



Disconnect air and electrical supplies before attempting repair or maintenance.
See ISO 4414-1982 for safety requirements covering the installation and use of pneumatic equipment.

Koppla ifrån luft och elektriska anslutningar innan reparations- och underhållsarbeten påbörjas.
Se ISO 4414-1982 för säkerhetsbestämmelser täckande installation och användning av pneumatisk utrustning.



NOTICE ALL DOCUMENTATIONS !

Before beginning work this operating instruction booklet has to be read through carefully. Always follow the instructions during operation. Give this operating instruction booklet to the operator.

1. Important Notes

Safety- and Warning Signs

The safety and warning instructions contained should invariably be followed!



IMMEDIATE DANGER

Possible consequences: Death or grave injuries.



DANGEROUS SITUATION

Possible consequences: slight or minor injuries.



DAMAGING DANGER

Possible consequences: damage to drive or the surrounding area.



Important instructions relating to explosion protection.



Application tips and other useful information.



Definition

Potentially explosive atmosphere (hereinafter referred to as "Ex-area")

= An atmosphere which could become explosive due to local and operational conditions.

The observance of the operating instructions is the precondition for an error free operation and the fulfillment of warranty claims. Therefore, please read the operating instruction booklet prior to working with the air motor! The operating instruction booklet contains important tips for motor service and should therefore be kept in the vicinity of the motor.



Disposal

Always observe the most current regulations for disposal.

Especially during installation, repair or maintenance water damaging agents, such as:

- lubricating greases and oil
- hydraulic fluid
- cooling agents
- solvent-containing cleaning agents may not leak into the ground or into the sewage system!

Such materials must be stored, transported, contained and recycled in suitable containers.

Housing parts, tooth rings, shafts, as well as gear parts should be disposed off as steel scrap.

2. Safety Instructions

2.1 General Safety Instructions for Standard Operation (non-explosive area)



Introduction

Prior to operating the motor, make sure to carefully read this operating instruction booklet (short OP).

Please pay attention to the additional safety instructions in the individual chapters of this OP.

The air motor or its load may have hot surfaces, during and after operation.

Assembly / installation, connection, operation as well as maintenance and repair work may only be performed by Parker or qualified persons / technical experts

Injury and damage to property may occur due to inaccurate installation and operation or non-designated use of motor.

Dealing with Compressed Air

- Always wear safety goggles.
- Do not move into the stream of compressed air.
- Do not use the motor with other gases or liquids.
- Do not operate the motor at higher pressure than specified.

Intended Use

This air motor is mainly used to generate a rotating motion in industrial equipment.

Basically, the air motor is approved for the use in the food industry. For the particular application the operator must comply with the valid legal requirements.

The motors' technical data, as well all pertinent conditions for its use, can be found in this OP.

Deviations from these requirements are not allowed!

2.2 Owner Obligation

The owner is obliged to only let persons operate the equipment, who:

- are familiar with basic work environment safety rules and accident-preventing regulations. Also, those persons must have been instructed in the correct use of the equipment.
- have read and understood all safety and warning notifications in the operating instruction booklet, as well as all other documentation pertaining to this equipment.
- check and confirm at regular intervals, that a safety oriented operation is guaranteed.

Only qualified and authorised personnel are allowed to operate, maintain and repair this equipment. A malfunction, which impairs operator safety, must be immediately removed.

2.3 Operator Obligation

Personnel, who are engaged in the operation of the equipment, must always be committed to:

- observe the basic safety and accident preventing regulations.
- read and observe the safety and warning notifications of this operating instruction booklet.

2.4 Warranty and Liability

Unless otherwise specified, our "General Sales and Delivery Conditions" apply. Warranty and liability claims in regards to persons or equipment damage are invalid if one or several of the following causes apply:

- Use of the equipment in a non-designated application.
- Improper installation, operation, service or maintenance of the machine.
- Operation of the machine with either defective or removed safety and protection devices.
- Non-observance of the requirements stated in the operating instruction booklet, in regards to transportation, storage, mounting, installation, operation, maintenance and service of the equipment.
- Structural change or adjustment on the equipment to a non-designated use.
- Inadequate supervision of wear parts.
- Improper repair, inspection or maintenance.
- Catastrophic cases because of a war, acts of god or other reasons which are beyond our control.

2.5 Additional Safety Instructions for Use of Motor in Explosive Area



Explosive gas- or dust atmospheres may cause grave or fatal injury when coming in contact with hot or movable parts in the air motor.

Assembly / installation, connection, operation as well as maintenance and repair work may only be performed by Parker or qualified persons / technical experts and if the following items are observed:

- read OP
- all warning and alert messages attached to the air motor
- all other or the operation pertinent documentation, such as project documents, operating instructions and control diagrams
- all machine specific regulations and requirements
- the most current and valid national/regional regulations (explosion protection, safety, accident prevention)

Intended Use




This air motor is used to generate a rotating motion in industrial equipment and it needs to be operated in accordance with the instructions of the technical documentation, while observing the information inscribed on the tag. It corresponds to all valid standards and regulations and fulfills the requirements per guideline 2014/34/EU (ATEX).

It is not permissible to use this air motor as a braking motor.

The air motor may not be used underground by mines or any of their distribution stations, where pit gas and/ or other flammable dusts occur. It may be used in areas where occasionally explosive atmospheres occur, which may be a combination of air and gas, or steam and fog of a flammable fluid or dust/air mixture (Zone 1 and Zone 21).



Air motors without an engraved -Symbol are not designed for the use in Ex-areas (see chapter 4.4)

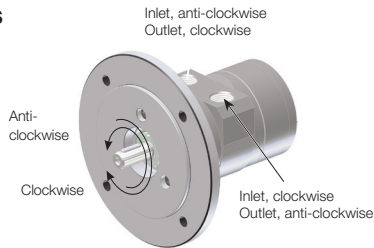
3. Delivery Capacity

Check that the shipment is complete and that there have been no damages in transit.

Quantity	Name
1	Operating Instruction Booklet
1	Pneumatic Air Motor

4. Structure

4.1 Basic Design Criteria for Air-Operated Gear Motors



Reversible means in both directions.

4.2 Maximum allowable Shaft Load on the Drive Shaft

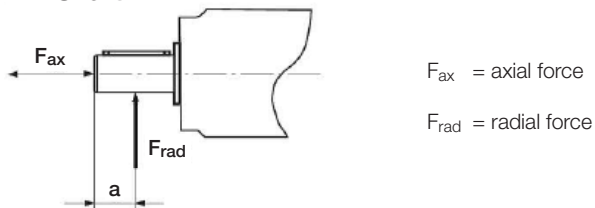


Illustration 1 - Axial- and radial force on parallel key shaft

Please refer to the technical catalog PDE2555TC

4.4 Nomenclature

Example: II 2 GD c IIC T4 (135°C) X



Communauté Européenne = European Community
This symbol documents the declaration of the manufacturer that the required EC-guidelines – as stated in the EC-Declaration of Conformity - are observed and its provisions are followed.



This air motor is suited for standard use in Ex-areas.

II	Design Group: this motor is NOT designed for use in underground mining.
2	Design Category: this motor is designed for the use in areas where occasionally explosive atmospheres may exist, which consist of gases, steam, combustible fumes or a combination of dust and air (Zone 1 and Zone 21).
GD	This motor is suited for the use in Ex areas, which are caused by combustible gases, steams, fumes or dust.
c	Ignition Protection: structural protection
IIC	Explosion Group: This motor is suited for the requirements per Explosion Group IIC. It also fulfills the requirements of the Explosion Groups IIB and IIA.
T6	<p>Temperature Class: T6 = 85°C surface temperature A motor with a temperature class of T6 may not exceed a maximum surface temperature of 85°C. Motor should be tested to ensure that the permissible temperature does not exceed 80°C; there is a safety margin of 5°C.</p> <p>(80°C) This is the maximum permissible surface temperature of the motor if used in an explosive atmosphere containing dust.</p>
T5	<p>Temperature Class: T5 = 100°C surface temperature A motor with a temperature class of T5 may not exceed a maximum surface temperature of 100°C. Motor should be tested to ensure that the permissible temperature does not exceed 95°C; there is a safety margin of 5°C.</p> <p>(95°C) This is the maximum permissible surface temperature of the motor if used in an explosive atmosphere containing dust.</p>
T4	<p>Temperature Class: T4 = 135°C surface temperature A motor with a temperature class of T4 may not exceed a maximum surface temperature of 135°C. Motor should be tested to ensure that the permissible temperature does not exceed 130°C; there is a safety margin of 5°C.</p> <p>(130°C) This is the maximum permissible surface temperature of the motor if used in an explosive atmosphere containing dust.</p>
X	„Observe special requirements“ In the Operating Instruction Booklet marked with the symbol

5. Assembly Instructions



Perform all assembly, installation, maintenance and repair work outside of the Ex-area.

5.1 Prior to Installation

The air motor should only be installed if:



- the details of the motor tag correspond with the details of the potentially explosive atmosphere of use (design group, design category, Ex-area, temperature class, maximum surface temperature).
- it is undamaged.
- it was verified that no explosive atmospheres, oils, acids, gases, steams or radiation, occurred during installation.

5.2 Pre-Installation



Drive shafts and flange areas should always be free from anticorrosive solvents, dirt or other agents. Solvents should not be allowed to penetrate the gear seal ring – this may cause material damage!

To avoid a swelling of the seal rings and damage to internal parts of the air motor, use only solvents approved by Parker (such as HAKU 1025-810-1 cold cleaner). Seal material: NBR/FKM

5.3 Operating Pressure and Temperature Range

Operating Pressure

Maximum operating pressure: 6 bar / 85 PSI



Temperature Range

Ambient temperature at standard operating (outside Ex-area): -20°C to +110°C

Ambient temperature for use in Ex-area: -20°C to +40°C



Compressed Air Temperature

The temperature of the compressed air used may not exceed the ambient temperature requirements.

If ambient temperatures are different, please contact Parker.

5.4 Installation Instructions

Important Notes for Installation of Motor

- Install the motor according to the dimension sheet (see chapter 5.6).
- The air motor may be installed in any orientation.
- Non-reversible air motors have a right or left rotational direction (as seen from air inlet in the direction to the drive).
- Use only mounting brackets having a sufficient size.
- Use only the implemented mounting holes to fixture the air motor.
- Observe the tightening torques for the mounting screws (see table 1).
- A maintenance unit should be installed (see illustration „Diagram“ in chapter 5.7).
- Be especially careful with all rotating parts.
- Do not install a belt pulley, clutch or pinion to the shaft-end, using hammer blows; this will damage gears, housing and shaft.
- Use an extractor for disassembly.
- Do not exceed the permissible radial and axial forces of the shaft (see chapter 4.2).



Attachment of the drive element will be simplified if a lubricant is applied or when heated-up for a moment – prior to installation (to 80°C to 100°C).



Drive attachments, such as a belt pulley, clutch, etc. have to be covered by a contact guard.

Property Class	Tightening torque (Nm) for thread ...											
	M 2.5	M 3	M 4	M 5	M 6	M 8	M 10	M 12	M 14	M 16	M 18	M 20
8.8	0.72	1.28	2.9	5.75	9.9	24	48	83	132	200	275	390
10.9	1.02	1.8	4.1	8.1	14	34	67	117	185	285	390	550
12.9	1.21	2.15	4.95	9.7	16.5	40	81	140	220	340	470	660
70*	0.46	0.82	1.9	3.7	6.4	15.3	31	52	83	126	174	245

* for stainless screws

Table 1 – Tightening torques for mounting screws



Use screws of property class (min.) 8.8 or 70 for stainless screws in order to mount the air motor onto your machine.

5.5 Additional Instructions for Installation in an Explosive Hazardous Area

Always follow the safety instructions of chapter 2.5 while installing an air motor into an Ex-area.

Grounding

The air motor must be grounded, for example by using

- an air-supply line made of metal or
- an electrically conductive hose.

The resistance between motor and ground has to be measured (requirement: $<10^6 \Omega$).



Only use drive attachments that correspond to guideline 2014/34/EU. Only use belts in the Ex-area, which correspond to the guideline 2014/34/EU (among others, items to watch is the belts electric conductivity and the correct belt-tension, since either may generate heat due to slippage).



The explosion-proof air motors correspond to the design requirements of the design group II, category 2 GD (explosive atmosphere consisting of gas and dust). Those motors are suited for the installation into Zone 1 and Zone 21.

Temperature Class

The air motors of group II, category 2 GD are suitable for the temperature class:

- T3 (for all P1V-A air motors)

Surface Temperature

This corresponds to a maximum surface temperature of:

- 200°C (for all P1V-A air motors)

Protection Class

All air motors must correspond – for a minimum – with the standard EN 60529 of the protection class IP 54. They are designed for the use in dusty or damp environments.

Ambient Conditions

Make sure that the air motor is sufficiently ventilated and that there is no additional warming source (such as a clutch).

Open inlet- and exhaust ports are not permissible. Those type of ports have to be closed, using either a sintered-metal filter (optional equipment) or an airline. If an airline is installed to any of the open ports (without the use of a sintered-metal filter), then they have to be guided out of the Ex-area.

Drive Power and Torque

Do not exceed either the maximum permissible drive power, or the maximum allowable radial and axial forces.

Braking Mode

The air motors may not be used in a braking mode in the Ex-area. A braking mode is when the motor is operated opposite to the turn-direction of the air-supply; this will have the motor operate as a compressor.

5.6 Dimensions

Please refer to the technical catalog PDE2555TC

5.7 Installation

Prior to Connection of Motor

Before connecting the air supply line to the motor, clean the air pipe and the air hose by slightly blowing air into the pipe/hose. This will remove any dirt particles that are present in the pipe/hose.

Always wear safety goggles, tightly hold the pipe/hose and do not move into the air stream.

Remove the covers from the connections.
Turn the air-supply to "OFF".

Air Supply Line

Make sure, that all air lines have a sufficient cross-section (see chapter Technical Data) and that there are no throttle areas, bends or kinks. If the air supply line is longer than 2 meters, the next larger hose I.D. should be installed in order to avoid a loss of power.

Connection of Motor

For operation in only one turn-direction:

See Diagram, figure a)
Install silencers (optional equipment) into the unused ports.

For reversible operation (clockwise and anticlockwise direction):

See Diagram, figure b)

Connect 2 supply lines to the motor. For position and size of the air inlet ports, see Dimensional Drawing (chapter 5.6).



Do not close unused ports with a plug or the like. This may lead to a loss of the motor's power or motor standstill. The exhaust air may be piped away using either an exhaust line or a silencer as well.

Do not use any Teflon tape on the threads of the pipe.

Operating Pressure

Check and make sure that the flow-pressure at the motor connection side is 6 bar (85 PSI). A higher air pressure leads to increased wear and tear (install a pressure regulator). An air pressure below 6 bar reduces the power output of the motor.

Lubrication

All motors may be operated only with lubricated air. The best performance is achieved by adding 1 – 2 drops of oil per 1 m³ of air consumption.

The air supply to the motor has to be filtered (see chapter 5.8).

The maintenance unit, the valves and the silencers have to be selected according to the air consumption of the motor, not in accordance to the connection threads. Install components, which have a measurement that will limit the pressure drop – when measured from the maintenance unit to the motor – to less than 0.5 bar (7.25 PSI).

Install a maintenance unit, fill it with oil and adjust oiler as needed. Fill the oil container of the oiler to the indicated oil level.

Lubricants

Use only lubricants approved by the manufacturer.

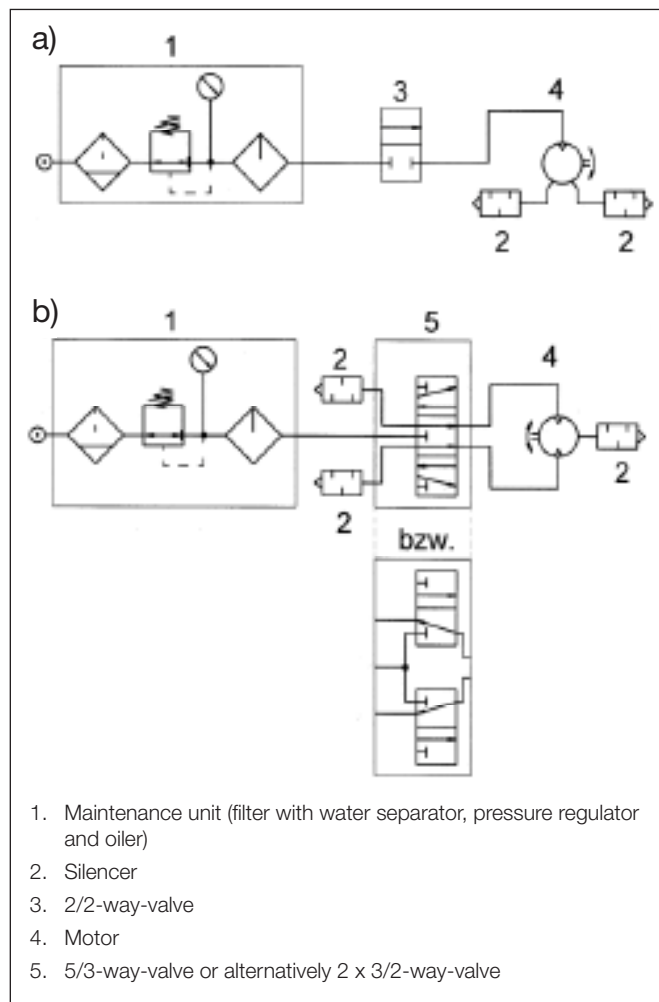


Illustration 2 - Diagram

5.8 Air Quality

With regard to air quality according to ISO 8573-1 we recommend:

	Class	Residual Dust		Residual Water		Residual Oil content mg/m ³
		particle size um	max. concentration on mg/m ³	max. concentration on mg/m ³	pressure dew-point °C	
Lubricator air	-/4/4	25	10	5	+3	5
Oil-free air	6/3/3	5	5	1	-20	1

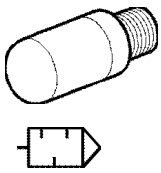
* Filter grade 8 µm is sufficient for units machines that are operated in dry run.

5.9 Silencing

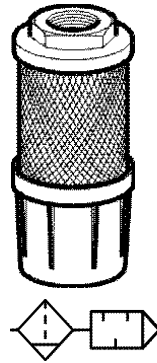
The noise from an air motor consists of both mechanical noise and a pulsating noise from the air flowing out of the outlet. The installation of the motor has a considerable effect on mechanical noise. It should be installed so that no mechanical resonance effects occur. The outlet air creates a noise level which can amount to 108 dB(A) if the air is allowed to exhaust freely into the atmosphere. To reduce noise levels, various types of outlet silencers are used. The most common type screws directly into the outlet port of the motor. A wide range of silencers are available. Many are made of sintered brass or sintered plastic. Since the motor function causes the exhaust air to pulsate, it is a good idea to allow the air to exhaust into some kind of chamber first, which reduces the pulsations before they reach the silencer. The best silencing method is to connect a soft hose to a central silencer allowing the speed of the air to reduce as much as possible.

NOTE! Remember that if a silencer is too small or is blocked, back pressure is generated on the outlet side of the motor, which in turn reduces the motor power.

Outlet silencer



Central silencer



Sound levels

Sound levels are measured at free speed with the measuring instrument positioned 1 m away from the air motor, see the table below

Air motor	Free outlet dB (A)	With outlet silencer dB (A)	Exhaust air removed with pipes to another room dB (A)
Please refer to the technical catalog PDE2555TC			

6. Operation

6.1 Check List

This check list shows all activities, which have to be performed prior to the use of the air motor in an Ex-area (according to the guideline 2014/34/EU – previously ATEX 100a).

Test prior to use of motor in EX-area	Checked	Reference Chapter
Do the following specifications of the tag on the air motor agree with the required specifications of the Ex-area: <ul style="list-style-type: none"> • design group • design category • Ex-area • temperature class • maximum surface temperature 		4.3 4.4
Has it been confirmed that during the installation of the air motor there were no explosive atmospheres, such as oils, acid, gas, steam or radiation?		5.1
Is the ambient temperature in accordance with requirements?		5.3

Has it been certified that the air motor is sufficiently ventilated and that there is no additional warning source (such as a clutch)?		5.5
Is a formal EC-Declaration of Conformity in accordance with guideline 2014/34/EU available 5.5 for all components that will be at-tached to the air motor?		
This check list shows all activities, which have to be performed during the use of the air motor in an Ex-area (according to the guideline 2014/34/EU – previously ATEX 100a).		

Test during use of motor in Ex-area	Checked	Reference Chapter
After approximately 1.5 hours of operation, measure the surface temperature. A temperature increase of over 40K is not allowed.		6.3
Example: $T_{max} = T_u + \Delta T = 20^{\circ}\text{C} + 40\text{K} = 60^{\circ}\text{C}$ If a temperature increase >40K occurs immediately stop the drive and contact Parker!		

6.2 Motor Operation



Make sure that all air supply parts are correctly connected, prior to motor operation.

Do not step into the air stream

Turn the air-supply to "ON".

If necessary, adjust the air-pressure or the flow-pressure to achieve the required speed or torque.

Adjust the oiler as described in chapter 5.7 – paragraph „Lubrication“.

Regularly check the oil-level and if necessary refill the oil container.



The motor needs to be cleaned on a regular basis to avoid a dust deposit with a more than 5-mm thickness.

6.3 Measure Surface Temperature (if motor is used in an explosive area)



The details of the maximum allowable surface temperature as shown on the motor tag are based on measurements under normal environmental and installation conditions. Small changes to those conditions (such as a constructed installation area) will considerably effect the temperature development!

Measure Surface Temperature

It is very important to measure the surface temperature of the motor during operation. Measurement can be done using conventional temperature measuring instruments.

The surface temperature should be taken at the marked measuring point as specified on the dimensions (see chapter 5.6).

The maximum allowable surface temperature is reached after approximately 1.5 hours of operation. This maximum temperature may not increase more than 40K.

Ambient temperature in the Ex-area: -20°C to +40°C



If the surface temperature exceeds the mandate, the motor must be stopped immediately. Please immediately contact Parker!

7. Maintenance and Upkeep

The first maintenance should be performed after 500 operating hours with non-lubricated air and after 1,000 operating hours with lubricated air. Thereafter, we recommend adjusting the maintenance intervals to the general usage and wear condition of the motor as well as the application area.



Lubrication

If the air motor is sufficiently lubricated, it requires little maintenance. The air motor should be regularly checked in regards to excessive noise and/or if the gears show an increased play.

The planetary gears and the bearings have to be sufficiently greased (see chapter 8.3 "Assembly"). After every maintenance session, the planetary gears have to be cleaned and re-greased.

Clean filter of the maintenance unit and bleed water condensation. If necessary, replace the filter to protect the motor against blockage caused by dirt particles in the supply air.

Regularly check the oil-level in the oiler and refill oiler as needed.

Lubricants

Use only lubricants approved by the manufacturer.

Bearing Exchange



To assure a continued low surface temperature if motor is used in an Ex-area, observe the following:

- Replace the bearings in the gearing after 10-Million rotations.
- Replace the bearings in the motor after 8,000 operating hours.

Worn Vanes



Our experience has shown that the vanes (in a complete set) have to be replaced latest after 2,000 operating hours. This interval may be longer or shorter, depending on the air quality and application area.

Loss of Power

If the motor does not operate correctly, after being used for a long time, then the flats of the vanes have been clogged in the rotor-slots by the oils resin residue. In such cases, it is necessary to clean the motor.

Seal Rings



The failure of a seal ring causes the grease in the gearing to prematurely dry out. Replace any brittle or damaged seal ring immediately.



If the motor is maintained on a regular basis, then the wear and tear on the movable parts is minimal. The wear mainly depends on the operating speed, the air pressure and the lubrication. We recommend sending a failed air motor to us for repair. We have all the necessary special repair tools for the disassembly, original spare parts and the trained repair specialists that can adjust the air motor to the correct gap play. The gap play determines the motors power, efficiency and life expectancy.

7.1 Wear Parts

Quantity	Description
Please refer to the technical catalogue PDE2555TC	

8. Disassembly – Assembly

(Spare Part Drawing/s)



Disassembly and assembly of the air motor may only be performed by Parker or qualified persons / technical experts.



The air motor may start and cause a hand injury. Disconnect air motor from the air supply.

After every maintenance session, verify that equipment runs to the required specifications.

Principally, use only Parker original spare parts. Otherwise, a reduction of equipment power-output and an increased maintenance requirement occurs.

If Non-Parker parts are installed, then Parker is justified to avoid any existing warranty and liability obligations.



Only use original Parker service tools in order to avoid causing damage.

8.1 Service Tools (Optional Equipment)

Name
No specific tools are required

8.2 Disassembly

1. Unscrew gear housing from motor housing (AF 32, right-hand thread).
2. Push the motor parts out of the motor housing.
3. Remove support disc and o-ring.
4. Clamp motor on its rotor cylinder into fixing device.
5. Pull off shaft-side bearing cover from rotor.
6. Remove rotor cylinder.
7. Take out the 5 vanes from the rotor.

Basically, replace the vanes. Exchange only complete sets of vanes (5 pieces).

8. Pull off air-connecting side bearing cover from rotor.
9. Press the two ball bearings from the bearing covers

8.3 Assembly

Lubrication

- Fill space areas of the planetary gear with 1/3rd of Parker-grease for the use in the food industry.
- Sufficiently grease the bearings.
- Use only lubricants approved by the manufacturer

1. Clean rotor.
2. Press the ball bearings into the two bearing covers.
3. Press the shaft-side bearing cover with the ball bearing on the rotor.
4. Insert 5 new vanes into the rotor.
5. Put the rotor cylinder over the rotor.



After assembly the bearing covers shouldn't have any axial gap. The rotor must turn freely.

6. Press air-connecting side bearing cover with ball bearing on the rotor.
7. Assemble o-ring and support disc.
8. Slide the motor parts (arranged in correct sequence) into the motor housing.



Bearing needle must engage into the bore of the motor housing.

9. Tighten motor housing (right-hand thread) onto gear housing.

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 (0, 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-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-6/4450352E
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.

9. Shut Down and Storage

- Turn the air supply to “OFF”.
- Disconnect the air motor from the air supply.
- Disconnect the air motor from the equipment it is attached to.
- Remove the silencer package (if one is installed).
- Blow clean and dry air (using a low pressure) into the air-inlet port of the air motor.
- Drip a couple of oil-drops into the inlet port and turn the shaft by hand to distribute the oil. Recommended oil: see chapter 7 – “Lubricants”.
- Close all connections.
- The air motor may now be stored until needed again.

10. Technical Data

Please refer to the technical catalog PDE2555TC

11. CE marking

The air motors are supplied as “Components for installation” – the installer is responsible for ensuring that the motors are installed safely in the overall system.

Parker Pneumatic guarantees that its products are safe, and as a supplier of pneumatic equipment we ensure that the equipment is designed and manufactured in accordance with the applicable EU directive.

Most of our products are classed as components as defined by various directives, and although we guarantee that the components satisfy the fundamental safety requirements of the directives to the extent that they are our responsibility, they do not usually carry the CE mark.

Nevertheless, most P1V-M motors carry the CE mark because they are ATEX certified (for use in explosive atmospheres).

The following are the currently applicable directives:

- Machinery Directive (essential health and safety requirements relating to the design and structure of machines and safety components)
- EMC Directive
- Simple Pressure Vessels Directive
- Low Voltage Directive
- ATEX Directive (ATEX = ATmosphere EXplosive)

12. EC-Declaration of Incorporation

EC-Declaration of Incorporation in accordance with the EC Machinery Directive 2006/42/EC, Annex IIB

As supplier of the partly completed machine we declare that:

- the essential requirements of the Directive 2006/42/EC and where applicable the other Directives and Standards listed below apply to the specified machine.
- the relevant technical documentation is compiled in accordance with part B of Annex VII.
- the relevant technical documentation in accordance with part B of Annex VII will be transmitted in response to a reasonable request by the national authorities in printed form or in electronic form (pdf).

Required documents have been filed - under Directive 2014/34/EU, Annex VIII - with the following authority:

IBExU, Institut für Sicherheitstechnik GmbH EU reference number 0637

Supplier

Parker Hannifin Manufacturing

Germany GmbH & Co. KG
Pneumatic Division Europe
Industriestrasse 8
70794 Filderstadt Germany

13. Troubleshooting

Fault					Cause	Corrective Action
Torque too low	Speed too low	Motor does not turn	Motor is hot	Motor operates, but becomes slower during operating		
•	•	•			Dirt or foreign objects in motor	Check and clean
•	•	•			Motor is rusty on	Check and clean
•	•	•	•	•	Incorrect gap play between rotor and bearing cover	Re-adjust gap play of motor
•	•				Air pressure is too low	Increase air pressure
		•			No air; shut-off valve is closed	Open shut-off valve
	•				Hose diameter is too small	Use a hose with a larger diameter
	•			•	Exhaust air is being throttled	Check and correct
•	•	•		•	Internal parts are frozen	Disassemble and repair motor
	•			•	Compressor is too small; air volume is too low	Supply larger volume
	•			•	Air supply is located too far from the motor	Optimise installation
•	•			•	Insufficient lubrication	Provide the required air quality
•	•	•		•	Worn vanes or vanes are jammed	Exchange vanes

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