

841T/842T

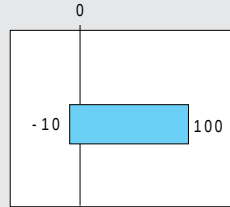
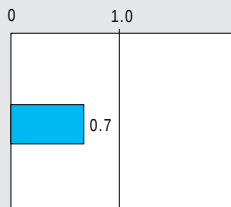
Valve nominal size

841T 250 to 600mm

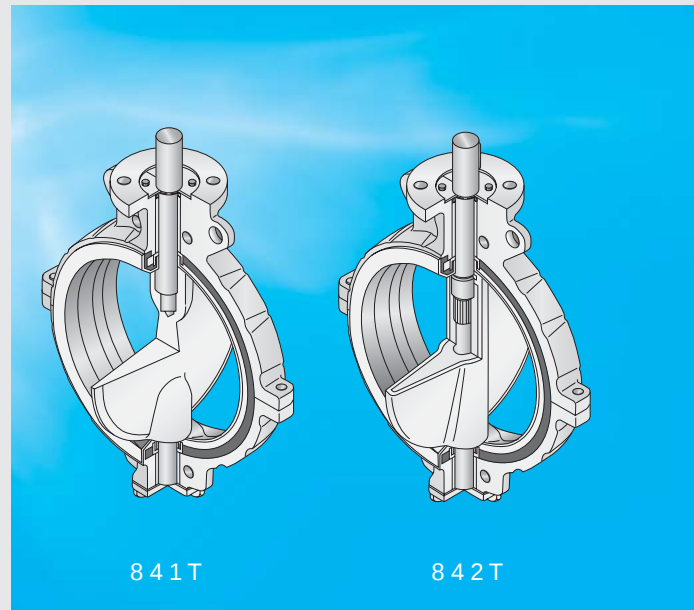
842T 350 to 600mm

Max. Working pressure MPa

Working temperature range degrees C



CE CE Marking(842T)



Bubble Tight Seal and No Leakage

Teflon®, or Tetrafluoroethylene, developed by Du Pont Inc. does not react to most of the chemicals used in modern chemical processing — even at high temperatures and high pressures. It is recognized as an ideal material for industrial valves that handle highly corrosive fluids. Teflon® has a low friction coefficient and excellent lubricity when used in contact with metal surface. TOMOE's 842T butterfly valve takes full advantage of these superior qualities of Teflon®: it protects all wetted parts and it guides all stems. It has 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.

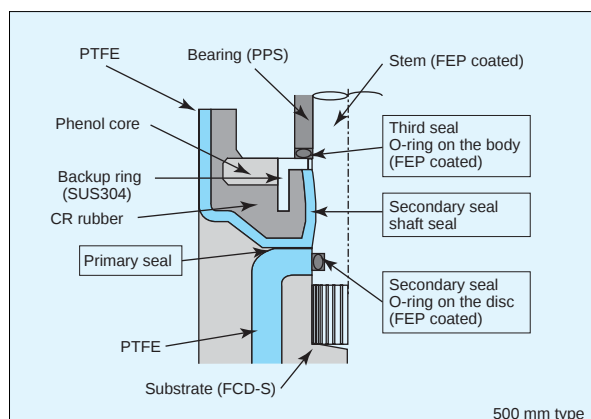
TOMOE butterfly valves are bi-directional and withstand pressures to 0.7 MPa from either direction.

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. This is shown in the illustration below,

Primary seal: Interference fit between the disc and seat.

Secondary seal: Interference fit between the stem and the PTFE liner.

Third seal: O-Ring, commonly called the stem seal.



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.

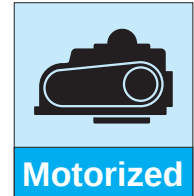
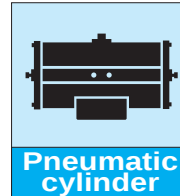
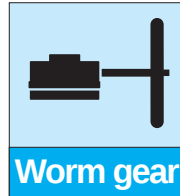
Piping: Pipelines for oxygen and other highly oxidizing agents.

5. In processes requiring sanitation or 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.

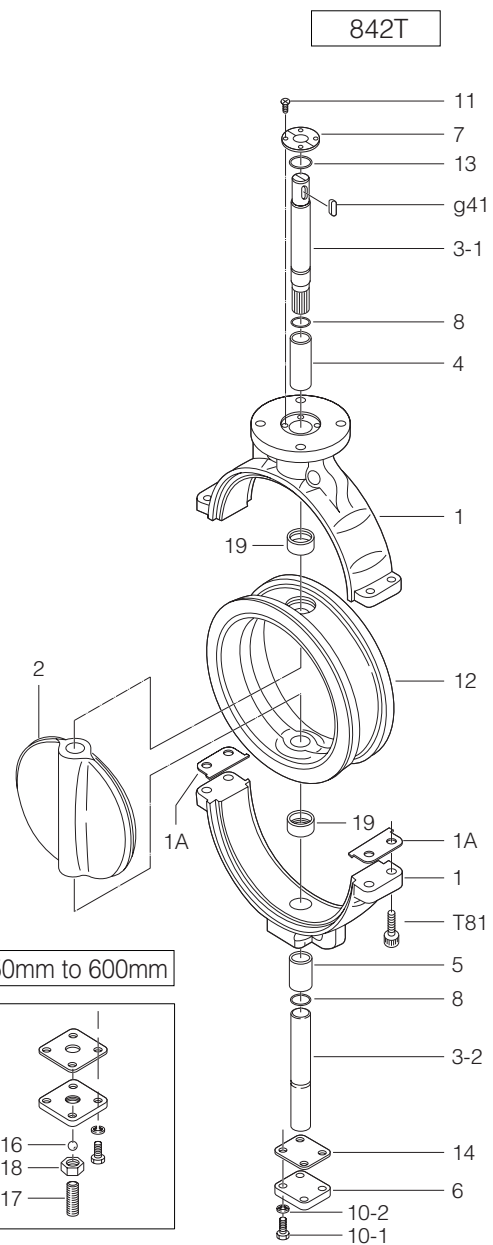
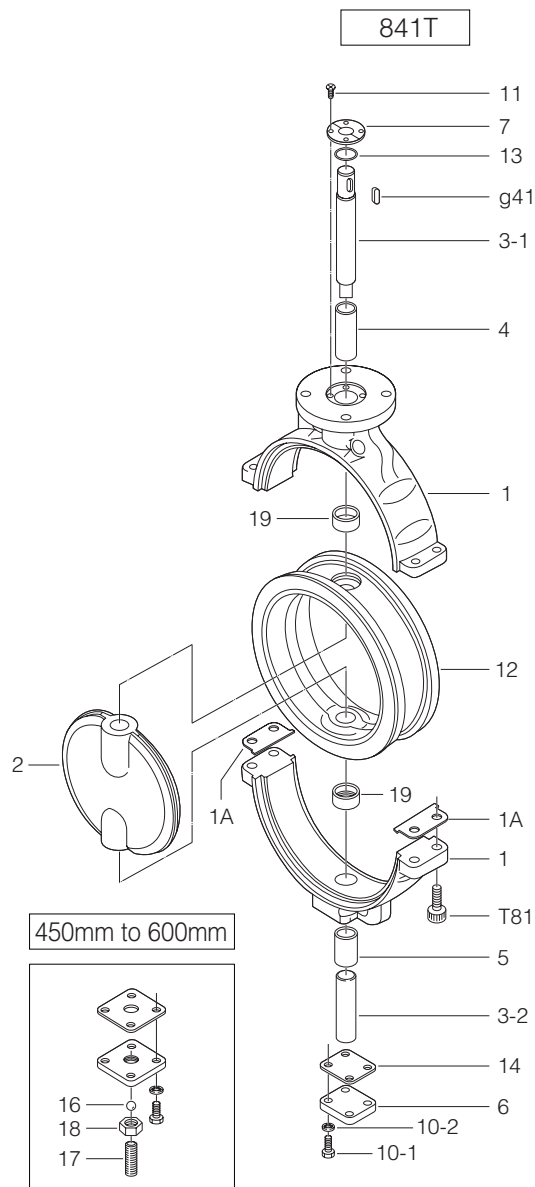


841T/842T Standard specifications			
Valve type		841T	842T
Body shape (centering method)		Concentric design, wafer type	
Valve nominal size		250, 300, 350, 400, 450, 500, 600mm	350, 400, 450, 500, 600mm
Applicable flange standard		JIS 10K, ANSI 125Lb/150Lb DIN NP10 BS 4504 PN10, BS 10Table E	
Face-to-face dimensions		Manufacturer standard	
Max.Working pressure		0.7MPa	
Seat leakage		Tight shut-off	
Flow direction		Bi-directional	
Pressure test	Body shell	1.05MPa(Hydraulic)	
	Seat leakage	0.7MPa(250, 300mm: Pneumatic 350mm and higher: Hydraulic)	
Working temperature range		- 10 to 100 degrees C	
Woking 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. Molded gaskets require special dimensions. (Refer to dimension chart.) Off-the-shelf seat gaskets can be used for 250mm to 400mm types. 450mm to 600mm types require special inner diameter dimensions. (Refer to dimension chart.)	
Coating		250mm and 300mm types: Epoxy resin coated (Munsell N7); 350mm types and higher: Lacquer primer (Munsell N7)	

* Teflon® is a registered trademark for a fluoride resin produced by Mitsui-Du Pont Fluorochemical Co., Ltd.
1. "Working temperature in continuous use" stands for the temperature continuously kept exceeding one hour.

841T/842T

841T/842T Expanded view of components



841T/842T Parts list

■ 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

841T/842T Actuator selection chart

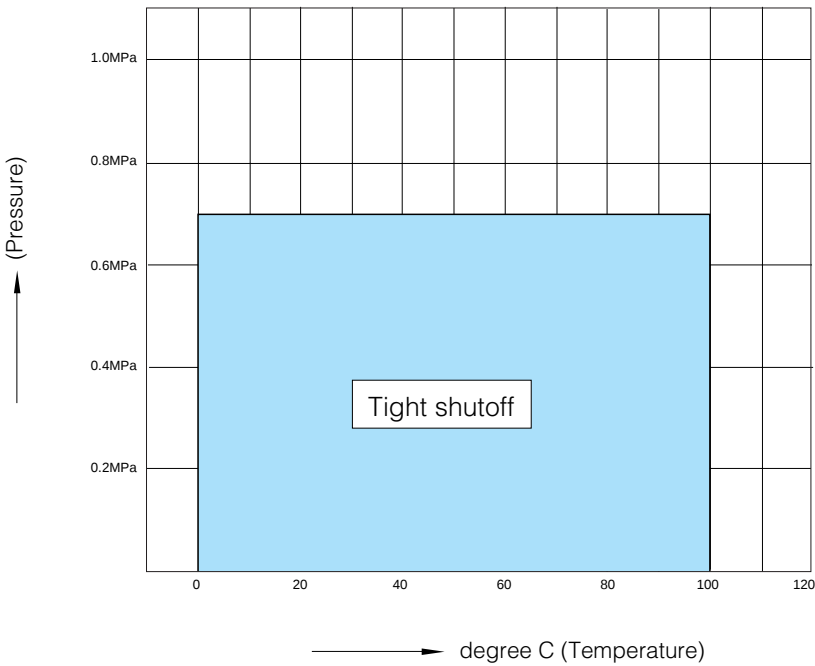
■ 841T/842T

Model	Category	Size (mm inch)							
		250	300	350	400	450	500	600	
		10	12	14	16	18	20	24	
2S	Standard	MGH-2		MGH-3				MGH-4	
	Heavy duty								
3E,3A	Standard	K700	TGA-125		TGA-140	TGA-160		TGA-200	
	Heavy duty		TGA-125		TGA-140	TGA-160	TGA-180		
3U,3K	Standard	TG-12S	TG-14S		TG-20S				
	Heavy duty								
4 I	ON-OFF	4 I-3		4 I-4					
	Control								
4L	Standard	LTKD-01 0.2kW/ MGH-2		LTKD-01 0.4kW/MGH-3				LTKD-02 0.75kW/ MGH-3	LTKD-05 0.75kW/ MGH-4
	Heavy duty								

842T: 350mm to 600mm

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

841T/842T Pressure-temperature rating

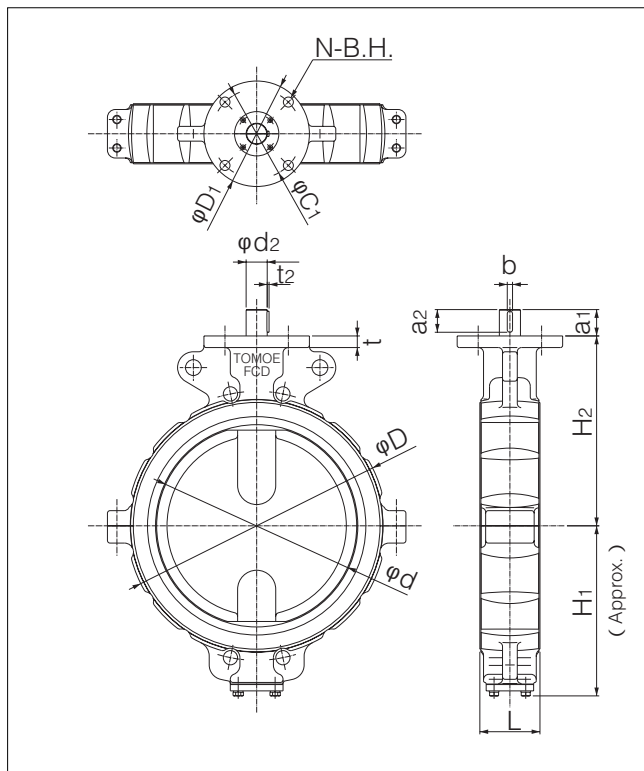


■ 841T/842T

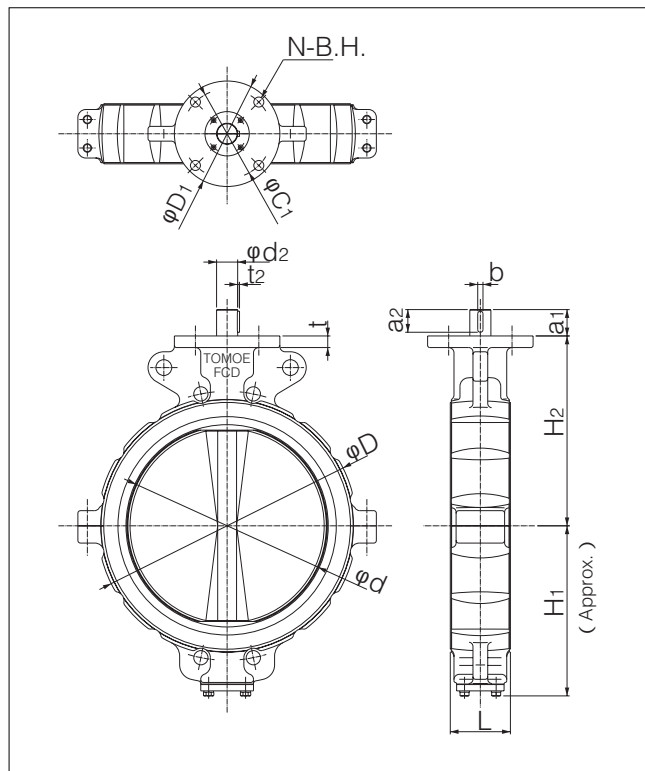
Nominal size		Dimension (mm)															Approx. Mass (kg)
mm	inch	ϕd	ϕD	L	H ₁	H ₂	a ₁	a ₂	ϕd_2	b	t ₂	t	D ₁	C ₁	N	B.H.	
250	10	248	338	90	221	250	42	35	24	7	3	18	155	125	4	15	31
300	12	295	382	90	261	280	50	43	35.5	10	3.5	18	155	125	4	15	39
350	14	332	428	100	293	320	50	43	40	10	3.5	20	200	170	4	19	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

842T: 350mm to 600mm

■ 841 T 250mm to 600mm



■ 842 T 350mm to 600mm



841T/842T

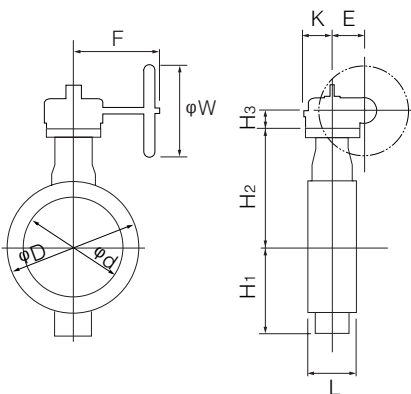
Worm gear type 841T-2S(250mm to 600mm) / 842T-2S(350mm to 600mm)

■ 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		
250	10	248	338	90	221	250	42	85	126	229	200	MGH-2	48
300	12	295	382	90	261	280	42	85	126	229	200	MGH-2	56
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

842T: 350mm to 600mm

■ 841T/842T-2S



■ 2S Installation direction

2SA(standard)	2SAR	2SB	2SBR

Double-acting pneumatic cylinder type 841T-3E(250mm to 300mm)

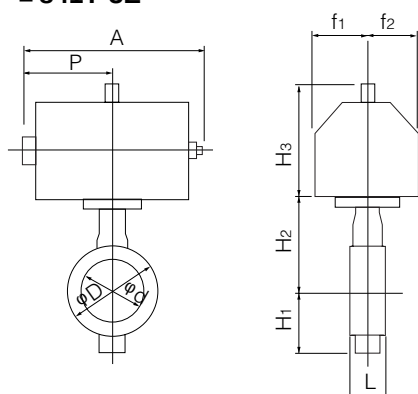
■ Standard

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	248	338	90	221	250	324	520	260	101	85	K700	58
300	12	295	382	90	261	280	324	520	260	101	85	K700	66

■ Heavy duty

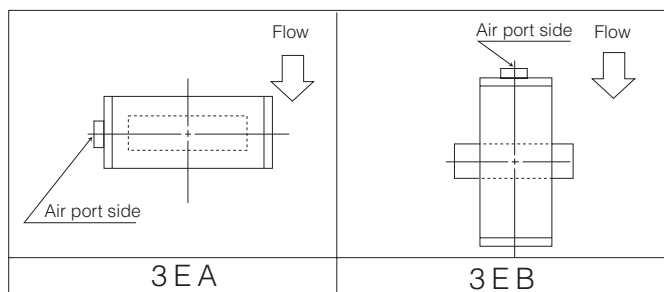
Nominal size		Dimension (mm)										Cylinder type	Approx. Mass (kg)
mm	inch	ϕd	ϕD	L	H ₁	H ₂	H ₃	A	P	f ₁	f ₂		
250	10	248	338	90	221	250	324	520	260	101	85	K700	58

■ 841T-3E



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

■ 3E Installation direction



841T/842T

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

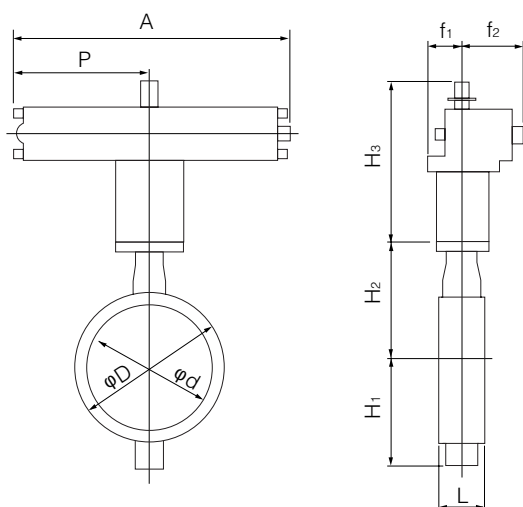
■ Standard

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		
300	12	295	382	90	261	280	359	743	362	100	164	TGA-125	82
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. ① Powder or high viscosity fluid (crude oil, etc.) ② Control specification (with positioner) ③ Emergency 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		
250	10	248	338	90	221	250	307	1080	720	94	206	TG-12S	126
300	12	295	382	90	261	280	307	1080	720	94	206	TG-12S	134
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

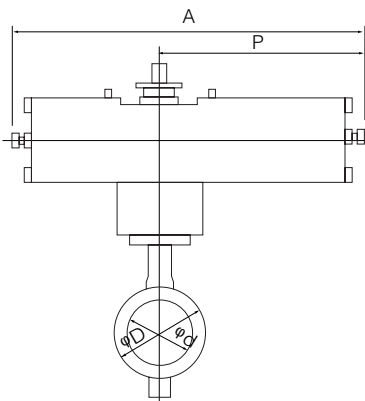
■ Heavy duty

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		
250	10	248	338	90	221	250	307	1080	720	94	206	TG-12S	126
300	12	295	382	90	261	280	340	1255	865	131	257	TG-14S	235
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

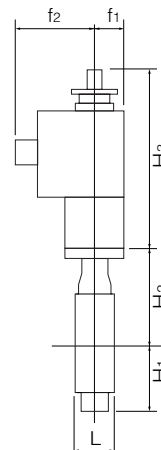
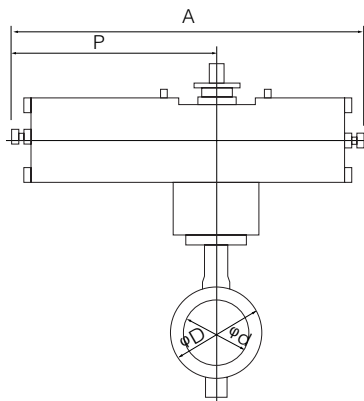
842T: 350mm to 600mm

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

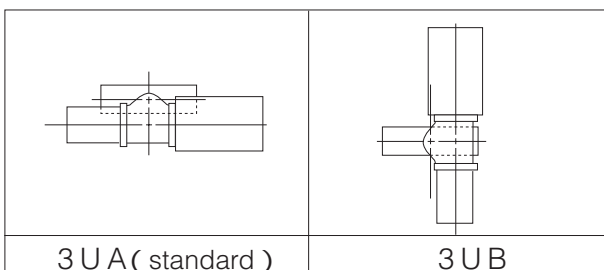
■ 841T/842T-3U



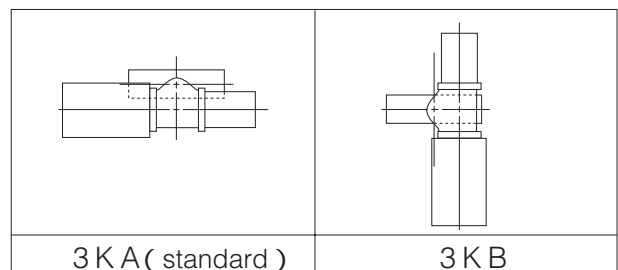
■ 841T/842T-3K



■ 3U Installation direction



■ 3K Installation direction



841T/842T

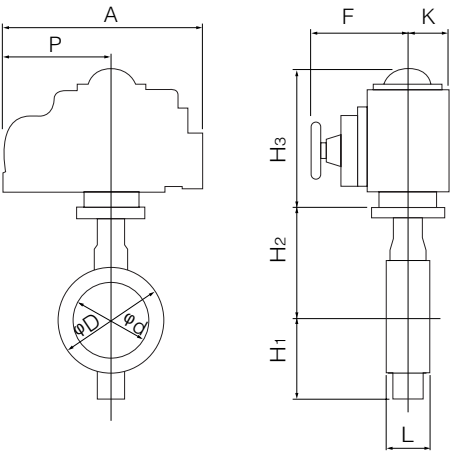
Single phase electric motor type 841T-4 I(250mm to 450mm) / 842T-4 I(350mm to 450mm)

■ 841T/842T

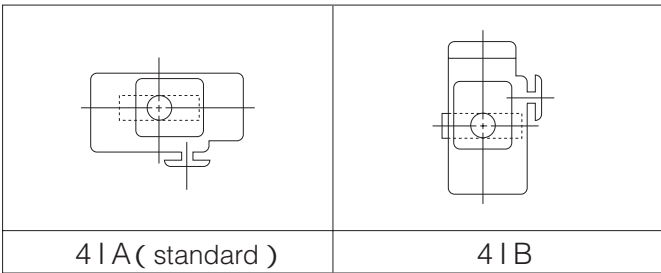
Nominal size		Dimension (mm)										Motor type	Approx. Mass (kg)
mm	inch	ϕd	ϕD	L	H ₁	H ₂	H ₃	A	P	F	K		
250	10	248	338	90	221	250	233	388	223	246	136	4 I-3	55
300	12	295	382	90	261	280	233	388	223	246	136	4 I-3	63
350	14	332	428	100	293	320	233	388	223	246	136	4 I-4	89
400	16	383	491	110	323	360	233	388	223	246	136	4 I-4	109
450	18	435	540	120	367	390	233	388	223	246	136	4 I-4	158

842T: 350mm to 450mm

■ 841T/842T-4 I



■ 4I Installation direction



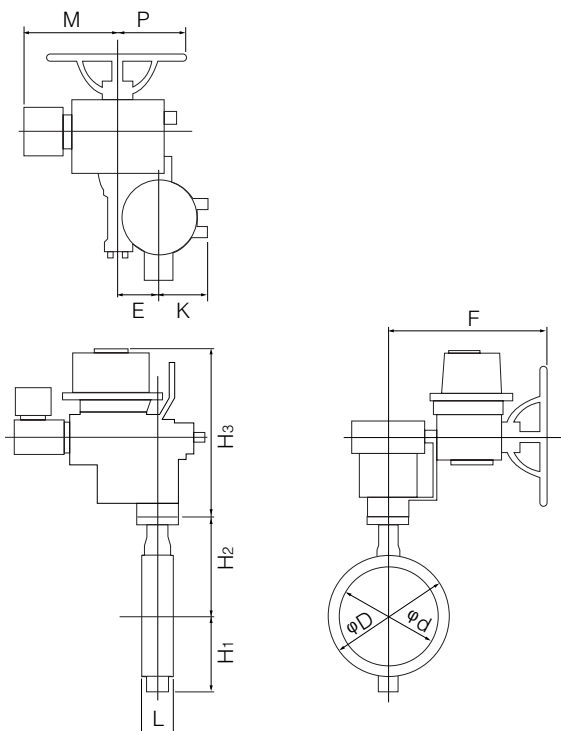
Three phase motor actuator type 841T-4L(300mm to 600mm) / 842T-4L(350mm to 600mm)

■ 841T/842T

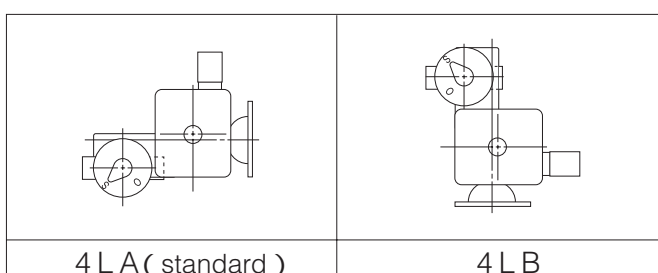
Nominal size		Dimension (mm)											Motor type	Approx. Mass (kg)
mm	inch	φd	φD	L	H ₁	H ₂	H ₃	E	K	F	M	P		
300	12	295	382	90	261	280	415	85	126	479	363	230	LTKD-01 0.2kW /MGH-2	130
350	14	332	428	100	293	320	458	117	164	533	373	230	LTKD-01 0.4kW /MGH-3	186
400	16	383	491	110	323	360	458	117	164	533	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

842T: 350mm to 600mm

■ 841T/842T-4L

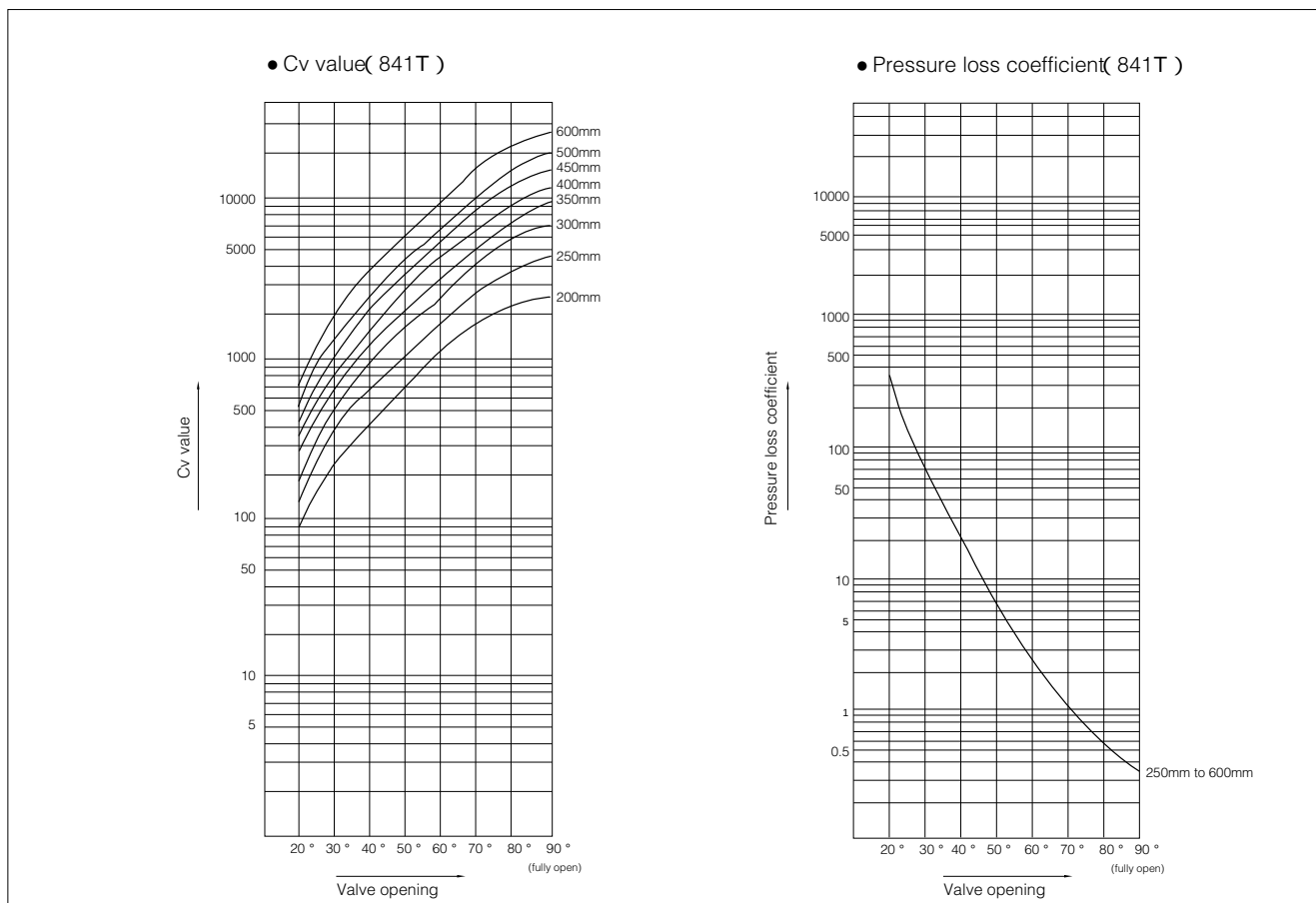


■ 4L Installation direction



841T/842T

841T Cv value/pressure loss coefficient



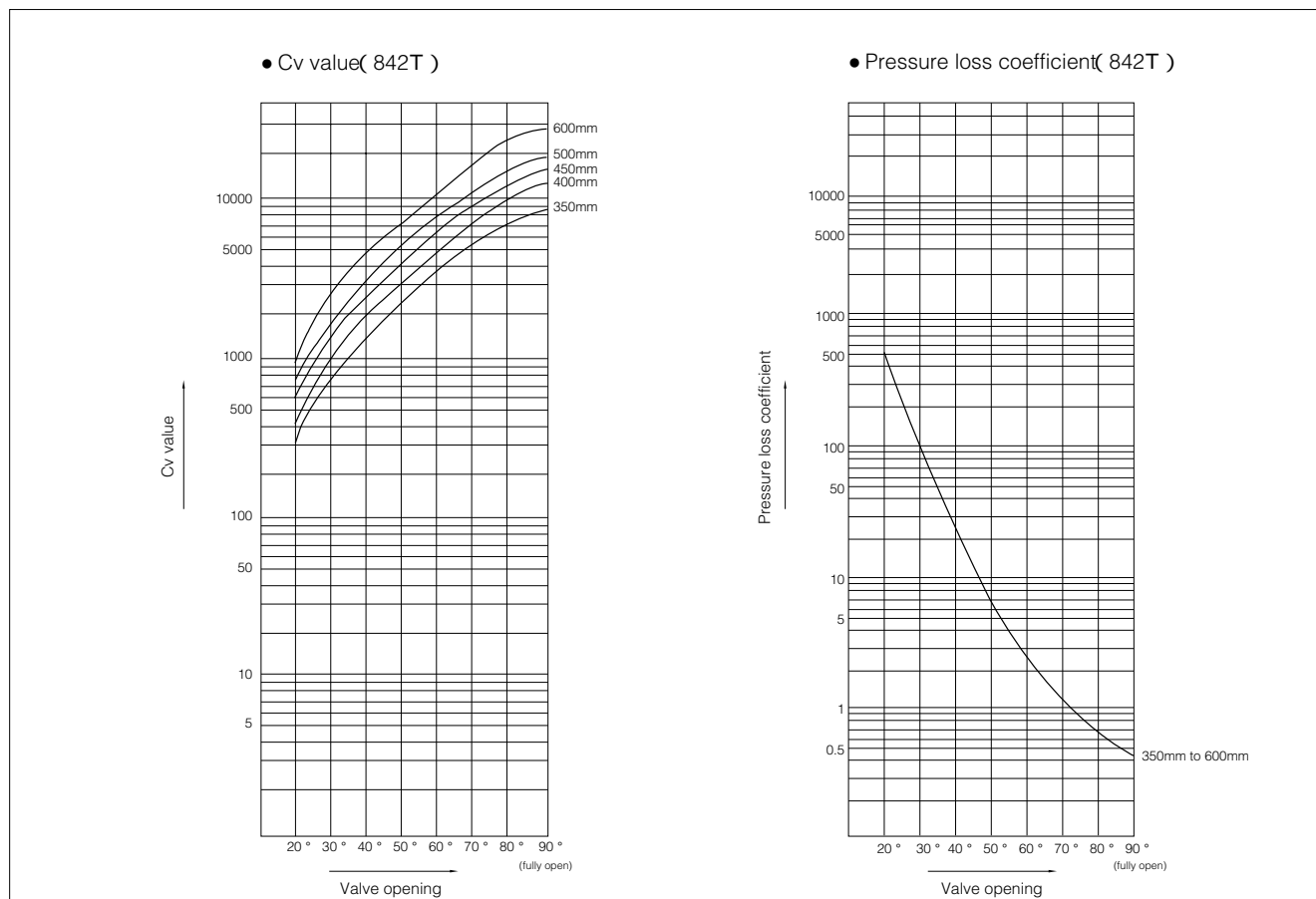
841T Cv value

Nominal size		Valve opening							
		20°	30°	40°	50°	60°	70°	80°	90°
mm	inch								
250	10	129	376	675	1086	1774	2827	4094	4500
300	12	181	527	961	1567	2550	4007	5651	6900
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							
		20°	30°	40°	50°	60°	70°	80°	90°
mm	inch								
250	10	536	63	20	8	3	1	1	0.4
300	12	561	66	20	8	3	1	1	0.4
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

841T/842T Applicable flange standard

Nominal size		JIS 10K	ANSI		BS4504 PN10	DIN NP10	BS10 Table E
mm	inch		125Lb	150Lb			
250	10	D	D	D	D	D	D
300	12	D	D	D	D	D	D
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	x
600	24	T	T	T	T	T	x

D: With flange drilling
T: With flange tapping
x: 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							
250	10	o	o	o	o	o	o	236
300	12	o	o	o	o	o	o	286
350	14	o	o	o	o	-	-	322
400	16	o	o	o	-	-	-	372
450	18	o	o	o	-	-	-	421
500	20	o	o	o	-	-	-	463
600	24	-	o	o	-	-	-	566

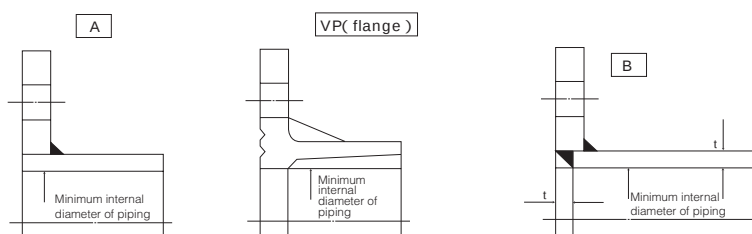
841T/842T Applicable pipe list in case of **B**

Nominal size		SGP	Sch20	Sch40	Sch10S	Sch20S
mm	inch					
250	10	o	o	o	o	o
300	12	o	o	o	o	o
350	14	o	o	o	-	-
400	16	o	o	o	-	-
450	18	o	o	o	-	-
500	20	o	o	o	-	-
600	24	-	o	o	-	-

Remark 1: o = Applicable

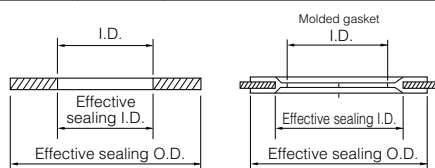
Remark 2: Butterfly valves are inserted into a pipe that was fitted with the disc when fully open.

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)
250	10	270	270	248	326
300	12	321	321	295	371
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		Teflon molded gasket	
mm	inch		JIS10K	ANSI 125Lb/150Lb	JIS10K	ANSI 125Lb/150Lb
250	10	270	○	×	×	×
300	12	321	○	×	×	×
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

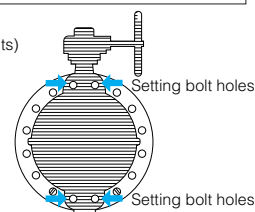
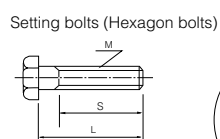
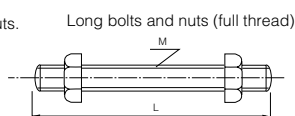
Nominal size		JIS 10K		ANSI 125Lb / 150Lb	
mm	inch	Long bolts and nuts	Setting bolts	Long bolts and nuts	Setting bolts
250	10	12-M22×195×45	—	12-U 7/8×220×55	—
300	12	16-M22×195×45	—	12-U 7/8×220×55	—
350	14	16-M22×215×45	—	12-U1 ×260×60	—
400	16	16-M24×230×50	—	16-U1 ×260×60	—
450	18	16-M24×245×50	8-M24×70×54	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.



Example

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

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