

Industrial Vacuum Components

Tubing, Pipe, Bends, Couplings & Fittings



Services

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

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Ruwac is a leading brand of tubular components for industrial vacuum systems.

TUBING

Our standard catalog items include tube sizes from 2-1/8" through 14" OD in *Carbon, Stainless, Aluminum and Galvanized Steel*. 1-1/2" and 2" OD are available upon request.

Tube Dimensions

16 Gauge	=	.065"
14 Gauge	=	.083"
12 Gauge	=	.109"
11 Gauge	=	.120"

CATALOG PART VARIATIONS

If our standard items don't meet your specific needs, visit our web site at www.ruwac.com. Custom tube fabrications are available to meet your exact specifications.

DELIVERY

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

PRICING

All prices are FOB factory, Holyoke, MA
Terms: Net 30 days
Prices are in U.S. dollars

Prices and specifications are subject to change without notice, and without obligation. All material is invoiced at the price in effect at time of shipment. All prices and discounts are based on one shipment to one destination. Please see current price list for pricing.

NOTE

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

INSIDE AND OUTSIDE DIAMETERS POLISHING

Provides smooth ID (180 grit) and OD (150 grit) surfaces. For 2" - 6" OD Long Radius Bends and Straights.

*When Ordering,
Please Specify
Type of Material:*

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard Tubing

- 2-1/8" through 14" OD
- Wall Thickness: 16, 14, 12, 11 Gauge
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

• WE ARE CAPABLE OF PROVIDING 1-1/2" - 14" OD

OD	GAUGE	NOMINAL WALL THICKNESS	CARBON	GALVANIZED STEEL	STAINLESS	ALUMINUM
2-1/8"	16	0.065"	90306C	90306Z	90306S	90306A
2-1/8"	11	0.120"	90307C	90307Z*	90307S	90307A
2-1/2"	16	0.065"	90308C	90308Z	90308S	90308A
2-1/2"	11	0.120"	90309C	90309Z*	90309S	90309A
3"	16	0.065"	90310C	90310Z	90310S	90310A
3"	11	0.120"	90311C	90311Z	90311S	90311A
3-1/2"	16	0.065"	90312C	90312Z	90312S	90312A
3-1/2"	11	0.120"	90313C	90313Z*	90313S	90313A
4"	16	0.065"	90314C	90314Z	90314S	90314A
4"	11	0.120"	90315C	90315Z	90315S	90315A
5"	14	0.083"	90316C	90316Z	90316S	90316A
5"	11	0.120"	90317C	90317Z	90317S	90317A
6"	14	0.083"	90318C	90318Z	90318S	90318A
6"	11	0.120"	90319C	90319Z	90319S	90319A
8"	14	0.083"	90320C	90320Z	90320S	90320A
8"	11	0.120"	90321C	90321Z	90321S	90321A
10"	12	0.109"	90322C	90322Z	90322S	90322A†
12"	12	0.109"	90323C	90323Z	90323S	90323A†
14"	12	0.109"	90324C	90324Z	**	**

• OUR STANDARD STOCK (UNLESS NOTED) IS 20 FT. LENGTHS, BUT WE WILL CUT TO YOUR SPECIFICATIONS

* 10 FT. LENGTHS

** QUOTATION BASIS

† 13 GAUGE

KEY

OD = Outside Diameter

GALV = Galvanized

All reference dimensions are nominal.

Standard Elbows & Bends

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard Specifications

- Inventories include a wide range of parts:
 - Standard Elbows (2-1/2" times OD)
 - Short Radius Elbows (1-1/2" times OD)
 - Long Radius Bends (over 2-1/2" times OD)
- Smooth, wrinkle free elbows
- Wall Thicknesses: 16, 14, 12, (11 Gauge Available in Straight Ends Only)
- (2-1/8" to 4" OD = 16 Gauge) (5" to 8" OD = 14 Gauge) (10" to 14" OD = 12 Gauge)
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

Tube Bending Capabilities

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

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	2-3/8, 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, 60	.083	.120	.203	.276	-
3	3.500	4, 5, 6, 7-1/2, 8, 8-3/4, 9, 12, 13, 15, 18, 24, 30, 32, 36, 48, 60	.083	.120	.216	.300	.188
3-1/2	4.000	4, 6, 8, 9, 10, 12, 18, 24, 30, 32, 36, 48, 60	.083	.120	-	.300	-
4	4.500	9, 12, 16, 18, 20, 24, 30, 32, 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

KEY

OD = Outside Diameter
NPS = Nominal Pipe Size
All reference dimensions are nominal.

When Ordering,
Please Specify
Type of Material:

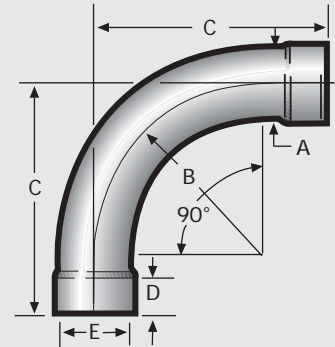
- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard Radius Elbows

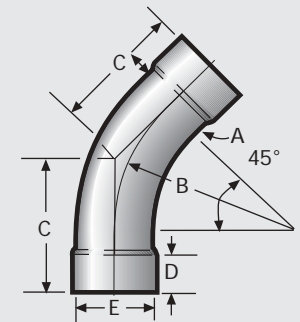
- 30° AND 60° ELBOWS AVAILABLE
- 11 GAUGE ELBOWS AVAILABLE (STRAIGHT ENDS ONLY)
- EXPANDED ENDS STANDARD THROUGH 6" SIZE
- EXPANDED ONE END AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

A (OD)	B (CLR)	GAUGE	TAN.	C	90° PART NO.	C	45° PART NO.
2-1/8"	5"	16	2"	7"	90432	4-5/16"	90402
2-1/2"	6"	16	2"	8"	90433	4-1/2"	90403
3"	7-1/2"	16	2"	9-1/2"	90434	5-1/8"	90404
3-1/2"	8-3/4"	16	2"	10-1/4"	90435	5-5/8"	90405
4"	10"	16	2"	12"	90436	6-1/8"	90406
5"	12-1/2"	14	2-5/8"	15-1/8"	90437	7-13/16"	90407
6"	15"	14	3-1/4"	18-1/4"	90438	9-15/32"	90408
8"	20"	14	4-1/4"	24-1/4"	90439	12-17/32"	90409
10"	32"	12	15"	47"	90440*	28-1/4"	90410*
12"	36"	12	6-1/4"	42-1/4"	90441**	21-5/32"	90411**
14"	36"	12	7-1/4"	43-1/4"	91442**	22-5/32"	90412**

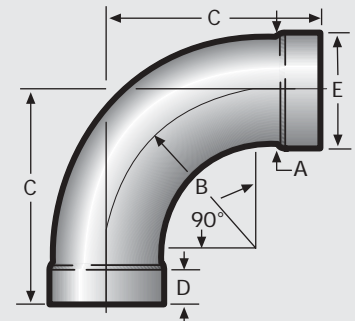
- EXPANSION DEPTH FOR STANDARD AND SHORT RADIUS ELBOWS: 1-1/4" THROUGH 4" OD AND 1-1/2" FOR 5" AND 6" OD
- STAINLESS PARTS (10" OR LARGER OD) ARE SEGMENTED
- * STAINLESS PARTS ARE SEGMENTED
- ** SEGMENTED



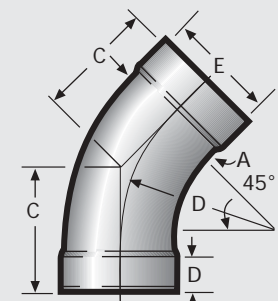
90° Standard Radius Elbow



45° Standard Radius Elbow



90° Short Radius Elbow



45° Short Radius Elbow

Short Radius Elbows

- 30° AND 60° ELBOWS AVAILABLE
- 11 GAUGE ELBOWS AVAILABLE (STRAIGHT ENDS ONLY)
- EXPANDED ENDS STANDARD THROUGH 6" SIZE
- EXPANDED ONE END AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

A (OD)	B (CLR)	GAUGE	TAN.	C	90° PART NO.	C	45° PART NO.
2-1/8"	3-1/2"	16	2"	5-1/2"	90442	3-7/16"	90422
2-1/2"	4"	16	2"	6"	90443	3-21/32"	90423
3"	4-1/2"	16	2"	6-1/2"	90444	3-7/8"	90424
3-1/2"	5"	16	2"	7"	90445	4-1/16"	90425
4"	6"	16	2"	8"	90446	4-1/2"	90426
5"	7-1/2"	14	2-5/8"	10-1/8"	90447	5-23/32"	90427
6"	9"	14	3-1/4"	12-1/4"	90448	6-31/32"	90428
8"	12"	14	4-1/4"	16-1/4"	90449	9-7/32"	90429

- EXPANSION DEPTH FOR STANDARD AND SHORT RADIUS ELBOWS: 1-1/4" THROUGH 4" OD AND 1-1/2" FOR 5" AND 6" OD

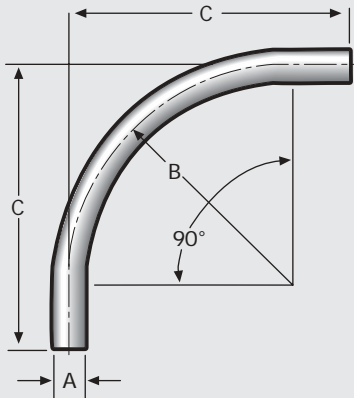
KEY

OD = Outside Diameter
 CLR = Center Line Radius
 TAN = Tangent Length
 D = Expansion Depth 1-1/4" through 4" OD, 1-1/2" for 5" and 6" OD
 E = Inside Diameter (ID) = A Outside Diameter (OD)
 All reference dimensions are nominal.

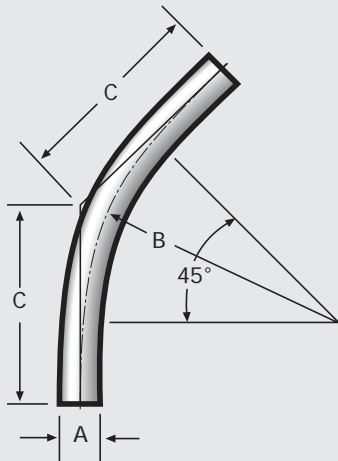
Standard Elbows & Bends

When Ordering,
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Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel



90° Long Radius Bend



45° Long Radius Bend

Standard Long Radius Bends

• EXPANDED ENDS AVAILABLE UPON REQUEST, EXCEPT ON 8" AND 10" BENDS & ALL 11 GAUGE BENDS

A (OD)	B (CLR)	GAUGE	C	90° PART NO.	C	45° PART NO.
2-1/8"	24"	16	30"	90601	15-15/16"	90651
2-1/8"	24"	11	30"	90602	15-15/16"	90652
2-1/8"	36"	16	42"	90603	20-15/16"	90653
2-1/8"	36"	11	42"	90604	20-15/16"	90654
2-1/2"	24"	16	30"	90605	15-15/16"	90655
2-1/2"	24"	11	30"	90606	15-15/16"	90656
2-1/2"	36"	16	42"	90607	20-15/16"	90657
2-1/2"	36"	11	42"	90608	20-15/16"	90658
3"	24"	16	30"	90609	15-15/16"	90659
3"	24"	11	30"	90610	15-15/16"	90660
3"	30"	16	36"	90611	18-7/16"	90661
3"	30"	11	36"	90612	18-7/16"	90662
3"	36"	16	42"	90613	20-15/16"	90663
3"	36"	11	42"	90614	20-15/16"	90664
3"	38"	16	44"	90615	21-3/4"	90665
3"	38"	11	44"	90616	21-3/4"	90666
3"	48"	16	54"	90617	25-7/8"	90667
3"	48"	11	54"	90618	25-7/8"	90668
3-1/2"	30"	16	37"	90619	19-7/16"	90669
3-1/2"	30"	11	37"	90620	19-7/16"	90670
3-1/2"	36"	16	43"	90621	21-15/16"	90671
3-1/2"	36"	11	43"	90622	21-15/16"	90672
3-1/2"	48"	16	55"	90623	26-7/8"	90673
3-1/2"	48"	11	55"	90624	26-7/8"	90674
4"	24"	16	32"	90625	17-15/16"	90675
4"	24"	11	32"	90626	17-15/16"	90676
4"	30"	16	38"	90627	20-7/16"	90677
4"	30"	11	38"	90628	20-7/16"	90678
4"	36"	16	44"	90629	22-15/16"	90679
4"	36"	11	44"	90630	22-15/16"	90680
4"	48"	16	56"	90631	27-7/8"	90681
4"	48"	11	56"	90632	27-7/8"	90682
4"	60"	16	68"	90633	32-7/8"	90683
4"	60"	11	68"	90634	32-7/8"	90684
5"	30"	14	40"	90635	22-7/16"	90685
5"	30"	11	40"	90636	22-7/16"	90686
5"	48"	14	58"	90637	29-7/8"	90687
5"	48"	11	58"	90638	29-7/8"	90688
6"	30"	14	42"	90639	24-7/16"	90689
6"	30"	11	42"	90640	24-7/16"	90690
6"	48"	14	60"	90641	31-7/8"	90691
6"	48"	11	60"	90642	31-7/8"	90692
6"	60"	14	72"	90643	36-7/8"	90693
6"	60"	11	72"	90644	36-7/8"	90694
8"	32"	14	48"	90645	25-1/4"	90695
8"	32"	11	48"	90646	25-1/4"	90696
8"	48"	14	64"	90647	31-7/8"	90697
8"	48"	11	64"	90648	31-7/8"	90698
10"	48"	12	70"	-	41-7/8"	90699*

- NOMINAL STANDARD TANGENT IS TWO TIMES TUBE OD, 6" MINIMUM
- ALL STANDARD BENDS HAVE STRAIGHT ENDS
- NOMINAL STANDARD TANGENT FOR 10" BEND IS 22"
- * STAINLESS PARTS ARE SEGMENTED

KEY

OD = Outside Diameter
CLR = Center Line Radius
C = Center to end
All reference dimensions are nominal.

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

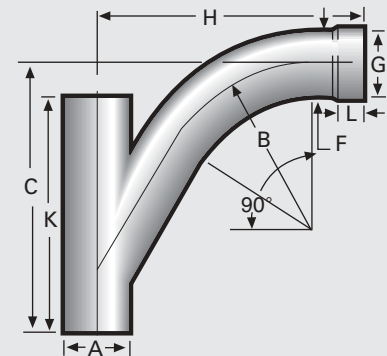
Standard 90° TY's

- 2-1/8" through 14" OD
- Wall Thickness: 16, 14, 12, (11 Gauge Available in Straight Ends Only)
- (16 Gauge: 2-1/8" to 4" OD) (14 Gauge: 5" to 8" OD) (12 Gauge: 10" to 14" OD)
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

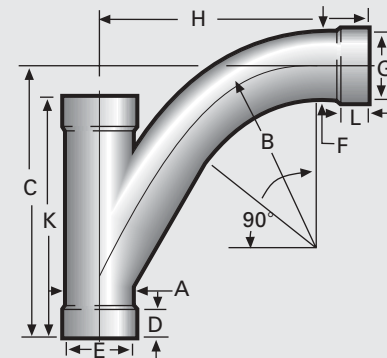
- 11 GAUGE TY'S AVAILABLE (STRAIGHT ENDS ONLY)
- STRAIGHT AND EXPANDED COMBINATIONS AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

SIZE	GAUGE	A (OD)	B	C	F (OD)	H	K	PART NO.
2-1/8"	16	2-1/8"	5"	9-5/32"	2-1/8"	8-13/16"	9-1/2"	90700
2-1/2" x 2-1/8"	16	2-1/2"	5"	9-11/32"	2-1/8"	9"	10"	90701
2-1/2"	16	2-1/2"	6"	10-1/2"	2-1/2"	10-1/32"	10"	90702
3" x 2-1/8"	16	3"	5"	9-19/32"	2-1/8"	9-1/4"	10-1/2"	90703
3" x 2-1/2"	16	3"	6"	10-3/4"	2-1/2"	10-9/32"	10-1/2"	90704
3"	16	3"	7-1/2"	12-3/8"	3"	11-25/32"	11-1/2"	90705
3-1/2" x 2-1/8"	16	3-1/2"	5"	9-27/32"	2-1/8"	9-1/2"	11"	90706
3-1/2" x 2-1/2"	16	3-1/2"	6"	11"	2-1/2"	10-17/32"	11"	90707
3-1/2" x 3"	16	3-1/2"	7-1/2"	12-5/8"	3"	12-1/32"	13"	90708
3-1/2"	16	3-1/2"	8-3/4"	14-1/8"	3-1/2"	13-11/32"	13"	90709
4" x 2-1/8"	16	4"	5"	10-3/32"	2-1/8"	9-3/4"	12"	90710
4" x 2-1/2"	16	4"	6"	11-1/4"	2-1/2"	10-25/32"	12"	90711
4" x 3"	16	4"	7-1/2"	12-7/8"	3"	12-9/32"	12"	90712
4" x 3-1/2"	16	4"	8-3/4"	14-3/8"	3-1/2"	13-19/32"	14"	90713
4"	16	4"	10"	15-7/8"	4"	14-29/32"	14"	90714
5" x 2-1/8"	14	5"	5"	10-19/32"	2-1/8"	10-1/4"	13"	90715
5" x 2-1/2"	14	5"	6"	11-3/4"	2-1/2"	11-9/32"	13"	90716
5" x 3"	14	5"	7-1/2"	13-3/8"	3"	12-25/32"	15-1/2"	90717
5" x 3-1/2"	14	5"	8-3/4"	14-7/8"	3-1/2"	14-3/32"	15-1/2"	90718
5" x 4"	14	5"	10"	16-3/8"	4"	15-13/32"	15-1/2"	90719
5"	14	5"	12-1/2"	19-3/8"	5"	18-5/8"	18-1/2"	90720
6" x 2-1/8"	14	6"	5"	11-3/32"	2-1/8"	10-3/4"	15"	90721
6" x 2-1/2"	14	6"	6"	12-1/4"	2-1/2"	11-25/32"	15"	90722
6" x 3"	14	6"	7-1/2"	13-7/8"	3"	13-9/32"	15"	90723
6" x 3-1/2"	14	6"	8-3/4"	15-3/8"	3-1/2"	14-19/32"	17"	90724
6" x 4"	14	6"	10"	16-7/8"	4"	15-29/32"	17"	90725
6" x 5"	14	6"	12-1/2"	19-7/8"	5"	19-1/8"	21"	90726
6"	14	6"	15"	22-7/8"	6"	22-11/32"	21"	90727
8" x 2-1/8"	14	8"	5"	12-3/32"	2-1/8"	11-3/4"	18"	90728
8" x 2-1/2"	14	8"	6"	13-1/4"	2-1/2"	12-25/32"	18"	90729
8" x 3"	14	8"	7-1/2"	14-7/8"	3"	14-9/32"	18"	90730
8" x 3-1/2"	14	8"	8-3/4"	16-3/8"	3-1/2"	15-19/32"	21"	90731
8" x 4"	14	8"	10"	17-7/8"	4"	16-29/32"	21"	90732
8" x 5"	14	8"	12-1/2"	20-7/8"	5"	20-1/8"	24"	90733
8" x 6"	14	8"	15"	23-7/8"	6"	23-11/32"	24"	90734
8"	14	8"	20"	29-7/8"	8"	29-17/32"	29"	90735
10" x 2-1/8"	12	10"	5"	13-3/32"	2-1/8"	12-3/4"	21"	90736

- EXPANDED ENDS STANDARD THROUGH 6" SIZE
- * SEGMENTED



90° TY
(one end expanded)



90° TY
(three ends expanded)

KEY

OD = Outside Diameter
D = Expansion Depth 1-1/4" through 4" OD, 1-1/2" for 5" and 6" OD
A = Outside Diameter (OD) = E Inside Diameter (ID)
F = Outside Diameter (OD) = G Inside Diameter (ID)
L = Expansion Depth 1-1/4" through 4" OD, 1-1/2" for 5" and 6" OD
All reference dimensions are nominal.

Fittings

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard 90° TY's - cont.

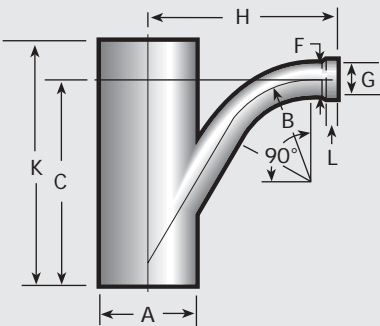
- 11 GAUGE TY'S AVAILABLE (STRAIGHT ENDS ONLY)
- STRAIGHT AND EXPANDED COMBINATIONS AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

SIZE	GAUGE	A (OD)	B	C	F (OD)	H	K	PART NO.
10" x 2-1/2"	12	10"	6"	14-1/4"	2-1/2"	13-25/32"	21"	90737
10" x 3"	12	10"	7-1/2"	15-7/8"	3"	15-9/32"	21"	90738
10" x 3-1/2"	12	10"	8-3/4"	17-3/8"	3-1/2"	16-17/32"	24"	90739
10" x 4"	12	10"	10"	18-7/8"	4"	17-29/32"	24"	90740
10" x 5"	12	10"	12-1/2"	21-7/8"	5"	21-1/8"	24"	90741
10" x 6"	12	10"	15"	24-7/8"	6"	24-11/32"	28"	90742
10" x 8"	12	10"	20"	30-7/8"	8"	30-17/32"	32"	90743
10"	12	10"	32"	40-3/8"	10"	42-25/32"	36"	90744
12" x 2-1/8"	12	12"	5"	14-3/32"	2-1/8"	13-3/4"	24"	90745
12" x 2-1/2"	12	12"	6"	15-1/4"	2-1/2"	14-25/32"	24"	90746
12" x 3"	12	12"	7-1/2"	16-7/8"	3"	16-9/32"	24"	90747
12" x 3-1/2"	12	12"	8-3/4"	18-3/8"	3-1/2"	17-19/32"	27"	90748
12" x 4"	12	12"	10"	19-7/8"	4"	18-29/32"	27"	90749
12" x 5"	12	12"	12-1/2"	22-7/8"	5"	22-1/8"	27"	91750
12" x 6"	12	12"	15"	25-7/8"	6"	25-11/32"	31"	91751
12" x 8"	12	12"	20"	31-7/8"	8"	31-17/32"	35"	91752
12" x 10"	12	12"	32"	41-3/8"	10"	43-25/32"	39"	91753
12"	12	12"	36"*	46-7/8"	12"	49-1/8"	43"	91754
14" x 8"	12	14"	20"	32-7/8"	8"	32-17/23"	38"	91755
14" x 10"	12	14"	32"	42-3/8"	10"	44-25/32"	42"	91756
14" x 12"	12	14"	36"*	47-7/8"	12"	50-1/8"	46"	91757
14"	12	14"	36"*	51-3/8"	14"	50-3/4"	52"	91758

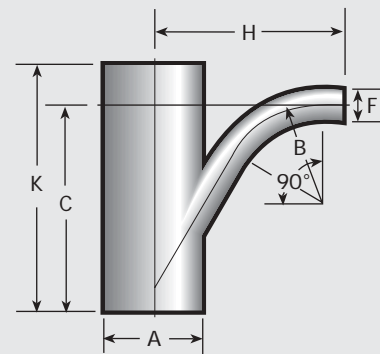
- EXPANDED ENDS STANDARD THROUGH 6" SIZE
- * SEGMENTED

KEY

OD = Outside Diameter
 F = Outside Diameter (OD) = G = Inside Diameter (ID)
 L = Expansion Depth 1-1/4" through 4" OD, 1-1/2" for 5" and 6" OD
 All reference dimensions are nominal.



90° TY
(one end expanded)



90° TY
(straight ends)

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

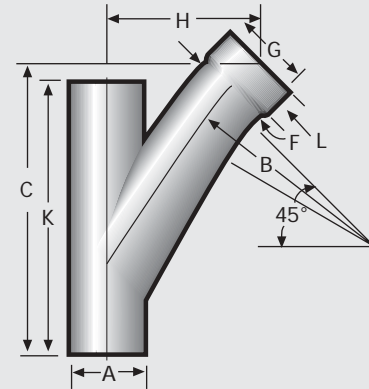
Standard 45° YL's

- 2-1/8" through 14" OD
- Wall Thickness: 16, 14, 12, (11 Gauge Available in Straight Ends Only)
- (16 Gauge: 2-1/8" to 4" OD) (14 Gauge: 5" to 8" OD) (12 Gauge: 10" to 14" OD)
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

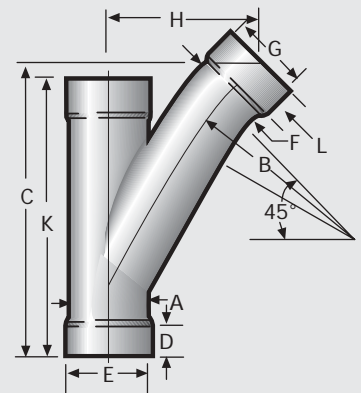
- 11 GAUGE YL'S AVAILABLE (STRAIGHT ENDS ONLY)
- STRAIGHT AND EXPANDED COMBINATIONS AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

SIZE	GAUGE	A (OD)	B	C	F (OD)	H	K	PART NO.
2-1/8"	16	2-1/8"	5"	9-3/32"	2-1/8"	4-11/16"	9-1/2"	90750
2-1/2" X 2-1/8"	16	2-1/2"	5"	9-9/32"	2-1/8"	4-7/8"	10"	90751
2-1/2"	16	2-1/2"	6"	10-5/32"	2-1/2"	5-3/16"	10"	90752
3" X 2-1/8"	16	3"	5"	9-17/32"	2-1/8"	5-1/8"	10-1/2"	90753
3" X 2-1/2"	16	3"	6"	10-13/32"	2-1/2"	5-7/16"	10-1/2"	90754
3"	16	3"	7-1/2"	11-19/32"	3"	5-29/32"	11-1/2"	90755
3-1/2" X 2-1/8"	16	3-1/2"	5"	9-25/32"	2-1/8"	5-3/8"	11"	90756
3-1/2" X 2-1/2"	16	3-1/2"	6"	10-21/32"	2-1/2"	5-11/16"	11"	90757
3-1/2" X 3"	16	3-1/2"	7-1/2"	11-27/32"	3"	6-5/32"	13"	90758
3-1/2"	16	3-1/2"	8-3/4"	12-31/32"	3-1/2"	6-9/16"	13"	90759
4" X 2-1/8"	16	4"	5"	10-1/32"	2-1/8"	5-5/8"	12"	90760
4" X 2-1/2"	16	4"	6"	10-29/32"	2-1/2"	5-15/16"	12"	90761
4" X 3"	16	4"	7-1/2"	12-3/32"	3"	6-13/32"	12"	90762
4" X 3-1/2"	16	4"	8-3/4"	13-7/32"	3-1/2"	6-13/16"	14"	90763
4"	16	4"	10"	14-11/32"	4"	7-1/4"	14"	90764
5" X 2-1/8"	14	5"	5"	10-17/32"	2-1/8"	6-1/8"	13"	90765
5" X 2-1/2"	14	5"	6"	11-13/32"	2-1/2"	6-7/16"	13"	90766
5" X 3"	14	5"	7-1/2"	12-19/32"	3"	6-29/32"	15-1/2"	90767
5" X 3-1/2"	14	5"	8-3/4"	13-23/32"	3-1/2"	7-5/16"	15-1/2"	90768
5" X 4"	14	5"	10"	14-27/32"	4"	7-3/4"	15-1/2"	90769
5"	14	5"	12-1/2"	17-9/16"	5"	9"	18-1/2"	90770
6" X 2-1/8"	14	6"	5"	11-1/32"	2-1/8"	6-5/8"	15"	90771
6" X 2-1/2"	14	6"	6"	11-29/32"	2-1/2"	6-15/16"	15"	90772
6" X 3"	14	6"	7-1/2"	13-3/32"	3"	7-13/32"	15"	90773
6" X 3-1/2"	14	6"	8-3/4"	14-7/32"	3-1/2"	7-13/16"	17"	90774
6" X 4"	14	6"	10"	15-11/32"	4"	8-1/4"	17"	90775
6" X 5"	14	6"	12-1/2"	18-1/16"	5"	9-1/2"	21"	90776
6"	14	6"	15"	20-25/32"	6"	10-25/32"	21"	90777
8" X 2-1/8"	14	8"	5"	12-1/32"	2-1/8"	7-5/8"	18"	90778
8" X 2-1/2"	14	8"	6"	12-29/32"	2-1/2"	7-15/16"	18"	90779
8" X 3"	14	8"	7-1/2"	14-3/32"	3"	8-13/32"	18"	90780
8" X 3-1/2"	14	8"	8-3/4"	15-7/32"	3-1/2"	8-13/16"	21"	90781
8" X 4"	14	8"	10"	16-11/32"	4"	9-1/4"	21"	90782
8" X 5"	14	8"	12-1/2"	19-1/16"	5"	10-1/2"	24"	90783
8" X 6"	14	8"	15"	21-25/32"	6"	11-25/32"	24"	90784
8"	14	8"	20"	27"	8"	14-5/32"	29"	90785
10" X 2-1/8"	12	10"	5"	13-1/32"	2-1/8"	8-5/8"	21"	90786

- EXPANDED ENDS STANDARD THROUGH 6" SIZE
- * SEGMENTED



45° YL
(one end expanded)



45° YL
(three ends expanded)

KEY

OD = Outside Diameter
 D = Expansion Depth 1-1/4"
 through 4" OD, 1-1/2" for
 5" and 6" OD
 A = Outside Diameter (OD) = E
 Inside Diameter (ID)
 F = Outside Diameter (OD) = G
 Inside Diameter (ID)
 L = Expansion Depth 1-1/4"
 through 4" OD, 1-1/2" for
 5" and 6" OD
 All reference dimensions are
 nominal.

Fittings

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard 45° YL's - cont.

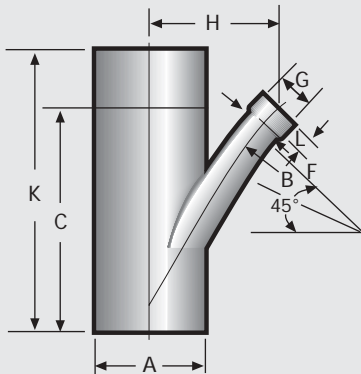
- 11 GAUGE YL'S AVAILABLE (STRAIGHT ENDS ONLY)
- STRAIGHT AND EXPANDED COMBINATIONS AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

SIZE	GAUGE	A (OD)	B	C	F (OD)	H	K	PART NO.
10" X 2-1/2"	12	10"	6"	13-29/32"	2-1/2"	8-15/16"	21"	90787
10" X 3"	12	10"	7-1/2"	15-3/32"	3"	9-13/32"	21"	90788
10" X 3-1/2"	12	10"	8-3/4"	16-7/32"	3-1/2"	9-13/16"	24"	90789
10" X 4"	12	10"	10"	17-11/32"	4"	10-1/4"	24"	90790
10" X 5"	12	10"	12-1/2"	20-1/16"	5"	11-1/2"	24"	90791
10" X 6"	12	10"	15"	22-3/4"	6"	12-25/32"	28"	90792
10" X 8"	12	10"	20"	28"	8"	15-5/32"	32"	90793
10"	12	10"	32"	34-11/16"	10"	18-5/8"	36"	90794
12" X 2-1/8"	12	12"	5"	14-1/32"	2-1/8"	9-5/8"	24"	90795
12" X 2-1/2"	12	12"	6"	14-29/32"	2-1/2"	9-31/32"	24"	90796
12" X 3"	12	12"	7-1/2"	16-3/32"	3"	10-13/32"	24"	90797
12" X 3-1/2"	12	12"	8-3/4"	17-7/32"	3-1/2"	10-13/16"	27"	90798
12" X 4"	12	12"	10"	18-11/32"	4"	11-1/4"	27"	90799
12" X 5"	12	12"	12-1/2"	21-1/16"	5"	12-1/2"	27"	90800
12" X 6"	12	12"	15"	23-3/4"	6"	13-25/32"	31"	91801
12" X 8"	12	12"	20"	29"	8"	16-5/32"	35"	91802
12" X 10"	12	12"	32"	35-11/16"	10"	19-5/8"	39"	91803
12"	12	12"	36**	40-3/4"	12"	21-27/32"	43"	91804
14" X 8"	12	14"	20"	30"	8"	17-5/32"	38"	91805
14" X 10"	12	14"	32"	36-11/32"	10"	20-5/8"	42"	91806
14" X 12"	12	14"	36**	41-3/4"	12"	22-27/32"	46"	91807
14"	12	14"	36**	45-15/16"	14"	24-13/32"	52"	91808

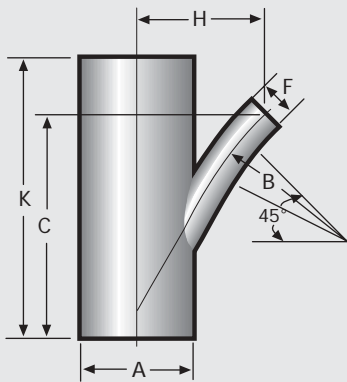
- EXPANDED ENDS STANDARD THROUGH 6" SIZE
- * SEGMENTED

KEY

OD = Outside Diameter
 F = Outside Diameter (OD) = G = Inside Diameter
 L = Expansion Depth 1-1/4" through 4" OD, 1-1/2" for 5" and 6" OD
 All reference dimensions are nominal.



45° YL
(one end expanded)



45° YL
(straight ends)

*When Ordering,
Please Specify
Type of Material:*

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard Double Y's

- 2-1/8" through 6" OD
- Wall Thickness: 16, 14, (11 Gauge Available in Straight Ends Only)
- (16 Gauge: 2-1/8" to 4" OD) (14 Gauge: 5" to 6" OD)
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

Standard Double 90° TY's

- 11 GAUGE Y'S AVAILABLE (STRAIGHT ENDS ONLY)
- STRAIGHT AND EXPANDED COMBINATIONS AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

SIZE	GAUGE	A (OD)	B	C	F (OD)	H	K	PART NO.
2-1/8"	16	2-1/8"	5"	9-5/32"	2-1/8"	8-13/16"	9-1/2"	90801
2-1/2"	16	2-1/2"	6"	10-1/2"	2-1/2"	10-1/32"	10"	90802
3"	16	3"	7-1/2"	12-3/8"	3"	11-25/32"	11-1/2"	90803
3-1/2"	16	3-1/2"	8-3/4"	14-1/8"	3-1/2"	13-11/32"	13"	90804
4"	16	4"	10"	15-7/8"	4"	14-29/32"	14"	90805
5"	14	5"	12-1/2"	19-3/8"	5"	18-5/8"	18-1/2"	90806
6"	14	6"	15"	22-7/8"	6"	22-11/32"	21"	90807

- EXPANDED ENDS STANDARD

Standard Double 45° YL's

- 11 GAUGE Y'S AVAILABLE (STRAIGHT ENDS ONLY)
- STRAIGHT AND EXPANDED COMBINATIONS AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

SIZE	GAUGE	A (OD)	B	C	F (OD)	H	K	PART NO.
2-1/8"	16	2-1/8"	5"	9-3/32"	2-1/8"	4-11/16"	9-1/2"	90808
2-1/2"	16	2-1/2"	6"	10-5/32"	2-1/2"	5-3/16"	10"	90809
3"	16	3"	7-1/2"	11-19/32"	3"	5-29/32"	11-1/2"	90810
3-1/2"	16	3-1/2"	8-3/4"	12-31/32"	3-1/2"	6-9/16"	13"	90811
4"	16	4"	10"	14-11/32"	4"	7-1/4"	14"	90812
5"	14	5"	12-1/2"	17-9/16"	5"	9"	18-1/2"	90813
6"	14	6"	15"	20-25/32"	6"	10-15/32"	21"	90814

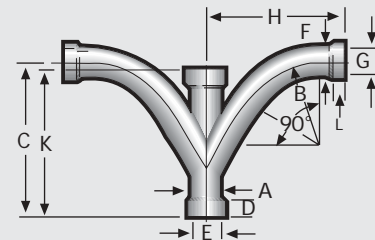
- EXPANDED ENDS STANDARD

Standard Double 90° Y's

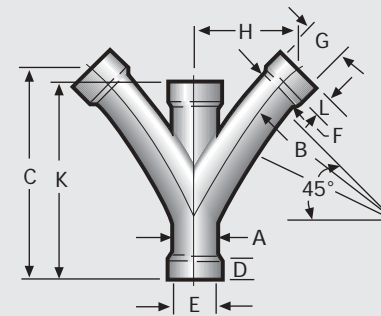
- 11 GAUGE Y'S AVAILABLE (STRAIGHT ENDS ONLY)
- STRAIGHT AND EXPANDED COMBINATIONS AVAILABLE
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

SIZE	GAUGE	A (OD)	B	C	F (OD)	H	K	PART NO.
2-1/8"	16	2-1/8"	5"	7"	2-1/8"	7"	-	90815
2-1/2"	16	2-1/2"	6"	8"	2-1/2"	8"	-	90816
3"	16	3"	7-1/2"	9-1/2"	3"	9-1/2"	-	90817
3-1/2"	16	3-1/2"	8-3/4"	10-3/4"	3-1/2"	10-3/4"	-	90818
4"	16	4"	10"	12"	4"	12"	-	90819
5"	14	5"	12-1/2"	15-1/8"	5"	15-1/8"	-	90820
6"	14	6"	15"	18-1/4"	6"	18-1/4"	-	90821

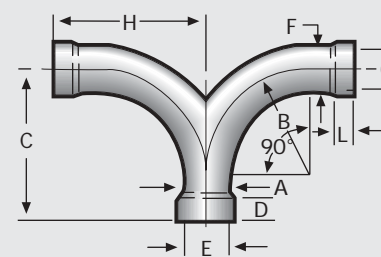
- EXPANDED ENDS STANDARD



Standard Double 90° TY



Standard Double 45° YL



Standard Double 90° Y

KEY

OD = Outside Diameter
 D = Expansion Depth 1-1/4" through 4" OD, 1-1/2" for 5" and 6" OD
 A = Outside Diameter (OD) = E - Inside Diameter (ID)
 F = Outside Diameter (OD) = G - Inside Diameter (ID)
 L = Expansion Depth 1-1/4" through 4" OD, 1-1/2" for 5" and 6" OD
 All reference dimensions are nominal.

Fittings

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard Reducing Couplings

- 2-1/8" through 14" OD
- Wall Thickness: 16, 14, (11 Gauge Available in Straight Ends Only)
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

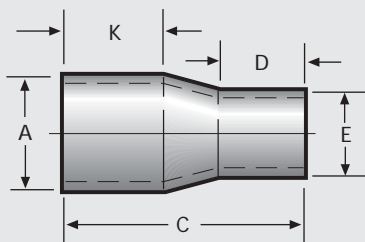
- 11 GAUGE AVAILABLE (STRAIGHT ENDS ONLY)
- STRAIGHT ENDS AVAILABLE ON ALL SIZES BY REQUEST

SIZE	GAUGE	A (OD)	C	D	E (ID) / F (OD)	GAUGE	K	PART NO.
2-1/8" x 2"	16	2-1/8"	4"	1-1/8"	2" ID	16	2"	90829
2-1/2" x 2-1/8"	16	2-1/2"	4-1/2"	1-1/4"	2-1/8" ID	16	1-1/2"	90830
3" x 2-1/8"	16	3"	8-3/4"	1-1/4"	2-1/8" ID	16	2"	90831
3" x 2-1/2"	16	3"	5"	1-1/4"	2-1/2" ID	16	1-1/2"	90832
3-1/2" X 2-1/8"	16	3-1/2"	11"	1-1/4"	2-1/8" ID	16	2"	90833
3-1/2" X 2-1/2"	16	3-1/2"	9-1/4"	1-1/4"	2-1/2" ID	16	2-7/8"	90834
3-1/2" X 3"	16	3-1/2"	5-1/2"	1-1/4"	3" ID	16	1-1/2"	90835
4" X 2-1/8"	16	4"	13-1/2"	1-1/4"	2-1/8" ID	16	2"	90836
4" X 2-1/2"	16	4"	10-1/2"	1-1/4"	2-1/2" ID	16	2"	90837
4" X 3"	16	4"	9-1/4"	1-1/4"	3" ID	16	2"	90838
4" X 3-1/2"	16	4"	6"	1-1/4"	3-1/2" ID	16	1-1/2"	90839
5" X 2-1/8"	14	5"	19-1/4"	1-1/4"	2-1/8" ID	16	2-3/4"	90840
5" X 2-1/2"	14	5"	17-1/2"	1-1/4"	2-1/2" ID	16	2-3/4"	90841
5" X 3"	14	5"	15"	1-1/4"	3" ID	16	2-3/4"	90842
5" X 3-1/2"	14	5"	12-1/2"	1-1/4"	3-1/2" ID	16	2-3/4"	90843
5" X 4"	16	5"	8"	1-1/4"	4" ID	16	1-3/4"	90844
6" X 2-1/8"	14	6"	24-3/4"	1-1/4"	2-1/8" ID	16	3-1/4"	90845
6" X 2-1/2"	14	6"	23"	1-1/4"	2-1/2" ID	16	3-1/4"	90846
6" X 3"	14	6"	20-1/2"	1-1/4"	3" ID	16	3-1/4"	90847
6" X 3-1/2"	14	6"	18"	1-1/4"	3-1/2" ID	16	3-1/4"	90848
6" X 4"	14	6"	15-3/4"	1-1/4"	4" ID	16	3-1/4"	90849
6" X 5"	14	6"	10"	1-1/2"	5" ID	14	1-3/4"	90850
8" X 4"	14	8"	26-1/4"	1-1/4"	4" ID	16	4-1/4"	90851
8" X 5"	14	8"	21-7/8"	1-1/2"	5" ID	14	4-1/4"	90852
8" X 6"	14	8"	17-1/2"	1-1/2"	6" ID	14	3-5/8"	90853
10" X 6"	12	10"	28-1/2"	1-1/2"	6" ID	14	5-1/4"	90854
10" X 8"	12	10"	18-1/4"	2-1/2"	8" OD	14	5-1/4"	90855
12" X 8"	12	12"	29-1/4"	2-1/2"	8" OD	14	6-1/4"	90856
12" X 10"	12	12"	19-3/4"	3"	10" OD	12	6-1/4"	90857
14" X 10"	12	14"	30"	3"	10" OD	12	7-1/4"	91857
14" X 12"	12	14"	20"	4"	12" OD	12	7-1/4"	91858

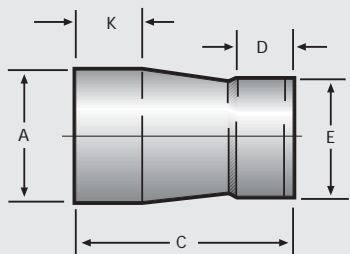
- EXPANDED ENDS STANDARD THROUGH 6" SIZE (ON SMALL END OF REDUCER)

KEY

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



Standard Reducing Coupling
(straight end)



Standard Reducing Coupling
(expanded end)

*When Ordering,
Please Specify
Type of Material:*

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard Adapters

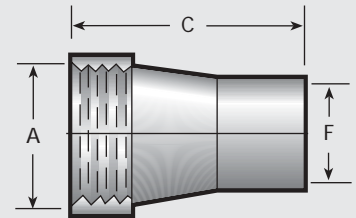
Female and Male Adapters

- 2" to 12"
- Wall Thickness: 16, 14, 12, 11 Gauge
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

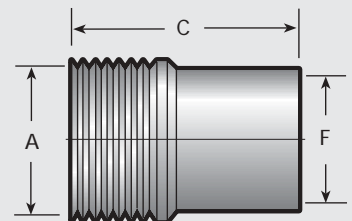
Female Adapters

• 11 GAUGE AVAILABLE

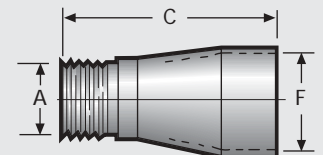
SIZE	GAUGE	A-FNPT	C	F (OD)	PART NO.
2" to 2"	16	2"	6"	2"	90924
2" to 2-1/8"	16	2"	6"	2-1/8"	90925
2-1/2" to 2-1/2"	16	2-1/2"	6"	2-1/2"	90926
3" to 3"	16	3"	6"	3"	90927
3-1/2" to 3-1/2"	16	3-1/2"	6"	3-1/2"	90928
4" to 4"	16	4"	6-1/2"	4"	90929
5" to 5"	14	5"	6-3/4"	5"	90930
6" to 6"	14	6"	7"	6"	90931
8" to 8"	14	8"	9"	8"	90932
10" to 10"	12	10"	11"	10"	90933
12" to 12"	12	12"	13"	12"	90934



Female Adapter



Male Adapter



Male Adapter

Male Adapters

• 11 GAUGE AVAILABLE

SIZE	GAUGE	A-MNPT	C	F (OD)	PART NO.
2" to 2"	16	2"	6"	2"	90935
2" to 2-1/8"	16	2"	6"	2-1/8"	90936
2-1/2" to 2-1/2"	16	2-1/2"	6"	2-1/2"	90937
3" to 3"	16	3"	6"	3"	90938
3-1/2" to 3-1/2"	16	3-1/2"	6"	3-1/2"	90939
4" to 4"	16	4"	6"	4"	90940
5" to 5"	14	5"	6-1/2"	5"	90941
6" to 6"	14	6"	7"	6"	90942
8" to 8"	14	8"	8"	8"	90943
10" to 10"	12	10"	8-1/2"	10"	90944
12" to 12"	12	12"	9"	12"	90945

Male Adapters

- 2-1/8"
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

SIZE	A-MNPT	C	D	F (ID)	F (OD)	PART NO.
2-1/8" x 1-1/4"	1-1/4"	5-3/4"	-	-	2-1/8"	90946
2-1/8" x 1-1/2"	1-1/2"	5-3/4"	-	-	2-1/8"	90947
2-1/8" x 1-1/4"	1-1/4"	5-3/4"	1-1/4"*	2-1/8"	-	90948
2-1/8" x 1-1/2"	1-1/2"	5-3/4"	1-1/4"*	2-1/8"	-	90949

* EXPANSION DEPTH

KEY

FNPT = Female National Pipe Thread
 OD = Outside Diameter
 MNPT = Male National Pipe Thread
 ID = Inside Diameter
 All reference dimensions are nominal.

Fittings

When Ordering,
Please Specify
Type of Material:

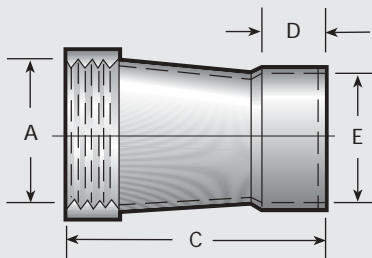
- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard Adapters - cont.

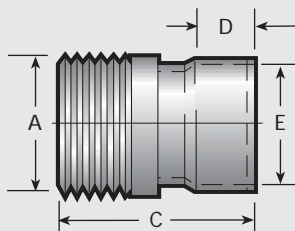
Female and Male Adapter Expanded

- 2" to 6"
- Wall Thickness: 16, 14, 12 Gauge
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

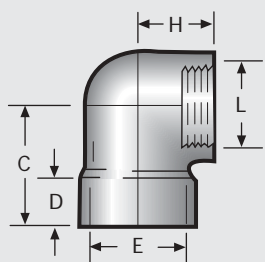
Female Adapter Expanded



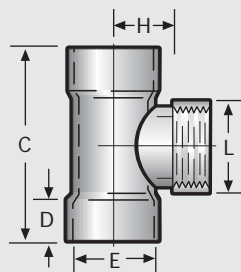
Female Adapter Expanded



Male Adapter Expanded



90° Adapter Elbow



Adapter Tee

SIZE	GAUGE	A-FNPT	C	D	E (ID)	PART NO.
2" to 2"	16	2"	4"	1-1/8"	2"	90950
2" to 2-1/8"	16	2"	4"	1-1/4"	2-1/8"	90951
2-1/2" to 2-1/2"	16	2-1/2"	5"	1-1/4"	2-1/2"	90952
3" to 3"	16	3"	5-1/4"	1-1/4"	3"	90953
3-1/2" to 3-1/2"	16	3-1/2"	5-1/2"	1-1/4"	3-1/2"	90954
4" to 4"	16	4"	6-1/2"	1-1/4"	4"	90955
5" to 5"	14	5"	6-3/4"	1-1/2"	5"	90956
6" to 6"	14	6"	7"	1-1/2"	6"	90957

Male Adapter Expanded

SIZE	GAUGE	A-MNPT	C	D	E (ID)	PART NO.
2" to 2"	16	2"	4"	1-1/8"	2"	90958
2" to 2-1/8"	16	2"	4"	1-1/4"	2-1/8"	90959
2-1/2" to 2-1/2"	16	2-1/2"	4"	1-1/4"	2-1/2"	90960
3" to 3"	16	3"	4-3/4"	1-1/4"	3"	90961
3-1/2" to 3-1/2"	16	3-1/2"	4-3/4"	1-1/4"	3-1/2"	90962
4" to 4"	16	4"	4-3/4"	1-1/4"	4"	90963
5" to 5"	14	5"	5"	1-1/2"	5"	90964
6" to 6"	14	6"	5-1/4"	1-1/2"	6"	90965

90° Adapter Elbow

- 2-1/8" to 2"
- Available only in Cast Gray Iron, Zinc, Nickel Plated or Cast Aluminum

SIZE	C	D	E (ID)	H	L-FNPT	PART NO.
2-1/8" to 2"	2-9/16"	1-1/16"	2-1/8"	1-5/8"	2"	90966*

* AVAILABLE ONLY IN CAST GRAY IRON, ZINC, NICKEL PLATED OR CAST ALUMINUM

Adapter Tees

- 2-1/8" to 4"

• 11 GAUGE ADAPTERS AVAILABLE

SIZE	C	D	E (ID)	H	L-FNPT	PART NO.
2-1/8" to 2"	4-13/16"	1-1/16"	2-1/8"	1-9/16"	2"	90967*
2-1/2" to 2"	6-1/2"	1-1/4"	2-1/2"	2-1/8"	2"	90968
3" to 2"	6-1/2"	1-1/4"	3"	2-3/4"	2"	90969
3-1/2" to 2"	6-7/8"	1-1/4"	3-1/2"	3-7/16"	2"	90970
4" to 2"	6-7/8"	1-1/4"	4"	3-7/16"	2"	90971

* AVAILABLE ONLY IN CAST GRAY IRON, ZINC, NICKEL PLATED OR CAST ALUMINUM & NOT 11 GAUGE

FNPT = Female National Pipe Thread
ID = Inside Diameter
MNPT = Male National Pipe Thread
All reference dimensions are nominal.

*When Ordering,
Please Specify
Type of Material:*

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Standard Adapters - cont.

Male Adapter Nipple

- 2-1/8"
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

SIZE	A-MNPT	C	E (ID)	PART NO.
2-1/8"	2"	2"	2-1/8"	90975

Female Reducing Adapter

- 2" to 2-1/2"
- Wall Thickness: 16 Gauge
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

SIZE	GAUGE	A-FNPT	C	F (OD)	PART NO.
2" to 2-1/2"	16	2"	4-1/4"	2-1/2"	90976

Female Reducing Adapter Expanded

- 2" to 2-1/2"
- Wall Thickness: 16 Gauge

SIZE	GAUGE	A-FNPT	C	D	E (ID)	PART NO.
2" to 2-1/2"	16	2"	4-1/4"	1-1/4"	2-1/2"	90977

45° Female Adapter Elbow

- 2-1/8" to 2-1/2" OD
- Wall Thickness: 16, (11 Gauge Available in Straight Ends Only)
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

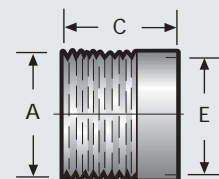
SIZE	A (OD)	GAUGE	B	C	D	E (ID)	L-FNPT	PART NO.
2-1/8" to 2"	2-1/8"	16	5"	4-1/16"	1-1/4"	2-1/8"	2"	90978
2-1/2" to 2"	2-1/2"	16	6"	4-1/2"	1-1/4"	2-1/2"	2"	90979
2-1/2" to 2-1/2"	2-1/2"	16	6"	4-1/2"	1-1/4"	2-1/2"	2-1/2"	90980

Expanded Fittings

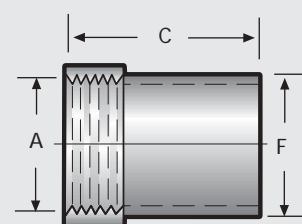
This type of connection enables a straight section of tubing to slip inside the expanded end of the fitting. The two pieces can then be "locked" together by any one of several techniques - brazing, welding, industrial adhesive or shrink sleeve. Not available in 11 gauge material. Joining methods are for use in low pressure (under 15 PSIG) systems. Slotted joining method also available.

KEY

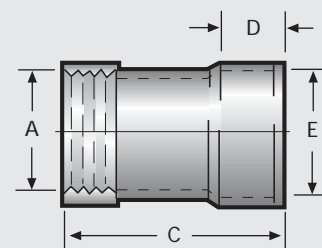
MNPT = Male National Pipe Thread
 ID = Inside Diameter
 FNPT = Female National Pipe Thread
 OD = Outside Diameter
 All reference dimensions are nominal.



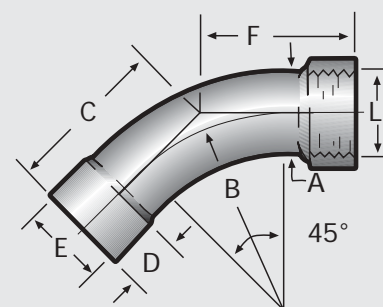
Male Adapter Nipple



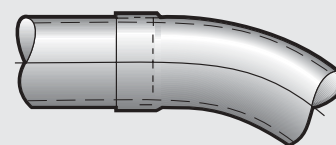
Female Reducing Adapter



Female Reducing Adapter Expanded



45° Female Adapter Elbow



Expanded Fitting

Methods of Joining

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Slip Couplings

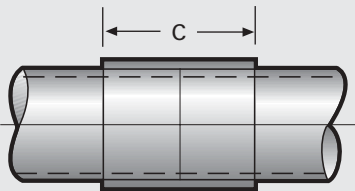
Can be used for joining any two straight ends of tubing or fittings. The slip coupling is a solid sleeve that fits the OD of the joint which can then be glued, brazed, welded, or covered by a shrink sleeve.

- 2-1/8" through 14" OD
- Wall Thickness: 16, 14, 12 Gauge
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

• SLOTTED JOINING METHOD ALSO AVAILABLE

SIZE	C	ID	GAUGE	PART NO.
2-1/8"	3"	2-1/8"	16	90270
2-1/2"	3-1/2"	2-1/2"	16	90271
3"	4"	3"	16	90272
3-1/2"	4-1/2"	3-1/2"	16	90273
4"	5"	4"	16	90274
5"	6"	5"	14	90275
6"	7"	6"	14	90276
8"	8"	8"	14	90277
10"	10"	10"	12	90278
12"	12"	12"	12	90279
14"	14"	14"	12	90280

• JOINING METHODS ARE FOR USE IN LOW PRESSURE (UNDER 15 PSIG) SYSTEMS
* 6" GALVANIZED SLIP COUPLING IS 16 GAUGE. ALL OTHER MATERIALS ARE 14 GAUGE



Slip Coupling



Shrink Sleeve

Shrink Sleeves

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 slip coupling or when using expanded fittings. Gluing, brazing and welding operations are eliminated.

• SLOTTED JOINING METHOD ALSO AVAILABLE

FOR TUBE OD SIZE	SLEEVE LENGTH	PART NO.
2-1/8" - 2-1/2"	4"	90250
3"	4"	90251
3-1/2"	4"	90252
4"	4"	90253
5"	4"	90254
6"	4"	90255
8"	9"	90256
10"	9"	90257
12"	9"	90258

• JOINING METHODS ARE FOR USE IN LOW PRESSURE (UNDER 15 PSIG) SYSTEMS

KEY

OD = Outside Diameter
ID = Inside Diameter
PSIG = Pounds per Square Inch Gravity
All reference dimensions are nominal.

*When Ordering,
Please Specify
Type of Material:*

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

RUWAC Compression Couplings

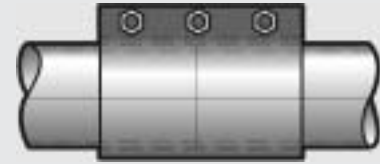
"Our own signature coupling"

- Offers easy "tear down" function
- Straight end tubing or fittings butt together within the ID of the coupling, and the joint is mechanically locked simply by tightening the bolts which are attached.
- 2-1/8" to 14" OD
- Standard Material is Galvanized Steel
- Standard Coupling includes Black Neoprene Liner & Stainless Steel Grounding Strip.

- WE ARE CAPABLE OF STAINLESS AND ALUMINUM COMPRESSION COUPLINGS
- OTHER GASKETS ARE AVAILABLE: WHITE NITRILE, RED RUBBER, SILICONE, EPDM AND VITON
- STAINLESS STEEL GASKET PROTECTORS ARE ALSO AVAILABLE
- WE CAN FURNISH YOU WITH REPLACEMENT NUTS, BOLTS, GASKETS AND STATIC STRIPS

OD	NO. BOLT	GASKET	PROTECTOR	COUPLING LENGTH	PART NO.
2-1/8"	2	BLACK	-	4	90500
2-1/8"	2	BLACK	YES	4	90501
2-1/8"	3	BLACK	-	6	90502
2-1/8"	3	BLACK	YES	6	90503
2-1/2"	2	BLACK	-	4	90504
2-1/2"	2	BLACK	YES	4	90505
2-1/2"	3	BLACK	-	6	90506
2-1/2"	3	BLACK	YES	6	90507
2-1/2"	4	BLACK	-	8	90508
2-1/2"	4	BLACK	YES	8	90509
3"	2	BLACK	-	4	90510
3"	2	BLACK	YES	4	90511
3"	3	BLACK	-	6	90512
3"	3	BLACK	YES	6	90513
3"	4	BLACK	-	8	90514
3"	4	BLACK	YES	8	90515
3-1/2"	2	BLACK	-	4	90516
3-1/2"	2	BLACK	YES	4	90517
3-1/2"	3	BLACK	-	6	90518
3-1/2"	3	BLACK	YES	6	90519
3-1/2"	4	BLACK	-	8	90520
3-1/2"	4	BLACK	YES	8	90521
4"	2	BLACK	-	4	90522
4"	2	BLACK	YES	4	90523
4"	3	BLACK	-	4	90524
4"	3	BLACK	YES	4	90525
4"	4	BLACK	-	8	90526
4"	4	BLACK	YES	8	90527
5"	2	BLACK	-	4	90528
5"	2	BLACK	YES	4	90529
5"	3	BLACK	-	6	90530
5"	3	BLACK	YES	6	90531
5"	4	BLACK	-	8	90532

- FOR COUPLINGS 1-1/4" THROUGH 2-7/8" OD THE BOLT SIZE IS 1/2" X 2"
- FOR COUPLINGS 3" THROUGH 7-1/2" OD THE BOLT SIZE IS 5/8" X 2-1/4"
- FOR COUPLINGS 8" THROUGH 14" OD THE BOLT SIZE IS 3/4" X 3"
- JOINING METHODS ARE FOR USE IN LOW PRESSURE (UNDER 15 PSIG) SYSTEMS



Compression Coupling

KEY

ID = Inside Diameter
 OD = Outside Diameter
 PSIG = Pounds per Square
 Inch Gravity
 All reference dimensions
 are nominal.

Methods of Joining

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel



Compression Coupling

RUWAC Compression Couplings - cont.

"Our own signature coupling"

- WE ARE CAPABLE OF STAINLESS AND ALUMINUM COMPRESSION COUPLINGS
- OTHER GASKETS ARE AVAILABLE: WHITE NITRILE, RED RUBBER, SILICONE, EPDM AND VITON
- STAINLESS STEEL GASKET PROTECTORS ARE ALSO AVAILABLE
- WE CAN FURNISH YOU WITH REPLACEMENT NUTS, BOLTS, GASKETS AND STATIC STRIPS

OD	NO. BOLT	GASKET	PROTECTOR	COUPLING LENGTH	PART NO.
5"	4	BLACK	YES	8	90533
6"	2	BLACK	-	4	90534
6"	2	BLACK	YES	4	90535
6"	3	BLACK	-	6	90536
6"	3	BLACK	YES	6	90537
6"	4	BLACK	-	8	90538
6"	4	BLACK	YES	8	90539
6"	5	BLACK	-	10	90540
6"	5	BLACK	YES	10	90541
8"	2	BLACK	-	6	90542
8"	2	BLACK	YES	6	90543
8"	3	BLACK	-	8	90544
8"	3	BLACK	YES	8	90545
8"	4	BLACK	-	10	90546
8"	4	BLACK	YES	10	90547
8"	5	BLACK	-	12	90548
8"	5	BLACK	YES	12	90549
10"	3	BLACK	-	8	90550
10"	3	BLACK	YES	8	90551
10"	4	BLACK	-	10	90552
10"	4	BLACK	YES	10	90553
10"	5	BLACK	-	12	90554
10"	5	BLACK	YES	12	90555
12"	3	BLACK	-	8	90556
12"	3	BLACK	YES	8	90557
12"	4	BLACK	-	10	90558
12"	4	BLACK	YES	10	90559
12"	5	BLACK	-	12	90560
12"	5	BLACK	YES	12	90561
14"	4	BLACK	-	10	90562
14"	4	BLACK	YES	10	90563
14"	5	BLACK	-	12	90564
14"	5	BLACK	YES	12	90565

- FOR COUPLINGS 1-1/4" THROUGH 2-7/8" OD THE BOLT SIZE IS 1/2" X 2"
- FOR COUPLINGS 3" THROUGH 7-1/2" OD THE BOLT SIZE IS 5/8" X 2-1/4"
- FOR COUPLINGS 8" THROUGH 14" OD THE BOLT SIZE IS 3/4" X 3"
- JOINING METHODS ARE FOR USE IN LOW PRESSURE (UNDER 15 PSIG) SYSTEMS

KEY

OD = Outside Diameter
PSIG = Pounds per Square Inch Gravity.
All reference dimensions are nominal.

When Ordering, Please Specify Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel

Slip Welding Rings

- 8" to 14" OD
- Materials: Carbon, Stainless, Aluminum, Galvanized Steel

SIZE	C	E (ID)	GAUGE	PART NO.
8"	3"	8"	14	90003
10"	3"	10"	12	90004
12"	3"	12"	12	90005
14"	3"	14"	12	90006

Tube Hangers

- 2-1/8" to 14" ID
- Wall Thickness: 16 gauge
- Available only in Galvanized Steel

SIZE	E (ID)	GAUGE	PART NO.
2-1/8"	2-1/8"	16	90860
2-1/2"	2-1/2"	16	90861
3"	3"	16	90862
3-1/2"	3-1/2"	16	90863
4"	4"	16	90864
5"	5"	16	90865
6"	6"	16	90866
8"	8"	16	90867
10"	10"	16	90868
12"	12"	16	90869
14"	14"	16	90870

Tube Plugs

- 2-1/8" to 14" OD/ID
- Wall Thickness: 16, 14, 12 Gauge

• AVAILABLE IN 11 GAUGE

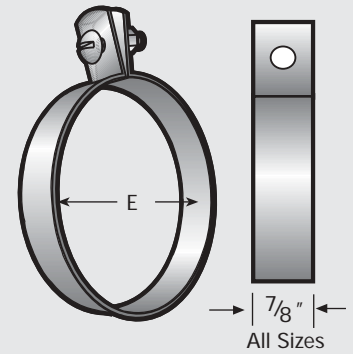
SIZE	A (OD)/(ID)	GAUGE	C	PART NO.
2-1/8"	2-1/8" OD	16	1-3/8"	90901
2-1/2"	2-1/2" OD	16	1-3/8"	90902
3"	3" OD	16	1-3/8"	90903
3-1/2"	3-1/2" OD	16	1-3/8"	90904
4"	4" OD	16	1-3/8"	90905
5"	5" OD	14	1-5/8"	90906
6"	6" OD	14	1-5/8"	90907
8"	8" ID	14	1-3/4"	90908
10"	10" ID	12	2"	90909
12"	12" ID	12	2"	90910
14"	14" ID	12	2"	90911

Tube Nipples

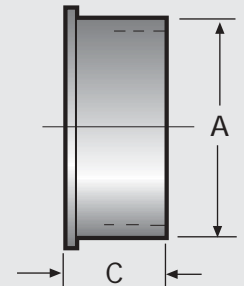
- 2-1/8" to 14" OD
- Wall Thickness: 16, 14, 12 Gauge

• AVAILABLE IN 11 GAUGE

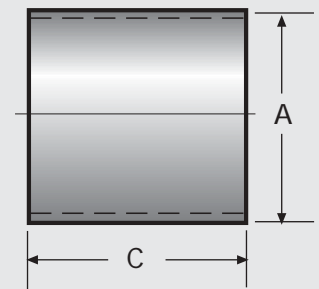
SIZE	A (OD)	GAUGE	C	PART NO.
2-1/8"	2-1/8"	16	2-1/2"	90912
2-1/2"	2-1/2"	16	2-1/2"	90913
3"	3"	16	2-1/2"	90914
3-1/2"	3-1/2"	16	2-1/2"	90915
4"	4"	16	2-1/2"	90916
5"	5"	14	3"	90917
6"	6"	14	3"	90918
8"	8"	14	4"	90919
10"	10"	12	5"	90920
12"	12"	12	6"	90921
14"	14"	12	7"	90922



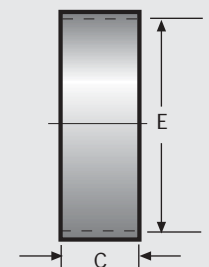
Tube Hanger



Tube Plug



Tube Nipple



Slip Welding Ring

KEY

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

Accessories

When Ordering,
Please Specify
Type of Material:

- Carbon
- Stainless
- Aluminum
- Galvanized Steel



Inlet Valve 5033
(For use with inlet adapters
pages 14 & 15)

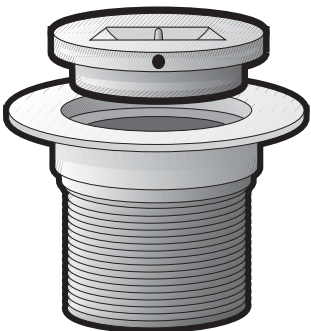


**#5220-BL Hose to
inlet connector**

Floor Valves

Our floor valve is a convenient alternative when wall valves aren't possible. It's built to resist wear and tear, even in heavy traffic areas.

The valve cap is easily removed, but remains flush with the body when not in use. Available in bronze and nickel-plated.



Inlet Valves

Heavy duty inlet valves provide for a quick connection of the male hose coupling to the vacuum cleaning system. These parts are designed for insertion into a 2" FNPT threaded fitting adapting to a 2-1/8" tube size. Valves have self-closing covers and are available in galvanized and stainless steel, as well as nickel plated models.

The same body is used for all three valves...only the bore varies. 90981 and 90983 use a slight taper for hose adapter retention. 90984 and 90982 utilize a clip on the valve lid for retention instead. Hose adapters are constructed of heavy-duty galvanized steel.

Inlet Valves

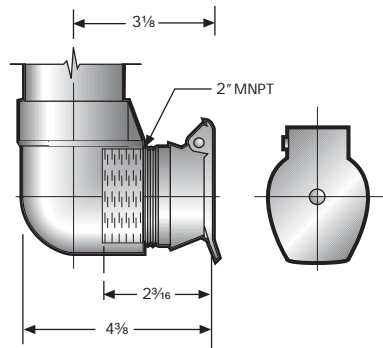
BORE	MNPT	PART NO.
1.5"	2.0"	90981
1.8"	2.0"	90982
2.0"	2.0"	5033
2.0"	2.0"	5050 inlet w/switch



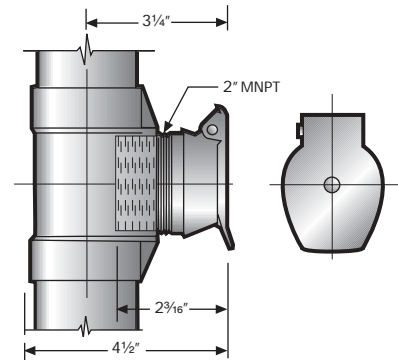
5050 w/switch

Valve Accessories for Installation & Operation

HOSE ADAPTER PART NO.	FOR HOSE SIZE	INLET VALVE PART NO.	WRENCH PART NO.
90986	1-1/2" ID	90981 accepts 1-1/2" OD Hose Adapter	90981WR
90987	1-1/2" ID	90982 accepts 1.8" OD Hose Adapter	90982WR
90988	2" ID	90983 accepts 2" OD Hose Adapter	90983WR
5220-BL	2" ID	5050/5033 accepts 2" OD Hose Adapter 5220-BL	



Valve shown in 90° adapter elbow (Part No. 90966)



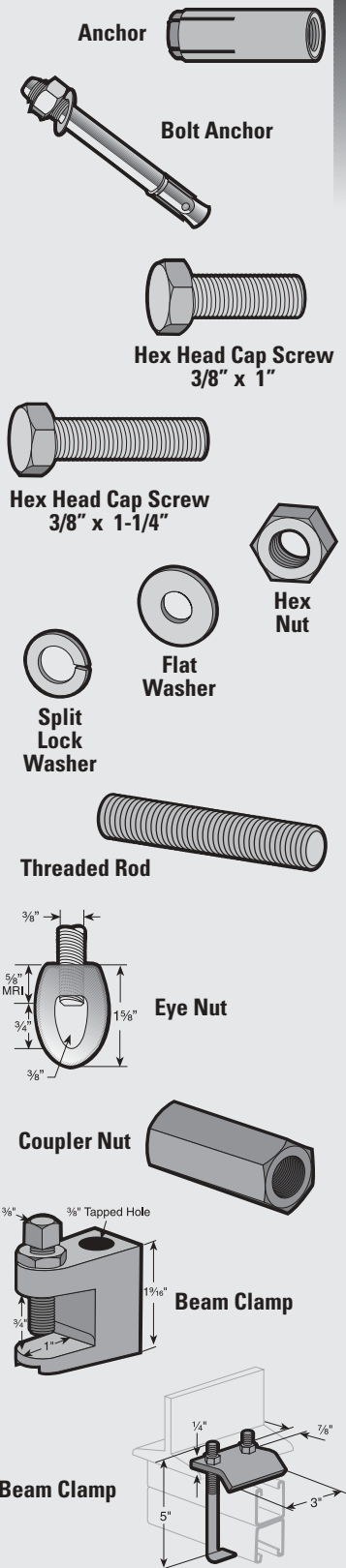
Valve shown in tube fitting (Part No. 90967)

KEY
FNPT = Female National Pipe Thread
MNPT = Male National Pipe Thread

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.

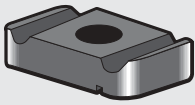
DESCRIPTION	SIZE	MATERIAL	PKGD.	PART NO.
Anchor , Hilti®	3/8" x 1-9/16" (Length)	Zinc	50 pc.	91401
Bolt Anchor , Includes Washer and Hex Nut	3/8" x 3-3/4" (Overall Length) 1-1/8" Thread Length	Zinc	100 pc.	91402
Features: Comprehensive performance testing in concrete, lightweight concrete, and grout-filled 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.	91403
Hex Head Cap Screw <i>"More Length When You Need It"</i>	3/8" x 1-1/4" (Length)	Zinc	50 pc.	91404
Hex Nut	3/8"	Zinc	50 pc.	91405
Flat Washer	3/8"	Zinc	50 pc.	91406
Split Lock Washer	3/8"	Zinc	50 pc.	91407
Threaded Rod	3/8" x 6' (Length)	Zinc	each	91408
Eye Nut , Maximum Allowable Load is 610 lbs. <i>"Works Great With MetFlo™ Tube Hangers"</i>	3/8" Tapped Hole	Malleable Iron - Plain.	each	91409
Coupler Nut	3/8" x 1-3/4" (Length)	Zinc	each	91410
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	91411
Beam Clamp with Set Screw and Lock Nut. Maximum Allowable Load, in top position, is 500 lbs.; in bottom position, 250 lbs. <i>"The Cost-Effective Solution When You Don't Need Our Heavy-Duty Beam Clamp (91411)"</i>	3/8" Tapped Hole	Malleable Iron - Plain	each	91412
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.	91413



KEY

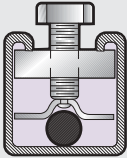
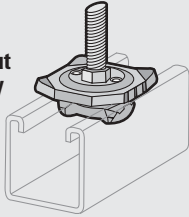
- MRI = Minimum Rod Insertion
- Zinc = Galvanized
- Carbon Steel
- OD = Outside Diameter
- All reference dimensions are nominal.

21



Channel Nut

Saddle Nut Assembly

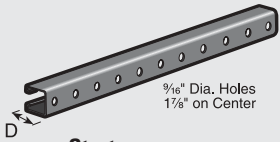


Hanger Rod Stiffener Assembly

Slotted Strut

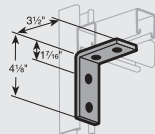


Slots are 9/16" Wide
2" on Center

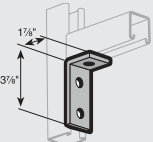


Strut

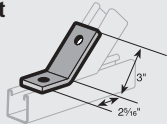
9/16" Dia. Holes
1 1/8" on Center



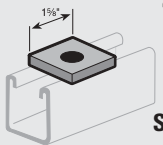
**90° Strut Bracket
2 holes x 2 holes**



**90° Strut Bracket
2 holes x 1 hole**

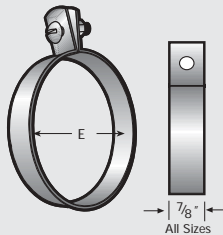


45° Strut Bracket



Square Washer Plate

Tube Hanger



7/8" All Sizes

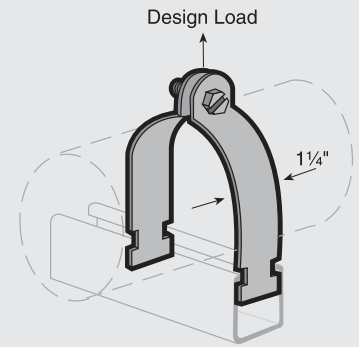
Installation Components - cont.

DESCRIPTION	SIZE	MATERIAL	PKGD.	PART NO.
Channel Nut , without spring	3/8"	Zinc	each	91414
Saddlenut Assembly <i>"Replaces Square Washer Plate and a Channel Nut Combination"</i>		Zinc	25	91415
Hanger Rod Stiffener Assembly <i>"Adds Rigidity to all Threaded Rod / Strut Channel Combinations where Earthquake Activity is a Concern"</i>		Zinc	each	91416
Slotted Strut , 14 Gauge	13/16"(D) x 1-5/8", 10' Length	Zinc	each	91417
Slotted Strut , 14 Gauge <i>"An Economical Alternative When You Don't Require Our Heavy-Duty Strut (91419)"</i>	1-5/8"(D) x 1-5/8", 10' Length	Zinc	each	91418
Slotted Strut , 12 Gauge	1-5/8"(D) x 1-5/8", 10' Length	Zinc	each	91419
Strut , 12 Gauge	9/16" Hole Strut 1-5/8"(D) x 1-5/8", 10' Length	Zinc	each	91420
90° Strut Bracket	2 x 2, 9/16" Holes	Zinc	each	91421
90° Strut Bracket	2 x 1, 9/16" Holes	Zinc	each	91422
45° Strut Bracket	9/16" Holes	Zinc	each	91423
Square Washer Plate	7/16" Hole for 3/8" Bolt Size	Zinc	100 pc.	91424
Tube Hanger , includes Bolt and Nut	For 1-1/2" OD Tube	Zinc	each	90858
Tube Hanger , includes Bolt and Nut	For 2" OD Tube	Zinc	each	90859
Tube Hanger , includes Bolt and Nut	For 2-1/8" and 2-1/4" OD Tube	Zinc	each	90860
Tube Hanger , includes Bolt and Nut	For 2-1/2" OD Tube	Zinc	each	90861
Tube Hanger , includes Bolt and Nut	For 3" OD Tube	Zinc	each	90862
Tube Hanger , includes Bolt and Nut	For 3-1/2" OD Tube	Zinc	each	90863
Tube Hanger , includes Bolt and Nut	For 4" OD Tube	Zinc	each	90864
Tube Hanger , includes Bolt and Nut	For 4-1/2" OD Tube	Zinc	each	90871
Tube Hanger , includes Bolt and Nut	For 5" OD Tube	Zinc	each	90865
Tube Hanger , includes Bolt and Nut	For 6" OD Tube	Zinc	each	90866
Tube Hanger , includes Bolt and Nut	For 8" OD Tube	Zinc	each	90867
Tube Hanger , includes Bolt and Nut	For 10" OD Tube	Zinc	each	90868
Tube Hanger , includes Bolt and Nut	For 12" OD Tube	Zinc	each	90869
Tube Hanger , includes Bolt and Nut	For 14" OD Tube	Zinc	each	90870

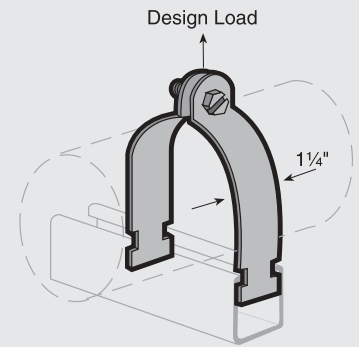
Installation Components - cont.

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.	90880
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2" Pipe Size	Zinc	4 pc.	90881
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2-1/2" Pipe Size	Zinc	4 pc.	90882
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 3" Pipe Size	Zinc	4 pc.	90883*
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 3-1/2" Pipe Size	Zinc	4 pc.	90884*
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 4" Pipe Size	Zinc	4 pc.	90885*
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 5" Pipe Size	Zinc	4 pc.	90886
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 6" Pipe Size	Zinc	4 pc.	90887
Pipe Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 8" Pipe Size	Zinc	4 pc.	90888**
* 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.	90889
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2" OD Tube	Zinc	4 pc.	90890
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2-1/8" OD Tube	Zinc	4 pc.	90891
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 2-1/2" OD Tube	Zinc	4 pc.	90892
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 3" OD Tube	Zinc	4 pc.	90893
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 800 lbs.	For 3-1/2" OD Tube	Zinc	4 pc.	90894
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 4" OD Tube	Zinc	4 pc.	90895
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 4-1/2" OD Tube	Zinc	4 pc.	90896
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 5" OD Tube	Zinc	4 pc.	90897
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 6" OD Tube	Zinc	4 pc.	90898
Tube Clamp , includes Slotted Hex Head Screw and Nut, Design Load 1000 lbs.	For 8" OD Tube	Zinc	4 pc.	90899**

** 2 piece package



Pipe Clamp

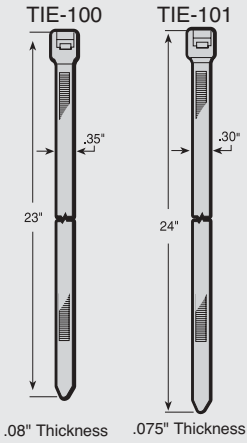


Tube Clamp

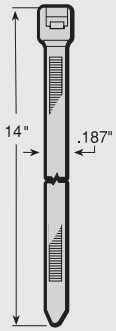
KEY

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

Cable Ties



.08" Thickness .075" Thickness



.075" Thickness



Firestop Sealant



Metal Sealant

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

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.	91900
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.	91901
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.	91902

Firestop Sealant	4-gallon Bucket	-	each	313555
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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	313556
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Metal Sealant	Quart Can	-	each	313557
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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 Ruwac, Inc.

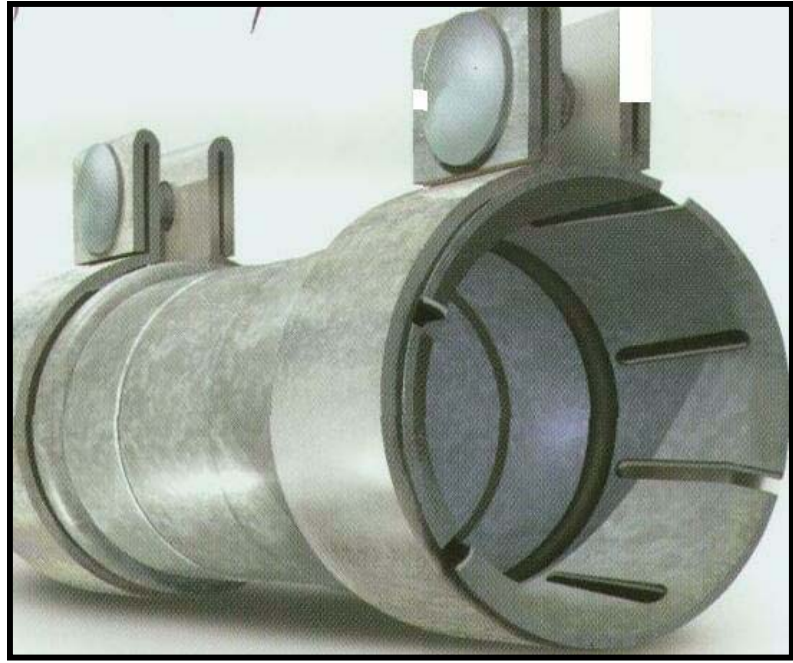
It's about revolutionizing the way you install couplings.

E-Z Couplings are the first major break through in compression couplings in 40 years. What makes it so revolutionary? How about 30% faster installations? You just insert one tube end and tighten the bolt. No more re-tightening multiple bolts. And that means no more juggling acts because there are fewer components to handle. Plus, E-Z's O-ring gaskets won't fall out or catch on the tube, slowing installation.

E-Z couplings cost less, too, because it's made from a solid piece of tube. Plus, your customers will experience fewer "streamers" and less chance of particle build-up and blockage. Why? Because the E-Z coupling is designed to self-align the ends of the tube for a smooth transition of your materials. It all adds up to superior performance.

With E-Z, you'll save time, save money and pocket more profit. Lots more!

Part No.	OD (in.)	Length (in.)
90566Z	1.5	4
90568Z	1.75	4
90570Z	2	4
90572Z	2.12	4
90574Z	2.25	4
90576Z	2.5	4
90578Z	3	4
90580Z	3.5	4
90582Z	4	4
90567Z	1.5	6
90569Z	1.75	6
90571Z	2	6
90573Z	2.12	6
90575Z	2.25	6
90577Z	2.5	6
90579Z	3	6
90581Z	3.5	6
90583Z	4	6



Ruwac offers a full line of central vacuum components from 2" to 12" in diameter to meet any application. Our tubing is available in aluminum, galvanized, carbon steel and stainless steel. Wall thickness ranges from 20-11 gauge. Our inlet valves are available in 1.5", 2.0", 2.75" and can be equipped with micro switches for low voltage remote starting. Ruwac recommends E-Z couplings for all joint connections and we offer heat shrink as an alternative. Utility Y's range in all sizes, from 1.5" to 3.0" with custom fittings available.



vacuumsforindustry.com

Tel: 704-752-7944

Fax: 704-542-9093



Ruwac is a world wide supplier of Industrial Vacuum Equipment. Our Industrial Vacuums are used in all applications, from general housekeeping to point of source extraction. We pride ourselves in providing cost effective solutions for your vacuum needs, using our state of the art filtration and vacuum systems.

Some of the vacuum systems we offer:

- 110 Volt Vacuums
- Air Operated Vacuums
- HEPA Vacuums
- Clean Room Vacuums
- Central Systems up to 125HP
- Explosion Proof Vacuums
- Continous Duty Vacuums
- Separation Systems
- Wet Vacuums
- Sump Vacuums
- Vacuum Assist Sanding Systems
- Vacuum Assist Welding Systems
- Fume Extractors
- Reverse Pulse Filter Cleaning
- Point of Source Extraction
- Bulk Material Recovery Systems
- Immersion Separators
- Dumpster Vacuums
- Trailer Mounted Vacuums
- Gasoline Driven Vacuums
- Custom Designed Vacuum Systems
- Contact us with your specific application

We vacuum everything... 