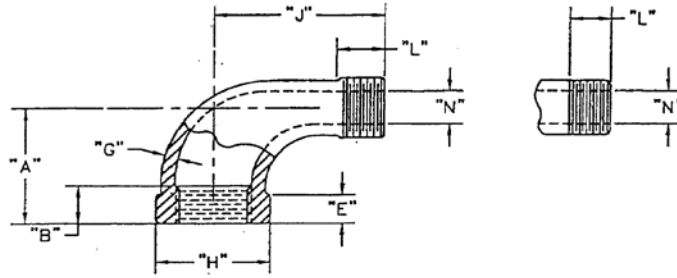


Merit Brass MSS SP 114 Dimensions

Class 150

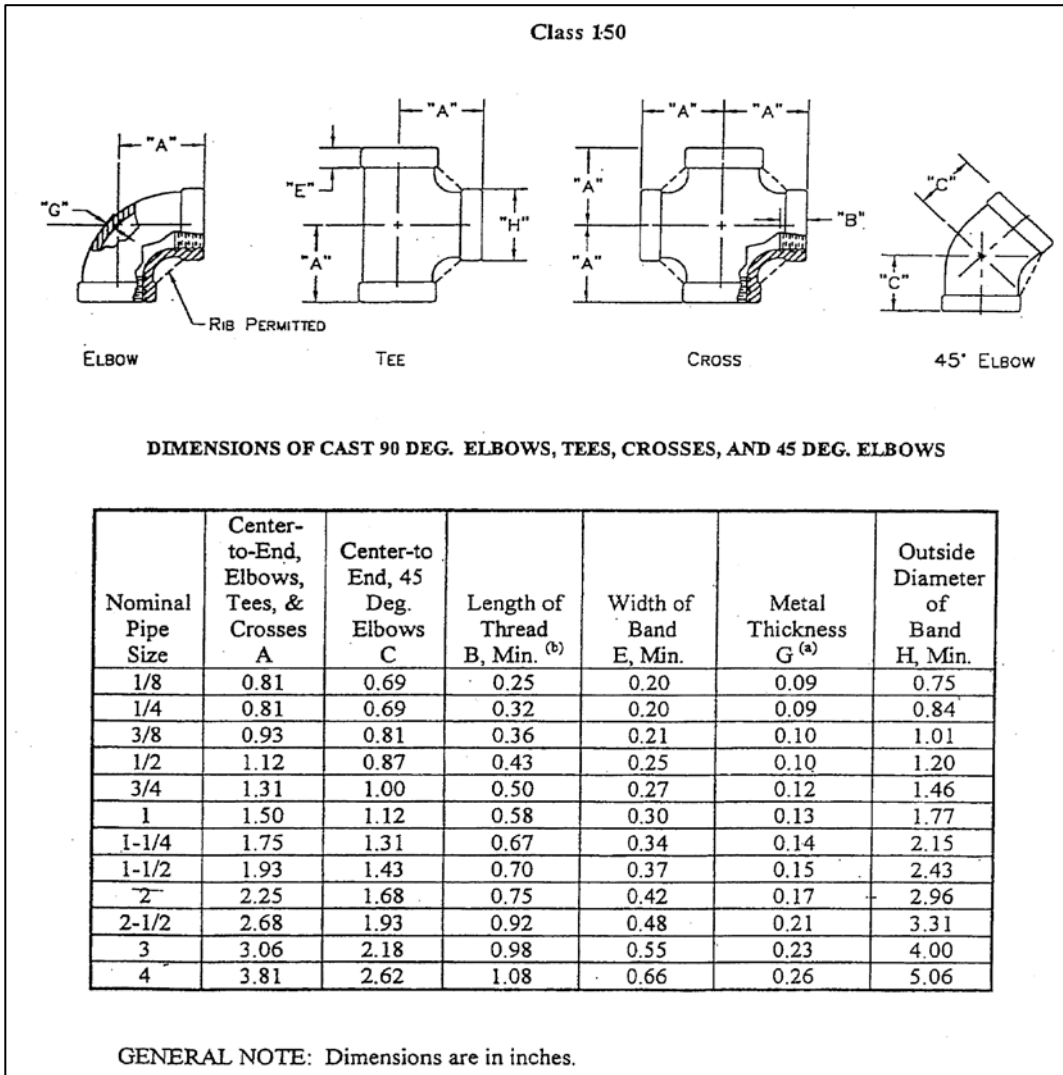


DIMENSIONS OF CAST 90 DEG. STREET ELBOWS

| Nominal Pipe Size | Center-to-End A | Length of Internal Thread B, Min. (b) | Width of Band E, Min. | Metal Thickness G (a) | Outside Diameter of Band H, Min. | Center-to-End J | Length Of External Thread L, Min. | Port Diameter Male End N, Max. |
|-------------------|-----------------|---------------------------------------|-----------------------|-----------------------|----------------------------------|-----------------|-----------------------------------|--------------------------------|
| 1/8 | 0.81 | 0.25 | 0.20 | 0.09 | 0.75 | 1.06 | 0.26 | 0.20 |
| 1/4 | 0.81 | 0.32 | 0.20 | 0.09 | 0.84 | 1.18 | 0.40 | 0.26 |
| 3/8 | 0.93 | 0.36 | 0.21 | 0.10 | 1.01 | 1.43 | 0.41 | 0.37 |
| 1/2 | 1.12 | 0.43 | 0.25 | 0.10 | 1.20 | 1.62 | 0.53 | 0.51 |
| 3/4 | 1.31 | 0.50 | 0.27 | 0.12 | 1.46 | 1.87 | 0.55 | 0.69 |
| 1 | 1.50 | 0.58 | 0.30 | 0.13 | 1.77 | 2.12 | 0.68 | 0.91 |
| 1-1/4 | 1.75 | 0.67 | 0.34 | 0.14 | 2.15 | 2.50 | 0.71 | 1.19 |
| 1-1/2 | 1.93 | 0.70 | 0.37 | 0.15 | 2.43 | 2.75 | 0.72 | 1.39 |
| 2 | 2.25 | 0.75 | 0.42 | 0.17 | 2.96 | 3.25 | 0.76 | 1.79 |
| 2-1/2 | 2.68 | 0.92 | 0.48 | 0.21 | 3.31 | 3.87 | 1.14 | 2.20 |
| 3 | 3.06 | 0.98 | 0.55 | 0.23 | 4.00 | 4.50 | 1.20 | 2.78 |
| 4 | 3.81 | 1.08 | 0.66 | 0.26 | 5.06 | 5.68 | 1.30 | 3.70 |

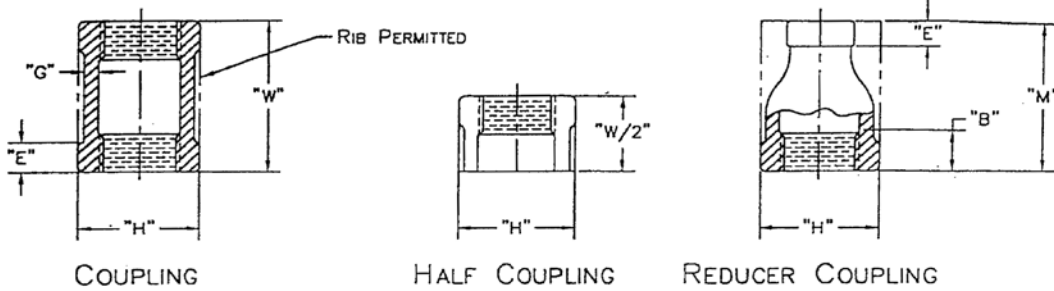
GENERAL NOTE: Dimensions are in inches.

Merit Brass MSS SP 114 Dimensions



Merit Brass MSS SP 114 Dimensions

Class 150



DIMENSIONS OF CAST COUPLINGS (STRAIGHT AND REDUCING SIZES)

| Nominal Pipe Size | Length of Thread, B, Min. ^(b) | Width of Band E, Min. | Metal Thickness G ^(a) | Outside Diameter of Band H, Min. | Length of Straight Couplings W, Min. | Length of Concentric Reducing Couplings M, Min. |
|-------------------|------------------------------------------|-----------------------|----------------------------------|----------------------------------|--------------------------------------|-------------------------------------------------|
| 1/8 | 0.25 | 0.20 | 0.09 | 0.75 | 1.00 | |
| 1/4 | 0.32 | 0.20 | 0.09 | 0.84 | 1.00 | 1.00 |
| 3/8 | 0.36 | 0.21 | 0.10 | 1.01 | 1.12 | 1.12 |
| 1/2 | 0.43 | 0.25 | 0.10 | 1.20 | 1.38 | 1.38 |
| 3/4 | 0.50 | 0.27 | 0.12 | 1.46 | 1.50 | 1.50 |
| 1 | 0.58 | 0.30 | 0.13 | 1.77 | 1.62 | 1.62 |
| 1-1/4 | 0.67 | 0.34 | 0.14 | 2.15 | 2.00 | 2.00 |
| 1-1/2 | 0.70 | 0.37 | 0.15 | 2.43 | 2.12 | 2.12 |
| 2 | 0.75 | 0.42 | 0.17 | 2.96 | 2.50 | 2.50 |
| 2-1/2 | 0.92 | 0.48 | 0.21 | 3.31 | 2.87 | 3.25 |
| 3 | 0.98 | 0.55 | 0.23 | 4.00 | 3.18 | 3.68 |
| 4 | 1.08 | 0.66 | 0.26 | 5.06 | 3.68 | 4.38 |

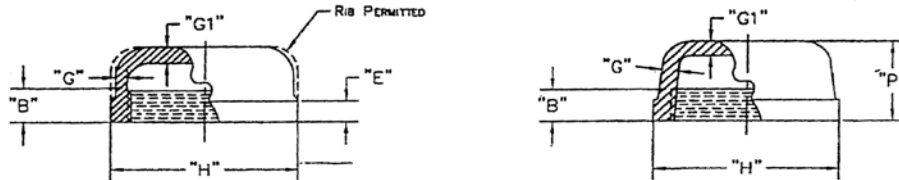
GENERAL NOTE: Dimensions are in inches. Reducing couplings may be either bell or straight. The outside diameter (H) of straight reducing couplings shall correspond to the largest size end connection of the reducing fitting.

(a) Patterns shall be designed to produce castings of metal thickness given in the Table. Metal thickness at no point shall be less than 90% of values given in the tables.

(b) The length of thread may extend beyond the width of band. However, minimum metal thickness (G) must be maintained at the end of the thread.

Merit Brass MSS SP 114 Dimensions

Class 150



DIMENSIONS OF CAST CAPS

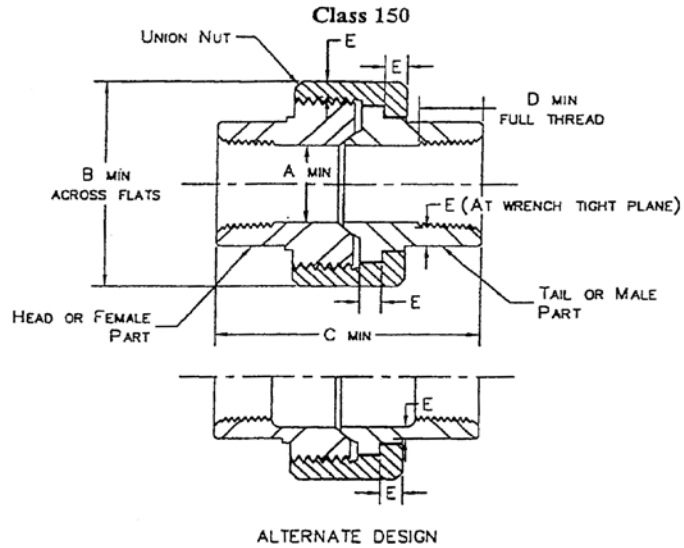
| Nominal Pipe Size | Length of Thread B, Min. (b) | Width of Band E, Min. | Metal Thickness of Side G (a) | Outside Diameter of Band H, Min. | Height P, Min. | Thickness of Flat Top Caps G1, Min. |
|-------------------|------------------------------|-----------------------|-------------------------------|----------------------------------|----------------|-------------------------------------|
| 1/8 | 0.25 | 0.20 | 0.09 | 0.75 | 0.68 | 0.09 |
| 1/4 | 0.32 | 0.20 | 0.09 | 0.84 | 0.68 | 0.09 |
| 3/8 | 0.36 | 0.21 | 0.10 | 1.01 | 0.81 | 0.10 |
| 1/2 | 0.43 | 0.25 | 0.10 | 1.20 | 0.93 | 0.12 |
| 3/4 | 0.50 | 0.27 | 0.12 | 1.46 | 1.06 | 0.13 |
| 1 | 0.58 | 0.30 | 0.13 | 1.77 | 1.31 | 0.15 |
| 1-1/4 | 0.67 | 0.34 | 0.14 | 2.15 | 1.62 | 0.17 |
| 1-1/2 | 0.70 | 0.37 | 0.15 | 2.43 | 1.62 | 0.19 |
| 2 | 0.75 | 0.42 | 0.17 | 2.96 | 1.75 | 0.22 |
| 2-1/2 | 0.92 | 0.48 | 0.21 | 3.31 | 2.00 | 0.25 |
| 3 | 0.98 | 0.55 | 0.23 | 4.00 | 2.25 | 0.29 |
| 4 | 1.08 | 0.66 | 0.26 | 5.06 | 2.50 | 0.36 |

GENERAL NOTES: Dimensions are in inches. Caps may be made without recess. Caps so made shall be of such height P that the length of perfect thread shall not be less than B, and the length of useful thread (B plus threads with fully formed roots and flat crests) shall be not less than L₂ (effective length of external thread) required by ANSI/ASME B1.20.1.

(a) Patterns shall be designed to produce castings of metal thickness given in the Table. Metal thickness at no point shall be less than 90% of values given in the tables.

(b) The length of thread may extend beyond the width of band. However, minimum metal thickness (G) must be maintained at the end of the thread.

Merit Brass MSS SP 114 Dimensions



DIMENSIONS OF CAST THREADED UNIONS

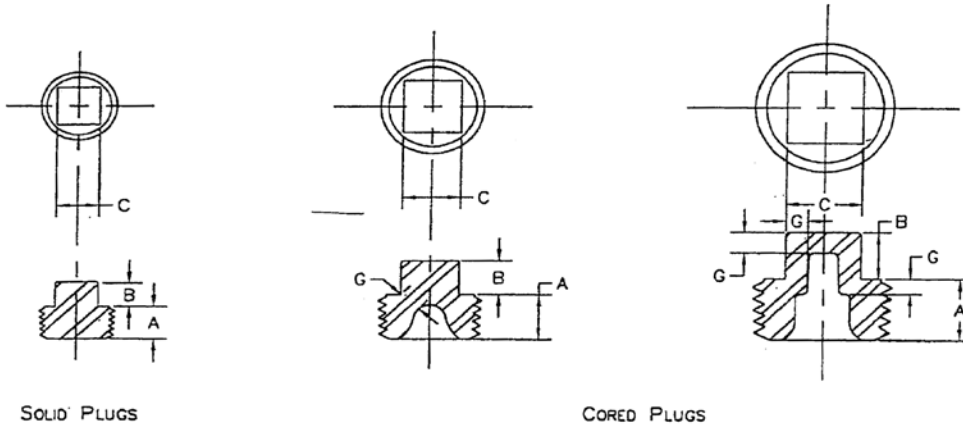
| Nominal Pipe Size | A Min. | B Min. | C Min. | D Min. (b) | E Min. (a) |
|-------------------|--------|--------|--------|------------|------------|
| 1/8 | 0.21 | 0.93 | 1.26 | 0.25 | 0.09 |
| 1/4 | 0.36 | 1.10 | 1.44 | 0.32 | 0.09 |
| 3/8 | 0.52 | 1.26 | 1.61 | 0.36 | 0.10 |
| 1/2 | 0.61 | 1.45 | 1.72 | 0.43 | 0.10 |
| 3/4 | 0.80 | 1.71 | 1.94 | 0.50 | 0.12 |
| 1 | 1.00 | 2.07 | 2.06 | 0.58 | 0.13 |
| 1 1/4 | 1.31 | 2.50 | 2.26 | 0.67 | 0.14 |
| 1 1/2 | 1.55 | 2.82 | 2.41 | 0.70 | 0.15 |
| 2 | 2.03 | 3.41 | 2.75 | 0.75 | 0.17 |
| 2 1/2 | 2.38 | 4.12 | 3.22 | 0.92 | 0.21 |
| 3 | 3.00 | 4.75 | 3.50 | 0.98 | 0.23 |
| 4 | 4.03 | 6.00 | 3.85 | 1.08 | 0.26 |

GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness (E) given in the table. Metal thickness at no point shall be less than 90% of values given in the table.

(b) The length of thread may extend beyond the width of band. However, minimum metal thickness (E) must be maintained at the end of the thread.

Class 150



DIMENSIONS OF CAST SQUARE HEAD PLUGS

| Nominal Pipe Size | Thread Length, Min. A | Height of Square, Min. B | Nominal Width Across Flats C (b) | Nominal Metal Thickness G (a) |
|-------------------|-----------------------|--------------------------|----------------------------------|-------------------------------|
| 1/8 | 0.37 | 0.24 | 9/32 | |
| 1/4 | 0.44 | 0.28 | 3/8 | |
| 3/8 | 0.48 | 0.31 | 7/16 | |
| 1/2 | 0.56 | 0.38 | 9/16 | 0.16 |
| 3/4 | 0.63 | 0.44 | 5/8 | 0.18 |
| 1 | 0.75 | 0.50 | 13/16 | 0.20 |
| 1 1/4 | 0.80 | 0.56 | 15/16 | 0.22 |
| 1 1/2 | 0.83 | 0.62 | 1 1/8 | 0.24 |
| 2 | 0.88 | 0.68 | 1 5/16 | 0.26 |
| 2 1/2 | 1.07 | 0.74 | 1 1/2 | 0.29 |
| 3 | 1.13 | 0.80 | 1 11/16 | 0.31 |
| 4 | 1.22 | 1.00 | 2 1/4 | 0.38 |

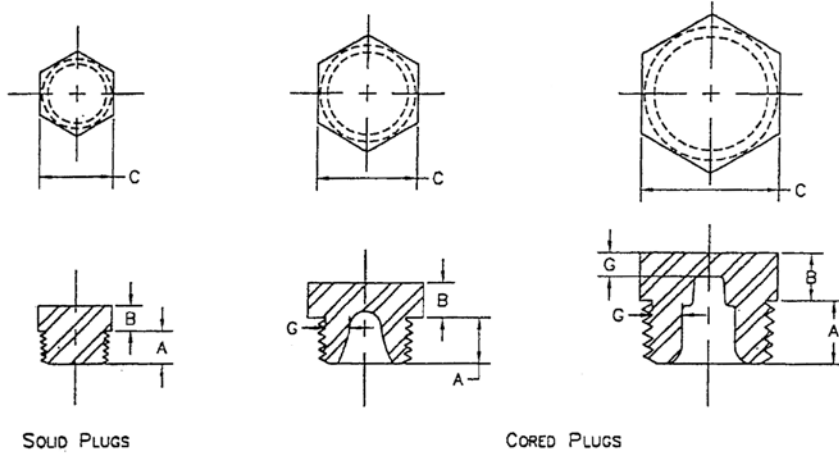
GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness given in the table. Metal thickness at no point shall be less than 90% of values given in the table.

(b) These dimensions are the nominal size of wrench as given in Appendix V of American National Standard, Square and Hex Bolts and Screws (ASME B18.2.1). Square head plugs are designed to fit these wrenches.

Merit Brass MSS SP 114 Dimensions

Class 150



DIMENSIONS OF CAST HEX HEAD PLUGS

| Nominal Pipe Size | Thread Length, Min. A | Height of Head, Min. B | Nominal Width Across Flats C | Nominal Metal Thickness G (a) |
|-------------------|-----------------------|------------------------|------------------------------|-------------------------------|
| 1/8 | 0.37 | 0.14 | .50 | |
| 1/4 | 0.44 | 0.14 | .62 (b) | |
| 3/8 | 0.48 | 0.16 | .68 (b) | |
| 1/2 | 0.56 | 0.19 | .87 (b) | 0.16 |
| 3/4 | 0.63 | 0.22 | 1.20 (b) | 0.18 |
| 1 | 0.75 | 0.25 | 1.43 (b) | 0.20 |
| 1 1/4 | 0.80 | 0.28 | 1.76 | 0.22 |
| 1 1/2 | 0.83 | 0.31 | 2.00 | 0.24 |
| 2 | 0.88 | 0.34 | 2.48 | 0.26 |
| 2 1/2 | 1.07 | 0.37 | 2.98 | 0.29 |
| 3 | 1.13 | 0.40 | 3.86 | 0.31 |
| 4 | 1.22 | 0.50 | 4.62 | 0.38 |

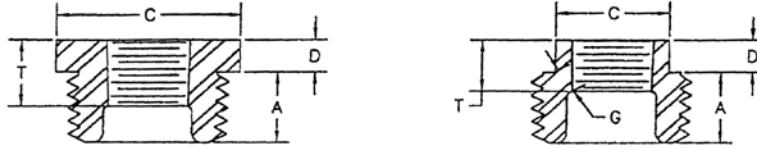
GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness given in the table. Metal thickness at no point shall be less than 90% of values given in the table.

(b) When made from bar stock, the dimensions may be 5/8, 11/16, 7/8, 1 1/8, and 1 7/16 in. respectively, in order to use regular bar stock sizes.

Merit Brass MSS SP 114 Dimensions

Class 150



DIMENSIONS OF CAST HEX HEAD BUSHINGS

| Nominal Pipe Size | Length of External Thread Min. A | Length of Internal Thread, Min. T | Nominal Metal Thickness G (a) | Height Of Head, Min. D (b) | Width of Flat Nominal C (c) |
|-------------------|----------------------------------|-----------------------------------|-------------------------------|----------------------------|-----------------------------|
| 1/4 x 1/8 | 0.44 | 0.26 | ... | 0.12 | 5/8 |
| 3/8 x 1/4 | 0.50 | 0.40 | ... | 0.16 | 11/16 |
| 3/8 x 1/8 | 0.50 | 0.26 | ... | 0.16 | 11/16 |
| 1/2 x 3/8 | 0.56 | 0.41 | ... | 0.19 | 7/8 |
| 1/2 x 1/4 | 0.56 | 0.40 | ... | 0.19 | 7/8 |
| 1/2 x 1/8 | 0.56 | 0.26 | ... | 0.19 | 7/8 |
| 3/4 x 1/2 | 0.62 | 0.53 | ... | 0.22 | 1 1/16 |
| 3/4 x 3/8 | 0.62 | 0.41 | ... | 0.22 | 1 1/16 |
| 3/4 x 1/4 | 0.62 | 0.40 | ... | 0.22 | 1 1/16 |
| 3/4 x 1/8 | 0.62 | 0.26 | ... | 0.22 | 1 1/16 |
| 1 x 3/4 | 0.75 | 0.55 | ... | 0.25 | 1 3/8 |
| 1 x 1/2 | 0.75 | 0.53 | ... | 0.25 | 1 3/8 |
| 1 x 3/8 | 0.75 | 0.41 | ... | 0.25 | 1 3/8 |
| 1 x 1/4 | 0.75 | 0.40 | ... | 0.25 | 1 3/8 |
| 1 x 1/8 | 0.75 | 0.26 | ... | 0.25 | 1 3/8 |
| 1 1/4 x 1 | 0.81 | 0.68 | ... | 0.28 | 1 3/4 |
| 1 1/4 x 3/4 | 0.81 | 0.55 | ... | 0.28 | 1 3/4 |
| 1 1/4 x 1/2 | 0.81 | 0.53 | 0.18 | 0.28 | 1 3/4 |
| 1 1/4 x 3/8 | 0.81 | 0.41 | 0.18 | 0.28 | 1 3/4 |
| 1 1/4 x 1/4 | 0.81 | 0.40 | 0.18 | 0.28 | 1 3/4 |
| 1 1/2 x 1 1/4 | 0.81 | 0.71 | ... | 0.31 | 2 |
| 1 1/2 x 1 | 0.81 | 0.68 | ... | 0.31 | 2 |
| 1 1/2 x 3/4 | 0.81 | 0.55 | 0.20 | 0.31 | 2 |
| 1 1/2 x 1/2 | 0.81 | 0.53 | 0.20 | 0.31 | 2 |
| 1 1/2 x 3/8 | 0.81 | 0.41 | 0.20 | 0.31 | 2 |
| 1 1/2 x 1/4 | 0.81 | 0.40 | 0.20 | 0.31 | 2 |

Merit Brass MSS SP 114 Dimensions

| Nominal Pipe Size | Length of External Thread Min. A | Length of Internal Thread, Min. T | Nominal Metal Thickness G (a) | Height Of Head, Min. D (b) | Width of Flat Nominal C (c) |
|-------------------|----------------------------------|-----------------------------------|-------------------------------|----------------------------|-----------------------------|
| 2 x 1 1/2 | 0.88 | 0.72 | ... | 0.34 | 2 1/2 |
| 2 x 1 1/4 | 0.88 | 0.71 | ... | 0.34 | 2 1/2 |
| 2 x 1 | 0.88 | 0.68 | 0.22 | 0.34 | 2 1/2 |
| 2 x 3/4 | 0.88 | 0.55 | 0.22 | 0.34 | 2 1/2 |
| 2 x 1/2 | 0.88 | 0.53 | 0.22 | 0.34 | 2 1/2 |
| 2 x 3/8 | 0.88 | 0.41 | 0.22 | 0.34 | 2 1/2 |
| 2 x 1/4 | 0.88 | 0.40 | 0.22 | 0.34 | 2 1/2 |
| 2 1/2 x 2 | 1.06 | 0.76 | ... | 0.38 | 3 |
| 2 1/2 x 1 1/2 | 1.06 | 0.72 | ... | 0.38 | 3 |
| 2 1/2 x 1 1/4 | 1.06 | 0.71 | 0.24 | 0.38 | 3 |
| 2 1/2 x 1 | 1.06 | 0.68 | 0.24 | 0.38 | 3 |
| 2 1/2 x 3/4 | 1.06 | 0.55 | 0.24 | 0.38 | 3 |
| 2 1/2 x 1/2 | 1.06 | 0.53 | 0.24 | 0.38 | 3 |
| 3 x 2 1/2 | 1.12 | 1.14 | ... | 0.41 | 3 1/2 |
| 3 x 2 | 1.12 | 0.76 | ... | 0.41 | 3 1/2 |
| 3 x 1 1/2 | 1.12 | 0.72 | 0.26 | 0.41 | 3 1/2 |
| 3 x 1 1/4 | 1.12 | 0.70 | 0.26 | 0.41 | 3 1/2 |
| 3 x 1 | 1.12 | 0.68 | 0.26 | 0.41 | 3 1/2 |
| 3 x 3/4 | 1.12 | 0.55 | 0.26 | 0.41 | 3 1/2 |
| 3 x 1/2 | 1.12 | 0.53 | 0.26 | 0.41 | 3 1/2 |
| 4 x 3 | 1.25 | 1.20 | ... | 0.50 | 4 5/8 |
| 4 x 2 1/2 | 1.25 | 1.14 | 0.31 | 0.60 | 4 5/8 |
| 4 x 2 | 1.25 | 0.76 | 0.31 | 0.60 | 4 5/8 |
| 4 x 1 1/2 | 1.25 | 0.72 | 0.31 | 0.60 | 4 5/8 |
| 4 x 1 1/4 | 1.25 | 0.70 | 0.31 | 0.60 | 4 5/8 |
| 4 x 1 | 1.25 | 0.68 | 0.31 | 0.60 | 4 5/8 |

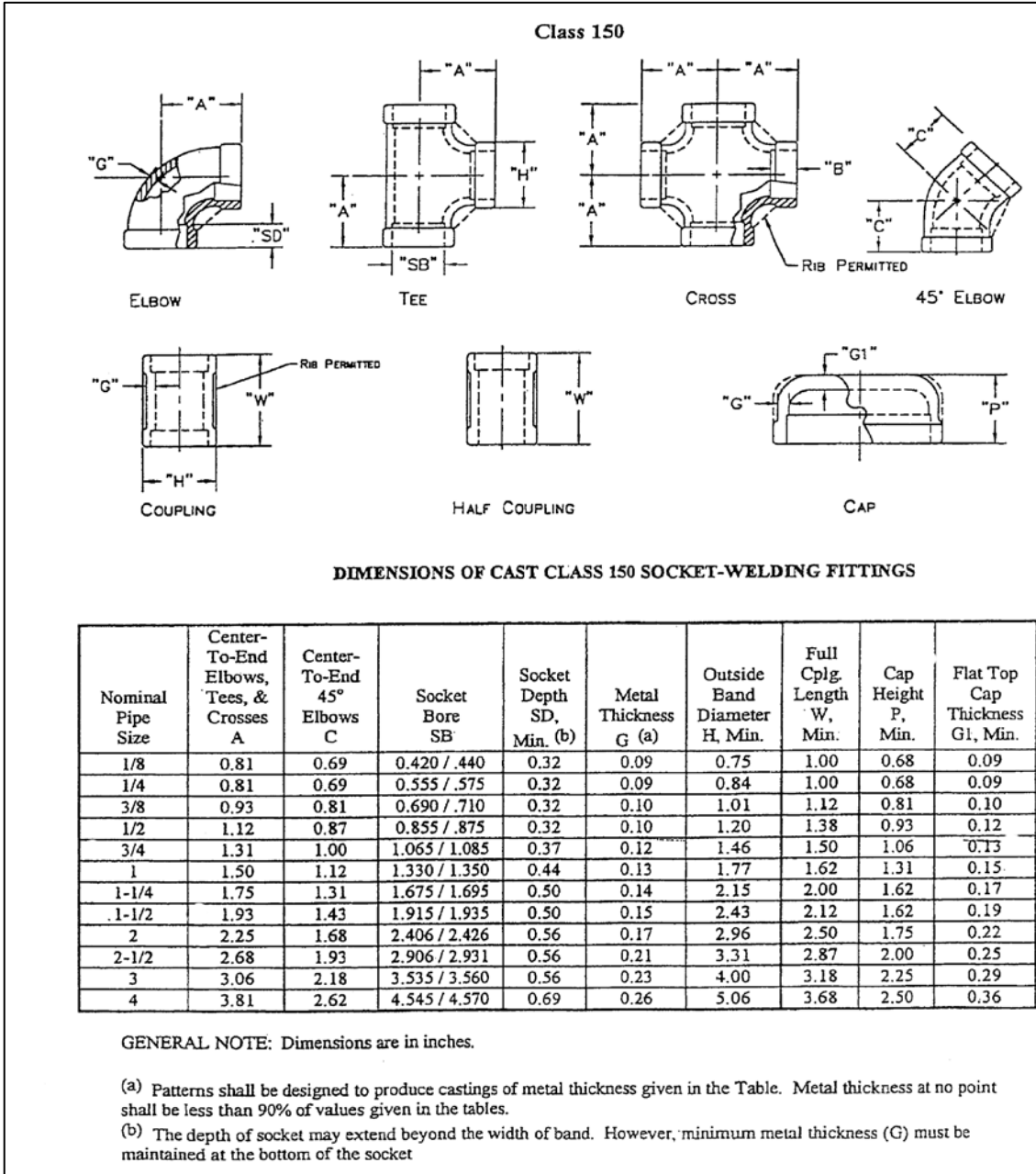
GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness given in the table. Metal thickness at no point shall be less than 90% of the values given in the table.

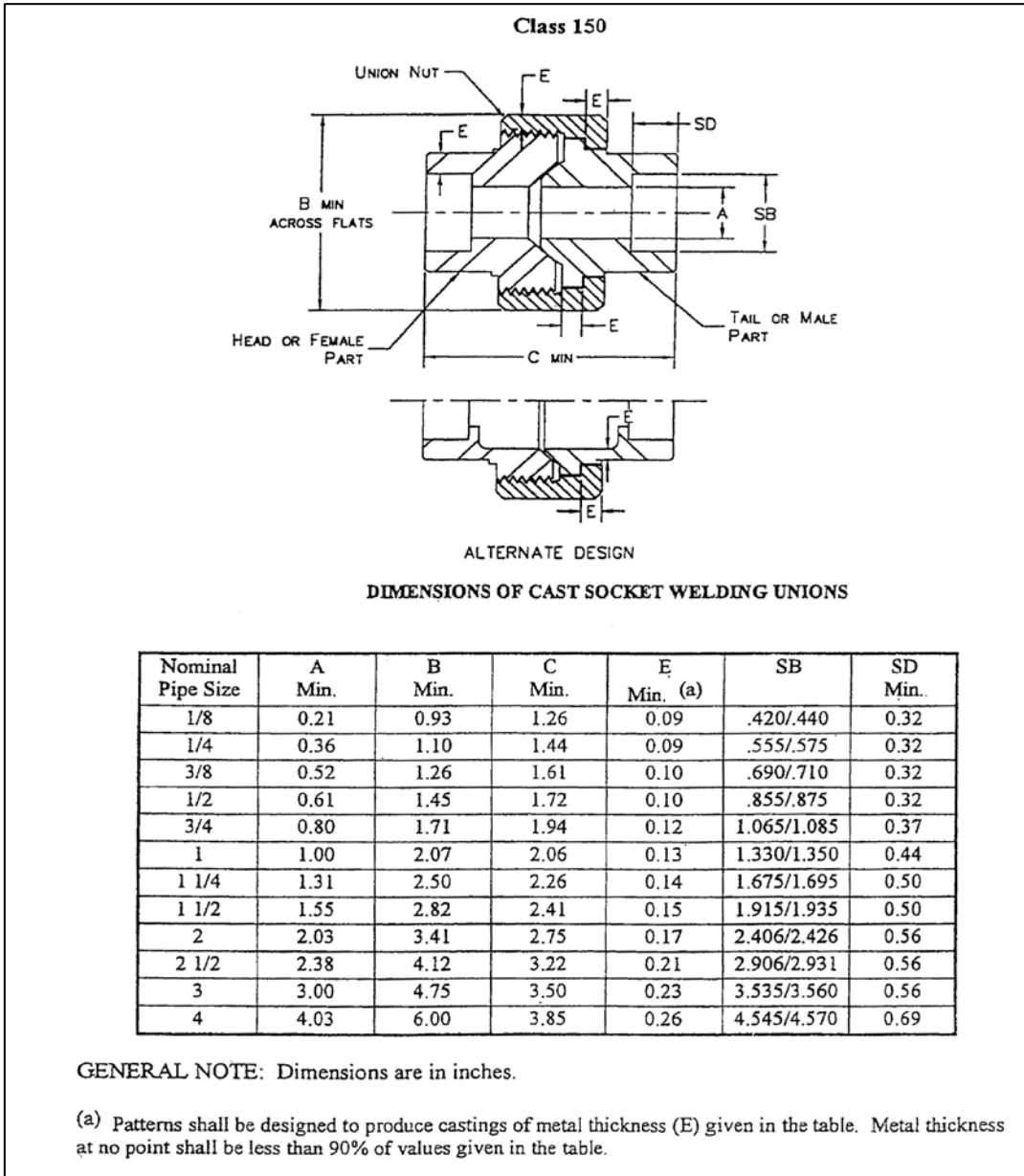
(b) When made from bar stock, the dimensions may be 5/8, 11/16, 7/8, 1 1/8, and 1 7/16 in. respectively, in order to use regular bar stock sizes.

(c) These dimensions are the nominal size of wrench as given in Appendix V of American National Standard, Square and Hex Bolts and Screws (ASME B18.2.1). Hex bushings are designed to fit these wrenches.

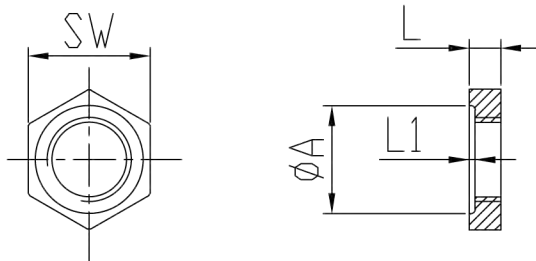
Merit Brass MSS SP 114 Dimensions



Merit Brass MSS SP 114 Dimensions



Backnut (Locknut)
1/8"-4"



inch

| SIZE | L | SW | ØA | L1 |
|--------|------|------|------|------|
| 1/8" | 0.20 | 0.69 | 0.50 | 0.04 |
| 1/4" | 0.25 | 0.85 | 0.66 | 0.06 |
| 3/8" | 0.28 | 1.00 | 0.77 | 0.06 |
| 1/2" | 0.31 | 1.18 | 0.97 | 0.06 |
| 3/4" | 0.34 | 1.44 | 1.24 | 0.06 |
| 1" | 0.38 | 1.75 | 1.50 | 0.06 |
| 1 1/4" | 0.42 | 2.11 | 1.87 | 0.06 |
| 1 1/2" | 0.47 | 2.36 | 2.12 | 0.06 |
| 2" | 0.53 | 2.88 | 2.63 | 0.09 |
| 2 1/2" | 0.59 | 3.86 | 3.18 | 0.09 |
| 3" | 0.67 | 4.62 | 3.84 | 0.09 |
| 4" | 0.80 | 5.79 | 5.00 | 0.13 |

Remark:
The dimensions comply with MSS SP114.

| | | | | | | | | | | | |
|---------|----------------|---------|--------------|---------------|--------|-------------------------------------------------------|--|----------|-------------|---------|--------|
| | | | | | | Backnut (Locknut) 1/8"-4" | | Fig No | K-011 | | |
| | | | | | | | | Drwg No | KI-SP114-LN | | |
| Mark | Amount | Subarea | Revision No. | Signature | Date | Projection | | Material | 304/316 | Edition | A0 |
| Drawing | | | Recheck | | | Proportion | | Weight | | page | 1 of 1 |
| Design | Hai Dong. Tan | | | | | <i>The Top Brass With A Stainless Reputation!</i> | | | | | |
| Check | BaoMing. Zhang | | | | | | | | | | |
| STD | | | Approve | Yao Xing. Wen | 5.6/97 | | | | | | |