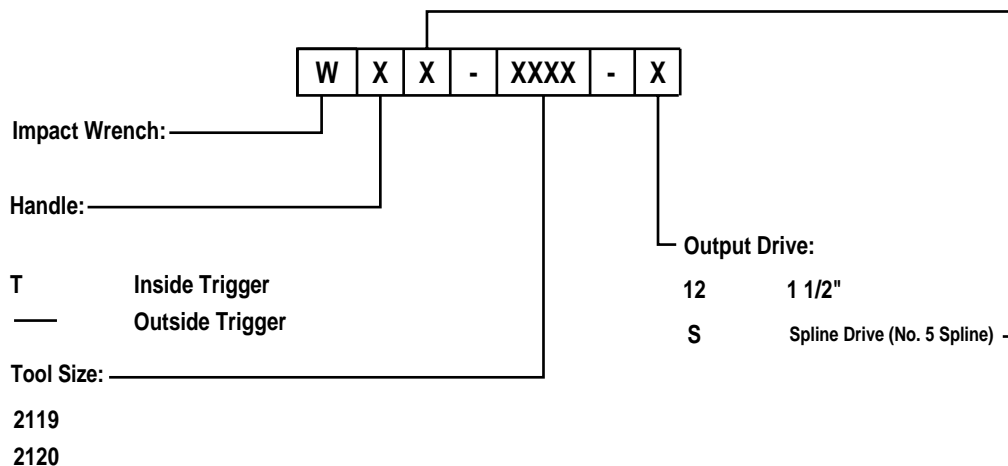
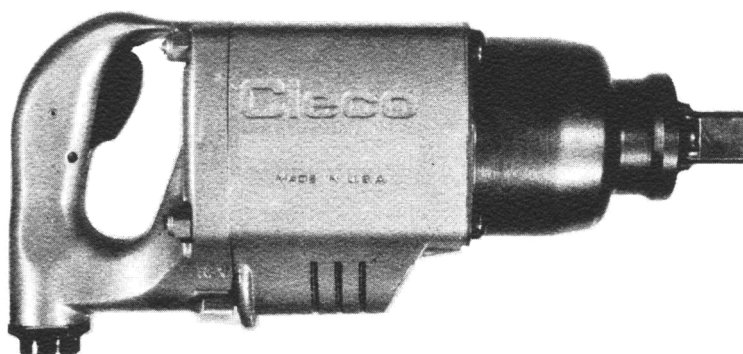


Cleco®

W2119 & W2120 SERIES IMPACTS



NORTH AMERICA

CooperTools
P.O. Box 1410
Lexington, SC 29071

EUROPE

Cooper Power Tools GmbH & Co.
Postfach 30
D-73461 Westhausen

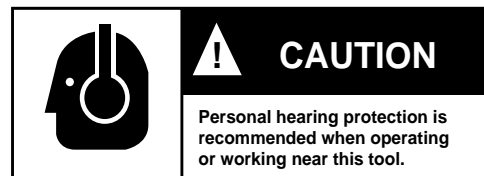
Safety Recommendations

For your safety and the safety of others, read and understand the safety recommendations before operating an impact wrench.

Always wear protective equipment and clothing.



For additional information on eye protection, refer to Federal OSHA Regulations, 29 CFR, Section 1910.133, Eye and Face Protection, and ANSI Z87.1, Occupational and Educational Eye and Face Protection. This standard 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 (above 85 dBA). Close proximity of additional tools, reflective surfaces, process noises, and resonant structures can substantially contribute to the sound level experienced by the operator. Proper hearing conservation measures, including annual audiograms and training in the use and fit of hearing protection devices may be necessary. For additional information on hearing protection, refer to Federal OSHA Regulations, 29 CFR, Section 1910.95, Occupational Noise Exposure, and American National Standards Institute, ANSI S12.6, Hearing Protectors.

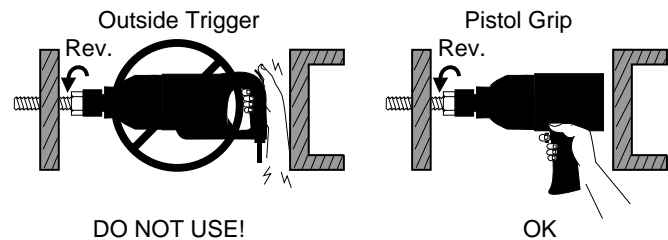
- **Gloves and other protective clothing should be worn as required, unless they create a greater hazard.**
- **Do not wear loose fitting clothing, or clothing that may restrict movement, become entangled or in any way interfere with the safe operation of the impact.**

Cleco impact wrenches 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 highly 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). Being careful not to endanger adjacent personnel, clear air hose of accumulated dust and moisture. 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.

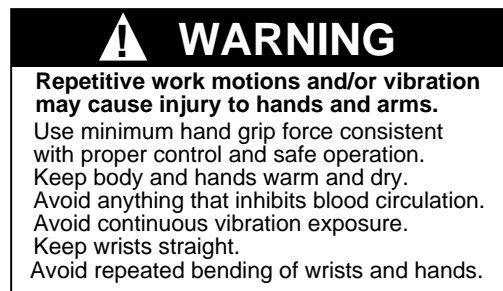
Never use the air hose for supporting, lifting, or lowering the tool. Use a safety line or cable on the tool when working in elevated areas.

Tools with exposed throttles should not be used where obstructions can hold the throttle in the "on" position. An impact wrench operating in reverse will move backwards as a nut is removed and can trap an operator's hand, making it difficult to release an outside trigger. Inside trigger or pistol grip tools are advised for close quarter operation.



Only use sockets designed for use with impact wrenches. Never use a hand tool socket on an impact wrench. Hand tool sockets can break, resulting in a hazard from flying pieces. Inspect sockets, retainers, and drives regularly for wear or damage, and replace as necessary. Worn sockets reduce power, cause drive wear, and increase the chance for breakage and should not be used.

Impact wrenches equipped with the spline drive have an integral socket retainer pin which may be depressed by a screwdriver or similar tool when installing or removing a socket. Tools with square drives 3/4" and larger use an aor-ring and pin for socket retention. Retainers—either pin or integral—should be properly engaged to prevent dropping sockets into lower working levels. Always use socket retainer components recommended by the socket manufacturer. Never substitute wire, nails, or welding rods for retaining pins because they are dangerous if thrown from the tool at free speed, or if the protruding nail or wire is accidentally grasped by the operator.

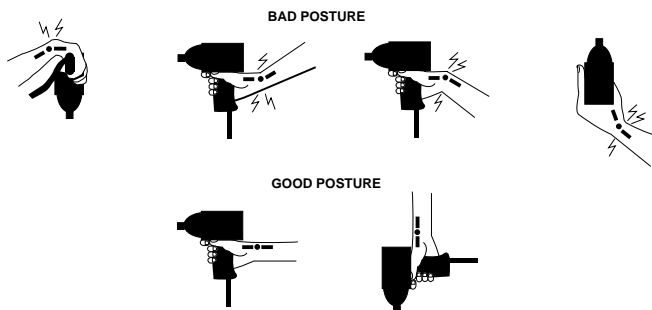


Some individuals may be susceptible to disorders of the hands and arms when performing tasks consisting of highly repetitive motions and/or exposure to extended vibration. Cumulative trauma disorders such as carpal tunnel syndrome and tendonitis may be caused or aggravated by repetitious, forceful exertions 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

Safety Recommendations

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.

Tool operators 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.



- Tasks should be performed in such a manner that the wrists are maintained in a neutral position, which is not flexed, hyperextended, or turned side to side.
- Stressful postures should be avoided. Select a tool appropriate for the job and work location.

The following suggestions will help reduce or moderate the effects of repetitive work motions and/or extended vibration exposure.

- Use a minimum hand grip force consistent with proper control and safe operation
- Keep body and hands warm and dry
- Avoid anything that inhibits blood circulation
 - Smoking Tobacco
 - Cold Temperatures
 - Certain Drugs
- Keep wrists as straight as possible
- Avoid highly repetitive movements of hands and wrists, and continuous vibration exposure

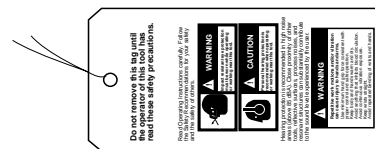
Work gloves with vibration reducing liners and wrist supports are available from some manufacturers of industrial work gloves. These gloves are designed to reduce and moderate the effects of extended vibration exposure and repetitive wrist trauma. Since they vary widely in design, material, vibration reduction, and wrist support qualities, it is recommended that the glove manufacturer be consulted for gloves designed for your specific application. **WARNING! Proper fit of gloves is important. Improperly fitted gloves may restrict blood flow to the fingers and can substantially reduce grip strength.**

Also note that various tool wraps are available from a number of different manufacturers. Like gloves, these wraps are also intended to reduce and moderate the effects of extended vibration exposure. They vary widely in design, material, thickness, vibration reduction, effectiveness, and durability, so consideration must be given to choosing the proper wrap for the specific application.

This information is a compilation of general safety practices obtained from various sources available at the date of production. However, our company does not represent that every acceptable safety practice is offered herein, or that abnormal or unusual circumstances may not warrant or require additional procedures. Your work may require additional specific safety procedures. Follow these procedures as required by your company.

Warnings

The warnings found on these tools are an essential part of the product. Warnings should be checked periodically for legibility. Replace warnings when missing or when the information can no longer be read. Replacements can be ordered as any spare part.



869976

For more information, see the latest edition of ANSI B186.1, Safety Code for Portable Air Tools, available from the American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.

These operating instructions and service manual should accompany tool if it is subsequently sold or ownership is changed.

GENERAL INFORMATION

AIR SUPPLY

The tool is designed to operate on 90 psig (6.2 bar) air pressure (measured at the tool air inlet with the tool running) using a 1/2" (12.7mm) hose up to 8' (2.4m) in length. An automatic in-line filter-lubricator is highly recommended to supply the tool with clean lubricated air. This will keep the tool in sustained operation and increase its service life.

The air hose should be cleared of accumulated dirt and moisture, then one (1) teaspoon (5ml) of 1 OW machine oil should be poured into the tool's air inlet before connection the hose to the tool.

IMPORTANT: If a quick-disconnect coupling is used with the tool, it should be separated from the tool by a whip hose.

All tools and hoses should be installed by trained, competent personnel. Hoses and fittings should be inspected regularly for worn or damaged areas and replaced if necessary.

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 1 OW machine oil. Proper adjustment of the in-line lubricator is performed by placing a sheet of paper next to the exhaust ports and holding the throttle open approximately 30 seconds. The lubricator is properly set when a light stain of oil collects on the paper. Excessive amounts of oil should be avoided. In the event an in-line lubricator is not used, the oil reservoir in the handle should be utilized.

The oil reservoir marked "30W oil" should not require attention until the tool is torn down for inspection purposes; however, if the tool is on the application for an unduly long period of time, the plug should be removed and the reservoir checked for the presence of oil. If oil is required, approximately 1-1/4 fluid ounces (40ml) of 30W oil should be added to the oil reservoir.

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.

MAINTINANCE - DISASSEMBLY

GENERAL - ALL MODELS

Disconnect the tool from the air supply and unscrew and remove the four (4) nuts, No. 865006; then remove the handle assembly, reversing valve, No. 869008, gasket, and the motor clamp seal, No. 869001, from the rear of the motor unit.

Drive the four (4) housing bolts, No. 869066, out the front of the motor unit. Removing the anvil housing, No. 861605, will allow the complete impacting mechanism to slip out the

front of the motor unit. The anvil housing may need to be rotated to clear the anvil and hammer lugs.

The impact wrench is now separated into four (4) basic assemblies. See the following paragraphs for complete disassembly instructions on these assemblies

ANVIL HOUSING

For better performance, it is recommended that the anvil housing seal, No. 867993, be replaced during each repair. The seal may be removed by prying it out with a screwdriver.

Should the anvil housing bushing, No. 861602, need replacing, the housing seal will have to be removed as outlined above. Press the housing bushing out the rear of the housing using a bushing driver 2-3/16" in diameter.

IMPACT MECHANISM

Clamp the hammer, No. 867969, horizontally in a softjawed vise and drive the anvil* away from the hammer using a soft hammer. This will allow the anvil pin, No. 867994, spring clip, No. 867964, and hammer spring No. 867984 to be removed from the front of the cam shaft, No. 867973.

Remove the hammer from the vise and slip the cam shaft and related components out of the rear of the cam, No. 867991. Remove the shock absorber, No. 867980, (slight press fit) from the rear of the cam shaft. This will allow the insulator, No. 869012, butt plate, No. 869011, cam roller, No. 869278, and cam roller shaft, No. 867979, to be removed from the cam shaft.

Slip the cam, No. 867991, out of the rear of the hammer, being careful not to lose the timing pin, No. 867966.

*NOTE: On the spline drive anvils, should any of the socket retainer parts need replacing, a 5/32" hole should be drilled in the socket retainer plunger, No. 867950, as shown in Figure 3. Insert a pin punch in the drilled hole and lightly tap the punch under the socket retainer pin, No. 867951. Pry on the punch to pop the pin out of its pocket in the plunger.

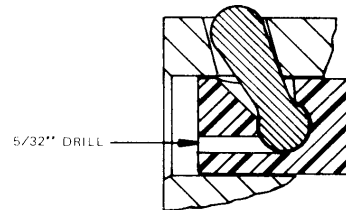


Figure 3

MOTOR UNIT

Set the front of the housing, No. 869744, on a cylinder (4-11/2" I.D. x 5" long) and using a suitable driver (2-1/8" O.D.) drive the rotor out of the rear rotor bearing, No. 867995. This will remove the front bearing plate, No. 867985, six (6) rotor blades, No. 867975, and rotor from the housing. Invert the housing on the fixture and use the rotor to drive the rear bearing plate assembly from the housing. The cylinder

should not be removed from the housing unless replacement is necessary. If cylinder replacement is necessary, a 4-5/32" O.D. bushing driver (with a suitable relief for the alignment key, No. 867981) should be used to press the cylinder out of the housing.

Remove the rotor bearings, No. 867995, from the bearing plates for inspection. For better performance, it is recommended that the rotor shaft seals, No. 867996, be replaced during each repair.

NOTE: UNLESS THE "O" RINGS, NO. 844309, LOCATED ON THE O.D. OF THE BEARING PLATE ARE SEVERELY DAMAGED, THEY SHOULD NOT BE REMOVED. IF REPLACEMENT IS NECESSARY, REPLACEMENT "O" RINGS SHOULD BE INSTALLED WITH A FAST CURE CONTACT ADHESIVE ("LOCTITE" 404).

For cleaning and inspection of the three (3) muffler plates, No. 869004, unscrew the retainer screw, No. 883695.

HANDLE ASSEMBLIES

Both the inside and outside trigger handle assemblies are disassembled using the same procedure. Unscrewing the air inlet bushing, No. 864972, will allow the "O" ring, No. 863009, air inlet screen, No. 843656, throttle valve spring, No. 864973, throttle valve No. 867974, throttle valve seal, No. 867977, and throttle valve pin, No. 867982, to be removed from the handle.

If the throttle pin bushing, No. 864975, should need replacing, tap the I.D. of the bushing with a 114"-20 thread tap. Insert a 114-20 bolt of the appropriate length and clamp the bolt in the vise. Drive the handle away from the vise using a soft mallet.

If the trigger should need replacing, only the trigger pin (solid pin), No. 832125, need be removed.

MAINTENANCE - REASSEMBLY CLEANING AND INSPECTION

All parts should be cleaned in a solvent and inspected for wear or damage. If rotor blades measure less than 7116 on either end, they should be replaced. Rotor bearings should be replaced if they feel rough after cleaning or show excessive looseness.

HANDLE ASSEMBLY

When installing the trigger use a pin slightly smaller than the hole in the handle to locate the trigger when driving the trigger pin, No 832125. into the handle.

If the throttle valve bushing No 864975, was removed, the new bushing should be pressed in to a depth of 1 15/16" plus or minus 1/64 from the bottom face of the handle.

Inspect the throttle valve seal, No, 867977, for wear or deterioration. If replacement is necessary, the new seal should be pushed (cupped face first) on the throttle valve,

No. 867974, from the tapered end. Inspect the "O"-ring, No. 863009, and replace if necessary. Clean the threads on the air inlet bushing, No 864972, and apply "LOCTITE" No. 271 to the threads.

Now install the throttle valve pin, No 867982, and throttle valve assembly into the handle. Place the inlet air screen, No. 843656, and throttle valve spring, No. 864973, in the air inlet bushing and screw the bushing into the handle. The bushing should be torqued to 80 ft lbs. minimum.

MOTOR UNIT

Insert the three (3) muffler plates. No. 869004, and install the retaining screw, No. 883695.

During reassembly of the bearing plates, No. 867985, the rotor shaft seals, No. 867996, should be installed with their "lips" facing out (visible after installation). When installing the rotor bearings, No. 867995, press on the bearing's outer race. Lubricate both the seals and rotor bearings with 30W oil before assembly into the motor unit. Inspect the "O"-ring, No. 863096, and replace if necessary. This "O"-ring is used only on the front bearing plate (both bearing plates are identical).

If the cylinder was removed, the new cylinder (with alignment key, No. 867981, in place) should be pressed in from the rear of the motor housing to a depth 5/8" from the rear face of the housing.

Lubricate the "O"-rings on the O.D. of the rear bearing plate assembly and press the assembly into the housing. When installing either bearing plate assembly, be sure the "O"-rings line up with the air ports in the housing. Invert the housing and install the rotor with the end stamped "REAR" into the rear rotor bearing, No. 867995.

Insert the six (6) rotor blades, No. 867975, then lubricate the "O"-rings on the front bearing plate assembly and press the assembly into the housing. **NOTE:** Be sure "O"-ring, No. 863096, is in place on the front bearing plate.

IMPACT MECHANISM

All parts should receive a thin coating of 30W oil before assembly.

Insert the timing pin, No. 867966, into the recess located on the small O.D. of the cam, No. 867991, and then install the cam and pin into the rear of the hammer, No. 867969.

Install the cam roller shaft, No. 867979, in the cam shaft, No. 867973. Put the cam roller, No. 867978, on the roller shaft and slip the butt plate, No. 869011, insulator, No. 869012, and shock absorber, No. 867980, onto the rear of the cam shaft. Hold the cam shaft vertically on the work bench with the shock absorber down and tap the end of the cam shaft with a soft mallet to seat the cam shaft in the shock absorber. Slip the cam shaft and related components through the cam and hammer assembly. Install the hammer spring, No. 867984 spring clip, No. 867964, and anvil pin, No. 867994,

onto the front of the cam shaft and hammer assembly. Rotate the spring clip to accept the anvil pin and then install the anvil on top of the assembly (be sure the slot in the anvil lines up with the anvil pin) and drive the anvil down until the spring clip engages the recess in the anvil.

To install the socket retainer pin, No 867951, in the spline drive anvil, insert socket retainer spring, No. 867949, and socket retainer plunger, No. 867950 into the anvil and then drive the socket retainer pin radially into the plunger.

ANVIL HOUSING

If the anvil housing bushing, No 861602, is replaced, it should be pressed in as shown in Fig. 4.

When replacing the anvil housing seal, No 867993, the housing bore should be cleaned with a solvent and then coated with "PERMATEX" Aviation Form-A-Gasket No. 3H, and then be allowed to air dry at least four (4) minutes before pressing in the seal. Press the seal in with its "lip" toward the bore of the housing ("Lip" should not be visible after assembly.)

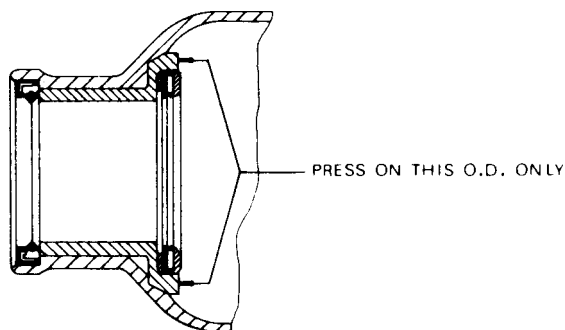


Figure 4

GENERAL- ALL MODELS

Coat the hammer and rotor splines with 30W oil and insert the impact mechanism into the front of the rotor. Lubricate the anvil housing seal and bushing with 30W oil and install on the unit being sure the contour of the anvil housing matches that of the motor housing. The anvil and hammer lugs should be in line with the recess in the make-up lip located in the anvil housing. Install the dead handle bracket, No. 867990, on the left side of the tool and insert the four (4) housing bolts. Tap the bolts with a hammer until the anvil housing seats against the motor housing.

Clamp the tool vertically in a vise and install the gasket. Insert -O--ring, No. 847981, into the reversing valve bore and install the reversing valve, No. 869008. Apply a thin coat of grease to the motor clamp seal, No 869001, and place it into the handle recess.

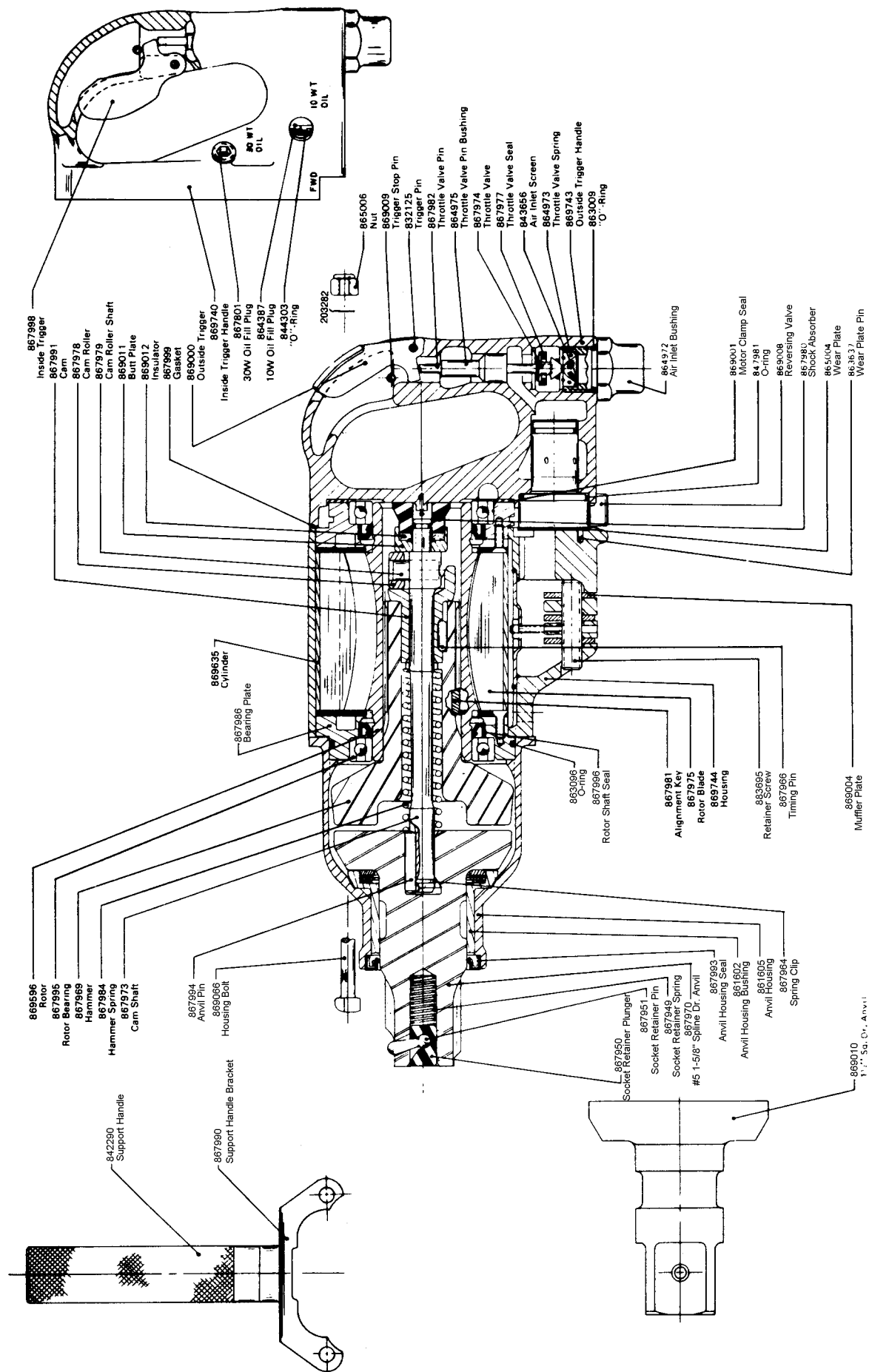
Put the handle on the tool and install the four (4) nuts, No. 865006. Torque these nuts to 20 ft. lbs. minimum.

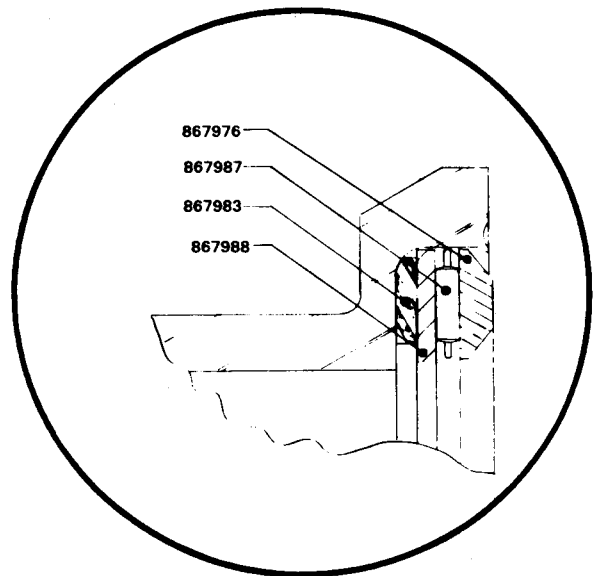
Lay the tool on its right side and remove the 30W oil fill plug, No. 867801. Fill the reservoir with a good grade of 30W oil up to the level of the fill indicator pin located in the reservoir (approximately 1 - 1-1/4 fluid Ounces).

Place a couple of teaspoons of 10W machine oil in the air inlet bushing before attaching the air hose to ensure immediate lubrication of all motor parts.

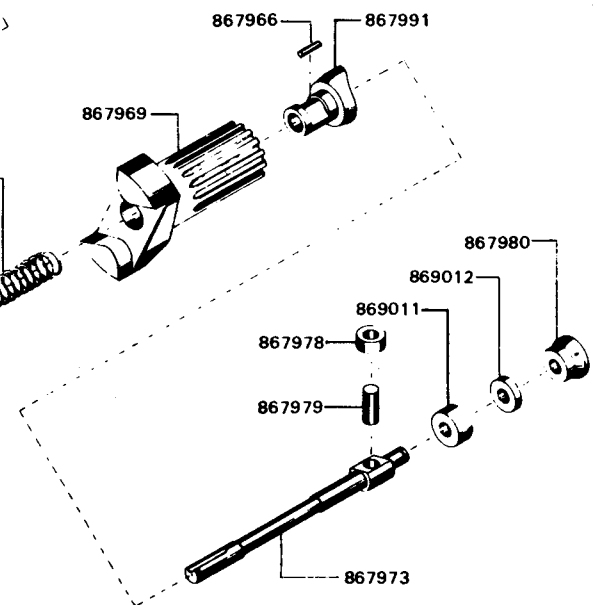
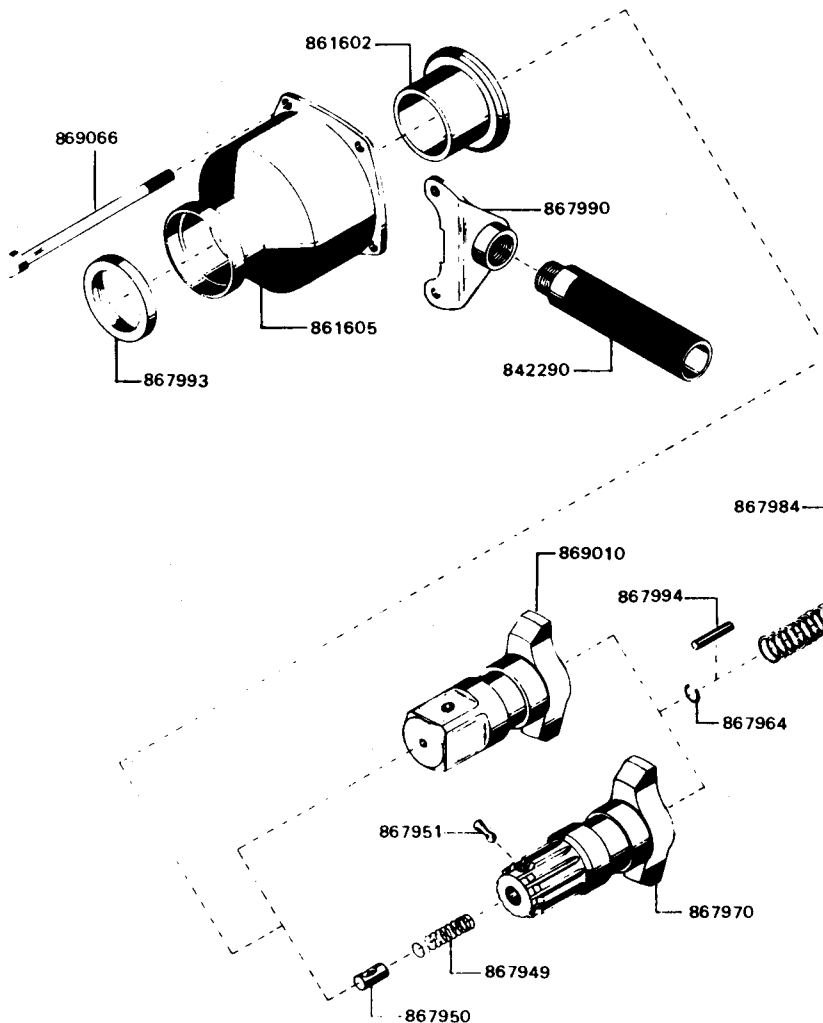
SAFETY CHECK

All tools should be tested after repair or replacement of parts to assure that they are functioning properly.



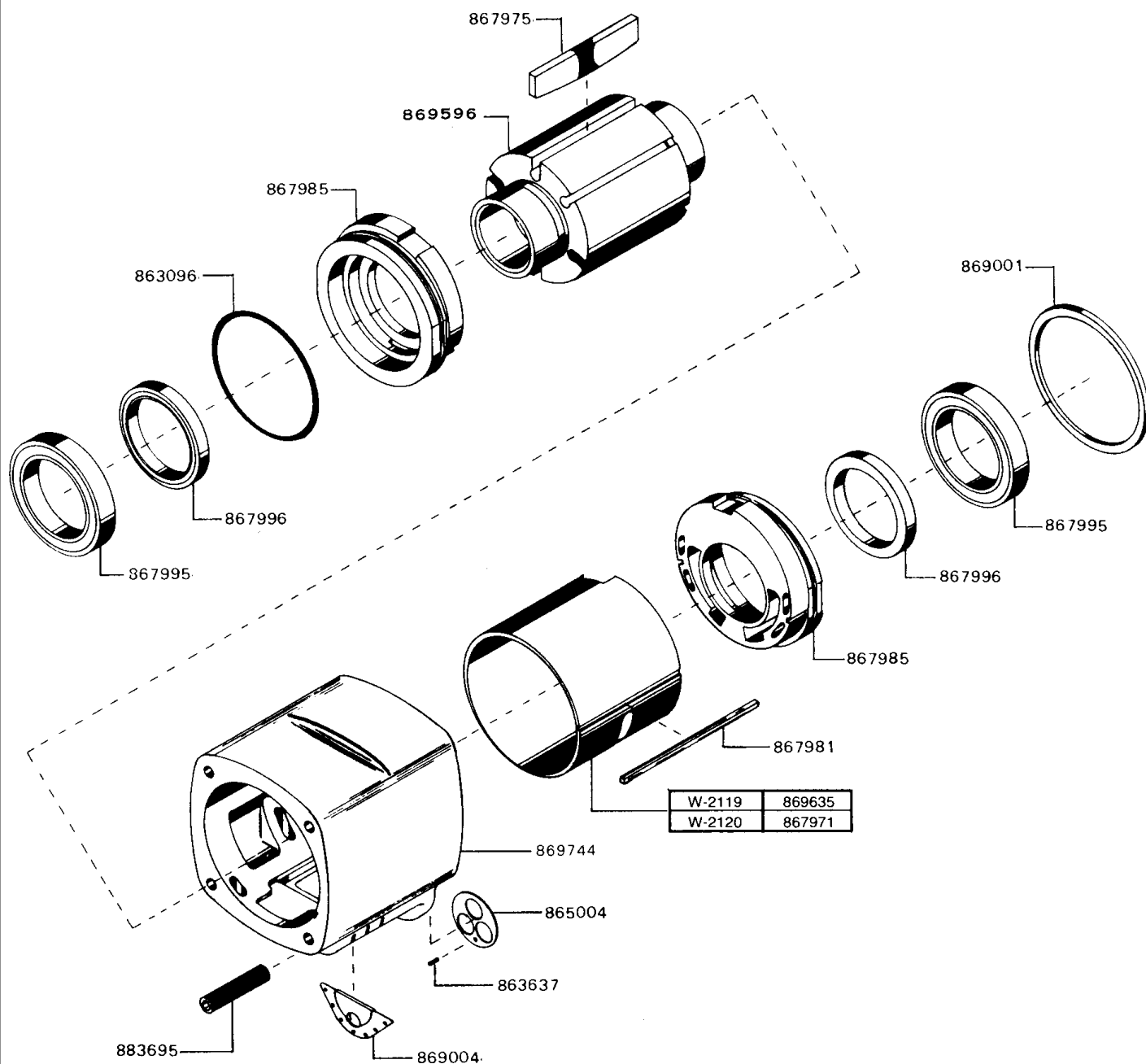


ANVIL HOUSING BUSHING ASSEMBLY



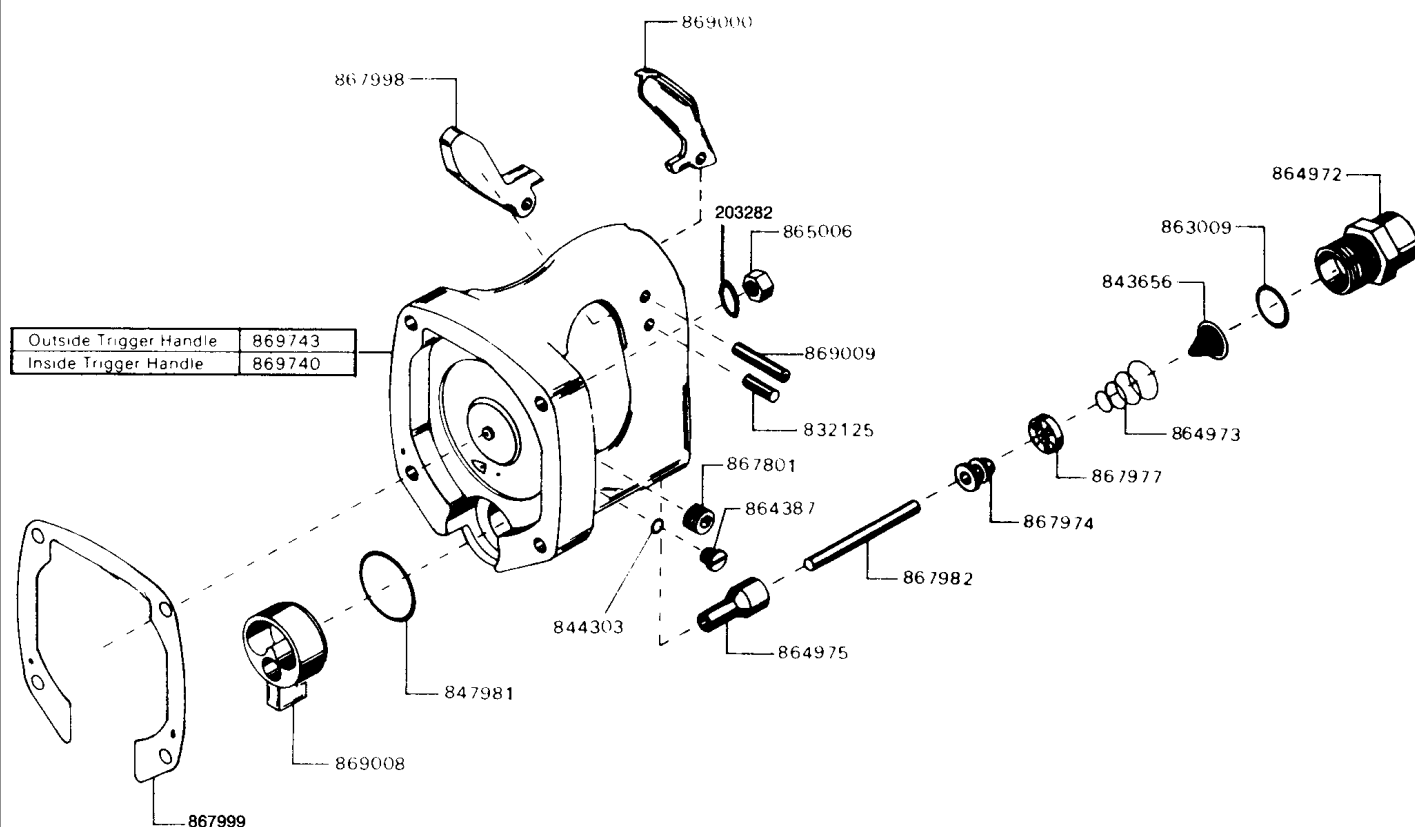
PARTS LIST — IMPACT MECHANISM

PART NO.	NAME OF PART	QTY.	PART NO.	NAME OF PART	QTY.
842290	Support Handle	1	867984	Hammer Spring	1
861602	Anvil Housing Bushing (incl. 867976, 867983, 867987, 867988)	1	867987	Thrust Bearing	1
861605	Anvil Housing (incl. 861602, 867993)	1	867988	Thrust Race	1
867949	Socket Retainer Spring	1	867990	Support Handle Bracket	1
867950	Socket Retainer Plunger	1	867991	Cam	1
867951	Socket Retainer Pin	1	867993	Anvil Housing Seal	1
867964	Spring Clip	1	867994	Anvil Pin	1
867966	Timing Pin	1	869010	1-1/2" Sq. Dr. Anvil	1
867969	Hammer	1	869011	Butt Plate	1
867970	#5 1-5/8" Spline Drive Anvil	1	869012	Insulator	1
867973	Cam Shaft	1	869066	Housing Bolt	4
867976	Thrust Race	1			
867978	Cam Roller	1			
867979	Cam Roller Shaft	1			
867980	Shock Absorber	1			
867983	Cushion	1			



PARTS LIST — MOTOR UNIT

PART NO.	NAME OF PART	QTY.	PART NO.	NAME OF PART	QTY.
863096	O-ring 3-1/4" X 3-1/2"	1	867996	Rotor Shaft Seal	1
863637	Wear Plate Pin	1	869001	Motor Clamp Seal	1
865004	Wear Plate	1	869004	Muffler Plate	1
867971	Cylinder (W-2120)	1	869596	Rotor	1
867975	Rotor Blade	6	869635	Cylinder (W-2119)	1
867981	Alignment Key	1	869744	Housing (incl. 863637, 865004, 869004, 883695)	
867985	Bearing Plate (incl. 844309)	2	883695	Retainer Screw	
867995	Rotor Bearing	2			



PARTS LIST — HANDLES

PART NO.	NAME OF PART	QTY.	PART NO.	NAME OF PART	QTY.
203282	Washer	2	867801	30W Oil Fill Plug	1
832125	Trigger Pin	1	867974	throttle Valve	1
843656	Air Inlet Screen	1	867977	Throttle Valve Seal	1
844303	O-ring 3/16" X 5/16"	1	867982	Throttle Valve Pin	1
847981*	O-ring 1-3/8" X 1-1/2"	1	567998	Inside Trigger	1
863009	O-ring 3/4" X 7/8"	1	867999*	Gasket	1
864387	10W Oil Fill Plug	1	869000	Outside Trigger	1
864972	Air Inlet Bushing	1	869008*	Reversing Valve	1
864973	Throttle Valve Spring	1	869009	Trigger Stop Pin	1
864975	Throttle Valve Pin Bushing	1	869740	Inside Trigger Handle (incl. 864975)	1
865006*	Nut	4	869743	Outside Trigger Handle (incl. 864975)	1

*Denotes parts not included in subassemblies listed below.

The complete handle can be ordered as a subassembly using the part numbers listed below.

Outside Trigger - 861867

Inside Trigger - 861863

NOTES

[illegible]



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