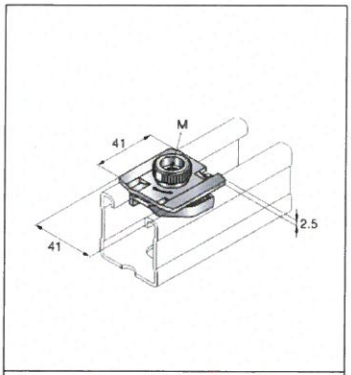
MQA-H M10 Saddle Nut

Designation	Item number
MQA-H M10	**2184831**



Package content

Corrosion protection:
Electro galvanized

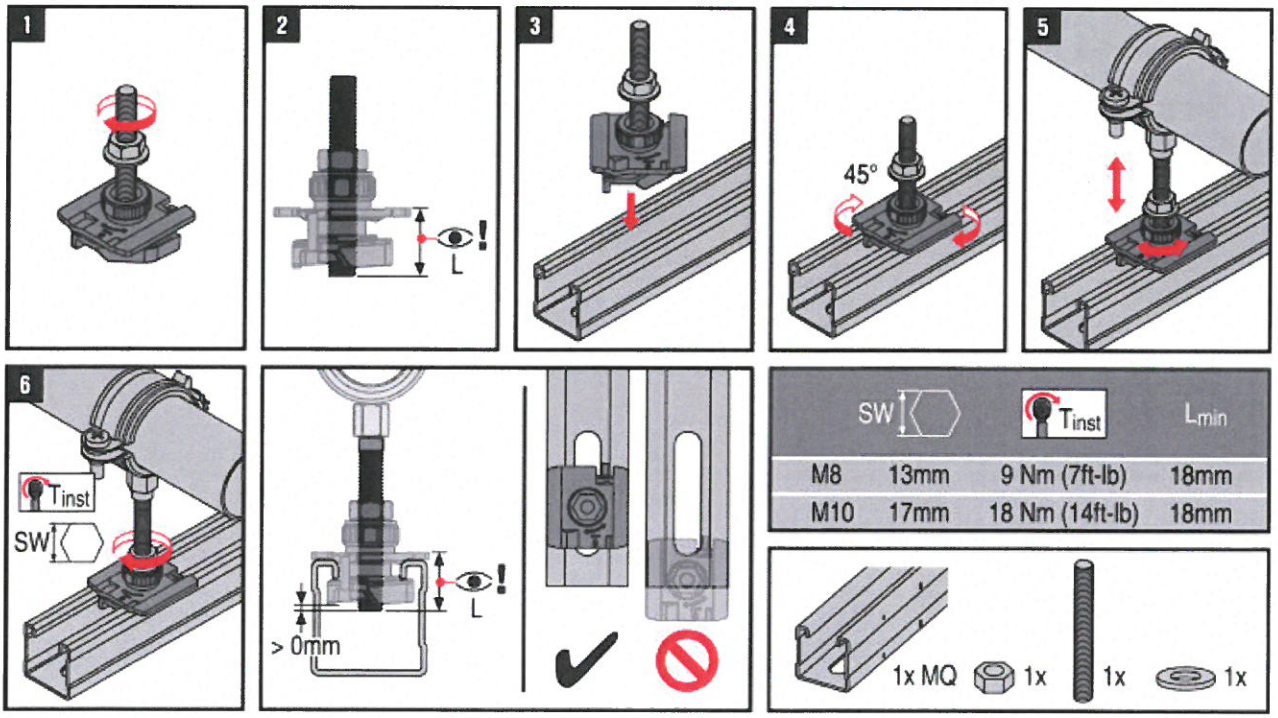
Weight:
71.0g

Submittal text:
Part, combining channel nut with metric internal thread M8 or M10 and channel plate. Installation by mounting to open side of channel and rotation to 45°. Fixation by screwing in threaded rod ant tightening a counter nut to pre-defined installation torque. Typically used for fixing pipe-rings and other threaded rod connections to installation channel. Can transfer tension, compression and shear loads. Part can be used for height adjustment of Pipe ring.

Material properties

Material	Yield strength	Ultimate strength	E-modulus	Shear modulus
Plate: steel S355J2 DIN EN 10025-2	$F_y = 355 \frac{N}{mm^2}$	$F_u = 510 \frac{N}{mm^2}$	$E = 210000 \frac{N}{mm^2}$	$G = 80769 \frac{N}{mm^2}$
Nut: S355MC - DIN EN 10149-2	$F_y = 355 \frac{N}{mm^2}$	$F_u = 430 \frac{N}{mm^2}$	$E = 210000 \frac{N}{mm^2}$	$G = 80769 \frac{N}{mm^2}$
Bolt: grade 8.8 - DIN EN ISO 898	$F_y = 640 \frac{N}{mm^2}$	$F_u = 800 \frac{N}{mm^2}$	$E = 210000 \frac{N}{mm^2}$	$G = 80769 \frac{N}{mm^2}$

Instruction For Use:



Boundary conditions - **Terms of common cooperation / Legal disclaimer** and guidelines as defined at the beginning of this book need to be mandatorily respected.

MQA-H M10 Saddle Nut

Possible loading cases		
In MQ-41-L (1.5mm wall thickness)	**In MQ-41** (2.0mm wall thickness)	
		

Design criteria used for loading capacity

Methodology:
- Finite element analysis
- Hardware tests

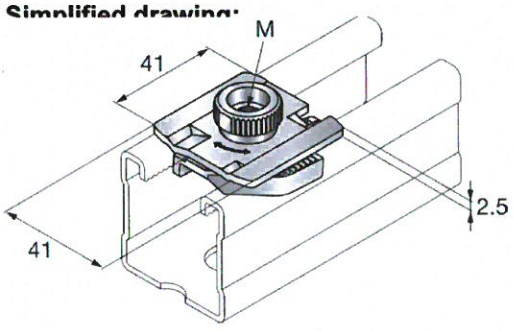
Standards and codes:

• EN 1990	Basics of structural design	03.2003
• EN 1991-1-1	Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings	09.2011
• EN 1993-1-1	Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings	03.2012
• EN 1993-1-3	Eurocode 3: Design of steel structures – Part 1-3: General rules- Supplementary rules for cold-formed members and sheeting	03.2012
• EN 1993-1-5	Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements	03.2012
• EN 1993-1-8	Eurocode 3: Design of steel structures – Part 1-8: Design of joints	03.2012
EN 10025-2	Hot rolled products of structural steels- Part 2: technical delivery conditions for non-alloy structural steels	02.2005
• RAL-GZ 655	Pipe Supports	04.2008

Software:
- Ansys 16.0
- Microsoft Excel

Environmental conditions:
- static loads
- no fatigue loads

Simplified drawing:



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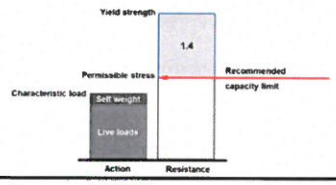
In MQ-41-L (1.5mm wall thickness)	In MQ-41 (2.0mm wall thickness)	
		

Loading case: In MQ-41-L (1.5mm wall thickness)	Combinations covered by loading case
BOM: **1x MQA-H M10** **2184831** Hardware not included in packaging **1x A 10,5/20 washer** **282851** **1x M10 hexagonal nut** **216466** **1x M10 threaded rod/bolt** 	M10 Saddle nut for perpendicular connection of M10 threaded rod to Hilti MQ channels 

Recommended loading capacity - simplified for most common applications

Method

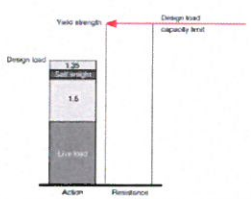


±Fx,rec. [kN]	±Fy,rec. [kN]	±Fz,rec. [kN]
0.5		3.0

These values are individual one directional maximal capacity limits. For any combinations of multiple directions, use design values and their corresponding interaction formulas.

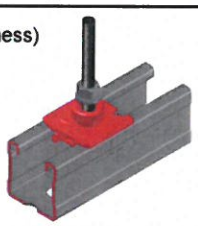
Design loading capacity - 3D 1/2

Method



Limiting components of capacity evaluated in following tables:

1. Saddle nut in MQ-41-L (1.5mm wall thickness)



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MQA-H M10 Saddle Nut

Conditions of the loading capacity tables:

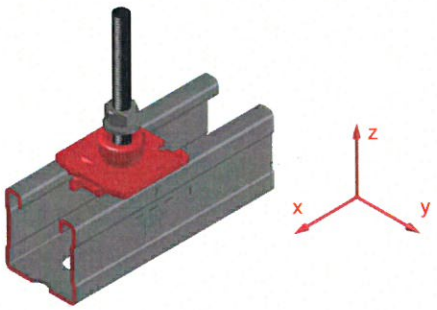
- Just for static loads
- No fatigue loads
- No low (< -10° C), no high (> +100° C) temperatures

In MQ-41-L (1.5mm wall thickness)	In MQ-41 (2.0mm wall thickness)	
		

Design loading capacity - 3D 2/2

Summary of design loads*
NOTE: all values in interaction formulas should be used in absolute values! The values below are referred to the coordinate system shown in the drawing.

1. MQA-H M8 in MQ-41-L (1.5mm wall thickness)



+Fx,Rd [kN]	-Fx,Rd [kN]	+Fy,Rd [kN]	-Fy,Rd [kN]	+Fz,Rd [kN]	-Fz,Rd [kN]
0.70	0.70			4.20	
+Mx,Rd [kNcm]	**-Mx,Rd [kNcm]**	**+My,Rd [kNcm]**	**-My,Rd [kNcm]**	**+Mz,Rd [kNcm]**	**-Mz,Rd [kNcm]**

valid for edge distance ≥ 100mm

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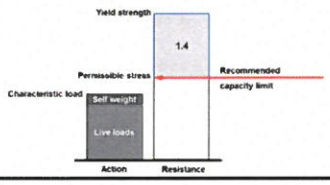
MQA-H M10 Saddle Nut

In MQ-41-L (1.5mm wall thickness)	In MQ-41 (2.0mm wall thickness)	
		

Loading case: In MQ-41 (2.0mm wall thickness)	Combinations covered by loading case
BOM: **1x MQA-H M10** **2184831** Hardware not included in packaging **1x A 10,5/20 washer** **282851** **1x M10 hexagonal nut** **216466** **1x M10 threaded rod/bolt** 	M10 Saddle nut for perpendicular connection of M10 threaded rod to Hilti MQ channels 

Recommended loading capacity - simplified for most common applications

Method

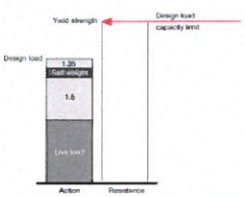


±Fx,rec. [kN]	±Fy,rec. [kN]	±Fz,rec. [kN]
0.5		4.0

These values are individual one directional maximal capacity limits. For any combinations of multiple directions, use design values and their corresponding interaction formulas.

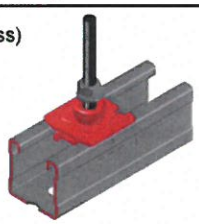
Design loading capacity - 3D 1/2

Method



Limiting components of capacity evaluated in following tables:

1. Saddle nut in MQ-41 (2.0mm wall thickness)



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Conditions of the loading capacity tables:

- Just for static loads
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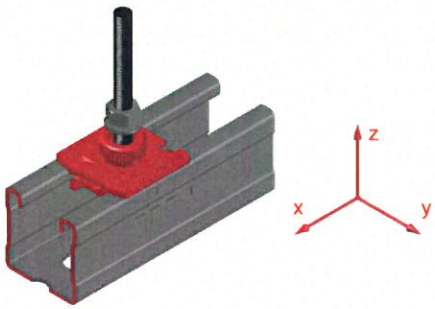
In MQ-41-L (1.5mm wall thickness)	In MQ-41 (2.0mm wall thickness)	
		

Design loading capacity - 3D 2/2

Summary of design loads*
NOTE: all values in interaction formulas should be used in absolute values! The values below are referred to the coordinate system shown in the drawing.

1. MQA-H M8 in MQ-41 (2.0mm wall thickness)



+Fx,Rd [kN]	-Fx,Rd [kN]	+Fy,Rd [kN]	-Fy,Rd [kN]	+Fz,Rd [kN]	-Fz,Rd [kN]
0.70	0.70			5.60	
+Mx,Rd [kNcm]	**-Mx,Rd [kNcm]**	**+My,Rd [kNcm]**	**-My,Rd [kNcm]**	**+Mz,Rd [kNcm]**	**-Mz,Rd [kNcm]**

valid for edge distance ≥ 100mm

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