**Spring Piston Airguns**

Present an overview of airgun power plants focusing on the spring piston air guns. Explain how the energy to power the pellet is generated by the helical coil spring. Cover the reasons for mainspring failure. Start the repair process with the initial inspection, special tools, disassembly, preparation of the compression cylinder for installation of new parts, install new parts, reassembly and subsequent testing. Limited tuning and improving the operation will be addressed. Also proper lubrication and maintenance will be covered. The special tools used for disassembly and assembly will be introduced.

**Randy Bimrose** whose gun repair experience dates back 47 years, puts the same dedication, determination, exactness and consistency into every repair. It does not matter if it is a shooter setting a world record, a national champion or the casual plinker wanting to hit that spinner as he relaxes in the backyard. The desire of each shooter is to have an airgun that works properly and hits where it is aimed. His experience and background include: A retired U.S. Marine Corps Match Armorer, Former Senior Gunsmith for Beeman Precision Airguns for over 10 years, former gunsmith for C&J Enterprises, Repair Consultant for Beeman Precision Airguns, Member of Marine Corps Distinguished Shooter Assoc., Life member of NRA & CRPA (CA Rifle & Pistol Assoc), also on the CRPA Board of Directors and member of NSSF.

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Students should bring a minimum of six and a maximum of twelve different spring piston air guns from the list below. It will most beneficial if they are as many different models as possible.

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**Pistols:**

Beeman P1, 700, Original 5; 
Diana 5; 
HW 45, HW 70;
Rifles:

Beeman R series (any model), Model 100, 200, 250, Original 27, 35, Falcon I & II, FX 1 & 2, S 1, GS 950, GS 1000, GT 600, GT 650, GT 700, C1, Kodiak; Crosman Challenger; Diana 20, 24, 25, 26, 27, 28, 34, 35, 36, 38, 350 Magnum, 45, 46, 48, 50, 52, 54; FWB 124, 127; HW 30, 35, 50, 55, 77, 80, 85, 95, 97, 98, 99; HyScore 801, 807, 809, 828; Marksman 45, 28, 55, 59, 60, 61, 70, 71, 72; Webley Eclipse, Vulcan I, II & III, Omega, Patriot; Winchester 425, 427.

The student should bring a new mainspring, piston seal and breech seal for each gun. Some guns will require other parts during disassembly and when changing the piston seal. These include the earlier Diana and other brands that are the same models. If you have any questions or doubts contact Randy. If anyone has a problem getting any parts please contact me at least 3-4 weeks ahead of the class meeting time.

AIRGUNSMITHING COURSE – GENERAL TOOL LIST

Safety glasses
Bench pad – rubber or similar to protect the gun
Soft jaws for the vise (felt, leather or molded plastic)
Assorted screwdrivers
Ball peen hammer (4 oz. Best)
Rawhide or non-marring hammer
Pin punch set
Roll pin punch set
Allen wrenches – SAE .050- ¼; Metric 1.5 – 6 mm
Assorted pliers – needle nose, slip joint, parallel action
Adjustable wrench – 8” best, 6” OK
Pin vises for holding small screws and pins
Files – 6” Swiss pattern pillar #2, #0
Needle file set #2
Dental picks – assorted
Deburring tool
Lathe tool bit – 3/8 or 1/2
12 gauge shotgun cleaning rod with slotted tip
3/8” variable speed drill (reversible is nice sometimes but not necessary)
Small flashlight – recommend Mag light with 2 AA batteries, it is bright and focuses to a spot for looking down inside the tubes/compression cylinders or one with LED with several bulbs for a bright beam
Paper towels – 1 roll
M-Pro 7 Gun Cleaner or Mil-Comm MC25 Gun Cleaner/Degreaser
M-Pro 7 Gun Oil LPX or Mil-Comm TW-25 Oil
Mil-Comm TW-25B Lubricating Light Grease
Almagard Vari Purpose Lubricant #3752 or Moly based grease
Rubbing alcohol – 91% is best, 70% OK
Plastic food storage tray (like Rubbermaid or similar), size 5-7” wide by 10-12” long and about 3” deep max. A small inner tray to keep the screw and pins helps to keep things organized.

AIRGUNSMITHING COURSE -- SPRING PISTON GUNS TOOL LIST
All Manufacturers -- Mainspring compressor—Home made or commercial (Commercial available from JG Airguns)
FWB 124 -- 11 mm Open end wrench or adjustable wrench
Marksman International Series -- 9 mm socket (1/4 or 3/8 drive)
Marksman International Series -- Circlip pliers