

SUPERPOSED FIELD SERVICE MANUAL



BROWNING FIELD SERVICE MANUAL

BELGIUM BROWNING SUPERPOSED
ST-100
CONTINENTAL SET
FIELD & TARGET GUNS
EXPRESS RIFLE

This manual is written to assist trained gunsmiths in the repair and servicing of Browning products. It should never be used by an untrained person to repair any firearm. Read the entire manual carefully and pay special attention to the portions dealing with safety.

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE	SECTION	DESCRIPTION	PAGE
I	GENERAL DESCRIPTION OF THE BROWNING SUPERPOSED TRIGGER MECHANISMS	1	V cont.		
II	FUNCTIONAL OPERATION	2	A.	Pre-Disassembly Inspection Procedure	10
III	PARTS SCHEMATIC	3	B.	Trigger Guard	10
IV	INSPECTION AND DISASSEMBLY INTO SUB-ASSEMBLIES	7	C.	Mainsprings and Mainspring Guide	10
1.	Pre-Disassembly Inspection	7	D.	Trigger, Trigger Piston, Spring and Inertia Block Assembly	10
2.	Hand Disassembly Without Tools	7	E.	Sears	10
3.	Disassembly With Tools Into Sub-Assemblies	7	F.	Selector Safety Assembly and Tang Piece	10
A.	Forearm Assembly	7	1.	Old Style	10
(1)	Old Style	7	2.	Mark III	10
(2)	New Style (Mark III)	7	G.	Hammers and Ejector Trip Rods	11
B.	Stock	8	H.	Firing Pins and Cocking Lever	11
V	DISASSEMBLY OF SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTION AND REASSEMBLY OF SUB-ASSEMBLIES	8	I.	Locking Bolt and Top Lever Assembly	11
1.	Disassembly Of The Forearm Bracket Assembly (Old and New Styles)	8	8.	Inspection Of Components And Reassembly Of The Receiver Assembly	11
2.	Inspection Of The Forearm Assembly Components	8	A.	Inspection of the Receiver	11
A.	Forearm	8	B.	Inspection and Reinstallation of the Top Lever	12
B.	Forearm Bracket	9	C.	Installation of the Locking Bolt	12
C.	Ejector Hammers	9	D.	Inspection and Installation of the Cocking Lever	12
3.	Reassembly Of The Forearm Assembly	9	E.	Installation of the Top Lever Spring and Retainer	12
A.	Ejector Hammer and Springs	9	F.	Inspection and Installation of the Firing Pins	12
B.	Cocking Lever Lifter	9	G.	Installation of the Sears	12
4.	Disassembly Of The Ejectors	9	H.	Installation of the Ejector Trip Rods and Hammers	12
A.	Old Style	9	I.	Inspection and Installation of the Tang Piece and Selector Safety Assembly (Old Style and Mark III)	12
B.	New Style	9	J.	Inspection and Installation of the Trigger and Inertia Block Assemblies	13
5.	Inspection and Reinstallation Of The Ejectors	9	K.	Installation of the Mainsprings and Mainspring Guides	13
A.	New Style	9	L.	Firing System Inspection Procedure	14
B.	Old Style	9	M.	Installation of the Trigger Guard and Stock	14
6.	Barrel and Forearm Reassembly	9	N.	Final Assembly and Inspection	14
A.	Old Style	9	VI	TROUBLESHOOTING/POSSIBLE CAUSES	14
B.	Mark III	9	VII	SPECIFICATIONS AND SPECIAL INSTRUCTIONS	15
7.	Inspection and Disassembly Of The Receiver Assembly (Old Style and Mark III)	10			

BROWNING FIELD SERVICE MANUAL

IMPORTANT SAFETY WARNINGS

Before carrying out any instructions given throughout this manual, be certain to read the **NOTES** and **CAUTION** notes given in regard to those instructions. Generally, these precautionary notes follow the related instructions. In any case, read all of the instructions and cautions on any step involving assembly or reassembly before proceeding with that step.



Failure to obey a Safety Warning **CAUTION** - may result in injuries to you or to others.

Failure to obey a **NOTE** regarding the repair process may result in incorrect procedure which could cause malfunctions and/or damage to the firearm.



CAUTIONS:

1. Be certain the firearm is unloaded before proceeding with any service work.
2. Appropriate safety glasses should be worn by service personnel and bystanders when removing or re-installing any springs or spring-loaded components.
3. As noted in the attached parts list on Pages 3, 4, & 5, some of the Browning supplied spare parts must be fitted by Browning Service Dept. in Arnold, Missouri, or trained gunsmiths. No other persons should attempt to fit these specific parts.
4. 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 firearm and extra copies may be obtained by contacting Browning, Route # 1, Morgan, Utah, 84050.
5. Read all of the instructions, cautions and notes on any step involving assembly or disassembly before proceeding with that step.
6. Section VII provides lists of special tools which may be required, specifications and special instructions.

SECTION I

GENERAL DESCRIPTION OF THE BROWNING SUPERPOSED TRIGGER MECHANISMS

The Browning Superposed (Belgium

manufacture) may be found equipped with the following types of Triggers:

- *1. **Double Trigger** which fires by pulling the front Trigger and then rear Trigger, or vice versa, independently.
- *2. **Twin-Single Trigger** which fires by pulling the front Trigger to fire the lower Barrel. The Trigger's inertia system sets the mechanism to fire the over Barrel with the second pull of the front Trigger. The rear Trigger operates the over Barrel first with the same procedure outlined above to fire the lower Barrel with the second pull. This type Trigger may also be used as a Double Trigger.
- *3. **U.S. Single Trigger** which is equipped with a Selector installed to the left of the Trigger in the Trigger slot. The purpose of the Selector is to set the mechanism to fire either Barrel first. This mechanism is very similar to that of the Twin-Type Trigger.

***NOTE:** These types of Triggers are no longer serviceable due to an unavailability of parts. It is recommended that guns requiring service to these Trigger systems be forwarded to the Service Dept., Arnold, Missouri for updating to the Single Selective Inertia-type Trigger configuration. Cost of this conversion is available upon request.

4. **Single Selective Inertia Trigger** which is equipped with one Trigger filling the entire Trigger slot. The Selector is located on top and to the rear of the Tang in conjunction with the Safety. When the Selector is moved to the right and pushed forward the under Barrel is selected to fire first. When pushed to the rear, moved to the left and then pushed forward, the over Barrel is set to fire first. When the Selector is pulled to the extreme rear of the Tang, the Safety is in the "ON SAFE" position.
5. **Mark III or Mechanical Single Trigger** which has the same outward appearance as the Single Selective Inertia Trigger. The operational difference can be described as: the second Barrel is set to fire by a mechanical function from the Hammer falling firing the first Barrel rather than a function of recoil. This type of Trigger is in current production and is included in most all Presentation, ST-100 Trap guns, Continental and special series Superposed guns.

SECTION II

FUNCTIONAL OPERATION

The Browning Superposed is an automatic ejecting, manually operated over/under shotgun. The sequence of operation follows:

COCKING

On opening an assembled gun, the Top Lever is pushed to the right rotating the Top Lever Dog and compressing the Top Lever Spring. Engaged in the Locking Bolt, the Top Lever Dog pulls the Locking Bolt to the rear and out of the Barrel lugs. This action unlocks the Barrels.

As the Locking Bolt travels to the rear by action of the Top Lever, it slides over the Trigger and blocks it from being pulled. This Trigger blockage occurs before the Locking Bolt has retracted sufficiently to unlock the Barrels from the Receiver. When the Locking Bolt has retracted sufficiently to unlock the Barrels, the Barrels are then pulled downward, rotating about the Hinge Pin. During this action, the Cocking Lever Lifter, engaged against the Cocking Lever, rotates the Cocking Lever. In rotating, the aft end of the Cocking Lever engaged against the Hammers, pushes the Hammers to the cocked position and rotates into a slot at the rear end of the Locking Bolt. In this fashion the Cocking Lever holds the Locking Bolt at full retraction when the Action is open.

In closing the Action, the lower Barrel makes contact with the forward end of the Cocking Lever. This action rotates the Cocking Lever in the opposite direction lifting its rear end out of the slot in the Locking Bolt.

When the Barrels are within a few degrees of being fully closed, the Cocking Lever releases the Locking Bolt. If the action is properly timed, this release occurs just after the Locking Bolt has made contact with the Barrel lug just below the locking notch. With slight additional rotation of the Barrels, the Locking Bolt is released into the locking notch of the Barrel lug.

The Locking Bolt is moved and retained in the forward position by the compressed Top Lever Spring through linkage with the Top Lever and Top Lever Dog.

BARREL SELECTION

SINGLE SELECTIVE INERTIA TRIGGER:

In Barrel selection, the forward shoulder of the Connector is positioned under the tail of the Sear corresponding to the Barrel selected. When the Trigger is pulled the Connector raises the tail of the Sear releasing the Hammer to fire the selected Barrel. In recoil, the Inertia Block moves to the rear pulling the shoulder of the Connector away from the tail of the released Sear. The Sear Spring then pushes the tail of the released Sear downward so as not to

interfere with the Connector as the Connector and Inertia Block return to the forward position. The Inertia Block and Connector are returned forward after recoil by the Trigger Piston Spring. When the Inertia Block and Connector return to the forward position and the Trigger has been fully released, one of the two rear shoulders of the Connector is positioned under the tail of the other Sear, arming the second Barrel. It is not possible to fire the second shot unless the Trigger is released after the first shot.

MARK III OR MECHANICAL SINGLE TRIGGER:

The function of this Trigger mechanism is very similar to the Single Selective Inertia type. The main functional difference is the Inertia Block and Connector are moved to the rear by a function of the Hammer falling and not by a reaction of recoil.

EJECTION:

As the Action is being opened and the Hammers are being pushed to the rear by the Cocking Lever, pins on the sides of each Hammer cam the Ejector Trip Rods forward (on the fired Barrels) to protrude slightly from the front of the Receiver.

At the same time the Ejector Trip Rods are being extended, the Ejector Extensions are being pushed to the rear by a camming action off lugs inside the Receiver. Thus, the Ejectors lift both fired and unfired shells partially out of the Chamber as the Action is being opened.

As the Action is opened further, the extended Trip Rods engage the Ejector Hammer Sear and with enough rotation of the Barrels release the Ejector Hammers. Driven by powerful springs located in the Forearm Bracket, the Ejector Hammers strike the Ejector Extensions. The Ejectors, butted to the Ejector Extensions, in turn eject the fired shells from the gun.

The old style Ejectors are limited in their travel rearward by Ejector Stop Screws located under the Ejectors in the side of the Barrel flats. The new style Ejectors are attached to, and their travel limited by, the Ejector Extensions. The Ejector Extensions are limited in their travel rearward by lugs on the inside of the Receiver. These same lugs cam the Ejector Extensions forward as the Action is closed to cock the Ejector Hammers.

As the Action is closed and the Ejector Hammers are being cocked, the Ejector Trip Rods are being cammed back into the Receiver. This camming action

occurs off the camming surfaces located in the Forearm Bracket below the Ejector Hammer Sear.

SECTION III

PARTS LIST SUPERPOSED

PART NO.	PART NAME
* PO33000	Barrel Plate Wood - Right & Left (Rough) 12
* PO33001	Barrel Plate Wood - Right & Left (Rough) 20-28-410
PO33004	Barrel Plate Screw 12-20-28-410
* PO33006	Butt Plate 12
* PO33007	Butt Plate 20-28-410
PO33008	Butt Plate Screw 12-20-28-410
* PO33010	Cocking Lever (Rough) 12
* PO33021	Cocking Lever (Rough) 20-28-410
PO33030	Cocking Lever Pin 12
PO33031	Cocking Lever Pin 20-28-410
PO33036	Cocking Lever Pin Superlight 12
PO33037	Cocking Lever Pin Retaining Screw
PO33038	Cocking Lever Pin Superlight 20
* PO33040	Cocking Lever Lifter (Rough) 12
* PO33051	Cocking Lever Lifter (Rough) 20-28-410
PO33060	Cocking Lever Lifter Pin 12
PO33061	Cocking Lever Lifter Pin 20-28-410
* PO33070	Connector 12
* PO33070	Connector 12 MT
* PO33071	Connector 20-28-410
* PO33071	Connector 20 MT
* PO33072	Connector Selector 12-20 MT
PO33074	Connector Stop Pin 12-20-28-410
PO33075	Connector Selector Pin 12-20 MT
* PO33082	Ejector Right & Left (Rough) 12
* PO33083	Ejector Right & Left (Rough) 20
* PO33088	Ejector Right & Left (Rough) 28
* PO33089	Ejector Right & Left (Rough) 410
PO33102	Ejector Extension Right 12
PO33103	Ejector Extension Right 20-28-410
PO33106	Ejector Extension Left 12
PO33107	Ejector Extension Left 20-28-410
PO33110	Ejector Extension Stop Pin 12-20-28-410
PO33120	Ejector Hammer - Right 12
PO33121	Ejector Hammer - Right 20-28-410
PO33124	Ejector Hammer - Left 12
PO33125	Ejector Hammer - Left 20-28-410
PO33128	Ejector Hammer Pin 12
PO33129	Ejector Hammer Pin 20-28-410
PO33130	Ejector Hammer Spring 12
PO33131	Ejector Hammer Spring 20-28-410
PO33132	Ejector Hammer Spring Guide 12-20-28-410
PO33136	Ejector Hammer Sear 12-20-28-410
PO33138	Ejector Hammer Sear Spring 12-20-28-410
PO33140	Ejector Hammer Sear Pin 12-20-28-410
* PO33142	Ejector Trip Rod - Right 12
* PO33143	Ejector Trip Rod - Right 20-28-410
* PO33146	Ejector Trip Rod - Left 12
* PO33147	Ejector Trip Rod - Left 20-28-410
* PO33148	Firing Pin - Over 12
* PO33150	Firing Pin - Over 20-28-410
* PO33157	Firing Pin - Under 12
* PO33159	Firing Pin - Under 20-28-410
PO33164	Firing Pin Spring - Under 12
PO33165	Firing Pin Spring - Under 20-28-410
PO33168	Firing Pin Retaining Pin 12
PO33169	Firing Pin Retaining Pin 20-28-410
* PO33171	Forearm, Field, Standard Cross Bolt Type 20
* PO30171	Forearm, Superlight, Clamp Type 12
* PO33173	Forearm, Superlight, Cross Bolt Type 12

PART NO.	PART NAME
* PO33174	Forearm, Field, Standard Cross Bolt Type 12
* PO33176	Forearm, Standard Trap, Semi-Beavertail, Cross Bolt Type 12
* PO33181	Forearm, Field, Lightning, Cross Bolt Type 20
* PO30181	Forearm, Field, Clamp Type 20
* PO33182	Forearm, Beavertail, End Piece Type 20
* PO30182	Forearm, Beavertail, Clamp Type 20
* PO33190	Forearm, Field, Lightning, Cross Bolt Type 12
* PO30190	Forearm, Field, Clamp Type 12
* PO33191	Forearm, Beavertail, End Piece Type 12
* PO30191	Forearm, Beavertail, Clamp Type 12
* PO33198	Forearm, Lightning Trap, Semi-Beavertail, Cross Bolt Type 12
* PO33207	Forearm, Field, Cross Bolt Type 28
* PO30200	Forearm, Semi-Beavertail, ST-100
* PO30207	Forearm, Field, Clamp Type 28
* PO33208	Forearm, Beavertail, End Piece Type 28
* PO30208	Forearm, Beavertail, Clamp Type 28
* PO33209	Forearm, Field, Cross Bolt Type 410
* PO30209	Forearm, Field, Clamp Type 410
* PO33210	Forearm, Beavertail, End Piece Type 410
* PO30210	Forearm, Beavertail, Clamp Type 410
* PO33223	Forearm, Superlight, Cross Bolt Type 20
* PO30223	Forearm, Superlight, Clamp Type 20
PO33218	Forearm Escutcheon, Threaded 12
PO33219	Forearm Escutcheon, Threaded 20-28-410
PO33222	Forearm Escutcheon, Unthreaded 12
PO33225	Forearm Escutcheon, Unthreaded 20-28-410
PO33226	Forearm Screw, Beavertail Type
PO33227	Forearm Screw Washer, Beavertail Type
* PO33230	Forearm Screw, Field Type 12
* PO33231	Forearm Screw, Field Type 20-28-410
* PO33234	Forearm Screw, Semi-Beavertail Type 12
PO33237	Forearm End Piece Metal, Beavertail 12
PO33239	Forearm End Piece Nylon, Beavertail 20
PO33240	Forearm End Piece Metal, Beavertail 28
PO33241	Forearm End Piece Metal, Beavertail 410
* PO33242	Forearm Bracket (Rough) 12
PO30243	Forearm Bracket Stop Block 12
PO30245	Stop Block Retaining Screw 12
PO30246	Stop Block Retaining Screw 20
PO30247	Forearm Retaining Clamp 12
PO30249	Forearm Retaining Clamp 20
* PO33251	Forearm Bracket (Rough) 20-28-410
PO30252	Forearm Bracket Stop Block 20
PO30254	Retaining Clamp Screw 12-20
* PO33260	Hammer - Right 12
* PO30260	Hammer - Right 12 MT
* PO33261	Hammer - Right 20-28-410
* PO30261	Hammer - Right 20 MT
* PO33264	Hammer - Left 12
* PO30264	Hammer - Left 12 MT
* PO33265	Hammer - Left 20-28-410
* PO30265	Hammer - Left 20 MT
PO33268	Hammer Pin 12
PO33269	Hammer Pin 20-28-410
PO33272	Inertia Block 12
PO30272	Inertia Block 12 MT
PO33273	Inertia Block 20-28-410
PO30273	Inertia Block 20 MT

* Indicates part must be fitted by Browning Service Department or qualified gunsmith.

NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

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PART NO.	PART NAME
PO30274	Inertia Block Pin 12-20 MT
PO33276	Inertia Block Spring 12-20-28-410
PO30276	Inertia Block Spring 12-20-MT
PO33278	Inertia Block Spring Guide 12-20-28-410
PO30278	Inertia Block Spring Guide 12-20 MT
PO33279	Inertia Block Retaining Pin 20-28-410
PO33282	Joint Pin, 12
PO33283	Joint Pin, 20
PO30282	Lower Barrel Spacer ST100 MT
PO30284	Lower Barrel Spacer Pin ST100 MT
* PO33290	Locking Bolt 12
* PO30290	Locking Bolt 12 MT
* PO33291	Locking Bolt 20-28-410
* PO30291	Locking Bolt 20 MT
PO30293	Mainspring 20 MT
PO33294	Mainspring 12-20-28-410
PO30294	Mainspring 12 MT
PO33296	Mainspring Guide 12-20-28-410
* PO30297	Safety Spring 12-20 MT
PO30298	Safety Spring Pin 12-20 MT
PO30299	Safety Spring Screw 12-20 MT Original Size
* PO33300	Selector Safety 12-20-28-410
* PO30300	Selector Safety 12-20 MT
PO30301	Selector Safety Spring Retaining Pin 12-20 MT
PO33310	Selector Block 12-20-28-410
PO30310	Selector Block 12-20 MT
PO33312	Selector Spring 12-20-28-410
PO30314	Selector Block Spring 12-20 MT
PO30315	Selector Block Spring Follower 12-20 MT
* PO33320	Sear - Right 12
* PO30320	Sear - Right 12 MT
* PO33321	Sear - Right 20-28-410
* PO30321	Sear - Right 20 MT
* PO33322	Sear - Left 12
* PO30322	Sear - Left 12 MT
* PO33323	Sear - Left 20-28-410
* PO30323	Sear - Left 20 MT
PO33324	Sear Spring 12
PO33325	Sear Spring 20-28-410
PO33328	Sear Pin 12
PO33329	Sear Pin 20-28-410
PO33332	Sight Bead 12-20-28-410
* PO33330	Stock, Superlight, U Type Inletting, Short Guard, 20-28-410
* PO30330	Stock, Superlight, U Type Inletting, Long Guard, 20-28-410
* PO33333	Stock, Skeet, U Type Inletting, Short Guard, w/pad, 12
* PO30333	Stock, Skeet, U Type Inletting, Long Guard, w/pad, 12
* PO33334	Stock, Skeet, U Type Inletting, Short Guard, w/o pad, 12
* PO30334	Stock, Skeet, U Type Inletting, Long Guard, w/o pad, 12
* PO33335	Stock, Magnum, U Type Inletting, Short Guard, 12
* PO30335	Stock, Magnum, U Type Inletting, Long Guard, 12
* PO33342	Stock, Field, Full Grip, Y Type Inletting, Long Guard, 12
* PO33343	Stock, Field, Full Grip, U Type Inletting, Short Guard, 12

PART NO.	PART NAME
* PO30343	Stock, Field, Full Grip, U Type Inletting, Long Guard, 12
* PO33352	Stock, Skeet, U Type Inletting, Short Guard, w/pad 20-28-410
* PO30352	Stock, Skeet, U Type Inletting, Long Guard, w/pad 20-28-410
* PO33353	Stock, Superlight, U Type Inletting, Short Guard, 12
* PO30353	Stock, Superlight, U Type Inletting, Long Guard, 12
* PO33354	Stock, Skeet, U Type Inletting, Short Guard, w/o pad 20-28-410
* PO30354	Stock, Skeet, U Type Inletting, Long Guard, w/o pad 20-28-410
* PO33355	Stock, Field, Full Grip, Y Type Inletting, Long Guard, 20-28-410
* PO33356	Stock, Field, Full Grip, U Type Inletting, Short Guard, 20-28-410
* PO30356	Stock, Field, Full Grip, U Type Inletting, Long Guard, 20-28-410
* PO33369	Stock, Trap, U Type Inletting, Short Guard, w/pad, 12
* PO30369	Stock, Trap, U Type Inletting, Long Guard, w/pad, 12
* PO30372	Stock, Trap, w/pad, ST100
* PO33374	Stock, Trap, Y Type Inletting, Long Guard, w/o pad, 12
* PO33379	Stock, Trap, U Type Inletting, Short Guard, w/o pad, 12
* PO30379	Stock, Trap, U Type Inletting, Long Guard, w/o pad, 12
* PO33384	Stock, Trap, Y Type Inletting, Long Guard, w/pad, 12
PO33386	Stock Bolt, 12-20-28-410
PO33389	Stock Bolt Washer, 12-20-28-410
PO33390	Stock Bolt Lock Washer, 12-20-28-410
* PO33392	Take Down Lever, 12
* PO33401	Take Down Lever, 20-28-410
PO33410	Take Down Lever Pin, 12
PO33411	Take Down Lever Pin, 20-28-410
* PO33414	Take Down Lever Latch, 12
* PO33423	Take Down Lever Latch, 20-28-410
PO33432	Take Down Lever Latch Pin, 12
PO33433	Take Down Lever Latch Pin, 20-28-410
PO33434	Take Down Lever Latch Spring, 12-20-28-410
PO33436	Tang Piece, 12
PO30436	Tang Piece, 12 MT
PO33437	Tang Piece, 20-28-410
PO30437	Tang Piece, 20 MT
PO33438	Tang Piece Screw Top, 12-20-28-410
PO33440	Tang Piece Screw Bottom, 12-20-28-410
* PO33442	Top Lever (Rough) 12
* PO33449	Top Lever (Rough), 20-28-410
PO33460	Top Lever Spring, 12-20-28-410
PO33463	Top Lever Spring Retainer, 12-20-28-410
PO33466	Top Lever Spring Retainer Screw, 12-20-28-410
PO33468	Top Lever Dog, 12
PO33469	Top Lever Dog, 20-28-410
PO30470	Top Rib w/Barrel Spacer, ST100
PO30472	Top Rib Retaining Pin Rear, ST100
PO33472	Top Lever Dog Screw, 12-20-28-410
* PO33476	Trigger (Gold Plated), 12

* Indicates part must be fitted by Browning Service Department or qualified gunsmith.

NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

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NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

PART NO.	PART NAME
* PO30476	Trigger (Gold Plated), 12 MT
* PO30477	Trigger (Gold Plated), Olympic Style, ST-100
* PO33481	Trigger (Gold Plated), 20-28-410
* PO30481	Trigger (Gold Plated), 20 MT
PO30482	Trigger Spring, 12-20 MT
PO33488	Trigger Pin, 12
PO33489	Trigger Pin, 20-28-410
PO33492	Trigger Piston, 12-20-28-410
PO30492	Trigger Piston, 12-20 MT
PO33494	Trigger Piston Pin, 12-20-28-410
PO30493	Trigger Piston Pin, 12-20 MT
PO33496	Trigger Piston Spring, 12
PO30496	Trigger Piston Spring, 12-20 MT
PO33498	Trigger Piston Spring, 20-28-410
PO33500	Trigger Guard, Field, Long Type, 12 Inertia Trigger
PO33501	Trigger Guard, Short Type, 12
PO30501	Trigger Guard, Long Type, 12 MT
PO33510	Trigger Guard, Trap, Long Type, 12 Inertia Trigger
PO33519	Trigger Guard, Superlight, 12
PO33520	Trigger Guard, Superlight, 20
PO33521	Trigger Guard, Field, Long Type, 20-28-410, Inertia Trigger
PO33522	Trigger Guard, Short Type, 20-28-410
PO30522	Trigger Guard, Long Type, 20 MT
* PO33530	Trigger Guard Screws, 12-20-28-410
* PO33533	Trigger Guard Screw, Machine Type Front
* PO33534	Trigger Guard Screw, Machine Type Rear
* PO33535	Trigger Guard Screw Escutcheon
PO33537	Trigger Guard Pin, Short Type
	¹ Skeet Stock Dimensions, 12-20-28-410 Gauge, 1 1/2" x 2" x 14 3/8" - With or Without Pad, Short or Long Trigger Guard
	² Type I, 12 Gauge Field Stock Dimensions, 1 5/8" x 2 1/2" x 14 1/4", Without Pad, Long Trigger Guard Only
	³ Type I, 20-28-410 Gauge Field Stock Dimensions, 1 1/2" x 2 3/8" x 14 1/4", Without Pad, Long Trigger Guard Only
	⁴ Type II, 12 Gauge Field Stock Dimensions, 1 5/8" x 2 1/2" x 14 1/4", Without Pad, Short or Long Trigger Guard
	⁵ Type II, 20-28-410 Gauge Field Stock Dimensions, 1 1/2" x 2 3/8" x 14 1/4", Without Pad, Short or Long Trigger Guard
	⁶ Type I, Trap Stock Dimensions, 1 7/16" x 1 5/8" x 14 7/8", With or Without Pad, Long Trigger Guard Only. For Pre-1967 Models
	⁷ Type III, Trap Stock Dimensions, 1 7/16" x 1 5/8" x 14 3/8" - With or Without Pad, Short or Long Trigger Guard
	⁸ Magnum Trigger Guard Stock Dimensions, 1 5/8" x 2 1/2" x 14" - With Recoil Pad, Short or Long Trigger Guard
	MT = Mechanical Trigger Model

* Indicates part must be fitted by Browning Service Department or qualified gunsmith.

NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

SECTION IV

INSPECTION AND DISASSEMBLY INTO SUB-ASSEMBLIES

1. PRE-DISASSEMBLY INSPECTION

- A. Check both Trigger pulls of the gun for a let-off force of 4 to 5 lbs. for target guns and 4.5 to 5.5 lbs. for field guns. Trigger pull adjustment is described in Section VII of this manual.
- B. With the Action cocked, only partially disengage the Sear by slightly pulling the Trigger. Release the Trigger slowly and feel the Sear's regain to full engagement.



CAUTION: If there is any doubt, check Sear regain visually after the Stock is removed.



CAUTION: If the Trigger pulls are lighter than specified or the Sear's do not regain as described in Paragraph 1.B, necessary repairs must be accomplished in order to correct those discrepancies.

- C. With the gun completely assembled, open and close the Action and allow the Top Lever to snap into position.

Check to see the Top Lever is slightly to the right and not in the center or past center of the Top Tang.

If in the center or past, and the Action is loose, the Locking Bolt is worn and requires welding and adjustment. This procedure is explained in Section VII of this manual.

If the Action is loose and the Top Lever is to the right, the Takedown Lever requires adjustment which will also be discussed in Section VII.

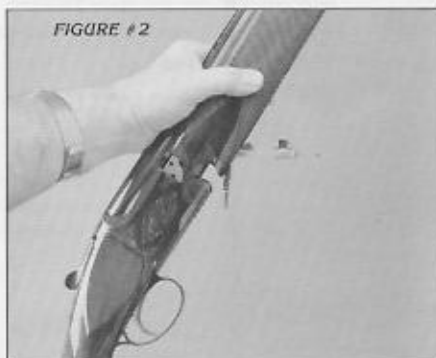
- D. Before disassembly, it is suggested that Sections VI and VII be reviewed for content and application to the Superposed being repaired.

2. HAND DISASSEMBLY WITHOUT TOOLS

With the gun completely assembled, press rearward on the Takedown Lever Latch with the index finger and then pull outward as shown in Figure #1. Slide the Forearm forward and allow the Cocking Lever Lifter to drop out of its slot in the Receiver as shown in Figure #2.

To disassemble the Barrel Assembly from the Receiver, push the Takedown Lever to the right and carefully rotate the Barrels downward and remove the

Barrels by lifting the breech end out of the Receiver.



3. DISASSEMBLY WITH TOOLS INTO SUB-ASSEMBLIES

A. FOREARM ASSEMBLY

NOTE: The old style Forearm and bracket differ from the Mark III in that the old style bracket remains on the Barrels after the Forearm has been removed. The Mark III Forearm and bracket are removed together from the Barrels along with the Takedown Lever and pin.

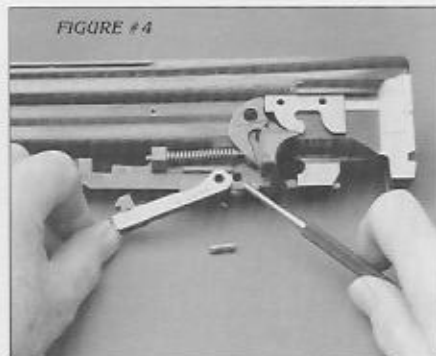
(1) OLD STYLE

Remove the Forearm Screw which may be end fastening (Beavertail Forearm) or side fastening. After removal of the Screw, slide the Forearm forward and off the muzzle end of the Barrels.

NOTE: If after removal of the Forearm Screw the Forearm is stuck in place, grasp it as shown in Figure #3 and strike the muzzle end of the Barrels on a wooden surface while pulling downward on the Forearm. This will loosen the Forearm from the Forearm Bracket.



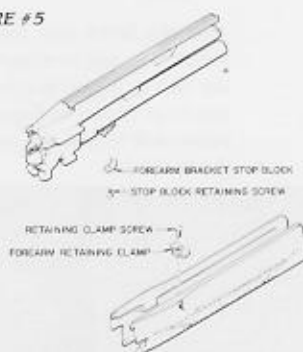
Remove the Takedown Lever Pin and Takedown Lever. (Figure #4)



The Forearm Bracket Assembly may now be removed by sliding it forward and lifting it off the Barrels.

(2) NEW STYLE (MARK III) (Figure #5)

FIGURE #5



With the Forearm to the rear, remove the Stop Block Retaining Screw and the Forearm Bracket Stop Block located underneath the Takedown Lever.

Lift the Forearm, with the Forearm Bracket Assembly attached, off the Barrels.

The Forearm Bracket Assembly may now be removed from the Forearm by removal of the Forearm Clamp Screw and clamp.

NOTE: Before removal of the Forearm Assembly, make sure the Ejectors and Ejector Extensions are pushed fully to the rear.

NOTE: Use a blade screwdriver and engage the slot at the rear of the Forearm Retaining Clamp to pry it out.

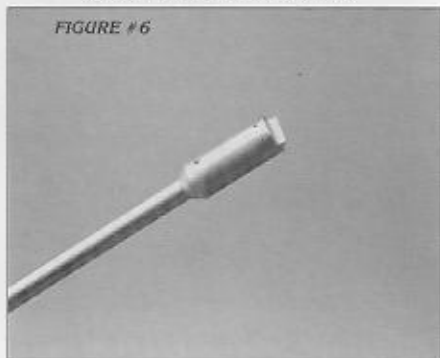
B. STOCK

Remove both Trigger Guard Screws.

NOTE: In 1966, production started with the introduction of the short Trigger Guard Tang. Return was made to the long Tang on Mark III guns in approximately 1972.

Remove the Recoil Pad or Butt Plate. With a special screwdriver such as shown in Figure #6, loosen the Stock Bolt 4 or 5 turns.

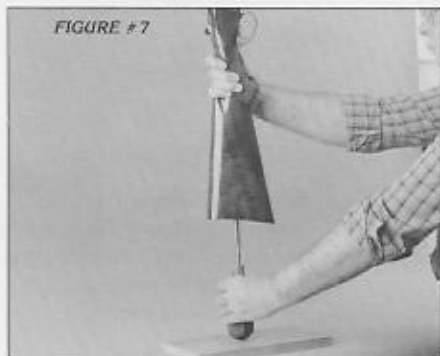
FIGURE #6



NOTE: A regular blade screwdriver is easily positioned along the Stock Bolt and when turned will break out the side of the Stock.

After the Stock Bolt has been loosened only two or three turns, rap the end of the screwdriver on a bench as shown in Figure #7. This action will loosen the Stock from the Receiver.

FIGURE #7



Completely remove the Stock Bolt, Washers and the Stock from the Receiver.

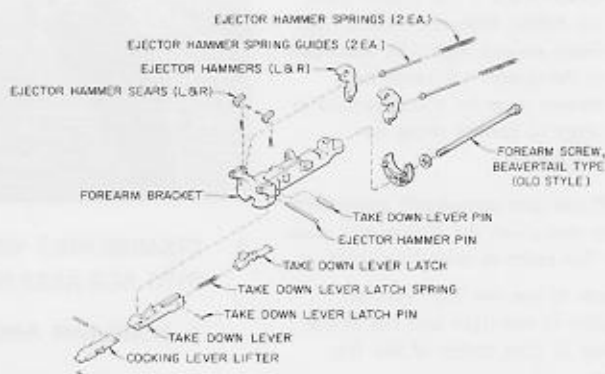
SECTION V

DISASSEMBLY OF SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTION AND REASSEMBLY OF SUB-ASSEMBLIES

1. DISASSEMBLY OF THE FOREARM BRACKET ASSEMBLY, OLD & NEW MARK III STYLES (Figure #8)

NOTE: The disassembly of the old style Forearm Bracket and the new Mark III style are identical with the exception of the Takedown Lever and pin. On the old style Forearm Bracket the Takedown Lever and pin were removed previously in Paragraph IV-3.

FIGURE #8

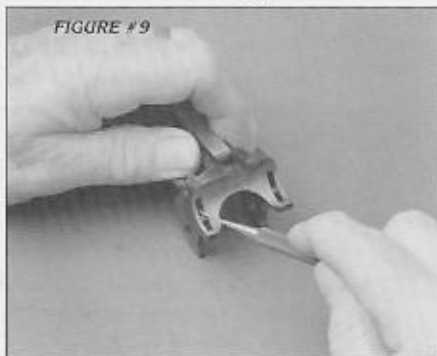


Remove the Takedown Lever and pin (Mark III).

Remove the Cocking Lever Lifter Pin with a 3/32" punch and remove the Cocking Lever Lifter.

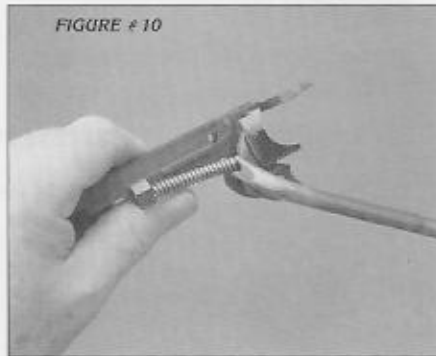
Relieve the tension on the Ejector Hammer Springs by laying the assembly on a work surface with the Ejector Hammers positioned downward. Using a 3/32" punch, trip the Ejector Hammer Sears as shown in Figure #9.

FIGURE #9



With a tack puller, or similar tool with which to pry, remove the Ejector Hammer Springs and Guides as shown in Figure #10.

FIGURE #10



CAUTION: Use extreme care in removal of these springs to prevent them from flying out and causing serious injury.

Remove the Ejector Hammers by removing the Ejector Hammer Pin with a 3/32" punch from left to right.

The only parts remaining on the Forearm Bracket are the Ejector Hammer Sears, springs and pins. Their removal should not be necessary. The Forearm Bracket may be reblued, if desired, with these parts installed provided the bluing salts are thoroughly rinsed out of the recesses.

Disassembly of the Takedown Lever Assembly should not be necessary. It too, may be reblued without disassembly, provided the bluing salts are thoroughly rinsed out.

2. INSPECTION OF THE FOREARM ASSEMBLY COMPONENTS

A. FOREARM

Inspect the Forearm for signs of pressure in the Barrel channel and where the Forearm butts against the Receiver. If the Forearm shows signs of rubbing in any of these areas, breakage of the Forearm may result. The Forearm must be relieved at these pressure points by carefully sanding or filing. These wood surfaces should be resealed with clear lacquer after making sure the wood-to-metal fits are correct.

B. FOREARM BRACKET

Check the Forearm Bracket for galling, remove with 320 grit emery cloth and polish.

Check the bracket for cracks at the point of the Ejector Hammer impact and at the notch just forward of the Ejector Hammer Spring Guide seats (Old Style).

C. EJECTOR HAMMERS

Check the Hammers and replace if cracked.

3. REASSEMBLY OF THE FOREARM ASSEMBLY

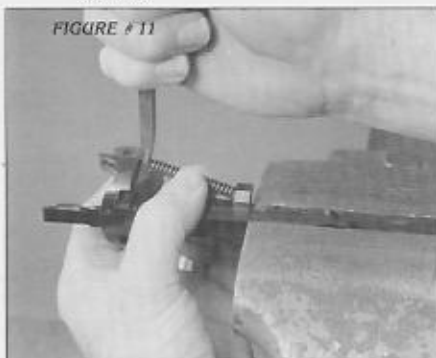
A. EJECTOR HAMMERS & SPRINGS

With the Ejector Hammer Sear and springs installed, install the Ejector Hammers and Ejector Hammer Pin.

Depress the Sear and lower both Ejector Hammers.

Position the bracket in a vise as shown in Figure #11 and using the same tool as in disassembly, install both Ejector Hammer Springs and guides.

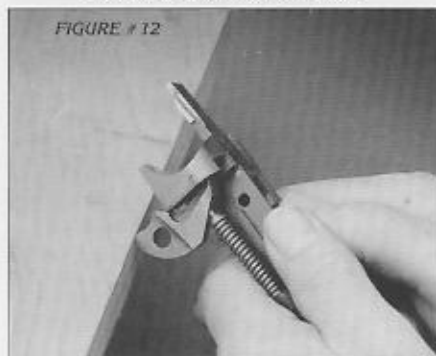
FIGURE #11



CAUTION: Use extreme care not to let the Ejector Hammer Springs and guides fly out and cause injury.

Grasp the Bracket Assembly, as shown in Figure #12, and cock the Ejector Hammers by pressing them against a work surface edge.

FIGURE #12



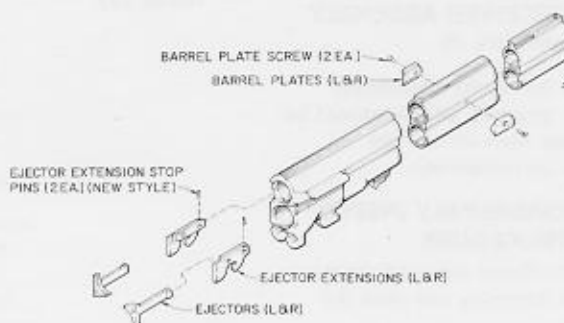
CAUTION: Cock the Ejector Hammers only far enough to engage the Ejector Hammer Sear. If cocked further, the Ejector Hammer Spring Guides may be cammed out of their seats. If this happens, the springs and guides will fly out and possibly cause serious personal injury.

B. COCKING LEVER LIFTER

Install the Cocking Lever Lifter and pin.

4. DISASSEMBLY OF THE EJECTORS (Figure #13)

FIGURE #13



A. OLD STYLE

Old style Ejectors are retained to the Barrels by a stop screw located under the Ejectors.

NOTE: Parts for the old style Ejector mechanism are no longer available. Consequently, when replacement of an old style Ejector or Ejector Extension is necessary, both parts must be replaced with the new style.

To remove, use a small properly ground screwdriver and remove the stop screw through the hole in the Ejector. Turn the Barrels on the opposite side and tap with the palm of the hand to eject the loosened screw. Next, slide the Ejector and Ejector Extension out of the Barrel flats.

B. NEW STYLE

The new style Ejectors and Extensions are retained by the Ejector Extension Stop Pin located at the forward end of the extension. The Ejector is attached to the extension by a small recess in the extension. Both may be removed after the stop pin has been driven flush with the top surface of the Ejector Extension.

NOTE: If damaged during adjustment, the stop pins may be removed by drilling with a #51 bit.

5. INSPECTION AND REINSTALLATION OF THE EJECTORS

Inspect the Ejectors and Ejector Extension for cracks and make any replacements necessary.

A. NEW STYLE

Install both left and right Ejector and Ejector Extensions. Drive the Ejector Stop Pins to extend approximately .005" above the top surface of the extensions.

NOTE: The stop pins should not extend excessively above the Ejector Extensions or else they will interfere with the Forearm.

B. OLD STYLE

Install both left and right Ejectors, Ejector Extensions and stop screws.

Check for free movement of the Ejector installation, remove any burrs that may restrict smooth operation.

6. BARREL AND FOREARM REASSEMBLY

A. OLD STYLE

Position the Forearm Bracket Assembly on the Barrels engaging the rails of the bracket under the rails of the lower Barrel lug. Install the Takedown Lever Assembly and Retaining Pin. (Figure #4).

Position the Forearm on the Forearm Bracket and install the Forearm Screw.

B. MARK III

Install the Takedown Lever and Retaining Pin on the Forearm Bracket.

Position the Forearm Bracket Assembly in the Forearm and install the Forearm Retaining Clamp and screw.

With the Takedown Lever unlatched, install the Forearm Assembly on the Barrels and position the Forearm to the extreme rear.

NOTE: Make sure the Ejectors

and Ejector Extensions are fully to the rear before installing the Forearm Assembly on the Barrels.

Install the Forearm Bracket Stop Block, positioning its end with the screw hole to the rear, and the retaining screw.

NOTE: When the Forearm is assembled with proper wood-to-metal fit, there should be enough clearance between the Barrel and the Forearm and the Receiver and the Forearm so that a piece of paper can pass through unrestricted.

7. INSPECTION & DISASSEMBLY OF THE RECEIVER ASSEMBLY (Old Style and Mark III)

NOTE: During the disassembly process, generally, all pins should be driven out from left to right. (Reverse on reassembly)

A. PRE-DISASSEMBLY INSPECTION PROCEDURE

Install the Barrel Assembly on the Receiver Assembly and close the Action.

With the Hammers in the fired position, observe they rest on the Cocking Lever and not the Receiver. The Hammers resting on the Cocking Lever results in a slight gap between the Hammers and Receiver. If the Hammers rest on the Receiver a hard opening action after firing could result due to the Firing Pins dragging in the primers. To correct, refer to Section VII after disassembly for adjustment procedure to a worn or bent Cocking Lever (seldom required).

Remove the Barrel Assembly from the Receiver.

B. TRIGGER GUARD

Remove the Trigger Guard by turning 90° and lifting it out of the Receiver.

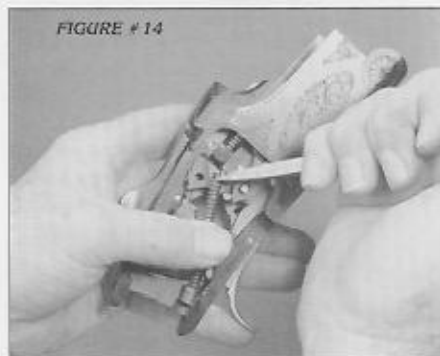
NOTE: On short tang models, a pin must first be driven out of the aft end of the Trigger Guard that retains it to the Receiver.

C. MAINSPRINGS AND MAIN-SPRING GUIDES

With the Hammers lowered, use the same special tool used to remove the Ejector Hammer Springs and remove both Mainsprings and guides as shown in Figure #14.

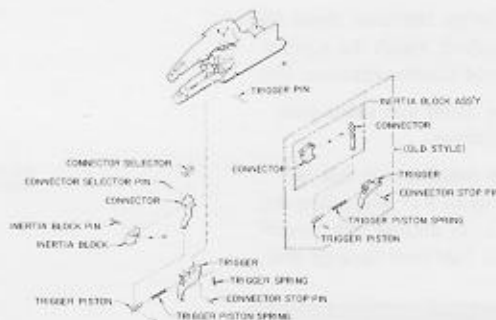


CAUTION: Use extreme care not to let the springs and guides fly out and cause injury.



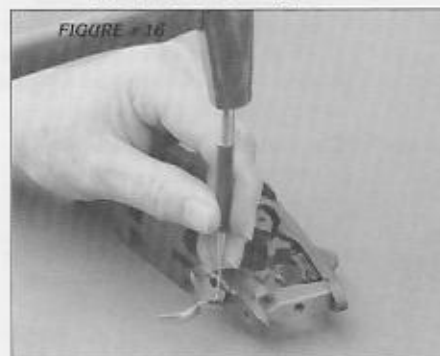
D. TRIGGER, TRIGGER PISTON, SPRING & INERTIA BLOCK ASSEMBLY (Figure #15)

FIGURE #15



Remove the Trigger Pin with a 3/32" punch.

Partially extend the Trigger Assembly from the Receiver as shown in Figure #16 and remove the Connector Stop Pin with a 1/16" punch and remove the Trigger.



NOTE: On the Mark III configuration, the Trigger Spring (coil spring) will be removed along with the Trigger.

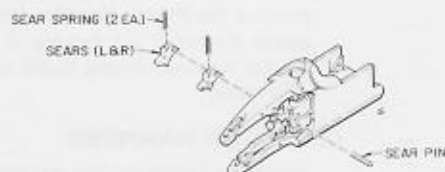
Remove the Trigger Piston Spring from the Trigger Piston.

Remove the Connector, Inertia Block and Trigger Piston, all as one assembly, from the top of the Trigger slot.

NOTE: It should not be necessary to disassemble the Inertia Block Assembly.

E. SEARS (Figure #17)

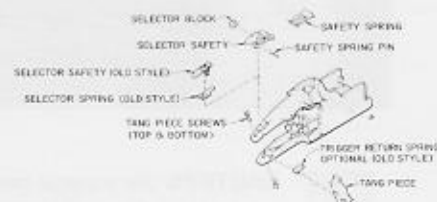
FIGURE #17



Remove the Sear Pin with a 3/32" punch and remove the Sears and Sear Springs.

F. SELECTOR SAFETY ASSEMBLY AND TANG PIECE (Figure #18)

FIGURE #18



1. OLD STYLE

Lift the forward end of the Selector Spring with a blade screwdriver, rotate it 90° and remove.

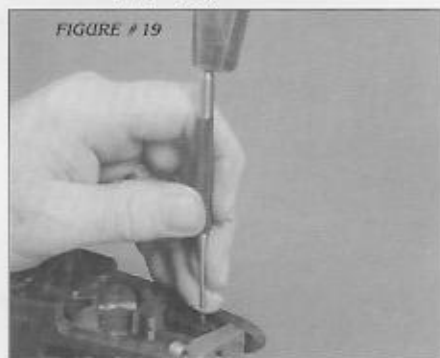
Remove the Selector Safety and Selector Block from the top of the tang.

NOTE: If the Selector Block is removed from the Selector Safety, it should be reassembled with the same orientation. It should be marked now to aid in reassembly.

2. MARK III

Lay the Receiver on one side and place a support block under the

Selector Safety as shown in Figure #19. The support block used here is a 3/4" brass rod, 3/4" long.



Remove the Safety Spring Pin (located in the Selector Safety Stud) with a 1/16" punch.

Center the Selector Block with the Selector Safety and remove both parts attached from the top of the Receiver.

NOTE: Removal of the Selector Block from the Selector Safety should not be necessary. A small spring and plunger in the block is easily lost if removed.

The Selector Spring may be removed by rotating it downward and lifting it out. In some cases it may be necessary to first remove its Retaining Pin.

NOTE: There should be no need to remove the Safety Selector Spring Retaining Pin (or retaining screw on some models).

Remove the top and bottom Tang Piece Screws.

NOTE: If difficult to remove, tap each side of the Tang Piece to loosen.

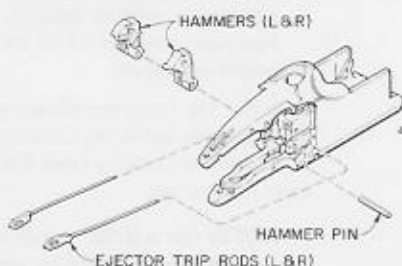
Tap the Tang Piece out of the side of the top and bottom Tangs.

NOTE: On some models a flat spring (Trigger Return Spring) is located under the bottom edge of the Tang Piece. Replacements are no longer available. However, this part is not necessary for proper functioning of the gun. The Trigger Piston Spring acts as the Trigger Return Spring should the flat spring become lost or broken.

G. HAMMERS AND EJECTOR TRIP RODS (Figure #20)

Remove the Hammer Pin with a 1/8" punch and remove both Hammers.

FIGURE #20

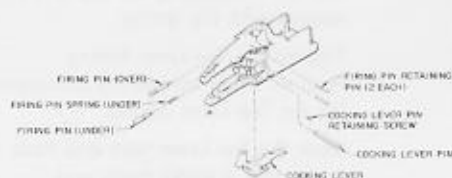


Withdraw both Ejector Trip Rods with the aid of a 3/32" punch.

NOTE: The Ejector Trip Rods should withdraw with some resistance. Do not attempt to straighten them so they float freely in the Receiver when installed. If they do, unfired shells may be ejected when the gun is broken open.

H. FIRING PINS AND COCKING LEVER (Figure #21)

FIGURE #21



With a 3/32" punch, remove both Firing Pin Retaining Pins, Firing Pins and the Under Firing Pin Spring.



CAUTION: Do not let the Under Firing Pin fly out of the Receiver upon withdrawal of the punch.

Use a 5/32" punch with its end rounded to mate the Cocking Lever Pin to prevent marring, and remove the pin from the left to the right side of the Receiver.

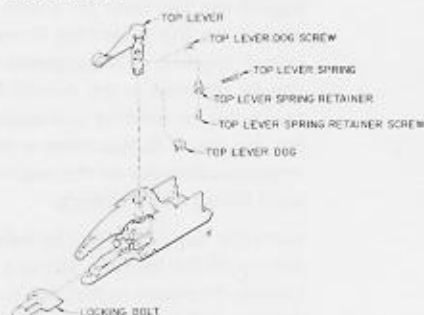
NOTE: On some models a Cocking Lever Pin Set Screw must first be loosened from the Receiver located beneath the left Ejector Trip Rod hole.

Remove the Top Lever Spring Retainer Screw, retainer and spring.

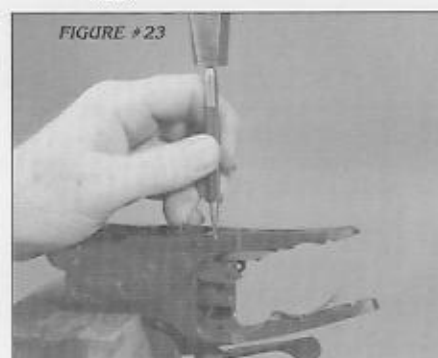
Push the Top Lever to the right and remove the Cocking Lever from the bottom of the Receiver.

I. LOCKING BOLT AND TOP LEVER ASSEMBLY (Figure #22)

FIGURE #22



Center the Top Lever with the Top Tang. Turn the Receiver bottom side up and with a 3/32" punch, tap the bottom end of the Top Lever toward the top of the Receiver approximately 1/4" as shown in Figure #23.



With the aid of a brass punch, tap the Locking Bolt out the rear end of the Receiver.

Position the Receiver bottom side up on a work surface. With a 3/32" punch, tap on either side of the Top Lever Dog. The Top Lever Dog will then rotate on its pin and the Top Lever Assembly can be driven completely out the top of the Receiver.

NOTE: It should not be necessary to disassemble the Top Lever Assembly.

EXPRESS RIFLE

Two Vent Screws will be remaining on the Receiver of the Continental and Express Rifle on the upper and right hand side of the Receiver. No attempt should ever be made to remove these Vent Screws.

8. INSPECTION OF COMPONENTS AND REASSEMBLY OF THE RECEIVER ASSEMBLY

A. INSPECTION OF THE RECEIVER

Inspect the Receiver for gall marks, remove with 320 grit emery paper and polish as necessary.

B. INSPECTION AND REINSTALLATION OF THE TOP LEVER (Figure #22)

Inspect the Top Lever for cracks around the Top Lever Dog Screw hole. If cracked, it is suggested the gun be returned to the Arnold Service Center for welding and repair of the Top Lever. Replacement is not recommended due to the required hand fitting and engraving.

Insert the Top Lever into its hole in the top of the Receiver. Using a rawhide or plastic mallet, tap it into position and position the lever to the right.

Turn the Receiver bottom side up with the top of the Receiver resting on a firm surface.

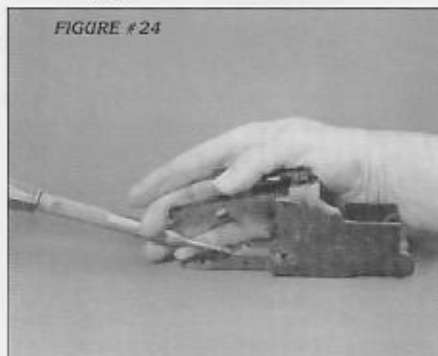
With a $3/32"$ punch, tap the Top Lever Dog into its recess in the Receiver until it has rotated fully on its pin.

Elevate the top of the Receiver from the work surface. Lightly tap the bottom of the Top Lever toward the top of the Receiver to allow insertion of the Locking Bolt.

C. INSTALLATION OF THE LOCKING BOLT (Figure #22)

Partially insert the Locking Bolt from the rear of the Receiver. With the Top Lever centered, hold slight downward pressure on the Top Lever with one hand as shown in Figure #24.

FIGURE #24



NOTE: Use care not to catch the Top Lever Dog with the forward end of the Locking Bolt.

While holding slight downward pressure on the Top Lever, tap the Locking Bolt forward until the Top Lever Dog drops into its recess in the Locking Bolt.

Tap the Top Lever down into final position.

D. INSPECTION & INSTALLATION OF THE COCKING LEVER (Figure #21)

NOTE: If it has been determined the Cocking Lever requires adjustment, refer to Sections V, Paragraph 7-A and VII for the proper procedure.

Push the Top Lever completely to the right and install the Cocking Lever and the Cocking Lever Pin from right to left.

NOTE: Use a $5/32"$ punch with a properly shaped end to prevent marring of the Cocking Lever Pin.

Tighten the Cocking Lever Pin Retaining Screw, if present.

E. INSTALLATION OF THE TOP LEVER SPRING AND RETAINER

Position the Top Lever to the center of the Top Tang.

Position the large end of the Top Lever Spring into its hole in the Receiver.

Position the end of the coil of the small end of the spring pointing toward the top of the Receiver.

Install the Top Lever Spring Retainer and screw engaging the lug of the retainer with the spring.

Tighten the Top Lever Spring Retainer Screw completely compressing the Top Lever Spring.

Work the Top Lever back and forth to see that it works freely and returns toward the center of the Top Tang.

F. INSPECTION AND INSTALLATION OF THE FIRING PINS (Figure #21)

Visually inspect the forward ends of the Firing Pins for pitting and even crowns.

Install the Over and Under Firing Pins, Under Firing Pin Spring and both Firing Pin Retaining Pins.

NOTE: It is recommended the flat sides of the Firing Pins be aligned with the Retaining Pin holes with a $3/32"$ punch before trying to install the Retaining Pins.

After installation of the Firing Pins, check that they move freely. If they do not, remove them and hand ream the Firing Pin holes.

NOTE: The correct reamer size is Morse #2 reamer for 12 ga. and a #15 for smaller gauges.

Refer to Section VII for proper protrusions and adjustments.

G. INSTALLATION OF THE SEARS (Figure #17)

Install both Sears, Sear Springs and the retaining pins making sure the Sear Springs locate in their recesses in the Top Tang.



CAUTION: The small recesses on the sides of the Sears are to be positioned facing each other. If they are not installed in this fashion, the gun is subject to doubling.

NOTE: Align both Sears with a $3/32"$ punch, chamfer the end of the Sear Retaining Pin and drive the punch out with the pin.

Check that both Sears move freely. If they do not, they may be made free by tapping lightly on the side of the Sear tails with a small hammer.



CAUTION: Do not strike the Sears on the corners of the Hammer Sear engaging surfaces.

H. INSTALLATION OF THE EJECTOR TRIP RODS & HAMMERS

Install the left and right Ejector Trip Rods (See Figure #20 for position) and align their holes with the Hammer Pin hole.

Install both Hammers and the Hammer Pin centering the pin with the Receiver so that an equal amount protrudes past each Ejector Trip Rod.

Refer to Section VII for Ejector timing adjustments.

I. INSPECTION AND INSTALLATION OF THE TANG PIECE AND SELECTOR SAFETY ASSEMBLY (OLD STYLE & MARK III) (Figure #18)

Install the Tang Piece with the Main-spring seats positioned to the bottom and forward, along with the leaf Trigger Return Spring, if previously removed.

Install the two Tang Piece Retaining Screws.

NOTE: After tightening, the Bottom and Top Tang Piece Screws must be staked to prevent loosening. This should be accomplished at the screw slots.

Check to see the Selector Block fits the Safety Selector snugly and has only lateral movement. If not, the Selector Safety will have too much play after installation resulting in malfunctions during Barrel selection. If there is too much play in the

Selector Block, refer to Section VII for the adjustment procedure.

SELECTOR SAFETY ASSEMBLY

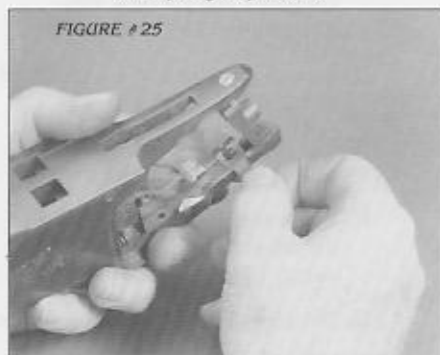
1. OLD STYLE

Check the forward edge of the forward stud on the Selector Safety for sharpness. Remove any burrs by filing to a sharp edge. This will help to alleviate the selector hanging in the center position.

With the Selector Block installed in the Selector Safety with its original orientation, insert the Selector Safety in its slot in the Top Tang.

Place the Selector Spring, 90° from its final orientation, under the shoulder on the stud of the Selector Safety as shown in Figure #25 and rotate the spring into final position while keeping the spring depressed.

FIGURE #25



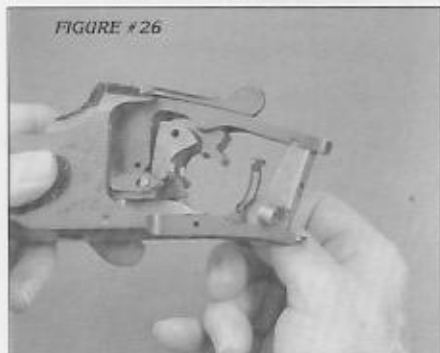
SAFETY WARNING

CAUTION: Check the safety for positive detents into the "ON" and "OFF" positions. It should require an operating force of approximately 7 lbs. If it operates too freely, fit a new Selector Safety Spring.

2. MARK III

Install the Selector Safety Spring Retaining Pin and Selector Spring with the orientation as shown in Figure #26.

FIGURE #26



Center the Selector Block with

the Selector Safety and position it in its slot in the Top Tang.

Push the Selector Safety to the left and forward and lay the Receiver on its right side.

Position the support block, 3/4" brass rod 3/4" long (for 12 ga.) under the Selector. Compress both the left and right arms of the Selector Spring and install the Safety Spring Pin, PO30298, under both of the compressed arms of the spring.

NOTE: Be sure to center the Safety Spring Pin with the selector.

SAFETY WARNING

CAUTION: Check the Safety for positive detents into the "ON" and "OFF" positions. It should require an operating force of approximately 7 lbs. If it operates too freely, fit a new Selector Safety Spring.

J. INSPECTION AND INSTALLATION OF THE TRIGGER AND INERTIA BLOCK ASSEMBLIES

(Figure #15)

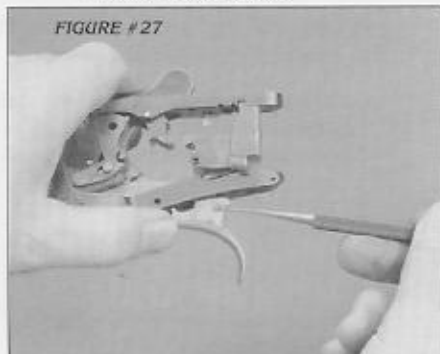
Inspect the Inertia Block slot, Trigger Piston hole and Trigger Piston for burrs. These parts must work smoothly or malfunctions will result. A #15 Morse reamer (all gauges) may be used in the Trigger Piston hole to remove burrs there. Clean and polish any parts as necessary.

Position the Inertia Block Assembly and Connector, with the Trigger Piston attached, into position extending the Connector down through the Trigger slot.

Install the Trigger Piston Spring in the Trigger Piston hole.

Position the Trigger Piston in the Trigger Piston hole compressing the Trigger Piston Spring.

FIGURE #27



Partially insert the Trigger in the Trigger slot with the Trigger Piston Spring compressed, as shown in Figure #27, and install the Connector Stop Pin.

NOTE: Use care not to collapse the Trigger Piston hole in the Trigger so the Trigger Piston will bind. The piston must work freely in the Trigger. If it does not, ream the Trigger Piston hole with a #15 Morse reamer.

After installation of the Connector Stop Pin, position the stud of the Selector Safety in the slot in the top of the Inertia Block.

Align the Trigger holes and install the Trigger Pin.

Pull the Trigger and see that it works freely.

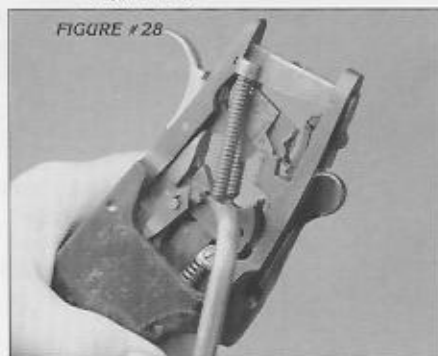
Pull the Inertia Block to the rear, release it and see that it snaps forward freely.

K. INSTALLATION OF THE MAINSPRINGS AND MAINSPRING GUIDES

(Figure #14)

With the Hammers lowered, use the same tool as in disassembly and install both Mainsprings as shown in Figure #28.

FIGURE #28

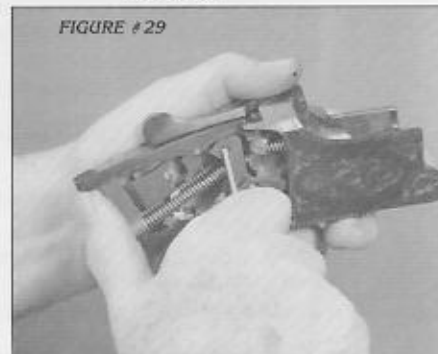


SAFETY WARNING

CAUTION: Use extreme care not to let the Mainsprings and guides fly out and cause injury.

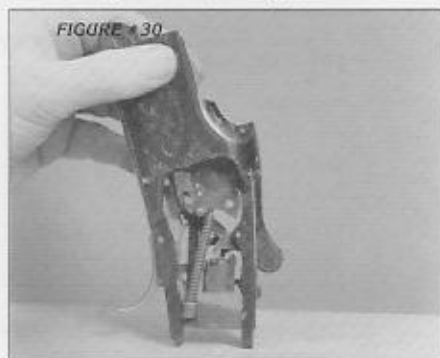
NOTE: Make sure the forward ends of the Mainspring Guides are seated properly in their Hammer seats.

FIGURE #29



Check for proper assembly by first placing the Selector Safety to the "ON SAFE" position and cocking both Hammers with a 1/8" punch as shown in Figure #29.

Cycle the Selector Safety mechanism and cycle the Firing System several times to ascertain proper functioning. After firing the first Barrel, the second Barrel should "set up" by slightly rapping the rear of the Receiver on a bench as shown in Figure #30. (Old Style)



L. FIRING SYSTEM INSPECTION PROCEDURE

1. With the Hammers cocked and the Safety in the "OFF SAFE" position, check for approximately .012" clearance between the Connector and the Sear tails. Too little clearance will result in the second Barrel not "setting up" for the second shot.
2. Check the Trigger pulls for a pull of 4.5 to 5.5 lbs. for field guns and 4 to 5 lbs. for target guns. Adjust Trigger pulls to the procedure given in Section VII if required.
3. With the Hammers cocked, pull the Trigger slightly and only partially disengage the Sear. Release the Trigger and observe that the searing surfaces regain to full engagement. Try this procedure on each Barrel. If both Sear do not regain to full engagement after partial disengagement, repair by replacement of the Hammers and/or Sear and adjustment, or adjustment per instructions given in Section VII.

M. INSTALLATION OF THE TRIGGER GUARD AND STOCK

With the Trigger Spring installed on the Mark III models, position the front lug of the Trigger Guard in the Receiver 90° from final orientation and rotate it into final position.

CAUTION: On the Mark III, the Trigger Spring must first be compressed before rotation of the Trigger Guard. Use care not to crush the spring or let it fly out of the Trigger.

On the short tang models, install the Trigger Guard Pin at the rear of the Trigger Guard.

Position the Stock on the Receiver. On long tang models, install the Trigger Guard Screws with the shorter screw forward. Do not fully tighten the screws at this time.

Install the Stock Bolt and washers. Tighten the Stock Bolt, using the same special screwdriver as in disassembly to prevent damage to the Stock. Tighten the Trigger Guard Screws.

Install the Butt Plate or Recoil Pad.

N. FINAL ASSEMBLY AND INSPECTION

Reassemble the Barrels to the Receiver.

Open and close the Action and cycle all systems to ascertain proper functioning.

Repeat the steps of inspection given in Section IV, Para. 1, A and B.

SECTION VI

TROUBLESHOOTING/POSSIBLE CAUSES



CAUTION: Make certain the shotgun is unloaded before performing any troubleshooting.

1. FAILS TO FIRE

- A. Weak Mainsprings.
- B. Short or pitted Firing Pins.
- C. Excessive headspace.

2. HARD OPENING AFTER FIRING

- A. Firing Pin too long and dragging in the primer (See Section VII, Para. 5).
- B. Bent Cocking Lever (See Section VII, Para. 9, for adjustment procedure.)
- C. Improper angle on the Locking Bolt surface engaging the Barrel lugs or improper angle on the Barrel lugs.
- D. Inspect for miscellaneous parts breakage.
- E. Galling of Receiver and Barrel flats.
- F. Broken Top Lever at the housing around the Top Lever Dog (rare occasion). Return the gun to the Arnold Browning Service Center.

3. BARREL SELECTION PROBLEMS

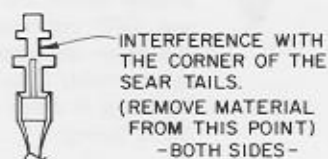
- A. Improperly installed Selector Spring.

- B. Selector Block loose in Selector Safety. Fit new Selector Block, or adjust. (Refer to Section VII)
- C. Insufficient clearance between the Connector and Sear tails preventing engagement. (Recommended .012 to .015 inch)
- D. Burrs in the Selector Safety slot in the Top Tang or on the mating parts.
- E. Rounded surface of the Connector at the point of Sear tail engagement.

4. FAILS TO SET UP SECOND SHOT

- A. Burrs in the Trigger Piston hole. Ream with a #15 Morse reamer and chamfer top forward edge of the Trigger Piston.
- B. Too weak or too strong Trigger Piston Spring.
- C. Insufficient clearance between the Connector and the Sear tails. (Recommend .012 to .015 inch)
- D. Burrs in top slot of the Inertia Block or the Selector Safety post.
- E. Burrs on the Sear tails or mating surface of the Connector.
- F. Interference between the corner of the second Sear tail and the Connector. See Figure #31.
- G. Dirt accumulation under the Trigger.

FIGURE #31



CONNECTOR

5. DOUBLING

- A. Worn Hammer Pin.
- B. Trigger pull too light.
- C. Selector Safety improperly adjusted and the Connector engages both Sear at once.

6. ACTION FAILS TO CLOSE

- A. Debris under the head of the Ejectors.
- B. Shallow headspace or bulged reloaded ammunition.

- C. Ejectors too long or improperly seated.
 - D. Locking Bolt stuck.
 - E. Bent Cocking Lever or Cocking Lever Lifter.
 - F. New Forearm not properly fit and wood bears against the Receiver.
 - G. Weak Top Lever Spring.
- 7. TOP LEVER MOVES TOWARD THE OPEN POSITION AFTER FIRING**
- A. Weak Top Lever Spring.
 - B. Worn Locking Bolt.
- 8. HAMMER FALLS AND IS CAUGHT BY THE SEARS IN THE HAMMER SAFETY NOTCH**
- A. Worn Hammer Pin.
 - B. Trigger pull too light.
 - C. Primary Connector stud rounded.
- 9. FAILS TO EJECT**
- A. Broken Ejector Hammer or Ejector Extension.
 - B. Ejector Hammer Sears stuck in the tripped position.
 - C. Ejector skipping over the rim of the shell due to oversized chamber or loose Ejectors.
 - D. Improperly timed Ejector Trip Rods. (Refer to Section VII)
- 10. LOOSE ACTION**
- A. Worn Locking Bolt - This can be determined by the position of the Top Lever when the Action is closed. If the Top Lever positions itself in the center of the Top Tang, and not slightly to the right, the Locking Bolt or mating Barrel Lug locking surfaces are worn. See Section VII for adjustment procedure.
 - B. Worn Takedown Lever. See Section VII for adjustment procedure.
- 11. BULGED OR DENTED BARRELS**
(Return to Arnold Browning Service Center.)

SECTION VII - INDEX

SPECIFICATIONS AND SPECIAL INSTRUCTIONS

1. RECOMMENDED POINTS OF LUBRICATION DURING REASSEMBLY

2. REMOVAL OF EJECTOR ACTION ALLOWING HAND REMOVAL OF FIRED SHELLS
3. EJECTOR TIMING
4. SCREW SIZES
5. FIRING PIN PROTRUSION
6. SPECIAL TOOLS
7. TAKEDOWN LEVER TIGHTENING PROCEDURE
8. TIGHTENING THE SELECTOR BLOCK
9. ADJUSTING A WORN OR BENT COCKING LEVER
10. TIMING THE COCKING LEVER TO ELIMINATE THE "DOUBLE CLICK" WHEN CLOSING THE GUN
11. REDUCING TRIGGER PRETRAVEL
12. FITTING OF NEW EJECTOR EXTENSION.
13. FITTING OF NEW EJECTORS.
14. ADJUSTMENT TO THE LOCKING BOLT.
15. TRIGGER PULL ADJUSTMENT.
16. REBLUING.
17. RESOLDERING RIBS.

SECTION VII

SPECIFICATIONS AND SPECIAL INSTRUCTIONS

1. RECOMMENDED POINTS OF LUBRICATION DURING REASSEMBLY

The use of Browning Gun Oil is recommended in the following areas during reassembly. Always use oil sparingly.

- A. Hinge Pin.
- B. Hinge area, both on the Receiver and the Forearm Bracket.
- C. Both sides of the Barrel flats that rest inside the Receiver and mating Receiver surfaces.
- D. Trigger Piston.
- E. Ejector Hammer Spring Guide pivot holes.
- F. Surface of Takedown Lever where contact is made on Barrel Lug.
- G. Shaft of the Top Lever.
- H. Locking Bolt.
- I. Exterior surfaces of gun.

- J. Hammer Pin.

2. REMOVAL OF EJECTOR ACTION ALLOWING HAND REMOVAL OF FIRED SHELLS

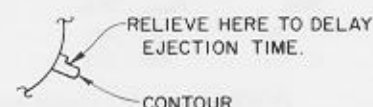
There are two methods that may be used to negate ejection of fired shells.

- A. Remove the Ejector Trip Rods.
- B. Remove the Ejector Hammers, Ejector Hammer Springs and guides.

3. EJECTOR TIMING

The front end of a new Ejector Trip Rod is cut off square and must be shortened and rounded to fit the contour of the Forearm Bracket as shown in Figure #32.

FIGURE #32

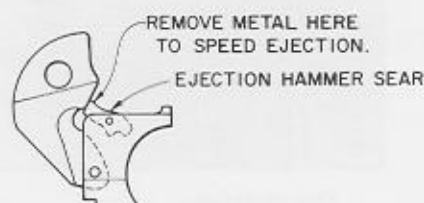


It must also be relieved at the point of the arrow where contact is made with the Ejector Sear in order to "time" ejection. Removing metal from this area will delay the time of ejection, i.e. the Barrels have to be rotated further open for the Ejectors to be tripped.

NOTE: Use a fine cut pillar file with a safe edge to prevent damage to the Receiver Forearm Bracket bearing surface.

In order to speed up ejection time, material must be removed from the Ejector Sear at the point of the arrow in Figure #33.

FIGURE #33



Proper timing has been achieved when the shell of the Under Barrel clears the Receiver when ejected without breaking the gun open excessively fast.

4. SCREW SIZES

The following screw sizes are given

should the need arise for the use of taps to recut threads.

Screw Sizes	Pitch and Gauge
Barrel Plate	
(Wooden) Screw	2.5 mm x .50 mm
Ejector Stop Screw	3.5 mm x .50 mm
Ejector Extension Screw	
(All Gauges)	4.0 mm x .50 mm
Stock Bolt (All Gauges)	6.0 mm x .75 mm
Tang Piece Screw	
(Top & Bottom)	4.0 mm x .75 mm
Top Lever Dog Screw	
(12 Gauge)	4.0 mm x .75 mm
(Small Gauges)	3.5 mm x .50 mm

5. FIRING PIN PROTRUSION

The minimum and maximum Firing Pin protrusion for all gauges are as listed below: (Hammer in down position with back of Firing Pin resting on the Hammer.)

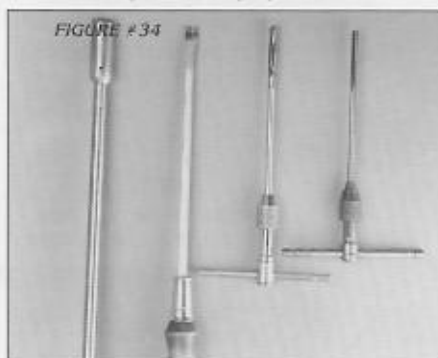
12 Gauge		20, 28 Ga. & 410	
Min.	Max.	Min.	Max.
0 - .052	.059	.036	.045
0 - .051	.056	.035	.039

NOTE: Firing Pins should have approximately .005" to .010" over travel in addition to the above dimensions. Forward travel of the Firing Pins should be limited by the Firing Pins forward shoulders striking the Receiver and not by the Firing Pins Retaining Pins.

If for any reason it becomes necessary to ream the Firing Pin Hole, use a Morse H.S. #15 reamer for the 20, 28, and .410 and a Morse H.S. #2 on the 12 gauge Superposed.

6. SPECIAL TOOLS

The following special tools shown in Figure #34 are recommended in the servicing of the Superposed.



From left to right:

1. Stock Bolt removal screwdriver.
2. Modified tack puller to remove Mainsprings and Ejector Hammer Springs.
3. #2 Morse reamer.
4. #15 Morse reamer.

7. TAKEDOWN LEVER TIGHTENING PROCEDURE

Remove the Forearm and the Takedown Lever.

Place the Takedown Lever in the corner of a vise as shown in Figure #35. Squeeze the cam of the lever to flow material so as to make the dimension from the Takedown Lever Pin hole to the camming surface greater. The vise jaws should grip approximately 3/32" from the edge of the camming surface.



Reassemble the Takedown Lever in the gun and check results. Do this in progressive steps until the proper tension is achieved. Ideally, the Barrels will barely drop by themselves when the Action is opened with the gun held horizontally.

If this results in the Forearm Bracket fitting too tightly, file a small amount of material away from the Takedown Lever cam.

8. TIGHTENING THE SELECTOR BLOCK

A. OLD STYLE

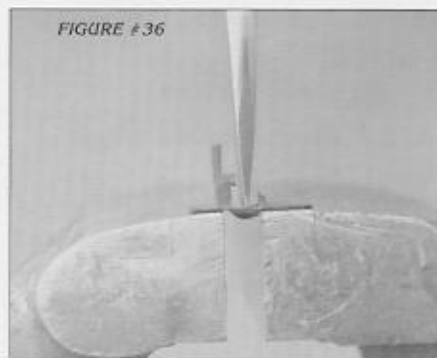
If the Selector Block is excessively loose, it is better to fit a new one. However, if only minor adjustment is necessary, use the following procedure:

Remove the Selector Safety Assembly from the Receiver and remove the Selector Block.

NOTE: Before removing the Selector Block, mark its orientation with the Selector Safety. Generally, the Block will work better when reinstalled with its original orientation.

Bridge the Selector Safety over a vise with the jaws close to the top button as shown in Figure #36.

Using a blunt screwdriver, bend the Selector Safety slightly by a light tap on the screwdriver in the center of the Selector Block slot.



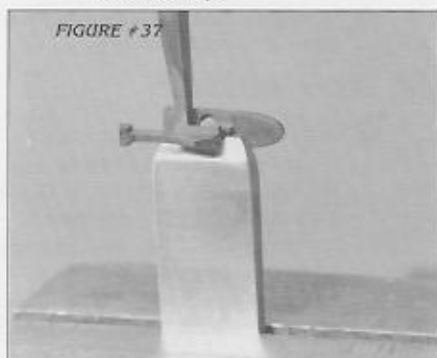
Additionally, check the forward edge of the forward stud and see that it is sharp. Remove any burrs by filing to a sharp edge.

B. NEW STYLE (Mark III)

If the Selector Block is excessively loose, it is better to fit a new one. However, if only slight adjustment is necessary, use the following procedure:

Remove the Selector Safety Assembly from the Receiver. Do not remove the Selector Block from the Selector Safety.

Using a small anvil, approximately .160" x .5" in cross section, stake the forward post of the Selector Block as shown in Figure #37. Do this on both sides of the forward post using a staking tool with an edge approximately .150" wide and not too sharp.



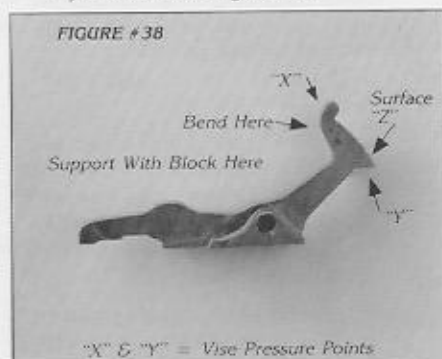
CAUTION: If the Selector Block is staked too tightly and the block must be removed, use care not to let the spring and plunger fly out of the block as it is disassembled.

9. ADJUSTING A WORN OR BENT COCKING LEVER (seldom required)

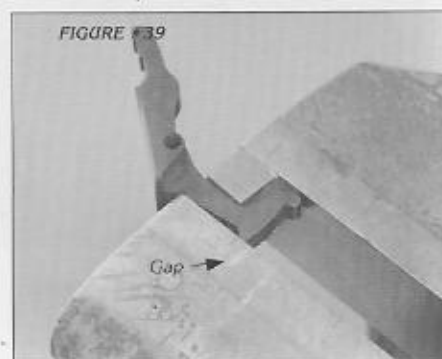
The Under Firing Pin dragging in the primer is the first indication of a severely worn or bent Cocking Lever. This occurrence is somewhat rare. In this event it is recommended the lever

be adjusted by bending and not by replacement.

The point at which to bend is indicated by the arrow in Figure #38.



A support block, approximately .450" x .450" in cross section, is needed for support in a vise. Figure #39 depicts the setup.



Localized heat should be applied at the area to be bent. Do not heat past a dark blue.

NOTE: Use care not to overheat or the desired characteristics of the metal will be lost.

Apply pressure gradually with the vise and check the results by installing the Cocking Lever and the Hammers and Hammer Pin in the Receiver.

Properly adjusted, the Hammers should rest on the Cocking Lever and not the Receiver. Ideally, a gap should exist between the Hammers and Receiver with the Hammers in the fired position. This gap should be .002" to .003" for the right Hammer and .001" to .002" for the left. These measurements should be taken toward the top of the Hammers.

The vise will mar the point "Y" in Figure #38. Remove the burrs formed on the sides and end of the arm, surface "Z", but do not shorten the point any more than necessary. Point "Y" affects timing of the Locking Bolt's return when closing the gun.

10. TIMING THE COCKING LEVER TO ELIMINATE THE "DOUBLE CLICK" WHEN CLOSING THE GUN

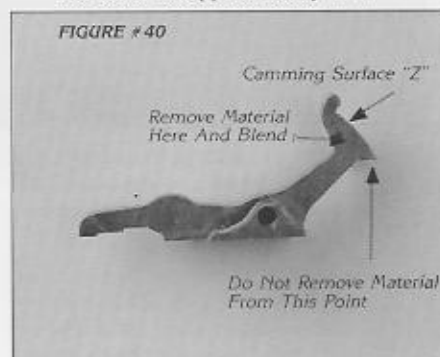
Properly timed, the gun should not make two distinct "clicks" when the Action is slowly closed. This is not harmful to the gun but is annoying to some shooters.

The first "click" is the Locking Bolt being released while too far retracted and falling against the Barrel Lug just below its locking notch. The second "click" is the Locking Bolt falling into the notch when the Barrels are fully closed.

To eliminate this first "click", the Locking Bolt must be resting against the Barrel Lug before it is released by the Cocking Lever.

To adjust, remove the Cocking Lever by removing the Cocking Lever Pin, and pushing the Top Lever to the right.

File a small amount of material away from the lower end of surface "Z" as shown in Figure #40 and blend into the curve for approximately 1/4".



NOTE: Do not remove material from the point so as to shorten the camming surface "Z".

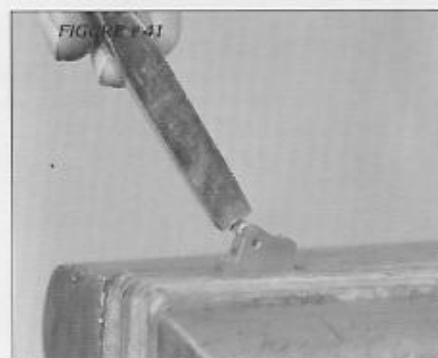
The material should be removed in small steps until the "click" is gone. The amount of material removed could be up to approximately .040".

11. REDUCING TRIGGER PRETRAVEL

If Trigger pre-travel is excessive, it may be reduced by shortening the gap between the Sear tails and the Connector. To accomplish this, remove the Trigger and place it in a padded vise as shown in Figure #41.

Bend the two tabs at the rear of the Trigger only slightly. The resultant gap should not be less than a recommended .012".

NOTE: On some guns, depending upon how the Stock is fit, this gap is sometimes reduced when the Stock Bolt is tightened.



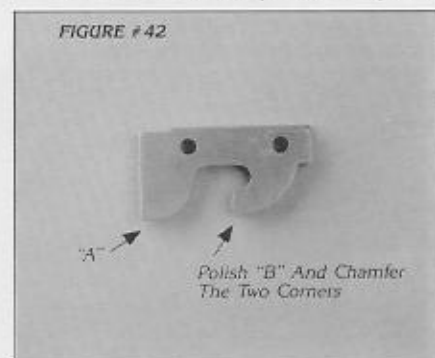
NOTE: Use care not to collapse the sides of the Trigger Piston hole and cause the Trigger Piston to bind. If necessary, ream the Trigger Piston hole with #15 Morse reamer after adjustment of the tabs.

12. FITTING OF NEW EJECTOR EXTENSION

In the fitting of new Ejector Extensions, it is desirable to obtain a fit as close as possible without binding.

Surfaces to be adjusted on a new Ejector Extension are the flat surface that mates with the bottom of the Barrel flat slot and the two adjoining angled edges of the extension.

After installation, check that corner "A" (Figure #42) clears the Forearm Bracket. Relieve and polish as required.



In order to prevent galling during closing of the Action, surface "B" should be polished and the two adjoining corners slightly chamfered.

After completely fitted and adjusted, polish all exposed surfaces to match the grade of the gun being repaired.

13. FITTING OF NEW EJECTORS

In the fitting of new Ejectors, it is necessary to fit them as closely as possible without binding. If loosely fit, malfunctions may result from the Ejectors riding over the rim of fired shells during ejection.

An Ejector blank may be fit to either the over or under barrel.

Initially, the blank should be adjusted to slide into the Barrel flat slot. Surfaces to be adjusted are the flat side of the Ejector that mates with the bottom of the Barrel flat slot and the two adjoining angled edges of the extension.

The next surfaces to be adjusted are the edges to allow fitting into the recess of the breech face. In addition, the outside surface must be dressed down to flush or slightly below flush with the Barrel flat. This is to prevent interference with the Receiver.

The face of the blank should now be dressed down to flush or slightly below flush with the breech face. Rough cuts should be made with the Ejector blank gripped in a vise. Final or next to final cuts can be made with the blank installed in the Barrel and the Barrel gripped in a padded vise.

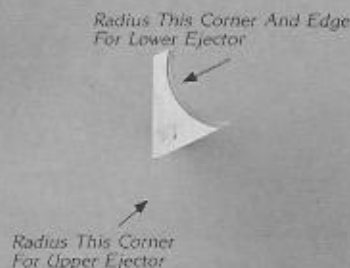
NOTE: Use extreme care not to file into the Barrel breech.

Next in order, the edge must be dressed down to the contour of the chamber. It is recommended this be accomplished by hand with a half-round file and not a chamber reamer. A reamer may remove material from the opposite side of the chamber.

The final adjustment is to face the head space with a headspace reamer.

After all adjustments, radius the corners as shown in Figure #43 to prevent damage to the standing breech.

FIGURE #43



Polish exposed areas to match the grade of the gun being repaired.

14. ADJUSTMENT TO THE LOCKING BOLT

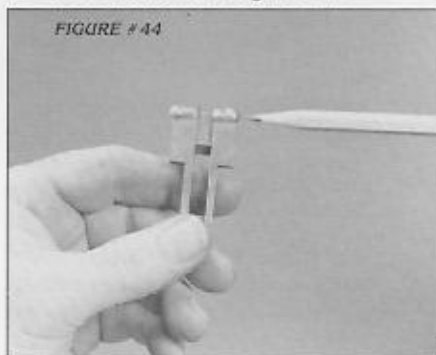
NOTE: Adjustment to the Locking Bolt is recommended instead of replacement with a new one. Adjustment requires the use of a tungsten inert gas (TIG) welder.

If a TIG welder is not available, return the gun to the Arnold Service Center for adjustment.

To adjust the Locking Bolt, a TIG weld must be built up on the locking sur-

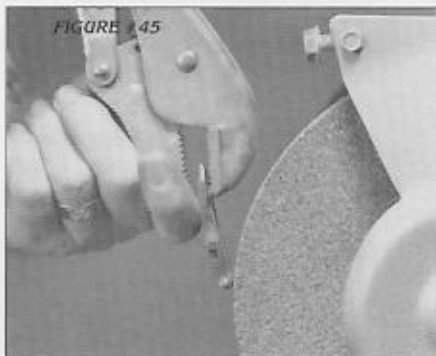
faces as shown in Figure #44.

FIGURE #44



Grip the Locking Bolt in a pair of vise grips, as shown in Figure #44. Grind the opposite weld flush with the top surface of the Locking Bolt as shown in Figure #45 and vice versa for the other side.

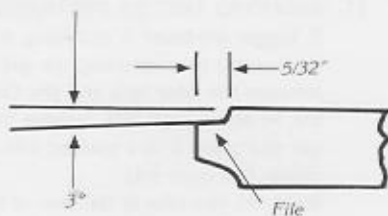
FIGURE #45



File the weld flush to the sides of the Locking Bolt being careful not to remove any material from any of the unwelded surfaces.

The locking surfaces of the bolt must now be adjusted to fit the locking surface of the Barrel Lugs. On a new Superposed, this is a 3 degree angle. On an older gun, this angle will change to some degree on the Barrel Lugs due to wear. Carefully file an approximate 3 degree step in the welded area, as shown in Figure #46, until the Locking Bolt will just begin to start into the Barrel Lugs.

FIGURE #46



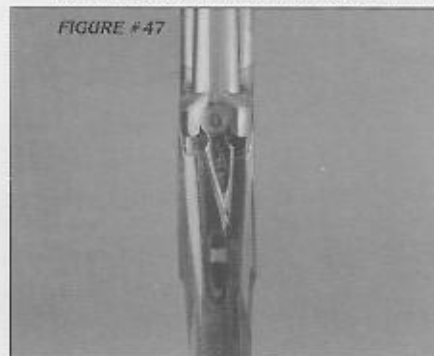
NOTE: To try this, only the Locking Bolt and Top Lever Assembly need to be installed in the Receiver along with the Barrels.

In small incremental steps, adjust the bearing surface of the Locking Bolt to a line to line contact with the bearing surfaces of the Barrel Lugs with as much contacting surface as possible. It is recommended these adjustments now be accomplished with 180 grit emery used against a flat file surface and finished with 320 grit.

Ideally, the Locking Bolt should be adjusted to bear slightly more on the left side of the Barrel Lug than on the right side. This is to compensate for very slight torquing of the Locking Bolt upon its withdrawal by the Top Lever.

The Locking Bolt should be adjusted until the Top Lever stops in an approximate position as shown in Figure #47.

FIGURE #47



15. TRIGGER PULL ADJUSTMENT



CAUTION: Trigger pull adjustment is critical requiring experience and skill. These instructions are offered only to the experienced gunsmith as a guide toward proper procedure and may not be all inclusive. It is recommended Superposed shotguns exhibiting Trigger pulls outside of Browning specifications be returned to the Arnold Service Center unless a considerable amount of experience has been gained in such areas. This type of experience, of course, is still no guarantee adjustments made will be proper and correct. In this event, return the gun to the Arnold Service Center for final repair.

NOTE: Trigger pull may be affected by bent or worn Hammer and Sear Pins, improper or weak Sear and Mainsprings or worn Sear and Hammer engaging surfaces.

The following procedure is based on the assumption the gun being repaired is not worn appreciably and is in proper configuration.

A. To increase Trigger pull, slightly lessen the area of the Sear engaging surface by filing the Sear in the area

indicated by Figure #48 with a small half-round pin or fine cut round file.

FIGURE #48



CAUTION: Be careful to maintain a straight edge and rectangular bearing surface on the Sear.

NOTE: On guns with above average wear, it may be necessary to "freshen up" the Sear and Hammer engaging surfaces with very light file strokes. The file strokes must be made in a direction so as to restore original factory angles. If in doubt, compare to new parts under 4 X magnification or replace with new parts.

- B. To decrease Trigger pull, remove material from the Sear's engaging surface (plane "C" in Figure #48) so as to slightly increase its area.



CAUTION: Be careful to maintain the original factory angle of the Sear. Under no circumstances, ever attempt to decrease Trigger pull by rounding the Sear or Hammer engaging surfaces.



CAUTION: It should be noted here that if adjustments are not made properly, Trigger pulls may change after only very little use. After the Trigger pulls seem properly adjusted and exhibit regain as explained in Section IV, Paragraph 1.B (Pre-Disassembly Inspection), dry fire approximately 50 times. Reinspect the Trigger pulls to Section IV, Paragraph 1, A and B in their entirety. If the Trigger pulls have changed, repair or return the gun to the Arnold Service Center.

16. REBLUING

Soft solder as well as silver solder has been used and combinations of both in rib attachment to the Superposed throughout its manufacture. If soft solder has been used the Arnold Service Center uses Belgian Blue, obtained

from Jim's Gun Shop, 113 Arthur, Pueblo, Colorado, 81004, (303) 543-9462.

In all other bluing the Arnold Service Center is presently using Nikel Penetrate, obtained from Heat Bath Corp., P.O. Box 2978, Springfield, Massachusetts, 01101.

17. RESOLDERING RIBS

Soft solder as well as silver solder has been used in rib attachment to the Superposed throughout its manufacture.

Some sets of Barrels may contain nothing but soft solder, others nothing but silver solder and still others may contain combinations of both, i.e. top ribs attached with silver and side ribs with soft solder.

NOTE: No attempt should ever be made to remove and/or re-attach a silver soldered rib. Too much torch heat is required which will result in warped Barrels. Generally, however, if a rib is loose on a Superposed, it has been soft soldered.

In order to differentiate between soft and silver solder, it is recommended the solder lines between the Barrels and ribs be examined at the muzzles. It may first be necessary to polish the muzzle end of the Barrels with 320 grit paper backed against a flat 12" file.

Silver solder is gold-like in color and soft solder has a grey steel-like color. Additionally, soft solder is more readily blued whereas silver solder retains its original color after being exposed to most bluing solutions.

NOTE: On some guns it is extremely difficult to recognize the type of solder used due to thin solder lines. On these guns, remove heat from the Barrels after, based on your own personal experience, sufficient heat has been applied to melt soft solder.

Remember, excessive heat will warp and ruin a set of Barrels. In this event, Browning cannot be held responsible for their replacement.

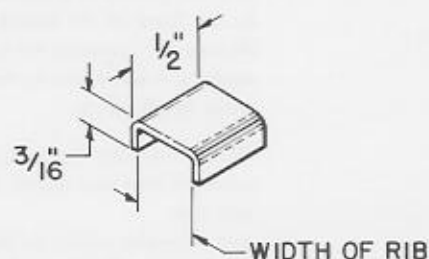
A. SOFT SOLDERED TOP RIBS

In preparation for resoldering a top rib, the following materials are necessary:

1. Soft flame torch.
2. Large electric soldering iron such as pictured in Figure #56. Tip should be cleaned, heated and tinned with silver solder.
3. Good quality 50-50 rosin core solder.
4. Can of solder flux.

5. Twelve (12) six inch (6") sections of .060" soft iron wire.
6. Two (2) small aluminum hat sections to protect the two extreme ends of the top rib. See Figure #49.

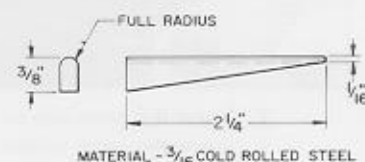
FIGURE #49



MATERIAL - .050 ALUMINUM

7. Twenty-four (24) steel wedges described in Figure #50. These wedges should be salt blued to prevent solder from sticking to them.

FIGURE #50



MATERIAL - 3/16 COLD ROLLED STEEL

8. Twelve (12) aluminum barrel protectors as described in Figure #51.

FIGURE #51



9. Rib scraper such as pictured in Figure #53.
10. Straight edge scraper.
11. Four (4) 18 inch, 240 volt, 500 watt tubular heater as pictured in Figure #60. Heaters must be controlled by rheostat to vary the temperature. Different diameter heaters are used for 20 and 12 ga. Heaters may be obtained from Industrial Engineering &

Equipment Co., 425 Hanley Industrial Ct., St. Louis, Mo. 63144, (314) 655-4300. The heaters are cataloged as "Blazer Cartridge Heater".

PROCEDURE

1. Grip the Barrels in a padded vise by the "flats" at the breech end. Remove the loosened rib by applying a soft flame to the entire length of rib.

NOTE: Use care not to apply excessive heat and loosen the side ribs.

2. Melt excessive solder on the Barrel and wipe off with a clean cloth as shown in Figure #52.



3. Repeat this procedure for the rib.
4. Scrape the entire surface of the ribs solder surface to a bright finish and leave absolutely clean. See Figure #53.

NOTE: The scraper shown in Figure #53 was ground from a thin flat file.



5. Using a straight edge scraper, clean the entire solder surface of the Barrel to a bright finish and leave absolutely clean. See Figure #54.
6. Apply a thin coat of solder flux to both the rib and barrel as shown in Figure #55.
7. Tin the rib with 50-50 rosin core solder as shown in Figure #56. With the solder melted, wipe

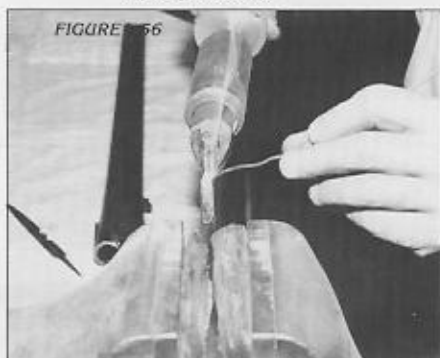
lightly with a clean cloth to remove excess.



8. Tin the Barrel by flowing solder from the soldering iron tip to the Barrel as shown in Figure #57.

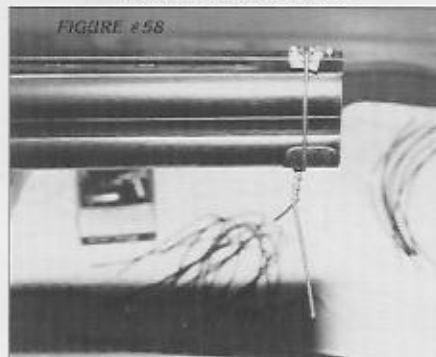
NOTE: (Shop Tip) The soldering iron tip will stay bright and clean when first tinned with silver solder.

It is recommended a thin coat of solder be applied and the Barrel not wiped down.



9. With the Barrels gripped in a padded vise at the breech end, position the rib on the Barrels. Wire the extreme ends of the rib to the Barrels using a hat section and Barrel protector as shown in Figure #49 and #51. A 6" piece of soft iron wire is used and twisted as shown in Figure #58.

NOTE: The wires will not be tight to the top rib until the wedges are applied later.



10. Approximately every 2 1/2 inches, wire the rib to the Barrels as shown in Figure #59.



These additional wires should pass through the vent holes in the rib and around a Barrel protector also shown in Figure #59.

11. After the Barrels are completely wired every 2 1/2 inches, tap metal wedges, as described in Figure #50, between the side ribs and the wire loops also shown in Figure #59. The wedges must be placed between all the wires and the side rib on both sides of the Barrels.

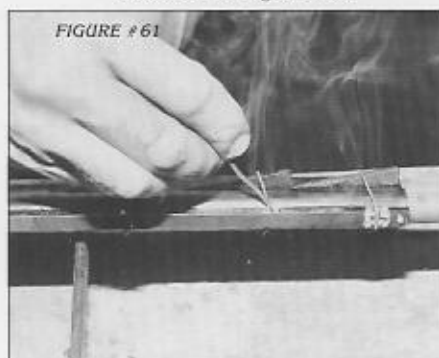
NOTE: If the wedges contain a half round edge, as cut from a bar of cold rolled steel, place the flat edge toward the side rib.

12. Sight down the rib and make final alignment by tapping, if necessary, from one side of the rib or the other.
13. Place 18" cartridge heaters into both ends of both Barrels as

shown in Figure #60 so the Barrels will heat evenly.

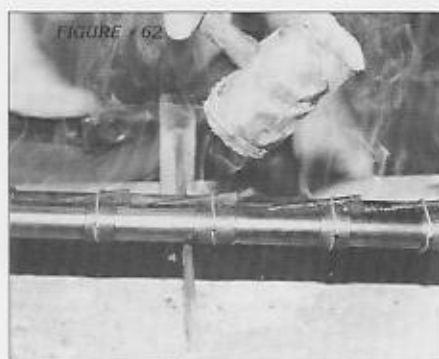


14. Heat the Barrels until solder will flow between the Barrel and rib as shown in Figure #61.



NOTE: The rheostat control should be adjusted so the Barrels are not heated above 450 degrees F.

15. After solder has been applied along one side of the rib, tighten the wedges on both sides of the Barrels, as shown in Figure #62, and apply solder to the other side of the rib.



16. Remove heaters, allow Barrels to cool and remove the hardware.
17. Remove excess solder droplets by shearing off with a blunt chisel and small hammer.
18. Solder any openings at the muzzle end of the Barrels closed and shape smooth.
19. Plug the vent holes in the side ribs by tapping a #6 shot into the holes with a 3/32" punch.

20. Boil the Barrels in Clean-90 solution for 20 minutes to remove any discoloration and excessive flux from the solder operation.

NOTE: Clean-90 solution is the degreasing agent used in the Arnold Service Center prior to bluing. It may be obtained from Chemical Ways Corp., 901 Sherwood Dr., Lake Bluff, Illinois. 60044. Some other degreasing agents may work as well.

NOTE: With the resoldering process properly executed, scraping of excessive solder from the Barrels and reblooming should not be necessary.

21. Remove the shot from the vent holes.

B. SOFT SOLDERED SIDE RIBS

The procedure used in resoldering side ribs is essentially the same as described in Para. A. (SOFT SOLDERED TOP RIBS) A brief procedure outline is given below:

1. Place an index mark between the Barrels at the muzzle end to permit re-alignment.
2. Mark the ribs prior to removal as to left and right.
3. Remove ribs by applying soft flame heat.
4. Make note as to the orientation of the Barrel Spacers.
5. Clean, flux and tin all solder surfaces.
6. Wire the Barrels together with the spacers between the Barrels.
7. Slide the side ribs into position and wedge them to the Barrels.
8. Align all components and solder as described in Para. A.
9. Let cool, remove hardware, plug vent holes and clean in Clean-90 solution as described in Para. A.