

## NOZZLE CHECK VALVE



It is a type of check valve which consists of a cylindrical body, a disc inside it, a shaft and shaft housing that hold and carry the disc.

Even it is fully open, disc is located on flow path. This is the reason why it cannot be used in sewage media, but can be used only in clean water.

Design of nozzle check valve seat sealing is metal-to-metal. This feature enables nozzle check valve to be used at outlet side of high pressure pumps where other types fail.

How it works,

Shape of nozzle check valve looks like needle valve. As a parameter of geometric design, there is a water-drop shaped chamber in the middle of check valve. When flow begins, disc is pushed forward by effect of flow. Water passes around the chamber and disc in a ring shape. As flow travels around that chamber, section of flow turns into a ring. As it continues, flow is forced to be directed at centre at outlet side of valve. Cavitations occur and finishes inside the flow and does not create any damage on valve or other equipment.

Another feature of nozzle check valve is that there are four pieces wide ribs which hold the chamber inside body. These wing shaped ribs decelerate rotation of flow at outlet of pump. Water flows more smoothly and laminar inside the pipe-line, does not create any damage on equipments at line.

When pump begins to slow down to stop, disc closes by assistance of back flow and spring force. Its closure prevents the water in the pipe line to flow reversely.

As a result of geometric design, flow section area is decreased. For that reason, velocity of flow is high, time of closure is short. Vibration, noise or shock is not created.

Installation Position,

Nozzle check valves can be installed as shaft in vertical or horizontal position.

Nozzle check valves do not have any accessory.

Maintenance,

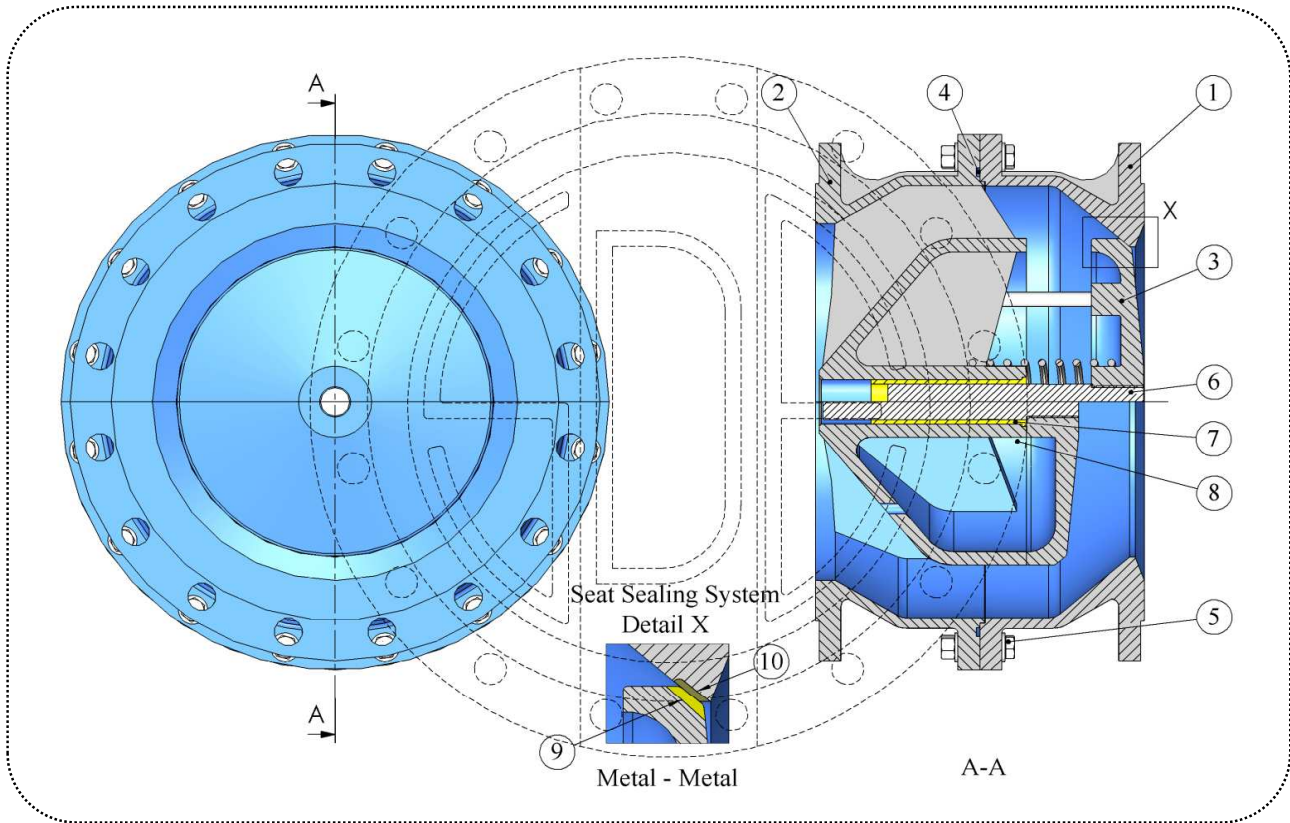
There is no need for maintenance for these valves that are installed especially in clean water pipe-line.

If it is uninstalled, we recommend cleaning inside.



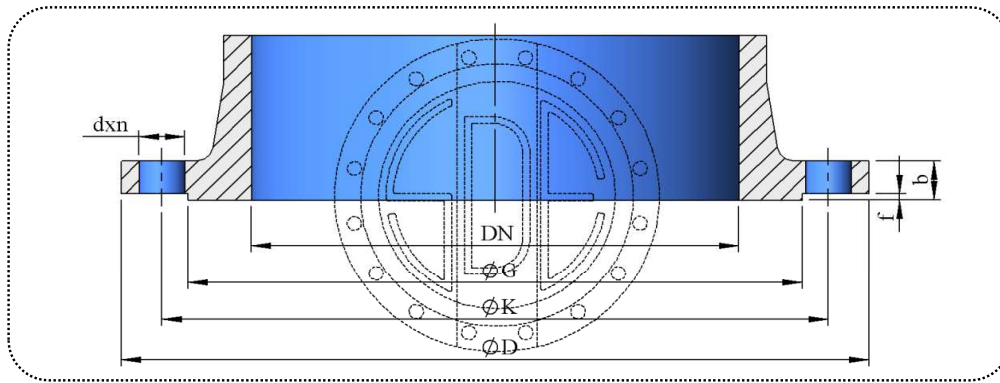


# NOZZLE CHECK VALVE



No	Item Name	Material	Description	EN Standard	Material No
1	Inlet Body	GGG 40	Ductile Iron	EN-GJS-400-15	0.7040
		GGG 50		EN-GJS-500-7	0.7050
2	Outlet Body	GGG 40	Ductile Iron	EN-GJS-400-15	0.7040
		GGG 50		EN-GJS-500-7	0.7050
3	Disc	GGG 40	Ductile Iron	EN-GJS-400-15	0.7040
		GGG 50		EN-GJS-500-7	0.7050
		304	Stainless Steel Casting	G - X6CrNi 18-9	1.4308
		316		G - X6CrNiMo 18-10	1.4408
		CC 331G-GS	Aluminium Bronze	CuAl10Fe2-C	2.0940.01
4	Ring	NBR - EPDM	Rubber	-	-
5	Bolts Nuts	Galvanized	Steel	-	-
		A2 - A 4	Stainless Steel	-	-
6	Shaft	420	Stainless Steel	X20Cr13	1.4021
		304		X5CrNi 18-10	1.4301
		316		X5CrNiMo17-12-2	1.4401
7	Bearing	Rg 5	Bronze	G-CuSn5Zn5Pb5-C	2.1096.01
8	Spring	301	Stainless Steel	X 12 CrNi 17-7	1,4310
9	Body Seat	316 L	Stainless Steel Welding	12072	1.4430
		CuAl8	Aluminium Bronze Welding	14640 S Cu 6100	2.0921
10	Disc Seat	316 L	Stainless Steel Welding	12072	1.4430
		CuAl8	Aluminium Bronze Welding	14640 S Cu 6100	2.0921
Coating		WRAS approved fusion bonded epoxy 300 microns dft as standard.			

# FLANGE DIMENSIONS



Nominal Dia	Outside Dia	Raised Face		Flange Holes			Flange Thickness	Outside Dia	Raised Face		Flange Holes			Flange Thickness	
		Dia	Height	Circle Dia.	Dia	Number			Dia	Height	Circle Dia.	Dia	Number		
DN	D	G	f	K	d	n	b	D	G	f	K	d	n	b	
PN 10								PN 16							
100	220	158	3	180	19	8	19	220	158	3	180	19	8	19	
125	250	188	3	210	19	8	19	250	188	3	210	19	8	19	
150	285	212	3	240	23	8	19	285	212	3	240	23	8	19	
200	340	268	3	295	23	8	20	340	268	3	295	23	12	20	
250	395	320	3	350	23	12	22	405	320	3	355	28	12	22	
300	445	370	4	400	23	12	25	460	378	4	410	28	12	25	
350	505	430	4	460	23	16	25	520	438	4	470	28	16	27	
400	565	482	4	515	28	16	25	580	490	4	525	31	16	28	
450	615	532	4	565	28	20	26	640	550	4	585	31	20	30	
500	670	585	4	620	28	20	27	715	610	4	650	34	20	32	
600	780	685	5	725	31	20	30	840	725	5	770	37	20	36	
700	895	800	5	840	31	24	33	910	795	5	840	37	24	40	
800	1.015	905	5	950	34	24	35	1.025	900	5	950	41	24	43	
900	1.115	1.005	5	1.050	34	28	38	1.125	1.000	5	1.050	41	28	47	
1.000	1.230	1.110	5	1.160	37	28	40	1.255	1.115	5	1.170	44	28	50	
1.200	1.455	1.330	5	1.380	41	32	45	1.485	1.330	5	1.390	50	32	57	
1.400	1.675	1.535	5	1.590	44	36	46	1.685	1.530	5	1.590	50	36	59	
1.500	1.785	1.640	5	1.700	44	36	48	1.820	1.640	5	1.710	57	36	63	
1.600	1.915	1.760	5	1.820	50	40	49	1.930	1.750	5	1.820	57	40	65	
1.800	2.115	1.950	5	2.020	50	44	52	2.130	1.950	5	2.020	57	44	69	
2.000	2.325	2.150	5	2.230	50	48	55	2.345	2.150	5	2.230	62	48	73	
2.200	2.550	2.370	5	2.440	57	52	59	2.555	2.360	5	2.440	62	52	80	
PN 25								PN 40							
100	235	162	3	190	23	8	19	235	162	3	190	23	8	19	
125	270	188	3	220	28	8	19	270	188	3	220	28	8	24	
150	300	218	3	250	28	8	20	300	218	3	250	28	8	26	
200	360	278	3	310	28	12	22	375	285	3	320	31	12	30	
250	425	335	3	370	31	12	25	450	345	3	385	34	12	35	
300	485	395	4	430	31	16	28	515	410	4	450	34	16	40	
350	555	450	4	490	34	16	30	580	465	4	510	37	16	44	
400	620	505	4	550	37	16	32	660	535	4	585	41	16	48	
450	670	548	4	600	37	20	34	685	560	4	610	41	20	50	
500	730	615	4	660	37	20	37	755	615	4	670	44	20	52	
600	845	720	5	770	41	20	42	890	735	5	795	50	20	58	
700	960	820	5	875	44	24	47	995	840	5	900	50	24	63	
800	1.085	930	5	990	50	24	51	1.140	960	5	1.030	57	24	68	
900	1.185	1.030	5	1.090	50	28	56	1.250	1.070	5	1.140	57	28	73	
1.000	1.320	1.140	5	1.210	57	28	60	1.360	1.180	5	1.250	57	28	80	
1.200	1.530	1.360	5	1.420	57	32	69	1.575	1.385	5	1.460	62	32	88	
1.400	1.755	1.570	5	1.640	62	36	74	1.795	1.600	5	1.680	62	36	98	
1.500	1.865	1.680	5	1.750	62	40	75	1.910	1.700	5	1.790	70	40	102	
1.600	1.975	1.790	5	1.860	62	40	81	2.025	1.815	5	1.900	70	40	108	
1.800	2.195	2.000	5	2.070	70	44	88								
2.000	2.425	2.230	5	2.300	70	48	95								