

Tech Note 35: Compressed Air & Press-Fit

TN.35

Applicable Products:

- AusPress Stainless Press-Fit, diameters 15 to 168.3mm.
- AusPress Copper Press-Fit, diameters DN15 to DN100.

Related Documents:

- Tech Note TN.03 AusPress Press-Fit Media Suitability Guide.
- Tech Note TN.19 Hazardous Liquids & Gasses (Press-Fit).
- Tech Note TN.20 Brackets & Supports.
- AusPress Test Protocol Form

We first introduced stainless press-fit to Australia in 1995 and since then, our AusPress system has been used extensively for a range of applications including potable water, gasses, oil & fuels plus other applications.

AusPress Stainless Press-Fit is suitable for compressed air applications, with the same standard installation procedure for our press-fit system however, there are some key elements to be considered in the design and installation of the product:

Product Suitability

We advise to check both the system material and the ring seal material for suitability. In the case of compressed air, suitability is determined by the oil content of the supply air:

Air Type	Oil Content	AusPress Stainless 316	AusPress Copper	EPDM	FKM
Dry	< 1.0mg/m ³	Suitable	Suitable	Suitable	Suitable
Lubricated	> 1.0mg/m ³	Suitable	Suitable	Not Suitable	Suitable

In some cases, especially remote locations and installations where uptime is critical, the compressor type could be changed over to a temporary or different type. To prevent issues and provide full flexibility, some specifiers choose to install with the FKM seal type to futureproof.

Operating (Working) Pressures

The working pressure is determined by the press tool used to install and the system material:

System Material	AusPress OD	Press Tool	Working Pressure (max)
AusPress Stainless 316	15 – 54mm	ACO203 & ACO203-XL	2,500 kPa
	66.7 – 168.3mm	ACO203-XL	1,600 kPa
AusPress Copper	DN15 - 100	ACO203 & ACO203-XL	1,600 kPa
It is noted that the ACO403 and other press tool models are not recommended for used with compressed air or gasses without written approval from AusPress Systems.			

Design Considerations

- Compressed air branches should have branches vertically above the main line, and a gooseneck/pigtail configuration with bends to supply droppers.
- Moisture drain points at end of lines and at low point(s) where liquid may collect to be drained as part of a maintenance plan to manage condensation.
- A pressure relief valve is recommended to avoid exceeding the rated pressure of the system.

Bracketing

Please refer to Tech Note TN.20. In the case of compressed air, this application is covered by Australian Standard AS 4041 Process Piping. Standard best practice methods apply equally to press-fit installations including rubber lined brackets to aid any minor vibration effects, supporting branches suitably to address risk of fatigue failure and graded fall to pipework to manage condensation.

Compliance

Classed as a non-harmful gas (NHG) in AS 4041, compressed air is discussed in Tech Note TN.19 and how AusPress press-fit aligns with the relevant clauses of this standard. Note “compressed air” is considered atmospheric air under pressure and not other compressed gasses such as oxygen, acetylene or others that are covered with different requirements.

Commissioning

Compressed air installations are to be pressure tested using the process outlined in standard ASME B31.3; the greater of 1,000 kPa or 1.1 to 1.3x the operating pressure with the process and results recorded as part of the commissioning process. Start at 50% test pressure, then increase gradually (max 25% increments) until the test pressure is reached for 30 minutes. The AusPress Test Protocol Form can be used or another equivalent method to document.

Diameter	Working Pressure (max)	Test Pressure (max)
15 – 54mm	2,500 kPa	3,300 kPa
66.7 – 168.3mm	1,600 kPa	2,100 kPa

Warranty

The warranty issued as Tech Note TN.14 (stainless) and Tech Note TN.06 (copper) are relevant to compressed air installations, noting the constraints as mentioned above including press tool selection.

Further Information

Please contact AusPress for additional technical or product information – technical@auspress.com.au or 1300 287 773.