



CGA E-11—2021
STANDARD FOR STATIONARY
COMPRESSED GAS CYLINDER
DISCHARGING MANIFOLDS
WITH WORKING PRESSURES
UP TO 3000 PSI

FOURTH EDITION

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Work Item 19-055
Industrial Gases Apparatus Committee

NOTE—Technical changes from the previous edition are underlined.

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1 Scope

These requirements are for stationary cylinder discharging manifolds for compressed gases for industrial use. Manifolds are used to connect compressed gas cylinders together to supply a distribution system with a particular gas at a selected distribution pressure. The requirements cover manifolds complete to the point where they connect to a distribution system.

Three basic gas groupings are covered:

- Fuel gases (grouped as acetylene, liquefied fuel gases, and nonliquefied fuel gases)—maximum 3000 psi at 70 °F (20 684 kPa at 21.1 °C);^{1,2}
- Oxygen and air—maximum 3000 psi at 70 °F (20 684 kPa at 21.1 °C); and
- Carbon dioxide, nitrogen, and inert gases—maximum 3000 psi at 70 °F (20 684 kPa at 21.1 °C).

Manifolds for gases used in oxy-fuel gas systems should be installed as outlined in NFPA 51, *Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes* [2].

This publication does not cover manifolds for medical gas cylinders, for charging cylinders, or liquid withdrawal from portable cryogenic containers (DOT 4L/TC-4LM).

2 Definitions

For the purpose of this publication, the following definitions apply.

2.1 Publication terminology

2.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

2.1.2 Should

Indicates that a procedure is recommended.

2.1.3 May

Indicates that the procedure is optional.

2.1.4 Will

Is used only to indicate the future, not a degree of requirement.

2.1.5 Can

Indicates a possibility or ability.

2.2 Technical definitions

2.2.1 Check valve

Internal valve mechanism that is pressure activated allowing flow in one direction and preventing backflow in the other.

2.2.2 Pigtail

Rigid tubing or flexible hose used to transfer gas media between cylinders, manifolds, and equipment such as regulators and which meets the pressure requirements of the process.

NOTE—Pigtail can also be known as a cylinder lead. The term pigtail originally comes from rigid leads that have one or two loops and look like a pig's tail.

¹ 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, *Guideline for Metric Practice in the Compressed Gas Industry* [1].

² References are shown by bracketed numbers and are listed in order of appearance in the reference section.