

**CGA V-10—2010**

**HIGH PRESSURE GAS  
TRAILER CONNECTIONS**

**FOURTH EDITION**



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NOTE—Technical changes from the previous edition are underlined.

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<b>Contents</b>	<b>Page</b>
1 Introduction.....	1
2 Scope .....	1
3 Standard connections.....	1
4 Conformance and implementation .....	2
5 Materials.....	2
6 Recommended sealing torque .....	2
7 Connection standard drawing tolerances .....	2
8 References .....	9

### Figures

Figure 1—CGA 1340: 1.00-11.5 NPS—RH—EXT .....	3
Figure 2—CGA 1350: 1.00-11.5 NPS—LH—EXT .....	4
Figure 3—CGA 1440: 1.4375-12 UN—RH—EXT .....	5
Figure 4—CGA 1450: 1.4375-12 UN—LH—EXT .....	6
Figure 5—CGA 1540: 1.25-11.5 NPS—RH—EXT .....	7
Figure 6—CGA 1550: 1.25-11.5 NPS—LH—EXT .....	8

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## 1 Introduction

This publication provides standard CGA connections for high pressure gas trailers. These connections allow the higher flow rates in trailer operations that could not be provided by existing connections in CGA V-1, *Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections* [1].<sup>1</sup> Although most, if not all, of the fittings in common use on high pressure gas trailers are believed to be adequately designed and manufactured to be safe for their intended use, there exists a high potential for hazardous cross-connections and incompatible uses of the various fittings due to the lack of standards.

Several incidents and numerous near misses have been reported related to the partial engagement of similar but not identical fittings and the use of adapters to interconnect the various trailer fittings in use. Also, since various gas providers and users did not have a common fitting for high pressure gas trailer service, they frequently removed fittings and replaced them to be able to perform filling or to use the trailer. Typically, these fittings are attached to the trailer or equipment by a standard tapered pipe thread. Tapered pipe threads are not designed for repeated use and therefore can become worn and unsafe with a high potential to catastrophically discharge when pressurized. Unsafe practices such as changing the fittings at every use to connect trailers or using equipment having different fittings can cause serious accidents due to worn threads or incompatible gases or equipment. These potentially hazardous situations can be minimized or eliminated by the adoption and promulgation of standard CGA connections for the various high pressure gas trailer services.

## 2 Scope

This publication provides guidelines for standard CGA connections for various high pressure gas trailer services. It defines the main outlet connection of the trailer unit only.

## 3 Standard connections

A reasonable attempt has been made to accept fittings already in common use after successful completion of specified manufacturing drawings and qualification testing as prescribed in CGA V-1 [1].

Four fittings were identified and tested successfully. Additionally, two new fittings were designed, specified, and tested successfully. The six connections are nominally described as follows:

- CGA 1340: 1.00-11.5 NPS–RH–EXT for pressures up to 3500 psig at 70 °F (24 130 kPa at 21.1 °C) for argon, helium, krypton, neon, nitrogen, tetrafluoromethane, and xenon (see Figure 1)<sup>2</sup>;
- CGA 1350: 1.00-11.5 NPS–LH–EXT for pressures up to 3500 psig at 70 °F (24 130 kPa at 21.1 °C) for ethane, ethylene, hydrogen, methane, and natural gas (see Figure 2);
- CGA 1440: 1.4375-12 UN–RH–EXT for pressures up to 3500 psig at 70 °F (24 130 kPa at 21.1 °C) for breathing air (see Figure 3);
- CGA 1450: 1.4375-12 UN–LH–EXT for pressures up to 3500 psig at 70 °F (24 130 kPa at 21.1 °C) for air (not for breathing) (see Figure 4);
- CGA 1540: 1.25-11.5 NPS–RH–EXT for pressures up to 3000 psig at 70 °F (20 680 kPa at 21.1 °C) for oxygen (see Figure 5); and
- CGA 1550: 1.25-11.5 NPS–LH–EXT for pressures up to 3500 psig at 70 °F (24 130 kPa at 21.1 °C) for carbon monoxide (see Figure 6).

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<sup>1</sup> References are shown by bracketed numbers and are listed in order of appearance in the reference section.

<sup>2</sup> kPa shall indicate gauge pressure unless otherwise noted as (kPa, abs) for absolute pressure or (kPa, differential) for differential pressure. All kPa values are rounded off per CGA P-11, *Metric Practice Guide for the Compressed Gas Industry* [2].