

Pipe Thread Assembly

The two British Standard pipe thread forms used for Parker's standard product are manufactured in a tighter tolerance range than required by the standards in order to facilitate the assembly and mating of fittings produced by the two different standards. In general, BS21 threads do not necessarily mate with BS2779 threads at tolerance overlap conditions, but fittings located within this catalog can be assembled as follows:

| External Thread | Mating Internal Thread |
|---------------------|--------------------------------------------------------------|
| G-BS2779 (parallel) | G-BS2779 (parallel) Rp-BS21* (parallel) |
| Rs-BS21 (parallel) | Rp-BS21 (parallel) G-BS2779 (parallel) |
| R-BS21 (taper) | Rp-BS21 (parallel) Rc-BS21 (taper) G-BS2779 (parallel) |

*This thread must be manufactured within a reduced tolerance range to always assemble with the G series external thread.

British Standard ISO Metric Screw Threads

They are commonly used in miniature pneumatic applications because of the availability of small thread diameters and are also used extensively in the automotive industry. There are two forms of sealing on metric screw threads.

- O-ring sealing into a profiled port in accordance with ISO 6149.
- Peripheral sealing with a copper or bonded washer in accordance with ISO 261 and 262.

Peripheral sealing of parallel threads

Pressure-tight joints of screwed connections with parallel threads are achieved by placing a seal between the two machined faces

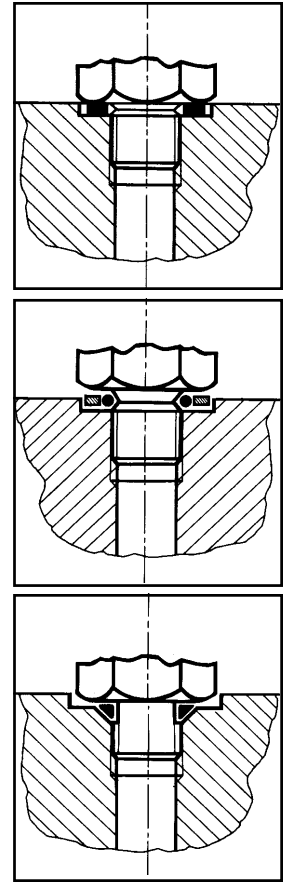
Flat seals

Washers and rings are manufactured in many different materials including copper, aluminium, fiber, plastics, etc.

The tightening torque at assembly must be carefully selected so as to avoid compressing the seal to the point of extrusion. As a general rule, the fitting should be tightened with an additional 1/4 wrench turn from the fingertight position.

O-rings

Depending upon the configuration of the female port or male thread, O-Ring seals are fitted with or without back-up washers, and can be fully retained in a captive seal.



Flaring Instructions

In order to properly flare copping tubing for use with Parker 45° Flared Fittings and Inverted Flared Fittings, the following procedures and specifications should be met in preparation and make-up of flares.

1) CUT TUBE WITH TUBE CUTTER:

To minimize the burr and workhardening, use a light feed on the cutting wheel and make several revolutions.

2) REAM THE TUBING:

Cutting with a tube cutter will always create a burr. The burr must be removed to obtain maximum sealing surface. Remove only the burr, do not remove material from the original wall thickness. Also clean the tube end thoroughly to remove burrs.

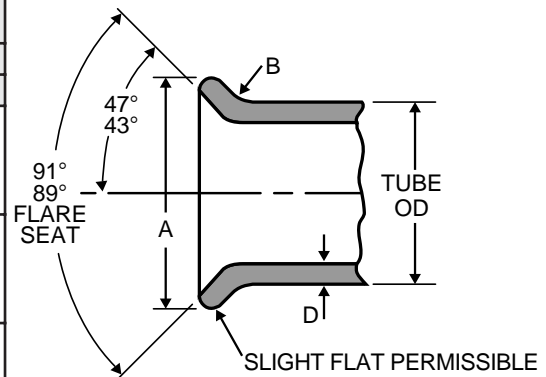
3) FLARE TUBING:

Flare with a compression or generating type flaring tool. Follow tool manufacturer's instructions for: (A) positioning the tube in tool and (B) for the correct number of turns on the feed handle.

4) INSPECT TUBING:

The flare cone should be checked for a smooth surface on the I.D. of the cone and measure with micrometer over largest O.D. for proper size. (See dimensions below for flare size for each tubing size.)

| Nominal Tube | A Single Flare Diameter | | B Single Flare Radius | D Single Flare Wall Thickness |
|--------------|-------------------------|-------|-----------------------|-------------------------------|
| | in | in | in | in |
| | Max. | Min. | ±0.01 | Max. |
| 1/8 | 0.0181 | 0.171 | 0.02 | 0.035 |
| 3/16 | 0.0249 | 0.239 | 0.02 | 0.035 |
| 1/4 | 0.325 | 0.315 | 0.02 | 0.049 |
| 5/16 | 0.404 | 0.388 | 0.02 | 0.049 |
| 3/8 | 0.487 | 0.471 | 0.02 | 0.065 |
| 7/16 | 0.561 | 0.545 | 0.02 | 0.065 |
| 1/2 | 0.623 | 0.607 | 0.02 | 0.083 |
| 9/16 | 0.676 | 0.660 | 0.02 | 0.083 |
| 5/8 | 0.748 | 0.732 | 0.02 | 0.095 |
| 3/4 | 0.916 | 0.900 | 0.02 | 0.109 |
| 7/8 | 1.041 | 1.025 | 0.02 | 0.109 |
| 1 | 1.157 | 1.141 | 0.02 | 0.120 |



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