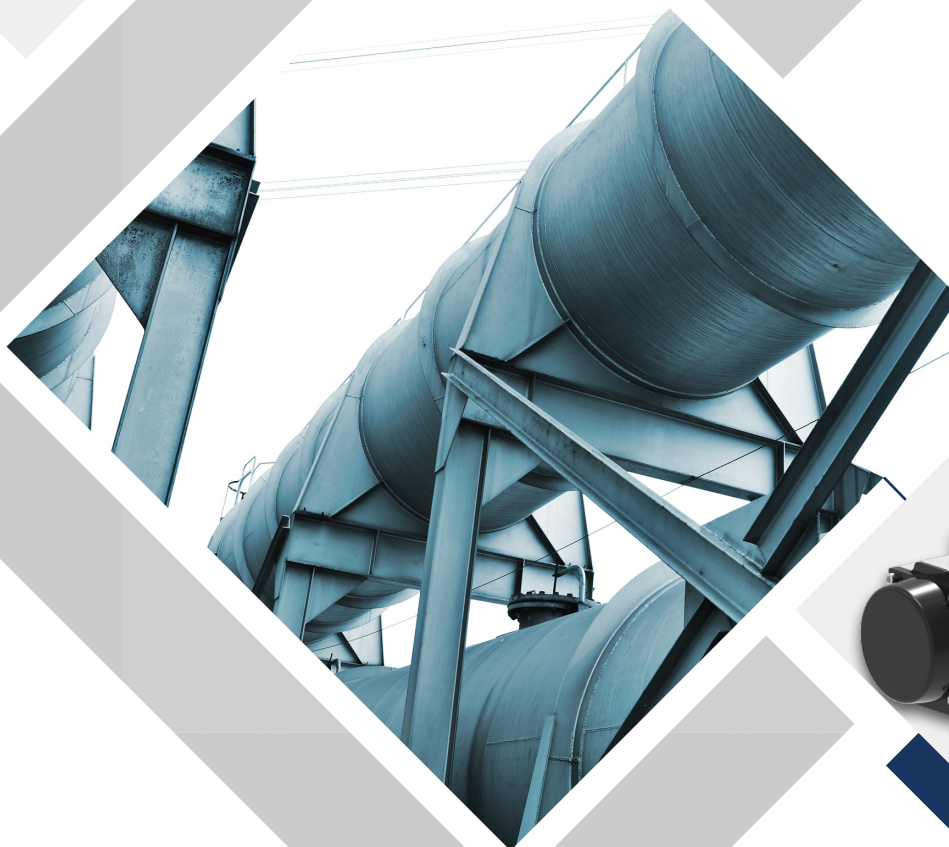




RIKTIG FØRSTE GANGEN



PNEUMATIC ACTUATORS

MER ENN 125 ÅRS ERFARING SOM LEVERANDØR AV VENTILER OG INSTRUMENTERING

Oslo | Bergen | Larvik | Arendal | Trondheim

CE SIL3 

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SPECIFICATIONS

PRESSURE RANGES

2 bar (29 psig) to 8 bar (116 psig) double-acting.
2.5 bar (36 psig) to 8 bar (116 psig) spring-return.

TEMPERATURE RANGES

*Std. (NBR O-rings): -20°C (-4°F) to +80°C (+176°F).

*Low Temp. (LNBR O-rings): -35°C (-31°F) to +80°C (+176°F).

*High Temp. (Viton O-rings): -15°C (+5°F) to +150°C (+300°F).

Note: Special grease is required for use in low and high temperature.

WIDE RANGE AVAILABLE

The actuator range consists of 19 sizes, with torques from 9 Nm (80 in.lbs) to 9,768 Nm (86,454 in.lbs) at 6 bar (87 psig) air supply.

OPERATING MEDIA

Filtered dry or lubricated air, or non-corrosive gas. The maximum particle size must not exceed 30 µm.

STROKE ADJUSTMENT

Standard travel 0° and 90° with ± 5° adjustment.

LUBRICATION

All moving parts are factory-lubricated to last the entire life cycle of the actuator.

CONSTRUCTION

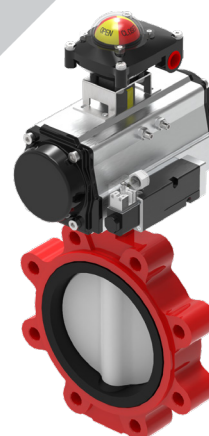
Twin piston rack and pinion actuator design, suitable for indoor and outdoor installation.

CONNECTIONS

Bottom drilling complies with ISO 5211/DIN 3337 to match valve. Interface for solenoid valve, shaft top end and top drilling to connect accessories are in accordance with VDI/VDE-3845, NAMUR standard.

INSPECTION

Every actuator is hydraulically tested and certified.



FEATURES

INDICATOR

The position indicator with Namur connection is standard on all ACHEM pneumatic actuators for connecting accessories. As standard, the indicator is suitable for induction sensor.

PINION

The pinion is made out of extruded low carbon alloy steel and nickel-plated ($> 15\mu\text{m}$) in order to provide long-term operation in harsh environments. Full conformance with the latest version of ISO5211, DIN3337 and NAMUR. The dimensions are customizable, optional material in stainless steel or aluminium alloy.

ACTUATOR BODY

Made out of extruded aluminium ASTM 6005 and hard anodized ($> 30\mu\text{m}$) to protect against wear and corrosion while reducing piston friction to the absolute minimum. Additional coating options such as nickel, PTFE and polyester are available on request.

END CAPS

Made out of high-end die cast aluminum, standard with anodization and polyester coating. Optional with nickel or PTFE coating for harsh environments.

PISTONS

Twin rack pistons are made from die-cast aluminum and coated with anodized finish. Symmetric mounting design ensures reliable, fast operation over a long service life and allows for easy on-site reversal of rotation by inverting the pistons.

TRAVEL ADJUSTMENT

Equipped with dual adjustable travel stops, allowing precise adjustment of $\pm 5^\circ$ in both the fully open and fully closed positions via easily accessible external adjustment bolts.

HIGH-PERFORMANCE SPRINGS

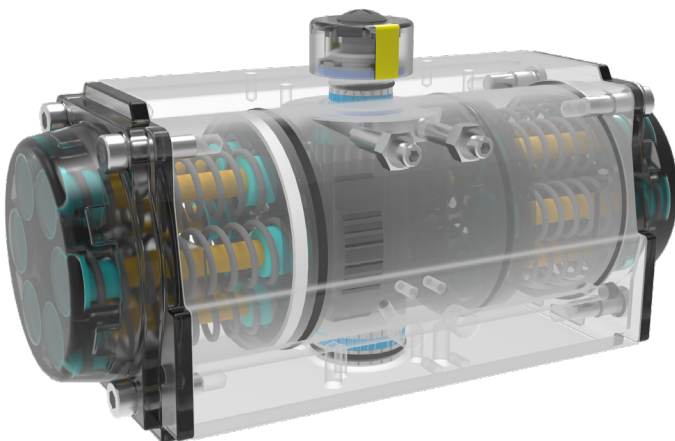
The high-strength piano wire springs are designed for durability and long service life. The preloaded cartridge springs can be quickly and safely disassembled to accommodate different valve types.

BEARINGS & GUIDES

Made with low-friction, durable compound materials that prevent metal-to-metal contact and ensure reliable performance and extended service life, even in demanding environments.

O-RINGS

NBR O-rings provide trouble-free operation at standard temperature ranges. Viton and LNBR O-rings are available for high or low temperature applications.

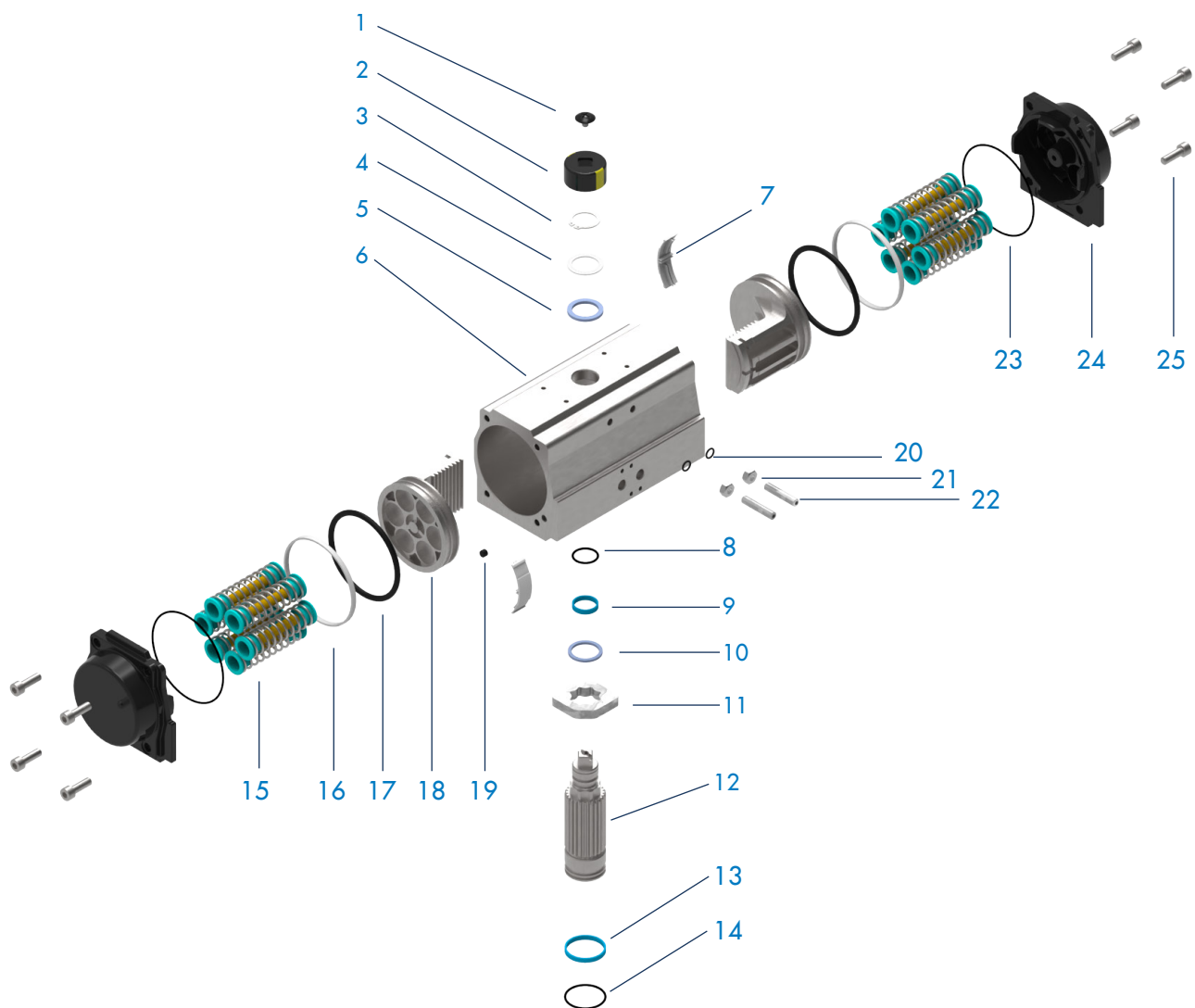


03VE040 - 140 PARTS LIST

ITEM	DESCRIPTION	MATERIAL	PROTECTION	QTY	OPTIONAL
1	Indicator screw	Stainless Steel (304)		1	
2	Indicator	Plastic (ABS)		1	
3	Circlip	Stainless Steel (304)		1	
4	Thrust Washer	Stainless Steel (304)		1	
5	Exterior Washer	Polyoxymethylene		1	
6	Actuator Body	Extruded Aluminium (6005-T5)	Hard Anodized (> 30µm)	1	Nickel- or PTFE-coated
7	Piston Guide	Nylon66 + 30% Glass Fiber		2	
8	O-ring (Pinion Top)	NBR		1	Viton / LNBR
9	Bearing (Pinion Top)	Polyoxymethylene		1	
10	Interior Washer	Polyoxymethylene		1	
11	Stroke Cam	Extruded Low Carbon Alloy Steel		1	
12	Pinion	Extruded Low Carbon Alloy Steel	Nickel-Plated (> 15µm)	1	
13	Bearing (Pinnion Bottom)	Polyoxymethylene		1	
14	O-ring (Pinion Bottom)	NBR		1	Viton / LNBR
15	Spring (Cartridge)	Piano Spring Steel		0 - 12	
16	Bearing (Piston)	Polyoxymethylene		2	
17	O-ring (Piston)	NBR		2	Viton / LNBR
18	Piston	Die-Cast Aluminium (A380)	Hard Anodized	2	
19	Plug	NBR		2	Viton / LNBR
20	O-ring (Adjustment Screw)	NBR		2	Viton / LNBR
21	Nut (Adjustment Screw)	Stainless Steel (304)		2	
22	Adjustment Screw	Stainless Steel (304)		2	
23	O-ring (End Cap)	NBR		2	Viton / LNBR
24	End-Cap	Die-Cast Aluminium (A380)	Hard Anodized + Polyester	2	Nickel- or PTFE-coated
25	End-Cap Screw	Stainless Steel (304)		8	

03VE160 - 400 PARTS LIST

ITEM	DESCRIPTION	MATERIAL	PROTECTION	QTY	OPTIONAL
1	Indicator screw	Plastic (ABS)		1	
2	Indicator	Plastic (ABS)		1	
3	Circlip	Stainless Steel (304)		1	
4	Thrust Washer	Stainless Steel (304)		1	
5	Exterior Washer	Polyoxymethylene		1	
6	Actuator Body	Extruded Aluminium (6005-T5)	Hard Anodized (> 30µm)	1	Nickel- or PTFE-coated
7	Piston Guide	Polyoxymethylene		2	
8	O-ring (Pinion Top)	NBR		1	Viton / LNBR
9	Bearing (Pinion Top)	Polyoxymethylene		1	
10	Interior Washer	Polyoxymethylene		1	
11	Stroke Cam	Alloy Steel (#45)		1	
12	Pinion	Alloy Steel (#45)		1	
13	Bearing (Pinion Bottom)	Polyoxymethylene		1	
14	O-ring (Pinion Bottom)	NBR		1	Viton / LNBR
15	Spring (Cartridge)	Spring Steel		0 - 12	
16	Bearing (Piston)	Polyoxymethylene		2	
17	O-ring (Piston)	NBR		2	Viton / LNBR
18	Piston	Die-Cast Aluminium (A380)		2	
19	Plug	NBR		2	Viton / LNBR
20	O-ring (Adjustment Screw)	NBR		2	Viton / LNBR
21	Nut (Adjustment Screw)	Stainless Steel (304)		2	
22	Adjustment Screw	Stainless Steel (304)		2	
23	O-ring (End Cap)	NBR		2	Viton / LNBR
24	End-Cap	Die-Cast Aluminium (A380)	Hard Anodized + Polyester	2	Nickel- or PTFE-coated
25	End-Cap Screw	Stainless Steel (304)		8	



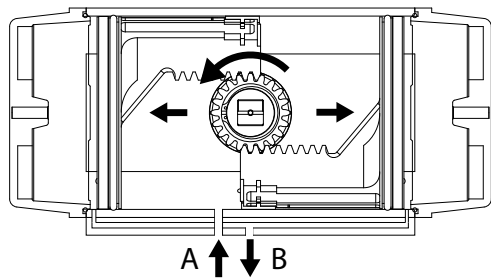
DOUBLE-ACTING

SIZING

Given an example valve torque of 100 Nm, add a 20% safety factor, which gives you 120 Nm. Our example minimum operating pressure is 6 bar (87 psig). Go to the torque table below, find the 6 bar (87 psig) column and follow it down to 120 Nm or a value just exceeding 120 Nm, in our case 135.4 Nm. The model number will be in the left-most column - in our example 03VE092DA.

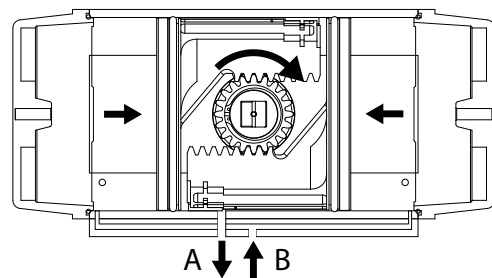
THE OPERATING PRINCIPLE OF DOUBLE-ACTING ACTUATOR

CCW counter-clockwise



Air to port A forces the pistons outwards, causing the piston to turn counter-clockwise while air is being released through port B.

CW clockwise



Air to port B forces the pistons inwards, causing the piston to turn clockwise while air is being released through port A.

TORQUE TABLE - DOUBLE-ACTING ACTUATORS

MODEL	AIR SUPPLY PRESSURE (bar)									
	2.0	2.5	3.0	4.0	4.5	5.0	5.5	6.0	7.0	8.0
OUTPUT TORQUE (Nm)										
03VE032DA	3.1	3.8	4.6	6.1	6.9	7.6	8.4	9.2	10.7	12.2
03VE040DA	4.8	6.0	7.2	9.5	10.7	11.9	13.1	14.3	16.7	19.1
03VE052DA	8.0	10.0	12.0	16.0	18.0	20.0	21.9	23.9	27.9	31.9
03VE063DA	14.6	18.2	21.9	29.2	32.8	36.5	40.1	43.8	51.1	58.4
03VE075DA	20.1	25.1	30.1	40.1	45.1	50.2	55.2	60.2	70.2	80.3
03VE083DA	31.4	39.2	47.0	62.7	70.5	78.4	86.2	94.1	109.7	125.4
03VE092DA	45.1	56.4	67.7	90.3	101.6	112.9	124.1	135.4	158.0	180.6
03VE105DA	66.1	82.7	99.2	132.2	148.8	165.3	181.8	198.4	231.4	264.5
03VE125DA	100.3	125.4	150.5	200.6	225.7	250.8	275.9	301.0	351.1	401.3
03VE132DA	136.8	171.0	201.5	278.5	307.8	342.0	376.2	410.4	478.8	547.2
03VE140DA	171.0	213.8	256.5	342.0	384.8	427.5	470.3	513.0	598.5	684.0
03VE160DA	266.0	332.5	399	532.0	598.5	665.0	731.5	798.0	931.0	1064.0
03VE190DA	425.6	532.0	638.4	851.2	957.6	1064.0	1170.4	1276.8	1489.6	1702.4
03VE210DA	532.0	665.0	798.0	1064.0	1197.0	1330.0	1463.0	1596.0	1862.0	2128.0
03VE240DA	769.5	961.9	1154.3	1539.0	1731.4	1923.8	2116.1	2308.5	2693.3	3078.0
03VE270DA	1169.6	1462.1	1754.5	2339.3	2631.7	2924.1	3216.5	3508.9	4093.7	4678.6
03VE300DA	1526	1908	2289	3052	3434	3815	4197	4578	5341	6104
03VE350DA	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139
03VE400DA	3256	4070	4484	6512	7326	8140	8954	9768	11396	13024

SPRING-RETURN (fail-safe)

SIZING

Sizing example of Achem spring-return actuator:

Spring to close when air fails (air to open):

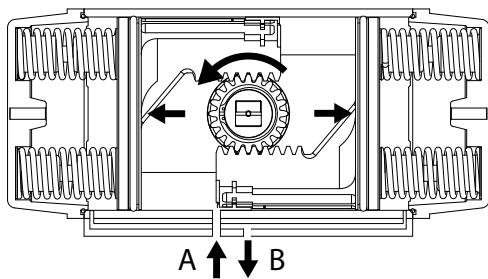
Valve torque 60 Nm plus 20% safety factor = 72 Nm. Minimum operating pressure: 6 bar (87 psig).

The spring-return actuator selected is 03VE105SR-12. The 03VE105SR-12 has the following output torques:

1. Air torque 0° (valve close) = 122.5 Nm > 72 Nm
2. Air torque 90° (valve open) = 80.6 Nm
3. Spring torque 90° (valve open) = 118.1 Nm
4. Spring torque 0° (valve close) = 75.9 Nm > 72 Nm

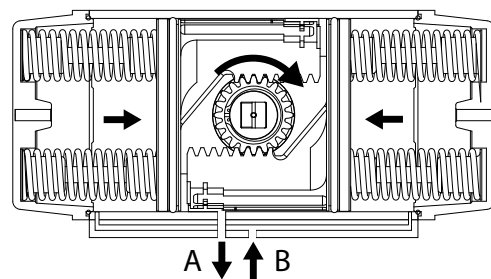
THE OPERATING PRINCIPLE OF SINGLE-ACTING SPRING-RETURN ACTUATOR

CCW counter-clockwise



Air to port A forces the pistons outwards, compressing the springs. The pinion turns counter-clockwise while air is being released through port B.

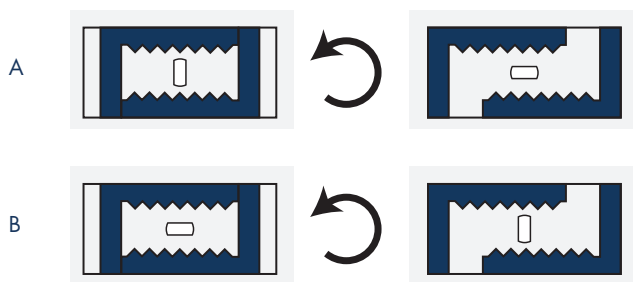
CW clockwise



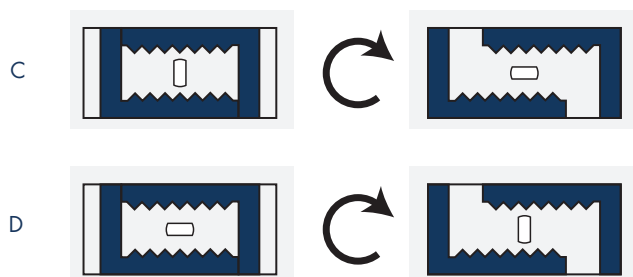
Loss of air pressure through port A allows the stored energy in the springs to force the pistons inwards. The pinion turns clockwise while air is being released through port A.

MOUNTING VARIATIONS

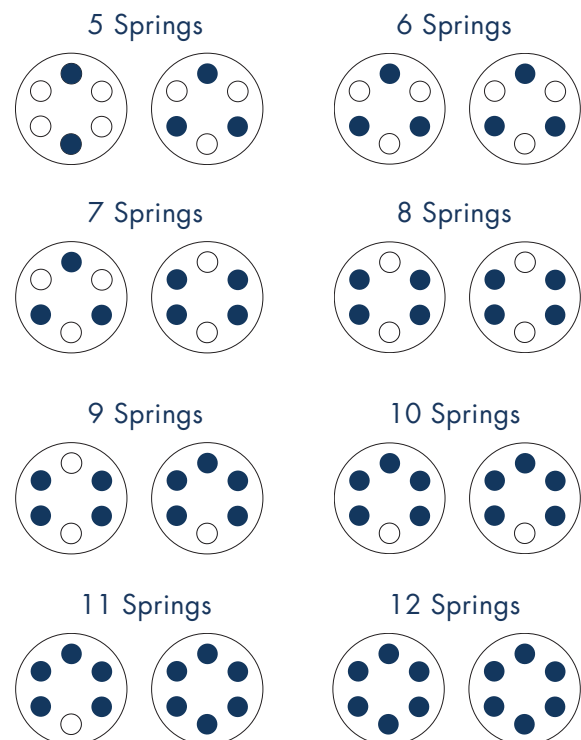
CCW counter-clockwise



CCW clockwise



SPRING ARRANGEMENT



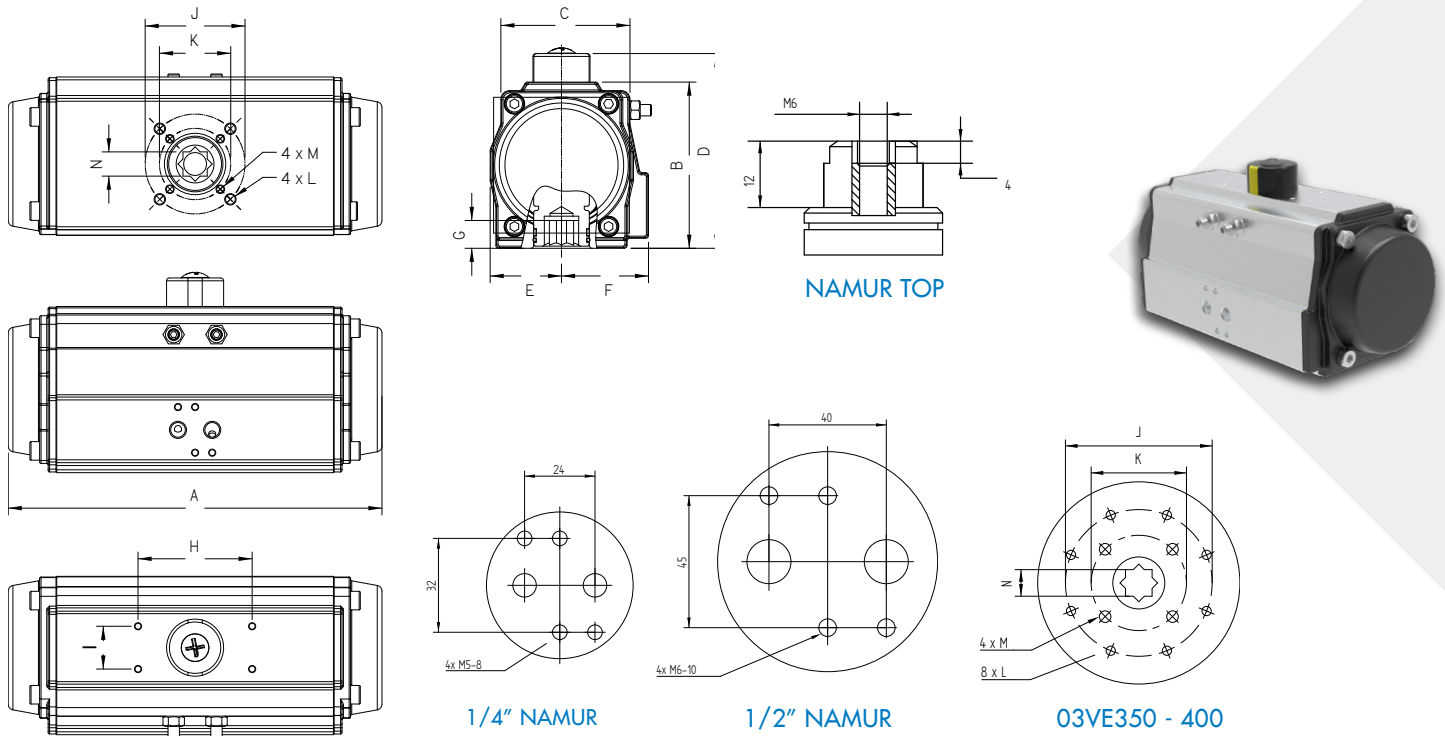
TORQUE TABLE - SPRING-RETURN ACTUATORS

MODEL	SPRING SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (bar)														
				2.5		3.0		4.0		5.0		6.0		7.0		8.0		
				AIR TORQUE OUTPUT (Nm)														
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	
03VE 052SR	5	4.3	6.2	5.7	3.8	7.6	5.7											
	6	5.0	7.4	4.9	2.5	6.9	4.5	10.9	8.5									
	7	5.9	8.6	4.0	1.3	6.0	3.3	9.8	7.3	14.0	10.4							
	8	6.7	9.9			5.2	2.0	9.2	6.0	13.2	9.1	17.2	14.1					
	9	7.6	11.1			4.3	0.8	8.3	4.8	12.3	7.9	16.3	12.8	20.3	16.8			
	10	8.5	12.4					7.4	3.6	11.5	6.7	15.5	11.6	19.5	15.6			
	11	9.3	13.6					6.6	2.3	10.6	5.4	14.6	10.4	18.6	14.3	22.6	18.3	
	12	10.2	14.8						9.7	3.5	13.8	9.1	17.8	12.2	21.8	17.1		
03VE 063SR	5	6.8	10.4	11.1	7.7	15.0	11.4	22.3	14.9									
	6	8.2	12.5	10.1	5.7	13.6	9.3	20.9	16.6	28.3	23.9							
	7	9.6	14.6	8.6	3.6	12.5	7.2	19.5	14.5	26.8	21.9							
	8	10.9	16.7			10.9	5.1	18.2	12.4	25.5	19.8	32.8	27.0	40.1	34.3			
	9	12.3	18.8					16.8	10.4	24.1	17.7	31.4	24.9	38.7	32.2			
	10	13.7	20.9					11.4	8.2	22.8	15.6	30.0	22.8	37.7	30.1	44.7	37.4	
	11	15.0	22.9							21.5	13.5	28.7	20.7	36.0	28.0	43.3	35.3	
	12	16.4	25.0						20.0	11.4	27.3	18.6	34.6	25.9	41.9	33.3		
03VE 075SR	5	10.5	14.5	14.5	10.6	19.4	15.5	29.5	25.7									
	6	12.7	17.4	12.4	7.6	17.3	12.6	27.4	22.7	37.5	32.8							
	7	14.8	20.3	10.4	4.8	15.2	9.7	25.3	19.9	35.4	29.9							
	8	16.9	23.2			13.1	6.8	23.1	16.9	33.3	27.0	43.2	37.0	53.3	47.0			
	9	19.0	26.1					21.0	14.1	31.2	24.1	41.1	34.1	51.2	44.2			
	10	21.1	29.0					19.0	11.1	28.8	21.2	39.0	31.2	49.1	41.2	59.1	51.2	
	11	23.2	31.9							27.0	18.3	37.0	28.3	47.0	38.4	57.0	48.4	
	12	25.3	34.7						24.9	15.4	34.9	25.4	44.9	35.4	54.9	45.4		
03VE 083SR	5	15.3	23.0	23.7	16.1	31.1	24.0	46.8	37.9									
	6	19.0	27.6	20.1	11.5	28.0	19.3	43.7	35.1	59.4	50.7							
	7	22.1	32.2	17.0	6.9	24.8	14.8	40.5	30.5	56.2	46.2							
	8	25.3	36.8			21.7	10.1	37.4	25.8	53.1	41.5	68.8	57.2	84.5	72.9			
	9	28.5	41.4					34.2	21.3	49.9	37.0	65.6	52.6	81.2	68.3			
	10	31.6	46.0					31.0	16.6	46.7	32.3	62.4	48.0	78.1	63.7	93.8	79.3	
	11	34.8	50.6							43.6	27.7	59.3	43.4	75.0	59.1	90.6	74.8	
	12	38.0	55.2						40.4	23.2	56.1	38.9	71.7	54.5	87.4	70.2		
03VE 092SR	5	23.3	34.4	33.1	22.0	44.2	33.2	66.8	55.9									
	6	28.0	41.2	28.4	15.2	39.6	26.4	62.2	49.0	84.8	71.6							
	7	32.7	48.1	23.8	8.2	34.9	19.4	57.5	42.1	80.2	64.7							
	8	37.3	55.0			31.3	12.6	52.9	35.2	75.5	57.9	98.1	80.5	120.7	103.0			
	9	42.0	61.9					48.2	28.4	70.9	51.0	93.5	73.6	116.0	96.1			
	10	46.7	68.7					43.6	21.5	66.2	44.1	88.8	66.7	111.3	89.2	134.0	111.8	
	11	51.4	75.6							61.5	37.2	84.1	59.9	106.6	82.4	129.2	105.0	
	12	56.0	82.5						56.8	30.4	79.4	53.0	101.9	75.5	124.5	98.1		
03VE 105SR	5	31.6	49.2	51.0	33.4	67.5	49.9	100.6	83.0									
	6	38.0	59.1	44.7	23.5	61.1	40.0	94.2	73.2	127.3	106.2							
	7	44.3	68.9	38.4	13.7	54.9	30.3	87.9	63.4	121.0	96.4							
	8	50.6	78.7			48.5	20.4	81.6	53.5	114.7	86.5	147.7	119.6	180.8	152.7			
	9	56.9	88.6					75.3	43.7	108.4	76.8	141.5	109.8	174.5	142.9			
	10	63.3	98.4					68.9	33.4	102.0	66.5	135.1	99.6	168.2	132.6	201.2	165.7	
	11	69.6	108.3							95.7	57.0	128.7	90.1	161.8	123.1	194.8	156.2	
	12	75.9	118.1						89.4	47.5	122.5	80.6	155.5	113.6	188.6	146.7		
03VE 125SR	5	52	79	73	47	98	72	148	122									
	6	63	94	63	31	88	56	138	107	188	157							
	7	73	110	52	15	77	40	127	90	178	141							
	8	84	125			67	25	117	75	167	125	217	176	268	226			
	9	94	141					107	59	157	109	207	159	257	210			
	10	105	157					96	44	146	94	196	144	247	194	297	245	
	11	115	173							136	78	186	128	236	178	286	228	
	12	125	188						125	63	176	113	226	163	276	213		
03VE 140SR	5	86	129	128	85	171	127	256	213									
	6	103	155	111	59	154	102	239	187	325	273							
	7	120	181	94	33	137	76	222	162	308	247							
	8	137	206			120	50	205	136	291	221	376	307	462	392			
	9	155	232					187	110	273	196	358	281	444	367			
	10	172	258					170	84	256	169	341	255	427	340	512	426	
	11	189	284							238	143	324	229	409	314	495	400	
	12	206	310						221	118	307	203	392	289	478	374		

TORQUE TABLE (Nm)

MODEL	SPRING SET	SPRING TORQUE (Nm)		AIR SUPPLY PRESSURE (unit:bar)														
				2.5		3.0		4.0		5.0		6.0		7.0		8.0		
				AIR TORQUE OUTPUT (Nm)														
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		
03VE 160SR	5	140	208	193	124	259	191	392	324									
	6	168	250	165	83	232	149	365	282	498	415							
	7	196	292	137	41	203	107	336	240	469	373							
	8	223	333			176	66	309	199	442	332	575	465	708	598			
	9	251	375					280	157	413	290	546	423	679	556			
	10	279	417					253	115	386	248	519	381	652	514	785	647	
	11	307	458							358	207	491	340	624	473	757	606	
03VE 190SR	12	335	500						330	165	463	298	596	431	729	564		
	5	200	309	332	222	438	329	651	542									
	6	240	371	292	161	398	267	611	480	824	693							
	7	280	433	252	99	358	205	571	418	784	631							
	8	320	495			318	143	531	356	744	569	957	782	1169	995			
	9	360	557					491	295	704	507	917	720	1130	933			
	10	400	618					451	233	664	446	877	658	1090	871	1302	1084	
03VE 210SR	11	440	680						624	384	837	597	1050	809	1263	1022		
	12	480	742						584	322	797	535	1010	748	1223	960		
	5	275	380	390	285	523	418	789	684									
	6	330	456	335	209	468	342	734	608	1000	874							
	7	385	532	280	133	413	266	679	532	945	798							
	8	440	608			358	190	624	456	890	722	1156	988	1422	1254			
	9	495	684					569	380	835	646	1101	912	1367	1178			
03VE 240SR	10	550	760					514	304	780	570	1046	836	1312	1102	1578	1368	
	11	605	836							725	494	991	760	1257	1026	1523	1292	
	12	660	912							670	418	936	684	1202	950	1468	1216	
	5	410	554	552	409	744	600	1129	985									
	6	490	665	470	297	662	489	1047	874	1432	1259							
	7	575	775	388	187	580	379	964	764	1349	1149							
	8	656	886			498	268	883	653	1267	1037	1652	1422	2037	1807			
03VE 270SR	9	739	998					800	542	1185	926	1569	1311	1954	1696			
	10	821	1 108					718	431	1103	816	1488	1201	1872	1586	2257	1970	
	11	903	1219							1021	705	1406	1090	1791	1471	2176	1859	
	12	985	1330							939	594	1323	979	1708	1363	2093	1748	
	5	560	787	903	675	1195	968	1779	1552									
	6	672	943	790	519	1083	811	1667	1396	2252	1981							
	7	783	1101	679	361	972	654	1556	1238	2141	1823							
03VE 300SR	8	895	1258			860	479	1444	1081	2029	1666	2614	2252	3199	2836			
	9	1007	1416					1332	923	1917	1509	2502	2094	3087	2678			
	10	1119	1572					1220	767	1805	1352	2390	1937	2974	2521	3560	3107	
	11	1231	1730							1693	1197	2278	1779	2862	2364	3448	2949	
	12	1342	1887							1582	1037	2167	1623	2751	2207	3336	2792	
	5	730	1061	1097	729													
	6	876	1273	935	494	1316	875											
03VE 350SR	7	1022	1485	772	258	1153	639	1916	1402									
	8	1168	1697			991	403	1754	1166	2517	1929							
	9	1314	1909					1592	930	2355	1693	3118	2456					
	10	1460	2122					1430	695	2193	1458	2956	2221	3719	2984	4482	3747	
	11	1606	2334							2030	1222	2793	1985	3556	2748	4319	3511	
	12	1752	2546							1868	986	2631	1749	3394	2512	4157	3275	
	5	1173	1702	1553	964													
03VE 400SR	6	1408	2043	1292	586	1863	1157											
	7	1640	2383	1031	208	1602	779	2745	1922									
	8	1877	2724			1341	401	2484	1544	3626	2686							
	9	2112	3064					2224	1165	3336	2307	4508	3449					
	10	2346	3405					1963	787	3105	1929	4247	3071	5390	4214	6532	5356	
	11	2581	3745							2844	1551	3986	2693	5129	3836	6271	4978	
	12	2816	4086							2584	1172	3726	2314	4869	3457	6011	4599	
03VE 400SR	7	1837	2880	2028	869													
	8	2100	3292	1736	411	2550	1225											
	9	2362	3703			2259	768	3887	2396									
	10	2624	4115			1967	311	3595	1939	5223	3567							
	11	2887	4526					3303	1482	4931	3110	6559	4738					
	12	3149	4938					3012	1025	4640	2653	6268	4281	7895	5908	9523	7536	
	13	3412	5349							4348	2195	5976	3823	7603	5450	9231	7078	
	14	3674	5761							4057	1738	5685	3366	7312	4993	8940	6621	
15	3937	6172							3765	1281	5393	2909	7020	4536	8648	6164		
16	4199	6584									5101	2452	6728	4079	8356	5707		

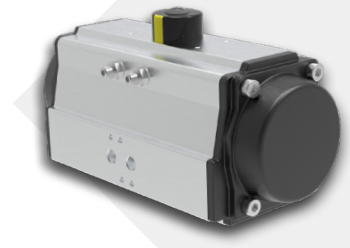
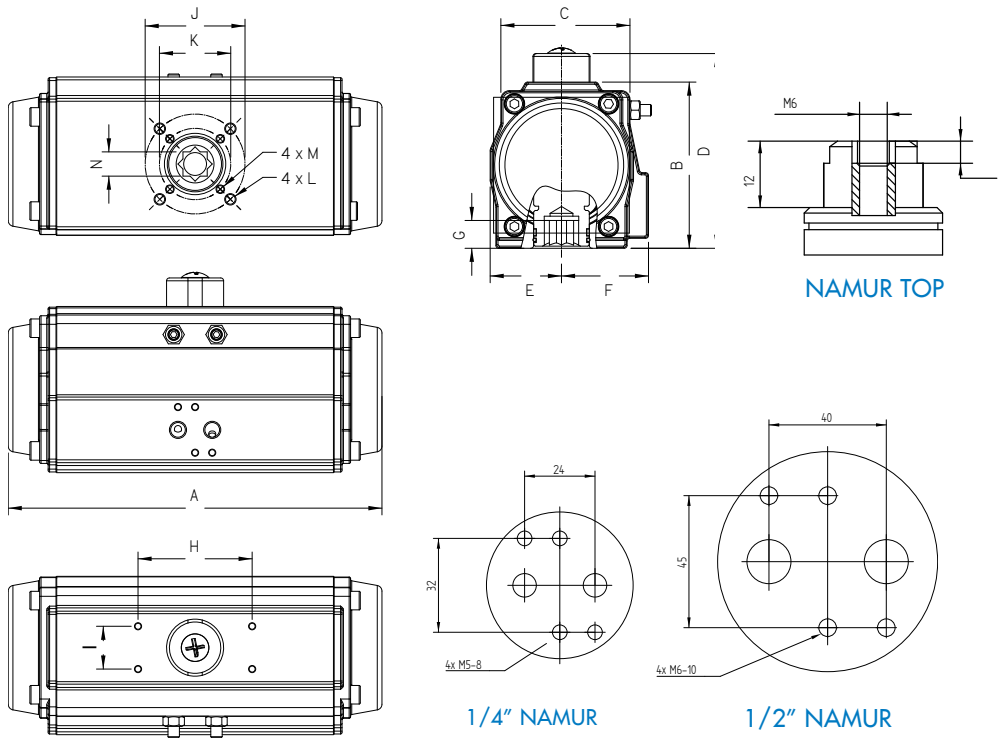
DIMENSION TABLE - DOUBLE-ACTING



Model	A	B	C	D	E	F	G	H	I	N	J	K	L	M	AIR CONNECTION
03VE 032	100	46	46	66	23	23	11	50	25	9	F03		M5*6		G1/8"
03VE 040	122	60	52	80	28.5	36.5	14	80	30	11	F05	F03	M6*10	M5*8	G1/4" (NPT)
03VE 052	147	72	65	92	30	41.5	14	80	30	11	F05	F03	M6*10	M5*8	G1/4" (NPT)
03VE 063	168	88	72	108	36	47	18	80	30	14	F07	F05	M8*13	M6*10	G1/4" (NPT)
03VE 075	185	100	81	120	42	53	18	80	30	14	F07	F05	M8*13	M6*10	G1/4" (NPT)
03VE 083	211	109	88	129	46	57	21	80	30	17	F07	F05	M8*13	M6*10	G1/4" (NPT)
03VE 092	262	117	98	137	50	61	21	80	30	17	F07	F05	M8*13	M6*10	G1/4" (NPT)
03VE 105	269	133	110	153	57.5	64	26	80	30	22	F10	F07	M10*16	M8*13	G1/4" (NPT)
03VE 125	303	155	128	175	67.5	74.5	26	80	30	22	F10	F07	M10*16	M8*13	G1/4" (NPT)
03VE 132	368	164	133	184	71	73	26	80	30	22	F12	F10	M12*20	M10*16	G1/4" (NPT)
03VE 140	394	172	138	192	75	77	31	80	30	27	F12	F10	M12*20	M10*16	G1/4" (NPT)
03VE 160	451	197	158	217	87	87	31	80	30	27	F12	F10	M12*20	M10*16	G1/4" (NPT)
03VE 190	522	230	189	260	103	103	40	130	30	36	F14		M16*25		G1/4" (NPT)
03VE 210	527	255	210	285	113	113	40	130	30	36	F14		M16*25		G1/4" (NPT)
03VE 240	598	289	245	319	130	130	50	130	30	36	F16		M20*25		G1/4" (NPT)
03VE 270	720	326	273	356	147	147	50	130	30	36	F16		M20*25		G1/2" (NPT)
03VE 300	757	352	289	382	160	173	60	130	30	46	F21	F16	M20*25	M20*25	G1/2" (NPT)
03VE 350	888	408	336	438	190	195	60	130	30	46	F25	F16	M16*25	M20*25	G1/2" (NPT)
03VE 400	922	466	330	496	260	260	60	130	30	55	F25	F16	M16*25	M20*25	G1/2" (NPT)

* Dimensions for reference only, subject to change.

DIMENSION TABLE - SPRING-RETURN



Model	A	B	C	D	E	F	G	H	I	N	J	K	L	M	AIR CONNECTION
03VE 052	147	72	65	92	30	41.5	14	80	30	11	F05	F03	M6*10	M5*8	G1/4" (NPT)
03VE 063	168	88	72	108	36	47	14	80	30	11	F05	F03	M6*10	M5*8	G1/4" (NPT)
03VE 075	185	100	81	120	42	53	18	80	30	14	F07	F05	M8*13	M6*10	G1/4" (NPT)
03VE 083	211	109	88	129	46	57	18	80	30	14	F07	F05	M8*13	M6*10	G1/4" (NPT)
03VE 092	262	117	98	137	50	61	18	80	30	17	F07	F05	M8*13	M6*10	G1/4" (NPT)
03VE 105	269	133	110	153	57.5	64	21	80	30	17	F10	F07	M10*16	M8*13	G1/4" (NPT)
03VE 125	303	155	128	175	67.5	74.5	26	80	30	22	F10	F07	M10*16	M8*13	G1/4" (NPT)
03VE 140	394	172	138	192	75	77	26	80	30	22	F12	F10	M12*20	M10*16	G1/4" (NPT)
03VE 160	451	197	158	217	87	87	26	80	30	22	F12	F10	M12*20	M10*16	G1/4" (NPT)
03VE 190	522	230	189	260	103	103	31	130	30	27	F12		M12*22		G1/4" (NPT)
03VE 210	527	255	210	285	113	113	31	130	30	27	F14		M16*25		G1/4" (NPT)

* Dimensions for reference only, subject to change.

TECHNICAL DATA

AIR CONSUMPTION - AIR VOLUME OPENING & CLOSING

MODEL	AIR VOLUME @OPENING (LITER)	AIR VOLUME @CLOSING (LITER)	MODEL	AIR VOLUME @OPENING (LITER)	AIR VOLUME @CLOSING (LITER)
03VE032	0.04	0.03	03VE140	2.46	3.33
03VE040	0.06	0.07	03VE160	3.81	4.91
03VE052	0.12	0.15	03VE190	6.15	7.85
03VE063	0.20	0.24	03VE210	7.53	9.94
03VE075	0.30	0.38	03VE240	11.09	14.41
03VE083	0.45	0.54	03VE270	16.61	22.09
03VE092	0.64	0.91	03VE300	22.94	28.19
03VE105	0.95	1.20	03VE350	33.22	46.08
03VE125	1.48	1.89	03VE400	50.11	66.97

Air consumption (l/min) depends on the amount of air required to operate the actuator (the air volume for opening and closing), the air supply pressure, and how often the actuator is cycled (open/close per minute). The formula for air consumption is as follows:

$$Air\ Consumption\ (l/min) = Air\ Volume \times \left(\frac{Air\ Supply\ (KPa) + 101.3}{101.3} \right) \times Cycle\ Times\ (per\ minute)$$

Where:

Air Volume = total air needed to full open and close the actuator (in liters).

Air Supply = air pressure supplied (in kilopascals).

101.3 = atmospheric pressure in kilopascal (used to normalize pressure).

Cycle Times = number of open/close cycles the actuator completes in one minute.

WEIGHT (IN KG)

	03VE32	03VE40	03VE52	03VE63	03VE75	03VE83	03VE92	03VE105	03VE125
DA	0.5	1.0	1.4	2.	2.7	3.1	4.6	6.8	8.9
SR			1.5	2.1	2.9	3.6	5.2	6.9	10.1

	03VE140	03VE160	03VE190	03VE210	03VE240	03VE270	03VE300	03VE350	03VE400
DA	13.3	19.88	32.75	39.40	55.45	83.80	128.50	210.15	209
SR	15.5	23.78	39.35	49.00	69.25	106.60	156.10	259.35	252

OPERATION TIME (IN SECONDS)

Spring Return (By Spring Qty.)

	Double Acting		3 + 3		3 + 4		4 + 4		4 + 5		5 + 5		5 + 6		6 + 6	
	0° - 90°	90° - 0°	0° - 90°	90° - 0°	0° - 90°	90° - 0°	0° - 90°	90° - 0°	0° - 90°	90° - 0°	0° - 90°	90° - 0°	0° - 90°	90° - 0°	0° - 90°	90° - 0°
03VE032	0.15	0.15														
03VE040	0.2	0.2														
03VE052	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.4	0.2	0.5	0.2
03VE063	0.2	0.2	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.4	0.3	0.5	0.3	0.6	0.3
03VE075	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.5	0.3	0.6	0.3
03VE083	0.4	0.4	0.6	0.7	0.7	0.6	0.7	0.6	0.7	0.5	0.7	0.5	0.8	0.5	0.9	0.4
03VE092	0.6	0.6	0.6	0.8	0.7	0.7	0.8	0.7	0.8	0.6	0.8	0.6	0.9	0.6	1.0	0.5
03VE105	0.8	0.8	1.0	1.4	1.2	1.3	1.4	1.2	1.6	1.1	1.8	1.0	2.0	0.9	2.2	0.9
03VE125	1.2	1.2	1.4	1.6	1.6	1.5	1.8	1.4	2.0	1.3	2.2	1.2	2.3	1.1	2.6	1.1
03VE132	1.4	1.4	1.8	2.1	2.1	2.0	2.4	1.8	2.7	1.6	3.0	1.5	3.2	1.4	3.6	1.3
03VE140	1.6	1.6	2.1	2.7	2.5	2.4	2.9	2.1	3.3	1.9	3.7	1.7	4.1	1.6	4.5	1.5
03VE160	3.9	2.6	4.7	1.8	4.8	1.8	4.8	1.7	4.8	1.7	4.8	1.7	4.8	1.7	4.8	1.65
03VE190	4.6	3.5	5.8	3.7	5.8	3.5	5.8	3.5	5.8	3.5	5.8	3.4	5.8	3.4	5.8	3.4
03VE210	5.5	4.4	8.3	4.8	8.4	4.6	8.4	4.6	8.4	4.6	8.5	4.5	8.5	4.5	8.5	4.5
03VE240	8.4	8.3	16.2	5.1	16.4	5.1	16.4	5.1	16.4	4.9	16.6	5.0	16.8	4.9	17	4.8
03VE270	10.9	8.5	17.6	6.3	17.8	6.3	17.6	6.2	17.8	6.2	18	6.2	18.2	6.2	18.4	6.1
03VE300	15.0	15.0	24.0	13.2	24.5	13.0	24.4	12.8	24.3	12.6	24.5	12.6	24.7	12.6	24.9	12.5
03VE350	23.7	18.6	31.0	17.3	31.5	17.0	31.3	16.8	31.0	16.6	31.2	16.6	31.4	16.6	31.6	16.5
03VE400	31.0	29.0	45.0	27.0	51.0	27.0	51.3	26.8	51.5	26.8	51.7	26.6	51.9	26.4	52.1	26.2

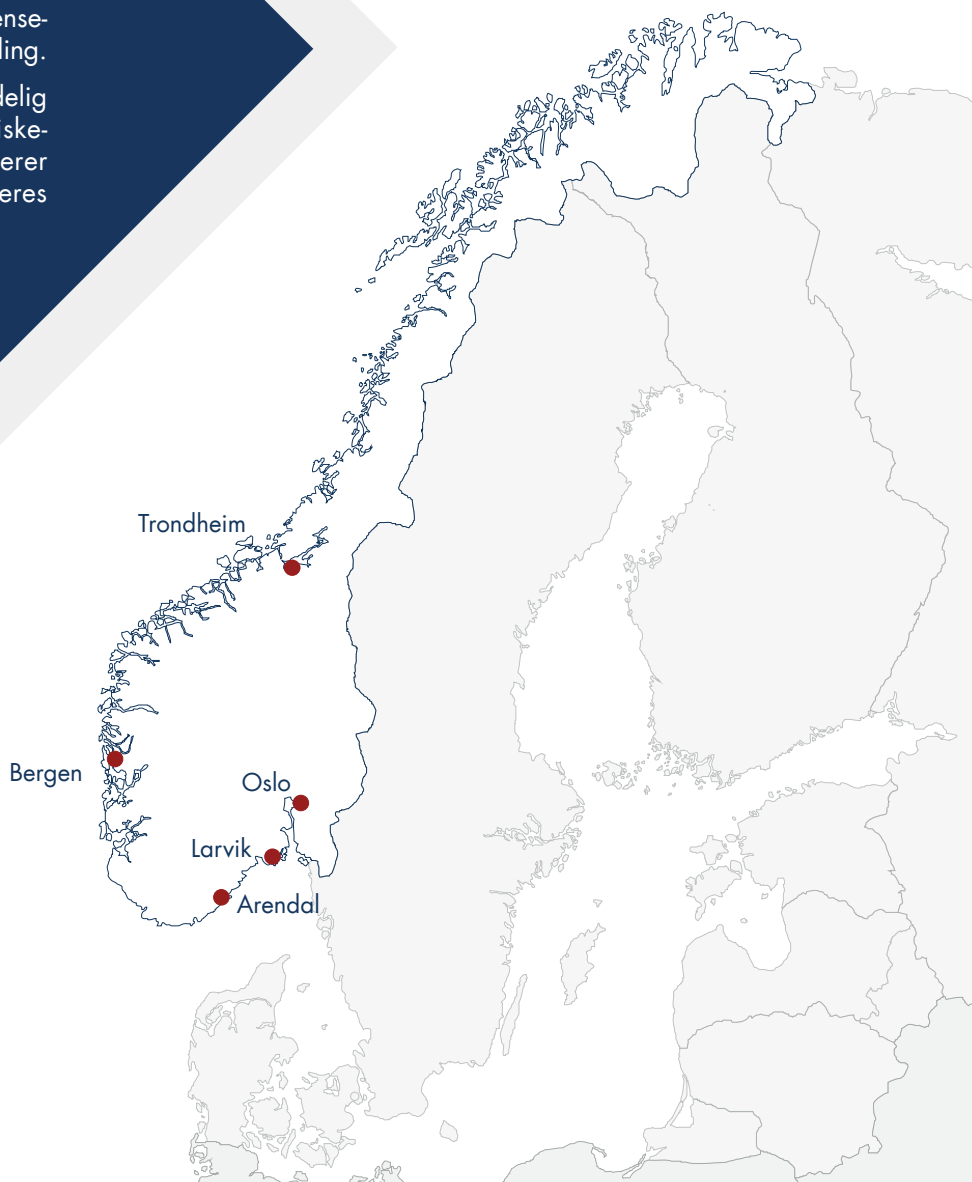
Note: Tested without load at 5 bar; with solenoid valve ALV510F3C0 (CV=1.1) for sizes 40 to 240 and solenoid valve ALV410F1/F2C0 (CV=2.78) for sizes 270 to 400.



RIKTIG FØRSTE GANGEN

J.S.Cock er en av Norges ledende leverandører av ventiler, instrumenter og komplette prosessutstyrs-pakker til industrien innenfor feltene skip, offshore, petrokjemi, næringsmiddel, farmasøytisk, rense-anlegg, smelteverk, vannkraft, papir og treforedling.

I de senere år har J.S.Cock også blitt en betydelig leverandør av ventiler og filtersystemer til fiskeoppdrettsindustrien i Norge. J.S.Cock konstruerer og utvikler i tillegg egne ventiler som produseres eksternt, og selges under varemerket JSC.



post@jsc.no | www.jsc.no

Oslo

+47 22 21 51 00

Nedre Rommen 3
0988 Oslo

Trondheim

+47 22 21 51 00

Vestre Rosten 88
7075 Tiller

Larvik

+47 33 19 29 15

Skreppstadveien 24
3261 Larvik

Bergen

+47 55 39 32 00

Hylkjeflaten 10
5109 Hylkje

Arendal

+47 37 06 11 40

Kystveien 40
4841 Arendal

