

**CP-0611 IMPACT WRENCH**

**UTICA PNEUMATIC 697**

**FIRST EDITION**

**FEBRUARY, 1985**

*Instruction and Parts Book for*

# **PNEUMATIC IMPACT WRENCH**

**CP-0611 REVERSIBLE Model "B"**

**HI-TORQUE**

**PROTECT YOUR INVESTMENT  
IN THE WORLD'S FINEST AIR TOOLS  
USE GENUINE CP REPLACEMENT PARTS.**

The purchase of replacement parts for your CP tools deserves the same good judgment that resulted in the purchase of the tools themselves. Each genuine CP part is made from carefully selected and inspected material, subjected to sophisticated machinery and finishing processes

and heat-treated to produce just the right combination of hardness, ductility and impact resistance for its intended use. Each part is identical to, and made concurrently with, parts used in production tools. The use of parts other than genuine CP replacement parts can lead to sub-standard performance, early failure, possible damage of other parts and, in some instances, unsafe conditions.



**Chicago  
Pneumatic**

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C136173

# CP-0611 HI-TORQUE IMPACT WRENCH Model "B"

## INDEX

Tools covered by this instruction and parts book have catalog numbers starting with CP-0611 followed by catalog code letters such as GASED & GASEK.

The following index indicates the pages on which part information corresponding to catalog code letters are located.

THROTTLE/HANDLE			MOTOR			CLUTCH HOUSING			CLUTCH			SHANK		
Code	Description	Page	Code	Description	Page	Code	Description	Page	Code	Description	Page	Code	Description	Page
<b>D</b>	Closed Grip Self-Closing Double Trigger	6	<b>A</b>	Standard	4 & 5	<b>S</b>	Standard Steel	4 & 5	<b>E</b>	2-Jaw Type	4 & 5	<b>D</b>	1" Sq. Drive Pin Hole Standard Length	5
<b>C</b>	Closed Grip Self-Closing Outside Trigger	4 & 5										<b>K</b>	1" Sq. Drive Pin Hole 6" Extension	5
<b>P</b>	Closed Grip Self-Closing Inside Trigger	4 & 5										<b>L</b>	No. 5 Spline Int. Retainer Standard Length	5

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**CAUTION: THIS CODE LETTER INDEX DOES NOT NECESSARILY INDICATE INTERCHANGEABILITY OR SAFE PARTS COMBINATIONS. REFER TO THE LATEST CHICAGO PNEUMATIC CATALOG FOR APPROVED TOOL DESIGNATIONS AND ASSEMBLY COMBINATIONS.**

## GENERAL INSTRUCTIONS

### WARNING

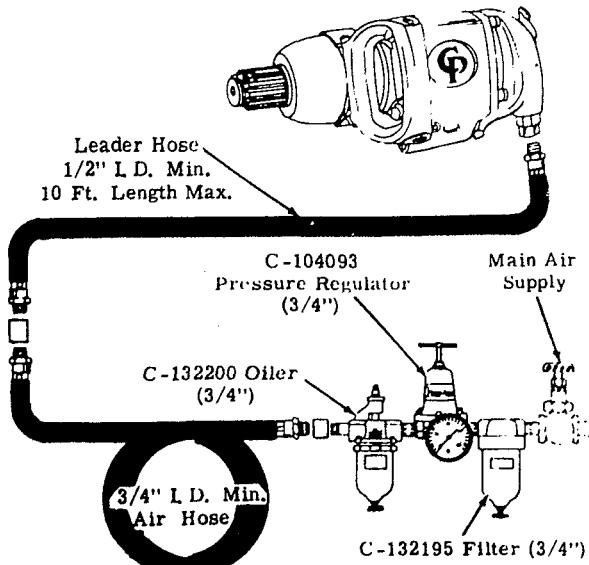
**TO AVOID INJURY  
DON'T USE HAND SOCKETS!!  
USE ONLY IMPACT WRENCH SOCKETS.  
ALWAYS USE EYE PROTECTION WHEN  
OPERATING THIS TOOL.**

### Air Supply

For satisfactory performance, 90 psi (6.2 bar) of clean, dry air is required AT THE TOOL with tool operating.

**WARNING: "DO NOT MOUNT AIR HOSE QUICK COUPLERS ON THE TOOL. VIBRATION CAN CAUSE BREAKAGE RESULTING IN SERIOUS INJURY FROM WHIPPING AIR HOSES. USE A SHORT LEADER HOSE." "ALWAYS CHECK FOR DAMAGED OR LOOSE HOSES AND FITTINGS BEFORE OPERATION. WHIPPING HOSES CAN CAUSE SERIOUS INJURY."**

### Recommended Air Supply Installation

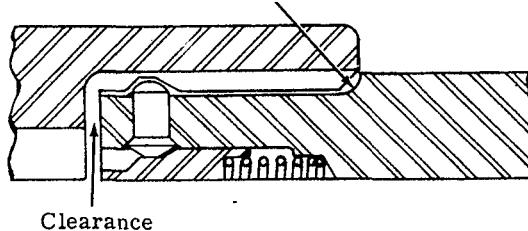


The use of a C-104093 CHICAGO PNEUMATIC Air Line Pressure Regulator, C-132195 Air Line Filter and C-132200 Oiler mounted as closely as possible to the tool is recommended.

### Operating Cautions

Spline drive anvil shank breakage can result from the use of incorrectly designed Impact Wrench sockets. CHICAGO PNEUMATIC Impact Wrench sockets, as shown in illustration below, are designed to ride against spline washout and to leave a clearance between end of drive and face of Impact Wrench socket recess. Impact Wrench sockets which do not meet these conditions cause excessive and unnecessary tool wear.

Impact Wrench Socket rides against spline washout.



### Preparing for Operation

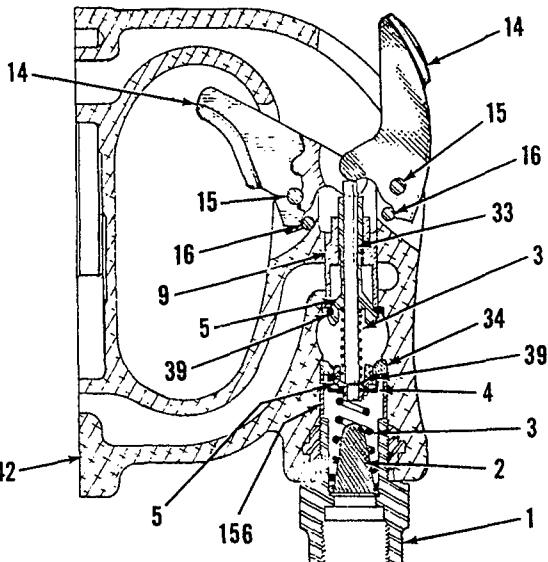
Daily before using and before putting tool into operation, disconnect air hose and pour about one ounce of recommended oil into tool air inlet. Blow out air line to clear it of accumulated dirt and moisture, connect tool and operate to allow oil to be carried to air motor.

### Lubrication

After each forty (40) hours of use, apply several shots of recommended grease to clutch housing bushing through pipe plug hole (117). At each inspection period, clean old grease from impact unit and relubricate with recommended lubricant. Coat pilot hole and spline of rotor (61), spline of coupling (95), spline and cam area of timing shaft (103), cam area of dog (98), O.D. of anvil (105) and I.D. of clutch housing bushing (114).

C-127841 SAFETY HANDLE

Index No.	CP Part No.	Description	No. Req'd.
1	C-094354	Cap-Throttle	1
2	C-087505	Screen-Air	1
3	C-088079	Spring-Lower Thr. Valve	1
	C-127547	Spring-Upper Thr. Valve	1
4	C-127546	Retainer-'O" Ring	1
5	C-127542	Valve-Upper Throttle	1
	C-127543	Valve-Lower Throttle	1
9	C-127541	Bushing-Throttle Valve	1
14	C-127549	Trigger-Inside	1
	C-127548	Trigger-Outside	1
15	C-113758	Pin	2
16	P-072359	Pin	2
33	C-127544	Stem	1
34	C-127545	Seat-Valve	1
39	A-082777	"O" Ring (-012)	2
42	C-127540	Handle-Pistol Grip (Incl.: #9)	1
156	C-127550	Sleeve	1



- e. With the impact wrench running free, set the pressure regulator for 70 psi.
- f. Tighten the nut on the bolt in the calibrator with the impact wrench until little further advance of the nut can be observed. This is the so-called "stall point" of the wrench, although the wrench itself never actually stalls. Observe the tension reading on the calibrator gauge.
- g. If the tension reading is too low, reverse the impact wrench and loosen the nut, increase the air pressure slightly and repeat the tightening procedure.
- h. If the tension reading is too high or the bolt breaks, install a new bolt and nut, reduce the air pressure and repeat the tightening procedure.
- i. When it appears that the wrench has been properly calibrated, tighten three separate sets of new bolts, nuts and washers. If the tension induced in all three exceeds the minimum required tension indicated in the table below, the assembly of wrench, hose and regulator may be regarded as properly calibrated.

Table No. 1

Bolt Size (Inches)	Minimum Bolt Tension In Pounds*	
	A 325 Bolts	A 490 Bolts
3/4	28,000	35,000
7/8	39,000	49,000
1	51,000	64,000
1 1/8	56,450	80,000
1 1/4	71,700	---

\* Equal to proof load of bolt (length measurement method) given in ASTM "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" dated March, 1964.

### Turn of Nut Method

This method is based upon rotating the nut a certain amount beyond a "snug" position, after the steel has been properly fitted up. It is not necessary to control the air pressure to the tool. The reliability of this method can be established by tightening several bolts in a tension-indicating calibrator such as the Skidmore-Wilhelm Model "ML" Calibrator. Gauge readings using turn-of-nut tightening procedure outlined in paragraph below should exceed the minimum required tension listed in Table 1. Recommended Procedure is as follows.

- a. Fair-up holes with enough pins to maintain dimension and plumbness of structure and install bolts in all remaining holes.
- b. Tighten enough bolts to bring all of the connected parts firmly into contact, preferably starting from the fixed or rigid ends and proceeding to the free edges.
- c. Using the impact wrench, spin the nut of each bolt not used to fit-up to a "snug" position, i. e., until the wrench begins to impact solidly. Then while the bolt head is held with a hand wrench to prevent turning, impact the nut through 1/2, 2/3 or 3/4 turn, as determined from Table 2 below.
- d. Remove pins and replace with bolts, tightening these as outlined in the preceding paragraph.
- e. Go back over bolts used for fit-up and give each 1/2 to 1 turn, depending upon grip length.

Table No. 2

### NUT ROTATION FROM SNUG TIGHT\*

Both faces normal to bolt axis or one face normal and other sloped 1:20 (bevel washers not used)	Both faces sloped 1:20 from normal to bolt axis (bevel washers not used)	
Bolt length** not exceeding 8 diameters or 8 inches	Bolt length** exceeding 8 diameters or 8 inches	For all lengths** of bolts
1/2 turn	2/3 turn	3/4 turn

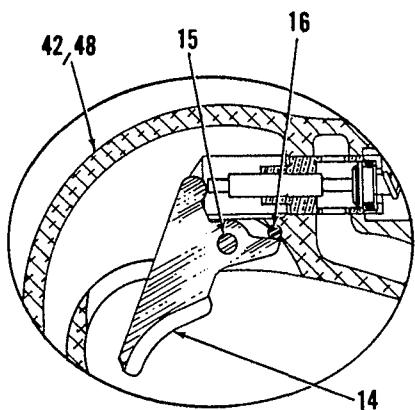
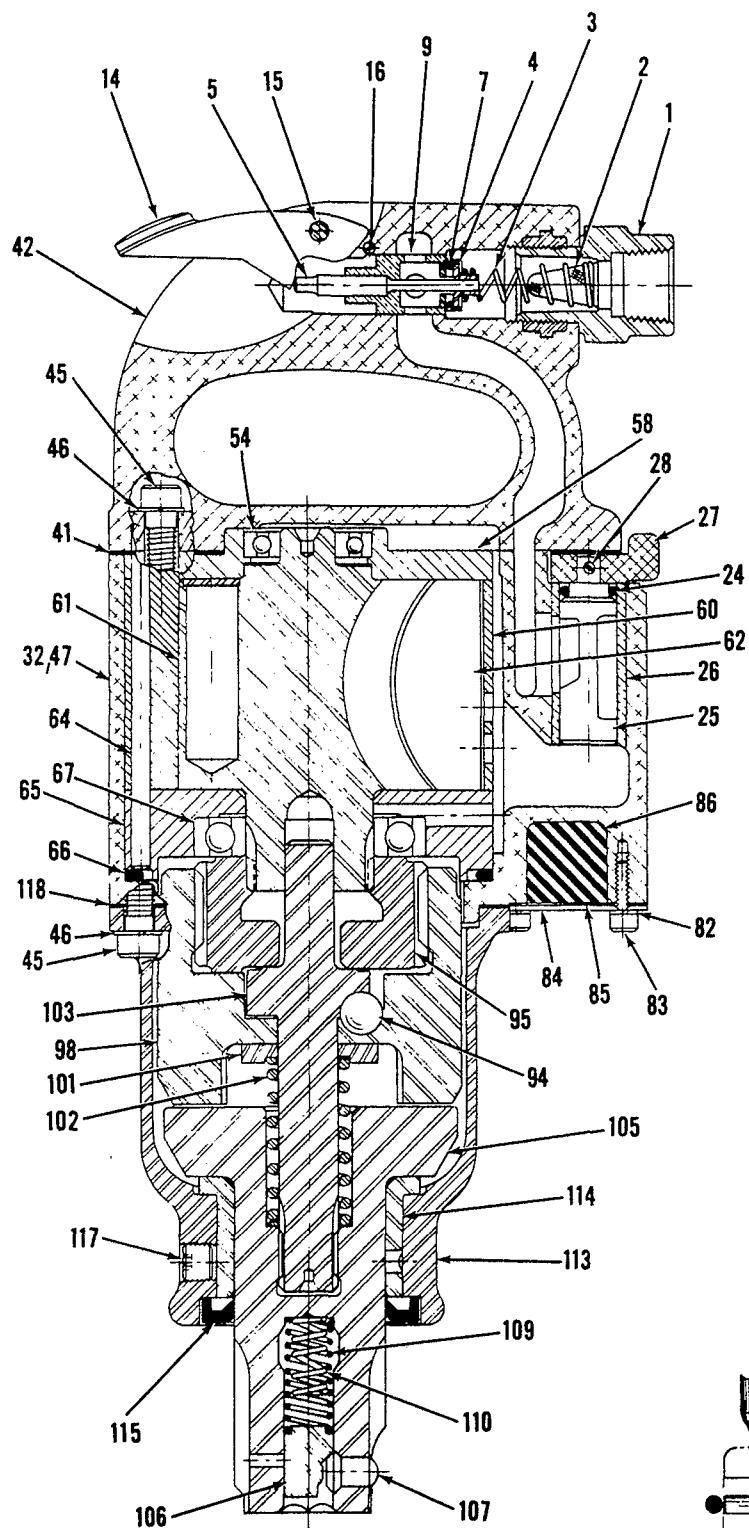
\*Tolerance on rotation 1/6 turn (60°) over and nothing under.

\*\*Length measured from underside of head to extreme end of point.

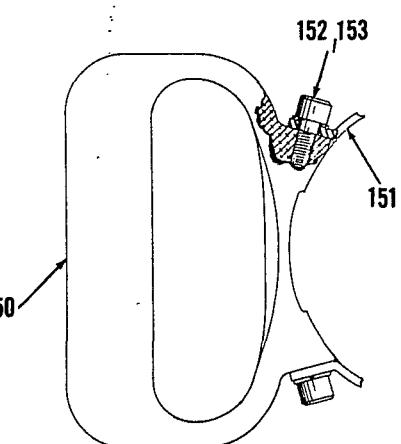
## CP0611 HI-TORQUE IMPACT WRENCH Model "B"

Index No.	CP Part No.	Description	No. Req'd.
1	C094354	Cap-Throttle	1
2	C087505	Screen-Air	1
3	C088079	Spring-Throttle Valve	1
4	C106818	Retainer-O'Ring	1
5	C106825	Valve-Throttle	1
7	A043001	O'Ring (-113)	1
9	C106817	Bushing-Throttle Valve	1
14	C063747	Trigger (Inside)	1
	C062112	Trigger (Outside)	1
15	C113758	Pin	1
16	C114089	Pin-Trigger Stop	1
24	CA083354	O'Ring (-111)	1
25	C106819	Valve-Reverse	1
26	C088482	Bushing-Reverse Valve	1
27	C068664	Lever-Reverse Valve	1
28	G071613	Pin-Reverse Valve	1
32	C112183	Housing-Motor (Incl: Index No's. 26 & 47)	1
41	C112187	Gasket-Handle	1
42	C119293	Handle-Pistol Grip (Inside Trigger) (Incl: Index No. 9)	1
	C112184	Handle-Pistol Grip (Outside Trigger) (Incl: Index No. 9)	1
45	S062777	Screw-Cap (5/16"-18 x 1-1/4")	8
46	S000456	Lockwasher (5/16")	8
47	C095035	Insert-Heli Coil	8
54	C068659	Bearing-Ball	1
58	C136167	Plate-Rear End	1
60	C136166	Liner	1
61	C112196	Rotor (15 Teeth)	1
62	C112192	Blade-Rotor <i>KF138246</i>	6
64	C136161	Pin-Dowel	1
65	C136168	Plate-Front End	1
66	C136182	O'Ring (-341)	1
67	C066977	Bearing-Ball	1
82	S000268	Lockwasher (#8)	3
83	G071483	Screw-Cap (#8-32 x 1/2")	3
84	C123855	Plate-Retaining	1
85	C123856	Screen-Exhaust	1
86	C123857	Muffler-Foam	1
94	CA048425	Ball-Steel	1
95	C136165	Coupling	1
98	C136170	Dog	1
101	C112190	Seat-Spring	1
102	C136164	Spring	1
103	C136169	Shaft-Timing	1
105	C112199	Anvil-Spline Drive (Incl: Index No's. 106,107,109 & 110)	1
105A	C114136	Anvil-1" Sq.Dr.	1
105B	C114137	Anvil-1" Sq.Dr. (3" Extension)	1
105C	C114138	Anvil-1" Sq.Dr. (6" Extension)	1
106	C112191	Plunger	1
107	C047620	Button	1
109	C112185	Spring-Outer	1
110	C112202	Spring-Inner	1
111	C066201	Pin	1
112	C089760	O'Ring (Special)	1
113	C115751	Housing-Clutch	1
114	C112188	Bushing-Clutch Housing	1
115	CA088508	Seal-Oil	1
117	C054897	Plug-Pipe (1/8")	1
118	C112186	Gasket-Clutch Housing	1
150	CA048548	Handle-Dead	1
151	C118388	Band-Handle (Steel Hsg.)	1
152	C064806	Screw-Cap (1/4"-20 x 3/4")	4
153	S000271	Lockwasher (1/4")	4

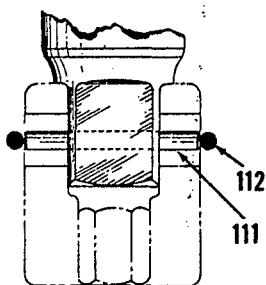
## **CP611 HI-TORQUE IMPACT WRENCH Model "B"**



C-115811 TUNE-UP KIT  
Incl: Index No's. 4, 7, 24,  
41, 62, 111, 112, 115 & 118.  
It is recommended that Tune-  
Up Kit parts be installed each  
time tool is disassembled.



All Threads Are Right Hand  
Unless Otherwise Specified.



Use no more than four fluid oz.

Clean open bearings and repack 25% of free space within bearing with recommended grease.

### Recommended Lubricants

CHICAGO PNEUMATIC Airoilene Oil, which contains moisture absorbent, rust inhibiting additives and will not separate while the tool is idle, is recommended for use in the air motor and may be purchased under the following symbols:

1 pt. can ----- P137646  
1 gal. can ----- P-089507  
5 gal. can ----- P-089508

If recommended oil is not available, use a turbine or spindle grade oil with a viscosity of 100-150 S. U.S. at 100°F which contains a rust inhibitor.

The use of synthetic oils is NOT RECOMMENDED due to possible damage to seals, "O" rings, hoses, rotor blades and polycarbonate oiler/filter bowls.

CHICAGO PNEUMATIC Impact Wrench grease is recommended for use in the impact unit and may be purchased under the following symbol:

5 lb. can ----- CA131901

If recommended grease is not available, use a good grade grease such as Baum's Castorine 0-23 grease or equivalent.

CHICAGO PNEUMATIC Bearing Grease is recommended for use in open bearings and may be purchased under the following symbol:

1 lb. can ----- S-087658

If recommended grease is not available, use a good grade bearing grease such as Humble Oil Co's. Andok C grease or equivalent.

### Loss of Power/Erratic Action

Motor failure, loss of power or erratic action may be caused by factors outside the tool. Make the following checks.

1. Check air pressure. For rated performance, 90 psi air pressure is required AT THE TOOL with tool operating. A drop in air pressure may be caused by lowered compressor output, excessive drain on the air line or by use of hose or connections of improper size or in poor condition.
2. Check for wet or dirty air. Wet air tends to wash lubricant away from motor and to rust and corrode the tool. Dirt and foreign matter in the air supply will impede action of the motor and cause damage to the tool.
3. Check motor lubrication. Disconnect tool and pour a liberal quantity of recommended oil cut with an equal amount of kerosene into tool air inlet. Operate tool to flush out gum and foreign matter.

**CAUTION:** When operating tool to flush out gum and foreign matter, direct the exhaust away from operator and co-workers.

4. Check mechanical parts of tool. Disassemble tool, thoroughly clean and inspect all parts. Check ball bearings for rough bumpy action and for excessive end play. Check rotor blades for wear, damage or swelling. BE SURE that old blades, or replacement blades, are a free, sliding fit in rotor slots. Examine impacting surfaces of dog (98) and anvil (105). Replace if excessively worn. Replace damaged or worn parts, relubricate and reassemble tool.

When ordering spare parts, give Name, Speed or Size, Model and Serial Number of the tool and Part Number and Description of each part desired.

### Disassembly/Assembly Cautions

Torque housing screws (45) to 200-220 in. lbs. and torque dead handle screws (152) 120-136 in. lbs..

When assembling liner (80) make sure EXHAUST holes in end of liner are facing toward the front end plate (65).

### Maintenance

Do not penalize the operator by requiring him to use a tool which is not in first class condition. A regularly scheduled inspection and repair program will correct minor faults, avoid extensive repairs and maintain the tool at its highest efficiency.

1. Keep tool properly lubricated.
2. Provide 90 psi (6.2 bar) of clean, dry air AT THE TOOL.
3. Use hose and connections of proper size and in good condition.
4. Set up and maintain a repair and replacement program scheduled at regular intervals.

### High Strength Structural Bolting

CP-0611 Impact Wrench can be used for installing up to 1 1/4" A325 or 1 1/8" A490 high strength bolts in steel structures. Two methods of controlling the bolt tension approved by the Research Council on Riveted and Bolted Structural Joints are outlined as follows.

### Air Control Method

This method requires the use of a 3/4" pipe size pressure regulator (CP part number C-104093) between the air header and each wrench. A convenient length of hose should be used between the regulator and the wrench. This assembly of wrench, hose and regulator must be calibrated as a unit. The calibration should be done on a tension-indicating calibrator such as the Skidmore-Wilhelm Model "ML" Calibrator. (See Fig. 1). Calibrate the wrench as follows:

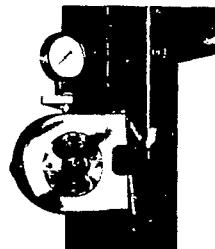


FIG. 1

- a. Obtain several of the bolts, nuts and washers to be used on the actual job. These bolts, etc. must be in the same condition as those used on the job. As described in the Skidmore-Wilhelm Instruction Manual, select and properly install the necessary plates and bushings for the bolts to be used.
- b. Insert a new bolt in the Calibrator and assemble a new washer and nut to the bolt. BE SURE the same bolts, washers and nuts to be run on the job are used in calibrating. Long bolts may require the use of spacers under the washer.
- c. Install a proper socket on the wrench. Be sure the socket is a snug fit on the shank of the wrench and on the fastener to be driven. Loose fits will cause erratic readings.
- d. Determine the required minimum bolt tension for the bolt size from Table 1.

Continued on page 6.

## SPARE PARTS SERVICE CHART

THIS SERVICE CHART IS PUBLISHED AS A GUIDE TO EXPECTANT LIFE OF COMPONENT PARTS. THE REPLACEMENT LEVELS ARE BASED ON AVERAGE TOOL USAGE OVER A ONE YEAR PERIOD

EXAMPLE: For 10 tools in use: 10 high wear items will be required per year, 7 medium wear items, etc.

NOTE: Quantities must be increased where tool is subjected to more severe and/or continuous usage.

## LEGEND

X—Type of wear, if no other comments apply.

L—Easily lost. Carefully reserve during disassembly.

R1—Replace each time tool is disassembled.

\* See Parts List

Index No.	CP Part No.	Description	No. Req'd	Wear				Subject To External Damage
				High Wear	100%	Medium Wear	70%	
1	C094354	Cap-Throttle	1					X
2	C087505	Screen-Air	1			X		
3	*	Spring-Throttle Valve	1		X			
4	*	Retainer—"O"-Ring	1					
5	*	Valve-Throttle	1		X			
7	A043001	"O"-Ring	1		X			
9	*	Bushing-Throttle Valve	1		X			
14	*	Trigger	1					
15	C113758	Pin	1	X				
16	C114089	Pin-Trigger Stop	1	X				X
24	CA083354	"O"-Ring	1		X			
25	C106819	Valve-Reverse	1		X			
26	C088482	Bushing-Reverse Valve	1		X			
27	C068664	Lever-Reverse Valve	1					
28	G071813	Pin-Reverse Valve	1			X		
32	C112183	Housing-Motor	1			X		
33	C127544	Stem	1			X		
34	C127545	Seat-Valve	1			X		
39	A082777	O'Ring (-012)	2					
41	C112187	Gasket-Cover	1	R1	X			
42	*	Handle-Pistol Grip	1					
45	S062777	Screw-Cap	8			X		X
46	S000456	Lockwasher	8			X		
47	C095035	Insert-Heli Coil	8			X		
54	C068659	Bearing-Ball	1		X			
58	C136187	Plate-Rear End	1					
60	C136188	Liner	1		X			
61	C112196	Rotor	1		X			
62	C112192	Blade-Rotor	6	X				
64	C136181	Pin-Dowel	1					
65	C136168	Plate-Front End	1		X			
66	C136182	"O"-Ring	1		X			
67	C066977	Bearing-Ball	1		X			
82	S000268	Lockwasher	3			X		
83	G071483	Screw-Cap	3			X		
84	C123855	Plate-Retaining	1					
85	C123856	Screen-Exhaust	1					
86	C123857	Muffler-Foam	1					
94	CA048425	Ball-Steel	1					
95	C136185	Coupling	1		X			
98	C136170	Dog	1		X			
101	C112190	Seat-Spring	1			X		
102	C136164	Spring	1					
103	C136169	Shaft-Timing	1			X		
105	*	Anvil	1		X			
106	C112191	Plunger	1		X			
107	C047620	Button	1		X			
109	C112185	Spring-Outer	1					
110	C112202	Spring-Inner	1			X		
111	C066201	Pin	1		X			
112	C089760	"O"-Ring	1		X			
113	C115751	Housing-Clutch	1					X
114	C112188	Bushing-Clutch Housing	1		X			
115	CA088508	Seal-Oil	1		X			
117	C054897	Plug-Pipe	1					
118	C112186	Gasket-Clutch Housing	1	R1				
150	CA048548	Handle-Dead	1					
151	C116388	Band-Handle	1					
152	C064806	Screw-Cap	4			X		
153	S000271	Lockwasher	4			X		
156	C127550	Sleeve	1		X			