# **Anvil® Forged Steel Fittings**

Class 6000 Socket Weld **Fig. 2176** Reducing Couplings **Fig. 2177** Pipe Caps



| Figure 2176           | Size  |                    |      |                 | В              |                | D              |              | _    |                         | J<br>Socket Booth |             |      |      |
|-----------------------|-------|--------------------|------|-----------------|----------------|----------------|----------------|--------------|------|-------------------------|-------------------|-------------|------|------|
| Reducing Couplings    |       | Lowest Reduction S |      | Socket Dia. Bor |                | Bore           | Bore Dia.      |              | Ξ.   | Socket Depth<br>Minimum |                   | Unit Weight |      |      |
|                       | NPS   | DN                 | NPS  | DN              | in             | mm             | in             | mm           | in   | mm                      | in                | mm          | lbs  | kg   |
|                       | 1/2   | 15                 | 1/4  | 8               | .875<br>.855   | 22.2<br>21.8   | .494<br>.434   | 12.5<br>11.0 | 0.38 | 9.5                     | 0.38              | 9.5         | -    | -    |
|                       | 3/4   | 20                 | 3/8  | 10              | 1.085<br>1.065 | 27.6<br>27.2   | .642<br>.582   | 16.3<br>14.8 | 0.38 | 9.5                     | 0.50              | 12.5        | 0.81 | 0.37 |
|                       | 1     | 25                 | 3/8  | 10              | 1.350<br>1.330 | 34.3<br>33.9   | .845<br>.785   | 21.5<br>19.9 | 0.50 | 12.5                    | 0.50              | 12.5        | 1.80 | 0.82 |
|                       | 111/4 | 32                 | 1/2  | 15              | 1.695<br>1.675 | 43.1<br>42.7   | 1.190<br>1.130 | 30.2<br>28.7 | 0.50 | 12.5                    | 0.50              | 12.5        | 2.00 | 0.91 |
|                       | 111/2 | 40                 | 1/2  | 15              | 1.935<br>1.915 | 49.2<br>48.8   | 1.368<br>1.308 | 34.7<br>33.2 | 0.50 | 12.5                    | 0.50              | 12.5        | 3.20 | 1.45 |
|                       | 2     | 50                 | 3/4  | 20              | 2.426<br>2.406 | 61.7<br>61.2   | 1.717<br>1.657 | 43.6<br>42.1 | 0.75 | 19.0                    | 0.62              | 16.0        | 5.40 | 2.45 |
|                       | 21/2  | 65                 | 11/4 | 32              | 2.931<br>2.906 | 74.4<br>73.9   | 2.185<br>2.065 | 55.5<br>52.5 | 0.75 | 19.0                    | 0.62              | 16.0        | _    | _    |
|                       | 3     | 80                 | 11/2 | 40              | 3.560<br>3.535 | 90.3<br>89.8   | 2.684<br>2.564 | 68.2<br>65.1 | 0.75 | 19.0                    | 0.62              | 16.0        | _    | _    |
| l <del>⇔</del> l<br>E | 4     | 100                | 2    | 50              | 4.570<br>4.545 | 115.7<br>115.2 | 3.498<br>3.378 | 88.8<br>85.8 | 0.75 | 19.0                    | 0.75              | 19.0        | _    | _    |

| <b>Figure 2177</b> Pipe Caps | Si    | ize | Socke          |                | (<br>Mini | c<br>mum |      | J<br>: Depth<br>mum | l<br>Mini | K<br>mum | Unit V | Veight |
|------------------------------|-------|-----|----------------|----------------|-----------|----------|------|---------------------|-----------|----------|--------|--------|
|                              | NPS   | DN  | in             | mm             | in        | mm       | in   | mm                  | in        | mm       | lbs    | kg     |
|                              | 1/2   | 15  | .875<br>.855   | 22.2<br>21.8   | 0.204     | 5.18     | 0.38 | 9.5                 | 0.31      | 7.9      | 0.42   | 0.19   |
|                              | 3/4   | 20  | 1.085<br>1.065 | 27.6<br>27.2   | 0.238     | 6.04     | 0.50 | 12.5                | 0.31      | 7.9      | 0.58   | 0.26   |
|                              | 1     | 25  | 1.350<br>1.330 | 34.3<br>33.9   | 0.273     | 6.93     | 0.50 | 12.5                | 0.44      | 11.2     | 1.21   | 0.55   |
|                              | 11/4  | 32  | 1.695<br>1.675 | 43.1<br>42.7   | 0.273     | 6.93     | 0.50 | 12.5                | 0.44      | 11.2     | 1.00   | 0.45   |
|                              | 111/2 | 40  | 1.935<br>1.915 | 49.2<br>48.8   | 0.307     | 7.80     | 0.50 | 12.5                | 0.50      | 12.7     | 2.12   | 0.96   |
|                              | 2     | 50  | 2.426<br>2.406 | 61.7<br>61.2   | 0.374     | 9.50     | 0.62 | 16.0                | 0.62      | 15.7     | 4.87   | 2.21   |
|                              | 21/2  | 65  | 2.931<br>2.906 | 74.4<br>73.9   | 0.41      | 10.41    | 0.62 | 16.0                | 0.75      | 19.0     | _      | _      |
|                              | 3     | 80  | 3.560<br>3.535 | 90.3<br>89.8   | 0.48      | 12.19    | 0.62 | 16.0                | 0.88      | 22.4     | _      | _      |
|                              | 4     | 100 | 4.570<br>4.545 | 115.7<br>115.2 | 0.58      | 14.73    | 0.75 | 19.0                | 1.12      | 28.4     | _      | _      |

**Note:** When the pipe is seated against the bottom of the socket prior to welding, to prevent possible cracking of the fillet welds, it is recommended that the pipe be withdrawn approximately ½ in (1.6mm) away from contact with the bottom of the socket before starting the weld.

Average of socket wall thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

| PROJECT INFORMATION | APPROVAL STAMP    |
|---------------------|-------------------|
| Project:            | Approved          |
| Address:            | Approved as noted |
| Contractor:         | Not approved      |
| Engineer:           | Remarks:          |
| Submittal Date:     |                   |
| Notes 1:            |                   |
| Notes 2:            |                   |

# **Anvil® Forged Steel Fittings**



# **Fig. 2176** Reducing Couplings **Fig. 2177** Pipe Caps



#### **Materials**

The steel for Anvil Forged Carbon Steel Fittings consists of forging, bars, seamless pipe or tubes which conform to the requirements for melting process, chemical composition and mechanical properties of ASTM A105.

#### **Design Basis**

ASME B16.11 - Forged fittings, socket-weld and threaded

### **Dimensions**

ASME B16.11, unless otherwise noted

#### **Threads**

ASME B1.20.1 NPT Threads

## **Forged Steel Fittings**

In accordance with ASME standard B16.11 – "Forged Fittings, Socket–Welding and Threaded" this table shows the schedule of pipe corresponding to each class of fitting for rating purposes.

| Pressure Ratings |                              |  |  |  |  |  |
|------------------|------------------------------|--|--|--|--|--|
| Schedule         |                              |  |  |  |  |  |
| N.P.T.           | S.W.                         |  |  |  |  |  |
| 80               | -                            |  |  |  |  |  |
| 160              | 80                           |  |  |  |  |  |
| XXS/XXH          | 160                          |  |  |  |  |  |
|                  | Sched<br>N.P.T.<br>80<br>160 |  |  |  |  |  |

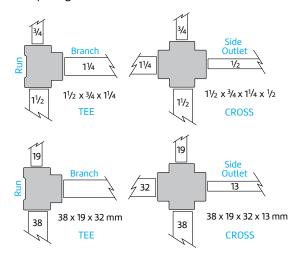
ASME B16.11 provides that the maximum allowable pressure of a fitting be computed in accordance with the applicable piping code or regulation for straight seamless pipe or for material of equivalent composition and mechanical properties to the fitting. Any corrosion or mechanical allowances and any reduction in allowable stress due to temperature or other service conditions must be applied to the pipe and fitting alike.

| Standards and Specifications   |                |                                       |                 |                 |  |  |  |  |  |
|--------------------------------|----------------|---------------------------------------|-----------------|-----------------|--|--|--|--|--|
|                                | Dimensions     | Material                              | Thread          | Pressure Rating |  |  |  |  |  |
| Forged Steel Threaded Fittings |                |                                       |                 |                 |  |  |  |  |  |
| Class 2000,<br>3000, 6000      | ASME<br>B16.11 | ASTM A105,<br>ASTM A182,<br>ASTM A350 | ASME<br>B1.20.1 | ASME B16.11     |  |  |  |  |  |

## **Reducing Fittings**

Reducing elbows, tees and crosses are available in both threaded and socket-welding.

On reducing tees and crosses give the size of the largest run opening; then give the opposite opening. On a tee give the branch size last. On a cross give the largest side outlet third and the opposite opening last.





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