

Rotary actuators are an efficient and easy way to generate torque from compressed air, in a very compact size. They are ideal for the compact applications in a wide range of industries such as, packaging, process, electronics etc.

- Compact design
- Durable construction
- Long maintenance-free life
- High output torque/weight ratio
- Wide choice of torques available (up to 247 Nm)
- Range of mounting option, hydro-cushioning and position sensors



Operating information

Working pressure: Max 10 bar
 Permissible fluid: Filtered (<math><5\mu</math>) with or without lubrication
 Standard working temperature:
 PRN/PRO 3 to 20 -5°C to +80°C
 Other models -5°C to +60°C

Pre-lubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For technical information see CD

PRN miniature (fixed oscillating angle)

Single vane	Torque at 6 bar (N.m)	Oscillating reference point		90°	Oscillating angle	
		45°	90°		180°	270°
PRNA1S	0,16	X		PRNA1S-90-90	PRNA1S-180-90	
PRNA3S	0,38	X		PRNA3S-90-90	PRNA3S-180-90	
PRNA10S	1,20	X		PRNA10S-90-90	PRNA10S-180-90	
PRNA20S	2,10		X	PRNA20S-90-90	PRNA20S-180-90	
PRN30SE	4,10	X		PRN30SE-90-45	PRN30SE-180-45	PRN30SE-270-45
Double vane						
PRNA3D	0,65			PRNA3D-90-45		
PRNA10D	2,54			PRNA10D-90-45		
PRNA20D	4,70			PRNA20D-90-45		
PRN30DE	9,50			PRN30DE-90-45		

PRO (adjustable oscillating angle)

Single vane	Torque at 6bar (N.m)	Oscillating angle	Order code	Torque at 6bar (N.m)	Oscillating angle	Order code
	0,38	30 to 180°	PROA3S-0-90	0,65	30 to 90°	PROA3D-0-45
	1,20	30 to 180°	PROA10S-0-90	2,54	30 to 90°	PROA10D-0-45
	2,10	30 to 180°	PROA20S-0-90	4,70	30 to 90°	PROA20D-0-45
	4,10	30 to 270°	PRO30SE-0-45	9,50	30 to 90°	PRO30DE-0-45

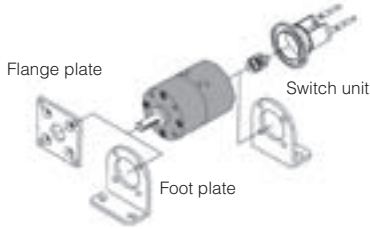
PRN high torque range (fixed oscillating angle)

Single vane	Torque at 6 bar (N.m)	Oscillating angle	
		90°	270°
PRN50SE	5,9	PRN50SE-90-45	PRN50SE-180-45 PRN50SE-270-45
PRN150SE	18,0	PRN150SE-90-45	PRN150SE-180-45 PRN150SE-270-45
PRN300SE	34,5	PRN300SE-90-45	PRN300SE-180-45 PRN300SE-270-45
PRN800SE	123,0	PRN800SE-90-45	PRN800SE-180-45 PRN800SE-270-45
Double vane (oscillating angle 45°)			
PRN50DE	12,8	PRN50DE-90-45	
PRN150DE	41,5	PRN150DE-90-45	
PRN300DE	83,0	PRN300DE-90-45	
PRN800DE	247,0	PRN800DE-90-45	

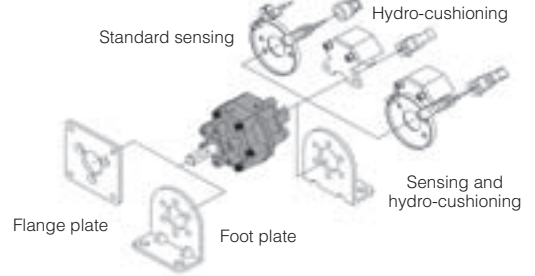
Indicates stocked product.

Design Variants

PRO and miniature PRN ranges



PRN high torque range



Hydro-cushion for PRN050 to PRN800 rotary actuators

Rotary actuator	Hydro-cushion	Claw for hydro-cushion - Oscillating angle		
		90°	180°	270°
PRN50S	CRN50	CRN50-90-45-T	CRN50-180-45-T	CRN50-270-45-T
PRN150S	CRN150	CRN150-90-45-T	CRN150-180-45-T	CRN150-270-45-T
PRN300S	CRN300	CRN300-90-45-T	CRN300-180-45-T	CRN300-270-45-T
PRN50D	CRN50	CRN50-90-45-T		
PRN150D	CRN150	CRN150-90-45-T		
PRN300D	CRN300	CRN300-90-45-T		

P1V-S is a range of air motors with all external components made of stainless steel, which means that they can be used in food grade applications, and in all other applications where there is a risk of corrosion.

- Power from 0,02 kW to 1,2 kW
- ATEX CE Ex approved from 0,12 kW to 1,2 kW
- Designed for arduous applications
- No-lube intermittent operation as standard
- 0,2 kW and 0,3 kW Brakemotors for higher safety



Operating information

Working pressure: Max 7 bar (max 6 bar in Ex area)
 Working temperature: -30° to +100° C (-20° to +40° C in Ex area)
 Fluid: Compressed air with ISO 8573-1 Quality class 3.4.3 (no-lube operation) and 3.-5 (lube operation)
 ATEX approval: CE Ex II 2 GD c IIC T6 (80°C)X
 CE Ex II 2 GD c IIC T5 (95°C)X

For ATEX specific products contact Sales Office

Note: All technical data is based on a working pressure of 6 bar in the inlet port

Reversible air motors

Keyed shaft, P1V-S002A series, 20 watt - (M5)

Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
0,02	1300	650	0,29	0,44	1,7	M5	3	P1V-S002A0130
0,02	950	475	0,40	0,60	1,7	M5	3	P1V-S002A0095

Keyed shaft, P1V-S008A series, 80 watt - (M8 x 0,75, 3 push in nippels for plastic pipes Ø6/4 mm supplied)

0,08	24000	12000	0,06	0,09	3,5	M8 x 0,75*	4	P1V-S008A0Q00
0,08	7000	3500	0,22	0,33	3,5	M8 x 0,75*	4	P1V-S008A0700
0,08	1900	950	0,80	1,20	3,5	M8 x 0,75*	4	P1V-S008A0190
0,08	1300	650	1,20	1,80	3,5	M8 x 0,75*	4	P1V-S008A0130

Keyed shaft, P1V-S012A series, 120 watt - (G1/8)

CE II2GD cIIC T6 (80°C) X

0,12	22000	11000	0,10	0,15	5,0	G1/8	6	P1V-S012A0N00
0,12	5500	2750	0,42	0,63	5,0	G1/8	6	P1V-S012A0550
0,12	3600	1800	0,64	0,95	5,0	G1/8	6	P1V-S012A0360
0,12	1400	700	1,64	2,40	5,0	G1/8	6	P1V-S012A0140
0,12	900	450	2,54	3,80	5,0	G1/8	6	P1V-S012A0090
0,12	600	300	3,82	5,00*	5,0	G1/8	6	P1V-S012A0060
0,12	100	50	5,00*	5,00*	5,0	G1/8	6	P1V-S012A0010

Threaded shaft, P1V-S012D series, 120 watt - (G1/8)

CE II2GD cIIC T6 (80°C) X

0,12	22000	11000	0,10	0,15	5,0	G1/8	6	P1V-S012D0N00
0,12	5500	2750	0,42	0,63	5,0	G1/8	6	P1V-S012D0550
0,12	3600	1800	0,64	0,95	5,0	G1/8	6	P1V-S012D0360
0,12	1400	700	1,64	2,40	5,0	G1/8	6	P1V-S012D0140
0,12	900	450	2,54	3,80	5,0	G1/8	6	P1V-S012D0090
0,12	600	300	3,82	5,00*	5,0	G1/8	6	P1V-S012D0060
0,12	100	50	5,00*	5,00*	5,0	G1/8	6	P1V-S012D0010

Keyed shaft, P1V-S020A series, 200 watt - (G1/8)

CE II2GD cIIC T6 (80°C) X

0,20	14500	7250	0,26	0,40	6,3	G1/8	10	P1V-S020A0E50
0,20	4600	2300	0,80	1,20	6,3	G1/8	10	P1V-S020A0460
0,20	2400	1200	1,60	2,40	6,3	G1/8	10	P1V-S020A0240
0,20	1400	700	2,70	4,10	6,3	G1/8	10	P1V-S020A0140
0,20	700	350	5,40	8,20	6,3	G1/8	10	P1V-S020A0070
0,20	350	160	12,00	18,00	6,3	G1/8	10	P1V-S020A0035
0,10	180	90	10,50	15,00	6,3	G1/8	10	P1V-S020A0018
0,20	110	55	33,00	49,50	6,3	G1/8	10	P1V-S020A0011
0,20	60	30	72,00	108,00*	6,3	G1/8	10	P1V-S020A0006
0,18	50	25	20,00*	20,00*	6,3	G1/8	10	P1V-S020A0005
0,18	20	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020A0002
0,18	10	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020A0001
0,20	5	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020A00005

Indicates stocked product.

* Max allowed torque

Reversible air motors

Threaded shaft, P1V-S020D series, 200 watt - (G1/8)

CE II2GD cIIc T6 (80°C) X

Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
0,20	14500	7250	0,26	0,40	6.3	G1/8	10	P1V-S020D0E50
0,20	4600	2300	0,80	1,20	6.3	G1/8	10	P1V-S020D0460
0,20	2400	1200	1,60	2,40	6.3	G1/8	10	P1V-S020D0240
0,20	1400	700	2,70	4,10	6.3	G1/8	10	P1V-S020D0140
0,20	700	350	5,40	8,20	6.3	G1/8	10	P1V-S020D0070
0,20	350	160	12,00	18,00	6.3	G1/8	10	P1V-S020D0035
0,10	180	90	10,50	15,00	4.5	G1/8	10	P1V-S020D0018
0,20	50	25	20,00*	20,00*	6.3	G1/8	10	P1V-S020D0005

Keyed shaft, P1V-S030A series, 300 watt - (G1/4)

CE II2GD cIIc T6 (80°C) X

0,30	14500	7250	0,40	0,60	8.0	G1/4	10	P1V-S030A0E50
0,30	4600	2300	1,20	1,90	8.0	G1/4	10	P1V-S030A0460
0,30	2400	1200	2,40	3,60	8.0	G1/4	10	P1V-S030A0240
0,30	1400	700	4,10	6,10	8.0	G1/4	10	P1V-S030A0140
0,30	600	300	9,60	14,30	8.0	G1/4	10	P1V-S030A0060
0,30	280	140	20,50	26,00	8.0	G1/4	10	P1V-S030A0028
0,30	230	115	24,00	36,00	8.0	G1/4	10	P1V-S030A0023
0,13	180	90	13,80	21,00	4.7	G1/8	10	P1V-S030A0018
0,30	100	50	57,00	85,50	8.0	G1/4	10	P1V-S030A0010
0,30	50	25	36,00*	36,00*	8.0	G1/4	10	P1V-S030A0005

Threaded shaft, P1V-S030D series, 300 watt - (G1/4)

CE II2GD cIIc T6 (80°C) X

0,30	14500	7250	0,40	0,60	8.0	G1/4	10	P1V-S030D0E50
0,30	4600	2300	1,20	1,90	8.0	G1/4	10	P1V-S030D0460
0,30	2400	1200	2,40	3,60	8.0	G1/4	10	P1V-S030D0240
0,30	1400	700	4,10	6,10	8.0	G1/4	10	P1V-S030D0140
0,30	600	300	9,60	14,30	8.0	G1/4	10	P1V-S030D0060
0,30	280	140	20,50	26,00	8.0	G1/4	10	P1V-S030D0028
0,13	180	90	13,80	21,00	4.7	G1/8	10	P1V-S030D0018
0,30	50	25	36,00*	36,00*	8.0	G1/4	10	P1V-S030D0005

Keyed shaft, P1V-S060A series, 600 watt - (G3/8)

CE II2GD cIIc T6 (80°C) X


0,60	14000	7000	0,82	1,23	14.5	G3/8	12	P1V-S060A0E00
0,60	4000	2000	2,90	4,30	14.5	G3/8	12	P1V-S060A0400
0,60	2700	1350	4,20	6,40	14.5	G3/8	12	P1V-S060A0270
0,60	1700	850	6,70	10,10	14.5	G3/8	12	P1V-S060A0170
0,60	720	360	15,90	24,00	14.5	G3/8	12	P1V-S060A0072
0,60	480	240	23,90	36,00	14.5	G3/8	12	P1V-S060A0048
0,60	300	150	38,20	57,00	14.5	G3/8	12	P1V-S060A0030
0,30	100	50	60,00*	60,00*	14.5	G3/8	12	P1V-S060A0010

Keyed shaft, P1V-S120A series, 1200 watt - (G3/4)

CE II2GD cIIc T5 (95°C) X

1,20	8000	4000	2,90	4,30	27,0	G3/4	19	P1V-S120A0800
1,20	2700	1350	8,50	12,70	27,0	G3/4	19	P1V-S120A0270
1,20	1100	550	21,00	31,00	27,0	G3/4	19	P1V-S120A0110
1,20	780	390	29,40	44,00	27,0	G3/4	19	P1V-S120A0078
1,20	320	160	71,60	107,00	27,0	G3/4	19	P1V-S120A0032
1,20	200	100	66,90	110,00*	19,0	G3/4	19	P1V-S120A0012

* Max allowed torque

 Indicates stocked product.

Brake motors

The integrated brake is a spring-loaded disk brake, which is released at a minimum air pressure of 5 bar. The brake is applied in the absence of pressure.

The technology and the size of air motors with integrated running and stationary brake make them ideal for applications requiring repeated precise positioning.

The motor can also be kept stationary in a specific position, and the stopping time for a rotating weight can be shortened significantly. Another typical application for brake motors is when the output shaft needs to be held in one position when the motor stops delivering torque.

The brake can handle more than 1500 braking operations per hour at maximum braking torque.

Note!

Brake motors must only ever be supplied with unlubricated air, otherwise there is a risk of oil from the supply air getting into the brake unit, resulting in poor brake performance or no braking effect.

Please check the allowed maximum torque applied on the motor from the load in the technical catalogue

Brake motors with keyed shaft, P1V-S020AD series, 200 watt - (G1/8)

Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
0,20	14500	7250	0,26	0,40	6,3	G1/8	10	P1V-S020ADE50
0,20	4600	2300	0,80	1,20	6,3	G1/8	10	P1V-S020AD460
0,20	2400	1200	1,60	2,40	6,3	G1/8	10	P1V-S020AD240
0,20	1400	700	2,70	4,10	6,3	G1/8	10	P1V-S020AD140
0,20	700	350	5,40	8,20	6,3	G1/8	10	P1V-S020AD070
0,20	350	160	12,00	18,00	6,3	G1/8	10	P1V-S020AD035
0,10	180	90	10,50	15,00	4,5	G1/8	10	P1V-S020AD018
0,20	110	55	33,00	49,50	6,3	G1/8	10	P1V-S020AD011
0,20	60	30	72,00	108,00*	6,3	G1/8	10	P1V-S020AD006
0,18	50	25	20,00*	20,00*	6,3	G1/8	10	P1V-S020AD005
0,18	20	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020AD002
0,18	10	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020AD005
0,18	5	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020AD0005


Brake motors with keyed shaft, P1V-S030AD series, 300 watt - (G1/4)

0,30	14500	7250	0,40	0,60	8,0	G1/4	10	P1V-S030ADE50
0,30	4600	2300	1,20	1,90	8,0	G1/4	10	P1V-S030AD460
0,30	2400	1200	2,40	3,60	8,0	G1/4	10	P1V-S030AD240
0,30	1400	700	4,10	6,10	8,0	G1/4	10	P1V-S030AD140
0,30	600	300	9,60	14,30	8,0	G1/4	10	P1V-S030AD060
0,30	280	140	20,50	26,00	8,0	G1/4	10	P1V-S030AD028
0,30	230	115	24,00	36,00	8,0	G1/4	10	P1V-S030AD023
0,30	100	50	57,00	85,50	8,0	G1/4	10	P1V-S030AD010
0,30	50	25	36,00*	36,00*	8,0	G1/4	10	P1V-S030AD005


* Max allowed torque

P1V-S Accessories

Flange

	For air motor	For drilling motor	Order code
	P1V-S002		P1V-S4002B
	P1V-S008	P1V-S008	P1V-S4008B
	P1V-S012		P1V-S4012B
	P1V-S020	P1V-S025	P1V-S4020B
	P1V-S030	P1V-S040	P1V-S4030B
	P1V-S060		P1V-S4060B
	P1V-S120		P1V-S4120B

Foot

	For air motor	For drilling motor	Order code
	P1V-S008	P1V-S008	P1V-S4008F
	P1V-S012		P1V-S4012F
	P1V-S020	P1V-S025	P1V-S4020F
	P1V-S030	P1V-S040	P1V-S4030F
	P1V-S020A0011		P1V-S4020C
	P1V-S020A0006		P1V-S4020C
	P1V-S020A0023		P1V-S4020C
	P1V-S020A0010		P1V-S4020C
	P1V-S060		P1V-S4060F
	P1V-S120		P1V-S4120F

Design Variants

A large number of drilling motors, milling motors and grinding motors have been developed using the P1V-S as the base motor in order to make it easier to install air motors in machining applications.

NB: These motors must be supplied with lubricated air



Operating information

Working pressure:	Max 7 bar
Working temperature:	-30°C to +100°C
Medium:	40 µm filtered oil mist (unlubricated for grinding motor P1V-S009)

For technical information see CD

P1V-A is a range of reversible air motors intended for heavy and demanding applications. The motor housings are made from painted cast iron, and the components sealed to permit operation in damp and dirty environments.

The simple construction of the motors makes them very reliable, with long service life and they are easy to service.



- Designed for arduous applications.
- Wide range of optional gears
- Wide speed and torque range
1.6kW, 2.6kW, 3.6kW

Operating information

Working Pressure: Max 7 bar
 Working Temperature: -30 °C to +100 °C
 Medium: 40 µm with or without oil mist

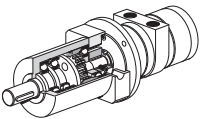
Note: All technical detail based on 6 bar inlet

Basic motor with keyed shaft

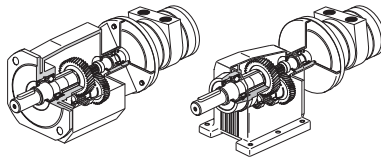
Max power kW	Free speed* r/min	Speed at max power r/min	Torque at at max power Nm	Min start torque Nm	Air consumption at max power l/s	Conct.	Min pipe ID Inlet/ Outlet mm	Order code
Series P1V-A160								
1,6	9000	4500	3,3	5	32	G1/2	19/19	P1V-A160A0900
Series P1V-A260								
2,6	7000	3500	7,1	11	60	G3/4	19/25	P1V-A260A0700
Series P1V-A360								
3,6	6000	3000	11,5	17	80	G1	22/32	P1V-A360A0600

* Idling speed

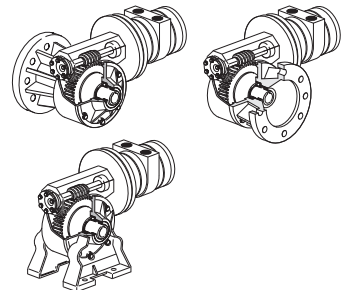
Planetary gear



Helical gear



Worm gear



Planetary gear: torque 15 - 160 Nm, speed 900 - 90 r/min at max output

Helical gear: torque 23 - 1800 Nm, speed 625 - 18 r/min at max output

Worm gear: torque 38 - 670 Nm, speed 350 - 37 r/min at max output