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**SPECIFICATION: G-2041-3**

**TITLE: REQUIREMENTS FOR THE INSTALLATION OF GAS UTILIZATION EQUIPMENT THAT MIXES PRESSURIZED OXYGEN WITH NATURAL GAS**

**VOLUME: 4 and Gas Yellow Book**

**COURSE ID: [GAS0403](#)**

★ **REQUIRED TRAINING GROUPS: Gas Distribution Services, Energy Services**

Each group listed is responsible for its own training which may be specific to a title/individual and not to the group in its entirety. Please check with your local training coordinator/department.

**SUBSTANTIVE REVISIONS: (See ★)**

- 1) Cover Page - Removed Core Group and Target Audience fields and replaced with Required Training Groups.
- 2) Table of Contents and Section 3.0 - Removed "Applicable Organizations" section and added "Climate & Environmental Considerations" section.
- 3) Section 4.4A) - Deleted comma for clarity.
- 4) Sections 4.4C) and 4.4D) - Removed limitation of the meter dial test as the only method to perform an integrity test in 4.4C). Removed callout to Attachment B in G-11836 since it is completed by the plumber. Replaced CAD with the Company's system of record.
- 5) Section 5.0 - Removed reference to attached schematic drawing 359677 and provided hyperlink instead.
- 6) Section 5.6 - Added "Section" for clarity.
- 7) Section 7.0 - Added reference drawing 359677 and Table 24 of Con Edison's "A Customer Guide to Natural Gas Service Installation" (Yellow Book).

**REVISIONS:** (Continued)

- 8) Section 8.0
  - Changed "Appendix" to "Attachment" for consistency. Removed 359677.
- 9) Attachment A
  - Changed "Appendix" to "Attachment."
- 10) 359677
  - Removed attached schematic drawing 359677 and provided hyperlink in specification instead.



# Gas Operations Standards

**TITLE: REQUIREMENTS FOR THE INSTALLATION OF GAS UTILIZATION EQUIPMENT THAT MIXES PRESSURIZED OXYGEN WITH NATURAL GAS**

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**REQUIREMENTS FOR THE INSTALLATION OF GAS  
TITLE: UTILIZATION EQUIPMENT THAT MIXES PRESSURIZED  
OXYGEN WITH NATURAL GAS**

**1.0 SCOPE**

This specification covers the requirements for the installation of gas utilization equipment that mixes pressurized oxygen with natural gas. This mixing equipment is typically torches used in jewelry manufacturing. This specification applies to all new installations and those existing installations where there have been gas piping changes requiring local municipal inspection and/or approval.

**2.0 LEGAL REQUIREMENTS**

NYC Fire Code, Section FC 2609 "Piping Manifolds and Hose Systems for Fuel Gases and Oxygen"

Occupational Safety and Health Administration Requirements

Local Municipal Codes

★ **3.0 CLIMATE & ENVIRONMENTAL CONSIDERATIONS**

Methane (CH<sub>4</sub>) is considered a greenhouse gas (GHG) and is more powerful than carbon dioxide (CO<sub>2</sub>). Planning and precaution should be taken to mitigate the release of methane into the atmosphere.

For guidance on climate and environmental considerations please reference Corporate Instruction "[Climate Change Adaptability & Resiliency](#)" Corporate Instruction (CI-610-4)."

**4.0 RESPONSIBILITIES**

4.1 The customer shall notify the Company when they plan to install gas utilization equipment that mixes pressurized oxygen with natural gas.

4.2 Energy Services shall be responsible for informing customers of the required equipment as detailed in Section 5.0. The required equipment must be provided and installed by the customer.

4.3 Energy Services shall be responsible for ensuring that the required equipment detailed in Section 5.0 is in place and that a certificate (i.e., Blue Card) has been received from the authority having jurisdiction prior to issuing a turn-on request to Gas Distribution Services.

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**4.0 RESPONSIBILITIES (Continued)**

4.4 Gas Distribution Services shall be responsible for performing an integrity test on gas piping and gassing in all equipment with the assistance of the customer's plumber or mechanical contractor using the following guidelines:

- ★ A) Perform a walkdown of the entire accessible customer piping system from the gas meter through and including gas torches. It is recommended that this is performed in concert with the building's superintendent, licensed plumber, or qualified contractor. Verify that all equipment meets company requirements.
- B) Establish two-way radio communication with your mechanic(s) or assistant(s).
- ★ C) Perform an integrity test from the appliance control valves (ACVs) upstream of the natural gas booster to the natural gas booster for five (5) minutes. Document the test results in the Company's system of record.
- ★ D) Perform an integrity test from the natural gas torch booster to the torch ACVs at line pressure for five (5) minutes. Soap test all visible and accessible hoses, fittings and equipment. Document the results of the test in the Company's system of record.
  - 1) If all test results are acceptable, go to step (E).
  - 2) If the results indicate an issue with the equipment or if the equipment/piping/hose has leaks, notify the party and complete a red tag as per [G-11837](#). Perform all necessary actions to ensure the area is left in a safe condition.
- E) Place all equipment in normal operating mode.

4.5 No gas service shall be supplied to a customer who has not made the necessary installations of equipment detailed in Section 5.0.

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**5.0 CUSTOMER’S NATURAL GAS/OXYGEN EQUIPMENT**

★ Reference schematic drawing [359677](#) for typical installations of natural gas torch boosters and associated equipment.

5.1 A “Check-All” check valve shall be installed downstream of the gas meter. There should be at least 10 pipe diameters of straight pipe upstream of the check valve. Table 24 of Con Edison’s “[A Customer Guide to Natural Gas Service Installation](#)” (i.e., Gas Yellow Book) lists approved “Check-All” check valves.

5.2 Approved flashback arrestors shall be installed upstream of the torch(es) on both the natural gas and oxygen supply lines. The flashback arresters may be installed either on the header pipe that supplies multiple torches **or** on each individual torch. Table 24 of Con Edison’s “[A Customer Guide to Natural Gas Service Installation](#)” (i.e., Gas Yellow Book) lists approved gas and oxygen models for both situations.

5.3 A natural gas torch booster approved by the NYC Fire Department and NYC Department of Buildings (or local municipal codes for Westchester locations) shall be installed as per manufacturer’s guidelines.

**NOTE:** In this situation, the natural gas torch booster is considered to be an appliance as opposed to the larger natural gas boosters covered in specification [G-2040](#).

5.4 An accessible appliance control valve shall be installed upstream of the natural gas booster.

5.5 Oxygen shall be typically supplied from an oxygen generator as required by the NYC Fire Department and NYC Department of Buildings (or local municipal codes for Westchester locations).

★ 5.6 When a natural gas torch booster supplies multiple torches, the authority having jurisdiction may require hard piping from the gas torch booster to each work bench. When multiple torches are supplied, an appliance control valve shall be installed upstream of each individual torch (this is in addition to the appliance control valve specified in Section 5.4).

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**6.0 RECORDS RETENTION**

Any records generated in the course of performing work in accordance with this specification shall be maintained as required by Corporate Instruction [CI-870-1](#) "Records Management". Guidance on the retention of Company Gas Operations records can also be found on the [Records Management](#) intranet site.

★ **7.0 REFERENCES**

- [359677](#) - "Typical Installation of Natural Gas Torch Booster and Associated Equipment"
- [G-2040](#) - Requirements for the Installation of Gas Boosters, Microturbines and Associated System Protective Devices
- [G-11836](#) - Integrity Tests, Meter Turn-Ons and Turn-Offs, Meter Exchanges, and Restoration of Gas Service After Repairs
- [G-11837](#) - Investigation of an Inside Gas Leak or Odor Call and Issuance of a Warning Tag
- [CI-870-1](#) - Records Management

Table 23 of Con Edison's "[A Customer Guide to Natural Gas Service Installation](#)" (Yellow Book)

Table 24 of Con Edison's "[A Customer Guide to Natural Gas Service Installation](#)" (Yellow Book)

★ **8.0 ATTACHMENTS**

- [Attachment A](#) - Photograph of a Typical Natural Gas Torch Booster

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★ ATTACHMENT A

Photograph of a Typical Natural Gas Torch Booster



Regulator  
(supplied with  
torch booster)

Flashback Arrestor  
for Natural Gas