

GSSE

ACTUATORS AND INSTRUMENTS GENERAL CATALOGUE

MADE IN IRAN



**TOTAL SOLUTION FOR YOUR
PROCESS REQUIREMENTS**



GSSE

is a known company in design and manufacturing of Gas, Power and Water engineering team design and simulate international standards API, ASME, and IGS. We use latest software for design and manufacturing of our products of valve including:

- Control Valves (Globe, Ball, Butterfly)
- Pressure Safety Valves (Conventional, Pilot Operated)
- Pressure Regulator Valve (Back Pressure Reducing Regulator Valve & Tank)
- On-Off Valve (Ball valves, Orbital)

Our products have been in service in oil and gas plants and other industries for many years. GSSE fully modernized CNC machining equipment enable us to offer best service. Our CAD-CAM Online network from our design shop help us to make our job in



Knowledge Based enterprise company active in design and manufacturing of valves for Oil and Gas, power plant and industrial plants. Our skilled engineers manufacture all of our products while considering international standards (ANSI, MSS, NACE, ISO, ISA, BS, ATEX, IPS). We provide sizing and selection, design, simulation and testing services. GSSE is manufacturing various types of valves (Globe, Gate, Ball, Butterfly)

(Pneumatic, Hydraulic, Manual, Pilot Operated) Pressure Regulator Valve, Pressure Reducing Valve, Blanketing Regulator Valve) and Control Valves (Ball Valves, ESDV, HIPPS) Our products are used in oil refineries, petrochemicals, power plants and many other industries for many years.

We have manufacturing facilities assembly and test equipment and provide services to our clients. We have an engineering office to the manufacturing plant to provide the shortest time.

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DS Series

DS Series is a pneumatic actuator with single spring and diaphragm in tow type (Direct & Reverse) designed to provide high performance.

Features

Heavy One-Piece Yoke

Provides maximum strength and rigidity.

Diaphragm Cases

Pressed steel upper and lower cases combine lightness, high mechanical strength and adequate protection in the event of severe over-pressurization.

Thrust Capability

Two actuator types and six sizes provide a wide range of applications.

Diaphragm

Molded elastomer with fabric insert for strength, long life and high sensitivity.

Linearity

The molded diaphragm and deep cases minimize area change and produce a linear relationship between travel and air pressure .

Numbering System

1st	2nd	3rd
D	S	

↓

Actuator Type
"D" Air to Close
"R" Air to Open



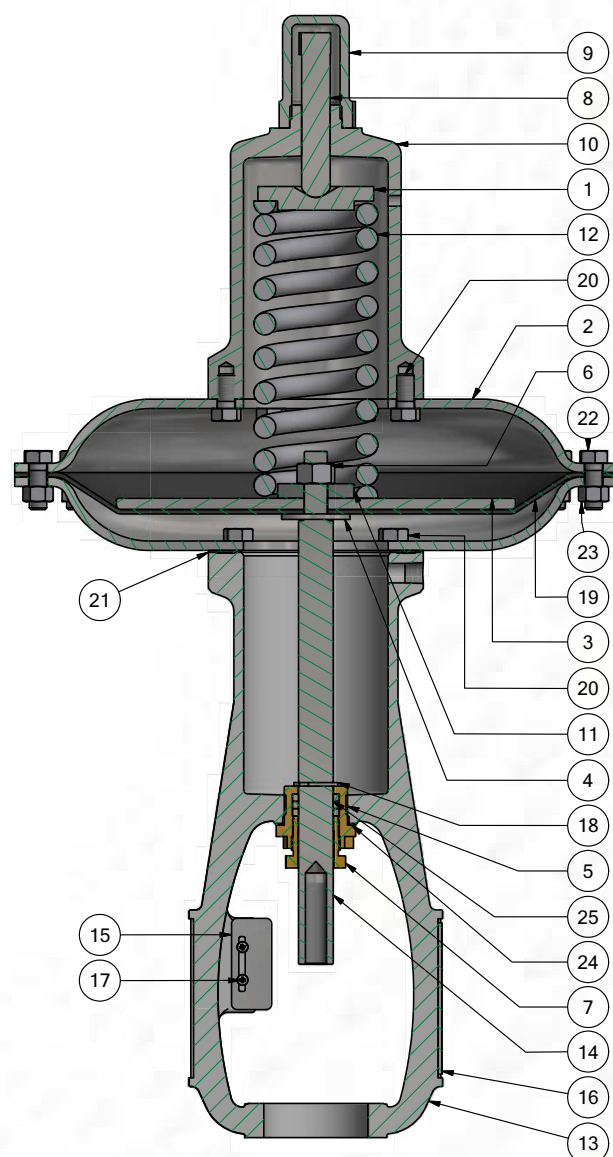
Direct: Air To Close (Fail To Open) "DSD"



Reverse: Air To Open (Fail To Close) "DSR"

Construction & Material Combination

ITEM	PART NAME	MATERIAL
1	Spring Guide	CARBON STEEL
2	Diaphragm Case	CARBON STEEL
3	Diaphragm Plate	CARBON STEEL
4	Diaphragm Washer	CARBON STEEL
5	Packing Box	BRASS
6	Stem Hex Nut	ASTM A194 GRADE 2H
7	Packing Nut	BRASS
8	Spring Adjuster	CARBON STEEL
9	Spring Barrell Cap	CAST IRON
10	Spring Barrell	CAST IRON
11	Spring Button	NICKEL COPPER ALLOY
12	Spring	SPRING STEEL
13	Yoke	CAST IRON
14	Actuator Stem	304 STAINLESS STEEL
15	Travel Indicator Scale	STAINLESS STEEL
16	Name Plate	STAINLESS STEEL
17	Machine Screw	STAINLESS STEEL
18	Snap Ring	CARBON STEEL
19	Diaphragm	NEOPRENE
21	Gasket	GRAPHITE
22	Case Screw	ASTM A193 GRADE B7
23	Case Nut	ASTM A194 GRADE 2H
24	Packing Box Gasket	COPPER
25	Yoke Packing	PTFE



Specifications

Actuator Size	Nominal Effective Area		Maximum Travel		Bench Range (psi)		Maximum Supply (psi)	Travel Time (Seconds) ⁽¹⁾		Weight (Kg)	
	(sq. in.)	(sq. cm.)	(in.)	(mm)				EPP ⁽²⁾	PP ⁽³⁾	DSD	DSR
07	46	297	0.75	19.1	3-15	6-30	60	3	6	16	15
11	71	458	1	25.4			60	3.3	7	20	25
13	105	667	1.5	38.1			60	6.3	13	32	40
15	145	935	2	50.8			60	11.4	20	55	64
18	200	1290	4	76.2			60	32	48	82	114
24	330	2130	4	76.2			55	38	54	148	245

NOTE:

Additional travels and spring ranges available.

(1) Measured by 3-15 psi bench range and 20 psi supply. For 6-30 psi bench range, increase travel time by 15%.

(2) Electro-pneumatic Positioner.

(3) Pneumatic Positioner .

DM Series

DM Series is Multi Spring diaphragm pneumatic actuator designed to provide high performance.

Features

Heavy One-Piece Yoke

Provides maximum strength and rigidity.

Diaphragm Cases

Pressed steel upper and lower cases combine lightness, high mechanical strength and adequate protection in the event of severe over-pressurization.

Thrust Capability

Two Linear Spring Diaphragm actuator types and seven sizes provide a wide range of applications.

Diaphragm

Molded elastomer with fabric insert for strength, long life and high sensitivity.

Linearity

The molded diaphragm and deep cases minimize area change and produce a linear relationship between travel and air pressure .

Field Reversible

Air action can be changed without additional parts.

Numbering System

1st	2nd	3rd
D	M	

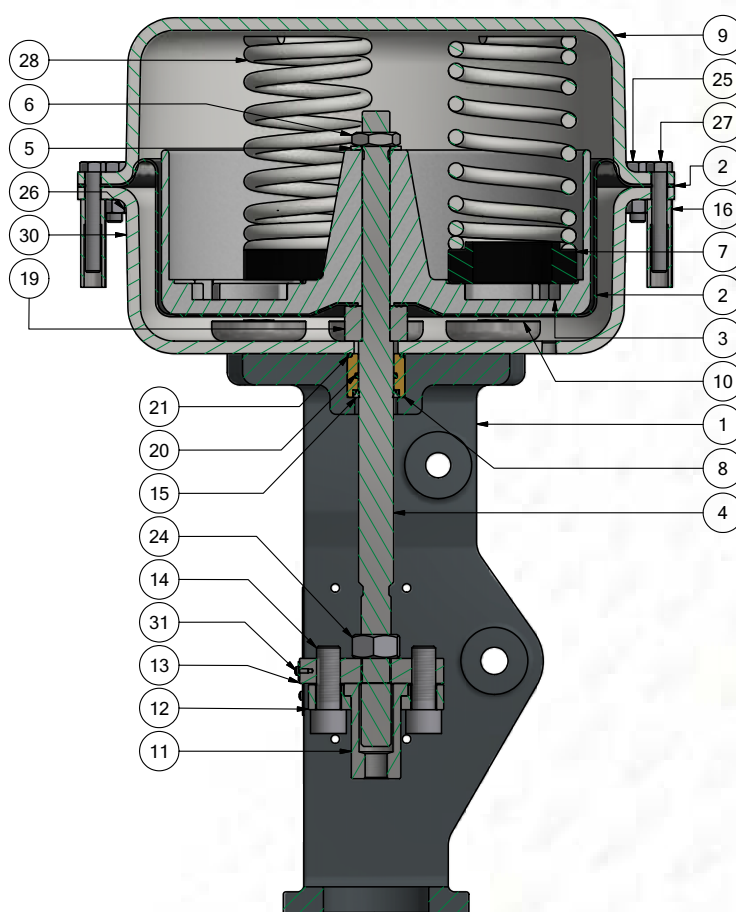
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Actuator Type
"7" Air to Close
"8" Air to Open



Construction & Material Combination

ITEM	PART NAME	MATERIAL
1	Yoke	GRAY CAST IRON
2	Diaphragm	BUNA-N W/POLYESTER
3	Diaphragm Plate	ALUMINUM
4	Actuator Stem	316 STAINLESS STEEL
5	Washer	CARBON STEEL
6	Jam Nut	CARBON STEEL
7	Spring Spacer	CAST IRON
8	Stem Bushing	BRONZE
9	Upper Diaphragm Case	CARBON STEEL
10	Spring Guide	CARBON STEEL
11	Connector Insert	CARBON STEEL
12	Bottom Stem Connector	CARBON STEEL
13	Top Stem Connector	CARBON STEEL
14	Socket Head Cap Screw	ALLOY STEEL
16	Compression Nut	CARBON STEEL
15	Stem Wiper	POLYURETHANE
17*	Hex Head Cap Screw	CARBON STEEL
18*	Seal Washer	STEEL & RUBBER
19	Spacer	CARBON STEEL
20	Internal O-ring	VITON
21	External O-ring	VITON
22*	Pointer	STAINLESS STEEL
23*	Scale - Travel	STAINLESS STEEL
24	Hex Nut	CARBON STEEL
25	Hex Head Case Screw	CARBON STEEL
26	Hex Head Case Nut	CARBON STEEL
27	Compression Screw	CARBON STEEL
29	Spring	SPRING STEEL
30*	Case Plug	CARBON STEEL
31	Pan Head Screw	CARBON STEEL



Specifications

Actuator Size	Nominal Effective Area		Maximum Travel		Bench Range (psi)				Maximum Supply (psi)	Travel Time (Seconds) ⁽¹⁾		Weight (Kg)
	(sq. in.)	(sq. cm.)	(in.)	(mm)						EPP ⁽²⁾	PP ⁽³⁾	
06	60	387	0.8	20.3	3-15	6-30	11-23	21-45	60	2	2	20
10	100	645	1.5	38.1						14	6	38
16	160	1032	2.5	63.5						13	10	95
23	230	1484	2.5	63.5						30	20	120

NOTE:

(1) Measured for DM8 type by 3-15 psi bench range and 20 psi supply (in maximum travel). For DM7 type, increase travel time by 5% to 15%.

(2) Electro-pneumatic Positioner .

(3) Pneumatic Positioner

PS Series

PS series are cylinder pneumatic actuators with high power actuating units, for use in on/off or modulating service, have a thrust capability which is much greater than similar size diaphragm spring actuators due to air pressure up to 150 psi (10 bar) being used.

Features

Rugged Construction

Heavy internal guiding and support provides proper alignment of the dynamic components, delivering a rugged construction suited for the most demanding valve actuation requirements.

Long Life Cycle

Heavy guiding of the actuator stem results in excellent mechanical alignment of the key components, thus minimizing dynamic seal and sliding surface wear. This also helps to reduce overall operating friction, which enhances throttling control performance.

Application Versatility

Standard construction options include double-acting without springs, as well as heavy mechanical spring-return for both air-to-extend and air-to-retract operation. Air volume in the cylinder is reduced in each design, providing high dynamic stiffness and improving speed of response.

Safety and Ease of Assembly

The standard spring-return design includes separate spring cartridge sub assemblies, which allows for safe pre-compression of the springs prior to final assembly into the actuator cylinder. The spring cartridge subassembly is also fully field reversible, which helps to reduce plant inventory.

Ease of Maintenance

Modular construction of the cylinder and spring cartridge design provides an assembly that is both easy and safe to maintain. The actuator piston is located in a separate cylinder chamber, which allows for simple dynamic seal replacement.

Manual Override

Optional handwheel assemblies provide manual override in case of air failure.

Integral Volume Tank

Fail action mode for the double-acting configuration without springs can be provided using an integral volume tank design.

Numbering System

1st	2nd	3rd
P	S	

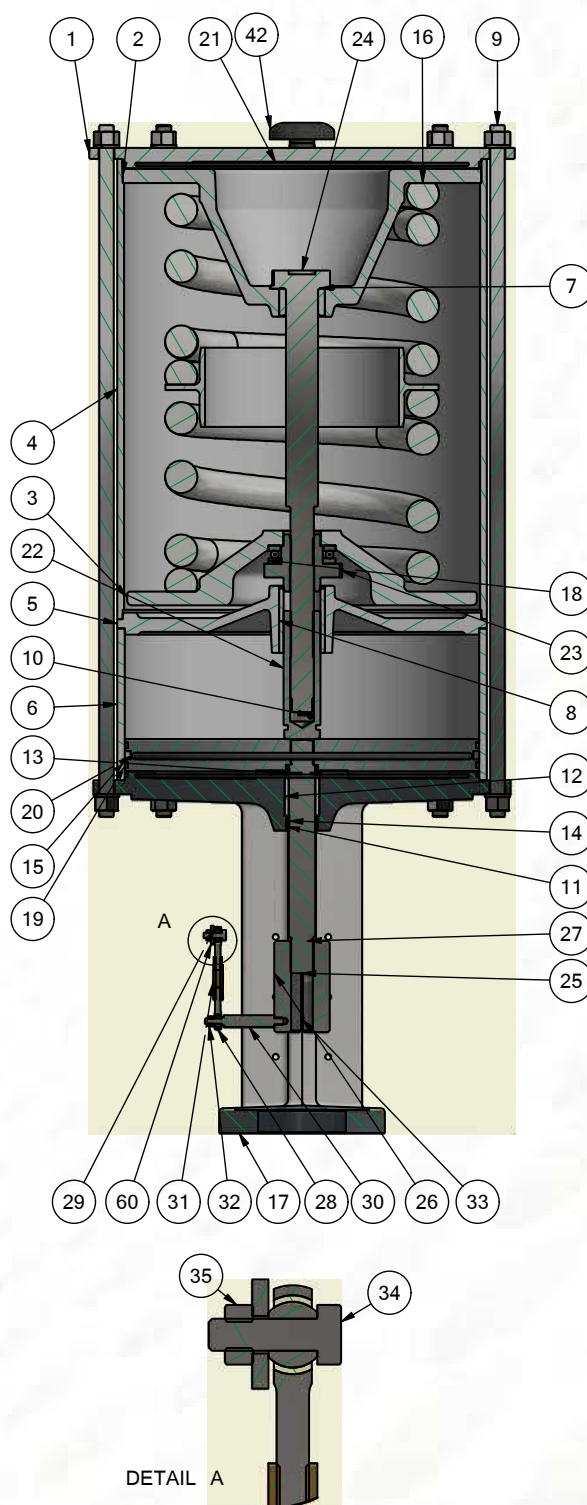
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Actuator Type
"D" Air to Close
"R" Air to Open
"U" Double Acting



Electrical And Control Specifications

ITEM	PART NAME	MATERIAL
1	Top plate	Ck45
2	Upper spring button 175	Cast Iron
3	Lower Spring Button 175	Ductile Iron
4	Spring tube	A106
5	Separator plate	Ductile Iron
6	Cylinder tube	A106 Inside Chrome Plated
7	Guide Bushing Upper Spring Button	Phosphore Bronze
8	Guide Bushing Separator Plate	Phosphor Bronze
9	Center Bolt	Mo40
10	Set Screw	Stainless Steel
11	Rod scraper	Nitrile (Buna-N)
12	Yoke Guide Bushing	Phosphor Bronze
13	Retaining Ring	Stainless Steel
14	Stem O-Ring	Nitrile (Buna-N)
15	Piston	Ck45
16	Spring	DIN 1.8159
17	Yoke	Ductile Iron
18	Thrust Ball Bearing	Chrome-Alloy Steel
19	Guide Ring	Graphite / Teflon
20	Piston O-Ring	Nitrile (Buna-N)
21	Yoke Internal O-Ring	Nitrile (Buna-N)
22	Compression Nut	Stainless Steel 410
23	Bearing Thrust	Mo40 ZP
24	Compression Bolt	Mo40 ZP
25	Stem	Stainless Steel A564
26	Back Stem Connector	Mo40 ZP
27	Front Stem Connector	Mo40 ZP
28	Eye Bolt.Metric Version.Left Hand	Stainless Steel
29	Eye Bolt.Metric Version.RIGHT HAND	Stainless Steel
30	Take Off Rod	Stainless Steel
31	Turn buckle.46	Brass
32	Hex Jam Nut	Stainless Steel
33	Socket Head Cap Screw	Carbon Steel ZP-Gr8.8
34	Hex Bolt	Stainless Steel
35	Nut (Positioner)	ASTM A194 Gr.2H
36	Scale - Travel 3.5 in	Stainless Steel 316
37	Pan Head Screw	Stainless Steel
38	Pin	Carbon Steel
39	Spacer	Ck45
40	Hex Nut	Carbon steel ZP-Gr8.8
41	Spring lock Washer	Carbon Steel ZP



Actuator Size	Nominal Effective Area		Maximum Travel		Spring Range (psi)			Maximum Supply (psi)	Travel Time (Seconds) ⁽¹⁾		Weight (Kg)
	(sq. in.)	(sq. cm.)	(in.)	(mm)					P ⁽²⁾	B ⁽³⁾	
6	28.3	182	4	101.6	10-25	20-40	25-50	150	3	2	9.5
8	50.3	325	2.5	63.5					5	2	16.3
12	113.1	729	6	152.4					42	8	38.6
16	197	1271	12	304.8					150	29	155
20	287	1854	6	152.4					109	22	290

Note:

- (1) Speed depends upon positioner selected, and size fittings and pipe work.
 - (2) Data based upon digital positioner calibrated at 4-20ma and 7 barg air supply.
 - (3) Booster fitted to top and bottom ports of actuator, with 1/4 inch fittings between cylinder and boosters, and separate 1/2 inch diameter feed for boosters. 7 barg air supply used.
- For sizes or strokes and spring range outside these listed or faster stroke speeds consult factory.

PSH Series

PSH series are cylinder Hydraulic actuators with high power actuating units, for use in on/off or modulating service, have a thrust capability to Hydraulic pressure up to 1500 psi (100 bar) being used.

Features

- Electroless nickel plated and polished cylinder for corrosion resistance and minimal friction.
- Hard chromium plated and polished piston rod in stainless steel for corrosion resistance and minimum friction.
- Piston rod support bushing in bronze with sintered PTFE provides minimal friction and extended service life.
- Enclosed spring cartridge ensures personnel safety during assembly or disassembly.
- Fabricated carbon steel adapter spool with accessories provision designed specifically for adaptation to any type of valve.
- Accept an extensive range of accessories:
 - Complete control panel
 - Emergency tank
 - Manual hand pump
 - PST device
- Special coatings for offshore or corrosive environments available on request.

Numbering System

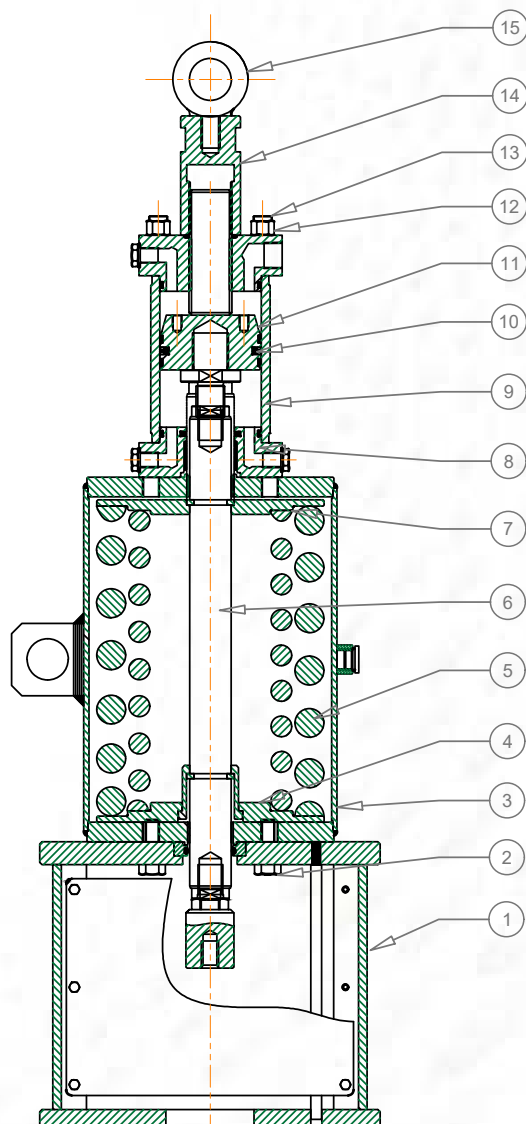
Model Number	Actuator Type	Actuator Size
PSH	X	XX

"C" Fail to Close
"O" Air to Open
"D" Double Acting



Construction & Material Combination

Item	Part Name	Material
1	Yoke	ST 52
2	Screw	A193 B7
3	Spring Barrel	A 106
4	Spring Lower Plate	GGG 40
5	Spring	Alloy Steel
6	Stem	Stainless Steel
7	Spring Upper Plate	GGG 40
8	Hydraulic Cylinder Bottom	Carbon Steel
9	Hydraulic Cylinder	Carbon Steel Plated
10	O-Ring	Nitrile
11	Piston	Carbon Steel
12	Hex Nut	A194 H2
13	Stud	A193 B7
14	Cap	Carbon Steel
15	Eye Bolt	Carbon Steel



Specifications

Actuator Series	Maximum Allowable Trust	Cylinder Diameter	Spring Ending Trust	Stroke	Spring Action		Ambient Temperature		Manual Override	
PSH	(Kn)	(mm)	(Kn)	(mm)	Close	Open	°C		HW	Hand Jack
	250	135	100	300			-20	+100		

NOTE:

- Speed might varies with inlet Pressure.
- Electro-Hydraulic digital positioner will be installed on this actuator.
- Dimensions are dependent on the valve stroke and trust for each actuator.

QT Series

QT series are quarter turn pneumatic spring diaphragm actuators. This series designed to provide high performance, reliability and long service life.

Features

Field Reversible

Air action can be changed without additional parts.

Diaphragm Cases

Pressed steel upper and lower cases combine lightness, high mechanical strength and adequate protection in the event of severe over-pressurization.

Diaphragm

Molded elastomer with fabric insert for strength, long life and high sensitivity.

Linearity

The molded rolling diaphragm and deep cases minimize area changes providing a more linear relationship between travel, air pressure and output torque.

Separate Interchangeable Yoke

Allows flexible mounting options to a variety of rotary valves. Yoke and mounting parts are available for GSSE rotary valves as well as a universal mounting that is adaptable to other quarter turn valve designs.

Numbering System

Model Number	Actuator Type	Actuator Size
QT	X	XX

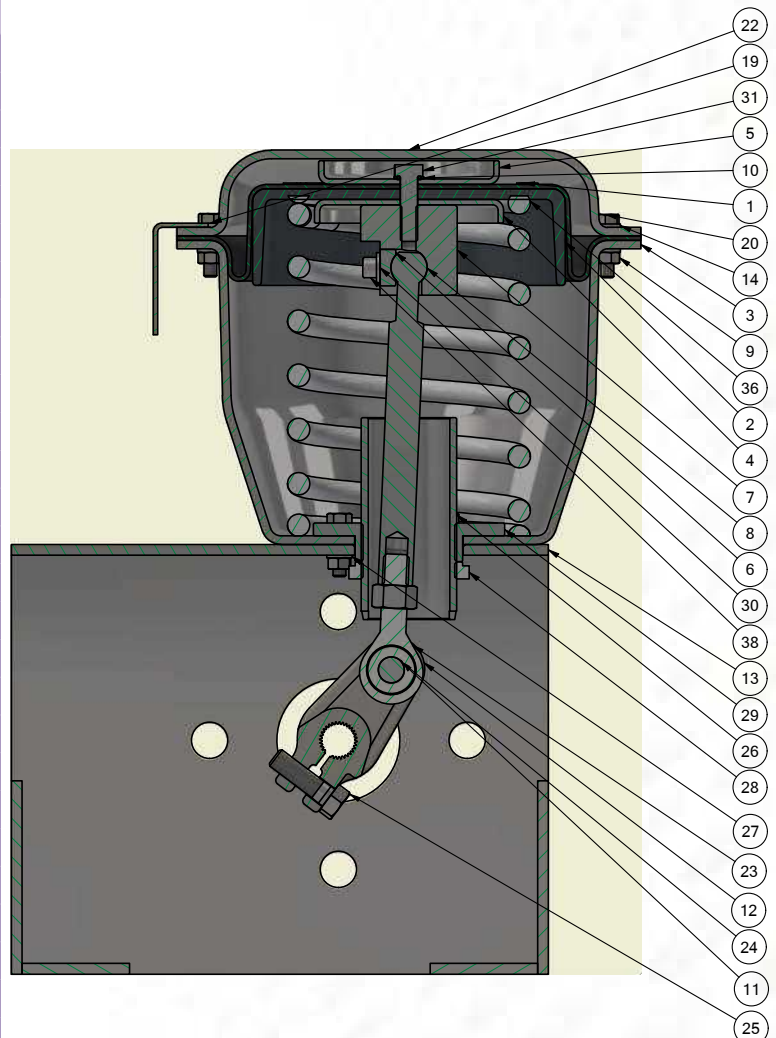


"C" Increasing Air Pressure Rotates Counter Clockwise
"O" Increasing Air Pressure Rotates Clockwise



Construction & Material Combination

ITEM	PART NAME	MATERIAL
1	Diaphragm	Ethylene Propylene
2	Diaphragm Plate	DIN GGG40
3	Lower Diaphragm Casing	DIN St 37
4	Spring Guide	DIN St 37
5	Stopper Plate	DIN St 37
6	Trunnion Block Plug	Stainless Steel 316
7	Trunnion Block	Stainless Steel 316
8	Spring Stem	ASTM A564 Gr 630
9	Hex Nut	ASTM A194 Gr.2H
10	Seal Washer	Stainless Steel/Viton
11	Pin	Stainless Steel 316
12	Lever Set	DIN St 52
13	Box	Acc. to BOM
14	Washer	Steel
15	Scale Travel	Stainless Steel 316
16	Compression Nut	Steel
17	Hex Nut	Steel
18	Hexagon Socket Screw	Stainless Steel
19	67CFR Bracket	Steel
20	Hex Bolt	ASTM A193 Gr.B7
21	Hex Bolt	ASTM A193 Gr.B7
22	Upper Diaphragm Casing	Acc. to BOM
23	Rod End Bearing Eye Bolt	Steel/Bronze
24	Retaining ring	Stainless Steel
25	Hex Bolt	ISO Gr. 8.8
26	Stopper	Steel
27	Spring Washer	Steel
28	Drive Nut	Steel
29	Stopper Ring	Steel
30	Washer	Steel
31	Hex Bolt	ASTM A193 Gr.B7
32	Ball Bearing	Stainless Steel
33	Accessory Drive	Stainless Steel 304
34	Hex Bolt	ASTM A193 Gr.B7
35	Retaining Ring	Stainless Steel
36	Spring	Oil Temper (OT)
37	Not Shown	
38	Cap Screw	Steel



Specifications

Actuator Size	Nominal Effective Area		Torque (N.M)						Travel Time (Seconds) (1)		Weight (Kg)
			Spring Range 40 psi		Spring Range 60 psi		Spring Range 80 psi				
	(sq. in.)	(sq. cm.)	Spring End	Air End	Spring End	Air End	Spring End	Air End	Air	Spring	
8	19	122.6	15.2	29.3	34.9	34.9	52.5	36	2	2	13
10	33	212.9	78.5	89.8	156.5	112.4	202.8	159.2	5	1.5	33
18	99	638.7	359.2	417.5	549.7	622.4	764.3	801.6	3	2	107.5

NOTE:

(1) Time may vary due to application.

RD Series

RD series are quarter turn pneumatic spring diaphragm actuators. This series designed to provide high performance, reliability and long service life.

Features

Diaphragm Cases

Pressed steel upper and lower cases combine lightness, high mechanical strength and adequate protection in the event of severe over-pressurization.

Diaphragm

Molded elastomer with fabric insert for strength, long life and high sensitivity.

Linearity

The molded rolling diaphragm and deep cases minimize area changes providing a more linear relationship between travel, air pressure and output torque.

Separate Interchangeable Yoke

Allows flexible mounting options to a variety of rotary valves. Yoke and mounting parts are available for GSSE rotary valves as well as a universal mounting that is adaptable to other quarter turn valve designs.

Modular Spring Pack

Three standard spring ranges are achievable using two springs either, individually or combined.

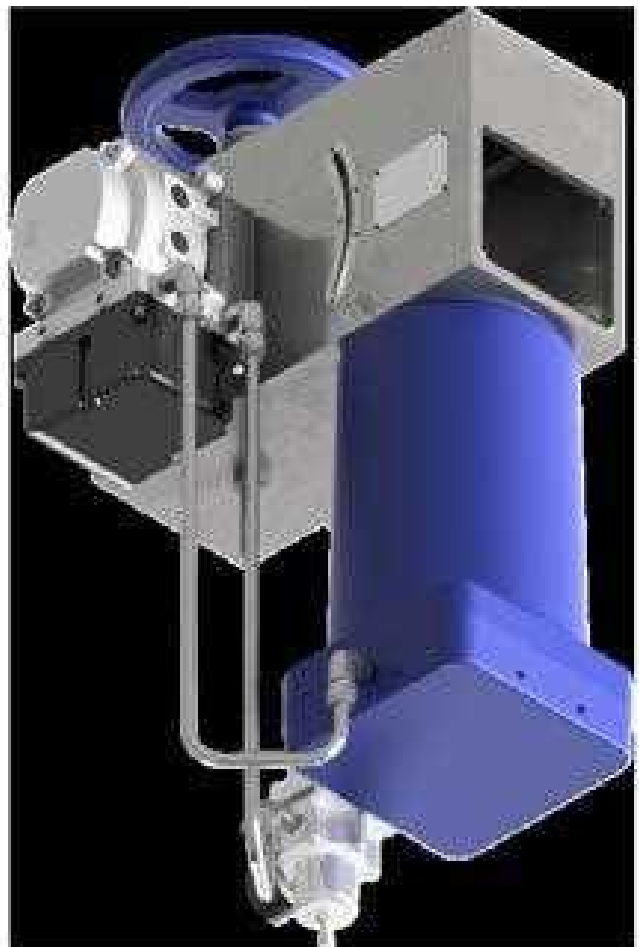
Numbering System

Model Number	Actuator Type	Actuator Size
RD	X	XX



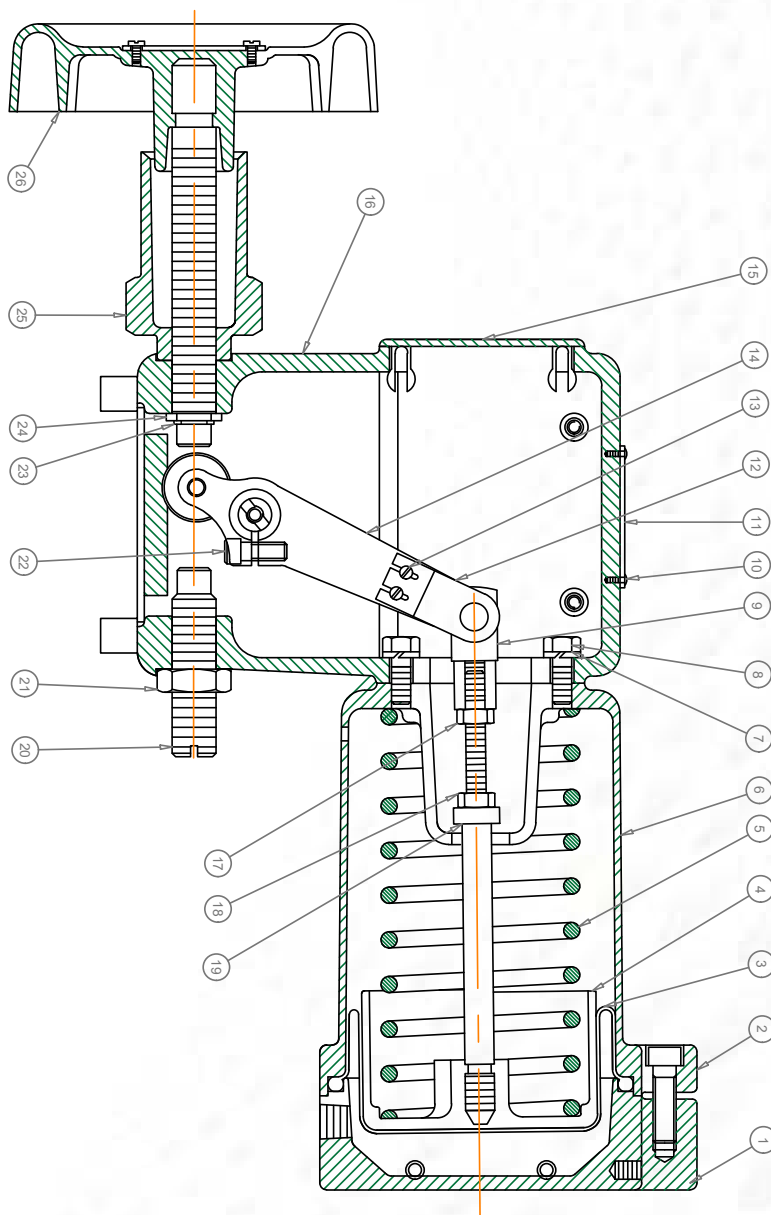
"C" Increasing Air Pressure Rotates Counter Clockwise

"O" Increasing Air Pressure Rotates Clockwise



Construction & Material Combination

Item	Part Name
1	Diaphragm Case
2	Cap Screw
3	Diaphragm
4	Diaphragm Plate
5	Spring
6	Spring Barrel
7	Lock Washer
8	Cap Screw
9	Clevis
10	Plate Screw
11	Serial Plate
12	Adjustable Indicator
13	Indicator Screw
14	Lever
15	Boss Cover
16	Yoke
17	Lock Nut
18	Lock Nut
19	Lock Washer
20	Limit Stop
21	Nut
22	Lever Cap Screw
23	Truarc Ring
24	Handwheel Washer
25	Handwheel Lock
26	Handwheel Shaft



Specifications

Actuator Diameter		Diaphragm Effective Area		Actuator Stroke		Travel Time (sec.)	
In.	Cm	Sq.In.	Cm2	In.	Cm	Increasing Instrument Signal	Decreasing Instrument Signal
4½	11.4	14	90	3½	8.9	1.2	2.4
6	15.2	24	155	5½	14.6	3	6.3
7	17.8	36	232	7½	18.4	7.6	9.8
9	22.9	75	483	7½	18.4	17	24

PQ Series

PQ series are quarter turn pneumatic Compact spring piston actuators. This series designed to provide high performance, reliability and long service life.

Features

The standard spring return actuator on the rotating valve can provide spring-to-close or spring-to-open operation simply by changing the mounting position by 90°. double acting and spring return Series. Piston type actuators are designed for use in both modulating control and on-off service. designed to ISO 5211/1 when linkages are utilized. These actuators offer an extremely long cycle life and are well suited to operate almost any type of rotary valve.

Cylinder Body

Extruded anodized aluminum is selected for cylinder body , the best advantages of such material is very good mechanical properties and light weight at the same time , easy machining and honing main bore. Molded elastomer with fabric insert for strength, long life and high sensitivity.

Corrosion resistance

The epoxy painted actuators have housings of rugged cast iron, with light-weight aluminum cylinders anodized for added corrosion resistance. Travel stops are stainless steel.

Numbering System

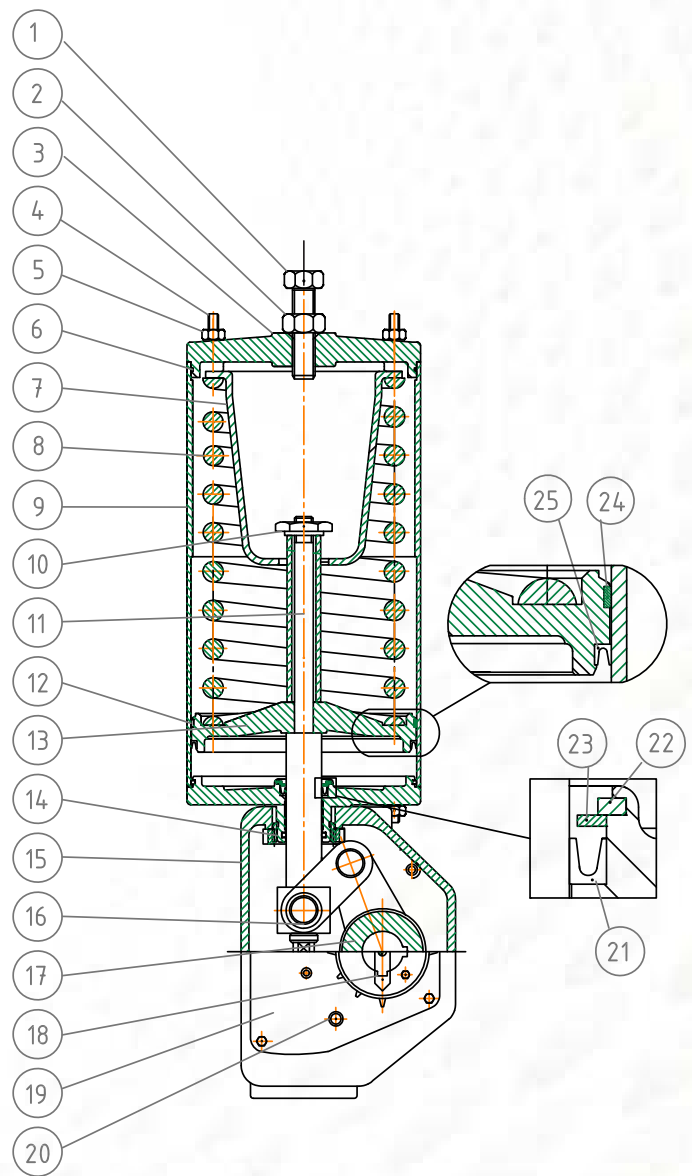
Model Number	Actuator Type	Actuator Size
PQ	X	XX

"C" Increasing Air Pressure Rotates Counter Clockwise
"O" Increasing Air Pressure Rotates Clockwise
"D" Double Acting



Construction & Material Combination

ITEM	PART NAME	MATERIAL
1	SCREW	AISI 304
2	LOCK NUT	AISI 304
3	CAP	ASTM A105
4	SCREW	AISI 304
5	NUT	AISI 304
6	O-RING	VITON
7	SPRING RETAINER	ASTM A 216 GR. WCB
8	SPRING	INCONEL X-750
9	CYLINDER	ASTM A 105
10	STEM NUT	AISI 304
11	STEM NUT	AISI 304
12	SEAL RING	PTFE
13	PISTON	ASTM A 216 GR. WCB
14	PACKING SET	PTFE
15	HOUSING	ASTM A 216 GR. WCB
16	CRANK	ASTM A 105
17	OUT PUT SHAFT	ASTM A 105
18	POSITION INDICATOR	AISI 316
19	HOUSING COVER	AISI 316
20	SCREW	AISI 304
21	V-RING	VITON
22	SEAL RING	VITON
23	PACKING SET	PTFE
24	SEAL RING	VITON
25	SEAL RING	VITON



Specifications

SINGLE ACTING	SPRING TORQUE
ACTUATOR TYPE	NM
6	36
8	70
10	150
12	300
16	600
20	1200
25	2400
32	4800
40	8400

ACTUATOR TYPE	TORQUE OUTPUT @ SPECIFIC PRESSURE (NM)						
	3 BAR	3,5BAR	4BAR	5BAR	5,5BAR	6BAR	7BAR
6	45	51	60	75	82	90	100
9	85	100	115	145	160	175	205
11	160	185	220	270	300	330	375
13	330	390	460	565	620	675	790
17	620	720	850	1040	1160	1260	1570
20	750	880	1030	1290	1400	1550	1780
25	1450	1700	2010	2500	2700	3000	3450
32	2890	3400	4000	5000	5500	6000	7000
40	6100	7100	8290	10310	11300	12290	14300
50	11770	13900	16290	20210	22000	24190	28100
60	17330	20300	23710	29580	32400	35320	41190
75	27180	31700	37170	46250			
50X2	26540	31000	36290	44790	49600	54500	63000
60X2	38200	44600	52200	65110	71400	77710	90490
75X2	70300	82340	102710				

RP Series

RP series are pneumatic actuators with rack and pinion mechanism, opposed-piston actuator available in a double acting option for 90°, 135° and 180° rotations as well as a spring return option for 90° rotation. It is ideal for use on the BT Series in either automated on/off or throttling service.

Features

Integral Passages

Reduces cost of external tubing.

Piston Guides And Rings

Provides low friction coefficient and absorbs the side thrusts of the pistons extending the valve package service life.

Output Shaft Bearings

Low friction steel design provides extended service life in both on/off and throttling environments.

Output Shaft and pinion Gear

On piece manufactured from hardened steel and zinc-plated for corrosion protection.

Shaft Position Indicator

Show clear open/close position and easily removable for manual override.

Body

Extruded aluminum with anodized corrosion protective coating.

Travel Stop

Supports travel limits in both open and close directions.

End Caps

Polyester coated for added chemical resistance.

Piston

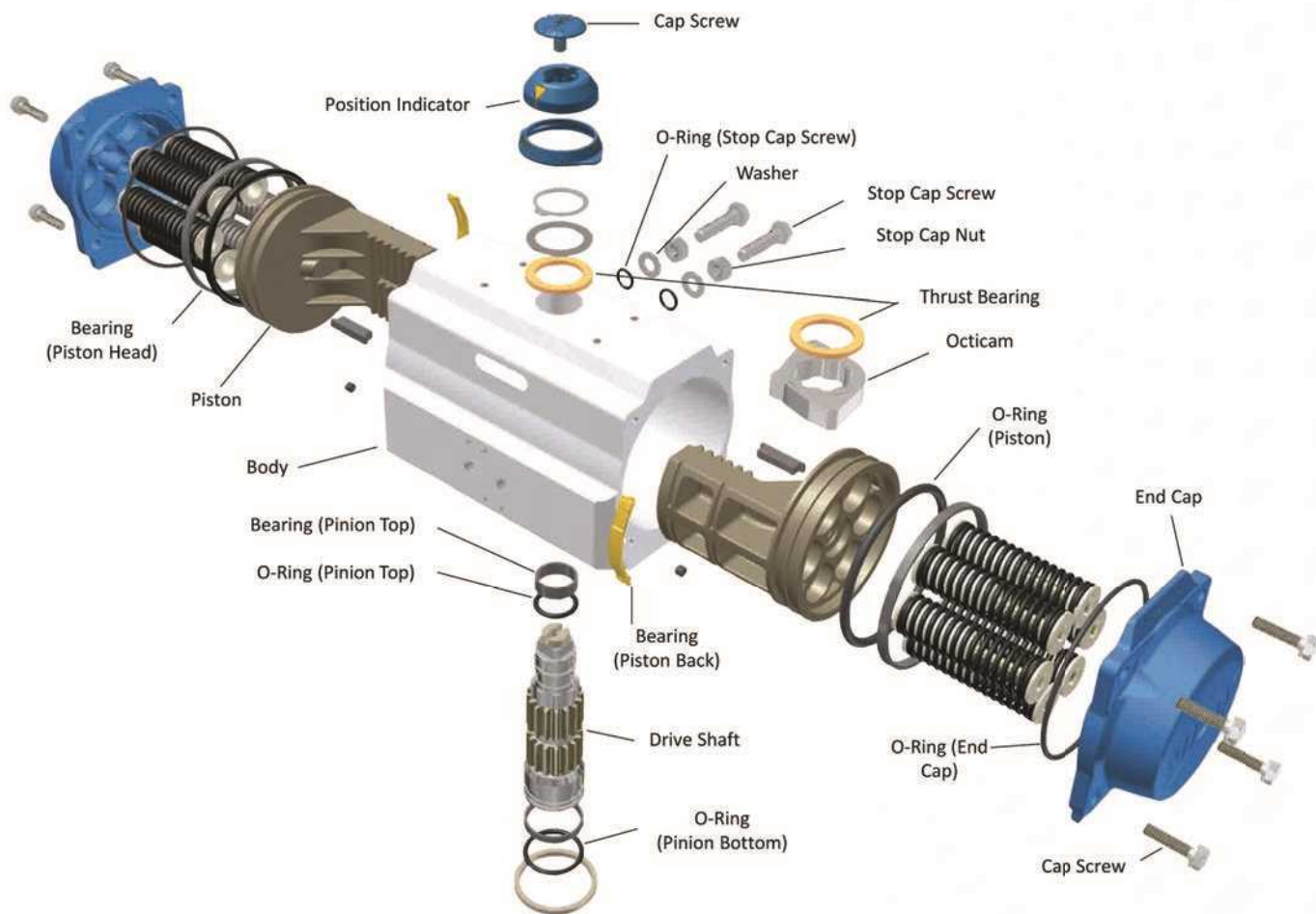
Die Cast aluminum.

Numbering System

Model Number	Actuator Type	Actuator Size
RP	X	XX

"S" Spring Return
"U" Double Acting





Specifications

Actuator Size	Actuator Volumes (cubic cm)		Output Torque (N.m)		Weight (Kg)	
	Double Acting	Spring Return	Minimum	Maximum	Double Acting	Spring Return
63	157	220	6.8	16.4	1.8	2.2
83	406	534	15.8	28.5	3.3	4.2
93	570	752	23.3	56	4.5	5.8
119	1209	1565	52	125	8.8	11.6
128	1585	2143	86	206	11.2	14.6
160	3073	4254	140	335	20.4	28.2
210	5899	7374	275	660	34.8	51.1
255	12290	14748	560	1342	77.2	103.2

MDS Series

MDS Series is Single Spring diaphragm pneumatic actuator designed to provide high performance with Maximum Precision for Microflow Control Valve .

Features

Robust Design

Main Body Design for absorbing Vibrstions

Diaphragm Cases

High mechanical strength and adequate protection in the event of severe over-pressurization.

Diaphragm

Molded elastomer with fabric insert for strength, long life and high sensitivity.

Linearity

The molded rolling diaphragm and deep cases minimize area changes providing a more linear relationship between travel, air pressure and output torque.

Field Reversible

Air action can be changed without additional parts.

Numbering System

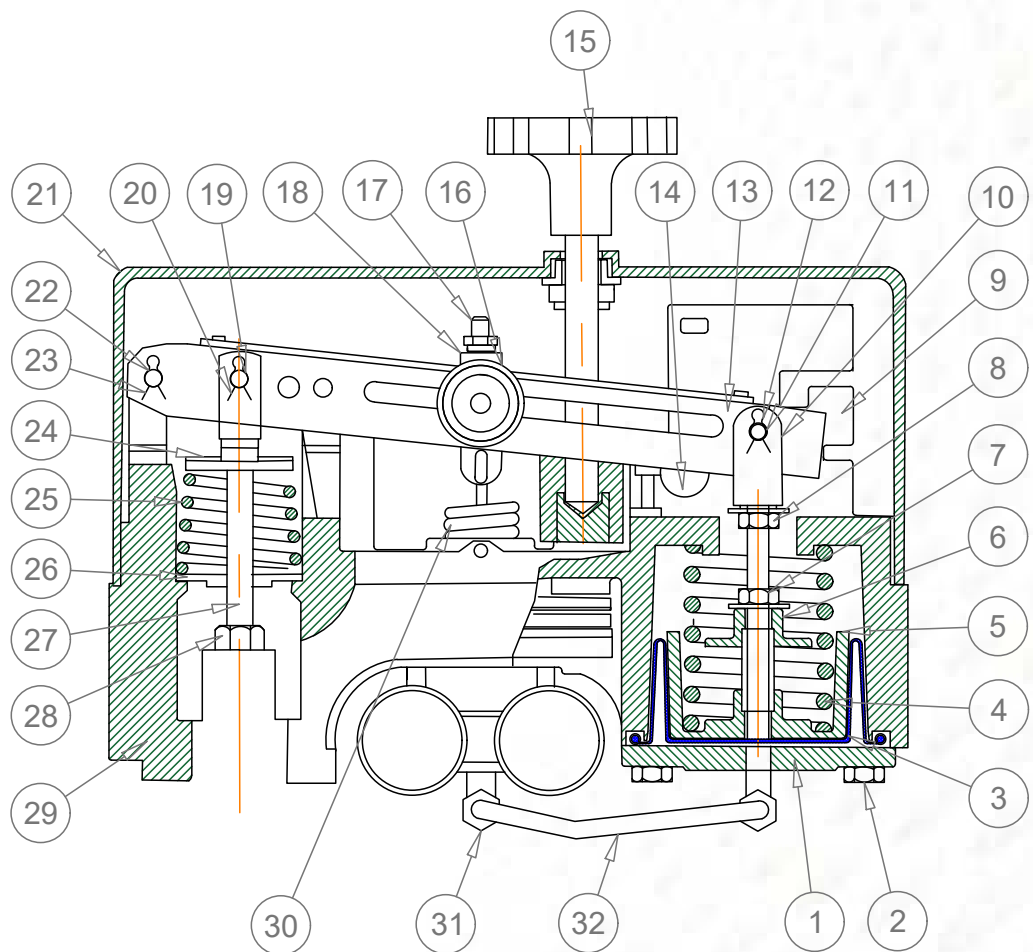
Model Number	Actuator Type	Actuator Size
MDS	X	XX

"C" Fail to Close
"O" Fail to Open



Construction & Material Combination

Item	Part Name
1	Diaphragm Cover
2	Cover Cap Screw
3	Diaphragm
4	Spring
5	Diaphragm Plate
6	Limit Stop
7	Lock Nut
8	Lock Nut
9	Indicator
10	Yoke
11	Pivot Pin
12	Clip
13	Arm
14	Cover Plug
15	Adjusting Wheel
16	Internal Ad. Wheel
17	Adjusting Screw
18	Link
19	Pivot Pin
20	Clip
21	Cover
22	Pivot Pin
23	Clip
24	Spring Button
25	Conical Spring
26	Spring Plate
27	Stem
28	Nut
29	Main Body
30	Balancing Spring
31	Union Elbow
32	Tubing



Specifications

SYP Penumatic Series

SYP series are pneumatic actuators with scotch yoke mechanism with Modular design , opposed-piston actuator available in a double acting option for 90°rotations as well as a spring return option for 90° rotation. It is ideal for use on the Butterfly , ball and other quarter turn valve Series in either automated on/off or throttling service as well as Modulating control valves.

Features

- * Compact design offers a high torque to weight ratio
- * Modular Design offers easy configuration in the field
- * Module alignment ensured by precision machined centering rings
- * Torque Output ranging from 2,744 to 885,100 Lb-in (310 to 100,000 Nm)
- * Spring End Torque ranging from 2,744 to 445,261 Lb-in (310 to 50,306 Nm)
- * Premium epoxy/polyurethane coating as standard

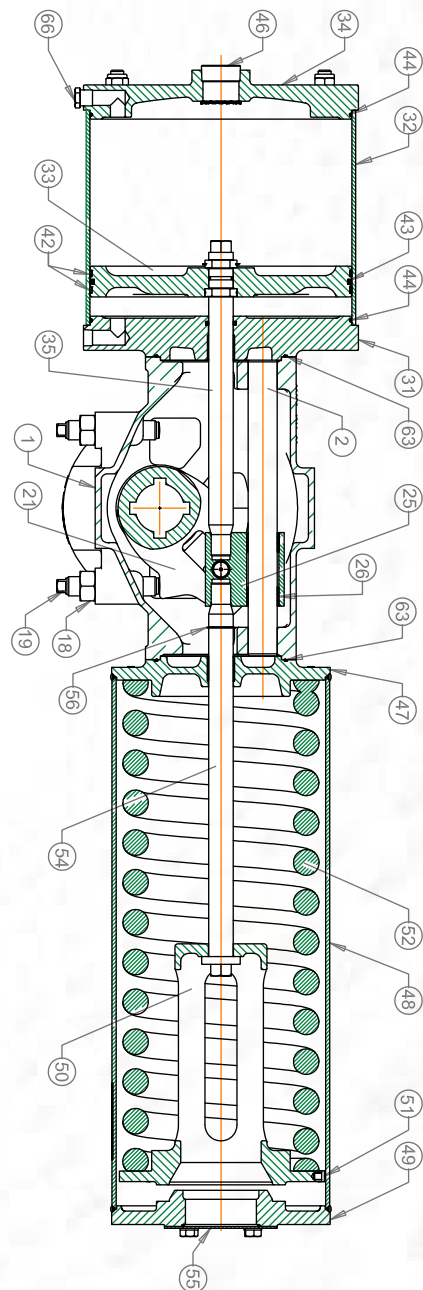
Numbering System

Series		Size Code									Base Number				
SYP	Actuator Size		Bore Size				Cylinder Size		Spring Size			Base Code	Action		
SYP	F		1				L		4		–	ZED	C		
	A	VF K1	X	Refer to Table Below				A	2.5"	0	None(DA)		A	Double Act, Single Cyli.	
	B	EZ K2	Actuator Bore Selection Table					B	4"	1	Spring 1		B	Double Act, Dual Cyli.	
	C	EA K2						C	5"	2	Spring 2		C	Spring Return, Fail CW	
	D	VF K2		Actuator Size	X			D	6"	3	Spring 3		D	Spring Return, Fail CCW	
	E	SD K2			1	2	3	E	7"	4	Spring 4				
	F	EV K3		EZ K2	0.87" A/F			F	8"	5	Spring 5				
	G	ZV K3		EA K2	1.378"	0.87" A/F		G	9"						
	H	VF K3		VF K2	1.969"	1.378"		H	10"						
	J	EN K4		SD K2	2.5"	1.969"		J	12"						
				EV K3	3"	2.5"		K	14"						
				ZV K3	4.5"	4.0"	3.5"	L	16"						
				VF K3	6.0"	5.0"		M	18"						
				EN K4	7.0"	6.0"		N	20"						
								P	22"						
							Q	24"							
							R	28"							
							S	32"							
							T	36"							

Base Number								Trim Code					
Mounting/ Yoke		Ports		Standard Options		Design Code		MOC		Temp Trim		Coating	
2		1		G		00		0		S		0	
1	ISO Symmetric	1	Single, NPT Standard	N	None	00	Std. Pneumatic	0	Standard (DI/CS)	S	Standard	0	Standard
2	ISO Canted	2	Dual, NPT	H	Hydraulic	01	PED	1	Stainless Steel	L	Low Temp	1	Primer Only
		3	Single, Custom	J	Jackscrew Direct Drive			2	Std with SS Bolt	H	High Temp		
		4	Dual, Custom	G	Jackscrew Gear Drive	XXX-Special Requirements							
				E	Extended Stopper 45°								
				F	Extended Stopper 90°								
				D	Damper - Hydraulic								
				P	PST & Locking Device								

Construction & Material Combination

ITEM	DESCRIPTION	MATERIAL
1	YOKE HOUSING	ASTM A 216 GR. WCB
2	GUIDE ROD	AISI 304
18	SEAL NUT	AISI 304
19	STOP BOLT	AISI 304
21	YOKE	ASTM A 216 GR. WCB
25	GUIDE BLOCK	ASTM A 105
26	BUSHING (GUIDE ROD)	AISI 316
31	ADAPTOR (PRESSURE MODULE)	ASTM A 216 GR. WCB
32	BARREL	ASTM A105
33	PISTON	ASTM A 216 GR. WCB
34	END CAP (PRESSURE MODULE)	ASTM A 216 GR. WCB
35	PISTON ROD	AISI 316
42	WEAR RING	AISI 316
43	QUAD SEAL	VITON
44	O-RING (BARREL)	VITON
46	PIPE PLUG	AISI 316
47	ADAPTOR (SPRING MODULE)	ASTM A 216 GR. WCB
48	PIPE	ASTM A 105
49	END CAP (SPRING MODULE)	ASTM A 216 GR. WCB
50	SPRING GUIDE	ASTM A 216 GR. WCB
51	BUTTON	AISI 316
52	SPRING	ALLOY STEEL
54	SPRING ROD	AISI 316
55	END COVER (SPRING MODULE)	ASTM A 216 GR. WCB
56	RETAINER RING (SPRING MODULE)	ASTM A 216 GR. WCB
63	O-RING (MODULE)	VITON
66	BREATHING VENT	AISI 316



Specifications



SYH Hydraulic Series

SYH series are hydraulic actuators with scotch yoke mechanism with Modular design , opposed-piston actuator available in a double acting option for 90°rotations as well as a spring return option for 90° rotation. It is ideal for use on the Butterfly , ball and other quarter turn valve Series in either automated on/off or throttling service as well as Modulating control valves.

Features

- * Compact design offers a high torque to weight ratio
- * Modular Design offers easy configuration in the field
- * Module alignment ensured by precision machined centering rings
- * Torque Output ranging from 2,744 to 885,100 Lb-in (310 to 100,000 Nm)
- * Spring End Torque ranging from 2,744 to 445,261 Lb-in (310 to 50,306 Nm)
- * Premium epoxy/polyurethane coating as standard

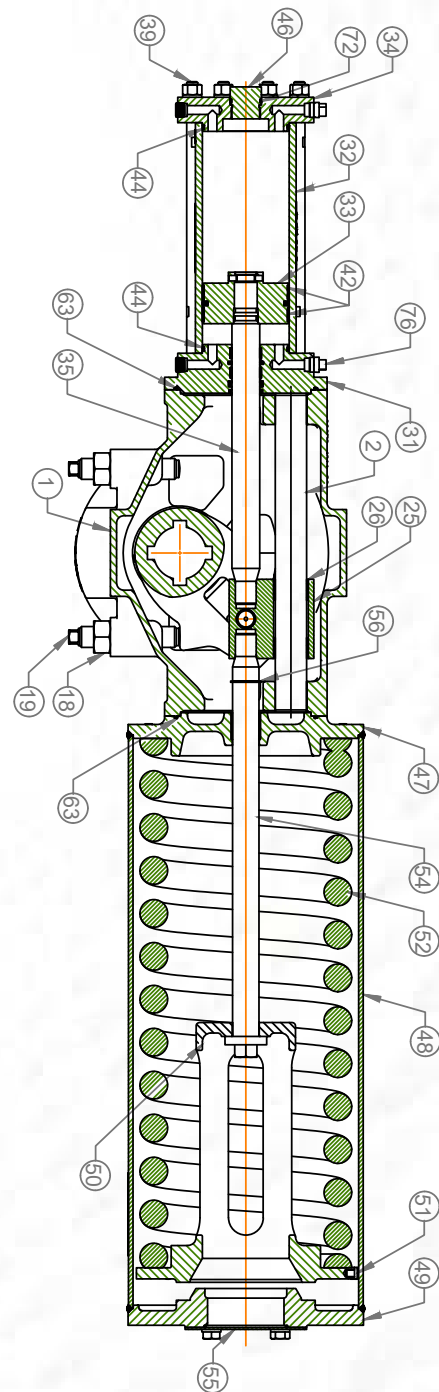
Numbering System

		Size Code									Base Number			
SYH	Actuator		Bore Size				Cylinder Size		Spring Size			Base	Action	
SYH	F		1				F		4		—	ZED	C	
	A		X	Refer to Table Below				A	32mm	0	None (DA)	A	Double Acting, Single Cylinder	
	B	EZ K2					B	40mm	1	Spring 1	B		Double Acting, Dual Cylinder	
	C	EA K2	Actuator Bore Selection Table				C	50mm	2	Spring 2	C		Spring Return, Fail	
	D	VF K2	Actuator Size	X				D	63mm	3	Spring 3		D	Spring Return, Fail
	E	SD K2		1	2	3	4	E	80mm	4	Spring 4			
	F	EV K3	EZ K2	1.181"				F	100mm	5	Spring 5			
	G	ZV K3	EA K2	1.378"	1.181"			G	125mm					
	H	VF K3	VF K2	1.969"	1.378"	1.75"		H	140mm					
	J	EA K4	SD K2	2.5"	1.969"	2.362"		J	160mm					
			EV K3	3"	2.5"	2.362"		K	180mm					
			ZV K3	4.5"	4.0"	3.5"	3.149"	L	200mm					
			VF K3	6.0"	5.0"	4.724"		M	220mm					
			EA K4	7.0"	6.0"			N	250mm					

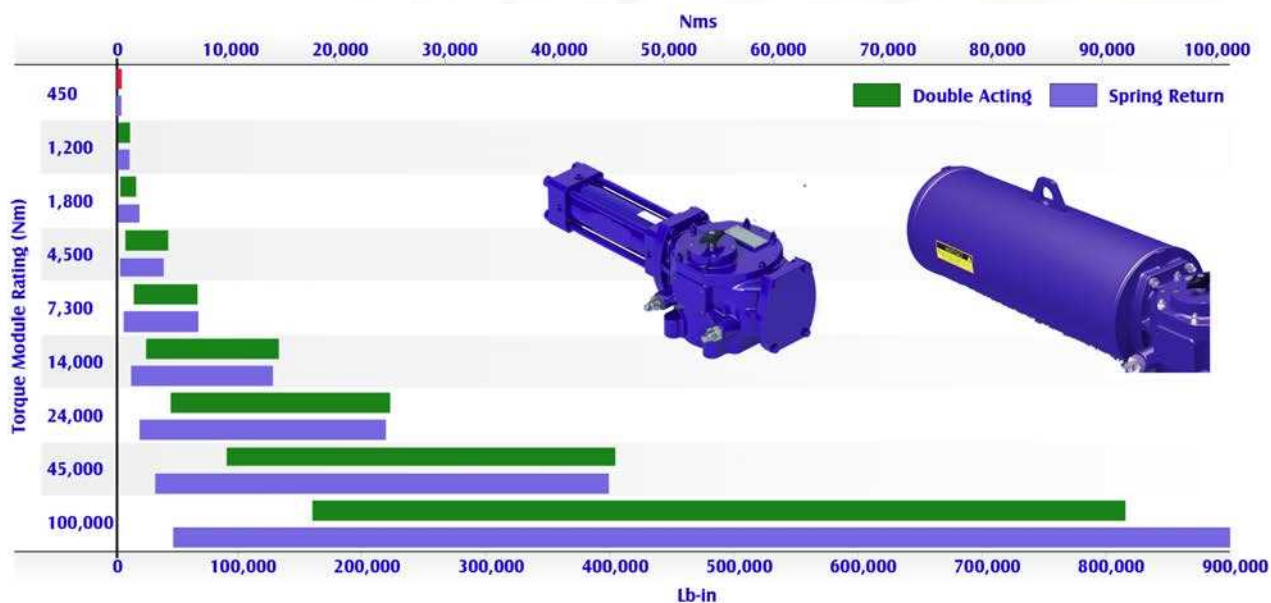
Base Number								Trim Code					
Mounting/Yoke		Ports		Standard Options		Design Code		MOC		Temp Trim		Coating	
2		1		G		00		0		S		0	
1	ISO /	1	NPT	N	None	00	Standard	0	Standard (DI/ CS)		S		Standard
2	ISO /	2	Custom	H	Hydraulic Override	01	PED				L	Low	
				K	Hand Pump Override								
				J	Jackscrew Direct drive			XXX-Special Requirements					
				G	Jackscrew Gear drive								
				E	Extended Stopper 45								
				F	Extended Stopper 90								
				D	Damper - Hydraulic								
				P	PST & Locking Device								

Construction & Material Combination

Item	Description	Material
1	Yoke Housing	Ductile Iron
2	Guide Rod	Alloy Steel
18	Seal Nut	Steel
19	Stop Bolt	Steel
25	Guide Block	Carbon Steel
26	Bushing (Guide Rod)	PTFE Bronze
31	Adaptor, Pressure Module	Carbon Steel
32	Barrel	Carbon Steel
33	Piston	Alloy Steel
34	End Cap, Pressure Module	Carbon Steel
35	Piston Rod	Alloy Steel
39	Tie Rod	Alloy Steel
40	Nut, Tie Rod	Steel
42	Guide Ring, Piston	Phenolic Resin
44	O-Ring (Barrel)	Buna-N
46	End Plug	Steel
47	Adaptor, Spring Module	Carbon Steel
48	Pipe	Carbon Steel
49	End Cap, Spring Module	Carbon Steel
50	Spring Guide	Carbon Steel
51	Button	Plastic
52	Spring, Compression	Alloy Steel
54	Spring Rod	Alloy Steel
55	End Cover	Carbon Steel
56	Retainer Ring	Stainless Steel
63	O-Ring (Module)	Buna-N
72	O-Ring	Buna-N
76	Plug	Plastic



Specifications



ELH Series

Self Contained Electro Hydraulic actuator generally all system components are mounted to the actuator assembly to form a compact solution for mounting directly on to the control valve.

These systems offer a solution for on-shore pipelines and applications where no hydraulic ring main is available. They require an electrical supply and a control command signal 4-20 mA.

Features

Modulating positional control

- Adjustable opening and closing speeds (also refer to stepping option)
 - Fail position - Fail closed, Fail open or Fail last
 - Fail position achieved by integral mechanical spring with installed load to provide fail condition on Loss of hydraulic supply
Loss of electrical supply
Loss of command signal
- Available in double-acting control and single-acting spring to fail-safe control options with stepping action if required.

self-contained control assemblies comprise:

- * Hydraulic actuator
- * Spring module (for fail to position options)
- * Hydraulic power unit
- * Hydraulic control module
- * Electronic positioner controller / motor starter enclosure
- * Pressure control switching
- * Hydraulic control switching
- * Hydraulic storage accumulator for back-up operation
- * Hydraulic hand pump for emergency operation

Hydraulic Actuators

- * Type -Double-acting and single-acting
- * Construction - Bolted style or tie rod
- * Materials of Construction - End caps and tubes -carbon steel with protective plated or painted finish
- * Piston Rod - Stainless steel with hard chrome
- * Tie Rods -Stainless steel
- * External Protective Finish - 2-pack epoxy

paint system for severe off-shore environment in accordance with project specification

Hydraulic System Specifications:

- * Hydraulic supply pressure range 50-350 bar.
- * The actuator assembly includes the valve mounting yoke that is designed to suit individual valve manufacturers standard interface top works.

Electronic Positioners

Generally these are mounted on the actuator assembly requiring a 24 V DC power supply and provide positioning control by a 4-20 mA command signal and providing a 4-20 mA re-transmitted output signal.

Universal Controller

For installation in zone 1 or 2 hazardous areas. This unit is housed within an Exd enclosure available in 316 stainless steel or coated aluminum and closed coupled to an Exe 316 stainless steel enclosure to facilitate interconnection wiring components on site installation wiring.

Universal Controller incorporates an LED graphic display with local control setting switch.

- * Manual mode for actuator test
- * Stepping mode selection
- * Fail safe mode selection on loss of power or signal
- * HART protocol data on command or retransmitted actual signal
- * Positional accuracy of control valve from 0.25% with a resolution of 0.1% from the 4-20 mA externally powered command signal
- * Configuration by Bluetooth communication including response tuning, valve position calibration, valve position feedback setting, fault viewing and pump control

EHPC210 P 80-36-50 DA FSP SC LS3 MO XXX

ELECTRONIC POSITIONER

EHPC210 = Universal positioner controller
EX200 = Compact positioner controller Exd
IS200 = Compact positioner controller Exia

POSITIONING MODE

P = Positioning
M = Modulating
S = Stepping

ACTUATOR CYLINDER SIZE

xxx - xxx - xxx = Bore x rod x stroke
 (Specify size according to thrust and pressure)

ACTUATOR OPERATION

DA = Double-acting
SA = Single-acting

FAIL ACTION

FSP = Fail stayput
SFC = Spring fail close
SFO = Spring fail open

ACTUATOR SYSTEM TYPE

RM = Ring main system
SC = Self contained system

SPECIAL REQUIREMENTS

LS1 = Limit switch open
LS2 = Limit switch close
LS3 = Limit switch open and close
MO = Manual override (hand pump)
SMAR = Independent position transmitter
XXX = Other special features



Gas Over Oil GOV Series

pipeline actuators is designed to use pipeline gas as the motive power source. The gas is delivered to oil tanks that convert the gas into hydraulic pressure.

This pressurized hydraulic oil is used to drive our industry recognized and proven scotch yoke quarter-turn or linear actuators. Using pressurized oil as the driving fluid provides powerful and smooth actuator control and isolates the cylinder from pipeline gas. This prevents contaminants from entering the hydraulic cylinder, eliminating corrosion and seal deterioration, and extending actuator life.

Standard Features:

- Scotch yoke quarter-turn actuators with either symmetric or canted yoke designs for optimum sizing of actuator to valve.
- Actuators are IP66M/67M third-party certified and approved for environmental protection.
- Chromium-plated piston rod and electroless nickel-plated cylinder to provide enhanced durability of critical sealing surfaces.
- Working pressure 10 to 105 barg (145 to 1,500 psig) –higher on application.
- Manual hand pump for emergency or local operation.
- Controls designed to operate at full pipeline pressure, eliminating possible pressure regulator failure.
- Modular and compact integrated manifold design reduces fittings and potential leakage.
- Local control via lever-operated poppet valves on the multi-function manifold.
- Standard GOV tanks are designed, manufactured and tested according to ASME VIII Div. 1.
- Stainless steel pressure gauge to measure gas supply pressure with psi / bar scale.
- Particulate filter with a stainless steel element is included as standard. The element is easily removable and cleanable.
- Stroke time is adjusted via two hydraulic flow control valves providing smooth and precise speed control.

Optional Features:

- Pressure sensing valves with optional manual reset to monitor pipeline pressure.
- Pressure differential valves with optional manual reset to monitor the differential across the valve.
- Linebreak detection safety systems sensing pipeline pressure drop over time.
- ESD (emergency shutdown) control configurations to suit specific customer shutdown logic requirements.
- Actuator torque limiting devices for the protection of the valve or drive train.
- Custom gas filtration.
- Lockable control cabinet in painted carbon steel, or optional stainless steel.



GOV ROTARY SPLINE COMPACT SIZE

GSSE designed a compact series of gas over oil actuator for small valve size from 2 inch to 8 inch , this special design utilizing a rotary spline sear configuration to convert the gas pipeline pressure to hydraulic pressure for moving the valve stem in desired position. Torque range of this type is from 100 NM to 800 NM

Applications:

Transmission
Meter runs
Blowdown Valves
Compressor Stations
Storage
LDC's
Gathering Gas Plants

Features:

No power gas regulators and relief valves required
Zero Leakage Piston
Typical Size range: Small Valves from 2 inch to 8 inch
Straight Line Torque Range: From 2,250 in-lbs to 18,000 in-lbs
Typical Pressure Ranges: From 400 psig to 1,500 psig
Temperature Range: -20°F to +120°F
Small Envelope
No Valve Stem Side Loading
No Internal Corrosion Problems
Gas Hydraulic Tanks prevent gas contaminants from entering the actuator Vastly Extended Seal Life

FRAME SIZE:

This series will be supplied in A, B & C size series

GOV SCOTCH YOKE SERIES Large Size:

This series is a high performance product which provide 500 NM to 750,000 NM torque to cover all pipeline valve requirement.

Operating Pressure :

12 bar to 150 bar

Temperature Range :

- 60 °C to + 80°C

Standard Equipment:

Local control

Remote control

Optional Features:

- Low Pressure ESD
- High Pressure ESD
- Differential Pressure
- * Line Break
- * Solar Energy System Available upon request



Motorized Actuator

The multi-turn electric actuator is an actuator with an output angle greater than 360°. EGA-L Series is suitable for valves with multi-turn stroke for linear travel, such as gate valves, globe valves, regulating valves and others. EGA-R Series can be paired with 90° gearbox to achieve quarter turn travel for valves such as butterfly valves, ball valves, plug valves and others.

Classifying By Motion Mode of Driven Part:

EGA-L Multi-Turn (Linear) / EGA-RQ Part-Turn Rotary

Classifying By Actuator Working Condition:

Outdoor Type / Explosion-Proof Type

Classifying By Actuator Control Performance:

Basic Type(Mechanical Type) /

Mechatronic Type (Integral Model/Intelligent Model)

Classifying By Actuator Control Mode:

On-Off Model /Modulating Model



Ordering System

	1	2	3	4	5	6	7
1	Product Design Series						
2	Driving Mode						
	R Multi-Turn						
	RQ Superimposed Part-Turn						
3	Applicable Ambient						
	A Outdoor Ambient (No Indication)						
	X Explosion-Proof Type						
	I Explosion-Proof And Intrinsic Safety Type						
4	Rated Torque: display in digits (Unit: kgf.m)						
	Or Thrust: display in digits (Unit: N)						
5	Rated Rotate Speed: Display in digits (Unit: RPM)						
6	Control Mode						
	Basic Type No Letter Indication						
	IO Integral On-Off Type						
	IM Integral Modulating Type						
	LO Intelligent On-Off Type						
	LM Intelligent Modulating Type						



Features

Manual/Electric Operation	Overload And Short Circuit
USER Interface LCD Display	Intelligent Self-Detection And Diagnosis
Highly Integrated Control Circuit	Spring Return Fail Safe (Optional)
Intelligent Backup Power System	Power Supply
Bus Control Function	380V AC±10% / 50Hz±5%
Superior Anti-Interference Capability	220V AC±10% / 50Hz±5%
Infrared Remote Control Function	Input Signal
Superior Anti-Interference Capability	A) Analog Quantity: 4mA~20mA DC, input impedance 250Ω
Advanced System Software	B) On/Off volume active 24V DC
Reliable And Comprehensive Data Recording	C) Profbus-DP Or MODBUS(Optional)
Precise Torque Measurement And Protection	Output Signal
Precise Valve Position Stroke Measurement And Protection	A) 4mA~20mA DC, load impedance≤750Ω
Electric Motor Detection and Protection	B) Six groups of passive contacts
Instantaneous Inversion Protection	C) PROFIBUS Or MODBUS(Optional)
Electronic Brake	Applications
Control Mode Protection	Oil & Gas Explosion Proof Ex (dI/dII) IP 65
Passive Monitoring Function	Power Plants All Weathers IP 65
Intelligent Network Security Protection(Optional)	Offshore & Marine All Weathers, Corrosion Proof
Power Detection and Protection	
Over Voltage And Under Voltage Protection	

GSSE TYPES OF CONTROL VALVES



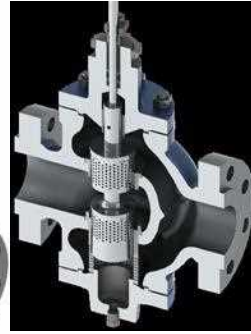
MF



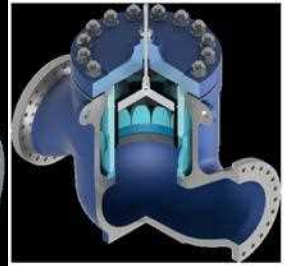
TG



LG



DP



CG / VL



TD



HOV



LMF



SF



NABA



SB



RG



BFT



BFD



3 WAY



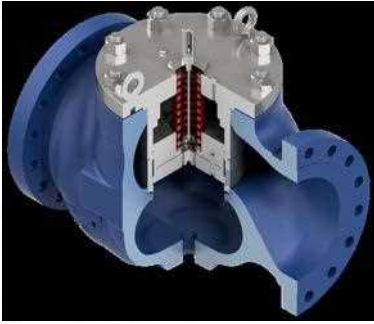
ARC VALVE

BLOW DOWN

GSSE SERIES	SIZE		PRESSURE RATING		END CONNECTION			TEMPERATURE RATING		DESIGN	SERVICE		Cv RANGE	Remarks	Application
	In		Lbs		FLG	RTJ	BW	°C			GENERAL	SEVERE			
TG	1/2	8	150	2500	*	*	*	-29	427	TOP GUIDED	*		0.1-640		All Purpose
CG	2	24	150	2500	*	*	*	-196	566	CAGE GUIDED	*	*	16-8000		All Purpose
LG	1	8	300	2500	*	*	*	-29	316	AXIAL FLOW	*	*	1-141.5	1	Min flow-Max DP
MF	1/2	1	150	2500	*	*	*	-196	343	AXIAL FLOW	*		0.0016-3.8		Micro flow
DP	2	12	150	1500	*	*	*	-29	427	STEM GUIDED	*		8-2560		High Cv
RG	1	12	150	600	*	*	*	-196	400	ECCENTRIC PLUG	*	*	0.5-1750	3	Densed fluid
SB	1	12	150	300	*	*	*	-29	316	SEGMENTED BALL	*	*	55-4400		Densed fluid
NABA	2	56	150	2500	*	*	*	-60	176	MULTI STAGE BALL	*	*	260-249000		Super High Cv
BFT	2	48	150	1500				-196	427	TRIPLE OFFSET	*	*	10-74210		High Temp. High Pre
BFD	2	64	150	600	*	*	*	-10	200	DOUBLE OFFSET	*	*			High Performance
SF	1	48	150	4500	*	*	*		648	CAGE GUIDED		*	5800		Desuperheater
HPL	1	8	600	4500	*	*	*	-29	565	AXIAL FLOW		*	15-200	1, 2	Min flow-Max DP
HOV	1	12	600	2500	*	*	*	-29	480	STEM GUIDED		*	7-530		High Cv
LMF	4	30	150	2500	*	*	*	-196	594	STACK TRIM		*	110-13500	1	Anti Surge
TD	1	16	150	1500	*	*		-29	360	STEM GUIDED		*	3.5-2500		Tankk Drain
VL	3	30	150	2500	*	*	*	-30	566	VARIABLE STACK					Anti Surge
BLOW DOWN	1	3	300	2500	*	*	*			STELLITE TRIM					Boiler
ARC VALVE	1.5	12	150	2500	*	*	*								Boiler

- 1 AVAILABLE FOR API 2000-10000
- 2 AVAILABLE WITH HUB CONNECTION
- 3 AVAILABLE WITH FLANGELESS BODY

GSSE TYPES OF PRESSURE REGULATOR AND BACK PRESSURE VALVES



ZN98-TGC



EF90



ZF90



ME05R



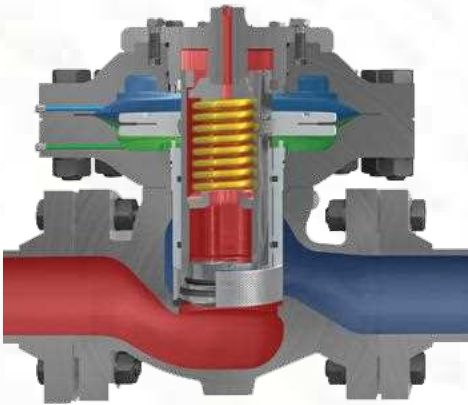
N2B



N2S



DE0A



E2H



T5L



ZN98-ZN TGC



MN5R



N9



Y-Z93



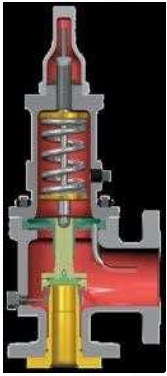
Z30

PRESSURE REGULATOR VALVES

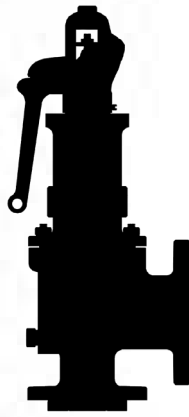
Outlet Pressure Range psig / barg	Air	Steam	Tank Blanketing	Liquid	Process Gas	Fuel Gas	Model	Operation Method	Body Size, NPS	MAXIMUM INLET PRESSURE, psig / barg
2 to 400 / 0.14 to 27.6	●	●		●	●	●	MN5R	Direct	¼ to 2	1000 / 68.9
1in. w.c. to 7 / 2 mbar to 0.48	●		●		●		TZ05	Direct	¾ and 1	200 / 13.8
3 to 500 psig / 0.21 to 34.5 bar	●				●	●	Z30	Direct	1 and 2	1500 / 103
5 to 300 / 0.34 to 20.7	●			●	●	●	ME05R	Direct	1, 2, 3 and 4	400 / 27.6
0.25 in. wc to 7 / 0.6 mbar to 0.48	●		●		●		EF90	Pilot	1 to 12	400 / 27.6
4 in. w.c. to 300 / 10 mbar to 20.7	●		●	●	●	●	ZN98-TGC	Pilot	1 to 12	400 / 27.6
14.5 to 1160 / 1 to 80	●				●	●	E2H	Pilot	1,2,3,4,6,8 and 12x6	1,500 / 103
0.5 in wc to 7 psig/1mbar to 0.48	●				●	●	T5L	Pilot	1, 2, 3, 4, 6, 8 and 10	1480 / 102
2 to 250 / 0.14 to 17.2		●					N2B	Pilot	1, 1-1/2, 2, 3 and 4	42,400 lbs/h / 19,234 kg/h
2 to 250 / 0.14 to 17.2		●					N2S	Pilot	1" to 6 x 4	300 / 20.7
10 to 700 / 0.69 to 48.3	●				●		DE0A	Pilot	1" to 4X6	1500 / 103
0 to 150 / 0 to 10.3	●				●	●	S7D	Direct	1/2	20,900 / 560
2 in. w.c. to 100 / 5 mbar to 6.9	●		●		●	●	N9	Pilot	2	1000 / 69.0

BACK PRESSURE REGULATOR AND RELIEF VALVES

Control Pressure Range psig / barg	Air	Steam	Tank Blanketing	Liquid	Process Gas	Fuel Gas	Model	Operation Method	Body Size, NPS	MAXIMUM INLET PRESSURE, psig / barg
2 to 375 / 0.14 to 25.9	●	●		●	●	●	MN8R	Direct	¼ to 2	400 / 27.6
2in. w.c. to 7 / 5 mbar to 0.48	●		●		●		TZ08	Direct	¾ and 1	75 / 5.2
3 to 250 / 0.21 to 17.2	●				●	●	Z30R	Direct	1 and 2	550 / 37.9
5 to 300 / 0.34 to 20.7	●			●	●	●	ME08R	Direct	1, 2, 3 and 4	400 / 27.6
0.5 in. w.c. to 7 / 1 mbar to 0.48	●		●		●		ZF90	Pilot	1 to 12	12.5 / 0.86
0.5 in. w.c. to 7 / 1 mbar to 0.48	●				●	●	ZN98-TGC-Z3EG	Pilot	1 to 6 and 8 x 6	8,795,000 / 235,706
14.5 to 1160 / 1.0 to 80.0	●				●	●	E2HR	Pilot	1 to 4	13,833,000 / 370,724
29 to 609 / 2 to 42	●				●	●	T5LR	Pilot	1, 2, 3, 4, 6, 8 and 10	74,442 / 1,995



EN00



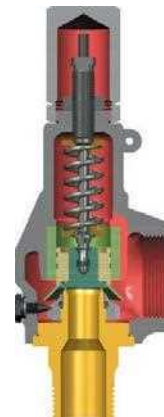
EN00-P



EN00-UM



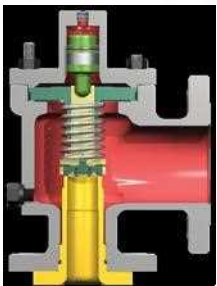
EN000



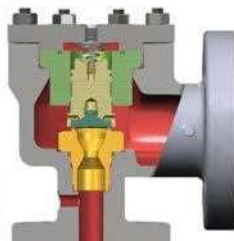
EN82



ZV82



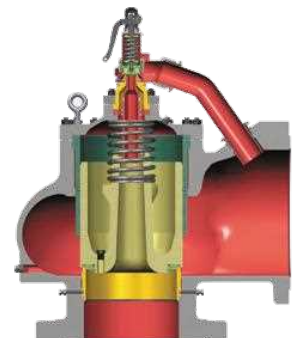
ZN00



DN00



VN00



EDN00



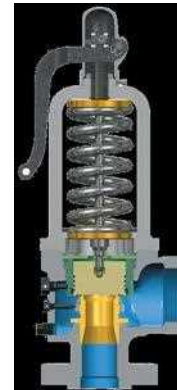
ES00



ZS00



EA11



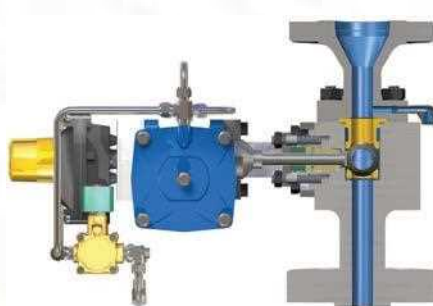
EF11



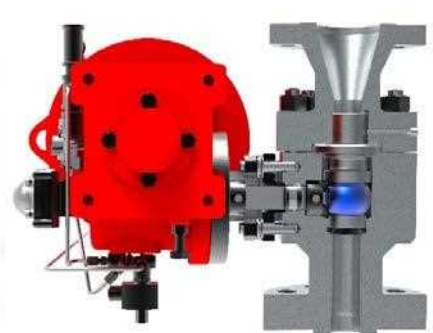
EF41-3



ZN00-40



DF00-5



DF00-B



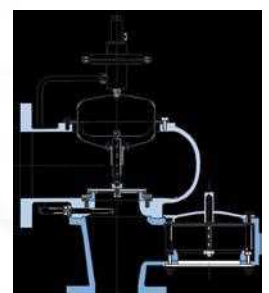
VN20



VN10



VN20-A



GSSE MODLE SERIES	CONSTRUCTION			INLET SIZE		INLET RATING		OUTLET SIZE		OUTLET RATING		ORIFICE SIZES		SET PRESSURE RANGE		TEMPERATURE RANGE		ASME SEC I	ASME SEC VIII
	CONVEN TIONAL	BELLOWS	PILOT	In		Psi		In		Psi		Psi		°C					
EN00	☐	☐		1	12	150	2500	2	16	150	300	D	W	4	6250	-268	815	*	*
EN00-UM	☐	☐		1	12	150	2500	2	16	150	300	D	W	4	6250	-268	815	*	*
EN000	☐	☐		0.5	2	150	2500			150	300	0.096	0.567	5	8000	-254	593	*	*
EN82				0.2	2	THREADED		THREADED		THREADED		0.121	1.399	10	500	-29	427	*	*
ZV82				0.5	2.5	THREADED		THREADED		THREADED		D	J	15	300	-198	208		
ZN00				1	12	150	2500	2	16	150	300	D	W	15	6250	-40	263	*	*
DN00			☐	1	12	150	2500	2	16	150	300	D	T	15	6250	-40	263	*	*
VN00			☐	1	8	150	2500	2	10	150	300	D	T	15	7200	-40	263	*	*
ED900	☐		☐	16	20	300		18	24			114	201	50	300	121	288	*	*
EZ00			☐	1.5	8	600	4500	3	10	150	300	-1	Q	100	1600		565	*	*
ZS00				1.5	6	600	1500	3	8	150	300	-1	Q	100	1600		565	*	*
EA11				1.25	6	300	600	1.5	8	150	300	-F	Q	15	725		538	*	*
EF11				1.5	6	250		2.5	4	125		-H	Q	15	250	-29	215	*	*
EF41-3				0.5	2.5	THREADED		0.75	2.5	THREADED		D	J	15	350	-29	215	*	*
EN00/P				1	8	150	2500	2	10	150	300	D	T	5	6000	-29	454	*	*
ZN00-40			☐	1	12	150	2500	2	16	150	300	D	W	15	5800	-40	263		
DF00-5				1.5	4	150	4500	3	6	300	900	0.875	3	50	6000		621		
PRESSURE VACUUM RELIEF VALVE PVRV																			
MODLE	CONSTRUCTION			PRESSURE SETTING				VACUUM SETTING											
	WEIGHT	SPRING	PILOT																
VN20	*	*		100 mbarg		1 barg		-100 mbarg		-1 barg									
VN20-A			*	100 mbarg		1 barg		-100 mbarg		-1 barg									
VN10	*	*		100 mbarg		4 barg		-100 mbarg		-4 barg									

GSSE TYPES OF ACTUATORS AND INSTRUMENTS



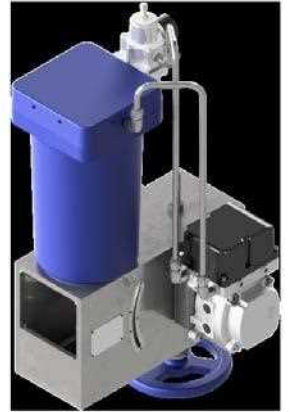
DM



PS



ELH



RG



QT



RP



SY



EGA



Digital Smart Hart and FF Positioner



Volume Booster



P to P VS00 Positioner



Air Set

GSSE SERIES	DESIGN		FRAME SIZE	MAX. OPERATING PRESSURE		TRAVEL RANGE	OPERATING ENERGY		
	LINEAR	ROTARY		PSI	PENUMATIC		HYDRAULIC	ELECTRIC	
DM	*		6, 10, 16, 23	60	0.8-2.5 INCH	*			
PS	*		6, 8, 12, 16, 20	150	2.5-12 INCH	*			
PSH	*		1	3000	12 INCH		*		
ELH-L	*		1 1	2250	20 INCH			*	
ELH-Q		*	1	2250	90 DEG			*	
QT		*	8, 10, 18	60	90 DEG	*			
RD		*	41/2, 6, 7, 9	60	90 DEG	*			
RP		*	8 SIZES	100	90 DEG	*			
PQ		*	9 SIZES	100	90 DEG	*			
SY		*	9 SIZES	100	90 DEG	*			
SYH		*	9 SIZES	1500	90 DEG		*		
EGA	*	*	11 SIZES		MULTI TURN			*	

VS 00 P to P fully stainless steel positioner suitable for direct sour gas application

Digital Smart Hart and Foundation Field Bus Electro Pneumatic Positioner

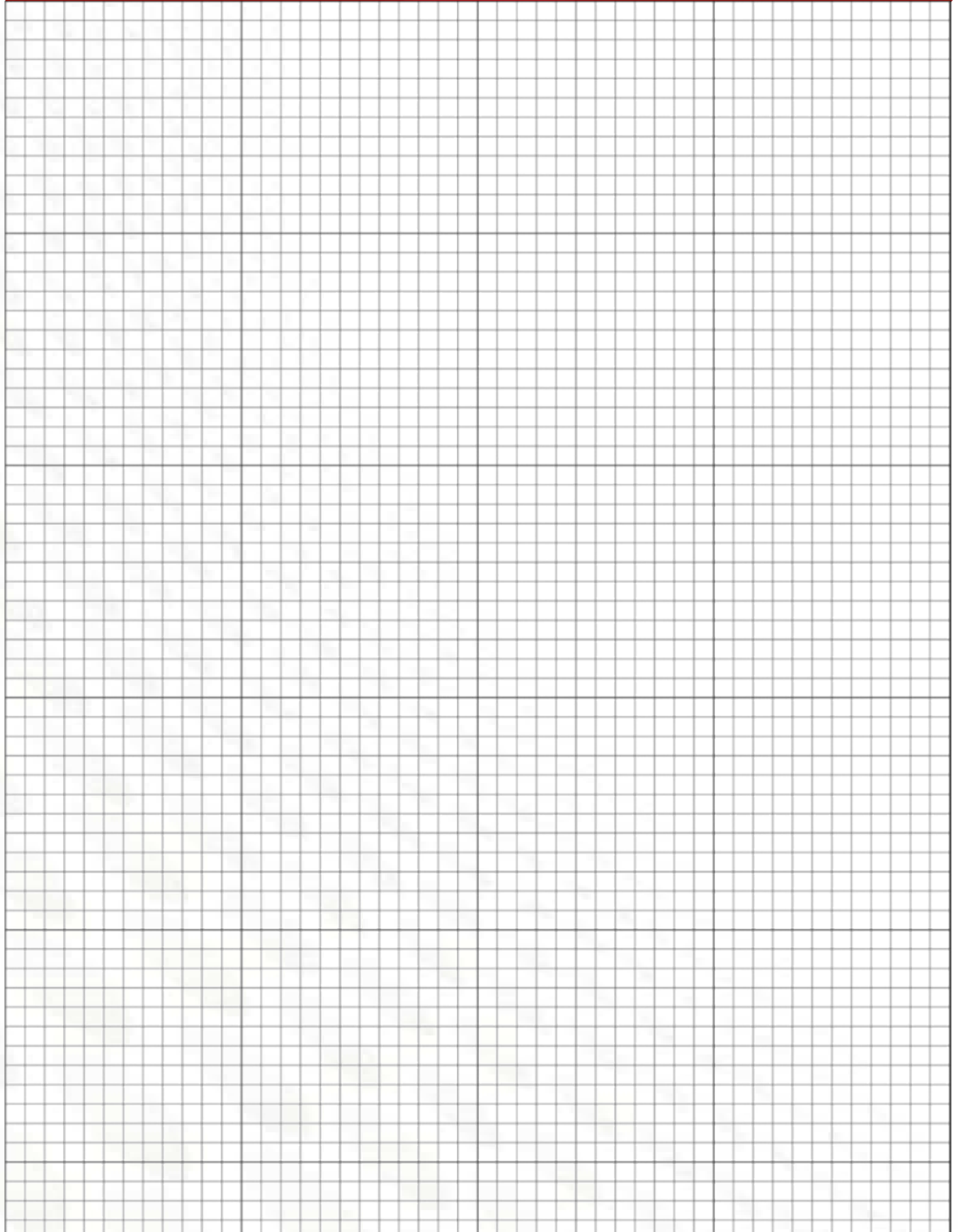
Volume Booster for fast Stroking Applications

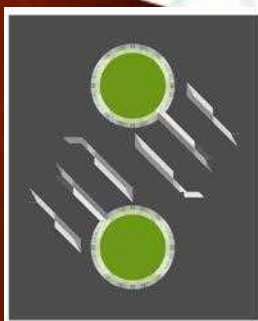
High and Low Cv Air set for different Applications

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