

# 846T/847T/847Q

## Standard specification for 846T/847T/847Q

Model	846T/847Q	847T/847Q	
Size	65 to 200 mm (6 size)	50 to 200 mm (7 size)	
Applicable flange standards	JIS 5K/10K ANSI 125/150Lb, ISO 6/10/16, BS 10E DIN 2632 BS 4504 6/10/16		
Face-to-face dimension	JIS B 2002 series 46 / ISO 5752 (series 20)		
Max. working pressure	0.98 MPa <sup>*1</sup> (10 kgf/cm <sup>2</sup> G)		
Body test pressure	1.47MPa (15 kgf/cm <sup>2</sup> G)		
Seat leakage test pressure	1.08 MPa (11 kgf/cm <sup>2</sup> G)		
Working temperature range	-20 to 120°C <sup>*1</sup>	-20 to 200°C <sup>*1</sup>	
Working temperature range for continues use	0 to 80°C <sup>*1</sup>	0 to 150°C <sup>*1</sup>	
Standard materials	Body	FCD-S / A395	
	Disc	PPS	304 Stainless steel + PFA lining
	Stem	Stainless steel	304 Stainless steel + PFA lining
	Seat ring	PFA (Back up rubber: FPM)	
Coating	Epoxy primer (Munsell 7)		

\*1 Please refer to Pressure – Temperature leakage chart.

Note: "Teflon" is a registered trademark for a fluoride resin produced by Du Pont Inc. and Mitsui Fluorochemical Co., Ltd.

## 846T/847T/847Q Heavy duty selection

The following conditions are categorized as heavy duty conditions.

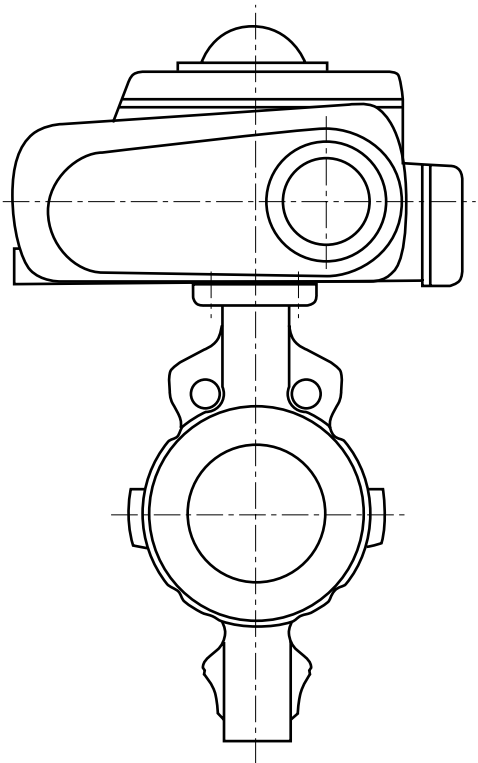
- ① The flow temperature is over 60°C.
- ② Powder, high viscosity fluids.
- ③ High velocity (over 3 m/s)
- ④ Throttling
- ⑤ Slow closing time (over 30 sec)
- ⑥ Dead end service, pump delivery, emergency output.

## Caution of actuator mounting for 847T/847Q at high temperature working condition

Our actuators are designed to work within the maximum temperature limits. However, in cases of temperature above 100°C, heat insulation is recommended.

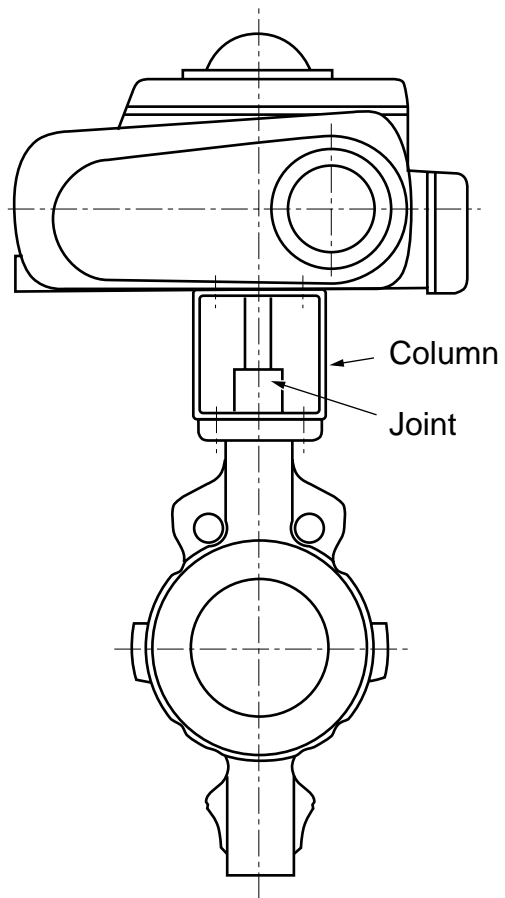
Please refer to below when selecting the actuators.

Type	Less than 100°C	Over 100°C
847T-4I	Standard finish	Extension column as below.
847T-3I		



**Standard finish**

Fluid temperature: not higher than 100°C



**High temperature finish**

Fluid temperature: over 100°C

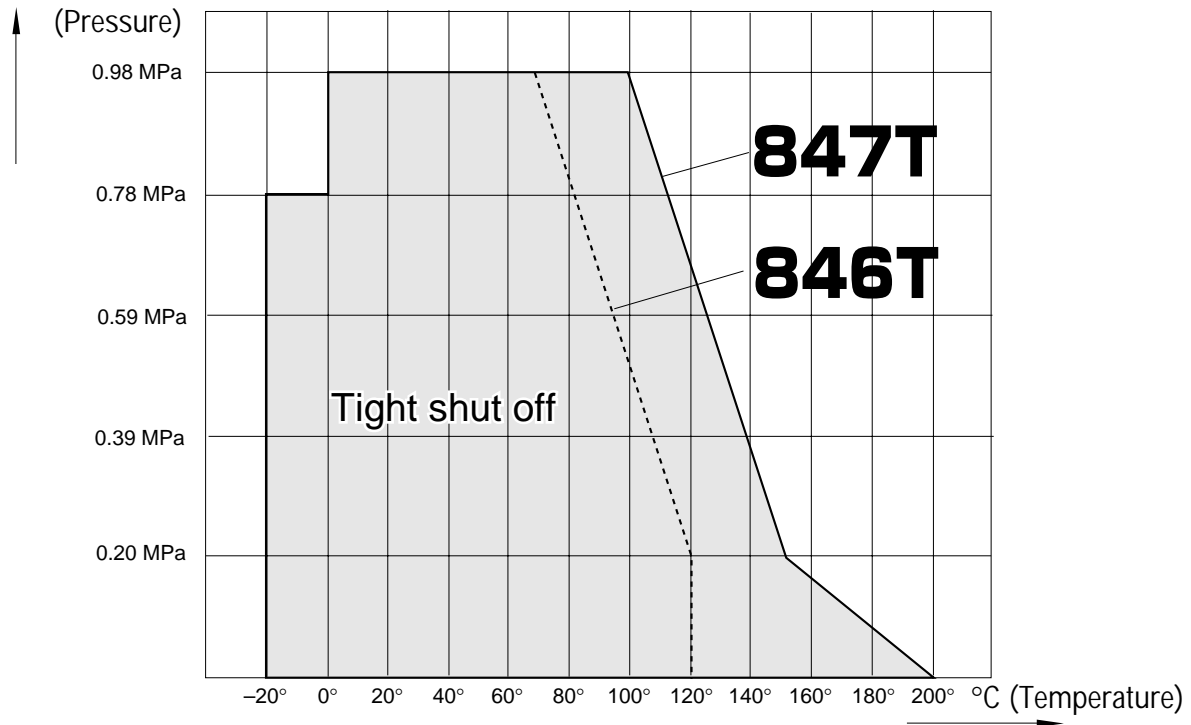
**846T/847T/847Q Actuator selection chart**

Valve nominal size		3I		3Q · 3R		3Y · 3A			
mm	inch	Standard	Heavy duty	Standard	Heavy duty	Standard	Heavy duty		
		Double Acting	Double Acting	Single Acting	Single Acting				
50	2	Type 1	Type 1	Type 2	Type 3	Z-06			
65	2 ½		Type 2			Type 3	Z-08		
80	3			Type 2					Type 3
100	4	Type 3	Type 4		Z-13				
125	5						Type 3	Type 4	
150	6	Type 3	Type 4	Z-13					
200	8					Type 4			

Valve nominal size		3X · 3W · 3T · 3S		4I		4E		
mm	inch	Standard	Heavy duty	Standard	Heavy duty	Standard	Heavy duty	
50	2	Z-08S		Type 1		SRE-010		
65	2 ½							Z-11S
80	3	Z-12S						
100	4		Z-13S	Type 2.5	SRE-060			
125	5	AW-13S						
150	6							
200	8							

\* The selection of pneumatic cylinder is based on 0.39 MPa air supply.

**846T/847T Pressure – Temperature chart**



**Butterfly valves  
Auto Actuated**

**846T/847T Basic torque chart**

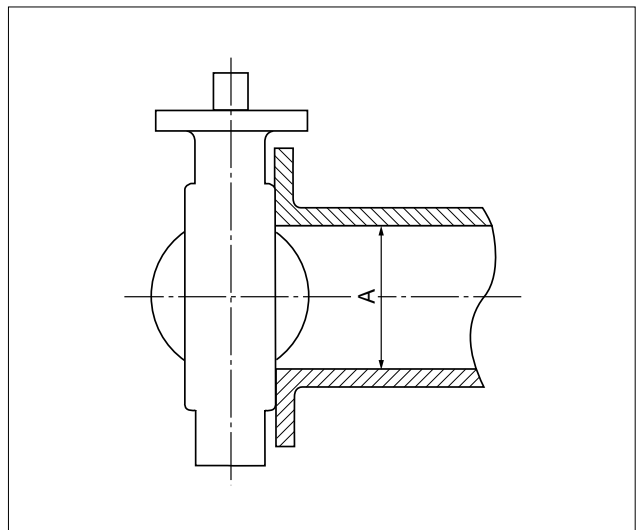
(Unit: N·m)

Size		Basic torque
mm	inch	
50	2	24.5
65	2 ½	27.4
80	3	35.3
100	4	49.0
125	5	73.5
150	6	98.0
200	8	156.8

**Minimum internal piping diameter for 846T/847T**

(Unit: mm)

Size		Minimum diameter A
mm	inch	
50	2	34
65	2 ½	51
80	3	70
100	4	91
125	5	118
150	6	144
200	8	194

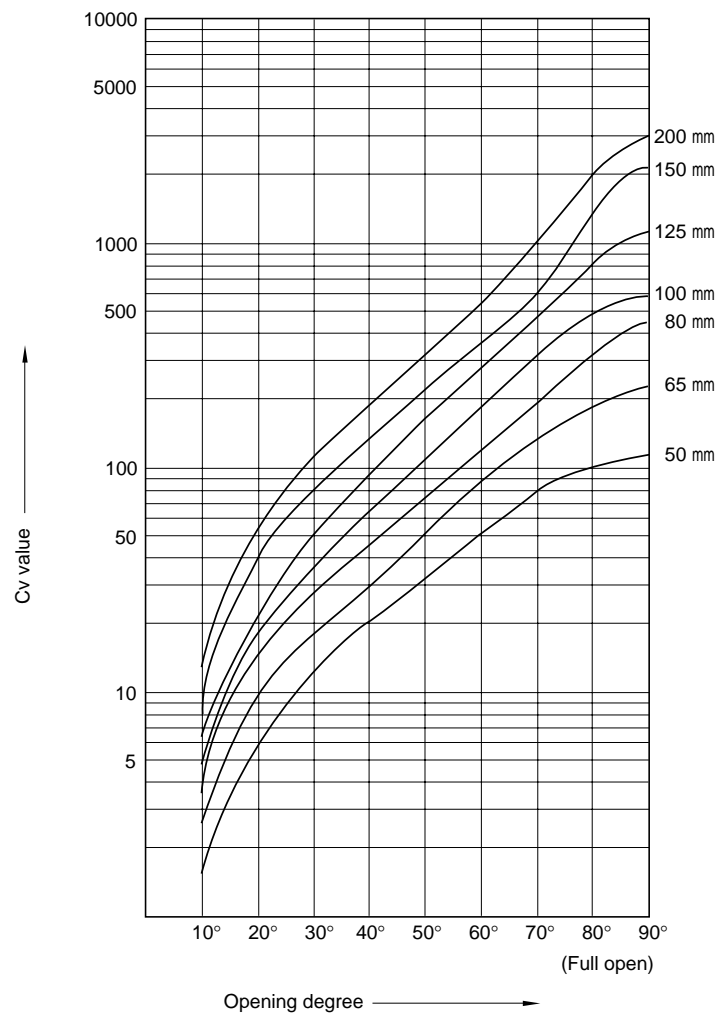


# 846T/847T/847Q

## 846T/847T/847Q Cv value

Cv value is defined as follows:

The flow rate expressed as US gal./min. at which a fresh water of 60°F flows when the pressure difference across the valve is maintained at 1 psi.



### 846T Cv value chart

Size		Opening degree							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
50	2	13	26	41	62	101	122	130	135
65	2½	16	41	72	112	192	213	220	225
80	3	21	58	101	164	305	429	455	465
100	4	34	72	134	232	428	710	788	810
125	5	45	99	193	332	648	1005	1143	1200
150	6	72	149	299	556	968	1665	1859	1950
200	8	107	266	562	862	1691	2716	3187	3300

### 847T Cv value chart

Size		Opening degree							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
50	2	5	10	20	32	51	77	103	114
65	2½	10	20	35	58	93	155	217	229
80	3	13	26	43	66	104	190	304	428
100	4	14	31	54	91	160	279	459	585
125	5	24	47	82	143	248	444	816	1170
150	6	38	73	126	220	382	619	1242	2080
200	8	53	103	176	305	551	988	1864	2910

Cv value · Pressure  
loss coefficient

### 847T Pressure loss coefficient at full open position

Size		Pipe inside dia. D (cm)	Flow rate Q (ℓ/min)	Actual Cv (—)	Differential pressure ΔP (MPa)	Equivalent pipe length L (m)	Coefficient ζ (—)	Opening sectional area A (cm <sup>2</sup> )
mm	inch							
50	2	5.3	623	114	0.1470	2.78	1.300	11.21
65	2½	6.8	889	229	0.0740	2.45	0.875	19.44
80	3	8.1	1373	428	0.0505	1.75	0.503	32.10
100	4	10.5	2653	585	0.1010	3.67	0.760	52.64
125	5	13.1	3718	1170	0.0496	2.83	0.460	87.80
150	6	15.5	5371	2080	0.0327	2.15	0.285	132.50
200	8	20.5	9294	2910	0.0501	4.65	0.446	233.20

### 846T Pressure loss coefficient

Size		Opening degree							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
50	2	97.6	24.4	9.81	4.29	1.62	1.11	0.976	0.905
65	2½	158	24.0	7.78	3.21	1.09	0.889	0.833	0.796
80	3	180	23.6	7.80	2.96	0.855	0.432	0.384	0.368
100	4	203	45.2	13.0	4.35	1.28	0.465	0.377	0.357
125	5	271	56.0	14.7	4.98	1.31	0.544	0.420	0.381
150	6	214	50.1	12.4	3.60	1.19	0.401	0.322	0.292
200	8	298	48.2	10.8	4.59	1.19	0.463	0.336	0.313

### 847T Pressure loss coefficient

Size		Opening degree							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
50	2	660	165	41.2	16.1	6.34	2.78	1.55	1.27
65	2½	403	101	32.9	12.0	4.66	1.68	0.856	0.769
80	3	471	118	43.0	18.3	7.35	2.20	0.861	0.434
100	4	1195	244	80.3	28.3	9.15	3.01	1.11	0.684
125	5	953	249	81.7	26.9	8.93	2.79	0.825	0.401
150	6	770	209	70.0	23.0	7.62	2.90	0.721	0.257
200	8	1215	322	110	36.7	11.2	3.50	0.983	0.403

