WAFER CHECK VALVES

www.hartvalves.co.uk

Our Company

Consistent product quality and availability of substantial stock makes HART Valves a dependable choice for API 594 dual plate check valves where total reliability is of the utmost concern.

HART Valves manufactures valves to industry and international standard specifications, or to customer specified requirements, both promptly and economically.

We maintains an extensive quality system which complies with the requirements of major oil companies, industry standards and to the ISO 9000 Standard.
HART check valves are manufactured in compliance with the requirements of API 594 and pressure tested in accordance with API 594 (or API 598) standard.

Range

Materials of construction include the ASME A216 and ASME A352 range of carbon steels, the ASTM A217 range of alloy steels, and the ASTM A351 and ASTM A890 range of corrosion-resistant steels; the pressure containing components being of high integrity castings.

Class
150/300/600/1500/2500

WL/WC

Dual Plate Wafer Check Valve

CLASS 150	**MODEL WL1/WC1**
CLASS 300	**MODEL WL3/WC3**
CLASS 600	**MODEL WL6/WC6**
CLASS 1500	**MODEL WL15/WC15**

WAFER LUG TYPE
WL

WAFER TYPE

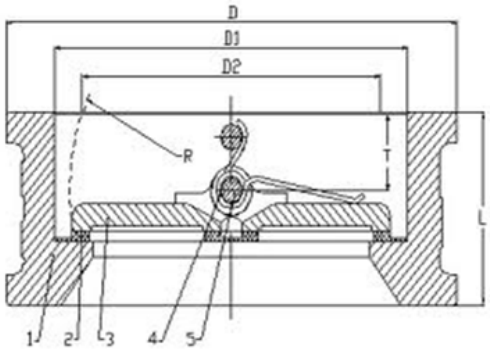
Standards

Design and manufacture as API594

Face to face dimensions as API594 / API 6D

Inspection API598 / ASME B16.34

Suit flanged for ASME B16.5/MSS SP-44/API605



MATERIALS LIST	
Description	**Materials**
Body	ASTM A216 Gr.WCB , A351 Gr.CF8M
Plate	ASTM A216 Gr.WCB , A351 Gr.CF8M
Spring	AISI 316 , INCONEL X750
Hinge pin	ANSI 304 , ANSI 316
Stop pin	ANSI 304 , ANSI 316
Plug	S25C
Body bearing	TEFLON
Plate	TEFLON
Spring	TEFLON
Eye bolt	
Body Seal	NBR / EPDM / VITON
	SAME MATERIALS AS THE PLATE
	410SS OVERLAY / STELLITE#6 OVERLAY

VALVE DIMENSIONS AND APPROXIMATE WEIGHTS

Size	End Facing	Pressure Rating	D inches	D1 inches	L inches	Dia.of Bolt Circle	Stud Selection		Stud Length		Weight	
							Stud No.	Stud Dia.	RF inches	RJ inches	lbs	kgs
2"	RF	150	4.12	2.36	2.37	4.75	4	5/8"	5.62	6.12	5.5	2.5
	RF/RJ-20	300-600	4.37		2.37	5.00	8	5/8"	6.62	6.37	7.7	3.5
	RF/RJ-20	900-1500	5.37		2.75	6.50	8	7/8"	8.50	8.25	14.3	6.5
	RF/RJ-23	2500	5.75		2.75	6.75	8	1"	9.75	9.50	27.5	12.5
2 1/2"	RF	150	4.87	2.87	2.62	5.50	4	5/8"	6.12	6.62	5.5	3.0
	RF/RJ-20	300-600	5.12		2.62	5.88	8	3/4"	7.37	7.12	8.8	4.0
	RF/RJ-20	900-1500	6.5		3.25	7.50	8	1"	9.50	9.25	15.4	7.0
	RF/RJ-23	2500	6.62		3.25	7.75	8	1-1/8"	11.00	10.75	38.5	17.5
3"	RF	150	5.37	3.5	2.87	6.00	4	5/8"	6.37	6.87	9.9	4.5
	RF/RJ-20	300-600	5.87		2.87	6.62	8	3/4"	7.87	7.62	11	5.0
	RF/RJ-20	900	6.62		3.25	7.50	8	7/8"	9.00	8.75	24.2	11.0
	RF/RJ-20	1500	6.87		3.25	8.00	8	1-1/8"	10.25	10.00	26.4	12.0
	RF/RJ-23	2500	7.75		3.37	9.00	8	1-1/4"	12.12	11.87	46.3	21.0

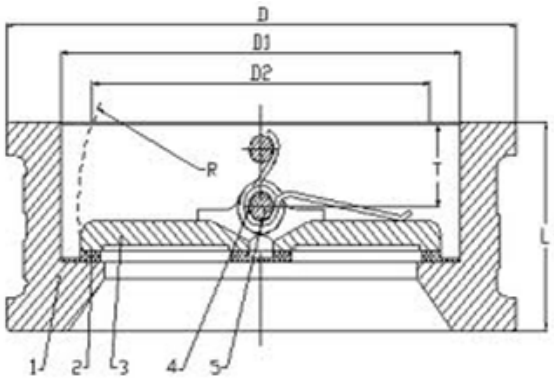
Dual Plate Wafer Check Valve

Class
150/300/600/1500/2500

WC

Carbon & Stainless Steel Materials Installation

Dimension : Suit for ASME/MSS/API Flanges



Standards

Design and manufacture as API594

Face to face dimensions as API594 / API 6D

Inspection API598 / ASME B16.34

Suit flanged for ASME B16.5 / MSS SP-44 / API605

VALVE DIMENSIONS AND APPROXIMATE WEIGHTS

Size	End Facing	Pressure Rating	D inches	D1 inches	L inches	Dia.of Bolt Circle	Stud Selection		Stud Length		Weight	
							Stud No.	Stud Dia.	RF inches	RJ inches	lbs	kgs
4"	RF	150	6.87	4.49	2.87	7.50	8	5/8"	6.37	6.87	17.6	8.0
	RF/RJ-37	300	7.12		2.87	7.88	8	3/4"	7.37	7.87	19.8	9.0
	RF/RJ-37	600	7.62		3.12	8.50	8	7/8"	8.87	8.62	24.2	11.0
	RF/RJ-37	900	8.12		4.00	9.25	8	1-1/8"	10.75	10.50	37.4	17.0
	RF/RJ-39	1500	8.25		4.00	9.50	8	1 1/4"	11.75	11.50	41.9	19.0
	RF/RJ-38	2500	9.25		4.12	10.75	8	1 1/2"	14.12	13.87	87.0	39.5
5"	RF	150	7.75	5.55	3.37	8.50	8	3/4"	7.12	7.62	22.0	10.0
	RF/RJ-41	300	8.50		3.37	9.25	8	3/4"	8.12	8.62	28.6	13.0
	RF/RJ-41	600	9.50		4.12	10.50	8	1"	11.12	11.62	46.3	21.0
6"	RF	150	8.75	6.61	3.87	9.50	8	3/4"	7.87	8.37	28.6	13.0
	RF/RJ-45	300	9.87		3.87	10.62	12	3/4"	8.75	9.37	50.7	23.0
	RF/RJ-45	600	10.50		5.37	11.50	12	1"	12.12	11.87	70.5	32.0
	RF/RJ-45	900	11.37		6.25	12.50	12	1 1/8"	13.75	13.50	112.3	51.0
	RF/RJ-46	1500	11.12		6.25	12.50	12	1 3/8"	16.50	16.25	123.3	56.0
	RF/RJ-47	2500	12.50		6.25	14.50	8	2"	19.75	19.50	187.2	85.0
8"	RF	150	11.00	8.62	5.00	11.75	8	3/4"	7.87	9.25	61.7	28.0
	RF/RJ-49	300	12.12		5.00	13.00	12	7/8"	8.75	10.50	79.3	36.0
	RF/RJ-49	600	12.62		6.50	13.75	12	1 1/8"	12.12	14.00	143.2	65.0
	RF/RJ-49	900	14.12		8.12	15.50	12	1 3/8"	13.75	16.87	180.6	82.0
	RF/RJ-50	1500	13.87		8.12	15.50	12	1 5/8"	16.50	19.62	200.4	92.0
	RF/RJ-51	2500	15.25		8.12	17.25	12	2"	19.75	23.12	281.9	128.0
10"	RF	150	13.37	10.79	5.75	14.25	12	7/8"	7.87	10.25	99.1	45.0
	RF/RJ-53	300	14.25		5.75	15.25	16	1"	8.75	12.00	132.2	60.0
	RF/RJ-53	600	15.75		8.37	17.00	16	1 1/4"	12.12	16.87	215.9	98.0
	RF/RJ-53	900	17.12		9.50	18.50	16	1 3/8"	13.75	18.75	277.5	126.0
	RF/RJ-54	1500	17.12		9.75	19.00	12	1 7/8"	16.50	23.00	290.7	132.0
	RF/RJ-55	2500	18.75		10.00	21.25	12	2 1/2"	19.75	29.25	440.5	200.0

View next page ⇨

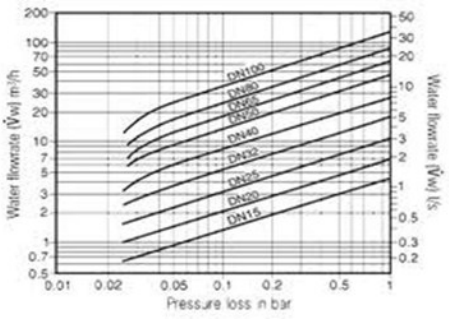
Class
150/300/600/1500/2500

Dual Plate Wafer Check Valve

WC

VALVE DIMENSIONS AND APPROXIMATE WEIGHTS

Size	End Facing	Pressure Rating	D inches	D1 inches	L inches	Dia.of Bolt Circle	Stud Selection		Stud Length		Weight	
							Stud No.	Stud Dia.	RF inches	RJ inches	lbs	kgs
12"	RF	150	16.12	12.76	7.12	17.00	12	7/8"	7.87	11.37	149.8	68.0
	RF/RJ-57	300	16.62		7.12	17.75	16	1 1/8"	8.75	13.87	189.4	86.0
	RF/RJ-57	600	18.00		9.00	19.25	20	1 1/4"	12.12	17.75	308.4	140.0
	RF/RJ-57	900	19.62		11.50	21.00	20	1 3/4"	13.75	21.50	359	163.0
	RF/RJ-58	1500	20.5		12.00	22.50	16	2"	16.50	26.75	383.3	174.0
	RF/RJ-60	2500	21.62		12.00	24.37	12	2 3/4"	19.75	33.25	865.6	393.0
14"	RF	150	17.75	14.02	7.25	18.75	12	1"	12.5	13	209.3	95.0
	RF/RJ-61	300	19.12		8.75	20.25	20	1 1/8"	15.75	16.25	374.4	170.0
	RF/RJ-61	600	19.37		10.75	20.75	20	1 3/8"	20	21.75	407.5	185.0
	RF/RJ-62	900	20.5		14	22	20	1 1/2"	24.75	24.5	960.4	436.0
	RF/RJ-63	1500	22.75		14	25	16	2 1/4"	30	29.75	1057.3	480.0
16"	RF	150	20.25	15.98	7.50	21.25	16	1"	12.75	13.25	290.7	132.0
	RF/RJ-65	300	21.25		9.12	22.50	20	1 1/4"	16.62	17.12	458.1	208.0
	RF/RJ-65	600	22.25		12.00	23.75	20	1 1/2"	22.00	21.75	603.5	274.0
	RF/RJ-66	900	22.62		15.12	24.25	20	1 5/8"	26.37	26.12	1180.6	536.0
	RF/RJ-67	1500	25.25		15.12	27.75	16	2 1/2"	32.62	32.37	1248.1	583.0
18"	RF	150	21.62	17.99	8.00	22.75	16	1 1/8"	13.75	14.25	323.8	147.0
	RF/RJ-69	300	23.50		10.37	24.75	24	1 1/4"	18.21	18.62	652.0	296.0
	RF/RJ-69	600	24.12		14.25	25.75	20	1 5/8"	25.50	25.25	872.2	396.0
	RF/RJ-70	900	25.12		17.75	27.00	20	1 7/8"	30.50	30.25	1442.2	655.0
	RF/RJ-71	1500	27.75		18.43	30.50	16	2 3/4"	38.00	37.62	1735.7	788.0
20"	RF	150	23.87	20.00	8.62	25.00	20	1 1/8"	14.87	15.37	445.0	202.0
	RF/RJ-73	300	25.75		11.50	27.00	24	1 1/4"	29.50	20.25	806.2	366.0
	RF/RJ-73	600	26.87		14.50	28.50	24	1 5/8"	27.50	27.25	1427.1	648.0
	RF/RJ-74	900	27.50		17.75	29.50	20	2"	31.50	31.25	2044.1	928.0
	RF/RJ-75	1500	29.75		21.00	32.75	16	3"	42.25	42.00	2828.2	1284.0
22"	RF	150	26.00	22.00	8.62	27.25	20	1 1/4"	15.75	16.25	508	230.0
24"	RF	150	28.25	24.02	8.75	29.50	20	1 1/4"	15.50	16.00	583.7	265.0
	RF/RJ-77	300	30.50		12.50	32.00	24	1 1/2"	21.50	22.50	1165.2	529.0
	RF/RJ-77	600	31.12		17.25	33.00	24	1 7/8"	30.25	30.00	2004.4	910.0
	RF/RJ-78	900	33.00		19.50	35.50	20	2 1/2"	36.75	36.50	2753.3	1250.0
	RF/RJ-79	1500	35.50		22.00	39.00	16	3 1/2"	46.25	46.00	4213.7	1913.0



Again clamps between flanges. Consists of two plates pivoted around a center pin. Typically a lower pressure drop across the valve when compared to other check valve designs. You don't get the slamming action which can occur with swing check types. This type can be made in very large sizes.

Pressure Loss Chart

Even in the open position a check valve will have a pressure loss across the valve. This chart shows the pressure drop across a check valve of a given size at various flow rates for the particular medium stated (usually water).

Swing Check Valve Wafer Type

Class 150

SD152

Features

◇ **Robust Design**

This is a self-acting, non-return, single plate, wafer type swing check valve which provides high quality and reliability within a simplified construction, available in both carbon steel and stainless steel.

◇ **Minimal Head Loss**

The low inertia disc is designed to open and close under low differential pressure conditions, also, the short pattern design and straight flow path minimize pressure drop across the valve.

◇ **Economical Design**

The low weight and short face-to-face dimensions provide an economical, space-saving solution, additionally, flange gaskets are typically not required due to the built-in, body seal O-ring.

◇ **Resilient Soft Seats**

Soft seats (PTFE or BUNA) combined with a gravity assisted disc help to ensure a positive shutoff which creates a bubble tight seal that meets or exceeds API 598 leakage requirements.

◇ **Versatile Design**

This valve can be installed between weld neck or slip-on type companion flanges of different standards, this valve can not be installed in a vertical pipeline with downward flow.

Application

◇ **Markets**

Oil and Gas Production, General Industry, Chemical & Petrochemical

◇ **Service**

This valve is intended for low flow service that is steady, clean (no abrasives or solids), and non-pulsating, flow rate must not exceed for liquids; is FT/sec

◇ **PTFE Properties**

Good for most chemical environments, offers excellent tear, abrasive , chemical, acid and alkali resistance, not recommended for high pressure steak or large temperature variations.

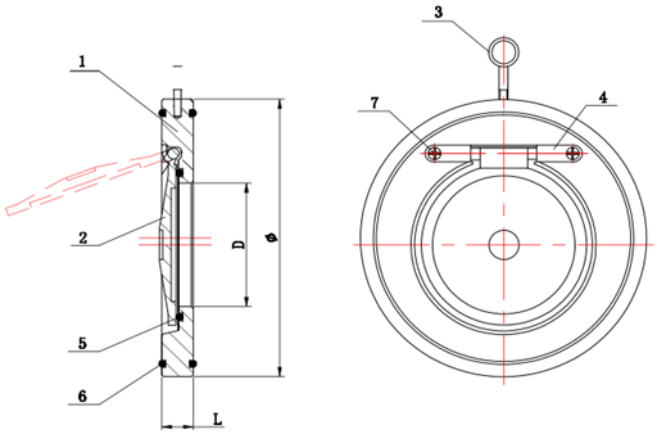
◇ **BUNA-N Properties**

Most widely used elastomer, good for most petroleum oils and fluids, silicone greases and oils, and cold water, excellent compression set, tear, and abrasion resistance, for weather resistance and moderate heat resistance. not recommended for severe ozone-resistant applications.

Class 150

SD152

Swing Check Valve Wafer Type



BILL OF MATERIALS		
No.	**Part**	**Materials**
1	Body	WCB, CF8, CF8M
2	Disc	WCB, CF8, CF8M
3	Screw	Stainless Steel
4	Bolt	Stainless Steel
5	Spacer	Stainless Steel
6	Eye Bolt	Stainless Steel
		Carbon Steel
7	Seat	PTFE , Viton , Buna-N

DIMENSIONS AND PERFORMANCE DATA													
SIZE	in	1"	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"
	mm	25	40	50	65	80	100	125	150	200	250	300	350
L	in	.55	.75	.75	.75	.75	.75	.75	.75	1.125	1.125	1.5	1.614
	mm	14	19	19	19	19	19	19	19	29	29	38	41
D	in	2.8	3.3	4.1	4.842	5.354	6.850	7.75	8.70	10.944	13.346	16.102	17.677
	mm	71	84	104	123	136	174	197	221	278	339	409	449
d	in	0.452	0.984	0.984	1.496	1.811	2.835	3.375	4.53	5.519	7.401	8.504	10.354
	mm	11.5	25	25	38	46	72	86	115	140	188	216	263
WEIGHT	lb	0.88	1.87	2.5	3.5	6.0	7	8.5	10.0	22.0	33.5	58.0	93.5
	kg	0.4	0.84	1.1	1.6	2.70	3.2	3.9	4.5	10.0	15.2	26.3	42.4

Note: 1. Dimensions, weights, and flow coefficients are provided for reference only. When required, always request certified drawings.
2. Face to face values have a tolerance of ± 0.06 in(± 2.0mm) for size 10" and smaller and a tolerance of ± 0.12 in (± 3.0mm) for size 12" and larger.
3. Cracking pressure is for horizontal installations only. For vertical installations, please consult factory. Valve can not be installed in the vertical position with downward flow.

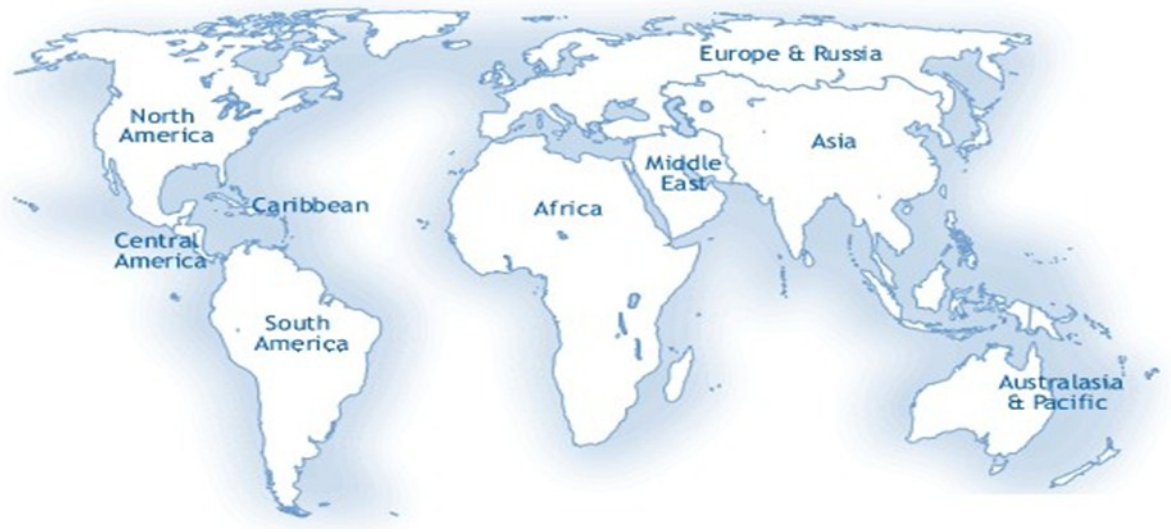
REFERENCED STANDARDS & CODES	
CODE	**DESCRIPTION**
API 598 / ANSI B16.5	Valve Testing
API 6D / ANSI B16.5	Design & Face-to-Face Dimensions
ASME / ANSI B16.34	Valves-Flanged, Threaded & Welding End
ANSI 150	Flange Standard Conformity

PRESSURE/TEMPERATURE RATING		
ANSI CLASS 150	A182 Gr. F316	A216 Gr. WCB
WOG (Non-shock)	275 PSI @ 100 °F	285 PSI @ 100 °F

Additional Design & Technical Notes:

Short pattern check valves feature a reduced port and eccentric opening which allow the disc to open into the connecting pipe. However, given the short face-to-face, the disc will not fully open due to interference with the connecting pipe. Although this conforms to API specification, this may be unsuitable for certain types applications. Consult factory for more specific application information.

WORLDWIDE NETWORK
OF AGENTS AND DISTRIBUTORS



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