AcraDyne Gen III
2000 Series Nutrunners

Operations Manual

INTRODUCTION

Thank you for purchasing this AcraDyne DC electric assembly tool, one of the lightest and fastest DC electric assembly tools on the market. When used with the AcraDyne iEC tool controller, this tool will provide excellent productivity, ergonomics, reliability and quality on a wide range of industrial assembly applications.

Safety Information

SAVE THESE INSTRUCTIONS

1) **WORK AREA**

   a) Keep work area clean and well lit. Cluttered and dark areas invite accidents.

   b) Do not operate power tools in explosive atmospheres, such as the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.

   c) Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

2) **ELECTRICAL SAFETY**

   a) Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.

   b) Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.

   c) Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

   d) Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.

   e) When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable of outdoor use reduces the risk of electric shock

   f) It is not recommended to use AcraDyne controllers or tools outside or to use an extension cord to connect the controller to a power source.
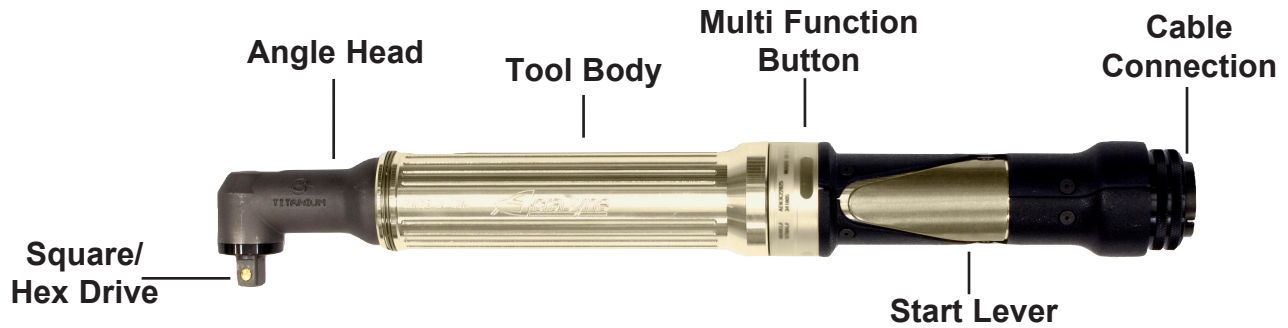
3) **PERSONAL SAFETY**

   a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.

   b) Use safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries. If the maximum duty cycle of the attached tool is exceeded or the tool temperature exceeds 50° C., then the operator should wear protective hand wear (gloves).

   c) Avoid accidental starting. Ensure the switch is in the off-position before plugging in. Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.

   d) Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

   e) Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.

   f) Dress properly. Do no wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.

   g) If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of these devices can reduce dust-related hazards.

4) **POWER TOOL USE AND CARE**

   a) Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.

   b) Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

   c) This product is designed to be used in combination with the AcraDyne iEC DC tool controller for intermittent hand-held or fixtured assembly processes.

Angle Head   **Tool Body**   **Multi Function Button**   **Cable Connection**

Square/ Hex Drive

Start Lever

1. Connect tool cable to the iEC controller and the tool: The tool cable has curved alignment tabs and slots built into the connectors at each end to ensure proper alignment and connection with the tool and controller.

Make sure that power is not turned on at the controller before making any connections. Align the female connector on the cable with the male connector on the tool and insert the cable onto the tool, then slide the connector nut onto the threads on the cable and turn clockwise until hand-tight.

Align the male connector tab on the other end of the tool cable with the female slot on the controller and insert the cable into the connector, then slide the metal outer cover onto the connection threads on the controller and turn clockwise until hand-tight.

2. Multifunction Button Operation: The tool will flash all LED lights three times when power is first turned on at the controller. After the controller finishes initializing and displays a target toque value, the multifunction button (MFB) is used to toggle the tool from clockwise mode (FWD) to counter-clockwise operation mode (REV). The MFB is the small button opposite the trigger.

The tool will initially start in clockwise mode and will have no LED lights turned on. If the trigger is pressed, the tool will turn on the blue LED meaning the tightening operation is underway. Pressing the MFB will cause the tool to flash yellow and red LED lights. Pressing the MFB again will switch the tool back FWD mode and will indicate this with no LED lights turned on.

3. Start Lever Operation: To start the tool, depress the start lever. Blue LED lights will be displayed while tightening a bolt. The tool will stop automatically when it senses its target torque value or if no torque is sensed in a specified time period. After a cycle is complete, the tool will display green LED lights for a success, or red LED lights for failure to reach torque/angle.

Light Ring Light Assignment	

The Buzzer and Multi-Function Button are programmable in the DSP Menu of ToolWare.

Light Color	Meaning
Green Solid	OK
Red Flashing	Torque Low
Red Solid	Torque High
Yellow Flashing	Angle Low
Yellow Solid	Angle High
Blue Solid	Tool In-Cycle/Tool Armed
Blue Flashing	P-Set Change thru MFB
All On Flashing	Tool in Disassembly
Buzzer	Bad Assembly/Tool in Disassembly/Power Up

A complete tool system consists of the following items:

Controller   Power cord   Tool   Tool Cable

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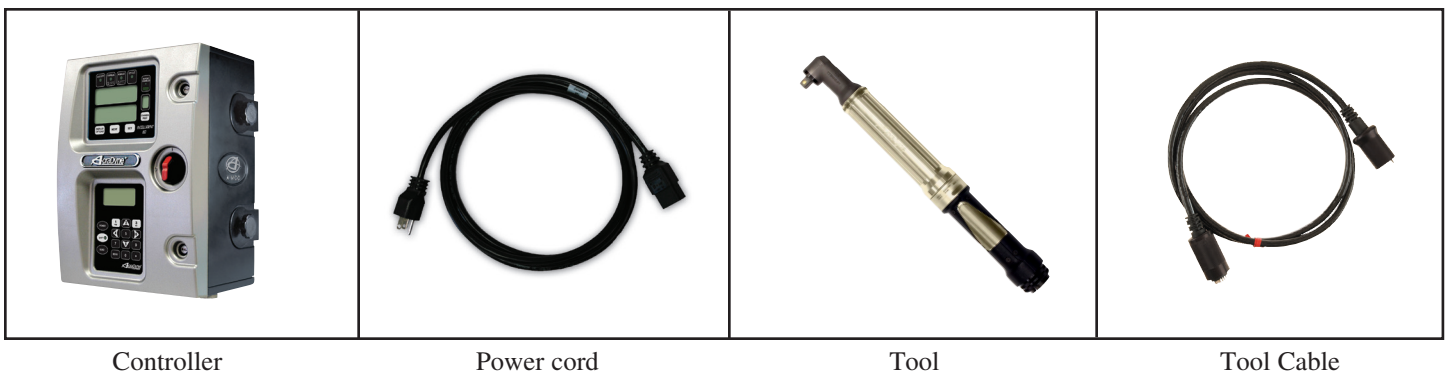
GEN III 2000 SERIES ANGLE NUTRUNNERS

Assembly for: AEN32015A, AEN32025A, AEN32030A and AEN32040A
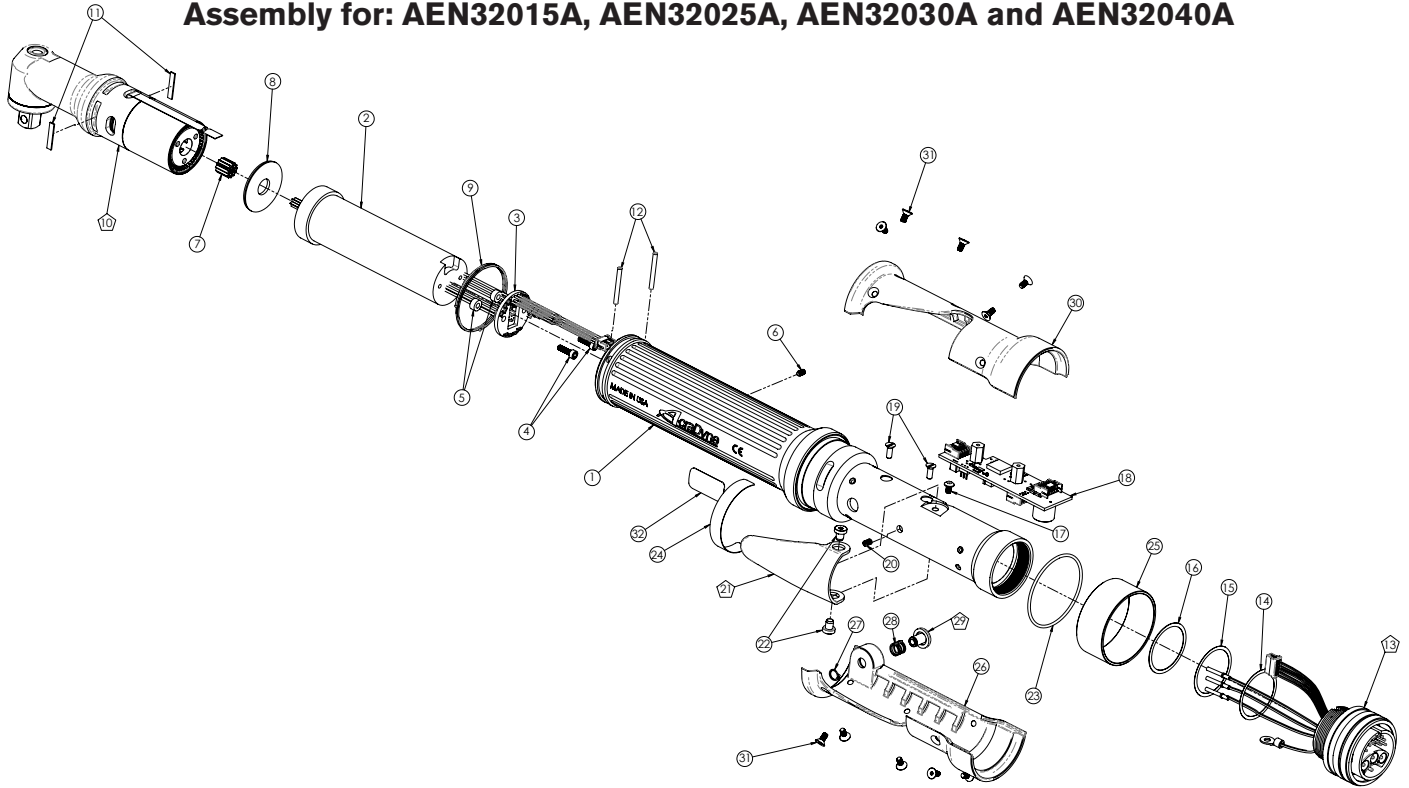
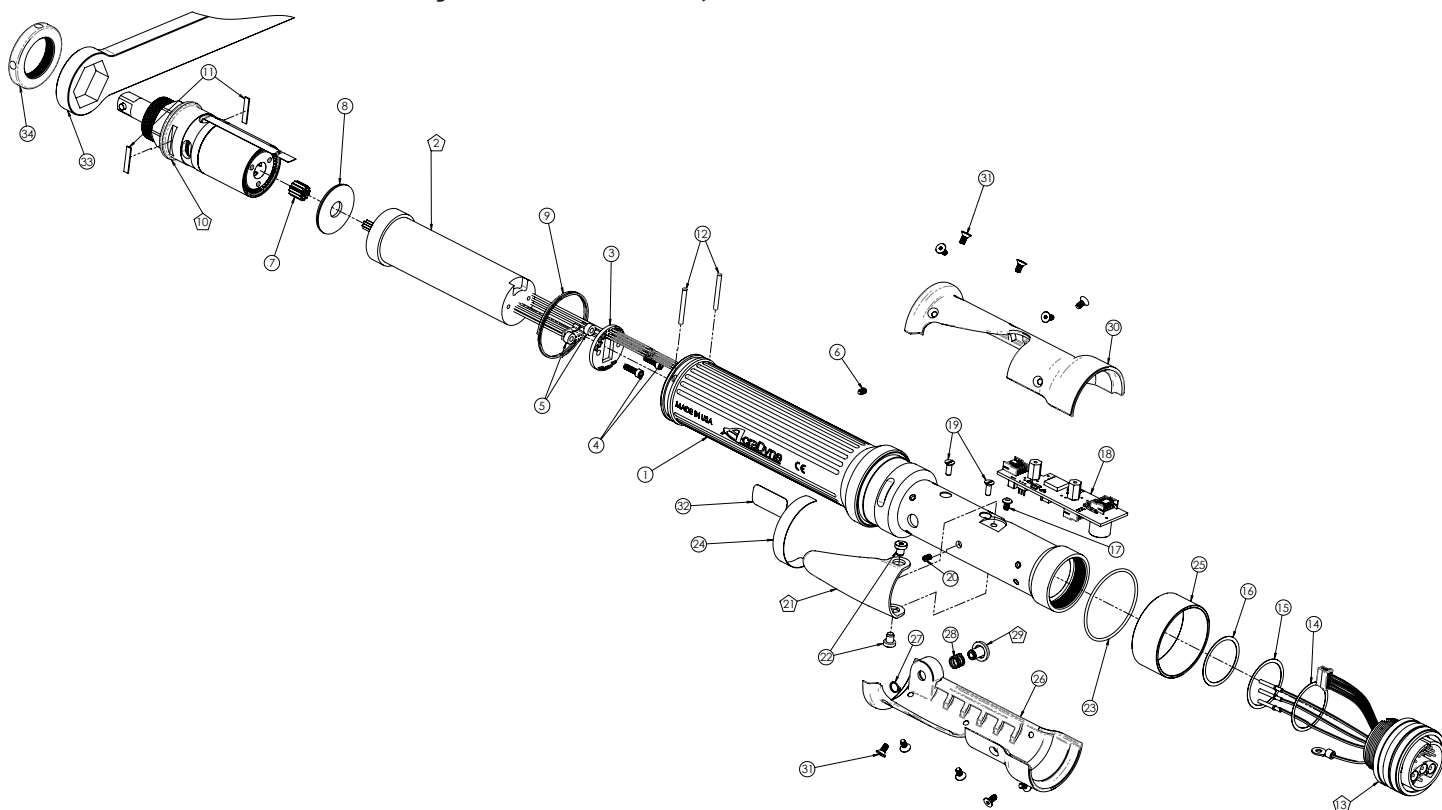| ITEM #	AEN 32015A	AEN 32025A	AEN 32030A	AEN 32040A	QTY.	PART #	DESCRIPTION
1	X	X	X	X	1	25064	MOTOR HOUSING
2	X	X	X	X	1	25425	MOTOR ASM., 5:1, 2000 SERIES GEN III
3	X	X	X	X	1	25063	LED BOARD ASM.
4	X	X	X	X	2	25075	SCREW, SHC 4-40X.375, STEEL, BLACK OXIDE
5	X	X	X	X	2	25429	STAND-OFF, LED, 2000 SERIES
6	X	X	X	X	1	25073	SCREW, SET 4-40X.375, STEEL, BLACK OXIDE
7	X				1	21145	12T SUN GEAR BLANK
8	X	X	X	X	1	24254	SPACER, PILOT
9	X	X	X	X	1	25298	SPIRAL RETAINING RING
10	X				1	21679	ANGLE HEAD GEAR TRAIN ASSY
		X			1	21069	
			X		1	25427	
				X	1	25428	
11	X	X	X		2	24272	ADAPTOR INSERT
12	X	X	X		2	24324	DOWEL PIN 3/32 Dia x 7/8 LONG
13	X	X	X		1	25418	TOOL CONNECTOR ASM GEN III TOOLS
14	X	X	X		A/R	25271	SHIM. - .002
15	X	X	X		A/R	25272	SHIM. - .005
16	X	X	X		A/R	25273	SHIM. - .010
17	X	X	X		1	25102	Screw, BHC4-40X.188, STEEL, BLACK OXIDE
18	X	X	X		1	25402	T.I.D. BOARD ASM. - GEN III
19	X	X	X		2	24934	FLAT HEAD CAP SCREW
20	X	X	X		1	25071	SPRING, LEVER
21	X	X	X		1	25074	LEVER ASSEMBLY
22	X	X	X		2	20061	SCREW, LEVER
23	X	X	X		1	25072	O-RING, LED LIGHT RING COVER
24	X	X	X		1	20534	3000 SERIAL/MODEL LABEL
25	X	X	X		1	25058	LIGHT RING COVER, LED
26	X	X	X		1	25060	HANDLE COVER, REV. BUTTON
27	X	X	X		1	24679	RETAINING RNG
28	X	X	X		1	24683	SPRING, REV BUTTON
29	X	X	X		1	24706	REV BUTTON SUB-ASSEMBLY
30	X	X	X		1	25059	HANDLE COVER
31	X	X	X		10	24940	SCREW, FHSC 4-40 X .25 LG., STEEL, BLACK OXIDE
32	X	X	X		1	22141	SAFETY LABEL

GEN III 2000 SERIES IN-LINE NUTRUNNERS

Assembly for: AES32010A, AES32020A and AES32025A

ITEM #	AES 32010A	AES 32020A	AES 32025A	QTY.	PART #	DESCRIPTION
1	X	X	X	1	25064	MOTOR HOUSING
2	X	X	X	1	25425	MOTOR ASM., 5:1, 2000 SERIES GEN III
3	X	X	X	1	25063	LED BOARD ASM.
4	X	X	X	2	25075	SCREW, SHC 4-40X.375, STEEL, BLACK OXIDE
5	X	X	X	2	25429	STAND-OFF, LED, 2000 SERIES
6	X	X	X	1	25073	SCREW, SET 4-40X.375, STEEL, BLACK OXIDE
7	X			1	21145	12T SUN GEAR BLANK
8	X	X	X	1	24254	SPACER, PILOT
9	X	X	X	1	25298	SPIRAL RETAINING RING
10	X			1	21170	INLINE HEAD ASM.3/8 SQ. DR.
		X		1	21943	
			X	1	20450	
11	X	X	X	2	24272	ADAPTOR INSERT
12	X	X	X	2	24324	DOWEL PIN 3/32 Dia x 7/8 LONG
13	X	X	X	1	25418	TOOL CONNECTOR ASM GEN III TOOLS
14	X	X	X	A/R	25271	SHIM. - .002
15	X	X	X	A/R	25272	SHIM. - .005
16	X	X	X	A/R	25273	SHIM. - .010
17	X	X	X	1	25102	Screw, BHC4-40X.188, STEEL, BLACK OXIDE
18	X	X	X	1	25402	T.I.D. BOARD ASM. - GEN III
19	X	X	X	2	24934	FLAT HEAD CAP SCREW
20	X	X	X	1	25071	SPRING, LEVER
21	X	X	X	1	25074	LEVER ASSEMBLY
22	X	X	X	2	20061	SCREW, LEVER
23	X	X	X	1	25072	O-RING, LED LIGHT RING COVER
24	X	X	X	1	20534	3000 SERIAL/MODEL LABEL
25	X	X	X	1	25058	LIGHT RING COVER, LED
26	X	X	X	1	25060	HANDLE COVER, REV. BUTTON
27	X	X	X	1	24679	RETAINING RNG
28	X	X	X	1	24683	SPRING, REV BUTTON
29	X	X	X	1	24706	REV BUTTON SUB-ASSEMBLY
30	X	X	X	1	25059	HANDLE COVER
31	X	X	X	10	24940	SCREW, FHSC 4-40 X .25 LG., STEEL, BLACK OXIDE
32	X	X	X	1	22141	SAFETY LABEL
33	X	X	X	1	20437	REACTION BAR
34	X	X	X	1	20454	NUT, INLINE FIXTURE

GEN III 2000 SERIES IN-LINE NUTRUNNERS

Assembly for: AES32038A and AES32068A
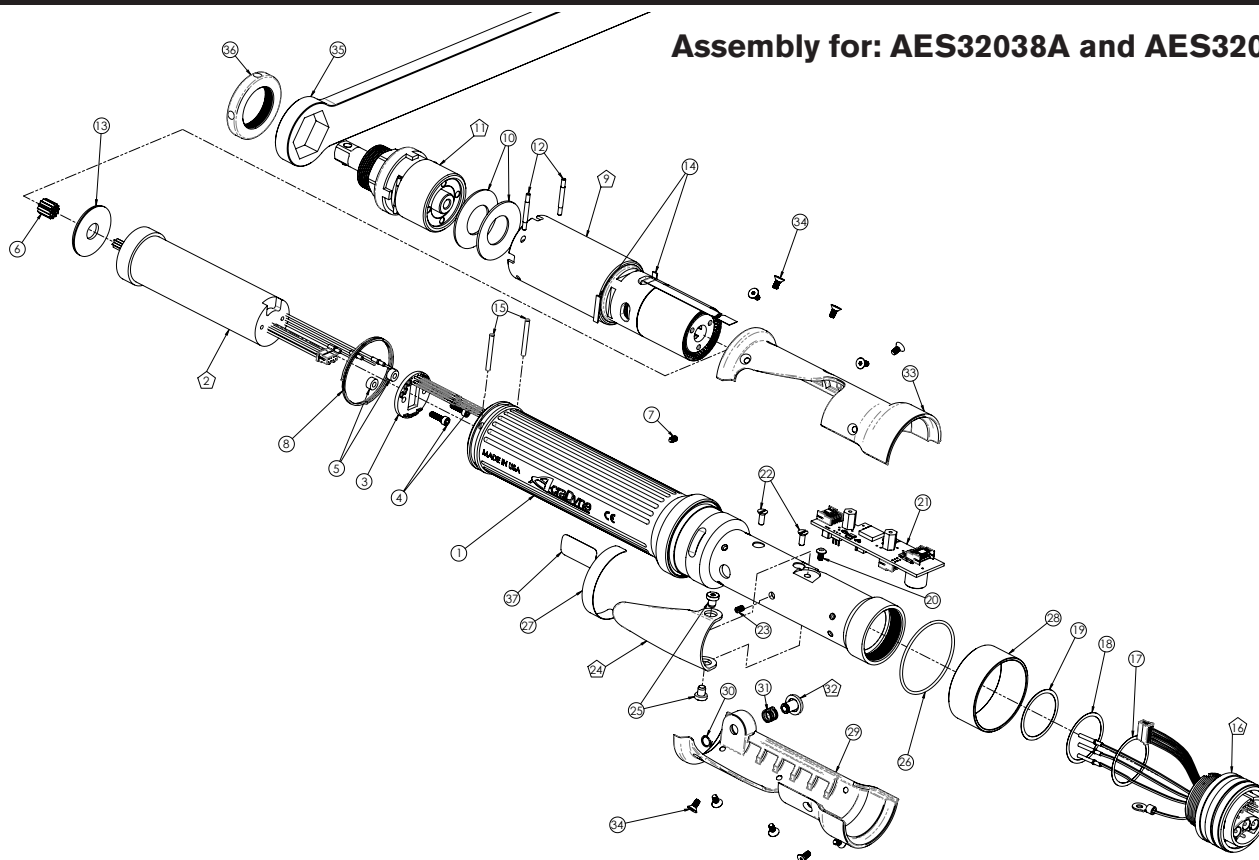
ITEM #	AES 32038A	AES 32068A	QTY.	PART #	DESCRIPTION
1	X	X	1	25064	MOTOR HOUSING
2	X	X	1	25425	MOTOR ASM., 5:1, 2000 SERIES GEN III
3	X	X	1	25063	LED BOARD ASM.
4	X	X	2	25075	SCREW, SHC 4-40X.375, STEEL, BLACK OXIDE
5	X	X	2	25429	STAND-OFF, LED, 2000 SERIES
6	X		1	21145	12T SUN GEAR BLANK
7	X	X	1	25073	SCREW, SET 4-40X.375, STEEL, BLACK OXIDE
8	X	X	1	25298	SPIRAL RETAINING RING
9	X		1	21169	GEAR TRAIN ASM. - TRIPLE STEP
		X	1	21141	
10	X	X	2	20864	BELLEVILLE WASHER
11	X	X	1	20877	3/8 INLINE HEAD ASM.
12	X	X	2	20116	RETAINING PIN --- 2000 SERIES
13	X	X	1	24254	SPACER, PILOT
14	X	X	2	24272	ADAPTOR INSERT
15	X	X	2	24324	DOWEL PIN 3/32 Dia x 7/8 LONG
16	X	X	1	25418	TOOL CONNECTOR ASM GEN III TOOLS
17	X	X	A/R	25271	SHIM. - .002
18	X	X	A/R	25272	SHIM. - .005
19	X	X	A/R	25273	SHIM. - .010
20	X	X	1	25102	Screw, BHC4-40X.188, STEEL, BLACK OXIDE
21	X	X	1	25402	T.I.D. BOARD ASM. - GEN III
22	X	X	2	24934	FLAT HEAD CAP SCREW
23	X	X	1	25071	SPRING, LEVER
24	X	X	1	25074	LEVER ASSEMBLY
25	X	X	2	20061	SCREW, LEVER
26	X	X	1	25072	O-RING, LED LIGHT RING COVER
27	X	X	1	20534	3000 SERIAL/MODEL LABEL
28	X	X	1	25058	LIGHT RING COVER, LED
29	X	X	1	25060	HANDLE COVER, REV. BUTTON
30	X	X	1	24679	RETAINING RNG
31	X	X	1	24683	SPRING, REV BUTTON
32	X	X	1	24706	REV BUTTON SUB-ASSEMBLY
33	X	X	1	25059	HANDLE COVER
34	X	X	10	24940	SCREW, FHSC 4-40 X .25 LG., STEEL, BLACK OXIDE
35	X	X	1	20437	REACTION BAR
36	X	X	1	20454	NUT, INLINE FIXTURE
37	X	X	1	22141	SAFETY LABEL

SPECIFICATIONS

Environmental
- Operating Temperature: 0°C to 32°C
- Storage Temperature: 0°C to 65°C
- Humidity:
  - o 5% to 90% RH, Non-Condensing, for temperatures 0°C to 40°C
  - o 5% to 60% RH, Non-Condensing, for temperatures 0°C to 65°C
- Maximum Altitude of Operation: 3000m
- Maximum decibel level: 73 dB(A)

Electrical
- Motor Type: BLDC
  - o Motor Phase Voltage: 160 Volts Pulse DC @ Controller Supply Voltage of 120 RMS, or 320 Volts Pulse DC @ Controller Supply Voltage of 230 RMS
- Duty Cycle: The Nutrunner tools are intended for intermittent operation with recommended maximum duty cycles not to exceed 33%. Note: actual maximum duty cycles are dependant upon several factors including: Ambient Temperature, Tool selection, Joint conditions, Fastening-parameter programming, and different applications and strategies. For optimum duty cycle determination, please contact your AcraDyne sales representative.

Physical
- 2.5 lbs/1.16 kg - 3.60 lbs/1.63 kg

Performance
- Torque range: 10 - 68 NM
- Speed Range: 320 - 2080 RPM