

Instruction Manual
PL70-A8-EN
07/14/2015

Cleco®

A8R Series
Reversible Axial Piston Power Motors



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



Zampini Industrial Group
AirToolPro.com
1-800-353-4676

Industrial Air & Electric Tools
We Sell Reliability!
In Business Since 1987
FREE Expert Assistance - Call Now

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
A8R309M	1300	2600	19	26	14	19	38	17.2	----	1000	454
A8R310M	375	765	64	87	48	65	38	17.2	3.4:1	1000	454
A8R311M	225	450	110	149	82	111	38	17.2	5.8:1	1000	454
A8R337M	109	215	226	306	167	226	51	23.1	11.9:1	1000	454
A8R338M	64	125	385	522	285	386	51	23.1	20.3:1	1000	454
A8R336M	38	75	638	865	471	639	51	23.1	33.6:1	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: July 14, 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:

Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG reserves the right to modify, supplement or improve this document or the product without prior notice. This document may not be reproduced in any way, shape or form, in full or parts thereof, or copied to another natural or machine readable language or to a data carrier, whether electronic, mechanical, optical or otherwise without the express permission of Apex Tool Group, LLC or Apex Tool Group GmbH & Co. OHG

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.



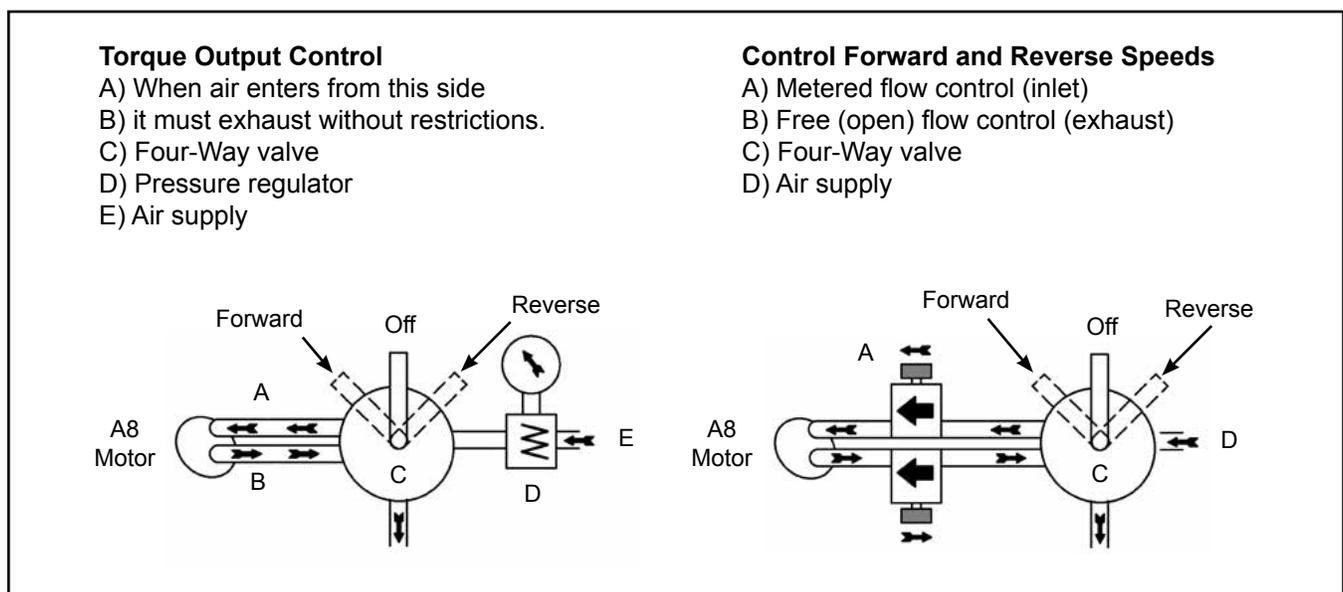
Excessive grease in the motor housing will cause a loss in motor performance. Not enough grease will cause premature motor failure.

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.

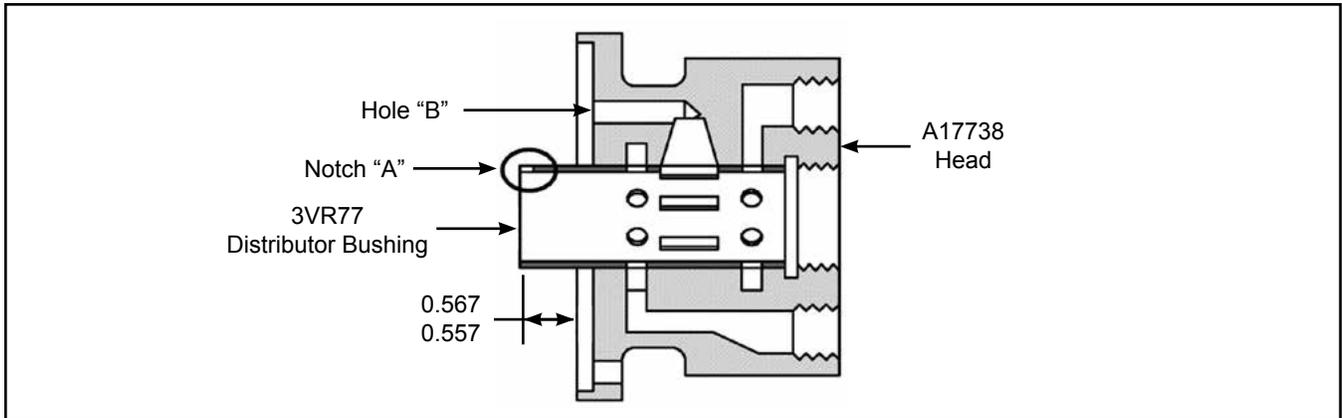
Valving

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.



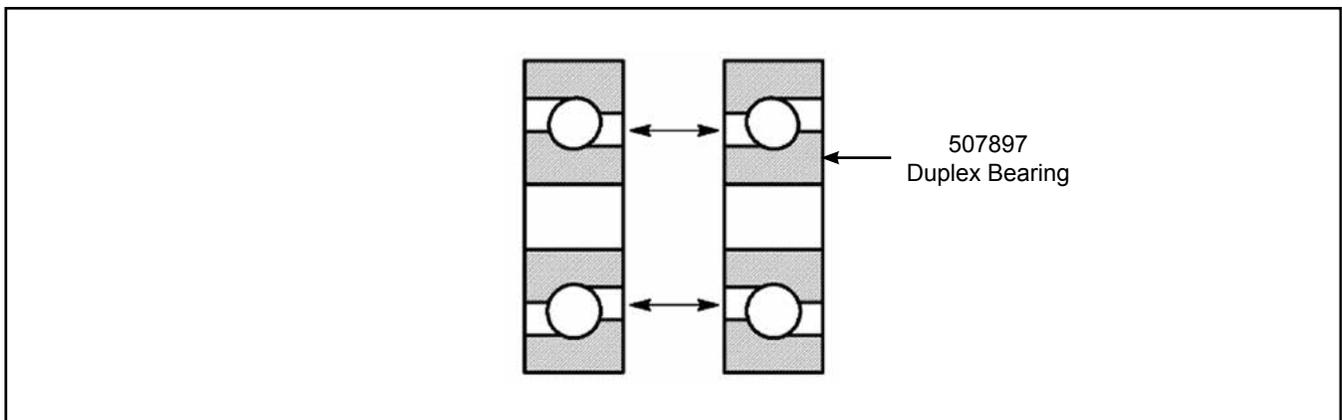
Distributor bushing assembly

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



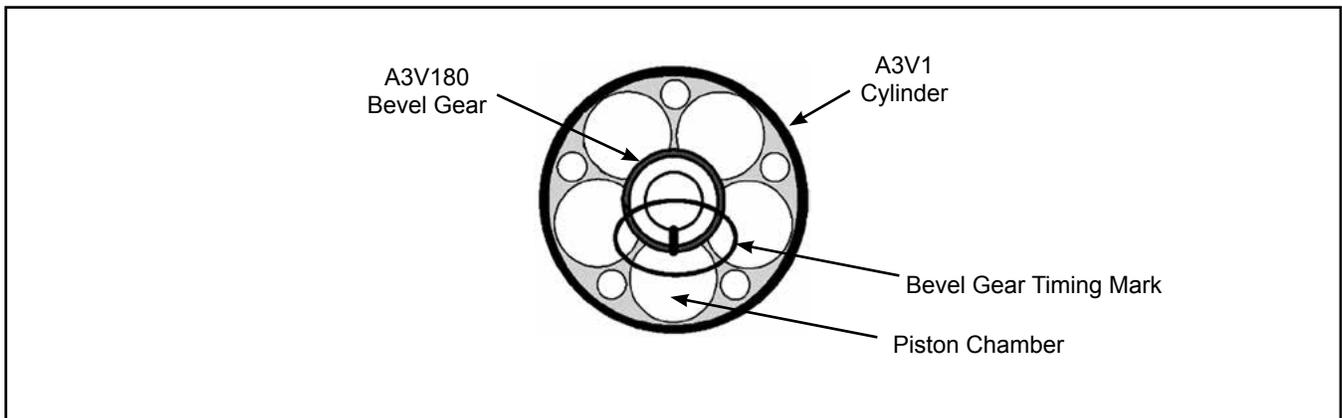
Duplex bearing assembly

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.



“A”

Models

A8R309M	A8R336M
A8R310M	A8R337M
A8R311M	A8R338M

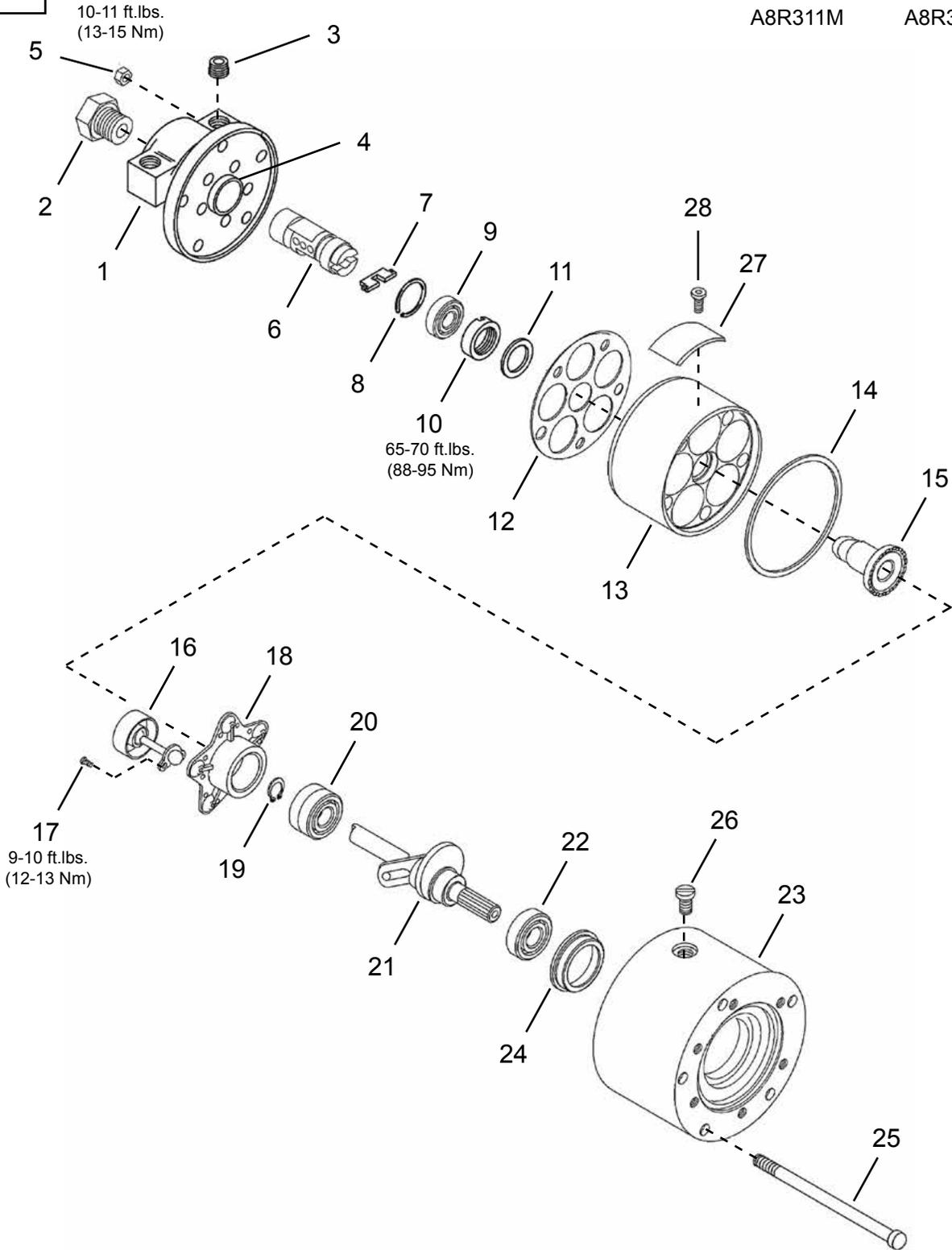


Illustration "A": Power Unit

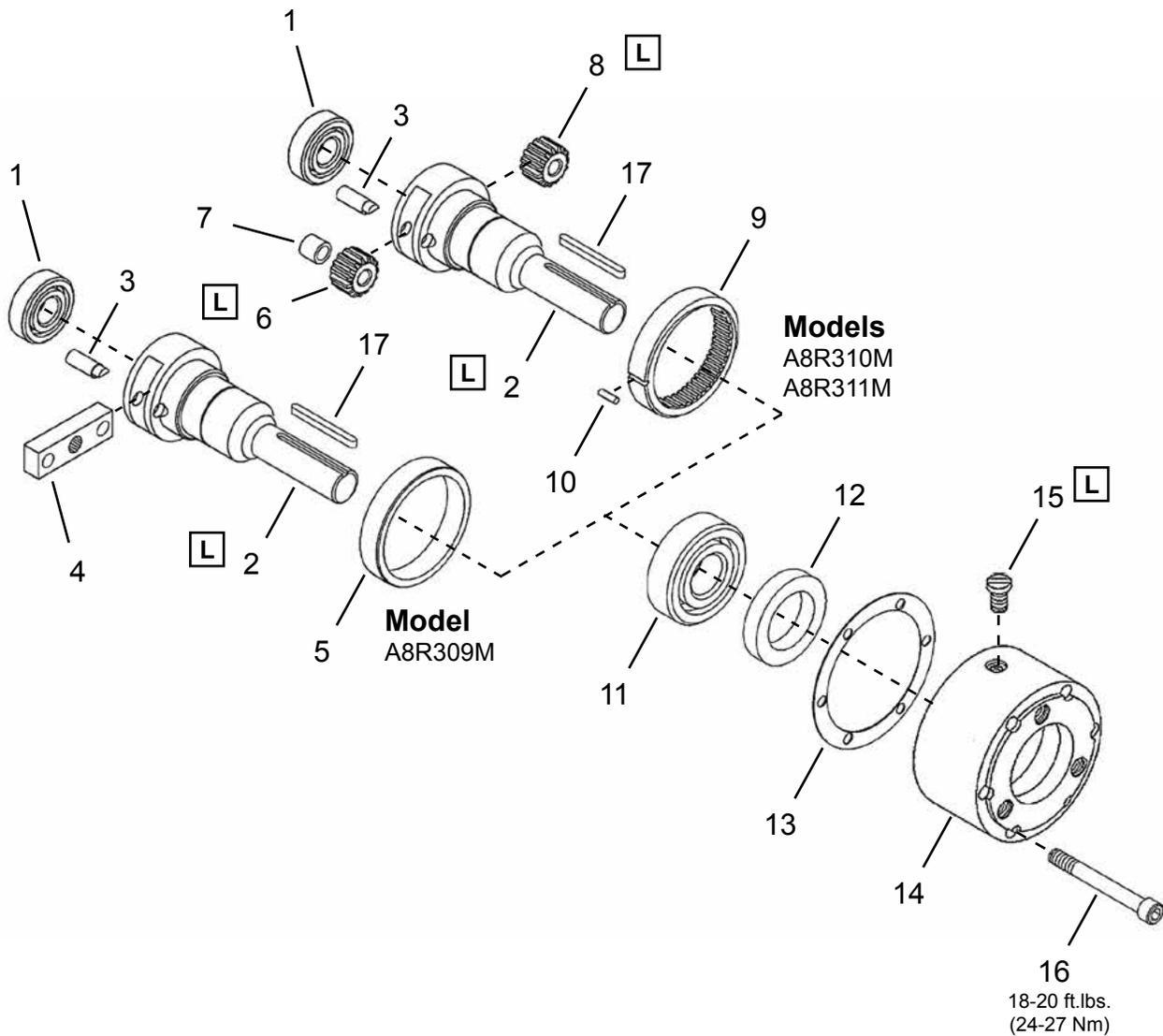
Ref	Number	#	X	EN
				Description
--	507491	1		Power Unit (includes Ref. 1-26)
1	A17738	1		Head Assembly (includes Ref. 2-4)
2	17749	1	1	Reducer Bushing
3	B110E	2	2	Square Head Pipe Plug (1/2-14 NPT)
4	3VR77	1	1	Distributor Bushing
5	C108S	5	10	Head Assembly Nut
6	508321	1		Distributor (includes Ref. 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	542240	5	5	Piston Assembly
17	3V188	10	20	Socket Head Cap Screw (12-24 NC-2 x 5/16)
18	507742	1		Socket Plate
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)

“B”

Models
A8R309M
A8R310M
A8R311M



L Lubricate with A123771 Grease (16 oz. can)

Illustration "B": Direct Drive and Single Stage Gearing Assemblies

Ref	Number	#	X	EN	
				Description	
1	525424	1	2	Ball Bearing	
2	Table "B"	1		Gear Cage Output Spindle	
3	10032	2	4	Planetary Gear Pin	
4	18324	1		Drive Block	
5	18320	1		Locating Ring	
6	Table "B"	2	4	Planetary Gear (includes Ref. 7)	
7	Table "B"	2	4	Planetary Gear Needle Bearing (Bushing)	
8	Table "B"	1	2	Pinion Gear	
9	10019	1		Ring Gear	
10	DP120PT	1	2	Ring Gear Pin	
11	18304	1	2	Ball Bearing	
12	18307	1	3	Oil Seal	
13	10010	1	3	Front Housing Gasket	
14	18313	1		Front Housing	
15	30775PT	1	1	Flush Type Grease Fitting	
16	B119S	6	6	Socket Head Cap Screw (5/16-18 x 2-1/2)	
17	18326	1	3	Output Spindle Key	

(#) Quantity

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

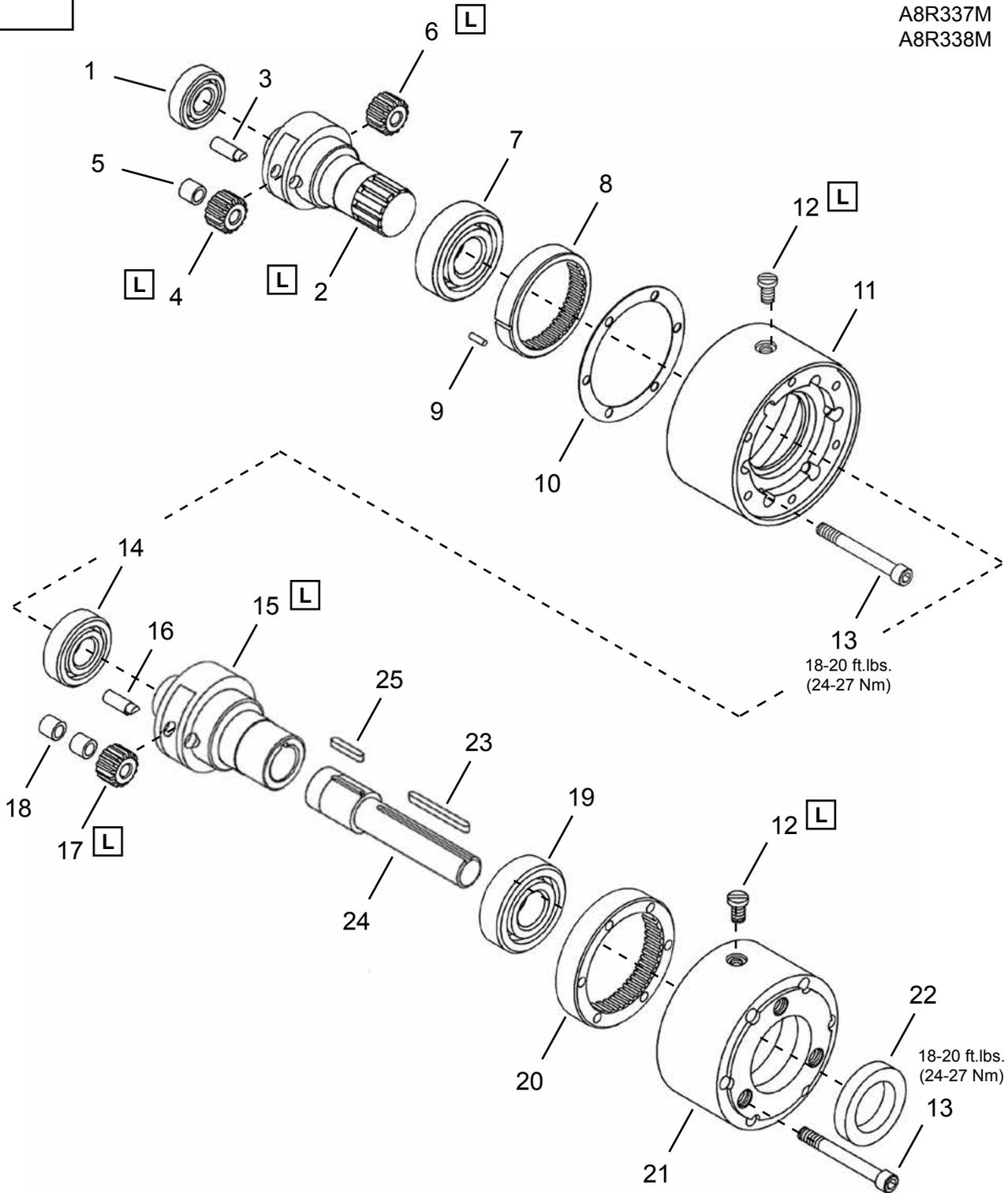
Table "B"

Ref.	Description	#	A8R309M	#	A8R310M	#	A8R311M
2	Gear Cage Output Spindle	1	544039	1	544039	1	544024
6	Planetary Gear		----	2	A18322 (14T)	2	540766 (19T)
7	Needle Bearing (Bushing)		----	2	21155	2	845845
8	Pinion Gear		----	1	18323		----

(T) Teeth

“C”

Models
A8R336M
A8R337M
A8R338M



L Lubricate with A123771 Grease (16 oz. can)

Illustration "C": Double Stage Gearing Assembly

Ref	Number	#	X	EN
				Description
1	525424	1	2	Ball Bearing
2	Table "C"	1		Gear Cage
3	10032	2	4	Planetary Gear Pin
4	Table "C"	2	4	Planetary Gear (includes Ref. 5)
5	Table "C"	2	4	Planetary Gear Needle Bearing (Bushing)
6	Table "C"	1	2	Pinion Gear
7	30075	1	2	Ball Bearing
8	10019	1		Ring Gear
9	DP120PT	1	2	Ring Gear Pin
10	10010	1	3	Center Housing Gasket
11	30050	1		Center Housing
12	30775PT	2	2	Flush Type Grease Fitting
13	B127D	12	12	Socket Head Cap Screw (5/16-18 x 3)
14	30076PT	1	2	Ball Bearing
15	Table "C"	1		Output Gear Cage
16	30058PT	2	4	Planetary Gear Pin
17	Table "C"	2	4	Planetary Gear (includes Ref. 18)
18	11700	4	8	Planetary Gear Needle Bearing
19	30063PT	1	2	Ball Bearing
20	30056PT	1		Ring Gear
21	30049	1		Front Housing
22	30057PT	1	3	Oil Seal
23	30072PT	1	3	Output Gear Cage Key
24	30053PT	1		Output Spindle
25	30071PT	1	3	Output Spindle Key

(#) Quantity

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

Table "C"

Ref.	Description	#	A8R336M	#	A8R337M	#	A8R338M
2	Gear Cage	1	30060	1	30052PT	1	30739PT
4	Planetary Gear	2	540766 (19T)	2	A18322 (14T)	2	540766 (19T)
5	Needle Bearing (Bushing)	4	845845	4	21155	4	845845
6	Pinion Gear		----	1	18323		----
15	Gear Cage Output Spindle	1	30059	1	30051	1	30051
17	Planetary Gear	2	A30061 (21T)	2	A30055 (16T)	2	A30055 (16T)

(T) Teeth

POWER TOOLS SALES & SERVICE CENTERS

Please note that all locations may not service all products.
Contact the nearest Apex Tool Group Sales & Service Center for the appropriate facility to handle your service requirements.

NORTH AMERICA | SOUTH AMERICA

Detroit, Michigan

Apex Tool Group
2630 Superior Court
Auburn Hills, MI 48236
Phone: +1 (248) 393-5640
Fax: +1 (248) 391-6295

Lexington, South Carolina

Apex Tool Group
670 Industrial Drive
Lexington, SC 29072
Phone: +1 (800) 845-5629
Phone: +1 (919) 387-0099
Fax: +1 (803) 358-7681

Louisville, Kentucky

Apex Tool Group
1000 Glengarry Drive
Suite 150
Fairdale, KY 40118
Phone: +1 (502) 708-3400
apexpowertools.com/service

Canada

Apex Tool Canada, Ltd.
7631 Bath Road
Mississauga, Ontario L4T 3T1
Canada
Phone: (866) 691-6212
Fax: (905) 673-4400

Mexico

Apex Tool Group
Manufacturing México
S. de R.L. de C.V.
Vialidad El Pueblito #103
Parque Industrial Querétaro
Querétaro, QRO 76220
Mexico
Phone: +52 (442) 211 3800
Fax: +52 (800) 685 5560

Brazil

Apex Tool Group
Ind. Com. Ferram, Ltda.
Av. Liberdade, 4055
Zona Industrial Iporanga
Sorocaba, São Paulo
CEP# 18087-170
Brazil
Phone: +55 15 3238 3820
Fax: +55 15 3238 3938

EUROPE | MIDDLE EAST | AFRICA

England

Apex Tool Group
GmbH & Co. OHG
C/O Spline Gauges
Piccadilly, Tamworth
Staffordshire B78 2ER
United Kingdom
Phone: +44 1827 8727 71
Fax: +44 1827 8741 28

France

Apex Tool Group S.A.S.
25 rue Maurice Chevalier
B.P. 28
77831 Ozoir-La-Ferrière
Cedex, France
Phone: +33 1 64 43 22 00
Fax: +33 1 64 43 17 17

Germany

Apex Tool Group
GmbH & Co. OHG
Industriestraße 1
73463 Westhausen
Germany
Phone: +49 (0) 73 63 81 0
Fax: +49 (0) 73 63 81 222

Hungary

Apex Tool Group
Hungária Kft.
Platánfa u. 2
9027 Győr
Hungary
Phone: +36 96 66 1383
Fax: +36 96 66 1135

ASIA PACIFIC

Australia

Apex Tool Group
519 Nurigong Street, Albury
NSW 2640
Australia
Phone: +61 2 6058 0300

China

Apex Power Tool Trading
(Shanghai) Co., Ltd
Building A8, No. 38
Dongsheng Road
Pudong, Shanghai
China 201201
Phone: +86 21 60880320
Fax: +86 21 60880298

India

Apex Power Tools India
Private Limited
Gala No. 1, Plot No. 5
S. No. 234, 235 & 245
Indialand Global
Industrial Park
Taluka-Mulsi, Phase I
Hinjawadi, Pune 411057
Maharashtra, India
Phone: +91 020 66761111

Japan

Apex Tool Group Japan
Korin-Kaikan 5F,
3-6-23 Shibakoen, Minato-Ku,
Tokyo 105-0011, JAPAN
Phone: +81-3-6450-1840
Fax: +81-3-6450-1841

Korea

Apex Tool Group Korea
#1503, Hibrand Living Bldg.,
215 Yangjae-dong,
Seocho-gu, Seoul 137-924,
Korea
Phone: +82-2-2155-0250
Fax: +82-2-2155-0252

Cleco®

Apex Tool Group, LLC

1000 Lufkin Road
Apex, NC 27539
Phone: +1 (919) 387-0099
Fax: +1 (919) 387-2614
www.apexpowertools.com

