

# HONGON

Triple Offset · **METAL TO METAL**  
**BUTTERFLY**  
**VALVE**

Specifically Developed for LNG and  
Hydrogen Energy

- Zero Leakage
- Bidirectional Hard Sealing



# COMPANY PROFILE

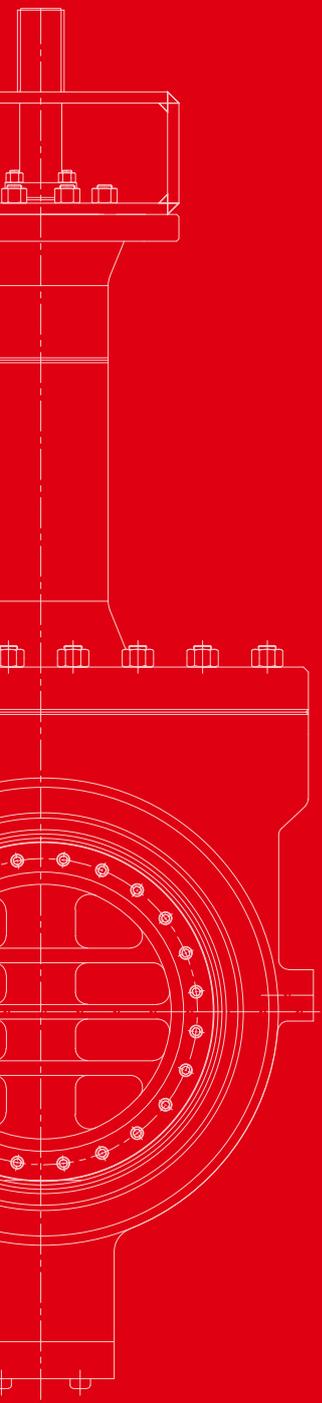
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Shanghai Hongon machinery technology Co, Ltd is a leading manufacturer and explorer in the field of designing CNC machine center and manufacturing triple offset butterfly valve.

Based on the advanced CNC machine centers and decades of years experience in valve manufacturing, Hongon has possessed many advanced invention patents all over the world.

Hongon is an API (American Petroleum Institute) certificated manufacturer and strictly enforces the API quality control system. All the butterfly valves are strictly quality controlled and tested before delivering to the customers.

Hongon's triple offset butterfly valves has been widely applied in the oil and gas industry, chemistry industry, electric power industry, etc., and all to be proved with excellent sealing performance, corrosion resistance and reliable lifecycle.



OUR MACHINE TOOLS

# BHC 800S

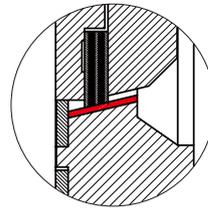
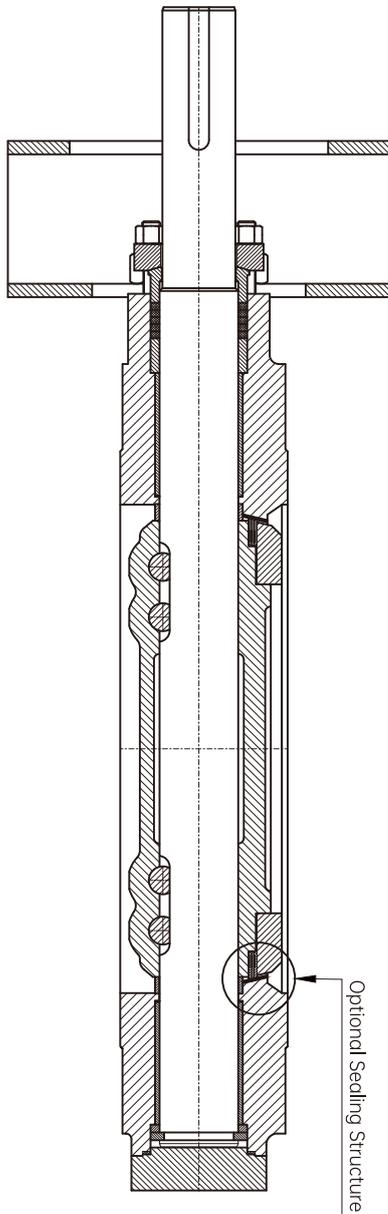


## Machine Specifications

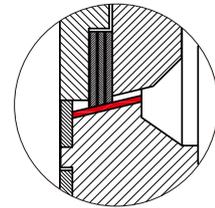
Standard Machine		Values
TRAVEL	X-axis (Table Left/Right):	800mm
	Z-axis (Table Back/Forth):	1200mm
	Y-axis (Spindle head Up/Down) :	1000 mm
	U-axis (Spindle head rotational radius):	100mm
SPINDLE	Spindle Taper	BT50
	Maximum Speed	1200rpm
TABLE	Pallet width	800mm
	Pallet length	800mm
FEEDRATE	Rapid traverse rate (X-, Y-, Z-)	3000mm/min
ATC & TOOL MAGAZINE	Tool storage capacity (standard)	20
	Max tool diameter	250mm
	Max tool length	355mm

# HONGON TRIPLE OFFSET VALVES

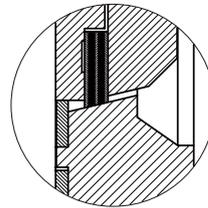
## SEALING SURFACE SECTIONAL DRAWING



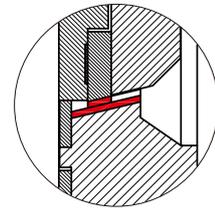
a: PTFE Sealing with surface welding on valve body



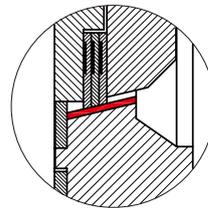
b: Multiple Layer Metal Sealing



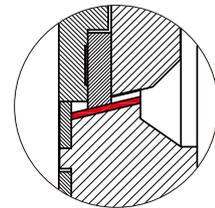
c: PTFE Sealing with no surface welding on valve body



d: Full Metal integrated sealing with surface welding on both disc and valve body



e: Multiple Layer inner grooved Metal Sealing



f: Full Metal integrated sealing with surface welding on valve body

**NOTE:**

Hongon Triple Offset Butterfly Valve has six types of optional sealing structure  
Sealing structure selection depends on the working condition of the valve or customer request

Sealing surface welding material:

- 1、 Valve body sealing surface welding material: 13Cr; Stellite® gr.21; Stellite® gr.6;
- 2、 Disc sealing surface welding material: Stellite® gr.21; Stellite® gr. 6; 316+N; 304+N; 316L+N; F51(S31803); Inconel 718; Inconel 825; Inconel 625; Hastelloy C276; C2000; XM-19 (Nitonic 50);

**NOTE:**

Surface welding material selection depends on working condition of the valve or customer request

# HONGON TRIPLE OFFSET VALVES

## CERTIFICATIONS AND QUALIFIED TEST REPORTS

Report No.: IN-SH-5801-22P95  
Page 3 of 8  
**Non-negotiable**



**1. Background information**

SGS order No.: IN-SH-5801-22P95				
Coordinator: <b>Huang, Queenie</b>	Telephone: <b>021-61195554</b>			
Description of commodity (Name, Model, Quantity ...)				
Description (PCS)	Butterfly Valve 3			
Buyer(Name, Address...)				
Seller(Name, Address...)				
Shanghai Hongong Machinery Technology Co., Ltd No.9628, Hunan Highway, Pudong New district, Shanghai, China				
PII No.	N/A			
Other	MESC SPE 77/200, client's requirement, API598			
Item	Satisfactory	Non conforming	Rejected	Subject to buyer's evaluation
Nature of inspection:	Witness cryogenic test			●

**2. Instrument**

During the inspection, the following instrument calibration status has been checked for inspection:

No.	Name	ID No.	Measuring range	Calibrated <sup>[1]</sup> (Yes/No/NA)	Certificate NO. (Optional)
1	Pressure gauge	HY71591803543	0-2.5Mpa	Yes	21006178452
2	Cup	/	500ml	Yes	J22435800377
3	Ultra low temperature thermometer	1149532	/	Yes	C22323S00001
4	Ultra low temperature thermometer	1149533	/	Yes	C22323S00002

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Report No.: IN-SH-5801-22P95  
Page 4 of 8  
**Non-negotiable**



**[1] Calibrated**  
--- "Yes" means the instrument was calibrated and now is in the period of validity.  
--- "No" means the instrument should be calibrated, in fact it was never calibrated or not calibrated before the expiry date.  
--- "NA" means the instrument does not need to be calibrated in the view of its function.

**3. Witness cryogenic test**

Reference documents: MESC SPE 77/200, client's requirement, API598  
Total 3pcs valves were prepared for cryogenic test. One of the valves was spare.  
The cryogenic test was performed for 2pcs butterfly valve and witnessed by SGS Inspector according to MESC SPE 77/200 of section 3.10.2. The valve of No.1 was required to perform leakage test in positive under the pressure of 2.0Mpa and the valve of No. 2 was required to perform leakage test in positive and opposite direction under the pressure of 1.05Mpa.  
Refer to table 4 of MESC SPE 77/200 for allowable leakage.  
The actual quantity of thermocouple was less than the requirement of MESC SPE 77/200. And the position was different from the requirement of MESC SPE 77/200.  
The purity of Helium used for tested was acceptable.  
No other marks such as size, class and material etc. were found on the surface of valve.  
Each valve were put into liquid nitrogen, and the hold time was more than 2hours.  
Details as following:

For valve No.1

Size	Position	Cycle times	Temp. °C	Test medium	Pre (Mpa)	Allow. leakage (ml/s)	Test time	Act. leakage (ml/min)	Relative leakage (ml/s)
12" DN300	Positiv e	2	-196	Helium	0.2	30	60s	215	3.5/s
					0.35	30	60s	215	3.5/s
					0.7	30	60s	<50	<0.42
					1.2	30	60s	<50	<0.42
					1.7	30	60s	<50	<0.42
					2.2	30	60s	<50	<0.42

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**Certificate of Authority to use the Official API Monogram**  
License Number: 609-0286 ORIGINAL

The American Petroleum Institute hereby grants to  
**SHANGHAI HONGON MACHINERY TECHNOLOGY CO., LTD.**  
Bldg. 7, No. 9628, Hunan Highway, Pudong New Area  
Shanghai  
People's Republic of China

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API-609** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **609-0286**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: **Butterfly Valves - Category B**

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: **MARCH 27, 2024**  
Expiration Date: **MARCH 27, 2027**

To verify the authenticity of this license, go to [www.apl.org/compositelist](http://www.apl.org/compositelist).

  
 Anchal Liddar  
Senior Vice President of Global Industry Services



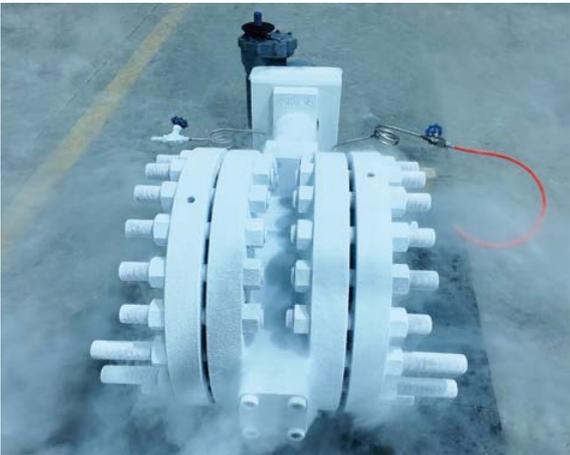
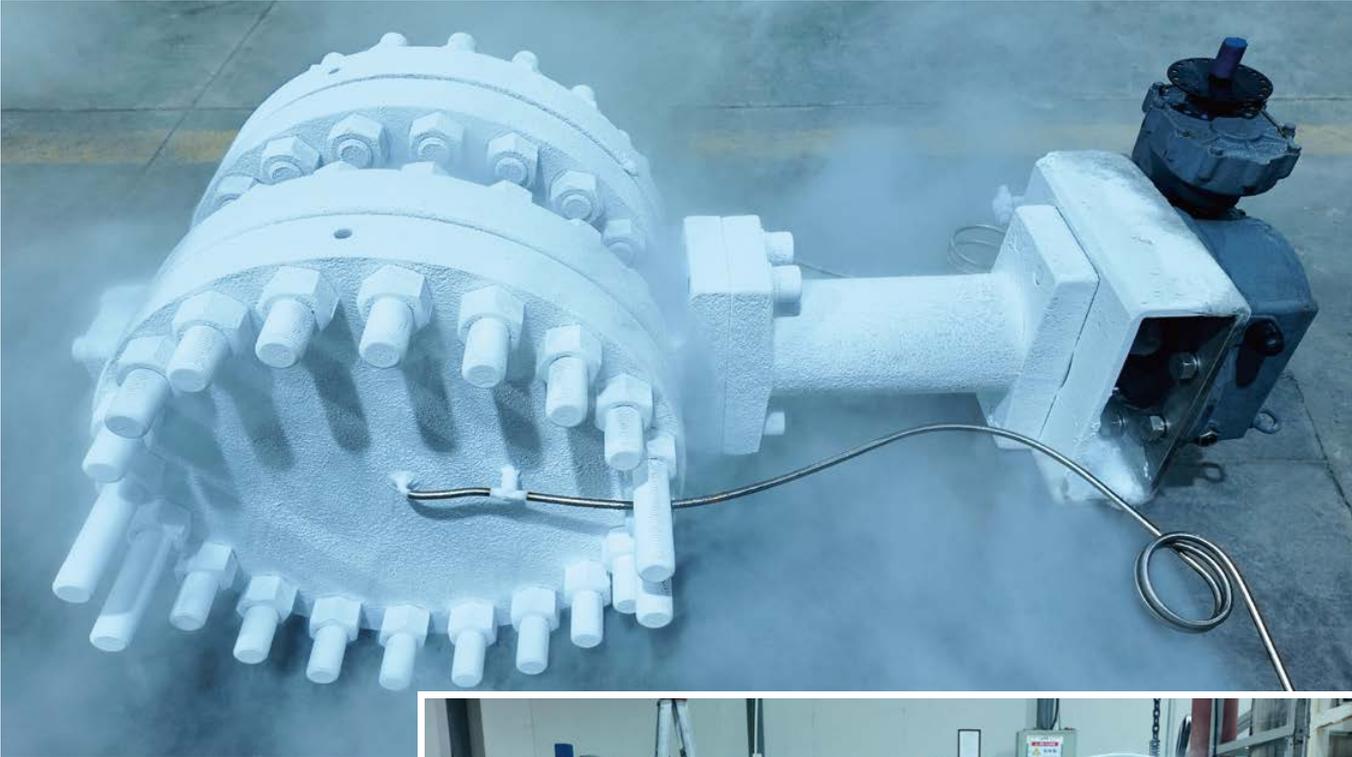
**HONGON** TRIPLE OFFSET VALVES  
CRYOGENIC TRIPLE OFFSET BUTTERFLY VALVE PRODUCT INSTANCE



**HONGON** TRIPLE OFFSET VALVES  
CRYOGENIC TRIPLE OFFSET BUTTERFLY VALVE PRODUCT INSTANCE

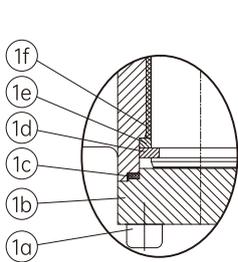
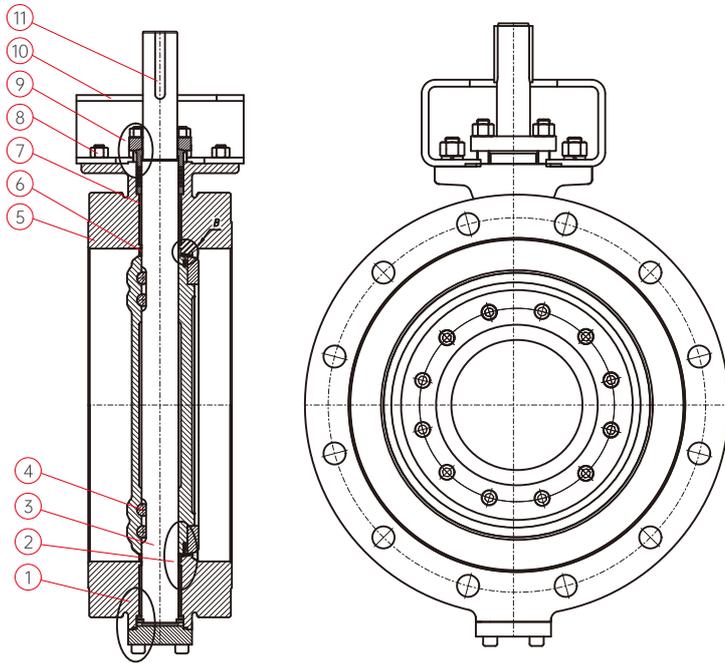


**HONGON** TRIPLE OFFSET VALVES  
CRYOGENIC VALVE PRODUCT INSTANCE

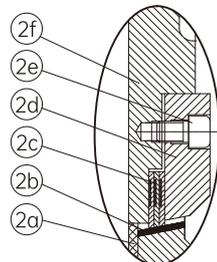


# HONGON TRIPLE OFFSET VALVES

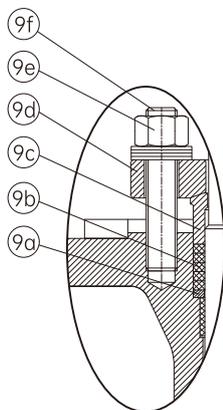
## BASIC CONFIGURATION SECTIONAL DRAWING



1 Bottom



2 Disc



9 Bracket

### MATERIALS SELECTION

Item	Description	Material
<b>1 Bottom</b>		
1a	Hexagon bolts	A193 B7M
1b	Bottom flange	A105N
1c	Spacer	316SS+Graphte
1d	Split ring	A276-316+PN
1e	Thrust washer	A276-316+PN
1f	Shaft Bearing	A276-316+PN
<b>2 Disc</b>		
2a	Shaft sleeve	A276-316
2b	Valve Body sealing	A216-WCB+STL
2c	Disc sealing	A240-F51+F.G.
2d	Retainer flange	A105N
2e	Hexagon Bolts	A193 B8M CL.2
2f	Disc	A105N
3	Shaft	17-4PH/1150D
4	Disc key	17-4PH/1150D
5	Valve Body	A216-WCB+STL.21
6	Shaft sleeve	A276-316
7	Shaft Bearing	A276-316+PN
8	Stud bolts	A193-B7M
	Hexagon Nuts	A194-2H
<b>9 Bracket</b>		
9a	Packing Spacer	A276-316
9b	Packing	Braided Graphite
9c	Packing gland	A276-316
9d	Packing flange	A216-WCB
9e	Stud nut	A194 2H
9f	Stud bolts	A193-B7M
10	Bracket	Q235-A
11	Keyway	AISI 1045

#### NOTES

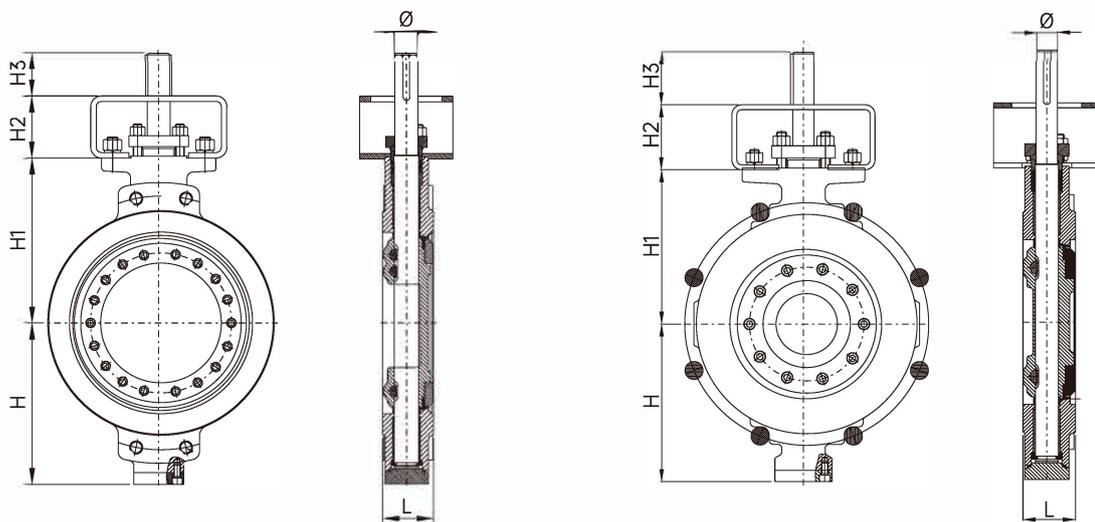
Material selection depends on working condition of the valve or customer request

# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 150

### WAFER - FACE TO FACE API 609 CLASS 150 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg
50	2	97	93	60	30	43	14	45	F07	6
65	2.5	115	106	60	35	48	16	70	F07	7
80	3	119	110	60	35	50	16	126	F07	8
100	4	139	133	70	50	54	18	300	F10	12
125	5	149	148	70	50	57	22	550	F10	16
150	6	159	158	70	50	57	22	690	F10	21
200	8	194	190	80	65	64	26	1565	F12	33
250	10	232	230	100	65	73	30	2466	F14	53
300	12	267	275	100	65	83	38	3697	F14	81
350	14	299	306	115	80	94	42	5670	F16	115
400	16	327	335	115	80	104	46	8689	F16	156
450	18	356	360	125	100	116	50	9823	F25	178
500	20	386	390	125	100	127	55	15558	F25	219
600	24	456	460	140	130	154	70	20953	F30	375
650	26	491	495	140	130	165	70	29823	F30	410
700	28	516	520	140	130	165	75	34047	F30	476
750	30	551	576	170	170	190		38738	F35	625
800	32	585	610	170	170	190	85	48583	F35	697
900	36	652	665	170	170	210	100	60528	F35	965
1000	40	719	730	200	200	251	115	66731	F40	1329
1050	42	754	765	200	200	251	115	87161	F40	1472
1200	48	845	855	230	250	276	130	99305	F48	2035

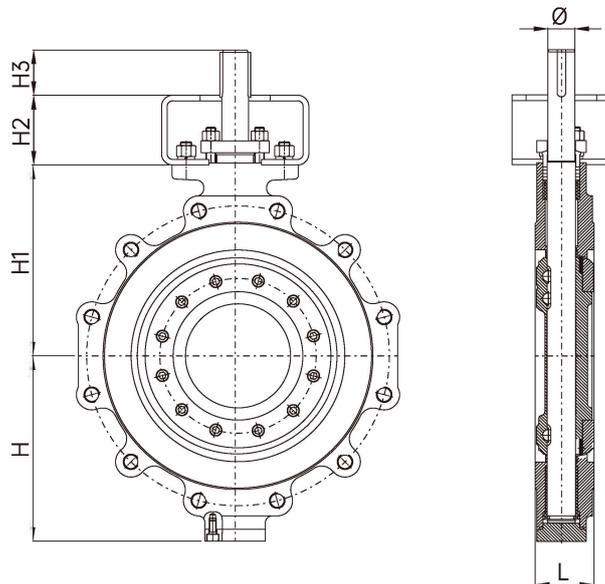


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 150

### LUG - FACE TO FACE API 609 CLASS 150 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg
50	2	97	93	60	30	43	14	45	F07	6
65	2.5	115	106	60	35	48	16	70	F07	7
80	3	119	110	60	35	50	16	126	F07	8
100	4	139	133	70	50	54	18	300	F10	13
125	5	149	148	70	50	57	22	550	F10	19
150	6	159	158	70	50	57	22	690	F10	21
200	B	194	190	80	65	64	26	1565	F12	35
250	10	232	230	100	65	73	30	2466	F14	79
300	12	267	275	100	65	83	38	3697	F14	95
350	14	299	306	115	80	94	42	5670	F16	119
400	16	327	335	115	80	104	46	8689	F16	159
450	18	356	360	125	100	116	50	9823	F25	204
500	20	386	390	125	100	127	55	15558	F25	292
600	24	456	460	140	130	154	70	20953	F30	447
650	26	491	495	140	130	165	70	29823	F30	507
700	28	516	520	140	130	165	75	34047	F30	585
750	30	551	576	170	170	190		38738	F35	737
800	32	585	610	170	170	190	85	48583	F35	836
900	36	652	665	170	170	210	100	60528	F35	1147
1000	40	719	730	200	200	251	115	66731	F40	1558
1050	42	754	765	200	200	251	115	87161	F40	1689
1200	48	845	855	230	250	276	130	99305	F48	2301

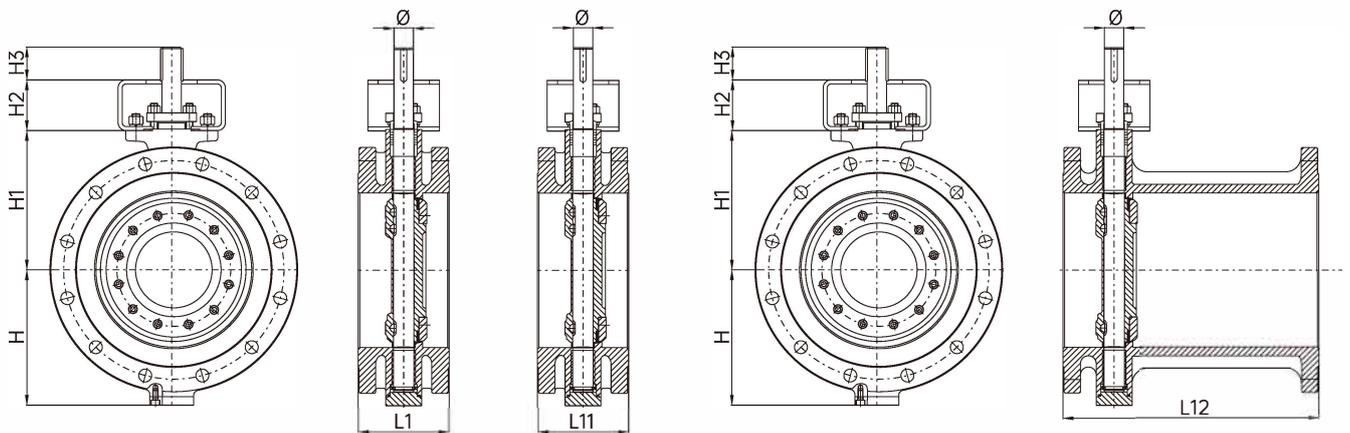


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 150

### DOUBLE FLANGED - FACE TO FACE API 609 CLASS 150 - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L1 mm	L11 mm	L12 mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg	Valve kg	Valve kg
50	2	97	93	60	30	108	—	—	14	45	F07	9	—	—
65	2.5	115	106	60	35	112	—	—	16	70	F07	13	—	—
80	3	119	110	60	35	114	180	203	16	126	F07	20	21	21
100	4	139	133	70	50	127	190	229	18	300	F10	29	30	31
125	5	149	148	70	50	140	—	—	22	550	F10	36	—	—
150	6	159	158	70	50	140	210	267	22	690	F10	41	44	46
200	8	194	190	80	65	152	230	292	26	1565	F12	66	70	73
250	10	232	230	100	65	165	250	330	30	2466	F14	98	104	111
300	12	267	275	100	65	178	270	356	38	3697	F14	138	147	155
350	14	299	306	115	80	190	290	361	42	5670	F16	161	174	183
400	16	327	335	115	80	216	310	406	46	8689	F16	212	226	240
450	18	356	360	125	100	222	330	432	50	9823	F25	251	270	287
500	20	386	390	125	100	229	350	457	55	15558	F25	314	339	360
600	24	456	460	140	130	267	390	508	70	20953	F30	500	534	567
650	26	491	495	140	130	292	410	559	70	29823	F30	644	681	728
700	28	516	520	140	130	292	430	610	75	34047	F30	738	784	845
750	30	551	576	170	170	318	450	610	—	38738	F35	928	978	1038
800	32	585	610	170	170	318	470	660	85	48583	F35	1071	1136	1217
900	36	652	665	170	170	330	510	711	100	60528	F35	1427	1521	1627
1000	40	719	730	200	200	410	550	—	115	66731	F40	1927	2012	—
1050	42	754	765	200	200	410	570	—	115	87161	F40	2149	2255	—
1200	48	845	855	230	250	470	630	—	130	99305	F48	2993	3124	—

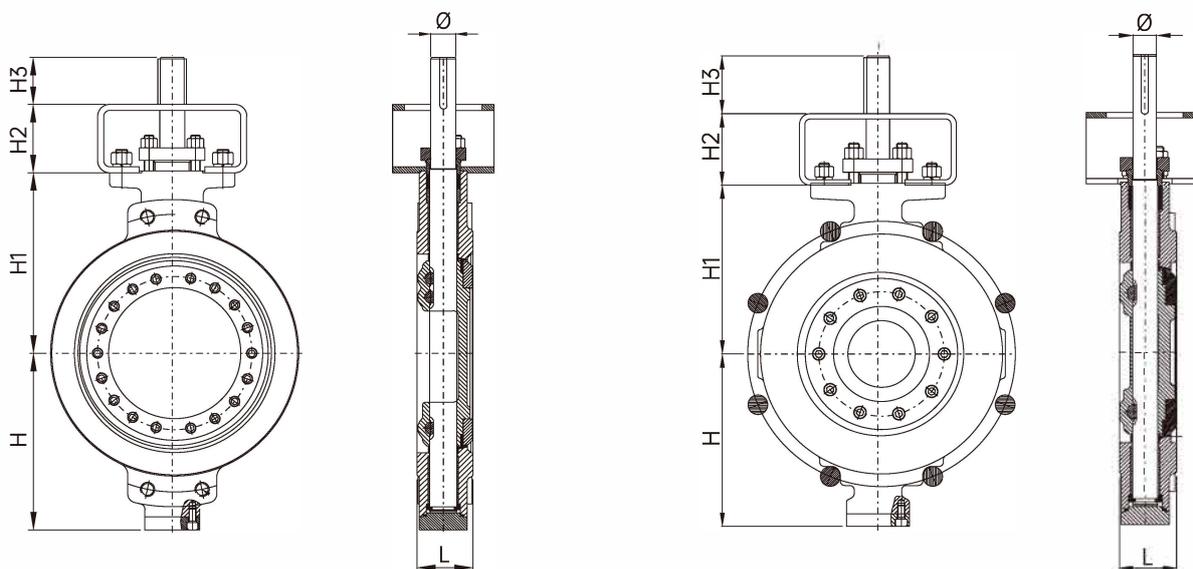


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 300

### WAFER - FACE TO FACE API 609 CLASS 300 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg
50	2	107	103	60	30	43	14	45	F07	6
80	3	129	120	60	35	50	16	126	F07	8
100	4	149	143	70	50	54	18	300	F10	13
150	6	179	180	80	65	61	24	690	F12	25
200	8	217	215	100	65	75	30	1466	F14	42
250	10	247	255	100	65	85	38	2366	F14	64
300	12	288	295	115	80	94	42	3497	F16	121
350	14	331	335	125	100	117	50	5370	F25	127
400	16	361	365	125	100	133	55	7689	F25	176
450	18	396	405	140	120	149	65	10823	F30	241
500	20	431	435	140	130	159	70	13558	F30	298
600	24	510	535	170	170	181	85	19904	F35	490
650	26	540	565	170	180	210	95	24599	F35	627
700	28	592	603	200	200	229	100	30104	F40	740
750	30	624	635	200	220	229	110	34252	F40	893
800	32	654	665	200	200	241	115	44028	F40	1015
900	36	720	730	230	250	271	130	58690	F48	1381
1000	40	773	745	230	280	300	140	64371	F48	1646
1050	42	803	775	230	290	330	150	82572	F48	1928
1200	48	905	870	260	310	381	170	93453	F60	2718

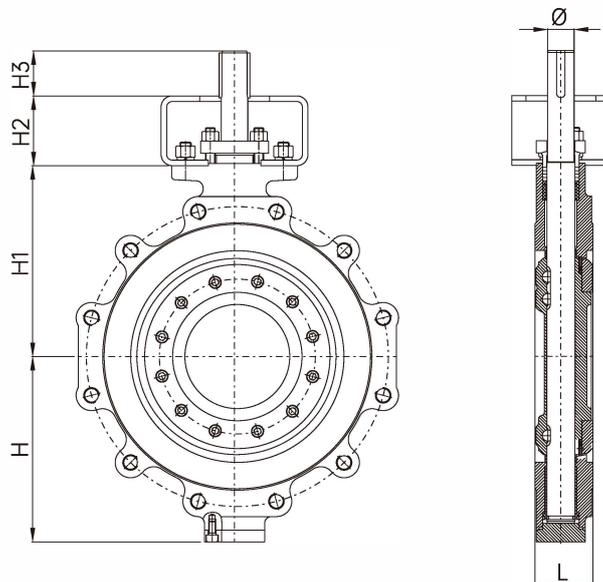


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 300

### LUG - FACE TO FACE API 609 CLASS 300 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg
50	2	107	103	60	30	43	14	45	F07	7
80	3	129	120	60	35	50	16	126	F07	11
100	4	149	143	70	50	54	18	300	F10	17
150	6	179	180	80	65	61	24	690	F12	32
200	8	217	215	100	65	75	30	1466	F14	54
250	10	247	255	100	65	85	38	2366	F14	90
300	12	288	295	115	80	94	42	3497	F16	158
350	14	331	335	125	100	117	50	5370	F25	206
400	16	361	365	125	100	133	55	7689	F25	277
450	18	396	405	140	120	149	65	10823	F30	349
500	20	431	435	140	130	159	70	13558	F30	427
600	24	510	535	170	170	181	85	19904	F35	696
650	26	540	565	170	180	210	95	24599	F35	917
700	28	592	603	200	200	229	100	30104	F40	1056
750	30	624	635	200	220	229	110	34252	F40	1275
800	32	654	665	200	200	241	115	44028	F40	1463
900	36	720	730	230	250	271	130	58690	F48	1857
1000	40	773	745	230	280	300	140	64371	F48	1929
1050	42	803	775	230	290	330	150	82572	F48	2144
1200	48	905	870	260	310	381	170	93453	F60	3001

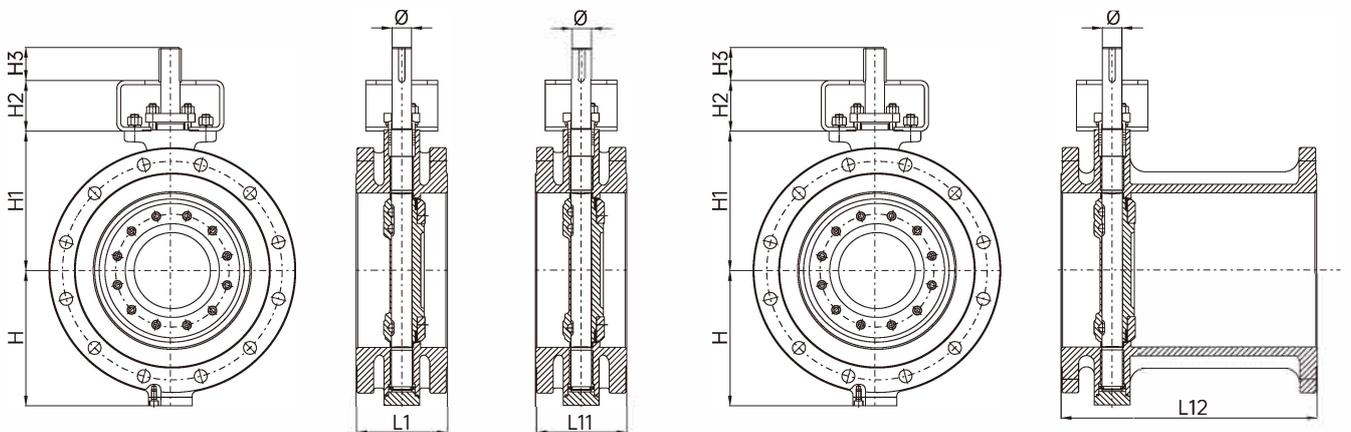


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 300

### DOUBLE FLANGED - FACE TO FACE API 609 CLASS 300 - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L1 mm	L11 mm	L12 mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg	Valve kg	Valve kg
50	2	107	103	60	30	108	—	—	14	45	F07	10	—	—
80	3	129	120	60	35	114	180	282	16	126	F07	19	21	23
100	4	149	143	70	50	127	190	305	18	300	F10	31	33	36
150	6	179	180	80	65	140	210	403	24	690	F12	55	58	68
200	8	217	215	100	65	152	230	418	30	1466	F14	84	90	108
250	10	247	255	100	65	165	250	457	38	2366	F14	128	136	158
300	12	288	295	115	80	178	270	502	42	3497	F16	212	225	257
350	14	331	335	125	100	190	290	762	50	5370	F25	249	267	348
400	16	361	365	125	100	216	310	838	55	7689	F25	328	349	464
450	18	396	405	140	120	222	330	914	65	10823	F30	411	438	588
500	20	431	435	140	130	229	350	991	70	13558	F30	509	546	745
600	24	510	535	170	170	267	390	1143	85	19904	F35	811	862	1176
650	26	540	565	170	180	292	410	1245	95	24599	F35	1005	1060	1451
700	28	592	603	200	200	292	430	1346	100	30104	F40	1192	1264	1741
750	30	624	635	200	220	318	450	1397	110	34252	F40	1437	1518	2102
800	32	654	665	200	200	318	470	1524	115	44028	F40	1626	1732	2469
900	36	720	730	230	250	330	510	1727	130	58690	F48	2115	2269	3309
1000	40	773	745	230	280	410	550	—	140	64371	F48	2225	2365	—
1050	42	803	775	230	290	410	570	—	150	82572	F48	2506	2678	—
1200	48	905	870	260	310	470	630	—	170	93453	F60	3504	3725	—

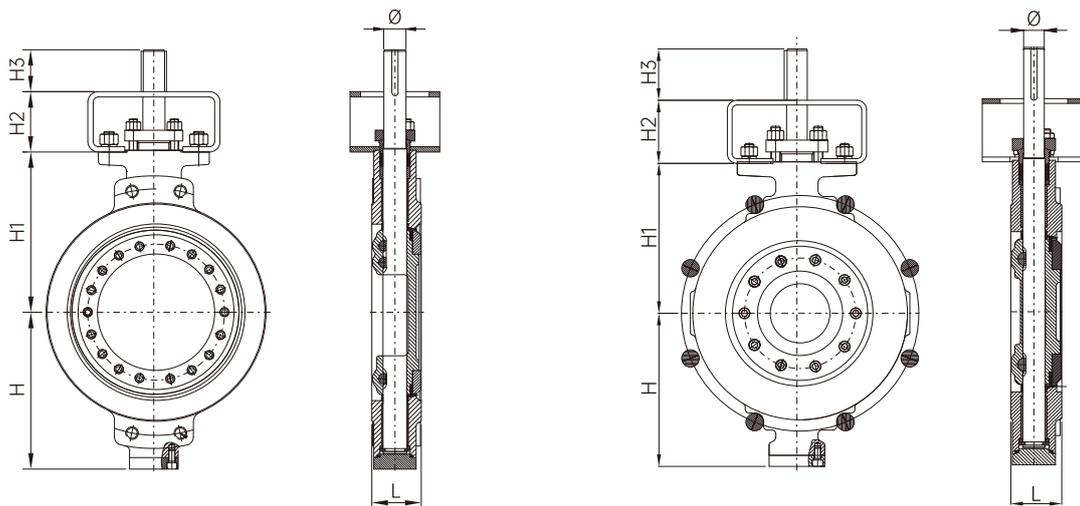


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 600

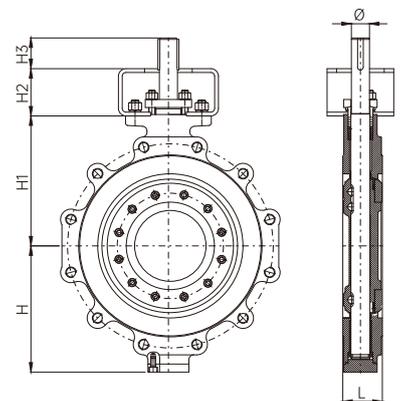
### WAFER - FACE TO FACE API 609 CLASS 600 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg
100	4	163	160	80	65	66	24	260	F12	20
150	6	217	205	100	65	80	34	612	F14	41
200	8	250	249	115	80	104	42	1451	F16	139
250	10	306	300	125	100	119	50	2869	F25	156
300	12	345	330	140	120	142	60	4515	F30	177
350	14	365	365	140	120	157	65	5670	F30	225
400	16	415	405	140	137	180	75	7593	F30	314
450	18	450	460	170	170	200	85	10420	F35	440
500	20	480	495	170	180	216	95	12698	F35	545
600	24	586	580	200	200	234	115	18973	F40	846



### LUG - FACE TO FACE API 609 CLASS 600 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg
100	4	163	160	80	65	66	24	260	F12	31
150	6	217	205	100	65	80	34	612	F14	67
200	8	250	249	115	80	104	42	1451	F16	184
250	10	306	300	125	100	119	50	2869	F25	205
300	12	345	330	140	120	142	60	4515	F30	298
350	14	365	365	140	120	157	65	5670	F30	351
400	16	415	405	140	137	180	75	7593	F30	497
450	18	450	460	170	170	200	85	10420	F35	650
500	20	480	495	170	180	216	95	12698	F35	806
600	24	586	580	200	200	234	115	18973	F40	1222

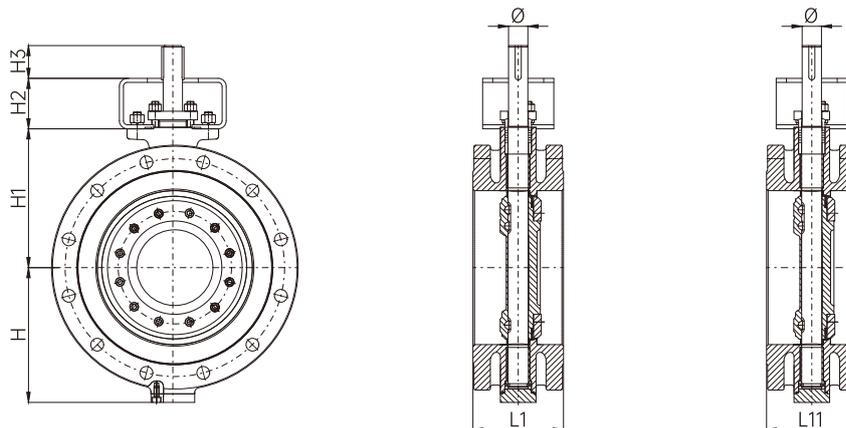
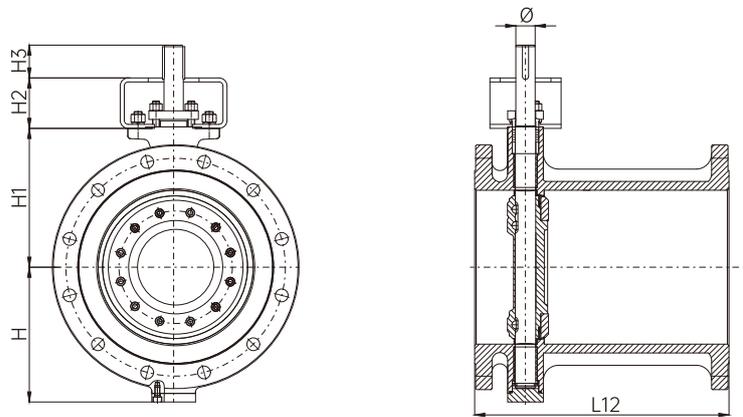


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 600

### DOUBLE FLANGED - FACE TO FACE API 609 CLASS 600 - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L1 mm	L11 mm	L12 mm	Ø mm	Cv [gal/min]at90°	Actuator Attachment ISO5211	Valve kg	Valve kg	Valve kg
100	4	163	160	80	65	190	305	432	24	260	F12	51	55	60
150	6	217	205	100	65	210	403	559	34	612	F14	101	114	124
200	8	250	249	115	80	230	418	660	42	1451	F16	229	249	274
250	10	306	300	125	100	250	457	787	50	2869	F25	264	296	347
300	12	345	330	140	120	270	502	838	60	4515	F30	350	399	469
350	14	365	365	140	120	290	762	889	65	5670	F30	434	557	590
400	16	415	405	140	137	310	838	991	75	7593	F30	598	772	822
450	18	450	460	170	170	330	914	1092	85	10420	F35	768	1005	1077
500	20	480	495	170	180	350	991	1194	95	12698	F35	967	1281	1380
600	24	586	580	200	200	390	1143	1397	115	18973	F40	1468	1993	2171

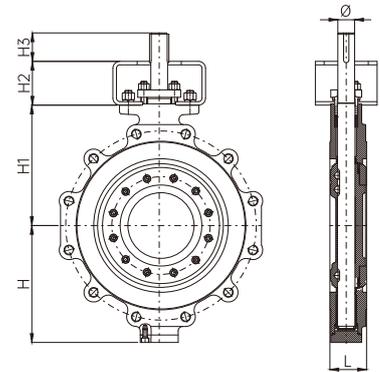


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 900

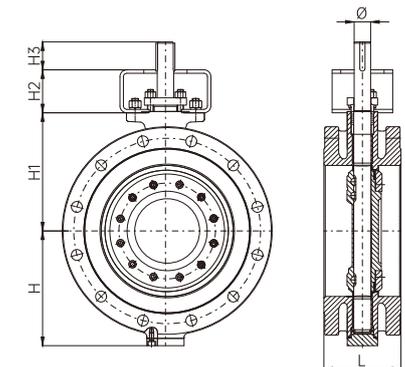
### LUG - FACE TO FACE HONGON STANDARD (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	235	285	120	65	105	30	612	115
200	8	295	350	135	80	140	40	1451	260
250	10	330	430	145	100	155	50	2869	327
300	12	385	510	145	110	178	55	4515	490
350	14	395	515	200	120	229	65	5670	571
400	16	440	530	200	120	241	65	7593	745
450	18	490	570	200	130	244	75	10420	1015
500	20	535	650	220	170	300	85	12698	1293
600	24	630	800	230	180	350	95	18973	2219



### DOUBLE FLANGED - FACE TO FACE ISO 5752 CLASS 900/300\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	235	285	120	65	225	30	612	145
200	8	295	350	135	80	275	40	1451	249
250	10	330	430	145	100	325	50	2869	339
300	12	385	510	145	110	375	55	4515	501
350	14	395	515	200	120	425	65	5670	670
400	16	440	530	200	120	475	65	7593	888
450	18	490	570	200	130	500	75	10420	1053
500	20	535	650	220	170	575	85	12698	1441
600	24	630	800	230	180	600	95	18973	2238

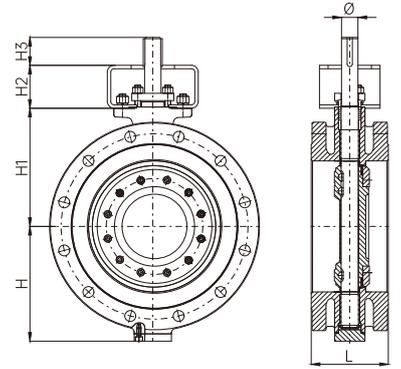


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 900

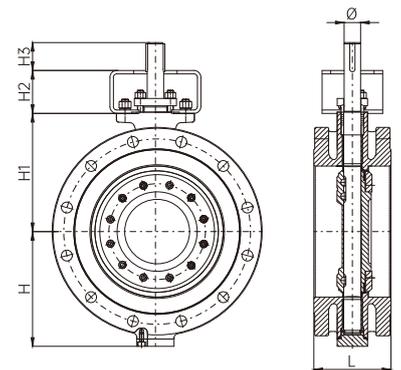
### DOUBLE FLANGED - FACE TO FACE ISO 5752 CLASS 900/600\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	235	285	120	65	225	30	422	145
200	8	295	350	135	80	275	40	1075	251
250	10	330	430	145	100	325	50	2329	354
300	12	385	510	145	110	375	55	3561	505
350	14	395	515	200	120	425	65	4608	582
400	16	440	530	200	120	475	75	6039	770
450	18	490	570	200	130	500	75	8773	1041
500	20	535	650	220	170	575	85	10787	1318
600	24	630	800	230	180	600	95	16492	2262



### DOUBLE FLANGED - FACE TO FACE ISO 5752 CLASS 900/900\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	235	285	120	65	225	30	345	147
200	8	295	350	135	80	275	40	936	261
250	10	330	430	145	100	325	50	1962	359
300	12	385	510	145	110	375	55	2819	515
350	14	395	515	200	120	425	65	4033	597
400	16	440	530	200	120	475	75	5460	774
450	18	490	570	200	130	500	85	7618	1059
500	20	535	650	220	170	575	95	8814	1385
600	24	630	800	230	180	600	105	13589	2311



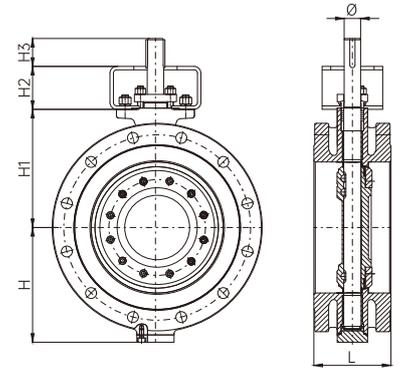
NOTE: \*Class Rating DownStream/Upstream Stream

# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 1500

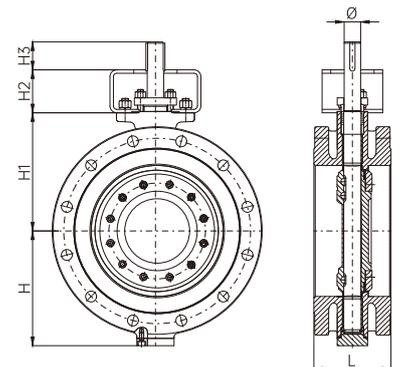
### DOUBLE FLANGED - FACE TO FACE ISO 5752 CLASS 1500/300\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	255	360	130	80	275	30	521	217
200	8	305	445	145	100	325	40	1164	360
250	10	365	530	155	110	375	50	2533	535
300	12	405	540	155	120	425	55	3981	649
350	14	445	560	210	120	475	65	5094	1096
400	16	485	605	210	130	575	65	6860	1461
450	18	535	690	210	170	575	75	9837	1890
500	20	565	845	230	180	700	85	10499	2404
600	24	660	850	240	200	800	95	17026	3773



### DOUBLE FLANGED - FACE TO FACE ISO 5752 CLASS 1500/600\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	255	360	130	80	275	30	417	218
200	8	305	445	145	100	325	40	982	361
250	10	365	530	155	110	375	50	2010	587
300	12	405	540	155	120	425	55	3388	850
350	14	445	560	210	120	475	65	4444	1106
400	16	485	605	210	130	575	70	5845	1492
450	18	535	690	210	170	575	75	8233	1901
500	20	570	845	230	180	700	85	7414	2424
600	24	665	850	240	200	800	95	12051	3893

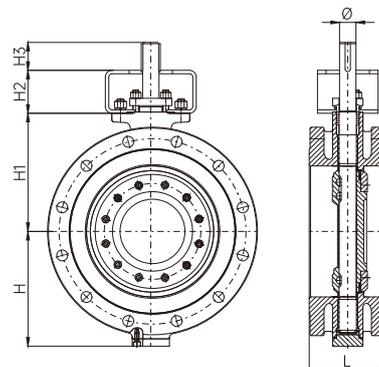


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 1500

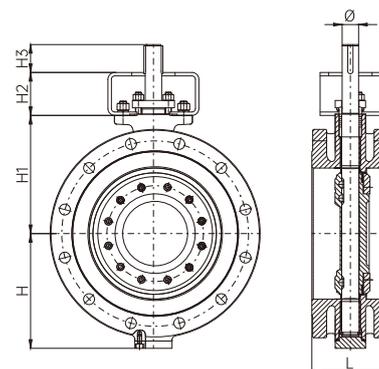
### DOUBLE FLANGED - FACE TO FACE ISO 5752 CLASS 1500/900\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	255	360	130	80	275	35	364	218
200	8	305	445	145	100	325	40	905	366
250	10	365	530	155	110	375	50	1588	591
300	12	415	540	155	120	425	55	2798	668
350	14	450	560	210	120	475	65	3803	1122
400	16	500	605	210	130	575	75	4884	1518
450	18	550	690	210	170	575	85	6763	1954
500	20	580	845	230	180	700	85	7414	2455
600	24	680	850	240	200	800	95	12051	3893



### DOUBLE FLANGED - FACE TO FACE ISO 5752 CLASS 1500/1500\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	—	—	—	—	—	—	—	—
200	8	310	445	145	100	325	45	528	385
250	10	370	530	155	110	375	50	1047	536
300	12	425	540	155	120	425	65	1876	906
350	14	465	560	210	120	475	70	2532	1192
400	16	510	605	210	130	575	75	3507	1604
450	18	560	690	210	170	575	85	4297	2056
500	20	590	845	230	180	700	95	4735	2596
600	24	695	850	240	200	800	120	7939	4101



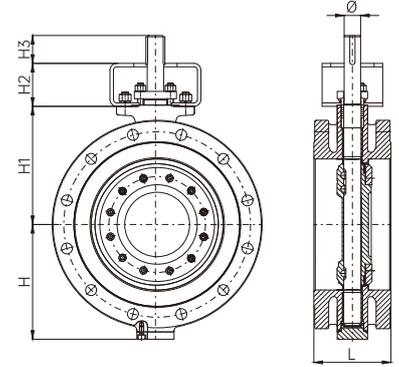
NOTE: \*Class Rating DownStream/Upstream Stream

# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 2500

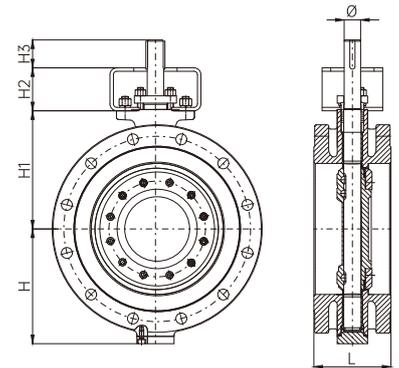
### DOUBLE FLANGED - FACE TO FACE HONGON STANDARD CLASS 2500/300\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	300	455	150	115	376	30	306	424
200	8	340	545	165	130	418	40	798	595
250	10	410	560	170	130	522	50	1748	1142
300	12	455	585	230	140	570	50	2558	1537
350	14	515	635	235	180	640	55	3991	2211
400	16	570	725	240	200	690	65	5469	3003
450	18	630	885	265	220	740	65	7421	4080
500	20	—	—	—	—	—	—	—	—
600	24	—	—	—	—	—	—	—	—



### DOUBLE FLANGED - FACE TO FACE HONGON STANDARD CLASS 2500/600\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	300	455	150	115	376	30	218	424
200	8	340	545	165	130	418	40	746	595
250	10	410	560	170	130	522	50	1572	1145
300	12	465	585	230	140	570	50	2352	1550
350	14	525	635	235	180	640	55	3522	2234
400	16	570	725	240	200	690	65	4487	3017
450	18	630	885	265	220	740	70	6237	4118
500	20	—	—	—	—	—	—	—	—
600	24	—	—	—	—	—	—	—	—

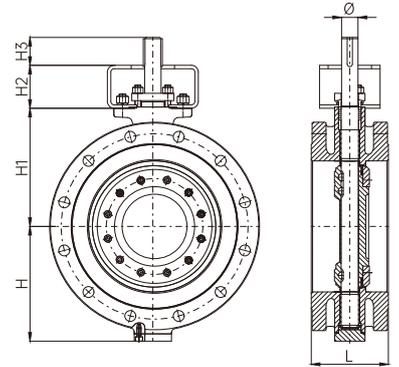


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 2500

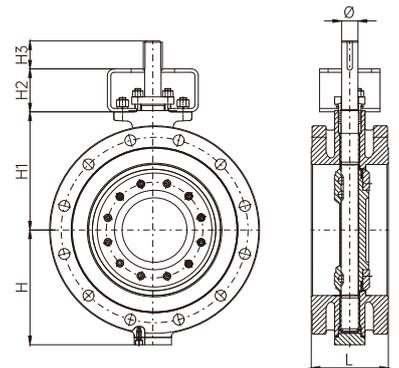
### DOUBLE FLANGED - FACE TO FACE HONGON STANDARD CLASS 2500/900\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	300	455	150	115	376	30	264	424
200	8	355	545	165	130	418	40	663	606
250	10	420	560	170	130	522	50	1347	1148
300	12	465	585	230	140	570	50	1921	1561
350	14	535	635	235	180	640	65	2839	2259
400	16	585	725	240	200	690	65	3772	3053
450	18	635	885	265	220	740	75	5347	4143
500	20	—	—	—	—	—	—	—	—
600	24	—	—	—	—	—	—	—	—



### DOUBLE FLANGED - FACE TO FACE HONGON STANDARD CLASS 2500/1500\* - ASME B16.10 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	—	—	—	—	—	—	—	—	—
200	8	355	545	165	130	418	50	346	642
250	10	430	560	170	130	522	50	828	1179
300	12	480	585	230	140	570	55	1384	1604
350	14	540	635	235	180	640	70	1808	2383
400	16	600	725	240	200	690	75	3292	3225
450	18	665	885	265	220	740	85	3559	4322
500	—	—	—	—	—	—	—	—	—
600	—	—	—	—	—	—	—	—	—

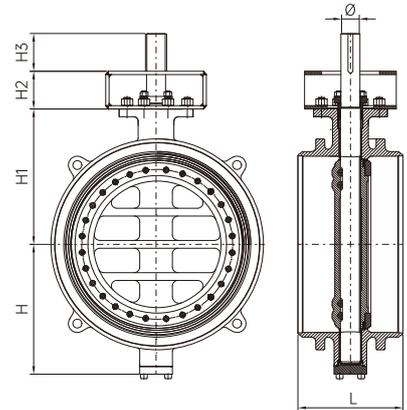


# HONGON TRIPLE OFFSET VALVES

## DIMENSIONS AND WEIGHTS / ASME CLASS 150/300

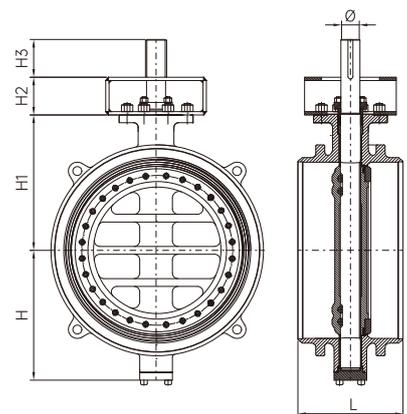
### Class 150LB, "L" API09&ISO 5752 Basic Series 14 (Metric)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Valve kg
80	3	119	110	60	35	180	12
100	4	139	133	70	50	190	18
150	6	159	158	70	50	210	27
200	8	194	190	80	65	230	42
250	10	232	230	100	65	250	66
300	12	267	275	100	65	270	80
350	14	299	306	115	80	290	102
400	16	327	335	115	80	310	129
450	18	356	360	125	100	330	140
500	20	386	390	125	100	350	190
600	24	456	460	140	130	390	268
650	26	491	495	140	130	410	321
700	28	516	520	140	140	430	367
750	30	551	576	170	170	450	480
800	32	585	610	170	170	470	519
900	36	652	665	170	170	510	708
1000	40	719	730	200	200	550	1019
1050	42	749	765	200	200	570	1127
1200	48	845	860	230	250	630	1611



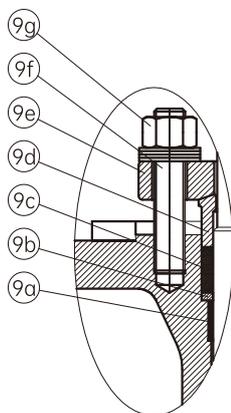
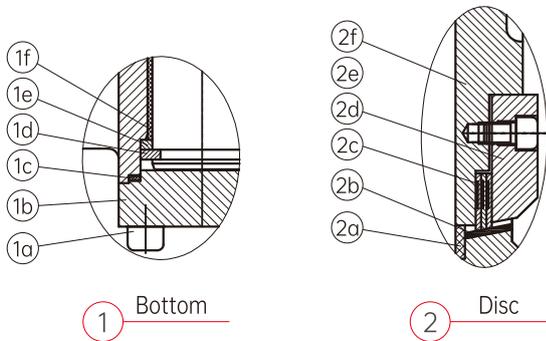
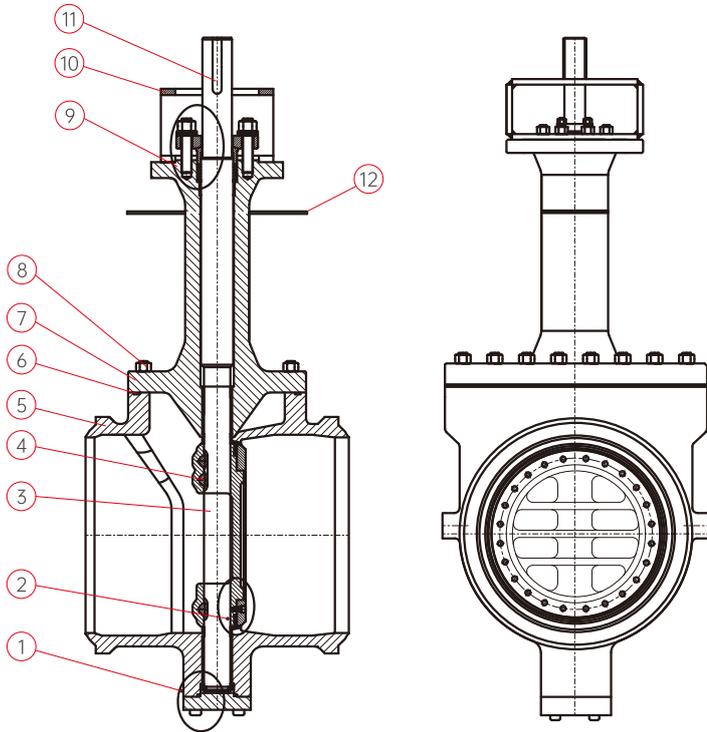
### Class 300LB, "L" API09&ISO 5752 Basic Series 14 (Metric)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Valve kg
100	4	149	143	70	50	190	18
150	6	179	180	80	65	210	24
200	8	217	215	100	65	230	39
250	10	247	255	100	65	250	61
300	12	288	295	115	80	270	108
350	14	331	335	125	100	290	119
400	16	361	365	125	100	310	164
450	18	396	405	140	120	330	295
500	20	431	435	140	130	350	305
600	24	505	530	170	170	390	456
650	26	540	565	170	180	410	494
700	28	592	605	200	200	430	576
750	30	619	630	200	220	450	724
800	32	649	665	200	200	470	809
900	36	722	735	230	250	510	1094
1000	40	750	745	230	280	550	1435
1050	42	782	775	230	280	570	1627
1200	48	877	870	260	310	630	2262



# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC FLANGED CONFIGURATION - SECTIONAL DRAWING AND MATERIAL SELECTION



### MATERIALS SELECTION

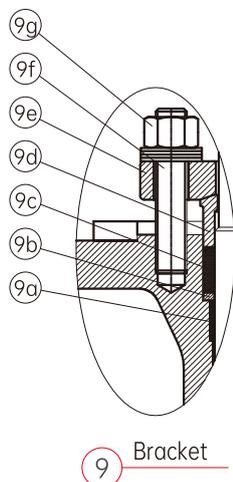
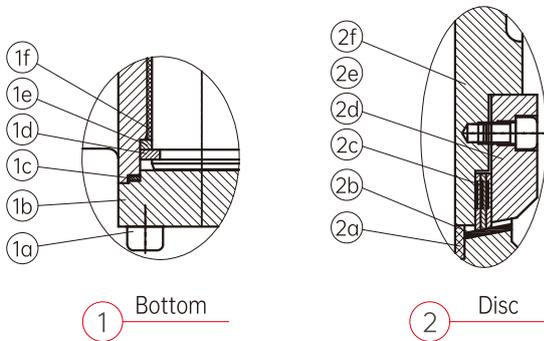
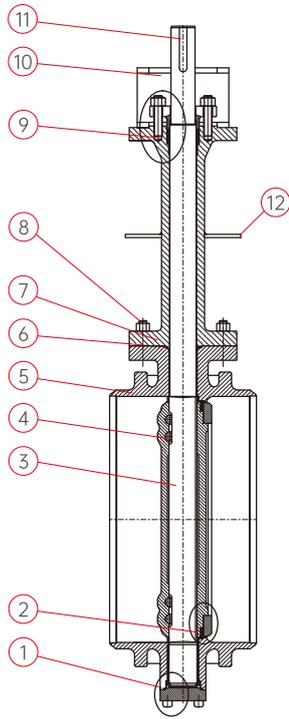
Item	Description	Material
<b>①</b>	<b>Bottom</b>	
1a	Stud bolts	A320 B8 CL2
1b	Bottom flange	F316
1c	Spacer	316+Graphite
1d	Split ring	316+N
1e	Thrust washer	316N
1f	Bearing	316+PTFE
<b>②</b>	<b>Disc</b>	
2a	Shaft sleeve	XM-19+N
2b	Body sealing surface	CF8M+STL21
2c	Disc sealing ring	316+Graphite
2d	Retainer flange	F316
2e	Retainer flange screw	A320 B8 CL2
2f	Disc	CF8M
3	Shaft	XM-19
4	Disc key	XM-19
5	Body	CF8M
6	Seal ring	Graphite
7	Bonnet	CE8M
8	Stud nut	A194 8
	Stud bolts	A320 B8 CL2
<b>⑨</b>	<b>Bracket</b>	
9a	Bearing	316+N
9b	Spacer	316
9c	Packing	Graphite
9d	Packing gland	316
9e	Packing flange	F316
	Stud bolts	A194 8
9f	Stud nut	A320 B8 CL2
	Disc spring	Inconel X750
10	Bracket	304
11	Keyway	410
12	Drip plate	304

#### NOTES

Material selection depends on working condition of the valve or customer request

# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC FLANGED CONFIGURATION - SECTIONAL DRAWING AND MATERIAL SELECTION



### MATERIALS SELECTION

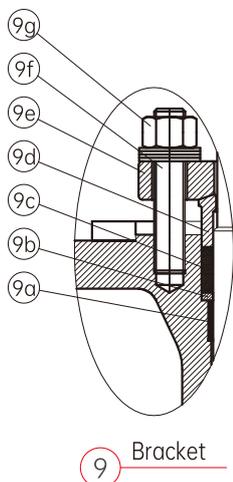
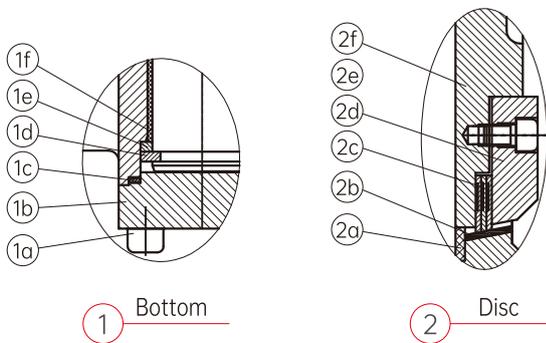
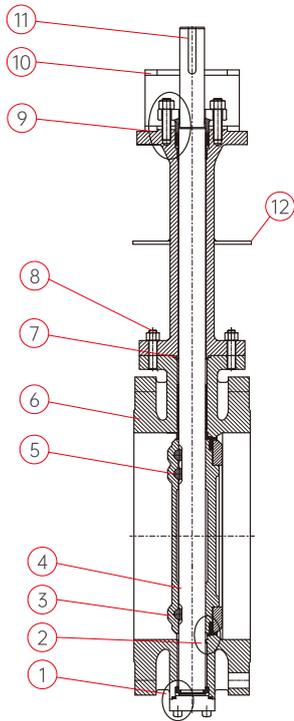
Item	Description	Material
<b>①</b>	<b>Bottom</b>	
1a	Stud bolts	A320 B8 CL2
1b	Bottom flange	F316
1c	Spacer	316+Graphite
1d	Split ring	316+N
1e	Thrust washer	316N
1f	Bearing	316+PTFE
<b>②</b>	<b>Disc</b>	
2a	Shaft sleeve	XM-19+N
2b	Body sealing surface	CF8M+STL21
2c	Disc sealing ring	316+Graphite
2d	Retainer flange	F316
2e	Retainer flange screw	A320 B8 CL2
2f	Disc	CF8M
3	Shaft	XM-19
4	Disc key	XM-19
5	Body	CF8M
6	Seal ring	Graphite
7	Bonnet	CE8M
8	Stud nut	A194 8
	Stud bolts	A320 B8 CL2
<b>⑨</b>	<b>Bracket</b>	
9a	Bearing	316+N
9b	Spacer	316
9c	Packing	Graphite
9d	Packing gland	316
9e	Packing flange	F316
	Stud bolts	A194 8
9f	Stud nut	A320 B8 CL2
	Disc spring	Inconel X750
10	Bracket	304
11	Keyway	410
12	Drip plate	304

#### NOTES

Material selection depends on working condition of the valve or customer request

# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC FLANGED CONFIGURATION - SECTIONAL DRAWING AND MATERIAL SELECTION



### MATERIALS SELECTION

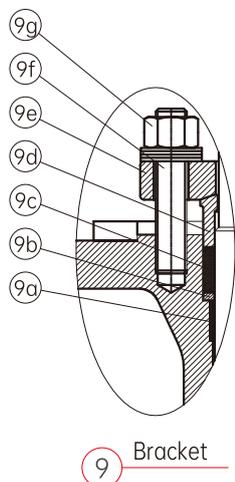
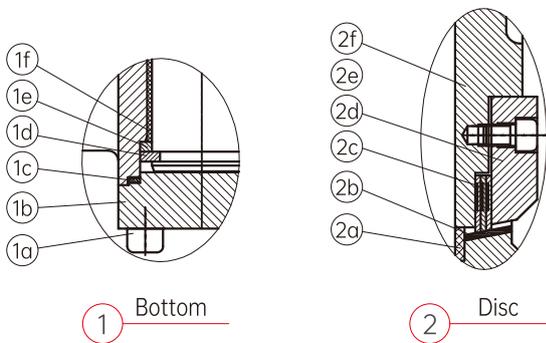
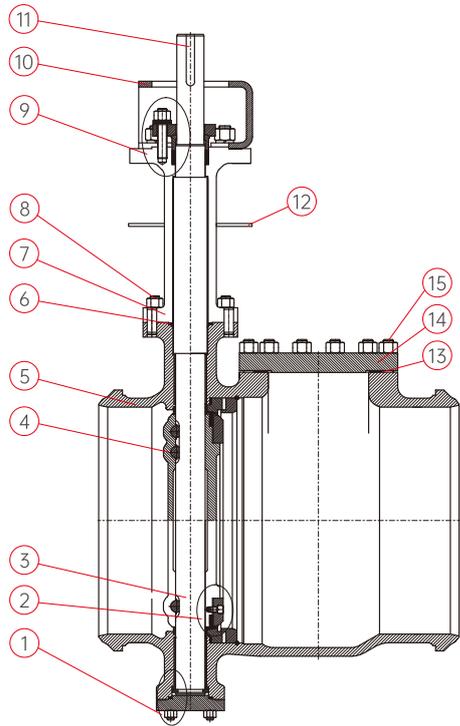
Item	Description	Material
<b>①</b>	<b>Bottom</b>	
1a	Stud bolts	A320 B8 CL2
1b	Bottom flange	F316
1c	Spacer	316+Graphite
1d	Split ring	316+N
1e	Thrust washer	316N
1f	Bearing	316+PTFE
<b>②</b>	<b>Disc</b>	
2a	Shaft sleeve	XM-19+N
2b	Body sealing surface	CF8M+STL21
2c	Disc sealing ring	316+Graphite
2d	Retainer flange	F316
2e	Retainer flange screw	A320 B8 CL2
2f	Disc	CF8M
3	Shaft	XM-19
4	Disc key	XM-19
5	Body	CF8M
6	Seal ring	Graphite
7	Bonnet	CE8M
8	Stud nut	A194 8
	Stud bolts	A320 B8 CL2
<b>⑨</b>	<b>Bracket</b>	
9a	Bearing	316+N
9b	Spacer	316
9c	Packing	Graphite
9d	Packing gland	316
9e	Packing flange	F316
	Stud bolts	A194 8
9f	Stud nut	A320 B8 CL2
	Disc spring	Inconel X750
10	Bracket	304
11	Keyway	410
12	Drip plate	304

#### NOTES

Material selection depends on working condition of the valve or customer request

# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC FLANGED CONFIGURATION - SECTIONAL DRAWING AND MATERIAL SELECTION



### MATERIALS SELECTION

Item	Description	Material
<b>① Bottom</b>		
1a	Stud bolts	A320 B8 CL2
1b	Bottom flange	F316
1c	Spacer	316+Graphite
1d	Split ring	316+N
1e	Thrust washer	316N
1f	Bearing	316+PTFE
<b>② Disc</b>		
2a	Shaft sleeve	XM-19+N
2b	Body sealing surface	CF8M+STL21
2c	Disc sealing ring	316+Graphite
2d	Retainer flange	F316
2e	Retainer flange screw	A320 B8 CL2
2f	Disc	CF8M
3	Shaft	XM-19
4	Disc key	XM-19
5	Body	CF8M
6	Seal ring	Graphite
7	Bonnet	CE8M
8	Stud nut	A194 8
	Stud bolts	A320 B8 CL2
<b>⑨ Bracket</b>		
9a	Bearing	316+N
9b	Spacer	316
9c	Packing	Graphite
9d	Packing gland	316
9e	Packing flange	F316
	Stud bolts	A194 8
9f	Stud nut	A320 B8 CL2
	Disc spring	Inconel X750
10	Bracket	304
11	Keyway	410
12	Drip plate	304

#### NOTES

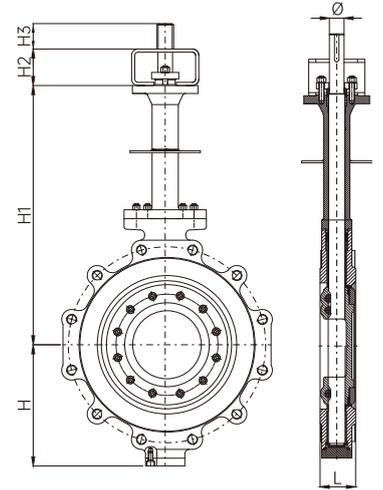
Material selection depends on working condition of the valve or customer request

# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS / ASME CLASS 150

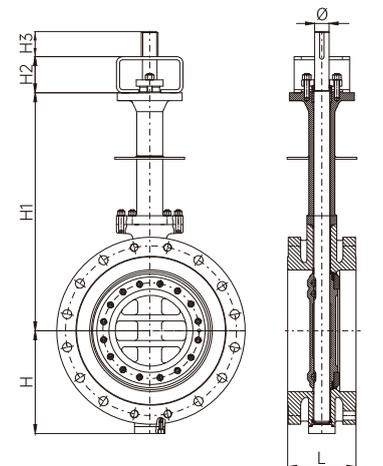
### LUG - FACE TO FACE API 609 CLASS 150 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
50	2	97	343	60	30	43	14	45	9
65	3	115	358	60	35	48	16	70	10
80	3	119	410	60	35	50	16	126	12
100	4	139	433	70	50	54	18	300	16
125	5	149	500	70	50	57	22	550	21
150	6	159	508	70	50	57	22	690	29
200	8	194	540	80	65	64	26	1565	42
250	10	232	630	100	65	73	30	2466	66
300	12	267	675	100	65	83	38	3697	98
350	14	299	756	115	80	94	42	5670	135
400	16	327	785	115	80	104	46	8689	185
450	18	356	860	125	100	116	50	9823	221
500	20	386	890	125	100	127	55	15558	320
600	24	456	960	140	130	154	70	20953	449
650	26	491	1045	140	130	165	70	29823	509
700	28	516	1070	140	140	165	75	34047	585
750	30	551	1126	170	170	190	85	38738	759
800	32	585	1160	170	170	190	85	48583	835
900	36	652	1265	170	170	210	100	60528	1193
1000	40	719	1330	200	200	251	115	66731	1614
1050	42	749	1365	200	200	251	115	87161	1764
1200	48	845	1460	230	250	276	130	99305	2410



### DOUBLE FLANGED - FACE TO FACE API609 CLASS 150 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
50	2	97	343	60	30	108	14	45	15
65	3	115	358	60	35	112	16	70	17
80	3	119	410	60	35	114	16	126	22
100	4	139	433	70	50	127	18	300	28
125	5	149	500	70	50	140	22	550	34
150	6	159	508	70	50	140	22	690	49
200	8	194	540	80	65	152	26	1565	66
250	10	232	630	100	65	165	30	2466	100
300	12	267	675	100	65	178	38	3697	141
230	14	299	756	115	80	190	42	5670	287
400	16	327	785	115	80	216	46	8689	269
450	18	356	860	125	100	222	50	9823	327
500	20	386	890	125	100	229	55	15558	572
600	24	456	960	140	130	267	70	20953	635
650	26	491	1045	140	130	292	70	29823	757
700	28	516	1070	140	140	292	75	34047	858
750	30	551	1126	170	170	318	85	38738	1093
800	32	585	1160	170	170	318	85	48583	1180
900	36	652	1265	170	170	330	100	60528	1762
1000	40	719	1330	200	200	410	115	66731	2326
1050	42	749	1365	200	200	410	115	87161	2495
1200	48	845	1460	230	250	470	130	99305	3347

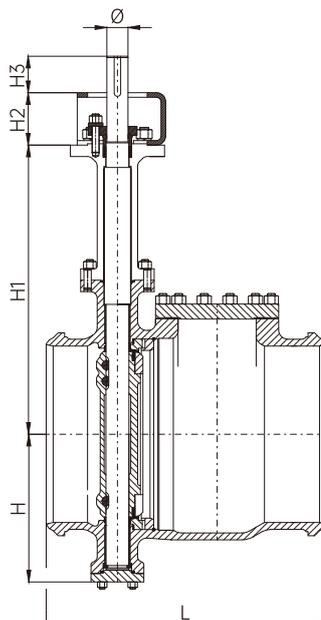


# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS / ASME CLASS 150

### BUTTWELD TOP ENTRY - END TO END HONGON STANDARD CLASS 150 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	159	559	70	50	395	22	690	86
200	8	194	594	80	65	410	26	1565	106
250	10	232	682	100	65	455	30	2466	161
300	12	267	717	100	65	480	38	3697	206
350	14	299	799	115	80	530	42	5670	292
400	16	327	827	115	80	555	46	8689	352
450	18	356	906	125	100	590	50	9823	462
500	20	386	966	125	100	625	55	15558	548
600	24	456	1016	140	130	680	70	20953	848
650	26	491	1051	140	130	680	70	29823	1018
700	28	516	1126	140	140	770	75	34047	1218
750	30	551	1181	170	170	795	85	38738	1362
800	32	585	1265	170	170	830	85	48583	1622
900	36	652	1332	170	170	900	100	60528	2222

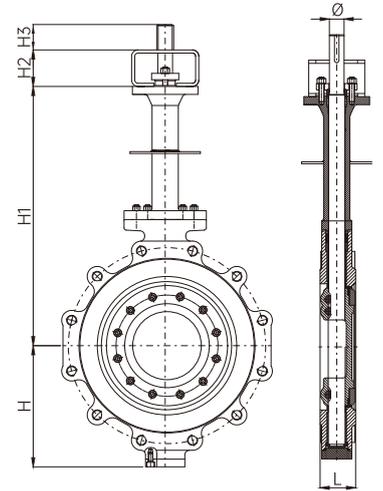


# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS / ASME CLASS 300

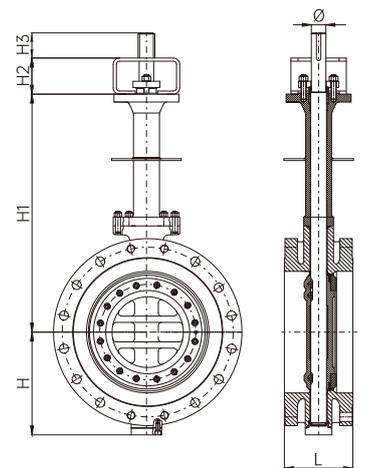
### LUG - FACE TO FACE API 609 CLASS 300 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
50	2	107	353	60	30	43	14	45	11
80	3	129	420	60	35	50	16	126	23
100	4	149	443	70	50	54	18	300	25
150	6	179	530	80	65	61	24	690	45
200	8	217	565	100	65	75	30	1466	54
250	10	247	655	100	65	85	38	2366	90
300	12	288	695	115	80	94	42	3497	158
350	14	331	785	125	100	117	50	5370	206
400	16	361	815	125	100	133	55	7689	277
450	18	396	905	140	120	149	65	10823	349
500	20	431	935	140	130	159	70	13558	427
600	24	505	1030	170	170	181	85	19904	696
650	26	540	1115	170	180	210	95	24599	917
700	28	592	1155	200	200	229	100	30104	1056
750	30	619	1180	200	220	229	110	34252	1275
800	32	649	1215	200	200	241	115	44028	1463
900	36	722	1335	230	250	271	130	58690	1929
1000	40	750	1345	230	280	300	140	64371	1857
1050	42	782	1375	230	280	330	150	82572	2144
1200	48	877	1470	260	310	381	170	93453	3001



### DOUBLE FLANGED - FACE TO FACE API609 & ISO 5752 BASIC SERIES 14 CLASS 300(METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
50	2	107	353	60	30	108	14	45	25
80	3	129	420	60	35	114	16	126	32
100	4	149	443	70	50	127	18	300	39
150	6	179	530	80	65	140	24	690	56
200	8	217	565	100	65	152	30	1466	75
250	10	247	655	100	65	165	38	2366	115
300	12	288	695	115	80	178	42	3497	162
350	14	331	785	125	100	190	50	5370	330
400	16	361	815	125	100	216	55	7689	309
450	18	396	905	140	120	222	65	10823	376
500	20	431	935	140	130	229	70	13558	658
600	24	505	1030	170	170	267	85	19904	731
650	26	540	1115	170	180	292	95	24599	871
700	28	592	1155	200	200	292	100	30104	986
750	30	619	1180	200	220	318	110	34252	1257
800	32	649	1215	200	200	318	115	44028	1357
900	36	722	1335	230	250	330	130	58690	2026
1000	40	750	1345	230	280	410	140	64371	2675
1050	42	782	1375	230	280	410	150	82572	2870
1200	48	877	1470	260	310	470	170	93453	3849

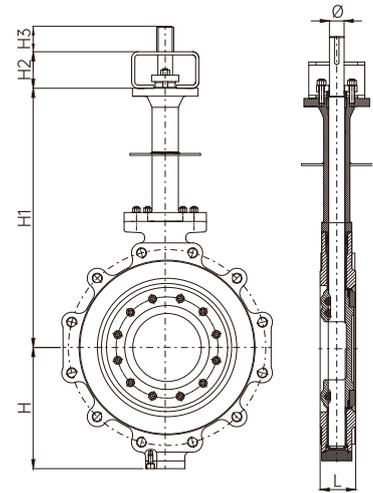


# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS / ASME CLASS 600

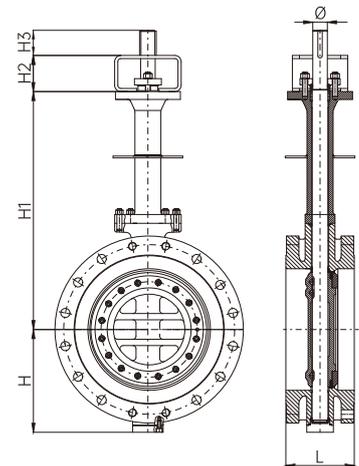
### LUG - FACE TO FACE API 609 CLASS 600 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
100	4	163	460	80	65	66	24	260	35
150	6	217	555	100	65	80	34	612	73
200	8	250	599	115	80	104	42	1451	153
250	10	306	700	125	100	119	50	2869	222
300	12	345	730	140	120	142	60	4515	388
350	14	365	815	140	120	157	65	5670	411
400	16	415	855	140	137	180	75	7593	541
450	18	450	960	170	170	200	85	10420	798
500	20	480	995	170	180	216	95	12698	869
600	24	586	1080	200	200	234	115	18973	1450



### DOUBLE FLANGED - FACE TO FACE API609 & ISO 5752 BASIC SERIES 14 CLASS 600(METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
100	4	163	460	80	65	190	24	260	55
150	6	217	555	100	65	210	34	612	107
200	8	250	599	115	80	230	42	1451	233
250	10	306	700	125	100	250	50	2869	281
300	12	345	730	140	120	270	60	4515	378
350	14	365	815	140	120	290	65	5670	470
400	16	415	855	140	137	310	75	7593	642
450	18	450	960	170	170	330	85	10420	820
500	20	480	995	170	180	350	95	12698	1030
600	24	586	1080	200	200	390	115	18973	1581

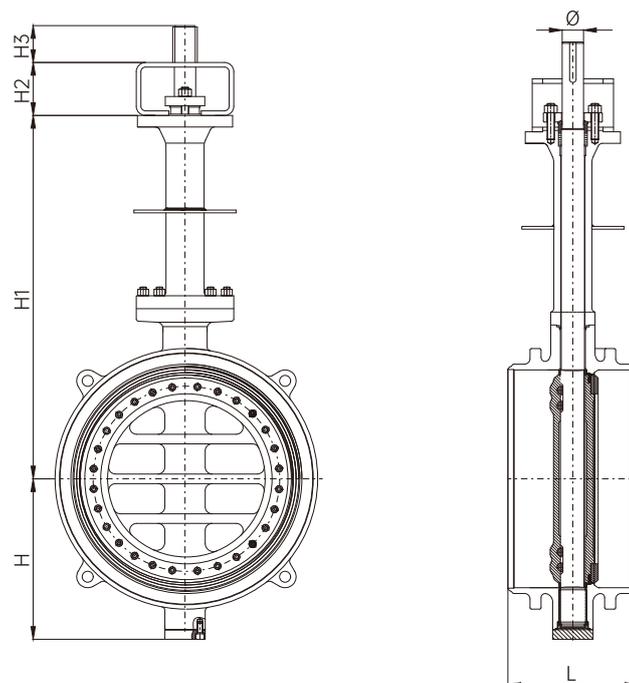


# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS / ASME CLASS 600

### BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 CLASS 600 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	217	555	100	65	210	34	612	67
200	8	250	599	115	80	230	42	1451	128
250	10	306	700	125	100	250	50	2869	205
300	12	345	730	140	120	270	60	4515	265
350	14	365	815	140	120	290	65	5670	303
400	16	415	855	140	137	310	75	7593	497
450	18	450	960	170	170	330	85	10420	632
500	20	480	995	170	180	350	95	12698	708
600	24	586	1080	200	200	390	115	18973	1010

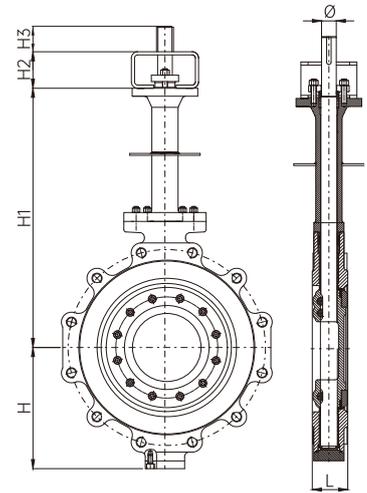


# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS / ASME CLASS 900

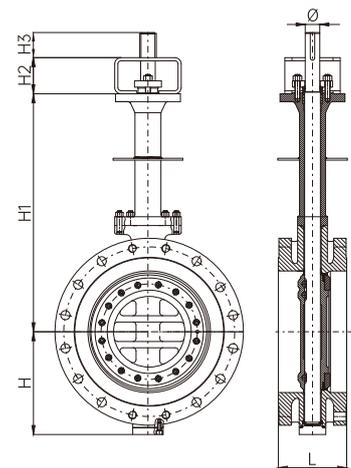
### LUG - FACE TO FACE HONGON STANDARD CALSS 900 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	226	635	120	65	105	30	345	130
200	8	277	700	135	80	140	40	936	249
250	10	330	830	145	100	155	50	1962	359
300	12	385	910	145	110	178	55	2819	520
400	16	440	980	200	120	241	65	6860	985
450	18	490	1070	200	130	244	75	9837	1230
500	20	585	1150	220	170	300	85	10499	1665
600	24	650	1300	230	180	350	95	17056	2350



### DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 14 CLASS 900 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
150	6	226	635	120	65	225	30	345	188
200	8	277	700	135	80	275	40	936	320
250	10	330	830	145	100	325	50	1962	501
300	12	385	910	145	110	375	55	2819	698
350	14	409	965	200	120	425	65	4033	902
400	16	440	980	200	120	475	65	6860	1080
450	18	490	1070	200	130	500	75	9837	1398
500	20	585	1150	220	170	575	85	10499	1998
600	24	650	1300	230	180	600	95	17056	3155

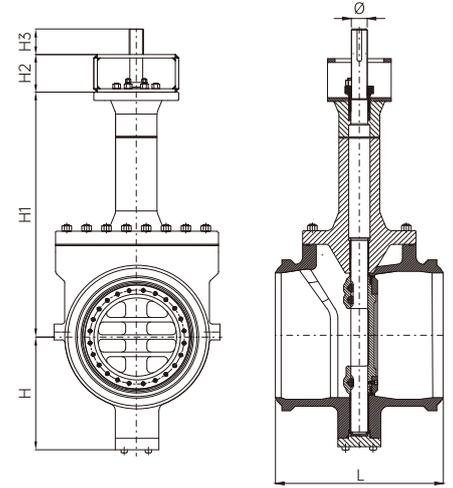


# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS / ASME CLASS 150/300

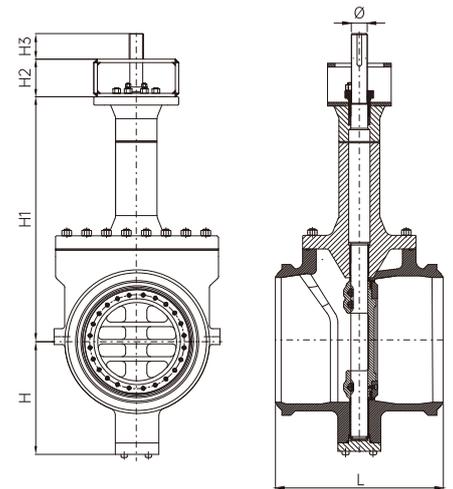
### BUTTWELD - END TO END HONGON STANDARD CLASS 150 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
200	8	194	540	80	65	350	26	1565	106
250	10	232	630	100	65	400	30	2466	123
300	12	267	675	100	65	450	38	3697	140
350	14	299	756	115	80	500	42	5670	264
400	16	327	785	115	80	500	46	8689	302
450	18	356	860	125	100	500	50	9823	344
500	20	386	890	125	100	600	55	15558	451
600	24	456	960	140	130	650	70	20953	621
700	28	545	1070	140	140	750	75	34047	848
750	30	615	1126	170	170	750	85	38738	978
800	32	615	1160	170	170	750	85	48583	1063
900	36	720	1265	170	170	900	100	60528	1573
1000	40	775	1330	200	200	1000	115	66731	2423
1050	42	845	1390	200	210	1000	115	82572	2465



### BUTTWELD - END TO END HONGON STANDARD CLASS 300 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
200	8	236	565	100	65	350	30	1466	125
250	10	247	655	100	65	400	38	2366	145
300	12	288	695	115	80	450	42	3497	165
350	14	331	785	125	100	500	50	5370	310
400	16	361	815	125	100	500	55	7689	355
450	18	396	905	140	120	500	65	10823	405
500	20	431	935	140	130	600	70	13558	530
600	24	505	1030	170	170	650	85	19904	730
700	28	592	1155	200	200	750	100	30104	998
750	30	645	1180	200	220	750	110	34252	1150
800	32	645	1215	200	200	750	115	44028	1250
900	36	750	1335	230	250	900	130	58690	1850
1000	40	780	1345	230	280	1000	140	64371	2850
1050	42	850	1405	230	290	1000	150	82572	2900

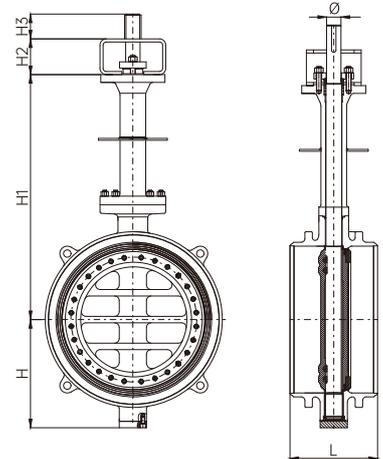


# HONGON TRIPLE OFFSET VALVES

## CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS / ASME CLASS 150/300

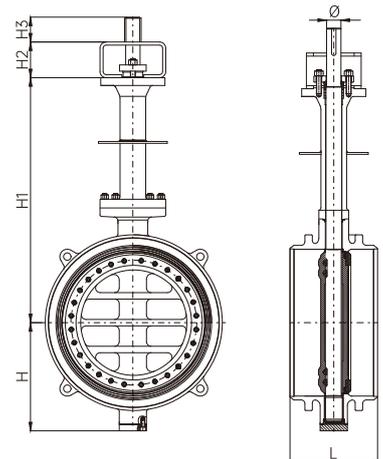
### BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 CLASS 150 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
80	3	119	410	60	35	180	16	126	12
100	4	139	433	70	50	190	18	300	18
150	6	159	508	70	50	210	22	690	24
200	8	194	540	80	65	230	26	1565	42
250	10	232	630	100	65	250	30	2466	66
300	12	267	675	100	65	270	38	3697	90
350	14	299	756	115	80	290	42	5670	102
400	16	327	785	115	80	310	46	8689	139
450	18	356	860	125	100	330	50	9823	170
500	20	386	890	125	100	350	55	15558	209
600	24	456	960	140	130	390	70	20953	353
650	26	491	1045	140	130	410	70	29823	411
700	28	516	1070	140	140	430	75	34047	470
750	30	551	1126	170	170	450	85	38738	616
800	32	585	1160	170	170	470	85	48583	666
900	36	652	1265	170	170	510	100	60528	908
1000	40	719	1330	200	200	550	115	66731	1307
1050	42	749	1365	200	200	570	115	87161	1445
1200	48	845	1460	230	250	630	130	99305	2065



### BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 CLASS 300 (METRIC)

DN	INCH	H mm	H1 mm	H2 mm	H3 mm	L mm	Ø mm	Cv [gal/min]at90°	Valve kg
80	3	129	420	60	35	190	16	126	12
100	4	149	443	70	50	200	18	300	13
150	6	179	530	80	65	210	24	690	27
200	8	217	565	100	65	230	30	1466	39
250	10	247	655	100	65	250	38	2366	61
300	12	288	695	115	80	270	42	3497	118
350	14	331	785	125	100	290	50	5370	139
400	16	361	815	125	100	310	55	7689	164
450	18	396	905	140	120	330	65	10823	214
500	20	431	935	140	130	350	70	13558	270
600	24	505	1030	170	170	390	85	19904	456
650	26	540	1115	170	180	410	95	24599	561
700	28	592	1155	200	200	430	100	30104	655
750	30	619	1180	200	220	450	110	34252	823
800	32	649	1215	200	200	470	115	44028	919
900	36	722	1335	230	250	510	130	58690	1243
1000	40	750	1345	230	280	550	140	64371	1631
1050	42	782	1375	230	280	570	150	82572	1849
1200	48	877	1470	260	310	630	170	93453	2570



# HONGON TRIPLE OFFSET VALVES

## REFERENCE DATA - OPERATING TORQUE TABLE

### Torque Parameters-150LB

SIZE	50psi(0.35MPa)		100psi(0.7MPa)		150psi(1.0MPa)		200psi(1.4MPa)		285psi(1.96MPa)	
	OPENING(N.M)	CLOSING(N.M)	OPENING(N.M)	CLOSING(N.M)	OPENING(N.M)	CLOSING(N.M)	OPENING(N.M)	CLOSING(N.M)	OPENING(N.M)	CLOSING(N.M)
3	51	48	75	59	78	66	87	76	97	89
4	74	62	98	81	105	96	114	112	141	133
5	106	96	147	132	183	144	230	156	297	190
6	121	105	172	166	205	191	258	210	331	264
8	153	123	238	231	297	270	386	303	510	395
10	225	199	429	366	493	487	648	558	872	738
12	297	248	530	463	605	600	795	690	1061	912
14	485	397	812	771	1090	832	1353	1076	1830	1357
16	653	623	1169	932	1361	1271	1721	1553	2353	2086
18	798	724	1584	1429	1970	1850	2691	2118	3700	2865
20	1242	1102	2484	2128	2911	2886	3899	3337	5316	4529
24	1936	1899	3198	2738	3724	3668	4910	4250	6500	5724
26	2338	2256	4562	3824	5304	5097	6795	6418	9173	8124
28	3215	3055	6522	5466	8038	7078	10610	8745	13568	11858
30	4349	4205	8297	7244	9724	8980	13032	11718	17664	14864
32	5008	4875	10060	8376	11262	11000	15111	14242	20500	18146
36	6001	5897	13242	10185	14384	13772	18954	18553	25248	24210
38	7454	6952	16268	12895	17694	17558	23776	23395	32482	29953
40	8200	7899	17942	14196	19517	19334	26185	25810	35780	33050
42	9060	8965	19890	15700	21639	21390	28975	28627	39600	36663
48	12630	11330	29514	21850	32125	29760	42570	40300	55058	54581

# HONGON TRIPLE OFFSET VALVES

## REFERENCE DATA - OPERATING TORQUE TABLE

### Torque Parameters-300LB

SIZE	220psi(1.5MPa)		290psi(2.0MPa)		435psi(3.0MPa)		580psi(4.0MPa)		740psi(5.1MPa)	
	OPENING(N.M)	CLOSING(N.M)								
3	92	89	100	96	115	110	140	120	163	133
4	132	115	155	133	202	169	249	205	295	245
5	220	185	256	209	329	259	401	308	473	363
6	270	214	334	268	430	320	536	388	652	464
8	444	392	538	469	727	623	916	777	1124	946
10	760	741	935	910	1283	1245	1632	1582	2016	1951
12	1088	981	1346	1203	1862	1649	2377	2094	2945	2583
14	1997	1677	2392	1965	3183	2542	3973	3119	4842	3753
16	2698	2200	3355	2611	4670	3433	5986	4255	7433	5160
18	3310	2914	4129	3507	5769	4694	7408	5880	9211	7186
20	5194	4316	6528	5225	9195	7043	11863	8860	14798	10860
24	7147	5600	9046	6825	12845	9272	16645	11720	20824	14413
28	11258	8419	14195	10136	20069	13573	25944	17010	32405	20790
36	20910	17719	26307	21527	37100	29145	47894	36762	56767	45142
40	28085	25065	35473	30343	50250	40899	65026	51455	81281	63067

### Torque Parameters-600LB

SIZE	580psi(4.0MPa)		725psi(5.0MPa)		870psi(6.0MPa)		1160psi(8.0MPa)		1508psi(10.4MPa)	
	OPENING(N.M)	CLOSING(N.M)	OPENING(N.M)	CLOSING(N.M)	OPENING(N.M)	CLOSING(N.M)	OPENING(N.M)	CLOSING(N.M)	OPENING(N.M)	CLOSING(N.M)
3	245	185	273	198	301	212	357	238	414	264
4	548	380	631	471	715	503	882	666	1048	875
6	905	857	1031	944	1156	1030	1408	1204	1659	1378
8	1748	1164	2049	1319	2350	1474	2952	1783	3554	2093
10	2148	2115	2456	2401	2788	2764	3461	3380	4133	3996
12	3714	3254	4294	3720	4874	4158	6034	5116	7149	6046
14	5922	4882	6869	5570	7817	6257	9712	7633	11607	9008
16	6725	5723	7898	6646	9070	7569	11416	9413	13761	11258
18	12450	9710	14426	11000	16403	12294	20357	14878	24310	17462
20	14661	12779	17069	14715	19475	16651	24289	20523	29103	24396
24	21179	16119	24959	18635	28740	21151	36302	26183	43864	31215

# HONGON TRIPLE OFFSET VALVES INTERNATIONAL PATENT DISPLAY

- A NEW TYPE OF BUTTERFLY VALVE SEALING STRUCTURE

Loredana Guglielmetti Firmato da: uibm-  
brevetti  
Roma, 20 luglio 2021

mise.AOO\_PIT.REGISTRO UFFICIALE.U.0216631.20-07-2021

  
*Ministero dello Sviluppo Economico*  
Direzione generale per la tutela della proprietà industriale  
Ufficio Italiano Brevetti e Marchi

**ATTESTATO DI BREVETTO PER INVENZIONE INDUSTRIALE**

Il presente brevetto viene concesso per l'invenzione oggetto della domanda:

**N. 102019000013629**

TITOLARE/I: 

- Shanghai Honggong Machinery Technology Co., Ltd. 50.0%
- Shanghai Qianggen Enterprise Development Co., Ltd. 50.0%

DOMICILIO: Longoni Alessandra  
AL & Partners S.r.l.  
via C. Colombo ang. via Appiani (Corte del Cotone)  
20831 Seregno

INVENTORE/I: 

- Sun Maoteng

TITOLO: Un gruppo di tenuta per una valvola a farfalla triplo eccentrica a tenuta stagna comprendente struttura di tenuta e valvola a farfalla triplo eccentrica a tenuta stagna

CLASSIFICA: F16K

DATA PRESENTAZIONE: 01/08/2019

PRIORITA': 

- CN. Deriva da una domanda di brevetto d'invenzione n.CN20181137743 del 19/11/2018

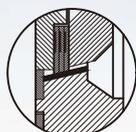
Roma, 20/07/2021

Il Dirigente della Divisione VII  
*Loredana Guglielmetti*

Documento informatico, redatto e firmato digitalmente ai sensi degli artt. 20 e 21 del D. Lgs. 82/2005 e s.m.i.

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Multiple Layer inner grooved Metal Sealing

# HONGON

Zero Leakage  
Zero Compromise

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