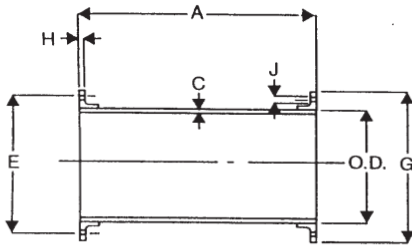
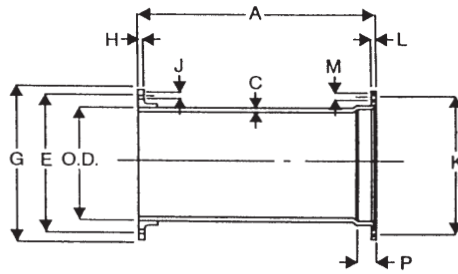


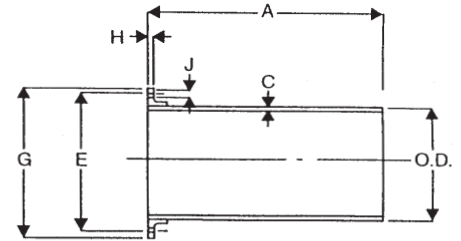
FABRICATED FLANGE PIPES



FLG. x FLG.



FLG. x M.J.



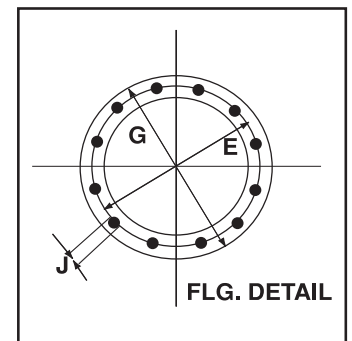
FLG. x P.E.

| SIZE | A | B | C | O.D. | | E | G | H | | NO. OF FLG'D BOLT HOLES | J | K | | L | | NO. OF M.J. BOLT HOLES | M | | P |
|------|---|---|------|-------|-------|-------|-------|------|------|-------------------------|-------|-------|-------|------|------|------------------------|-------|-------|------|
| | | | | MIN. | MAX. | | | MIN. | MAX. | | | MIN. | MAX. | MIN. | MAX. | | | | |
| 3 | • | • | 0.31 | 3.90 | 4.02 | 6.00 | 7.50 | 0.63 | 0.87 | 4 | 0.75 | 6.13 | 6.25 | 0.88 | 0.94 | 4 | 0.75 | 0.81 | 2.50 |
| 4 | A | A | 0.32 | 4.74 | 4.86 | 7.50 | 9.00 | 0.82 | 1.06 | 8 | 0.75 | 7.44 | 7.56 | 0.94 | 1.00 | 4 | 0.875 | 0.935 | 2.50 |
| 6 | S | S | 0.34 | 6.84 | 6.96 | 9.50 | 11.00 | 0.88 | 1.12 | 8 | 0.875 | 9.44 | 9.56 | 1.00 | 1.06 | 6 | 0.875 | 0.935 | 2.50 |
| 8 | • | • | 0.36 | 8.99 | 9.11 | 11.75 | 13.50 | 1.00 | 1.24 | 8 | 0.875 | 11.69 | 11.81 | 1.04 | 1.12 | 6 | 0.875 | 0.935 | 2.50 |
| 10 | • | • | 0.38 | 11.04 | 11.16 | 14.25 | 16.00 | 1.07 | 1.31 | 12 | 1.00 | 13.94 | 14.06 | 1.11 | 1.19 | 8 | 0.875 | 0.935 | 2.50 |
| 12 | R | R | 0.40 | 13.14 | 13.26 | 17.00 | 19.00 | 1.13 | 1.37 | 12 | 1.00 | 16.19 | 16.31 | 1.17 | 1.25 | 8 | 0.875 | 0.935 | 2.50 |
| 14 | E | E | 0.42 | 15.22 | 15.35 | 18.75 | 21.00 | 1.19 | 1.57 | 12 | 1.125 | 18.69 | 18.81 | 1.19 | 1.31 | 10 | 0.875 | 0.935 | 3.50 |
| 16 | Q | Q | 0.43 | 17.32 | 17.45 | 21.25 | 23.50 | 1.25 | 1.63 | 16 | 1.125 | 20.94 | 21.06 | 1.26 | 1.38 | 12 | 0.875 | 0.935 | 3.50 |
| 18 | U | U | 0.44 | 19.42 | 19.55 | 22.75 | 25.00 | 1.37 | 1.75 | 16 | 1.25 | 23.19 | 23.31 | 1.32 | 1.44 | 12 | 0.875 | 0.935 | 3.50 |
| 20 | I | I | 0.45 | 21.52 | 21.65 | 25.00 | 27.50 | 1.50 | 1.88 | 20 | 1.25 | 25.44 | 25.56 | 1.38 | 1.50 | 14 | 0.875 | 0.935 | 3.50 |
| 24 | R | R | 0.47 | 25.72 | 25.85 | 29.50 | 32.00 | 1.69 | 2.07 | 20 | 1.375 | 29.94 | 30.06 | 1.50 | 1.62 | 16 | 0.875 | 0.935 | 3.50 |
| 30 | E | E | 0.51 | 31.94 | 32.08 | 36.00 | 38.75 | 1.87 | 2.37 | 28 | 1.375 | 36.82 | 36.94 | 1.69 | 1.81 | 20 | 1.125 | 1.185 | 4.00 |
| 36 | D | D | 0.58 | 38.24 | 38.38 | 42.75 | 46.00 | 2.13 | 2.63 | 32 | 1.625 | 43.69 | 43.81 | 1.88 | 2.00 | 24 | 1.125 | 1.185 | 4.00 |
| 42 | • | • | 0.65 | 44.44 | 44.58 | 49.50 | 53.00 | 2.37 | 2.87 | 36 | 1.625 | 50.56 | 50.68 | 1.88 | 2.00 | 28 | 1.375 | 1.435 | 4.00 |
| 48 | • | • | 0.72 | 50.74 | 50.88 | 56.00 | 59.50 | 2.50 | 3.00 | 44 | 1.625 | 57.44 | 57.56 | 1.88 | 2.00 | 32 | 1.375 | 1.435 | 4.00 |
| 54 | • | • | 0.81 | 57.40 | 57.64 | 62.75 | 62.75 | 2.75 | 3.25 | 44 | 1.875 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

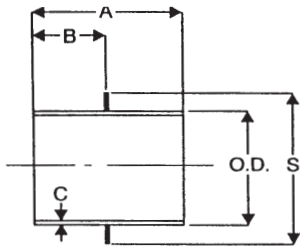
1. Tolerance on length of FLG. x FLG. and FLG. x M.J. pipe shall be $\pm 0.125"$.
2. Tolerance on length of FLG. x P.E. shall be $\pm 0.25"/$
3. Above material shall meet all applicable sections of ANSI A21.10, A21.15, A21.51, B2.1, B16.1/ AWWA, C110, C115, C150, C151, and all revisions thereto.
4. Flanged pipe shall be ductile iron pipe with ductile iron flanges threaded on.
5. Linings, if required, shall be in accordance with ANSI A21.4
6. The mechanical joint bell for 30" & 36" sizes of ductile iron pipe have thicknesses different from those shown in ANSI A21.11, which are based on gray iron pipe. These reduced thicknesses provide a lighter-weight bell which is compatible with the wall thickness of ductile iron pipe.
7. Submitted material only. Consult engineer for application.
8. 250 lb. faced and drilled flanges available upon request.



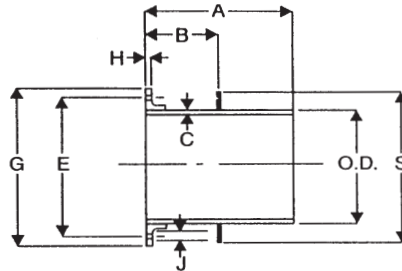
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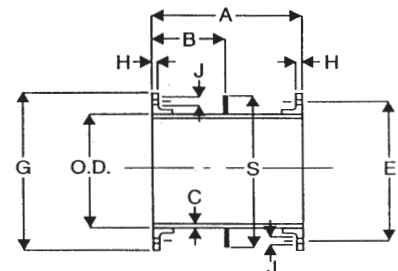
FABRICATED WALL PIPES



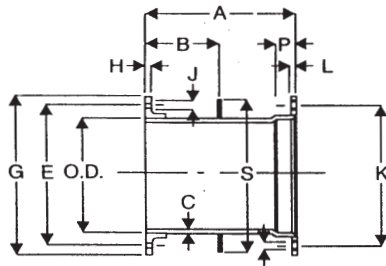
P.E. x P.E.



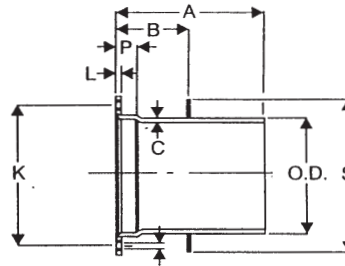
FLG. x P.E.



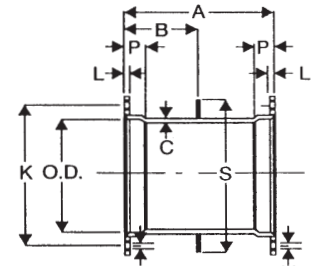
FLG. x FLG.



FLG. x M.J.



M.J. x P.E.



M.J. x M.J.

| SIZE | A | B | C | O.D. | | E | G | H | | NO. OF FLG'D BOLT HOLES | J | K | | L | | NO. OF M.J. BOLT HOLES | M | | P | S |
|------|---|---|------|-------|-------|-------|-------|------|------|-------------------------|-------|-------|-------|------|------|------------------------|-------|-------|------|-------|
| | | | | MIN. | MAX. | | | MIN. | MAX. | | | MIN. | MAX. | MIN. | MAX. | | MIN. | MAX. | | |
| 3 | • | • | 0.31 | 3.90 | 4.02 | 6.00 | 7.50 | 0.63 | 0.87 | 4 | 0.75 | 6.13 | 6.25 | 0.88 | 0.94 | 4 | 0.75 | 0.81 | 2.50 | 6.50 |
| 4 | A | A | 0.32 | 4.74 | 4.86 | 7.50 | 9.00 | 0.82 | 1.06 | 8 | 0.75 | 7.44 | 7.56 | 0.94 | 1.00 | 4 | 0.875 | 0.935 | 2.50 | 7.40 |
| 6 | S | S | 0.34 | 6.84 | 6.96 | 9.50 | 11.00 | 0.88 | 1.12 | 8 | 0.875 | 9.44 | 9.56 | 1.00 | 1.06 | 6 | 0.875 | 0.935 | 2.50 | 9.50 |
| 8 | • | • | 0.36 | 8.99 | 9.11 | 11.75 | 13.50 | 1.00 | 1.24 | 8 | 0.875 | 11.69 | 11.81 | 1.04 | 1.12 | 6 | 0.875 | 0.935 | 2.50 | 12.00 |
| 10 | • | • | 0.38 | 11.04 | 11.16 | 14.25 | 16.00 | 1.07 | 1.31 | 12 | 1.00 | 13.94 | 14.06 | 1.11 | 1.19 | 8 | 0.875 | 0.935 | 2.50 | 14.10 |
| 12 | R | R | 0.40 | 13.14 | 13.26 | 17.00 | 19.00 | 1.13 | 1.37 | 12 | 1.00 | 16.19 | 16.31 | 1.17 | 1.25 | 8 | 0.875 | 0.935 | 2.50 | 16.25 |
| 14 | E | E | 0.42 | 15.22 | 15.35 | 18.75 | 21.00 | 1.19 | 1.57 | 12 | 1.125 | 18.69 | 18.81 | 1.19 | 1.31 | 10 | 0.875 | 0.935 | 3.50 | 18.40 |
| 16 | Q | Q | 0.43 | 17.32 | 17.45 | 21.25 | 23.50 | 1.25 | 1.63 | 16 | 1.125 | 20.94 | 21.06 | 1.26 | 1.38 | 12 | 0.875 | 0.935 | 3.50 | 21.00 |
| 18 | U | U | 0.44 | 19.42 | 19.55 | 22.75 | 25.00 | 1.37 | 1.75 | 16 | 1.25 | 23.19 | 23.31 | 1.32 | 1.44 | 12 | 0.875 | 0.935 | 3.50 | 23.10 |
| 20 | I | I | 0.45 | 21.52 | 21.65 | 25.00 | 27.50 | 1.50 | 1.88 | 20 | 1.25 | 25.44 | 25.56 | 1.38 | 1.50 | 14 | 0.875 | 0.935 | 3.50 | 25.70 |
| 24 | R | R | 0.47 | 25.72 | 25.85 | 29.50 | 32.00 | 1.69 | 2.07 | 20 | 1.375 | 29.94 | 30.06 | 1.50 | 1.62 | 16 | 0.875 | 0.935 | 3.50 | 30.00 |
| 30 | E | E | 0.51 | 31.94 | 32.08 | 36.00 | 38.75 | 1.87 | 2.37 | 28 | 1.375 | 36.82 | 36.94 | 1.69 | 1.81 | 20 | 1.125 | 1.185 | 4.00 | 37.00 |
| 36 | D | D | 0.58 | 38.24 | 38.38 | 42.75 | 46.00 | 2.13 | 2.63 | 32 | 1.625 | 43.69 | 43.81 | 1.88 | 2.00 | 24 | 1.125 | 1.185 | 4.00 | 43.40 |
| 42 | • | • | 0.65 | 44.44 | 44.58 | 49.50 | 53.00 | 2.37 | 2.87 | 36 | 1.625 | 50.56 | 50.68 | 1.88 | 2.00 | 28 | 1.375 | 1.435 | 4.00 | 49.50 |
| 48 | • | • | 0.72 | 50.74 | 50.88 | 56.00 | 59.50 | 2.50 | 3.00 | 44 | 1.625 | 57.44 | 57.56 | 1.88 | 2.00 | 32 | 1.375 | 1.435 | 4.00 | 55.90 |
| 54 | • | • | 0.81 | 57.40 | 57.64 | 62.75 | 62.75 | 2.75 | 3.25 | 44 | 1.875 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 62.70 |

1. Tolerance on length of wall pipes, regardless of end configurations, shall be $\pm 0.0625"$.
2. Tolerance on location of waterstop shall be $\pm 0.25"$.
3. All waterstops shall be welded on in a watertight fashion.
4. All flanges shall be ductile iron and threaded on ductile iron pipe per ANSI A21.15.
5. M.J. x M.J. shall have a ductile iron M.J. bell threaded on ductile iron pipe.
6. Linings, if required, shall be in accordance with ANSI A21.4.
7. Above material shall meet all applicable sections of ANSI A21.10, A21.15, A21.50, A21.51, B2.1, B16.1/ AWWA, C110, C115, C150, C151, and all revisions thereto.
8. Submitted material only. Consult engineer for application.
9. 250 lb. faced and drilled flanges available upon request.



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