



**Double Acting and Spring Return
Pneumatic Rack & Pinion Actuators**

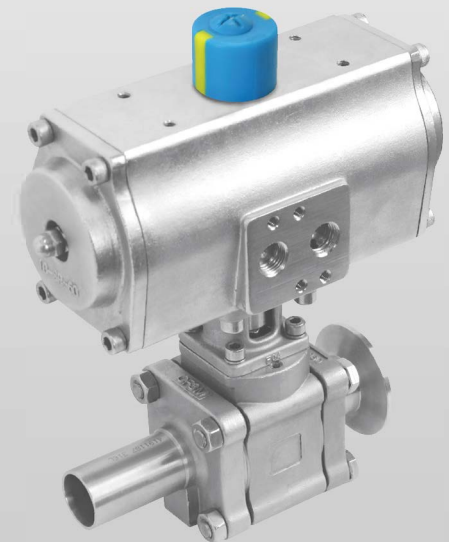
Features:

- **Suitable for Highly Corrosive Environments**
- **Operates with Lubricated or Non-Lubricated Air**
- **Air supply Pressure: (30 to 145 psig) 2 to 10 Bar**
- **Operating Temperatures**
- **Standard: -4°F to 176°F (-20°C to 80°C)**
- **Low Temperature: -31°F to 176°F (-35°C to 80°C)**
- **High Temperature: +5°F to 302°F (-15°C to 150°C)**
- **Travel Adjustment: +/- 4 Degrees unidirectional Travel**
- **Extended Stops Optional**



**Torque Range at
80 PSIG**

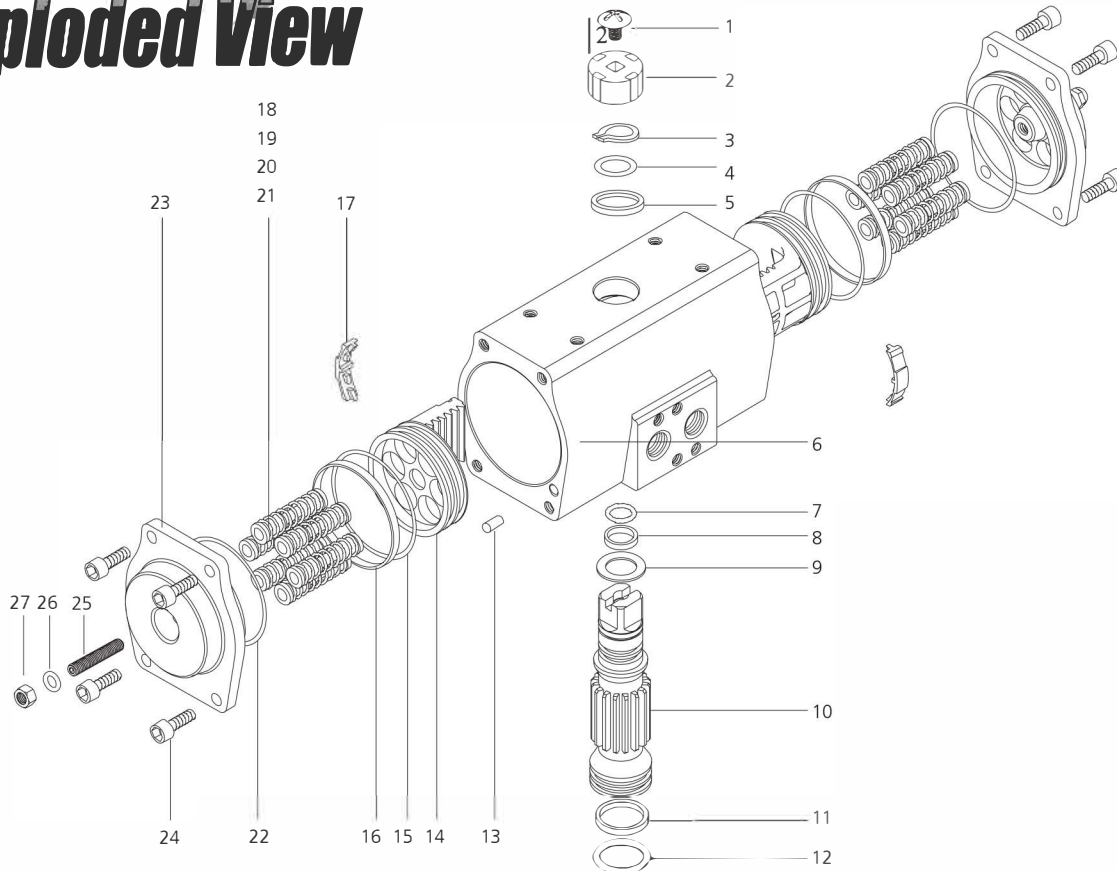
**Air Pressure
Doubling Acting
11647 (In-lb)
Spring Return
5532 (In-lb)**



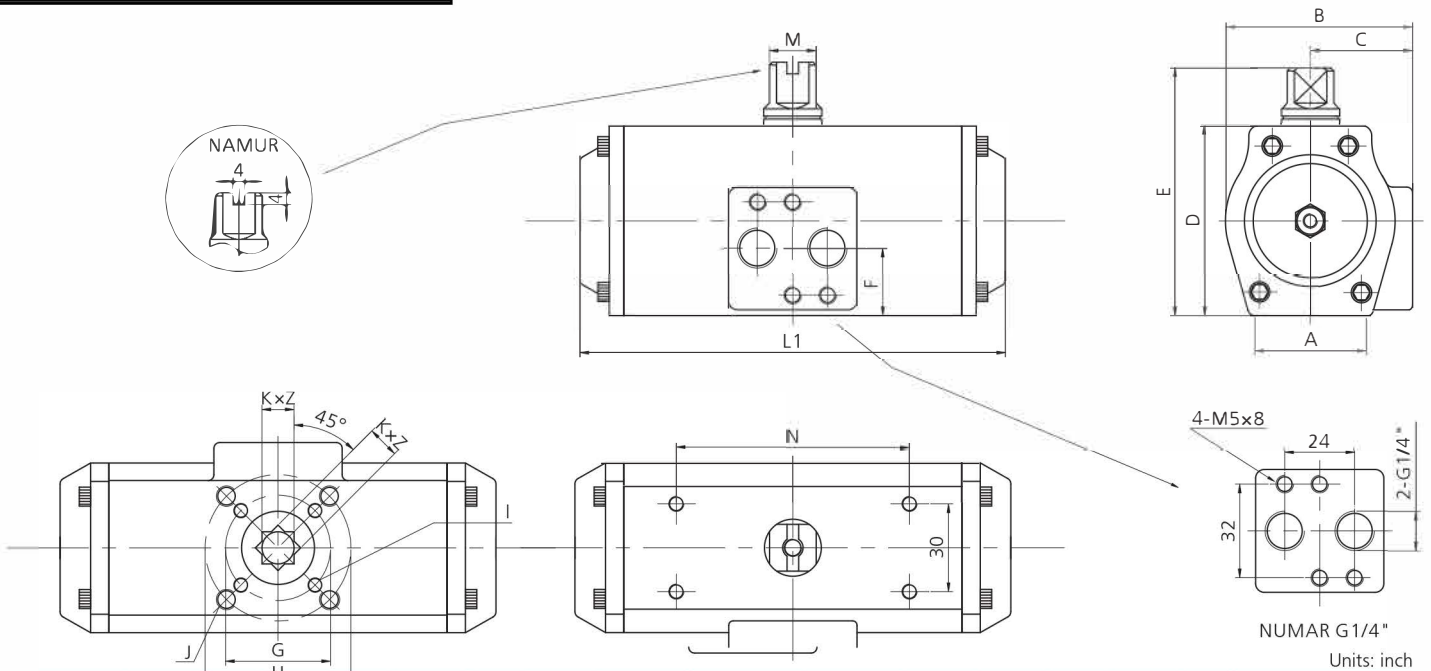
Materials of Construction

No.	Description	Qty.	Standards Material
1	Indicator screw	1	Stainless steel
2	Indicator	1	Plastic (ABS)
3	Circlip	1	Stainless steel
4	Thrust washer	1	Stainless steel
5	Outside washer	1	Polyoxymethylene
6	Body	1	Stainless steel
7	O-ring (Pinion top)	1	Viton/NBR
8	Bearing (Pinion top)	1	Polyoxymethylene
9	Inside washer	1	Polyoxymethylene
10	Pinion	1	Stainless steel
11	Bearing (Pinion bottom)	1	Polyoxymethylene
12	O-ring (Pinion bottom)	1	NBR
13	Plugs	2	NBR
14	Pistons	2	Stainless steel
15	O-rings (Pistons)	2	NBR
16	Bearings (Pistons)	2	Polyoxymethylene
17	Guides (Pistons)	2	Nylon66
18	Spring	*	Spring steel
19	Spring Retainer (L)	*	Nylon66
20	Spring Retainer (R)	*	Nylon66
21	Retainer Connector	*	Brass
22	O-rings (End-Caps)	2	NBR
23	End-Caps	2	Stainless steel
24	End-Cap Screws	8	Stainless steel
25	Adjust Screws	2	Stainless steel
26	O-rings (Adjust Screws)	2	NBR
27	Nuts (Adjust Screws)	2	Stainless steel

Exploded View



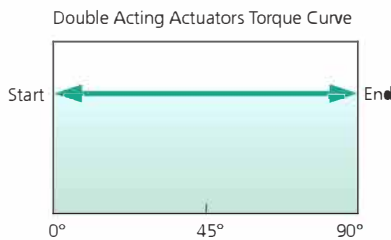
*** Available in CF8M 316SS or CF8 304SS ***



Model	A	B	C	D	E	F	G	H	I	J	K	L1	M	N	Z	Air Connection
45-SS	1.65	2.52	1.38	2.56	3.35	0.91	F04	F05	M5 x 8	M6 x 10	0.433	5.79	0.630	3.15	0.55	1/4" NPT
60-SS	1.91	2.91	1.54	3.19	3.98	0.91		F05		M6 x 10	0.551	5.75	0.630	3.15	0.71	1/4" NPT
85-SS	2.60	3.98	2.05	4.25	5.04	0.94	F05	F07	M6 x 10	M8 x 13	0.669	7.80	0.630	3.15	0.83	1/4" NPT
105-SS	3.15	4.65	2.36	5.24	6.02	0.94		F07		M8 x 13	0.866	9.88	0.630	3.15	1.02	1/4" NPT
125-SS	3.94	5.43	2.72	6.11	7.28	1.10	F07	F10	M8 x 13	M10 x 16	0.866	9.53	0.866	5.118	1.02	1/4" NPT
140-SS	4.53	6.02	3.03	6.73	7.91	1.34	F10	F12	M10 x 16	M12 x 20	1.063	14.09	0.866	5.118	1.22	1/4" NPT
160-SS	5.20	6.85	3.43	7.76	8.94	1.54	F10	F12	M10 x 16	M12 x 20	1.063	12.80	0.866	5.118	1.22	1/4" NPT
210-SS	5.67	8.90	4.45	10.04	11.22	2.17		F14		M16 x 25	1.417	20.87	1.260	5.118	1.57	1/4" NPT

Technical Data

Double Acting Actuators Output Torque (lbf-in)



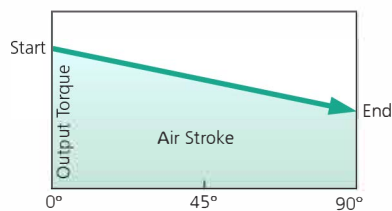
Model Style	Air pressure (Psi)								
	30	40	50	60	70	80	90	100	120
DA45-SS	53	67	87	107	120	133	160	178	214
DA60-SS	125	157	204	251	283	314	377	419	502
DA85-SS	272	340	443	545	614	682	818	910	1091
DA105-SS	582	727	946	1164	1309	1455	1746	1940	2328
DA125-SS	911	1132	1473	1814	2044	2265	2726	3027	3628
DA140-SS	1548	1938	2522	3106	3496	3885	4655	5172	6213
DA160-SS	2363	2956	3846	4735	5319	5912	7098	7883	9461
DA210-SS	4656	5824	7568	9311	10479	11647	13444	15527	18631

Installation of Springs for Spring Return Actuator

Even spring set is recommended for high cycle application. It is also feasible to insert an odd number of springs per side. By doing this more efficient actuator sizing can be achieved.

Spring Return Actuators Output Torque (In-lb)

Model	Spring Qty	Air pressure(PSI)																		Springs' output	
		30		40		60		70		80		90		100		120		90°	0°		
		0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	Start	End		
SR45	5	27	11	41	25														40	25	
	6	20	2	35	16														48	31	
	7			29	7	69	47												58	36	
	8					64	38	77	51	90	65								65	40	
	9					58	30	72	44	85	57	112	83						73	46	
	10					53	21	66	35	80	48	106	74	124	92	160	128		81	51	
	11							48	13	74	39	101	66	118	83	155	120		89	56	
	12									69	31	96	58	113	75	149	112		98	62	
	SR60	5	62	14	50	32														55	37
		6	50	3	43	20														65	45
		7			35	9	88	62												76	52
		8					80	50	98	69	116	87								87	60
9						72	39	90	57	108	75	143	111						98	67	
10						64	27	82	46	100	64	135	99	159	123	207	171		109	75	
11								56	16	92	52	128	88	151	111	199	159		120	82	
12										84	41	120	76	143	100	191	148		131	89	
SR85		5	126	58	194	127														203	139
		6	96	15	164	83														244	168
		7			135	41	339	245												285	195
		8					310	202	378	270	447	339								325	223
	9					280	159	348	228	417	297	553	433						366	252	
	10					251	117	319	185	388	254	524	390	615	481	797	663		407	279	
	11							223	75	359	211	495	347	586	438	767	620	447	447	308	
	12									328	168	465	305	556	395	737	577	488	488	336	
	SR105	5	288	124	433	269														435	279
		6	228	32	374	177														523	336
		7			315	86	752	523												609	392
		8					693	431	838	576	983	721								696	447
9						635	340	780	450	925	630	1216	921						784	503	
10						575	248	721	393	866	538	1157	829	1351	1023	1739	1412		870	560	
11								514	155	806	446	1098	737	1292	931	1680	1320		958	616	
12										748	355	1039	646	1233	840	1622	1229		1045	671	
SR125		5	424	181	645	403														693	463
		6	327	35	548	257														832	555
		7			450	111	1131	792												970	648
		8					1034	626	1260	872	1485	1098								1109	741
	9					936	500	1162	726	1388	952	1848	1412						1248	833	
	10					839	354	1065	580	1290	805	1751	1266	2052	1567	2654	2168		1387	926	
	11							733	198	1193	659	1653	1120	1954	1421	2556	2022	1525	1525	1019	
	12									1095	513	1555	974	1856	1275	2458	1876	1664	1664	1112	
	SR140	5	750	348	1139	737														1141	759
		6	590	107	979	497														1370	910
		7			820	257	1988	1425												1597	1063
		8					1828	1184	2217	1574	2607	1963								1825	1215
9						1668	944	2058	1334	2447	1723	3217	2493						2054	1366	
10						1508	704	1898	1093	2287	1483	3057	2253	3576	2772	4615	3810		2282	1518	
11								1357	473	2127	1243	2897	2013	3416	2532	4455	3570		2511	1670	
12										1968	1002	2738	1772	3257	2291	4295	3320		2739	1822	
SR160		5	1062	422	1655	1015														1843	1236
		6	802	36	1395	628														2212	1486
		7			1135	239	2914	2018												2584	1734
		8					2654	1630	3242	2219	3031	2808								2947	1973
	9					2393	1242	2982	1830	3570	2419	4756	3605						3319	2221	
	10					2133	853	2722	1442	3310	2031	4496	3217	5281	4002	6859	5580		3690	2469	
	11							1864	457	3050	1643	4236	2829	5021	3613	6599	5192	4053	4053	2717	
	12									2790	1254	3976	2440	4761	3225	6339	4803	4425	4425	2965	
	SR210	5	2098	1115	3266	2284														3186	2301
		6	1584	407	2753	1576														3823	2770
		7			2239	876	5727	4364												4452	3231
		8					5213	3656	6382	4824	7550	5992								5089	3691
9						4700	2947	5868	4116	7037	5284	9364	7612						5727	4151	
10						4187	2239	5355	3408	6523	4576	8851	6904	10403	8455	13507	11559	6364	6364	4611	
11								3682	1540	6010	3868	8338	6196	9889	7747	12993	10851	7001	7001	5072	
12										5497	3160	7824	5488	9376	7039	12480	10143	7638	7638	5532	



Spring Return Torque Curve

