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January 21, 2026

MISTER CRN CONSULTING INC.
31 AMBER AVE
MILTON STATION PE C1E 0K8

Workorder Type: Registration - Fitting(Conventional)
Workorder No: 14903757
Your Reference No.: 7074
Registered to: JINAN MEIDE CASTING COMPANY

Dear Dennis Jones,

Technical Standards and Safety Authority (TSSA) is pleased to inform you that your submission has been reviewed and registered as follows:

CRN : 0A2837.75 Rev1
Main Design No.: Scope of Registration
Expiry Date: Dec 19, 2035

Please be advised that a valid quality control system must be maintained for the fitting registration to remain valid until the expiry date.

The stamped copy of the approved registration and the invoice are mailed separately (There will be no hard copies for electronic submissions). Should you have any questions or require further assistance, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail customerservices@tssa.org. We will be happy to assist you. When contacting TSSA regarding this file, please refer to the Service Request number provided above.

Yours truly,

Charley Dong

Charley Dong
Engineer, BPV
Tel. : +1 416-734-3436
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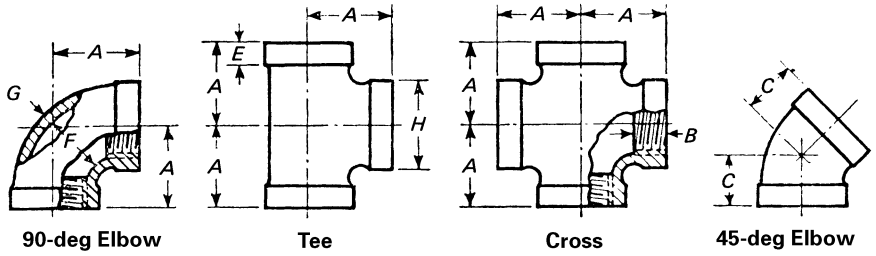
Scope of Registration

Document Number:1A6/8A6MGGJCRN-0 Rev.:0

No.	Scope-Malleable Iron Pipe Fitting
1	ASME B16.3 TABLES 7.1-1 to 8.1-1
2	ASME B16.14 TABLES 7-1 to 7-5
3	ASME B16.39 TABLES 14-1 & 14-3

THIS IS PART OF CRN
0A2837.75 Rev1
Technical Standards and Safety Authority
Boilers and Pressure Vessels Safety Program

Table 7.1-1 Dimensions of Class 150 90-deg Elbows, Tees, and Crosses, and 45-deg Elbows (Straight Sizes)

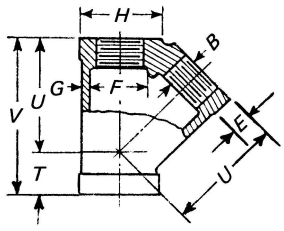


NPS	Center-to-End Elbows, Tees, and Crosses, *A* [Note (1)]	Center-to-End 45-deg Elbows, *C*	Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness, *G*	Minimum Outside Diameter of Band, *H*
					Min.	Max.		
1/8	17.5 (0.69)	...	6.4 (0.25)	5.1 (0.20)	10.3 (0.40)	11.0 (0.43)	2.29 (0.09)	17.6 (0.69)
1/4	20.6 (0.81)	18.5 (0.73)	8.1 (0.32)	5.5 (0.21)	13.7 (0.54)	14.8 (0.58)	2.41 (0.09)	21.4 (0.84)
3/8	24.1 (0.95)	20.3 (0.80)	9.1 (0.36)	5.8 (0.23)	17.1 (0.67)	18.3 (0.72)	2.54 (0.10)	35.8 (1.01)
1/2	28.5 (1.12)	22.4 (0.88)	10.9 (0.43)	6.3 (0.25)	21.3 (0.84)	22.8 (0.90)	2.67 (0.10)	30.4 (1.20)
3/4	33.3 (1.31)	24.9 (0.98)	12.7 (0.50)	6.9 (0.27)	26.7 (1.05)	28.1 (1.11)	3.05 (0.12)	37.0 (1.46)
1	38.1 (1.50)	28.5 (1.12)	14.7 (0.58)	7.7 (0.30)	33.4 (1.31)	35.2 (1.38)	3.40 (0.13)	45.0 (1.77)
1 1/4	44.5 (1.75)	32.8 (1.29)	17.0 (0.67)	8.7 (0.34)	42.2 (1.66)	43.9 (1.73)	3.68 (0.14)	54.7 (2.15)
1 1/2	49.3 (1.94)	36.3 (1.43)	17.8 (0.70)	9.3 (0.37)	48.3 (1.90)	50.0 (1.97)	3.94 (0.15)	61.6 (2.43)
2	57.2 (2.25)	42.7 (1.68)	19.1 (0.75)	10.7 (0.42)	60.3 (2.37)	62.1 (2.44)	4.39 (0.17)	75.3 (2.96)
2 1/2	68.6 (2.70)	49.5 (1.95)	23.4 (0.92)	12.1 (0.48)	73.0 (2.87)	75.6 (2.97)	5.33 (0.21)	91.2 (3.59)
3	78.2 (3.08)	55.1 (2.17)	24.9 (0.98)	13.9 (0.55)	88.9 (3.50)	91.4 (3.60)	5.87 (0.23)	108.8 (4.28)
3 1/2	86.9 (3.42)	60.7 (2.39)	26.2 (1.03)	15.3 (0.60)	101.6 (4.00)	104.1 (4.10)	6.30 (0.25)	123.0 (4.84)
4	96.3 (3.79)	66.3 (2.61)	27.4 (1.08)	16.8 (0.66)	114.4 (4.50)	116.8 (4.60)	6.73 (0.26)	137.2 (5.40)
5	114.3 (4.50)	77.5 (3.05)	30.0 (1.18)	19.8 (0.78)	141.3 (5.56)	143.8 (5.66)	7.62 (0.30)	167.2 (6.58)
6	130.3 (5.13)	87.9 (3.46)	32.5 (1.28)	22.9 (0.90)	168.3 (6.62)	170.8 (6.72)	8.53 (0.34)	197.3 (7.77)

GENERAL NOTE: Dimensions are in millimeters (inches).

NOTE: (1) Dimensions for reducing elbows and reducing crosses are given in Table 7.2.1-1 and dimensions for reducing tees in Table 7.2.1-2.

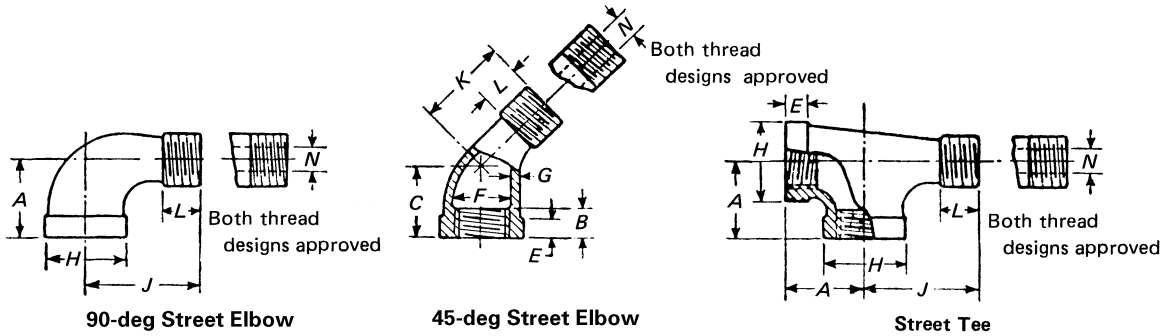
Table 7.1-2 Dimensions of Class 150 45-deg Y-Branches (Straight Sizes)



NPS	Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness, *G*	Minimum Outside Diameter of Band, *H*	Center-to-End Inlet, *T*	Center-to-End Outlet, *U*	End-to- End, *V*
			Min.	Max.					
3/8	9.1 (0.36)	5.8 (0.23)	17.1 (0.67)	18.3 (0.72)	2.54 (0.10)	25.8 (1.01)	12.7 (0.50)	36.3 (1.43)	49.0 (1.93)
1/2	10.9 (0.43)	6.3 (0.25)	21.3 (0.84)	22.8 (0.90)	2.67 (0.10)	30.4 (1.20)	15.5 (0.61)	43.4 (1.71)	58.9 (2.32)
3/4	12.7 (0.50)	6.9 (0.27)	26.7 (1.05)	28.1 (1.11)	3.05 (0.12)	37.0 (1.46)	18.3 (0.72)	52.1 (2.05)	70.4 (2.77)
1	14.7 (0.58)	7.6 (0.30)	33.4 (1.31)	35.2 (1.38)	3.40 (0.13)	45.0 (1.77)	21.6 (0.85)	61.7 (2.43)	83.3 (3.28)
1 1/4	17.0 (0.67)	8.7 (0.34)	42.2 (1.66)	43.9 (1.73)	3.68 (0.14)	54.7 (2.15)	25.9 (1.02)	74.2 (2.92)	100.1 (3.94)
1 1/2	17.8 (0.70)	9.3 (0.37)	48.3 (1.90)	50.0 (1.97)	3.94 (0.15)	61.6 (2.43)	27.9 (1.10)	83.3 (3.28)	111.3 (4.38)
2	19.1 (0.75)	10.7 (0.42)	60.3 (2.37)	62.1 (2.44)	4.39 (0.17)	75.3 (2.96)	37.5 (1.24)	99.8 (3.93)	131.3 (5.17)
2 1/2	23.4 (0.92)	12.1 (0.48)	73.0 (2.87)	75.6 (2.97)	5.33 (0.21)	91.2 (3.59)	38.6 (1.52)	120.1 (4.73)	158.8 (6.25)
3	24.9 (0.98)	13.9 (0.55)	88.9 (3.50)	91.4 (3.60)	5.87 (0.23)	108.8 (4.28)	43.4 (1.71)	141.0 (5.55)	184.4 (7.26)
4	27.4 (1.08)	16.8 (0.66)	114.4 (4.50)	116.8 (4.60)	6.73 (0.26)	137.2 (5.40)	51.1 (2.01)	177.0 (6.97)	228.1 (8.98)

GENERAL NOTE: Dimensions are in millimeters (inches).

Table 7.1-3 Dimensions of Class 150 Street Tees and 90-deg and 45-deg Street Elbows

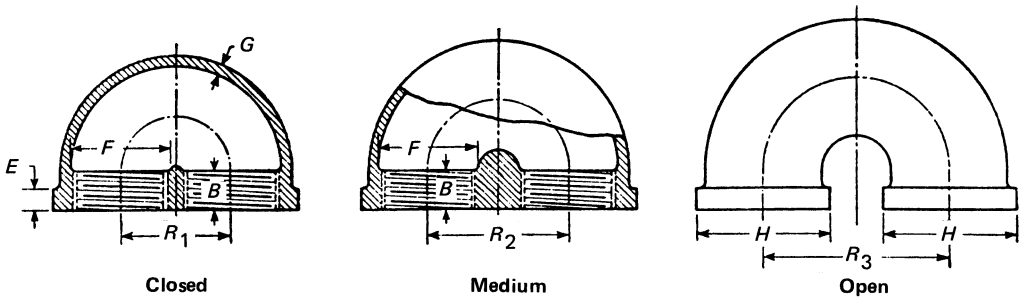


NPS	Center-to-End Elbows and Tees, *A*	Center-to-End 45-deg Elbows, *C*	Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness, *G*	Minimum Outside Diameter of Band, *H*	Center-to-Male End Elbows and Tees, *J*	Center-to-Male End 45-deg Elbows, *K*	Minimum Length of External Thread, *L*	Maximum Port Diameter Male End, *N*
					Min.	Max.						
1/8	17.5 (0.69) [Note (1)]	...	6.4 (0.25)	5.1 (0.20)	10.3 (0.40)	11.0 (0.43)	2.29 (0.09)	17.6 (0.69)	25.4 (1.00) [Note (1)]	...	6.70 (0.26)	5.1 (0.20)
1/4	20.6 (0.81)	18.5 (0.73)	8.1 (0.32)	5.5 (0.21)	13.7 (0.54)	14.8 (0.58)	2.41 (0.09)	21.4 (0.84)	30.2 (1.19)	23.9 (0.94)	10.20 (0.40)	6.6 (0.26)
3/8	24.1 (0.95)	20.3 (0.80)	9.1 (0.36)	5.8 (0.23)	17.1 (0.67)	18.3 (0.72)	2.54 (0.10)	25.8 (1.01)	36.6 (1.44)	26.2 (1.03)	10.36 (0.41)	9.4 (0.37)
1/2	28.5 (1.12)	22.4 (0.88)	10.9 (0.43)	6.3 (0.25)	21.3 (0.84)	22.8 (0.90)	2.67 (0.10)	30.4 (1.20)	41.2 (1.63)	29.2 (1.15)	13.56 (0.53)	13.0 (0.51)
3/4	33.3 (1.31)	24.9 (0.98)	12.7 (0.50)	6.9 (0.27)	26.7 (1.05)	28.1 (1.11)	3.05 (0.12)	37.0 (1.46)	48.0 (1.89)	32.8 (1.29)	13.86 (0.55)	17.5 (0.69)
1	38.1 (1.50)	28.5 (1.12)	14.7 (0.58)	7.7 (0.30)	33.4 (1.31)	35.2 (1.38)	3.40 (0.13)	45.0 (1.77)	54.4 (2.14)	37.3 (1.47)	17.34 (0.68)	23.1 (0.91)
1 1/4	44.5 (1.75)	32.8 (1.29)	17.0 (0.67)	8.7 (0.34)	42.2 (1.66)	43.9 (1.73)	3.68 (0.14)	54.7 (2.15)	62.2 (2.45)	43.4 (1.71)	17.94 (0.71)	30.2 (1.19)
1 1/2	49.3 (1.94)	36.3 (1.43)	17.8 (0.70)	9.3 (0.37)	48.3 (1.90)	50.0 (1.97)	3.94 (0.15)	61.6 (2.43)	68.3 (2.69)	47.8 (1.88)	18.38 (0.72)	35.3 (1.39)
2	57.2 (2.25)	42.7 (1.68)	19.1 (0.75)	10.7 (0.42)	60.3 (2.37)	62.1 (2.44)	4.39 (0.17)	75.3 (2.96)	82.8 (3.26)	56.4 (2.22)	19.22 (0.76)	45.5 (1.79)
2 1/2	68.6 (2.70) [Note (1)]	49.5 (1.95)	23.4 (0.92)	12.1 (0.48)	73.0 (2.87)	75.6 (2.97)	5.33 (0.21)	91.2 (3.59)	98.0 (3.86) [Note (1)]	65.3 (2.57)	28.96 (1.14)	55.9 (2.20)
3	78.2 (3.08) [Note (1)]	55.1 (2.17)	24.9 (0.98)	13.9 (0.55)	88.9 (3.50)	91.4 (3.60)	5.87 (0.23)	108.8 (4.28)	114.6 (4.51) [Note (1)]	76.2 (3.00)	30.48 (1.20)	70.6 (2.78)
4	96.3 (3.79)	66.3 (2.61)	27.4 (1.08)	16.8 (0.66)	114.4 (4.50)	116.8 (4.60)	6.73 (0.26)	137.2 (5.40)	144.5 (5.69)	94.0 (3.70)	33.02 (1.30)	94.0 (3.70)
5	114.3 (4.50) [Note (1)]	...	30.0 (1.18)	19.8 (0.78)	141.3 (5.56)	143.8 (5.66)	7.62 (0.30)	167.2 (6.58)	174.2 (6.86) [Note (1)]	...	35.72 (1.41)	119.1 (4.69)
6	130.3 (5.13) [Note (1)]	...	32.5 (1.28)	22.9 (0.90)	168.3 (6.62)	170.8 (6.72)	8.53 (0.34)	197.4 (7.77)	204.0 (8.03) [Note (1)]	...	38.42 (1.51)	144.0 (5.67)

GENERAL NOTE: Dimensions are in millimeters (inches).

NOTE: (1) This dimension applies to street elbows only. Street tees are not made in these sizes.

Table 7.1-4 Dimensions of Class 150 Closed-, Medium-, and Open-Pattern Return Bends



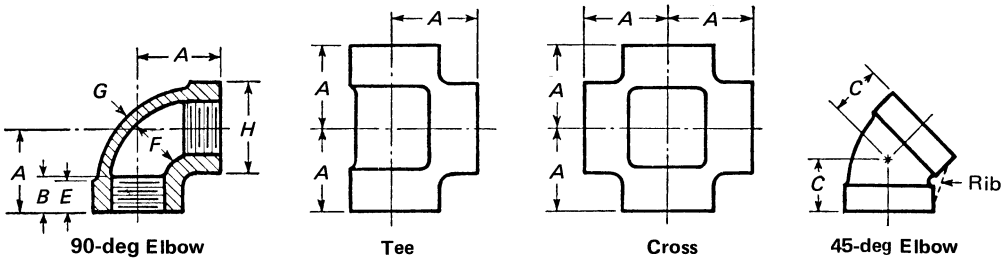
NPS	Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness, *G*	Minimum Outside Diameter of Band, *H*	Center-to-Center (Closed Pattern), R_1	Center-to-Center (Medium Pattern), R_2	Center-to-Center (Open Pattern), R_3
			Min.	Max.					
½	10.9 (0.43)	6.3 (0.25)	21.3 (0.84)	22.8 (0.90)	2.95 (0.12)	30.4 (1.20)	25.4 (1.00)	31.8 (1.25)	38.1 (1.50)
¾	12.7 (0.50)	6.9 (0.27)	26.7 (1.05)	28.1 (1.11)	3.38 (0.13)	37.0 (1.46)	31.6 (1.25)	38.1 (1.50)	50.8 (2.00)
1	14.7 (0.58)	7.7 (0.30)	33.3 (1.31)	35.2 (1.38)	3.81 (0.15)	45.0 (1.77)	38.1 (1.50)	47.6 (1.87)	63.5 (2.50)
1¼	17.0 (0.67)	8.7 (0.34)	42.2 (1.66)	43.9 (1.73)	4.19 (0.16)	54.7 (2.15)	44.5 (1.75)	57.2 (2.25)	76.2 (3.00)
1½	17.8 (0.70)	9.3 (0.37)	48.3 (1.90)	50.0 (1.97)	4.52 (0.18)	61.6 (2.43)	55.6 (2.19)	63.5 (2.50)	88.9 (3.50)
2	19.1 (0.75)	10.7 (0.42)	60.3 (2.37)	62.1 (2.44)	5.11 (0.20)	75.3 (2.96)	66.8 (2.62)	76.2 (3.00)	101.6 (4.00)
2½	23.4 (0.92)	12.1 (0.48)	73.0 (2.87)	75.8 (2.97)	6.20 (0.24)	91.2 (3.59)	...	...	114.3 (4.50)
3	24.9 (0.98)	13.9 (0.55)	88.9 (3.50)	91.4 (3.60)	6.91 (0.27)	108.8 (4.28)	...	...	127.0 (5.00)
4	27.4 (1.08)	16.8 (0.66)	114.4 (4.50)	116.8 (4.60)	7.87 (0.31)	137.2 (5.40)	...	...	152.4 (6.00)

GENERAL NOTES:

(a) Dimensions are in millimeters (inches).

(b) It is permissible to furnish closed-pattern return bends not banded. Closed-pattern return bends will not make up equally spaced coils, as the distance center-to-center of two adjacent bends is greater than the center-to-center of openings of a single bend.

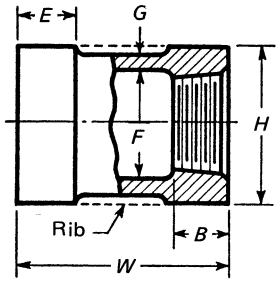
Table 7.1-5 Dimensions of Class 300 90-deg Elbows, Tees, and Crosses, and 45-deg Elbows (Straight Sizes)



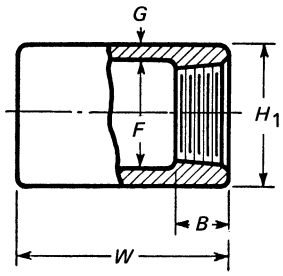
NPS	Center-to-End Elbows, Tees, and Crosses, *A*	Center-to-End 45-deg Elbows, *C*	Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness, *G*	Minimum Outside Diameter of Band, *H*
					Min.	Max.		
1/4	23.9 (0.94)	20.6 (0.81)	10.9 (0.43)	9.7 (0.38)	13.7 (0.54)	14.8 (0.58)	3.6 (0.14)	23.6 (0.93)
3/8	26.9 (1.06)	22.4 (0.88)	11.9 (0.47)	11.2 (0.44)	17.1 (0.67)	18.3 (0.72)	3.8 (0.15)	28.5 (1.12)
1/2	31.8 (1.25)	25.4 (1.00)	14.5 (0.57)	12.7 (0.50)	21.3 (0.84)	22.8 (0.90)	4.1 (0.16)	34.0 (1.34)
3/4	35.6 (1.44)	28.7 (1.13)	16.3 (0.64)	14.2 (0.56)	26.7 (1.05)	28.1 (1.11)	4.6 (0.18)	41.4 (1.63)
1	41.4 (1.63)	33.3 (1.31)	19.1 (0.75)	15.8 (0.62)	33.4 (1.31)	35.2 (1.38)	5.1 (0.20)	49.5 (1.95)
1 1/4	49.3 (1.94)	38.1 (1.50)	21.3 (0.84)	17.5 (0.69)	42.2 (1.66)	43.9 (1.73)	5.6 (0.22)	60.7 (2.39)
1 1/2	54.1 (2.13)	42.9 (1.69)	22.1 (0.87)	19.1 (0.75)	48.3 (1.90)	50.0 (1.97)	6.1 (0.24)	68.1 (2.68)
2	63.5 (2.50)	50.8 (2.00)	25.4 (1.00)	21.3 (0.84)	60.3 (2.37)	62.1 (2.44)	6.6 (0.26)	83.3 (3.28)
2 1/2	74.7 (2.94)	57.2 (2.25)	29.7 (1.17)	23.9 (0.94)	73.0 (2.87)	75.6 (2.97)	7.9 (0.31)	98.0 (3.86)
3	85.9 (3.38)	63.5 (2.50)	31.2 (1.23)	25.4 (1.00)	88.9 (3.50)	91.4 (3.60)	8.9 (0.35)	117.3 (4.62)

GENERAL NOTE: Dimensions are in millimeters (inches).

Table 7.1-6 Dimensions of Class 300 Couplings



Couplings With Bands



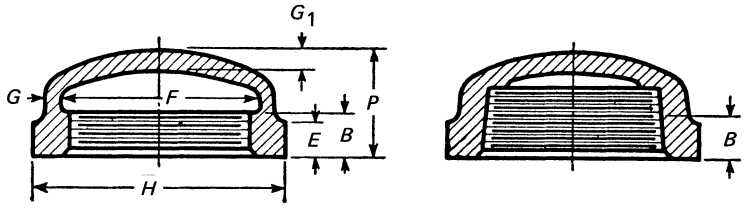
Couplings Without Bands

NPS	Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F* Min.	Inside Diameter of Fitting, *F* Max.	Metal Thickness, *G*	Minimum Outside Diameter of Coupling, H_1 [Note (1)]	Minimum Outside Diameter of Band, *H* [Note (2)]	Length of Straight Coupling, *W*
1/4	10.9 (0.43)	9.7 (0.38)	13.7 (0.54)	14.8 (0.58)	3.6 (0.14)	20.8 (0.82)	23.6 (0.93)	35.1 (1.37)
3/8	11.9 (0.47)	11.2 (0.44)	17.1 (0.67)	18.3 (0.72)	3.8 (0.15)	24.7 (0.97)	28.5 (1.12)	41.4 (1.62)
1/2	14.5 (0.57)	12.7 (0.50)	21.3 (0.84)	22.8 (0.90)	4.1 (0.16)	29.5 (1.16)	34.0 (1.34)	47.8 (1.87)
3/4	16.3 (0.64)	14.2 (0.56)	26.7 (1.05)	28.2 (1.11)	4.6 (0.18)	35.8 (1.41)	41.4 (1.63)	54.1 (2.12)
1	19.1 (0.75)	15.8 (0.62)	33.4 (1.31)	35.0 (1.38)	5.1 (0.20)	43.7 (1.71)	49.5 (1.95)	60.5 (2.37)
1 1/4	21.3 (0.84)	17.5 (0.69)	42.2 (1.66)	43.9 (1.73)	5.6 (0.22)	53.4 (2.10)	60.7 (2.39)	73.2 (2.87)
1 1/2	22.1 (0.87)	19.1 (0.75)	48.3 (1.90)	50.0 (1.97)	6.1 (0.24)	60.5 (2.38)	68.1 (2.68)	73.2 (2.87)
2	25.4 (1.00)	21.3 (0.84)	60.3 (2.37)	62.0 (2.44)	6.6 (0.26)	73.4 (2.89)	83.3 (3.28)	92.2 (3.62)
2 1/2	29.7 (1.17)	23.9 (0.94)	73.0 (2.87)	75.4 (2.97)	7.9 (0.31)	88.7 (3.49)	98.0 (3.86)	104.9 (4.12)
3	31.2 (1.23)	25.4 (1.00)	88.9 (3.50)	91.4 (3.60)	8.9 (0.35)	106.7 (4.20)	117.3 (4.62)	104.9 (4.12)

GENERAL NOTE: Dimensions are in millimeters (inches).

NOTES:
(1) H_1 diameter is standard for coupling without bands; H_1 = *F* min. + 2G.
(2) Minimum *H* is for couplings with bands and is at the discretion of the manufacturer. For information on ribs, see section 9.

Table 7.1-7 Dimensions of Class 300 Caps



Caps With Recess | Caps Without Recess

NPS	Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness		Minimum Outside Diameter of Band, *H*	Minimum Height, *P* [Note (2)]
			Min.	Max.	Minimum *G*	Recommended G_1 [Note (1)]		
1/4	10.9 (0.43)	9.7 (0.38)	13.7 (0.54)	14.8 (0.58)	3.6 (0.14)	4.6 (0.18)	23.6 (0.93)	19.8 (0.78)
3/8	11.9 (0.47)	11.2 (0.44)	17.1 (0.67)	18.3 (0.72)	3.8 (0.15)	4.8 (0.19)	28.5 (1.12)	21.1 (0.83)
1/2	14.5 (0.57)	12.7 (0.50)	21.3 (0.84)	22.8 (0.90)	4.1 (0.16)	5.1 (0.20)	34.0 (1.34)	24.9 (0.98)
3/4	16.3 (0.64)	14.2 (0.56)	26.7 (1.05)	28.2 (1.11)	4.6 (0.18)	5.8 (0.23)	41.4 (1.63)	27.4 (1.08)
1	19.1 (0.75)	15.8 (0.62)	33.4 (1.31)	35.0 (1.38)	5.1 (0.20)	6.4 (0.25)	48.5 (1.95)	32.0 (1.26)
1 1/4	21.3 (0.84)	17.5 (0.69)	42.2 (1.66)	43.9 (1.73)	5.6 (0.22)	7.1 (0.28)	60.7 (2.39)	35.1 (1.38)
1 1/2	22.1 (0.87)	19.1 (0.75)	48.3 (1.90)	50.0 (1.97)	6.1 (0.24)	7.6 (0.30)	68.1 (2.68)	36.3 (1.43)
2	25.4 (1.00)	21.3 (0.84)	60.3 (2.37)	62.1 (2.44)	6.6 (0.26)	8.4 (0.33)	83.3 (3.28)	42.7 (1.68)
2 1/2	29.7 (1.17)	23.9 (0.94)	73.0 (2.87)	75.6 (2.97)	7.9 (0.31)	9.9 (0.39)	98.0 (3.86)	52.3 (2.06)
3	31.2 (1.23)	25.4 (1.00)	88.9 (3.50)	91.4 (3.60)	8.9 (0.35)	11.2 (0.44)	117.3 (4.62)	55.1 (2.17)

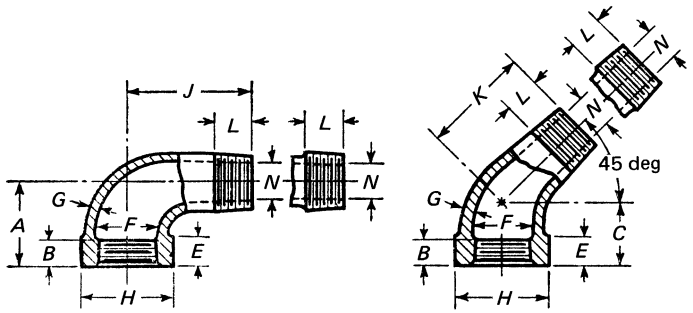
GENERAL NOTE: Dimensions are in millimeters (inches).

NOTES:

(1) Dimension G_1 is recommended but shall in no case be less than dimension *G*.

(2) Dimension *P* may be varied to comply with manufacturer's practice, and, for caps without recess, shall be of such height that the length of effective thread shall be not less than *B*.

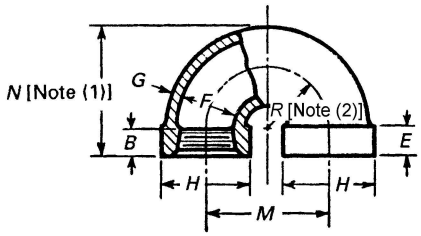
Table 7.1-8 Dimensions of Class 300 90-deg and 45-deg Street Elbows



NPS	90-deg Elbows		45-deg Elbows		Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness, *G*	Minimum Outside Diameter of Band, *H*	Minimum Length of External Thread, *L*	Maximum Port Diameter Male End, *N*
	Center-to-End, *A*	Center-to-Male End, *J*	Center-to-End, *C*	Center-to-Male End, *K*			Min.	Max.				
1/4	23.9 (0.94)	36.6 (1.44)	...	...	10.9 (0.43)	9.7 (0.38)	13.7 (0.54)	14.8 (0.58)	3.6 (0.14)	23.6 (0.93)	10.2 (0.40)	6.6 (0.26)
3/8	26.9 (1.06)	41.4 (1.63)	...	...	11.9 (0.47)	11.2 (0.44)	17.1 (0.67)	18.3 (0.72)	3.8 (0.15)	28.5 (1.12)	10.4 (0.41)	9.1 (0.36)
1/2	31.8 (1.25)	50.8 (2.00)	25.4 (1.00)	35.1 (1.38)	14.5 (0.57)	12.7 (0.50)	21.3 (0.84)	22.8 (0.90)	4.1 (0.16)	34.0 (1.34)	13.5 (0.53)	12.5 (0.49)
3/4	36.6 (1.44)	55.6 (2.19)	28.7 (1.13)	39.6 (1.56)	16.3 (0.64)	14.2 (0.56)	26.7 (1.05)	28.1 (1.11)	4.6 (0.18)	41.4 (1.63)	14.0 (0.55)	17.0 (0.67)
1	41.4 (1.63)	65.0 (2.56)	33.3 (1.31)	46.0 (1.81)	19.1 (0.75)	15.8 (0.62)	33.4 (1.31)	35.2 (1.38)	5.1 (0.20)	49.5 (1.95)	17.3 (0.68)	22.4 (0.88)
1 1/4	49.3 (1.94)	73.2 (2.88)	38.1 (1.50)	54.1 (2.13)	21.3 (0.84)	17.5 (0.69)	42.2 (1.66)	43.9 (1.73)	5.6 (0.22)	60.7 (2.39)	18.0 (0.71)	29.5 (1.16)
1 1/2	54.1 (2.13)	79.5 (3.13)	42.9 (1.69)	58.7 (2.31)	22.1 (0.87)	19.1 (0.75)	48.3 (1.90)	50.0 (1.97)	6.1 (0.24)	68.1 (2.68)	18.3 (0.72)	34.3 (1.35)
2	63.5 (2.50)	93.7 (3.69)	50.8 (2.00)	68.3 (2.69)	25.4 (1.00)	21.3 (0.84)	60.3 (2.37)	62.1 (2.44)	6.6 (0.26)	83.3 (3.28)	19.3 (0.76)	44.5 (1.75)
2 1/2	74.7 (2.94)	114.3 (4.50)	...	...	29.7 (1.17)	23.9 (0.94)	73.0 (2.87)	75.6 (2.97)	7.9 (0.31)	98.0 (3.86)	29.0 (1.14)	54.9 (2.16)
3	85.9 (3.38)	130.3 (5.13)	...	...	31.2 (1.23)	25.4 (1.00)	88.9 (3.50)	91.4 (3.60)	8.9 (0.35)	117.3 (4.62)	30.5 (1.20)	67.8 (2.67)

GENERAL NOTE: Dimensions are in millimeters (inches).

Table 7.1-9 Dimensions of Class 300 Return Bends



NPS	Center-to-Center, *M*			Minimum Length of Thread, *B*	Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness, *G* [Note (3)]	Minimum Outside Diameter of Band, *H*
	Closed Pattern	Medium Pattern	Open Pattern			Min.	Max.		
1	44.5 (1.75)	63.5 (2.50)	76.2 (3.00)	19.1 (0.75)	15.8 (0.62)	33.4 (1.31)	35.2 (1.38)	5.1 (0.20)	49.5 (1.95)
1¼	57.2 (2.25)	63.5 (2.50)	76.2 (3.00)	21.3 (0.84)	17.5 (0.69)	42.2 (1.66)	43.9 (1.73)	5.6 (0.22)	60.7 (2.39)
1½	76.2 (3.00)	88.9 (3.50)	152.4 (6.00)	22.1 (0.87)	18.1 (0.75)	48.3 (1.90)	50.0 (1.97)	6.1 (0.24)	68.1 (2.68)
2	101.6 (4.00)	152.4 (6.00)	203.2 (8.00)	25.4 (1.00)	21.3 (0.84)	60.3 (2.37)	62.1 (2.44)	6.6 (0.26)	83.3 (3.28)

GENERAL NOTE: Dimensions are in millimeters (inches).

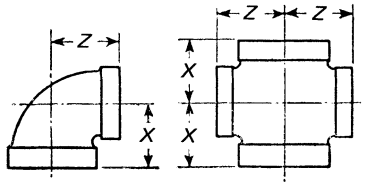
NOTES:

(1) Dimension *N* may be varied to comply with manufacturer's practice.

(2) It is recommended that the distance from the end of the fitting to the center of the radius, *R*, be approximately equal to the dimension *B;* radius, *R*, is recommended as being one-half of dimension *M.*

(3) It is recommended that *G* for return bends be increased by 10% or more.

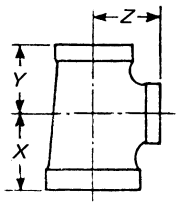
Table 7.2.1-1 Dimensions of Class 150 90-deg Elbows and Crosses (Reducing Sizes)



Elbows			Crosses		
	Center-to-End			Center-to-End	
NPS	*X*	*Z*	NPS	*X*	*Z*
1/4 × 1/8	18.8 (0.74)	19.3 (0.76)	3/4 × 3/4 × 1/2 × 1/2	30.5 (1.20)	31.0 (1.22)
3/8 × 1/4	22.4 (0.88)	22.9 (0.90)	1 × 1 × 3/4 × 3/4	34.8 (1.37)	36.8 (1.45)
3/8 × 1/8	20.5 (0.81)	21.6 (0.85)	1 × 1 × 1/2 × 1/2	32.0 (1.26)	35.5 (1.36)
1/2 × 3/8	26.4 (1.04)	26.2 (1.03)	1 1/4 × 1 1/4 × 1 × 1	40.1 (1.58)	42.4 (1.67)
1/2 × 1/4	24.6 (0.97)	24.9 (0.98)	1 1/4 × 1 1/4 × 3/4 × 3/4	36.8 (1.45)	41.2 (1.62)
3/4 × 1/2	30.5 (1.20)	31.0 (1.22)	1 1/2 × 1 1/2 × 1 1/4 × 1 1/4	46.2 (1.82)	47.8 (1.88)
3/4 × 3/8	28.5 (1.12)	28.7 (1.13)	1 1/2 × 1 1/2 × 1 × 1	41.9 (1.65)	45.7 (1.80)
3/4 × 1/4	26.7 (1.05)	27.4 (1.08)	1 1/2 × 1 1/2 × 3/4 × 3/4	38.6 (1.52)	44.5 (1.75)
1 × 3/4	34.8 (1.37)	36.8 (1.45)	2 × 2 × 1 1/2 × 1 1/2	51.3 (2.02)	54.9 (2.16)
1 × 1/2	32.0 (1.26)	35.5 (1.36)	2 × 2 × 1 1/4 × 1 1/4	48.3 (1.90)	53.3 (2.10)
1 × 3/8	30.0 (1.18)	32.3 (1.27)	2 × 2 × 1 × 1	43.9 (1.73)	51.3 (2.02)
1 1/4 × 1	40.1 (1.58)	42.4 (1.67)	2 × 2 × 3/4 × 3/4	40.6 (1.60)	50.0 (1.97)
1 1/4 × 3/4	36.8 (1.45)	41.2 (1.62)	2 1/2 × 2 1/2 × 2 × 2	60.7 (2.39)	66.0 (2.60)
1 1/4 × 1/2	34.0 (1.34)	38.9 (1.53)	3 × 3 × 2 × 2	64.0 (2.52)	73.4 (2.89)
1 1/2 × 1 1/4	46.2 (1.82)	47.8 (1.88)			
1 1/2 × 1	41.9 (1.65)	45.7 (1.80)			
1 1/2 × 3/4	38.6 (1.52)	44.5 (1.75)			
2 × 1 1/2	51.3 (2.02)	54.9 (2.16)			
2 × 1 1/4	48.3 (1.90)	53.3 (2.10)			
2 × 1	43.9 (1.73)	51.3 (2.02)			
2 × 3/4	40.6 (1.60)	50.0 (1.97)			
2 1/2 × 2	60.7 (2.39)	66.0 (2.60)			
2 1/2 × 1 1/2	54.9 (2.16)	63.8 (2.51)			
3 × 2 1/2	71.9 (2.83)	75.9 (2.99)			
3 × 2	64.0 (2.52)	73.4 (2.89)			
4 × 3	83.8 (3.30)	91.4 (3.60)			

GENERAL NOTES:
(a) Dimensions are in millimeters (inches).
(b) For dimensions not given, see Table 7.1-1.
(c) Reducing sizes of fittings for which dimensions are not given in tables may be produced from regular patterns for listed sizes by sand bushing.

Table 7.2.1-2 Dimensions of Class 150 Tees (Reducing Sizes)



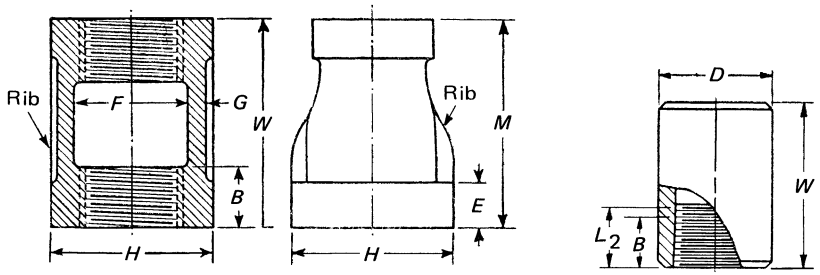
NPS	Center-to-End			NPS	Center-to-End		
	X	*Y*	*Z*		*X*	*Y*	*Z*
1/4 × 1/4 × 1/8	18.8 (0.74)	18.8 (0.74)	19.3 (0.76)	1 1/4 × 1 1/4 × 3/8	32.0 (1.26)	32.0 (1.26)	36.6 (1.44)
1/8 × 1/8 × 1/4	19.3 (0.76)	19.3 (0.76)	18.8 (0.74)	1 1/4 × 1 × 1 1/4	44.5 (1.75)	42.4 (1.67)	44.5 (1.75)
3/8 × 3/8 × 1/4	22.4 (0.88)	22.4 (0.88)	22.9 (0.90)	1 1/4 × 1 × 1	40.1 (1.58)	38.1 (1.50)	42.4 (1.67)
3/8 × 3/8 × 1/8	20.6 (0.81)	20.6 (0.81)	21.6 (0.85)	1 1/4 × 1 × 3/4	36.8 (1.45)	34.8 (1.37)	41.2 (1.62)
3/8 × 1/4 × 3/8	24.1 (0.95)	22.9 (0.90)	24.1 (0.95)	1 1/4 × 1 × 1/2	34.0 (1.34)	32.0 (1.26)	38.9 (1.53)
3/8 × 1/4 × 1/4	22.4 (0.88)	20.6 (0.81)	22.9 (0.90)	1 1/4 × 3/4 × 1 1/4	44.5 (1.75)	41.2 (1.62)	44.5 (1.75)
1/4 × 1/4 × 3/8	22.9 (0.90)	22.9 (0.90)	22.4 (0.88)	1 1/4 × 3/4 × 1	40.1 (1.58)	36.8 (1.45)	42.4 (1.67)
1/2 × 1/2 × 3/8	26.4 (1.04)	26.4 (1.04)	26.2 (1.03)	1 1/4 × 3/4 × 3/4	36.8 (1.45)	33.3 (1.31)	41.2 (1.62)
1/2 × 1/2 × 1/4	24.6 (0.97)	24.6 (0.97)	24.9 (0.98)	1 1/4 × 1/2 × 1 1/4	44.5 (1.75)	38.9 (1.53)	44.5 (1.75)
1/2 × 3/8 × 1/2	28.5 (1.12)	26.2 (1.03)	28.5 (1.12)	1 1/4 × 1/2 × 1	40.1 (1.58)	34.5 (1.36)	42.4 (1.67)
1/2 × 3/8 × 3/8	26.4 (1.04)	24.1 (0.95)	26.2 (1.03)	1 × 1 × 1 1/4	42.4 (1.67)	42.4 (1.67)	40.1 (1.58)
1/2 × 1/4 × 1/2	28.5 (1.12)	24.9 (0.98)	28.5 (1.12)	3/4 × 3/4 × 1 1/4	41.2 (1.62)	41.2 (1.62)	36.8 (1.45)
3/8 × 3/8 × 1/2	26.2 (1.03)	26.2 (1.03)	26.4 (1.04)	1 1/2 × 1 1/2 × 1 1/4	46.2 (1.82)	46.2 (1.82)	47.8 (1.88)
3/4 × 3/4 × 1/2	30.5 (1.20)	30.5 (1.20)	31.0 (1.22)	1 1/2 × 1 1/2 × 1	41.9 (1.65)	41.9 (1.65)	45.7 (1.80)
3/4 × 3/4 × 3/8	28.5 (1.12)	28.5 (1.12)	28.7 (1.13)	1 1/2 × 1 1/2 × 3/4	38.6 (1.52)	38.6 (1.52)	44.5 (1.75)
3/4 × 3/4 × 1/4	26.7 (1.05)	26.7 (1.05)	27.4 (1.08)	1 1/2 × 1 1/2 × 1/2	35.8 (1.41)	35.8 (1.41)	42.2 (1.66)
3/4 × 1/2 × 3/4	33.3 (1.31)	31.0 (1.22)	33.3 (1.31)	1 1/2 × 1 1/4 × 1 1/2	49.3 (1.94)	47.8 (1.88)	49.3 (1.94)
3/4 × 1/2 × 1/2	30.5 (1.20)	28.5 (1.12)	31.0 (1.22)	1 1/2 × 1 1/4 × 1 1/4	46.2 (1.82)	44.5 (1.75)	47.8 (1.88)
3/4 × 1/2 × 3/8	28.5 (1.12)	26.4 (1.04)	28.7 (1.13)	1 1/2 × 1 1/4 × 1	41.9 (1.65)	40.1 (1.58)	45.7 (1.80)
3/4 × 3/8 × 3/4	33.3 (1.31)	28.7 (1.13)	33.3 (1.31)	1 1/2 × 1 1/4 × 3/4	38.6 (1.52)	36.3 (1.45)	44.5 (1.75)
3/4 × 3/8 × 3/8	28.5 (1.12)	24.1 (0.95)	28.7 (1.13)	1 1/2 × 1 1/4 × 1/2	35.8 (1.41)	34.0 (1.34)	42.2 (1.66)
3/4 × 1/4 × 3/4	33.3 (1.31)	27.4 (1.08)	33.3 (1.31)	1 1/2 × 1 × 1 1/2	49.3 (1.94)	45.7 (1.80)	49.3 (1.94)
1/2 × 1/2 × 3/4	31.0 (1.22)	31.0 (1.22)	30.5 (1.20)	1 1/2 × 1 × 1 1/4	46.2 (1.82)	42.4 (1.67)	47.8 (1.88)
1 × 1 × 3/4	34.8 (1.37)	34.8 (1.37)	36.8 (1.45)	1 1/2 × 1 × 1	41.9 (1.65)	38.1 (1.50)	45.7 (1.80)
1 × 1 × 1/2	32.0 (1.26)	32.0 (1.26)	35.5 (1.36)	1 1/2 × 3/4 × 1 1/2	49.3 (1.94)	44.5 (1.75)	49.3 (1.94)
1 × 1 × 3/8	30.0 (1.18)	30.0 (1.18)	32.3 (1.27)	1 1/2 × 1/2 × 1 1/2	49.3 (1.94)	42.2 (1.66)	49.3 (1.94)
1 × 1 × 1/4	28.2 (1.11)	28.2 (1.11)	31.0 (1.22)	1 1/4 × 1 1/4 × 1 1/2	47.8 (1.88)	47.8 (1.88)	46.2 (1.82)
1 × 3/4 × 1	38.1 (1.50)	36.8 (1.45)	38.1 (1.50)	1 × 1 × 1 1/2	45.7 (1.80)	45.7 (1.80)	41.9 (1.65)
1 × 3/4 × 3/4	34.8 (1.37)	33.3 (1.31)	36.8 (1.45)	2 × 2 × 1 1/2	51.3 (2.02)	51.3 (2.02)	54.9 (2.16)
1 × 3/4 × 1/2	32.0 (1.26)	30.5 (1.20)	35.5 (1.36)	2 × 2 × 1 1/4	48.3 (1.90)	48.3 (1.90)	53.3 (2.10)
1 × 1/2 × 1	38.1 (1.50)	35.5 (1.36)	38.1 (1.50)	2 × 2 × 1	43.9 (1.73)	43.9 (1.73)	51.3 (2.02)
1 × 1/2 × 3/4	34.8 (1.37)	31.0 (1.22)	36.8 (1.45)	2 × 2 × 3/4	40.6 (1.60)	40.6 (1.60)	50.0 (1.97)
1 × 1/2 × 1/2	32.0 (1.26)	38.5 (1.12)	35.5 (1.36)	2 × 2 × 1/2	37.9 (1.49)	37.9 (1.49)	47.8 (1.88)
3/4 × 3/4 × 1	36.8 (1.45)	36.8 (1.45)	34.8 (1.37)	2 × 1 1/2 × 2	57.2 (2.25)	54.8 (2.16)	57.2 (2.25)
1/2 × 1/2 × 1	34.6 (1.36)	34.6 (1.36)	32.0 (1.26)	2 × 1 1/2 × 1 1/2	51.3 (2.02)	49.3 (1.94)	54.9 (2.16)
1 1/4 × 1 1/4 × 1	40.1 (1.58)	40.1 (1.58)	42.4 (1.67)	2 × 1 1/2 × 1 1/4	48.3 (1.90)	46.2 (1.82)	53.3 (2.10)
1 1/4 × 1 1/4 × 3/4	36.8 (1.45)	36.8 (1.45)	41.2 (1.62)	2 × 1 1/2 × 1	43.9 (1.73)	41.9 (1.65)	51.3 (2.02)
1 1/4 × 1 1/4 × 1/2	34.0 (1.34)	34.0 (1.34)	38.9 (1.53)	2 × 1 1/4 × 2	57.2 (2.25)	53.3 (2.10)	57.2 (2.25)

Table 7.2.1-2 Dimensions of Class 150 Tees (Reducing Sizes) (Cont'd)

NPS	Center-to-End			NPS	Center-to-End		
	X	*Y*	*Z*		*X*	*Y*	*Z*
2 × 1¼ × 1½	51.3 (2.02)	47.8 (1.88)	54.9 (2.16)	3 × 3 × 1¼	55.1 (2.17)	55.1 (2.17)	69.6 (2.74)
2 × 1¼ × 1¼	48.3 (1.90)	44.5 (1.75)	53.3 (2.10)	3 × 3 × 1	50.8 (2.00)	50.8 (2.00)	67.6 (2.66)
2 × 1 × 2	57.2 (2.25)	51.3 (2.02)	57.2 (2.25)	3 × 3 × ¾	47.5 (1.87)	47.5 (1.87)	66.3 (2.61)
2 × 1 × 1½	51.3 (2.02)	45.7 (1.80)	54.9 (2.16)	3 × 2½ × 3	78.2 (3.08)	76.0 (2.99)	78.2 (3.08)
2 × ¾ × 2	57.2 (2.25)	50.0 (1.97)	57.2 (2.25)	3 × 2½ × 2½	71.9 (2.83)	68.6 (2.70)	76.0 (2.99)
2 × ½ × 2	57.2 (2.25)	47.8 (1.88)	57.2 (2.25)	3 × 2½ × 2	64.0 (2.52)	60.7 (2.39)	73.4 (2.89)
1½ × 1½ × 2	54.9 (2.16)	54.9 (2.16)	51.3 (2.02)	3 × 2 × 3	78.2 (3.08)	73.4 (2.89)	78.2 (3.08)
1¼ × 1¼ × 2	53.3 (2.10)	58.3 (2.10)	48.3 (1.90)	3 × 2 × 2	64.0 (2.52)	57.2 (2.25)	73.4 (2.89)
1 × 1 × 2	51.3 (2.02)	51.3 (2.02)	48.9 (1.73)	2½ × 2½ × 3	76.0 (2.99)	76.0 (2.99)	71.9 (2.83)
2½ × 2½ × 2	60.7 (2.39)	60.7 (2.39)	66.0 (2.60)	3½ × 3½ × 2½	74.4 (2.93)	74.4 (2.93)	82.3 (3.24)
2½ × 2½ × 1½	54.9 (2.16)	54.9 (2.16)	63.8 (2.51)	4 × 4 × 3	83.8 (3.30)	83.8 (3.30)	91.4 (3.60)
2½ × 2½ × 1¼	51.8 (2.04)	51.8 (2.04)	62.2 (2.45)	4 × 4 × 2½	77.5 (3.05)	77.5 (3.05)	89.2 (3.51)
2½ × 2½ × 1	47.5 (1.87)	47.5 (1.87)	60.2 (2.37)	4 × 4 × 2	69.6 (2.74)	69.6 (2.74)	86.6 (3.41)
2½ × 2½ × ¾	44.2 (1.74)	44.2 (1.74)	58.9 (2.32)	4 × 4 × 1½	63.8 (2.51)	63.8 (2.51)	84.3 (3.32)
2½ × 2 × 2½	68.6 (2.70)	66.0 (2.60)	68.6 (2.70)	4 × 3 × 4	96.3 (3.79)	91.4 (3.60)	96.3 (3.79)
2½ × 2 × 2	60.7 (2.39)	57.2 (2.25)	66.0 (2.60)	3 × 3 × 4	91.4 (3.60)	91.4 (3.60)	83.8 (3.30)
2½ × 1½ × 2½	68.6 (2.70)	63.8 (2.51)	68.6 (2.70)	5 × 5 × 3	89.2 (3.51)	89.2 (3.51)	107.2 (4.22)
2½ × 1½ × 2	60.7 (2.39)	54.9 (2.16)	66.0 (2.60)	6 × 6 × 4	104.9 (4.13)	104.9 (4.13)	125.5 (4.94)
2 × 2 × 2½	66.0 (2.60)	66.0 (2.60)	60.7 (2.39)	6 × 6 × 3	92.5 (3.64)	92.5 (3.64)	120.7 (4.75)
3 × 3 × 2½	71.9 (2.83)	71.9 (2.83)	76.0 (2.99)	6 × 6 × 2½	86.1 (3.39)	86.1 (3.39)	118.4 (4.66)
3 × 3 × 2	64.0 (2.52)	64.0 (2.52)	73.4 (2.89)	6 × 6 × 2	78.2 (3.08)	78.2 (3.08)	115.8 (4.56)
3 × 3 × 1½	58.2 (2.29)	58.2 (2.29)	71.1 (2.80)				

GENERAL NOTES:
(a) Dimensions are in millimeters (inches).
(b) For dimensions not given, see Table 7.1-1.
(c) Reducing sizes of fittings for which dimensions are not given in tables may be produced from regular patterns for listed sizes by sand bushing.

Table 7.2.1-3 Dimensions of Class 150 Couplings (Straight and Reducing Sizes)



NPS	Minimum Length of Thread		Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness, *G*	Minimum Outside Diameter of Band, *H*	Thickness of Ribs	Length of Straight Couplings, *W*	Length of Reducing Concentric Couplings, *M* [Notes (1), (2)]	Steel Couplings [Notes (2), (3)]	
	B	L_2		Min.	Max.						Length, *W*	Outside Diameter, *D*
1/8	6.4 (0.25)	6.7 (0.2639)	5.1 (0.20)	10.3 (0.40)	11.0 (0.43)	2.29 (0.09)	17.6 (0.69)	2.29 (0.09)	24.2 (0.96)	...	20.7 (0.81)	14.3 (0.56)
1/4	8.1 (0.32)	10.2 (0.4018)	5.5 (0.21)	13.7 (0.54)	14.8 (0.58)	2.41 (0.09)	21.4 (0.84)	2.41 (0.09)	26.9 (1.06)	25.4 (1.00)	30.2 (1.19)	18.3 (0.72)
3/8	9.1 (0.36)	10.4 (0.4078)	5.8 (0.23)	17.1 (0.67)	18.3 (0.72)	2.54 (0.10)	25.8 (1.01)	2.54 (0.10)	29.5 (1.16)	28.7 (1.13)	30.2 (1.19)	22.2 (0.87)
1/2	10.9 (0.43)	...	6.3 (0.25)	21.3 (0.84)	22.8 (0.90)	2.67 (0.10)	30.4 (1.20)	2.67 (0.10)	34.0 (1.34)	31.8 (1.25)	...	...
3/4	12.7 (0.50)	...	6.9 (0.27)	26.7 (1.05)	28.1 (1.11)	3.05 (0.12)	37.0 (1.46)	3.05 (0.12)	38.6 (1.52)	36.6 (1.44)	...	...
1	14.7 (0.58)	...	7.7 (0.30)	33.4 (1.31)	35.2 (1.38)	3.40 (0.13)	45.0 (1.77)	3.40 (0.13)	42.4 (1.67)	42.9 (1.69)	...	...
1 1/4	17.0 (0.67)	...	8.7 (0.34)	42.2 (1.66)	43.9 (1.73)	3.68 (0.14)	54.7 (2.15)	3.60 (0.14)	49.0 (1.93)	52.3 (2.06)	...	...
1 1/2	17.8 (0.70)	...	9.3 (0.37)	48.3 (1.90)	50.0 (1.97)	3.94 (0.15)	61.6 (2.43)	3.84 (0.15)	54.6 (2.15)	58.7 (2.31)	...	...
2	19.1 (0.75)	...	10.7 (0.42)	60.3 (2.37)	62.1 (2.44)	4.39 (0.17)	75.3 (2.96)	4.39 (0.17)	64.3 (2.53)	71.4 (2.81)	...	...
2 1/2	23.4 (0.92)	...	12.1 (0.48)	73.0 (2.87)	75.6 (2.97)	5.33 (0.21)	91.2 (3.59)	5.33 (0.21)	73.2 (2.88)	82.6 (3.25)	...	...
3	24.9 (0.98)	...	13.9 (0.55)	88.9 (3.50)	91.4 (3.60)	5.87 (0.23)	108.8 (4.28)	5.87 (0.23)	80.8 (3.18)	93.7 (3.69)	...	...
4	27.4 (1.08)	...	16.8 (0.66)	114.4 (4.50)	116.8 (4.60)	6.73 (0.26)	137.2 (5.40)	6.73 (0.26)	93.7 (3.69)	111.3 (4.38)	...	...

GENERAL NOTES:

(a) Dimensions are in millimeters (inches).

(b) Right- and left-hand pattern couplings are standard only in sizes up to and including NPS 2.

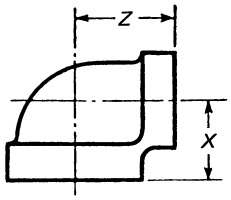
NOTES:

(1) Dimension *M* for all reduction of reducing couplings (concentric only) shall be the same as shown for the largest opening. Dimension *M* for eccentric couplings is not standard; such information should be obtained from the manufacturer.

(2) Couplings NPS 3/8 and smaller may be cast or made from steel rod with a minimum yield strength of 207 MPa (30 ksi) at the option of the manufacturer.

(3) Steel couplings are made without recess. Dimension *B* for steel couplings is the minimum length of perfect thread, and the length of useful thread (*B* plus threads with fully formed roots and flat crests) shall be not less than L_2 (effective length of external thread) required by ANSI/ASME B1.20.1 (see section 8).

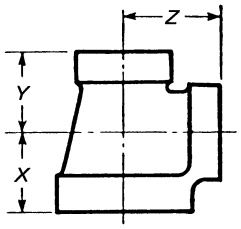
Table 7.2.1-4 Center-to-End Dimensions of Class 300 90-deg Elbows (Reducing Sizes)



NPS	Center-to-End	
	X	*Z*
½ × ⅜	30.2 (1.19)	30.2 (1.19)
¾ × ½	33.3 (1.31)	35.1 (1.38)
1 × ¾	38.1 (1.50)	39.6 (1.56)
1¼ × 1	44.5 (1.75)	46.0 (1.81)
1½ × 1¼	50.8 (2.00)	52.3 (2.06)
2 × 1½	57.2 (2.25)	60.5 (2.38)
2½ × 2	68.3 (2.69)	69.9 (2.75)
3 × 2½	77.7 (3.06)	84.1 (3.31)

GENERAL NOTES:
(a) Dimensions are in millimeters (inches).
(b) For dimensions not given, see Table 7.1-5.
(c) Reducing sizes of fittings for which dimensions are not given in tables may be produced from regular patterns for listed sizes by sand bushing.

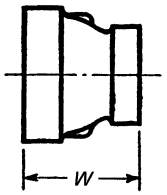
Table 7.2.1-5 Center-to-End Dimensions of Class 300 Tees (Reducing Sizes)



NPS	Center-to-End		
	X	*Y*	*Z*
½ × ½ × ⅜	30.2 (1.19)	30.2 (1.19)	30.2 (1.19)
½ × ⅜ × ½	31.8 (1.25)	30.2 (1.19)	31.8 (1.25)
¾ × ¾ × ½	33.3 (1.31)	33.3 (1.31)	35.1 (1.38)
¾ × ½ × ¾	36.6 (1.44)	35.1 (1.38)	36.6 (1.44)
1 × 1 × ¾	38.1 (1.50)	38.1 (1.50)	39.6 (1.56)
1 × 1 × ½	36.6 (1.44)	36.6 (1.44)	38.1 (1.50)
1 × 1 × ⅜	33.3 (1.31)	33.3 (1.31)	36.6 (1.44)
1 × ¾ × 1	41.4 (1.63)	39.6 (1.56)	41.4 (1.63)
1¼ × 1¼ × 1	44.5 (1.75)	44.5 (1.75)	46.0 (1.81)
1¼ × 1¼ × ¾	41.4 (1.63)	41.4 (1.63)	44.5 (1.75)
1¼ × 1¼ × ½	38.1 (1.50)	38.1 (1.50)	42.9 (1.69)
1¼ × 1 × 1¼	49.3 (1.94)	46.0 (1.81)	49.3 (1.94)
1½ × 1½ × 1¼	50.8 (2.00)	50.8 (2.00)	52.3 (2.06)
1½ × 1½ × 1	46.0 (1.81)	46.0 (1.81)	50.8 (2.00)
1½ × 1½ × ¾	42.9 (1.69)	42.9 (1.69)	47.6 (1.88)
1½ × 1½ × ½	41.4 (1.63)	41.4 (1.63)	46.0 (1.81)
1½ × 1¼ × 1½	54.1 (2.13)	52.3 (2.06)	54.1 (2.13)
2 × 2 × 1½	57.2 (2.25)	57.2 (2.25)	60.5 (2.38)
2 × 2 × 1¼	54.1 (2.13)	54.1 (2.13)	58.7 (2.31)
2 × 2 × 1	50.8 (2.00)	50.8 (2.00)	57.2 (2.25)
2 × 2 × ¾	46.0 (1.81)	46.0 (1.81)	54.1 (2.13)
2 × 2 × ½	44.5 (1.75)	44.5 (1.75)	52.3 (2.06)
2 × 1½ × 2	63.5 (2.50)	60.5 (2.38)	63.5 (2.50)
2½ × 2½ × 2	68.3 (2.69)	68.3 (2.69)	70.0 (2.75)
2½ × 2½ × 1½	62.0 (2.44)	62.0 (2.44)	66.8 (2.63)
2½ × 2 × 2½	74.7 (2.94)	70.0 (2.75)	74.7 (2.94)
3 × 3 × 2½	77.7 (3.06)	77.7 (3.06)	84.1 (3.31)
3 × 3 × 2	71.4 (2.81)	71.4 (2.81)	79.5 (3.13)
3 × 2½ × 3	85.9 (3.38)	84.1 (3.31)	85.9 (3.38)

GENERAL NOTES:
(a) Dimensions are in millimeters (inches).
(b) For dimensions not given, see Table 7.1-5.
(c) Reducing sizes of fittings for which dimensions are not given in tables may be produced from regular patterns for listed sizes by sand bushing.

Table 7.2.1-6 Dimensions of Class 300 Reducing Couplings



NPS	Length, *W*
3/8 × 1/4	36.6 (1.44)
1/2 × 3/8	42.9 (1.69)
1/2 × 1/4	42.9 (1.69)
3/4 × 1/2	44.5 (1.75)
3/4 × 3/8	44.5 (1.75)
3/4 × 1/4	44.5 (1.75)
1 × 3/4	50.8 (2.00)
1 × 1/2	50.8 (2.00)
1 × 3/8	50.8 (2.00)
1 × 1/4	50.8 (2.00)
1 1/4 × 1	60.5 (2.38)
1 1/4 × 3/4	60.5 (2.38)
1 1/4 × 1/2	60.5 (2.38)
1 1/2 × 1 1/4	68.3 (2.69)
1 1/2 × 1	68.3 (2.69)
1 1/2 × 3/4	68.3 (2.69)
1 1/2 × 1/2	68.3 (2.69)
2 × 1 1/2	81.0 (3.19)
2 × 1 1/4	81.0 (3.19)
2 × 1	81.0 (3.19)
2 × 3/4	81.0 (3.19)
2 × 1/2	81.0 (3.19)
2 1/2 × 2	93.7 (3.69)
2 1/2 × 1 1/2	93.7 (3.69)
3 × 2 1/2	103.1 (4.06)
3 × 2	103.1 (4.06)
3 × 1 1/2	103.1 (4.06)

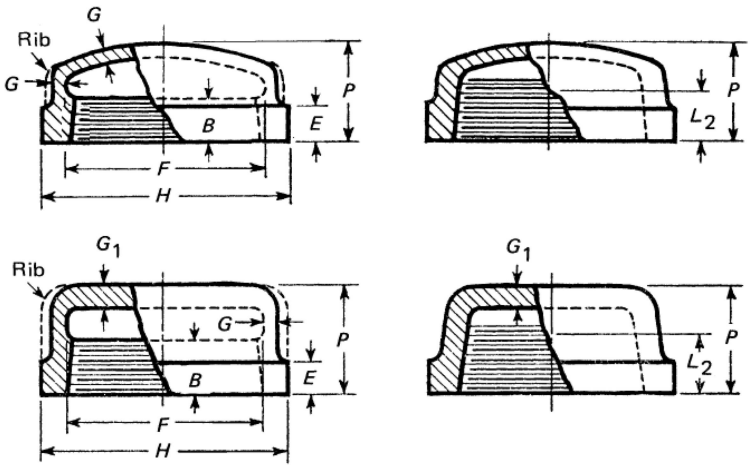
GENERAL NOTES:
(a) Dimensions are in millimeters (inches).
(b) For dimensions not given, see Table 7.1-5.
(c) Reducing sizes of fittings for which dimensions are not given in tables may be produced from regular patterns for listed sizes by sand bushing.

Table 7.3-1 Inspection Tolerances

NPS	Tolerance, mm (in.)
1/8	±0.8 (±0.03)
1/4	±1.0 (±0.04)
3/8	±1.3 (±0.05)
1/2, 3/4	±1.5 (±0.06)
1, 1 1/4	±1.8 (±0.07)
1 1/2, 2	±2.0 (±0.08)
2 1/2, 3, 3 1/2	±2.5 (±0.10)
4, 5	±3.0 (±0.12)
6	±3.6 (±0.14)

(21)

Table 8.1-1 Dimensions of Class 150 Caps



NPS	Minimum Length of Thread		Minimum Width of Band, *E*	Inside Diameter of Fitting, *F*		Metal Thickness of Side, *G*	Minimum Outside Diameter of Band, *H* [Note (1)]	Minimum Height, *P* [Note (2)]	Thickness of Ribs	Thickness of Flat Top Caps, G_1
	B	L_2		Min.	Max.					
1/8	6.4 (0.25)	6.7 (0.2639)	5.1 (0.20)	10.3 (0.40)	11.0 (0.43)	2.29 (0.09)	17.6 (0.69)	13.5 (0.53)	...	...
1/4	8.1 (0.32)	10.2 (0.4018)	5.5 (0.21)	13.7 (0.54)	14.8 (0.58)	2.41 (0.09)	21.4 (0.84)	16.0 (0.63)	...	...
3/8	9.1 (0.36)	10.4 (0.4078)	5.8 (0.23)	17.1 (0.67)	18.3 (0.72)	2.54 (0.10)	25.8 (1.01)	18.8 (0.74)	...	...
1/2	10.9 (0.43)	13.6 (0.5337)	6.3 (0.25)	21.3 (0.84)	22.8 (0.90)	2.67 (0.10)	30.4 (1.20)	22.1 (0.87)	3.67 (0.10)	...
3/4	12.7 (0.50)	13.9 (0.5457)	6.9 (0.27)	26.7 (1.05)	28.1 (1.11)	3.05 (0.12)	37.0 (1.46)	24.6 (0.97)	3.05 (0.12)	3.30 (0.13)
1	14.7 (0.58)	17.3 (0.6828)	7.7 (0.30)	33.4 (1.31)	35.2 (1.38)	3.40 (0.13)	45.0 (1.77)	29.5 (1.16)	3.40 (0.13)	3.81 (0.15)
1 1/4	17.0 (0.67)	18.0 (0.7068)	8.7 (0.34)	42.2 (1.66)	43.9 (1.73)	3.68 (0.14)	54.7 (2.15)	32.5 (1.28)	3.68 (0.14)	4.32 (0.17)
1 1/2	17.8 (0.70)	18.4 (0.7235)	9.3 (0.37)	48.3 (1.90)	50.0 (1.97)	3.94 (0.15)	61.6 (2.43)	33.8 (1.33)	3.94 (0.15)	4.83 (0.19)
2	19.1 (0.75)	19.2 (0.7565)	10.7 (0.42)	60.3 (2.37)	62.1 (2.44)	4.39 (0.17)	75.3 (2.96)	36.8 (1.45)	4.39 (0.17)	5.59 (0.22)
2 1/2	23.4 (0.92)	28.9 (1.1375)	12.1 (0.48)	73.0 (2.87)	75.6 (2.97)	5.33 (0.21)	91.3 (3.59)	43.2 (1.70)	5.33 (0.21)	6.35 (0.25)
3	24.9 (0.98)	30.5 (1.2000)	13.9 (0.55)	88.9 (3.50)	91.4 (3.60)	5.87 (0.23)	108.8 (4.28)	45.7 (1.80)	5.87 (0.23)	7.37 (0.29)
3 1/2	26.2 (1.03)	31.8 (1.2500)	15.3 (0.60)	101.6 (4.00)	104.1 (4.10)	6.30 (0.25)	123.0 (4.84)	48.3 (1.90)	6.30 (0.25)	7.62 (0.30)
4	27.4 (1.08)	33.0 (1.3000)	16.9 (0.66)	114.4 (4.50)	116.8 (4.60)	6.73 (0.26)	137.2 (5.40)	52.8 (2.08)	6.73 (0.26)	9.14 (0.36)
5	30.0 (1.18)	35.7 (1.4063)	19.8 (0.78)	141.3 (5.56)	143.8 (5.66)	7.62 (0.30)	167.2 (6.58)	58.9 (2.32)	7.62 (0.30)	...
6	32.5 (1.28)	38.4 (1.5125)	22.9 (0.90)	168.3 (6.62)	170.8 (6.72)	8.53 (0.34)	197.3 (7.77)	64.8 (2.55)	8.53 (0.34)	...

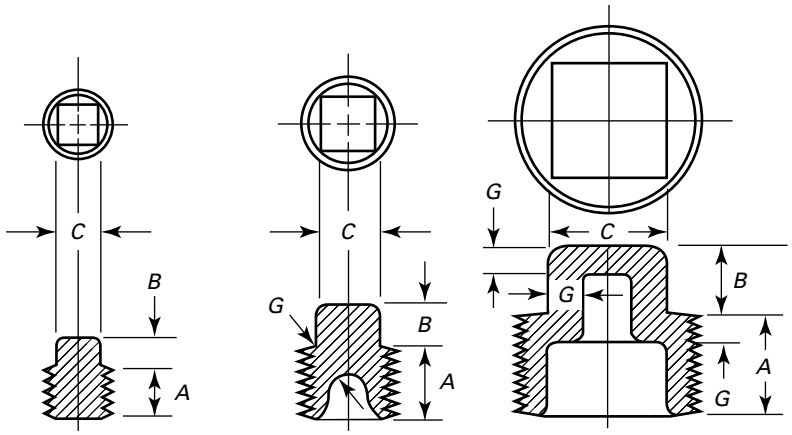
GENERAL NOTE: Dimensions are in millimeters (inches).

NOTES:

(1) Caps sizes 1/8, 1/4, and 3/8 may be malleable castings or made from steel rod with a minimum yield strength of 207 MPa (30 ksi) at the option of the manufacturer. When made from steel rod, diameters shall be 14.3 (0.50), 17.4 (0.69), and 21.4 (0.84), respectively. Caps made from steel rod have no recess.

(2) Caps may be made without recess. Caps so made shall be of such height, *P*, that the length of perfect thread shall be not less than *B*, and the length of useful thread (*B* plus threads with fully formed roots and flat crests) shall be not less than L_2 (effective length of external thread) required by ANSI/ASME B1.20.1.

Table 7-1
Dimensions of Square Head Plugs



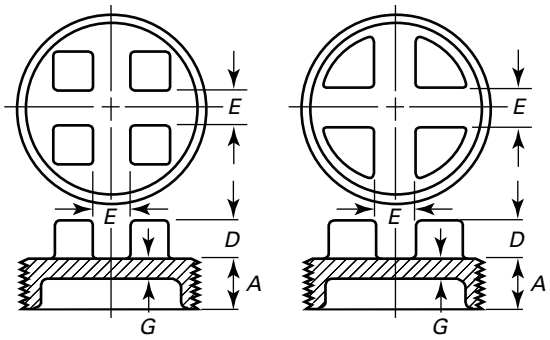
(a) Solid Plugs (b) Cored Plugs

NPS [Notes (1), (2)]	Minimum Thread Length, *A*, mm (in.)	Minimum Height of Square, *B*, mm (in.)	Nominal Width Across Flats, *C*, in. [Note (3)]	Nominal Metal Thickness, *G*, mm (in.) [Note (4)]
1/8	9.4 (0.37)	6.1 (0.24)	9/32	...
1/4	11.2 (0.44)	7.1 (0.28)	3/8	...
3/8	12.2 (0.48)	7.9 (0.31)	7/16	...
1/2	14.2 (0.56)	9.7 (0.38)	9/16	4.1 (0.16)
3/4	16.0 (0.63)	11.2 (0.44)	5/8	4.6 (0.18)
1	19.1 (0.75)	12.7 (0.50)	13/16	5.1 (0.20)
1 1/4	20.3 (0.80)	14.2 (0.56)	15/16	5.6 (0.22)
1 1/2	21.1 (0.83)	15.8 (0.62)	1 1/8	6.1 (0.24)
2	22.4 (0.88)	17.3 (0.68)	15/16	6.6 (0.26)
2 1/2	27.2 (1.07)	18.8 (0.74)	1 1/2	7.4 (0.29)
3	28.7 (1.13)	20.3 (0.80)	1 11/16	7.9 (0.31)
3 1/2	30.0 (1.18)	21.8 (0.86)	1 7/8	8.6 (0.34)

GENERAL NOTE: Nominal width across flats is given in inches.

NOTES:
(1) Solid plugs are provided in NPS 1/8 to NPS 3 1/2, inclusive; cored plugs, NPS 1/2 to NPS 3 1/2, inclusive.
(2) For NPS 4 and larger, slotted or bar pattern plugs are provided (see Table 7-2).
(3) These dimensions are the nominal width across flats as given in ASME B18.2.1, Table 1. Square head plugs are designed to fit these wrenches.
(4) Cored plugs have metal thickness at all points equal to dimension *G*, except at the end of the thread. For tolerance, see para. 7(b).

Table 7-2
Dimensions of Bar or Slotted Head Plugs



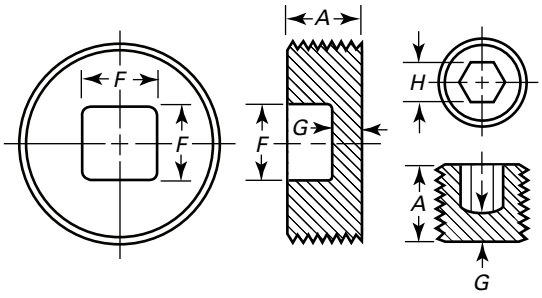
Optional Designs

NPS	Minimum Thread Length, *A*, mm (in.)	Minimum Height of Lug, *D*, mm (in.)	Minimum Distance Between Lugs, *E*, mm (in.)	Metal Thickness, *G*, mm (in.) [Note (1)]
4	31.0 (1.22)	25.4 (1.00)	22.4 (0.88)	9.4 (0.37)
5	33.3 (1.31)	25.4 (1.00)	22.4 (0.88)	11.7 (0.46)
6	35.6 (1.40)	31.8 (1.25)	31.8 (1.25)	13.2 (0.52)
8	39.9 (1.57)	35.1 (1.38)	38.1 (1.50)	16.8 (0.66)

GENERAL NOTE: For NPS 3½ and smaller, square head plugs are provided (see Table 7-1).

NOTE: (1) Cored plugs have metal thickness at all points equal to dimension *G*, except at the end of the thread. For tolerance, see para. 7(b).

Table 7-3
Dimensions of Countersunk Plugs



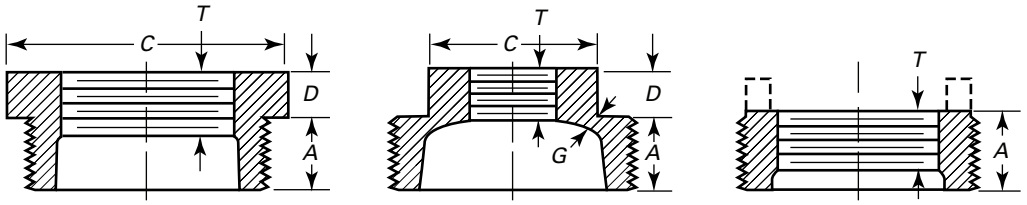
NPS	Minimum Thread Length, *A*, mm (in.)	Nominal Size of Square Socket, *F*, in. [Note (1)]	Size of Hexagon, *H*, in. [Note (2)]	Metal Thickness, *G*, mm (in.) [Note (3)]
1/8	9.4 (0.37)	...	3/16	1.5 (0.06)
1/4	11.2 (0.44)	...	1/4	2.3 (0.09)
3/8	12.2 (0.48)	...	5/16	3.3 (0.13)
1/2	14.2 (0.56)	3/8	3/8	4.1 (0.16)
3/4	16.0 (0.63)	1/2	9/16	4.6 (0.18)
1	19.1 (0.75)	1/2	5/8	5.1 (0.20)
1 1/4	20.3 (0.80)	3/4	...	5.6 (0.22)
1 1/2	21.1 (0.83)	3/4	...	6.1 (0.24)
2	22.4 (0.88)	7/8	...	6.6 (0.26)
2 1/2	27.2 (1.07)	1 1/8	...	7.4 (0.29)
3	28.7 (1.13)	1 3/8	...	7.9 (0.31)
3 1/2	30.0 (1.18)	1 1/2	...	8.6 (0.34)
4	31.0 (1.22)	2	...	9.4 (0.37)

GENERAL NOTE: Nominal sizes of square sockets and sizes of hexagons are given in inches.

NOTES:
(1) Square socket within countersunk pattern shall have dimensions to fit commercial square bars of sizes indicated.
(2) Hexagon socket within countersunk pattern shall have dimensions to fit regular wrenches used with hexagon socket set screws.
(3) For metal thickness tolerance, see para. 7(b).

(24)

Table 7-4
Dimensions of Outside Head, Inside Head, and Face Bushings



(a) Outside Head (b) Inside Head (c) Face

NPS [Note (1)]	Minimum Length of External Thread, *A*, mm (in.) [Note (2)]	Minimum Length of Internal Thread, *T*, mm (in.)	Minimum Height of Head, *D*, mm (in.)	Minimum Width of Head, *C*, mm (in.) [Note (3)]		Nominal Metal Thickness, *G*, mm (in.) [Note (4)]
				Outside	Inside	
1/4 × 1/8	11.2 (0.44)	6.6 (0.26) [Note (5)]	3.6 (0.14)	16.3 (0.64) [Note (6)]	...	...
3/8 × 1/4	12.2 (0.48)	10.2 (0.40) [Note (5)]	4.1 (0.16)	17.3 (0.68) [Note (6)]	...	...
3/8 × 1/8	12.2 (0.48)	6.4 (0.25)	4.1 (0.16)	17.3 (0.68) [Note (6)]	...	...
1/2 × 3/8	14.2 (0.56)	10.4 (0.41) [Note (5)]	4.8 (0.19)	22.1 (0.87) [Note (6)]	...	...
1/2 × 1/4	14.2 (0.56)	8.1 (0.32)	4.8 (0.19)	22.1 (0.87) [Note (6)]	...	...
1/2 × 1/8	14.2 (0.56)	6.4 (0.25)	4.8 (0.19)	22.1 (0.87) [Note (6)]	...	...
3/4 × 1/2	16.0 (0.63)	13.5 (0.53) [Note (5)]	5.6 (0.22)	29.2 (1.15) [Note (6)]	...	...
3/4 × 3/8	16.0 (0.63)	9.1 (0.36)	5.6 (0.22)	29.2 (1.15) [Note (6)]	...	...
3/4 × 1/4	16.0 (0.63)	8.1 (0.32)	5.6 (0.22)	29.2 (1.15) [Note (6)]	...	...
3/4 × 1/8	16.0 (0.63)	6.4 (0.25)	5.6 (0.22)	29.2 (1.15) [Note (6)]	...	...
1 × 3/4	19.1 (0.75)	12.7 (0.50)	6.4 (0.25)	36.1 (1.42) [Note (6)]	...	...
1 × 1/2	19.1 (0.75)	10.9 (0.43)	6.4 (0.25)	36.1 (1.42) [Note (6)]	...	...
1 × 3/8	19.1 (0.75)	9.1 (0.36)	7.6 (0.30)	...	28.5 (1.12)	...
1 × 1/4	19.1 (0.75)	8.1 (0.32)	7.6 (0.30)	...	28.5 (1.12)	...
1 × 1/8	19.1 (0.75)	6.4 (0.25)	7.6 (0.30)	...	28.5 (1.12)	...
1 1/4 × 1	20.3 (0.80)	14.7 (0.58)	7.1 (0.28)	44.7 (1.76)	...	...
1 1/4 × 3/4	20.3 (0.80)	12.7 (0.50)	7.1 (0.28)	44.7 (1.76)	...	...
1 1/4 × 1/2	20.3 (0.80)	10.9 (0.43)	8.6 (0.34)	...	34.0 (1.34)	4.8 (0.18)
1 1/4 × 3/8	20.3 (0.80)	9.1 (0.36)	8.6 (0.34)	...	28.5 (1.12)	4.8 (0.18)
1 1/4 × 1/4	20.3 (0.80)	8.1 (0.32)	8.6 (0.34)	...	28.5 (1.12)	4.8 (0.18)
1 1/2 × 1 1/4	21.1 (0.83)	18.0 (0.77) [Note (5)]	7.9 (0.31)	50.8 (2.00)	...	...
1 1/2 × 1	21.1 (0.83)	14.7 (0.58)	7.9 (0.31)	50.8 (2.00)	...	...
1 1/2 × 3/4	21.1 (0.83)	12.7 (0.50)	9.4 (0.37)	...	41.4 (1.63)	5.1 (0.20)
1 1/2 × 1/2	21.1 (0.83)	10.9 (0.43)	9.4 (0.37)	...	34.0 (1.34)	5.1 (0.20)
1 1/2 × 3/8	21.1 (0.83)	9.1 (0.36)	9.4 (0.37)	...	28.5 (1.12)	5.1 (0.20)
1 1/2 × 1/4	21.1 (0.83)	8.1 (0.32)	9.4 (0.37)	...	28.5 (1.12)	5.1 (0.20)
2 × 1 1/2	22.4 (0.88)	17.8 (0.70)	8.6 (0.34)	63.0 (2.48)	...	...
2 × 1 1/4	22.4 (0.88)	17.0 (0.67)	8.6 (0.34)	63.0 (2.48)	...	...
2 × 1	22.4 (0.88)	14.7 (0.58)	10.4 (0.41)	...	49.5 (1.95)	5.6 (0.22)
2 × 3/4	22.4 (0.88)	12.7 (0.50)	10.4 (0.41)	...	41.4 (1.63)	5.6 (0.22)
2 × 1/2	22.4 (0.88)	10.9 (0.43)	10.4 (0.41)	...	34.0 (1.34)	5.6 (0.22)

Table 7-4
Dimensions of Outside Head, Inside Head, and Face Bushings (Cont'd)

NPS [Note (1)]	Minimum Length of External Thread, *A*, mm (in.) [Note (2)]	Minimum Length of Internal Thread, *T*, mm (in.)	Minimum Height of Head, *D*, mm (in.)	Minimum Width of Head, *C*, mm (in.) [Note (3)]		Nominal Metal Thickness, *G*, mm (in.) [Note (4)]
				Outside	Inside	
2 × 3/8	22.4 (0.88)	9.1 (0.36)	10.4 (0.41)	...	28.5 (1.12)	5.6 (0.22)
2 × 1/4	22.4 (0.88)	8.1 (0.32)	10.4 (0.41)	...	28.5 (1.12)	5.6 (0.22)
2 1/2 × 2	27.2 (1.07)	19.1 (0.75)	9.4 (0.37)	75.7 (2.98)	...	...
2 1/2 × 1 1/2	27.2 (1.07)	17.8 (0.70)	11.2 (0.44)	68.1 (2.68)	...	...
2 1/2 × 1 1/4	27.2 (1.07)	17.0 (0.67)	11.2 (0.44)	...	60.7 (2.39)	6.1 (0.24)
2 1/2 × 1	27.2 (1.07)	14.7 (0.58)	11.2 (0.44)	...	49.5 (1.95)	6.1 (0.24)
2 1/2 × 3/4	27.2 (1.07)	12.7 (0.50)	11.2 (0.44)	...	41.4 (1.63)	6.1 (0.24)
2 1/2 × 1/2	27.2 (1.07)	10.9 (0.43)	11.2 (0.44)	...	34.0 (1.34)	6.1 (0.24)
3 × 2 1/2	28.7 (1.13)	23.4 (0.92)	10.2 (0.40)	98.0 (3.86)	...	...
3 × 2	28.7 (1.13)	19.1 (0.75)	12.2 (0.48)	83.3 (3.28)	...	...
3 × 1 1/2	28.7 (1.13)	17.8 (0.70)	12.2 (0.48)	...	68.1 (2.68)	6.6 (0.26)
3 × 1 1/4	28.7 (1.13)	17.0 (0.67)	12.2 (0.48)	...	60.7 (2.39)	6.6 (0.26)
3 × 1	28.7 (1.13)	14.7 (0.58)	12.2 (0.48)	...	49.5 (1.95)	6.6 (0.26)
3 × 3/4	28.7 (1.13)	12.7 (0.50)	12.2 (0.48)	...	41.4 (1.63)	6.6 (0.26)
3 × 1/2	28.7 (1.13)	10.9 (0.43)	12.2 (0.48)	...	34.0 (1.34)	6.6 (0.26)
3 1/2 × 3	30.0 (1.18)	24.9 (0.98)	10.9 (0.43)	117.3 (4.62)	...	...
3 1/2 × 2 1/2	30.0 (1.18)	23.4 (0.92)	13.2 (0.52)	98.0 (3.86)	...	...
3 1/2 × 2	30.0 (1.18)	19.1 (0.75)	13.2 (0.52)	...	83.3 (3.28)	7.1 (0.28)
3 1/2 × 1 1/2	30.0 (1.18)	17.8 (0.70)	13.2 (0.52)	...	68.1 (2.68)	7.1 (0.28)
3 1/2 × 1 1/4	30.0 (1.18)	17.0 (0.67)	13.2 (0.52)	...	60.7 (2.39)	7.1 (0.28)
3 1/2 × 1	30.0 (1.18)	14.7 (0.58)	13.2 (0.52)	...	49.5 (1.95)	7.1 (0.28)
4 × 3 1/2	31.0 (1.22)	26.2 (1.03)	12.7 (0.50)	132.1 (5.20)	...	...
4 × 3	31.0 (1.22)	24.9 (0.98)	12.7 (0.50)	117.3 (4.62)	...	...
4 × 2 1/2	31.0 (1.22)	23.4 (0.92)	15.2 (0.60)	...	98.0 (3.86)	7.9 (0.31)
4 × 2	31.0 (1.22)	19.1 (0.75)	15.2 (0.60)	...	83.3 (3.28)	7.9 (0.31)
4 × 1 1/2	31.0 (1.22)	17.8 (0.70)	15.2 (0.60)	...	68.1 (2.68)	7.9 (0.31)
4 × 1 1/4	31.0 (1.22)	17.0 (0.67)	15.2 (0.60)	...	60.7 (2.39)	7.9 (0.31)
4 × 1	31.0 (1.22)	14.7 (0.58)	15.2 (0.60)	...	49.5 (1.95)	7.9 (0.31)
5 × 4	33.3 (1.31)	27.4 (1.08)	12.7 (0.50)	147.1 (5.79)	...	...
5 × 3 1/2	33.3 (1.31)	26.2 (1.03)	15.2 (0.60)	132.1 (5.20)	...	...
5 × 3	33.3 (1.31)	24.9 (0.98)	15.2 (0.60)	...	117.3 (4.62)	9.7 (0.38)
5 × 2 1/2	33.3 (1.31)	23.4 (0.92)	15.2 (0.60)	...	98.0 (3.86)	9.7 (0.38)
5 × 2	33.3 (1.31)	19.1 (0.75)	15.2 (0.60)	...	83.3 (3.28)	9.7 (0.38)
6 × 5	35.6 (1.40)	30.0 (1.18)	16.0 (0.63)	179.1 (7.05)	...	...
6 × 4	35.6 (1.40)	27.4 (1.08)	19.1 (0.75)	...	147.1 (5.79)	10.9 (0.43)
6 × 3 1/2	35.6 (1.40)	26.2 (1.03)	19.1 (0.75)	...	132.1 (5.20)	10.9 (0.43)
6 × 3	35.6 (1.40)	24.9 (0.98)	19.1 (0.75)	...	117.3 (4.62)	10.9 (0.43)
6 × 2 1/2	35.6 (1.40)	23.4 (0.92)	19.1 (0.75)	...	98.0 (3.86)	10.9 (0.43)
6 × 2	35.6 (1.40)	19.1 (0.75)	19.1 (0.75)	...	83.3 (3.28)	10.9 (0.43)

Table 7-4
Dimensions of Outside Head, Inside Head, and Face Bushings (Cont'd)

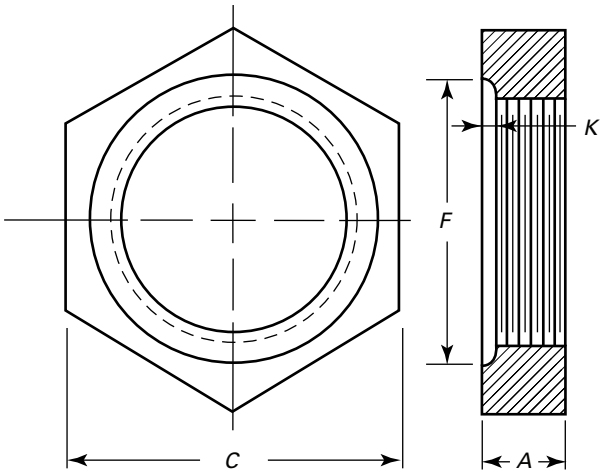
NPS [Note (1)]	Minimum Length of External Thread, *A*, mm (in.) [Note (2)]	Minimum Length of Internal Thread, *T*, mm (in.)	Minimum Height of Head, *D*, mm (in.)	Minimum Width of Head, *C*, mm (in.) [Note (3)]		Nominal Metal Thickness, *G*, mm (in.) [Note (4)]
				Outside	Inside	
8 × 6	39.9 (1.57)	32.5 (1.28)	21.1 (0.83)	210.3 (8.28)	...	...
8 × 5	39.9 (1.57)	30.0 (1.18)	21.1 (0.83)	...	179.1 (7.05)	14.0 (0.55)
8 × 4	39.9 (1.57)	27.4 (1.08)	21.1 (0.83)	...	147.1 (5.79)	14.0 (0.55)
8 × 3½	39.9 (1.57)	26.2 (1.03)	21.1 (0.83)	...	132.1 (5.20)	14.0 (0.55)
8 × 3	39.9 (1.57)	24.9 (0.98)	21.1 (0.83)	...	117.3 (4.62)	14.0 (0.55)

GENERAL NOTE: Cored bushings have minimum metal thickness at all points equal to dimension *G*, except at the end of the thread.

NOTES:
(1) Hexagon head or octagon head bushings NPS 2½ and smaller reducing one NPS shall not be made of gray cast iron. Other NPS may be made of either cast iron, malleable iron, or ductile iron. Face bushings NPS 2½ and smaller shall not be made of gray cast iron. Face bushings NPS 3 and larger reducing one NPS shall not be made of gray cast iron. Face bushings NPS 3 and larger reducing two NPS or more may be made of either cast iron, malleable iron, or ductile iron.
(2) In the case of outside head bushings, length *A* includes provisions for imperfect threads (see also section 8).
(3) Heads of bushings shall be hexagonal or octagonal, except that on the larger sizes of outside head bushings, the heads may be made round with lugs instead of hexagonal or octagonal.
(4) *G* is the same as metal thickness for Class 125 Cast Iron Threaded Fittings (ASME B16.4). For tolerance, see para. 7(b).
(5) To provide proper metal thickness, these NPS shall not be cored out to diameters greater than the root diameter of the internal thread. The length of the internal thread may be equal to the minimum dimension, *T*, or greater up to the full length of bushing.
(6) When made of bar stock, the dimensions may be ⅝ in., 11⁄16 in., ⅞ in., 1⅛ in., and 1 7⁄16 in., respectively, in order to use regular bar stock sizes.

Table 7-5
Dimensions of Locknuts

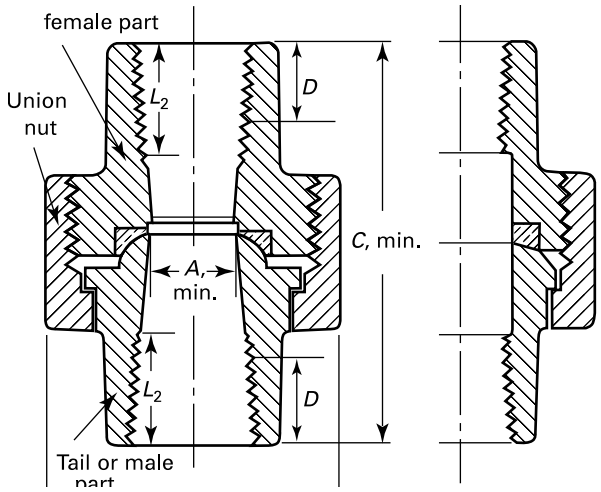
(24)



NPS	Minimum Nominal Thickness, *A*, mm (in.)	Minimum Width Across Flats, *C*, mm (in.) [Note (1)]		Minimum Diameter of Packing Recess, *F*, mm (in.) [Note (2)]	Depth of Packing Recess, *K*, mm (in.) [Note (2)]
		Malleable Iron or Ductile Iron	Cast Iron		
1/8	4.8 (0.19)	17.5 (0.69) [Note (3)]	...	12.7 (0.50)	1.0 (0.04)
1/4	6.4 (0.25)	21.3 (0.84) [Note (3)]	...	16.8 (0.66)	1.5 (0.06)
3/8	7.1 (0.28)	25.4 (1.00) [Note (3)]	...	19.6 (0.77)	1.5 (0.06)
1/2	7.9 (0.31)	30.0 (1.18) [Note (3)]	...	24.6 (0.97)	1.5 (0.06)
3/4	8.6 (0.34)	36.3 (1.43) [Note (3)]	...	31.2 (1.23)	1.5 (0.06)
1	9.7 (0.38)	44.5 (1.75)	...	38.1 (1.50)	1.5 (0.06)
1 1/4	10.7 (0.42)	53.3 (2.10)	...	47.2 (1.86)	1.5 (0.06)
1 1/2	11.9 (0.47)	59.7 (2.35)	...	53.9 (2.12)	1.5 (0.06)
2	13.5 (0.53)	73.2 (2.88)	...	66.8 (2.63)	2.3 (0.09)
2 1/2	15.0 (0.59)	88.9 (3.50)	98.0 (3.86)	80.8 (3.18)	2.3 (0.09)
3	17.0 (0.67)	108.5 (4.27)	117.3 (4.62)	97.5 (3.84)	2.3 (0.09)
3 1/2	18.5 (0.73)	122.9 (4.84)	132.1 (5.20)	111.3 (4.38)	3.3 (0.13)
4	20.3 (0.80)	136.7 (5.38)	147.1 (5.79)	127.0 (5.00)	3.3 (0.13)

NOTES:
(1) NPS 3 1/2 and smaller are hexagonal; NPS 4 may be either hexagonal or octagonal.
(2) The packing recess surface may be as cast. When made from bar stock, the recess may be tool finished.
(3) Locknuts in these NPS may be made from bar stock, in which case dimension *C* may be 11/16 in., 7/8 in., 1 in., 1 3/16 in., and 1 7/16 in., respectively, in order to conform with regular hexagon bar stock sizes.

Table 14-1 Dimensions of Class 150 Malleable Iron Threaded Unions



NPS	*A* Min., mm (in.)	*B* Min., mm (in.)	*C* Min., mm (in.)	*D* Min., mm (in.)
1/8	5.5 (0.21)	23.5 (0.93)	32.0 (1.26)	6.7 (0.26)
1/4	9.0 (0.36)	28.0 (1.10)	36.5 (1.44)	10.2 (0.40)
3/8	13.0 (0.52)	32.0 (1.26)	41.0 (1.61)	10.4 (0.41)
1/2	15.5 (0.61)	37.0 (1.45)	43.5 (1.72)	13.6 (0.53)
3/4	20.5 (0.80)	43.5 (1.71)	49.5 (1.94)	13.9 (0.55)
1	25.5 (1.00)	52.5 (2.07)	52.5 (2.06)	17.3 (0.68)
1 1/4	33.5 (1.31)	63.5 (2.50)	57.5 (2.26)	18.0 (0.71)
1 1/2	39.5 (1.55)	71.5 (2.82)	61.0 (2.41)	18.4 (0.72)
2	51.5 (2.03)	86.5 (3.41)	70.0 (2.75)	19.2 (0.76)
2 1/2	60.5 (2.38)	104.5 (4.12)	82.0 (3.22)	28.9 (1.14)
3	76.0 (3.00)	120.5 (4.75)	89.0 (3.50)	30.5 (1.20)
4	102.5 (4.03)	152.5 (6.00)	98.0 (3.85)	33.0 (1.30)

GENERAL NOTE: Dimension *D* is minimum length of perfect thread. The length of useful thread (*D* plus threads with fully formed roots and flat crests) shall be not less than L_2 (effective length of external thread) required by ASME B1.20.1.

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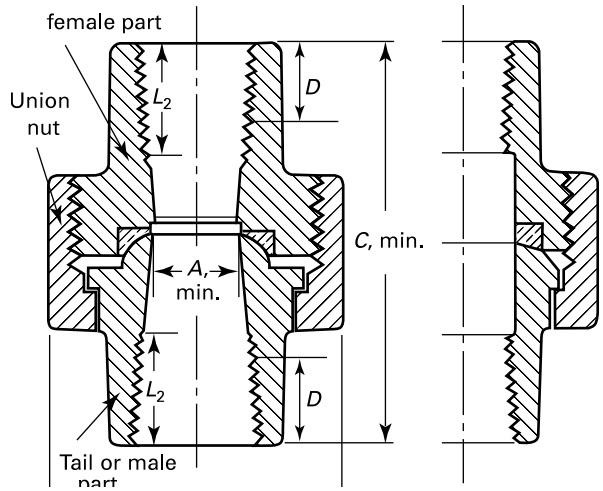
Table 14-3 Dimensions of Class 300 Malleable Iron Threaded Unions



NPS	*A* Min., mm (in.)	*B* Min., mm (in.)	*C* Min., mm (in.)	*D* Min., mm (in.)
1/8	5.5 (0.21)	23.5 (0.93)	32.0 (1.26)	7.5 (0.30)
1/4	7.5 (0.30)	34.0 (1.33)	39.5 (1.55)	11.0 (0.43)
3/8	10.5 (0.42)	38.0 (1.50)	43.5 (1.71)	12.0 (0.47)
1/2	13.5 (0.54)	44.5 (1.76)	46.0 (1.81)	14.5 (0.57)
3/4	19.0 (0.74)	54.5 (2.15)	54.0 (2.12)	16.5 (0.64)
1	24.0 (0.95)	63.0 (2.48)	58.5 (2.31)	19.0 (0.75)
1 1/4	32.5 (1.27)	76.5 (3.02)	67.5 (2.66)	21.5 (0.84)
1 1/2	38.0 (1.50)	83.5 (3.28)	72.5 (2.85)	22.0 (0.87)
2	49.0 (1.93)	100.5 (3.96)	82.0 (3.23)	25.5 (1.00)
2 1/2	59.0 (2.32)	120.0 (4.72)	84.5 (3.33)	29.5 (1.17)
3	73.5 (2.90)	136.5 (5.37)	104.0 (4.09)	31.0 (1.23)
4	97.0 (3.82)	178.0 (7.00)	113.5 (4.47)	34.0 (1.33)

GENERAL NOTE: Dimension *D* is minimum length of perfect thread. The length of useful thread (*D* plus threads with fully formed roots and flat crests) shall be not less than L_2 (effective length of external thread) required by ASME B1.20.1.

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(Show facsimile of logo or trademark, as it will appear on the fitting as evidence of certification)

DECLARATION OF CONFORMITY

REGISTRATION OF FITTINGS

A
Charley Dong
Jan 21,2026
CRN expires date: Dec 19,2035

Technical Standards and Safety Authority

Boilers and Pressure Vessels Safety Program

REGISTERED

C.R.N.: 0A2837.75 Rev1

Signed: Charley Dong

Date: January 21, 2026.

Declaration No: (Unique identifier assigned by the manufacturer)	1A6/8A6MGGJCRN-0	**Revision:**	0

Manufacturer	(Name and Address) Name: Jinan Meide Casting Co., Ltd. Address: NO.1 Meide Street, Meigui Town, Pingyin County, Jinan, Shandong, 250400,P.R. China

***Table 1 Scope of Fitting Designs**

Item No.	Type/ Model / Size	Product Description	Material of Construction	MDMT	Rated Pressure		References: Catalog (pages) or Drawing(s) (revision level included)
					At Ambient Temperature	At Maximum Temperature	
1	Cass 150 Malleable Iron Pipe Fittings	90° Elbow	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
2	Cass 150 Malleable Iron Pipe Fittings	90° Reducing Elbow	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
3	Cass 150 Malleable Iron Pipe Fittings	90° Street Elbow	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
4	Cass 150 Malleable Iron Pipe Fittings	45° Elbow	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
5	Cass 150 Malleable Iron Pipe Fittings	45° Street Elbow	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
6	Cass 150 Malleable Iron Pipe Fittings	Side Outlet Elbow	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
7	Cass 150 Malleable Iron Pipe Fittings	Tee	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
8	Cass 150 Malleable Iron Pipe Fittings	Reducing Tee	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
9	Cass 150 Malleable Iron Pipe Fittings	Cross	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
10	Cass 150 Malleable Iron Pipe Fittings	Coupling	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
11	Cass 150 Malleable Iron Pipe Fittings	Reducing Coupling	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
12	Cass 150 Malleable Iron Pipe Fittings	Outside Hex Bushing	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
13	Cass 150 Malleable Iron Pipe Fittings	Inside Hex Bushing	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
14	Cass 150 Malleable Iron Pipe Fittings	Cored Plug	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32

15	Cass 150 Malleable Iron Pipe Fittings	Cap	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
16	Cass 150 Malleable Iron Pipe Fittings	Locknut	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
17	Cass 150 Malleable Iron Pipe Fittings	Floor Flange	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
18	Cass 150 Malleable Iron Pipe Fittings	Union with Brass Seat	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
19	Cass 150 Malleable Iron Pipe Fittings	Extension Piece	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
20	Cass 150 Malleable Iron Pipe Fittings	Side Outlet Tee	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
21	Cass 150 Malleable Iron Pipe Fittings	Solid Plug	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
22	Cass 150 Malleable Iron Pipe Fittings	Long Compression Coupling	ASTM A197/ A197M	-29℃	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32

****Table 2 Codes, Standards, Guidelines, and Other Applicable Documents**

Item No.	Title of Code(s), Standard(s), Guideline(s), or Other Applicable Document(s)	Edition / Revision	Item No.	Title of Code(s), Standard(s), Guideline(s), or Other Applicable Document(s)	Edition / Revision
1	ASME B16.3	2021	4		
2	ASME B16.14	2024	5		
3	ASME B16.39	2025	6		
4	ASTM B1.20.1	2018			

*****Table 3 Quality Program Verification and Manufacturing Sites**

Item No.	Location(s) Plant Name and Address / Site(s)	Quality Program Certificate Number	Expiry Date	Verifying Organization
1	Name: Jinan Meide Casting Co., Ltd. Address: No.1 Meide Street, Meigui Town, Pingyin County, Jinan, Shandong, 250400, P.R. China	CNBJ322598-A	29-05-2027	Bureau Veritas Certification
A copy of the Quality Certificate from each manufacturing site must be included.				

As an official of the manufacturer with authority and having responsibility for the conformity and regulatory compliance of the fittings, I hereby declare that the information and statements made in this declaration of conformity are true and accurate.

I declare, under our sole responsibility, that the design, construction, certification, and marking of the fitting(s) listed in Table 1*, are subject to a conformity assessment process and quality program that has been verified, as described in Table 3***.

I certify that the fittings (s) listed in Table 1* conform to: the provisions of the acts and regulations of the provinces and territories where the fitting(s) are registered; CSA B51; and the codes, standards, guidelines, or other applicable documents listed in Table 2**.

I further declare that there is a process in place for the retention of this declaration of conformity for not less than 10 years from the issuance of the Canadian Registration Number (CRN).

Signed for and on behalf of Jinan Meide Casting Co., Ltd. (Manufacturer) , Jinan (city) , Shandong ,China (state/province/country)

Li Chuanjun (Name, please print) , General Manager (Function or Title) , (Signature of Declarer) , 2025/12/15 (Date)

FRM-1752-00 (2024-12-31)

As an official of the manufacturer with authority and having responsibility for the conformity and regulatory compliance of the fittings, I hereby declare that the information and statements made in this declaration of conformity are true and accurate.

I declare, under our sole responsibility, that the design, construction, certification, and marking of the fitting(s) listed in Table 1*, are subject to a conformity assessment process and quality program that has been verified, as described in Table 3***.

I certify that the fittings (s) listed in Table 1* conform to: the provisions of the acts and regulations of the provinces and territories where the fitting(s) are registered; CSA B51; and the codes, standards, guidelines, or other applicable documents listed in Table 2**.

I further declare that there is a process in place for the retention of this declaration of conformity for not less than 10 years from the issuance of the Canadian Registration Number (CRN).

Signed for and on behalf of Jinan Meide Casting Co., Ltd. (Manufacturer), Jinan (city), Shandong, China (state/province/country)

Li Chuanjun	General Manager		2025/12/15
(Name, please print)	(Function or Title)	(Signature of Declarer)	(Date)

FRN-1752-00 (2024-12-31)

CRN: 0A2837.7 Rev.1

Note: This registration is based on the understanding that the Cl.150.M.I. fittings are in strict compliance with ASME B16.3, B16.14, B16.39 in regards to type, materials, dimensions, marking, pressure and temperature ratings, etc. No change from previous registration. (DGallant)

ACCEPTED
PROVINCE OF PRINCE EDWARD ISLAND
C.R.N.: 0A2837.79 Rev.1
DATE: Dec. 19 2025
SIGNED: Jennifer McCabe
INSPECTION SERVICES SECTION
BOILER/PRESSURE VESSEL BRANCH

As an official of the manufacturer with authority and having responsibility for the conformity and regulatory compliance of the fittings, I hereby declare that the information and statements made in this declaration of conformity are true and accurate.

I declare, under our sole responsibility, that the design, construction, certification, and marking of the fitting(s) listed in Table 1*, are subject to a conformity assessment process and quality program that has been verified, as described in Table 3***.

I certify that the fittings (s) listed in Table 1* conform to: the provisions of the acts and regulations of the provinces and territories where the fitting(s) are registered; CSA B51; and the codes, standards, guidelines, or other applicable documents listed in Table 2**.

I further declare that there is a process in place for the retention of this declaration of conformity for not less than 10 years from the issuance of the Canadian Registration Number (CRN).

Signed for and on behalf of Jinan Meide Casting Co., Ltd. (Manufacturer), Jinan (city), Shandong ,China (state/province/country)

LI Chuanjun	General Manager		2025/12/15
(Name, please print)	(Function or Title)	(Signature of Declarer)	(Date)

FRI4-1752-00 (2024-12-31)

CRN: 0A2837.7 Rev.1

Note: This registration is based on the understanding that the Cl.150 M.I. fittings are in strict compliance with ASME B16.3, B16.14, B16.39 in regards to type, materials, dimensions, marking, pressure and temperature ratings, etc. No change from previous registration. (DGallant)

BOILER & PRESSURE VESSEL ACT & REGULATIONS
NOVA SCOTIA
Date Dec. 19/25
C.R.N. 0A2837.78 Rev. 1
Dwg. as described
Signed
1 of 1
Part

(Show facsimile of logo or trademark, as it will appear on the fitting as evidence of certification)

DECLARATION OF CONFORMITY

REGISTRATION OF FITTINGS

Declaration No: (Unique identifier assigned by the manufacturer)	1A6/8A6MGGJCRN-0	**Revision:**	0

Manufacturer	(Name and Address) Name: Jinan Meide Casting Co., Ltd. Address: NO.1 Meide Street, Meigui Town, Pingyin County, Jinan, Shandong, 250400,P.R. China

***Table 1 Scope of Fitting Designs**

Item No.	Type/ Model / Size	Product Description	Material of Construction	MDMT	Rated Pressure		References: Catalog (pages) or Drawing(s) (revision level included)
					At Ambient Temperature	At Maximum Temperature	
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2	Cass 150 Malleable Iron Pipe Fittings	90° Reducing Elbow	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
3	Cass 150 Malleable Iron Pipe Fittings	90° Street Elbow	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
4	Cass 150 Malleable Iron Pipe Fittings	45° Elbow	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
5	Cass 150 Malleable Iron Pipe Fittings	45° Street Elbow	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
6	Cass 150 Malleable Iron Pipe Fittings	Side Outlet Elbow	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
7	Cass 150 Malleable Iron Pipe Fittings	Tee	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
8	Cass 150 Malleable Iron Pipe Fittings	Reducing Tee	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
9	Cass 150 Malleable Iron Pipe Fittings	Cross	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
10	Cass 150 Malleable Iron Pipe Fittings	Coupling	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
11	Cass 150 Malleable Iron Pipe Fittings	Reducing Coupling	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
12	Cass 150 Malleable Iron Pipe Fittings	Outside Hex Bushing	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
13	Cass 150 Malleable Iron Pipe Fittings	Inside Hex Bushing	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
14	Cass 150 Malleable Iron Pipe Fittings	Cored Plug	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32

15	Cass 150 Malleable Iron Pipe Fittings	Cap	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
16	Cass 150 Malleable Iron Pipe Fittings	Locknut	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
17	Cass 150 Malleable Iron Pipe Fittings	Floor Flange	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
18	Cass 150 Malleable Iron Pipe Fittings	Union with Brass Seat	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
19	Cass 150 Malleable Iron Pipe Fittings	Extension Piece	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
20	Cass 150 Malleable Iron Pipe Fittings	Side Outlet Tee	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
21	Cass 150 Malleable Iron Pipe Fittings	Solid Plug	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32
22	Cass 150 Malleable Iron Pipe Fittings	Long Compression Coupling	ASTM A197/ A197M	-29°C	As per ASME B16.3 Table 3-1	150 psi at 175 °C	catalog P10 - P32

**Table 2 Codes, Standards, Guidelines, and Other Applicable Documents

Item No.	Title of Code(s), Standard(s), Guideline(s), or Other Applicable Document(s)	Edition / Revision	Item No.	Title of Code(s), Standard(s), Guideline(s), or Other Applicable Document(s)	Edition / Revision
1	ASME B16.3	2021	4		
2	ASME B16.14	2024	5		
3	ASME B16.39	2025	6		
4	ASTM B1.20.1	2018			

***Table 3 Quality Program Verification and Manufacturing Sites

Item No.	Location(s) Plant Name and Address / Site(s)	Quality Program Certificate Number	Expiry Date	Verifying Organization
1	Name: Jinan Meide Casting Co., Ltd. Address: No.1 Meide Street, Meigui Town, Pingyin County, Jinan, Shandong, 250400, P.R. China	CNBJ322598-A	29-05-2027	Bureau Veritas Certification
A copy of the Quality Certificate from each manufacturing site must be included.				

As an official of the manufacturer with authority and having responsibility for the conformity and regulatory compliance of the fittings, I hereby declare that the information and statements made in this declaration of conformity are true and accurate.

I declare, under our sole responsibility, that the design, construction, certification, and marking of the fitting(s) listed in Table 1*, are subject to a conformity assessment process and quality program that has been verified, as described in Table 3***.

I certify that the fittings (s) listed in Table 1* conform to: the provisions of the acts and regulations of the provinces and territories where the fitting(s) are registered; CSA B51; and the codes, standards, guidelines, or other applicable documents listed in Table 2**.

I further declare that there is a process in place for the retention of this declaration of conformity for not less than 10 years from the issuance of the Canadian Registration Number (CRN).

Signed for and on behalf of Jinan Meide Casting Co., Ltd. (Manufacturer), Jinan (city), Shandong ,China (state/province/country)

Li Chuanjun (Name, please print), General Manager (Function or Title), (Signature of Declarer), 2025/12/15 (Date)

FRM-1752-00 (2024-12-31)

CRN: 0A2837.7 Rev.1

Note: This registration is based on the understanding that the Cl.150 M.I. fittings are in strict compliance with ASME B16.3, B16.14, B16.39 in regards to type, materials, dimensions, marking, pressure and temperature ratings, etc. No change from previous registration. (DGallant)

New Nouveau Brunswick

DEPT OF JUSTICE PUBLIC SAFETY
BOILER & PRESSURE VESSEL ACT

REGISTRATION ONLY
CRN 0A2837.7Rev1

CHIEF BOILER INSPECTOR
DATE 12/19/25

☐ BLRs ☐ PVs
☑ FITTINGS ☐ NUCLEAR COMPONENTS

As an official of the manufacturer with authority and having responsibility for the conformity and regulatory compliance of the fittings, I hereby declare that the information and statements made in this declaration of conformity are true and accurate.

I declare, under our sole responsibility, that the design, construction, certification, and marking of the fitting(s) listed in Table 1*, are subject to a conformity assessment process and quality program that has been verified, as described in Table 3***.

I certify that the fittings (s) listed in Table 1* conform to: the provisions of the acts and regulations of the provinces and territories where the fitting(s) are registered; CSA B51 and the codes, standards, guidelines, or other applicable documents listed in Table 2**.

I further declare that there is a process in place for the retention of this declaration of conformity for not less than 10 years from the issuance of the Canadian Registration Number (CRN).

Signed for and on behalf of Jinan Meide Casting Co., Ltd. (Manufacturer) , Jinan (city) , Shandong ,China (state/province/country)

Li Chuanjun (Name, please print) , General Manager (Function or Title) , [signature] (Signature of Declarer) , 2025/12/15 (Date)

FAU-1753-c0 (2024-12-31)

Newfoundland
Labrador

CRN: 0A2837.7 Rev.1

Note: This registration is based on the understanding that the Cl.150 M.I. fittings are in strict compliance with ASME B16.3, B16.14, B16.39 in regards to type, materials, dimensions, marking, pressure and temperature ratings, etc. No change from previous registration. (DGallant)

Registered 0A2837.7 Rev.1
Date Dec. 22, 2025
Engineering and Inspection Services
Registered by [signature]
UNDER THE AUTHORITY OF THE
PUBLIC SAFETY ACT AND
THE BOILER, PRESSURE VESSEL AND
COMPRESSED GAS REGULATIONS

As an official of the manufacturer with authority and having responsibility for the conformity and regulatory compliance of the fittings, I hereby declare that the information and statements made in this declaration of conformity are true and accurate.

I declare, under our sole responsibility, that the design, construction, certification, and marking of the fitting(s) listed in Table 1*, are subject to a conformity assessment process and quality program that has been verified, as described in Table 3***.

I certify that the fittings (s) listed in Table 1* conform to: the provisions of the acts and regulations of the provinces and territories where the fitting(s) are registered; CSA B51; and the codes, standards, guidelines, or other applicable documents listed in Table 2**.

I further declare that there is a process in place for the retention of this declaration of conformity for not less than 10 years from the issuance of the Canadian Registration Number (CRN).

Signed for and on behalf of Jinan Meide Casting Co., Ltd. (Manufacturer), Jinan (city), Shandong ,China (state/province/country)

Li Chuanjun	General Manager		2025/12/15
(Name, please print)	(Function or Title)	(Signature of Declarer)	(Date)

FRM-1752-00 (2024-12-31)

CRN: 0A2837.7 Rev.1

Note: This registration is based on the understanding that the Cl.150 M.I. fittings are in strict compliance with ASME B16.3, B16.14, B16.39 in regards to type, materials, dimensions, marking, pressure and temperature ratings, etc. No change from previous registration. (DGallant)

GOVERNMENT OF YUKON
BY
CRN 0A2837.7Y REV.1
DATE 2025/12/19
BOILER BRANCH

As an official of the manufacturer with authority and having responsibility for the conformity and regulatory compliance of the fittings, I hereby declare that the information and statements made in this declaration of conformity are true and accurate.

I declare, under our sole responsibility, that the design, construction, certification, and marking of the fitting(s) listed in Table 1*, are subject to a conformity assessment process and quality program that has been verified, as described in Table 3***.

I certify that the fittings (s) listed in Table 1* conform to: the provisions of the acts and regulations of the provinces and territories where the fitting(s) are registered; CSA B51; and the codes, standards, guidelines, or other applicable documents listed in Table 2**.

I further declare that there is a process in place for the retention of this declaration of conformity for not less than 10 years from the issuance of the Canadian Registration Number (CRN).

Signed for and on behalf of Jinan Meide Casting Co., Ltd. (Manufacturer), Jinan (city), Shandong ,China (state/province/country)

Li Chuanjun (Name, please print), General Manager (Function or Title), (Signature of Declarer), 2025/12/15 (Date)

FRM-1752-00 (2024-12-31)

CRN: 0A2837.7 Rev.1

Note: This registration is based on the understanding that the Cl.150 M.I. fittings are in strict compliance with ASME B16.3, B16.14, B16.39 in regards to type, materials, dimensions, marking, pressure and temperature ratings, etc. No change from previous registration. (DGallant)

Northwest Territories
REGISTERED
UNDER THE AUTHORITY OF
THE BOILER AND PRESSURE
VESSEL ACT.
C.R.N. 0A2837.7Rev1
SIGNED Matthias Mailman
DATE 12/19/25

As an official of the manufacturer with authority and having responsibility for the conformity and regulatory compliance of the fittings, I hereby declare that the information and statements made in this declaration of conformity are true and accurate.

I declare, under our sole responsibility, that the design, construction, certification, and marking of the fitting(s) listed in Table 1*, are subject to a conformity assessment process and quality program that has been verified, as described in Table 3***.

I certify that the fittings (s) listed in Table 1* conform to: the provisions of the acts and regulations of the provinces and territories where the fitting(s) are registered; CSA B51; and the codes, standards, guidelines, or other applicable documents listed in Table 2**.

I further declare that there is a process in place for the retention of this declaration of conformity for not less than 10 years from the issuance of the Canadian Registration Number (CRN).

Signed for and on behalf of Jinan Meide Casting Co., Ltd. (Manufacturer), Jinan (city), Shandong, China (state/province/country)

Li Chuanjun (Name, please print), General Manager (Function or Title), [signature] (Signature of Declarer), 2025/12/15 (Date)

FRM-1752-00 (2024-12-31)

CRN: 0A2837.7 Rev.1

Note: This registration is based on the understanding that the Cl.150 M.I. fittings are in strict compliance with ASME B16.3, B16.14, B16.39 in regards to type, materials, dimensions, marking, pressure and temperature ratings, etc. No change from previous registration. (DGallant)

Nunavut

NUNAVUT
Boilers and
Pressure Vessels Act

REGISTERED

CRN 0A2837.7N Rev.1

Date 12/19/2025

Signed [signature]

Chief Inspector

Territorial Registration Fee