

CGA E-5—2010

TORCH STANDARD

FIFTH EDITION



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Work Item 08-036
Industrial Gases Apparatus Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendix A (Informative) is for information only.

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1 Scope

This standard applies to oxygen-fuel gas torches and cutting attachments used for cutting, welding, scarfing, heating, and other similar processes. It contains design and manufacturing requirements for torch materials, construction, safety, performance, test procedures, and marking.

This standard does not apply to air-fuel torches that use compressed air, air at atmospheric pressure, or liquid fuels. It does not include special devices, welding tips, cutting tips, multiflame heating tips, or accessories for special functions.

2 Definitions

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

2.1 Cutting attachment

Attachment for cutting metals that is used with a welding or heating torch.

2.2 Cutting tip

Nozzle for cutting metals (usually expendable) designed to produce preheat flames and a jet of oxygen.

2.3 Cutting torch

Torch designed primarily to cut ferrous metals with preheat flames and cutting oxygen.

2.4 Heating tip

Nozzle (usually multi-orifice) for heating objects.

NOTE—A heating tip may be used with a welding torch, a heating torch, or a cutting torch (instead of a cutting tip).

2.5 Heating torch

Torch designed primarily for heating.

NOTE—A heating torch usually has a higher flow capacity than a welding torch.

2.6 Injector mixer

Mixer in which the pressure of the fuel gas measured immediately before the point of mixing is lower than the pressure of the gas mixture measured between the point of mixing and the nozzle.

2.7 Mixer

Device for mixing fuel gas with oxygen.

NOTE—By design, gas mixing can occur in the handle, between the handle and nozzle, in the nozzle, or outside of the nozzle.

2.8 Positive pressure mixer

Mixer in which the pressures of both the fuel gas and the oxidizing gas measured immediately before the point of mixing are greater than the pressure of the gas mixture measured between the point of mixing and the nozzle.

2.9 Pounds per square inch gauge (psig)

Unit of pressure measurement with atmospheric pressure used as the base or reference pressure.

NOTE—Under standard conditions, 0 psig is equivalent to 14.7 psia (101 kPa, abs).^{1, 2}

2.10 Welding tip

Nozzle (usually single orifice) used for welding, brazing, or heating metals.

2.11 Welding torch

Torch designed for welding, brazing, or heating operations.

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

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