

ASME B16.48-2005
(Revision of ASME B16.48-1997)

Line Blanks



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LINE BLANKS

1 SCOPE

1.1 General

This Standard covers pressure-temperature ratings, materials, dimensions, tolerances, marking, and testing for operating line blanks in sizes NPS 1/2 through NPS 24 for installation between ASME B16.5 flanges in the 150, 300, 600, 900, 1500, and 2500 pressure classes.

1.2 Definitions

1.2.1 Figure-8 Blank. A figure-8 blank (also called a spectacle blank) is a pressure-retaining plate with one solid end and one open end connected with a web or tie bar (see Fig. 1).

1.2.2 Paddle Blank. A paddle blank is similar to the solid end of a figure-8 blank. It has a plain radial handle. It is generally used in conjunction with a paddle spacer in large sizes.

1.2.3 Paddle Spacer. A paddle spacer is similar to the open end of a figure-8 blank. It has a plain radial handle. It is generally used in conjunction with a paddle blank.

1.3 References

Codes, standards, and specifications, containing provisions to the extent referenced herein, constitute requirements of this Standard. These reference documents are listed in Nonmandatory Appendix B.

1.4 Quality Systems

Nonmandatory requirements relating to the product manufacturer's Quality System Program are described in Nonmandatory Appendix C.

1.5 Relevant Units

This Standard states values in both Metric and U.S. Customary units. These systems of units are to be regarded separately as standard. Within the text, the U.S. Customary units are shown in parenthesis or separate tables. Refer to Nonmandatory Appendix A. The values stated in each system are not exact equivalents; therefore, it is required that each system of units be used independently of the other. Combining values from the two systems constitutes nonconformance with the Standard. Nonmandatory Appendix A provides dimensions in U.S. Customary units.

1.6 Convention

For the purpose of determining conformance with this Standard, the convention for fixing significant digits

where limits and maximum and minimum values are specified, shall be rounded as defined in ASTM Practice E 29. This requires that an observed or calculated value shall be rounded off to the nearest unit in the last right-hand digit used for expressing the limit. Decimal values and tolerances do not imply a particular method of measurement.

1.7 Size

NPS, followed by a dimensionless number, is the designation for nominal blank size. NPS is related to the reference nominal diameter, *DN*, as defined in ISO 6708. The relationship is typically as follows:

| NPS | DN |
|-------|-----|
| 1/2 | 15 |
| 3/4 | 20 |
| 1 | 25 |
| 1 1/4 | 32 |
| 1 1/2 | 40 |
| 2 | 50 |
| 2 1/2 | 65 |
| 3 | 80 |
| 4 | 100 |

NOTE: For NPS ≥ 4, the related DN is $DN = 25 (NPS)$.

1.8 Service Conditions

Criteria for selection of materials suitable for particular fluid service are not within the scope of this Standard.

2 PRESSURE-TEMPERATURE RATINGS

2.1 Pressure Classes

Line blanks covered by this Standard are for the following pressure classes: 150, 300, 600, 900, 1500, and 2500 as listed in ASME B16.5.

2.2 Pressure-Temperature Ratings

2.2.1 Ratings. Ratings are the maximum allowable working gage pressure at the temperature shown in Tables 2 and F-2 of ASME B16.5 for the appropriate material and pressure class. For intermediate temperatures, linear interpolation between temperatures within a pressure class is permitted by ASME B16.5.

2.2.2 System Pressure Testing. Line blanks may be subjected to system tests at a pressure not to exceed 1.5 times the 38°C (100°F) rating rounded off to the next higher 1 bar (25 psi) increment. Testing at any higher pressure is the responsibility of the user, taking into



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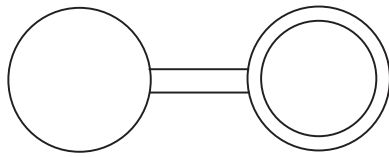
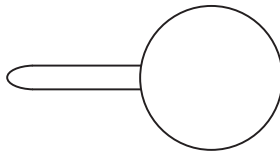
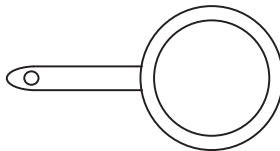


Figure-8 Blank



Paddle Blank



Paddle Spacer

Fig. 1 Line Blanks

account the requirements of the applicable code or regulation.

2.2.3 Mixed Material Joints. Should either the two flanges or the line blank in a flanged line blank assembly not have the same pressure-temperature rating, the rating of the assembled joint at any temperature shall be the lower of the flange or line blank rating at that temperature.

3 DESIGN

3.1 Handle

The handle or web (tie bar) may be integral or attached to the line blank or spacer. The web and its attachment shall be capable of supporting the weight of the blank or spacer in all orientations without permanent deformation to the web.

3.2 Edge Preparation

Finished surfaces shall be free of projections that would interfere with gasket seating.

3.3 Facing

3.3.1 Raised Face Joint Blanks. The gasket seating surface finish and dimensions for raised face line blanks shall be in accordance with ASME B16.5. A raised face may be specified at the option of the purchaser. The height of the raised faces shall be in addition to the

thicknesses, t , listed in Tables 1 through 6 (Tables A-1 through A-6 in Nonmandatory Appendix A).

3.3.2 Female Ring-Joint Blanks. Female ring-joint grooves shall be shaped with the groove side wall surface finish not exceeding $1.6 \mu\text{m}$ ($63 \mu\text{in.}$) Ra roughness. The finish of the gasket contact faces shall be judged by visual comparison with Ra standards (see ASME B46.1) and not by instruments having stylus tracers and electronic amplification.

3.3.3 Male Ring-Joint Blanks. The gasket shape (ring) for male ring-joint blanks shall not exceed $1.6 \mu\text{m}$ ($63 \mu\text{in.}$) Ra roughness. The finish of the gasket contact faces shall be judged by visual comparison with Ra standards (see ASME B46.1) and not by instruments having stylus tracers and electronic amplification.

4 DIMENSIONS

4.1 General

Dimensions shall be in accordance with Tables 1 through 18 (Tables A-1 through A-18 of Nonmandatory Appendix A).

4.2 Tolerances

4.2.1 Facing Tolerances. Tolerances for facings shall be in accordance with ASME B16.5.

4.2.2 Thickness Tolerances. Thickness tolerances are NPS 18 and smaller $-\text{zero} + 3.0 \text{ mm}$ (0.12 in.)
NPS 20 and larger $-\text{zero} + 4.8 \text{ mm}$ (0.19 in.)

4.3 Openings

(a) For NPS $\frac{1}{2}$, NPS $\frac{3}{4}$, and NPS 1 blanks in all raised face classes, the inside diameter is equal to standard weight welding neck flange bore.

(b) For NPS $1\frac{1}{4}$ and larger blanks in Classes 150 and 300 raised face, the inside diameter is equal to the pipe outside diameter.

(c) For NPS $1\frac{1}{4}$ and larger blanks in Classes 600 and 900 raised face, the inside diameter is equal to Schedule 10S welding neck flange bore.

(d) For Class 1500 raised face blanks, the inside diameter is equal to Schedule 40 welding neck flange bore.

(e) For Class 2500 raised face blanks, the inside diameter is equal to Schedule 40 through NPS 6, Schedule 60 for NPS 8 and NPS 10, and Schedule 80 for NPS 12.

(f) For all ring-joint blanks, the inside diameter is equal to the pipe outside diameter.

(g) Dimensions are based upon concentric installation of spiral wound gaskets with inner rings as required by ASME B16.20 and conform to the maximum permitted bore of ASME B16.5 welding neck flanges described in Table 16 of ASME B16.20.



4.4 Facing Finish

Facing finish shall be in accordance with ASME B16.5, para. 6.4.5.

5 MATERIALS

Materials for line blanks shall be in accordance with ASME B16.5, Table 1-A, and shall include material restrictions cited in notes to Tables 2 or F-2 of ASME B16.5. Recommended bolting materials for flange-blank assemblies are listed in ASME B16.5, Table 1-B.

Criteria for the selection of materials are not within the scope of this Standard.

6 MARKING

6.1 General

(a) Line blanks shall be marked as follows:

- (1) Manufacturer's name or trademark
- (2) Material, specification, and grade or class
- (3) Pressure class
- (4) B16
- (5) Size (NPS)
- (6) Ring number (if applicable)

(b) Where space does not permit all of the above markings, they may be omitted in the reverse order given in 6.1(a).

(c) The B16 designation may be applied only when the line blank has been manufactured in full conformance with this Standard.

6.2 Marking Method

The marking shall be applied by steel stamping on the web (tie bar) or handle. Where space is limited, marking may be stamped on the outside edge of the blind portion of blanks.

7 PADDLE BLANK AND SPACER IDENTIFICATION

7.1 Paddle Handles

In order to differentiate between an installed paddle spacer and a paddle blank, it is required that there be an externally visible distinction between the two as required by paras. 7.2 and 7.3.

7.2 Paddle Blank Handles

Handles for paddle blanks shall be solid with no openings.

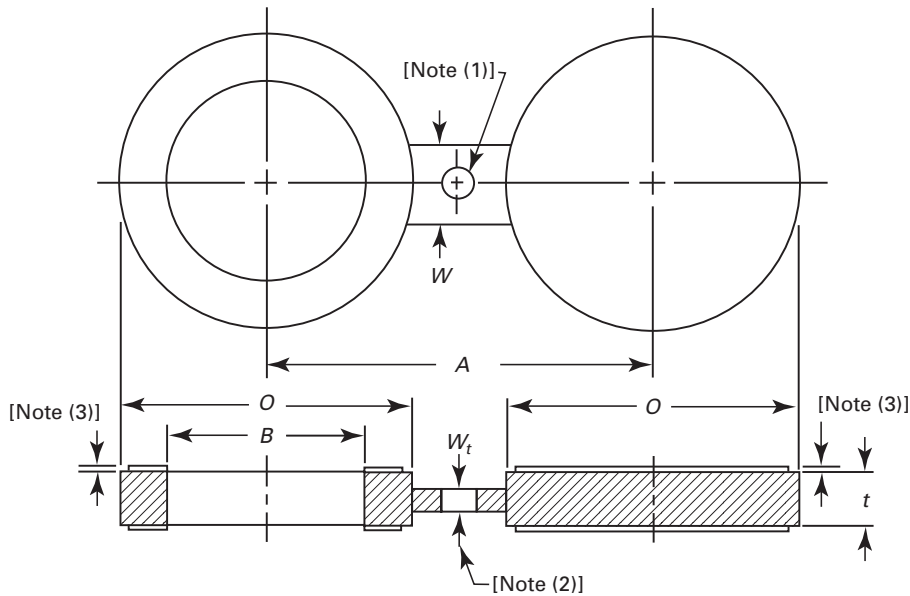
7.3 Paddle Spacer Handles

Handles for paddle spacers shall have a single through indicator hole located near the end of the handle. The hole diameter shall not be less than 12 mm ($\frac{1}{2}$ in.).

8 TESTING

Line blanks are not required to be pressure tested.




Table 1 Dimensions of Class 150 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 16 | 45 | 60 | 3.0 | 38 |
| 3/4 | 21 | 54 | 70 | 3.0 | 38 |
| 1 | 27 | 64 | 80 | 3.0 | 38 |
| 1 1/4 | 42 | 73 | 90 | 6.4 | 38 |
| 1 1/2 | 48 | 83 | 100 | 6.4 | 38 |
| 2 | 61 | 102 | 120 | 6.4 | 51 |
| 2 1/2 | 73 | 107 | 140 | 6.4 | 51 |
| 3 | 89 | 133 | 150 | 6.4 | 64 |
| 3 1/2 | 102 | 159 | 175 | 9.7 | 64 |
| 4 | 114 | 172 | 190 | 9.7 | 64 |
| 5 | 141 | 194 | 215 | 9.7 | 76 |
| 6 | 168 | 219 | 240 | 12.7 | 76 |
| 8 | 219 | 276 | 300 | 12.7 | 76 |
| 10 | 273 | 337 | 360 | 15.7 | 102 |
| 12 | 324 | 406 | 430 | 19.1 | 102 |
| 14 | 356 | 448 | 475 | 19.1 | 108 |
| 16 | 406 | 511 | 460 | 22.4 | 108 |
| 18 | 457 | 546 | 580 | 25.4 | 114 |
| 20 | 508 | 603 | 635 | 28.4 | 121 |
| 24 | 610 | 714 | 750 | 31.8 | 140 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-1 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.



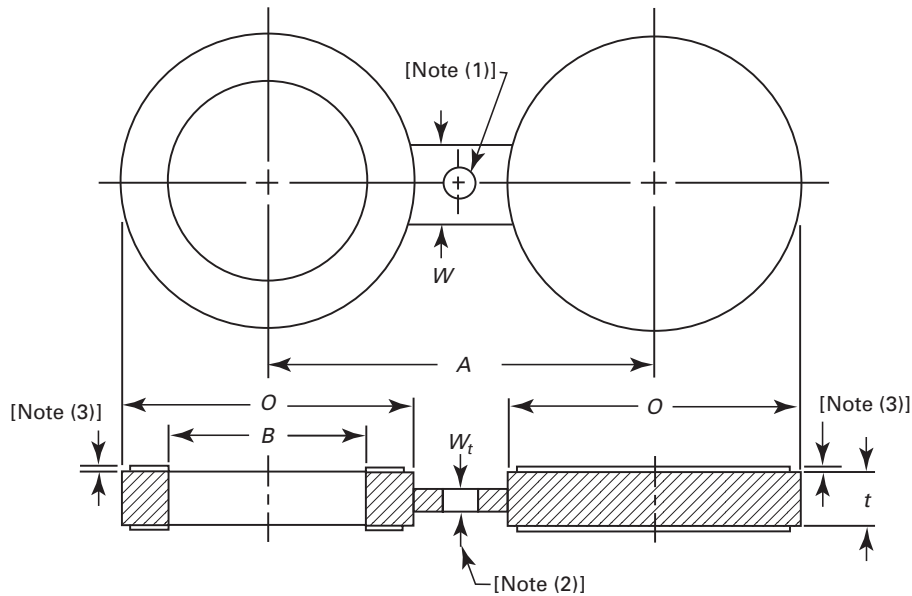


Table 2 Dimensions of Class 300 Raised Face Figure-8 Blanks

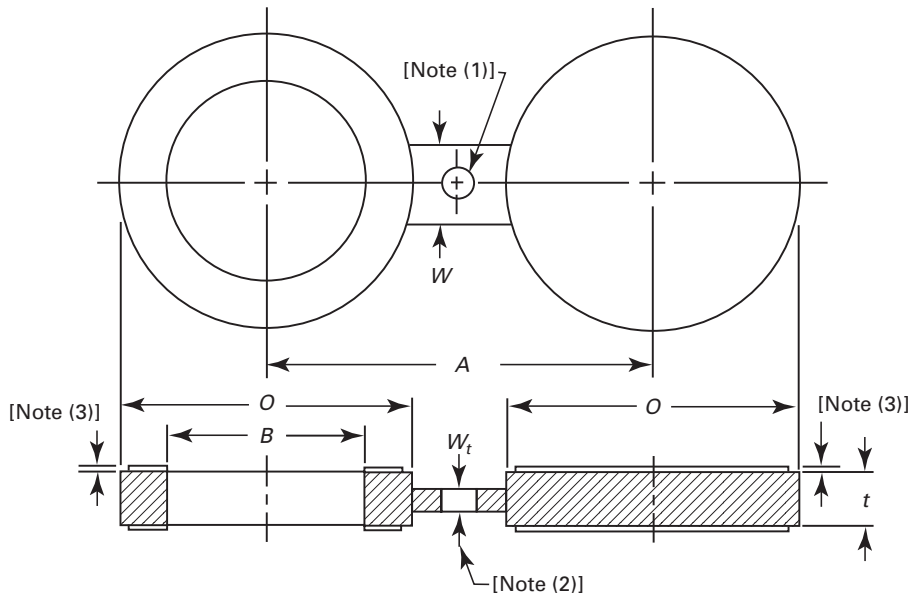
| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 16 | 51 | 65 | 6.4 | 38 |
| 3/4 | 21 | 64 | 80 | 6.4 | 38 |
| 1 | 27 | 70 | 90 | 6.4 | 38 |
| 1 1/4 | 42 | 79 | 100 | 6.4 | 38 |
| 1 1/2 | 48 | 92 | 115 | 6.4 | 38 |
| 2 | 61 | 108 | 125 | 9.7 | 51 |
| 2 1/2 | 73 | 127 | 150 | 9.7 | 51 |
| 3 | 89 | 146 | 170 | 9.7 | 64 |
| 3 1/2 | 102 | 162 | 185 | 12.7 | 64 |
| 4 | 114 | 178 | 200 | 12.7 | 64 |
| 5 | 141 | 213 | 235 | 15.7 | 76 |
| 6 | 168 | 248 | 270 | 15.7 | 76 |
| 8 | 219 | 305 | 330 | 22.4 | 76 |
| 10 | 273 | 359 | 385 | 25.4 | 102 |
| 12 | 324 | 419 | 450 | 28.4 | 102 |
| 14 | 356 | 483 | 515 | 31.8 | 108 |
| 16 | 406 | 536 | 570 | 38.1 | 108 |
| 18 | 457 | 594 | 630 | 41.1 | 114 |
| 20 | 508 | 651 | 685 | 44.5 | 121 |
| 24 | 610 | 772 | 810 | 50.8 | 140 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-2 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.




Table 3 Dimensions of Class 600 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 16 | 51 | 65 | 6.4 | 38 |
| 3/4 | 21 | 64 | 80 | 6.4 | 38 |
| 1 | 27 | 70 | 90 | 6.4 | 57 |
| 1 1/4 | 37 | 79 | 100 | 9.7 | 57 |
| 1 1/2 | 43 | 92 | 115 | 9.7 | 67 |
| 2 | 55 | 108 | 125 | 9.7 | 57 |
| 2 1/2 | 67 | 127 | 150 | 12.7 | 67 |
| 3 | 83 | 146 | 170 | 12.7 | 67 |
| 3 1/2 | 96 | 159 | 185 | 15.7 | 76 |
| 4 | 108 | 191 | 215 | 15.7 | 76 |
| 5 | 135 | 238 | 265 | 19.1 | 86 |
| 6 | 162 | 264 | 290 | 22.4 | 86 |
| 8 | 212 | 318 | 350 | 28.4 | 95 |
| 10 | 265 | 397 | 430 | 35.1 | 105 |
| 12 | 315 | 454 | 490 | 41.1 | 105 |
| 14 | 346 | 489 | 525 | 44.5 | 114 |
| 16 | 397 | 562 | 605 | 50.8 | 124 |
| 18 | 448 | 610 | 655 | 53.8 | 133 |
| 20 | 497 | 679 | 725 | 63.5 | 133 |
| 24 | 597 | 787 | 840 | 73.2 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-3 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.



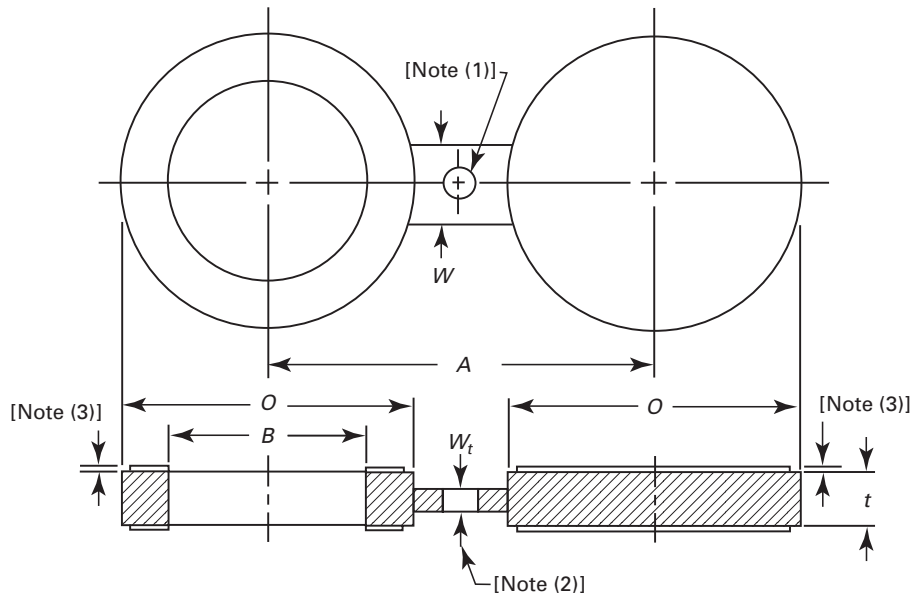


Table 4 Dimensions of Class 900 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 16 | 60 | 80 | 6.4 | 38 |
| 3/4 | 21 | 67 | 90 | 6.4 | 41 |
| 1 | 27 | 76 | 100 | 6.4 | 57 |
| 1 1/4 | 37 | 86 | 110 | 9.7 | 57 |
| 1 1/2 | 43 | 95 | 125 | 9.7 | 67 |
| 2 | 55 | 140 | 165 | 12.7 | 57 |
| 2 1/2 | 67 | 162 | 190 | 12.7 | 67 |
| 3 | 83 | 165 | 190 | 15.7 | 67 |
| 4 | 108 | 203 | 235 | 19.1 | 76 |
| 5 | 135 | 244 | 280 | 22.4 | 86 |
| 6 | 162 | 286 | 320 | 25.4 | 86 |
| 8 | 212 | 356 | 395 | 35.1 | 95 |
| 10 | 265 | 432 | 470 | 41.1 | 105 |
| 12 | 315 | 495 | 535 | 47.8 | 105 |
| 14 | 346 | 518 | 560 | 53.8 | 114 |
| 16 | 397 | 572 | 615 | 60.5 | 124 |
| 18 | 448 | 635 | 685 | 66.5 | 133 |
| 20 | 497 | 696 | 750 | 73.2 | 133 |
| 24 | 597 | 835 | 900 | 88.9 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-4 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.

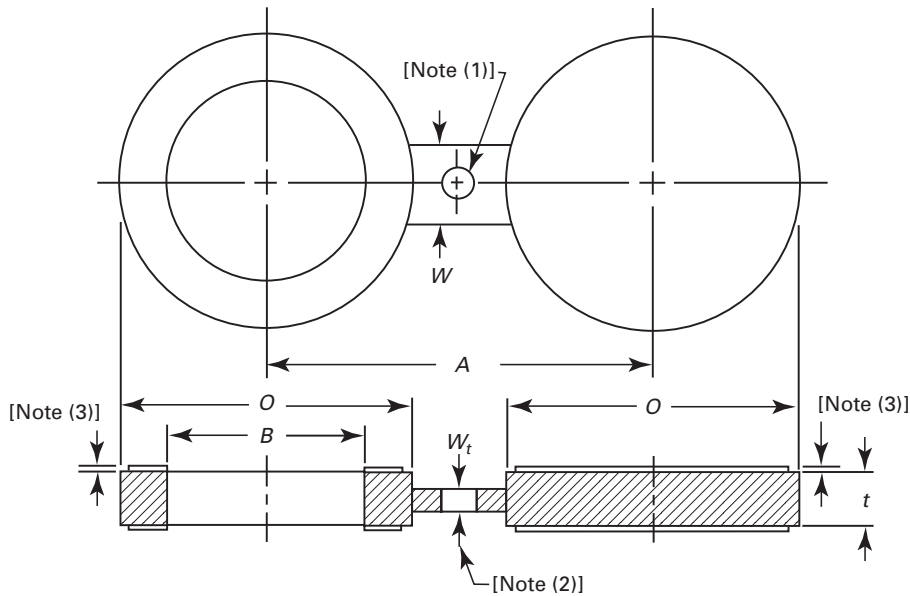


Table 5 Dimensions of Class 1500 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 16 | 61 | 80 | 6.4 | 38 |
| 3/4 | 21 | 67 | 90 | 9.7 | 41 |
| 1 | 27 | 76 | 100 | 9.7 | 64 |
| 1 1/4 | 35 | 86 | 110 | 9.7 | 64 |
| 1 1/2 | 41 | 95 | 125 | 12.7 | 70 |
| 2 | 53 | 140 | 165 | 12.7 | 70 |
| 2 1/2 | 63 | 162 | 190 | 15.7 | 76 |
| 3 | 78 | 172 | 205 | 19.1 | 76 |
| 4 | 102 | 206 | 240 | 22.4 | 89 |
| 5 | 128 | 251 | 290 | 28.4 | 89 |
| 6 | 154 | 279 | 320 | 35.1 | 89 |
| 8 | 203 | 349 | 395 | 41.1 | 102 |
| 10 | 255 | 432 | 480 | 50.8 | 114 |
| 12 | 303 | 518 | 570 | 60.5 | 114 |
| 14 | 333 | 575 | 635 | 66.5 | 127 |
| 16 | 381 | 638 | 705 | 76.2 | 133 |
| 18 | 429 | 702 | 775 | 85.9 | 146 |
| 20 | 478 | 752 | 830 | 95.3 | 152 |
| 24 | 575 | 899 | 990 | 111.3 | 178 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-5 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.



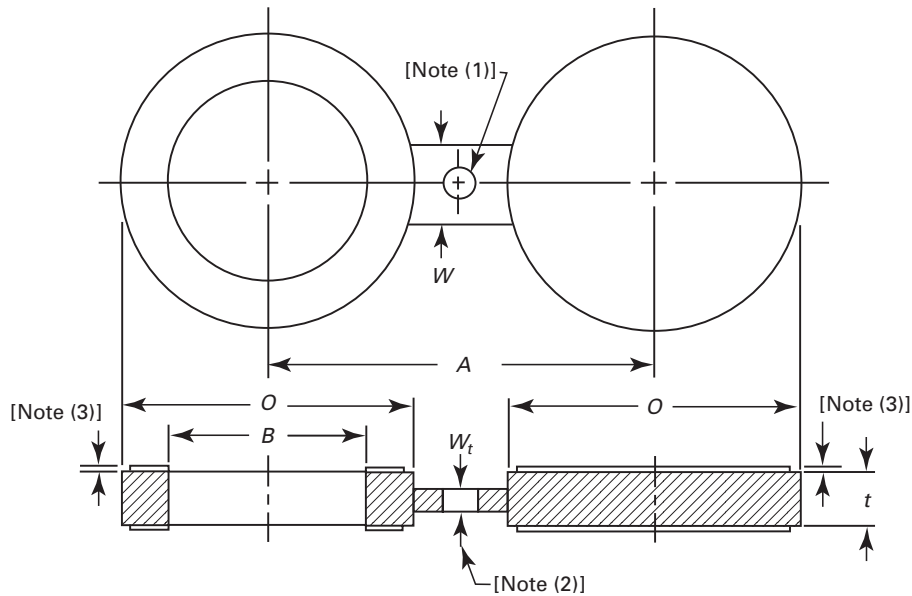


Table 6 Dimensions of Class 2500 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 16 | 67 | 90 | 9.7 | 38 |
| 3/4 | 21 | 73 | 95 | 9.7 | 41 |
| 1 | 27 | 83 | 110 | 9.7 | 64 |
| 1 1/4 | 35 | 102 | 130 | 12.7 | 64 |
| 1 1/2 | 41 | 114 | 145 | 15.7 | 70 |
| 2 | 53 | 143 | 170 | 15.7 | 70 |
| 2 1/2 | 63 | 165 | 195 | 19.1 | 76 |
| 3 | 78 | 194 | 230 | 22.4 | 76 |
| 4 | 102 | 232 | 275 | 28.4 | 89 |
| 5 | 128 | 276 | 325 | 35.1 | 89 |
| 6 | 154 | 314 | 370 | 41.1 | 89 |
| 8 | 198 | 384 | 440 | 53.8 | 102 |
| 10 | 248 | 473 | 540 | 66.5 | 114 |
| 12 | 289 | 546 | 620 | 79.2 | 114 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-6 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.

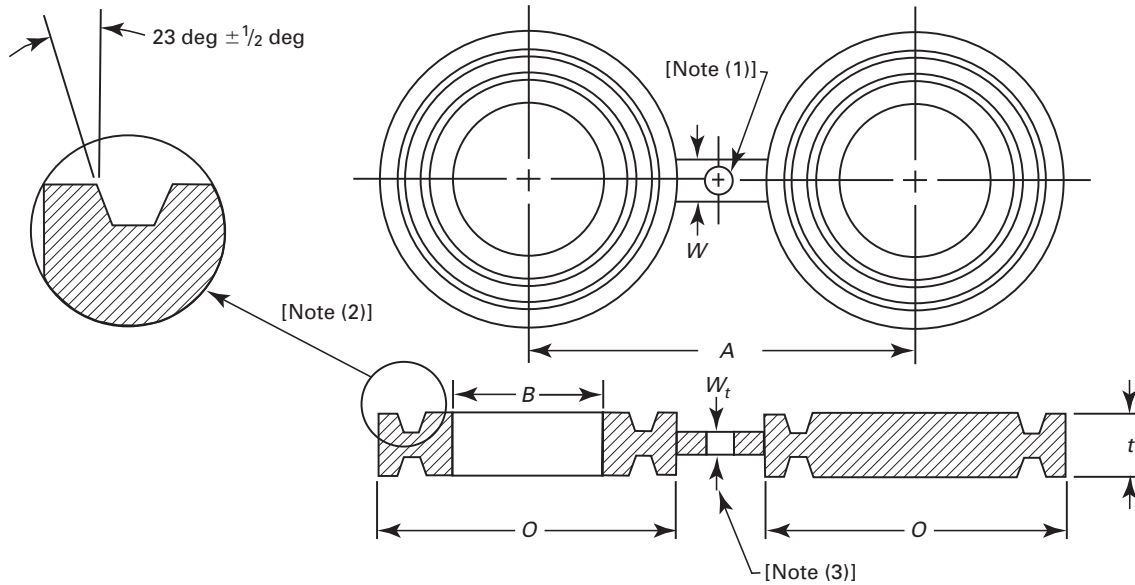


Table 7 Dimensions of Class 1500 Female Ring-Joint Facing Figure-8 Blanks

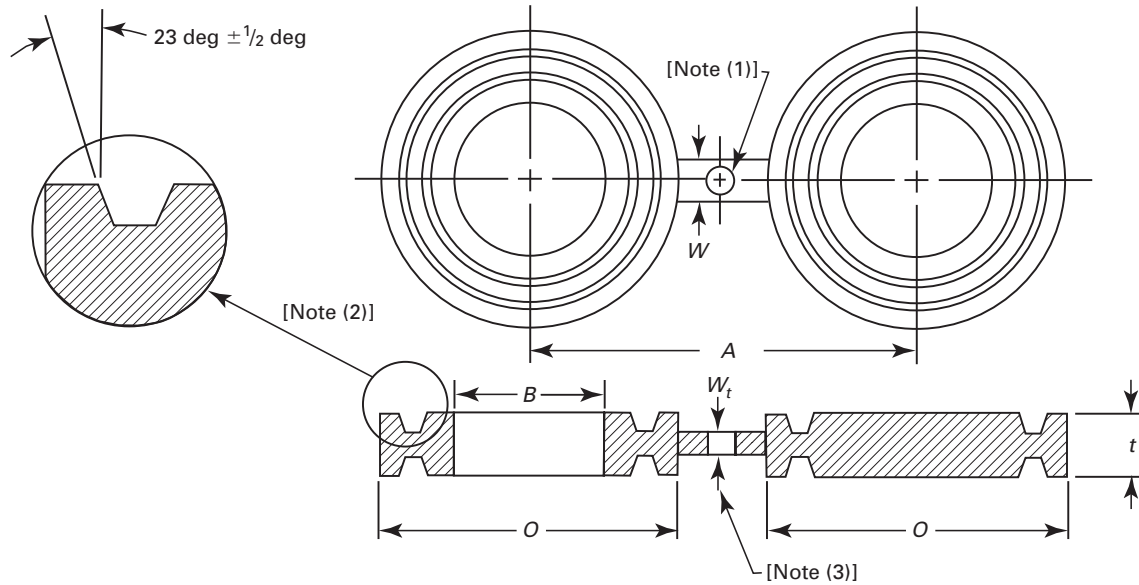
| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------------------------------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1 | 34 | 64 | 80 | 19.1 | 51 |
| 1 ¹ / ₄ | 42 | 73 | 90 | 19.1 | 51 |
| 1 ¹ / ₂ | 48 | 83 | 100 | 19.1 | 57 |
| 2 | 61 | 102 | 120 | 19.1 | 57 |
| 2 ¹ / ₂ | 73 | 121 | 140 | 22.4 | 57 |
| 3 | 89 | 133 | 150 | 22.4 | 57 |
| 3 ¹ / ₂ | 102 | 154 | 175 | 22.4 | 64 |
| 4 | 114 | 172 | 190 | 22.4 | 64 |
| 5 | 141 | 194 | 215 | 25.4 | 70 |
| 6 | 168 | 219 | 240 | 25.4 | 83 |
| 8 | 219 | 273 | 300 | 28.4 | 95 |
| 10 | 273 | 330 | 360 | 31.8 | 102 |
| 12 | 324 | 406 | 430 | 35.1 | 121 |
| 14 | 356 | 426 | 475 | 35.1 | 127 |
| 16 | 406 | 483 | 540 | 38.1 | 127 |
| 18 | 457 | 546 | 580 | 41.1 | 127 |
| 20 | 508 | 597 | 635 | 41.1 | 127 |
| 24 | 610 | 711 | 750 | 47.8 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-7 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.




Table 8 Dimensions of Class 300 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 21 | 51 | 65 | 15.7 | 38 |
| 3/4 | 27 | 64 | 80 | 19.1 | 45 |
| 1 | 34 | 70 | 90 | 19.1 | 51 |
| 1 1/4 | 42 | 79 | 100 | 22.4 | 51 |
| 1 1/2 | 48 | 90 | 115 | 22.4 | 57 |
| 2 | 61 | 108 | 125 | 25.4 | 57 |
| 2 1/2 | 73 | 127 | 150 | 28.4 | 57 |
| 3 | 89 | 146 | 170 | 28.4 | 57 |
| 3 1/2 | 102 | 159 | 185 | 28.4 | 64 |
| 4 | 114 | 175 | 200 | 31.8 | 64 |
| 5 | 141 | 210 | 235 | 35.1 | 70 |
| 6 | 168 | 241 | 270 | 35.1 | 83 |
| 8 | 219 | 302 | 330 | 41.1 | 95 |
| 10 | 273 | 356 | 385 | 44.5 | 102 |
| 12 | 324 | 413 | 450 | 50.8 | 121 |
| 14 | 356 | 457 | 515 | 53.8 | 127 |
| 16 | 406 | 508 | 570 | 57.2 | 127 |
| 18 | 457 | 575 | 630 | 60.5 | 127 |
| 20 | 508 | 635 | 685 | 69.9 | 127 |
| 24 | 610 | 749 | 810 | 79.2 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-8 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

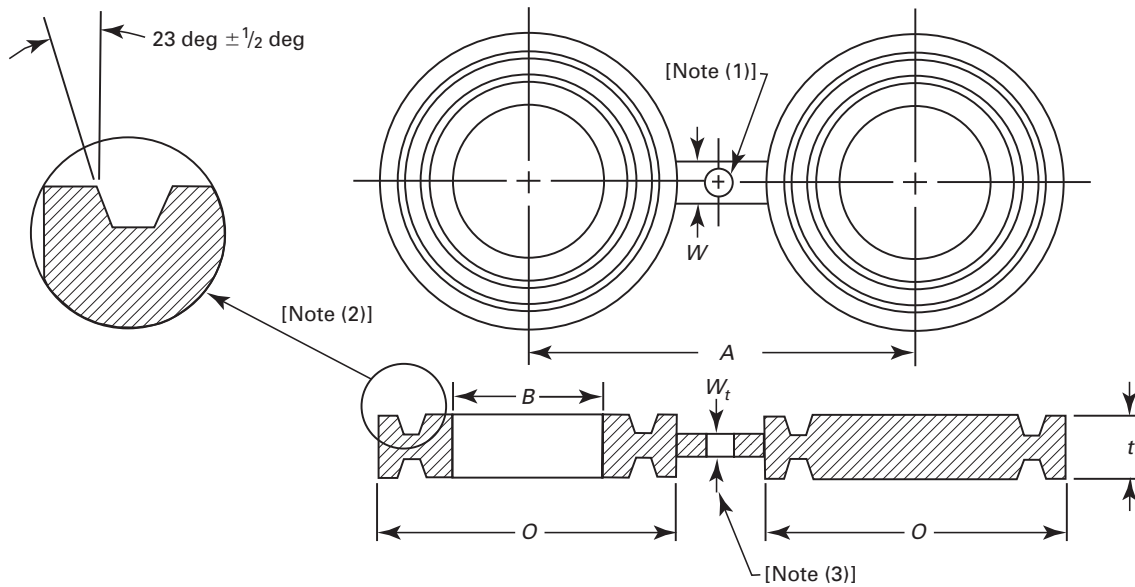


Table 9 Dimensions of Class 600 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 21 | 51 | 65 | 19.1 | 38 |
| 3/4 | 27 | 64 | 80 | 22.4 | 45 |
| 1 | 34 | 70 | 90 | 22.4 | 51 |
| 1 1/4 | 42 | 79 | 100 | 22.4 | 51 |
| 1 1/2 | 48 | 90 | 115 | 22.4 | 57 |
| 2 | 61 | 108 | 125 | 28.4 | 57 |
| 2 1/2 | 73 | 127 | 150 | 31.8 | 57 |
| 3 | 89 | 146 | 170 | 31.8 | 57 |
| 3 1/2 | 102 | 159 | 185 | 35.1 | 64 |
| 4 | 114 | 175 | 215 | 35.1 | 64 |
| 5 | 141 | 210 | 265 | 38.1 | 70 |
| 6 | 168 | 241 | 290 | 44.5 | 83 |
| 8 | 219 | 302 | 350 | 50.8 | 95 |
| 10 | 273 | 356 | 430 | 57.2 | 102 |
| 12 | 324 | 413 | 490 | 63.5 | 121 |
| 14 | 356 | 457 | 525 | 66.5 | 127 |
| 16 | 406 | 508 | 605 | 73.2 | 127 |
| 18 | 457 | 575 | 655 | 79.2 | 127 |
| 20 | 508 | 635 | 725 | 88.9 | 127 |
| 24 | 610 | 749 | 840 | 104.6 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-9 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.



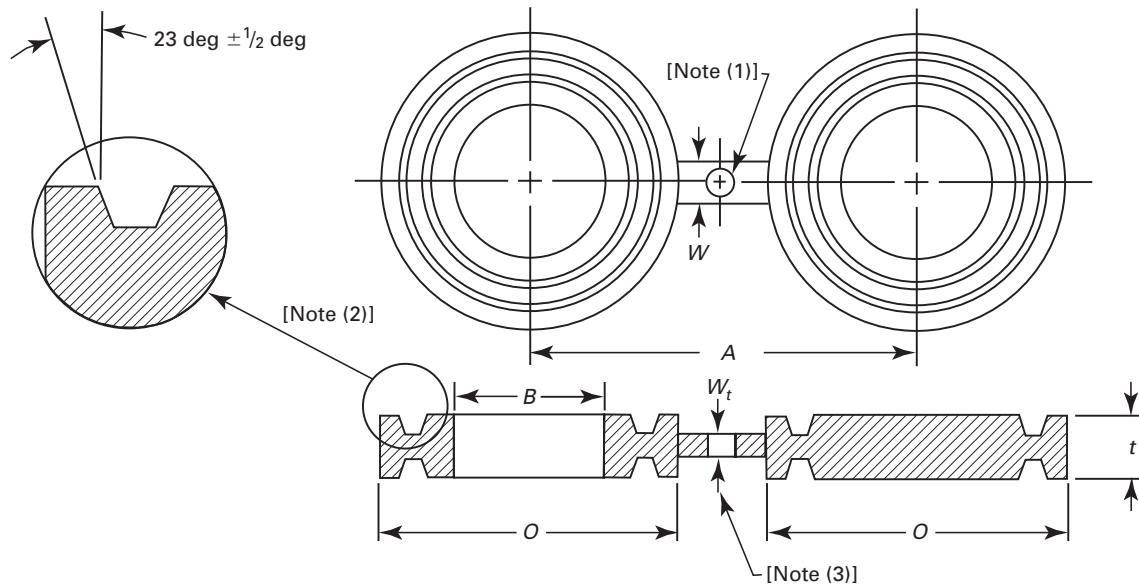


Table 10 Dimensions of Class 900 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 21 | 61 | 80 | 22.4 | 38 |
| 3/4 | 27 | 67 | 90 | 22.4 | 45 |
| 1 | 34 | 71 | 100 | 22.4 | 51 |
| 1 1/4 | 42 | 81 | 110 | 25.4 | 51 |
| 1 1/2 | 48 | 92 | 125 | 25.4 | 64 |
| 2 | 61 | 124 | 165 | 31.8 | 51 |
| 2 1/2 | 73 | 137 | 190 | 35.1 | 67 |
| 3 | 89 | 155 | 190 | 35.1 | 67 |
| 4 | 114 | 181 | 235 | 41.1 | 73 |
| 5 | 141 | 216 | 280 | 44.5 | 73 |
| 6 | 168 | 241 | 315 | 47.8 | 73 |
| 8 | 219 | 308 | 395 | 57.2 | 80 |
| 10 | 273 | 362 | 470 | 63.5 | 121 |
| 12 | 324 | 419 | 535 | 73.2 | 121 |
| 14 | 356 | 467 | 560 | 82.6 | 121 |
| 16 | 406 | 524 | 615 | 91.9 | 127 |
| 18 | 457 | 594 | 685 | 101.6 | 133 |
| 20 | 508 | 648 | 750 | 111.3 | 127 |
| 24 | 610 | 772 | 900 | 133.4 | 140 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-10 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

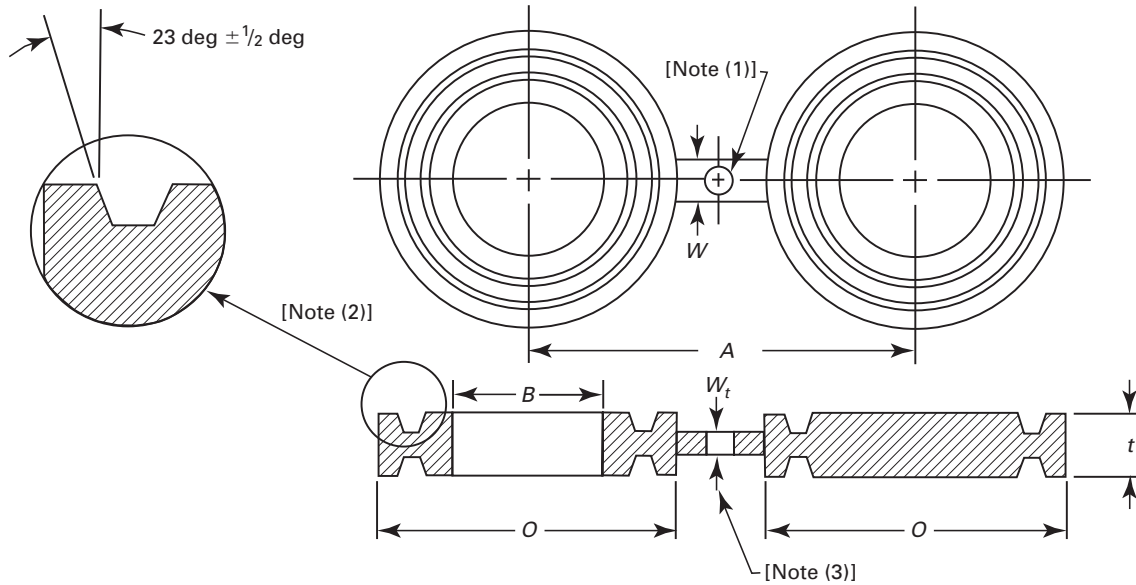


Table 11 Dimensions of Class 1500 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 21 | 61 | 80 | 22.4 | 38 |
| 3/4 | 27 | 67 | 90 | 25.4 | 45 |
| 1 | 34 | 71 | 100 | 25.4 | 54 |
| 1 1/4 | 42 | 81 | 110 | 25.4 | 54 |
| 1 1/2 | 48 | 92 | 125 | 28.4 | 57 |
| 2 | 61 | 124 | 165 | 35.1 | 54 |
| 2 1/2 | 73 | 137 | 190 | 38.1 | 57 |
| 3 | 89 | 168 | 205 | 44.5 | 73 |
| 4 | 114 | 194 | 240 | 47.8 | 76 |
| 5 | 141 | 229 | 290 | 53.8 | 76 |
| 6 | 168 | 248 | 315 | 60.5 | 79 |
| 8 | 219 | 318 | 395 | 73.2 | 86 |
| 10 | 273 | 371 | 480 | 82.5 | 133 |
| 12 | 324 | 438 | 570 | 101.6 | 133 |
| 14 | 356 | 489 | 635 | 111.3 | 140 |
| 16 | 406 | 546 | 705 | 124.0 | 146 |
| 18 | 457 | 613 | 775 | 133.0 | 152 |
| 20 | 508 | 673 | 830 | 142.7 | 165 |
| 24 | 610 | 794 | 990 | 168.1 | 178 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-11 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.



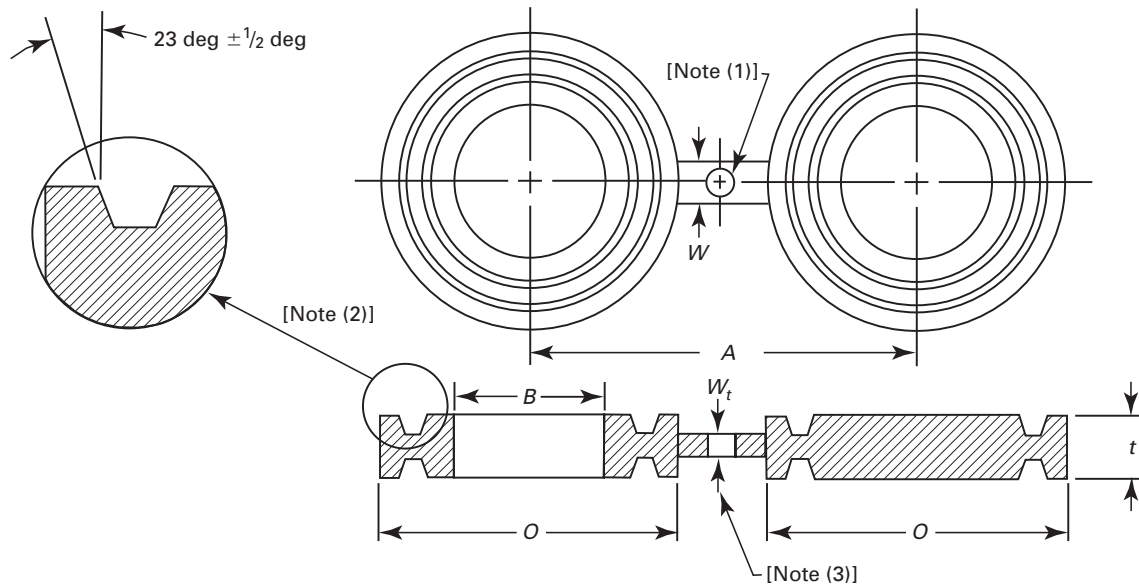


Table 12 Dimensions of Class 2500 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Outside Diameter, O, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-------------------------|-----------------------------|------------------|------------------|
| 1/2 | 21 | 65 | 90 | 25.4 | 38 |
| 3/4 | 27 | 73 | 95 | 28.4 | 45 |
| 1 | 34 | 83 | 110 | 28.4 | 54 |
| 1 1/4 | 42 | 102 | 130 | 35.1 | 54 |
| 1 1/2 | 48 | 114 | 145 | 38.1 | 61 |
| 2 | 61 | 133 | 170 | 41.1 | 57 |
| 2 1/2 | 73 | 149 | 195 | 47.8 | 61 |
| 3 | 89 | 168 | 230 | 50.8 | 76 |
| 4 | 114 | 203 | 270 | 63.5 | 83 |
| 5 | 141 | 241 | 325 | 73.2 | 89 |
| 6 | 168 | 279 | 370 | 82.6 | 95 |
| 8 | 219 | 340 | 440 | 98.6 | 95 |
| 10 | 273 | 425 | 540 | 117.3 | 91 |
| 12 | 324 | 495 | 620 | 133.4 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-12 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

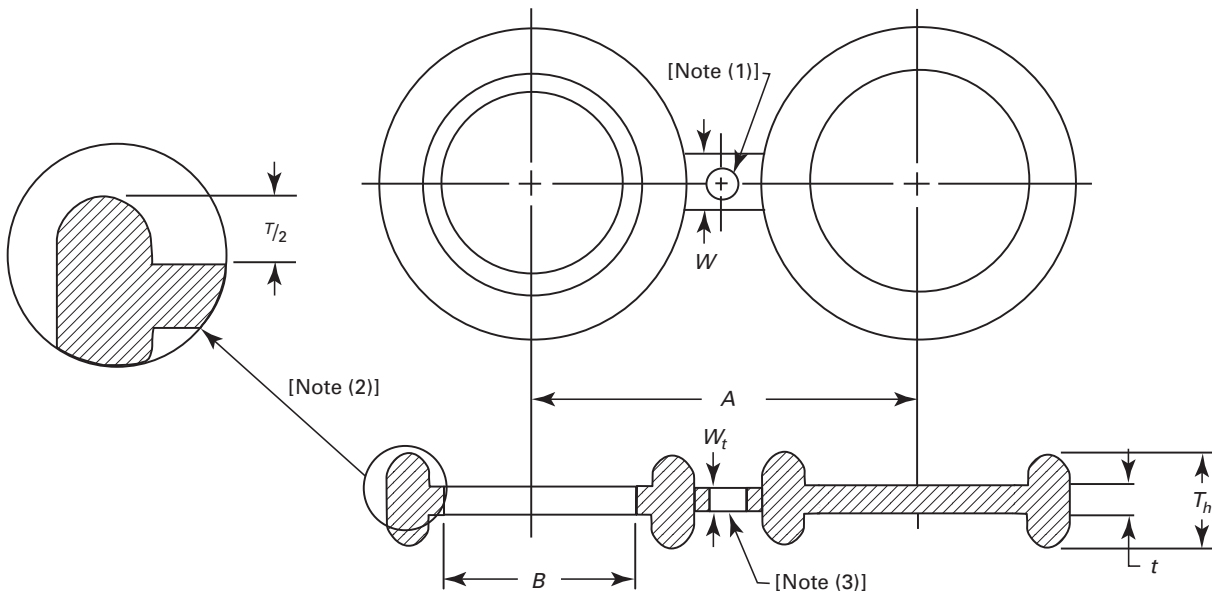


Table 13 Dimensions of Class 150 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------------------------------|------------------------|-----------------------------|------------------|------------------|
| 1 | 34 | 80 | 6.4 | 51 |
| 1 ¹ / ₄ | 42 | 90 | 6.4 | 51 |
| 1 ¹ / ₂ | 48 | 100 | 6.4 | 57 |
| 2 | 61 | 120 | 6.4 | 57 |
| 2 ¹ / ₂ | 73 | 140 | 9.7 | 57 |
| 3 | 89 | 150 | 9.7 | 57 |
| 3 ¹ / ₂ | 102 | 175 | 9.7 | 64 |
| 4 | 114 | 190 | 9.7 | 64 |
| 5 | 141 | 215 | 12.7 | 76 |
| 6 | 168 | 240 | 12.7 | 83 |
| 8 | 219 | 300 | 15.7 | 95 |
| 10 | 273 | 362 | 19.1 | 102 |
| 12 | 324 | 432 | 22.4 | 121 |
| 14 | 356 | 476 | 22.4 | 127 |
| 16 | 406 | 540 | 25.4 | 127 |
| 18 | 457 | 578 | 28.4 | 127 |
| 20 | 508 | 635 | 28.4 | 127 |
| 24 | 610 | 749 | 35.1 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-13 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.



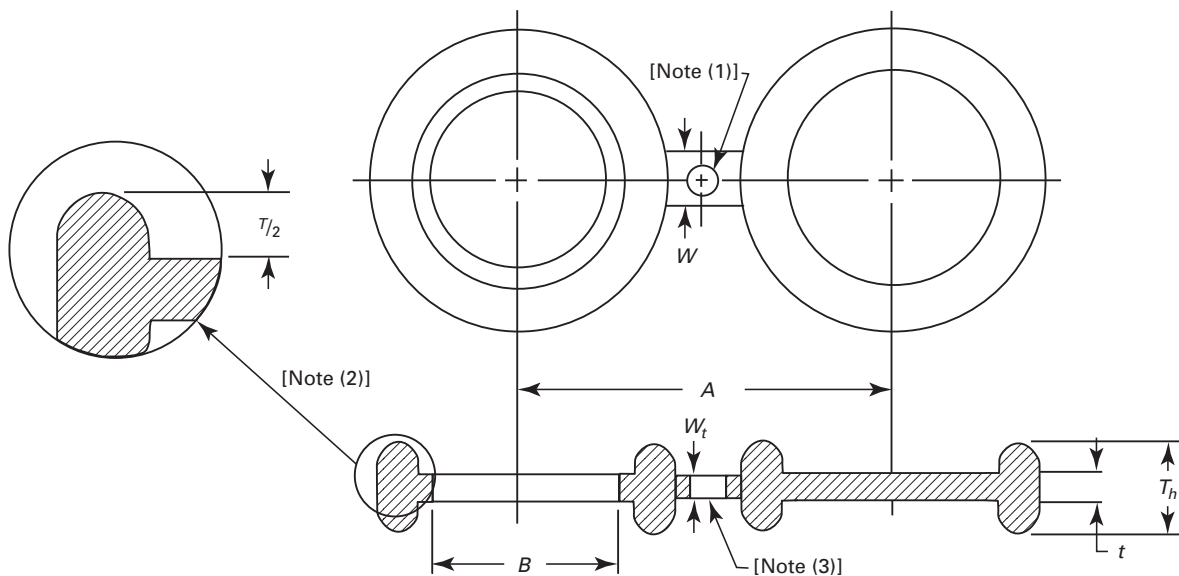


Table 14 Dimensions of Class 300 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-----------------------------|------------------|------------------|
| 1/2 | 21 | 65 | 6.4 | 38 |
| 3/4 | 27 | 80 | 9.7 | 45 |
| 1 | 34 | 90 | 9.7 | 51 |
| 1 1/4 | 42 | 100 | 9.7 | 51 |
| 1 1/2 | 48 | 115 | 9.7 | 57 |
| 2 | 61 | 125 | 12.7 | 57 |
| 2 1/2 | 73 | 150 | 15.7 | 57 |
| 3 | 89 | 170 | 15.7 | 57 |
| 3 1/2 | 102 | 180 | 19.1 | 64 |
| 4 | 114 | 200 | 15.7 | 64 |
| 5 | 141 | 235 | 19.1 | 76 |
| 6 | 168 | 270 | 22.4 | 83 |
| 8 | 219 | 330 | 25.4 | 95 |
| 10 | 273 | 390 | 28.4 | 102 |
| 12 | 324 | 450 | 35.1 | 121 |
| 14 | 356 | 415 | 38.1 | 127 |
| 16 | 406 | 570 | 41.1 | 127 |
| 18 | 457 | 630 | 44.5 | 127 |
| 20 | 508 | 685 | 50.8 | 127 |
| 24 | 610 | 810 | 57.2 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-14 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

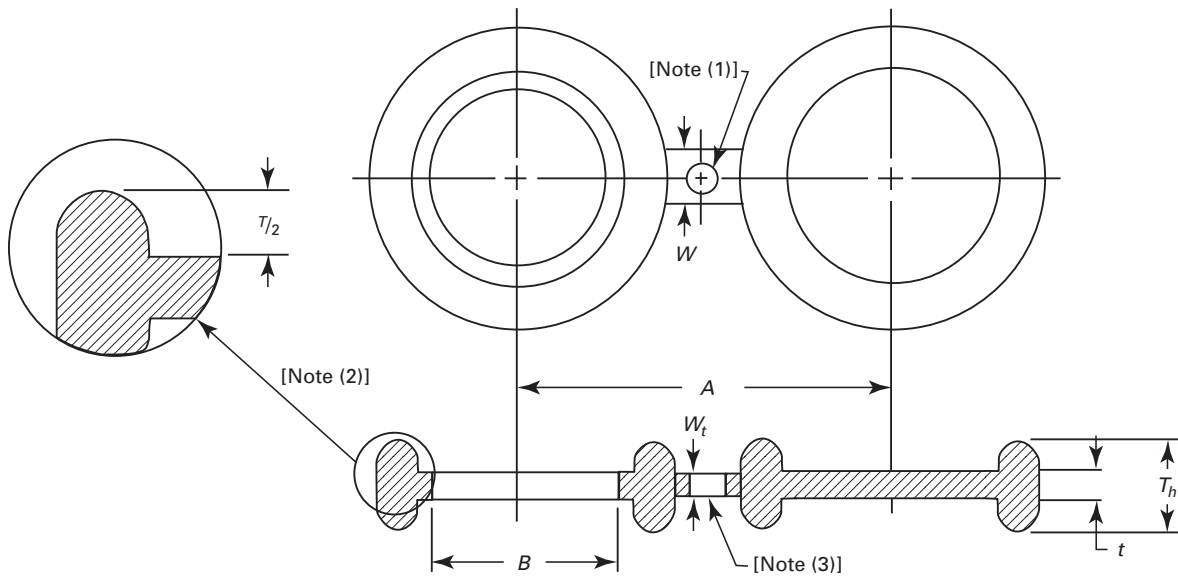


Table 15 Dimensions of Class 600 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-----------------------------|------------------|------------------|
| 1/2 | 21 | 65 | 6.4 | 38 |
| 3/4 | 27 | 80 | 9.7 | 45 |
| 1 | 34 | 90 | 9.7 | 51 |
| 1 1/4 | 42 | 100 | 9.7 | 57 |
| 1 1/2 | 48 | 115 | 9.7 | 57 |
| 2 | 61 | 125 | 12.7 | 51 |
| 2 1/2 | 73 | 150 | 15.7 | 57 |
| 3 | 89 | 170 | 15.7 | 67 |
| 3 1/2 | 102 | 180 | 19.1 | 67 |
| 4 | 114 | 215 | 19.1 | 73 |
| 5 | 141 | 265 | 22.4 | 73 |
| 6 | 168 | 290 | 28.4 | 73 |
| 8 | 219 | 350 | 35.1 | 83 |
| 10 | 273 | 430 | 41.1 | 121 |
| 12 | 324 | 490 | 47.8 | 121 |
| 14 | 356 | 525 | 50.8 | 121 |
| 16 | 406 | 605 | 57.2 | 127 |
| 18 | 457 | 650 | 63.5 | 133 |
| 20 | 508 | 720 | 69.9 | 127 |
| 24 | 610 | 840 | 82.6 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-15 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.



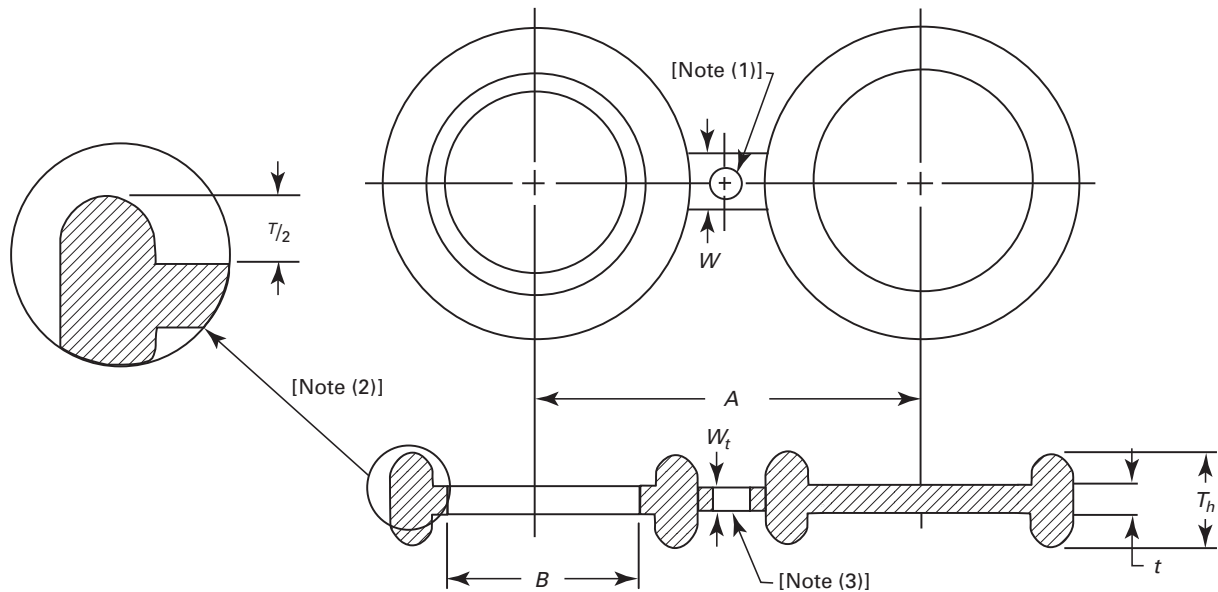


Table 16 Dimensions of Class 900 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, mm | Centerline Dimension, A, mm | Thickness, t, mm | Web Width, W, mm |
|-------|------------------------|-----------------------------|------------------|------------------|
| 1/2 | 21 | 80 | 9.7 | 38 |
| 3/4 | 27 | 90 | 9.7 | 45 |
| 1 | 34 | 100 | 9.7 | 51 |
| 1 1/4 | 42 | 110 | 12.7 | 54 |
| 1 1/2 | 48 | 125 | 12.7 | 54 |
| 2 | 61 | 165 | 15.7 | 51 |
| 2 1/2 | 73 | 190 | 19.1 | 54 |
| 3 | 89 | 190 | 19.1 | 67 |
| 4 | 114 | 235 | 25.4 | 73 |
| 5 | 141 | 280 | 28.4 | 73 |
| 6 | 168 | 315 | 31.8 | 73 |
| 8 | 219 | 395 | 41.1 | 79 |
| 10 | 273 | 470 | 47.8 | 121 |
| 12 | 324 | 535 | 57.2 | 121 |
| 14 | 356 | 560 | 60.5 | 121 |
| 16 | 406 | 615 | 69.9 | 127 |
| 18 | 457 | 685 | 76.2 | 133 |
| 20 | 508 | 750 | 85.9 | 127 |
| 24 | 610 | 900 | 98.6 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-16 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

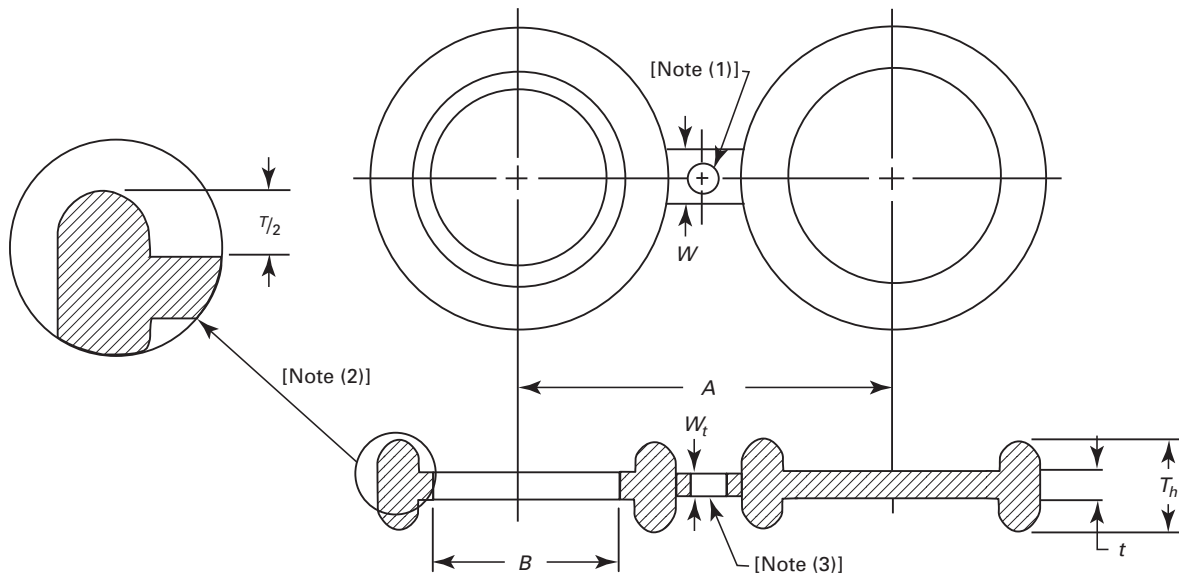


Table 17 Dimensions of Class 1500 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B , mm | Centerline Dimension, A , mm | Thickness, t , mm | Web Width, W , mm |
|-------|---------------------------|--------------------------------|---------------------|---------------------|
| 1/2 | 21 | 83 | 9.7 | 38 |
| 3/4 | 27 | 89 | 9.7 | 45 |
| 1 | 34 | 102 | 12.7 | 54 |
| 1 1/4 | 42 | 111 | 12.7 | 54 |
| 1 1/2 | 48 | 124 | 15.7 | 57 |
| 2 | 61 | 165 | 19.1 | 54 |
| 2 1/2 | 73 | 191 | 22.4 | 57 |
| 3 | 89 | 203 | 28.4 | 73 |
| 4 | 114 | 241 | 31.8 | 76 |
| 5 | 141 | 292 | 38.1 | 76 |
| 6 | 168 | 318 | 41.1 | 79 |
| 8 | 219 | 394 | 50.8 | 86 |
| 10 | 273 | 483 | 63.5 | 133 |
| 12 | 324 | 572 | 73.2 | 133 |
| 14 | 356 | 635 | 79.2 | 140 |
| 16 | 406 | 705 | 88.9 | 146 |
| 18 | 457 | 775 | 98.6 | 152 |
| 20 | 508 | 832 | 108.0 | 165 |
| 24 | 610 | 991 | 127.0 | 178 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-17 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.



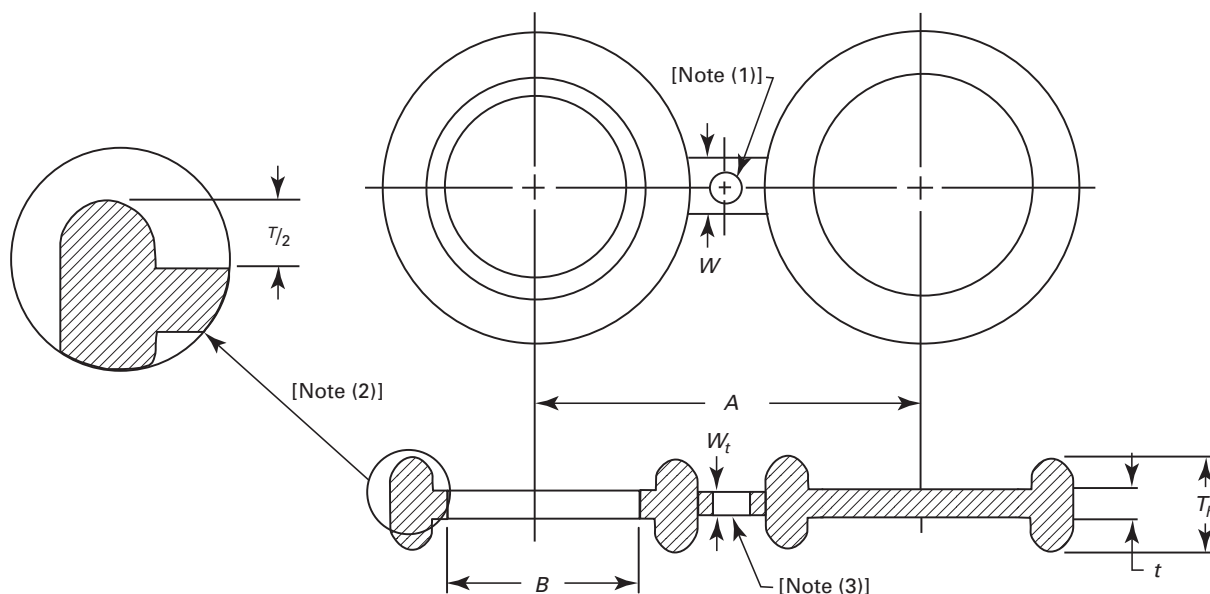


Table 18 Dimensions of Class 2500 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, | Centerline Dimension, A, | Thickness, t, | Web Width, W, |
|-------|---------------------|--------------------------|---------------|---------------|
| | mm | mm | mm | mm |
| 1/2 | 21 | 90 | 12.7 | 41 |
| 3/4 | 27 | 95 | 15.7 | 48 |
| 1 | 34 | 110 | 15.7 | 54 |
| 1 1/4 | 42 | 130 | 19.1 | 54 |
| 1 1/2 | 48 | 145 | 22.4 | 61 |
| 2 | 61 | 170 | 25.4 | 57 |
| 2 1/2 | 73 | 195 | 28.4 | 61 |
| 3 | 89 | 230 | 31.8 | 76 |
| 4 | 114 | 270 | 38.1 | 83 |
| 5 | 141 | 325 | 47.8 | 89 |
| 6 | 168 | 370 | 57.2 | 95 |
| 8 | 219 | 440 | 69.9 | 95 |
| 10 | 273 | 540 | 82.6 | 95 |
| 12 | 324 | 620 | 98.6 | 152 |

GENERAL NOTE: Dimensions are in millimeters. For inch dimensions, refer to corresponding Table A-18 in Nonmandatory Appendix A.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

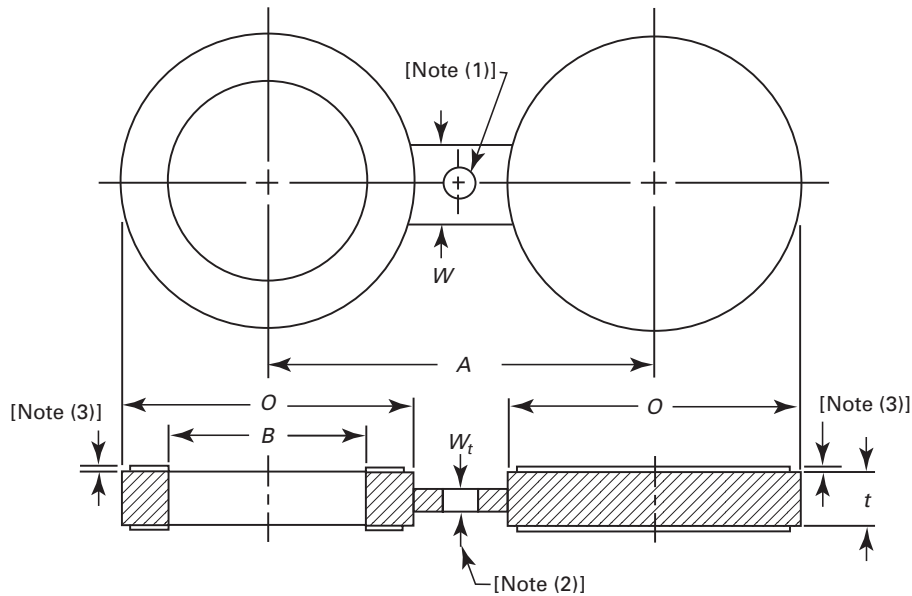


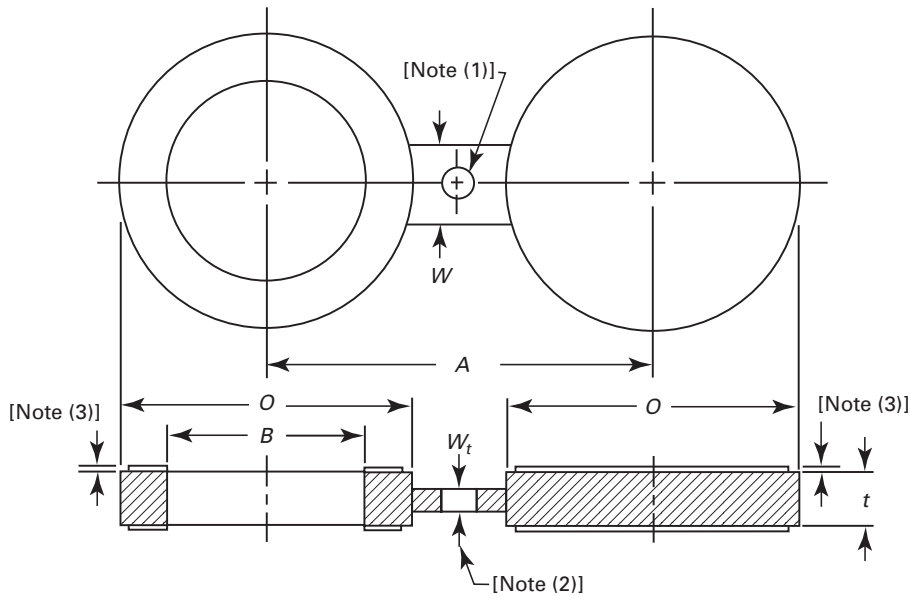
Table A-1 Dimensions of Class 150 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Outside Diameter, O, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|--------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.62 | 1.75 | 2.38 | 0.12 | 1.50 |
| 3/4 | 0.82 | 2.12 | 2.75 | 0.12 | 1.50 |
| 1 | 1.05 | 2.50 | 3.12 | 0.12 | 1.50 |
| 1 1/4 | 1.66 | 2.88 | 3.50 | 0.25 | 1.50 |
| 1 1/2 | 1.90 | 3.25 | 3.88 | 0.25 | 1.50 |
| 2 | 2.38 | 4.00 | 4.75 | 0.25 | 2.00 |
| 2 1/2 | 2.88 | 4.75 | 5.50 | 0.25 | 2.00 |
| 3 | 3.50 | 5.25 | 6.00 | 0.25 | 2.50 |
| 3 1/2 | 4.00 | 6.25 | 7.00 | 0.38 | 2.50 |
| 4 | 4.50 | 6.75 | 7.50 | 0.38 | 2.50 |
| 5 | 5.56 | 7.62 | 8.50 | 0.38 | 3.00 |
| 6 | 6.62 | 8.62 | 9.50 | 0.50 | 3.00 |
| 8 | 8.62 | 10.88 | 11.75 | 0.50 | 3.00 |
| 10 | 10.75 | 13.25 | 14.25 | 0.62 | 4.00 |
| 12 | 12.75 | 16.00 | 17.00 | 0.75 | 4.00 |
| 14 | 14.00 | 17.62 | 18.75 | 0.75 | 4.25 |
| 16 | 16.00 | 20.12 | 21.25 | 0.88 | 4.25 |
| 18 | 18.00 | 21.50 | 22.75 | 1.00 | 4.50 |
| 20 | 20.00 | 23.75 | 25.00 | 1.12 | 4.75 |
| 24 | 24.00 | 28.12 | 29.50 | 1.25 | 5.50 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 1.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.


Table A-2 Dimensions of Class 300 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B , in. | Outside Diameter, O , in. | Centerline Dimension, A , in. | Thickness, t , in. | Web Width, W , in. |
|-------|----------------------------|-----------------------------|---------------------------------|----------------------|----------------------|
| 1/2 | 0.62 | 2.00 | 2.62 | 0.25 | 1.50 |
| 3/4 | 0.82 | 2.50 | 3.25 | 0.25 | 1.50 |
| 1 | 1.05 | 2.75 | 3.50 | 0.25 | 1.50 |
| 1 1/4 | 1.66 | 3.12 | 3.88 | 0.25 | 1.50 |
| 1 1/2 | 1.90 | 3.62 | 4.50 | 0.25 | 1.50 |
| 2 | 2.38 | 4.25 | 5.00 | 0.38 | 2.00 |
| 2 1/2 | 2.88 | 5.00 | 5.88 | 0.38 | 2.00 |
| 3 | 3.50 | 5.75 | 6.62 | 0.38 | 2.50 |
| 3 1/2 | 4.00 | 6.38 | 7.25 | 0.50 | 2.50 |
| 4 | 4.50 | 7.00 | 7.88 | 0.50 | 2.50 |
| 5 | 5.56 | 8.38 | 9.25 | 0.62 | 3.00 |
| 6 | 6.62 | 9.75 | 10.62 | 0.62 | 3.00 |
| 8 | 8.62 | 12.00 | 13.00 | 0.88 | 3.00 |
| 10 | 10.75 | 14.12 | 15.25 | 1.00 | 4.00 |
| 12 | 12.75 | 16.50 | 17.75 | 1.12 | 4.00 |
| 14 | 14.00 | 19.00 | 20.25 | 1.25 | 4.25 |
| 16 | 16.00 | 21.12 | 22.50 | 1.50 | 4.25 |
| 18 | 18.00 | 23.38 | 24.75 | 1.62 | 4.50 |
| 20 | 20.00 | 25.62 | 27.00 | 1.75 | 4.75 |
| 24 | 24.00 | 30.38 | 32.00 | 2.00 | 5.50 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 2.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.

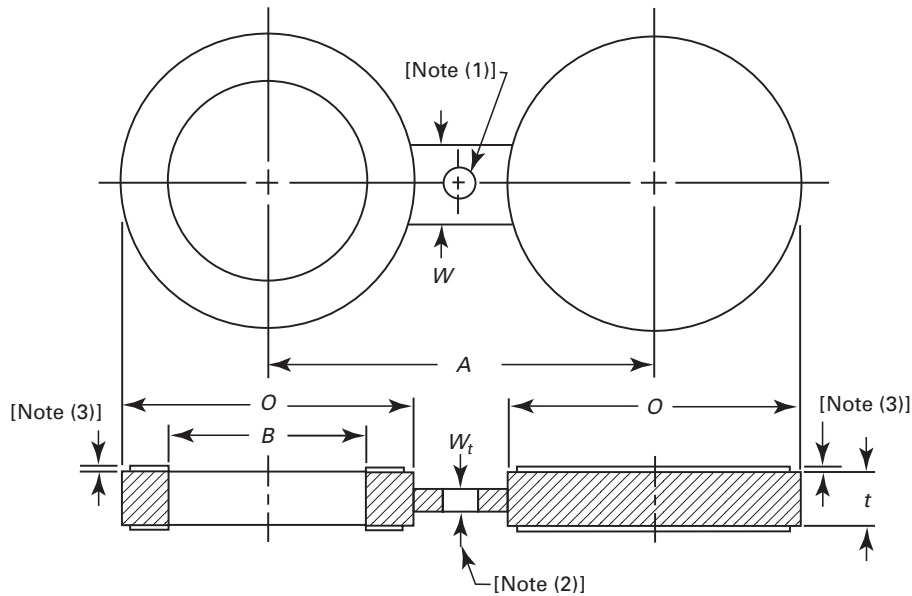


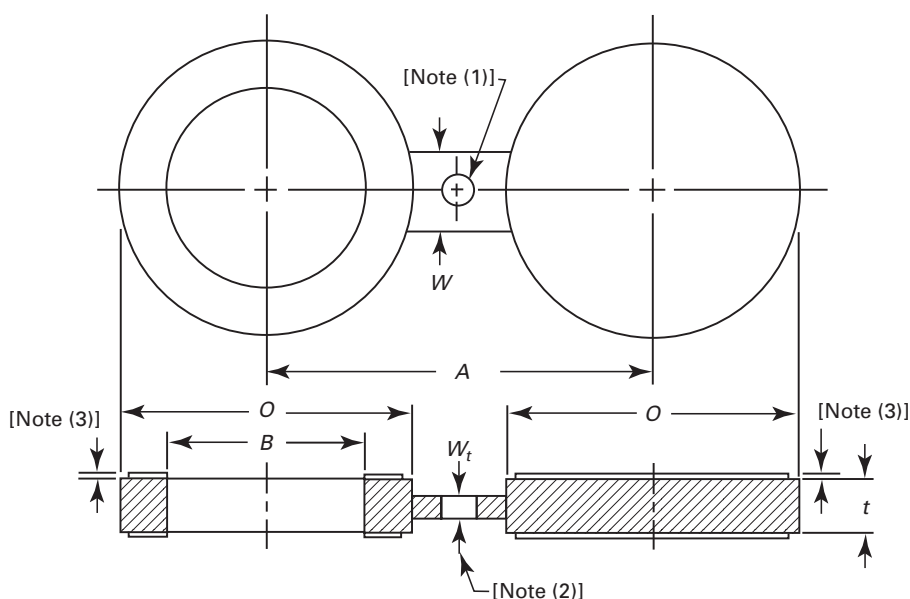
Table A-3 Dimensions of Class 600 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B , in. | Outside Diameter, O , in. | Centerline Dimension, A , in. | Thickness, t , in. | Web Width, W , in. |
|-------|----------------------------|-----------------------------|---------------------------------|----------------------|----------------------|
| 1/2 | 0.62 | 2.00 | 2.62 | 0.25 | 1.50 |
| 3/4 | 0.82 | 2.50 | 3.25 | 0.25 | 1.50 |
| 1 | 1.05 | 2.75 | 3.50 | 0.25 | 2.25 |
| 1 1/4 | 1.44 | 3.12 | 3.88 | 0.38 | 2.25 |
| 1 1/2 | 1.68 | 3.62 | 4.50 | 0.38 | 2.62 |
| 2 | 2.16 | 4.25 | 5.00 | 0.38 | 2.25 |
| 2 1/2 | 2.64 | 5.00 | 5.88 | 0.50 | 2.62 |
| 3 | 3.26 | 5.75 | 6.62 | 0.50 | 2.62 |
| 3 1/2 | 3.76 | 6.25 | 7.25 | 0.62 | 3.00 |
| 4 | 4.26 | 7.50 | 8.50 | 0.62 | 3.00 |
| 5 | 5.30 | 9.38 | 10.50 | 0.75 | 3.38 |
| 6 | 6.36 | 10.38 | 11.50 | 0.88 | 3.38 |
| 8 | 8.33 | 12.50 | 13.75 | 1.12 | 3.75 |
| 10 | 10.42 | 15.62 | 17.00 | 1.38 | 4.12 |
| 12 | 12.39 | 17.88 | 19.25 | 1.62 | 4.12 |
| 14 | 13.62 | 19.25 | 20.75 | 1.75 | 4.50 |
| 16 | 15.62 | 22.12 | 23.75 | 2.00 | 4.88 |
| 18 | 17.62 | 24.00 | 25.75 | 2.12 | 5.25 |
| 20 | 19.56 | 26.75 | 28.50 | 2.50 | 5.25 |
| 24 | 23.50 | 31.00 | 33.00 | 2.88 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 3.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.


Table A-4 Dimensions of Class 900 Raised Face Figure-8 Blanks

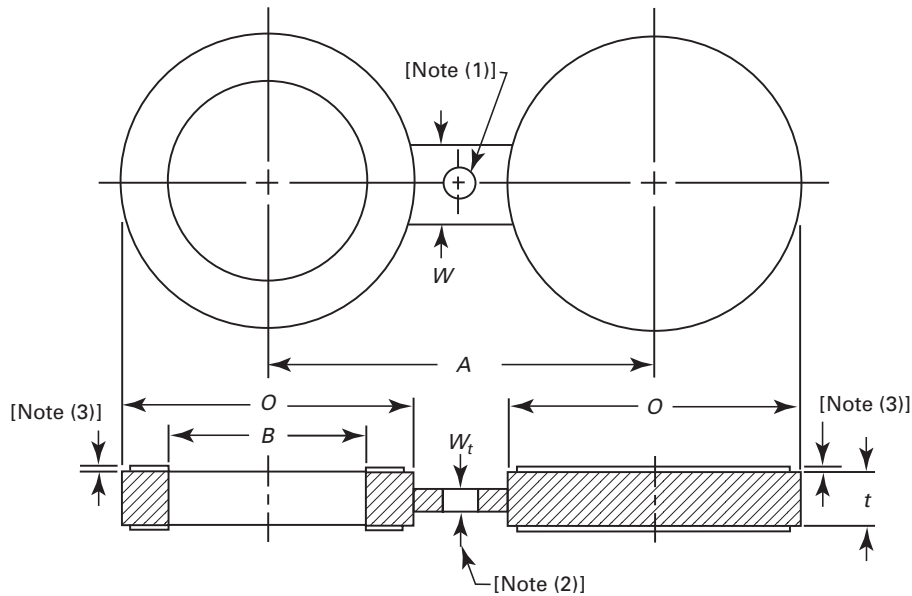
| NPS | Inside Diameter, B , in. | Outside Diameter, O , in. | Centerline Dimension, A , in. | Thickness, t , in. | Web Width, W , in. |
|-------|----------------------------|-----------------------------|---------------------------------|----------------------|----------------------|
| 1/2 | 0.62 | 2.38 | 3.25 | 0.25 | 1.50 |
| 3/4 | 0.82 | 2.62 | 3.50 | 0.25 | 1.62 |
| 1 | 1.05 | 3.00 | 4.00 | 0.25 | 2.25 |
| 1 1/4 | 1.44 | 3.38 | 4.38 | 0.38 | 2.25 |
| 1 1/2 | 1.68 | 3.75 | 4.88 | 0.38 | 2.62 |
| 2 | 2.16 | 5.50 | 6.50 | 0.50 | 2.25 |
| 2 1/2 | 2.64 | 6.38 | 7.50 | 0.50 | 2.62 |
| 3 | 3.26 | 6.50 | 7.50 | 0.62 | 2.62 |
| 4 | 4.26 | 8.00 | 9.25 | 0.75 | 3.00 |
| 5 | 5.30 | 9.62 | 11.00 | 0.88 | 3.38 |
| 6 | 6.36 | 11.25 | 12.50 | 1.00 | 3.38 |
| 8 | 8.33 | 14.00 | 15.50 | 1.38 | 3.75 |
| 10 | 10.42 | 17.00 | 18.50 | 1.62 | 4.12 |
| 12 | 12.39 | 19.50 | 21.00 | 1.88 | 4.12 |
| 14 | 13.62 | 20.38 | 22.00 | 2.12 | 4.50 |
| 16 | 15.62 | 22.50 | 24.25 | 2.38 | 4.88 |
| 18 | 17.62 | 25.00 | 27.00 | 2.62 | 5.25 |
| 20 | 19.56 | 27.38 | 29.50 | 2.88 | 5.25 |
| 24 | 23.50 | 32.88 | 35.50 | 3.50 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 4.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.



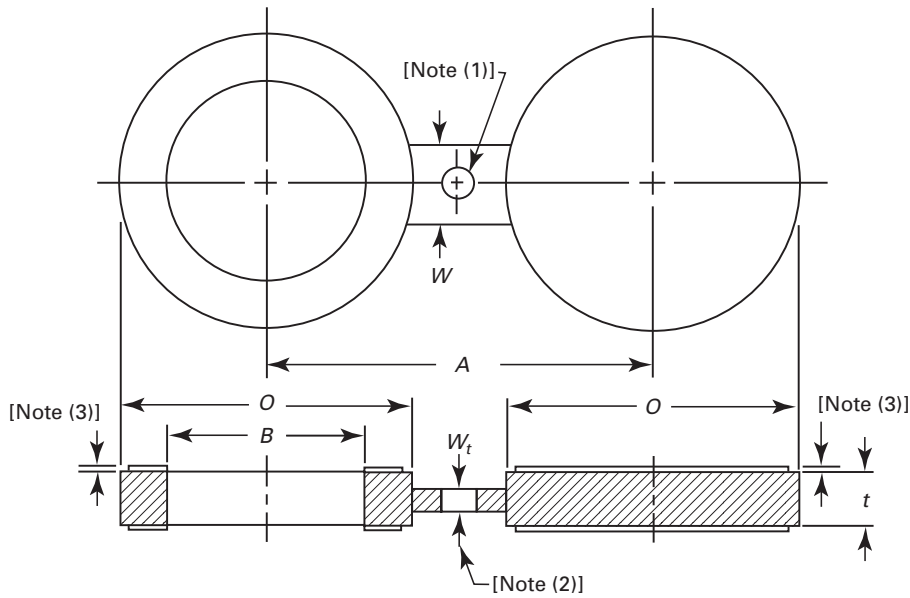

Table A-5 Dimensions of Class 1500 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, <i>B</i> , in. | Outside Diameter, <i>O</i> , in. | Centerline Dimension, <i>A</i> , in. | Thickness, <i>t</i> , in. | Web Width, <i>W</i> , in. |
|-------|---------------------------------|----------------------------------|--------------------------------------|---------------------------|---------------------------|
| 1/2 | 0.62 | 2.38 | 3.25 | 0.25 | 1.50 |
| 3/4 | 0.82 | 2.62 | 3.50 | 0.38 | 1.62 |
| 1 | 1.05 | 3.00 | 4.00 | 0.38 | 2.20 |
| 1 1/4 | 1.38 | 3.38 | 4.38 | 0.38 | 2.50 |
| 1 1/2 | 1.61 | 3.75 | 4.88 | 0.50 | 2.75 |
| 2 | 2.07 | 5.50 | 6.50 | 0.50 | 2.75 |
| 2 1/2 | 2.47 | 6.38 | 7.50 | 0.62 | 3.00 |
| 3 | 3.07 | 6.75 | 8.00 | 0.75 | 3.00 |
| 4 | 4.03 | 8.12 | 9.50 | 0.88 | 3.50 |
| 5 | 5.05 | 9.88 | 11.50 | 1.12 | 3.50 |
| 6 | 6.06 | 11.00 | 12.50 | 1.38 | 3.50 |
| 8 | 7.98 | 13.75 | 15.50 | 1.62 | 4.00 |
| 10 | 10.02 | 17.00 | 19.00 | 2.00 | 4.50 |
| 12 | 11.94 | 20.38 | 22.50 | 2.38 | 4.50 |
| 14 | 13.12 | 22.62 | 25.00 | 2.62 | 5.00 |
| 16 | 15.00 | 25.12 | 27.75 | 3.00 | 5.25 |
| 18 | 16.88 | 27.62 | 30.50 | 3.38 | 5.75 |
| 20 | 18.81 | 29.62 | 32.75 | 3.75 | 6.00 |
| 24 | 22.62 | 35.38 | 39.00 | 4.38 | 7.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 5.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.


Table A-6 Dimensions of Class 2500 Raised Face Figure-8 Blanks

| NPS | Inside Diameter, B , in. | Outside Diameter, O , in. | Centerline Dimension, A , in. | Thickness, t , in. | Web Width, W , in. |
|-------|----------------------------|-----------------------------|---------------------------------|----------------------|----------------------|
| 1/2 | 0.62 | 2.62 | 3.50 | 0.38 | 1.50 |
| 3/4 | 0.82 | 2.88 | 3.75 | 0.38 | 1.62 |
| 1 | 1.05 | 3.25 | 4.25 | 0.38 | 2.50 |
| 1 1/4 | 1.38 | 4.00 | 5.12 | 0.50 | 2.50 |
| 1 1/2 | 1.61 | 4.50 | 5.75 | 0.62 | 2.75 |
| 2 | 2.07 | 5.62 | 6.75 | 0.62 | 2.75 |
| 2 1/2 | 2.47 | 6.50 | 7.75 | 0.75 | 3.00 |
| 3 | 3.07 | 7.62 | 9.00 | 0.88 | 3.00 |
| 4 | 4.03 | 9.12 | 10.75 | 1.12 | 3.50 |
| 5 | 5.05 | 10.88 | 12.75 | 1.38 | 3.50 |
| 6 | 6.06 | 12.38 | 14.50 | 1.62 | 3.50 |
| 8 | 7.81 | 15.12 | 17.25 | 2.12 | 4.00 |
| 10 | 9.75 | 18.62 | 21.25 | 2.62 | 4.50 |
| 12 | 11.37 | 21.50 | 24.38 | 3.12 | 4.50 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 6.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.
- (3) Refer to para. 3.3.1.



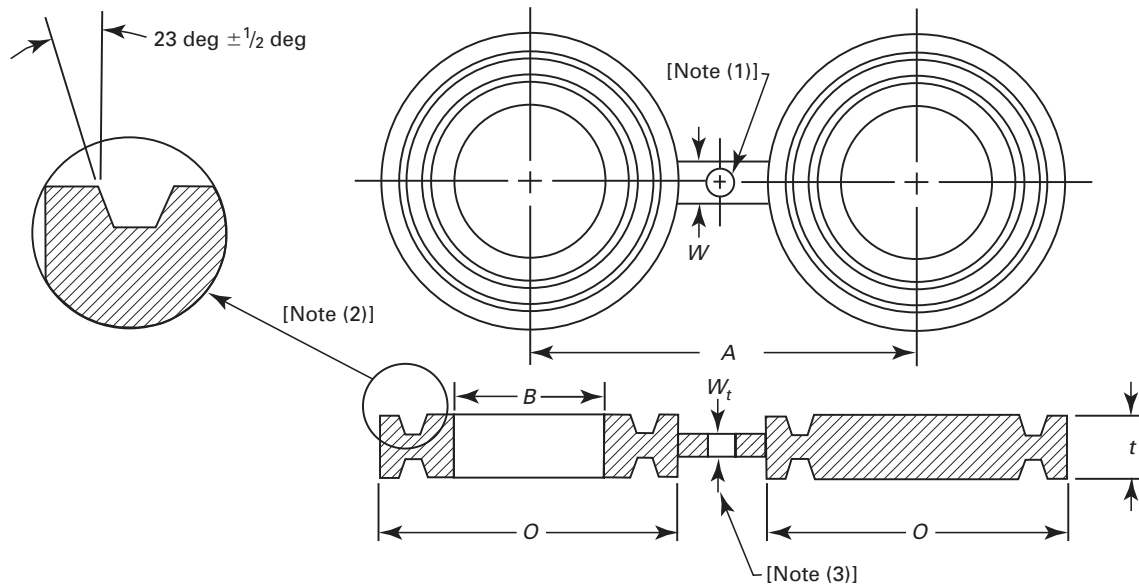


Table A-7 Dimensions of Class 1500 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Outside Diameter, O, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------------------------------|-------------------------|--------------------------|------------------------------|-------------------|-------------------|
| 1 | 1.32 | 2.50 | 3.12 | 0.75 | 2.00 |
| 1 ¹ / ₄ | 1.66 | 2.88 | 3.50 | 0.75 | 2.00 |
| 1 ¹ / ₂ | 1.90 | 3.25 | 3.88 | 0.75 | 2.25 |
| 2 | 2.38 | 4.00 | 4.75 | 0.75 | 2.25 |
| 2 ¹ / ₂ | 2.88 | 4.75 | 5.50 | 0.88 | 2.25 |
| 3 | 3.50 | 5.25 | 6.00 | 0.88 | 2.25 |
| 3 ¹ / ₂ | 4.00 | 6.06 | 7.00 | 0.88 | 2.50 |
| 4 | 4.50 | 6.75 | 7.50 | 0.88 | 2.50 |
| 5 | 5.56 | 7.62 | 8.50 | 1.00 | 2.75 |
| 6 | 6.62 | 8.62 | 9.50 | 1.00 | 3.25 |
| 8 | 8.62 | 10.75 | 11.75 | 1.12 | 3.75 |
| 10 | 10.75 | 13.00 | 14.25 | 1.25 | 4.00 |
| 12 | 12.75 | 16.00 | 17.00 | 1.38 | 4.75 |
| 14 | 14.00 | 16.75 | 18.75 | 1.38 | 5.00 |
| 16 | 16.00 | 19.00 | 21.25 | 1.50 | 5.00 |
| 18 | 18.00 | 21.50 | 22.75 | 1.62 | 5.00 |
| 20 | 20.00 | 23.50 | 25.00 | 1.62 | 5.00 |
| 24 | 24.00 | 28.00 | 29.50 | 1.88 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 7.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

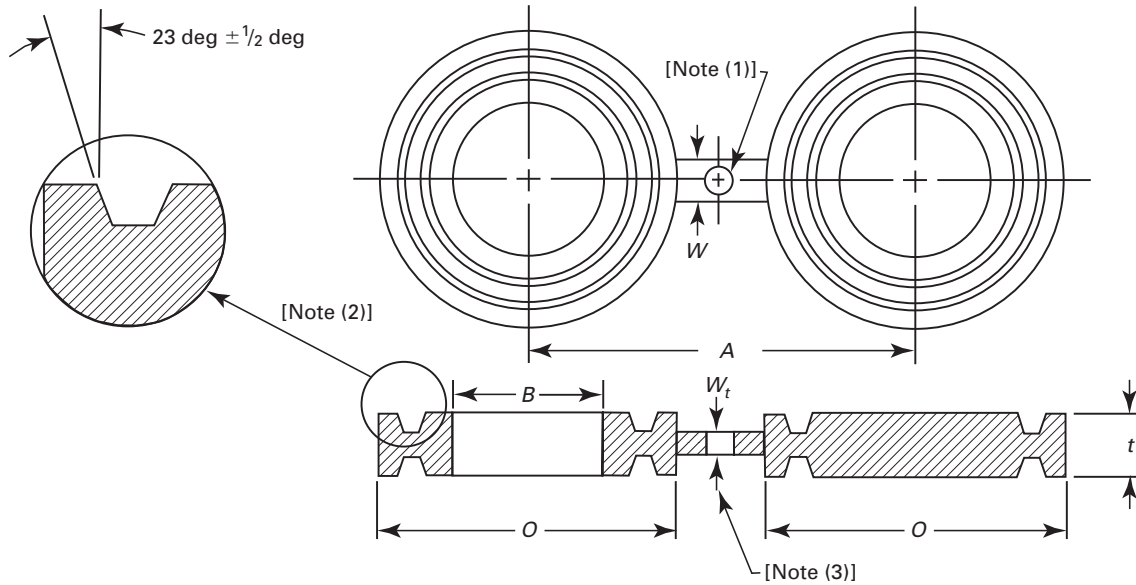


Table A-8 Dimensions of Class 300 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Outside Diameter, O, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|--------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 2.00 | 2.62 | 0.62 | 1.50 |
| 3/4 | 1.05 | 2.50 | 3.25 | 0.75 | 1.75 |
| 1 | 1.32 | 2.75 | 3.50 | 0.75 | 2.00 |
| 1 1/4 | 1.66 | 3.12 | 3.88 | 0.88 | 2.00 |
| 1 1/2 | 1.90 | 3.56 | 4.50 | 0.88 | 2.25 |
| 2 | 2.38 | 4.25 | 5.00 | 1.00 | 2.25 |
| 2 1/2 | 2.88 | 5.00 | 5.88 | 1.12 | 2.25 |
| 3 | 3.50 | 5.75 | 6.62 | 1.12 | 2.25 |
| 3 1/2 | 4.00 | 6.25 | 7.25 | 1.12 | 2.50 |
| 4 | 4.50 | 6.88 | 7.88 | 1.25 | 2.50 |
| 5 | 5.56 | 8.25 | 9.25 | 1.38 | 2.75 |
| 6 | 6.62 | 9.50 | 10.62 | 1.38 | 3.25 |
| 8 | 8.62 | 11.88 | 13.00 | 1.62 | 3.75 |
| 10 | 10.75 | 14.00 | 15.25 | 1.75 | 4.00 |
| 12 | 12.75 | 16.25 | 17.75 | 2.00 | 4.75 |
| 14 | 14.00 | 18.00 | 20.25 | 2.12 | 5.00 |
| 16 | 16.00 | 20.00 | 22.50 | 2.25 | 5.00 |
| 18 | 18.00 | 22.62 | 24.75 | 2.38 | 5.00 |
| 20 | 20.00 | 25.00 | 27.00 | 2.75 | 5.00 |
| 24 | 24.00 | 29.50 | 32.00 | 3.12 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 8.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

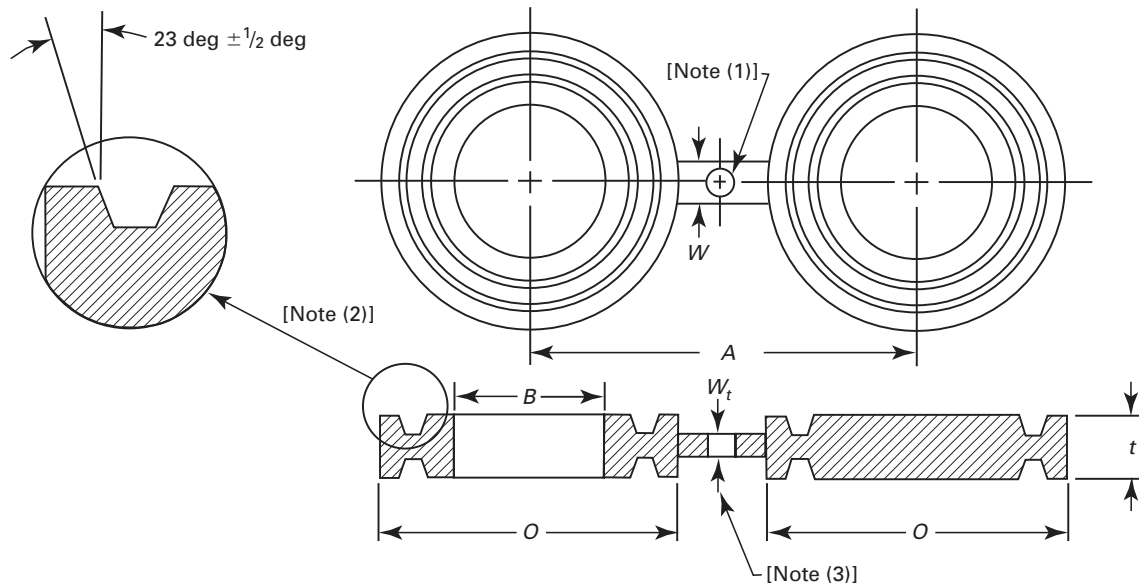


Table A-9 Dimensions of Class 600 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Outside Diameter, O, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|--------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 2.00 | 2.62 | 0.75 | 1.50 |
| 3/4 | 1.05 | 2.50 | 3.25 | 0.88 | 1.75 |
| 1 | 1.32 | 2.75 | 3.50 | 0.88 | 2.00 |
| 1 1/4 | 1.66 | 3.12 | 3.88 | 0.88 | 2.00 |
| 1 1/2 | 1.90 | 3.56 | 4.50 | 0.88 | 2.25 |
| 2 | 2.38 | 4.25 | 5.00 | 1.12 | 2.25 |
| 2 1/2 | 2.88 | 5.00 | 5.88 | 1.25 | 2.25 |
| 3 | 3.50 | 5.75 | 6.62 | 1.25 | 2.25 |
| 3 1/2 | 4.00 | 6.25 | 7.25 | 1.38 | 2.50 |
| 4 | 4.50 | 6.88 | 8.50 | 1.38 | 2.50 |
| 5 | 5.56 | 8.25 | 10.50 | 1.50 | 2.75 |
| 6 | 6.62 | 9.50 | 11.50 | 1.75 | 3.25 |
| 8 | 8.62 | 11.88 | 13.75 | 2.00 | 3.75 |
| 10 | 10.75 | 14.00 | 17.00 | 2.25 | 4.00 |
| 12 | 12.75 | 16.25 | 19.25 | 2.50 | 4.75 |
| 14 | 14.00 | 18.00 | 20.75 | 2.62 | 5.00 |
| 16 | 16.00 | 20.00 | 23.75 | 2.88 | 5.00 |
| 18 | 18.00 | 22.62 | 25.75 | 3.12 | 5.00 |
| 20 | 20.00 | 25.00 | 28.50 | 3.50 | 5.00 |
| 24 | 24.00 | 29.50 | 33.00 | 4.12 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 9.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

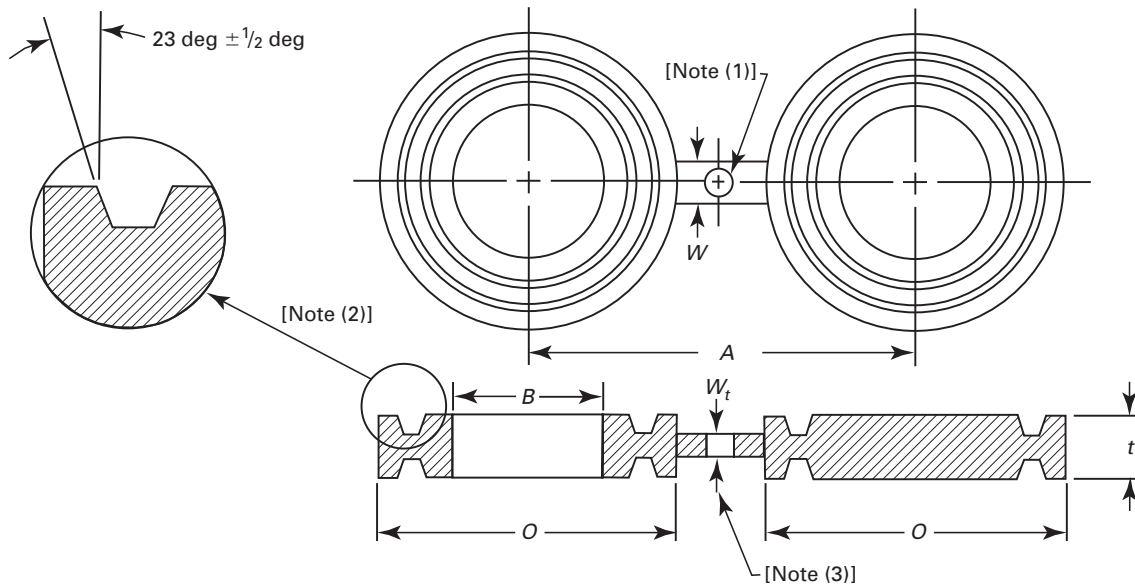


Table A-10 Dimensions of Class 900 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Outside Diameter, O, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|--------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 2.38 | 3.25 | 0.88 | 1.50 |
| 3/4 | 1.05 | 2.62 | 3.50 | 0.88 | 1.75 |
| 1 | 1.32 | 2.81 | 4.00 | 0.88 | 2.00 |
| 1 1/4 | 1.66 | 3.19 | 4.38 | 1.00 | 2.00 |
| 1 1/2 | 1.90 | 3.62 | 4.88 | 1.00 | 2.50 |
| 2 | 2.38 | 4.88 | 6.50 | 1.25 | 2.00 |
| 2 1/2 | 2.88 | 5.38 | 7.50 | 1.38 | 2.62 |
| 3 | 3.50 | 6.12 | 7.50 | 1.38 | 2.62 |
| 4 | 4.50 | 7.12 | 9.25 | 1.62 | 2.88 |
| 5 | 5.56 | 8.50 | 11.00 | 1.75 | 2.88 |
| 6 | 6.62 | 9.50 | 12.50 | 1.88 | 2.88 |
| 8 | 8.62 | 12.12 | 15.50 | 2.25 | 3.12 |
| 10 | 10.75 | 14.25 | 18.50 | 2.50 | 4.75 |
| 12 | 12.75 | 16.50 | 21.00 | 2.88 | 4.75 |
| 14 | 14.00 | 18.38 | 22.00 | 3.25 | 4.75 |
| 16 | 16.00 | 20.62 | 24.25 | 3.62 | 5.00 |
| 18 | 18.00 | 23.38 | 27.00 | 4.00 | 5.25 |
| 20 | 20.00 | 25.50 | 29.50 | 4.38 | 5.00 |
| 24 | 24.00 | 30.38 | 35.50 | 5.25 | 5.50 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 10.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.



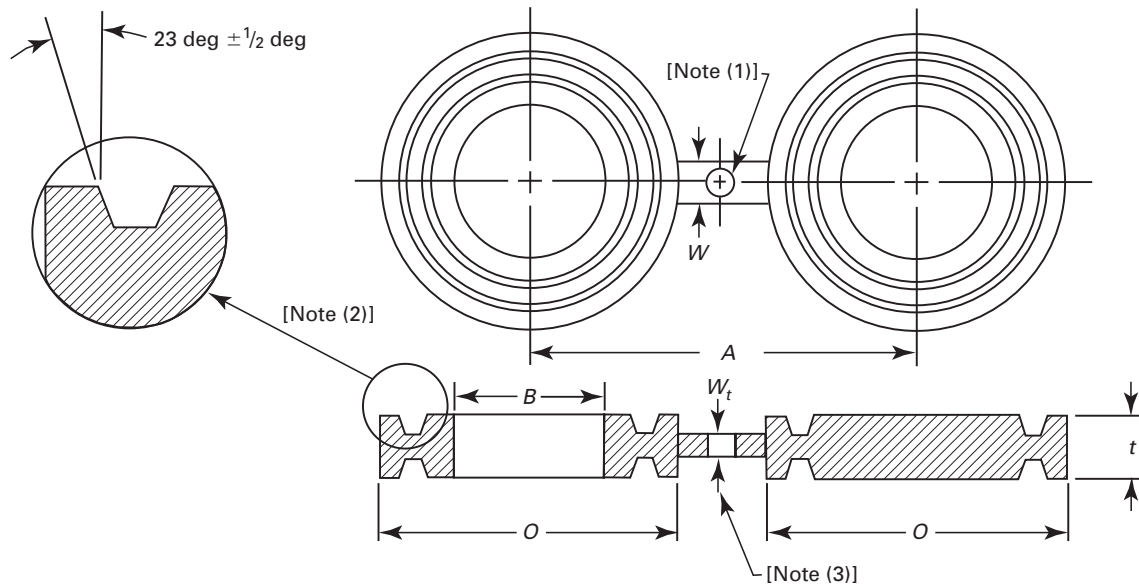


Table A-11 Dimensions of Class 1500 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Outside Diameter, O, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|--------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 2.38 | 3.25 | 0.88 | 1.50 |
| 3/4 | 1.05 | 2.62 | 3.50 | 1.00 | 1.75 |
| 1 | 1.32 | 2.81 | 4.00 | 1.00 | 2.12 |
| 1 1/4 | 1.66 | 3.19 | 4.38 | 1.00 | 2.12 |
| 1 1/2 | 1.90 | 3.62 | 4.88 | 1.12 | 2.25 |
| 2 | 2.38 | 4.88 | 6.50 | 1.38 | 2.12 |
| 2 1/2 | 2.88 | 5.38 | 7.50 | 1.50 | 2.25 |
| 3 | 3.50 | 6.62 | 8.00 | 1.75 | 2.88 |
| 4 | 4.50 | 7.62 | 9.50 | 1.88 | 3.00 |
| 5 | 5.56 | 9.00 | 11.50 | 2.12 | 3.00 |
| 6 | 6.62 | 9.75 | 12.50 | 2.38 | 3.12 |
| 8 | 8.62 | 12.50 | 15.50 | 2.88 | 3.38 |
| 10 | 10.75 | 14.62 | 19.00 | 3.25 | 5.25 |
| 12 | 12.75 | 17.25 | 22.50 | 4.00 | 5.25 |
| 14 | 14.00 | 19.25 | 25.00 | 4.38 | 5.50 |
| 16 | 16.00 | 21.50 | 27.75 | 4.88 | 5.75 |
| 18 | 18.00 | 24.12 | 30.50 | 5.25 | 6.00 |
| 20 | 20.00 | 26.50 | 32.75 | 5.62 | 6.50 |
| 24 | 24.00 | 31.25 | 39.00 | 6.62 | 7.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 11.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

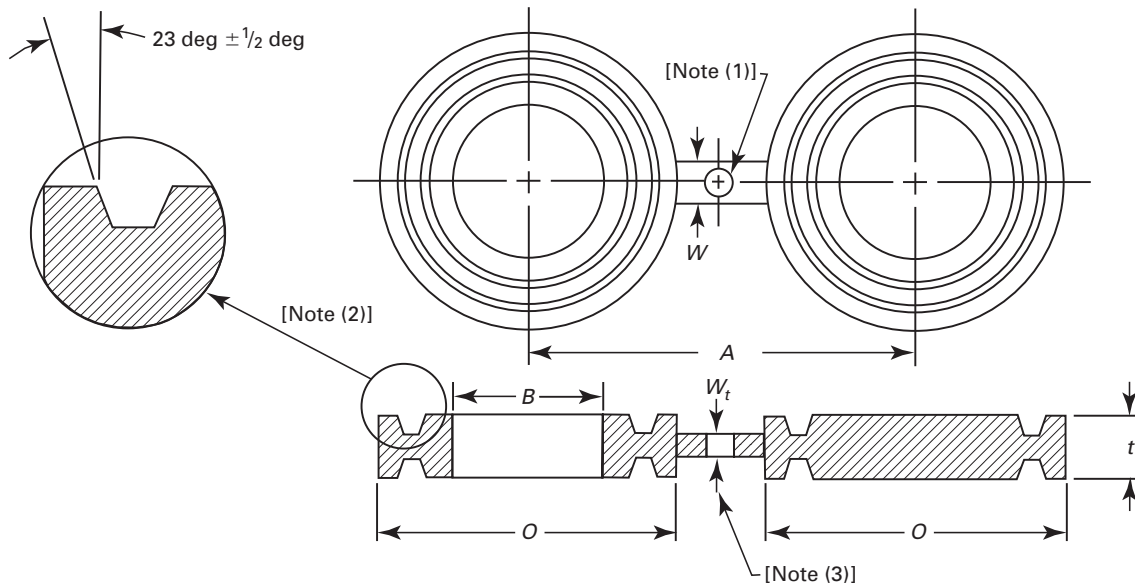


Table A-12 Dimensions of Class 2500 Female Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, <i>B</i> , in. | Outside Diameter, <i>O</i> , in. | Centerline Dimension, <i>A</i> , in. | Thickness, <i>t</i> , in. | Web Width, <i>W</i> , in. |
|-------|---------------------------------|----------------------------------|--------------------------------------|---------------------------|---------------------------|
| 1/2 | 0.84 | 2.56 | 3.50 | 1.00 | 1.50 |
| 3/4 | 1.05 | 2.88 | 3.75 | 1.12 | 1.75 |
| 1 | 1.32 | 3.25 | 4.25 | 1.12 | 2.12 |
| 1 1/4 | 1.66 | 4.00 | 5.12 | 1.38 | 2.12 |
| 1 1/2 | 1.90 | 4.50 | 5.75 | 1.50 | 2.38 |
| 2 | 2.38 | 5.25 | 6.75 | 1.62 | 2.25 |
| 2 1/2 | 2.88 | 5.88 | 7.75 | 1.88 | 2.38 |
| 3 | 3.50 | 6.62 | 9.00 | 2.00 | 3.00 |
| 4 | 4.50 | 8.00 | 10.75 | 2.50 | 3.25 |
| 5 | 5.56 | 9.50 | 12.75 | 2.88 | 3.50 |
| 6 | 6.62 | 11.00 | 14.50 | 3.25 | 3.75 |
| 8 | 8.62 | 13.38 | 17.25 | 3.88 | 3.75 |
| 10 | 10.75 | 16.75 | 21.25 | 4.62 | 3.58 |
| 12 | 12.75 | 19.50 | 24.38 | 5.25 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 12.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

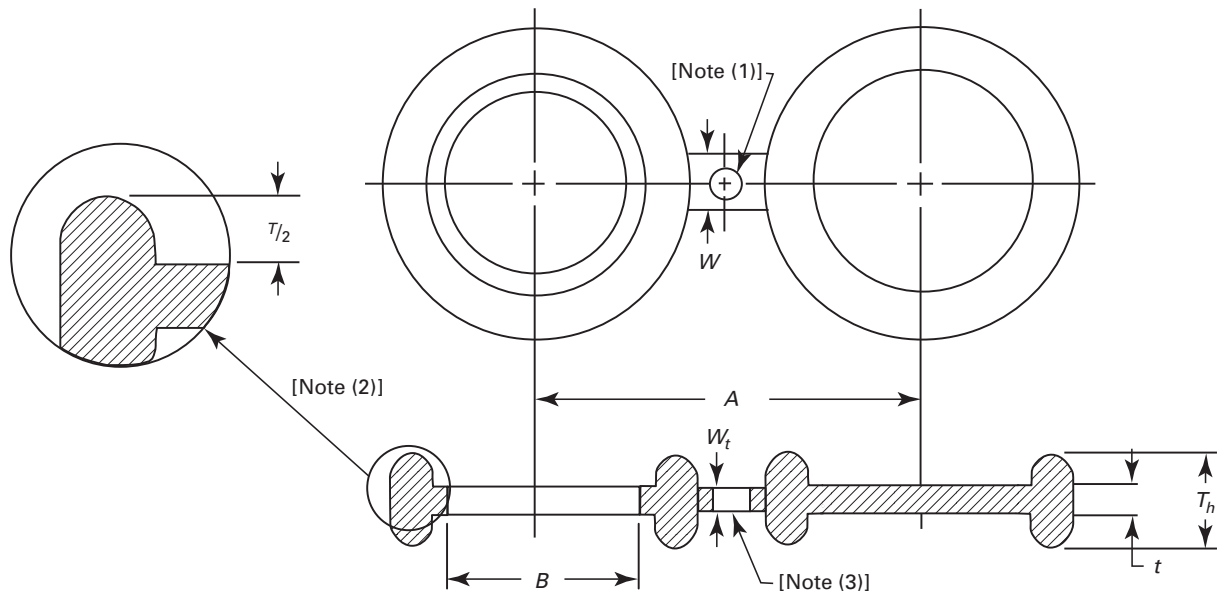


Table A-13 Dimensions of Class 150 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------------------------------|-------------------------|------------------------------|-------------------|-------------------|
| 1 | 1.32 | 3.12 | 0.25 | 2.00 |
| 1 ¹ / ₄ | 1.66 | 3.50 | 0.25 | 2.00 |
| 1 ¹ / ₂ | 1.90 | 3.88 | 0.25 | 2.25 |
| 2 | 2.38 | 4.75 | 0.25 | 2.25 |
| 2 ¹ / ₂ | 2.88 | 5.50 | 0.38 | 2.25 |
| 3 | 3.50 | 6.00 | 0.38 | 2.25 |
| 3 ¹ / ₂ | 4.00 | 7.00 | 0.38 | 2.50 |
| 4 | 4.50 | 7.50 | 0.38 | 2.50 |
| 5 | 5.56 | 8.50 | 0.50 | 3.00 |
| 6 | 6.62 | 9.50 | 0.50 | 3.25 |
| 8 | 8.62 | 11.75 | 0.62 | 3.75 |
| 10 | 10.75 | 14.25 | 0.75 | 4.00 |
| 12 | 12.75 | 17.00 | 0.88 | 4.75 |
| 14 | 14.00 | 18.75 | 0.88 | 5.00 |
| 16 | 16.00 | 21.25 | 1.00 | 5.00 |
| 18 | 18.00 | 22.75 | 1.12 | 5.00 |
| 20 | 20.00 | 25.00 | 1.12 | 5.00 |
| 24 | 24.00 | 29.50 | 1.38 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 13.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W , shall be as determined by para. 3.1.

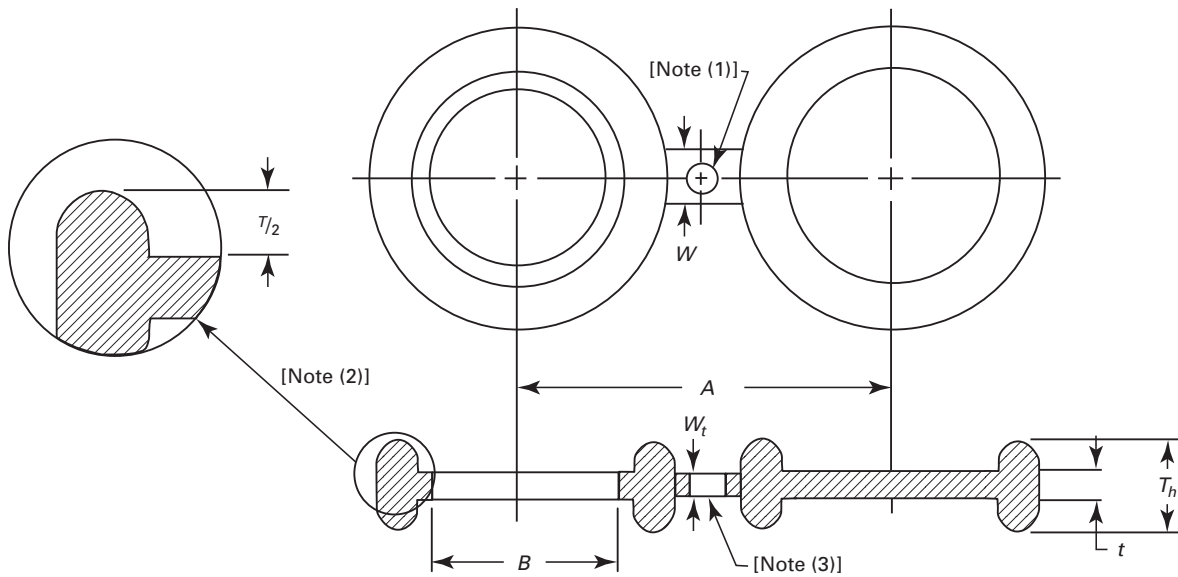


Table A-14 Dimensions of Class 300 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 2.62 | 0.25 | 1.50 |
| 3/4 | 1.05 | 3.25 | 0.38 | 1.75 |
| 1 | 1.32 | 3.50 | 0.38 | 2.00 |
| 1 1/4 | 1.66 | 3.88 | 0.38 | 2.00 |
| 1 1/2 | 1.90 | 4.50 | 0.38 | 2.25 |
| 2 | 2.38 | 5.00 | 0.50 | 2.25 |
| 2 1/2 | 2.88 | 5.88 | 0.62 | 2.25 |
| 3 | 3.50 | 6.62 | 0.62 | 2.25 |
| 3 1/2 | 4.00 | 7.25 | 0.75 | 2.50 |
| 4 | 4.50 | 7.88 | 0.62 | 2.50 |
| 5 | 5.56 | 9.25 | 0.75 | 3.00 |
| 6 | 6.62 | 10.62 | 0.88 | 3.25 |
| 8 | 8.62 | 13.00 | 1.00 | 3.75 |
| 10 | 10.75 | 15.25 | 1.12 | 4.00 |
| 12 | 12.75 | 17.75 | 1.38 | 4.75 |
| 14 | 14.00 | 20.25 | 1.50 | 5.00 |
| 16 | 16.00 | 22.50 | 1.62 | 5.00 |
| 18 | 18.00 | 24.75 | 1.75 | 5.00 |
| 20 | 20.00 | 27.00 | 2.00 | 5.00 |
| 24 | 24.00 | 32.00 | 2.25 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 14.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

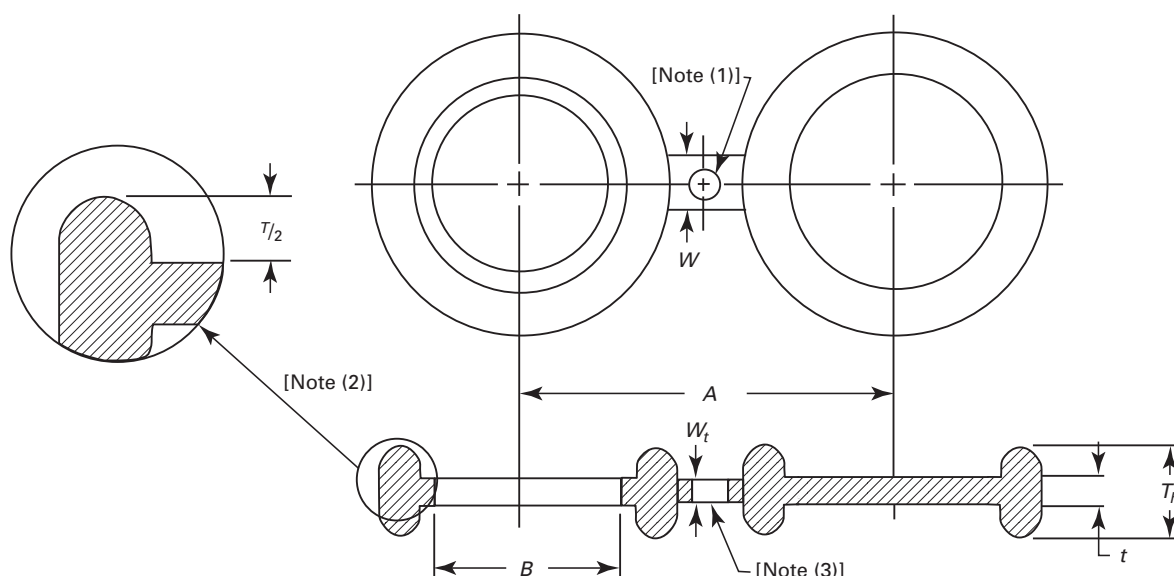


Table A-15 Dimensions of Class 600 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 2.62 | 0.25 | 1.50 |
| 3/4 | 1.05 | 3.25 | 0.38 | 1.75 |
| 1 | 1.32 | 3.50 | 0.38 | 2.00 |
| 1 1/4 | 1.66 | 3.88 | 0.38 | 2.25 |
| 1 1/2 | 1.90 | 4.50 | 0.38 | 2.25 |
| 2 | 2.38 | 5.00 | 0.50 | 2.00 |
| 2 1/2 | 2.88 | 5.88 | 0.62 | 2.25 |
| 3 | 3.50 | 6.62 | 0.62 | 2.62 |
| 3 1/2 | 4.00 | 7.25 | 0.75 | 2.62 |
| 4 | 4.50 | 8.50 | 0.75 | 2.88 |
| 5 | 5.56 | 10.50 | 0.88 | 2.88 |
| 6 | 6.62 | 11.50 | 1.12 | 2.88 |
| 8 | 8.62 | 13.75 | 1.38 | 3.25 |
| 10 | 10.75 | 17.00 | 1.62 | 4.75 |
| 12 | 12.75 | 19.25 | 1.88 | 4.75 |
| 14 | 14.00 | 20.75 | 2.00 | 4.75 |
| 16 | 16.00 | 23.75 | 2.25 | 5.00 |
| 18 | 18.00 | 25.75 | 2.50 | 5.25 |
| 20 | 20.00 | 28.50 | 2.75 | 5.00 |
| 24 | 24.00 | 33.00 | 3.25 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 15.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

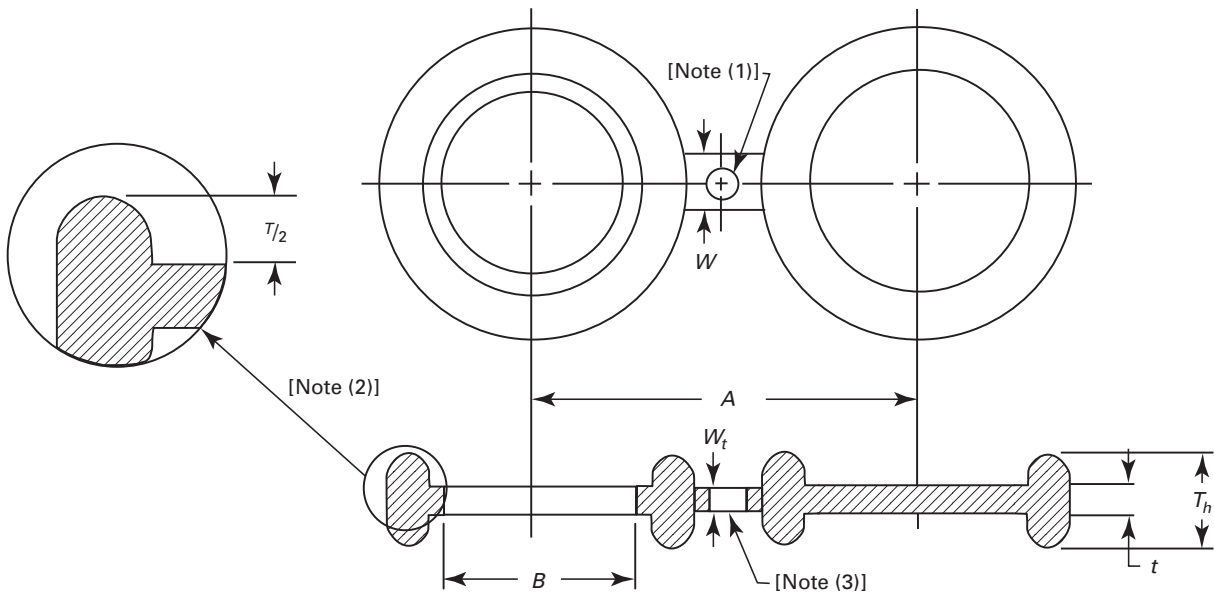


Table A-16 Dimensions of Class 900 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 3.25 | 0.38 | 1.50 |
| 3/4 | 1.05 | 3.50 | 0.38 | 1.75 |
| 1 | 1.32 | 4.00 | 0.38 | 2.00 |
| 1 1/4 | 1.66 | 4.38 | 0.50 | 2.12 |
| 1 1/2 | 1.90 | 4.88 | 0.50 | 2.12 |
| 2 | 2.38 | 6.50 | 0.62 | 2.00 |
| 2 1/2 | 2.88 | 7.50 | 0.75 | 2.12 |
| 3 | 3.50 | 7.50 | 0.75 | 2.62 |
| 4 | 4.50 | 9.25 | 1.00 | 2.88 |
| 5 | 5.56 | 11.00 | 1.12 | 2.88 |
| 6 | 6.62 | 12.50 | 1.25 | 2.88 |
| 8 | 8.62 | 15.50 | 1.62 | 3.12 |
| 10 | 10.75 | 18.50 | 1.88 | 4.75 |
| 12 | 12.75 | 21.00 | 2.25 | 4.75 |
| 14 | 14.00 | 22.00 | 2.38 | 4.75 |
| 16 | 16.00 | 24.25 | 2.75 | 5.00 |
| 18 | 18.00 | 27.00 | 3.00 | 5.25 |
| 20 | 20.00 | 29.50 | 3.38 | 5.00 |
| 24 | 24.00 | 35.50 | 3.88 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 16.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

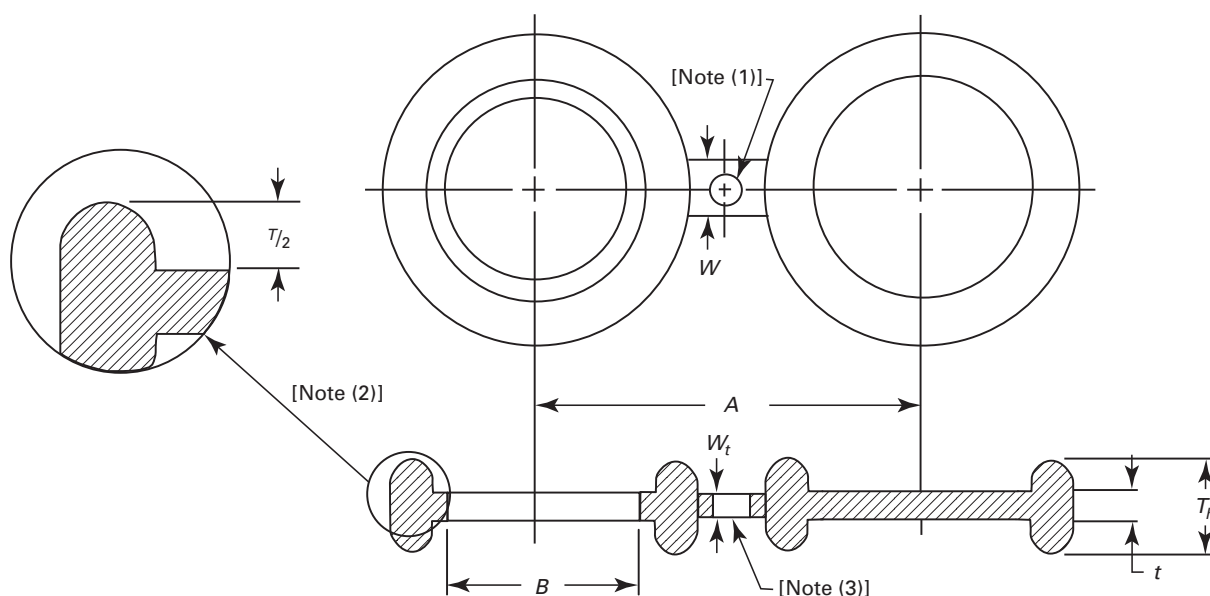


Table A-17 Dimensions of Class 150 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 3.25 | 0.38 | 1.50 |
| 3/4 | 1.05 | 3.50 | 0.38 | 1.75 |
| 1 | 1.32 | 4.00 | 0.50 | 2.12 |
| 1 1/4 | 1.66 | 4.38 | 0.50 | 2.12 |
| 1 1/2 | 1.90 | 4.88 | 0.62 | 2.25 |
| 2 | 2.38 | 6.50 | 0.75 | 2.12 |
| 2 1/2 | 2.88 | 7.50 | 0.88 | 2.25 |
| 3 | 3.50 | 8.00 | 1.12 | 2.88 |
| 4 | 4.50 | 9.50 | 1.25 | 3.00 |
| 5 | 5.56 | 11.50 | 1.50 | 3.00 |
| 6 | 6.62 | 12.50 | 1.62 | 3.12 |
| 8 | 8.62 | 15.50 | 2.00 | 3.38 |
| 10 | 10.75 | 19.00 | 2.50 | 5.25 |
| 12 | 12.75 | 22.50 | 2.88 | 5.25 |
| 14 | 14.00 | 25.00 | 3.12 | 5.50 |
| 16 | 16.00 | 27.75 | 3.50 | 5.75 |
| 18 | 18.00 | 30.50 | 3.88 | 6.00 |
| 20 | 20.00 | 32.75 | 4.25 | 6.50 |
| 24 | 24.00 | 39.00 | 5.00 | 7.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 17.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

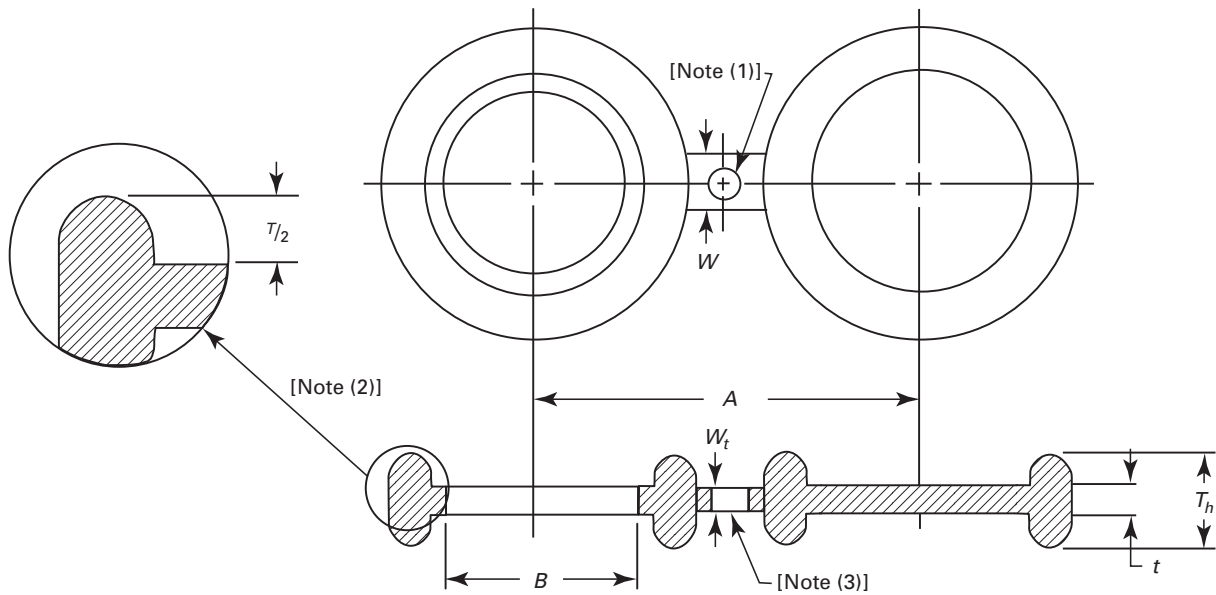


Table A-18 Dimensions of Class 2500 Male Oval Ring-Joint Facing Figure-8 Blanks

| NPS | Inside Diameter, B, in. | Centerline Dimension, A, in. | Thickness, t, in. | Web Width, W, in. |
|-------|-------------------------|------------------------------|-------------------|-------------------|
| 1/2 | 0.84 | 3.50 | 0.50 | 1.62 |
| 3/4 | 1.05 | 3.75 | 0.62 | 1.88 |
| 1 | 1.32 | 4.25 | 0.62 | 2.12 |
| 1 1/4 | 1.66 | 5.12 | 0.75 | 2.12 |
| 1 1/2 | 1.90 | 5.75 | 0.88 | 2.38 |
| 2 | 2.38 | 6.75 | 1.00 | 2.25 |
| 2 1/2 | 2.88 | 7.75 | 1.12 | 2.38 |
| 3 | 3.50 | 9.00 | 1.25 | 3.00 |
| 4 | 4.50 | 10.75 | 1.50 | 3.25 |
| 5 | 5.56 | 12.75 | 1.88 | 3.50 |
| 6 | 6.62 | 14.50 | 2.25 | 3.75 |
| 8 | 8.62 | 17.25 | 2.75 | 3.75 |
| 10 | 10.75 | 21.25 | 3.25 | 3.75 |
| 12 | 12.75 | 24.38 | 3.88 | 6.00 |

GENERAL NOTE: Dimensions are in inches. For millimeter dimensions, refer to corresponding Table 18.

NOTES:

- (1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
- (2) Oval ring-joint dimensions shall be in accordance with ASME B16.20, except $T_h = T + t$, where T is the ring height specified in ASME B16.20.
- (3) The thickness of the web (or tie bar) dimension, W_t , shall be as determined by para. 3.1.

