



Druckluftmotoren
Air motors
Rührwerke
Agitators
Greifsysteme
Gripping systems
Antriebstechnik
Drive technology

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Certified in accordance with ISO 9001:2008

Assembly guide:

PTM air motor

PMO450 PMO900
PMO1450 PMO1800
PMO3600 PMO7200



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A. INSTALLATION CERTIFICATE

Our products are in principle developed and manufactured in compliance with the applicable directives and standards. They are based on current knowledge and subject to modifications as well as improvements. Any additions or revisions to the EU guidelines are taken into consideration. The original installation certificate as defined by Directive 2006/42/EC for Machinery, Annex II Part 1 Section B is attached to this product.

Compressed air motors are non-electrical equipment in terms of incomplete machinery.

The devices are approved only for proper and intended use. Contraventions invalidate any warranty and exempt the manufacturer from any responsibility!

The applicable national regulations must be observed prior to commissioning.

A.1 Functional description

The compressed air motor (radial piston motor) has neither a connecting rod nor crankshaft. The star-shaped working pistons roll off a curve embedded into the inside of the casing. The compressed air required for the drive operation reaches the working piston via a rotating control ring on the cylinder disc and a control shaft fixed in the centre. Fresh air and exhaust air alternately supply and vent the pistons. By reversing supply and exhaust air, right or left rotation can immediately be generated at motors that work without gears. Of the seven pistons installed, three to four are always involved in generating the required torque. The pistons at the highest curve point are vented and forced back to their initial position. The operating sequence corresponds to that of a single-acting cylinder. To discharge the slight overpressure (volume max.: 0.1m³/h) occurring during operation from inside the device, an exhaust air opening is provided. The feed rollers are manufactured from heavy-duty plastic and are arranged on two sets of ball-bearings. That means there is almost no friction and only a minimum roll-off noise. In contrast to conventional vane motors, the PMO develops its highest torque in the low revolution range with very low air consumption. It can be used only between 30 < n < 300 rpm. As a medium it uses treated, non-oiled compressed air at 2-6 bar and a filtration degree of <=5µ.

A.2 Manufacturer and customer service

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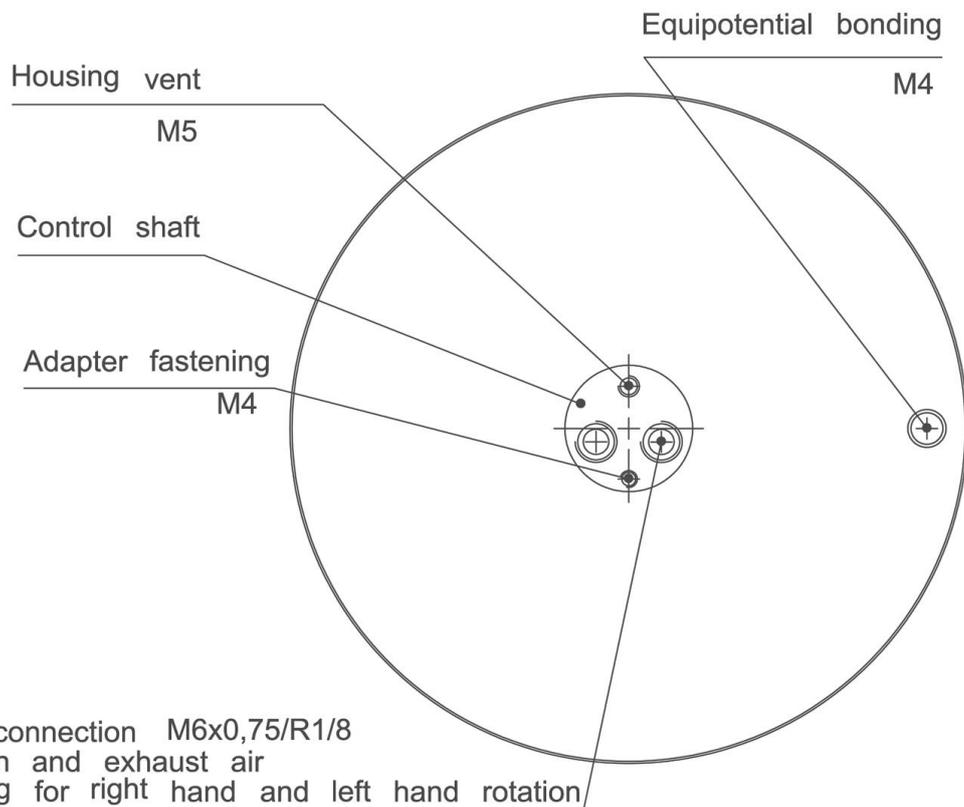
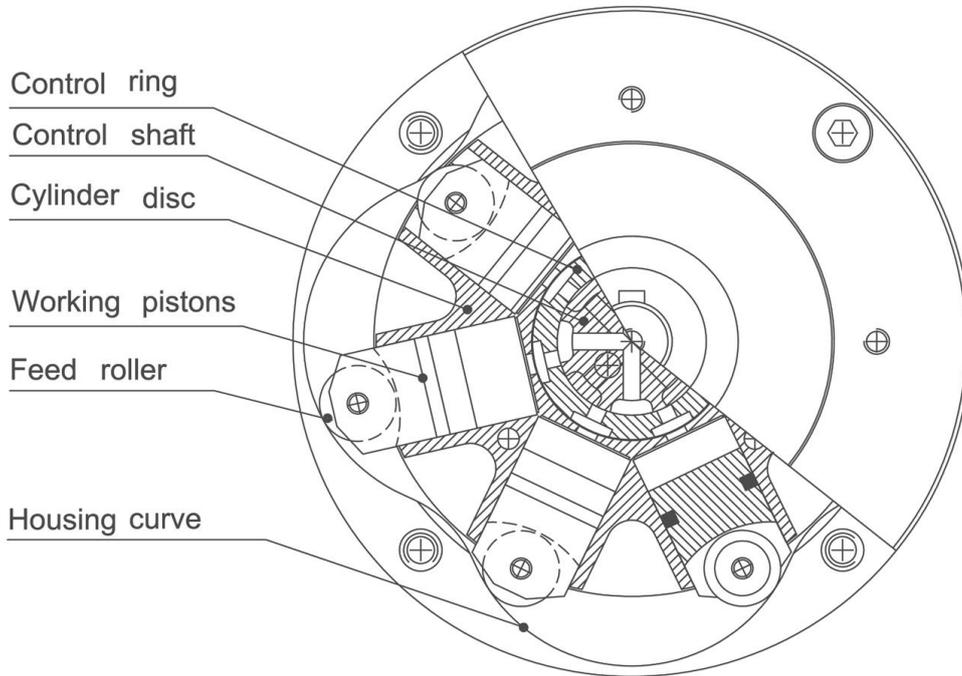
Please always indicate the device number when contacting the customer service.

Please contact our customer service before shipment of devices for repair or returns. Otherwise consignments will not be accepted.

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03/2017
Subject to modifications

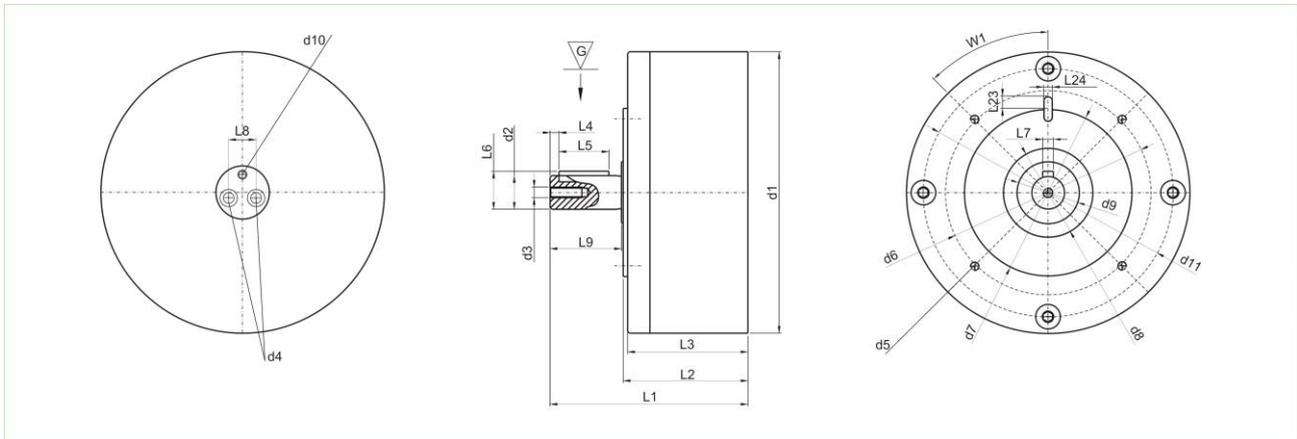
A.3 Important notes

<p>Compressed air</p> 	<p>As a medium, only use treated, non-oiled compressed air at 2-6 bar and a filtration degree of $\leq 5\mu$.</p>
<p>Speed</p> 	<p>Motor is to be used only between $30 < n < 300$ rpm.</p> <p>For protection against too high speed, we offer flow rate reductions.</p> <p>When using transmission, final limit speed is</p> <p>3:1 $10 < n < 100$ rpm 9:1 $3.3 < n < 33$ rpm 1:2 $60 < n < 600$ rpm</p>
<p>Agitator operation continuous</p> 	<p>At continuous operation in one rotation direction, the exhaust air duct needs to be larger than the supply air duct.</p> <p>When using silencers at the exhaust air, only high-performance silencers may be used.</p> <p>Dynamic pressure inside the motor must be avoided.</p>
<p>Housing ventilation</p> 	<p>The housing must be able to vent during operation. Therefore, housing ventilation may not be closed.</p>



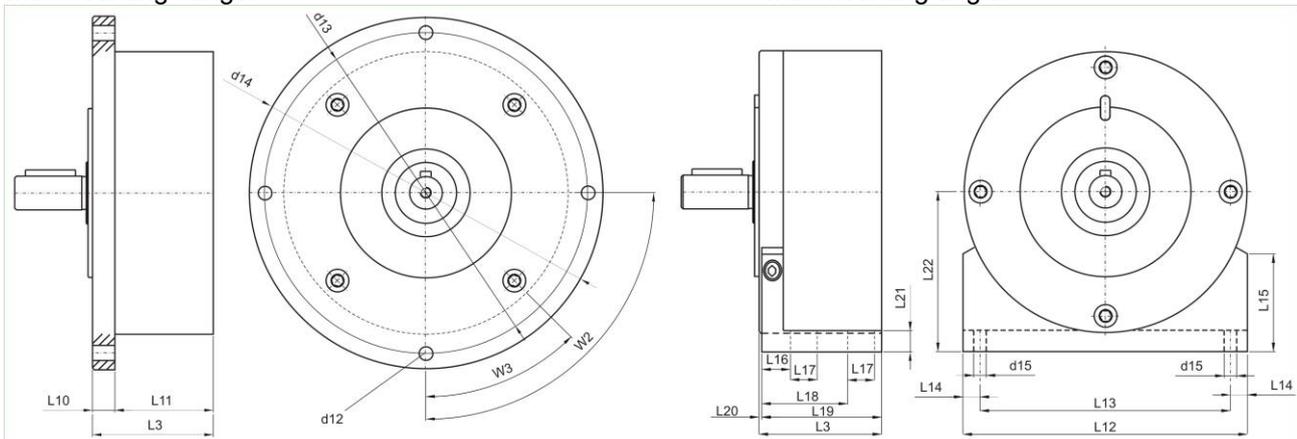
A.4 Versions

Dimensions:



with mounting flange:

with mounting angle:



	d 1	d 2	d 3	d 4	d 5	d 6	d 7	d 8	d 9	d 10	d 11	d 12	d 13	d 14	d 15
PMO 0450	99	14 h6	M 4x12	M 6x0,75x8	M 4x9	67	55 h6	40	28	M 5x5	87	5.4	110	120	5
PMO 0900	99	14 h6	M 4x12	M 6x0,75x8	M 4x9	67	55 h6	40	28	M 5x5	87	5.4	110	120	5
PMO 1800	159	19 h6	M 6x18	R1/8x9	M 6x10	115	95 h6	50	35	M 5x5	140	8.5	180	199	7
PMO 3600	159	19 h6	M 6x18	R1/8x9	M 6x10	115	95 h6	50	35	M 5x5	140	8.5	180	199	7
PMO 7200	159	19 h6	M 6x18	R1/8x9	M 6x10	115	95 h6	50	35	M 5x5	140	8.5	180	199	7

	L 1	L 2	L 3	L 4	L 1 VA	L 2 VA	L 3 VA	L 5	L 6	L 7	L 8	L 9	L 10	L 11	L 12	L 13	L 14
PMO 0450	78	52	51	3	81	55	53.5	18	16	5 N9	11	25	12	39	99	89	5
PMO 0900	93	67	65	3	95.5	69.5	68	18	16	5 N9	11	25	12	54	99	89	5
PMO 1800	111	70	68	5	115	74	71.5	28	22	6 N9	15	40	13	55	159	140	9.5
PMO 3600	133	92	90	5	137	96	93.5	28	22	6 N9	15	40	13	77	159	140	9.5
PMO 7200	194	153	151	5	198	157	154.5	28	22	6 N9	15	40	13	138	159	140	9.5

	L 15	L 16	L 17	L 18	L 19	L 20	L 21	L 22	L 23	L 24	W 1	W 2	W 3				
PMO 0450	40	15	10	37	50	0.5	10	58	6	4 N9	45°	90°	45°				
PMO 0900	40	15	10	37	50	0.5	10	58	6	4 N9	45°	90°	45°				
PMO 1800	55	16	15	48	67	0.5	12	90	7	5 N9	45°	90°	45°				
PMO 3600	55	16	15	48	67	0.5	12	90	7	5 N9	45°	90°	45°				
PMO 7200	55	16	15	48	67	0.5	12	90	7	5 N9	45°	90°	45°				

Abmessung mit Getriebe	L 1 3:1	L 2 3:1	L 3 3:1	L 11 3:1	L 1 9:1	L 2 9:1	L 3 9:1	L 11 9:1
PMO 0450	120	94	93	81	104	78	77	65
PMO 0900	135	109	107	96	119	93	91	80
PMO 1800	161	120	118	105	137	96	94	81
PMO 3600	183	142	140	127	159	118	116	103
PMO 7200	244	203	201	188	220	179	177	164

	Without gear		Reduction ratio 3 : 1		Reduction ratio 9:1		Reduction ratio 1:2	
	n min = 30 rpm	n max = 300 rpm	n min = 10 rpm	n max = 100 rpm	n min = 3,3 rpm	n max = 33 rpm	n min = 60 rpm	n max = 600 rpm
PMO 0450	4 Nm	2 Nm	12 Nm	6 Nm	36 Nm	18 Nm	2 Nm	1 Nm
PMO 0900	8 Nm	3 Nm	24 Nm	9 Nm	72 Nm	27 Nm	4 Nm	1,5 Nm
PMO 1800	16 Nm	2 Nm	48 Nm	6 Nm	144 Nm	18 Nm	8 Nm	1 Nm
PMO 3600	32 Nm	3 Nm	96 Nm	9 Nm	288 Nm	27 Nm	16 Nm	1,5 Nm
PMO 7200	64 Nm	6 Nm	194 Nm	19 Nm	576 Nm	54 Nm	32 Nm	3 Nm

	max. allowed axial loading	radial dyn. C	radial stat. Co	max. allowed radial loading	weights			
					without gear	with 3:1 gear	with 9:1 gear	with 1:2 gear
PMO 0450	100 N	750 N	400 N	5 Nm	1.10 Kg	2.00 Kg	2.80 Kg	2.10 Kg
PMO 0900	100 N	750 N	400 N	5 Nm	1.30 Kg	2.20 Kg	3.00 Kg	2.30 Kg
PMO 1800	200 N	1500 N	800 N	10 Nm	3.40 Kg	6.10 Kg	7.90 Kg	5.90 Kg
PMO 3600	200 N	1500 N	800 N	10 Nm	4.00 Kg	6.70 Kg	8.50 Kg	6.50 Kg
PMO 7200	200 N	1500 N	800 N	10 Nm	6.40 Kg	9.10 Kg	10.90 Kg	8.90 Kg

A.5 General safety precautions

The installation instructions are to be read by the motor operator prior to commissioning and the precautions observed during operation.

14. The motor can be used in any position.
15. Check that all packaging and contamination protection residues have been removed.
16. Make sure that all connections and joints are correctly made.
17. The tamperproof seals must not be damaged.
18. Repairs are reserved for the manufacturer.
19. Observe Directive 1999/92/EC (employee health and safety)
20. Do not exceed the maximum operating pressure of 6 bar.
21. Minimum operating pressure is 2 bar.
22. Do not exceed the maximum motor speed of 300 rpm. Danger of total destruction.
23. Geared motors may only be reversed if the motor is at standstill
24. Use non-oiled, dried compressed air with a filtration of $\leq 5\mu$.
25. Temperature application range is -10°C to $+80^{\circ}\text{C}$
26. Check the delivery against your order and the delivery note with serial number for authenticity and completeness.

Strict compliance to the accident prevention regulations and any additional national safety regulations is required at all times.

B. COMMISSIONING

B.1 Compressed air connection

The function and the service life largely depend on the quality and pressure of the compressed air supplied. Excessive moisture or dirt particles damage the motor. A high proportion of condensate in the compressed air causes rust to form in the motor and the silencer freezes up when the air expands.

The following points are to be observed when using the compressed air motor:

For the supply and exhaust air to/from the motor, use the right air hose (see table)

PMO450 PMO900	PMO1450 PMO1800 PMO3600
Air supply diameter 6mm	Air supply diameter 8mm
Air exhaust diameter 8mm (at continuous operation in one direction of rotation)	Air exhaust diameter 10mm (at continuous operation in one direction of rotation)

Reduce to smaller diameter required immediately before the motor's compressed air connections. Various adapter versions are available as accessories for this purpose.

The M5 vent hole for the overpressure generated inside the compressed air motor must never be sealed off. Use a vent hose with an inside diameter of 3 mm.

Main air lines require a slight gradient of at least 1% in the direction of flow to allow condensate to drain at the lowest position through a valve (manual or automatic).

For a horizontal main line, connect the branches from above. For a vertical main line, do not connect at the lowest position. That will prevent condensate present in the main line from flowing into the branch.

Use maintenance units with an air filter of min. < 5 μ filtration degree. Install the maintenance unit with a minimum 1/4" threaded air connection in the vicinity of the motor.

When used under water it is essential to observe correct dried, cooled compressed air to avoid the formation of condensate.

The air filter requires regular maintenance during which the stored condensate must be drained and the filter cleaned.

The compressed air motor achieves its optimum performance at 6 bar (85 psi). If the pressure in the compressed air network exceeds 6 bar, a pressure regulator must be used.

The required number of revolutions can be set using the pressure regulator or a supply or exhaust air throttle. The supply air throttle is preferred over the exhaust air throttle as less wear occurs.

A speed of over 300 rpm and hence damage to the motor must be prevented at all costs, both without load and under load.

B.2 Repairs

If the compressed air motor does not achieve the required output, check the following points:

- g) Is the air pressure adequate (6 bar / 85 psi)?
- h) Is the air pressure constant or does it fluctuate?
- i) Is the required air quantity available?
- j) Is the air filter in the maintenance unit clean?
- k) Are there any leak losses between the maintenance unit and compressed air motor?
- l) Are there cross-sectional constrictions in the exhaust air line?

If none of these faults is present, the motor must be returned to the manufacturer for inspection.

Please have all repairs carried out by the manufacturer. The seals must not be damaged.

C. EX PROTECTION

For use in potentially explosive areas.

C.1 General safety precautions

The installation instructions are to be read by the motor operator prior to commissioning and the precautions observed during operation.

Only operate the motor in explosion protected systems.

Create equipotential bonding. (on the rear of the motor using the M4 lens head screw)

Only use conductive air hoses.

Compressed air generated and treated outside the Ex-area is used as a medium.

Vent the housing vent via the M5 connection outside of the potentially explosive area.

Strict compliance to the accident prevention regulations and any additional national safety regulations is required at all times.

C.2 Motor versions

Compressed air motors are non-electrical equipment and do not require approval when used in Zones 1 and 21.

The compressed air motors are available in various designs and upgrades.

These motors are used, for instance, in paint shops (solvent-based paints and coatings, e.g. petrol, kerosene) and mills, silos etc.

The qualification with regard to the surface temperature is T5; for all gases, vapours and mists with an ignition temperature > 100°C, the devices are no ignition sources. In the dust ex-area, 100°C is the reference temperature for further considerations with respect to a safety clearance from the smouldering temperature. A decision can be made only by the operator.

The gearbox mounted to the radial piston motor is a planetary gearbox. It reduces the drive speed for each gear setting by one third and increases the max. torque by a factor of 3.

ATTENTION! Change direction of rotation only after the motor is stopped to standstill. See A.1 / 10

The PMO radial piston motor with or without mounted gearbox can be used as follows:

- In Zone 1 (gas-ex, Category 2G) in explosion group IIA and IIB.
- In Zone 21 (dust-ex, Category 2D) for non-conductive dusts with a minimum ignition energy > 3 mJ

C.3 Verification of Ex-protection

Prior to commissioning in a potentially explosive environment, verification of the following is required:

5. compressed air motor explosion-protected?
6. System explosion-protected?
7. Equipotential bonding created?
8. Conductive hoses and hose connections used?

C.4 Operation

When used in potentially explosive areas, the ball bearings must be replaced after 45,000 hours of operation at the latest.

C.5 Principles

Given the planned use of the radial piston motors and gearbox in a potentially explosive area, the following EU Directive is decisive:

C.5.1 European directives, laws and provisions

94/9/EC and 2014/34/EU: European Explosion Protection Directive

C.5.2 Marking in accordance with Directive 94/9/EG and 2014/34/EU

The marking of the non-electrical equipment is:

 II 2 G/D c T5 100°C

C.6 Explosion protection regulations

For equipment in potentially explosive areas, the operator is required to comply with a number of regulations. The list below shows the key regulations at a glance:

The following applies within the European Union:

- >Directive 1999/92/EC regarding minimum regulations for improving health safety and the safety of employees who can be endangered by potentially explosive atmospheres.
- >EN 50014
- Electrical equipment for potentially explosive areas – General Provisions
- >EN 60079-14 (IEC 60079-14)
- Electrical equipment for potentially explosive areas – Part 14: Electrical systems in potentially explosive areas
- >EN 60079-10 (IEC 60079-10)
- Electrical equipment for potentially explosive areas – Part 10: Classification of potentially explosive areas
- >DIN EN 1127-1
- Potentially explosive atmospheres – Explosion protection - Part 1: Principles and methods
- >DIN EN 13463-1
- Non-electrical equipment for use in potentially explosive areas – Part 1: Principles and requirements
- >DIN EN 13463-5
- Non-electrical equipment for use in potentially explosive areas – Part 5: Protection through safe construction

Additional national regulations and directives can also apply.

C.6.1 Zone classification of potentially explosive areas

Potentially explosive areas are areas in which potentially explosive atmospheres can occur in hazardous amounts due to the local and operational circumstances. These areas are subdivided into several zones.

For potentially explosive areas due to combustible gases, vapours or mist:

- d) Zone 0/20 – includes areas in which hazardous potentially explosive atmospheres are present constantly or over the long term.
- e) Zone 1/21 – includes areas in which hazardous potentially explosive atmospheres can be expected to occur occasionally.
- f) Zone 2/22 – includes areas in which hazardous potentially explosive atmospheres can be expected to occur only seldom and even then only for a brief period.

C.7 Commissioning, installation

Radial piston motor and gearboxes feature housings to protection class IP 67 and/or IP 68, which guarantee the IP protection required. The operator must specify the time required to clean the equipment of dust deposits irrespective of the above and depending on the application conditions.

Other key facts:

- Experts may place the device in operation in Category 2 (Zone 1 or 21).
- Closures must be re-attached after opening and closing.
- Supply air and exhaust air openings must not be closed.
- The devices are approved only for operation with compressed air to at least Quality Class 5 in accordance with ISO 8573-1 that has been generated and treated outside the Ex-area. The use of liquids and gases is not considered within the boundaries of intended use. Requirements are stated in the Installation Instructions.
- Ignitable sparks can be produced when discharging electrostatically charged parts. Operation of the devices with hoses and hose bundles up to a maximum outside diameter of Ø 20 mm is permitted.
- During operation, an effective equipotential bonding is to be created using the earthing screw on the housing.
- Impact involving rust and light metals or their alloys can generate ignitable sparks. The use of tools with corroded surfaces is prohibited. The devices must be protected against falling objects.
- Potentially explosive atmospheres or potentially explosive dusts must not penetrate the housing.
- Operation of the device is permitted only when the housing is fully closed and intact.
- Operation with a damaged housing is prohibited.
- Compressed air must not be blown out into areas containing potentially explosive atmospheric dusts. The exhaust air lines must be routed outside of the Ex-area.
- Corrosion, wear and other reciprocal effects must be taken into account in the choice of substances, materials and fittings.
- The number and choice of detachable connections must be kept to a minimum, hose connections must be kept as short as possible and mechanical stresses avoided.
- The equipment satisfies the requirements of IP 67 and/or IP 68 for housings and side panels. No additional protection is required against moisture.

C.7.1 Use, application conditions

- The devices are approved only for proper and intended use. Contraventions invalidate any warranty and exempt the manufacturer from any responsibility!
- Only those accessories that satisfy all the requirements of the European Directives and the national legislation concerned are permitted for use in potentially explosive areas.
- The radial piston motor for driving the gearbox may be employed up to a maximum overpressure of 6 bar. The maximum speed of the radial piston motor is 300 rpm, the maximum gearbox speed is 100 rpm.
- A hazardous electrostatic discharge directly onto the equipment is not permitted. Under normal circumstances, such discharges cannot be generated by humans, they require a compressed air nozzle or similar.
- Use in the dust ex-area is permitted for non-conductive dusts with a minimum ignition energy > 3 mJ.
- The ambient conditions specified in the Mounting Instructions must be respected at all times.
- Lightning protection measures must be guaranteed by the operator.

C.7.2 Ambient temperatures

At $-10^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$, the stated ambient temperature range differs from the standard temperature range.

C.7.3 Maximum surface temperature

The temperature measurements on the motor, gearbox housing and control shafts were taken at ambient temperatures of between 21°C and 24°C . A maximum heat-up, assuming the worst possible operating conditions (maximum load: 2 Nm; speed 300 rpm), of 8.7°C was measured on the control shaft. No significant temperature fluctuations were detected during the further course of the 60-hour measurement.

C.7.4 Temperature resistance

Non-metallic housing parts must be resistant to hot and cold temperatures such that the degree of protection is not reduced. Plastics must have a temperature index TI consistent with the 20,000h point, which is at least 20K higher than the local maximum surface temperature, taking into account the maximum ambient temperature. All the plastics used have a continuous working temperature of at least 100°C and hence comply with the set requirements.

C.7.5 Maintenance, repair

- Maintenance activities may only be carried out by PTM mechatronics GmbH itself or by persons who have been specially trained by PTM mechatronics GmbH.
- Components may be replaced only with genuine spare parts, which are also approved for use in the Ex-area. This also applies to the used lubricants and excipients.
- The devices in the Ex-area must be regularly serviced and cleaned. The intervals are specified by the operator in accordance with the local environmental conditions, e.g. a dust deposit of approx. 0.5 - 1 mm.
- On completion of maintenance and/or repair work, all barriers and/or notices removed during the process must be re-attached at their original position.
- Dust deposits in gaps between moving parts are capable of warming up. The spaces between rotating parts must be cleaned on a regular basis.
- The mounted outer bearings must be replaced after 45,000 hours of operation and outside of potentially explosive atmospheres.
- Radial piston motors and gearboxes may only be cleaned outside of potentially explosive atmospheres.

C.7.6 Troubleshooting

No modifications may be made to devices that are operated in potentially explosive areas. Repairs to the device may only be carried out by PTM mechatronics GmbH.

C.7.8 Disposal

Packaging and used parts must be disposed of in accordance with the provisions of the country in which the device is installed.

Egenhofen, 01.03.2017

Carsten Angermeyer, Managing Director

→ subject to modifications ←

D. APPENDIX

D.1 Declaration of conformity

Installation Declaration ("Original Installation Declaration") as defined by Directive 2006/42/EC for Machinery, Appendix II Part 1 Section B

We, as manufacturer, declare that for the equipment/incomplete machine described below

DESIGNATION	TYPE	SERIAL NO.:	ITEM NO.:
Pneumatic Radial Piston Motors	PMO	PMO0450; PMO0900; PMO1450; PMO1800; PMO3600; PMO7200	PMOxxxx-x-x-xxx-x
In explosion-proof version  II 2 G/D c T5 100°C	PMO	PMO0450; PMO0900; PMO1450; PMO1800; PMO3600; PMO7200	PMOxxxx-x-x-x1x-x
Radial piston motor as non-electrical equipment for the drive by compressed air in different versions and sizes. Alternatively in EX-version, with and without gear box.			

1. the following health and safety requirements as per Appendix I in accordance with Directive 2006/42/EC are applied and respected:

- Nr. 1: General principles,
- Nr. 1.1.2: Principles of safety integration,
- Nr. 1.1.3: Materials and products,
- Nr. 1.1.5: Design of machinery to facilitate its handling,
- Nr. 1.2.3: Starting,
- Nr. 1.2.6: Failure of the power supply,
- Nr. 1.3.2: Risk of break-up during operation,
- Nr. 1.3.3: Risks due to falling or ejected objects,
- Nr. 1.3.4: Risks due to surfaces, edges or angles,
- Nr. 1.5.2: Static electricity,
- Nr. 1.5.6: Fire,
- Nr. 1.6.3: Isolation of energy sources,
- Nr. 1.6.4: Operator intervention.

2. the special technical documents have been prepared as per Appendix VII Part B in accordance with Directive 2006/42/EC.

We also commit to transmitting to the responsible authority(ies) the aforementioned special technical documents on receipt of a justified request in the form of / via CAD.

They can be requested from: PTM mechatronics GmbH, Gewerbepark 1, 82281 Egenhofen - Deutschland

The commissioning of incomplete machines/equipment is forbidden and unacceptable until the machine, into which the incomplete machine/equipment is to be integrated, satisfies the provisions of Directive 2006/42/EC.

Egenhofen, 01.03.2017

Carsten Angermeyer, Managing Director

D.2 Declaration of Conformity



Druckluftmotoren
Air motors
Antriebstechnik
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Rührwerke
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Gripping systems

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Internet: www.ptm-mechatronics.com

EU- Declaration of Conformity

Manufacturer: PTM mechatronics GmbH
Gewerbepark 1
D-82281 EGENHOFEN

Name of product: Pneumatic Motor **PMO (Ex)**

Description of product: Radial piston motor as non-electrical equipment for operation by compressed air for various applications.

The conformity assessment procedure in accordance with Directive 2014/34/EU to Art. 8 (1) b) ii) was carried out with the participation of the following authority:

TÜV SÜD Product Service GmbH
Ridlerstraße 65
D-80339 MÜNCHEN
Identification no.: 0123

The corresponding documentation is filed here in accordance with Directive 2014/34/EU.

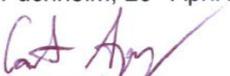
Device marking:  **II 2 G/D c T5 100°C**

The declaration of conformity refers only to the design and manufacture of the equipment described above in accordance with EU-Directive 2014/34/EU in conjunction with the harmonised norm DIN EN 13463 – 1:2009 and draft DIN EN 13463 – 5:2011 "Design safety".

The relevant operating instructions contain important safety instructions and regulations for the placement and operation of the PMO – Pneumatic motors in accordance with Directive 2014/34/EU.

We hereby declare that the PMO – Pneumatic motors conform to the requirements of the relevant harmonisation legislation of the European Union: directive 94/9/EG (until 19 April 2016) and directive 2014/34/EU (from 20 April 2016).

Puchheim, 20st April 2016


Carsten Angermeyer
CEO

greifen spannen drehen schwenken bewegen rühren pneumatisch servomotorisch hydropneumatisch

Geschäftsführer: Carsten Angermeyer
Handelsregister-Nr.: HRB 84593
Ust.IdNr.: DE 128243127
Zoll-EORI-Nr.: DE 569702433483519

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D.3 EG Certification of Conformity

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ CERTIFICADO ◆ CERTIFICAT

EG - Konformitätsbescheinigung

Nr.: EX8 03 10 51217 001



aufgrund einer freiwilligen Prüfung gemäß Anhang VIII der Richtlinie des Rates Nr. 94/9/EG für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen für

P.T.M. PRODUKTION
 techn.-mech. Geräte GmbH
 Boschstraße 4
 D-82178 Puchheim

Produkt: Nichtelektrisches Betriebsmittel
 Radialkolbenmotor

Modell: PMO (Ex)

Kenndaten: siehe Anlage

Das oben bezeichnete Gerät entspricht den einschlägigen Anforderungen der EG-Richtlinie.

Grundlage dieses Zertifikates ist das zur Prüfung und Zertifizierung vorgestellte Prüfmuster sowie dessen technische Dokumentation. Die detaillierten Ergebnisse der Prüfung sowie die technische Dokumentation sind dem Prüfbericht zu entnehmen.

Prüfberichtsnummer: *PP 63071 T*

Dieses Zertifikat bezieht sich ausschließlich auf das TÜV PRODUCT SERVICE zur Prüfung überlassene Prüfmuster. Eine zeitliche Begrenzung ist deshalb irrelevant.

Freigegeben mit der obigen EG-Konformitätsbescheinigungs Nr. durch die Zertifizierstelle von TÜV PRODUCT SERVICE.

Abteilung:
 Datum:



TA-ES/jb
 22.10.2003



D.4 Appendix to EG Certification of conformity**Anhang zur EG - Konformitätsbescheinigung****Nr.: EX8 03 10 51217 001****1 Beschreibung**

Der Radialkolbenmotor besitzt weder Pleuel noch Kurbelwelle. Die sternförmig angeordneten Arbeitskolben rollen auf der im Gehäuseinneren eingearbeiteten Kurve ab. Der Arbeitsablauf entspricht dem eines einfach wirkenden Zylinders. Zur Ableitung des leichten Überdrucks (Volumen_{max}: 0,1m³/h) während des Betriebs aus dem Geräteinneren ist eine Abluftöffnung vorgesehen. Die Ablaufrollen sind aus Kunststoff (POM) gefertigt und zweifach mit Kugellagern gelagert. Der Motor entwickelt sein höchstes Drehmoment im niedrigen Drehzahlbereich zwischen $30 < n < 300 \text{ min}^{-1}$.

Anwendung finden diese Motoren in Lackierereien (Lösungsmittelhaltige Farben und Lacke, z. B. Benzin, Kerosin) und Mühlen bzw. Silos.

Die Angaben für die sichere Anwendung sind der Betriebsanleitung für den Ex-Betrieb zu entnehmen.

2 Kennzeichnung

Die Kennzeichnung muss gut sichtbar, lesbar und dauerhaft sein und die folgenden Angaben enthalten:

- Name und Anschrift des Herstellers
- das Jahr der Herstellung des Gerätes
- das Kennzeichen **Ex II 2 G/D c T5 100°C**

3 Bedingungen

- Der Radialkolbenmotor darf im Umgebungstemperaturbereich zwischen $-10^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$ eingesetzt werden.
- Der Betreiber hat dafür Sorge zu tragen, dass nur Druckluft verwendet wird, die einen Filterungsgrad $< 5\mu\text{m}$ aufweist.
- Die äußeren Lager sind nach 45000h Lebensdauer auszutauschen.

Weitere Bedingungen für den Betrieb bestehen nicht. Die Angaben der Betriebsanleitung sind einzuhalten.

Abteilung: TA-ES / jb
Datum: 22.10.2003

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