

### GENERAL

The Caproco standard high pressure access fitting provides access to systems under full operating conditions (up to 6,000 psi / 41.4 Mpa), eliminating any need for system shut-down in order to obtain vital corrosion data. Certain models are rated up to 10,000 psi / 68.9 Mpa.

This versatile fitting comes in different mounting configurations, allowing operators the flexibility to select the optimum location based on the type of monitoring desired and any location-specific characteristics (such as height clearance) that need to be taken into consideration.

The tee access fitting body along with the solid plug assembly and injection sampling nut comprise the Caproco high pressure injection/sampling system. The tee design enables a product to be injected into the system, either continuously or intermittently, and allows the operator to take fluid samples.

### APPLICATION

Once the fitting is attached to the line, it acts as the conduit through which hot tapping and swabbing can take place. After the line is successfully "tapped in", monitoring equipment can be exposed to the process stream by using the Caproco Retriever and Service Valve to install either a Solid or Hollow plug, to which monitoring equipment can be attached. Once installed, the plug seals off the fitting, thereby maintaining line integrity.

The tee on the access fitting usually has NPT threads so that a nipple and shut off valve may be attached. Other options of tee connections, such as butt weld, socket weld or flanged are also available.

When required, the tee on the access fitting body may be sealed off with a pipe plug. The fitting will then act as a standard non-tee fitting, permitting the use of corrosion coupons, hydrogen probes or electronic probes. If the tee is sealed with a pipe plug, the tee outlet cannot be used again until the system has been depressurized.

The height of the access fitting body is increased to accommodate the tee, and should be taken into account when calculating the length of the injection/sampling tube or insert.

The Caproco access fitting is available in seven main body shapes:

- Flareweld
- Butt weld
- Socketweld
- NPT
- Flanged
- "L" Trap
- Cross Trap

Fittings can be located anywhere on-line that local operating conditions permit. Trap fittings are typically mounted underneath the line and gather samples of the liquids and residues that exist along the line bottom. Monitoring through traps simulates the corrosive conditions of stagnant locations that may exist in the line.



FLAREWELD WITH  
1" BUTTWELD TEE



FLAREWELD WITH  
1/2" NPT TEE

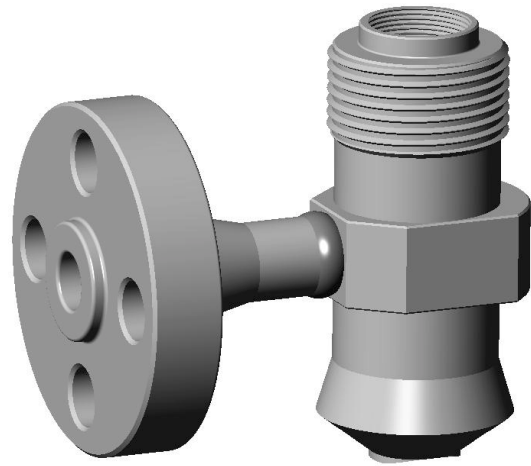


FLAREWELD WITH  
1/2" SOCKETWELD TEE

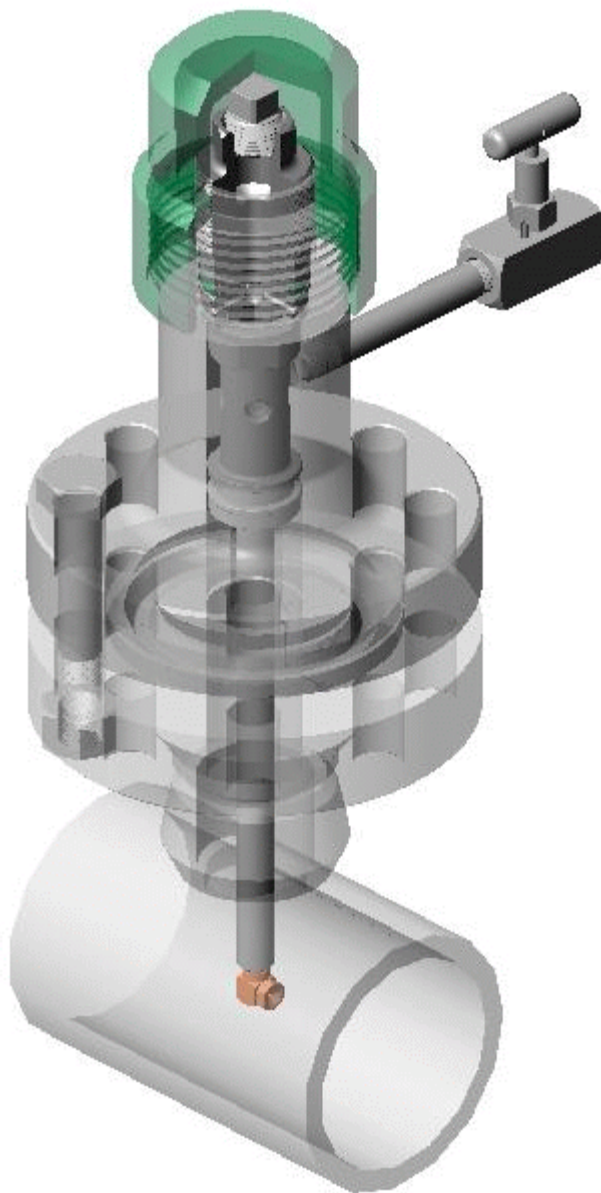
**SPECIFICATIONS**

The Buttweld, Socketweld, Flareweld and NPT Access fitting bodies are manufactured from 1020 hot rolled bar stock or from A350LF2/A105N forged bar. Flanged fittings are manufactured from long weldneck forgings. Alternative materials and sizes are available upon request.

All welds are stress relieved and inspected according to prevailing relevant codes.



**Flareweld Access Fitting with Flanged Tee**



**TABLE 1 - 1/4 INCH TEE ACCESS FITTING ASSEMBLIES FOR SERVICE BELOW -20 °F (-28.9 °C)**

| Body Style /<br>Line Size | Part No. | Material           | Height  |       | Weight |      | Max. Working Pressure |                |
|---------------------------|----------|--------------------|---------|-------|--------|------|-----------------------|----------------|
|                           |          |                    | (in)    | (mm)  | (lb)   | (kg) | (psi)                 | (MPa)          |
| <b>Flareweld</b>          |          |                    |         |       |        |      |                       |                |
| 2x2                       | 10047    | ASTM-A350LF2/A105N | 6.25    | 159   | 7      | 3.2  | 6000                  | 41.36          |
| 3x2                       | 10048    | ASTM-A350LF2/A105N | 6.25    | 159   | 7      | 3.2  | 6000                  | 41.36          |
| 4x2                       | 10049    | ASTM-A350LF2/A105N | 6.25    | 159   | 7      | 3.2  | 6000                  | 41.36          |
| 6x2                       | 10050    | ASTM-A350LF2/A105N | 6.25    | 159   | 7      | 3.2  | 6000                  | 41.36          |
| 10-8x2                    | 10051    | ASTM-A350LF2/A105N | 6.25    | 159   | 7      | 3.2  | 6000                  | 41.36          |
| 18-12x2                   | 10052    | ASTM-A350LF2/A105N | 6.25    | 159   | 7      | 3.2  | 6000                  | 41.36          |
| 36-20x2                   | 10053    | ASTM-A350LF2/A105N | 6.25    | 159   | 7      | 3.2  | 6000                  | 41.36          |
| Flatx2                    | 10054    | ASTM-A350LF2/A105N | 6.25    | 159   | 7      | 3.2  | 6000                  | 41.36          |
| <b>Buttweld Flat</b>      | 10055    | ASTM-A350LF2/A105N | 6.25    | 159   | 6.5    | 3.0  | 6000                  | 41.36          |
| <b>Socketweld</b>         | 10056    | ASTM-A350LF2/A105N | 5.875** | 149** | 6.25   | 2.8  | 3600/ 6000 †          | 20.68/ 41.36 † |
| <b>NPT</b>                | 10057    | ASTM-A350LF2/A105N | 6.00**  | 152** | 6.25   | 2.8  | 3600/ 6000 †          | 20.68/ 41.36 † |
| <b>Flanged (ANSI)</b>     |          |                    |         |       |        |      |                       |                |
| 2 " 150 # R.F.            | 11538    | ASTM-A350LF2/A105N | 7.50    | 190   | 15     | 6.8  | 260*                  | 1.79*          |
| 2 " 300 # R.F.            | 11539    | ASTM-A350LF2/A105N | 7.50    | 190   | 22     | 10.0 | 675*                  | 4.65*          |
| 2 " 4 / 600 # R.F.        | 11540    | ASTM-A350LF2/A105N | 7.50    | 190   | 24     | 10.9 | 900 / 1350*           | 6.20 / 9.31*   |
| 2 " 9 / 1500 # R.F.       | 11541    | ASTM-A350LF2/A105N | 9.00    | 228   | 35     | 15.9 | 2025 / 3375*          | 13.96/ 23.27*  |
| 2 " 2500 # R.F.           | 11542    | ASTM-A350LF2/A105N | 9.50    | 241   | 48     | 21.8 | 5625*                 | 38.78*         |
| 2 " 150 # R.J.            | 11543    | ASTM-A350LF2/A105N | 7.50    | 190   | 15     | 6.8  | 260*                  | 1.79*          |
| 2 " 300 # R.J.            | 11544    | ASTM-A350LF2/A105N | 7.50    | 190   | 22     | 10.0 | 675*                  | 4.65*          |
| 2 " 4 / 600 # R.J.        | 11545    | ASTM-A350LF2/A105N | 7.50    | 190   | 24     | 10.9 | 900 / 1350*           | 6.20 / 9.31*   |
| 2 " 9 / 1500 # R.J.       | 11546    | ASTM-A350LF2/A105N | 9.00    | 228   | 35     | 15.9 | 2025 / 3375*          | 13.96/ 23.27*  |
| 2 " 2500 # R.J.           | 11547    | ASTM-A350LF2/A105N | 9.50    | 241   | 48     | 21.8 | 5625*                 | 38.78*         |
| <b>Flanged (API)</b>      |          |                    |         |       |        |      |                       |                |
| 2 " 2000 # R.J.           | 11548    | AISI-4130          | 8.50    | 216   | 27     | 12.2 | 2000                  | 13.79          |
| 2 " 3 / 5000 # R.J.       | 10049    | AISI-4130          | 9.25    | 235   | 40     | 18.1 | 3000 / 5000           | 20.68 / 34.47  |
| 2 " 10000 # R.J.          | 10050    | AISI-4130          | 9.25    | 235   | 40     | 18.1 | 10000                 | 68.94          |

Table 1 Not to be used above 650 °F, 340 °C

**Table Legend**

- \* For Water, Oil, Gas at 200 °F (93 °C)
- \*\* Height for fitting body only
- † Pressure rating for socket weld and NPT fittings are rated to that of the weld-o-let or thread-o-let; either 3000# or 6000#

**Additional Height of Socketweld / NPT Fitting When Assembled With Sock-o-let / Thread-o-let**

|            | 3000 # |       | 6000 # |       |
|------------|--------|-------|--------|-------|
| Socketweld | 0.87 " | 22 mm | 1.25 " | 32 mm |
| NPT        | 0.80 " | 20 mm | 1.37 " | 35 mm |

**TABLE 2 - 1/2 INCH TEE ACCESS FITTING ASSEMBLIES FOR SERVICE BELOW -20 °F (-28.9 °C)**

| Body Style /<br>Line Size | Part No. | Material           | Height |       | Weight |      | Max. Working Pressure |                |
|---------------------------|----------|--------------------|--------|-------|--------|------|-----------------------|----------------|
|                           |          |                    | (in)   | (mm)  | (lb)   | (kg) | (psi)                 | (MPa)          |
| <b>Flareweld</b>          |          |                    |        |       |        |      |                       |                |
| 2x2                       | 10082    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.25   | 3.7  | 6000                  | 41.36          |
| 3x2                       | 10083    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.25   | 3.7  | 6000                  | 41.36          |
| 4x2                       | 10084    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.25   | 3.7  | 6000                  | 41.36          |
| 6x2                       | 10085    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.25   | 3.7  | 6000                  | 41.36          |
| 10-8x2                    | 10086    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.25   | 3.7  | 6000                  | 41.36          |
| 18-12x2                   | 10087    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.25   | 3.7  | 6000                  | 41.36          |
| 36-20x2                   | 10088    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.25   | 3.7  | 6000                  | 41.36          |
| Flatx2                    | 10089    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.25   | 3.7  | 6000                  | 41.36          |
| <b>Buttweld Flat</b>      | 10090    | ASTM-A350LF2/A105N | 6.25   | 159   | 7.75   | 3.5  | 6000                  | 41.36          |
| <b>Socketweld</b>         | 10091    | ASTM-A350LF2/A105N | 6.25** | 159** | 7.75   | 3.5  | 3600/ 6000 †          | 20.68/ 41.36 † |
| <b>NPT</b>                | 10092    | ASTM-A350LF2/A105N | 6.25** | 159** | 7.75   | 3.5  | 3600/ 6000 †          | 20.68/ 41.36 † |
| <b>Flanged (ANSI)</b>     |          |                    |        |       |        |      |                       |                |
| 2 " 150 # R.F.            | 11551    | ASTM-A350LF2/A105N | 7.50   | 190   | 15     | 6.8  | 260*                  | 1.79*          |
| 2 " 300 # R.F.            | 11552    | ASTM-A350LF2/A105N | 7.50   | 190   | 22     | 10.0 | 675*                  | 4.65*          |
| 2 " 4 / 600 # R.F.        | 11553    | ASTM-A350LF2/A105N | 7.50   | 190   | 24     | 10.9 | 900 / 1350*           | 6.20 / 9.31*   |
| 2 " 9 / 1500 # R.F.       | 11554    | ASTM-A350LF2/A105N | 9.00   | 228   | 35     | 15.9 | 2025 / 3375*          | 13.96/ 23.27*  |
| 2 " 2500 # R.F.           | 11555    | ASTM-A350LF2/A105N | 9.50   | 241   | 48     | 21.8 | 5625*                 | 38.78*         |
| 2 " 150 # R.J.            | 11556    | ASTM-A350LF2/A105N | 7.50   | 190   | 15     | 6.8  | 260*                  | 1.79*          |
| 2 " 300 # R.J.            | 11557    | ASTM-A350LF2/A105N | 7.50   | 190   | 22     | 10.0 | 675*                  | 4.65*          |
| 2 " 4 / 600 # R.J.        | 11558    | ASTM-A350LF2/A105N | 7.50   | 190   | 24     | 10.9 | 900 / 1350*           | 6.20 / 9.31*   |
| 2 " 9 / 1500 # R.J.       | 11559    | ASTM-A350LF2/A105N | 9.00   | 228   | 35     | 15.9 | 2025 / 3375*          | 13.96/ 23.27*  |
| 2 " 2500 # R.J.           | 11560    | ASTM-A350LF2/A105N | 9.50   | 241   | 48     | 21.8 | 5625*                 | 38.78*         |
| <b>Flanged (API)</b>      |          |                    |        |       |        |      |                       |                |
| 2 " 2000 # R.J.           | 11561    | AISI-4130          | 8.50   | 216   | 27     | 12.2 | 2000                  | 13.79          |
| 2 " 3 / 5000 # R.J.       | 11562    | AISI-4130          | 9.25   | 235   | 40     | 18.1 | 3000 / 5000           | 20.68 / 34.47  |
| 2 " 10000 # R.J.          | 11563    | AISI-4130          | 9.25   | 235   | 40     | 18.1 | 10000                 | 68.94          |

Table 2 Not to be used above 650 °F, 340 °C

**Table Legend**

- \* For Water, Oil, Gas at 200 °F (93 °C)
- \*\* Height for fitting body only
- † Pressure rating for socket weld and NPT fittings are rated to that of the weld-o-let or thread-o-let; either 3000# or 6000#

**Additional Height of Socketweld / NPT Fitting When Assembled With Sock-o-let / Thread-o-let**

|            | 3000 # |       | 6000 # |       |
|------------|--------|-------|--------|-------|
| Socketweld | 0.87 " | 22 mm | 1.25 " | 32 mm |
| NPT        | 0.80 " | 20 mm | 1.37 " | 35 mm |

**TABLE 3 - 3/4 INCH TEE ACCESS FITTING ASSEMBLIES FOR SERVICE BELOW -20 °F (-28.9 °C)**

| Body Style /<br>Line Size | Part No. | Material           | Height |       | Weight |      | Max. Working Pressure |                |
|---------------------------|----------|--------------------|--------|-------|--------|------|-----------------------|----------------|
|                           |          |                    | (in)   | (mm)  | (lb)   | (kg) | (psi)                 | (MPa)          |
| <b>Flareweld</b>          |          |                    |        |       |        |      |                       |                |
| 2x2                       | 10117    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.5    | 3.8  | 6000                  | 41.36          |
| 3x2                       | 10118    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.5    | 3.8  | 6000                  | 41.36          |
| 4x2                       | 10119    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.5    | 3.8  | 6000                  | 41.36          |
| 6x2                       | 10120    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.5    | 3.8  | 6000                  | 41.36          |
| 10-8x2                    | 10121    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.5    | 3.8  | 6000                  | 41.36          |
| 18-12x2                   | 10122    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.5    | 3.8  | 6000                  | 41.36          |
| 36-20x2                   | 10123    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.5    | 3.8  | 6000                  | 41.36          |
| Flatx2                    | 10124    | ASTM-A350LF2/A105N | 6.25   | 159   | 8.5    | 3.8  | 6000                  | 41.36          |
| <b>Buttweld Flat</b>      | 10125    | ASTM-A350LF2/A105N | 6.25   | 159   | 8      | 3.6  | 6000                  | 41.36          |
| <b>Socketweld</b>         | 10126    | ASTM-A350LF2/A105N | 6.25** | 159** | 8      | 3.6  | 3600/ 6000 †          | 20.68/ 41.36 † |
| <b>NPT</b>                | 10127    | ASTM-A350LF2/A105N | 6.25** | 159** | 8      | 3.6  | 3600/ 6000 †          | 20.68/ 41.36 † |
| <b>Flanged (ANSI)</b>     |          |                    |        |       |        |      |                       |                |
| 2 " 150 # R.F.            | 11564    | ASTM-A350LF2/A105N | 7.50   | 190   | 15     | 6.8  | 260*                  | 1.79*          |
| 2 " 300 # R.F.            | 11565    | ASTM-A350LF2/A105N | 7.50   | 190   | 22     | 10.0 | 675*                  | 4.65*          |
| 2 " 4 / 600 # R.F.        | 11567    | ASTM-A350LF2/A105N | 7.50   | 190   | 24     | 10.9 | 900 / 1350*           | 6.20 / 9.31*   |
| 2 " 9 / 1500 # R.F.       | 11568    | ASTM-A350LF2/A105N | 9.00   | 228   | 35     | 15.9 | 2025 / 3375*          | 13.96/ 23.27*  |
| 2 " 2500 # R.F.           | 11569    | ASTM-A350LF2/A105N | 9.50   | 241   | 48     | 21.8 | 5625*                 | 38.78*         |
| 2 " 150 # R.J.            | 11570    | ASTM-A350LF2/A105N | 7.50   | 190   | 15     | 6.8  | 260*                  | 1.79*          |
| 2 " 300 # R.J.            | 11571    | ASTM-A350LF2/A105N | 7.50   | 190   | 22     | 10.0 | 675*                  | 4.65*          |
| 2 " 4 / 600 # R.J.        | 11572    | ASTM-A350LF2/A105N | 7.50   | 190   | 24     | 10.9 | 900 / 1350*           | 6.20 / 9.31*   |
| 2 " 9 / 1500 # R.J.       | 11573    | ASTM-A350LF2/A105N | 9.00   | 228   | 35     | 15.9 | 2025 / 3375*          | 13.96/ 23.27*  |
| 2 " 2500 # R.J.           | 11574    | ASTM-A350LF2/A105N | 9.50   | 241   | 48     | 21.8 | 5625*                 | 38.78*         |
| <b>Flanged (API)</b>      |          |                    |        |       |        |      |                       |                |
| 2 " 2000 # R.J.           | 11575    | AISI-4130          | 8.50   | 216   | 27     | 12.2 | 2000                  | 13.79          |
| 2 " 3 / 5000 # R.J.       | 11576    | AISI-4130          | 9.25   | 235   | 40     | 18.1 | 3000 / 5000           | 20.68 / 34.47  |
| 2 " 10000 # R.J.          | 11577    | AISI-4130          | 9.25   | 235   | 40     | 18.1 | 10000                 | 68.94          |

Table 3 Not to be used above 650 °F, 340 °C

**Table Legend**

- \* For Water, Oil, Gas at 200 °F (93 °C)
- \*\* Height for fitting body only
- † Pressure rating for socket weld and NPT fittings are rated to that of the weld-o-let or thread-o-let; either 3000# or 6000#

**Additional Height of Socketweld / NPT Fitting When Assembled With Sock-o-let / Thread-o-let**

|            | 3000 # |       | 6000 # |       |
|------------|--------|-------|--------|-------|
| Socketweld | 0.87 " | 22 mm | 1.25 " | 32 mm |
| NPT        | 0.80 " | 20 mm | 1.37 " | 35 mm |

**TABLE 4 - 1 INCH TEE ACCESS FITTING ASSEMBLIES FOR SERVICE BELOW -20 °F (-28.9 °C)**

| Body Style /<br>Line Size | Part No. | Material           | Height |       | Weight |      | Max. Working Pressure |                |
|---------------------------|----------|--------------------|--------|-------|--------|------|-----------------------|----------------|
|                           |          |                    | (in)   | (mm)  | (lb)   | (kg) | (psi)                 | (MPa)          |
| <b>Flareweld</b>          |          |                    |        |       |        |      |                       |                |
| 2x2                       | 10152    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.75   | 4.4  | 6000                  | 41.36          |
| 3x2                       | 10153    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.75   | 4.4  | 6000                  | 41.36          |
| 4x2                       | 10154    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.75   | 4.4  | 6000                  | 41.36          |
| 6x2                       | 10155    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.75   | 4.4  | 6000                  | 41.36          |
| 10-8x2                    | 10156    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.75   | 4.4  | 6000                  | 41.36          |
| 18-12x2                   | 10157    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.75   | 4.4  | 6000                  | 41.36          |
| 36-20x2                   | 10158    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.75   | 4.4  | 6000                  | 41.36          |
| Flatx2                    | 10159    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.75   | 4.4  | 6000                  | 41.36          |
| <b>Buttweld Flat</b>      | 10160    | ASTM-A350LF2/A105N | 7.25   | 184   | 9.25   | 4.2  | 6000                  | 41.36          |
| <b>Socketweld</b>         | 10161    | ASTM-A350LF2/A105N | 7.25** | 184** | 9.25   | 4.2  | 3600/ 6000 †          | 20.68/ 41.36 † |
| <b>NPT</b>                | 10162    | ASTM-A350LF2/A105N | 7.25** | 184** | 9.25   | 4.2  | 3600/ 6000 †          | 20.68/ 41.36 † |
| <b>Flanged (ANSI)</b>     |          |                    |        |       |        |      |                       |                |
| 2 " 150 # R.F.            | 11578    | ASTM-A350LF2/A105N | 8.50   | 216   | 15     | 6.8  | 260*                  | 1.79*          |
| 2 " 300 # R.F.            | 11579    | ASTM-A350LF2/A105N | 8.50   | 216   | 22     | 10.0 | 675*                  | 4.65*          |
| 2 " 4 / 600 # R.F.        | 11580    | ASTM-A350LF2/A105N | 8.50   | 216   | 24     | 10.9 | 900 / 1350*           | 6.20 / 9.31*   |
| 2 " 9 / 1500 # R.F.       | 11581    | ASTM-A350LF2/A105N | 9.00   | 228   | 35     | 15.9 | 2025 / 3375*          | 13.96/ 23.27*  |
| 2 " 2500 # R.F.           | 11582    | ASTM-A350LF2/A105N | 8.50   | 241   | 48     | 21.8 | 5625*                 | 38.78*         |
| 2 " 150 # R.J.            | 11583    | ASTM-A350LF2/A105N | 8.50   | 216   | 15     | 6.8  | 260*                  | 1.79*          |
| 2 " 300 # R.J.            | 11584    | ASTM-A350LF2/A105N | 8.50   | 216   | 22     | 10.0 | 675*                  | 4.65*          |
| 2 " 4 / 600 # R.J.        | 11585    | ASTM-A350LF2/A105N | 8.50   | 216   | 24     | 10.9 | 900 / 1350*           | 6.20 / 9.31*   |
| 2 " 9 / 1500 # R.J.       | 11586    | ASTM-A350LF2/A105N | 8.50   | 228   | 35     | 15.9 | 2025 / 3375*          | 13.96/ 23.27*  |
| 2 " 2500 # R.J.           | 11587    | ASTM-A350LF2/A105N | 8.50   | 241   | 48     | 21.8 | 5625*                 | 38.78*         |
| <b>Flanged (API)</b>      |          |                    |        |       |        |      |                       |                |
| 2 " 2000 # R.J.           | 11588    | AISI-4130          | 8.50   | 216   | 27     | 12.2 | 2000                  | 13.79          |
| 2 " 3 / 5000 # R.J.       | 11589    | AISI-4130          | 8.50   | 235   | 40     | 18.1 | 3000 / 5000           | 20.68 / 34.47  |
| 2 " 10000 # R.J.          | 11590    | AISI-4130          | 8.50   | 235   | 40     | 18.1 | 10000                 | 68.94          |

Table 4 Not to be used above 650 °F, 340 °C

**Table Legend**

- \* For Water, Oil, Gas at 200 °F (93 °C)
- \*\* Height for fitting body only
- † Pressure rating for socket weld and NPT fittings are rated to that of the weld-o-let or thread-o-let; either 3000# or 6000#

**Additional Height of Socketweld / NPT Fitting When Assembled With Sock-o-let / Thread-o-let**

|            | 3000 # |       | 6000 # |       |
|------------|--------|-------|--------|-------|
| Socketweld | 0.87 " | 22 mm | 1.25 " | 32 mm |
| NPT        | 0.80 " | 20 mm | 1.37 " | 35 mm |

## FLANGED FITTINGS - STUD & NUT, INSULATION AND GASKET KITS

| Flange Size         | Stud & Nut Sets |               |               |                | Insulation Sets | Flange Gasket Sets |                  |
|---------------------|-----------------|---------------|---------------|----------------|-----------------|--------------------|------------------|
|                     | Part Number     | Number to Set | Stud Diameter | Stud Length    | Part Number     | R.F. Part Number   | R.J. Part Number |
| <b>ANSI Flanges</b> |                 |               |               |                |                 |                    |                  |
| 2" 150 #            | 11206           | 4             | 5/8" (16mm)   | 3 3/4" (95mm)  | 11212           | 11220              | 11225            |
| 2" 300 #            | 11207           | 8             | 5/8" (16mm)   | 4 1/4" (108mm) | 11213           | 11221              | 11226            |
| 2" 4 / 600 #        | 11208           | 8             | 5/8" (16mm)   | 4 1/2" (114mm) | 11214           | 11222              | 11226            |
| 2" 9 / 1500 #       | 11209           | 8             | 7/8" (22mm)   | 5 3/4" (146mm) | 11215           | 11223              | 11227            |
| 2" 2500 #           | 11210           | 8             | 1" (25mm)     | 7 1/2" (191mm) | 11216           | 11224              | 11228            |
| <b>API Flanges</b>  |                 |               |               |                |                 |                    |                  |
| 2" 2000 #           | 11208           | 8             | 5/8" (16mm)   | 4 1/2" (114mm) | 11217           | N/A                | 11226            |
| 2" 3 / 5000 #       | 11209           | 8             | 7/8" (22mm)   | 5 3/4" (146mm) | 11218           | N/A                | 11227            |
| 2" 10000 #          | 11211           | 8             | 3/4" (19mm)   | 5 1/4" (133mm) | 11219           | N/A                | 11229            |

STUD AND NUT INSULATION MATERIAL IS POLYETHYLENE  
RAISED FACE FLANGE GASKET MATERIAL IS STAINLESS STEEL AND GRAPHITE

RING-TYPE JOINT FLANGE GASKET MATERIAL IS STAINLESS STEEL

### TEE ACCESS FITTING ACCESSORIES FOR INJECTION/SAMPLING SYSTEMS

An injection/sampling system requires the following equipment:

- 1) Tee Access Fitting Body
- 2) Solid Plug Assembly
- 3) Injection / Sampling Nut
- 4) Injection / Sampling Tube  
(and nozzle where applicable)
- 5) Nipple
- 6) Shut Off Valve

The injection/sampling nut holds the injection/sampling tube in a position where it can give maximum effective distribution of the injection fluid. The o-ring on the nut seals the internal bore of the access fitting so that the injection fluid can only pass through the tube. This ensures that the injection fluid is only delivered to the required point of application.

The injection/sampling nut is held in position by a solid plug assembly. The solid plug assembly can be retrieved under pressure along with the nut and tube. This enables the operator to check or alter the injection/sampling system without having to depressurize the system first.

All Caproco injection/sampling equipment complies with NACE MR-01-75 Sour Service specifications. Standard valves are rated for a maximum working pressure of 6,000 psi; however valves rated up to 10,000 psi are available for

10,000 psi flanged fittings. Standard valves have a straight-through flow passage.

### Tee Access Fitting Accessories

| Access Fitting Tee Size (NPT) | Valves   | Nipples       | Pipe Plugs      |
|-------------------------------|----------|---------------|-----------------|
|                               | 316 SS   | 316 SS Sch 80 | Stainless Steel |
|                               | Part No. | Part No.      | Part No.        |
| 1/4" (6.4mm)                  | 10661    | 10657         | 11230           |
| 1/2" (12.7mm)                 | 10662    | 10658         | 11231           |
| 3/4" (19.0mm)                 | 10663    | 10659         | 11232           |
| 1" (25.0mm)                   | 10664    | 10660         | 11233           |

Note: Select Tee size of equal or larger diameter than that of the injection nut threads.

### Injection/Sampling Nuts

| Nut Thread Size to Mate with Injection Tube | Nut Length |          | For Minimal Energy Loss, Injection Rate Should Be Less Than: |            |
|---|------------|----------|--|------------|
|   | 1.75"      | 3.25"    |  |            |
| NPT Threads                                 | Part No.   | Part No. | U.S. GPM   | Ltr. / hr. |
| 1/8" (3.2mm)                                | 38001      | 10649    | 0.1  | 23         |
| 1/4" (6.4mm)                                | 13049      | 10650    | 0.2  | 45         |
| 1/2" (12.7mm)                               | 38002      | 10651    | 0.4  | 91         |
| 3/4" (19.0mm)                               | 38003      | 10652    | 0.6  | 136        |

1.75" injection nut to be used with 5.25" height fittings

3.25" injection nut to be used with all other height of fittings