

Gas Cylinders & Valves

High Pressure Gas Cylinders



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Gas cylinders are very essential for people in the gas business for the storage and transportation of high pressure gases, due to their increasingly versatile applications in various fields, especially, steel cylinders subject to rigorous use. High Pressure Cylinders adhere to the most stringent regulations, both national and international. The cylinders for domestic market are produced as per IS - 7285, certified by Bureau of Indian Standards (ISI) and approved by chief Controller of Explosives, Govt. of India.

High Pressure gas cylinders are manufactured from high quality seamless steel tubes on the most modern CNC Machines, using the latest state-of-the-art technology to suit different industrial applications. We offer a wide range in these cylinders with water capacity right from 1 to 280 ltrs.

Many countries over the world have approved the usage of these cylinders which are famous for their flexibility to match any kind of specifications. The above manufacturing process & data seeks to provide the customers' with potential information about the cylinders meant for industrial usage. Further information, intricate details will be

provided on request.

MAX. WORKING PRESSURE AT 15C	TEST PRESSURE	WATER CAPACITY (1 ltr.)	GAS CAPACITY (Cu.m.)	OUTSIDE DIA 'D'	MIN. WALL THICKNESS 't'(mm).	LENGTH 'L' APPROX. (mm)	TARE WEIGHT APPROX. (kg)
150kgf/cm ²	250kgf/cm ²	1.0	0.15	76	3.2	310	2.5
		1.5	0.23	76	3.2	455	3.4
		2.0	0.30	108	3.5	330	4.0
		3.0	0.45	108	3.5	465	5.1
		4.0	0.60	108	3.5	600	6.5
		4.8	0.72	108	3.5	710	7.8
		5.0	0.75	108	3.5	735	8.0
		4.5	0.68	140	4.2	430	8.2
		5.0	0.75	140	4.2	465	8.8
		6.8	1.02	140	4.2	610	11.0
		7.5	1.10	140	4.2	655	11.8
		10.0	1.50	140	4.2	845	14.8
		10.2	1.53	140	4.2	855	14.9
		13.5	2.03	140	4.2	1110	19.0
		14.0	2.10	140	4.2	1145	19.5
		15.0	2.25	140	4.2	1225	20.8
		6.8	1.02	165	5.0	470	12.7
		10.2	1.53	165	5.0	655	16.8
		13.5	2.03	165	5.0	835	21.0
		14.0	2.10	165	5.0	865	21.5

	15.0	2.25	165	5.0	920	22.7
	20.0	3.00	165	5.0	1190	28.0
	22.0	3.30	232	5.5	675	29.0
	24.0	3.60	232	5.5	735	32.0
	27.0	4.00	232	5.5	830	35.0
	34.0	5.00	232	5.5	1030	42.0
	40.0	6.00	232	5.5	1200	48.0
	40.5	6.07	232	5.5	1215	48.5
	45.0	6.70	232	5.5	1330	53.0
	46.7	7.00	232	5.5	1370	54.0
	50.0	7.50	232	5.5	1455	58.0
	54.0	8.00	232	5.5	1565	62.0
	38.0	5.70	267	6.3	910	52.0
	44.0	6.60	267	6.3	1034	58.0
	50.0	7.50	267	6.3	1150	63.0
	54.0	8.00	267	6.3	1234	66.0
	56.0	8.40	267	6.3	1260	68.0
	58.0	8.70	267	6.3	1300	70.0
	68.0	10.20	267	6.3	1500	78.0
	80.0	12.00	267	6.3	1738	88.0

Low Pressure Gas Cylinders

MANUFACTURING PROCESS of low pressure welded cylinders as per IS - 3196

Low Pressure Cylinders production process is a unique combination of highly efficient manufacturing techniques, rigid quality control process and ultra modern machines and equipments.

Low Pressure Cylinders unique process of welding of cylinders by the combination of submerged Arc and metal inert gas welding using gas mixture of Argon and Carbon Di Oxide, produced best quality welded cylinders which are passed through the different stages of inspection and X-Ray's examination (Radiography) to meet the requirements of respective standards. The sequence of tests after stress relieving provides the consistency of quality.

Acetylene Cylinders are massed with its own formulation and controlled mixing system of its own unique design ensures uniformity and optimum quality of Monolithic Calcium Silicate Mass (Porous Mass) inside the finished cylinders after reaction and drying process. The cylinders after fitted with valve are subjected for high degree of vacuuming subsequently filling of Acetone and saturated with gas.

The special feature of Low Pressure Cylinders porous Mass is chemical stability, no effect against mechanical impact due to high crushing strength of mass, maintaining the porosity of mass between 90-92%, high degree of permeability along with the retention of Acetone during discharge of gas. Such porous mass has capacity to absorb heat of solution as well as resist decomposition of acetylene gas under pressure.

FINISHED GOODS

All cylinders are subjected for shot blasting followed by Zinc metallizing and painting by electrostatic spray painting with their color code. All cylinders are punched in accordance with their specification and finally certified by Bureau of Indian Standards (ISI) and approved by chief Controller of Explosives, Govt. of India.

Cylinder Valves



A Cylinder Valve is fixed into Gas Cylinder by screw threads. A Valving Capsule of suitable soft metal for fitting between male and female threads may be used to ensure gastight joint when the valve is screwed home. Alternatively a jointing compound compatible with gas contained in cylinder and valve material may also be used to ensure gastight joint.

Prime functions of Gas Cylinder Valves are

- filling of gas into cylinder
- proper storage of gas inside the cylinder
- release the gas as and when required
- act as a safety for cylinder against pressure overisation (when valves are fitted with safety devices)

Types of Cylinders

There are different types of Cylinders and Cylinder Valves depending upon the types of gases to be stored as mentioned below.

- Industrial Gas Cylinders for Oxygen, Acetylene, Chlorine, Ammonia, Sulphur Dioxide, Hydrogen Cyanide, Cyanogen Ethylene Oxide. Vinyl Chloride, Phosgene, Ethyl Chloride, Methyl Chloride, Propane, Refrigerant Gases, Hydrogen Fluoride, Butadiene and other gases.
- Medical Gas Cylinders and Breathing Apparatus for Nitrous Oxide, Air, Oxygen, Cyclo Propane, Carbon Dioxide, Ethyl Chloride, Helium, Oxygen/Carbon Dioxide mixture, Oxygen/Helium mixture etc. . Fire fighting Cylinders for Carbon Dioxide.
- Pest Control Gas Cylinders for Methyl Bromide etc.
- D/A Cylinders for Marine Lightning etc.
- CNG Cylinders for CNG filling station

Internal Design of Valve



The internal design / working part / spindle / gland side designs are not specified in the ISI Standards except for wrenching portion of the spindle. The internal design of the Cylinder Valves are normally classified in following broad categories. . Metal to Metal Seat Type Design When spindle tip and body seat are both metallic, they are ideal for areas where danger of fire exists. In the closed position metal to metal seat prevents the flow media from entering the atmosphere. The Cylinder valve having metal to metal seat should not be used with the hand wheel.

Such type of design is commonly used for Chlorine, Ammonia, D/A, and Oxygen Cylinder Valves.

- Soft Non-Metallic Spindle Seat or Metallic / Non-metallic body seat Type Design With such type of seating arrangement the valve opens and closes at a low torque, therefore such valves can be provided with hand wheel. Non-metallic seating should be avoided where corrosive / poisonous gases are used. Such types of valves are used with Carbon Dioxide and CNG cylinders.
- Diaphragm Type Design The design is of packless nature achieved by metal diaphragm in which a seal is effected by the diaphragm being held in the place with body and gland side arrangement. When the Valve is turned from open to close position the stem deflects the diaphragm, which open or close the valve body seat. The curvature of the diaphragm increase proportionately, which regulates the flow of the gas. Such type of design is widely used in Marine D/A Cylinder used for Marine Lightening purpose and also in some type of Refrigerant Valves and other special type of valves.

Salient Features

- Inlet and Outlet threads are as per BIS specification with interchangeable components Stringent inspection carried out at every stage of manufacture and 100% tested after assembly as per BIS test procedure.
- All valves are tested above maximum working pressure.
- Minimise closing torque and smooth valve operating mechanism to open and close the valve.
- Excellent service life under normal working conditions
- Body of steel valves is *forged* with high impact
- Brass valves are forged from extruded high tensile brass rod for higher wear resistance and strength.
- Raw material is procured from highly reputed manufacturers.
- Third Party inspection by Lloyd's/Bureau Veritas/SGS as per customer's requirement.
- Valves are meant for more than 10-litres water capacity Compressed Gas Cylinders.