

ARS3A-M053

## Pneumatic Nutrunner Parts List

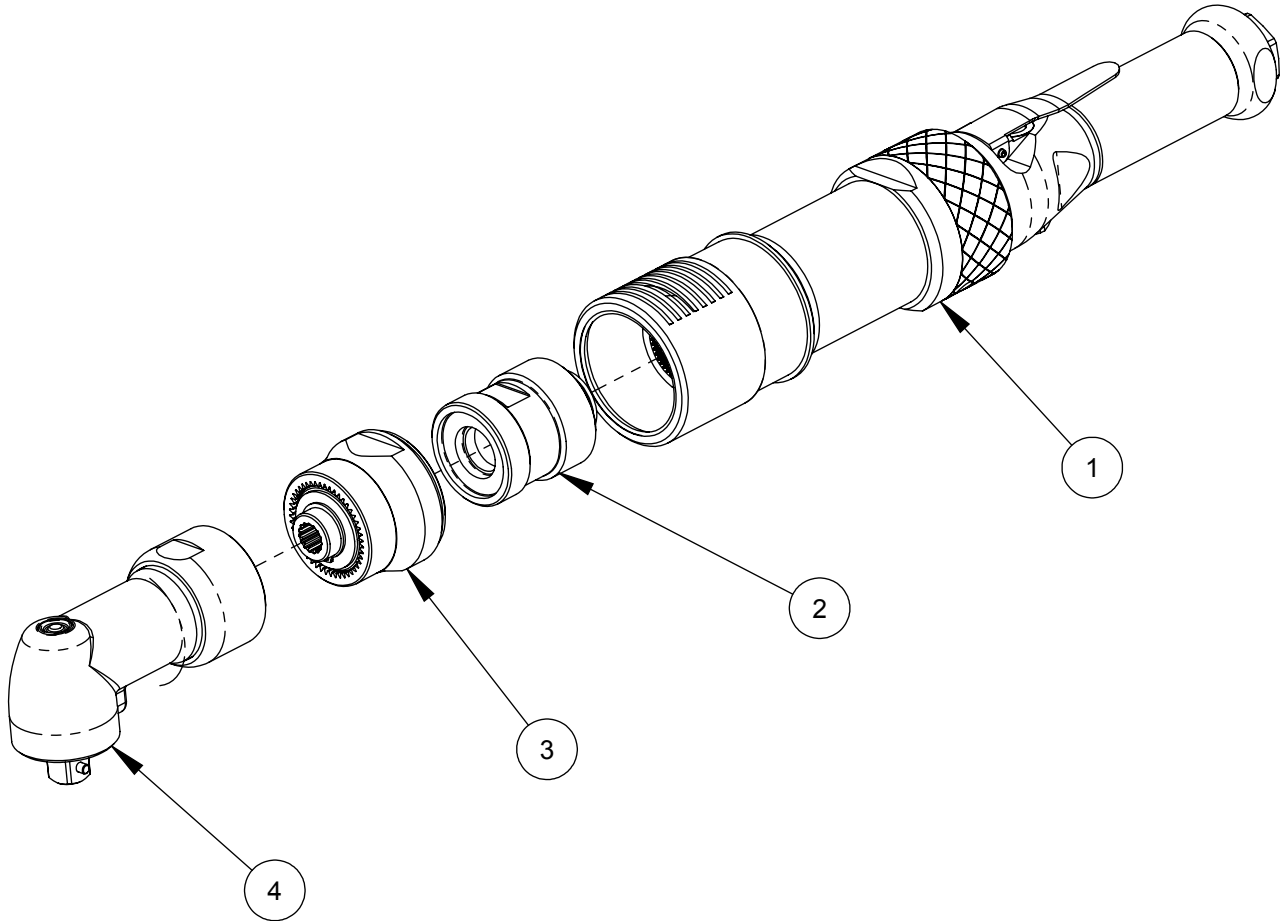


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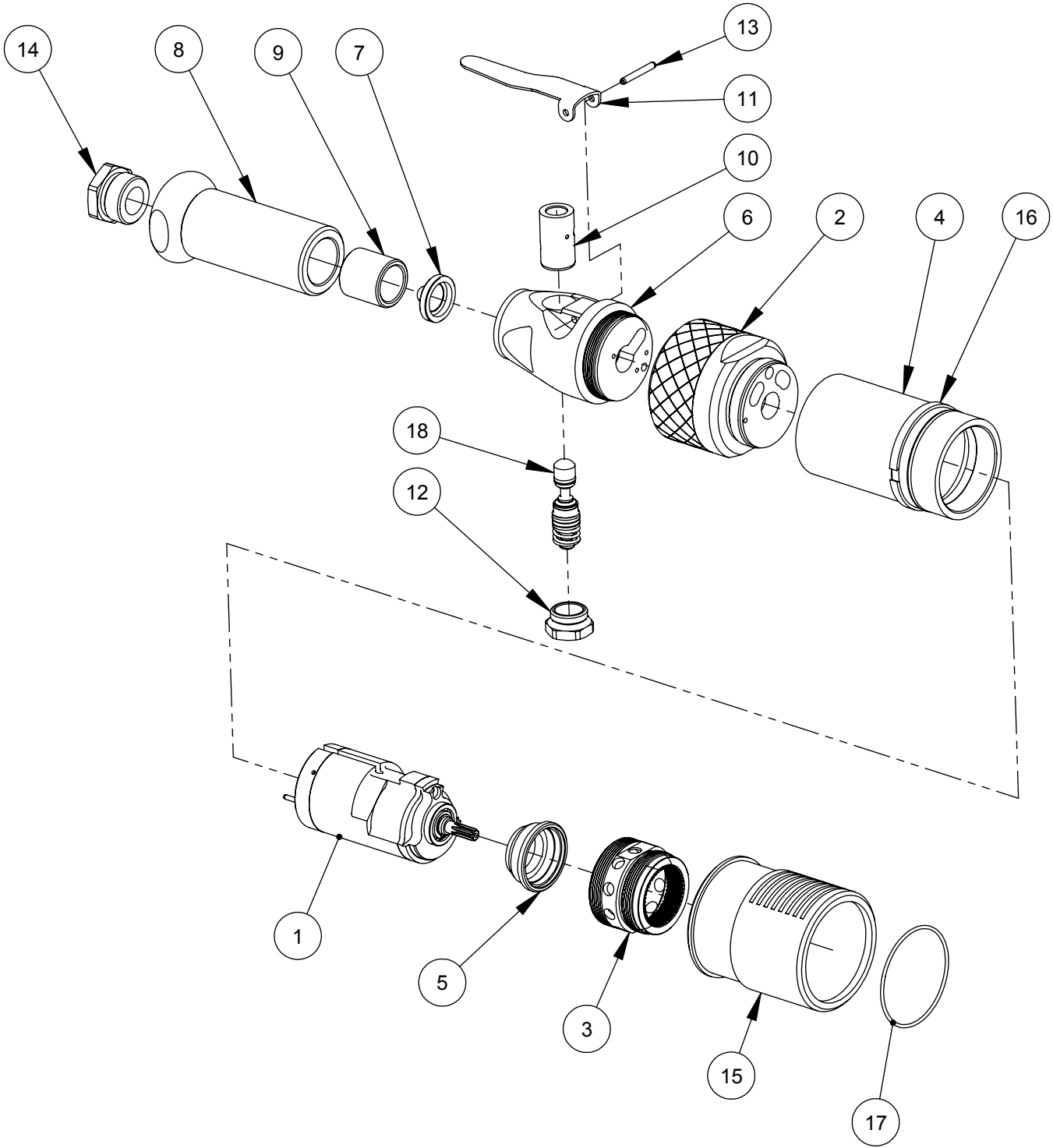
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## ARS3A-M053 Parts List



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1005-33000	ARS3 Reversible Motor	1
2	3002-13201	First Stage Gearing 16T Pinion	1
3	3015-03003	Gearing 3, 2 In, 10T Pinion	1
4	5000-03324	Anglehead Assembly 120Nm 1/2" Sq. Dr.	1

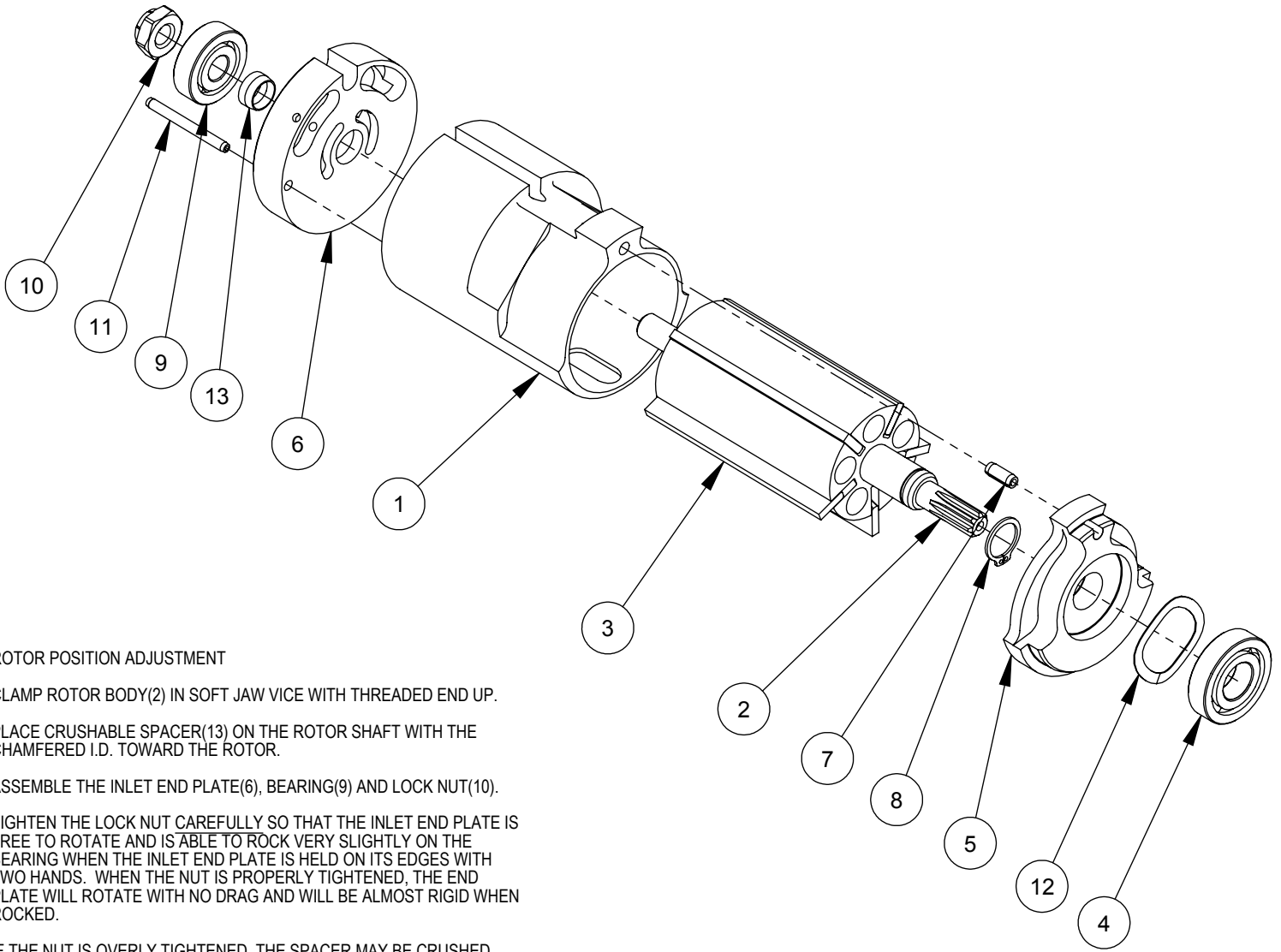
**P/N 1005-33000 Parts List**  
**3 size Reversible Motor (NEW)**



**P/N 1005-33000 Parts List**  
**3 size Reversible Motor (NEW)**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1005-90030	Reversible 3 Motor Group	1
2	1525-90305	Reversible 3 Rotary Valve	1
3	1220-40011	Exhaust Housing	1
4	1200-00010	Motor Housing, 3 Series	1
5	1250-00122	Bearing Spacer	1
6	1201-00016	Valve Body, Modified AR3	1
7	1610-00003	Inlet Screen	1
8	1230-00037	Handle	1
9	1600-00057	Threaded Coupler	1
10	1500-00012	Valve Sleeve, AS3 & AC3 Manual	1
11	1550-00018	Hand Lever 3 Size	1
12	1530-00023	Valve Cap A/3	1
13	SPS 0.125x1	Roll Pin, 1/8" x 1.0L	1
14	1600-00025	Inlet Adaptor, 3/8 NPT	1
15	8600-00005	Exhaust Cover	1
16	8310-00144	Retaining Ring	1
17	9200-00032	O-Ring	2
18	1520-90034	Valve Stem Assembly	1

## P/N 1005-90030 ARS3 Motor Sub assembly Parts List



### ROTOR POSITION ADJUSTMENT

CLAMP ROTOR BODY(2) IN SOFT JAW VICE WITH THREADED END UP.

PLACE CRUSHABLE SPACER(13) ON THE ROTOR SHAFT WITH THE CHAMFERED I.D. TOWARD THE ROTOR.

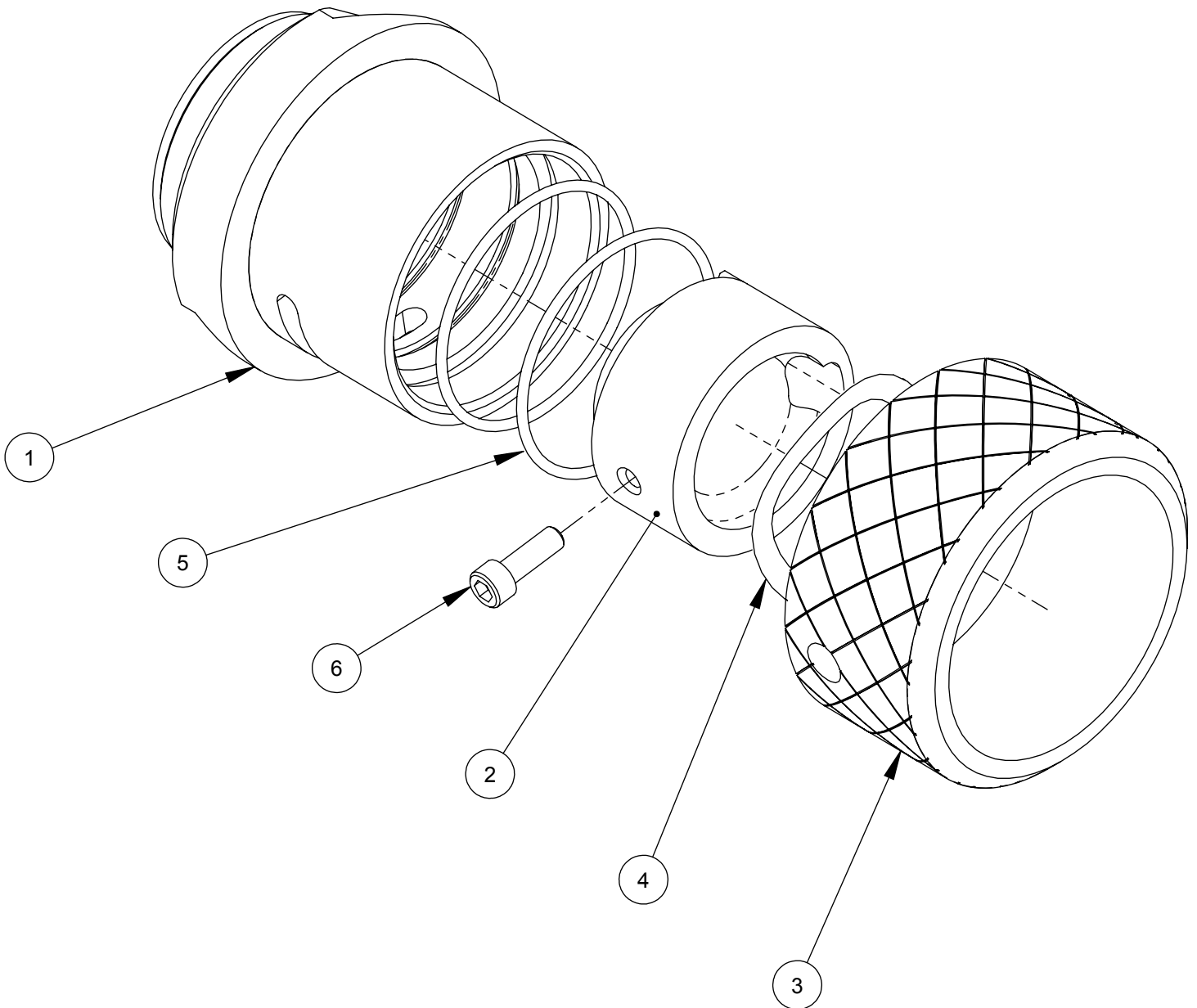
ASSEMBLE THE INLET END PLATE(6), BEARING(9) AND LOCK NUT(10).

TIGHTEN THE LOCK NUT CAREFULLY SO THAT THE INLET END PLATE IS FREE TO ROTATE AND IS ABLE TO ROCK VERY SLIGHTLY ON THE BEARING WHEN THE INLET END PLATE IS HELD ON ITS EDGES WITH TWO HANDS. WHEN THE NUT IS PROPERLY TIGHTENED, THE END PLATE WILL ROTATE WITH NO DRAG AND WILL BE ALMOST RIGID WHEN ROCKED.

IF THE NUT IS OVERLY TIGHTENED, THE SPACER MAY BE CRUSHED BELOW ITS ALLOWABLE MINIMUM LENGTH AND MUST BE REPLACED.

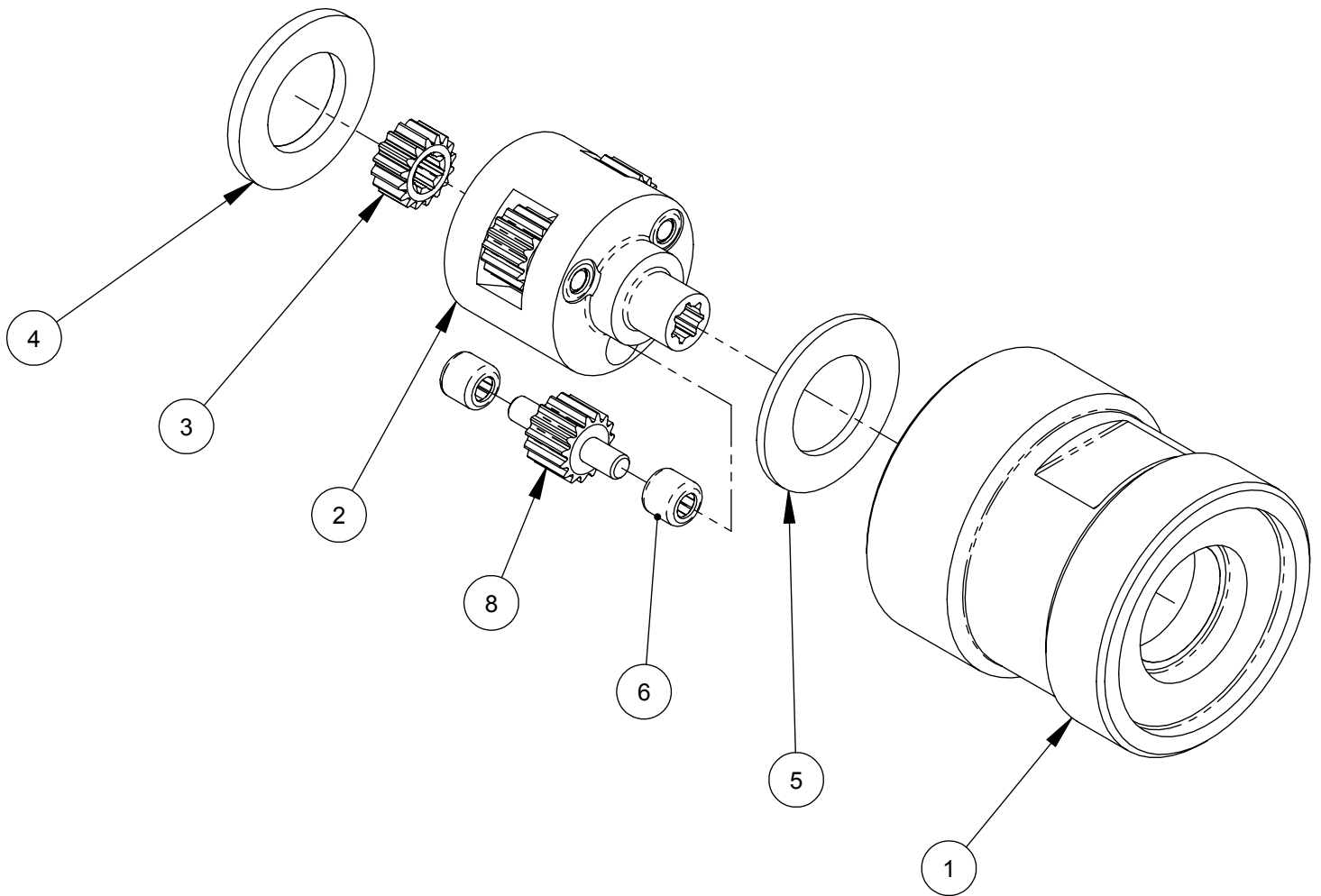
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1100-30002	#3 Reversible Motor Cylinder, AR3	1
2	1110-00028	Rotor 3 Series	1
3	1130-00044	Blade	5
4	9400-00006	Bearing, Ball	1
5	1120-30110	Drive End Plate A3 Reversible	1
6	1120-30010	Inlet End Plate A3 Reversible	1
7	9300-00805	Roll Pin .125" x .312"L	1
8	9307-00037	Retaining Ring	1
9	9400-00044	Bearing, Ball	1
10	9033-00025	Nut	1
11	9300-00616	Roll Pin, 3/32 x 1"Lg.	1
12	9102-08610	Spring Wave Washer	1
13	8320-05165	Bearing Spacer - A3 (Crushable)	1

## P/N 1525-90305 Rotary Valve 3 Parts List



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1210-30005	Rotary Reverse Valve Body	1
2	1520-00305	Rotary Valve, Rev3	1
3	1525-00036	Rotary Switch, Rev3	1
4	9312-00068	Wave Spring 3/4 x 1-1/8	1
5	9200-00030	O-Ring #2-030	2
6	9000-00808	SHCS #8-32 x 1/2L	1

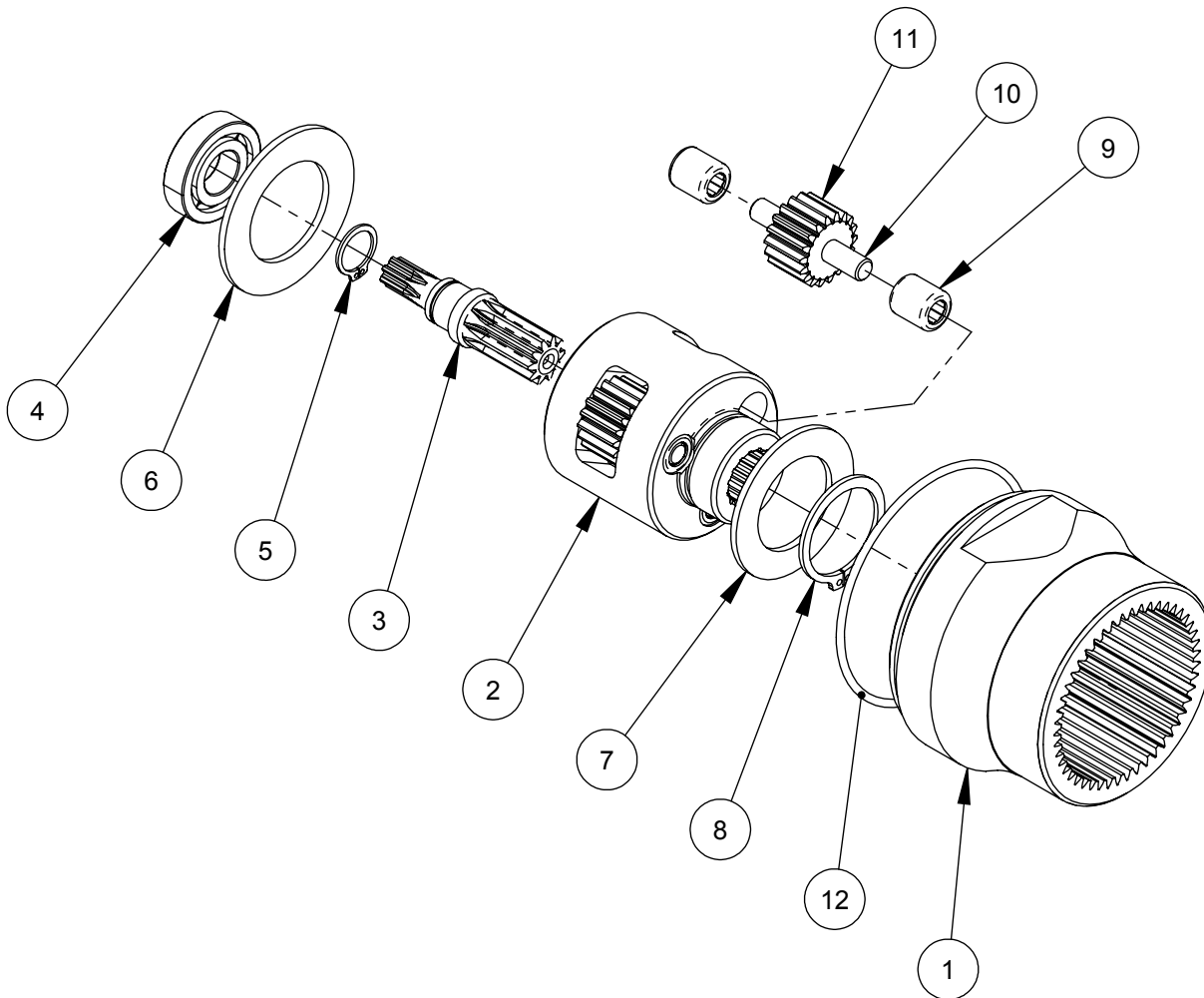
## P/N 3002-13201 First Stage Gearing Parts List



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1220-00016	Exhaust Housing Adaptor PAC3	1
2	3409-99016	Carrier	1
3	3100-40160	Pinion Gear 16T	1
4	9432-10183	Thrust Washer, .637 x 1.105 x .093W	1
5	9432-10182	Thrust Washer, .637 x 1.105 x .062W	1
6	9410-00254	Bearing, Needle	6
7	8303-00528	Pin, Planet Gear	3
8	3120-40151	Planet Gear 15T	3

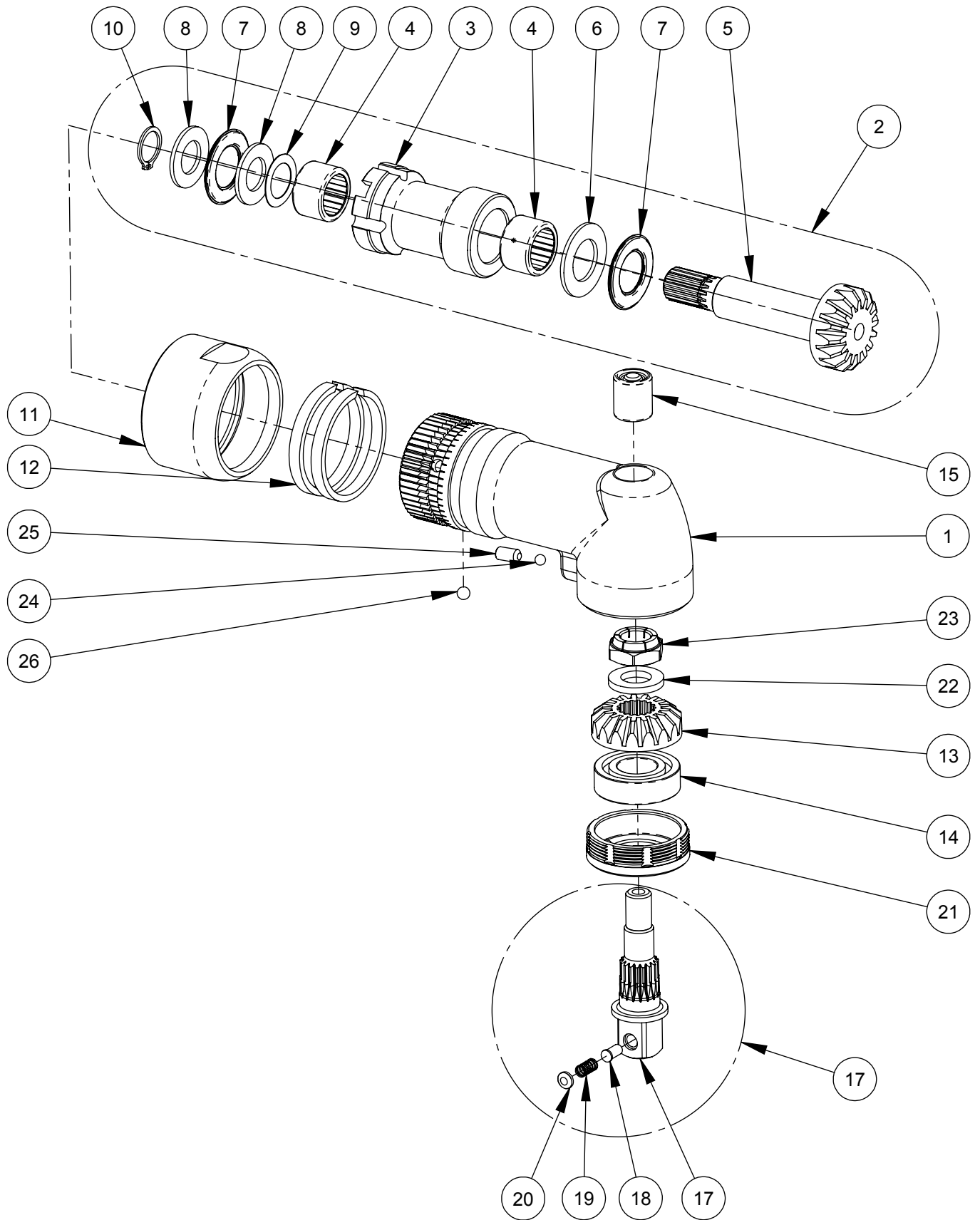


## P/N 3015-03003 Gear Group Parts List



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	3200-32020	Gear Housing, Reversible, Single Stage 32P	1
2	3410-99310	Planet Carrier, Output 10T	1
3	3300-00038	Pinion Shaft 10T	1
4	9400-00006	Bearing, Ball	1
5	9307-00037	Retaining Ring	1
6	9432-14232	Thrust Washer, .875 x 1.437 x .063W	1
7	8320-00045	Washer, 1.301 OD x .820 ID x .060W	1
8	9307-00081	Retaining Ring	1
9	9410-00036	Needle Bearing	6
10	8303-00638	Pin, Planet Gear	3
11	3120-32070	Gear, Planet 18T	3
12	9200-00032	O-Ring	1

# P/N 5000-03324 Output Group Parts List



## P/N 5000-03324 Output Group Parts List

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	5220-99004	Right Angle Head 120 Nm	1
2	5120-90047	Pinion Assembly, Bevel 120Nm	1
3	5224-00026	Cartridge	1
4	9410-00108	Needle Bearing	2
5	5120-00047	Bevel Pinion Gear	1
6	9432-10182	Thrust Washer, .637 x 1.105 x .062W	1
7	9430-01018	Thrust Roller Bearing	2
8	9432-08152	Thrust Washer, .506 x .917 x .062W	2
9	9110-05017	Spring Washer	1
10	9307-00050	Retaining Ring	1
11	5223-00011	Clamp Nut	1
12	8310-00042	Retaining Ring	2
13	5120-00054	Bevel Gear 120Nm A/H	1
14	9401-00102	Ball Bearing 15-32-9	1
15	9411-06101	Needle Bearing	1
16	5300-90073	Output Spindle, 1/2" Sq. Drive	1
17	5300-00073	Output Spindle 1/2" Sq. Drive	1
18	8500-00312	Pin, Lock Socket	1
19	9100-70285	Spring	1
20	9322-10004	Plug, Expansion	1
21	5221-00020	Bearing Cap	1
22	8320-00016	Washer, .810 OD x .450 ID x .100W (Stock)	1
23	9033-00044	Nut, Flexlock	1
24	9418-00156	Ball, 5/32 Diameter	1
25	9051-51006	Set Screw #10-32 x 3/8L Cup Pt.	1
26	9418-00188	Ball, 3/16 Diameter	1



## **USING AAT STALL AND PAC PNEUMATIC NUTRUNNERS**

**MODELS NOS. BEGINNING: AS2; AS3; AP2; AP3; ARS2; ARS3; ARP2; ARP3**

**GENERAL:** The torque developed by Stall type and PAC nutrunners is directly proportional to the regulated pressure setting. AAT tests these nutrunners in a production acceptance test at 80 PSI (5.8 bar) measured and controlled at the inlet to the tool using a pilot type regulator. The tool being tested must be capable of the rated torque (Model number torque) as the MINIMUM average torque delivered to a moderate joint rate. A moderate joint requires 180 degrees of rotation from "just snug" to full stall torque.

There are manufacturing variables that cause small differences in tool performance. In order to set the torque properly in a manufacturing plant, the nutrunner must be run on the actual joint upon which it is to be used with the actual, or duplicate of, the air supply at the job site. The air supply should conform to the specifications in AAT's Air Line Requirements. The torque results from the tool should be evaluated using the torque test methods as defined in the user customer's quality standards. The pressure should be adjusted, up or down, so the torque conforms to the customer's target torque. If a 10% torque reduction is required when the nutrunner is running at a particular regulator setting, the pressure should be reduced 10% - and so on. The tool should be retested at the new setting and the process repeated if required. Good quality practice requires that the torque be checked on a regular basis. With age and other factors, an air supply adjustment may be required from time to time. Note that tool performance may initially improve as the air motor is broken-in.

**PREVENTATIVE MAINTENANCE:** AAT recommends that a nutrunner be disassembled, all internal components cleaned, degreased and inspected, regreased, reassembled and the nutrunner torque tested every 250,000 cycles or at least once per year. AAT's exploded view drawings include assembly instructions where required. We do not recommend greasing the tool from time to time without internal parts cleaning. Metallic particulate matter that results from wear will mix internally with the lubricant and must be removed to prevent damage. It does no good to add grease to a contaminated environment.

**OPERATION:** STALL NUTRUNNERS are controlled by the operator directly by hand or remotely for tools equipped with AAT's remote feature. For tools with built-in remote operated valves, a small valve is required to pressure activate the tool's valve. "H" series stall tools require a valve that must be capable of supplying 25-30 CFM directly to the motor to achieve the rated speed. In either case the tool remains pressurized until the operator shuts it off. Torque load will bring it to a stop (stall) when tightening a fastener at which time the operator should shut it off. Stall tools do not shut-off automatically.

PAC NUTRUNNERS are controlled by the operator directly by hand or remotely for tools equipped with AAT's remote feature. The tool runs until the operator shuts it off or until the torque achieves a level very near stall where a pressure sensing system within the tool recognizes the near stall condition and shuts-off the tool. The tool will remain off until the operator or remote device allows the tool's valve to return to the off position. The valve is then reset and a new cycle can begin.



## **AIR LINE REQUIREMENTS**

Optimum performance of AAT 2 and 3 Series nutrunners is achieved when the tools are properly lubricated and supplied with clean air regulated at 85 to 90 PSI (5.8 to 6.1 BAR). Pressure should not exceed 105 PSI (7.1 BAR). Air pressure is adjusted to change torque output on AAT's PAC and stall type nutrunner. Accu-Brake™ and Accu-Trol™ nutrunners can operate at lower pressures as long as the tool can still achieve the target torque.

2 Series nutrunners require a hose diameter of 3/8" for lengths up to 25' and 1/2" for lengths up to 50' and have air consumption of 26 SCFM (Standard Cubic Feet per Minute). 3 Series nutrunners require a hose diameter of 1/2" for lengths up to 25' and 3/4" for lengths up to 50' and have air consumption of 38 SCFM.

The tool should be supplied air through a Filter/Regulator/Lubricator (FRL) that has a flow rating capable of supplying the nutrunner with minimal pressure drop so that the rated torque can be achieved. Generally a 3/4" NPT FRL is adequate for the 3 Series and a 1/2" NPT FRL is adequate for the 2 Series. American Assembly Tools highly recommends single-point, injection type lubricators (as opposed to oil mist or drip types) to insure proper lubrication. An injection type lubricator is adjustable and should be set for one drop of oil every fifth cycle. A good quality oil, specifically for use in pneumatic tools, should be used (such as Peeroyl R-43 air line oil). Lubricating oils that contain cleaning or anti-gumming agents should not be used. These additives may cause swelling of O-rings and other rubber components that can cause malfunction. Inadequate lubrication is considered abnormal operation under atypical conditions. Tool failures caused by inadequate lubrication will not be covered by our warrantee.



## **AMERICAN ASSEMBLY TOOLS LIFETIME WARRANTY**

American Assembly Tools (AAT) warrants AAT Tools and Accessory Equipment against defects in material and workmanship for the life of the Tool or Accessory Equipment. Without charge to the original purchaser, AAT, at its option, will repair or replace any Tool or Accessory or component part if it is found to be defective or not in accordance with AAT Engineering specifications in effect at the time of manufacture and said Tool or Accessory or component part is in active commercial production by AAT. Without charge to the original purchaser, AAT will also, at its option, repair or replace any Assembly Tool or Accessory used for assembly operations or component part (excepting Tools and Accessory Equipment and parts thereof designated for light or limited duty) in the event of a failure due to wear encountered in normal operation under typical specified conditions where typical maintenance procedures have been observed if such failure occurs within one year of the original purchase date of the Tool or Accessory and the failed Tool or Accessory has been subjected to 500,000 operations or less. The Tool or Accessory is to be returned to AAT's factory with shipping charges prepaid.

This warranty will not apply to any Tool or Accessory which has been misused, misapplied, modified or has been subjected to negligence or has been damaged by accidental misuse or other damage by accidental occurrences; or in which parts not manufactured by or specified by AAT have been used for repair; or which shall have been repaired or altered by other than AAT authorized personnel in such a manner, as determined by AAT, that the function of the Tool or Accessory has been affected.

**THIS WARRANTY CONSTITUTES THE ENTIRETY OF THE OBLIGATION OF AAT RELATIVE TO THE SALE AND USE OF SAID PRODUCTS AND ITS MAXIMUM LIABILITY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT. IN NO EVENT WILL AAT BE LIABLE FOR CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL OR PUNITIVE DAMAGES ARISING FROM THE USE OR SALE OF SUCH PRODUCT.**