

700 Series  
 Rubber Seated Butterfly Valves

**846T** Wafer

**847T** Wafer

**847Q** Lugged



**Features and benefits**

New design features of the TOMOE 847 series result in vastly improved sealing performance in applications where conditions are potentially hazardous.

**High tension coil spring**

(250, 300mm: coned disc spring)  
 Ensures a stable seal at both the upper and lower gland even at extreme temperatures or when thermal shock occurs.

**Minimum 3mm PFA thickness**

(250, 300mm: PTFE)  
 Seamfree PFA injection moulding (PTFE compression moulding) on the seat and disc to a minimum thickness of 3mm prevents permeation of dangerous fluids or gases.

**No special gasket needed**

Stable flange sealing performance is ensured by concentric circular grooves on the flange faces thereby eliminating the need for a special gasket when operating under specified temperatures.  
 The wider sealing area also ensures minimum "creep" at high temperatures.  
 Flange sealing mechanism is independent of the seating and gland seals which ensures there is no loss of line fluid. Soft gaskets can be used when fitting the valve in the pipeline.

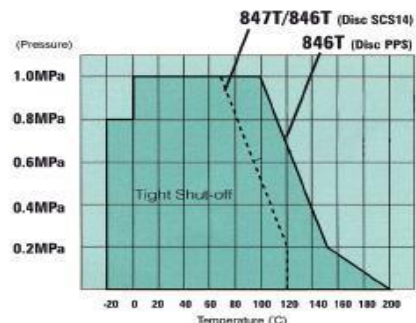
**Total sealing**

Valve structure includes primary, secondary and independent tertiary seal, ie. gland packing. There is also a fourth seal of O-rings on the top/bottom stems, ie. dust seal.

**Lining**

(50 to 200mm: PFA, 250, 300mm: PTFE)  
 Seamless construction of the valve lining of the 847 Series ensures complete stability in all conditions.  
 Design and construction of conventional valves often means permeation of fluids or gases, particularly at high temperatures. By employing an injection moulding method and utilising the properties of Teflon at a minimum thickness of 3mm, the 847 Series is able to eliminate faults common to Teflon-lined valves of conventional design.

**Pressure-temperature leakage chart**

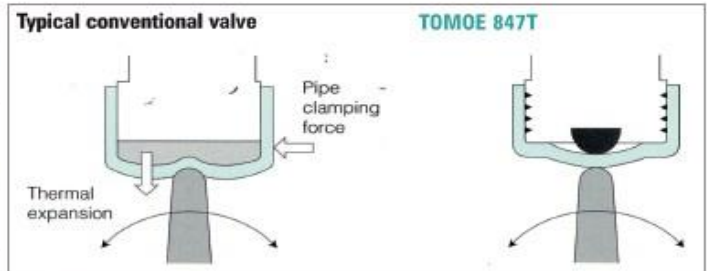


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**General Description**

Chemically resistant butterfly valves. The unique construction of the TOMOE 847 Series provides superior strength and sealing properties essential in applications where conditions are potentially hazardous.

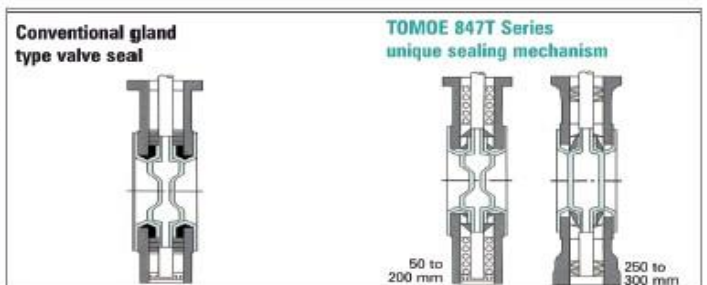
Type	846T	847T
Valve nominal size	65 to 200mm (8 sizes)	50 to 300mm (9 sizes)
Applicable flange standard	JIS 5K/10K, ANSI 125 lb/150 lb, ISO 7005-1 PN 6/10/16, BS10 Table E, DIN 2632 NP 6/10/16, BS 4504 PN 6/10/16	
Face-to-face dimensions	JIS B 2002 46 series/ ISO 5752 wafer butterfly valves (short)	
Max. working pressure #1	1.0 MPa	
Body shell test	1.5 MPa	
Seat leak test	1.1 MPa	
Working temperature range	PPS disc: -20 to 120 degrees C Stainless disc: -20 to 200 degrees C #1	0 to 150 degrees C #1
Working temperature in continuous use #2	PPS disc: 0 to 80 degrees C Stainless disc: 0 to 150 degrees C #1	0 to 150 degrees C #1
Standard materials	Body	Ductile iron, FCD-S (A395)
	Disc	50 to 200mm: PPS (65 to 200mm) SCS14 (CF8M) 250, 300mm: SCS 13 (CF8) with PTFE lining
	Stem	316SS / 420J2SS
	Seat ring	50 to 200mm: PFA (backup rubber: Fluorocarbon rubber) 300mm: PTFE (backup rubber: fluorocarbon rubber)



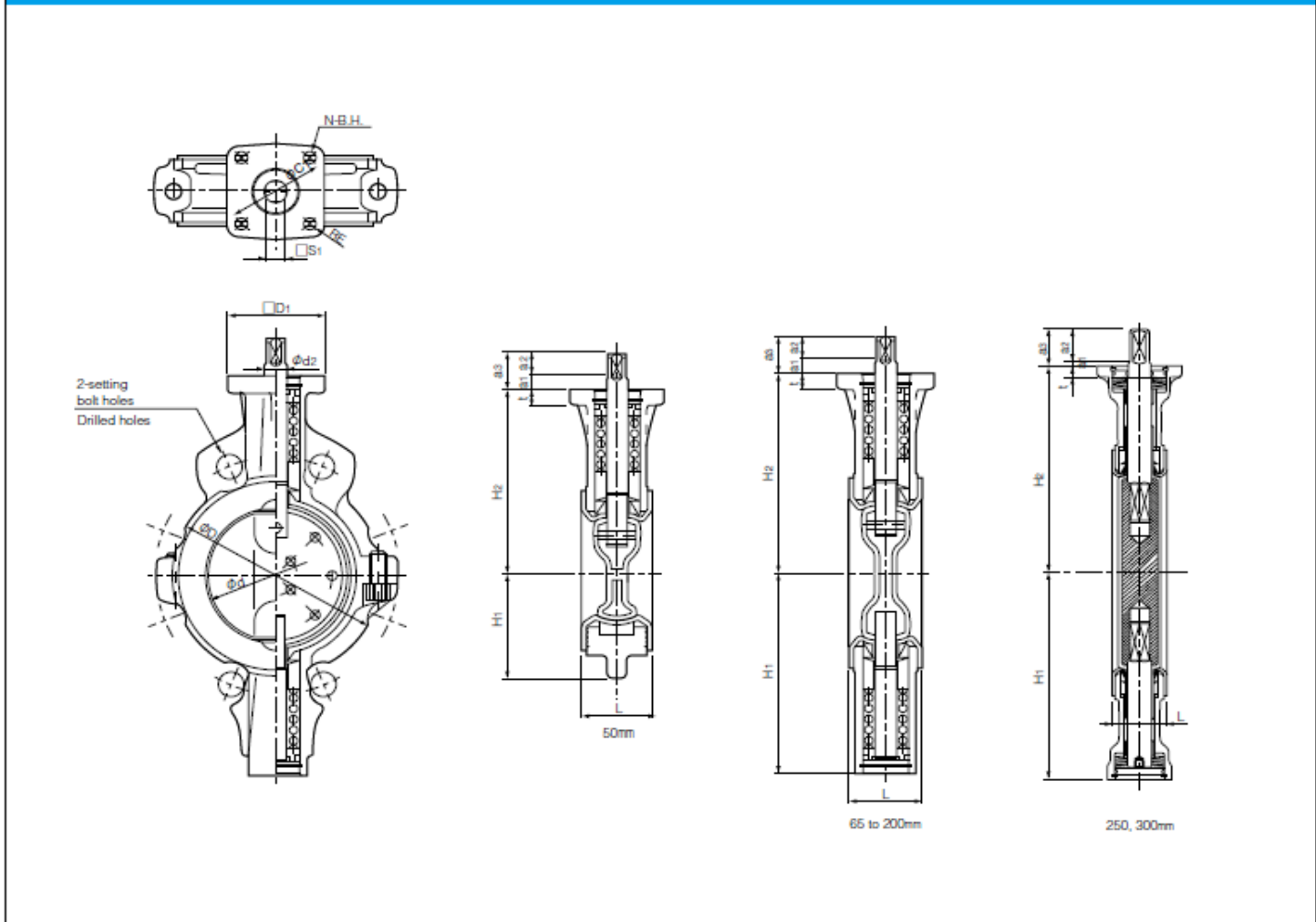
**Sealing Properties**

The upper and lower stem housings of the 847 Series valve have the same length high tension coil springs which provide stable sealing performance in cases of temperature change. Conventional valves usually employ a shorter spring in the lower stem housing. This can lead to a loading imbalance on the seat making it difficult to maintain consistent sealing performance. The sealing design features a triple acting sealing mechanism controlled by the balanced spring forces. (240, 300mm: Coned disc springs).

In addition, stem seal leakage caused by excessive pipe flange damping forces is eliminated because the stem seal arrangement and the pipe flange seal are totally independent.



**847T Wafer type**

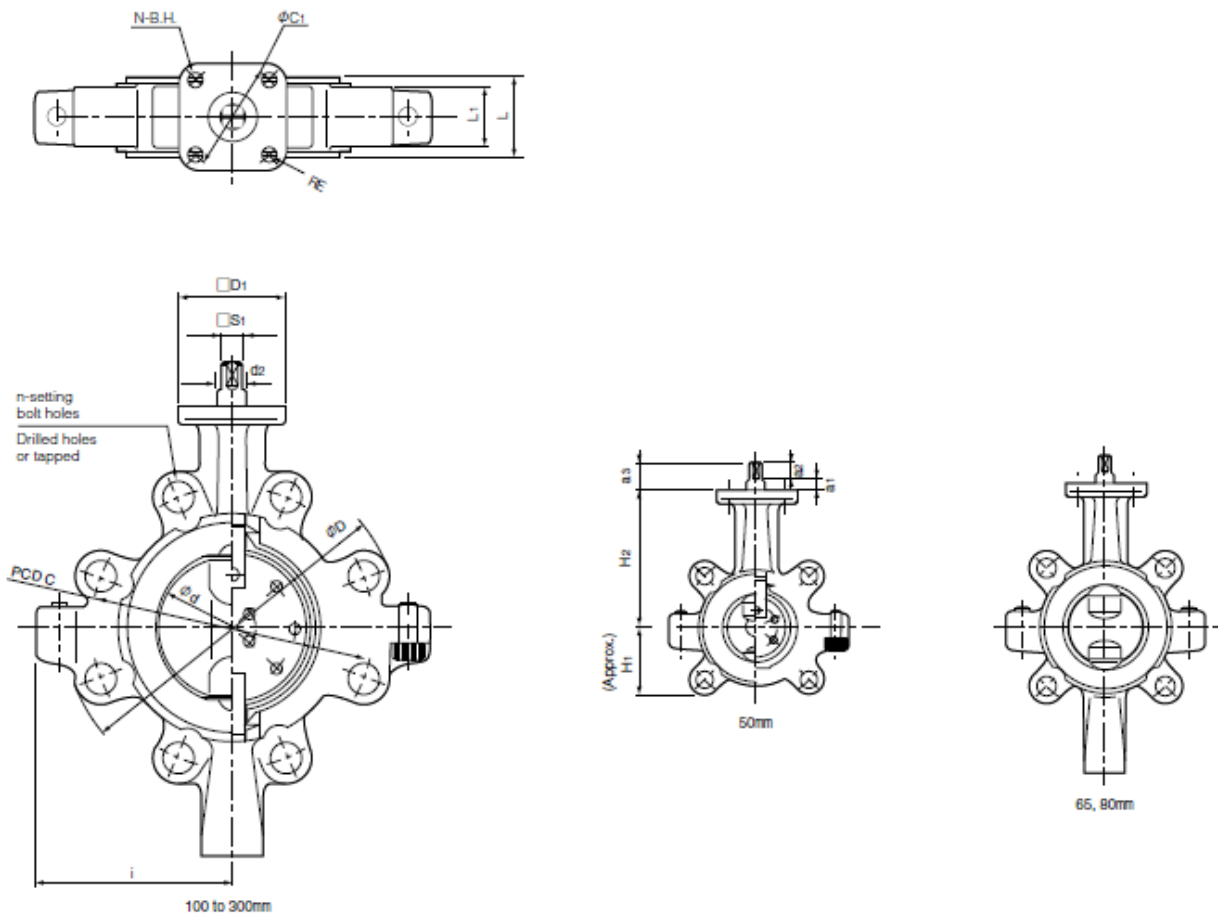


**Dimensions**

Nominal size		Dimension (mm)															Approx. Mass (kg)	
mm	inch	$\phi d$	$\phi D$	L	H <sub>1</sub>	H <sub>2</sub>	d <sub>2</sub>	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	S <sub>1</sub>	D <sub>1</sub>	t	RE	$\phi C_1$	N		B.H.
50	2	53.4	96	43	62	118.5	14	11	12	23	12	70	12	10	70	4	9	2.2
65	2 1/2	67	115	46	125	125	14	11	12	23	12	70	12	10	70	4	9	3.3
80	3	82	131	46	132.5	132.5	14	11	12	23	12	70	12	10	70	4	9	3.6
100	4	102	152	52	148	148	16	11	17	28	14	70	12	10	70	4	9	5
125	5	127.6	190	56	171	171	18	11	17	28	14	102	14	23.5	102	4	11	8.5
150	6	151.6	217	56	183	183	18	11	17	28	14	102	14	23.5	102	4	11	10.1
200	8	197	266	60	220	220	22	10	21	31	18	102	14	23.5	102	4	11	14.6
250	10	247.5	320	68	260	260	28	5	30	35	24	102	14	24	102	4	11	28
300	12	296.4	374	78	297	297	30	5	30	35	24	125	16	32	125	4	13	38



**847Q Lugged type**



**■ Dimensions**

Nominal size		Dimension (mm)																		Approx. Mass (kg)
mm	inch	$\phi d$	$\phi D$	L	$L_1$	$H_1$	$H_2$	i	$d_2$	$a_1$	$a_2$	$a_3$	$S_1$	$D_1$	t	RE	$\phi C_1$	N	B.H.	
50	2	150.6	53.4	43	32	58	118.5	80	14	11	12	23	12	70	12	10	70	4	9	3.3
65	2 1/2	175	67	46	34	125	125	86	14	11	12	23	12	70	12	10	70	4	9	4.4
80	3	184	82	46	34	132.5	132.5	90	14	11	12	23	12	70	12	10	70	4	9	4.7
100	4	223	102	52	40	148	148	130	16	11	17	28	14	70	12	10	70	4	9	8.6
125	5	252	127.6	56	43	171	171	150	18	11	17	28	14	102	14	23.5	102	4	11	12.6
150	6	276	151.6	56	44	183	183	163	18	11	17	28	14	102	14	23.5	102	4	11	13.3
200	8	331	197	60	50	220	220	180	22	10	21	31	18	102	14	23.5	102	4	11	21.3
250	10	406	247.5	68	52	260	260	242	28	5	30	35	24	102	14	24	102	4	11	37
300	12	476	296.4	78	66	297	297	270.5	30	5	30	35	24	125	16	32	125	4	13	54

Lock lever type 847T-1T (50mm to 200mm) / 846T-1T (65mm to 200mm)

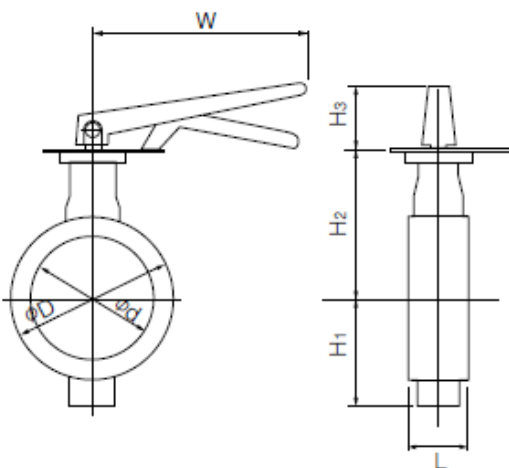
■ 847T-1T

Nominal size		Dimension (mm)							Lever type	Approx. Mass (kg)
mm	inch	$\phi d$	$\phi D$	L	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	W		
50	2	53.4	96	43	62	118.5	66	200	1T-1	2.8
65	2 1/2	67	115	46	125	125	66	200	1T-1	3.9
80	3	82	131	46	132.5	132.5	66	200	1T-1	4.2
100	4	102	152	52	148	148	66	200	1T-1	5.6
125	5	127.6	190	56	171	171	92	300	1T-2	9.8
150	6	151.6	217	56	183	183	92	300	1T-2	11.4
200	8	197	266	60	220	220	97	350	1T-3	16.3

■ 846T-1T

Nominal size		Dimension (mm)							Lever type	Approx. Mass (kg)
mm	inch	$\phi d$	$\phi D$	L	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	W		
65	2 1/2	67	115	46	125	125	66	200	1T-1	3.9
80	3	82	131	46	132.5	132.5	66	200	1T-1	4.3
100	4	102	152	52	148	148	66	200	1T-1	5.7
125	5	127.6	190	56	171	171	92	300	1T-2	9.8
150	6	151.6	217	56	183	183	92	300	1T-2	11.4
200	8	197	266	60	220	220	97	350	1T-3	16

■ 846T/847T-1T



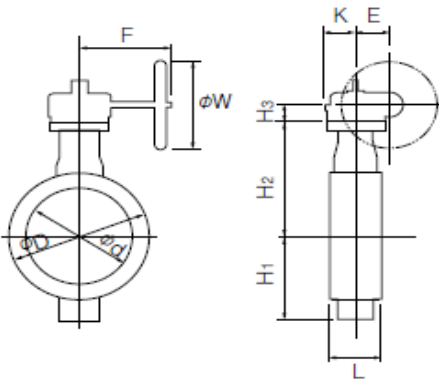
■ **847T-2U**

Nominal size		Dimension (mm)										Gear type	Approx. Mass (kg)
mm	inch	$\phi d$	$\phi D$	L	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	E	K	F	W		
50	2	53.4	96	43	62	118.5	29.5	36	46	160	100	2U-1	4.5
65	2 1/2	67	115	46	125	125	29.5	36	46	160	100	2U-1	5.6
80	3	82	131	46	132.5	132.5	29.5	36	46	160	100	2U-1	5.9
100	4	102	152	52	148	148	34.5	44	53	173.5	160	2U-2	9.2
125	5	127.6	190	56	171	171	34.5	44	53	173.5	160	2U-2	12.7
150	6	151.6	217	56	183	183	34.5	44	53	173.5	160	2U-2	14.3
200	8	197	266	60	220	220	41.5	67	75	198	200	2U-3	22.2
250	10	247.5	320	68	260	260	41.5	67	75	198	200	2U-3	36
300	12	296.4	374	78	297	297	48	87.5	90	222.5	200	2U-4	52

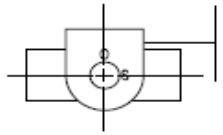
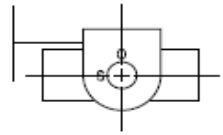
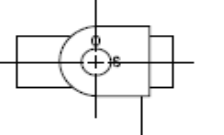
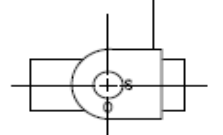
■ **846T-2U**

Nominal size		Dimension (mm)										Gear type	Approx. Mass (kg)
mm	inch	$\phi d$	$\phi D$	L	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	E	K	F	W		
65	2 1/2	67	115	46	125	125	29.5	36	46	160	100	2U-1	5.6
80	3	82	131	46	132.5	132.5	29.5	36	46	160	100	2U-1	6
100	4	102	152	52	148	148	34.5	44	53	173.5	160	2U-2	9.3
125	5	127.6	190	56	171	171	34.5	44	53	173.5	160	2U-2	12.7
150	6	151.6	217	56	183	183	34.5	44	53	173.5	160	2U-2	14.3
200	8	197	266	60	220	220	41.5	67	75	198	200	2U-3	21.9
250	10	247.5	320	68	260	260	41.5	67	75	198	200	2U-3	36
300	12	296.4	374	78	297	297	48	87.5	90	222.5	200	2U-4	52

■ **846T/847T-2U**



■ **2U Installation direction**

			
2UA (standard)	2UAR	2UB	2UBR