

CP-6120 REVERSIBLE IMPACT WRENCH

UTICA PNEUMATIC 418

FOURTH EDITION

FEBRUARY, 1976

Supersedes Third Edition March, 1974

TOOLS RENEWED AIR TOOL PARTS
800-247-3639 FAX: 860-665-9821

Instruction and Parts Book for

**PNEUMATIC
REVERSIBLE IMPACT WRENCH**

CP-6120, Model " A "

Standard

INDEX

Tools covered by this book have catalog numbers consisting of "CP-6120-" followed by 5 letters (CP-6120-GASEL, CP-6120-PASEL, etc.). To determine the pages on which parts information for the various portions of a particular model can be found, refer to the letter in the first column of the chart below corresponding to the first letter in the catalog number. Then refer to the letter in the second column corresponding to the second letter in the catalog number. Repeat for all letters in the catalog number.

NEW NUMBERS	OLD NUMBERS
CP-6120 GASED	CP-6120-RP
CP-6120 GASEL	CP-6120-RL5P
CP-6120 GASED	CP-6120-RLP
CP-6120 PASED	CP-6120-RP(IT)
CP-6120 PASEP	CP-6120-RLP(IT)

THROTTLE HANDLE							SHANK		
		MOTOR	CLUTCH HOUSING		CLUTCH				
Closed Grip Self-Closing Outside Trigger pages 4 & 6	G	Standard pages 4 & 6	A	Standard Steel pages 4 & 5	S	2-Jaw Type pages 4 & 5	E	#5 Spline Dr. Int. Retainer Std. Lgth. page 5	L
Closed Grip Self-Closing Inside Trigger page 6	P							#5A Spline Dr. Int. Retainer Std. Lgth... page 5	P
								1 1/2" Sq. Dr. Pin Hole Std. Lgth. page 5	D

TOOLS RENEWED AIR TOOL PARTS
800-247-3639 FAX: 860-665-9821

GENERAL INSTRUCTIONS..... Pages 3 & 7

RECOMMENDED SPARES Back Cover

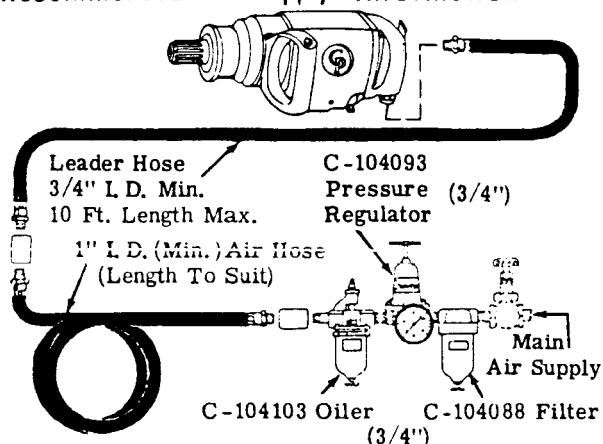
WARNING

**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 of clean, dry air is required AT THE TOOL with tool operating.

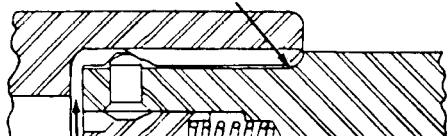
Recommended Air Supply Information



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

Always comply with lubrication instructions before putting an Impact Wrench into service.

Always blow out the air line to clear it of accumulated dirt and moisture before connecting any air tool.

Lubrication

Daily before using and before putting tool into service, pour about one ounce of recommended oil into air inlet. Daily before using and after each eight hours of service, fill oil reservoir with recommended oil. In addition, use of a C-104103 CHICAGO PNEUMATIC Air Line Lubricator installed at the end of each air pipe leading to this pneumatic tool is recommended to assure a constant and adequate supply of lubricant to the motor.

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 parts, with recommended lubricant. Use no more than 2 1/2 to 3 fluid oz.

At each inspection period, clean open bearings and re-pack 25% of free space within bearing with recommended grease.

At each inspection period, coat splines of rotor (61), coupling (95), dog (98) and timing shaft (103) with a good grade molybdenum disulphide lubricant.

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 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 SUS at 100°F which contains a rust inhibitor.

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

- 5 lb. can ----- C-075564
- 10 lb. can ----- C-078602

If recommended grease is not available, use a good grade grease such as Non-Fluid Oil Co's. HD-927 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.

Bel-Ray Co's. anti seize or equivalent is recommended for use on drive splines of rotor, coupling, cam and timing shaft.

High Strength Structural Bolting

The CP-6120 Impact Wrench can be used for installing up to 1 3/8" ASTM A325 or 1 1/4" ASTM 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 below.

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. Calibration should be done on a tension indicating device such as a Skidmore Wilhelm Model "K" calibrator for 1 1/4" A490 bolts or 1 3/8" A325 & Model "ML" calibrator for smaller sizes. See Fig. 1.

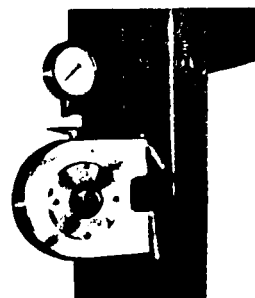


FIG. 1

Calibrate the wrench as follows:

- 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 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 below.
- e. With 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.
- 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 1

Bolt Size (Inches)	Minimum Bolt Tension in Pounds*	
	A 325 Bolts	A 490 Bolts
1	51,000	64,000
1 1/8	56,450	80,000
1 1/4	71,700	102,000
1 3/8	85,000	----

* Equal to proof load of bolt (length measurement method) given in ASTM "Specifications for Structural Joints Using ASTM A325 or A490 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 device. Gauge readings using turn-of-nut tightening procedure outlined in paragraph below should exceed the minimum required tension listed in Table 1 above. 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 to 3/4 turn, as determined from Table 2 on page 3.

- 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 one turn depending upon grip length.

TABLE 2

Nut Rotation* from snug tight (ASTM Specifications, Revised March, 1964).

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 1/12 turn (30°) over and under.

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

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. If above are in order:

1. 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.
2. 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.
3. Examine impacting surfaces of dog (98) and anvil (105). Replace if excessively worn.

Replace damaged or worn parts, relubricate and re-assemble tool.

Assembly Cautions

When assembling wrench, torque handle to motor housing screws (44) 200-220 in. lbs.

Maintenance

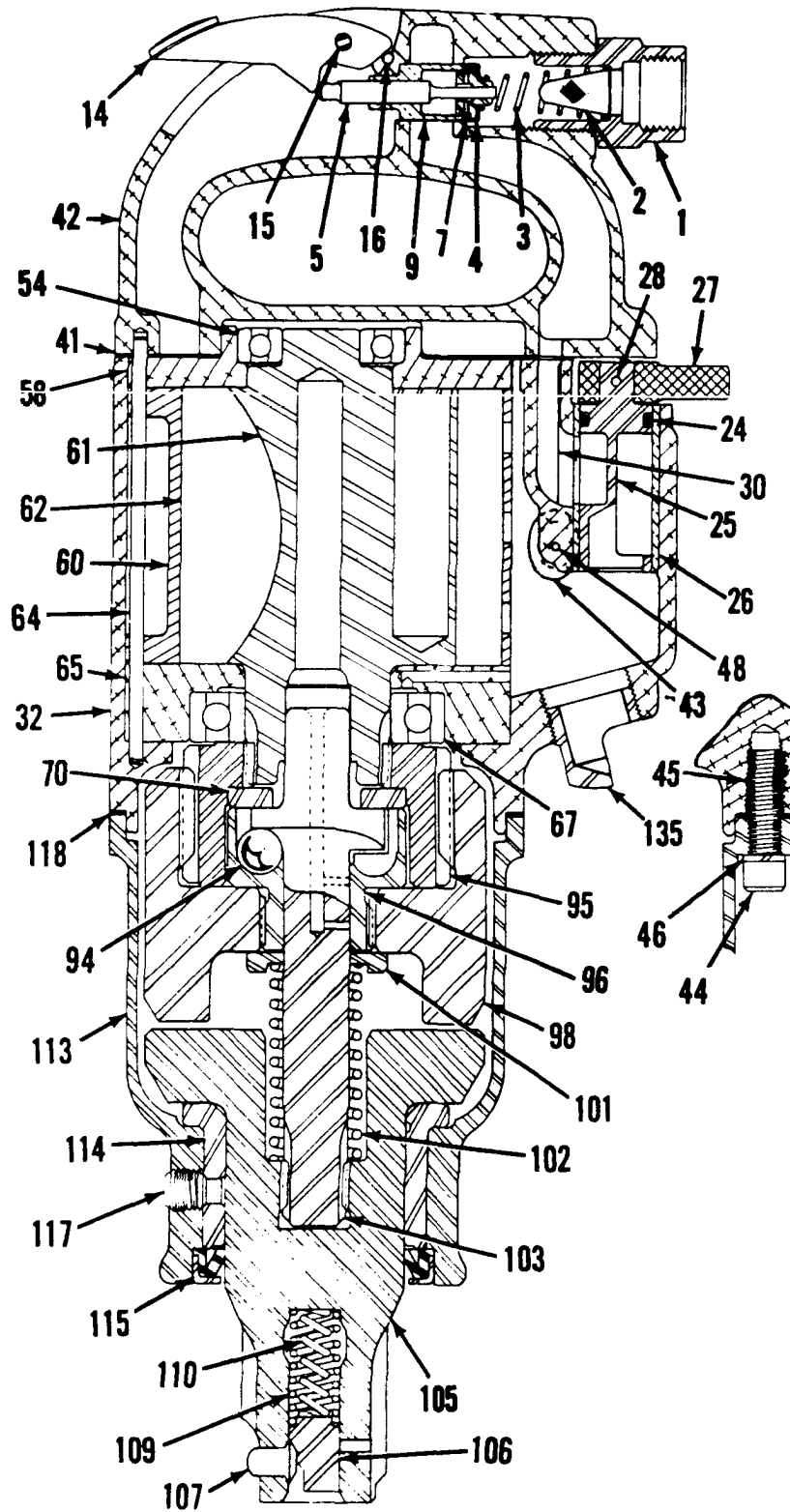
Do not penalize the operator by requiring him to use a tool which is not in first class condition. A regularly scheduled inspection and repair program will correct minor faults, avoid later, extensive repairs and maintain the tool at its highest efficiency.

1. Keep tool properly lubricated.
2. Provide 90 psi 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.

TOOLS RENEWED AIR TOOL PARTS

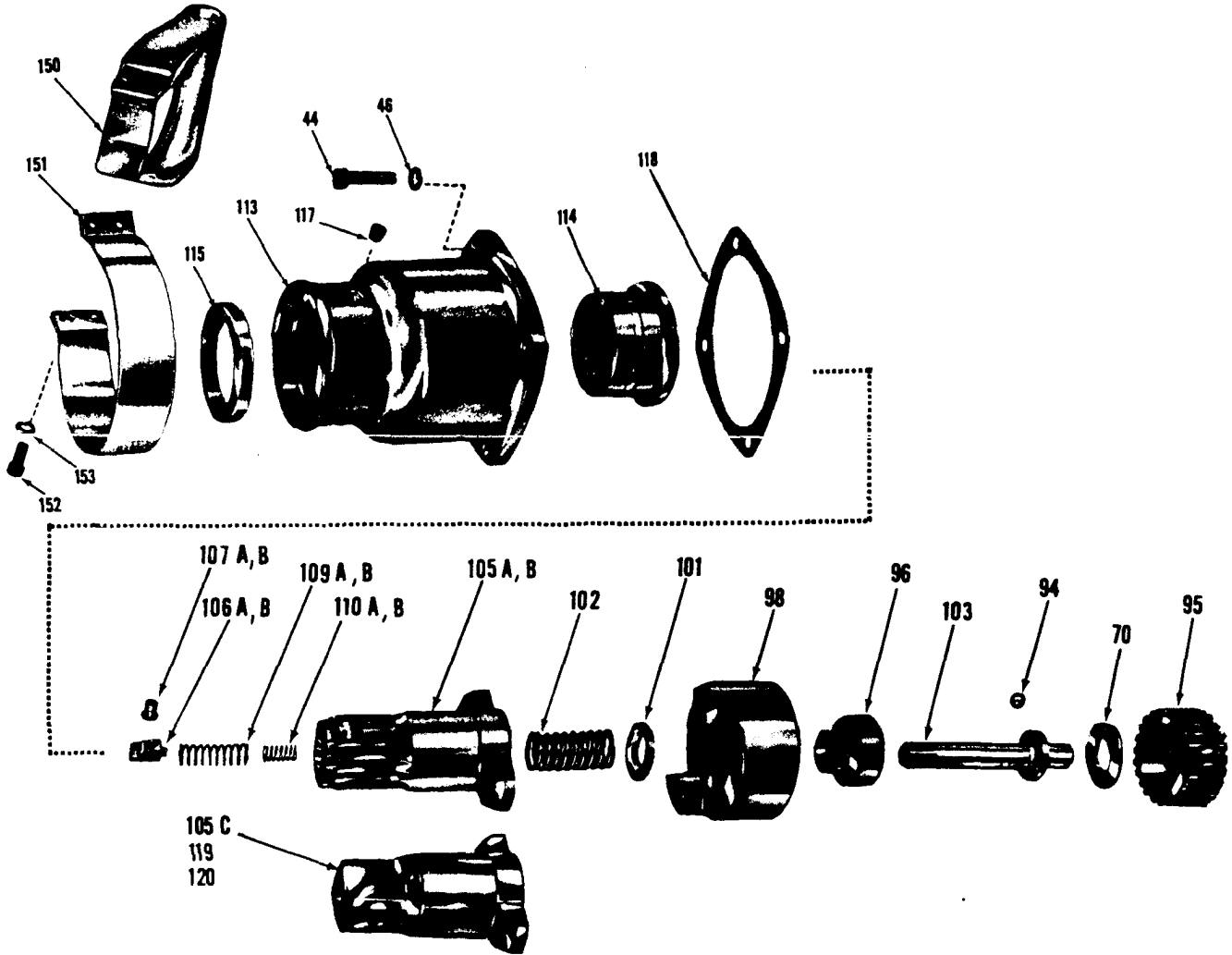
800-247-3639 FAX: 860-665-9821

CP-6120 REVERSIBLE IMPACT WRENCH Model " A "



CP-6120 REVERSIBLE IMPACT WRENCH Model " A "

NO. 5 & 5A SPLINE DRIVE & 1 1/2" SQUARE DRIVE



Index No.	CP Part No.	Description	No. Req'd.	Index No.	CP Part No.	Description	No. Req'd.
44	S-062777	Screw-Cap (Socket Hd.) (5/16"-18 x 1 1/4")	4	107A	C-047620	Button	1
	S-069343	Wrench-Allen (1/4")	1	107B	C-105651	Button	1
46	S-000456	Lockwasher (5/16")	4	109A	C-112185	Spring-Compres. (Long)	1
70	C-117055	Washer-Thrust	1	109B	C-105652	Spring-Compres. (Long)	1
	P-004254	Ball-1/2" Diameter	1	110A	C-112202	Spring-Compres. (Short)	1
94	P-004254	Ball-1/2" Diameter	1	110B	C-109765	Spring-Compres. (Short)	1
95	C-117061	Coupling-Drive	1	113	C-117610	Housing-Clutch (Incl: Index No's. 114, 115 & 117)	1
96	C-117060	Cam-Dog	1	114	C-117053	Bushing-Clutch Housing	1
98	C-117068	Dog	1	115	C-117576	Seal-Grease	1
101	C-117051	Seat-Spring	1	117	C-054897	Plug-Pipe (1/8")	1
102	C-117054	Spring-Dog	1		P-070320	Wrench-Allen (3/16" Hex.)	1
103	C-117067	Shaft-Timing	1	118	C-117049	Gasket-Clutch Housing	1
105A	C-117069	Anvil-Spline (#5)(Incl: No's. 106A, 107A, 109A & 110A)	1	119	C-089761	Ring-Ret.(Not Shown)Sq. Dr.	1
				120	C-067635	Pin-Skt. Ret.(Not Shown)Sq. Dr.	1
105B	C-117722	Anvil-Spline (#5A) (Incl: No's. 106B, 107B, 109B & 110B)	1	150	CA-048548	Handle-Dead	1
105C	C-117620	Anvil-1 1/2" Sq. Dr.	1	151	C-119061	Band-Dead Handle	1
106A	C-112191	Plunger	1	152	P-073025	Screw-Allen Cap (1/4"-20 x 5/8")	4
106B	C-105654	Plunger	1		P-070320	Wrench-Allen (3/16")	1
				153	S-000271	Lockwasher (1/4")	4

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.

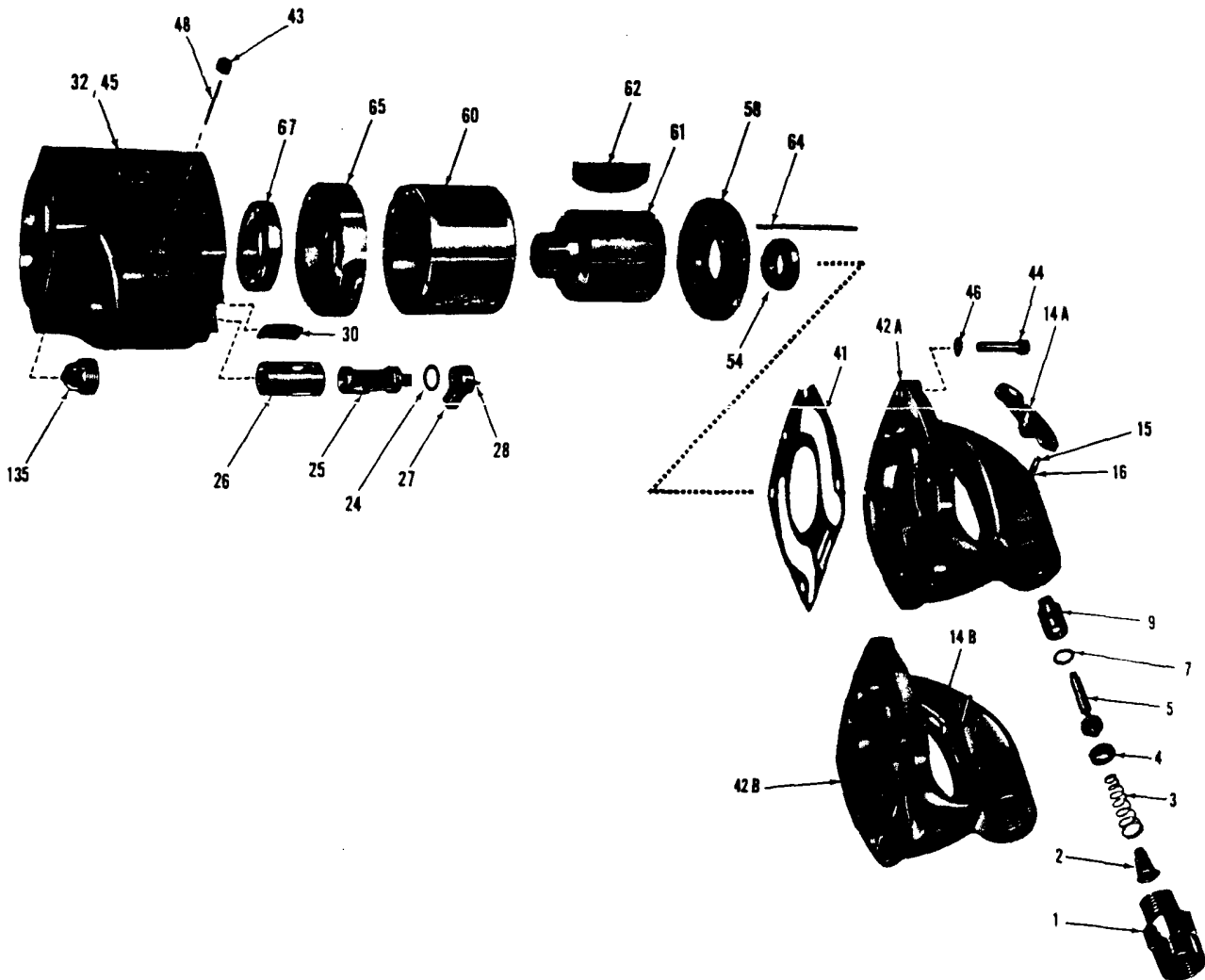
TOOLS RENEWED AIR TOOL PARTS
800-247-3639 FAX: 860-665-9821

TOOLS RENEWED AIR TOOL PARTS

800-247-3639 FAX: 860-665-9821

CP-6120 REVERSIBLE IMPACT WRENCH Model " A "

NO. 5 & 5A SPLINE DRIVE & 1 1/2" SQUARE DRIVE



Index No.	CP Part No.	Description	No. Req'd.	Index No.	CP Part No.	Description	No. Req'd.
1	C-094354	Bushing-Air Inlet	1	42A	C-117071	Handle-Outside Trigger(Incl. #9)	1
2	C-087505	Screen-Throttle	1	42B	C-117866	Handle-Inside Trigger (Incl: No. 9)	1
3	C-088079	Spring-Throttle	1	43	C-059641	Plug-Pipe (1/4" Hex.)	4
4	C-106818	Retainer-"O" Ring	1		R-009300	Wrench-Allen (1/8" Hex.)	1
5	C-106825	Valve Assembly	1	44	S-062777	Screw-Cap (Socket Hd.) (5/16"-18 x 1 1/4")	4
7	A-043001	"O" Ring (-013)	1		S-069343	Wrench-Allen (1/4" Hex.)	1
9	C-106817	Bushing-Valve	1	45	C-095035	Insert-Heli Coil	8
14A	C-062112	Lever-Throttle	1	46	S-000456	Lockwasher (5/16")	4
14B	C-063747	Trigger-Inside	1	48	CA-094316	Pin-Oil Metering	1
15	C-113758	Pin-Trigger	1	54	C-075812	Bearing-Ball	1
16	P-072359	Pin-Trigger Stop	1	58	C-120682	Plate-End (Rear)	1
24	S-082809	"O" Ring (-114)	1	60	C-117064	Liner	1
25	C-117065	Valve-Reverse	1	61	C-117066	Rotor (18 Teeth)	1
26	C-117057	Bushing-Rev. Valve	1	62	C-117056	Blade-Rotor	6
27	C-117058	Lever-Rev. Valve	1	64	C-117048	Pin-Dowel	1
28	CA-091533	Pin (1/8 x 1 3/16)	1	65	C-120683	Plate-End (Front)	1
30	C-120076	Screen-Air	1	67	C-117047	Bearing-Ball	1
32	C-117072	Housing-Motor (Incl: No's. 26 & 45)	1	135	C-119253	Deflector-Exhaust	1
41	C-117050	Gasket-Motor Housing	1				

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.

R1—Replace each time tool is disassembled.

Index No.	CP Part No.	Description	No. Req'd.	High Wear	100%	Medium Wear	70%	Low Wear	30%	Non Wear	10%	Subject To External Damage
1	C-094354	Bushing-Air Inlet	1									X
2	C-087505	Screen-Throttle	1					X				
3	C-088079	Spring-Throttle	1					X				
4	C-106818	Retainer-"O" Ring	1					X				
5	C-106825	Valve Assembly	1					X				
7	A-043001	"O" Ring	1			X						
9	C-106817	Bushing-Valve	1			X						
14	*	Lever/Trigger	1			X						
15	C-113758	Pin-Trigger	1	X								
16	P-072359	Pin-Trigger Stop	1			X						
24	S-092809	"O" Ring	1			X						
25	C-117065	Valve-Reverse	1					X				
26	C-117057	Bushing-Rev. Valve	1			X						
27	C-117058	Lever-Rev. Valve	1									X
28	CA-091533	Pin	1					X				
30	C-120076	Screen-Air	1					X				
32	C-117072	Housing-Motor	1					X				
41	C-117050	Gasket-Motor (Housing)	1	R1								
42	*	Handle-Live Air	1									X
45	C-095035	Insert-Heli-Coil	8					X				
48	CA-094316	Pin-Oil Metering	1							X		
54	C-075812	Bearing-Ball *	1			X						
58	C-120682	Plate-End (Rear)	1			X						
60	C-117064	Liner	1			X						
61	C-117066	Rotor	1			X						
62	C-117056	Blade-Rotor	6	X								
64	C-117048	Pin-Dowel	1								X	
65	C-120683	Plate-End (Front)	1			X						
67	C-117047	Bearing-Ball *	1			X						
70	C-117055	Washer-Thrust	1			X						
94	P-004254	Ball	1	X								
95	C-117061	Coupling-Drive	1			X						
96	C-117060	Cam-Dog	1			X						
98	C-117068	Dog	1	X								
101	C-117051	Seat-Spring	1					X				
102	C-117054	Spring-Dog	1			X						
103	C-117087	Shaft-Timing	1			X						
105	*	Anvil-Spline	1	X								
106	*	Plunger	1	X								
107	*	Button	1	X								
109	*	Spring-Compression (Long)	1					X				
110	*	Spring-Compression (Short)	1					X				
113	C-117610	Housing-Clutch	1									X
114	C-117053	Bushing-Clutch (Housing)	1			X						
115	C-117576	Seal-Grease	1			X						
118	C-117049	Gasket-Clutch (Housing)	1	R1								
135	C-119253	Deflector-Exhaust	1									X
150	CA-048548	Handle-Dead	1									X
151	C-119061	Band-Dead Handle	1									X

TOOLS RENEWED AIR TOOL PARTS
800-247-3639 FAX: 860-665-9821

* See Parts List

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.