

BULK manufactures high quality compression and pipe fittings in various materials for any application requiring reliable tube connections with pressure tight sealing.

BULK compression fittings are designed, manufactured, sold and serviced by experienced instrument specialists understanding and respecting the need of reliable performance.

## Construction material

BULK compression fittings have all components made by the same material as the fitting body for thermal compatibility and corrosion resistance.

Standard construction materials are listed on table 2 section "how to order".

It is recommended that the tubing and fitting be of same material to allow positive sealing and to avoid galvanic corrosion.

## Pressure and temperature rating

BULK compression fittings are rated for working pressure higher than the tubing, therefore pressure rating depends on choice of tubing which should be based on material, wall thickness and temperature (see table below).

Degrating factors must be used to determinate tubing working pressure at high temperatures.

Please consult us if in doubt !

maximum allowable working pressure for fractional size tubing (value in psi)

tubing O.D. (inch)	tubing wall thickness (inch)											
	0.010"	0.012"	0.016"	0.020"	0.028"	0.035"	0.049"	0.065"	0.083"	0.095"	0.109"	0.120"
1/16"	6.852	8.395	11.510	14.395								
1/8"				6.843	9.948	12.622						
3/16"				4.345	6.342	8.145	11.760					
1/4"					4.575	5.910	8.700	11.773				
3/8"						3.770	5.465	7.520				
1/2"						2.770	3.980	5.415	7.155			
5/8"							3.130	4.240	5.550	6.480		
3/4"							2.570	3.490	4.535	5.270	6.150	
7/8"							2.190	2.948	3.845	4.443	5.180	
1"								2.568	3.318	3.843	4.462	4.970

maximum allowable working pressure for metric size tubing (value in bar)

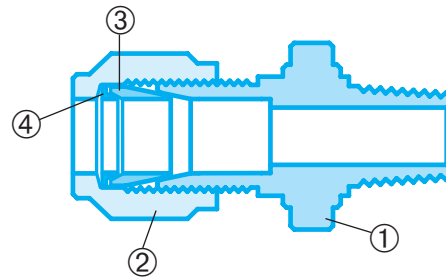
tubing O.D. (mm)	tubing wall thickness (mm)											
	0.5	0.6	0.8	1.0	1.2	1.5	1.6	1.8	2.0	2.2	2.5	3
3	492	610	825	1.030								
6			382	495	603	775	909					
8			281	357	441	560	603					
10			220	278	342	438	471					
12			180	235	280	360	384	438				
16				170	203	259	278	315	360	398	458	561
18				148	178	231	245	278	313	350	400	495
22				121	145	186	201	223	250	278	320	392
25				104	125	160	175	194	218	243	278	339

Tables are based on the following conditions:

AISI 304 and AISI 316 stainless steel annealed seamless tubing ASTM A-269 or A-213 or equivalent.

Tensile strength 75,000 psi at room temperature - Safety factor 4 (75,000 psi: 4 = 18,700 psi)

Metal temperature between -20° to 100° F, -29° to 38°C - Reference ANSI B31.3



BULK compression fittings are made by four parts consisting of **body (1)**, **nut (2)**, **front ferrule (3)**, **back ferrule (4)**.

The bodies of fitting for metric tubes are provided with a collar on the tube end side to differentiate from inch tube fitting. Reference standard is BS 4368 : Part IV 1984.

## Assembly instruction

- 1) Loosen the nut (2)
- 2) Fully insert the tubing into the fitting. Make sure that the tubing rests firmly on the shoulder of the fitting and that the nut (2) is finger tight.
- 3) Tighten the nut (2) one and one quarter turns.

## Reassembly instruction

- 1) Firmly insert the tubing end with the previously set ferrules (3)(4) into the fitting body (1) and tighten the nut (2) to a hand tight condition.
- 2) Tighten the nut until a sharp rise in torque is felt with a wrench
- 3) Snug with wrench

BULK compression fittings may be disconnected and retightened repeatedly.

## Safety Guidelines

- 1) Never tight or loose a fitting with pressure in the system.
- 2) Do not bleed the system by loosing the fitting or fitting nut.
- 3) Always use proper thread lubricants and sealants (suitable to temperature system) on tapered pipe threads.
- 4) Always leave a length of straight tube between the tube bend and the fitting.
- 5) Always use a tube insert when assembling fitting to plastic tubing
- 6) Bulk does not recommend interchanging its fitting components with other manufacturers'.
- 7) Tubing must always be softer than the fitting material (RB 80 maximum for stainless steel).
- 8) Careful selection, handling and installation of tubing have vital importance to install safe and leak-free system.
- 9) Contact your local Bulk distributor for further informations.