

CGA E-10—2013

**MAINTENANCE OF MEDICAL
GAS AND VACUUM SYSTEMS
IN HEALTH CARE FACILITIES**

FOURTH EDITION



**COMPRESSED GAS
ASSOCIATION, INC.**

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NOTE—Technical changes from the previous edition are underlined.

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1 Introduction

A planned preventative maintenance program can prevent potentially hazardous conditions and unexpected loss of service. It can also reduce the economic burden of leakage and emergency repairs. This publication is intended as a starting point for the development of a planned preventative maintenance program for centrally piped medical gas and vacuum systems. It describes minimal procedures and schedules and should be supplemented with the requirements and guidelines issued by manufacturers for specific equipment.

The specifications in this document are common to most installations. Users are encouraged to plan and schedule maintenance as required based on the conditions within a facility. A system's compliance with all applicable federal, state or provincial/territorial, and local standards is assumed. When a system does not comply with applicable regulations, it should be brought into compliance before implementation of a preventative maintenance plan.

2 Scope

This publication contains information on the maintenance of centrally piped medical gas and vacuum systems in hospitals and other health care facilities.

This publication does not apply to construction or repair of any component of a medical gas system.

3 Definitions

For purposes of this publication, the following definitions apply.

3.1 Alarm sensor

Switch, transducer, or other device that allows an alarm to sense an environmental condition.

NOTE—Common alarm sensors include pressure switches, pressure transmitters, vacuum switches, vacuum transmitters, and float switches.

3.2 Alarm system

Warning system consisting of alarm panels and associated actuating devices that provide audible and visible signals.

3.2.1 Area alarm system

Alarm system that monitors the pressure in the pipelines of medical gas and vacuum systems that serve a specific area.

3.2.2 Local alarm system

Alarm system that monitors the functions of medical gas and vacuum system source equipment at the equipment site.

3.2.3 Master alarm system

Alarm system that monitors the operation and condition of medical gas and vacuum supply sources including the pressure in the main lines of medical gas and vacuum systems.

3.3 Bulk system

Assembly of equipment, e.g., storage containers, pressure regulators, pressure relief devices, vaporizers, manifolds, and interconnecting piping.

3.3.1 Bulk nitrous oxide system

Bulk system that has a storage capacity of more than 3200 lb (1451 kg) [approximately 28 000 ft³ (793 m³)] of nitrous oxide at standard temperature and pressure (STP).

NOTE—See NFPA 99, *Standard for Healthcare Facilities*, and CSA Z305.1, *Nonflammable Medical Gas Piping Systems*, for additional information [1, 2].¹

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