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**Aerospace — Part numbering for hose  
assemblies**

*Aéronautique et espace — Numerotation des éléments de systèmes de  
tuyauterie*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11639 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 10, *Aerospace fluid systems and components*.

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# Aerospace — Part numbering for hose assemblies

## 1 Scope

This International Standard specifies a hose-assembly designation system and presents a part numbering scheme for aerospace fluid-system hose assemblies.

Standardization on certain numbering systems provides for numbering simplicity, ease of interchangeability, and the suppression (as required), standardization and limitation of usable codes.

## 2 Terms and definitions

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

### 2.1

#### **basic standard number**

stem number

number that is the drawing specification or standard number for a part or family of parts

### 2.2

#### **dash number**

all digits of a part number, other than the basic standard number, used to define and differentiate individual part configurations with the standard

### 2.3

#### **non-significant dash number**

dash number that is numerical, sequential and contains no coding

### 2.4

#### **digit**

number, alpha character or symbol that occupies a space within a part number

## 3 Construction of part numbers

### 3.1 Part number length

To the maximum extent possible, part numbers should be limited in length to 15 digits. Part numbers up to 20 digits in length are acceptable, if required to fully differentiate part numbers.

### 3.2 Basic numbers

It is recommended that the basic standard number be a maximum of seven digits in length.

### 3.3 Size codes

Size codes for hose assemblies shall be in accordance with Table 1. Hose assembly size codes shall be alphabetic.

Table 1 — Size codes

Hose or fitting size		Size code
Metric <sup>a</sup>	Imperial <sup>b</sup>	
DN05	–03	D
DN06	–04	E
DN08	–05	F
DN10	–06	G
DN12	–08	H
DN16	–10	J
DN20	–12	K
DN25	–16	M
DN32	–20	N
DN40	–24	P
DN50	–32	R

<sup>a</sup> DN size in millimetres, example: DN05; 5 mm.  
<sup>b</sup> Dash size in 1/16 inch, example: –05 = 5/16 inch diameter.

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**3.4 Assembly length codes**

— **15-digit part numbers**

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Metric = three-digit code as given in Table 2.

Inch = three digits in inches: first two digits in whole inches, last digit in 1/8 inch.

— **20-digit part numbers**

Metric = four digits in millimetres.

Inch = four digits in inches: first three digits in whole inches, last digit in 1/8 inch.

Hose assembly lengths shall be coded in whole millimetres.

The length code of a hose assembly shall always be three digits long, using zeros when necessary.

For hose assemblies length ≥ 1 m, the length code shall be defined using a prefix letter.

Table 2 — Three-digit metric assembly length codes

Length mm	Three-digit metric code
0 to 999	000 to 999
1 000 to 1 099	A00 to A99
1 100 to 1 199	B00 to B99
1 200 to 1 299	C00 to C99
1 300 to 1 399	D00 to D99
1 400 to 1 499	E00 to E99
1 500 to 1 599	F00 to F99
1 600 to 1 699	G00 to G99
1 700 to 1 799	H00 to H99
1 800 to 1 899	J00 to J99
1 900 to 1 999	K00 to K99
2 000 to 2 099	L00 to L99
2 100 to 2 199	M00 to M99
2 200 to 2 299	N00 to N99
2 300 to 2 399	P00 to P99
2 400 to 2 499	R00 to R99
2 500 to 2 599	S00 to S99
2 600 to 2 699	T00 to T99
2 700 to 2 799	U00 to U99
2 800 to 2 899	V00 to V99
2 900 to 2 999	W00 to W99
3 000 to 3 099	Y00 to Y99

### 3.5 Assembly length tolerances

The tolerances on assembly lengths shall be as follows.

- a)  $\pm 3,2$  mm for lengths under 0,46 m;  
 $\pm 0,125$  in for lengths under 18 in.
- b)  $\pm 6,4$  mm for lengths from 0,46 to 0,91 m exclusive;  
 $\pm 0,125$  in for lengths under 18 in.
- c)  $\pm 12,7$  mm for lengths from 0,91 to 1,3 m exclusive;  
 $\pm 0,500$  in for lengths from 36 to 50 in exclusive.
- d)  $\pm 1$  % for lengths of 1,3 m and over;  
 $\pm 1$  % for lengths of 50 in and over.

3.6 Fitting type codes

Fitting type codes shall be in accordance with Table 3.

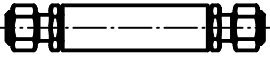
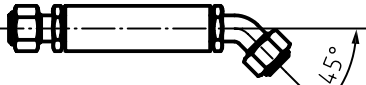

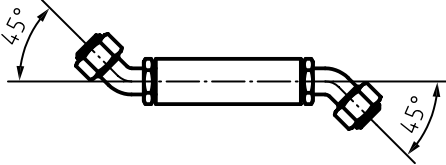
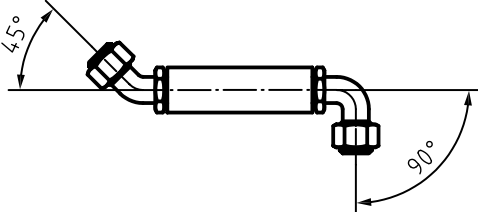
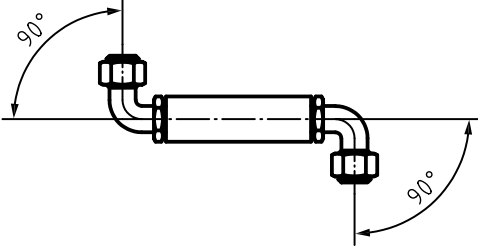
Table 3 — Fitting type codes

Code	Fitting thread type
M	Metric (mm)
E	Imperial (inch)

3.7 Fitting configuration codes

Fitting configuration codes for hose assemblies shall be in accordance with Table 4.

Table 4 — Fitting configuration codes

Assembly <sup>a</sup>	Code
	A
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	D
	E
	F

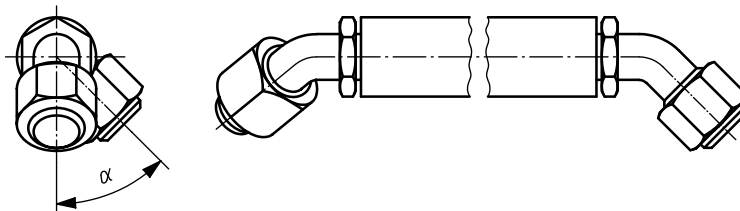
<sup>a</sup> The fitting shape is given for information only.



### 3.8 Orientation codes

Double-elbow hose assemblies or other hose assemblies requiring end coupling orientation shall have a three-digit orientation code, given in whole degrees, using zeros when necessary. The angle is determined with anti-clockwise orientation from the datum position given by the end coupling nearest to the observer.

See Figure 1 and Table 5.



The angle,  $\alpha$ , shall be in accordance with Table 5.

Figure 1 — Angle determining end coupling orientation code

Table 5 — Orientation codes

Angle $\alpha$ degrees	Code letter	Angle $\alpha$ degrees	Code letter
0,0	A	165,0	L
15,0	B	180,0	M
30,0	C	195,0	N
45,0	D	210,0	P
60,0	E	225,0	R
75,0	F	240,0	S
90,0	G	255,0	T
105,0	H	270,0	U
120,0	J	285,0	V
135,0	K	300,0	W
150,0		330,0	Y

### 3.9 General requirements

Whenever possible, a hyphen (-) should be used to separate numbers from each other (in lieu of a space) but should not be used to separate letter codes from numbers. Running letter or number codes consecutively should be avoided but is not prohibited. A hyphen shall constitute one digit.

If consecutive number codes or letter codes are used, no more than four successive number or letter codes shall be used, and adjacent codes shall not be ambiguous in meaning.

When establishing a new basic series of numbering, issuance of the short basic standard number series should be limited to those parts requiring long, complex dash numbers, their use being justified in order to stay within the 15-digit limitation. Typical fluid system parts requiring this would be hose assemblies and reducer/expander tee fittings. A short basic standard number may also be needed to stay within the 20-digit limitation.