



## COMPACT VANE AIR MOTORS

### ADVANTAGES

GLOBE-ARCHIMEDES compact vane air motors are motors with incorporated reduction units. They offer a unique form of drive with advantages including:

- Simple and inexpensive variable speed and torque control with a flow control valve and/or pressure regulator.
- Intrinsically safe for explosion proof environments. All GLOBE-ARCHIMEDES compact vane air motors are certified according to the European Explosion Directive ATEX II cat. 2 G&D T5.
- Stalling under load. Air motors will not overheat or burn out.
- Instantly reversible, operated with a simple control valve.
- Control over a wide speed range.
- Resistant to warm, dirty and damp conditions.
- Cool running caused by the expanding air.
- High reliability thanks to the low number of moving parts.
- Compact and light weight compared to equivalent electric motors.
- No shock start up which improves the life span of your equipment.
- Available in stainless steel

### WHY CHOOSE A GLOBE-ARCHIMEDES COMPACT VANE AIR MOTOR

- Stainless steel models available for use in aggressive environments and foodstuffs industry.
- Mounting via flange, threads on the front or on the motor housing.
- High torques and low speeds of rotation possible in application with limited mounting space.
- Small size for hand held machinery.
- Motors can be supplied directly coupled to a wide range of gearboxes for higher torques.

### AIR SUPPLY

#### AIR QUALITY

To insure optimal working conditions for the GLOBE ARCHIMEDES compact vane air motors, the air supply must be dry, filtered and lubricated. A 5 micron filter is recommended. The air motors should be lubricated sufficiently.

### AIR LINE RESTRICTIONS

Air line restrictions on the inlet side of the motor will result in performance loss. Therefore it is important to make sure that the desired air pressure is available at the motor during operation. The pressure reading at the compressor or pressure regulator may be different than the pressure available at the motor.

Performance loss can also occur by an exhaust restriction generating back pressure on the outlet side of the motor. An insufficiently sized silencer, valve or coupling is usually the cause.



## ORDERING CODES

Motor type	Starting Torque
01	0,27 kW / 0,36 hp   0,4 NM / 0,3 lb-ft
02	0,27 kW / 0,36 hp   2 NM / 1,5 lb-ft
12	0,27 kW / 0,36 hp   12 NM / 8,8 lb-ft
02R	0,24 kW / 0,32 hp   2 NM / 1,5 lb-ft
05R	0,24 kW / 0,32 hp   5 NM / 3,7 lb-ft
10R	0,24 kW / 0,32 hp   10 NM / 7,4 lb-ft

\* R = Reversible

Motor type	Starting Torque
01	0,67 kW / 0,90 hp   1,5 NM / 1,1 lb-ft
43	0,67 kW / 0,90 hp   43 NM / 31,7 lb-ft
05R	0,61 kW / 0,82 hp   5 NM / 3,7 lb-ft
34R	0,61 kW / 0,82 hp   34 NM / 25,1 lb-ft

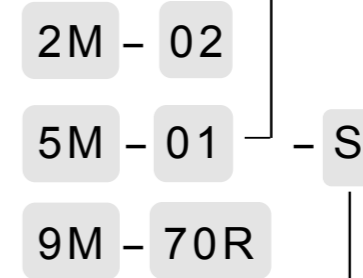
\* R = Reversible

Motor type	Starting Torque
70R	1,0 kW / 1,34 hp   70 NM / 51,6 lb-ft

\*R = Reversible

Motor type

Stainless steel

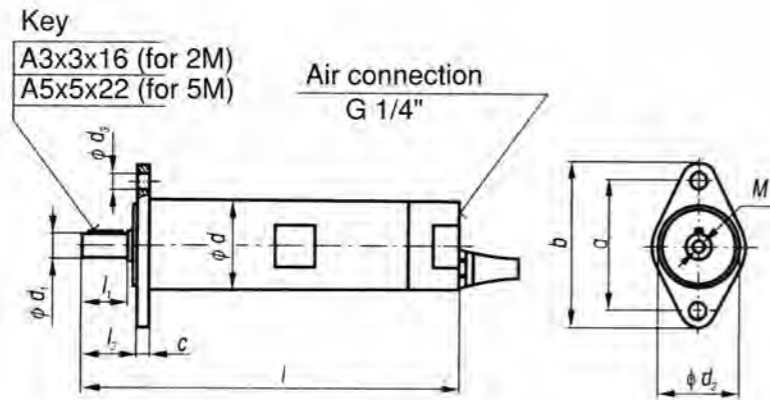


Use the ordering codes to create the GLOBE Archimedes Vane Air motor you want.

For example: 5M43 or 2M05RS.

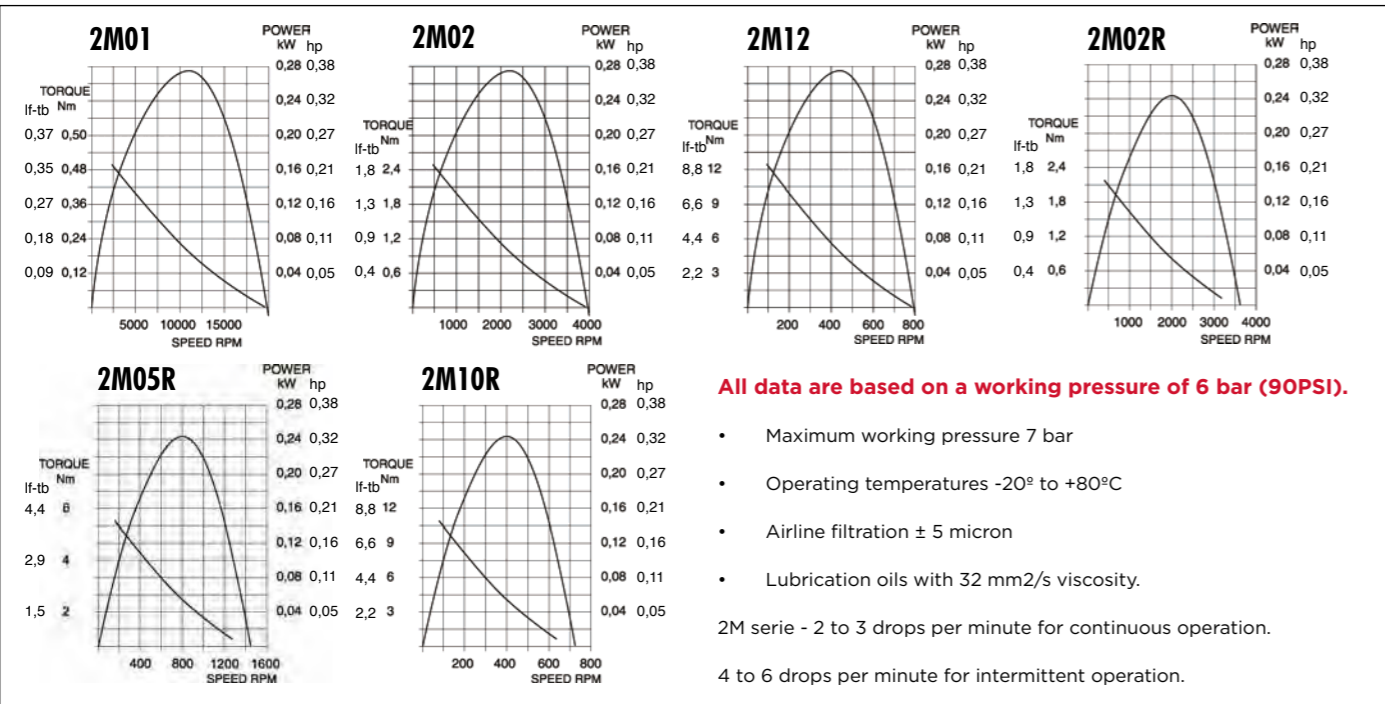
## DIMENSIONS 2M

Type	a	b	c	l	l1	l2	M	d	d1	d2	d3
2M01	52 (2.05")	64 (2.52")	5 (0.20")	160 (6.30")	20 (0.79")	25 (0.98")	M4	40h9 (1.57")	10h6 (0.39")	36h9 (1.42")	6.5 (0.26")
2M02				160 (6.30")							
2M12				190 (7.48")							
2M02R				160 (6.30")							
2M05R				190 (7.48")							
2M10R				190 (7.48")							



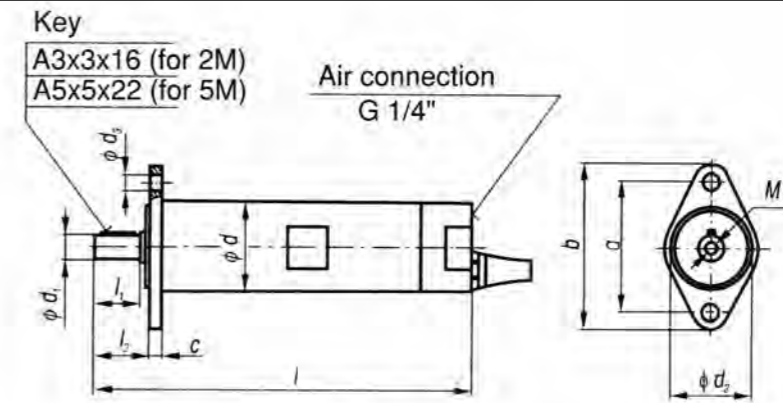
## PERFORMANCES 2M

TYPE	POWER KW (HP)	MAX FREE SPEED	NOMINAL SPEED RPM	NOMINAL TORQUE NM (lb-ft)	MIN STARTING TORQUE Nm (lb-ft)	ROTATION	AIR CONSUMPTION (M3/min)	GEAR RATIO	WEIGHT Kg (lb)
2M01	0.27 (0.36)	19.000	11.000	0,18 (0,13)	0.4 (0.29)	Counter Clockwise	0,5	1	0.9 (1.9)
2M02		3700	2200	0,9 (0,66)	2 (1.47)			5	0.9 (1.9)
2M12		710	450	4,5 (3,31)	12 (8.84)			25	1.1 (2.4)
2M02R	0.24 (0.32)	3100	2000	0,8 (0,58)	2 (1.47)	Reversible	0,6	5	0.9 (1.9)
2M05R		1600	800	2,6 (1,91)	5 (3.69)			12	1.1 (2.4)
2M10R		600	400	4 (2,94)	10 (7.37)			25	1.1 (2.4)



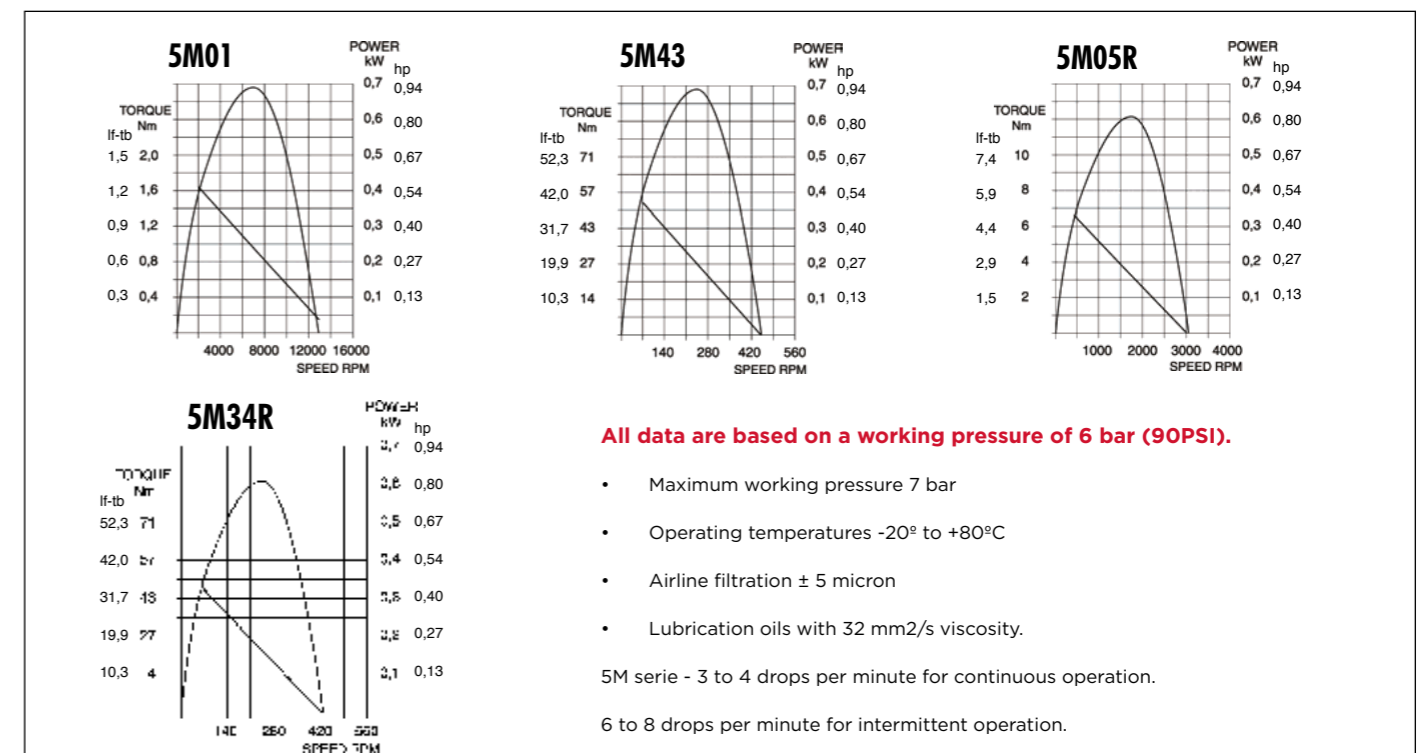
## DIMENSIONS 5M

Type	a	b	c	l	l1	l2	M	d	d1	d2	d3
5M01	75 (2.95")	95 (3.74")	6 (0.24")	185 (7.28")	30 (1.18")	35 (1.38")	M6	55h9 (2.17")	14h6 (0.55)	52h9 (2.05")	11 (0.43")
5M43				230 (9.06")							
5M05R				185 (7.28")							
5M34R				230 (9.06")							



## PERFORMANCES 5M

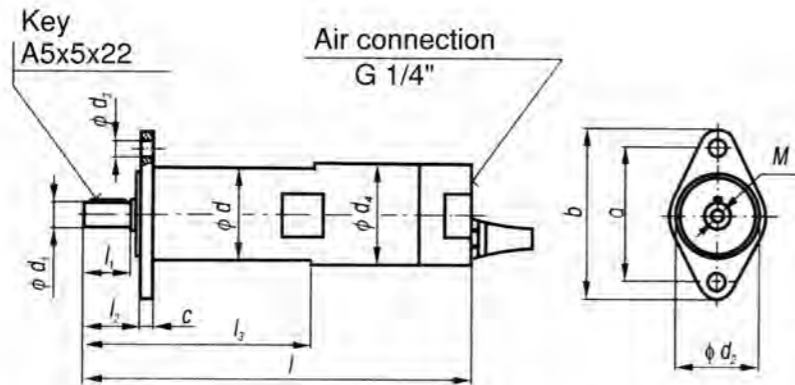
TYPE	POWER KW (HP)	MAX FREE SPEED	NOMINAL SPEED RPM	NOMINAL TORQUE NM (lb-ft)	MIN STARTING TORQUE Nm (lb-ft)	ROTATION	AIR CONSUMPTION (M3/min)	GEAR RATIO	WEIGHT Kg (lb)
5M01	0.67 (0.90)	14.000	7000	0,9 (0,66)	1.5 (1.1)	Counter Clockwise	0,8	1	2.0 (4.4)
5M43		450	250	27 (19,89)	43 (31.7)			36	2.4 (5.3)
5M05R	0.61 (0.82)	3000	1750	3 (2,21)	5 (3.7)	Reversible	0,83	5	2.0 (4.4)
5M34R		420	250	20,5 (15,10)	34 (25.1)			36	2.4 (5.3)





## DIMENSIONS 9M

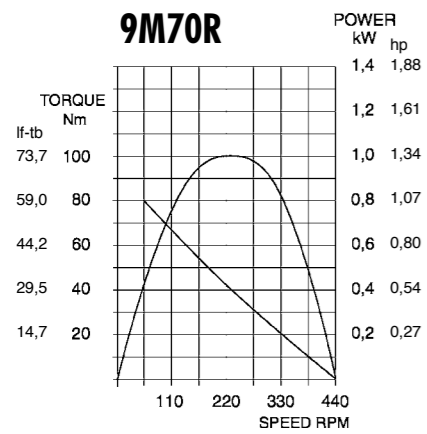
Type	a	b	c	l	l1	l2	l3	M	d	d1	d2	d3	d4
<b>9M70R</b>	75 (2.95")	95 (3.74")	6 (0.24")	270 (10.63")	30 (1.18")	35 (1.38")	110 (4.33")	M4	55h9 (2.17")	16h9 (0.63")	52h9 (2.05")	11 (0.43")	62 (2.44")



## PERFORMANCES 9M

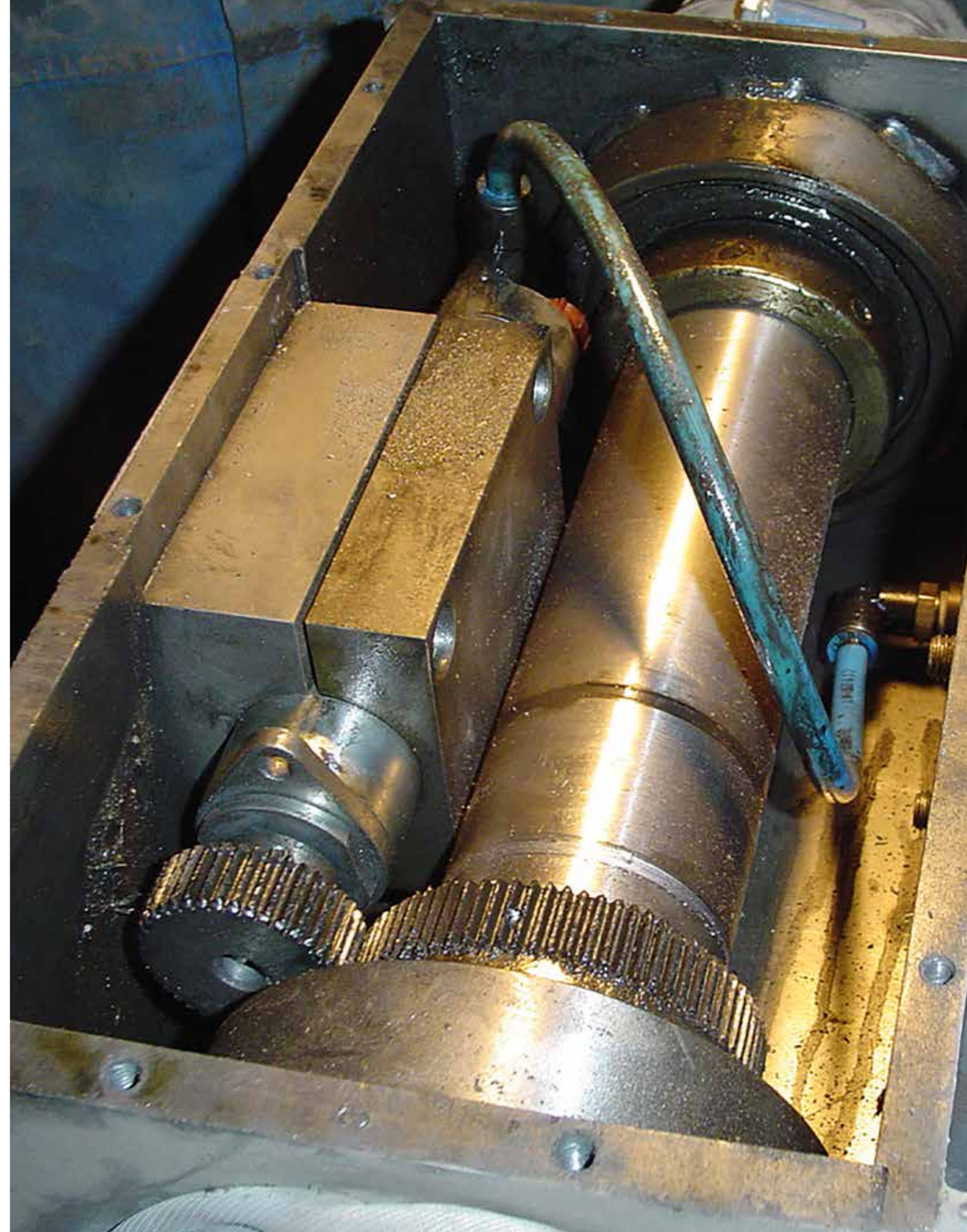
TYPE	POWER KW (HP)	MAX FREE SPEE	NOMINAL SPEED RPM	NOMINAL TORQUE NM (lb-ft)	MIN STARTING TORQUE Nm (lb-ft)	ROTATION	AIR CONSUMPTION (M3/min)	GEAR RATIO	WEIGHT Kg (lb)
<b>9M70R</b>	1.0 (1.34)	440	220	40 (29,48)	70 (51.6)	Reversible	1.36	36	3.3 (7.26)

### 9M70R



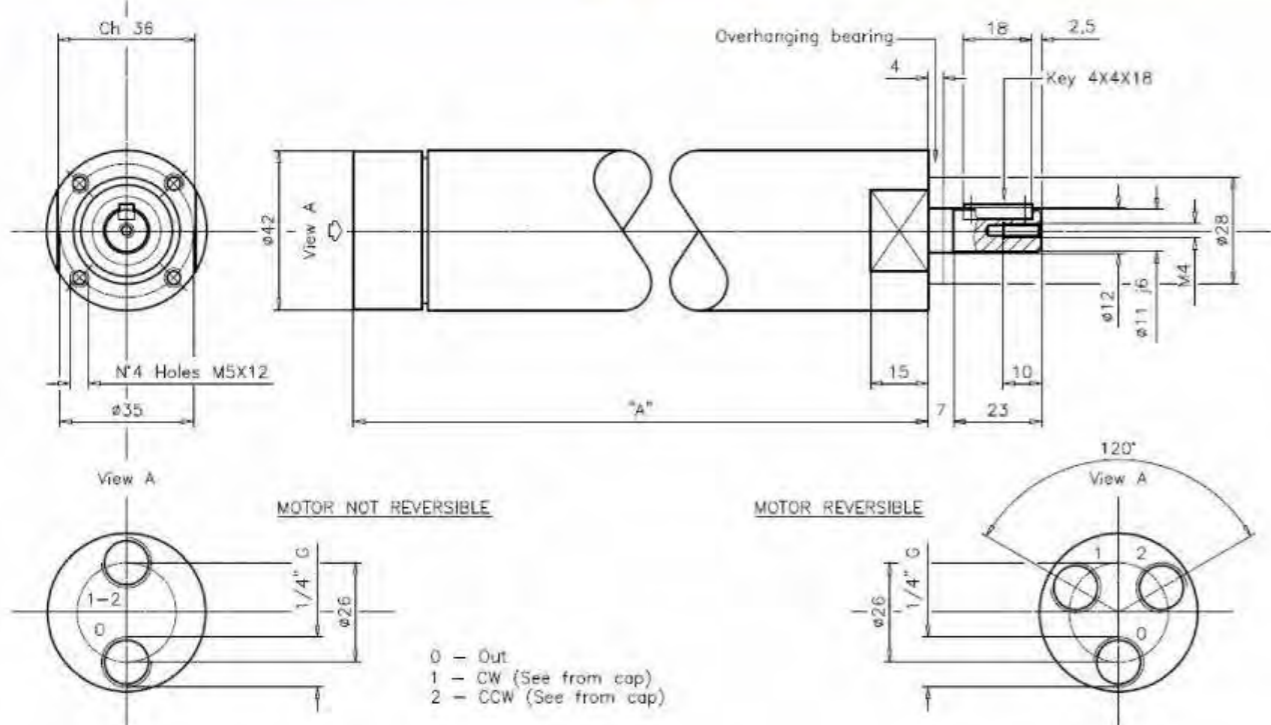
All data are based on a working pressure of 6 bar (90PSI).

- Maximum working pressure 7 bar
  - Operating temperatures -20° to +80°C
  - Airline filtration  $\pm$  5 micron
  - Lubrication oils with 32 mm<sup>2</sup>/s viscosity.
- 2M serie - 2 to 3 drops per minute for continuous operation.  
4 to 6 drops per minute for intermittent operation.





**GLOBE COMPACT VANE MOTORS SERIES M53**



Model	Free speed r/min			Speed at max power r/min			Torque max. power Kgm			Starting torque NM			Torque NM			Quote "A" mm	Weight Kg.	N° Reduction gear		
	Reversible	Not Reversible		7 bar	5 bar	3 bar	7 bar	5 bar	3 bar	7 bar	5 bar	3 bar	7 bar	5 bar	3 bar					
M53R0	M53N0		15000	13400	11800	7500	6700	5900	0,5	0,3	0,1	0,6	0,4	0,2	0,9	0,6	0,3	118	0,9	0
M53R1A	M53N1A		3800	3400	3000	1900	1700	1500	1,9	1,4	0,7	2,9	1,8	1,0	3,9	2,8	1,4	118	0,9	1
M53R1B	M53N1B		2800	2550	2250	1400	1275	1125	2,6	1,9	0,9	3,9	2,8	1,3	5,2	3,8	1,8	118	0,9	1
M53R1C	M53N1C		2400	2180	1930	1200	1090	965	3,0	2,2	1,1	4,5	3,3	1,6	6,0	4,4	2,2	118	0,9	1
M53R1D	M53N1D		2100	1900	1690	1050	850	845	3,5	2,4	1,2	5,2	4,2	1,8	7,0	5,6	2,4	118	0,9	1
M53R2	M53N2		1200	1000	900	600	500	450	6,3	4,8	2,3	9,6	6,0	3,3	13	9,3	4,7	135	1,0	2
M53R2A	M53N2A		900	755	670	450	377	335	8,0	6,3	3,1	12	9,4	4,6	16	13	6,2	135	1,0	2
M53R2B	M53N2B		630	565	500	315	282	230	11	8,4	4,2	17	13	6,3	23	17	8,4	135	1,0	2
M53R2C	M53N2C		540	485	430	270	242	215	13	10	4,9	19	15	7,3	26	20	9,8	135	1,0	2
M53R2D	M53N2D		480	425	375	240	212	187	15	11	5,6	22	16	8,4	30	22	11	135	1,0	2
M53R3	M53N3		270	220	200	135	110	100	27	20	10	40	31	15	53	41	21	157	1,2	3
M53R3A	M53N3A		190	168	150	85	84	75	42	28	14	63	42	21	84	56	28	157	1,2	3
M53R3B	M53N3B		140	126	110	70	63	55	51	38	19	75	57	28	102	76	38	157	1,2	3
M53R3C	M53N3C		120	108	95	60	54	48	60	44	22	90	66	33	120	88	44	157	1,2	3
M53R3D	M53N3D		110	95	83	55	47	42	65	50	25	97	75	37	130	100	50	157	1,2	3
M53R4	M53N4		60	50	45	30	25	22	140	93	47	210	140	70	280	185	93	175	1,3	4
M53R4A	M53N4A		46	37	33	23	19	16	157	125	65	235	187	97	315	250	130	175	1,3	4
M53R4B	M53N4B		32	28	24	16	14	12	230	170	87	345	255	145	460	340	194	175	1,3	4
M53R4C	M53N4C		26	24	21	13	12	10	277	198	105	410	297	157	550	396	210	175	1,3	4
M53R4D	M53N4D		23	21	18	11	10	9	328	238	117	485	357	175	650	476	234	175	1,3	4

Air consum	a 6 bar 13,5 l/sec	a 5 bar 11,6 l/sec	a 4 bar 9,6 l/sec	a 3 bar 7,7 l/sec	a 2 bar 5,7 l/sec
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**ATTENTION**  
The M53 air motors cannot be used over 60Nm torque. The figures shown in the green colored area should be considered purely as an indication.

**LUBRICATION:** 2-3 gocce/1' continuous operation  
4-6 gocce/1' intermittent operation  
**FILTRATION:** Use 64 micron filtration or better  
**RADIAL LOAD:** 2000 N max.  
**AXIAL LOAD:** Not admitted  
**OPERATIVE TEMPERATURE:** da -20°C a +80°C

**PNEUMATIC GLOBE COMPACT VANE MOTORS M53 SERIES | HP 0,53 KW 0,38**

**ATTITUDE:**

The motors of the M53 series are standard with case and end plate in AISI 303 stainless steel, and the possibility, upon request, of also supplying the shaft in AISI 303 stainless steel by adding "051" after the M53 code.

necessary. To achieve this, all motors may be assembled with a protruding bearing. To order the motor with this modification, add "019" after the code.

The M53 offers reversible and uni directional motors. Non reversible motors are furnished with standard counterclockwise rotation (counter clockwise facing the shaft). Non reversible motors are delivered with a standard CCW rotation (counter clock wise) while looked upon shaft. To order them with a CW rotation (clock wise) add "015" after the code. There is often the need to mount the motor to other equipment or simply to an interfacing flange, in this case safe alignment is

The single-stage, two-stage and three-stage models may also be internally equipped with a brake device that prevents the exit shaft to rotate when the motor is in static condition. To order the motor with this devise, add "102" after the code.

The entire line is in accordance to European Directive for products destined to be uses in potentially explosive atmospheres ATEX II cat.2 G&D T3.

All the models of the M53 series can be ordered in a no lube version by putting 'N' in front of the article code.

**STAINLESS STEEL COMPACT VANE AIR MOTORS**

Each type of the GLOBE-Archimedes compact vane air motors are also available in stainless steel models. The

stainless steel models have the same performances and dimensions as the standard versions.

