

Data for Reversible Air Motor Power 600 watts, with Keyed Shaft

Max power	Free speed	Nominal speed	Nominal torque	Min starting torque	Stall torque	Max adm torque	Air consumption	Supply/ Exhaust	Min pipe	Weight	ATEX	Rotation	Vanne Option	Order Code
[watt]	[rpm]	[rpm]		[Nm]	[Nm]	[Nm]	[m³/min]		[mm]	[kg]				
600	13500	6750	0.85	1.25	1.60	*	0.85	G3/8 G1/2	12 12	2.20	T6 T80°C	L & R	0. C. Z	P1VAS060A0D50
600	5500	2750	2.00	3.10	3.90	*	0.85	G3/8 G1/2	12 12	2.70	T6 T80°C	L & R	0. C. Z	P1VAS060A0550
600	4000	2000	2.80	4.30	5.40	*	0.85	G3/8 G1/2	12 12	2.30	T3 T195°C	L & R	0. C. Z	P1VAS060A0400
600	3000	1500	3.80	5.70	7.20	*	0.85	G3/8 G1/2	12 12	2.30	T4 T130°C	L & R	0. C. Z	P1VAS060A0300
600	2000	1000	5.70	8.50	10.80	*	0.85	G3/8 G1/2	12 12	2.330	T4 T130°C	L & R	0. C. Z	P1VAS060A0200
600	700	350	16.30	24.50	31.10	*	0.85	G3/8 G1/2	12 12	2.60	T6 T80°C	L & R	0. C. Z	P1VAS060A0070
600	500	250	22.90	34.30	43.50	*	0.85	G3/8 G1/2	12 12	2.70	T6 T80°C	L & R	0. C. Z	P1VAS060A0050
600	340	170	33.70	50.60	64.00	*	0.85	G3/8 G1/2	12 12	2.70	T6 T80°C	L & R	0. C. Z	P1VAS060A0034
300	180	90	31.80	47.40	60.40	*	0.55	G3/8 G1/2	12 12	2.70	T6 T80°C	L & R	0. C. Z	P1VAS060A0018

Max. adm torque is restriction from the gear box Details on page 16.

Data for Reversible Air Motor Power 900 watts, with Keyed Shaft

Max power	Free speed	Nominal speed	Nominal torque	Min starting torque	Stall torque	Max adm torque	Air consumption	Supply/ Exhaust		Min pipe	Weight	ATEX	Rotation	Vanne Option	Order Code
[watt]	[rpm]	[rpm]		[Nm]	[Nm]	[Nm]	[m³/min]			[mm]	[kg]				
900	12600	6300	1.35	2.00	2.60	*	1.40	G3/8	G1/2	12 12	3.55	T6 T80°C	L & R	0. C. Z	P1VAS090A0C60
900	5200	2600	3.30	4.90	6.20	*	1.40	G3/8	G1/2	12 12	3.55	T6 T80°C	L & R	0. C. Z	P1VAS090A0520
900	3670	1835	4.60	7.00	8.90	*	1.40	G3/8	G1/2	12 12	3.65	T3 T195°C	L & R	0. C. Z	P1VAS090A0367
900	2850	1425	6.00	9.00	11.40	*	1.40	G3/8	G1/2	12 12	3.65	T4 T130°C	L & R	0. C. Z	P1VAS090A0285
900	1900	950	9.00	14.50	17.10	*	1.40	G3/8	G1/2	12 12	3.65	T4 T130°C	L & R	0. C. Z	P1VAS090A0190
900	650	325	26.40	39.60	50.20	*	1.40	G3/8	G1/2	12 12	3.95	T6 T80°C	L & R	0. C. Z	P1VAS090A0065
900	470	235	36.50	54.80	69.40	*	1.40	G3/8	G1/2	12 12	3.95	T6 T80°C	L & R	0. C. Z	P1VAS090A0047
900	310	155	55.40	83.10	105.30	*	1.40	G3/8	G1/2	12 12	3.95	T6 T80°C	L & R	0. C. Z	P1VAS090A0031

Max. adm torque is restriction from the gear box Details on page 16.

Data for Reversible Air Motor Power 1600 watts, with Keyed Shaft

Max power	Free speed	Nominal speed	Nominal torque	Min starting torque	Stall torque	Max adm torque	Air consumption	Supply/ Exhaust		Min pipe	Weight	ATEX		Rotation	Vanne Option	Order Code
[watt]	[rpm]	[rpm]		[Nm]	[Nm]	[Nm]	[m³/min]			[mm]	[kg]					
1600	9600	4800	3.10	4.70	6.05	*	1.60	G1/2	G3/4	19 19	5.90	T6	T80°C	L & R	0, C, Z	P1VAS160A0960
1600	2500	1250	12.20	18.30	23.20	*	1.60	G1/2	G3/4	19 19	6.10	T3	T195°C	L & R	0, C, Z	P1VAS160A0250
1600	1200	600	25.40	38.20	48.30	*	1.60	G1/2	G3/4	19 19	6.10	T4	T130°C	L & R	0, C, Z	P1VAS160A0120
1600	700	350	43.60	65.40	82.90	*	1.60	G1/2	G3/4	19 19	6.70	T4	T130°C	L & R	0, C, Z	P1VAS160A0070
1600	320	160	95.40	143.20	181.40	*	1.60	G1/2	G3/4	19 19	6.70	T4	T130°C	L & R	0, C, Z	P1VAS160A0032
700	200	100	66.90	100.00	125.00	+	1.60	G1/2	G3/4	19 19	6.70	T6	T80°C	L & R	0, C, Z	P1VAS160A0020
1600	160	80	191.00	**	**	220.20	1.60	G1/2	G3/4	19 19	8.00	T6	T80°C	L & R	0, C, Z	P1VAS160A0016

Max. adm torque is restriction from the gear box Details on page 16.

* Maximum admissible torque

No values as these motors can not achieve the maximum gear box torque. Stall torque is the max they can achieve.

** Nominal speed, nominal torque, min starting torque, stall torque

No values as the motors can not reach these conditions, otherwise the maximum torque of the gearboxes will be exceeded.

Vane option	Air Motor	Order Code
0 vanes option	P1VAS012A0N00	P1VAS6/4455801C
	P1VAS012A0550 to 010	P1VAS6/4455801G
C vanes option	P1VAS012ACN00	P1VAS6/4455801D
	P1VAS012A0550 to 010	P1VAS6/4455801H
Z vanes option	P1VAS012AZN00	P1VAS6/4455804C
	P1VAS012AZ550 to 010	P1VAS6/4455804B
0 vanes option	P1VAS020A0G00	P1VAS6/4447851E
	P1VAS020A0460 to 0005	P1VAS6/4447851F
C vanes option	P1VAS020ACG00	P1VAS6/4447853C
	P1VAS020AC460 to 0005	P1VAS6/4447853B
Z vanes option	P1VAS020AZG00	P1VAS6/4447854C
	P1VAS020AZ460 to 0005	P1VAS6/4447854B
0 vanes option	P1VAS030A0E50	P1VAS6/4447861L
	P1VAS030A0460 to 005	P1VAS6/4447861M
C vanes option	P1VAS030ACE50	P1VAS6/4447863C
	P1VAS030AC460 to 005	P1VAS6/4447863B
Z vanes option	P1VAS030AZE50	P1VAS6/4447864C
	P1VAS030AZ460 to 005	P1VAS6/4447864B
0 vanes option	P1VAS060A0D50 and 550	P1VAS6/4447871K
	P1VAS060A0400 to 070	P1VAS6/4447871M
C vanes option	P1VAS060A0050 to 018	P1VAS6/4447871L
	P1VAS060ACD50 and 550	P1VAS6/4447873E
Z vanes option	P1VAS060AC400 to 070	P1VAS6/4447873C
	P1VAS060AC050 to 018	P1VAS6/4447873D
0 vanes option	P1VAS060AZD50 and 550	P1VAS6/4447874E
	P1VAS060AZ400 to 070	P1VAS6/4447874C
C vanes option	P1VAS060AZ050 to 018	P1VAS6/4447874D
	P1VAS090A0C60 and 520	P1VAS6/4449191G
Z vanes option	P1VAS090A0367 to 065	P1VAS6/4449191E
	P1VAS090A0047 and 031	P1VAS6/4449191F
0 vanes option	P1VAS090ACC60 and 520	P1VAS6/1191563A
	P1VAS090AC367 to 065	P1VAS6/1191563B
C vanes option	P1VAS090AC047 and 031	P1VAS6/1191563C
	P1VAS090AZC60 and 520	P1VAS6/1191564A
Z vanes option	P1VAS090AZ367 to 065	P1VAS6/1191564B
	P1VAS090AC047 and 031	P1VAS6/1191654C
0 vanes option	P1VAS160A0960 and 250	P1VAS6/4447881D
	P1VAS160A0120 and 070	P1VAS6/4447881E
C vanes option	P1VAS160A0032 and 020	P1VAS6/4447881F
	P1VAS160A0016	P1VAS6/4447881C
Z vanes option	P1VAS160AC960 and 250	P1VAS6/4447883D
	P1VAS160AC120 and 070	P1VAS6/4447883E
0 vanes option	P1VAS160AC032 and 020	P1VAS6/4447883F
	P1VAS160AC0016	P1VAS6/4447883C
C vanes option	P1VAS160AZ960 and 250	P1VAS6/4447884D
	P1VAS160AZ120 and 070	P1VAS6/4447884E
Z vanes option	P1VAS160AZ032 and 020	P1VAS6/4447884F
	P1VAS160AZ016	P1VAS6/4447884C

Optional vanes

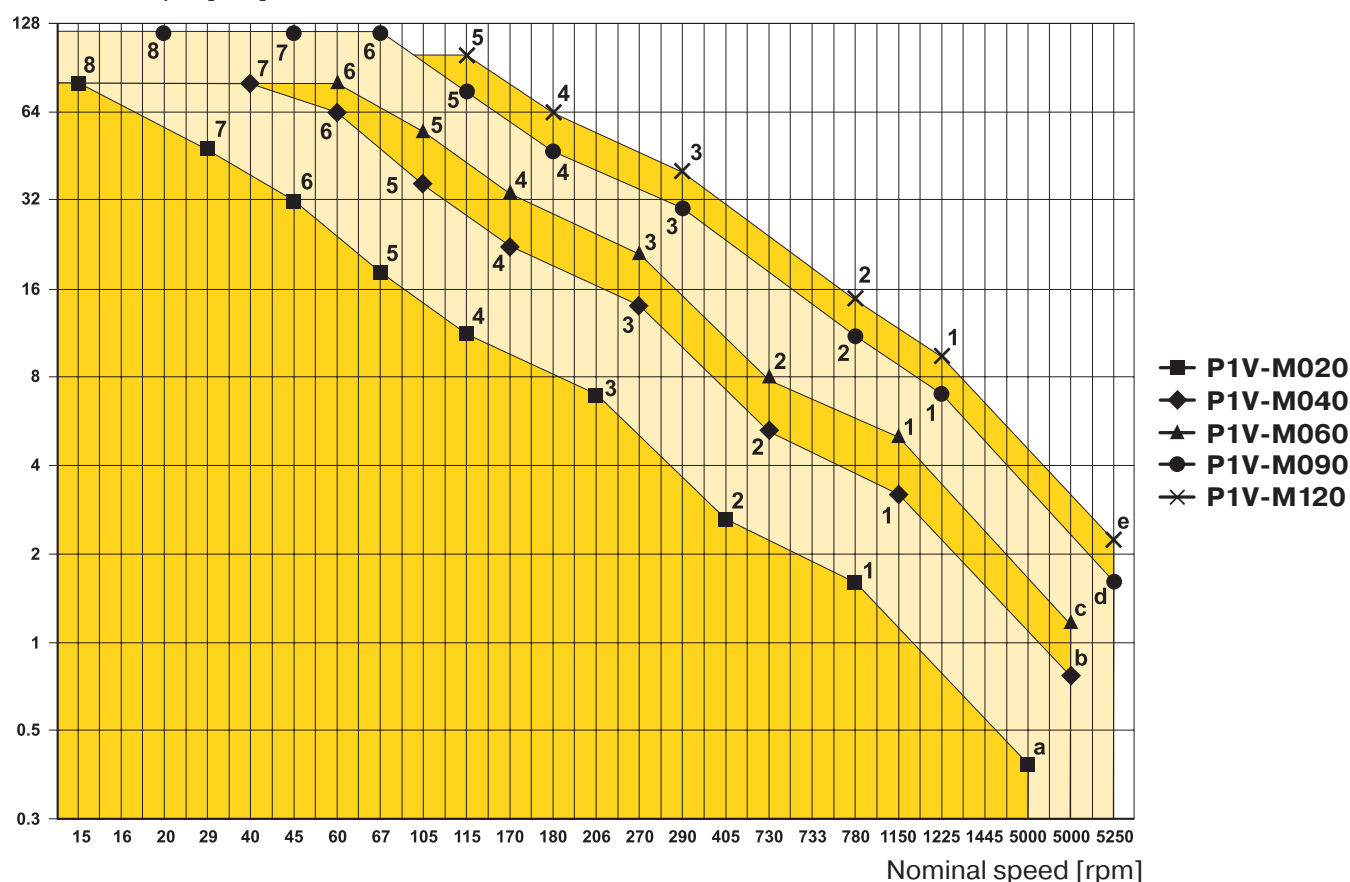
0 Standard vanes

C Continuous lubrication-free operations

Z Standard spring loaded vanes

Choice of an air motor

Nominal torque [Nm]



The motor to be used should be selected by starting with the torque needed at a specific shaft speed. In other words, to choose the right motor, you have to know the required speed and torque. Since maximum power is reached at half the motor's free speed, the motor should be chosen so that the operating point is as close as possible to the maximum power of the motor.

The design principle of the motor means that higher torque is generated when it is braked, which tends to increase the speed, etc. This means that the motor has a kind of speed self-regulation function built in.

Use the above graph to choose the correct motor size. The graph contains the points for the maximum torque of each motor at maximum output. Add your operating point to the graph, then select a marked point above and to the right of your point.

Then use the correct working diagram of the chosen motor to get more detailed technical data. Always select a motor whose requisite technical data are in the shaded area. Also use the correction diagram to find out what operation with different supply pressures would mean for the motor.

Tip: Select a motor which is slightly too fast and powerful, then regulate its speed and torque with a pressure regulator and/or throttle to achieve the optimum working point.

Air motors in diagram above

■ a	P1V-M020B0A00	▲ 1	P1V-M060C0230
◆ b	P1V-M040B0A00	▲ 2	P1V-M060C0146
▲ c	P1V-M060B0A00	▲ 3	P1V-M060C0054
● d	P1V-M090B0A00	▲ 4	P1V-M060C0034
X e	P1V-M120B0A00	▲ 5	P1V-M060C0021
		▲ 6	P1V-M060C0012
■ 1	P1V-M020C0230	● 1	P1V-M090C0245
■ 2	P1V-M020C0146	● 2	P1V-M090C0156
■ 3	P1V-M020C0054	● 3	P1V-M090C0058
■ 4	P1V-M020C0034	● 4	P1V-M090C0036
■ 5	P1V-M020C0021	● 5	P1V-M090C0023
■ 6	P1V-M020C0012	● 6	P1V-M090C0013
■ 7	P1V-M020C0008	● 7	P1V-M090C0009
■ 8	P1V-M020C0003	● 8	P1V-M090C0004
◆ 1	P1V-M040C0230	X 1	P1V-M120C0245
◆ 2	P1V-M040C0146	X 2	P1V-M120C0156
◆ 3	P1V-M040C0054	X 3	P1V-M120C0058
◆ 4	P1V-M040C0034	X 4	P1V-M120C0036
◆ 5	P1V-M040C0021	X 5	P1V-M120C0023
◆ 6	P1V-M040C0012		
◆ 7	P1V-M040C0008		

Compact Air Motors - 200 Watts

NOTE! All technical data are based on a working pressure of 6 bar and with oil. For oil-free performances are -10 to 15% lower. Speed tolerance accuracy $\pm 10\%$.



II 2D Ex h IIC T4 Gb X



II 2D Ex h IIC T130°C Db X

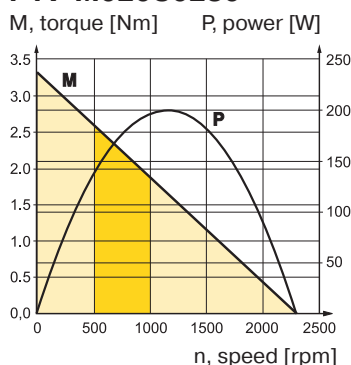


Compact reversible motor with keyed shaft, flange

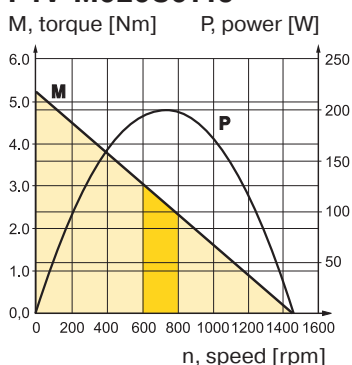
Max power	Free speed*	Nominal speed	Nominal torque	Min starting torque	Air consumption at max power	Conn.	Min pipe ID	Weight	Order Code
[kW]	[rpm]	[rpm]	[Nm]	[Nm]	[l/s]		[mm]	[kg]	
0.200	2300	1150	1.60	2.40	5	G1/8	10	2.40	P1V-M020C0230
0.200	1460	730	2.60	3.90	5	G1/8	10	2.40	P1V-M020C0146
0.200	540	270	7.00	10.50	5	G1/8	10	2.80	P1V-M020C0054
0.200	340	170	11.20	16.80	5	G1/8	10	2.80	P1V-M020C0034
0.200	210	105	18.20	27.30	5	G1/8	10	2.80	P1V-M020C0021
0.200	120	60	31.80	47.70	5	G1/8	10	3.20	P1V-M020C0012
0.200	80	40	47.80	71.70	5	G1/8	10	3.20	P1V-M020C0008
0.200	32	16	80**	80**	5	G1/8	10	3.20	P1V-M020C0003

* maximum admissible speed (idling) / ** gear box restriction

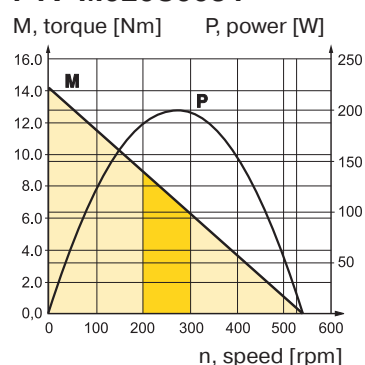
P1V-M020C0230



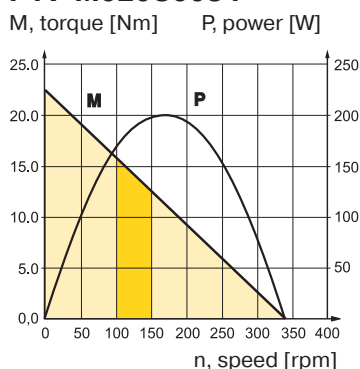
P1V-M020C0146



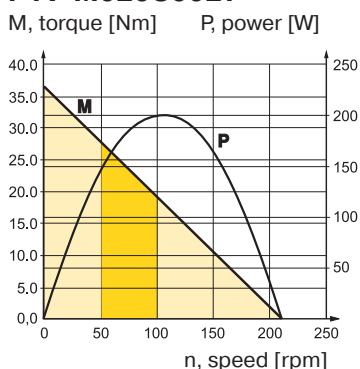
P1V-M020C0054



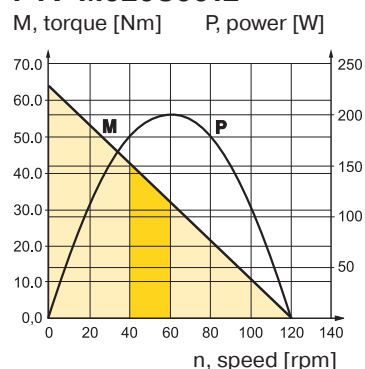
P1V-M020C0034



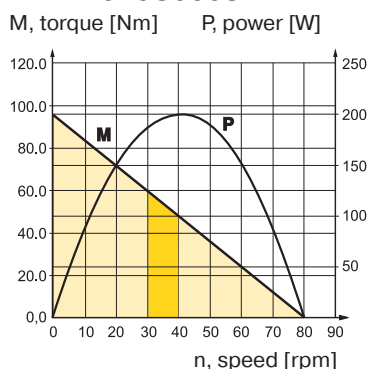
P1V-M020C0021



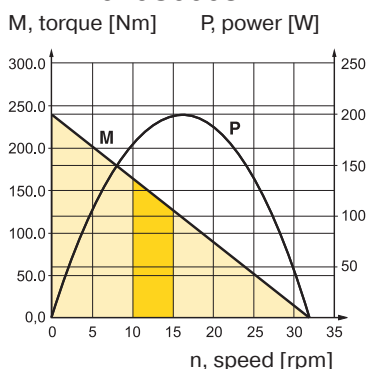
P1V-M020C0012



P1V-M020C0008



P1V-M020C0003



Possible working range of motor.



Optimum working range of motor.

Higher speeds = more vane wear
Lower speeds with high torque = more gearbox wear

Motor P1V-M020C



Motor type		Dimensions (mm)			
		C1	C2	C3	C4
P1V-M020C	(IEC80 B5) P1V-MF9	200	130f7	11	165
	(IEC80 B14) P1V-MF8	120	80f7	M6	100

Compact Air Motors - 400 Watts

NOTE! All technical data are based on a working pressure of 6 bar and with oil. For oil-free performances are -10 to 15% lower. Speed tolerance accuracy $\pm 10\%$.



CE Ex II 2D Ex h IIC T4 Gb X
 Ex II 2D Ex h IIC T130°C Db X



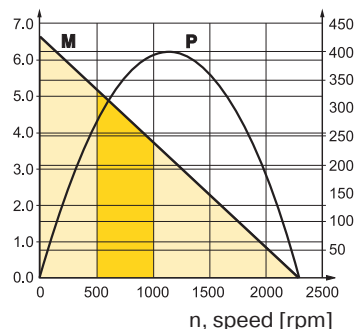
Compact reversible motor with keyed shaft, flange

Max power	Free speed*	Nominal speed	Nominal torque	Min starting torque	Air consumption at max power	Conn.	Min pipe ID	Weight	Order Code
[kW]	[rpm]	[rpm]	[Nm]	[Nm]	[l/s]		[mm]	[kg]	
0.400	2300	1150	3.20	4.80	10	G3/8	12	2.80	P1V-M040C0230
0.400	1460	730	5.20	7.80	10	G3/8	12	2.80	P1V-M040C0146
0.400	540	270	14.00	21.00	10	G3/8	12	3.20	P1V-M040C0054
0.400	340	170	22.40	33.60	10	G3/8	12	3.20	P1V-M040C0034
0.400	210	105	36.40	54.60	10	G3/8	12	3.20	P1V-M040C0021
0.400	120	60	63.60	80**	10	G3/8	12	3.60	P1V-M040C0012
0.400	80	40	80**	80**	10	G3/8	12	3.60	P1V-M040C0008

* maximum admissible speed (idling) / ** gear box restriction

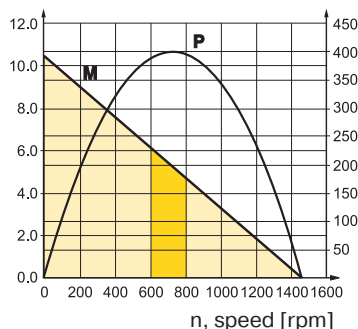
P1V-M040C0230

M, torque [Nm] P, power [W]



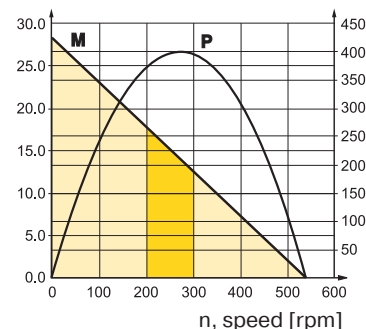
P1V-M040C0146

M, torque [Nm] P, power [W]



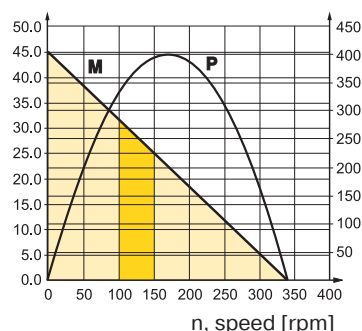
P1V-M040C0054

M, torque [Nm] P, power [W]



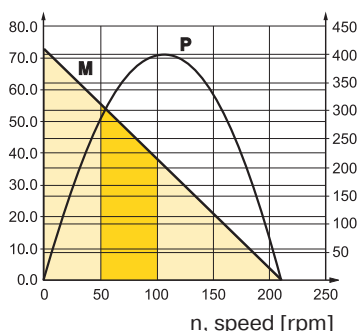
P1V-M040C0034

M, torque [Nm] P, power [W]



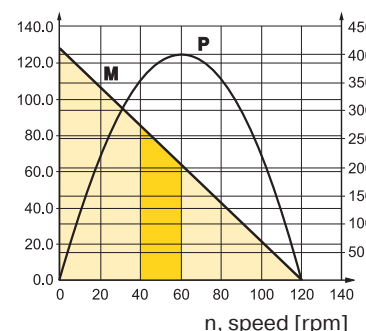
P1V-M040C0021

M, torque [Nm] P, power [W]



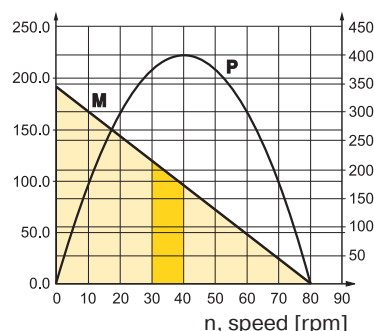
P1V-M040C0012

M, torque [Nm] P, power [W]



P1V-M040C0008

M, torque [Nm] P, power [W]



Possible working range of motor.



Optimum working range of motor.

Higher speeds = more vane wear
 Lower speeds with high torque = more gearbox wear

Motor P1V-M040C



The drawing consists of two views of a mechanical part:

- Left View (Cross-section):** Shows an L-shaped profile. The vertical leg has a total height of 89.5. The horizontal leg has a total width of 50, with a central section of 35. The thickness of the part is 9.5. A hole with a diameter of $\varnothing 11$ is located in the horizontal leg. The top surface of the vertical leg is offset by 9.5 from the left edge.
- Right View (Top View):** Shows a trapezoidal shape. The top width is 110 and the bottom width is 92. The height is 60, with a tolerance of $0 \text{ } -0.2$. A central circular hole has a diameter of $\varnothing 40 \text{ H7}$. There are four smaller holes, each with a diameter of $\varnothing 11$, arranged in a square pattern around the central hole. The distance between the centers of the four small holes is 60, with a tolerance of $0 \text{ } -0.2$.

Motor type		Dimensions (mm)			
		C1	C2	C3	C4
P1V-M040C	(IEC80 B5) P1V-MF9	200	130f7	11	165
	(IEC80 B14) P1V-MF8	120	80f7	M6	100

Compact Air Motors - 600 Watts

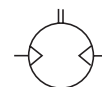
NOTE! All technical data are based on a working pressure of 6 bar and with oil. For oil-free performances are -10 to 15% lower. Speed tolerance accuracy $\pm 10\%$.



II 2D Ex h IIC T4 Gb X



II 2D Ex h IIC T130°C Db X



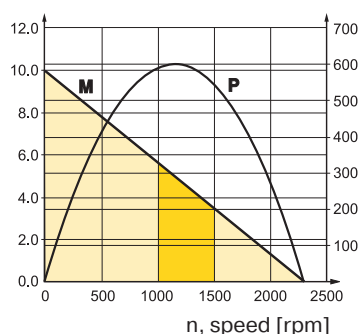
Compact reversible motor with keyed shaft, flange

Max power	Free speed*	Nominal speed	Nominal torque	Min starting torque	Air consumption at max power	Conn.	Min pipe ID	Weight	Order Code
[kW]	[rpm]	[rpm]	[Nm]	[Nm]	[l/s]		[mm]	[kg]	
0.600	2300	1150	5.00	7.50	15	G3/8	13	3.00	P1V-M060C0230
0.600	1460	730	7.80	11.70	15	G3/8	13	3.00	P1V-M060C0146
0.600	540	270	21.00	31.50	15	G3/8	13	3.40	P1V-M060C0054
0.600	340	170	33.60	50.40	15	G3/8	13	3.40	P1V-M060C0034
0.600	210	105	54.50	80**	15	G3/8	13	3.40	P1V-M060C0021
0.600	120	60	80**	80**	15	G3/8	13	3.80	P1V-M060C0012

* maximum admissible speed (idling) / ** gear box restriction

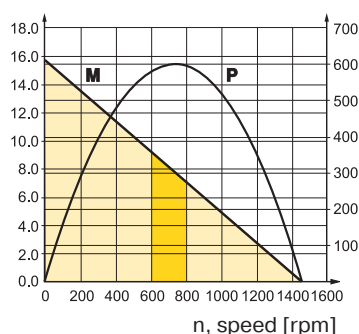
P1V-M060C0230

M, torque [Nm] P, power [W]



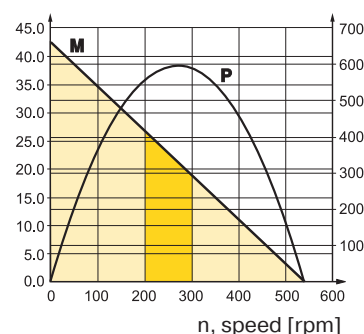
P1V-M060C0146

M, torque [Nm] P, power [W]



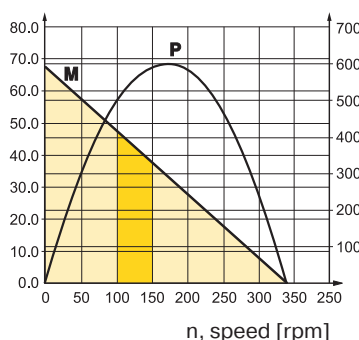
P1V-M060C0054

M, torque [Nm] P, power [W]



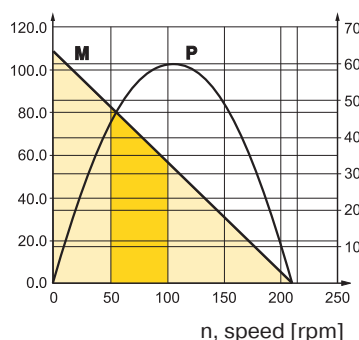
P1V-M060C0034

M, torque [Nm] P, power [W]



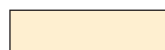
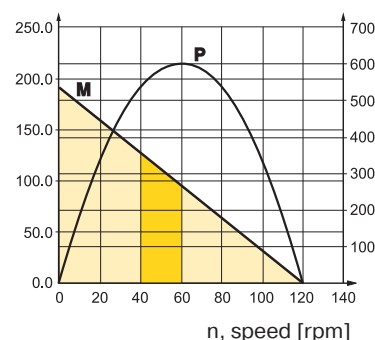
P1V-M060C0021

M, torque [Nm] P, power [W]



P1V-M060C0012

M, torque [Nm] P, power [W]



Possible working range of motor.



Optimum working range of motor.

Higher speeds = more vane wear

Lower speeds with high torque = more gearbox wear

Motor P1V-M060C



Motor type		Dimensions (mm)			
		C1	C2	C3	C4
P1V-M060C	(IEC80 B5) P1V-MF9	200	130f7	11	165
	(IEC80 B14) P1V-MF8	120	80f7	M6	100

Permissible forces air motors with gear boxes

Max. permitted load on output shaft for basic motors (based on 10,000 rpm at input shaft with 90 % probable service life for ball bearings).

a (mm)	Radial force (N)	Axial force (N)
Motors P1V-M020C0230, P1V-M020C0146		
39	240	50
Motors P1V-M020C0054, P1V-M020C0034, P1V-M020C0021		
39	360	70
Motors P1V-M020C0012, P1V-M020C0008, P1V-M020C0003		
39	520	120

Motors P1V-M040C0230, P1V-M040C0146		
39	240	50
Motors P1V-M040C0054, P1V-M040C0034, P1V-M040C0021		
39	360	70
Motors P1V-M040C0012, P1V-M040C		
39	520	120

Motors P1V-M060C0230, P1V-M060C0146		
39	240	50
Motors P1V-M060C0054, P1V-M060C0034, P1V-M060C0021		
39	360	70
Motors P1V-M060C0012		
39	520	120

Motors P1V-M090C0245, P1V-M090C0156		
39	400	80
Motors P1V-M090C0058, P1V-M090C0036, P1V-M090C0023		
39	600	120
Motors P1V-M090C0013, P1V-M090C0009, P1V-M090C0004		
39	1000	200

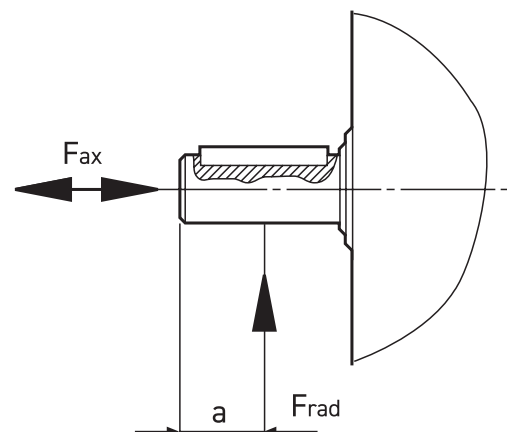
Motors P1V-M120C0245, P1V-M120C0156		
39	400	80
Motors P1V-M120C0058, P1V-M120C0036, P1V-M120C0023		
39	600	120

Permissible forces air motors without gear boxes

	a (mm)	Radial force (N)	Axial force (N)
P1V-M020B	8	145	0
P1V-M040B	8	145	0
P1V-M060B	8	145	0
P1V-M090B	9	145	0
P1V-M120B	9	145	0

F_{rad} = Radial loading (N)

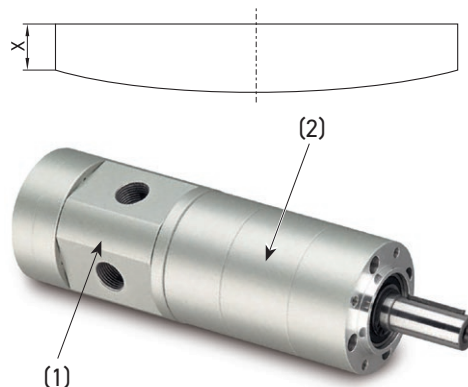
F_{ax} = Axial loading (N)



Loads on output shaft for basic motor with shaft with key slot.

LUBRICATION AND SERVICE LIFE

Air motor	Dimensions on new vanes X [mm]	Minimum dimensions on vane X [mm]
P1V-M020	8.5	6.5
P1V-M040	7.0	5.0
P1V-M060	8.0	6.0
P1V-M090	X	X
P1V-M120	X	X



SPARE PARTS

Spare parts Order Code		
Motor	Air Motor (1)	Gear Box (2)
P1V-M020C0230	P1V-M/202193A	P1V-M/202202B
P1V-M020C0146	P1V-M/202193A	P1V-M/202202D
P1V-M020C0054	P1V-M/202193A	P1V-M/202202G
P1V-M020C0034	P1V-M/202193B	P1V-M/202202C
P1V-M020C0021	P1V-M/202193B	P1V-M/202202E
P1V-M020C0012	P1V-M/202193B	P1V-M/202202F
P1V-M020C0008	P1V-M/202193B	P1V-M/202202H
P1V-M020C0003	P1V-M/202193B	P1V-M/202202I
Motor	Air Motor (1)	Gear Box (2)
P1V-M040C0230	P1V-M/202194A	P1V-M/202202B
P1V-M040C0146	P1V-M/202194A	P1V-M/202202D
P1V-M040C0054	P1V-M/202194A	P1V-M/202202G
P1V-M040C0034	P1V-M/202194B	P1V-M/202202C
P1V-M040C0021	P1V-M/202194B	P1V-M/202202E
P1V-M040C0012	P1V-M/202194B	P1V-M/202202F
P1V-M040C0008	P1V-M/202194B	P1V-M/202202H
Motor	Air Motor (1)	Gear Box (2)
P1V-M060C0230	P1V-M/202179A	P1V-M/202202B
P1V-M060C0146	P1V-M/202179A	P1V-M/202202D
P1V-M060C0054	P1V-M/202179A	P1V-M/202202G
P1V-M060C0034	P1V-M/202179B	P1V-M/202202C
P1V-M060C0021	P1V-M/202179B	P1V-M/202202E
P1V-M060C0012	P1V-M/202179B	P1V-M/202202F
Motor	Air Motor (1)	Gear Box (2)
P1V-M090C0245	P1V-M/202409A	P1V-M/807015B
P1V-M090C0156	P1V-M/202409B	P1V-M/807015C
P1V-M090C0058	P1V-M/202409A	P1V-M/807015D
P1V-M090C0036	P1V-M/202409B	P1V-M/807015E
P1V-M090C0023	P1V-M/202409B	P1V-M/807015F
P1V-M090C0013	P1V-M/202409A	P1V-M/807015G
P1V-M090C0009	P1V-M/202409B	P1V-M/807015H
P1V-M090C0004	P1V-M/202409B	P1V-M/807015I
Motor	Air Motor (1)	Gear Box (2)
P1V-M120C0245	P1V-M/202457A	P1V-M/807015B
P1V-M120C0156	P1V-M/202457B	P1V-M/807015C
P1V-M120C0058	P1V-M/202457A	P1V-M/807015D
P1V-M120C0036	P1V-M/202457B	P1V-M/807015E
P1V-M120C0023	P1V-M/202457B	P1V-M/807015F

NOTE! All technical data are based on a working pressure of 6 bar and with oil. For oil-free performances are -10 to 15% lower. Speed tolerance accuracy $\pm 10\%$.

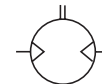
Powers 1,6, 3,2, 5 & 6 kW

CE  II 2G Ex h IIC T3 Gb X
 II 2D Ex h IIC T195° Db X

Powers 9 & 18 kW

CE  II 2G Ex h IIC T4 Gb X
 II 2D Ex h IIC T130° Db X

Note! Inlet and exhaust air flows are critical for reaching the best performances.



A: Basic reversible motor without gear box (A), IEC flange, ATEX, with planetary (B) or spur (D) gear boxes

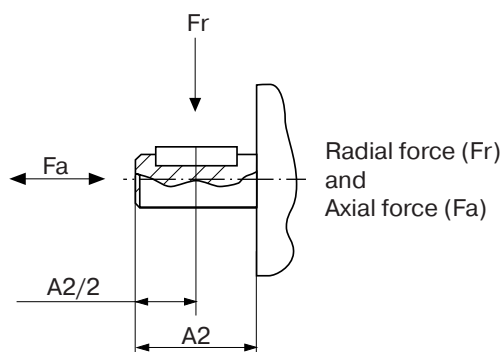
Max power	Free speed	Nominal speed	Nominal torque	Min starting torque	Air consumption	Con- nection	Min pipe ID	Weight	Moun- ting	Max permis- sible shaft loading		At A2/2	Gear box type	Order Code
[kW]	[rpm]	[rpm]	[Nm]	[Nm]	[l/s]		[mm]	[kg]	Flange	F radial [N]	F axial [N]	[mm]		
1600	9000	4500	3.4	5.1	31.7	G1/2	15/19	5.2	IEC71	1000	600	15.0	Without	P1V-A160A0900
1600	3000	1500	10.2	15.3	31.7	G1/2	15/19	9.5	IEC80	550	1500	20.0	Spur	P1V-A160D0300
1600	1400	700	21.8	32.7	31.7	G1/2	15/19	9.5	IEC80	1200	880	20.0	Helical	P1V-A160B0140
3200	7000	3500	8.7	13.1	65.0	G3/4	19/25	10.3	IEC80	1400	700	20.0	Without	P1V-A320A0700
3200	3000	1500	20.4	30.6	65.0	G3/4	19/25	15.4	IEC90	800	1450	25.0	Spur	P1V-A320D0300
3200	1400	700	43.7	65.5	65.0	G3/4	19/25	13.6	IEC90	1600	1350	25.0	Helical	P1V-A320B0140
5000	6000	3000	15.9	23.9	96.7	G1	25/32	17.0	IEC90	1900	900	25.0	Without	P1V-A500A0600
5000	3000	1500	31.8	47.7	96.7	G1	25/32	25.8	IEC100	1250	950	30.0	Spur	P1V-A500D0300
5000	1450	725	65.9	98.8	96.7	G1	25/32	26.8	IEC100	2650	1150	30.0	Helical	P1V-A500B0145
6000	7000	3500	16.4	24.6	131.7	G1	25/32	17.0	IEC90	1900	900	25.0	Without	P1V-A600A0700
6000	3500	1750	32.7	49.1	131.7	G1	25/32	25.8	IEC100	1250	950	30.0	Spur	P1V-A600D0350
6000	1600	800	71.6	107.4	131.7	G1	25/32	26.8	IEC100	2650	1150	30.0	Helical	P1V-A600B0160
9000	6000	3000	28.6	43.0	166.7	G1	25/32	33.0	IEC112A	7500	1100	30.0	Without	P1V-A900A0600
18000	6000	3000	57.3	85.9	333.3	G2	43/63.5	54.0	IEC112A	7500	1100	30.0	Without	P1V-AJ00A0600

Maximum admissible speed (idling)

Air consumption at the maximum air motor power

Permitted shaft loadings

Max permitted load on output shaft for basic motors (based on 10,000,000 revolutions of the output shaft, with 90% probable service life for ball bearings).



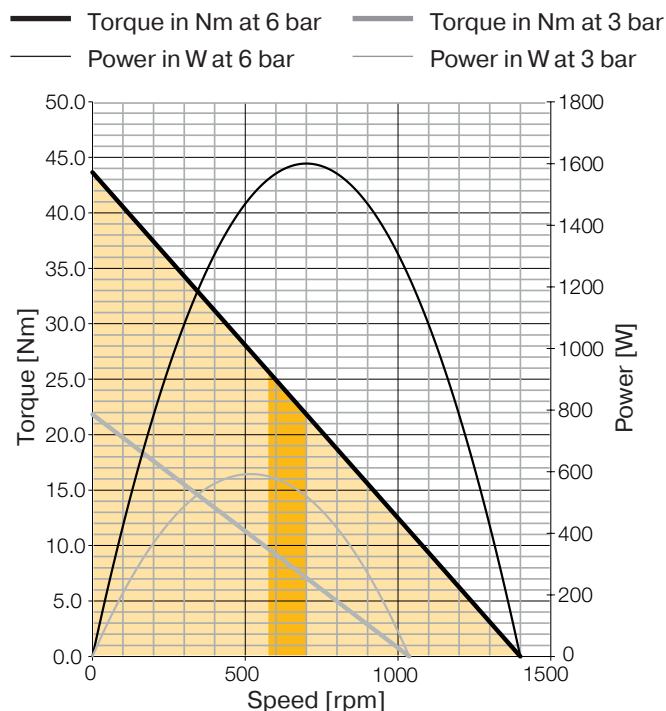
P1V-A160B0140

Technical data

Max. power [Watt]	1600
Free speed [rpm]	1400
Nominal speed [rpm]	700
Nominal torque [Nm]	21.8
Min. starting torque [Nm]	32.7
Stall torque [Nm]	41.5
Working pressure [bar]	3 to 7*
Air consumption [l/s]	31.7
Min pipe ID inlet/outlet [mm]	15 / 19
Connection [BSPP]	G1/2
Working temperature	-20° to +110°C -20 to +40°C in explosive atmosphere
Weight [kg]	9.5
Flange mounting	IEC80
Gear box type	Planetary
Max. shaft radial force [N]	1200
Max. shaft axial force [N]	900
At A2/2 [mm]	20

* 6 in explosive atmosphere

Torque & speed curves/ Air Motor Power



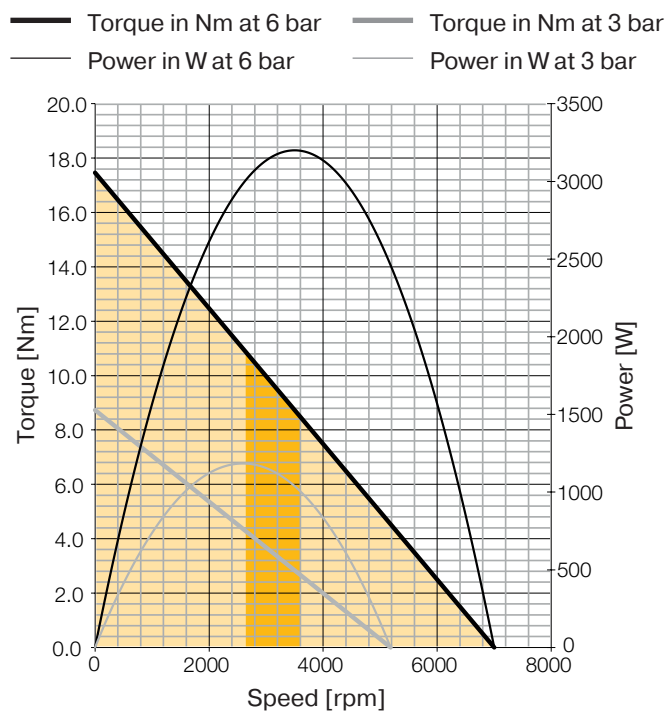
P1V-A320A0700

Technical data

Max. power [Watt]	3200
Free speed [rpm]	7000
Nominal speed [rpm]	3500
Nominal torque [Nm]	8.7
Min. starting torque [Nm]	13.1
Stall torque [Nm]	16.6
Working pressure [bar]	3 to 7*
Air consumption [l/s]	65.0
Min pipe ID inlet/outlet [mm]	19 / 25
Connection [BSPP]	G3/4
Working temperature	-20° to +110°C -20 to +40°C in explosive atmosphere
Weight [kg]	10.3
Flange mounting	IEC80
Gear box type	None
Max. shaft radial force [N]	1400
Max. shaft axial force [N]	700
At A2/2 [mm]	20

* 6 in explosive atmosphere

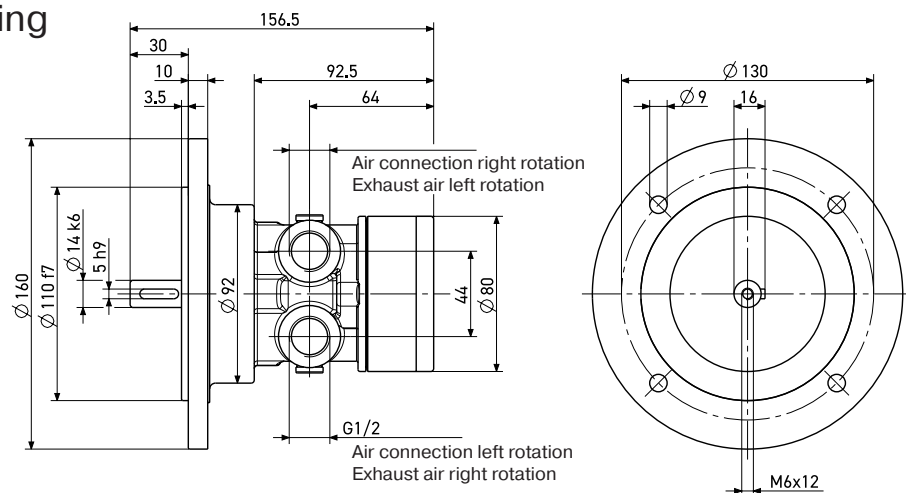
Torque & speed curves / Air Motor Power



Dimensions [mm]

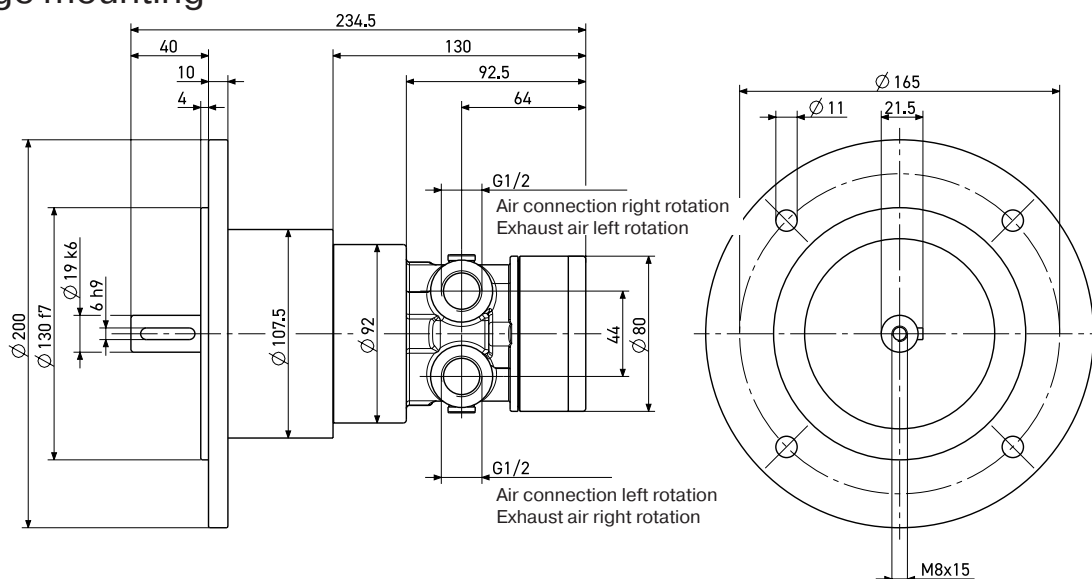
P1V-A160A0900

IEC71 Flange mounting



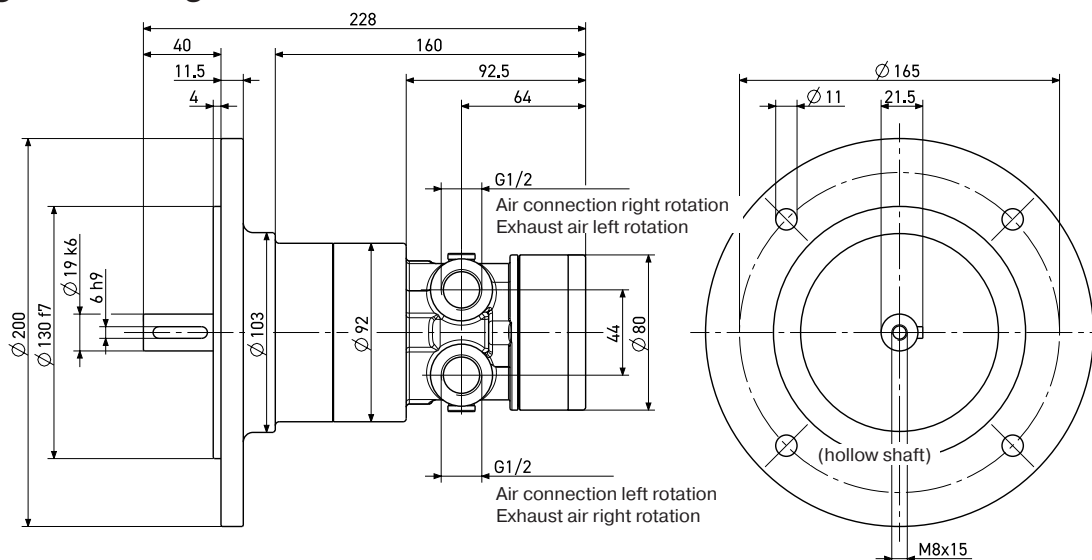
P1V-A160D0300

IEC80 Flange mounting

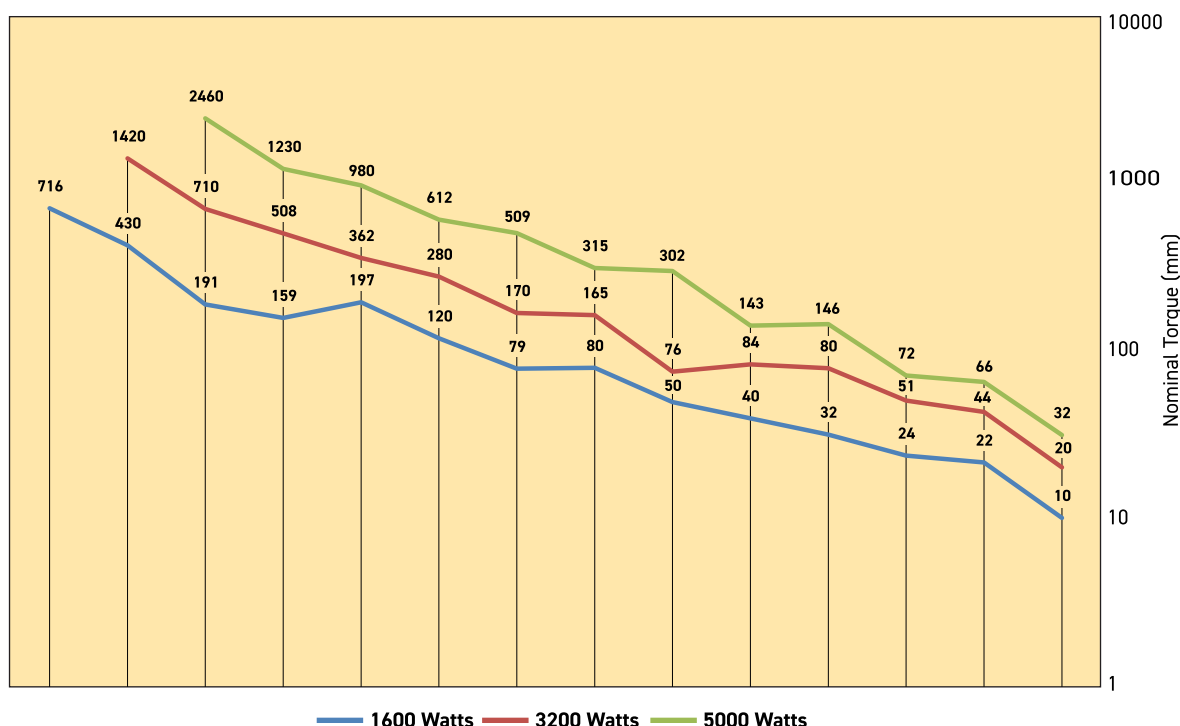


P1V-A160B0140

IEC80 Flange mounting



Choice of an air motor with gear



The motor to be used should be selected by starting with the torque needed at a specific spindle speed. In other words, to choose the right motor, you have to know the required speed and torque. Since maximum power is reached at half the motor's free speed, the motor should be chosen so that the point aimed at is as close as possible to the maximum power of the motor.

The design principle of the motor means that higher torque is generated when it is braked, which tends to increase the speed, etc. This means that the motor has a kind of speed self regulation function built in.

Use the following graph to choose the correct motor size and the correct type of gear as appropriate. The graph contains the points for the maximum torque of each motor at maximum power. Put in your point on the graph and select a marked point above and to the right of the point you need.

Then check the characteristic graph of each motor to find more accurate technical data. Always select a motor where the data required is in the grey field. Also use the correction diagram to see what it would mean to use different air supply pressures with the motor.

Tip: Select a motor which is slightly too fast and powerful, regulate its speed and torque with a pressure regulator and/or restriction to achieve the optimum working point.

Order code	Gear box type	Torque (Nm)
P1V-A160D0300	Helical (spur)	10
P1V-A160B0140	Planetary	22
P1V-A160D0066	Helical (spur)	24
P1V-A160B0060	Planetary	32
P1V-A160H0043	Worm	40
P1V-A160D0032	Helical (spur)	50
P1V-A160B0019	Planetary	80
P1V-A160H0020	Worm	79
P1V-A160D0014	Helical (spur)	120
P1V-A160D0008	Helical (spur)	197
P1V-A160H0010	Worm	159
P1V-A160H0008	Worm	191
P1V-A160D0004	Helical (spur)	430
P1V-A160D0003	Helical (spur)	716
P1V-A320D0300	Helical (spur)	20
P1V-A320B0140	Planetary	44
P1V-A320D0080	Helical (spur)	51
P1V-A320D0052	Helical (spur)	80
P1V-A320B0060	Planetary	84
P1V-A320H0050	Worm	76
P1V-A320D0025	Helical (spur)	165
P1V-A320H0022	Worm	170
P1V-A320H0013	Worm	280
P1V-A320D0011	Helical (spur)	362
P1V-A320H0006	Worm	508
P1V-A320H0006	Helical (spur)	710
P1V-A320D0003	Helical (spur)	1420
P1V-A500D0300	Helical (spur)	32
P1V-A500B0145	Planetary	66
P1V-A500D0105	Helical (spur)	72
P1V-A500D0052	Helical (spur)	146
P1V-A500H0050	Worm	143
P1V-A500D0025	Helical (spur)	302
P1V-A500H0022	Worm	315
P1V-A500H0013	Worm	509
P1V-A500D0013	Helical (spur)	612
P1V-A500H0006	Worm	980
P1V-A500D0006	Helical (spur)	1230
P1V-A500H0003	Helical (spur)	2460
P1V-A600D0350	Helical (spur)	33
P1V-A600B0160	Planetary	72

LUBRICATION AND SERVICE LIFE

Oil and oil mist are things which one tries to avoid to get the best possible working environment. In addition, purchasing, installation and maintenance of oil mist equipment costs money and, above all, time to achieve optimum lubrication effect.

The P1V-A motor is equipped with vanes for intermittent operation as standard for most common applications.

Service interval



The first service is due after approximately 500 hours of operation. After the first service, the service interval is determined by the degree of vane wear.

The following normal service intervals should be applied to in order to guarantee problem-free operation in air motors working continuously at load speeds.

Intermittent lubrication operation

Duty cycle	70%
Max. duration of intermittent use	15 minutes
Oil volume	1 drop oil/Nm ³
Filtering 40 µm	app. 750 hours operation
Filtering 5 µm	app. 1,000 hours operation

Continuous lubrication operation

Oil volume	1 drop oil/Nm ³
Filtering 40 µm	app. 1,000 hours operation
Filtering 5 µm	app. 2,000 hours operation

Continuous lubrication operation

Oil volume	Oil free
Filtering 40 µm	app. 750 hours operation
Filtering 5 µm	app. 1,000 hours operation

Standard vanes (O, D):

For intermittent lubrication-free operation.
They can operate 70 % of the time for up to 15 minutes without lubrication.

With lubrication, these motors can operation 100 % of the time.

"Black" vanes (C, E):

For continuous lubrication-free operation.
(To obtain the longest possible service life, we recommend no oil in the air.)

SERVICE KITS

The following kits are available for the basic motors, consisting of vanes, O-rings and springs:

Motor type	Motor power Watt	Order code	
		Vanes for intermittent lubrication operation, options "O & D"	Vanes for continuous lubrication operation, options "C & E"
P1V-A160A0900	1600	P1V-6/4450331B	P1V-6/4450332B
P1V-A160D0300	1600	P1V-6/4450331D	P1V-6/4450332D
P1V-A160B0140	1600	P1V-6/4450331E	P1V-6/4450332E
P1V-A160B****	1600	P1V-6/4450331B	P1V-6/4450332B
P1V-A160H*****	1600	P1V-6/4450331B	P1V-6/4450332B
P1V-A160F*****	1600	P1V-6/4450331B	P1V-6/4450332B
P1V-A160G*****	1600	P1V-6/4450331B	P1V-6/4450332B
P1V-A160D*****	1600	P1V-6/4450331B	P1V-6/4450332B
P1V-A160E*****	1600	P1V-6/4450331B	P1V-6/4450332B
P1V-A320A0700	3200	P1V-6/4450341B	P1V-6/4450342B
P1V-A320D0300	3200	P1V-6/4450341D	P1V-6/4450342D
P1V-A320B0140	3200	P1V-6/4450341E	P1V-6/4450342E
P1V-A320B0060	3200	P1V-6/4450341B	P1V-6/4450342B
P1V-A320H*****	3200	P1V-6/4450341B	P1V-6/4450342B
P1V-A320F*****	3200	P1V-6/4450341B	P1V-6/4450342B
P1V-A320G*****	3200	P1V-6/4450341B	P1V-6/4450342B
P1V-A320D*****	3200	P1V-6/4450341B	P1V-6/4450342B
P1V-A320E*****	3200	P1V-6/4450341B	P1V-6/4450342B
P1V-A500A0600	5000	P1V-6/4450351B	P1V-6/4450352B
P1V-A500D0300	5000	P1V-6/4450351D	P1V-6/4450352D
P1V-A500B0145	5000	P1V-6/4450351E	P1V-6/4450352B
P1V-A500H*****	5000	P1V-6/4450351B	P1V-6/4450352B
P1V-A500F*****	5000	P1V-6/4450351B	P1V-6/4450352B
P1V-A500G*****	5000	P1V-6/4450351B	P1V-6/4450352B
P1V-A500D*****	5000	P1V-6/4450351B	P1V-6/4450352B
P1V-A500E*****	5000	P1V-6/4450351B	P1V-6/4450352B
P1V-A600A0700	6000	P1V-6/4450351B	P1V-6/4450352B
P1V-A600D0350	6000	P1V-6/4450351D	P1V-6/4450352D
P1V-A600B0160	6000	P1V-6/4450351E	P1V-6/4450352E
P1V-A900A0600	9000	P1V-6/440246C	-
P1V-AJ00A0600	18000	P1V-6/440246B	-

***** Rest of the air motor order code

For more information about our maintenance services, please contact your local parker sales office.