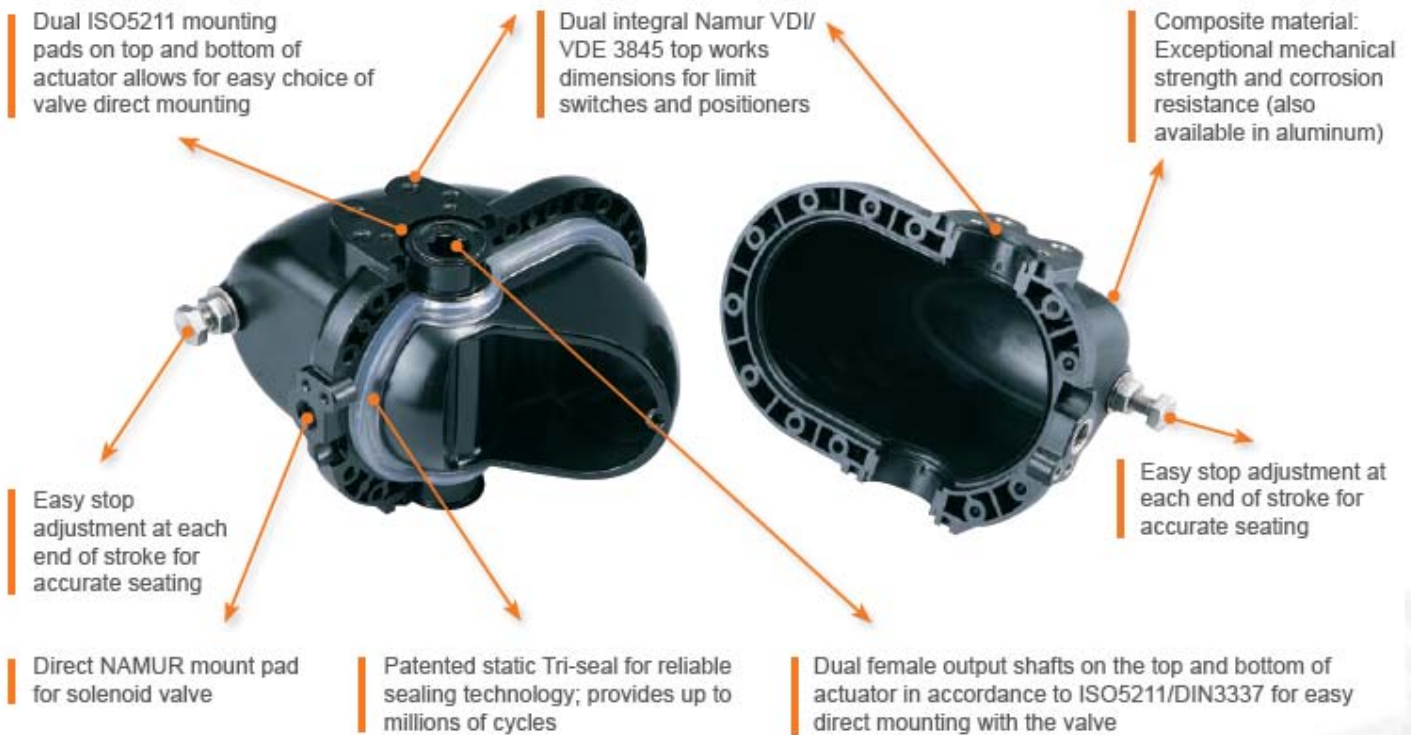


Pneumatic Vane Actuator **V-FLOW** SOLUTIONS LTD

V-Flow Solutions pneumatic vane actuator provides rotary control for simple open/close and modulating applications.

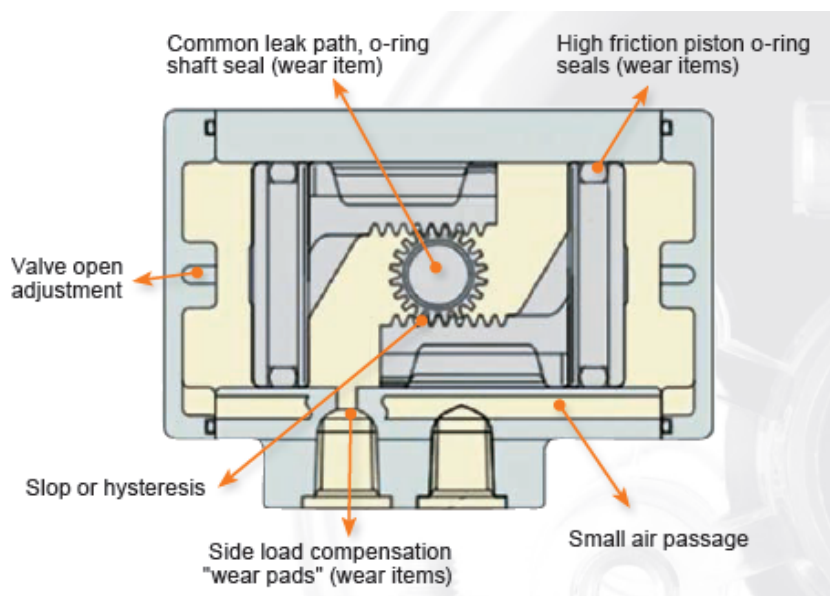
High quality components and fewer moving parts makes the V-Flow vane actuator efficient, cost effective with an extended life over many other rotary actuator types.



Features

V-Flow Solutions pneumatic vane actuator is the ideal design for modulating applications.

Conventional Rack & Pinion actuators can not avoid the hysteresis caused by the gap between the rack and the pinion, inducing motion errors when utilized in modulation application. Puretorq actuators do not have these issues and can provide the reliability for modulating and simple on/off application.



Simple design

The simple design results in far fewer parts over a conventional Rack and Pinion actuator, improving reliability, life cycle and significantly lower maintenance costs of many of its competitors.



life cycle has been tested to **millions** of cycles in Double Acting, Fail-Safe and Spring Return versions, lasting longer than the conventional Rack & Pinion actuator. Air pressure is used to create the sealing due to the V-shape of the Tri-seal. The air pressure produces a tight seal at the contact of "seal to vane" and "seal to housing".

Patent worldwide:

U.S.A. 6,511,040 ; 6,318,701

EPC UK 97942744

Italy 97942744

China z1 2007 1 0014807.0

Taiwan 155762 ; 143286

All other areas patent pending

► Direct NAMUR Mount Pad for Solenoid Valve



- Provides compatibility with a broad range of solenoid suppliers and the option of direct piping

► Single Moving Vane

- The vane is the only moving part of the actuator and is comprehensively integrated with the shaft. Zero hysteresis occurs from the actuator to the valve stem
- Unlike a Rack & Pinion shaft, Puretorq's shaft is constructed symmetrically allowing for better balance thereby mitigating unwanted friction and improving actuator life



Rack & Pinion Shaft



► External Single Acting Spring Return Unit

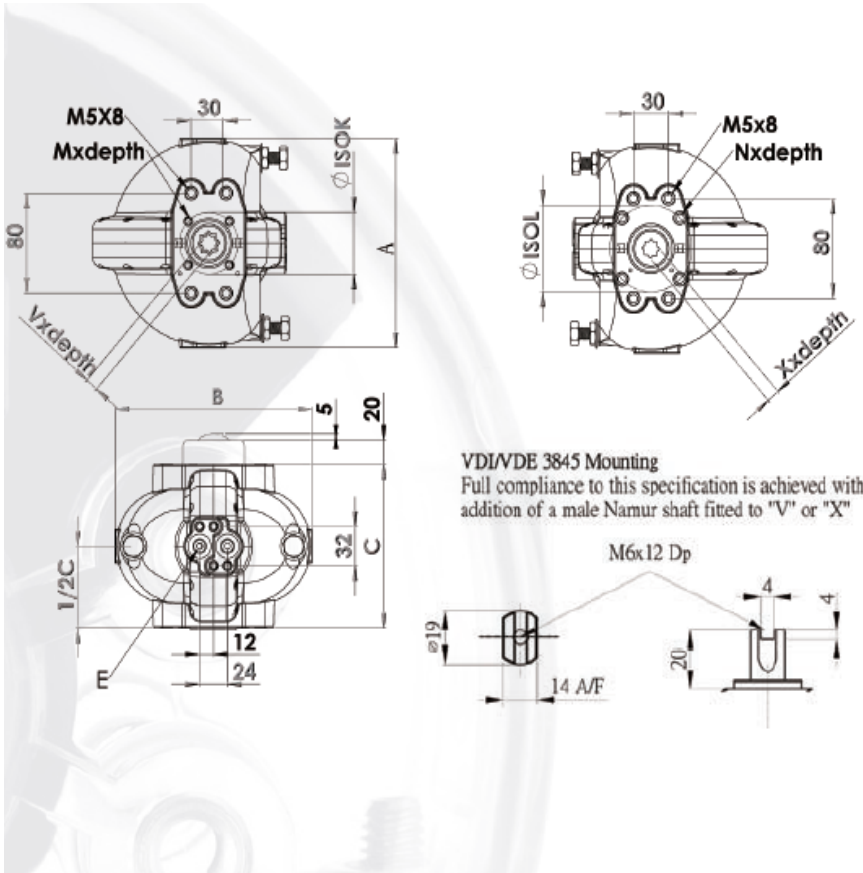
- Sealed, non-breathing housing protects spring in corrosive environments



Pneumatic Vane Actuator **V-FLow** SOLUTIONS LTD

Dual female drive

As per ISO standards the unit features a female drive allowing mounting of valve on both the top and bottom of the actuator.



Both mounting pads conform to ISO5211 with double square drives. Perfect for mounting quarter turn valves on both sides of the actuator.

Pneumatic Vane Actuator **V-FLOW** SOLUTIONS LTD

Dual VDI/VDE 3845 mounting pads

V-Flow vane actuators comply fully to VDI/VDE 3845 standards, providing compatibility of mounting switch boxes, positioners and other auxiliary products.



Pneumatic Vane Actuator



	Aluminum Model	Composite Model
Design	Rotary-to-rotary motion vane type actuator	
	Type VDA = Double Acting	
	Type VSR = Single Acting (with spring return unit)	
Construction	Patented fixed Tri-seal with moving vane principle. The vane is the only moving part in the actuator and is comprehensively integrated to the shaft, resulting in zero hysteresis to the valve stem	
Features	Symmetric construction to allow dual ISO mounting pads and drive pinions	
Standards for Mounting Specifications	<ul style="list-style-type: none"> Interface Actuator / Valve: 4 or 8 female threads and 1 drive pinion on both top and bottom of actuator according to EN ISO5211 Interface Actuator / Control Units: According to NAMUR i.e. VDI/VDE 3845 Interface Actuator / Signal Units: According to NAMUR i.e. VDI/VDE 3845 	<ul style="list-style-type: none"> Interface Actuator / Valve: 4 or 8 female threads and 1 drive pinion on both top and bottom of actuator according to EN ISO5211 Interface Actuator / Control Units: According to NAMUR i.e. VDI/VDE 3845 Interface Actuator / Control Units: According to NAMUR i.e. VDI/VDE 3845 Stainless steel thread inserts
	Option 1. Alternative mounting and connection dimensions possible 2. Drive Pinion selectable with Double D or Key Way 3. Hollow drive pinion possible for direct mounting with longer stem	
Material	Body: Aluminum alloy Vane: Aluminum alloy Seal: Polyurethane Bushing: SS304 Spring: Clock type spring steel (VSR1000A and higher) Musical wire (VSR050A to VSR500A)	Body: High corrosion resistance glass reinforced polyamide composite material Vane: Aluminum alloy Seal: Polyurethane Bushing: SS304 Spring: Clock type spring steel (VSR1000A and higher) Musical wire (VSR050C to VSR500C)
Operating Temperature	-20°C to +75°C (-4°F to +167°F) (Use very dry air with all moisture removed for sub-zero temperatures)	
Operating Media	Air (dry or lubricated)	
Travel Adjustment	90° +/- 4°	90° +/- 4°
Supply Pressure	120 psi (8 BAR) max	120 psi (8 BAR) max



Pneumatic Vane Actuator



Double Acting Torque Output										
Model	PSIG	40 psi	50 psi	60 psi	70 psi	80 psi	90 psi	100 psi	110 psi	120 psi
VDA100	in-lb	31	42	51	60	69	79	88	97	106
VDA200	in-lb	83	102	125	148	169	191	214	235	258
VDA300	in-lb	136	171	203	235	270	304	336	375	415
VDA500	in-lb	272	338	414	493	578	651	722	793	863
VDA1100	in-lb	575	752	920	1,090	1,255	1,412	1,587	1,779	1,938
VDA2000	in-lb	1,118	1,387	1,669	1,947	2,226	2,504	2,793	3,064	3,336
VDA3800	in-lb	1,662	2,111	2,588	3,074	3,554	4,053	4,540	5,046	5,526
VDA6800	in-lb	2,711	3,402	4,087	4,793	5,503	6,183	6,903	7,590	8,364

Single Acting Torque Output																					
Model	Preload of Spring	Operating Pressure (PSI)																		Spring Stroke	
		40		50		60		70		80		90		100		110		120			
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
VSR50	1/4 Turn	19	10	28	12	38	21	46	35	56	47	65	56	77	67	88	72	99	83	21	0
	3/8 Turn			19	7	33	19	44	33	51	42	61	51	72	63	83	70	93	79	32	0
	1/2 Turn					21	17	35	30	47	38	56	47	67	58	72	67	83	74	35	16
	5/8 Turn **					19	14	33	24	42	31	51	42	63	51	70	60	79	67	37	32
	3/4 Turn							30	17	38	26	47	35	58	46	67	54	74	61	42	35
VSR100	1/4 Turn	38	19	60	35	81	54	100	76	123	99	146	120	168	141	191	166	212	189	50	0
	3/8 Turn			47	23	70	44	90	65	113	86	132	111	157	132	178	154	200	177	64	0
	1/2 Turn					54	30	76	51	99	72	120	95	141	116	166	138	189	161	73	50
	5/8 Turn					44	17	65	38	86	63	111	84	132	107	154	129	177	150	83	64
	3/4 Turn **							51	26	72	49	95	72	116	93	138	116	161	138	94	73
VSR150	1/4 Turn	88	35	120	69	152	104	189	138	223	173	256	207	292	242	327	279	362	316	80	0
	3/8 Turn			95	44	129	76	164	111	198	148	233	182	267	217	299	253	332	286	106	0
	1/2 Turn			69	23	104	56	138	92	173	125	207	161	242	192	279	230	316	263	133	80
	5/8 Turn **					76	33	111	67	148	102	182	136	217	169	253	207	286	242	158	106
	3/4 Turn							92	51	125	84	161	120	192	152	230	184	263	217	179	133
VSR200	1/4 Turn	185	97	254	164	327	237	398	304	476	377	548	454	619	525	690	598	759	665	129	0
	3/8 Turn	125	38	191	102	263	169	338	240	410	313	485	378	557	456	624	490	700	568	177	0
	1/2 Turn			164	72	237	138	304	207	377	277	454	348	525	415	598	495	665	534	207	129
	5/8 Turn			102	37	169	100	240	171	313	240	378	313	456	382	490	454	568	525	243	177
	3/4 Turn **					138	69	207	132	277	203	348	272	415	339	495	408	534	488	285	207
VSR500	1/4 Turn	446	253	582	415	750	578	918	734	1,111	897	1,271	1,069	1,446	1,237	1,603	1,405	1,761	1,577	117	0
	3/8 Turn	246	201	481	361	653	525	810	693	971	855	1,129	1,021	1,294	1,191	1,465	1,363	1,656	1,532	215	0
	1/2 Turn	253	127	415	277	578	435	734	603	897	770	1,069	938	1,237	1,113	1,405	1,281	1,577	1,453	317	117
	5/8 Turn	201	88	361	217	525	378	693	541	855	709	1,021	881	1,191	1,051	1,363	1,219	1,532	1,393	386	215
	3/4 Turn **			277	182	435	350	603	508	770	676	938	851	1,113	1,024	1,281	1,191	1,453	1,363	427	317
VSR1500	1-1/2 Turn	168	87	582	481	1,044	929	1,499	1,425	2,019	1,878	2,446	2,361	2,926	2,835	3,407	3,319	3,890	3,800	680	611
	1-3/4 Turn			481	417	929	840	1,425	1,322	1,878	1,764	2,361	2,239	2,835	2,731	3,319	3,219	3,800	3,682	758	680
	2 Turn			417	270	840	734	1,322	1,175	1,764	1,676	2,239	2,136	2,731	2,596	3,219	3,088	3,682	3,547	844	758
	2-1/4 Turn **			270	164	734	570	1,175	1,037	1,676	1,518	2,136	1,977	2,596	2,455	3,088	2,929	3,547	3,428	922	844
VSR3000	1-1/2 Turn			230	95	947	676	1,490	1,332	2,149	1,998	2,842	2,641	3,524	3,303	4,241	3,993	4,917	4,694	2,586	2,337
	1-3/4 Turn					800	635	1,428	1,267	2,083	1,933	2,772	2,586	3,439	3,250	4,117	3,951	4,843	4,666	2,974	2,767
	1-5/8 Turn **					676	617	1,332	1,184	1,998	1,833	2,641	2,492	3,303	3,147	3,993	3,818	4,969	4,489	2,671	2,446
	2-1/4 Turn					386	342	947	926	1,587	1,543	2,231	2,187	2,898	2,854	3,585	3,541	4,240	4,196	3,197	2,974

** Standard default of preload spring



Pneumatic Vane Actuator



Double Acting Torque Output										
Model	BAR	2.8 BAR	3.4 BAR	4.1 BAR	4.8 BAR	5.5 BAR	6.2 BAR	6.9 BAR	7.6 BAR	8.3 BAR
VDA100	Nm	3.5	4.7	5.8	6.8	7.8	8.9	9.9	11.0	12.0
VDA200	Nm	9.4	11.5	14.1	16.7	19.1	21.6	24.2	26.6	29.2
VDA300	Nm	15.4	19.3	22.9	26.6	30.5	34.4	38.0	42.4	46.9
VDA500	Nm	30.7	38.2	46.8	55.7	65.3	73.6	81.6	89.6	97.5
VDA1100	Nm	65.0	85.0	104.0	123.2	141.8	159.6	179.3	201.0	219.0
VDA2000	Nm	126.3	156.7	188.6	220.0	251.5	283.0	315.6	346.2	377.0
VDA3800	Nm	187.8	238.5	292.4	347.4	401.6	458.0	513.0	570.2	624.4
VDA6800	Nm	306.3	384.4	461.8	541.6	621.8	698.7	780.0	857.7	945.1

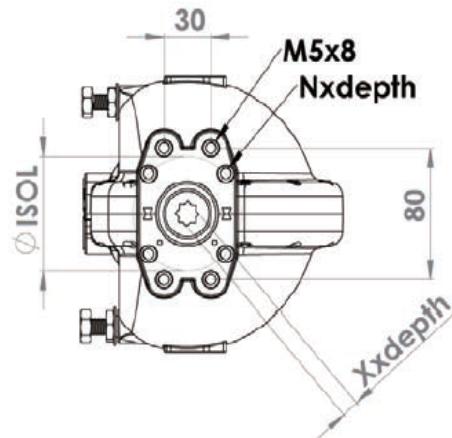
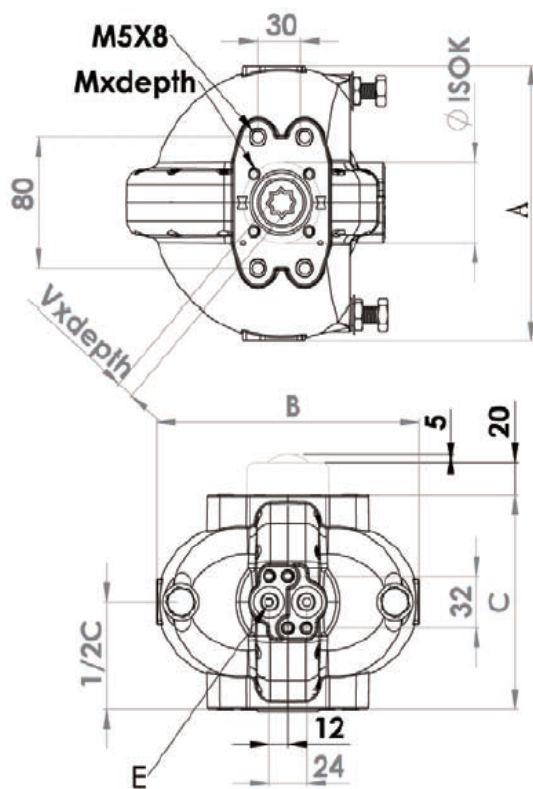
Single Acting Torque Output																					
Model	Preload of Spring	Operating Pressure (BAR)																		Spring Stroke	
		2.8		3.4		4.1		4.8		5.5		6.2		6.9		7.6		8.3			
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
VSR50	1/4 Turn	2.1	1.1	3.2	1.4	4.3	2.4	5.2	4.0	6.3	5.3	7.3	6.3	8.7	7.6	9.9	8.1	11.2	9.4	2.4	0.0
	3/8 Turn			2.1	0.8	3.7	2.1	5.0	3.7	5.8	4.7	6.9	5.8	8.1	7.1	9.4	7.9	10.5	8.9	3.6	0.0
	1/2 Turn					2.4	1.9	4.0	3.4	5.3	4.3	6.3	5.3	7.6	6.6	8.1	7.6	9.4	8.4	4.0	1.8
	5/8 Turn **					2.1	1.6	3.7	2.7	4.7	3.5	5.8	4.7	7.1	5.8	7.9	6.8	8.9	7.6	4.2	3.6
	3/4 Turn							3.4	1.9	4.3	2.9	5.3	4.0	6.6	5.2	7.6	6.1	8.4	6.9	4.8	4.0
VSR100	1/4 Turn	4.3	2.1	6.8	4.0	9.2	6.1	11.3	8.6	13.9	11.2	16.5	13.6	19.0	15.9	21.6	18.8	24.0	21.4	5.6	0.0
	3/8 Turn			5.3	2.6	7.9	5.0	10.2	7.3	12.8	9.7	14.9	12.5	17.7	14.9	20.1	17.4	22.6	20.0	7.2	0.0
	1/2 Turn					6.1	3.4	8.6	5.8	11.2	8.1	13.6	10.7	15.9	13.1	18.8	15.6	21.4	18.2	8.2	5.6
	5/8 Turn					5.0	1.9	7.3	4.3	9.7	7.1	12.5	9.5	14.9	12.1	17.4	14.6	20.0	17.0	9.4	7.2
	3/4 Turn **							5.8	2.9	8.1	5.5	10.7	8.1	13.1	10.5	15.6	13.1	18.2	15.6	10.6	8.2
VSR150	1/4 Turn	9.9	4.0	13.6	7.8	17.2	11.8	21.4	15.6	25.2	19.5	28.9	23.4	33.0	27.3	37.0	31.5	40.9	35.7	9.0	0.0
	3/8 Turn			10.7	5.0	14.6	8.6	18.5	12.5	22.4	16.7	26.3	20.6	30.2	24.5	33.8	28.6	37.5	32.3	12.0	0.0
	1/2 Turn			7.8	2.6	11.8	6.3	15.6	10.4	19.5	14.1	23.4	18.2	27.3	21.7	31.5	26.0	35.7	29.7	15.0	9.0
	5/8 Turn **					8.6	3.7	12.5	7.6	16.7	11.5	20.6	15.4	24.5	19.1	28.6	23.4	32.3	27.3	17.8	12.0
	3/4 Turn							10.4	5.8	14.1	9.5	18.2	13.6	21.7	17.2	26.0	20.8	29.7	24.5	20.2	15.0
VSR200	1/4 Turn	20.9	11.0	28.7	18.5	37.0	26.8	45.0	34.4	53.8	42.6	61.9	51.3	69.9	59.3	78.0	67.6	85.8	75.1	14.6	0.0
	3/8 Turn	14.1	4.3	21.6	11.5	29.7	19.1	38.2	27.1	46.3	35.4	54.8	42.7	62.9	51.5	70.5	55.4	79.1	64.2	20.0	0.0
	1/2 Turn			18.5	8.1	26.8	15.6	34.4	23.4	42.6	31.3	51.3	39.3	59.3	46.9	67.6	55.9	75.1	60.3	23.4	14.6
	5/8 Turn			11.5	4.2	19.1	11.3	27.1	19.3	35.4	27.1	42.7	35.4	51.5	43.2	55.4	51.3	64.2	59.3	27.4	20.0
	3/4 Turn **					15.6	7.8	23.4	14.9	31.3	22.9	39.3	30.7	46.9	38.3	55.9	46.1	60.3	55.1	32.2	23.4
VSR500	1/4 Turn	50.4	28.6	65.8	46.9	84.8	65.3	103.7	82.9	125.5	101.4	143.6	120.8	163.4	139.8	181.1	158.8	199.0	178.2	13.2	0.0
	3/8 Turn	27.8	22.7	54.4	40.8	73.8	59.3	91.5	78.3	109.7	96.6	127.6	115.4	146.2	134.6	165.5	154.0	187.1	173.1	24.3	0.0
	1/2 Turn	28.6	14.4	46.9	31.3	65.3	49.2	82.9	68.1	101.4	87.0	120.8	106.0	139.8	125.8	158.8	144.8	178.2	164.2	35.8	13.2
	5/8 Turn	22.7	9.9	40.8	24.5	59.3	42.7	78.3	61.1	96.6	80.1	115.4	99.6	134.6	118.8	154.0	137.7	173.1	157.4	43.6	24.3
	3/4 Turn **			31.3	20.6	49.2	39.6	68.1	57.4	87.0	76.4	106.0	96.2	125.8	115.7	144.8	134.6	164.2	154.0	48.2	35.8
VSR1500	1-1/2 Turn	19.0	9.8	65.8	54.4	118.0	105.0	169.4	161.0	228.1	212.2	276.4	266.8	330.6	320.4	385.0	375.0	439.6	429.4	76.8	69.0
	1-3/4 Turn			54.4	47.1	105.0	94.9	161.0	149.4	212.2	199.3	266.8	253.0	320.4	308.6	375.0	363.7	429.4	416.1	85.6	76.8
	2 Turn			47.1	30.5	94.9	82.9	149.4	132.8	199.3	189.4	253.0	241.4	308.6	293.3	363.7	348.9	416.1	400.8	95.4	85.6
	2-1/4 Turn **			30.5	18.5	82.9	64.4	132.8	117.2	189.4	171.5	241.4	223.4	293.3	277.4	348.9	331.0	400.8	387.4	104.2	95.4
VSR3000	1-1/2 Turn			26.0	10.7	107.0	76.4	168.4	150.5	242.8	225.8	321.1	298.4	398.2	373.2	479.2	451.2	555.6	530.4	292.2	264.0
	1-3/4 Turn					90.4	71.8	161.4	143.2	235.4	218.4	313.2	292.2	388.6	367.3	465.2	446.5	547.3	527.3	336.0	312.6
	1-5/8 Turn **					76.4	69.7	150.5	133.8	225.8	207.1	298.4	281.6	373.2	355.6	451.2	431.4	561.5	507.3	301.8	276.4
	2-1/4 Turn					43.6	38.6	107.0	104.6	179.3	174.4	252.1	247.1	327.5	322.5	405.1	400.1	479.1	474.1	361.2	336.0

** Standard default of preload spring



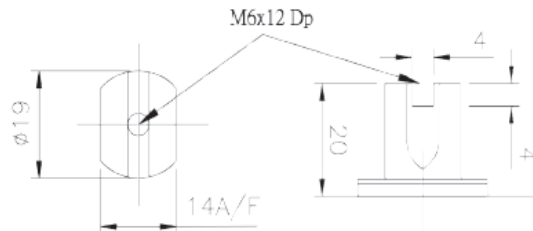
Pneumatic Vane Actuator **V-FLow** SOLUTIONS LTD

► Assembly Dimension - Double Acting



VDI/VDE 3845 mounting

Full compliance to this specification is achieved with addition of a male Namur shaft fitted to "V" or "X"



Double Acting											Imperial		
Model	A	B	C	E	Ø ISO K	M x depth	V x depth	Ø ISO L	N x depth	X x depth	A	B	C
VDA100	101.00	106.00	78.00	1/8"	Ø 36/F03	M5x8	9x13	Ø 42/F04	M5x8	11x14	3.98	4.17	3.07
VDA200	127.50	126.50	79.50	1/4"	Ø 36/F03	M5x8	9x13	Ø 42/F04	M5x8	11x14	5.02	4.98	3.13
VDA300	144.60	144.20	110.00	1/4"	Ø 42/F04	M5x8	11x14	Ø 50/F05	M6x9	14x18	5.70	5.67	4.33
VDA500	169.60	167.00	132.70	1/4"	Ø 50/F05	M6x9	14x18	Ø 70/F07	M8x12	17x21	6.68	6.58	5.23
VDA1100	219.90	191.57	132.70	1/4"	Ø 50/F05	M6x9	14x18	Ø 70/F07	M8x12	17x21	8.66	7.54	5.23
VDA2000	280.00	247.50	141.00	1/4"	Ø 70/F07	M8x12	17x21	Ø 102/F10	M10x15	22x27	11.02	9.74	5.55
VDA3800	313.00	281.00	230.80	1/4"	Ø 102/F10	M10x20	22x35	Ø 125/F12	M10x20	27x35	12.32	11.06	9.09
VDA6800	364.00	306.00	234.80	1/4"	Ø 125/F12	M10x20	22x35	Ø 140/F14	M16x24	27x35	14.33	12.05	9.24

All dimensions in mm, except E. E in inch. Outside dimensions in inch

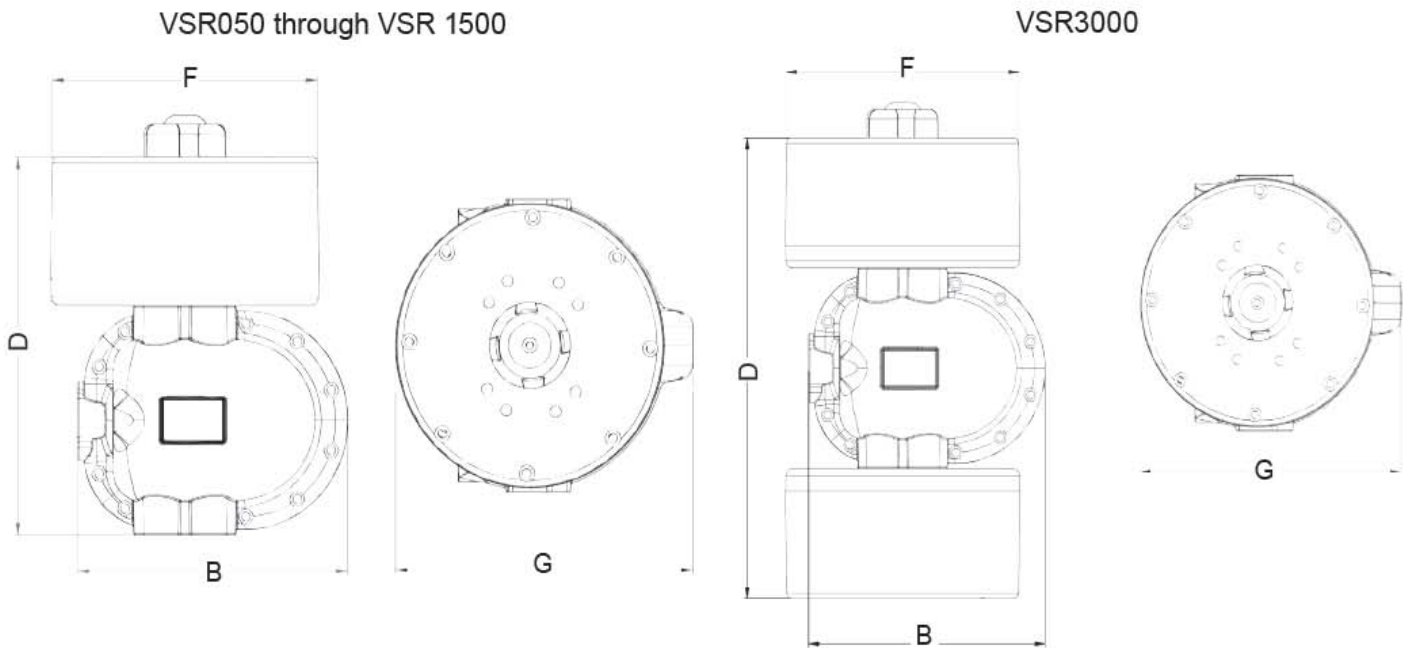
Weight Double Acting				
Model	Standard		Chemical	
	lbs	Kg	lbs	Kg
VDA100	1.68	0.76	1.50	0.68
VDA200	2.47	1.12	2.16	0.98
VDA300	3.75	1.70	3.22	1.46
VDA500	6.22	2.82	5.29	2.40
VDA1100	7.32	3.32	6.44	2.02
VDA2000	8.38	3.80	6.06	2.75
VDA3800	27.29	12.38	23.06	10.46
VDA6800	33.33	15.12	26.46	12.00



Pneumatic Vane Actuator



► Assembly Dimension - Single Acting



Single Acting(Spring Return)												Imperial		
Model	A	B	C	D	E	F	G	Ø ISO K	M x depth	V x depth	X x depth	D	F	G
VSR050	101.00	106.00	78.00	160.20	1/8"	140.00	140.00	N/A	N/A	9x13	11x43	6.31	5.51	5.51
VSR100	127.50	126.50	79.50	161.50	1/4"	140.00	146.50	N/A	N/A	9x13	11x43	6.36	5.51	5.77
VSR150	144.60	144.20	110.00	192.20	1/4"	140.00	154.00	N/A	N/A	14x14	11x43	7.57	5.51	6.06
VSR200	169.60	167.00	132.70	219.72	1/4"	165.00	182.50	N/A	N/A	17x18	14x42	8.65	6.50	7.19
VSR500	219.90	191.57	132.70	219.72	1/4"	165.00	207.90	N/A	N/A	17x18	14x42	8.65	6.50	8.19
VSR1000	280.00	247.50	141.00	256.00	1/4"	214.00	259.00	N/A	N/A	17x21	22x54	10.08	8.43	10.20
VSR1500	313.00	281.00	230.80	342.80	1/4"	261.10	308.00	N/A	N/A	27x35	22x83	13.50	10.28	12.13
VSR3000	364.00	306.00	234.80	458.80	1/4"	261.10	333.77	N/A	N/A	22x35	22x83	18.06	10.28	13.14

All dimensions in mm, except E. E in inch. Outside dimensions in inch

Weight Single Acting				
Model	Aluminum		Composite	
	lbs	Kg	lbs	Kg
VSR050	3.99	1.81	3.92	1.78
VSR100	4.94	2.24	4.89	2.22
VSR150	6.35	2.88	5.95	2.70
VSR200	12.35	5.60	9.74	4.42
VSR500	13.89	6.30	11.24	5.10
VSR1500	46.30	21.00	37.17	16.86
VSR3000	97.00	44.00	83.33	37.80

