OPERATING INSTRUCTIONS

MCS500
POP® RIVET MANDREL COLLECTION SYSTEM

HOW IT WORKS

Air is supplied to the Vacuum Cap Assembly from a "T" connection in the tool air line. The Vacuum Cap Assembly creates a vacuum within the Collector Bottle, drawing outside air in through the Nosepiece. This action holds a rivet in the Nosepiece and also propels the spent mandrel into the Collector Bottle.

Empty the Collector Bottle when approximately ¾ full. To empty, simply twist and pull the Vacuum Cap Assembly from the bottle and empty mandrels into a container. Replace the Vacuum Cap Assembly and resume operations. (It is not necessary to disconnect air before removing Vacuum Cap).

CAUTION: THIS SYSTEM SHOULD BE USED WITH DRY, FILTERED AIR FOR OPTIMUM PERFORMANCE.

SPECIFICATIONS

Added Tool Length ..... 4¾" (approx.)

Added Tool Weight (empty) ... 5 oz. (approx.)

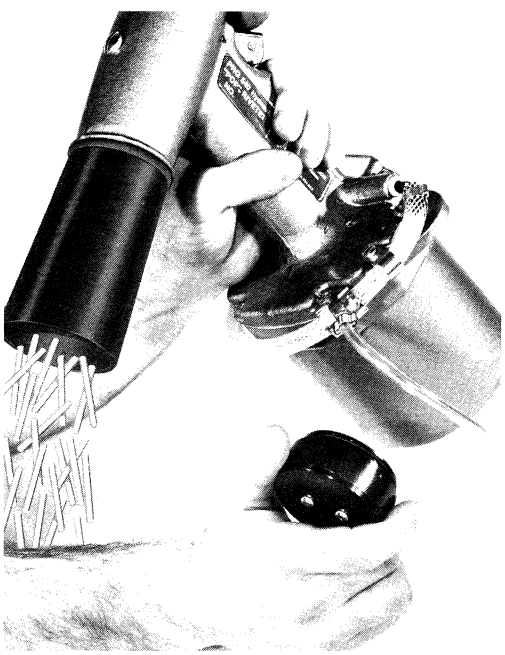
Air Consumption ..... 2 SCFM at 80 PSI

COLLECTOR CAPACITIES

(approx.)

⅛" rivets 500
3/16" rivets 300
¼" rivets 100

To empty, twist and pull off Vacuum Cap.



Empty mandrels in scrap container. Replace the Vacuum Cap and resume operations.

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NOTE: Tool shown is MCS540. Mandrel Collection System MCS500 is also available as MCS510, MCS520A and as a Retrofit Kit.

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SYSTEM CARE AND MAINTENANCE

The MCS500 will provide extended trouble free service when used with dry, filtered air. Depending on the operating environment, the unit will require occasional servicing of the Vacuum Cap and/or replacement seals.

SERVICE INSTRUCTIONS

CAUTION: VACUUM CAP ASSEMBLY MUST BE REMOVED FROM THE COLLECTOR BOTTLE PRIOR TO CLEANING AND LUBRICATING JAWS WITH JAW LUBE OR ANY OTHER LIQUID.

TROUBLE SHOOTING

If rivet is not maintained in the nosepiece or mandrels are not propelled into the Collector Bottle, check the following:

Probable Cause

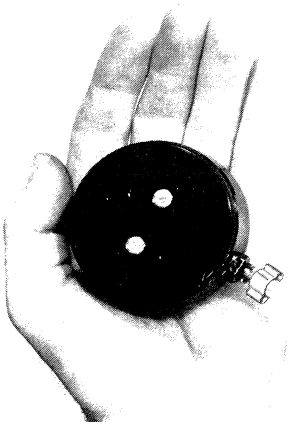
1) Collector Bottle filled with mandrels

Remedy

Empty bottle

Probable Cause

2) Clogged Vacuum Cap Assembly



Remedy

With air connected, remove Vacuum Cap Assembly.

Hold the intake side against the palm of your hand.

If it clings to your hand the Vacuum Cap Assembly is working properly. Proceed to step 3 "Air Leaks".

If the Vacuum Cap Assembly does NOT cling to your hand, it is probably clogged. Proceed as follows:

a.) Disconnect air supply and remove Vacuum Cap Assembly from bottle.

b.) To disassemble, remove the following parts; Vacuum Cap Cover Screws (MCS500-12) and Nuts (MCS500-13), Vacuum Cap Cover (MCS500-1), Filter Cover (MCS500-2), Vacuum Filter (MCS500-5) and Muffler (MCS500-6) from Vacuum Cap Body (MCS500-30). Refer to picture below.

c.) Clean Nuts, Screws, Vacuum Cap Cover and Filter Cover. Clean Muffler and Filter by soaking and flushing with detergent solution. Air blow dry.

d.) Clean Vacuum Cap Body Assembly by immersing in detergent solution for a few minutes. Remove, connect air supply temporarily and blow out dirt.

e.) Retest. If still clogged, disassemble Vacuum Cap Body Assembly (MCS500-30) from air supply Hose Fitting (MCS500-21). Holding an air source to the exhaust hole, blow back air through Vacuum Cap Body Assembly. Reconnect Air Line Fitting.

f.) Reassemble following picture. Screws and Nuts should NOT be tightened excessively.

Probable Cause

3) Air leaks

Remedy

a.) Check for damaged Collector Bottle. Replace as required.

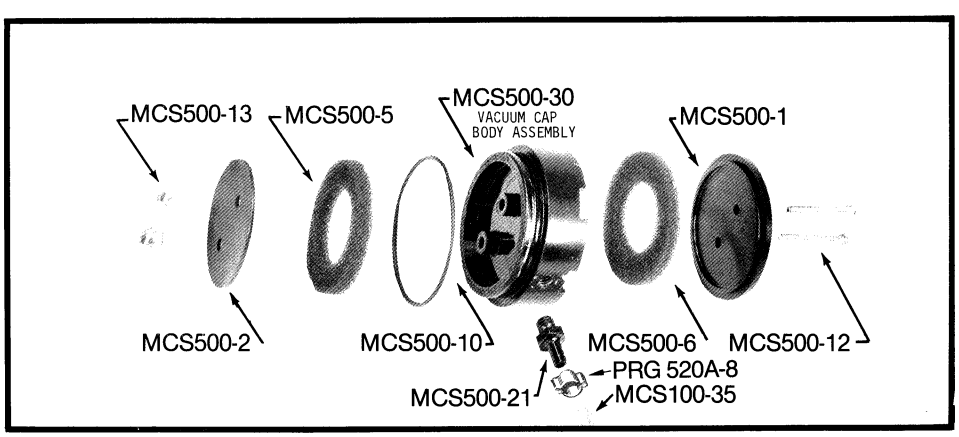
b.) Be sure Nose Housings are tight.

c.) Check Vacuum Cap "O" ring (MCS500-10). Replace if required.

d.) Refer to MCS 500 Installation instruction sheets for individual tools:

PRG510-check Nose Housing Seal (PRG540-117)
check Mandrel Guide Tube (MCS510-12)
Replace if required.

PRG520A-check Nose Housing Seal (PRG540-117)



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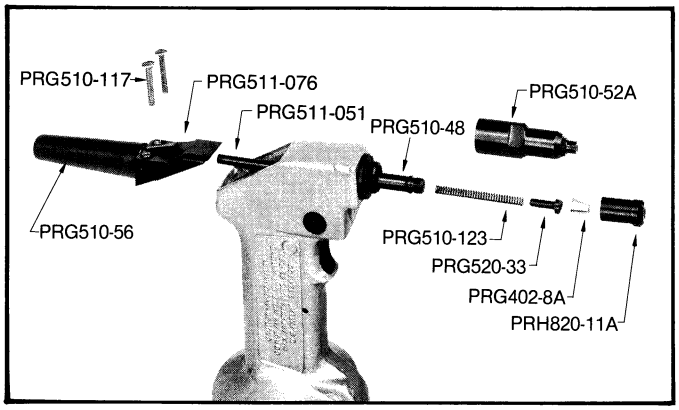
INSTRUCTIONS

for Installing MCS500 to PRG510 "POP® Rivetool.

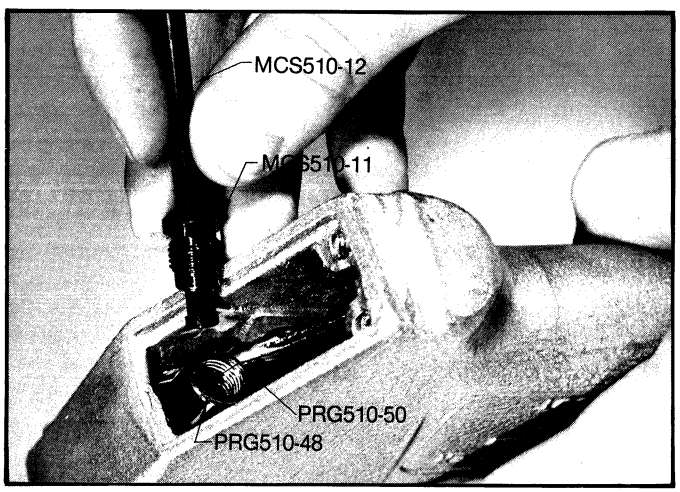
USE MCS510-100 RETROFIT KIT

REFER TO PRG510 INSTRUCTION MANUAL (P218)



1.) Remove Nose Housing (PRG510-52A), Jaw Guide (PRH820-11A), Jaws (PRG402-8A), etc. (refer to manual Sec. IV, Par. E-1). Clean all parts and retain.

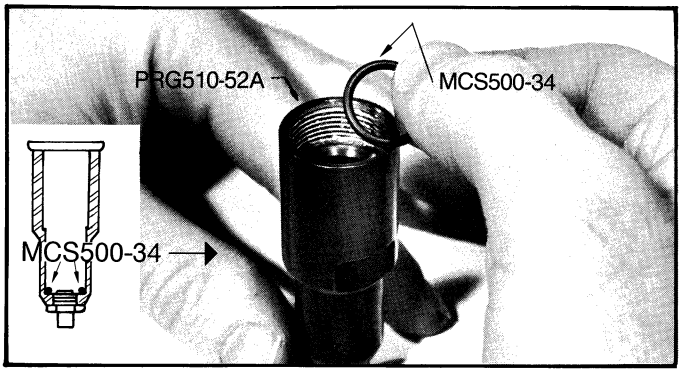
Remove Housing Cap (PRG511-076) and Housing Cap Deflector (PRG510-56) by removing Housing Cap Screws (PRG510-117), retain screws only.



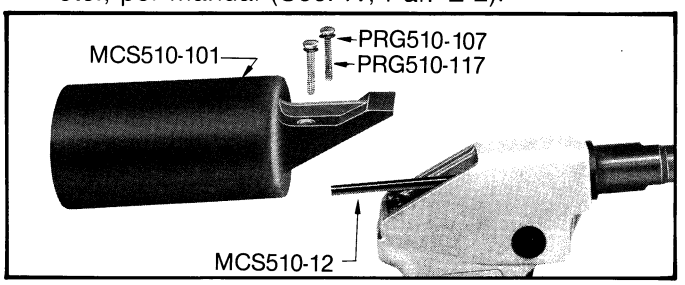
2.) Connect tool to air supply. Hold tool nose end pointing down, and depress Trigger so that rear of Pulling Head moves upward. Using a 3/8" box wrench remove Mandrel Guide (PRG511-051) from Pulling Head (PRG510-48), being careful not to shake out Mandrel Tube (PRG510-50).

Install Mandrel Guide (MCS510-12) and Mandrel Guide Nut (MCS510-11) as shown.

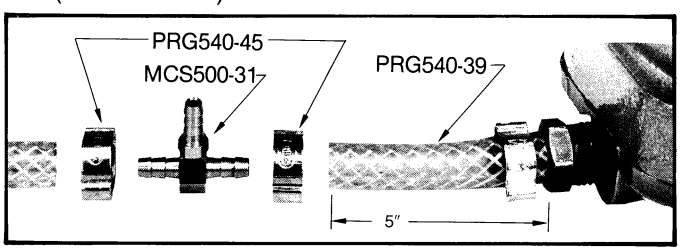
Tighten Mandrel Guide Nut and release Trigger.



3.) Place "O" Ring Seal (PRG540-117) into Nose Housing (PRG510-52A) and seat . Reassemble Jaws, etc., per manual (Sec. IV, Par. E-2).



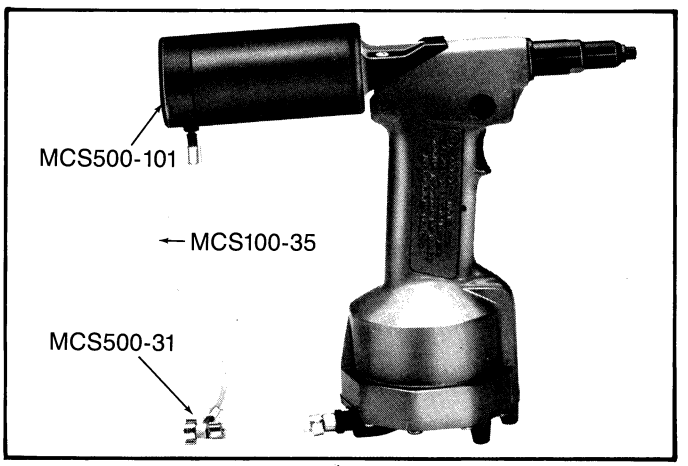
4.) Push "O" Rings (PRG510-107) onto Housing Cap Screws (PRG510-117). Slide Collector Bottle Assembly (MCS510-101) over Mandrel Guide (MCS510-12) and secure in place on tool with Housing Cap Screws (PRG510-117).



5.) Disconnect air. Cut Air Line (PRG540-39) as shown. Using largest "O" clamps (PRG540-45), insert "T" fitting (MCS500-31) into Air Line. Tighten clamps.

6.) Slide smallest Air Line 'O' Clamp (PRG520A-8) on open end of Air Supply Hose (MCS100-35) attached to Vacuum Cap Assembly (MCS500-101). Push open end of Air Supply Hose onto open-end of "T" Fitting (MCS500-31). Crimp 'O' Clamp over Fitting.

Put Vacuum Cap Assembly on back of Collector Bottle. Connect tool to air supply.



Tool is now ready for use.

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PRG510 "POP"© RIVETOOL with MCS500 MANDREL COLLECTION SYSTEM installed

LIST OF PARTS

PART NO.	DESCRIPTION	QTY.
Housing And Trigger Parts		
PRG510-31	Housing	1
*PRG510-34	Nose Housing Insert	1
PRG510-35	Trigger	1
PRG510-36A	Trigger Lever	1
PRG510-118	Trigger Pin	1
PRG510-120	Trigger Fulcrum Pin	1
Valve Parts		
PRG510-37	Valve Tube	1
PRG510-112	Valve Tube Cap	1
PRG520-60	Valve Tube Seal	1
PRG510-38	Valve Seat	1
PRG510-106	Valve Seat Seal	1
PRG510-107	Valve Ring Seal	1
PRG510-109	Valve Ring Seal Washer	1
PRG510-122	Retaining Ring	3
Piston Rod & Pulling Head Parts		
PRG510-39+	Valve Plate	1
PRG510-115	Valve Plate Screw	2
PRG510-111	Valve Plate Screw Lockwasher	2
PRG510-41+	Piston Rod	1
PRG510-119	Piston Rod Pin	1
PRG510-124	Piston Rod Return Spring	1
PRG510-42	Spring Cap	1
PRG510-105	Spring Washer	1
PRG510-48	Pulling Head	1
PRG510-49	Pulling Head Fulcrum	1
PRG510-50	Mandrel Tube	1
MCS510-11	Mandrel Guide Nut	1
MCS510-12	Mandrel Guide	1
PRG510-45	Bell Crank	2
PRG510-46	Bell Crank Bushing, Outer	2
PRG510-47	Bell Crank Bushing, Center	1
PRG510-126	Bell Crank Fulcrum	1
PRG510-122	Retaining Ring	1
PRG510-113	Piston Rod Fulcrum	1
Piston & Base Parts		
PRG510-104	Piston Rod Seal Washer	1
PRG510-114	Piston Rod Seal	1
PRG510-43	Piston	1
PRG510-44	Piston Seal	1
PRG510-103	Piston Rod Washer	1
PRG510-110	Piston Rod Lockwasher	1
PRG510-102	Piston Rod Screw	1

PART NO.	DESCRIPTION	QTY.
Piston & Base Parts (cont'd)		
PRG510-54	Piston Bumper	1
PRG510-107	Base Air Seal	1
PRG510-33	Base	1
PRG510-116	Base Screw	9
PRP101	Base Screw Washer	9
PRG540-39	Air Line—7' Long	1
PRG540-45	Air Line "O" Clamp	4
PRG510-58	Hose Adapter — 1/4" N.P.T.	1
PRG540-40	Hose Female Fitting — 1/4" N.P.T.	1
MCS540-39	Air Line—5"	1
MCS500-31	Hose Connection Assembly	1
Jaw Pulling Mechanism Parts		
PRG510-123	Jaw Pusher Spring	1
PRG520-33	Jaw Pusher	1
PRG402-8A	Jaw	2
PRH820-11A	Jaw Guide	1
PRG510-52A	Nose Housing	1
PRG540-117	Nose Housing Seal	1
†PRN314	Nosepiece, 3/32"Open End Rivets	1
PRN414	Nosepiece, 1/8" and 7/64" Open End Rivets	1
PRN514	Nosepiece 5/32" Open End Rivets	1
PRN614	Nosepiece, 3/16" Open End Rivets	1
†PRN424	Nosepiece, 1/8" Closed End Rivets with Steel Mandrels	1
†PRN434	Nosepiece, 1/8" Closed End Rivets with Aluminum Mandrels	1
†PRN534	Nosepiece, 5/32" Closed End Rivets with Aluminum Mandrels	1
†PRN634	Nosepiece, 3/16" Closed End Rivets with Aluminum Mandrels	1
Collector Bottle Parts		
PRG510-117	Housing Cap Screw	2
PRG510-107	Housing Cap Screw "O" Ring	2
MCS510-101	Collector Bottle Assembly	1
MCS500-101	Vacuum Cap Assembly	1
PRG520A-8	Air Line O-Clamp	2
MCS100-35	Transducer Tube	1

†Not furnished with tool. Must be ordered separately.

*Not sold separately.

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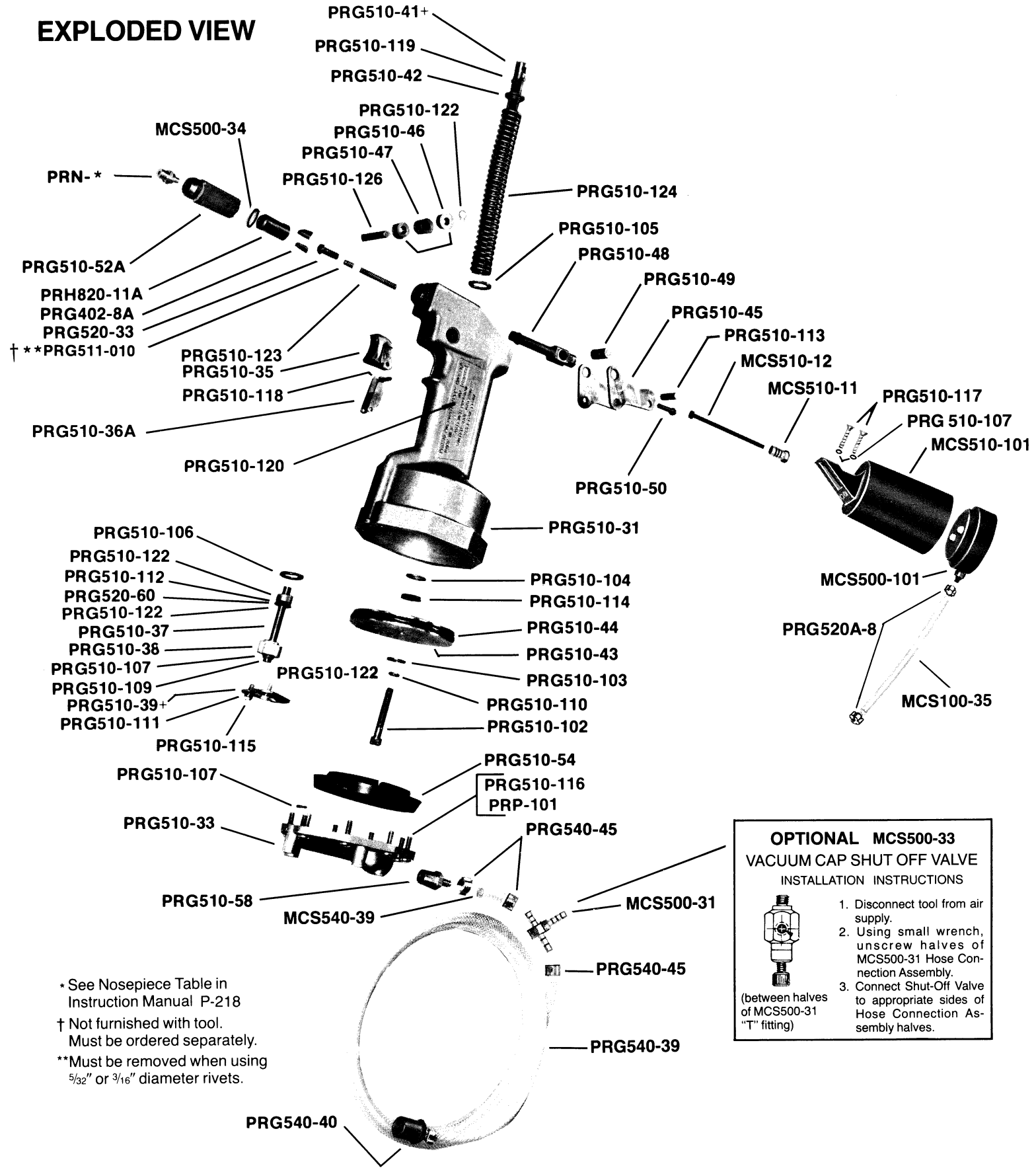
EXPLODED VIEW



* See Nosepiece Table in Instruction Manual P-218

† Not furnished with tool. Must be ordered separately.

**Must be removed when using 5/32" or 3/16" diameter rivets.

OPTIONAL MCS500-33

VACUUM CAP SHUT OFF VALVE

INSTALLATION INSTRUCTIONS

(between halves of MCS500-31 "T" fitting)

1. Disconnect tool from air supply.
2. Using small wrench, unscrew halves of MCS500-31 Hose Connection Assembly.
3. Connect Shut-Off Valve to appropriate sides of Hose Connection Assembly halves.

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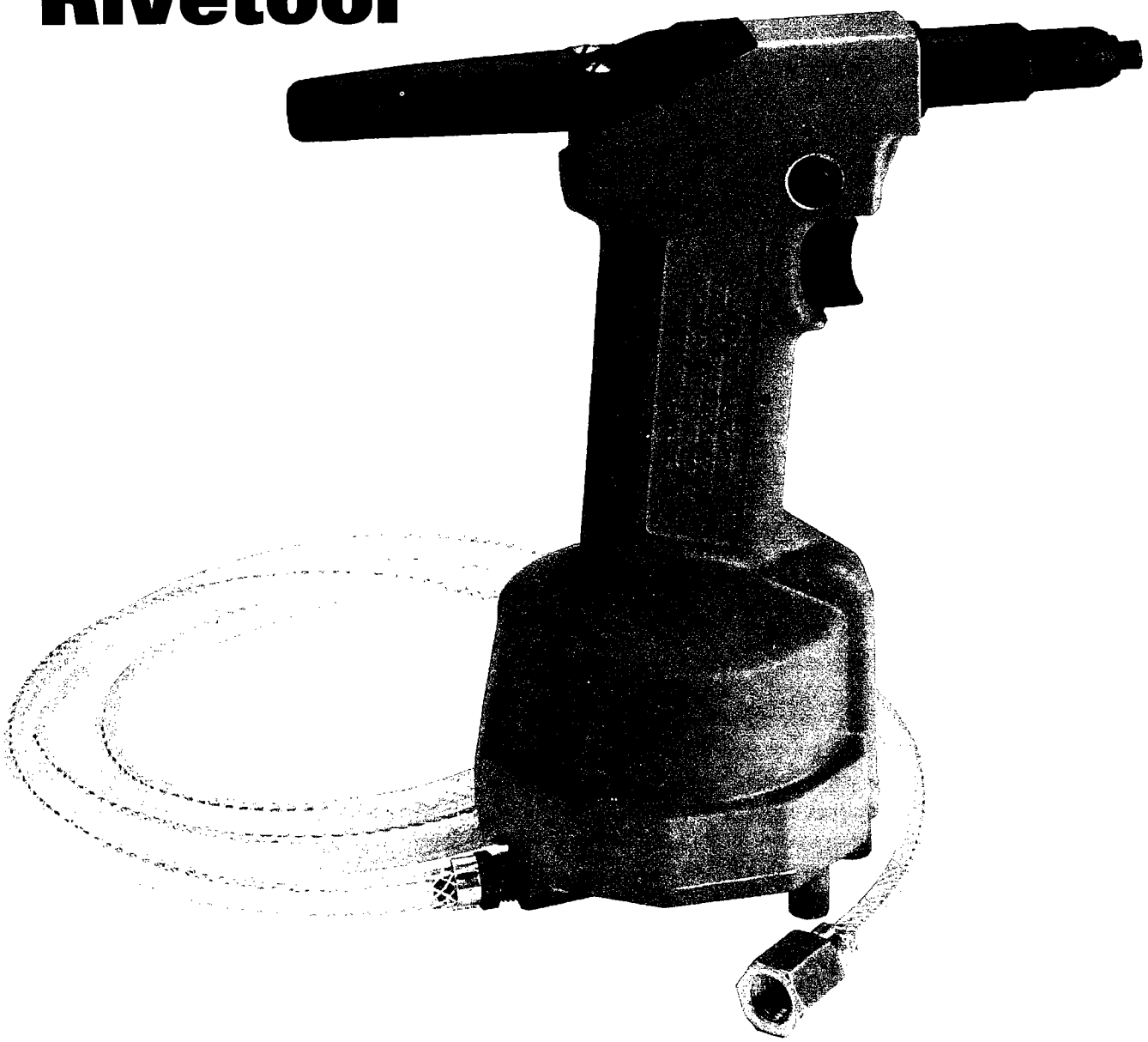
INSTRUCTION MANUAL PRG 510

Pneumatic POP® Rivetool



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SECTION I — GENERAL INFORMATION

The PRG 510 is a Pneumatic Tool suitable for setting all rivets with a break load up to 1,000 pounds. The PRG 510 is equipped to handle various Nosepieces. See Table 1, Page 2, for specific sizes available. The main castings are made of high tensile aluminum, and replacement parts are interchangeable.

PRG 510 WILL SET ONLY THE "POP" RIVETS LISTED IN THIS CHART

RIVET	MANDREL	3/32	7/64	1/8	5/32	3/16
OPEN END RIVETS						
alum.	alum.	●		●	●	●
alum.	steel	●		●	●	●
steel	steel	●		●	●	
monel	steel		●	●		
stainless	stainless			●		
CLOSED END RIVETS						
alum.	alum.			●	●	●
alum.	steel			●		

DATA

Weight of Tool	4 lbs.
Centerline of Nosepiece to Top of Tool	9/16"
Length Including Deflector	9½"
Length With Deflector Collapsed	7"
Length of Stroke	5/8"
Air Pressure	85 P.S.I.
(WARNING—Do Not Exceed 85 P.S.I. Air Pressure)	
Air Consumption	.008 CF./Net

Table 1
NOSEPIECE NUMBERS

RIVET DIA.	OPEN END	CLOSED END STEEL MANDREL	CLOSED END ALUM. MANDREL
3/32	PRN-314		
1/8 or 7/64	PRN-414	PRN-424	PRN-434
5/32	PRN-514		PRN-534
3/16	PRN-614		PRN-634

Table 2
ACCEPTABLE EQUIVALENTS OF RECOMMENDED LUBRICANT, LUBRIPLATE 130AA

ESTAN 1 — HUMBLE OIL & REFINING COMPANY

UNEDO 1 — SHELL OIL COMPANY

SUN C-891T GREASE — SUN OIL COMPANY

ALASTAC #10 — TIDEWATER OIL COMPANY

SECTION II — OPERATION

The following description gives a brief summary of the events that occur when the Trigger is depressed.

1. When Trigger PRG 510-35 is squeezed, Valve Tube PRG 510-37 moves down with Valve Ring Seal PRG 510-107, allowing air to flow to top of Piston PRG 510-43.

2. The air then sets the Piston in motion downward, pulling the Piston Rod PRG 510-41+ with it.

3. This causes the Bell Cranks PRG 510-45 to pivot and the Pulling Head PRG 510-48 to move rearward.

4. As this occurs, Jaws PRG 402-8A grip the mandrel of rivet and pull until rivet is set.

5. When the Trigger is released, the Valve Tube and Valve Ring Seal move up, shutting off the air supply. The air then exhausts out through the Valve Tube.

6. The Piston Rod Return Spring PRG 510-124 returns the Piston and the Jaw Guide PRH 820-11A to their normal positions, allowing the Jaws to open and release the spent mandrel.

SECTION III — CARE AND MAINTENANCE

A. GENERAL

For best results and longer life a regular service procedure should be established and maintained.

The following points should be checked on a regular maintenance basis.

1. Under normal working conditions, foreign matter will accumulate in the Jaw Pulling mechanism and hinder its normal operation. To prevent this build-up and to lubricate the pulling mechanism, the following procedure is recommended. NO disassembly of the tool is required.

a. Clear tool of spent mandrels.

b. Dip Nose Housing 1½" into Jaw Lube PRG 510-130.

c. While immersed, cycle tool several times, pausing between cycles.

d. Remove tool, wipe outer surface clean.

e. For alternate method, see Section III A2. Use ONLY recommended lubricants or equivalent.

2. Eventually, dirt build-up may require front end disassembly and cleaning. In this event, the following procedure should be followed.

a. Disassemble as described in Section IV E1.

b. Clean all parts thoroughly including the Nose Housing PRG 510-52A Cavity. Clean serrations in Jaw Teeth with a wire brush if necessary.

c. Inspect Jaws and replace if teeth are worn.

d. Measure Jaw Pusher Spring PRG 510-123 and replace if length is less than 2 inches.

e. Lubricate and reassemble as described in Section IV E2, making certain that the Jaw Guide, Nose Housing, and Nosepiece are tightened.

3. About every 100,000 cycles, the three bearings in the Bell Crank and the associated Pins should be liberally relubricated with Lubriplate 130AA or equivalent.

a. Remove Housing Cap PRG 511-076.

b. With small brush, force new grease between Bell Cranks PRG 510-45 and Piston Rod PRG 510-41+ so that it will work onto Piston Rod Fulcrum PRG 510-113.

c. With air pressure on tool, use tape or rubber band to hold Trigger PRG 510-35 in pulling position. Remove Retaining Ring PRG 510-122, Bell Crank Fulcrum PRG 510-126 and the two Outer Bell Crank Bushings PRG 510-46. Use brush to force new grease through holes in Housing to work around Bell Cranks and Center Bell Crank Bushing PRG 510-47. Wipe some grease onto Outer Bushings and Fulcrum Pin, and reassemble.

d. With small brush, force new grease between Bell Cranks and Pulling Head Fulcrum PRG 510-49.

e. Release Trigger and reassemble Housing Cap.

B. AIR HOSE REPLACEMENT

In the event the Air Line PRG 540-39 is crushed or damaged in some manner, it may be repaired or replaced, depending on the amount of damage, by using the following procedure:

1. Remove Air Line Clamp PRG 540-45 by cutting or deforming the ears which project on either side. In doing this, the Clamp will be permanently damaged, and for this purpose two extra Clamps are included on the Air Line.

2. Remove faulty Air Line from Hose Adapter PRG 510-58 and insert new or repaired Air Line.

3. Tighten new Clamp by squeezing with pliers both ears on either side of Clamp.

NOTE

Insertion of new Air Line may be facilitated by dipping end of Air Line into hot water to make it more flexible.

SECTION IV — DISASSEMBLY AND ASSEMBLY

A. GENERAL

In assembling or disassembling this tool, care should be taken that foreign matter does not get into the tool.

When ordering replacement parts, order by part number shown on Page No. 7.

CAUTION

Shut off air supply to the tool before proceeding with any assembly or disassembly procedures.

B. AIR PISTON AND AIR PISTON SEAL

1. Disassembly

a. Unscrew nine Base Screws PRG 510-116, and remove Washers PRP-101.

b. Remove Base PRG 510-33, being careful not to lose Base Air Seal "O" Ring PRG 510-107.

c. Remove Piston Bumper PRG 510-54.

d. Unscrew Piston Rod Screw PRG 510-102. Tip to one side to facilitate removal of Piston PRG 510-43, Washer PRG 510-103 and Washer PRG 510-110.

e. Remove Piston Seal PRG 510-44.

f. Clean air cylinder in Handle PRG 510-31 and lubricate cylinder walls with recommended lubricant.

2. Assembly

a. Attach Piston Seal PRG 510-44 to Piston PRG 510-43.

b. Apply recommended lubricant to Seal and insert assembly into bottom of Housing. Be sure flat side of Piston is facing the bottom of the tool.

c. Secure Piston with Screw PRG 510-102 and Washers PRG 510-103 and PRG 510-110.

d. Insert Piston Bumper PRG 510-54 into Housing.

e. Apply a light coating of lubricant to Base Air Seal PRG 510-107 so as to retain it in the Base PRG 510-33.

f. Attach Base PRG 510-33 to Housing with nine Screws PRG 510-116 and Washers PRP-101.

C. TRIGGER ASSEMBLY

1. Disassembly

a. Remove Trigger Fulcrum Pin PRG 510-120.

b. Remove Trigger and Trigger Lever from Housing.

c. Remove Trigger Pin PRG 510-118 from Trigger PRG 510-35 and Trigger Lever PRG 510-36A.

2. Assembly

a. Attach Trigger PRG 510-35 and Trigger Lever PRG 510-36A with Trigger Pin PRG 510-118.

b. Insert Trigger assembly into Housing and locate hole in Trigger Lever relative to fulcrum hole in Housing by holding up to light and orienting with a rod, such as mandrel of 3/16" "POP" Rivet.

c. Drive Trigger Fulcrum Pin PRG 510-120 into Housing and carefully through holes in Trigger Lever, using above rod to maintain alignment.

D. VALVE ASSEMBLY

1. Disassembly

a. Remove Base and Piston per Section IV, Paragraph B1.

b. Remove Valve Plate PRG 510-39+ by removing two Valve Plate Screws PRG 510-115 and two Lock Washers PRG 510-111.

c. Withdraw Valve Assembly from Housing.

d. Using Truarc Pliers, remove Retainer Rings PRG 510-122 from each end of Valve Tube PRG 510-37.

e. Remove Valve Tube Cap PRG 510-112, Valve Tube Seal PRG 520-60, Valve Seat Seal PRG 510-106, Valve Ring Seal Washer PRG 510-109, Valve Ring Seal PRG 510-107, Valve Seat PRG 510-38, and remaining Retainer Ring PRG 510-122 from Valve Tube.

2. Assembly

a. Attach Retainer Ring PRG 510-122 to upper end of Valve Tube PRG 510-37.

b. Position Valve Tube Cap PRG 510-112, Valve Tube Seal PRG 520-60, middle Retainer Ring PRG 510-122, Valve Seat Seal PRG 510-106, and Valve Seat PRG 510-38 on Valve Tube PRG 510-37.

c. Position Valve Ring Seal PRG 510-107 and Valve Ring Seal Washer PRG 510-109 on Valve Tube PRG 510-37 and retain in place with third Retainer Ring PRG 510-122.

d. Lubricate Valve Seals lightly with recommended Lubricant and insert assembly into Housing.

e. Retain in place with Valve Plate PRG 510-39+ and two Screws PRG 510-115 and two Lock Washers PRG 510-111.

f. Assemble Piston as per Section IV, Paragraph B2.

E. JAWS, JAW PUSHER, JAW GUIDE, JAW PUSHER SPRING TUBE, AND JAW PUSHER SPRING

1. Disassembly

a. Remove Nose Housing PRG 510-52A and Nosepiece.

b. Remove Jaw Guide PRH 820-11A.

c. Remove Jaws PRG 402-8A, Jaw Pusher PRG 520-33, and Jaw Pusher Spring PRG 510-123.

2. Assembly

a. Lightly lubricate outside of Jaw Pusher Spring PRG 510-123 and insert into Pulling Head PRG 510-48.

b. Lightly lubricate conical surface of Jaws PRG 402-8A and drop Jaws in place in Jaw Guide PRH 820-11A.

c. Lightly lubricate outside of Jaw Pusher PRG 520-33 and drop in place in Jaw Guide and attach to Pulling Head PRG 510-48.

d. Attach Nose Housing PRG 510-52A and Nosepiece to Tool Housing PRG 510-31.

e. See Section III A1 for alternate lubrication method.

F. PULLING HEAD, PISTON HEAD AND RETURN SPRING

1. Disassembly

a. Remove Housing Cap PRG 511-076 by removing two Housing Cap Screws PRG 510-117.

b. Remove Nosepiece and screw in a 3/8–24 screw (approx. 1" long) in place of Nosepiece until Pulling Head mechanism is moved rearward approximately 5/8" (16MM) exposing wrench flats on Mandrel Guide.

c. Loosen, but do not remove Mandrel Guide PRG 511-051 as Mandrel Tube PRG 510-50 will fly out under spring pressure. Remove 3/8–24 Screw.

d. Remove Jaw Assembly as per Section IV, Paragraph E1.

e. Remove Air Piston as per Section IV, Paragraph B1.

f. Remove Mandrel Guide PRG 511-051.

g. Remove Fulcrum Retaining Ring PRG 510-122. Place screwdriver blade under lip of PRG 510-31 Housing and press down on top of Piston Rod PRG 510-41 + and remove Bell Crank Fulcrum PRG 510-126. If tension has not been released sufficiently to remove Bell Crank Fulcrum, rotate screwdriver blade 90° and follow same procedure.

h. Relieve pressure and remove Piston Rod Fulcrum PRG 510-113.

i. Remove Outer Bell Crank Bushings PRG 510-46.

j. Rotate Piston Rod PRG 510-41 + so that Roll Pin is centered between Bell Cranks PRG 510-45 and remove.

k. Remove Spring Cap PRG 510-42 and remove Piston Rod Return Spring PRG 510-124.

l. Lift rear ends of Bell Cranks PRG 510-45 and draw them and Pulling Head Assembly up and to the back to remove from Housing.

m. Remove the Spring Washer PRG 510-105 and Center Bell Crank Bushing PRG 510-47 from the Housing.

n. Remove two Bell Cranks PRG 510-45 from Pulling Head Fulcrum PRG 510-49.

o. Remove Mandrel Tube PRG 511-050 and Pulling Head Fulcrum PRG 510-49 from Pulling Head PRG-510-48.

p. Remove Valve Plate as per section IV, Paragraph D 1b.

q. Remove Piston Rod Seal PRG 510-114 and Piston Rod Seal Washer PRG 510-104.

2. Assembly

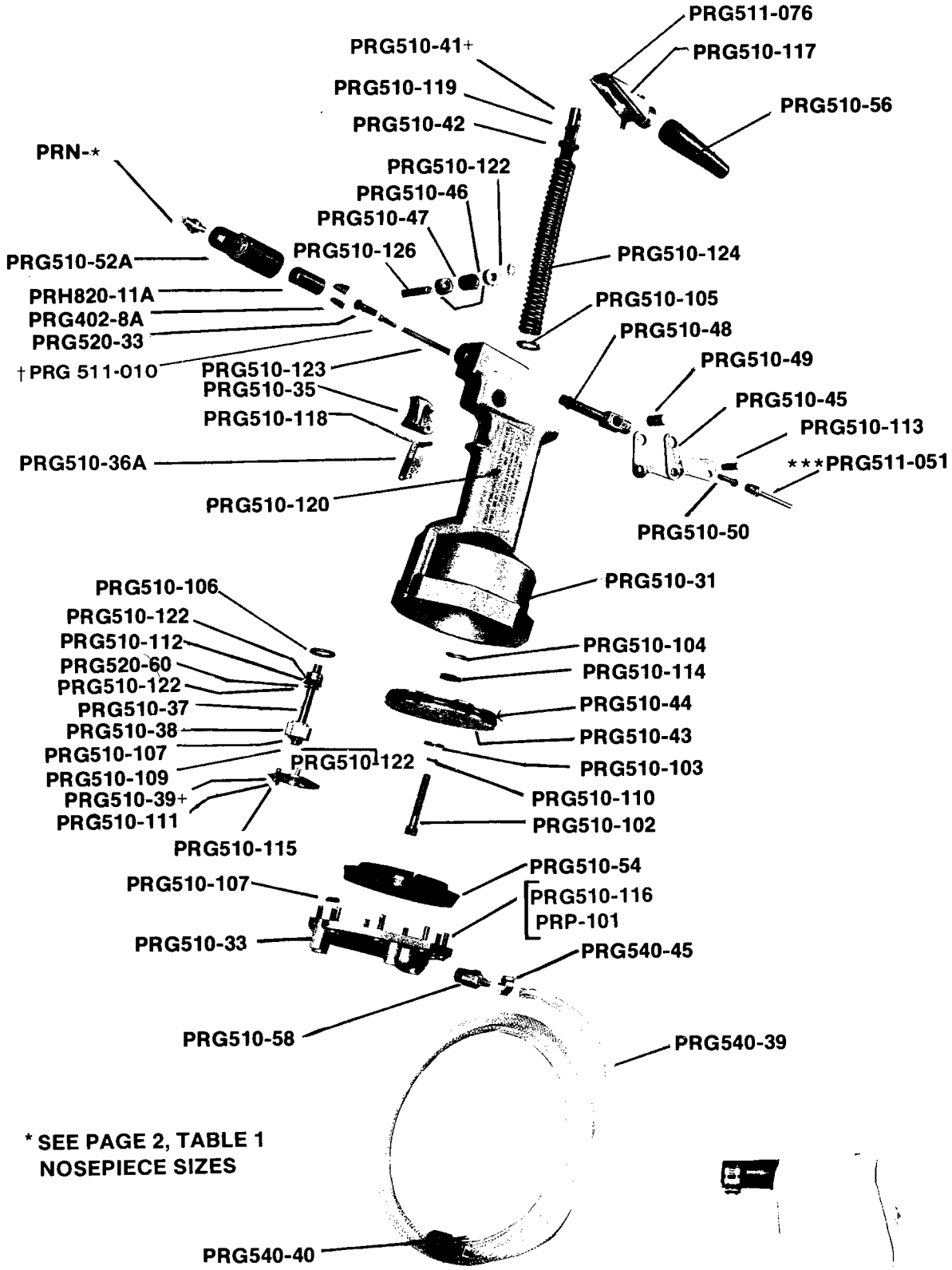
NOTE

All bearing and pivot points should be lightly lubricated with recommended lubricant or equivalent.

a. Insert Pulling Head Fulcrum PRG 510-49 into Pulling Head PRG 510-48.
b. Insert Mandrel Tube PRG 510-50 into bore of Pulling Head and through Pulling Head Fulcrum.
c. Attach the Bell Cranks PRG 510-45 to the Pulling Head Fulcrum.
d. Place the Spring Washer PRG 510-105 at the bottom of the bore in the Housing.
e. Position Center Bell Crank Bushing PRG 510-47 into Housing.
f. Insert Pulling Head Assembly into Housing.
g. Insert Piston Rod Return Spring PRG 510-124 into the Housing on top of the Spring Washer PRG 510-105.
h. Insert the Spring Cap PRG 510-42 into the Piston Rod Return Spring PRG 510-124.
i. Insert the Piston Rod PRG 510-41 + through the Spring Cap PRG 510-42 and Piston Rod Return Spring PRG 510-124.
j. Align the fulcrum holes in the Piston Rod and the Bell Cranks and insert the Piston Rod Fulcrum PRG 510-113.
k. With screwdriver blade push down on Piston Rod PRG 510-41 + as far as it will go, place one outer Bell Crank Bushing PRG 510-46 over Bell Crank Fulcrum PRG 510-126 and insert through the Housing and lower holes of the Bell Cranks.
l. Insert the second outer Bell Crank Bushing PRG 510-46 into the other side of the Housing and retain with the Fulcrum Retaining Ring PRG 510-122.
m. Hand tighten Mandrel Guide PRG 511-051 into rear of Pulling Head.
n. Insert Piston Rod Seal Washer PRG 510-104 and Piston Rod Seal PRG 510-114 over end of Piston Rod PRG 510-41 +.
o. Reassemble Valve Plate as per Section IV, Paragraph D 2e.
p. Reassemble Air Piston as per Section IV, Paragraph B2.
q. Reassemble Jaw Assembly as per Section IV, Paragraph E2.
r. Attach tool to Air Line and cycle. Hold Trigger and tighten Mandrel Guide PRG 511-051.
s. Place Housing Cap 511-076 on Housing and secure with two Housing Cap Screws PRG 510-117.

SECTION V — TROUBLE SHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY
Jaws Slipping on Mandrels	Dirt in Jaw Teeth	Clean Jaws See Section III A1, 2
	Worn Jaw Teeth	Replace Jaws See Section III A2
	Fatigued Jaw Pusher Spring	Replace See Section III A2
Jaws Fail to Open	Nosepiece or Nose Housing Loose	Tighten
	Jaws Sticking	Clean Jaws & Lubricate See Section III A
	Fatigued Return Spring	Replace See Section IVF
	Dirt packed toward front of Nose Housing	Clean See Section III A 2
Slow Pulling Action	Air Line or Air Passage Plugged	Repair See Section III B
	Insufficient Air Pressure	Check Air Supply
	Worn Piston Seal	Replace See Section IV B
	Damaged Air Valve	Replace See Section IV D
	Dirt in restrictor hole of Piston Bumper	Clean See Section IV B
	Foreign material inside Housing	Clean See Section IV F



* SEE PAGE 2, TABLE 1
NOSEPIECE SIZES

†PRG510-69
MANDREL CATCHER

† Not furnished with tool.
Must be ordered separately.

***Sold as a complete assembly only.

SECTION VI — LIST OF PARTS

PRG 510 NO.	MISC. PARTS		QTY.
		HOUSING AND TRIGGER PARTS	
PRG 510-31		Housing	1
PRG 510-34		Nose Housing Insert	1
PRG 510-35		Trigger	1
PRG 510-36A		Trigger Lever	1
PRG 510-118		Trigger Pin	1
PRG 510-120		Trigger Fulcrum Pin	1
		VALVE PARTS	
PRG 510-37		Valve Tube	1
PRG510-112		Valve Tube Cap	1
	PRG 520-60	Valve Tube Seal	1
PRG 510-38		Valve Seat	1
PRG 510-106		Valve Seat Seal	1
PRG 510-107		Valve Ring Seal	1
PRG 510-109		Valve Ring Seal Washer	1
PRG 510-122		Retaining Ring	3
		PISTON ROD AND PULLING HEAD PARTS	
PRG 510-39+		Valve Plate	1
PRG 510-115		Valve Plate Screw	2
PRG 510-111		Valve Plate Screw Lockwasher	2
PRG 510-41+		Piston Rod	1
PRG 510-119		Piston Rod Pin	1
PRG 510-124		Piston Rod Return Spring	1
PRG 510-42		Spring Cap	1
PRG 510-105		Spring Washer	1
PRG 510-48		Pulling Head	1
PRG 510-49		Pulling Head Fulcrum	1
PRG 510-50		Mandrel Tube	1
	PRG 511-051	Mandrel Guide	1
PRG 510-45		Bell Crank	2
PRG 510-46		Bell Crank Bushing, Outer	2
PRG 510-47		Bell Crank Bushing, Center	1
PRG 510-126		Bell Crank Fulcrum	1
PRG 510-122		Retaining Ring	1
PRG 510-113		Piston Rod Fulcrum	1
		PISTON AND BASE PARTS	
PRG 510-104		Piston Rod Seal Washer	1
PRG 510-114		Piston Rod Seal	1
PRG 510-43		Piston	1
PRG 510-44		Piston Seal	1
PRG 510-103		Piston Rod Washer	1
PRG 510-110		Piston Rod Lockwasher	1
PRG 510-102		Piston Rod Screw	1

PRG 510 NO.	MISC. PARTS		QTY.
PRG 510-54		Piston Bumper	1
PRG 510-107		Base Air Seal	1
PRG 510-33		Base	1
PRG 510-116		Base Screw	9
	PRP-101	Base Screw Washer	9
	PRG 540-39	Air Line — 7' Long	1
	PRG 540-45	Air Line "O" Clamp	4
PRG 510-58.		Hose Adapter — ¼" N.P.T.	1
	PRG 540-40	Hose Female Fitting — ¼" N.P.T.	1
		JAW PULLING MECHANISM PARTS	
PRG 510-123		Jaw Pusher Spring	1
	†PRG 511-010	Mandrel Guide Tube	1
	PRG 520-33	Jaw Pusher	1
	PRG 402-8A	Jaw	2
	PRH 820-11A	Jaw Guide	1
PRG 510-52A		Nose Housing	1

† PRN 314 Nosepiece, 3/32" Open End Rivets

PRN 414 Nosepiece, 1/8" and 7/64" Open End Rivets

PRN 514 Nosepiece, 5/32" Open End Rivets

PRN 614 Nosepiece, 3/16" Open End Rivets

† PRN 424 Nosepiece, ⅛" Closed End Rivets with Steel Mandrels

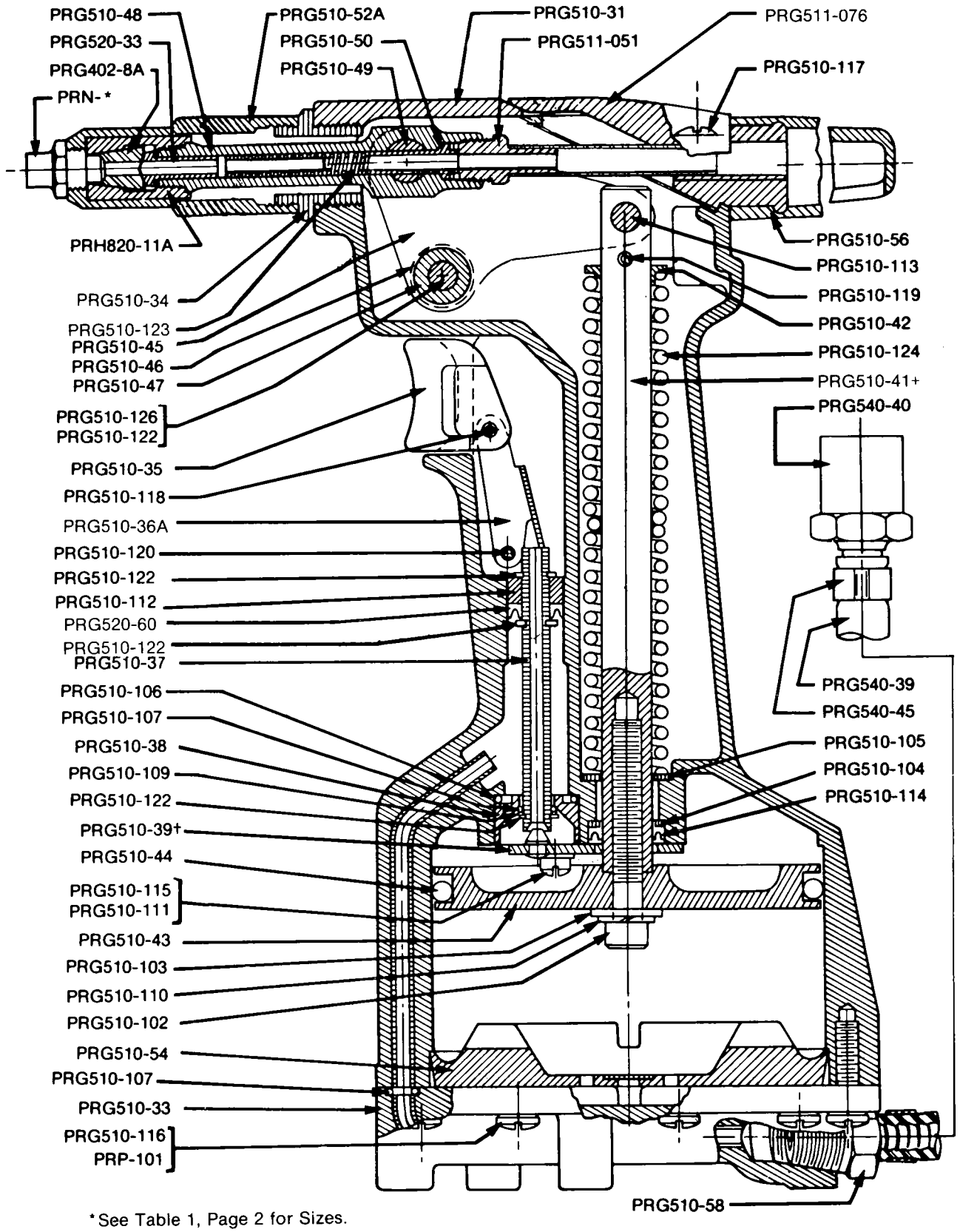
† PRN 434 Nosepiece, 1/8" Closed End Rivets with Aluminum Mandrels

† PRN 534 Nosepiece, 5/32" Closed End Rivets with Aluminum Mandrels

† PRN 634 Nosepiece, 3/16" Closed End Rivets with Aluminum Mandrels

		HOUSING CAP PARTS	
	PRG 511-076	Housing Cap	1
PRG 510-117		Housing Cap Screw	2
PRG 510-56		Housing Cap Deflector	1
†PRG 510-69		Mandrel Catcher	1

† Not furnished with tool. Must be ordered separately.



*See Table 1, Page 2 for Sizes.

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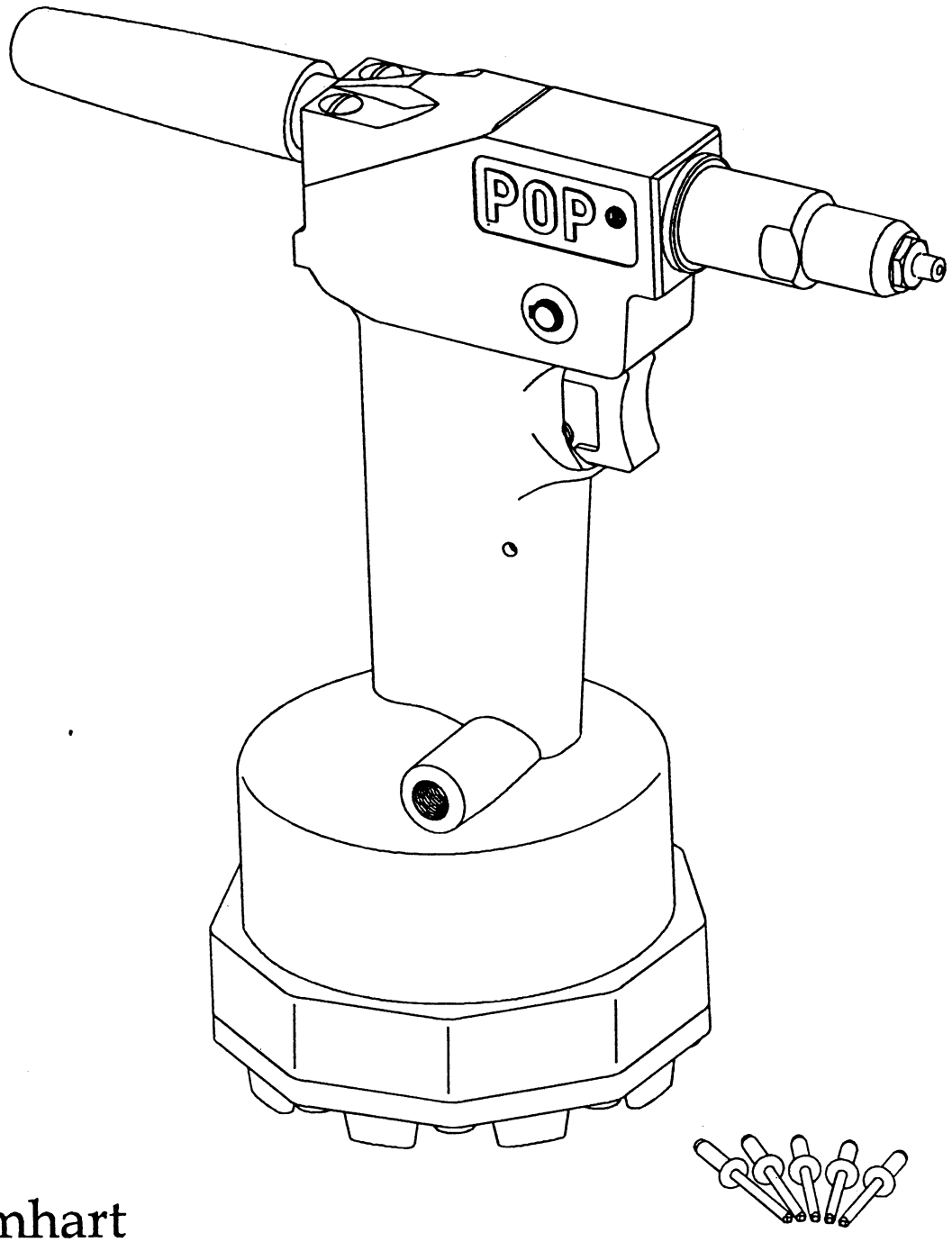
PRG 510A

Addendum to the PRG510 manual No P-218



Emhart
POP

A BLACK&DECKER COMPANY

Series 510A

Addendum to the PRG510 manual No P-218

The PRG 510A tool is an enhanced version of our PRG510 pneumatic POP® rivetool, therefore, most of the components are interchangeable. Table A1 provides information that identifies components that are unique to the 510A series tools. It also lists 510 components not used in the 510A.

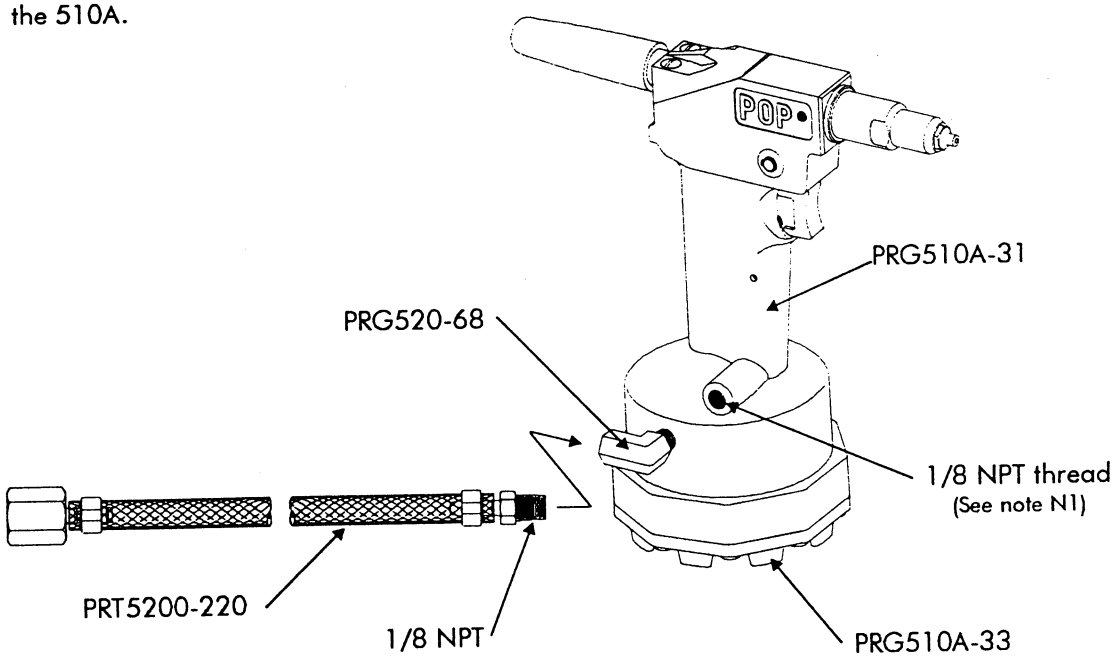


Table A1

Descripton	PRG510A-PLUS Part number	PRG510A Part number	Replaces 510 tool Part number in manual
Elbow Fitting	PRG520-68	PRG520-68	None Provided
Housing	PRG510A-31	PRG510A-31	PRG510-31
Base	PRG510A-33	PRG510A-33	PRG510-33
O'ring (Qty. 1)	PRG510-107	PRG510-107	Qty. Change only
Air Line Assembly	PRT5200-220		See note (N2)
Jaw Service Kit (N3)	PRG510A230		

NOTES :

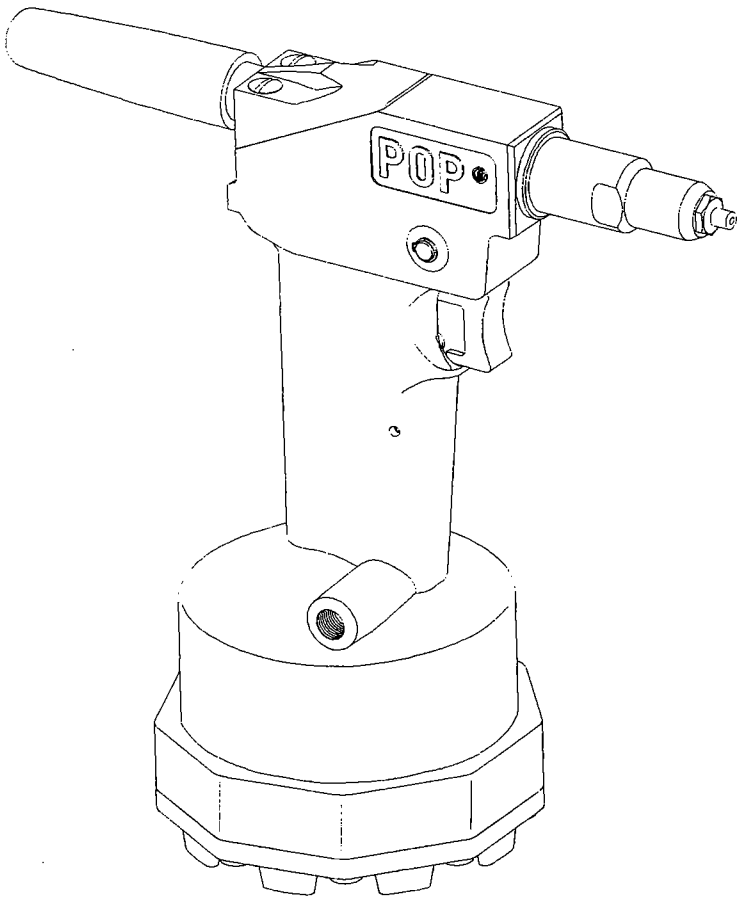
N1 The 510A air supply inlet is located just below the housing grip and is a 1/8 N.P.T. thread. The 510 air hose assembly uses a 1/4 N.P.T. and will not fit. Use part number PRT5200-220 air hose assembly.

N2 The air supply hose provided with the PRG510 tools are made up of PRG540-39 Air Line (Qty 1), PRG540-40 Hose Female Fitting (Qty 1), PRG540-45 air line "O" Clamp (Qty 2), PRG510-58 Hose Adapter-1/4 NPT.

N3 The Jaw Service Kit consists of PRG402-8A Jaw (Qty 2), PRG520-33 Jaw Pusher (Qty 1), PRG510-123 Jaw Pusher Spring (Qty 1).

INSTRUCTION MANUAL

Series 510A Pneumatic POP® Rivetools, MCS 510A, PRG 510A, MCS 511A, PRG 511A and PRG 510A Plus.



Emhart® POP

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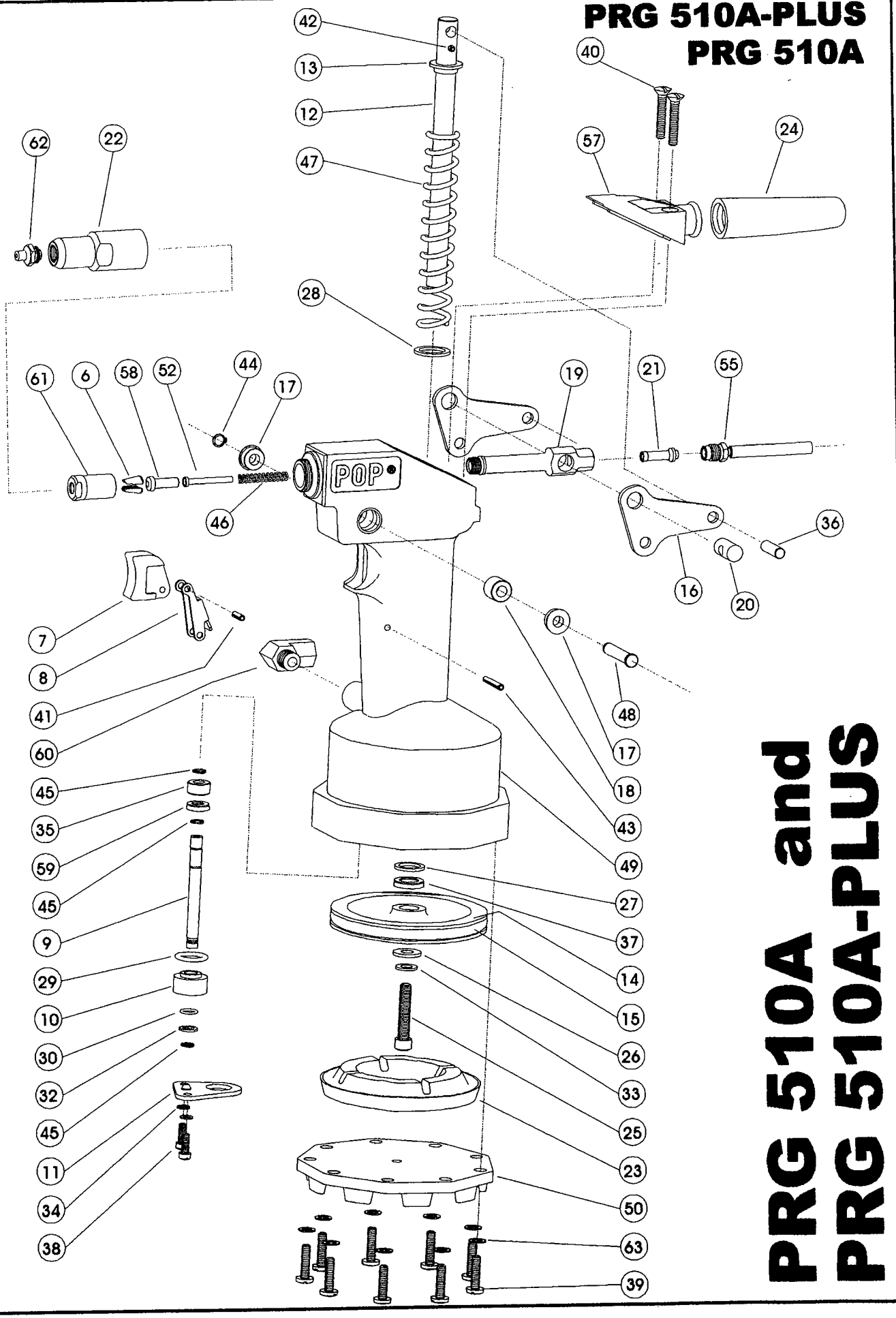
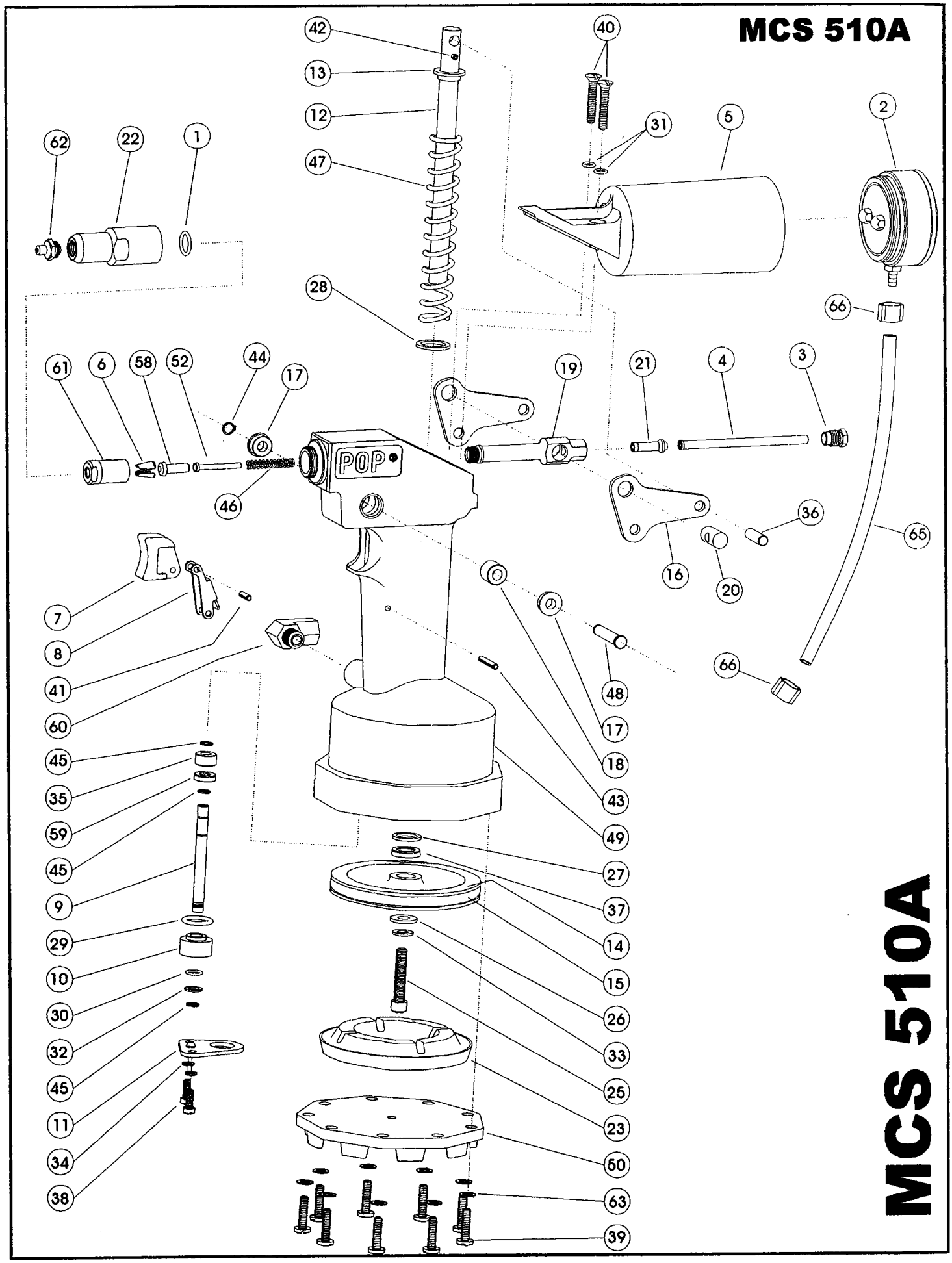
PRG 510A-PLUS
PRG 510A



PRG 510A and PRG 510A-PLUS

MCS 510A



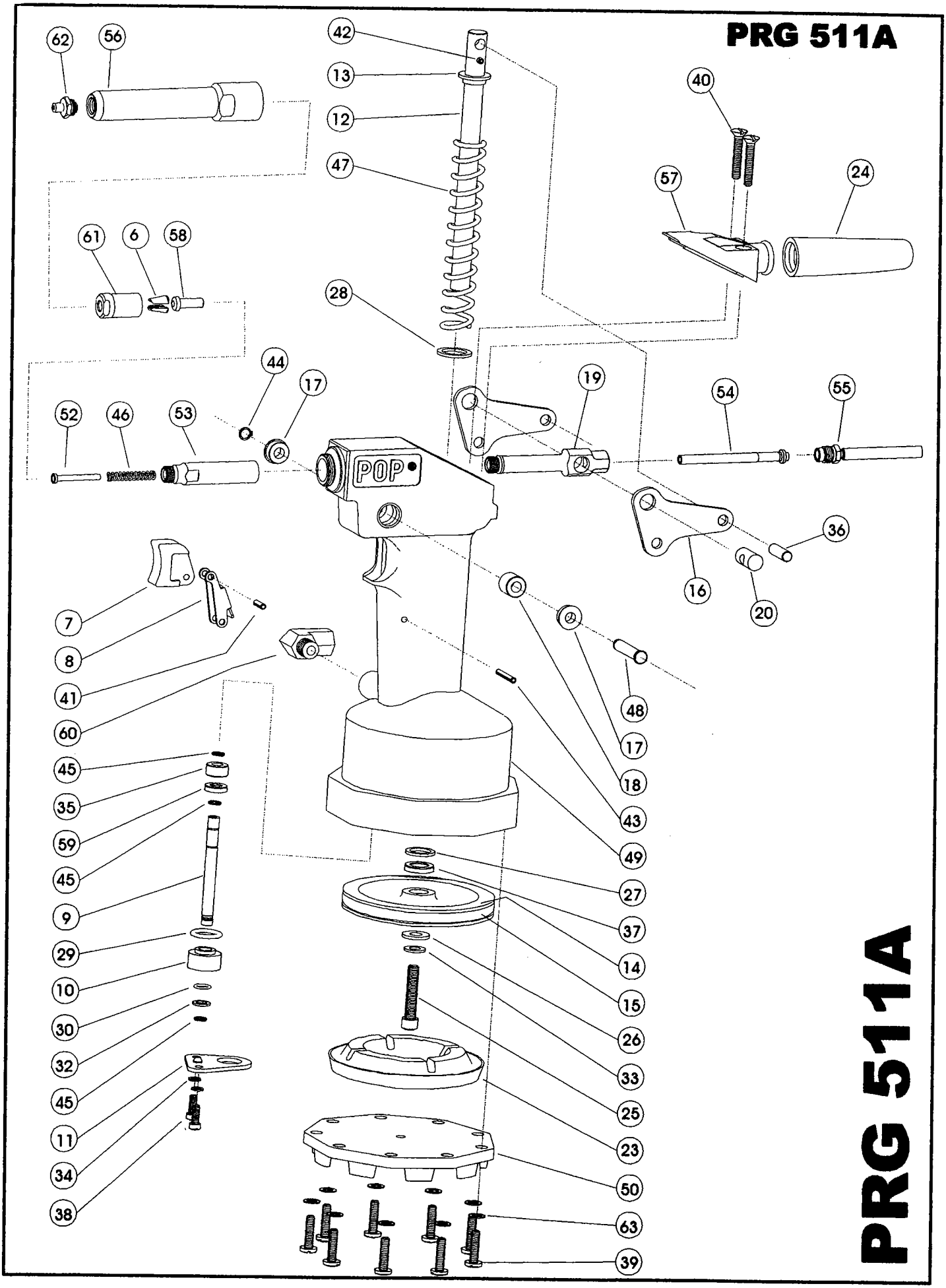
MCS 510A

	ITEM	PART NUMBER	DESCRIPTION	MCS510A	MCS511A	PRG510A	PRG510A PLUS	PRG511A
	1	MCS500-34	NOSE HOUSING O-RING	1	1			
	2	MCS500-101	VACUUM CAP	1	1			
	3	MCS510-11	MANDREL GUIDE NUT	1	1			
	4	MCS510-12	MANDREL GUIDE	1	1			
	5	MCS510-101	COLLECTOR BOTTLE ASSEMBLY	1	1			
	6	PRG402-8A	JAW	2	2	2	2	2
N1	7	PRG510-35	TRIGGER	1	1	1	1	1
N1	8	PRG510-36A	TRIGGER LEVER	1	1	1	1	1
N2	9	PRG510-37	VALVE TUBE	1	1	1	1	1
N2	10	PRG510-38	VALVE SEAT	1	1	1	1	1
	11	PRG510-39+	VALVE PLATE	1	1	1	1	1
	12	PRG510-41+	PISTON ROD ASSEMBLY	1	1	1	1	1
	13	PRG510-42	SPRING CAP	1	1	1	1	1
	14	PRG510-43	PISTON	1	1	1	1	1
	15	PRG510-44	PISTON SEAL	1	1	1	1	1
	16	PRG510-45	BELL CRANK	2	2	2	2	2
	17	PRG510-46	BELL CRANK BUSHING	2	2	2	2	2
	18	PRG510-47	BELL CRANK BUSHING CENTER	1	1	1	1	1
	19	PRG510-48	PULLING HEAD	1	1	1	1	1
	20	PRG510-49	PULLING HEAD FULCRUM	1	1	1	1	1
	21	PRG510-50	MANDREL TUBE	1		1	1	
	22	PRG510-52A	NOSE HOUSING	1		1	1	
	23	PRG510-54	PISTON BUMPER	1	1	1	1	1
	24	PRG510-56	DEFLECTOR			1	1	1
	25	PRG510-102	PISTON ROD SCREW	1	1	1	1	1
	26	PRG510-103	PISTON ROD WASHER	1	1	1	1	1
	27	PRG510-104	PISTON ROD SEAL WASHER	1	1	1	1	1
	28	PRG510-105	SPRING WASHER	1	1	1	1	1
N2	29	PRG510-106	VALVE SEAT SEAL	1	1	1	1	1
	30	PRG510-107	BASE AIR SEAL	1	1	1	1	1
N2	31	PRG510-107	BASE AIR SEAL	2	2			
N2	32	PRG510-109	VALVE RING SEAL WASHER	1	1	1	1	1
	33	PRG510-110	PISTON ROD LOCKWASHER	1	1	1	1	1
	34	PRG510-111	VALVE PLATE SCREW LOCKWASHER	2	2	2	2	2
	35	PRG510-112	VALVE TUBE CAP	1	1	1	1	1
	36	PRG510-113	PISTON ROD FULCRUM	1	1	1	1	1
	37	PRG510-114	PISTON ROD SEAL	1	1	1	1	1
	38	PRG510-115	VALVE PLATE SCREW	2	2	2	2	2
	39	PRG510-116	BASE SCREW	9	9	9	9	9
	40	PRG510-117	HOUSING CAP SCREW	2	2	2	2	2
N1	41	PRG510-118	TRIGGER PIN	1	1	1	1	1
	42	PRG510-119	PISTON ROD PIN					
	43	PRG510-120	TRIGGER FULCRUM PIN	1	1	1	1	1

	ITEM	PART NUMBER	DESCRIPTION	MCS510A	MCS511A	PRG510A	PRG510A PLUS	PRG511A
N2	44	PRG510-122	VALVE RING SEAL RETAINER	1	1	1	1	1
	45	PRG510-122	VALVE RING SEAL RETAINER	3	3	3	3	3
	46	PRG510-123	JAW PUSHER SPRING	1	1	1	1	1
	47	PRG510-124	PISTON ROD RETURN SPRING	1	1	1	1	1
	48	PRG510-126	BELL CRANK FULCRUM	1	1	1	1	1
	49	PRG510A-31	HOUSING	1	1	1	1	1
	50	PRG510A-33	BASE	1	1	1	1	1
N3	51	PRG510A-59	ADAPTOR FITTING			1		
N3	52	PRG511-010	JAW PUSHER SPRING TUBE		1			1
	53	PRG511-022	PULLING HEAD ADAPTOR (EXT.)		1			1
	54	PRG511-050	MANDREL TUBE		1			1
	55	PRG511-051	MANDREL GUIDE	1	1	1	1	1
	56	PRG511-052	NOSE HOUSING		1			1
	57	PRG511-076	HOUSING CAP			1	1	1
	58	PRG520-33	JAW PUSHER	1	1	1	1	1
N2	59	PRG520-60	VALVE TUBE SEAL	1	1	1	1	1
	60	PRG520-68	ELBOW FITTING	1	1	1	1	1
	61	PRH820-11A	JAW GUIDE	1	1	1	1	1
	62	PRN414	NOSEPIECE	1	1	1	1	1
	63	PRP-101	JAW PUSHER WASHER	9	9	9	9	9
	64	PRG510-230	JAW SERVICE KIT				1	
	65	MCS100-35	TRANSDUCER TUBE	1	1			
	66	PRG520A-8	AIR LINE O-CLAMP	2	2			
N4	70	PRT5200-90	AIR LINE FITTING				1	1
N4	71	PRG540-40	HOSE FEMALE FITTING				1	1
N4	72	PRG540-45	AIR LINE O-CLAMP				2	2
N4	73	PRG540-39	AIR LINE (HOSE)				1	1
N5	74	MCS500-31	HOSE CONNECTION ASSEMBLY	1	1			
N5	75	PRT5200-90	AIR LINE FITTING	1	1			
N5	76	PRG540-39	AIR LINE (HOSE)	2	2			
N5	77	PRG540-40	HOSE FEMALE FITTING	1	1			
N5	78	PRG540-45	AIR LINE O-CLAMP	4	4			

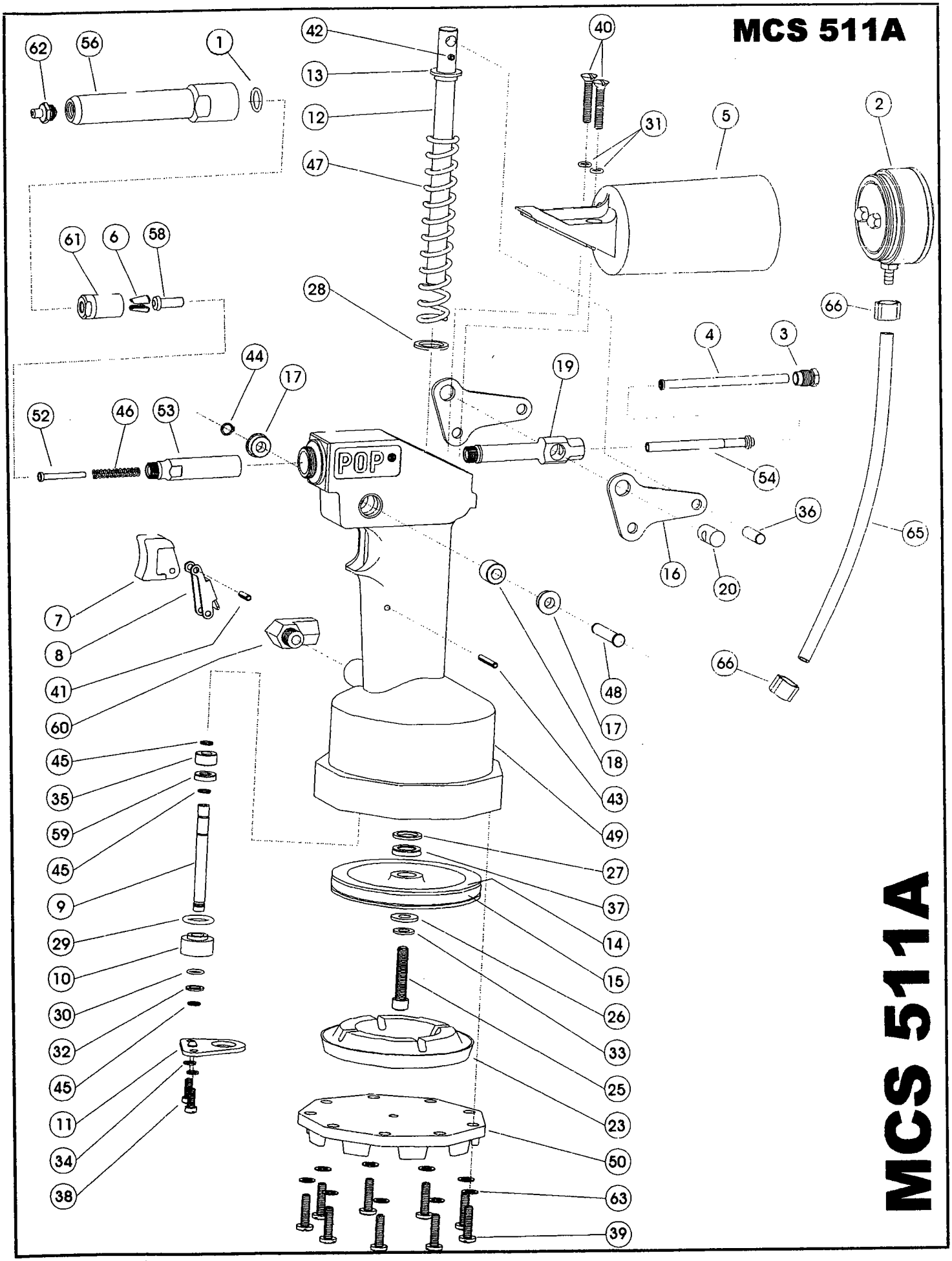
N1 = These parts must be ordered as an assembly. Order part number PRG510-170.
N2 = These parts must be ordered as an assembly. Order part number PRG510-180.
N3 = These parts are optional on some tools and are shown for identification only.
N4 = These parts must be ordered as an assembly. Order part number PRT5200-220.
N5 = These parts must be ordered as an assembly. Order part number MCS510A-220.

PRG 511A

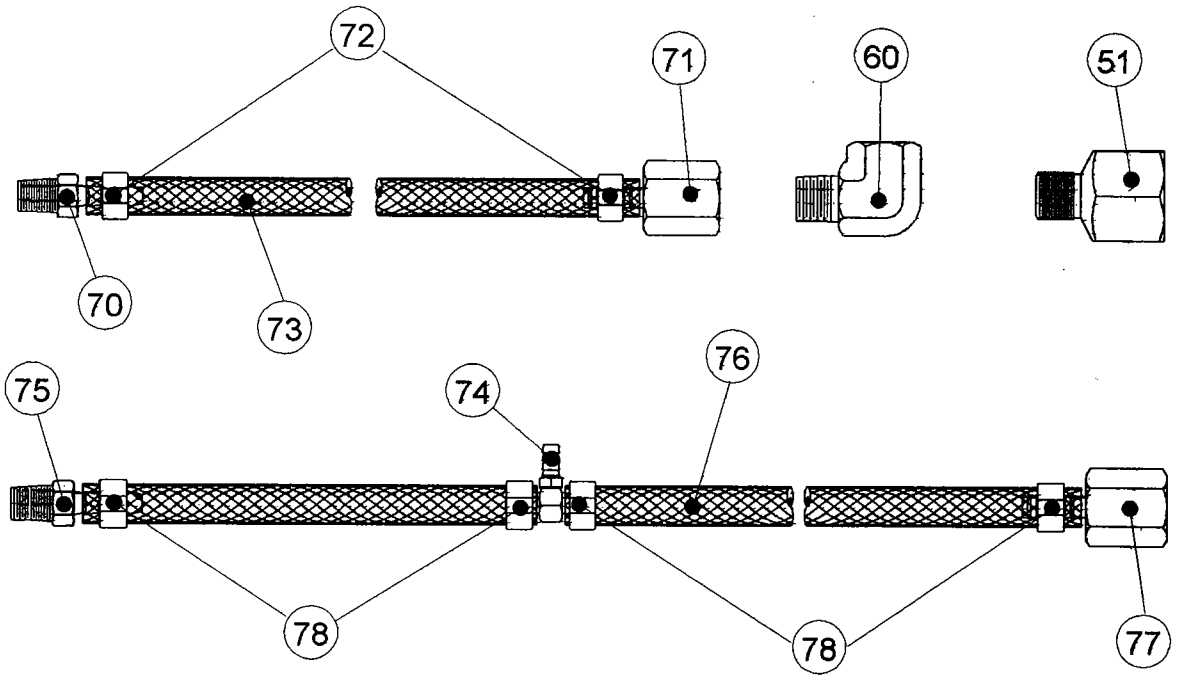


PRG 511A

MCS 511A



MCS 511A



The PRG510A tool is an enhanced version of our PRG510 pneumatic POP® rivetool, therefore most of the components are interchangeable. The following table summarizes the differences between the tools.

	DESCRIPTION	PRG510A-PLUS	PRG510A	PRG510
	ELBOW FITTING	PRG520-68	PRG520-68	NONE PROVIDED
	HOUSING	PRG510A-31	PRG510A-31	PRG510-31
	BASE	PRG510A-33	PRG510A-33	PRG510-33
	O-RING	PRG510-107	PRG510-107	QTY. CHANGE ONLY
	AIR LINE ASSEMBLY	PRT5200-220		
*	JAW SERVICE KIT	PRG510A-230		

* The PRT510A-230 Jaw Service Kit consists of PRG402-8A Jaw (2), PRG520-33 Jaw Pusher (1), and PRG510-123 Jaw Pusher Spring (1).

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