



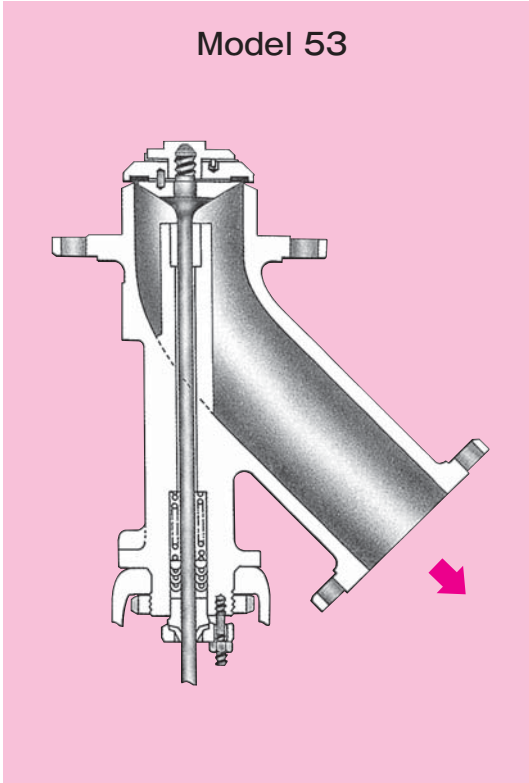
General Specifications

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 con-tributes to better tight closing.
- The valve body, made of stainless steel, is extremely corro-sion 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 dia-phragm type, and permit high thrust.



(Note) Mounting direction of actuator yoke on the body is illustrated on page4.

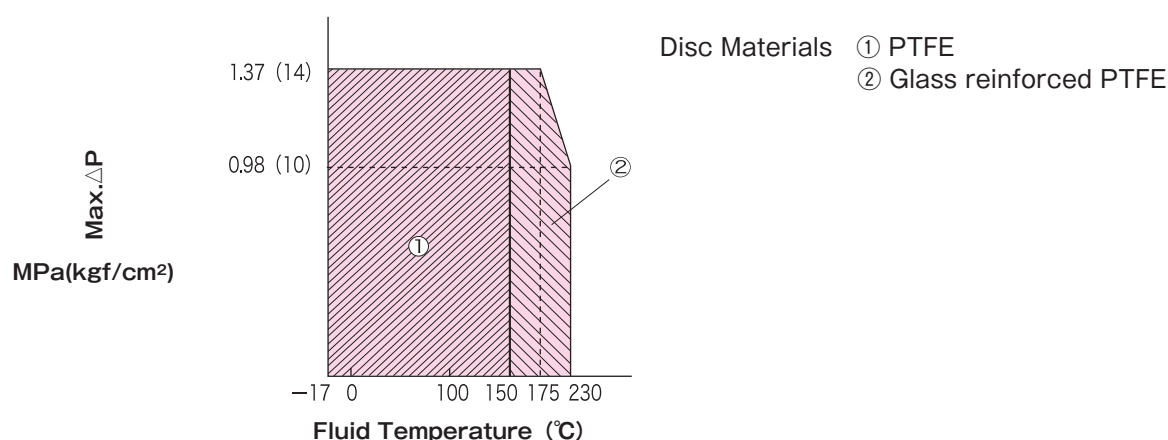
1. SPECIFICATIONS

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/cm²G)				280kPaG (2.8kgf/cm²G)			
	Spring Range		40~200kPaG (0.4~2.0kgf/cm²G)				40~200kPaG (0.4~2.0kgf/cm²G)			
	Action		Direct action							
	Materials		(Diaphragm)Cloth reinforced chloroprene rubber, (Yoke)FC200 *SCPH2							
	Air Connection		Rc ¹ / ₄ , Rc ³ / ₈ , (only 650 ^S _L)							
	Ambient Temperature		-20℃~+70℃ (※-50℃~-20℃, +70℃~+100℃)				-30℃~+70℃ (※-50℃~-30℃, +70℃~+100℃)			
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℃~+230℃							
	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 Inlet × Outlet(mm)	Rated Cv Value
(mm)	(in.)	(mm)	(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)

5. MAIN DIMENSIONS AND WEIGHT

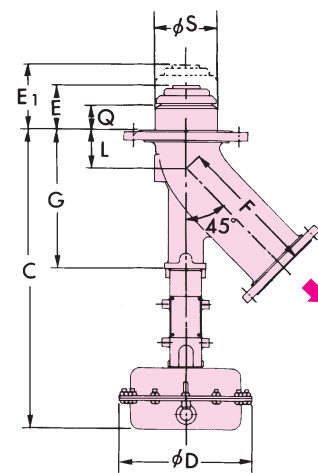
Unit : mm

Valve Size (Outlet) (mm) (in.)		Actuator Size	D	S	E	L	G	Q	F	C	E1	Weight (kgf)
25	1	N24	240	36	65	35	155	40	160	455	80	21
40	1½		N28	280		52	40		160	180	460 500	85
50	2	N24		240	65	70	52	182	200	480 520	95	26
		N28	280									
65	2½	N24	240	77	70	55	200	220	500 540	110	32	
		N28	280									
80	3	N33S	330	100	70	65	220	260	560 615	110	41	
100	4	N40	400	125	90	70	280	320	800	130	93	
125	5		500S	500	150	105	75		305	825 1040	155	106 142
150	6	N40	400	175	110	80	330	350	850 1065	160	124 160	
		500S	500						960 1175			204 240
200	8	N40	400	230	90	130	440	400	1475 1005	155	360 229	
		500S	500	280		135	486		1225 1520		265 385	
250	10	N40	400	335	105	515	450	1340 1550	180	320 419		
		500S	500					650L		650	1650	469

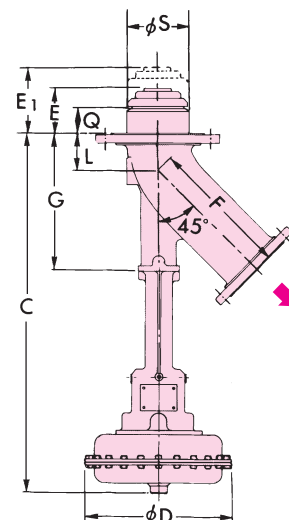
(Note) E1 is the dimension at full open.

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.



株式会社 本山製作所

MOTOYAMA ENG. WORKS, LTD.

http://www.motoyama-cp.co.jp

本 社 工 場 〒981-3697 宮城県黒川郡大衡村大衡字亀岡5-2 TEL(022)344-4511(代表) / FAX(022)344-4522
E-mail : info@motoyama-cp.co.jp

Main Office & Factory 5-2, Ohira Aza Kameoka, Ohira-mura, Kurokawa-gun, Miyagi, 981-3697, Japan
TEL +81-22-344-4511 / FAX +81-22-344-4522
E-mail : info-overseas@motoyama-cp.co.jp

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●海外関連会社

本山閥門(大連)有限公司 〒116601 中国 遼寧省大連市金州新区港興大街 39 号 14-7 TEL +86-411-6589-1277 FAX +86-411-6589-1278

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中国、韓国、台湾、シンガポール、インドネシア、マレーシア、サウジアラビア

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TEL: +81-44-381-8771 FAX : +81-44-381-8773

Domestic Sales Branches : Tokyo, Osaka, Sapporo, Tohoku, Joetsu, Kanto, Shizuoka, Nagoya, Hanshin, Tokuyama, Shikoku, Oita

●OVERSEAS AFFILIATED COMPANY

MOTOYAMA VALVE (DALIAN) CO., LTD

Gangxing Street 39-14-7, Jinzhou New District, Dalian-city, 116601 China

TEL: +86-411-6589-1277

FAX: +86-411-6589-1278

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