

FITTINGS OF THE FLANGING SYSTEM

DESCRIPTION

Fittings in nickel plated brass for "AQUARIUS", "PEGASUS" and "GEMINIplus" by PSP CSST pliable corrugated stainless steel tubes for the supply of fluids under pressure suitable also for drinking water, gas⁽¹⁾ and thermal solar.



The use of fittings other than those specifically supplied by PSP could not ensure a durable tightness: contact PSP to verify the compatibility of the fittings from other manufacturers.

APPLICATION FIELDS

Hydro-thermo-sanitary plants for the supply of cold and hot water, combustible gases⁽¹⁾, thermal solar, supply of fluids in industrial plants⁽²⁾ and connection of stationary appliances⁽³⁾:

- nominal pressure (20°C): PN 16 (gas: MOP = 0,5 bar);
- maximum working pressure: 16 bar (1,6 MPa)⁽⁴⁾;
- maximum working temperature: 250°C⁽⁴⁾;
- minimum working temperature: -50°C⁽⁴⁾.

MATERIAL

Brass conform to EN 12164 / EN 12165 type CW614N or CW617N with nickel plating.

THREADS

- G parallel external male conform to EN ISO 228 (class B);
- G parallel internal female conform to EN ISO 228;
- R taper external male conform to EN 10226 (ISO 7);
- Rp parallel internal female conform to EN 10226 (ISO 7).

CERTIFICATIONS

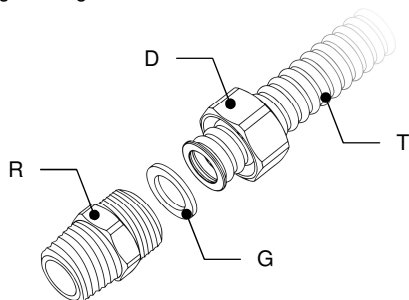
- The quality management system of PSP S.r.l. is certified as conform to EN ISO 9001 : 2015 (Bureau Veritas certificate nr. IT308879).
- The CSST pliable corrugated tubes by PSP S.r.l. are certified as conform to EN ISO 10380 : 2012 (Bureau Veritas certificate nr. 900/001).

TYPE OF TIGHTNESS

The tightness of the junction is obtained through the compression of the plane gasket between the plane surface of the fitting and the flange of the pliable corrugated tube (flanging system).

METHODS OF USE

- 1) Cut to size the CSST pliable corrugated tube (T) adding the two corrugations that will be compressed to obtain the flange.
- 2) Pay attention not to engrave the tube, remove any external coating from seven / eight corrugations.
- 3) Insert the nut (D) on the tube (T).
- 4) Flange the tube (T) following the instructions of the flanging tool.
- 5) Put the plane gasket (G) in the nut (D).
- 6) Tight the nut (D) on the fitting (R) with plane surface. Do not use fittings without plane surface: it is possible to tight the nut directly on the male threaded of the appliance only if this has a plane surface otherwise the tightness for long time is not secured due to damaging of the gasket.



CHEMICAL COMPATIBILITY (CORROSION RESISTANCE) OF THE BRASS⁽⁵⁾

Substance		Substance	
Acetone	+	Methyl alcohol (methanol)	+
Acetylene	+	Milk	+
Air	+	Naphtha	+
Alcohols	+	Nitric acid	-
Amines	-	Nitrogen	+
Ammonia	-	Oils, fuel	+
Aniline	-	Oils, mineral	+
Beer	+	Oils, vegetable	+
Benzene (benzol)	-	Oxygen	+
Butane	+	Paraffin	+
Caffee	+	Petrols	+
Carbon dioxide	+	Phosphoric acid	-
Chlorides and chlorinated	-	Propane	+
Chlorine	-	Soaps	+
Citric acid	-	Sodium hydroxide	-
Diesel fuel	+	Sodium hypochlorite (bleach)	-
Ethane	+	Sulfuric acid (vitriol)	-
Ethers	+	Sulfur dioxide	-
Ethyl alcohol (ethanol)	+	Sulphurous acid	-
Formaldehyde	+	Toluene	+
Fruit juices	+	Trichloroethylene	+
Glycerine	+	Turpentine	+
Glycols	+	Varnishes	+
Hydrocarbons (aliphatic, aromatic)	+	Vinegar, liquid	-
Hydrochloric acid (muriatic acid)	-	Vinegar, vapor	-
Hydrofluoric acid	-	Water vapor	+
Hydrogen peroxide	-	Water, see	+
Hydrogen sulfide	-	Water, soft	+
Ketones	+	Waxes	+
Methane	+	Wine	+

Legend:

- + compatible
- not compatible (possibility of di corrosion or corrosion)

SEALING ELEMENTS (plane gaskets):

- material: synthetic fiber;
- suitability for drinking water and gas;
- maximum working temperature: 250°C⁽⁴⁾;
- minimum working temperature: -50°C⁽⁴⁾;
- nominal thickness:
 - 2 mm for the gaskets for nuts,
 - 3 mm for the gaskets for reduced nuts;
- chemical compatibility⁽⁵⁾:

Substance	
Water	+
Acids (diluted and concentrated)	-
Bases (diluted and concentrated)	-
Petrols	+
Aliphatic hydrocarbons (*)	+
Aromatic hydrocarbons (**)	-
Oxygenated hydrocarbons (***)	-
Oils (animal and vegetable)	+
Fats (animal and vegetable)	+

Legend:

- +: suitable
- : not suitable

- (*): methane, ethane, propane, etc.
- (**): benzene, toluene and phenols
- (***): alcohols, aldehydes, ketones, carboxylic acids, esters, ethers, acetates and peroxides

1) The "PEGASUS" tubing system for gas must be installed in accordance with all the existing municipal, regional and national regulations and the instructions by PSP.
 2) Verify the chemical compatibility of all the components of the tubing system (tubes, fittings, sealing elements and so on).
 3) The CSST pliable corrugated tubes are not suitable for the connection of moving appliances and/or parts in relative motion each other: for these purposes use only suitable flexible hoses.
 4) For the maximum working temperature and pressure take into consideration all the components of the tubing system (tubes, fittings, sealing elements and so on).
 5) The data of the chemical compatibility (resistance to corrosion) are to be considered only as indicative as the behavior of the tubing systems in the real working conditions depends on many factors such as the working temperature, the exposure time, the actual concentration of the substance and so on.

FITTINGS OF THE NO FLANGING SYSTEM

DESCRIPTION

Fittings in nickel plated brass for "AQUARIUS" , "PEGASUS" and "GEMINIplus" CSST pliable corrugated stainless steel tubes for the supply of fluids under pressure suitable also for drinking water, gas ⁽¹⁾ and thermal solar.



The use of fittings other than those specifically supplied by PSP could not ensure a durable tightness: contact PSP to verify the compatibility of the fittings from other manufacturers.

APPLICATION FIELDS

Hydro-thermo-sanitary plants for the supply of cold and hot water, combustible gases ⁽¹⁾, thermal solar, supply of fluids in industrial plants ⁽²⁾ and connection of stationary appliances ⁽³⁾:

- nominal pressure (20°C): PN 16 (gas: MOP = 0,5 bar);
- maximum working pressure ⁽⁴⁾: 16 bar (1,6 MPa);
- maximum working temperature ⁽⁴⁾: : 150°C - : 100°C;
- minimum working temperature ⁽⁴⁾: -20°C.

MATERIAL

Brass conform to EN 12164 / EN 12165 type CW614N or CW617N with nickel plating.

THREADS

- G parallel external male conform to EN ISO 228 (class B);
- G parallel internal female conform to EN ISO 228.

CERTIFICATIONS

- The quality management system of PSP S.r.l. is certified as conform to EN ISO 9001 : 2015 (Bureau Veritas certificate nr. IT308879).
- The CSST pliable corrugated tubes by PSP S.r.l. are certified as conform to EN ISO 10380 : 2012 (Bureau Veritas certificate nr. 900/001).

TYPE OF TIGHTNESS

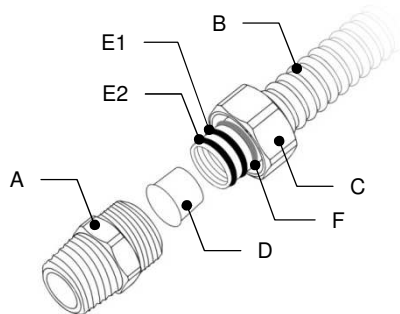
The tightness of the junction is obtained through the compression of O-rings without the flanging of the CSST corrugated tube.

METHODS OF USE



Always use the protective cap in order to avoid to damage the O-rings during their insertion on the CSST corrugated tube.

- 1) Screw the fitting (A) onto the terminal to be connected using a suitable sealant.
- 2) Insert the nut (C) into the CSST tube (B).
- 3) Insert the protective cap (D) into the CSST tube (B).
- 4) Insert two O-rings (E1 and E2) in the first two grooves of the CSST tube (B).
- 5) Remove the protective cap (D).
- 6) Insert the open brass ring (F) into the third groove of the CSST tube (B) and tighten it with pliers without deforming the CSST tube (B).
- 7) Insert the CSST tube (B) up to the stop in the fitting (A).
- 8) Screw the nut (C) onto the fitting (A).



CHEMICAL COMPATIBILITY (CORROSION RESISTANCE) OF THE BRASS ⁽⁵⁾

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Amines	-	Nitrogen	+
Ammonia	-	Oils, fuel	+
Aniline	-	Oils, mineral	+
Beer	+	Oils, vegetable	+
Benzene (benzol)	-	Oxygen	+
Butane	+	Paraffin	+
Caffee	+	Petrols	+
Carbon dioxide	+	Phosphoric acid	-
Chlorides and chlorinated	-	Propane	+
Chlorine	-	Soaps	+
Citric acid	-	Sodium hydroxide	-
Diesel fuel	+	Sodium hypochlorite (bleach)	-
Ethane	+	Sulfuric acid (vitriol)	-
Ethers	+	Sulfur dioxide	-
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Fruit juices	+	Trichloroethylene	+
Glycerine	+	Turpentine	+
Glycols	+	Varnishes	+
Hydrocarbons (aliphatic, aromatic)	+	Vinegar, liquid	-
Hydrochloric acid (muriatic acid)	-	Vinegar, vapor	-
Hydrofluoric acid	-	Water vapor	+
Hydrogen peroxide	-	Water, see	+
Hydrogen sulfide	-	Water, soft	+
Ketones	+	Waxes	+
Methane	+	Wine	+

Legend:
+ compatible
- not compatible (possibility of di corrosion or corrosion)

SEALING ELEMENTS (O-rings):

- material: : EPDM - : NBR;
- chemical compatibility ⁽⁵⁾ (legend: + : suitable; - : not suitable):

Substance	EPDM	NBR
Water	+	+
Acids	-	-
Bases	-	-
Petrols	-	+
Aliphatic hydrocarbons (*)	-	+
Aromatic hydrocarbons (**)	-	+
Oxygenated hydrocarbons (***)	-	-
Oils (animal and vegetable)	-	+
Fats (animal and vegetable)	-	+

(*): methane, ethane, propane, etc.
(**): benzene, toluene and phenols
(***): alcohols, aldehydes, ketones, carbo-xylic acids, esters, ethers, acetates and peroxides

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