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Gas welding equipment — Hose connections for equipment for welding, cutting and allied processes — Listing of connections which are either standardised or in common use

Matériel de soudage aux gaz — Raccords pour tuyaux souples pour appareils de soudage, coupage et techniques connexes — Listes de raccords normalisés ou d'usage courant

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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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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/TR 28821 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 8, *Equipment for gas welding, cutting and allied processes*.

ISO/TR 28821 cancels and replaces ISO 3253:1998.

Requests for official interpretations of any aspect of this Technical Report should be directed to the Secretariat of ISO/TC 44/SC 8 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

Introduction

In 2003 when ISO/TC 44/SC 8 undertook the systematic revision of ISO 3253:1998, a number of member bodies represented in the committee pointed out that the hose connections described in ISO 3253 were in use only in certain regions and countries. Many member bodies issued their own standard for hose connections many years ago. Therefore many millions of hose connections of different types to those of ISO 3253 are in world-wide use, and the various countries concerned are not ready to give up such connections due to the very large costs and disruptions to industry which would be involved.

It was therefore decided to draw up a list of the known hose connections, either standardized or in common use, to be published as this Technical Report to replace ISO 3253. The publication of this data is expected to limit the proliferation of new hose connection systems by directing countries which have not yet issued their own national standard for hose connections to those existing standards which are in use in the widest number of countries.

This document is published as a Technical Report instead of an International Standard because it is for information purposes only and part of the data it contains is extremely difficult to verify precisely.

Gas welding equipment — Hose connections for equipment for welding, cutting and allied processes — Listing of connections which are either standardised or in common use

1 Scope

This Technical Report lists the hose connections for equipment for welding, cutting and allied processes which are standardised within countries of ISO member bodies. Its purpose is to prevent further proliferation of hose connections in countries or fields of applications where such connections have not been standardised.

This Technical Report only provides details of the thread type and size applying to that connection. For a more complete description of a hose connection and further applicable requirements and limitations, refer to the corresponding national standard or national industry specification.

2 Abbreviated terms

The abbreviated terms used in the fourth column of Table 2 designate the national or industry standards produced by the ISO member bodies or other issuers as listed in Table 1 below.

Table 1 — Abbreviated terms

National or industry standard designation	ISO member body or issuer
AS	Standards Australia
CGA	Compressed Gas Association, Inc. (Arlington, VA, USA)
EN	European Committee for Standardization
JIS	Japanese Industrial Standards Committee

3 Codes

The following codes (taken from ISO 3166-1) have been used in drawing up Tables 3 and 4.

AU: Australia

BE: Belgium

CA: Canada

CH: Switzerland

DE: Germany

FR: France

GB: United Kingdom

ID: Indonesia

IT: Italy

JP: Japan

MY: Malaysia

NZ: New Zealand

PH: Philippines

SG: Singapore

TH: Thailand

US: United States of America

4 Listing of connections

It is recommended that before allocating new hose connections, member bodies should consult Tables 2 to 4 and select, if possible, those connections which have been adopted by the greatest number of countries.

The listed hose connections are also in common use in countries not known to have issued a standard for hose connections, and this information is also given where available to the Committee. This use may be only partial in those countries.

Table 2 — Nominal dimensions, designations and references in national standards

Nominal diameter mm	**Pitch** mm	**Designation**	**National or industry standards**
9,525	1,058	0.375-24UNF-2A/B-LH-EXT and -INT	CGA E-1:2000
9,525	1,058	0.375-24UNF-2A/B-RH-EXT and -INT	CGA E-1:2000
9,728	0,907	G1/8 LH-INT	EN 560:2005
9,728	0,907	G1/8 RH-INT	EN 560:2005

Table 2 *(continued)*

Nominal diameter mm	Pitch mm	Designation	National or industry standards
12,000	1,000	M12x1 LH-INT	EN 560:2005, JIS B 6805:2003
12,000	1,000	M12x1 RH-INT	EN 560:2005, JIS B 6805:2003
12,500	1,270	W 12.5 - 20-LH-INT	JIS B6805:2003
12,500	1,270	W 12.5 - 20-RH-INT	JIS B6805:2003
13,157	1,337	G1/4 LH-INT	EN 560:2005
13,157	1,337	G1/4 RH-INT	EN 560:2005
14,288	1,411	0.5625-18UNF-2B-LH-INT	CGA E-1:2000
14,288	1,411	0.5625-18UNF-2B-RH-INT	CGA E-1:2000
15,875	1,411	5/8-18 UNF LH-INT	AS 4267:1995
15,875	1,411	5/8-18 UNF RH-INT	AS 4267:1995
15,875	1,411	0.625-18UNF-2A-RH-EXT	CGA E-1:2000
15,875	1,411	0.625-18UNF-2A-LH-EXT	CGA E-1:2000
16,000	1,500	M16x1.5 LH-INT	EN 560:2005, JIS B 6805:2003
16,000	1,500	M16x1.5 RH-INT	EN 560:2005, JIS B 6805:2003
16,662	1,337	G3/8 LH-INT	EN 560:2005
16,662	1,337	G3/8 RH-INT	EN 560:2005
20,000	1,500	M20x1.5 LH-INT	EN 560:2005
20,000	1,500	M20x1.5 RH-INT	EN 560:2005
20,955	1,814	G1/2 LH-INT	EN 560:2005
20,955	1,814	G1/2 RH-INT	EN 560:2005
22,911	1,814	G5/8 LH-INT	AS 4267:1995
22,911	1,814	G5/8 RH-INT	AS 4267:1995
22,225	1,814	0.875-14UNF-2A/B-LH-EXT and –INT	CGA E-1:2000
22,225	1,814	0.875-14UNF-2A/B-RH-EXT and –INT	CGA E-1:2000
26,441	1,814	G3/4 LH-INT	EN 560:2005
26,441	1,814	G3/4 RH-INT	EN 560:2005
31,75	2,117	1.250-12UNF-2A/B-LH-EXT and –INT	CGA E-1:2000
31,75	2,117	1.250-12UNF-2A/B-RH-EXT and –INT	CGA E-1:2000
33,249	2,309	G1 LH-INT	EN 560:2005
33,249	2,309	G1 RH-INT	EN 560:2005
NOTE 1 For consistency, the designation refers to the union nut. NOTE 2 The abbreviated terms used in the designation of the screw threads differ from one national standard to another. A uniform system of abbreviated terms as shown below has been adopted in this Technical Report for ease of reading. The abbreviated terms are not necessarily identical to those in the relevant national standards or national industry specification. NOTE 3 The listed national standard or industry specification may specify other features of the hose connections, e.g. the hose tail dimensions.			
LH = left hand RH = right hand		EXT = external INT = internal	

Table 3 — Hose connections for oxygen and non-flammable gases

Union nut thread		Designation	Oxygen and non-fuel gases	Oxygen only	Inert gases	Water and industrial air
Nominal diameter mm	Pitch mm					
9,525	1,058	0.375-24UNF-2A-RH-EXT			US (CA)	
9,525	1,058	0.375-24UNF-2A-LH-EXT				US (CA)
9,525	1,058	0.375-24UNF-2B-RH-INT		US (CA)		
9,728	0,907	G1/8 RH-INT	BE, CH, DE, GB, IT			
12,000	1,000	M12x1 RH-INT	FR, JP			
12,500	1,270	W 12.5 - 20-RH-INT	JP			
13,157	1,337	G1/4 RH-INT	BE, CH, DE, GB, IT			
14,288	1,411	0.5625-18UNF-2B-RH-INT		US (CA, PH, TH)		
15,875	1,411	0.625-18UNF-2A-RH-EXT			US (CA)	
15,875	1,411	0.625-18UNF-2A-LH-EXT				US (CA)
15,875	1,411	5/8-18 UNF RH-INT	AU (NZ)			
16,000	1,500	M16x1.5 RH-INT	FR, JP			
16,662	1,337	G3/8 RH-INT	BE, CH, DE, GB, IT (ID, MY, SG)			
20,000	1,500	M20x1.5 RH-INT	FR, JP			
20,955	1,814	G1/2 RH-INT	BE, CH, DE, GB, IT			
22,911	1,814	G5/8 RH-INT	AU (NZ)			
22,225	1,814	0.875-14UNF-2A-LH-EXT				US (CA)
22,225	1,814	0.875-14UNF-2A-RH-EXT			US (CA)	
22,225	1,814	0.875-14UNF-2B-RH-INT		US (CA)		
26,441	1,814	G3/4 RH-INT	BE, CH, DE, GB, IT			
31,75	2,117	1.250-12UNF-2B-RH-INT		US (CA)		
31,75	2,117	1.250-12UNF-2A-RH-EXT			US (CA)	
31,75	2,117	1.250-12UNF-2A-LH-EXT				US (CA)

NOTE Countries shown in brackets have the listed connection in common use but are not known to have standardised it.

Table 4 — Hose connections for flammable gases

Union nut thread		Designation	Country
Nominal diameter mm	**Pitch** mm		
9,525	1,058	0.375-24UNF-2B-LH-INT	US (CA, PH, TH)
9,728	0,907	G1/8 LH-INT	BE, CH, DE, GB, IT
12,000	1,000	M12x1 LH-INT	FR, JP
12,500	1,270	W 12.5 - 20-LH-INT	JP
13,157	1,337	G1/4 LH-INT	BE, CH, DE, GB, IT
14,288	1,411	0.5625-18UNF-2B-LH-INT	US (CA, PH, TH)
15,875	1,411	5/8-18 UNF LH-INT	AU (NZ)
16,000	1,500	M16x1.5 LH-INT	FR, JP
16,662	1,337	G3/8 LH-INT	BE, CH, DE, GB, IT (ID, MY, SG)
20,000	1,500	M20x1.5 LH-INT	FR
20,955	1,814	G1/2 LH-INT	BE, CH, DE, GB, IT
22,911	1,814	G5/8 LH-INT	AU (NZ)
22,225	1,814	0.875-14UNF-2B-LH-INT	US (CA, PH, TH)
26,441	1,814	G3/4 LH-INT	BE, CH, DE, GB, IT
31,75	2,117	1.250-12UNF-2B-LH-INT	US (CA, PH, TH)
33,249	2,309	G1 LH-INT	BE, CH, DE, GB, IT
NOTE Countries shown in brackets have the listed connection in common use but are not known to have standardised it.			

Bibliography

[1] ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

[2] ISO 3253:1998, *Gas welding equipment — Hose connections for equipment for welding, cutting and allied processes*

[3] AS 4267:1995, *Pressure regulators for use with industrial compressed gas cylinders*

[4] CGA E-1:2000, *Standard connections for regulator outlets, torches, and fitted hose for welding and cutting equipment*

[5] EN 560:2005, *Gas welding equipment — Hose connections for equipment for welding, cutting and allied processes*

[6] JIS B6805:2003, *Rubber hose connection for equipment for welding, cutting and allied processes*

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