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Aerospace fluid systems and components — Vocabulary —

Part 2: Fittings and couplings

Systèmes aérospatiaux de fluides et éléments constitutifs — Vocabulaire —

Partie 2: Raccords et raccordements

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
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Foreword

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This document was prepared by ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 10, *Aerospace fluid systems and components.*

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Aerospace fluid systems and components — Vocabulary —

Part 2: Fittings and couplings

1 Scope

This document defines terms which are used for all types of fittings and couplings.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1 General terms

3.1.1
fitting
component used for connecting parts of a fluid system

3.1.2
separable fitting
fitting which can be disassembled so as to connect or disconnect at least two parts of a fluid system

3.1.3
permanent fitting
fitting connecting at least two parts of a fluid system

Note 1 to entry: The connected parts cannot be disconnected without destruction of the fitting assembly.

3.1.4
coupling
coupling assembly
mating pair of fittings designed to connect parts of a fluid system

3.1.5
nominal size
nominal diameter
standardized characteristic of all parts of a fluid system relative to the outside diameter of a rigid tube that can be used on such a fluid system

3.1.6
nominal diameter
DN
<metric series> nominal dimension corresponding to outside diameter of the rigid tube measured in millimetres

3.1.7
nominal diameter
dash number
<inch series> nominal dimension corresponding to outside diameter of the rigid tube measured in increments of $1/16^{th}$ of an inch

3.1.8
interface
sealing zone on a separable fitting where there is contact with another separable fitting or with a piece of equipment

3.1.9
conical coupling
coupling made of male fitting with conical shaped interface and female fitting with conical shaped interface

EXAMPLE See Figure 1.

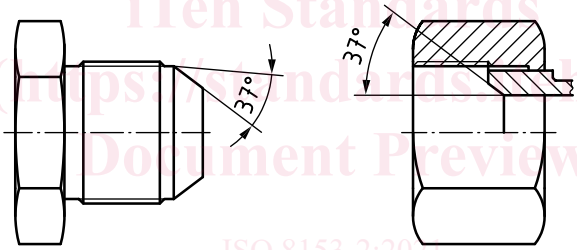

Figure 1 — Conical Coupling

3.1.10
spherical coupling
coupling made of male fitting with spherically or toroidally shaped interface and female fitting with conical interface

EXAMPLE See Figure 2.

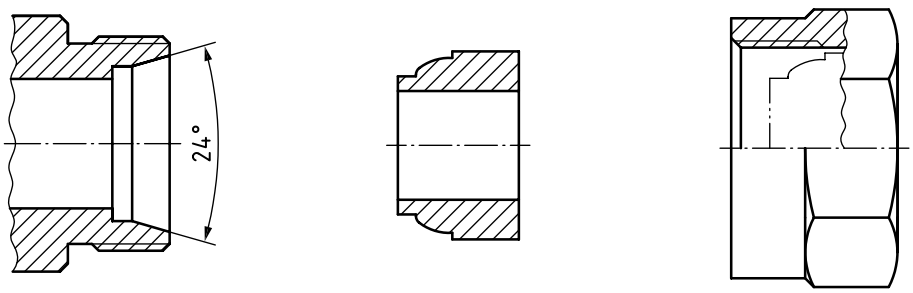

Figure 2 — Spherical coupling

3.1.11
lip seal coupling
beam seal coupling
coupling using a thin deformable area (elastic lip) to provide the sealing

EXAMPLE See Figure 3.

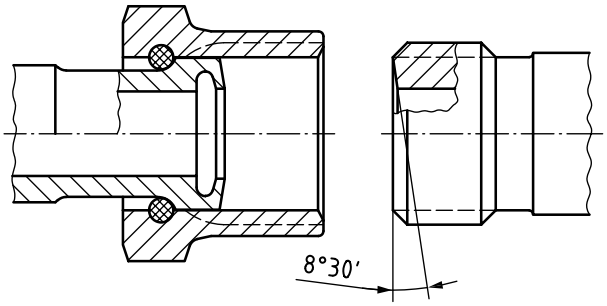

Figure 3 — Lip seal coupling

3.1.12
orientable fitting
banjo fitting
swivel fitting
removable fitting using a bored bounding screw allowing fluid flow and orientation of it with regard to the equipment on which it is mounted

EXAMPLE See Figure 4.

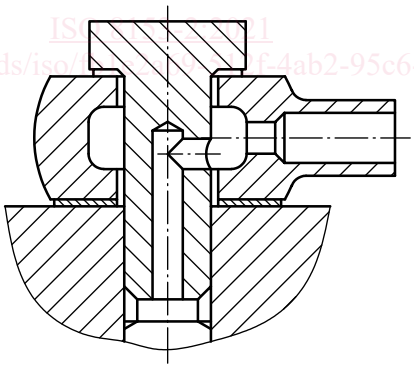

Figure 4 — Banjo fitting

3.1.13
flange fitting
removable fitting using the contact of a plane surface to seal against equipment or another flange fitting on which it is mounted

3.1.14
fixed flange fitting
one-part flange fitting
flange fitting having an integrated surface

EXAMPLE See Figure 5.

Note 1 to entry: The sealing can be achieved directly by metal to metal contact or by the means of a seal.

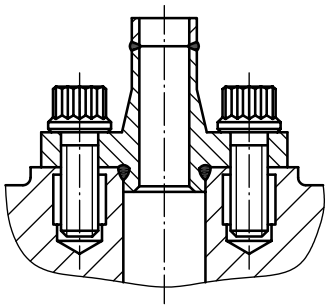

Figure 5 — Fixed flange fitting

3.1.15
swivel flange fitting
two-part flange fitting
fitting which flange is separate from the sealing part

EXAMPLE See Figure 6.

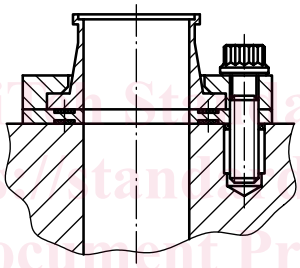

Figure 6 — Swivel flange fitting

3.1.16
V-flange
V band clamp
flange fitting allowing connection with other V-flange by means of V shaped clamp

EXAMPLE See Figure 7.

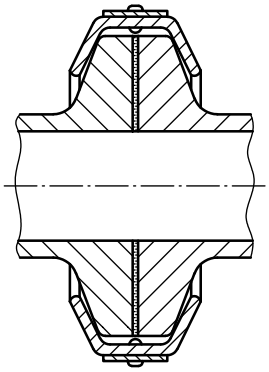

Figure 7 — V band clamp

3.1.17
quick disconnect coupling
separable fittings allowing assembly or disassembly with another component without the use of a tool

3.1.18
self-sealing coupling
separable fitting which allows no leakage of fluid from the circuit from where it is disassembled, or from the fitting where it is connected

3.1.19
attachment
<tube or hose end> sealing zone between the fitting and the rigid tube or flexible hose

3.1.20
brazed fitting
fitting having at least one brazed attachment to one rigid tube or metallic flexible hose junction

EXAMPLE See Figure 8.

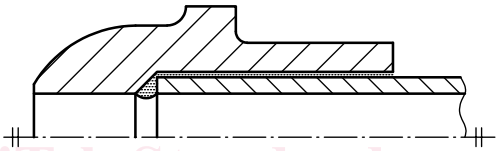

Figure 8 — Brazed fitting

3.1.21
welded fitting
fitting having at least one welded attachment to one rigid tube or metallic flexible hose junction

Note 1 to entry: Fitting should have a welding end which facilitates the welding operation by providing metal for welding.

EXAMPLE See Figure 9.

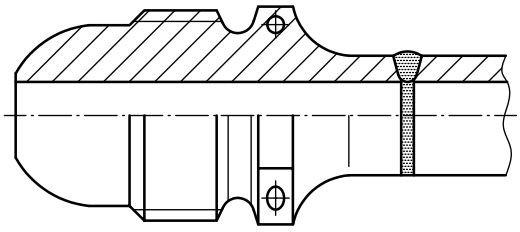

Figure 9 — Welded fitting

3.1.22
swaged fitting
fitting where metal is deformed (swaged) to form the attachment between fitting and a rigid tube

3.1.23
external swage fitting
fitting which is swaged by the action of a tool acting at 90 deg circumferentially to the axis of the tube

EXAMPLE See Figure 10.

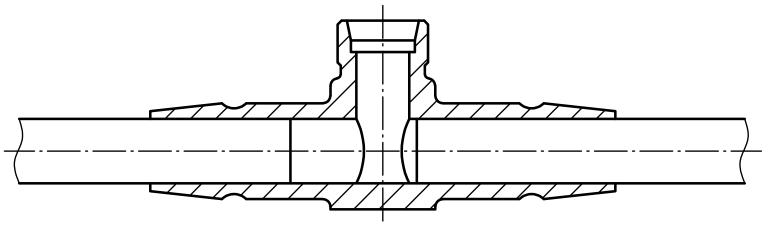

Figure 10 — External swage fitting

3.1.24
axial swage fitting
fitting which is swaged by the action of a tool acting along the axis of the tube

Note 1 to entry: A tapered locking ring is used to transfer the axial motion of the tool into swaging force on the body of the fitting.

EXAMPLE See Figure 11.

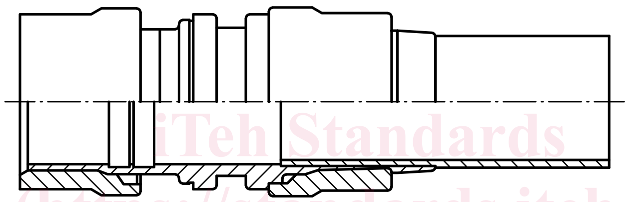

Figure 11 — Axial swage fitting

3.1.25
internal swage fitting
fitting in which the tube is swaged by an internal tool so as to form internal attachment to a fitting

EXAMPLE See Figure 12. Figure shows configuration after swaging.

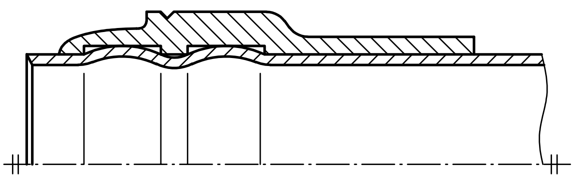

Figure 12 — Internally swaged fitting

3.1.26
shape-memory-alloy fitting
fitting which uses properties of shape-memory alloy to swage itself onto a tube

EXAMPLE 1 See Figure 13 for permanent connection. Figure shows configuration after swaging.

EXAMPLE 2 See Figure 14 for separable connection. Figure shows configuration after swaging.

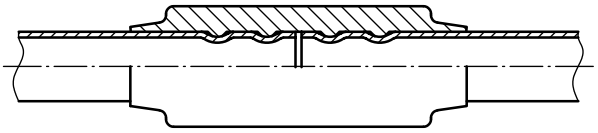

Figure 13 — Shape-memory-alloy permanent fitting

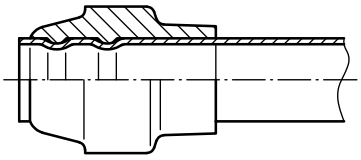

Figure 14 — Shape-memory-alloy separable fitting

3.1.27
nut
internal threaded part used to attach or connect a coupling

3.1.28
B-nut
nut used to bring together the sealing faces of two parts of separable coupling assembly

EXAMPLE See Figure 15.

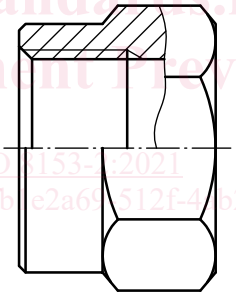

Figure 15 — B-nut

3.1.29
swivel nut
nut having a groove and a drilled hole to permit installation of thrust wire which secures the attachment between the nut and a fitting

EXAMPLE See Figure 16.

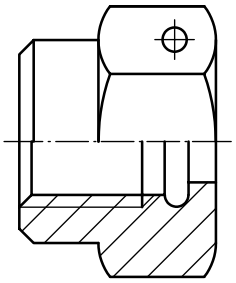

Figure 16 — Swivel nut

3.1.30
nut for bulkhead fitting
nut used to fit a bulkhead fitting on a wall

3.1.31
port
hole made in a piece of equipment allowing installation of a fitting

3.1.32
threaded port
threaded hole made in a piece of equipment allowing installation of a fitting

EXAMPLE See Figure 17 and Figure 18.

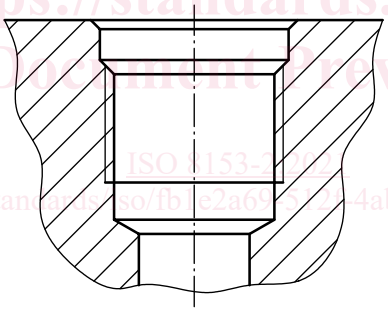

Figure 17 — Threaded port

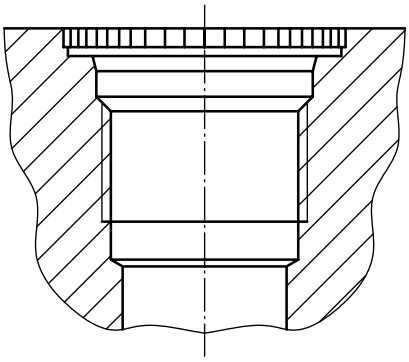

Figure 18 — Port for fitting with lock ring