CHEMORI

Cylinder Valve Assembly

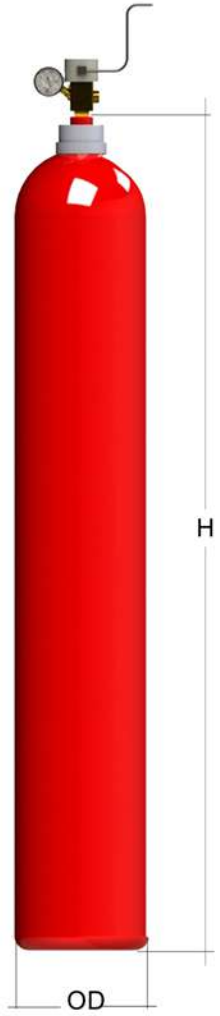
Description

Seamless steel cylinders manufactured in accordance to the following specifications.

- Pressurized equipment directive 97/23/CE (CE Marking)
- Transportable pressurized equipment directive (TPED) 199/36/CE (π Marking)

Cylinders used for the CO2 system have the design pressure of 2,175 psi (150 bar) and test pressure of 3,625 psi (250 bar). The filling rate of the cylinder is never higher than 0.6 kg of CO2 for each liter of capacity of the cylinder. Each cylinder is equipped with brass valve containing a safety burst disc for protection against over pressurization due to elevated temperature and a dip tube (siphon tube). The cylinder is also equipped with a valve cap that is attached to the threaded neck ring for the valve protection in accordance with ISO 11117 standard.

CAUTION: During handling, moving or transporting of cylinder, valve cap must be attached at all times.



SPECIFICATION				
Cylinder Part Number	**Description**	**OD (mm)**	**Height (mm)**	**Weight (KG)**
CR 8210670	67 Liters Seamless Cylinder	267	1480	78
CR 8210400	40 Liters Seamless Cylinder	229	1370	52
CR 8230270	27 Liters Seamless Cylinder	229	1070	47
CR 8230150	15 Liters Seamless Cylinder	154	960	13.7
CR 8230075	7.5 Liters Seamless Cylinder	136	650	7.6
CR 8230003	3 Liters Seamless Cylinder	113	385	3.6

Description

The valves are differential pressure type (a.k.a. back pressure type) of valves. A pilot valve is integrated in the discharge valve. The pilot valve is pressure operated that utilizes the pressurized cylinder to initiate the agent discharge. When the pilot valve is triggered manually, electrically or pneumatically, the upper pressure chamber vents immediately. This pressure drop causes the cylinder pressure to push the closing piston in the open position. The quick release valve is now open and discharging the agent completely. For the protection, the valve is equipped with a safety pressure relief disc.

While pilot valves are activated using a lever or solenoid actuator, slave valves are activated pneumatically that is installed in the upper side of the valve. The pneumatic actuator is pressurized by the pilot valve, and each pilot valve can activate up to four (4) slave valves.

Valves are available in two series – VP and VS Series. In the next section, each series of valve is described.

Specifications

Valve for fixed installations. DN12	200 Bar	300 Bar
Burst Disc Rating	270 Bar	405 Bar
Cylinder Burst Pressure	300 Bar	450 Bar
Pressure gauge connection	M12x1	M12x1
Cylinder thread	25E - DIN EN ISO 11363-1	
Valve outlet	W21,8x1/14”	W21,8x1/14”
Temperature range	-20ºC (-4ºF) up to +65ºC (149ºF)	
Max operating pressure	360 Bar	
Mounting Torque	15 Nm ± 1	
Material valve body	Forged Brass	

CHEMORI®

CO2 SYSTEM

Discharge Valve Series

VP Series

VP Series valve has a built-in electric solenoid. It operates the system cylinder electrically through electrical solenoid actuator after receiving an electronic initiating signal from the control panel. Also, it operates the system cylinder through pneumatic principle, which allows the Inert gas pressure to open the valve piston in order to discharge the gas in the protected area.

Part Number	Description
CR 8420003	200 Bar Discharge Valve
CR 8430003	300 Bar Discharge Valve

VS Series

VS Series valve has a no built-in electric solenoid. Four types of actuators can be installed on top of the valve – Electric, Pneumatic, Manual and Pneumatic + Manual actuators.

Part Number	Description
CR 8420002	200 Bar Discharge Valve
CR 8430002	300 Bar Discharge Valve

Solenoid Specifications

Nominal Voltage	24 VDC (+/-10%)
Max. Electric Current at ambient temperature	0.4 A
Power Consumption	9.3 W
Duty Cycle	100% ED
Insulation Class acc. FDE	F
Ingress Protection acc. DIN 40050	IP65 (with assembled cable connector and attached sealing)
Materials: housing, screw, screw-nut,	brass, stainless steel, nickel-plated steel, elastomeric gasket, plastic
Male connector	DIN EN 175301-803 type C

Pneumatic + Manual Actuator - VP Series

Pneumatic + Manual Actuator is used for VP Series valve. It allows both manual and pneumatic release in slave valves. Manual actuation is done by pulling out the safety pin and lever movement (moving the lever by 90 °). Pneumatic actuation is done via G1/8" connection thread.

P/N: CR 8520003

Specifications

Thread for Valve	M36 X 1.5
Thread for Pilot Connection	G 1/8"
Minimum Pilot Pressure	8 Bar
Maximum Pilot Pressure	360 Bar
Material	Brass

Pneumatic + Manual Actuator - VS Series

Pneumatic + Manual Actuator is used for VS Series valve. It allows both manual and pneumatic release in slave valves. Manual actuation is done by pulling out the safety pin and lever movement (moving the lever by 90 °). Pneumatic actuation is done via G1/8" connection thread.

Depending on the type and design of the pneumatic connection of the pneumatic + manual release device, it may be required to place an additional vent valve (bleed valve) in the pneumatic control line, to avoid accidental activations caused by inadvertent pressure increases (as result of small leakages) in the control line.

P/N: CR 8520002

Specifications

Thread for Valve	M20 X 1.5
Thread for Pilot Connection	G 1/8"
Minimum Pilot Pressure	8 Bar
Maximum Pilot Pressure	300 Bar
Material	Brass

Electric Solenoid Actuator (VS Series)

Description

Electric Solenoid Actuator is used for VS Series valve. It allows electrical release in slave valves. Upper thread in the actuator (M36 X 1.5) is a connection port to install other release systems such as pneumatic, manual or manual + pneumatic actuators to the solenoid.

P/N: CR 8540002

Specifications

Thread for Valve	M36 X 1.5
Thread for Actuators	M36 X 1.5
Nominal Voltage	24 VDC (+4/-4)
Male connector plug/socket	DIN EN 175301-803 TYPE A
Diode	None
Temperature Range	-20˚C to +65 ˚C (Transport and Storage)
	-20˚C to +50 ˚C (Application)
Max. Electric Current	0.48 A
at ambient temperature	
Power Consumption	12 W
Duty Cycle	100% ED
Actuation Signal	Time must be at least 5 seconds
Permanent Diagnosis Current	0.02 A
Trigger Activation Time	5 seconds minimum
Insulation Class acc. FDE	F
Ingress Protection acc. DIN 40050	IP65
Material: body, screws, union nuts	brass, stainless steel, nickel-plated steel, elastomeric gasket, plastic

CHEMORI®

Pneumatic Actuator VP SERIES

Pneumatic Actuator is used for VP Series valve. It allows pneumatic release in slave valves. Pneumatic actuation is done via G1/8" connection thread.

P/N: CR 8530003

Specifications

Thread for Valve	M20 X 1.5
Thread for Pilot Connection	G 1/8"
Minimum Pilot Pressure	8 Bar
Maximum Pilot Pressure	300 Bar
Material	Brass

Pneumatic Actuator VS SERIES

Pneumatic Actuator is used for VS Series valve. It allows pneumatic release in slave valves. Pneumatic actuation is done via G1/8" connection thread.

Depending on the type and design of the pneumatic connection of the pneumatic release device, it may be required to place an additional vent valve (bleed valve) in the pneumatic control line, to avoid accidental activations caused by inadvertent pressure increases (as result of small leakages) in the control line.

P/N: CR 8530002

Specifications

Part Number	Pilot Pressure Min	Pilot Pressure Max
CR 8530002-A	5 Bar	200 Bar
CR 8530002-B	8 Bar	300 Bar
CR 8530002-C	20 Bar	360 Bar

CHEMORI®

Manual Actuator - VP SERIES

Manual Actuator is used for VP Series valve. It allows manual release in slave valves. Manual actuation is done by pulling out the safety pin and lever movement (moving the lever by 90 °).

P/N: CR 8510003

Specifications

Thread for Valve	M20 X 1.5
Material	Brass

Manual Actuator - VS SERIES

Manual Actuator is used for VS Series valve. It allows manual release in slave valves. Manual actuation is done by pulling out the safety pin and lever movement (moving the lever by 90 °).

P/N: CR 8510002

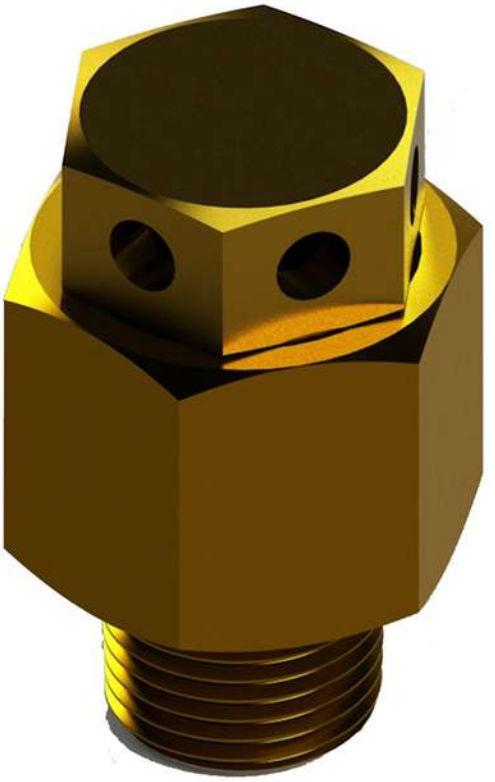
Specifications

Thread for Valve	M36 X 1.5
Material	Brass

Description

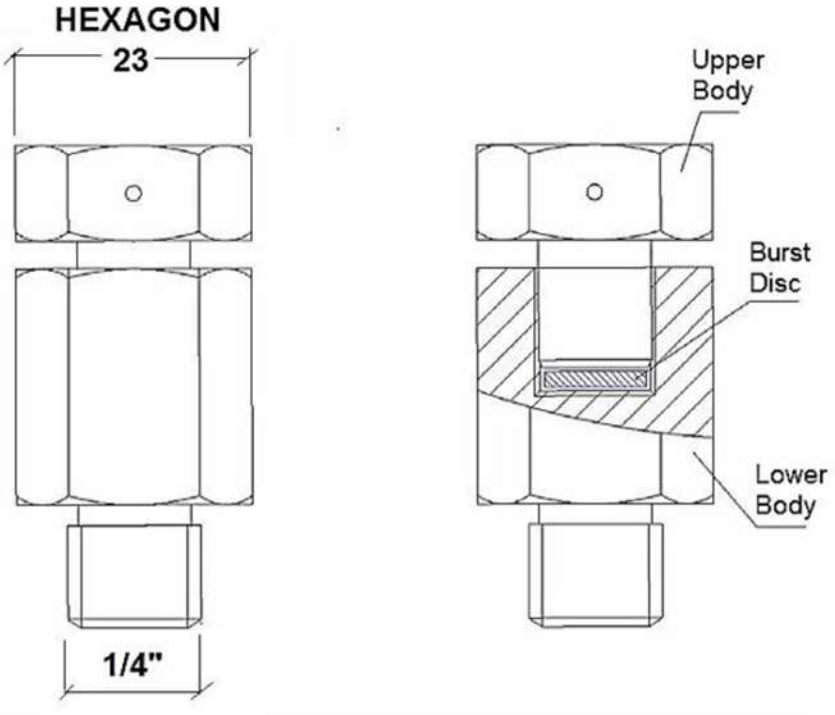
The Safety Pressure Relief is designed to prevent the entrapment of Inert gas in sections of closed piping. It is installed in the discharge manifold. The relief valve is designed or set to open at a predetermined set pressure to protect pressure vessels and other equipment from being subjected to pressures that exceed their design limits. When the set pressure is exceeded, the relief valve becomes the "path of least resistance" as the valve is forced open and a portion of the fluid is diverted through the auxiliary route.

A pressure increase up to 300 Bar or 450 Bar will cause the internal disc to rupture, thus venting the pressure to atmosphere.



P/N: CR 8760001

TECHNICAL DATA	
Burst Disc Pressure	300 or 450 Bar ± 10%
Body Material	Brass or Stainless Steel



CHEMORI

Description

Check valves are self-activating safety valves that permit gases and liquids to flow in only one direction. The purpose of a check valve is to prevent process flow from reversing in the system which could damage equipment or upset the process.

They are classified as one-way directional valves. They are also applied in process systems that have varying pressures, which must be kept separate. They do not need an outside power supply to operate since they use the pressure drop created by the media flow.

Check valve are made of brass materials and are commonly used in manifold system.

P/N: CR 8720003
Discharge Hose Check Valve

Type of Check Valve

Two types of Check Valve are utilized for the manifold system:

1. Discharge Hose Check Valve (CR 8720001 / CR 8720003)
2. Pilot Hose Check Valve (CR 8730001)

P/N: CR 8720001
Discharge Hose Check Valve

SPECIFICATIONS			
Parameters	**Discharge Hose Check Valve**		**Pilot Hose Check Valve**
Part Number	CR 8720001	CR 8720003	CR 8730001
Thread for Valve	G3/4”	G1/2”	G1/8”
Max Working Pressure	360 Bar		
Material	stainless steel, plastic, elastomer		stainless steel, plastic

CHEMORI

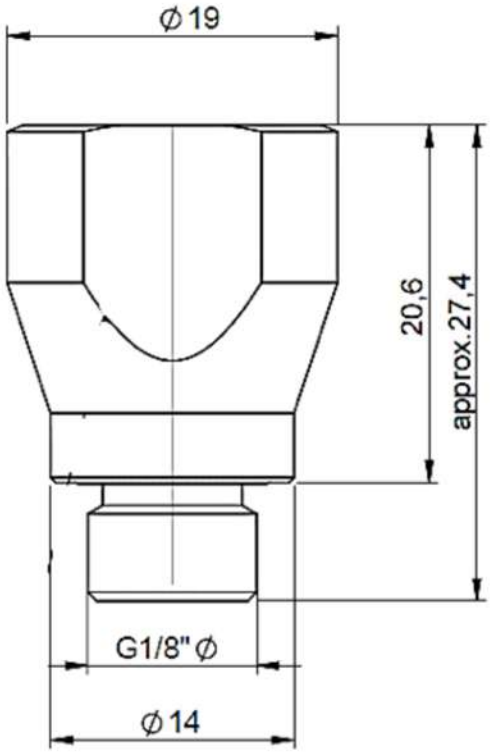
Bleed Valve

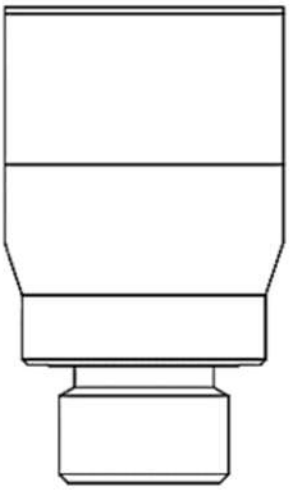
Description

The bleed valve prevents an improper built-up of pressure within the pilot hose due to possible leakages of the cylinder valve. This prevents an unintended actuation of the pneumatic actuator, respectively the fire extinguishing system.

P/N: CR 8710001

TECHNICAL DATA	
Max. Work Pressure	360 Bar
Connections	G1/8"

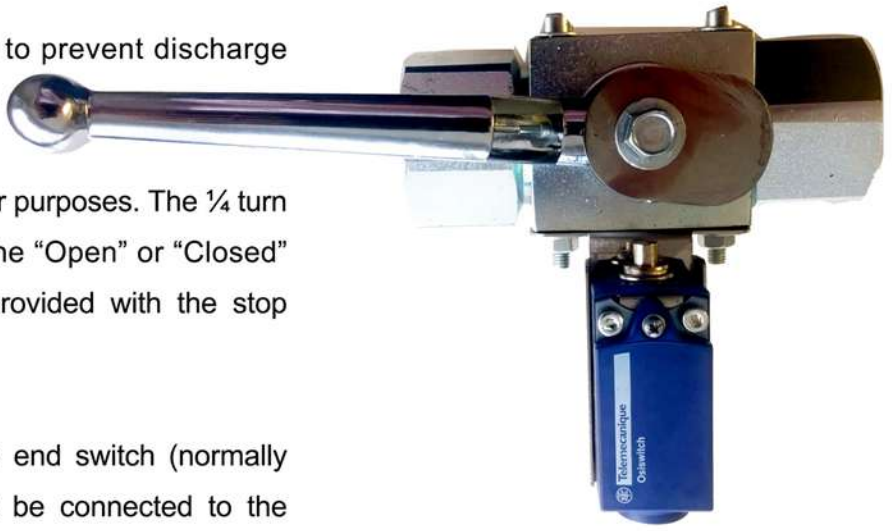




CHEMORI

Stop Valve With End Switch

Description



The stop/maintenance valve is used to prevent discharge of Inert Gas from the system discharge nozzles while the system is "locked out" for maintenance or other purposes. The ¼ turn valve handle can be locked in either the "Open" or "Closed" positions. Locks and keys are not provided with the stop valves.

The stop valves are provided with an end switch (normally open or normally closed) that should be connected to the system control panel to supervise the valve's position.

P/N: CR 8790002

End Switch Contacts: NO and NC
Model: OMRON D41120 (Optional)

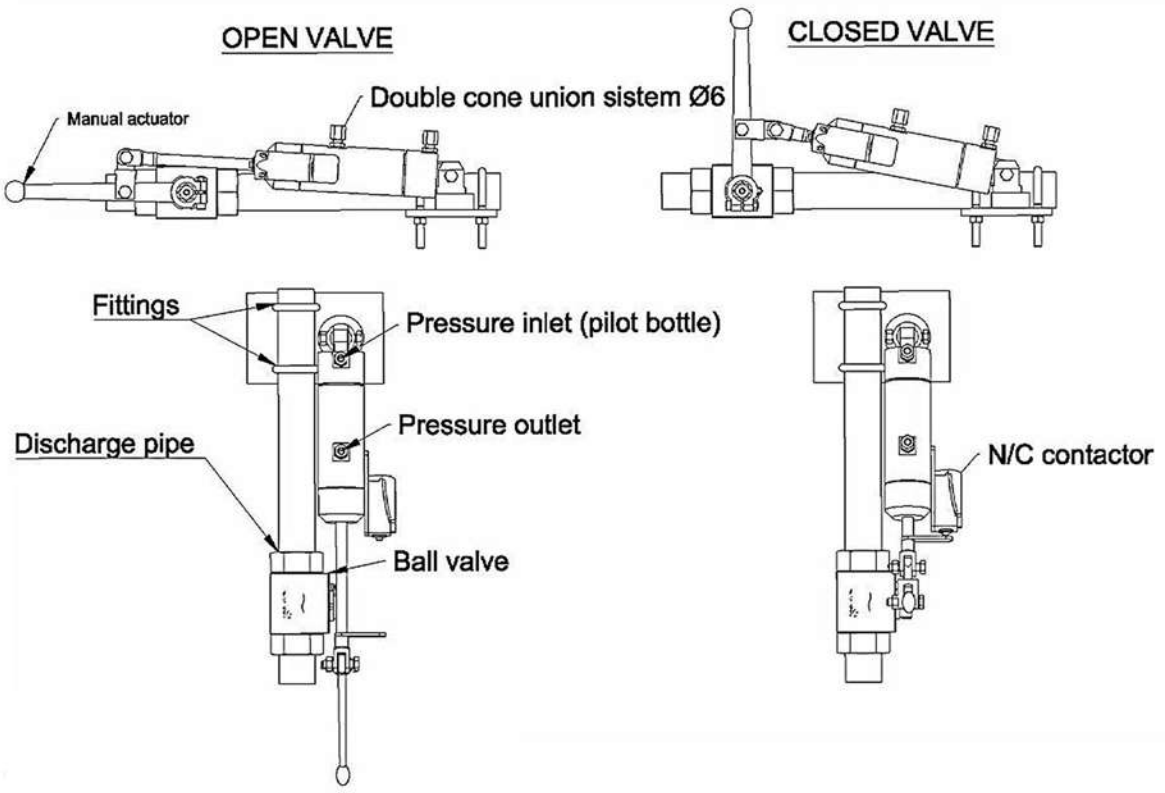
SPECIFICATIONS			
Part Number	A and B	Working Pressure	DN
CR 8790002-0.50	½"-H	500 Bar	13
CR 8790002-0.75	¾"-H	350 Bar	19
CR 8790002-1.00	1"-H	350 Bar	25
CR 8790002-1.25	1 ¼ "-H	350 Bar	32
CR 8790002-1.50	1 ½ "-H	350 Bar	40
CR 8790002-2.00	2"-H	350 Bar	52
CR 8790002-2.25	2 ½ "-H	350 Bar	65
CR 8790002-3.00	3"-H	350 Bar	80
CR 8790002-4.00	4"-H	350 Bar	104

Description

Directional valves are used to protect several hazard areas with a single fire extinguishing system. When one of the risk areas has fire, the control panel notifies the incident and send signal to the solenoid of the pilot valve and the corresponding directional valve will open in order to discharge the fire extinguishing agent in the area where the incident has happened.

The assembly of a directional valve is a normally close high pressure ball valve with a pneumatic actuator which opens the valve when it receives the signal from the control panel.

P/N: CR 8790001



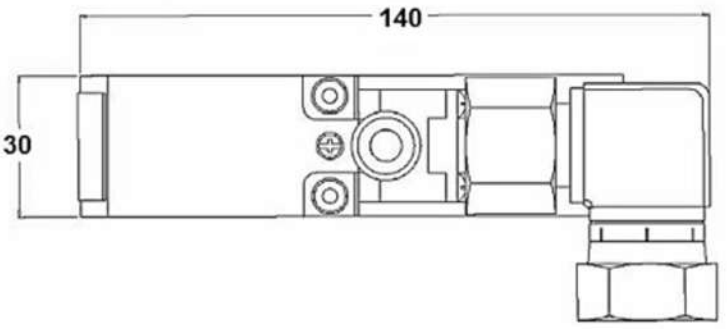
Pass Contactor Interlock

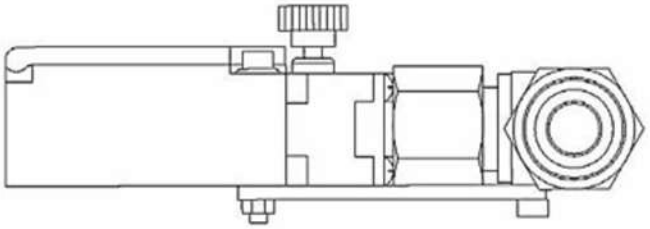
Description

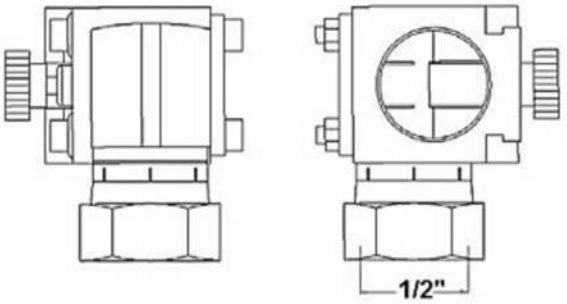
Pass contactor interlock is designed to indicate the discharge of the system. It has an interlock system which keeps the signal in the controller until the interlock is deactivated.

It is a normally open pressure gauge that is installed in the outlet of the discharge manifold. The contactor is activated when there is a pressure in the manifold to indicate that the agent has been discharged. Meanwhile, the interlock system blocks the pressure switch in the close position when it is activated in order to ensure that the activation signal is received by the central control.

P/N: CR 8740001







CHEMORI®

Description

Two types of nozzles are offered for the CO2 system. One is called directional nozzles, and another is nozzles intended for the total flooding application. These nozzles are available in different diameters and types, depending on its application and volume of the protected area.

Different sizes of nozzles are available as follows.

- Directional nozzle available sizes: 1/4” BSP, 1/2” BSP, 3/4” BSP
- Nozzle for total flooding application is summarized in Table 2-2

Directional Type A Nozzle		Directional Type B Nozzle	
Part Number	Thread Size	Part Number	Thread Size
CR 8910025-A	1/4“ BSP	CR 8910038-B	1/4" BSP
CR 8910050-A	1/2" BSP	CR 8910050-B	1/2" BSP
CR 8910075-A	3/4" BSP	CR 8910075-B	3/4" BSP
		CR 8910100-B	1" BSP
		CR 8910125-B	1-1/4" BSP
		CR 8910150-B	1-1/2" BSP
		CR 8910200-B	2" BSP

P/N: CR 8910025-A

Total Flooding Type A Nozzle		Total Flooding Type B Nozzle	
Part Number	Thread Size	Part Number	Thread Size
CR 8900050-A	1/2" BSP	CR 8900038-B	1/4" BSP
CR 8900075-A	3/4" BSP	CR 8900050-B	1/2" BSP
CR 8900100-A	1" BSP	CR 8900075-B	3/4" BSP
CR 8900125-A	1-1/4" BSP	CR 8900100-B	1" BSP
CR 8900150-A	1-1/2" BSP	CR 8900125-B	1-1/4" BSP
CR 8900200-A	2" BSP	CR 8900150-B	1-1/2" BSP
		CR 8900200-B	2" BSP

P/N: CR 8900050-A

CHEMORI®

Description

The pilot flexible hose is used in manifold configuration to connect one slave valve to another through pneumatic actuators. The hoses are interconnected on the ports of the pressure actuators.

Adapter is used to connect the M12 X 1.5 thread of pilot hose to the pilot port of the valve.

SPECIFICATIONS	
Thread	G 1/8", M12 X 1.5
Working Pressure	360 Bar
Burst Pressure	1080 Bar

Part Number	Length (L) mm	Part Number	Length (L) mm
		CR 8610700	700
CR 8610100	100	CR 8610750	750
CR 8610150	150	CR 8610800	800
CR 8610250	250	CR 8610850	850
CR 8610300	300	CR 8610900	900
CR 8610350	350	CR 8610950	950
CR 8610400	400	CR 8611000	1000
CR 8610450	450	CR 8611100	1100
CR 8610500	500	CR 8611200	1200
CR 8610550	550	CR 8611300	1300
CR 8610600	600	CR 8611400	1400
CR 8610650	650	CR 8611500	1500

CHEMORI®

CO_2 SYSTEM

Discharge Hose

Description

This flex hose has 1/2-inch threaded connections to allow interface between the cylinder valves and the discharge manifold (if applicable). Where more than one cylinder is connected to a common manifold, check valves are required at the end of each discharge flex hose.

Model A

SPECIFICATIONS		
Outlet Thread	¼"	½"
Working Pressure	400 Bar	420 Bar
Temperature Range	-40˚C up to 100˚C	
Directives	EN 853 2SN	

Model B

SPECIFICATIONS	
Outlet Thread	G ¾"
Working Pressure	360 Bar
Burst Pressure	1080 Bar

Part Number	Length (L) mm	Part Number	Length (L) mm
CR 8600250	250	**CR 8600700**	700
CR 8600300	300	**CR 8600750**	750
CR 8600350	350	**CR 8600800**	800
CR 8600400	400	**CR 8600850**	850
CR 8600450	450	**CR 8600900**	900
CR 8600500	500	**CR 8600950**	950
CR 8600550	550	**CR 8601000**	1000
CR 8600600	600	**CR 8601100**	1100
CR 8600650	650	**CR 8601200**	1200

Note: -A: Model A
-B: Model B

CHEMORI

Alarm / Siren

This is used to warn personnel of the CO2 system discharge. The pressure of the CO2 system is connected to the piping configuration in order to activate the siren throughout the duration of the agent discharge.

P/N: CR 8742001

Odorizer

In order to warn personnel in the protected area for evacuation, an odorizer is used to inject a scent into the CO2 during the system discharge.

P?N: CR 8743001

CHEMORI

Description

The pneumatic time delay is utilized in order to ensure that the personnel have the time to leave the protected area prior to the CO2 discharge and to allow additional time for ventilation and equipment to shut down.

P/N: CR 8744001

CHEMORI

Description

The weighing system allows for continuous monitoring of the charge state of both modular and pilot systems. Depending on the customers' requirement, this system is available in electronic or mechanical system. While the mechanical system uses a counter weight which will provide a visual signal in case of system leakage, electronic system provides a continuous weight monitoring system if the weight loss is more than 10% of the gross weight.

There are two types of Weighing System: Mechanical and Electrical Weighing System

MECHANICAL WEIGHING SYSTEM
P/N: CR 8820001

ELECTRICAL WEIGHING SYSTEM
P/N: CR 8820002