# Forged Fittings & Instrumentation Tubing Handbook

BRONZE FARTAK INDUSTRIAL VALVE & PIPING SOLUTIONS

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**Design Standard: ASME B16.11 / MSS SP-97 / ASTM A269**

Quality Verification: Certified 100% Hydrostatic & Pneumatic Tested under API 598 / ISO 5208

## 1. OVERVIEW & SCOPE

Practical engineering handbook for piping engineers, outlining thread compatibility (NPT/BSPP), pressure derating at elevated temperatures, and tube bending radii.

## 2. TECHNICAL SPECIFICATIONS & DESIGN PARAMETERS

| PARAMETER / CHARACTERISTIC | ENGINEERING VALUE / STANDARD RATING |
|---|---|
| **Fittings Covered** | Elbows 90/45, Tees, Reducers, Unions, Olets, Couplings |
| **Tubing Sizes** | Metric 6mm-38mm and Imperial 1/8 to 1-1/2 inch |
| **Recommended Ferrule Torque** | 1-1/4 turns past finger-tight (Standard Double Ferrule) |
| **Safety Factor** | Minimum 4:1 Proof Pressure over Working Rating |
| **Applicable Media** | Hydraulic Oils, Sour Gas, Seawater, High Pressure Steam |
| **Storage & Handling** | End-capped and poly-bagged to maintain clean room standard |

## 3. QUALITY ASSURANCE & INSPECTION CRITERIA

**[+] Step-by-Step Installation Guide**

Clear illustrations instruct field technicians on correct tube pre-swaging and gauge checks.

**[+] Temperature Derating Tables**

Accurate reduction multipliers for copper-nickel and stainless alloys up to 400 deg C.

**[+] Vibration & Shock Dampening**

Specially engineered geometry eliminates stress concentrations at ferrule bite edges.