CGA®

Compressed Gas Association

The Standard For Safety Since 1913

CGA V-6—2021

STANDARD BULK REFRIGERATED LIQUID TRANSFER CONNECTIONS

SEVENTH EDITION

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Work Item 19-054
Bulk Distribution Equipment and Standards Committee

NOTE—Technical changes from the previous edition are underlined.

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1 Introduction

Before the design and evolution of standard connections, each company involved in liquid transport used a variety of proprietary connections. CGA member companies recognized a need for development of a standardized fittings system and selected specific designs for evaluation.

Prototypes were produced for testing starting in 1972. Tests were then conducted to ensure that connections could be made to prototypes submitted by each of the companies and could not be connected to fittings for products other than those intended. A one-year test was carried out in specific geographical areas where interfaces between the existing and proposed standard fittings were least likely. The results of this test program were deemed successful.

2 Scope and purpose

2.1 Scope

Liquid and vapor transfer connections for the industrial gases listed in Table 1 are specified in this standard and in Appendix A. An obsolete/limited standard flanged connection system for oxygen, nitrogen, and argon is also specified in Appendix B. The specified connections are intended for use with liquid transport equipment, such as: cargo tanks, portable tanks, and railway tank cars, but do not apply to barges and marine tankers. Termination points at liquid production plants and on stationary storage vessels that directly interface with this transport equipment are also included. The connections in this standard are intended for use exclusively with the specified products. These connections are not intended for use on uninsulated or insulated (DOT 4L) cylinders, tubes, or on small equipment using connections less than 1 in (25 mm). The physical design of the fittings, other than the connection configuration at the coupling point, is also beyond the scope of this standard.

Specialized vacuum-jacketed bayonet connections, which are required for some cryogenic products, are not included in this standard.

Table 1—Assignment of standard connections

Product	Size		Standard connection number
	in	mm	
Argon	1-1/2	38	AR-15
	2-1/2	64	AR-25
Carbon Dioxide	1	25	CO_2-10
	1-1/2	38	CO_2-15
	2	51	CO_2-20
	3	76	CO_2-30
	4	102	CO_2-40
Liquefied natural gas (LNG)	3	76	LNG-30
Nitrogen	1-1/2	38	NI-15
	2-1/2	64	NI-25
	3	76	NI-30
Nitrous oxide	1	25	N_2O-10
	1-1/2	38	N_2O-15
Oxygen	1-1/2	38	OX-15
	2	51	OX-20
	3	76	OX-30