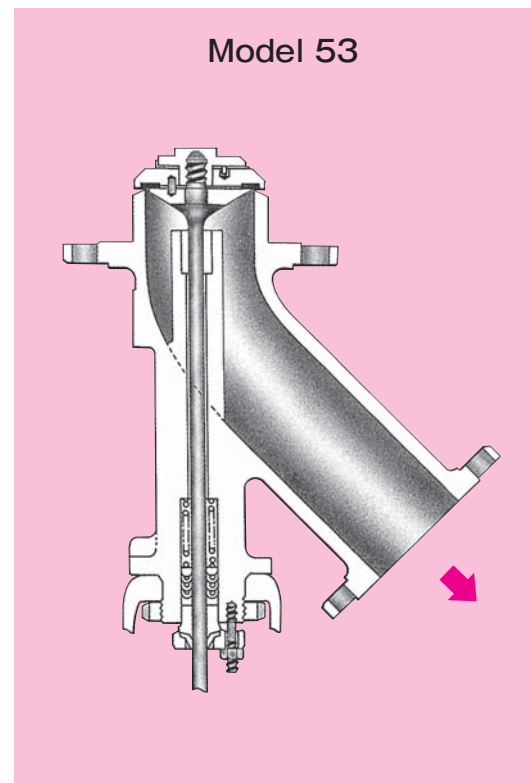


Model 53 DISCHARGE VALVES

Model 53 discharge valve is external type, in which the valve plug is so constructed that the liquid is discharged when the valve stem is moves upwards.

The main features are as follows.

- Since static pressure of the liquid in the vessel acts to increase the contact pressure on the valve seat, it contributes to better tight closing.
- The valve body, made of stainless steel, is extremely corrosion resistant and durable.
- Consideration has been given to the shape of the flow path to discharge on large quantity of liquid from the vessel in a short time.
- The internal design does not allow discharged liquid to remain in the valve.
- A flushing port can be provided. (Option)
- Gland-purge construction can be provided. (Option)
- The actuators are designed compactly as multi-spring diaphragm type, and permit high thrust.



(Note) Mounting direction of actuator yoke on the body is illustrated on page 4.

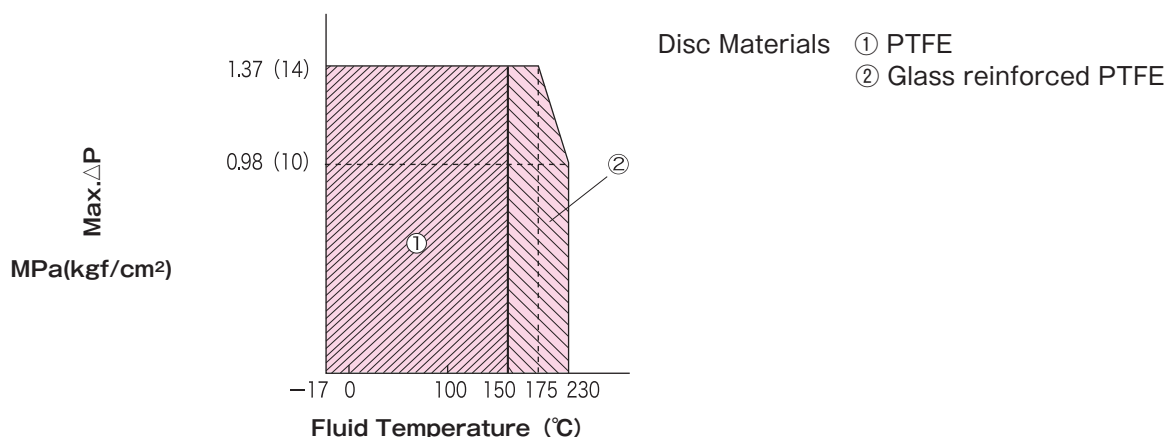
1. SPECIFICATIONS

Valve Type		Diaphragm operated Discharge Valve											
Valve Model No.		3853							2853				
VALVE BODY	Body type		Model 53 Y-shaped Globe Type(External type) ⁽¹⁾										
	Valve Sizes ⁽²⁾	(mm)	25	40	50	65	80	100	125	150	200	250	300
		(in.)	1	1 1/2	2	2 1/2	3	4	5	6	8	10	12
	Pressure Rating		JIS10K, ASME / JPI 150										
	End Connections		Flanged end : RF										
	Body Materials		CF8, CF8M										
	Bonnet Types		Plain (integrated with body)										
	Gland Type		Bolted gland										
	Packing(Non Asbestos)		Braided packing										
	Guiding		Top guide (larger than 250mm×200mm ; with wing guide.)										
Valve Plug Action		Push-down to open											
Seat Type		Single seated											

VALVE BODY	Plug Type	Quick opening (Q)							
	Plug Characteristics	Quick opening							
	Trim Materials	SUS304, SUS316, PTFE disc							
	Treatment of Trim	Metal seat , CoCr Alloy seat							
ACTUATOR	Actuator Type	Model 3800 Multi-spring type single acting diaphragm Actuator				Model 2800 Spring type single acting diaphragm Actuator			
	Actuator Sizes	N24	N28	N33S	N40	500S	500L	650S	650L
	Max. Stroke (mm)	25	38	38	65	65	100	65	130
	Supply Air Press.	280, 300kPaG (2.8, 3.0kgf/cm ² G)				280kPaG (2.8kgf/cm ² G)			
	Spring Range	40~200kPaG (0.4~2.0kgf/cm ² G)				40~200kPaG (0.4~2.0kgf/cm ² G)			
	Action	Direct action							
	Materials	(Diaphragm)Cloth reinforced chloroprene rubber, (Yoke)FC200 *SCPH2							
	Air Connection	Rc ¹ / ₄ , Rc ³ / ₈ , (only 650 ^S)							
	Ambient Temperature	-20°C~+70°C (* -50°C~-20°C, +70°C~+100°C)				-30°C~+70°C (* -50°C~-30°C, +70°C~+100°C)			
Painting Color		Silver, No painting on stainless steel							
VALVE CHARACTERISTICS AND PERFORMANCE	Control Mode	On-off							
	Valve Action	Reverse action (Air-to open)							
	Applicable Press. Range	Pressure limit conform to the standard of pressure and temperature rating.						In case of resilient disc, see page 2 ②	
	Applicable Temp. Range	-17°C~+230°C							
	Allowable Differential Press.	See page 3 "Allowable Shut-off Pressure"							
	Rated Cv Value	See page 3 "Rated Cv Value"							
	Allowable Seat Leakage Rate	Metal Seat	0.001% of rated Cv						
Resilient Seat		0.00001% of rated Cv							
* Options		Flushing port on body, Gland purge, Side-mounted handwheel, Jacketed body							

- [Notes] (1) Internal type(#54) is also available on request.
 (2) Valve sizes mean outlet sizes.
 (3) Valve performance is represented under the condition of standard packing(P4519+V7010)
 (4) * Manufactured and attached as option according to customer's request.

2. PRESSURE AND TEMPERATURE RATING OF RESILIENT DISC



3. SCOPE OF PRODUCTION

1 Combination of Valve Body and Actuator

Valve Model No.		3853				2853			
Valve Size(Outlet)	Actuator Size	N24	N28	N33S	N40	500S	500L	650S	650L
25(mm)	1 (in.)	○							
40	1 1/2	○	○						
50	2	○	○						
65	2 1/2	○	○						
80	3		○	○					
100	4				○				
125	5				○	○			
150	6				○	○		○	
200	8				○	○		○	
250	10				○	○		○	
300	12						○		○

2 Rated Stroke · End Connections · Rated Cv Value

Valve Size(Outlet)		Port Size	Rated Stroke	Nominal Size of Connection Flange	Rated Cv Value
(mm)	(in.)	(mm)	(mm)	Inlet × Outlet(mm)	
25	1	25	15	40 × 25	15.6
40	1 1/2	40	20	50 × 40	35
50	2	50	25	65 × 50	62
65	2 1/2	65		80 × 65	79
80	3	80	38	100 × 80	130
100	4	100		125 × 100	227
125	5	125	50	150 × 125	350
150	6	150		200 × 150	500
200	8	200	65	250 × 200	800
250	10	250		300 × 250	1300
300	12	300	90	350 × 300	1970

(Note) Size of inlet flange (tank side) is one or two size larger than the valve Size.

4. ALLOWABLE DIFFERENTIAL PRESSURE

1 Off-balance Classification

Unit: kPaG (kgf/cm²G)

Actuator	Spring Range	Supply Air Press.	Off-balance
Direct Action	40~200 (0.4~2.0)	280 (2.8)	80 (0.8)
		300 (3.0)	100 (1.0)

2 Allowable Shut-off Pressure

Unit: MPa (kgf/cm²)

Port Size		25(mm)	40	50	65	80	100	125	150	200	250	300
Actuator Size	Off-balance	1 (in.)	1 1/2	2	2 1/2	3	4	5	6	8	10	12
N24	80 (0.8)	1.37 (14)	1.37 (14)	0.92 (9.4)	0.55 (5.7)							
	100 (1.0)	1.37 (14)	1.37 (14)	1.07 (11)	0.70 (7.2)							
N28	80 (0.8)		1.37 (14)	1.37 (14)	0.72 (7.4)	0.49 (5.0)						
	100 (1.0)		1.37 (14)	1.37 (14)	0.91 (9.3)	0.61 (6.3)						
N33S	80 (0.8)					0.72 (7.4)						
	100 (1.0)					0.90 (9.2)						
N40	80 (0.8)						0.66 (6.8)	0.43 (4.4)	0.30 (3.1)	0.16 (1.7)	0.10 (1.1)	
	100 (1.0)						0.83 (8.5)	0.53 (5.5)	0.37 (3.8)	0.21 (2.2)	0.13 (1.4)	
500	80 (0.8)							0.71 (7.3)	0.50 (5.1)	0.28 (2.9)	0.17 (1.8)	0.12 (1.3)
	—									—	—	—
650	80 (0.8)								0.86 (8.8)	0.50 (5.1)	0.31 (3.2)	0.21 (2.2)
	—									—	—	—

(Notes) (1) portion shows standard combination of valve Body and Actuator.

(2) Shut-off pressure of this table shows the valve only with standard gland packing(P4519+V7010)

(3) This table is available for metal seat and resilient seat.

(4) The Unit of Off-balance is kPaG (kgf/cm²G)

Model 53



5. MAIN DIMENSIONS AND WEIGHT

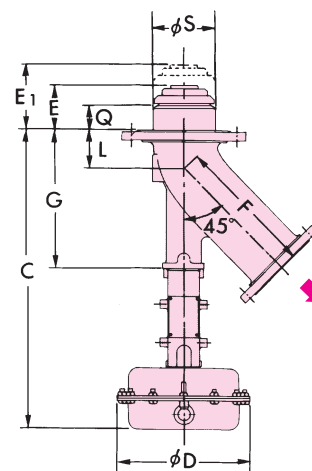
Unit : mm

Valve Size (Outlet)	Actuator Size	D	S	E	L	G	Q	F	C	E1	Weight (kgf)	
(mm)	(in.)											
25	1	N24	240	36	65	35	155	40	160	455	80	21
40	1 1/2	N28	280	52		40	160		180	460	85	23
50	2	N24	240	65	70	52	182	40	200	480	95	29
		N28	280						520	32		
65	2 1/2	N24	240	77	70	55	200	40	220	500	110	35
		N28	280						540	41		
80	3	N33S	330	100		65	220		260	615		50
100	4	N40	400	125	90	70	280		280	800	130	93
125	5	N40	400	150	105	75	305	50	320	825	155	106
		500S	500						1040	142		
150	6	N40	400	175	110	80	330	50	350	850	160	124
		500S	500						1065	160		
200	8	N40	400	230	90	130	440	50	400	960	155	204
		500S	500							1175		240
		650S	650							1475		360
		N40	400							1005		229
250	10	500S	500	280	90	135	486	50	450	1225	180	265
		650S	650							1520		385
		500L	500							1340		320
300	12	650S	650	335	105	515	515	50	450	1550	180	419
		650L	650							1650		469

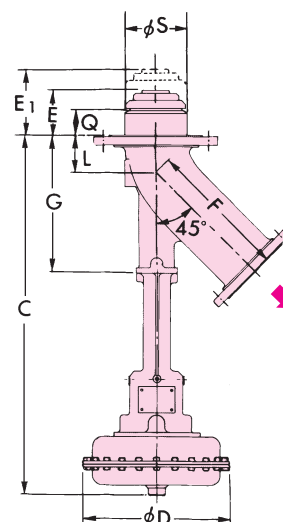
(Note) E1 is the dimension at full open.

Actuator Size

N24~N40



500, 650



6. INSTALLATION NOTES

Please install a discharge valve vertically with the actuator downwards. Do not install a valve horizontally, as the valve stem may deviate from the center line, causing leakage through the valve seat or the gland packing.

In designing a vessel, note that the size of inlet connection is larger than the body size. Design the installation of a valve on a vessel so that the valve seat and bottom of the vessel will be on the same level, taking "Q" dimensions into consideration.

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