

## Model 32&33 SPLIT BODY CONTROL VALVES

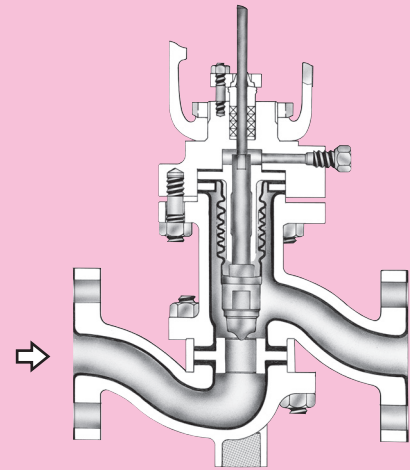
### Z-Valve

**Model 30** Series control valves are a so-called Split-body or Z type control valve whose body can be separated into two parts.

The features of these valves are as follows:

- Replacement of the seat-ring for changing the plug size, reversing the seat-ring or other purposes is easy.
- Flow pass inside of the body is smooth with no stagnation pockets.
- Highly suitable for viscous fluid and slurry services.
- Since the seat-ring is retained between body it is available to use glasses or nonmetallic materials. Seat-ring is not threaded or welded to the body.
- Body linings of glass, resin or other materials are available on request.
- It's simple construction makes maintenance easy.
- The actuators are designed compactly with multi-spring diaphragm operated type and permit high thrust.

Model 33



## 1. SPECIFICATIONS

**NOTE** : ETFE lining, PTFE trim and PTFE bellows seal are applicable to strategic materials in EXPORT TRADE CONTROL ORDER.

Valve Type		Diaphragm operated control valve		
Valve Model		3832	3833	
Materials of Lining		Glass	Resin	
Body Type		Model 32, 33 Split body		
Valve Sizes	(mm)	20	25	40
	(in.)	3/4	1	1 1/2
Pressure Rating		JIS 10K, ANSI/JPI 150*		
End Connections		Flanged end : FF		
Materials	Body	FC 200		
	Lining	Glass	ETFE Note (3)	
	Trim	PTFE		
Bonnet Types		PTFE Bellows seal		
Gland Type		Bolted gland		
Packing (Non Asbestos)		Braided packing		
Gaskets (Non Asbestos)		Flat gasket		
Guiding		Top guide		
Valve plug Action		Push-down close		
Seat Type		Single seated		

VALVE BODY

32  
33

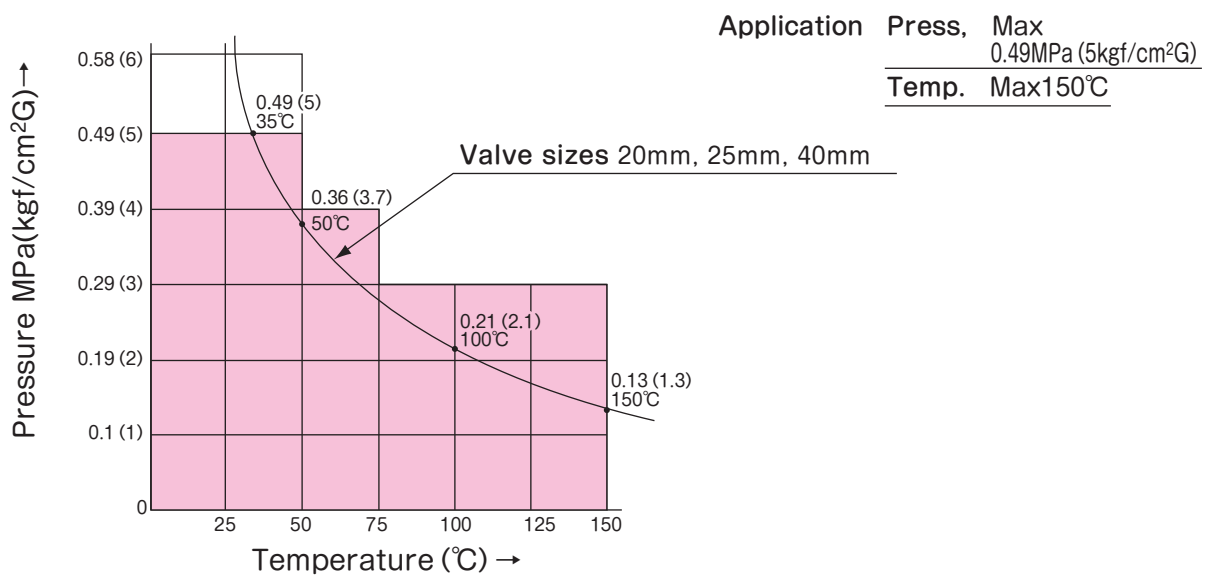
Valve Model		3832	3833		
VALVE BODY	Plug Types	Contoured plug (P), Quick opening (Q)			
	Plug Characteristics	Equal percentage, Linear, Quick opening			
ACTUATOR	Actuator Type	Model 3800 <small>Multi-spring type single acting diaphragm Actuator</small>			
	Actuator Sizes	N24	N28	N33S	
	Max. Stroke (mm)	25	38	38	
	Supply Air Press.	120 (1.2) , 240 (2.4) , 280 (2.8) , 300 (3.0) kPa (kgf/cm <sup>2</sup> G)			
	Spring Range	20~100 (0.2~1.0) , 40~200 (0.4~2.0) , 80~200 (0.8~2.0) kPa (kgf/cm <sup>2</sup> G)			
	Action	Direct action, Reverse action			
	Materials	(Diaphragm)Cloth reinforced chloroprene rubber, (Yoke) FC 200			
	Air Connection	Rc 1/4 (※NPT1/4)			
	Ambient Temperature	-20~+70°C (-50~-20°C, +70~+100°C※)			
	Painting Color	Silver			
VALVE CHARACTERISTICS AND PERFORMANCE (1)	Control Mode	Throttling control, On-off control			
	Valve Action	Direct action (Air-to close), Reverse action (Air-to open)			
	Applicable Max. Pressure	0.98MPa (10kgf/cm <sup>2</sup> G) Bellows seal type bonnet ; 0.49MPa(5kgf/cm <sup>2</sup> G)(at the normal temp.)			
	Applicable Temperature	See page 3 "Characters of Lining Materials" Bellows seal type bonnet:150°C<(at 0.13MPa(1.3kgf/cm <sup>2</sup> ))			
	Allowable Differential Press.	See page 4, 5 "Allowable Shut-off Pressure"			
	Rated Cv Value	See page 4 "Rated Cv Value"			
	Flow Characteristics	See page 4 "Flow Characteristics"			
	Inherent Range ability	Contoured Plug	15 : 1 ~ 30 : 1		
	Allowable Seat Leakage Ratio	Metal Seat	Contoured Plug	0.02% of rated Cv    Tight shut off*, 25mm or less...0.001% of rated Cv (TSO)    40mm or less...0.002% of rated Cv	
			Quick Opening	25mm or less...0.001% of rated Cv 40mm or less...0.002% of rated Cv	
		Soft Seat	Contoured Plug	25mm or less...0.001% of rated Cv	
			Quick Opening	40mm or less...0.002% of rated Cv	
	Function Accuracy	Hysteresis Error (With positioner)	max.    2 % F.S.		
Linearity (With positioner)		max.    ±2 % F.S.			
OPTIONS※	Valve body	Special treatment for trim			
	Actuator	Handwheel (Top-mounted handwheel). Travel stop, Diaphragm material : Ethylene propylene rubber.			
	Accessories	Pneumatic positioner(PA92A), Electro-pneumatic positioner(EA91A, EA90A), Air pressure regulator(MR2000), Limit switch, Solenoid valve, Booster relay, Speed controller, Lock up valve, Pneumatic operated valve.			
	Others	Oil-free, Water-free, Sandproof, Dustproof, Anti-salt damage, Cold district spec, Tropical district spec, External exposure bolt & nut S. S, Optional painting color.			

(Notes) (1) Valve performance is represented under the condition of standard packing.  
 (2) ※ Manufactured and mounted as option on customer's request.  
 (3) ETFE: Polyethylene-Tetrafluoroethylene  
 (4) Stud Bolt connection is applied for ANSI/JPI 150 flange end.

## 2. CHARACTERS OF LINING MATERIALS

Lining	Methods of Lining	Thickness (mm)	Temperature Range(°C)	Features
Glass	GL	1	0~200	Excellent chemical and abrasion resistance, Minimum fluid friction
ETFE	Melt process	2~3	0~150	Excellent chemical, abrasion and shock resistance, High strength

## 3. APPLICABLE PRESS. AND TEMP. OF PTFE BELLOWS



## 4. SCOPE OF PRODUCTION

### 1 Combination of Valve Body and Actuator

Valve Model		3832 & 3833	
Body Model	Actuator size	N24	N28
	Valve size		
32 33	20(mm)    3/4 (inch)	○	
	25            1	○	
	40            1 1/2	○	○

### 2 Scope of Plug

Plug size (mm)		6	7	8	10	15	20	25	32	40
Valve size	Plug size (mm)									
20(mm)	3/4 (inch)	◆	◆	◆	◆	◆	●			
25	1	◆	◆	◆	◆	◆	◆	●		
40	1 1/2						◆	◆	◆	●

● : Full port    ◆ : Reduced port

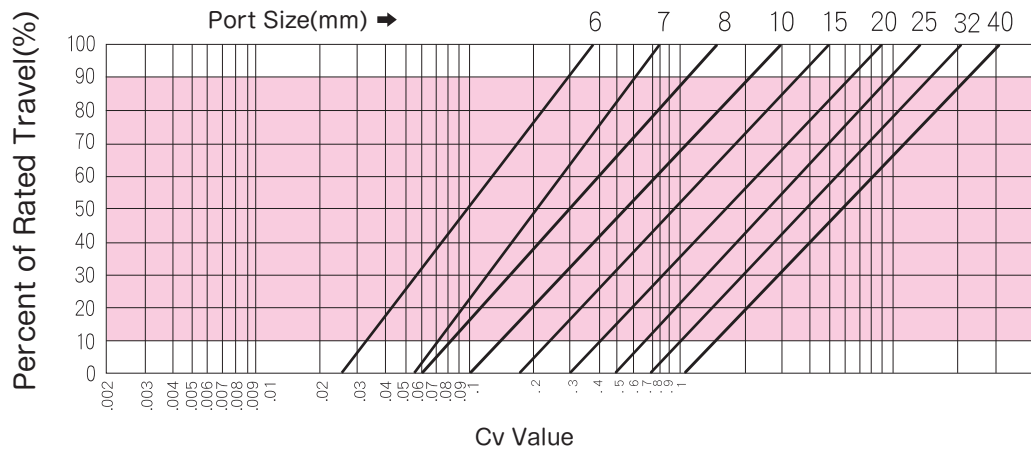
## 5. FLOW CHARACTERISTICS

### 1 Rated Cv Value

Plug size		Rated Travel (mm)	Plug Type		Inherent Rangeability (Contoured plug)
(mm)	(inch)		Contoured	Quick opening	
6	1/8	15	0.4	—	15 : 1
7	3/16		0.8	—	
8	1/4		1.5	2	
10	3/8		3.0	3.5	30 : 1
15	1/2		5.2	5.6	
20	3/4		9.0	9.5	
25	1		14	14	
32	1 1/4	20	21	21	
40	1 1/2		32	32	

### 2 Flow Characteristics

■ Contoured plug Equal percentage(P)



(Note)  Colored zone represents proper control range.

## 6. ALLOWABLE DIFFERENTIAL PRESSURE

### 1 Off-balance Classification

Unit : KPa (kgf/cm<sup>2</sup>G)

Action		Spring Range Actuator Size N24~N28	Supply Air Pressure	Off- balance	Positioner
Contoured Plug	Direct Action	20~100 (0.2~1.0)	120 (1.2)	20 (0.2)	Without
			140 (1.4)		
	Reverse Action	40~200 (0.4~2.0)	240 (2.4)	40 (0.4)	With
			280 (2.8)		
Quick Opening	Direct Action	40~200 (0.4~2.0)	300 (3.0)	80 (0.8)	With
			100 (1.0)		
	Reverse Action	80~200 (0.8~2.0)	240 (2.4)	40 (0.4)	Without
			280 (2.8)		

## 2 Allowable Shut-off Pressure

### Model 32 & 33

Unit : MPa (kgf/cm<sup>2</sup>)

Plug Types		Contoured Plug				Quick Opening			
Plug Size		15(mm)	20	25	40	15(mm)	20	25	40
Actuator Size	Off-Balance	1/2(inch)	3/4	1	1 1/2	1/2(inch)	3/4	1	1 1/2
N24	20 (0.2)	—	—	—	—	0.54 (5.6)			
	40 (0.4)	0.98 (10)				0.98 (10)			
	80 (0.8)	0.98 (10)				0.98 (10)			
	100 (1.0)	0.98 (10)				0.98 (10)			
N28	20 (0.2)	—	—	—	—	0.71 (7.3)			
	40 (0.4)	0.98 (10)				0.98 (10)			
	80 (0.8)	0.98 (10)				0.98 (10)			
	100 (1.0)	0.98 (10)				0.98 (10)			

(Notes) (1)   Frame represents standard combination of valve body size(at full port)and actuator size.  
 (2) Unit of Off-balance is kPa(kgf/cm<sup>2</sup>G).  
 (3) Regarding Press. & Temp. limit of PTFE-bellows type bonnet, see page 3 Paragraph3.

# 7. MAIN DIMENSIONS AND MASSES

### 1 Face-to-face Dimensions of Valve Body

Unit : mm

Body Model		32	33
Materials of Lining		Glass	ETFE
End Connections		Face-to-face Dimensions	
Valve Size	JIS 10K		
	(mm)	(inch)	
20	3/4	220	222
25	1	250	252
40	1 1/2	290	292

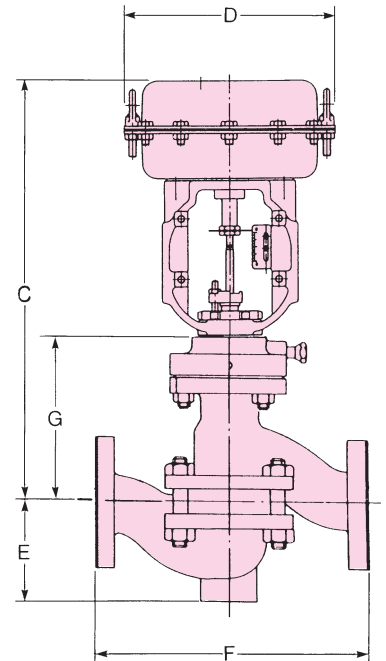
### 2 Standard Dimensions

#### Model 32 & 33

Unit : mm

Valve Size		Actuator Size	D	E	G	C
(mm)	(inch)					
20	3/4	N24	240	75	158	455
25	1	N24	240	85	158	455
40	1 1/2	N24	240	110	219	520
		N28	280			560

(Note) Dimension C represents in case of direct action.  
 IN case of reverse action, please add 25mm to the numerical value of the above table.



### 3 Masses

Following table shows standard mass of completed valve with actuator except accessories.  
 As to the masses not represented in this table, please contact your nearest MOTOYAMA's sales office.

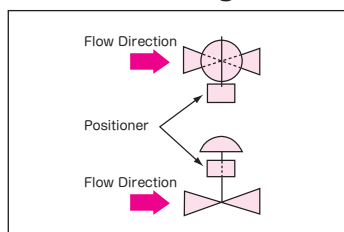
#### Model 32 & 33

Unit : kg

Valve Size	(mm)	20	25	40
	(inch)	3/4	1	1 1/2
Pressure Rating	10K			
Actuator Size	10K			
N24		27	31	36
N28		30	34	39

# 8. MOUNTING ORIENTATIONS

Standard mounting orientations are as follows.



32  
33



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

●販売・サービスネットワーク

東 京 支 店	〒210-0007 神奈川県川崎市川崎区駅前本町 10-5 クリエ川崎 11F	TEL(044)381-8770(代表)	FAX(044)381-8772
大 阪 支 店	〒550-0014 大阪市西区北堀江一丁目 12-19 クリモビル 3F	TEL(06)6535-8111(代表)	FAX(06)6535-8655
国 際 営 業 部	〒210-0007 神奈川県川崎市川崎区駅前本町 10-5 クリエ川崎 11F	TEL(044)381-8771	FAX(044)381-8773
札 幌 営 業 所	〒001-0912 札幌市北区新琴似12条七丁目1-47 リパティタウンP棟101号	TEL(011)766-1520	FAX(011)766-1521
東 北 営 業 所 大衡サービスセンター	〒981-3697 宮城県黒川郡大衡村大衡字亀岡 5-2	TEL(022)344-1761	FAX(022)344-1762
上 越 営 業 所 上越サービスセンター	〒942-0036 新潟県上越市大字東中島2393番地	TEL(025)542-5151	FAX(025)542-5152
関 東 営 業 所 千葉サービスセンター	〒290-0046 千葉県市原市岩崎西一丁目5-19	TEL(0436)21-4400	FAX(0436)21-3540
静 岡 営 業 所	〒422-8033 静岡市駿河区登呂二丁目10-13 ハイツ富士1F	TEL(054)288-2237	FAX(054)288-2239
名 古 屋 営 業 所 中部サービスセンター	〒481-0012 愛知県北名古屋市長久野安田36番地	TEL(0568)26-6681	FAX(0568)26-6631
阪神サービスセンター	〒560-0894 大阪府豊中市勝部二丁目18-3	TEL(06)6854-7511	FAX(06)6854-7512
徳 山 営 業 所 周南サービスセンター	〒745-0861 山口県周南市新地一丁目6-11	TEL(0834)21-5012	FAX(0834)31-0450
四 国 営 業 所 新居浜サービスセンター	〒792-0851 愛媛県新居浜市観音原町1013-1	TEL(0897)40-0270	FAX(0897)40-0305
大 分 営 業 所 大分サービスセンター	〒870-0108 大分市大字三佐字山ノ神980-1	TEL(097)527-3704	FAX(097)522-2352

●海外関連会社

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

●海外販売代理店

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

●SALES AND SERVICE NETWORK

Overseas Marketing & Sales Dept. : 11th Floor, Clie Kawasaki, 10-5, Ekimae-honcho, Kawasaki-ku, Kawasaki-city, Kanagawa, 210-0007 Japan

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

●OVERSEAS NETWORK

China, Korea, Taiwan, Singapore, Indonesia, Malaysia, Saudi Arabia

■本カタログの記載内容は、商品の改良等のため予告なく変更することがありますので予めご了承下さい。

■MOTOYAMA is continuously improving and upgrading its product design, specifications and/or dimensions. Information included herein is subject to change without notice.

■本カタログは正しい情報の提供を目的としたものであり、本製品の市場性または適合性の保証を証明するものではありません。

■This catalog is supplied for information purpose only and should not be considered certified marketability and conformability of this product.