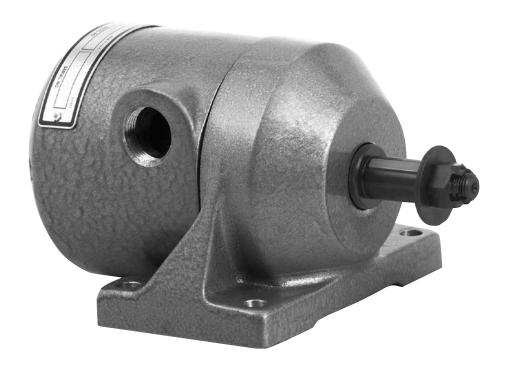


MR30 Series Rotary Vane Power Motors



For additional product information visit our website at http://www.apextoolgroup.com

07/08/2013

Cleco® General Information

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 MR30 series tools.
- serves as a reference guide for technical data, service intervals and spare parts ordering.
- · provides information on optional equipment.

Identification text:

MR30 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

Model Number	Maximum RF		all que		Starting Torque		Weight		Air Consumption		Maximum Overhung Load @ Stall *		
Number	@ Max. HP Free Spee		ft. lbs.	Nm	ft. lbs. Nm		lbs.	kg	cfm	m3/min	Ratio	lbs.	kg
Foot Mounting	Foot Mounting - 3/4" (Non-Geared) or 1-1/8" (Geared) Diameter Keyed Spindle												
MR30R103M	6000	11000	7.2	10	4.6	6	12.5	5.7	124	3.51		1220	553
MR30R106M	366	670	91.0	123	45.0	61	33.0	15.0	124	3.51	16.4:1	1550	703
MR30R105M	252	460	148.0	201	87.0	118	33.0	15.0	124	3.51	23.8:1	1550	703
MR30R107M	177	325	209.0	283	122.0	165	33.0	15.0	124	3.51	23.8:1	1550	703
Flange Mounti	ng - 3/4" (No	n-Geared) o	r 1-1/8" ((Geared)	Diamet	er Keye	d Spindl	е					
MR30R104M	60000	11000	7.2	10	4.6	6	12.5	5.7	124	3.51		1220	553
MR30R111M	366	670	90.1	123	45.0	61	33.0	15.0	124	3.51	16.4:1	1550	703
MR30R110M	252	460	148.0	201	87.0	118	33.0	15.0	124	3.51	23.8:1	1550	703
MR30R112M	177	325	209.0	283	122.0	165	33.0	15.0	124	3.51	23.8:1	1550	703

^{*} Note: Non-geared models assume overhung load located at 0.625" (15.88mm) from the face of the motor.

* Note: Geared models assume overhung load located at 0.875" (22.02mm) from the face of the motor.

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Cleco® Safety

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

CAUTION!

Work Area:



- → 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 MR30 tools. The MR30 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

Cleco® Safety

1.5 Designated use

The MR30 is designed exclusively as a power source to be integrated into an application.

- Do not modify the MR30, 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.

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Scope of Supply, Transport and Storage

2 Scope of supply, transport and storage

2.1 Items supplied

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

- MR30
- PL70-1057EN instruction manual
- 1 Declaration of Conformity (if applicable)
- 1 Lubrication sheet
- Warranty statement

2.2 **Transport**

Transport and store the MR30 in the original packaging. The packaging is recyclable.

2.3 **Storage**

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

→ Place the MR30 in a location on the workbench to avoid accidental startup.

For storage longer than 2 hours:

→ Disconnect the air supply from the MR30

Object	Time Period	Storage Temperature			
MR30 without air supply	No guideline	-13°F to 104°F (-25°C to 40°C)			

Cleco® Product Description

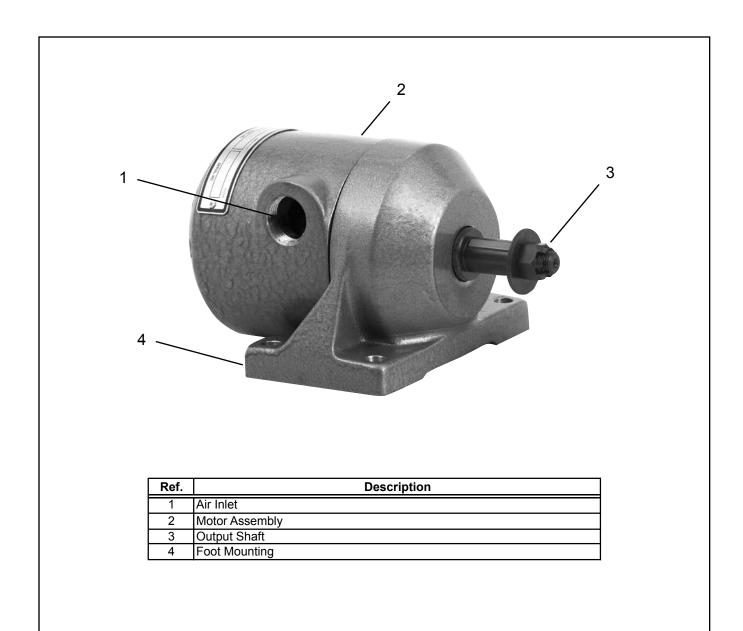
3 Product description

3.1 General description

- Pneumatic powered radial piston power motor
- 3.0 Horsepower
- Non-geared or geared model options
- Foot or flange mounting options

3.2 Operation and functional elements

This section describes the operational and functional elements of the MR30.



Cleco® Accessories

4 **Accessories**

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Before Initial Operation

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: 3/4" (19,1 mm)
All Hose	Maximum length: 16.4' (5 m)
Marking process range	60 to 100 psi (414 to 689 kPa)
Working pressure range	Recommended: 90 psi (620 kPa)
Compressed air	Air quality according to ISO 8573-1, quality class 2.4.3
Compressed all	The compressed air must be clean and dry.



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

WARNING!

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



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

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Before Initial Operation

5.4 Tool set up

The motor must be configured for the application.

Cleco[®] First Operation

6 First operation

6.1 Putting into use

The MR30 series motors are a rotary vane type with spring loaded blades. 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 MR30 series motors perform satisfactorily in high temperature ares 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 MR30 motor.

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Cleco® Troubleshooting

Troubleshooting 7

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 the oil levels in the motor case and gear case. Add oil as necessary.
	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 the oil levels in the motor case and gear case. Add oil as necessary.

Cleco® Maintenance

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	 → 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	 → Inspect the air hose for damage or wear → inspect the output spindle for damage or wear → Inspect the airline lubrication for proper function

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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!

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Repair Instructions

9 Repair instructions

9.1 Motor run-in or test procedure

- Connect the power motor to an air supply of 90 psig pressure with no load on the motor output shaft.
- Open the throttle valve so a minimum amount of air will turn the motor slowly, the motor must run
- Open the throttle valve until the motor runs at a high even speed.
- No additional run-in time is required to improve the motor performance.

9.2 Disassembly of motor (non-geared and geared models)

- Remove the four (4) screws from the motor case and carefully remove the motor case by hand. DO NOT FORCE.
- NOTE



- Disengage the lockwasher tang from the lock nut and remove the lock nut, lock washer and motor plate (rear) with the ball bearing.
- Note: The rotor vanes and rotor vane springs can now be serviced without any additional disassembly.
- Remove the cylinder, rotor vanes, rotor vane springs and dowel pin. The motor shaft and motor plate (front) can now be removed.
- Note: Non-geared models have a nut and washer securing the motor shaft to the motor case.

NOTE

9.3 Disassembly of gearing (geared models)

- Remove the six (6) screws securing the motor case plate assembly to the gear case.
- Remove the nut and washer from the output shaft of the upper gear.
- Remove the motor case plate assembly from the gear case. The upper and lower gears should stay assembled to the motor case plate when it is removed from the gear case.
- The bearing on the gear case end of the lower gear shaft must be removed before the upper gear can be disassembled from the motor case plate.
- Remove the lower gear from the motor case plate.
- Remove the four (4) screws and washers securing the bracket to the moto case plate.

9.4 Inspection of parts

Clean all parts (except bearings, o-rings and rotor vanes) in a solvent and blow dry. Thoroughly inspect all parts for excessive wear or damage and replace as necessary with genuine Cleco replacement parts as specified in Section 10.

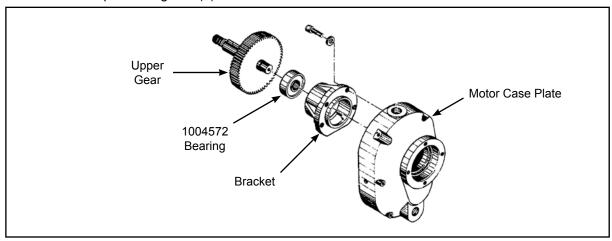
Minor scoring in the cylinder and on the motor plates can be removed by honing or resurfacing the parts.

Check the condition and length of the rotor vanes. The length of the vanes should be .002" to .0075" shorter than the cylinder and they must fit freely into the rotor slots.

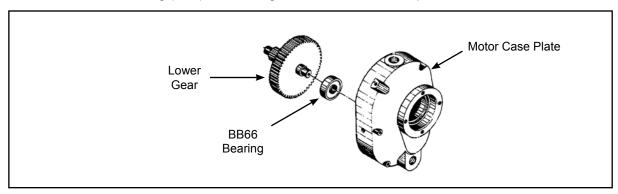
Cleco®Repair Instructions

9.5 Assembly of gearing (geared models)

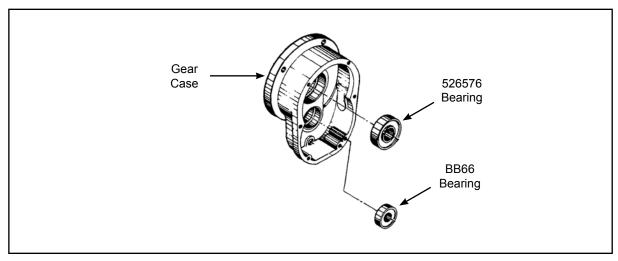
- Place the motor case plate horizontally on a workbench with the large open side facing up.
- Assemble the bearing (1004572) and upper gear into the bracket. Assemble the bracket to the motor case plate using four (4) washers and screws.



Assemble the bearing (BB6) and lower gear into the motor case plate.



• Press the upper gear bearing (526576) and lower gear bearing (BB66) into the gear case.



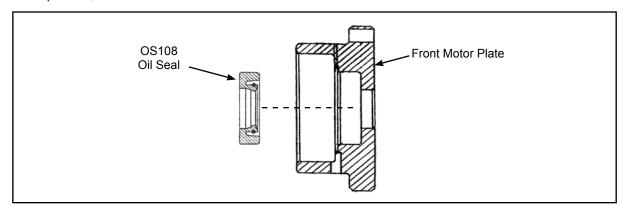
Position the gasket on the motor case plate and assemble the gear case.

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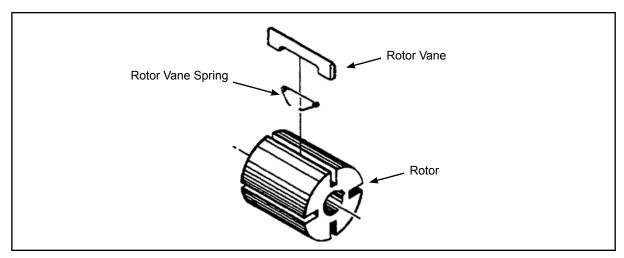
Repair Instructions

9.6 Assembly of motor (non-geared and geared models)

- Press the large bearing (BB127) onto the motor shaft.
- Press the oil seal (OS108) into the front motor plate. Note: The seal must be assembled with the lip down, as shown.



- Assemble the front motor plate over the large bearing on the motor shaft.
- Place the two woodruff keys in the key slots of the motor shaft and assemble the rotor and cylinder onto the motor shaft.
- Install the rotor vane springs and rotor vanes into the rotor slots. Note: The spring arms must set in the bottom of each slot.



- Geared Models: Make sure the splined end of the motor shaft engages completely with the gears.
- Assemble the small bearing (BB130) into the rear motor plate. Note: The small bearing must be assembled by hand.
- Assemble the rear motor plate, with bearing, onto the motor shaft.

CAUTION!

- Install the lock washer and lock nut onto the motor shaft. CAUTION: Tighten the lock nut to a
 maximum of 30 ft. lbs. torque. Overtightening can cause damage to the motor components.
 Lock one of the washer tangs into the lock nut.
- Insert the dowel pin through the motor plates and cylinder.

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Repair Instructions

9.6 Assembly of motor (non-geared and geared models) (continued)

CAUTION!



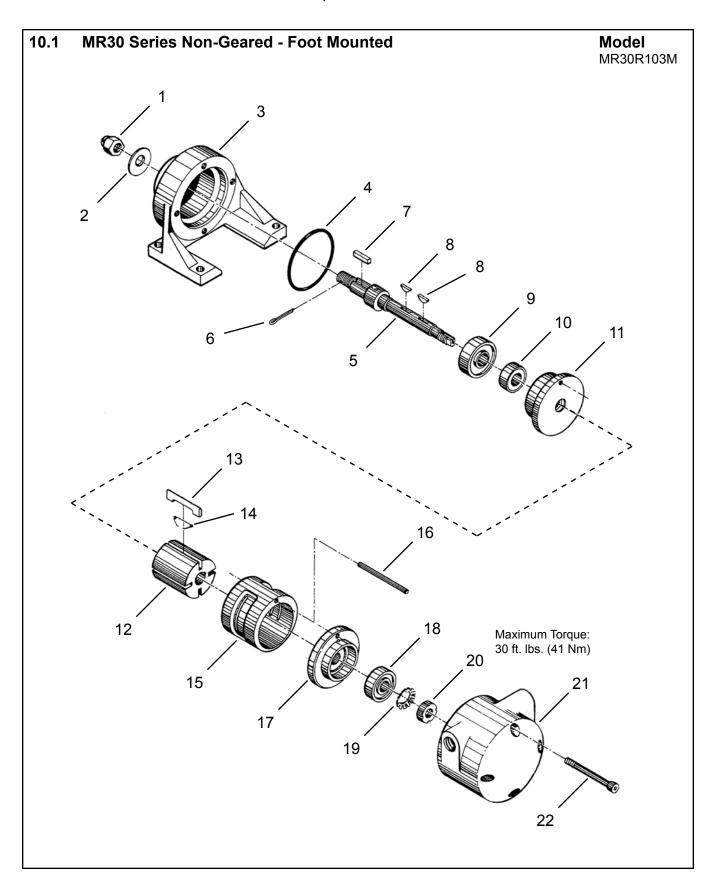
- Place the rear motor case over the motor assembly. Align the dowel pin with the hole in the motor case. CAUTION: Assemble the motor case by hand and do not drive the motor case over the motor assembly. Watch for burrs on the front and rear motor plates as well as the cylinder.
- Using four (4) screws, secure the rear motor case to the front motor case (non-geared) models or motor case plate (geared models). There should be approximately 1/16" gap between the motor cases when assembly is complete.

NOTE



- Connect the air line and open the valve slightly to determine if the motor idles freely.
- Note: If an excessive amount of oil was used during assembly, the motor will run rough until the surplus oil is exhausted.

Cleco[®] Spare Parts



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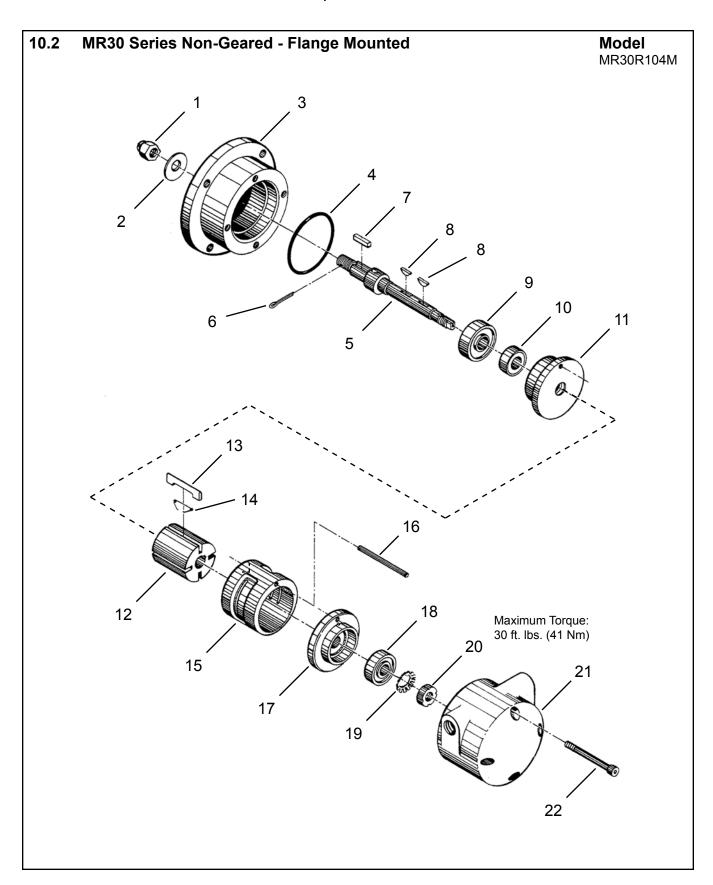
10.1 MR30 Series Non-Geared Foot Mounted

Ref	Number	#	х	EN
Rei	Number	#	^	Description
1	C104W	1	2	Output Shaft Hex Nut
2	W216	1	2	Output Shaft Washer
3	1035177	1		Motor Case (Front)
4	19075	1	3	O-Ring
5	MR30A11A	1		Motor Shaft
6	P101J	1	3	Cotter Pin
7	20910	1	3	Motor Shaft Key
8	MR30A11K	2	6	Woodruff Key
9	BB127	1	2	Ball Bearing
10	OS108	1	3	Oil Seal
11	1035688	1		Motor Plate (Front)
12	MR30A7	1		Rotor
13	MR30A9M	4	8	Rotor Vane
14	541819	4	8	Rotor Vane Spring
15	1036721	1		Cylinder
16	MR30A6	1		Dowel Pin
17	1035705	1		Motor Plate (Rear)
18	BB130	1	2	Ball Bearing
19	NDL10	1	1	Lock Washer
20	NDN8	1	1	Lock Nut
21	1034699	1		Motor Case (Rear)
22	SHA49	4		Motor Case Screw
23	530322	1		Name Plate (not shown)
24	534820	2		Drive Screw (not shown)

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

Cleco® Spare Parts



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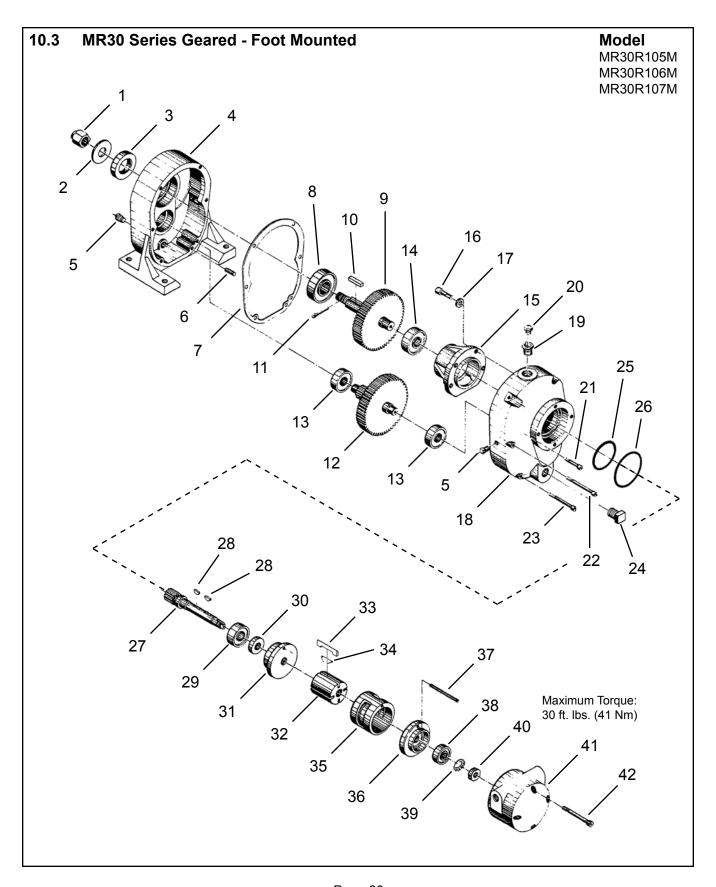
10.2 MR30 Series Non-Geared Flange Mounted

Ref	Number	#	х	EN
Kei	Number	#	^	Description
1	C104W	1	2	Output Shaft Hex Nut
2	W216	1	2	Output Shaft Washer
3	1035172	1		Motor Case (Front)
4	19075	1	3	O-Ring
5	MR30A11A	1		Motor Shaft
6	P101J	1	3	Cotter Pin
7	20910	1	3	Motor Shaft Key
8	MR30A11K	2	6	Woodruff Key
9	BB127	1	2	Ball Bearing
10	OS108	1	3	Oil Seal
11	1035688	1		Motor Plate (Front)
12	MR30A7	1		Rotor
13	MR30A9M	4	8	Rotor Vane
14	541819	4	8	Rotor Vane Spring
15	1036721	1		Cylinder
16	MR30A6	1		Dowel Pin
17	1035705	1		Motor Plate (Rear)
18	BB130	1	2	Ball Bearing
19	NDL10	1	1	Lock Washer
20	NDN8	1	1	Lock Nut
21	1034699	1		Motor Case (Rear)
22	SHA49	4		Motor Case Screw
23	530322	1		Name Plate (not shown)
24	534820	2		Drive Screw (not shown)

^(#) Quantity

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

Cleco® **Spare Parts**



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We Sell Reliability!



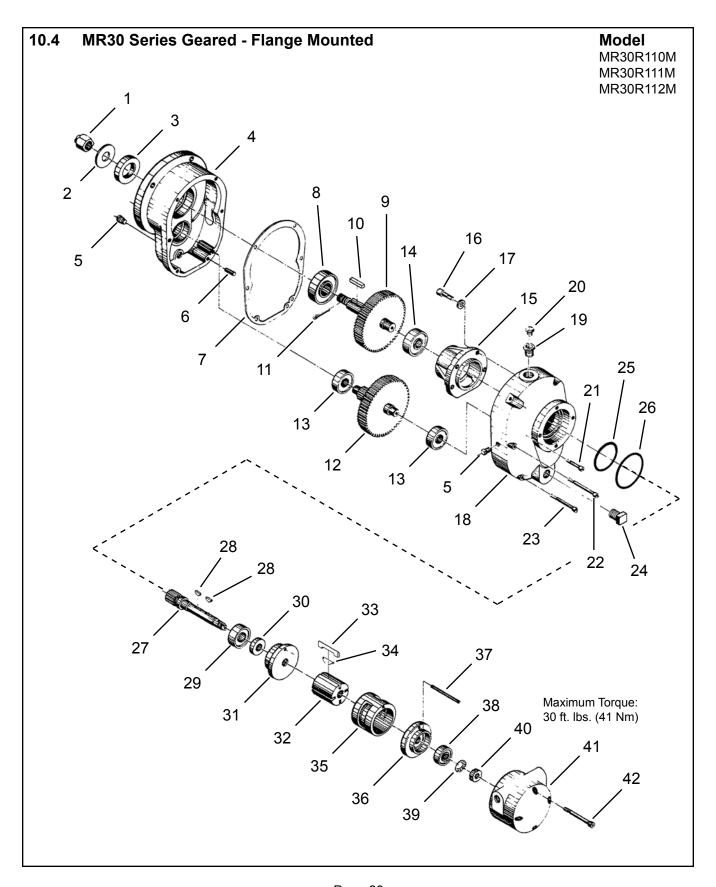
10.3 **MR30 Series Geared Foot Mounted**

1		NI1	Ι	Τ,,	EN				
2	Ref	Number	#	X	Description				
2	1	C109W	1	2	Output Shaft Hex Nut				
3	2	W10	1	2	·				
MR30C18A	3	OS20	1	3	·				
5 F504PT 2 2 Pipe Plug 6 20572 1 Dowel Pin 7 MR30C19A 1 3 Gear Case Gasket 8 526576 1 2 Ball Bearing 1036697 1 Gear (Model: MR30R105M) 9 MR30C22D 1 Gear (Model: MR30R105M) 10 1035557 1 3 Gear Shaft Key 11 P101K 1 3 Cotter Pin 10 1035525 1 3 Gear (Model: MR30R105M) 12 MR30C24D 1 Gear (Model: MR30R105M) 13 BB66 2 4 BI Bearing 14 1004572 1 2 Ball Bearing 15 MR30C21B 1 Bracket 16 B102C 4 4 Bracket Washer 17 W222 4 4 Bracket Washer 18 MR30C20A 1 McBin (Includes Ref. 6) 19	\vdash			Ť					
6 20572 1 Dowel Pin 7 MR30C19A 1 3 Gear Case Gasket 8 526576 1 2 Ball Bearing 1036697 1 Gear (Model: MR30R105M) 9 MR30C22D 1 Gear (Model: MR30R105M) 10 1035557 1 3 Gear (Model: MR30R107M) 10 1035255 1 3 Gear (Model: MR30R105M) 11 P101K 1 3 Gear (Model: MR30R105M) MR30C24D 1 Gear (Model: MR30R105M) MR30C24E 1 Gear (Model: MR30R107M) 13 BB66 2 4 Ball Bearing 14 1004572 1 2 Ball Bearing 15 MR30C21B 1 Bracket Screw 16 B102C 4 4 Bracket Washer 18 MR30C20A 1 Motor Case Plate (includes Ref. 6) 19 F579 1 Relief Valve Bushing 21 B18				2					
7 MR30C19A 1 3 Gear Case Gasket 8 526576 1 2 Ball Bearing 1036697 1 Gear (Model: MR30R105M) 9 MR30C22D 1 Gear (Model: MR30R106M) 10 1035557 1 Gear (Model: MR30R107M) 11 P101K 1 3 Gear (Model: MR30R105M) 12 MR30C24D 1 Gear (Model: MR30R106M) 13 BB66 2 4 BIB Bearing 14 1004572 1 2 Ball Bearing 15 MR30C21B 1 Bracket Screw 16 B102C 4 Bracket Screw 17 W222 4 4 Bracket Screw 18 MR30C20A 1 Motor Case Plate (includes Ref. 6) 19 F579 1 Relief Valve 20 500189 1 1 Relief Valve 21 B129N 2 2 Screw 22 B1	_			_					
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1035285			_						
MR30C24D				۳					
MR30C24E	12								
13 BB66 2 4 Ball Bearing 14 1004572 1 2 Ball Bearing 15 MR30C21B 1 Bracket 16 B102C 4 4 Bracket Screw 17 W222 4 4 Bracket Washer 18 MR30C20A 1 Motor Case Plate (includes Ref. 6) 19 F579 1 Relief Valve Bushing 20 500189 1 1 Relief Valve Bushing 21 B129N 2 2 Screw 22 B115M 2 2 Screw 23 B119R 2 2 Screw 24 B112E 1 1 Pipe Plug 25 OG8 1 3 O-Ring 26 19075 1 3 O-Ring 27 MR30C11A 1 Motor Shaft 28 MR30A11K 2 6 Woodruff Key 29	'^				,				
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42 SHA49 4 Motor Case Screw 43 530322 1 Name Plate (not shown)	40	NDN8	1	1	Lock Nut				
42 SHA49 4 Motor Case Screw 43 530322 1 Name Plate (not shown)	41	1034699	1		Motor Case (Rear)				
43 530322 1 Name Plate (not shown)					` '				

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

We Sell Reliability!

Cleco® **Spare Parts**



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Cleco® Spare Parts

10.4 MR30 Series Geared Flange Mounted

10.4					
Ref	Number	#	х	EN Description	
	0400144	1 4		Description Description	
1	C109W	1	2	Output Shaft Hex Nut	
2	W10	1	2	Output Shaft Washer	
3	OS20	1	3	Oil Seal	
4	MR30D18	1		Gear Case	
5	F504PT	2	2	Pipe Plug	
6	20572	1		Dowel Pin	
7	MR30C19A	1	3	Gear Case Gasket	
8	526576	1	2	Ball Bearing	
	1036697	1		Gear (Model: MR30R110M)	
9	MR30C22D	1		Gear (Model: MR30R111M)	
	MR30C22E	1		Gear (Model: MR30R112M)	
10	1035557	1	3	Gear Shaft Key	
11	P101K	1	3	Cotter Pin	
l	1035285	1		Gear (Model: MR30R110M)	
12	MR30C24D	1		Gear (Model: MR30R111M)	
	MR30C24E	1		Gear (Model: MR30R112M)	
13	BB66	2	4	Ball Bearing	
14	1004572	1	2	Ball Bearing	
15	MR30C21B	1		Bracket	
16	B102C	4	4	Bracket Screw	
17	W222	4	4	Bracket Washer	
18	MR30C20A	1		Motor Case Plate (includes Ref. 6)	
19	F579	1		Relief Valve Bushing	
20	500189	1	1	Relief Valve	
21	B129N	2	2	Screw	
22	B115M	2	2	Screw	
23	B119R	2	2	Screw	
24	B112E	1	1	Pipe Plug	
25	OG8	1	3	O-Ring	
26	19075	1	3	O-Ring	
27	MR30C11A	1		Motor Shaft	
28	MR30A11K	2	6	Woodruff Key	
29	BB127	1	2	Ball Bearing	
30	OS108	1	3	Oil Seal	
31	1035688	1	<u> </u>	Motor Plate (Front)	
32	MR30A7	1		Rotor	
33	MR30A9M	4	8	Rotor Vane	
34	541819	4	8	Rotor Vane Spring	
35	1036721	1		Cylinder Meter Plete (Peer)	
36 37	1035705 MR30A6	1 1	-	Motor Plate (Rear) Dowel Pin	
38	BB130	1	2	Ball Bearing	
39	NDL10				
40	NDL10 NDN8	1	1	Lock Washer	
-		1	- '	Lock Nut	
41	1034699	1	-	Motor Case (Rear)	
42	SHA49	4		Motor Case Screw	
43 44	530322	1	<u> </u>	Name Plate (not shown)	
44	534820	2		Drive Screw (not shown)	

^(#) Quantity

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

Cleco® **Technical Data**

11 **Technical data**

MR30 Specifications 11.1

Model Number	Maximum Allowable RPM		Stall Torque		Starting Torque		Weight		Air Consumption		Gear Ratio	Maximum Overhung Load @ Stall *	
	@ Max. HP	Free Speed	ft. lbs.	Nm	ft. lbs.	Nm	lbs.	kg	cfm	m3/min	Kalio	lbs.	kg
Foot Mounting - 3/4" (Non-Geared) or 1-1/8" (Geared) Diameter Keyed Spindle													
MR30R103M	6000	11000	7.2	10	4.6	6	12.5	5.7	124	3.51		1220	553
MR30R106M	366	670	91.0	123	45.0	61	33.0	15.0	124	3.51	16.4:1	1550	703
MR30R105M	252	460	148.0	201	87.0	118	33.0	15.0	124	3.51	23.8:1	1550	703
MR30R107M	177	325	209.0	283	122.0	165	33.0	15.0	124	3.51	23.8:1	1550	703
Flange Mounting - 3/4" (Non-Geared) or 1-1/8" (Geared) Diameter Keyed Spindle													
MR30R104M	60000	11000	7.2	10	4.6	6	12.5	5.7	124	3.51		1220	553
MR30R111M	366	670	90.1	123	45.0	61	33.0	15.0	124	3.51	16.4:1	1550	703
MR30R110M	252	460	148.0	201	87.0	118	33.0	15.0	124	3.51	23.8:1	1550	703
MR30R112M	177	325	209.0	283	122.0	165	33.0	15.0	124	3.51	23.8:1	1550	703

^{*} Note: Non-geared models assume overhung load located at 0.625" (15.88mm) from the face of the motor.

* Note: Geared models assume overhung load located at 0.875" (22.02mm) from the face of the motor.



12 Service

12.1 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.

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.

Cleco® Disposal

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.

FREE Expert Assistance - Call Now

PL70-1057EN

07/08/2013

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

1 ax. (003) 330-700

Los Angeles, California **Apex Tool Group**

Sales & Service Center

6881 Stanton Avenue Unit B

Buena Park, CA 90621 Tel: (714) 994-1491

Fax: (714) 994-1491

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

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