

Instrumentation Pipe & Weld Fittings

6000psig, 10000psig and standard rating



Thread Fittings

Three different ratings are available to fit your specific application.

- Standard rating : page 3
- 10,000 psig : page 12
- 6,000 psig : page 15

Weld Fittings

See page 16

- Tube Socket Weld
- Pipe Butt-weld

Features of Thread Fittings

- Wrench flat body design allowing standard Hex. wrench assembly.
- Attractive finishes to suit precision equipment.
- Much less-weight design compared to Class 3000 pipe fittings.
- Fine pipe thread construction equals or exceeds the requirement of ASME B1.20.1 to ensure maximum thread engagement.
- Male pipe threads capped for protection from damages.
- Fitting materials available in SS316, Brass and Carbon Steel.

Thread Fittings - Standard Rating

Thread Fittings - Standard Rating are designed to the requirements of ASME B31.3 process piping code.
The pipe thread sizes are available 1/8" to 1"

Table 1. **Pressure Ratings**

Size Designator	NPT/ISO Pipe Size	Stainless Steel 316				Brass				Carbon Steel			
		Male		Female		Male		Female		Male		Female	
		bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig
2	1/8	689	10,000	420	6,100	337	4,900	207	3,000	689	10,000	420	6,100
4	1/4	558	8,100	434	6,300	275	4,000	214	3,200	558	8,100	434	6,300
6	3/8	524	7,600	345	5,000	262	3,800	172	2,500	524	7,600	345	5,000
8	1/2	517	7,500	324	4,700	255	3,700	158	2,300	517	7,500	324	4,700
12	3/4	496	7,200	303	4,400	248	3,600	152	2,200	496	7,200	303	4,400
16	1	365	5,300	296	4,300	172	2,500	145	2,100	365	5,300	296	4,300

- Pressure ratings listed are for temperature up to 37°C (100°F)
- Pressure rating is calculated at -28 to 37°C (-20 to 100°F) using allowable stress value of 20,000psi for SS316, 10,000psi for Brass, and 20,000psi for Carbon Steel as per ASME B31.3 Process Piping Code.
- To determine the working pressure of ASME B31.1 Power Piping Code, multiply the ASME B31.3 rating by 0.94. Brass pressure ratings remain the same.
- The pressure ratings of reducing hex bushing (GHB), pipe plug (GP), and shaped fittings such as Elbow, Tee, Crosses are not covered in this table. See the pressure rating in the dimensional table.

BFO can provide a quote for all sizes listed in the table*
All dimensions are in millimeters unless otherwise specified, only for reference and subject to change

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Table 2. **Material Standards and Temperature Range**

Materials	Bar Stock	Forgings	Maximum Temperature
Stainless Steel 316	ASTM A276 Type 316 / ASTM A479 Type 316	ASTM A182 F316	537°C (1000°F)
Brass	JIS H3250 C3604 / ASTM B453 C35300	JIS H3250 C3771 / ASTM B283 C37700	204 °C (400°F)
Carbon Steel	ASTM A108 / JIS G4051 S20C - S48C	ASTM A105 / JIS G4051 S20C - S48C	190 °C (375 °F)

Table 3. **Temperature De-rating Factors**

Temp.	°F	100	200	300	400	500	600	700	800	900	1,000	1,200
	°C	38	93	149	204	260	316	371	427	482	538	649
Factor	Stainless Steel	1.00	1.00	1.00	0.97	0.90	0.85	0.82	0.80	0.78	0.77	0.49
	Brass	1.00	0.78	0.69	0.13							
	Carbon Steel	1.00	0.94	0.91	0.88							

To determine the allowable working pressure at a specific temperature, multiply the working pressure by the applicable factor shown in table 3. Example: The working pressure of GNC-2N-S at 700 °F. 10 000 psig x 0.82 = 8200 psig.

Table 4. **Temperature Ratings of O-ring, Gasket Materials**

System temperature may be limited by the O-ring, Gasket material or thread sealant.

Component	Applicable Part #	Material	Temperature Ratings
O-ring	Designator : BN	NBR	-20 to 105°C (-4 to 221°F)
	Designator : VT	FKM	-28 to 204°C (-18 to 400°F)
	Designator : KZ	FFKM	-30 to 275°C (-22 to 527°F)
Copper Gasket	DGC-	Copper	-198 to 204°C (-324 to 400°F)
NBR bonded Gasket	DGB-	NBR bonded Carbon Steel Ring	-40 to 110°C (-40 to 230°F)
FKM bonded Gasket	DGV-	FKM bonded bonded Stainless Steel Ring	-28 to 204°C (-20 to 400°F)

Table 5. **Pipe Thread Designator**

Designator	Pipe	NPT ASME B1.20.1	ISO Thread	
			Tapered ISO 7-1	Parallel ISO 228-1
2	1/8	2N	2R	2G
4	1/4	4N	4R	4G
6	3/8	6N	6R	6G
8	1/2	8N	8R	8G
12	3/4	12N	12R	12G
16	1	16N	16R	16G

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