

공압 다이어프램 액추에이터

다이어프램 특징

일반적으로

다이어프램 액추에이터는 다양한 플랜트 시스템 뿐만 아니라 미세 공정 제어 요구에 따라 유체의 흐름과 압력을 정확하게 제어할 수 있도록 설계되었으며, 견고한 설계로 리니어 타입 밸브는 물론 로터리 밸브에서도 강력하고 고성능의 공압 작동이 가능합니다.

성능:

- 저렴한 비용 및 효율적인 설계
- 긴 스트로크와 폭넓은 적용
- 강력한 시팅과 콤팩트하고 가벼운 무게

특징:

간단한 유지보수

- 조립과 분해가 용이하고 설계를 단순화하여 유지보수 비용을 절감할 수 있습니다.

뛰어난 성능

- 최대의 강도와 신뢰성 있는 고성능을 제공합니다.

유연성

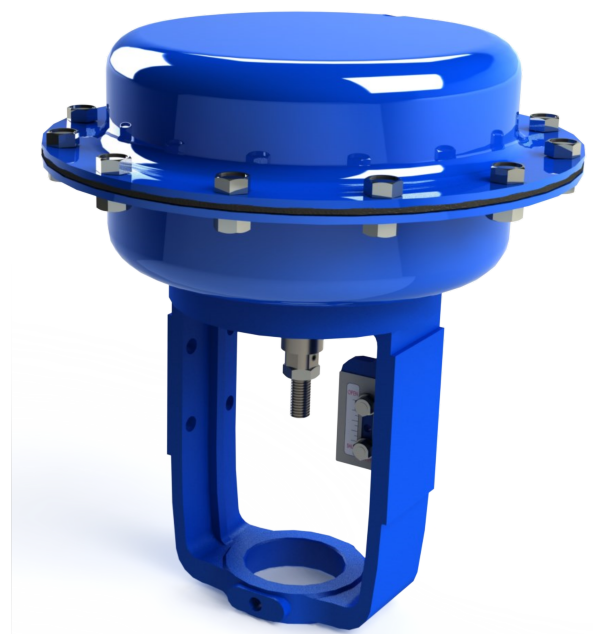
다양한 액세서리 선택 가능(오버라이드 포함)

컴팩트한 디자인

- 기존의 다른 제품보다 컴팩트하고 가볍습니다.
- 쉽게 설치할 수 있도록 설계되었고 편리한 현장 유지 보수가 가능합니다.

다중 스프링 설계

- 3개부터 최대 6개의 스프링을 삽입 가능하며 낮은 압력부터 높은 압력까지 다양한 압력에 적합합니다.



참고 1.
다이어프램 액추에이터

다이하프램 액추에이터 사양

Actuator Type	Multi-spring Diaphragm Actuator				
Actuator Size	T-1	T-2	T-3S	T-3	T-4
Stroke (mm)	20	25	38	50	50
Eff. Area (cm ²)	270	350	515	515	725
Max. Thrust - Direct (kgf)	683	925	1573	1630	2289
Max. Thrust - Reverse (kgf)	504	737	1271	1259	1930
Max. Operating Pressure to Diaphragm (Barg)	6				
Max. Allowable Casing Burst Out Pressure (Barg)	15 * Over Max. operating pressure, internal parts can be permanently deformed.				
Spring Range (Barg)	1.0 ~ 3.0 (approximate)				
Max. Working Temperature (°C)	-40 ~ 90				
Action	Reverse or Direct				
Movement	Reciprocate, Rotary (with rotary box)				
Option	Hand-wheel, Positioner, Filter regulator, Solenoid valve, Limit switches, Speed controller, etc.				

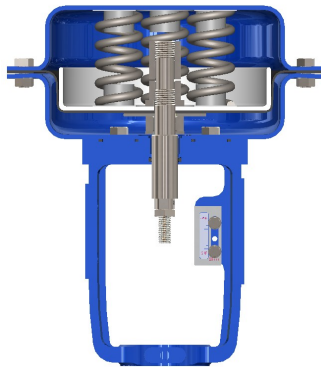


Figure 2. Cross Sectional Drawing Diaphragm Actuator (Direct Acting)



Figure 3. Cross Sectional Drawing Diaphragm Actuator (Reverse Acting)

Table 1. Standard Materials of Construction

Part Description	Material
Yoke	Ductile Iron / Carbon Steel
Diaphragm Cover	Carbon Steel
Spring Case	Carbon Steel
Diaphragm	NBR / EPDM
Seals	NBR / EPDM
Stem	Stainless Steel

Alternately material combinations suitable for offshore and extremely corrosive duties are available. Consult factory for details.

Table 2. Actuator Working conditions.

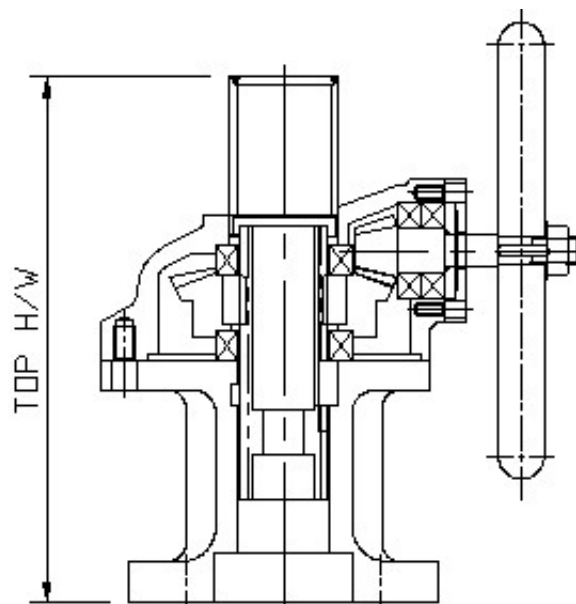
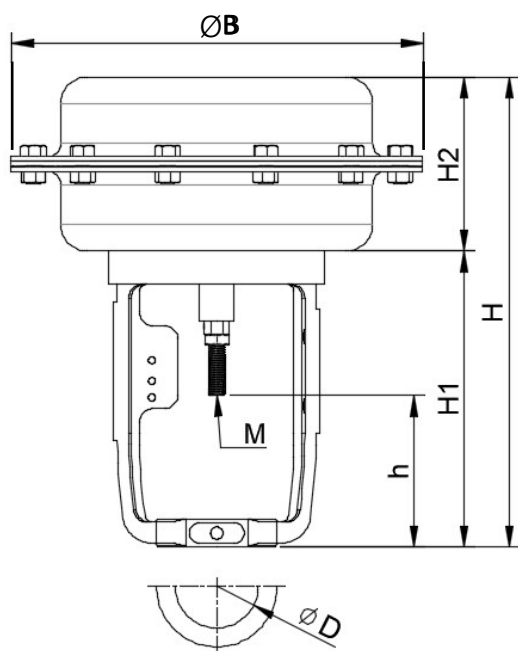
Max. Working Pressure	6	Barg
Max. Working Temperature	90	°C
Min. Working Temperature	-40	°C
Min. Storage Temperature	-55	°C

Standard Actuators are suitable of air operation. Actuators for low temperature or high temperature applications are available on request.

Dimension Table (Linear)

Standard Diaphragm Actuator from T-1 ~ T-5L

Standard Handwheel



Dimension

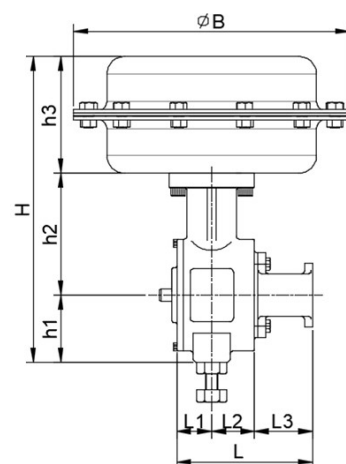
(Unit: mm)

Size	H	H1	H2	h	ØB	M	ØD	Stroke	H/W(D)	H/W(R)
T-1	332.4	214	118.4	132.2	257	M12xP1.75	61.5	20	250	250
T-2	340.5	214	126.5	133	298	M12xP1.75	61.5	25	250	250
T-3S	473	281	192.5	122	348	M12xP1.75	61.5	38	286	355
T-3	493	300.5	192.5	140	348	M18xP1.5	101.5	50	286	355
T-4	502.5	300.5	202	140	414	M18xP1.5	101.5	50	320	355
T-5	691	391	300	180	526	M27xP3.0	101.5	100	524	595
T-5L	738.5	391	347.5	150	526	M27xP3.0	101.5	130	524	595

Dimension Table (Rotary)

(Unit: mm)

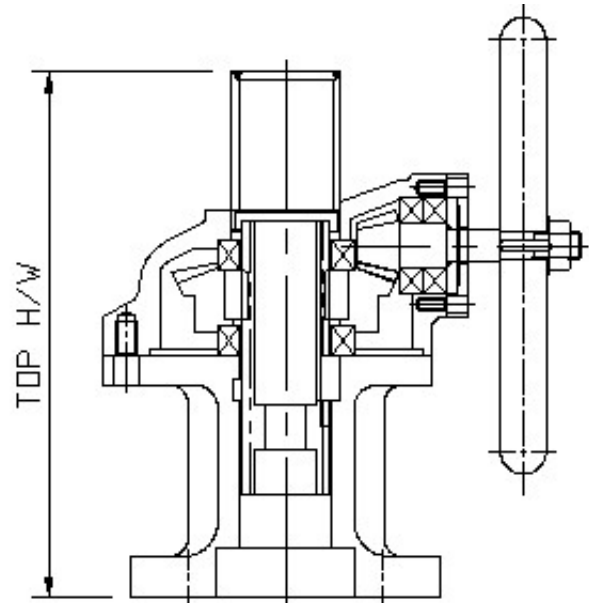
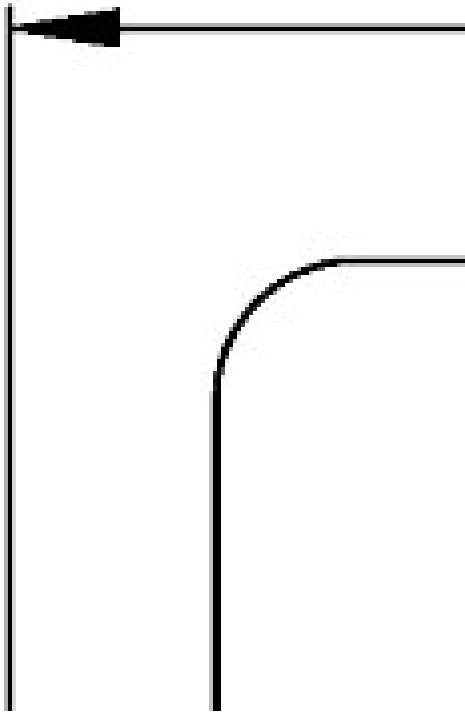
Size	B	h1	h2	h3	H	L1	L2	L3	L
T-3	348	110	233	192	535	57	75	90	222
T-5	526	160	350	300	810	75	95	110	280



Dimension Table (Linear)

Standard Diaphragm Actuator from T-5M, T-5ML

Standard Handwheel



Dimension

(Unit: mm)

Size	H	H1	H2	h	ØB	M	ØD	Stroke	H/W(D)	H/W(R)
T-5M	1031	391	640	180	526	M27xP3.0	101.5	100	524	595
T-5ML	1126	391	735	150	526	M27xP3.0	101.5	130	524	595

Actuator Power

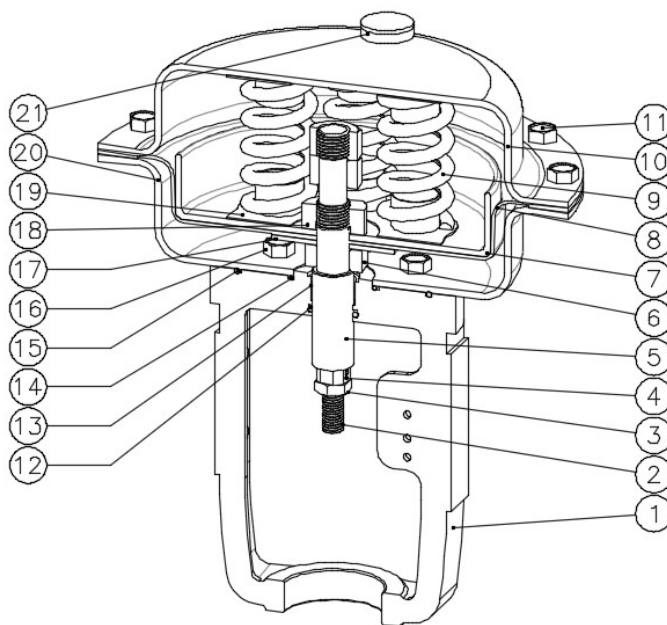
Linear Spring Range 1~3kgf/cm²G(approximate)

Size	T-1	T-2	T-3S	T-3	T-4
Max. Stroke (mm)	20	25	38	50	50
Eff. Area (cm ²)	270	350	515	515	725
Max. Thrust—Direct (kgf)	683	925	1573	1630	2289
Max. Thrust—Reverse (kgf)	504	737	1271	1259	1930

Rotary

Size	T-3	
Max. Stroke (mm)	50	
Eff. Area (cm ²)	515	
Torque (N.m)	Max.	1060
	Non Air	835

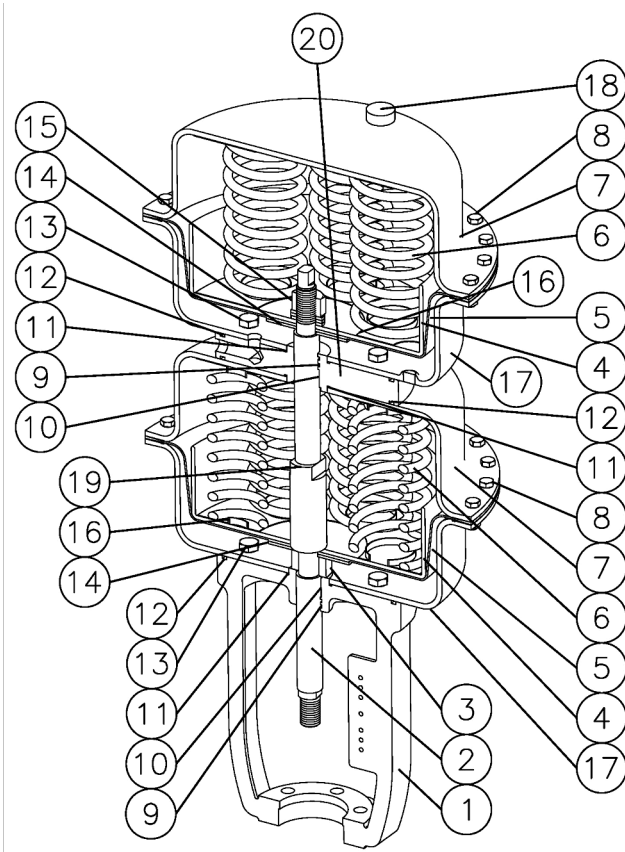
Actuator Assembly Drawing (Parts List)



T-1 ~ T-5

No.	Name of Parts	Material	Q'ty
1	Yoke	Ductile Iron	1
2	Set Bolt	Stainless Steel	1
3	Hex. Nut	Stainless Steel	1
4	Set Screw	Stainless Steel	1
5	Stem	Stainless Steel	1
6	Spacer	Stainless Steel	1
7	Diaphragm Plate	Carbon Steel	1
8	Diaphragm	Rubber	1
9	Spring	Carbon Steel	6
10	Spring case	Carbon Steel	1
11	Hex. Bolt + Washer	Stainless Steel	-
12	O-ring	Rubber	1
13	Du-Bush	Carbon Steel	1
14	O-ring	Rubber	1
15	O-ring	Rubber	1
16	Hex. Bolt + Spring Washer	Stainless Steel	6
17	Back Plate	Carbon Steel	1
18	Spacer Nut	Stainless Steel	1
19	Spring Seat Plate	Carbon Steel	2
20	Diaphragm Case	Carbon Steel	1
21	Vent Cap	Plastic	1

Actuator Assembly Drawing (Parts List)



No.	Name of Parts	Material	Q'ty
1	Yoke	Ductile Iron	1
2	Stem	Stainless Steel	1
3	Spacer	Stainless Steel	1
4	Diaphragm Plate	Carbon Steel	2
5	Diaphragm	Rubber	2
6	Spring	Carbon Steel	12
7	Spring case	Carbon Steel	2
8	Hex. Bolt + Washer	Stainless Steel	48
9	O-ring	Rubber	4
10	Du-Bush	Carbon Steel	2
11	O-ring	Rubber	3
12	O-ring	Rubber	3
13	Hex. Bolt + Spring Washer	Stainless Steel	18
14	Back Plate	Carbon Steel	2
15	Spacer Nut	Stainless Steel	2
16	Spring Seat Plate	Carbon Steel	4
17	Diaphragm Case	Carbon Steel	2
18	Vent Cap	Plastic	1
19	Double Stem	Stainless Steel	1
20	Double Pad	Stainless Steel	1

T-5M & T-5ML

Warranty / Remedy

Doctor Valve Inc. warrants goods of its manufacture as being free of defective materials and faulty workmanship for 12 months from the date of shipment, unless otherwise specified. In this period, all of our products claimed by original defects may be returned to our factory after notice and authorization by us. If warranted goods are returned to Doctor Valve Inc. during the period of coverage, it will be repaired or replaced without charge for those items it finds defective. Such defects shall be exclusive of the effects of corrosion, erosion, normal wear or improper handling and storage. In case our engineers have field service, the user shall detach and install valves by his cost. Determination of the suitability of the Products for the use contemplated by the buyer or buyer's customer(s) is the sole responsibility of the buyer in connection therewith. The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.

Specifications are subject to change without notices.



VALVES & CONTROLS

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