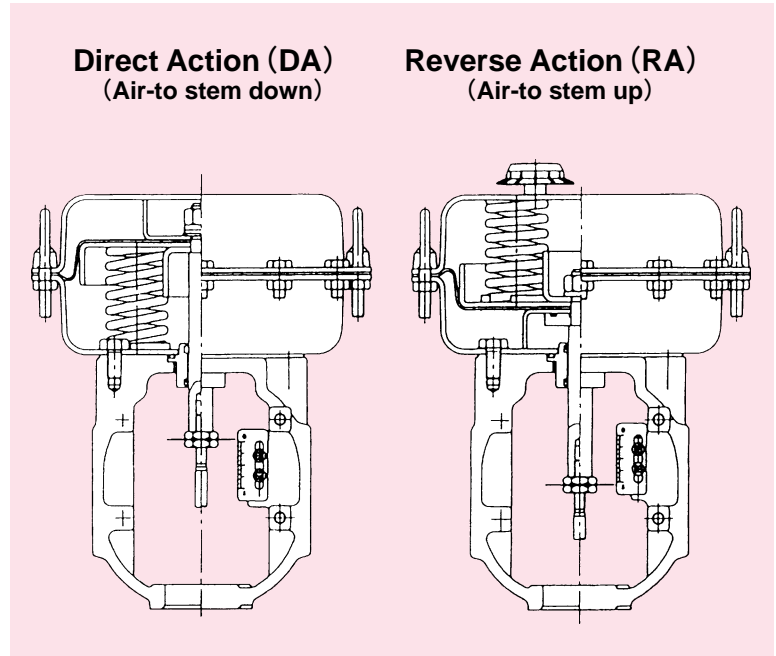


Model 3800

MULTI-SPRING TYPE DIAPHRAGM ACTUATORS

Model 3800 diaphragm actuator is capable of controlling valve travel precisely by adjusting input air pressure resulting in balance of the diaphragm force and the spring force.

Model 3800 diaphragm actuator is new-type actuator which is designed to be compact and light weight by adopting multi-spring structure.



1. SPECIFICATIONS

Type		Model 3800 Pneumatic single action diaphragm actuator			
Action		Direct action (DA), Reverse action (RA)			
Actuator Sizes		N24	N28	N33S	N40 ⁽³⁾
Max Stroke (mm)		25	38	38	65
Power thrust N (kgf) at off-balance 80kPa (0.8kgf/cm ² G)		2120 (216)	2750 (280)	4040 (412)	5690 (580)
Hysteresis Error (With positioner)		Max. 1% F.S. ... PTFE V Ring		Max. 2% F.S. Other Gland Packing	
Linearity (With positioner)		Max. ± 1% F.S. ... PTFE V Ring		Max. ± 2% F.S. Other Gland Packing	
Materials	Diaphragm	Cloth reinforced chloroprene rubber (※ Ethylene propylene rubber)			
	Yoke	FC200 (※ SCPH2)			
Supply Air Pressure kPa (kgf/cm ² G)		140 (1.4), 240 (2.4), 280 (2.8), 300 (3.0), ⁽⁵⁾ ※ 400 (4.0)			
Spring Range kPa (kgf/cm ² G)		20~100 (0.2~1.0), 40~200 (0.4~2.0), 80~200 (0.8~2.0), ⁽⁵⁾ ※ 120~280 (1.2~2.8), ※ 40~120 (0.4~1.2)			
Air Connection		Rc 1/4 (※ NPT 1/4)			
Ambient Temperature		- 20 °C ~ + 70 °C (※ - 50 °C ~ - 20 °C, + 70 °C ~ + 100 °C) ⁽⁴⁾			
Dimensions, Mass		See page 2 Table 1.			
Painting Color		Silver			
Options ※	Additional Mechanisms	Top-mounted handwheel, Side-mounted handwheel, Travel stop.			
	Accessories	Pneumatic positioner (PA92A), Electro-pneumatic positioner (EA91A, EA90A), Air Filter regulator (MR2000), Limit switch, Solenoid valve, Booster relay, Speed controller, Lock up valve, Position Transmitter			

[Notes] (1) ※ Manufactured and attached as option by customer's request.

(2) Material designation is represented by new JIS (SI unit). Please consent in advance that approval drawings and other documents may represent with old material designation.

(3) The actuator for size N40, stroke 65 mm and spring range 80 ~ 200kPa (0.8 ~ 2.0kgf/cm²G) is not available.

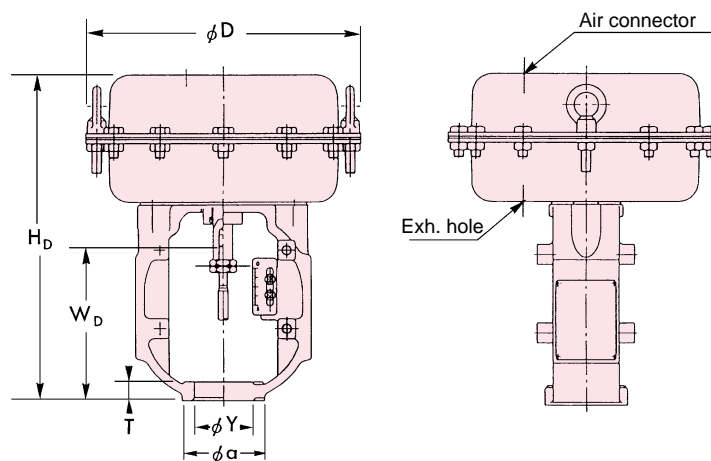
(4) For ambient temperature, denoted the extended temperature range as option.

(5) Supply Air Pressure 400kPa (4.0kgf/cm²G) & Spring Range 120 ~ 280kPa (1.2 ~ 2.8kgf/cm²G) are available for only Actuator Size N33S & N40.

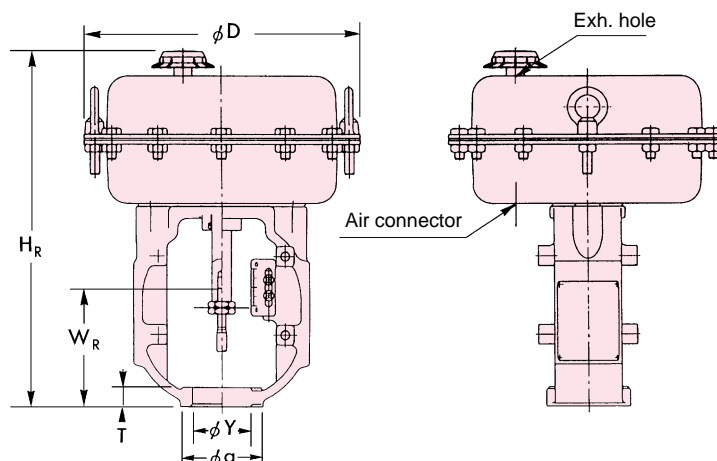
Table 1. Dimensions and Mass

Actuator Size		N 24	N 28	N 33 S	N 40
Effective Diaphragm Area (cm ²)		270	350	515	725
Max. Diaphragm Chamber Volume (DA, RA) (cm ³)		1550	2820	4510	9090
Outside Dia. of Diaphragm Casing ϕ D		240	280	330	400
	Height	DA ; H _D	297	336	391
RA ; H _R		321	360	415	539
Stem Length	DA ; W _D	158	171	183	272
	RA ; W _R	133	133	145	207
Thread of valve stem		M 9 × 1.25		M 12 × 1.75	M 18 × 2.0
Yoke Insertion Dia. ϕ Y		60			100
Yoke Thickness T		20			40
Yoke Mounted by		Yoke nut			Yoke bolt 6- ϕ 19 PCD 135
Yoke Seat Dia. ϕ a		85	85	85	170
Approximate Mass (kg)		12	15	24	51

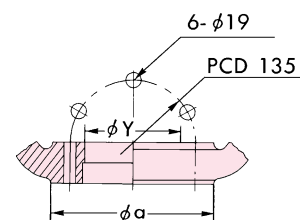
DA



RA



Actuator Size N40



2. ADDITIONAL MECHANISMS

1 Top-mounted Handwheels

Table 2. Dimensions and Mass for DA type with Top-mounted Handwheel

Unit : mm

Actuator Size	N24	N28	N33S	N40
Handwheel Dia. ϕB	200		250	300
Max. Height H_D	469	535	626	795
Max. Stroke	25	38	38	65
Turns for Max. Stroke	17	25	25	43
Approximate Mass (kg)	16	20	31	65

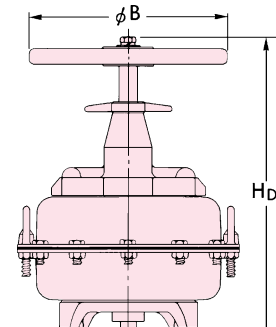
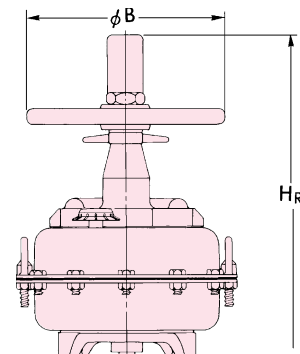


Table 3. Dimensions and Mass for RA type with Top-mounted Handwheel

Unit : mm

Actuator Size	N24	N28	N33S	N40
Handwheel Dia. ϕB	250		300	400
Max. Height H_R	562	628	706	922
Max. Stroke	25	38	38	65
Turns for Max. Stroke	8	13	13	22
Approximate Mass (kg)	18	22	34	71

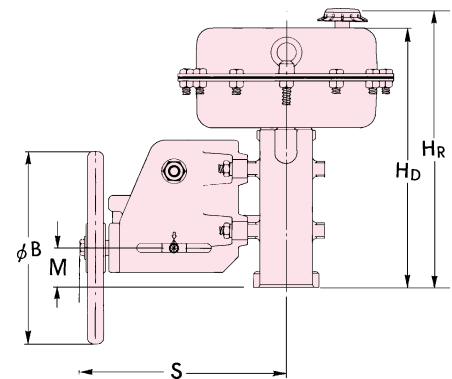


2 Side-mounted Handwheels

Table 4. Dimensions and Mass for units with Side-mounted Handwheel

Unit : mm

Actuator Size	N24	N28	N33S	N40	
Handwheel Dia. ϕB	250	300		400	
Handwheel Projection S	235	271	271	402	
Stem Length	DA ; W_D ⁽²⁾	138	151	163	235
	RA ; W_R ⁽²⁾	113		125	170
Center-to-center distance M	63	51	59	65	
Max. Stroke	25	38	38	65	
Turns for Max. Stroke	4.7	8.7	8.7	19	
Approximate Mass (kg)	21	28	37	77	



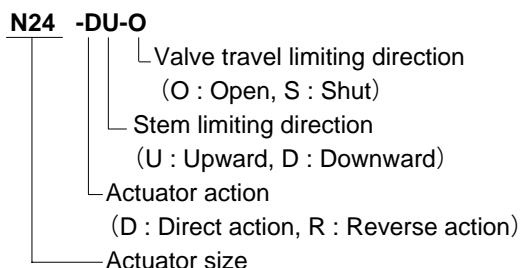
- [Notes] (1) Height H_D and H_R is coincident with the standard actuator.
 (2) Symbol W_D and W_R denote the same dimension of attached figure on table 1.

3 Travel Stops

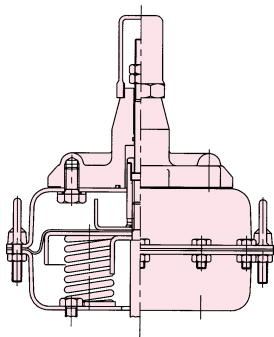
Travel stops are used to limit the valve travel if necessary.

< Example >

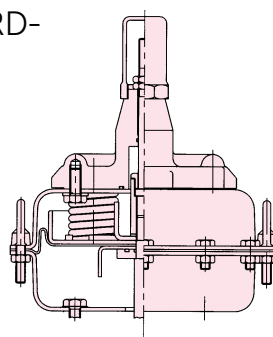
Actuator size N24, direct action, push-down close, to limit full open



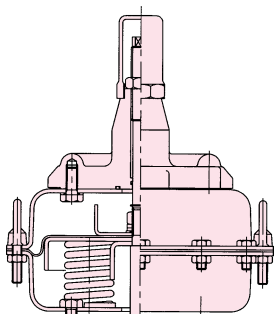
-DD-



-RD-



-DU-



-RU-

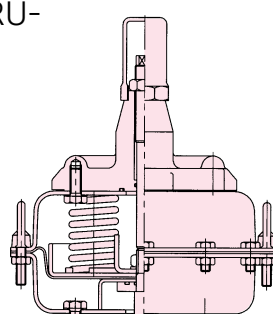


Table 5. Classification of Travel Stop and Heights

Unit : mm

Actuator Action	Stem Limiting Direction	Symbol	Valve Travel Limiting Direction	Application	Height	Actuator Size			
						N24	N28	N33S	N40
Direct Action (DA)	Downward-D	-DD	Shut-S	Travel limit of push-down close	H _D	478	531	609	778
			Open-O	Travel limit of push-down open					
	Upward -U	-DU	Shut-S	Travel limit of push-down open					
			Open-O	Travel limit of push-down close					
Reverse Action (RA)	Downward-D	-RD	Shut-S	Travel limit of push-down close	H _R	478	531	609	778
	Upward -U	-RU	Open-O	Travel limit of push-down open					

3. POSITIONER MOUNTING DIMENSIONS

1 Pneumatic Positioner Model PA92A

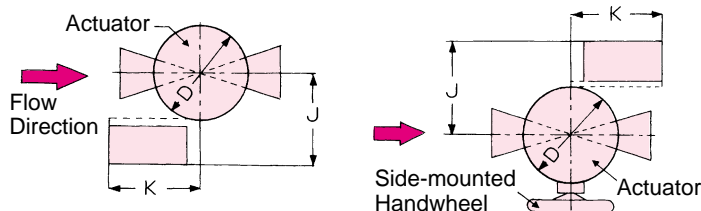


Table 6. Mounting Dimensions for Model PA92A

Unit : mm

Actuator Size	N24		N28		N33S		N40	
Actuator outside Dia. ϕD	240		280		330		400	
Action	DA	RA	DA	RA	DA	RA	DA	RA
J	210						250	
K	330						270	

[Note] The mounting dimensions for other positioner may be different from the above mentioned.

2 Electro-pneumatic Positioner Model EA91A, EA90A

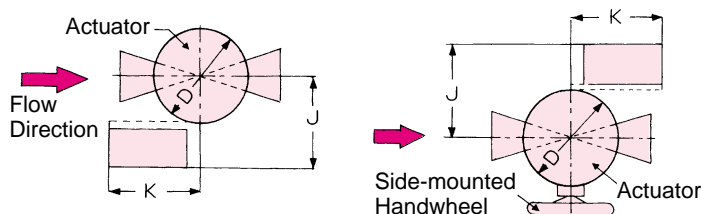


Table 7. Mounting Dimensions for Model EA91A and EA90A

Unit : mm

Actuator Size	N24		N28		N33S		N40	
Actuator outside Dia. ϕD	240		280		330		400	
Action	DA	RA	DA	RA	DA	RA	DA	RA
J	220						230	
K	320						360	



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.