



TOMOE valves can be found in operation in a vast range of industries worldwide, both on-shore and off-shore, providing unsurpassed levels of leak tightness and wear resistance and making a valuable contribution to overall process efficiency.

- Water Treatment
- Chemical Processing
- Food & Drink
- Sugar Processing
- Oil & Gas
- Offshore
- Petrochemical
- HVAC
- Power Generation
- LNG
- Iron & Steel
- Marine
- Cement
- Powder Handling

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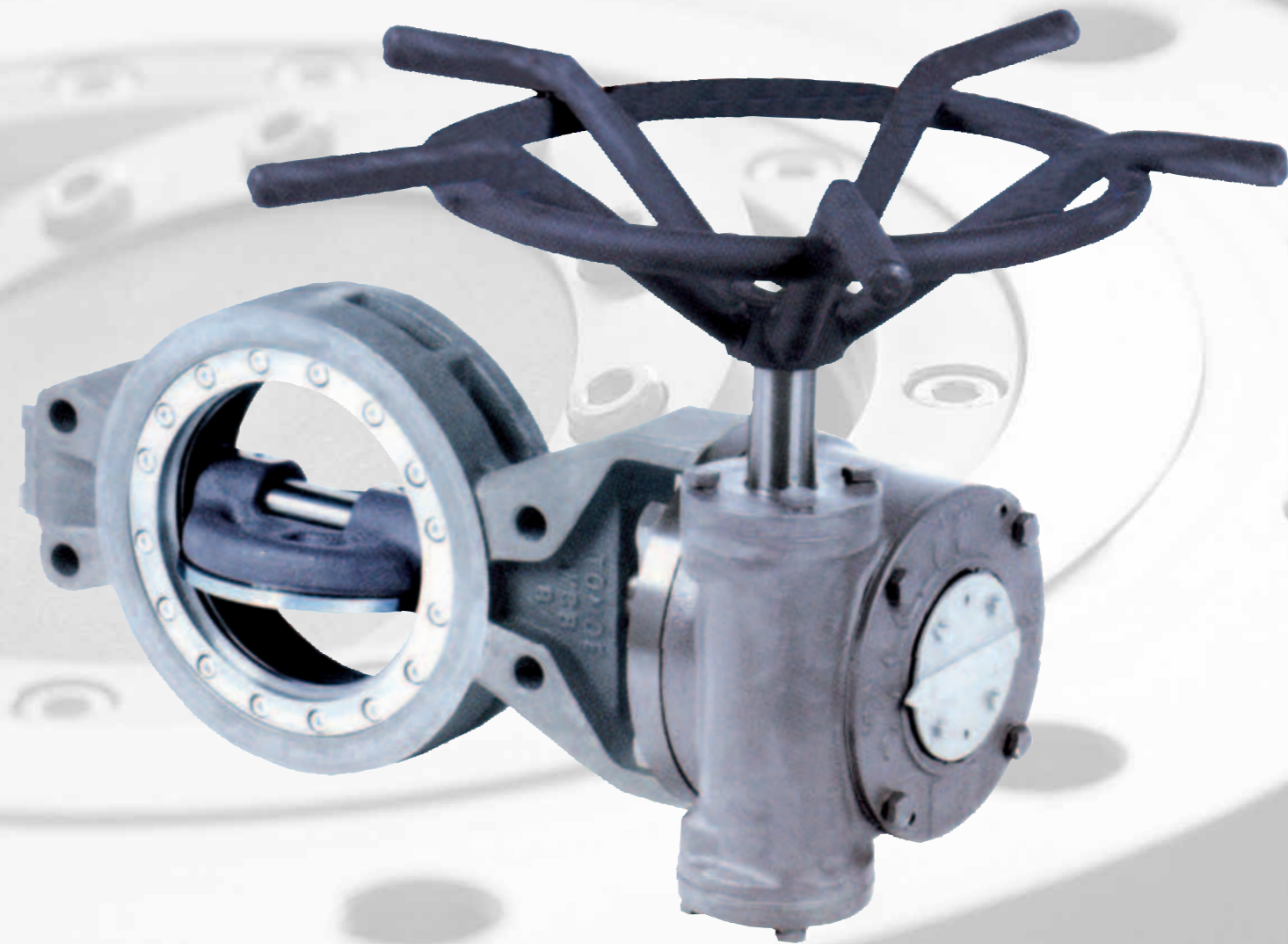


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# TOMOE EXCELLENCE IN HYDRODYNAMICS

## Triple Offset Process Valve

# TT2



**High performance valve delivering long life and positive shut-off in arduous conditions:**

- Bi-direction zero-leakage with metal seat
- Compact, lightweight design
- Fully field replaceable seat and seal design
- Longer life cycle
- Fire safe certification to API 607 4th Edition

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## Always at the leading edge

Through an extensive commitment to Research & Development, TOMOE has remained at the leading edge of valve design for more than 50 years. The TT2 Triple Offset process valve is the result of advanced technology design and stringent testing to develop a valve that meets the high performance demands of applications where long life and positive shut-off under arduous conditions is essential.

The TT2 inherits the torque sealing, friction-free sealing design of other valves in the TT series and the unique triple offset and ellipsoidal sealing geometry guarantees zero leakage and bubble-tight shut-off.

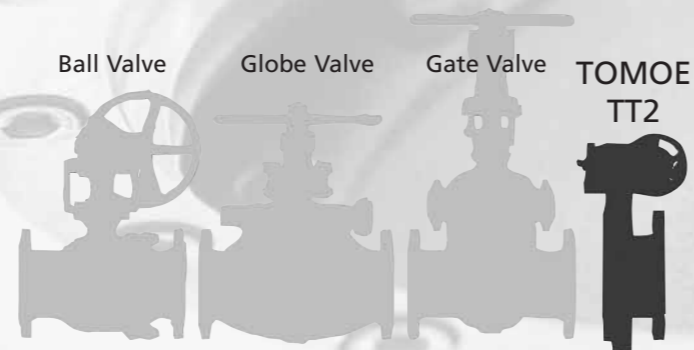
In addition, the compact, lightweight design of the TT2 triple offset valve has revolutionised design and maintenance of piping systems in the OPC industry. Smaller and lighter than traditional ball, globe and gate valves, the TT2 features a fully field-replaceable seat and seal design for increased plant efficiency and reduced cost of ownership.

Available in Wafer, Lugged and Double Flanged type body styles to 150 lb and 300 lb pressure ratings, the TT2 triple offset valve has fire safe certification to AP1607 4th Edition, making it inherently safe in high risk industry applications.



### TT2 Triple Offset Process Valve

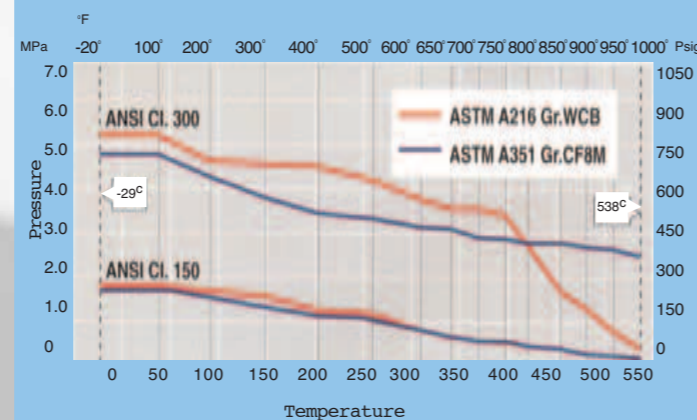
- Bi-directional zero-leakage with metal seat
- Compact, lightweight design
- Fully field replaceable seat and seal design
- Longer life cycle
- Fire safe certification to AP1607 4th Ed.



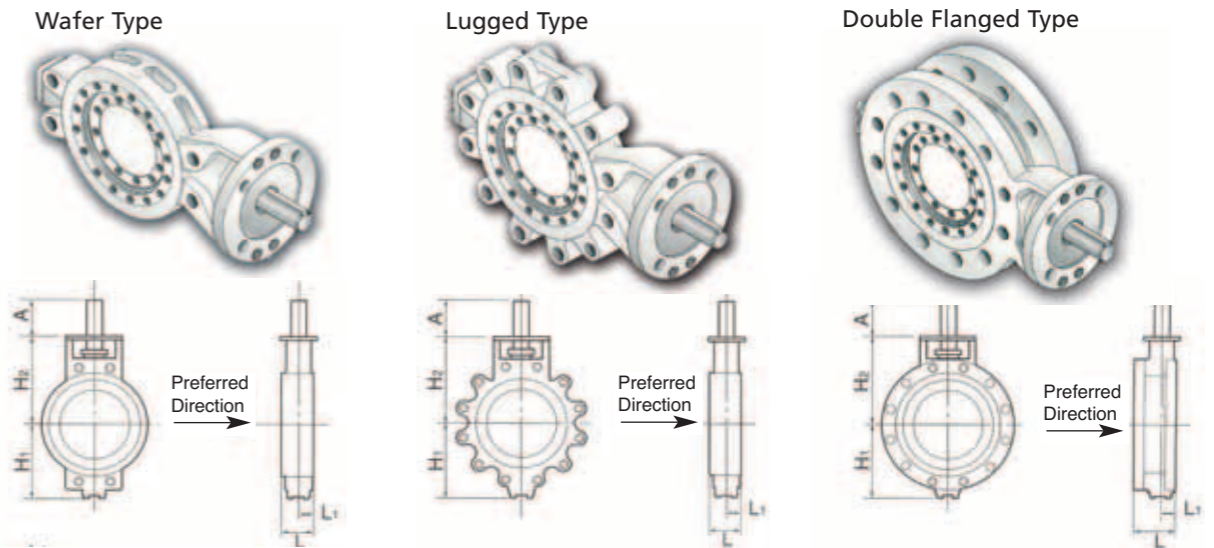
### General Specifications: Class 150/300 Range

Design: API 609 Cat.B, ASME B 16.34  
 Pressure Rating: ASME B16.34 Class 150 & 300 Range, API 609 Class 150 & 300 Range  
 Flange Connection: ASME B 16.5, JPI, JIS, BS and DIN  
 Nominal Diameter: 3" to 24"  
 Body Style: Wafer, Lugged and Double Flanged short & long  
 Standard Materials:  
 Body: ASTM A216 WCB or ASTM A351 CF8M  
 Disc: ASTM A216 WCB or ASTM A351 CF8M  
 Disc Seal: Stainless steel type 316  
 Stem: ASTM 564 type 630 H1150 + 1150  
 Body Seat: Stainless steel type 316 with graphite laminate.

### Pressure-Temperature Ratings



### Options Available



### Dimensions (mm) 150LB

Valve	m	inch	H1	H2	A	L1	L			Approx Weight (kg)		
							Wafer Type	Lugged Type	Flanged Type	Wafer Type	Lugged Type	Flanged Type
80	3	127	159	34	29	48	48	114	8	7	16	
100	4	151	194	34	31	54	54	127	12	14	23	
150	6	177	242	34	37	57	57	140	20	22	37	
200	8	195	237	34	41	64	64	152	29	31	54	
250	10	227	277	64	46	71	71	165	47	54	80	
300	12	266	325	79	53	81	81	178	70	80	120	
350	14	293	352	79	61	92	92	190	88	96	160	
400	16	336	425	79	64	102	102	216	111	139	199	
450	18	356	443	79	75	114	114	222	168	194	249	
500	20	391	482	79	81	127	127	229	197	237	328	
600	24	463	550	109	97	154	154	267	322	413	454	

### Dimensions (mm) 300LB

Valve	m	inch	H1	H2	A	L1	L			Approx Weight (kg)		
							Wafer Type	Lugged Type	Flanged Type	Wafer Type	Lugged Type	Flanged Type
80	3	121	159	34	29	48	48	114	7	9	18	
100	4	145	194	34	32	54	54	127	12	14	30	
150	6	189	276	64	37	59	59	140	25	26	51	
200	8	218	285	79	44	73	73	152	38	47	83	
250	10	260	355	79	46	83	83	165	63	75	119	
300	12	306	428	79	53	92	92	178	94	111	184	
350	14	341	460	79	61	117	117	190	119	171	247	
400	16	374	518	109	71	133	133	216	174	236	317	
450	18	401	592	109	79	149	149	222	242	344	428	
500	20	442	620	128	85	159	159	229	307	394	516	
600	24	515	696	128	100	181	181	267	437	588	761	

### Class 150 lb

Valve Size	Positive Pressure		Reverse Pressure		Max. Allowance Torque	Min. Design Pressure (MPa)	
	mm	Inch	Opening Torque	Shut off Torque			Opening Torque
80	3	90	80	50	120	477	2.0
100	4	120	110	70	150	660	2.0
150	6	150	140	90	260	881	2.0
200	8	350	260	105	445	1260	2.0
250	10	600	500	300	900	2206	2.0
300	12	960	800	400	1200	4165	2.0
350	14	1400	1200	600	1600	4165	1.5
400	16	2000	1800	850	2700	7421	1.0
450	18	2900	1900	1050	3650	11529	1.0
500	20	3785	2400	1600	4500	11529	1.0
600	24	6535	3240	2760	7100	22453	1.0

### Class 300 lb

Valve Size	Positive Pressure		Reverse Pressure		Max. Allowance Torque	Min. Design Pressure (MPa)	
	mm	Inch	Opening Torque	Shut off Torque			Opening Torque
80	3	150	135	75	175	477	3.5
100	4	200	170	105	230	660	3.5
150	6	390	350	200	400	1260	3.5
200	8	770	700	500	1080	2677	3.0
250	10	1280	1100	710	1530	4165	3.0
300	12	2260	1600	1320	2470	7421	3.0
350	14	3170	1900	1840	3190	11529	3.0
400	16	5920	3730	2940	6710	17590	2.5
450	18	9000	4600	4200	9420	28015	2.5
500	20	11440	5670	5560	11600	34357	2.5
600	24	19100	8500	9340	18140	50313	2.5

These torque tables describe the values at the highest use pressure and become linear for pressure. Do not use the values below the min. design pressure at the torque calculation.

Calculation examples:

14" – 150 lb (positive pressure side opening torque when customer use pressure is 0.8MPa)

$$1400 \text{ (Nm)} \times 1.5 \text{ (MPa)} / 2.0 \text{ (MPa)} = 1050 \text{ (Nm)} \dots (\circ)$$

$$1400 \text{ (Nm)} \times 0.8 \text{ (MPa)} / 2.0 \text{ (MPa)} = 560 \text{ (Nm)} \dots (\times)$$

8" – 300 lb (positive pressure side opening torque when customer use pressure is 2.0MPa)

$$770 \text{ (Nm)} \times 3.0 \text{ (MPa)} / 5.1 \text{ (MPa)} = 453 \text{ (Nm)} \dots (\circ)$$

$$770 \text{ (Nm)} \times 2.0 \text{ (MPa)} / 5.1 \text{ (MPa)} = 302 \text{ (Nm)} \dots (\times)$$

Should be required 20% safety factor on the above torques.