

846T/847T (Wafer)/847Q (Lugged)

New design features of the Tomoe 847 series result in vastly improved sealing performance under hazardous conditions.

The unique construction of the Tomoe 847 Series provides superior strength and sealing properties essential 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.

Standard specifications

Valve type	846T	847T
Valve nominal size	65 to 200mm(8 sizes)	50 to 300mm(9 sizes)
Applicable flange standard	JIS 5K/10K, ANSI 125/150Lb, ISO 7005-1 PN 6/10/16 BS10 TableE, 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	1.0MPa	
Body shell test	1.5MPa	
Seat leak test	1.1MPa	
Working temperature range	PPS disc: - 20 to 120 degrees C Stainless disc: - 20 to 200 degrees C ¹	- 20 to 200 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	PPS(65 to 200mm) SCS14(CF8M)
	Stem	316SS
	Seat ring	PFA(backup rubber: fluorocarbon rubber)
Actuators	Lock lever, worm gear, pneumatic cylinder, motorized	Lock lever (50 to 200mm), worm gear, pneumatic cylinder, motorized
Coating	Polyester powder baking finish(Munsell N7)	

1. Please refer to pressure-temperature leakage chart.

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

Teflon® is a registered trademark for a fluoride resin produced by Mitsui-DuPont Fluorochemical Co., Ltd.

Total Sealing

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

846T with SCS14(CF8M) or PPS disc and Teflon seat ring

847T Teflon-lined disc and seat ring

Design features

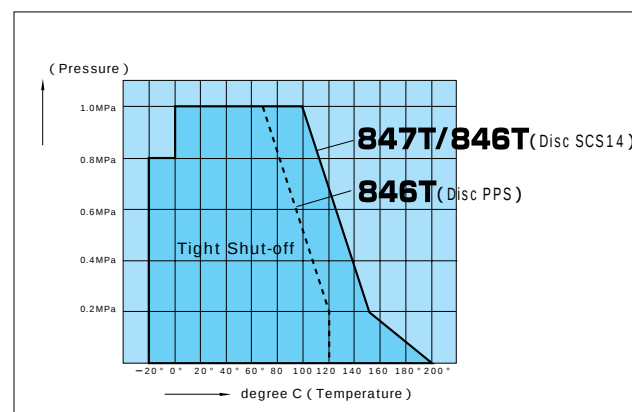
LINING (50 to 200mm: PFA) (250, 300mm: PTFE)

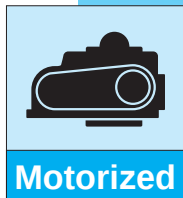
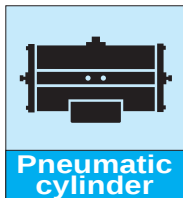
Seamless construction of the valve lining of the 847 Series ensures complete stability in all conditions.

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



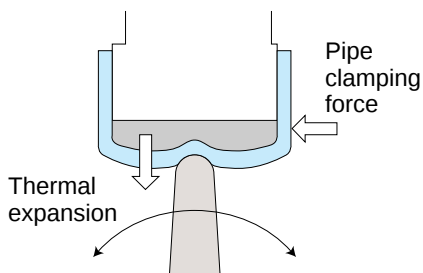


SEAT CONSTRUCTION (250, 300mm: PTFE)

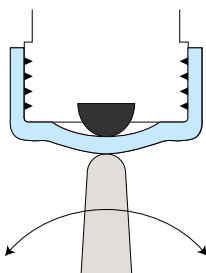
Another reason for the stable sealing performance of the 847 Series is that no bond is produced between the rubber and Teflon.

At high temperatures, sealing problems due to separation of the rubber and lining are eliminated. High valve torque caused by expansion of the lining is also eliminated.

Typical conventional valve



TOMOE 847T

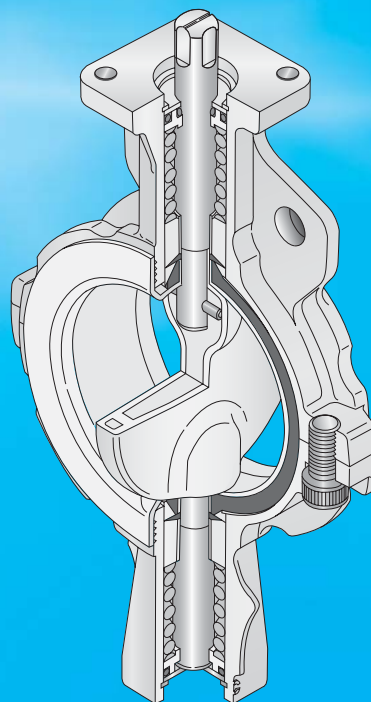


SEALING PROPERTIES

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)

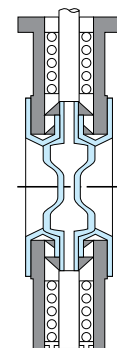
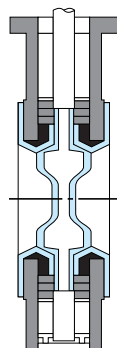
In addition, stem seal leakage caused by excessive



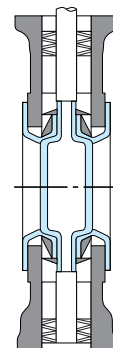
pipe flange damping forces is eliminated because the stem seal arrangement and the pipe flange seal are totally independent.

Conventional gland type valve seal

TOMOE 847 Series unique sealig mechanism



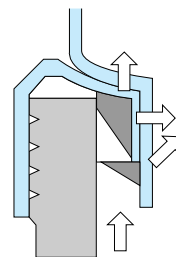
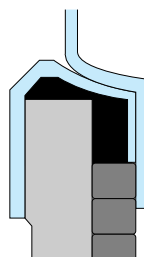
50 to 200mm



250, 300mm

Conventional gland type valve seal

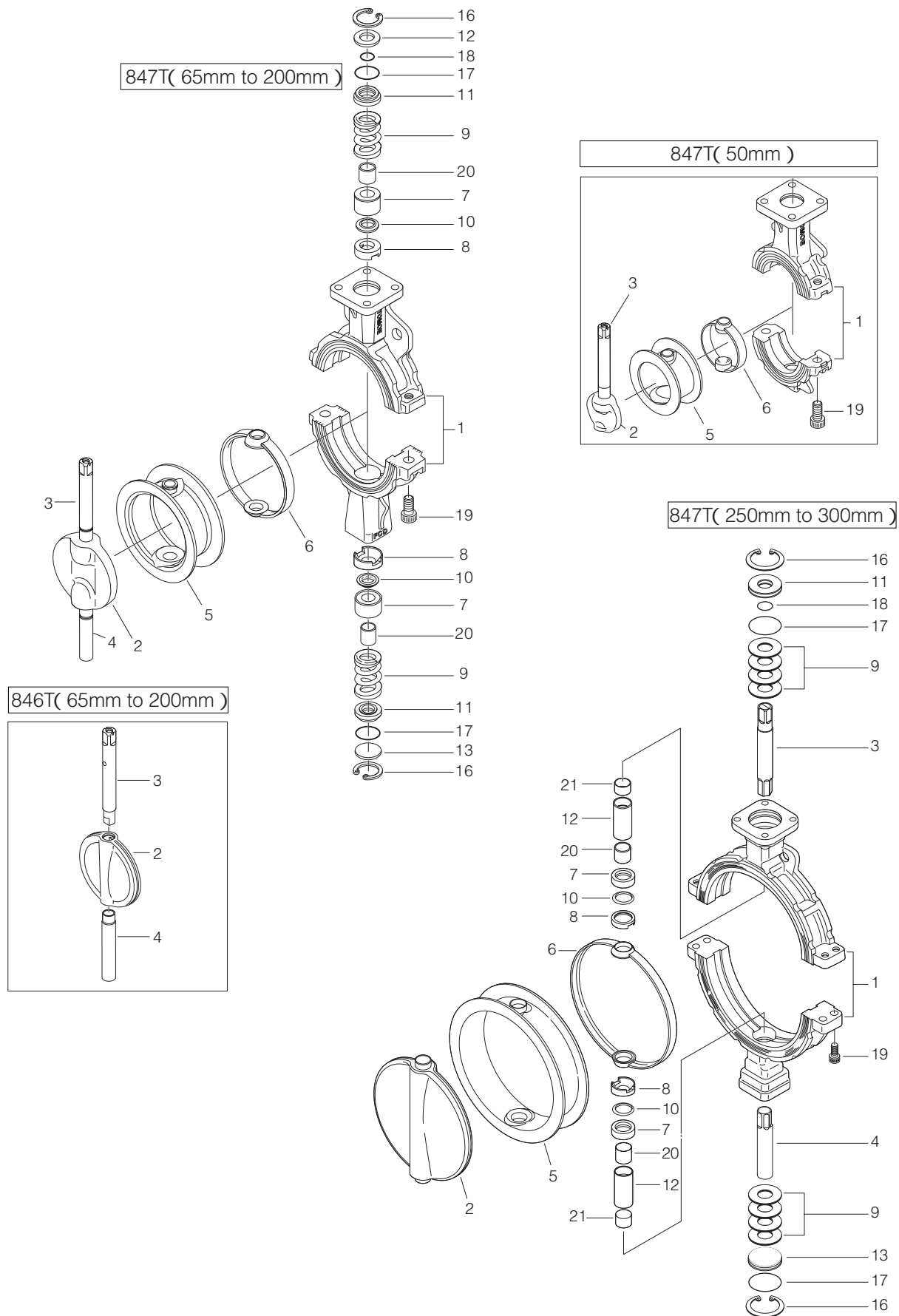
TOMOE 847 Series unique sealig mechanism



50 to 300mm

846T/847T (Wafer)/847Q (Lugged)

846T/847T Expanded view of components



846T/847T Parts list

■ 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
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	
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 (seating) 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.

846T/847T (Wafer)/847Q (Lugged)

847T Actuator selection chart

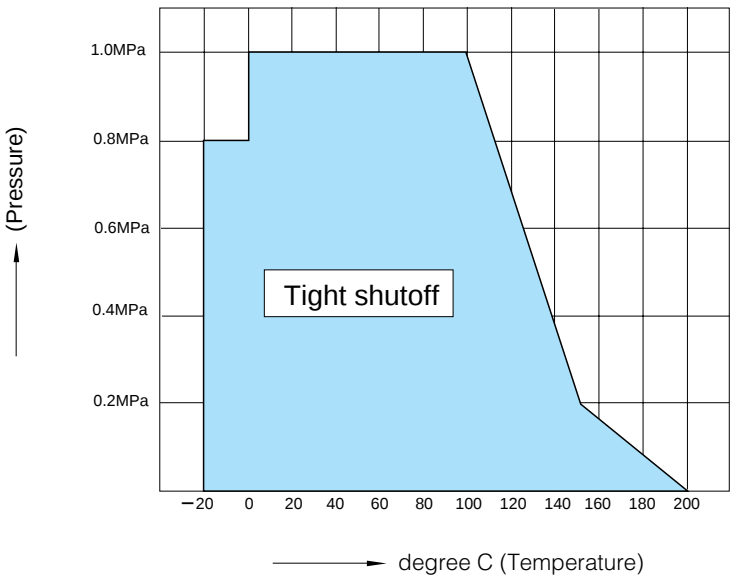
■ 847T

Model	Cate- gory	Size ($\frac{\text{mm}}{\text{inch}}$)								
		50	65	80	100	125	150	200	250	300
		2	2 1/2	3	4	5	6	8	10	12
1T	Standard	1T-1			1T-2		1T-3			
	Heavy duty									
2U	Standard	2U-1		2U-2			2U-3		2U-4	
	Heavy duty									
3E, 3A	Standard	K70		K170			K370		K700 TGA-125	
	Heavy duty									
3G,3F 3U,3K	Standard	K170S		K370S			K700S TG-10S		TG-12S TG-14S	
	Heavy duty									
4 I	Standard	4 I-0		4 I-1		4 I-2		4 I-2.5		4 I-3
	Heavy duty									
4J	Standard	SRJ-010			SRJ-020		SRJ-060			
	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. ① Working temperature is over 60 degrees C ② Powder or high viscosity fluids (consult us) ③ Velocity more than 3 m/s ④ Throttling ⑤ Slow travelling time of valve: more than 30 sec. ⑥ Dead end, pump outlet, emergency open

846T/847T Pressure-temperature rating

846T/847T(SCS14)



846T Actuator selection chart

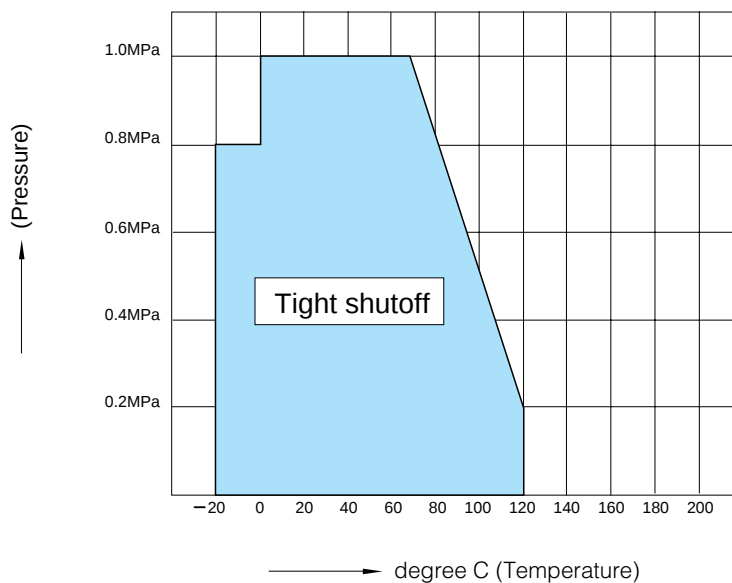
■ 846T

Model	Cate- gory	Size ($\frac{\text{mm}}{\text{inch}}$)					
		65	80	100	125	150	200
		2 1/2	3	4	5	6	8
1T	Standard	1T-1			1T-2		1T-3
	Heavy duty						
2U	Standard	2U-1		2U-2			2U-3
	Heavy duty						
3E	Standard	K70			K170		K370
	Heavy duty						
3G,3F 3U,3K	Standard	K170S		K370S		K700S	
	Heavy duty					TG-10S	
4 I	Standard	4 I-0		4 I-1		4 I-2	
	Heavy duty						
4J	Standard	SRJ-010			SRJ-020		SRJ-060
	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. ① Working temperature is over 60 degrees C ② Powder or high viscosity fluids (consult us) ③ Velocity more than 3 m/s ④ Throttling ⑤ Slow travelling time of valve: more than 30 sec. ⑥ Dead end, pump outlet, emergency open

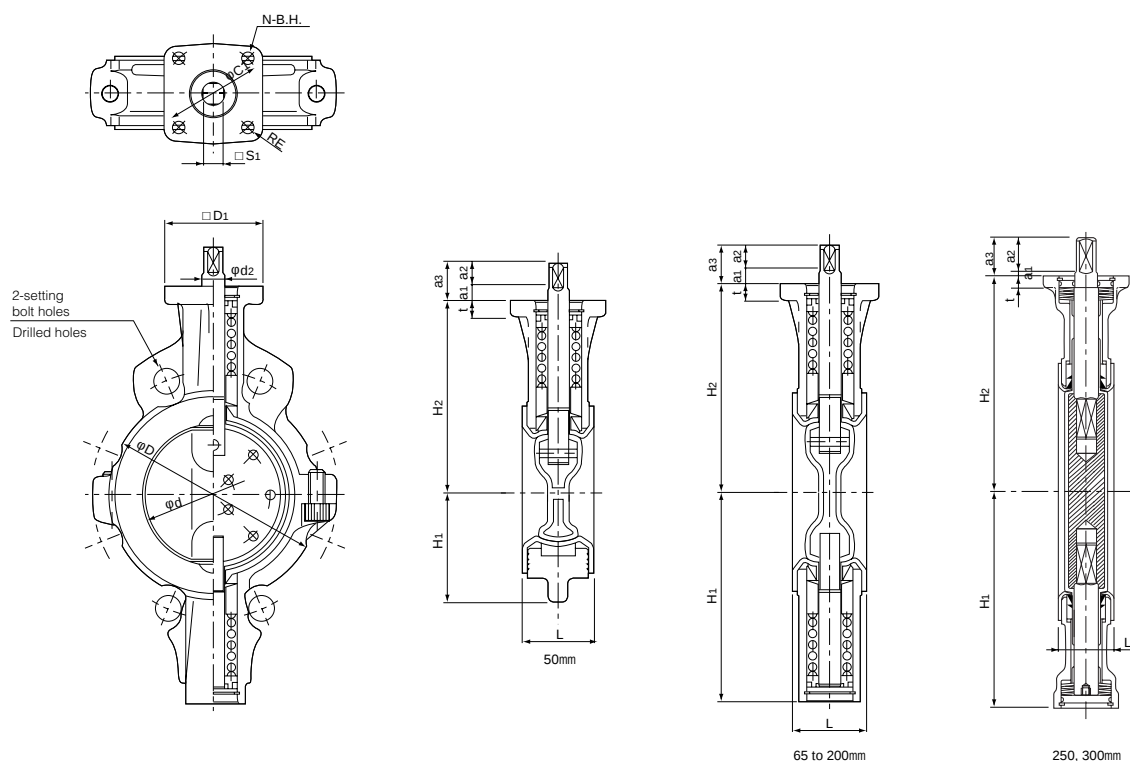
846T Pressure-temperature rating

846T(PPS)



846T/847T (Wafer)/847Q (Lugged)

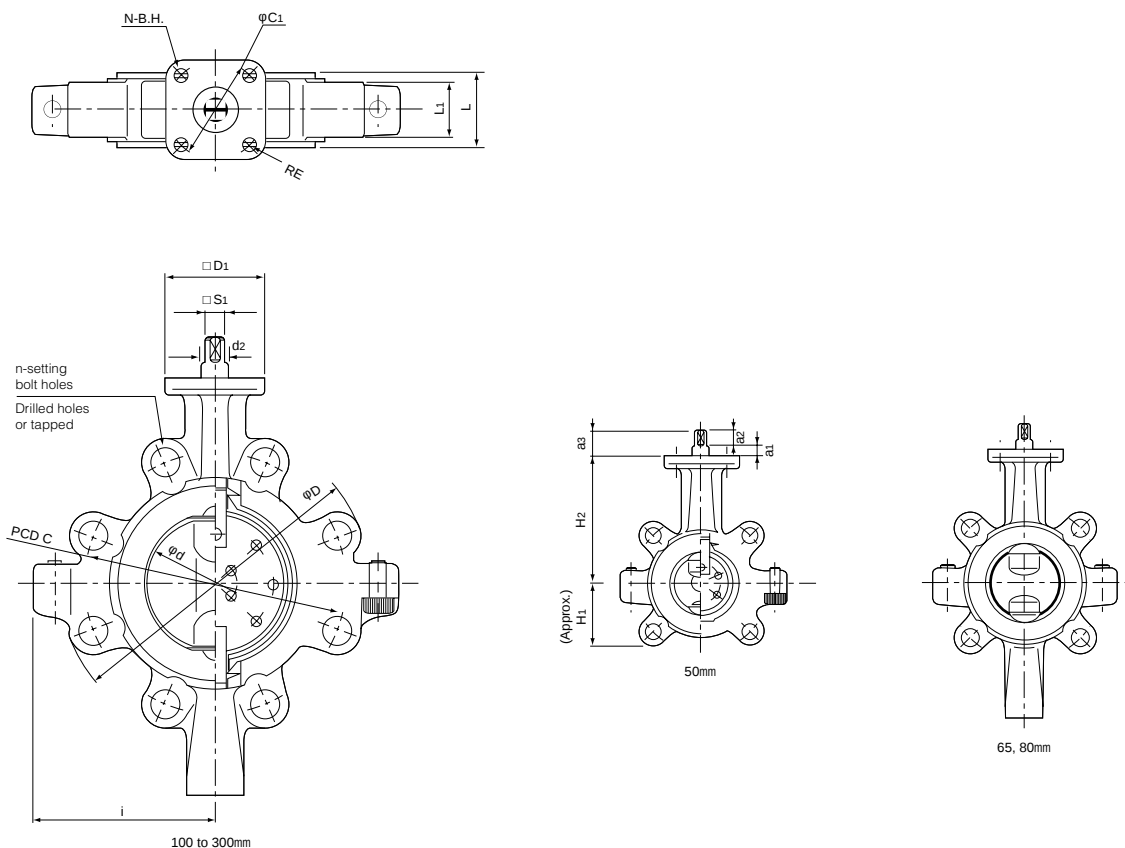
847T Wafer type



■ 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	53.4	150.6	43	32	58	118.5	80	14	11	12	23	12	70	12	10	70	4	9	3.3
65	2 1/2	67	175	46	34	125	125	86	14	11	12	23	12	70	12	10	70	4	9	4.4
80	3	82	184	46	34	132.5	132.5	90	14	11	12	23	12	70	12	10	70	4	9	4.7
100	4	102	223	52	40	148	148	130	16	11	17	28	14	70	12	10	70	4	9	8.6
125	5	127.6	252	56	43	171	171	150	18	11	17	28	14	102	14	23.5	102	4	11	12.6
150	6	151.6	276	56	44	183	183	163	18	11	17	28	14	102	14	23.5	102	4	11	13.3
200	8	197	331	60	50	220	220	180	22	10	21	31	18	102	14	23.5	102	4	11	21.3
250	10	247.5	406	68	52	260	260	242	28	5	30	35	24	102	14	24	102	4	11	37
300	12	296.4	476	78	66	297	297	270.5	30	5	30	35	24	125	16	32	125	4	13	54

846T/847T (Wafer)/847Q (Lugged)

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

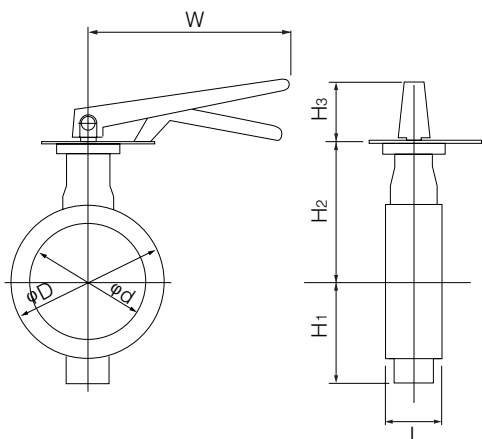
■ 847T-1T

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 200mm)

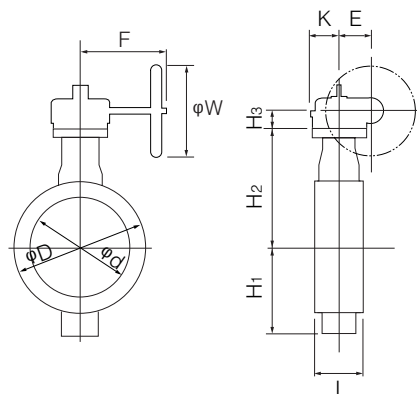
■ **847T-2U**

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

■ **846T/847T-2U**



■ **2U Installation direction**

2UA(standard)	2UAR	2UB	2UBR

846T/847T (Wafer)/847Q (Lugged)

Double-acting pneumatic cylinder type 847T-3E(50mm to 300mm)

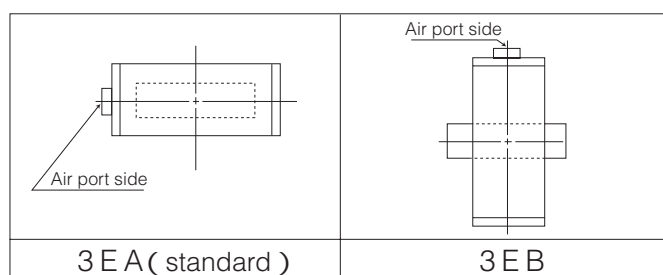
■ 847T-3E Standard

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	133	268	138	53	51	K70	6.1
65	2 1/2	67	115	46	125	125	133	268	138	53	51	K70	7.2
80	3	82	131	46	132.5	132.5	133	268	138	53	51	K70	7.5
100	4	102	152	52	148	148	157	332	171	65	58	K170	11.6
125	5	127.6	190	56	171	171	157	332	171	65	58	K170	15.1
150	6	151.6	217	56	183	183	157	332	171	65	58	K170	16.7
200	8	197	266	60	220	220	184	411	209	83	69	K370	26.2
250	10	247.5	320	68	260	260	224	520	262	101	85	K700	49.3
300	12	296.4	374	78	297	297	244	520	262	101	85	K700	59.6

■ 847T-3E, 3A 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	133	268	138	53	51	K70	6.1
65	2 1/2	67	115	46	125	125	133	268	138	53	51	K70	7.2
80	3	82	131	46	132.5	132.5	133	268	138	53	51	K70	7.5
100	4	102	152	52	148	148	157	332	171	65	58	K170	11.6
125	5	127.6	190	56	171	171	157	332	171	65	58	K170	15.1
150	6	151.6	217	56	183	183	184	411	209	83	69	K370	21.7
200	8	197	266	60	220	220	184	411	209	83	69	K370	26.2
250	10	247.5	320	68	260	260	224	520	262	101	85	K700	49.3
300	12	296.4	374	78	297	297	244	743	381	164	100	TGA-125	78

■ 3E,3A Installation direction



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

Double-acting pneumatic cylinder type 846T-3E(65mm to 200mm)

■ 846T-3E Standard

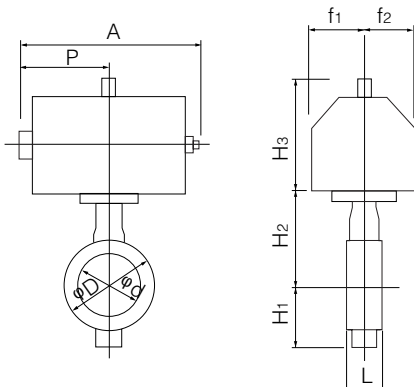
Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	ϕd	ϕD	L	H ₁	H ₂	H ₃	A	P	f ₁	f ₂		
65	2 1/2	67	115	46	125	125	133	268	138	53	51	K70	7.2
80	3	82	131	46	132.5	132.5	133	268	138	53	51	K70	7.6
100	4	102	152	52	148	148	157	332	171	65	58	K170	11.7
125	5	127.6	190	56	171	171	157	332	171	65	58	K170	15.1
150	6	151.6	217	56	183	183	157	332	171	65	58	K170	16.7
200	8	197	266	60	220	220	184	411	209	83	69	K370	25.6

■ 846T-3E Heavy duty

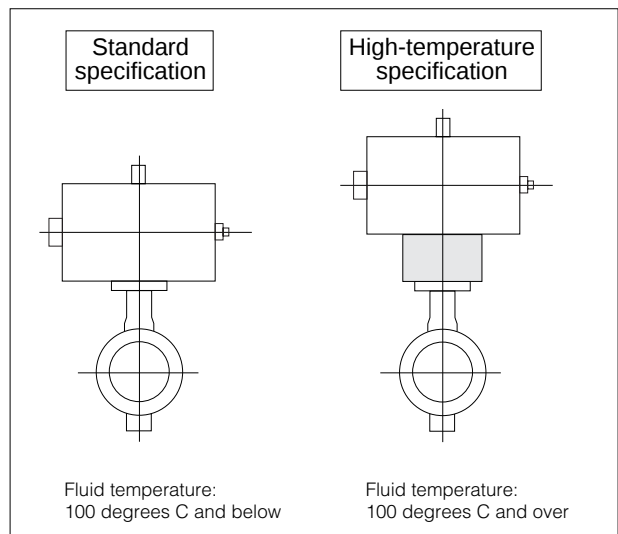
Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	ϕd	ϕD	L	H ₁	H ₂	H ₃	A	P	f ₁	f ₂		
65	2 1/2	67	115	46	125	125	133	268	138	53	51	K70	7.2
80	3	82	131	46	132.5	132.5	157	268	138	53	51	K70	7.6
100	4	102	152	52	148	148	157	332	171	65	58	K170	11.7
125	5	127.6	190	56	171	171	184	332	171	65	58	K170	15.1
150	6	151.6	217	56	183	183	184	411	209	83	69	K370	19.7
200	8	197	266	60	220	220	184	411	209	83	69	K370	25.6

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

■ 846T/847T-3E



■ Caution for actuator mounting



846T/847T (Wafer)/847Q (Lugged)

Single-acting pneumatic cylinder type 847T-3G(Air to open: 50mm to 200mm) / 847T-3F(Air to close: 50mm to 200mm)

■ 847T-3G/3F 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	157	446	220.5	65	58	K170S	11.1
65	2 1/2	67	115	46	125	125	157	446	220.5	65	58	K170S	12.2
80	3	82	131	46	132.5	132.5	157	446	220.5	65	58	K170S	12.5
100	4	102	152	52	148	148	184	547	271	83	69	K370S	20.8
125	5	127.6	190	56	171	171	184	547	271	83	69	K370S	24.3
150	6	151.6	217	56	183	183	224	709	352	101	85	K700S	40
200	8	197	266	60	220	220	224	709	352	101	85	K700S	44.5

■ 847T-3G/3F 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	157	446	220.5	65	58	K170S	11.1
65	2 1/2	67	115	46	125	125	157	446	220.5	65	58	K170S	12.2
80	3	82	131	46	132.5	132.5	184	547	271	83	69	K370S	19.4
100	4	102	152	52	148	148	184	547	271	83	69	K370S	20.8
125	5	127.6	190	56	171	171	224	709	352	101	85	K700S	38.4
150	6	151.6	217	56	183	183	224	709	352	101	85	K700S	40

Remark: Value in brackets indicates 3F (air to close).

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

Single-acting pneumatic cylinder type 847T-3G(Air to open: 50mm to 200mm) / 847T-3F(Air to close: 50mm to 200mm)

■ 846T-3G/3F Standard 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		
65	2 1/2	67	115	46	125	125	157	446	220.5	65	58	K170S	12.2
80	3	82	131	46	132.5	132.5	157	446	220.5	65	58	K170S	12.6
100	4	102	152	52	148	148	184	547	271	83	69	K370S	20.9
125	5	127.6	190	56	171	171	184	547	271	83	69	K370S	24.3
150	6	151.6	217	56	183	183	224	709	352	101	85	K700S	40
200	8	197	266	60	220	220	224	709	352	101	85	K700S	44.2

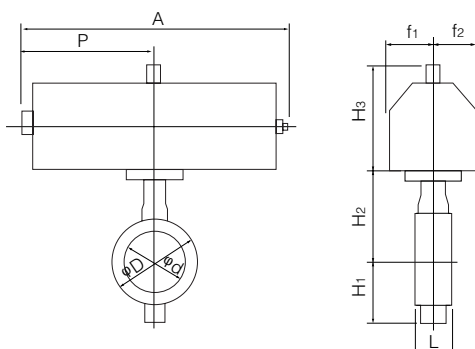
■ 846T-3G/3F Heavy duty

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		
65	2 1/2	67	115	46	125	125	157	446	220.5	65	58	K170S	12.2
80	3	82	131	46	132.5	132.5	184	547	271	83	69	K370S	19.5
100	4	102	152	52	148	148	184	547	271	83	69	K370S	20.9
125	5	127.6	190	56	171	171	224	709	352	101	85	K700S	38.4
150	6	151.6	217	56	183	183	224	709	352	101	85	K700S	4

■ 846T-3G/3F High temperature specification(SCS14: fluid temperature 100 degrees C and over)

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		
65	2 1/2	67	115	46	125	125	157	446	220.5	65	58	K170S	13.7
80	3	82	131	46	132.5	132.5	184	547	271	83	69	K370S	20.9
100	4	102	152	52	148	148	184	547	271	83	69	K370S	22.3
125	5	127.6	190	56	171	171	224	709	352	101	85	K700S	41.9
150	6	151.6	217	56	183	183	224	709	352	101	85	K700S	43.5

■ 846T/847T-3F/3G



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

■ 3F/3G Installation direction

3FA/3GA(standard)	3FB/3GB

■ Caution for actuator mounting

Standard specification 	High-temperature specification
Fluid temperature: 100 degrees C and below	Fluid temperature: 100 degrees C and over

846T/847T (Wafer)/847Q (Lugged)

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) / 846T-3K(Air to close: 200mm)

■ 847T-3U/3K 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		
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. Mass (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	71
250	10	247.5	320	68	260	260	340	1255	865	131	257	TG-14S	225
300	12	296.4	374	78	297	297	340	1255	865	131	257	TG-14S	235

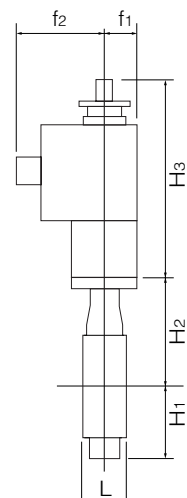
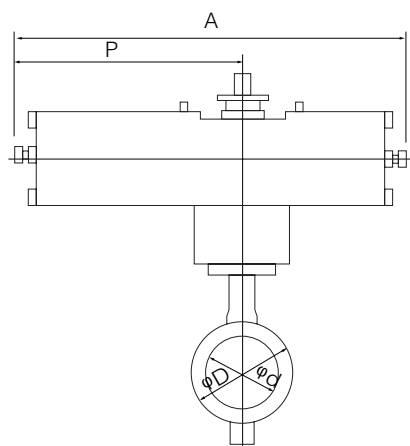
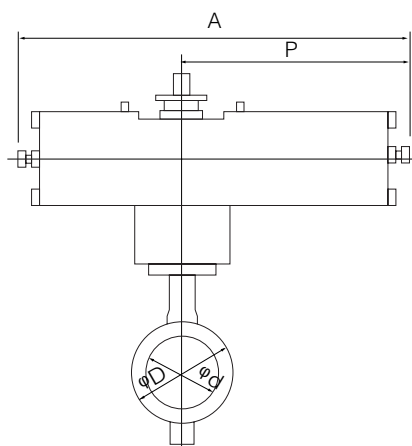
■ 846T-3U/3K Heavy duty

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		
200	8	197	266	60	220	220	307	945	585	75	165	TG-10S	71

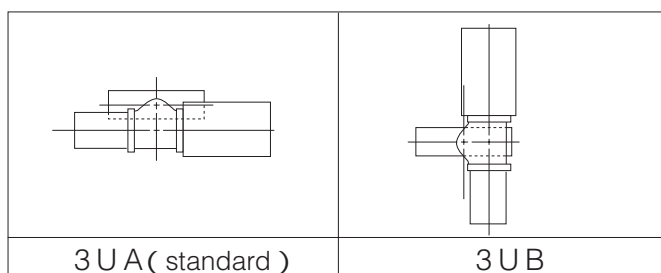
Selection criteria	Standard	Select when none of the following heavy duty items apply.
	Heavy duty	Select when any of the following items apply. ① Working temperature is over 60 degrees C ② Powder or high viscosity fluids (consult us) ③ Velocity more than 3 m/s ④ Throttling ⑤ Slow travelling time of valve: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

■ 846T/847T-3U

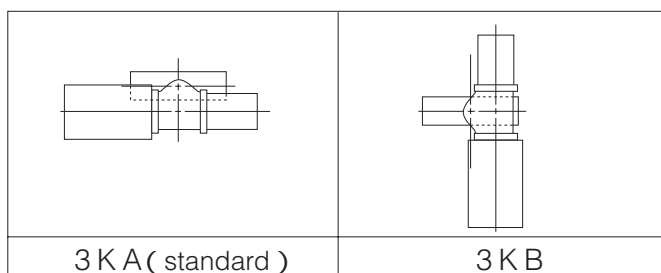
■ 846T/847T-3K



■ 3U Installation direction



■ 3K Installation direction



846T/847T (Wafer)/847Q (Lugged)

Single phase electric motor type 847T-4 I (50mm to 300mm) / 846T-4 I (65mm to 200mm)

■ 847T-4 I

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-4 I High temperature specification (fluid temperature 100 degrees C and over)

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

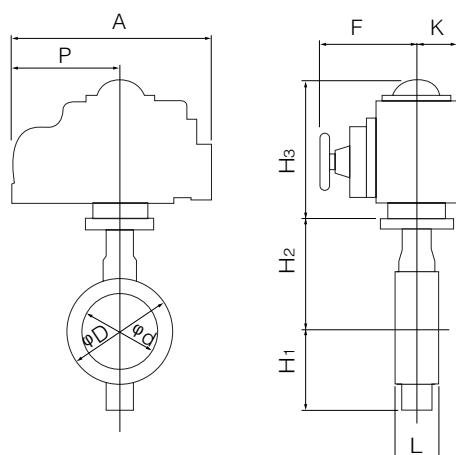
■ 846T-4 I

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

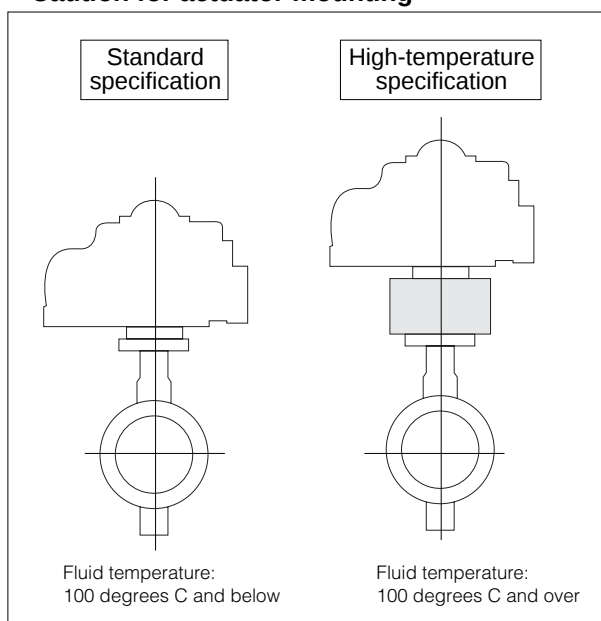
■ 846T-4 I High temperature specification (SCS14: fluid temperature 100 degrees C and over)

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

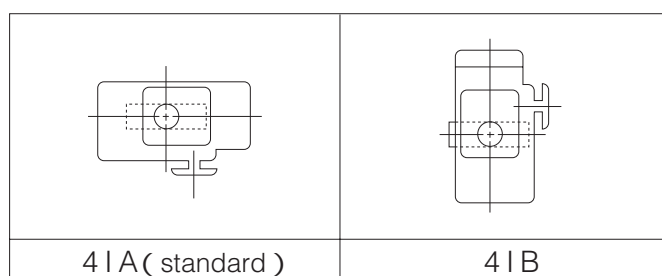
■ 846T/847T-4 I



■ Caution for actuator mounting

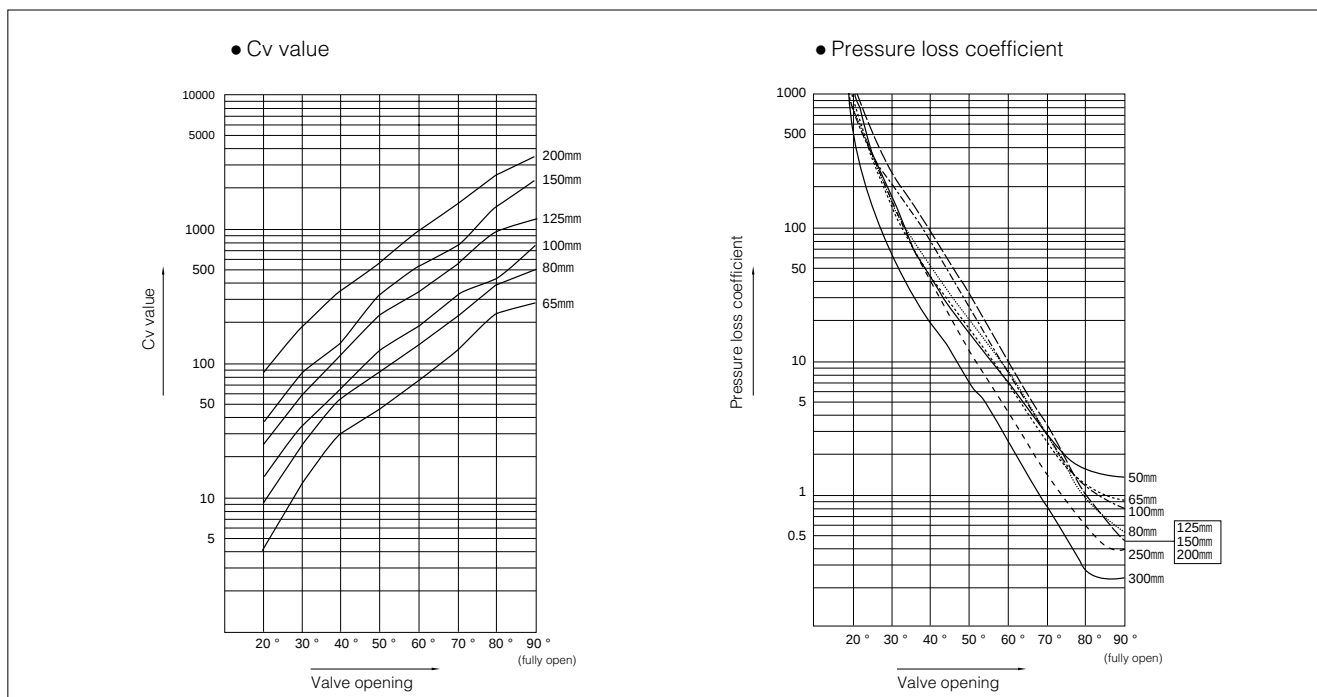


■ 4I Installation direction



846T/847T (Wafer)/847Q (Lugged)

846T Cv value/pressure loss coefficient



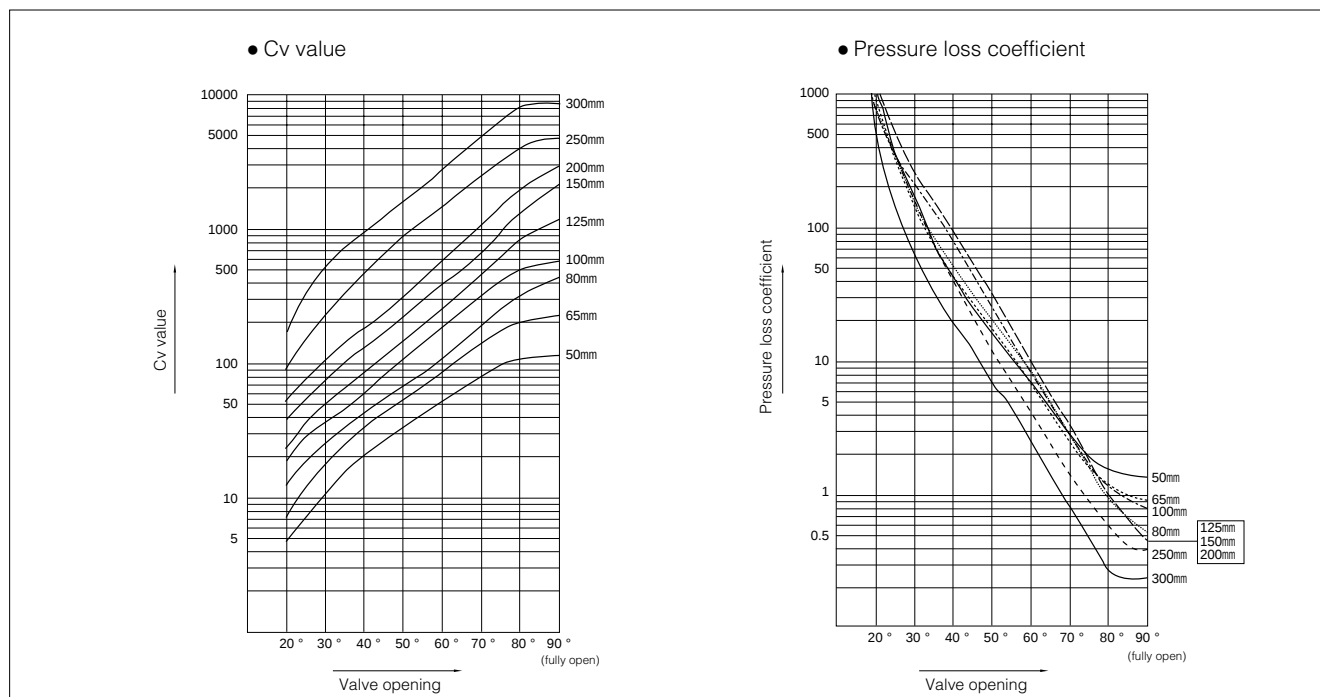
846T Cv value

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

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

847T 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

846T/847T (Wafer)/847Q (Lugged)

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

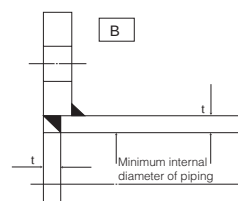
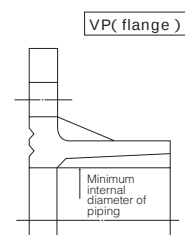
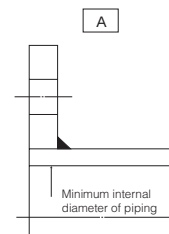
847T/846T Applicable pipe list in case of **B**

■ 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	○	○	○	○	○



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 PN10	DIN NP10	BS10 Table E
mm	inch	5K	10K	125Lb	150Lb			
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 PN10	DIN NP10	BS10 Table E
mm	inch	5K	10K	125Lb	150Lb			
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

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

847T/ 846T Piping bolt and nut sizes

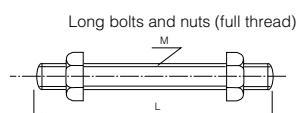
■ Piping bolts sizes

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

