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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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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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

A list of all parts in the ISO 8153 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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 1/16th 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](#).

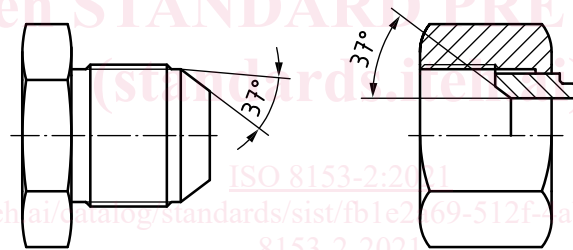


Figure 1 — Conical Coupling

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](#).

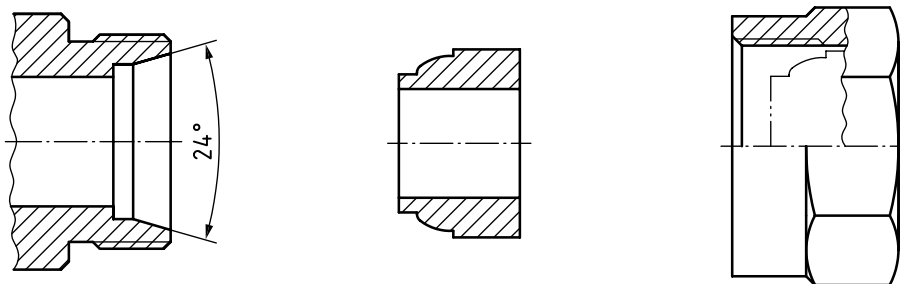


Figure 2 — Spherical coupling

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](#).

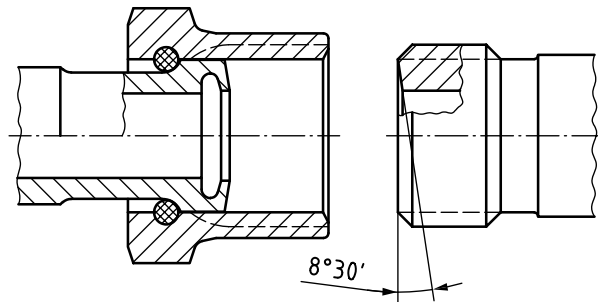


Figure 3 — Lip seal coupling

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](#).

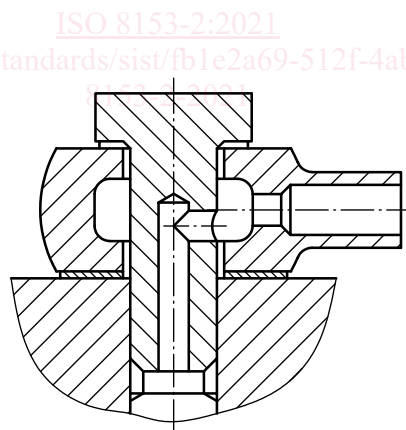


Figure 4 — Banjo fitting

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.

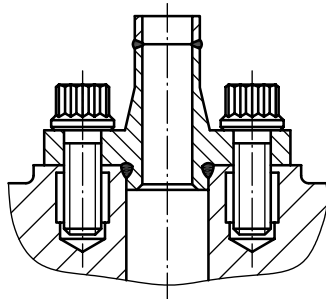


Figure 5 — Fixed flange fitting

3.1.15
swivel flange fitting
two-part flange fitting

fitting which flange is separate from the sealing part

EXAMPLE See [Figure 6](#).

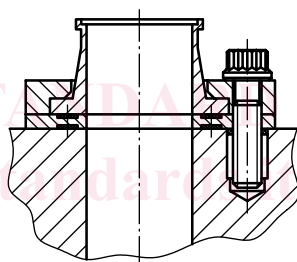


Figure 6 — Swivel flange fitting

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](#).

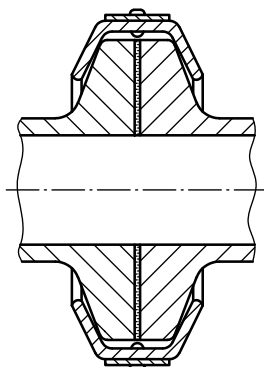


Figure 7 — V band clamp

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](#).

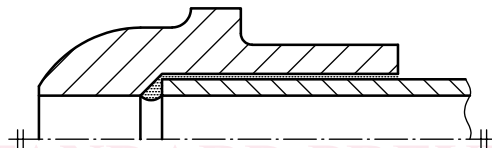


Figure 8 — Brazed fitting

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](#).

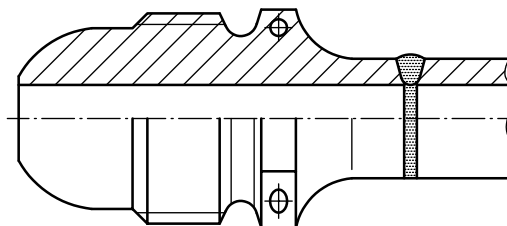


Figure 9 — Welded fitting

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](#).

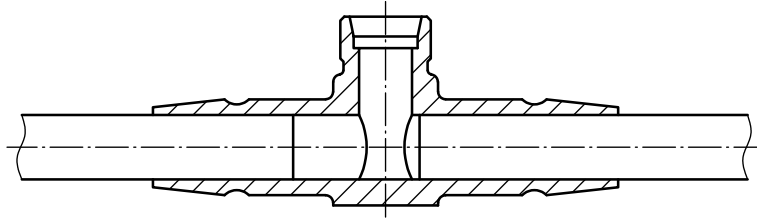


Figure 10 — External swage fitting

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](#).

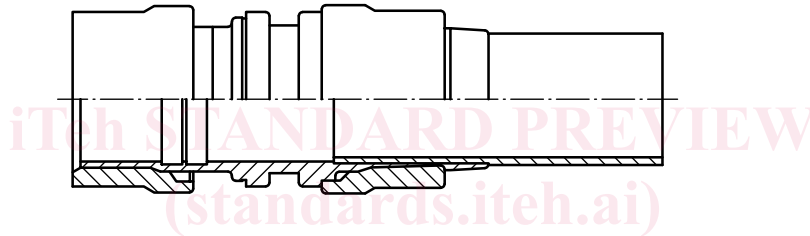


Figure 11 — Axial swage fitting

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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.

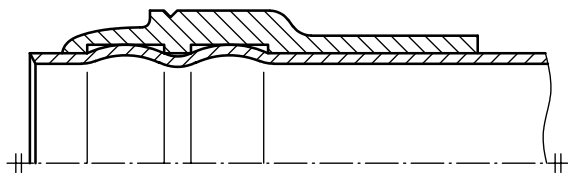


Figure 12 — Internally swaged fitting

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.

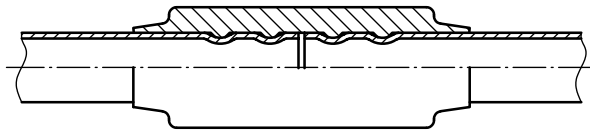


Figure 13 — Shape-memory-alloy permanent fitting

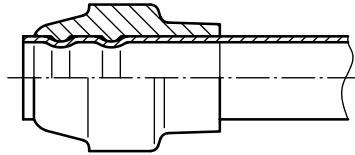


Figure 14 — Shape-memory-alloy separable fitting

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](#).

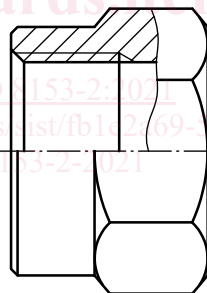


Figure 15 — B-nut

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](#).

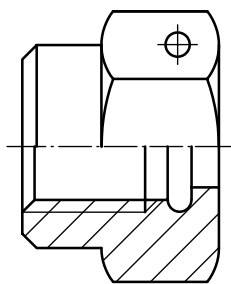


Figure 16 — Swivel nut

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](#).

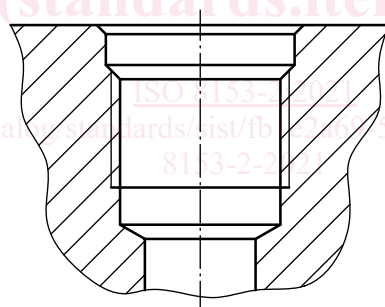


Figure 17 — Threaded port

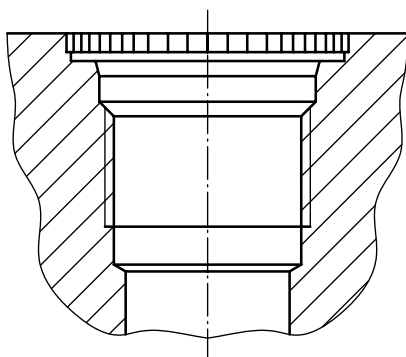


Figure 18 — Port for fitting with lock ring

3.1.33
port fitting
boss fitting

plug-in union fitting having a threaded end allowing its installation into a threaded port

EXAMPLE See [Figure 19](#).

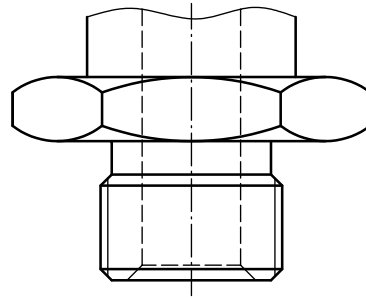


Figure 19 — Port fitting

3.1.34
ring locked fitting

port fitting with a serrated lock ring which engages in serrations in a threaded port and thereby prevents rotation of the port fitting with respect to the equipment

EXAMPLE See [Figure 20](#).

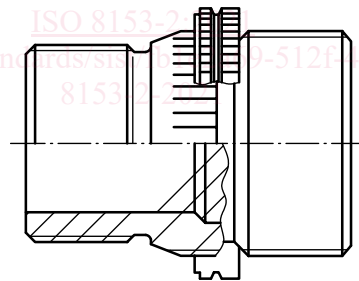


Figure 20 — Ring locked fitting

3.1.35
bulkhead fitting

fitting with a threaded end which passes through a bulkhead and is secured to the bulkhead with a nut

EXAMPLE See [Figure 21](#).

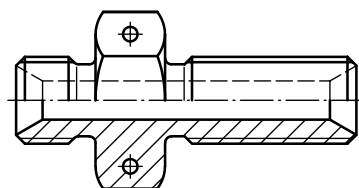


Figure 21 — Bulkhead fitting