HIGH PRESSURE GAS CYLINDER VALVES

PRODUCT CATALOGUE

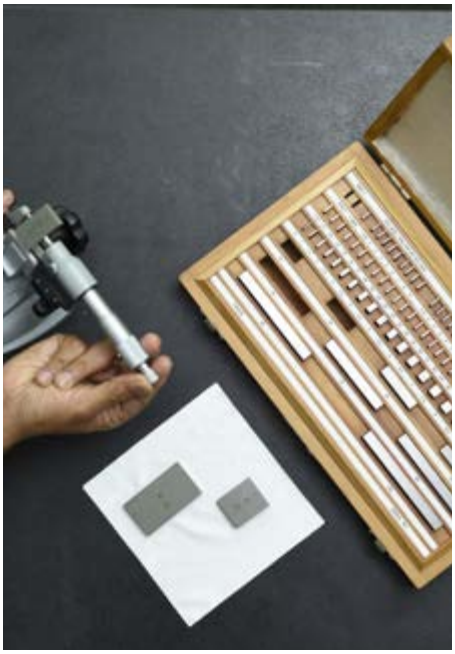
EXPORT EDITION

tekno valves

50 YEARS OF EXCELLENCE

Your Safety Is Valued







CONTRACT

Your Technology Partner for High Pressure Gas Cylinder Valves

Tekno Valves is a leading manufacturer of high pressure gas cylinder valves for Industrial, Medical, Speciality, Firefighting, CNG, SCBA, Refrigerants & Corrosive gases.

Established in 1971, Tekno Valves is proudly family-owned, with the first and second-generation working with a shared vision to put Indian gas equipment at the global centre stage.

With long-term and sustainable decision-making at the core of all activities, our journey of 51 years has led to Tekno Valves being accepted and used in 65+ countries worldwide.

Our integrated manufacturing facility based in Kolkata, India, is equipped with the latest technology and inclusive of a tool & die shop, forging unit & ISO 17025-certified laboratories in the field of calibration, mechanical & chemical testing. The infrastructure is sustainably designed to minimize environmental impact.

Cylinder valves are designed, certified, and manufactured to exceed the requirements of national & international standards. Valves bear Pi, Rho and CGA V-9 marks for exports and are approved by Federal Institute for Materials Research & Testing (BAM), Germany and Arrowhead UK.

Through active participation, we contribute towards the development of technical standards in the International Organization for Standardization (ISO) / Compressed Gas Association (CGA) / Chlorine Institute (CI) / Bureau of Indian Standards (BIS) cylinder valve committees. Our association with the gas industry includes membership in IOMA, CGA, GAWDA, CI, ASTM & AIIGMA.

“Tekno” is synonymous with safety in handling high pressure, and our dedicated team of valve experts remain committed to delivering reliable valving solutions to our customers.

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About Us

Valves Technology

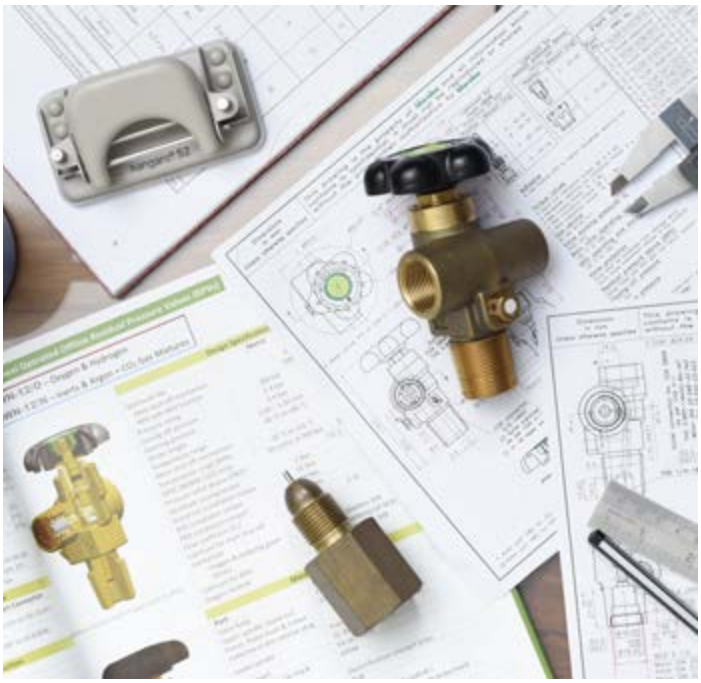
Why Tekno Valves

Glossary & Bibliography

360º Manufacturing Under One Roof

Design & Development

Cylinder valves are designed to meet national and international specifications, tested and certified by a European notified body. Product development is aided by the CAD/CAM software, which seamlessly integrates with manufacturing.



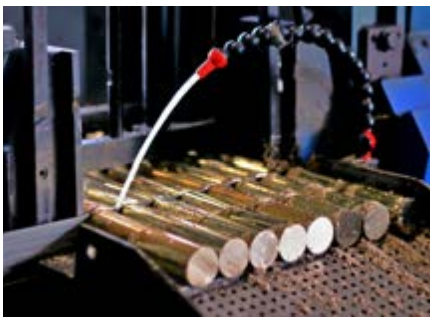
Tool & Die Studio

Modern tool room assists design and production activity by developing forging dies, trimming punches, jigs and fixtures, packaging trays and other utilities.

In-house Forging

Integrated forge shop is equipped to produce in-house customized forgings using energy-efficient induction furnaces and carry out subsequent heat-treatment processes.






Machining Bay

Our state of the art machine shop uses multi-axis CNC machines to carry out simultaneous operations of valve bodies and components in a single setup to minimize loading time and ensure accuracy.




Deburring & Degreasing

Valve bodies and components are degreased in a close circuit using vacuum solvent technology to remove oil and grease, cutting fluid and particulate matter.

Assembly & Testing Bay

Automated equipment used for O-ring fitment, lubrication dispensation, PTFE taping and wheel assembly. Torques are imparted using DC nut runners and each valve is pressure tested prior to despatch.

Eco-Friendly Packaging

Valves are packed in customized foam trays made on-site to provide cushioning and protection during transport. The foam compacts to approximately 10% of its original volume in a landfill. It is biostable and will not degrade to pollute air or groundwater. Valves for Oxygen service are heat sealed to maintain the integrity of the cleaning process.

ISO 17025 Laboratories

Our dedicated Mechanical, Chemical, and Calibration laboratories are ISO 17025 certified and NABL accredited, allowing us to carry complete chemical and mechanical tests of raw materials and in-house calibration of measuring instruments, torque wrenches and pressure gauges.

Cylinder Valves Designs

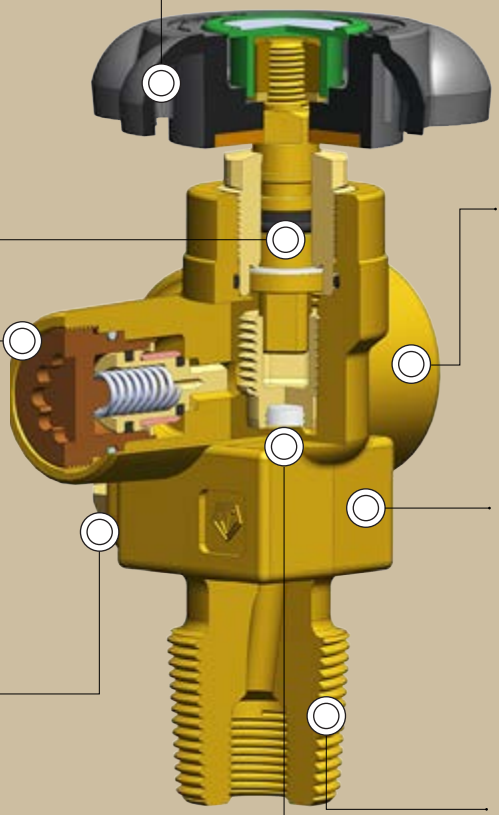
Nomenclature

Valve Operating Device

Component which actuates the valve operating mechanism – handwheel, key, knob or actuator.

Valve Operating Mechanism

Mechanism which opens & closes the valve orifice.



Outlet

Portion of the valve body through which gas is introduced or discharged.

Residual Pressure Device (RPD)

Device that is designed to prevent ingress of contaminants by maintaining a positive pressure within the cylinder relative to atmosphere by closing off its internal gas passages in the discharging direction.

Valve Body

Portion of the valve that contains the orifice, seat, inlet & outlet connections. It is machined to accept the components to create the valve assembly & sealing system.

Pressure Relief Device (PRD)

Device used to prevent the pressure in a normally charged cylinder from rising above a predetermined maximum, thereby preventing rupture of the cylinder in case of fire & / or overfilling.

Inlet

Portion of the valve body that connects to the cylinder.

Seat

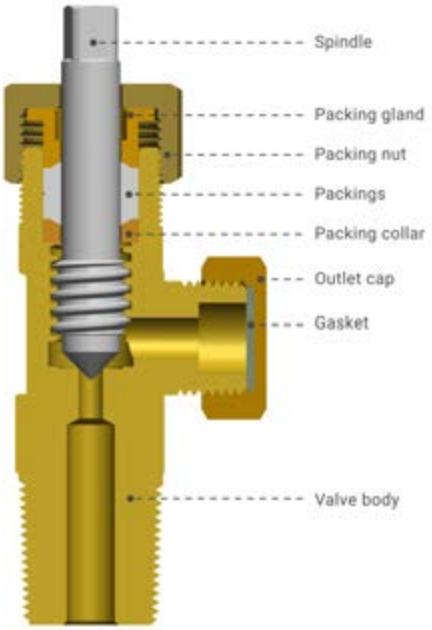
Sealing surface surrounding the orifice in the valve body

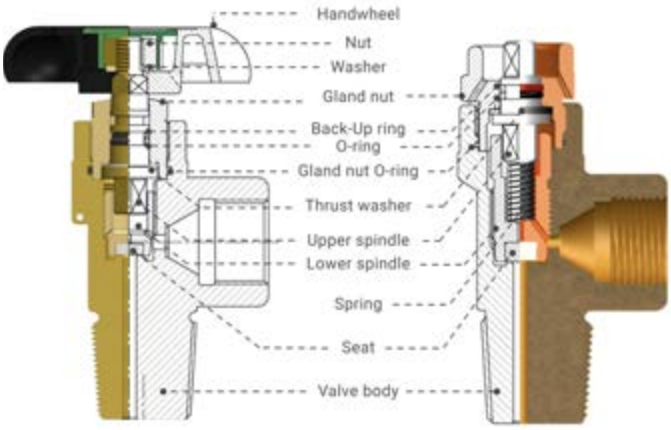
Compression Packed Valves

01

(Key Operated, Single Spindle, Metal Seated)

These valves, available in Brass, Al-Si Bronze and Carbon Steel, use compressed packing to make a seal around the valve spindle & body. To ensure a good seal, the packing nut is tightened to compress the packing against the spindle. As this results in higher torques, the valve is operated with wrench. The design allows for tightening of the gland nut in case of leakage past the packings. These valves are used for corrosive gases because of the ability of the operating mechanism to withstand higher torques to overcome any build-up of salts or contaminants in the seating area. These valves are generally used up to valve test pressure of 50 bar & not preferred for high purity applications because of particulate generation from valve seat & packing wear.





Handwheel Operation

Key Operation

O-ring Seal Valves

02

(Two-piece Spindle, Soft Seated)

These valves, available in brass body, have a non-rising upper spindle & threaded lower spindle. It uses O-ring/s to create a seal around the upper spindle. These valves are easier to operate than packed valves due to absence of packing load on the upper spindle & hence used for a wide range of pressure & non-corrosive gas applications where low torque operation is desired. The top spindle is designed to fail first, allowing valve maintenance & package content recovery in the event of a failure, even when the cylinder is full. These valves come in key, toggle, handwheel & handle operation.

a) Key Operation

The upper spindle is usually manufactured from Stainless steel as the valves are expected to withstand high torques in the field.

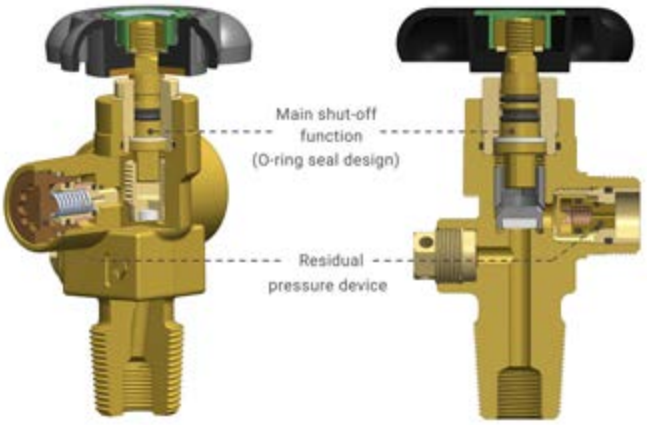
b) Handwheel Operation

The upper spindle is fitted to a handwheel to operate the valve by hand. This restricts imparting of high torques by the user to operate the valve, preventing damage to the operating mechanism & facilitating high cycle life.

03

Residual Pressure Valves (RPV)

These are handwheel operated O-ring seal valves fitted with an offline or inline Residual Pressure Device (RPD). The RPD has a built in Non-Return Valve (NRV) function to prevent backflow of downstream contents preventing contamination risks as a result of positive pressure always present in the cylinder. RPV technology provides improved safety of the cylinder & ensures purity of gas contents eliminating the need to purge cylinder each time it comes back for filling. The user needs a filling connector consisting of a projected “Pin” during filling & evacuation to neutralize the NRV function.



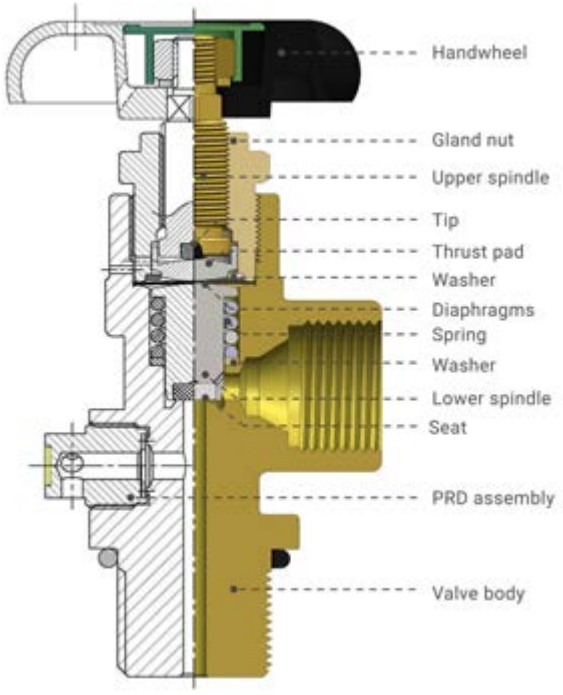
Offline RPV Inline RPV

Inline RPV

The RPD is contained within the outlet & therefore is mainly used for external threaded outlet requiring sealing on the face. Due to limitation of the volume within which the inline RPD have to be accommodated, they have greater flow limitation than the offline version.

Offline RPV

The outlet is offset with respect to the inlet plane & the RPD is backside of the outlet. Offline valves can be designed for any outlet connection but are mainly used for outlet with internal threads & for external threaded outlet requiring sealing in the cone. They are less restrictive on the flow passage of the valve.



04

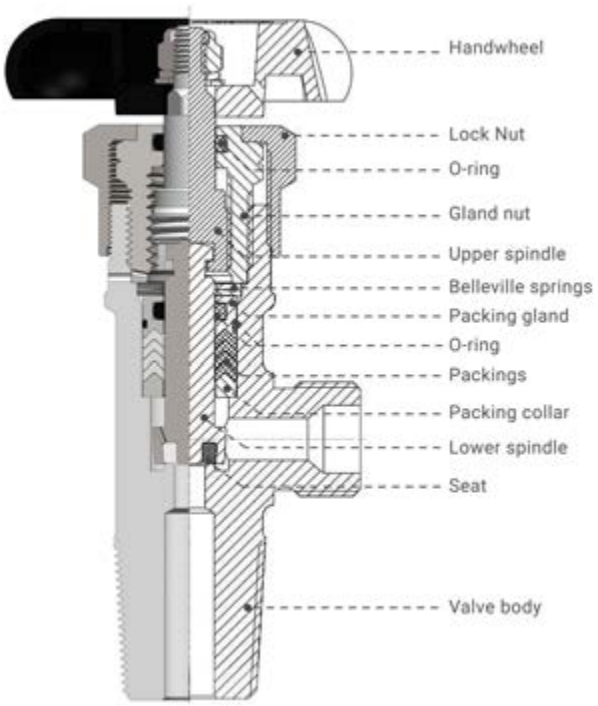
Diaphragm Seal Valves

(Handwheel Operated, Two-piece Spindle, Soft Seated)

These valves, available in brass & stainless steel body, use diaphragms for gland sealing. The gland nut threads into the valve body & clamps the outer edges of the diaphragms against a ledge in the valve body to form a seal. The lower spindle assembly is non-threaded & encased in a spring which forces it away from the seat when the valve is opened. The upper spindle is threaded into the gland nut.

The replacement of elastomeric seals with metal diaphragms gives the valve superior leak integrity. The lower spindle is non-threaded & non-lubricated making the design highly suitable for toxic, pyrophoric & high purity gas. The valve opening is restricted by the stroke of the diaphragm, limiting the flow through the valve. Due to high torque required to close the valve by overcoming cylinder pressure X area of the diaphragm plus the spring force, the use of these valves is limited to cylinder pressure up to 200 bar.

05



Compression Packed Valves with O-ring Seal

(Handwheel Operated, Two-piece Spindle, Soft Seated)

These valves, available in Brass, Al-Si Bronze, Carbon Steel & Stainless Steel body, combine compressed gland packing & O-ring technology to gland seal the valve. The lower spindle connects to the upper spindle via a slip joint. The lower spindle assembly seals against the seat without rotating, reducing wear & particle generation. The gland nut is usually secured by a lock nut having threads in the opposite direction to prevent accidental loosening of the gland nut.

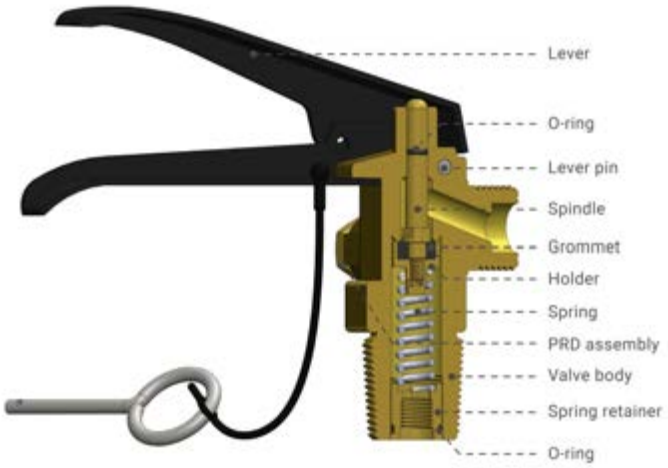
Unlike the single spindle packed valve, the packing is smaller, better contained, spring loaded & backed by O-ring/s. This allows the mechanism to seal with handwheel up to 200 bar & eliminates the need to retighten gland nut making the design very suitable for toxic & corrosive gases.

Reverse Seated Valves

These are brass valves & use an O-ring to seal around the valve spindle. Pressure tends to keep the valve shut & as the cylinder pressure decreases, the total force available to sustain valve shut-off also decreases & seat closure is achieved by spring force. If there is a leak at the seat when the valve closes, there is no way to manually apply more force.

This design is used for squeeze grip carbon dioxide valves for firefighting application where quick release of gas content is desired.

06



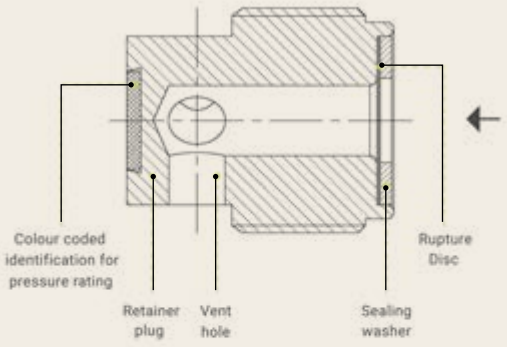
Pressure Relief Device (PRD)

Pressure & / or temperature activated device installed on cylinders to prevent the pressure in a cylinder from rising above a predetermined maximum, thereby preventing rupture of the cylinder in case the cylinder is exposed to fire, high temperature & / or overfilling.

Rupture Disc Device (CG-1)

Pressure operated non-reclosing device designed to function by the bursting of a pressure containing disc. Once the disc ruptures, it completely releases the content of the cylinder. It is equipped with colour coded safety for easy identification of its set pressure.

For compressed gas UN cylinder, test pressure of the cylinder is 1.5 times the working pressure of cylinder. For liquefiable gas UN cylinder, test pressure & the corresponding filling ratio is given in P200 of ADR. Test pressure of a DOT cylinder is 5/3 times the working/service pressure.



01

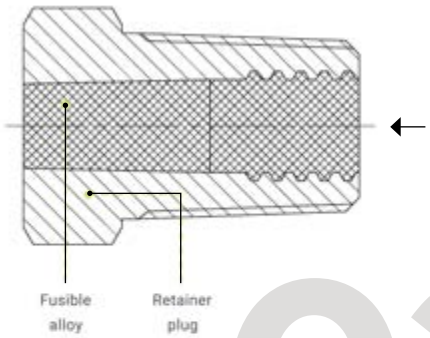
Fusible Plug Device (CG-2/CG-3)

Thermally operated non-reclosing device designed to function by the yielding of a fusible metal at a set temperature. These devices do not protect from overpressurization at temperatures below their melting point. In the event a cylinder is exposed to fire or excess heat, the fusible plug is designed to melt & release the cylinder contents preventing product within the cylinder from creating excessively high pressures, caused by high external temperatures & rupturing the cylinder.

These devices are limited for use up to 500 psig service pressure due to risk of extrusion of the alloy.

CG-2 plug yields at a temperature between 157°F to 170°F (69.4°C to 76.7°C). Nominal temperature 165 °F (74 °C).

CG-3 plug yields at a temperature between 208°F to 224°F (97.8°C to 106.7°C). Nominal temperature 212 °F (100 °C).

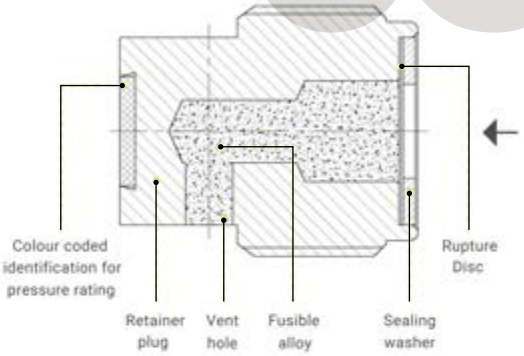


02

Combination Rupture Disc/ Fusible Alloy (CG-4/CG-5)

03

Combination of pressure & temperature operated non-reclosing device consisting of a rupture disc backed by fusible alloy on the atmospheric side of the disc. In case of fire or high temperature, the fusible metal yields & cylinder overpressure is relieved by the bursting of the rupture disc. Both the pressure & temperature requirements of the device must be satisfied for the device to actuate. This device will not protect a cylinder from overpressurization if the fusible alloy is not heated to its yield temperature. The fusible metal prevents premature rupture disc failure from momentary overpressurization & also protects the disc from external corrosion.

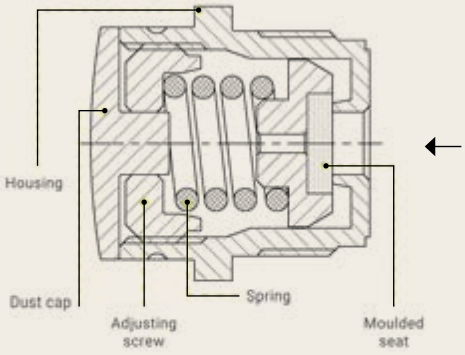


CG-4 plug yields at a temperature between 157°F to 170°F (69.4°C to 76.7°C). Nominal temperature 165 °F (74 °C).

CG-5 plug yields at a temperature between 208°F to 224°F (97.8°C to 106.7°C). Nominal temperature 212 °F (100 °C).

Pressure Relief Valve (PRV, CG-7)

Spring-loaded device designed to relieve excessive pressure & reclose & reseat to prevent further flow of gas or fluid from the container after resealing pressure is achieved. When the cylinder pressure exceeds the pressure setting of the spring in the relief valve, the valve opens to discharge the cylinder contents. Once the cylinder pressure decreases to the Pressure Relief Valve's (PRV's) pressure setting, it reseats above the pressure in a normally charged cylinder at 130°F (54.4 °C) after venting sufficient gas to control the internal cylinder pressure.



The pressure setting of the pressure relief valve is normally between 75% & 100% of the minimum test pressure of the cylinder.

This device does not protect against rupture of the container when the application of heat weakens the container to the point where its rupture pressure is less than the operating pressure of the device. These devices are limited for use up to 500 psig charging pressure cylinders.

04

Cylinder Valves Markings

Mandatory Markings

Pi marking

Compliance to European Transportable Pressure Equipment Directive, TPED 2010/35/EU

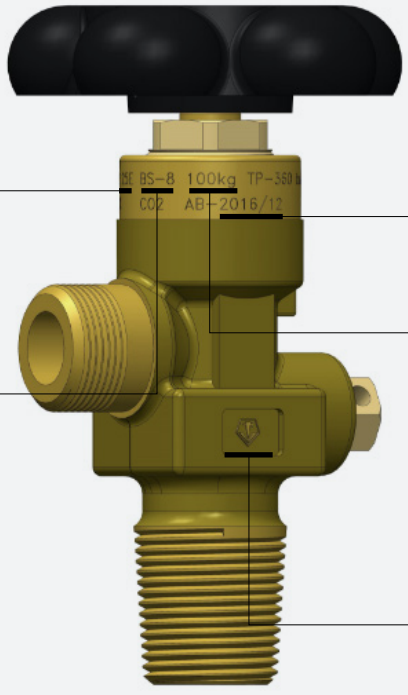
Identification of notified body

Four digit identification number for TPED notified body

Standard compliance

Compliance to EN ISO 10297 standard. If ISO VB is marked on the valve, it indicates that the valve has been tested for Oxygen pressure surge test for use as a main valve

FRONT VIEW



Inlet identification

Valve inlet connection which engages with the cylinder neck

Outlet identification

Valve outlet connection which engages with the filling / discharge connection

Manufacturing date

YYYY/MM - Year & month of manufacture of valve

Total package mass

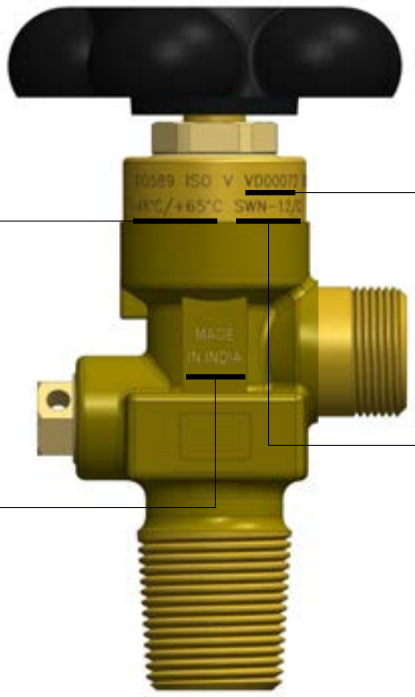
Total package mass (combined mass of a gas cylinder, its valve, its permanent attachment(s) including valve guard & its maximum allowed gas content) for which the valve can be used without valve protection

Manufacturer's identification

REAR VIEW

Markings shown are as per ISO 10297 & for illustration purpose.

Optional Markings



Temperature range

Operating and storage temperature range if the valve has been design tested for extended temperature range

Country of origin

Country where the valve is manufactured

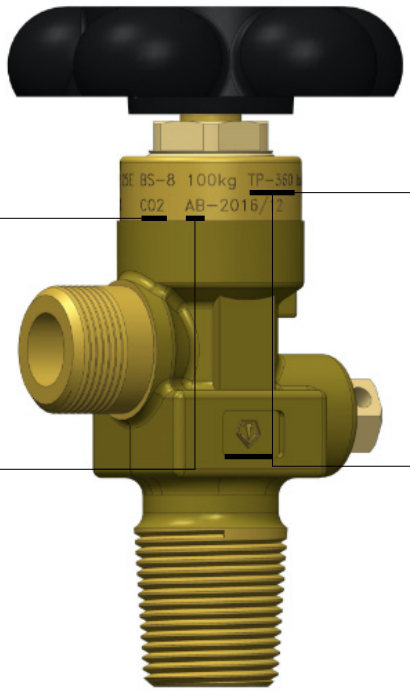
Item code

Alpha numeric valve identification

Series

Model number of the valve with unique design features

FRONT VIEW



Gas service

Gas service for which the valve is certified, compatible & intended to be used

Batch number

Traceability to the raw material used to manufacture valve body

Valve working pressure (WP)*

Settled pressure of a compressed gas at 15 °C in a full gas cylinder or cylinder bundle for which the valve is intended to be used

OR

Valve test pressure (TP)*

Minimum pressure of the valve used for endurance test, Oxygen pressure surge test & leak tightness test during type & production testing

REAR VIEW

** For compressed gas , test pressure = 1.2 x working pressure. For liquefied gas, test pressure shall be at least equal to the minimum test pressure corresponding to the applicable filling ratio.*

Markings shown are as per ISO 10297 & for illustration purpose.

SERIES SELECTION TABLE

Operating Mechanism	Operating Device	Valve Seal	Spindle Configuration	Valve Body Material			
				Brass	Al-Si Bronze	Carbon Steel	Stainless Steel
INDUSTRIAL GASES							
Oxygen, Hydrogen & other gases							
Compression packed	Key	Metal to metal	Single	BSKM-21/O			
O-ring seal	Key	Soft seated	Two-piece	BSKN-12/O & BTKN-12/O			
	Handwheel			SWN-12/O & SWN-12/N			
				TWN-12/O			
				SWN-12/45			
O-ring seal (Offline RPVs)				BOWN-12/O & BOWN-12/N			
Acetylene							
Compression packed	Key	Metal to metal	Single	BSKM-21/O			
O-ring seal	Key	Soft seated	Two-piece	KHO-10/D & KVO-10/D			
				BSKN-12/D & BAKN-12/D			
	Handwheel			BSWN-12/D-30 & BAWN-12/D-30			
				SWN-12/D & TWN-12/D			
Carbon Dioxide							
O-ring seal	Key	Soft seated	Two-piece	SKN-12/C			
	Handwheel			SWN-12/45			
				SWN-12/C			
O-ring seal (Offline RPVs)				BOWN-12/C			
MEDICAL GASES							
Compression packed	Key	Metal to metal	Single	BSKM-21/O			
O-ring seal	Key	Soft seated	Two-piece	BSKN-12/O & BTKN-12/O			
	Key / Toggle			BPKN-12 & BPTN-12			
	Knob			PBN-12			
	Handwheel			SWN-12/O			
				TWN-12/O			
				SWN-12/45			
O-ring seal (Offline RPVs)				BOWN-12/O			

SERIES SELECTION TABLE

Operating Mechanism	Operating Device	Valve Seal	Spindle Configuration	Valve Body Material			
				Brass	Al-Si Bronze	Carbon Steel	Stainless Steel
CHLORINE & CORROSIVE GASES							
Compression packed	Key	Metal to metal	Single		CAV-06 (P-17)		
Compression packed with O-ring seal	Handwheel	Soft seated	Two-piece	SWN-22/V	SWN-22/V		SSWN-22/V
SPECIALITY GASES							
Diaphragm gland seal	Handwheel	Soft seated	Two-piece	RWH-03			SSWN-32/V
AMMONIA & AMINES							
Compression packed	Key	Metal to metal	Single			CST-06 (CGA V-9)	
Compression packed with O-ring seal	Handwheel	Soft seated	Two-piece			SWN-22	SSWN-22/V-S3
REFRIGERANT GASES							
Compression packed	Key	Metal to metal	Single	CAV-06 (CGA V-9)			
Diaphragm gland seal	Handwheel	Soft seated	Two-piece	RDP-03			
				BSWN-32/L			
BREATHABLE AIR (SCBA)							
O-ring seal	Handwheel	Soft seated	Two-piece	HBA-10/I			
				HBA-10/I with PG			
				RBA-10/I			
				MBA-10/I			
MASTER SHUT-OFF VALVES							
O-ring seal	T-handle	Metal to metal	Two-piece	BMV-09			
		Soft seated		BHN-12/N			

O_2, N_2O, O_2+N_2O, O_2+He

O_2, C_2H_2, CO_2, H_2, N_2 CO_2 - CLASS B & ELECTRICAL

Cl_2, SO_2, HCl, HF, $COCl_2$

O_2, Ar, He, CO, Kr Xe, SF_6, NO, NO_2, SiH_4

NH_3, H_2S, COS, BF_3, $C_2H_5NH_2$

CHC_1F_2, CF_3C_1, $CHFCl_2$, CH_2FCF_3

N_2, O_2, Ar, CO_2 CNG

How to Select Cylinder Valve Specification

1. Valve Series	Select the suitable series based on design/application/materials/orientation/flow requirement/operating device/ pressure rating etc. for your application from 'Series Selection Table'. Scan the QR code from the product page to download the detailed series catalogue, if applicable. Choose the appropriate three-digit valve series code given in the 'Product Selection Guide' of the detailed series catalogue for item code creation.
2. Valve Body Material	Select the appropriate valve body material from the options given in the 'Product Selection Guide'. Choose chrome plating option if available and required. The choice of valve body material with or without plating is reflected in the next two digits of the item code.
3. Valve Inlet	Select inlet connection to match the cylinder neck thread. Distinguish between taper & parallel threads. Taper threads seal by a combination of thread sealant & metal deformation. Parallel thread seal is created by O-ring. Select the applicable three-digit code from the options. Customer specific inlet size / respective oversize are offered on request.
4. Dip Tube Thread	Choose dip tube thread if required on inlet connection. Dip tubes are used for quick withdrawal of the liquid content of the cylinder. Select the corresponding single-digit for the dip tube thread. Choose "X" if dip tube thread is not required. Customer specific dip tube thread can be offered on request.
5. Valve Outlet	Select the outlet connection required. Outlet connection changes based on the gas service / pressure rating and the country of use. Outlet connections are referred in the national / international outlet connection standard (e.g. CGA/BS/DIN/AFNOR/UNI/AS/IS/ISO). Select the applicable three-digit code for the outlet. Outlet connection not listed can be provided on request.
6. Gas Service	Select the applicable two-digit code from the available list of gases.
7. Pressure Relief Device (PRD)	If PRD is required, select the applicable single digit for the PRD type taking into consideration the material option of the burst disc (if provided). Choose "X" if PRD is not required.
8. PRD Rating	Select the PRD rating (temperature &/or pressure) from the two-digit code. Choose "XX" if PRD is not required. Pressure rating of the PRD depends upon the working pressure of compressed gas, filling ratio used for liquifiable gases and the test pressure of the cylinder.
9. Specification	Select the applicable single-digit code for the standard to which the cylinder valve compliance is required (e.g. ISO 10297/ CGA V-9/IS 3224).

10. Inspection

Select the applicable single digit for the inspection requirement (e.g. In-house/third party).

11. Seating

Select the applicable single digit for the soft seat option. Ensure the soft seat is compatible with the gases for which the valves shall be used.

12. Valve Pressure Rating Nomenclature

Select "WP" (Working pressure) or "TP" (Test pressure) to reflect in the item code. WP is the settled pressure of a compressed gas at 15 °C in a full gas cylinder.

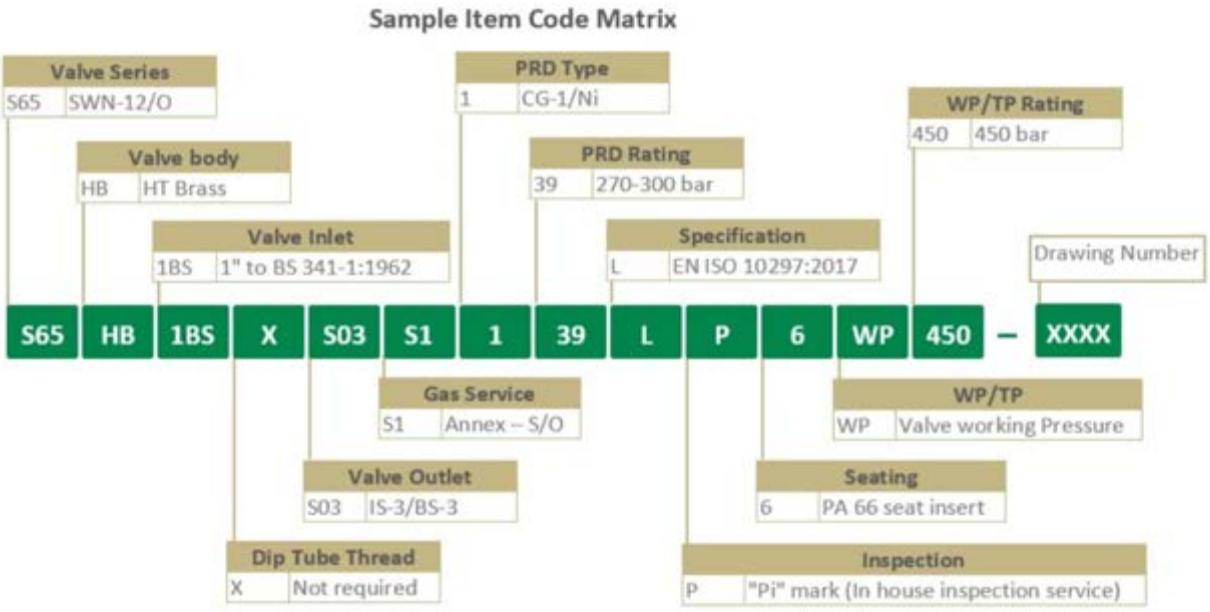
Note - As per ISO 10297, the term WP is only applicable for compressed gases & does not apply to liquefied or dissolved gases.
For compressed gases, TP = 1.2 x WP
For liquefied gases, TP shall be at least equal to the minimum test pressure given in ADR.

13. Pressure Rating

Select the three-digit code to correspond to the pressure rating required for the valves.

Options:
Handwheel material & colour, filter, seal nut, gasket, dip tube, chain & keeper ring, EFV- are generally not unique to the item code & need to be specified separately.

Note:
Four-digit number following the item code is the drawing number & marked on the valve body representing the unique combination of selected technical parameters from 1-13



CYLINDER VALVE INLET CONNECTIONS

Sl. No.	Designation	Small End Major Diameter (mm)	Taper on Diameter	Thread Angle	Thread Per Inch (TPI)	Specification	Remarks
TAPER THREADS							
1a	1/8-27 NGT	9.984	1:16	60°	27	CGA V-1	
1b	1/4-18 NGT	13.253			18		Also as per IS : 12300
1c	3/8-18 NGT	16.672					
1d	1/2-14 NGT	20.716			14	Type 1, Size 1 of IS 3224	Also as per CGA V-1
1e	3/4-14 NGT	26.029				Type 1, Size 2 of IS 3224	
i)	3/4-14 NGT (Cl)-1					Standard size for Chlorine as per IS 3224	
ii)	3/4-14 NGT (Cl)-2	26.484				4 turns oversize for Chlorine as per IS 3224	
iii)	3/4-14 NGT	26.824				7 turns oversize other than Chlorine as per IS 3224	
iv)	3/4-14 NGT (Cl)-3	26.995				8-1/2 turns oversize for Chlorine as per IS 3224	
v)	3/4-14 NGT (Cl)-4	27.617				14 turns oversize for Chlorine as per IS 3224	
vi)	3/4-14 NGT (Cl)-5	29.204				28 turns oversize for Chlorine as per CGA V-1	
1f	1-11 1/2 NGT	32.593	1:16	60°	11.5	Type 1, Size 3 of IS 3224	Also as per CGA V-1
i)	1-11 1/2 NGT (Cl)-1					Standard size for Chlorine as per CGA V-1	Also as per Chlorine Institute P-17
ii)	1-11 1/2 NGT (Cl)-2	33.144				4 turns oversize for Chlorine as per CGA V-1	
iii)	1-11 1/2 NGT (Cl)-3	33.766				8-1/2 turns oversize for Chlorine as per CGA V-1	
iv)	1-11 1/2 NGT (Cl)-4	34.523				14 turns oversize for Chlorine as per CGA V-1	
v)	1-11 1/2 NGT (Cl)-5	36.454				28 turns oversize for Chlorine as per CGA V-1	
2a	17E (W 19.8)	17.4	3:25	55°	14	Type 2 Size 1 of IS 3224	Equivalent to 19.8 mm of DIN 477-1:1990 & 17E of EN ISO 11363-1
2b	25E (W 28.8)	25.8				Type 2 Size 2 of IS 3224	Equivalent to 28.8 mm of DIN 477-1:1990, 25T of BS: 341-1991, 25E of EN ISO 11363-1 (supersedes EN 629-1:1996)
2c	28E (W 31.3)	28.3				DIN 477	

Sl. No.	Designation	Small End Major Diameter (mm)	Taper on Diameter	Thread Angle	Thread Per Inch (TPI)	Specification	Remarks	
TAPER THREADS								
3a	18.16* (18T)	18.16	1:8	55°	14	Type 4, Size 1 of IS 3224	Equivalent to 18T of BS 341-1:1991 & 0.715-18AU of AS 2473.2	Also as per BS 341:1962
3b	25.4 (1"BS)	25.4				Type 4, Size 2 of IS 3224	Equivalent to 1.0-25AU of AS 2473.2	
i)	26.194 (1 1/32")	26.194				3.5 turns oversize as per IS 3224	Also as per BS 341:1962	
ii)	26.987 (1 1/16")	26.987				7 turns oversize as per IS 3224		
iii)	27.781 (1 3/32")	27.781				10.5 turns oversize as per IS 3224		
iv)	28.574 (1 1/8")	28.574				14 turns oversize as per IS 3224		
3c	31.75* (32T)	31.75			11	Type 4, Size 3 of IS 3224	Also as per BS 341-1:1991	
Sl. No.	**Designation**	**Large End Major Diameter (mm)**	**Taper on Diameter**	**Thread Angle**	**Thread Per Inch (TPI)**	**Specification**	**Remarks**	
4a	V1	21.2	3:26	55°	14	JIS 8246		
4b	V2	29.5						
4c	V3	29.5						
4d	1.455" (W39)	40.3 (Approx.)			12	JIS 8244		

** Oversize of 18.16 & 31.75 are also available as per IS 3224*

Sl. No.	Designation	Thread Angle	Major Diameter (mm)	Specification	Remarks
PARALLEL THREADS					
1	3/4-16 UNF-2A	60°	19.012 / 18.773	IS 3224	Also as per JIS B 8246
2	1 1/8-12 UNF-2A		28.529 / 28.240		
3	3/4-14 NPSM		26.264 / 26.010		1. Also as per JIS B 8246 2. Equivalent to 3/4-14 NGS-2A as per AS 2473.2
4	M18X1.5-6g		17.968 / 17.732	ISO 15245	Also as per IS 3224 & BS 341-1:1991
5	M25X2.0-6g		24.962 / 24.682		
6	M30X2.0-6g		29.982 / 29.662		Also as per IS 3224 & BS 341-1:1991

NOTE The list contains commonly used Cylinder Valve Inlet Connections & is not exhaustive. Refer ISO/TR 11364, for additional connections used worldwide.

Gas Cylinder Valves for Industrial Gases

OXYGEN, HYDROGEN & OTHER GASES

ACETYLENE

CARBON DIOXIDE

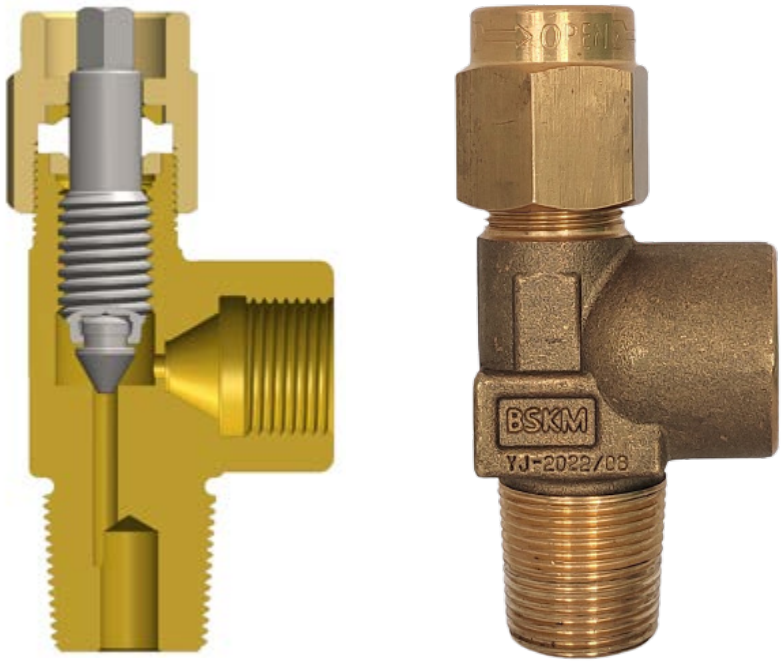
BSKM-21/O

Key Operated Metal Seated Valves in Single Spindle Compression Packed Design

tekno valves
50 YEARS OF EXCELLENCE

Cylinder Valves for Oxygen, Hydrogen & Other Gases

BAM



Design Specifications	
Minimum life	2000 cycles
Maximum pressure rating (type approval)	240 bar
Spindle square	7.1 mm / 8 mm
Oxygen pressure surge test	20 cycles at 240 bar
Temperature range	-20 °C to + 65 °C
Minimum closing torque [a]	8 Nm
Gland nut installation torque [b]	60 Nm
Spindle failure torque	80-85 Nm
Flow coefficient (C_v)	0.40
Lubricant	Krytox GPL 225
Oxygen cleaned	Yes

Material of Construction	
Part	**Material**
Valve body	HT brass
Self-centering spindle	SS 303
Packing	PTFE
Other components	Free cutting brass

a - Higher torques may be required to operate the valve in service (Maximum recommended 25 Nm)
b - Retightening may be required in service

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ℼ) mark
• Valves meet IS 3224:2021, approved by PESO & supplied under BIS inspection [c] for Indian market

c - Available only with 7.1mm spindle square valves

For features, benefits & ordering information, refer detailed catalogue

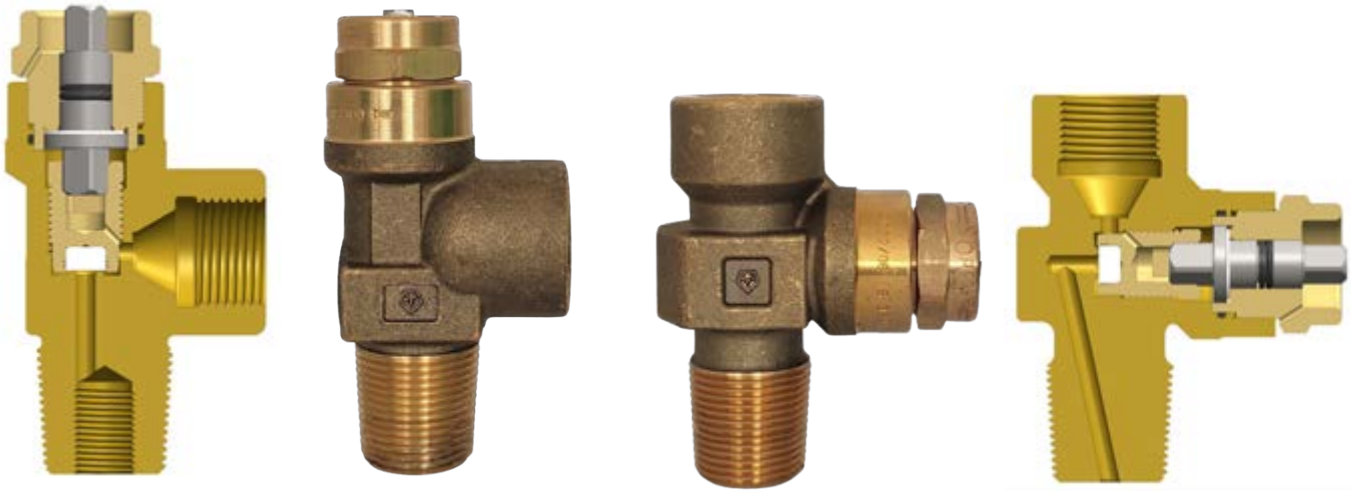
BSKN-12/O & BTKN-12/O

Key Operated Soft Seated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Oxygen, Hydrogen & Other Gases

BAM



BSKN-12/O
Side Outlet Valve

BTKN-12/O
Top Outlet Valve

Design Specifications	
Minimum life	2000 cycles
Maximum pressure rating (type approval)	400 bar
Spindle square	7.1 mm / 8 mm
Oxygen pressure surge test	50 cycles at 400 bar
Temperature range	−46 °C to +85 °C
Pressure relief device (PRD) [a]	CG-1 / CG-4 / CG-5
Minimum closing torque	8 Nm
Gland nut installation torque	75 Nm
Spindle failure torque	75-80 Nm
Flow coefficient (C_v)	0.35
Lubricant - Oxygen and oxidizing gases - Non-oxidizing gases	 Gleitmo 599 Krytox GPL 225
Oxygen cleaned	Yes

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged brass
Upper spindle	SS 303
Lower spindle	Naval Brass
Gland Nut	Free cutting brass
Seat insert & Thrust washer	PEEK
O-rings & Back-Up Ring	EPDM

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ℼ) mark
• Valves meet IS 3224:2021, are approved by PESO & supplied under BIS inspection [b] for Indian market
• PRD complies with CGA S-1.1

b - Available only with 7.1 mm spindle square valve

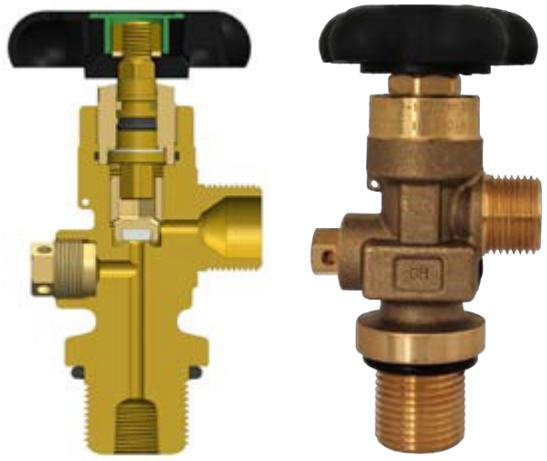
For features, benefits & ordering information, refer detailed catalogue

SWN-12/O & SWN-12/N

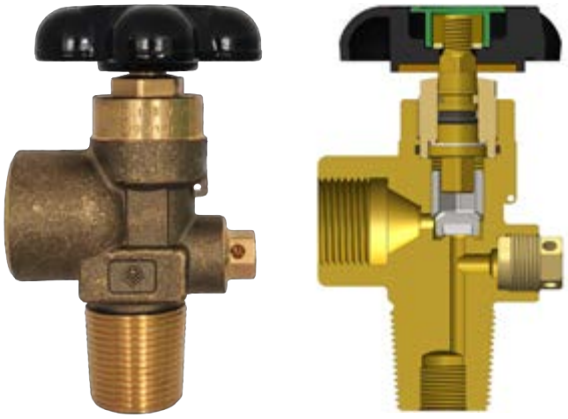
Handwheel Operated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

SWN-12/O - Oxygen, Hydrogen & Other Gases
SWN-12/N - Inerts & Argon + CO2 Gas Mixtures



SWN-12/O
(Valve shown with parallel inlet & PRD)



SWN-12/N
(Valve shown with taper inlet & PRD)

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval) • SWN-12/O ○ Oxygen & Oxidizing gases ○ Others • SWN-12/N	 360 bar 540 bar 360 bar	 5220 psig 7830 psig 5220 psig
Oxygen pressure surge test (SWN-12/O)	50 cycles at 360 bar	50 cycles at 5220 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Pressure relief device (PRD) [a]	CG-1 / CG-4 / CG-5	
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
PRD installation torque [a]	32 Nm	24 ft.lb
Flow coefficient (C_v)	0.36	
Lubricant - Oxygen & oxidizing gases - Others	 Gleitmo 599 Klubertemp GR M30	
Oxygen cleaned	Yes	

a - Optional

Material of Construction		
Part		**Material**
Valve body		Forged LT brass
Upper spindle, Gland nut & Retainer plug		Free cutting brass
Lower spindle	SWN-12/O	Free cutting brass
	SWN-12/N	SS 303
Seat insert		PA 66
Thrust washer		PEEK
O-rings & Back-Up Ring		EPDM
Handwheel		Aluminium (CED coated) / Glass filled PA with brass insert
Burst disc		Nickel / Copper
Burst disc sealing washer		Copper
Inlet O-ring [b]		EPDM / PTFE

b - For parallel inlet connection only

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED, available with Pi (ℼ) mark & UK TPE, available with Rho (ℙ) mark
• PRD complies with CGA S-1.1

SWN-12/O

For features, benefits & ordering information, refer detailed catalogue

SWN-12/N

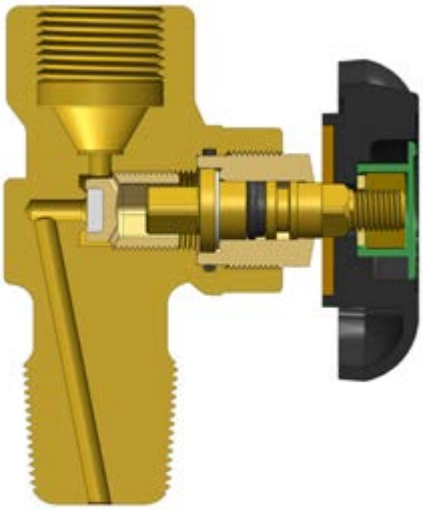
TWN-12/O

Handwheel Operated Top Outlet Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Oxygen, Hydrogen & Other Gases

BAM



Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type testing)	360 bar	5220 psig
Oxygen pressure surge test	50 cycles at 360 bar	50 cycles at 5220 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
Flow coefficient (C_v)	0.36	
Lubricant - Oxygen & oxidizing gases - Others	 Gleitmo 599 Klubertemp GR M30	
Oxygen cleaned	Yes	

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Gland nut, Upper & Lower spindle	Free cutting brass
Seat insert	PA 66
Thrust washer	PEEK
O-rings & Back-Up Ring	EPDM
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED, available with Pi (ΠΤ) mark & UK TPE, available with Rho (ρ) mark

For features, benefits & ordering information, refer detailed catalogue

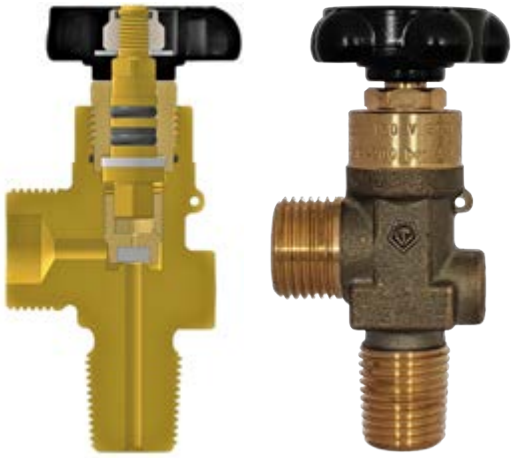
SWN-12/45

Handwheel Operated Valves in O-ring Seal Design for Cylinders up to 10 Litres WC

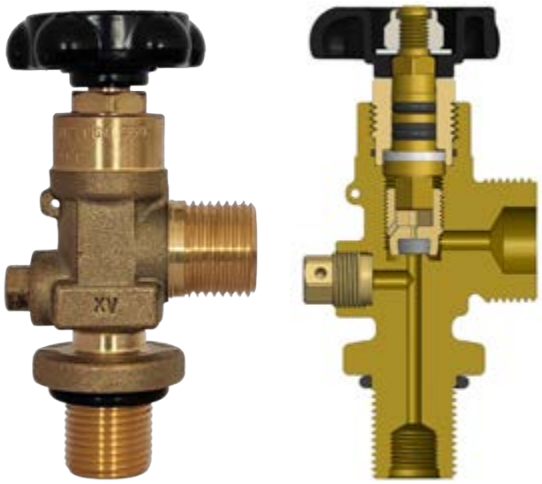
tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Oxygen, Hydrogen & Other Gases

BAM



Valve with taper inlet



Valve with parallel inlet
(shown with PRD)

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	360 bar	5220 psig
Oxygen pressure surge test	20 cycles at 360 bar	20 cycles at 5220 psig
Temperature range	-46 °C to +90 °C	-51 °F to +194 °F
Pressure relief device (PRD) [a]	CG-1 / CG-4 / CG-5	
Minimum closing torque	4 Nm	3 ft.lb
Gland nut installation torque	50 Nm	37 ft.lb
PRD installation torque [a]	17 Nm	13 ft.lb
Flow coefficient (C_v)	0.25	
Lubricant - Oxygen & oxidizing gases - Others	Klueberalfa YV 93-302 Krytox GPL 225	
Oxygen cleaned	Yes	

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Gland nut & Retainer plug	Free cutting brass
Upper & Lower spindle	Naval brass
Thrust washer & Seat insert	PA 66
O-rings & Back-Up Ring	EPDM
Handwheel	ø45 mm Aluminium (CED coated)
Burst disc	Nickel / Copper
Burst disc sealing washer	Copper
Inlet O-ring [b]	EPDM

b - For parallel inlet connection only

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi ( )mark
• PRD complies with CGA S-1.1

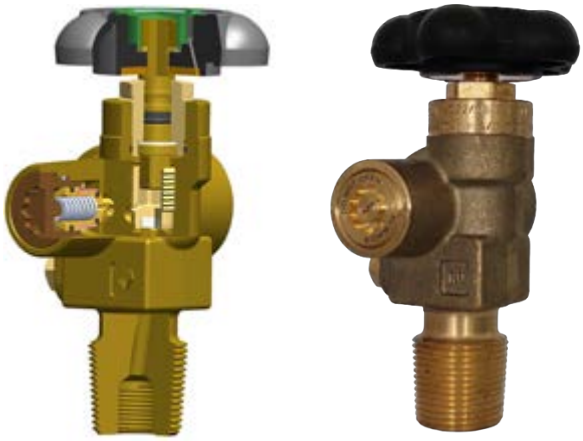
For features, benefits & ordering information, refer detailed catalogue

BOWN-12/O & BOWN-12/N

Handwheel Operated Offline Residual Pressure Valves (RPVs) with Non-Return Valve Function

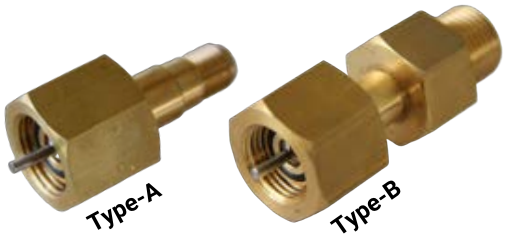
tekno valves 50 YEARS OF EXCELLENCE

BOWN-12/O - Oxygen, Hydrogen & Other Gases
BOWN-12/N - Inerts & Argon + CO_2 Gas Mixtures



Valve shown with taper inlet & PRD

RPV Filling Adapters



Design Specifications		
	Metric	**English**
Minimum life - Main shut-off mechanism - Residual pressure device (RPD)	2000 cycles 100000 cycles	
Minimum pressure rating (type approval)	360 bar	5220 psig
Closing-off pressure	2-4 bar	30-60 psig
Opening pressure	4-6 bar	60-90 psig
Stroke length	5.0–5.5 mm	0.20–0.22 in
Temperature range (Main shut-off mechanism)	-46 °C to +85 °C	-51 °F to +185 °F
Temperature range (RPD)	-20 °C to +65 °C	-4 °F to +149 °F
OPST (BOWN-12/O)	50 cycles at 360 bar	50 cycles at 5220 psig
Pressure relief device (PRD) [a]	CG-1 / CG-4 / CG-5	
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
RPD installation torque	19 Nm	14 ft.lb
PRD installation torque [a]	28 Nm	21 ft.lb
Flow coefficient (C_v)	0.35	
Lubricant for main shut-off mechanism - Oxygen & oxidizing gases - Others	Gleitmo 599 Klubertemp GR M30	
Lubricant for RPD	Gleitmo 599	
Oxygen cleaned	Yes	

a - Optional

Material of Construction		
Part		**Material**
Valve body		Forged LT brass
Upper spindle, Gland nut, Piston, Piston bush & Retainer plug		Free cutting brass
Lower spindle	BOWN-12/O	Free cutting brass
	BOWN-12/N	SS 303
Seat insert		PA 66
O-rings, Back-Up Ring & Quad ring		EPDM
Housing		Dezincification resistant brass
RPD O-rings		PUR
Thrust washer		PEEK
Handwheel		Aluminium (CED coated) / Glass filled PA with brass insert
Spring		Copper beryllium
Burst disc		Nickel / Copper
Burst disc sealing washer		Copper
Inlet O-ring [b]		EPDM

b - For parallel inlet connection only

Compliance & Certification
• Valves meet EN ISO 10297:2017, ISO 15996:2017 & CGA V-9:2019
• Valves are certified to European TPED, available with Pi (ΠΤ) mark & UK TPE, available with Rho (ρ) mark
• Valves are approved by PESO & supplied under Lloyd's inspection for Indian market
• PRD complies with CGA S-1.1
• Available with CGA XXXR outlet connection as per CGA V-1

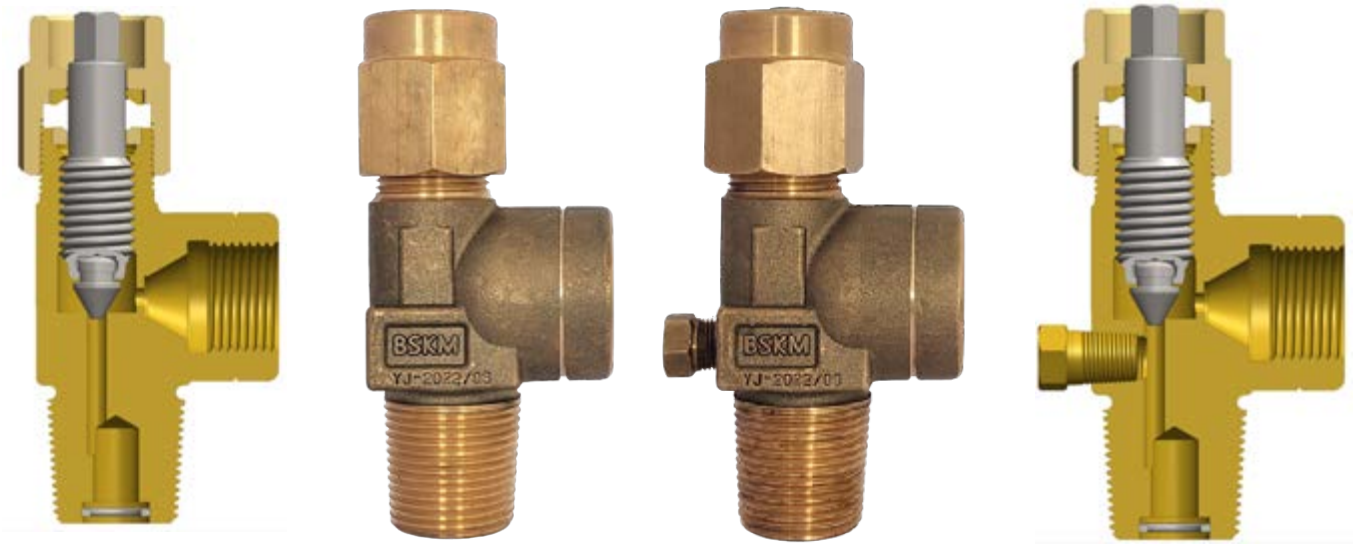
For features, benefits & ordering information, refer detailed catalogue

BSKM-21/O

Key Operated Metal Seated Valves in Single Spindle Compression Packed Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Acetylene



Standard valve **Valve with fusible plug**

Design Specifications	
Minimum life	2000 cycles
Maximum pressure rating (type approval)	60 bar
Spindle square	7.1 mm / 8 mm
Temperature range	-20 °C to + 65 °C
Pressure relief device (PRD) [a]	CG-3
Fusible alloy yield temperature	98°C -104°C
Minimum closing torque [b]	8 Nm
Gland nut installation torque [c]	60 Nm
Spindle failure torque	80-85 Nm
Fusible plug installation torque [a]	17 Nm
Filter net size	60 mesh
Flow coefficient (C_v)	0.40
Lubricant	Krytox GPL 225

Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Self-centering spindle	SS 303
Packing	PTFE
Other components	Free cutting brass
Fusible plug	Naval brass
Filter net	Stainless steel
Filter washer	SS 304

a - Optional

b - Higher torques may be required to operate the valve in service (Maximum recommended 25 Nm)

c - Retightening may be required in service

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (⚶) mark
• Valves meet IS 3224:2021, approved by PESO & supplied under BIS inspection [d] for Indian market
• Fusible plug complies with CGA S-1.1

d - *Available only with 7.1 mm spindle square valves*

For features, benefits & ordering information, refer detailed catalogue

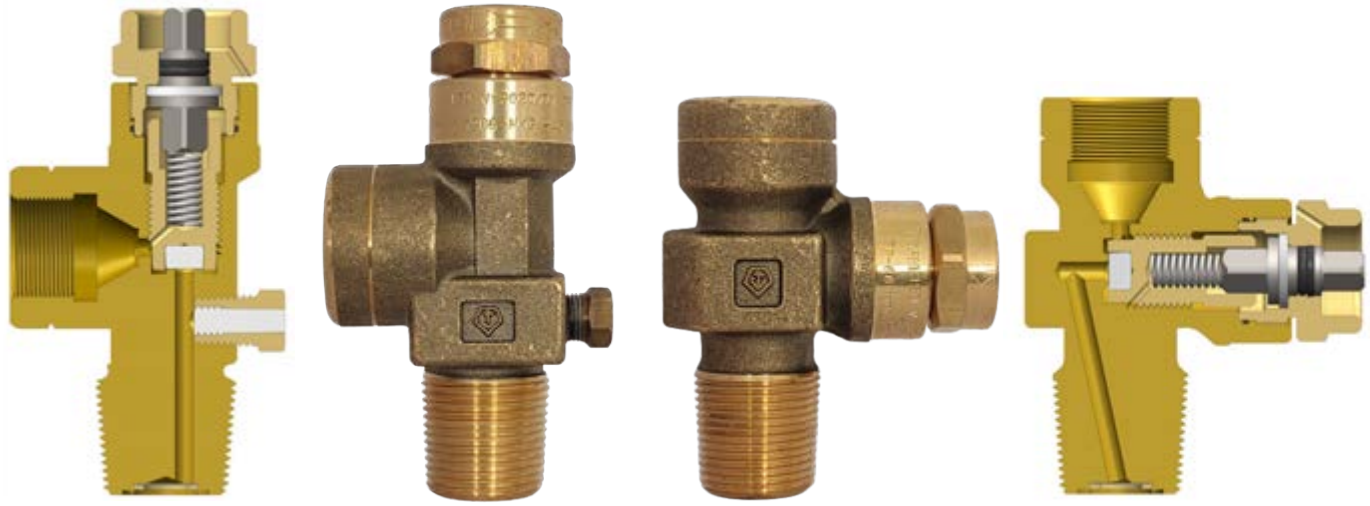
KHO-10/D & KVO-10/D

Key Operated Soft Seated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Acetylene

BAM



KHO-10/D
Side outlet valve shown with fusible plug

KVO-10/D
Top outlet valve

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	60 bar	870 psig
Spindle square	7.1 mm	9/32 in
Temperature range	-40 °C to +85 °C	-40 °F to +185 °F
Pressure relief device (PRD)*	CG-3	
Fusible alloy yield temperature	97.8 °C to 106.7 °C	208 °F to 224 °F
Minimum closing torque	8 Nm	6 ft.lb
Gland nut installation torque	75 Nm	55 ft.lb
Fusible plug installation torque*	20 Nm	15 ft.lb
Spindle failure torque	75-80 Nm	55-59 ft.lb
Filter net size	250 micron	60 mesh
Flow coefficient (C_v)	0.25	
Lubricant	Krytox GPL 225	

Material of Construction	
Part	**Material**
Valve body	Forged brass
Gland nut & Filter washer	Free cutting brass
Upper spindle	SS 303
Lower spindle	Naval brass
Seat insert	PA 66
O-rings & Back-Up Ring	EPDM
Thrust washer	PA 66
Spring	SS 302
Filter net	Stainless steel
Fusible plug	Naval brass

** Optional*
KHO-10/D – Integrated fusible alloy/plug
KVO-10/D – Integrated fusible alloy

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves without fusible plug are certified to European TPED & available with Pi (ΠΥ) mark
• Fusible plug complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

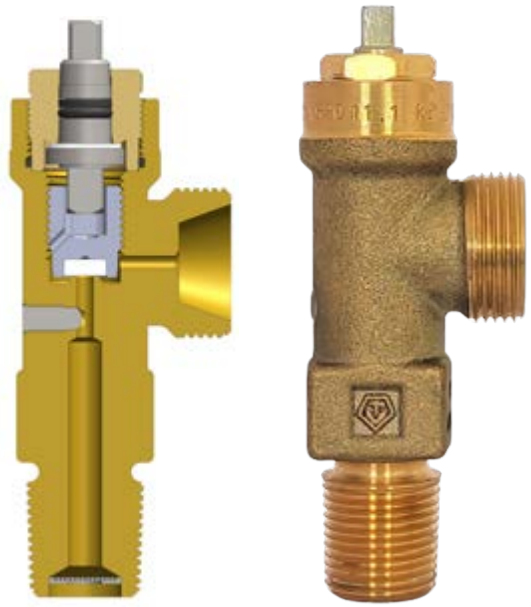
BSKN-12/D & BAKN-12/D

Key Operated Soft Seated Valves in O-ring Seal Design

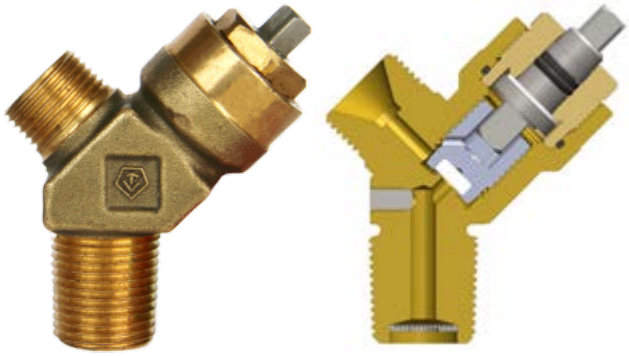
tekno valves 50 YEARS OF EXCELLENCE

Acetylene Valves with integrated fuse metal for “B” & “MC” Style Cylinders

BAM



BSKN-12/D – for ‘B’ cylinder



BAKN-12/D – for ‘MC’ cylinder

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	60 bar	870 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Stem square	5 mm	0.20 in
Integrated fuse metal*	CG-3	
Fuse metal yield temperature	97.8 °C to 106.7 °C	208 °F to 224 °F
Minimum closing torque	2 Nm	1.5 ft.lb
Packing nut installation torque	45 Nm	33 ft.lb
Spindle failure torque	25-30 Nm	18-22 ft.lb
Filter net size	250 micron	60 mesh
Flow coefficient (C_v)	0.15	
Lubricant	Krytox GPL 225	

Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Packing nut	Free cutting brass
Upper & Lower stem	SS 303
Thrust washer & Seat insert	PEEK
O-rings & Back-Up ring	EPDM
Filter net	Stainless steel
Filter washer	SS 304

** Valves for manifold application shall be supplied without fuse metal*

Valve Selection & Application			
Series	**Cylinder Style**	**Outlet Connection**	**Inlet Connection**
BSKN-12/D	B	CGA 520	3/8-18NGT
BAKN-12/D	MC	CGA 200	

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves without fuse metal are certified to European TPED & available with Pi (⚶) mark
• Fuse metal complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

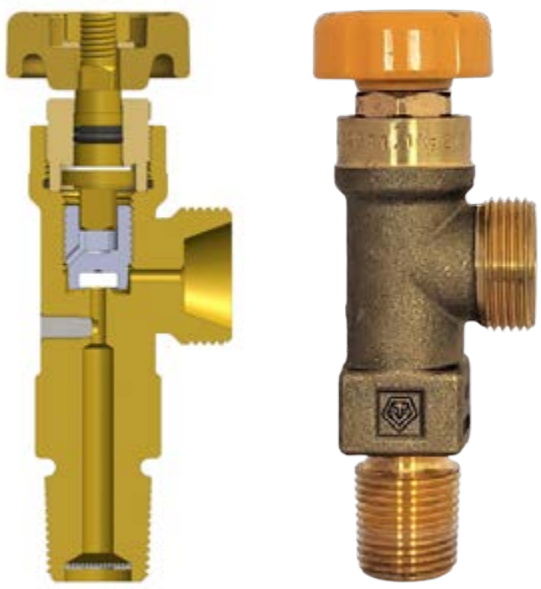
BSWN-12/D-30 & BAWN-12/D-30

Handwheel Operated Valves in O-ring Seal Design

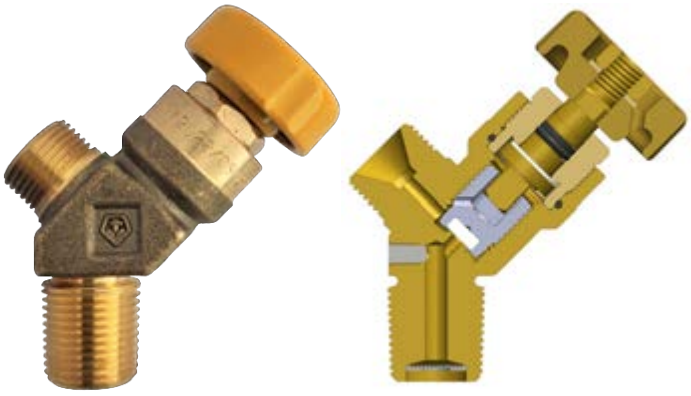
tekno valves
50 YEARS OF EXCELLENCE

Acetylene Valves with integrated fuse metal for “B” & “MC” Style Cylinders

BAM



BSWN-12/D-30 - for ‘B’ cylinder



BAWN-12/D-30 - for ‘MC’ cylinder

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	60 bar	870 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Integrated fuse metal*	CG-3	
Fuse metal yield temperature	97.8 °C to 106.7 °C	208 °F to 224 °F
Minimum closing torque	2 Nm	1.5 ft.lb
Packing nut installation torque	45 Nm	33 ft.lb
Filter net size	250 micron	60 mesh
Flow coefficient (C_v)	0.15	
Lubricant	Krytox GPL 225	

Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Upper stem & Packing nut	Free cutting brass
Lower stem	SS 303
Seat insert	PVDF
Thrust washer	PEEK
O-rings & Back-Up Ring	EPDM
Handwheel (Gold)*	ø30 mm Zinc base alloy (Powder coated)
Filter net	Stainless steel
Filter washer	SS 304

** Valves for manifold application shall be supplied with Red handwheel & without fuse metal*

Valve Selection & Application			
Series	**Cylinder Style**	**Outlet Connection**	**Inlet Connection**
BSWN-12/D-30	B	CGA 520	3/8-18NGT
BAWN-12/D-30	MC	CGA 200	

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves without fuse metal are certified to European TPED & available with Pi (ℼ) mark
• Fuse metal complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

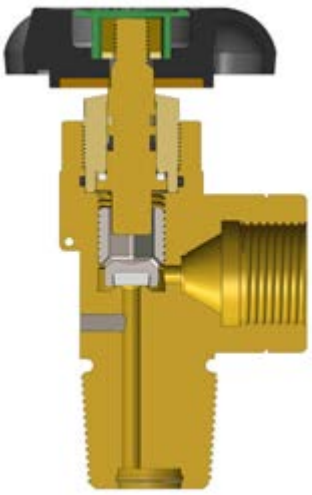
SWN-12/D & TWN-12/D

Handwheel Operated Valves in O-ring Seal Design

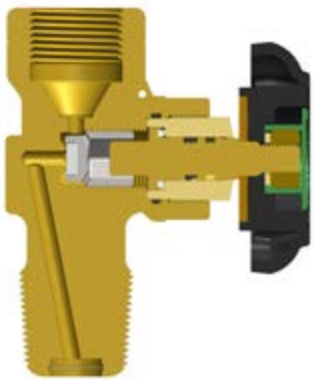
tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Acetylene

BAM



SWN-12/D
Side outlet valve shown with integrated fuse metal



TWN-12/D
Top outlet valve

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	60 bar	870 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Pressure relief device (PRD)*	CG-3	
Fuse metal yield temperature	97.8 °C to 106.7 °C	208 °F to 224 °F
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
Filter net size	250 micron	60 mesh
Flow coefficient (C_v)	0.36	
Lubricant	Klubertemp GR M30	

** Optional*

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Upper spindle & Gland nut	Free cutting brass
Lower spindle	SS 303
Seat insert	PEEK
Thrust washer	PEEK
O-rings & Back-Up Ring	EPDM
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert
Filter net	Stainless steel
Filter washer	SS 304

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
Valves are certified to European TPED, available with Pi (ⓟ) mark & UK TPE, available with Rho (Ⓟ) mark
• Fuse metal complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

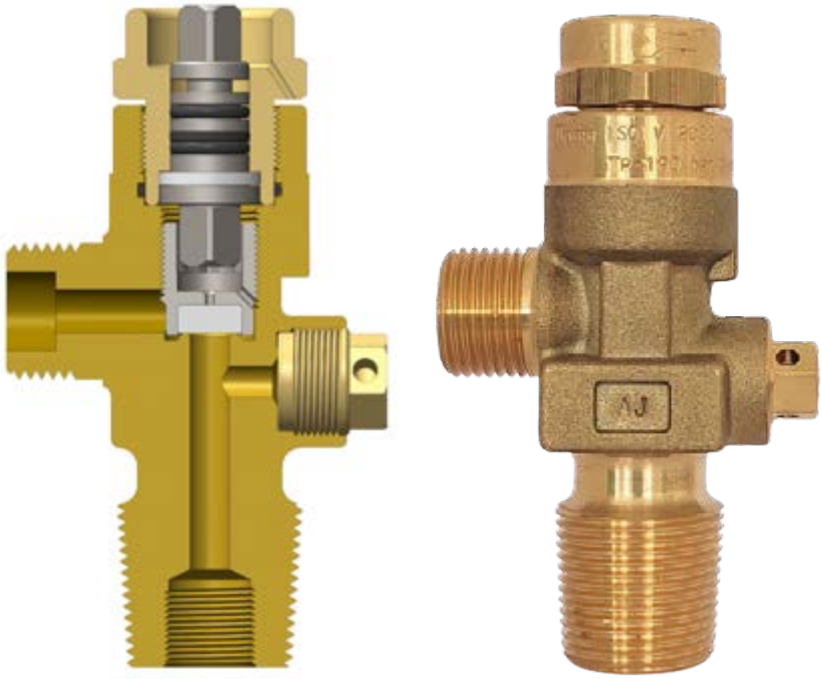
SKN-12/C

Key Operated Soft Seated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Carbon Dioxide

BAM



Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	360 bar	5220 psig
Spindle square	9.50 mm	3/8 in
Temperature range	-46 °C to +65 °C	-51 °F to +149 °F
Pressure relief device (PRD)	CG-1	
Minimum closing torque	8 Nm	6 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
PRD installation torque	30-35 Nm	22-26 ft.lb
Spindle failure torque	75-80 Nm	55-59 ft.lb
Flow coefficient (C_v)	0.70	
Lubricant	Krytox GPL 225	

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Gland nut & Retainer plug	Free cutting brass
Upper & Lower spindle	SS 303
Seat insert	PA 66
O-rings & Back-Up Ring	EPDM
Thrust washer	PA 66
Burst disc	Nickel
Burst disc sealing washer	Copper

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ᴨ)mark
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

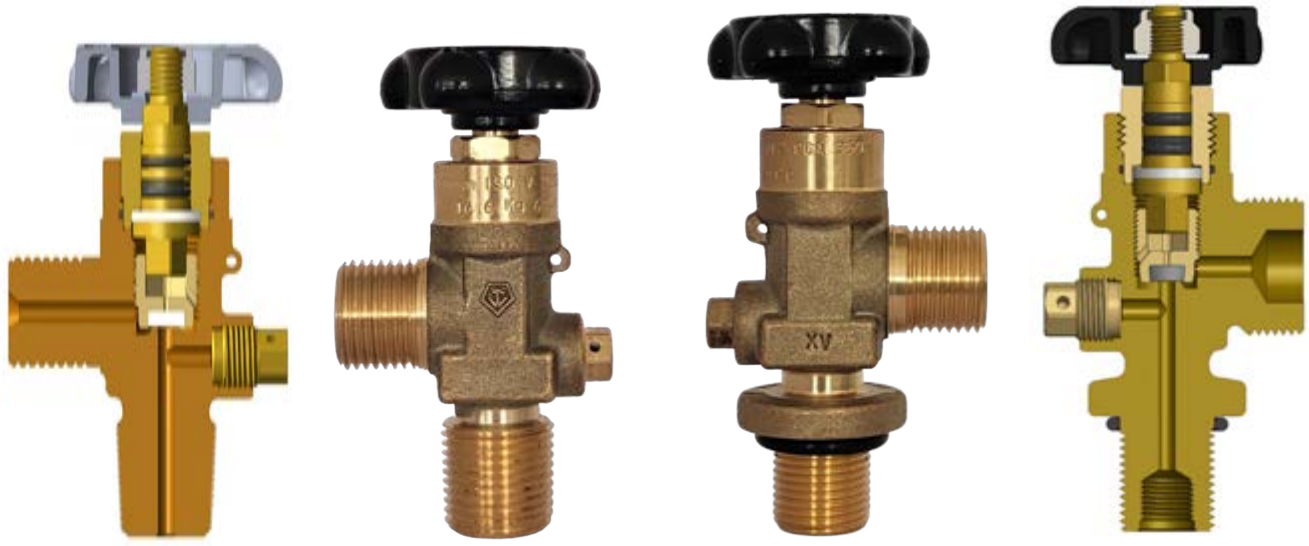
SWN-12/45

Handwheel Operated Valves in O-ring Seal Design for Cylinders up to 10 Litres WC

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Carbon Dioxide

BAM



Valve with taper inlet **Valve with parallel inlet**

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	360 bar	5220 psig
Temperature range	-46 °C to +90 °C	-51 °F to +194 °F
Pressure relief device (PRD)	CG-1	
Minimum closing torque	4 Nm	3 ft.lb
Gland nut installation torque	50 Nm	37 ft.lb
PRD installation torque	17 Nm	13 ft.lb
Flow coefficient (C_v)	0.25	
Lubricant	Krytox GPL 225	

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Gland nut & Retainer plug	Free cutting brass
Upper & Lower spindle	Naval brass
Thrust washer & Seat insert	PA 66
O-rings & Back-Up Ring	EPDM
Handwheel	ø45 mm Aluminium (CED coated)
Burst disc	Nickel
Burst disc sealing washer	Copper
Inlet O-ring *	EPDM

** For parallel inlet connection only*

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi (ᴨ) mark
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

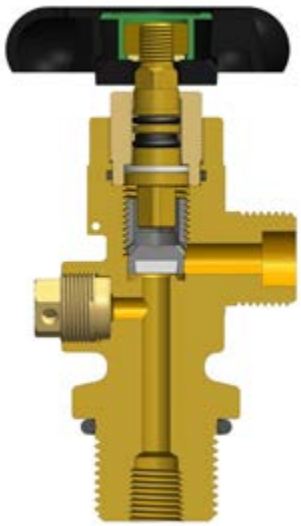
SWN-12/C

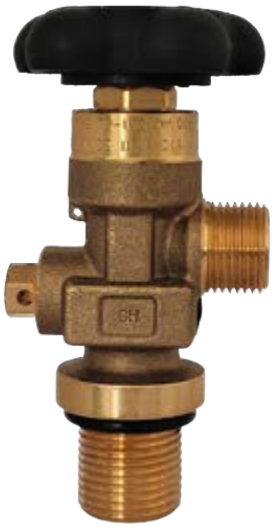
Handwheel Operated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Carbon Dioxide

BAM





Valve with parallel inlet

Valve with taper inlet

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	360 bar	5220 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Pressure relief device (PRD)	CG-1	
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
PRD installation torque	32 Nm	24 ft.lb
Flow coefficient (C_v)	0.85	
Lubricant	Krytox GPL 225	

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Upper spindle, Gland nut & Retainer plug	Free cutting brass
Lower spindle	SS 303
Seat insert	PA 66
O-rings & Back-Up ring	EPDM
Thrust washer	PA 66
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert
Burst disc	Nickel
Burst disc sealing washer	Copper
Inlet O-ring *	EPDM

** For parallel inlet connection only*

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi (⚶) mark
• PRD complies with CGA S-1.1

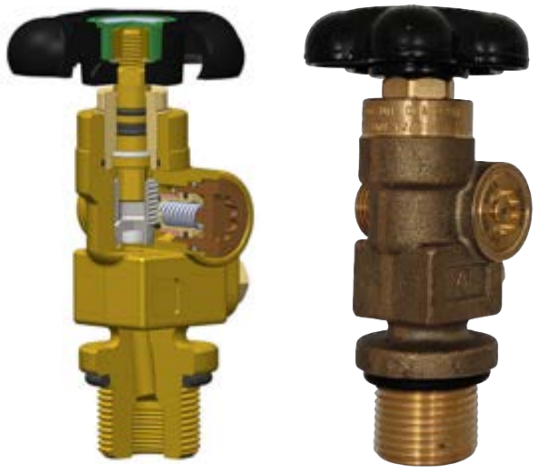
For features, benefits & ordering information, refer detailed catalogue

BOWN-12/C

Handwheel Operated Offline Residual Pressure Valves (RPVs) with Non-Return Valve Function

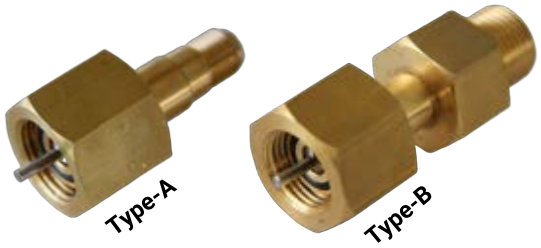
tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Carbon Dioxide



Valve shown with parallel inlet

RPV Filling Adapters



Design Specifications		
	Metric	**English**
Minimum life - Main shut-off mechanism - Residual pressure device (RPD)	2000 cycles 100000 cycles	
Maximum pressure rating (type approval)	360 bar	5220 psig
Closing-off pressure	2-4 bar	30-60 psig
Opening pressure	4-6 bar	60-90 psig
Stroke length	5.0–5.5 mm	0.20–0.22 in
Temperature range (Main shut-off mechanism)	-46 °C to +85 °C	-51 °F to +185 °F
Temperature range (RPD)	-20 °C to +65 °C	-4 °F to +149 °F
Pressure relief device (PRD)	CG-1	
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	14 ft.lb
RPD installation torque	19 Nm	24 ft.lb
PRD installation torque	28 Nm	21 ft.lb
Flow coefficient (C_v)	0.45	
Lubricant for main shut-off mechanism	Krytox GPL 225	
Lubricant for RPD	Gleitmo 599	

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Upper spindle, Gland nut, Piston, Piston bush & Retainer plug	Free cutting brass
Lower spindle	SS 303
Seat insert	PA 66
O-rings, Back-Up Ring & Quad ring	EPDM
Housing	Dezincification resistant brass
Housing and Piston O-ring	PUR
Thrust washer	PA 66
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert
Spring	Copper beryllium
Burst disc	Nickel
Burst disc sealing washer	Copper
Inlet O-ring *	NBR

** For parallel inlet connection only*

Compliance & Certification
• Valves meet EN ISO 10297:2017, ISO 15996:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi (ᴨ) mark
• Valves are approved by PESO and supplied under Lloyd's inspection for Indian market
• PRD complies with CGA S-1.1
• Available with CGA 320R outlet connection as per CGA V-1

For features, benefits & ordering information, refer detailed catalogue

NOTES

Gas Cylinder Valves for Medical Gases

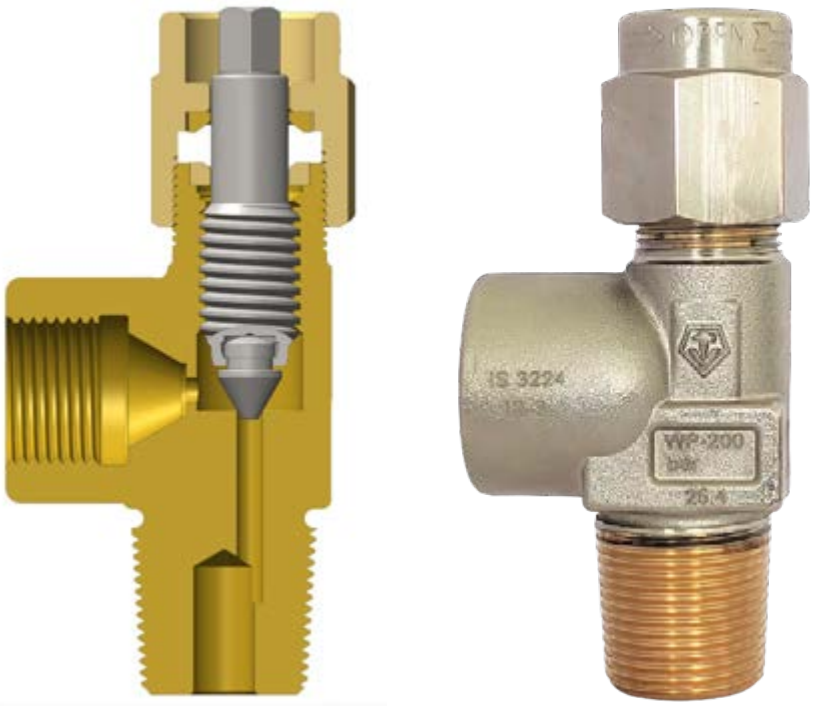
BSKM-21/O

Key Operated Metal Seated Valves in Single Spindle Compression Packed Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Medical Gases

BAM



Design Specifications	
Minimum life	2000 cycles
Maximum pressure rating (type approval)	240 bar
Spindle square	7.1 mm / 8 mm
Oxygen pressure surge test	20 cycles at 240 bar
Temperature range	-20 °C to + 65 °C
Minimum closing torque [a]	8 Nm
Gland nut installation torque [b]	60 Nm
Spindle failure torque	80-85 Nm
Flow coefficient (C_v)	0.40
Lubricant	Krytox GPL 225
Nickel chrome plated & Oxygen cleaned	Yes

Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Self-centering spindle	SS 303
Packing	PTFE
Other components	Free cutting brass

a - Higher torques may be required to operate the valve in service (Maximum recommended 25 Nm)
b - Retightening may be required in service

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ℼ) mark
• Valves meet IS 3224:2021, approved by PESO & supplied under BIS inspection [c] for Indian market

c - Available only in 7.1mm spindle square

For features, benefits & ordering information, refer detailed catalogue

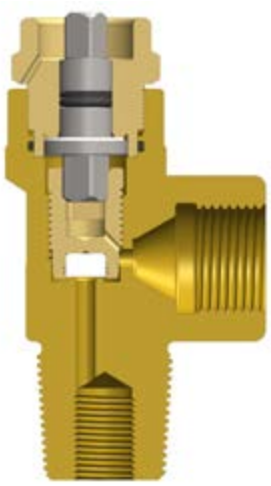
BSKN-12/O & BTKN-12/O

Key Operated Soft Seated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Medical Gases

BAM



BSKN-12/O
Side Outlet Valve

BTKN-12/O
Top Outlet Valve

Design Specifications	
Minimum life	2000 cycles
Maximum pressure rating (type approval)	400 bar
Spindle square	7.1 mm / 8 mm
Oxygen pressure surge test	50 cycles at 400 bar
Temperature range	−46 °C to +85 °C
Pressure relief device (PRD)[a]	CG-1
Minimum closing torque	8 Nm
Gland nut installation torque	75 Nm
Spindle failure torque	75-80 Nm
Flow coefficient (C_v)	0.35
Lubricant	Gleitmo 599
Nickel chrome plated & Oxygen cleaned	Yes

Material of Construction	
Part	**Material**
Valve body	Forged brass
Upper spindle	SS 303
Lower spindle	Naval Brass
Gland Nut	Free cutting brass
Seat insert & Thrust washer	PEEK
O-ring & Back-Up Ring	EPDM

a - Optional

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ℼ) mark
• Valves meet IS 3224:2021, are approved by PESO & supplied under BIS inspection [b] for Indian market
• PRD complies with CGA S-1.1

b- Available only in 7.1mm spindle square

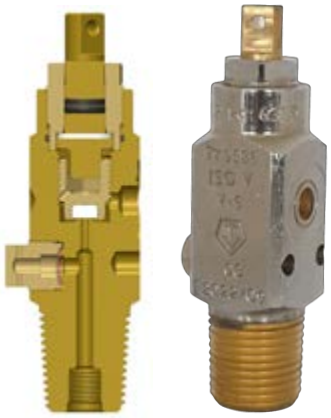
For features, benefits & ordering information, refer detailed catalogue

BPKN-12 & BPTN-12

Key/Toggle Operated Pin Index Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Medical Gases



BPKN-12
Valve shown with taper inlet & CG-1 PRD

BPTN-12
Valve shown with CG-4 PRD

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum Pressure rating (type approval)	250 bar	3625 psig
Oxygen pressure surge test	20 cycles at 250 bar	20 cycles at 3625 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Pressure relief device (PRD) [a]	CG-1 / CG-4	
Minimum closing torque	2 Nm	1.5 ft.lb
Gland nut installation torque	50 Nm	37 ft.lb
PRD installation torque - CG-1 (3/8" HEX) - CG-4 (TORX-T30)	 16 Nm 7 Nm	 12 ft.lb 5 ft.lb
Spindle failure torque	22-24 Nm	16-18 ft.lb
Flow coefficient (Cv)	0.16	
Lubricant	Gleitmo 599	
Nickel chrome plated & Oxygen cleaned	Yes	

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged / Extruded brass
Upper spindle, Gland nut & Flange ring [b] & Retainer plug	Free cutting brass
Lower spindle	Naval brass
Seat insert	PA 66
Thrust Washer	PEEK
O-ring, Back-Up Ring & Flange O- ring [b]	EPDM
Burst disc	Nickel
Burst disc sealing washer	Copper
Inlet O-ring [c]	PTFE
Toggle (Short / Long)	Aluminium

b - For 3/4-16 UNF parallel inlet connection
c - For parallel inlet connection

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi (ᴨ) mark
• PRD complies with CGA S-1.1
• MRI approved upto 3 tesla as per ASTM F2052-15 & stamped as per ASTM F2503-13

For features, benefits & ordering information, refer detailed catalogue

PBN-12

Knob Operated Pin Index Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Medical Gases

Valve with taper inlet
(shown with PRD)

Valve with parallel inlet

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	240 bar	3480 psig
Oxygen pressure surge test	50 cycles at 240 bar	50 cycles at 3480 psig
Temperature range	-46 °C to +65 °C	-51 °F to +149 °F
Pressure relief device (PRD) [a]	CG-1 / CG-4	
Minimum closing torque	0.6 Nm	5.3 in.lb
Gland nut installation torque	50 Nm	37 ft.lb
PRD installation torque - CG-1 (3/8" HEX) - CG-4 (TORX-T30)	 16 Nm 7 Nm	 12 ft.lb 5 ft.lb
Flow coefficient (C_v)	0.13	
Lubricant	Gleitmo 595	
Nickel chrome plated & Oxygen cleaned	Yes	

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged / Extruded brass
Upper spindle, Gland nut, Flange ring [b] & Retainer plug	Free cutting brass
Lower spindle	Naval brass
Seat insert	PA 66
Flange O-ring [b], O-rings & Back-Up Ring	EPDM
Inlet O-ring [c]	EPDM / PTFE
Thrust washer	PEEK
Knob	ø22 mm Glass filled PA (V-0) moulded with brass insert
Burst disc	Nickel
Burst disc sealing washer	Copper

b - For 3/4-16 UNF parallel inlet connection
c - For parallel inlet connection

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED, available with Pi (ᴨ) mark & UK TPE, available with Rho (ρ) mark
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

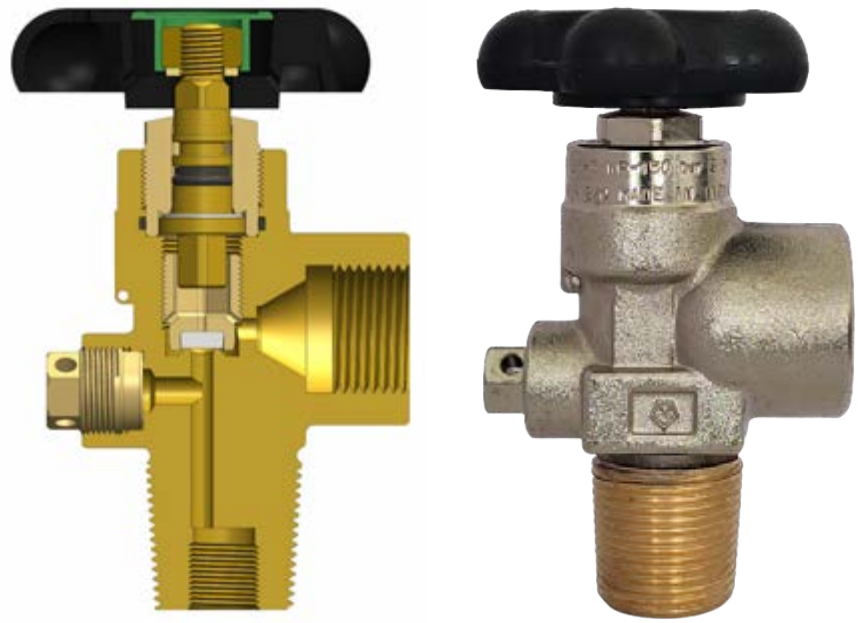
SWN-12/O

Handwheel Operated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Medical Gases

BAM



Valve shown with taper inlet & PRD

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	360 bar	5220 psig
Oxygen pressure surge test	50 cycles at 360 bar	50 cycles at 5220 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Pressure relief device (PRD) [a]	CG-1	
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
PRD installation torque [a]	32 Nm	24 ft.lb
Flow coefficient (C_v)	0.36	
Lubricant	Gleitmo 599	
Nickel chrome plated & Oxygen cleaned	Yes	

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Upper & Lower spindle, Gland nut & Retainer plug	Free cutting brass
Seat insert	PA 66
Thrust washer	PEEK
O-rings & Back-Up Ring	EPDM
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert
Burst disc	Nickel
Burst disc sealing washer	Copper
Inlet O-ring [b]	EPDM / PTFE

b - For parallel inlet connection only

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED, available with Pi (ℼ) mark & UK TPE, available with Rho (ρ) mark
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

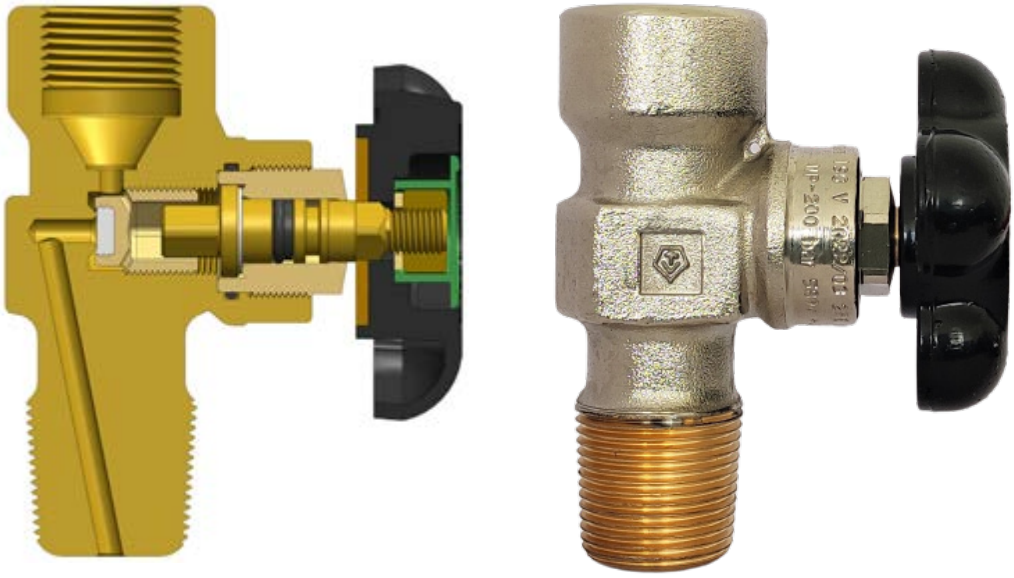
TWN-12/O

Handwheel Operated Top Outlet Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Medical Gases

BAM



Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type testing)	360 bar	5220 psig
Oxygen pressure surge test	50 cycles at 360 bar	50 cycles at 5220 psig
Temperature range	-46 °C to +85 °C	-51 °F to +185 °F
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
Flow coefficient (C_v)	0.36	
Lubricant	Gleitmo 599	
Nickel chrome plated & Oxygen cleaned	Yes	

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Gland nut, Upper & Lower spindle	Free cutting brass
Seat insert	PA 66
Thrust washer	PEEK
O-rings & Back-Up Ring	EPDM
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED, available with Pi (ℼ) mark & UK TPE, available with Rho (℘) mark
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

SWN-12/45

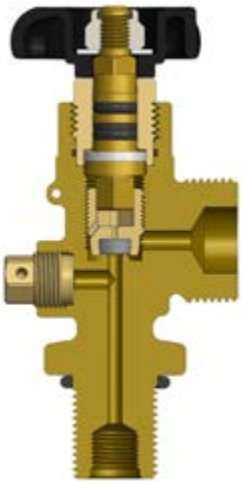
Handwheel Operated Valves in O-ring Seal Design for Cylinders up to 10 Litres WC

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Medical Gases

BAM

Valve with taper inlet



Valve with parallel inlet
(shown with PRD)

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	360 bar	5220 psig
Oxygen pressure surge test	20 cycles at 360 bar	20 cycles at 5220 psig
Temperature range	-46 °C to +90 °C	-51 °F to +194 °F
Pressure relief device (PRD) [a]	CG-1	
Minimum closing torque	4 Nm	3 ft.lb
Gland nut installation torque	50 Nm	37 ft.lb
PRD installation torque [a]	17 Nm	13 ft.lb
Flow coefficient (C_v)	0.25	
Lubricant	Klueberalfa YV 93-302	
Nickel chrome plated & Oxygen cleaned	Yes	

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Gland nut & Retainer plug	Free cutting brass
Upper & Lower spindle	Naval brass
Thrust washer & Seat insert	PA 66
O-rings & Back-Up Ring	EPDM
Handwheel	ø45 mm Aluminium (CED coated)
Burst disc	Nickel
Burst disc sealing washer	Copper
Inlet O-ring [b]	EPDM

b - For parallel inlet connection only

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi ( )mark
• PRD complies with CGA S-1.1

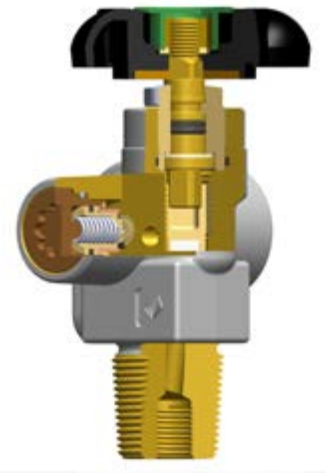
For features, benefits & ordering information, refer detailed catalogue

BOWN-12/O

Handwheel Operated Offline Residual Pressure Valves (RPVs) with Non-Return Valve Function

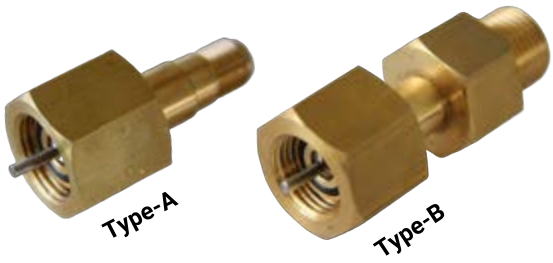
tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Medical Gases



Valve shown with taper inlet & PRD

RPV Filling Adapters



Design Specifications		
	Metric	**English**
Minimum life - Main shut-off mechanism - Residual Pressure Device (RPD)	2000 cycles 100000 cycles	
Maximum pressure rating (type approval)	360 bar	5220 psig
Closing-off pressure	2-4 bar	30-60 psig
Opening pressure	4-6 bar	60-90 psig
Stroke length	5.0–5.5 mm	0.20–0.22 in
Temperature range - Main shut-off mechanism - RPD	 -46 °C to +85 °C -20 °C to +65 °C	 -51 °F to +185 °F -4 °F to +149 °F
Oxygen pressure surge test	50 cycles at 360 bar	50 cycles at 5220 psig
Pressure relief device (PRD) [a]	CG-1	
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	65 Nm	48 ft.lb
RPD installation torque	19 Nm	14 ft.lb
PRD installation torque [a]	28 Nm	21 ft.lb
Flow coefficient (C_v)	0.35	
Lubricant	Gleitmo 599	
Nickel chrome plated & Oxygen cleaned	Yes	

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Upper & Lower spindle, Gland nut, Piston, Piston bush & Retainer plug	Free cutting brass
Seat insert	PA 66
O-rings, Back-Up Ring & Quad ring	EPDM
Housing	Dezincification resistant brass
RPD O-rings	PUR
Thrust washer	PEEK
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert
Spring	Copper beryllium
Burst disc	Nickel
Burst disc sealing washer	Copper
Inlet O-ring [b]	EPDM

b - For parallel inlet connection only

Compliance & Certification
• Valves meet EN ISO 10297:2017, ISO 15996:2017 & CGA V-9:2019
• Valves are certified to European TPED, available with Pi (ᴨ) mark & UK TPE, available with Rho (ρ) mark
• Valves are approved by PESO & supplied under Lloyd's inspection for Indian market
• PRD complies with CGA S-1.1
• Available with CGA XXXR outlet connection as per CGA V-1

For features, benefits & ordering information, refer detailed catalogue

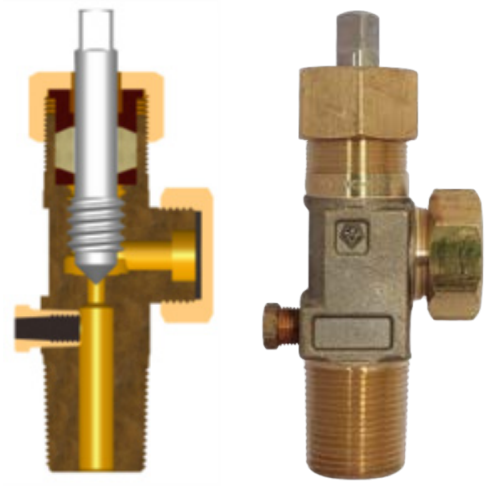
Gas Cylinder Valves for Chlorine & Corrosive Gases

CAV-06

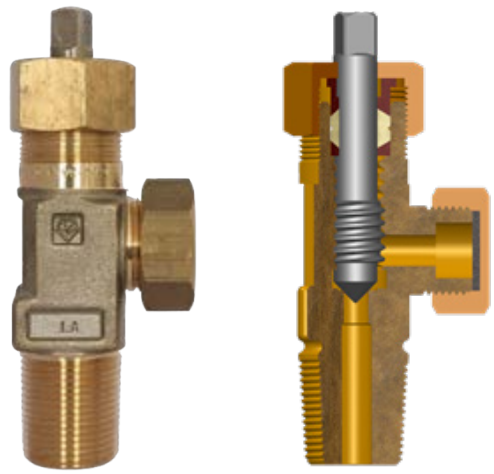
Key Operated Valves in Standard Chlorine Institute (P17) Compression Packed Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder & Ton Container Valves for Chlorine & Corrosive Gases



Cylinder Valve
(3/16" orifice)



Ton Container Valve
(5/16" orifice)

Design Specifications	
Minimum life	2000 cycles
Maximum design service Pressure (type approval)	3625 psig
Stem square	3/8 in
Operating temperature range	−4 °F to +149 °F
Storage temperature range	−40 °F to +149 °F
Pressure relief device (PRD) [a]	Thermally operated device
Fusible alloy yield temperature	158 °F to 165 °F
Flow coefficient (C_v) - Cylinder valve - Ton Container valve	 0.78 1.60
Minimum closing torque [b]	9 ft.lb
Packing nut installation torque [c]	40 ft.lb
Fusible plug installation torque [a]	12.5 ft.lb
Stem failure torque in closing direction	>80 ft.lb
Lubricant	Krytox GPL 225

Material of Construction	
Part	**Material**
Valve body	Forged AlSi Bronze
Packing collar	AlSi Bronze
Packing nut, Packing gland & Outlet cap	Free cutting brass
Packing X 2	PTFE
Stem	Monel metal
Gasket	Lead / PTFE
Fusible Plug	Naval brass

a – Applicable for cylinder valve only
b - Higher torques may be required to operate the valve in service (Maximum recommended 25 ft.lb)
c - Retightening may be required in service

Compliance & Certification
• Valves meet performance requirements of Pamphlet 17 of the Chlorine Institute (CI)
• Valves meet CGA V-9:2019
• Fusible plug complies with CGA S-1.1
• Cylinder valve compatible with CI Emergency Kit A
• Ton container valve compatible with CI Emergency Kit B

Outlet Connection
CGA 660 & CGA 820

For features, benefits & accessories, refer detailed catalogue

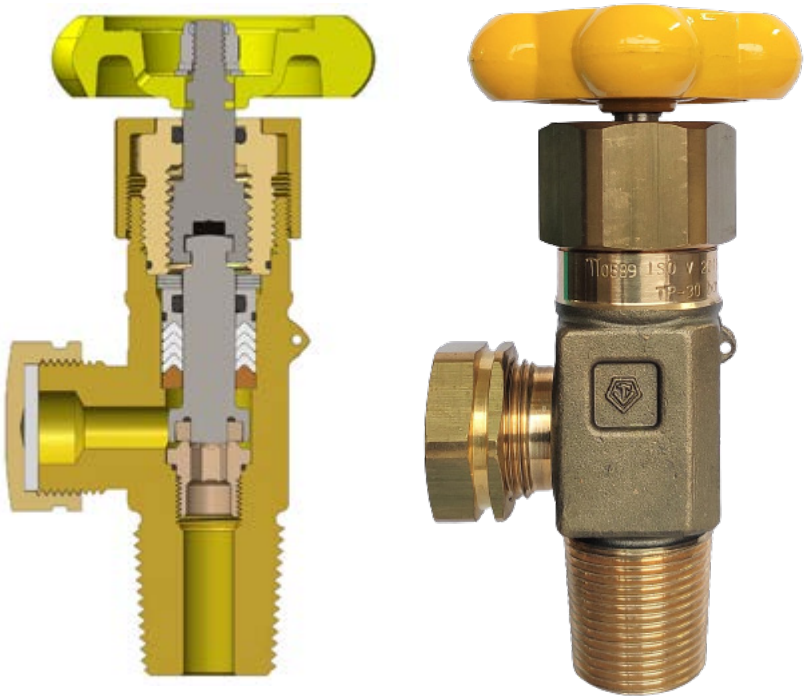
SWN-22/V

Handwheel Operated Compression Packed Valves with O-ring Seal

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Chlorine & Corrosive Gases

BAM



Design Specifications	
Minimum life	2000 cycles
Maximum Pressure rating (type approval)	50 bar [b]
Operating temperature range	-20 °C to +65 °C
Storage temperature range	-40 °C to +65 °C
Minimum closing torque	6 Nm
Gland nut installation torque	60 Nm
Lock nut installation torque	30 Nm
Flow coefficient (C_v)	1.4
Lubricant	Klubertemp GR M30

b - 30bar for Chlorine

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ℼ) mark

Material of Construction	
Part	**Material**
Valve body	Forged AlSi Bronze / Forged HT brass
Gland nut, Lock nut & Outlet cap [a]	Free cutting brass
Upper spindle & Packing gland	SS 303
Lower spindle & Body seat insert	Monel metal
Seat insert, Tip blank & Gasket [a]	PVDF
O-rings	FKM
Packing X 4	PTFE
Packing collar	Al-Si Bronze
Belleville spring X 3	EN 42
Handwheel	Zinc base alloy (Powder coated)

a - Optional

For features, benefits & ordering information, refer detailed catalogue

SSWN-22/V

Handwheel Operated Compression Packed Valves with O-ring Seal

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Corrosive Gases

BAM

Valve shown with chain & keeper ring

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	250 bar	3600 psig
Operating temperature range	-20 °C to +65 °C	-4 °F to +149 °F
Storage temperature range	-40 °C to +65 °C	-40 °F to +149 °F
Minimum closing torque	6 Nm	4 ft.lb
Gland nut installation torque	95 Nm	70 ft.lb
Lock nut installation torque	35 Nm	26 ft.lb
Flow coefficient (Cv)	1.1	
Lubricant	Klubertemp GR M30	

Material of Construction	
Part	**Material**
Valve body	Forged SS 316L (Electropolished)
Lock nut & Packing collar	SS 316L
Upper spindle, Gland nut, Packing gland & Outlet cap*	SS 303
Lower spindle	Monel metal
Seat insert	PCTFE
Tip blank & Gasket*	PVDF
Packing X 2	PTFE
O-rings	FKM
Belleville spring X 3	EN 42
Handwheel	Zinc base alloy (Powder coated)
Chain & keeper ring*	Stainless steel

** Optional*

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ᴨ) mark
• Valves are approved by PESO & supplied under Lloyd's inspection for Indian market

For features, benefits & ordering information, refer detailed catalogue

NOTES

Gas Cylinder Valves for Speciality Gases

RWH-03

Handwheel Operated Brass Valves in Diaphragm Gland Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Speciality Gases

BAM

Valve with parallel inlet
(shown with PRD)

Valve with taper inlet

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	250 bar	3600 psig
Oxygen pressure surge test	50 cycles at 250 bar	50 cycles at 3625 psig
Temperature range	–40 °C to +65 °C	-40 °F to +149 °F
Pressure relief device (PRD) [a]	CG-1 / CG-4 / CG-5	
Minimum closing torque	6 Nm	4 ft.lb
Gland nut installation torque	95 Nm	70 ft.lb
PRD installation torque [a]	32 Nm	24 ft.lb
Flow coefficient (Cv)	0.27	
Lubricant (only used in non-gas wetted parts)	Krytox GPL 225	
Oxygen cleaned	Yes	

a - Optional

Material of Construction	
Part	**Material**
Valve body & Gland nut	Forged HT brass
Upper spindle assembly	Naval brass with PA tip
Lower spindle & Thrust metallic pad	SS 303
Seat insert	PA 66 / PCTFE
Diaphragm X 5	SS 301
Spring	SS 302
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert
Retainer plug	Free cutting brass
Burst disc	Nickel / Copper
Burst disc sealing washer	Copper
Inlet O-Ring [b]	PTFE / NBR

b - For parallel inlet only

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED, available with Pi (ᵽ)mark
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

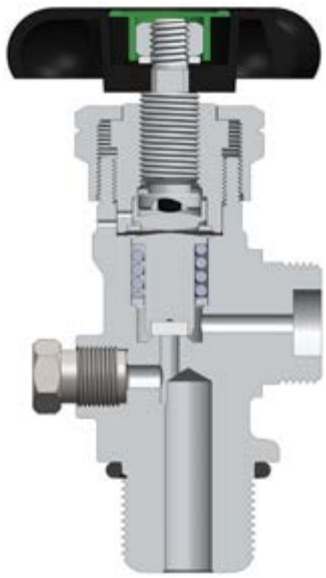
SSWN-32/V

Handwheel Operated Stainless Steel Valves in Diaphragm Gland Seal Design

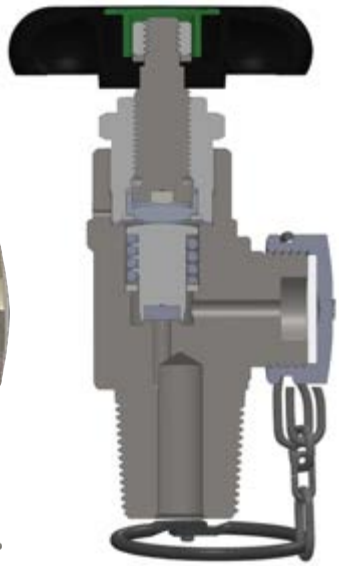
tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Speciality Gases

BAM



Valve with parallel inlet
(shown with PRD)



Valve with taper inlet
(shown with chain & keeper ring)

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	250 bar	3600 psig
Oxygen pressure surge test	20 cycles at 250 bar	20 cycles at 3625 psig
Temperature range	-20 °C to +65 °C	-4 °F to +149 °F
Pressure relief device (PRD) [a]	CG-1 / CG-4 / CG-5	
Minimum closing torque	7 Nm	5.2 ft.lb
Gland nut installation torque	95 Nm	70 ft.lb
PRD installation torque [a]	35-40 Nm	26-30 ft.lb
Flow coefficient (C_v)	0.30	
Lubricant (only used in non-gas wetted parts)	Klubertemp GR M30	
Oxygen cleaned	Yes	

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged SS 303 (Electropolished)
Upper & Lower spindle, Gland nut, Lock nut [a], Thrust metallic pad, Outlet cap [a] & Retainer plug	SS 303
Seat insert	PCTFE
Upper diaphragm X 4	SS 301
Lower diaphragm X 1	Inconel® 625
Handwheel	Aluminium (CED coated)
Burst disc	Platinum clad Nickel
Burst disc sealing washer	SS alloy
Outlet gasket [a]	PVDF
Inlet O-ring [b]	PTFE / NBR
Chain & keeper ring [a]	Stainless steel

b - For parallel inlet connection only

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi (ℼ)mark
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

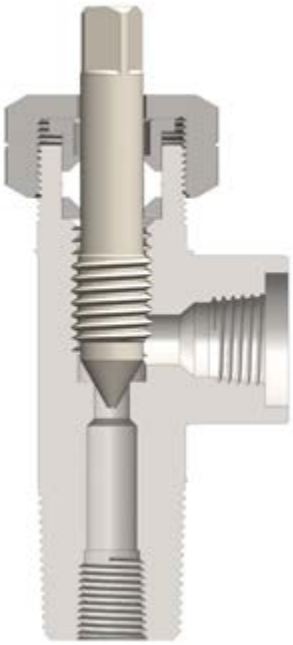
Gas Cylinder Valves for Ammonia & Amines

CST-06

Key Operated Metal Seated Valves in Single Spindle Compression Packed Design (CGA V-9)

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Ammonia & Amines



Design Specifications	
Minimum life	2000 cycles
Maximum design service pressure (type approval)	3600 psig
Stem square	3/8 in
Temperature range	-51 °F to +149 °F
Pressure relief device (PRD) [c]	CG-2
Fusible alloy yield temperature	157 °F to 165 °F
Minimum closing torque [a]	10 ft.lb
Packing nut installation torque [b]	42 ft.lb
Spindle failure torque in closing direction	>100 ft.lb
Flow coefficient (C_v)	1.5
Lubricant	Krytox GPL 225

a - Higher torques may be required to operate the valve in service (Maximum recommended 25 ft.lb)

b - Retightening may be required in service

Material of Construction	
Part	**Material**
Valve body	Forged Low carbon steel (Phosphated)
Stem	SS 316L
Packing X 2	PTFE
Other components	Carbon steel
Seal nut [c]	
Gasket [c]	PA 66

c - Optional

Outlet Connections	
Outlet connection	**Maximum Rated Outlet Pressure**
CGA 240	500 psig
CGA 800	
CGA 845	
CGA 705	3000 psig

Compliance & Certification
• Valves meet CGA V-9:2019

For features & benefits, refer detailed catalogue

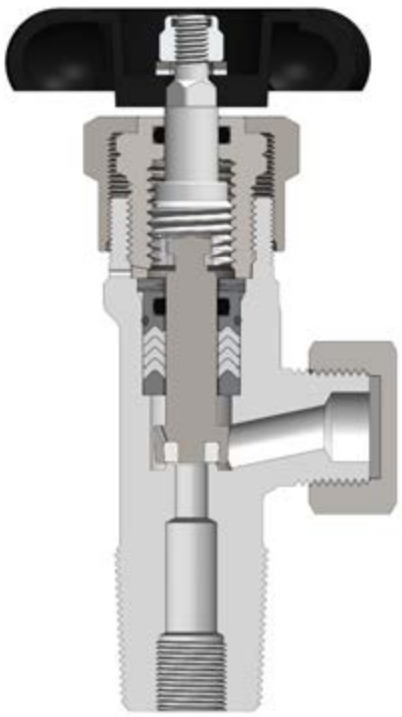
SWN-22

Handwheel Operated Carbon Steel Compression Packed Valves with O-ring Seal

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Ammonia & Amines

BAM



Design Specifications	
Minimum life	2000 cycles
Maximum pressure rating (type approval)	100 bar
Temperature range	-46 °C to +65 °C
Minimum closing torque	6 Nm
Gland nut installation torque	55 Nm
Lock nut installation torque	32 Nm
Flow coefficient (C_v)	0.90
Lubricant	Krytox GPL 225

Material of Construction	
Part	**Material**
Valve body	Forged Low carbon steel (Phosphated)
Upper & Lower spindle, Packing gland & Packing collar	SS 303
Gland nut, Lock nut & Outlet cap*	Carbon steel
Seat insert	PCTFE
Packing X 4	PTFE
O-rings	EPDM
Belleville spring X 2	EN 42
Handwheel	Aluminium (CED coated)
Gasket*	PA 6

** Optional*

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ⵣ) mark

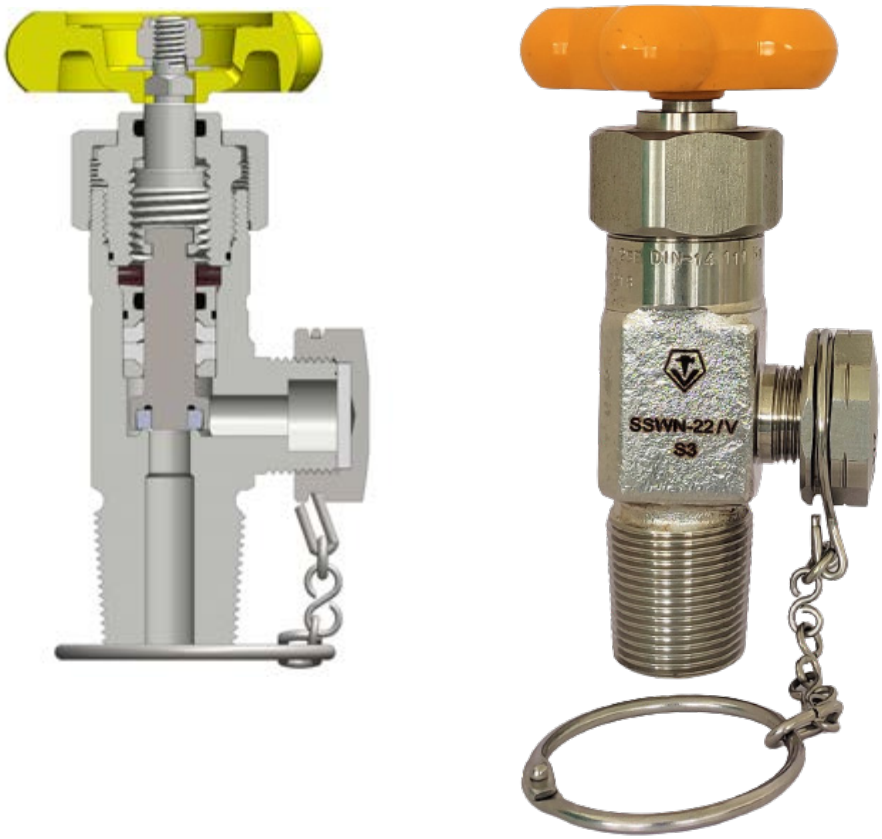
For features, benefits & ordering information, refer detailed catalogue

SSWN-22/V-S3

Handwheel Operated Stainless Steel Compression Packed Valves with O-ring Seal

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Ammonia & Amines



Valve shown with chain & keeper ring

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	250 bar	3600 psig
Operating temperature range	-20 °C to +65 °C	-4 °F to +149 °F
Storage temperature range	-40 °C to +65 °C	-40 °F to +149 °F
Minimum closing torque	6 Nm	4 ft.lb
Gland nut installation torque	95 Nm	70 ft.lb
Lock nut installation torque	35 Nm	26 ft.lb
Flow coefficient (C_v)	1.1	
Lubricant	Klubertemp GR M30	

Material of Construction	
Part	**Material**
Valve body	Forged SS 303 (Electropolished)
Lock nut, Packing collar, Upper spindle, Lower spindle, Gland nut, Packing gland & Outlet cap*	SS 303
Seat insert & Gasket*	PCTFE
Tip blank	PA 66
Packing X 2	PTFE
O-rings	EPDM
Belleville spring X 3	EN 42
Handwheel	Zinc base alloy (Powder coated)
Chain & keeper ring*	Stainless steel

** Optional*

Compliance & Certification
• Valves meet EN ISO 10297:2017
• Valves are certified to European TPED & available with Pi (ᴨ) mark

For features, benefits & ordering information, refer detailed catalogue

NOTES

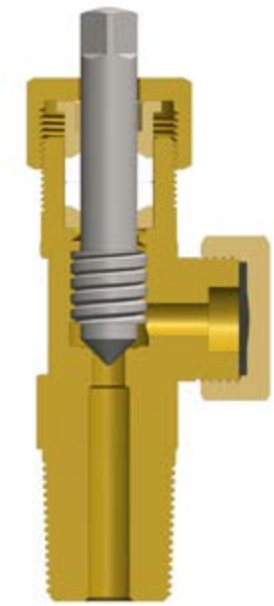
Gas Cylinder Valves for Refrigerant Gases

CAV-06

Key Operated Metal Seated Valves in Single Spindle Compression Packed Design (CGA V-9)

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Refrigerant gases



Design Specifications	
Minimum life	2000 cycles
Maximum design service Pressure (type approval)	3600 psig
Outlet connection	CGA 660
Stem square	3/8 in
Operating temperature range	−4 °F to +149 °F
Storage temperature range	−40 °F to +149 °F
Flow coefficient (C_v)	1.60
Minimum closing torque [a]	9 ft.lb
Packing nut installation torque [b]	40 ft.lb
Stem failure torque in closing direction	>80 ft.lb
Lubricant	Krytox GPL 225

Material of Construction	
Part	**Material**
Valve body	Forged HT Brass
Packing nut, Packing gland & Outlet cap	Free cutting brass
Packing collar	Al Si Bronze
Packing X 2	PTFE
Stem	SS 304
Gasket	Lead / PTFE

a - Higher torques may be required to operate the valve in service (Maximum recommended 20 ft.lb)

b - Retightening may be required in service

Compliance & Certification
• Valves meet CGA V-9:2019

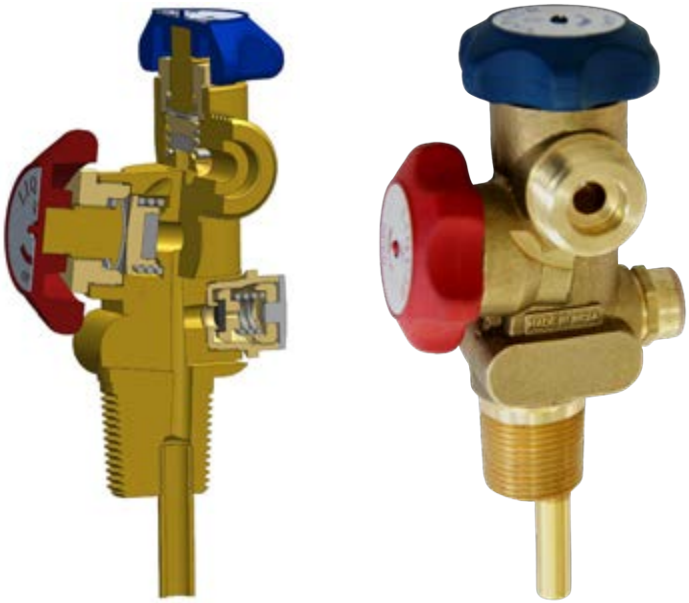
For features, benefits & accessories, refer detailed catalogue

RDP-03

Handwheel Operated Twin Phase Valves in Diaphragm Gland Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Refrigerant Gases



Valve shown with PRV

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	50 bar	725 psig
Temperature range	-20 °C to +65 °C	-4 °F to +149 °F
Pressure relief valve (PRV) [a]	CG-7	
Minimum closing torque	4 Nm	3 ft.lb
Gland nut installation torque	60 Nm	45 ft.lb
PRV installation torque [a]	30 Nm	22 ft.lb
Flow coefficient (Cv) - Liquid port - Vapour port	 0.51 0.56	
Lubricant	Krytox GPL 225	

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Spindle, Tip holder & Gland nut	Free cutting brass
Tip, Washer & Friction washer	PA 66
Diaphragm X 4	SS 301
Spring	SS 302
Circular disc	Aluminium
Handwheel	ø52 mm Glass filled PA (V-0) - Red for liquid service - Blue for vapour service
Dip tube	Brass fitting connected with HDPE tube [a] (1/2" X 3/8" X L [b])
Pressure Relief Valve (PRV)	
Housing, Seat holder & Adjusting screw	Free cutting brass
Seat	Neoprene
Spring	SS 302
Sealing washer	Copper

b – As per customer requirement

Pressure Relief Valve Rating, psig		
Cylinder service pressure	**Start-to-discharge pressure**	**Cylinder test pressure**
300	450-600	600
400	600-800	800

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves without PRV meet IS 3224:2002, approved by PESO & supplied under BIS inspection for Indian market
• PRV complies with CGA S-1.1

For features & benefits, refer detailed catalogue

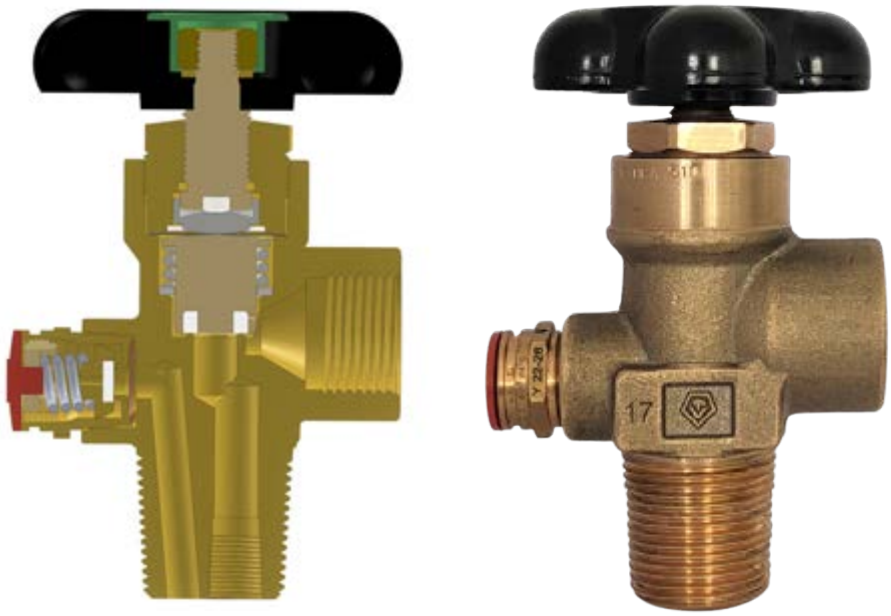
BSWN-32/L

Handwheel Operated High Flow Valves in Diaphragm Gland Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Low Pressure Refrigerant Gases

BAM



Valve shown with PRV

Design Specifications		
	Metric	**English**
Minimum life	2000 cycles	
Maximum pressure rating (type approval)	50 bar	725 psig
Temperature range	-40 °C to +65 °C	-40 °F to +149 °F
Pressure relief valve (PRV)*	CG-7	
Minimum closing torque	3 Nm	2.2 ft.lb
Gland nut installation torque	80 Nm	59 ft.lb
PRV installation torque*	30 Nm	22 ft.lb
Flow coefficient (C_v)	0.68	
Lubricant	Krytox GPL 225	

** Optional*

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Upper spindle & Washer	Free cutting brass
Tip blank	Moly filled nylon
Lower spindle & Thrust metallic pad	SS 303
Seat insert	PEEK
Gland nut	HT brass
Diaphragm X 4	SS 301
Spring	Stainless steel
Handwheel	Aluminium (CED coated) / Glass filled PA with brass insert
Pressure Relief Valve (PRV)	
Housing, Seat holder & Adjusting screw	Free cutting brass
Seat	Neoprene
Spring	SS 302
Sealing washer	Copper

Pressure Relief Valve Rating, psig		
Cylinder service pressure	**Start-to-discharge pressure**	**Cylinder test pressure**
300	450-600	600
400	600-800	800

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi (ΠΤ) mark
• PRV complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

NOTES

Gas Cylinder Valves for Breathable Air (SCBA)

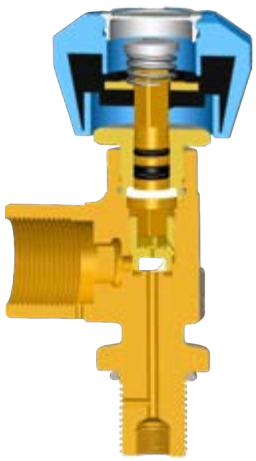
HBA-10/I

Handwheel Operated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

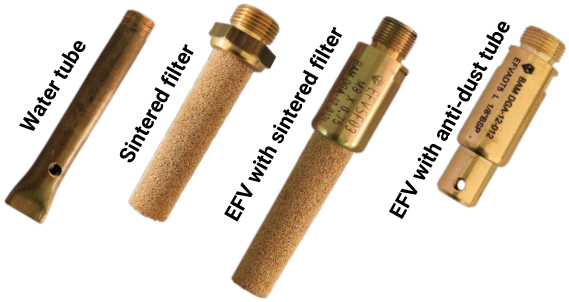
Cylinder Valves for Breathable Air (SCBA)

BAM



Valve with parallel inlet
(shown with Normal handwheel)

Valve with taper inlet
(shown with Self-locking handwheel)



Inlet Accessories

Design Specifications	
Minimum life	2000 cycles
Maximum working pressure (WP)	300 bar
Outlet connection	232 bar / 300 bar as per EN 144-2 / ISO 12209
Temperature range	-46 °C to +85 °C
Resistance to mechanical impact	120 J
Pressure relief device (PRD) [a]	CG-1
Minimum closing torque	3 Nm
Gland nut installation torque	50 Nm
PRD installation torque [a]	17 Nm
EFV actuation pressure when cylinder valve is fully open	30 - 40 bar
Lubricant	Krytox GPL 225
Nickel chrome plated	Yes

a - Optional

Compliance & Certification
• Valves meet EN ISO 10297:2017, EN 144-1:2018 & EN 144-2:2018
• Valves are certified to European TPED & available with Pi (ᴨ) mark
• EFV with anti-dust tube tested for 2000 pressure shocks by BAM
• Valves without PRD meet IS 7302:1974, approved by PESO & supplied under Lloyd's inspection for Indian market
• PRD complies with CGA S-1.1

Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Gland nut, handwheel nut & Retainer plug	Free cutting brass
Upper & Lower spindle	Naval brass
Thrust washer & Seat insert	PA 66
O-rings, Inlet O-ring [b] & Back-Up ring	EPDM
Spring	SS 302
Handwheel (Blue / Black)	ø52.5 mm PA coated with FR Thermoplastic PU & brass insert
Burst disc	Nickel
Burst disc sealing washer	Copper

b - For parallel inlet connection only

For features, benefits & ordering information, refer detailed catalogue

HBA-10/I with Pressure Gauge

Handwheel Operated Valves in O-ring Seal Design with Pressure Gauge (PG)

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Breathable Air (SCBA)

BAM

Valve with normal handwheel

Valve with self-locking handwheel

Inlet Accessories

Design Specifications	
Minimum life	2000 cycles
Maximum working pressure (WP)	300 bar
Inlet connection	M18 X 1.5 as per ISO 15245-1
Outlet connection	232 bar / 300 bar as per EN 144-2 / ISO 12209
Temperature range	-46 °C to +85 °C
Resistance to mechanical impact	120 J
Pressure relief device (PRD) *	CG-1
Pressure gauge	0 to 300 bar (Make – WIKA)
Minimum closing torque	3 Nm
Gland nut installation torque	50 Nm
PRD installation torque *	9 Nm
Pressure gauge installation torque	20 Nm
EFV actuation pressure when cylinder valve is fully open	30 - 40 bar
Lubricant	Krytox GPL 225
Nickel chrome plated	Yes

** Optional*

Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Gland nut, handwheel nut & Retainer plug	Free cutting brass
Upper & Lower spindle	Naval brass
Thrust washer & Seat insert	PA 66
O-rings, Inlet O-ring & Back-Up ring	EPDM
Spring	SS 302
Handwheel (Blue / Black)	ø52.5 mm PA coated with FR Thermoplastic PU & brass insert
Burst disc	Nickel
Burst disc sealing washer	Copper

Compliance & Certification
• Valves meet EN ISO 10297:2017, EN 144-1:2018 & EN 144-2:2018
• Valves are certified to European TPED & available with Pi (⚶) mark
• EFV with anti-dust tube tested for 2000 pressure shocks by BAM
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

RBA-10/I

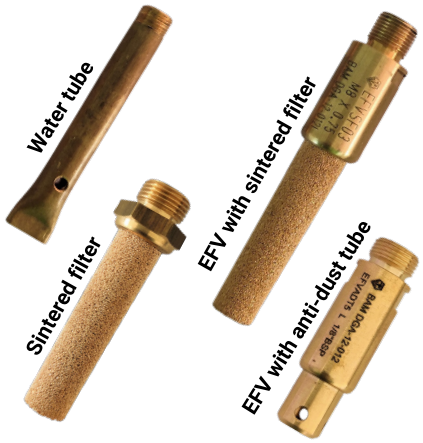
Handwheel Operated Right-angled Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

Cylinder Valves for Breathable Air (SCBA)

BAM

Valve shown with Normal handwheel, PRD & Pressure gauge



Inlet Accessories

Design Specifications	
Minimum life	2000 cycles
Maximum working pressure (WP)	300 bar
Inlet connection	M18 X 1.5 as per ISO 15245-1
Outlet connection	232 bar / 300 bar as per ISO 12209
Temperature range	-46 °C to +85 °C
Resistance to mechanical impact	120 J
Pressure relief device (PRD) [a]	CG-1
Pressure gauge [a]	0 to 300 bar (Make – WIKA)
Minimum closing torque	3 Nm
Gland nut installation torque	50 Nm
PRD installation torque [a]	9 Nm
Pressure gauge installation torque [a]	20 Nm
EFV actuation pressure when cylinder valve is fully open	45 - 55 bar
Lubricant	Krytox GPL 225
Nickel chrome plated	Yes

a - Optional

Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Gland nut, Handwheel nut & Retainer plug	Free cutting brass
Upper & Lower spindle	Naval brass
Thrust washer & Seat insert	PA 66
O-rings, Inlet O-ring & Back-Up ring	EPDM
Spring	SS 302
Handwheel [b] (Blue / Black)	ø52.5 mm PA coated with FR Thermoplastic PU & brass insert
Burst disc	Nickel
Burst disc sealing washer	Copper
Shock absorber	Thermoplastic rubber

b - Also available with self-locking handwheel

Compliance & Certification
• Valves meet EN ISO 10297:2017, EN 144-1:2018 & EN 144-2:2018
• Valves are certified to European TPED & available with Pi (ℼ) mark
• EFV with anti-dust tube tested for 2000 pressure shocks by BAM
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

MBA-10/I

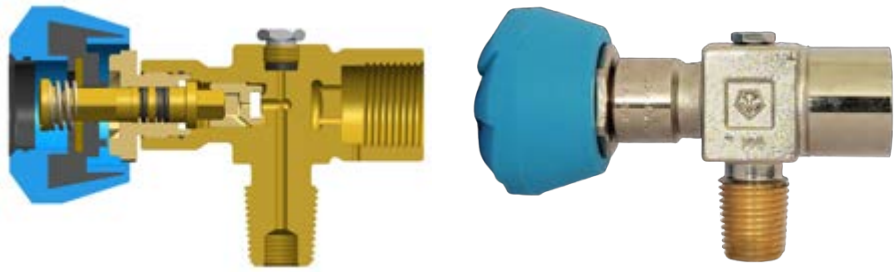
Side Handwheel Operated Valves in O-ring Seal Design

tekno valves 50 YEARS OF EXCELLENCE

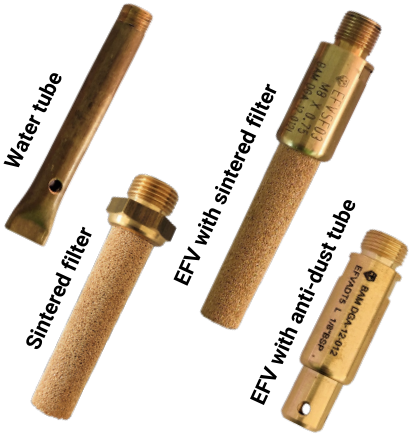
Cylinder Valves for Breathable Air (SCBA)

BAM

Valve with parallel inlet
(shown with Pressure gauge provision)



Valve with taper inlet
(shown with Pressure gauge provision)



Inlet Accessories

Design Specifications	
Minimum life	2000 cycles
Maximum working pressure (WP)	300 bar
Outlet connection	232 bar / 300 bar as per EN ISO 12209
Pressure relief device (PRD) [a]	CG-1
Pressure gauge provision [a]	1/8-28 BSP
Temperature range	-46 °C to +85 °C
Resistance to mechanical impact	120 J
Minimum closing torque	3 Nm
Gland nut installation torque	50 Nm
PRD installation torque [a]	9 Nm
EFV actuation pressure when cylinder valve is fully open	125 - 135 bar
Lubricant	Krytox GPL 225 / Gleitmo 599
Nickel chrome plated	Yes

a - Optional

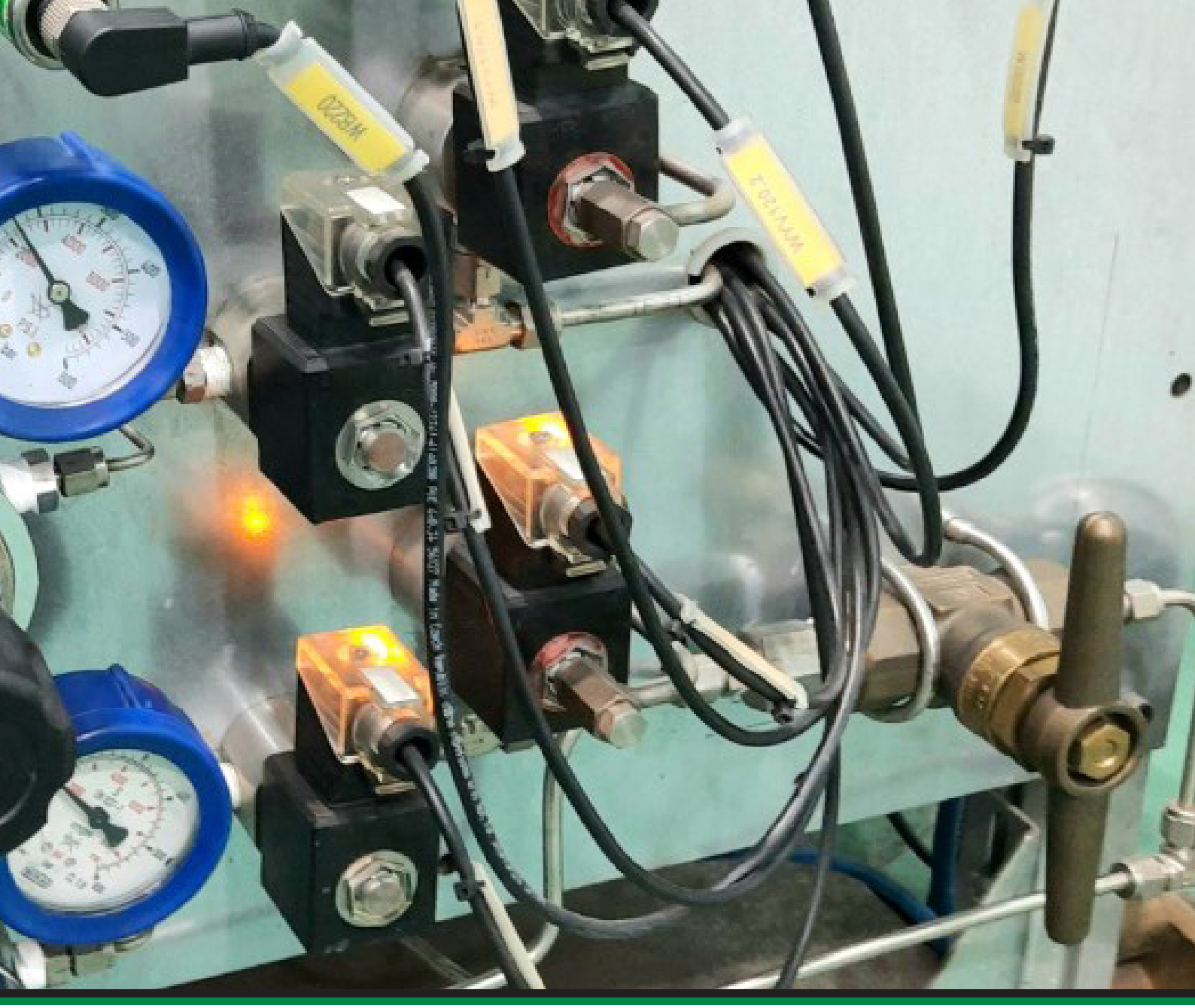
Material of Construction	
Part	**Material**
Valve body	Forged HT brass
Upper & Lower spindle	Naval brass
Gland nut, Special nut & Retainer plug	Free cutting brass
Thrust washer & Seat insert	PA 66
Gland nut O-ring, O-ring, Back-Up ring & Inlet O-ring [b]	EPDM
Spring	SS 302
Handwheel (Blue / Black)	ø52.5 mm PA coated with FR Thermoplastic PU & brass insert
Burst disc	Nickel
Burst disc sealing washer	Copper

b - For parallel connection only

Compliance & Certification
• Valves meet EN ISO 10297:2017, EN 144-1:2018 & EN 144-2:2018
• Valves are certified to European TPED & available with Pi (⛩) mark
• EFV with anti-dust tube tested for 2000 pressure shocks by BAM
• Valves meet IS 7302:1974, approved by PESO & supplied under Lloyd's inspection for Indian market
• PRD complies with CGA S-1.1

For features, benefits & ordering information, refer detailed catalogue

Master Shut-Off Valves



BMV-09

Handle Operated Metal Seated Valves in O-ring Seal Design

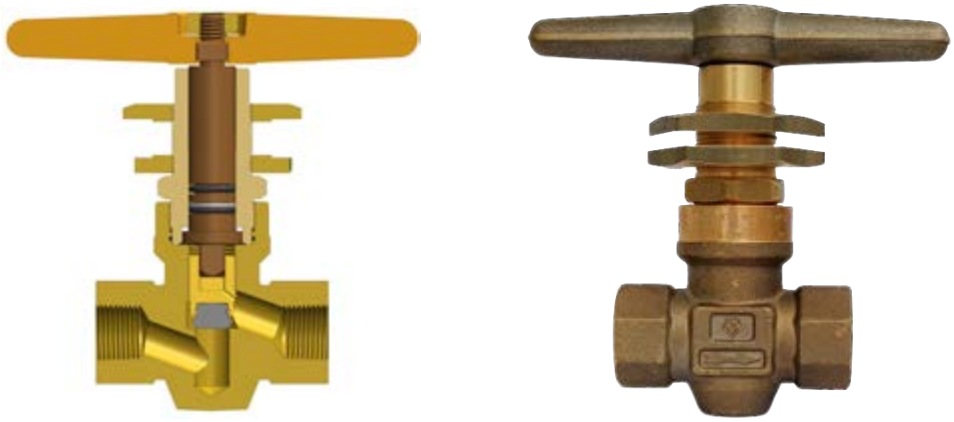
tekno valves 50 YEARS OF EXCELLENCE

Master Shut-off Valves (Main Valves) for Bundles, Manifold & Panels

Approved for Oxygen Service

BAM

Standard valve



Panel mounting valve

Design Specifications			
		Metric	**English**
Minimum life		2000 cycles	
Maximum pressure rating (type approval)		360 bar	5220 psig
Oxygen surge pressure test (tested via filling & inlet connection)		20 cycles at 360 bar	20 cycles at 5220 psig
Temperature range		-40 °C to +65 °C	-40 °F to + 149 °F
Minimum closing torque		10 Nm	7.4 ft.lb
Packing nut installation torque		105 Nm	77 ft.lb
Flow coefficient (C_v)		3.16	
Lubricant		Gleitmo 599	
Oxygen cleaned		Yes	
Panel hole size *	Standard	ø31	ø1.22
	Customer specific	ø32 - ø45 mm	ø1.26 - ø1.77 in

**For panel mounting valve*

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Packing nut & Panel mounting nut*	Free cutting brass
Upper Stem	Al-Si Bronze
Lower stem assembly	High silicon bronze with self-centering Monel seat
Thrust washer	PA 66
O-rings & Back-Up ring	EPDM
T-handle	152.4 mm forged brass

Outlet & Inlet Connection		
1. 1-11 BSP	2. 3/4-14NPT (F)	3. 1/2-14NPT (F)

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified to European TPED & available with Pi (ΠΤ) mark

For gas service, features, benefits & ordering information, refer detailed catalogue

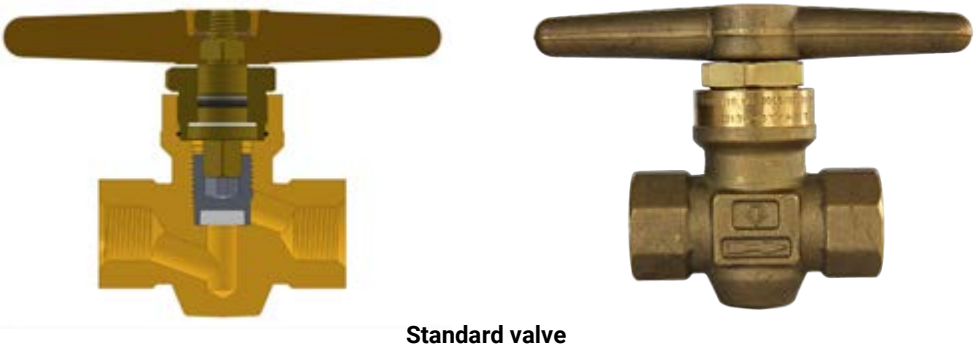
BHN-12/N

Handle Operated Soft Seated Valves in O-ring Seal Design

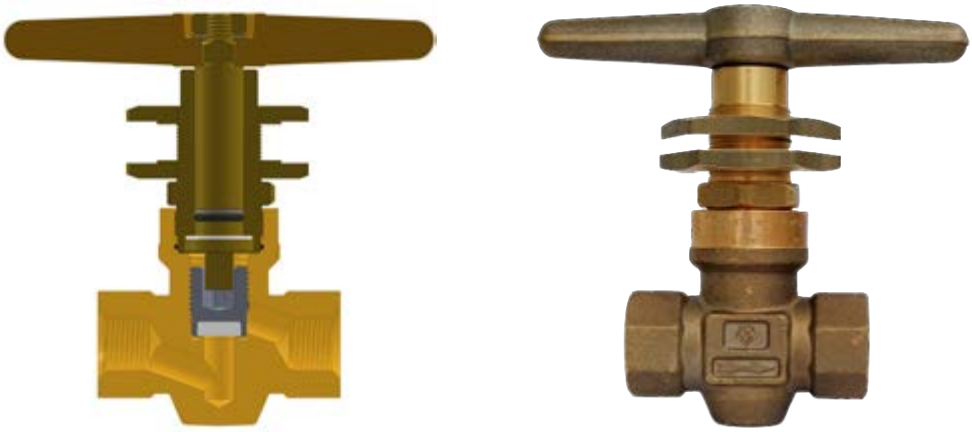
tekno valves 50 YEARS OF EXCELLENCE

Master Shut-off Valves (Main Valves) for Bundles, Manifold & Panels

BAM



Standard valve



Panel mounting valve

Design Specifications			
		Metric	**English**
Minimum life		2000 cycles	
Maximum pressure rating (type approval)		450 bar	6525 psig
Operating temperature range		-20 °C to + 85 °C	-4 °F to + 185 °F
Storage temperature range		-40 °C to + 85 °C	-40 °F to + 185 °F
Minimum closing torque		10 Nm	7.4 ft.lb
Packing nut installation torque		105 Nm	77 ft.lb
Handle retaining nut installation torque		15 Nm	11 ft.lb
Flow coefficient (C_v)		1.57	
Lubricant		Klubertemp GR M30	
Panel hole size *	Standard	ø31	ø1.22
	Customer specific	ø32 - ø45 mm	ø1.26 - ø1.77 in

Material of Construction	
Part	**Material**
Valve body	Forged LT brass
Upper Stem, Packing nut & Panel mounting nut*	Free cutting brass
Lower stem	SS 303
Seat Insert	PA 66 / PEEK / PCTFE
Thrust washer	PEEK
O-rings, Gland O-ring & Back-Up ring	EPDM
T-handle	152.4 mm forged brass

** For panel mounting valve*

Outlet & Inlet Connection		
1. 1-11 BSP	2. 3/4-14NPT (F)	3. 1/2-14NPT (F)

Compliance & Certification
• Valves meet EN ISO 10297:2017 & CGA V-9:2019
• Valves are certified by to European TPED & available with Pi (ⵊ) mark

For gas service, features, benefits & ordering information, refer detailed catalogue

Why Tekno Valves

YOUR SAFETY IS VALUED

Salient Design Features

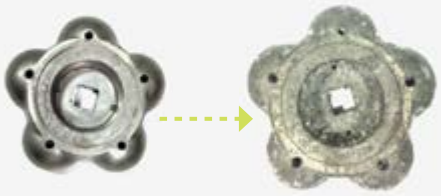
CED Coating

WHY: Aluminium handwheel is prone to atmospheric corrosion when exposed to natural elements. Corrosion leads to surface degradation involving pitting and flaking. Flaking is particularly risky in oxygen service and may act as fuel if it comes in contact with the gas.

HOW: CED (Cathodic Electro Deposition) coating is a process of painting using electrical current to deposit the paint on the surface of a part connected to the cathode. The paint primarily consists of epoxy resin with suitable pigment for colour.

WHAT:

Non-Coated Handwheel



95 hours of salt spray test

CED Coated Handwheel

171 hours of salt spray test

Colour Coded Pressure Relief Device (PRD)

WHY: Cylinder valves with identical outlet connections are commonly equipped with PRDs whose rating depends upon the service pressure corresponding to the cylinder test pressure. The different rated PRDs (e.g., 3000 psig, 3360 psig) are not easy to distinguish visually, leading to a mix up of cylinders.

HOW: Each pressure rating is assigned a unique colour code for easy identification of cylinders with different test pressures.

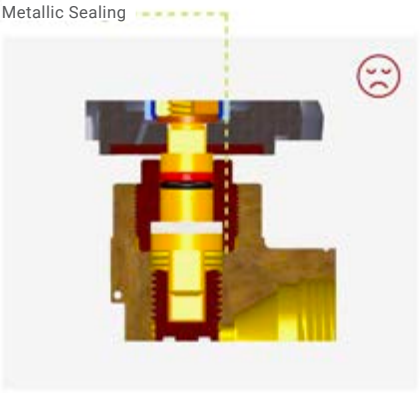
WHAT: A colour-coded cap corresponding to the pressure rating is fitted to the retainer nut of the PRD.

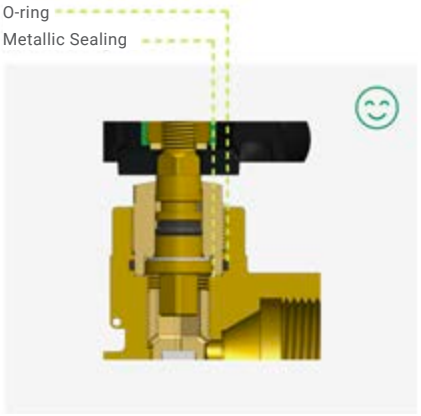
Gland Nut O-Ring

WHY: Some cylinder valve designs (e.g., O-ring seal) have a metal-to-metal seal between the gland nut and the valve body to prevent external leakage past the threads. The sealing works till there is no external damage to the gland nut. Any impact on the gland nut may lead to leakage through the threads, which the users generally struggle to arrest.

HOW: Secondary protection is provided by an O-ring in case the metallic seal is compromised.

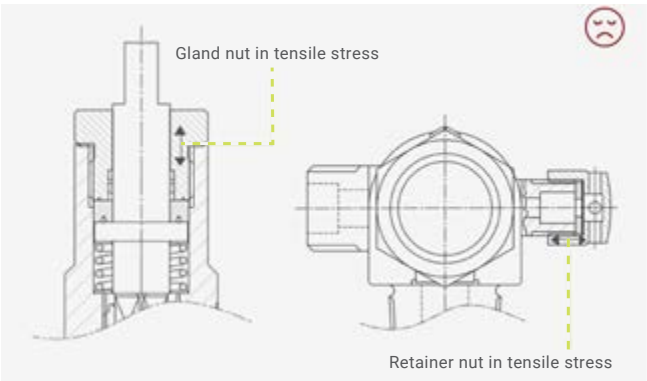
WHAT: Gland nut O-ring is introduced in the valve body below the gland nut threads to prevent leakage.





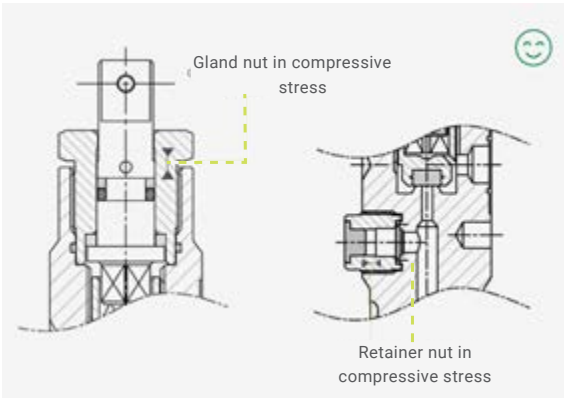
Compressive Stress

WHY: Parts of cylinder valves (e.g., retainer nut and gland nut) manufactured from Brass are susceptible to stress corrosion cracking or over-stressing, especially if installed in tensile stress.



HOW: Components are designed to be assembled in compressive stress and torque values optimized to limit stresses below the material strength.
Refer EIGA Safety Info 21/19

WHAT:



Nickel Chrome Plating

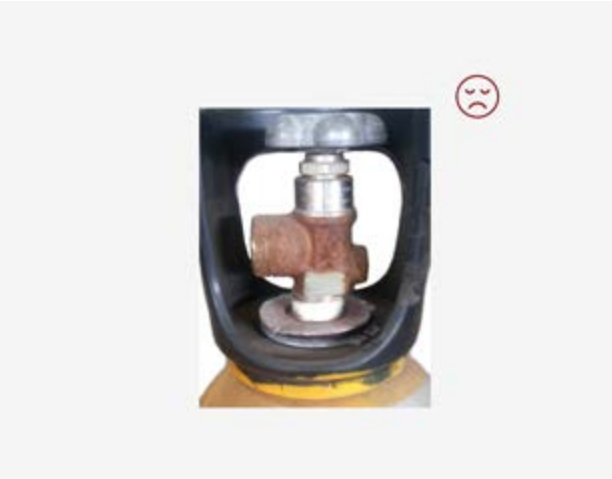
WHY: Plating on cylinder valves is done for aesthetics but carries the risk of flaking and particle generation, which is risky for oxidizing gases. Further, the plating and the substrate material may be incompatible with the gas content, and machining tolerances need to take plating thickness into account to ensure gauge compliance.

HOW: The inlet, outlet & the internal surface of the valve body & components are plugged during the plating process to ensure plating is only deposited on non-gas wetted areas to avoid any chance of plating contamination.

WHAT:

Electropolishing

WHY: Stainless steel valves are often used in corrosive environments making the surface prone to degradation and discolouration. Therefore, surface treatment of the valve body is critical to ensure corrosion resistance and aesthetics.



HOW: Electropolishing removes free iron, embedded contaminants and oxide scale from the surface of the submerged valve body forging in an electrolyte and passing an electric current. Electropolishing also reduces roughness by levelling micro-peaks and valleys and removes free iron to enhance chrome/nickel content, making the surface corrosion-resistant.

WHAT:

Stainless Steel Lower Spindle

WHY: Brass soft seat retention skirts having high-stress concentrations are susceptible to stress corrosion cracking (SCC) [Refer EIGA Doc. 21/19]. SCC occurs when stresses, corrosive environment & time act together and is observable in gases like Carbon Dioxide and Acetylene in the presence of moisture.

HOW: The lower spindle material is constructed from 300 series Stainless Steel to eliminate the possibility of SCC.

WHAT:

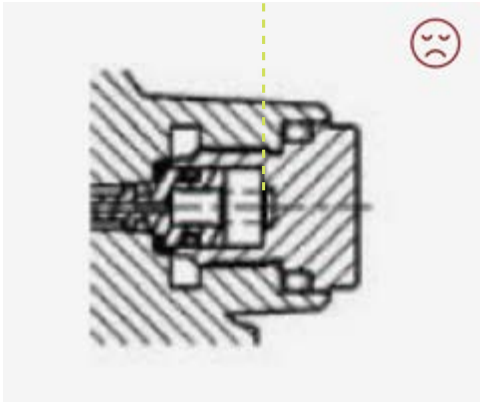
Fail Safe Design of RPVs

WHY: Failures in Residual Pressure Valves (RPVs) can result from design and operational issues and stress corrosion cracking.

HOW: Fail-safe design ensures that in case of failures, the valves would still function at a basic level (i.e., open and close safely), and no unsafe gas release or ejection of parts occurs.

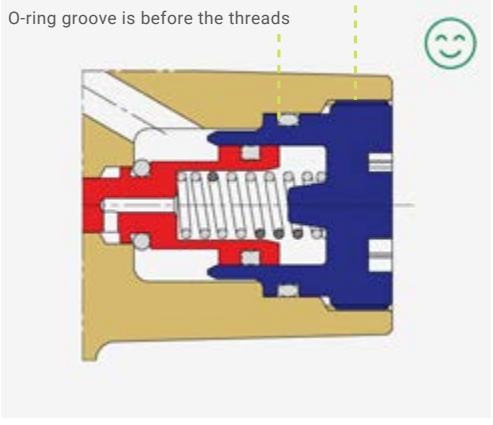
WHAT: The Residual Pressure Device (RPD) housing threads are placed after the O-ring groove, which is the critical area.

Weak point - In case of failure, the part of the cartridge outside the threads would fly away



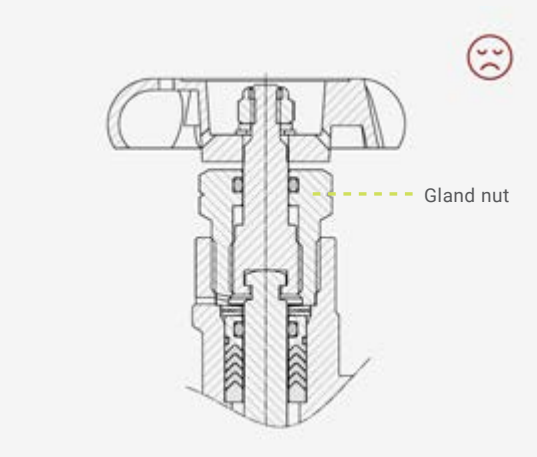
More wall thickness

O-ring groove is before the threads



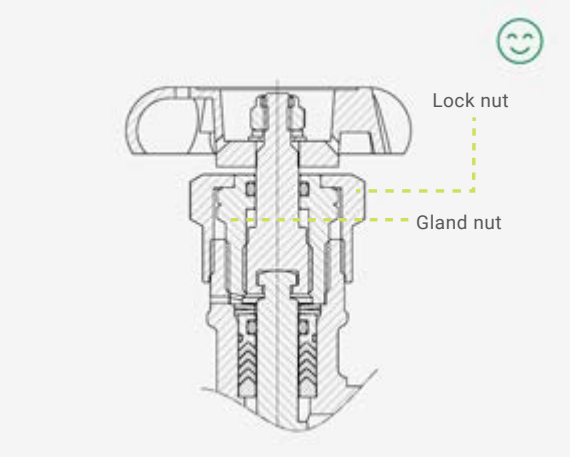
Lock Nut

WHY: Some cylinder valve designs (e.g., diaphragm, packed etc.) have a threaded upper spindle engaging with the gland nut internal threads. These designs may witness loosening of the gland nut due to the applied torque on the operating mechanism.



HOW: The gland nut is secured by a lock nut having threads in opposite direction to the gland nut threads to avoid the risk of loosening in service.

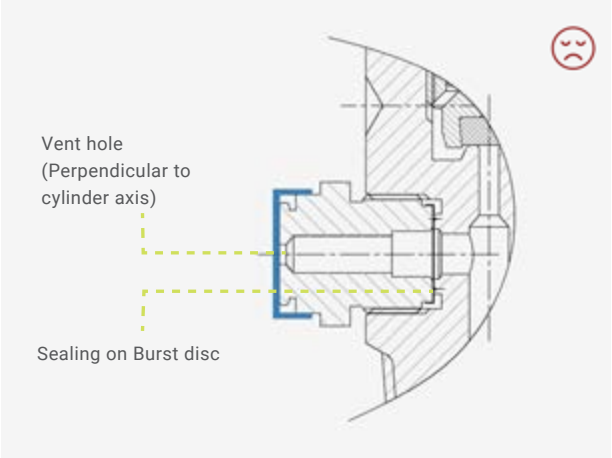
WHAT:



Pressure Relief Device (PRD)

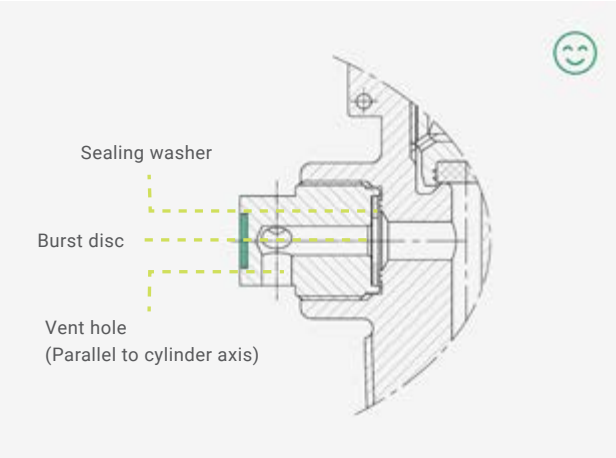
WHY:

Design issues may cause pressure-activated PRDs to actuate prematurely. The resultant thrust can lead to the cylinder getting propelled dangerously, causing safety issues and product loss.



HOW: Internal plug capsule design uses a washer for secure sealing, reducing torsional stress on the burst disc and preventing the PRD from loosening, damage or premature failure. Cross-flow design diverts the escaping gas in a plane parallel to the cylinder's longitudinal axis to balance the thrust forces and prevents cylinder tipping.

WHAT:



Beyond Compliance..
Valuing your Safety

Hot Forgings

Forging dies and Brass hot forgings are manufactured in-house to close tolerances. Induction heating of the slugs ensure better ductility, finer grains and superior resistance to Dezincification.

Stress Relieving

Brass valve body forgings are stress relieved to remove residual stresses to improve impact performance and resist stress corrosion cracking in the field.

Machining

Valve body and components are precision machined in-house in latest technology CNC machines in single set up for unparalleled accuracy.

Surface Treatment

Brass valve body is shot blasted and not acid pickled for surface treatment to avoid problems of stress corrosion cracking and, unsightly marking if exposed to rainwater.

Cleaning

Valve body and parts are cleaned to a much higher level of cleanliness than required by industry standards.

Packaging

Foam Trays used for packaging are eco-friendly reducing environmental footprint by cutting greenhouse gas emissions. The foam compacts to 10% of its original volume, is biostable and will not degrade to pollute air or ground water.

GLOSSARY

Abbreviation	Full Form
ADR	Agreement Concerning the International Carriage of Dangerous Goods by Road
Al-Si Bronze	Aluminium Silicon Bronze
ASTM	American Society for Testing & Materials
BAM	Federal Institute for Materials Research & Testing
BIS	Bureau of Indian Standards
BS	British Standard
BSB	British Standard Brass
BSP	British Standard Pipe
CED	Cathodic Electro Deposition
CGA	Compressed Gas Association, Inc.
EFV	Excess Flow Valve
EN	European Standards
EPDM	Ethylene Propylene Diene Rubber
European TPED	European Transportable Pressure Equipment Directive
FKM	Fluorocarbon Rubber
FR	Flame Retardant
ft.lb	Foot-Pound
HDPE	High Density Polyethylene
HEX	Hexagon
HT	High Tensile
in	Inch
IS	Indian Standard
ISO	International Organisation for Standardization
kgf/cm^2	Kilogram-Force Per Square Centimetre
L	Length
l	Litre
LH	Left Hand
LT	Low Tensile
mm	Millimetre
MRI	Magnetic Resonance Environment
NBR	Nitrile Butadiene Rubber
NGT	National Gas Taper
Nm	Newton-Meter
NPT	National Pipe Taper

Abbreviation	Full Form
OPST	Oxygen Pressure Surge Test
PA	Polyamide
PCTFE	Polychlorotrifluoroethylene
PEEK	Polyetheretherketone
PESO	Petroleum And Explosive Safety Organization
psig	Pounds Per Square Inch Gauge
PTFE	Polytetrafluoroethylene
PU	Polyurethane
PUR	Polyurethane Rubber
PVDF	Polyvinylidenefluoride
RH	Right Hand
SCBA	Self-Contained Breathing Apparatus
SS	Stainless Steel
TPI	Thread Per Inch
UK TPE	United Kingdom Transportable Pressure Equipment
UNF	Unified National Fine

TECHNICAL STANDARDS BIBLIOGRAPHY

Standard	Title
ISO 407	Small medical gas cylinders - Pin-index yoke-type valve connections
ISO 5145	Cylinder valve outlets for gases & gas mixtures - Selection & dimensioning
ISO 9001	Quality Managements Systems - Requirements
EN ISO 10297	Gas cylinders - Cylinder valves - Specification & type testing
IS ISO 11114-1	Transportable gas cylinders - Compatibility of cylinder & valve materials with gas contents - Part 1: Metallic materials
IS ISO 11114-2	Transportable gas cylinders - Compatibility of cylinder & valve materials with gas contents - Part 2: Non-metallic materials
EN ISO 11363-1	17E & 25E taper threads for connection of valves to gas cylinders - Part 1: Specification
ISO 12209	Gas cylinders - Outlet connections for gas cylinder valves for compressed breathable air
EN ISO 14246	Gas cylinders - Cylinder valves - Manufacturing tests & examination
EN ISO 15001	Anesthetic & respiratory equipment - Compatibility with oxygen
ISO 15245-1	Gas cylinders - Parallel threads for connection of valves to gas cylinders - Part 1: Specification
EN ISO 15996	Gas cylinders - Residual pressure valves - Specification & type testing of cylinder valves incorporating residual pressure devices
ISO 17025	General requirements for the competence of testing & calibration laboratories
IS 3224	Valve fittings for compressed gas cylinders excluding Liquefied Petroleum Gas (LPG) cylinder
IS 3745	Specification for yoke type valve connections for small medical gas cylinders
IS 5903	Recommendation for safety devices for gas cylinders
IS 7302	Valve fittings for Self Contained Breathing Apparatus (SCBA) & Self-Contained Underwater Breathing Apparatus (SCUBA) - Specification
IS 13497	Fusible plug for dissolved acetylene gas cylinder - Specification
CGA G-4.1	Cleaning equipment for oxygen service
CGA S-1.1	Pressure Relief Device standards - Part 1 - Cylinders for compressed gases
CGA V-1	Compressed Gas Association standard for compressed gas cylinder valve outlet & inlet connection
CGA V-9	Compressed Gas Association standard for compressed gas cylinder valve
EN 144-1	Respiratory protective devices - Gas cylinder valves - Thread connections for insert connector
EN 144-2	Respiratory protective devices - Gas cylinder valves - Outlet connections
ASTM F2052	Standard test method for measurement of magnetically induced displacement force on medical devices in the magnetic resonance environment
ASTM F2503	Standard practice for marking medical devices & other items for safety in the magnetic resonance environment
BS 341-1:1991	Transportable gas container valves - Specification for industrial valves for working pressure up to & including 300 bar
BS 341-3:2002	Transportable gas container valves - Valve outlet connection
ADR (Volume I & II)	European agreement concerning the international carriage of dangerous goods by road
AFNOR NF E 29-650	Gas cylinders - Valve outlet connections
AS 2473-2	Valves for compressed gas cylinders - Part 2: Outlet connections (threaded) & stem (inlet) threads
CI Pamphlet 17	Pamphlet 17 - Packaging plant safety & operational guidelines
DIN 477-1	Gas cylinder valves for cylinder test pressures up to 300 bar - Part 1: Valve inlet & outlet connections
JIS B 8246	Valves for high pressure gas cylinders
2010/35/EU	Transportable Pressure Equipment Directive (TPED)
UNI 11144	Transportable gas cylinders - Cylinder valves for working pressure ≤ 250 Bar - Outlet, Inlet valve connections & fittings: Shapes & dimensions

Safety & Certifications

International homologation

(**'Pi'** mark/TPED Directive + **'Rho'** mark/TPE Directive) -

BAM
TPED Certification by BAM as notified body: ID-0589

Cylinder valve designs are tested to relevant ISO standard/s by an ISO 17025 accredited test laboratory, resulting in Type approval certificate issued by the European/UK notified body.

The combination of type approval and periodic audits form the basis of the Authorization Certificate, which lists all the type approval certificates covered under the scope of TPED / TPE directives. Our In-house Inspection agency, authorized by the Notified body, is responsible for the surveillance of manufacture and initial inspection and test for all valves.

National homologation

(**PESO** Approval)

The Petroleum and Explosives Safety Organization (PESO) is India's statutory body for approving gas cylinder valves. Valves for the Indian market are approved by PESO and duly inspected by BIS or Lloyds Register as per Indian or International standards.

Lloyd's Register

To Know more

ISO 9001


DNV
MANAGEMENT SYSTEM CERTIFICATE
This is to certify that the management system of
Tekno Valves
Bilkanda Nalun Rasta, P.O. Kanna Madhabpur, Kolkata – 700 113, West Bengal, India
has been found to conform to the Quality Management System standard:
ISO 9001:2015
This certificate is valid for the following scope:
- Design, development and manufacture of cylinder valves and accessories for technical and medical gases
- Manufacture and supply of close die forgings up to 5 Kg capacity

QUALITY

ISO 45001


DNV
MANAGEMENT SYSTEM CERTIFICATE
This is to certify that the management system of
Tekno Valves
Bilkanda Nalun Rasta, P.O. Kanna Madhabpur, , Kolkata - 700113, West Bengal, India
has been found to conform to the Occupational Health and Safety Management System standard:
ISO 45001:2018
This certificate is valid for the following scope:
Design, development and manufacture of cylinder valves and accessories for technical and medical gases
Manufacture and supply of close die forgings up to 5 Kg capacity

SAFETY

NABL ACCREDITED LABORATORY

ISO 17025

TC-11058
Mechanical & Chemical Testing

CC-2617
Calibration

Membership & Affiliations

Members since **2019**

Members since **2008**

Members since **2017**

Members since **2004**

Member since **1975**

Member since **2019**

Approved Supplier since 2020

OUR JOURNEY OVER 50 YEARS

1971

Commenced business to manufacture Chlorine Cylinder Valves

1975

Expanded portfolio by developing Cylinder Valves for Industrial Gases

1978

Commenced production of Brass Forgings as backward integration

1980

Established Tool Room to manufacture In-house Forging Dies

1985

Y.K. Behani was awarded 'Udyog Patra' by the Vice President of India as recognition for being a self-made industrialist

1995

Started using 300 bar 3-stage reciprocating compressors for testing of Cylinder Valves

1996

Second generation joined the business (Rohit Behani)

2003

Received ISO 9001:1994 Certification from Lloyds Register

2004

Introduced CNC Machines for machining of Cylinder Valve Body & Components

2005

Entered North American market with export of Chlorine valves

2006

Introduced DC Nut Runner Torque Tools for Assembly and Testing

2007

Received EN ISO 10297:2006 certification for three valve designs by BAM

2008

Awarded ‘Pi’ mark in compliance with European Directives (TPED)

2009

Tekno Valves North America Incorporated

2010

Developed Residual Pressure Valves (RPV) as per EN ISO 15996:2007

2011

Established state-of-the-art integrated manufacturing unit

2012

Recognized as ‘One star Export house’ from Government of India

2014

Export footprint enlarged to 50+ countries

2018

Quality lab granted NABL certification as per ISO 17025

2019

Started testing of Cylinder Valves using Differential Pressure Technology

2020

Declared Essential Manufacturer for Medical Oxygen Cylinder Valves amidst COVID-19 pandemic

2021

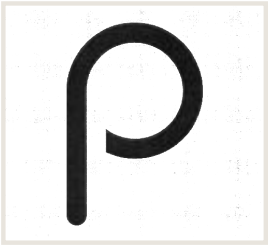
Received ISO 45001:2018 Certification from DNV”

2022

Green Initiative - Solar Power Plant of 715 kW commissioned

2023

Awarded ‘Rho’ mark in compliance with UK TPE



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