arm 600 mm	
MQK-21D/600	369619
MQK-41D/1000	369620
Brace long	
MQK-SL long brace	369621
Pushbutton	
1x MQN pushbutton	369623
Screw anchor	
3x HUS3-H 10x70/-/-	2079912
or	
Stud anchor	
3x HST M12X115/20	371587



For single brackets min. arm 600 mm	
MQK-41/600	369611
MQK-41/1000	369612
MQK-41/3/600	370597
MQK-41/600/4	369613
MQK-41/1000/4	369614
MQK-72/600	369616
Brace long	
MQK-SL long brace	369621
Pushbutton	
1x MQN pushbutton	369623
Screw anchor	
3x HUS3-H 10x70/-/-	2079912
or	
Stud anchor	
3x HST M12X115/20	371587

Application description	Application	Product lines	Base material
Cantilever arm	 7	MQ System	Concrete

General comments

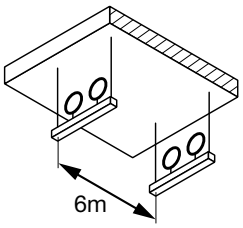
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

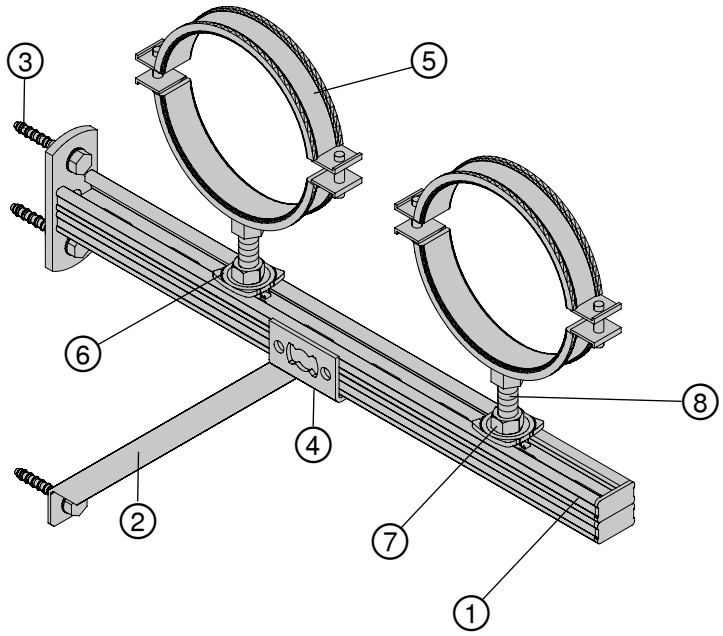
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Plumbing Application - Cantilever Arm

Type P-CA10

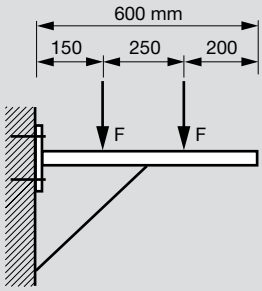
- Limited to max. 2x DN 150 (O.D. 159 mm) steel pipes
- Spacing - support distance 6.0 m
- Insulation rubber 20 mm



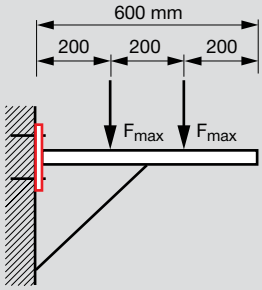


Additional loading capacity limits

This particular case
F= 2.3 kN recommended loads

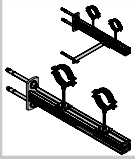


Max. F = 2.39 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369619**	**MQK-21 D/600 cantilever arm**	1	0
②	**369621**	**MQK-SL short brace**	1	0
③	**2079912**	**HUS3-H 10x70/-/- screw anchor**	3	0
④	**369623**	**MQN pushbutton**	1	0
⑤	**229087**	**MP-MI 159 C pipe ring**	2	0
⑥	**369632**	**MQA-M16 saddle nut**	2	0
⑦	**216468**	**M16 hex. Nut**	2	0
⑧	**216422**	**AM16x1000 threaded rod**	2	0.06

Application description	In PROFIS as	Application		
Plumbing - cantilever arm	P-CA10	 7	Base material	Concrete
			Product line	MQ System
			Capacity limit	2x DN 150 steel

General comments

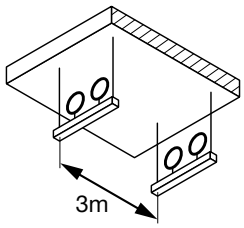
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

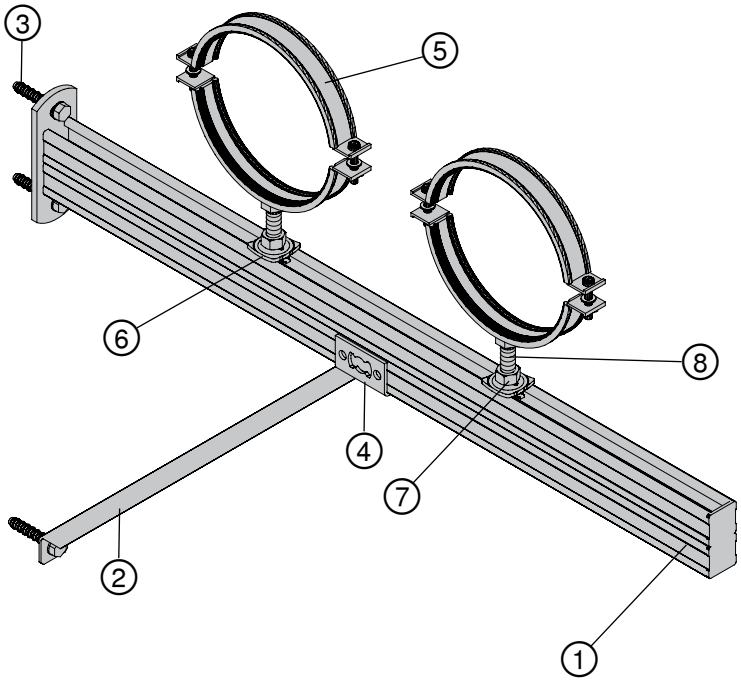
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Plumbing Application - Cantilever Arm

Type P-CA11

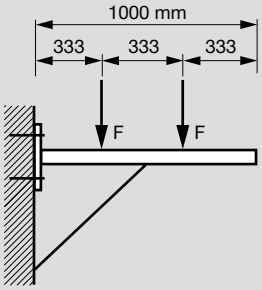
- Limited to max. 2x O.D. 193.7 mm steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



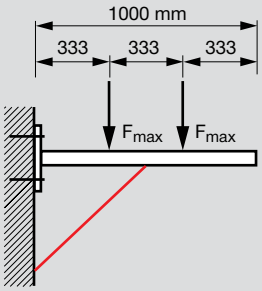


Additional loading capacity limits

This particular case
F= 1.53 kN recommended loads

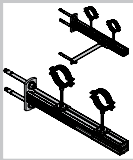


Max. F = 1.69 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369620**	**MQK-41 D/1000 cantilever arm**	1	0
②	**369621**	**MQK-SL brace – long**	1	0
③	**2079912**	**HUS3-H 10x70/-/- screw anchor**	3	0
④	**369623**	**MQN pushbutton**	1	0
⑤	**20892**	**MP-MI 193.7 C pipe ring**	2	0
⑥	**369632**	**MQA-M16 saddle nut**	2	0
⑦	**216468**	**M16 hex. Nut**	2	0
⑧	**216422**	**AM16x1000 threaded rod**	2	0.06

Application description	In PROFIS as	Application
Plumbing - cantilever arm	P-CA11	 7

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

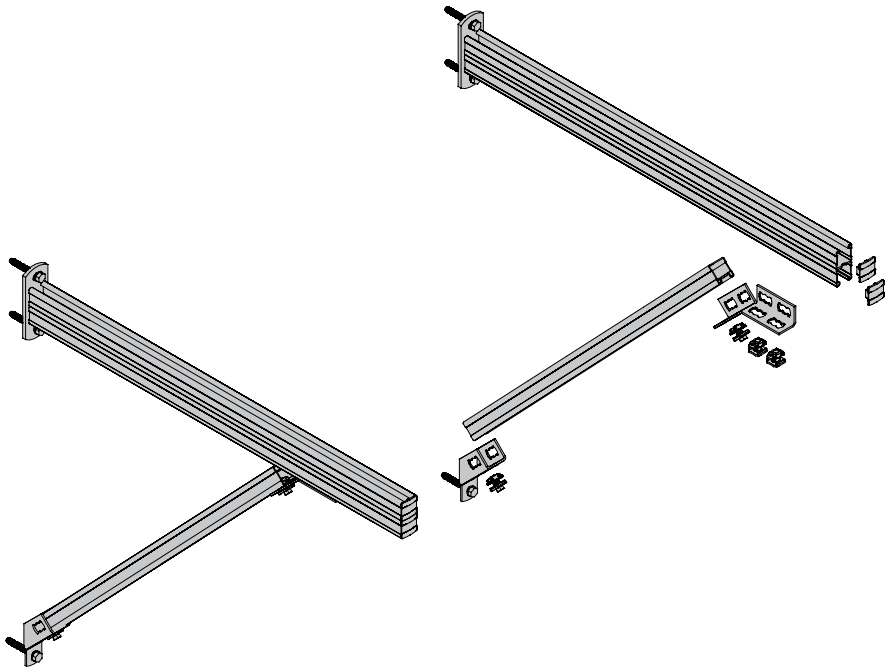
Base material	Concrete
Product line	MQ System
Capacity limit	2x O.D. 193 mm

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

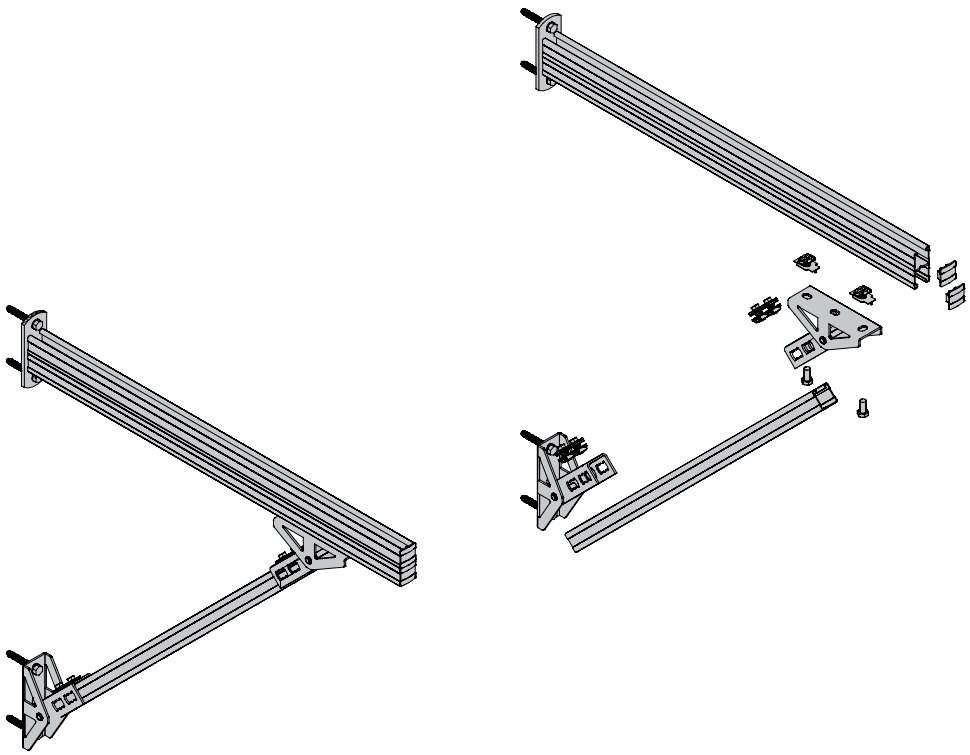
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Cantilever Arm On Concrete - Options 3

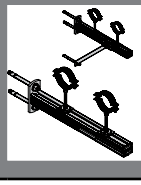
Pre-welded brackets with assembled brace



Assembled brace for pre-assembled bracket with min. arm 300 mm	
MQK-21D/300	**369617**
MQK-21D/450	**369618**
MQK-21D/600	**369619**
MQK-41D/1000	**369620**
Base connector bottom	
MQP-45	**369649**
Upper connector	
MQW-8/45	**369660**
Brace created from 41mm channel format e.g.	
MQ-41 3m...m channel	**369591**
Pushbuttons	
4x MQN pushbutton	**369623**
Screw anchor	
3x HUS3-H 10x70/-/-	**2079912**
or	
Stud anchor	
3x HST M12x115/20	**371587**



Assembled brace for pre-assembled bracket with min. arm 450 mm	
MQK-21D/450	**369618**
MQK-21D/600	**369619**
MQK-41D/1000	**369620**
Brace created from 41mm channel format e.g.	
MQ-41 3m...m channel	**369591**
Base and upper connector	
2x MQP-G	**369654**
Pushbuttons	
4x MQN pushbutton	**369623**
Upper connection to channel	
2x MQM-M12 wing nut	**369627**
2x M 12x25 screw	**216458**
Screw anchor	
4x HUS3-H 10x70/-/-	**2079912**
or	
Stud anchor	
4x HST M12x115/20	**371587**

Application description	Application	Product lines	Base material
Cantilever arm	 7	MQ System	Concrete

General comments

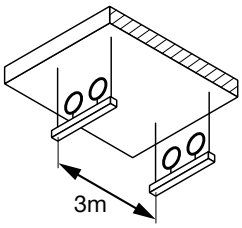
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

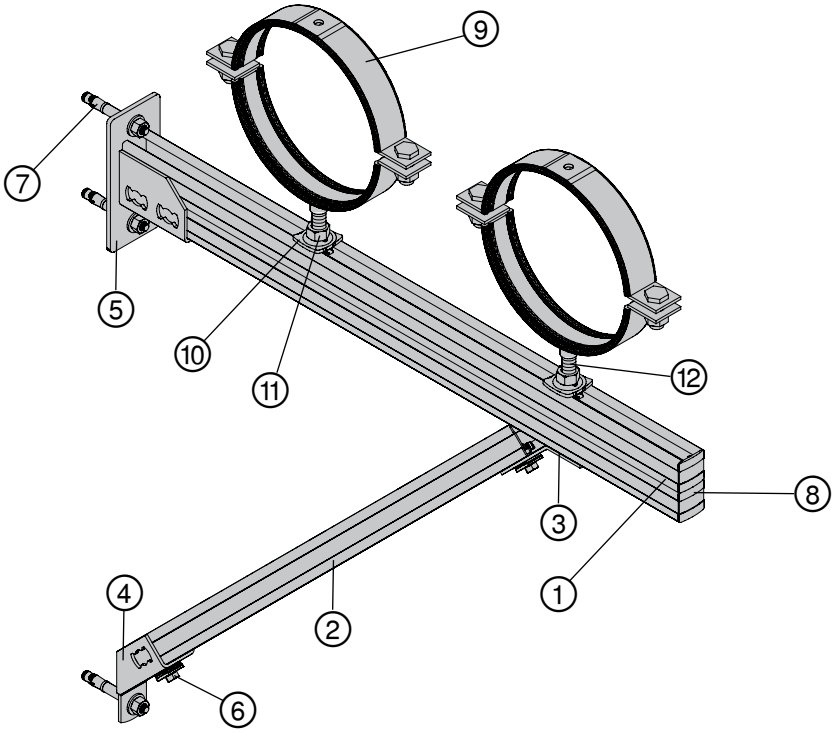
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Plumbing Application - Cantilever Arm

Type P-CA12

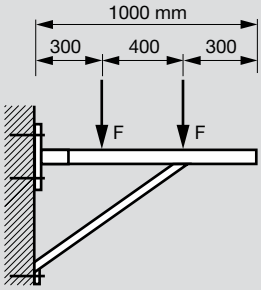
- Limited to max. 2x DN 200 (O.D. 219.1 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



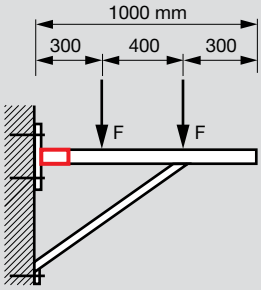


Additional loading capacity limits

This particular case
F = 2.00 kN recommended loads

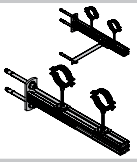


Max. F = 2.1 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369603**	**MQ-41 D 3M channel**	1	0.89
②	**369592**	**MQ-41 6M channel**	1	0.87
③	**369657**	**MQW-3/45 angle**	1	0
④	**369649**	**MQP-45 brace support**	1	0
⑤	**369651**	**MQP-21-72 channel base**	1	0
⑥	**369623**	**MQN push button**	6	0
⑦	**371587**	**HST M12X115/20 stud anchor**	3	0
⑧	**369685**	**MQZ-E41 plastic end caps**	2	0
⑨	**372238**	**MP-MXI 219 M 16**	2	0
⑩	**369632**	**MQA-M16 saddle nut**	2	0
⑪	**216468**	**M16 hex. Nut**	2	0
⑫	**216422**	**AM16x1000 threaded rod**	2	0.05

Application description	In PROFIS as	Application		
Plumbing - cantilever arm	P-CA12	 7	Base material	Concrete
			Product line	MQ System
			Capacity limit	2 x DN 200 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

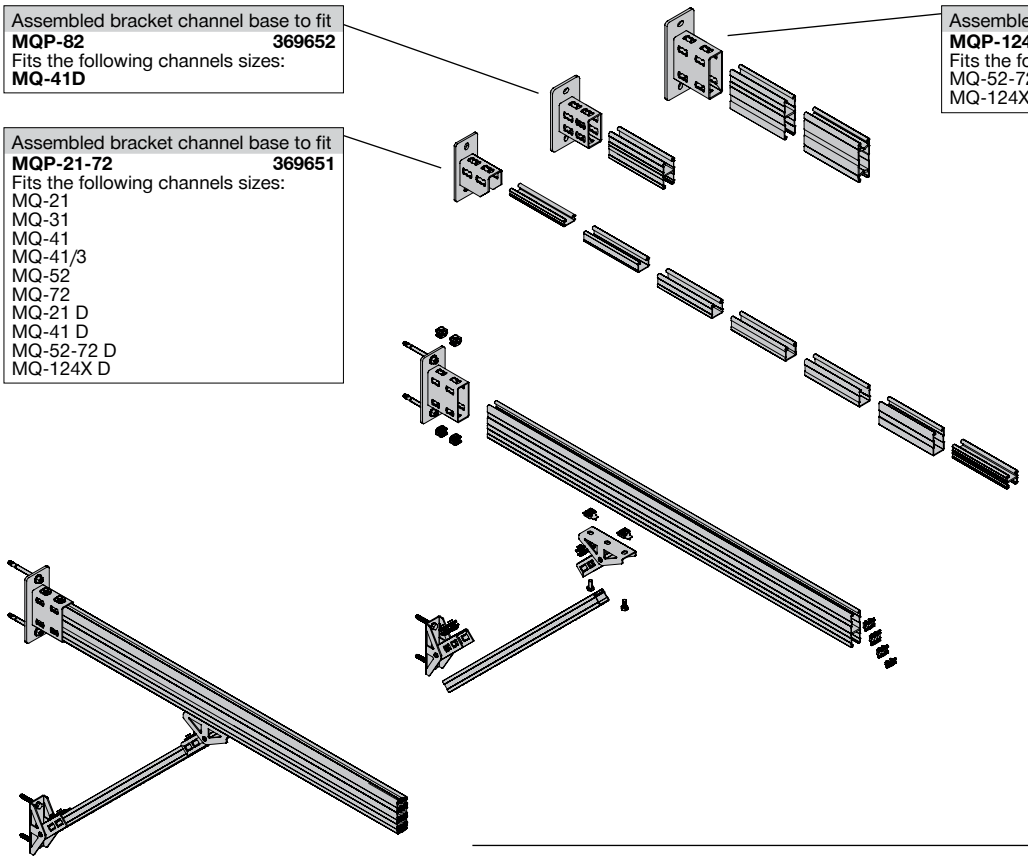
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Cantilever Arm On Concrete - Options 4

Assembled bracket channel base to fit	
MQP-82	**369652**
Fits the following channels sizes:	
MQ-41D	

Assembled bracket channel base to fit	
MQP-21-72	**369651**
Fits the following channels sizes:	
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	

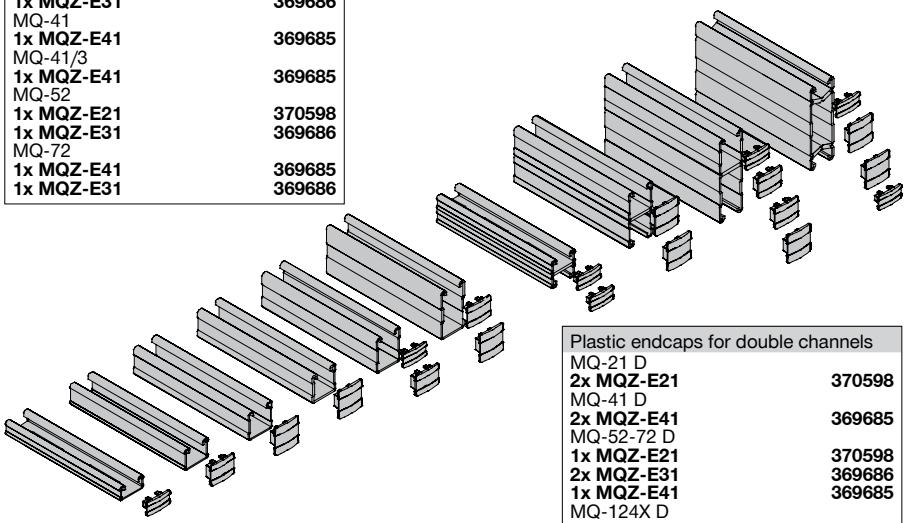
Assembled bracket channel base to fit	
MQP-124	**369653**
Fits the following channels sizes:	
MQ-52-72 D	
MQ-124X D	



Assembled bracket with assembled brace with min. arm 400 mm	
For channel base see table above.	
MQP	**.....**
Double channel alternatives	
MQ-21 D 3M	**369601**
MQ-21 D 6M	**369602**
MQ-41 D 3M	**369603**
MQ-41 D 6M	**369604**
MQ-52-72 D 3M	**373799**
MQ-52-72 D 6M	**369605**
MQ-124X D 6M	**369606**
Brace created from 41mm channel format e.g.	
1x MQ-41 3m...m channel	**369591**
Base and upper connector	
2x MQP-G	**369654**
Pushbuttons	
8x MQN pushbutton	**369623**
Upper connection to channel	
2x MQM-M12 wing nut	**369627**
2x M 12x25 screw	**216458**
Screw anchor	
4x HUS3-H 10x70/-/-	**2079912**
or	
Stud anchor	
4x HST M12X115/20	**371587**

Channel end caps

Plastic endcaps for single channels	
MQ-21	
1x MQZ-E21	**370598**
MQ-31	
1x MQZ-E31	**369686**
MQ-41	
1x MQZ-E41	**369685**
MQ-41/3	
1x MQZ-E41	**369685**
MQ-52	
1x MQZ-E21	**370598**
1x MQZ-E31	**369686**
MQ-72	
1x MQZ-E41	**369685**
1x MQZ-E31	**369686**



Plastic endcaps for double channels	
MQ-21 D	
2x MQZ-E21	**370598**
MQ-41 D	
2x MQZ-E41	**369685**
MQ-52-72 D	
1x MQZ-E21	**370598**
2x MQZ-E31	**369686**
1x MQZ-E41	**369685**
MQ-124X D	
2x MQZ-E21	**370598**
2x MQZ-E41*	**369685**
*Adjustment necessary	

Application description	Application	Product lines	Base material
Cantilever arm	7	MQ System	Concrete

General comments

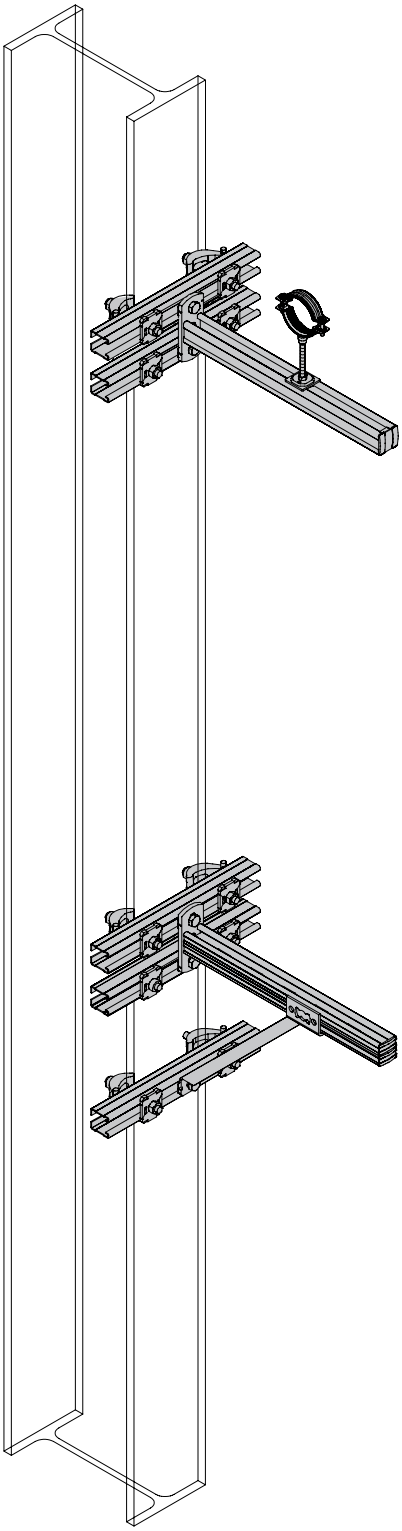
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

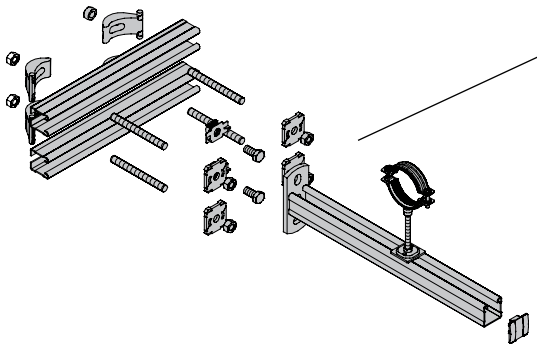
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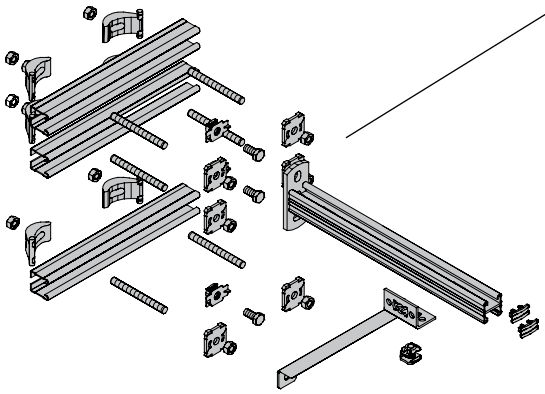
Cantilever Arm On Steel - Options 1

For all brackets with a base plate height of 125 mm or more and distance between mounting holes of 80 mm or more



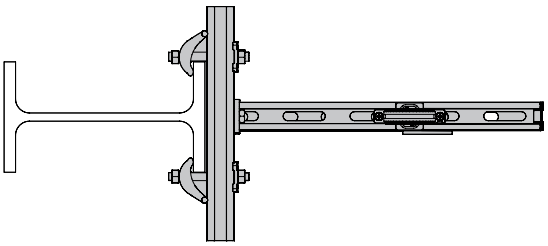


Clamping of single supported bracket	
Bracket	**……**
Beam clamps	
4x MQT-M12	**284243**
Transverse channels required	
2x MQ-41 3m…m channel	**369591**
Threaded bolts e.g.	
4x AM12x1000...m	**339797**
Square washers	
4x MQZ-L13 sq. washer	**369680**
Nuts	
8x M12 nut	**216467**
Fastening bracket in channels	
2x MQM-M12 wing nut	**369627**
2x M 12x25 screw	**216458**



Clamping of braced bracket	
Bracket	**……**
Brace	**……**
Beam clamps	
6x MQT-M12	**284243**
Transverse channels required	
3x MQ-41 3m…m channel	**369591**
Threaded bolts e.g.	
6x AM12x1000...m	**339797**
Square washers	
6x MQZ-L13 Sq. washer	**369680**
Nuts	
12x M12 nut	**216467**
Fastening bracket and brace in channels	
3x MQM-M12 wing nut	**369627**
3x M 12x25 screw	**216458**

Top view of clamps



Solutions relevant for brackets	
MQK-21/300	**369607**
MQK-21/450	**369608**
MQK-41/300	**369609**
MQK-41/450	**369610**
MQK-41/600	**369611**
MQK-41/1000	**369612**
MQK-41/3/300	**370595**
MQK-41/3/450	**370596**
MQK-41/3/600	**370597**
MQK-41/600/4	**369613**
MQK-41/1000/4	**369614**
MQK-72/450	**369615**
MQK-72/600	**369616**
MQK-21D/300	**369617**
MQK-21D/450	**369618**
MQK-21D/600	**369619**
MQK-41D/1000	**369620**
channel brace	
For arm min. 450 mm	
MQK-SK short brace	**369622**
For arm min. 600 mm	
MQK-SL long brace	**369621**

Application description	Application	Product lines	Base material
Cantilever arm	7	MQ System	Steel

General comments

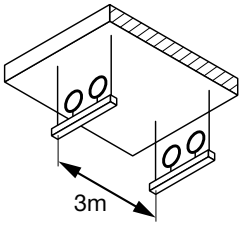
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

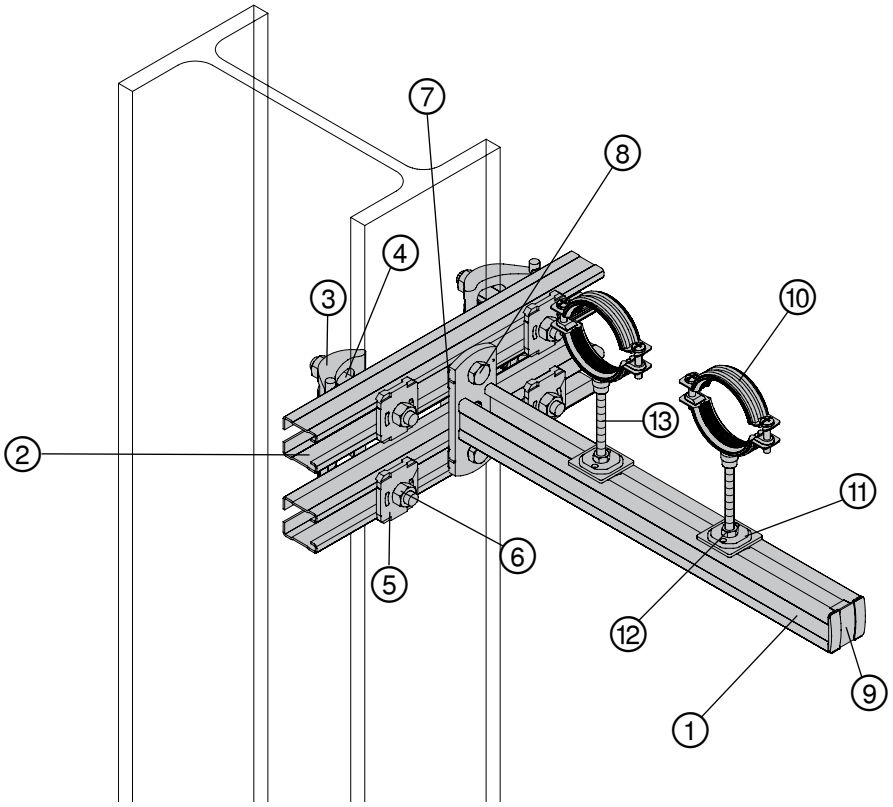
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Plumbing Application - Cantilever Arm

Type P-CA20

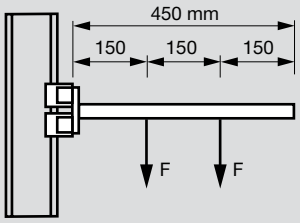
- Limited to max. 2x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



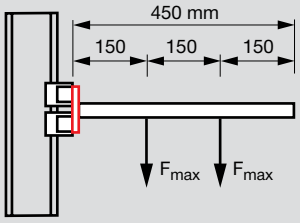


Additional loading capacity limits

This particular case
F = 0.2 kN recommended loads



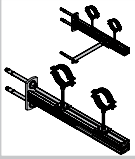
Max. F = 0.56 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369610**	**MQK-41/450 bracket**	1	0
②	**369591**	**MQ-41 3m channel**	2	0.3 max.
③	**284243**	**MQT-M12 beam clamp**	4	0
④	**339797**	**AM12x1000 threaded rod**	4	0.1
⑤	**369680**	**MQZ-L13 square washer**	4	0
⑥	**216467**	**M12 hex. Nut**	8	0
⑦	**369627**	**MQM-M12 wing nut**	2	0
⑧	**216458**	**M 12x25 screw**	2	0
⑨	**369685**	**MQZ-E41 end cap**	5	0
⑩	**386409**	**MP-HI 45-52 M8/M10 pipe ring**	2	0
⑪	**369629**	**MQA-M8 saddle nut**	2	0
⑫	**216465**	**M 8 hex. Nut**	2	0
⑬	**216382**	**AM8x60 threaded bolt**	2	0

Application description	In PROFIS as	Application
Plumbing - cantilever arm	P-CA20	7



Base material	Steel
Product line	MQ System
Capacity limit	2 x DN 50 steel

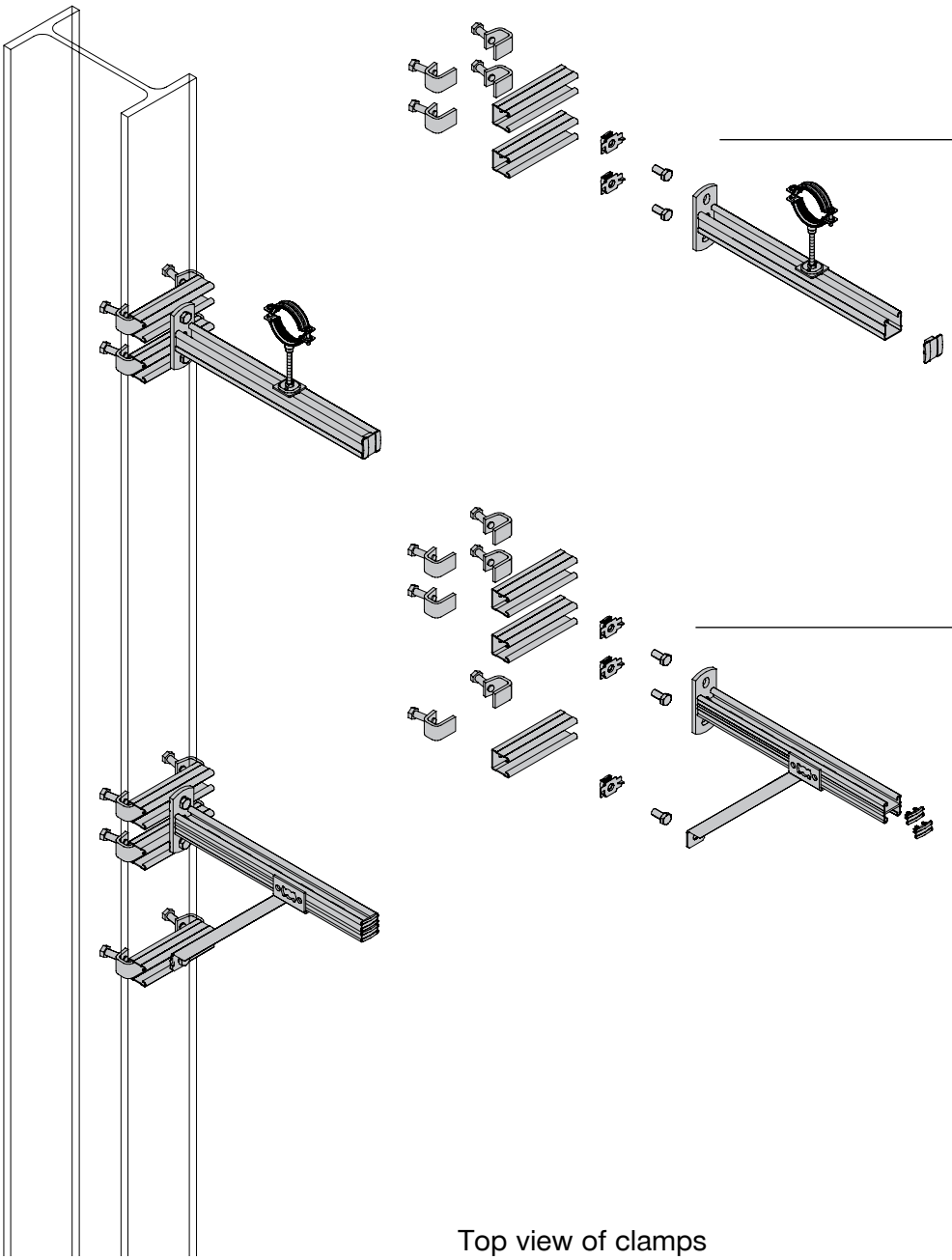
General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Cantilever Arm On Steel - Options 2

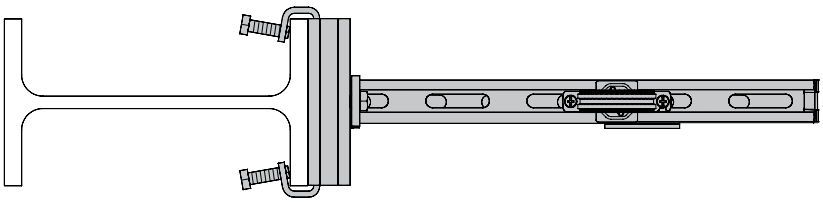
For all brackets



Clamping of single supported bracket	
Bracket (single, double)	**……..**
Beam clamps	
4x MQT-C22-F	**304194**
Transverse channels required	
2x MQ-41 3m...m channel	**369591**
Fastening bracket in channels	
2x MQM-M12 wing nut	**369627**
2x M 12x25 screw	**216458**

Clamping of braced bracket	
Bracket (double)	**……..**
Brace	**……..**
Beam clamps	
6x MQT-C22-F	**304194**
Transverse channels required	
3x MQ-41 3m...m channel	**369591**
Fastening bracket and brace in channels	
3x MQM-M12 wing nut	**369627**
3x M 12x25 screw	**216458**

Top view of clamps



Solutions relevant for brackets	
MQK-21/300	**369607**
MQK-21/450	**369608**
MQK-41/300	**369609**
MQK-41/450	**369610**
MQK-41/600	**369611**
MQK-41/1000	**369612**
MQK-41/3/300	**370595**
MQK-41/3/450	**370596**
MQK-41/3/600	**370597**
MQK-41/600/4	**369613**
MQK-41/1000/4	**369614**
MQK-72/450	**369615**
MQK-72/600	**369616**
MQK-21D/300	**369617**
MQK-21D/450	**369618**
MQK-21D/600	**369619**
MQK-41D/1000	**369620**
Channel brace	
For arm min 450 mm	
MQK-SK Brace short	**369622**
For arm min 600mm	
MQK-SL Brace long	**369621**

Application description	Application	Product lines	Base material
Cantilever arm	7	MQ System	Steel

General comments

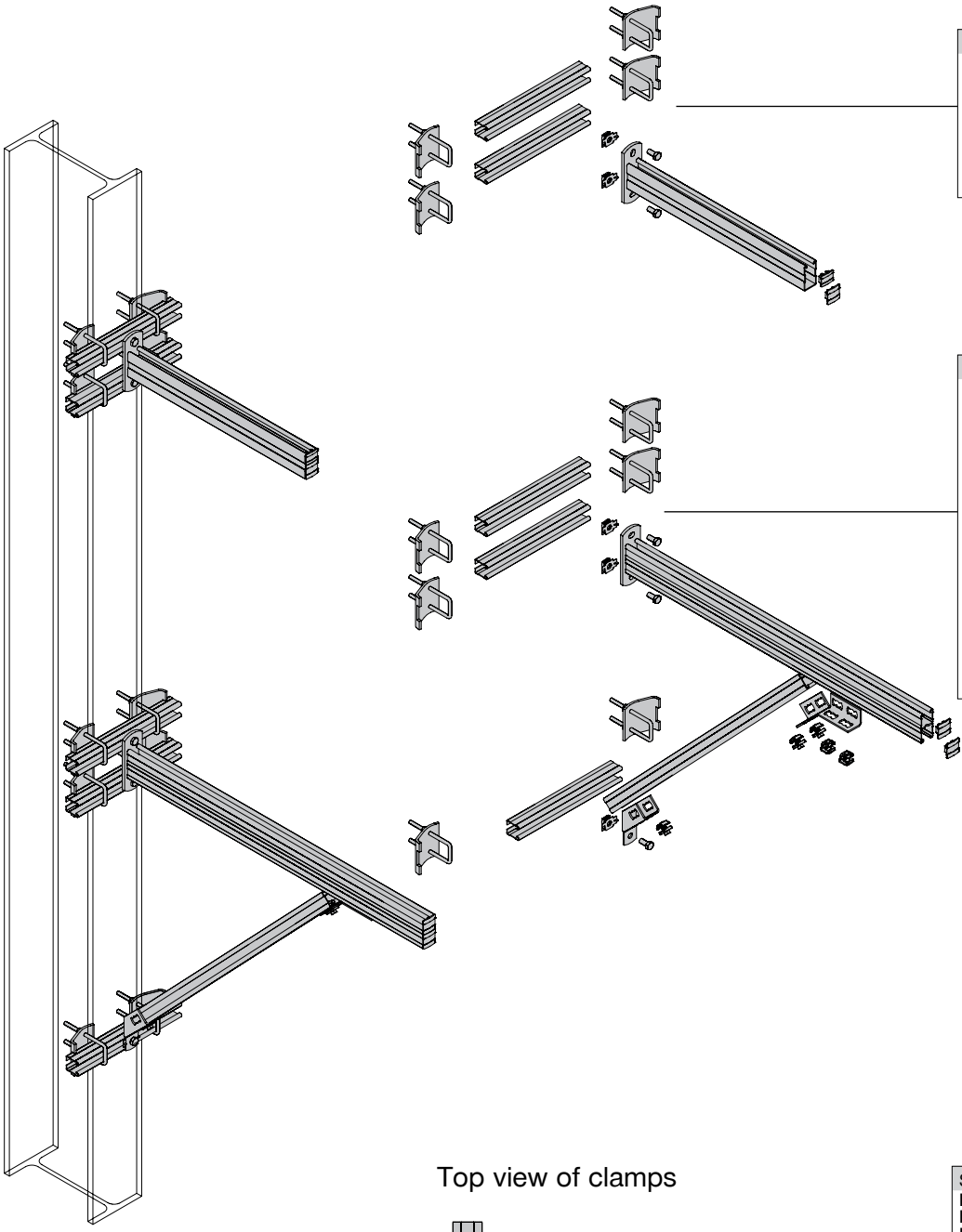
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

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Cantilever Arm On Steel - Options 3

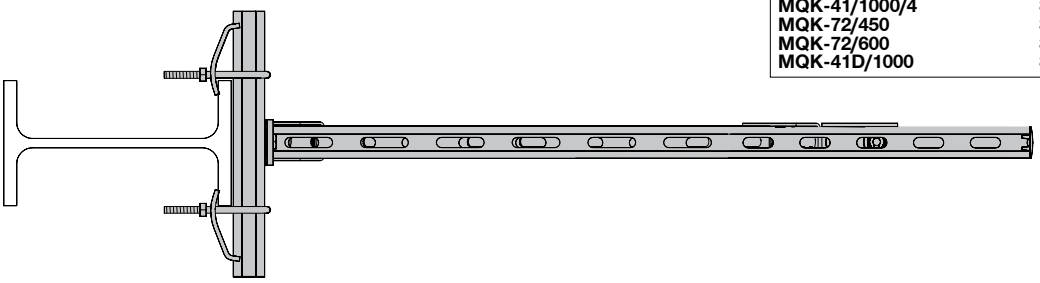
For all brackets except MQK-21



Clamping of single supported bracket	
Bracket (single, double)	**……**
Beam clamps	
4x MQT 21-41 clamp	**369675**
Transverse channels required	
2x MQ-41 3m...m channel	**369591**
Fastening bracket in channels	
2x MQM-M12 wing nut	**369627**
2x M 12x25 screw	**216458**

Clamping of braced bracket	
Bracket (double)	**……**
Beam clamps	
6x MQT 21-41 clamp	**369675**
Transverse channels required	
3x MQ-41 3m...m channel	**369591**
Fastening bracket in channels	
3x MQM-M12 wing nut	**369627**
3x M 12x25 screw	**216458**
Assembled brace	
Bottom connector	
MQP-45	**369649**
Upper connector	
MQW-8/45	**369660**
Brace created from	
41mm channel e.g.	
MQ-41 3m...m channel	**369591**
Pushbuttons	
5x MQN pushbutton	**369623**

Top view of clamps



Solutions relevant for brackets	
MQK-41/600/4	**369613**
MQK-41/1000/4	**369614**
MQK-72/450	**369615**
MQK-72/600	**369616**
MQK-41D/1000	**369620**

Application description	Application	Product lines	Base material
Cantilever arm	7	MQ System	Steel

General comments

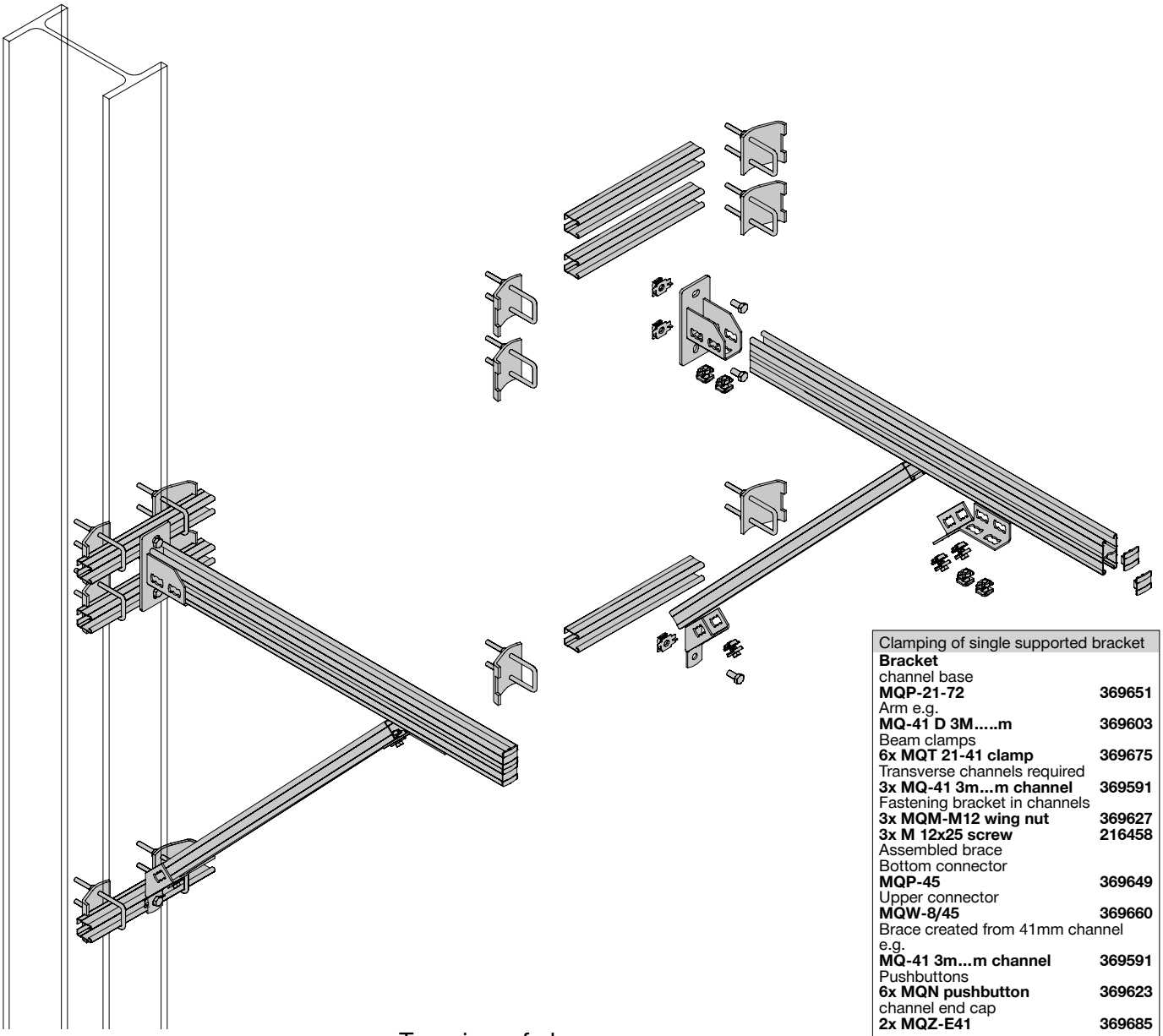
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

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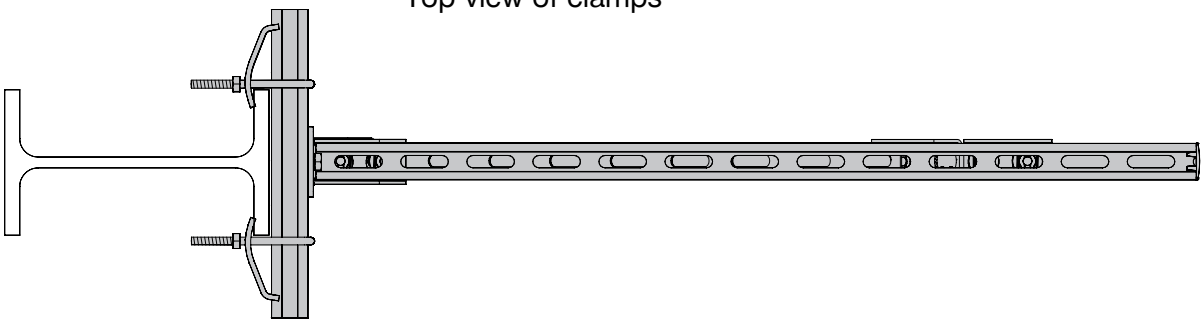
Cantilever Arm On Steel - Options 4

For all assembled brackets with a base plate height of at least 165 mm or more and a distance between mounting holes of 120 mm or more, with assembled brace



Clamping of single supported bracket	
Bracket	
channel base	
MQP-21-72	**369651**
Arm e.g.	
MQ-41 D 3M.....m	**369603**
Beam clamps	
6x MQT 21-41 clamp	**369675**
Transverse channels required	
3x MQ-41 3m...m channel	**369591**
Fastening bracket in channels	
3x MQM-M12 wing nut	**369627**
3x M 12x25 screw	**216458**
Assembled brace	
Bottom connector	
MQP-45	**369649**
Upper connector	
MQW-8/45	**369660**
Brace created from 41mm channel	
e.g.	
MQ-41 3m...m channel	**369591**
Pushbuttons	
6x MQN pushbutton	**369623**
channel end cap	
2x MQZ-E41	**369685**

Top view of clamps



Application description	Application	Product lines	Base material
Cantilever arm	7	MQ System	Steel

General comments

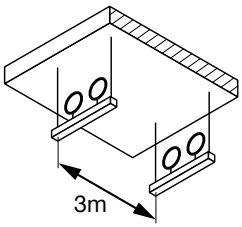
- Application subject to vertical loads caused by weight of the pipes
- Application not subject to any thermal expansion or any other 3D loads

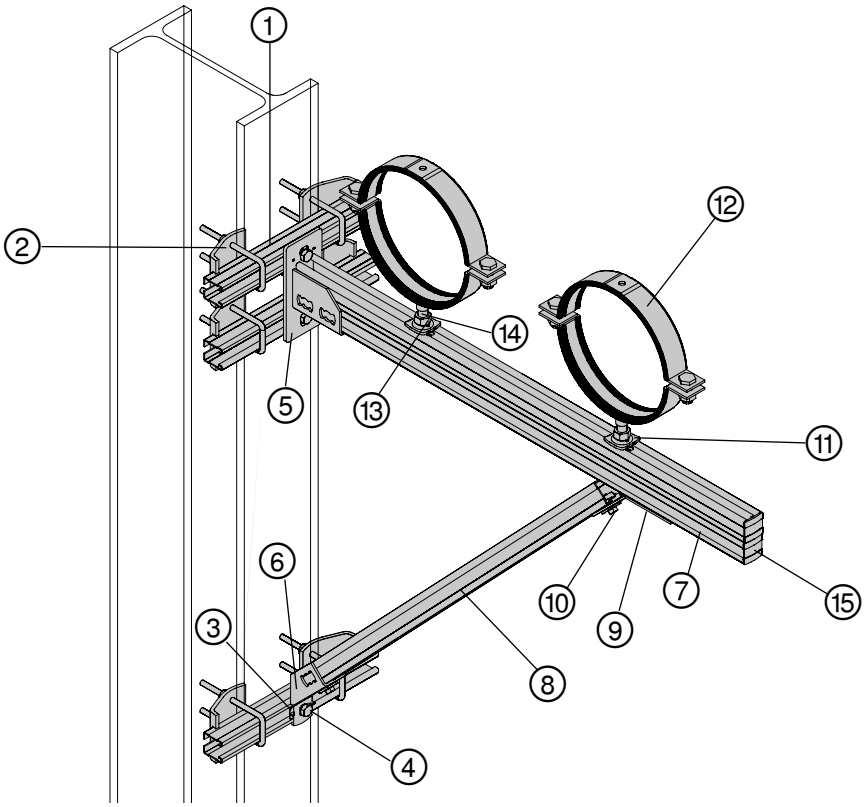
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Plumbing Application - Cantilever Arm

Type P-CA21

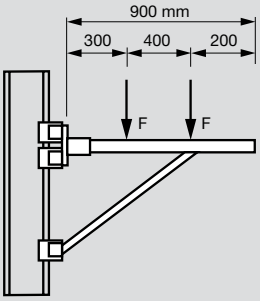
- Limited to max. 2x DN 200 (O.D. 219.1 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



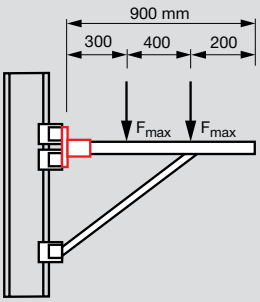


Additional loading capacity limits

This particular case
F = 2.0 kN recommended loads



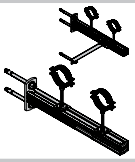
Max. F = 2.48 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**369591**	**MQ-41 3m channel**	3	0.3 max
②	**369676**	**MQP-41-82 beam clamp**	6	0
③	**369627**	**MQM-M12 wing nut**	3	0
④	**216458**	**M 12x25 screw**	3	0
⑤	**369651**	**MQP-21-72 channel base**	1	0
⑥	**369649**	**MQP-45 brace connector**	1	0
⑦	**369603**	**MQ-41 D 3m channel**	1	0.9m
⑧	**369591**	**MQ-41 3m channel**	1	0.87
⑨	**369657**	**MQW-3/45° connector**	1	0
⑩	**369623**	**MQN push button**	4	0
⑪	**369632**	**MQA-M16 saddle nut**	2	0
⑫	**372238**	**MP-MXI 219 M 16**	2	0
⑬	**216468**	**M16 hex. Nut**	2	0
⑭	**216422**	**AM16x1000 threaded rod**	2	0.05
⑮	**369685**	**MQZ-E41 end cap**	2	0

Application description	In PROFIS as	Application
Plumbing - cantilever arm	P-CA21	7



Base material	Steel
Product line	MQ System
Capacity limit	2 x DN 200 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Wall Spot Fixture On Concrete - Options M8

M8 pipe rings	
MP-LHI	**Sizes 8mm- 2"**
MP-HI	**Sizes 8mm- 6"**
MPN-LI	**Sizes 8mm- 2"**
MPN-RC	**Sizes 8mm- 6"**
MPN-QRC M8	**Sizes 8mm- 2"**

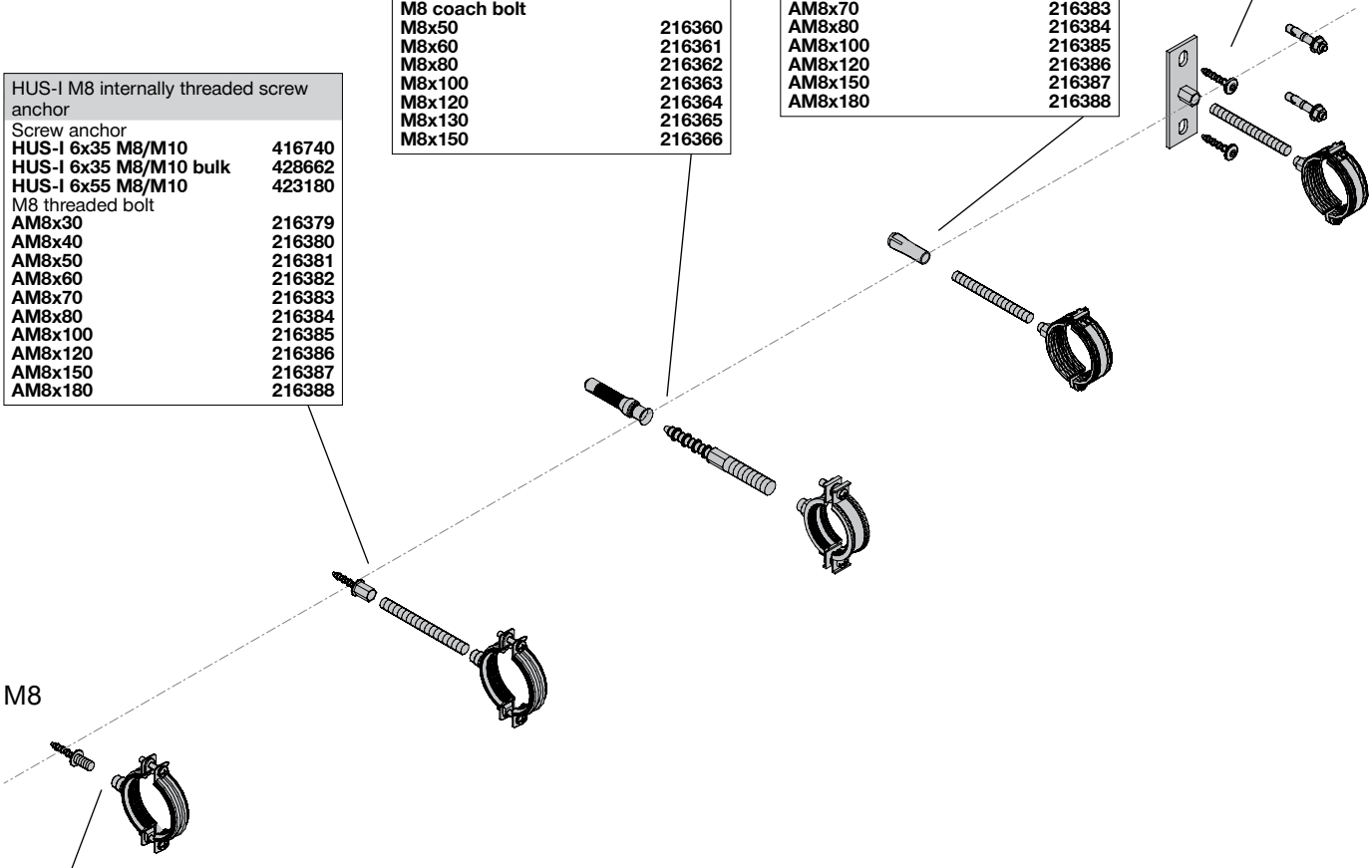
M8 threaded rods	
AM8x1000	**339793**
AM8x2000	**339794**
AM8x3000	**216415**

HUS-I M8 internally threaded screw anchor	
Screw anchor	
HUS-I 6x35 M8/M10	**416740**
HUS-I 6x35 M8/M10 bulk	**428662**
HUS-I 6x55 M8/M10	**423180**
M8 threaded bolt	
AM8x30	**216379**
AM8x40	**216380**
AM8x50	**216381**
AM8x60	**216382**
AM8x70	**216383**
AM8x80	**216384**
AM8x100	**216385**
AM8x120	**216386**
AM8x150	**216387**
AM8x180	**216388**

M8 HUD plastic anchor with coach bolt	
Anchor	
HUD-1 10x50 bulk	**331618**
HUD-1 10x50	**338711**
M8 coach bolt	
M8x50	**216360**
M8x60	**216361**
M8x80	**216362**
M8x100	**216363**
M8x120	**216364**
M8x130	**216365**
M8x150	**216366**

M8 drop-in anchor	
Anchor	
HKD M8x30 anchor	**376959**
M8 threaded bolt	
AM8x30	**216379**
AM8x40	**216380**
AM8x50	**216381**
AM8x60	**216382**
AM8x70	**216383**
AM8x80	**216384**
AM8x100	**216385**
AM8x120	**216386**
AM8x150	**216387**
AM8x180	**216388**

M8 MGL2 - M8 base plate	
Base plate	
MGL 2-M8 base plate	**246908**
Screw anchor	
HUS-P 6x40/5	**416745**
HUS-P 6x40/5 bulk	**428663**
Stud anchor	
HSA M8 5/-/- stud anchor	**2004122**
M8 threaded bolt	
AM8x30	**216379**
AM8x40	**216380**
AM8x50	**216381**
AM8x60	**216382**
AM8x70	**216383**
AM8x80	**216384**
AM8x100	**216385**
AM8x120	**216386**
AM8x150	**216387**
AM8x180	**216388**



HUS-A 6x__ M8 screw anchor	
Screw anchor	
HUS-A 6x35 M8/18	**416741**
HUS-A 6x35 M8/18 bulk	**428665**
HUS-A 6x55 M8/18	**416743**

Application description	Application	Product lines	Base material
Wall spot fixture M8 solutions	8	Base plates	Concrete
General comments		Anchors	
▪ Application not subject to any forces as used as a spacer for offset solutions		Pipe rings	

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Wall Spot Fixture On Concrete - Options M10

M10 pipe rings	
MP-HI	**Sizes 8mm-6”**
MPN-RC	**Sizes 8mm-6”**
MPN-QRC M10	**Sizes 8mm-4”**
MP-MI ..G	**Sizes 3/8” - 6”**
MP-MXI M10/M12	**Sizes 2”- 3”**

M10 threaded rods	
AM10x1000	**339795**
AM10x2000	**339796**
AM10x3000	**216418**

HUS-I M10 internally threaded screw anchor	
Screw anchor	
HUS-I 6x35 M8/M10	**416740**
HUS-I 6x35 M8/M10 Bulk	**428662**
HUS-I 6x55 M8/M10	**423180**
M10 threaded bolt	
AM10x40	**216390**
AM10x60	**216391**
AM10x80	**216392**
AM10x100	**216393**
AM10x120	**216394**
AM10x150	**216395**
AM10x180	**216396**

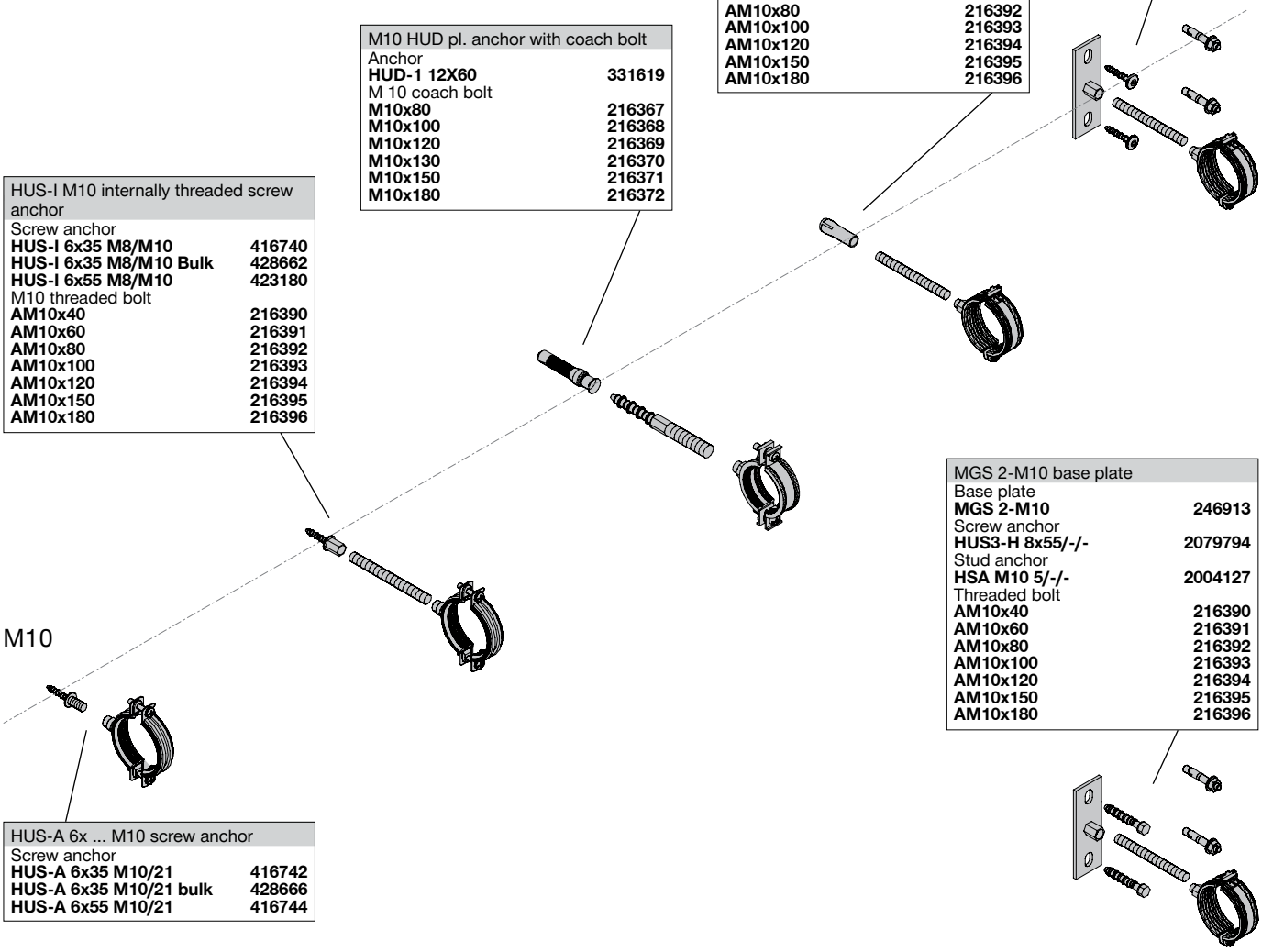
HUS-A 6x ... M10 screw anchor	
Screw anchor	
HUS-A 6x35 M10/21	**416742**
HUS-A 6x35 M10/21 bulk	**428666**
HUS-A 6x55 M10/21	**416744**

M10 HUD pl. anchor with coach bolt	
Anchor	
HUD-1 12X60	**331619**
M 10 coach bolt	
M10x80	**216367**
M10x100	**216368**
M10x120	**216369**
M10x130	**216370**
M10x150	**216371**
M10x180	**216372**

M10 drop-in anchor	
Anchor	
HKD M10x25	**2037453**
HKD M10x25 bulk	**2037454**
HKD M10x30	**376965**
HKD M10x30 bulk	**376966**
HKD M10x40	**376967**
HKD M10x40 bulk	**378430**
M10 threaded bolt	
AM10x40	**216390**
AM10x60	**216391**
AM10x80	**216392**
AM10x100	**216393**
AM10x120	**216394**
AM10x150	**216395**
AM10x180	**216396**

M10 MGL2 - M8 base plate	
Base plate	
MGL 2-M10 base plate	**246909**
Screw anchor	
HUS-P 6x40/5	**416745**
HUS-P 6x40/5 bulk	**428663**
Stud anchor	
HSA M8 5/-/- stud anchor	**2004122**
M10 threaded bolt	
AM10x40	**216390**
AM10x60	**216391**
AM10x80	**216392**
AM10x100	**216393**
AM10x120	**216394**
AM10x150	**216395**
AM10x180	**216396**

MGS 2-M10 base plate	
Base plate	
MGS 2-M10	**246913**
Screw anchor	
HUS3-H 8x55/-/-	**2079794**
Stud anchor	
HSA M10 5/-/-	**2004127**
Threaded bolt	
AM10x40	**216390**
AM10x60	**216391**
AM10x80	**216392**
AM10x100	**216393**
AM10x120	**216394**
AM10x150	**216395**
AM10x180	**216396**



Application description	Application	Product lines	Base material
Wall spot fixture M10 solutions	8	Base plates	Concrete
General comments		Anchors	
▪ Application not subject to any forces as used as a spacer for offset solutions		Pipe rings	

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Wall Spot Fixture On Concrete - Options M12

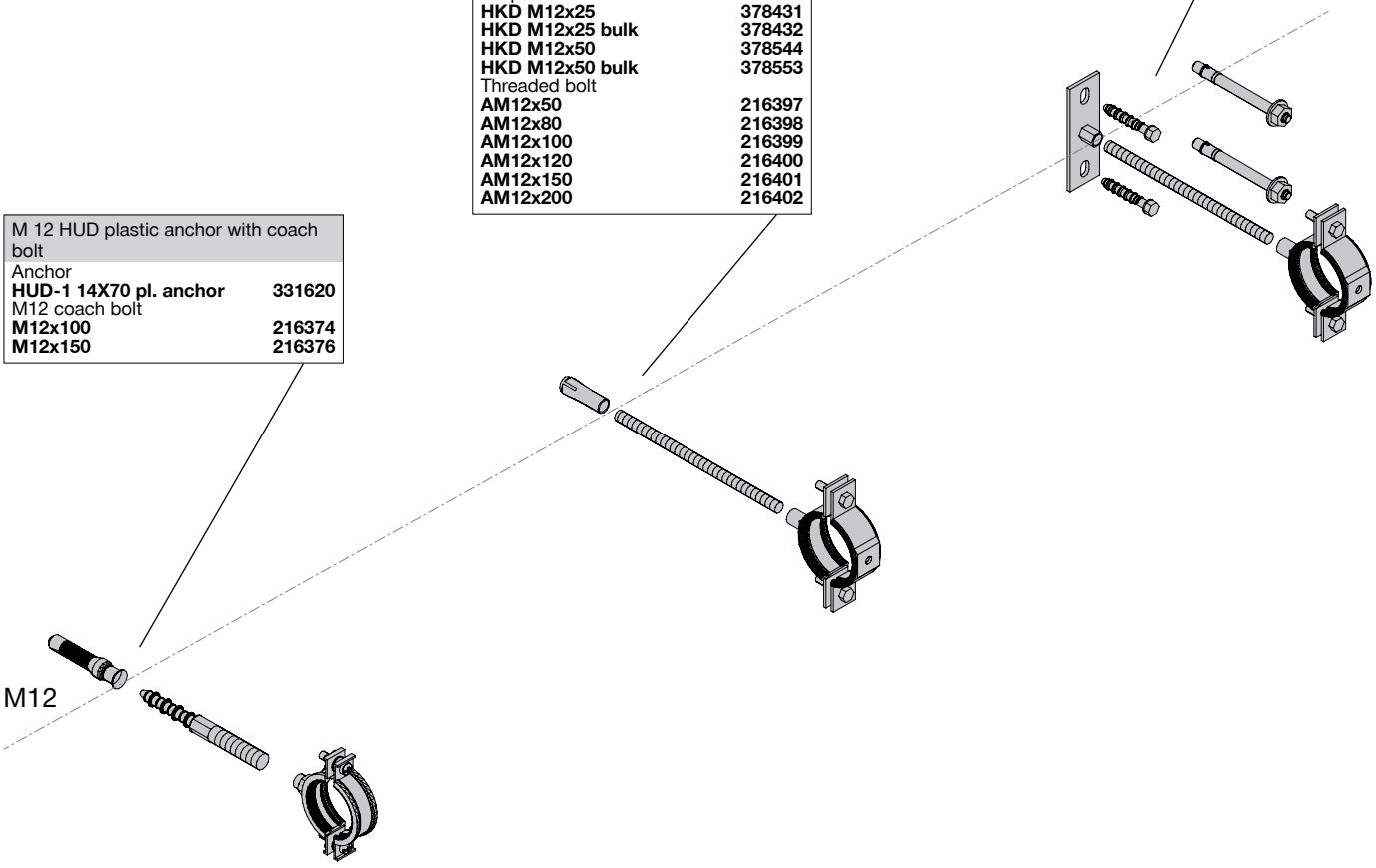
M12 pipe rings	
MP-MI ... G	**Sizes 3/8" - 6"**
MP-MXI M10/M12	**Sizes 2"- 3"**

M12 threaded rods	
AM12x1000	**339797**
AM12x2000	**216420**
AM12x3000	**216421**

M12 MGS2 base plate	
Base plate	
MGS 2-M12	**246914**
Screw anchor	
HUS3-H 8x55/-/-	**2079794**
Stud anchor	
HSA M10 5/-/-	**2004127**
Threaded bolt	
AM12x50	**216397**
AM12x80	**216398**
AM12x100	**216399**
AM12x120	**216400**
AM12x150	**216401**
AM12x200	**216402**

M12 drop in anchor	
Drop in anchor	
HKD M12x25	**378431**
HKD M12x25 bulk	**378432**
HKD M12x50	**378544**
HKD M12x50 bulk	**378553**
Threaded bolt	
AM12x50	**216397**
AM12x80	**216398**
AM12x100	**216399**
AM12x120	**216400**
AM12x150	**216401**
AM12x200	**216402**

M 12 HUD plastic anchor with coach bolt	
Anchor	
HUD-1 14X70 pl. anchor	**331620**
M12 coach bolt	
M12x100	**216374**
M12x150	**216376**



Application description	Application	Product lines	Base material
Wall spot fixture M12 solutions	8	Base plates	Concrete
General comments		Anchors	
▪ Application not subject to any forces as used as a spacer for offset solutions		Pipe rings	

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Wall Spot Fixture On Concrete - Options M16

M16 solutions	
AM16x1000	**216422**
AM16x2000	**216423**
AM16x3000	**216424**

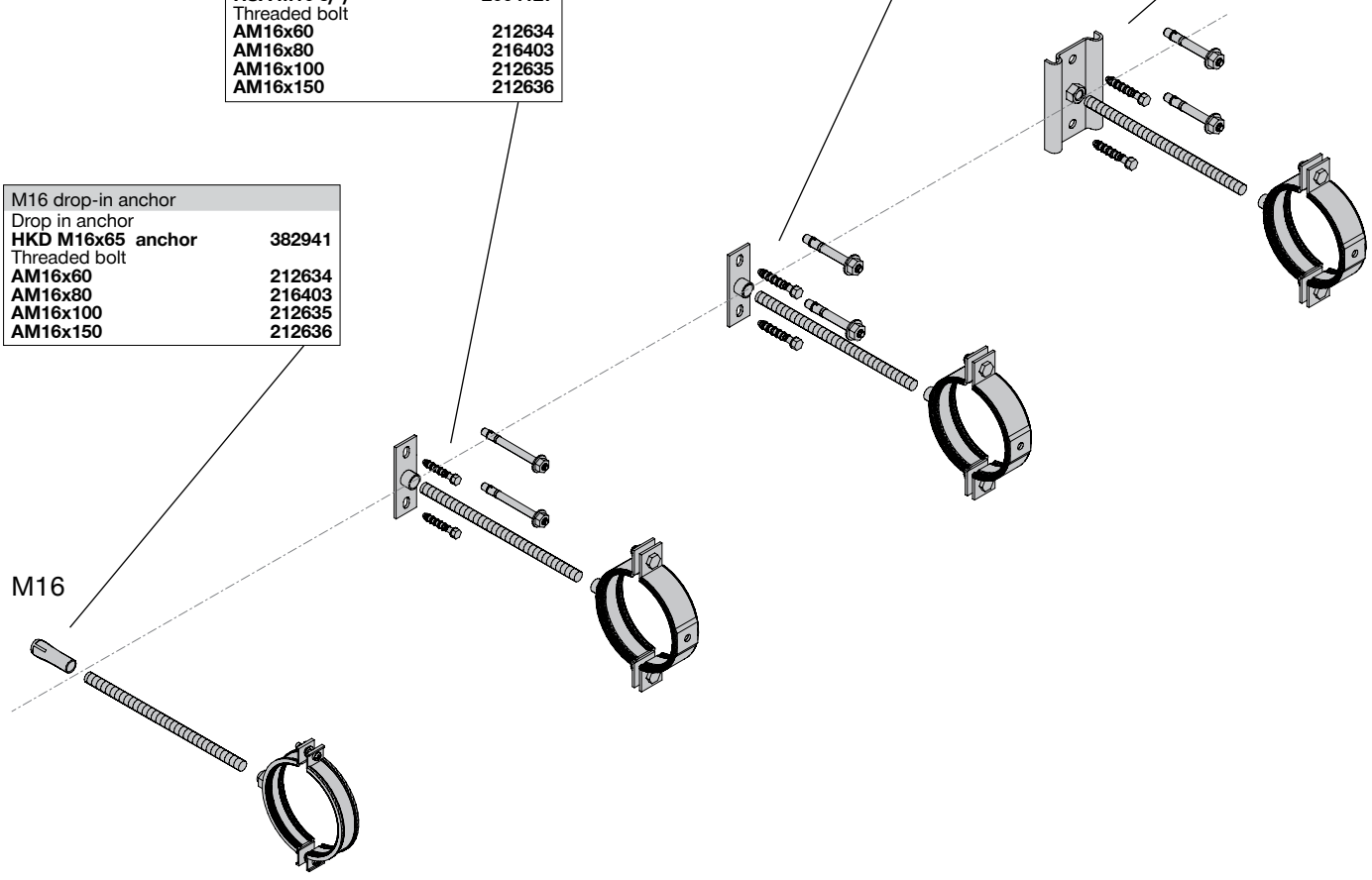
M16 pipe rings	
MP-MI ... C	**Sizes 4” - 244.5mm**
MP-MXI M16	**Sizes 4” - 508 mm**

MFP - GP 16 base plate	
Base plate	
MFP-GP M16	**373203**
Screw anchor	
HUS3-10x60 5/-/-	**2079911**
Stud anchor	
HSA M12 5/ -/-	**2004154**
Threaded bolt	
AM16x60	**212634**
AM16x80	**216403**
AM16x100	**212635**
AM16x150	**212636**

MGM M16 base plate	
Base plate	
MGM 2-M16	**373202**
Screw anchor	
HUS3-10x60 5/-/-	**2079911**
Stud anchor	
HSA M12 5/ -/-	**2004154**
Threaded bolt	
AM16x60	**212634**
AM16x80	**216403**
AM16x100	**212635**
AM16x150	**212636**

MGS 2 M16 base plate	
Base plate	
MGS 2-M16	**246915**
Screw anchor	
HUS3-H 8x55/-/-	**2079794**
Stud anchor	
HSA M10 5/-/-	**2004127**
Threaded bolt	
AM16x60	**212634**
AM16x80	**216403**
AM16x100	**212635**
AM16x150	**212636**

M16 drop-in anchor	
Drop in anchor	
HKD M16x65 anchor	**382941**
Threaded bolt	
AM16x60	**212634**
AM16x80	**216403**
AM16x100	**212635**
AM16x150	**212636**



Application description	Application	Product lines	Base material
Wall spot fixture M16 solutions	8	Base plates	Concrete
General comments		Anchors	
▪ Application not subject to any forces as used as a spacer for offset solutions		Pipe rings	

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Wall Spot Fixture On Concrete - Options ½"

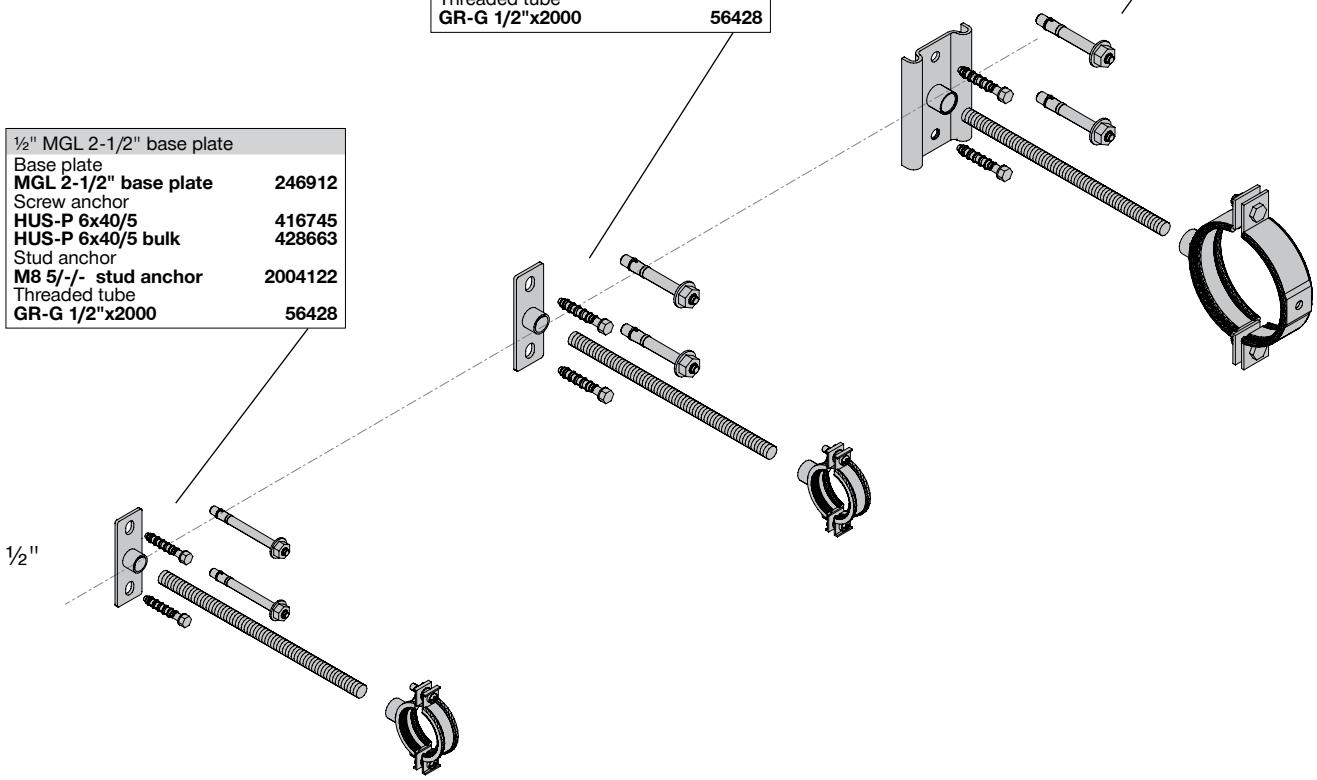
½" threaded tubes	
GR-G 1/2"x2000 4.6 Zn	**56428**

½" Pipe Rings	
MP-MI ..DL	**Sizes 3/4" - 2"**

½" MFP -GP ½" base plate	
Base plate	
MFP-GP 1/2"	**310318**
Screw anchor	
HUS3-10x60 5/-/-	**2079911**
Stud anchor	
HSA M12 5/ -/-	**2004154**
Threaded tube	
GR-G 1/2"x2000	**56428**

½" MGS 2 - ½" base plate	
Base plate	
MGS 2-1/2" base plate	**246916**
Screw anchor	
HUS3-H 8x55/-/-	**2079794**
Stud anchor	
HSA M10 5/-/-	**2004127**
Threaded tube	
GR-G 1/2"x2000	**56428**

½" MGL 2-1/2" base plate	
Base plate	
MGL 2-1/2" base plate	**246912**
Screw anchor	
HUS-P 6x40/5	**416745**
HUS-P 6x40/5 bulk	**428663**
Stud anchor	
M8 5/-/- stud anchor	**2004122**
Threaded tube	
GR-G 1/2"x2000	**56428**



Application description	Application	Product lines	Base material
Wall spot fixture 1/2" solutions	8	Base plates	Concrete
General comments		Anchors	
▪ Application not subject to any forces as used as a spacer for offset solutions		Pipe rings	

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Wall Spot Fixture On Concrete - Options ¾"

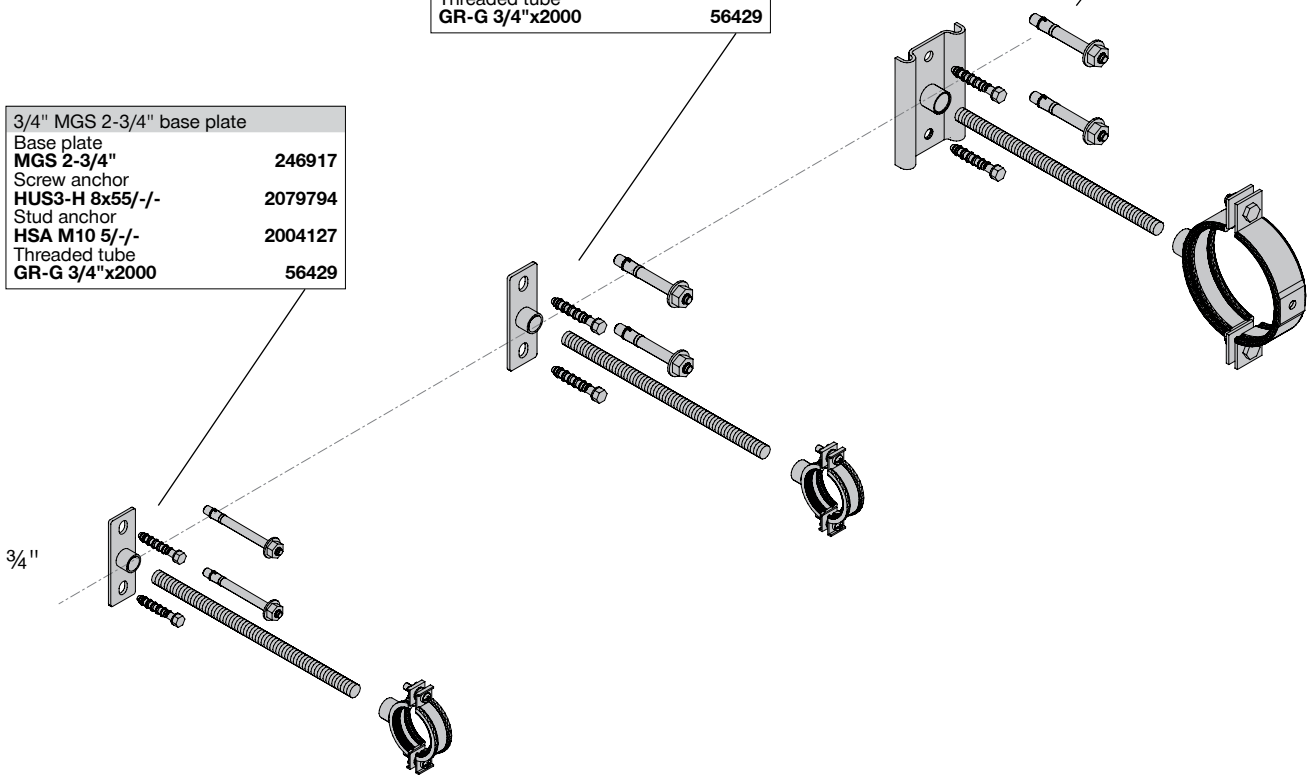
¾" threaded tubes	
GR-G 3/4"x2000 4.6 Zn	**56429**

3/4" pipe rings	
MP-MI ... EL	**Sizes 117mm - 267mm**
MP-MXI ... 3/4"	**Sizes 2" - 133mm**

¾" MFP -GP ¾" base plate	
Base plate	
MFP-GP 3/4"	**310319**
Screw anchor	
HUS3-10x60 5/-/-	**2079911**
Stud anchor	
HSA M12 5/ -/-	**2004154**
Threaded tube	
GR-G 3/4"x2000	**56429**

3/4" MGM 2-3/4" base plate	
Base plate	
MGM 2-3/4"	**246919**
Screw anchor	
HUS3-10x60 5/-/-	**2079911**
Stud anchor	
HSA M12 5/ -/-	**2004154**
Threaded tube	
GR-G 3/4"x2000	**56429**

3/4" MGS 2-3/4" base plate	
Base plate	
MGS 2-3/4"	**246917**
Screw anchor	
HUS3-H 8x55/-/-	**2079794**
Stud anchor	
HSA M10 5/-/-	**2004127**
Threaded tube	
GR-G 3/4"x2000	**56429**



Application description	Application	Product lines	Base material
Wall spot fixture 3/4" solutions	8	Base plates	Concrete
General comments		Anchors	
▪ Application not subject to any forces as used as a spacer for offset solutions		Pipe rings	

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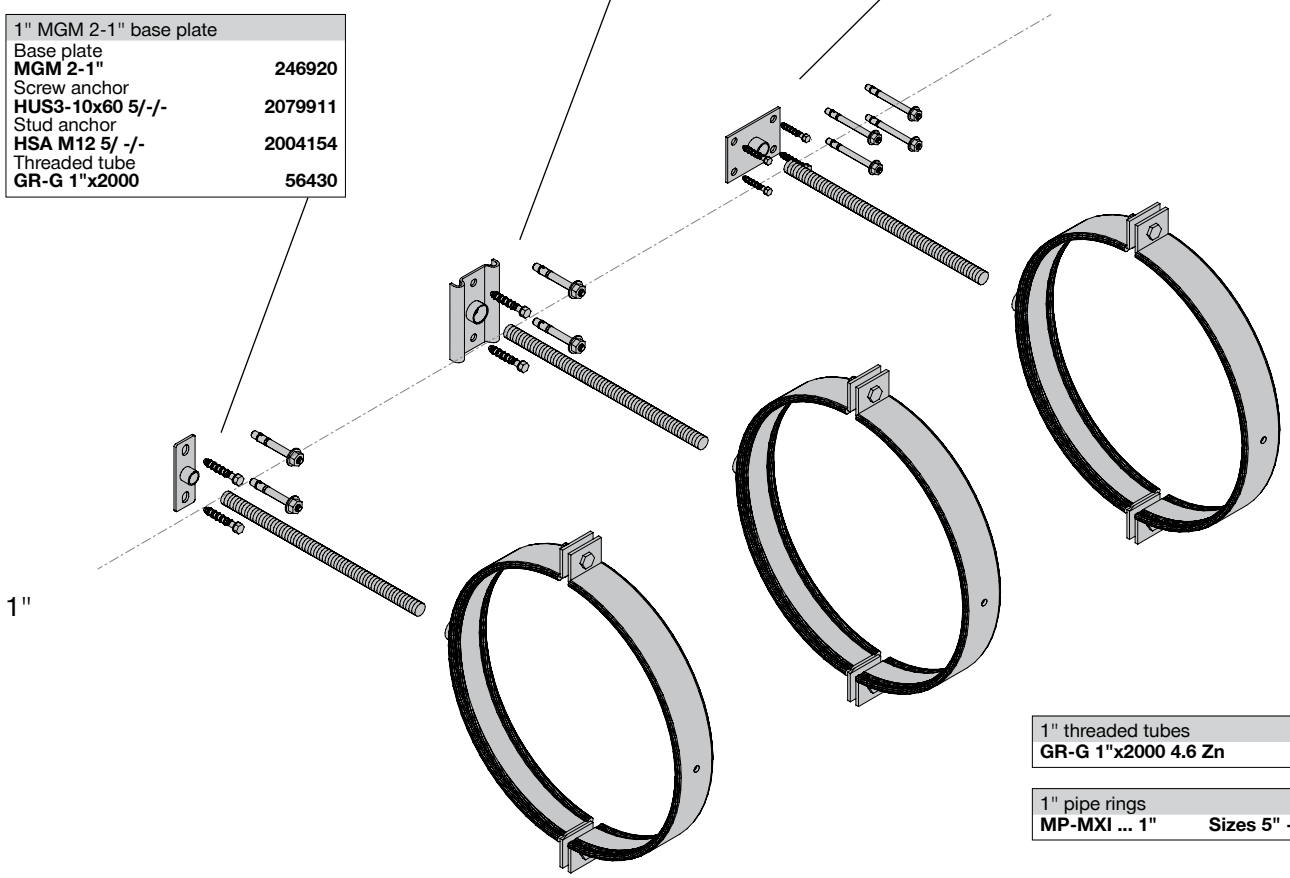
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Wall Spot Fixture On Concrete - Options 1"

1" MGZ 4-1" base plate	
Base plate	
MGZ 4-1"	**246926**
Screw anchor	
HUS3-H 8x55/-/-	**2079794**
Stud anchor	
HSA M10 5/-/-	**2004127**
Threaded tube	
GR-G 1"x2000	**56430**

1" MFP -GP 1" base plate	
Base plate	
MFP-GP 1"	**372614**
Screw anchor	
HUS3-10x60 5/-/-	**2079911**
Stud anchor	
HSA M12 5/ -/-	**2004154**
Threaded tube	
GR-G 1"x2000	**56430**

1" MGM 2-1" base plate	
Base plate	
MGM 2-1"	**246920**
Screw anchor	
HUS3-10x60 5/-/-	**2079911**
Stud anchor	
HSA M12 5/ -/-	**2004154**
Threaded tube	
GR-G 1"x2000	**56430**



1"

1" threaded tubes	
GR-G 1"x2000 4.6 Zn	**56430**

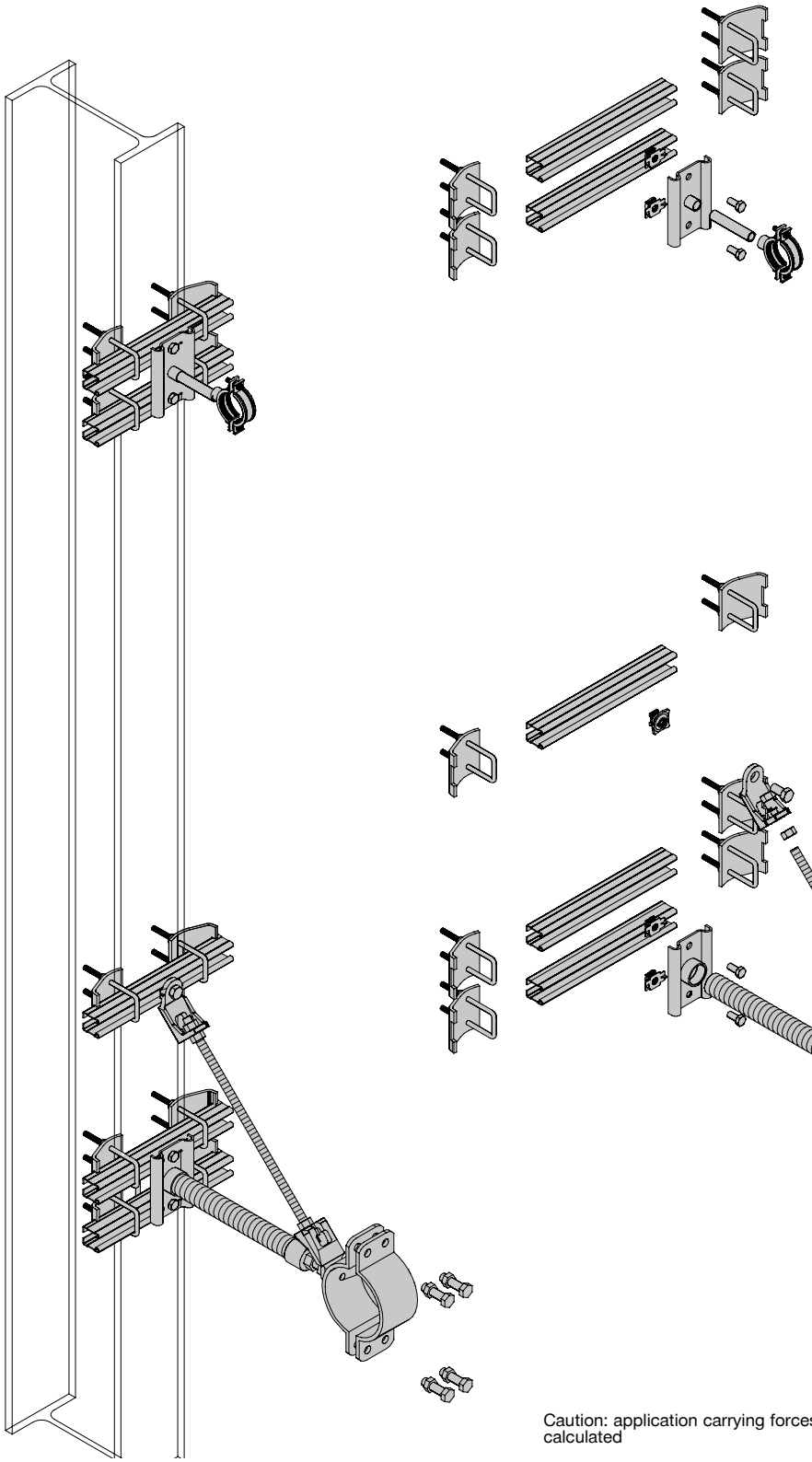
1" pipe rings	
MP-MXI ... 1"	**Sizes 5" - 508mm**

Application description	Application	Product lines	Base material
Wall spot fixture 1" solutions	8	Base plates	Concrete
General comments		Pipe rings	
▪ Application not subject to any forces as used as a spacer for offset solutions			

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Wall Spot Fixture On Steel - Options



MFP-GP M16 base plate	
Beam clamps	
4x MQT 21-41 clamp	**369675**
Transverse channels required	
2x MQ-41 3m...m channel	**369591**
Fastening base plate in channels	
2x MQM-M12 wing nut	**369627**
2x M12x25 screw	**216458**
Base plate	
1x MFP-GP M16 base plate	**373203**
Threaded rod	
1x AM 16x1000...m t-rod	**216422**
Pipe ring with M16 connection head	
MP-MI ... C	**Sizes 4" - 244.5mm**
or	
MP-MXI ... M16	**Sizes 4" - 508mm**

MFP 1 fixed point set on steel profile	
Beam clamps	
6x MQT 21-41 clamp	**369675**
Transverse channels required	
3x MQ-41 3m...m channel	**369591**
Fastening base plate in channels	
2x MQM-M12 wing nut	**369627**
2x M12x25 screw	**216458**
Fastening brace in the channel	
MQA-M16-B	**369632**
M16x40 screw	**47427**
Fixed point	
Fixed point pipe ring as per size	
Bracing set	
MFP-AP	**247829**
Base plate packet	
MFP-BP 16	**369581**
Stand: threaded tube	
GR-G 1 1/4”x2000	**248532**
Brace: threaded rod	
AM16x1000	**216422**

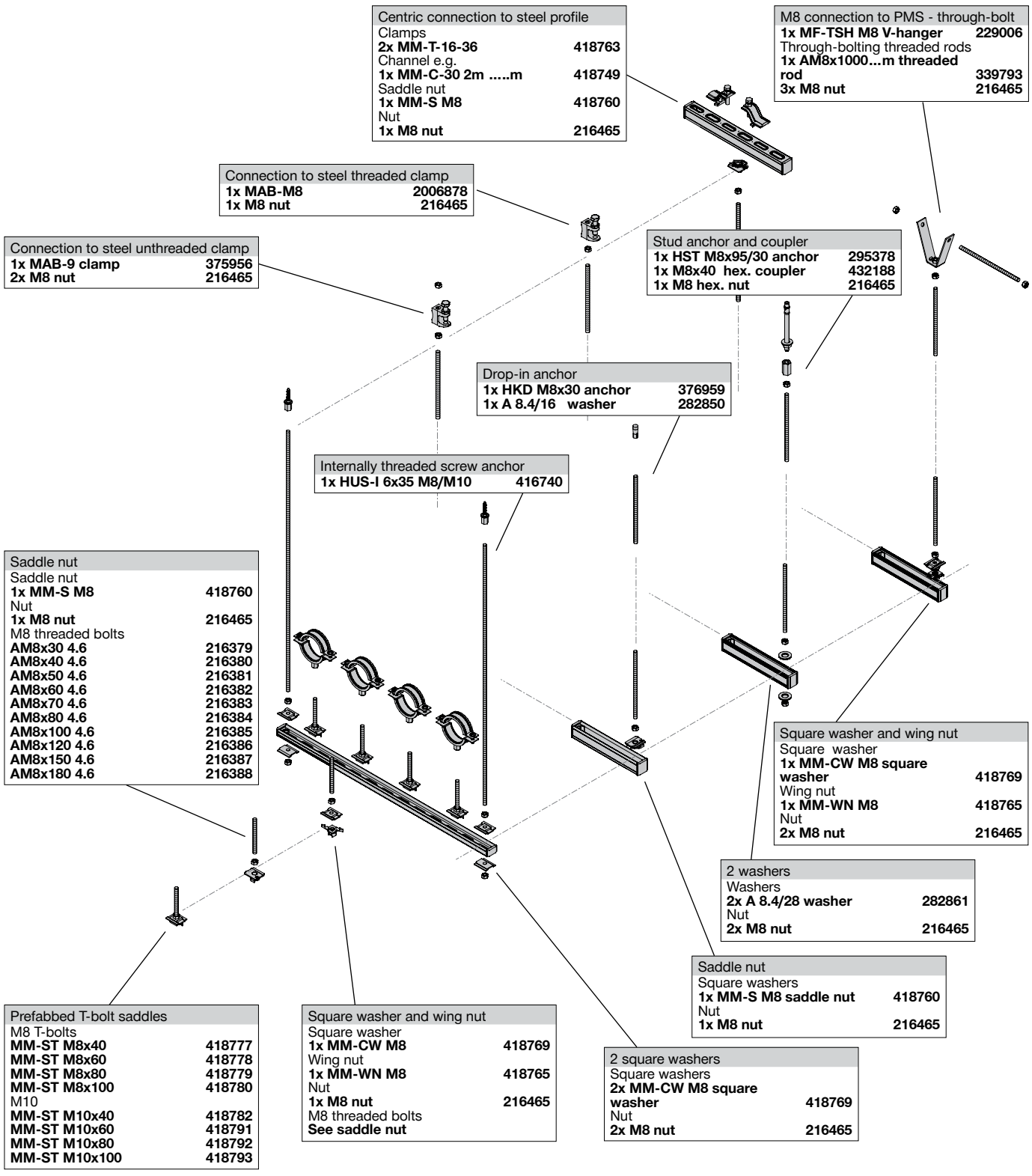
Caution: application carrying forces has to be calculated

Application description	Application	Product lines	Base material
Wall spot fixture	8	MQ system	Steel
General comments		Clamps	
▪ Application not subject to any forces as used as a spacer for offset solutions		Fixed points	

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Trapeze On Concrete, Steel, PMS - Options MM System



Centric connection to steel profile	
Clamps	
2x MM-T-16-36	**418763**
Channel e.g.	
1x MM-C-30 2m .....m	**418749**
Saddle nut	
1x MM-S M8	**418760**
Nut	
1x M8 nut	**216465**

M8 connection to PMS - through-bolt	
1x MF-TSH M8 V-hanger	**229006**
Through-bolting threaded rods	
1x AM8x1000...m threaded rod	**339793**
3x M8 nut	**216465**

Connection to steel threaded clamp	
1x MAB-M8	**2006878**
1x M8 nut	**216465**

Connection to steel unthreaded clamp	
1x MAB-9 clamp	**375956**
2x M8 nut	**216465**

Stud anchor and coupler	
1x HST M8x95/30 anchor	**295378**
1x M8x40 hex. coupler	**432188**
1x M8 hex. nut	**216465**

Drop-in anchor	
1x HKD M8x30 anchor	**376959**
1x A 8.4/16 washer	**282850**

Internally threaded screw anchor	
1x HUS-I 6x35 M8/M10	**416740**

Saddle nut	
Saddle nut	
1x MM-S M8	**418760**
Nut	
1x M8 nut	**216465**
M8 threaded bolts	
AM8x30 4.6	**216379**
AM8x40 4.6	**216380**
AM8x50 4.6	**216381**
AM8x60 4.6	**216382**
AM8x70 4.6	**216383**
AM8x80 4.6	**216384**
AM8x100 4.6	**216385**
AM8x120 4.6	**216386**
AM8x150 4.6	**216387**
AM8x180 4.6	**216388**

Square washer and wing nut	
Square washer	
1x MM-CW M8 square washer	**418769**
Wing nut	
1x MM-WN M8	**418765**
Nut	
2x M8 nut	**216465**

2 washers	
Washers	
2x A 8.4/28 washer	**282861**
Nut	
2x M8 nut	**216465**

Saddle nut	
Square washers	
1x MM-S M8 saddle nut	**418760**
Nut	
1x M8 nut	**216465**

Prefabbed T-bolt saddles	
M8 T-bolts	
MM-ST M8x40	**418777**
MM-ST M8x60	**418778**
MM-ST M8x80	**418779**
MM-ST M8x100	**418780**
M10	
MM-ST M10x40	**418782**
MM-ST M10x60	**418791**
MM-ST M10x80	**418792**
MM-ST M10x100	**418793**

Square washer and wing nut	
Square washer	
1x MM-CW M8	**418769**
Wing nut	
1x MM-WN M8	**418765**
Nut	
1x M8 nut	**216465**
M8 threaded bolts	
See saddle nut	

2 square washers	
Square washers	
2x MM-CW M8 square washer	**418769**
Nut	
2x M8 nut	**216465**

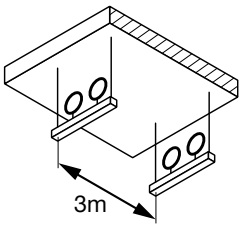
Application description	Application	Product lines	Base material
Trapeze	1	MM system	Concrete
General comments		V-hangers	Steel
▪ Application not subject to any forces as used as a spacer for offset solutions		Pipe rings	PMS

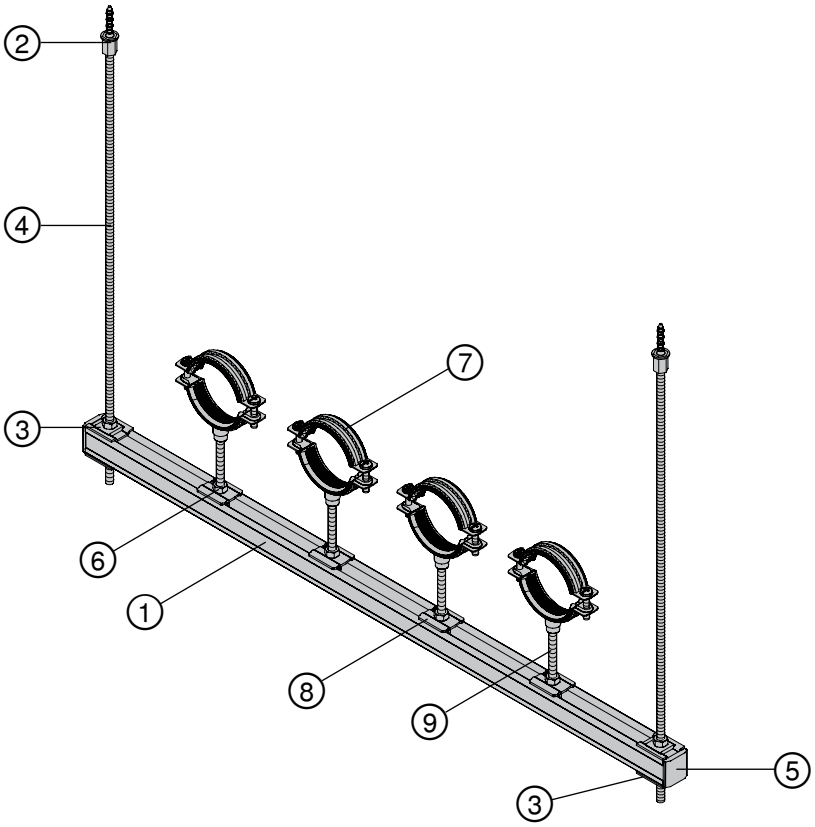
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Plumbing Application - Trapeze

Type P-T50

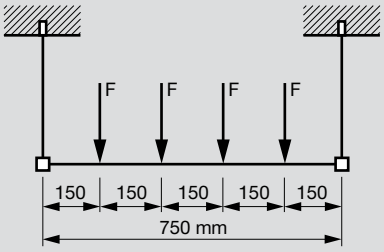
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



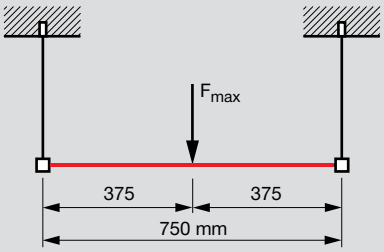


Additional loading capacity limits

This particular case
F = 0.20 kN recommended loads



Max. F = 0.72 recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**418749**	**MM-C-30 2m channel**	1	0.8
②	**416740**	**HUS-I 6x35 M8/M10 screw anchor**	2	0
③	**417769**	**MM-CE M8 square washer**	4	0
④	**339793**	**AM8x1000 threaded rod**	2	0.53 Depends on the distance
⑤	**418775**	**MM-C-30 plastic end cap**	2	0
⑥	**216465**	**M8 hex. Nut**	8	0
⑦	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑧	**418760**	**MM-S M8 saddle nut**	4	0
⑨	**216384**	**AM8x80 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - trapeze	No reference	1

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

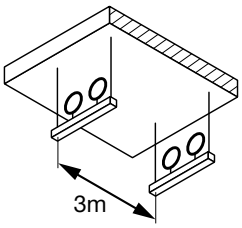
Base material	Concrete
Product line	MM System
Capacity limit	4 x DN 50 steel

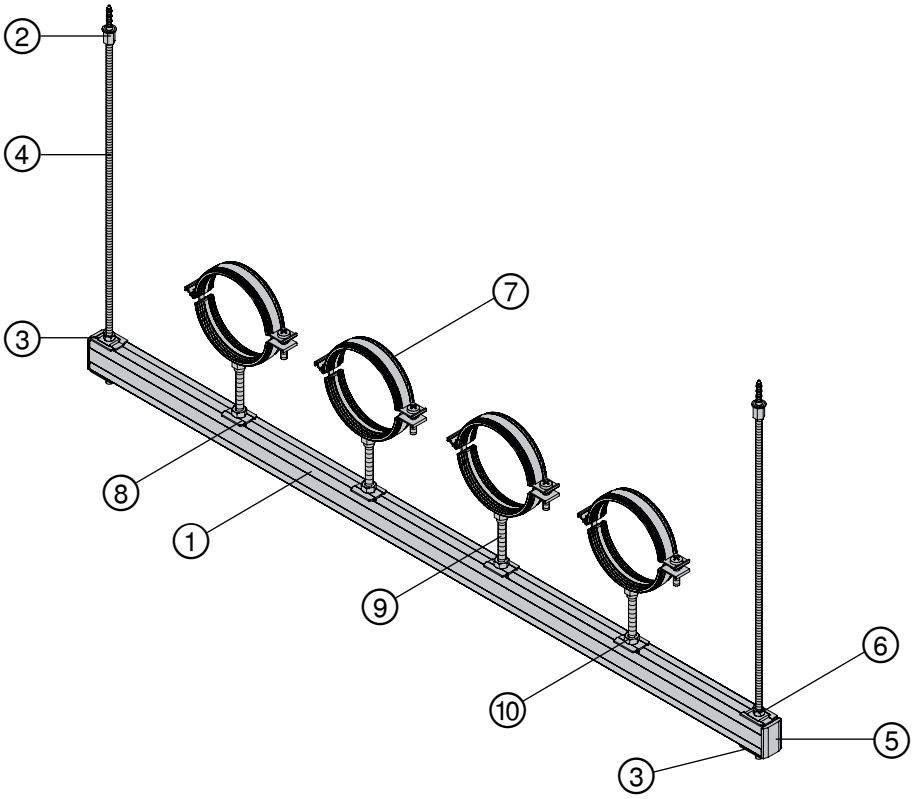
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Plumbing Application - Trapeze

Type P-T51

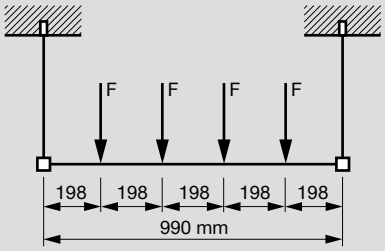
- Limited to max. 4x DN 80 (O.D. 88.9 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



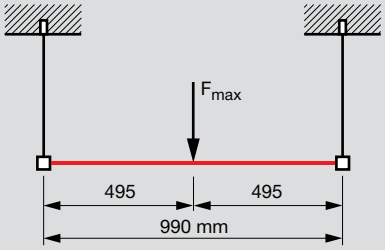


Additional loading capacity limits

This particular case
F = 0.52 kN recommended loads



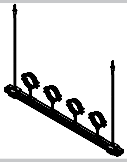
Max. F = 1.70 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**2048104**	**MM-C-45 3M channel**	1	1.09
②	**416740**	**HUS-I 6x35 M8/M10 screw anchor**	2	0
③	**417769**	**MM-CE M8 square washer**	4	0
④	**339793**	**AM8x1000 threaded rod**	2	0.53 Depends on the distance
⑤	**2048095**	**MM-E-45 plastic end cap**	2	0
⑥	**216465**	**M8 hex. Nut**	4	0
⑦	**335692**	**MPN-RC 3" B pipe ring**	4	0
⑧	**418761**	**MM-S M10 Saddle nut**	4	0
⑨	**216392**	**AM10x80 threaded bolt**	4	0
⑩	**216466**	**M10 hex. Nut**	4	0

Application description	In PROFIS as	Application
Plumbing - trapeze	No reference	1



Base material	Concrete
Product line	MM System
Capacity limit	4 x DN 80 steel

General comments

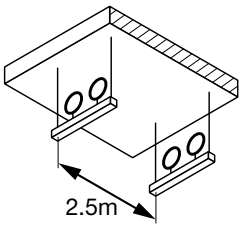
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

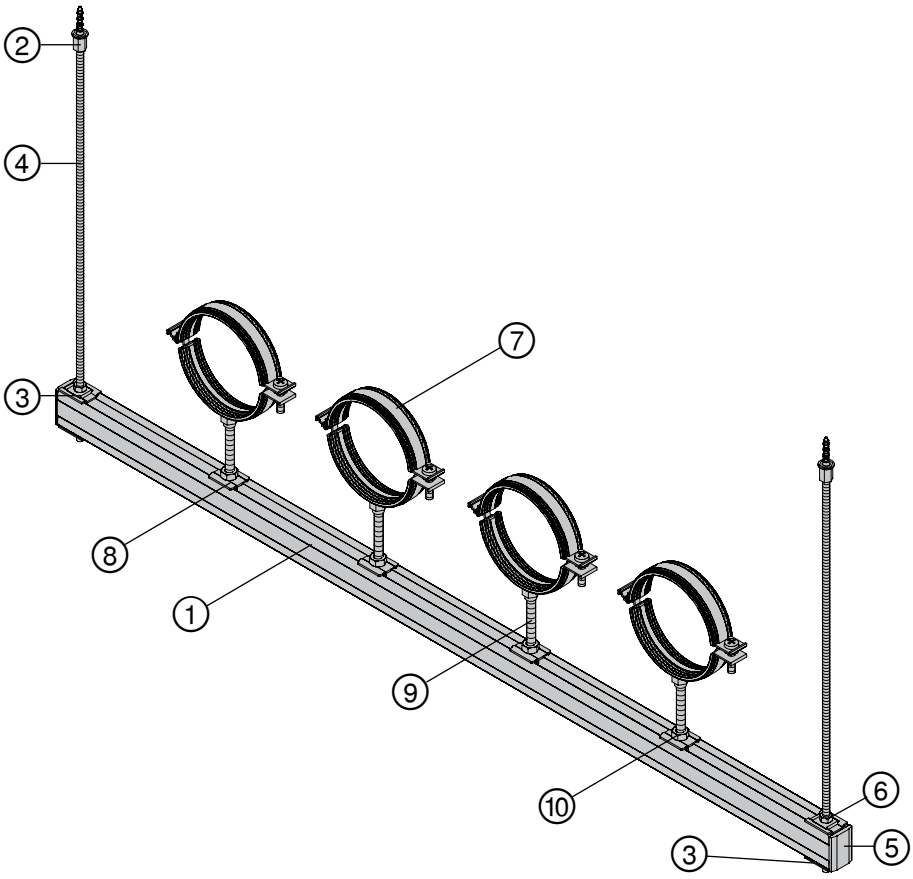
Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

Plumbing Application - Trapeze

Type P-T52

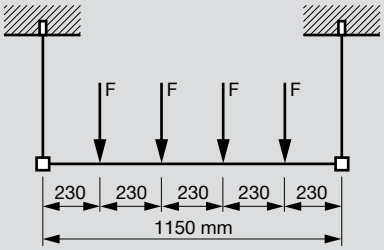
- Limited to max. 4x DN 100 (O.D. 108 mm) steel pipes
- Spacing - support distance 2.5 m
- Insulation rubber 20 mm



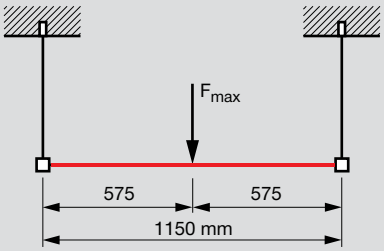


Additional loading capacity limits

This particular case
F = 0.56 kN recommended loads



Max. F = 1.45 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**2048104**	**MM-C-45 3M channel**	1	1.250
②	**416740**	**HUS-I 6x35 M8/M10 screw anchor**	2	0
③	**417769**	**MM-CE M8 square washer**	4	0
④	**339793**	**AM8x1000 threaded rod**	2	0.53 Depends on the distance
⑤	**2048095**	**MM-E-45 plastic end cap**	2	0
⑥	**216465**	**M8 hex. Nut**	4	0
⑦	**335696**	**MPN-RC 110 B pipe ring**	4	0
⑧	**418761**	**MM-S M10 saddle nut**	4	0
⑨	**216392**	**AM10x80 threaded bolt**	4	0
⑩	**216466**	**M10 hex. Nut**	4	0

Application description	In PROFIS as	Application
Plumbing - trapeze	No reference	1

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

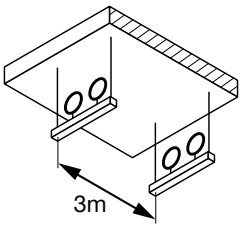
Base material	Concrete
Product line	MM System
Capacity limit	4 x DN 100 steel

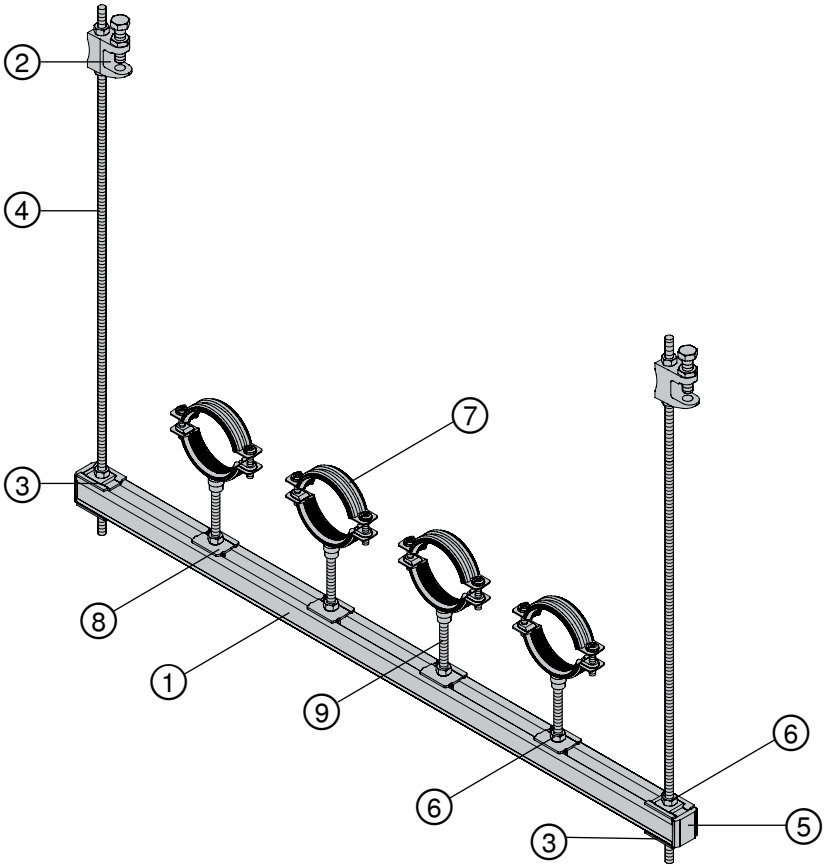
Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

Plumbing Application - Trapeze

Type P-T60

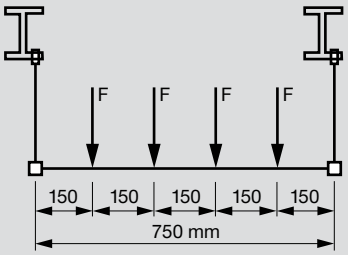
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



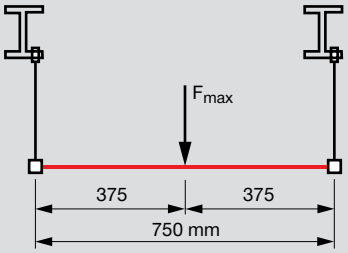


Additional loading capacity limits

This particular case
F = 0.20 kN recommended loads



Max. F = 0.72 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**418749**	**MM-C-30 2m channel**	1	0.8
②	**375956**	**MAB-9 beam clamp**	2	0
③	**417769**	**MM-CE M8 square washer**	4	0
④	**339793**	**AM8x1000 threaded rod**	2	0.53 Depends on the distance
⑤	**418775**	**MM-C-30 plastic end cap**	2	0
⑥	**216465**	**M8 hex. Nut**	12	0
⑦	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑧	**418760**	**MM-S M8 saddle nut**	4	0
⑨	**216384**	**AM8x80 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - trapeze	No reference	1

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

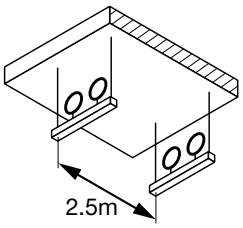
Base material	Steel
Product line	MM System
Capacity limit	4 x DN 50 steel

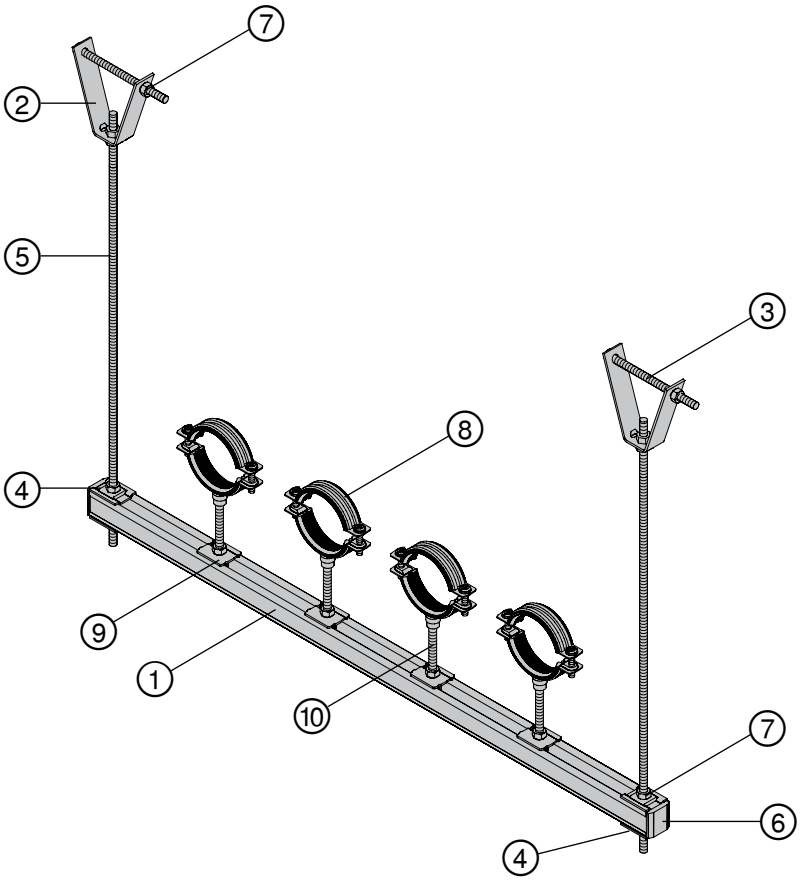
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Plumbing Application - Trapeze

Type P-T70

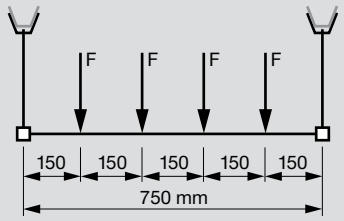
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 2.5 m
- Insulation rubber 20 mm



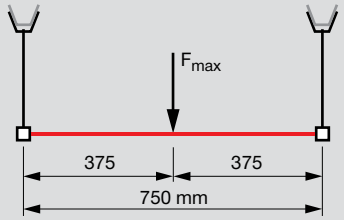


Additional loading capacity limits

This particular case
F = 0.20 kN recommended loads



Max. F = ~0.4 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**418749**	**MM-C-30 2m channel**	1	0.8
②	**229006**	**MF-TSH M8 V-hanger**	2	0
③	**2063165**	**M8x120 hex. head screw**	2	0
④	**417769**	**MM-CE M8 square washer**	4	0
⑤	**339793**	**AM8x1000 threaded rod**	2	0.53 Depends on the distance
⑥	**418775**	**MM-C-30 plastic end cap**	2	0
⑦	**216465**	**M8 hex nut**	10	0
⑧	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑨	**418760**	**MM-S M8 saddle nut**	4	0
⑩	**216384**	**AM8x80 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - trapeze	No reference	1

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

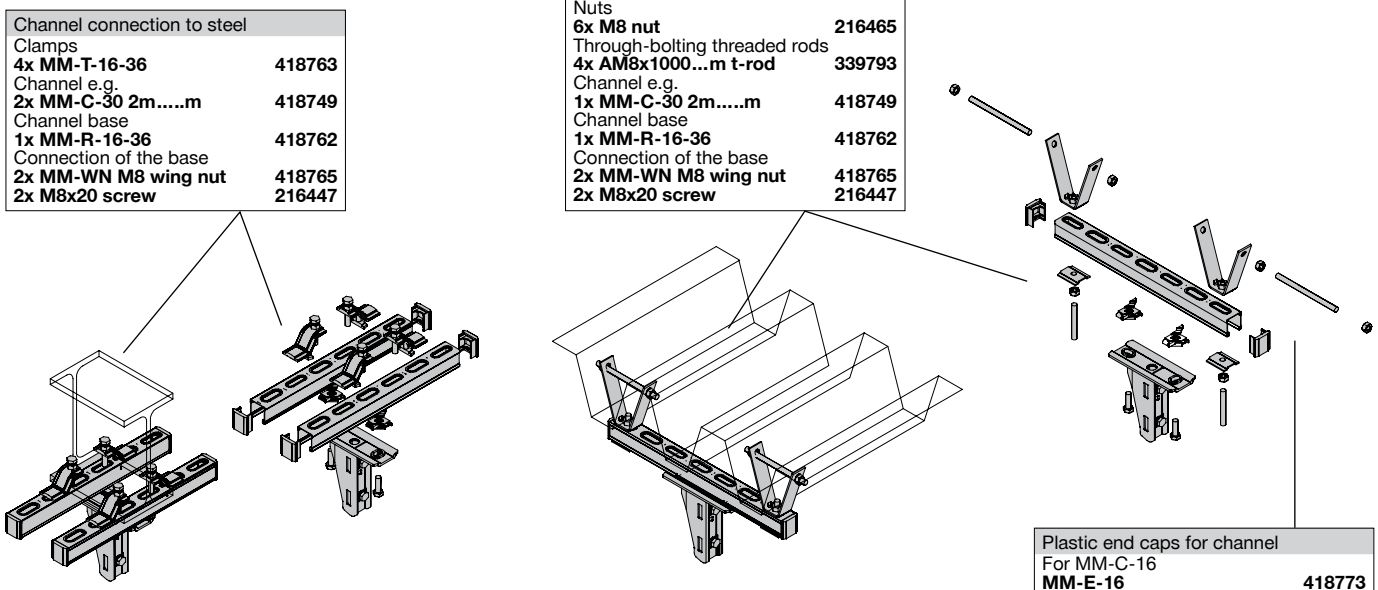
Base material	PMS
Product line	MM System
Capacity limit	4 x DN 50 steel

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

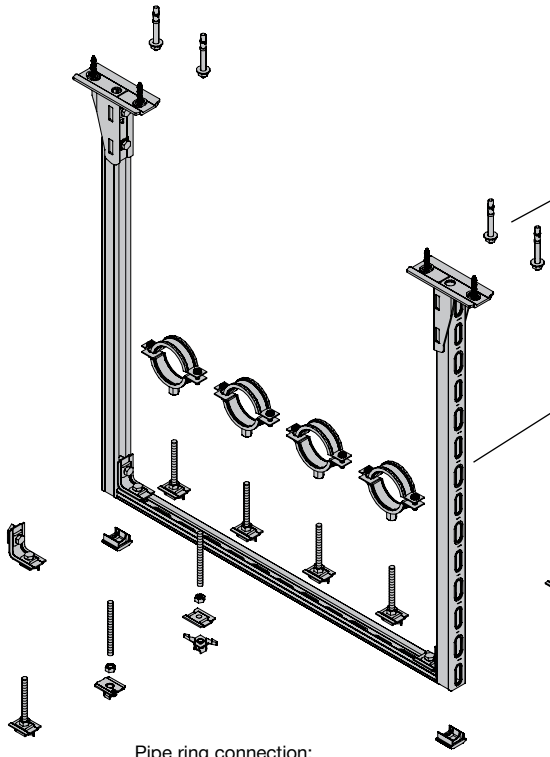
Trapeze Frame On Concrete, Steel, PMS - Options MM System

Channel connection to steel	
Clamps	
4x MM-T-16-36	**418763**
Channel e.g.	
2x MM-C-30 2m.....m	**418749**
Channel base	
1x MM-R-16-36	**418762**
Connection of the base	
2x MM-WN M8 wing nut	**418765**
2x M8x20 screw	**216447**

Channel connection to PMS	
V-hangers	
2x MF-TSH M8 V-hanger	**229006**
Nuts	
6x M8 nut	**216465**
Through-bolting threaded rods	
4x AM8x1000...m t-rod	**339793**
Channel e.g.	
1x MM-C-30 2m.....m	**418749**
Channel base	
1x MM-R-16-36	**418762**
Connection of the base	
2x MM-WN M8 wing nut	**418765**
2x M8x20 screw	**216447**



Plastic end caps for channel	
For MM-C-16	
MM-E-16	**418773**
For MM-C-30	
MM-E-30	**418774**
For MM-C-36	
MM-E-36	**418775**
For MM-C-45	
MM-E-45	**2048095**



Channel connection to concrete	
Channel base	
1x MM-R-16-36	**418762**
Screw anchor	
HUS-P 6x40/5	**416745**
HUS-P 6x40/5 bulk	**428663**
or	
Stud anchor	
M8 5/-/- stud anchor	**2004122**

MM System channels	
Channels	
MM-C-16 2m	**418748**
MM-C-30 2m	**418749**
MM-C-30 3m M10	**418776**
MM-C-36 2m	**418750**
MM-C-36 3m M10	**418751**
MM-C-45 3M	**2048104**
MM-C-45 6M	**2048105**

Channel angle connection	
Pre-assembled angle	
1x MM-A-90 angle	**418757**

Pipe ring connection:
see trapeze application

Application description	Application	Product lines	Base material
Trapeze frame	2	MM system	Concrete
		Pipe rings	Steel
			PMS

General comments

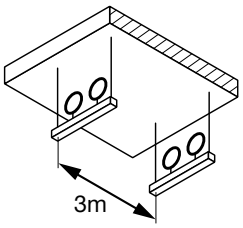
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

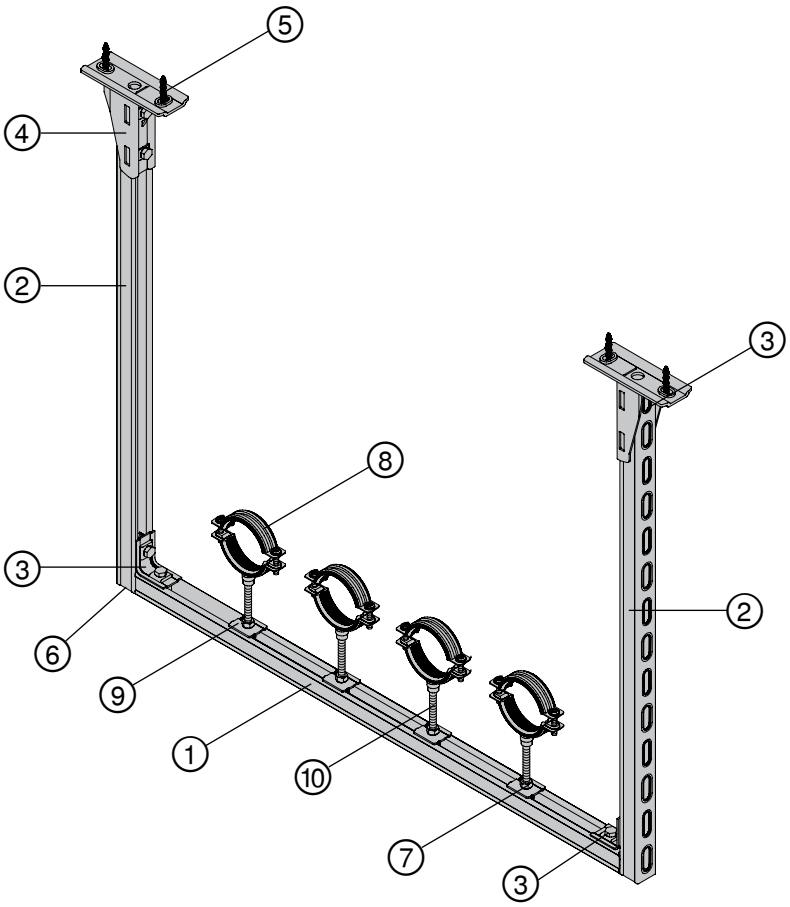
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Plumbing Application - Trapeze frame

Type P-TF70

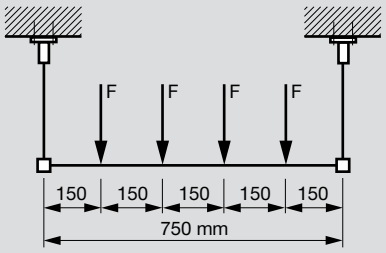
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



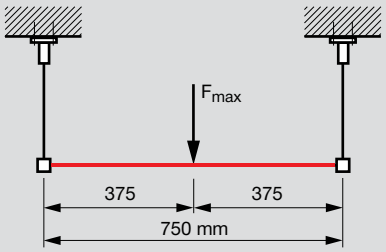


Additional loading capacity limits

This particular case
F = 0.20 kN recommended loads



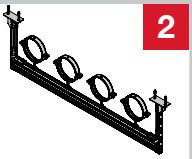
Max. F = 0.72 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**418749**	**MM-C-30 2m channel**	1	0.8
②	**418749**	**MM-C-30 2m channel**	2	0.7 Depends on the distance
③	**418757**	**MM-A-90 angle connector**	2	0
④	**418762**	**MM-R-16-36 channel base**	2	0
⑤	**416745**	**HUS-P 6x40/5 screw anchor**	4	0
⑥	**418775**	**MM-C-30 plastic end cap**	2	0
⑦	**216465**	**M8 hex. nut**	4	0
⑧	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑨	**418760**	**MM-S M8 saddle nut**	4	0
⑩	**216384**	**AM8x80 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - trapeze frame	No reference	2



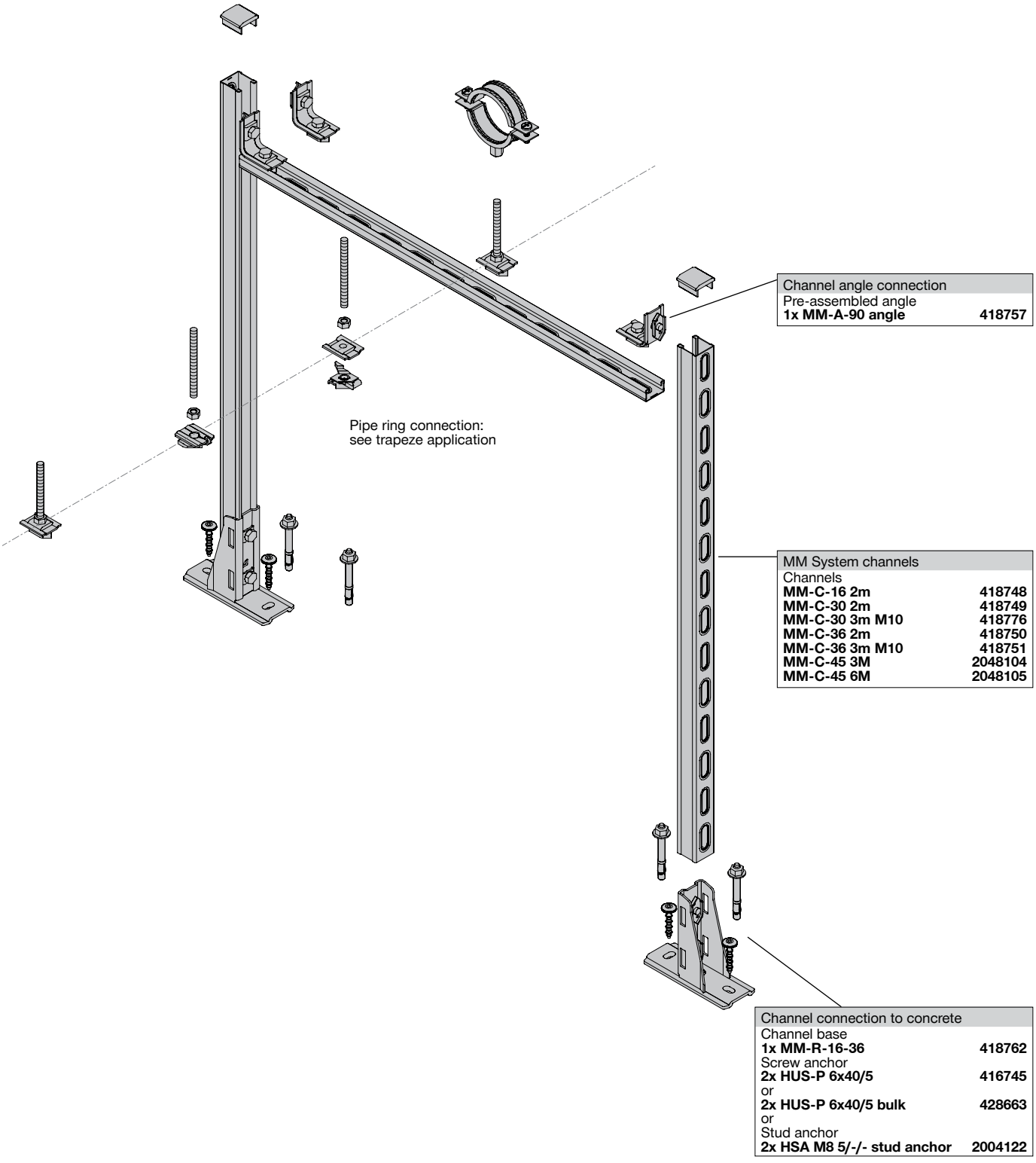
Base material	Concrete
Product line	MM System
Capacity limit	4 x DN 50 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

Goal Post Frame On Concrete - Options MM System



Channel angle connection	
Pre-assembled angle	
1x MM-A-90 angle	**418757**

MM System channels	
Channels	
MM-C-16 2m	**418748**
MM-C-30 2m	**418749**
MM-C-30 3m M10	**418776**
MM-C-36 2m	**418750**
MM-C-36 3m M10	**418751**
MM-C-45 3M	**2048104**
MM-C-45 6M	**2048105**

Channel connection to concrete	
Channel base	
1x MM-R-16-36	**418762**
Screw anchor	
2x HUS-P 6x40/5	**416745**
or	
2x HUS-P 6x40/5 bulk	**428663**
or	
Stud anchor	
2x HSA M8 5/-/- stud anchor	**2004122**

Application description	Application	Product lines	Base material
Goal post	5	MM system	Concrete
		Pipe rings	

General comments

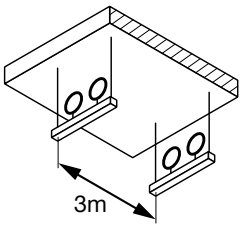
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

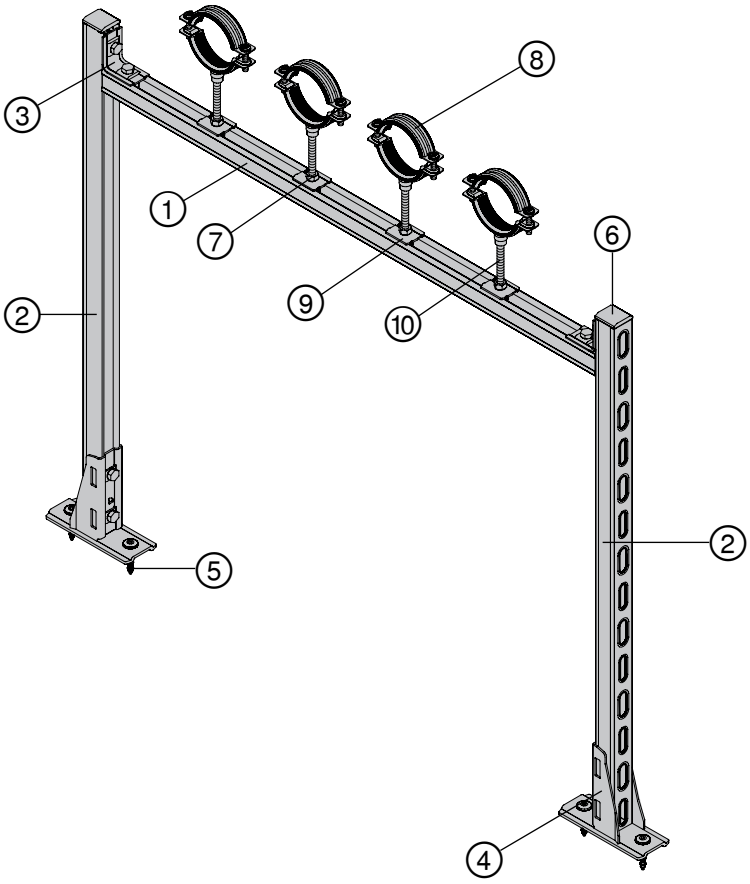
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Plumbing Application - Goal Post

Type P-GP50

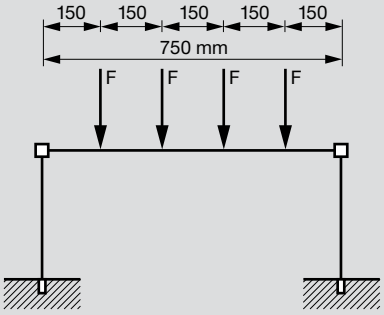
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



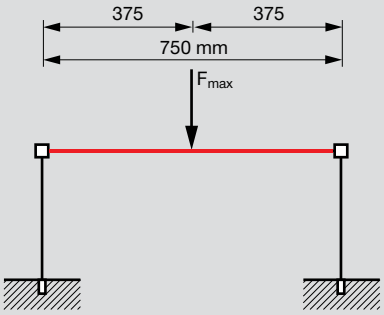


Additional loading capacity limits

This particular case
F = 0.20 kN recommended loads



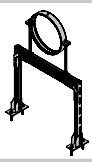
Max. F = 0.72 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**418749**	**MM-C-30 2m channel**	1	0.8
②	**418749**	**MM-C-30 2m channel**	2	0.7 Depends on the distance
③	**418757**	**MM-A-90 angle connector**	2	0
④	**418762**	**MM-R-16-36 channel base**	2	0
⑤	**416745**	**HUS-P 6x40/5 screw anchor**	4	0
⑥	**418775**	**MM-C-30 plastic end cap**	2	0
⑦	**216465**	**M8 hex. Nut**	4	0
⑧	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑨	**418760**	**MM-S M8 saddle nut**	4	0
⑩	**216384**	**AM8x80 threaded bolt**	4	0

Application description	In PROFIS as	Application
Plumbing - goal post	No reference	5



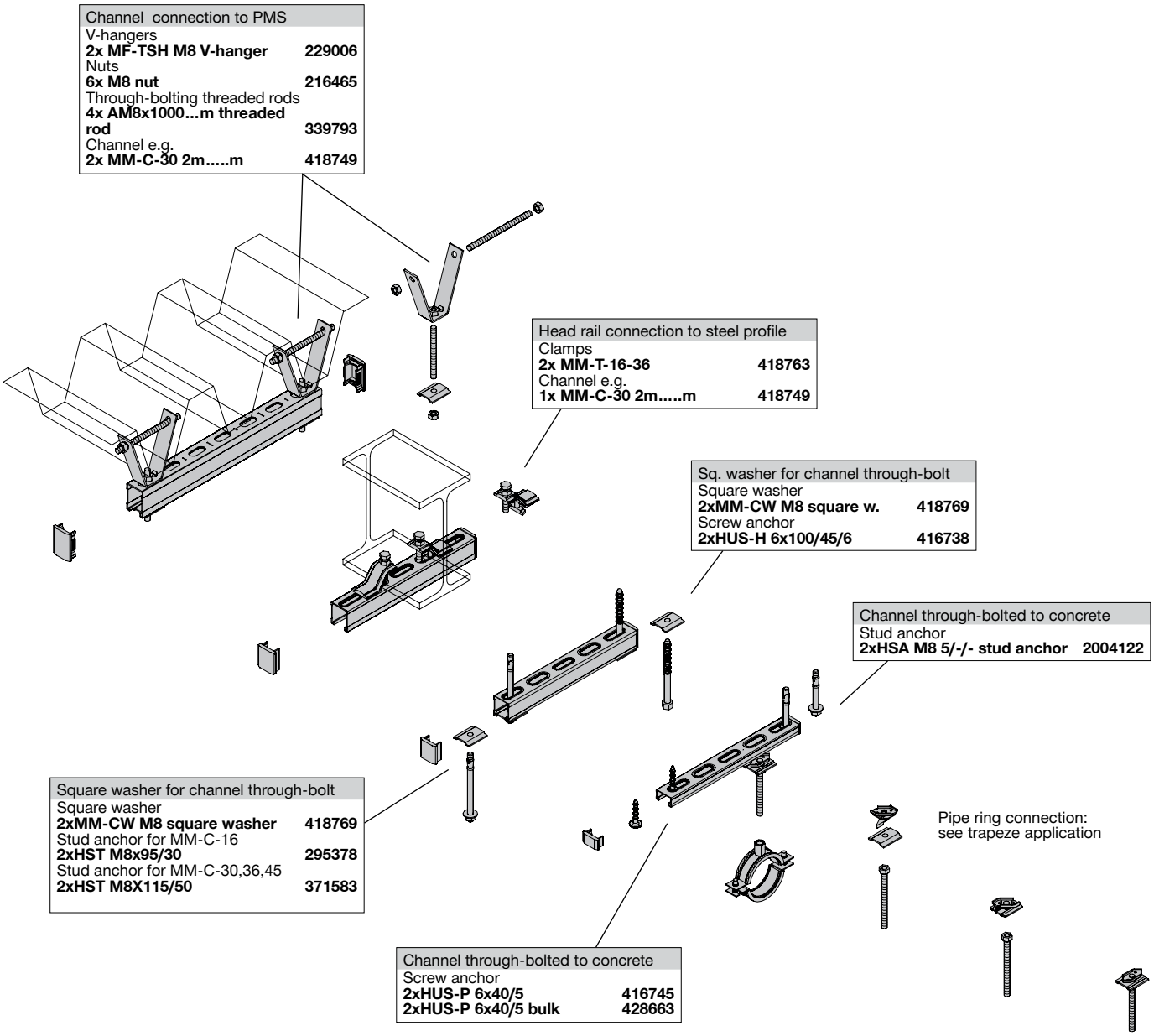
Base material	Concrete
Product line	MM System
Capacity limit	4 x DN 50 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

Hilti strongly advises the customer to verify the respective application by consultation and calculation of an structural engineer for the compliance of the product with applicable norms and standards. The non-involvement of a structure engineer will lead to a release of Hilti's liability. It is required that the product is used strictly according to the applicable Hilti Instruction For Use and within the application limits specified in the Hilti Technical Data Sheets, the technical specifications and supporting product literature, and the relevant application limits were not exceeded at any time. All rights reserved for Hilti AG. Duplication of drawings, as well as utilization and disclosure, are not permitted unless expressly agreed by Hilti AG.

Head Rail On Concrete, Steel, PMS - Options MM System



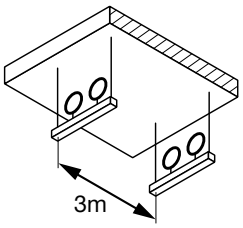
Application description	Application	Product lines	Base material
Head rail	6	MM system	Concrete
General comments		V-hangers	Steel
▪ Application subject to vertical loads caused by weight of the pipes ▪ Application not subjects to any thermal expansion or any other 3D loads		Pipe rings	PMS

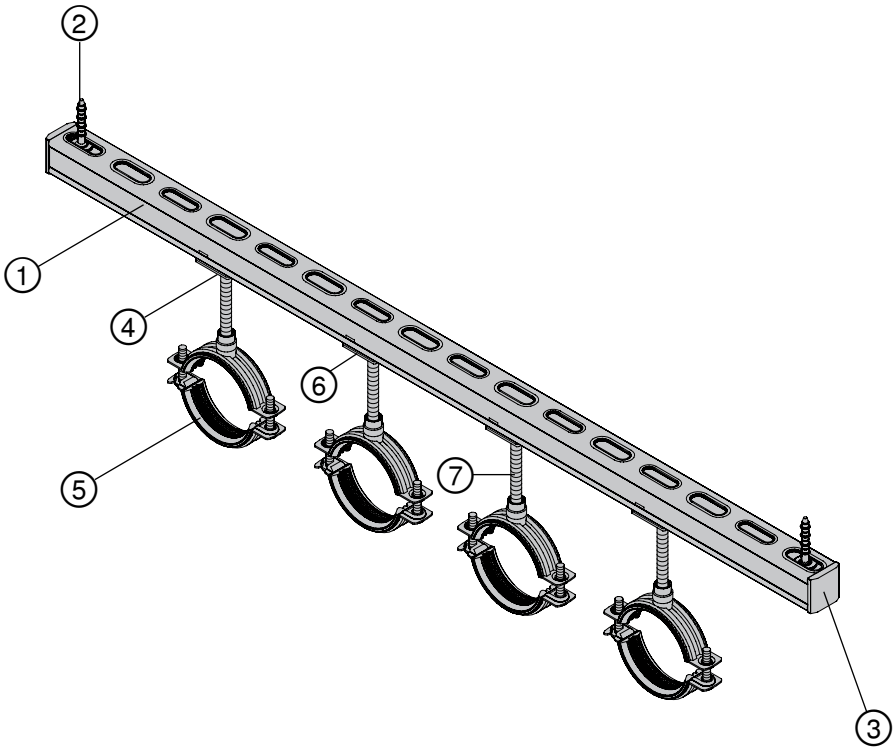
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Plumbing Application - Head Rail

Type P-HR50

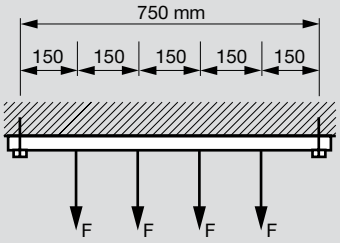
- Limited to max. 4x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



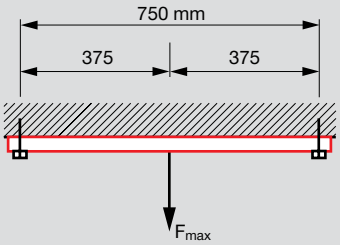


Additional loading capacity limits

This particular case
F= 0.20 kN recommended loads

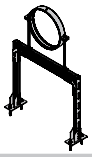


Max. F = 0.72 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**418749**	**MM-C-30 2m channel**	1	0.8
②	**416745**	**HUS-P 6x40/5 screw anchor**	2	0
③	**418775**	**MM-C-30 plastic end cap**	2	0
④	**216465**	**M8 hex. Nut**	4	0
⑤	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	4	0
⑥	**418760**	**MM-S M8 saddle nut**	4	0
⑦	**216384**	**AM8x80 threaded bolt**	4	0

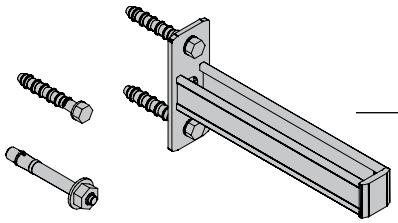
Application description	In PROFIS as	Application			
Plumbing - head rail	No reference		5	Base material	Concrete
				Product line	MM System
				Capacity limit	4 x DN 50 steel

General comments

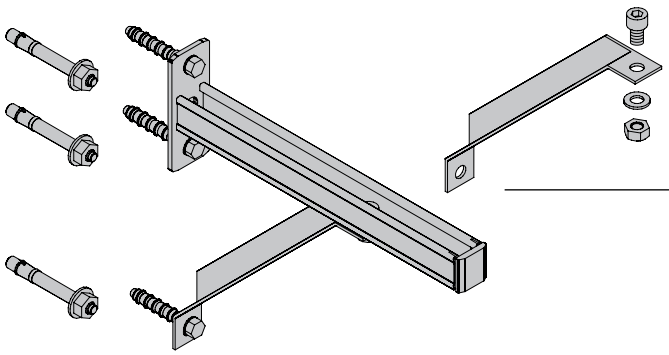
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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Cantilever Arm On Concrete - Options MM System



Single supported bracket to concrete	
Bracket	
MM-B-30/200	**418752**
MM-B-30/300	**418753**
MM-B-36/300	**418754**
MM-B-36/450	**418755**
MM-B-36/600	**418756**
Screw anchor	
2x HUS3-H 8x55/-/-	**2079794**
or	
Stud anchor	
2x HSA M10 5/-/-	**2004127**



Braced bracket to concrete	
Bracket	
Bracket	**.....**
Brace	
1x MM-AB brace	**418772**
Fastening brace to bracket	
1x cyl. screw M10x16	**216474**
1x A10.5/20 washer	**282851**
1x M8 nut	**216466**
Screw anchor	
3x HUS3-H 8x55/-/-	**2079794**
Stud anchor	
3x HSA M10 5/-/-	**2004127**

Application description	Application	Product lines	Base material
Cantilever arm	7	MM system	Concrete

General comments

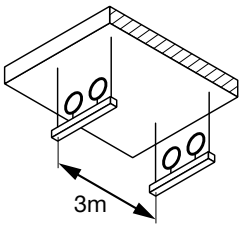
- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

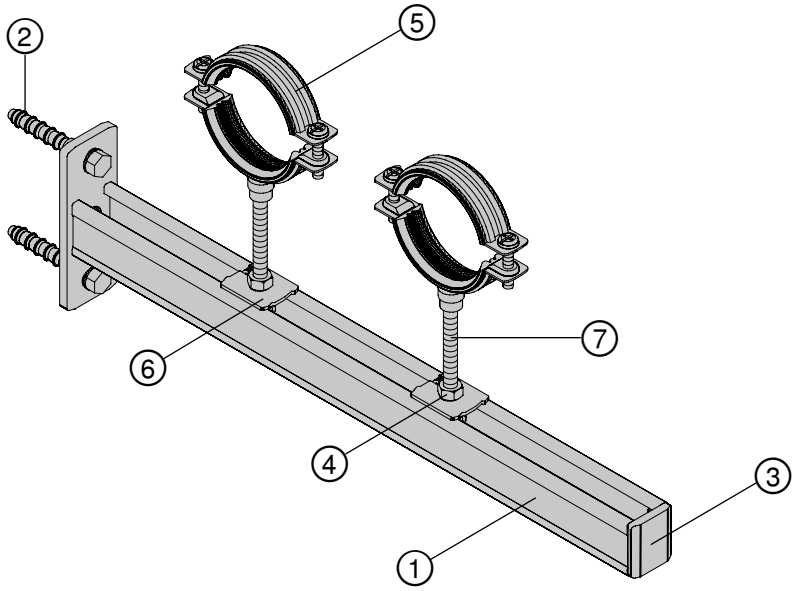
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Plumbing Application - Cantilever Arm

Type P-CA50

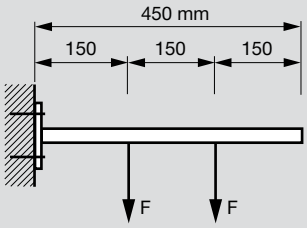
- Limited to max. 2x DN 50 (O.D. 60.3 mm) steel pipes
- Spacing - support distance 3.0 m
- Insulation rubber 20 mm



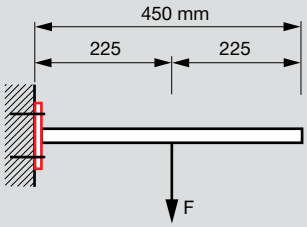


Additional loading capacity limits

This particular case
F= 0.20 kN recommended loads



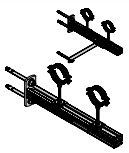
Max. F = 0.4 kN recommended load



Bill of materials

Reference	Item no.	Description	Piece	Length (m)
①	**418755**	**MM-B-36/450**	1	0
②	**2079794**	**HUS3-H 8x55/-/-**	2	0
③	**418775**	**MM-E-36 plastic end cap**	1	0
④	**216465**	**M8 hex. Nut**	2	0
⑤	**386411**	**MP-HI 59-66 M8/M10 pipe ring**	2	0
⑥	**418760**	**MM-S M8 saddle nut**	2	0
⑦	**216384**	**AM8x80 threaded bolt**	2	0

Application description	In PROFIS as	Application
Plumbing - cantilever arm	No reference	7



Base material	Concrete
Product line	MM System
Capacity limit	2 x DN 50 steel

General comments

- Application subject to vertical loads caused by weight of the pipes
- Application not subjects to any thermal expansion or any other 3D loads

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