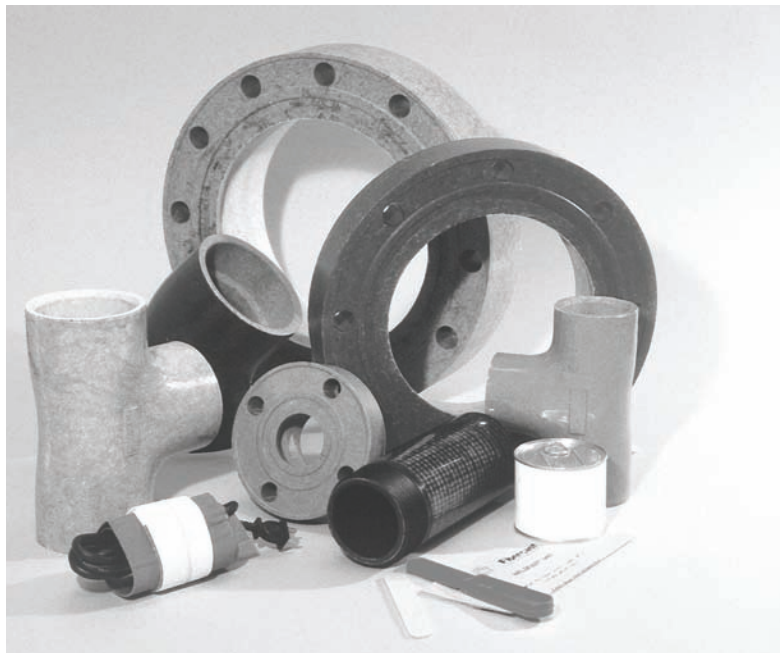


**FITTINGS and
ACCESSORIES 1"-14"
CENTRICAST® PIPING SYSTEMS**

Fiber Glass Systems (FGS) offers a complete line of fittings manufactured from both epoxy and vinyl ester resins. These fittings and adhesives provide the same corrosion resistance and temperature ratings as the compatible grade of FGS pipe. Press molded fittings are manufactured from a resin-rich compound which is corrosion resistant throughout the fitting wall. Hand layup fittings have a 100 mil resin-rich corrosion barrier. Epoxy RB fittings are color-coded brown; Z-CORE fittings are dark green or black; CL vinyl ester fittings are off-white. Because FGS fittings are designed for the most severe services, they are suitable for the broad range of chemicals shown in the E5615 Chemical Resistance Guide. All 1"-14" fittings are available with either a socket fitting or flanged type connection for easy field assembly. Adapters to iron pipe threads are also available.



Order by figure (Fig.) number prefixed with CL for vinyl ester, RB for epoxy and ZC for Z-Core followed by construction type (if applicable), diameter, and outlet sizes.

Example Fig. 34C HLU 3x2

PM - Represents Press Molded Fittings
HLU - Represents Hand Layup Fittings

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PRESSURE RATINGS

Pressure Rating of CL Vinyl Ester Fittings up to 200°F based on Weldfast® CL-200 and/or CL-200QS Adhesive Uninsulated Piping

Size (In.)	Elbows, Tees, Reducers Couplings, Flanges, Socket and Threaded Nipples		Laterals and Crosses (psi)
	Socket Fgts. (psi)	Flanged Fgts. (psi)	
1	300	300	-
1 1/2	300	300	-
2	275	200	125
3	200	150	125
4	150	150	100
6	150	150	100
8	150	150	100
10	150	150	75
12	150	150	75
14	125	150	-

Reduce pressure by 25% for 175°F to 200°F operating temperatures.

Pressure Rating of RB Epoxy Fittings up to 225°F based on Weldfast® ZC-275 Adhesive Uninsulated Piping

Size (In.)	Elbows, Tees, Reducers Couplings, Flanges, Socket and Threaded Nipples		Flanges (psi)	Laterals and Crosses (psi)
	Socket Fgts. (psi)	Flanged Fgts. (psi)		
1	300	300	300	-
1 1/2	300	150	300	-
2	300	150	300	125
3	275	150	200	125
4	150	150	150	100
6	150	150	150	100
8	150	150	150	100
10	150	150	150	75
12	150	150	150	75
14	125	150	150	-

For insulated and/or heat traced piping systems, use 100% of un-insulated piping recommendations up to 200°F and reduce these ratings 50% for 200°F to 250°F operating temperatures. For un-insulated CENTRICAST PLUS RB-2530 piping, reduce these ratings 30% for 225°F to 250°F operating temperatures.

Pressure Rating of ZC Epoxy Fittings up to 225°F based on Weldfast® ZC-275 Adhesive Uninsulated Piping

Size (In.)	Elbows, Tees, Reducers Couplings, Flanges, Socket and Threaded Nipples		Flanges (psi)	Laterals and Crosses, (psi)
	Socket Fgts. (psi)	Flanged Fgts. (psi)		
1	300	300	300	-
1 1/2	300	150	300	-
2	300	150	300	125
3	275	150	200	125
4	150	150	150	100
6	150	150	150	100
8	150	150	150	100
10	150	150	150	75
12	150	150	150	75
14	125	150	150	-

For insulated and/or heat traced piping systems, use 100% of un-insulated piping recommendations up to 225°F and reduce these ratings 25% for 225°F to 275°F operating temperatures. For un-insulated ZC piping, reduce these ratings 25% for 250°F to 275°F operating temperatures.

Note: Quotations for specially fabricated higher pressure fittings are available on request.

COUPLINGS

Fig. 14
Socket

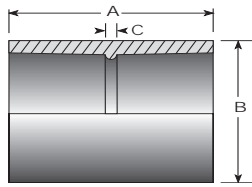
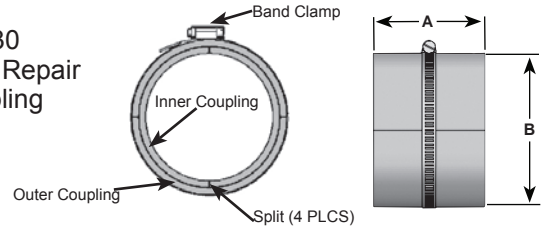


Fig. 30
RSR Repair
Coupling

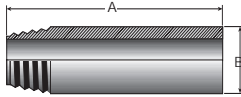


Size (In)	A± 1/8 (In.)	B		C Ref (In.)	Wt. † (Lb.)
		PM Ref (In.)	HLU Ref (In.)		
1	3	2 1/8	1 7/8	5/8	0.5
1 1/2	3	2 3/4	2 3/8	3/8	0.5
2	4	3 1/16	2 7/8	3/8	.07
3	4	4 3/16	4 1/8	3/8	1.0
4	4	5 1/4	5 1/8	3/8	1.5
6	4	8	7 3/16	3/8	3.2
8	5 5/8	9 7/8	9 3/8	3/8	4.4
10	8 3/8	12 1/4	11 3/8	3/8	13.2
12	8 3/8	14 3/16	13 1/2	3/8	14.0
14	8 3/8	15 9/16	-	3/8	17.2

Size (In)	A± 1/8 (In.)	B Ref (In.)	Wt. † (Lb.)
1	2 5/8	2 3/8	1.0
1 1/2	3 1/4	3	1.0
2	4	3 7/16	1.4
3	4	4 9/16	2.0
4	4	5 9/16	3.0
6	4 3/4	7 11/16	6.5
8	5 1/4	9	8.8
10	5 3/4	11 1/8	26
12	6 1/4	13 1/8	28
14	6 1/4	15 1/8	34

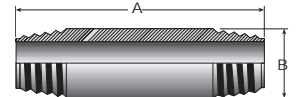
NIPPLES

Fig. 6S Iron Pipe
Male Thread



Size (In)	A± 1/8 - 1/16 (In.)	B+0 - 1/16 (In.)	Wt. † (Lb.)
1	8	1 5/16	0.5
1 1/2	8	1 15/16	0.8
2	8	2 3/8	1.1
3	8	3 1/2	1.9
4	8	4 1/2	2.6
6	8	6 5/8	5.0

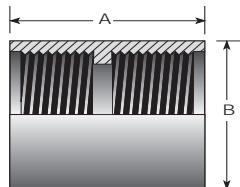
Fig. 3S*
Iron Pipe



Size (In)	A± 1/8 - 1/16 (In.)	B+0 - 1/16 (In.)	Wt. † (Lb.)
1	8	1 5/16	0.5
1 1/2	8	1 15/16	0.8
2	8	2 3/8	1.1
3	8	3 1/2	1.9
4	8	4 1/2	2.6
6	8	6 5/8	5.0

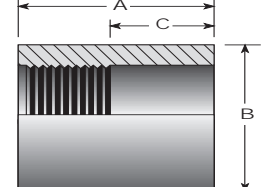
THREADED ADAPTERS

Fig. 2
Iron Pipe Thread



Size (In)	A± 3/16 (In.)	B+0 - 1/16 (In.)	Wt. † (Lb.)
1	3	2 11/16	0.7
1 1/2	4	3 1/8	0.7
2	3 1/16	3 1/2	1.0
3	4	4 1/2	1.5
4	4 1/2	5 3/4	2.9

Fig. 29S*
Iron Pipe Thread x
Socket

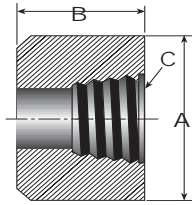


Size (In)	A+ 1/8 - 1/16 (In.)	B+0 - 1/16 (In.)	C± 1/16 (In.)	Wt. † (Lb.)
2	3 5/16	3 1/2	1 13/16	1.0
3	4	4 1/2	1 13/16	1.4
4	4 1/2	5 3/4	1 13/16	2.8
6	4 1/4	7 1/4	1 13/16	1.6

* Available on order only - nonreturnable.
† CL weight, multiply by 1.07 for RB, 1.1 for ZC.

THREADED INSERT

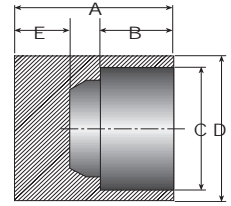
Fig. 33S
Insert



Size (In.)	A Ref (In.)	B ± 1/16 (In.)	C Ref (In.)	Wt. † (Lb.)
1 x blank	1 ⁵ / ₁₆	1 ¹ / ₄	-	0.1
1 ¹ / ₂ x blank	1 ¹⁵ / ₁₆	1 ¹ / ₂	-	0.2
2 x blank	2 ³ / ₈	1 ¹ / ₂	-	0.4
3 x blank	3 ¹ / ₂	2	-	1.2
2 x 1/4	2 ³ / ₈	1 ¹ / ₂	1/4 I.P.	0.4
2 x 1/2	2 ³ / ₈	1 ¹ / ₂	1/2 I.P.	0.4
2 x 3/4	2 ³ / ₈	1 ¹ / ₂	3/4 I.P.	0.3
2 x 1	2 ³ / ₈	1 ¹ / ₂	1 I.P.	0.3
2 x 1 1/4	2 ³ / ₈	1 ¹ / ₂	1 1/4 I.P.	0.3
2 x 1 1/2	2 ³ / ₈	1 ¹ / ₂	1 1/2 I.P.	0.2
3 x 1	3 ¹ / ₂	2	1 I.P.	1.0
3 x 1 1/2	3 ¹ / ₂	2	1 1/2 I.P.	0.8

END CAP

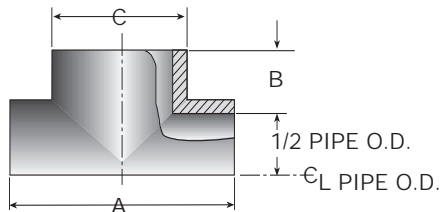
Fig. 101C
Socket Pipe Cap



Size (In.)	A ± 3/8 (In.)	B ± 1/16 (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	Wt. † (Lb.)
1	3 ¹ / ₁₆	1 ³ / ₁₆	1 ⁵ / ₁₆	2 ¹ / ₁₆	1 ¹ / ₄	0.7
1 1/2	3 ³ / ₁₆	1 ⁵ / ₁₆	1 ¹⁵ / ₁₆	2 ¹¹ / ₁₆	1 ¹ / ₂	0.9
2	4	1 ¹³ / ₁₆	2 ³ / ₈	3 ¹ / ₈	1 ¹ / ₂	1.2
3	4	1 ¹³ / ₁₆	3 ¹ / ₂	4 ³ / ₁₆	1 ¹ / ₂	2.2
4	4	1 ¹³ / ₁₆	4 ¹ / ₂	5 ¹ / ₄	1 ¹ / ₂	3.7
6	4	1 ¹³ / ₁₆	6 ⁵ / ₈	7 ⁷ / ₈	1 ¹ / ₂	7.4
8	5 ⁵ / ₈	2 ⁵ / ₈	8 ⁵ / ₈	9 ⁷ / ₈	2 ⁵ / ₈	12.4
10	8 ³ / ₈	4	10 ³ / ₄	12 ¹ / ₄	2	15
12	8 ³ / ₈	4	12 ³ / ₄	14 ³ / ₁₆	2	-

SADDLE

Fig. 13*
Pipe Saddle



Size (In.)	A ± 1/4 (In.)	B ± 1/16 (In.)	C Ref (In.)									Wt. † (Lb.)
				1	1 1/2	2	3	4	6	8	10	
2	4 ¹ / ₄	3/4	2	X	X							0.4
3	5 ³ / ₄	2	3 ³ / ₈			X						1.5
4	8	2	4 ¹ / ₁₆			X	X					2.6
6	9	2	5 ¹ / ₈			X		X				4.8
8	10 ¹ / ₂	2	7 ⁷ / ₁₆			X			X			8.1
10	13 ¹ / ₂	3 ¹ / ₈	10 ¹ / ₈			X				X		23.1
12	15 ¹ / ₂	3 ¹ / ₈	12 ³ / ₁₆			X					X	32.8

Note: For Threaded Outlets or Cement Socket Outlets greater than one size reduction, see Assembled Fittings section.

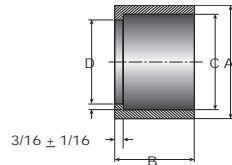
Figure 13 weights based on blank saddle. Saddles available in CL and RB only.

* Available on order only - nonreturnable

† CL weight, multiply by 1.07 for RB, 1.1 for ZC

REDUCERS

Fig. 33
Insert Socket



Reducer inserts which reduce greater than two pipe sizes are available on order only. Reducer inserts 8" and larger which reduce greater than one pipe size are not recommended in pressure service applications.

Size (In.)	A ± 1/16 (In.)	B ± 1/8 (In.)	C Ref (In.)	D Ref (In.)	Wt. † (Lb.)
1 1/2 x 1	1 15/16	1 1/2	1 5/16	1	0.2
2 x 1	2 3/8	1 1/2	1 5/16	1	0.3
2 x 1 1/2	2 3/8	1 1/2	1 7/8	1 1/2	0.2
3 x 1	3 1/2	2	1 5/16	1	0.9
3 x 1 1/2	3 1/2	2	1 7/8	1 1/2	0.9
3 x 2	3 1/2	2	2 3/8	2	0.6
4 x 2	4 1/2	2	2 3/8	2	1.3
4 x 3	4 1/2	2	3 1/2	3	0.7
6 x 2	6 5/8	2	2 3/8	2	3.5
6 x 3	6 5/8	2	3 1/2	3	2.9
6 x 4	6 5/8	2	4 1/2	4	2.2
8 x 2	8 5/8	2 1/2	2 3/8	2	7.4
8 x 3	8 5/8	2 1/2	3 1/2	3	7.1

Size (In.)	A ± 1/16 (In.)	B ± 1/8 (In.)	C Ref (In.)	D Ref (In.)	Wt. † (Lb.)
8 x 4	8 5/8	2 1/2	4 1/2	4	6.3
8 x 6	8 5/8	2 1/2	6 5/8	6 1/8	3.5
10 x 2	10 3/4	4 3/16	2 3/8	2	20.9
10 x 3	10 3/4	4 3/16	3 1/2	3	19.9
10 x 4	10 3/4	4 3/16	4 1/2	4	17.9
10 x 6	10 3/4	4 3/16	6 5/8	6 1/8	13.8
10 x 8	10 3/4	4 3/16	8 5/8	8 1/8	7.8
12 x 2	12 3/4	4 3/16	2 3/8	2	34.9
12 x 3	12 3/4	4 3/16	3 1/2	3	33.1
12 x 4	12 3/4	4 3/16	4 1/2	4	29.8
12 x 6	12 3/4	4 3/16	6 5/8	6 1/8	22.9
12 x 8	12 3/4	4 3/16	8 5/8	8 1/8	16.9
12 x 10	12 3/4	4 3/16	10 3/4	10 1/4	12.1

Fig. 34C
Concentric Tapered Socket

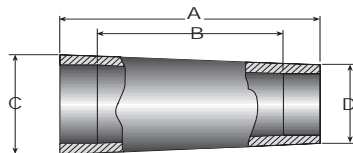
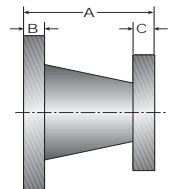


Fig. 34F(1)
Concentric Tapered Socket



Size (In.)	A Ref		B ± 3/8		C Ref		D Ref		Wt. † (Lb.)
	PM (In.)	HLU (In.)	PM (In.)	HLU (In.)	PM (In.)	HLU (In.)	PM (In.)	HLU (In.)	
1 1/2 x 1*	6	4 1/2	3 3/16	2	3 1/8	3 1/8	2 11/16	2 11/16	1.6
2 x 1	6	7 1/8	3	4 1/8	3 1/8	3 1/8	2 11/16	2 11/16	2.0
2 x 1 1/2	6	5	2 7/8	1 7/8	3 1/8	3 1/8	2 11/16	2 11/16	1.2
3 x 1 1/2	5 11/16	6 1/2	2 9/16	3 3/8	4 13/16	4 13/16	3 1/8	3 1/8	2.1
3 x 2	6	6	2 3/8	2 3/8	4 13/16	4 13/16	3 1/8	3 1/8	1.9
4 x 2	7 1/4	10 5/8	3 5/8	7 1/4	5 1/4	5 1/4	3 1/8	3 1/8	2.6
4 x 3	7 1/4	7	3 5/8	3 3/8	5 1/4	5 1/4	4 3/16	4 3/16	2.9
6 x 3	9 9/16	11 1/2	5 15/16	7 7/8	7 7/8	7 7/8	5 1/4	5 1/4	6.8
6 x 4	9 3/8	9	5 3/8	5 3/8	7 7/8	7 7/8	5 1/4	5 1/4	6.2
8 x 4	-	15 7/16	-	11	-	9 1/2	-	5 1/4	10.7
8 x 6	-	15 7/16	-	11	-	9 1/2	-	7 1/2	9.5
10 x 6	-	13 7/16	-	7 3/8	-	11 1/2	-	7 1/2	10.0
10 x 8	-	14	-	7 3/8	-	11 1/2	-	9 1/2	11.5
12 x 8	-	16	-	9 3/8	-	13 1/2	-	9 1/2	17.2
12 x 10	-	16 3/8	-	9 3/8	-	13 1/2	-	11 1/2	20.7
14 x 12	-	17 3/16	-	9 3/16	-	15	-	13 3/4	22.8

Size (In.)	A Ref (In.)	B ± 1/16 (In.)	C Ref (In.)	Wt. † (Lb.)
1 1/2 x 1*	6	3 1/16	7/8	2.3
2 x 1	6	3 1/16	7/8	2.8
2 x 1 1/2	6	3 1/16	1 3/16	3.4
3 x 1 1/2	6	3 1/16	1 3/16	5.1
3 x 2	6	3 1/16	1 3/16	5.2
4 x 2	7	1 1/2	1 3/16	7.5
4 x 3	7	1 1/2	1 3/16	8.8
6 x 3	9	1 9/16	1 3/16	10.1
6 x 4	9	1 9/16	1 1/2	13.9
8 x 4	11	2 1/16	1 1/2	18.5
8 x 6	11	2 1/16	1 9/16	20.2
10 x 6	12	3 1/16	1 9/16	30.4
10 x 8	12	3 1/16	2 1/16	35.5
12 x 8	14	3 1/16	2 1/16	46.9
12 x 10	14	3 1/16	3 1/16	56.3
14 x 12	25 13/16	4 3/8	3 1/16	93.0

* Available on order only - nonreturnable

(1) See Fig. 18 for flange dimensions.

† CL weight, multiply by 1.07 for RB, 1.1 for ZC

Fig. 35C
Eccentric Tapered
Socket

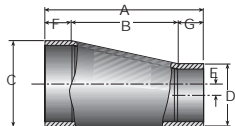
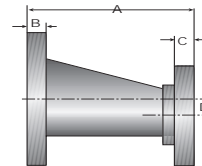


Fig. 35F (1)
Eccentric Tapered
Flanged



Size (In)	A Ref (In.)	B ± 3/8 (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F ± 3/8 (In.)	G ± 1/8 (In.)	Wt. † (Lb.)
3 x 2	6 5/8	2 15/16	4	2 7/8	1 1/2	1 13/16	1 13/16	1.3
4 x 2	6 5/8	2 15/16	5	2 7/8	1	1 13/16	1 13/16	1.5
4 x 3	6 5/8	2 15/16	5	4	1 1/2	1 13/16	1 13/16	1.6
6 x 3	9	5 3/8	7 1/8	4	1 1/2	1 13/16	1 13/16	6.3
6 x 4	9	5 3/8	7 1/8	5	1	1 13/16	1 13/16	5.5
8 x 4	11 13/16	7 3/8	9 1/8	5	2	2 5/8	1 13/16	9.5
8 x 6	11 13/16	7 3/8	9 1/8	7 1/8	1	2 5/8	1 13/16	7.3
10 x 6	13 3/16	7 3/8	11 1/4	7 1/8	2	4	1 13/16	13.7
10 x 8	14	7 3/8	11 1/4	9 1/8	1	4	2 5/8	12.9
12 x 8	16	9 3/8	13 1/4	9 1/8	2	4	2 5/8	16.8
12 x 10	16 3/8	8 3/8	13 1/4	11 1/4	1	4	4	20.0

Size (In)	A ± 1/8 (In.)	B Ref (In.)	C Ref (In.)	D Ref (In.)	Wt. † (Lb.)
2 x 1*	6	1 3/16	7/8	1 1/2	3.4
3 x 2	10 3/4	1 3/16	1 3/16	1 1/2	6.2
4 x 2	10 3/4	1 1/2	1 3/16	1	8.2
4 x 3	10 3/4	1 1/2	1 3/16	1 1/2	9.2
6 x 3	9	1 9/16	1 3/16	1 1/2	10.0
6 x 4	9	1 9/16	1 1/2	1	12.0
8 x 4	11	2 1/16	1 1/2	2	16.1
8 x 6	11	2 1/16	1 9/16	1	19.7
10 x 6	12	3 1/16	1 9/16	2	30.9
10 x 8	12	3 1/16	2 1/16	1	35.2
12 x 8	14	3 1/16	2 1/16	2	46.4
12 x 10	14	3 1/16	3 1/16	1	54.8

FLANGES

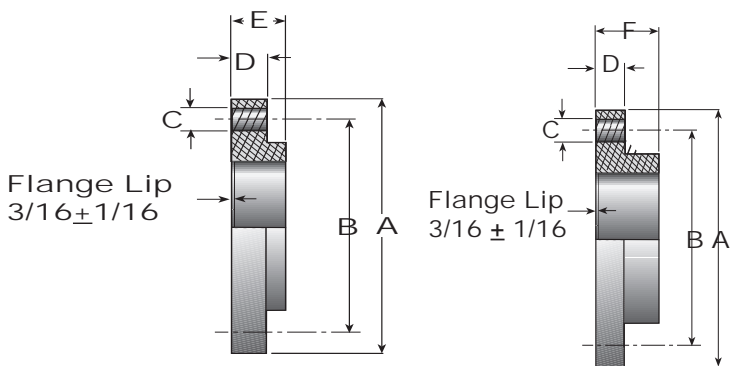


Fig. 18 and Fig. 18L* Flange Socket

Size (In)	A Ref (In.)	B Ref (In.)	C Ref (In.)	D ± 1/16 (In.)	E ± 1/16 (In.)	F ± 1/16 (In.)	Wt. † (Lb.)	Bolts No/Size
1	4 1/4	3 1/8	5/8	7/8	1 7/16	-	0.6	4-1/2
1 1/2	5	3 7/8	5/8	1 3/16	1 9/16	-	1.1	4-1/2
2	6	4 3/4	3/4	1 3/16	2 1/16	3 11/16	1.6	4-5/8
3	7 1/2	6	3/4	1 3/16	2 1/16	3 11/16	2.5	4-5/8
4	9	7 1/2	3/4	1 1/2	2 1/16	3 15/16	4.2	8-5/8
6	11	9 1/2	7/8	1 9/16	2 1/16	4 7/16	5.3	8-3/4
8	13 1/2	11 3/4	7/8	2 1/16	2 9/16	4 7/16	9.9	8-3/4
10	16	14 1/4	1	3 1/16	4 1/4	-	19.6	12-7/8
12	19	17	1	3 1/16	4 1/4	-	27.8	12-7/8
14	21	18 3/4	1 1/8	4 3/8	4 3/8	-	45.5	12-1

Fig. 18R * Reducer Socket

Size (In)	A Ref (In.)	B Ref (In.)	C Ref (In.)	D ± 1/16 (In.)	E ± 1/16 (In.)	Wt. † (Lb.)	Bolts No/Size
1 1/2 x 1	5	3 7/8	5/8	1 3/16	1 9/16	1.3	4-1/2
2 x 1	6	4 3/4	3/4	1 3/16	2 1/16	1.4	4-5/8
2 x 1 1/2	6	4 3/4	3/4	1 3/16	2 1/16	1.7	4-5/8
3 x 2	7 1/2	6	3/4	1 3/16	2 1/16	3.3	4-5/8
4 x 2	9	7 1/2	3/4	1 1/2	2 1/16	5.4	8-5/8
4 x 3	9	7 1/2	3/4	1 1/2	2 1/16	4.9	8-5/8
6 x 2	11	9 1/2	7/8	1 9/16	2 1/16	7.6	8-3/4
6 x 3	11	9 1/2	7/8	1 9/16	2 1/16	8.0	8-3/4
6 x 4	11	9 1/2	7/8	1 9/16	2 1/16	8.8	8-3/4
8 x 2	13 1/2	11 3/4	7/8	2 1/16	2 9/16	17.6	8-3/4
8 x 3	13 1/2	11 3/4	7/8	2 1/16	2 9/16	17.0	8-3/4
8 x 4	13 1/2	11 3/4	7/8	2 1/16	2 9/16	16.0	8-3/4
8 x 6	13 1/2	11 3/4	7/8	2 1/16	2 9/16	13.4	8-3/4
10 x 6	16	14 1/4	1	3 1/16	4 1/4	33.4	12-7/8
10 x 8	16	14 1/4	1	3 1/16	4 1/4	27.3	12-7/8
12 x 8	16	17	1	3 1/16	4 1/4	49.9	12-7/8
12 x 10	16	17	1	3 1/16	4 1/4	43.3	12-7/8

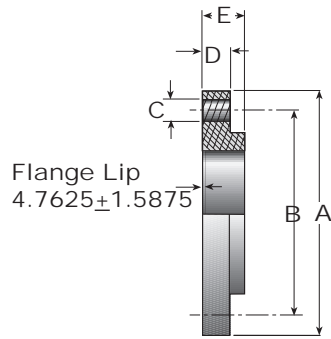
Smith Fibercast flanges meet O.D. bolt circle diameter, number of holes, and bolt hole diameter dimensions for ANSI B16.1 125 lb. cast iron sizes 1"-72" and ANSI B16.5 lb. steel for 1"-24" diameters.

* Available on order only - nonreturnable

(1) See Fig. 18 for flange dimensions.

† CL weight, multiply by 1.07 for RB, 1.1 for ZC

Fig. 18M*
Flange Metric Socket



Size		A Ref	B Ref	C Ref	D ± 1/16	E ± 1/16	Bolts No/Size
(mm)	(In.)	(mm)	(mm)	(mm)	(mm)	(mm)	
25	1	115	85	14	22.225	34.925	4-12mm
40	1 1/2	150	110	18	30.163	38.1	4-16mm
50	2	165	125	18	30.163	50.8	4-16mm
80	3	200	160	18	30.163	50.8	8-16mm
100	4	220	180	18	38.1	50.8	8-16mm
150	6	279	241	23	39.688	50.8	8-20mm
200	8	343	298	23	52.388	60.325	8-20mm
250	10	406	350	23	77.788	106.363	12-20mm
300	12	483	400	23	77.788	106.363	12-20mm

Fig. 22 Blind Flange

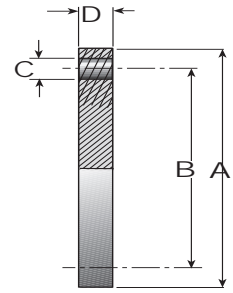
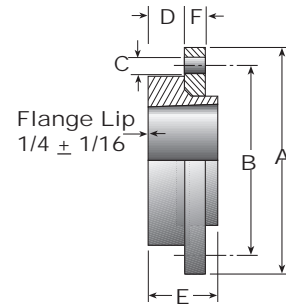


Fig 22S⁽²⁾ Iron Pipe Tapped

Size (In)	A ± 1/8 (In.)	B ± 1/16 (In.)	C Ref (In.)	D ± 1/16 (In.)	Wt. † (Lb.)	Bolts No/Size
1	4 1/4	3 1/8	5/8	7/8	0.6	4-1/2
1 1/2	5	3 7/8	5/8	1 3/16	1.2	4-1/2
2	6	4 3/4	3/4	1 3/16	1.8	4-5/8
3	7 1/2	6	3/4	1 3/16	3.0	4-5/8
4	9	7 1/2	3/4	1 1/2	5.2	8-5/8
6	11	9 1/2	7/8	1 9/16	8.2	8-3/4
8	13 1/2	11 3/4	7/8	2 1/16	16.6	8-3/4
10	16	14 1/4	1	3 1/16	34.3	12-7/8
12	19	17	1	3 1/16	49.1	12-7/8

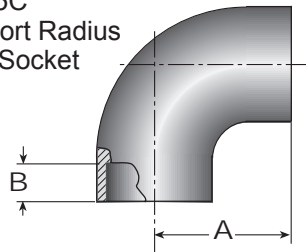
Fig. 21/24/25
Van Stone Flange

Size (In)	A Ref (In.)	B Ref (In.)	C Ref (In.)	D ± 1/16 (In.)	E ± 1/16 (In.)	Fig. 24		Fig. 25	
						F			
						Fiberglass Ring ± 1/16	Steel Ring ± 1/8		
2	6	4 3/4	3/4	1	2	7/8	5/8		
3	7 1/2	6	3/4	1	2	7/8	5/8		
4	9	7 1/2	3/4	1	2	7/8	5/8		



ELBOWS

Fig. 255C
90° Short Radius Elbow, Socket



Size (In.)	A ± 1/16 (In.)	B ± 1/16 (In.)	Wt. † (Lb.)
1	2 1/2	1 3/16	0.4
1 1/2	2 3/4	1 5/16	0.6
2	3 13/16	1 13/16	1.5
3	4 7/16	1 13/16	2.4
4	5 1/16	1 13/16	3.5
6	6	1 13/16	7.6
8	7 1/2	2 5/8	12.0

Sizes 1" - 6" PM Construction
8" HLU Construction

Fig. 257C
90° Long Radius Elbow, Socket

Size (In.)	A ± 3/16 (In.)	B + 0 - 1/16 (In.)	Wt. † (Lb.)
1	5	1 3/16	1.0
1 1/2	6	1 5/16	1.5
2	6 1/2	1 13/16	1.9
3	7 3/4	1 13/16	2.2
4	9	1 13/16	3.6
6	10 13/16	1 13/16	7.6
8	14 5/8	2 5/8	13.8
10	17 11/16	4	22.8
12	20 3/16	4	31.4
14	22	4	41.0

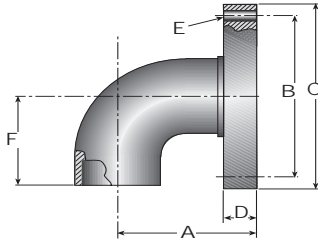
HLU Construction

* Available on order only - nonreturnable

(2) Maximum Iron Pipe Thread size = 1"

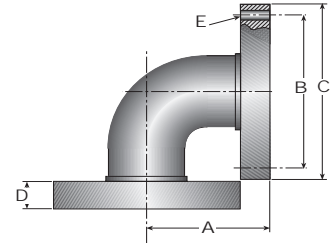
† CL weight, multiply by 1.07 for RB, 1.1 for ZC

Fig. 255S*
90° Short Radius
Elbow, Flange x Socket



Size (In.)	A± ¹ / ₁₆ (In.)	B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	Wt. † (Lb.)	Bolts No/Size
1	3 ¹⁵ / ₁₆	3 ¹ / ₈	4 ¹ / ₄	7 ₈	5 ₈	1.1	4- ¹ / ₂
1 ¹ / ₂	4 ⁵ / ₁₆	3 ⁷ / ₈	5	1 ³ / ₁₆	5 ₈	1.9	4- ¹ / ₂
2	5 ⁷ / ₈	4 ³ / ₄	6	1 ³ / ₁₆	3 ₄	3.3	4- ⁵ / ₈
3	6 ¹ / ₂	6	7 ¹ / ₂	1 ³ / ₁₆	3 ₄	5.1	4- ⁵ / ₈
4	7 ¹ / ₈	7 ¹ / ₂	9	1 ¹ / ₂	3 ₄	8.3	8- ⁵ / ₈
6	8 ¹ / ₁₆	9 ¹ / ₂	11	1 ⁹ / ₁₆	7 ₈	14.2	8- ³ / ₄
8	10 ¹ / ₁₆	11 ³ / ₄	13 ¹ / ₂	2 ¹ / ₁₆	7 ₈	25	8- ³ / ₄

Fig. 255F
90° Short Radius
Elbow, Flanged



Size (In.)	A± ¹ / ₁₆ (In.)	B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	Wt. † (Lb.)	Bolts No/Size
1	3 ¹⁵ / ₁₆	3 ¹ / ₈	4 ¹ / ₄	7 ₈	5 ₈	1.8	4- ¹ / ₂
1 ¹ / ₂	4 ¹³ / ₁₆	3 ⁷ / ₈	5	1 ³ / ₁₆	5 ₈	3.3	4- ¹ / ₂
2	4 ¹ / ₂	4 ³ / ₄	6	1 ¹ / ₁₆	3 ₄	4.4	4- ⁵ / ₈
3	5 ¹ / ₂	6	7 ¹ / ₂	1 ¹ / ₄	3 ₄	8.3	4- ⁵ / ₈
4	6 ¹ / ₂	7 ¹ / ₂	9	1 ³ / ₈	3 ₄	13.0	8- ⁵ / ₈
6	8	9 ¹ / ₂	11	1 ⁹ / ₁₆	7 ₈	20.8	8- ³ / ₄
8	9	11 ³ / ₄	13 ¹ / ₂	2 ¹ / ₁₆	7 ₈	36.4	8- ³ / ₄
10	11	14 ¹ / ₄	16	3 ¹ / ₁₆	1	52.6	12- ⁷ / ₈
12	12	17	19	3 ¹ / ₁₆	1	73.4	12- ⁷ / ₈

Size (In.)	A± ¹ / ₁₆ (In.)	B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	Wt. † (Lb.)	Bolts No/Size
1	6 ⁷ / ₁₆	3 ¹ / ₈	4 ¹ / ₄	7 ₈	5 ₈	2.4	4- ¹ / ₂
1 ¹ / ₂	7 ⁹ / ₁₆	3 ⁷ / ₈	5	1 ³ / ₁₆	5 ₈	4.2	4- ¹ / ₂
2	8 ⁹ / ₁₆	4 ³ / ₄	6	1 ³ / ₁₆	3 ₄	5.2	4- ⁵ / ₈
3	9 ¹³ / ₁₆	6	7 ¹ / ₂	1 ³ / ₁₆	3 ₄	9.1	4- ⁵ / ₈
4	11 ¹ / ₁₆	7 ¹ / ₂	9	1 ¹ / ₂	3 ₄	14.6	8- ⁵ / ₈
6	11 ¹ / ₂	9 ¹ / ₂	11	1 ⁹ / ₁₆	7 ₈	17.1	8- ³ / ₄
8	14	11 ³ / ₄	13 ¹ / ₂	2 ¹ / ₁₆	7 ₈	29.3	8- ³ / ₄
10	16 ¹ / ₂	14 ¹ / ₄	16	3 ¹ / ₁₆	1	52.6	12- ⁷ / ₈
12	19	17	19	3 ¹ / ₁₆	1	72.2	12- ⁷ / ₈
14	26 ³ / ₈ **	18 ³ / ₄	21	4 ³ / ₈	1 ¹ / ₈	134.6	12-1

Fig. 257F
90° Long Radius
Elbow, Flanged

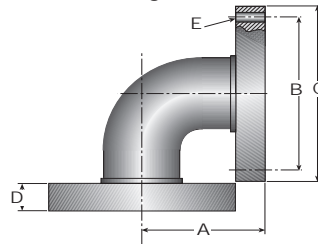
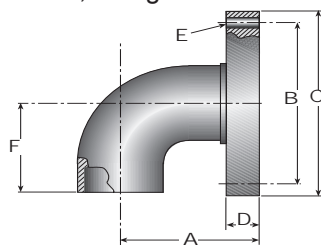


Fig. 257S*
90° Long Radius
Elbow, Flange x Socket



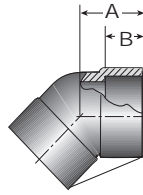
Size (In.)	A± ¹ / ₈ (In.)	B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F± ¹ / ₈ (In.)	Wt. † (Lb.)	Bolts No/Size
1	6 ⁷ / ₁₆	3 ¹ / ₈	4 ¹ / ₄	7 ₈	5 ₈	5	1.7	4- ¹ / ₂
1 ¹ / ₂	7 ⁹ / ₁₆	3 ⁷ / ₈	5	1 ³ / ₁₆	5 ₈	6	2.8	4- ¹ / ₂
2	8 ⁹ / ₁₆	4 ³ / ₄	6	1 ³ / ₁₆	3 ₄	6 ¹ / ₂	3.3	4- ⁵ / ₈
3	9 ¹³ / ₁₆	6	7 ¹ / ₂	1 ³ / ₁₆	3 ₄	7 ³ / ₄	5.8	4- ⁵ / ₈
4	11 ¹ / ₁₆	7 ¹ / ₂	9	1 ¹ / ₂	3 ₄	9	8.5	8- ⁵ / ₈
6	12 ⁷ / ₈	9 ¹ / ₂	11	1 ⁹ / ₁₆	7 ₈	10 ³ / ₁₆	14.4	8- ³ / ₄
8	17 ³ / ₁₆	11 ³ / ₄	13 ¹ / ₂	2 ¹ / ₁₆	7 ₈	14 ⁵ / ₈	25.7	8- ³ / ₄
10	21 ¹⁵ / ₁₆	14 ¹ / ₄	16	3 ¹ / ₁₆	1	17 ¹¹ / ₁₆	49.7	12- ⁷ / ₈
12	24 ⁷ / ₁₆	17	19	3 ¹ / ₁₆	1	20 ³ / ₁₆	65.2	12- ⁷ / ₈
14	26 ³ / ₈	18 ³ / ₄	21	4 ³ / ₈	1 ¹ / ₈	22	105.1	12-1

* Available on order only - nonreturnable

** Tolerance exception - Fig. 257F x 14 - A±¹/₈

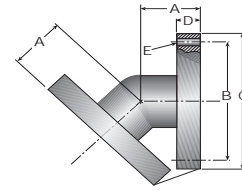
† CL weight, multiply by 1.07 for RB, 1.1 for ZC

Fig. 265C
45° Short Radius
Elbow, Socket



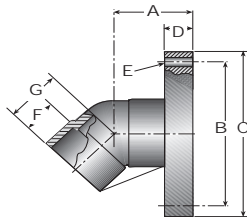
Size (In.)	A		B Ref* (In.)	Wt. † (Lb.)
	PM± ¹ / ₁₆ (In.)	HLU± ¹ / ₈ (In.)		
1	2 ¹ / ₂	1 ³ / ₄	1 ³ / ₁₆	0.7
1 ¹ / ₂	2 ⁵ / ₁₆	2 ¹ / ₄	1 ⁵ / ₁₆	0.6
2	3 ¹ / ₄	2 ¹ / ₂	1 ¹³ / ₁₆	1.3
3	3 ³ / ₄	3	1 ¹³ / ₁₆	2.1
4	4 ¹ / ₁₆	4	1 ¹³ / ₁₆	3.4
6	4 ³ / ₄	5	1 ¹³ / ₁₆	7.0
8		5 ¹⁵ / ₁₆	2 ⁵ / ₈	7.7
10		7 ¹¹ / ₁₆	4	15.8
12		8 ¹¹ / ₁₆	4	20.2
14		9 ³ / ₈	4	24.5

Fig. 265F
45° Short Radius
Elbow, Flanged



Size (In.)	A		B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	Wt. † (Lb.)	Bolts No/Size
	PM± ¹ / ₁₆ (In.)	HLU± ¹ / ₈ (In.)						
1	3 ¹⁵ / ₁₆	3 ³ / ₁₆	3 ¹ / ₈	4 ¹ / ₄	7 ⁷ / ₈	5 ⁵ / ₈	2.1	4-1/2
1 ¹ / ₂	4 ³ / ₈	3 ¹³ / ₁₆	3 ⁷ / ₈	5	1 ¹³ / ₁₆	5 ⁵ / ₈	3.3	4-1/2
2	2 ¹ / ₂	4 ⁹ / ₁₆	4 ³ / ₄	6	1 ¹ / ₁₆	3 ³ / ₄	5.4	4-5/8
3	3	5 ¹ / ₁₆	6	7 ¹ / ₂	1 ¹ / ₄	3 ³ / ₄	6.6	4-5/8
4	4	6 ¹ / ₁₆	7 ¹ / ₂	9	1 ³ / ₈	3 ³ / ₄	13.0	8-5/8
6	6 ¹³ / ₁₆	7 ¹ / ₁₆	9 ¹ / ₂	11	1 ⁹ / ₁₆	7 ⁷ / ₈	20.3	8-3/4
8		5 ¹ / ₂	11 ³ / ₄	13 ¹ / ₂	2 ¹ / ₁₆	7 ⁷ / ₈	23.8	8-3/4
10		6 ¹ / ₂	14 ¹ / ₄	16	3 ¹ / ₁₆	1	56	12-7/8
12		7 ¹ / ₂	17	19	3 ¹ / ₁₆	1	77	12-7/8
14		13 ³ / ₄	18 ³ / ₄	21	4 ³ / ₈	1 ¹ / ₈	115	12-1

Fig. 265S*
45° Elbow,
Flange x Socket



Size (In.)	A		B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F (In.)	G		Wt. † (Lb.)	Bolts No/Size
	PM± ¹ / ₁₆ (In.)	HLU± ¹ / ₈ (In.)						PM± ¹ / ₁₆ (In.)	HLU± ¹ / ₈ (In.)		
1	3 ¹⁵ / ₁₆	3 ³ / ₁₆	3 ¹ / ₈	4 ¹ / ₄	7 ⁷ / ₈	5 ⁵ / ₈	1 ³ / ₁₆	2 ¹ / ₂	1 ³ / ₄	1.3	4-1/2
1 ¹ / ₂	3 ⁷ / ₈	3 ¹³ / ₁₆	3 ⁷ / ₈	5	1 ¹³ / ₁₆	5 ⁵ / ₈	1 ⁵ / ₁₆	2 ⁵ / ₁₆	2 ¹ / ₄	2.0	4-1/2
2	5 ⁵ / ₁₆	4 ⁹ / ₁₆	4 ³ / ₄	6	1 ¹³ / ₁₆	3 ³ / ₄	1 ¹³ / ₁₆	3 ¹ / ₄	2 ¹ / ₂	3.2	4-5/8
3	5 ¹³ / ₁₆	5 ¹ / ₁₆	6	7 ¹ / ₂	1 ¹³ / ₁₆	3 ³ / ₄	1 ¹³ / ₁₆	3 ³ / ₄	3	4.9	4-5/8
4	6 ¹ / ₈	6 ¹ / ₁₆	7 ¹ / ₂	9	1 ¹ / ₂	3 ³ / ₄	1 ¹³ / ₁₆	4 ¹ / ₁₆	4	8.0	8-5/8
6	6 ¹³ / ₁₆	7 ¹ / ₁₆	9 ¹ / ₂	11	1 ⁹ / ₁₆	7 ⁷ / ₈	1 ¹³ / ₁₆	4 ³ / ₄	5	13.7	8-3/4
8		8 ¹ / ₂	11 ³ / ₄	13 ¹ / ₂	2 ¹ / ₁₆	7 ⁷ / ₈	2 ⁵ / ₈		5 ¹⁵ / ₁₆	15.9	8-3/4
10		11 ¹⁵ / ₁₆	14 ¹ / ₄	16	3 ¹ / ₁₆	1	4		7 ¹¹ / ₁₆	39.3	12-7/8
12		12 ¹⁵ / ₁₆	17	19	3 ¹ / ₁₆	1	4		8 ¹¹ / ₁₆	57.5	12-7/8
14		13 ³ / ₄	18 ³ / ₄	21	4 ³ / ₈	1 ¹ / ₈	4		9 ³ / ₈	70	12-1

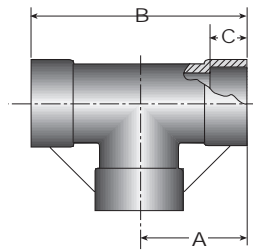
* Available on order only - nonreturnable

† CL weight, multiply by 1.07 for RB, 1.1 for ZC

TEES

Size (In.)	A		B		C ± 1/8 (In.)	Wt. † (Lb.)
	PM ± 1/16 (In.)	HLU ± 1/8 (In.)	PM ± 1/16 (In.)	HLU ± 1/8 (In.)		
1	2 1/2	3 1/2	5	7	1 3/16	0.8
1 1/2	2 3/4	4	5 1/2	8	1 5/16	0.9
2	3 13/16	4 1/2	7 5/8	9	1 13/16	2.1
3	4 7/16	5 1/2	8 7/8	11	1 13/16	3.4
4	5 1/16	6 1/2	10 1/8	13	1 13/16	5.3
6♦	6	8	12	16	1 13/16	11.2
8		7 11/16		15 3/8	2 5/8	15.5
10		12 3/16		24 3/8	4	29.3
12		13 3/16		26 3/8	4	38.8
14		13 5/8		27 1/4	4	40.8

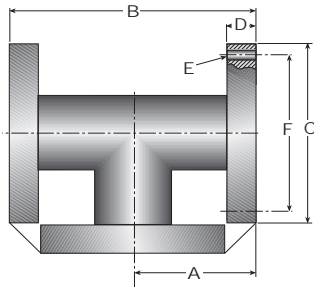
Fig. 275C
Tee, Socket



Tolerance Exception

275C x 10	A ± 1/8
275C x 12	A ± 1/8
	A ± 1/8

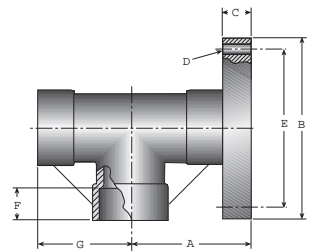
Fig. 275F
Tee, Flanged



Size (In.)	A		B		C Ref (In.)	D Ref (In.)	E Ref (In.)	F Ref (In.)	Wt. † (Lb.)	Bolts No/Size
	PM ± 1/16 (In.)	HLU ± 1/8 (In.)	PM ± 1/16 (In.)	HLU ± 1/8 (In.)						
1	3 15/16	4 15/16	7 7/8	9 7/8	4 1/4	7/8	5/8	3 1/8	2.9	4-1/2
1 1/2	4 13/16	5 9/16	9 5/8	11 1/8	5	1 3/16	5/8	3 7/8	5.0	4-1/2
2	4 1/2	6 9/16	9	13 1/8	6	1 1/16	3/4	4 3/4	7.6	4-5/8
3	5 1/2	7 9/16	11	15 1/8	7 1/2	1 1/4	3/4	6	12.6	4-5/8
4	6 1/2	8 9/16	13	17 1/8	9	1 3/8	3/4	7 1/2	19.0	8-5/8
6♦	8	10 1/16	16	20 1/8	11	1 9/16	7/8	9 1/2	32.7	8-3/4
8		9		18	13 1/2	2 1/16	7/8	11 3/4	51.7	8-3/4
10		11		22	16	3 1/16	1	14 1/4	90	12-7/8
12		12		24	19	3 1/16	1	17	125	12-7/8
14		18		36	21	4 3/8	1 1/8	18 3/4	180	12-1

Size (In.)	A		B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F Ref (In.)	G		Wt. †	
	PM ± 1/16 (In.)	HLU ± 1/8 (In.)						PM ± 1/16 (In.)	HLU ± 1/8 (In.)	One Flg (Lb.)	Two Flgs (Lb.)
1	3 15/16	4 15/16	4 1/4	7/8	7/8	3 1/8	1 3/16	2 1/2	3 1/2	1.5	2.2
1 1/2	4 5/16	5 9/16	5	1 13/16	5/8	3 7/8	1 5/16	2 3/4	4	2.2	3.5
2	5 7/8	6 9/16	6	1 13/16	3/4	4 3/4	1 13/16	3 13/16	4 1/2	3.9	5.8
3	6 1/2	7 9/16	7 1/2	1 13/16	3/4	6	1 13/16	4 7/16	5 1/2	7.0	10.6
4	7 1/8	8 9/16	9	1 1/2	3/4	7 1/2	1 13/16	5 1/16	6 1/2	11.4	17.4
6♦	8 1/16	10 1/16	11	1 9/16	7/8	9 1/2	1 13/16	6	8	19.3	27.5
8		10 1/4	13 1/2	2 1/16	7/8	11 3/4	2 5/8		7 11/16	22.2	28.9
10		16 7/16	16	3 1/16	1	14 1/4	4		12 3/16	60	90
12		17 7/16	19	3 1/16	1	17	4		13 3/16	95	140

Fig. 275S*
Tee, Flanged x Socket



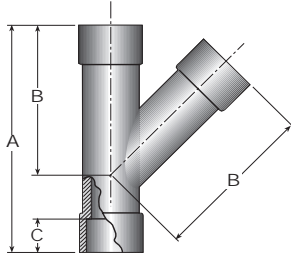
♦6" PM available in CL only

* Available on order only - nonreturnable

†CL weight, multiply by 1.07 for RB, 1.1 for ZC

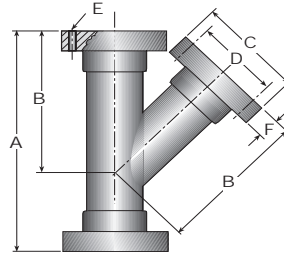
LATERALS

Fig. 266C
Lateral, Socket



Size (In.)	A± 1/4 (In.)	B± 1/4 (In.)	C± 1/8 (In.)	Wt. † (Lb.)
2	10 ¹ / ₈	7 ¹ / ₂	1 ¹³ / ₁₆	2.0
3	11 ⁷ / ₈	8 ¹⁵ / ₁₆	1 ¹³ / ₁₆	3.7
4	13 ¹¹ / ₁₆	11	1 ¹³ / ₁₆	8
6	24 ¹ / ₂	17 ³ / ₈	1 ¹³ / ₁₆	13.9
8	29 ¹ / ₄	21 ⁵ / ₁₆	2 ⁵ / ₈	35.5
10	36 ⁷ / ₈	26 ⁷ / ₁₆	4	51.7
12	43 ¹ / ₄	31 ¹⁵ / ₁₆	4	69.1

Fig. 266F*
Lateral, Flanged

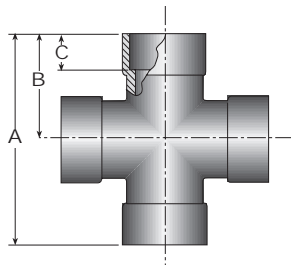


Size (In.)	A± 1/8 (In.)	B± 1/8 (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F Ref (In.)	Wt. † (Lb.)	Bolts No/Size
2	12 ¹ / ₂	8 ¹¹ / ₁₆	6	1 ¹ / ₁₆	3/4	4 ³ / ₄	7.6	4-5/8
3	14 ¹ / ₂	10 ¹ / ₈	7 ¹ / ₂	1 ¹ / ₄	3/4	6	12.6	4-5/8
4	16 ¹¹ / ₁₆	12 ¹ / ₂	9	1 ³ / ₈	3/4	7 ¹ / ₂	19.0	8-5/8
6	28 ⁵ / ₈	19 ⁷ / ₁₆	11	1 ⁹ / ₁₆	7/8	9 ¹ / ₂	32.7	8-3/4
8	31 ³ / ₄	22 ⁹ / ₁₆	13 ¹ / ₂	2 ¹ / ₁₆	7/8	11 ³ / ₄	51.7	8-3/4
10	45 ³ / ₈	30 ¹¹ / ₁₆	16	3 ¹ / ₁₆	1	14 ¹ / ₄	112	12-7/8
12	51 ³ / ₄	36 ³ / ₁₆	19	3 ¹ / ₁₆	1	17	152	12-7/8

Note: Reducing Laterals and crosses are available on request.

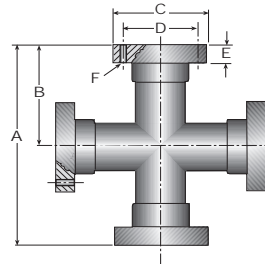
CROSSES

Fig. 285C
Cross, Socket



Size (In.)	A± 1/4 (In.)	B± 1/8 (In.)	C± 1/8 (In.)	Wt. † (Lb.)
2	6 ³ / ₈	3 ³ / ₁₆	1 ¹³ / ₁₆	1.4
3	8	4	1 ¹³ / ₁₆	2.3
4	10 ⁵ / ₈	5 ⁵ / ₁₆	1 ¹³ / ₁₆	5.5
6	12	6	1 ¹³ / ₁₆	15.7
8	15 ³ / ₈	7 ¹¹ / ₁₆	2 ⁵ / ₈	15.5
10	24 ³ / ₈	12 ³ / ₁₆	4	45.6
12	26 ³ / ₈	13 ³ / ₁₆	4	57.2

Fig. 285F*
Cross, Flanged



Size (In.)	A± 1/8 (In.)	B± 1/8 (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F Ref (In.)	Wt. † (Lb.)	Bolts No/Size
2	8 ³ / ₄	4 ³ / ₈	6	4 ³ / ₄	1 ³ / ₁₆	3/4	9.3	4-5/8
3	10 ³ / ₈	5 ³ / ₁₆	7 ¹ / ₂	6	1 ³ / ₁₆	3/4	13.9	4-5/8
4	13 ⁵ / ₈	6 ¹³ / ₁₆	9	7 ¹ / ₂	1 ¹ / ₂	3/4	23.5	8-5/8
6	16	8	11	9 ¹ / ₂	1 ⁹ / ₁₆	7/8	57.5	8-3/4
8	18	9	13 ¹ / ₂	11 ³ / ₄	2 ¹ / ₁₆	7/8	71.7	8-3/4
10	22	11	16	14 ¹ / ₄	3 ¹ / ₁₆	1	126	12-7/8
12	24	12	19	17	3 ¹ / ₁₆	1	170	12-7/8

* Available on order only - nonreturnable.

† CL weight, multiply by 1.07 for RB, 1.1 for ZC

PIPE SUPPORT/WEAR PAD

Fig. 391
Pipe Support

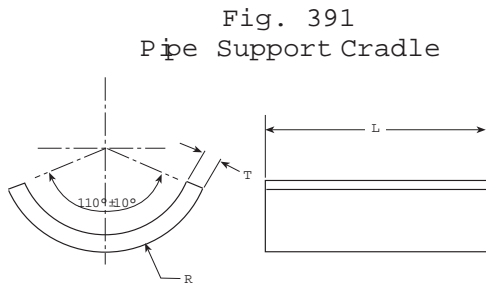


Fig. 391
Pipe Support Cradle

Size (In.)	R	L ± 1/8 (In.)	T Ref (In.)
1	1-1/16	3	13/32
1 1/2	1-3/8	3	7/16
2	1-17/32	4	11/32
3	2-3/32	4	11/32
4	2-5/8	4	3/8
6	3-15/16	4	5/8
8	4-15/16	5-5/8	5/8
10	6-1/8	8-3/8	3/4
12	7-3/32	8-3/8	23/32
14	7-25/32	8-3/8	25/32

FLOOR DRAIN



Fig. 203
Sealable Floor Drain

Sealable Drain Dimensional Data

Size (In.)	A ± 1/8 (In.)	B (In.)	C (In.)	D (In.)	E (In.)	F ± 1/8 (In.)	G (In.)	H (In.)	I (In.)
6 x 2	6 1/4	2 3/8	2	6 3/8	6	8 7/8	5 3/4	7	7 3/4
6 x 3	6 1/4	3 1/2	2	6 3/8	6	8 7/8	5 3/4	7	7 3/4
6 x 4	6	4 1/2	2	6 3/8	6	8 7/8	5 3/4	7	7 3/4
12 x 4	8 11/16	4 1/2	1 9/16	13 3/8	8	15 1/2	12 3/4	14	14 1/2
12 x 6	8 11/16	6 5/8	1 9/16	13 3/8	8	15 1/2	12 3/4	14	14 1/2
12 x 8	8	6 5/8	1 9/16	13 3/8	8	15 1/2	12 3/4	14	14 1/2

Note: Standard outlet straight socket. 2" - 6" FNPT outlet available on request.

Sealable Drain Standard Configurations

Description	Figure	Viton Plug	1/4" Solid Cover Plate with O-Ring Seal	1/4" Drilled Drain Grate	16 Gauge Strainer Basket
Clean Out	203CO	✓	✓		
Floor Drain	203FD	✓		✓	✓
Equipment Drain	203ED	✓	✓		✓

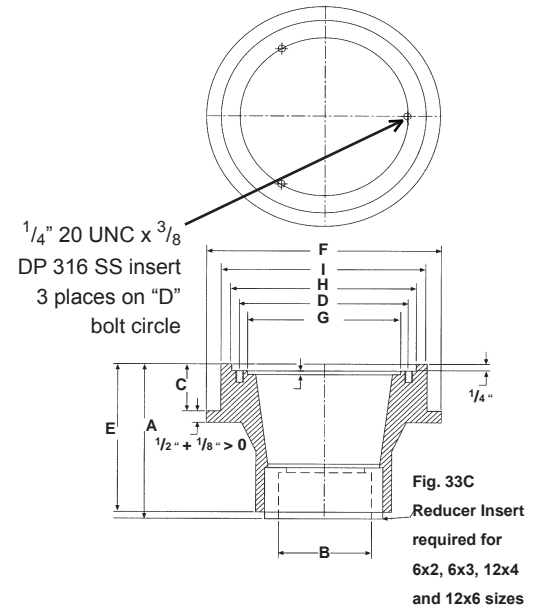
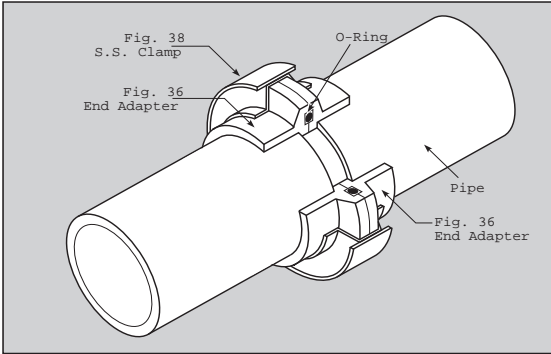


Fig. 33C
Reducer Insert
required for
6x2, 6x3, 12x4
and 12x6 sizes

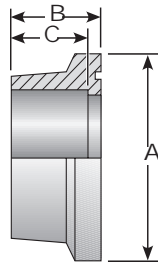
CENTRICLAMP

Physical Data



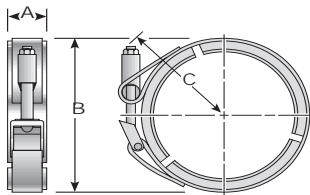
Size (In.)	Pressure Rating		Max Rec. Torque (In-Lbs.)	Precision O-Ring Size	Wrench Size (In.)
	EP @225 °	VE @175 °			
2	150	150	50	333	7/16
3	150	150	75	342	7/16
4	150	150	150	428	1/2
6	150	150	150	441	1/2
8	150	125	175	448	1/2

Fig. 36* End Adapter



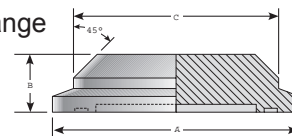
Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)	Wt. † (Lb.)
2	3 ³ / ₄	2 ¹ / ₁₆	1 ¹³ / ₁₆	0.5
3	5	2 ¹ / ₁₆	1 ¹³ / ₁₆	0.7
4	6 ³ / ₈	2 ¹ / ₁₆	1 ¹³ / ₁₆	1.2
6	8 ⁷ / ₈	2 ¹ / ₁₆	1 ¹³ / ₁₆	2.2
8	11 ¹ / ₂	2 ¹ / ₁₆	1 ¹³ / ₁₆	3.8

Fig. 38* SS Clamp



Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)	Nut(s)		Wt. † (Lb.)
				No.	Size (In.)	
2	1 ⁵ / ₁₆	4	3	1	7/16	0.5
3	1 ³ / ₈	5 ¹ / ₄	3 ⁵ / ₈	1	7/16	.07
4	1 ³ / ₄	7	5	1	1/2	1.2
6	2 ¹ / ₁₆	9 ¹ / ₄	5 ⁵ / ₈	1	1/2	2.4
8	2 ⁹ / ₁₆	12	7 ¹ / ₂	1	1/2	5.5

Fig. 39* Blind Flange



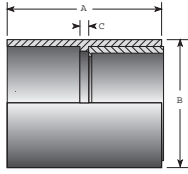
Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)
2	3 ³ / ₄	1 ¹ / ₁₆	3 ¹ / ₈
3	5	1 ¹ / ₈	4 ⁵ / ₁₆
4	6 ³ / ₈	1 ¹ / ₄	5 ⁵ / ₁₆
6	8 ⁷ / ₈	1 ¹ / ₂	7 ¹⁵ / ₁₆
8	11 ¹ / ₂	2	10 ⁵ / ₁₆

* Available on order only - nonreturnable.

† CL weight, multiply by 1.07 for RB, 1.1 for ZC

ASSEMBLED FITTINGS REFERENCE DIMENSIONS

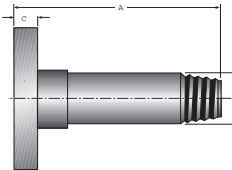
Fig. 8C*
Reducer
Socket



Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)	Wt. † (Lb.)
1 1/2 x 1	3 3/16	2 11/16	9/16	0.7
2 x 1	4	3 1/8	9/16	1.3
2 x 1 1/2	4	3 1/8	9/16	0.9
3 x 2	4 3/16	4 3/16	9/16	1.6
4 x 2	4 3/16	5 1/4	9/16	2.7
4 x 3	4 3/16	5 1/4	9/16	2.4
6 x 4	4 3/16	7 7/8	9/16	5.4
8 x 4	5 5/8	9 7/8	9/16	7.8
8 x 6	5 5/8	9 7/8	9/16	6.7

Assemble using Fig. 14 Socket Coupling and Fig. 33 Reducer Bushing

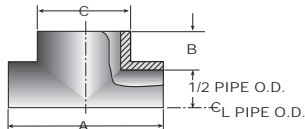
Fig. 244*
Nipple
Flanged
Iron Pipe Thread



Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)	Wt. † (Lb.)
1	8 1/4	1 5/16	7/8	1.0
1 1/2	8 1/4	1 15/16	1 3/16	1.8
2	8 1/4	2 3/8	1 3/16	2.5
3	8 1/4	3 1/2	1 3/16	4.1
4	8 1/4	4 1/2	1 1/2	6.5
6	8 1/4	6 5/8	1 9/16	9.3

Assemble using Fig. 18 Socket Flange and Fig. 6S Iron Pipe Adapter

Fig. 13*
Pipe Saddle

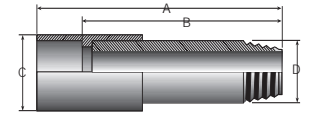


Size (In.)	A±1/4 (In.)	B±1/8 (In.)	C Ref (In.)	Threaded Outlet NPT						Cement Outlet									
				1/4	1/2	3/4	1	1 1/4	1 1/2	1	1 1/2	2	3	4	6	8	10		
2	4 1/4	3/4	2 3/8								S								
3	5 3/4	2	3 3/8	X	X	X	X	X	X	V	V	S							
4	8	2	4 1/16	XV	XV	XV	X	XV	X	V	V	S	S						
6	9	2	5 1/8	XV	XV	XV	XV	XV	XV	W	W	S	V	S					
8	10 1/2	2	7 7/16	XV	XV	XV	XV	XV	XV	W	W	S	V	V	S				
10	13 1/2	3 1/8	10 1/8	XV	XV	XV	XV	XV	XV	W	W	S	V	V	V	S			
12	8 3/8	3 1/8	12 3/16	XV	XV	XV	XV	XV	XV	W	W	S	V	V	V	V	S		

* Available on order only - nonreturnable.

† CL weight, multiply by 1.07 for RB, 1.1 for ZC

Fig. 6*
Adapter
Iron Pipe Male x
Socket Female



Size (In.)	A (In.)	B Ref (In.)	C (In.)	D (In.)	Wt. † (Lb.)
1	9 13/16	8 5/8	2 1/16	1 5/16	0.8
1 1/2	9 11/16	8 3/8	2 11/16	1 15/16	1.1
2	10 3/16	8 3/8	3 1/8	2 3/8	1.6
3	10 3/16	8 3/8	4 3/16	3 1/2	2.6
4	10 3/16	8 3/8	5 1/4	4 1/2	3.6
6	10 3/16	8 3/8	7 7/8	6 5/8	6.6

Assemble using Fig. 6S Adapter and Fig. 14 Socket Coupling

Fig. 19
Stub Flange



Size (In.)	A±1/8 (In.)	B±1/8 (In.)	Wt. † (Lb.)
1	2 5/8	1 3/16	0.7
1 1/2	3 7/8	1 5/16	1.3
2	3 7/8	1 13/16	2.0
3	3 7/8	1 13/16	3.0
4	3 7/8	1 13/16	4.9
6	3 7/8	1 13/16	6.5
8	5 3/16	2 5/8	11.7
10	8 1/4	4	23.9
12	8 1/4	4	33.9
14	8 3/8	4	36.9

Assemble using Fig. 18 Socket Flange and Fig. 17 Pipe Stub

X=Fabricated using Fig 13 Cement Socket Outlet Pipe Saddle and Fig 33S Threaded Bushing Insert.

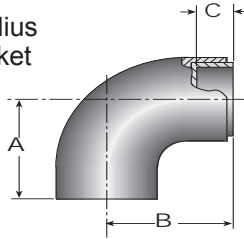
V=Fabricated using Fig 13 Cement Socket Outlet Pipe Saddle and Fig 33 Socket Reducer Bushing Insert.

S=Standard Pipe Saddle, no fabrication needed.

XV=Fabricated using Fig 13 Cement Socket Outlet Pipe Saddle, Fig 33 Socket Reducer Bushing and Fig 33S Threaded Bushing Insert.

W=Fabricated using Fig 13 Cement Socket Outlet Pipe Saddle and 2 or more Fig 33 Socket Reducer Bushing Inserts.

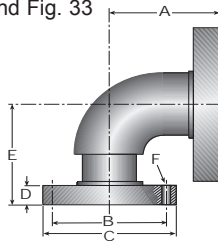
Fig. 255CR*
90° Short Radius
Reducer, Socket



Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)
1 1/2	2 3/4	2 15/16	1 5/16
2	3 13/16	3 1/2	1 5/16
3	4 7/16	4 5/8	1 13/16
4	5 1/16	5 1/4	1 13/16
6	6	6 3/16	1 13/16
8	7 1/2	7 1/2	2 5/16

Assemble using Fig. 255C Elbow and Fig. 33 Reducer Bushing

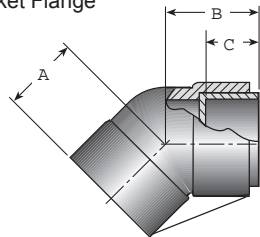
Fig. 255FR*
90° Short Radius
Reducer, Flanged



Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F Ref (In.)	Bolts No/Size
1 1/2 x 1	4 5/16	3 1/8	4 1/4	7/8	6 3/16	5/8	4-1 1/2
2 x 1 1/2	5 7/8	3 7/8	5	1 3/16	7	5/8	4-5/8
3 x 2	6 1/2	4 3/4	6	1 3/16	7 5/8	3/4	4-5/8
4 x 3	7 1/8	6	7 1/2	1 3/16	8 1/4	3/4	4-5/8
6 x 4	8 1/16	7 1/2	9	1 1/2	9 1/2	3/4	8-5/8
8 x 6	10 1/16	9 1/2	11	1 9/16	10 1/2	7/8	8-3/4

Assemble using Fig. 255C Elbow and Fig. 33 Reducer Bushing, Fig. 17 Pipe Stub and Fig. 18 Socket Flange

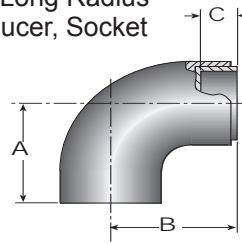
Fig. 265CR(3)
45° Reducer, Socket



Size (In.)	A		B		C Ref (In.)
	PM ± 1/16 (In.)	HLU ± 1/8 (In.)	PM Ref (In.)	HLU Ref (In.)	
1 1/2	2 5/16	2 1/4	2 1/2	2 7/16	1 5/16
2	3 1/4	2 1/2	2 15/16	2 3/16	1 5/16
3	3 3/4	3	3 15/16	3 3/16	1 13/16
4	4 1/16	4	4 1/4	4 3/16	1 13/16
6	4 3/4	5	4 15/16	5 3/16	1 13/16
8		5 15/16		5 13/16	2 5/16
10		7 11/16		7 7/8	4
12		8 11/16		8 7/8	4

Assemble using Fig. 265C Elbow and Fig. 33 Reducer Bushing

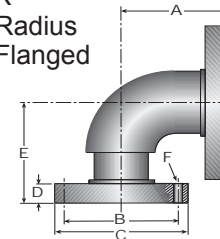
Fig. 257CR*
90° Long Radius
Reducer, Socket



Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)
6	10 13/16	11	1 13/16
8	14 5/8	14 5/8	2 5/16
10	17 11/16	17 7/8	4
12	20 3/16	20 3/8	4

Assemble using Fig. 257C Elbow and Fig. 33 Reducer Bushing

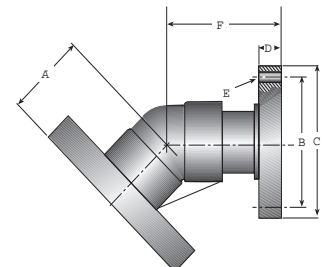
Fig. 257FR*
90° Long Radius
Reducer, Flanged



Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F Ref (In.)	Bolts No/Size
6 x 4	12 7/8	7 1/2	9	1 1/2	14 5/16	3/4	8-5/8
8 x 6	17 3/16	9 1/2	11	1 9/16	17 3/8	7/8	8-3/4
10 x 8	21 15/16	11 3/4	13 1/2	2 1/16	21 1/4	7/8	8-3/4
12 x 10	24 7/16	14 1/4	16	3 1/16	26 3/8	1	12-7/8

Assemble using Fig. 257C Elbow, Fig. 33 Reducer Bushing, Fig. 17 Pipe Stub and Fig. 18 Socket Flange

Fig. 265FR(3)*
45° Reducer,
Flanged



Size (In.)	A		B Ref (In.)	C Ref (In.)	D Ref (In.)	E Ref (In.)	F Ref (In.)	Bolts No/Size
	PM ± 1/16 (In.)	HLU ± 1/8 (In.)						
1 1/2 x 1	3 7/8	3 13/16	3 1/8	4 1/4	7/8	5/8	5 3/4	4-1 1/2
2 x 1 1/2	5 5/16	4 9/16	3 7/8	5	1 3/16	5/8	7 5/16	4-5/8
3 x 2	5 13/16	5 1/16	4 3/4	6	1 3/16	3/4	7 13/16	4-5/8
4 x 3	6 1/8	6 1/16	6	7 1/2	1 3/16	3/4	8 1/8	8-5/8
6 x 4 ♦	6 13/16	7 1/16	7 1/2	9	1 1/2	7/8	8 1/4	8-3/4
8 x 6		8 1/2	9 1/2	11	1 9/16	7/8	8 11/16	8-3/4
10 x 8		11 15/16	11 3/4	13 1/2	2 1/16	1	11 1/4	12-7/8
12 x 10		12 15/16	14 1/4	16	3 1/16	1	14 7/8	12-7/8

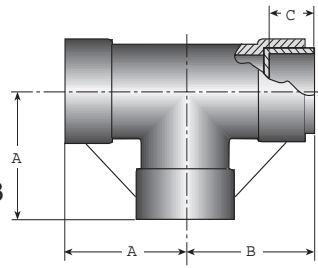
Assemble using Fig. 265F Elbow and Fig. 33 Reducer Bushing, Pipe Stubs and Fig 18 Socket Flanges

♦ 6" PM available in CL only

* Available on order only - nonreturnable.

(3) Reductions beyond one pipe size for reduced pressure applications are available. (See Fig. 33, page 3)

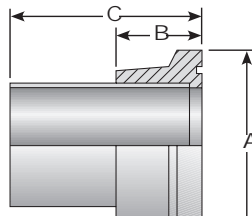
Fig. 275CR*
Reducer, Socket



Assemble using Fig 275C and Fig 33
Reducer Bushing

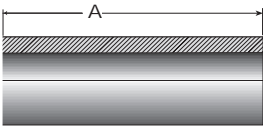
Size (In.)	A		B		C Ref
	PM $\pm 1/16$	HLU $\pm 1/8$	PM Ref	HLU Ref	
1 1/2	2 3/4	4	2 15/16	4	1 5/16
2	3 13/16	4 1/2	3 1/2	4 3/16	1 5/16
3	4 7/16	5 1/2	4 5/8	5 11/16	1 13/16
4	5 1/16	6 1/2	5 1/4	6 11/16	1 13/16
6 ♦	6	8	6 3/16	8 3/16	1 13/16
8		7 11/16		7 9/16	2 5/16
10		12 3/16		12 3/8	4
12		13 3/16		13 3/8	4

Fig. 37*
Adapter Nipple



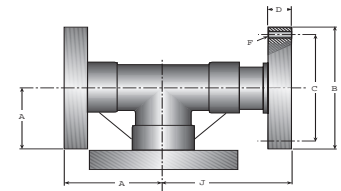
Size (In.)	A Ref (In.)	B Ref (In.)	C Ref (In.)	Wt. † (Lb.)
2	3 3/4	2 1/16	4 13/16	1.0
3	5	2 1/16	4 13/16	1.7
4	6 3/8	2 1/16	4 13/16	2.2
6	8 7/8	2 1/16	4 13/16	4.0
8	11 1/2	2 1/16	4 13/16	6.3

Fig. 17
Assembly Pipe Stubs



Size (In.)	Fig 17
	A (In.)
1	2 3/8
1 1/2	2 5/8
2	3 5/8
3	3 5/8
4	3 5/8
6	3 5/8
8	5 1/4
10	8
12	8
14	8

Fig. 275FR(3)*
Reducer, Flanged
Single Size Reduction Shown



Size (In.)	A		B Ref (In.)	C Ref (In.)	D Ref (In.)	F Ref (In.)	J Ref (In.)
	PM Ref	HLU Ref					
1 1/2 x 1	4 5/16	5 9/16	4 1/4	3 1/8	7/8	5/8	6 3/16
2 x 1 1/2	5 7/8	6 9/16	5	3 7/8	1 3/16	5/8	7
3 x 2	6 1/2	7 9/16	6	4 3/4	1 3/16	3/4	7 5/8
4 x 3	7 1/8	8 9/16	7 1/2	6	1 3/16	3/4	8 1/4
6 x 4	8 1/16	10 1/16	9	7 1/2	1 1/2	3/4	9 1/2
8 x 6		10 1/4	11	9 1/2	1 9/16	7/8	10 9/16
10 x 8		16 7/16	13 1/2	11 3/4	2 1/16	7/8	15 11/16
12 x 10		17 7/16	16	14 1/4	3 1/16	1	19 3/8

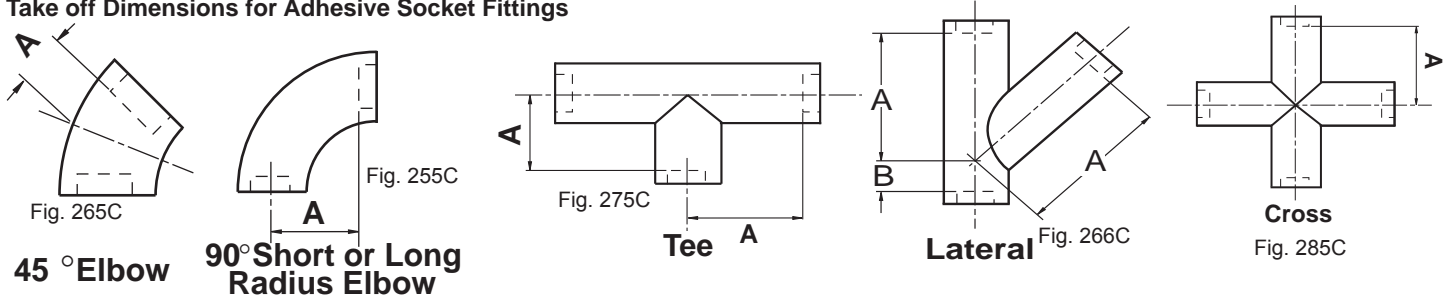
♦ 6" PM available in CL only

* Available on order only - nonreturnable.

(3) Reductions beyond one pipe size for reduced pressure applications are available. (See Fig. 33, page 3)

DIMENSIONS

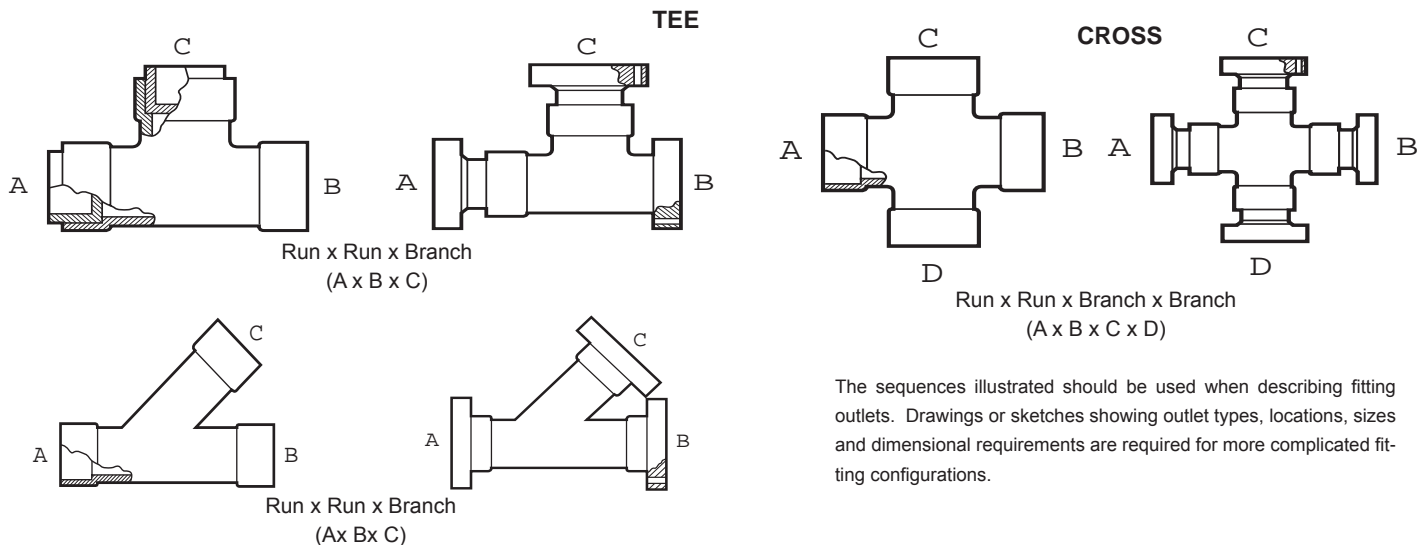
Take off Dimensions for Adhesive Socket Fittings



Pipe Stop to Fittings' Center Line Dimensions

Size (In.)	45° Elbow		Short Radius 90° Elbow	Long Radius 90° Elbow	Tee		Lateral		Cross
	PM A (In.)	HLU A (In.)	A (In.)	A (In.)	PM A (In.)	HLU A (In.)	A (In.)	B (In.)	A (In.)
1	1 ⁵ / ₁₆	9/ ₁₆	1 ⁵ / ₁₆	3 ¹³ / ₁₆	1 ⁵ / ₁₆	2 ⁵ / ₁₆	-	-	-
1 ¹ / ₂	1	1 ⁵ / ₁₆	1 ⁷ / ₁₆	4 ¹¹ / ₁₆	1 ⁷ / ₁₆	2 ¹¹ / ₁₆	-	-	-
2	1 ⁷ / ₁₆	1 ¹ / ₁₆	2	4 ¹¹ / ₁₆	2	2 ¹¹ / ₁₆	5 ¹¹ / ₁₆	1 ³ / ₁₆	1 ³ / ₈
3	1 ¹⁵ / ₁₆	1 ³ / ₁₆	2 ⁵ / ₈	5 ¹⁵ / ₁₆	2 ⁵ / ₈	3 ¹¹ / ₁₆	7 ¹ / ₈	1 ¹ / ₈	2 ³ / ₁₆
4	2 ¹ / ₄	2 ³ / ₁₆	3 ¹ / ₄	7 ³ / ₁₆	3 ¹ / ₄	4 ¹¹ / ₁₆	9 ³ / ₁₆	7 ⁷ / ₈	3 ¹ / ₂
6	2 ¹⁵ / ₁₆	3 ³ / ₁₆	4 ³ / ₁₆	9	4 ³ / ₁₆	6 ³ / ₁₆	15 ⁹ / ₁₆	5 ⁵ / ₁₆	4 ³ / ₁₆
8		3 ⁵ / ₁₆	4 ⁷ / ₈	12		5 ¹ / ₁₆	18 ¹¹ / ₁₆	5 ⁵ / ₁₆	5 ³ / ₁₆
10		3 ¹¹ / ₁₆	-	13 ¹¹ / ₁₆		8 ³ / ₁₆	22 ⁷ / ₁₆	6 ⁷ / ₁₆	8 ³ / ₁₆
12		4 ¹¹ / ₁₆	-	16 ³ / ₁₆		9 ³ / ₁₆	27 ¹⁵ / ₁₆	7 ⁵ / ₁₆	9 ³ / ₁₆
14		5 ³ / ₈	-	18		9 ⁵ / ₈	-	-	-

How to Read Flanged or Reducing Fittings



The sequences illustrated should be used when describing fitting outlets. Drawings or sketches showing outlet types, locations, sizes and dimensional requirements are required for more complicated fitting configurations.

Special Configuration Fittings Contact Fiber Glass Systems for Details

- 1¹/₁₆ through 12" Orifice flanges, 150# & 300#
- Odd degree elbows, 15, 22¹/₂, 30 & 60 degree
- 5D Socket & Flanged Elbows
- Sump Fittings
- 4" thru 10" Reducing Lateral, Socket, Fig. 266CR
- 2" thru 12" Fig 267F Long Turn Tee, Socket, Fig. 267C
- 2" thru 12" Long Turn Tee, Flanged, Fig 267F
- 2" thru 12" 45° Double Y Branch, Socket, Fig. 268C
- 2" thru 12" 45° Double Y Branch, Flanged, Fig. 268F
- 2" thru 12" 90° Double Y Branch, Socket, Fig. 269C
- 2" thru 12" 90° Double Y Branch, Flanged, Fig. 269F

ADHESIVES

Weldfast® ZC-275 Epoxy Adhesive for Adhesive Socket Joints

Order for Z-Core epoxy piping systems. Weldfast ZC-275 adhesive can also be used to bond RB and CL pipe and fittings. Usage should be limited to applications recommended for both Z-Core product and the pipe and fittings grade being used.

Contents:

- Adhesive (Part A)
- Hardener (Part B)
- Wooden Stir Stick
- Plastic Putty Knife
- Fabrication Instructions

No. 1 Kit Size-1/2 Pint

Number of Bonds Per Kit	
Joints	Pipe Size
12	1" connections
10	1 1/2" connections
8	2" connections
5	3" connections
3	4" connections
2	6" connections
1	8" connections
1/2	10" connections
1/2	12" connections
1/3	14" connections



For complete instructions, refer to fab Bulletin D4090 included in each kit of WELDFAST ZC-275 Adhesive.

Weldfast® CL-200-QS Part "C"



Accelerator used with Smith Fibercast WELDFAST CL-225 to provide a quick set vinyl ester adhesive. Joints fabricated with this quick set adhesive can be made and quickly cured in as little as one hour (at room temperature) compared to 24 hours (at room temperature) for conventional adhesives.

Contents:

- Adhesive (Part A)
- Catalyst
- Wooden Stir Stick
- Plastic Putty Knife
- Fabrication Instructions

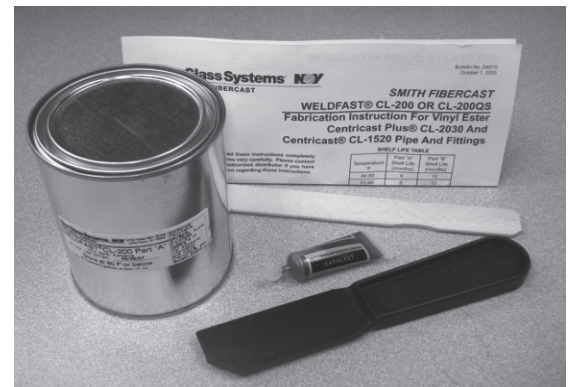
Order for CL-2030 and CENTRICAST CL-1520 vinyl ester piping systems.

No. 1 Kit Size-1/2 Pint

Number of Bonds Per Kit	
Joints	Pipe Size
12	1" connections
10	1 1/2" connections
8	2" connections
5	3" connections
3	4" connections
2	6" connections
1	8" connections
1/2	10" connections
1/2	12" connections
1/3	14" connections

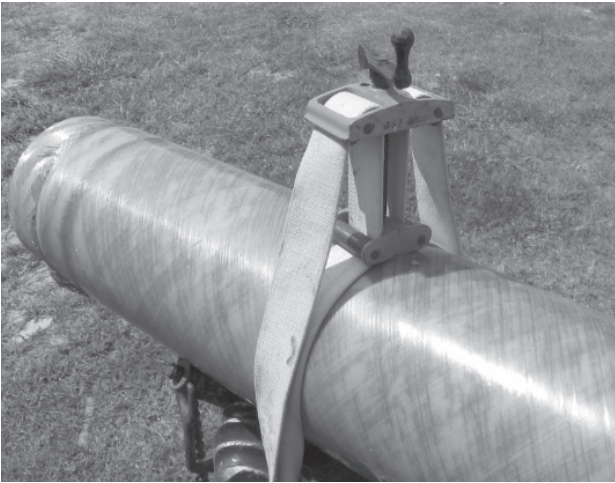
For Complete instructions refer to fab Bulletin D4210 included in each kit of WELDFAST CL-200.

Weldfast® CL-200

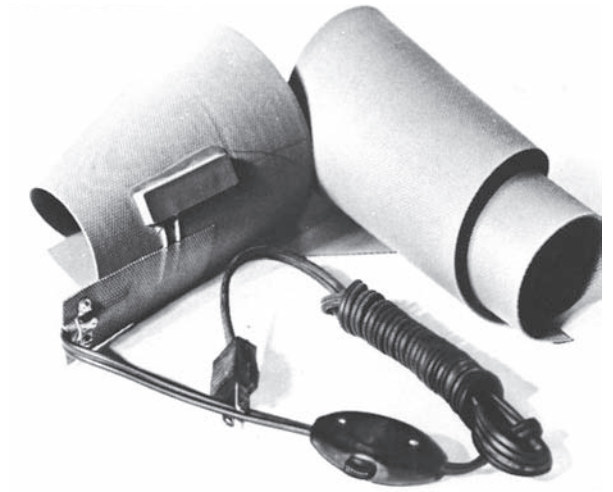


ACCESSORIES

Strap Clamp Kit

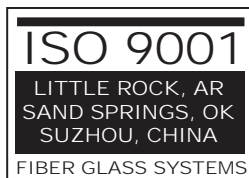


Silicone Rubber Heat Blanket



For Heat Curing 1"-20" connections

Pipe Size	Model Number for Pipe Size
1 - 3 inches	B
4 - 8 inches	C
10 - 14 inches	D
16 - 20 inches	E



NOV Fiber Glass Systems™

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