

Instruction Manual
PL70EN-A8-1228
11/23/2015

Cleco®

A8R Series
Reversible Axial Piston Power Motors



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Cleco® Nomenclature

Model Number	Maximum Allowable RPM *		Stall Torque		Starting Torque		Weight		Gear Ratio	Maximum Overhung Load @ Stall **	
	@ Max. HP	Free Speed	ft. lbs.	Nm	ft. lbs.	Nm	lbs.	kg		lbs.	kg
A8R-2206	375	765	64	87	48	65	38	17.2	3.4:1	1000	454
A8R-2208	225	450	110	149	82	111	38	17.2	5.8:1	1000	454

* Note: These motors must be operated with sufficient load to prevent speed from exceeding the maximum allowable free speed.

** Note: All models assume overhung load located at 2.25" (57.15mm) from the face of the motor.

The original language of this manual is English.

Product Safety Information:

Intended Use:

This pneumatic motor is to be used exclusively as a power source to be integrated into an application.

For additional product safety information refer to Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG document CE-2005, General Safety Instructions for Air Motors.



The motor must not be modified in any manner unless approved in writing by Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG. All safety devices must be properly installed and maintained in good working order.

Declaration of Incorporation:

We affirm that this machine complies with the basic requirements of the following directives (2006/42/EC) and is intended for installation / assembly in a / with other machine(s). Commissioning of the incomplete machine is prohibited until such time that the incomplete machine has been incorporated in a machine that complies with the EC Machinery Directive 2006/42/EC and for which there is an EC Declaration of Conformity in accordance with Appendix II A. We furthermore declare that the special technical documentation for the incomplete machine is in accordance with Appendix VII Part B. We undertake to have it passed on to the market surveillance body upon request by our representative for the compilation of technical documentation. The following Sections of Appendix I of Directive 2006/42/EC have been fulfilled: 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4, 1.5. Applied harmonized standards are ISO 12100-1: 2004-04, ISO 12100-2:2004-04.

The name, job function and address of the person authorized to compile the technical file.

Mr. Vishnu Irigreddy
Director of Global R&D- Mechanical Engineering
Apex Tool Group
670 Industrial Drive
Lexington, SC 29072

Signature: Vishnu Irigreddy
Date: November 23, 2015

Air Line Lubrication:

Use Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG's lightweight air tool oil 500021 (available in quantities shown in the following chart) or an SAE-5 lightweight spindle oil.

Part No.	Packaged	Designation
540397	1 Quart (0.94 liter)	Airlube 10W/NR-420LB DR
533485	1 US Gallon (3.78 liter)	Airlube 10W/NR-420LB DR

Recommended Grease:

Part No.	Packaged	Designation
A123771	16 oz. (0.45 kg)	Shell Alvania® EP 00
540450	16 oz. (0.45 kg)	Chevron Black Pearl® EP NLGI

Air Supply Line:

Parameter	Description
Air Hose	Minimum inside diameter: 1/2" (12.7mm) Maximum length: 16.4' (5 m)
Working pressure range	Performance rated at: 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.

Service and Repair:

Tool service and repair should be performed by an authorized Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG Center. Refer to the last page of this manual for locations.

Disposal:



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

Copyright Protection:

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Repair instructions

Lubrication

“DO NOT SUBSTITUTE LUBRICANTS”

The proper grades of oil and grease are essential too the efficient operation of these air motors. Heavy oil will not flow through a lubricator at a satisfactory rate too insure proper lubrication to the motor. Greases that are too stiff will channel and fail to lubricate properly and greases that are tool thin will blow out of the motor. Improper lubrication or inadequate lubricants can cause extensive motor damage.

Grease fittings are located on the motor housing and the gear housing for each stage of gearing. The following quantities of A123771 (*High Temp 540450*) grease are provided during factory assembly and these same amounts must be provided whenever the air motor is disassembled.

- Motor assembly: 12 oz.
- Gearing assembly (each): 4 oz.

During normal operation, the motor wil loose a small amount of grease through the exhaust making it necessary to add grease at regular intervals. After each 50 hours of operation add 2.0 oz. of A123771 (*High Temp 540450*) grease to the motor housing.

! CAUTION

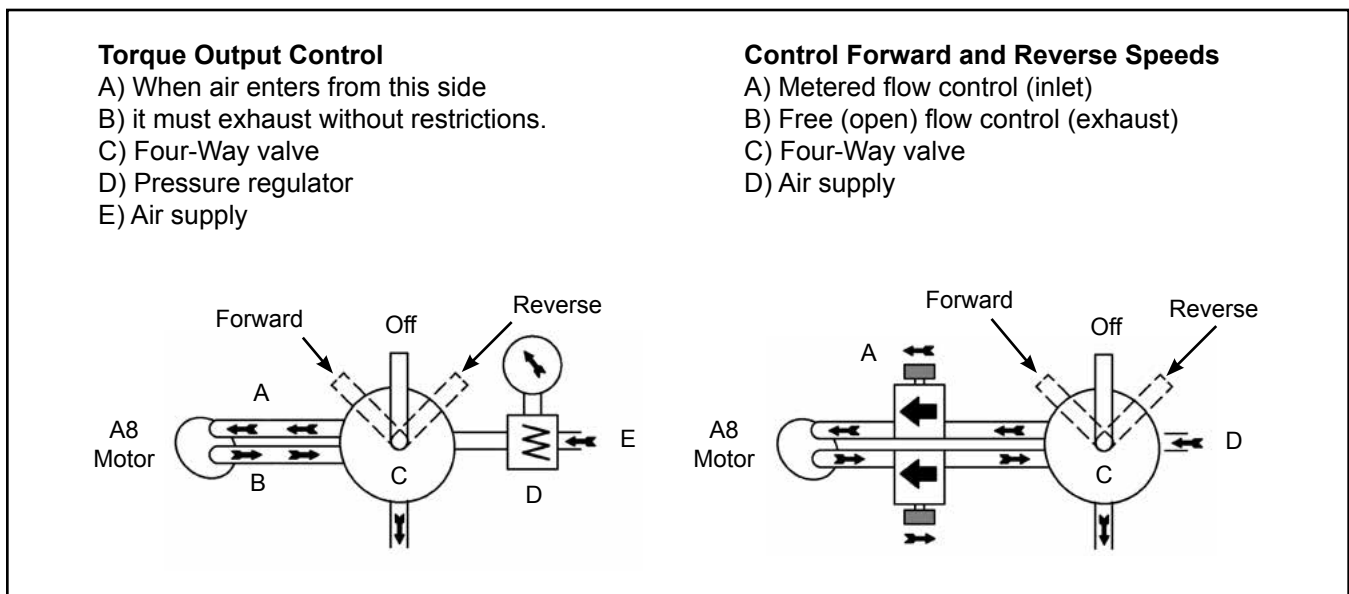
Excessive grease in the motor housing will cause a loss in motor performance. Not enough grease will cause premature motor failure.

Too much grease in the gear case will force the seal out of the front housing.

The gear case will lose grease through the motor. The motor will siphon gear grease, saturated with airline oil, through the exhaust. After 200 hours of operation, add 1.0 oz. of A123771 (*High Temp 540450*) grease into each gear housing.

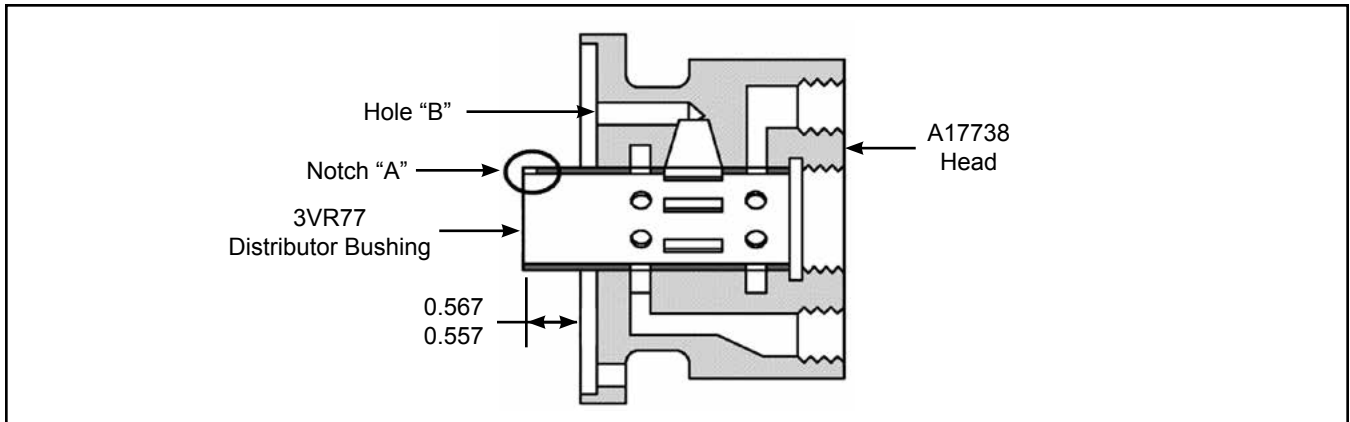
Valving

If a valve is used, it should have a full flow air passage to utilize full powe of the motor. For quick motor stops, an all-ports closed-in-neutral type valve with a spring return should be used.



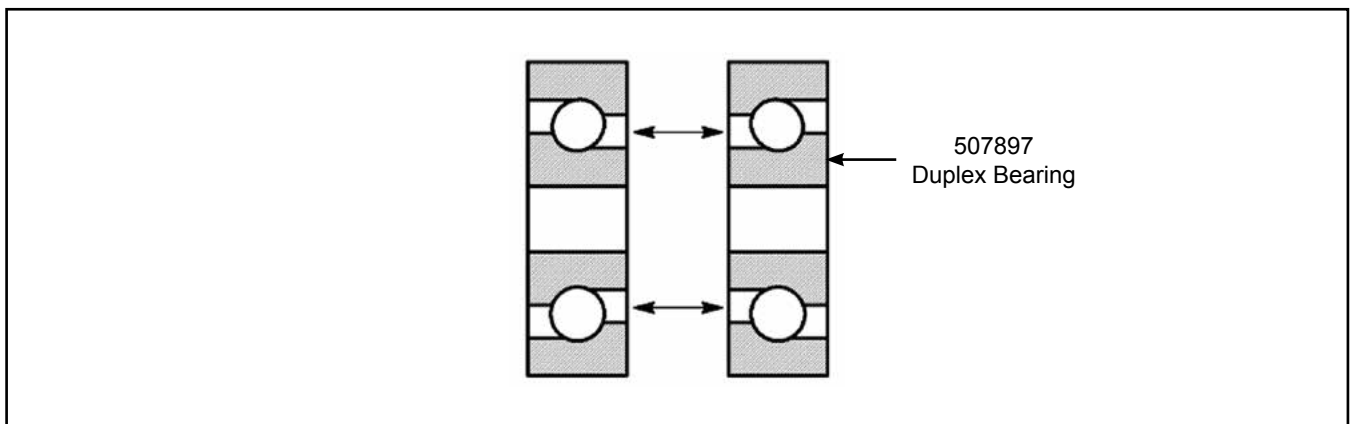
Distributor bushing assembly

Press the new bushing into the head as shown. Notch "A" in the bushing must be opposite hole "B" in the head.



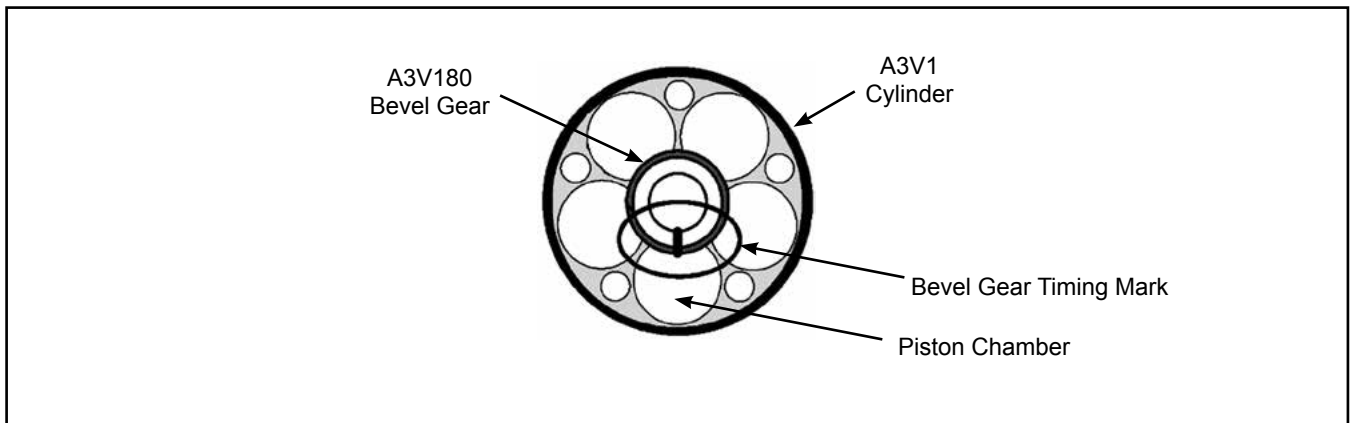
Duplex bearing assembly

The small diameters of the bearings must face each other when assembled.



Bevel gear timing mark

Make sure the timing mark on the bevel gear is aligned with the center of a piston chamber before assembling the driveshaft assembly into the cylinder.



Models
A8R-2206
A8R-2208

“A”

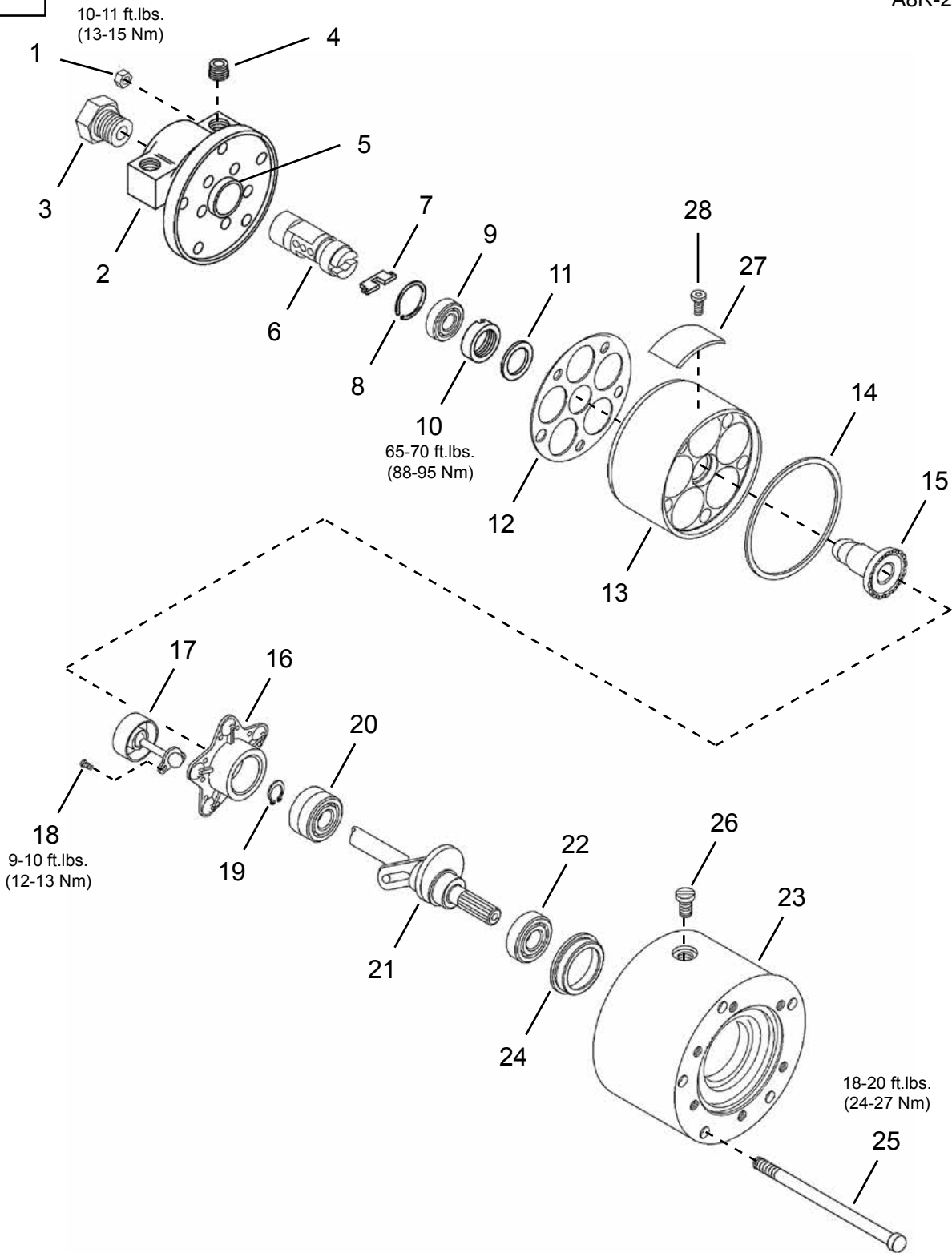


Illustration "A": Power Unit

Ref	Number	#	X	EN
				Description
--	507491	1		Power Unit (includes Ref. 1-26)
1	C108S	5	10	Head Assembly Nut
2	A17738	1		Head Assembly (includes Ref. 3-5)
3	17749	1	1	Reducer Bushing
4	B110E	2	2	Square Head Pipe Plug (1/2-14 NPT)
5	3VR77	1	1	Distributor Bushing
6	508321	1		Distributor (includes Ref. 7-8)
7	3V43	1	1	Drive Key
8	3V235	1	3	Distributor Spring
9	OG196	1	2	Ball Bearing
10	3V169	1		Lock Nut
11	3V272	1		Washer
12	10012PT	1	3	Head Gasket
13	A3V1	1		Cylinder
14	10011	1	3	Cylinder Gasket
15	A3V180	1	1	Bevel Gear
--	542241	1		Socket Plate Assembly (includes Ref. 16-18)
16	507742	1		Socket Plate
17	542240	5	5	Piston Assembly
18	3V188	10	20	Socket Head Cap Screw (12-24 NC-2 x 5/16)
19	500741	1	3	Retaining Ring
20	507897	1	2	Duplex Ball Bearing
21	508056	1		Driveshaft
22	22G155	1	2	Ball Bearing
23	526546	1		Rear Housing (includes Ref. 24-25)
24	18364PT	1	1	Rear Housing Bearing Liner
25	526543	5	5	Rear Housing Stud (5/16-24 x 7.81)
26	30775PT	1	1	Flush Type Grease Fitting
27	530322	1		Nameplate (not included in 507491 power unit)
28	534820	2		Drive Screw (not included in 507491 power unit)

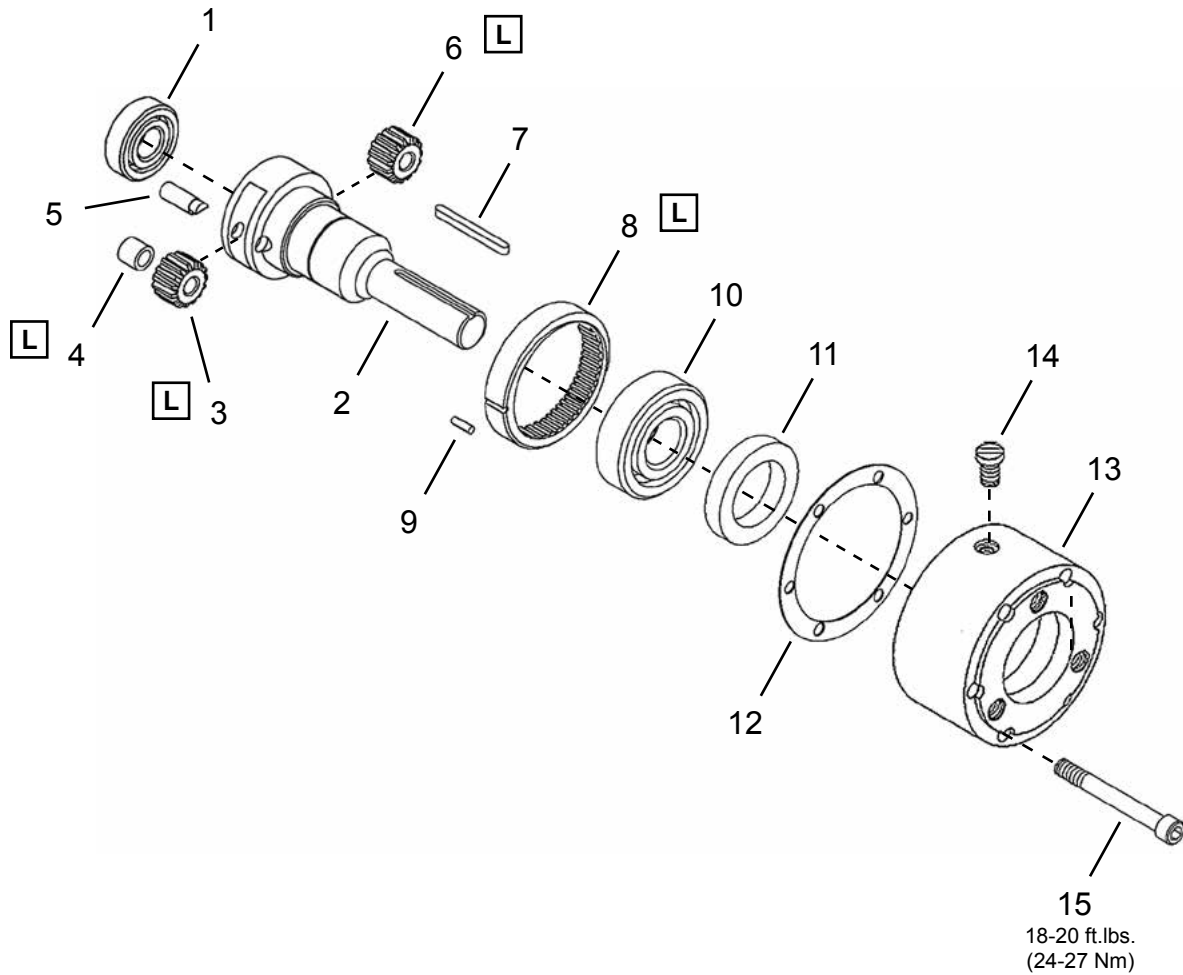
(#) Quantity

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

Cleco® Single Stage Gearing

Models
A8R-2206
A8R-2208

“B”



L Lubricate with A123771 Grease (16 oz. can)

Cleco®
Single Stage Gearing

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Illustration "B": Single Stage Gearing Assemblies

Ref	Number	#	X	EN	
				Description	
1	525424	1	2	Ball Bearing	
2	Table "B"	1		Gear Cage Output Spindle	
3	Table "B"	2	4	Planetary Gear (includes Ref. 4)	
4	Table "B"	2	4	Planetary Gear Needle Bearing (Bushing)	
5	10032	2	4	Planetary Gear Pin	
6	Table "B"	1	2	Pinion Gear	
7	18326	1	3	Output Spindle Key	
8	10019	1		Ring Gear	
9	DP120PT	1	2	Ring Gear Pin	
10	18304	1	2	Ball Bearing	
11	18307	1	3	Oil Seal	
12	10010	1	3	Front Housing Gasket	
13	18313	1		Front Housing	
14	30775PT	1	1	Flush Type Grease Fitting	
15	B119S	6	6	Socket Head Cap Screw (5/16-18 x 2-1/2)	

(#) Quantity

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

Table "B"

Ref.	Description	#	A8R-2206	#	A8R-2208
2	Gear Cage Output Spindle	1	544039	1	544024
3	Planetary Gear	2	A18322 (14T)	2	540766 (19T)
4	Needle Bearing (Bushing)	2	21155	2	845845
6	Pinion Gear	1	18323		----

(T) Teeth



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