

CARRIER PNEUMATIC COMPONENTS

METAL / PVC
TUBING, BENDS,
COUPLINGS, FITTINGS
& ACCESSORIES



METFLO[™]

A product line of H-P Products, Inc.

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*H-P Products, Inc. is the leading supplier of tubular components for carrier pneumatic systems. We have...
"Thousands of solutions under one roof".*

TUBING

Our standard catalog items include tube sizes from 2-1/4" through 6" OD, plus 4" x 7" oval in zinc-coated (galvanized) steel. Also, these metal parts are "ID Friendly" with our PVC line of tubular parts also featured. With "Thousands of solutions under one roof", H-P Products, Inc. gives you maximum flexibility in designing a system with metal and PVC applications.

Tube Dimensions

14 Gauge	=	.083"
16 Gauge	=	.065"
18 Gauge	=	.049"
20 Gauge	=	.035"

OVERALL BENDING CAPABILITIES

Tube Bending Capabilities

OD (INCHES)	CENTER LINE RADIUS (INCHES)	GAUGE	WALL THICKNESS (INCHES)
1-1/2	1-3/4, 2-1/2, 3, 3-1/4, 4, 6, 7-1/2, 9, 12, 15, 18, 24, 30, 36	11, 14, 16, 18	.120, .083, .065, .049
1-5/8	2-1/8	16	.065
1-3/4	2-1/2, 8, 9, 12, 15, 18, 24, 30, 36	11, 14, 16	.120, .083, .065
2	2, 2-1/2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 18, 24, 30, 36, 48	11, 14, 16, 18, 20	.120, .083, .065, .049, .035
2-1/8	2-7/8, 3-1/2, 4-1/4, 5, 18, 20, 24, 36	11, 16	.120, .065
2-1/4	2-1/2, 3, 4, 5-1/2, 8, 9, 12, 15, 18, 24, 30, 36, 42	11, 13, 14, 16, 18, 20	.120, .095, .083, .065, .049, .035
2-3/8	2-3/8, 6, 8	16, 18	.065, .049
2-1/2	2-1/2, 3-1/4, 3-3/4, 4, 5, 6, 9, 12, 15, 18, 24, 30, 36, 48	11, 13, 14, 16	.120, .095, .083, .065, .049
2-3/4	2-3/4, 3-7/8, 9, 15, 24, 30	11, 14, 16, 18	.120, .083, .065, .049
2-7/8	10, 10-1/2, 60	15, 16	.072, .065
3	3, 4-1/2, 6, 7-1/2, 9, 12, 15, 18, 24, 30, 36, 38, 48	11, 12, 13, 14, 16, 18	.120, .109, .095, .083, .065, .049
3-1/8	6	16	.065
3-1/2	4, 5, 8, 8-3/4, 9, 12, 13, 15, 18, 24, 30, 36, 48, 60	11, 14, 15, 16, 18	.120, .083, .072, .065, .049
4	4, 6, 8, 9, 10, 12, 18, 24, 30, 32, 36, 48, 60	10, 11, 14, 16, 18	.134, .120, .083, .065, .049
4-1/4	60	11, 13, 14	.120, .095, .083
4-1/2	9, 12, 16, 18, 20, 24, 30, 32, 36, 48, 60	11, 14, 16	.120, .083, .065
5	7-1/2, 12, 12-1/2, 18, 24, 30, 36, 48, 60, 72	10, 11, 14, 16	.134, .120, .083, .065
6	9, 15, 24, 30, 36, 48, 60, 72	10, 11, 14, 16	.134, .120, .083, .065
8	12, 20, 32, 48, 60, 72	11, 14	.120, .083
10	32, 48, 60, 72	11, 12	.120, .109
4 x 7	48, 60	16	.065

KEY

OD = Outside Diameter
ID = Inside Diameter
ERW = Electric Welded Resistance
NPS = Nominal Pipe Size
All reference dimensions are nominal.

Pipe Bending Capabilities

NPS (INCHES)	OD (INCHES)	CENTER LINE RADIUS (INCHES)	SCHEDULE (INCHES)				
			5	10	40	80	OTHER
1-1/4	1.660	5, 12, 18	-	-	.140	-	-
1-1/2	1.900	6, 9, 12, 18, 36	-	-	.145	-	.200
2	2.375	6, 8, 12, 18, 24, 30, 36, 48	.065	.109	.154	.218	.218
2-1/2	2.875	9, 10, 10-1/2, 12, 24, 30, 36, 48	.083	.120	.203	.276	-
3	3.500	5, 8, 8-3/4, 9, 12, 13, 15, 18, 24, 30, 36, 48, 60	.083	.120	.216	.300	.188
3-1/2	4.000	6, 8, 9, 10, 12, 18, 24, 30, 36, 48, 60	.083	.120	-	.300	-
4	4.500	9, 12, 16, 18, 20, 24, 30, 36, 48, 60	.083	.120	.237	.337	.188, .337
5	5.563	24, 30, 36, 48, 60, 72	-	.134	.258	.375	-
6	6.625	24, 30, 36, 48, 60, 72	-	.134	.280	.432	.188, .250
8	8.625	32, 48, 60, 72	-	.148	.322	-	.188, .250

CATALOG PART VARIATIONS

If our standard items don't meet your needs, contact us for immediate assistance. Custom tube fabrications are available to meet your exact specifications.

SPECIAL SERVICE

Please call for additional details on this application:

- **Tapecoat**

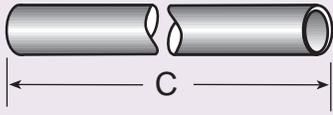
For additional corrosion protection underground, we can apply a tar-backed tape to the outside of the part.

DELIVERY

Fast delivery is available on a wide selection of in-stock MetFlo Tubing, Bends, Couplings, Fittings and Installation Components. We'll also make every effort to meet emergency requirements for non-stock items.

NOTE

Specifications subject to change without notice, without incurring any obligation on our part.



Standard Tubing
(Straight End)

Standard Tubing (Straight Ends)

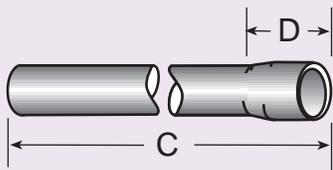
• Zinc-Coated (Galvanized) Steel

OD	C LENGTH	NOMINAL WALL THICKNESS	GAUGE	PART NUMBER
2-1/4"	12' 6"	.035"	20	29012
3"	12' 6"	.049"	18	39012
4"	12' 6"	.065"	16	49012
4"	10'	.065"	16	49010
4-1/2"	12' 6"	.065"	16	45012
4-1/2"	10'	.065"	16	45010
5"	10'	.083"	14	59010
6"	12' 6"	.065"	16	69012
6"	10'	.065"	16	69010
4" x 7"	10'	.065"	16	79010

• OUR STANDARD STOCK IS IN 10' AND 12'6" LENGTHS, BUT WE WILL CUT TO YOUR SPECIFICATIONS

Standard Tubing (One End Expanded)*

• Zinc-Coated (Galvanized) Steel



Standard Tubing
(One End Expanded)

OD	C LENGTH	D EXP DEPTH	NOMINAL WALL THICKNESS	GAUGE	PART NUMBER
2-1/4"	12' 6"	1-3/4"	.035"	20	29000
3"	12' 6"	2-1/8"	.049"	18	39000
4"	12' 6"	3-3/4"	.065"	16	49000
4"	10'	3-3/4"	.065"	16	49010-1
4-1/2"	12' 6"	3-3/4"	.065"	16	45000
4-1/2"	10'	3-3/4"	.065"	16	45010-1
5"	10'	4"	.083"	14	59010-1
6"	12' 6"	4-3/4"	.065"	16	69000
6"	10'	4-3/4"	.065"	16	69010-1
4" x 7"	10'	4-3/4"	.065"	16	79010-1

• OUR STANDARD STOCK IS IN 10' AND 12'6" LENGTHS, BUT WE WILL CUT TO YOUR SPECIFICATIONS

* ID OF EXPANSION = TUBE OD

KEY

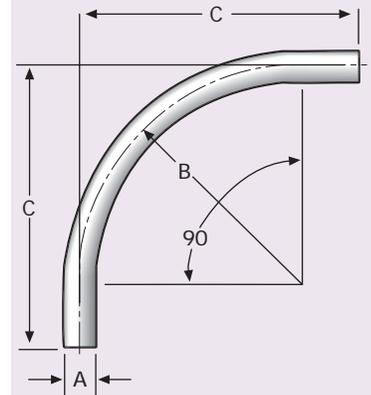
OD = Outside Diameter
 EXP = Expansion
 ID = Inside Diameter
 CLR = Center Line Radius
 TAN = Tangent
 All reference dimensions are nominal.

Straight Ends

• Zinc-Coated (Galvanized) Steel

A OD	B CLR	C	TAN	GAUGE	PART NUMBER
2-1/4"	18"	23"	3-7/8"	20	29218
2-1/4"	24"	31-1/4"	6-1/8"	20	29224
2-1/4"	42"	53"	6"	20	29242
3"	24"	31-1/2"	6"	18	39224
3"	30"	37-1/2"	6"	18	39230
3"	38"	50"	8-1/4"	18	39238
3"	48"	62-3/4"	13-1/4"	18	39248
4"	36"	49-1/2"	11-7/16"	16	49236
4"	48"	63-1/4"	13-1/4"	16	49248
4"	60"	74"	12"	16	49260
4-1/2"	20"	27-7/8"	5-5/16"	16	45220
4-1/2"	24"	37-3/4"	11-1/2"	16	45224
4-1/2"	30"	43-3/4"	11-1/2"	16	45230
4-1/2"	48"	63-1/2"	13-1/4"	16	45248
4-1/2"	60"	75-1/8"	12-7/8"	16	45260
6"	30"	46-1/2"	13-1/2"	16	69230
6"	36"	48"	12"	16	69236
6"	48"	73-3/8"	22-3/8"	16	69248
6"	60"	75-7/8"	12-7/8"	16	69260
4" X 7" (FLAT BEND)	48"	74-1/8"	24"	16	70248*
4" X 7" (EDGE BEND)	48"	74-1/8"	24"	16	7E248**
4" X 7" (FLAT BEND)	60"	84"	24"	14	70260*
4" X 7" (EDGE BEND)	60"	84"	24"	14	7E260**

* NEUTRAL AXIS THRU 7" DIMENSION
 ** NEUTRAL AXIS THRU 4" DIMENSION



90° Long Radius Bend
(Straight End)

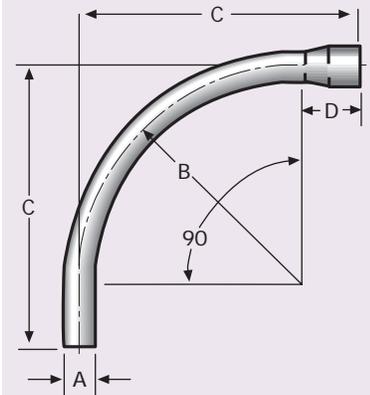
Air Relief Bends are Available

One End Expanded (ID of Expansion = Tube OD)

• Zinc-Coated (Galvanized) Steel

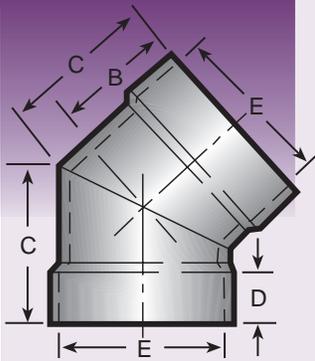
A OD	B CLR	C	D EXP DEPTH	TAN	GAUGE	PART NUMBER
2-1/4"	18"	23"	1-3/4"	3-7/8"	20	29218-1
2-1/4"	24"	31-1/4"	1-3/4"	6-1/8"	20	29224-1
2-1/4"	42"	53"	1-3/4"	6"	20	29242-1
3"	24"	31-1/2"	2-1/8"	6"	18	39224-1
3"	30"	37-1/2"	2-1/8"	6"	18	39230-1
3"	38"	50"	2-1/8"	8-1/4"	18	39238-1
3"	48"	62-3/4"	2-1/8"	13-1/4"	18	39248-1
4"	36"	49-1/2"	3-3/4"	11-7/16"	16	49236-1
4"	48"	63-1/4"	3-3/4"	13-1/4"	16	49248-1
4"	60"	74"	3-3/4"	12"	16	49260-1
4-1/2"	20"	27-7/8"	3-3/4"	5-5/16"	16	45220-1
4-1/2"	24"	37-3/4"	3-3/4"	11-1/2"	16	45224-1
4-1/2"	30"	43-3/4"	3-3/4"	11-1/2"	16	45230-1
4-1/2"	48"	63-1/2"	3-3/4"	13-1/4"	16	45248-1
4-1/2"	60"	75-1/8"	3-3/4"	12-7/8"	16	45260-1
6"	30"	46-1/2"	4-3/4"	13-1/2"	16	69230-1
6"	36"	48"	4-3/4"	12"	16	69236-1
6"	48"	73-3/8"	4-3/4"	22-3/8"	16	69248-1
6"	60"	75-7/8"	4-3/4"	12-7/8"	16	69260-1
4" X 7" (FLAT BEND)	48"	74-1/8"	4-3/4"	24"	16	70248-1*
4" X 7" (EDGE BEND)	48"	74-1/8"	4-3/4"	24"	16	7E248-1**

* NEUTRAL AXIS THRU 7" DIMENSION
 ** NEUTRAL AXIS THRU 4" DIMENSION

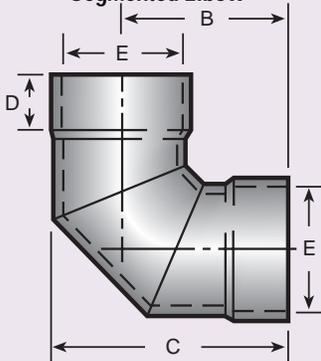


90° Long Radius Bend
(One End Expanded)

METAL TUBING

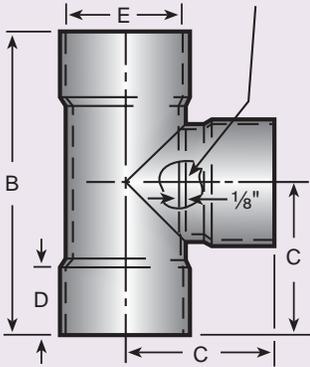


Standard 45° Segmented Elbow

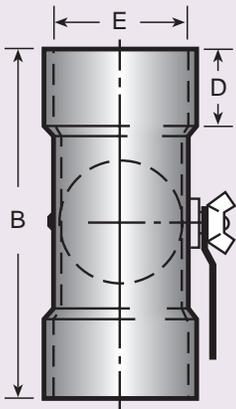


Standard 90° Segmented Elbow

GUIDE: 1/8 x 1/4
or 3/16 x 3/8



Standard 90° Segmented Tee



Standard Windgate

Standard 45° Segmented Elbows

• Zinc-Coated (Galvanized) Steel

E ID	B CENTER TO END	C	D EXP DEPTH	GAUGE	PART NUMBER
2-1/4"	2-1/8"	2-9/16"	1-1/4"	20	29101
3"	2-5/8"	3-1/4"	1-1/4"	16	39101
4"	2-7/8"	3-11/16"	1-1/4"	16	49101
5"	3-5/8"	4-5/8"	1-1/2"	14	59101
6"	3-3/4"	5"	1-1/2"	14	69101

Standard 90° Segmented Elbows

• Zinc-Coated (Galvanized) Steel

E ID	B CENTER TO END	C	D EXP DEPTH	GAUGE	PART NUMBER
2-1/4"	3-1/4"	4-3/8"	1-1/4"	20	29202
3"	3-7/8"	5-3/8"	1-1/4"	16	39202
4"	4-15/16"	6-15/16"	1-1/4"	16	49202*
5"	5-3/8"	7-7/8"	1-1/2"	14	59202
6"	6"	9"	1-1/2"	14	69202

* NOT SEGMENTED

Standard 90° Segmented Tees

• Zinc-Coated (Galvanized) Steel

E ID	B	C	D EXP DEPTH	GAUGE	PART NUMBER
2-1/4"	5-3/4"	2-7/8"	1-1/4"	20	29303
3"	6-1/2"	3-1/4"	1-1/4"	18	39303
4"	7-3/4"	3-7/8"	1-1/4"	16	49303
4-1/2"	7-1/2"	3-3/4"	1-1/4"	16	45303*
6"	12"	6"	1-1/2"	16	69303

* BRANCH IS 4" ID, CENTER TO END 5"

Standard Windgates

• Zinc-Coated (Galvanized) Steel

E ID	B LENGTH	D EXP DEPTH	GAUGE	PART NUMBER
2-1/4"	5"	1-1/4"	20	WG-290
3"	5"	1-1/4"	18	WG-390
4"	5"	1-1/4"	16	WG-490

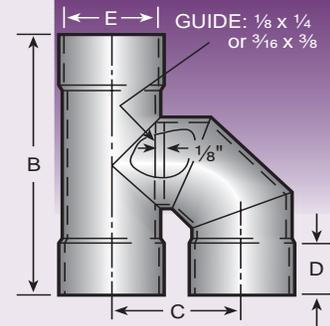
KEY

ID = Inside Diameter
EXP = Expansion
OD = Outside Diameter
All reference dimensions are nominal.

Standard Segmented Bypass

- Zinc-Coated (Galvanized) Steel

E ID	B	C	D EXP DEPTH	GAUGE	PART NUMBER
2-1/4"	6-1/2"	3"	1-1/4"	20	29404
3"	7-3/4"	4-1/4"	1-1/4"	18	39404
4"	8-11/16"	5-1/2"	1-1/4"	16	49404
4-1/2"	9"	6"	1-1/4"	16	45404
6"	13-1/2"	8"	1-1/2"	16	69404



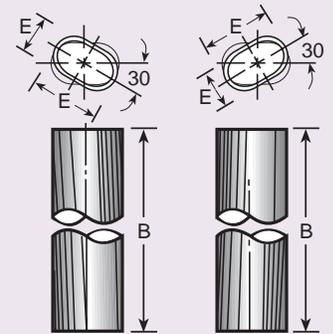
Standard Segmented Bypass

Standard 30° Twists

- Cross section nominal 4" x 7" 16 gauge.
- Zinc-Coated (Galvanized) Steel.

E ID	B	TWIST	PART NUMBER
4" x 7"	60"	Clockwise (Right Hand)	79111
4" x 7"	60"	Counter Clockwise (Left Hand)	79333

• EXPANDED ENDS NOT AVAILABLE.



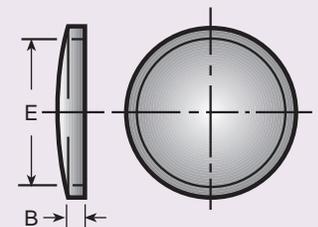
79333 79111

Standard 30° Twists

Standard Tube Caps

- Zinc-Coated (Galvanized) Steel

E ID	B	GAUGE	PART NUMBER
2-1/4"	1/2"	18	TC-290
3"	1/2"	18	TC-390
4"	7/16"	18	TC-490
4-1/2"	1-5/16"	18	TC-450
6"	1-5/16"	14	TC-690
4" x 7"	1"	16	2044

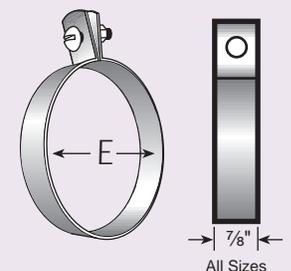


Standard Tube Cap

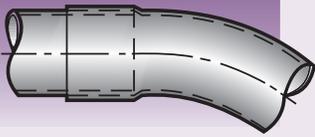
Standard Tube Hangers

- Nut and bolt included.

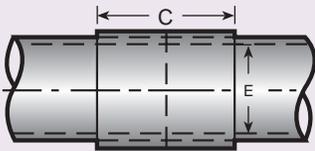
FOR TUBE OD SIZE	E ID	GAUGE	PART NUMBER
2-1/4"	2-1/4"	16	TH-212
3"	3"	16	TH-300
4"	4"	16	TH-400
4-1/2"	4-1/2"	16	TH-450
5"	5"	16	TH-500
6"	6"	16	TH-600



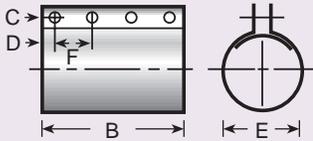
Standard Tube Hanger



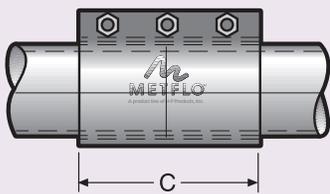
Expanded Fitting



Solid Sleeve



Clamp Sleeve



MetFlo™ Compression Coupling

PSIG = Pounds Per Sq. Inch In Gravity
 ID = Inside Diameter
 EXP = Expansion
 OD = Outside Diameter

Expanded Fitting

Zinc-Coated (Galvanized) Steel. This type of connection enables a straight section of tubing to slip inside the expanded end of the fitting. The two pieces can then be "locked" together by any one of several techniques - brazing, welding, industrial adhesive, or shrink sleeve. For use in low pressure (under 15 PSIG) systems.

Standard Solid Sleeves

Zinc-Coated (Galvanized) Steel. Can be used for joining any two straight ends of tubing or fittings. The solid sleeve is a slip coupling that fits the OD of the joint which can then be glued, brazed, welded, or covered by a shrink sleeve. For use in low pressure (under 15 PSIG) systems.

C LENGTH	E ID	GAUGE	PART NUMBER
3-1/2"	2-1/4"	20	29003
4"	3"	18	39003
5"	4"	16	49003
5"	4-1/2"	16	45003
6"	5"	14	59003
6"	6"	16	69003
6"	4"x7"	16	79003

Clamp Sleeves or Compression Couplings

Zinc-Coated (Galvanized) Steel. Offers easy "tear down" function. Straight end tubing or fittings butt together within the ID of the coupling or sleeve, and the joint is mechanically locked simply by tightening the bolts which are included. For use in low pressure (under 15 PSIG) systems.

Standard Clamp Sleeves

Zinc-Coated (Galvanized) Steel. Bolt holes are 9/32". Nuts and bolts are included. For use in low pressure (under 15 PSIG) systems.

E ID	B LENGTH	C NO. OF HOLES	D*	F**	GAUGE	PART NUMBER
2-1/4"	4"	3	1/2"	1-1/2"	20	CS-290
3"	4"	3	1/2"	1-1/2"	20	CS-390
4"	5"	4	1/4"	1-1/2"	20	CS-490
4-1/2"	5"	4	1/4"	1-1/2"	20	CS-450
6"	5-7/8"	4	5/16"	1-3/4"	18	CS-690
4"x7"	5-7/8"	4	5/16"	1-3/4"	16	CS-790

*DIMENSION D = DISTANCE CENTER OUTSIDE HOLE TO END ** DIMENSION F = DISTANCE BETWEEN CENTER OF HOLES

MetFlo™ Compression Couplings

Zinc-Coated (Galvanized) Steel. With black neoprene liner & stainless steel grounding strip. For use in low pressure (under 15 PSIG) systems.

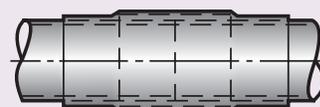
FOR TUBE OD SIZE	NO. OF BOLTS	C LENGTH	PART NUMBER
2-1/4"	3	6"	22503B10
3"	3	6"	30003B10
4"	3	6"	40003B10
4-1/2"	3	6"	45003B10
5"	3	8"	50003B10
5"	4	8"	50004B10
6"	3	8"	60003B10
6"	4	8"	60004B10

Shrink Sleeve

A heat shrinkable polyolefin band that literally shrinks and encircles the connection giving it mechanical strength and a positive seal. It can be used in conjunction with a solid sleeve or when using expanded fittings. Either way, gluing, brazing, and welding are eliminated. For use in low pressure (under 15 PSIG) systems.

Shrink Sleeves (4" Long)

FOR TUBE OD SIZE	PART NUMBER
2-1/4"	SS-212
3"	SS-300
4"	SS-400
4-1/2"	SS-450
5"	SS-500
6" & 4"x 7"	SS-600



Shrink Sleeve /
Protective Sleeve

Protection Sleeves (18" Long)

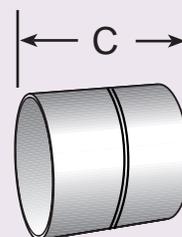
A heat shrinkable polyethelene band that literally shrinks and encircles the joint. It is primarily used for underground joint protection. For use in low pressure (under 15 PSIG) systems.

FOR TUBE OD SIZE	PART NUMBER
2-1/4"	PS-212
3"	PS-300
4"	PS-400
4-1/2"	PS-450
5"	PS-500
6" & 4"x 7"	PS-600

Standard Adapters (PVC to Metal)*

FOR TUBE OD SIZE	C LENGTH	PART NUMBER
4"	2-1/2"	PMA-400
4-1/2"	2-1/2"	PMA-450

* ADAPTERS ARE PVC MATERIAL.
• SEE PAGES 10-15 FOR PVC COMPONENTS.



Adapter

PVC TUBING

Our PVC product line offers you a choice of standard catalog items in 4" and 4-1/2" OD sizes. And these PVC parts are "ID friendly" with our corresponding metal line of tubular components featured in this catalog. With "Thousands of solutions under one roof", H-P Products, Inc. gives you maximum flexibility in designing a system with metal and PVC applications!

OUR MetFlo™ PVC TUBING & FITTINGS ARE:

- "ID Friendly" with metal tube
- Lightweight
- Non-corrosive
- Easy to assemble into offsets
- Economical to install
- Wrinkle-free bends with a uniform ID throughout

MATERIAL SPECIFICATIONS:

- 1120 Type 1, Grade1, Gray Rigid PVC
- 4" OD parts are 3.875" ID
- 4-1/2" OD Parts are 4.385" ID

Standard Tubing (Straight Ends)

- Standard PVC Tubing

OD	C (LENGTH)	WALL THICKNESS	PART NUMBER
4"	10'	.120"	P40010
4"	12'	.120"	P40012
4.5"	10'	.120"	P45010
4.5"	12'	.120"	P45012

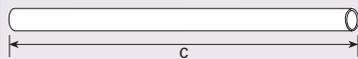
• OUR STANDARD STOCK IN 10' AND 12' LENGTHS, BUT WE WILL CUT TO YOUR SPECIFICATIONS

Standard Tubing (Slip Coupling One End*)

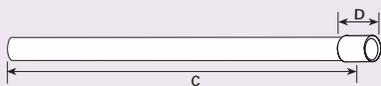
- Standard PVC Tubing

OD	C (LENGTH)	D	WALL THICKNESS	PART NUMBER
4"	10'	5"	.120"	P40010-C
4"	12'	5"	.120"	P40012-C
4.5"	10'	5"	.120"	P45010-C
4.5"	12'	5"	.120"	P45012-C

• OUR STANDARD STOCK IN 10' AND 12' LENGTHS, BUT WE WILL CUT TO YOUR SPECIFICATIONS
* SLIP COUPLING EXTENDS 2-1/2" BEYOND TUBE LENGTH (C).



Standard PVC Tubing (Straight End)



Standard PVC Tubing (Slip Coupling One End)

KEY

OD = Outside Diameter
ID = Inside Diameter
CLR = Center Line Radius
All reference dimensions are nominal.

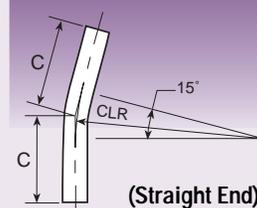
15° Long Radius Bends

• Standard PVC Tubing

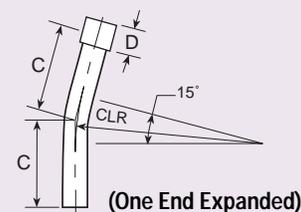
OD	CLR	C	D	WALL THICKNESS	PART NUMBER
4"	48"	10.25"	-	.120"	P401548
4.5"	20"	6.5"	-	.120"	P451520
4"	48"	10.25"	5"	.120"	P401548-C*
4.5"	20"	6.5"	5"	.120"	P451520-C*

* SLIP COUPLING ONE END. EXTENDS 2.5" BEYOND TUBE LENGTH (C).
 • NOMINAL STANDARD TANGENT IS 4"

15° Long Radius Bend



(Straight End)



(One End Expanded)

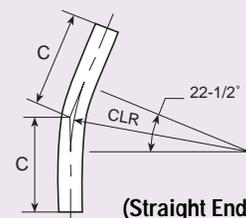
22.5° Long Radius Bends

• Standard PVC Tubing

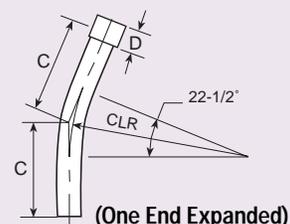
OD	CLR	C	D	WALL THICKNESS	PART NUMBER
4"	48"	13.5"	-	.120"	P4022548
4"	48"	13.5"	5"	.120"	P4022548-C*

* SLIP COUPLING ONE END. EXTENDS 2.5" BEYOND TUBE LENGTH (C).
 • NOMINAL STANDARD TANGENT IS 4"

22.5° Long Radius Bend



(Straight End)



(One End Expanded)

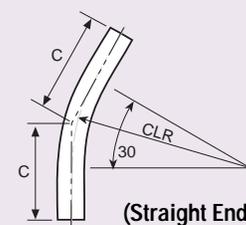
30° Long Radius Bends

• Standard PVC Tubing

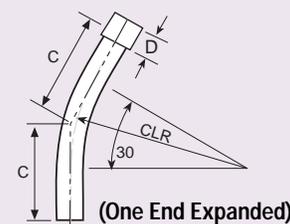
OD	CLR	C	D	WALL THICKNESS	PART NUMBER
4"	48"	17"	-	.120"	P403048
4.5"	20"	9.25"	-	.120"	P453020
4"	48"	17"	5"	.120"	P403048-C*
4.5"	20"	9.25"	5"	.120"	P453020-C*

* SLIP COUPLING ONE END. EXTENDS 2.5" BEYOND TUBE LENGTH (C).
 • NOMINAL STANDARD TANGENT IS 4"

30° Long Radius Bend



(Straight End)

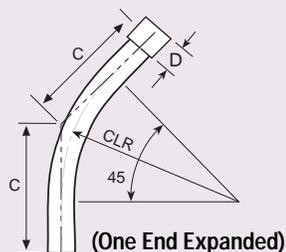
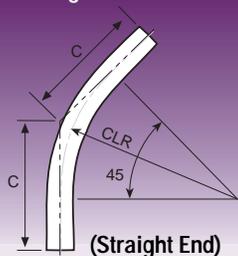


(One End Expanded)

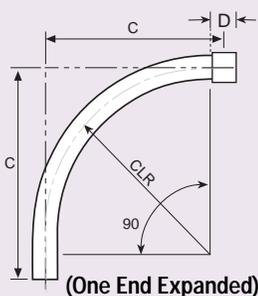
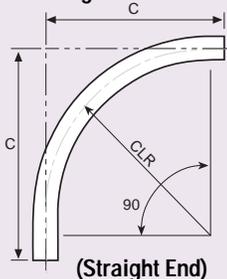
PVC TUBING

Standard PVC Long Radius Bends

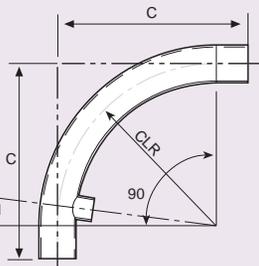
45° Long Radius Bends



90° Long Radius Bend

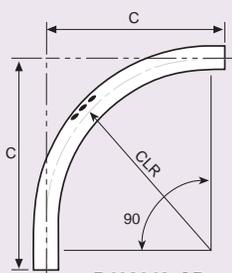


90° Long Radius Bend with Air Relief



P459020-AR

Stud is 2-1/2" Nominal Pipe OD



P409048-AR

(6) 1-1/8" ID Holes
(Center holes are located at 45°)

45° Long Radius Bends

• Standard PVC Tubing

OD	CLR	C	D	WALL THICKNESS	PART NUMBER
4"	48"	24"	-	.120"	P404548
4.5"	20"	12.25"	-	.120"	P454520
4"	48"	24"	5"	.120"	P404548-C*
4.5"	20"	12.25"	5"	.120"	P454520-C*

* SLIP COUPLING ONE END. EXTENDS 2.5" BEYOND TUBE LENGTH (C).

• NOMINAL STANDARD TANGENT IS 4"

90° Long Radius Bends

• Standard PVC Tubing

OD	CLR	C	D	WALL THICKNESS	PART NUMBER
4"	48"	52"	-	.120"	P409048
4.5"	20"	24"	-	.120"	P459020
4"	48"	52"	5"	.120"	P409048-C*
4.5"	20"	24"	5"	.120"	P459020-C*

* SLIP COUPLING ONE END. EXTENDS 2.5" BEYOND TUBE LENGTH (C).

• NOMINAL STANDARD TANGENT IS 4"

90° Long Radius Bends with Air Relief

• Standard PVC Tubing

• Part variations are easily accommodated.

OD	CLR	C	D	WALL THICKNESS	PART NUMBER
4"	48"	52"	-	.120"	P409048-AR
4.5"	20"	24"	-	.120"	P459020-AR

• NOMINAL STANDARD TANGENT IS 4"

KEY

OD = Outside Diameter

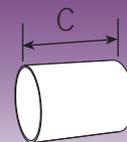
CLR = Center Line Radius

ID = Inside Diameter

Standard PVC Couplings

- Standard PVC Tubing

SIZE	C (LENGTH)	WALL THICKNESS	PART NUMBER	DESCRIPTION
4"	5"	.120"	P40003	
4.5"	5"	.120"	P45003	
4.5"	5"	.120"	P45103	Clear and Tapered



Standard PVC Coupling

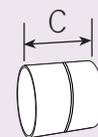
Standard PVC Adhesive

DESCRIPTION	PART NUMBER
1/2 pint can, PVC adhesive	P2862

Standard Adapters (PVC to Metal)

- Standard PVC Tubing

SIZE	C (LENGTH)	PART NUMBER
4"	2.5"	PMA-400
4.5"	2.5"	PMA-450



Standard PVC Adapter

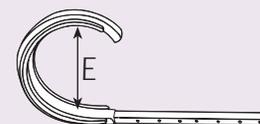
Standard Adapter (PVC to Acrylic)

- Standard PVC Tubing

SIZE	C (LENGTH)	PART NUMBER
4.5"	2.5"	PAA-450

Standard Plastic Hangers

E (ID)	PART NUMBER
4" - 4.5"	PTH-400

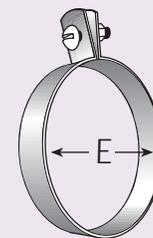


Standard Plastic Hanger

Standard Metal Hangers

- Zinc-coated (Galvanized)
- 16 Gauge Steel

E (ID)	PART NUMBER
4"	TH-400
4.5"	TH-450



Standard Metal Hanger

Offset Chart for PVC 4" OD Tube Systems

90° / 48" CLR / 4" TAN

A	B	C
8' - 8"	8' - 8"	0"
9' - 1-1/4"	8' - 8"	5-1/4"

22.5° / 48" CLR / 4" TAN

A	B	C
10-3/8"	4' - 4-1/8"	0"
1' - 3/8"	4' - 9"	5-1/4"
1' - 1"	4' - 10-1/2"	6-7/8"
1' - 2"	5' - 7/8"	9-1/2"
1' - 3"	5' - 3-5/16"	12-1/8"
1' - 4"	5' - 5-3/4"	14-11/16"
1' - 5"	5' - 8-1/8"	17-5/16"
1' - 6"	5' - 10-9/16"	19-15/16"
1' - 7"	6' - 15/16"	22-9/16"
1' - 8"	6' - 3-3/8"	25-3/16"
1' - 9"	6' - 5-13/16"	27-3/4"
1' - 10"	6' - 8-3/16"	30-3/8"
1' - 11"	6' - 10-5/8"	33"
2'	7' - 1-1/16"	35-5/8"
2' - 1"	7' - 3-7/16"	38-1/4"
2' - 2"	7' - 5-7/8"	40-7/8"
2' - 3"	7' - 8-1/4"	43-7/16"

45° / 48" CLR / 4" TAN

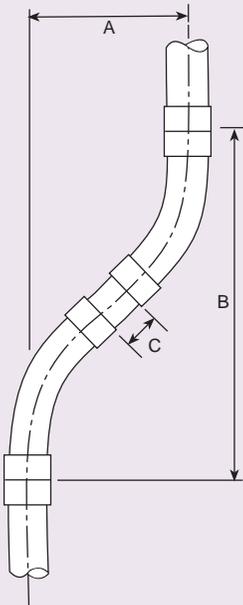
A	B	C
2' - 9-3/4"	6' - 9-9/16"	0
3' - 1-1/2"	7' - 1-1/4"	5-1/4"
3' - 2"	7' - 1-3/4"	6"
3' - 3"	7' - 2-3/4"	7-3/8"
3' - 4"	7' - 3-3/4"	8-13/16"
3' - 5"	7' - 4-3/4"	10-3/16"
3' - 6"	7' - 5-3/4"	11-5/8"
3' - 7"	7' - 6-3/4"	13-1/16"
3' - 8"	7' - 7-3/4"	14-7/16"
3' - 9"	7' - 8-3/4"	15-7/8"
3' - 10"	7' - 9-3/4"	17-5/16"
4'	7' - 11-3/4"	20-1/8"
4' - 2"	8' - 1-3/4"	22-15/16"
4' - 4"	8' - 3-3/4"	25-3/4"
4' - 6"	8' - 5-3/4"	28-5/8"
4' - 8"	8' - 7-3/4"	31-7/16"
5'	8' - 11-3/4"	37-1/16"

15° / 48" CLR / 4" TAN

A	B	C
5-5/16"	3' - 4-9/16"	0"
6-11/16"	3' - 9-5/8"	5-1/4"
7"	3' - 10-3/4"	6-7/16"
8"	4' - 2-1/2"	10-1/4"
9"	4' - 6-1/4"	14-1/8"
10"	4' - 9-15/16"	18"
11"	5' - 1-11/16"	21-7/8"
1'	5' - 5-7/16"	25-3/4"
1' - 1"	5' - 9-1/8"	29-9/16"
1' - 2"	6' - 7/8"	33-7/16"
1' - 3"	6' - 4-7/16"	37-1/8"
1' - 4"	6' - 8-3/8"	41-3/16"
1' - 5"	7' - 1/16"	45-1/16"
1' - 6"	7' - 3-13/16"	48-15/16"
1' - 7"	7' - 7-9/16"	52-3/4"
1' - 8"	7' - 11-1/4"	56-5/8"
1' - 9"	8' - 3"	60-1/2"

30° / 48" CLR / 4" TAN

A	B	C
1' - 4-7/8"	5' - 2-15/16"	0"
1' - 7-1/2"	5' - 7-1/2"	5-1/4"
1' - 8"	5' - 8-3/8"	6-1/4"
1' - 9"	5' - 10-1/8"	8-1/4"
1' - 10"	5' - 11-13/16"	10-1/4"
1' - 11"	6' - 1-9/16"	12-1/4"
2'	6' - 3-5/16"	14-1/4"
2' - 1"	6' - 5"	16-1/4"
2' - 2"	6' - 6-3/4"	18-1/4"
2' - 3"	6' - 8-1/2"	20-1/4"
2' - 4"	6' - 10-1/4"	22-1/4"
2' - 6"	7' - 1-11/16"	26-1/4"
2' - 8"	7' - 5-1/8"	30-1/4"
2' - 10"	7' - 8-5/8"	34-1/4"
3'	8' - 1/16"	38-1/4"
3' - 2"	8' - 3-9/16"	42-1/4"
3' - 4"	8' - 7"	46-1/4"



KEY
 OD = Outside Diameter
 TAN = Tangent
 CLR = Center Line Radius
 All reference dimensions are nominal.
 A = Vertical or Horizontal offset
 B = Min. distance needed for offset
 C = Length of straight between bends

Offset Chart for PVC 4.5" OD Tube Systems

90° / 20" CLR / 4" TAN

A	B	C
4'	4'	0"
4' - 5-1/4"	4'	5-1/4"

45° / 20" CLR / 4" TAN

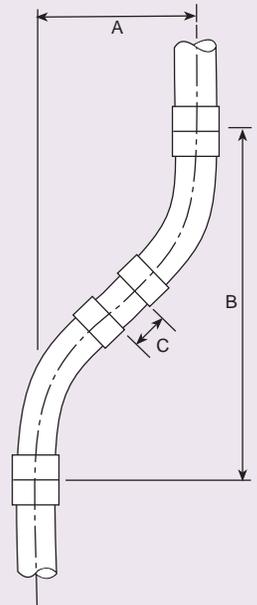
A	B	C
1' - 5-3/8"	3' - 5-15/16"	0"
1' - 9-1/16"	3' - 9-5/8"	5-1/4"
1' - 10"	3' - 10-9/16"	6-9/16"
1' - 11"	3' - 11-9/16"	7-15/16"
2'	4' - 9/16"	9-3/8"
2' - 1"	4' - 1-9/16"	10-13/16"
2' - 2"	4' - 2-9/16"	12-7/16"
2' - 3"	4' - 3-9/16"	13-5/8"
2' - 4"	4' - 4-9/16"	15"
2' - 5"	4' - 5-9/16"	16-7/16"
2' - 6"	4' - 6-9/16"	17-7/8"
2' - 7"	4' - 7-9/16"	19-1/4"
2' - 8"	4' - 8-9/16"	20-11/16"
2' - 9"	4' - 9-9/16"	22-1/8"
2' - 10"	4' - 10-9/16"	23-1/2"
2' - 11"	4' - 11-9/16"	24-15/16"
3'	5' - 9/16"	26-3/8"

30° / 20" CLR / 4" TAN

A	B	C
9-3/8"	2' - 10-15/16"	0"
1'	3' - 3-1/2"	5-1/4"
1' - 1"	3' - 5-1/4"	7-1/4"
1' - 2"	3' - 6-15/16"	9-1/4"
1' - 3"	3' - 8-11/16"	11-1/4"
1' - 4"	3' - 10-7/16"	13-1/4"
1' - 5"	4' - 3/16"	15-1/4"
1' - 6"	4' - 1-7/8"	17-1/4"
1' - 7"	4' - 3-5/8"	19-1/4"
1' - 8"	4' - 5-3/8"	21-1/4"
1' - 9"	4' - 7-1/16"	23-1/4"
1' - 10"	4' - 8-13/16"	25-1/4"
1' - 11"	4' - 10-9/16"	27-1/4"
2'	5' - 9/16"	29-1/4"
2' - 1"	5' - 2"	31-1/4"
2' - 2"	5' - 3-3/4"	33-1/4"
2' - 3"	5' - 5-1/2"	35-1/4"

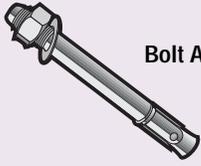
15° / 20" CLR / 4" TAN

A	B	C
3-7/16"	2' - 2-1/16"	0"
4-13/16"	2' - 7-1/8"	5-1/4"
5"	2' - 7-15/16"	6-1/16"
6"	2' - 11-5/8"	9-15/16"
7"	3' - 3-3/8"	13-3/4"
8"	3' - 7-1/8"	17-5/8"
9"	3' - 10-7/8"	21-1/2"
10"	4' - 2-9/16"	25-3/8"
11"	4' - 6-5/16"	29-1/4"
12"	4' - 10-1/16"	33-1/8"
1' - 1"	5' - 1-13/16"	37"
1' - 2"	5' - 5-1/2"	40-13/16"
1' - 3"	5' - 9-1/4"	44-11/16"
1' - 4"	6' - 1"	48-9/16"
1' - 5"	6' - 4-11/16"	52-7/16"
1' - 6"	6' - 8-7/16"	56-1/4"
1' - 7"	7' - 3/16"	60-1/8"

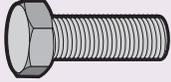


PVC TUBING

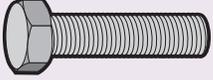
Anchor



Bolt Anchor



Hex Head Cap Screw
3/8" x 1"



Hex Head Cap Screw
3/8" x 1-1/4"



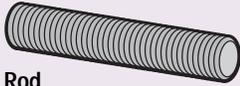
Hex Nut



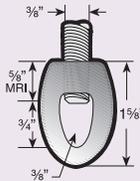
Split Lock Washer



Flat Washer

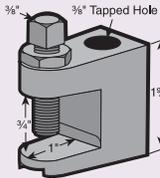
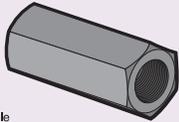


Threaded Rod

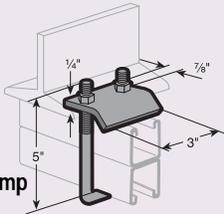


Eye Nut

Coupler Nut



Beam Clamp



Beam Clamp

MRI = Minimum Rod Insertion
Zinc = Galvanized Carbon Steel
OD = Outside Diameter
All reference dimensions are nominal.

KEY

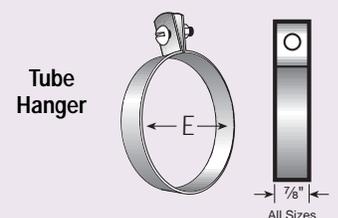
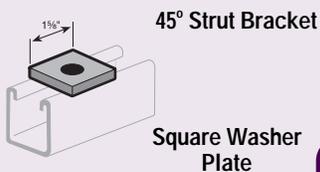
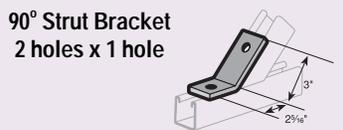
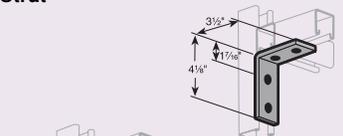
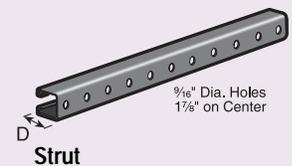
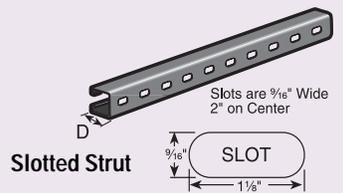
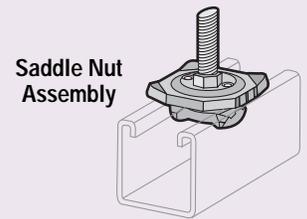
Installation Components

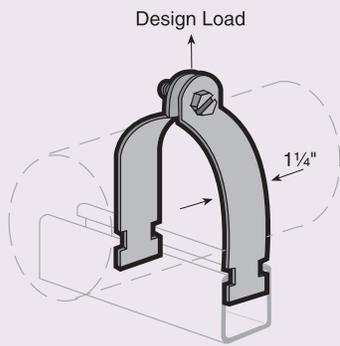
H-P Products, Inc. gives you everything you need to get your system up and running, all in one complete installation package. If you're searching for a particular installation component, we'll be glad to help you find whatever you're looking for. Our "one-stop-shopping" will help you lower your inventory costs and spend less time looking for parts. And, when it's time for installation, you'll have all the components you need on-the-spot.

DESCRIPTION	SIZE	MATERIAL	PKGD.	PART NO.
Anchor , Hilti®	3/8" x 1-9/16" (Length)	Zinc	50 pc.	ANC-0380
Bolt Anchor Includes Washer and Hex Nut	3/8" x 3-3/4" (Overall Length) 1-1/8" Thread Length	Zinc	100 pc.	ANC-0381
Features: Comprehensive performance testing in concrete, lightweight concrete, and grout-filled block base materials. Can be installed in a bottomless hole. Anchor size is same as hole size for easy installation. Hilti® Kwik Bolt II Stud Anchor System.				
Hex Head Cap Screw	3/8" x 1" (Length)	Zinc	50 pc.	HCS-0380
Hex Head Cap Screw "More Length When You Need It"	3/8" x 1-1/4" (Length)	Zinc	50 pc.	HCS-0381
Hex Nut	3/8"	Zinc	50 pc.	HXN-0380
Flat Washer	3/8"	Zinc	50 pc.	FW-0380
Split Lock Washer	3/8"	Zinc	50 pc.	LKW-0380
Threaded Rod	3/8" x 6' (Length)	Zinc	each	ATR-100
Eye Nut , Maximum Allowable Load is 610 lbs. "Works Great With MetFlo™ Tube Hangers"	3/8" Tapped Hole	Malleable Iron - Plain.	each	EN-0380
Coupler Nut	3/8" x 1-3/4" (Length)	Zinc	each	CN-0380
Beam Clamp with Zinc Set Screw and Lock Nut. Maximum Allowable Load, in top or bottom position, is 550 lbs.	3/8" Tapped Hole	Malleable Iron - Galv.	each	BC-037T
Beam Clamp with Set Screw and Lock Nut. Maximum Allowable Load, in top position, is 500 lbs.; in bottom position, 250 lbs. "The Cost-Effective Solution When You Don't Need Our Heavy-Duty Beam Clamp (BC-037T)"	3/8" Tapped Hole	Malleable Iron - Plain	each	BC-100
Beam Clamp with U-Bolt and 3/8" Hex Nuts included, for use with Beams up to 3/4" Flanges. Design Load is 1000 lbs. Use in pairs only		Zinc	2 pc.	BC-2786

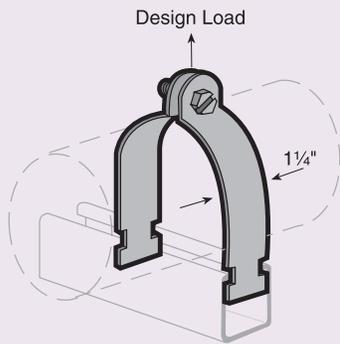
Installation Components - cont.

DESCRIPTION	SIZE	MATERIAL	PKGD.	PART NO.
Channel Nut , without spring	3/8"	Zinc	each	CHN-0380
Saddlenut Assembly <i>"Replaces Square Washer Plate and a Channel Nut Combination"</i>		Zinc	25	SN-0380
Hanger Rod Stiffener Assembly <i>"Adds Rigidity to all Threaded Rod / Strut Channel Combinations where Earthquake Activity is a Concern"</i>		Zinc	each	SA-100
Slotted Strut , 14 Gauge	13/16"(D) x 1-5/8", 10' Length	Zinc	each	UN-100
Slotted Strut , 14 Gauge <i>"An Economical Alternative When You Don't Require Our Heavy-Duty Strut (UN-202)"</i>	1-5/8"(D) x 1-5/8", 10' Length	Zinc	each	UN-201
Slotted Strut , 12 Gauge	1-5/8"(D) x 1-5/8", 10' Length	Zinc	each	UN-202
Strut , 12 Gauge	9/16" Hole Strut 1-5/8"(D) x 1-5/8", 10' Length	Zinc	each	UN-200
90° Strut Bracket	2 x 2, 9/16" Holes	Zinc	each	BRKT-0900
90° Strut Bracket	2 x 1, 9/16" Holes	Zinc	each	BRKT-0901
45° Strut Bracket	9/16" Holes	Zinc	each	BRKT-0450
Square Washer Plate	7/16" Hole for 3/8" Bolt Size	Zinc	100 pc.	SQW-0380
Tube Hanger , includes Bolt and Nut	For 1-1/2" OD Tube	Zinc	each	TH-150
Tube Hanger , includes Bolt and Nut	For 2" OD Tube	Zinc	each	TH-200
Tube Hanger , includes Bolt and Nut	For 2-1/8" and 2-1/4" OD Tube	Zinc	each	TH-212
Tube Hanger , includes Bolt and Nut	For 2-1/2" OD Tube	Zinc	each	TH-250
Tube Hanger , includes Bolt and Nut	For 3" OD Tube	Zinc	each	TH-300
Tube Hanger , includes Bolt and Nut	For 3-1/2" OD Tube	Zinc	each	TH-350
Tube Hanger , includes Bolt and Nut	For 4" OD Tube	Zinc	each	TH-400
Tube Hanger , includes Bolt and Nut	For 4-1/2" OD Tube	Zinc	each	TH-450
Tube Hanger , includes Bolt and Nut	For 4" to 4.5" Tube	Plastic	each	PTH-400
Tube Hanger , includes Bolt and Nut	For 5" OD Tube	Zinc	each	TH-500
Tube Hanger , includes Bolt and Nut	For 6" OD Tube	Zinc	each	TH-600
Tube Hanger , includes Bolt and Nut	For 8" OD Tube	Zinc	each	TH-800
Tube Hanger , includes Bolt and Nut	For 10" OD Tube	Zinc	each	TH-1000
Tube Hanger , includes Bolt and Nut	For 12" OD Tube	Zinc	each	TH-1200
Tube Hanger , includes Bolt and Nut	For 14" OD Tube	Zinc	each	TH-1400





Pipe Clamp



Tube Clamp

Installation Components - cont.

DESCRIPTION	SIZE	MATERIAL	PKGD.	PART NO.
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 1-1/2" Pipe Size	Zinc	4 pc.	PCL-150
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2" Pipe Size	Zinc	4 pc.	PCL-200
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2-1/2" Pipe Size	Zinc	4 pc.	PCL-250
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 3" Pipe Size	Zinc	4 pc.	TCL-350*
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 3-1/2" Pipe Size	Zinc	4 pc.	TCL-400*
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 4" Pipe Size	Zinc	4 pc.	TCL-450*
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 5" Pipe Size	Zinc	4 pc.	PCL-500
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 6" Pipe Size	Zinc	4 pc.	PCL-600
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 8" Pipe Size	Zinc	4 pc.	PCL-800**
* Tube Clamp also fits this pipe size.				
** 2 piece package				
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 600 lbs.	For 1-1/2" OD Tube	Zinc	4 pc.	TCL-150
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2" OD Tube	Zinc	4 pc.	TCL-200
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2-1/8" OD Tube	Zinc	4 pc.	TCL-212
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2-1/2" OD Tube	Zinc	4 pc.	TCL-250
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 3" OD Tube	Zinc	4 pc.	TCL-300
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 3-1/2" OD Tube	Zinc	4 pc.	TCL-350
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 4" OD Tube	Zinc	4 pc.	TCL-400
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 4-1/2" OD Tube	Zinc	4 pc.	TCL-450
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 5" OD Tube	Zinc	4 pc.	TCL-500
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 6" OD Tube	Zinc	4 pc.	TCL-600
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 8" OD Tube	Zinc	4 pc.	TCL-800**

** 2 piece package

OD = Outside Diameter
 Zinc = Galvanized
 Carbon Steel
 All reference dimensions
 are nominal.

KEY

Installation Components - cont.

DESCRIPTION	SIZE	MATERIAL	PKGD.	PART NO.
Cable Tie Features: One-piece construction. Easy to use. Permanent lock. Designed to withstand 90 lbs. of force. Richco Brand.	23" Length	Nylon	100 pc.	TIE-100
Cable Tie Features: One-piece construction. Easy to use. Permanent lock. Designed to withstand 60 lbs. of force. Catamount Brand. <i>"When Our Heavy-Duty Cable Tie (TIE-100) Isn't Necessary"</i>	24" Length	Nylon	50 pc.	TIE-101
Cable Tie Features: One-piece construction. Easy to use. Permanent lock. Designed to withstand 25 lbs. of force. Catamount Brand. <i>"A Light-Duty, Shorter Length Tie"</i>	14" Length	Nylon	100 pc.	TIE-200

Firestop Sealant 4-gallon Bucket - each FSB-100

A non-sag silicone which remains flexible after curing for simple metal pipe penetrations and fire-rated joints where the ability to absorb movement and/or vibration is required.

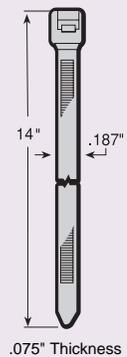
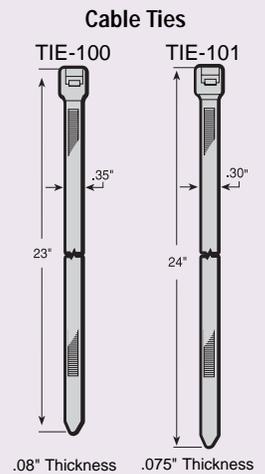
Features: Just 1/4" layer provides up to a 3-hour fire rating when backed with 4" of mineral wool. Superior adhesion characteristics. Resistant to smoke and water. Excellent elongation/compression properties. Distributed by Hilti®.

Firestop Sealant 10.5-oz. Tube - each FST-100

Metal Sealant Quart Can - each 2084-QT

An aluminum-colored, medium viscosity, synthetic rubber sealant with excellent adhesion to many metal, glass, wood and other surfaces.

Features: Adheres to metal, wood and glass. Seals metal to glass in windows and doors. Resists weather, water, oil and gasoline. Solids wt. approx. 46%. Flash Point (closed cup) 0° F, heavy liquid consistency, aluminum color (dry), brush or flow application. Drying time is 24 hours (1/8" dia. bead), service temp. range of -30 to 200° F. 3M Scotch-Seal™ 2084 Metal Sealant repackaged by H-P Products, Inc.



Firestop Sealant



Metal Sealant
"Surface dries tack-free in approx. 5 min."

ACCESSORIES



A division of H-P Products, Inc.

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