



SLOVENSKI STANDARD
oSIST prEN 14420-7:2021
01-september-2021

Cevni fitingi z objemkami - 7. del: Spojke z vzvodno ročico

Hose fittings with clamp units - Part 7: Cam locking couplings

Schlaucharmaturen mit Klemmfassungen - Teil 7: Hebelarmkupplungen

Raccords pour flexibles avec demi-coquille - Partie 7: Raccords à cames

Ta slovenski standard je istoveten z: prEN 14420-7

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ICS:

23.040.60 Prirobnice, oglavki in spojni elementi Flanges, couplings and joints

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 14420-7

July 2021

ICS 23.040.70

English Version

Hose fittings with clamp units - Part 7: Cam locking couplings

Raccords pour flexibles avec demi-coquille - Partie 7:
Raccords à cames

Schlaucharmaturen mit Klemmfassungen - Teil 7:
Hebelarmkupplungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 218.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European Foreword

This document (prEN 14420-7:2021) has been prepared by Technical Committee CEN/TC 218 “Rubber and plastics hoses and hose assemblies”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14420-7:2013.

In comparison to EN 14420-7:2013, the following changes have been made:

- In Clause 2, the Normative references have been updated.
- The Scope of the document has been changed.

EN 14420, *Hose fittings with clamp units* consists of the following parts:

- *Part 1: Requirements, types of fixing and connection, designation and testing*
- *Part 2: Hose side parts of hose tail*
- *Part 3: Clamp units, bolted or pinned*
- *Part 4: Flange connections*
- *Part 5: Threaded connections*
- *Part 6: TW tank truck couplings* [oSIST prEN 14420-7:2021](https://standards.iteh.ai/catalog/standards/sist/f4449a42-67ea-4a8f-aa76-35e894deef6/osist-pr-en-14420-7-2021)
- *Part 7: Cam locking couplings* <https://standards.iteh.ai/catalog/standards/sist/f4449a42-67ea-4a8f-aa76-35e894deef6/osist-pr-en-14420-7-2021>
- *Part 8: Symmetrical half coupling (Guillemin system)*

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prEN 14420-7:2021 (E)**Introduction**

Cam locking couplings are manufactured worldwide according to the American “military specification” MIL-C-27487. This American standard fixes the coupling side in a limited way, but not the connection side. Other parts like levers, bolts, ring and gaskets are not standardized.

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1 Scope

This document specifies the design, materials, dimensions and marking requirements for cam locking couplings that serve as the link between hoses and connections to transport liquids, solids and gases, except liquid gas and steam. The couplings are capable of operating within the pressure range $-0,8 \text{ bar}^1$ to 16 bar and in a working temperature range of -20 °C up to $+65 \text{ °C}$. For all sizes of aluminium-cast-material couplings and for all couplings size DN 100 the pressure range is from $-0,8 \text{ bar}$ to 10 bar.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 755-2, *Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles — Part 2: Mechanical properties*

EN 1706, *Aluminium and aluminium alloys — Castings — Chemical composition and mechanical properties*

EN 1982, *Copper and copper alloys — Ingots and castings*

EN 10088-1, *Stainless steels — Part 1: List of stainless steels*

EN 10213, *Steel castings for pressure purposes*

EN 10226-1, *Pipe threads where pressure tight joints are made on the threads — Part 1: Taper external threads and parallel internal threads — Dimensions, tolerances and designation*

EN 12420, *Copper and copper alloys — Forgings*

EN 14420-1:2013, *Hose fittings with clamp units — Part 1: Requirements, types of fixing and connection, designation and testing*

EN 14420-2, *Hose fittings with clamp units — Part 2: Hose side parts of hose tail*

EN 14420-5, *Hose fittings with clamp units — Part 5: Threaded connections*

EN 22768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1)*

EN 22768-2, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications (ISO 2768-2)²*

EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1)*

EN ISO 683-1, *Heat-treatable steels, alloy steels and free-cutting steels - Part 1: Non-alloy steels for quenching and tempering (ISO 683-1)*

EN ISO 8330:2014, *Rubber and plastics hoses and hose assemblies — Vocabulary (ISO 8330:2014)*

ISO 272, *Fasteners — Hexagon products — Widths across flats*

¹ 1 bar = 0,1 MPa.

² EN 22768-2 has been withdrawn and replaced by EN ISO 22081.

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 8330:2014 and the following apply.

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

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

— IEC Electropedia: available at <https://www.electropedia.org/>

3.1

DN

nominal size

alphanumeric designation of size for components of a pipework system, which is used for reference purposes, comprised of the letters DN followed by a dimensionless whole number which is indirectly related to the physical size, in millimetres, of the bore or outside diameter of the end connections

Note 1 to entry: The number following the letters DN does not represent a measurable value and should not be used for calculation purposes except where specified in the relevant standard.

Note 2 to entry: In those standards which use the DN designation system, any relationship between DN and component dimensions should be given, e.g. DN/OD or DN/ID.

[SOURCE: EN ISO 6708:1995, 2.1]

3.2

PN

alphanumeric designation used for reference purposes related to a combination of mechanical and dimensional characteristics of a component of a hose fitting

Note 1 to entry: It comprises the letters PN followed by a dimensionless number.

Note 2 to entry: The number following the letters PN does not represent a measurable value and should not be used for calculation purposes except where specified in the relevant standard.

3.3

main gasket

interface gasket between the male and female part of a coupling

3.4

thread gasket

flat faced gasket for threads according to EN ISO 228-1

4 Requirements

4.1 Construction

The curves of the lever and the adapters as well as the dimensions of the main gaskets shall be harmonized such that twisting of the hose and vibrating during operation shall not lead to leakage. Cam arms shall be manually operable.

Cam arms shall be suitable to operate without using tools.

For gauges for cam-locking couplings according to this document see Annex A.

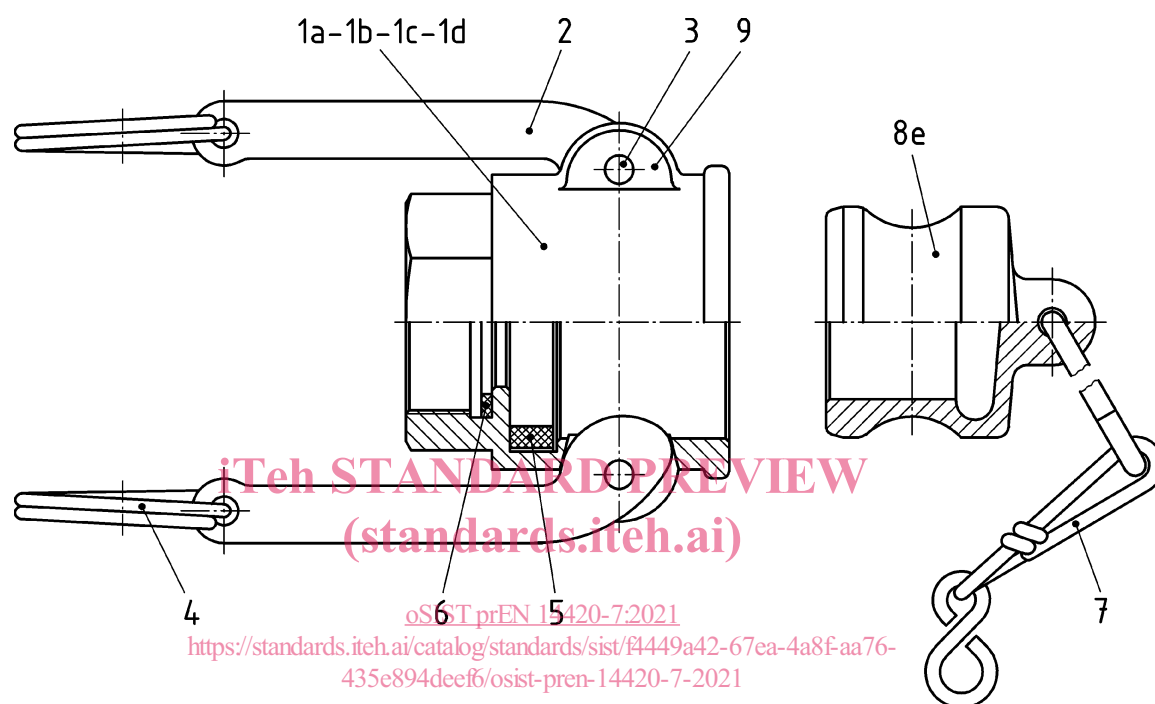
NOTE If the requirements of this document are met, compatibility between couplers and adapters from different manufacturers is ensured. Apart from gaskets, the interchangeability between spare parts from different manufacturers cannot be ensured.

4.2 Temperatures

Range of working temperatures of couplings equipped with nitrile butadiene rubber gasket (NBR-gasket): $-20\text{ }^{\circ}\text{C}$ to $+65\text{ }^{\circ}\text{C}$.

5 Survey

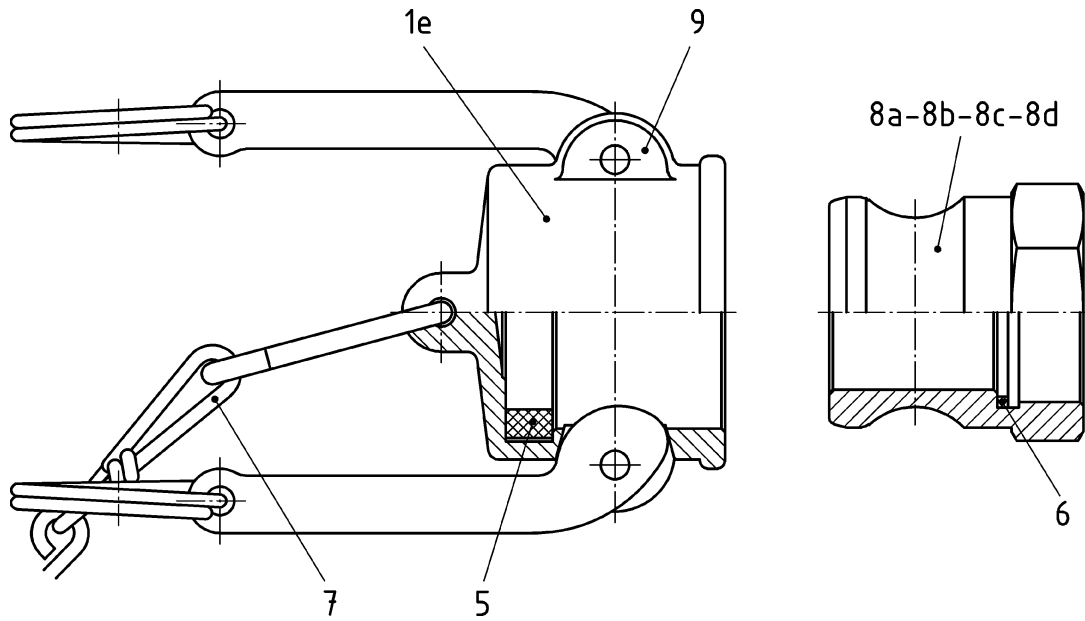
Figure 1 and Figure 2 show examples for cam-locking couplings. A parts list is given in Table 1.



NOTE Chain optional.

Figure 1 — Coupler type DF and adapter type DP (dust plug)

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NOTE Chain optional.

Figure 2 — Coupler type DC and adapter type AF

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Table 1 — Parts list

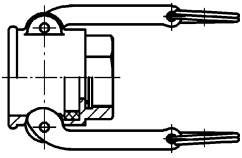
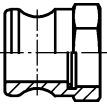
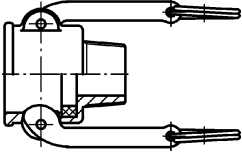
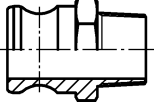
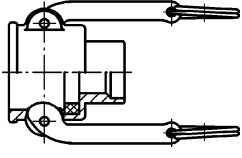
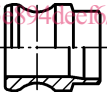
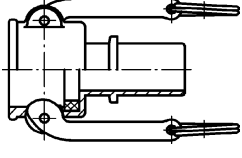
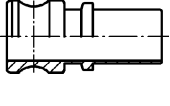
Item No.	Number of pieces	Nomination		
1 a	1	body	with internal thread	for coupler
1 b	1		with external thread	
1 c	1		with welding connection	
1 d	1		with hose nipple	
1 e	1		cap	
2	2	cam arms		
3	2	pin		
4	2	ring		
5	1	main gasket		
6	1	thread gasket for internal thread (see EN 14420-5)		
7	1	At the discretion of the manufacturer ^a		
8 a	1	Adapter	with internal thread	
8 b	1		with external thread	
8 c	1		with welding neck	
8 d	1		with hose tail	
8 e	1		plug	
9	4	ears		

^a The chain is not part of a complete coupling.

6 Types of connection

The different types of connection of cam lock couplings are specified in Table 2.

Table 2 — Types of connection

Coupler			Adapter			Kind of connection	DN	Thread
Figure	Type	For detail see	Figure	Type	For detail see			
	DF	8.2.1		AF	8.8.1	internal thread according to EN ISO 228-1 flat-faced with thread gasket according to EN 14420-5	20 25 32 40 50 65 80 10 0	G 3/4 G 1 G 1 1/4 G 1 1/2 G 2 G 2 1/2 G 3 G 4
	BF ^a	8.2.2		FF ^a	8.8.2	external thread according to EN 10226-1	20 25 32 40 50 65 80 10 0	R 3/4 R 1 R 1 1/4 R 1 1/2 R 2 R 2 1/2 R 3 R 4
	DW	8.2.3		AW	8.8.3	welding connection	20 25 32 40 50 65 80 10 0	—
	CC	8.2.4		EC	8.8.4	hose tail	20 25 32 40 50 65 80 10 0	—

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