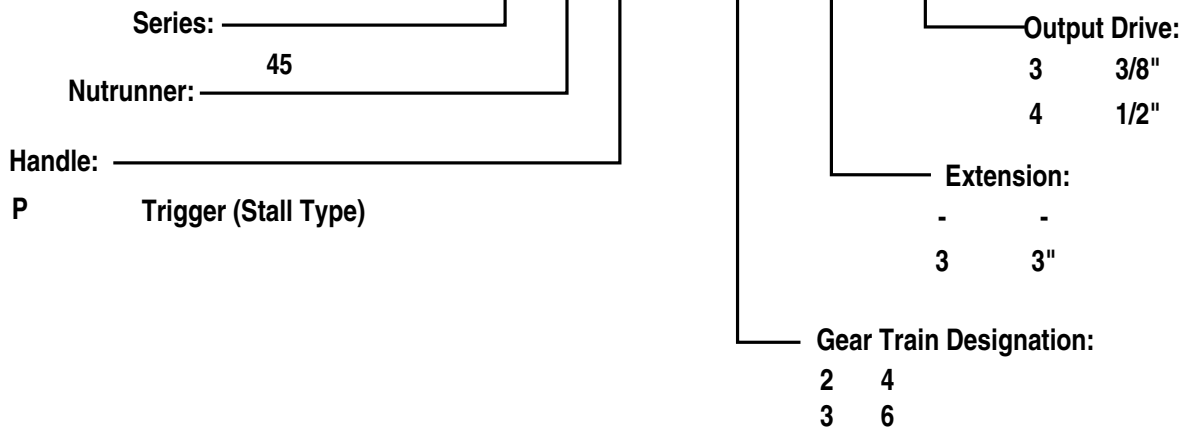


Cleco®

**45 Series Pistol Reaction Bar
Nutrunners**



45 N P - X - X - X



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

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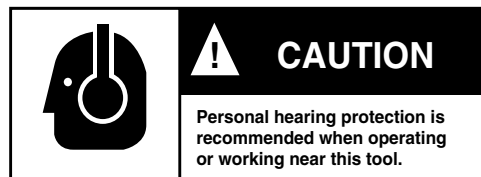
Safety Recommendations

For your safety and the safety of others, read and understand the safety recommendations and operating instructions before operating a nutrunner.

Always wear protective equipment:



For additional information on eye protection and face protection, refer to Federal OSHA Regulations, 29 Code of Federal Regulations, Section 1910.133., Eye and Face Protection, and American National Standards Institute, ANSI Z87.1, Occupational and Educational Eye and Face Protection. Z87.1 is available from the American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.



Hearing protection is recommended in high noise areas 85 dBA or greater. The operation of other tools and equipment in the area, reflective surfaces, process noises and resonant structures can substantially contribute to, and increase the noise level in the area. Excessive air pressure 90PSIG or worn motor components can also increase sound level emitted by tool. For additional information on hearing protection, refer to Federal Regulations, Section 1910.95, Occupational Noise Exposure, and American National Standards Institute, ANSI S12.6, Hearing Protectors.

Cleco nutrunners are designed to operate on 90 psig (6.2 bar) maximum air pressure. If the tool is properly sized and applied, higher air pressure is unnecessary. Excessive air pressure increases the loads and stresses on the tool parts, sockets, and fasteners and may result in breakage. Installation of a filter-regulator-lubricator in the air supply line ahead of the tool is recommended.

Before the tool is connected to the air supply, check the throttle for proper operation (i.e., throttle moves freely and returns to closed position). Clear the air hose of accumulated dust and moisture. Be careful not to endanger adjacent personnel. Before removing a tool from service or changing sockets, make sure the air line is shut off and drained of air. This will prevent the tool from operating if the throttle is accidentally engaged.

It is essential for safe operation that any operator of a nutrunner use good balance, sure footing, and proper posture in anticipation of a torque reaction. Insure that the operator's hand will not be wedged or pinched between the work and the tool when operating.

Reaction bar nutrunners are equipped with a torque reaction bar. These bars can be braced against the work or other suitable points to absorb and relieve the operator of the torque reaction transmitted

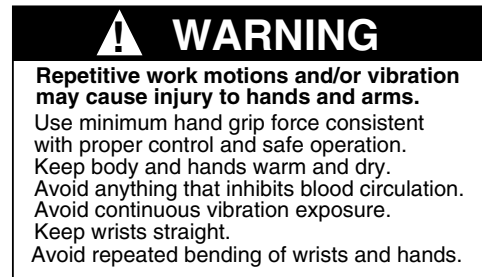
by the tool. Tool balance arms are also available to absorb the torque reaction of the tool while balancing the weight of the tool for improved ergonomic applications.



If the tool is to be reversed, locate torque reaction bar in a position that will resist torque reaction and prevent entrapment. See Directions on next page.

Tools with clutches can stall rather than shut-off if adjusted over maximum power output of tool, or if there is a drop in air pressure. Reaction bar must be properly positioned to resist torque. Operator must release throttle to stop tool if this occurs. Do not use without properly positioned reaction bar.

Reversible tools can have torque reactions in either direction. The reaction bar must be properly positioned to resist the torque reaction.



Some individuals may be susceptible to disorders of the hands and arms when performing tasks consisting of highly repetitive motions and/or exposure to extended vibration. Cumulative trauma disorders such as carpal tunnel syndrome and tendonitis may be caused or aggravated by repetitious, forceful exertions of the hands and arms. Vibration may contribute to a condition called Raynaud's Syndrome. These disorders develop gradually over periods of weeks, months, and years. It is presently unknown to what extent exposure to vibrations or repetitive motions may contribute to the disorders. Hereditary factors, vasculatory or circulatory problems, exposure to cold and dampness, diet, smoking and work practices are thought to contribute to the conditions.

Any tool operator should be aware of the following warning signs and symptoms so that a problem can be addressed before it becomes a debilitating injury. Any user suffering prolonged symptoms of tingling, numbness, blanching of fingers, clumsiness or weakened grip, nocturnal pain in the hand, or any other disorder of the shoulders, arms, wrists, or fingers is advised to consult a physician. If it is determined that the symptoms are job related or aggravated by movements and postures dictated by the job design, it may be necessary for the employer to take steps to prevent further occurrences. These steps might include, but are not limited to, repositioning the workpiece or redesigning the workstation, reassigning workers to other jobs, rotating jobs, changing work pace, and/or changing the type of tool used so as to minimize stress on the operator. Some tasks may require more than one type of tool to obtain the optimum operator/tool/task relationship.

OPERATING INSTRUCTIONS

45 STALL-TYPE NUTRUNNERS

The 45 stall-type nutrunner is designed to develop maximum rated torque at 90 psig. Torque output is controlled by a pressure regulator in the air supply line. Adjust the regulator until the desired torque is reached.

AIR SUPPLY

For maximum performance, use a 3/8" I.D. air hose no longer than 8' in length. If additional length is required, a 1/2" or larger hose should be connected to the 3/8" hose.

The air hose should be cleared of accumulated dirt and moisture, then a few drops of 10W machine oil should be poured into the tool's air inlet before connecting the hose to the tool.

LUBRICATION

An automatic in-line filter-lubricator is recommended as it increases tool life and keeps the tool in sustained operation. The in-line lubricator should be regularly checked and filled with a good grade of 10W machine oil. For proper adjustment of the in-line lubricator, place a sheet of paper next to the exhaust ports and hold the throttle open approximately 30 seconds to one minute. All the oil needed is enough to produce a light stain on the paper. If the oil mist is visible to the naked eye it is generally an excessive amount of oil. Excessive amounts of oil should be avoided.

Application of the tool should govern how frequently it is greased. It is recommended that the idler gears and right angle gears receive a generous amount of No. 2 Moly grease through the grease fittings after 40 hours of operation.

STORAGE

In the event that it becomes necessary to store the tool for an extended period of time (overnight, weekend, etc.), it should receive a generous amount of lubrication at that time and again when returned to service. The tool should be stored in a clean and dry environment.

SERVICE INSTRUCTIONS

DISASSEMBLY — GENERAL

Stall Tools

To disassemble the tool, clamp the handle, 869755, in a vise and unscrew the gear case, 869762. The motor unit may now be removed from the handle.

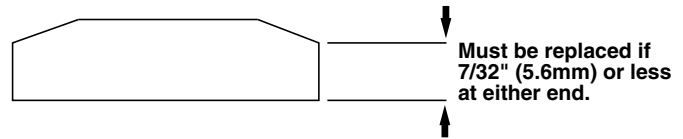
The gear train should be removed from the rear of the gear case, 202325. The 2nd reduction idler gears are removed from the spider by driving the idler gear pins out the rear of the spider.

To disassemble the motor unit, clamp the cylinder, 864236, in the vise with the gear end of the rotor up. Note: Rotor pinion, 867524, used on the - 4 and -6 gear trains should be removed from the rotor. Use a soft-faced hammer to drive the rotor out of the front rotor bearing, No. 619377. Be careful not to damage the rotor. The front bearing plate, 869054, cylinder, 203169, and rotor blades, may now be removed from the rotor. Clamp the body of the rotor in the vise and unscrew the rotor lock nut, 865352, to remove the rear bearing plate, 869055, and rear rotor bearing, 843444.

Unscrew the inlet bushing, 833471, for inspection and cleaning of the inlet screen, 869548. Wash the screen in a solvent and blow out in the reverse of normal air flow. If the screen is damaged or torn it should be replaced. The muffler, 869764, may be removed for cleaning by removing the retainer ring, 619016, and exhaust screen, 412775.

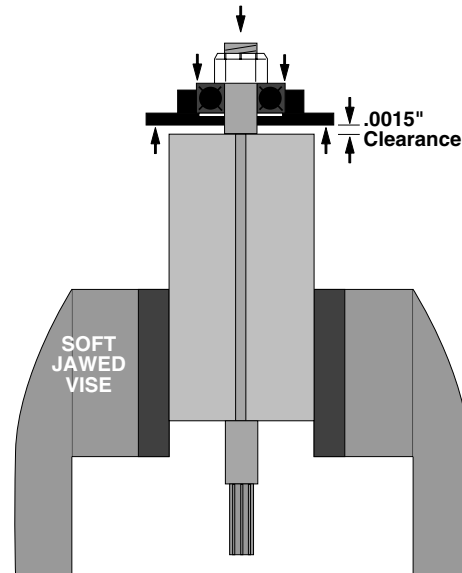
REASSEMBLY

The tool is reassembled in the reverse order of disassembly. Clean all parts thoroughly in solvent and inspect for damage or wear. Check all bearings for wear which can be detected by excessive end play and/or roughness which would indicate a brinelled condition. The rotor blades should be replaced every repair cycle or if they measure less than 7/32" (5.6mm) at either end.



All gear teeth, bearings, and pins should receive a close inspection and be replaced if necessary.

To assemble the motor, install the rear rotor bearing into the rear bearing plate. Make sure the outer bearing race is firmly seated in the bearing plate. Clamp the rotor body lightly in the vise with the threaded end up and slip the rear bearing plate assembly onto the rotor shaft far enough for the bearing lock nut to start. Tighten the lock nut until there is approximately .0015" clearance between the rotor and bearing plate. The outer bearing race should be firmly seated and the rotor bumped forward when checking this clearance as shown in drawing below.



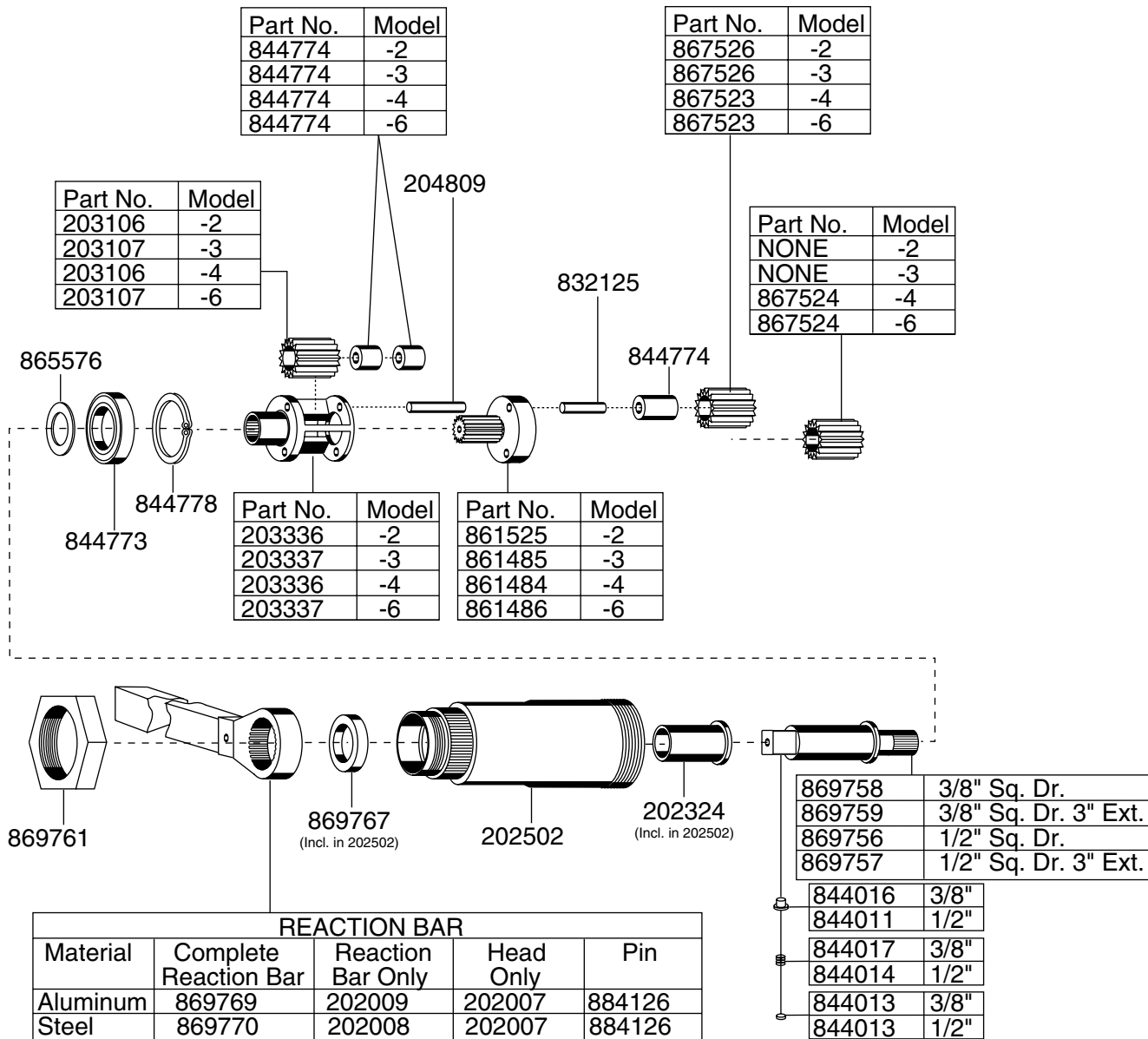
Pack both rotor bearings with a good grade of No. 2 Moly grease after assembly of the motor unit.

Note: During reassembly of the complete tool, it is important that the motor be free. After the tool is completely assembled, the square drive spindle should turn freely using a small hand wrench. If the spindle does not turn freely, the motor should be checked for proper spacing. Do not run the tool until the spindle turns freely. Failure to do this could result in damage to motor components.

During reassembly of the gear train all of the various gears and bearings should receive a generous amount of No. 2 Moly grease.

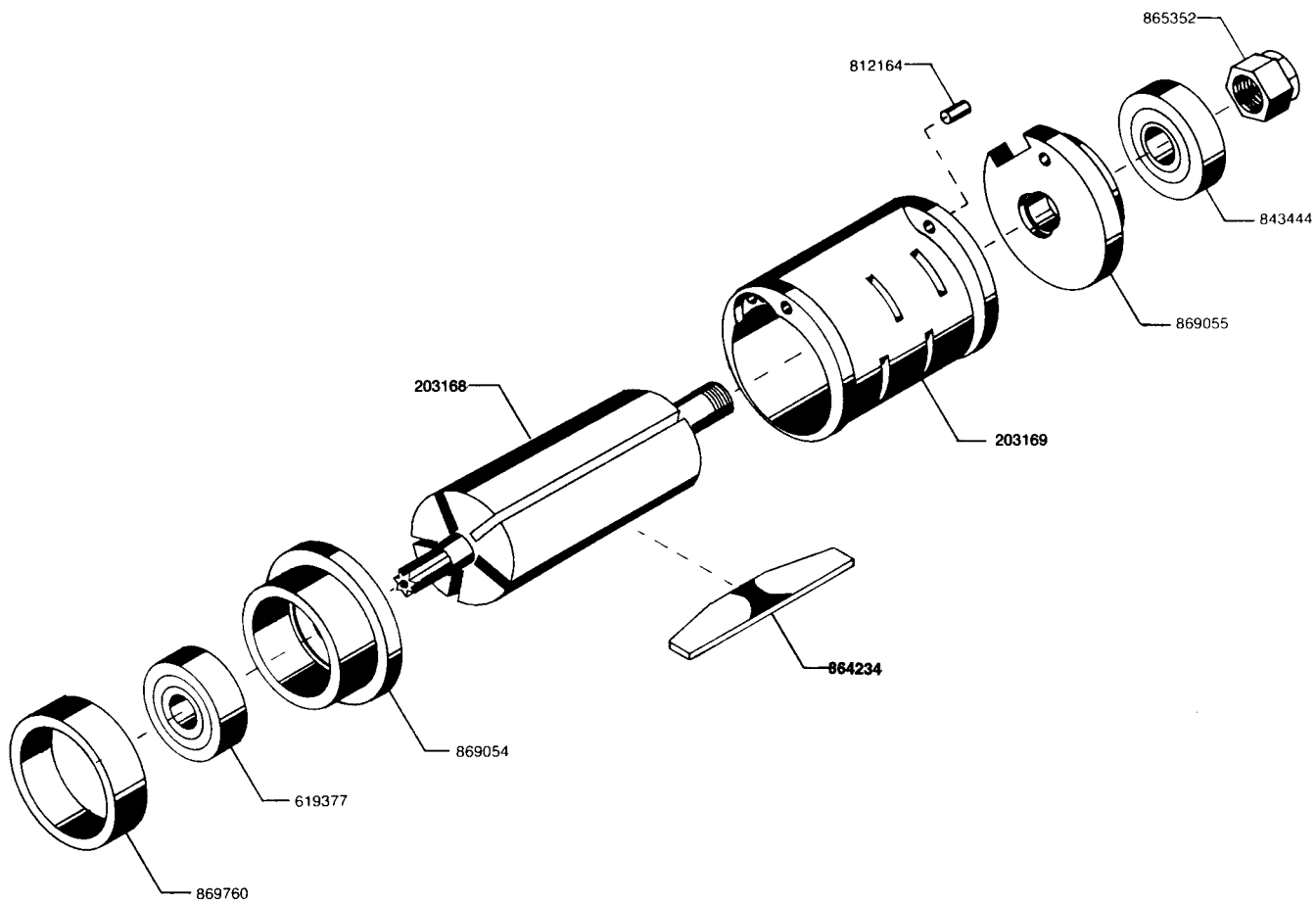
Pour a few drops of 10W machine oil into the air inlet after complete assembly to insure immediate lubrication of all motor parts when air is applied.

45 & 55 INLINE REACTION BAR NUTRUNNER GEAR TRAINS



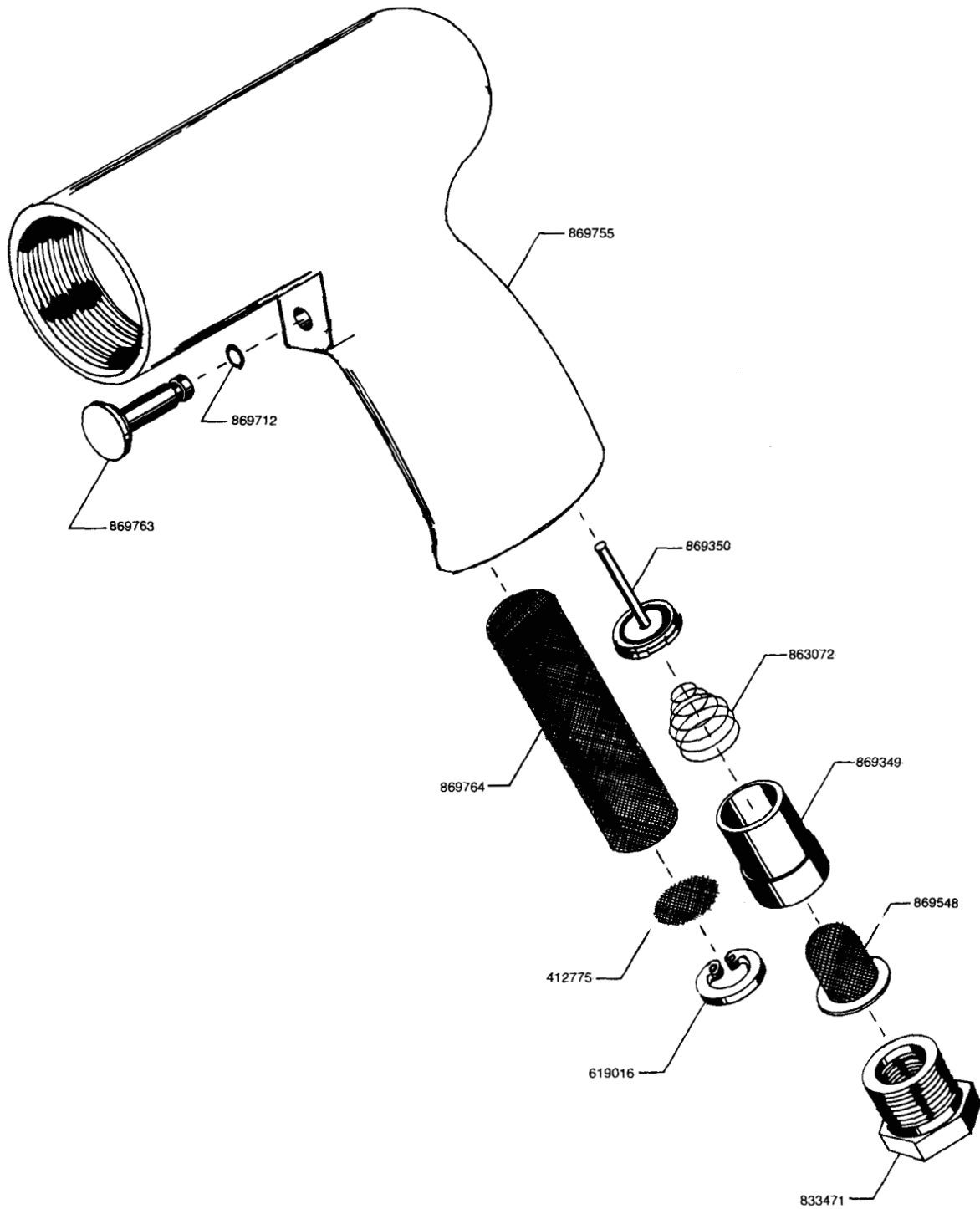
PARTS LIST — 45 & 55 GEAR TRAINS

PART NO.	NAME OF PART	QTY.	PART NO.	NAME OF PART	QTY.
202007	Reaction Bar Head	1	861486	- 6 —1st Red. Spider- 19T (incl. Pin)	1
202008	Reaction Bar (Steel)	1	861525	- 2 —1st Red. Spider- 13T (incl. Pin)	1
202009	Reaction Bar (Aluminum)	1	867523	- 4, - 6 —1st Red. Gear- 17T (incl. 844774)	3
202324	Spindle Bushing	1	867524	- 4, - 6 — Rotor Pinion 6T	1
202502	Gear Case (incl. 869767 & 202324)	1	867526	- 2, - 3 —1st Red. Gear - 21T (incl. 844774)	3
203106	- 2 — 2nd Red. Gear- 18T (incl. 844774)	3	869756	1/2" Sq. Dr. Spindle (incl. Ret. Pin)	1
203107	- 3, - 6 — 2nd Red. Gear- 15T (incl. 844774)	3	869757	1/2" Sq. Dr. Spindle " Ext. (incl. Ret. Pin)	1
204809	2nd Red. Gear	3	869758	3/8" Sq. Dr. Spindle (incl. Ret. Pin)	1
832125	- 2, - 3, - 4, - 6 —1st Red. Gear Pin	3	869759	3/8" Sq. Dr. Spindle " Ext. (incl. Ret. Pin)	1
844011	Socket Retainer Pin	1	869761	Lock Nut	1
844013	Retainer Plug	1	869767	Grease Seal	1
844014	Spring	1	869769	Aluminum Reaction Bar (incl. 202007, 202008, 884126)	1
844016	Socket Retainer Pin	1	869770	Steel Reaction Bar (incl. 202007, 202008, 884126)	1
844017	Spring	1	884126	Pin	1
844773	Ball Bearing	1			
844774	Gear Bearing	9			
844778	Retainer Ring	1			
861484	- 4 —1st Red. Spider - 13T (incl. Pin)	1			
861485	- 3 —1st Red. Spider- 19T (incl. Pin)	1			



PARTS LIST – MOTOR UNIT

PART NO.	NAME OF PART	QTY.	PART NO.	NAME OF PART	QTY.
203168	Rotor - 7T	1	843444	Rear Rotor Bearing	1
203169	Cylinder	1	865352	Rotor Lock Nut	1
864234	Rotor Blade	5	869054	Front Bearing Plate	1
619377	Front Rotor Bearing	1	869055	Rear Bearing Plate	1
812164	Cylinder Pin	1	869760	Motor Spacer	1



PARTS LIST – HANDLE

PART NO.	NAME OF PART	QTY.	PART NO.	NAME OF PART	QTY.
412775	Exhaust Screen	1	869548	Inlet Screen	1
619016	Retainer Ring	1	869712	"O"-Ring	1
833471	Inlet Bushing	1	869755	Handle	1
863072	Throttle Valve Spring	1	869763	Trigger incl. 869712	1
869349	Sleeve	1	869764	Muffler	1
869350	Throttle Valve	1			

The complete handle can be purchased as a sub-assembly using Part No. 861872-0.



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