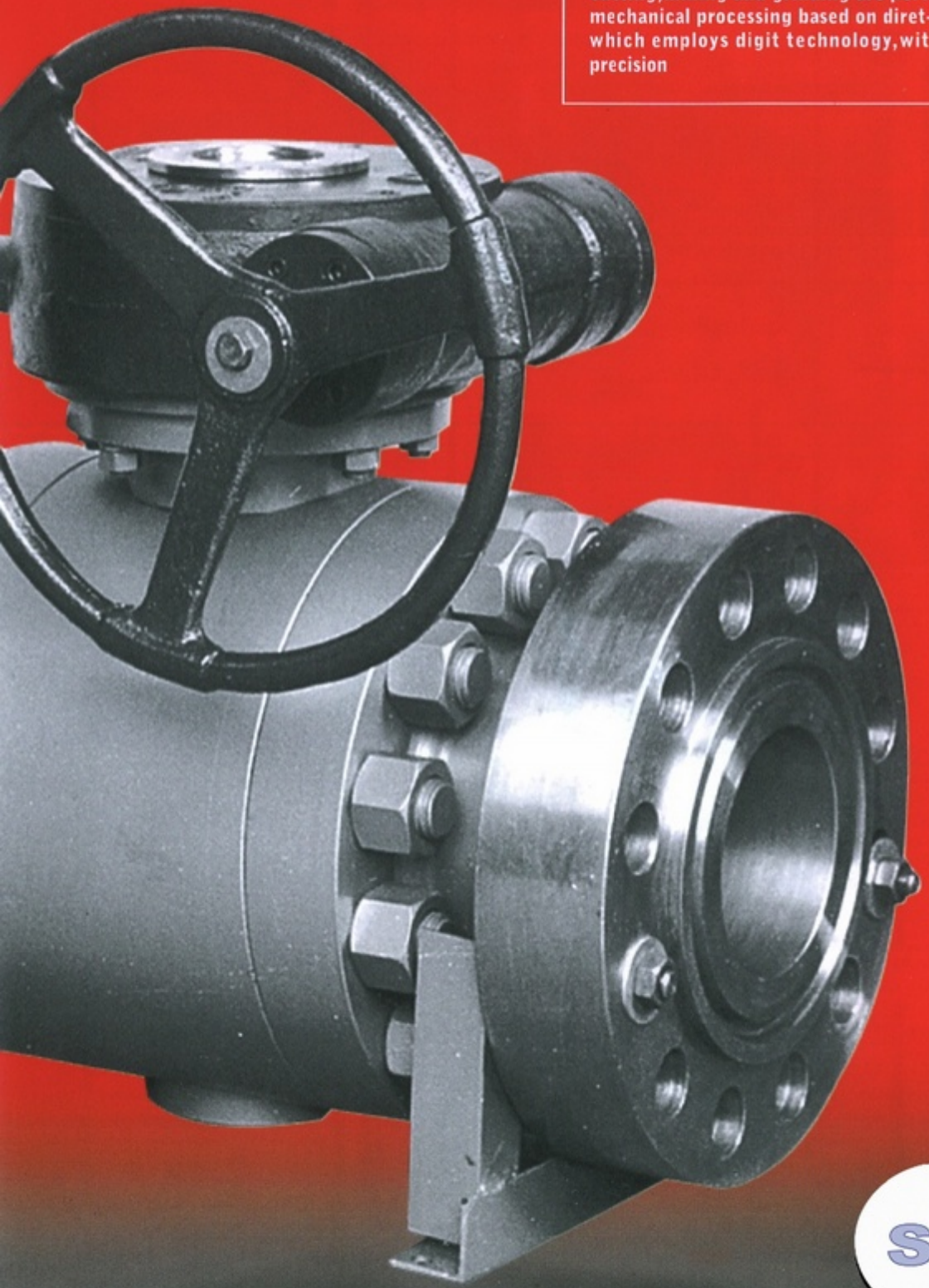
Ball Valve

The high-precision technique is employed to ensure the quality and work efficiency on the basis of full performing of computerized aided manufacturing moreover,the processes of drilling, cutting,milling and grinding are performed at key parts for mechanical processing based on diret-dialogue programming which employs digit technology,with which ensures limit precision

001



SZNAJDER STAHLWAREN

SZNAJDER STAHLWAREN

Main products







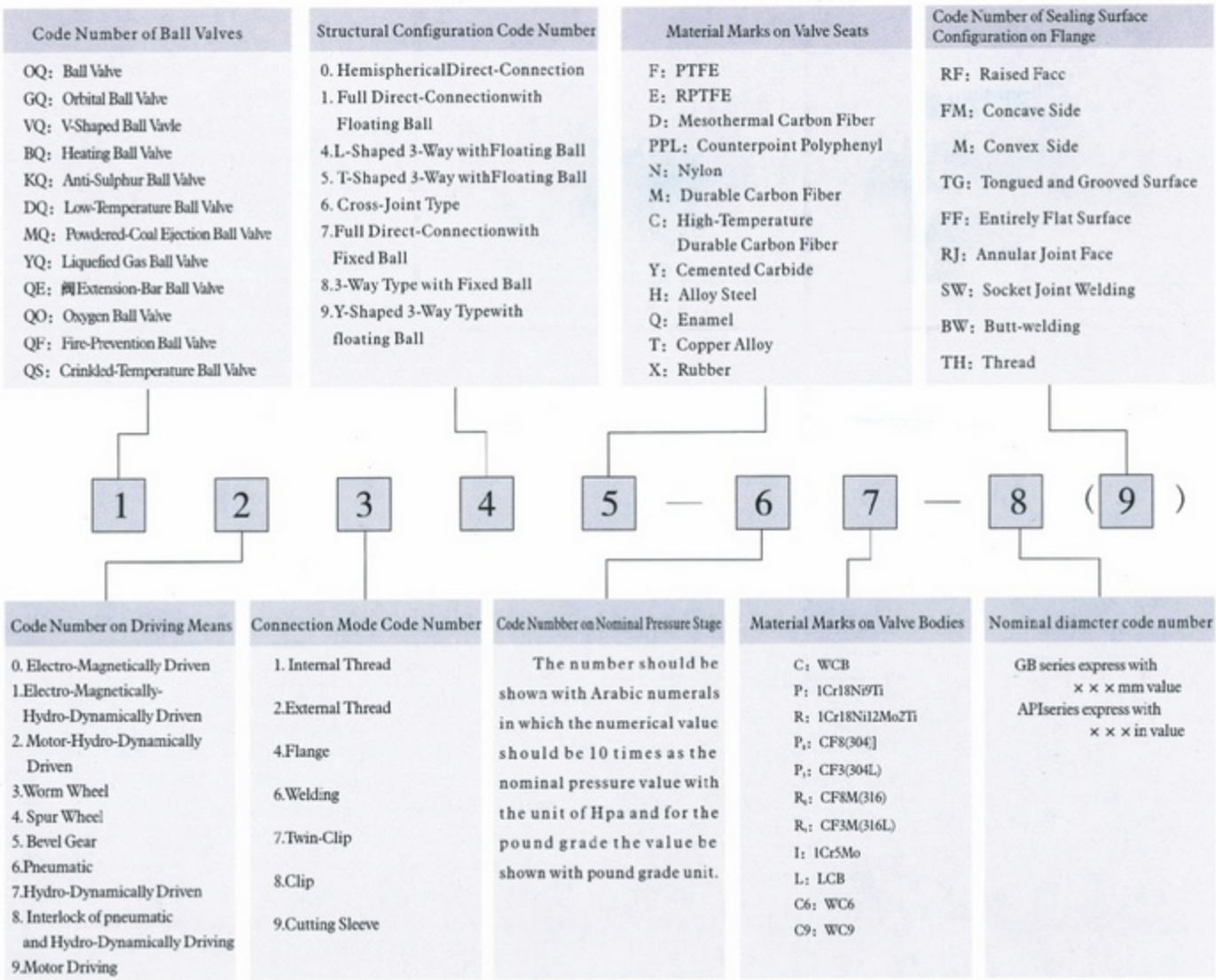






Code Number of Ball Valves

SZNAJDER STAHLWAREN



Remarks:

1) The second unit code number should be omitted for hand-wheel,handle and spanner driving means .The character 6K or 7k represents the pneumatic or hydr-odynamical normally-open products in the second unit,the character 6B or 7B represent the normally closed type,6S represents the pneumatic products with manual driven,9B represents the blast-proofing motor-driven products,and 9R represents the outdoor type.
2) For the materials of the valve seat in unit 5,the character W represents those directly-processed with Body, and the material marks of lower-rigidity represent those products with different materials on the two abutting sealing surfaces.
3) For the gray cast iron valve of PN≤1.6MPa and carbon steel valve of PN≥2.5MPa,the code numbers in unit 7 could be omitted.
4) For the raised face flange of PN≤4.0MPa in unit 8,the micro-groove waterlines could be carted with the code number for the sealing surface as RF(A).
5) The materials for the globe body and main internal components are identical to that for the Body if special version not mentioned.

Example 1:Q647Y-16P$_s$

It represents a Contact Flange pneumatic ball valve of all -diameter,which fixed with the sealing material of cemented carbide and the and the material of Body of CF8, the pressure stays at 1.6MPa.

Example 2: Q341F-150Lb

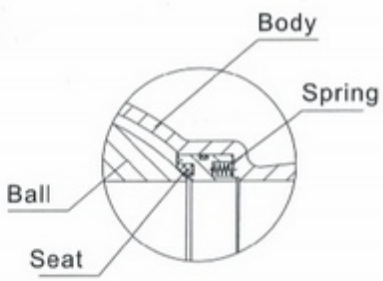
It represents a wormgear-driven Contact Flange ball valve of all-diameter,which floating with the material of polytetrafluorethylene and the material of Body of WCB,the pressure stage stays at ClASS150

Primary Construction, Functions and Features of Ball Valves

(Figure 1)

Fluid-Abrasion Protecting Construction of Valve Seat

(Figure 2)



Sealing construction of spring loading on valve seal

(Figure 3)

Ball Valve is widely used in such fields as petroleum melting,chemical industry,papermaking,pharmaceutical industry,food industry,water power, electric power, city planning,steel,etc.Among them the sulphur-resistance serial ball valve is especially applicable for Natural Gas Long-Distance Transportation features containing sulphurate bydrogen medium,mang impurity and serious corroding.,

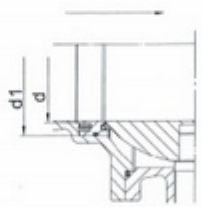
Sealing Construction of Valve Seat

The elastic double-beve seal ring is specially applied in designing the floating ball valve to reduce friction between globe body and seal ring for the reduction of operating physical force. The contact area of the seal ring against the globe body is small when the medium pressure is comparably small as well,therefore the relatively higher specific pressure of sealing would be featured for ensuring the positive sealing,while the area would be correspondingly increasing when the pressure is becoming larger.In this situati on the seal ring can hold thrust force from the medium without being damaged,while the positive sealing state would certainly be maintained.
(As shown in Figure 1)

The specially-designed fluid-abrasion protecting construction of valve seat could effectively prevent the abrasion from liquid medium for the service life of sealing rings if the scouring force by the medium is relatively high.
(As shown in Figure 2)

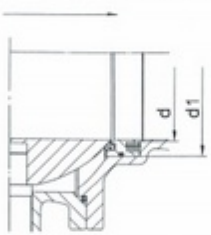
For the ball valve applied in low-pressure,ultra-low-pressure or vacuum operating conditions,the specially-designed sealing construction of spring-loading valve seat would maintain the long-term reliable service of the valve,because the pressure from the medium applied itself could not ensure the positive sealing of the seat while the pre-tightening force wouldbe unavoidabg weakened after long-term performance.
(As shown in Figure 3)

Differentealing measures are provided for choice with regard to diversified pressure required by the fixed-type ball valve:
A: Sealing on Entrance End B: Sealing on Exit End C: Two-Way Sealing on both Entrance and Exit Ends.(As shown in Figure 4)



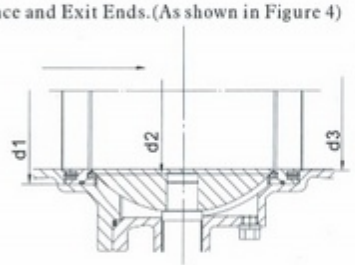
Sealing on Entrance End

The piston effect would be realized through the pressure from head-race medium against the areal difference of d1 to d, thus it would cause intimate con tact from valve seat to globe body until sealed.



Sealing on Exit End

The piston effect would be realized through the pressure from lumen medium of the Body against the areal difference of d1 to d,thus it would cause intimate contact from valve seat to globe body until sealed



Two-Way Sealing

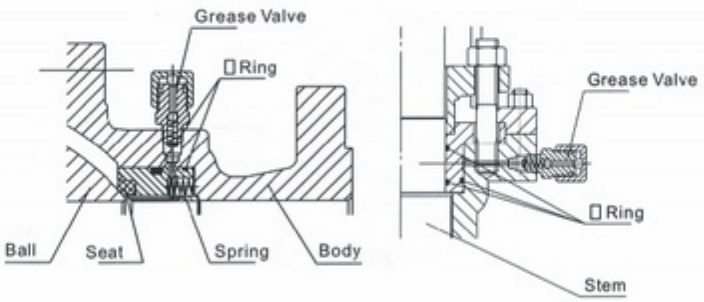
The piston effect would be realized through the pressure from both the head-race medium and the lumen medium of the Body,thus it would cause intimate contact from valve seat to globe body until sealed, because of d1 > d2 > d3 and the areal differences of d1 and d2, and that of d2 and d3

(Fingure 4)

Primary Construction, Functions and Features of Ball Valves

Auxiliary Sealing Construction

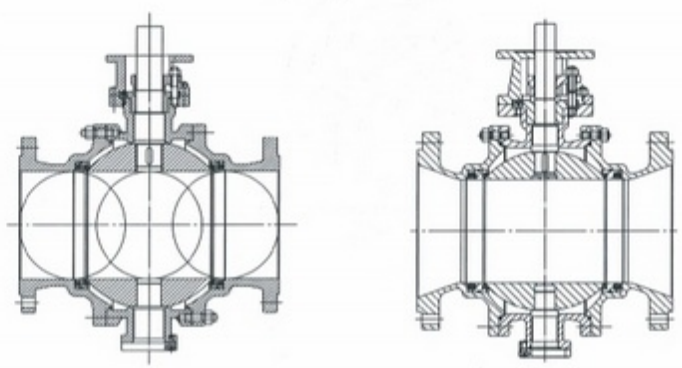
The grease valve could be additionally mounted on those parts require sealing process as valve seat or Stem of the ball valve as required. The sealing grease could be filled in through the grease valve if some leakage should happen caused by scratchings on related sealing place to realize instantaneous sealing effect.
(As shown inFigure 5)



(Fingure 5)

All-Diameter Construction & Crinkled-Diameter Construction for the Ball Valve

The two series of the ball valve,the all-diameter ones and the crinkled-diameter ones,are being provided for the valve as required, With the minimumfluid resistance and facilitated pipeline-cleaning system, the all-diameter ball valve features identical inside diameter of the passage to that of the pipeline while crinkled-diameter construction features much smaller fluid resistance and 30% discunt of less weight than that enjoyed by the cut-off valve ofidentical caliber. With the effectively-reduced production cost and price, thiskind of valve is increasingly enjoying more popularity.(As shown in Figure 6)

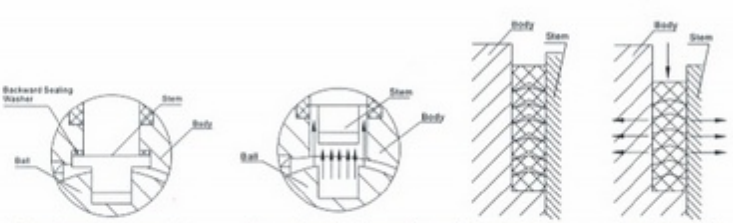


All-Diameter Ball Valve　　Crinkled-Diameter Ball Valve

(Fingure 6)

Extruding-Protection/Valid Sealing Construction for the Stem

Backward sealing construction with lower-loading and sealing washer is provided with the Stem. The sealing force from the backward sealing process would increase in company with the medium pressure inside the valve pocket to maintain the sealing effectiveness of the Stem and ensure that the handle rush out if some abnormal lifting pressure should happen.The V-structure is also associated with the design of the loading material to effectively transfer both of the medium pressure inside the pocket and the locking force on the external gland to the sealing force on the handle.
(As shown in Figure 7)

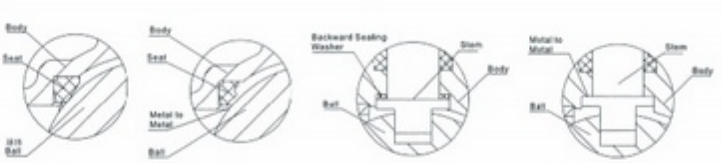


Lower-Loading Construction with Backward Sealing　　Lower-Loading Construction without Backward Sealing　　Before Forcing Against the Stuffing　　Stuffing Forced-Against

(Fingure 7)

Incombustible Construction

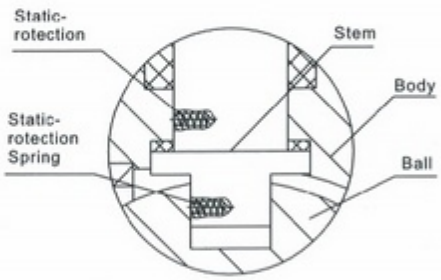
Incombustible construction woulb be provided in designing the ball valve as required.Should seal rings be burned in fire, all the sealing parts of the ball valve would form a kind of hard-sealing construction of metal against metal to effectively stop the pervasion of the medium in the valve and aggravation of the fire.
(As shown infigure 8)



Normal Sealing　　Sealing when Soft-Sealing Burned-Lost　　Normal Construction of Bacr ward Sealing for Stem　　Incombustible Construction on Backward Sealing for Stem

(Fingure 8)

Primary Construction, Functions and Features of Ball Valves



Static-Protecting Construction of Ball Valve

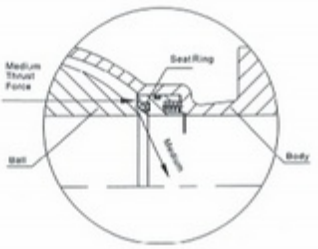
(Figure 9)

Static-Protecting Construction

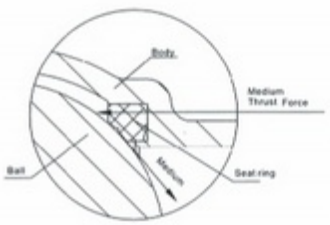
The ball valve could be designed as static-protecting construction as required, namely, mounting conductive spring between the globe body and stem, or between the stem and body. There after the static engendered during opening the valve could be conducted to pipelines then earth through the pre-set static passage to clear static away. The design works to prevent igniting combustible medium by static fire-striking for the system safety.
(As shown in Figure 9)

Auto-Decompressing Construction

The medium in lumen would press the valve seat backwards through its own thrust force to realize auto-decompression for the safety of the Body if some abnominal pressure-rise should happen caused by the gasification of the liquid medium detained in the valve pocket from temperature rise. (As showm in Figure 11)

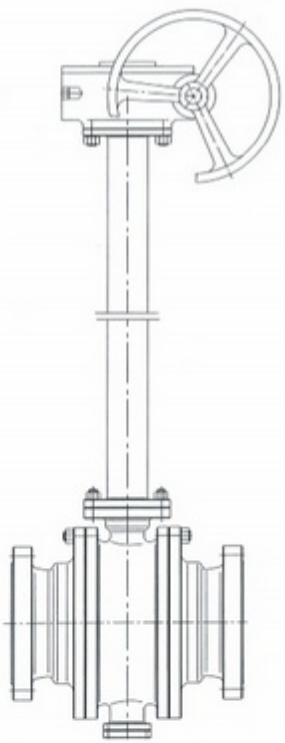


Auto-Decompressing Construction
in Fixed Globe



Auto-Decompressing Construction
in Floating Globe

(Figure 11)



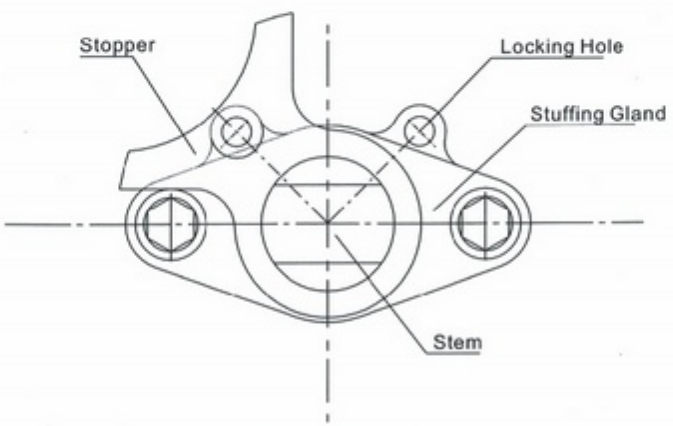
(Figure 10)

Earthing Construction

The ball valve could be designed as lengthened construction of Stem as required for favorable application in places earthing pipelines or installing laying works.
(As shown in Finure 10)

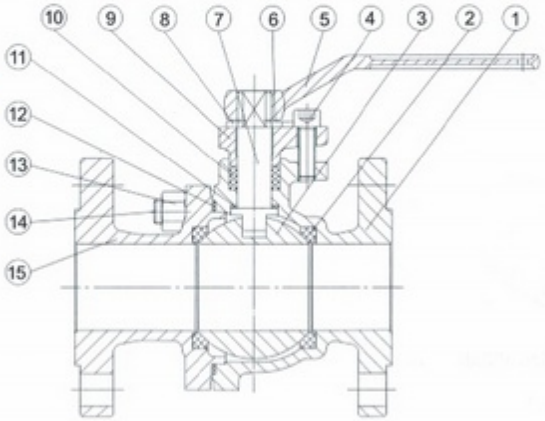
Misoperation-Protecting Construction

Locking holes are provided in the fully-open or fully-close position of the valve to realize locking-up motion for safety should some incorrect operations happen to the valve caused by outdoor installation,maloperation by non-staff, or the valve easy of malfunctioning through the impaction of the handle in the situation with intense vibration.
(As shown in Figure 12)



(Figure 12)

Flange-connection Floating Ball Valve Series



Specifications

Applicable medium: Water, gas, oil product, natural gas and corrosive mediums as acids, alkalis, etc.

Applicable Temperature: -196~350℃

Driving Means:Manual, pneumatic, motor, hydro-dynamic, etc.

Inside Nominal Diameter: DN15~250mm 1/2"~10"

Main Parts and Materials

No.	Accessory name	Material	
		GB	ASTM
1	Body	WCB	A216-WCB
2	Seat	PTEE	PTFE
3	Ball	1Cr18Ni9Ti	SS304
4	Nut	35	A193-B7
5	Wrench	65Mn	A47-667 Gr.32510
6	Ring	65Mn	AISI 1066
7	Stem	1Cr13	A276-410
8	Locating piece	25	A105
9	Gland Packing	WCB	A216-WCB
10	Stuffing	PTFE	PTFE
11	Fix Casket	PTFE	PTFE
12	Gasket	PTFE	Graphite +stainless steel
13	Nut	35	A194-2H
14	Bolt	35CrMoA	A193-B7
15	Bonnet	WCB	A216-WCB

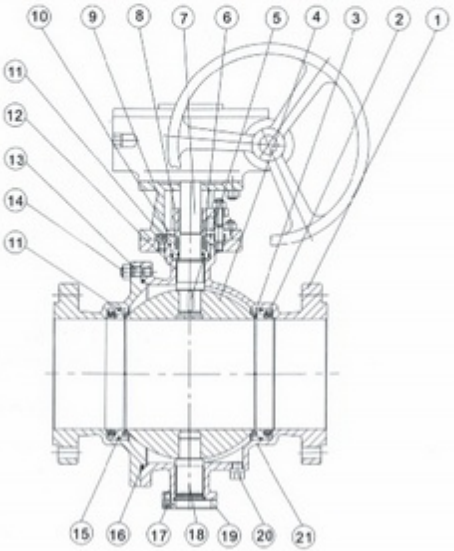
Technical Specification

Design Reference	GB series	API series	
Design Standard	GB/T12237	API6D	ANSI B16.34
Structural Length of Flange-Connection	GB/T12221	API6D	ANSI B16.10
Structural Length (Welding)	GB/T15188.1	API6D	ANSI B16.10
Connecting flange	GB/T9113 JB/T79 HG20592	ANSI B16.5、B16.47	
Butt-welding ends	GB/T12224	ANSI B16.25	
Test & Inspection	GB/T9092	API6D	API598

Test Pressure

Pressure grade		Test pressure(MPa)	
Nominal pressure	Pound(class)	Shell test	Sealing test
1.0	-	1.5	1.1
1.6	-	2.5	1.76
2.5	-	3.8	2.75
4.0	-	6.0	4.4
6.4	-	9.6	7.04
-	150	3.0	2.2
-	300	7.6	5.6
-	600	15.0	11.0
-	10k	2.4	1.5
-	20k	5.8	4.0

Flange-connection Fixed Ball Valve Series



Main Parts and Materials

No.	Accessory name	Material	
		GB	ASTM
1	Boby	WCB	A216-WCB
2	Spring	60Si2Mn	AISI 9260
3	Seat	PTFE	PTFE
4	Ball	1Cr18Ni9Ti	SS 304
5	Key	45	AISI C 1045
6	Stuffing	PTFE	PTFE
7	Stem	1Cr13	A276-410
8	Gland	WCB	A216-WCB
9	Yoke	WCB	A216-WCB
10	Cover	25	A105
11	"0" Ring	Rubber	Rubber
12	Sliding bearing	PTFE & stainless steel	PTFE & stainless steel
13	Stud	35CrMoA	A193-B7
14	Nut	35	A194-2H
15	Seat Ring	25	A105
16	Gasket	Rubber	Viton
17	Screw nial	35	A193-B7
18	Fixed spindle	1Cr13	A276-410
19	Bottom cover	25	A105
20	Blowoff screw	25	A105
21	Bonnet	WCB	A216-WCB

Specifications

Applicable medium: Water, gas, oil product, natural gas and corrosive mediums as acids, alkalis, etc.

Applicable Temperature: -196~350℃
Driving Means:Manual, pneumatic, motor, hydro-dynamic, etc.
Inside Nominal Diameter: DN15~800mm 1/2"~32"

Technical Specification

Design Reference	GB series	API series	
Design Standard	GB/T12237	API6D	ANSI B16.34
Structural Length of Flange-Connection	GB/T12221	API6D	ANSI B16.10
Structural Length (Welding)	GB/T15188.1	API6D	ANSI B16.10
Connecting flange	GB/T9113 JB/T79 HG20592	ANSI B16.5、B16.47	
Butt-welding ends	GB/T12224	ANSI B16.25	
Test & Inspection	GB/T9092	API6D	API598

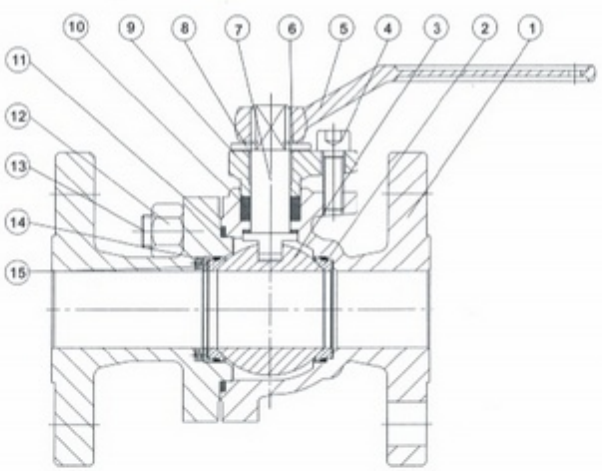
Test Pressure

Pressure grade		Test pressure(MPa)	
Nominal pressure	Pound(class)	Shell test	Sealing test
1.0	-	1.5	1.1
1.6	-	2.5	1.76
2.5	-	3.8	2.75
4.0	-	6.0	4.4
6.4	-	9.6	7.04
-	150	3.0	2.2
-	300	7.6	5.6
-	600	15.0	11.0
-	10k	2.4	1.5
-	20k	5.8	4.0

Flange-connection Stiff Metallic Sealing Series

$Q41_{H}^{Y}$

$Q47_{H}^{Y}$



Construction Features

process through special techniques, the globe body and valve seat are especially applicable for high-temperatures and the medium containing dusts and solid particles.

1.The specially-designed compensatory movable valve seat construction made from metal is of great reliability in its sealing performance.

2.The ball valve series should be applied in accordance to the specified flow direction.

3.Multiple driving devices could be prepared for the series.

Main Parts and Materials

No.	Accessory name	Material	
		GB	ASTM
1	Body	WCB	A216-WCB
2	Seat	1Cr18Ni9Ti	304
3	Ball	2Cr13	A276-420
4	Screw nial	35	A193-B7
5	Wrench	65Mn	A47-667 Gr.32510
6	Ring	65Mn	AISI 1066
7	Stem	1Cr13	A276-410
8	Locating piece	25	A105
9	Gland	WCB	A216-WCB
10	Stuffing	graphite PTFE	graphite PTFE
11	Gasket	graphite+stainlesssteel	B12.10-304/F.G
12	Nut	35	A194-2H
13	Stud	35CrMoA	A193-B7
14	Gasket	1Cr18Ni9Ti	304
15	Spring	60Si2Mn	AISI 9260

Performance Specification of the Products

Pressure Rating		Nominal Pressure(PN)					Pound Grade(Class)			
		1.6	2.5	4.0	6.4	10.0	150	300	400	600
Test Pressure (MPa)	Shell Test	2.4	3.75	6.0	9.6	15.0	3.03	7.5	10.2	15.0
	Pressure Test	1.76	2.75	4.4	7.04	11.0	2.2	5.5	7.48	11.0
Applicable Operating Mode	Applicable Mediums	Pulps like paper pulp, dusts, and medium with solid particles.								
	Applicable Temperature	-196～≤550℃								
Applicable specification	The designing and manufacturing work follows	GB12237-89				API 6D			JPI7S-48	
	Flange dimension according	JB79-59、GB9113、HG20592-97				ANSI B16.5			JIS B2212-2214	
	Physical dimension according	GB12221-89				ANSI B16.10			AIS B2002	
	Test and inspection according					JB/T9092-99			API 598	

SZNAJDER STAHLWAREN

Orbital Ball Valve

Features

1.Non-abrasion design for ob-off. which fully resolves the problem of mulual abrasion affecting sealing performances of sealing surfaces in traditional valves.

2.Uploading comstruction,with which the valves on pipelines could be online checked and repaired directly. Thus the engine-stopping could be effectively minimized to reduce the production cost.

3.Single-seat design, which eliminates those problems affecting safety caused by abnormal temperature-rise from the medium in the lumen of the valve.

4.Low torsional moment design, with which the Stem with specially-designed structure could be opened or shut down with merely a small hand-whcel valve.

5.Wedge-type sealing construction.Traditionally the valve would be sealed through the mechanical force provided by the Stem to wedge-press the ball onto the valve seat.With this design,the sealing performance of the valve would never be influenced by the fluctuation of the pressure differences in pipelines and the performance would be reliably maintained under all the operating modes.

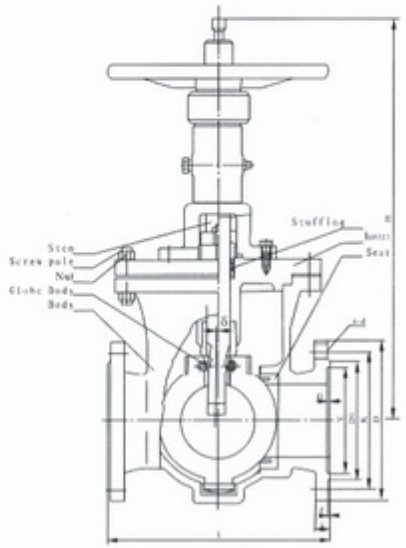
6.Self-purging construction of sealing surfaces.The fluid inside the pipeline would pass through evenly by 360º along the sealing face on the globe body when the Body sidingly leaves the seat. This design not only climinates the scouring on parts on the valve seat by high-speed fluid, but also washes away the piled-up matters on the surface to realize self-purging.

Operating Principle

① Rotate the hand-wheel clocd wisely while the valve stays at full-open state.Afterwards the Stem begins to move downwards and brings along the globe body to rotate under the concerted running of valve stem nuts and blocd bearing.	② Continuously rotate the hand-wheel, and then the cam-slot track with fine helical-curve would mutually interact with the guide finger embedded inside the track toceaselessly drive the globe body rotate clockwisely with the Stem.	③ When the valve is about to shut-down,the Stem would bring along the globe body to rotate for 90& ordm;under the condition that the two parts completely bears no abrasion against the sealing surface of the seat.	④ Continue to rotate the hand-wheel,and then the again-desc-ended Stem would mechanically press the globe body to make it closely conta ct with the seat. Thus the sealing effect would be realized.
			
⑧Continuously rotate the hand-wheel, as long as the Stem rises to the limiting position, at this time,the ball has also reversed along with the handle for 90& ordm; and the valve has already stayed at the fullopen position.	⑦When the valve is about to open, the cam-slot track with fine helical-curve would mutually interact with the guide finger embedded inside the track to ceaselessly drive the gobe body rotate counter-clockwisely under the condition that the mentioned parts completely bears no abrasion against the sealing surface of the seat.	⑥Continuously rotate the hand-wheel, hereafter the Stem would bring along the globe body sidingly leave the seat while going-up.	⑤Rotate the hand-wheel counter-clockwisely while the valve stays at the full-closed position.Therefore the handle would go up and drive the globe body to rotate under the concerted work by valve stem nuts and the block bearing.

Orbital Ball Valve

SZNAJDER STAHLWAREN



Technical Specification

Design Reference	GB	API
Structural Length	B/ 7745 GB/ 12221	NSI B16.10
Connecting Flange	GB/T 9113 JB/79	ANSI B16.5
Butt-welding cnds	HG20592GB/T 12224	MSS SP 44 ANSI B16.25
Test & Inspection	JB/T 9092	API 598

Main Parts and Materials

Main types	Accessory name	Materials			
F GQ40Y H	Body, bonnet	WCB	ZG1Cr5Mo	ZG1Cr18Ni9Ti	ZG1Cr18Ni12Mo2Ti
	Ball	2Cr13	1Cr18Ni9Ti	1Cr18i9Ti	1Cr18Ni12Mo2Ti
	Stem				
	Sealing surface	Cemented Carbide Allov steel			
	Guide finger	2Cr13 40CrMn			
	Stem nut	Cast manganese brass			
F Gq41 Y H	Bolt	35		1Cr18Ni9Ti	
	Nut	35 45			
	Stuffing	PTFE Graphite ring			
	Gasket	Graphite wrap-gasket Graphite combined gasket			
	Handle	Able to forge iron			

Performance Specification of the Products

Pressure grade (Mpa)	Test pressure (Mpa)		Suitble environment
	Shell test	Sealing test	
1.6	2.4	1.76	The occasions such as it is inflammablc, casy to exploit,easy to volatilize,easy to get together,and hypertoxic occasion,etc.
2.5	3.75	2.75	
4.0	6.0	4.4	
6.4	9.6	7.04	
Class 150	2.94	2.2	
Class 300	7.5	5.5	
Class 600	15.0	11.0	
Applicable temperature	-196℃～⩽550℃		
Applicable medium	Water, oil, natural gas, afl kinds of soft mediums and susrension, etc.		
Driving manner	Manual,Motor driving, Pneumatic		

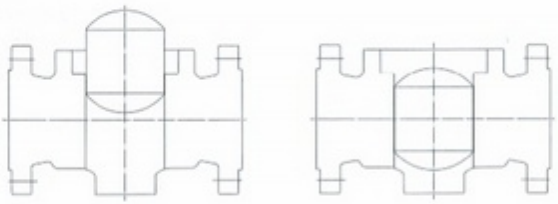
Main Form of Connecting Dimension

Class	Main Dimension	Nominal diamter (mm)															
		25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500
PN1.6MPa	L	160	180	200	230	290	310	350	400	480	600	730	850	980	1100	1200	1250
	H	240	260	307	360	410	483	512	543	581	617	672	723	758	791	828	870
	Kg	9.5	16	19	28	30	41	55	78	115	215	270	385	502	876	980	1240
PN2.5MPa	L	160	180	200	230	290	310	350	400	480	600	730	850	980	1100	1200	1250
	H	260	280	320	360	430	490	525	567	604	642	695	742	781	815	864	905
	Kg	9.5	16	19	28	30	45	59	82	121	230	289	402	540	913	1120	1280
PN4.0MPa	L	160	180	200	230	290	310	350	400	480	600	730	850	980	1100	1200	1250
	H	260	280	320	360	436	492	527	607	649	701	750	750	790	832	875	910
	Kg	10	17	20	25	32	45	59	82	115	230	295	402	540	913	1124	1348
PN6.4MPa	L	160	180	200	230	290	310	350	400	480	600	730	850	980	1100	_	_
	H	280	300	329	365	450	509	541	663	725	781	790	806	821	858	_	_
	Kg	10	17	20	25	32	52	68	106	168	281	355	498	689	1134	_	_
150Lb	L	127	140	165	178	190	203	229	356	394	457	533	610	686	762	864	914
300Lb	L	165	178	190	216	241	283	305	381	403	502	568	648	762	838	914	991
600Lb	L	216	229	241	292	330	356	432	508	559	660	787	838	889	991	1092	1194

Top Entry Trunnion Mounted Ball Valve

Adopt standard

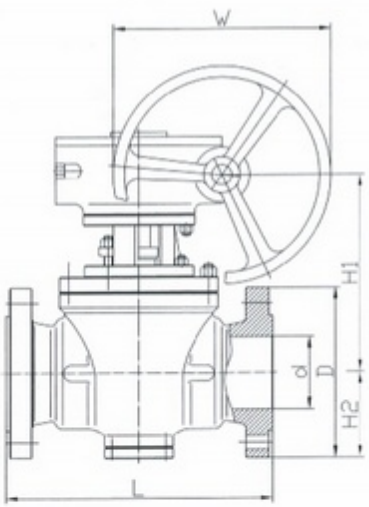
Design manufacture according to API 6D、ASME B16.34
Inspection and test to API 598
Flang to ASME B16.5、DIN2543-2550、JB/T79.4
Material to NACE MR0175
Fire safe as per API 607、API 6FA



The ball is fitted into the valve body from the top, thus for repair work.

Seat inter-rolled can be to prevent the seat inserts being washed out.

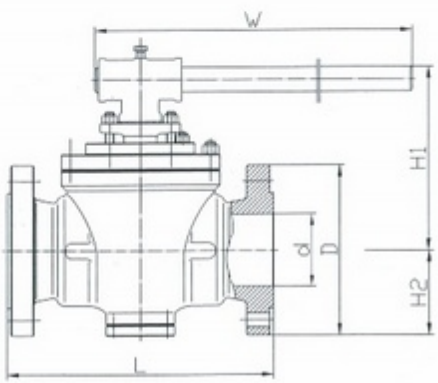
F.S. design of seat-assistant, Body chamber greased urgency when firing.



Main Types and Connecting Dimension

Class 150

Size	G	L	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	292	170	76	285	46
3	76	356	21	95	285	83
4	102	432	250	115	400	156
6	152	559	265	140	*400	256
8	203	660	355	172	*400	453
10	254	787	385	203	*600	622
12	305	838	400	242	*600	747
14	337	889	450	267	*600	959
16	387	991	510	299	*600	1220
18	438	1092	565	318	*600	1640
20	489	1194	620	349	*600	2118
24	591	1397	680	407	*700	2950



Class 300

Size	G	L	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	292	170	83	285	49
3	76	356	21	105	285	87
4	102	432	250	127	400	164
6	152	559	265	159	*400	272
8	203	660	355	191	*500	479
10	254	787	385	222	*600	657
12	305	838	400	261	*600	783
14	337	889	450	292	*600	1007
16	387	991	510	324	*600	1281
18	438	1092	565	256	*700	1722
20	489	1194	620	388	*700	2224
24	591	1397	680	457	*760	3100

Powder-Coal Ejection Ball Valve

SZNAJDER STAHLWAREN

Construction Features

The Air operated ball valve series are designed for controlling the powders containing dusts or solid bodies, especially for those fields or systems as coal-powder injection in high-furnace, airflow lines, lance lines, etc.

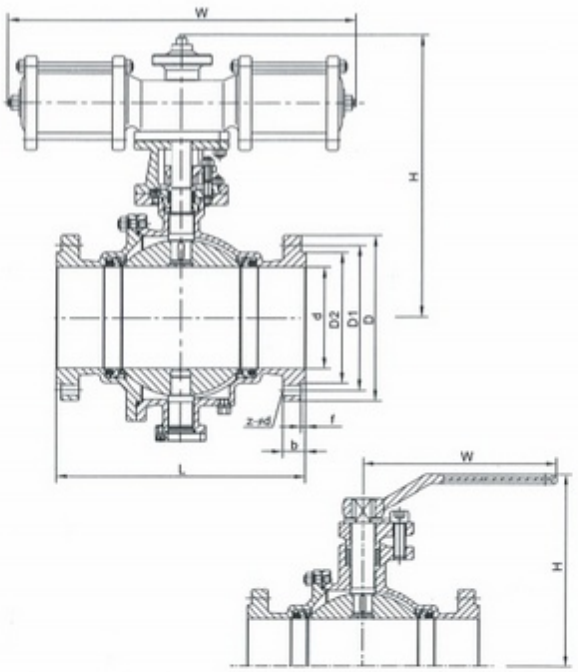
1.Wear-auto-compensation equipment is applied with the valve seat to effectively ensure the sealing performance of the valve.

2.The seal ring made from exotic materials features such spec ialties as high-temperature resistance,abrasion-resistance, long service-life, etc.

3.The valve bears those characteristics like compact structure,flexible on-off, and convenient method for installation and maintenance.

Nominal pressure	1.6Mpa
Shell Test Pressure	2.4Mpa
High-Pressure Liquid Sealing	1.76Mpa
Low-Pressure Hermetic Sealing	0.6Mpa
Applicable Temperature	-28~300℃
Applicable Mediums	Dusty gases,Powder coal,etc.
Structural length follows	GB1221-89
Flange Dimension follows	GB9113、JB79-59
Test and Inspection follows	JB/T9092-99
Driving manner	Manual/Pneumatic

Form of Main Types and Connecting Dimension



PN(MPa) Nominal pressure	DN(mm) Nominal diameter	Dimension(mm)				
		L	W		H	
			Manual	Pneumatic	Manual	Pneumatic
1.6	25	180	140	235	90	298
	32	200	155	235	107	304
	40	220	250	330	127	370
	50	220	250	330	140	376
	65	241	350	400	164	425
	80	283	350	510	177	484
	100	305	420	510	206	531
	125	356	700	580	292	570
	150	394	1000	720	320	570
	200	457	-	720	-	610
	250	533	-	900	-	670
	300	610	-	1050	-	740
	350	686	-	1290	-	790
	400	762	-	1600	-	905

Please refer to the sample book of Form of Main Types and Connecting Dimension for other connection dimensions.

Main Parts and Materials

Accessory name	Materials
Body,bonnet	WCB
Globe Body,seat	ICr18Ni9Ti+Hard chrome
Stem	2Cr13
Sealing ring	Special wearing-resisting and high-temperature resistance tetraf luorine
Bolt	Medium Carbon stell

SZNAJDER STAHLWAREN

Special Ball Valves in Series for Energy-Saving Coke Oven

Features

The valve series are especially applicable for the high/low-temperature conversion course in such fields as the ammonia water in coke ovens or the injection circulating system in coke plants.

1.The connection dimension of the valve is identical to that of the above-mentioned 3-way ball valve for convenient replacement.

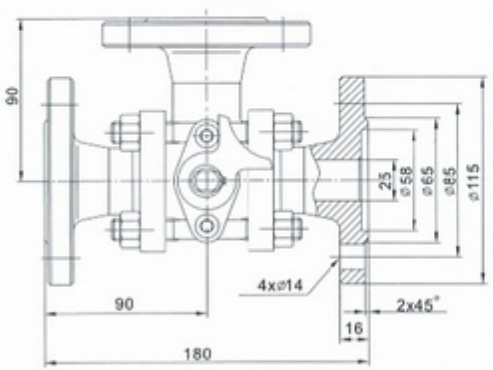
2.The specially-designed seal ring made from strong polytetrafluoroethylene with much greater abrasion strength could obviously enhance the service life of the ring.

3.The special interior structure applied not only reduces the production cost but also simplifies the processing and maintenance work.

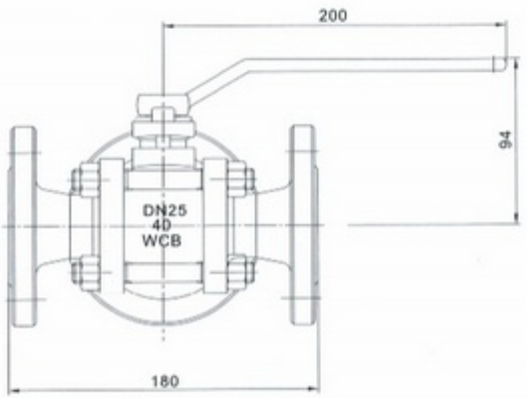
4.The lower-loading Stem with backward sealing construction not only prevents the handle form backing-out but also ensures the reliability of the scaling part of the handle.

5.With compact structure in configuration,the specially-designed 3-part feature makes the valve much more perfect.

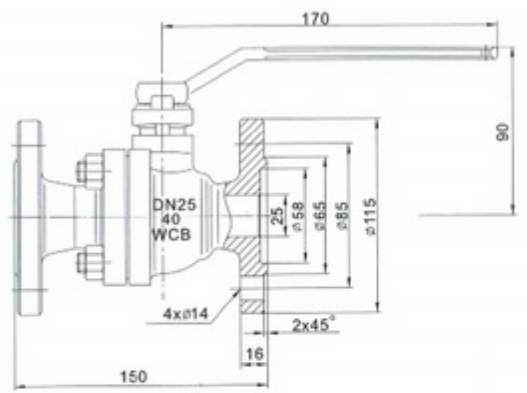
Main Connecting Dimension



Q44M-40



Q41F-40



Product type	Accessory name	Accessory material
Q44M-40DN25 Q41F-40DN25	body,Bonnet	WCB
	Ball	1Cr18Ni9Ti
	Stem	2Cr13
	Sealing ring	RPTFE
	Stuffing	V-shaped PTFE

PN(MPa) Nominal pressure	Test pressure (Mpa)		
	Shell	High-pressure liquid sealing	Low-pressure hermetic sealing
4.0	6.0	4.4	0.6
Applicable temperature	≤150℃		
Applicable medium	Liquid ammonia, etc.		

Pipeline Ball Valve for Long-Distance Transportation

SZNAJDER STAHLWAREN

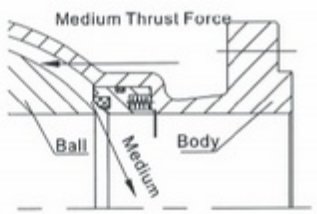
Features

The ball valve is designed according to the demands from the customers to meet the requirements for cracking-resistance from sulphur stress under sulfidizing environment. Therefore under this requirement we strictly is according to the standards concerned of NACE-National Association of Corrosion Engineer in the designing, material-selecting,manufacturing, testing, surface-treating and lacquer-finishing processes.

The ball valve series not only bears wide range of selected materials, furthermore, the internal components of the valve are all nickel-plated on surfaces or made from the material 316, and the seal ring is made from the special polymeric material. Therefore the valve not only features favorable anti-corrosion and sulfide-resistance capacity, the fine fire-proofing, static-prevention and sealing performance are also enjoyed by it. With wide range of Suitable pressure and temperature, the valve feature both all-diameter types and crinkled-diameter ones with diversified applicable driving units. It is indeed a kind of ideal choice in chemical industry,petroleum refining industry, the mining and conveying system of natural gas, etc.

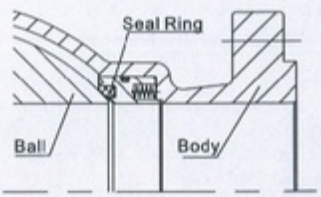
Main Functions

Auto Pressure-Relief



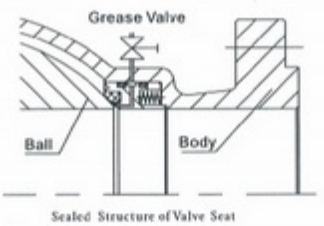
The pressure from medium would press the valve seat of from globe body to make auto-decompression a realization when the pressure of the medium remained in the lumen of the valve increases abnormally caused by temperature shift. The seat automatically reset after decompression.

Fire-Resistive Constion Normal Sealing



The valve is stall reliable on occasion of fire hazard happens or the seal ring on the valve seat burned ot softened caused by abnormal temperature -rise.Meanwhile, the contact of metal against metal by the seat and globe body would be made up to realize temporary sealing measures to prevent the fire from expanding. This course fully meets the specification of AP16FA.

Auxiliary Sealing Construction

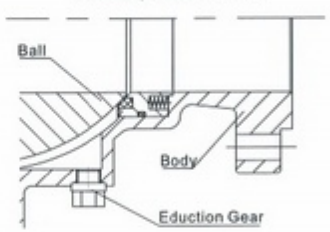


Sealed Structure of Valve Seat

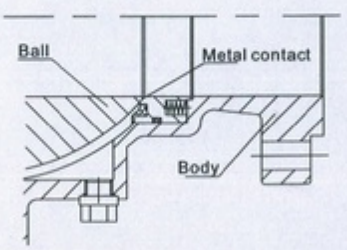
Sealed Structure of Valve Seat

Besides normal sealing measures, the specially-mounted auxiliary sealed construction on the valve seat can work to first-aid the leakage caused by the damage of the seal ring.

Draining Construction

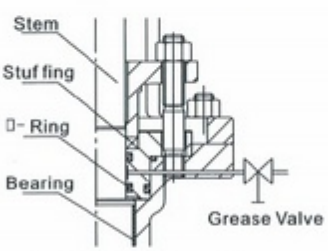


After the eduction gear being screwed-off,the valve seat could be checked for leakage,and the retained matter in the lumen would also be vented to reduce the medium from polluting the valve. When the valve stays at full-open or full-closed position under operating mode, the stuffing box on Stem could be replaced.



Sealing while valve seat Burned-loss

Sealing Construction of Stem

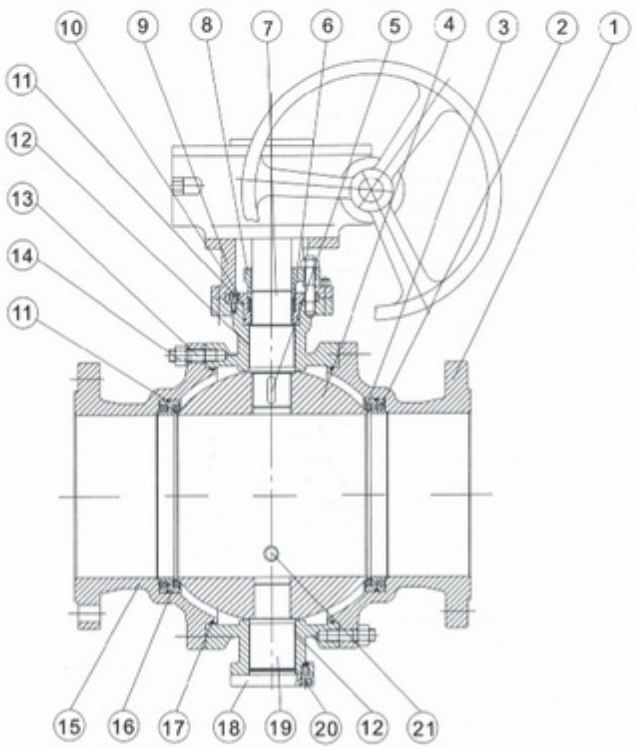


Sealing Construction of Stem

The double-sealing of stuffing PTFE and O-ring is applied for sealing the part of Stem,thus this measare is especially applicable for gaseous medium. The high-quality self-lubricating bearing SF is utilized on the motion parts of the handle to minimize the coefficient of friction and reduce operating physical force.

SZNAJDER STAHLWAREN

Pipeline Ball Valve for Long-Distance Transportation



Main Parts and Materials

N0.	Accessory name	Material	
		GB	ASTM
1	Body	WCB、A105	A182 F316
2	Spring	60Si2Mn	316
3	Seat		RPTFE
4	Ball	A105+ENP	A182 F316
5	Key	45	316
6	Stuffing	PTFE	PTFE
7	Stem	2Cr13+ENP	316
8	Gland	WCB	A216-WCB
9	Yoke	WCB	A216-WCB
10	Cover	A105	316
11	"O" Ring	Rubber	Rubber
12	Sliding bearing	PTFE& stainless steel	316+PTFE
13	Stud	35CrMoA	316
14	Nut	35	316
15	Bonnet	WCB	A276-410
16	Seat Ring	A105+ENP	316
17	Gasket	Graphite+stainless steel	Graphite+316
18	Bottom cover	A105	316
19	Fixed spindle	1Cr13	A216-WCB
20	Screw nial	35	316
21	Blowoff screw	25	316

Main Performance and Specification

PN(MPa) Nominal pressure	The highest using pressure	Test pressure			Pressure class	The highest using pressure	Test pressure		
	(Mpa)	Shell	High-pressure liquid sealing	Low-pressure hermetic sealing		(Mpa)	Shell	High-pressure liquid sealing	Low-pressure hermetic sealing
1.6	1.6	2.4	1.76	0.6	CLASS150	1.94	2.94	2.16	0.6
2.5	2.5	3.75	2.75		CLASS300	5.1	7.67	5.62	
4.0	4.0	6.0	4.4		CLASS600	10.2	15.3	11.23	
6.4	6.4	9.6	7		CLASS900	15.1	23	16.85	
10.0	10.0	15	11		CLASS1500	25.1	37.5	27.5	

Applicable specification	Physical dimension follows	CB12221-89 ANSI B16.10
	Flange dimension follows	JB79-59 GB 9113 HG20592-97 ANSI B16.5
	Weding standard follows	CB12224-89 ANSI B16.25
	Test and inspection follows	JB/T 9092-89 API 598
Applicable Operating Mode	Applicable medium	Natural gas, liquefied gas, petroleum and other medium
	Applicable temperature	-28℃～≤150℃
	Driving manner	Worm gear, air operated, electric driving, combined air and hydraulic driving, etc.

Please refer to the sample book of form of Main Types and Connecting Dimension for particular installation dimension

V-shaped Regulation Ball Valve

SZNAJDER STAHLWAREN

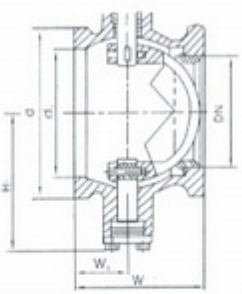
Features

The structures with cylindrical spring-loaded compensatory metal valve seat possess reliable seating performance, the spool will not be blocked or fallen off from the valve seat, with long service life.

There is shearing action between the V-shaped notch on the spooland the metal valve seat ,especially suitable for controlling the mediums such as high viscosity,containing-fibres,solid partioles and serous luid etc,It ismore superior to control paper pulp of paper industry.

Big flow of the valve,small pressure lost,the medium will not depsit in the inner cavity of the valve,he valve not only possesses the Chara Cteristic of approximate percentage flow,big adjustable scope,the maximum adjustable ration of 100:1,but also possesses the functions of accurate adjustment and reliable positioning.

This valve series can be disposed with multiple modes of drive.



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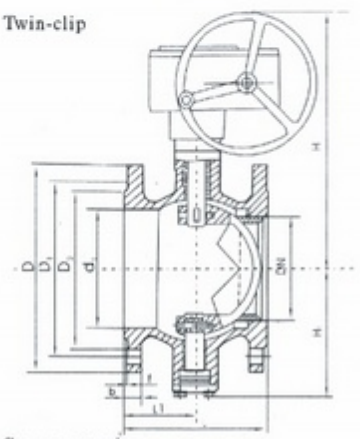

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Form of Main Parts and Materials

Accessory name		
Body、Bonnet	WCB	CF 8
Sealing Ring	2Cr13+Nitriding	304+Nitriding
Ball	2Cr13+Hard chrome	304+Hard chrome
Seat、Stem	2Cr13	304
Gasket	Graphite+stainless steel	Graphite+stainless steel
Dual-head double-screw bnlt	35CrMoA	1Cr18Ni9Ti

Performance Specification of the Products

PN (Mpa) Nominal pressure	Test pressure(MPa)		Applicable medium	Applicable temperature
	Shell test	Sealing test		
1.6	2.4	1.76	The medium&such as water,oil,gas,and the solid grain with high viscosity and containing fibers,etc.	-28℃~550℃
2.5	3.75	2.75		
4.0	6.0	4.4		

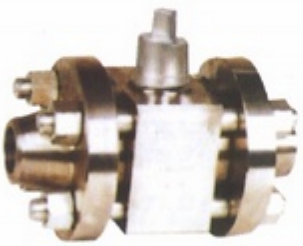
Applicable specification		
	Connecting flange	JB79-59 GB9113 HG20592-97 AMSI B16.5
	Test and inspection	JB/T9092-99 API 598

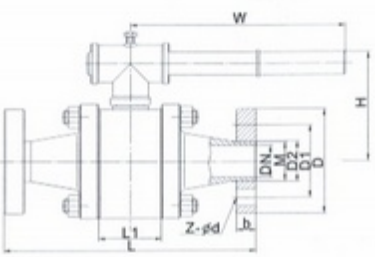
Main Type Dimenson

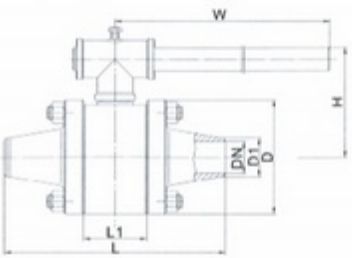
Nominal pressure	Nominal diameter		Dimension(mm)								
	(mm)	(In)	W	L	W1	L1	d	d1	H1	H	D D1D2
PN1.6MPa	25	—	50	—	25	—	64	38	57	200	Please refer to the sample book of Form of Main Types and Connecting Dimension.
	40	—	60	—	25	—	82	49	63	205	
	50	—	75	124	32	62	100	60	92	225	
	65	—	85	145	38	72.5	120	75	100	235	
	80	—	100	165	45	82.5	131	89	108	260	
	100	—	115	194	50	97	158	113	117	270	
	125	—	135	210	55	105	180	140	140	320	
	150	—	160	229	65	114.5	216	164	177	340	
	200	—	200	243	80	121.5	268	205	200	390	
	250	—	240	297	92	148.5	326	259	252	420	
	300	—	—	338	—	169	—	300	270	510	
PN2.5MPa	25	—	50	—	25	—	64	38	57	200	
	40	—	60	—	25	—	82	49	63	205	
	50	—	75	124	32	62	100	60	92	225	
	65	—	85	145	38	72.5	120	75	100	235	
	80	—	100	165	45	82.5	131	89	108	260	
	100	—	115	194	50	97	158	113	117	270	
	125	—	135	210	55	105	180	140	140	320	
	150	—	160	229	65	114.5	216	164	177	340	
	200	—	200	243	80	121.5	268	205	200	390	
	250	—	240	297	92	148.5	326	259	252	420	
	300	—	—	338	—	169	—	300	270	510	
CLASS150	25	1	50	—	25	—	65	38	57	200	
	40	1 1/2	60	—	25	—	84	49	63	205	
	50	2	75	124	32	62	102	60	92	225	
	65	2 1/2	85	145	38	72.5	121	75	100	235	
	80	3	100	165	45	82.5	134	89	108	260	
	100	4	115	194	50	97	172	113	117	270	
	125	5	135	210	55	105	196	140	140	320	
	150	6	160	229	65	114.5	221	164	177	340	
	200	8	200	243	80	121.5	278	205	200	390	
	250	10	240	297	92	148.5	333	259	252	420	
	300	12	—	338	—	169	—	300	270	510	

SZNAJDER STAHLWAREN

High-Pressure Forged-Steel Ball Valve







Features

1.All the components are forged ones.

2.Lower-loading Stem and backwardsealing construction have been setup forpositive sealing at stuffing position and backing-out protecting of the handle.

3.Interbedded valve seat is applied onwhose bace RO-ring is also mounted for avoiding the leakage of medium.

Main Parts and Materials

Accessory name	Material	
	GB	ASTM
Body,bonnet	WCB	A216-WCB
Sealing Ring	Nylon	Nylon
Ball	1Cr18Ni9Ti	SS 304
Seat、Stem	2Cr12	A246-416
O ring	RUBBER	RUBBER
Dual-head double-screw bolt	35CrMoA	A193-B7

Main Performance Specification

PN(MPa) Nominal diameter	Test pressure(mpa)		
	Shell	High-pressure liquid sealing	Low-pressure hermetic sealing
16.0	24	17.6	0.6
32.0	48	35.2	
Applicable temperature		-40~80℃	
Applicable medium		Water, oil products, nitrogen, ammonia, hydrogen, and liquefied gas, etc.	

Form of Main Types and Connecting Dimension

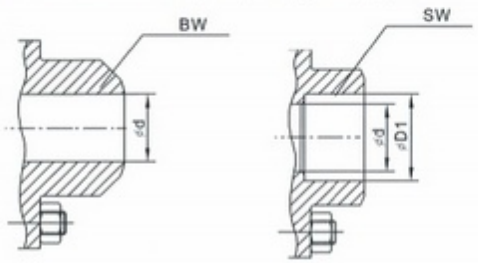
PN(MPa) Nominal diameter	DN(mm) Nominal pressure	Main dimension (mm)														
		L		L1		D		D1		H		W	M	D2	b	Z-Φd
		Flange	Butt-welding	Flange	Butt-welding	Flange	Butt-welding	Flange	Butt-welding	Flange	Butt-welding		Flange			
16.0	10	210	150	52	60	95	90	60	18	77	58	220	M24×2	18	20	3-Φ18
	15	230	170	62	70	95	100	60	23	85	62	220	M24×2	20	20	3-Φ18
	20	240	190	73	80	105	110	68	29	94	75	250	M33×2	28	20	3-Φ18
	25	260	205	77	95	105	115	68	36	100	80	250	M33×2	28	22	3-Φ18
	32	300	230	100	110	115	150	80	43	120	96	300	M42×2	38	24	4-Φ18
	40		260	110	120	165	170	115	49	150	111	400	M52×2	48	30	6-Φ26
	50	400	330	130	140	165	200	115	61	165	128	450	M64×3	58	32	6-Φ26
	65	490	360	140	150	200	225	145	80	180	180	500	M80×3	74	40	6-Φ29
	80	580	380	150	160	225	270	170	105	200	200	600	M24×2	94	50	6-Φ33
	100	620	430	178	188	260	320	190	118	245	245	800	M125×4	115	60	6-Φ36
32.0	10	210	150	52	60	95	90	60	18	77	58	220	M24×2	18	20	3-Φ18
	15	230	170	62	70	105	100	68	23	85	62	220	M33×2	28	20	3-Φ18
	20	240	190	73	80	105	110	68	29	94	75	250	M33×2	28	20	3-Φ18
	25	260	205	77	95	115	115	80	36	100	80	250	M42×2	35	25	4-Φ18
	32	300	230	100	110	135	150	95	43	120	96	300	M52×2	41	30	4-Φ22
	40	350	260	110	120	165	170	115	49	150	111	400	M64×3	47	35	6-Φ26
	50	400	330	130	140	200	200	145	61	165	128	450	M80×3	70	40	6-Φ29
	65	490	360	140	150	225	225	170	80	180	180	500	M100×3	90	50	6-Φ33
	80	580	380	150	160	260	270	195	105	200	200	600	M125×4	112	55	6-Φ36
	100	620	430	178	188	300	320	235	118	245	245	800	M155×4	135	65	8-Φ36

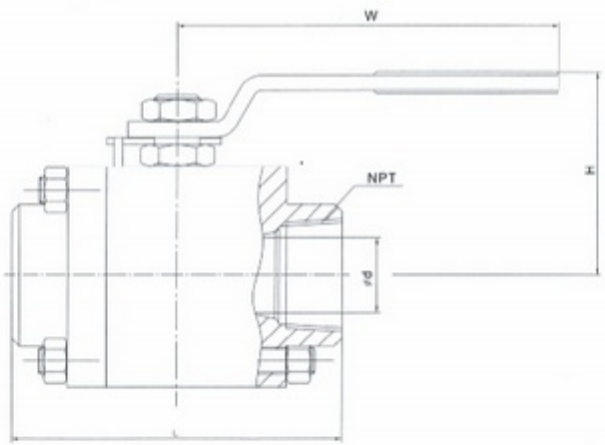
3PCS Forged Steel Ball Valves

SZNAJDER STAHLWAREN

Application standards

1、Design and manufacture conform to BS5351 MSS SP-118;
2、Connection ends conform to:
 1)Scoket wdled ends conform to ANSI B16.11;JB/T1751
 2)Screw ends conform to ANSI B16.11;JB/T1751
 3)Butt-welded ends conform to ANSI B16.25;JB/T12224
 4)Flanged ends conform to ANSI B16.5;JB79
3、Test and inspection conform to:API 598;GB/T13927;JB/T9092
4、Structure features:Bolted bonnet; three-piece
5、Materials conform to ANSI/ASTM
6、Main materials:A105;LF2;F304(L);F316(L);F51.





Form of Major Patrs Materials

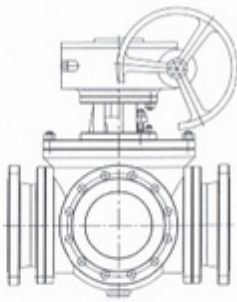
N0.	Accessory name	Material	
1	Body	A105	F304
2	Sealing Ring	APTFE & PEEK	
3	Ball	F6	F304
4	Stem	410	304
5	O-ring	VITON	
6	Gasket	PTFE	
7	Bolt	B7	B8
8	Nut	2H	8
9	Flat nut	8	

Main Types and Connecting Dimension

Class 800、1500

F.P	1/4	3/8	1/2	3/4	1	1¼	1½	2
L	92	92	92	111	127	140	152	152
d CL800 CL1500	6 6	9 9	13 13	19 18	25 23	32 28	38 35	49 49
H	70	70	70	80	80	105	105	115
W	125	125	125	215	215	250	250	290
Weight(Kg)	2.5 2.5	2.4 2.4	2.3 2.5	3.4 3.7	5.4 5.8	6.4 6.8	11 11.5	13 13.7

Flang-Connection Four-Way Ball Valve



Features

Four-way direction changeable ball valve is a kind of ball valve with X-pattern vertical bore.It s feature is, the ball valve s two bores are arranged to be X-pattern ,and its four bores are connected to each other two of adjacent bores can be connected to each other.

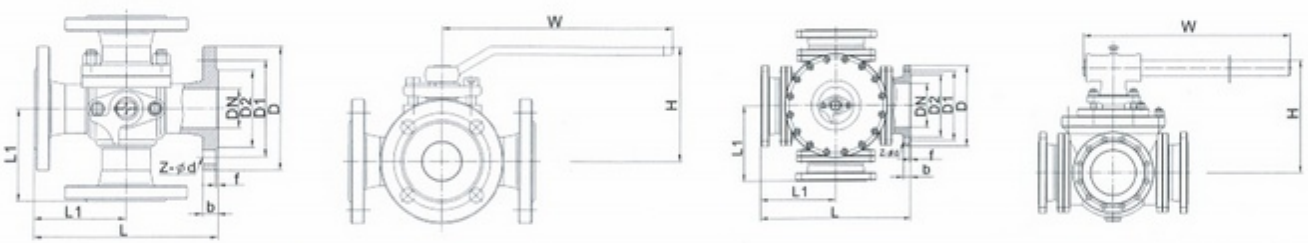
This ball valve can be equipped with several types of operation device.

Main Patrs and Materials

Accessory name	Material	
	GB	ASTM
Body,bonnet	WCB	A216-WCB
Sealing Ring	PTFE、Counterpoint polyphenyl	PTFE、Counterpoint polyphenyl
Ball	1Cr18Ni9Ti	SS 304
Seat、Stem	2Cr13	A246-416
Dual-head double-screw bolt	35CrMoA	A193-B7

Main Performance Spcification

PN(MPa) Nominal diameter		Test pressure		
		Shell	High-pressure liquid sealing	Low-pressure hermetic sealing
1.6		2.4	1.76	0.6
2.5		3.75	2.75	
4.0		6.0	4.4	
CLASS150		3.0	2.2	
Applicable Operating Mode	Applicable medium	Non-corrosion medium such as water, oil products,and gas, etc,and nitric acid corrosion medium.		
	Applicable temperature	-28～350℃		
Applicable specification	Connecting flange	JB79-59、GB9113、HG20592-97、ANSI B16.5		
	Test and inspection	GB9/T 9092-99、API 598		
Other manufacturing standard is according to the standard of our factory.				



Form of Main Types and Connecting Dimension

Nominal pressure	Main dimension	DN(mm/in) Nominal diameter											
		15/1/2"	20/3/4"	25/1"	32/1 1/4"	40/1 1/2"	50/2"	65/2 1/2"	80/3"	100/4"	125/5"	150/6"	200/8"
PN1.6MPa	L	150	150	180	200	220	240	260	280	320	380	440	550
PN2.5MPa	L1	75	75	90	100	110	120	130	140	160	190	220	275
PN4.0MPa	H	90	90	102	115	135	140	155	185	210	275	305	335
CLASS150	W	140	140	155	250	250	350	350	420	700	1000	1300	1800
Please refer to the sample book of Form of Main Types and Connecting Dimension for other flange dimensions.													

Flange-Connection L-Shaped (T-Shaped)Three-Way Ball Valve

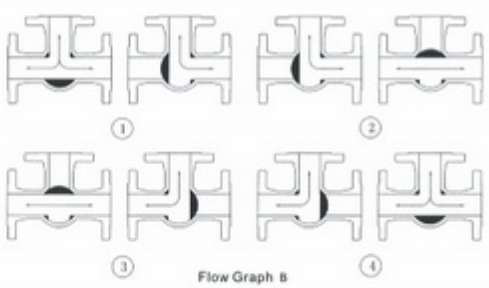
SZNAJDER STAHLWAREN

Four-Seat Design

Double-Seat Design

Nominal diameter: DN15~200mm 1/2"~16
Nominal pressure: PN1.6~4.0Mpa CLASS:150Lb

Flow Graph A



Flow Graph B

Features

1. In the double-seat sealing design, the 3-way ball valve enjoys compact structure,goodly configuration and favorable sealing performance. The valve could make a realization the switching of flow direction of the medium inside the pipeline, furthermore, it also could connect or shut-down the two orthogonal passages.(As shown in Flow Graph A)

2.In the 4-seat sealing design, the 3-way ball valve enjoys reasonable, compact structure and goodly configuration. The valve could not only make a realization the switching of flow direction of the medium inside the pipeline, but also connect the 3 passages on another. Meanwhile, the valve also features the capacity of shutting-down one of the 3 passages while connecting the other 2 ones for the flexible control of the convergent flow or shunting of the medium in pipelines.(As shown in Flow Graph B)

Main Performance Spcification

PN(MPa) Nominal diameter		Test pressure		
		Shell	High-pressure liquid sealing	Low-pressure hermetic sealing
1.6		2.4	1.76	0.6
2.5		3.75	2.75	
4.0		6.0	4.4	
CLASS150		3.0	2.2	
Applicable Operating Mode	Applicable medium	Non-corrosion medium such as water, oil products, and gas, etc,and nitric acid corrosion medium.		
	Applicable temperature	-28~350℃		
Applicable specification	Connecting flange	JB79-59、GB9113、HG20592-97、ANSI B16.5		
	Test and inspection	GB9/T 9092-99、API 598		
Other manufacturing standard is according to the standard of our factory.				

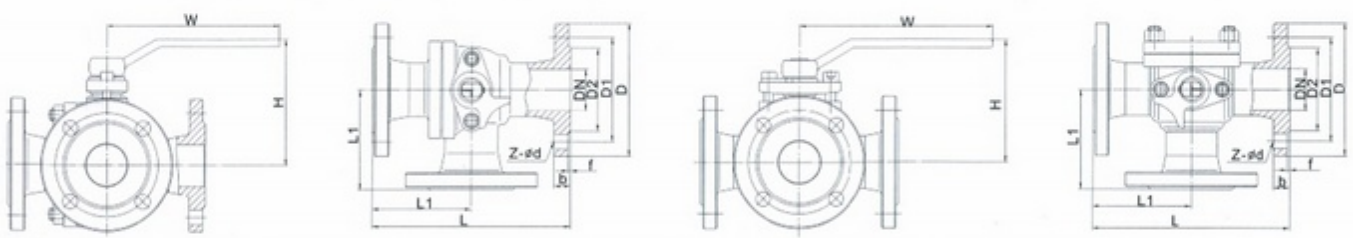
Main Patrs and Materials

Accessory name	Material	
	GB	ASTM
Body,bonnet	WCB	A216-WCB
Sealing Ring	PTFE、Counterpoint polyphenyl	PTFE、Counterpoint polyphenyl
Ball	1Cr18Ni9Ti	SS 304
Seat、Stem	2Cr13	A246-416
Dual-head double-screw bolt	35CrMoA	A193-B7

Remarks:

Double-seat configuration design is generally utilized for 3-way ball valve as shown in the 2 operating conditions in Flow Graph A which apply the L-Shaped construction with double-seat(Type Q44).With regard to the 2 conditions of ①and ④in Flow Graph B, the T-shaped construction with double-seat could also be applied(Type Q45).In the ②and ③conditions in this graph, the choice of the construction must be limited to T-shaped ones with 4-seat(Type Q45). For other kinds of operating conditions, the construction with 4-seat could also be applied, however, the construction of the relevant valve seats should be referred in advance in the contract for future delivery. For other requirements please refer to the sample of Organizing Method for Types of Ball Valves and fill in corresponding code numbers as required.

Form of Main Types and Connecting Dimension



Nominal pressure	Main dimension	DN(mm/in)Nominal diameter											
		15/1/2"	20/3/4"	25/1"	32/1 1/4"	40/1 1/2"	50/2"	65/2 1/2"	80/3"	100/4"	125/5"	150/6"	200/8"
PN1.6MPa	L	150	150	180	200	220	240	260	280	320	380	440	550
PN2.5MPa	L1	75	75	90	100	110	120	130	140	160	190	220	275
PN4.0MPa	H	90	90	102	115	135	140	155	185	210	275	305	335
CLASS150	W	140	140	155	250	250	350	350	420	700	1000	1300	1800
Please refer to the sample book of Form of Main Types and Connecting Dimension for other flange dimensions.													

SZNAJDER STAHLWAREN

Flange-Connection-Heating Ball Valve

Features

The product bears favorable heat-preservation and cold-insulation specialties.In addition, the all-diameter of the valve is identical to pipe diameter to effectively reduce the heat loss from those medium in the pipeline. It is mainly applied to transport the full-bodied mediums which solidify under normal temperature in such fields as petroleum industry, chemical industry, metallurgical industry, pharmaceutical industry,food industry, etc.

For the monolithic construction is applied in design the product, the jacket valve with favorable sealing performance features smaller configuration and weight than traditional ball valves without leakage. More over-pressure-resistant and firmer capacities are also enjoyed by the jacket made through carbon steel welding than that through casting.

Technical Specification

Design Standard	ASME B 16.34 GB/T 12224
Structure length	ASME B 16.10 GB/T 12221
Connecting flange	ASME B 16.5 JB/T 79
Driving manner	
Test & Inspection	JB/T9092 API 598
Applicable medium	Heavy oil,glue and other easy-clotting medium

Notes: The sizes of serial valve connecting flange can be designed according to customer's requirement.

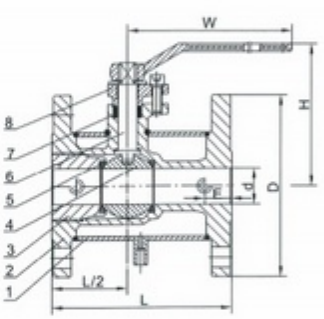
Form of Major Parts Materials

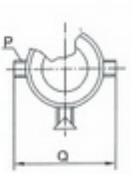
N0.	Accessory name	Material	
		GB	ASTM
1	Jacket	25	A105
2	Seat	WCB	A216-WCB
3	Body	25	A105
4	Sealing Ring	PTFE、Counterpoint polypheny1	
5	Ball		
6	Stem	1Cr13	A247-410
7	Stuffing	Graphite	
8	Gland	WCB	A216-WCB

Notes: Major parts of the valve series and materials of sealing surface differ according to actual working condition and custmer's special requirement.

Main Types and Connecting Dimension

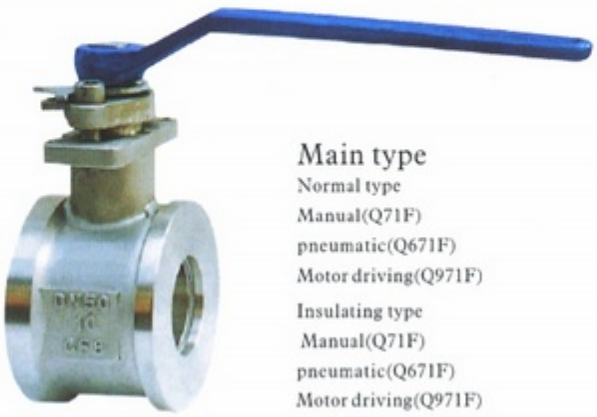
Nominal diameter		d	L	D		E	Q	H	W	Pipe thread
(mm)	(in)			(mm)	(in)					P
20	3/4"	19	117	40	$1^1/2$"	58.5	147	101	170	$G^3/4$"
25	1"	25	127	50	2"	62.5	156	106	170	$G^3/4$"
40	$1^1/2$"	38	165	65	$2^1/2$"	63.5	181	125	250	$G^3/4$"
50	2"	51	178	80	3"	68	218	135	250	$G^3/4$"
80	3"	76	229	150	6"	82	275	193	350	$G^3/4$"
100	4"	102	254	200	8"	83	300	265	420	$G^3/4$"
150	6"	152	292	250	10"	95	403	355	1000	$G^3/4$"
200	8"	203	330	300	12"	100	492	410	1300	$G^3/4$"
Remarks		Flange dimension refer to the sample book of form of Main Types andConnecting Dimension, according to the corresponding diameter								





Double-clip Connected Ball Valve

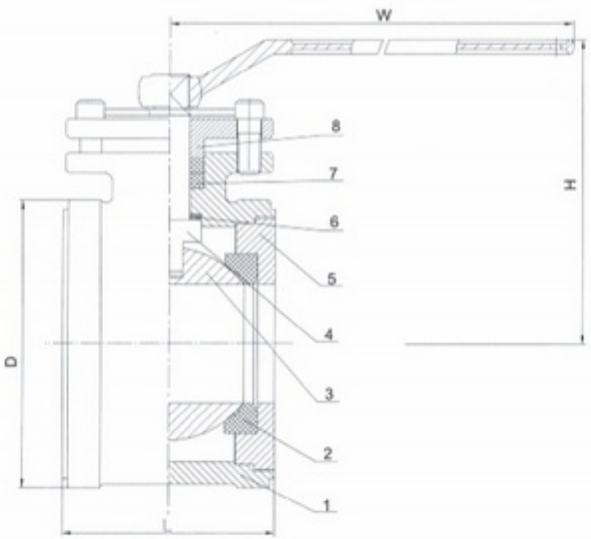
SZNAJDER STAHLWAREN



Main type

Normal type
Manual(Q71F)
pneumatic(Q671F)
Motor driving(Q971F)

Insulating type
Manual(Q71F)
pneumatic(Q671F)
Motor driving(Q971F)



Features

The double-clip connected ball valve possess such features as compact structure, smaller volume, lighter ponderance, fine sealing performance,flexible on-off, convenient installation course, etc.

The heating double-clip connected ball valve enjoys favorable heat/cold preservation performances which not only effectively prevent the slabby medium in pipelines from solidifying but also reduce the heat loss of the medium in pipelines.

The double-clip connected ball valve series could also be applied with the mounted corresponding motor or air operated plant to implement remote control or automatic control.

Nominal diameter:DN15~100mm 1/2" ~4"
Nominal pressure:PN1.0~2.5MPa
CLASS:150Lb JIS:10K

Form of Major Patrs Materials

N0.	Accessory name	Material	
		GB	ASTM
1	Body	CF8	A351-CF8
2	Sealing Ring	PTFE、PPL	
3	Ball	0Cr18Ni9	A351-CF8
4	Stem	0Cr18Ni9	A276-304
5	Seat	0Cr18Ni9	A276-304
6	Gasket	PTFE、PPL	
7	Gasket	Graphite+stainless steel	
8	Stuffing	PTFE、PPL	
9	Stufing cover	0Cr18Ni9	A351-CF8

Notes: Major parts of the valve series and materials of sealing surface differ according to actual working condition and custmer's special requirement.

Technical Specification

Structure form	Double-clip type
Connecting flange	ANSI B16.5、JB/T79
Driving manner	Manual,Moton driving,Pneumatil
Test & Inspection	JB/T9092-99 API 598

Main Types and Connecting Dimension

Nominal diameter		Main dimension (mm)							
		L	D					W	H
(mm)	(in)		1.0MPa	1.6MPa	2.5MPa	150Lb	10k	Manual	Manual
15	1/2	40	53	53	53	47	58	130	80
20	3/4	45	63	63	63	57	63	170	80
25	1	50	73	73	73	66	74	170	100
32	1 1/4"	60	84	84	84	75	84	200	110
40	1 1/2"	70	94	94	94	85	89	250	120
50	2	80	109	109	109	103	104	250	130
65	2 1/2"	110	129	129	129	122	124	350	140
80	3	120	144	144	144	135	134	350	150
100	4	140	164	164	170	173	159	420	180

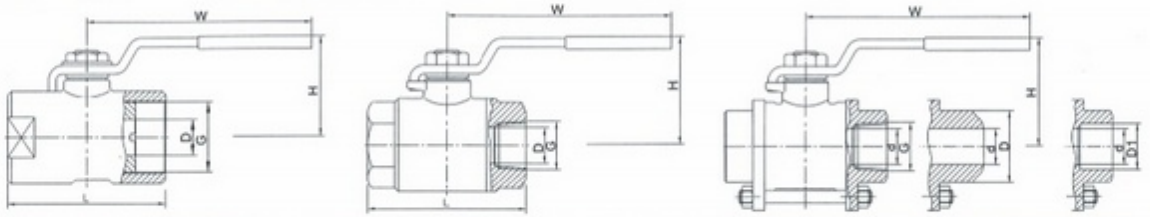
SZNAJDER STAHLWAREN

Integrated, two-section, three-section steel stainless ball valve

Main Parts and Materials

Type	Accessory name	Materials		
Q11F-64 C P R Integral Type Q11F-64 C P R Two-section Type Q11F-64 C P R Three-section Type Q61F-64 C P R Welding three-section type(Buttwelding, socket joint welding)	Body	WCB	CF8、304	CF8M、316
	Seat	WCB	CF8、304	CF8M、316
	Ball	1 Cr18Ni9Ti	0Cr18Ni9Ti	0Cr17Ni12Mo2
	Seat	RPTFE Counterpoint polyphenyl		
	Stem	2Cr13	0Cr18Ni9Ti	0Cr17Ni12Mo2
	Pressure disk	PTFE Combined gasket		
	Stem stuffing	V-shaped PTFE Graphite		
	Bolt	35	304	
	Hex nut	35	304	
	Spring washer	Clamp nut	304	
	Spring washer	35	304	
	Medium carbon	Clamp nut	304	
	Nut	35	304	
	Wrench	1Cr18Ni9Ti	304	
	Wrench cover	Plastics		
	Lock instrument	1Cr18Ni9Ti	304	
Applicable medium	Water,vapor and oil products,etc.		Corrosion medium such as Nitric acid.	Corrosion medium such as Acetic acid.
Applicable temperature	-28~350℃			
Applicable temperature	DIN259/2999 • BSPT • NPT or ZG • G			
Remarks	Three-section ball valve can be made as external thread connection and nipping fork according to the requirements of customers. In addition,it can match pneumatic and moten driving			

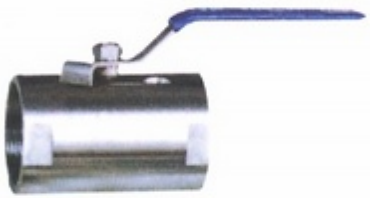
Form of Main Types and Connecting Dimension



DN(mm) Nominal diameter	G	L					D					H					W					D	D1	A
	Pipe Thread	Integral	Two-section	Three-section	Butt-welding	Socket	Integral	Two-section	Three-section	Butt-welding	Butt-welding	Integral	Two-section	Three-section	Butt-welding	Socket	Integral	Two-section	Three-section	Butt-welding	Socket	Integral	Socket welding	Socket welding
6	1/4	39	57	65	65	65	4.6	11.6	11.6	11.6	11.6	22	49	48	48	48	80	120	120	120	120	18	14.1~14.3	9.5
10	3/8	44	57	65	65	65	6.8	12.7	12.7	12.7	12.7	26	49	48	48	48	80	120	120	120	120	18	17.55~17.8	9.5
15	1/2	56	63.5	67	67	67	9.2	15	15	15	15	31	51	54	54	54	88	120	120	120	120	24	21.7~21.95	9.5
20	3/4	59	75	82	82	82	12.5	20	20	20	20	34	58	57	57	57	88	130	130	130	130	28	27.05~27.3	11.1
25	1	71	89	91	91	91	15	25	25	25	25	38	70	72	72	72	105	154	154	154	154	34	33.80~34.05	12.7
32	1 1/4	78	99	108	108	108	20	32	32	32	32	43	80	79	79	79	105	154	154	154	154	41	42.55~42.8	14.3
40	1 1/2	83	118	129	129	129	35	38	38	38	38	50	88	81	81	81	124	185	185	185	185	49	48.65~48.9	15.9
50	2	100	136	148	148	148	32	50	50	50	50	57	97	97	97	97	124	185	185	185	185	62	61.10~61.35	17.4
65	2 1/2	-	165	186	193	-	-	64	64	64	-	-	130	130	130	-	-	200	200	200	-	78	-	-
80	3	-	184	206	222	-	-	78	78	78	-	-	150	150	150	-	-	250	250	250	-	94	-	-
100	4	-	-	240	273	-	-	-	98	98	-	-	-	170	170	-	-	-	250	250	-	124	-	-

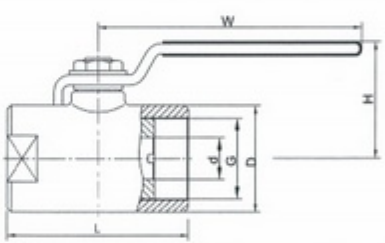
Open-Type Ball Valve

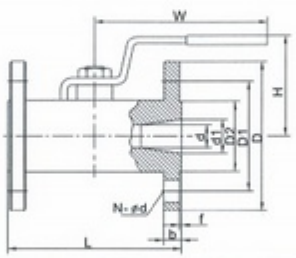
SZNAJDER STAHLWAREN

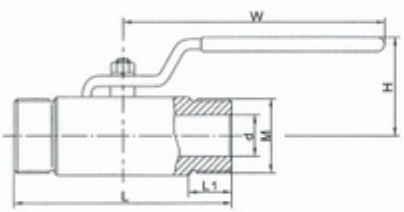


Type		Accesory name	Materials		
Q21F-64 C P R Internal thread Q41F-64 C P R Flange Q11F-64 C P R Extermal thread Q11F-64 C P R welding three-section type(butt welding,socket joint welding)		Body	WCB、45	CF8、304	CF8M、316
		Seat	WCB、45	CF8、304	CF8M、316
		Ball	1Cr18Ni9Ti	0Cr18Ni9Ti	0Cr17Ni12Mo2
		Seat	RPTFE Counterpoint polyphenyl		
		Stem	2Cr13	0Cr18Ni9Ti	0Cr17Ni12Mo2
		Pressure disk	PTFE Combined gasket		
		Stem stuffing	V- shaped PTFE Graphite		
		Bolt	35	304	
		Hex nut	35	304	
		Spring washer	Clamp nut	304	
		Spring washer	35	304	
		Medium carbon	Clamp nut	304	
		Nut	35	304	
		Wrench	1Cr18Ni9Ti	304	
		Wrench cover	Plastics		
		Lock instrument	1Cr18Ni9Ti	304	
Applicable Operating Mode	Applicable medium	Water,vapor,and oil products,etc.		Corrosion medium such as Nitric acid.	Corrosion medium such as Acetic acid.
	Applicable temperature	-28~350℃			
Applicable specification	Pipe screw standard	DIN259/2999 GB7307-87 NPT BSPT			
	Flanged standard	JB79-59、SH3406、GB9113、HG20592-97			
	Screw standard	GB196			

Form of Main Types and Connecting Dimension







DN(mm) Nominal diameter	G	D	d			d2	L			L1	H			W			M		D、D1、D2
	Q11F	Q11F	Q11F	Q41F	Q21F	Q41F	Q11F	QL1F	Q21F	Q21F	Q11F	Q41F	Q21F	Q11F	Q41F	Q21F	Q21F		Q41F
6	1/4	30	8	-	8	-	60	-	85	15	56	-	56	110	-	110	20×1.5	Can bring and receive a union tube sections	Please refer to the sample book of Form of Main Types and Connecting Dimension.
10	3/8	31	10	-	10	-	60	-	85	16	58	-	58	110	-	110	24×1.5		
15	1/2	32	10	10	10	18	60	92	85	18	58	60	58	110	110	110	30×2		
20	3/4	38	13.5	12.5	13.5	20	67.3	106	90	18	62	65	62	110	110	110	36×2		
25	1	45	18	17	18	24	73	109	100	20	68	70	68	110	110	110	42×2		
32	11/4	53.4	22	22	22	32	90	126	120	20	75	85	75	150	145	150	52×2		
40	11/2	63	26	26	26	38	97.5	136	135	25	83	90	83	150	145	150	60×3		
50	2	71	32.8	32.8	32.8	46	112	154	140	25	90	98	90	150	177	180	72×3		
65	21/2	92	46	46	-	60	140	170	-	-	95	110	-	180	190	-	-		

SZNAJDER STAHLWAREN

Full welded forging steel ball valve

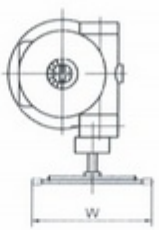
CLASS150~ 600 Full welded forging steel ball valve
6″ ~32″ Class150/Class300 DN150~DN800 PN2.0/PN5.0

Dimension chart(inch)

CLASS	NPS	d	L	H1	H2	W	Weight(Kg)
150Lb 300Lb	6	6	18	11.93	7.28	18.1	185
	8	8	20.5	13.47	8.9	18.1	276
	10	10	22	14.9	10.7	27.8	385
	12	12	25	16.44	12.25	27.8	535
	14	13.5	30	17.9	13.7	27.8	735
	16	15.25	33	21.95	16.4	31.5	1585
	18	17.25	36	23.54	17.83	31.5	2340
	20	19.25	39	24.8	18.86	31.5	2520
	24	23.25	45	27.79	23.11	31.5	3985
	26	25	49	30.59	23.62	31.5	4800
	28	27	53	31.49	25.59	31.5	5760
	30	29	55	33.85	27.24	31.5	6715
	32	30.75	60	35.75	28.98	31.5	8120

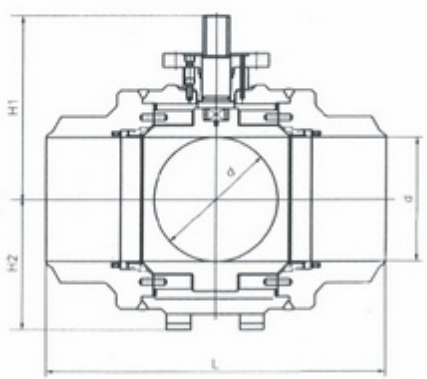
Dimension chart(mm)

PN	DN	d	L	H1	H2	W	Weight(Kg)
2.0MPa 5.0MPa	150	152	457	303	185	460	185
	200	203	521	342	226	460	276
	250	254	559	378.5	272	705	385
	300	305	635	418	311	705	535
	350	337	762	455	348	705	735
	400	387	838	558	417	800	1585
	450	438	914	598	453	800	2340
	500	489	991	630	479	800	2520
	600	591	1143	705	587	800	3985
	650	635	1245	777	600	800	4800
	700	686	1346	800	650	800	5760
	750	737	1397	860	692	800	6715
	800	781	1524	908	736	800	8120



16″ ~24″ Class600 DN150~DN600 PN10.0 Dimension chart(inch)

CLASS	NPS	d	L	H1	H2	W	Weight(Kg)
600Lb	6	6	22	12.17	9.65	18.1	230
	8	8	26	14.1	11.81	27.8	445
	10	10	31	16.1	13.38	27.8	658
	12	12	33	18.68	15.35	31.5	952
	14	13.25	35	19.75	16.85	31.5	1330
	16	15.25	39	20.96	18.70	31.5	2040
	18	17.25	43	25.04	21.45	31.5	2890
	20	19.25	47	26.75	22.44	31.5	3350
	22	21.25	51	28.56	24.72	31.5	4165
	24	23.25	55	30.12	27.56	31.5	5650



Dimension chart(mm)

PN	DN	d	L	H1	H2	W	Weight(Kg)
10.0MPa	150	152	558.8	309	245	460	
	200	203	660.4	358	300	705	
	250	254	787.4	409	340	705	
	300	305	838.2	474.4	390	800	
	350	337	889	502	428	800	
	400	387	990.6	532.3	475	800	
	450	438	1092.2	636	545	800	
	500	489	1193.8	674.8	570	800	
	550	540	1295.4	725	628	800	
	600	591	1397	765	700	800	

Full welded forging steel ball valve

SZNAJDER STAHLWAREN

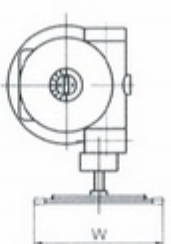
CLASS900LBS Full welded forging steel ball valve
6″ -24″ Class900LBS

Dimension chart(inch)

CLASS	NPS	d	L	H1	H2	W	Weight(Kg)
9000Lb	6	6	24	12	11.81	27.8	330
	8	8	29	15.6	15.74	31.5	595
	10	10	33	16.93	16.96	31.5	935
	12	12	38	18.3	17.91	31.5	1485
	14	12.75	405	21.45	24.45	31.5	1955
	16	14.75	44.5	24.21	24.21	31.5	2975
	18	16.75	48	26.97	23.39	31.5	4010
	20	18.625	52	29.52	26.97	31.5	4710
	24	22.5	61	35.23	30.51	31.5	8285

Dimension chart(mm)

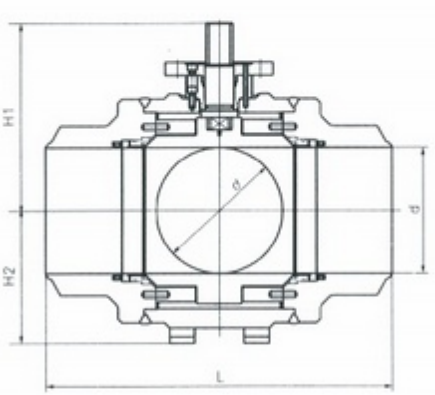
PN	DN	d	L	H1	H2	W	Weight(Kg)
15.0MPa	150	152	609.6	305	300	705	330
	200	203	735.6	395	400	800	595
	250	254	838.2	430	430	800	935
	300	305	965.2	465	455	800	1485
	350	324	1028.7	545	545	800	1955
	400	375	1130.3	615	615	800	2975
	450	425.5	1219.2	685	645	800	4010
	500	473	1320.8	750	685	800	4710
	600	571.5	1549.4	895	775	800	8285



CLASS1500LBS Full welded forging steel ball valve
6″ -16″ Class1500LBS

Dimension chart(inch)

CLASS	NPS	d	L	H1	H2	W	Weight(Kg)
1500Lb	6	5.75	27.75	14.96	11.81	31.5	503
	8	7.625	32.75	19.29	15.75	31.5	795
	10	9.5	39	20.07	16.93	31.5	1615
	12	11.375	44.5	22.05	18.11	31.5	1945
	14	12.5	49.5	25	21.65	31.5	3350
	16	14.25	54.5	26.97	24.40	31.5	4615

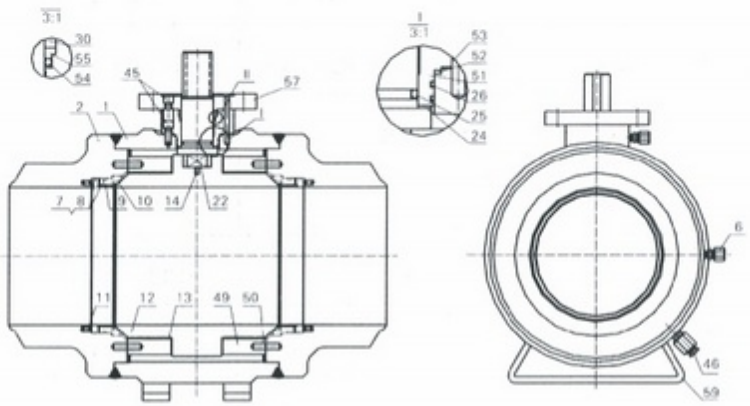


Dimension chart(mm)

PN	DN	d	L	H1	H2	W	Weight(Kg)
25.0MPa	150	146	704.9	380	300	800	503
	200	194	831.9	490	400	800	795
	250	241	990.6	510	430	800	1615
	300	289	1130.2	560	460	800	1945
	350	317.5	1257.3	635	550	800	3350
	400	362	1384.3	685	620	800	4615

Full welded forging steel ball valve

CLASS 150～600 LBS full welded forging steel ball valve
6″ -48″



Technica specification
1、ssure temperature lating:ASME B16.34、BS5351
2、Shell thickness:ASME B16.34、BS5351
3、Pore hole dimension:API 6D、BS5351
4、Face to face:ASME B16.10、API 6D
5、Connection dimension:ASME B16.5、BS1560
6、Test and inspection conform to :API 6D、BS5146
Main materials:A105、LF2、F304、F316、F304L、F316L

Main part materials list

NO.	Part name	Carbon steel	Low Temp.steel	Stainless steel
1	Body	ASTM A105	ASTM A350 LF2	ASTM A182 F316
2	Bonnet	ASTM A105	ASTM A350 LF2	ASTM A182 F316
6	Inject valve	ASTM A1045	ASTM A1045	A276-316
7	O-ring	VITON	VITON	VITON
8	O-ring	VITON	VITON	VITON
9	Seat retainer	ASTM A105	ASTM A350 LF2+ENP	ASTM A182 F316
10	Ring	RPTFE	RPTFE	RPTFE
11	Spring	Inconelx-750	Inconelx-750	Inconelx-750

Full welded forging steel ball valve

SZNAJDER STAHLWAREN

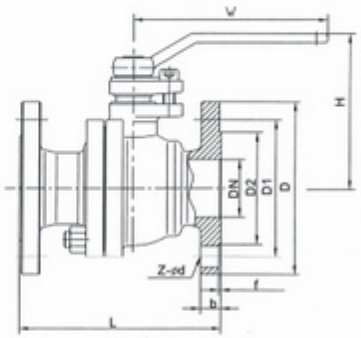
Main part materials list

NO.	Part name	Carbon steel	Low Temp.steel	Stainless steel
12	Ball	ASTM A105+ENP	ASTM A350 LF2+ENP	ASTM A182 F316
13	Sliding bearing	304+PTFE	304+PTFE	316+PTFE
14	Static spring	A276-316	A276-316	A276-316
22	Stem	A182-F6a	A182-F6a	ASTM A182 F316
24	Gasket	304+PTFE	304+PTFE	316+PTFE
25	O-ring	VITON	VITON	VITON
26	O-ring	VITON	VITON	VITON
30	Packing	Graphite	Graphite	Graphite
45	Screw	ASTM A193-B7/B7M	ASTM A193- 7M	ASTM A193-B8
46	Waste valve	ANSI 1045	ANSI 1045	ASTM A182- F316
49	Backing	ASTM A105	ASTM A350 LF2+ENP	ASTM A182 -F316
50	Backing pin	ASNI 1045	ASTM A350 LF2+ENP	ASTM A182 -F316
51	Upper bushing	ASTM A105	ASTM A350 LF2+ENP	ASTM A182- F316
52	Gasket	304+Graphite	304+ Graphite	316+ Graphite
53	定位销	ANSI 1045	ANSI 1045	A276-316
54	O-ring	VITON	VITON	VITON
55	Packing seat	ASTM A182-F6a	ASTM A182-F6a	ASTM A182- F316
57	Coupling plate	ASTM A105	ASTM A350 LF2	ASTM A182- F316
59	Base frame	ANSI 1025	ANSI 1025	A276-316

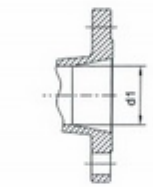
SZNAJDER STAHLWAREN

Form of Main Types and Connecting Dimension

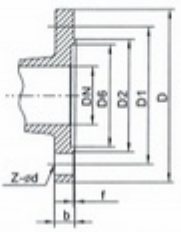
Form ofMain Type



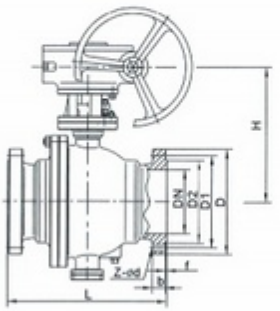
Q41型
Q41 Type



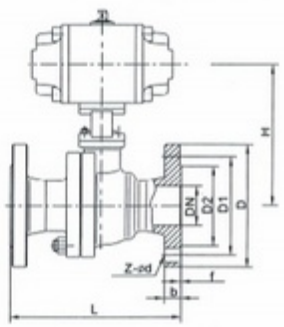
缩径流道
Crinkled-Diameter Interval Channel



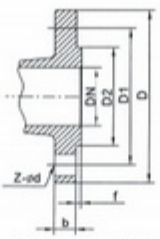
PN4.0、6.4、1.0MPa 法兰
PN4.0、6.4、1.0MPa Flange



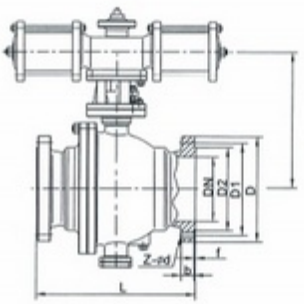
Q347型
Q347 Type



Q641型
Q641 Type



CLASS600、900Lb 法兰
CLASS600、900Lb Flange



Q647型
Q647 Type

Structural Length List for Ball Valves on Main Specifications (Emblem Marks)

We conclued that the structural length standards of currently-applied ball valves could not always match the actual demand from users after long-term production practice.Therefore,in the managing concept of anything for our customers,we comprehensively studied the most-demanded and actually-applied structural lengths of ball valves from our customers and set theose data a list for reference during pattern-selecting as our enterprise' modular length standard.Please give a clear indication of the dimensions in the list in your contract of future delivery.

Main type	DN (mm) Nominal diameter	Structural length(mm)							
		PN1.6MPa		PN2.5MPa		PN4.0MPa		PN6.4MPa	
	15	130	-	130	-	130	-	140	-
	20	140	-	140	-	140	-	152	-
	25	150	180	150	180	150	-	180	-
	32	165	200	165	200	180	-	200	-
	40	180	220	180	220	200	-	220	-
	50	200	216/220	200	216/220	220	216/220	250	292
$OQ4\frac{1}{7}F$	65	220	241	220	241	250	241	280	330
	80	250	283	250	283	280	283	320	356
$OQ34\frac{1}{7}F$	100	280	305	280	305	320	305	360	432
	125	320	356	320	381	400	381	381	508
$OQ64\frac{1}{7}F$	150	360	394	360	403	400	403	403	559
	200	400	457	400	502	502	502		660
	250	450	533	-	568	-	568	-	787
$OQ94\frac{1}{7}F$	300	-	610	-	648	-	648	-	838
	350	-	686	-	762	-	762	-	889
	400	-	762	-	838	-	838	-	991
	450	-	864	-	864	-	914	-	1067
	500	-	914	-	991	-	991	-	1194
	600	-	1067	-	1067	-	1143	-	1397
	700	-	1245	-	1245	-	1346	-	-

Form of Main Types and Connecting Dimension

SZNAJDER STAHLWAREN

Form of GB Series Main Connecting Dimension

PN(MPa) Nominal pressure	DN(mm) Nominal diameter	Dimension(mm)																Weight (Kg)	
		L		d1		D	D1	D2	b	f	z-Φd	W	H						
		RF	BW	A型-diameter	cridd-d-diameter							Manual	41Type	641Type	347 Type	647Type		41Type	347Type
1.0	15	108	140	15	-	95	65	45	14	2	4-14	130	75	200	-	-		2.5	-
	20	117	152	20	-	105	75	55	14		4-14	170	84	205	-	-		3	-
	25	127	165	25	-	115	85	65	14		4-14	170	90	216	-	-		4.5	-
	32	140	178	32	-	135	100	78	16		4-18	200	107	240	-	-		6.5	-
	40	165	190	40	-	145	110	85	16	3	4-18	250	127	265	-	-		8.5	-
	50	178	216	50	-	160	125	100	16		4-18	250	140	275	-	-		10	15
	65	190	241	65	-	180	145	120	18		4-18	350	164	380	-	-		16	20
	80	203	283	80	65	195	160	135	20		4-18	350	177	390	-	-		19	24
	100	229	305	100	80	215	180	155	20		8-18	420	206	416	-	-		33	40
	125	356	381	125	100	245	210	185	22		8-23	700	292	542	-	542		55	62
	150	394	457	150	125	280	240	210	22		8-23	1000	320	475	305	572		82	113
	200	457	521	200	150	335	295	265	24		8-23	1300	365	610	398	636		140	218
	250	533	559	250	200	390	350	320	26		12-23	1800	420	650	495	726		.	240
	300	610	635	300	250	440	400	368	26	4	12-23	-	-	-	580	859		.	390
	350	686	762	350	300	500	460	428	26		16-23	-	-	-	625	927		.	510
	400	762	838	400	350	565	515	482	26		16-25	-	-	-	720	1080		.	750
	450	864	914	450	350	615	565	532	28		20-25	-	-	-	770	1120		.	940
	500	914	991	500	400	670	620	585	28		20-25	-	-	-	840	1150		.	1190
1.6	15	108	140	15	-	95	65	45	14	2	4-14	130	75	200	-	-		2.5	-
	20	117	152	20	-	105	75	55	14		4-14	170	84	205	-	-		3	-
	25	127	165	25	-	115	85	65	14		4-14	170	90	215	-	-		4.5	-
	32	140	178	32	-	135	100	78	16		4-18	200	107	240	-	-		6.5	-
	40	165	190	40	-	145	110	85	16	3	4-18	250	127	265	-	-		8.5	-
	50	178	216	50	-	160	125	100	16		4-18	250	140	275	-	-		10	15
	65	190	241	65	-	180	145	120	18		4-18	350	164	380	-	-		16	20
	80	203	283	80	65	195	160	135	20		8-18	350	177	390	-	-		19	24
	100	229	305	100	80	215	180	155	20		8-18	420	206	416	-	-		33	40
	125	356	381	125	100	245	210	185	22		8-18	700	292	542	-	542		55	62
	150	394	457	150	125	280	240	210	24		8-23	1000	320	575	305	572		82	118
	200	457	521	200	150	335	295	265	26		12-23	1300	365	610	398	736		140	218
	250	533	559	250	200	405	355	320	30		12-25	1800	420	650	495	890			240
	300	610	625	300	250	460	410	375	30	4	12-25	-	-	-	580	910		-	390
	350	686	762	350	300	520	470	435	34		16-25	-	-	-	625	1020		-	510
	400	762	838	400	350	580	525	485	36		16-30	-	-	-	720	1080		-	750
	450	864	914	450	350	640	585	545	40		20-30	-	-	-	770	1120		-	940
	500	914	991	500	400	705	650	608	44		20-34	-	-	-	840	1150		-	1190
	600	1067	1143	600	500	840	770	718	48	5	20-41	-	-	-	920	1230		-	2100
	700	1245	1346	700	600	910	840	788	50		24-41	-	-	-	990	1310		-	3000
2.5	15	140	140	15	-	95	65	45	16	2	4-14	130	75	200	-	-		2.5	-
	20	152	152	20	-	105	75	55	16		4-14	170	84	205	-	-		3	-
	25	165	165	25	-	115	85	65	16		4-14	170	90	215	-	-		4.5	-
	32	178	178	32	-	135	100	78	18		4-18	200	107	240	-	-		6.5	-
	40	190	190	40	-	145	110	85	18	3	4-18	250	127	265	-	-		8.5	-
	50	216	216	50	-	160	125	100	20		4-18	250	140	275	-	-		10	15
	65	241	241	65	-	180	145	120	22		8-18	350	164	380	-	-		16	20
	80	283	283	80	65	195	160	135	22		8-18	350	177	390	-	-		20	24
	100	305	305	100	80	230	190	160	24		8-23	420	206	416	-	416		35	34
	125	381	381	125	100	270	220	188	28		8-25	700	292	542	-	542		60	69.5
	150	403	457	150	125	300	250	218	30		8-25	1000	320	575	305	572		92	102
	200	502	521	200	150	360	310	278	34		12-25	1300	365	625	398	736		175	192
	250	568	559	250	200	425	370	332	36		12-30	1800	420	660	495	890		-	288
	300	648	635	300	250	485	430	390	40		16-30	-	-	-	580	910		-	468
	350	762	762	350	300	550	490	448	44	4	16-34	-	-	-	625	1020		-	587
	400	838	838	400	350	610	550	505	48		16-34	-	-	-	720	1080		-	863
	450	914	914	450	350	660	600	555	50		20-34	-	-	-	770	1120		-	958
	500	991	991	500	400	730	660	610	52		20-41	-	-	-	840	1150		-	1369
	600	1143	1143	600	500	840	770	718	56	5	20-41	-	-	-	920	1230		-	2415
	700	1346	1346	700	600	955	875	815	60		24-48	-	-	-	990	1310		-	3450

Form of Main Types and Connecting Dimension

Continued form

PN(MPa) Nominal presure	DN(mm) Nominal diameter	Dimension(mm)																	Weight (Kg)	
		L		d1		D	D1	D2	D6	b	F/f1	z-Φd	W	H					41Type	347Type
		RF	BW	All-diameter	middel-diameter								Manual	41Type	641Type	347 Type	647Type			
4.0	15	140	140	15	-	95	65	45	40	16	2/4	4-14	130	75	200	-	-		3	-
	20	152	152	20	-	105	75	55	51	16		4-14	170	84	205	-	-		4	-
	25	165	165	25	-	115	85	65	58	16		4-14	170	90	215	-	-		5	-
	32	178	178	32	-	135	100	78	66	18		4-18	200	107	240	-	-		7	-
	40	190	190	40	-	145	110	85	76	18	3/4	4-18	250	127	265	-	-		9	-
	50	216	216	50	-	160	125	100	88	20		4-18	250	140	360	-	-		12	18
	65	241	241	65	-	180	145	120	110	22		8-18	350	164	380	-	-		18	23
	80	283	283	80	65	195	160	135	121	22		8-18	350	177	452	-	-		28	33
	100	305	305	100	80	230	190	160	150	24	3/4.5	8-23	420	206	480	-	479		46	55
	125	381	381	125	100	270	220	188	176	28		8-25	700	292	646	-	646		75	81
	150	403	457	150	125	300	250	218	204	30		8-25	1000	320	666	305	666		106	118
	200	502	521	200	150	375	320	282	260	38		12-30	1300	365	815	398	814		190	245
	250	568	559	250	200	445	385	345	313	42		12-34	-	-	-	495	890		-	482
	300	648	635	300	250	510	450	408	364	46	4/4.5	16-34	-	-	-	580	910		-	615
	350	762	762	350	300	570	510	465	422	52		16-34	-	-	-	625	1020		-	930
	400	838	838	400	350	655	585	535	474	58	4/5	16-41	-	-	-	720	1080		-	1100
	450	914	914	450	350	680	610	560	524	60		20-41	-	-	-	770	1120		-	1400
	500	991	991	500	400	755	670	612	576	62		20-48	-	-	-	840	1150		-	2030
	600	1143	1143	600	500	890	795	730	678	62	5/6	20-54	-	-	-	920	1230		-	2850
	700	1346	1346	700	600	995	900	835	768	68		24-54	-	-	-	990	1310		-	4250
6.4	15	165	165	15	-	105	75	55	40	18	2/4	4-14	170	80	200	-	-		4.5	-
	20	191	191	20	-	125	90	68	51	20		4-18	200	89	205	-	-		6	-
	25	216	216	25	-	135	100	78	58	22		4-18	200	95	215	-	-		8	-
	32	229	229	32	-	150	110	82	66	24		4-23	250	112	240	-	-		12	-
	40	241	241	40	-	165	125	95	76	24	3/4	4-23	350	132	265	-	-		14	-
	50	292	292	50	40	175	135	105	88	26		4-23	350	145	360	-	360		18	28
	65	330	330	65	50	200	160	130	110	28		8-23	420	169	380	-	379		28	38
	80	356	356	80	65	210	170	140	121	30		8-23	420	182	452	-	452		40	58
	100	406	406	100	80	250	200	168	150	32	3/4.5	8-25	700	211	480	-	479		65	85
	125	508	508	125	100	295	240	202	176	36		8-30	1000	302	646	340	646		98	130
	150	495	495	150	125	340	280	240	204	38		8-34	1300	330	666	435	666		140	150
	200	597	597	200	150	405	345	300	260	44		12-34	-	-	-	530	736		-	287
	250	673	673	250	200	470	400	352	313	48		12-41	-	-	-	615	790		-	540
	300	762	762	300	250	530	460	412	364	54	4/4.5	16-41	-	-	-	680	870		-	780
	350	826	826	350	300	595	525	475	422	60	4/5	16-41	-	-	-	720	1020		-	1000
	400	902	902	400	350	670	585	525	474	66		16-48	-	-	-	840	1080		-	1300
	500	1054	1054	500	400	800	705	640	576	70		20-54	-	-	-	925	1200		-	2100
	600	1232	1232	600	500	930	820	750	678	76	5/6	20-58	-	-	-	980	1295		-	3400
10.0	15	165	165	15	-	105	75	55	40	20	2/4	4-14	170	80	200	-	-		5.5	
	20	3191	191	20	-	125	90	68	51	22		4-18	200	89	205	-	-		7	
	25	216	216	25	-	135	100	78	58	24		4-18	200	95	215	-	-		10	
	32	229	229	32	-	150	110	82	66	24		4-23	250	112	240	-	-		15	
	40	241	241	40	-	165	125	95	76	26	3/4	4-23	350	132	265	-	-		18	
	50	292	292	50	40	195	145	112	88	28		4-25	350	145	360	-	360		25	-
	65	330	330	65	50	220	170	138	110	32		8-25	420	169	380	-	379		32	-
	80	356	356	80	65	230	180	148	121	34		8-25	420	182	452	-	452		46	-
	100	432	432	100	80	265	210	172	150	38	3/4.5	8-30	700	211	480	-	479		75	-
	125	508	508	125	100	310	250	210	176	42		8-34	-	-	-	320	646		-	-
	150	559	559	150	125	350	290	250	204	46		12-34	-	-	-	356	666		-	150
	200	660	660	200	150	430	360	312	260	54		12-41	-	-	-	398	736		-	350
	250	787	787	250	200	500	430	382	313	60		12-41	-	-	-	445	790		-	590
	300	838	838	300	250	585	500	442	364	70	4/4.5	16-48	-	-	-	515	870		-	920
	350	889	889	350	300	655	560	498	422	76	4/5	16-54	-	-	-	550	1020		-	1100
	400	991	991	400	350	715	620	558	474	80		16-54	-	-	-	615	1080		-	1540

Form of Main Types and Connecting Dimension

SZNAJDER STAHLWAREN

Form of DIN Series Main Connecting Dimension

PN(MPa) Nominal presure	DN(mm) Nominal diameter	Dimension(mm)															Weight (Kg)	
		L	d1		D	D1	D2	b	f/f1	z-Φd	W	H						
		RF	All-diameter	middel-diameter							Manual	41Type	641Type	347 Type	647Type	41Type	347Type
1.6	15	115	15	10	95	65	45	16	2	4-14	130	75	200	-	-	2.5	-
	20	120	19	15	105	75	58	18		4-14	170	84	205	-	-	3	-
	25	125	25	19	115	85	68	18		4-14	170	90	215	-	-	4.5	-
	32	130	32	25	140	100	78	18		4-18	200	107	240	-	-	6.5	-
	40	140	38	32	150	110	88	18	3	4-18	250	127	265	-	-	8.5	-
	50	150	49	38	165	125	102	20		4-18	250	140	275	-	-	10	15
	65	170	64	49	185	145	122	18		4-18	350	164	380	-	-	16	20
	80	180	76	64	200	160	138	20		8-18	350	177	390	-	-	19	24
	100	190	98	76	220	180	158	20		8-18	420	206	416	-	-	33	40
	125	325	123	98	250	210	188	22		8-18	700	292	542	-	542	55	62
	150	350	148	123	285	240	212	22		8-22	1000	320	575	305	572	82	118
	200	400	198	148	340	295	268	24		12-22	1300	365	610	398	736	140	218
	250	450	248	198	405	355	320	26		12-26	1800	420	650	495	890		240
	300	500	298	248	460	410	378	28	4	12-26	-	-	-	580	910	-	390
	350	550	337	298	520	470	438	30		16-26	-	-	-	625	1020	-	510
	400	762	387	337	580	525	490	32		16-30	-	-	-	720	1080	-	750
	450	864	438	387						20-30	-	-	-	770	1120	-	940
	500	914	489	438	715	650	610	36		20-33	-	-	-	840	1150	-	1190
	600	1067	591	489	840	770	725	40	5	20-36	-	-	-	920	1230	-	2100
	700	1245	692	591	910	840	795	42		24-36	-	-	-	990	1310	-	3000
2.5	15	115	15	10	95	65	45	16	2	4-14	130	75	200	-	-	2.5	-
	20	120	19	15	105	75	58	18		4-14	170	84	205	-	-	3	-
	25	125	25	19	115	85	68	18		4-14	170	90	215	-	-	4.5	-
	32	130	32	25	140	100	78	18		4-18	200	107	240	-	-	6.5	-
	40	140	38	32	150	110	88	18	3	4-18	250	127	265	-	-	8.5	-
	50	150	49	38	165	125	102	20		4-18	250	140	275	-	-	10	15
	65	170	64	49	185	145	122	22		8-18	350	164	380	-	-	16	20
	80	180	76	64	200	160	138	24		8-18	350	177	390	-	-	20	24
	100	190	98	76	235	190	162	24		8-22	420	206	416	-	416	35	34
	125	325	123	98	270	220	188	26		8-26	700	292	542	-	542	60	69.5
	150	350	148	123	300	250	218	28		8-26	1000	320	575	305	572	92	102
	200	400	198	148	360	310	278	30		12-26	1300	365	625	398	736	175	192
	250	450	248	198	425	370	335	32		12-30	1800	420	660	495	890	-	288
	300	500	298	248	485	430	395	34	4	16-30	-	-	-	580	910	-	468
	350	550	337	298	555	490	450	38		16-33	-	-	-	625	1020	-	587
	400	762	387	337	620	550	505	40		16-36	-	-	-	720	1080	-	863
	450	864	436	387						20-36	-	-	-	770	1120	-	958
	500	914	489	438	730	660	615	44		20-36	-	-	-	840	1150	-	1369
	600	1067	591	489	845	770	720	46	5	20-39	-	-	-	920	1230	-	2415
	700	1245	692	591	960	875	820	50		24-42	-	-	-	990	1310	-	3450
4.0	15	115	13	10	95	65	45	16	2	4-14	130	75	200	-	-	3	-
	20	120	19	13	105	75	58	18		4-14	170	84	205	-	-	4	-
	25	125	25	19	115	85	68	18		4-14	170	90	215	-	-	5	-
	32	130	32	25	140	100	78	18		4-18	200	107	240	-	-	7	-
	40	130	38	32	150	110	88	18	3	4-18	250	127	265	-	-	9	-
	50	200	51	38	165	125	102	20		4-18	250	140	360	-	-	12	18
	65	240	64	51	185	145	122	22		8-18	350	164	380	-	-	18	23
	80	260	76	64	200	160	138	24		8-18	350	177	452	-	-	28	33
	100	300	102	76	235	190	162	24	3	8-23	420	206	480	-	479	46	55
	125	350	127	102	270	220	188	26		8-25	700	292	646	-	646	75	81
	150	400	152	127	300	250	218	28		8-25	1000	320	666	305	666	106	118
	200	500	203	152	375	320	285	34		12-30	1300	365	815	398	814	190	245
	250	600	254	230	450	385	345	38	4	12-34	-	-	-	495	890	-	482
	300	700	305	254	515	450	410	42		16-34	-	-	-	580	910	-	615
	350	800	337	305	580	510	465	46		16-34	-	-	-	625	1020	-	930
	400	900	387	337	660	585	535	50	4	16-41	-	-	-	720	1080	-	1100
	450	1000	432	357						20-41	-	-	-	770	1120	-	1400
	500	1100	483	387	755	670	615	52		20-48	-	-	-	840	1150	-	2030
	600	1300	591	483	890	795	735	60	5	20-54	-	-	-	920	1230	-	2850
	700	1500	686	591	995	900	840	64		24-54	-	-	-	990	1310	-	4250

SZNAJDER STAHLWAREN

Form of Main Types and Connecting Dimension

Form of API Series Main Connecting Dimension

Pressure class	DN(mm) Nominal diameter	L		d1		D	D1	D2	b	f	z-Φd	W	H				Weight (Kg)	
		RF	BW	All-diameter	Cooled-diameter							Manual	41Type	641Type	347Type	647Type	41Type	347Type
Class 150	1/2	108	140	13	-	89	60.5	35	-	1.6	4-15	130	75	200	-	-	2	-
	3/4	117	152	19	-	98	70	43	-		4-15	170	84	205	-	-	2.5	-
	1	127	165	25	-	108	79.5	51	12		4-15	170	90	215	-	-	4.5	-
	11/4	140	178	32	-	117	89	64	13		4-15	200	107	240	-	-	6	-
	11/2	165	190	38	-	127	98.5	73	15		4-15	250	127	265	-	-	7.5	-
	2	178	216	51	-	152	120.5	92	16.0		4-19	250	140	275	-	-	9.5	-
	21/2	190	241	64	-	178	139.5	105	18		4-19	350	164	380	-	-	14	-
	3	203	283	76	64	190	152.5	127	19		4-19	350	177	390	-	-	19	-
	4	229	305	102	76	229	190.5	157	24		8-19	420	206	415	-	416	30	-
	5	356	381	127	102	254	216.0	186	24		8-22	700	292	545	-	542	58	-
	6	394	457	152	127	279	241.5	216	26		8-22	1000	320	575	305	572	88	117
	8	457	521	203	152	343	298.5	270	29		8-22	1300	365	600	398	736	150	185
	10	533	559	254	203	406	362	324	31		12-25	-	-	-	495	890	-	245
	12	610	635	305	254	483	432	381	32		12-25	-	-	-	580	910	-	395
	14	686	762	337	305	533	476	413	35		12-29	-	-	-	625	1020	-	516
	16	762	838	387	337	597	540	470	37		16-29	-	-	-	720	1080	-	756
	18	864	914	438	337	635	578	533	40		16-32	-	-	-	770	1120	-	958
	20	914	991	489	387	699	635	584	43		20-32	-	-	-	840	1150	-	1200
	24	1067	1143	591	489	813	749.5	692	48		20-35	-	-	-	920	1230	-	2100
	28	1245	1345	686	591	927	863.5	800	72		28-35	-	-	-	990	1310	-	3000
Class 300	1/2	140	140	13	-	95	66.5	35	15	1.6	4-15	130	75	200	-	-	3	-
	3/4	152	152	19	-	117	82.5	43	16		4-19	170	84	205	-	-	4	-
	1	165	165	25	-	124	89.0	51	18		4-19	170	90	215	-	-	6	-
	11/4	178	178	32	-	133	98.5	64	19		4-19	200	107	240	-	-	8	-
	11/2	190	190	38	-	156	114.5	73	21		4-22	250	127	265	-	-	10	-
	2	216	216	51	-	165	127.0	92	23		8-22	250	140	360	-	-	13	-
	21/2	241	241	64	-	190	149.0	105	26		8-22	350	164	380	-	-	20	-
	3	283	283	76	64	210	168.5	127	29		8-22	350	177	455	-	-	32	-
	4	305	305	102	76	254	200.0	157	32		8-22	420	206	480	-	479	52	-
	5	381	381	127	102	279	235.0	186	35		8-22	700	292	645	-	646	82	-
	6	403	457	152	127	318	270.0	216	37		12-22	1000	320	665	305	666	115	145
	8	502	521	203	152	381	330.0	270	42		12-25	1300	365	815	398	814	200	240
	10	568	559	254	203	445	387.5	324	48		16-29	-	-	-	495	890	-	400
	12	648	635	305	254	521	451	381	51		16-32	-	-	-	580	910	-	580
	14	762	762	337	305	584	514.5	413	54		20-32	-	-	-	625	1020	-	790
	16	838	838	387	337	648	571.5	470	58		20-35	-	-	-	720	1080	-	940
	18	914	914	432	337	711	628.5	533	61		24-35	-	-	-	770	1120	-	1200
	20	991	991	483	387	775	686	584	64		24-35	-	-	-	840	1150	-	1400
	24	1143	1143	591	483	914.5	813	692	70		24-41	-	-	-	920	1230	-	2850
	28	1346	1346	686	591	1035	940	800	86		28-45	-	-	-	990	1310	-	4250
Class 600	1/2	165	165	13	-	95	66.5	35	15	6.4	4-15	170	80	200	-	-	5.5	-
	3/4	191	191	19	-	118	82.5	43	16		4-19	200	89	205	-	-	7	-
	1	216	216	25	-	124	89	51	18		4-19	200	95	215	-	-	10	-
	1 1/4	229	229	32	-	133	98.5	64	21		4-19	250	112	240	-	-	15	-
	1 1/2	241	241	38	-	156	114.5	73	23		4-22	350	132	265	-	-	18	-
	2	292	292	51	38	165	127	92	26		8-19	350	145	360	-	360	25	-
	2 1/2	330	330	64	51	190	179	105	29		8-22	420	169	380	-	379	32	-
	3	356	356	76	64	210	168.5	127	32		8-22	420	182	455	-	452	46	-
	4	432	432	102	76	273	216	157	38		8-25	700	211	480	-	479	75	-
	6	559	559	152	127	356	292	216	48		12-29	-	-	-	435	666	-	150
	8	660	660	200	152	419	349	270	56		12-32	-	-	-	530	736	-	350
	10	787	787	248	200	508	432	324	64		16-35	-	-	-	615	790	-	580
	12	838	838	298	248	559	489	381	67		20-35	-	-	-	680	870	-	790
	14	889	889	327	298	603	527	413	70		20-38	-	-	-	720	1020	-	980
	16	991	991	375	327	686	603	470	77		20-41	-	-	-	840	1080	-	1300
	18	1092	1092	432	327	743	654	533	83		20-45	-	-	-	890	1120	-	1400
	20	1194	1194	483	375	813	724	584	89		24-45	-	-	-	925	1200	-	2100
	24	1397	1397	591	483	940	838	692	102		24-51	-	-	-	980	1295	-	3400
	28	1549	1549	686	591	1073	965	800	112		28-55	-	-	-	1180	1310	-	5000

Form of Main Types and Connecting Dimension

SZNAJDER STAHLWAREN

Continued form

Pressure class	DN(mm) Nominal diameter	Dimension (mm)															Weight (Kg)	
		L		d1		D	D1	D2	b	f	z-Φd	W	H					
		RF	BW	All-diameter	Crinkled-diameter							Manual	41Type	641Type	347Type	647Type	41Type	347Type
Class 900	2	368	368	47	-	216	165.1	92	38.5	6.4	8-26	-	-	-	-	380	-	-
	2 1/2	419	419	57	47	244	190.5	105	41.5		8-29	-	-	-	-	395	-	-
	3	381	381	73	57	241	190.5	127	38.5		8-26	-	-	-	-	480	-	-
	4	457	457	98	73	292	234.9	157	44.5		8-32	-	-	-	290	532	-	160
	6	610	610	146	121	381	317.5	216	56.0		12-32		-		435	703	-	220
	8	737	737	190	146	470	393.7	270	63.5		12-39	-	-	-	530	750	-	450
	10	838	838	238	190	545	459.5	324	70.0		16-39	-	-	-	615	820	-	760
	12	965	965	282	238	610	533.4	381	79.5		20-39	-	-	-	680	900	-	1050

Form of JIS Series Main Connecting Dimension

Pressure class	DN(mm) Nominal diameter	Dimension (mm)																Weight (Kg)	
		L		d1		D	D1	D2	D6	b	f/f1	z-Φd	W	H					
		RF	BW	All-diameter	crinkled-diameter								Manual	41Type	641Type	347 Type	647Type	41Type	347Type
JIS10K	15	108	140	15	-	95	70	52	-	12	1	4-15	130	75	200	-	-	2	-
	20	117	152	20	-	100	75	58	-	14		4-15	170	84	204	-	-	2.5	-
	25	127	165	25	-	125	90	70	-	14		4-19	170	90	215	-	-	4.5	-
	32	140	178	32	-	135	100	80	-	16		4-19	200	107	240	-	-	6	-
	40	165	190	40	-	140	105	85	-	16	2	4-19	250	127	264	-	-	7.5	-
	50	178	216	50	-	155	120	100	-	16		4-19	250	140	274	-	-	9.5	-
	65	190	241	65	-	175	140	120	-	18		4-19	350	164	379	-	-	14	-
	80	203	283	80	65	185	150	130	-	18		8-19	350	177	389	-	-	19	-
	100	229	305	100	80	210	175	155	-	18		8-19	420	206	416	-	416	30	-
	125	356	381	125	100	250	210	185	-	20		8-23	700	292	542	-	542	58	-
	150	394	457	150	125	280	240	215	-	22		8-23	1000	320	572	305	572	88	117
	200	457	521	200	150	330	290	265	-	22		12-23	1300	365	600	398	736	150	185
	250	533	559	250	200	400	355	325	-	24		12-25	-	-	-	495	890	-	245
	300	610	635	300	250	450	400	370	-	24		16-25	-	-	-	580	910	-	395
	350	686	762	350	300	490	445	415	-	26		16-25	-	-	-	625	1020	-	516
	400	762	838	400	350	560	510	475	-	28		16-27	-	-	-	720	1080	-	756
	450	864	914	450	350	620	565	530	-	30		20-27	-	-	-	770	1120	-	958
	500	914	991	500	400	675	620	585	-	30		20-27	-	-	-	840	1150	-	1200
JIS20K	15	140	140	15	-	95	70	52	-	14	1	4-15	130	75	200	-	-	3	-
	20	152	152	20	-	100	75	58	-	16		4-15	170	84	204	-	-	4	-
	25	165	165	25	-	125	90	70	-	16		4-19	170	90	215	-	-	6	-
	32	178	178	32	-	135	100	80	-	18		4-19	200	107	240	-	-	8	-
	40	190	190	40	-	140	105	85	-	18	2	4-19	250	127	264	-	-	10	-
	50	216	216	50	-	155	120	100	-	18		8-19	250	140	360	-	-	13	-
	65	241	241	65	-	175	140	120	-	20		8-19	350	164	379	-	-	20	-
	80	283	283	80	65	200	160	135	-	22		8-23	350	177	452	-	-	32	-
	100	305	305	100	80	225	185	160	-	24		8-23	420	206	479	-	479	52	-
	125	381	381	125	100	270	225	195	-	26		8-25	700	292	646	-	466	82	-
	150	403	457	150	125	305	260	230	-	28		12-25	1000	320	666	305	666	115	138
	200	502	521	200	150	350	305	275	-	30		12-25	1300	365	815	398	814	200	230
	250	568	559	250	200	430	380	345	-	34		12-27	-	-	-	495	890	-	390
	300	648	635	300	250	480	430	395	-	36		16-27	-	-	-	580	910	-	560
	350	762	762	350	300	540	480	440	-	40		16-33	-	-	-	625	1020	-	770
	400	838	838	400	350	605	540	495	-	46		16-33	-	-	-	720	1080	-	920
	450	914	914	450	350	675	605	560	-	48		20-33	-	-	-	760	1120	-	1150
	500	991	991	500	400	730	660	615	-	50		20-33	-	-	-	840	1150	-	1350

SZNAJDER STAHLWAREN

Serial Ball Valves Torque Form

Floating Ball Valve Torque Form

Size(mm) / Class(Mpa)	15	20	25	40	50	65	80	100	125	150	200
1.6	3	5	10	16	25	50	65	125	250	340	485
2.5	3	5	11	18	30	60	80	140	300	400	680
4.0	5	10	24	35	50	100	150	250	450	585	996
6.4	15	30	30	80	100	200	300	400	-	-	-
10.0	19	35	68	130	190	360	460	700	-	-	-
Size(mm) / Class(Mpa)	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"
150	3	5	11	16	25	50	65	125	250	410	700
300	7	12	26	38	60	120	160	280	600	950	1550
400	15	30	50	90	140	240	350	540	-	-	-
600	19	35	68	130	190	360	460	770	-	-	-

Trunnion Type Ball Valve Torque Form(N.M)

Size(mm) / Class(Mpa)	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800
PN1.6	25	50	65	125	250	340	485	810	1310	1910	2860	4500	5860	8920	13320	24000
PN2.5	30	60	80	140	300	400	680	1140	1870	2740	4150	6500	7800	13210	19830	35420
PN4.0	50	100	150	250	450	585	996	1690	2800	4110	6300	8900	12000	20380	30670	55200
PN6.4	100	200	300	400	650	890	1500	2560	4290	6320	9750	13500	18660	21820	48020	85830
PN10.0	190	300	460	770	1050	1980	3280	5250	7200	9860	14500	19600	29000	42500	58000	82000
Size(mm) / Class(Mpa)	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"
150	25	50	65	125	250	410	700	1100	1750	2600	3900	6200	7500	10500	14500	21000
300	60	120	160	280	600	950	1550	2000	3300	5000	7500	11800	14400	19600	28200	29800
400	140	240	350	540	740	1260	1910	3250	5340	7500	10000	12400	18500	29500	40500	53000
600	190	360	460	770	1050	1980	3280	5250	7200	9860	14500	19600	29000	42500	58000	62000

Three-Way Ball Valve Torque Form(N.M)

通径(mm) Size / 压力(MPa) Class	15	20	25	40	50	65	80	100	125	150	200	250	300
PN1.6	5	8	15	24	35	75	100	180	350	500	730	1210	1950
PN2.5	5	8	16	27	45	90	120	210	450	600	1000	1600	2800
PN4.0	8	15	36	50	75	145	220	350	650	850	1450	2400	4200
通径(mm) Size / 压力(MPa) Class	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"
Class 150	5	8	16	24	38	75	95	185	380	600	1050	1650	2625
Class 300	8	18	38	58	90	180	240	420	900	1425	2300	3000	4950

Notes: The data in the form are not practically,and just for reference.