



X-EM6H, X-EW6H,  
X-EF7H, X-EM8H,  
X-EM10H, X-EW10H  
DATA SHEET

**Threaded stud for fastening  
to steel**



# X-EM6H, X-EW6H, X-EF7H, X-EM8H, X-EM10H, X-EW10H

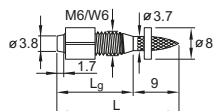
## Threaded stud for fastening to steel

### Product data

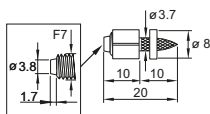
#### Dimension

X-EM6H/

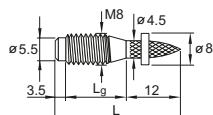
EW6H-\_\_-9 FP8



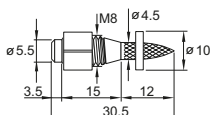
X-EF7H-7-9 FP8



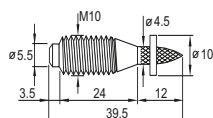
X-EM8H-\_\_-12 P8



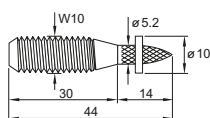
X-EM8H-15-12 FP10



X-EM10H-24-12 P10



X-EW10H-30-14 P10



#### Material specification

Carbon steel shank: HRC 56.5

Zinc coating: <sup>1)</sup> 5–13 µm

<sup>1)</sup> Zinc coating (electroplating for corrosion protection during construction and service in protected environment)

#### Recommended fastening tool

DX 6 F8, DX 5 F8, DX 460 F8,  
DX 76, DX 76 PTR, DX 600 N

#### Approval

ICC-ES ESR-2347 X-EW6H, X-EW10H,  
(USA):

FM 3026695: X-EW6H, X-EW10H

UL: EX2258: X-EW6H, X-EW10H

ABS, LR: all types



- For dimension details see fastener program
- Not all information presented in this product data sheet might be subject to approval/certificate content. Please refer to approval/certificate for further information.

### Environmental condition

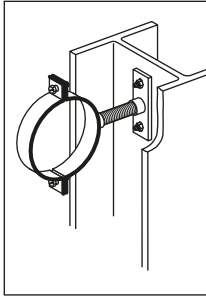
Environmental condition	Fastener X-EM6H, EW6H, X-EF7H X-EM8H, X-EW8H, X-EM10H, X-EW10H
Dry indoor non-corrosive environment	■



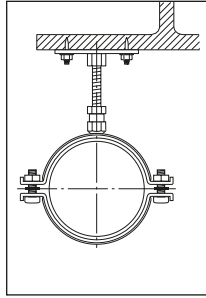
- For more details, please refer to following technical document: Hilti Corrosion Handbook.

## Application

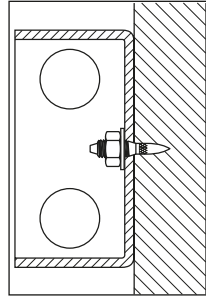
Example:



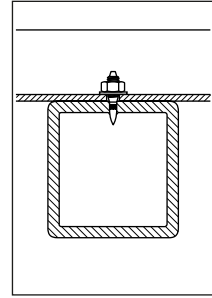
Base plates for pipe rings



Hanging with threaded couplers



Electrical boxes

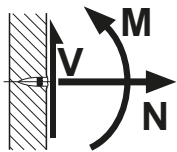


Miscellaneous attachments

## Performance data

Recommended resistance under tension load, shear load and under bending moment

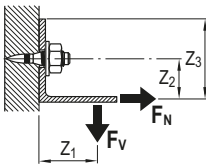
Designation	Shank $d_s \times L_s$	Tension load $N_{rec}$	Shear load $V_{rec}$	Bending moment $M_{rec}$
X-EM6H, X-EW6H, X-EF7H	3.7 x 8.5 mm	1.6 kN	1.6 kN	5.0 Nm
X-EM8H, X-EM10H	4.5 x 12.0 mm	2.4 kN	2.4 kN	9.0 Nm
X-EW10H-30-14	5.2 x 15.0 mm	3.0 kN	3.0 kN	14.0 Nm



Conditions:

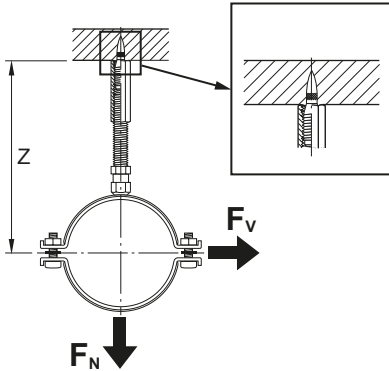
- Redundancy (multiple fastening) must be provided.
- Global factor of safety for static pull-out > 3 (based on 5% fractile value).
- Predominantly static loading.
- Strength of fastened material must be considered.
- Observance of all application limitations and recommendations.
- The recommended loads in the table refer to the resistance of the individual fastening and may not be the same as the loads  $F_N$  and  $F_V$  acting on the fastened part.

Note: If relevant, prying forces need to be considered in design, see example. Moment acting on fastener shank only in case of a gap between base and fastened material.



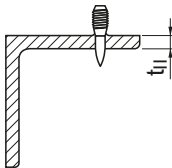
Arrangement to prevent moment on shank

Coupler tight against steel



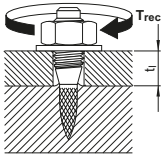
Application recommendation

Base material thickness



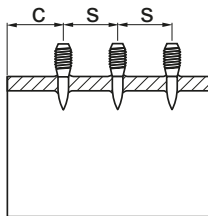
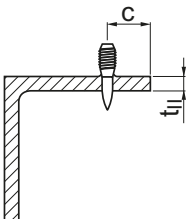
Designation	Base material thickness $t_{l,min}$
X-EM6H-8-9 FP8	4.0 mm
X-EM6H-11-9 FP8	
X-EM6H-20-9 FP8	
X-EW6H-11-9 FP8	
X-EW6H-20-9 FP8	
X-EW6H-28-9 FP8	
X-EW6H-38-9 FP8	
X-EF7H-7-9 FS8	6.0 mm
X-EM8H-11-12 P8	
X-EM8H-15-12 P8	
X-EM8H-15-12 FP10	
X-EM10H-24-12 P10	
X-EW10H-30-14 P10	

Fastened material thickness



Designation	Fastened material thickness $t_{1,max}$
X-EM6H-8-9 FP8	1.5 mm
X-EM6H-11-9 FP8	4.5 mm
X-EM6H-20-9 FP8	13.5 mm
X-EW6H-11-9 FP8	4.5 mm
X-EW6H-20-9 FP8	13.5 mm
X-EW6H-28-9 FP8	21.5 mm
X-EW6H-38-9 FP8	31.5 mm
X-EF7H-7-9 FS8	0.5 mm
X-EM8H-11-12 P8	2.0 mm
X-EM8H-15-12 P8	6.0 mm
X-EM8H-15-12 FP10	6.0 mm
X-EM10H-24-12 P10	14.0 mm
X-EW10H-30-14 P10	20.0 mm

Fastener positioning and base material

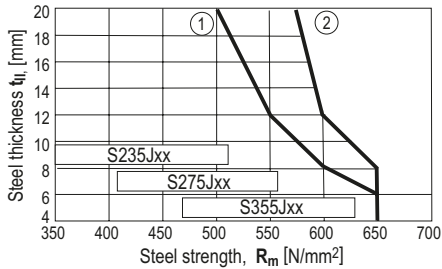


Edge distance:  $c \geq 15 \text{ mm}$

Spacing:  $s \geq 15 \text{ mm}$

## Application recommendation

### X-EM6H, X-EW6H, X-EF7H

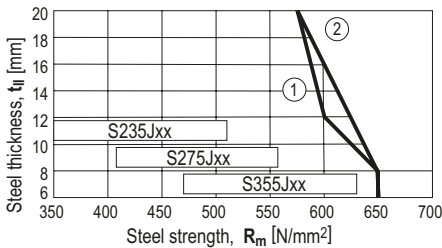


- ① Fastener:  
X-EF7H-7-9 FP8  
Setting tool:  
DX 6 F8, DX 5 F8, DX 460 F8

- ② Fastener:  
X-EM6H-8-9 FP8, X-EM6H-11-9 FP8,  
X-EM6H-20-9 FP8,  
X-EW6H-11-9 FP8, X-EW6H-20-9 FP8,  
X-EW6H-28-9 FP8, X-EW6H-38-9 FP8

Setting tool:  
DX 6 F8, DX 5 F8, DX 460 F8

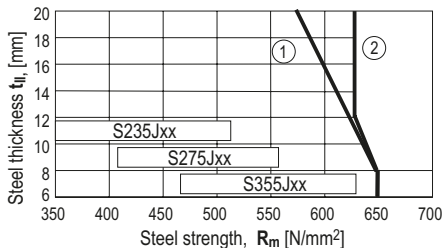
### X-EM8H



- ① Fastener:  
X-EM8H-11-12 P8, X-EM8H-15-12 P8  
Setting tool:  
DX 6 F8, DX 5 F8, DX 460 F8

- ② Fastener:  
X-EM8H-15-12 FP10  
Setting tool:  
DX 76, DX 76 PTR

### X-EM10H, X-EW10H



- ① Fastener:  
X-EM10H-24-12 P10  
Setting tool:  
DX 76, DX 76 PTR

- ② Fastener:  
X-EW10H-30-14 P10  
Setting tool:  
DX 600 N

**System recommendation**


- For more details, please refer to the chapter **Accessories and consumables compatibility** in the Direct Fastening Technology Manual (DFTM).

**Cartridge recommendation for X-EM6H, X-EW6H**

Base material		Cartridge color (tool power level)	
		Tool type: DX 6 F8	Tool type: DX 5 F8, DX 460 F8
		Cartridge type: 6.8/11 M	Cartridge type: 6.8/11 M
S235	$4 \leq t_{II} \leq 10 \text{ mm}$	titanium ■ (1-3)	green ■
	$10 < t_{II} \leq 20 \text{ mm}$	titanium ■ (2-5)	yellow ■
S275	$4 \leq t_{II} \leq 6 \text{ mm}$	titanium ■ (1-3)	green ■
	$6 < t_{II} \leq 20 \text{ mm}$	titanium ■ (2-5)	yellow ■
S355	$4 \leq t_{II} \leq 20 \text{ mm}$	titanium ■ (2-5)	yellow ■

**Cartridge recommendation for X-EF7H**

Base material		Cartridge color (tool power level)	
		Tool type: DX 6 F8	Tool type: DX 5 F8, DX 460 F8
		Cartridge type: 6.8/11 M	Cartridge type: 6.8/11 M
S235	$4 \leq t_{II} \leq 8 \text{ mm}$	titanium ■ (1-3)	green ■
	$8 < t_{II} \leq 20 \text{ mm}$	titanium ■ (2-5)	yellow ■
S275	$4 \leq t_{II} \leq 6 \text{ mm}$	titanium ■ (1-3)	green ■
	$6 < t_{II} \leq 20 \text{ mm}$	titanium ■ (2-5)	yellow ■
S355	$4 \leq t_{II} \leq 20 \text{ mm}$	titanium ■ (2-5)	yellow ■

**Cartridge recommendation for X-EM8H**

Base material		Cartridge color (tool power level)	
		Tool type: DX 6 F8	Tool type: DX 5 F8, DX 460 F8
		Cartridge type: 6.8/11 M	Cartridge type: 6.8/11 M
S235, S275	$6 \leq t_{II} \leq 8 \text{ mm}$	titanium ■ (5-8), black ■ (6-8)	red ■, black ■
S235, S275	$8 \leq t_{II} \leq 20 \text{ mm}$	titanium ■ (7-8), black ■ (6-8)	black ■
S355	$6 \leq t_{II} \leq 20 \text{ mm}$	titanium ■ (7-8), black ■ (6-8)	black ■

**Cartridge recommendation for X-EM8H**

Base material		Cartridge color (tool power level)
		Tool type: DX 76 PTR
		Cartridge type: 6.8/18 M
S235	$4 \leq t_{  } \leq 8 \text{ mm}$	blue ■
	$8 < t_{  } \leq 20 \text{ mm}$	red ■
S275	$6 \leq t_{  } \leq 7 \text{ mm}$	blue ■
	$7 < t_{  } \leq 8 \text{ mm}$	red ■
	$8 < t_{  } \leq 20 \text{ mm}$	black ■
S355	$6 \leq t_{  } \leq 8 \text{ mm}$	red ■
	$8 < t_{  } \leq 20 \text{ mm}$	black ■

**Cartridge recommendation for X-EM10H**

Base material		Cartridge color (tool power level)
		Tool type: DX 76 PTR
		Cartridge type: 6.8/18 M
S235	$6 \leq t_{  } \leq 20 \text{ mm}$	yellow ■
S275	$6 \leq t_{  } \leq 7 \text{ mm}$	yellow ■
	$7 < t_{  } \leq 8 \text{ mm}$	blue ■
	$8 < t_{  } \leq 20 \text{ mm}$	red ■
S355	$6 \leq t_{  } \leq 8 \text{ mm}$	red ■
	$8 < t_{  } \leq 20 \text{ mm}$	black ■

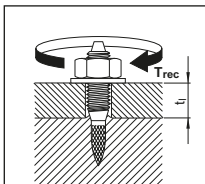
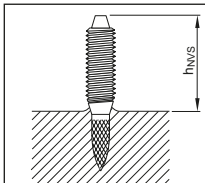


**Cartridge recommendation for X-EW10H**

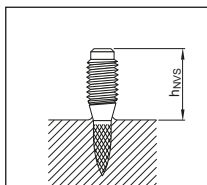
Base material		Cartridge color (tool power level)
		Tool type: DX 600 N
		Cartridge type: 6.8/18 M
S235	$6 \leq t_{II} \leq 20 \text{ mm}$	blue ■
	$8 \leq t_{II} \leq 15 \text{ mm}$	red ■
	$15 < t_{II} \leq 20 \text{ mm}$	black ■
S275	$6 \leq t_{II} \leq 8 \text{ mm}$	blue ■
	$8 < t_{II} \leq 12 \text{ mm}$	red ■
	$12 < t_{II} \leq 20 \text{ mm}$	black ■
S355	$6 \leq t_{II} \leq 7 \text{ mm}$	red ■
	$7 < t_{II} \leq 20 \text{ mm}$	black ■



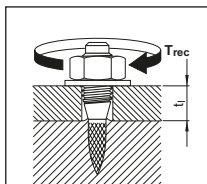
- Tool power level adjustment by setting tests on site.
- Start tool energy selection with lowest recommended tool power level.
- Correct according requirement from chapter quality assurance.

**Quality assurance**
**X-EM6H, X-EW6H, X-EF7H**


Designation	Nail standoff $h_{NVS}$	Tightening torque $T_{rec}$
X-EM6H-8-9	8.0–11.0 mm	≤ 4 Nm
X-EM6H-/X-EW6H-11-9	9.5–12.5 mm	
X-EM6H-/X-EW6H-20-9	18.5–21.5 mm	
X-EW6H-28-9	26.5–29.5 mm	
X-EW6H-38-9	36.5–39.5 mm	
X-EF7H-7-9	9.0–12.0 mm	

**X-EM8H, X-EM10H, X-EW10H**


Designation	Nail standoff $h_{NVS}$	Tightening torque $T_{rec}$
X-EM8H-11-12	11.5–15.5 mm	≤ 10.5 Nm
X-EM8H-15-12	15.5–19.5 mm	
X-EM10H-24-12	26.5–29.5 mm	≤ 15.0 Nm
X-EW10H-30-14	28.0–31.0 mm	


**Fastener program**

Designation	Item no.	Threading length $L_g$	Shank length $L_s$
X-EM6H-8-9 FP8	271965	8 mm	8.5 mm
X-EM6H-11-9 FP8	271963	11 mm	8.5 mm
X-EM6H-20-9 FP8	271961	20 mm	8.5 mm
X-EW6H-11-9 FP8	271973	11 mm	8.5 mm
X-EW6H-20-9 FP8	271971	20 mm	8.5 mm
X-EW6H-28-9 FP8	271969	28 mm	8.5 mm
X-EW6H-38-9 FP8	271967	38 mm	8.5 mm
X-EF7H-7-9 FS8	271975	7 mm	10 mm
X-EM8H-11-12 P8	271983	11 mm	12 mm
X-EM8H-15-12 P8	271981	15 mm	12 mm
X-EM8H-15-12 FP10	271982	15 mm	12 mm
X-EM10H-24-12 P10	271984	24 mm	12 mm
X-EW10H-30-14 P10	271985	30 mm	14 mm



• Fastener designation – Type of threading:

M = metric; W6, W10 = Whitworth  $\frac{1}{4}$ "",  $\frac{3}{8}$ "", F7 = French 7 mm