

Instruction Manual
45-8062EN
07/10/2013

Cleco®

OMEGA TECHNOLOGIES

22 Series Double Reduction Rotary Vane Power Motors



For additional product information visit our website at:
<https://dotcotool.com/product-category/cleco-tools/cleco-air-motors/cleco-22-series-rear-exhaust-rotary-vane-air-motors/>

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 22 series tools.
- serves as a reference guide for technical data, service intervals and spare parts ordering.
- provides information on optional equipment.

Identification text:

22 represents all models of 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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Cleco®
Nomenclature

45-8062EN
07/10/2013

Rotation Direction	Housing Style	Output Speed - RPM			Exhaust
		430	640	940	
Right	Round	22-5000	22-5001	22-5002	Side
Right	Round	22-5040	22-5041	22-5042	Rear
Right	Flange and Base Mounting	22M5000	22M5001	22M5002	Side
Right	Flange and Base Mounting	22M5040	22M5041	22M5042	Rear
Left *	Round	22D5000-50	22D5001-50	22D5002-50	Side
Left *	Round	22D5040-50	22D5041-50	22D5042-50	Rear
Left *	Flange and Base Mounting	22V5000-50	22V5001-50	22V5002-50	Side
Left *	Flange and Base Mounting	22V5040-50	22V5041-50	22V5042-50	Rear

* Note: Left hand rotation (not reversible)

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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 22 series tools. The 22 series tools are 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 22 series are designed exclusively as a power source to be integrated into an application.

- Do not modify the 22 series, 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

No data available on this equipment.

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 22 series motor
- 1 45-8062EN instruction manual
- 1 Declaration of Conformity (if applicable)
- 1 Lubrication sheet
- 1 Warranty statement

2.2 Transport

Transport and store the 22 series 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 22 series to avoid accidental startup.

For storage longer than 2 hours:

➔ Disconnect the air supply from the 22 series

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

3 Product description

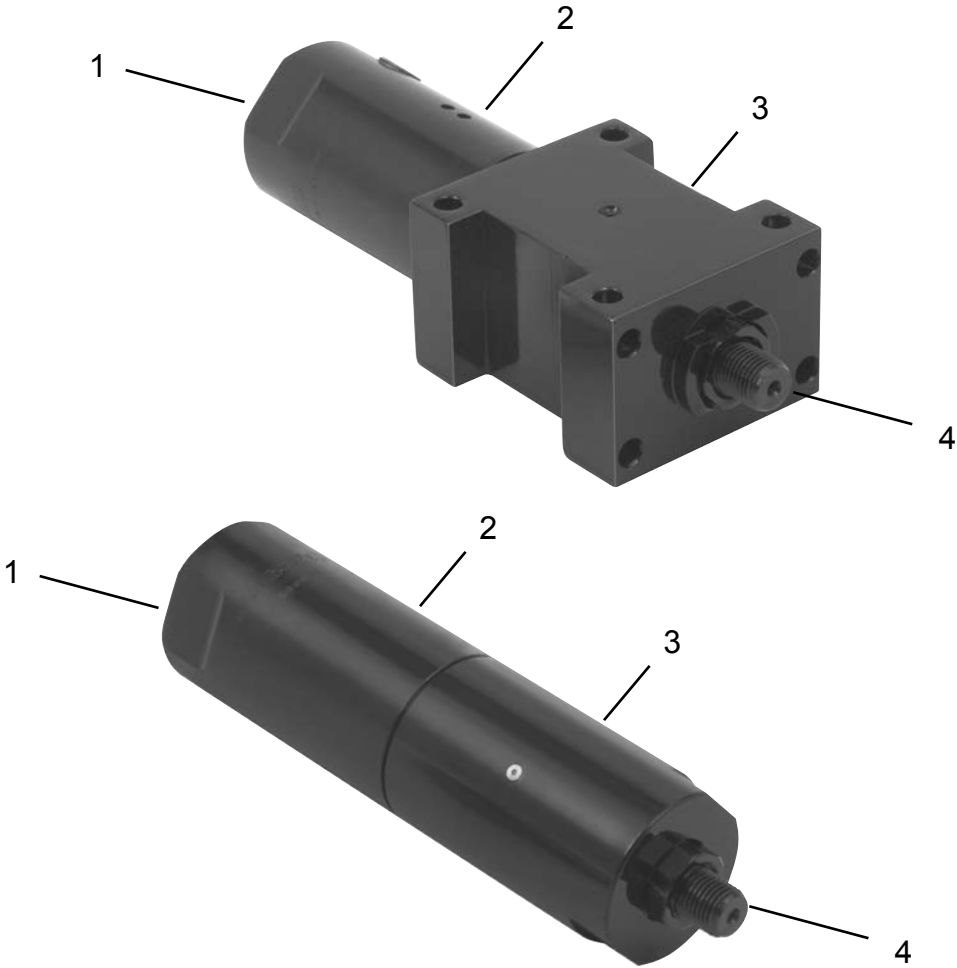
3.1 General description

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

3.2 Operation and functional elements

This section describes the operational and functional elements of the 22 series.

3.2 Operation and functional elements (continued)



Ref.	Description
1	Air Inlet
2	Motor Assembly
3	Gearing Assembly
4	Output Spindle

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 22 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 22 series motors perform 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 22 series 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:

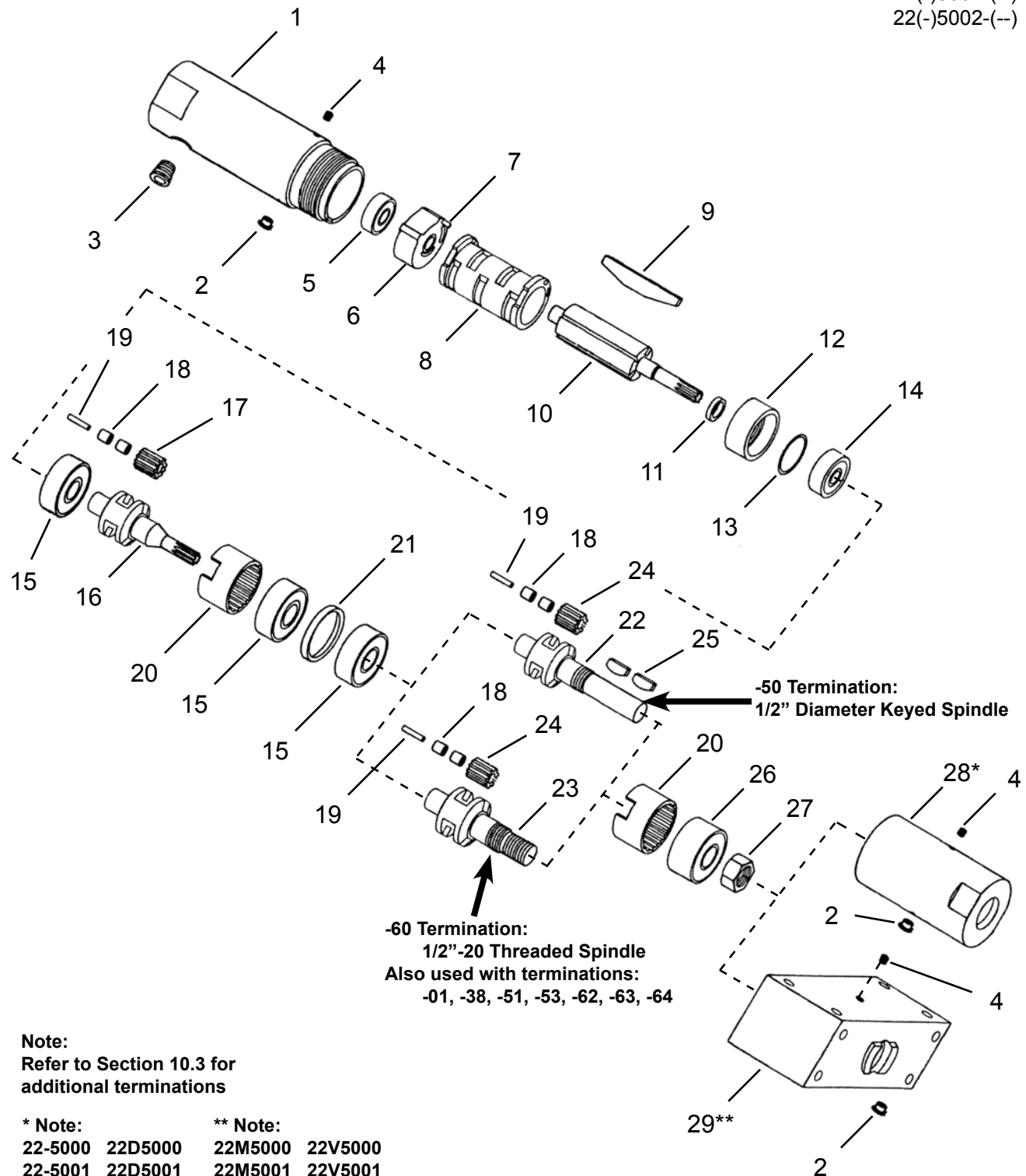
533484: 1 pint

533485: 1 gallon

DO NOT SUBSITUTE LUBRICANTS!

9 Repair instructions

10.1 22 Series - Side Exhaust Models
Models

 22(-)5000(-)
 22(-)5001(-)
 22(-)5002(-)


10.1 22 Series Side Exhaust Motors

Ref	Number	#	X	EN
				Description
1	2896	1		Motor Housing (includes 1 Ref. 2)
2	1664	2	4	Grease Fitting
3	2957	1	2	Pipe Plug (1/4-18 NPTF)
4	2831	2	4	Set Screw (#10-32)
5	538PT	1	2	Ball Bearing
6	Table 10.1	1		Bearing Plate (includes Ref. 7)
7	1041	1	2	Pin
8	Table 10.1	1		Cylinder
9	2253PT	4	8	Rotor Blade
10	Table 10.1	1		Rotor (includes Ref. 11)
11	2017PT	1		Rotor Spacer
12	2508	1		Bearing Plate
13	2488PT	1	2	Shim Packet
14	500PT	1	2	Ball Bearing
15	556	3	6	Ball Bearing
16	Table 10.1	1		Planetary Gear Carrier
17	Table 10.1	2	4	Planetary Gear (includes 2 Ref. 18)
18	1464	8	16	Planetary Gear Needle Bearing
19	2509PT	4	8	Planetary Gear Shaft
20	2533PT	2		Ring Gear
21	2830	1		Bearing Spacer
22	2927	1		Planetary Gear Carrier (-50 Termination)
23	2513PT	1		Planetary Gear Carrier (-01, -62 Terminations)
	2864	1		Planetary Gear Carrier (-38, -51, -53, -60, -63, -64 Terminations)
24	Table 10.1	2	4	Planetary Gear (includes 2 Ref. 18)
25	613	2	4	Woodruff Key (-50 Termination)
26	557	1	2	Ball Bearing
27	2958	1	2	Lock Nut (-38, -50, -51, -53, -60, -63, -64 Terminations)
28	2893	1		Round Housing
29	2819PT	1		Flange and Base Mounting Housing
Termination 60				
--	14-0812	1	2	Wrench (3/4") (not shown)

(#) Quantity

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

Table 10.1

Ref.	Description	#	22-5000 22M5000	#	22-5001 22M5001	#	22-5002 22M5002	#	22D5000 22V5000	#	22D5001 22V5001	#	22D5002 22V5002
6	Bearing Plate	1	7404	1	7404	1	7404	1	7194PT	1	7194PT	1	7194PT
8	Cylinder	1	2255PT	1	2255PT	1	2255PT	1	2519PT	1	2519PT	1	2519PT
10	Rotor	1	7656S	1	7656S	1	7658PT	1	7656S	1	7656S	1	7658PT
16	Planetary Gear Carrier	1	2851	1	2848	1	2848	1	2851	1	2848	1	2848
17	Planetary Gear	2	2809PT (17T)	2	2809PT (17T)	2	2956 (15T)	2	2809PT (17T)	2	2809PT (17T)	2	2956 (15T)
24	Planetary Gear	2	2809PT (17T)	2	2956 (15T)	2	2956 (15T)	2	2809PT (17T)	2	2956 (15T)	2	2956 (15T)

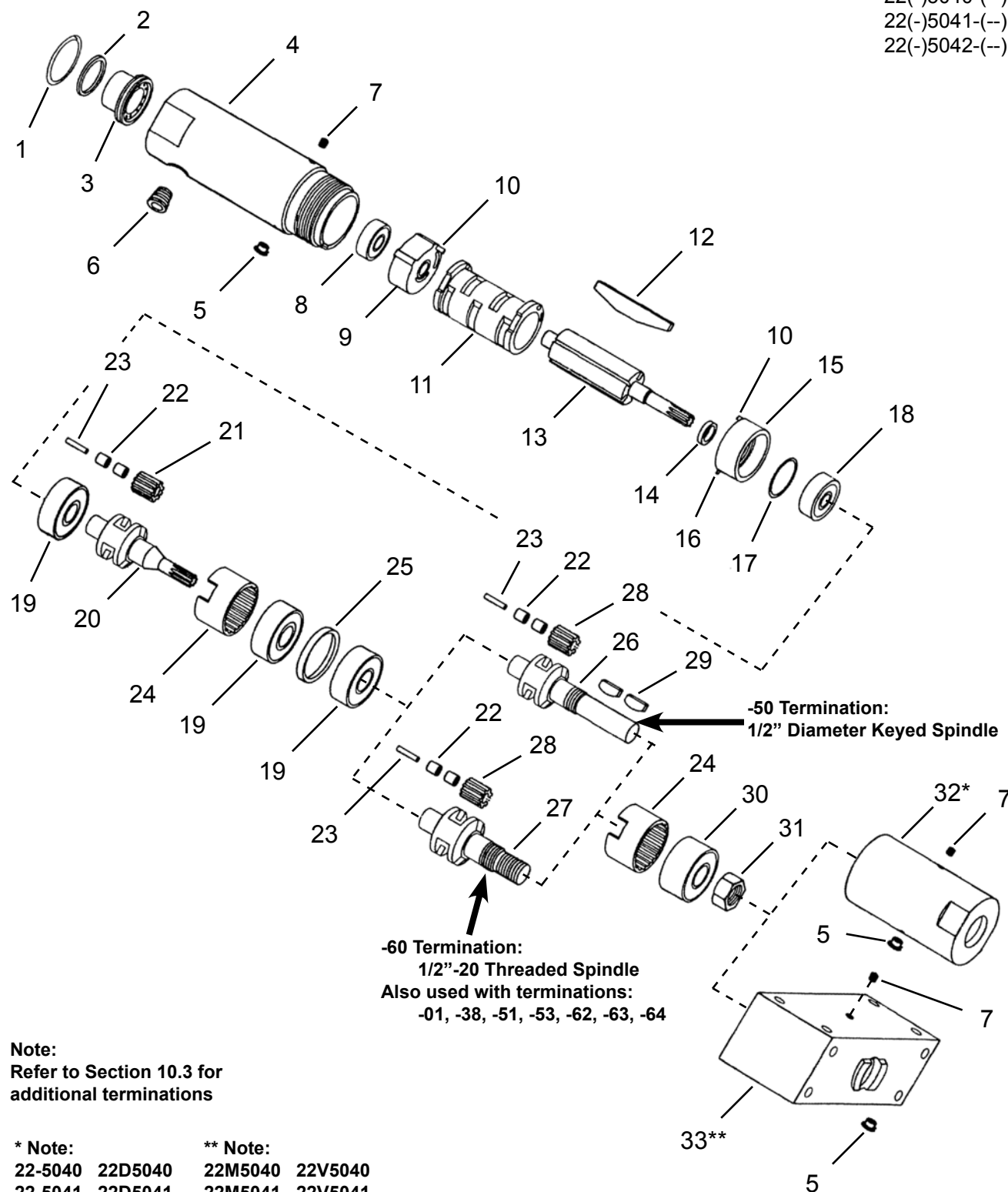
(T) Teeth

10.2 22 Series - Rear Exhaust Models
Models

22(-)5040(--)

22(-)5041(--)

22(-)5042(--)



10.2 22 Series Rear Exhaust Motors

Ref	Number	#	X	EN
				Description
1	2690PT	1	3	Retaining Ring
2	1838PT	1	3	O-Ring
3	2685	1	3	Muffler
4	2897	1		Motor Housing (includes 1 Ref. 5)
5	1664	2	4	Grease Fitting
6	2957	1	2	Pipe Plug (1/4-18 NPTF)
7	2831	2	4	Set Screw (#10-32)
8	538PT	1	2	Ball Bearing
9	Table 10.2	1		Bearing Plate (includes 1 Ref. 10)
10	1041	2	4	Pin
11	Table 10.2	1		Cylinder
12	2253PT	4	8	Rotor Blade
13	Table 10.2	1		Rotor (includes Ref. 14)
14	2017PT	1		Rotor Spacer
15	Table 10.2	1		Bearing Plate (includes 1 Ref. 10 and Ref. 16)
16	2964	1	2	Pin
17	2488PT	1	2	Shim Packet
18	500PT	1	2	Ball Bearing
19	556	3	6	Ball Bearing
20	Table 10.2	1		Planetary Gear Carrier
21	Table 10.2	2	4	Planetary Gear (includes 2 Ref. 22)
22	1464	8	16	Planetary Gear Needle Bearing
23	2509PT	4	8	Planetary Gear Shaft
24	2533PT	2		Ring Gear
25	2830	1		Bearing Spacer
26	2927	1		Planetary Gear Carrier (-50 Termination)
27	2513PT	1		Planetary Gear Carrier (-01, -62 Terminations)
	2864	1		Planetary Gear Carrier (-38, -51, -53, -60, -63, -64 Terminations)
28	Table 10.2	2	4	Planetary Gear (includes 2 Ref. 18)
29	613	2	4	Woodruff Key (-50 Termination)
30	557	1	2	Ball Bearing
31	2958	1	2	Lock Nut (-38, -50, -51, -53, -60, -63, -64 Terminations)
32	2893	1		Round Housing
33	2819PT	1		Flange and Base Mounting Housing
Termination 60				
--	14-0812	1	2	Wrench (3/4") (not shown)

(#) Quantity

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

Table 10.2

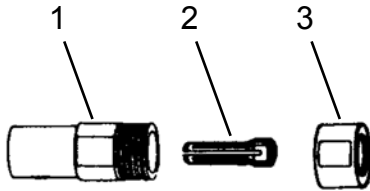
Ref.	Description	#	22-5040 22M5040	#	22-5041 22M5041	#	22-5042 22M5042	#	22D5040 22V5040	#	22D5041 22V5041	#	22D5042 22V5042
9	Bearing Plate	1	7013PT	1	7013PT	1	7013PT	1	7198	1	7198	1	7198
11	Cylinder	1	2255PT	1	2255PT	1	2255PT	1	2519PT	1	2519PT	1	2519PT
13	Rotor	1	7656S	1	7656S	1	7658S	1	7656S	1	7656S	1	7658S
15	Bearing Plate	1	2959	1	2959	1	2959	1	2424	1	2424	1	2424
20	Planetary Gear Carrier	1	2851	1	2848	1	2848	1	2851	1	2848	1	2848
21	Planetary Gear	2	2809PT (17T)	2	2809PT (17T)	2	2956 (15T)	2	2809PT (17T)	2	2809PT (17T)	2	2956 (15T)
28	Planetary Gear	2	2809PT (17T)	2	2956 (15T)	2	2956 (15T)	2	2809PT (17T)	2	2956 (15T)	2	2956 (15T)

(T) Teeth

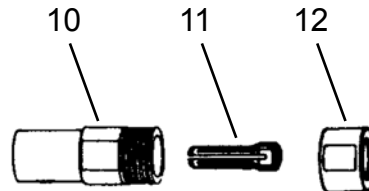
10.3 22 Series - Motor Terminations

Models

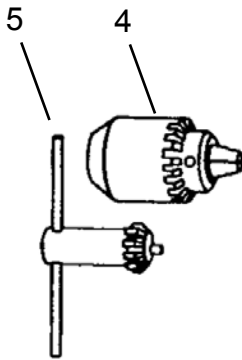
22(-)5000(--)
22(-)5001(--)
22(-)5002(--)
22(-)5040(--)
22(-)5041(--)
22(-)5042(--)



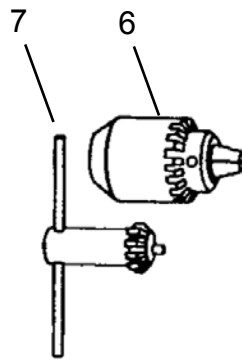
-01 Termination: Series 200 Collet



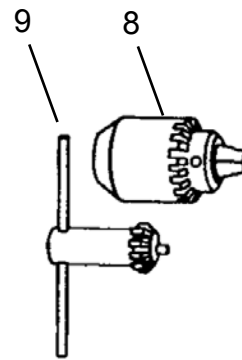
-62 Termination: Series "K" Collet



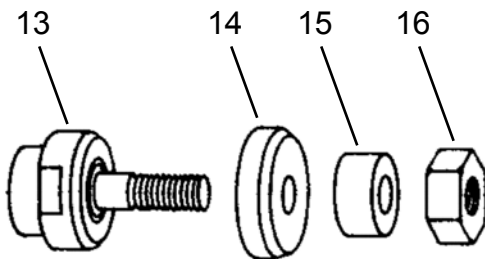
-38 Termination: 1/4" Drill Chuck



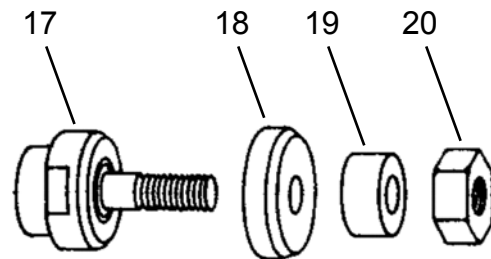
-51 Termination: 3/8" Drill Chuck



-53 Termination: 1/2" Drill Chuck



-63 Termination: 4"x1"x.50" Polishing Wheel



-64 Termination: 8"x1"x.62" Polishing Wheel

10.3 22 Series Motor Terminations

Ref	Number	#	X	EN
				Description
Termination 01 - Series 200 Collet				
1	2801PT	1	2	Collet Chuck Body
2	208	1	2	1/4" Collet
3	2058PT	1	2	Collet Cap
--	14-0809	1	2	Wrench (9/16") (not shown)
--	14-0812	1	2	Wrench (3/4") (not shown)
Termination 38 - 0"-1/4" Drill Chuck Capacity				
4	14-2545B	1	1	1/4" Chuck
5	14-2548	1	2	Chuck Key
Termination 51 - 1/16"-3/8" Drill Chuck Capacity				
6	14-2546	1	1	3/8" Chuck
7	14-2169	1	2	Chuck Key
Termination 53 - 5/64"-1/2" Drill Chuck Capacity				
8	14-2547	1	1	1/2" Chuck
9	14-2549	1	2	Chuck Key
Termination 62 - Series "K" Collet				
10	14-2254	1	2	Collet Chuck Body
11	124PT	1	2	1/4" Collet
12	4255PT	1	2	Collet Cap
--	14-0814	1	2	Wrench (7/8") (not shown)
--	14-0818	1	2	Wrench (1-1/8") (not shown)
Termination 63 - 4" x 1" x .50" Polishing Wheel				
13	14-2216	1	2	Wheel Adapter
14	14-4072	1	2	Wheel Flange
15	14-4082	1	2	Spacer
16	14-4073	1	2	Hex Nut
--	14-0814	1	2	Wrench (7/8") (not shown)
--	14-0836	1	2	Wrench (1-3/8") (not shown)
Termination 64 - 8" x 1" x .62" Polishing Wheel				
17	14-2212	1	2	Wheel Adapter
18	14-4045	1	2	Wheel Flange
19	14-4009	1	2	Spacer
20	14-4037	1	2	Hex Nut
--	14-0815	1	2	Wrench (15/16") (not shown)
--	14-0836	1	2	Wrench (1-3/8") (not shown)

(#) Quantity

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

22 Series Rotary Vane Motors

11 Technical data**11.1 22 Series Specifications**

Model Number	Maximum Allowable RPM		Stall Torque		Weight		Overall Length		Air Consumption		Gear Ratio	Exhaust
	@ Max. HP	Free Speed	ft. lbs.	Nm	lbs.	kg	in.	mm	cfm	m3/min		
Round Housing - Right Hand Rotation - See Termination Options												
22-5000	215	430	41.2	55.83	4.2	1.91	7.94	202	29	0.82	50.4:1	Side
22-5040	215	430	41.2	55.83	4.1	1.86	7.94	202	29	0.82	50.4:1	Rear
22-5001	320	640	28.4	38.48	4.2	1.91	7.94	202	29	0.82	34.8:1	Side
22-5041	320	640	28.4	38.48	4.1	1.86	7.94	202	29	0.82	34.8:1	Rear
22-5002	470	940	19.6	26.56	4.2	1.91	7.94	202	29	0.82	24:1	Side
22-5042	470	940	19.6	26.56	4.1	1.86	7.94	202	29	0.82	24:1	Rear
Round Housing - Left Hand Rotation - 1/2" Diameter Keyed Spindle (only)												
22D5000-50	215	430	41.2	55.83	4.2	1.91	7.94	202	29	0.82	50.4:1	Side
22D5040-50	215	430	41.2	55.83	4.1	1.86	7.94	202	29	0.82	50.4:1	Rear
22D5001-50	320	640	28.4	38.48	4.2	1.91	7.94	202	29	0.82	34.8:1	Side
22D5041-50	320	640	28.4	38.48	4.1	1.86	7.94	202	29	0.82	34.8:1	Rear
22D5002-50	470	940	19.6	26.56	4.2	1.91	7.94	202	29	0.82	24:1	Side
22D5042-50	470	940	19.6	26.56	4.1	1.86	7.94	202	29	0.82	24:1	Rear
Flange and Base Mounting - Right Hand Rotation - See Termination Options												
22M5000	215	430	41.2	55.83	5.1	2.31	7.94	202	29	0.82	50.4:1	Side
22M5040	215	430	41.2	55.83	5.0	2.27	7.94	202	29	0.82	50.4:1	Rear
22M5001	320	640	28.4	38.48	5.1	2.31	7.94	202	29	0.82	34.8:1	Side
22M5041	320	640	28.4	38.48	5.0	2.27	7.94	202	29	0.82	34.8:1	Rear
22M5002	470	940	19.6	26.56	5.1	2.31	7.94	202	29	0.82	24:1	Side
22M5042	470	940	19.6	26.56	5.0	2.27	7.94	202	29	0.82	24:1	Rear
Flange and Base Mounting - Left Hand Rotation - 1/2" Diameter Keyed Spindle (only)												
22V5000-50	215	430	41.2	55.83	5.1	2.31	7.94	202	29	0.82	50.4:1	Side
22V5040-50	215	430	41.2	55.83	5.0	2.27	7.94	202	29	0.82	50.4:1	Rear
22V5001-50	320	640	28.4	38.48	5.1	2.31	7.94	202	29	0.82	34.8:1	Side
22V5041-50	320	640	28.4	38.48	5.0	2.27	7.94	202	29	0.82	34.8:1	Rear
22V5002-50	470	940	19.6	26.56	5.1	2.31	7.94	202	29	0.82	24:1	Side
22V5042-50	470	940	19.6	26.56	5.0	2.27	7.94	202	29	0.82	24:1	Rear

Termination Options for Right Hand Rotation Models:

- 01 Series 200 Collet Chuck (for milling and routing)
- 38 0"-1/4" Capacity Drill Chuck
- 50 1/2" Diameter Keyed Spindle
- 51 1/16"-3/8" Capacity Drill Chuck
- 53 5/64"-1/2" Capacity Drill Chuck
- 62 Series "K" Collet Chuck (for milling and routing)
- 63 4" x 1" x .50" Polishing Wheels
- 64 8" x 1" x .62" Polishing Wheels

12 Service

12.1 Replacement parts

NOTE



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.

12.2 Tool repairs

Only qualified and trained personnel are to repair this equipment.

12.3 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.

13 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.

Sales & Service Centers

Note: All locations may not service all products. Please contact the nearest Sales & Service Center for the appropriate facility to handle your service requirements.

Detroit, Michigan

**Apex Tool Group
Sales & Service Center**
2630 Superior Court
Auburn Hills, MI 48326
Tel: (248) 393-5640
Fax: (248) 391-6295

Houston, Texas

**Apex Tool Group
Sales & Service Center**
6550 West Sam Houston
Parkway North, Suite 200
Houston, TX 77041
Tel: (713) 849-2364
Fax: (713) 849-2047

Lexington, South Carolina

Apex Tool Group
670 Industrial Drive
Lexington, SC 29072
Tel: (800) 845-5629
Tel: (803) 951-7544
Fax: (803) 358-7681

Los Angeles, California

**Apex Tool Group
Sales & Service Center**
6881 Stanton Avenue
Unit B
Buena Park, CA 90621
Tel: (714) 994-1491
Fax: (714) 994-9576

Seattle, Washington

**Apex Tool Group
Sales & Service Center**
2865 152nd Avenue N.E.
Redmond, WA 98052
Tel: (425) 497-0476
Fax: (425) 497-0496

York, Pennsylvania

**Apex Tool Group
Sales & Service Center**
3990 East Market Street
York, PA 17402
Tel: (717) 755-2933
Fax: (717) 757-5063

Brazil

**Apex Tool Group
Sales & Service Center**
Av. Liberdade, 4055
Zona Industrial - Iporanga
18087-170 Sorocaba
SP Brazil
Tel: +55 15 2383929
Fax: +55 15 2383260

Canada

**Apex Tool Group
Sales & Service Center**
7631 Bath Road
Mississauga, Ont. L4T
3T1
Canada
Tel: (866) 691-6212
Tel: (905) 673-4400

China

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an Apex Tool Group, LLC
company
955 Sheng Li Road,
Heqing Pudong, Shanghai
China 201201
Tel: +86-21-28994176
Fax: +86-21-51118446

England

**Apex Tool Group
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C/O Spline Gauges
Piccadilly, Tamworth
Staffordshire B78 2ER
United Kingdom
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Fax: +44 1827 8741 28

France

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77831 Ozoir-La-Ferrière
Cedex, France
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Germany

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73463 Westhausen
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Hungary

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Hungaria Kft**
Platánfa u.2
9027 Győr
Hungary
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India

**Apex Power Tools India
Private Limited**
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Industrial Park
Taluka-Mulsi, Phase I
Hinjawadi, Pune 411057
Maharashtra, India

Mexico

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