



The following pages are an excerpt from the North American Product Technical Guide, Volume 1: Direct Fastening Technical Guide, Edition 22.

Please refer to the publication in its entirety for complete details on this product including data development, base materials, general suitability, installation, corrosion, and product specifications.

[Direct Fastening Technical Guide, Edition 22](#)

To consult directly with a team member regarding our direct fastening products, contact Hilti's team of technical support specialists between the hours of 7:00am - 5:00pm CST.

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3.2.17 MECHANICAL/ELECTRICAL CLIPS AND HANGERS

3.2.17.1 PRODUCT DESCRIPTION

X-DR and X-DR MX Drop Rods

For suspending telecommunications, electrical cables or conduits from concrete ceiling or steel members. Available as single clip or with a preassembled 1/4" threaded or smooth rod. Drop rods are available with premium pre-mounted fasteners (X-DR) for use with powder actuated tools or without pre-mounted fasteners (X-DR MX) for use with battery actuated tools and X-S B3 or X-P B3 fasteners. The product is UL/cUL listed per NEC requirements. Product meets ANSI/TIA/EIA-568-A/-569-A, UL 2239 standards for cable and conduit support devices, which limits center-to-center spacing for hangers to 5' or less.

X-BW Batwing Clip

For suspending single thin wall and small rigid conduits or single metal clad electrical cables to a 1/4" threaded or smooth rod, 8 to 12 ga. wire, or steel flange. Contact Hilti for UL/cUL listing information.

X-MS and X-MS BW MC stackers

For suspending multiple metal clad electrical cables to a 1/4" threaded or smooth rod and 8 to 12 ga. wire. This product is UL/cUL listed.

X-HS and X-HS MX Hangers

Threaded rod hangers available with pre-mounted fastener (X-HS W6 and X-HS W10) or without pre-mounted fastener (X-HS W6 MX) for use with magazine tools. For attachment of 1/4" (W6) or 3/8" (W10) threaded rods to concrete or steel.

Threaded Studs with Couplers

For attachment of 1/4" (X-W6) or 3/8" (W10) threaded rods to concrete or steel. More information on Threaded Studs can be found in Section 3.2.11 and 3.2.12.

X-DH and X-DH BW Data Hooks

For suspending telecommunication cables in side mounting or ceiling applications (X-DH). Also available with a batwing connection (X-DH BW) for suspending telecommunication cables attachments to a 1/4" threaded or smooth rod or 8 to 12 ga wires. The product is UL/cUL listed, plenum rated (for air handling spaces) per requirements of UL 62275 and CAN/CSA C22.2 No. 62275.

X-ECH Cable Holder

For supporting telecommunication or electrical cable from concrete or steel. UL/cUL listed, plenum rated (for air handling spaces) per the requirements of UL62275 and CAN/CSA C22.2 No. 62275.



3.2.17.1 Product description

3.2.17.2 Material specifications

3.2.17.3 Technical data

3.2.17.4 Installation instructions

3.2.17.5 Ordering information

Listings/Approvals

ICC-ES (International Code Council)
ICC-ES (International Code Council)
ESR-2795 (X-HS, X-DR and X-DR MX)
with LABC/LARC Supplement

FM (Factory Mutual)

W10-30-27P10, W10-30-32P10 and
W10-30-42P10 fasteners for sprinkler
pipe hangers in concrete

EW10-30-15P10, X-EW10H, X-EW6H
and X-HS U19 fasteners for sprinkler
pipe hanger in steel

UL (Underwriters Laboratories)

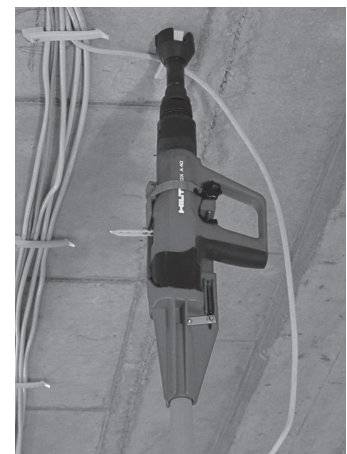
X-ECH, X-EKB and X-ECT hangers for
positioning devices

W10-30-32P10, W10-30-42P10,
EW10-30-15P10, X-EW10H and X-EW6H
fasteners for sprinkler pipe hangers

Cable and Conduit Hardware Hangers
X-HS W6, X-HS W10 and EMTSC,
X-DR, X-DR MX, X-DH, X-DH BW,
X-BW, X-MS, X-MX BW, X-BR,
X-BR MX, X-BR S and X-BR S MX



Threaded and smooth rod hangers



Cable and conduit attachment

X-BR S and X-BR S MX Bridle ring with saddle

For telecommunication cable applications. Bridle ring with saddle increases the cable holding surface and provides optimal bending radius for cables. Product is available with premium pre-mounted fasteners (X-BR S) for use with powder actuated tools or without pre-mounted fasteners (X-BR S MX) for use with battery actuated tools. UL/cUL listed, plenum rated (for air handling spaces) per the requirements of UL62275 and CAN/CSA C22.2 No. 62275.

X-BR and X-BR MX Bridle Ring

For telecommunication, network wiring, or metal clad electrical cable fastenings to concrete ceilings. Product is available with premium pre-mounted fasteners (X-BR)) for use with powder actuated tools or without pre-mounted fasteners (X-BR MX) for use with Battery-actuated Tools. UL/cUL listed.

X-EKB MX Cable Clamps

For telecommunications and network wiring applications. Cable clamp attached directly to base material; designed to support multiple cables approximately 1/4" in diameter. UL/ cUL listed.

X-ECT Cable Tie Fastener

For telecommunications and premise wiring applications. Cable or conduit support using an adjustable cable tie to secure cable or pipe. UL/cUL listed.

X-EMTC and X-BX/EMTC MX Thin Wall Conduit Clips

Thin wall conduit clips available with standard pre-mounted fastener (X-EMTC C27) or premium pre-mounted fastener (X-EMTC U22.) Also available without pre-mounted fastener for use with magazine tools (X-BX/EMTC MX) for use with magazine tools. For fastening thin wall conduit.

X-EMTSC MX Stand-Off Conduit Clips

Similar to EMTC clips to hold conduits away from base material and align conduit to knockouts on junction boxes. UL/ cUL listed.

X-ECC MX

Metal ceiling clip for light-duty electrical/mechanical fastenings on ceiling and use with collated fasteners. For use with cable trays and electrical applications.



3.2.17.2 MATERIAL SPECIFICATIONS

Clip/hanger designation	Fastener material	Fastener plating ¹	Clip/hanger material	Clip/hanger plating
X-HS W10/W6	Carbon Steel	5 µm Zinc	Carbon Steel	5 µm Zinc
X-HS W6 MX	Carbon Steel	5 µm Zinc ²	Carbon Steel	5 µm Zinc
X-ECH	Carbon Steel	5 µm Zinc	Nylon Plastic	N/A
X-EKB MX	Carbon Steel	5 µm Zinc ²	Plastic	N/A
X-ECT MX	Carbon Steel	5 µm Zinc ²	Plastic	N/A
X-EMTC	Carbon Steel	5 µm Zinc	Carbon Steel	5 µm Zinc
X-BX/EMTC MX	Carbon Steel	5 µm Zinc ²	Carbon Steel	5 µm Zinc
X-EMTSC MX	Carbon Steel	5 µm Zinc ²	Carbon Steel	5 µm Zinc
X-DR	Carbon Steel	5 µm Zinc	Carbon Steel	5 µm Zinc
X-DR MX	Carbon Steel	5 µm Zinc ²	Carbon Steel	5 µm Zinc
X-ECC MX	Carbon Steel	5 µm Zinc ²	Carbon Steel, Plastic	5 µm Zinc
X-BR / X-BR S	Carbon Steel	5 µm Zinc	Carbon Steel, Polyamid (Saddle)	5 µm Zinc
X-BR MX / X-BR S MX	Carbon Steel	5 µm Zinc ²	Carbon Steel, Polyamid (Saddle)	5 µm Zinc
X-DH / X-DH BW	N/A	N/A	Carbon Steel, Nylon Plastic (Saddle) Spring Steel (Batwing)	5 µm Zinc
X-BW	N/A	N/A	Spring Steel	5µm zinc
X-MS / X-MS BW	N/A	N/A	Carbon Steel, Plastic, Spring Steel	5 µm Zinc

¹ The 5 µm coating is in accordance with ASTM B633, SC1, Type III. Reference Section 2.3.3.1 for more information.

² Noted clips/hangers do not come with a pre-mounted power-actuated fastener. Collated battery actuated fasteners are recommended to be used with those clips. Material and plating information provided for the powder-actuated fasteners commonly used with these clips.

Allowable loads in normal weight concrete^{1,2}

Description	Fastener	Shank diameter	Concrete compressive strength						
			2000 psi			4000 psi			6000 psi
			Tension	Shear	45-Degree ³	Tension	Shear	45-Degree	Tension
		in. (mm)	lb (kN)	lb (kN)	lb (kN)	lb (kN)	lb (kN)	lb (kN)	lb (kN)
Threaded Rod Hanger with pre-mounted fastener	X-HS U32	0.157 (4.0)	75 (0.33)	100 (0.44)	60 (0.27)	85 (0.38)	150 (0.67)	120 (0.53) ³	–
	X-HS U22	0.157 (4.0)	50 (0.22)	–	–	50 (0.22)	–	–	–
X-DR Drop rod with pre-mounted fastener	X-ALH 22	0.177 (4.5)	–	–	–	40 (0.18)	–	–	–
	X-ALH 27	0.177 (4.5)	–	–	–	50 (0.22)	–	–	100 (0.44)
X-DR MX Drop rod	X-P 20 B3	0.118 (3.0)	–	–	–	30 (0.13)	–	–	–
X-ECC MX	X-P 20 B3	0.118 (3.0)	–	–	–	30 (0.13) ⁴	–	–	–

1 The tabulated allowable load values are for the low-velocity fasteners only, using a safety factor that is greater than or equal to 5.0, calculated in accordance with ICC-ES AC70.

2 Multiple fasteners are recommended for any attachment. Threaded or smooth rod must be investigated in accordance with accepted design criteria.

3 Allowable loads for 45-degree applications are based on testing. For allowable loads at other angles of installation, refer to Section 3.2.1.8.

4 Nail stand-off must be less than or equal to 0.2-inch, testing was done using concrete with 3,500 psi compressive strength

Allowable loads in minimum $f'_c = 3000$ psi structural lightweight concrete¹

Fastener	Shank diameter	Fastener location														
		Installed into concrete			Installed through 3" deep metal deck into concrete ²						Installed through 1-1/2" deep metal deck into concrete ³					
					Upper flute			Lower flute			Upper flute			Lower flute		
		Tension	Shear	45-Degree	Tension lb (kN)	Shear lb (kN)	45-Degree lb (kN)	Tension lb (kN)	Shear lb (kN)	45-Degree lb (kN)	Tension lb (kN)	Shear lb (kN)	45-Degree lb (kN)	Tension lb (kN)	Shear lb (kN)	45-Degree lb (kN)
X-HS U32^{4,5,7}	0.157 (4.0)	95 (0.42)	115 (0.51)	105⁶ (0.47)	125 (0.56)	220 (0.98)	175⁶ (0.78)	95 (0.42)	220 (0.98)	135⁶ (0.60)	95 (0.42)	220 (0.98)	135⁶ (0.60)	95 (0.42)	220 (0.98)	135⁶ (0.60)
X-DR ALH 22	–	–	–	–	100 (0.44)	–	–	60 (0.27)	–	–	–	–	–	–	–	–
X-DR ALH 27	–	–	–	–	100 (0.44)	–	–	80 (0.36)	–	–	–	–	–	–	–	–
X-DR MX, X-P20 B3	–	–	–	–	80 (0.36)	–	–	60 (0.27)	–	–	–	–	–	–	–	–
X-ECC MX, X-P20 B3	–	–	–	–	80 (0.36)	–	–	40 (0.18)	–	–	–	–	–	–	–	–

1 The tabulated allowable load values are calculated using a safety factor that is greater than or equal to 5.0, in accordance with ICC-ES AC70. Multiple fasteners are recommended for any attachment. Threaded rod must be investigated in accordance with accepted design criteria.

2 The steel deck profile for the 3" deep composite floor deck has a minimum thickness of 20 gauge (0.0358") and a minimum $F_y = 33$ ksi. Lower and upper flute width must be a minimum of 3-7/8". Figure 1 in Section 3.2.1.6 shows the nominal flute dimensions, fastener locations and load orientations for the deck profile. Structural lightweight concrete fill above top of steel deck must be minimum 3-1/4".

3 The steel deck profile for the 1-1/2" deep composite floor deck has a minimum thickness of 20 gauge (0.0358") and a minimum $F_y = 33$ ksi. Lower flute and upper flute widths must be a minimum of 1-3/4" and 3-1/2", respectively. This deck may also be inverted as shown in Figure 3 in Section 3.2.1.6. Figures 2 and 3 in Section 3.2.1.6 show the nominal flute dimensions, fastener locations and load orientations for the deck profile. Structural lightweight concrete fill above top of steel deck must be minimum 2-1/2".

4 Nailhead Standoff, h_{NS} , must be less than or equal to 3/8" for the X-HS U32 hanger assembly. Reference Section 3.2.16.4.

5 Allowable loads apply to X-HS threaded rod hanger assemblies with either the 1/4" or 3/8" diameter internally threaded hole.

6 Allowable loads for 45-degree applications are based on testing. For allowable loads at other angles of installation, refer to Section 3.2.1.8.

7 Values shown for the X-HS threaded rod hanger assembly are for use with the X-U powder-actuated fastener.

Allowable loads in minimum ASTM A36 ($F_y \geq 36$ ksi; $F_u \geq 58$ ksi) steel^{1,2,3,4}

Fastener description	Fastener	Shank diameter in. (mm)	Steel thickness in. (mm)											
			3/16 (4.8)			1/4 (6.4)			3/8 (9.5)			1/2 (12.7)		
			Tension lb (kN)	Shear lb (kN)	45-Degree ⁴ lb (kN)	Tension lb (kN)	Shear lb (kN)	45-Degree ⁴ lb (kN)	Tension lb (kN)	Shear lb (kN)	45-Degree ⁴ lb (kN)	Tension lb (kN)	Shear lb (kN)	45-Degree ⁴ lb (kN)
Threaded rod hanger with pre-mounted fastener	X-HS U19	157 (4.0)	270 (1.20)	220 (0.98)	275 (1.22)	270 (1.20)	220 (0.98)	275 (1.22)	270 (1.20)	220 (0.98)	275 (1.22)	270 (1.20)	220 (0.98)	275 (1.22)
X-DR Drop rod with pre-mounted fastener	X-ALH 22	0.177 (4.5)	100 (0.44)	-	-	100 (0.44)	-	-	-	-	-	100 (0.44)	-	-
X-DR MX Drop rod for BX technology	X-S 14 B3	0.118 (3.0)	90 (0.40)	-	-	85 (0.38)	-	-	-	-	-	80 (0.36)	-	-

1 The tabulated allowable load values are for the low-velocity fasteners only, using a safety factor that is greater than or equal to 5.0, calculated in accordance with ICC-ES AC70. Threaded rod must be investigated in accordance with accepted design criteria.

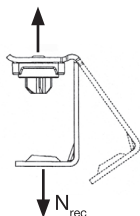
2 Low-velocity fasteners shall be driven to where the point of the fastener penetrates through the steel base material in accordance with Section 3.2.2.3.

3 Multiple fasteners are recommended for any attachment. Reference Section 3.2.16.4 for installation instructions for X-HS.

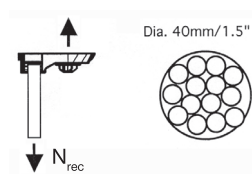
4 Allowable loads for 45-degree applications are based on testing. For allowable loads at other angles of installation, refer to Section 3.2.2.8.

Allowable loads values for Hangers and Clips

X-HS W6 MX^{1,3}
Allowable load N_{rec}
Tensile
lb (kN)
15 (0.07)



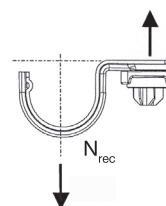
X-ECT MX^{1,3}
Allowable load N_{rec}
Tensile
lb (kN)
10 (0.04)



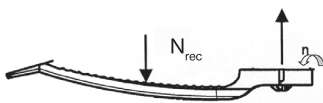
X-EKB 4 MX^{1,3}
Allowable load N_{rec}
Tensile
lb (kN)
5 (0.02)



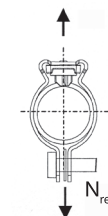
X-BX 3/8" MX^{1,2,3}
X-EMTC MX^{1,2,3}
Allowable load N_{rec}
Tensile
lb (kN)
10 (0.04)



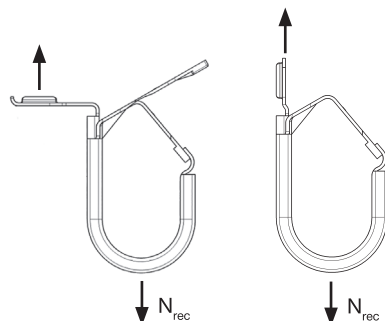
X-EKB 8 MX^{1,3}
Allowable load N_{rec}
Tensile
lb (kN)
10 (0.04)



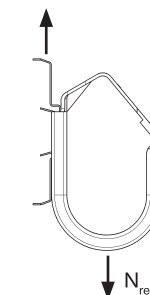
X-EMTSC 1/2" MX^{1,3}
X-EMTSC 1" MX^{1,3}
Allowable load N_{rec}
Tensile
lb (kN)
15 (0.07)



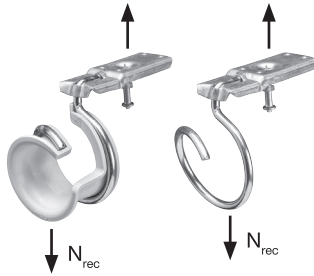
X-DH
Allowable load N_{rec}
Tensile
lb (kN)
70 (0.31)



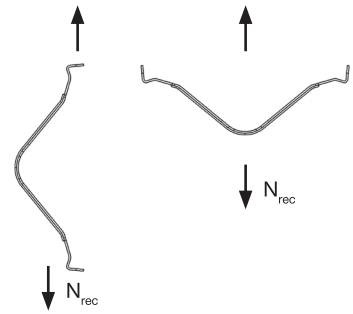
X-DH BW
Allowable load N_{rec}
Tensile
lb (kN)
30 (0.13)



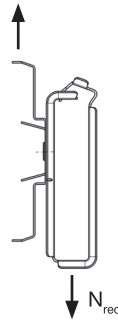
X-BR ALH 27, X-BR S ALH 27, X-BR MX⁷
Allowable load N_{rec}
Tensile
lb (kN)
15 (0.07)



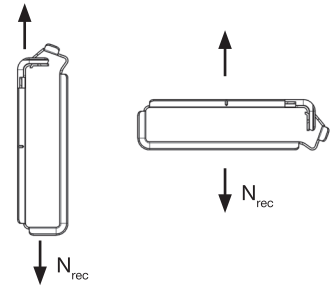
X-BW
Allowable load N_{rec}
Tensile
lb (kN)
15 (0.07)



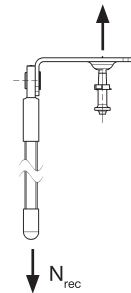
X-MS BW
Allowable load N_{rec}
Tensile
lb (kN)
15 (0.07)



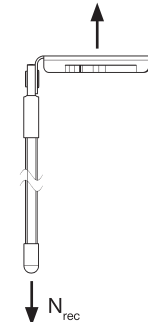
X-MS
Allowable load N_{rec}
Tensile
lb (kN)
15 (0.07)



X-DR ALH
Allowable load N_{rec}
Tensile
lb (kN)
20 (0.09)



X-DR MX
Allowable load N_{rec}
Tensile
lb (kN)
20 (0.09)



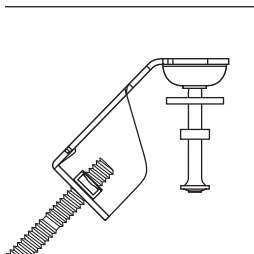
- 1 The allowable load capacities are based on tests with the predecessors to the X-P 20 B3/G3, X-C 27 G3, and X-S 14 fasteners, using a safety factor that is greater than or equal to 5.0.
- 2 Load capacities are based on armored cable and EMT.
- 3 X-P 20 B3/G3 must be installed at a minimum penetration depth of 9/16" into concrete. X-C 27 must be installed at a minimum penetration depth of 3/4" into CMU or mortar joint. X-S 14 must be installed at a minimum penetration depth of 0.320" through or into steel. Hanger assemblies must be firmly clamped to the base material.
- 4 Concrete base materials include 2000 to 6000 psi normal weight or lightweight types and also includes attachment through steel deck into concrete.
- 5 Steel base materials include 1/8" or thicker carbon steel base material with minimum yield strength $F_y = 36$ ksi.
- 6 CMU base materials include hollow or grout-filled concrete masonry units conforming to ASTM C90.
- 7 X-P24 B3 fasteners are not recommended for X-BR MX applications.

3.2.17.4 INSTALLATION INSTRUCTIONS

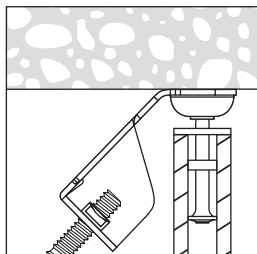
X-HS Installation instructions

Installation Instructions For Use (IFU) are included with each product package. They can also be viewed or downloaded online at www.hilti.com. Because of the possibility of changes, always verify that downloaded IFU are current when used.

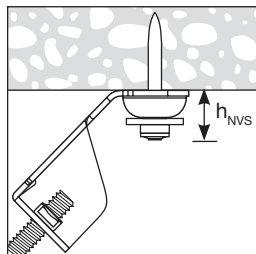
Proper installation is critical to achieve full performance. Training is available on request. Contact Hilti Technical Services for applications and conditions not addressed in the IFU.



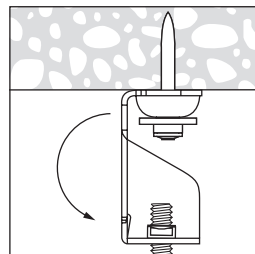
1. Insert appropriate sized threaded rod into hanger.



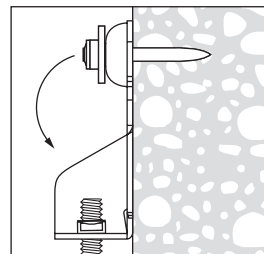
2. Press tip of fastener to concrete/steel base material. Drive with Hilti powder-actuated tool.



3. Ensure proper fastener embedment.
 $h_{NVS} \leq 3/8"$ (9.5 mm)



4. Bend clip until threaded rod is in desired location, vertical or horizontal for ceiling or wall hanger applications, respectively.



3.2.17.5 ORDERING INFORMATION

X-HS and X-HS MX Threaded Rod Hangers

Fastener description	Fastener length in. (mm)	Fastener shank Ø in. (mm)	Thread rod Ø
Concrete			
X-HS W6 U32 P8S15	1-1/4 (32)	0.157 (4.0)	UNC 1/4-inch
X-HS W10 U32 P8S15	1-1/4 (32)	0.157 (4.0)	UNC 3/8-inch
X-HS W6 U22 P8S15	7/8 (22)	0.157 (4.0)	UNC 1/4-inch
X-HS W10 U22 P8S15	7/8 (22)	0.157 (4.0)	UNC 3/8-inch
Steel			
X-HS W10 U19 P8S15	5/8 (16)	0.157 (4.0)	UNC 3/8-inch
X-HS W6 U19 P8S15	5/8 (16)	0.157 (4.0)	UNC 1/4-inch
MX Version (without pre-mounted fastener)			
X-HS W6 MX	N/A	N/A	UNC 1/4-inch



Threaded studs

Fastener description	Shank length in. (mm)	Fastener shank Ø in. (mm)	Thread length in. (mm)	Thread Ø
Steel				
X-EW6H-11-9 FP8	3/8 (9)	0.145 (3.7)	1/2 (11)	UNC 1/4-inch
X-EW6H-20-9 FP8	3/8 (9)	0.145 (3.7)	3/4 (20)	UNC 1/4-inch
X-EW6H-28-9 FP8	3/8 (9)	0.145 (3.7)	1-1/8 (28)	UNC 1/4-inch
X-EW6H-38-9 FP8	3/8 (9)	0.145 (3.7)	1-1/2 (38)	UNC 1/4-inch
X-EW10H-30-14 P10	9/16 (14)	0.205 (5.2)	1-3/16 (30)	UNC 3/8-inch



Couplers

Fastener description	Overall length in. (mm)	Thread Ø stud	Thread Ø rod
Coupler 1/4-20	1 (25)	UNC 1/4-inch	UNC 1/4-inch
Coupler 3/8-16	1-1/8 (28)	UNC 3/8-inch	UNC 3/8-inch
Adapter B-1/4x3/8	7/8 (22)	UNC 1/4-inch	UNC 3/8-inch



X-ECH Cable Holder

Fastener description	Fastener length in. (mm)	Fastener shank Ø in. (mm)	Number of 1/4" Ø cables
Without pre-mounted fastener			
X-ECH-F/R-S	N/A	N/A	15-22
X-ECH-F/R-M	N/A	N/A	30-37
X-ECH-F/R-L	N/A	N/A	45-52
With pre-mounted fastener			
X-ECH-F/R-S U37	1-1/2 (37)	0.157 (4.0)	15-22
X-ECH-F/R-M U37	1-1/2 (37)	0.157 (4.0)	30-37
X-ECH-F/R-L U37	1-1/2 (37)	0.157 (4.0)	45-52
Tool accessories			
ECH adapter	For use with DX 351 and DX 5-F8		



X-ECH

X-EKB MX Cable Clamps

Fastener description	Max diameter of cable in. (mm)	Maximum no. of cables
X-EKB 4 MX	1/4 (6)	4
X-EKB 8 MX	1/4 (6)	8



X-EKB MX

3.2.17.6 ORDERING INFORMATION

X-ECT MX Cable Tie Fastener*

Fastener description	Cable tie* size in. (mm)
X-ECT MX	1/2 (12)

*Cable tie is not available through Hilti.



X-ECT
without Cable Tie

X-EMTC and X-BX/EMTC MX Conduit Clips

Fastener description	Fastener length in. (mm)	Fastener shank Ø in. (mm)	Conduit Ø in. (mm)
Premium grade (with pre-mounted fastener)			
X-EMTC-3/8" U22	7/8 (22)	0.157 (4.0)	3/8 (10)
X-EMTC-1/2" U22	7/8 (22)	0.157 (4.0)	1/2 (13)
X-EMTC-3/4" U22	7/8 (22)	0.157 (4.0)	3/4 (19)
X-EMTC-1" U22	7/8 (22)	0.157 (4.0)	1 (25)
Standard grade (with pre-mounted fastener)			
X-EMTC-3/8" C27	1 (27)	0.138 (3.5)	3/8 (10)
X-EMTC-1/2" C27	1 (27)	0.138 (3.5)	1/2 (13)
X-EMTC-3/4" C27	1 (27)	0.138 (3.5)	3/4 (19)
X-EMTC-1" C27	1 (27)	0.138 (3.5)	1 (25)
MX version (without pre-mounted fastener)			
X-BX 3/8" MX	N/A	N/A	3/8 (10)*
X-EMTC 1/2" MX	N/A	N/A	1/2 (13)
X-EMTC 3/4" MX	N/A	N/A	3/4 (19)
X-EMTC 1" MX	N/A	N/A	1 (25)
X-EMTC 1-1/4" MX	N/A	N/A	1-1/4 (32)

*Also valid for 3/8" metal jacketed cable.



X-EMTC



X-BX/EMTC MX

X-EMTSC Stand-Off Conduit Clips

Fastener description	Conduit Ø
MX version (without pre-mounted fastener)	
X-EMTSC 1/2" MX	1/2 (13)
X-EMTSC 3/4" MX	3/4 (19)
X-EMTSC 1" MX	1 (25)



X-EMTSC MX

X-DR Drop Rod

Fastener description	Fastener length in. (mm)	Fastener shank Ø in. (mm)	Threaded Rod Ø in. (mm)	Rod Length	Rod Type
Steel and post-tension concrete					
X-DR 1' T ALH22	7/8 (22)	0.177 (4.5)	1/4-inch	1 feet	Threaded
X-DR 2' T ALH22	7/8 (22)	0.177 (4.5)	1/4-inch	2 feet	Threaded
X-DR 3' T ALH22	7/8 (22)	0.177 (4.5)	1/4-inch	3 feet	Threaded
X-DR 4' T ALH22	7/8 (22)	0.177 (4.5)	1/4-inch	4 feet	Threaded
X-DR 6' T ALH22	7/8 (22)	0.177 (4.5)	1/4-inch	6 feet	Threaded
X-DR ALH22	7/8 (22)	0.177 (4.5)	UNC 1/4-inch	N/A	N/A



3.2.17.6 ORDERING INFORMATION

X-DR Drop Rod

Fastener description	Fastener length in. (mm)	Fastener shank Ø in. (mm)	Threaded Rod Ø in. (mm)	Rod Length	Rod Type
Concrete					
X-DR 1' T ALH27	1 (27)	0.177 (4.5)	1/4-inch	1 foot	Threaded
X-DR 2' T ALH27	1 (27)	0.177 (4.5)	1/4-inch	2 feet	Threaded
X-DR 3' T ALH27	1 (27)	0.177 (4.5)	1/4-inch	3 feet	Threaded
X-DR 4' T ALH27	1 (27)	0.177 (4.5)	1/4-inch	4 feet	Threaded
X-DR 6' T ALH27	1 (27)	0.177 (4.5)	1/4-inch	6 feet	Threaded
X-DR 1' S ALH27	1 (27)	0.177 (4.5)	1/4-inch	1 foot	Smooth
X-DR 2' S ALH27	1 (27)	0.177 (4.5)	1/4-inch	2 feet	Smooth
X-DR 3' S ALH27	1 (27)	0.177 (4.5)	1/4-inch	3 feet	Smooth
X-DR 4' S ALH27	1 (27)	0.177 (4.5)	1/4-inch	4 feet	Smooth
X-DR 6' S ALH27	1 (27)	0.177 (4.5)	1/4-inch	6 feet	Smooth
X-DR ALH27	1 (27)	0.177 (4.5)	UNC 1/4-inch	N/A	N/A



X-DR MX Drop Rod

Fastener description	Fastener length in. (mm)	Fastener shank Ø in. (mm)	Threaded Rod Ø in. (mm)	Rod Length	Rod Type
Without premounted fastener					
X-DR 1' T MX	N/A	N/A	1/4-inch	1 foot	Threaded
X-DR 2' T MX	N/A	N/A	1/4-inch	2 feet	Threaded
X-DR 3' T MX	N/A	N/A	1/4-inch	3 feet	Threaded
X-DR 4' T MX	N/A	N/A	1/4-inch	4 feet	Threaded
X-DR 6' T MX	N/A	N/A	1/4-inch	6 feet	Threaded
X-DR 1' S MX	N/A	N/A	1/4-inch	1 foot	Smooth
X-DR 2' S MX	N/A	N/A	1/4-inch	2 feet	Smooth
X-DR 3' S MX	N/A	N/A	1/4-inch	3 feet	Smooth
X-DR 4' S MX	N/A	N/A	1/4-inch	4 feet	Smooth
X-DR 6' S MX	N/A	N/A	1/4-inch	6 feet	Smooth
X-DR MX	N/A	N/A	UNC 1/4-inch	N/A	N/A



3.2.17.5 ORDERING INFORMATION

X-DH and X-DH BW Data Hook*

Fastener description	Batwing attachable to	Number of CAT 5e cables (70% fill rate)	Number of CAT 6 cables (70% fill rate)	Number of CAT 6A cables (70% fill rate)	Number of CAT 7A cables (70% fill rate)
With preassembled batwing, max. recommended overbending distance 1 in. (25 mm)					
X-DH 1" BW	1/4-inch rod, 8-12 ga wire	30	20	12	10
X-DH 2" BW	1/4-inch rod, 8-12 ga wire	95	70	40	35
X-DH 4" BW	1/4-inch rod, 8-12 ga wire	360	260	155	125
Without preassembled batwing					
X-DH 2" C	N/A	95	70	40	35
X-DH 2"	N/A	95	70	40	35
X-DH 4"	N/A	360	260	155	125



X-MS MC Stacker*

Fastener description	Batwing attachable to	Max. pieces of 14-2 MC cables	Max. pieces of 8-3 MC cables
With preassembled batwing, max. recommended overbending distance 1 in. (25 mm)			
X-MS 3" BW	1/4-inch rod, 8-12 ga wire	7	4
Without preassembled batwing			
X-MS 3"	N/A	7	4



X-BR Bridle Ring*

Fastener description	Fastener length in. (mm)	Fastener shank Ø in. (mm)	Number of fire alarm 18/2 cables (70% fill rate)	Number of MC Cables
With premounted fastener				
X-BR 1-1/4" ALH 27	1 (27)	0.177 (4.5)	39	1
X-BR 2" ALH27	1 (27)	0.177 (4.5)	60	3
Without premounted fastener				
X-BR 1-1/4" MX	N/A	N/A	39	1
X-BR 2" MX	N/A	N/A	60	3



* For spacing requirements, please refer to TIA 569.

3.2.17.6 ORDERING INFORMATION

X-BR S Bridle Ring with Saddle

Fastener description	Fastener length in. (mm)	Fastener shank Ø in. (mm)	Number of CAT 5e cables (70% fill rate)	Number of CAT 6 cables (70% fill rate)	Number of CAT 7A cables (70% fill rate)
With premounted fastener					
X-BR S 2" ALH 27	1 (27)	0.177 (4.5)	37	30	15
Without premounted fastener					
X-BR S 2" MX	N/A	N/A	37	30	15



X-BW Batwing

Fastener description	Number of EMT / MC Cables	Maximum Recommended Overbending Distance in. (mm)
X-BW 1/2"	1	1.2 (30)
X-BW 3/4"	1	1.2 (30)
X-BW 1"	1	1.2 (30)
X-BW W	1	0.6 (16)



X-BW 1/2"



X-BW 3/4"



X-BW 1"



X-BW W

Application	Size	Attachable to					
		Wire #12, #10	Wire #9, #8	Rod 1/4"	Flange 1/8 to 1/4"	Flange 5/16 to 3/8"	Flange 7/16 to 1/2"
EMT	1/2"	X-BW 1/2"	X-BW 1/2"	X-BW 1/2"	X-BW 1/2"	X-BW 3/4"	X-BW 3/4"
	3/4"	X-BW 3/4"	X-BW 3/4"	X-BW 3/4"	X-BW 3/4"	X-BW 1"	X-BW 1"
	1"	-	X-BW 1"	X-BW 1"	X-BW 1"	X-EMTC 1"	X-EMTC 1"
MC cable	14-2 to 14-4	X-BW W	X-BW W	X-BW 1/2"	X-EMTC 3/8"	X-EMTC 3/8"	X-EMTC 3/8"
	12-2 to 10-3	X-BW W	X-BW W	X-BW 1/2"	X-BW 1/2"	X-EMTC 3/8"	X-EMTC 3/8"
	10-4	X-BW W	X-BW 1/2"	X-BW 1/2"	X-BW 1/2"	X-EMTC 3/8"	X-EMTC 3/8"
Rigid	1/2"	X-BW 1/2"	X-BW 3/4"	X-BW 3/4"	X-BW 3/4"	X-BW 3/4"	X-BW 1"
	3/4"	X-BW 3/4"	X-BW 3/4"	X-BW 1"	X-BW 1"	-	-