Drive and stirring technology for

PHARMA | FOOD | COSMETICS | CHEMICALS | AUTOMATION

Pneumatic Motor
PMO BASIC / PMO ATEX / IP 67

Radial piston motor
Five performance variants
Housing & flange: anodized aluminum
Compressed air supply 2–6 bar | 30-90 PSI
Rotational speed 0–300 rpm, reversible
Noise level < 75 dB
Oil- and silicone-free

Various drive shaft options (p. 2)
Various flange options (p. 3-6)
Various connection options (p. 7-8)
Three different optional gearboxes (p. 9)
Various shaft seal options (p. 10)
Optional rotational speed sensor (p. 10)
Optional ATEX certificate (p. 10):
Ex II 2 G Ex h IIC T5 Gb X
Ex II 2 D Ex h IIIC T100°C Db X

Charts for air consumption, torque, power output (p. 11 - 13)

PERFORMANCE VARIANTS

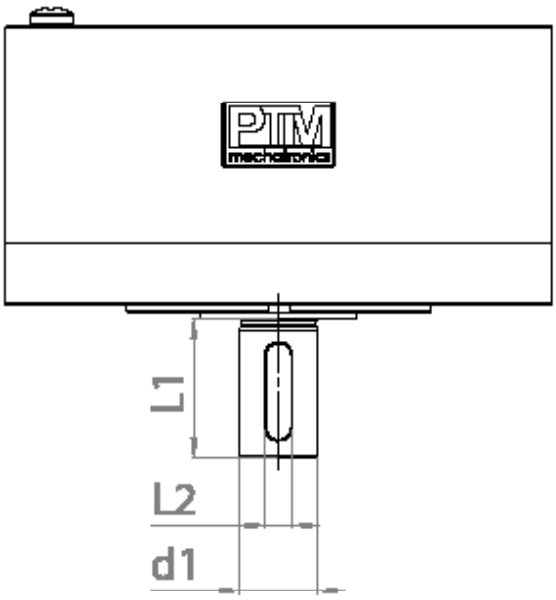
	PMO 0450	PMO 0900	PMO 1800	PMO 3600	PMO 7200
Art. No. PMO	PTM1001	PTM1002	PTM1003	PTM1004	PTM1005
Starting torque*	35 lbf in | 4 Nm	71 lbf in | 8 Nm	142 lbf in | 16 Nm	283 lbf in | 32 Nm	566 lbf in | 64 Nm
Max. axial load**	45 lbf | 200 N	45 lbf | 200 N	67 lbf | 300 N	67 lbf | 300 N	67 lbf | 300 N
Radial dyn. C**	169 lbf | 750 N	169 lbf | 750 N	225 lbf | 1000 N	225 lbf | 1000 N	225 lbf | 1000 N
Radial stat. Co**	90 lbf | 400 N	90 lbf | 400 N	135 lbf | 600 N	135 lbf | 600 N	135 lbf | 600 N
Max. permitted tilt torque	44 lbf in | 5 Nm	44 lbf in | 5 Nm	89 lbf in | 10 Nm	89 lbf in | 10 Nm	89 lbf in | 10 Nm
Weight*	2.4 lbs | 1.1 kg	2.9 lbs | 1.3 kg	7.5 lbs | 3.4 kg	8.8 lbs | 4 kg	17.4 lbs | 7.9 kg
Max. power*	0.08 HP | 60 W	0.16 HP | 120 W	0.23 HP | 170 W	0.31 HP | 230 W	0.62 HP | 460 W

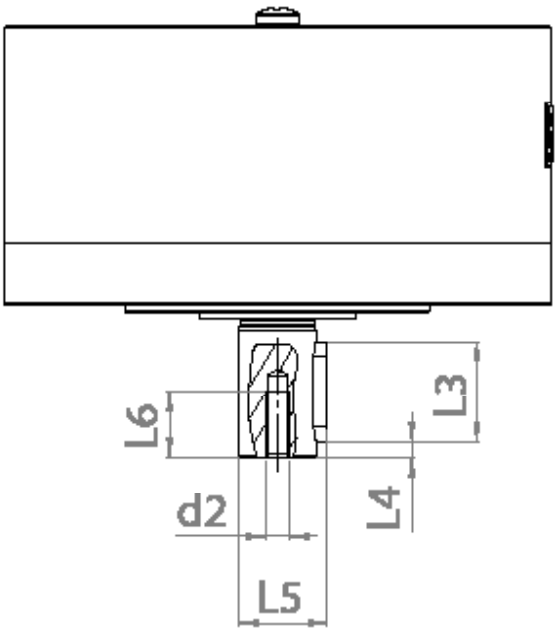
* Motor without gearbox.
** Valid only for standard flange, mounting flange, and mounting bracket.

WE GENERATE MOVEMENT IN SPECIAL ENVIRONMENTS.

DRIVE SHAFTS

Drive shafts for PMO 0450/0900	Art. No.		Drive shafts for PMO 1800/3600/7200	Art. No.	
	BASIC/ ATEX	IP 67		BASIC/ ATEX	IP 67
Drive shaft Ø 0.55in | 14mm smooth (with thread M4)	PTM1205	PTM1208	Drive shaft Ø 0.75in | 19mm smooth (with thread M6)	PTM1202	PTM1211
Drive shaft Ø 0.75in | 19mm smooth (with thread M4)	PTM1301	PTM1313	Drive shaft Ø 0.94in | 24mm smooth (mit Innengewinde M6)	PTM1307	PTM1319
Drive shaft Ø 0.94in | 24mm smooth (with thread M4)	PTM1302	PTM1314	Drive shaft Ø 1.26in | 32mm smooth (with thread M6)	PTM1308	PTM1320
Drive shaft Ø 0.55in | 14mm with key	PTM1303	PTM1315	Drive shaft Ø 0.75in | 19mm with key	PTM1309	PTM1321
Drive shaft Ø 0.75in | 19mm with key	PTM1304	PTM1316	Drive shaft Ø 0.94in | 24mm with key	PTM1310	PTM1322
Drive shaft Ø 0.94in | 24mm with key	PTM1305	PTM1317	Drive shaft Ø 1.26in | 32mm with key	PTM1311	PTM1323
Threaded shaft M12		PTM8503	Threaded shaft M16		PTM9151
Special shaft max. Ø 1.18in | 30mm (for bearing flange max. Ø 1.1in | 28mm)	PTM1306	PTM1318	Special shaft max. Ø 1.38in | 35mm (for bearing flange max. Ø 1.18 in | 30mm)	PTM1312	PTM1324



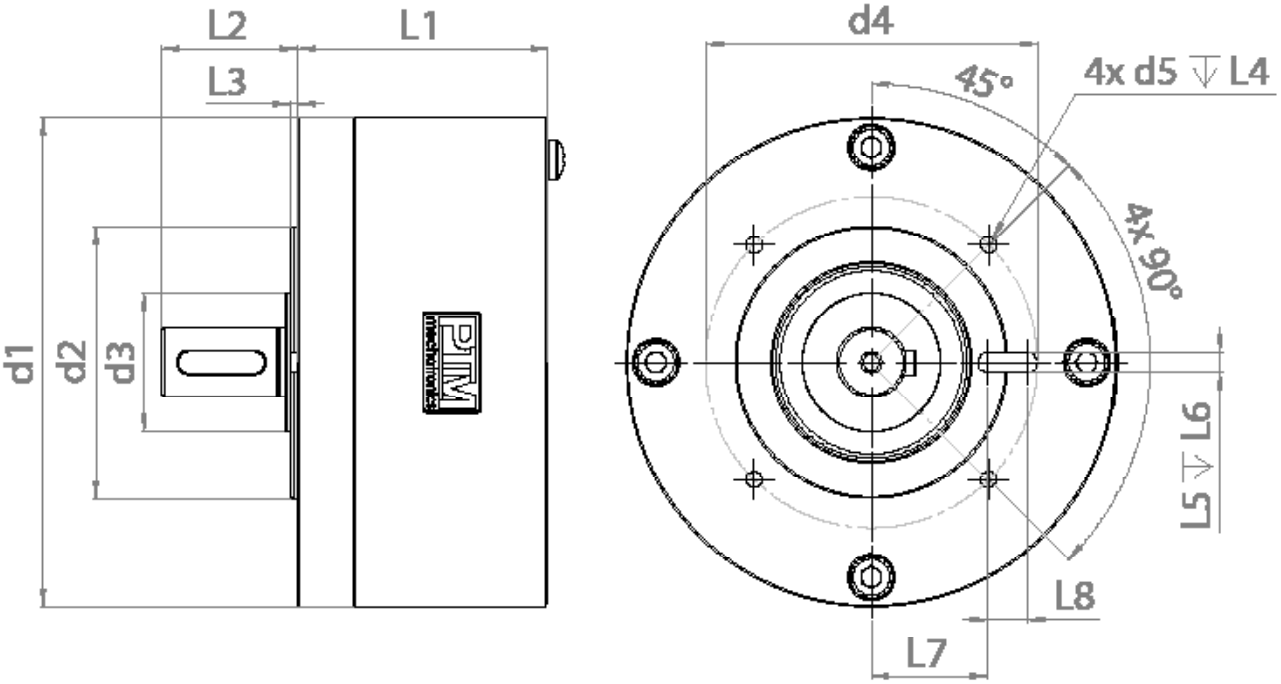


	PMO 0450/0900			PMO 1800/3600/7200		
Ø d1	0.55 | 14 h6	0.75 | 19 h6	0.94 | 24 h6	0.75 | 19 h6	0.94 | 24 h6	1.26 | 32 h6
L1	0.98 | 25			1.57 | 40		
L2	0.2 | 5 n9	0.24 | 6 n9	0.31 | 8 n9	0.24 | 6 n9	0.31 | 8 n9	0.39 | 10 n9
L3	0.71 | 18	0.87 | 22	0.87 | 22	1.1 | 28	1.42 | 36	1.42 | 36
L4	0.12 | 3	0.03 | 0.75	0.03 | 0.75	0.2 | 5	0.08 | 2	0.08 | 2
L5	0.63 | 16	0.85 | 21.5	1.06 | 27	0.85 | 21.5	1.06 | 27	1.38 | 35
L6	0.47 | 12			0.71 | 18		
Ø d2	M4			M6		

All dimensions in inch | mm.

FLANGE OPTIONS - STANDARD FLANGE

PMO	0450/0900	1800/3600/7200
Article no. Standard flange	PTM1807	PTM9200

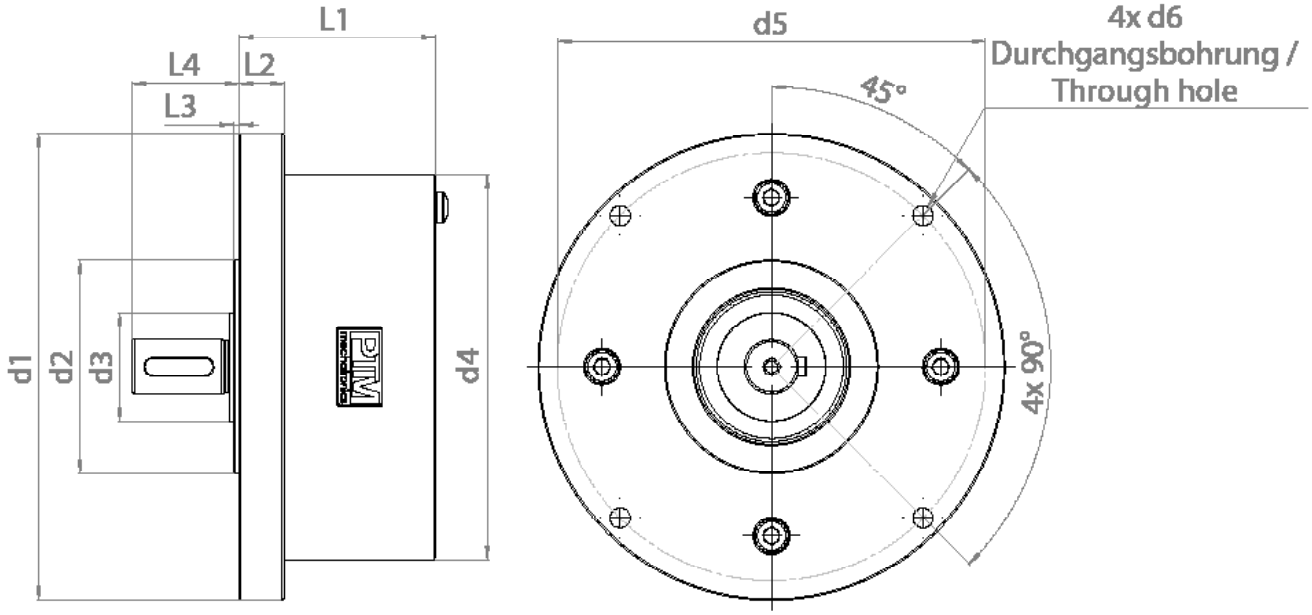


	PMO 0450	PMO 0900	PMO 1800	PMO 3600	PMO 7200
L1	1.99 | 50.5	2.56 | 65	2.66 | 67.5	3.52 | 89.5	5.93 | 150.5
L2	1.08 | 27.5		1.71 | 43.5		
L3	0.06 | 1.5		0.1 | 2.5		
Ø d1	3.9 | 99		6.26 | 159		
Ø d2	2.17 | 55 h6		3.74 | 95 h6		
Ø d3	1.1 | 28		1.38 | 35		
Ø d4	2.64 | 67		4.53 | 115		
Ø d5 depth L4	M4 depth 0.35 | 9		M6 depth 0.41 | 10.5		
L5 depth L6	0.16 | 4 P9 depth 0.16 | 4		0.2 | 5 P9 depth 0.2 | 5		
L7	0.93 | 23.5		1.69 | 43		
L8	0.31 | 8		0.35 | 9		

All dimensions in inch | mm.

FLANGE OPTIONS - MOUNTING FLANGE

PMO	0450/0900	1800/3600/7200
Article no. Mounting flange	PTM1801	PTM1804



	PMO 0450	PMO 0900	PMO 1800	PMO 3600	PMO 7200
L1	1.99 | 50.5	2.56 | 65	2.66 | 67.5	3.52 | 89.5	5.93 | 150.5
L2	0.45 | 11.5		0.49 | 12.5		
L3	0.06 | 1.5		0.1 | 2.5		
L4	1.08 | 27.5		1.71 | 43.5		
Ø d1	4.72 | 120		7.83 | 199		
Ø d2	2.17 | 55 h6		3.74 | 95 h6		
Ø d3	1.1 | 28		1.38 | 35		
Ø d4	3.9 | 99		6.26 | 159		
Ø d5	4.33 | 110		7.09 | 180		
Ø d6	0.2 | 5.2		0.32 | 8.2		

All dimensions in inch | mm.

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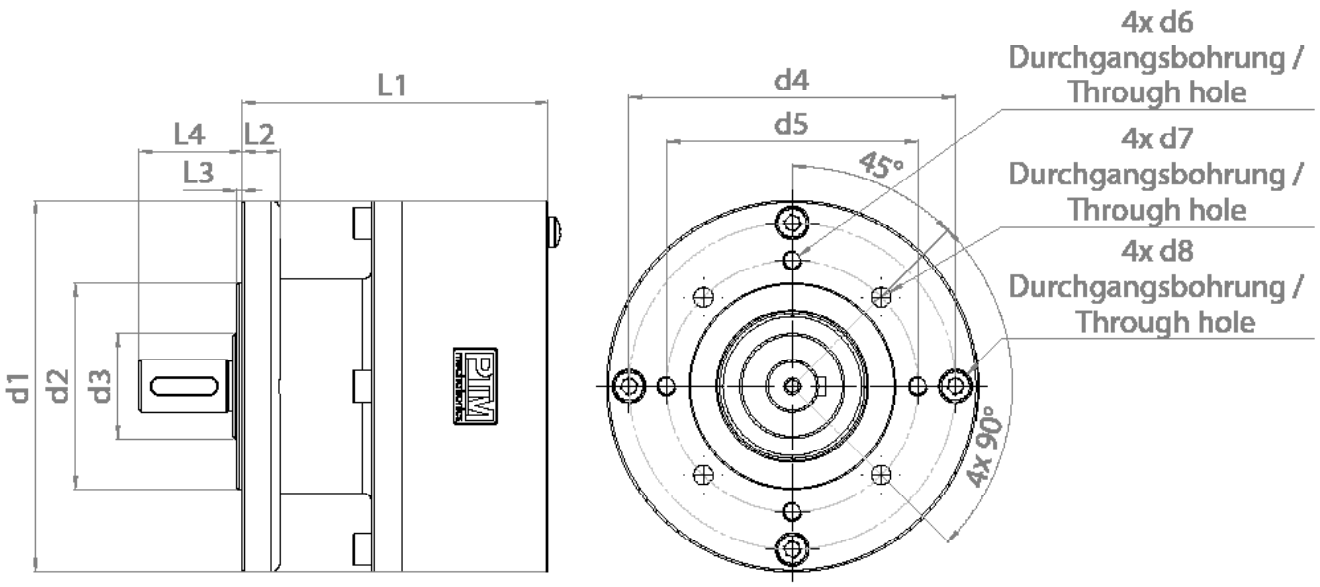
FLANGE OPTIONS - BEARING FLANGE

PMO	0450/0900	1800/3600/7200
Article no. Bearing flange	PTM1803	PTM1806
Max. axial load	141 lbf | 625 N	281 lbf | 1250 N
Radial stat. Co	281 lbf | 1250	562 lbf | 2500 N
Radial dyn. C	472 lbf | 2100 N	787 lbf | 3500 N
Max. permitted tilt torque	44 lbf in | 5 Nm	89 lbf in | 10 Nm

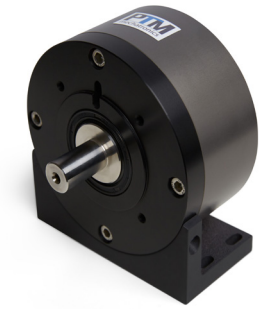


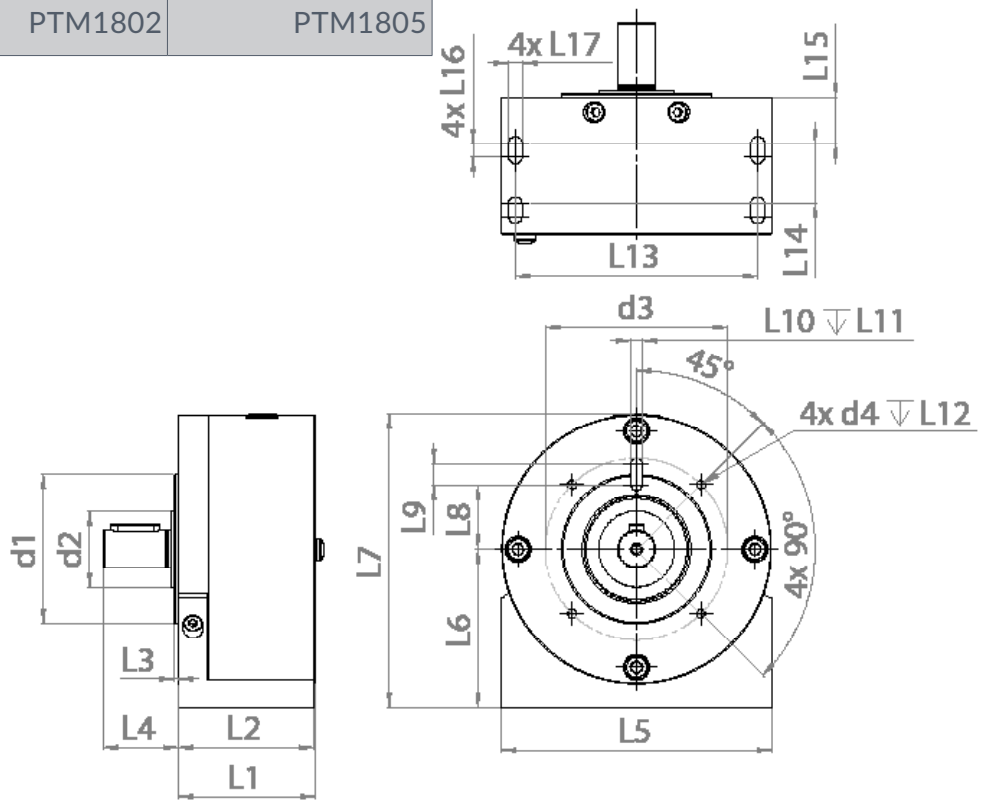
	PMO 0450	PMO 0900	PMO 1800	PMO 3600	PMO 7200
L1	3.21 | 81.5	3.78 | 96	4.15 | 105.5	5.02 | 127.5	7.42 | 188.5
L2	0.39 | 10		0.31 | 8		
L3	0.06 | 1.5		0.1 | 2.5		
L4	1.08 | 27.5		1.71 | 43.5		
Ø d1	3.9 | 99		6.26 | 159		
Ø d2	2.17 | 55 h6		3.74 | 95 h6		
Ø d3	1.1 | 28		1.38 | 35		
Ø d4	3.43 | 87		-		
Ø d5	2.64 | 67		4.53 | 115		
Ø d6	M5		M8		
Ø d7	0.2 | 5.2		0.32 | 8.2		
Ø d8	0.35 | 9		-		

All dimensions in inch | mm.

FLANGE OPTIONS - MOUNTING BRACKET

PMO	0450/0900	1800/3600/7200
Article no. Mounting bracket	PTM1802	PTM1805



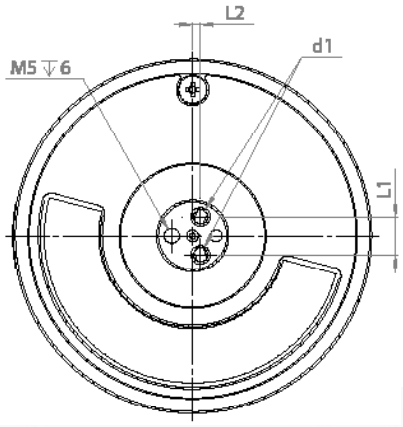


	PMO 0450	PMO 0900	PMO 1800	PMO 3600	PMO 7200
L1	1.99 | 50.5	2.56 | 65	2.66 | 67.5	3.52 | 89.5	5.93 | 150.5
L2	1.97 | 50		2.64 | 67		
L3	0.06 | 1.5		0.1 | 2.5		
L4	1.08 | 27.5		1.71 | 43.5		
Ø d1	2.17 | 55 h6		3.74 | 95 h6		
Ø d2	1.1 | 28		1.38 | 35		
L5	3.9 | 99		6.26 | 159		
L6	2.28 | 58		3.54 | 90		
L7	4.25 | 108		6.69 | 170		
L8	0.93 | 23.5		1.69 | 43		
L9	0.31 | 8		0.35 | 9		
L10 depth L11	0.16 | 4 P9 depth 0.16 | 4		0.2 | 5 P9 depth 0.2 | 5		
Ø d3	2.64 | 67		4.53 | 115		
Ø d4 depth L12	M4 depth 0.35 | 9		M6 depth 0.41 | 10.5		
L13	3.5 | 89		5.51 | 140		
L14	0.87 | 22		1.26 | 32		
L15	0.67 | 17		0.77 | 19.5		
L16	0.2 | 5		0.31 | 8		
L17	0.2 | 5		0.28 | 7		

All dimensions in inch | mm.

CONNECTION OPTIONS - PUSH-IN FITTING

Standard

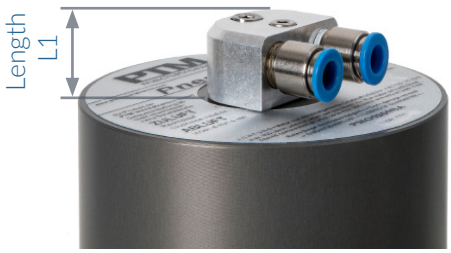


PMO	0450/0900	1800/3600/7200
Article no. Push-in fitting	Included as standard	Included as standard
L1	0.42 | 10.6	0.6 | 15.3
L2	0.09 | 2.2	0.13 | 3.2
Ø d1*	M6x0.75 depth 0.31 | 8	R1/8 depth 0.35 | 9
Standard push-in fitting*	Pipe diameter 0.24 | 6	Pipe diameter 0.31 | 8

All dimensions in inch | mm.

* The two bores d1 are used for the connection of the compressed air and exhaust air and can be alternately connected for clockwise or counterclockwise rotation.
The housing ventilation must be able to escape freely and without resistance (M5, depth 6). For motors operated in humid environments or under water, the exhaust air must be routed through a pipe out of the moisture area to prevent water from entering the housing.
The exhaust air must be able to escape freely and without resistance. An undersized silencer may cause back pressure in the housing.

CONNECTION OPTIONS - 90° ADAPTER



Example figure

PMO	0450/0900	1800/3600/7200
Article no. 90° Adapter	PTM1838	PTM1835
Push-in fitting*	Pipe diameter 0.24 | 6	Pipe diameter 0.31 | 8
Length L1**	0.69 | 17.5	1.2 | 30.5

All dimensions in inch | mm.

* The two push-in fittings mounted on the 90° adapter are used for the connection of the compressed air and exhaust air and can be alternately connected for clockwise or counterclockwise rotation.
The housing ventilation must be able to escape freely and without resistance (preassembled silencer). For motors operated in humid environments or under water, the exhaust air must be routed through a pipe out of the moisture area to prevent water from entering the housing.
The exhaust air must be able to escape freely and without resistance. An undersized silencer may cause back pressure in the housing.
** Dimension increase due to the 90° adapter installed on the selected motor variant.

CONNECTION OPTIONS - PNEUMATIC ORIFICE

Speed limitation for overload protection

Example figure

PMO	Article no. Pneumatic orifice
0450/0900*	PTM1840
1800/3600/7200*	PTM1843

* The pneumatic orifice is to be installed in the supply air connection only.

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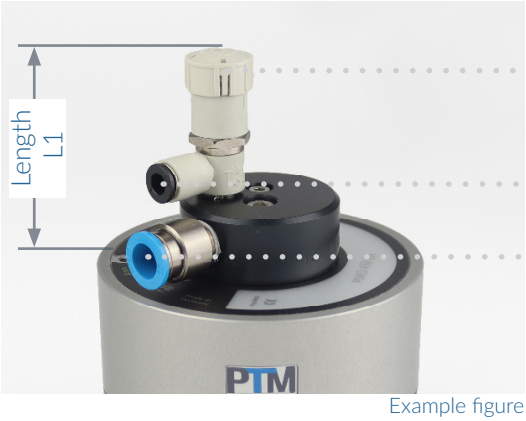
CONNECTION OPTIONS - CONNECTION BLOCK

The connection block 2.19 ensures durable and reliable operation of your motor. It regulates the air pressure and maintains the motor performance within the proper speed range.

Supply and exhaust air lines are neatly arranged and easy to connect.



Throttle valve for speed adjustment

Push-in connector for compressed air connection

Push-in connector for exhaust air

Example figure

PMO	0450/0900	1800/3600
Compressed air pipe diameter	0.24 | 6	0.31 | 8
Exhaust air pipe diameter	0.39 | 10	0.47 | 12
Length L1* (Standard connection block)	1.87 | 47.5	2.09 | 53
Length L1* (Flat connection block)	0.91 | 23	1.12 | 28.5

All dimensions in inch | mm.

* Dimension increase due to the connection block installed on the selected motor variant. For connection block variants, see the table below.

Variant connection block	PMO			
	Article no. for 0450	Artivle no. for 0900	Article no. for 1800	Article no. for 3600
Standard (CW**)	PTM5831	PTM5832	PTM5833	PTM5834
Standard (CCW**)	PTM5831-1	PTM5832-1	PTM5833-1	PTM5834-1
Flat*** (CW**)	PTM5831-2	PTM5832-2	PTM5833-2	PTM5834-2
Without TV****	PTM5831-3	PTM5832-3	PTM5833-3	PTM5834-3
Flat*** (CCW**)	PTM5831-4	PTM5832-4	PTM5833-4	PTM5834-4
For condensation protection	PTM5831-6	PTM5832-6	PTM5833-7	PTM5834-6

For motors operated in humid environments or under water, the exhaust air must be routed through a pipe out of the moisture area to prevent water from entering the housing.

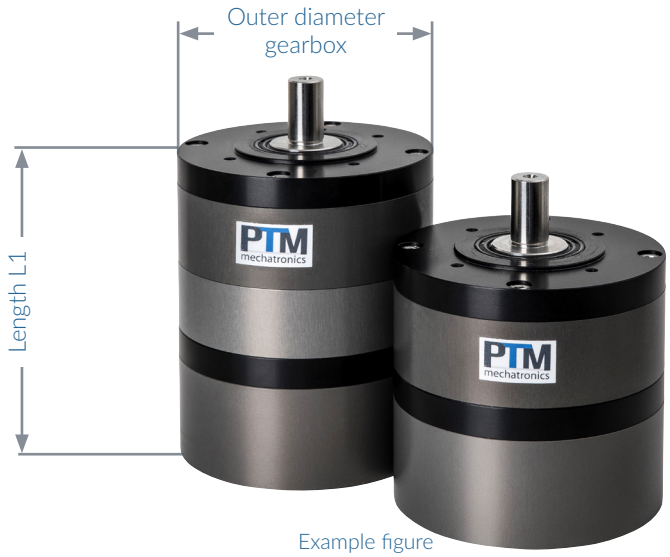
The exhaust air must be able to escape freely and without resistance. An undersized silencer may cause back pressure in the housing.

** CW = clockwise. The direction of rotation of the motor is defined when viewed from above the connection block/throttle valve - CCW = counterclockwise.

*** 'Flat' indicates that the compressed air connection is positioned on the lateral cylindrical surface of the connection block rather than on the flat surface shown above.

**** Without TV = Without throttle valve. Instead of the throttle valve, a standard push-in fitting for the compressed air connection is installed.

GEARBOXES



Example figure

PMO	0450/0900			1800/3600/7200		
Gearbox	3:1	9:1	1:2	3:1	9:1 *	1:2
Art. no.	PTM5039	PTM5040	PTM5041	PTM5042	PTM5043	PTM5044

* Only for 1800 & 3600, not for 7200.

PMO	0450			0900			1800			3600			7200	
Gearbox	3:1	9:1	1:2	3:1	9:1	1:2	3:1	9:1	1:2	3:1	9:1	1:2	3:1	1:2
Outer Ø gearbox [in | mm]	3.9 99	3.9 99	3.9 99	3.9 99	3.9 99	3.9 99	6.26 159	6.26 159	6.26 159	6.26 159	6.26 159	6.26 159	6.26 159	6.26 159
Length L1 [in | mm]** (with standard flange, mounting flange, mounting bracket)	3.64 92.5	4.67 118.5	3.64 92.5	4.21 107	5.24 133	4.21 107	4.63 117.5	5.87 149	4.63 117.5	5.49 139.5	6.73 171	5.49 139.5	7.89 200.5	7.89 200.5
Length L1 [in | mm]** (with bearing flange)	4.86 123.5	5.89 149.5	4.86 123.5	5.43 138	6.46 164	5.43 138	6.12 155.5	7.36 187	6.12 155.5	6.99 177.5	8.23 209	6.99 177.5	9.39 238.5	9.39 238.5
Max. rot. speed [1/min] +/-10%	100	25	600	100	25	600	100	25	600	100	25	600	100	600
Starting torque [lbf in | Nm]	106 12	319 36	18 2	212 24	637 72	35 4	425 48	1275 144	71 8	850 96	2549 288	142 16	1699 192	283 32
Max. axial load [lbf | N]	45 200	45 200	15 67.5	45 200	45 200	15 67.5	67 300	67 300	67 300	67 300	67 300	67 300	67 300	67 300
Radial dyn. C [lbf | N]	170 750	170 750	112 500	170 750	170 750	112 500	225 1000	225 1000	225 1000	225 1000	225 1000	225 1000	225 1000	225 1000
Radial stat. Co [lbf | N]	90 400	90 400	56 250	90 400	90 400	56 250	135 600	135 600	135 600	135 600	135 600	135 600	135 600	135 600
Max. permitted tilt torque [lbf in | Nm]	45 5	45 5	45 5	45 5	45 5	45 5	89 10	89 10	89 10	89 10	89 10	89 10	89 10	89 10
Max. power [HP | W]	0.08 60	0.08 60	0.08 60	0.16 120	0.16 120	0.16 120	0.23 170	0.23 170	0.23 170	0.31 230	0.31 230	0.31 230	0.62 460	0.62 460

** Total length of the motor including gearbox and selected flange option.

SHAFT SEALS
(for all flange options)

Shaft seals for PMO 0450/0900	Art. no.
Shaft seal NBR (silicon-free)	PTM8020
Shaft seal PTFE + KOHLE (acetone-resistant & silicon-free)	PTM8021
Shaft seal FKM (Viton, silicon-free)	PTM8022
Shaft seal EPDM FDA	PTM4367

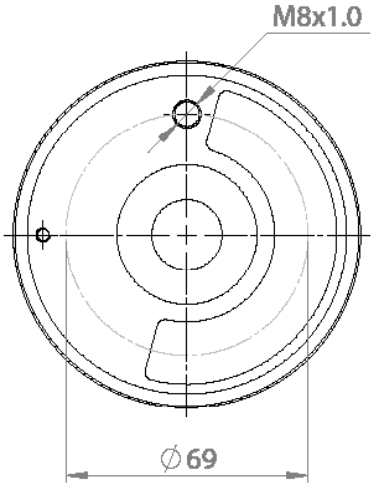
Shaft seals for PMO 1800/3600/7200	Art. no.
Shaft seal NBR (silicon-free)	PTM8030
Shaft seal PTFE (acetone-resistant & silicon-free)	PTM8031
Shaft seal FKM (Viton, silicon-free)	PTM8032
Shaft seal FDA	PTM1389

ROTATIONAL SPEED SENSOR

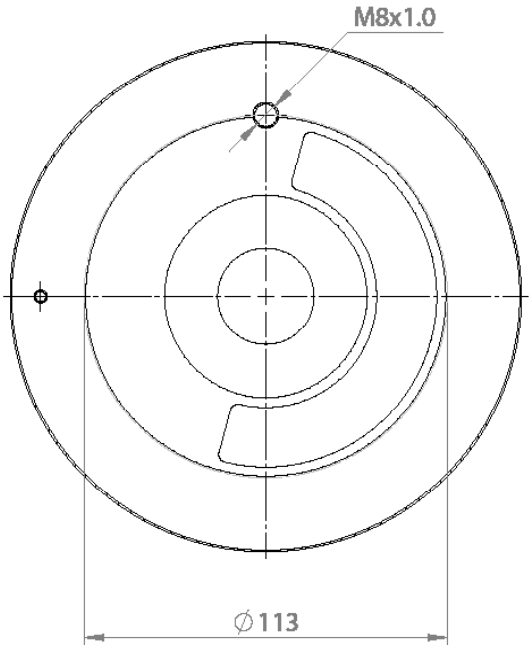
Rotational speed sensor for all models of the PMO series	Art. no.
Motor housing with provision for speed sensor (M8x1 bore including mounted sealing plug for subsequent sensor installation)	PTM5807
Speed sensor with 2-wire plug connector*	PTM5802
Speed sensor with 3-wire plug connector*	PTM5806

* For more information on the rotational speed sensor, see the sensor data sheet.

PMO 0450 & PMO 0900



PMO 1800, PMO 3600 & PMO 7200



ATEX CERTIFICATE

ATEX certificate for all models of the PMO ATEX series	Art. no.
ATEX certificate (only included when ordering a PMO ATEX, not with the PMO BASIC version)	PTM9008

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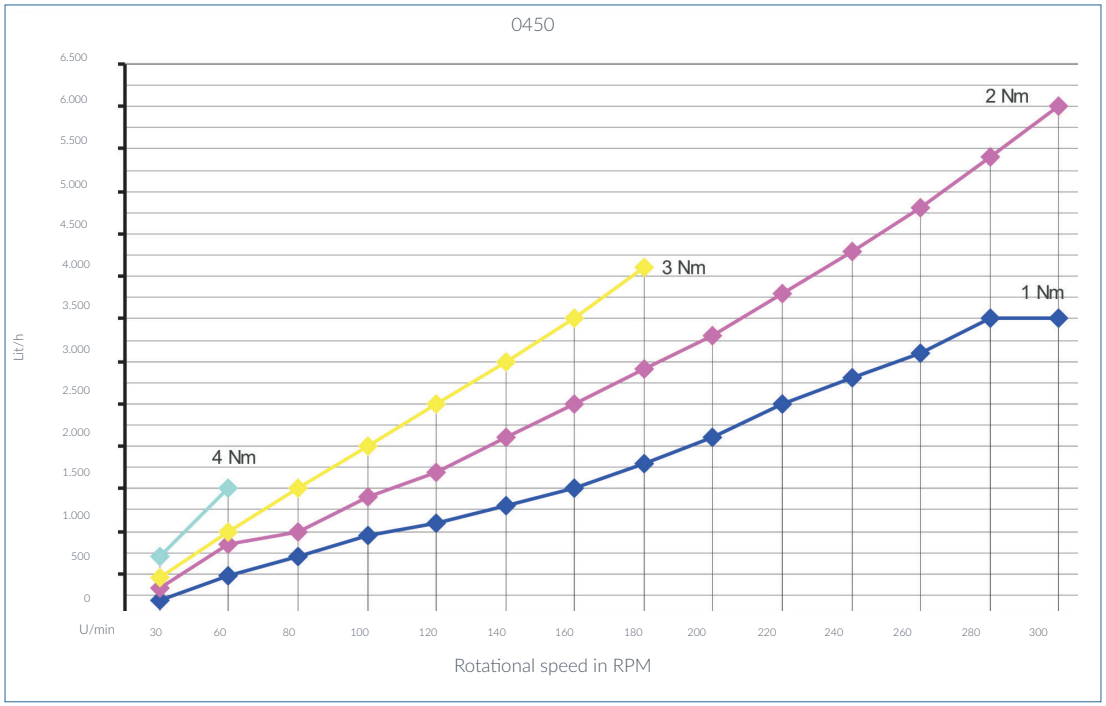
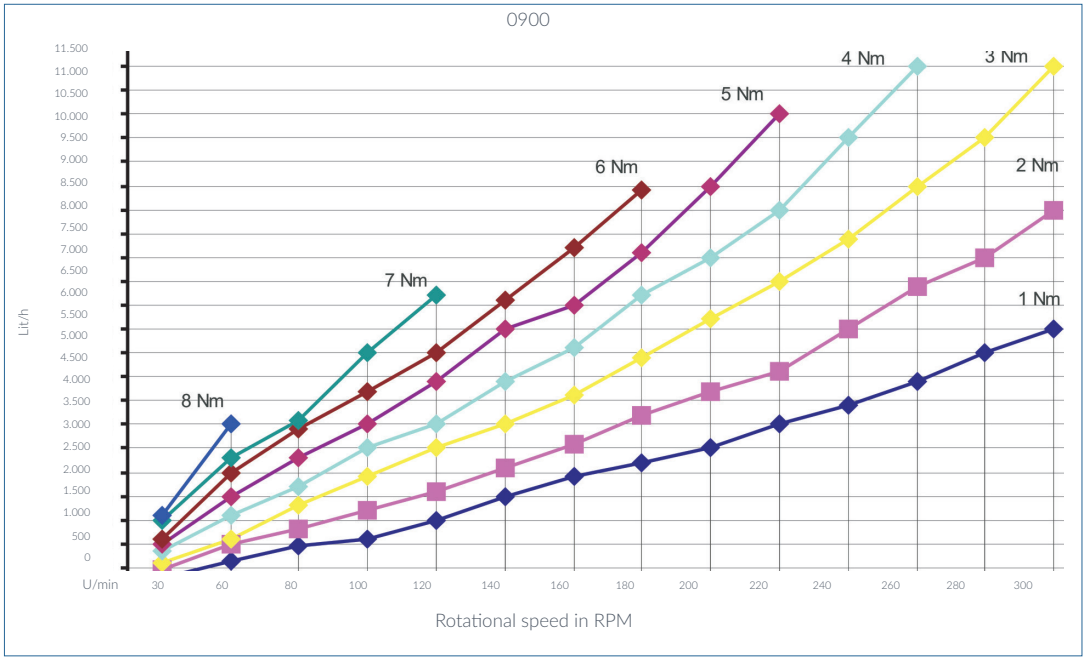
AIR CONSUMPTION
as a function of rotational speed and torque
PMO 0450



AIR CONSUMPTION
as a function of rotational speed and torque
PMO 0900



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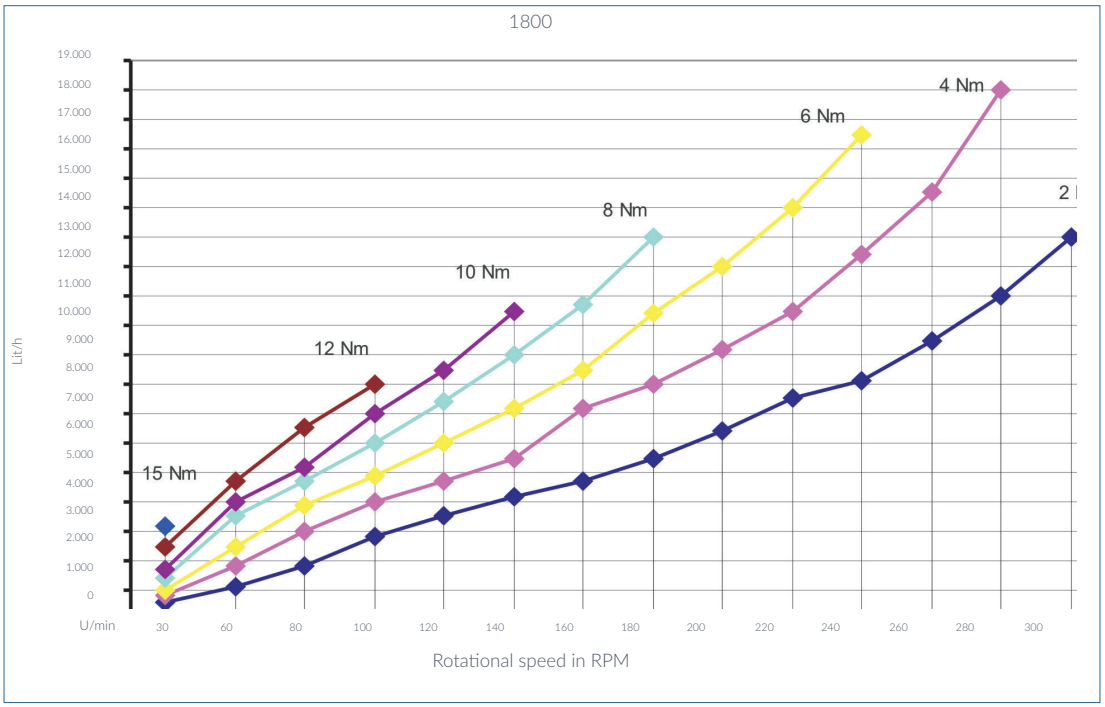
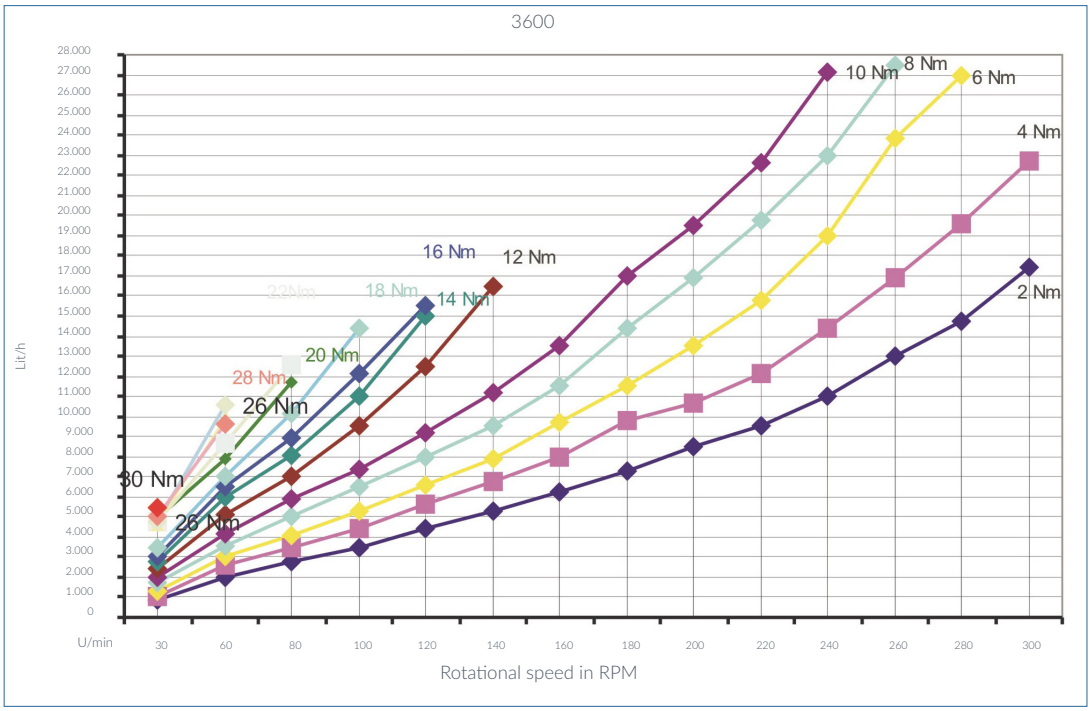
AIR CONSUMPTION
as a function of rotational speed and torque
PMO 1800



AIR CONSUMPTION
as a function of rotational speed and torque
PMO 3600



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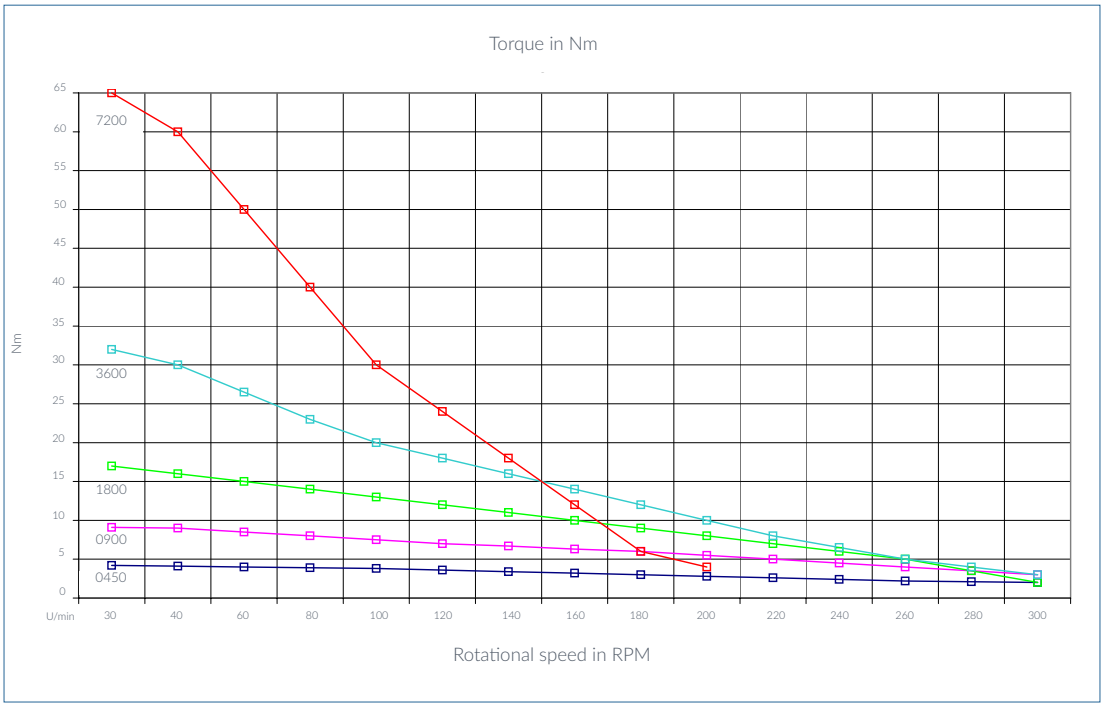
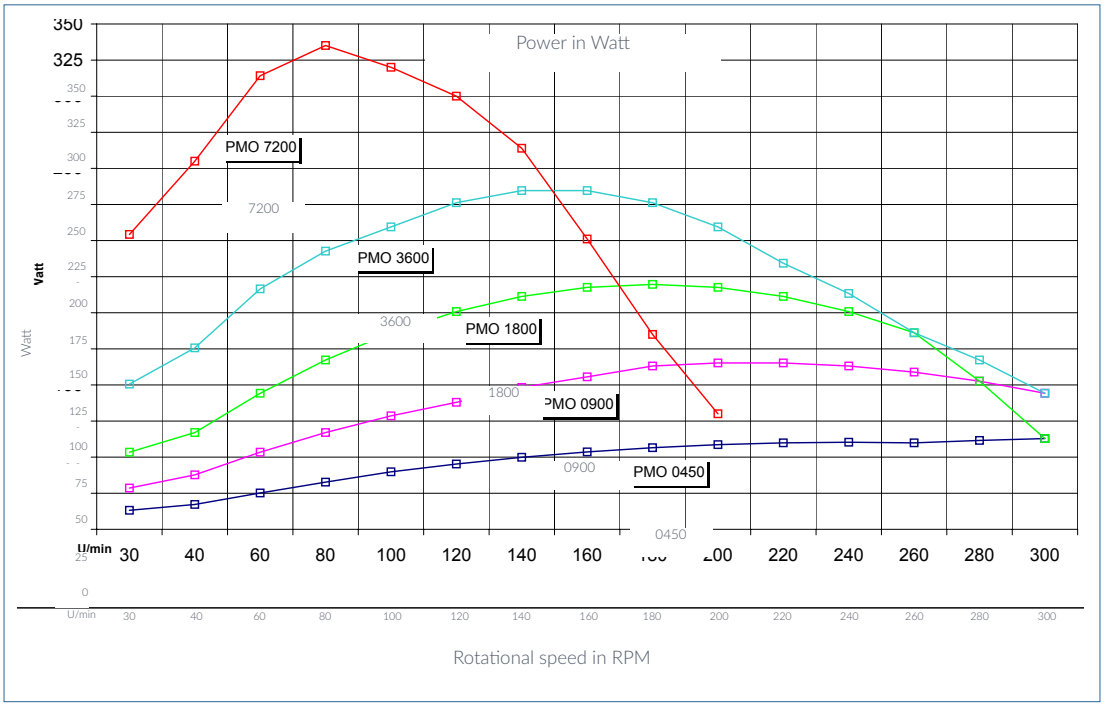
TORQUE
as a function of rotational speed
PMO 0450-7200



POWER
as a function of rotational speed
PMO 0450-7200



WE GENERATE MOVEMENT IN SPECIAL ENVIRONMENTS.