

Wheel operated Residual Pressure Valves



Series CRPV-10/C

(For Carbon dioxide and Carbon dioxide gas mixtures)

H Protects cylinder contents.

- +• Eliminates need to vacuum and clean gas cylinder.
- → Increases cylinder life.



ISO 9001:2008 and TPED 1999/36/EC certified valve manufacturer

Wheel operated Residual Pressure Valve for Oxygen, Inert, High purity and Medical gases.

Series -CRPV-10/O-WN(With Non-Return function)Series -CRPV-10/O-WO(Without Non-Return function)



Specification and Certification-

- Meets EN ISO 10297, certified by BAM Berlin.
- Additonally meets ISO 15996, certified by BAM Berlin.
- Available with Υ mark in accordance with TPED 1999/36/EC.
- Production testing as per ISO 14246.



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Em W W ISO 9001:2008 and TPED 1999/36/EC certified valve manufacturer

Wheel operated Residual Pressure Valve.

Series CRPV-10

Basic concept and benefit:

The cylinder valve with a built-in Residual Pressure Unit always retains a small positive pressure in the gas cylinder, preventing the cylinder from being completely empty even if the cylinder valve is left open in customer use. This prevents ingress of atmospheric contamination, resulting in avoidance of contamination of gases and gas cylinder, thus maintaining high gas quality, reducing internal cylinder maintenance and improving cylinder life. Besides protecting the integrity of the cylinder content, the use of Residual Pressure Valve eliminates the high cost of purging, evacuating and cleaning of gas cylinder.

The Residual Pressure Unit is optionally provided with a Non-Return function that protects the cylinder from back flow of fluids into the cylinder from a higher pressure source (downstream processes). Residual Pressure Valve with Non-Return function requires special filling adaptor for filling and evacuation to allow the adaptor to mechanically deactivate the Non-Return function by pushing back the piston with a pin against the spring load.

Use of valve with or without Non-Return function depends upon operational and gas quality requirements.

Working Principle:

The Residual Pressure Unit consists of brass housing, large O-ring, spring, piston with quad ring and a small O-ring to slide within the housing.

When the valve is in the closed position, the piston is under spring force against the valve body sealing surface (seat) and the small O-ring seals the outlet off against the atmosphere.

When the main valve is opened, contents of the cylinder flows through the valve seat and the connecting opening to the front side of the piston. When the force exceeds the spring load, the piston is forced backwards off the sealing surface into the housing by compressing the spring, allowing the gas contents to flow out of the cylinder through the valve outlet.

When the cylinder pressure falls to 3-5 Bar, the spring force closes the piston against the valve seat. Therefore a residual pressure is always retained in the cylinder at the end of its discharge life even if the cylinder valve is in the open position. At the closing off pressure, the resulting force (Difference between the small sealing area and the big sealing area multiplied by the cylinder pressure) is less than the spring load pushing the piston against the sealing surface.

Non-Return function - where provided, prevents unauthorized filling. When the pressure downstream of the cylinder valve exceeds the cylinder pressure, the outlet pressure passes through the centre hole in the piston to the back side of the piston, pressure loading the piston and forcing the piston forward to shut off for flow, preventing cylinder filling. Valve without Non-Return function does not have a centre hole in the piston. This allows piston to be pushed back and filling to be carried out without the use of special filling adaptor.



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Materials of construction and assembly arrangement.

Series CRPV-10/O and CRPV-10/C

Main Valve SL.NO. **DESCRIPTION** MATERIAL (10)Free cutting brass. **Retainer Nut** 13 * Washer Copper 12 * 9 Nickel ** 11 * **Burst Disc** Nut 10 8 **Brass**. 9 Washer 8 Aluminium. Hand Wheel **Gland Nut** Free cutting brass. 7 6 **Back up Ring** 7 **EPDM O-Ring** 5 6 4 **Thrust Washer** Nylon 66. 5 Naval brass. **Top Spindle** 3 Bottom Spindle with Soft seat (CRPV-10/O) 4 **2b** Naval brass with Nylon 66. **Bottom Spindle with Soft 2a** 3 seat (CRPV-10/C) 1 Valve body Low tensile Brass 2 14 (15) (16 18 **Residual Pressure Unit** SL.NO. DESCRIPTION MATERIAL **Piston O-Ring EPDM** 14 15a Piston for valves with NRV Free cutting brass. 15b Piston for valves without NRV (13)**Quad-Ring** 16 **EPDM** 12 **Beryllium Copper** Spring 17 **Housing O-Ring** 18 **EPDM** Housing for valves with NRV 19a Free cutting brass. 19b Housing for valves without NRV

* For valves with pressure relief device (PRD)

** For Hydrogen service Copper burst disc will be provided.



Enquiry Checklist

Series CRPV-10/O and Series CRPV-10/C

At the time of enquiry/order please specify the following :-

- 1. Series CRPV-10/O or Series CRPV-10/C.
- Whether valves are required with or without Non-Return function. Valves with Non-Return function are classified by (-WN) after series no. Valves without Non-Return function are classified by (-WO) after series no.
- 3. Outlet size of the valves.
- 4. Inlet size of the valves.
- 5. Maximum working pressure of the valves for compressed gases or Minimum Test pressure of the cylinder for liquifiable gases.
- 6. Gas service.
- 7. Proposed order quantity.
- 8. Dip tube thread size, if required, other than standard 1/4" BSP.
- 9. Pressure relief device requirement.
- 10. Burst disc range for CG-1 type pressure relief device (If required).
- 11. Requirement of special filling adaptor.