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Date: 07/09/2026
Return Request: 07/30/2026
Project: Highlands Building at Pinnacle Hills
Supplier: Comfort Systems USA
Manufacturer: Various
Submittal: Hangers and Supports for Plumbing Piping
Submittal Number: 22 05 29-01
Drawing # and Installation: Plumbing

ARCHITECT

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ENGINEER

IMEG

GENERAL CONTRACTOR

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MECHANICAL SUBCONTRACTOR

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NOTES:

Submitted or equal to

CSUSA PROJECT NO.
26-5034

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Fig. 260 (Formerly Afcon Fig. 371)

Adjustable Clevis Hanger

Size Range: 1/2" through 30"

Material: Carbon steel

Finish: ☐ Plain, ☐ 8" & Smaller: Zinc Plated (Hot-Dip Galvanized optional), 10" & Larger: Hot-Dip Galvanized with Zinc Plated Bolts & Nuts, or ☐ Primed, also available in ☐ Plastic or ☐ Epoxy Coated.

Service: Recommended for the suspension of stationary pipe lines.

Maximum Temperature: Plain 650° F, Galvanized and Epoxy 450° F

Approvals: Complies with Federal Specification A-A-1192A (Type 1), WW-H-171-E (Type 1), ANSI/MSS SP-69 and MSS SP-58 (Type 1). FM Approved (Sizes 3/4" through 8"), UL and ULC Listed (Sizes 1/2" through 8")

Installation: Hanger load nut *above* clevis must be tightened securely to assure proper hanger performance.

Adjustment: Vertical adjustment without removing pipe may be made from 3/8" through 5 1/8", varying with the size of clevis. Tighten upper nut after adjustment.

Features:

- Design has yoke on outside of lower U-strap so yoke cannot slide toward center of bolt, thus bending of bolt is minimized.
- Sizes 5" and up have rod and two nuts instead of bolt and nut; thread length on clevis rod is such that the thread locks the nuts in place, and threads are not in shear plane.

Ordering: Specify pipe size, figure number, name and finish.

Notes:

- Punched forming holes may be present on certain sizes of this clevis hanger. These holes are solely for the purpose of manufacturing, and do not effect the structural integrity or load carrying capacities of these hangers.
- For insulated line options without shields, see Figures 260 ISS and Figure 300. For insulated line options with shields, see Figures 167 and 168. For ductile iron pipe sizes, see Figure 590.
- Fig. 260F (Felt lined) – available for use for suspension of copper (or other material) so as to prevent electrolysis between the dissimilar metals of the hanger and the pipe, tube or conduit.

Caution: When an oversize clevis is used, a pipe spacer or multispace should be placed over clevis bolt to ensure that the lower U-strap will not move in on the bolt.



PROJECT INFORMATION		APPROVAL STAMP	
Project:		☐ Approved	
Address:		☐ Approved as noted	
Contractor:		☐ Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

Fig. 260 (Formerly Afcon Fig. 371)

Adjustable Clevis Hanger (cont.)

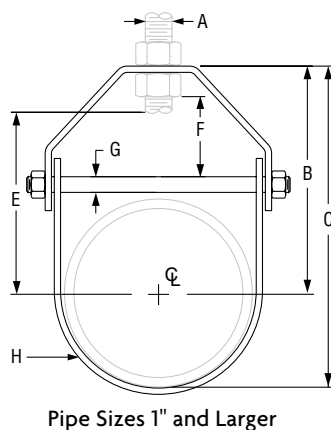
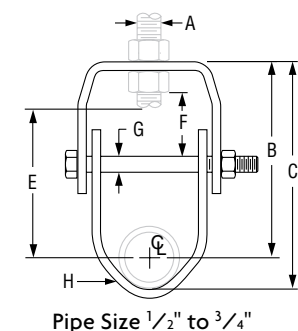


FIG. 260: DIMENSIONS (IN) • LOADS (LBS) • WEIGHTS (LBS)

Pipe Size	Max Load	Span Ft.	Weight	Rod Size A	B	C	Rod Take Out E	Adjust. F	G	H Width Lower	
1/2	610	7*	0.34	3/8	2 ³ / ₁₆	2 ¹¹ / ₁₆	1 ¹ / ₂	5/8	1/4	1	
3/4			0.34		2		1 ⁵ / ₁₆				
1			0.35		2 ⁵ / ₁₆		3				1 ⁵ / ₈
1 1/4			0.40		2 ³ / ₈		3 1/4				1 ¹¹ / ₁₆
1 1/2	730	9*	0.45	2 ¹³ / ₁₆	3 ¹³ / ₁₆	2 ¹ / ₈	7/8	3/8			
2		10*	0.50	3 ⁵ / ₁₆	4 1/2	2 ⁵ / ₈	1 ¹ / ₈				
2 1/2		11*	0.65	4 ¹ / ₁₆	5 1/2	3 ³ / ₁₆	1 ⁵ / ₁₆				
3		12*	0.85	4 ³ / ₄	6 1/2	4 ¹ / ₁₆	1 ⁵ / ₈				
3 1/2	1,350	13*	1.10	5 ¹ / ₁₆	7 ¹ / ₁₆	4 ³ / ₁₆	1 ¹³ / ₁₆		3/8	1 1/4	
4		14*	1.51	5 ⁹ / ₁₆	7 ¹³ / ₁₆	4 ¹ / ₂	1 ¹¹ / ₁₆				
5		16*	1.70	6 ⁹ / ₁₆	8 ¹⁵ / ₁₆	5 ¹ / ₂	1 ¹⁵ / ₁₆			1 ³ / ₁₆	
6		1,940	17*	3.10	3/4	6 ¹⁵ / ₁₆	10 ¹ / ₄			5 ³ / ₄	1 ¹¹ / ₁₆
8	2,000	19*	4.75	8 ³ / ₈		12 ¹¹ / ₁₆	7 ³ / ₁₆	2			
10	3,600	22*	8.60	7/8	9 ⁷ / ₈	15 ¹ / ₄	8 ⁷ / ₁₆	2 ¹ / ₈	5/8	1 ³ / ₄	
12	3,800	23*	11.20		11 ⁹ / ₁₆	17 ¹⁵ / ₁₆	10 ¹ / ₈	2 ¹³ / ₁₆		2	
14	4,200	25*	12.50	1	12 ⁹ / ₁₆	19 ⁹ / ₁₆	10 ¹¹ / ₁₆	2 ¹¹ / ₁₆	3/4	2 1/2	
16	4,600	27	19.85		14	22	12	2 ³ / ₄			
18	4,800	28	22.25		15 ¹⁵ / ₁₆	24 ¹⁵ / ₁₆	13 ¹⁵ / ₁₆	3 ¹³ / ₁₆			
20	4,800	30	40.33	1 1/4	17 ⁹ / ₁₆	27 ⁹ / ₁₆	15 ³ / ₁₆	3 ⁷ / ₈	1 1/4	3	
24	4,800	32	49.83		19 ¹³ / ₁₆	31 ¹³ / ₁₆	17 ⁵ / ₁₆		7 ⁸ / ₈ *		
30**	6,000	33	70.18		24 ³ / ₁₆	39 ³ / ₁₆	21 ⁹ / ₁₆	5 ⁵ / ₈	1 1/4		

"Span" represents the maximum recommended distance between hangers on a continuous and straight run of horizontal standard weight steel pipe filled with water. In all cases, verify that chosen location of hangers does not subject hangers to a load greater than the maximum recommended load shown above. *Indicates that span represents the maximum span for water filled pipe.

* The 24" pipe size assembly includes a 1 1/4" SCH 40 pipe spacer over the 7/8" threaded rod.

** 30" pipe size: When assembled, the U-strap sits outside of the yoke.

Fig. 300

Adjustable Clevis for Insulated Lines

Size Range: $\frac{3}{4}$ " through 12"

Material: Carbon steel

Finish: ☐ Plain, ☐ 8" & Smaller: Zinc Plated (Hot-Dip Galvanized optional), 10" & Larger: Hot-Dip

Galvanized with Zinc Plated Bolts & Nuts or ☐ Epoxy Coated

Service: Recommended for suspension of insulated **stationary** pipe lines.

Maximum Temperature: Plain 650° F, Galvanized and Epoxy 450° F

Approvals: Complies with Federal Specification A-A-1192A (Type 1)

WW-H-171-E (Type 1), ANSI/MSS SP-69 and MSS SP-58 (Type 1).

Installation: Hanger load nut above clevis must be tightened securely to assure proper hanger performance.

Adjustment: Vertical adjustment is provided, varying with the size of the clevis. Tighten upper nut after adjustment.

Features:

- Designed for 2" of insulation on $\frac{3}{4}$ " through $1\frac{1}{2}$ " pipe and 4" of insulation on 2" and larger pipe.
- When properly installed, clevis bolt is outside the insulation.

Ordering: Specify pipe size, figure number, name and finish.

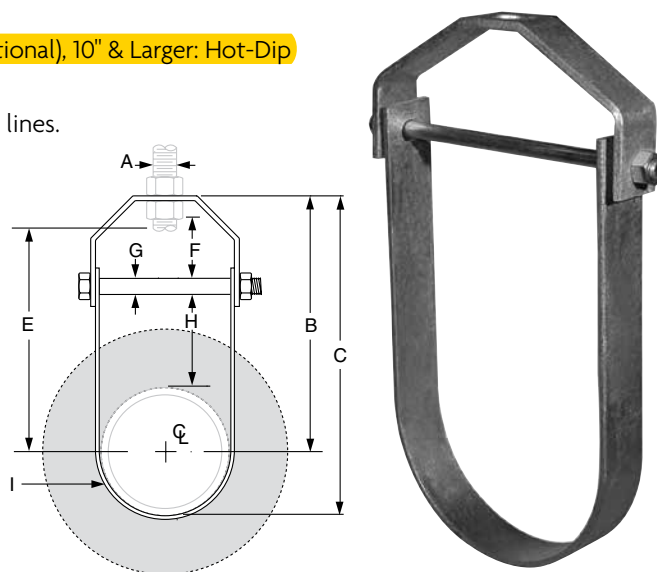


FIG. 300: DIMENSIONS (IN) • LOADS (LBS) • WEIGHT (LBS)

Pipe Size	Max Load	Weight	Rod Size A	B	C	E	Adjustment F	G	H	I Width Lower
¾	730	0.51	⅜	3⅝	4¼	2⅞	½	¼	2	1
1		0.58		4	4 ¹¹ / ₁₆	3¾	⅝			
1¼		0.64		4 ⁷ / ₁₆	5¼	3⅝	⅞			
1½		0.72		4¾	5¾	4 ¹ / ₁₆	1 ¹ / ₁₆			
2		0.85		7 ⁷ / ₁₆	8 ¹¹ / ₁₆	6½	1⅝			
2½	1,350	1.90	½	8 ⁷ / ₁₆	9 ¹⁵ / ₁₆	7½	2	⅜	4	
3		2.00		8⅝	10 ⁵ / ₁₆	7 ⁹ / ₁₆	1¾			
4	1,430	2.50	⅝	9⅜	11⅝	8 ³ / ₁₆	1 ¹⁵ / ₁₆			
5		3.00		9 ⁷ / ₈	12 ⁵ / ₈	8¾	1¾			
6	1,940	3.40	¾	10 ⁵ / ₈	14	9⅜	1⅞	⅝		
8	2,000	6.70		12 ³ / ₈	16¾	11	2			1½
10	3,600	11.0	⅞	13¾	19 ³ / ₁₆	12¼	2⅛	¾		1¾
12	3,800	13.8		15⅛	21 ⁹ / ₁₆	13⅝	2 ⁷ / ₁₆			2

PROJECT INFORMATION

APPROVAL STAMP

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Fig. 181

Adjustable Steel Yoke Pipe Roll

Size Range: 2 1/2" through 24"

Material: Cast iron roll; carbon steel yoke, roll rod and hex nuts

Finish: ☐ Plain, ☐ Hot-Dip Galvanized Yoke with Zinc Plated Parts or ☐ Resilient Coated

Service: For suspension of pipe from a single rod where longitudinal movement may occur because of expansion or contraction.

Maximum Temperature: 400° F at roller, 300° F at resilient coated roller.

Approvals: Complies with Federal Specification A-A-1192A (Type 43), WW-H-171-E (Type 44), ANSI/MSS SP-69 and MSS SP-58 (Type 43).

Features: Advantages of pipe rollers with a protective resilient coated covering.

- Non conductive pipe rollers - prevent the passing of current from pipeline to structure.
- Corrosion resistant - for protection against severe weather conditions, moderate corrosive conditions such as marine atmospheres and weather resistant to ultra-violet radiation.
- Low coefficient of friction between pipe and resilient coated pipe roller.

How to size: If the roll is to support bare pipe, select the size directly from nominal pipe size (see below). If used with pipe covering protection saddle, see Figure 160 to 166A for size of pipe roll to be used.

Ordering: Specify pipe roll size, figure number, name and finish. Be certain to order oversized rolls when insulation and protection saddles are required.

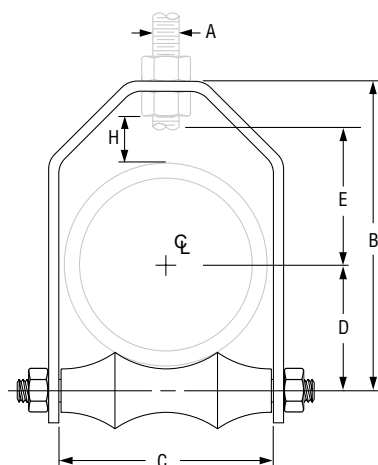
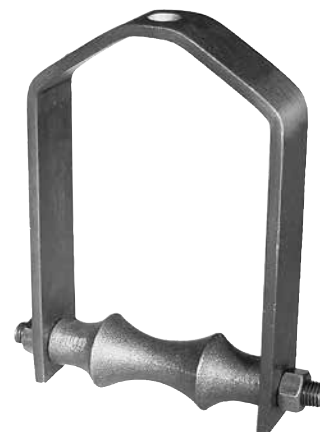


FIG. 181: DIMENSIONS (IN) • LOADS (LBS) • WEIGHT (LBS)

Pipe Size	Max O.D. of Covering	Max Load	Wgt.	Rod Size A	B	C	D	Rod Take Out E	H
2 1/2	3	225	1.7	1/2	5 3/4	3 1/4	1 15/16	2 7/8	1 11/16
3	3 5/8	310	2.2		6 3/8	3 7/8	2 1/4	3 1/8	1 5/8
3 1/2	4 1/8	390	2.5		7	4 3/8	2 9/16	3 1/2	1 11/16
4	4 11/16	475	3.2		7 9/16	4 15/16	2 13/16	3 5/8	1 5/8
5	5 3/4	685	6.3	5/8	9 1/8	6	3 7/16	4 1/2	1 15/16
6	6 7/8	780	9.3		10 5/16	7 1/8	4	5	1 7/8
8	9		14.5		12 11/16	9 1/4	5 1/8	6 1/8	2
10	11	965	18.8		15 1/16	11 1/4	6 3/8	7 1/4	2 1/16
12	13	1,200	27.7	7/8	17 7/16	13 1/4	7 7/16	8 3/8	2 1/4
14	14 1/4		39.1		18 7/8	14 1/2	8 3/8	8 3/4	2
16	16 1/4		49.1		20 13/16	16 1/2	9 3/8	9 11/16	1 15/16
18	18 1/4		57.8		23 3/4	18 1/2	10 7/16	11 7/16	2 13/16
20	20 1/4	1,600	75.9	1 1/4	26	20 1/2	11 5/8	12 1/4	2 1/2
24	24 1/4	1,800	119.3	1 1/2	32 5/16	24 5/8	13 15/16	15 3/4	4 3/8

DI/CI ROLL SIZING	
DI/CI Pipe Size	Fig. 181 Roller Size
3	4
4	5
6	6
8	8
10	10
12	14
14	16
16	18
18	20
20	24

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Submittal Date:			
Notes 1:			
Notes 2:			

Fig. 261 (Formerly Afcon Fig. 400)

Extension Pipe or Riser Clamp

Size Range: $\frac{3}{4}$ " through 24"

Material: Carbon steel

Finish: ☐ Plain, ☐ Hot-Dip Galvanized with Zinc Plated Bolts & Nuts,

☐ Epoxy Coated or ☐ Painted.

Service: For support of stationary steel pipe risers, cast iron pipe or conduit. This product is not intended for use with hanger rods. For this application refer to Fig. 40 Riser Clamp, page 49.

Maximum Temperature: Plain 650° F, Galvanized and Epoxy 450° F

Approvals: Complies with Federal Specification A-A-1192A (Type 8) WW-H-171-E (Type 8), ANSI/MSS SP-69 and MSS SP-58 (Type 8).

UL, ULC Listed (Sizes $1\frac{1}{2}$ " - 8").

Installation: Clamp is fitted and bolted preferably below a coupling, hub or welded lugs on steel pipe. Bolt torques should be per industry standards (see page 248). Clamp is designed for standard steel pipe O.D. and this must be considered in sizing the riser for other types of piping.

Ordering: Specify pipe size, figure number, name and finish.



Note: Refer to Technical Data Section of the Pipe Hanger Catalog for cast iron soil pipe data.

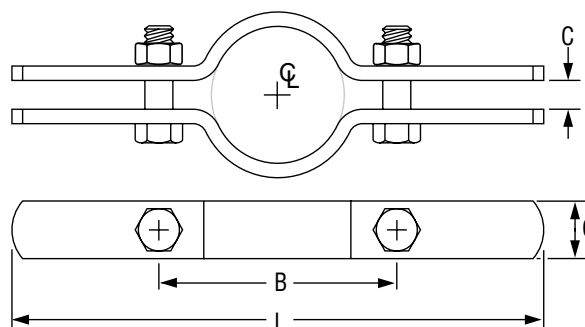


FIG. 261: DIMENSIONS (IN) • LOADS (LBS) • TORQUE (FT-LBS) • WEIGHT (LBS)

Pipe Size	Max Load	Weight	L	G Width	B	C	Bolt Diameter	Torque Values
¾	220	1.1	8⅞	1	2⅞	⅜	⅜	21
1		1.1			3⅛			
1¼		1.6			3½			
1½	250	1.6	10¼		3⅞	½	⅞	32
2		1.7			4¼			
2½		1.9			4¾			
3	500	1.9	11⅜		5½	½	½	46
3½	600	2.3	12⅞		6½			
4	750	2.4			7			
5	1,500	3.6	13¾	1½	8	½	½	100
6	1,600	4.0	14¾		9			
8	2,500	7.6	18½		12			
10		11.1	20¼	2	13¾			
12		16.5	22¾		15¾			
14	2,700	17.7	24		17¼	¾	¾	150
16		2,900	30.4	26	19¾			
18			33.8	28	21¾			
20	35.0		30	23¾	1	⅞	190	
24	3,200	82.0	36¾	3				30

PROJECT INFORMATION

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Notes 1:	
Notes 2:	

Fig. CT-121

Copper Tubing Riser Clamp

Size Range: 1/2" through 4"

Material: Carbon steel

Finish: Copper plated

Service: Recommended for support and steadying of copper tube risers, either insulated or non-insulated. This product is not intended for use with hanger rods.

Approvals: Complies with Federal Specification A-A-1192A (Type 8), WW-H-171-E (Type 8), ANSI/MSS SP-69 and MSS SP-58 (Type 8).

Service: For support and steadying of copper tubing risers.

Installation: Clamp is fitted and bolted preferably below a coupling or fitting on the tubing. Do not over tighten bolts.

Features: Rounded ears provide greater safety for personnel.

Ordering: Specify tube size, figure number, and name.

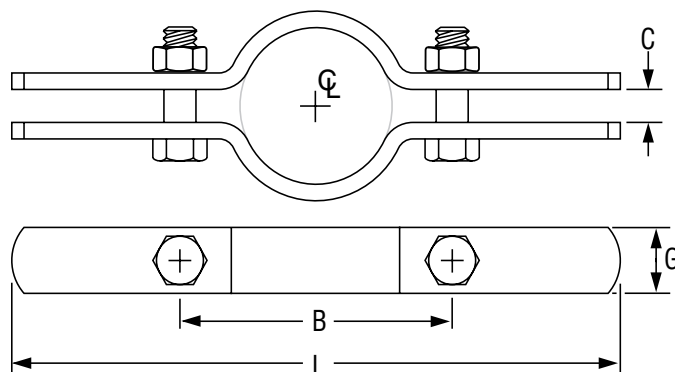


FIG. CT-121: DIMENSIONS (IN) • LOADS (LBS) • TORQUE (FT-LBS) • WEIGHT (LBS)

Tube Size	Max Load	Weight	L	G Width	B	C	Bolt Size	Torque Values
½	75	0.52	6½	1	2⅞	¾	⅝	11
¾		0.56	7					
1	120	0.94	9⅜	1¼	3⅛		⅜	21
1¼	150	0.98	9⅝		3½			
1½		1.50	10		3⅞			
2		1.50	10⅜		4¼			
2½	300	1.70	11⅓		4¾	½		
3		1.80	11½		5½			
3½		1.90	12		6½			
4		2.60	13	1	7		½	46

Note: Minimum loads per MSS SP only applicable to 1 1/4" and up.

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Notes 1:	
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Fig. 93 (Formerly Afcon Fig. 105)

Universal C-type Clamp (Wide Throat)

Size Range: $\frac{3}{8}$ " and $\frac{1}{2}$ "

Material: Ductile iron clamp, hardened steel cup point set screw and locknut.

Finish: ☐ Plain or ☐ Zinc Plated (Hot-Dip Galvanized optional)

Service: Recommended for use under roof installations with bar joist type constructions, or for attachment to the top or bottom flange of structural shapes where the vertical hanger rod is required to be offset from the edge of the flange and where the thickness of joist or flange does not exceed $1\frac{1}{4}$ ".

Approvals: Complies with Federal Specification A-A-1192A (Type 19 & 23), WW-H-171-E (Type 23), ANSI/MSS SP-69 and MSS SP-58 (Type 19 & 23). UL, ULC Listed and FM Approved.

How to size: Size of clamp is determined by size of rod to be used.

Installation: Follow recommended set screw torque values per MSS-SP-69.

Features:

- They may be attached to horizontal flanges of structural members in either the top beam or bottom beam positions.
- Secured in place by a cup-pointed Set Screw tightened against the flange.
A Jam Nut is provided for tightening the Set Screw against the Body Casting.
- Thru tapping of the body casting permits extended adjustment of the threaded rod.
- Wider throat for attaching to flange with up to $1\frac{1}{4}$ " thickness.

Ordering: Specify rod size, figure number, name of clamp and finish.

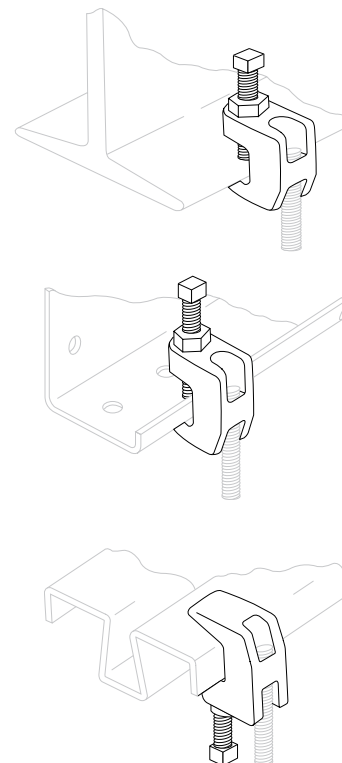
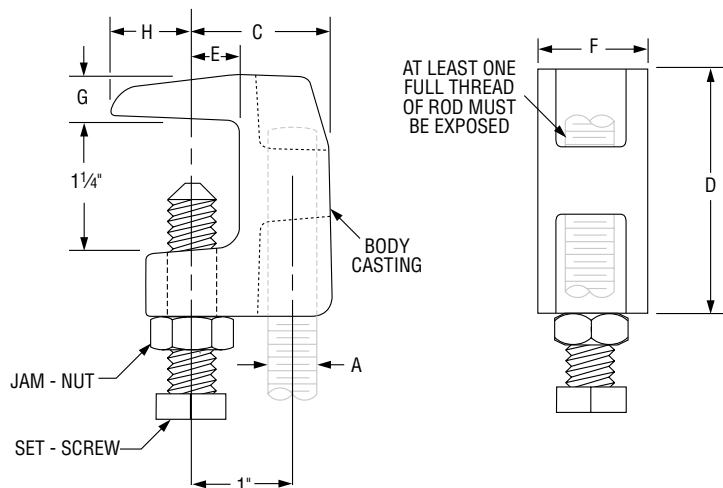


FIG. 93: DIMENSIONS (IN) • LOAD (LBS) • TORQUE (IN-LBS) • WEIGHT (LBS)											
Rod Size A	Set Screw Size	Torque Value	Max Loads ■		Weight	C	D	E	F	G	H
			Top	Bottom							
3⁄8	3⁄8	60	500	250	0.41	1 ⁵ ⁄ ₁₆	2 ⁵ ⁄ ₃₂	9⁄ ₁₆	1 ³ ⁄ ₁₆	3⁄ ₈	5⁄ ₈
1⁄ ₂	1⁄ ₂	125	950	760	0.75	1 ³ ⁄ ₈	2 ¹¹ ⁄ ₃₂	1⁄ ₂	1 ¹ ⁄ ₁₆	7⁄ ₁₆	1 ³ ⁄ ₁₆

■ Maximum temperature of 450° F

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Project:		☐ Approved
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Notes 1:		
Notes 2:		

Fig. 94

Wide Throat Top Beam C-Clamp

Size Range: $\frac{5}{8}$ " and $\frac{3}{4}$ "

Material: Ductile iron body, hardened steel cup point set screw and locknut.

Finish: ☐ Plain or ☐ Zinc Plated (Hot-Dip Galvanized optional)

Service: Recommended for use under roof installations with bar joist type construction, or for attachment to the top flange of structural shapes where the vertical hanger rod is required to be offset from the edge of the flange and where the thickness of joists or flange does not exceed $1\frac{5}{16}$ ".

Approvals: Complies with Federal Specification A-A-1192A (Type 19) WW-H-171-E (Type 19), ANSI/MSS SP-69 and MSS SP-58 (Type 19), UL Listed.

How to size: Size of clamp is determined by size of rod to be used.

Installation: Follow maximum recommended set screw torque values per MSS-SP-69.

Features:

- Provides clamping to bar joists which are directly under roof installations.
- Provides for vertical hanger rod installed offset from the edge of the beam flange.
- Malleable iron body assures full thread engagement of rod.

Ordering: Specify rod size, figure number, name of clamp and finish.

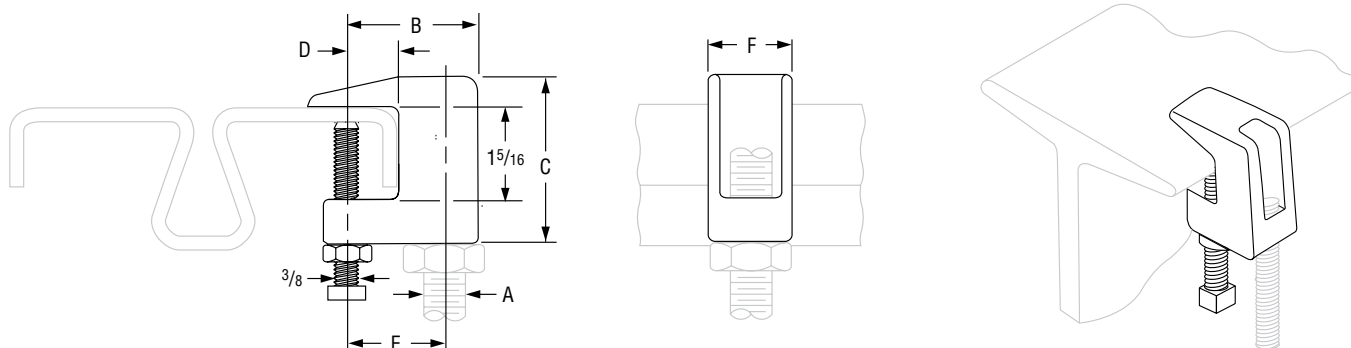
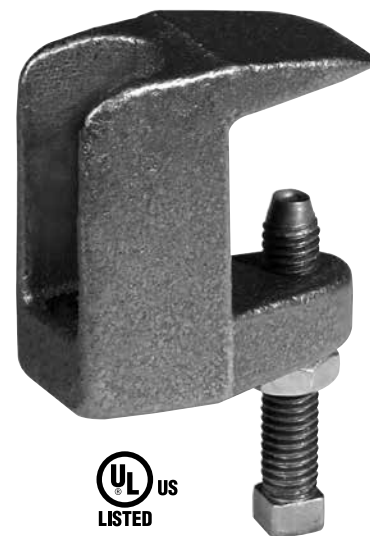


FIG. 94: DIMENSIONS (IN) • LOAD (LBS) • TORQUE (IN-LBS) • WEIGHT (LBS)

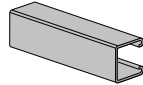
Rod Size A	Set Screw Size	Torque Value	Max Loads ■	Weight	B	C	D	E	F
$\frac{5}{8}$	$\frac{3}{8}$	60	1,200	0.66	$1\frac{3}{4}$	$2\frac{1}{4}$	$\frac{3}{4}$	$1\frac{1}{4}$	1
$\frac{3}{4}$	$\frac{3}{8}$	60	1,600	0.83	$1\frac{7}{8}$	$2\frac{3}{8}$		$1\frac{3}{8}$	$1\frac{3}{16}$

■ Maximum temperature of 450° F

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☐ AS 210 ☐ PL, ☐ GR, ☐ PG, ☐ SS, ☐ ZTC, ☐ HG

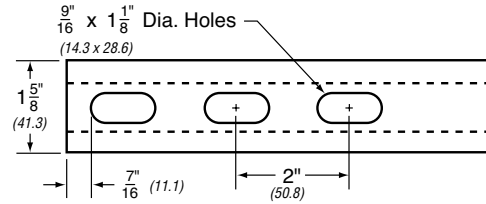
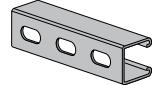
SOLID



Wt./100 Ft: 145 Lbs

☒ AS 210EH ☐ PL, ☒ GR, ☐ PG, ☐ SS, ☐ ZTC, ☒ HG

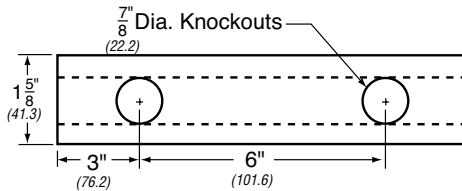
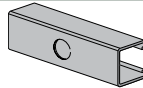
WITH ELONGATED HOLES



Wt./100 Ft: 140 Lbs

☐ AS 210KO ☐ PL, ☐ GR, ☐ PG, ☐ Other

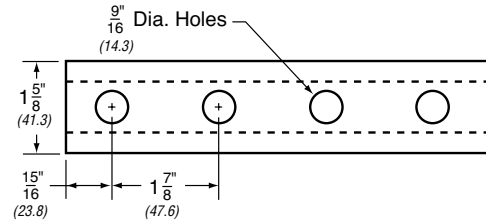
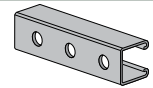
WITH KNOCK OUT



Wt./100 Ft: 145 Lbs

☐ AS 210H ☐ PL, ☐ GR, ☐ PG, ☐ Other

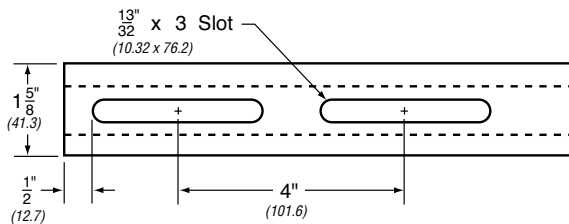
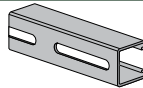
WITH HOLES



Wt./100 Ft: 140 Lbs

☐ AS 210S ☐ PL, ☐ GR, ☐ PG, ☐ Other

WITH LONG SLOTS



Wt./100 Ft: 130 Lbs

LEGEND:

GR: Powder Coated Supr-Green **EG:** Electro-Galvanized **PG:** Pre-Galvanized **AL:** Aluminum **HG:** Hot Dipped Galvanized **PL:** Plain **SS:** Stainless Steel **ZTC:** Zinc Trivalent Chromium
Stainless Steel (**SS**), Zinc Trivalent Chromium (**ZTC**) and Hot Dipped Galvanized (**HG**) are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil-Strut price book.

PROJECT INFORMATION		APPROVAL STAMP
Project:		☐ Approved
Address:		☐ Approved as noted
Contractor:		☐ Not approved
Engineer:		Remarks:
Submittal Date:		
Notes 1:		
Notes 2:		

☐ AS 004OD THRU AS 106P ☐ EG, ☐ 304SS, ☐ 316SS, ☐ ZTC

CUSHION CLAMP ASSEMBLY

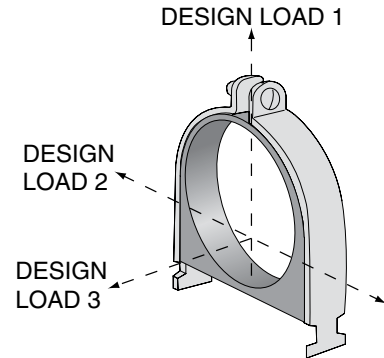
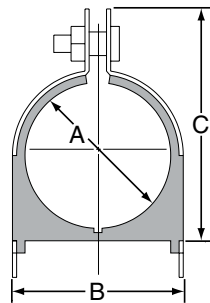
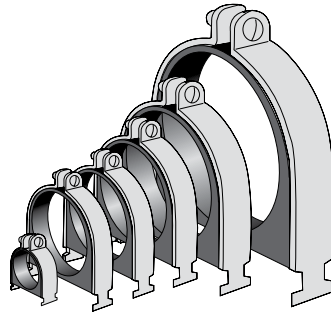
Material

Clamp: 1008-1018 Carbon Steel
Cushion: High Strength TPE
Locknut: Nylon Insert

Service Temperature:
-65°F to 275°F.

Approvals

UL 2043 Fire Test for Heat and
Visible Smoke Release
25/50 Flame Spread/Smoke
Development Index



TUBE SERIES						
Part No.	O.D. Size	A	B	C	Std Pkg	Wt/100 pcs
AS 004OD	1/4"	0.25	0.62	0.98	25	10
AS 006ODN	3/8"	0.37	0.82	1.13	25	11
AS 008ODN	1/2"	0.50	0.94	1.34	25	13
AS 010ODN	5/8"	0.62	1.06	1.54	25	14
AS 012ODN	3/4"	0.75	1.20	1.68	25	14
AS 014ODN	7/8"	0.87	1.31	1.82	25	15
AS 016OD	1"	1.00	1.44	1.95	25	17
AS 018ODN	1 1/8"	1.12	1.57	2.08	20	18
AS 020OD	1 1/4"	1.25	1.70	2.21	20	18
AS 022ODN	1 3/8"	1.37	1.82	2.34	20	20
AS 024OD	1 1/2"	1.50	1.95	2.47	20	33
AS 026ODN	1 5/8"	1.62	2.07	2.60	20	35
AS 028OD	1 3/4"	1.75	2.20	2.73	20	37
AS 032OD	2"	2.00	2.45	3.04	10	41
AS 034OD	2 1/8"	2.12	2.57	3.23	10	46
AS 040OD	2 1/2"	2.50	2.94	3.79	10	49
AS 042OD	2 5/8"	2.62	3.07	3.92	5	51
AS 048OD	3"	3.00	3.57	4.42	5	57
AS 050OD	3 1/8"	3.12	3.57	4.42	5	60
AS 058OD	3 5/8"	3.62	4.20	5.11	5	70
AS 066OD	4 1/8"	4.12	4.57	5.54	5	94
AS 082OD	5 1/8"	5.12	5.57	6.54	5	125
AS 098OD	6 1/8"	6.12	6.57	7.54	5	130

TUBE SERIES			
Copper & Steel Tube O.D. Size	Design Load 1 (lbs)	Design Load 2 (lbs)	Design Load 3 (lbs)
1/4"	400	50	50
3/8"	400	50	50
1/2"	400	50	50
5/8"	400	50	50
3/4"	600	75	75
7/8"	600	75	75
1"	600	75	75
1 1/8"	600	75	75
1 1/4"	600	75	75
1 3/8"	600	75	75
1 1/2"	600	75	75
1 5/8"	600	75	75
1 3/4"	800	125	125
1 7/8"	800	125	125
2"	800	125	125
2 1/8"	800	125	125
2 1/4"	800	125	125
2 3/8"	800	125	125
2 1/2"	800	125	125
2 5/8"	800	125	125
3"	800	125	125
3 1/8"	800	125	125
3 5/8"	1000	200	150
4 1/8"	1000	200	150
6 1/8"	1000	200	150

Std Pkg & Wt/100 pcs: See chart above.

PIPE SERIES ON NEXT PAGE

LEGEND:

GR: Powder Coated Supr-Green **EG:** Electro-Galvanized **PG:** Pre-Galvanized **AL:** Aluminum **HG:** Hot Dipped Galvanized **PL:** Plain **SS:** Stainless Steel **ZTC:** Zinc Trivalent Chromium
Stainless Steel (**SS**), Zinc Trivalent Chromium (**ZTC**) and Hot Dipped Galvanized (**HG**) are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil-Strut price book.

PROJECT INFORMATION		APPROVAL STAMP	
Project:		☐ Approved	
Address:		☐ Approved as noted	
Contractor:		☐ Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

CUSHION CLAMP ASSEMBLY

Material

Clamp: 1008-1018 Carbon Steel

Cushion: High Strength TPE

Locknut: Nylon Insert

Service Temperature:

-65°F to 275°F.

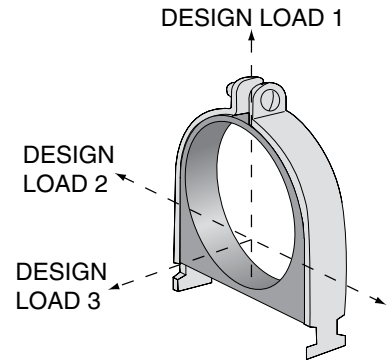
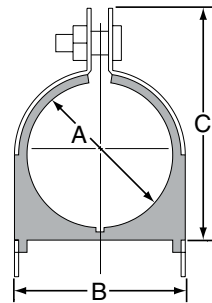
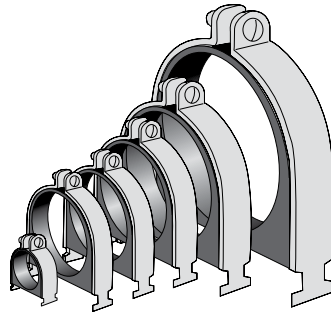
Approvals

UL 2043 Fire Test for Heat and

Visible Smoke Release

25/50 Flame Spread/Smoke

Development Index



PIPE SERIES						
Part No.	O.D. Size	A	B	C	Std Pkg	Wt/100 pcs
AS 009P	1/4" Pipe	0.54	0.98	1.34	25	13
AS 011P	3/8" Pipe	0.67	1.13	1.54	25	14
AS 014P	1/2" Pipe	0.84	1.29	1.82	25	15
AS 017P	3/4" Pipe	1.05	1.50	2.08	20	17
AS 021P	1" Pipe	1.31	1.76	2.34	20	19
AS 027P	1 1/4" Pipe	1.66	2.17	2.73	20	35
AS 030ODP	1 1/2" Pipe	1.90	2.35	2.86	20	39
AS 038ODP	2" Pipe	2.37	2.82	3.67	10	47
AS 046ODP	2 1/2" Pipe	2.87	3.32	4.17	5	55
AS 056ODP	3" Pipe	3.50	3.95	4.79	5	55
AS 064ODP	3 1/2" Pipe	4.00	4.45	5.42	5	88
AS 072ODP	4" Pipe	4.50	4.95	5.92	5	110
AS 089P	5" Pipe	5.56	6.01	6.92	5	130
AS 106P	6" Pipe	6.62	7.07	8.23	5	140

PIPE SERIES			
Pipe Sizes (Nominal)	Design Load 1 (lbs)	Design Load 2 (lbs)	Design Load 3 (lbs)
1/4"	400	50	50
3/8"	600	75	75
1/2"	600	75	75
3/4"	600	75	75
1"	600	75	75
1 1/4"	800	125	125
1 1/2"	800	125	125
2"	800	125	125
2 1/2"	800	125	125
3"	1000	200	150
3 1/2"	1000	200	150
4"	1000	200	150
5"	1000	200	150
6"	1000	200	150

Std Pkg & Wt/100 pcs: See chart above.

TUBE SERIES ON PREVIOUS PAGE

Fig. 146 (Formerly Afcon Fig. 650)

Continuous Threaded Rod

Size Range: 1/4" through 1 1/2" Stocked in six, ten, and twelve foot lengths. Other even foot lengths can be furnished to order.

Material: Carbon steel or Stainless Steel Gr 304

Threads: National Coarse (UNF), rod threaded complete length.

Finish: ☐ Plain or ☐ Zinc Plated (Hot-Dip Galvanized optional)

Maximum Temperature: Zinc Plated 450°F, Stainless Steel 650° F

Approvals: Complies with MSS SP-58.

Ordering: Specify rod diameter and length, figure number, name and finish.

Note: The acceptability of galvanized coatings at temperatures above 450°F is at the discretion of the end user.

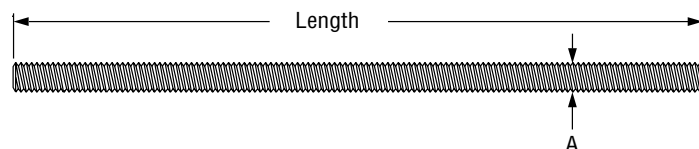


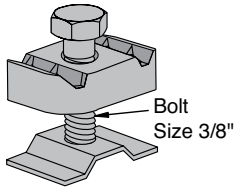
FIG. 146:
DIMENSIONS (IN) • LOADS (LBS) • WEIGHTS (LBS)

Rod Size A	Threads per Inch	Max Load 650° F	Weight per Ft.
1/4	20	240	0.12
3/8	16	730	0.30
1/2	13	1,350	0.53
5/8	11	2,160	0.84
3/4	10	3,230	1.20
7/8	9	4,480	1.70
1	8	5,900	2.30
1 1/4	7	9,500	3.60
1 1/2	6	13,800	5.10

PROJECT INFORMATION		APPROVAL STAMP	
Project:		☐ Approved	
Address:		☐ Approved as noted	
Contractor:		☐ Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

☐ AS 3500 ☐ EG, ☐ ZTC

SEISMIC ROD STIFFENER

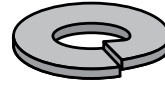


Size	Wt./100 Pcs.
3/8" - 5/8"	16

Std Pkg: 25 · Wt./100 pcs: See chart above.

☐ AS 211 ☐ EG

LOCK WASHER



Size	Wt./100 Pcs.
1/4"	0.3
3/8"	0.7
1/2"	1.5

Std Pkg: 100 · Wt./100 pcs: See chart above.

☐ AS 83 ☒ EG

HEXAGON NUT

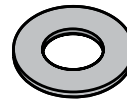


Size	Std. Pkg.	Wt./100 Pcs.
1/4"	500	0.6
3/8"	500	1.6
1/2"	100	4.8
5/8"	50	7.0
3/4"	50	12.0

Std Pkg & Wt./100 pcs: See chart above.

☐ AS 209 ☒ EG

FLAT WASHER

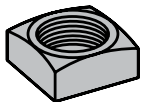


Size	Std. Pkg.	Wt./100 Pcs.
1/4"	200	0.7
3/8"	100	1.5
1/2"	100	3.5
5/8"	100	8.0
3/4"	100	11.0

Std Pkg & Wt./100 pcs: See chart above.

☐ AS 6108 ☐ EG

SQUARE NUT

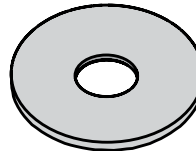


Size	Std. Pkg.	Wt./100 Pcs.
1/4"	100	0.9
5/16"	100	1.6
3/8"	100	2.7
1/2"	100	5.8

Std Pkg & Wt./100 pcs: See chart above.

☐ AS 230 ☐ EG

FENDER WASHER



Size	Std. Pkg.	Wt./100 Pcs.
1/4"	100	3.3
3/8"	100	3.0
1/2"	100	2.8

Std Pkg & Wt./100 pcs: See chart above.

LEGEND:

GR: Powder Coated Supr-Green EG: Electro-Galvanized PG: Pre-Galvanized AL: Aluminum HG: Hot Dipped Galvanized PL: Plain SS: Stainless Steel ZTC: Zinc Trivalent Chromium
Stainless Steel (SS), Zinc Trivalent Chromium (ZTC) and Hot Dipped Galvanized (HG) are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil-Strut price book.

PROJECT INFORMATION

APPROVAL STAMP

Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

DURA-BLOK™ Rooftop Supports

Our DURA-BLOK products gives you a versatile and long-term solution for all your roof top support needs. Designed with flexibility in mind, DURA-BLOK is ideal for roof top support applications such as pipe, HVAC, duct, conduit, cable tray, and roof walkways.

Manufactured to provide years of service in harsh, roof top environments, DURA-BLOK is made from 100% recycled rubber, require no supplemental rubber pads, and will not float or blow away. 1" gaps between blocks allow water to flow freely around longer assemblies. For added strength, the DURA-BLOK support channel is through bolted on all sizes. For added visibility, a reflective strip is incorporated on both sides of each DURA-BLOK.

Beyond product durability, DURA-BLOK helps to dampen vibration, are not sharp or abrasive and require no roof penetration to maximize existing roof life - and roof structural and environmental integrity.

Recommended Torque (In channels)

See page 44 Channel Nuts & Hardware section

Materials & Finishes

See appropriate fitting's pages.
Alternative finishes available upon request.

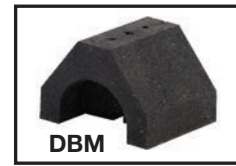
Metric

Metric dimensions are shown in parentheses.
Unless noted, all metric dimensions are in millimeters.



SUPPORT BASES ONLY

- Base only - see chart for height, width and length.
- 100% recycled rubber, UV resistant.
- Load Rating - Ultimate Uniform Load (See Chart Below)*
- DURA-BLOK channel support is designed as an economical support for piping systems, cable tray, HVAC equipment and many other applications. The DURA-BLOK is UV resistant and suitable for any type of roofing material or other flat surfaces. Material effectively accepts screw fasteners for securing accessories.



DBM



DBP

Part No.	Height x Width x Length In. (mm)	Wt./Each Lbs. (kg)	Load Rating Lbs. (kN)
DBM	4" x 6" x 4.8" (101.6 x 152.4 x 121.9)	2.35 (1.07)	200 (0.89)
DBP	4" x 6" x 9.6" (101.6 x 152.4 x 243.8)	4.48 (2.03)	500 (2.22)

DB SERIES SUPPORT BASE WITH B44 CHANNEL

- Base with 14 ga. (1.9mm) galvanized channel 1" high (25.4mm) - see chart for height, width and length.
- 100% recycled rubber, UV resistant.
- Load Rating - Ultimate Uniform Load (See Chart Below)*
- DURA-BLOK DB-Series channel support is designed for superior support of piping systems, cable tray, HVAC equipment, walkway systems and many other applications. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces. (For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 158)
- For sloped roofs use B634 adjustable hinge fittings (see page 84).



DB10



DB20



DB30

Part No.	Height x Width x Length In. (mm)	Wt./Each Lbs. (kg)	Load Rating Lbs. (kN)
DB5	5" x 6" x 4.8" (127.0 x 152.4 x 121.9)	2.75 (1.25)	200 (0.89)
DB10	5" x 6" x 9.6" (127.0 x 152.4 x 243.8)	5.28 (2.39)	500 (2.22)
DB20	5" x 6" x 20.2" (127.0 x 152.4 x 513.1)	10.63 (4.82)	1000 (4.45)
DB30	5" x 6" x 30.8" (127.0 x 152.4 x 782.3)	15.99 (7.25)	1500 (6.67)
DB40	5" x 6" x 41.4" (127.0 x 152.4 x 1051.5)	21.34 (9.68)	2000 (8.89)
DB48	5" x 6" x 52.0" (127.0 x 152.4 x 1320.8)	26.70 (12.40)	2500 (11.12)

DB6 SERIES SUPPORT BASE WITH B12 CHANNEL

- Base with 12 ga. (2.6mm) galvanized channel 27/16" high (61.9mm) - see chart for height, width and length.
- 100% recycled rubber, UV resistant.
- Load Rating - Ultimate Uniform Load (See Chart Below)*
- DURA-BLOK DB-Series channel support is designed for superior support of piping systems, cable tray, HVAC equipment, walkway systems and many other applications. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces. (For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 158)
- For sloped roofs use B634 adjustable hinge fittings (see page 84).



DB610



DB620



DB630

Part No.	Height x Width x Length In. (mm)	Wt./Each Lbs. (kg)	Load Rating Lbs. (kN)
DB610	67/16" x 6" x 9.6" (163.5 x 152.4 x 243.8)	6.36 (2.88)	500 (2.22)
DB620	67/16" x 6" x 20.2" (163.5 x 152.4 x 513.1)	12.90 (5.85)	1000 (4.45)
DB630	67/16" x 6" x 30.8" (163.5 x 152.4 x 782.3)	19.45 (8.82)	1500 (6.67)
DB640	67/16" x 6" x 41.4" (163.5 x 152.4 x 1051.5)	26.00 (11.79)	2000 (8.89)
DB648	67/16" x 6" x 52.0" (163.5 x 152.4 x 1320.8)	32.55 (14.76)	2500 (11.12)

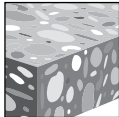
* **General Note:** Consult roofing manufacturer or engineer for roof load capacity. The weakest point may be the insulation board beneath the rubber membrane.

3.3.12 HDI+, HDI-L+, AND HDI DROP IN ANCHORS

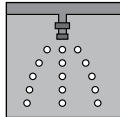
PRODUCT DESCRIPTION

HDI+, HDI-L+, and HDI Drop-in anchors

Anchor System		Features and Benefits
	HDI-L+ and HDI+ with Auto setting tools 1/4" to 1/2"	- Anchor, setting tool and Hilti drill bit form a matched tolerance system to provide reliable fastenings - Allows shallow embedment without sacrificing performance - Lip allows accurate flush surface setting, independent of hole depth for the HDI-L+ - Ideal for repetitive fastenings with threaded rods of equal length
		- HDI+ and HDI-L+ have an innovative stepped plug that reduces number of hammer blows by up to 50% - HDI+ and HDI-L+ can be installed with the new HDI+ Setting Tool system (stop drill bit and machine setting tool) for improved productivity



Uncracked concrete



Fire sprinkler listings

Approvals/Listings	
FM (Factory Mutual)	Pipe hanger components for automatic sprinkler systems HDI+ 3/8, HDI-L+ 3/8, HDI+1/2, HDI-L+ 1/2, HDI 5/8 and HDI 3/4
UL and cUL (Underwriters Laboratory)	Pipe hanger equipment for fire protection services HDI+ 3/8, HDI-L+ 3/8, HDI+1/2, HDI-L+ 1/2, HDI 5/8 and HDI 3/4



INSTALLATION PARAMETERS

Table 1 - Hilti HDI+, HDI-L+ and HDI specifications¹

Setting Information	Symbol	Units	HDI+ and HDI-L+			HDI	
			1/4	3/8	1/2	5/8	3/4
Insert thread	d	UNC	1/4-20	3/8-16	1/2-13	5/8-11	3/4-10
Nominal bit diameter	d _{bit}	in.	3/8	1/2	5/8	27/32	1
Nominal embedment	h _{nom}	in.	1	1-9/16	2	2-9/16	3-3/16
Anchor length	ℓ	(mm)	(25)	(40)	(51)	(65)	(81)
Hole depth	h _o						
Useable thread length	ℓ _{th}	in.	7/16	5/8	11/16	7/8	1-3/8
		(mm)	(11)	(15)	(17)	(22)	(34)
Installation torque	T _{inst}	ft-lb	4	11	22	37	80
		(Nm)	(5)	(15)	(30)	(50)	(109)
Minimum slab thickness	h	in.	3	3-1/8	4	5-1/8	6-3/8
		(mm)	(76)	(79)	(102)	(130)	(162)

¹ HDI+ and HDI-L+ are available in 1/4-, 3/8- and 1/2-in. The HDI is available in 5/8- and 3/4-in.

MATERIAL SPECIFICATIONS

HDI+, HDI-L and HDI anchors are manufactured from mild carbon steel. Anchor bodies are zinc plated in accordance with ASTM B633, AC 1, Type III

HDI stainless steel anchors are manufactured from AISI Type 303 stainless steel

DESIGN DATA IN CONCRETE USING ALLOWABLE STRESS DESIGN

Table 2 - Hilti HDI+, HDI-L+ and HDI carbon steel allowable loads in concrete^{1,2}

Anchor type	Nominal anchor diameter in.	$f'_c = 2,000$				$f'_c = 4,000$				$f'_c = 6,000$			
		Tension, lb (kN)		Shear, lb (kN)		Tension, lb (kN)		Shear, lb (kN)		Tension, lb (kN)		Shear, lb (kN)	
HDI+	1/4	385	(1.7)	450	(2.0)	510	(2.3)	625	(2.8)	640	(2.8)	700	(3.1)
	3/8	635	(2.8)	965	(4.3)	920	(4.1)	1,250	(5.6)	1,260	(5.6)	1,500	(6.7)
	1/2	945	(4.2)	1,500	(6.7)	1,605	(7.1)	2,125	(9.5)	1,950	(8.7)	2,500	(11.1)
HDI+	5/8	1,875	(8.3)	2,500	(11.1)	2,920	(13.0)	3,250	(14.5)	3,715	(16.5)	3,750	(16.7)
	3/4	2,500	(11.1)	3,875	(17.2)	4,065	(18.1)	5,000	(22.2)	5,565	(24.8)	5,500	(24.5)

Table 3 - Hilti HDI+, HDI-L+ and HDI carbon steel ultimate loads in concrete¹

Anchor type	Nominal anchor diameter in.	$f'_c = 2,000$				$f'_c = 4,000$				$f'_c = 6,000$			
		Tension, lb (kN)		Shear, lb (kN)		Tension, lb (kN)		Shear, lb (kN)		Tension, lb (kN)		Shear, lb (kN)	
HDI+	1/4	1,535	(6.8)	1,800	(8.0)	2,040	(9.1)	2,500	(11.1)	2,555	(11.4)	2,800	(12.5)
	3/8	2,540	(11.3)	3,850	(17.1)	3,685	(16.4)	5,000	(22.2)	5,035	(22.4)	6,000	(26.7)
	1/2	3,780	(16.8)	6,000	(26.7)	6,425	(28.6)	8,500	(37.8)	7,810	(34.7)	10,000	(44.5)
HDI+	5/8	7,500	(33.4)	10,000	(44.5)	11,685	(52.0)	13,000	(57.8)	14,865	(66.1)	15,000	(66.7)
	3/4	10,000	(44.5)	15,500	(68.9)	16,260	(72.3)	20,000	(89.0)	22,250	(99.0)	22,000	(97.9)

- The shear tests were conducted with SAE Grade 5 bolts with minimum yield strength of 85 ksi and minimum tension strength of 120 ksi. Shear testing for the 1/4-in. models were conducted with SAE Grade 8 bolts with minimum yield strength of 120 ksi and minimum tension strength of 150 ksi in 6,000 psi concrete. High-strength bolts were used to force concrete failure modes. When using steel bolts with a lower tensile strength, steel failure must be considered.
- Allowable loads calculated with a factor of safety of 4.

Table 4 - Hilti HDI+, HDI-L+ and HDI carbon steel allowable loads in lightweight concrete and lightweight concrete poured over metal deck^{1,2,3,4}

Anchor type	Nominal anchor diameter in.	3,000 psi lightweight concrete				3,000 psi lightweight concrete over metal deck							
						Upper flute				Lower flute			
		Tension, lb (kN)		Shear, lb (kN)		Tension, lb (kN)		Shear, lb (kN)		Tension, lb (kN)		Shear, lb (kN)	
HDI+	1/4	465	(2.1)	340	(1.5)	530	(2.4)	335	(1.5)	375	(1.7)	250	(1.1)
	3/8	720	(3.2)	940	(4.2)	810	(3.6)	1,010	(4.5)	500	(2.2)	500	(2.2)
	1/2	1,035	(4.6)	1,700	(7.6)	1,035	(4.6)	1,755	(7.8)	625	(2.8)	750	(3.3)
HDI+	5/8	1,465	(6.5)	2,835	(12.6)	-	-	-	-	875	(3.9)	875	(3.9)
	3/4	2,075	(9.2)	3,680	(16.4)	-	-	-	-	1,250	(5.6)	1,000	(4.4)

- The shear tests were conducted with SAE Grade 5 bolts with minimum yield strength of 85 ksi and minimum tension strength of 120 ksi. Shear testing for the 1/4-in. models were conducted with SAE Grade 8 bolts with minimum yield strength of 120 ksi and minimum tension strength of 150 ksi in 6,000 psi concrete. High-strength bolts were used to force concrete failure modes. When using steel bolts with a lower tensile strength, steel failure must be considered.
- Minimum compressive strength of structural lightweight concrete is 3,000 psi.
- See figure 1 for typical details.
- Allowable loads calculated with a factor of safety of 4.

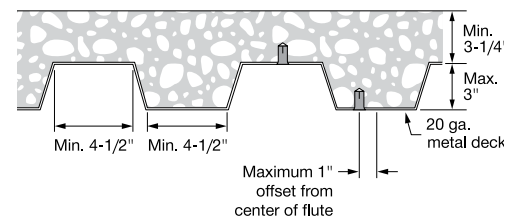
Table 5 - Hilti HDI stainless steel allowable loads in concrete^{1,2,3}

Nominal anchor diameter in.	Nominal anchor	$f'_c = 4,000$				$f'_c = 6,000$			
		Tension, lb (kN)		Shear, lb (kN)		Tension, lb (kN)		Shear, lb (kN)	
HDI+	1/4	480	(2.1)	600	(2.7)	740	(3.3)	600	(2.7)
	3/8	1,040	(4.6)	1,230	(5.5)	1,460	(6.5)	1,230	(5.5)
	1/2	1,840	(8.2)	2,760	(12.3)	2,410	(10.7)	2,760	(12.3)
HDI+	5/8	2,630	(11.7)	4,510	(20.1)	3,770	(16.8)	4,510	(20.1)
	3/4	3,830	(17.0)	5,580	(24.8)	5,030	(22.4)	5,580	(24.8)

Table 6 - Hilti HDI stainless steel ultimate loads in concrete^{1,2}

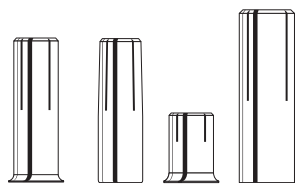
Nominal anchor diameter in.	Nominal anchor	$f'_c = 4,000$				$f'_c = 6,000$			
		Tension, lb (kN)		Shear, lb (kN)		Tension, lb (kN)		Shear, lb (kN)	
HDI+	1/4	1,930	(8.6)	2,400	(10.7)	2,950	(13.1)	2,400	(10.7)
	3/8	4,170	(18.5)	4,920	(21.9)	5,850	(26.0)	4,920	(21.9)
	1/2	7,350	(32.7)	11,040	(49.1)	9,630	(42.8)	11,040	(49.1)
HDI+	5/8	10,540	(46.9)	18,040	(80.2)	15,100	(67.2)	18,040	(80.2)
	3/4	15,340	(68.2)	22,320	(99.3)	20,130	(89.5)	22,320	(99.3)

- Stainless steel models available in HDI version only.
- Shear testing conducted with 18-8 stainless steel bolts.
- Allowable loads calculated with a factor of safety of 4.

Figure 1 - Installation of Hilti HDI+ and HDI drop-in anchor in the soffit of concrete over metal deck floor and roof assemblies W – deck

Combined shear and tension loading

$$\left(\frac{N_d}{N_{rec}} \right)^{5/3} + \left(\frac{V_d}{V_{rec}} \right)^{5/3} \leq 1.0$$

Multi-Set II®



SPECIFIED FOR ANCHORAGE INTO CONCRETE

Drop-In, shell-type anchors feature an internally threaded, all-steel shell with expansion cone insert and flush

embedment lip. "Anchors are manufactured from zinc-plated carbon steel, 18-8 stainless steel and 316 stainless steel.

Anchors should be installed with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994 specifications.

Anchors should be tested to ASTM E488 criteria and listed by ICC (formerly ICBO). Anchors should also be listed by the following agencies as required by the local building code: UL, FM, City of Los Angeles, California State Fire Marshal and Cal Trans.

APPROVALS/LISTINGS

Meets or exceeds U.S. Government G.S.A. Specification A-A-55614 Type 1
 (Formerly GSA: FF-S-325 Group VIII)

Underwriters Laboratories

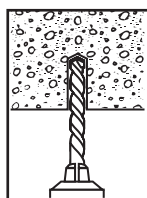
Factory Mutual

California State Fire Marshal

Caltrans

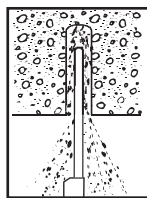
For the most current approvals/listings visit: www.itw-redhead.com

INSTALLATION STEPS

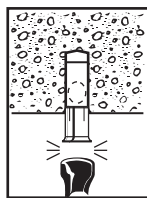


To set anchor flush with surface:

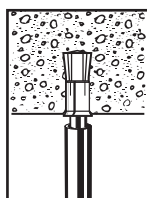
1. Drill hole to required embedment (see Table on page 73).



2. Clean hole with pressurized air.



3. Drive anchor flush with surface of concrete.



4. Expand anchor with setting tool provided (see chart). Anchor is properly expanded when shoulder of setting tool is flush with top of anchor.

To set anchor below surface:

Drill hole deeper than anchor length. Thread bolt into anchor. Hammer anchor into hole until bolt head is at desired depth. Remove bolt and set anchor with setting tool.

PERFORMANCE TABLE

Multi-Set II Drop-In Anchors

Ultimate Tension and Shear Values (Lbs/kN) in Concrete*

BOLT DIA. In. (mm)	ANCHOR DIA. In. (mm)	MIN. EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE	TENSION Lbs. (kN)			SHEAR Lbs. (kN)
				f'c = 2000 PSI (13.8 MPa)	f'c = 4000 PSI (27.6 MPa)	f'c = 6000 PSI (41.4 MPa)	f'c ≥ 2000 PSI (13.8 MPa)
1/4 (6.4)	3/8 (9.5)	1 (25.4)	RM, RL or CL-Carbon or SRM-18-8 S.S. or SSRM-316 S.S.	1,680 (7.5)	2,360 (10.5)	2,980 (13.3)	1,080 (4.8)
3/8 (9.5)	1/2 (12.7)	1-5/8 (41.3)		2,980 (13.3)	3,800 (16.9)	6,240 (27.8)	3,160 (14.1)
1/2 (12.7)	5/8 (15.9)	2 (50.8)		3,300 (14.7)	5,840 (26.0)	8,300 (36.9)	4,580 (20.4)
5/8 (15.9)	7/8 (22.2)	2-1/2 (63.5)		5,500 (24.5)	8,640 (38.4)	11,020 (49.0)	7,440 (33.1)
3/4 (19.1)	1 (25.4)	3-3/16 (81.0)		8,280 (36.8)	9,480 (42.2)	12,260 (54.5)	10,480 (46.6)

*Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

*For continuous extreme low temperature applications, use stainless steel.

Combined Tension and Shear Loading—for Multi-Set Anchors

Allowable loads for anchors subjected to combined shear and tension forces are determined by the following equation:

$$(P_s/P_t)^{5/3} + (V_s/V_t)^{5/3} \leq 1$$

P_s = Applied tension load

V_s = Applied shear load

P_t = Allowable tension load

V_t = Allowable shear load

PERFORMANCE TABLES

Multi-Set II Drop-In Anchors Ultimate Tension and Shear Values (Lbs/kN) in Lightweight Concrete*

BOLT DIA. In. (mm)	ANCHOR DIA. In. (mm)	MINIMUM EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE	LIGHTWEIGHT CONCRETE f'c = 3000 PSI (20.7 MPa)		LOWER FLUTE OF STEEL DECK WITH LIGHTWEIGHT CONCRETE FILL f'c = 3000 PSI (20.7 MPa)	
				TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/8 (9.5)	1/2 (12.7)	1-5/8 (39.7)	RM, RL or CL-Carbon or SRM-18-8 S.S. or SSRM-316 S.S.	2,035 (9.1)	1,895 (8.4)	3,340 (14.9)	4,420 (19.6)
1/2 (12.7)	5/8 (15.9)	2 (50.8)		2,740 (12.2)	2,750 (12.2)	3,200 (14.2)	4,940 (22.0)
5/8 (15.9)	7/8 (22.2)	2-1/2 (63.5)		4,240 (18.9)	4,465 (19.9)	5,960 (26.5)	5,840 (26.0)
3/4 (19.1)	1 (25.4)	3-3/16 (81.0)		5,330 (23.7)	6,290 (28.0)	8,180 (36.4)	9,120 (40.6)

*Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

Multi-Set II Drop-In Anchors Recommended Edge and Spacing Distance Requirements*

BOLT DIA. In. (mm)	DRILL BIT SIZE In. (mm)	EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. EDGE DISTANCE AT WHICH LOAD FACTOR APPLIED =.80 FOR TENSION =.70 FOR SHEAR In. (mm)	SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. ALLOWABLE SPACING BETWEEN ANCHORS LOAD FACTOR APPLIED =.80 FOR TENSION =.55 FOR SHEAR In. (mm)
1/4 (6.4)	3/8 (9.5)	1 (25.4)	RM, RL or CL-Carbon or SRM-18-8 S.S. or SSRM-316 S.S.	1-3/4 (44.5)	7/8 (22.2)	3-1/2 (88.9)	1-3/4 (44.5)
3/8 (9.5)	1/2 (12.7)	1-5/8 (41.3)		2-7/8 (73.0)	1-7/16 (36.5)	5-11/16 (144.5)	2-7/8 (73.0)
1/2 (12.7)	5/8 (15.9)	2 (50.8)		3-1/2 (88.9)	1-3/4 (44.5)	7 (177.8)	3-1/2 (88.9)
5/8 (15.9)	7/8 (22.2)	2-1/2 (63.5)		4-3/8 (111.1)	2-3/16 (55.6)	8-3/4 (222.3)	4-3/8 (111.1)
3/4 (19.1)	1 (25.4)	3-3/16 (81.0)		5-5/8 (142.9)	2-13/16 (71.4)	11-3/16 (284.2)	5-5/8 (142.9)

*Spacing and edge distances shall be divided by 0.75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

Multi-Set II Drop-In Anchors Ultimate Tension and Shear Values (Lbs/kN) for RX-series (3/4" and 1" Embedment)*

BOLT DIA. In. (mm)	DRILL BIT SIZE In. (mm)	EMBEDMENT In. (mm)	2500 PSI (17.2 MPa) CONCRETE		4000 PSI (27.6 MPa) CONCRETE		HOLLOW CORE	
			TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/8 (9.5)	1/2 (12.7)	3/4 (19.1)	1,571 (7.0)	2,295 (10.2)	1,987 (8.8)	2,903 (12.9)	1,908 (8.5)	2,401 (10.7)
1/2 (12.7)	5/8 (15.9)	1 (25.4)	2,113 (9.4)	2,585 (11.5)	2,673 (11.9)	3,270 (14.5)	2,462 (11.0)	2,401 (10.7)

* The tabulated values are for RX anchors installed at a minimum of 12 diameters on center and minimum edge distance of 6 diameters for 100 percent anchor efficiency. Spacing and edge distance may be reduced to 6 diameters spacing and 3 diameter edge distance provided the values are reduced 50 percent. Linear Interpolation may be used for intermediate spacings and edge margins.

* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

Multi-Set II Drop-In Anchors Anchoring Overhead in 3000 PSI Lightweight Concrete On Metal Deck

ANCHOR In. (mm)	DRILL HOLE DIAMETER In. (mm)	EMBEDMENT In. (mm)	3000PSI (20.7 MPa) CONCRETE			
			ULTIMATE TENSION LOAD Lbs. (kN)		ALLOWABLE WORKING LOAD Lbs. (kN)	
RX-38 Drop-In	1/2 (12.7)	3/4 (19.1)	Upper Flute	1,410 (6.3)	353 (1.6)	
			Lower Flute	1,206 (5.4)	301 (1.3)	

*Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

