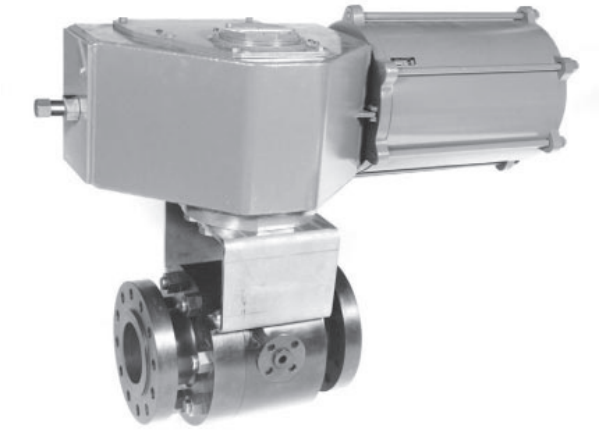
Neles™ metal seated, seat supported, full bore ball valves
Series S6 for ASME 900 - 2500

Neles S6-series metal-seated ball valves meet a wide range of severe-service requirements. These valves are your best choice for handling the challenges presented by critical applications for abrasive and/or corrosive media and extremely high or low temperatures and pressures in a wide range of petroleum refining, chemical, power, mining and general industrial applications. S6 valves are available in full bore designs in pressure classes ASME 900 to 2500 and sizes from 1/2" to 6" (DN 15 to 150). Each S6- series valve is constructed with a forged body and cap resulting in a wide selection of material possibilties even in higher pressure classes. The S6-series severe- service ball valve is a proven valve design constructed from the most suitable parts and materials specifically engineered to satisfy your most demanding needs.



Applications
- Chemical and petrochemical plants
- Oil and gas production
- Oxygen plants
- Power plants
- Other process industry applications
- Liquids, gas and steam
- Hydrocarbons
- Catalyst handling
- Moderate control and tight shut-off applications
- Emergency valves ESD/ESV

Size range
- 1/2" - 6" / DN 15 - 150 in full bore

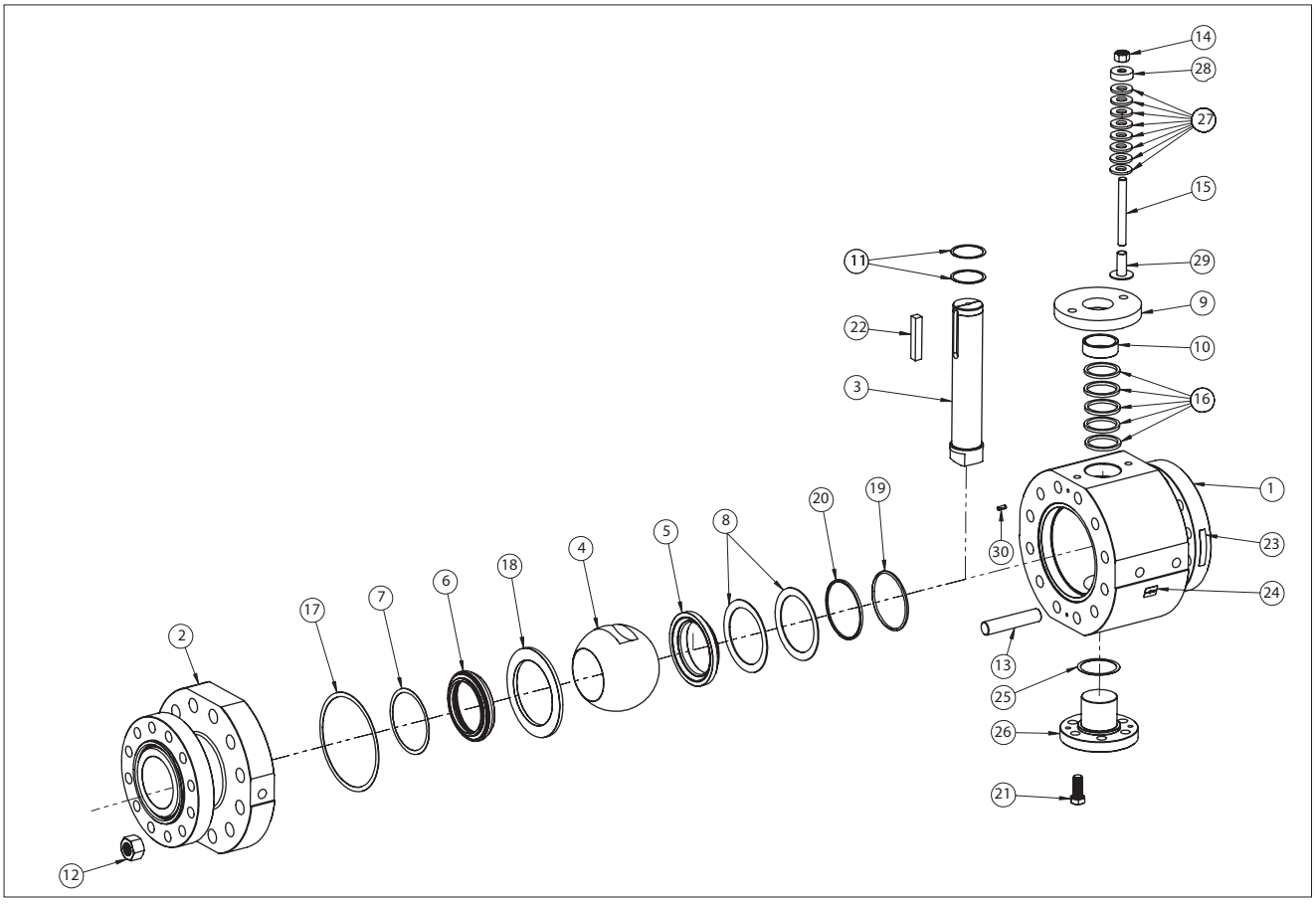
Pressure classes
- ASME Class 900 to 2500.

Tightness
- Floating ball design assures tight shutoff with metal seats.

Features

Full bore
- Maximum Cv per nominal size.
- Cylindrical flow path allows low flow resistance.
- Full bore design for API requirements.

Tight shutoff
- Standard shutoff to FCI 70-2 class V
- Optional - Class VI
- Optional - API 598



Item no.	Part description	Material	
		Carbon Steel	Stainless Steel
1	Body	ASTM A105	ASTM A182 gr. F316
2	Body Cap	ASTM A105	ASTM A182 gr. F316
3	Shaft	ASTM 410	17-4PH
4	Ball	ASTM 410 + CrC	17-4PH + CrC
5	Seat Ring	ASTM 410 + CrC	Cobalt based alloy
6	Seat Ring	ASTM 410 + CrC	Cobalt based alloy
7	Seat Gasket	Graphite	Graphite
8	Disc Sring	UNS N08825	UNS N08825
9	Compression Plate	ASTM A105	Stainless Steel
10	Compression Ring	Stainless Steel	Stainless Steel
11	Thrust Bearing	Cobalt based alloy	Cobalt based alloy
12	Hexagon Nut	ASTM A194 gr. 2H	ASTM A194 gr. 8 or 8M
13	Stud	ASTM A193 gr. B7	ASTM A193 gr. B8 or B8M
14	Hexagon Nut	ASTM A194 gr. 2H	ASTM A194 gr. 8 or 8M
15	Stud	ASTM A193 gr. B7	ASTM A193 gr. B8 or B8M
16	Packing	Graphite	Graphite
17	Body Seal	Graphite	Graphite
18	Belleville Spring	Stainless Steel	Stainless Steel
19	Back Seal	Graphite	Graphite
20	Support Ring	AISI 316	AISI 316
21	Hex Head Cap Screw	ASTM A193 gr. B7	ASTM A193 gr. B8M
22	Key	EN 10088-1.4460	EN 10088-1.4460
23	Identificaton Plate	Stainless Steel	Stainless Steel
24	Flow Direction Arrow	Stainless Steel	Stainless Steel
25	Gasket	Graphite	Graphite
26	Plug	ASTM A105	ASTM A182 gr. F316
27	Belleville Spring	Stainless Steel	Stainless Steel
28	Flat Washer	Stainless Steel	Stainless Steel
29	Guide Bushing	Stainless Steel	Stainless Steel
30	Spring Pin	Stainless Steel	Stainless Steel

Technical specification

Product type
Full bore seat supported ball valve split body Design
Flanged

Pressure ratings
ASME Class 900
ASME Class 1500
ASME Class 2500

Size range
1/2”-6” in ASME Class 900
1/2”-6” in ASME Class 1500
1/2”-4” in ASME Class 2500

Standard temperature range (dependent on materials of construction)
-29 to +538°C (-29 to +1000 °F), consult factory for higher temperature applications

Design standards

Valve body	ASME B16.34
Valve flanges	ASME B16.5
Face-to-face	ASME B16.10 long pattern

Standard materials

Body	ASTM A105
	ASTM A182 gr. F316
Ball	410 + Carbide coating
Bearings	Cobalt based alloy
Seats	Cobalt based alloy
Seals/gaskets	Graphite
Body gaskets	Graphite

Material and test certification

Gland packing	Graphite with live loaded construction.
Bolting	B8M/8M with stainless steel body.
	B7/2H with carbon steel body.

Standard options
Oxygen cleaning
BAM compatible
High temperature linkages.
Degreasing
High temperature design
Carbide ball coating
NACE MR 0103 and MR 0175
EN10204-3. 1 material certificate for body and bonnet

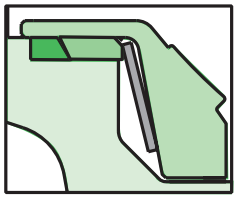
Valve testing
Each valve is tested for body integrity and seat tightness. The body test pressure is 1,5 x pressure class. The seat test is done according to selected standard. Test medium is inhibited water or air depending on standard.

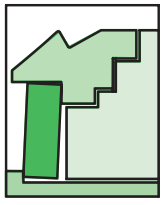
Standard tightness
FCI 70-2 Class V for metal seats.
Other tightness rates upon request.

Actuator sizing torques
Please use Neles Nelprof software for actuator sizing torques or consult the factory.

Standard seats construction and materials

H Seat

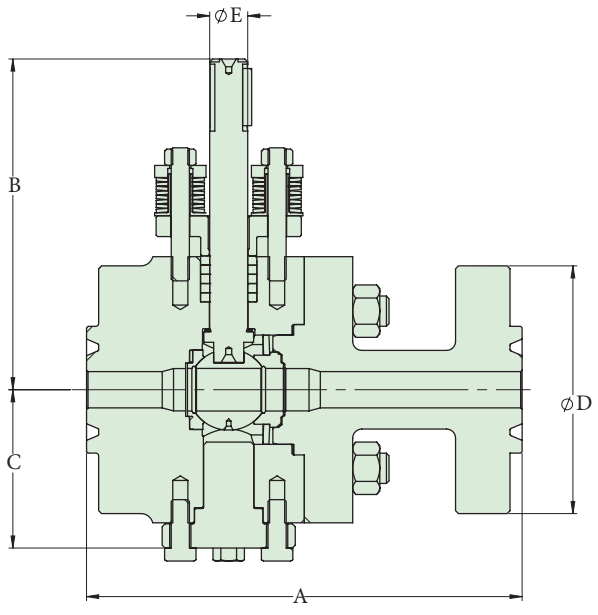




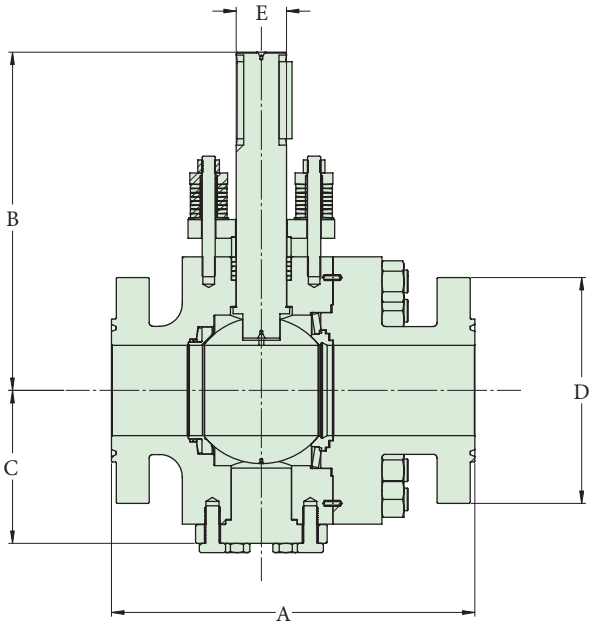
Ball seat:	410 + hard facing
Seat seal:	Graphite
Spring:	INCOLOY 825
Temperature range:	-30 to +425 °C / -20 to +797 °F with carbide coating

Dimensions

Size 1/2" and 3/4"



Size 1" and 6"



Valve size DN / inches	ASME Class 900# S6 — dimensions mm / inches							
	Bore	A (RF)	A (RTJ)	B	C	D	E	Weight (kp/lbs)
15 / 0.50	12.7 / 0.50	254/10.00	254/10.00	173.6 / 6.84	82.55 / 3.25	121 / 4.75	20 mm	20 / 44
20 / 0.75	17.5 / 0.69	254/10.00	254/10.00	173.6 / 6.84	82.55 / 3.25	130 / 5.12	20 mm	20 / 44
25 / 1.00	22.1 / 0.87	254 / 10.00	254 / 10.00	173.6 / 6.84	82.55 / 3.25	149.6 / 5.88	20 mm	30 / 66
40 / 1.50	34.8 / 1.37	305 / 12.00	305 / 12.00	237.4 / 9.35	108.0 / 4.25	178.2 / 7.00	25 mm	43 / 95
50 / 2.00	47.5 / 1.87	368 / 14.48	371 / 14.60	280 / 11.03	124.5 / 4.90	215.9 / 8.50	35 mm	78 / 172
80 / 3.00	72.9 / 2.87	381 / 15.00	384 / 15.12	359.3 / 14.14	147.7 / 5.81	241.3 / 9.50	45 mm	169 / 372
100 / 4.00	98.3 / 3.87	457 / 18.00	460 / 18.11	389.5 / 15.33	175.0 / 6.89	292.1 / 11.50	55 mm	370 / 820
150 / 6.00	146.1 / 5.75	610 / 24.02	613 / 24.13	571 / 22.48	257 / 10.12	381.4 / 15.00	85 mm	560 / 1235

Valve size DN / inches	ASME Class 1500# S6 — dimensions mm / inches							
	Bore	A (RF)	A (RTJ)	B	C	D	E	Weight (kp/lbs)
15 / 0.50	12.7 / 0.50	254/10.00	254/10.00	173.6 / 6.84	82.55 / 3.25	121 / 4.75	20 mm	20 / 44
20 / 0.75	17.5 / 0.69	254/10.00	254/10.00	173.6 / 6.84	82.55 / 3.25	130 / 5.12	20 mm	20 / 44
25 / 1.00	22.1 / 0.87	254 / 10.00	254 / 10.00	173.6 / 6.84	82.55 / 3.25	149.6 / 5.88	20 mm	30 / 66
40 / 1.50	34.8 / 1.37	305 / 12.00	305 / 12.00	237.4 / 9.35	108.0 / 4.25	178.2 / 7.00	25 mm	43 / 95
50 / 2.00	47.5 / 1.87	368 / 14.48	371 / 14.60	280 / 11.03	124.5 / 4.90	215.9 / 8.50	35 mm	78 / 172
80 / 3.00	69.9 / 2.75	470 / 18.50	473 / 18.62	400.3 / 15.76	173.0 / 6.81	266.7 / 10.5	50 mm	164 / 363
100 / 4.00	91.9 / 3.62	546 / 21.50	549 / 21.61	491.1 / 19.33	203.2 / 8.00	311.2 / 12.25	65 mm	317 / 700
150 / 6.00	136.4 / 5.37	705 / 27.76	711 / 28.00	634.5 / 24.98	269.9/10.62	393.7 / 15.50	85 mm	725 / 1600

Valve size DN / inches	ASME Class 2500# S6 — dimensions mm / inches							
	Bore	A (RF)	A (RTJ)	B	C	D	E	Weight (kp/lbs)
15 / 0.50	11.2 / 0.44	266.7 / 10.50	266.7 / 10.50	204.9 / 8.07	92.2 / 3.63	133.4 / 5.25	20 mm	34.02 / 75
20 / 0.75	14.2 / 0.56	266.7 / 10.50	266.7 / 10.50	204.9 / 8.07	92.2 / 3.63	139.7 / 5.50	20 mm	34.02 / 75
25 / 1.00	19.1 / 0.75	266.7 / 10.50	266.7 / 10.50	204.9 / 8.07	92.2 / 3.63	158.8 / 6.25	20 mm	34.02 / 75
40 / 1.50	28.4 / 1.12	451 / 17.76	451 / 17.76	359 / 14.14	174.4 / 6.87	203.2 / 8.00	50 mm	169 / 372
50 / 2.00	38.1 / 1.50	451 / 17.76	451 / 17.76	359 / 14.14	174.4 / 6.87	235 / 9.25	50 mm	169 / 372
80 / 3.00	57.2 / 2.25	578 / 22.76	584 / 23.0	443. / 17.46	215.9 / 8.50	304.8 / 12.00	55 mm	330 / 727
100 / 4.00	72.9 / 2.87	673 / 26.50	683 / 26.89	600.1 / 23.63	322.6 / 12.70	355 / 13.98	85 mm	1247/2750

How to order

1	Valve series and style
S6	Full bore

2	Size — DN / inches
0050	15 / 0.50" *)
0075	20 / 0.75" *)
0100	25 / 1.00"
0150	40 / 1.50"
0200	50 / 2.00"
0300	80 / 3.00"
0400	100 / 4.00"
0600	150 / 6.00"

3	Pressure class
G	ASME 900 (1/2" - 6")
H	ASME 1500 (1/2" - 6")
N	ASME 2500 (1/2" - 4")

4	End connection
A	Raised face, ASME B16.5
J	Ring joint, ASME B16.5

5	Construction
BA	Standard bi-directional, metal seated, live loaded

6	Body material
W1	ASTM A 105 (Carbon steel)
W5	ASTM A350 LF2 (Carbon steel)
R1	ASTM A182 gr. F316 (Stainless steel)
R3	ASTM B164 gr. N04400 (Monel 400)
R4	ASTM B564 gr. N06600 (Inconel 600)
R5	ASTM B564 UNS N06625 (Inconel 625)

7	Ball / Coating material	Stem material	Typ. body material
SW	410 / CrC	410	W1, W5
RW	17-4ph / CrC	17-4ph	R1
NB	Monel / CrC	K-Monel	R3
NG	Inconel 600 / CrC	Inconel 718	R4
NE	Inconel 625 / CrC	Inconel 718	R5

8.sign	Seat material / coating	Body seal	Packing	Typ. body material
HCG	410 / CrC	Graphite	Graphite	W1, W5
XBG	Cobalt based alloy	Graphite	Graphite	R1
NBG	Monel / CrC	Graphite	Graphite	R3
HNG	Inconel 600 / CrC	Graphite	Graphite	R4
HEG	Inconel 625 / CrC	Graphite	Graphite	R5

9.sign	Body bolting (studs / nuts)	Typ. body material
A	A193 gr. B7 / A194 gr. 2H	W1, W5
B	A193 gr. B8M / A194 gr. 8M	R1, R4, R5
C	Monel K-500	R3

10.sign	Modifier codes
	FCI 70-2 class V seat leak test
T6	FCI 70-2 class VI seat leak test
T8	API 598 seat leak test 3" and larger only

*) = Face to face is equal to 1" B16.10 long pattern.

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