



GVK(MSD/HPL) PNEUMATIC ACTUATOR

Total Engineering Solution Service

Mission

기초에 근거하여 원천 기술을 살리고 원천 기술을
극대화하여 세계 중심에 서는 것

To stand at the centre of the world by
utilizing original technology based on the
foundation and maximizing original technology

Vision

우리는 옳은 일과 가치 있는 일에 주저함이 없이
최선을 다하고 실천하여 세계의 중심에 서자

Let us put ourselves at the center of the world by
doing our best and not hesitating to stand up for
what is right and worthy



GLOBAL VISION KOREA





Valve Product Service



GVK Limited, founded in June 2020 by a leader with 38 years of experience, focuses on R&D while ensuring quality, price, and functionality through domestic production. The company offers Process Valves, Valve Equipment, and Total Engineering services for industries such as Gas, Refining, Petroleum, Power generation, Environment, and Water treatment.

With a management team possessing 30-40 years of experience, GVK has developed numerous patents and adheres to quality standards like ISO 9001, 14001, 45001, and CE. Recognized for its advanced automatic control valves, GVK also supplies a range of Control Valves globally through OEM and ODM partnerships.

Although still in the early design and manufacturing stages, GVK has emerged as a leading company in Korea, equipped with skilled personnel and testing capabilities. The company aims to lower production costs, enhance efficiency, and improve quality while accumulating Hyper-Intelligence Valve Engineering (HIVE) technology. GVK Limited is committed to meeting customer needs with competitive pricing and high value-added services.

The Professional Provider of Automatic valve Actuators



Mutually Beneficial Relationships



To Be Your Best Partner



Twenty years experience "one stop" goods and services





MSD/HPL SERIES

Pneumatic Actuator

Total Engineering Solution Service



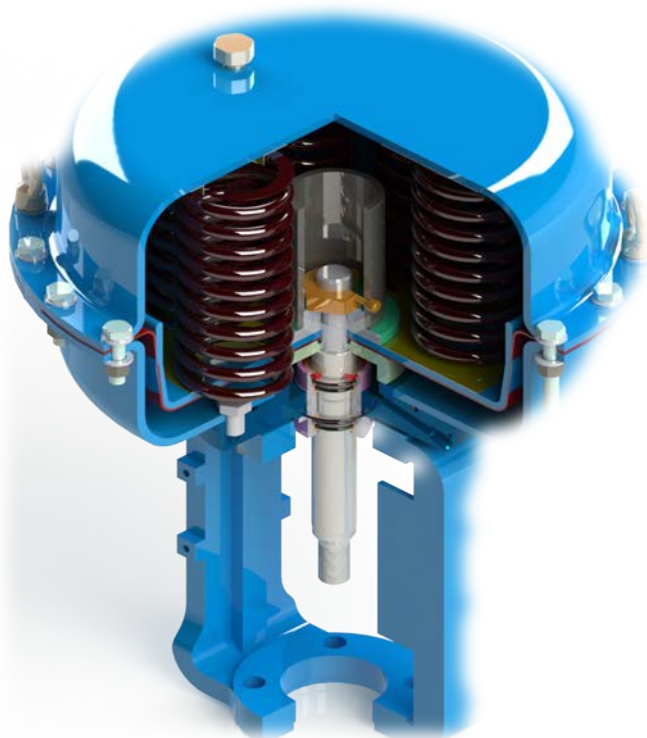
GVK / MSD, HPL Series Pneumatic Accessories

Contents

Series MSD/HPL

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PneumPneumatic Spring Return Linear Motion Diaphragm Actuatoratic



Application Versatility

With Direction & Reverse Action in multiple sizes, it can be used for a wide range of applications. Wide Spring Range, Travel(Stroke) Stopper, and Manual Override Handwheel can be used for all Control Valve Applications.

Excellent Linearity Between Loading Pressure and Stroke

Special Molding Diaphragm moves to a deep Diaphragm Case to minimize area change through Stroke.

High Thrust Capability

Special Molding Diaphragm and deep cold-rolled Casing allow high-pressure supply and maximum thrust for a given diaphragm size.

Long Service Life

Thickly cold-rolled Casing with a ductile iron structure provides stability, corrosion resistance, and deformation prevention in case of excessive pressure.

Cold Service Application

Enhanced product specifications for all PD series Diaphragm Actuators ensure performance down to -40°C if needed.

Positive Connections

Divided Block Stem connection allows easy mounting while providing a solid motion transmission. Minimizing backlash ensures accurate valve positioning.

Compact & Light –

Compared to Multi-Spring and high Air Supply Pressure, the PD series is much smaller and lighter than conventional actuators.

FEATURES

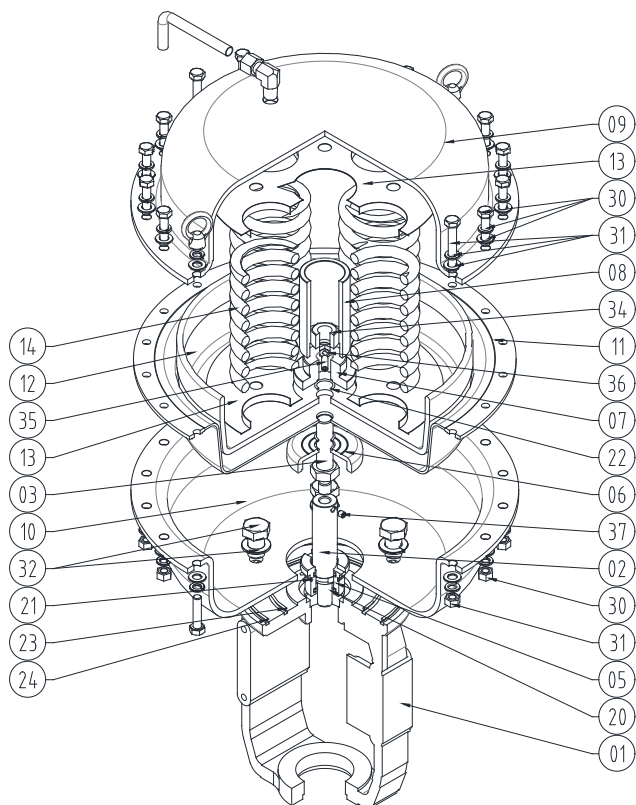
The MSD series Linear Motion Actuator is a compact and lightweight, high-performance, high-output diaphragm actuator with a multi-spring type design.

This actuator regulates the output by balancing the force generated when the diaphragm receives air pressure with the force of the compressed springs, ensuring precise control and accurate positioning.

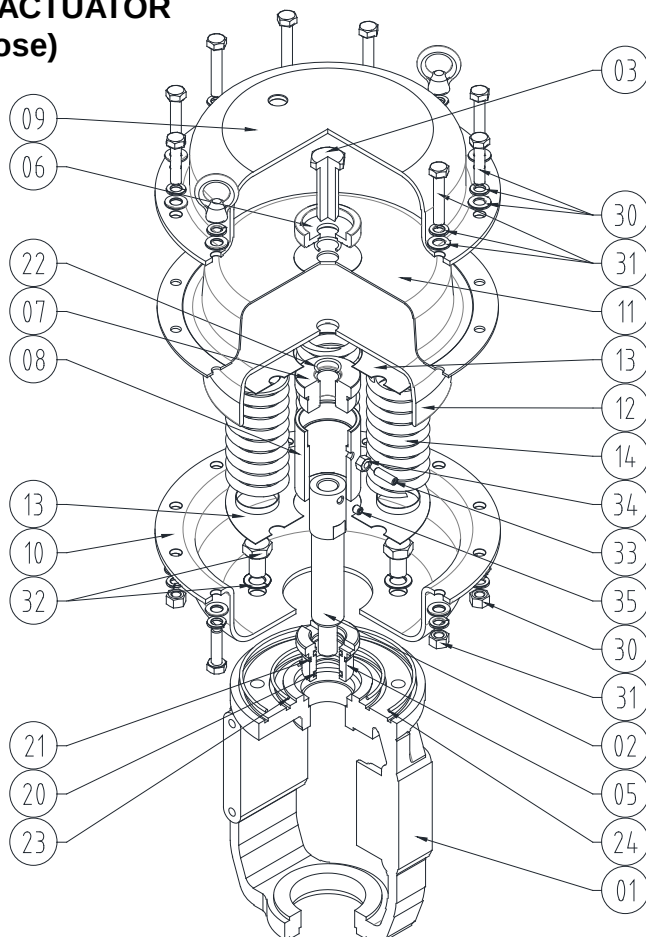
When combined with a control valve featuring a linear motion stem, this PD series actuator is suitable for both modulating and on-off services.

DESIGN STANDARD

Series	MSD series
Type	Multi-Spring, Single-Spring
Size	220 ... 650mm, Others
Stroke	5 ... 110 mm
Function	Spring to Open (FO)
	Spring to Close (FC)
Air Supply	0.4 MPa G(4.0 bar G)
Air Connection	1/4 ... 1/2 inch PT & NPT(F)
Performance	Hysteresis: with positioner, Less than 1.0% df full stroke
	Linearity: with positioner, Less than $\pm 2.0\%$ df full stroke
Ambient Temperature	Standard : -10 ... +70°C
	High (option) : 0 ... +100°C
	Low (option) :-47 ... +40°C
Painting Color (Standard)	Blue RAL5015 (polyurethanes g roup) and other epoxy finishes is available.
Option	Manual Handwheel Case & Yoke Material (Stainless Steel) Travel Stopper Sand Storm Protection



**STANDARD TYPE ACTUATOR
(Air Fail Close)**



**STANDARD TYPE ACTUATOR
(Air Fail Open)**

PART NAME

01	Yoke
02	Actuator Stem
03	Stem connector-RA
05	Stem Guide Bush
06	Diaphragm Holder
07	Spacer Holder
08	Stopper
09	Upper. Case
10	Lower. Case
11	Diaphragm
12	Diaphragm Plate
13	Spring Seat
14	Spring
15	Stem Clamp
16	Indicator
20	O-RING
21	O-RING
22	O-RING
23	O-RING
24	O-RING
30	Hex. Bolt,S/W.P/W,Nut
31	Hex. Bolt,S/W.P/W,Nut
32	Hex. Bolt,S/W
34	Stem Lock Nut
35	Stopper Screw
36	Hex. Nut
37	Stopper Screw



Valve Actuator Product Service

MATERIAL of MAIN PARTS

Part Name	Material	Part Name	Material
Diaphragm Case	Carbon Steel	Spring	Spring Steel Electrophoretic paint
Diaphragm	Cloth Embedded Buna-N	Piston Rod	Stainless Steel
Yoke	Carbon Steel	Bolts & Nuts	Stainless Steel
O-Ring	NBR	Guide Box	Carbon Steel

OUTPUT POWER

Actuator Size	Effect. Diaphragm Area (cm ²)	Air Supply (MPa G)	Spring Range (MPa G)	Thrust Capabilities (N)
220	189	0.4	0.12~0.3	2,177
270	314	0.4	0.12~0.3	3,648
350	556	0.4	0.12~0.28	6,472
450	957	0.4	0.12~0.28	11,180
550	1549	0.4	0.12~0.28	18,028
650	2236	0.4	0.12~0.28	26,050

STANDARD STROKE and VOLUME (L)

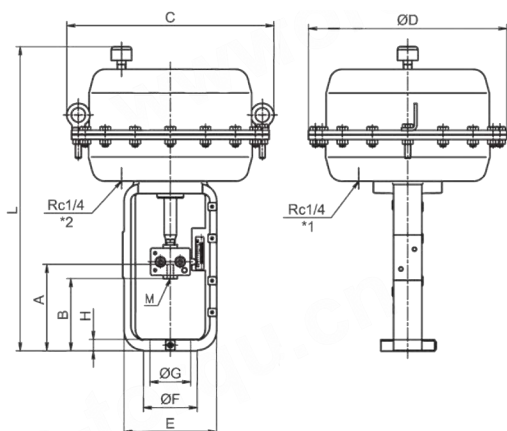
Actuator Size	Stroke (mm)											
	20	25	30	40	50	60	70	80	90	100	110	120
220	0.70	-	-	-	-	-	-	-	-	-	-	-
250	0.88	1.01										
270	1.31	1.46	1.60	-	-	-	-	-	-	-	-	-
290	1.38	1.58	1.77									
350	2.25	2.52	2.78	3.30	-	-	-	-	-	-	-	-
370	2.31	2.63	2.96	3.61								
450S	4.18	4.64	5.09	6.00	-	-	-	-	-	-	-	-
450L	-	-	-	-	7.28	8.18	9.09	10.00	10.91	-	-	-
480S				7.80	8.93	10.06	11.19					
480L								12.32	13.45			
550S	-	-	-	10.49	12.01	13.53	15.05	16.57	18.09		-	-
550L	-	-	-	-	-	-	-	-	-	19.61	21.13	22.65
650S	-	-	22.75	24.83	26.92	29.00	32.67*	34.75*	36.83*	-	-	-
650L	-	-	-	-	-	-	32.67	34.75	36.83	38.92	41.00	43.08

* : Optional

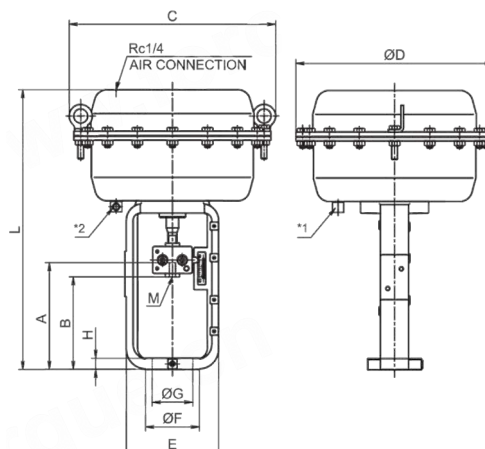
WEIGHT without ACCESSORIES

Actuator Size		220	270	350	450S	450L	550S	550L	650S	650L
Weight (Kg)	Without Manual Handle	9	15	37	65	87	130	160	192	223
	With Manual Handle	13	25	47	77	100	155	190	232	272

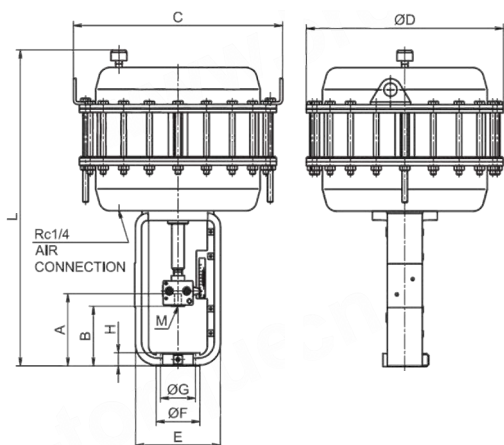
Pneumatic Spring Return Linear Motion Diaphragm Actuator



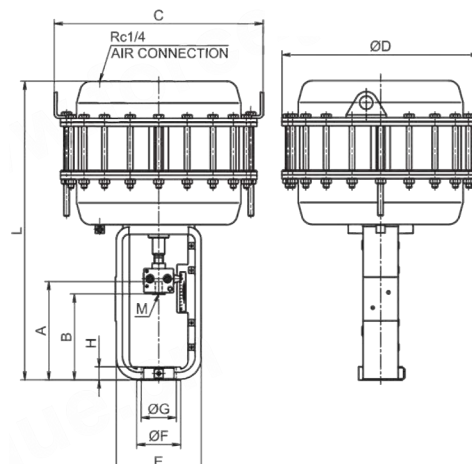
**STANDARD TYPE ACTUATOR
(Air Fail Close)**



**STANDARD TYPE ACTUATOR
(Air Fail Open)**



**LONG STROKE TYPE ACTUATOR
(Air Fail Close)**



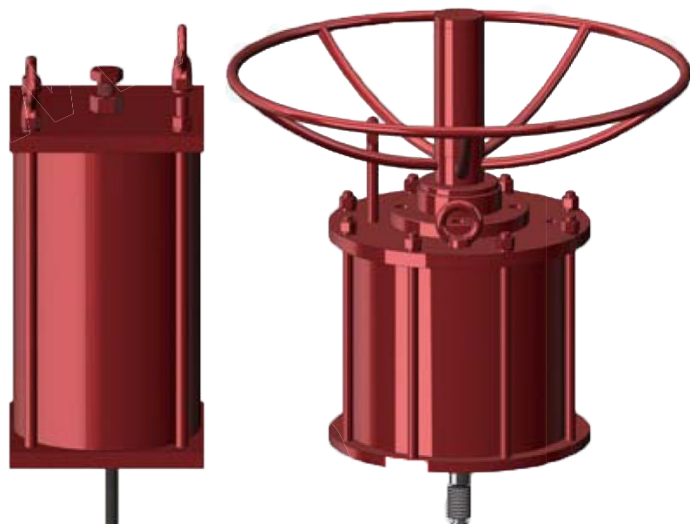
**LONG STROKE TYPE ACTUATOR
(Air Fail Open)**

STANDARD DIMENSIONS

Unit : mm

Actuator Code	Rated Size	ØD	C	ØF	Fail Close			Fail Open			E	ØG	H	M
					L	A	B	L	A	B				
MSD22	220	218	231	80	350	130	110	310	150	130	132	56	20	M9x1.0P
MSD25	250	256	269	80	373	110	88	333	130	108	146	56	20	M14x1.5P
MSD27	270	270	283	95	465	150	127	425	180	157	162	56	20	M10x1.5P
MSD29	290	292	305	80	410	110	88	370	140	118	146	56	20	M14x1.5P
MSD35	350	350	367	95	535	150	122	495	190	162	164	65	20	M12x1.5P
PMD37	370	370	387	80	450	110	88	410	140	118	146	56	20	M14x1.5P
MSD45S	450	450	472	100	555	165	133	515	205	173	194	80	30	M16x1.5P
MSD45L	450	450	480	100	725	165	133	685	245	213	194	80	30	M16x1.5P
MSD55S	550	560	580	120	720	129	99	680	219	189	230	80	30	M20x1.5P
MSD55L	550	560	580	120	920	129	99	880	249	219	230	80	30	M20x1.5P
MSD65S	650	650	680	130	760	185	140	760	245	200	280	100	30	M24x2.0P
MSD65L	650	650	680	130	860	185	140	860	295	250	280	100	30	M24x2.0P

Pneumatic Spring Return & Double Acting Linear Motion Cylinder Actuator



FEATURES

The HPL series Actuator, Double Acting or Spring Return(Single Acting) Type, offers a wide output range and is designed to meet the most common applications. It is manufactured in Carbon Steel body, making it suitable for service in harsh environments such as desert areas, power plants, petrochemical plants, and steel industries.

Compact and straightforward in design, the Block System allows for easy installation and maintenance. All HPL series share a common feature of built-in lubricating grease, ensuring long service life. The connection flange for the Stem and Valve can be manufactured according to various applications to meet the specific requirements of all customers.

Wide Range of Options

The PP series Spring Cylinder Actuator offers a wide range of options and accessories, making it suitable for all applications requiring high output and simple maintenance.

Compact & Lightweight

With a next-generation design system, the PP series is incredibly compact and lightweight for its output.

Simple Maintenance

Regular maintenance can be easily performed. The PP series spring cylinder actuator comes with a block system design for easy access to all internal parts.

Simple Parts

The PP series Cylinder actuator uses standard O-Rings for both static and dynamic seals, making it easy to purchase spare parts.

Long Service Life

The robustly designed casing has a thick, iron structure, providing stability, corrosion resistance, and deformation prevention in case of excessive pressure.

Cold Service Application

Enhanced product specifications for all sizes of PP series Cylinder Actuator ensure performance down to -40°C when required.

Positive Connections

The split block stem connection allows for easy mounting and provides robust motion transfer. Minimizing connection ensures accurate valve positioning without backlash.

Compact & Light

The PP series is much smaller and lighter than conventional actuators compared to multi-spring and single spring high air supply pressure.

DESIGN STANDARD

Series	HPL series
Type	Single & Multi-Spring, Double
Size	80 ... 1,000mm, Others
Stroke	Upon Customer Requirements
Function	Spring to Open (FO)
	Spring to Close (FC)
Air Supply	0.7 MPa G(7.0 bar G)
Air Connection	1/4 ... 1/2 inch PT & NPT(F)
Performance	Hysteresis: with positioner, Less than 1.0% df full stroke
	Linearity: with positioner, Less than $\pm 2.0\%$ df full stroke
Ambient Temperature	Standard : -10 ... +70°C
	High (option) : 0 ... +100°C
	Low (option) :-47 ... +40°C
Painting Color (Standard)	Blue RAL5015 (polyurethanes group) and other epoxy finishes is available.
Option	Manual Handwheel Case & Yoke Material (Stainless Steel) Travel Stopper Sand Storm Protection

Pneumatic Spring Return Linear Motion Diaphragm Actuator

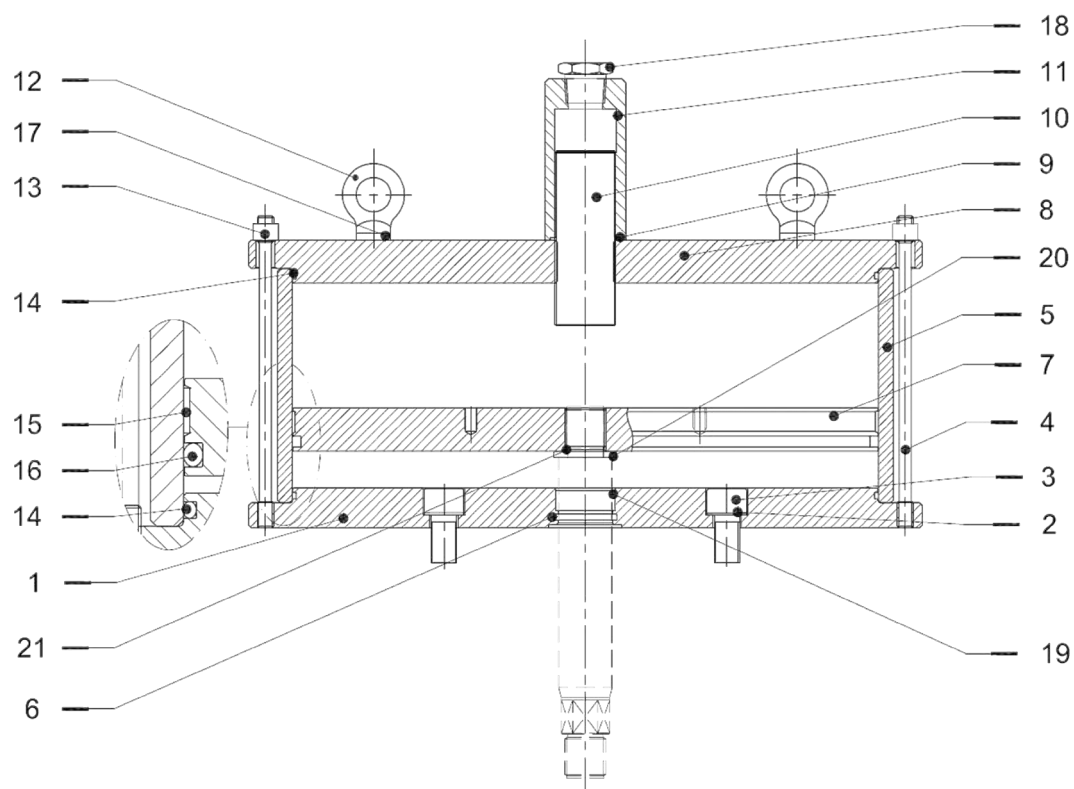
MATERIAL of MAIN PARTS

Part Name	Material	Part Name	Material
Cylinder	Carbon Steel	Spring	Spring Steel Electrophoretic paint
Piston & Seal	Carbon Steel & Buna-N	Piston Rod	Stainless Steel
Yoke	Carbon Steel	Bolts & Nuts	Stainless Steel
O-Ring	NBR	Guide Box	Carbon Steel

OUTPUT POWER(N)

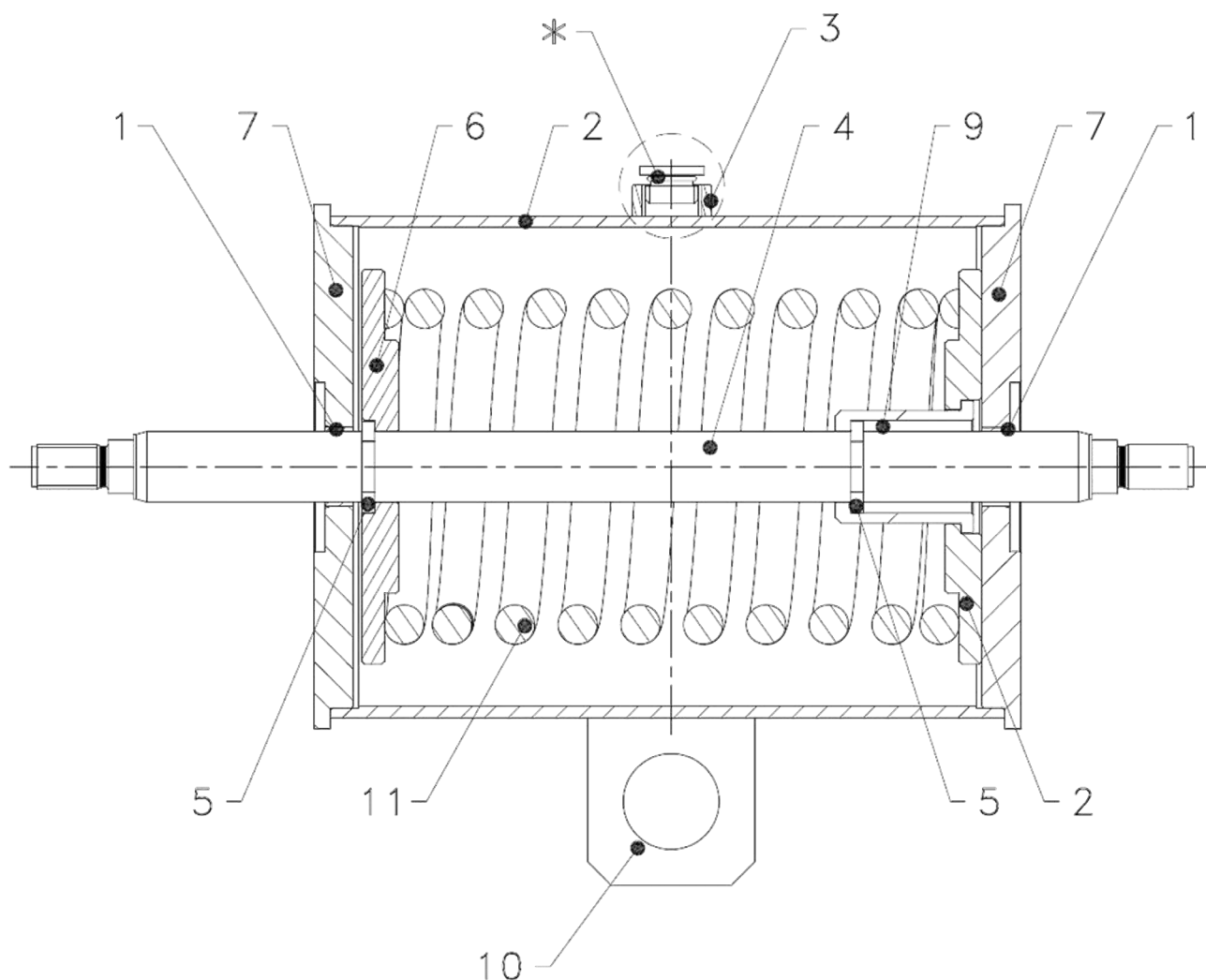
MPa G	80	100	125	160	200	250	280	320	350
0.3	1,507	2,355	3,680	6,029	9,420	14,719	18,463	24,115	28,849
	1,360	2,208	3,439	5,652	9,043	14,342	18,086	23,738	28,472
0.35	1,758	2,748	4,293	7,034	10,990	17,172	21,540	28,134	33,657
	1,587	2,576	4,012	6,594	10,550	16,732	21,101	27,695	33,217
0.4	2,010	3,140	4,906	8,033	12,560	19,625	24,618	32,154	38,465
	1,813	2,944	4,585	7,536	12,058	19,123	24,115	31,651	37,963
0.45	2,261	3,533	5,520	9,043	14,130	22,078	27,695	36,173	43,273
	2,040	3,312	5,158	8,478	13,565	21,513	27,130	35,808	42,708
0.5	2,512	3,925	6,133	10,048	15,700	24,531	30,772	40,192	48,081
	2,267	3,680	5,731	9,420	15,072	23,903	30,144	39,564	47,453
0.55	2,763	4,318	6,746	11,053	17,570	26,984	33,849	44,211	52,886
	2,493	4,048	6,304	10,362	16,579	26,294	33,158	43,520	52,199
0.6	3,014	4,710	7,539	12,058	18,840	29,438	36,926	48,230	57,698
	2,720	4,418	6,877	11,304	18,086	28,684	36,173	47,477	56,944
MPa G	400	450	500	550	600	630	700	800	900
0.3	37,680	47,689	58,875	73,853	84,780	93,470	115,395	150,720	190,755
	37,303	47,100	58,027	73,005	83,932	92,622	114,547	149,566	189,601
0.35	43,960	55,637	68,688	86,162	98,910	109,048	134,628	178,540	222,548
	43,520	54,850	67,698	85,173	97,921	108,059	133,638	174,494	221,201
0.4	50,240	63,585	78,500	98,470	113,040	124,627	153,860	200,960	254,340
	49,738	62,800	77,370	97,340	111,910	123,496	152,730	199,421	252,801
0.45	56,520	71,533	88,313	110,779	127,170	140,205	173,083	226,060	286,133
	55,965	70,650	87,041	109,508	125,898	138,933	171,821	224,349	284,402
0.5	62,800	79,481	98,125	123,088	141,300	155,783	192,325	251,200	317,925
	62,172	78,500	96,712	121,675	139,887	154,370	190,912	249,277	316,002
0.55	69,080	87,429	107,988	135,397	155,430	171,362	211,558	276,320	349,718
	68,389	86,350	106,383	133,843	153,876	169,807	210,003	274,204	347,602
0.6	75,360	95,378	117,750	147,706	169,560	186,940	230,790	301,440	381,210
	74,606	94,200	116,054	146,010	167,864	185,244	229,094	299,132	379,202

Pneumatic Spring Return & Double Acting Linear Motion Cylinder Actuator



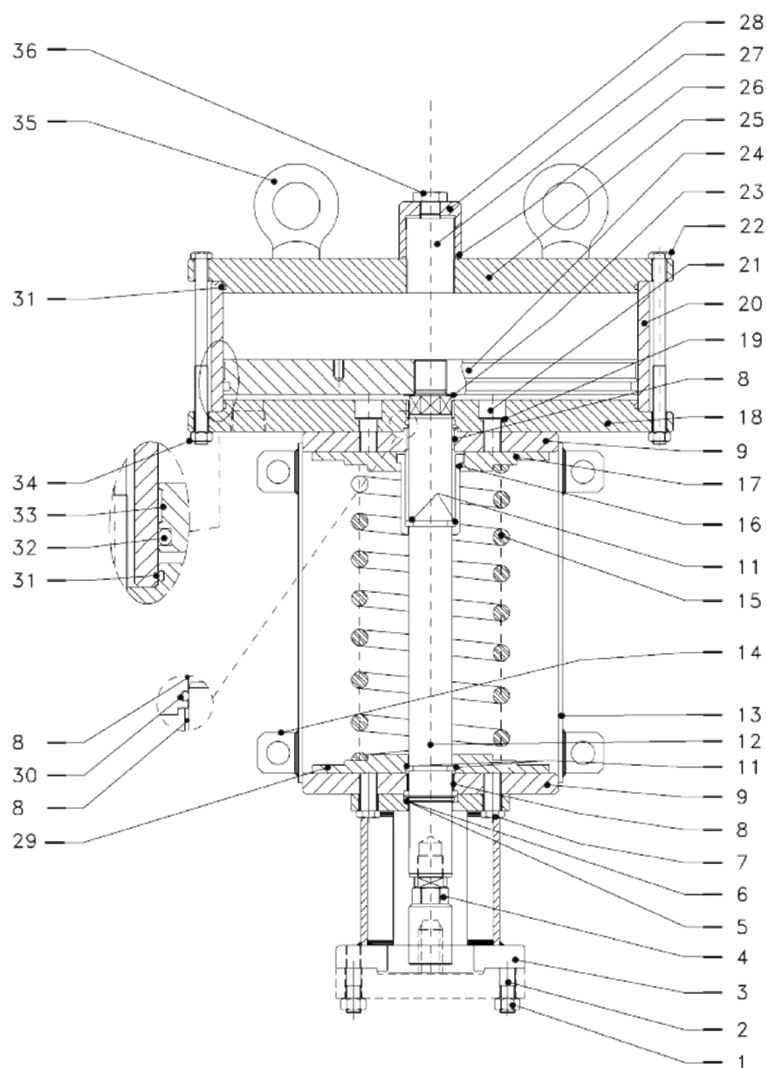
ITEM	DESCRIPTION	MATERIAL
1	Head flange	Carboon steel
2	Washer	Carboon steel+nitrile rubber
3	Screw	Alloy steel
4	Cylinder tube	Carboon steel
5	Tie rod	Alloy steel
6	O-Ring	NBR rubber
7	Piston	Carboon steel
8	End flange	Carboon steel
9	O-Ring	NBR rubber
10	Adjusting screw	Alloy steel
11	Adjusting screw cover	Carboon steel
12	Eyebolt	Carboon steel
13	Nut	Carboon steel
14	O-Ring	NBR rubber
15	Guide sliding ring for piston	Teflon+Graphite
16	O-Ring	NBR rubber
17	washer	Carboon steel
18	Plug	Stainless steel
19	Rod bushing	Steel+Bz+ Teflon
20	Washer	Alloy steel
21	O-Ring	NBR rubber
22	O-Ring	NBR rubber

Pneumatic and Hydraulic Scotch Yoke Rotary Motion



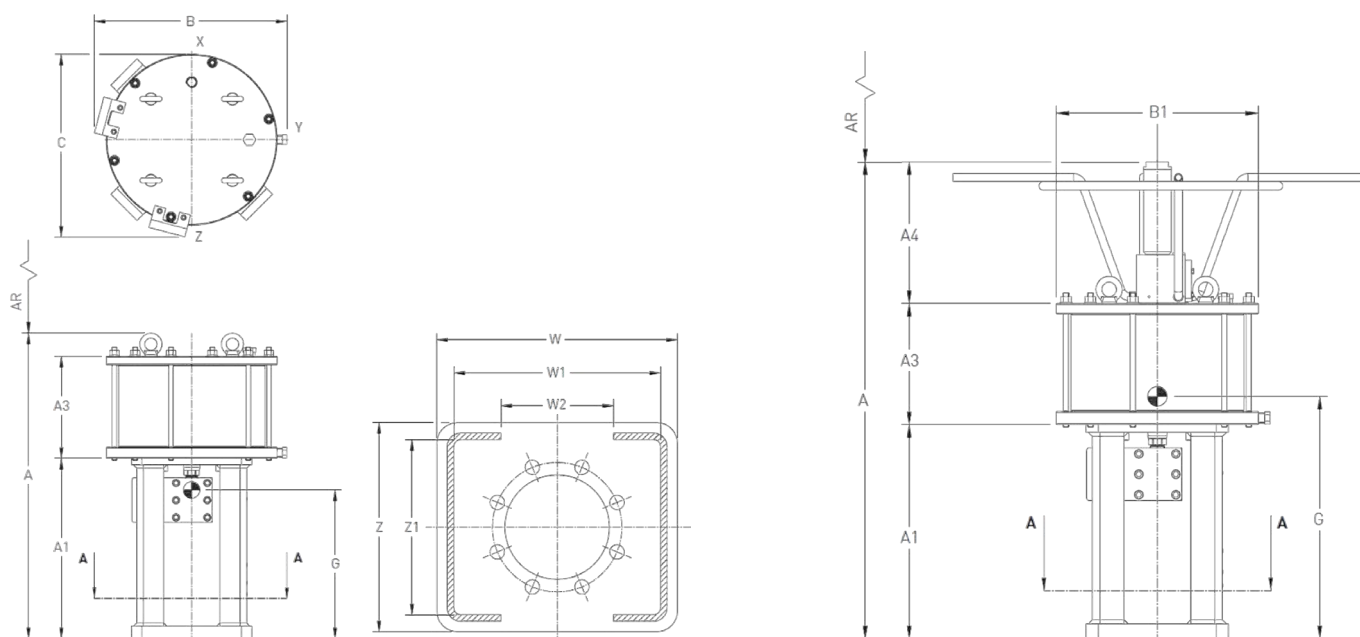
ITEM	DESCRIPTION	MATERIAL
1	Piston rod bushing	Steel+Bz+Teflon
2	Upper spring flange	Carboon steel
3	Shaft	Carboon steel
4	Rod	Stainless steel
5	Retainer ring	Stainless steel
6	Lower spring flange	Carboon steel
7	Flange	Carboon steel
8	External tube	Carboon steel
9	Piston rod guide tube	Nitrided carboon steel
10	Lifiting eyelet	Carboon steel
11	External spring	Spring steel
12	Plug	Alloy steel
13	O-Ring	NBR
*	Plug	-

Pneumatic Spring Return & Double Acting Linear Motion Cylinder Actuator



ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Nut	13	External tube	25	End flange
2	Stud bolt	14	Lifting eyelet	26	O-Ring
3	Support joint	15	Internal spring	27	Adjusting screw
4	Connecting joint	16	Piston rod guide tube	28	Adjusting screw cover
5	Scroper support	17	Upper spring flange	29	Lower spring flange
6	Scroper ring	18	Head flange	30	O-Ring
7	Screw	19	Seal Washer	31	O-Ring
8	Bushing	20	Cylinder tube	32	O-Ring
9	Flange	21	Screw	33	Guide sliding piston ring
10	---	22	Screw	34	Nut
11	Retainer ring	23	Sealing washer	35	Eyebolt
12	Piston rod	24	Piston	36	Plug for adj. screw cover

Double Acting

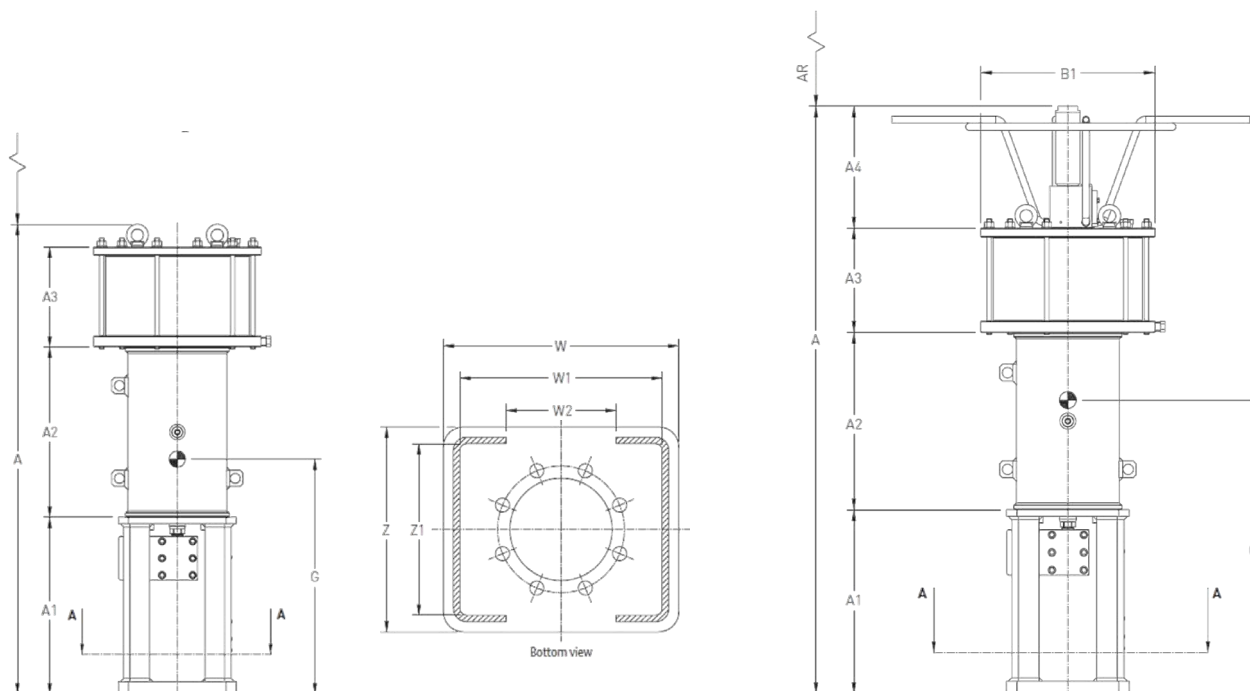


Unit : mm

Actuator Code		HPL28	HPL33	HPL38	HPL43	HPL48	HPL53	HPL58	HPL63	HPL68
Rated Size		280	335	385	435	485	535	585	635	685
Standard Travel		115	115	115	115	115	115	115	115	115
A3	STD	245	248	248	248	276	278	296	296	306
	H/W	282	285	285	C.F	C.F	C.F	C.F	C.F	C.F
A4		290	290	290	C.F	C.F	C.F	C.F	C.F	C.F
B		415	467	514	565	630	680	730	785	835
C		390	444	490	565	630	680	730	785	840
C1		397	431	497	C.F	C.F	C.F	C.F	C.F	C.F
Pneumatic Port (inch)	TOP	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
	BOTTOM	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
A	STD	736	742	742	742	790	792	833	833	868
	H/W	1,010	1,013	1,013	C.F	C.F	C.F	C.F	C.F	C.F
G	STD	368	371	371	371	395	396	417	417	434
	H/W	368	371	371	C.F	C.F	C.F	C.F	C.F	C.F
A1		438	438	438	438	438	438	461	461	486
W		292	292	330	330	330	330	436	436	436
W1		251	251	289	289	289	289	390	390	390
W2		137	137	145	145	145	145	251	251	251
Z		254	254	330	330	330	330	487	487	487
Z1		213	213	289	289	289	289	441	441	441
Weight (kg)	STD	132	163	210	243	332	388	519	596	697
	H/W	148	181	229	C.F	C.F	C.F	C.F	C.F	C.F

C.F : Consult Factory

Spring Return

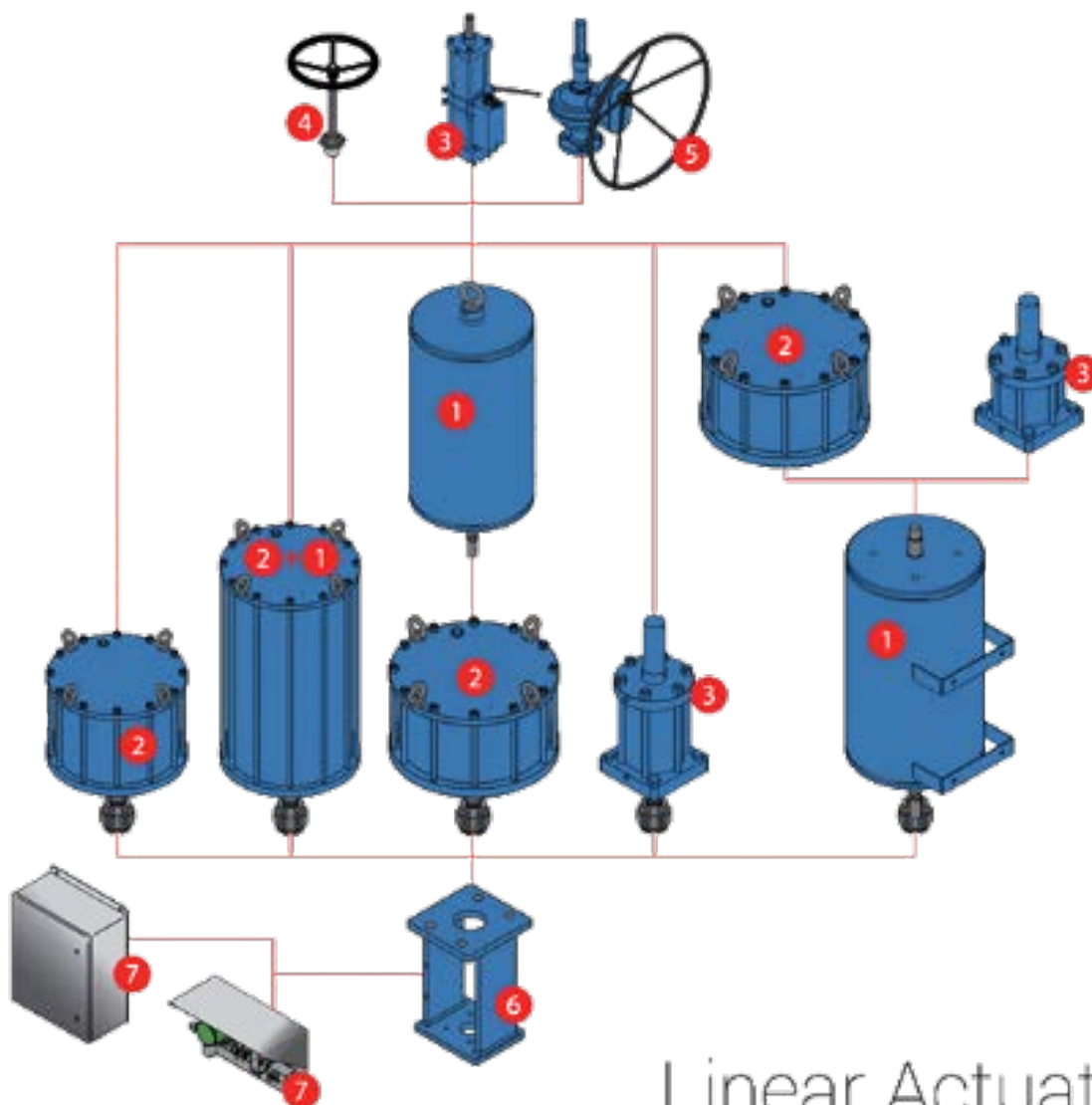


Unit : mm

Actuator Code		HPL28	HPL33	HPL38	HPL43	HPL48	HPL53	HPL58	HPL63	HPL68
Rated Size		280	335	385	435	485	535	585	635	685
Standard Travel		115	115	115	115	115	115	115	115	115
A2	STD	499	516	629	629	638	771	780	746	746
	H/W	788	619	609	C.F	C.F	C.F	C.F	C.F	C.F
A3	STD	245	248	248	248	276	278	296	296	306
	H/W	282	285	285	C.F	C.F	C.F	C.F	C.F	C.F
A4		290	290	290	C.F	C.F	C.F	C.F	C.F	C.F
B		415	467	514	565	630	680	730	785	835
C		390	444	490	565	630	680	730	785	840
C1		397	431	497	C.F	C.F	C.F	C.F	C.F	C.F
Pneumatic Port (inch)	TOP	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
	BOTTOM	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
A	STD	1,236	1,258	1,371	1,371	1,428	1,563	1,613	1,579	1,614
	H/W	1,604	1,471	1,492	C.F	C.F	C.F	C.F	C.F	C.F
G	STD	618	629	686	686	714	782	807	790	807
	H/W	802	735	746	C.F	C.F	C.F	C.F	C.F	C.F
A1		438	438	438	438	438	438	461	461	486
W		292	292	330	330	330	330	436	436	436
W1		251	251	289	289	289	289	390	390	390
W2		137	137	145	145	145	145	251	251	251
Z		254	254	330	330	330	330	487	487	487
Z1		213	213	289	289	289	289	441	441	441
Weight (kg)	STD	206	222	330	363	456	615	762	835	937
	H/W	250	309	396	C.F	C.F	C.F	C.F	C.F	C.F

C.F : Consult Factory

Double Acting



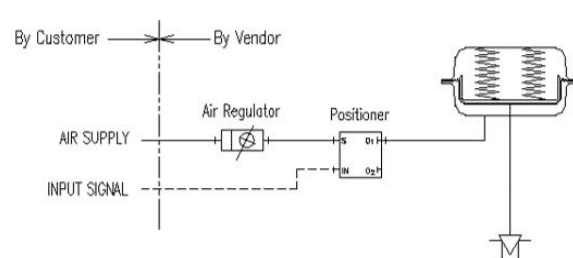
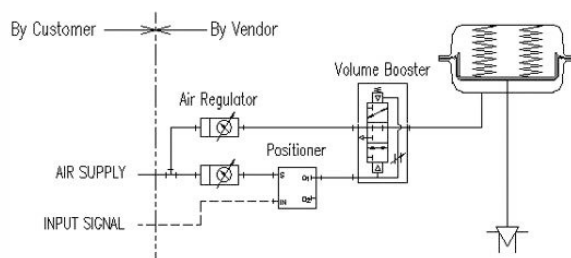
Linear Actuators

ITEM	DESCRIPTION	NOTES
1	Spring container	-Several spring containers available
2	Pneumatic cylinder	-Widest variety of cylinders available -Optional: version with spring included inside pneumatic cylinder
3	Hydraulic cylinder	-Widest variety of cylinders available -Implemented with hydraulic pump for manual override HP
4	Jack screw with hand-wheel	-HW manual override suitable for smaller actuators
5	Hand-wheel with gearbox	-Manual override suitable for medium size actuators
6	Mounting bracket	-Open type
7	Control system	-panel or cabinet version -Customized design

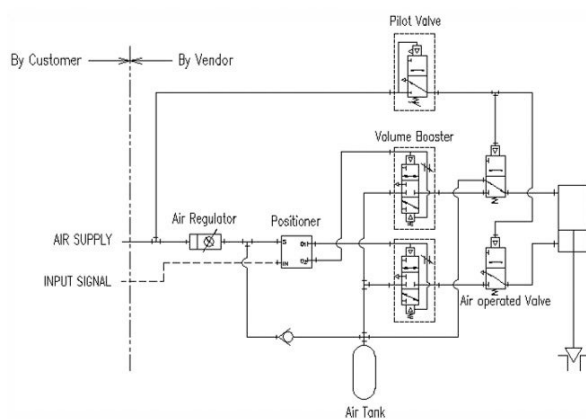
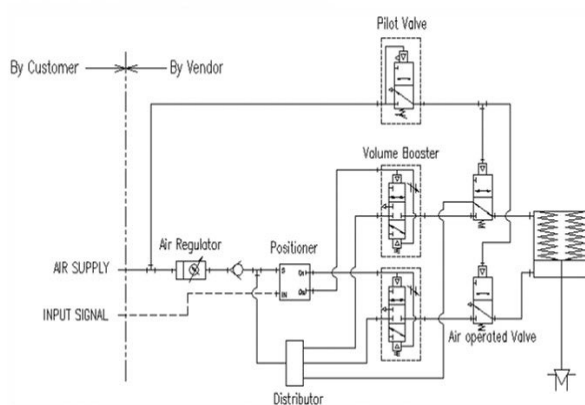
Spring Return

Schematic Diagram

Diaphragm Actuator



Cylinder Actuator





Cylinder Actuator



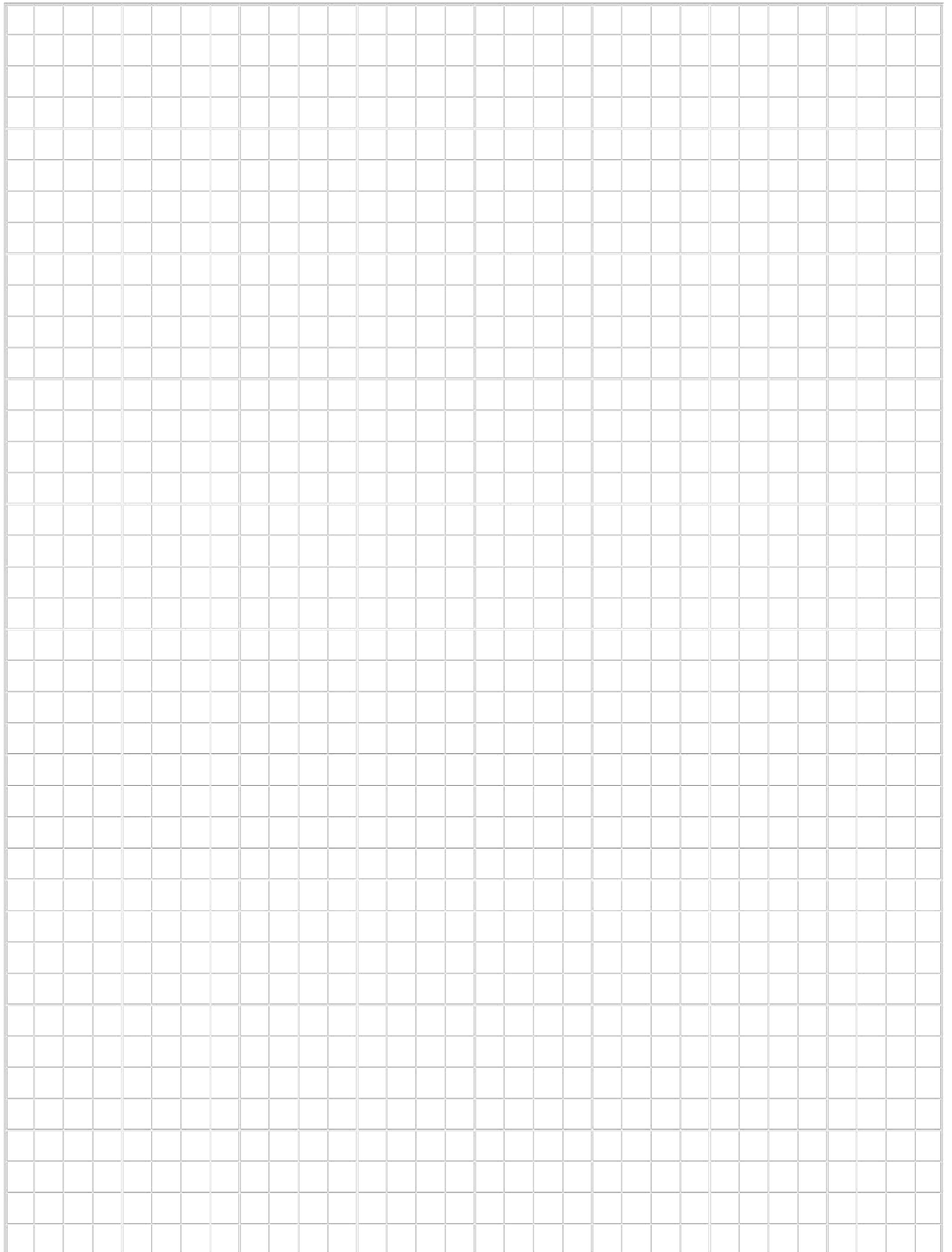
Blow Down Valve Actuator

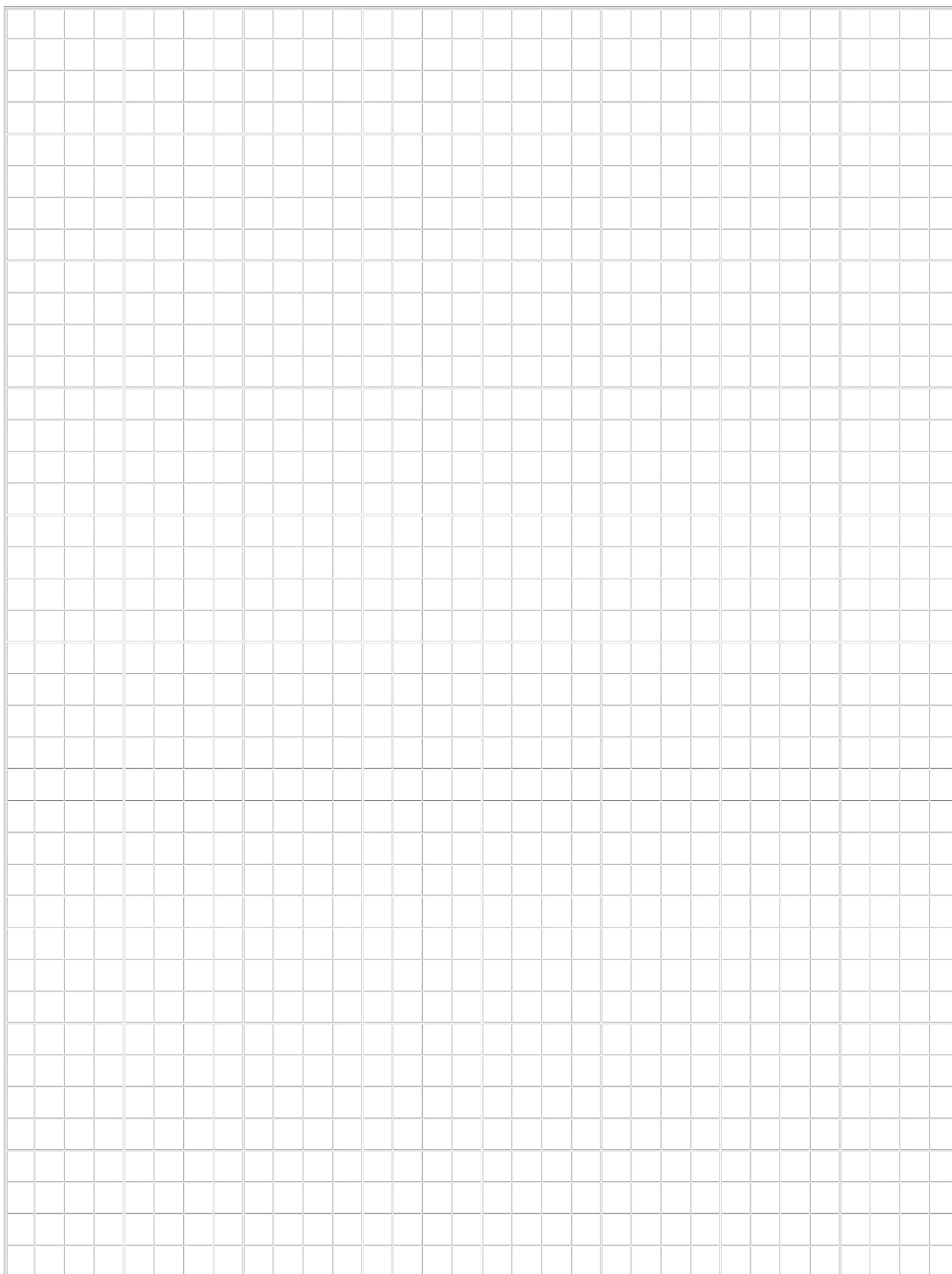


Choke Valve Actuator



Cryogenic Valve Actuator







Product Service Qualified Certificate

ISO 9001:2015

ISO 14001:2015

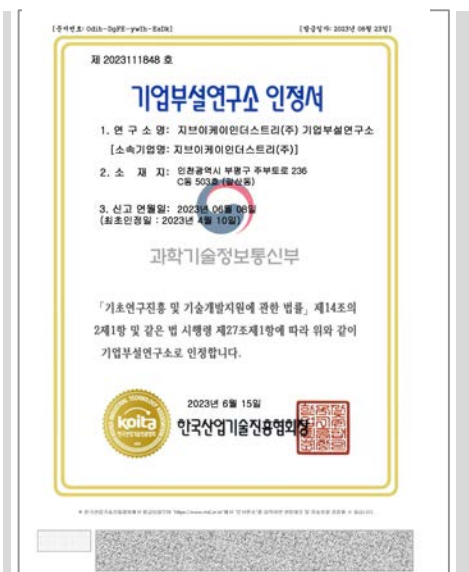
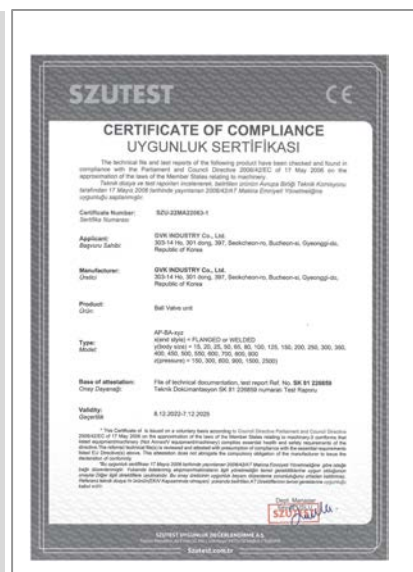
ISO 45001:2018



CE: Globe Control Valve

CE : Ball Valve

Research Institute



ASME U, PP Stemp

EAC : RUSSIA TRCU

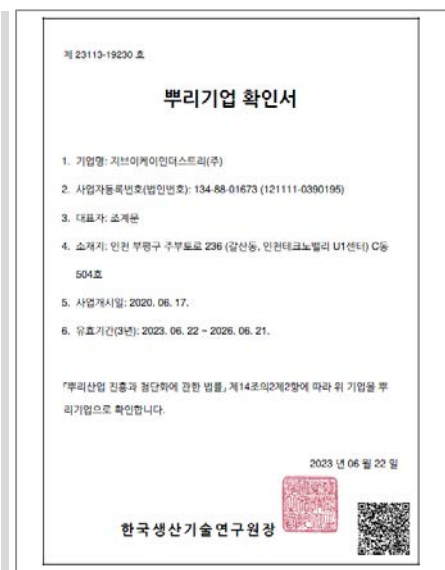
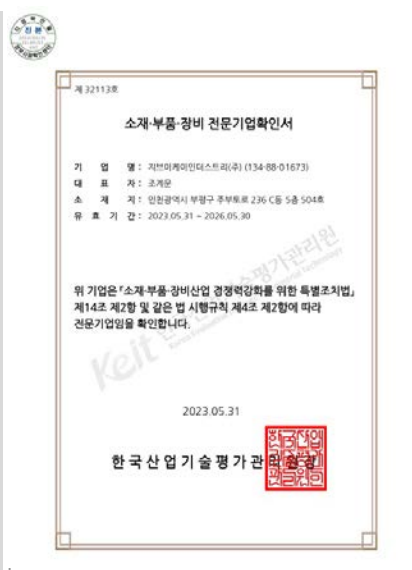
API 6D / 600 By KSM



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