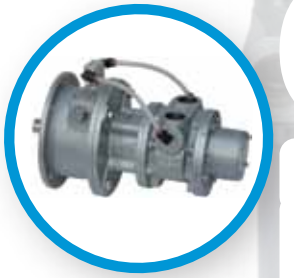
Vane Air Motors

SAMT

Specialised Air Motors and Transmission



TONSON®

About TONSON AUSTRALIA

TONSON AUSTRALIA is a Specialised Air Motors & Transmission Company; an innovative manufacturer and supplier Of Explosion proof Products to Industries including Mining, oil & Gas, Chemicals & Paints , food & Beverage, paper & Plastic, Pharmaceutical, Manufacturing & Power Transmission. Our products meet CE standards ISO9001 & ISO9002.

At TONSON Australia (SAMT) we continue to develop new products for better working efficiency at competitive prices. We Manufacture wide range of industrial equipment and hold several international patents.

"Efficient & Reliable Global Brand"

TONSON Australia (SAMT) products include a complete range of Air Motors, Air Motors, Drum Air Mixers, Air Fans, Pressure Tank, Drum Handling equipment, Air Diaphragm Pump, and Spray Guns for use in all major industries. Patented products are registered in countries including USA, Taiwan and China; including 100% Explosion-proof radial piston air motor, 100% Explosion-proof air fan, Reversible Air Motor Control & Bung entry mixer. Unlike other conventional products, our products mainly utilise air instead of electricity as the source of power; thus, it eliminates the chance of electricity shock and fire which are the most crucial factors for industries involved in chemical, flammable or volatile contents. TONSON Air Motors, Air Mixers, and Air Fans are engineered to meet the highest standard featuring 100% Explosion-proof, low air consumption, light weight, high torque, reversible stepless speed control, easy maintenance, and various mounting method. It may also be applied in harsh working condition such as humid, high temperature and volatile. Engineering safety factor and material selection are taken into account seriously upon design and manufacturing to produce the most safe and reliable equipment.

"Innovation & Quality, that's the key to our success"

At TONSON Australia we 'continually strive to offer our customer complete drive solutions and therefore we have partnered with Global brands in Power Transmission and Gearbox drives, providing complete drive solutions; Specialising in Industrial Gearboxes, Explosion proof electric AC & DC Motors & All power Transmission components such as Fluid Couplings, Brakes & Clutches, Gear and Tyre Couplings, Chain and Belt power transmission drives. We also provide solutions to meet your customised requirements, Including full engineering & AUTOCAD service and assistance with design, selection and site installation.

We can also customise any product to suit your specific requirements and will investigate the possibilities of developing new products to satisfy your special specifications.

"Innovative Ideas, Exclusive Technologies since 1966"

This Brochure has been dedicated to our extensive range of Explosion Proof Piston Air Motors, We have the biggest range of air motors in Australia., we can also customise any air motor to suit your requirements. For all other products please refer to their dedicated brochure.

Contact Us
Ph.: +61 (02) 9607 4100 & Fax: +61 (02) 9607 4200

SAMT
Specialised Air Motors and Transmission

Features and applications

Vane Air Motor features include:

- 100% Explosion-proof
- Stalling Safety
- Step less Speed Control
- Never Burn Out
- Self-Sealing & Cool Running
- Smooth Start
- Mounting Flexibility (IEC, Nema, Face and Foot)
- All Plane Operation
- Toleration of Environment

Vane Air Motor applications are unlimited including:

- Hoist / Winches
- Pump Drives
- Automation Devices
- Hose Reels
- Conveyor Drives
- Choppers / Grinders
- Turntables
- Mixing Equipment
- Food / Pharmacy Packaging

SAMT
Specialised Air Motors and Transmission

V1

V1-F

V1-L

VA1

VA1-F

VA1-L

V2

V2-F
Face

V2-L
Foot

V2-B
Butterfly

V2-N
NEMA56C

V2-I
IEC

V4

V4-F

V4-L

V4-B

V4-N

V4-I

V6

V6-F

V6-L

V6-B

V6-N

V6-I

V8

V8-F

V8-L

V8-B

V8-N

V16

V16-F

V16-L

V8-I

V16-LN

V16-N

V16-I

MOUNT

Mass(kg)	V1	VA1	V2	V4	V6	V8	V16
F-Face	0.8	1	2.2	3.9	7.6	10.4	32.94
L-Foot	0.9	1.1	3.3	4.3	7.9	11	32.9
B-Butterfly	V2		3	4.1	7.8	10.5	(LN)36
NEMA56C	IEC#72D71C		3.8	5.1	8.4	12	32.9
IEC#72D71	4kg		4.3	5.3	8.8	13	36

SPECIFICATION

Series	Gear Ratio	Performance at Maximum Speed							Max. Torque		
		Power		Torque		Speed	Air Com.		Spd.	Torque	
		HP	kW	N·m	lb·in	RPM	l/min	CFM	RPM	N·m	lb·in
V1	1:1	0.5	0.3	0.31	2.75	10000	590	21	650	0.65	5.75
	3.5:1	0.4	0.3	0.82	7.26	2800			190	0.9	7.97
	15:1	0.4	0.3	4.07	36	666			30	8.15	72
	43:1	0.4	0.3	11.30	100	232			10	12	106
	150:1	0.2	0.1	19.40	172	66			5	21	186
VA1	1:1	0.50	0.4	0.60	5.31	6000	760	27	500	0.68	6.01
	3.5:1	0.45	0.3	1.80	15.9	1700			135	2	18
	15:1	0.46	0.3	8.13	72	400			30	8.9	71
	43:1	0.41	0.3	21.0	186	139			10	23	204
	150:1	0.20	0.2	36.0	319	40			3	40	354
V2	1:1	0.9	0.7	2.20	19.5	3000	850	30	350	3.05	27
	3:1	0.8	0.6	5.6	49.6	1000	900	32	100	7.6	67
	5:1	0.8	0.6	9	79.7	600			60	12	106
	10:1	0.74	0.6	17.6	156	300			30	24	212
	15:1	0.70	0.5	25.0	221	200			20	34	301
	20:1	0.65	0.5	31.0	274	150			15	42	372
	30:1	0.58	0.4	41.0	363	100			10	55	487
	40:1	0.51	0.4	48.6	430	75			7	66	584
	60:1	0.47	0.4	67.0	593	50			5	89	788
	80:1	0.45	0.3	85	752	37.5			3.5	112	991
	100:1	0.44	0.3	106	934	30			3	139	1230
	120:1	0.44	0.3	127	1121	25			2.5	167	1480
	140:1	0.44	0.3	148	1308	21			2	195	1726
V4	1:1	1.7	1.3	4.10	36	3000	1620	57	300	6.3	56
	3:1	1.3	0.9	9.20	81	1000	1700	60	100	14	124
	5:1	1.3	0.9	15.4	136	600			60	24	212
	10:1	1.3	0.9	31	274	300			30	48	425
	15:1	1.3	0.9	45.2	400	200			20	72	640
	20:1	1.2	0.9	55.0	487	150	2000	71	15	84	740
	30:1	1.1	0.8	75.5	668	100			10	116	1027
	40:1	1	0.7	90	800	75			7	142	1255
	50:1	0.9	0.7	105	929	60			6	161	1425
	60:1	0.8	0.6	118	1040	50			5	185	1640
	70:1	0.8	0.6	138	1220	42.9			4	207	1832
	80:1	0.8	0.6	158	1396	37.5			3.5	237	2097
	100:1	0.8	0.6	205	1814	30			3	308	2726
	120:1	0.8	0.6	237	2093	25			2.5	355	3142
	140:1	0.8	0.6	285	2522	21			2	428	3788
V6	1:1	4	3	10	89	3000	3620	128	300	13	115
	3:1	3.5	2.6	25	221	1000	3680	130	100	33	292
	5:1	3.4	2.5	40	354	600			60	52	460
	10:1	3.4	2.5	81	720	300			30	107	950
	15:1	3	2.2	105	929	200			20	137	1212
	20:1	2.7	2	124	1100	150			15	175	1550
	30:1	2.4	1.8	169	1496	100			10	220	1947
	40:1	2.1	1.6	195	1725	75	3820	135	8	283	2500
	50:1	2	1.5	238	2106	60			6	309	2735
	60:1	2	1.5	290	2567	50			5	377	3336
	80:1	2	1.5	380	3363	37.5			3.8	646	5717
	100:1	1.9	1.4	446	3947	30			3	580	5133
	120:1	1.9	1.4	540	4779	25			2.5	703	6222
	150:1	1.9	1.4	675	5974	20			2	878	7770
	200:1	1.8	1.3	900	7965	15			1.8	1170	10355
	360:1	1.8	1.3	1600	14160	8			1	2080	18408
V8	1:1	5.3	3.9	15	132	2500	4955	175	300	21	185
	3:1	4.6	3.5	40	354	833			100	54	478
	5:1	4.5	3.3	63	558	500			60	85	752
	10:1	4.5	3.3	127	1124	250			30	171	1513
	20:1	3.7	2.8	209	1850	125	5010	177	15	288	2550
	30:1	3.1	2.3	266	2354	83			10	360	3186
	40:1	2.7	2	309	2735	63			8	417	3690
	50:1	2.6	2	375	3319	50			6	506	4478
	60:1	2.5	1.9	427	3779	42			5	576	5098
	80:1	2.5	1.9	560	4956	31.3			3.8	755	6682
	100:1	2.5	1.9	700	6195	25			3	943	8346
	125:1	2.5	1.9	880	7788	20			2.4	1161	10275
	140:1	2.5	1.9	980	8673	17.9			2.1	1293	11443
	180:1	2.5	1.9	1269	11231	13.9			1.7	1675	14824
V16	1:1	9.5	7.1	34	300	2000	7787	275	300	43	380
	3:1	7	5.2	75	664	666			100	92.3	817
	5:1	6.7	5	116	1027	400			60	143	1266
	10:1	6.7	5	238	2106	200			30	293	2593
	20:1	6.5	4.9	472	4177	100			15	585	5177
	30:1	5.5	4.1	592	5239	66			10	728	6443
	40:1	5.6	3.4	650	5753	50			7.5	800	7080
	60:1	4.6	3.4	975	8629	33.3			4.9	1200	10620
	80:1	4.6	3.4	1300	11505	25			3.8	1599	14151
	100:1	4.3	3.2	1530	13541	20			3	1882	16656
	120:1	4.3	3.2	1830	16196	16.7			2.5	2250	19913

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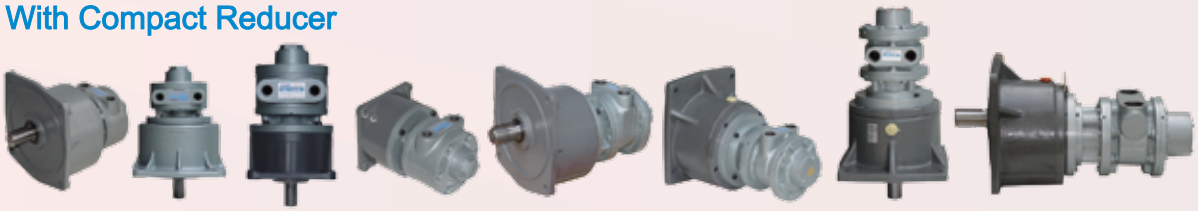
With Gearbox Reducer

V2-LG V4-FG60 V4-LG60 V6-FG10 V8-LG20 V8-LG50 V8-LG20 V16-LG30

With Compact Reducer



V2-FGS5 V2-FGS V4-FGS3 V4-FGS3 V6-FGS5 V8-FGS10 V8-FGS10 V16-FGS5

Refer to our Gearbox Division / Brochure for extensive range of gearboxes available.

With Worm Gearbox Reducer

V4-LWG50 V6-FBWG V8-LWG20

With Planetary Gearbox Reducer

V6-FPG V6-LPG V8-LPG V1-FG 3.5 15 43 150

With Hand Control Valve

V4-LBHV V4-LBG40R V6-LG20R V8-FGHCV V16-LHCV

With Remote Control

V8-FBRCV V8-LRCV

With Brake

V2-FB(IEC) V4-FB V4-FBIEC V6-LB V8-FB V16-FB V16-FBG40

With Customed Flange

V1-FG15 V1 V2 V4 V4-FG5

Spcial Material

V6S-I **SS** Stainless Steel Outside V2-I Chromium Plated V16-I Chromium Plated

Double Shaft

VA1 V2-L V4-NDS V6-LDS V8-LDSHCV

Dedicated to Mixers

V2-M V2-LM V4-M V4-LM

We can customise air motors.

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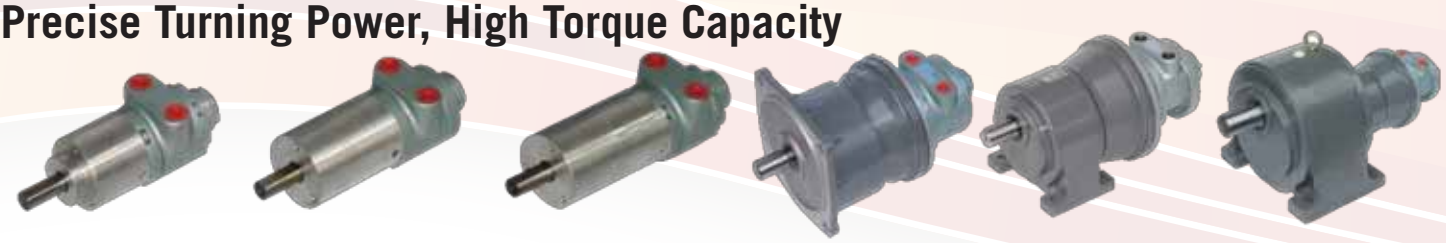
AIR GEARMOTORS

For applications where precise and variable turning power and speed is a requirement. Examples are bolt tensioning equipment or rock drilling rigs, precise lifting, lowering, traversing or turning. Unlike electric gearmotors, no chance of burn-out nor heat buildup with TONSON Air Motors. Direction of rotation is instantly reversible.

Precise Turning Power, High Torque Capacity



V1-FG3.5 V1-FG15 V1-FG43 F Foot

refer to gearbox division for full range gearboxes.

BRAKES

For applications where positive braking is a requirement, a range of caliper brakes is offered. These are designed to withstand full stall torque of the air motor. The brake consists of two spring supplied shoes pressed against a central hub. The shoes are realeased by applying air pressure to the cylinder/piston assembly. The brake torque can be carried by adjustment of two spring adjusters but it is normally set so that a pilot pressure of 4 bars (60 PSI) will fully release it.

V6-LB (Foot, Brake)

V6-LB (Flange, Brake)

V8-FRCV (Flange, Brake, Remote Control Valve)

How to Order

V6 - F B G10 RCV

Motor	Mounting		Brake Option		Reducer Option				Valve Option	
V1	F	Face/Hub	Blank	No Brake	Blank	No Reducer			Blank	No Valve
VA1	L	Foot	B	Brake	G3	1/3	G30	1/30	HCV	Hand Control Valve
V2	B	Butterfly			G5	1/5	G40	1/40	RCV	Remote Control Valve
V4	N	NEMA			G10	1/10	G60	1/60		
V6	I	IEC			G15	1/15	G80	1/80		
V8					G20	1/20	G100	1/100		
V16										

***Other Gearbox ratios / variations are avilable contact us for quote.**

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AIR MOTOR ACCESSORIES

Control Vales

HV1 Mini Reverse Control

HV2 Reverse Control

HV3 Reverse Control

HV4 Reverse Control

Pressure Gauge

Air Regulator

APPLICATION

Model	Vane Air Motor						
	VA1	V1	V2	V4	V6	V8	V16
HV1 Mini (1/4")	●	●	●	●			
HV2(1/4")	●	●	●	●			
HV3(1/2")					●	●	
HV4(1")							●
HCV1(RCV1)1/2"					★	★	
HCV2(RCV2)3/4"							
HCV3(RCV3)1"							●
HCV4(RCV4)1-1/4"							★
HCV5(RCV5)1-1/2"							
HCV6(RCV6)2"							

● Standard

★ Better Performance

Silencer

TC1 TC3 TC4 SC2 MF SM1 SM2 NM3 NM1 NM2 SP PL5 PL4 PL2

Model	SC2	TC1	TC2S	TC3	TC4	MF1	MF3	MF5	MF7	MF9	MF11	NM1	NM2	NM3	SM1	SM2	SP1	SP2	SP2L	SP3	SP4	PL1	PL2	PL3	PL4	PL5	PL6
Caliber(PT)	2"	1"	1-1/2"	1-1/2"	2"	3/8"	1/2"	3/4"	1"	1-1/2"	2"	1/8"	1/4"	1/2"	1/4"	1/2"	1/8"	1/4"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Dia. O	86	100	70	100	100	80	90	100	112	132	150	48	76	78	40.5	65	16	16	20	26	28	12	19	20	24	40	49
Height mm	256	202	164	217	211	129	147	171	195	259	312	48	58	107	50	80	34	37	62	67	70	30	42	57	55	113	112
Material	Carbon Steel	Filter:Fiber Shell:Steel				Filter:A5052P.SPCC Shell:PC.A2011						Adsorb Active Carbon			Industrial Cotton		Forming Resin (5μm)					Filter: Plastic Particle Shell: Engineering Plastic					

FRL (Filter, Regulato, and Lubricator)

FRL1/4 Mini

FRL1/4 FRL1/2

FRL1

FRL2

FRL (1/4") Stainless Steel

Model	Vane Air Motor							Caliber	Mass
	VA1	V1	V2	V4	V6	V8	V16		(kg)
FRL1/4 Mini								1/4"	0.2
FRL1/4	●	●	●	●				1/4"	0.5
FRL1/2					●	●		1/2"	1.41
FRL1							●	1"	4.43
FRL1-1/4							★	1-1/4"	7.5
FRL2								2"	12

● Standard

★ Better Performance

Model	FRL1/4Mini	FRL1/4 &FRL1/2	SS1/4	FRL1	FRL2
Dimension(cm)	9x4.5x17.5	16x7x23.5	11.5x7x24.5	17.8x7x28	65x16x72

FRL (Filter, Regulator, and Lubricator) are recommendd to improve air motor performance and provide longer life.

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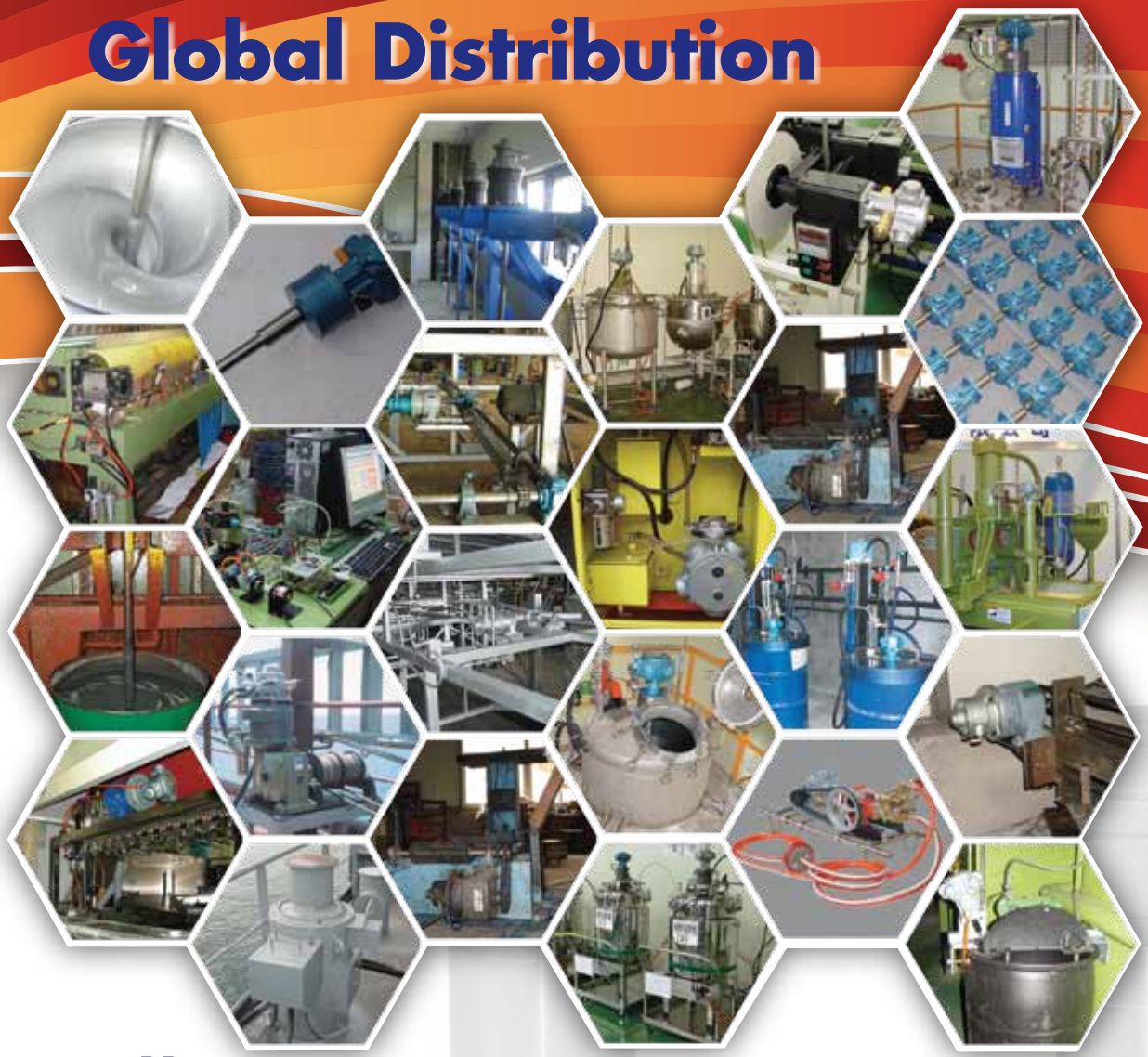
Global Distribution



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