



FORGED PIPE FITTINGS

Literature



Introduction:



Figure 1 Forged Pipe Fittings

Forged Pipe Fittings (Socket Weld and Threaded) are made in accordance to ASME (American Society of Mechanical Engineers) B16.11, MSS-SP-79\ 83\ 95\97 and BS3799 standards, and are used to connect nominal bore schedule pipes and pipelines. (See Figure 1). The applications range from chemical, petrochemical, power generation and OEM manufacturing industry as well other applications where vibration, high pressure or extremely corrosive conditions exist.

Material:

Forged pipe fittings are generally available in two materials: Carbon Steel (ASTM A105 material spec), and Stainless Steel SS316 (ASTM A182 material spec). The surface of carbon steel A105 forged pipe fittings may be further reinforced against corrosion through galvanizing. This is an optional add-on which customers may include at an additional cost.

Pressure Rating and Size Range:

Fittings come in a variety of classes and material grades for any application. The fittings are available in class 3,000 and 6,000. (See Figure 2). Although class 2,000 and 9,000 fittings exist, these are rarely used and class 3,000 and 6,000 remain the more common class of fittings used. Sizes of forged fittings typically range from 1/8” to 4”. And reducing sizes are available for common parts like couplings, tees, hex bushings and nipples.



Figure 2 Class 3000 vs 6000 Fittings

Connection Types:

Class 3,000 and 6,000 forged pipe fittings come in two types of connection: Socket Weld, or Threaded. NPT (National Pipe Thread) is the most common thread type although BSPP (British Standard Pipe Parallel thread) is also available for certain parts like Full Couplings, Hex Bushings and Hex Nipples. Socket weld connection is significantly more popular than threaded since most applications call for completely sealing off a line and eliminating all possibility of leakage.

The fittings are normally produced with the same connection for all sides of the same fitting. That means, a socket weld fitting will have socket weld connection on all sides. Should different connection ends be required, additional machining could be possible but at a higher cost and a longer lead time. i.e. Socket weld x Socket weld x NPT Tee.



Figure 3 S/W x S/W x NPT TEE

Brands of Forged Fittings:

A highly recommended manufacturer for forged fittings is Both-Well Steel Fittings Co., Ltd. Both-Well Steel Fittings Co., Ltd was established in 1985 in Taiwan, and has been well-recognized among customers worldwide for excellence in its quality and services. Both-Well Quality Management System has been certified with ISO 9001:2000, PED, together with all major internationally-recognized certificates and also being listed on the Approval Supplier List of major domestic refineries, petro-chemical factories in Taiwan.



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