

# Rotary Damper (Manual Type)

## Features

-Butterfly valve for air volume control (complete sealing is not available.)



## Basic specifications

- Valve Type : Rotary Damper
- Size : 40 mm - 600 mm ( 1 1/2 inch - 24 inch )
- Body Material : U-PVC (Conforming to ASTM D1784 Cell Classification 12454A)  
: PP (Conforming to ASTM D4101 Cell Classification PP0210B67272)  
: PVDF (Conforming to ASTM D3222 Cell Classification Type II)
- Seal Material / O-ring : EPDM, FKM, etc.
- Connection / Wafer : JIS B2220 10K, JIS B2220 5K, DIN/EN1092-1, ANSI B16.5

	FLUID TEMPERATURE °C {°F}	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa {psi}	
		40mm - 200mm	250mm - 600mm
U-PVC	0 ~ 50 { 30~120 }	0.1 { 15 }	0.05 { 7 }
PP	-20 ~ 80 { -5~175 }	0.1 { 15 }	0.05 { 7 }
PVDF	-20 ~ 120 { -5~250 }	0.1 { 15 }	0.05 { 7 }

Note: The maximum working pressure is the value including the water hammer pressure.  
Be careful that the maximum working pressure is not exceeded during use.

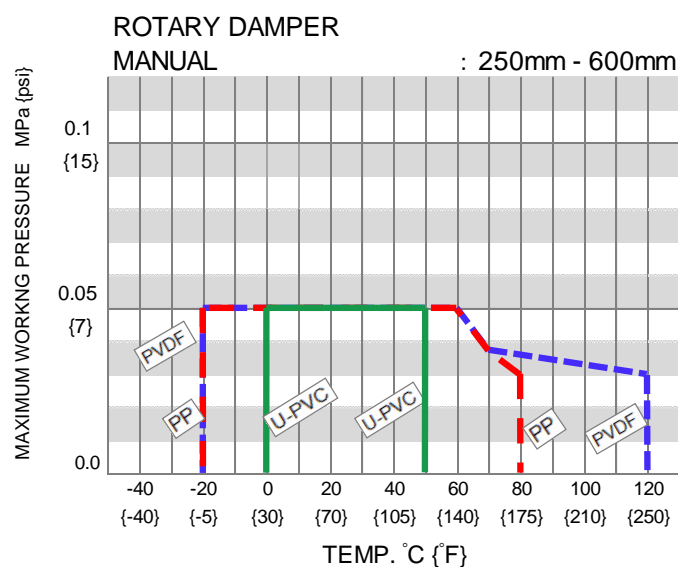
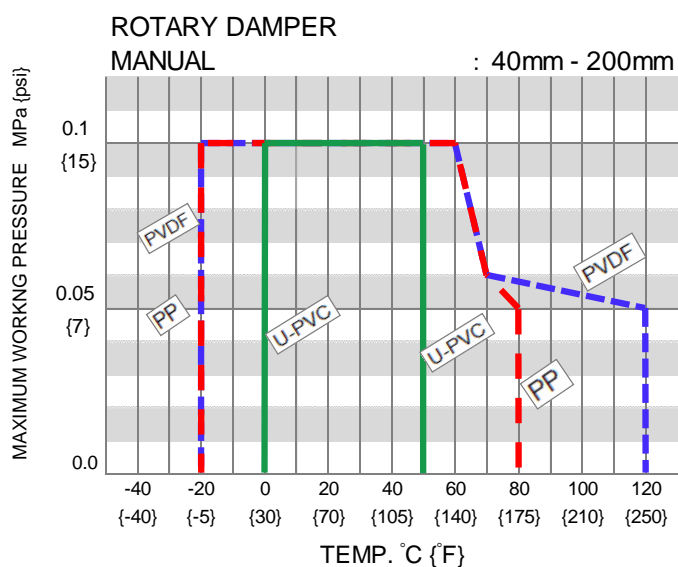
\* Concerning the allowable pressure for each temperature and material, see the technical documents at the next page of this sheet.

## Certificate / Approval

### PED

“For details of applicable products, please consult us.”

## Working pressure vs. Temperature

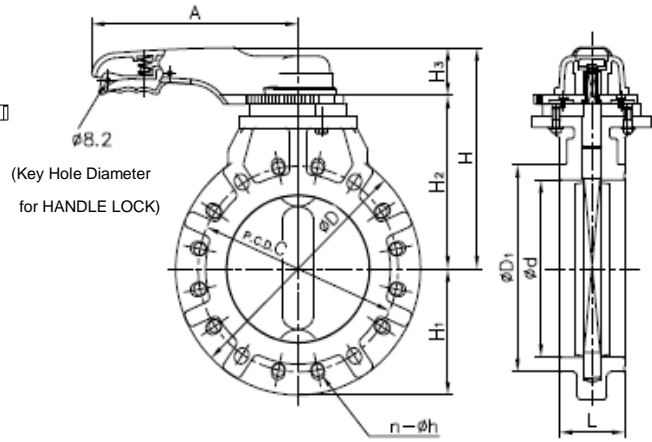
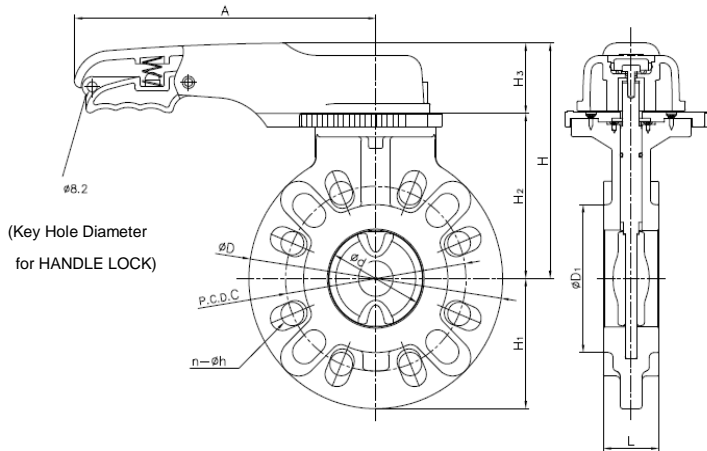


Note: Make sure that the temperature and pressure are within the working range during operation.  
(If the tolerance range is exceeded during use, the valve may be damaged.)

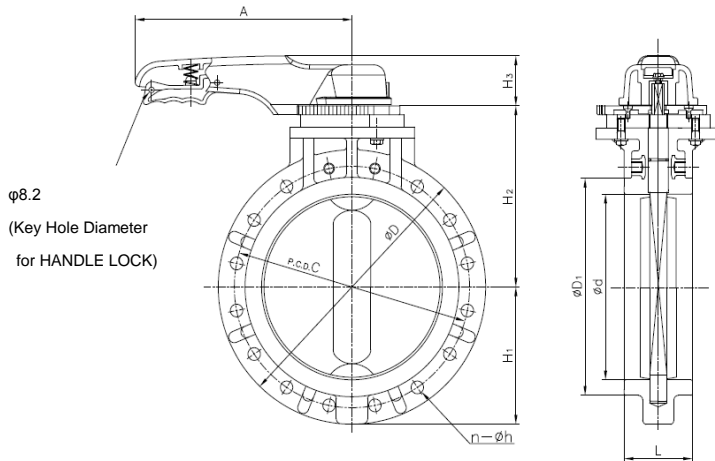
**Product dimension**

40mm (1 1/2") - 200mm (8")

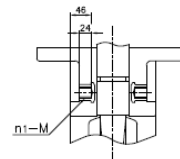
250mm (10") - 350mm (14")



400mm (16")

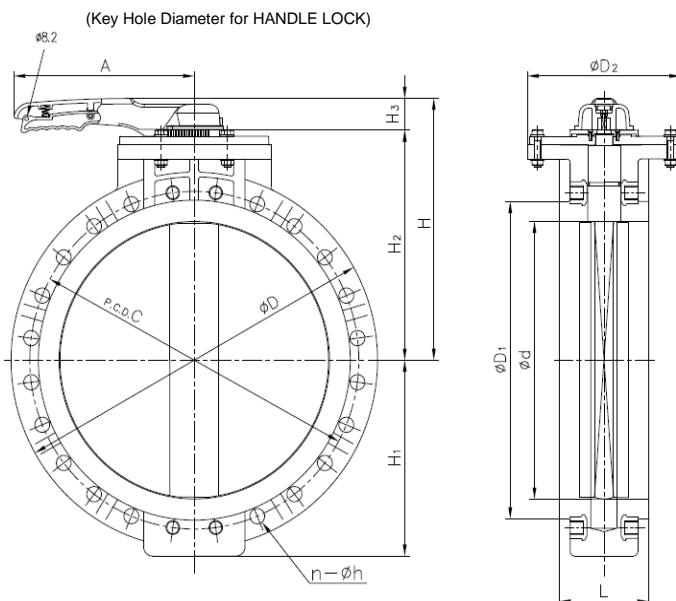


Detail of inserted nuts

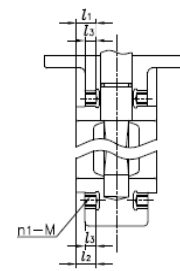


JIS 10K only

PP 450mm (18") - 600mm (24")



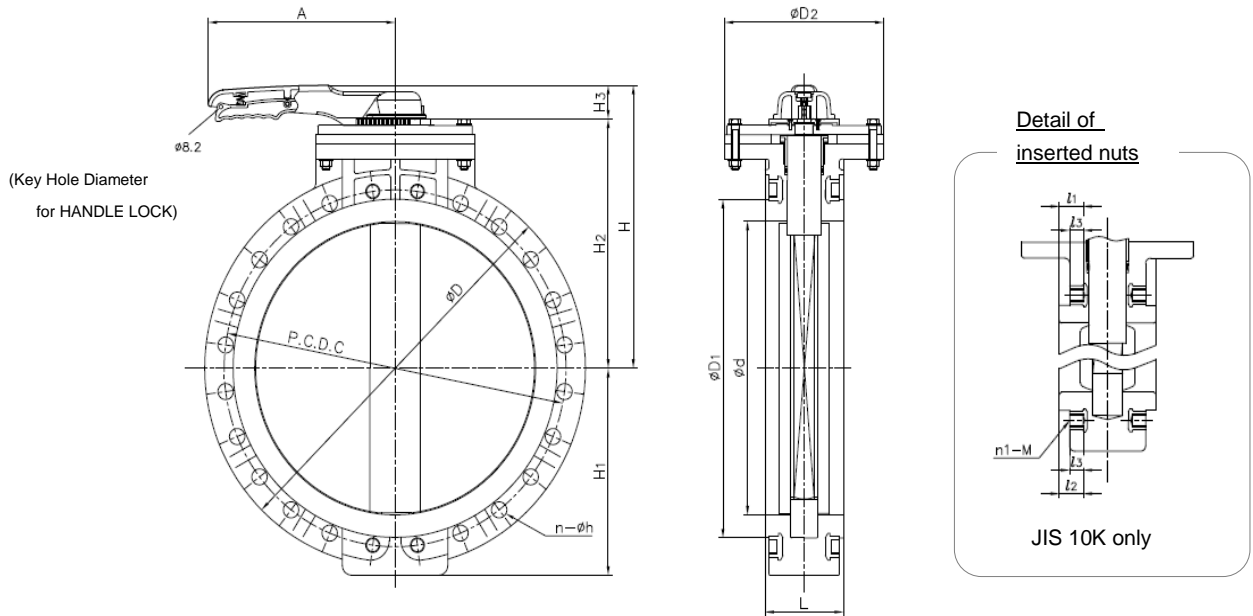
Detail of inserted nuts



JIS 10K only

PVDF

450mm (18") - 600mm (24")



■ 40 - 600mm JIS, DIN (Unit: mm)

mm	inch	d	D	D <sub>1</sub>	D <sub>2</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
40	1 1/2	46	150	86	—	32	156	75	100	56	220
50	2	57	165	96	—	35	166	83	110	56	220
65	2 1/2	70	185	116	—	37	176	93	120	56	220
80	3	78	211	120	—	37	191	106	135	56	250
100	4	103	238	152	—	47	206	119	150	56	250
125	5	128	263	190	—	57	237	132	168	69	320
150	6	150	285	208	—	62	252	143	183	69	320
200	8	195	340	264	—	76	283	170	214	69	400
250	10	251	421	332	—	96	342	211	273	69	400
300	12	303	488	400	—	116	399	244	330	69	400
350	14	352	539	414	—	116	426	270	357	69	400
400	16	394	600	470	—	157	451	300	382	69	400
450	18	441	630	525	340	167	496	315	402	69	400
500	20	488	699	575	340	177	526	350	432	69	400
600	24	600	813	686	340	197	591	424	497	69	400

JIS 5K		
C	n	h
95	4	15
105	4	15
130	4	15
145	4	19
165	8	19
200	8	19
230	8	19
280	8	23
345	12	23
390	12	23
435	12	25
495	16	25
555	16	25
605	20	25
715	20	27

JIS 10K				
C	n	h	n1	M
105	4	19	-	-
120	4	19	-	-
140	4	19	-	-
150	8	19	-	-
175	8	19	-	-
210	8	23	-	-
240	8	23	-	-
290	12	23	-	-
355	12	25	-	-
400	16	25	-	-
445	16	25	-	-
510	14	27	2	M24
565	16	27	4	M24
620	16	27	4	M24
730	20	33	4	M30

DIN PN10		
C	n	h
110	4	18
125	4	18
145	4	18
160	8	18
180	8	18
210	8	18
240	8	22
295	8	22
350	12	22
400	12	22
460	16	22
515	16	26
565	20	26
620	20	26
725	20	30

DATASHEET

■ 450 - 600mm JIS, DIN (Unit: mm)

mm	inch	d	D	D <sub>1</sub>	D <sub>2</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A	JIS 5K			JIS 10K					DIN PN10		
												C	n	h	C	n	h	n1	M	C	n	h
450	18	441	630	525	340	167	491	315	422	69	400	555	16	25	565	16	27	4	M24	565	20	26
500	20	488	680	575	340	177	521	350	452	69	400	605	20	25	620	16	27	4	M24	620	20	26
600	24	600	790	686	340	197	586	424	517	69	400	715	20	27	730	20	33	4	M30	725	20	30

(Detail of inserted nuts)

BODY: PP

(Unit: mm)

mm	inch	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>
450	18	43	48	24
500	20	43	53	24
600	24	58	58	30

BODY: PVDF

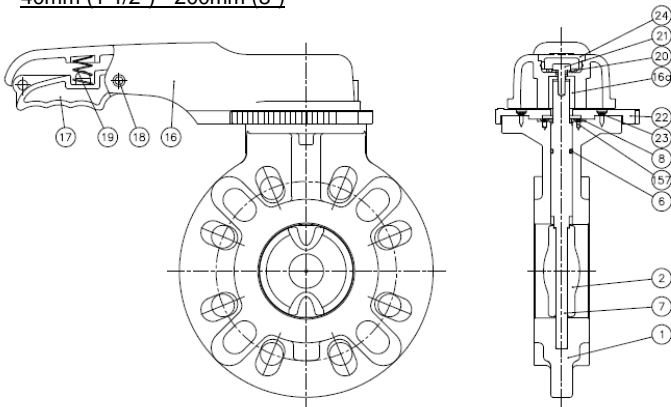
(Unit: mm)

mm	inch	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>
450	18	49	54	24
500	20	49	59	24
600	24	64	64	30

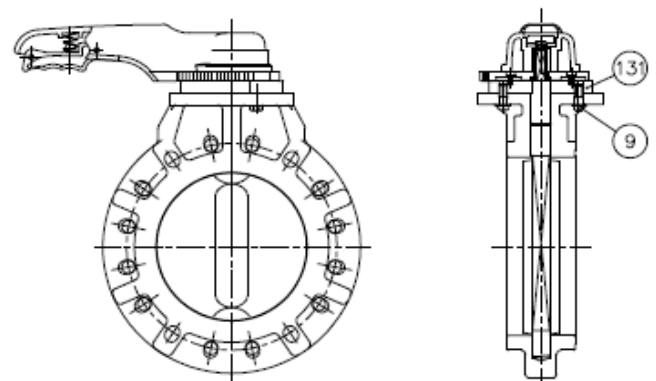
The shape and appearance of assembly differ a little with nominal size compared to this drawing.

Parts list

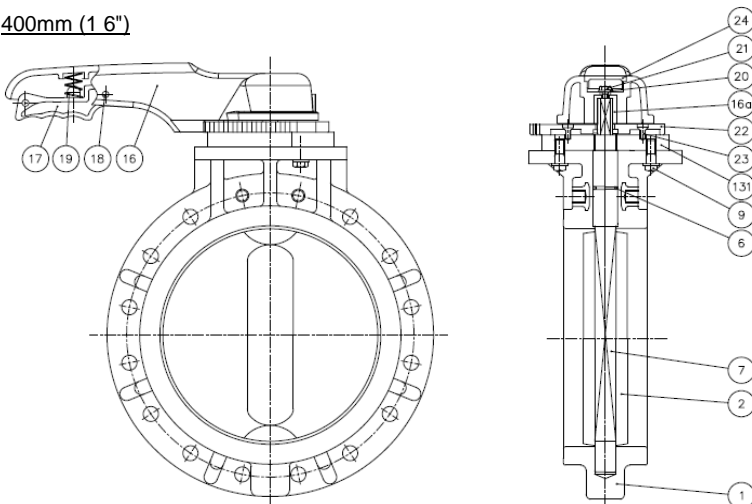
40mm (1 1/2") - 200mm (8")



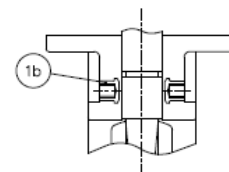
250mm (10") - 350mm (14")



400mm (1 6")

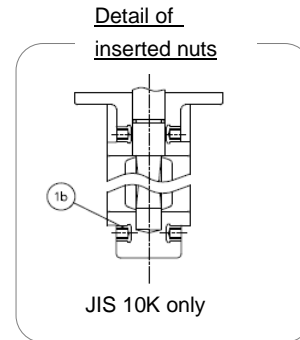
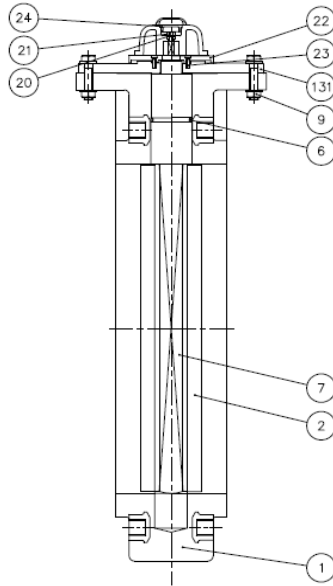
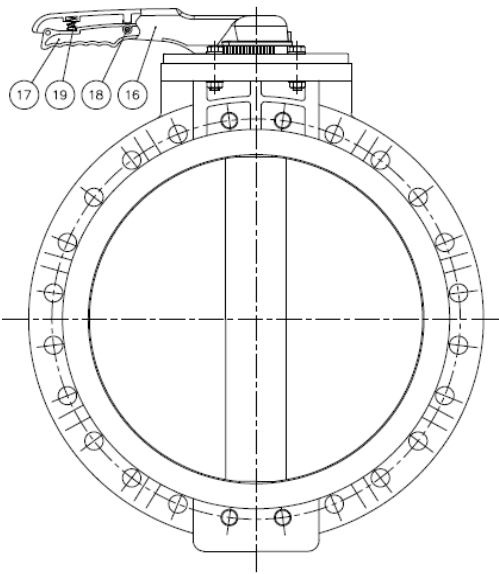


Detail of inserted nuts

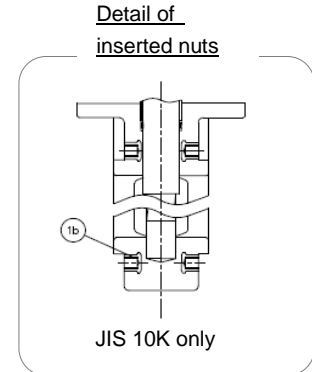
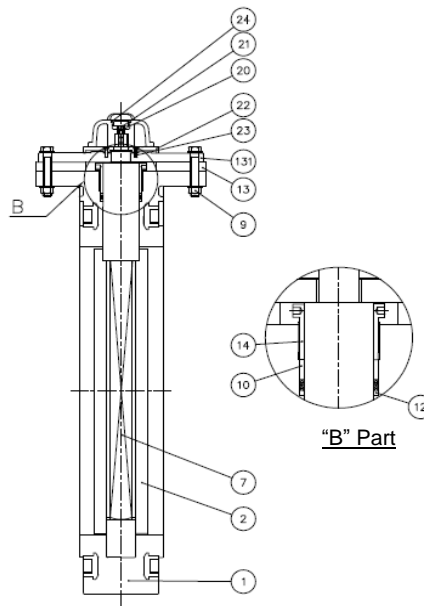
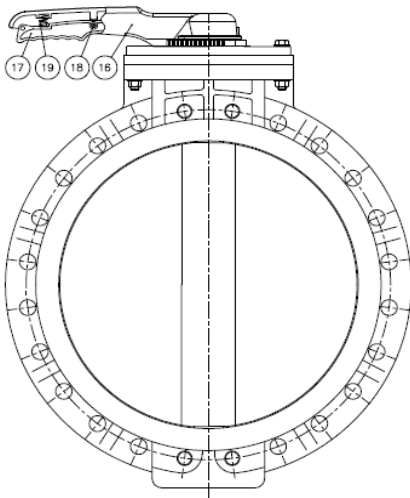


JIS 10K only

PP 450mm (18") - 600mm (24")



PVDF 450mm (18") - 600mm (24")



■ 40 - 350mm JIS, DIN, ANSI

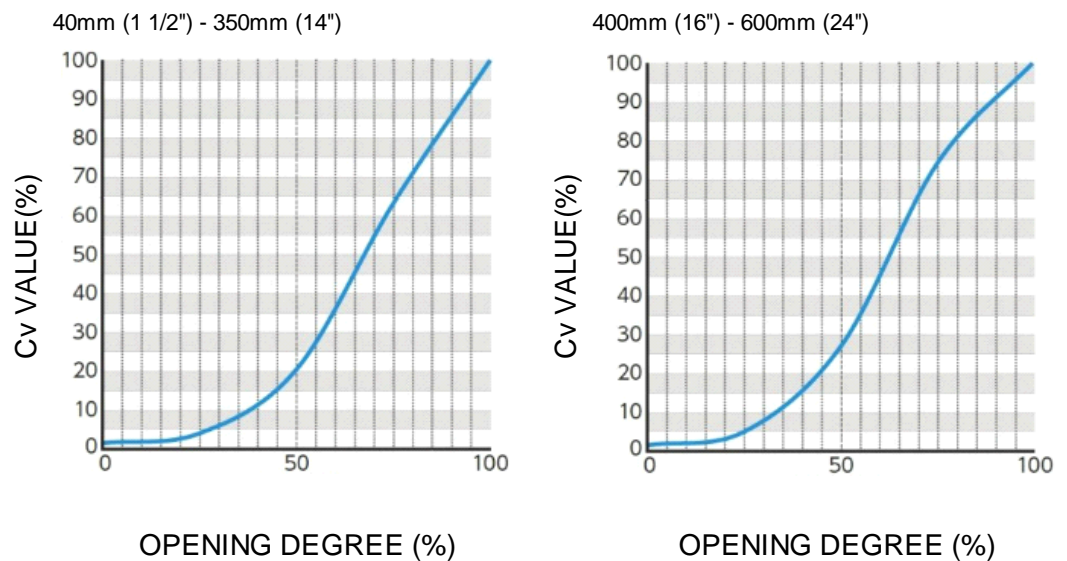
PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL
1 BODY	1	BODY / STEM PVC / PVC	17 HANDLE LEVER	1	PPG	24 CAP (A)	1	PP
7 STEM	1	PP / PP	18 PIN	1	PPG	157 SCREW (F)	4	STAINLESS STEEL Used for Size 40-200mm
2 DISC	1	PP	19 SPRING	1	STAINLESS STEEL	9 BOLT (A)	3	STAINLESS STEEL Used for Size 250-350mm
6 O-RING (C)	1	EPDM, FKM, Others	20 WASHER (A)	1	STAINLESS STEEL	131 STEM HOLDER (C)	1	PP Used for Size 250-350mm
8 STEM HOLDER (A)	1	PP	21 BLOT (B)	1	STAINLESS STEEL			
16 HANDLE (A)	1	PP	22 LOCKING PLATE	1	PPG			
16a HANDLE INSERTED METAL	1	STAINLESS STEEL	23 SCREW (B)	4	STAINLESS STEEL			

DATASHEET

■ 400 - 600mm JIS, DIN, ANSI

PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL			
1	BODY	1	PP, PVDF	21	BOLT ( B )	1	STAINLESS STEEL	12	V-PACKING	1Set	PTFE Used for PVDF Body
2	DISC	1	PP, PVDF	22	LOCKING PLATE	1	PPG	13	SPACER ( A )	1Set	C-PVC Used for PVDF Body
7	STEM	1	PP, PVDF	23	SCREW ( B )	4	STAINLESS STEEL	14	GLAND	1	PVDF Used for PVDF Body
9	BOLT&NUT(A)	3Set	STAINLESS STEEL	24	CAP ( A )	1	PP	1b	INSERTED METAL OF BODY	8	COPPER ALLOY Used for JIS 10K
16	HANDLE ( A )	1	PP	131	STEM HOLDER ( C )	1	PP				
17	HANDLE LEVER	1	PPG	6	O-RING ( C )	1	EPDM, FKM, Others Used for PP Body				
18	PIN	1	PPG	10	BUSH ( A )	1	PVDF Used for PVDF Body				
19	SPRING	1	STAINLESS STEEL								
20	WASHER ( A )	1	STAINLESS STEEL								

Cv value for each opening degree



mm	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
inch	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
ROTARY DAMPER	71	120	250	300	470	830	1,100	2,500	3,860	5,700	6,440	8,340	10,890	14,060	18,500

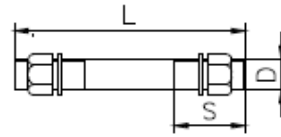
Operating torque

UNIT : N · m

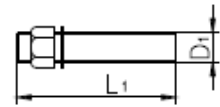
mm	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
inch	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
Operation torque (O→S)	5	10	15	20	30	40	65	165	300	330	400	760	820	1,150	1,600

Dimension of bolt length (reference:recommended data)

BOLT A



BOLT B



■ JIS 10K

UNIT : mm

mm	inch	BOLT A			BOLT B				QTY		
		d	L	S	d <sub>1</sub>	L <sub>1</sub>	S <sub>1</sub>	S <sub>2</sub>	BOLT A	BOLT B	NUT / WASHER
40	1 1/2	M16	115	40	-	-	-	-	4	-	8
50	2		125	45							
65	2 1/2		135								
80	3		135								
100	4		145								
125	5	M20	165	55	-	-	-	-	8	-	16
150	6		175								
200	8		195								
250	10	M22	225	60	-	-	-	-	12	-	24
300	12		245								
350	14		255	65							
400	16	M24	290	60	M24	115	60	30	14	4	32
450	18		305	65		120	65		16	8	40
500	20		315								
600	24	M30	350	75	M30	135	70	40	20		48

■ JIS 5K

UNIT : mm

mm	inch	BOLT A			BOLT B				QTY		
		d	L	S	d <sub>1</sub>	L <sub>1</sub>	S <sub>1</sub>	S <sub>2</sub>	BOLT A	BOLT B	NUT / WASHER
40	1 1/2	M12	100	30	-	-	-	-	4	-	8
50	2		105	35							
65	2 1/2		110								
80	3	M16	120	40	-	-	-	-	8	-	16
100	4		130								
125	5		140								
150	6		150								
200	8	M20	195	55	-	-	-	-	12	-	24
250	10		225	60							
300	12		240								
350	14		255						65		
400	16	M22	260	55	-	-	-	-	16	-	32
450	18		270								
500	20		280								
600	24	M24	315	60					20		40

In the above list, the values for size 40 to 350 mm indicate the bolt dimensions when an AVTS flange is used.

The values for size 400 to 600 mm indicate the bolt dimensions when a JIS B2238 "steel pipe flange" (nominal pressure 10K, corrugated) is used.

The quantity of nuts and washers for Bolt A indicates the number of 2 sets (1 bolt / 2 nuts, 2 washers).

The quantity for Bolt B indicate the number of 1 set (1 bolt / 1 nut, 1 washer).



## Product weight list (reference)

### ROTARY DAMPER (LEVER TYPE)

UNIT: kg

mm	inch	ROTARY DAMPER		
		U-PVC	PP	PVDF
40	1 1/2	1.1	0.9	1.4
50	2	1.3	1.0	1.7
65	2 1/2	1.5	1.2	2.0
80	3	1.7	1.3	2.3
100	4	2.3	1.7	3.1
125	5	4.4	3.5	5.3
150	6	5.3	4.2	6.6
200	8	8.4	6.6	10.1
250	10	11.2	8.0	22.5
300	12	17.0	15.0	32.7
350	14	19.0	16.0	35.2
400	16	—	22.0	48.5
450	18	—	28.0	50.0
500	20	—	36.0	57.5
600	24	—	66.0	79.0

## Product model code list

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
<b>V</b>	<b>**</b>	<b>LV</b>	<b>*</b>	<b>*</b>	<b>W</b>	<b>*</b>	<b>***</b>
: V	: D7 TYPE 57 D6 TYPE 56 DP TYPE 75	: LV LEVER TYPE	: U U-PVC P PP F PVDF	: E EPDM V FKM	: W WAFER	: 1 JIS 10K 5 JIS 5K D DIN A ANSI	: 040 40mm : 600 600mm

## Installation, Operation and Maintenance Manual

"For details of Installation, Operation and Maintenance, please contact our nearest distribution agent or sales office.