

Engineered reliability from design to delivery.



## Ball Valves

Virgo Low Temperature Ball Valves

# About Us

In a short period of 27 years, Virgo Group of companies has gained a position of prominence in the field of process ball valves, pipeline ball valve and automation systems for a host of applications in chemical, petrochemical, oil & gas, fertilizer and pharmaceutical industries.

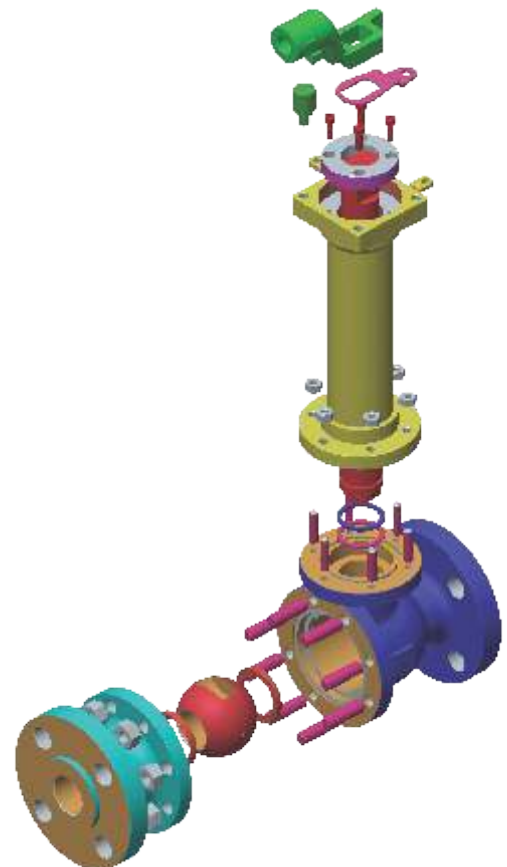
During this period, Virgo established its presence in India, USA, Middle East, Far East, and Europe. Today, Virgo is a true multinational company with manufacturing plants in India, Italy and USA, sales office in 8 countries and customer in over 75 countries.

Virgo Valves are designed and manufactured using the latest engineering softwares and tools like Pro/Engineer® for 3D CAD, ANSYS® for finite element analysis & Windchill® for project management.

State-of-the-art manufacturing technologies, modern quality management methods and competent ERP system ensure efficient production process resulting in consistent high quality standards over large quantities of valves.

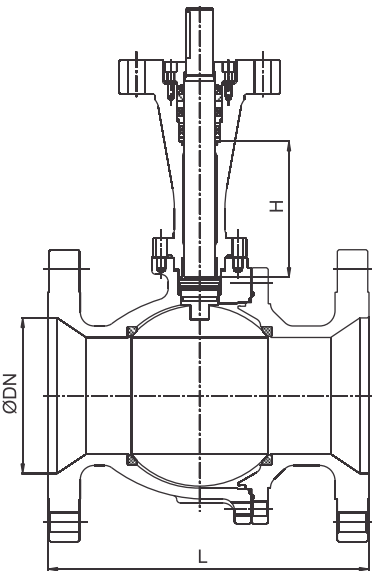
Virgo's Cryogenic Ball Valves are available in the size range of ½" to 48", in pressure class ASME # 150 to ASME #2500. These valves are engineered as per international standards to achieve leak tightness at cryogenic conditions (-196°C / -321°F), ensuring smooth performance of the system and safety at work place.

Cryogenic Ball Valves are suitable for applications in LNG Storage & Transportation, Liquid Ammonia Systems, Air Separation plants and many others.



Dimensional Details

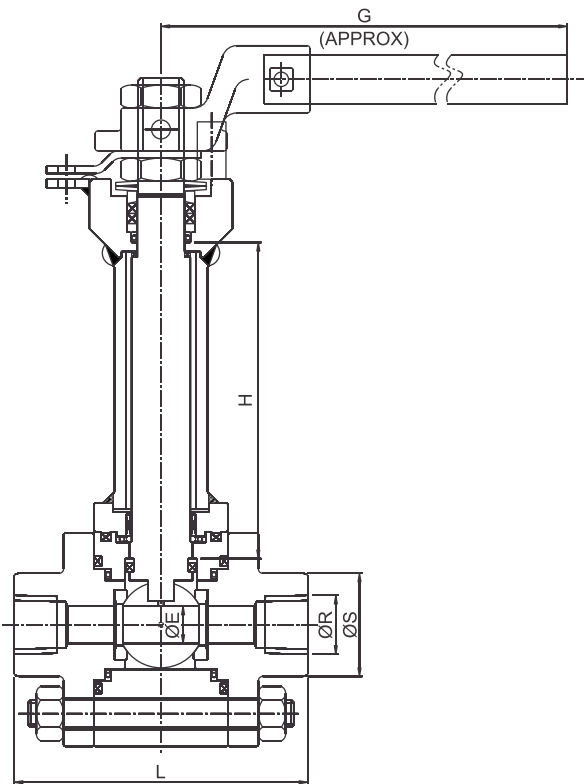
Floating Ball Valves (Two Piece)



Virgo’s Cryogenic Floating Ball Valves are available with different end connections as Flanged RF, Flanged RTJ, Butt Welded End and Socket Welded End.

Size	Class 150	Class 300	Class 600
	L	L	L
15 (½")	108	140.5	165
20 (¾")	117	152	190.5
25 (1")	127	165	216
40 (1 ½")	165	190	241.3
50 (2")	178	216	292
50 (3")	203	283	355.5
100 (4")	229	305	432
150 (6")	394	403	559

Floating Ball Valves (Three Piece)

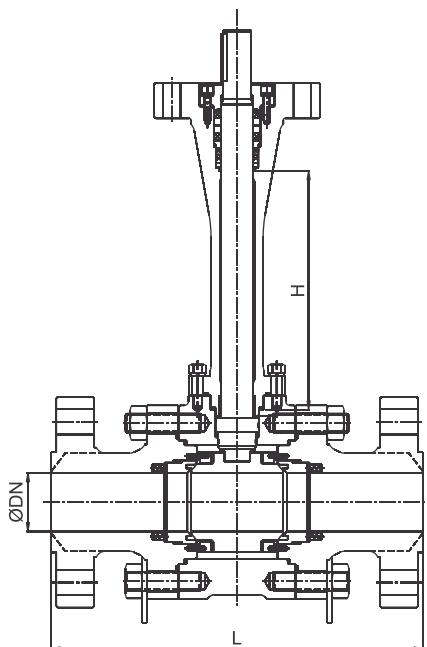


Class 400 and 800					
Size	½"	¾"	1"	1-½"	2"
ØE	14	20	26	39	50
ØR*	½" NPT	¾" NPT	1" NPT	1-½" NPT	2" NPT
ØS	30.5	36.5	44.5	62.5	75.5
L	As per MFG Std				
G	175	175	225	300	350

- Note:
- H = 250mm minimum for non Cold box applications
  - For Cold Box applications H will be as per BS 6364 Table 1
  - All Dimensions are in mm
  - For + marked dimensions, consult Virgo
  - \* End connections can also be supplied with SWE

## Dimensional Details

### Trunnion Ball Valves



Virgo's Cryogenic Trunnion Ball Valves are available with different end connections as Flanged RF, Flanged RTJ, Butt Welded End and Socket Welded End.

Size	Class 150			Class 300			Class 600		
	L			L			L		
	RF	BWE	RTJ	RF	BWE	RTJ	RF	BWE	RTJ
50 (2")	178	216	191	216	216	232	292	292	295
80 (3")	203	283	216	283	283	298	356	356	359
100 (4")	229	305	241	305	305	321	432	432	435
150 (6")	394	457	406	403	403	419	559	559	562
200 (8")	457	521	470	502	521	518	660	660	664
250 (10")	533	559	546	568	559	584	787	787	791
300 (12")	610	635	622	648	635	664	838	838	841
350 (14")	686	762	699	762	762	778	889	889	892
400 (16")	762	838	775	838	838	854	991	991	994
450 (18")	864	914	876	914	914	930	1092	1092	1095
500 (20")	914	991	927	991	991	1010	1194	1194	1200
600 (24")	1067	1143	1080	1143	1143	1165	1397	1397	1407
750 (30")	1295	1397	+	1397	1397	1422	1651	1651	1664
900 (36")	1524	1727	+	1727	1727	1756	2083	2083	2099
1000 (40")	1600	+	+	1778	+	+	2083	2083	2099
1050 (42")	1689	+	+	1829	+	+	2083	2083	2099
1200 (48")	1918	+	+	2020	+	+	2200	2083	2216

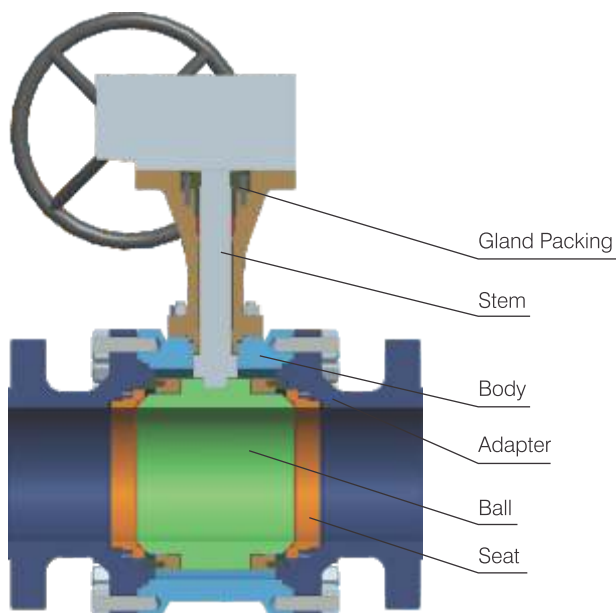
Size	ANSI Class 900			ANSI Class 1500			ANSI Class 2500		
	L			L			L		
	RF	BWE	RTJ	RF	BWE	RTJ	RF	BWE	RTJ
50 (2")	368	368	371	368	368	371	451	451	454
80 (3")	381	381	384	470	470	473	578	578	584
100 (4")	457	457	460	546	546	549	673	673	683
150 (6")	610	610	613	705	705	711	914	914	927
200 (8")	737	737	740	832	832	841	1022	1022	1038
250 (10")	838	838	841	991	991	1000	1270	1270	1292
300 (12")	965	965	968	1130	1130	1146	1422	1422	1445
350 (14")	1029	1029	1038	1257	1257	1276	--	--	--
400 (16")	1130	1130	1140	1384	1384	1407	--	--	--
450 (18")	1219	1219	1232	1537	1537	1559	--	--	--
500 (20")	1321	1321	1334	1664	1664	1686	--	--	--
600 (24")	1549	1549	1568	2043	2043	2071	--	--	--
750 (30")	1880	1880	1902	--	--	--	--	--	--
900 (36")	2240	2240	2269	--	--	--	--	--	--

#### Note:

- H = 250mm minimum for non Cold box applications
- For Cold Box applications H will be as per BS 6364 Table 1
- All Dimensions are in mm
- For + marked dimensions, consult Virgo

## Product Information : Range | Design Features | Reference Standards | Special Tests

### Trunnion Ball Valves



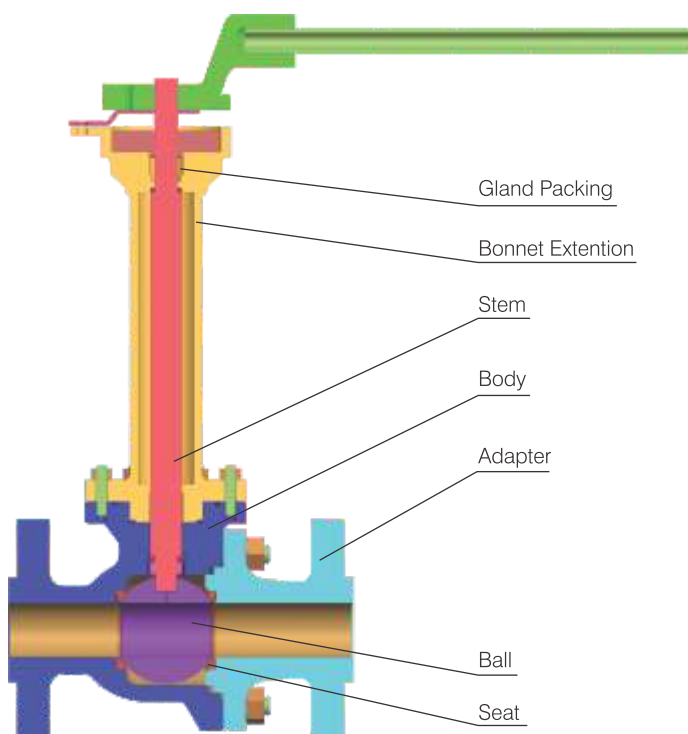
#### Range

- Size: ½" to 48"
- Class: 150# to 2500#
- Type: Split body, Bolted joints
- Temperature: Down to (-) 196 °C

#### Features

- Extended Bonnet (Gas column / Vapor space length)
- Floating ball & Trunnion supported ball.
- Full & reduced bore
- Blow out proof stem
- Body cavity relief by providing
  - 1) Drilled hole in ball on upstream side in Floating ball valves.
  - 2) Self Relieving seats for Trunnion ball valves.
- Multiple sealing arrangement for stem in stuffing box.
- Gland loading arrangement for stem packing.
- Static & Dynamic sealing arrangement meets Fugitive emission requirements.
- Engineered material components to ensure low thermal stresses
- Low operating torque
- Fire safe design

### Floating Ball Valves (Two Piece)



#### Reference Standards

- API 6D / EN ISO 17292
- BSEN 6364 – 1984: Valves for cryogenic service
- MESC SPE 77/200: Valves in low temperature and cryogenic service
- ASME B 16.34, ASME B 16.5, ASME B 16.10, ASME B 16.47
- ASME BPVC Sections: II, V, VIII, IX.
- API 598, BE EN 12266-1& 2., API 607
- NACE MR0175 / ISO15156-1,2 & 3.
- MSS SP-6, 9, 25, 44, 45, 53, 54 & 55.

#### Special Tests

- PMI
- Radiography Testing
- LPT
- MPT
- Performance test at low / cryogenic temperature.
- Fugitive Emission Test at low / cryogenic temperature.

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