B. BOLT GROUP

The bolt group of the HK roller locked bolt mechanism is the heart of the system and a thorough understanding of it is essential. It is comprised of six major components and we are going to examine each individually.

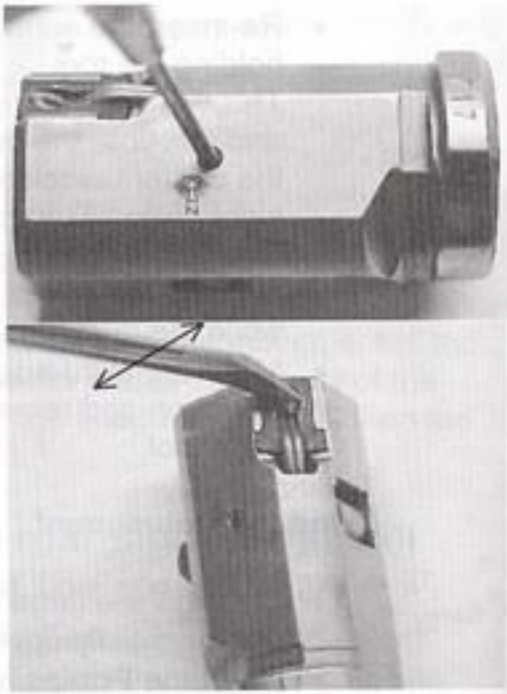
1.BOLT HEAD: Case hardened, carries the brunt of the force of the round firing. Contains the rollers, the extractor and spring and is independent of the other parts. The bolt head contains the two weakest parts of the rifle, the extractor spring and the roller holder.

A. DISASSEMBLY

1. Drive roll pin (50) into the body of the bolt head (47).

2. Remove the rollers (48) and roller holder (49).

3. Insert tool into the extractor spring (52) loop and rotate lengthwise. The spring will invert and can then be removed, as can the extractor (51). By inverting the extractor spring in this manner the spring does not lose tension. UNDER NO CIRCUMSTANCES SHOULD A TOOL BE PLACED UNDER THE SPRING AND THE SPRING PRIED UP.

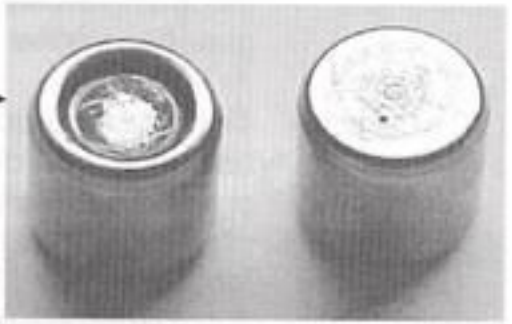


B. ASSEMBLY

1. Install the extractor, push extractor spring in right side up until it stops under thumb pressure. Place the

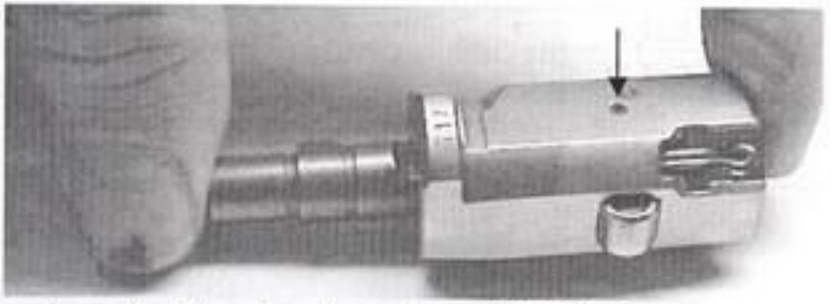
front of the spring against a hard surface and push until the spring seats in the extractor.

2. Turn bolt head upside down, install roller holder w/buttons up and one button exposed. Set a roller the exposed button, recessed side of the roller facing the button. Slide the roller holder and roller into the bolt head until the other button is exposed. Place the remaining roller on this button.



3. Hold the roller in the bolt head with the thumb and index finger of one hand. Turn the bolt head over and set it on the feed pawls with the roll pinhole facing up.

4. Insert the locking piece into the bolt head and now hold the back of the locking piece and the front of the bolt head with the thumb and index finger of one hand



5. Insert and drift in the roll pin. The roll pin should be flush with the top of the bolt head, ensure the roll pin is not seated too deeply as to restrict the free movement of the locking piece.

NOTE: By placing the locking piece in the bolt head the hole in the roller holder gets centered. If the hole in the roller holder is not centered when the roll pin is driven into the bolt head, the roll pin will score the roller holder and either fracture or begin a fracture in the roller holder causing another failure of the roller holder.

2. LOCKING PIECE

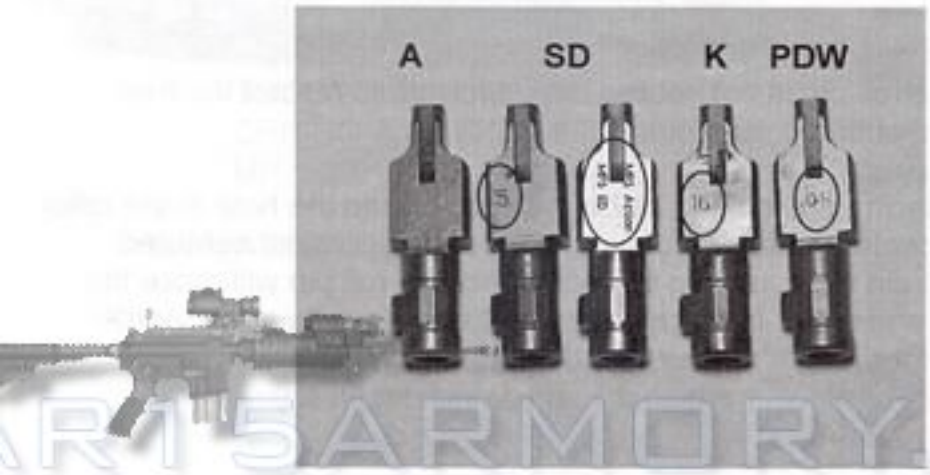
- Nothing to disassemble but inspection is necessary. Locking piece angles are critical to the proper function and safety of the gun, don't grind or stone on them.

- The locking piece is the timing piece of the rifle. It tells the rifle how long the bolt assembly must remained locked to have the projectile leave the muzzle at a particular velocity and the gas pressures drop to a safe level before unlocking the breech. The longer the barrel the longer the rifle has to stay locked.

- This timing is based on the angle of the locking piece shoulders.

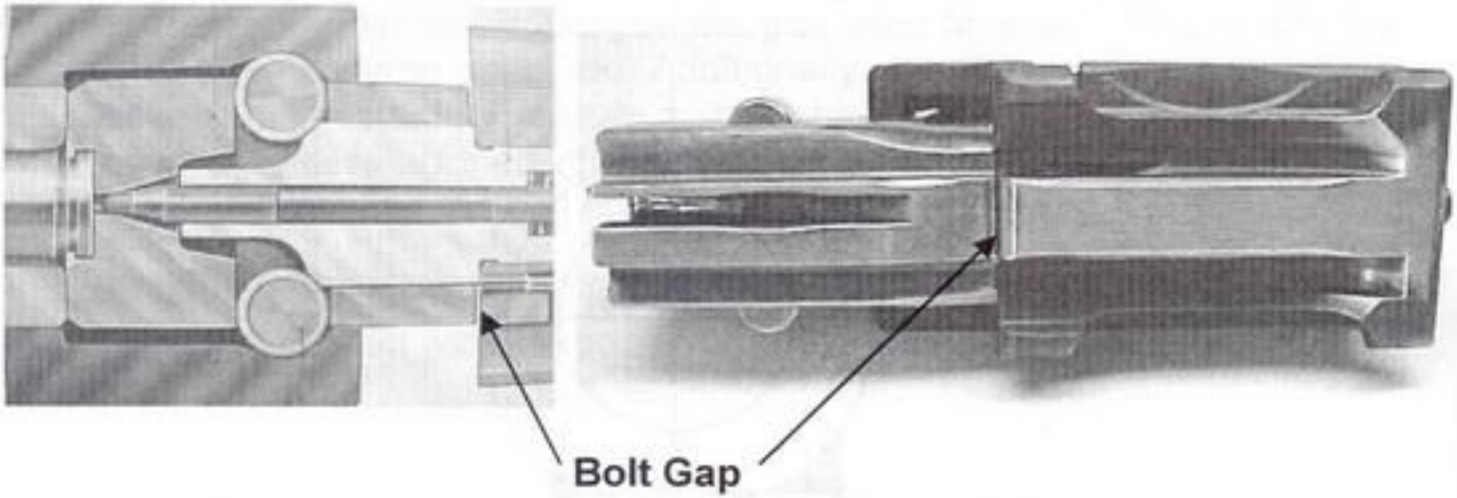
Since MP5 variants have different lengths of barrels there must be a different locking piece for each of these variants.

MP5 Locking pieces for 9mm & 40 cal. Variants			
Variant	**Markings**	**Barrel Length**	**Remarks**
A	NO MARKINGS	8.85 inches	
SD	5 or SD action	5.73 inches	
K	16	4.50inches	new/no,markings
PDW	80	5.50 inches	28W/suppressor
.40 cal	26 (old) lo 24 (new)	8.85 inches	
.40 cal	25 Newest	8.85 inches	Ammunition dependent
10mm	24 Low impulse 25 Hi impulse	8.85 inches	Ammunition dependent



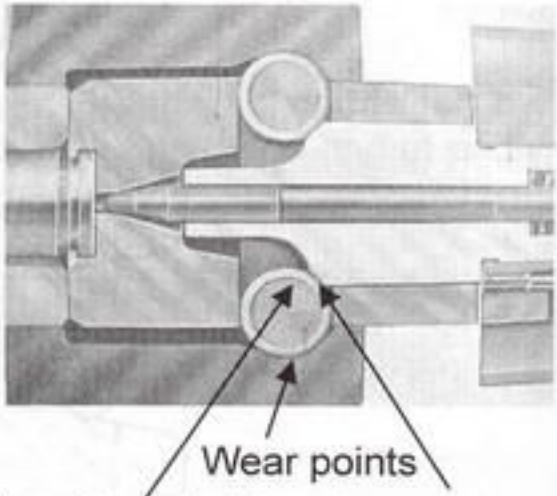
BOLT GAP

The distance between the rear of the bolt head and the front of the bolt carrier WHEN the bolt is IN battery and the hammer forward.



BOLT GAP RANGE

.25mm	**-**	**.45mm**	(ideal)
.25mm	**-**	**.50mm**	(maximum)
.010"	**-**	**.018"**	(ideal)
.010"	**-**	**.020"**	(maximum)

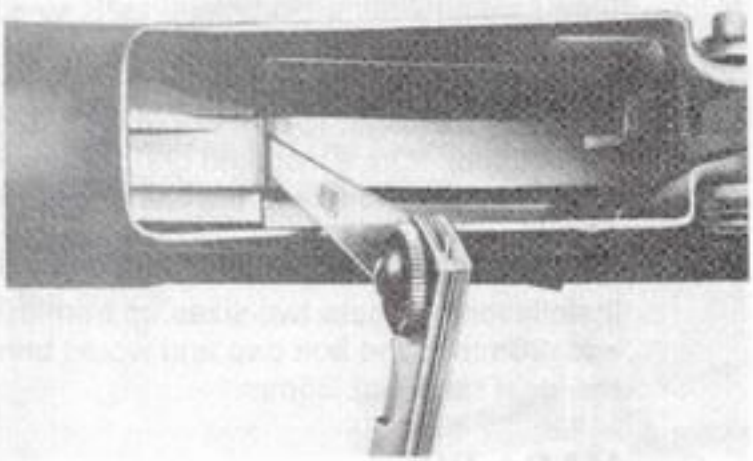


MEASURE BOLT GAP

Bolt gap is measured to the check the wear of the rollers, locking piece shoulders and barrel extension roller recesses. Excessive wear will change the timing of the rifle and result in malfunctions. As wear occurs in these areas the locking piece is allowed to move further into the bolt head. As the locking piece moves, so does the bolt carrier. The further the locking piece moves in, the smaller the gap gets.

Assemble the weapon and do a function check

After the function check the bolt is to be locked to the rear. To check the gap, point the weapon toward the floor, release the bolt and let it snap forward. Put the selector on semi and press the trigger allowing the hammer to fall. Turn the weapon upside down and insert a feeler gauge through the magazine well into the gap between the bolt head and bolt carrier. Record the measurement once a firm drag is obtained on a gauge.



Adjusting Bolt Gap

To adjust the bolt gap different size rollers may be installed. This in effect will either push the locking piece out (installing larger rollers), creating a larger bolt gap or allow the locking piece to move in further (installing smaller rollers), decreasing the bolt gap.

Roller sizes

•Standard Diameter:	8.00mm	No markings
•One size larger	8.02mm	-
•Two sizes larger	8.04mm	=
•One size smaller:	7.98mm	**-2**
•Two sizes smaller:	7.96mm	**-4**

Calculating Roller Sizes

Each size roller effects bolt gap by **.10mm**

If the bolt gap reading were .15mm with the standard rollers in the rifle the next size larger rollers would be 8.02mm and would add .10mm to the bolt gap. Once installed our bolt gap should be. 25mm. However, this would put the rifle at the low end of the ideal operating range (.25mm - .45mm).

Installation of rollers two sizes up from the standard, 8.04mm, would add .20mm to the bolt gap and would bring the bolt gap to the center of the ideal range @. 35mm.