



Series 30  
Spring & Diaphragm Actuator

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## Valve Model Numbering

Series	Size	Fail Action	Handwheel	Adjustable Travel Stop
30	1A - S38	1 – Fail Open	N – None	1 - Open
	1B - S75	2 – Fail Close	T – Top Mounted Handwheel	2 - Close
	1C - S150		S – Side Mounted Handwheel	3 - None
	1D - S300			

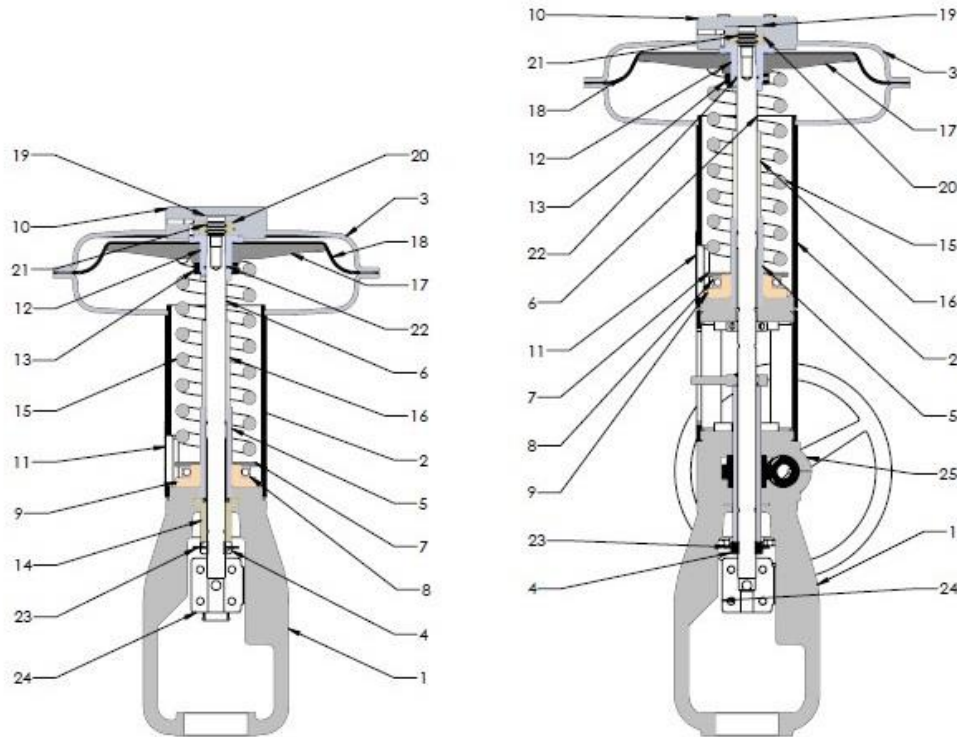
## Engineering Data

Size	S38, S75, S150 & S300
Travel	3/4, 1 1/8, 1 1/2, 2 1/4, 2 1/2, 3 1/2, 4
Spring Range	3-15, 6-18, 6-30, 8-32, 12-24, 12-30, 16-32
Ambient Temperature	Minimum Temp: -20°C Maximum Temp: 80°C Special Material Options Available for use in low Temperature applications down to -40°C
Pneumatic Supply Pressure	Max pressure: 4.1bar (60psi) for S 38, S 75 & S 150. 3.4bar (50psi) for S 300 actuator.

## Actuator Thrust

Actuator Size	Travel (inch)	Spring Range (psig)	Gross Thrust (Lbf)	Spring Force (Lbf)		Net Pneumatic Thrust (Lbf)	
				Min	Max	Min	Max
S38	3/4, 1 1/8	3-15	2280	114	570	1710	2166
	3/4, 1 1/8	6-18		228	684	1596	2052
	3/4, 1 1/8	6-30		228	1140	1140	2052
	3/4, 1 1/8	8-32		304	1216	1064	1976
	3/4	12-24		456	456	1368	1824
	1 1/8	12-30		456	456	1140	1824
S75	3/4, 1 1/8, 1 1/2	3-15	4500	225	1125	3375	4275
	3/4, 1 1/8, 1 1/2	6-18		450	1350	3150	4050
	3/4, 1 1/8, 1 1/2	16-32		1200	2400	2100	3300
	3/4, 1 1/8, 1 1/2	6-30		450	2250	2250	4050
	3/4, 1 1/8, 1 1/2	8-32		600	2400	2100	3900
S150	1 1/8, 1 1/2, 2 1/4, 3 1/2	3-15	9000	450	2250	6750	8550
	1 1/8, 1 1/2, 2 1/4, 3 1/2	6-18		900	2700	6300	8100
	1 1/8, 1 1/2, 2 1/4	6-30		900	4500	4500	8100
	1 1/8, 1 1/2, 2 1/4	8-32		1200	4800	4200	7800
	1 1/2, 2 1/4	16-32		2400	4800	4200	6600
	1 1/8	14-32		2100	4800	4200	6900
S300	2 1/2, 3 1/2, 4	3-15	15000	900	4500	10500	14100
	2 1/2, 3 1/2, 4	6-18		1800	5400	9600	13200
	2 1/2, 3 1/2, 4	6-30		1800	9000	6000	13200
	2 1/2, 3 1/2, 4	8-32		2400	9600	5400	12600
	3 1/2, 4	11-32		3300	9600	5400	11700
	2 1/2	16-32		4800	9600	5400	10200

## Cross-Sectional View



## Part List

S.no	Item Description	Materials	S.no	Item Description	Materials
1	Yoke	CS casting	14	Stem Guide	13% Cr Stainless Steel
2	Spring tube assembly	Mild steel / Carbon steel	15	Spring	Chrome Vanadium Steel
3	Diaphragm case assembly	Mild steel / Carbon steel	16	Travel stop tube	Mild steel / Carbon steel
4	Travel stop nuts	Mild steel / Carbon steel	17	Diaphragm button	Aluminium Casting, Carbon steel
5	Spring adjuster screw	Mild steel / Carbon steel	18	Diaphragm	Nitrile with Re-inforced Fabric
6	Actuator stem	Stainless Steel	19	Cover plate joint	Nitrile
7	Spring carrier	Mild steel / Carbon steel	20	Seal box	13% Cr Stainless Steel
8	Spring thrust bearing	Steel	21	Seal box O ring	Nitrile
9	Spring adjuster	Carbon Steel	22	Diaphragm collar O ring	Nitrile
10	Cover plate	Carbon Steel	23	Travel indicator pointer	Stainless Steel
11	Spring cover plate	Steel	24	Stem Coupling	Steel/Stainless Steel 316
12	Diaphragm collar	Mild steel / Carbon steel	25	Gear Box Assembly	Carbon Steel
13	Collar nut	Mild steel / Carbon steel			

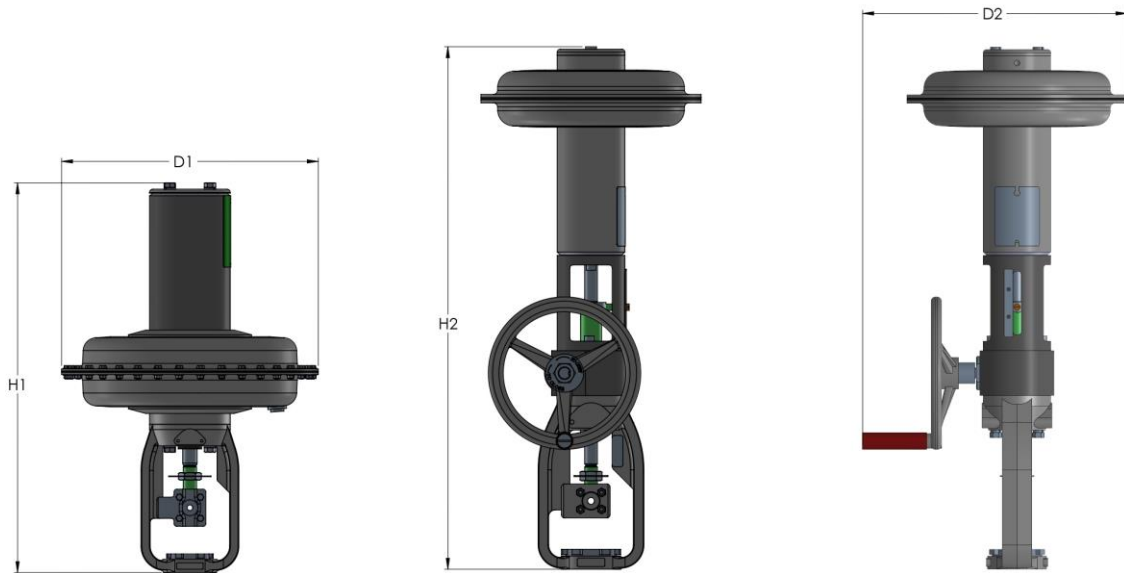
## Volumetric Data

Actuator Size	Travel (Inch)	Zero Volume		Swept Volume		Volume at full travel	
		(In <sup>3</sup> )	(cm <sup>3</sup> )	(In <sup>3</sup> )	(cm <sup>3</sup> )	(In <sup>3</sup> )	(cm <sup>3</sup> )
S38	3/4	32	524	29	475	61	1000
	1 1/8			43	705	75	1229
S75	3/4	32	524	56	918	88	1442
	1 1/8			84	1377	116	1901
	1 1/2			113	1852	145	2376
S150	1 1/8	92	1508	169	2769	261	4277
	1 1/2			225	3687	317	5195
	2 1/4			338	5539	430	7046
S300	2 1/2	255	4180	675	11061	930	15240
	3 1/2			1050	17206	1305	21385
	4			1200	19664	1455	23843

## Handwheel

Actuator Size	Gear Box No.	Stem Dia (inch)	H/W Dia (inch)	Turns per (inch)	Rim Force		Output Thrust	
					(lbf)	(N)	(lbf)	(N)
S38	001	0.75	9	8	27	120	1710	7606
S75	001	0.75	9	30	38	169	3375	15013
S150	002	1	12	30	40	178	7650	34029
S300	003	1.25	15	48	53	236	12300	54713

# Dimensions and Weight



Act. Size	Travel (Inch)	Spring Range (lbf/ inch)	Yoke bore A (Inch)	Dimensions					Weights (kg)	
				'H1'	'H2'	'D1'	'D2'	'E'	W/O HW	W/ HW
S38	3/4	3-15, 6-18, 6-30, 8-32	2 1/8	483	737	260	230	-	15	20
	1 1/8	3-15, 6-18, 6-30, 8-32, 12-24								
S75	3/4	3-15, 6-18, 6-30, 8-32	2 1/8	505	679	330	230	245	25	35
		3-15, 6-18, 6-30, 8-32		505	695					
	1 1/8	16-32	556	746						
	1 1/2	3-15, 6-18, 6-30, 8-32	584	794						
16-32		667	876							
S150	1 1/8	3-15, 6-18, 6-30, 8-32, 14-32	2 1/8	660	876	457	305	254	55	75
	1 1/2	3-15, 6-18, 6-30, 8-32	2 13/16	749	965					
		2 1/4	3-15, 6-18, 6-30, 8-32	3 9/16	775	1035				
	16-32		864		1105					
3 1/2	3-15, 6-18	980	1302							
S300	1 1/2	3-15, 6-18, 6-30, 8-32, 16-32	3 9/16	930	1245	616	381	320	155	195
	2 1/2	3-15, 6-18, 6-30, 8-32, 16-32								
	3 1/2	3-15, 6-18, 6-30, 8-32, 16-32								
	4	3-15, 6-18, 6-30, 8-32, 16-32								



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