

Instruction Manual
PL70-1062EN
06/28/2013

Cleco®

21-19-5020
Non-Geared Rotary Vane Power Motors



Standard 21 Series Motor Shown

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For this Instruction Manual

This Instruction Manual is the Original Instruction Manual intended for all persons who will operate and maintain these tools.

This Instruction Manual

- provides important notes for the safe and efficient use of these tools.
- describes the function and operation of the 21-19-5020 motor.
- serves as a reference guide for technical data, service intervals and spare parts ordering.
- provides information on optional equipment.

Identification text:

21-19-5020 represents the rotary vane power motor as described in this manual

→ indicates a required action

• indicates a list

<..> indicates a reference number from the exploded parts drawings

Arial indicates an important feature or instruction written in **Arial Bold**

Identification graphic:

→ indicates a directional movement

↓ indicates a function or force

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1 Safety

1.1 Warnings and notes

Warning notes are identified by a signal word and a pictogram.

- The signal word indicates the severity and probability of the impending danger.
- The pictogram indicates the type of danger.

WARNING!



WARNING identifies a potentially **hazardous** situation which, if not avoided, may result in serious injury.

CAUTION!



CAUTION identifies a potentially **hazardous** situation which, if not avoided, may result in minor or moderate injury or property and environmental damage.

NOTE



NOTE identifies general information which may include application tips or useful information but no hazardous situations.



Important information that must be read and understood by all personnel installing, operating or maintaining this equipment.

1.2 Basic requirements for safe working practices



All personnel involved with the installation, operation or maintenance of these tools must read and understand all safety instructions contained in this manual. Failure to comply with these instructions could result in serious injury or property damage.

These safety instructions are not intended to be all inclusive. Study and comply with all applicable National, State and Local regulations.

Work Area:

CAUTION!



- Ensure there is enough space in the work area.
- Keep the work area clean.
- Keep the work area well ventilated.

Personnel Safety:

- Inspect the air supply hoses and fittings. Do not use damaged, frayed or deteriorated hoses.
- Make sure the air supply hose is securely attached to the tool.
- Install adequate guards for all moving parts of the power motor or it's application.

Safety working with and around power motors:

- Make sure the motor is securely mounted to the application.
- Make sure the output spindle is fully engaged with the application.
- Disconnect the air supply before servicing the motor

1.3 Operator training

All personnel must be properly trained before operating the 21-19-5020 motor. The 21-19-5020 motor is to be repaired by fully trained personnel only.

1.4 Personal protective equipment



When working

- Wear eye protection to protect against flying metal splinters.
- Wear hearing protection

Danger of injury by being caught by moving equipment.



- Wear a hair net
- Do not wear close fitting clothing
- Do not wear jewelry

1.5 Designated use

The 21 series are designed exclusively as a power source to be integrated into an application.

- Do not modify the 21-19-5020, any guard or accessory.
- Use only with accessory parts which are approved by the manufacturer.
- Do not use in any improper manner that can cause damage to the motor.

1.6 Codes and standards

It is mandatory that all national, state and local codes and standards be followed.

1.7 Noise and vibration

Noise level ≤ 00 dB(A) free speed (without load) according to ISO 12100: 2011
Vibration values < 0.0 m/s² according to ISO 12100: 2011

2 Scope of supply, transport and storage

2.1 Items supplied

Check shipment for transit damage and ensure that all items have been supplied:

- 1 21-19-5020 motor
- 1 PL70-1062EN instruction manual
- 1 Declaration of Conformity (if applicable)
- 1 Lubrication sheet
- 1 Warranty statement

2.2 Transport

Transport and store the 21-19-5020 motor in the original packaging. The packaging is recyclable.

2.3 Storage

For short term storage (less than 2 hours) and protection against damage:

→ Secure the 21-19-5020 motor to avoid accidental startup.

For storage longer than 2 hours:

→ Disconnect the air supply from the 21-19-5020 motor

Object	Time Period	Storage Temperature
21 Series without air supply	No guideline	-13°F to 104°F (-25°C to 40°C)

3 Product description

3.1 General description

- Pneumatic powered rotary vane power motor
- 0.3 Horsepower
- Double geared
- Round housing or Flange and Base mounting options

4 Accessories

None listed

5 Before initial operation

5.1 Ambient conditions

Ambient temperature: 41°F (5°C) to a maximum of 104°F (40°C)

Acceptable relative humidity: 25% to 90%, non-condensing

5.2 Air supply

Parameter	Description
Air Hose	Air inlet: 1/4" (6,4 mm) 5/16" I.D. Air Hose: Maximum length run of 10.0' (3 m) 3/8" I.D. Air Hose: Runs over 10.0' (3 m)
Working pressure range	60 to 100 psi (414 to 689 kPa) Recommended: 90 psi (620 kPa)
Compressed air	Air quality according to ISO 8573-1, quality class 2.4.3 The compressed air must be clean and dry.

NOTE



To attain consistent results, maintain a constant working pressure using a suitable air line unit consisting of a filter, lubricator and regulator.

- The inside diameter of the air hose must be free of residue, clean if necessary.
- If a line lubricator is used, it should be filled daily

5.3 Connecting the air supply to the tool

The air hose can disconnect from the motor by itself and whip around uncontrollably.

WARNING!



- Turn off the compressed air before connecting to the motor.
- Securely connect the air hose to the motor.
- Turn on the compressed air.

5.4 Tool set up

The motor must be configured for the application.

6 First operation

6.1 Putting into use

The 21 series are rotary vane type motors. All motors feature durable construction with precision heavy-duty bearings throughout, and multiple blade rotors for smooth power. These motors require air line lubrication for long, trouble-free service. The 21-19-5020 motor performs satisfactorily in high temperature areas up to 200°F (93°C).

- Make sure the air line is clean and free of scale and dirt before connecting to the motor.
- Make sure all pipe fittings are securely tightened to prevent air leaks.
- Make sure the air supply is securely attached and the compressor is turned on.
- Make sure the output spindle is properly engaged with the application.
- Make sure all necessary guards are in place to protect operator from rotating mechanisms.

If an excessive amount of water is found in the air line, a water trap should be installed to trap as much as possible before it reaches the 21-19-5020 motor.

7 Troubleshooting

Malfunction	Possible causes	Remedy
Tool does not start	Improper air supply	→ Make sure there is adequate air pressure at the tool air inlet
	Motor dry from lack of lubrication	→ Check airline lubricator for proper function
	Broken gears	→ Tool disassembly required (parts replacement)
Tool runs slow and lacks torque	Improper air supply	→ Make sure there is adequate air pressure at the tool air inlet
	Motor dry from lack of lubrication	→ Check airline lubricator for proper function

8 Maintenance

CAUTION!



Danger of injury from accidental start up.
Turn off the compressed air before performing any maintenance.

8.1 Service schedule

Only qualified and trained personnel are permitted to perform maintenance on these motors.

Regular maintenance reduces operating faults, repair costs and downtime. In addition to the following service schedule, implement a safety related maintenance program that takes the local regulations for repair and maintenance for all operating phases of the motor into account.

Maintenance Interval	Designation
Daily	<ul style="list-style-type: none">→ Visual inspection of air supply hose and connections→ Inspect airline filter, regulator and lubricator for proper operation→ Check the tool for excessive vibration or unusual noises→ Visual inspection of all external components of the tool
Weekly	<ul style="list-style-type: none">→ Inspect the air hose for damage or wear→ inspect the output spindle for damage or wear→ Inspect the airline lubrication for proper function

8.2 Lubricants

For proper function and long service life, use of the correct lubricant is essential.

Oil identification

Use a light air tool oil, Cleco part number 500021. This oil is available from Apex Tool Group in the following quantities:

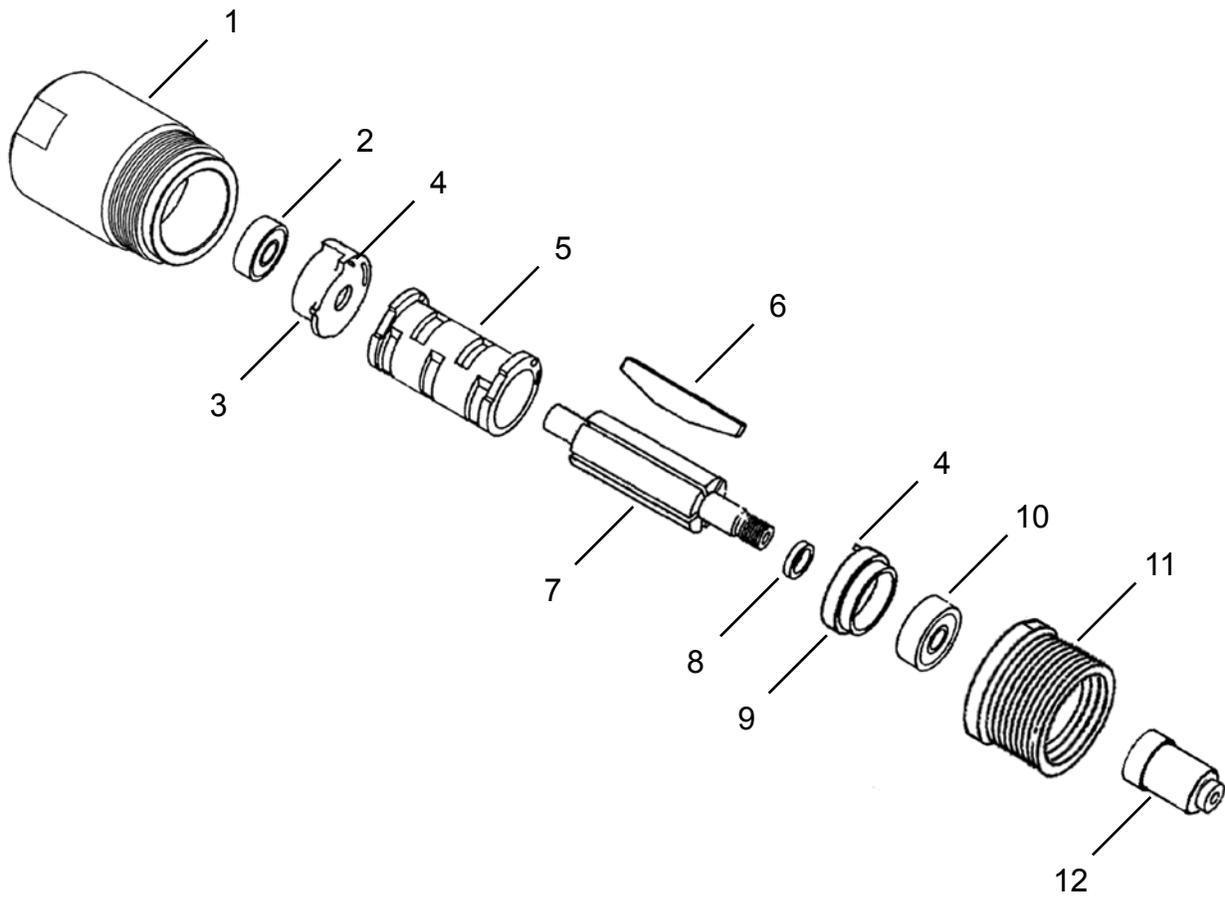
533484: 1 pint

533485: 1 gallon

DO NOT SUBSITUTE LUBRICANTS!

9 Repair Instructions

10.1 21-19-5020 - Side Exhaust Motor



21-19-5020 Rotary Vane Motor

10.1 21-19-5020 Side Exhaust Motor

Ref	Number	#	X	EN
				Description
1	1457PT	1		Motor Housing
2	504PT	1	2	Ball Bearing
3	1003PT	1		Bearing Plate (includes 1 Ref. 4)
4	1041	1	2	Pin
5	1002PT	1		Cylinder
6	1006PT	4	8	Rotor Blade
7	1005S	1		Rotor
8	1017PT	1		Rotor Spacer
9	1361PT	1		Bearing Plate (includes 1 Ref. 4)
10	538PT	1	2	Ball Bearing
11	1734PT	1		Lock Ring
12	14-1012	1		Output Adapter

(#) Quantity

(X) Recommended Spare Parts (quantity shown based on 1-5 tools in operation)

11 Service

11.1 Replacement parts



Use only original Cleco replacement parts. Failure to comply can result in reduced power and increased service requirements. The tool warranty may be voided if replacement parts are not manufactured or approved by Apex Tool Group.

11.2 Tool repairs

Only qualified and trained personnel are to repair this equipment.

11.3 Warranty repairs

All warranty repairs are to be performed by an authorized Apex Tool Group service center. Contact your local representative for assistance with warranty repair claims.

12 Disposal

CAUTION!



Injuries and environmental damage from improper disposal.

Components and auxiliary materials of the tool pose risks to health and the environment.

- Capture auxiliary materials (oils, greases) when drained and dispose of them properly.
- Separate the packaging components and dispose of them properly.
- Comply with all applicable local regulations.



Observe local disposal guidelines for all components of this tool and its packaging.



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