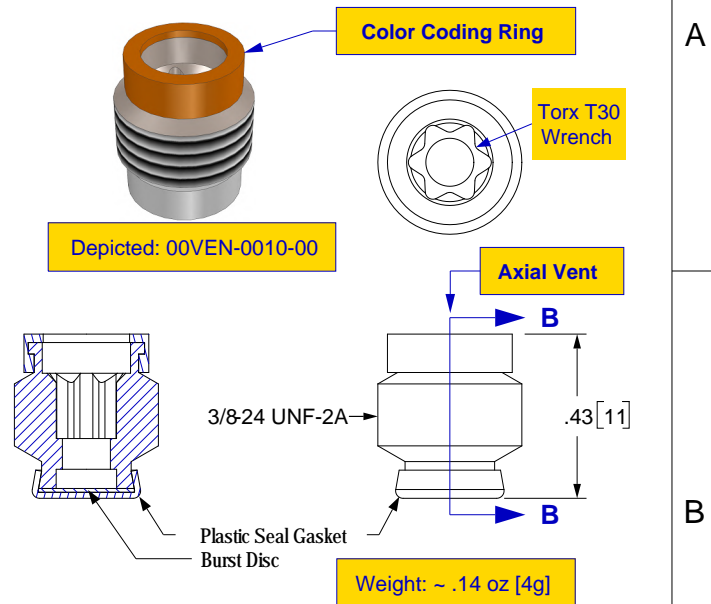
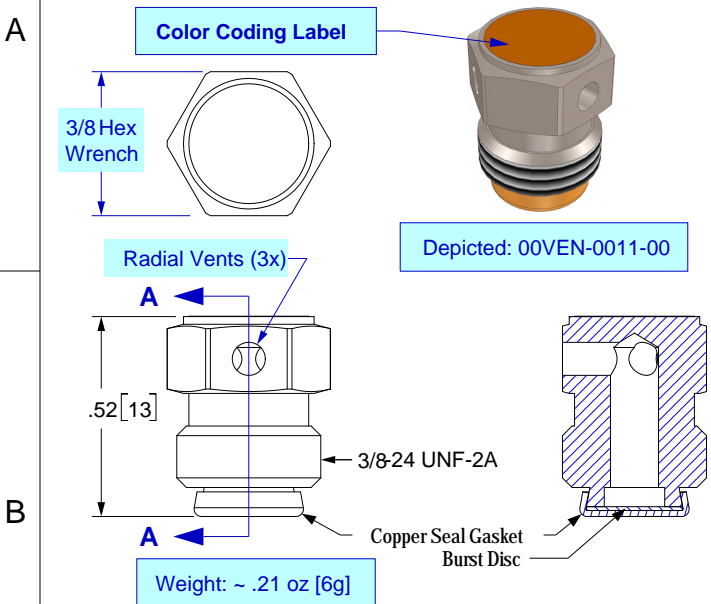


RE	ECO	Release	Drawn	REVISION HISTORY
-1	2019-012A	2019-05-09	SGO	Update torque values; Add color-coding

**HPRD Type CG-1**  
Rupture Disc only  
(typical for built-in systems)

**HPRD Type CG-4**  
Fuse Metal + Rupture Disc  
(typical for portable systems)



HPRD Type CG-1		Common Specifications				HPRD Type CG-4	
MH Part Number (Sherwood p/n)	Color Coding	MH Cylinder Family	Service Pressure	Disc Rupture Range PSIG @ 160°F [71°C] MIN-MAX	Mfg Mark	Color Coding	MH Part Number (Sherwood p/n)
00VEN-0011-00 (9-4000-60-28)	Orange	KF	1800	2700-3000	#28	Orange	00VEN-0010-00 (6513-MFA28)
00VEN-0015-00 (9-4000-60-32)	Yellow	AL, CFFC	2015	3025-3360	#32	(None)	00VEN-0012-00 (6513-MFB32)
00VEN-0009-00 (9-4000-60-48)	Black	CFF-480	3000	4500-5000	#48	Black	00VEN-0014-00 (6513-MFA48)

**GENERAL SPECIFICATIONS**

Material: UNS C36000 (CDA-360) Brass, Nickel-plated  
 Threads: 3/8-24 UNF-2A  
 Installation Torque  
 CG-1: 80-100 in-lbs [9.0-11.3 Nm]  
 CG-4: 50-65 in-lbs [5.7-7.3 Nm]  
 Pressure Rating: (see table)  
 Temperature Range: (see text)  
*Cleaned for oxygen service per MH ESR-008D*

- References**
- For more information about related products available from MH:
- 50CYL-0014-00 Cylinder Valve, Vertical Output, CGA-540-S
  - 50CYL-0020-00 Cylinder Valve, Vertical Output, DIN-477-9
  - 5SMAN-002x-00 Low Profile Manifold Assembly

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE:  
 0.X ±0.015 ANGLES ± 3°  
 0.XX ±0.010 FRACTIONS ± 1/64  
 0.XXX ±0.005

INTERPRET GD&T PER ASME 14.5

**MH MOUNTAIN HIGH E&S CO. REDMOND, OR. USA**

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Customer Drawing,  
High Pressure Relief Devices [SCD]  
**5SVEN-010-000**

THIRD ANGLE PROJECTION	DRAWN SGO 2017-08-22	DWG TITLE	DWG REV. -1
	CHECKED EAM 2017-09-21	DWG NUMBER	
	ENGINEER PLM 2017-09-21	CAD FILE 5SVEN-010-000\$-1	INV. PART NUMBER 00VEN-001x-00
DO NOT SCALE DRAWING	APPROVED HBS 2017-09-22	DWG FORMAT: ESR-002 Rev H [20]	DWG SCALE
		DWG SHEET 1 OF 2	DWG SIZE A 8½x11

### High Pressure Relief Devices (HPRD)

An HPRD is a safety device incorporated into an oxygen system, typically in a valve body or other device installed into the cylinder. It is designed to activate in the event of an over-pressure condition which might arise by either over-filling (i.e., filling the cylinder to a pressure in excess of its pressure rating), or by being subjected to excessive temperature which would consequently cause an increase in the pressure in the cylinder.

An HPRD must be properly matched to the associated cylinder such that it activates above the cylinder service pressure (normal operation), but yet well below the pressure at which the cylinder itself might rupture or be otherwise compromised. An HPRD is therefore a critically important component of an oxygen system, and improper selection or use of an HPRD can result in **severe damage, serious injury or death!**

The HPRD's described here are of the "rupture disc" type, which consist of a holder and a thin metal disc, which are together engineered to rupture within a specified pressure range. Once the disc ruptures, it does not re-close and will continue venting until the cylinder is empty.

An HPRD also incorporates a gasket that forms a high-pressure seal when the device is installed. This gasket is deformed in the course of installation and cannot be counted on to function properly if the device is subsequently removed and re-installed.

Type **CG-1** devices operate in response to pressure alone, independent of temperature (although note that rupture pressure ranges are specified at a particular reference temperature). Once the rupture pressure is exceeded, the disc ruptures and the cylinder is vented. Type **CG-1** devices typically incorporate a radial-vented configuration, which functions as an anti-recoil feature.

Type **CG-4** and **CG-5** devices additionally incorporate a metal alloy "fuse" plug in their vent port which prevents the device from operating below a specified temperature. Once the fuse temperature is reached (165°F [74°C] for **CG-4** devices, 212°F [100°C] for **CG-5** devices), the fuse plug melts and the disc will then rupture if its pressure rating is exceeded (same as a CG-1 device). Note that CG-4/CG-5 devices **do not** provide any protection against simple over-filling if the fuse temperature has not also been exceeded. Type CG-4/CG-5 devices typically incorporate an axial-vented configuration.

#### Application

HPRD's are characterized by the system Service Pressure and the device Type (**CG-1** or **CG-4**). An HPRD **must** be properly matched to the system Service Pressure. Device Type is determined by the application.

Type **CG-1** devices are generally used in "built-in" (custom) systems. MH equipment primarily intended for use in custom installations incorporate a Type **CG-1** device.

Type **CG-4** and **CG-5** devices are generally used in ambulatory (portable) systems where the cylinder may be subject to fire or extreme temperatures while in transport or storage. MH Cylinder/Valve units provided as part of a portable oxygen system incorporate a Type **CG-4** device.

Contact **Mountain High Equipment & Supply** (MH) for help in selecting the proper device for your needs.

Replacement/spare parts are available from **MH** (see Table, Sheet 1).

More information is available on the MH website ("Pressure Relief Devices for Oxygen Valves").

#### Notes and Cautions:

- **Do not** use a cylinder with an incorrect HPRD, or **without** an HPRD (by sealing or plugging the HPRD port) - **severe damage, serious injury or death** could result!
- **Do not** attempt to re-use an HPRD. Once an HPRD is removed, it **must** be replaced.
- An HPRD must be replaced as a unit (not serviceable).
- A Type **CG-4/CG-5** device must be replaced once it has been subjected to the "fuse" temperature, even if the disc has not been ruptured and the unit is otherwise intact.
- These devices **do not** provide adequate protection against excessive temperatures in the case of a partially filled cylinder. High temperatures could compromise the integrity of the cylinder, but the consequent pressure rise may not be sufficient to activate the relief device, resulting in catastrophic failure of the cylinder and **severe damage, serious injury or death!**
- Never work on a pressurized system.
- Install devices to the correct torque specification using proper tools and procedures.
- Cleanliness is critical. Contaminants such as oil, unapproved lubricants or cleaning agents, or metal particles, pose an **extreme safety hazard** with the potential of fire or explosion.

MH p/n	Description	HPRD Type
00CYL-0014-00	Cylinder Valve, CGA	<b>CG-4</b>
00CYL-0020-00	Cylinder Valve, DIN	
00CYL-0022-00	Isolation Valve	<b>CG-1</b>
00CYL-0024-00	Hex Valve	
00MAN-002x-00	Low Profile Manifold	
A0IPR-0124-00	IP Regulator	
ARCV2-01xx-xx	RCV/RCR	