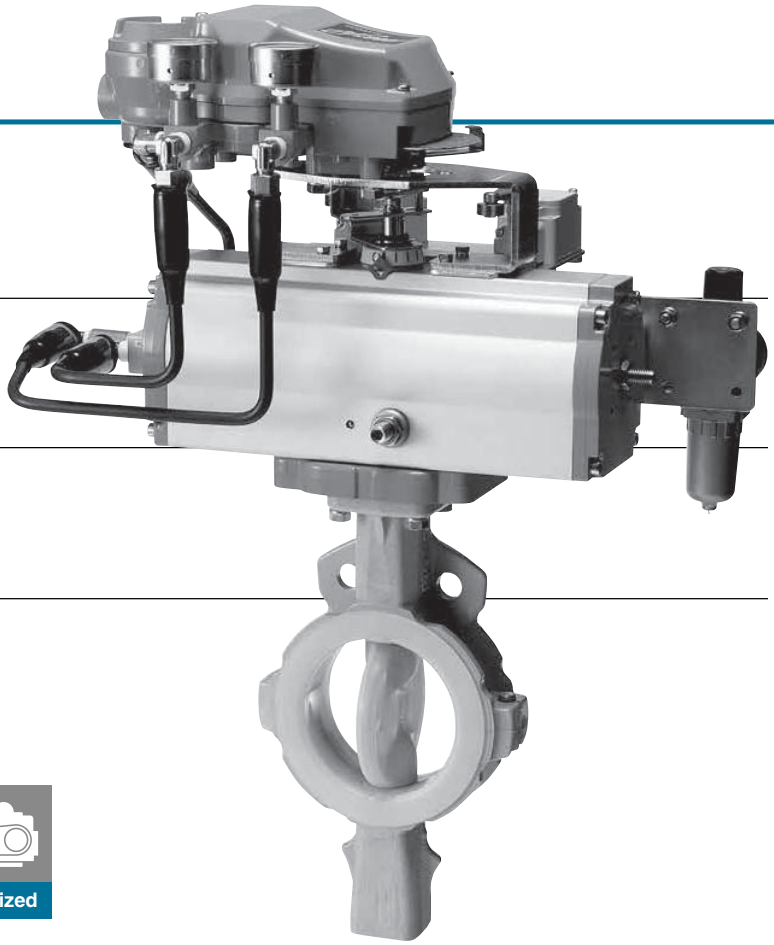
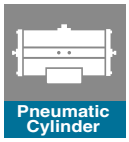
Chemically Resistant Butterfly Valves

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.

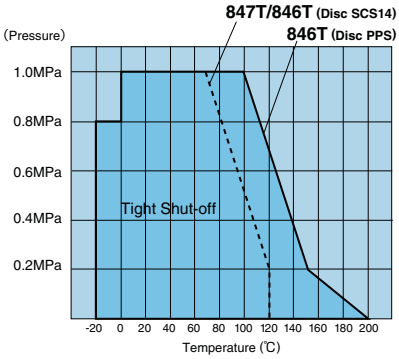
Total sealing

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

(50~200mm: 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 PFA, PTFE at a minimum thickness of 3mm, the 847 Series is able to eliminate faults common to PTFE-lined valves of conventional design.

Pressure-Temperature Leakage Chart



FLOCONX™

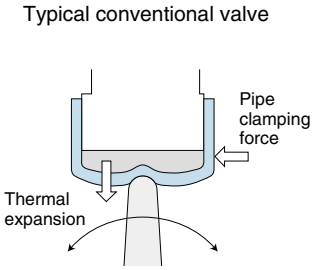
USA FLOW CONTROL COMPANY

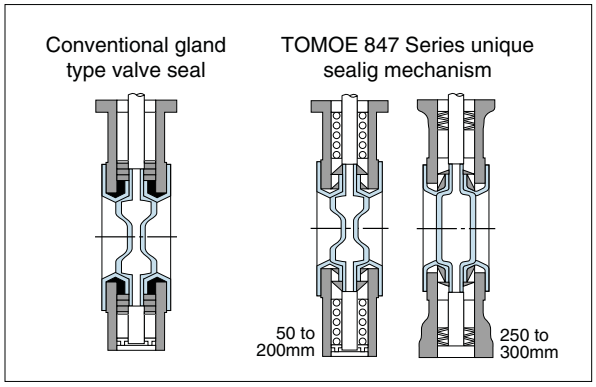
General Description

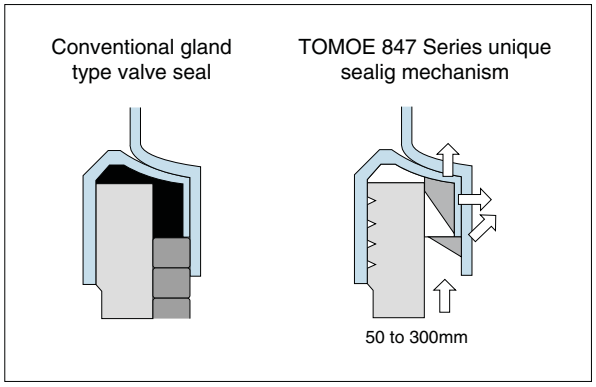
Chemically resistant butterfly valves. The unique construction of the TOMOE 847 Series provides superior strength and sealing properties essential in applications where conditions are potentially hazardous.

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. (250, 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.







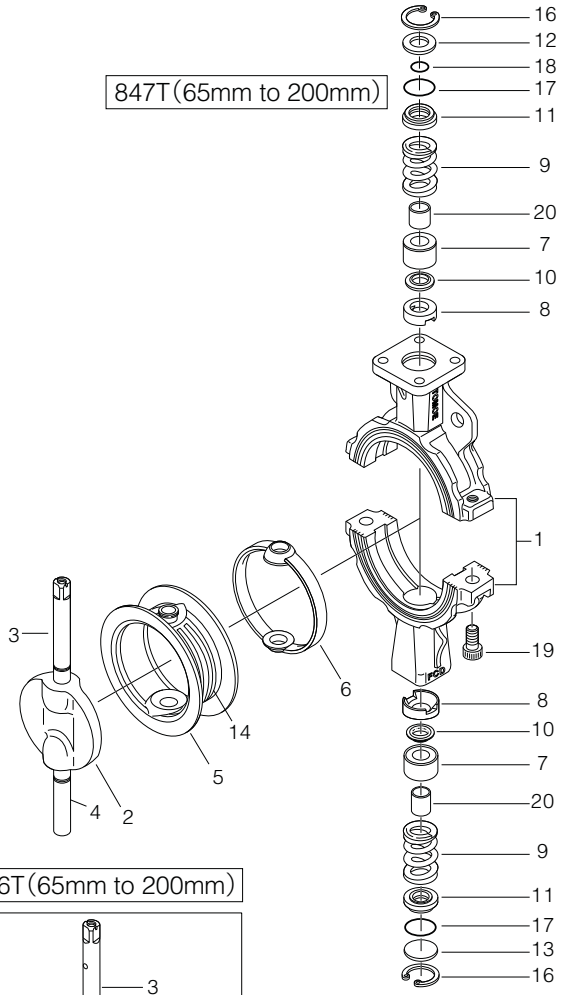
Standard Specifications

Type		846T	847T
Valve nominal size		65 to 300mm (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	-20 to 200 degrees C
Working temperature in continuous use ※1		PPS disc: 0 to 80 degrees C Stainless disc: 0 to 150 degrees C	0 to 150 degrees C
Standard materials	Body	Ductile iron, FCD-S (A395)	
	Disc	65 to 200mm: PFA/250, 300mm: PTFE (Backup rubber: Fluorocarbon rubber)	50 to 200mm: SCS13(CF8) with PFA lining 250, 300mm: SCS 13 (CF8) with PTFE lining
	Stem	SUS329J1	420J2SS
	Seat ring	PFA (Backup rubber: Fluorocarbon rubber)	50 to 200mm: PFA/250, 300mm: PTFE (Backup rubber: Fluorocarbon rubber)
Coating		Up to 200mm : Epoxy resin coating (Munsell N7) 250 and 300mm : Polyester powder baking finish (Munsell N7)	

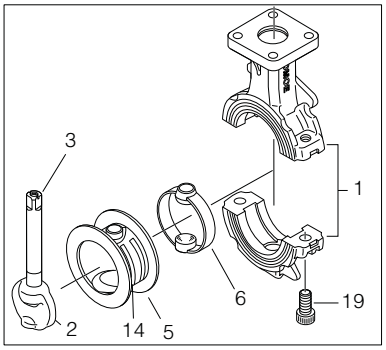
※1 "Woking temperature in continuous use" stands for the temperature continuously kept exceeding one hour.

846T/847T Expanded view of components

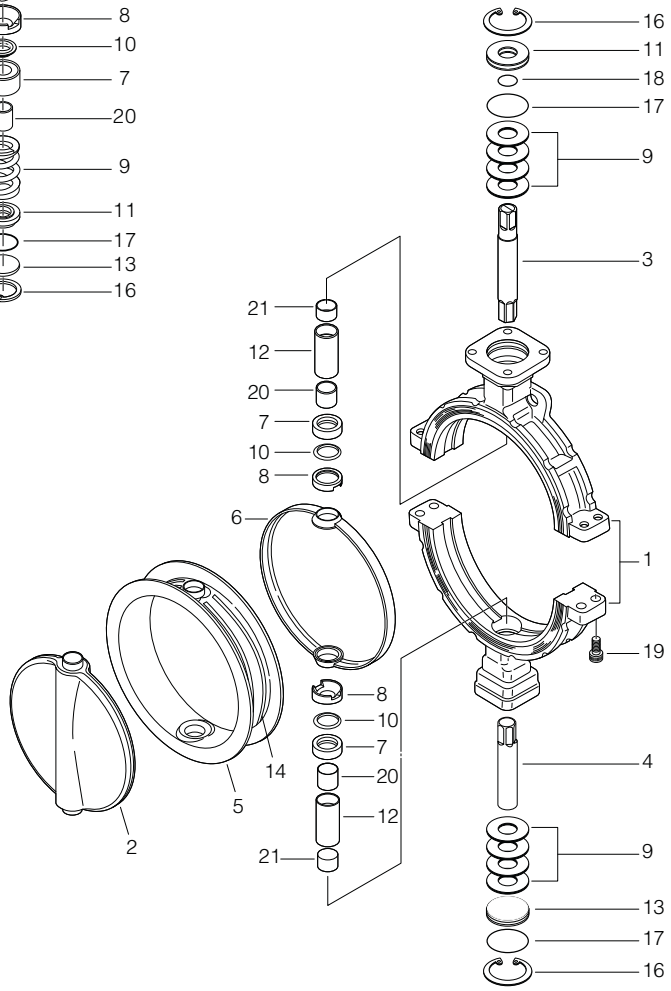
847T (65mm to 200mm)



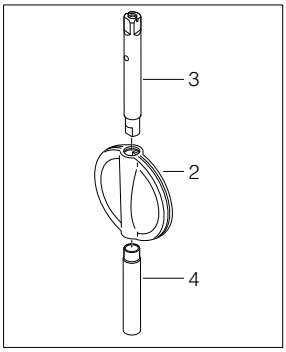
847T (50mm)



847T (250mm to 300mm)



846T (65mm to 200mm)



■846T/847T Parts list（846T: 65 to 200mm, 847T: 50 to 200mm）

No.	Description	Q'ty	Remarks
1	Body	1	
★ 2	Disc	1	
★ 3	Upper stem	1	
★ 4	Lower stem	1	
★ 5	Seat ring	1	See Remark 2.
★ 6	Back-up rubber	1	See Remark 2.
7	Bearing	1	50mm
		2	65mm to 200mm
8	Secondary ring	1	50mm
		2	65mm to 200mm
9	Spring	1	50mm
		2	65mm to 200mm
★ 10	Gland packing	1	50mm
		2	65mm to 200mm
11	Dust seal	1	50mm
		2	65mm to 200mm
12	Retaining spring	1	
13	Bottom cover	1	65mm to 200mm
14	Plate	4	Attach on Seat ring
16	C- ring	1	50mm
		2	65mm to 200mm
★ 17	O-ring	1	50mm
		2	65mm to 200mm
★ 18	O-ring	1	
19	Hexagon hole bolt	2	50mm to 150mm
		4	200mm
20	Bearing	1	50mm
		2	65mm to 200mm

■847T Parts list（250mm, 300mm）

No.	Description	Q'ty	Remarks
1	Body	1	
★ 2	Disc	1	
3	Upper stem	1	
4	Lower stem	1	
★ 5	Seat ring	1	
★ 6	Back-up rubber	1	
7	Bearing	2	
8	Secondary ring	2	
9	Spring	8	
★ 10	Gland packing	2	
11	Dust seal	1	
12	Bearing	2	
13	Bottom cover	1	
14	Plate	4	Attach on Seat ring
16	C-ring	2	
★ 17	O-ring	2	
★ 18	O-ring	1	
19	Hexagon hole bolt	2	250mm
		4	300mm
20	Bearing	2	
21	Bearing	2	

Remark 1: The ★ indicates recommended spare parts. They are supplied as "Seat ring set" with a small hexagonal spanner to remove set screws.

Remark 2: Item number 5 (seatring) and 6 (Back-up rubber) are supplied as a set. For 847T type, item number 2 (disc), 3 (upper stem) and 4 (lower stem) are supplied as an assembled unit.

847T Actuator selection chart

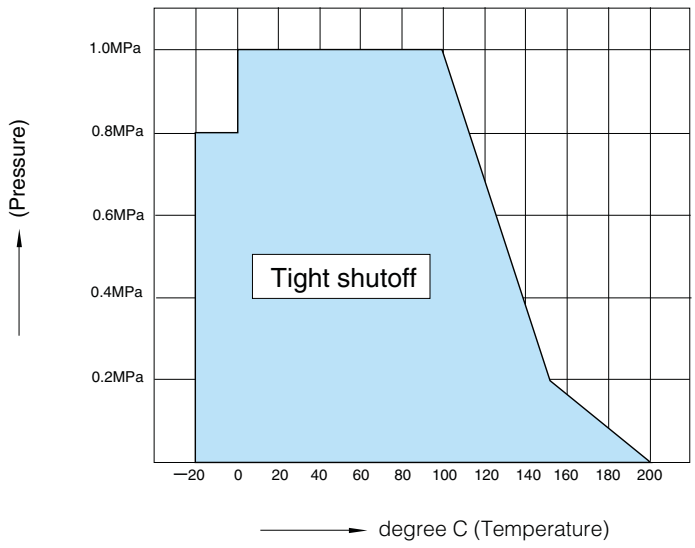
■847T

Model	Category	Size (mm / inch)								
		50	65	80	100	125	150	200	250	300
		2	2 1/2	3	4	5	6	8	10	12
1T	Standard / Heavy duty	1T-1				1T-2		1T-3		
2U	Standard / Heavy duty	2U-1			2U-2			2U-3		2U-4
7E, 3A	Standard / Heavy duty	T85			T200			T380	T750	TGA-125
7G,7F 3U,3K	Standard	T200S			T380S		T750S		TG-12S	
	Heavy duty							TG-10S	TG-14S	
4 I	Standard / Heavy duty	4 I-0			4 I-1		4 I-2	4 I-2.5	4 I-3	
4J	Standard / Heavy duty	SRJ-010				SRJ-020		SRJ-060		

Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Working temperature is over 60 degrees C ②Powder or high viscosity fluids (consult us) ③Velocity more than 3 m/s ④Throttling ⑤Slow travelling time of valve: more than 30 sec. ⑥Dead end, pump outlet, emergency open

846T/847T Pressure-temperature rating

846T/847T (SCS14)



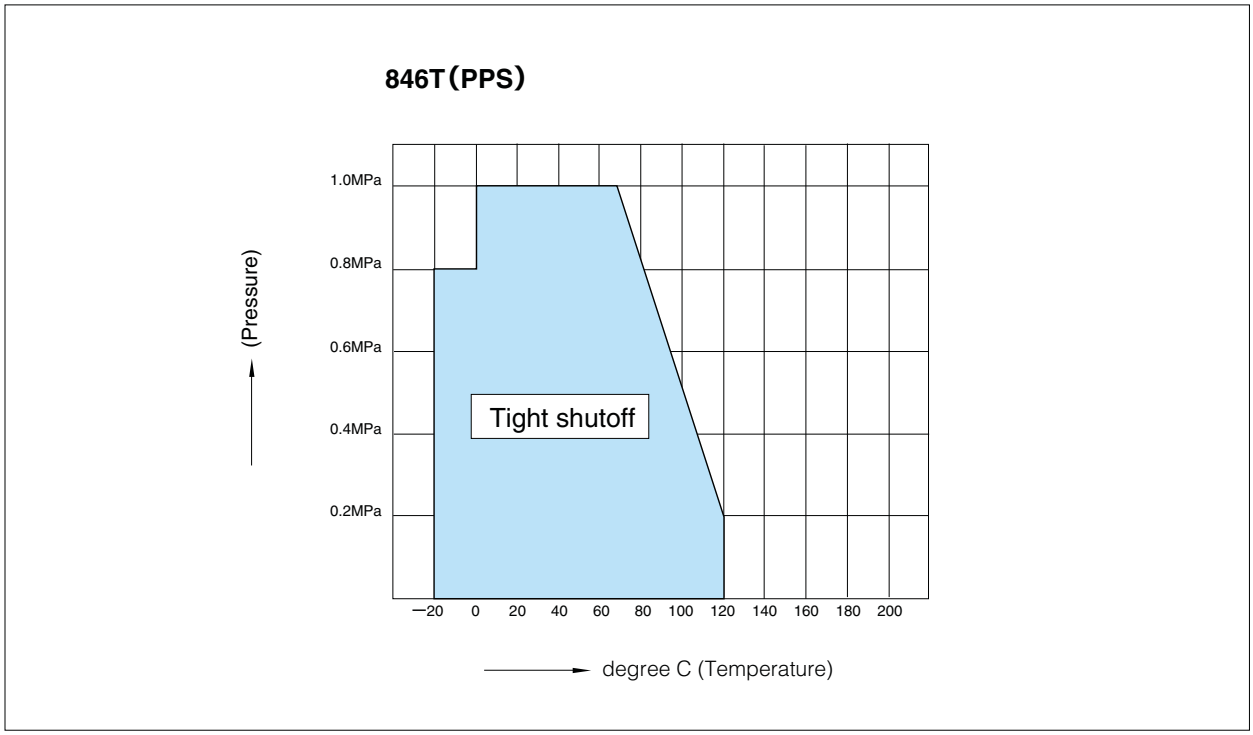
846T Actuator selection chart

■846T

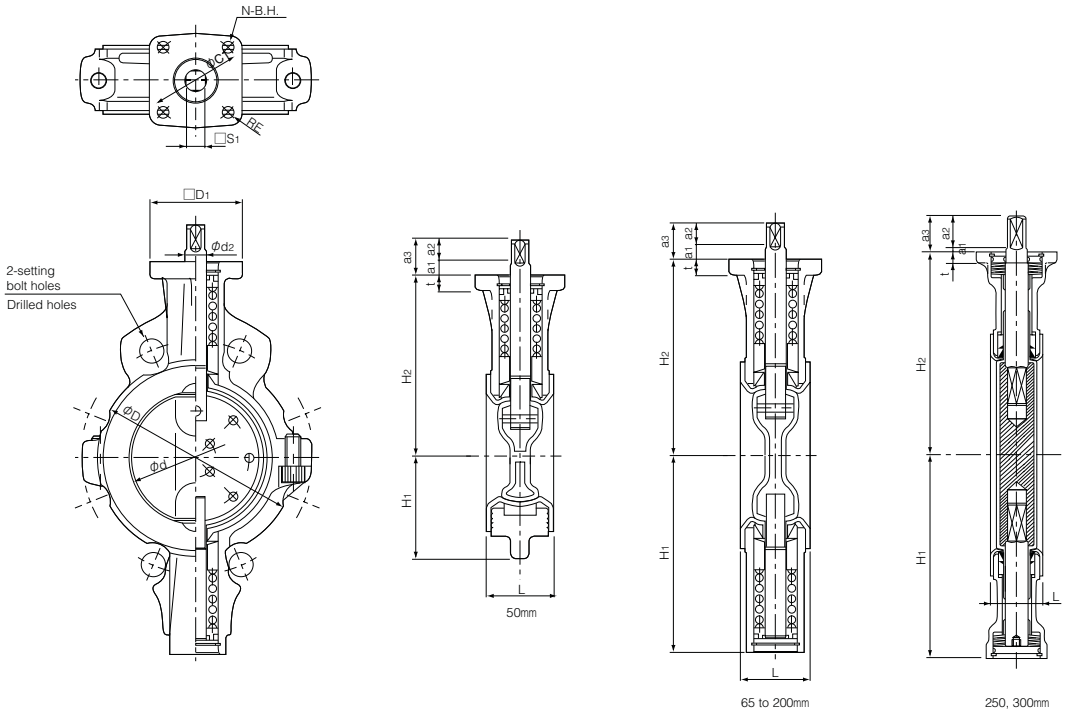
Model	Category	Size (mm / inch)							
		65	80	100	125	150	200	250	300
		2 1/2	3	4	5	6	8	10	12
1T	Standard / Heavy duty	1T-1			1T-2		1T-3		
2U	Standard / Heavy duty	2U-1		2U-2			2U-3		2U-4
7E	Standard / Heavy duty	T85		T200			T380	T750	TGA-125
7G,7F 3U,3K	Standard	T200S		T380S		T750S		TG-12S	
	Heavy duty						TG-10S	TG-14S	
4 I	Standard / Heavy duty	4 I-0	4 I-1		4 I-2		4 I-2.5	4 I-3	
4J	Standard / Heavy duty	SRJ-010			SRJ-020		SRJ-060		

Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Working temperature is over 60 degrees C ②Powder or high viscosity fluids (consult us) ③Velocity more than 3 m/s ④Throttling ⑤Slow travelling time of valve: more than 30 sec. ⑥Dead end, pump outlet, emergency open

846T Pressure-temperature rating



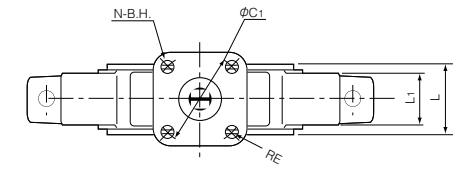
847T Wafer type

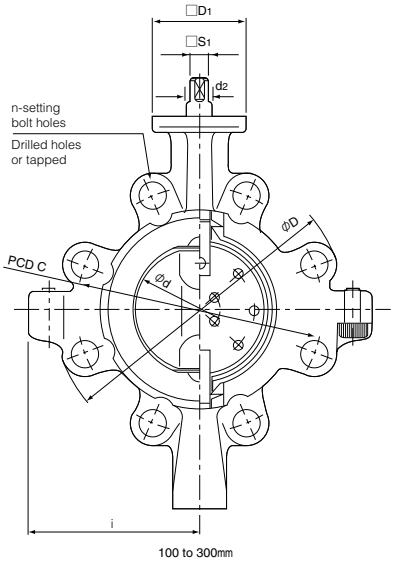


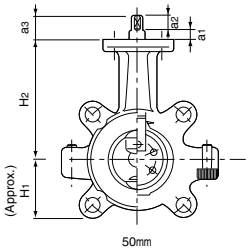
■Dimensions

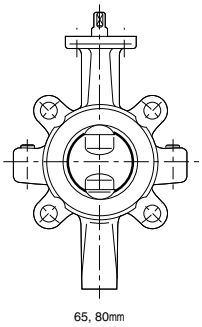
Nominal size		Dimension (mm)																Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	d_2	a_1	a_2	a_3	S_1	D_1	t	RE	ϕC_1	N	B.H.	
50	2	53.4	96	43	62	118.5	14	11	12	23	12	70	12	10	70	4	9	2.2
65	2 1/2	67	115	46	125	125	14	11	12	23	12	70	12	10	70	4	9	3.3
80	3	82	131	46	132.5	132.5	14	11	12	23	12	70	12	10	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	Φd	ΦD	L	L_1	H_1	H_2	i	d_2	a_1	a_2	a_3	S_1	D_1	t	RE	$ΦC_1$	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)

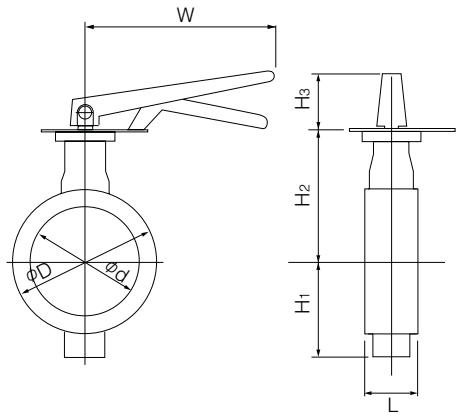
■847T-1T

Nominal size		Dimension (mm)							Lever type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	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	φd	φD	L	H_1	H_2	H_3	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



Worm gear type 847T-2U(50mm to 300mm) / 846T-2U(65mm to 300mm)

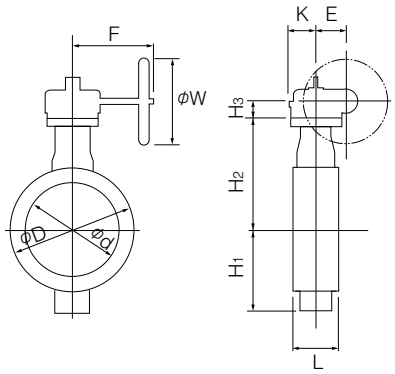
■847T-2U

Nominal size		Dimension (mm)										Gear type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	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

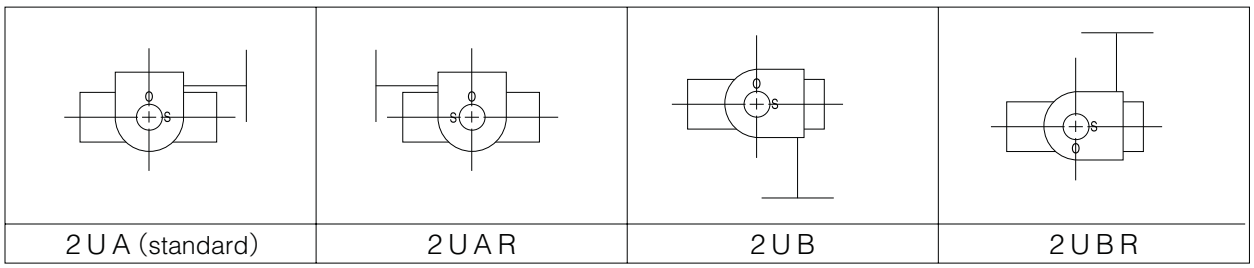
■846T-2U

Nominal size		Dimension (mm)										Gear type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	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



Double-acting pneumatic cylinder type 847T-7E (50mm to 300mm)

■847T-7E Standard

Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	φd	φD	L	H1	H2	H3	A	P	f1	f2		
50	2	53.4	96	43	62	118.5	168	276	142	75	47	T85	8
65	2 1/2	67	115	46	125	125	168	276	142	75	47	T85	9
80	3	82	131	46	132.5	132.5	168	276	142	75	47	T85	9
100	4	102	152	52	148	148	203	346	176	79	57	T200	14
125	5	127.6	190	56	171	171	203	346	176	79	57	T200	17
150	6	151.6	217	56	183	183	203	346	176	79	57	T200	19
200	8	197	266	60	220	220	231	423	214	91	69	T380	30
250	10	247.5	320	68	260	260	269	546	270	118	85	T750	52
300	12	296.4	374	78	297	297	269	546	270	118	85	T750	62

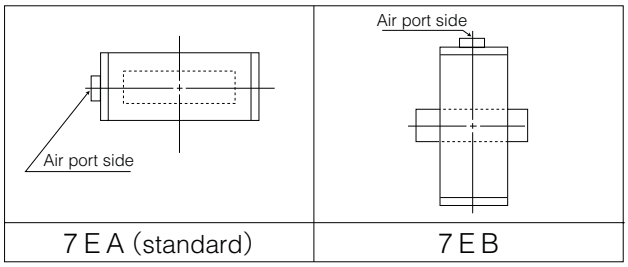
■847T-7E, 3A Heavy duty

Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	φd	φD	L	H1	H2	H3	A	P	f1	f2		
50	2	53.4	96	43	62	118.5	168	276	142	75	47	T85	8
65	2 1/2	67	115	46	125	125	168	276	142	75	47	T85	9
80	3	82	131	46	132.5	132.5	168	276	142	75	47	T85	9
100	4	102	152	52	148	148	203	346	176	79	57	T200	14
125	5	127.6	190	56	171	171	203	346	176	79	57	T200	17
150	6	151.6	217	56	183	183	231	423	214	91	69	T380	25
200	8	197	266	60	220	220	231	423	214	91	69	T380	30
250	10	247.5	320	68	260	260	269	546	270	118	85	T750	52
300	12	296.4	374	78	297	297	269	754	373	167	100	TGA-125	81

■847T-7E, 3A High Temperature Specification (For fluids over 100 degrees C)

Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	φd	φD	L	H1	H2	H3	A	P	f1	f2		
50	2	53.4	96	43	62	118.5	243	276	142	75	47	T85	8
65	2 1/2	67	115	46	125	125	243	276	142	75	47	T85	9
80	3	82	131	46	132.5	132.5	243	276	142	75	47	T85	9
100	4	102	152	52	148	148	278	346	176	79	57	T200	14
125	5	127.6	190	56	171	171	278	346	176	79	57	T200	17
150	6	151.6	217	56	183	183	306	423	214	91	69	T380	25
200	8	197	266	60	220	220	331	423	214	91	69	T380	30
250	10	247.5	320	68	260	260	369	546	270	118	85	T750	52
300	12	296.4	374	78	297	297	359	754	373	167	100	TGA-125	81

■7E,3A Installation direction



7 E A (standard)	7 E B

Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Working temperature is over 60 degrees C ②Powder or high viscosity fluids (consult us) ③Velocity more than 3 m/s ④Throttling ⑤Slow travelling time of valve: more than 30 sec. ⑥Dead end, pump outlet, emergency open

Double-acting pneumatic cylinder type 846T-7E / 3A(65mm to 300mm)

■846T-7E Standard

Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	Φd	ΦD	L	H1	H2	H3	A	P	f1	f2		
65	2 1/2	67	115	46	125	125	168	276	142	75	47	T85	9
80	3	82	131	46	132.5	132.5	168	276	142	75	47	T85	9
100	4	102	152	52	148	148	203	346	176	79	57	T200	14
125	5	127.6	190	56	171	171	203	346	176	79	57	T200	17
150	6	151.6	217	56	183	183	203	346	176	79	57	T200	19
200	8	197	266	60	220	220	231	423	214	91	69	T380	29
250	10	247.5	320	68	260	260	269	546	270	118	85	T750	52
300	12	296.4	374	78	297	297	269	546	270	118	85	T750	62

■846T-7E/3A Heavy duty

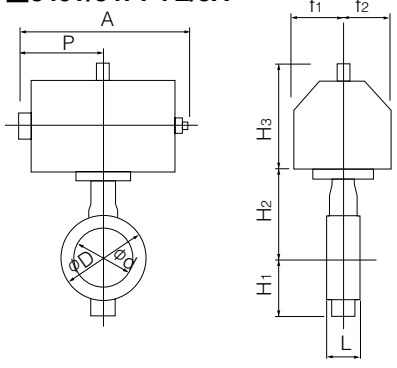
Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	Φd	ΦD	L	H1	H2	H3	A	P	f1	f2		
65	2 1/2	67	115	46	125	125	168	276	142	75	47	T85	9
80	3	82	131	46	132.5	132.5	168	276	142	75	47	T85	9
100	4	102	152	52	148	148	203	346	176	79	57	T200	14
125	5	127.6	190	56	171	171	203	346	176	79	57	T200	17
150	6	151.6	217	56	183	183	231	423	214	91	69	T380	23
200	8	197	266	60	220	220	231	423	214	91	69	T380	29
250	10	247.5	320	68	260	260	269	546	270	118	85	T750	52
300	12	296.4	374	78	297	297	359	754	373	167	100	TGA-125	81

■846T-7E/3A High Temperature Specification(For fluids over 100 degrees C)

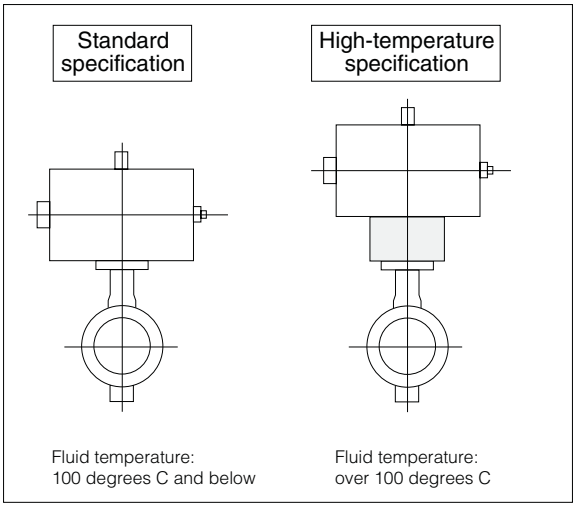
Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	Φd	ΦD	L	H1	H2	H3	A	P	f1	f2		
65	2 1/2	67	115	46	125	125	243	276	142	75	47	T85	9
80	3	82	131	46	132.5	132.5	243	276	142	75	47	T85	9
100	4	102	152	52	148	148	278	346	176	79	57	T200	14
125	5	127.6	190	56	171	171	278	346	176	79	57	T200	17
150	6	151.6	217	56	183	183	306	423	214	81	69	T380	23
200	8	197	266	60	220	220	331	423	214	81	69	T380	29
250	10	247.5	320	68	260	260	369	546	270	118	85	T750	52
300	12	296.4	374	78	297	297	369	754	373	167	100	TGA-125	81

Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Working temperature is over 60 degrees C ②Powder or high viscosity fluids (consult us) ③Velocity more than 3 m/s ④Throttling ⑤Slow travelling time of valve: more than 30 sec. ⑥Dead end, pump outlet, emergency open

■846T/847T-7E/3A



■Caution for actuator mounting



Single-acting pneumatic cylinder type 847T-7G (Air to open: 50mm to 200mm) / 847T-7F (Air to close: 50mm to 200mm)

■847T-7G/7F Standard

Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
50	2	53.4	96	43	62	118.5	203	449	226	79	57	T200S	13
65	2 1/2	67	115	46	125	125	203	449	226	79	57	T200S	14
80	3	82	131	46	132.5	132.5	203	449	226	79	57	T200S	15
100	4	102	152	52	148	148	231	550	276	91	69	T380S	24
125	5	127.6	190	56	171	171	231	550	276	91	69	T380S	28
150	6	151.6	217	56	183	183	269	723	360	118	85	T750S	43
200	8	197	266	60	220	220	269	723	360	118	85	T750S	47

■847T-7G/7F Heavy duty

Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
50	2	53.4	96	43	62	118.5	203	449	226	79	57	T200S	13
65	2 1/2	67	115	46	125	125	203	449	226	79	57	T200S	14
80	3	82	131	46	132.5	132.5	231	550	276	91	69	T380S	23
100	4	102	152	52	148	148	231	550	276	91	69	T380S	24
125	5	127.6	190	56	171	171	269	723	360	118	85	T750S	41
150	6	151.6	217	56	183	183	269	723	360	118	85	T750S	43

■847T-7G/7F High Temperature Specification (For fluids over 100 degrees C)

Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
50	2	53.4	96	43	62	118.5	278	449	226	79	57	T200S	13
65	2 1/2	67	115	46	125	125	278	449	226	79	57	T200S	16
80	3	82	131	46	132.5	132.5	306	550	276	91	69	T380S	24
100	4	102	152	52	148	148	306	550	276	91	69	T380S	26
125	5	127.6	190	56	171	171	344	723	360	118	85	T750S	45
150	6	151.6	217	56	183	183	344	723	360	118	85	T750S	46

Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Working temperature is over 60 degrees C ②Powder or high viscosity fluids (consult us) ③Velocity more than 3 m/s ④Throttling ⑤Slow travelling time of valve: more than 30 sec. ⑥Dead end, pump outlet, emergency open

■846T-7G/7F Heavy Duty

Nominal size		Dimension (mm)										Cylinder type	Approx. Weight (kg)
mm	inch	φd	φD	L	H1	H2	H3	A	P	f1	f2		
65	2 1/2	67	115	46	125	125	203	449	226	79	57	T200S	14
80	3	82	131	46	132.5	132.5	203	449	226	79	57	T200S	15
100	4	102	152	52	148	148	231	550	276	91	69	T380S	24
125	5	127.6	190	56	171	171	231	550	276	91	69	T380S	28
150	6	151.6	217	56	183	183	269	723	360	118	85	T750S	43
200	8	197	266	60	220	220	269	723	360	118	85	T750S	47

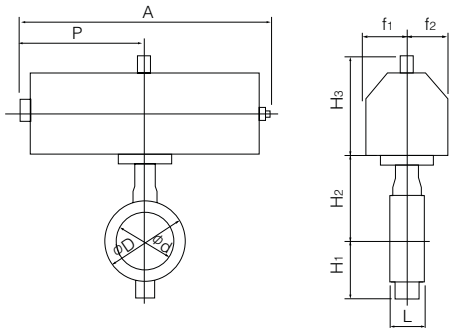
■846T-7G/7F Heavy Duty

Nominal size		Dimension (mm)										Cylinder type	Approx. Weight (kg)
mm	inch	φd	φD	L	H1	H2	H3	A	P	f1	f2		
65	2 1/2	67	115	46	125	125	203	449	226	79	57	T200S	14
80	3	82	131	46	132.5	132.5	231	550	276	91	69	T380S	23
100	4	102	152	52	148	148	231	550	276	91	69	T380S	24
125	5	127.6	190	56	171	171	269	723	360	118	85	T750S	41
150	6	151.6	217	56	183	183	269	723	360	118	85	T750S	43

■846T-7G/7F High Temperature Specification(SCS14 Disc: For fluids over 100 degrees C)

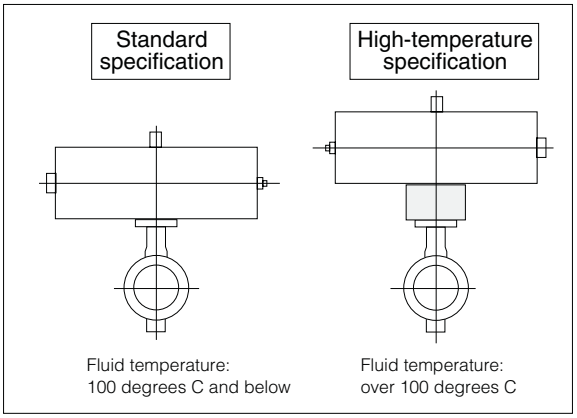
Nominal size		Dimension (mm)										Cylinder type	Approx. Weight (kg)
mm	inch	φd	φD	L	H1	H2	H3	A	P	f1	f2		
65	2 1/2	67	115	46	125	125	278	449	226	79	57	T200S	16
80	3	82	131	46	132.5	132.5	306	550	276	91	69	T380S	24
100	4	102	152	52	148	148	306	550	276	91	69	T380S	26
125	5	127.6	190	56	171	171	344	723	360	118	85	T750S	45
150	6	151.6	217	56	183	183	344	723	360	118	85	T750S	46

■846T/847T-7F/7G

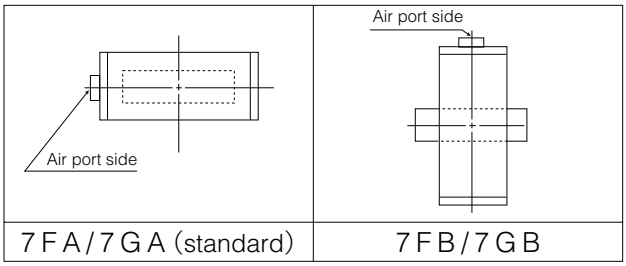


Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Working temperature is over 60 degrees C ②Powder or high viscosity fluids (consult us) ③Velocity more than 3 m/s ④Throttling ⑤Slow travelling time of valve: more than 30 sec. ⑥Dead end, pump outlet, emergency open

■Caution for Actuator Mounting



■7F/7G Installation Direction



Single-acting Pneumatic Cylinder Type 847T-3U(Air to open: 200mm to 300mm) / 847T-3K(Air to close: 200mm to 300mm)
846T-3U(Air to open: 200mm to 300mm) / 846T-3K(Air to close: 200mm to 300mm)

■847T-3U/3K Standard

Nominal size		Dimension (mm)										Cylinder type	Approx. Weight (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
250	10	247.5	320	68	260	260	307	1080	720	94	206	TG-12S	123
300	12	296.4	374	78	297	297	307	1080	720	94	206	TG-12S	133

■847T-3U/3K Heavy Duty

Nominal size		Dimension (mm)										Cylinder type	Approx. Weight (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
200	8	197	266	60	220	220	307	945	585	75	165	TG-10S	66
250	10	247.5	320	68	260	260	340	1255	865	131	257	TG-14S	219
300	12	296.4	374	78	297	297	340	1255	865	131	257	TG-14S	229

■846T-3U/3K Standard

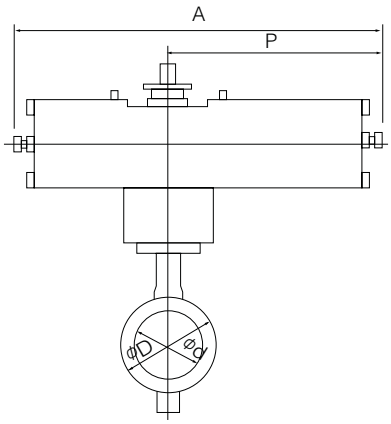
Nominal size		Dimension (mm)										Cylinder type	Approx. Weight (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
250	10	247.5	320	68	260	260	307	1080	720	94	206	TG-12S	122
300	12	296.4	374	78	297	297	307	1080	720	94	206	TG-12S	132

■846T-3U/3K Heavy Duty

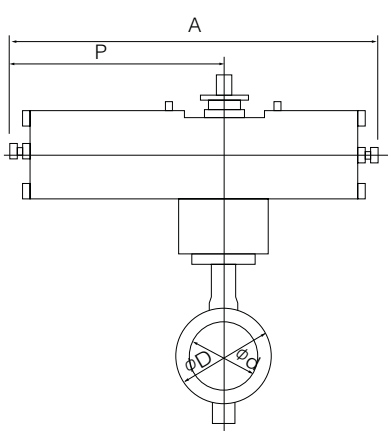
Nominal size		Dimension (mm)										Cylinder type	Approx. Weight (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
200	8	197	266	60	220	220	307	945	585	70	165	TG-10S	66
250	10	247.5	320	68	260	260	340	1255	865	131	257	TG-14S	218
300	12	296.4	374	78	297	297	340	1255	865	131	257	TG-14S	228

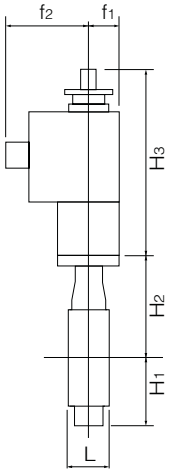
Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Working temperature is over 60 degrees C ②Powder or high viscosity fluids (consult us) ③Velocity more than 3 m/s ④Throttling ⑤Slow travelling time of valve: more than 30 sec. ⑥Dead end, pump outlet, emergency open

■846T/847T-3U

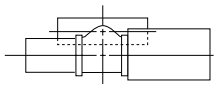
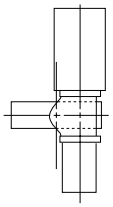


■846T/847T-3K

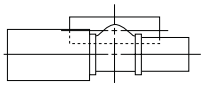
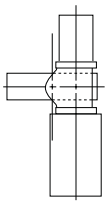




■3U Installation direction

	
3UA (standard)	3UB

■3K Installation direction

	
3KA (standard)	3KB

Single phase electric motor type 847T-4I(50mm to 300mm) / 846T-4I(65mm to 300mm)

■847T-4I

Nominal size		Dimension (mm)										Motor type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	F	K		
50	2	53.4	96	43	62	118.5	150	202	100	85	54	4 I-0	6.4
65	2 1/2	67	115	46	125	125	150	202	100	85	54	4 I-0	7.5
80	3	82	131	46	132.5	132.5	165	252	138	126	65	4 I-1	10
100	4	102	152	52	148	148	165	252	138	126	65	4 I-1	11.4
125	5	127.6	190	56	171	171	198	310	167	154	85	4 I-2	20.3
150	6	151.6	217	56	183	183	198	310	167	154	85	4 I-2	22
200	8	197	266	60	220	220	198	310	167	154	85	4 I-2.5	27
250	10	247.5	320	68	260	260	230	388	223	246	136	4 I-3	52
300	12	296.4	374	78	297	297	230	388	223	246	136	4 I-3	62

■847T-4I High temperature specification(SCS14 Disc: For fluids over 100 degrees C)

Nominal size		Dimension (mm)										Motor type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	F	K		
50	2	53.4	96	43	62	118.5	225	202	100	85	54	4 I-0	7.5
65	2 1/2	67	115	46	125	125	225	202	100	85	54	4 I-0	8.6
80	3	82	131	46	132.5	132.5	240	252	138	126	65	4 I-1	11.1
100	4	102	152	52	148	148	240	252	138	126	65	4 I-1	12.7
125	5	127.6	190	56	171	171	273	310	167	154	85	4 I-2	21.5
150	6	151.6	217	56	183	183	273	310	167	154	85	4 I-2	23.1
200	8	197	266	60	220	220	273	310	167	154	85	4 I-2.5	29.2
250	10	247.5	320	68	260	260	305	388	223	246	136	4 I-3	54
300	12	296.4	374	78	297	297	305	388	223	246	136	4 I-3	64

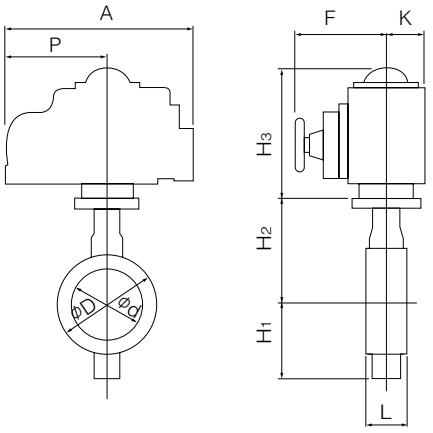
■846T-4I

Nominal size		Dimension (mm)										Motor type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	F	K		
65	2 1/2	67	115	46	125	125	150	202	100	85	54	4 I-0	7.5
80	3	82	131	46	132.5	132.5	165	252	138	126	65	4 I-1	10.1
100	4	102	152	52	148	148	165	252	138	126	65	4 I-1	11.5
125	5	127.6	190	56	171	171	198	310	167	154	85	4 I-2	20.3
150	6	151.6	217	56	183	183	198	310	167	154	85	4 I-2	22
200	8	197	266	60	220	220	198	310	167	154	85	4 I-2.5	27.6
250	10	248	338	90	221	250	233	388	223	246	136	4 I-3	55
300	12	295	382	90	261	280	233	388	223	246	136	4 I-3	63

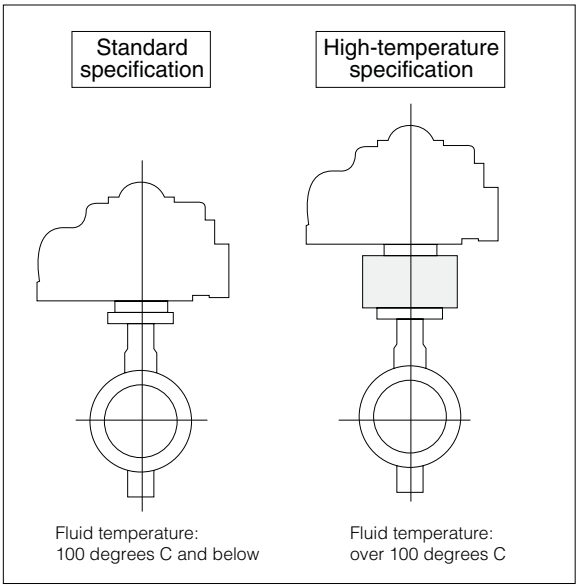
■846T-4I High temperature specification(SCS14 Disc: For fluids over 100 degrees C)

Nominal size		Dimension (mm)										Motor type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	F	K		
65	2 1/2	67	115	46	125	125	225	202	100	85	54	4 I-0	8.6
80	3	82	131	46	132.5	132.5	240	252	138	126	65	4 I-1	11.2
100	4	102	152	52	148	148	240	252	138	126	65	4 I-1	12.8
125	5	127.6	190	56	171	171	273	310	167	154	85	4 I-2	21.5
150	6	151.6	217	56	183	183	273	310	167	154	85	4 I-2	23.1
200	8	197	266	60	220	220	273	310	167	154	85	4 I-2.5	28.9
250	10	247.5	320	68	260	260	305	388	223	246	136	4 I-3	54
300	12	296.4	374	78	297	297	305	388	223	246	136	4 I-3	64

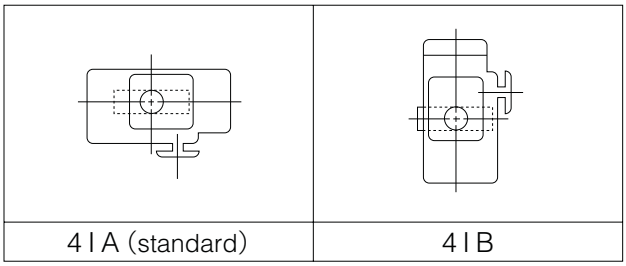
■846T/847T-4 I



■Caution for actuator mounting

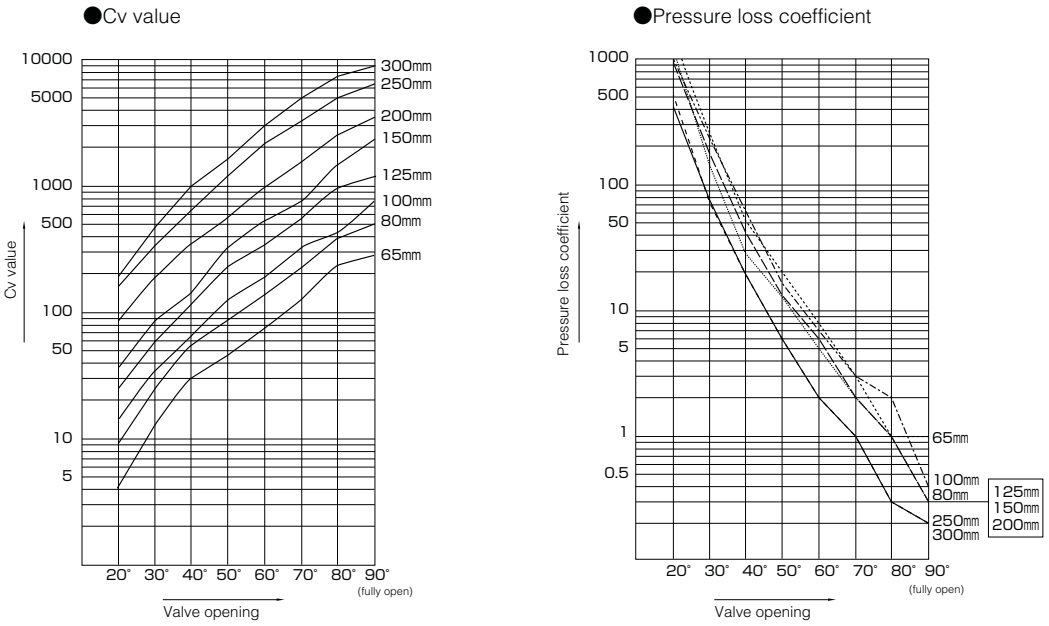


■4 I Installation direction



4 I A (standard)	4 I B

846T Cv value/pressure loss coefficient



846T Cv value

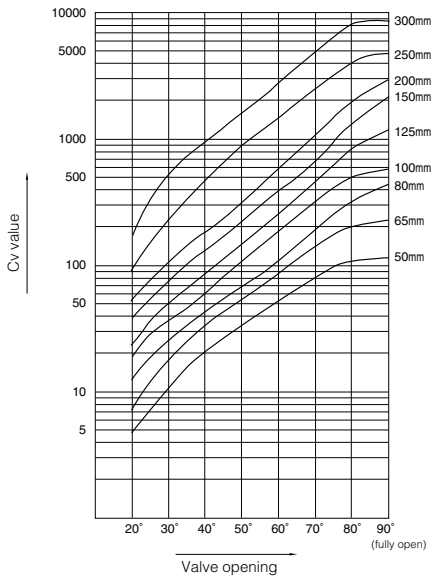
Nominal size		Valve opening							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
65	2 1/2	5	13	30	48	74	129	220	293
80	3	9	25	56	85	130	225	396	500
100	4	16	33	65	125	198	311	405	772
125	5	26	59	122	211	338	555	951	1295
150	6	37	77	145	303	507	767	1400	2166
200	8	83	178	355	592	906	1557	2573	3248
250	10	130	351	675	1225	2125	3375	5091	6200
300	12	194	487	972	1764	3011	4966	7412	8900

846T Pressure loss coefficient

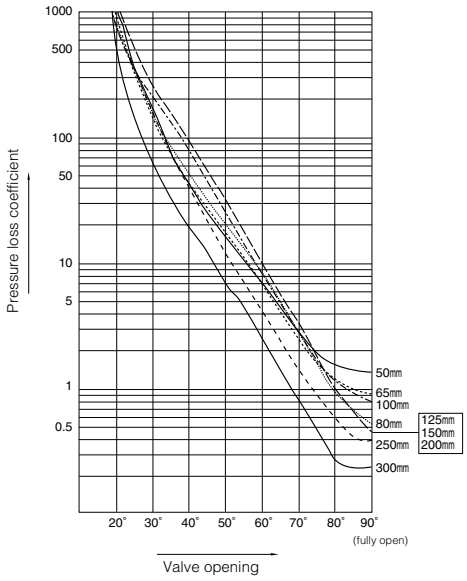
Nominal size		Valve opening							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
65	2 1/2	1829	270	51	20	8	3	1	1
80	3	1136	147	29	13	5	2	1	0.3
100	4	1015	239	62	17	7	3	2	0.4
125	5	931	181	42	14	6	2	1	0.3
150	6	901	208	59	13	5	2	1	0.2
200	8	548	119	30	11	5	2	1	0.3
250	10	528	72	20	6	2	1	0.3	0.2
300	12	488	78	20	6	2	1	0.3	0.2

847T Cv value/pressure loss coefficient

●Cv value



●Pressure loss coefficient



847T Cv value

Nominal size		Valve opening							
mm	inch	20˚	30˚	40˚	50˚	60˚	70˚	80˚	90˚
50	2	5	10	20	32	50	78	107	114
65	2 1/2	7	18	33	51	83	140	202	229
80	3	12	25	43	67	106	184	318	428
100	4	19	35	58	103	178	309	493	585
125	5	23	49	83	141	250	441	808	1170
150	6	38	75	127	218	383	621	1260	2080
200	8	52	105	177	305	547	995	1890	2910
250	10	75	210	415	745	1250	2200	3520	4270
300	12	140	475	850	1420	2400	4190	6780	7780

847T Pressure loss coefficient

Nominal size		Valve opening							
mm	inch	20˚	30˚	40˚	50˚	60˚	70˚	80˚	90˚
50	2	675	169	42	16	7	3	1	1
65	2 1/2	933	141	42	18	7	2	1	1
80	3	639	147	50	21	8	3	1	1
100	4	720	212	77	24	8	3	1	1
125	5	1190	262	91	32	10	3	1	0.4
150	6	855	219	77	26	8	3	1	0.3
200	8	1396	342	121	41	13	4	1	0.4
250	10	1485	189	49	15	5	2	1	0.5
300	12	860	75	23	8	3	1	0.4	0.3

847T/846T Applicable pipe list in case of A

■847T

Nominal size		SGP	Sch20	Sch40	VP (TS flange)	Sch10S	Sch20S	Minimum internal diameter of piping (mm)
mm	inch							
50	2	○	○	○	○	○	○	34
65	2 1/2	○	○	○	○	○	○	51
80	3	○	○	○	○	○	○	70
100	4	○	○	○	○	○	○	91
125	5	○	○	○	○	○	○	118
150	6	○	○	○	○	○	○	144
200	8	○	○	○	○	○	○	194
250	10	○	○	○	○	○	○	246
300	12	○	○	○	○	○	○	294

■846T

Nominal size		SGP	Sch20	Sch40	VP (TS flange)	Sch10S	Sch20S	Minimum internal diameter of piping (mm)
mm	inch							
65	2 1/2	○	○	○	○	○	○	51
80	3	○	○	○	○	○	○	70
100	4	○	○	○	○	○	○	91
125	5	○	○	○	○	○	○	118
150	6	○	○	○	○	○	○	144
200	8	○	○	○	○	○	○	194
250	10	○	○	○	○	○	○	246
300	12	○	○	○	○	○	○	294

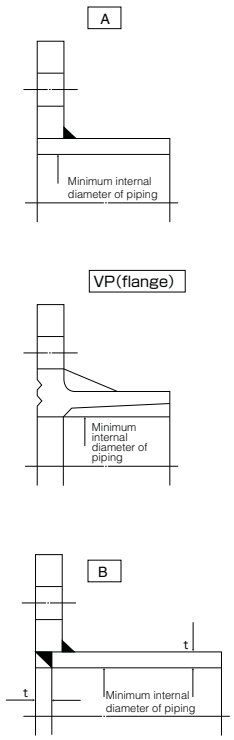
847T/846T Applicable pipe list in case of B

■847T

Nominal size		SGP	Sch20	Sch40	Sch10S	Sch20S
mm	inch					
50	2	○	○	○	○	○
65	2 1/2	○	○	○	○	○
80	3	○	○	○	○	○
100	4	○	○	○	○	○
125	5	○	○	○	○	○
150	6	○	○	○	○	○
200	8	○	○	○	○	○
250	10	○	○	○	○	○
300	12	○	○	○	○	○

■846T

Nominal size		SGP	Sch20	Sch40	Sch10S	Sch20S
mm	inch					
65	2 1/2	○	○	○	○	○
80	3	○	○	○	○	○
100	4	○	○	○	○	○
125	5	○	○	○	○	○
150	6	○	○	○	○	○
200	8	○	○	○	○	○
250	10	○	○	○	○	○
300	12	○	○	○	○	○



Remark 1: ○=Applicable
Remark 2: Butterfly valves are inserted into a pipe that was fitted with the disc when fully open.
In cases where you are using a pipe or flange that is less than the minimum inner pipe diameter, use is still possible if means are taken such as inserting a spacer between the valve and flange.
For details, please consult us.

847T Applicable flange standard

Nominal size		JIS		ANSI		BS4504	DIN	BS10
mm	inch	5K	10K	125Lb	150Lb	PN10	NP10	Table E
50	2	○	○	○	○	○	○	○
65	2 1/2	○	○	○	○	○	○	○
80	3	D	D	D	D	D	D	D
100	4	D	D	D	D	D	D	D
125	5	D	D	D	D	D	D	D
150	6	D	D	D	D	D	D	D
200	8	D	D	D	D	D	D	D
250	10	D	D	D	D	D	D	D
300	12	D	D	D	D	D	D	D

○ : Can be used without flange drilling
D : With flange drilling

846T Applicable flange standard

Nominal size		JIS		ANSI		BS4504	DIN	BS10
mm	inch	5K	10K	125Lb	150Lb	PN10	NP10	Table E
65	2 1/2	○	○	○	○	○	○	○
80	3	D	D	D	D	D	D	D
100	4	D	D	D	D	D	D	D
125	5	D	D	D	D	D	D	D
150	6	D	D	D	D	D	D	D
200	8	D	D	D	D	D	D	D
250	10	D	D	D	D	D	D	D
300	12	D	D	D	D	D	D	D

○ : Can be used without flange drilling
D : With flange drilling

847T/ 846T Piping bolt and nut sizes

■Piping bolts sizes

Nominal size		JIS 5K	JIS 10K	ANSI 125Lb/150Lb	DIN NP10, BS4504 PN10
mm	inch	Hexagon bolts and nuts	Hexagon bolts and nuts	Long bolts and nuts	Long bolts and nuts
50	2	4-M12× 90×30	4-M16×105×40	4-5/8-11UNC×145×45	4-M16×125×30
65	2 1/2	4-M12× 90×30	4-M16×105×40	4-5/8-11UNC×155×50	4-M16×125×30
80	3	4-M16×105×40	8-M16×110×40	4-5/8-11UNC×155×50	8-M16×130×30
100	4	8-M16×110×40	8-M16×110×40	8-5/8-11UNC×165×50	8-M16×140×35
125	5	8-M16×110×40	8-M20×120×50	8-3/4-10UNC×175×55	8-M16×140×35
150	6	8-M16×120×40	8-M20×130×50	8-3/4-10UNC×175×55	8-M20×155×40
200	8	8-M20×130×50	12-M20×135×50	8-3/4-10UNC×175×55	8-M20×160×40
250	10	12-M20×135×50	12-M22×150×60	12-7/8- 9UNC×215×55	12-M20×175×40
300	12	12-M20×150×50	16-M22×160×60	12-7/8- 9UNC×215×55	12-M20×185×40

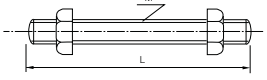
●The bolt lengths fit the JIS or steel flanges.
Remark: ※ Use thin hexagon nuts for hexagon bolts.(Except for ANSI : nuts for ANSI is heavy nut)
※ Material: Consult us when other than SS400 (Mild steel)

Example

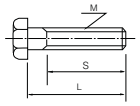
Long bolts: 12 - M22 × 185 × 45
N M L S

Hexagon bolts: 4 - M30 × 95 × 65
N M L S

Long bolts and nuts (full thread)



Hexagon bolts and nuts



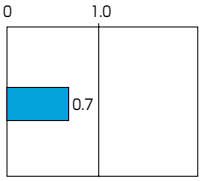
841T Wafer

842T Wafer

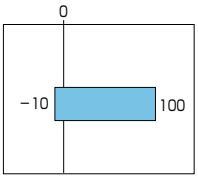
Valve nominal size

841T 350 to 600mm　842T 350 to 600mm

Max.Working pressure MPa



Working temperature range degrees C



CE CE Marking (842T)

Features and Benefits

Bubble tight seal and no leakage

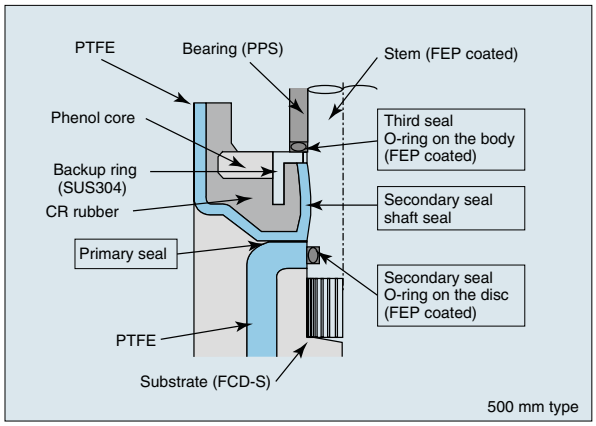
PTFE does not react to most of the chemicals used in modern chemical processing – even at high temperatures and high pressures. It is recognised as an ideal material for industrial valves that handle highly corrosive fluids. PTFE has a low friction coefficient and excellent lubricity when used in contact with metal surfaces.
TOMOE's 841T and 842T butterfly valves take full advantage of the superior qualities of PTFE: it protects all wetted parts and guides all stems. The 841T and 842T valves have a proven record of excellent performance and long life in heavy duty applications requiring tight shut-off, low torque and smooth operation.

Triple seal prevents leakage

The special feature of TOMOE butterfly valves is the seat ring design. The interference between the disc and the raised central area of the seat ring shuts off the flow completely.
The resilient elastomer seat cushion ensures reliable shut off for the life of the valve.
TOMOE butterfly valves are bi-directional and withstand pressures to 0.7 MPa from either direction.
The upper and lower positions of the seat ring, where the stem passes through, use a triple seal design to prevent leakage to the atmosphere as shown in the illustration.

General Description

Chemically resistant butterfly valves with a proven record of excellent performance and long life in heavy duty applications.



Where you can see advantages over other types of valves

1. In corrosion resistant pipelines requiring mechanical strength as well as heat resistance.
   Chemical Industry: Chlorine gas, acentric acid, sulfuric acid, hydrochloric acid, and other highly corrosive fluids.
2. In non-toxic environments where the fluid must not contact any metallic or organic materials.
   Food Industry: Cooking oil, seasoning, syrup, and other food products.
3. In reduced pressure or high temperature pipelines where conventional valves cannot be used because of piping space requirements and valve weight.
   General Industry: Steam lines, hot air, special process gases, dyes, and so on.
4. In processes involving hazardous fluids that require clean pipelines free from machining burrs, scales, and grease.
   Piping: Pipelines for oxygen and other highly oxidying agents.
5. In processes requiring sanitation or vacuum service. vacuum service.
   Handling: Processing food, transporting powder or granular solids.
6. In low temperature processes where low heat gain is an advantage.
   Cooling: Cooling air, chilled water, and brine.

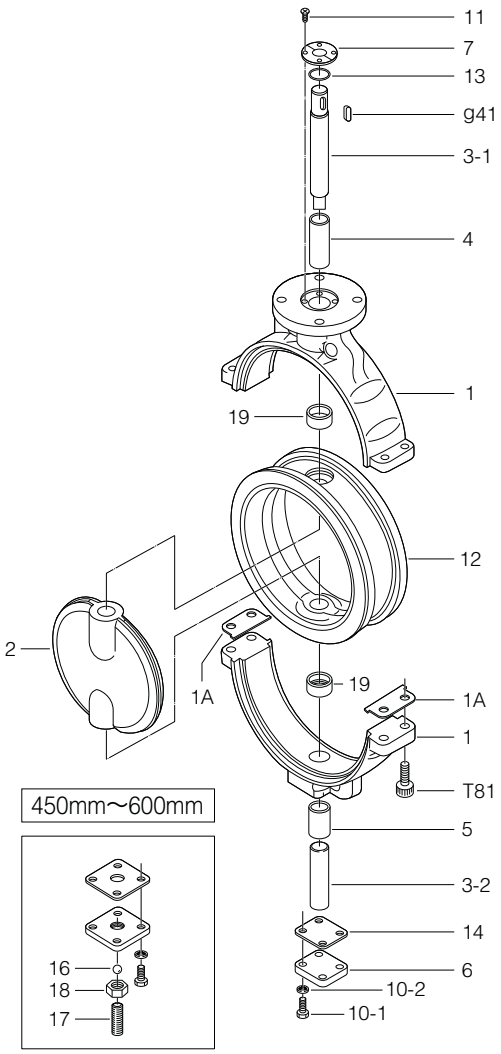
Standard Specifications

Type		841T	842T
Body shape (centring method)		Concentric design, wafer type	
Valve nominal size		350, 400, 450, 500, 600mm	350, 400, 450, 500, 600mm
Applicable flange standard		JIS 10K, ANSI 125 lb/150 lb, DIN NP10, BS 4504 PN10, BS 10Table E	
Face-to-face dimensions		Manufacturer standard	
Max. working pressure		0.7 MPa	
Seat leakage		Tight shut-off	
Flow direction		Bi-directional	
Pressure test	Body shell	1.05 MPa (Hydraulic)	
	Seat leakage	0.7 MPa (Hydraulic)	
Working temperature range		- 10 to 100 degrees C	
Working temperature in continuous use ※1		0 to 90 degrees C	
Standard materials	Body	FCD-S	
	Disc	SCS14	FCD-S+ PTFE lining
	Stem	SUS316	S45C+FEP coating
	Seat ring	PTFE (back-up rubber: CR)	
Top flange		Manufacturer standard	
Applicable gaskets		Rubber gasket cannot be used. Moulded gaskets require special dimensions (refer to dimension chart). Off-the-shelf seat gaskets can be used for 350 to 400mm. 450 to 600mm require special inner diameter dimensions (refer to dimension chart).	
Coating		350mm and larger: Lacquer primer (Munsell N7)	

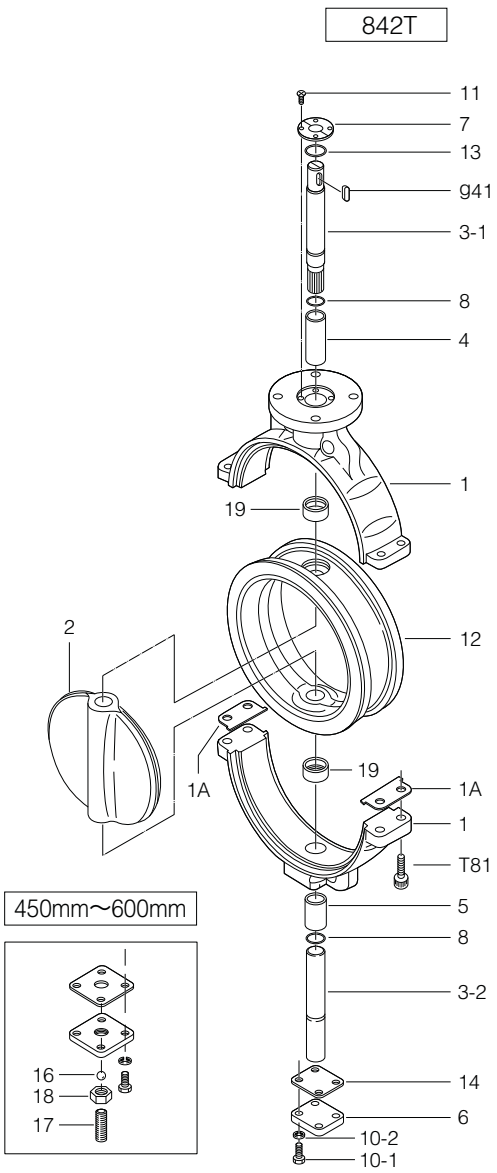
※1 "Working temperature in continuous use" stands for the temperature continuously kept exceeding one hour.

841T / 842T Expanded View of Components

841T



842T



■841T Parts list

No.	Description	Q'ty	Remarks
1	Body	1	
★ 1A	Packing	2	
2	Disc	1	
3-1	Upper stem	1	
3-2	Lower stem	1	
★ 4	Bushing	1	
★ 5	Bushing	1	
6	Bottom cover	1	
7	Retainer plate	1 Set	
10-1	Hexagon bolt	4	
10-2	Spring washer	4	
11	Machine screw	4	
★ 12	Seat ring	1	
★ 13	O-ring	1	
14	Gasket	1	
16	Ball	1	Only 450mm to 600mm
17	Hollow bolt	1	Only 450mm to 600mm
18	Lock nut	1	Only 450mm to 600mm
19	Back-up rubber	2	
T81	Hexagon hole bolt	4	
g41	Key	1	

■842T Parts list

No.	Description	Q'ty	Remarks
1	Body	1	
★ 1A	Packing	2	
2	Disc	1	
3-1	Upper stem	1	
3-2	Lower stem	1	
★ 4	Bushing	1	
★ 5	Bushing	1	
6	Bottom cover	1	
7	Retainer plate	1 Set	
★ 8	O-ring	2	
10-1	Hexagon bolt	4	
10-2	Spring washer	4	
11	Machine screw	4	
★ 12	Seat ring	1	
★ 13	O-ring	1	
14	Gasket	1	
16	Ball	1	Only 450mm to 600mm
17	Hollow bolt	1	Only 450mm to 600mm
18	Lock nut	1	Only 450mm to 600mm
19	Back-up ring	2	
T81	Hexagon hole bolt	4	
g41	Key	1	

Remark: The ★ indicates recommended spare parts. They are supplied as "Seat ring set" with a small hexagonal spanner to remove hollow bolt.

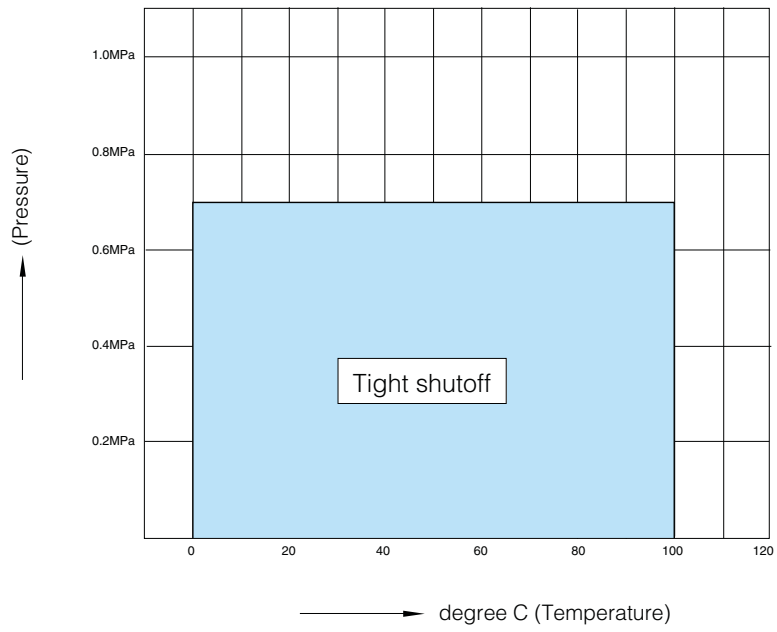
841T/842T Actuator selection chart

■841T/842T

Model	Category	Size (mm / inch)				
		350	400	450	500	600
		14	16	18	20	24
2S	Standard	MGH-3				MGH-4
	Heavy duty					
3A	Standard	TGA-125	TGA-140	TGA-160		TGA-200
	Heavy duty	TGA-140	TGA-160	TGA-180		
3U,3K	Standard	TG-14S			TG-20S	
	Heavy duty					
4 I	ON-OFF Control	4 I-4				
4L	Standard	LTKD-01 0.4kW/MGH-3			LTKD-02 0.75kW/ MGH-3	LTKD-05 0.75kW/ MGH-4
	Heavy duty					

Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Powder or high viscosity fluid (crude oil, etc.) ②Control specification (with positioner) ③Emergency open valve or pipe dead end valve

841T/842T Pressure-temperature rating

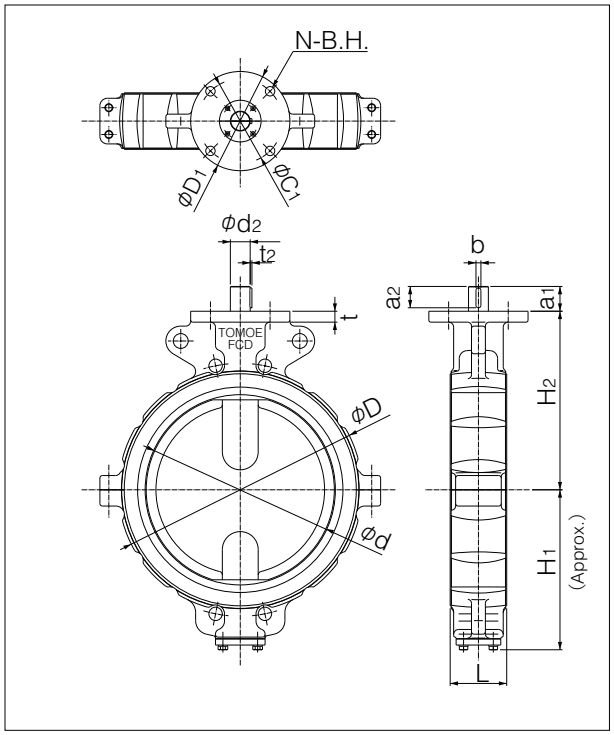


Bare shaft 841T-02(350mm to 600mm) / 842T-02(350mm to 600mm)

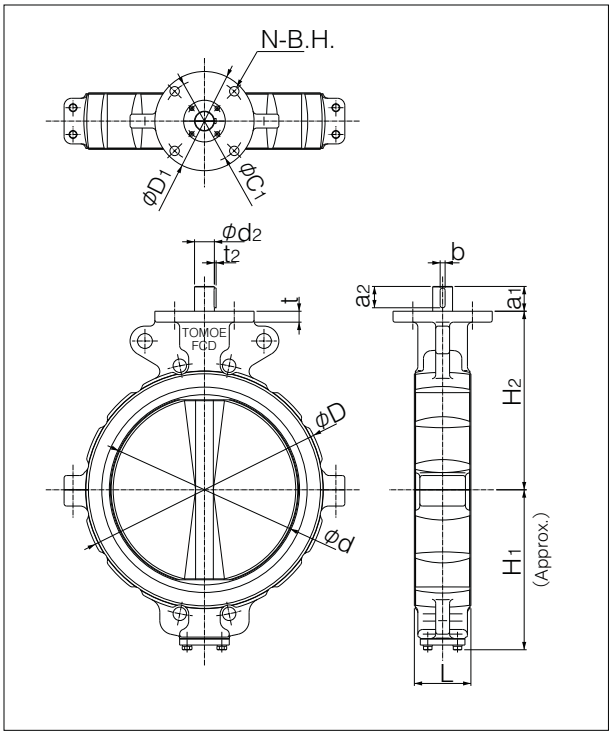
■841T/842T

Nominal size		Dimension (mm)															Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	a_1	a_2	φd_2	b	t_2	t	D_1	C_1	N	B.H.	
350	14	332	428	100	293	320	50	43	40	10	3.5	20	200	170	4	19	60
400	16	383	491	110	323	360	50	43	40	10	3.5	20	200	170	4	19	80
450	18	435	540	120	367	390	60	53	47	12	3.5	20	200	170	4	19	123
500	20	482	595	140	383	420	60	53	47	12	3.5	20	200	170	4	19	188
600	24	581	700	160	478	490	75	65	65	18	6	25	260	220	4	23	266

■841T 350mm to 600mm



■842T 350mm to 600mm

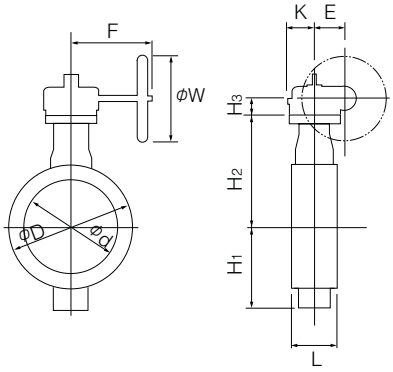


Worm gear type 841T-2S(350mm to 600mm) / 842T-2S(350mm to 600mm)

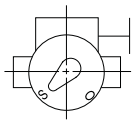
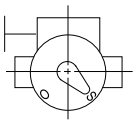
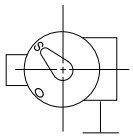
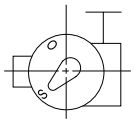
■841T/842T

Nominal size		Dimension (mm)										Gear type	Approx. Mass (kg)
mm	inch	ϕd	ϕD	L	H_1	H_2	H_3	E	K	F	W		
350	14	332	428	100	293	320	55	117	164	325	280	MGH-3	93
400	16	383	491	110	323	360	55	117	164	325	280	MGH-3	113
450	18	435	540	120	367	390	55	117	164	335	355	MGH-3	155
500	20	482	595	140	383	420	55	117	164	335	355	MGH-3	220
600	24	581	700	160	478	490	65	140	198	400	450	MGH-4	320

■841T/842T-2S



■2S Installation direction

			
2SA (standard)	2SAR	2SB	2SBR

Double-acting pneumatic cylinder type 841T-3A(350mm to 600mm) / 842T-3A(350mm to 600mm)

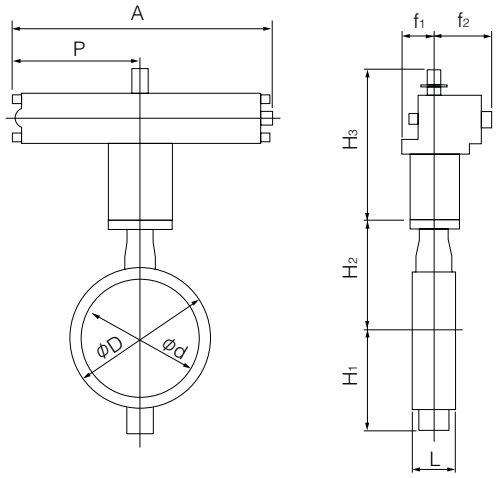
■ Standard

Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	Φd	ΦD	L	H_1	H_2	H_3	A	P	f_1	f_2		
350	14	332	428	100	293	320	359	743	362	100	164	TGA-125	106
400	16	383	491	110	323	360	407	810	393	100	180	TGA-140	139
450	18	435	540	120	367	390	435	939	456	130	202	TGA-160	220
500	20	482	595	140	383	420	435	939	456	130	202	TGA-160	260
600	24	581	700	160	478	490	570	1163	564	160	253	TGA-200	450

■ Heavy duty

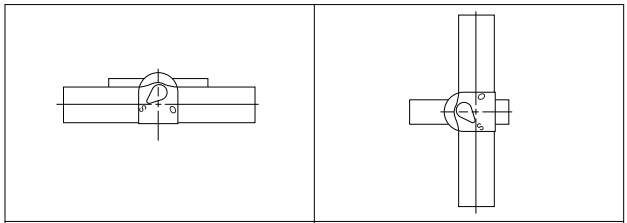
Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	Φd	ΦD	L	H_1	H_2	H_3	A	P	f_1	f_2		
350	14	332	428	100	293	320	407	810	393	100	180	TGA-140	106
400	16	383	491	110	323	360	435	939	456	130	202	TGA-160	190
450	18	435	540	120	367	390	478	1053	510	130	218	TGA-180	252
500	20	482	595	140	383	420	478	1053	510	130	218	TGA-180	292
600	24	581	700	160	478	490	570	1163	564	160	253	TGA-200	450

■841T/842T-3A



Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Powder or high viscosity fluid (crude oil, etc.) ②Control specification (with positioner) ③Emergency open valve or pipe dead end valve

■3A Installation direction



3 A A (standard)	3 A B

Single-acting pneumatic cylinder type 841T-3U(Air to open: 250mm to 600mm) / 841T-3K(Air to close: 250mm to 600mm)
842T-3U(Air to open: 350mm to 600mm) / 842T-3K(Air to close: 350mm to 600mm)

■ Standard

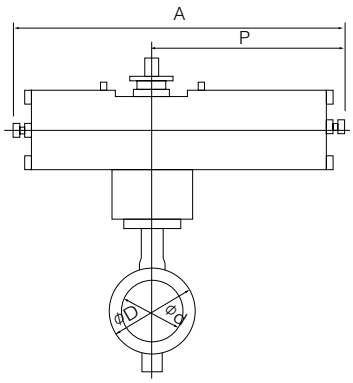
Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
350	14	332	428	100	293	320	340	1255	865	131	257	TG-14S	246
400	16	383	491	110	323	360	340	1255	865	131	257	TG-14S	266
450	18	435	540	120	367	390	340	1255	865	131	257	TG-14S	305
500	20	482	595	140	383	420	474	1655	1095	164	348	TG-20S	588
600	24	581	700	160	478	490	474	1655	1095	164	348	TG-20S	665

■ Heavy duty

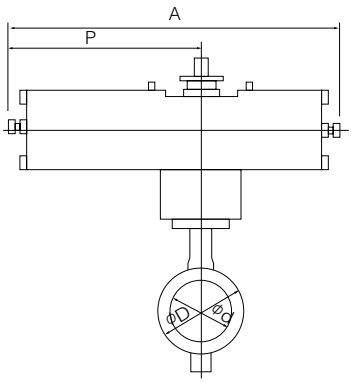
Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	f_1	f_2		
350	14	332	428	100	293	320	340	1255	865	131	257	TG-14S	246
400	16	383	491	110	323	360	474	1655	1095	164	348	TG-20S	483
450	18	435	540	120	367	390	474	1655	1095	164	348	TG-20S	523
500	20	482	595	140	383	420	474	1655	1095	164	348	TG-20S	588
600	24	581	700	160	478	490	474	1655	1095	164	348	TG-20S	655

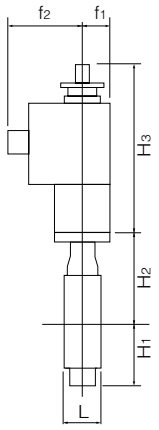
Selection criteria		
	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ①Powder or high viscosity fluid (crude oil, etc.) ②Control specification (with positioner) ③Emergency open valve or pipe dead end valve

■841T/842T-3U

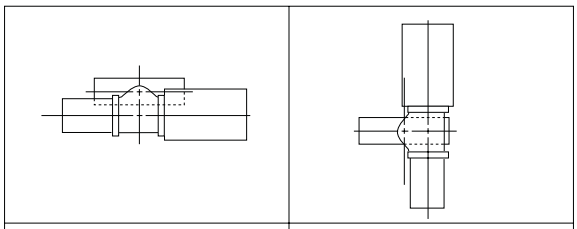


■841T/842T-3K



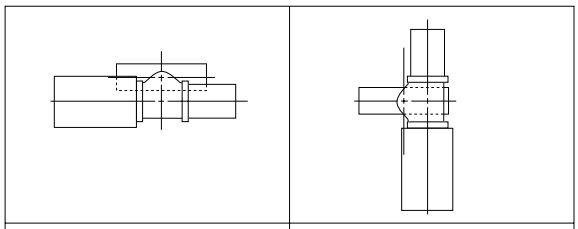


■3U Installation direction



3 U A (standard)	3 U B

■3K Installation direction



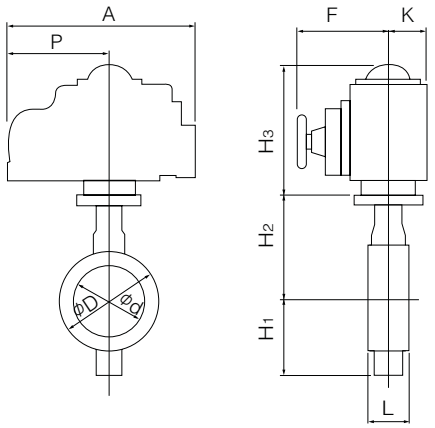
3 K A (standard)	3 K B

Single phase electric motor type 841T-4I(350mm to 450mm) / 842T-4I(350mm to 450mm)

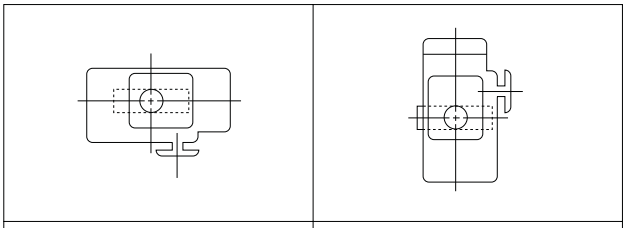
■841T/842T

Nominal size		Dimension (mm)										Motor type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	A	P	F	K		
350	14	332	428	100	293	320	233	388	223	246	136	4 I-4	89
400	16	383	491	110	323	360	233	388	223	246	136	4 I-4	109
450	18	435	540	120	367	390	233	388	223	246	136	4 I-4	158

■841T/842T-4I



■4I Installation direction



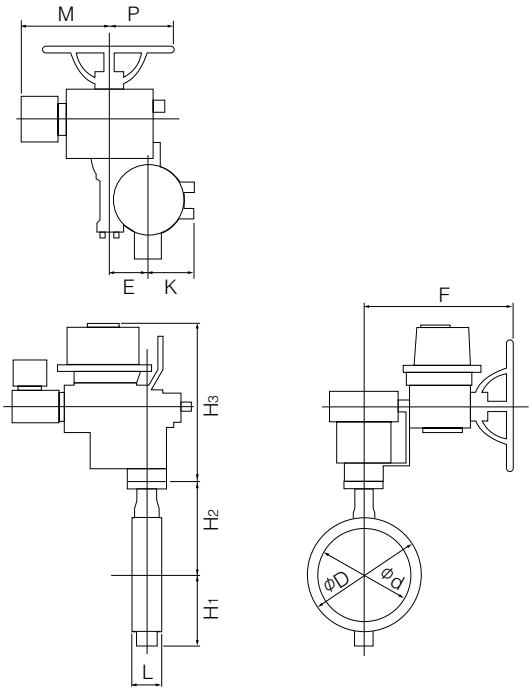
4 I A (standard)	4 I B

Three phase motor actuator type 841T-4L(350mm to 600mm) / 842T-4L(350mm to 600mm)

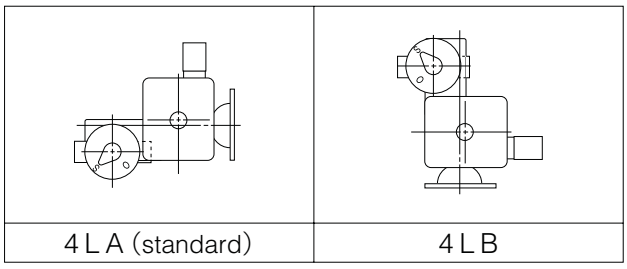
■841T/842T

Nominal size		Dimension (mm)											Motor type	Approx. Mass (kg)
mm	inch	φd	φD	L	H_1	H_2	H_3	E	K	F	M	P		
350	14	332	428	100	293	320	458	117	164	533	373	230	LTKD-01 0.4kW /MGH-3	186
400	16	383	491	110	323	360	458	117	164	533	373	230	LTKD-01 0.4kW /MGH-3	206
450	18	435	540	120	367	390	458	117	164	533	373	230	LTKD-01 0.4kW /MGH-3	249
500	20	482	595	140	383	420	492	117	164	567	370	230	LTKD-02 0.75kW /MGH-3	328
600	24	581	700	160	478	490	570	140	198	637	440	230	LTKD-05 0.75kW /MGH-4	485

■841T/842T-4L

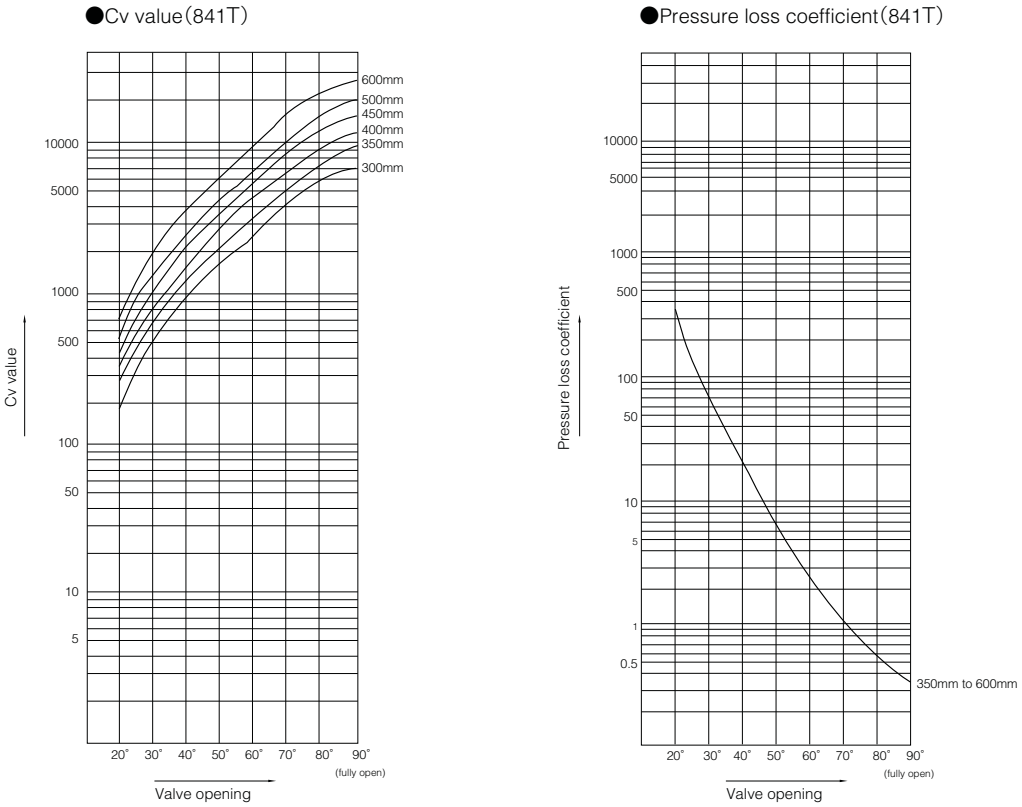


■4L Installation direction



4 L A (standard)	4 L B

841T Cv value/pressure loss coefficient



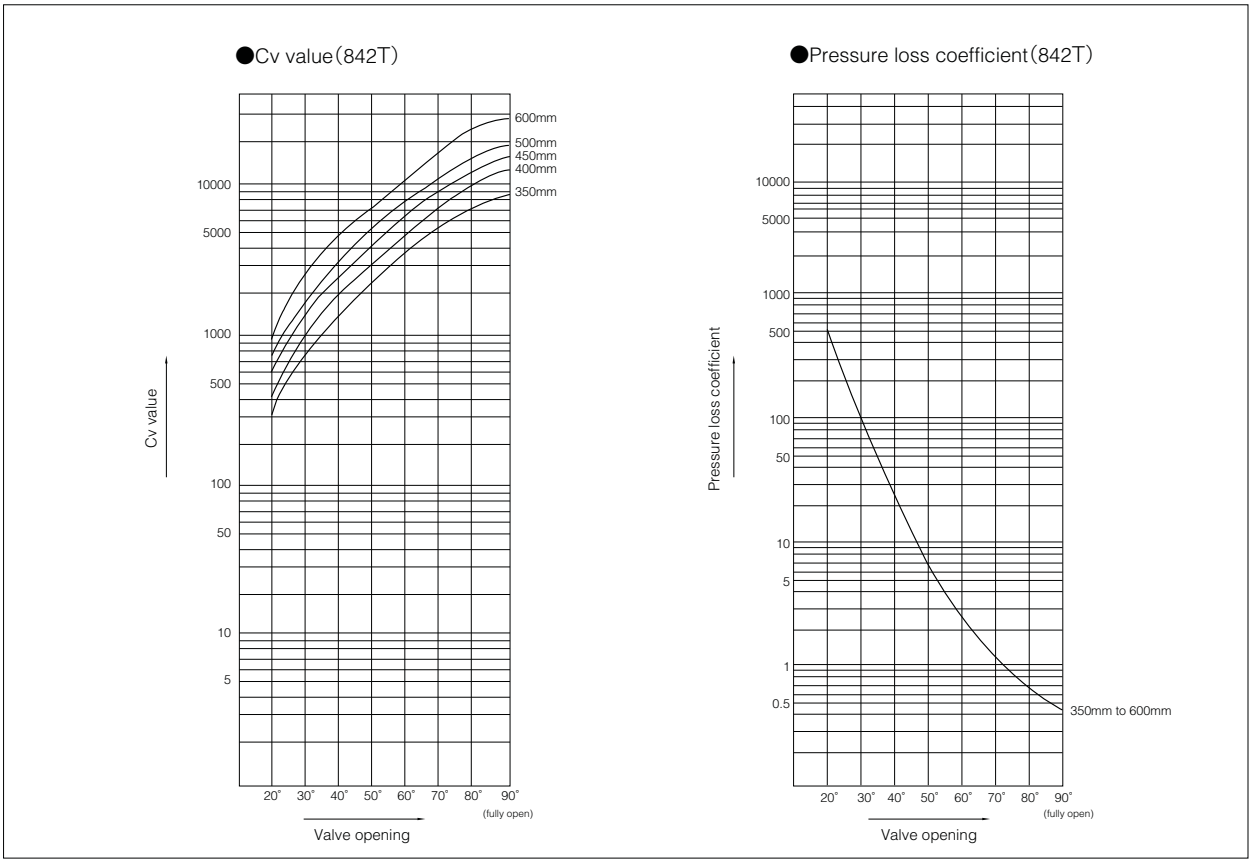
841T Cv value

Nominal size		Valve opening							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
350	14	218	646	1224	2074	3373	5223	7784	9200
400	16	287	869	1632	2703	4306	6766	10289	12000
450	18	364	1150	2122	3437	5510	8993	13081	15500
500	20	450	1401	2589	4210	6753	10966	15993	19000
600	24	656	2060	3795	6141	9835	15952	23001	27600

841T Pressure loss coefficient

Nominal size		Valve opening							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
350	14	600	68	19	7	3	1	0.4	0.3
400	16	606	66	19	7	3	1	0.4	0.3
450	18	611	61	18	7	3	1	0.4	0.3
500	20	619	64	19	7	3	1	0.4	0.3
600	24	618	63	18	7	3	1	1	0.3

842T Cv value/pressure loss coefficient



842T Cv value

Nominal size		Valve opening							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
350	14	284	766	1465	2264	3675	5349	7378	8800
400	16	384	1060	1993	3015	4845	7209	9860	12000
450	18	558	1298	2339	3888	6060	8917	12455	15000
500	20	586	1608	3078	4738	7473	11002	15154	18000
600	24	878	2414	4476	6871	11346	16828	22464	26000

842T Pressure loss coefficient

Nominal size		Valve opening							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
350	14	354	49	13	6	2	1	1	0.3
400	16	337	44	13	5	2	1	1	0.3
450	18	261	48	15	5	2	1	1	0.3
500	20	365	49	13	6	2	1	1	0.3
600	24	345	46	13	6	2	1	1	0.3

841T/842T Applicable flange standard

Nominal size		JIS	ANSI		BS4504	DIN	BS10
mm	inch	10K	125Lb	150Lb	PN10	NP10	Table E
350	14	D	D	D	D	D	D
400	16	D	D	D	D	D	D
450	18	T	T	T	T	T	T
500	20	T	T	T	T	T	×
600	24	T	T	T	T	T	×

D : With flange drilling
T : With flange tapping
× : Not applicable

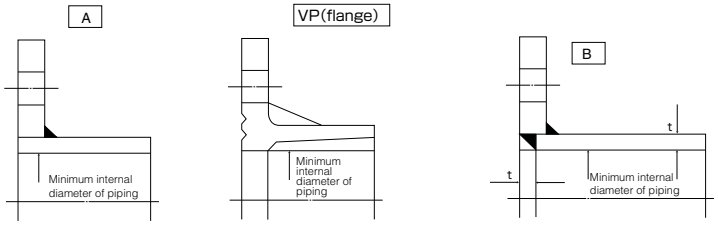
841T/842T Applicable pipe list in case of A

Nominal size		SGP	Sch20	Sch40	VP (TS Flange)	Sch10S	Sch20S	Minimum internal diameter of piping (mm)
mm	inch							
350	14	○	○	○	○	–	–	322
400	16	○	○	○	–	–	–	372
450	18	○	○	○	–	–	–	421
500	20	○	○	○	–	–	–	463
600	24	–	○	○	–	–	–	566

841T/842T Applicable pipe list in case of B

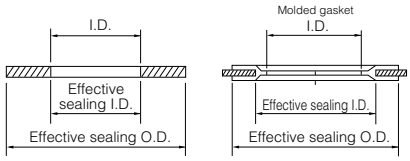
Nominal size		SGP	Sch20	Sch40	Sch10S	Sch20S
mm	inch					
350	14	○	○	○	–	–
400	16	○	○	○	–	–
450	18	○	○	○	–	–
500	20	○	○	○	–	–
600	24	–	○	○	–	–

Remark 1: ○=Applicable
Remark 2: Butterfly valves are inserted into a pipe that was fitted with the disc when fully open.
In cases where you are using a pipe or flange that is less than the minimum inner pipe diameter, use is still possible if means are taken such as inserting a spacer between the valve and flange.
For details, please consult us.



841T/842T Applicable gasket dimensions

Nominal size		841T/842T			
mm	inch	Recommended effective sealing I.D. (mm)	Max. effective sealing I.D. (mm)	Minimum I.D. (mm)	Min. effective sealing I.D. (mm)
350	14	359	359	332	416
400	16	410	410	383	479
450	18	457	457	435	533
500	20	508	508	482	590
600	24	610	610	581	693



841T/842T Applicable standard for piping gasket list

Nominal size		Recommended effective sealing I.D. (mm)	Sheet gasket		PTFE molded gasket	
mm	inch		JIS10K	ANSI 125Lb/150Lb	JIS10K	ANSI 125Lb/150Lb
350	14	359	○	○	×	×
400	16	410	○	○	×	×
450	18	457	×	×	×	×
500	20	508	×	×	×	×
600	24	610	×	×	×	×

○ : Standard gasket can be used
× : Standard gasket cannot be used. Use one with special dimensions.

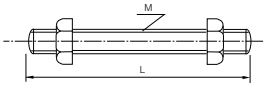
841T/842T Piping bolt and nut sizes

■Piping bolts sizes

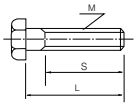
Nominal size		JIS 10K		ANSI 125Lb／150Lb	
mm	inch	Long bolts and nuts	Setting bolts	Long bolts and nuts	Setting bolts
350	14	16-M22×215×45	——	12-U1 ×260×60	——
400	16	16-M24×230×50	——	16-U1 ×260×60	——
450	18	16-M24×245×50	8-M24×70×54	12-U1 1/8×285×65	8-U1 1/8× 85×70
500	20	16-M24×265×50	8-M24×70×54	16-U1 1/8×310×65	8-U1 1/8× 90×70
600	24	20-M30×300×60	8-M30×80×66	16-U1 1/4×345×70	8-U1 1/4×100×70

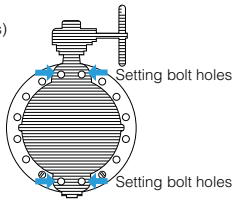
Remarks:
1. Use thin hexagon nuts. For ANSI 125Lb and 150Lb, use heavy hexagon nuts.
2. If the nominal diameter of the unified screw exceeds 1 inch, make the threading 8 threads per inch.
3. The table above does not apply if the material used is a special material which is not SS400.

Long bolts and nuts (full thread)



Setting bolts (Hexagon bolts)





Example

Long bolts: 12 - M22 × 185 × 46
N M L S

Setting bolts: 4 - M30 × 95 × 65
(Hexagon bolts)
N M L S

Approvals

ISO 9001

Due to our highly-evaluated quality system throughout all processes across the entire company, from designing and development to order acceptance, procurement, manufacturing, inspection and shipment, registration of the ISO9001 international standard for quality management systems has been approved.

※The certification authority : Tomoe Valve Co., Ltd. (Japan)····· JIC
Shanghai Tomoe Valve Co., Ltd. (China)····· Lloyd's
Tomoe Valve Limited (UK)····· Lloyd's
PT. Tomoe Valve Batam (Indonesia)····· Lloyd's

Certifying authority	Certifying authority accredited by JICQA (JIC Quality Assurance Ltd.), Dutch Accreditation Council (RvA) and Japan Accreditation Board
Date of registration	September 11, 1995
Registration number	No.0091
Scope of registration	Designing, development and servicing of butterfly valves, actuators, and accessories

ISO9001 is a standard for a quality system for the entire company, whose scope ranges from quality policy of managers and clarification of responsibility to development, designing, order acceptance, procurement, manufacturing, inspection, shipment, servicing and even education and training. This standard requires systems that supply high-quality products trusted by users.

For fire safety

The symbol on the left indicates that the product is certified by the Fire Equipment and Safety Center of Japan; it is displayed on each product.
Note: When you contact us, please ask our sales staff for “fire-fighting” products.

700ZF
◇Certification Number VA-115

700G
◇Certification Number VA-065-1

702G
◇Certification Number VA-066-1

731P(50～300mm)
◇Certification Number VA-068-1

732P(50～300mm)
◇Certification Number VA-069-1

302Y
◇Certification Number VA-070

334A
◇Certification Number VA-103

903C
◇Certification Number VA-078

906C
◇Certification Number VA-080

907H
◇Certification Number VA-011

- Dry models other than 302Y cannot be used in places where products are exposed to flame or in environments where pipes are constantly filled with gas.
  However, these models can be used if covered with fire-resistant material such as Rockwool*1, of thickness more than 50 mm, to avoid direct flame.

*1 For selection of Rockwool, please inquire with fire authorities in your district.

- In environments such as above, please use 302Y (dry model).
- Rubber seated valves whose certification numbers have no suffixed numbers after hyphens are certified as wet models.

Waterworks approvals

700G
◇Approved by Singapore public utility board.
License Number WE 92413/29

779J
◇Registration number E-306
Certified by Japan Water Works Association

Marine approvals

Nippon Kaiji Kyokai (NK)	NK 98FV601B	704G, 722F
	NK 93FV601B	700S, 700E, 720F
	NK 94FV601B	337Y
	NK 92FV603B	700G, 901C, 903C
	NK 93FV606B	705G
	NK 05FV601B	700Z(Application planned)
	NK 09FV601B	302Y, 304Y, 302A, 304A, TT2AFR
	NK 10FV604B	907H, 908H
Lloyd's Register of Shipping	LR 00/10044	704G, 722F
	LR 96/10037	705G
American Bureau of Shipping	A.B.S 02-YO230943/1-PDA	705G, 704G, 704R, 705R, 722F, 720F
	A.B.S 09-YO490943/2-PDA	302Y, 304Y, 302A, 304A, TT2AFR
Bureau Veritas (France)	02572/FO BV	720F
	09498/A0 BV	704G
	09499/A0 BV	722F

Fire safe approvals

302A・334A
◇API Std 607 4th Edition

TOMOE TRITEC
◇BS 6755 Part 2/API 6FA and API Std 607 4th/5th Edition

TT2
◇API Std 607 4th/5th Edition