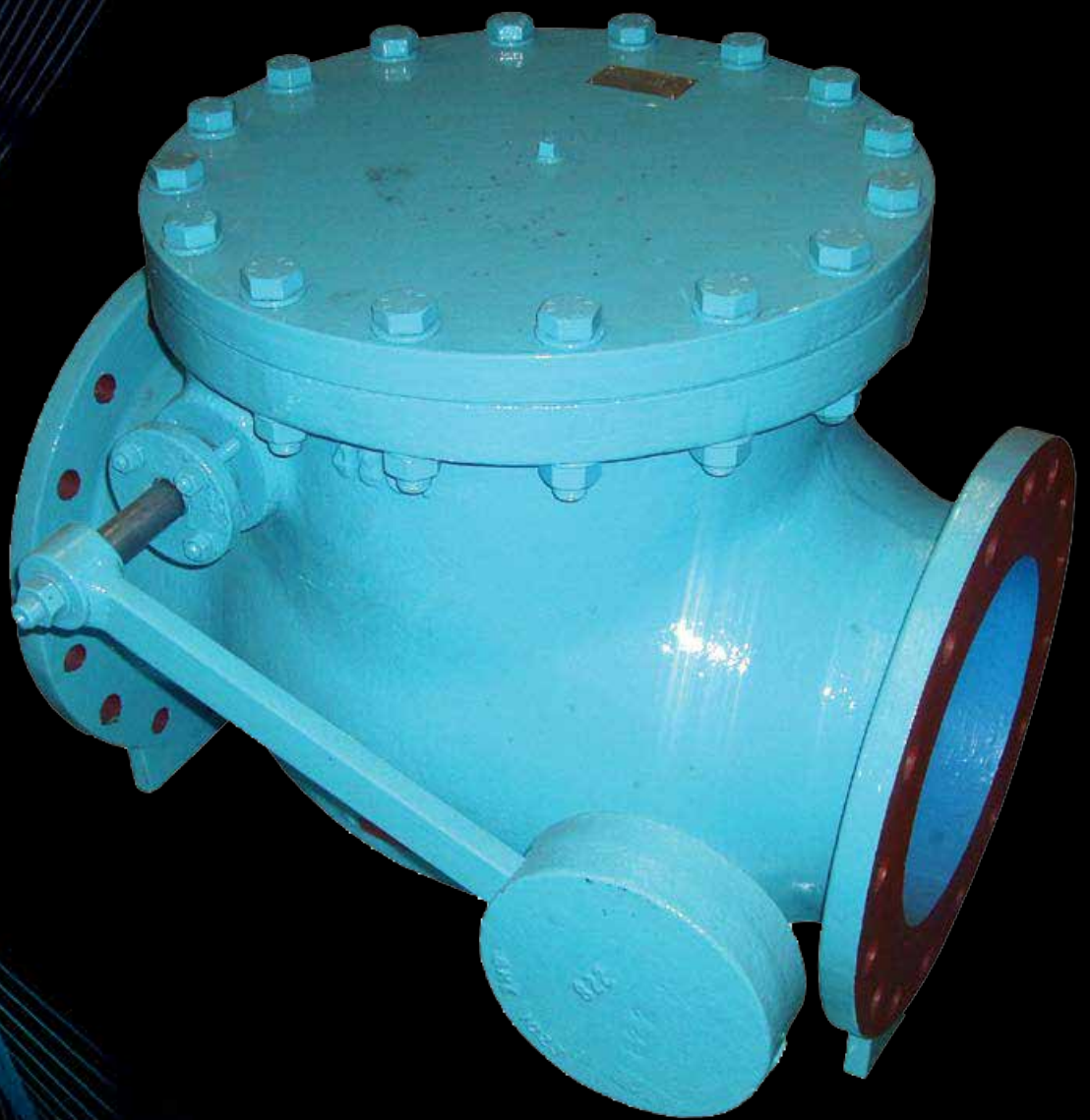


ULTRA SWING CHECK VALVES

SINGLE & MULTI DOOR TYPE: SABS 144 & 192



ULTRA
CONTROL VALVES

T O T A L V A L V E S O L U T I O N S

SINGLE DOOR CHECK VALVES

These valves are of self-contained, free swinging clack conventional style. Depending on operating conditions, valves can be supplied with or without lever and weight or by contractual requirement. The valves conform to BS 5153, SABS 144&192. The valves come complete with quality welded seats of St/Steel 316 (body) and NA Bronze AB2 (Clack) for all ratings. The clack is keyed to the shaft, as opposed to pinning, for ease of maintenance.

These valves are suitable for use in waste water, sewerage and clean water applications and are designed for horizontal installations.

The illustrations shown in this catalogue are subject to change without notice. The valves are rated as shown in this section.

Flanges:

The valves have integral flanges that can be cast and drilled to suit customer or contractual specification requirements.

Coating:

Internal and external coatings are of Twin Pack Epoxy, Fusion Bonded Epoxy or an approved equivalent.

Operation:

With these valves, the clack swings freely open and is keyed to the spindle. The valve swings open once pump starts and allows for full flow. The valves come complete with lever and weight, as per customer or contractual requirements.

Installation:

All valves are built for horizontal pipe installation. However, valves operate equally well in vertical pipe flow-up installations.

Size Range:

Sizes vary from DN100 to DN500.

Rating:

Valves are rated for PN10 to PN100.

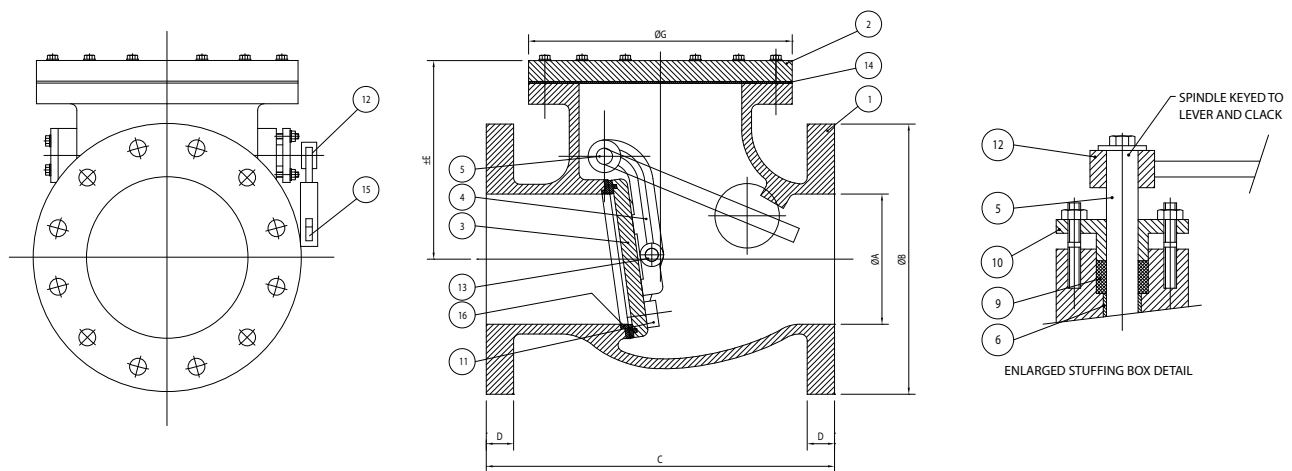


VALVE SLAMMING

Swing check valves are subject to slamming on rapid reversal of flow. Valve doors are balanced by using a lever and counter-weights attached to the hinge shaft. It is recommended that all sizes of high pressure check valves be fitted with lever and weight. This, when set properly, helps the valves close on time before water waves reach the valve from the downstream end, thus eliminating slamming.

BY PASSES

Valve sizes of DN200 and larger may be fitted with by-pass assemblies to drain the pipeline downstream of the main valve, or in the open position, to relieve surge pressures.



DIMENSIONS IN MILLIMETERS

Size	PN40 Rating						PN100 Rating					
	C	G	D	B	E	Mass (kg)	A	B	C	D	E	Mass (kg)
50	230	172	20	165	140	19						-
80	305	229	24	200	195	36	356	280	32	230	250	130
100	355	240	24	235	210	54	432	296	36	265	262	160
150	450	343	28	300	264	125	559	408	44	355	332	210
200	535	420	34	375	298	180	660	505	52	430	398	430
250	635	480	38	450	356	290	787	590	60	505	445	575
300	760	495	42	515	380	400	838	578	68	585	403	630
350	865	597	46	580	393	500	889	715	74	655	432	780
400	865	720	50	660	489	725	-	-	-	-	-	-
450	950	699	52	685	479	725	-	-	-	-	-	-
500	950	699	52	755	479	820	-	-	-	-	-	-

MATERIALS OF CONSTRUCTION

For all the valve ratings the material for primary components conforms to relevant specification and as listed below.

Item	Component	Specification	
		Low Pressure	High Pressure
1	Body	SG BS 2789 420/12	Cast Steel 3100-A2
3	Door	SG BS 2789 420/12	Cast Steel 3100-A2
2	Cover	Mild Steel BS 4360 300WA	
5	Shaft	Stainless Steel BS 970 431S29	
16	Body Seat	Stainless Steel 316 (Weld Deposit)	
16	Door Seat	NA Bronze AB2 (Weld Deposit)	

COMPONENT MATERIAL LIST AS INDICATED

Item	Description	Material
1	Body	SG Iron BS 2789 420/12
2	Cover	Mild Steel 300WA
3	Clack	SG BS 2789 420/12
4	Clack Arm	SG BS 2789 420/12
5	Spindle	St/Steel BS 970 431 529
6	Bush	GM BS 1400 LG4
7	End Cover O'ring	Nitrile Rubber
8	End Cover	Mild Steel 300WA
9	Gland Packing	John Crane
10	Gland	SG BS 2789 420/12
11	Stopper	Nitrile
12	Lever	Mild Steel 300WA
13	Clack Pin	St/Steel BS 970
14	Cover Gasket	Klinger
15	Counter Weight	SG BS 2789 420/12
16	Body Seat	St/Steel 316

All other components are as shown on the list or as per customer requirements.

HEADLOSS

The table on the next page indicates headloss in kPa across pattern Swing Check Valves mounted in horizontal pipelines, with door shafts supported in low friction bearings and without counter-weights or damping devices affecting the movement of the doors. The headloss indicated is at various fluid velocities through the valves of clean water at 20°C. The minimum headloss across the valves required to hold in the open position averages 3.5kPa in all sizes.

Size	No of Doors	Velocities			
		2 m/s	2.5 m/s	3 m/s	3.5 m/s
50	1	4.4	7.0	10.0	13.5
80	1	4.4	7.0	10.0	13.5
100	1	4.4	7.0	10.0	13.5
150	1	4.4	7.0	10.0	13.5
200	1	4.4	7.0	10.0	13.5
250	1	4.4	7.0	10.0	13.5
300	1	4.2	6.6	9.5	13.0
350	1	4.2	6.6	9.5	13.0
400	1	4.2	6.6	9.5	13.0
450	1	4.2	6.6	9.5	13.0
500	2	3.5	4.6	6.6	9.0
600	2	3.5	4.6	6.6	9.0
700	2	3.5	4.6	6.6	9.0
800	2	3.5	4.6	6.6	9.0
900	4	3.5	4.2	6.6	9.0
1000	4	3.5	4.2	6.6	9.0
1200	6	3.5	4.0	5.6	7.6
1400	6	3.5	4.0	5.6	7.6
1600	6	3.5	4.0	5.6	7.6

MULTI DOOR CHECK VALVES

The illustration shown is of the 3-piece construction of sizes DN800 - DN1600. DN500 and DN600 sized valves are of two-piece construction. The valves are supplied complete with lever and weight on each door or door-pair and position indicators. The valves can also be fitted with by pass assemblies when required. The valves conform to BS 5153 standards.

Flanges:

The valves have integral flanges that can be cast and drilled to suit customer or contractual specification requirements.

Coating:

Internal and external coatings are of Twin Pack Epoxy, Fusion Bonded Epoxy or an approved equivalent.

Operation:

The top and bottom doors swing open independently and, unlike the single clack type, are pinned to their respective spindles. The valve doors swing open once pump starts and allows for full flow. The valves come complete with lever and weight on each shaft.

Installation:

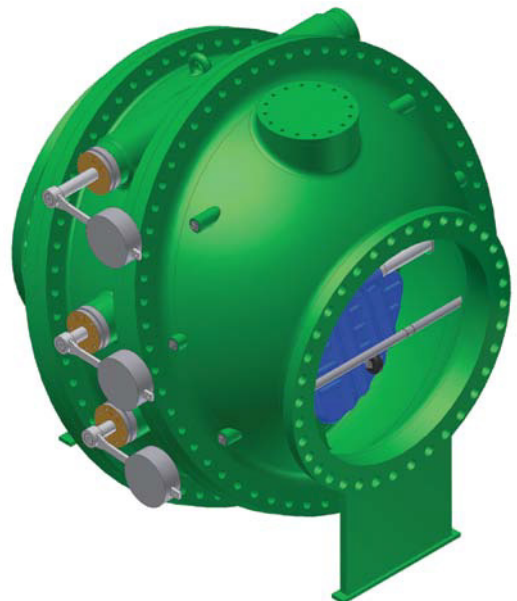
All valves are built for horizontal pipe installation.

Size Range:

Sizes vary from DN500 to DN1600.

Rating:

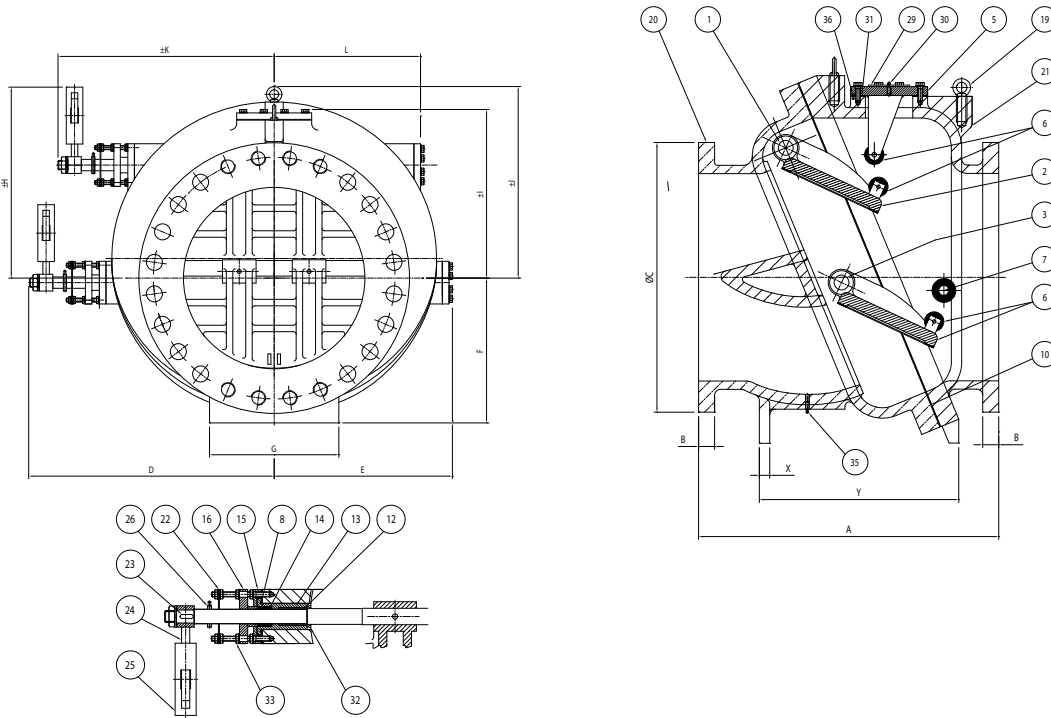
Valves are rated for PN10 to PN40 water working pressure.



MATERIALS OF CONSTRUCTION

For all valve ratings, the material for primary components conforms to relevant specification and as listed below.

Item	Component	Specification	
		Low Pressure	High Pressure
2 & 4	Doors	SG 420/12	Cast Steel 3100-A2
20 & 21	Body	SG 420/12	Cast Steel 3100-A2
15	Inspection-Cover	Mild Steel BS 4360 300WA	
1	Shaft	Stainless Steel BS 970 431S29	
(20)	Body Seat	Stainless Steel 316 (Weld Deposit)	
(2)	Door Seat	NA Bronze AB2 (Weld Deposit)	



DIMENSIONS IN MILLIMETERS

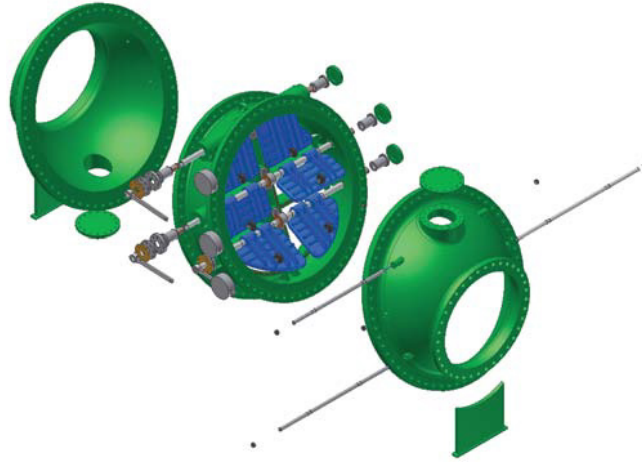
Size	A	D	E	F	G	$\pm J$	PN25 Rating			PN40			No of Doors
							B	C	Mass (kg)	B	C	Mass (kg)	
500	1000	885	630	500	500	720	44	730	2150	52	755	2205	2
600	1015	695	650	595	400	815	46	845	2500	60	890	2625	2
700	1330	1050	750	560	500	741	50	960	3240	64	995	3402	2
800	1330	1130	773	824	550	770	54	1085	4000	72	1140	4200	2
900	1700	935	756	900	700	770	58	1185	6456	-	-	6780	4
1000	1700	1616	964	1000	700	1035	62	1320	7600	-	-	7980	4
1200	2210	1800	1664	1100	900	1032	70	1530	14770	-	-	15510	6
1400	2150	1800	1465	1610	1000	1535	76	1755	17000	-	-	18700	6
1600	2400	1800	1465	1610	1000	1535	84	1975	25000	-	-	27000	6

NB:

All other components are as shown on the list or as per customer requirements. All lettered dimensions conform to SABS 144 & SABS 192 standards.

GENERAL CONSTRUCTION (3-PIECE TYPICAL)

Typical arrangement of large Multi Door Check Valve



COMPONENT MATERIAL

Item	Description	Material	Item	Description	Material
1	Upper Door Spindle	SG BS 2789-420/12	19	Eye Bolt	EN5A
2	Upper Door	SG BS 2789-420/12	20	Inlet Body	See 2.1
3	Lower Door Spindle	St/Steel BS 970 431S29	21	Outlet Body	See 2.1
4	Lower Door	SG BS 2789 420/12	22	Indicator Plate	Cast Brass
5	Inspection Cover	Mild Steel 300WA	23	Key (lever door)	Keysteel BS 4235
6	Rubber Stopper	Nitrile	24	Lever	Mild Steel 300WA
7	Lower Stopper Rod	St/Steel BS 970 431S29	25	Counter Weight	SG BS 2789-420/12
8	Stuffing Box O'ring	Nitrile	26	Indicator Pointer	Gunmetal BS 1400 LG2
9	Eccentric Bush Cover	Mild Steel 300WA	27	Shaft Pin	St/Steel 316
10	Body O'ring	Nitrile	28	Shaft Pin Grub Screw	St/Steel 316
11	Eccentric Bush	Mild Steel 300WA	29	Name Plate	Cast Brass
12	Ecc. Bush Bearing	Phosphor Bronze	30	Air Release Plug	Steel - Galv.
13	Ecc.Stuffing Box	Mild Steel 300WA	31	Inspection Cover Gasket	Rubber Insertion
14	Gland Packing	John Crane	32	Gaco U-Seal	Nitrile
15	Ecc.Stuffing Box Cover	Mild Steel 300WA	33	Gland Bolting	Steel Gr 8.8
16	Gland	Mild Steel 300WA	34	Ecc Bush Over Bolting	Steel Gr 8.8
17	Body Seat (weld deposit)	St/Steel 316	35	Drain Plug	Steel
18	Door Seat (weld deposit)	N.A. Bronze AB2	36	Dowel Pin	St/Steel 316