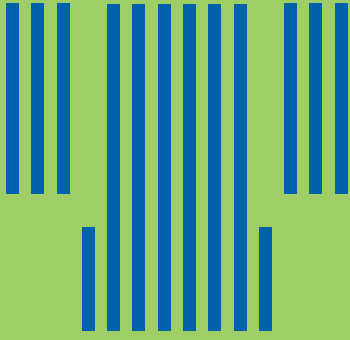


TUNGUM PIPING SYSTEMS LTD.



TUNGUM 'PG SERIES'

SILVER SOLDER FITTINGS

High performance, leak free seals

Corrosion resistant throughout

Uncomplicated assembly

Suitable for use with liquids or gases



'PG SERIES' SILVER SOLDER TUBE FITTINGS

The 'PG Series' of Silver Solder Fittings is designed to prevent leaks and hence eliminate the costs and dangers arising from their presence.

Today, in fewer and fewer applications for high pressure hydraulics, or systems conveying high pressure gases, can a designer tolerate anything less than the highest levels of integrity.

Leaks in hydraulic pipework are now universally recognised as being not only messy, but also costly, inefficient in operation and, a fire hazard.

Leaks in high pressure gas systems pose all of these problems and, can put lives at risk.

The "PG Series" connector range, combines the special features of Tungum Alloy with the proven traditional concept of silver soldering (brazing). This creates a range of tube fittings with unrivaled performance.



All complex shapes are forged. The resultant fittings have a vastly superior grain flow, density and overall integrity than similar parts produced from Bar stock.

Uniform sections around all tube sockets ensure uniform heating and simplifies subsequent NDT testing.



Recessed 'O' Seal faces prevent damage during removal of flux residue.



Available with Bonded Washer or Recessed 'O' Ring Stud Seals.

BSPP Male studs are coned to suit BS.5200 hose end fittings.



FEATURES AND BENEFITS

HIGH STRENGTH

Examples of all fittings in the standard 'PG Series' range have been proof tested at 1380 Bar (20,000 psi), and found to be free from leaks and evidence of stress.

CORROSION RESISTANCE

All 'PG Series' components are manufactured from the highest quality, corrosion resistant materials, and fully conform to the 'Fit and Forget' philosophy of all Tungum products. **'PG Series' fittings require no painting, or external treatment to prevent corrosion.**

FLAT FACED NIPPLES

Allow the easy withdrawal of valves for servicing, without imposing stress on, or movement in, adjacent pipework.

HIGH EFFICIENCY ELASTOMER SEALS

Pressure assisted – ensure the ultimate in leak free performance with liquids or gases, from vacuum to 10,000 psi – year after year.

WIDE RANGE OF CONFIGURATIONS

Supplied with BSP, BSP Taper or NPT threads, male or female, to suit the application.

SPECIALS

We can supply non-standard connectors to suit any recognised thread type or port design. Our specialist advice is freely available on request.

SIMPLE, NO NONSENSE, ASSEMBLY

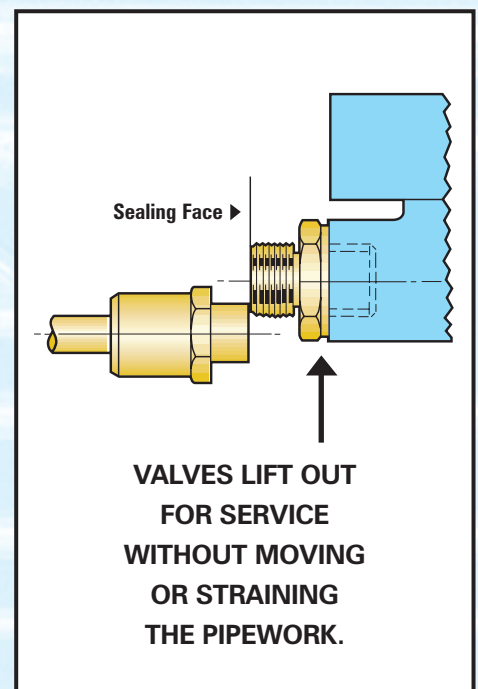
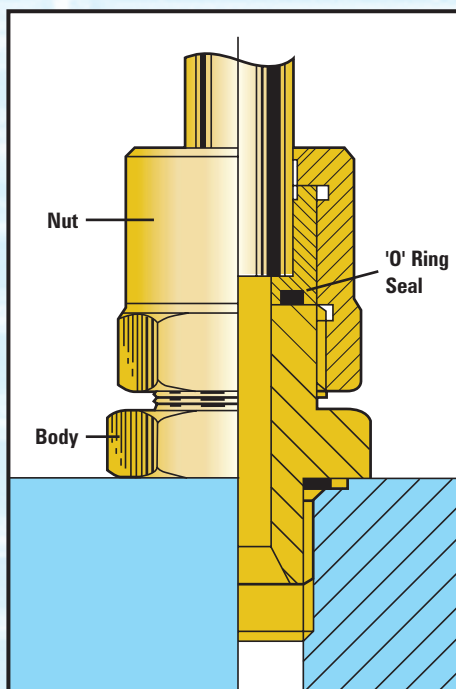
- Tees, Elbows and Sleeves can be permanently jointed single component couplings.
- To assemble breakaway fittings, simply tighten the nut finger tight (to bring the prelocated 'O'ring seal down on to its mating face).
- Whilst restraining the body of the fitting with one spanner, tighten up the nut with another for a vibration resisting, leak free seal, on liquids or gases.
- There is virtually no risk of overtightening a 'PG Series' fitting.
- No critical torque figures have to be observed.
- No special nut position has to be noted.
- Minimal torque is transmitted to the tube.

ALL COMPONENTS TO BE BRAZED ARE MADE FROM TUNGUM ALLOY, WHICH UNIQUELY AIDS THE CONSISTENT PRODUCTION OF QUALITY JOINTS.

- The low aluminium content in Tungum ensures there are no barrier oxides to work against the even flow of the silver solder.
- The absence of lead eliminates any potential for post braze porosity.
- Tungum Alloy's tolerance of thermal shock virtually banishes cooling cracks.
- Tungum Alloy resists stress corrosion sometimes found in other high tensile brasses following the exposure to flux.
- Tungum Alloy is corrosion resisting in all common states of heat treatment.

Primarily designed to complement Tungum Alloy tubing, the 'PG Series' of fittings are equally appropriate for use with Admiralty Brass, Copper or Cupro-Nickel tubing.

'PG Series' fittings have the general approval of Lloyds Register of Shipping who agreed the manufacturing plan and witnessed the type testing.



The full range of 'PG Series' fittings are described in our engineering data pack, available on request.

SILVER SOLDERING PRINCIPLES

Silver Soldering (Brazing) differs from welding, in that the filler is distributed evenly throughout the joint by capillary action; whereas, in welding, the filler fuses with the base metal only where it is deposited.

Silver Solder is, by many, considered superior to other forms of jointing:

- Lower temperatures are involved.
- Problems with warping and residual stresses are virtually unheard of.
- Consistently reliable joints can be made with relative speed.
- Modern N.D.T techniques can be readily and easily applied.

The Tungum 'PG Series' of Silver Solder fittings incorporate the experience gained in 40 years practical application of the techniques involved – On the full spectrum of work from industrial installations through to high quality aircraft part manufacture.

The detailed design of each component in the range, followed a careful study of the basic factors influencing easy application and reliable performance.

The 'PG series' is targeted at offering the user:

- System safety and reliability
- Ease of use
- Material integrity
- Simplicity in design

THE MAIN FACTORS GOVERNING GOOD SILVER SOLDERING ARE:

CLEANLINESS

To make good quality joints, the parts to be joined must be clean and free from oil, grease or any other form of contamination.

TEMPERATURE

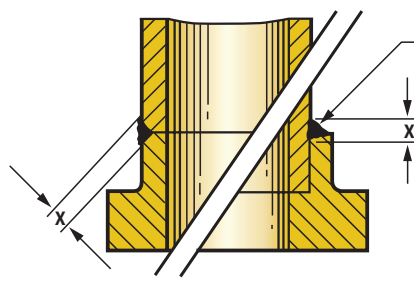
The optimum temperature for making joints using 'PG Series' fittings is 650°C/700°C.

This temperature should be maintained for the shortest practical period of time.

SILVER SOLDERING MATERIALS

'PG Series' fittings can be supplied complete with Silver Solder Rings and flux. Alternatively Johnson Matthey "Easy-flo" Nos. 1 and 2, or SILVERFLO 55 (Cadmium Free) Solder are perfectly suitable for most applications.

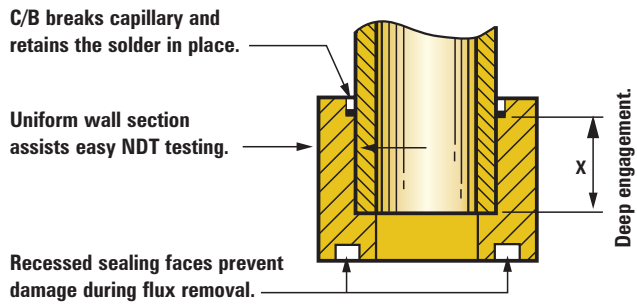
TYPICAL WELD CONFIGURATIONS



Rough, uneven weld fillets complicate NDT testing.

THE 'PG SERIES' SOLUTION

The joints lengths 'x' resisting leakage, flexing and vibration in the 'PG Series' are on average 8 times greater than in welded connectors.



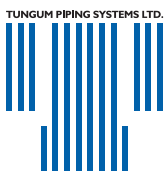
C/B breaks capillary and retains the solder in place.

Uniform wall section assists easy NDT testing.

Recessed sealing faces prevent damage during flux removal.

Deep engagement.

Our design and workshop guide is available on request.



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