

# TEESING

WE MAKE YOUR TECHNOLOGY WORK



# ROTAREX

PURETEC



**VALVES FOR ULTRA-HIGH PURITY  
& SPECIALTY GASES**



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## WHAT IS PURETEC | THE WORLD LEADER IN UHP CYLINDER VALVES

Rotarex Puretec manufactures and provides Ultra High Purity cylinder valves for

- ★ Technical & Inert gases
- ★ Reactive gases
- ★ Corrosive gases
- ★ Toxic gases

With the highest level of Purity Rotarex offers you the highest tightness technology.

With the highest expectation of safety, Rotarex offers you the "finest" UHP cylinder valves.

## A FULLY CONTROLLED PROCESS TO INSURE PURITY AND RELIABILITY

### PURETEC CARRIES OUT PRODUCTION WITH CLEANROOM MANUFACTURING



- ★ Certified clean room: ISO 4 under the laminar flows under request (ISO 14644-1 cleanroom standards) and ISO 7 outside the laminar flows.
- ★ 100% helium leak testing

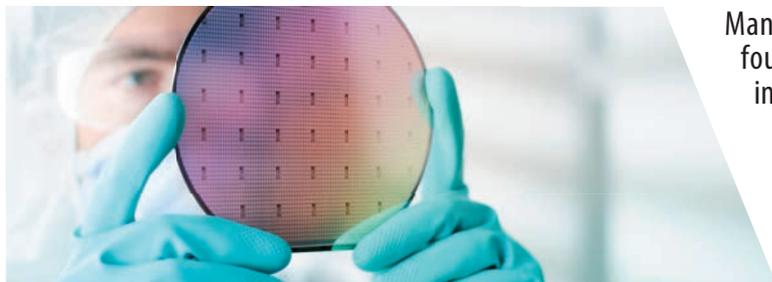
### STRICT QUALITY CONTROLS FOR EACH SINGLE VALVE

- ★ More than 14 visual, tactile or microscope controls realized on each valve
- ★ Microscope Toroids controls before and after the valve mounting
- ★ Internal & External tightness tests registered in the traceability system

## PURETEC VALVES APPLICATIONS

### GASES FOR THE ELECTRONIC INDUSTRY

#### SEMICONDUCTORS, FLAT PANEL DISPLAYS & PHOTOVOLTAICS



Many specific gases are used to manufacture processors found inside smartphones or computers, micro chips, image sensors and many other electronic devices.

Rotarex Puretec provides high performance UHP valves to ensure semiconductor companies to keep their **manufacturing processes clean, safe and stable** over time.

### GASES FOR THE CHEMICAL INDUSTRY

#### PETROCHEMICAL, COSMETICS OR RESEARCH CENTERS

The chemicals industry requires Rotarex high quality valves for high purity gases and mixtures. These gases are important in **refining processes**, to **protect substances** from **humidity** or oxygen, for **inerting**, reactor **cooling**, or **pH control**, and even to perform **tests** or **measurements** in research centers.



### CALIBRATION



A calibration gas is a reference gas or gas mixture used as a comparative standard in the calibration of analytical instruments, like gas analyzers or gas detectors.

The calibration gas itself must **maintain a precisely defined composition**, like zero gas or span gas (for example, 500 ppm carbon monoxide in nitrogen).

# TECHNOLOGY OVERVIEW

## TIED DIAPHRAGM SEAL

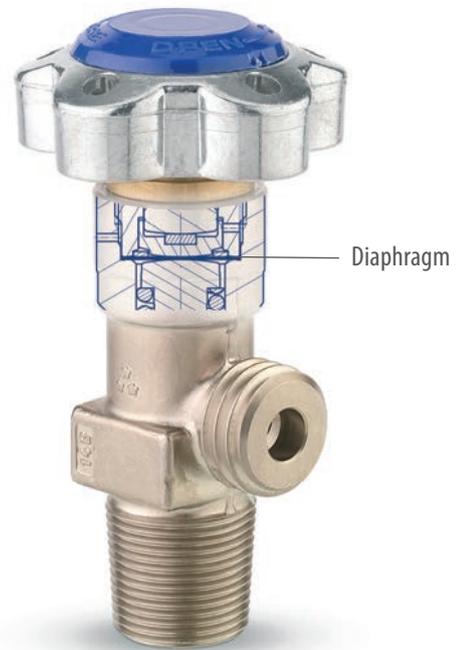


**Gas Type:** High, Ultra High purity, toxic & corrosive gases  
**Applications:** Electronics manufacturing, Chemical industry  
**Purity grade:** >8.0

### Advantages:

- ★ Reduced dead spaces and gas wetted volumes allow easy purging process
- ★ Freedom of internal threads and springs insures minimum particles generation
- ★ Very low internal volume with minimum dead spaces. Particularly beneficial for hygroscopic, corrosive, pyrophoric or high purity gases where inert gas purging is necessary before opening or after closing the valve
- ★ Freedom from seizure when used with corrosive gases. Gas does not come into contact with the valve operating mechanism
- ★ Positive and effective operation, valve lower spindle is mechanically linked to the upper spindle and operating handwheel
- ★ Backed up welded diaphragms provide a permanent and durable gas tight seal

## DIAPHRAGM SEAL



**Gas Type:** High purity, flammable & toxic gases  
**Applications:** Calibration, Laboratories, food industry  
**Purity grade:** >5.0

### Advantages:

- ★ The gas does not come into contact with the valve operating mechanism
- ★ High leak tightness through diaphragm sealing
- ★ Low operating torque

## PACKED SEAL



**Gas Type:** Corrosive, toxic gases & liquids

**Applications:** Chemical industry

**Purity grade:** >3.0

### Advantages:

- ★ Freedom from seizure when use with corrosive gases – gas does not come into contact with the valve operating system
- ★ Positive and effective operation - valve spindle is mechanically linked to the operating handwheel, which only requires low closing torque
- ★ Long life - valve spindle and seat are replaceable
- ★ Adjustable gland packing
- ★ Low internal volume - this is particularly beneficial, when using the valve for hygroscopic, corrosive or high purity gases, where inert gas purging may be necessary before opening or after closing the valve
- ★ Left hand threaded counter screw to secure sealing mechanism even under excessive torque

## INTEGRATED VALVE



Valve with integrated  
Flow Selector

Valve with integrated  
Pressure Regulator

**Gas types:** High purity gases

**Application:** Calibration

**Purity grade:** >5.0

### Advantages:

- ★ All in one design, a complete pre-engineered solution
- ★ Premium materials and components ensure purity of gas mixtures for precise calibration application
- ★ High outlet flow stability and performance
- ★ Less potential leak points
- ★ Ergonomics, compact and lightweight design for mobile applications

# TECHNOLOGY OVERVIEW

## O-RING SEAL



**Gas type:** Inert & Mixtures, Flammable, Oxygen, Carbon Dioxide, Hydrogen, Methane and Acetylene

**Applications:** Industrial

**Purity grade:** >3.0

### Advantages:

- ★ Standard Open/Close functionality
- ★ High life cycle thanks to a smart choice of materials
- ★ Safe, long, trouble free life under all service conditions

## BELLOWS SEAL



**Gas Type:** High, Ultra High purity, toxic, corrosive gases & Liquids

**Applications:** Electronics manufacturing, Chemical industry

**Purity grade:** >3.0

### Advantages:

- ★ High safety level thanks to sustainable metallic bellows, providing a high internal and external tightness ( $1.10^{-9}$  mbar.l/s)
- ★ 100% Helium leak test performed on all valves
- ★ 100% degreased for Oxygen use
- ★ TPED approved according to international transport regulation
- ★ Welding, Face seal and Flange end connections as standard option
- ★ Fluid specific seat & body material and design
- ★ High Cv Value
- ★ Electropolished surface roughness

# NEW! OPEN-CLOSE INDICATOR

EFFICIENCY & SAFETY BY KNOWING  
THE VALVE POSITION AT-A-GLANCE



- ★ EASY-TO-SEE INDICATOR IF THE VALVE IS OPEN OR CLOSED
- ★ VISIBLE FROM A DISTANCE THANKS TO COLOR CODING AND SIDE VIEW
- ★ MORE ERGONOMIC HANDWHEEL
- ★ TESTED UP TO 2,000 VALVE CYCLES ACCORDING TO EN ISO 10297-2014 STANDARD
- ★ THE STANDARD COLORS ARE DEFINED AS GREEN-OPEN / RED-CLOSED\*
- ★ AVAILABLE AS AN OPTION FOR ALL PURETEC™ ULTRA HIGH PURITY MANUAL VALVES (series D300)



**CLOSED POSITION:** The open indicator is totally hidden under the skirt. The valve is transportable.



**INTERMEDIARY POSITION:** The open indicator doesn't entirely cover the closed indicator. Tightness is no longer guaranteed.



**PARTIALLY OPEN POSITION:** The open indicator covers the closed indicator after 70° handwheel rotation but the valve is not yet fully opened.



**FULLY OPEN POSITION:** The valve is fully opened once the mechanical stop is reached (270° rotation).

# ULTRA HIGH PURITY GASES | ELECTRONIC GASES

## TIED DIAPHRAGM SEAL TYPE CYLINDER VALVES



<b>4mm orifice / 200 Bar</b>	<b>D304</b>	P. 016
<b>Internal tightness</b>	Soft	
<b>Max. working pressure</b>	200 bar	
<b>Orifice</b>	4 mm	
<b>Cv</b>	0.35	
<b>Actuator</b>	Manual	



<b>D385S</b>	P. 017
<b>Internal tightness</b>	Soft
<b>Max. working pressure</b>	200 bar
<b>Orifice</b>	4 mm
<b>Cv</b>	0.35
<b>Actuator</b>	Pneumatic



<b>D386S</b>	P. 017
<b>Internal tightness</b>	Soft
<b>Max. working pressure</b>	200 bar
<b>Orifice</b>	4 mm
<b>Cv</b>	0.35
<b>Actuator</b>	Pneumatic



<b>D354</b>	P. 018
<b>Internal tightness</b>	Soft
<b>Max. working pressure</b>	200 bar
<b>Orifice</b>	4 mm
<b>Cv</b>	0.35
<b>Actuator</b>	Pneumatic



<b>4mm orifice / 200 Bar</b>	<b>D340S</b>	P. 018
<b>Internal tightness</b>	Soft	
<b>Max. working pressure</b>	200 bar	
<b>Orifice</b>	4 mm	
<b>Cv</b>	0.29	
<b>Actuator</b>	Manual	



<b>D306</b>	P. 019
<b>Internal tightness</b>	Metal / Metal
<b>Max. working pressure</b>	150 bar
<b>Orifice</b>	3,5 mm
<b>Cv</b>	0.28
<b>Actuator</b>	Manual



<b>D356</b>	P. 019
<b>Internal tightness</b>	Metal / Metal
<b>Max. working pressure</b>	150 bar
<b>Orifice</b>	3,5 mm
<b>Cv</b>	0.28
<b>Actuator</b>	Pneumatic

NB: For specific electronic gases (Nitrous Oxide, Silane, Diborane), D388. For Tone Tank tube trailer, D334 (manual) or D382 (pneumatic)



<b>6mm orifice / 200 Bar</b>	<b>D339S</b>	P. 020
<b>Internal tightness</b>	Soft	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	6 mm	
<b>Cv</b>	0.55	
<b>Actuator</b>	Manual	



<b>D389S</b>	P. 021
<b>Internal tightness</b>	Soft
<b>Pressure</b>	200 bar
<b>Orifice</b>	6 mm
<b>Cv</b>	0.55
<b>Actuator</b>	Pneumatic



<b>D349</b>	P. 021
<b>Internal tightness</b>	Soft
<b>Pressure</b>	200 bar
<b>Orifice</b>	6 mm
<b>Cv</b>	0.55
<b>Actuator</b>	Manual



<b>8mm orifice / 45 Bar</b>	<b>D337</b>	P. 022
<b>Internal tightness</b>	Soft	
<b>Pressure</b>	45 bar	
<b>Orifice</b>	8 mm	
<b>Cv</b>	0.7	
<b>Actuator</b>	Manual	



<b>D387</b>	P. 023
<b>Internal tightness</b>	Soft
<b>Pressure</b>	45 bar
<b>Orifice</b>	8 mm
<b>Cv</b>	0.7
<b>Actuator</b>	Pneumatic



<b>D342</b>	P. 023
<b>Internal tightness</b>	Soft
<b>Pressure</b>	45 bar
<b>Orifice</b>	8 mm
<b>Cv</b>	0.55
<b>Actuator</b>	Manual

For calibration application, refer to "Solution for Calibration Gas mixture" catalog: D00006

# ULTRA HIGH PURITY GASES | ELECTRONIC GASES

## VALVES WITH INTEGRATED PRESSURE REGULATOR (VIPR)



**D551 - DUCAL** P. 024

Internal tightness	Soft
Inlet Pressure	200 bar
Outlet Pressure	1-4 bar
Actuator	Manual
Material	Stainless steel



**D553 - FLOWCAL** P. 025

Internal tightness	Soft
Inlet Pressure	200 bar
Outlet Pressure	4,5 bar
Actuator	Manual with flow selector
Material	Stainless steel

## TIED DIAPHRAGM SEAL TYPE LINE VALVES FOR TRANSPORTATION



**4mm orifice / 200 Bar** **D604** P. 026

Internal tightness	Soft seat
Pressure	200 bar
Orifice	4 mm
Cv	0.3
Actuator	Manual



**D654** P. 027

Internal tightness	Soft
Pressure	200 bar
Orifice	4 mm
Cv	0.3
Actuator	Pneumatic



**D688** P. 027

Internal tightness	Soft (knife edge seat)
Pressure	200 bar
Orifice	4 mm
Cv	0.20
Actuator	Pneumatic



**6mm orifice / 200 Bar** **D639S** P. 028

Internal tightness	Soft
Pressure	200 bar
Orifice	6 mm
Cv	0.5
Actuator	Manual



**D689S** P. 028

Internal tightness	Soft
Pressure	200 bar
Orifice	6 mm
Cv	0.5
Actuator	Pneumatic

## BELLOWS VALVE\*



**HP 2008/2012**

Internal tightness	Bellow sealing
Max. working pressure	240 bar (24 MPA)
Orifice	8 / 12mm
Cv	Between 0.77 and 2.15 depending on seat diameter
Actuator	Manual



**HP 2008/2012 CN**

Internal tightness	Bellow sealing
Max. working pressure	240 bar (24 MPA)
Orifice	8 / 12mm
Cv	Between 0.77 and 2.15 depending on seat diameter
Actuator	Pneumatic



**K300**

Internal tightness	Bellow sealing
Max. working pressure	Between 15 and 100 bar depending on seat diameter
Orifice	8 / 12 / 20 / 32 / 50 / 80mm
Cv	Between 0.78 and 114 depending on seat diameter
Actuator	Manual



**K300**

Internal tightness	Bellow sealing
Max. working pressure	Between 15 and 100 bar depending on seat diameter
Orifice	8 / 12 / 20 / 32 / 50 / 80mm
Cv	Between 0.78 and 114 depending on seat diameter
Actuator	Pneumatic

\*for detailed informations, refer to catalog E04015 - Line valves UHP cryogenic

# HIGH PURITY GASES | CALIBRATION

## DIAPHRAGM SEAL TYPE CYLINDER VALVES



4mm orifice /  
200 Bar

**D200** P. 029

Internal tightness	Soft
Pressure	200 bar
Orifice	4 mm
Cv	0.35
Actuator	Manual



**D250** P. 030

Internal tightness	Soft (lecture bottles)
Pressure	200 bar
Orifice	4 mm
Cv	0.25
Actuator	Manual



**D265** P. 030

Internal tightness	Soft
Pressure	200 bar
Orifice	3,5 mm
Cv	0.3
Actuator	Manual



**D283 (RPV inline)** P. 031

Internal tightness	Soft
Pressure	200 bar
Orifice	3,5 mm
Cv	0.2
Actuator	Manual



**D282 (RPV offline)** P. 031

Internal tightness	Soft
Pressure	200 bar
Orifice	3,5 mm
Cv	0.21
Actuator	Manual



3,5mm orifice /  
315 Bar

**D203** P. 032

Internal tightness	Soft
Pressure	315 bar
Orifice	3,5 mm
Cv	0.35
Actuator	Manual



8mm orifice /  
45 Bar

**D285 (Dual port)** P. 032

Internal tightness	Soft
Pressure	45 bar
Orifice	8 mm
Cv	1
Actuator	Manual

For other calibration application (Constant flow valve, regulators...), refer to "Solution for Calibration Gas mixture" catalog: D00000

## SPECIFIC APPLICATIONS | HYDROGEN, METHANE AND ACETYLENE

### O-RING SEAL TYPE



**D605** P. 033

Internal tightness	Soft
Pressure	300 bar
Orifice	12 mm
Cv	1.8
Actuator	Manual



**D488** P. 034

Internal tightness	Soft
Pressure	300 bar
Orifice	6 mm
Cv	0.8
Actuator	Manual

# CORROSIVE AND TOXIC GASES

## PACKED TYPE CYLINDER VALVES



<b>3mm orifice / 200 bar</b>	<b>D100</b>	P. 035
<b>Internal tightness</b>	Metal / Metal	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	3,3 mm	
<b>Cv</b>	0.3	
<b>Actuator</b>	Manual	



	<b>D131</b>	P. 036
<b>Internal tightness</b>	Metal / Metal	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	2,8 mm	
<b>Cv</b>	0.25	
<b>Actuator</b>	Pneumatic	



<b>6mm orifice / 200 bar</b>	<b>D160S</b>	P. 037
<b>Internal tightness</b>	Soft	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	6 mm	
<b>Cv</b>	0.9	
<b>Actuator</b>	Manual	



	<b>D156S</b>	P. 038
<b>Internal tightness</b>	Soft	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	6 mm	
<b>Cv</b>	0.9	
<b>Actuator</b>	Pneumatic	



	<b>D195S</b>	P. 038
<b>Internal tightness</b>	Soft	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	6 mm	
<b>Cv</b>	0.9	
<b>Actuator</b>	Manual	



	<b>D161S</b>	P. 039
<b>Internal tightness</b>	Metal / Metal	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	6 mm	
<b>Cv</b>	0.9	
<b>Actuator</b>	Manual	



	<b>D154S (Drum valve)</b>	P. 039
<b>Internal tightness</b>	Soft	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	6 mm	
<b>Cv</b>	1.1	
<b>Actuator</b>	Manual/ Key operated	



	<b>D167S (RPV offline)</b>	P. 040
<b>Internal tightness</b>	Soft	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	6 mm	
<b>Cv</b>	0.3	
<b>Actuator</b>	Manual	



<b>12mm orifice / 200 bar</b>	<b>D158 (Drum valve)</b>	P. 041
<b>Internal tightness</b>	Soft seat	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	12 mm	
<b>Cv</b>	2.9	
<b>Actuator</b>	Manual/ Key operated	



	<b>D183 (with non-return valve)</b>	P. 042
<b>Internal tightness</b>	Soft (reversed seat)	
<b>Pressure</b>	200 bar	
<b>Orifice</b>	12 mm	
<b>Cv</b>	1.1	
<b>Actuator</b>	Manual	

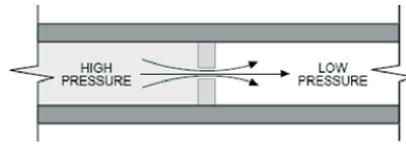
All valves are available in brass, chrome plated brass, stainless steel or Monel

## ACCESSORIES

### FILLING PORT (service oxygen clean)



### CALIBRATED FLOW RESTRICTOR



### TUBE (service oxygen clean)



## CYLINDER CONNECTORS & FILLING CONNECTORS

Connects regulators, supply boards or switch over boards to gas cylinders directly, or via a flexible hose or pigtail

### CYLINDER FITTINGS

- ★ High pressure
- ★ 300 bar / 4350 psig
- ★ Chrome plated brass or stainless steel

Special requirements on request



### KEY FEATURES

- Cylinder connector according to the following standards: AFNOR, DIN, BS, CGA, NEN, UNI, FTSC 300 bar . . .
- Other connections on demand
- Outlet connection: 16 x 1.336 - Male or 1/4 NPT - Male
- Material: chrome plated brass or stainless steel

### OPTIONS

- 300 bar (FTSC) version
- Raw brass version
- Mounted on flexible hose or pigtail



\*For detailed information, refer to the catalog E03000 - MTA

## DIAPHRAGM VALVES



### M4SI

<b>Technology</b>	Diaphragm
<b>Max. Working Pressure</b>	240 bar (3481 psig)
<b>Temperature Range</b>	-40°C to +150°C (-40°F to 302°F)
<b>Flow Capacity (Cv)</b>	0.2
<b>Material</b>	Stainless steel 316L / VAR



### M8SI

<b>Technology</b>	Diaphragm
<b>Max. Working Pressure</b>	240 bar (3481 psig)
<b>Temperature Range</b>	-40°C to +150°C (-40°F to 302°F)
<b>Flow Capacity (Cv)</b>	0.5
<b>Material</b>	Stainless steel 316L / VAR



### M8.1

<b>Technology</b>	Diaphragm
<b>Max. Working Pressure</b>	240 bar (3481 psig)
<b>Temperature Range</b>	-40°C to +150°C (-40°F to 302°F)
<b>Flow Capacity (Cv)</b>	0.35
<b>Material</b>	Stainless steel 316L



### M12

<b>Technology</b>	Diaphragm
<b>Max. Working Pressure</b>	15 bar (218 psig)
<b>Temperature Range</b>	-40°C to +150°C (-40°F to 302°F)
<b>Flow Capacity (Cv)</b>	1.75
<b>Material</b>	Stainless steel 316L / VAR



### M20

<b>Technology</b>	Diaphragm
<b>Max. Working Pressure</b>	15 bar (218 psig)
<b>Temperature Range</b>	-40°C to +150°C (-40°F to 302°F)
<b>Flow Capacity (Cv)</b>	3.5
<b>Material</b>	Stainless steel 316L / VAR

## PRESSURE REGULATORS



### RX1000

<b>Technology</b>	Diaphragm
<b>Inlet Pressure</b>	Standard: 200 bar (2901 psig) HF: 50 bar (725 psig)
<b>Outlet Pressure</b>	2/4/7/10 bar (29/58/102/145 psig)
<b>Temperature Range</b>	-20°C to +65°C (-4°F to +149°F)
<b>Flow Capacity (Cv)</b>	Standard: 0.09 HF: 0.2
<b>Material</b>	Stainless steel 316L / VAR
<b>SLPM</b>	Up to 100



### RX2200

<b>Technology</b>	Diaphragm
<b>Inlet Pressure</b>	240 bar (3481 psig)
<b>Outlet Pressure</b>	3/8/10/15/25/50 bar (44/116/145/218/363/725 psig)
<b>Temperature Range</b>	-20°C to +65°C (-4°F to +149°F)
<b>Flow Capacity (Cv)</b>	0.2
<b>Material</b>	Stainless steel 316L / VAR
<b>SLPM</b>	Up to 1150



### RX2400

<b>Technology</b>	Diaphragm
<b>Inlet Pressure</b>	240 bar (3481 psig)
<b>Outlet Pressure</b>	2/4/7/10 bar (29/58/102/145 psig)
<b>Temperature Range</b>	-20°C to +65°C (-4°F to +149°F)
<b>Flow Capacity (Cv)</b>	Standard: 0.09 HF: 0.2
<b>Material</b>	Stainless steel 316L / VAR
<b>SLPM</b>	Up to 300



### RX2500

<b>Technology</b>	Diaphragm
<b>Inlet Pressure</b>	Standard: 240 bar (3481 psig) HF: 50 bar (725 psig)
<b>Outlet Pressure</b>	5/8/10 bar (73/116/145 psig)
<b>Temperature Range</b>	-20°C to +65°C (-4°F to +149°F)
<b>Flow Capacity (Cv)</b>	Standard: 0.45 HF: 1.2
<b>Material</b>	Stainless steel 316L / VAR

\*For detailed information, refer to E00015 - UHP valves & regulators

# ULTRA HIGH PURITY GASES | ELECTRONIC GASES

## TIED DIAPHRAGM SEAL TYPE CYLINDER VALVES | 4MM ORIFICE / 200 BAR

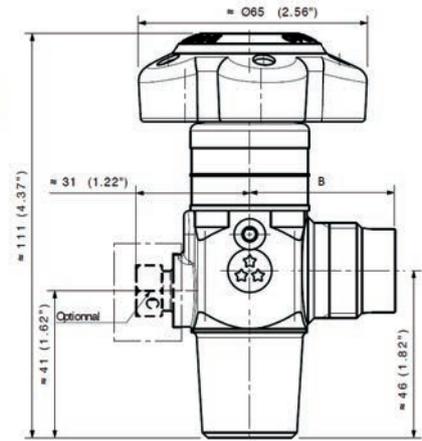
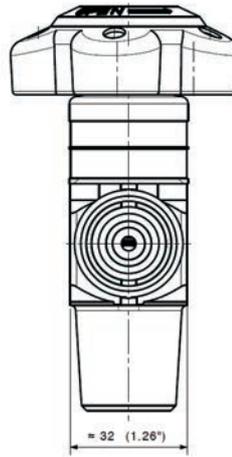
- Cylinder valves for UHP corrosive, reactive and toxic gases
- 200 bar
- 4mm orifice size
- available with open/close indicator for manual valves

### KEY FEATURES

- Tied diaphragm design with minimal gas wetted volume.
- Combined soft and metal seat design with low permeation rate.
- Positive operation due to mechanical link of the upper and lower spindle.
- Patented operating mechanism.
- Threaded weep hole for leak test and pipe away connection.
- No particle generating threads in the gas wetted part
- Optional pressure relief device (PRD)



D304



### SPECIFICATIONS

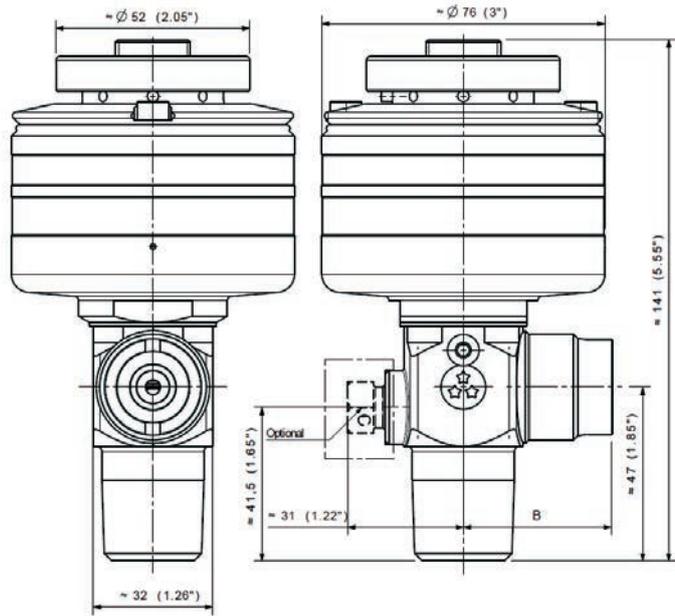
<b>Connections</b>	Standard Specific (e.i: DISS)
<b>Working pressure</b>	200 bar 3000 psig

<b>Nominal flow rate</b>	CV = 0.35
<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy® C22, Nickel 200, Monel® 2.4375 (Monel 500 K)

<b>Leak rate</b>	1.10 <sup>-8</sup> m bar L/s
<b>Seat orifice size</b>	4 mm
<b>Marking</b>	n0029 (according to TPED) 3 stars, valve number, manufacturing date

NB: For Tone Tank tube trailer, D334 (manual)

D3855



SPECIFICATIONS

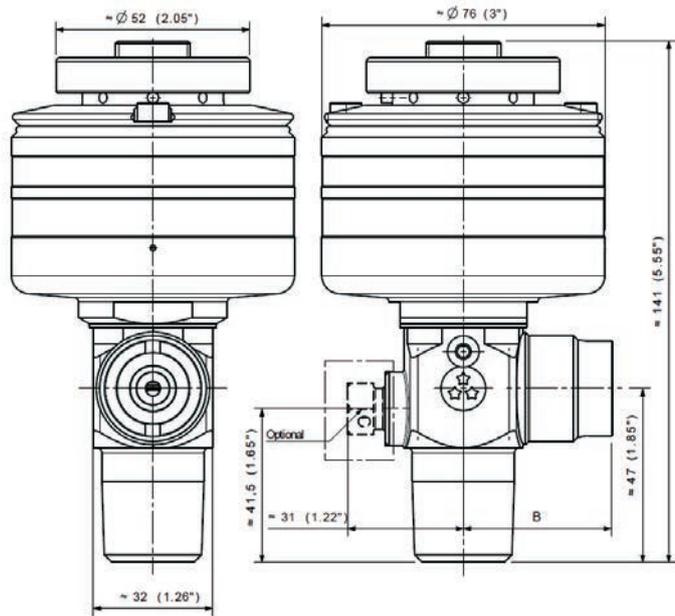
<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psig
<b>Nominal flow rate</b>	CV = 0.35

<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy® C22, Nickel 200, Monel® 2.4375 (Monel 500 K)
<b>Leak rate</b>	1.10 <sup>-8</sup> m bar l/s

<b>Seat orifice size</b>	4 mm
<b>Marking</b>	n0029 (according to TPED), 3 stars, valve number, manufacturing date

NB: For specific electronic gases (Nitrous Oxide, Silane, Diborane), D388.

D3865



SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psig
<b>Nominal flow rate</b>	CV = 0.25

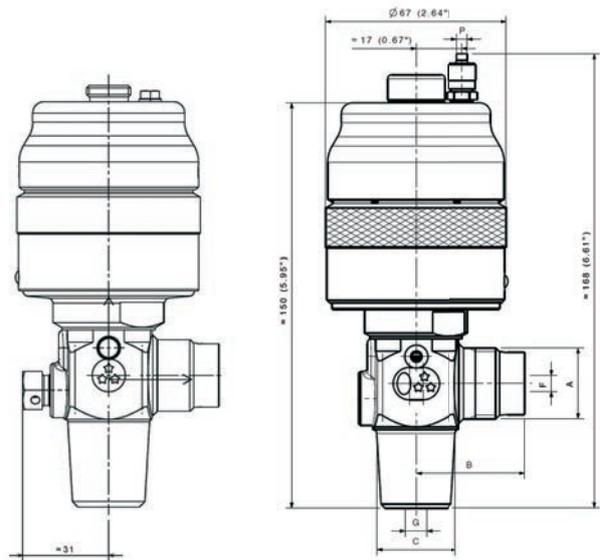
<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy® C22, Nickel 200, Monel®
<b>Leak rate</b>	1.10-8 m bar l/s

<b>Seat orifice size</b>	4,5 mm
<b>Marking</b>	n0029 (according to TPED), 3 stars, valve number, manufacturing date

NB: For specific electronic gases (Nitrous Oxide, Silane, Diborane), D388.

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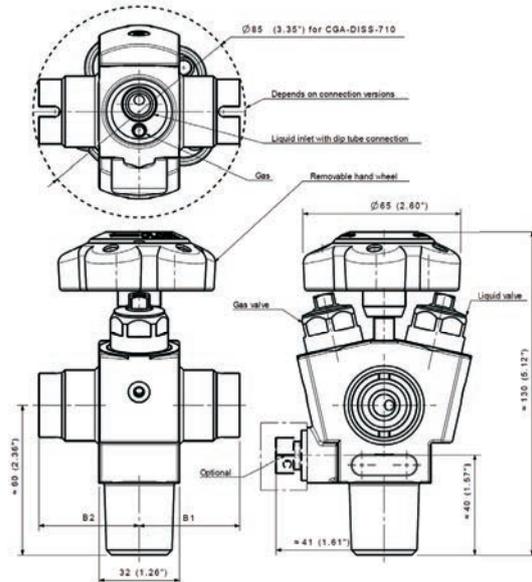
## D354



### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards, customer's specifications	<b>Nominal flow rate</b>	CV = 0.35	<b>Leak rate</b>	1.10 <sup>-6</sup> m bar l/s
<b>Working pressure</b>	200 bar 3000 psig	<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)	<b>Seat orifice size</b>	4 mm
		<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)/option Hastelloy 2.4602 (UNS N 06022)	<b>Marking</b>	n0029 (according to TPED), valve number, manufacturing date, Connections, seat material, 3 stars

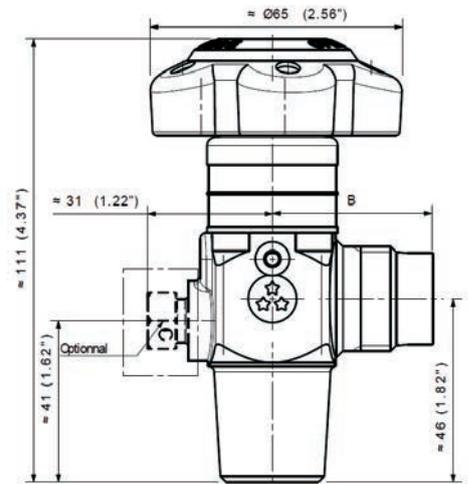
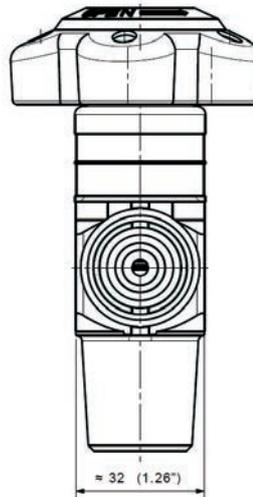
## D340S



### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications	<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)	<b>Seat orifice size</b>	4 mm
<b>Working pressure</b>	200 bar 3000 psig	<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy C22	<b>Marking</b>	n0029 (according to TPED), 3 stars, valve number, manufacturing date
<b>Nominal flow rate</b>	CV = 0.35	<b>Leak rate</b>	1.10 <sup>-6</sup> m bar l/s		

D306



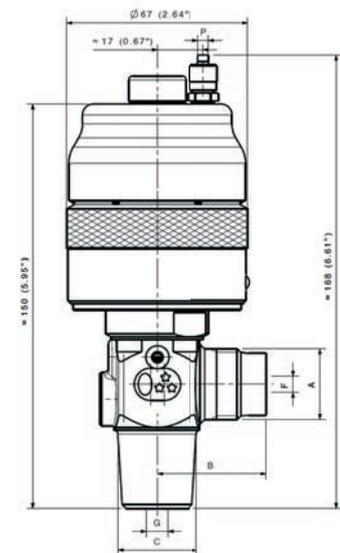
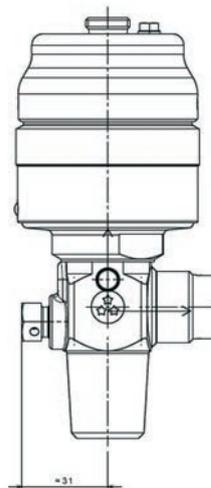
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards, customer's specifications
<b>Working pressure</b>	150 bar 2175 psi

<b>Nominal flow rate</b>	CV = 0.28
<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy C22

<b>Leak rate</b>	1.10 <sup>-9</sup> m bar l/s
<b>Seat orifice size</b>	3.5 mm
<b>Marking</b>	π (according to TPED), 3 stars, valve number, manufacturing date

D356



SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards, customer's specifications
<b>Working pressure</b>	150 bar 2175 psi

<b>Nominal flow rate</b>	CV = 0.28
<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)/ Hastelloy 2.4602 (UNS N06022)

<b>Leak rate</b>	1.10 <sup>-9</sup> m bar l/s
<b>Seat orifice size</b>	3.5 mm
<b>Marking</b>	π (according to TPED), valve number, Manufacturing date, Connections, 3 stars

# ULTRA HIGH PURITY GASES | ELECTRONIC GASES

## TIED DIAPHRAGM SEAL TYPE CYLINDER VALVES | 6MM ORIFICE / 200 BAR

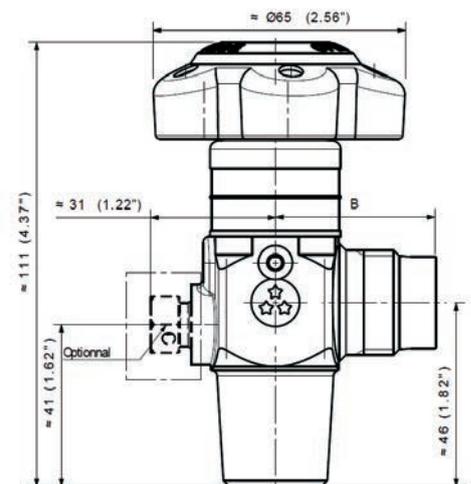
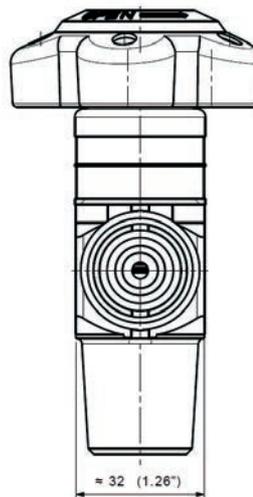
- Cylinder valves for UHP gases
- 200 bar
- 6mm orifice size
- available with open/close indicator for manual valves

### KEY FEATURES

- Tied diaphragm design with minimal gas wetted volume.
- Combined soft and metal seat design with low permeation rate.
- The valve allows a high Cv value at high pressure.
- Positive operation due to mechanical link of the upper and lower spindle.
- Threaded weep hole for leak test and pipe away connection.
- No particle generating threads in the gas wetted part
- Optional pressure relief device (PRD)



D339S



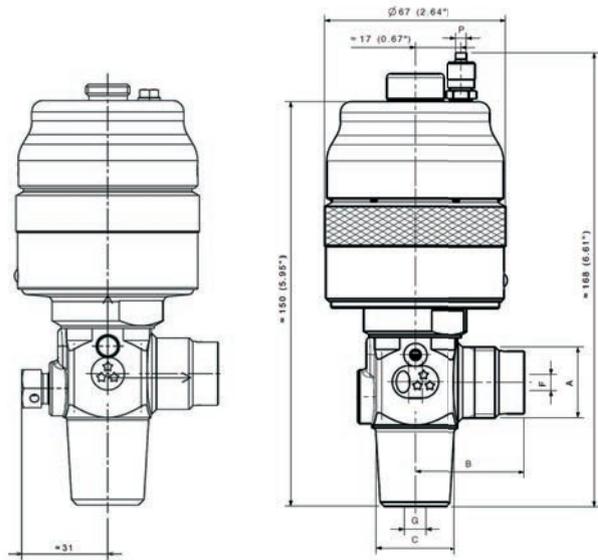
### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards, customer's specifications
<b>Working pressure</b>	200 bar 3000 psi

<b>Nominal flow rate</b>	CV = 0.55
<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy C22

<b>Leak rate</b>	1.10 <sup>-9</sup> m bar l/s
<b>Seat orifice size</b>	6 mm
<b>Marking</b>	n0029 (according to TPED), 3 stars, valve number, manufacturing date

D389S



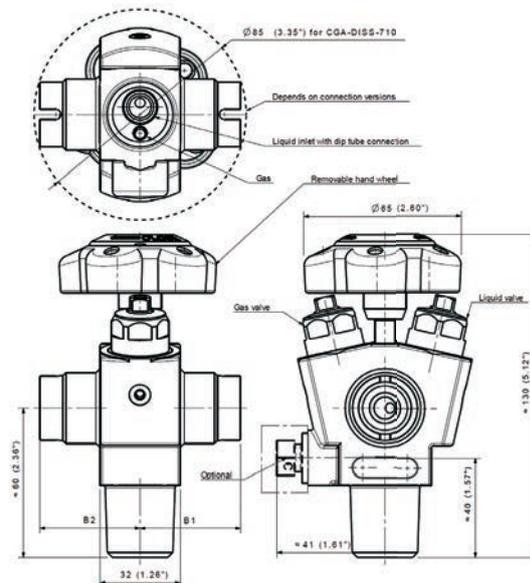
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards, customer's specifications
<b>Working pressure</b>	200 bar 3000 psig
<b>Nominal flow rate</b>	CV = 0.55

<b>Temperature range</b>	-40°C to +65°C -40°F to + 149 °F
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)/ Hastelloy 2.4602 (UNS N 06022)
<b>Leak rate</b>	1.10 <sup>-8</sup> m bar L/s

<b>Seat orifice size</b>	6 mm
<b>Marking</b>	n0029 (according to TPED), valve part number, Manufacturing date, Connections, seat material, 3 stars
<b>Options</b>	Accessories like mechanical and electronic position indicators are available on request

D349



SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards, customer's specifications
<b>Working pressure</b>	200 bar 3000 psi

<b>Nominal flow rate</b>	CV = 0.5
<b>Temperature range</b>	-40°C to +65°C -40°F to + 149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)

<b>Leak rate</b>	1.10 <sup>-8</sup> m bar L/s
<b>Seat orifice size</b>	6 mm
<b>Marking</b>	n0029 (according to TPED), valve number, Manufacturing date, 3 stars

# ULTRA HIGH PURITY GASES | ELECTRONIC GASES

## TIED DIAPHRAGM SEAL TYPE CYLINDER VALVES | 8MM ORIFICE / 45 BAR

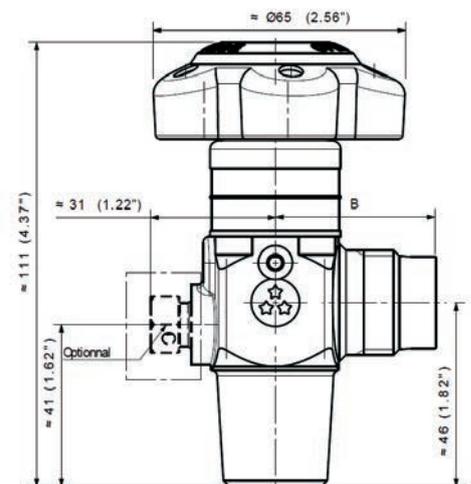
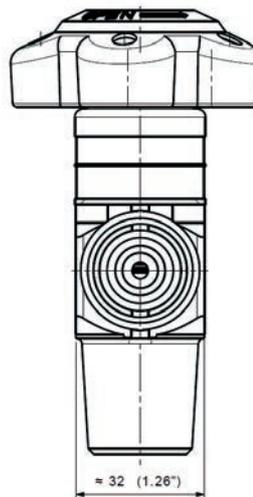
- Cylinder valves for UHP corrosive, reactive and toxic gases
- 45 bar
- 8mm orifice size
- available with open/close indicator for manual valves

### KEY FEATURES

- Backed up welded diaphragms provide a high leak tightness integrity
- Reduced dead spaces and gas wetted volumes allow easy purging process
- No particle generating threads in the gas wetted part
- Gas will not come in contact with the valve operating system
- Positive and effective operation, valve lower spindle is mechanically linked to the upper spindle and operating hand wheel
- Optional pressure relief device (PRD)
- The tapped vent hole (M4 thread) allows the connection of a leak detector



D337



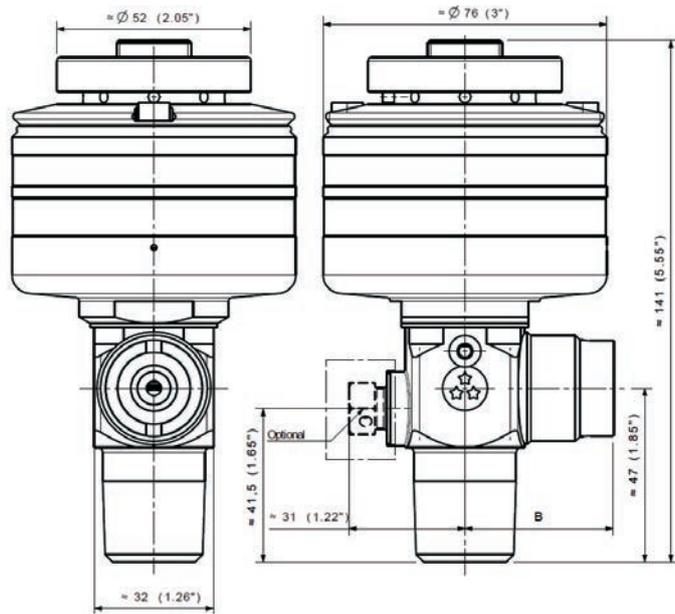
### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	45 bar 652 psi
<b>Nominal flow rate</b>	CV = 0.7

<b>Temperature range</b>	-40°C to +65°C -40°F to +149°F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy C22, Nickel 200, Monel 2.4360 (Monel 400)
<b>Leak rate</b>	1.10 <sup>-8</sup> m bar l/s

<b>Seat orifice size</b>	8 mm
<b>Marking</b>	n0029 (according to TPED), 3 stars, valve number, manufacturing date

D387



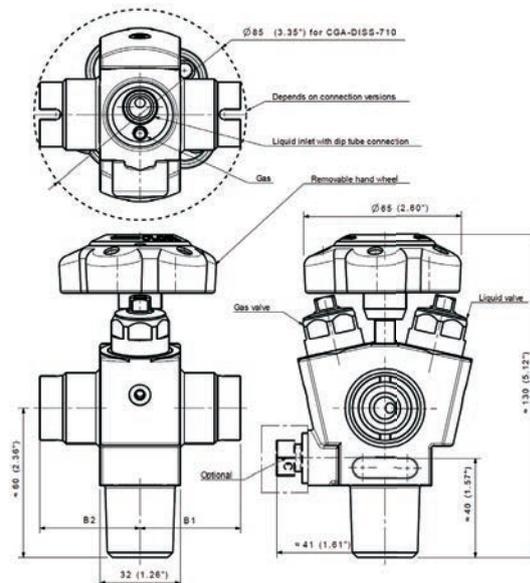
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	45 bar 652 psi
<b>Nominal flow rate</b>	CV = 0.7

<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy® C22, Nickel 200, Monel® 2.4375 (Monel 500 K)
<b>Leak rate</b>	1.10 <sup>-6</sup> m bar l/s

<b>Seat orifice size</b>	8 mm
<b>Marking</b>	n0029 (according to TPED), 3 stars, valve number, manufacturing date

D342



SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	45 bar 652 psi
<b>Nominal flow rate</b>	CV = 0.55

<b>Temperature range</b>	-40°C to +65°C -40°F to +149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Hastelloy C22
<b>Leak rate</b>	1.10 <sup>-6</sup> m bar l/s

<b>Seat orifice size</b>	8 mm
<b>Marking</b>	n0029 (according to TPED), 3 stars, valve number, manufacturing date

# D551 - DUCAL | INTEGRATED VALVE WITH ADJUSTABLE PRESSURE REGULATOR

- Designed for wide range of specialty gases
- Used to calibrate analyzers
- Cylinder valve with adjustable pressure regulator.



FILLING OPERATIONS



PLASTIC GUARD ACCESSORY

## KEY FEATURES

### All-in one design

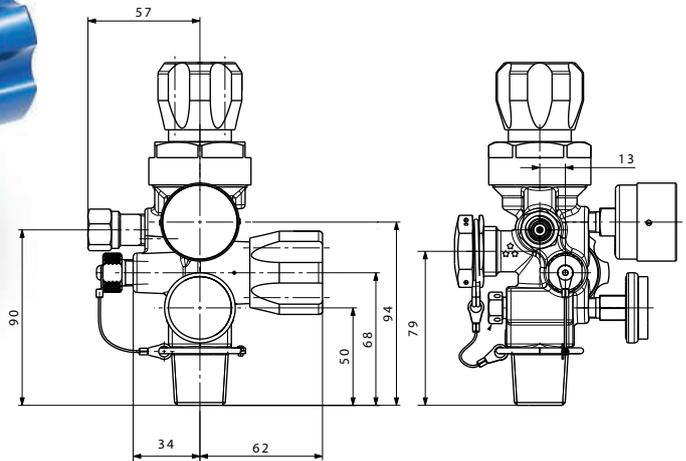
- Pre-engineered complete solution to optimize your calibrated gas supply
- Fully protected & integrated solution with ergonomic and aesthetic design
- Superior productivity and better sealing due to reduction of potential leak points

### Easier and safer

- Easy handling and better protection thanks to plastic guard
- Compact and light weight design ideal for mobile applications key features
- High outlet flow stability and performance thanks to diaphragm technology
- Premium material and components ensure quality of gas mixtures to preserve required properties for calibration application

### Higher productivity

- Buy one complete system instead of many individual components
- Save your time and be much more effective with built-in solution



## SPECIFICATIONS

<b>Connections</b>	25E – ISO 11363 ¾" NGT CGA-V1	<b>Temperature range</b>	-20°C to +60°C -5°F to + 140 °C	<b>Internal components</b>	Stainless Steel
<b>Working pressure</b>	Inlet : 200 Bar / 3000 psig Outlet: 1-4Bar(14- 65 psig)	<b>Seat seal</b>	PA - PCTFE	<b>Leak rate</b>	1.10 <sup>-7</sup> m bar L/s HEL
<b>Nominal flow rate</b>	1L/min at 3 bars Max flow rate 10 L/min at 4bars	<b>O-ring</b>	EPDM or FPM depending of application	<b>Property level</b>	Cleaned for oxygen service
				<b>Filling Tool connection</b>	To be defined according to norms and gas types

# FLOWCAL - SERIES D553 | INTEGRATED VALVE WITH FLOW SELECTOR

Designed for wide range of specialty gases



FILLING OPERATIONS



PLASTIC GUARD ACCESSORY

## KEY FEATURES

### All-in one design

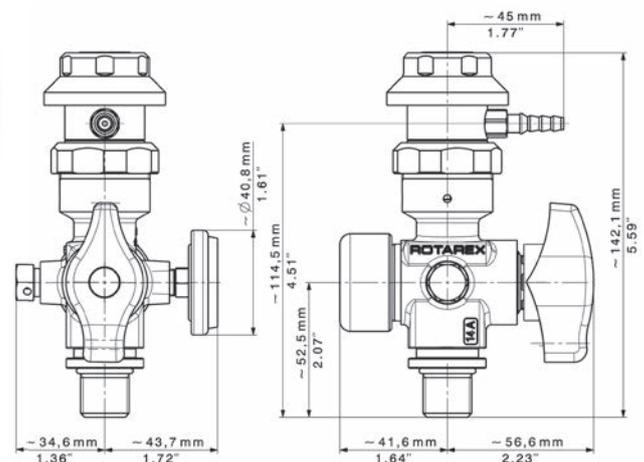
- Pre-engineered complete solution to optimize your calibrated gas supply
- Ready to be used system, just take it and use it. No more components assembly and settings before use
- Fully protected & integrated solution with ergonomic and design
- Productivity and with integrated design

### Easier and safer

- Easy handling and better protection thanks to plastic guard
- Integrated solution to reduce leak points risks. The valve is designed to have directly used pressure at the outlet without any additional connection on high pressure ports.
- Universal hose barb connection to ensure easy "plug-in" system
- Compact and light weight design ideal for mobile applications

### Higher productivity

- Buy one complete system instead of many individual components



## SPECIFICATIONS

<b>Connections</b>	According to local standard	<b>Temperature range</b>	-20°C to +60°C -5°F to +140°C	<b>Body + internal parts</b>	Stainless Steel
<b>Working pressure</b>	200 bar / 3000 psig	<b>Seat seal</b>	PCTFE	<b>Leak rate</b>	1.10 <sup>-4</sup> m bar L/s. HEL
<b>Nominal flow rate</b>	0,5 - 15 L/min. Others on request	<b>O-ring</b>	EPDM - FPM	<b>Property level</b>	Cleaned for oxygen service

# ULTRA HIGH PURITY GASES | ELECTRONIC GASES

## TIED DIAPHRAGM SEAL TYPE LINE VALVES FOR TRANSPORTATION

- Line valves for UHP gas distribution systems
- available with open/close indicator for manual valves

### KEY FEATURES

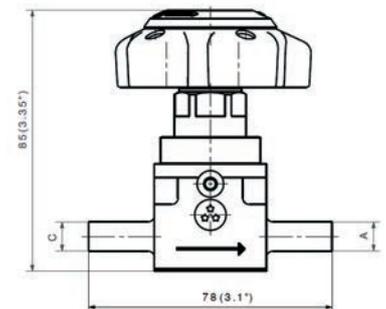
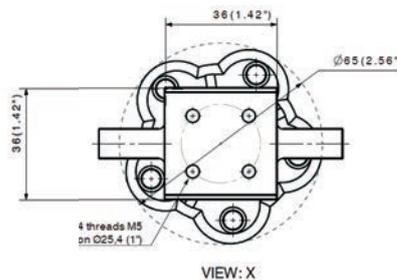
- Combined soft and metal seat design with low permeation rate.
- Welded diaphragms provide a high leak tightness integrity
- Tied diaphragm design which minimizes gas wetted volume to allow easy purging.
- No moving components in the gas wetted area to not generate particles.
- Secondary sealing to prevent the gas coming in contact with actuator in the case of diaphragm failure.
- Threaded weep hole for leak test and pipe away connection (M4 thread), allows the connection to a leak detector.
- Front and back panel valve fixation



D604



Back panel mounting



### SPECIFICATIONS

<b>Connections</b>	Welded connection according to standards
<b>Working pressure</b>	200 bar 3000 psig
<b>Nominal flow rate</b>	CV = 0.3

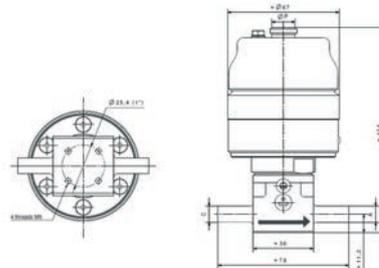
<b>Temperature range</b>	-40°C to +65°C -40°F to + 149 °F
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)
<b>Leak rate</b>	1.10 <sup>-6</sup> m bar L/s

<b>Seat orifice size</b>	4 mm
<b>Marking</b>	n0029 (according to TPED), Manufacturing date, 3 stars, valve part number, Nominal pressure and flow direction

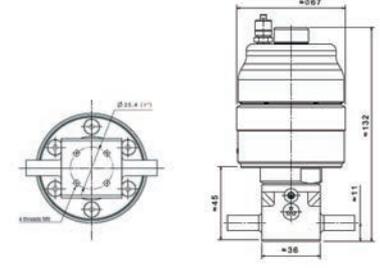
D654



Standard valve



Valve with locking function



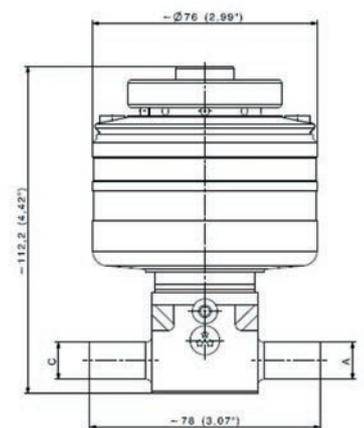
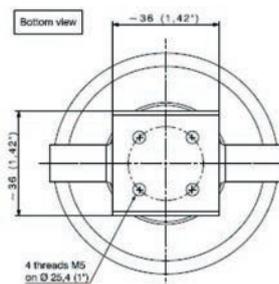
SPECIFICATIONS

<b>Connections</b>	Butt welding or welded with nipples defined by standard or by customers
<b>Working pressure</b>	200 bar 3000 psi (up to 240 bar for filling pressure)

<b>Nominal flow rate</b>	CV = 0.3
<b>Temperature range</b>	-40°C to +65°C -40°F to + 149 °C
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)

<b>Leak rate</b>	1.10 <sup>-9</sup> m bar L/s
<b>Seat orifice size</b>	4 mm
<b>Marking</b>	n0029 (according to TPED), Valve part number, manufacturing date, nominal pressure and flow direction, Connections - seat material, 3 stars

D688



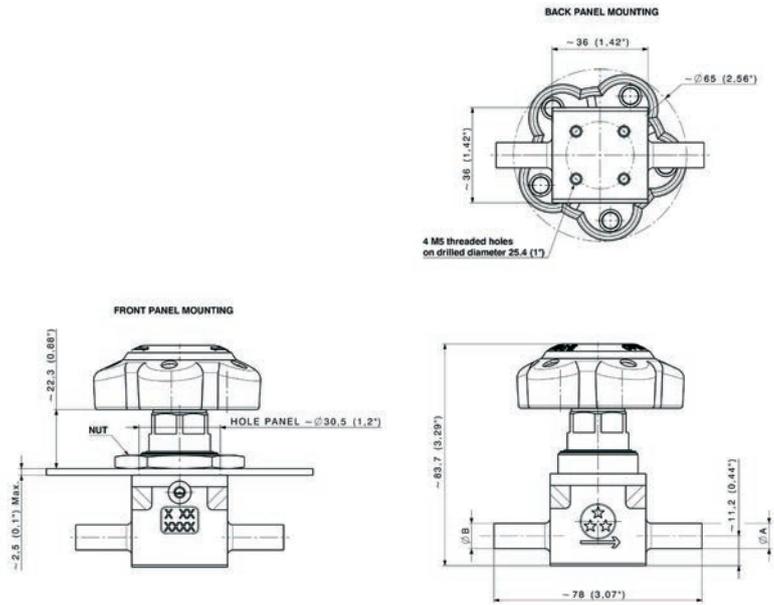
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards, customer's specifications
<b>Working pressure</b>	200 bar 3000 psig

<b>Nominal flow rate</b>	CV = 0.25
<b>Temperature range</b>	-40°C to +65°C -40°F to + 149 °F (without PRD)
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)

<b>Leak rate</b>	1.10 <sup>-9</sup> m bar L/s
<b>Seat orifice size</b>	4 mm
<b>Marking</b>	n0029 (according to TPED), 3 stars, valve number, manufacturing date, Nominal pressure and flow direction

D639S



SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards, customer's specifications
<b>Working pressure</b>	200 bar / 3000 psig
<b>Nominal flow rate</b>	CV=0.5

<b>Temperature range</b>	-40°C to +65°C -40°F to + 149 °F
<b>Body materials</b>	SS AISI 316L (standard)
<b>Leak rate</b>	1.10 <sup>-6</sup> m bar L/s

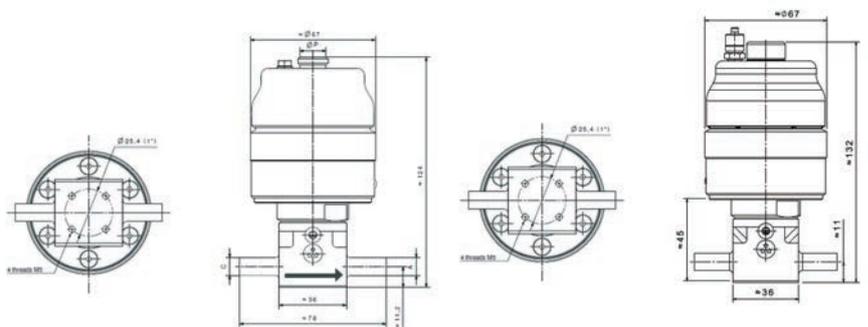
<b>Seat orifice size</b>	6 mm
<b>Marking</b>	3 stars, valve number, manufacturing date, Nominal pressure and flow direction, n0029 (if according to TPED)

D689S



Standard valve

Valve with locking function



SPECIFICATIONS

<b>Connections</b>	Welded connection according to standards
<b>Working pressure</b>	200 bar / 3000 psig
<b>Nominal flow rate</b>	CV=0.5

<b>Temperature range</b>	-40°C to +65°C -40°F to + 149 °F
<b>Body materials</b>	SS AISI 316L (standard)
<b>Leak rate</b>	1.10 <sup>-6</sup> m bar L/s

<b>Seat orifice size</b>	6 mm
<b>Marking</b>	n0029 (according to TPED), Valve part number, manufacturing date, nominal pressure and flow direction, Connections - seat material, 3 stars

# HIGH PURITY GASES | CALIBRATION

## DIAPHRAGM SEAL TYPE CYLINDER VALVES

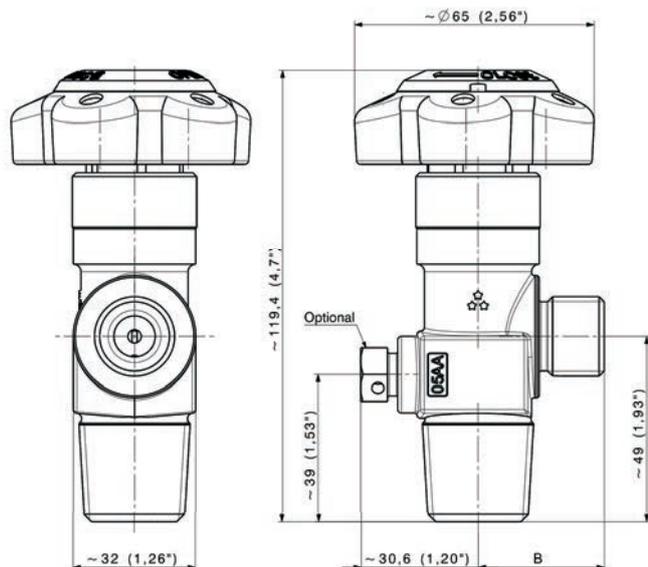
- Cylinder valves for High Purity gases, flammable & toxic gases
- for calibration, laboratories and food industry applications

### KEY FEATURES

- Soft seat sealing arrangement offers low operating torque
- Valve seat captivated to avoid extrusion and blockage of the valve
- High leak tightness integrity through diaphragm sealing
- High performance thrust pad



## D200



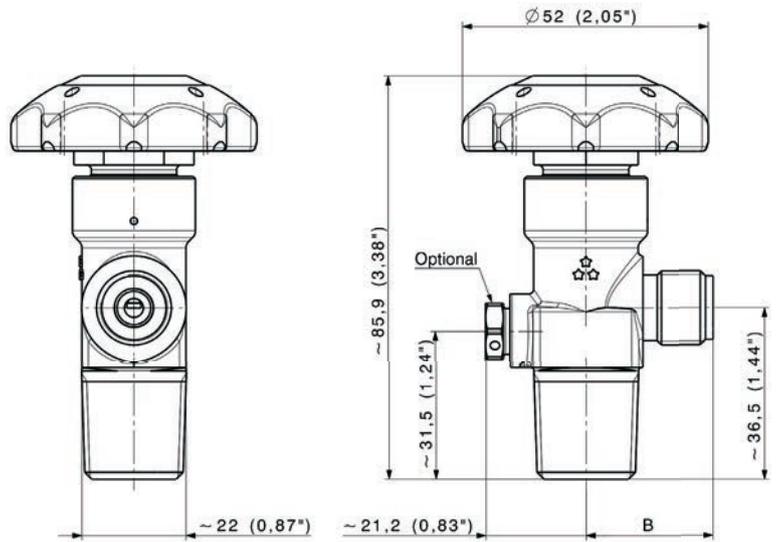
## SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.35

<b>Temperature range</b>	-40°C to +65°C -40°F to + 149 °F
<b>Body materials</b>	Brass, stainless steel, nickel
<b>Leak rate</b>	1.10 <sup>-7</sup> m bar L/s

<b>Seat orifice size</b>	3.5 mm
<b>Marking</b>	m0029 (according to TPED), Valve part number, manufacturing date, nominal pressure and flow direction, Connections - seat material, 3 stars

D250



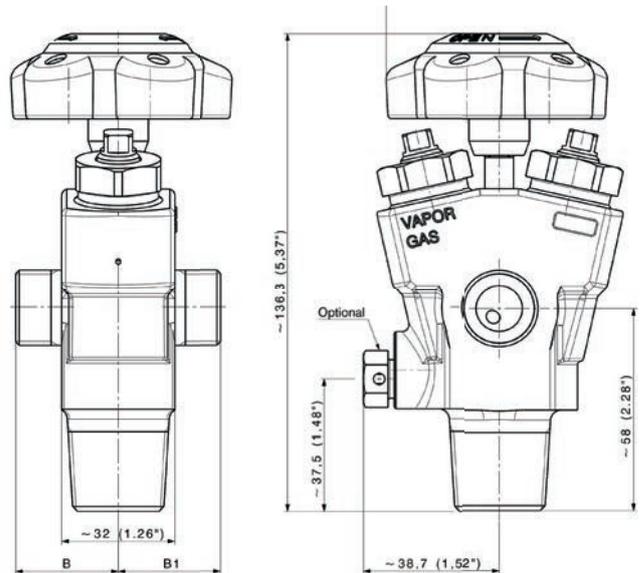
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.25

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steel, Brass, AlSiBz
<b>Leak rate</b>	1.10 <sup>-7</sup> m bar L/s

<b>Seat orifice size</b>	4 mm
<b>Marking</b>	n0029 (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

D265



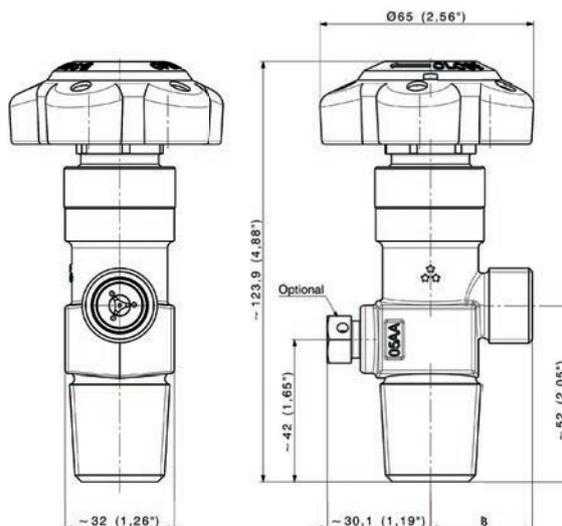
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.35

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Brass, stainless steel
<b>Leak rate</b>	1.10 <sup>-7</sup> m bar L/s

<b>Seat orifice size</b>	3.5 mm
<b>Marking</b>	n0029 (according to TPED), manufacturing date, 3 stars, valve number

D283 (RPV inline)



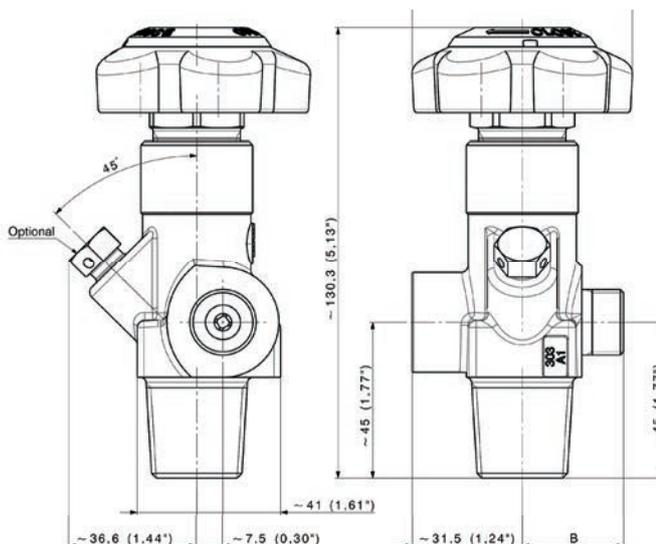
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.2

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Brass CW617N
<b>Leak rate</b>	1.10 <sup>-7</sup> m bar L/s

<b>Seat orifice size</b>	3.5 mm
<b>Marking</b>	π0029 (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

D282 (RPV offline)



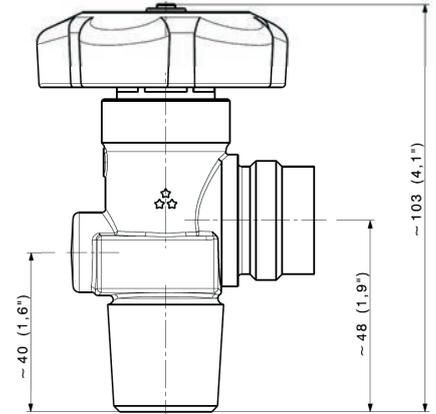
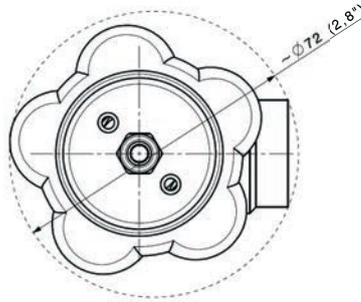
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.21

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L), Stainless steel 1.4305 (AISI 303), Brass
<b>Leak rate</b>	1.10 <sup>-7</sup> m bar L/s

<b>Seat orifice size</b>	3.5 mm
<b>Marking</b>	π (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

### D203 (3,5mm orifice / 300 bar)



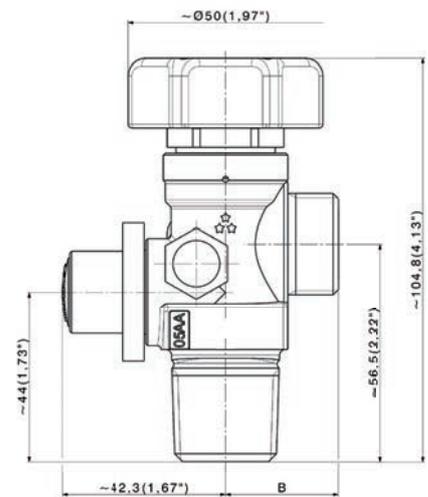
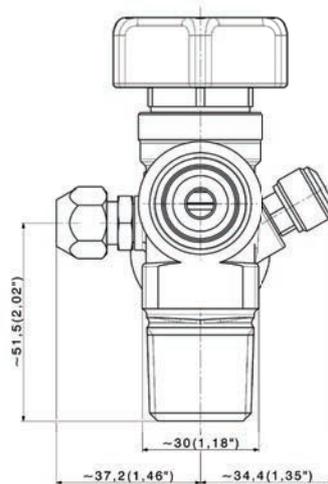
#### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	315 bar 4583 psi
<b>Nominal flow rate</b>	CV=0.35

<b>Temperature range</b>	-40°C up to +65°C -40°F up to +149°F
<b>Body materials</b>	Brass CW617N according to EN 12420
<b>Leak rate</b>	1.10 <sup>-7</sup> m bar L/s

<b>Seat orifice size</b>	3.5 mm
<b>Marking</b>	π (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet, V-9

### D285 (Dual port - 8mm orifice / 45 bar)



#### SPECIFICATIONS

<b>Connections</b>	¼" SAE
<b>Working pressure</b>	45 bar 650 psi
<b>Nominal flow rate</b>	CV = 1.0

<b>Temperature range</b>	-40°C up to +65°C -40°F up to +149°F
<b>Body materials</b>	Brass CW617N or stainless steel 1.4305 (AISI 303)
<b>Leak rate</b>	1.10 <sup>-7</sup> m bar L/s

<b>Seat orifice size</b>	8 mm
<b>Safety</b>	CG1-2-3-4-5-7

# SPECIFIC APPLICATIONS | HYDROGEN, METHANE AND ACETYLENE

## O-RING SEAL TYPE

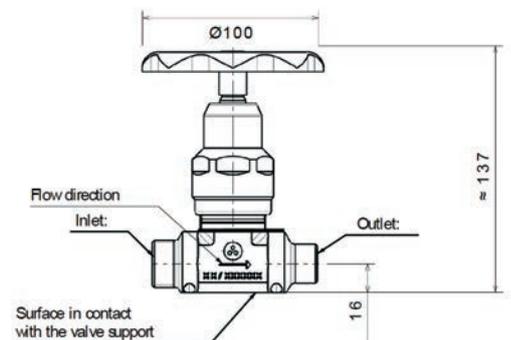
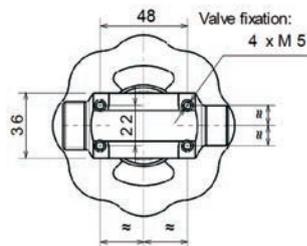
Cylinder, tube trailer or bundle valves for specific Hydrogen, methane and acetylene applications

### KEY FEATURES

- Non-rotating, threadless lower spindle.
- No particle shedding in gas wetted valve cavity.
- Ring and fitted into gland nut guarantee a secondary sealing and exclude humidity
- Soft seat captivated to avoid extrusion and good sealing performances.
- Lower spindle design allows a smooth opening of the valve, and prevents adiabatic compression.
- Possibility to add a Residual Pressure Valve (RPV)



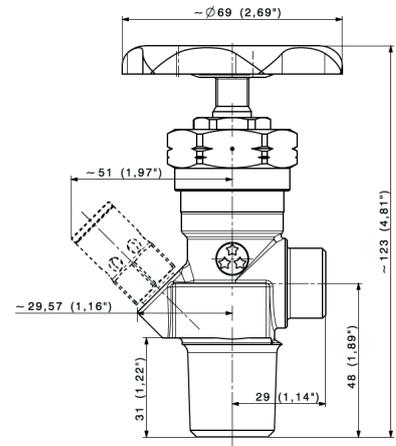
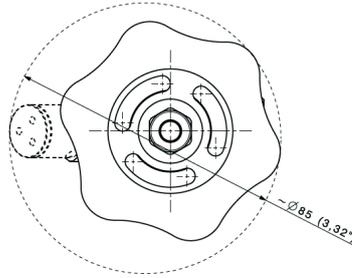
## D605



## SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications	<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F	<b>Seat orifice size</b>	12 mm
<b>Working pressure</b>	300 bar 4350 psi	<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)	<b>Marking</b>	n0029 (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet
<b>Nominal flow rate</b>	CV = max. 1.8 or 1.5	<b>Leak rate</b>	<1.10 <sup>-3</sup> m bar L/s		

D488



## SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	300 bar 4350 psi
<b>Nominal flow rate</b>	CV=0.8

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)
<b>Leak rate</b>	<1.10 <sup>-3</sup> m bar L/s

<b>Seat orifice size</b>	6 mm
<b>Marking</b>	π (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

# CORROSIVE AND TOXIC GASES

## PACKED TYPE CYLINDER VALVES | 3MM ORIFICE / 200 BAR

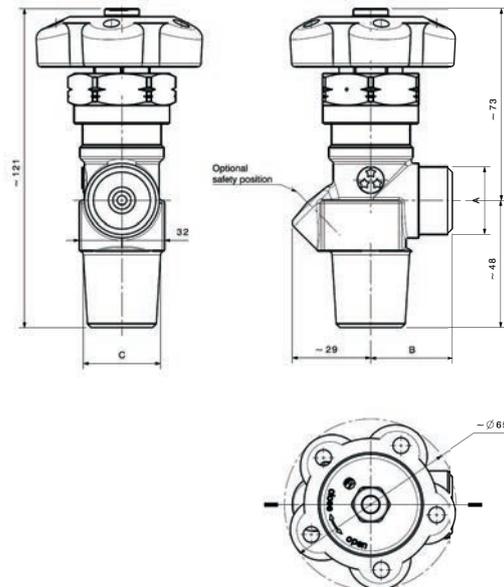
- Cylinder valves for high purity corrosive gases
- 200bar

### KEY FEATURES

- Freedom from seizure when used with corrosive gases- gas does not come into contact with the valve operating mechanism.
- Positive and effective operation-valve spindle is mechanically linked to the operating hand wheel, which only requires low closing torque.
- Long life-valve, all internal parts are replaceable
- Adjustable gland packing-in the unlikely event of a leakage occurring past the valve spindle, when opening the valve, rectification is readily achieved by retightening the gland packing nut.
- Low internal volume-this is particularly beneficial, when using the valve for hygroscopic, corrosive or high purity gases, where inert gas purging may be necessary before opening after closing the valve.



D100



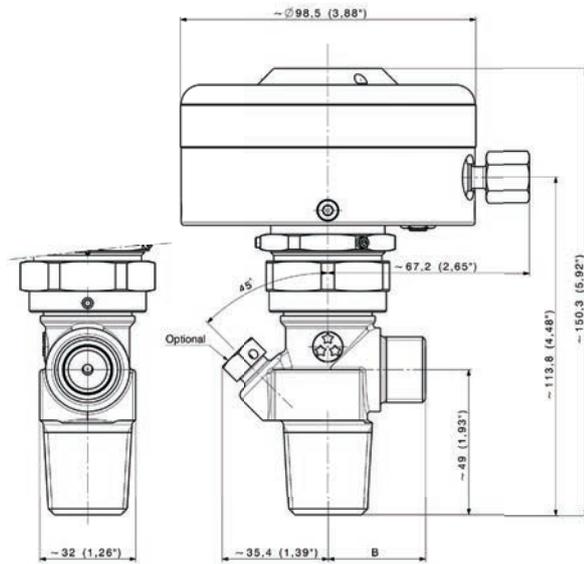
### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.3

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4305 (AISI 303), 1.4435 (AISI 316L), Brass CW617N, ASB CW302G

<b>Leak rate</b>	<1.10 <sup>-6</sup> m bar L/s
<b>Seat orifice size</b>	3.3 mm
<b>Marking</b>	π 0029 (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

D131



## SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.25

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steels 1.4305 (AISI 303) and 1.4435 (AISI 316L), AISiBz and brass
<b>Leak rate</b>	<1.10 <sup>-5</sup> m bar L/s

<b>Seat orifice size</b>	2.8 mm
<b>Marking</b>	π 0029 (according to TPED), manufacturing date, 3 stars, valve number

# CORROSIVE AND TOXIC GASES

## PACKED TYPE CYLINDER VALVES | 6 MM ORIFICE / 200 BAR

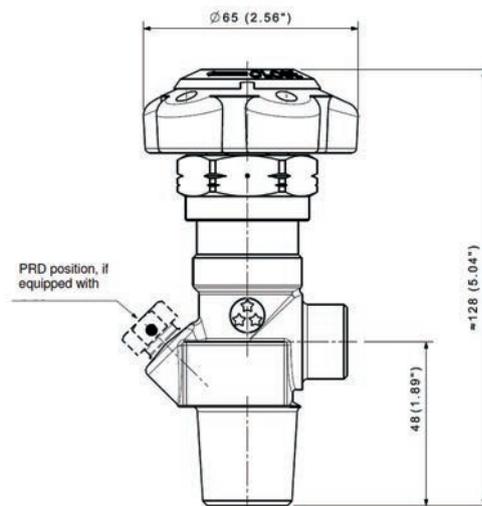
- Cylinder valves for high purity, corrosive and toxic gases
- 200 bar
- 6mm orifice size

### KEY FEATURES

- 2-piece sturdy stem design in order to reduce particle generation.
- Non rotating lower spindle for increasing tightness during life time.
- No particle shedding threading in gas wetted areas.
- Self-adjusting compression of V-packings using disc springs, allowing a service temperature range from -40° to +65°C.
- Locking nut having left-hand thread that secures the valve mechanism, even if excessive torques are applied.
- O-rings fitted behind V-packings guarantee a secondary sealing, and they avoid the risk of humidity coming in contact with the gas wetted areas.
- Soft seat induces low operating torque.
- Soft seat is fixed with a special screw and its design improves the valve's robustness against over torques.



D160S



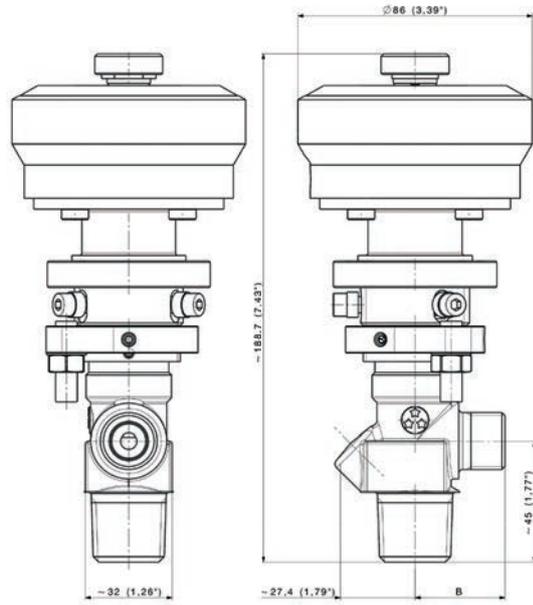
### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.9

<b>Temperature range</b>	-40°C up to +65°C -40°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4305 (AISI 303), 1.4435 (AISI 316L), Brass CW617N, ASB
<b>Leak rate</b>	<1.10 <sup>-5</sup> m bar L/s

<b>Seat orifice size</b>	6 mm
<b>Marking</b>	π 0029 (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

D1565



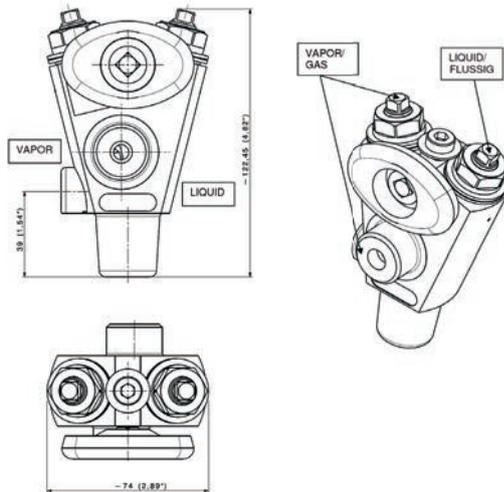
SPECIFICATIONS

<b>Connections</b>	Standards
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 1.1

<b>Temperature range</b>	-40°C + 70°C -40°F up to +158°F
<b>Body materials</b>	AISI 303, AISI 316L
<b>Leak rate</b>	<1.10 <sup>-5</sup> m bar L/s

<b>Seat orifice size</b>	6 mm
<b>Marking</b>	Production date, 3 stars, valve number

D1955



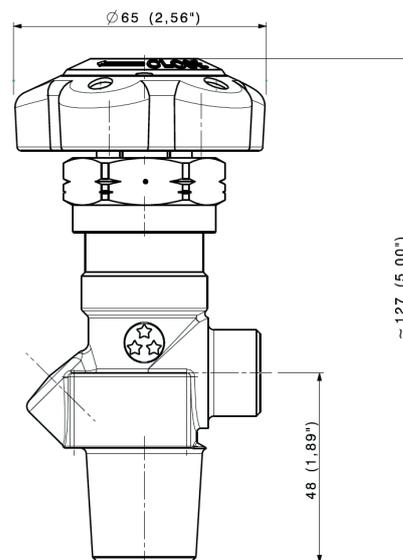
SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.9

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4305 (AISI 303), 1.4435 (AISI 316L)
<b>Leak rate</b>	<1.10 <sup>-5</sup> m bar L/s

<b>Seat orifice size</b>	6 mm
<b>Marking</b>	π 0029 (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

## D1615



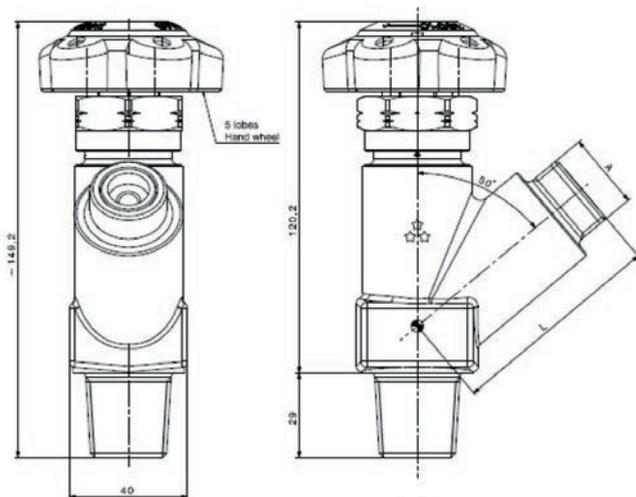
## SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 0.9

<b>Temperature range</b>	-40°C up to +65°C -40°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4305 (AISI 303), 1.4435 (AISI 316L), Brass CW617N, ASB

<b>Leak rate</b>	<math><1.10^{-5}</math> m bar L/s
<b>Seat orifice size</b>	6 mm

## D154S (Drum valve)



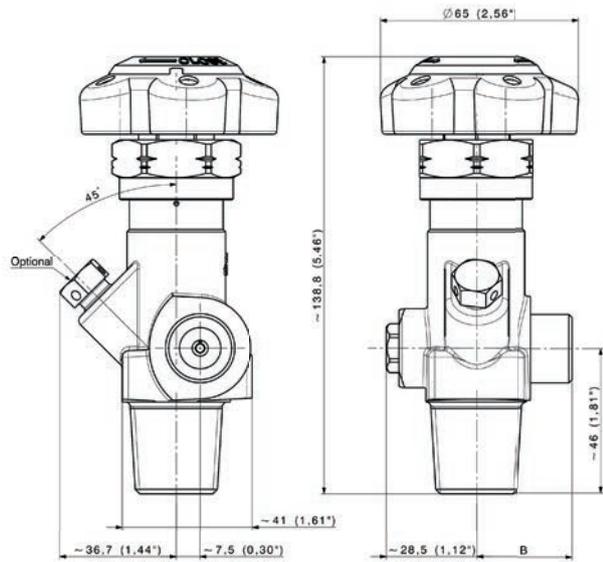
## SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	1 – D154S/TDB – D154S-KEY

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)
<b>Leak rate</b>	<math><1.10^{-5}</math> m bar L/s

<b>Seat orifice size</b>	6 mm
<b>Handwheel type</b>	Manual or Key operated
<b>Marking</b>	$\pi$ 0029 (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

## D167S (Offline RPV)



### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV=0.3

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4305 (AISI 303), 1.4435 (AISI 316L)
<b>Leak rate</b>	<1.10 <sup>-6</sup> m bar L/s

<b>Seat orifice size</b>	6 mm
<b>Marking</b>	π (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

# CORROSIVE AND TOXIC GASES

## PACKED TYPE CYLINDER VALVES | 12MM ORIFICE / 200 BAR

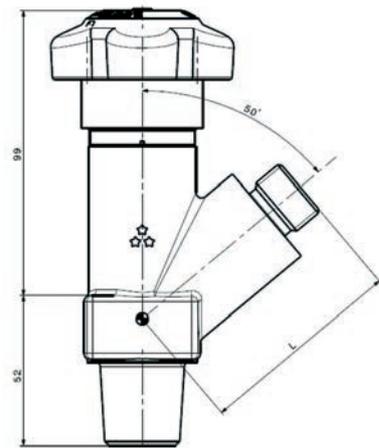
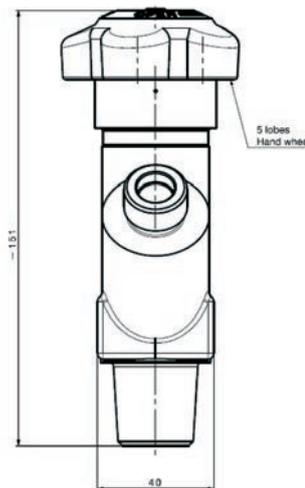
- Cylinder valves for high purity, corrosive and toxic gases
- 200 bar
- 6mm orifice size

### KEY FEATURES

- 2-piece sturdy stem design.
- Non-rotating, thread less lower spindle
- No particle shedding threading in gas wetted valve cavity.
- Self-adjusting, spring-loaded V-ring gland packing
- Metal to metal sealing by a nickel ring
- Left hand threaded counter nut to secure sealing mechanism even under excessive torque.
- O-ring fitted into gland nut guarantee a secondary sealing and exclude humidity.
- Soft seat offers low operating torque and is captivated to avoid extrusion and blockage of the valve.



D158 (Drum valve)



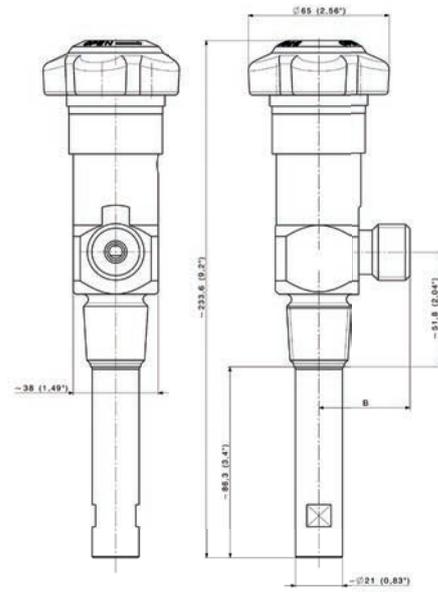
### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 2.9

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body materials</b>	Stainless steel 1.4435 (AISI 316L)
<b>Leak rate</b>	<1.10 <sup>-5</sup> m bar L/s

<b>Seat orifice size</b>	12 mm
<b>Marking</b>	π 0029 (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

### D183 (with non-return valve)



### SPECIFICATIONS

<b>Connections</b>	According (inter-)national standards and customer's specifications
<b>Working pressure</b>	200 bar 3000 psi
<b>Nominal flow rate</b>	CV = 1.1

<b>Temperature range</b>	-20°C up to +65°C -4°F up to +149°F
<b>Body material</b>	Stainless steel 1.4471 (AISI 316Ti), 1.4435 (AISI 316L)
<b>Leak rate</b>	<1.10 <sup>-5</sup> m bar L/s

<b>Seat orifice size</b>	12 mm
<b>Marking</b>	π (according to TPED), manufacturing date, 3 stars, valve part number, valve inlet, valve outlet

# CORROSION PROTECTION SOLUTIONS FROM ROTAREX

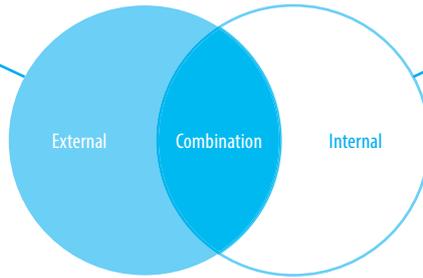
## CORROSION PHENOMENONS ON GAS VALVES & EQUIPMENT

The word corrosive refers to any chemical that will dissolve the structure of an object. They can be acids, oxidizers, or bases. When they come in contact with a surface, the surface deteriorates.

Some compressed gases are corrosive. Corrosive gases can attack and corrode metals. They can also burn and destroy body tissues on contact. Common corrosive gases include ammonia, hydrogen chloride, chlorine, methylamine, diborane, bromine trichloride, hydrogen bromide and bromine trifluoride.

### EXTERNAL CORROSION

Corrosion due to atmospheric conditions, as humidity & warm or marine salty environment, or acid environment which could exist in some factories, as chemical industries.



### INTERNAL CORROSION

Corrosion due to the used gas, attacking & corroding the valve internal parts.

## ROTAREX SOLUTIONS AND EXPERTISE TO PREVENT CORROSION

### ASSESSMENT ON BODY MATERIALS

- Brass** - good mechanical & marine resistance
- Stainless steel** - Good marine resistance
- Aluminum** - High resistance to corrosion

External Corrosion

### SURFACE PROTECTION COATING

- Nickel Coating**
- Chrome Coating**
- PTFE Coating**
- Anodization**
- Painting**

**Rotarex knowledge**  
Internal data base with compatibilities between materials and 1081 fluids

### ASSESSMENT ON BODY MATERIALS

- Brass CW617** - Chemically neutral gases and/or oxidizing gases
- Stainless Steel: 303/316L** - Chemical resistance/ UHP applications
- Hastelloy** - C22 Very corrosives applications
- Nickel 200 for specific electronic applications

Internal Corrosion

### SPECIFIC SURFACE COMPONENT COATING

- SiO2 coating**
- Gold plating**
- Platinum plating**
- Silver coating**

### SPECIFIC SURFACE BODY COATING

Multilayer silicon chemical vapor deposited (CVD) coating specifically designed to improve corrosion resistance of stainless steel

### ASSESSMENT ON COMPONENTS MATERIALS

- Brass CuBe** - Heating diffusion for oxidizing gases
- Stainless Steel: 316L** - Chemical resistance/ UHP applications
- Hastelloy C276** - Chemical resistance/ UHP applications
- Nickel 200** - On specific demand in electronic domain

### SURFACE FINISHING

Different surface roughness for each part/component of the valve

### SURFACE TREATMENT

- Passivation** - chemical process to create an outer protective layer on material.
- Electro polishing** - electrochemical process that removes material from a metallic workpiece.





# A FULL LINE OF GAS CONTROL SOLUTIONS



## COMPLETE SOLUTIONS FROM SOURCE TO PROCESS.

ROTAREX is helping engineers worldwide to get better gas results: from ultra high purity production and medical care facilities to industrial and LPG applications, as well as alternative energy vehicles, fire suppression, diving, aerospace, cryogenics, laboratory, petro-chemical and welding. ROTAREX applies almost 100 years of know-how and experience to custom design, develop and manufacture the high performance valves, regulators and fittings to suit your needs, all in one hand. Discover the difference ROTAREX can make in your world.

**CYLINDER VALVES**

**EQUIPMENT**

**FIRETEC**

**AUTOMOTIVE**

**LPG/SRG**

**MEDITEC**



## WORLDWIDE HEADQUARTERS

**ROTAREX S.A.**  
24, rue de Diekirch,  
L-7440 Lintgen  
Luxembourg  
Tel.: +352 32 78 32-1  
Fax: +352 32 78 32-854  
E-mail: info@rotarex.com



## REGIONAL / COUNTRY HEADQUARTERS

### NORTH AMERICA

**USA**  
Rotarex North America  
Hackettstown  
E-mail: northamerica@rotarex.com

### SOUTH AMERICA

**BRASIL**  
Rotarex Brazil Ltda  
São Paulo  
E-mail: brasil@rotarex.com

### CENTRAL AMERICA

**MEXICO**  
Rotarex Mexico  
Mexico City  
E-mail: mexico@rotarex.com

### EUROPE

**EUROPEAN HEADQUARTERS**  
Rotarex S.A. Luxembourg  
24, rue de Diekirch,  
L-7440 Lintgen, Luxembourg  
Tel.: +352 32 78 32-1  
E-mail: salescodeux@rotarex.com

### ITALY

Rotarex Italia S.r.l.  
Ciliverghe di Mazzano  
E-mail: italia@rotarex.com

### SPAIN

Rotarex Spain  
Madrid  
E-mail: spain@rotarex.com

### FRANCE

Rotarex France  
Paris  
E-mail: france@rotarex.com

### GERMANY

Rotarex Germany  
Gladenbach  
E-mail: germany@rotarex.com

### POLAND

Rotarex Polska  
Brzeg  
E-mail: polska@rotarex.com

### UNITED KINGDOM

Rotarex UK Ltd.  
London  
E-mail: uk@rotarex.com

### ASIA - PACIFIC

#### SINGAPORE

Rotarex Fareast Pte Ltd  
Singapore  
E-mail: fareast@rotarex.com

#### CHINA

Rotarex Star  
Shanghai  
E-mail: china@rotarex.com

#### JAPAN

Rotarex Japan Ltd  
Tokyo  
E-mail: japan@rotarex.com

#### INDIA

Rotarex ENGG. PVT. LTD.  
Mumbai  
E-mail: india@rotarex.com

#### SOUTH KOREA

Rotarex South Korea  
Hwasung-si  
E-mail: korea@rotarex.com

#### THAILAND

Rotarex (Thailand) Co Ltd.  
Pakkret  
E-mail: thailand@rotarex.com

#### TAIWAN

Rotarex Taiwan  
Taipei  
E-mail: info-taiwan@rotarex.com

#### MALAYSIA

Rotarex Malaysia  
Kuala Lumpur  
E-mail: malaysia@rotarex.com

#### PHILIPPINES

Rotarex Philippines  
Manila  
E-mail: philippines@rotarex.com

#### INDONESIA

Rotarex Indonesia  
Jakarta  
E-mail: Indonesia@rotarex.com

#### VIETNAM

Rotarex Vietnam  
Hanoi  
E-mail: vietnam@rotarex.com

### MIDDLE EAST / AFRICA

#### MIDDLE EAST

Rotarex Middle East  
Dubai  
E-mail: middle-east@rotarex.com



For more contact details go to  
[www.rotarex.com/locations](http://www.rotarex.com/locations)