

P 1 V - M



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.



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

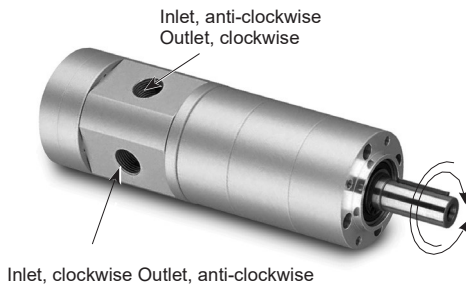
Check that the shipment is complete and that there have been no damages in transit.

Quantity	Name	Order No.
1	Operating Instruction Booklet	
1	Pneumatic Air Motor	P1V-M Series

4. Structure

4.1 Basic design criteria for all operated gear motors

Refer to the catalogue as it depends on power sizes



Maximum allowable Shaft Load on the Drive Shaft

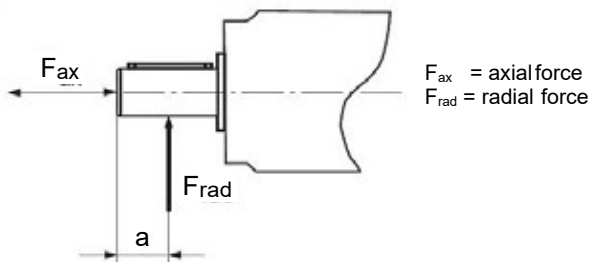


Illustration 1 – Axial and radial forces on the shaft

Refer to the catalogue as it depends on power sizes

Motor P1V-A	F_{ax} (N / lbf)	F_{rad} (N / lbf)	a (mm / in.)
Parallel key shaft	xx / xx	xx / xx	xx / xx

Allowable force for 10 million spindle rotations with 90 % survival probability of the bearing.

4.2 Model Number Description, Tag Description

Type key (example)	Type plate - engraved (example)	
P1V-M...	Parker	Supplier
Design	P1V-M...	Type
200 W	Nr. 1008728/03	Serial No. / Mfg. Year
Stainless	6 bar	Operating Pressure
Pneumatic Air Motor	CE Ex	Explosion Protection Characteristics

Example: **CE** **Ex** II 2G Ex h IIC T4 Gb X
Ex II 2D Ex h IIIC T130 °C Db X

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

Ex The Parker air motor is suited for standard use in explosion Ex-areas

II Design group II – Use in endangered areas except in underground mining operations and their over-ground facilities

2G/2D Design group 2 – These machines provide a high level of safety and can be used in areas where there is occasionally an explosive atmosphere of gases, vapours, mists (2G) or dust / air mixtures (2D). This corresponds to zones 1 resp. 21 and also includes zones 2 and 22.

EX h Ignition Protection: “structural protection” for non-electrical devices for use in explosive atmospheres according to ISO 80079-36, -37

IIC Explosion group IIC (gas, subgroup C, it also fulfills the requirements of the explosion groups IIB and IIA)

IIIC Explosion group IIIC (conductive combustible dust, specific electrical resistance $\leq 10^3$ Ohm, it also fulfills the requirements of the explosion groups IIIB and IIIA.

T4 Temperature class for gases and liquids. The temperature class shows the max. permissible temperature of the surface corresponding ISO 80079-36:
T1 = 450°C, T2 = 300°C, T3 = 200°C, T4 = 135°C, T5 = 100°C, T6 = 85°C

130°C Max. permitted temperature of the surface of the motor in an area, where explosive dusts are existent

Gb Equipment protection level
Db Gb (high protection level) gases / vapours
Db (high protection level) dusts

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 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: <math> < 10^6 \Omega </math>).



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:

- T4 (for type P1V-M Series)

Surface Temperature

This corresponds to a maximum surface temperature of:

- 130°C (for type P1V-M Series)

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

Refer to the catalogue as it depends on power sizes

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 either with or without lubricated air. The best performance is achieved by adding 1 – 2 drops of oil per 1 m³ of air consumption. When operating with oil-free air, a performance reduction of up to 20% occurs.

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.

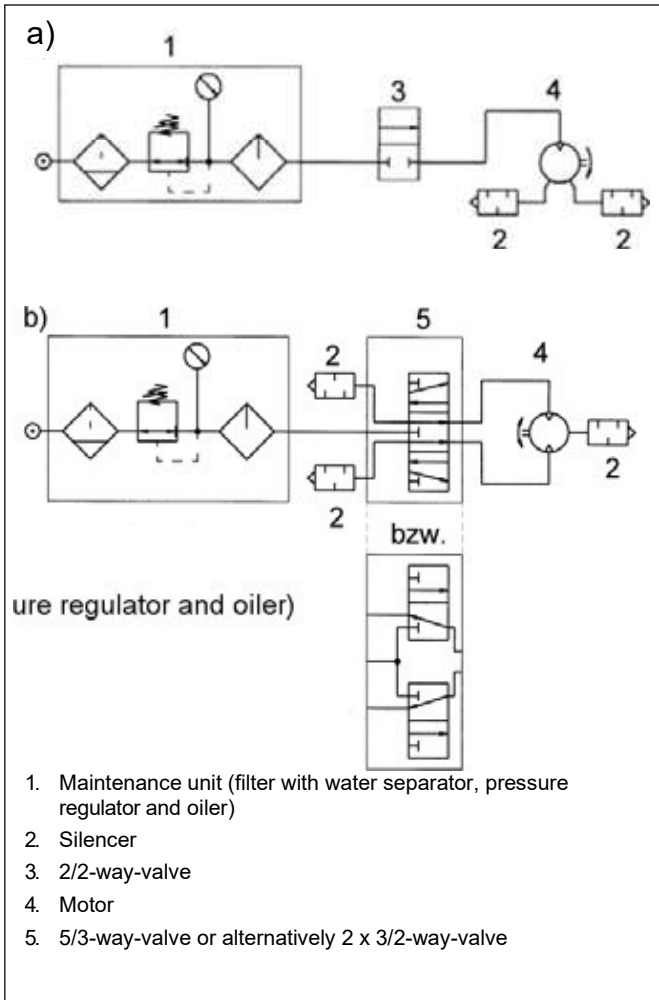


Illustration 2 - Diagram

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

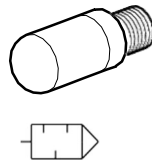
* Filter grade 8 µm is sufficient for units machines that are operated in dry run.

5.9 Silencing

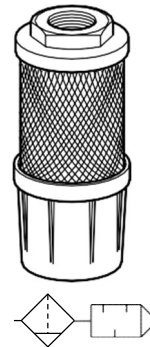
The noise from an air motor consists of both mechanical noise and a pulsating noise from the air flowing out of the outlet. The installation of the motor has a considerable effect on mechanical noise. It should be installed so that no mechanical resonance effects occur. The outlet air creates a noise 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 silencer 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.

x Refer to the catalogue as it depends on power sizes

Air motor	Free outlet	With outlet silencer	Exhaust air removed with pipes to another room
	dB (A)	dB (A)	dB (A)
P1V-M Series	xx	xx	xx

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 warming source (such as a clutch)?		5.5
Is a formal EC-Declaration of Conformity in accordance with guideline 2014/34/EU available for all components that will be attached to the air motor?		5.5

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
Test in the ATEX zone after about 1.5 hours of operation, measure the surface and ambient temperature and record the values in writing. The measured ambient temperature is subtracted from the measured surface temperature and 40oC is added. The maximum surface temperature thus calculated must not exceed the maximum surface temperature allowed. If the measured value is greater than the maximum value indicated then the PNEUMATIC MOTOR should be stopped immediately and consult your local partner		6.3

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.

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	Order code
1	Repair Kit Includes: Vanes, Silencer, O-Ring, Seal Ring and 50g of grease	P1V-6/...

... Refer to the catalogue as it depends on power sizes

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	Order code
Fixing device (to clamp the rotor cylinder)	On request

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 onto gear housing.

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.

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

10. Technical Data

x Refer to the catalogue as it depends on power sizes

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).

Lubrication and service life

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 table below shows new dimensions and the minimum dimensions of worn vanes.

×

Spare parts

For motor with Z optional option, please consult factory

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

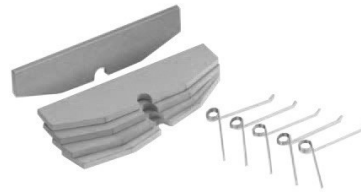
Service kits

The following kits are available for the basic motors, consisting of vanes and (springs).



Service kits, vanes for intermittent lubrication operation, option "0"

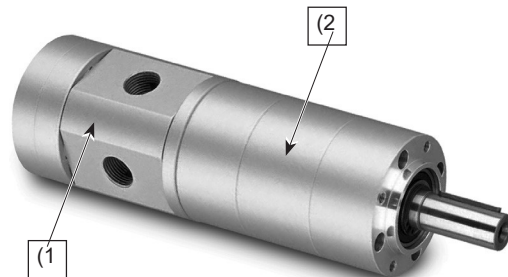
For motors	Order code
P1V-M020	P1V-6/4462971A
P1V-M040	P1V-6/4462981A
P1V-M060	P1V-6/4462991A
P1V-M090	P1V-6/4449171A
P1V-M120	P1V-6/4449181A



Service kits, vanes for intermittent lubrication operation, option "Z"

For motors	Order code
P1V-M020	P1V-6/4449144B
P1V-M040	P1V-6/4449154B
P1V-M060	P1V-6/4449164B
P1V-M090	P1V-6/4449174B
P1V-M120	P1V-6/4449184B

* The following normal service intervals should be applied to in order to guarantee problem-free operation in air motors working at load speeds. The specified hours of operation apply when the motor is running at the speed corresponding to maximum power (load speed). This is approximately half free speed. If the motor operates at higher speeds, the service interval is shorter. If the motor operates at lower speeds, the service interval is longer.



P1V-M Declaration of Conformity

According to ATEX 2014/34/EU

P1V-M Declaration of Incorporation

According to EC Machinery Directive 2006/42/EC



We Parker Hannifin Manufacturing
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Division Europe Industriestraße 8
70794 Filderstadt, Germany

Declare that the following Air Motors have been assessed in accordance with ATEX 2014/34/EU (Products for use in potentially explosive atmospheres).

Air Motors here below with power **200, 400, 600, 900 and 1200 watts** is compatible for the use in explosive atmosphere following classification:

P1V-M is designed for utilization in applications falling under the scope of the ATEX 2014/34/EU. These products are designed and manufactured in compliance with following elements:

- DIN EN 1127-1:2019** Explosive atmospheres - Explosion protection
Part 1: Basics and Methodology
- DIN EN ISO 80079-36:2016** Explosive Atmospheres
Part 36: Non-electrical equipment for use in explosive atmospheres
Basics and Requirements
- DIN EN ISO 80079-37:2016** Explosive atmospheres
Part 37: Non-electrical equipment for use in explosive Atmospheres
Protection by constructive security "c", Ignition source monitoring "b", liquid encapsulation
„k“

As manufacturer of the partly completed machine we declare that:

- The specified Air motors correspond to the listed essential requirements of the EC Machinery Directive 2006/42/EC
- The relevant technical documentation is complied 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

Product: Air motor P1V-M series

Directives	Date	Applied and fulfilled essential requirements
2006/42/EC	2006-06	1.1.2, 1.1.5, 1.3.4, 1.5.3, 1.7.3, 1.7.4
Standards	Date	Remark
DIN EN ISO 12100	2011-03	Partly fulfilled

This partly completed machinery must not be put into service until the final machinery into which it is to be incorporates has been declared in conformity with the provisions of the Directive 2006/42/EG, were appropriated.

Additional Information:

This coverage could only be referred to as long as operations needed for final assembling and starting up of theses products comply with standards relating to the above mentioned directive. Each time this will be required for compliance purpose the user will have to apply for complete coverage of the final assembled system according to the above mentioned Directive and relating standards.

Filderstadt, October 2019

Dr. Axel Fröschle
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