BROWNING AND WINCHESTER
SERVICE CENTER MANUAL

BAR

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I SCOPE

This manual is written to assist trained gunsmiths in the repair and servicing of Browning BAR MARK II SAFARI and LIGHT rifles. This manual should never be used by an untrained person to repair any BAR MARK II SAFARI or LIGHT rifle

Read the entire manual carefully and pay attention to the portions dealing with **WARNINGS** AND **CAUTIONS** before attempting any service repair work. Failure to comply may result in serious **INJURIES OR DEATH** to you or to others.

This service manual is written to cover all BAR MARK II SAFARI and LIGHT models. It is recommended that this service manual not be used to service older BAR rifle models. There is another service manual available from the Service Department in Arnold, Missouri that should be used to service and repair the old BAR rifle models. The address is:

Browning Service Center
One Browning Place
Arnold, MO 63010
Phone: (636) 287-6800 Fax: (636) 287-9751

For reference purposes, the major difference between the BAR MARK II SAFARI and LIGHT models and the older BAR models are:

1 The MARK II SAFARI and LIGHT models have a Bolt Release. The older BAR models did not have a Bolt Release.

2 In the MARK II SAFARI and LIGHT models the Trigger Guard can be removed by removing two pins. In the older BAR models, the Stock had to be removed before the Trigger Guard could be removed.

3 The MARK II SAFARI and LIGHT models have a Gas Regulation Screw for controlling the action forces. The older BAR models used Gas Regulation (non-adjustable orifice) for adjusting the action forces.

4 The Inertia Piece used for the MARK II SAFARI and LIGHT models is in more alignment with the longitudinal axis of the rifle than the original BAR model Inertia Piece.

5 The MARK II SAFARI model has an alloy Receiver instead of steel Receiver used for older BAR models.

6 The Boss and CR Accurizing systems are only available for MARK II BAR models.
This service manual covers all MARK II SAFARI and LIGHT BAR Centerfire models.
WARNING: The parts list in Section IV of this manual lists common parts for older BAR and newer MARK II SAFARI and LIGHT models. Never try to interchange these BAR parts unless the parts are common as noted in the parts list. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

II IMPORTANT INFORMATION AND WARNINGS

PLEASE READ AND UNDERSTAND THE INFORMATION AND **WARNINGS**, **CAUTIONS**, AND PROPER HANDLING PROCEDURES OUTLINED IN THIS BOOKLET BEFORE WORKING ON ANY MARK II SAFARI AND LIGHT BAR C.F. RIFLE MODELS

FAILURE TO COMPLY WITH **WARNINGS** IN THIS MANUAL MAY RESULT IN INJURIES OR DEATH TO YOU OR TO OTHERS.

1 **WARNING:** Failure to follow recommended servicing/repair procedures may result in an incorrect procedure, which could cause malfunctions and/or damage to the rifle.

2 If you run into problems that are not addressed in this service manual and/or need Browning parts, please contact the Browning service facility at:
Browning Service and Distribution Center
One Browning Place
Arnold, MO 63010
Phone: (636) 287-6800 Fax: (636) 287-9751

3 **WARNING:** Be certain your rifle is unloaded and inspect the chamber before proceeding with any service work. Keep the muzzle pointed in a safe direction. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

4 **WARNING:** Do not alter the firing mechanism parts in this rifle or any other firearm because it can make the firearm dangerous. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

II IMPORTANT INFORMATION AND WARNINGS

5 **WARNING:** Read all of the instruction, cautions and notes on any step involving assembly or disassembly before proceeding with that step.

6 Section V provides a list of special tools which may be required and special instructions.

7 **WARNING:** Appropriate safety glasses should be worn by service personnel and bystanders when disassembling, cleaning or reassembling your rifle to prevent the possibility of springs, spring-tensioned parts, solvents or other agents from contacting your eyes. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY.

8 **WARNING:** As noted in the attached parts lists in Section IV, some of the Browning supplied spare parts must be fitted by the Browning Service Department in Arnold, Missouri or by Browning certified gunsmiths. No other persons should attempt to fit these specific parts. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

9 **WARNING:** Browning parts are made exclusively for Browning guns and are not recommended for use in other guns, even though models may be similar. Inadequately fitted parts may be dangerous. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

10 **WARNING:** If the Barrel or any of the Bolt or Slide Assembly components are replaced during the servicing of any BAR, make sure the Headspace is within SAAMI Approved specifications and then, remotely proof test the rifle before function test firing. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

11 **WARNING:** If for any reason it becomes necessary to load and discharge this firearm, it is recommended that reference be made to the owners manual for proper loading, handling and safety procedures. These owners manuals are supplied with each new BAR rifle and extra copies may be obtained by contacting Browning, One Browning Place, Morgan, Utah 84050, Phone (801) 876-2711. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

III DESCRIPTION AND FUNCTIONAL OPERATION OF MARK II SAFARI AND LIGHT BAR MODELS

The BAR is a centerfire, gas operated semi-automatic rifle. Magazine capacity is four rounds (three in Magnum calibers).

The Safety is crossbolt-type blocking Trigger movement when in the "ON SAFE" position. When the Trigger is pulled, with the Safety in the "OFF SAFE" position, it rotates about its Pin causing the Disconnector to move forward against the Sear. This causes the Sear to disengage from the Hammer which is driven forward by two compressed Mainsprings to strike the Firing Pin. The Firing Pin moves forward compressing the Firing Pin Spring, strikes and ignites the primer of the chambered cartridge.

As the bullet travels down the Barrel and passes the Gas Port, gas pressure is bled into the Gas Cylinder driving the Gas Piston rearward. Excess pressure is bled off through the Gas Regulator. The Gas Piston travels rearward approximately 5/8" and imparts its momentum to the Inertia Piece which is connected to the Bolt Sleeve, through the Action Rods.

As the Bolt Sleeve is driven rearward by the Inertia Piece, the Action Spring is compressed and the Cam Pin rotates the Bolt, unlocking it from the Locking Lugs in the Barrel. During this unlocking process, the Timing Latch, attached to the Bolt Sleeve, is engaged in a short slot in the left side of the Receiver.

After the Bolt has been fully unlocked and starts moving rearward, the Timing Latch is cammed into the sleeve. This keeps the Bolt in proper orientation with the Locking Lugs of the Barrel until the Bolt and Bolt Sleeve are returned forward.

In moving rearward, the empty case is extracted from the chamber. Ejection occurs by action of the compressed Ejector Spring and Ejector when the forward end of the empty case clears the Receiver Ejection Port.

Additionally, in moving rearward, the tail of the Bolt Sleeve overrides the Hammer, depressing it past the cocked position disengaging the disconnector from the Sear and compresses the Mainspring. Rearward motion of the Action is stopped by the Inertia Piece striking the Buffer and Buffer Plates at the forward end of the Receiver. The compressed Action Spring then starts the Action moving forward.

In moving forward, the Bolt picks up a fresh round from the Magazine and starts it toward the chamber. When the Bolt is closed, the Hammer is allowed to raise and engage the Sear. The Disconnector cannot re-engage the Sear unless the Trigger has been fully released. Thus, the rifle cannot fire fully automatic if the Trigger is held to the rear. Additionally, if for some reason the Hammer follows the Bolt forward, the tail of the Bolt Slide keeps the Hammer from contacting the Firing Pin until the Bolt is locked. Even then the Firing Pin has insufficient inertia for primer ignition.

When the Bolt has traveled forward and is in proper orientation, the Timing Latch is cammed into its slot in the Receiver and the Cam Pin rotates the Bolt into the Locking Lugs of the Barrel.

As the Bolt is rotating into the full locked position, the Extractor is forced over the rim of the newly chambered cartridge.

Full forward movement of the Inertia Piece returns the Gas Piston to the unfired or forward position.

After the last round has been fired, the protruding tab on the Magazine Follower lifts the Bolt Release locking the action open.

IV PARTS LIST

IMPORTANT: When ordering, list part number, part name, gun gauge/caliber and serial number. Please specify grade. Prices F.O.B. point of shipment —subject to change without notice. Minimum billing for parts orders is $5.00. Prices effective August 1, 2001.

PART NO.	DESCRIPTION	SUGG. RETAIL
B3176002	Action Rod-Right or Left	
B317600602	Action Spring BAR All	
B3176010	Action Spring Guide	
B3176016	Barrel 243 Win. Type II	
B3176021	Barrel 270 Win. Type II	
B3176024	Barrel 280 Rem Type II	
B3176031	Barrel 30/06 sprg. Type II	
B3176035	Barrel 300 Win. Mag Type II	
B3176026	Barrel 308 Win. Type II	
B3176036	Barrel 338 Win. Mag. Type II	
B3176033	Barrel 7MM Rem. Mag. Type II	
B317675901	Bolt Cover	
B317604814	Bolt Mag Cal BAR All & BPR	
B3176060	Bolt Sleeve 243 Win. 308 Win. 270 Win. 30/06 Sprg & 280 R	
B3176062	Bolt Sleeve 7mm Rem. Mag. 300 Win. Mag. 338 Win Mag.	
B317604514	Bolt Std Cal BAR All & BPR	
B317606501	Buffer BAR All	
B3176066	Buffer Plate	
BST1408001	Butt Plate	
BST1431801	Butt Plate Screws	
B3176077	Butt Stock Magnum Grade I Type II	
B317607D	Butt Stock Magnum Grade III Type I	
B317617D	Butt Stock Magnum Grade III Type II	
B317607E	Butt Stock Magnum Grade IV Type I	
B317617E	Butt Stock Magnum Grade IV Type II	
B317607F	Butt Stock Magnum Grade V Type I	
B3176071	Butt Stock Standard Grade I Type II	
B317607A	Butt Stock Standard Grade III Type I	
B317617A	Butt Stock Standard Grade III Type II	
B317607B	Butt Stock Standard Grade IV Type I	
B317617B	Butt Stock Standard Grade IV Type II	
B317607601	Cam Pin BAR All & BPR	
B3176080	Disconnector	
B3176082	Disconnector Pin	
B3176084	Disconnector Spring	
B3176086	Disconnector Spring Plunger	
BST7609601	Ejector Ret Pin BAR All & BPR	
BST7609002	Ejector BAR All & BPR	
B317609901	Ejector Spring BAR All & BPR	
B317610102	Extractor BAR All & BPR	
B317610501	Extractor Spring BAR All & BPR	
B317612402	F.A. Escutcheon BAR All	
B317611402	Firing Pin Ret Pin BAR & BPR	
B317611701	Firing Pin Spr BAR All & BPR	
B317611001	Firing Pin BAR All & BPR	
B3176122	F/Arm Mag GR 1	
B317612D	F/Arm Mag GR 3	
B317612E	Forearm Magnum Grade IV Type I & II	
B317612F	Forearm Magnum Grade V Type I & II	
B3176120	Forearm Standard Grade I Type I & II	
B317612A	Forearm Standard Grade III Type I & II	
B317612B	Forearm Standard Grade IV Type I & II	
B317612C	Forearm Standard Grade V Type I & II	
B3176131	Gas Cylinder Type 2	
B3176138	Gas Piston Stop Pin	
B3176133	Gas Piston Type 2	
B3176135	Gas Regulator 243 Win. Type II	
B3176136	Gas Regulator 270 Win. Type II	
B3176132	Gas Regulator 280 Rem. Type II	
B3176139	Gas Regulator 30/06 Sprg. Type II	
B3176146	Gas Regulator 300 Win. Mag Type II	
B3176137	Gas Regulator 308 Win. Type II	
B3176149	Gas Regulator 338 Win. Mag	
B3176144	Gas Regulator 7 mm Rem. Mag Type II	
B3176145	Gas Regulator Gasket	
B3176150	Hammer	
B3176152	Hammer Pin	
B3176155	Inertia Piece	
B317618401	Magazine Floorplate Put Pin All & BPR	
B3176186	Magazine Floorplate Spr	
B3176180	Magazine Floorplate Std	
B317688801	Magazine Latch Spring BAR All & BPR	
B317689201	Magazine Latch Spg Plu BAR All & BPR	
B3176210	Magazine Ret Spr Pn	
B3176182	Magazine Floor Plate-Magnum Calibers	
B3176202	Magazine Latch	
B317689001	Magazine Latch Stop Pin	
B3176208	Magazine Retaining Spring	
B3176218	Mainspring Gd Rt or Lft	
B3176224	Mainspring Support	
B3176222	Mainspring Guide Support	
B317683601	Mainspring Right or Left	
B317623201	Operating Handle Lock BAR All	
B317623601	Operating Handle Lock Pin BAR All	
B317623801	Operating Handle Lock Spg BAR All	
B317622802	Operating Handle BAR All	
* B3176250	Receiver Gr 1 Mag	
* B3176240	Receiver Gr 1 Std	
* B3176246	Receiver Magnum Calibers Type II	
* B3176239	Receiver Standard Calibers Type II	
B0008453	Recoil Pad	
B317687001	Saf Spg Ret Pin II LWT & BPR	
B3176262	Safety Cross Bolt (79 on) R&L	
B3176254	Safety Cross Bolt Pre-79	
B3176258	Safety Plunger	
B317686801	Safety Spring	

*Indicates part must be fitted by Browning Service Department or qualified gunsmith.
+Part may be purchased only by holders of current, valid Federal Firearms License.
NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

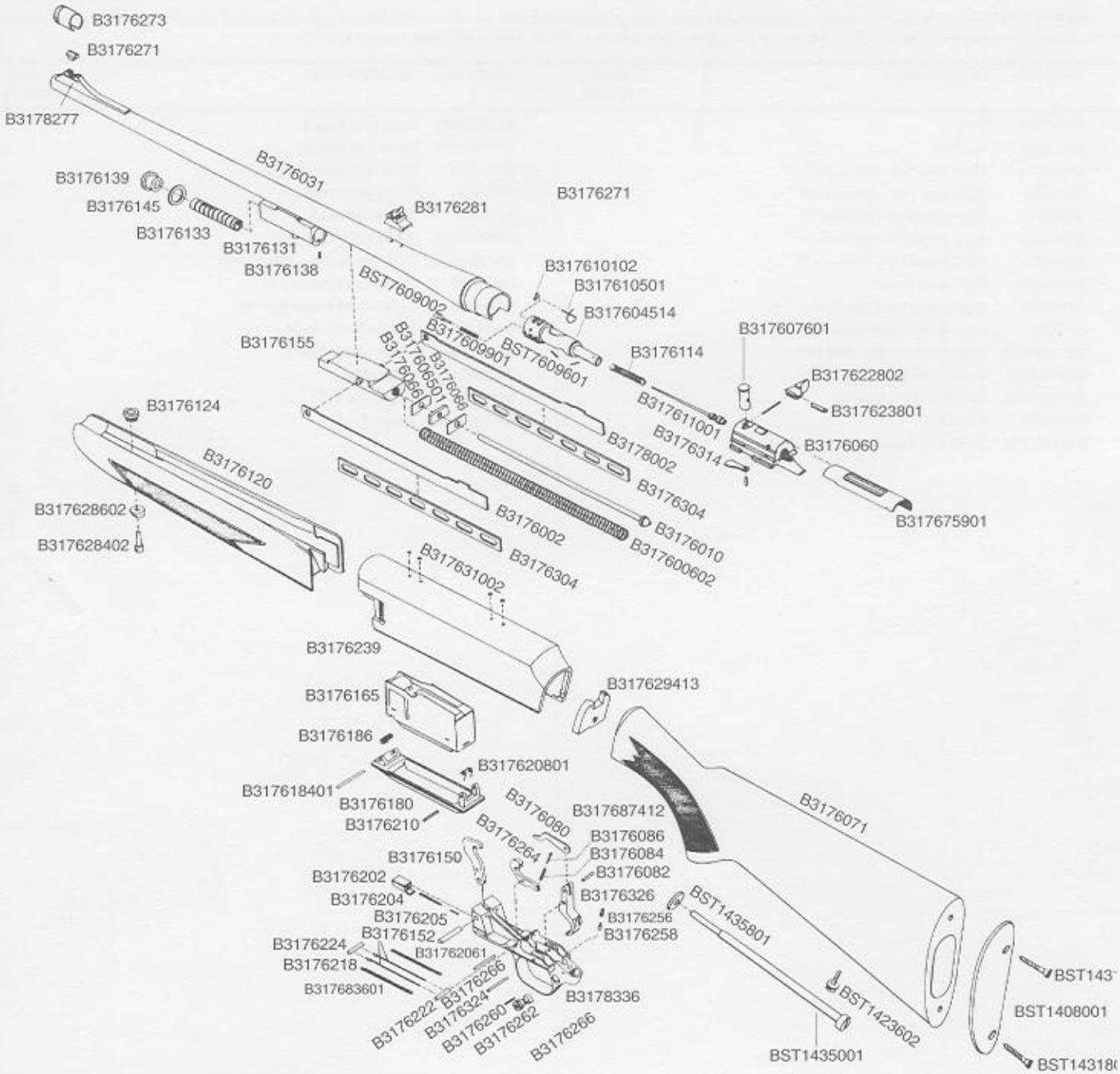
IV PARTS LIST

IMPORTANT: When ordering, list part number, part name, gun gauge/caliber and serial number. Please specify grade. Prices F.O.B. point of shipment —subject to change without notice. Minimum billing for parts orders is $5.00. Prices effective August 1, 2001.

PART NO.	DESCRIPTION	SUGG. RETAIL
B3176264	Sear	
B3176266	Sear Pin	
B3176282	Sight Assy Rear Williams Mag	
B3176281	Sight Assy Rear Williams Std	
B3176271	Sight Bead Front Williams TY	
B3176273	Sight Hood Front Williams TY	
B3176277	Sight Ramp Front Williams TY	
B3176270	Sight Bead Front	
B3176276	Sight Ramp Front Magnum	
B3176274	Sight Ramp Front Standard	
BST1423602	Sling Eye Rear BAR All & BPR	
B317628602	Sling Eyelet Wash Front BAR	
B317628402	Sling Eyelet Frt BAR All	
B3176292	Stock Bolt	
B317629413	Stock Bolt Plate I & II	
BST1435001	Stock Bolt Type II	
BST1435801	Stock Bolt Washer	
B1114358	Stock Bolt Washer Type II	
B3176298	Stock Screw Plate	
B3176304	Supp Rl Rt or Lft	
BST7631002	Telescope Mt Fill Scrw	
B317631612	Time Ltch Ret Pin BAR & BPR	
B3176314	Timing Latch BAR I & II	
B3176323	Trigger Gold Plated Pre - 79	
B3176330	Trigger Guard Grade 1	
B3176336	Trigger Guard Type II	
B3176324	Trigger Pin	
B3176322	Trigger Pre - 79	
B3176325	Trigger Type II	

*Indicates part must be fitted by Browning Service Department or qualified gunsmith.
+Part may be purchased only by holders of current, valid Federal Firearms License.
NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

IV SCHEMATIC



IV PARTS LIST

IMPORTANT: When ordering, list part number, part name, gun gauge/caliber and serial number. Please specify grade. Prices F.O.B. point of shipment —subject to change without notice. Minimum billing for parts orders is $5.00. Prices effective August 1, 2001.

PART NO.	DESCRIPTION	SUGG. RETAIL
B317600602	Action Spring BAR All	
B317676002	Action Spring Guide BAR II & Lwt.	
B317656203	Barrel 22" BAR LWT 270W w/o sights	
B317656103	Barrel 22" BAR LWT 30-06 w/o sights	
B317656303	Barrel 22" BAR LWT 308W w/o sights	
B317656203	Barrel 270 Win (HG)	
B317656203	Barrel 270 Win (HG)	
B317617113	Barrel 270 Win Stalker	
B317656103	Barrel 30-06 (HG)	
B317617613	Barrel 30-06 Stalker	
B317657213	Barrel 300 Win (HG)	
B317695113	Barrel 300 Win Stalker	
B317657613	Barrel 7MM Rem (HG)	
B317695213	Barrel 7MM Rem Stalker	
B317657213	Barrel w/o sights 300 Mag BAR II	
B317652113	Barrel w/o sights 338 Mag II	
B317657613	Barrel w/o sights 7MM Mag BAR II	
B317653213	Barrel w/o sights 243 W BAR II	
B317655613	Barrel w/o sights 25/06 BAR II	
B317654013	Barrel w/o sights 270 W BAR II	
B317653613	Barrel w/o sights 30/06 BAR II	
B317654813	Barrel w/o sights 308 W BAR II	
B317678702	Bolt Release Pin, BAR II	
B317678811	Bolt Release POS Spring II	
B317675901	Bolt Cover, BAR II & LWT	
B317604814	Bolt, Mag Cal BAR all & BPR	
B317678402	Bolt Release BAR II	
B317606404	Bolt Sleeve, Mag BAR II / LWT	
B317606304	Bolt Sleeve, Standard BAR II / LIGHT	
B317604514	Bolt, Standard Caliber BAR all & BPR	
B317606501	Buffer, BAR all	
B317678102	Buffer Plate, Frt BAR II & LWT	
B317677902	Buffer Plate Ret BAR II & LWT	
BST1408001	Butt Plate A-500 & BAR I & II	
BST1431801	Butt Plate Screws	
B317690402	Butt Stock BAR II (00)	
B327921203	Butt Stock w/Pad BAR LWT & BPR	
B317690512	Butt Stock w/ Pad BAR II	
B317690802	Butt Stock Stalker Standard & Magnum	
B317689903	Butt Stock Standard & Magnum (HG)	
B317607601	Cam Pin BAR all & BPR	
B317687412	Discon Pin, BAR II-LWT & BPR	
B317687203	Disconnect BAR II-LWT & BPR	
B317682601	Disconnector Spring BAR II	
BST7609601	Eject Ret Pin BAR all & BPR	
BST7609002	Ejector BAR all & BPR	
B317609901	Ejector Spring, BAR all & BPR	
B317610102	Extractor, BAR all & BPR	
B317610501	Extractor Spring, BAR all & BPR	
B317612402	F.A. Escutcheon BAR all	
B317697002	Fa Mag BAR II Classic (00)	
B317696702	Fa Standard BAR II Classic (00)	
B317611402	Firing Pin Ret Pin BAR & BPR	
B317611701	Firing Pin Spring BAR all & BPR	
B317611001	Firing Pin BAR all & BPR	
B317696603	Forearm Stalker Standard	
B317698302	Forearm Magnum (HG)	
B317697102	Forearm Magnum BAR II	
B317697902	Forearm Magnum BAR LWT	
B317696503	Forearm Stalker Magnum	
B317697202	Forearm Standard (HG)	
B317696802	Forearm Standard BAR II	
B317697602	Forearm Standard BAR LWT	
B317666502	Gas Cyl Cap BAR II & LWT	
B317667902	Gas Piston BAR II & LWT	
B317667001	Gas Regular Gasket BAR II & LWT	
B317667202	Gas Reg Scr Lok Plg II LWT	
B317667302	Gas Reg Scr Lok Scr II LWT	
B317667102	Gas Reg Screw, BAR II & LWT	
B317683013	Hammer BAR II & LWT	
B317683402	Hammer Pin BAR II	
B317677202	Inertia Piece Spring RD II & LWT	
B317677101	Inertia Spring Piece, BAR II & LWT	
B317677003	Inertia Piece, BAR II & LWT	
B317674513	Magazine Floorplate, BAR II LWT & BPR	
B317618401	Magazine Floorplate Put Pin, all & BPR	
B317671301	Magazine Floorplate Spring, II LWT & BPR	
B317689001	Magazine Latch Pin, II LWT & BPR	
B317688801	Magazine Lath Pin, BAR ALL BPR	
B317689201	Magazine Latch Spg Plu, BAR all & BPR	
B317688701	Mag Floor Plate Latch (00)	
B317620801	Magazine Retaining Spring	
B317683801	Mainspring Guide II LWT & BPR	
B317684002	Mainspring Guide Supp II & LWT	
B317684202	Mainspring Supp II LWT & BPR	
B317683601	Mainspring, Right or Left	
B317623201	Operating Handle Lock, BAR all	
B317623601	Operating Handle Lock Pin, BAR all	
B317623801	Operating Handle Lock Spg, BAR all	
B317622802	Operating Handle, BAR all	
* B317670305	Receiver Mag (HG)	
* B317668105	Receiver, Magnum BAR II	
* B317669404	Receiver, Magnum Caliber LWT	
* B317669404	Receiver, Stalker Magnum	
* B317669304	Receiver, Standard Stalker	
* B317669105	Receiver, Standard BAR II	
* B317670205	Receiver, Standard Caliber (HG)	
* B317669304	Receiver, Standard Caliber LTW	
B0008453	Recoil Pad, BAR I & II	
BST7647001	Recoil Pad, BAR LWT & BPR & BAR	

*Indicates part must be fitted by Browning Service Department or qualified gunsmith.
+Part may be purchased only by holders of current, valid Federal Firearms License.
NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

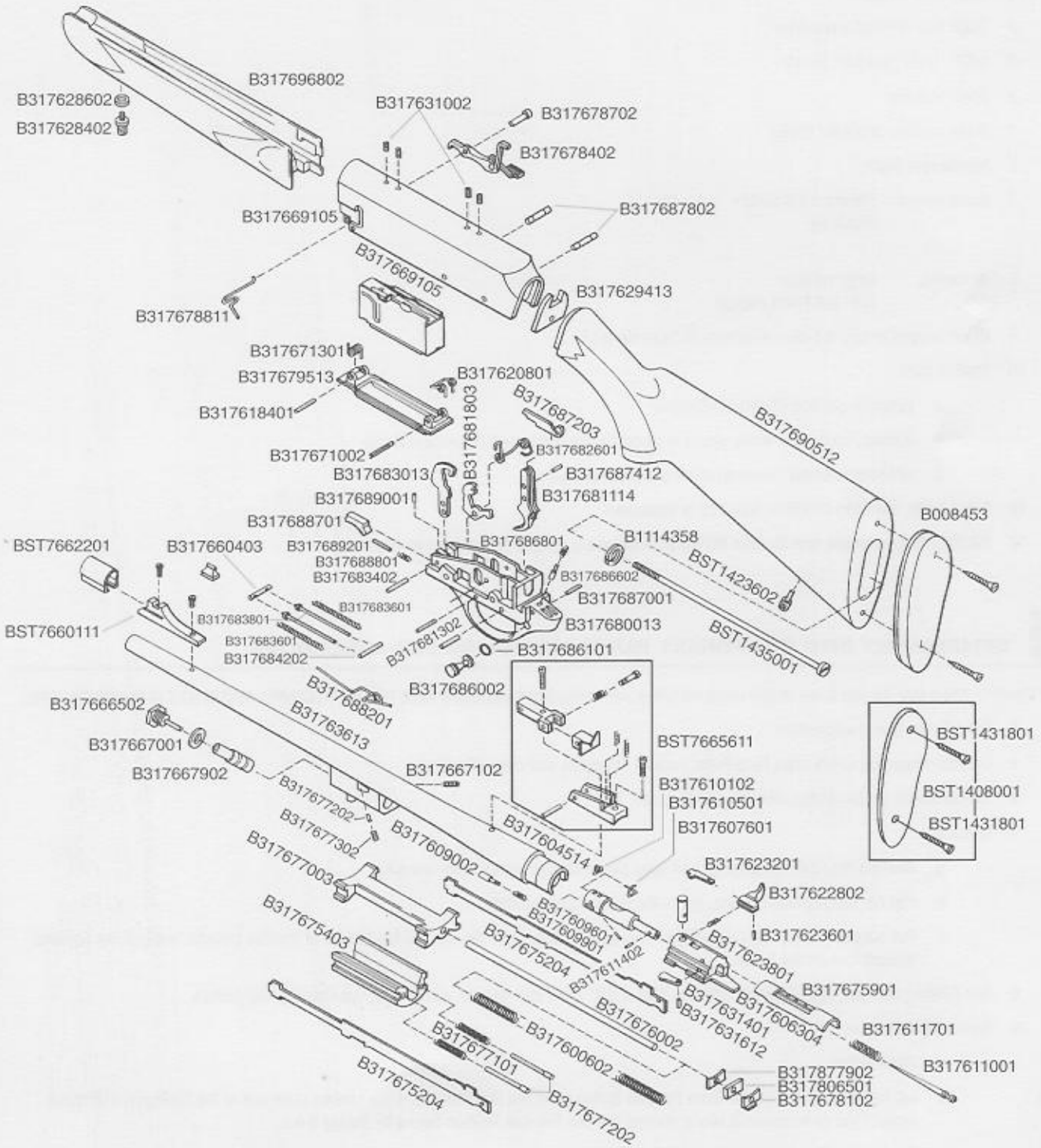
IV BAR II SAFARI & BAR LIGHT RIFLE

IMPORTANT: When ordering, list part number, part name, gun gauge/caliber and serial number. Please specify grade. Prices F.O.B. point of shipment —subject to change without notice. Minimum billing for parts orders is $5.00. Prices effective August 1, 2001.

PART NO.	DESCRIPTION	SUGG. RETAIL
B317687001	Safety Spg Ret Pin II LWT & BPR	
B317686101	Safety O-Ring II LWT & BPR	
B317686801	Safety Spring II LWT & BPR	
B317686002	Safety BAR II LWT & BPR	
B317681803	Sear BAR II LWT & BPR	
B317681302	Sear/Trig Pin II-LWT-BPR	
BST7665611	Sgt Asy R Mag II-LWT-BPR	
BST7665711	Sgt Asy R Std II-LWT-BPR	
BST7664501	Sgt Mt Scrw F & R Med (94)	
B317664302	Sgt Mt Scrw Rear Sht (94)	
BST7664401	Sgt Rmp Scrw Frt Lng (94)	
B317660303	Sight Fnt 327 II-LWT-BPR	
B317660403	Sight Fnt 358 II-LWT-BPR	
B317660503	Sight Fnt 390 II-LWT-BPR	
BST7662201	Sight Hood II-LWT-BPR	
BST7660111	Sight Rmp Fnt II-LWT-BPR	
B317675204	Slide BAR R or L BAR II	
B317675403	Slide Head BAR II	
BST1423602	Sling Eye Rear BAR All & BPR	
B317628602	Sling Eye Wash Front BAR	
B317628402	Sling Eyelet Frt BAR All	
BST1435001	Stock Bolt	
BST1435401	Stock Bolt Lock Washer A-500 BAR II	
B317629413	Stock Bolt Plate I & II	
BST1435801	Stock Bolt Washer	
BST7631002	Telescop Mt Fill Scrw	
B317631612	Timing Latch Ret Pin BAR & BPR	
B317631401	Timing Latch BAR I & II	
B3279060	Timing Latch BAR-LWT & BPR	
B317687802	Trigger Guard Ret Pin II LWT & BPR	
B317688201	Trigger Guard Ret Pin Spring II	
B317681114	Trigger BAR II LWT & BPR	
B317680212	Trigger Guard (Alu Rec 00)	
B317680013	Trigger Guard (Steel Rec 00)	
B327915601	Trigger Guard Buffer BAR-LWT & BPR	
B317680312	Trigger Guard Std/Mag (HG)	

*Indicates part must be fitted by Browning Service Department or qualified gunsmith.
+Part may be purchased only by holders of current, valid Federal Firearms License.
NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

IV SCHEMATIC



V RECOMMENDED TOOLS FOR SERVICING THE BAR MARK II SAFARI AND LIGHT MODELS

1 Vise – smooth jaw

2 Stock Bolt removal screwdriver

3 1/32", 1/16" and 1/8" punch

4 Small hammer

5 Small rawhide or plastic mallet

6 Needlenose pliers

7 Screwdrivers: Standard flat blade
Cross-tip

8 Wrenches: 9mm wrench
5/8" open-end wrench

9 Wood scraper or rasp for removing material from forearm

10 Special tools

- a Extractor position GO/NO-GO Gauges
- b 0.4mm and 0.1mm feeler gauge to measure gap between Forearm and Barrel
- c Slide hammer (for removing stock gas piston) (Figure 2)

11 Mild Loctite, 3M Bond #1305 or type 222 or equivalent

12 BACO/SAAMI, approved specification GO/NO GO Headspace gauges (for calibers as required)

VI DISASSEMBLY INTO COMPONENT PARTS AND MAJOR SUB-ASSEMBLIES

WARNING: Make sure the rifle is completely unloaded before performing any disassembly work. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

1 Open Action to locked position.

2 Depress Magazine Latch, open Floor Plate, remove Magazine and close Floor Plate.

3 Secure Barrel of rifle in vise with rifle upside down.

4 Forearm

- a Remove the Front Sling Eyelet and Sling Eyelet Washer with a 9mm wrench.
- b Pull the Bolt Assembly to the rear to the locked open position.
- c Pull outward on the front end of the Forearm slightly to clear the stud on the bottom of the Gas Cylinder and pull the Forearm forward and off the Barrel.

5 Gas Cylinder Cap and Gas Regulator Gasket - With a 5/8" open end wrench, remove the Gas Cylinder and gasket.

6 Remove Bolt Release

- a Close Action.
- b Lift hook end of the Bolt Release Position Spring off of the Bolt Release. While holding hook end of the Spring up with small screwdriver or needlenose pliers, remove the Bolt Release Position Spring by pulling it out.
- c Remove the Bolt Release Pin and Bolt Release.

VI DISASSEMBLY INTO COMPONENT PARTS AND MAJOR SUB-ASSEMBLIES (CONT.)

7 Slide BAR (right hand and left hand) – Remove both Slide Bars by lifting off the Inertia Piece and pulling forward.

8 Gas Piston (Figure 1) – Grasp the Action Spring around the Action Spring Guide and push forward to eject the Gas Piston from the Gas Cylinder.

NOTE: If the Gas Piston hasn't been cleaned or if it has set for a prolonged period, it could be difficult to remove. If frozen, it can be removed with a special slide hammer.

This device is used to hammer out a frozen Gas Piston. In use, it is slipped around the Action Spring Guide and then the Inertia Piece is used to Hammer the piston out of the Gas Cylinder by retracting the Inertia Piece and letting it fly forward. This may have to be repeated several times.

Dimensions and diagram of use are given in Figure 2.

NOTE: A piece of a scrap .30 caliber Barrel may be used as stock for the slide hammer and continue to push forward with Action Spring Guide. Once the Action Spring Guide clears the Receiver, the Piston can be removed by prying or tapping on the end of the Action Spring Guide.

9 Inertia Piece/Slide Head Action Spring and Action Slide Head Spring Guide Assembly (reference Figure 1 above). As soon as the Gas Piston is removed grasp the Action Spring around the Action Spring Guide and push forward to allow for their removal along with the Inertia Piece/Slide Head.

WARNING: In compressing and removing the Action Spring and Guide, do not let them escape your grasp. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY.

10 Trigger Guard Assembly Removal

- a Put safety in the "SAFE" position.
- b Open Magazine Floor Plate
- c Push in the two Trigger Guard Pins from either the right or left side of the Receiver. Use a drive punch or similar object, using caution not to scratch the gun's Receiver. Push the Trigger Guard Pins completely through the Receiver.
- d Grasp the Trigger Guard and pull the Trigger Assembly out of the Receiver.

FIGURE 1

FIGURE 2

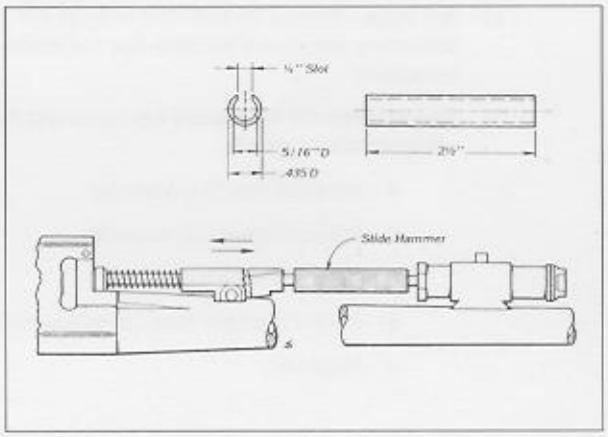


FIGURE 3

VI DISASSEMBLY INTO COMPONENT PARTS AND MAJOR SUB-ASSEMBLIES

11 Operating Handle

- a Pull the Operating Handle fully to the rear and then bring the Bolt forward against the index finger.
- b With the index finger still in the Receiver, apply slight pressure to the Operating Handle with the thumb (Figure 3).
- c With a small blade screwdriver lift up on the Operating Handle Lock (Figure 4), disengaging it from the Bolt Slide.
- d Maintain the blade of the screwdriver under the Operating Handle Lock and slide the Operating Handle forward and out of the Receiver.

12 Bolt/Bolt Sleeve Assembly – Once the Operating Handle is removed, place Action in vise, bottom facing up. Remove the Bolt/Bolt Sleeve Assembly by pulling the Bolt in forward position and then by rotating 90 degrees counterclockwise (as view) and lift out of the bottom of the Receiver.

13 Butt Stock – Remove the Butt Plate or Recoil Pad with a blade screwdriver and remove the Stock Bolt and Washer with a special screwdriver.

14 This completes the disassembly into component parts and major sub-assemblies (Figure 5).

- a Barrel/Receiver Sub-Assembly
- b Bolt/Bolt Sleeve Sub-Assembly
- c Trigger Guard Sub-Assembly
- d Inertia Piece/Slide Head Spring Sub-Assembly
- e Magazine

FIGURE 4

FIGURE 5

VII RECOMMENDED POINTS OF LUBRICATION DURING REASSEMBLY

The use of Browning Gun Oil (use oil sparingly) is recommended for lubricating the following areas during reassembly:

1 Extractor Spring
2 Bolt assembly
3 Bolt Sleeve (inside on rails)
4 Action Guide Spring
5 Exterior metal surfaces

VIII DISASSEMBLY OF THE SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTIONS AND REASSEMBLY OF SUB-ASSEMBLIES

1 Disassembly of Barrel/Receiver Sub-Assembly

Additional assembly of the Barrel/Receiver Sub-assembly is normally not required or recommended. However, if required:

a Open Sights, front and rear can be removed with screwdriver. If removed, apply mild loctite to threads when reinstalled.

b BOSS if installed, can be removed by just unscrewing.

c Magazine Floor Plate – Remove the magazine Floor Plate Pin, Spring and Magazine Floor Plate.

d Barrel- Any Barrel replacement should be performed by Browning Service Center in Arnold, Missouri.
WARNING: There is a small Gas Regulating Screw on the side of the Gas Piston Bracket on the bottom of the Barrel. Unless formally trained by Browning, no attempt should be made to remove or adjust this Screw. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

2 Inspection of the Barrel/Receiver Components

a Visually examine the Locking Lugs in the end of the Barrel. Check for deformation, burrs, etc. If any abnormalities are found, the entire gun should be returned to the Browning Service Center in Arnold, Missouri.

b Make sure the open sights and BOSS, if installed, are tight. If loose, tighten.

c Gas Bracket on bottom of Barrel – Make sure it is tight, no cracks or burrs. Thoroughly clean with solvent.

d Check muzzle crown for deformation or burrs. Recrown Barrel as required.

3 Disassembly of Bolt/Bolt Sleeve Sub-Assembly (Figure 6)

a Bolt Cover – Slide the Bolt Cover to the rear and while holding the assembly in one hand, lift up on the right rear corner and remove the Bolt Cover.

b Timing Latch – Using a 3/32" punch, drive out the Timing Latch Pin from the bottom of the Bolt Sleeve to the top and remove the Timing Latch.

c Extractor and Extractor Spring – With the aid of a small blade screwdriver lift the free end of the Extractor Spring from the Bolt (Figure 7). Pull the Spring to the rear and remove the Extractor from the Bolt face.

d Firing Pin and Firing Pin Spring – Grip the Bolt Assembly in a smooth jawed vise by the rails of the Bolt Sleeve using a 1/16" punch, drive out the Firing Pin Retaining Pin from right to left and remove the Firing Pin and Firing Pin Spring.
WARNING: Do not let the Firing Pin and Spring fly out of the assembly while withdrawing the punch. THIS MAY RESULT IN INJURY.

FIGURE 6

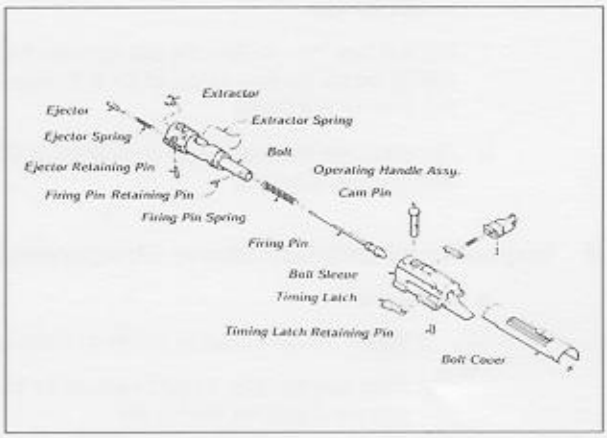


FIGURE 7

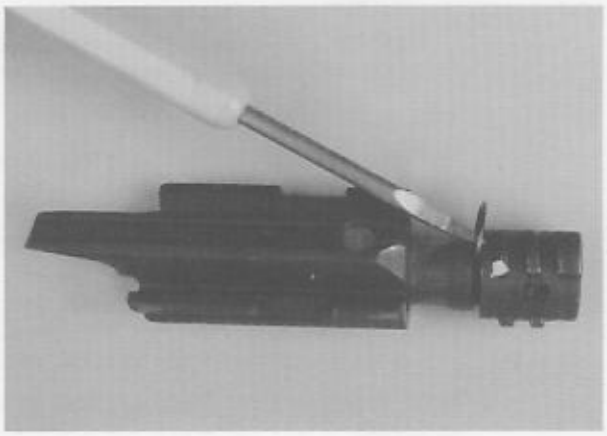
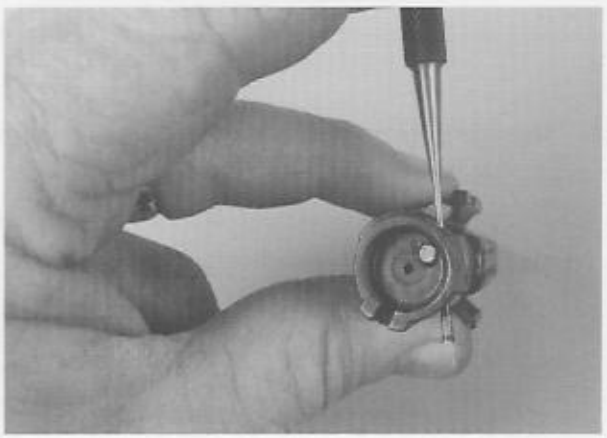


FIGURE 8



VIII DISASSEMBLY OF THE SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTIONS AND REASSEMBLY OF SUB-ASSEMBLIES (CONT.)

e Ejector and Ejector Spring – Grip the Bolt Assembly (Figure 8) in smooth jaw vise.

f Bolt and Cam Pin – Remove the Bolt Assembly from the vise and remove the am Pin from the top of the Bolt Sleeve. Withdraw the Bolt from the Bolt Sleeve.

g This completes the disassembly of the Bolt/Bolt Sleeve Sub-Assembly (Figure 9).

FIGURE 9

4 Inspection of Bolt/Bolt Sleeve Component Parts

a Bolt Sleeve

1 Inspect the Bolt Sleeve for cracks and chipped out areas.

2 Make sure the lower forward edges of the Bolt Sleeve Guide rails are chamfered, front to rear.

3 Check the edges of the Bolt Sleeve Guide Rails and make sure the corners are not sharp i.e., should be slightly radiused.

4 Insert the Bolt into the Bolt Sleeve and see that it works freely. If burred, polish the inside of the Sleeve.

b Bolt

1 Inspect the Bolt's Timing Latch camming shoulder for burrs. If required, smooth and polish.

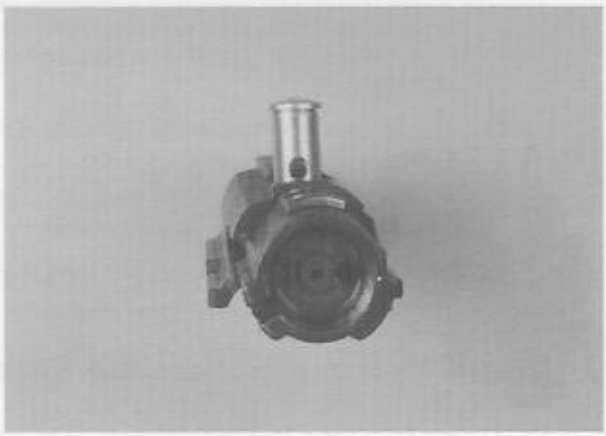
2 Inspect the Ejector Spring Hole for burrs and accumulated dirt. Clean and polish if necessary.

3 Inspect the end edges of the locking surfaces of the Bolt and make sure they are chamfered. If necessary, polish the Head of the Bolt (locking surfaces) on a cloth wheel.

c Ejector and Ejector Spring – Make sure there are no burrs. Polish as required.

d Extractor and Extractor Spring – Inspect the straight end of the Extractor Spring for burrs and polish on a cloth wheel if required.

FIGURE 10



e Timing Latch – Inspect the Timing Latch and if necessary, remove any burrs with a fine cut file and polish.
NOTE: If badly burred, replace the Timing Latch.

5 Reassembly of Bolt/Bolt Sleeve Sub-Assembly

a Bolt, Bolt Sleeve, Firing Pin and Firing Pin Spring

1 Install the Bolt in the Bolt Sleeve with the Extractor slot on the right side.

2 Place the Cam Pin in the assembly as shown in Figure 10 with the Firing Pin hole aligned with the longitudinal axis of the Bolt.

3 Insert the Firing Pin Spring on the Firing Pin and put assembly in the Bolt and install the Firing Pin Retaining Pin. It is recommended a new Firing Pin Retaining Pin should be installed from left to right **NOTE:** If old firing Pin Retainer Pin is re-installed, the orientation must be closely controlled so that ends of the pin are flush with the Bolt Neck.

4 Check to see if the Firing Pin works freely in the Bolt and the Bolt works freely in the Bolt Sleeve past the Firing Pin Retaining Pin.

VIII DISASSEMBLY OF THE SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTIONS AND REASSEMBLY OF SUB-ASSEMBLIES (CONT.)

b Ejector and Ejector Spring

1 Grip the Bolt Assembly bottom side up in a smooth jawed vise. Install the Ejector Spring on the Ejector, insert assembly into end of Bolt with Retaining slot on Ejector facing out, compress and install the Retaining Pin.
NOTE: Make sure to install the Retaining Pin with the splined end of the Pin away from the Ejector to ensure proper function.
WARNING: Be careful when compressing the Ejector/Ejector Spring assembly to not let parts fly out. THIS MAY RESULT IN INJURY.

2 After installation of the Ejector, depress and release it and see that it works freely.

c Timing Latch – Install the Timing Latch with orientation (Figure 11) and install the Timing Latch Retaining Pin.

d Bolt Cover

1 Position the Bolt Cover on the Bolt Sleeve, hooking the left (slatted side goes on right hand side of Bolt/Bolt Sleeve Assembly) side of the Cover in its slot in place with finger pressure or gently tap into place with a plastic or rawhide mallet.

2 Check to see the Bolt Cover moves with enough restriction to prevent it from moving on its own and causing a rattle in the rifle. Too much restrictive force, however, may cause malfunctions. The Bolt Cover should fit the Bolt Sleeve tight enough to prevent it from moving by itself creating a rattle in the rifle. However, too tight of a fit may result in malfunctions.

To tighten the fit, lightly strike the side of the Bolt Cover. To loosen the fit, lightly strike the top of the Bolt Cover.

e This completes the reassembly of the Bolt/Bolt Sleeve Sub-Assembly.

6 Disassembly of the Trigger Guard Sub-Assembly

a Mainspring and Hammer (Figure 12).

1 Place the Safety to the "OFF SAFE" position and lower the Hammer to the fired position.

2 With small needlenose pliers or small screwdriver, disengage the Mainspring Guide from the Mainspring and remove the Mainspring Guide.

3 Remove Mainspring Guide Support and Mainspring Support (pins).

4 Remove the Hammer Pin with a 18" punch and remove the Hammer.

b Trigger, Disconnector, Disconnect Spring and Sear (Figure 13).

FIGURE 11

FIGURE 12

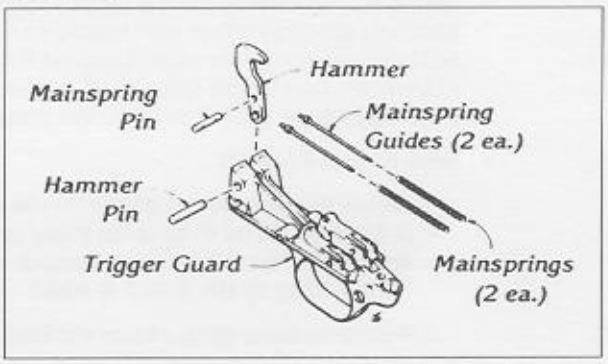
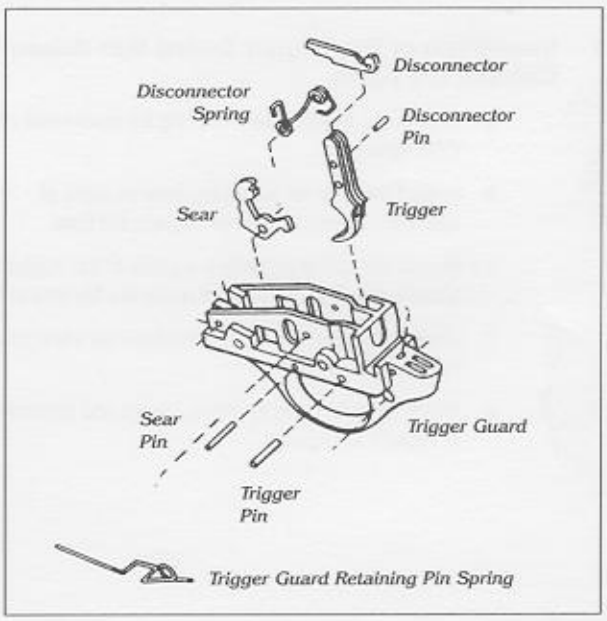


FIGURE 13



VIII DISASSEMBLY OF THE SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTIONS AND REASSEMBLY OF SUB-ASSEMBLIES (CONT.)

1 Hold coil of Disconnector Spring back (from top of Trigger Guard), Pull Sear forward and release Disconnector Spring. Disengage the Disconnector and release the Disconnection Spring pressure.

2 Remove Trigger Pin and Trigger with Disconnector attached
NOTE: It normally isn't necessary to remove the Disconnector from the Trigger but can be removed if necessary by removing the Disconnector Pin.

3 Remove Sear Pin, Sear and Disconnector Spring.

c Remove Trigger Guard Retaining Pin Spring by lifting both ends out of the retaining slots in the Trigger Guard.
WARNING: Be careful to contain spring on removal to keep it from flying out. FAILURE TO DO SO MAY RESULT IN INJURY.

d Remove Magazine Latch (Figure 14) – Lay the Trigger Guard inverted on a work surface. Using a 1/8" punch, drive the Magazine Latch Stop Pin flush while keeping the Magazine Latch held to the rear. Remove the Latch, Spring and Plunger.
WARNING: Do not let the spring loaded components fly out of the Trigger Guard. FAILURE TO DO SO MAY RESULT IN INJURY.

e Safety Removal (Figure 15)

1 Remove the Safety Spring Retaining Pin with a 1/16" punch.
WARNING: Do not let the spring-loaded components fly out of the Trigger Guard upon withdrawal of the punch. FAILURE TO DO SO MAY RESULT IN INJURY.

2 Remove the Safety Spring, Plunger and Safety.

f This completes the disassembly of the Trigger Guard Sub-Assembly (Figure 16).

7 Inspection of the Trigger Guard Sub-Assembly Component Parts

a Inspect the Trigger Guard housing for cracks and replace if necessary.

b Inspect the Sear for excessive wear or signs of alteration. If worn or altered, replace the Sear.

c Inspect the safety contacting surface of the Trigger for burrs and remove with a small, fine cut round file the size of the safety.

d Inspect the Sear notch of the Hammer for signs of alteration and replace if found altered.

e Check all other parts for burrs, cracks and excessive wear. Repair or replace as required.

FIGURE 14

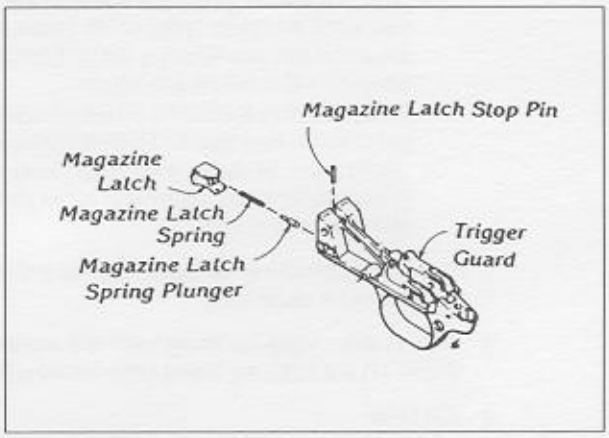


FIGURE 15

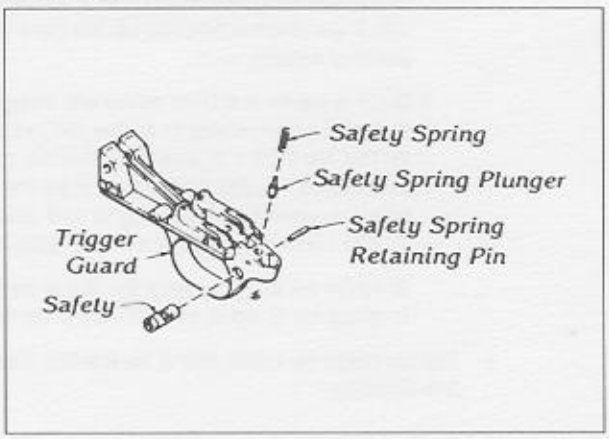


FIGURE 16

VIII DISASSEMBLY OF THE SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTIONS AND REASSEMBLY OF SUB-ASSEMBLIES (CONT.)

8 Reassembly of the Trigger Guard Sub-Assembly

a Safety (Figure 15)

1 The Safety can be installed for right or left hand shooters. For right hand shooters, the red band on the Safety must be installed to the left of the Trigger Guard and for the left hand shooters, to the right of the Trigger Guard. When Safety is "ON SAFE", the red band is not visible.

2 Position the Safety in its hole in the Receiver with the detent notches aligned with the Safety Spring hole.

3 Insert the Safety Spring Plunger and Spring in its hole, compress the spring with a 1/8" punch and install the Retaining Pin.
WARNING: Do not let the spring and plunger fly out of the Trigger Guard. FAILURE TO COMPLY MAY RESULT IN INJURY.

4 Operate the Safety and see that it detents positively into the "ON SAFE" and "OFF SAFE" position

5 Minimum operating force should be 3.5 to 4.5 lbs. If lighter, replace parts as necessary to correct.

FIGURE 17

b Magazine Latch (Figure 13)

1 Position the Magazine Latch Spring Plunger, Spring and Magazine Latch in the Trigger Guard with the Plunger to the rear.

2 Compress the Spring with the Latch and drive the Magazine Latch Stop Pin down in the Trigger Guard to protrude approximately 1/32" at the bottom.

c Trigger Guard Retaining Pin Spring

1 Place Spring on Trigger Guard (Figure 17).

2 While holding against Trigger Guard, place both ends of the spring in the slots in the Trigger Guard.
WARNING: Be careful to hold spring against Trigger Guard when placing ends of Spring in Trigger Guard slots, to keep spring from flying loose. FAILURE TO COMPLY MAY RESULT IN INJURY.

FIGURE 18

d Sear, Disconnection Spring and Sear Pin

1 Position Disconnector Spring and Sear as shown in Figure 18 and insert into Trigger Guard. Align Sear Pin hole in Trigger Guard, Disconnector Spring and Sear. Then install Sear Pin.

2 Suggested installation:

a Partially install Sear Pin in from left side of Trigger Guard.

b Install Sear, secure in position with Sear Pin.

c Install disconnector Spring with hooked end behind the Sear. Complete Sear Pin installation.

e Install Trigger with Disconnector attached down from top of Trigger Guard.

1 Align holes and install Trigger Pin.

2 Position Disconnector so free end is in vertical position. Then push the Disconnector Spring aft and pivot the Disconnector down over the hooked end of the Spring. Continue depressing until the Disconnector catches on the Sear.

f Install Hammer in Trigger Guard, hooked end facing aft and down. Install Hammer Pin.

VIII DISASSEMBLY OF THE SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTIONS AND REASSEMBLY OF SUB-ASSEMBLIES (CONT.)

g Install the Main Spring Guide Support Pin in Hammer.

h Install the Main Spring Support Pin in the Trigger Guard.

i Main Springs and major Spring Guides.

1 Clamp Trigger Guard in smooth jawed vise.

2 Install both Mainsprings and Mainspring Guides by initially seating the non-flanged end of the Guides in the holes of the Mainspring support and then compressing the Mainsprings until the flanged end of the Guides fit into the holes of the Mainspring. Guide support Pin on Hammer.
WARNING: Use care not to let the spring and guides fly out of the Trigger Guard. FAILURE TO COMPLY MAY RESULT IN INJURY.

j This completes the reassembly of the Trigger Guard Sub-Assembly.

1 Check function i.e.. cock Hammer and hold while releasing by pulling the Trigger (safety in "OFF SAFE" position).

2 Check Safety function for positive on-off detents and smooth operation.

3 Check Trigger pull (specification is 3.5 to 4.5 lb.)
NOTE: Sear engagement may be increased (also increasing Trigger pull) by relieving the bottom surface of the Sear contacting the floor of the Trigger Guard.
WARNING: If Sear engagement is increased by relieving the bottom of the Sear, the following inspection procedure is mandatory: FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH

(a) Check the Trigger pull for a Trigger pull of 3.5 to 4.5 lbs.

(b) With the proper Sear engagement and the Safety in the "OFF SAFE" position, slightly pull the Trigger and observe slight pre-travel before the Disconnector contacts the Sear.

(c) With the Hammer cocked, place the Safety to the "ON SAFE" position. Pull the Trigger and observe the Disconnector does not contact the Sear by holding the Trigger to the rear and depressing the Disconnector with a finger.

(d) If the Disconnector contacts the Sear with the Safety in the "ON SAFE" position, the Trigger must be replaced or the Disconnector adjusted at the point of contact with the Sear.

9 Disassembly Inertia Piece/Slide Head/Action Spring Sub-Assembly

a Remove the Action Spring and Action Spring Guide Assembly. This assembly can be separated into the following component parts:

(a) Action Spring

(b) Action Spring Guide

(c) Buffer Plate Front

(d) Buffer

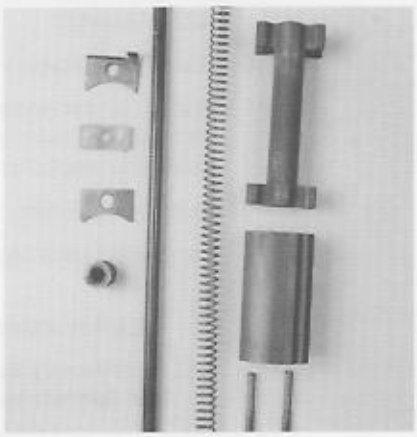
(e) Buffer Plate Rear

(f) Action Spring Guide coned slope part not on parts 1 & 2

b Separate the Slide Head and Inertia Piece, placing the end of the rear end of the assembly on a flat surface so Springs will not fly out on disassembly, then compress the Inertia Piece Springs and lift end of Inertia piece off of the Slide Head. Remove the two (each) Inertia Piece Springs and Inertia Piece Spring Rods.

c This completes the disassembly of the Inertia Piece/Slide Head/Action Spring Sub-Assembly (Figure 19).

FIGURE 19



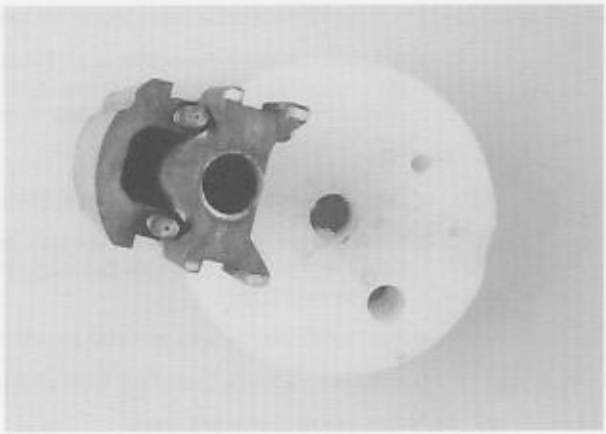
VIII DISASSEMBLY OF THE SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTIONS AND REASSEMBLY OF SUB-ASSEMBLIES (CONT.)

10 Inspection of the Inertia Piece/Slide Head/Action Spring Sub-assembly Component Parts

a Visually check the Inertia Piece and Slide Head for any cracks or burrs. Repair or replace as required.

b Inspect the Buffer for cracks or deformations. Replace as required.

FIGURE 20



11 Reassembly of the Inertia Piece/slide Head/Action Spring Sub-assembly

a Make sure the Inertia Piece and Slide Head components are clean before reassembly.

b Install the Inertia Piece Springs, Spring facing out in the Slide Head. Then place Slide Head, Springs and Spring Rods on the Inertia Piece.
NOTE: The end of the Slide Head with Spring Rods exposed should face same direction as large hole in the Inertia Piece (Figure 20).

c Place the end of the Inertia Piece with large hole down against firm surface, then push down on the Slide Head, compressing Inertia Piece Springs until the Slide Head can be positioned behind the shoulder on the Inertia Piece.

d Place Action Spring on Action Spring Guide, install Action Spring Guide (large end facing Action Spring), Rear Buffer Plate, Buffer and Front Buffer Plate (short Flange facing away form Action Spring).

e Install Action Spring Guide assembly, Spring end into large hole in the Inertia Piece.

f This completes the assembly of the Inertia Piece, Slide Head, Action Spring sub-assembly.

12 Magazine

Normally it isn't necessary to disassemble the Magazine. However, if required, depress and twist the Magazine Follower.

IX REASSEMBLY OF THE BAR MARK II RIFLE

1 Butt Stock – Install the Stock Bolt Washer in rear of the Receiver. Install the Butt Stock and attach to the Receiver with Stock bolt and Stock Bolt Plate Washer. Tighten with special Stock Bolt screwdriver. Install Recoil Pad.

2 Bolt/Bolt Sleeve (Bolt assembly)

a Lower the Bolt Assembly into the bottom of the Receiver with the left side positioned upward and the Timing Latch retracted into the Slide.

b Rotate the Bolt Assembly clockwise and lower it so that the side rails of the Slide rest on the rails inside the Receiver.

c Push the Bolt Assembly forward locking the Bolt to the Barrel Lugs.

3 Operating Handle

a Secure the Action Barrel in a padded vise with right side of the Receiver facing upward.

b Retract the Bolt Assembly about midway and position the forward edge of the Bolt Cover Cutout even with the rear edge of the head of the Bolt.

IX REASSEMBLY OF THE BAR MARK II RIFLE

c While holding the Bolt assembly in the Receiver, install the Operating Handle in the Bolt Assembly, pulling the Operating Handle fully to the rear until it locks into position.

d Push the Bolt Assembly fully forward locking it into the Barrel lugs.

4 Inertia Piece/Slide head, Action Spring and Action Spring Guide

a Position the Barreled/Action in vise in the inverted position.

b Assemble the Inertia Piece/Slide Head, Action Spring and Action Spring Guide together. Insert the end of the Action Spring Guide that goes through the Inertia Piece into the Gas Bracket on the Barrel. Compress Action Spring until the rear end of the Action Spring Guide with Buffer and Buffer Plates can be inserted into the hole in Receiver.

5 Gas Piston

a Before installing Gas Piston, make sure the Gas Cylinder Bracket on Barrel and Piston are clean.

b Install Gas Piston, end with hole facing aft, into Gas Cylinder Bracket.
CAUTION: Make sure the Piston moves freely in the Gas Bracket. Fit is snug but Piston must move freely or cause functioning problems.

c Push Gas Piston rearward with 1/8" punch until Action Spring Guide fits into hole in end of the Gas Piston.

d Install Gas Regulator Gasket and Gas Cylinder cap and tighten securely.

6 Slide Bars (left hand and right hand)

a Position Bolt Assembly in the closed position.

b Install each Slide Bar through slot in front of Receiver until the square protrusion on the Slide bars fit into the slot cuts on the Bolt Assembly, then fit other end of Slide Bars onto Inertia Piece/Slide Head Assembly.

FIGURE 21

7 Bolt Release

a Close Action.

b Install the Bolt Release in Receiver and secure in place with the Bolt Release Pin.

c From left hand side of Receiver, insert the long end of the Bolt Release Spring under the tab on the Buffer Plate (Figure 21).

d With needlenose pliers or small screwdriver, place end of hook on long end of the Bolt Release Spring over the Bolt Release. The coiled end of the Bolt Release Spring fits into hole on left hand side of Receiver.

e After installation, cycle Bolt Release to make sure it cycles smoothly under spring pressure.

8 Trigger Guard Assembly

a Before reinstalling the Trigger Group make sure that the Action is fully forward and engaged in the locked position.

b Insert the Trigger Group back into the Receiver, lining up the holes in the Trigger Assembly with the holes on each side of the Receiver.

c Re-insert the Trigger Guard Pins from either side of the Receiver and gently tap them into place again using caution not to scratch the Receiver.

9 Forearm – Open action and install Forearm and Sling Eyelet Front. Tighten Sling Eyelet.

10 Install Magazine.

11 This completes the re-assembly of the BAR Mark II Rifle.

X FINAL INSPECTIONS AND TESTS OF ASSEMBLED RIFLE

WARNING: Make sure the rifle is unloaded before any of these inspections or tests are performed.

1 Safety Function

a With the Action cocked, place the Safety Selector to the "ON SAFE" position.

50lb Static weight — b Pull the Trigger much harder than normal with the index finger of both hands and see that the Firing Pin does not fall.

c Release the Trigger. The Firing Pin should not fall when the Safety is moved to the "OFF SAFE" position.

d Open the Action. The Firing Pin should not fall when the action is opened.

2 Regain – with the Action cocked and closed, place the Safety Selector to the "OFF SAFE" position. Partially disengage the Sear by slightly pulling the Trigger. Slowly release the Trigger. You should feel the searing surfaces fully re-engage.
WARNING: If the rifle fails any of inspection sequences above, return the rifle to the Browning Service Center in Arnold, Missouri. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.

3 Trigger Pull – Check the Trigger Pull for a let-off force of 3.5 to 4.5 lbs.
NOTE: If the Trigger Pull force is not within specifications, see paragraph VIII-8-J-(3) above for instructions on how to correct.

4 Function (Dry Cycle) – Load Magazine with "Dummy" ammunitions and cycle through one action.

5 Head Space – Check the Head Space with SAAMI/BACO approved specification GO/NO GO Head Space gauges.

6 Proof Testing – As noted in paragraph II-10, if any service work has been performed on the Barrel, Bolt or Slide Assembly components are modified or replaced during servicing of any BAR III rifle, make sure the Head Space is within SAAMI/BACO specifications and then remotely proof test the rifle before function test firing.

7 Test Firing – After any mechanical servicing, it is recommended that the rifle be test fired. Please refer to the owners manual for proper loading, handling and safety procedures. These owners manuals were supplied with each new BAR II Safari and Light rifle and extra copies may be obtained by contacting Browning, One Browning Place, Morgan, UT 84050, Phone (801) 876-2711.

8 Firing Pin Indent (Misfires) – If any misfires should occur the firing pin indent should be checked using Copper Crushers per SAAMI recommended procedures.

XI TROUBLESHOOTING/POTENTIAL CAUSES/CORRECTIVE ACTIONS

CAUTION: Before choosing accuracy problem, make sure sighting system being used is securely attached to rifle e.g., tight scope mounting, screws etc.

PROBLEM	POTENTIAL CAUSES	CORRECTIVE ACTION
Poor accuracy	1 BOSS or CR Systems improperly adjusted.	1 Refer to owners booklet on BOSS adjustments.
	2 Loose Scope Mounting Screws.	2 Tighten Mounting Screws.
	3 Fouled Barrel.	3 Clean Barrel and if necessary polish bore with a good lapping compound.
	4 Excessive Head Space (check with SAAMI approved specification GO/NO-GO gauges).	4 If Head Space is excessive, return rifle to Arnold Service Center for repair.
	5 On non-BOSS rifles check Muzzle Crown for burrs.	5 Re-crown if required.
	6 Ammunition or sighting device.	6 As last resort, try different brands of ammo and different sighting device.
	7 Loose Butt Stock or Forearm.	7 Tighten.
	8 Interference between the Barrel and Forearm.	8 Relieve Forearm and re-seal the wood.
Fails to eject	1 Frozen or sticky Gas Piston.	1 Clean.
	2 Weaver-type scope mounts improperly installed on the rifle and interfering with ejection. Ring clamp must be used on left side of the rifle.	2 Install correctly.
	3 Scope Base Screws too long and rubbing on the top of Bolt Cover.	3 Shorten or replace Screws.
	4 Damaged or missing Ejector.	4 Replace.
	5 Ejector binding due to foreign matter in ejector hole.	5 Clean.
	6 Interference between the Action Rods and the Forearm.	6 Relieve.
	7 Sling Eyelet too long interfering with the Gas Piston.	7 Shorten.
	8 Weak Ejector Spring.	8 Replace.
	9 Weak cartridge i.e., low pressure.	9 Change type/brand of Ammunition.

XI AUTO-5 TROUBLESHOOTING/POTENTIAL CAUSES/CORRECTIVE ACTIONS (CONT.)

PROBLEM	POTENTIAL CAUSES	CORRECTIVE ACTION
Fails to feed	1 Rough or bent Magazine lips. 2 Broken Magazine Spring. 3 Sharp edge at chamber rim. 4 Bolt Cover too tight or loose, causing binding or jamming. 5 Weak cartridge i.e. low pressure.	1 Polish and adjust or replace. 2 Replace. 3 Polish. 4 Adjust per paragraph VII-5-e above. 5 Try different ammunition.
Fail to fire	1 Broken or damaged firing pin. 2 Sticking gas piston not allowing the Bolt to close completely. (May have to be noticed before pulling Trigger because the Hammer falling may drive the Bolt closed. 3 Bolt Cover too tight preventing the Bolt from completely closing. 4 Burred Timing Latch not letting the Bolt close completely. 5 Build up of foreign matter between the Trigger and Trigger Guard.	1 Replace. 2 Clean. 3 Refer to paragraph VIII-d above for adjusting procedure. 4 Replace Timing Latch. 5 Clean.
Hammer fails to cock	1 Foreign matter build-up between the Sear and Trigger guard. 2 Last coil of the lower end of the Disconnector Spring binding the Disconnector Spring Plunger in it hole in the Sear.. 3 Inspect the Trigger Guard Assembly for broken parts. **NOTE:** If for some reason the Hammer fails to cock and follows the Bolt forward, the rifle will not fire because the tail of the Bolt Slide keeps the Hammer from contacting the Firing Pin with sufficient energy to fire the cartridge until the Bolt is locked.	1 Clean. 2 Spread the last coil of the Disconnector Spring. 3 Replace.

XI TROUBLESHOOTING/POTENTIAL CAUSES/CORRECTIVE ACTIONS (CONT.)

PROBLEM	POTENTIAL CAUSES	CORRECTIVE ACTION
Safety difficult to work	1 Foreign matter between the Trigger and Trigger Guard. 2 Burred surface of the Trigger that contact the Safety.	1 Clean. 2 Deburr.
Bolt hard to operate	1 Action Rods or Support Rails binding in the Receiver. 2 Action Rods interfering inside the Forearm. 3 Cracked Bolt Sleeve. 4 Burred Bolt at the point of Timing Latch contact. 5 Burred Timing Latch.	1 Polish. 2 Polish. 3 Replace. 4 Deburr and polish. 5 Replace.
Short cycling	1 Dirty Gas Piston and Cylinder. 2 Gas Regulating Screw out of adjustment.	1 Clean. 2 **WARNING:** Unless formally trained by Browning, no attempt should be made to adjust or remove this screw. FAILURE TO COMPLY MAY RESULT IN INJURY OR DEATH.
Brass marks on the receiver	Normal condition – Mouths of ejected brass may flatten slightly when they strike the Receiver during ejection.	
Cuts in brass	Can be caused by sharp edges on Bolt Lugs, Barrel Lugs, or Ejection Port. A sharp cam pin hole edge will cut the belt on brass in the Magazine.	