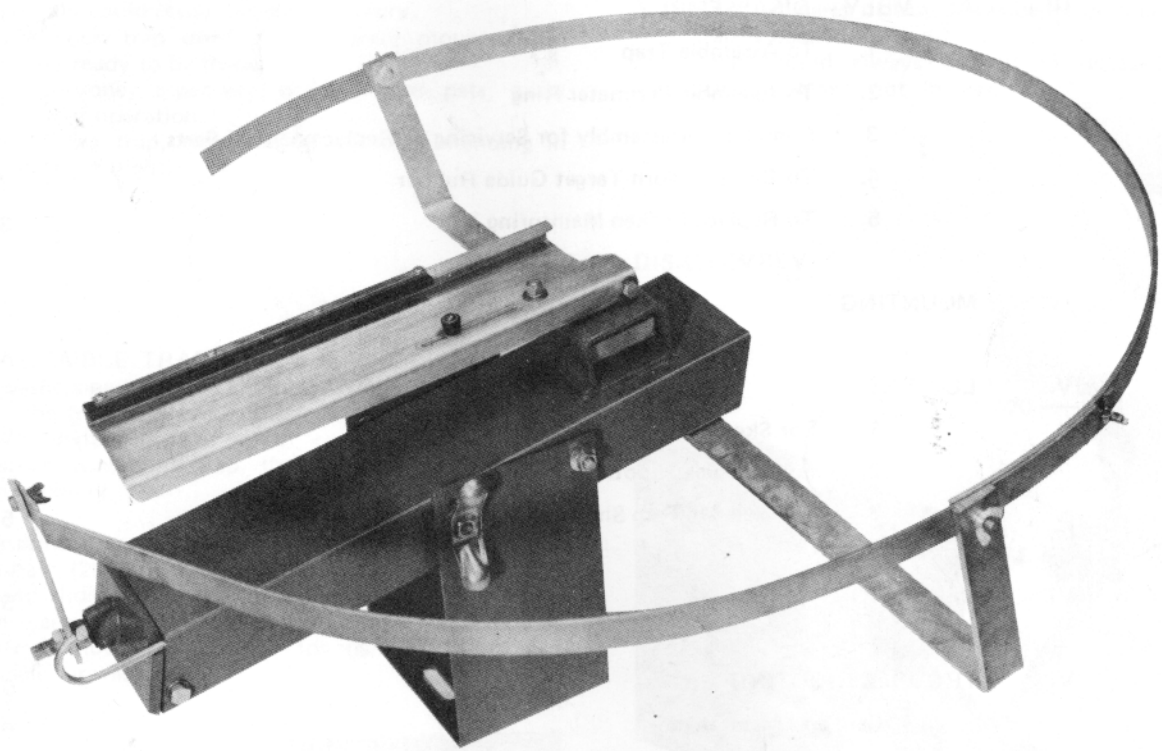


# Model BR-78

## "Blue Rock 78" Trap



***Remington®***

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## I. INTRODUCTION

THE "BLUE ROCK 78" is an economically priced target thrower specially suited for small clubs and individual target shooters. Used for straight trap, doubles or skeet shooting, it will provide many years of dependable service.

The one way sprag clutches prevent reverse rotation of the carrier after completion of the throwing cycle, minimizing the angle through which the trap has to be cocked. A perimeter ring has been included to define the area where extreme caution should be used when trap is cocked.

THE "BLUE ROCK 78" is of simple but durable design and will deliver true, consistent targets to a distance of 70 yards. For increased strength and safety, the rectangular steel tubing frame encloses the mainspring and release mechanism. Most parts are treated for corrosion resistance and the target guide rubber is easily replaced at low cost. A low pull force of 6 pounds Max. is all that is required to release the trap.

## II. SAFETY

**CAUTION:** To assure maximum safety and optimum performance of the "Blue Rock 78" it is essential that operators read and understand the contents of this manual. Special attention should be given to the following safety instructions. Failure to comply could result in personal injury.

1. Do not cock trap until it is securely mounted and targets are ready to be thrown.
2. Keep everyone, especially children and pets, away from area of operation.
3. Before firing trap, make sure no one is standing in path of target flight.
4. If trap is mounted ahead of shooters a protective enclosure must be provided for the trap operator.
5. All routine servicing and adjusting should be made with trap in released (uncocked) position.
6. Keep all parts of body outside of perimeter ring when trap is cocked.
7. Trap should always be left in released (uncocked) position when not in use.

## III. ASSEMBLY – DISASSEMBLY

1. **TO ASSEMBLE TRAP** — All bolts, nuts, washers and lock washers necessary to complete assembly and mounting of the trap are included. See parts list and exploded view for identification of parts.

Before assembling trap, the base should be bolted down securely.

- A. To assemble carrier assembly (9), install key (5) in mainshaft (28). Align keyway in carrier arm (3) with key and slide carrier assembly over mainshaft. Tighten carrier arm clamp screw (4) and nut (7). **NOTE:** Carrier is not perpendicular to mainshaft but at a 5° angle upward.

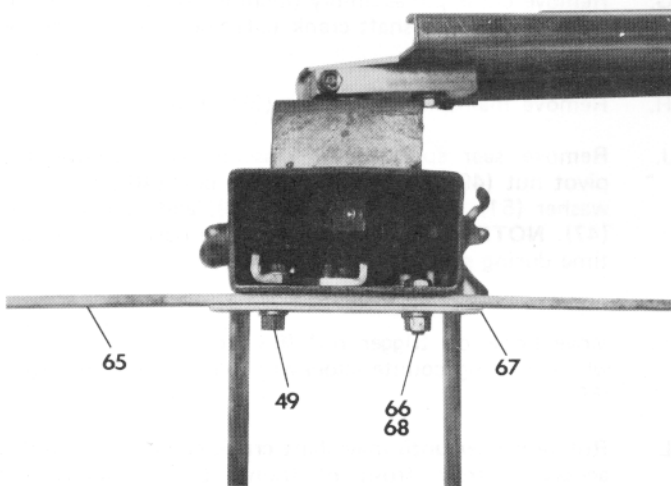


Fig. 1

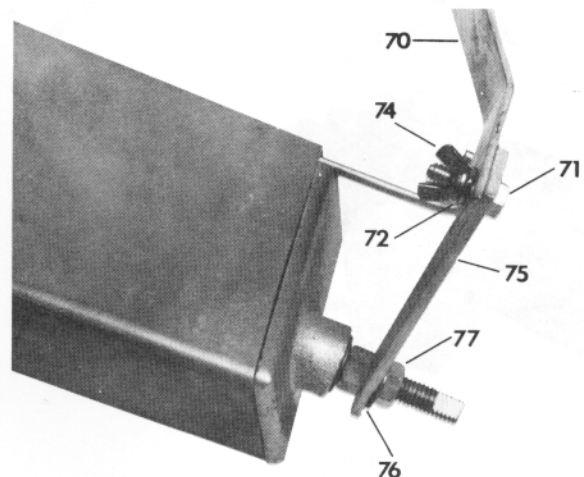


Fig. 2

### 2. TO ASSEMBLE PERIMETER RING

- A. Unscrew and remove sear pivot nut (49). Assemble front ring support (65) and brace (67) to frame with front ring support bolt (66), and nut (68). Replace and tighten sear pivot nut (see Fig. 1).
- B. Assemble rear ring support (75) to mainspring adjusting bolt. Assemble and tighten rear ring support lock washer (76) and nut (77). Assemble rear perimeter ring (70) to rear ring support with perimeter ring bolt (71), lock washer (72) and wing nut (74) (see Fig. 2).

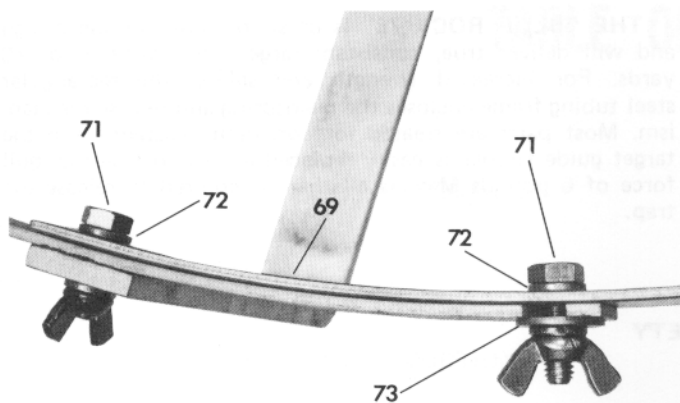


Fig. 3

- C. Thread 3 perimeter ring bolts (71), with lock washers (72) beneath heads, through inside of front perimeter ring (69). Assemble front perimeter ring to rear perimeter ring and front ring support. **NOTE:** Front and rear perimeter rings will require springing into final position. Assemble lock washers, perimeter ring washer (73) and wing nuts ( see Figs. 3 & 4).

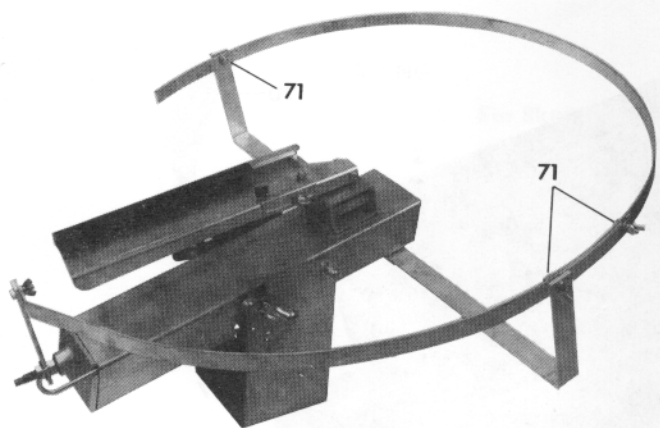


Fig. 4

- D. Before tightening wing nuts, make sure that front perimeter ring can be rotated to rear for transportation and storage (see Fig. 5).
- E. After assembling perimeter ring to trap and before attempting to cock carrier, make sure that sear (47) rotates freely by using the following procedure: Pull and hold trigger rod (63) rearward while manually rotating sear clockwise as far as possible. Release sear, allowing it to snap back against inside of frame. If this does not occur, refer to troubleshooting section VII, page 5. See "Carrier fails to latch in cocked position".

### 3. COMPLETE DISASSEMBLY FOR SERVICING OR REPLACEMENT OF PARTS — (See exploded view and parts list for identification of parts)

- A. Elevate trap to horizontal position, remove rear ring support nut (77) and lockwasher (76) and pull rear ring support (75) off mainspring adjusting bolt.
- B. Back off mainspring adjusting nut (39) to end of mainspring adjusting bolt.
- C. Rotate carrier (2) to cocked position. Grip carrier firmly and pull trigger rod (63). Resist force of mainspring and ease carrier to "12 o'clock" position.
- D. Remove mainspring adjusting nut and lockwasher.
- E. Remove rear frame closure screw (45) and lockwasher (46) and remove rear frame closure (44) from frame (22).

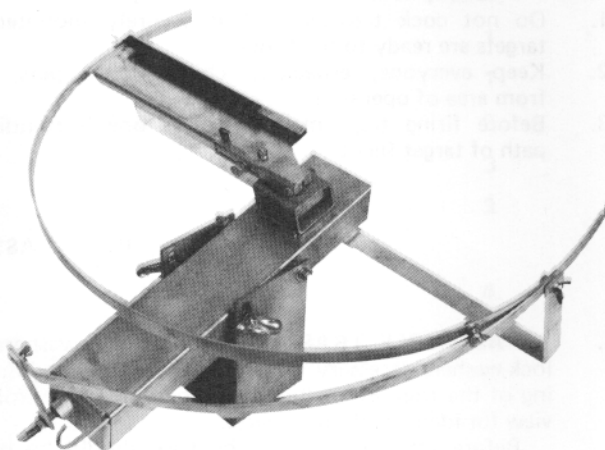


Fig. 5

- F. Rotate carrier counter-clockwise until mainshaft crank extension screws (33) are accessible from front of frame. Remove screws and mainshaft crank extension (32).
- G. Remove crank pin assembly (includes 18, 19, 20 and 21) from seat in mainshaft crank (31) and from mainspring eyebolt.
- H. Remove mainspring assembly (38) from rear of frame.
- J. Remove sear spring (52). Unscrew and remove sear pivot nut (49). Remove sear pivot bolt (48), sear pivot washer (51), sear pivot spacer (50), and sear assembly (47). **NOTE:** This operation may be performed at any time during sequence of disassembly.
- K. Move hook on trigger rod (63) toward side of frame while rotating counter-clockwise out of hole in trigger (59).
- L. Rotate carrier until mainshaft crank clamp screw (34) is accessible from front of frame. Loosen screw and remove mainshaft crank (31) from mainshaft (28). Remove mainshaft crank key (35).

- M. Insert screwdriver blade between underside of clutch housing (14) and top of clutch housing spring (16) near vertical end. Pry downward until vertical end of spring is below clutch housing. Rotate spring clockwise and allow end to snap up at side of clutch housing.
- N. Rotate carrier counter-clockwise while pulling upward and remove mainshaft from mainshaft bearing-upper (30).
- O. Remove clutch housing (14), two (2) sprag clutches (53), clutch housing spring (16), clutch housing thrust washer (17) and clutch housing cover washer (15).
- P. Unscrew and remove trigger nut (60). Remove trigger pivot bolt (61), trigger pivot washer (62), trigger spacer (64), and trigger assembly (59).

**REASSEMBLE IN REVERSE ORDER EXCEPT AS LISTED BELOW**

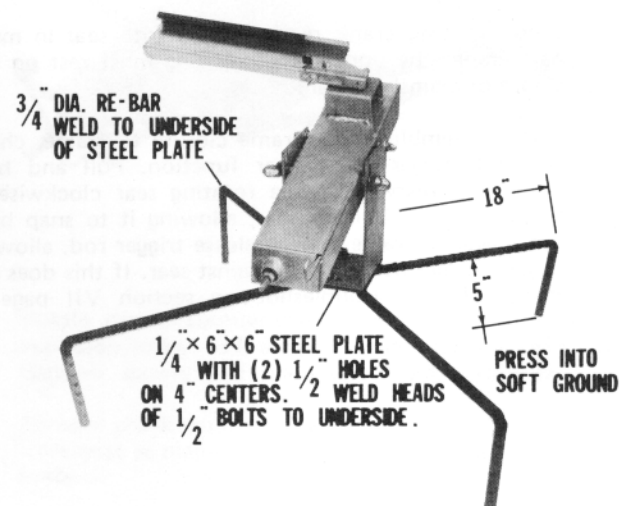
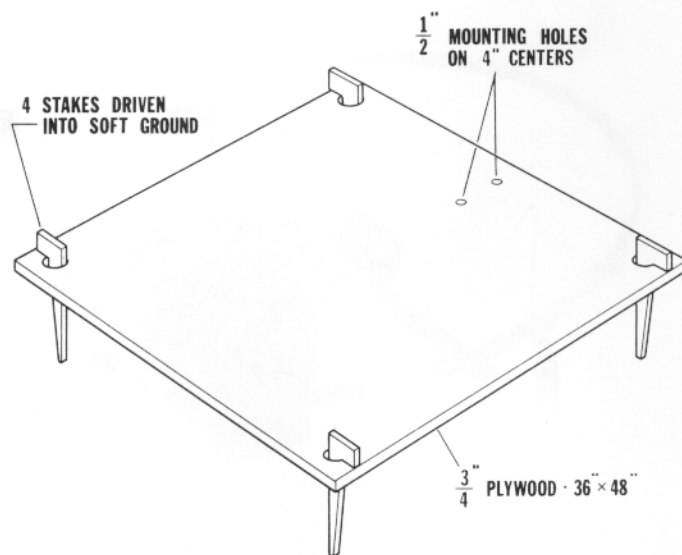
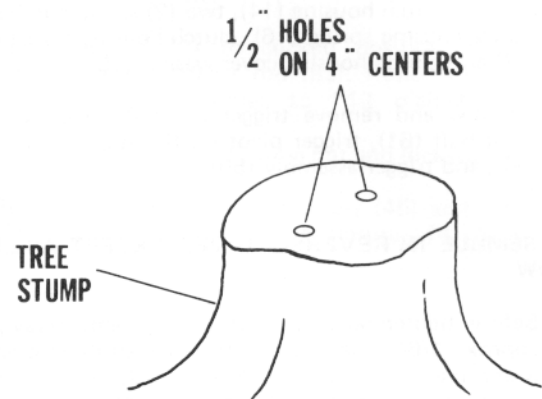
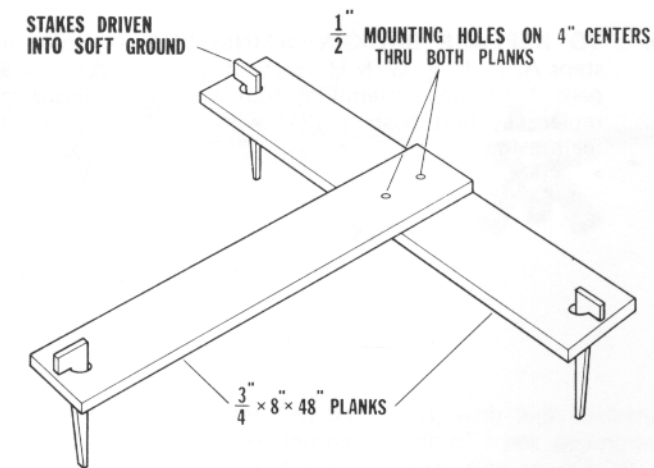
- M. Before tightening mainshaft crank clamp screw, allow approx. 1/64" clearance between mainshaft crank and lower mainshaft bearing. **NOTE:** Tilt trap to position mainshaft in horizontal position. This will prevent mainshaft key from falling out while reassembling mainshaft crank.
- H. Insert mainspring assembly into rear of frame. Lift Mainspring eyebolt over trigger with screwdriver blade and pull forward until eyebolt is accessible. Alternate method of pulling eyebolt forward, is to use the trigger rod to hook into the eyebolt from front end.
- G. When inserting crank pin assembly into seat in mainshaft crank, the upper retaining ring must rest on top surface of mainshaft crank.
- E. After reassembling rear frame closure to frame, check sear and trigger for proper function. Pull and hold trigger rod rearward while rotating sear clockwise as far as possible. Release sear, allowing it to snap back firmly against frame. Then release trigger rod, allowing trigger to snap back firmly against sear. If this does not occur, refer to troubleshooting section VII page 5.

**4. TO REPLACE WORN TARGET GUIDE RUBBER**

- A. Unscrew the four (4) mounting bracket screws (43) and remove upper and lower mounting brackets (41) & (42) and target guide rubber (54).
- B. Install new target guide rubber and replace upper and lower mounting brackets and screws. Tighten screws sufficiently to gently squeeze rubber.

- 5. **TO REPLACE BROKEN MAINSPRING** — Refer to steps A, D, E, F, G, & H in trap disassembly procedure, page 2. Before reassembling trap with new mainspring, replace eyebolt bushing (21) with one furnished with mainspring.

IV. **MOUNTING** — For permanent installations the trap should be bolted to a plank attached to a concrete foundation in a trap or sket house. The 1/2" bolts (on 4" centers) should be inserted from the underside of the plank with washers and nuts on top. For temporary mounting outdoors some suggested methods are shown below.



In addition to the above, several other suitable methods of mounting may be used. A wooden pallet or a picnic table are two that may be easily adapted by drilling two (2) 1/2" holes on 4" centers in suitable location and attaching trap. Traps mounted on pallets may be satisfactorily installed in the back of a pick up truck.

Fig. 6 — Suggested Method for Mounting Trap Outdoors on Soft Ground.

## V. LOADING

**NOTE:** Target stop settings referred to below are for initial setting only. Wind conditions and type of trap mounting platform (rigid or flexible) will affect target flight, therefore target stop may have to be set in a position other than that specified.

To prevent breakage, targets must always be placed against target guide rubber. It is also necessary in skeet shooting, where fixed angles are thrown, to place targets against target stop rubber. This will prevent variation in flight path.

1. **TO LOAD TRAP FOR SKEET SHOOTING** — Move target stop to align with "S" (Singles) on carrier. In this position, target will fly approximately straight-away (in line with trap frame). To counteract crosswinds and throw targets to the left, move target stop towards mainshaft. Move target stop away from mainshaft to throw targets to the right.

2. **TO LOAD TRAP FOR DOUBLES SHOOTING** — Increase mainspring tension and move target stop to align with "D" (doubles) on carrier. Place one target against target stop rubber and another target directly behind and against the first. If targets do not fly at the same height, move target stop away from mainshaft to raise left target, or towards mainshaft to raise right target. It may also be necessary to elevate trap to increase distance, and rotate base in order to center the spread of targets with trap field.

3. **TO LOAD TRAP FOR REGULAR TRAP SHOOTING** — Move target stop towards mainshaft as far as possible. Extreme right and left hand targets desired should be determined by trial and their positions marked on carrier or target guide rubber. Placing a target at various positions between the two marks will vary the horizontal angle of flight. A straight-away target should be thrown if placed midway between the two marks. Use this target to judge flight and adjust the angle, mainspring tension and elevation of the trap.

A regular target flight is between 8 & 12 feet high at a point 10 yards from the trap. The horizontal distance is between 48 and 52 yards.

## VI. OPERATION

**TO COCK TRAP** — Grasp carrier at extreme end and rotate counter-clockwise, snapping firmly into cocked position.

**CAUTION:** Do not push up or down on carrier while rotating. Never force carrier clockwise. This will damage the one-way sprag clutches.

**TO RELEASE COCKED TRAP** — Pull trigger rod at rear of trap. When releasing trap from a distance, attach a suitable length of cord to hook of trigger rod.

## VII. TROUBLESHOOTING

**CAUTION:** Before attempting to inspect or replace any internal parts (except sear or sear spring) disconnect mainspring by following steps A thru E in Section III page 2.

Malfunction of trap can usually be traced to one of the following symptoms.

### 1. CARRIER FAILS TO LATCH IN COCKED POSITION (Fired Through)

#### Cause

- A. Loose sear or trigger nut.
- B. Sear or trigger does not rotate freely.
- C. Sear Spring broken or missing.
- D. Trigger rod does not move freely.

#### Solution

- A. Tighten nut.
- B. Identify reason and correct.
- C. Replace.
- D. Provide more clearance in rear frame closure.



## 2. CARRIER FAILS TO RELEASE WHEN TRIGGER ROD IS PULLED

Cause	Solution
A. Lack of lubrication.	A. Lubricate
B. Sear does not rotate freely.	B. Identify reason and correct.
C. Flat worn on crank pin.	C. Rotate crank pin approx. 45°.
D. Mainshaft does not rotate freely	D. Provide clearance as noted in reassembly procedure Step M page 3.

## 3. CARRIER RETURNS TO "12 O'CLOCK POSITION AFTER THROWING TARGET

Cause	Solution
A. One-way sprag clutches have failed (rolled over).	A. Replace sprag clutches as well as mainshaft and/or clutch housing if sprag depressions are evident.

**CARE AND MAINTENANCE** — The "Blue Rock 78" like all machines, must be periodically inspected and lubricated to insure satisfactory operation. Check nuts and bolts often and tighten if necessary. Any parts showing evidence of excessive wear should be replaced as soon as possible.

Keep all bearings well oiled and wear surfaces greased. Light oil should be used to lubricate the sprag clutches which become accessible by raising clutch housing cover washer (15). Pay special attention to eyebolt bushing (21) and sear surface that releases crank pin (18). Items requiring lubrication are identified by \* on exploded view page 9.



## RECOMMENDED SPARE PARTS

Qty.	1	Mainspring assembly Part No. 33480
"	1	Eyebolt bushing Part No. 13581
"	1	Target guide rubber Part No. 13573

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**REMINGTON ARMS COMPANY, INC.**  
PARTS DEPT.  
ARMS SERVICE DIVISION  
Ilion, New York 13357

## INSTRUCTIONS FOR ORDERING PARTS

(Please read carefully)

When ordering parts, model number, part number and part name must be given. Parts may be identified from exploded view and parts list.

Please do not ship sample parts to factory unless it is impossible to identify from parts list or exploded view. See shipping instructions concerning FACTORY SERVICE. Parts will be furnished as long as supply is available.

All parts will be shipped as ordered. The particular part may require slight adjustment or fitting to assure proper function.

Please send part orders direct to:

**REMINGTON ARMS COMPANY, INC.**  
Parts Dept., Arms Service Division • Ilion, N.Y. 13357

## INSTRUCTIONS FOR FACTORY SERVICE

(Please read carefully)

Please package carefully when shipping to factory. Use plenty of cushioning material to prevent movement in package during transit.

All shipments should have return and forwarding address clearly marked on package as well as on attached letter.

To further improve service, please attach complete letter of information securely on outside of each package returned to factory for repairs. Give full details of contents of shipment. List model name and number. Give full condition of contents — damage, parts missing, etc. A full description will enable us to more accurately list the needed repairs.

Cover only one subject in letter or order. Do not order spare parts and give instructions on repair in the same letter — this delays service.

To avoid all possible delay in starting work, please include in first order or letter the trouble to be corrected, any changes

desired or parts to be replaced. If an estimate is required before work is started, please advise. Otherwise, we will proceed with necessary work and send a statement of the cost. Unless otherwise specified shipments will be made by way of Parcel Post on small packages, Express on larger packages. Remington parts are not interchangeable with those of any other make. For this reason Remington Arms Company, Inc. cannot service any product not of its manufacture.

**IMPORTANT:** Before packaging trap for return to factory, make sure trap is uncocked. Carrier should be removed and carefully packaged. All shipments may be made by insured mail, Express, Motor Transport or Freight.

Please send repairs direct to:

**REMINGTON ARMS COMPANY, INC.**  
Arms Service Division • Ilion, N.Y. 13357

## PARTS LIST

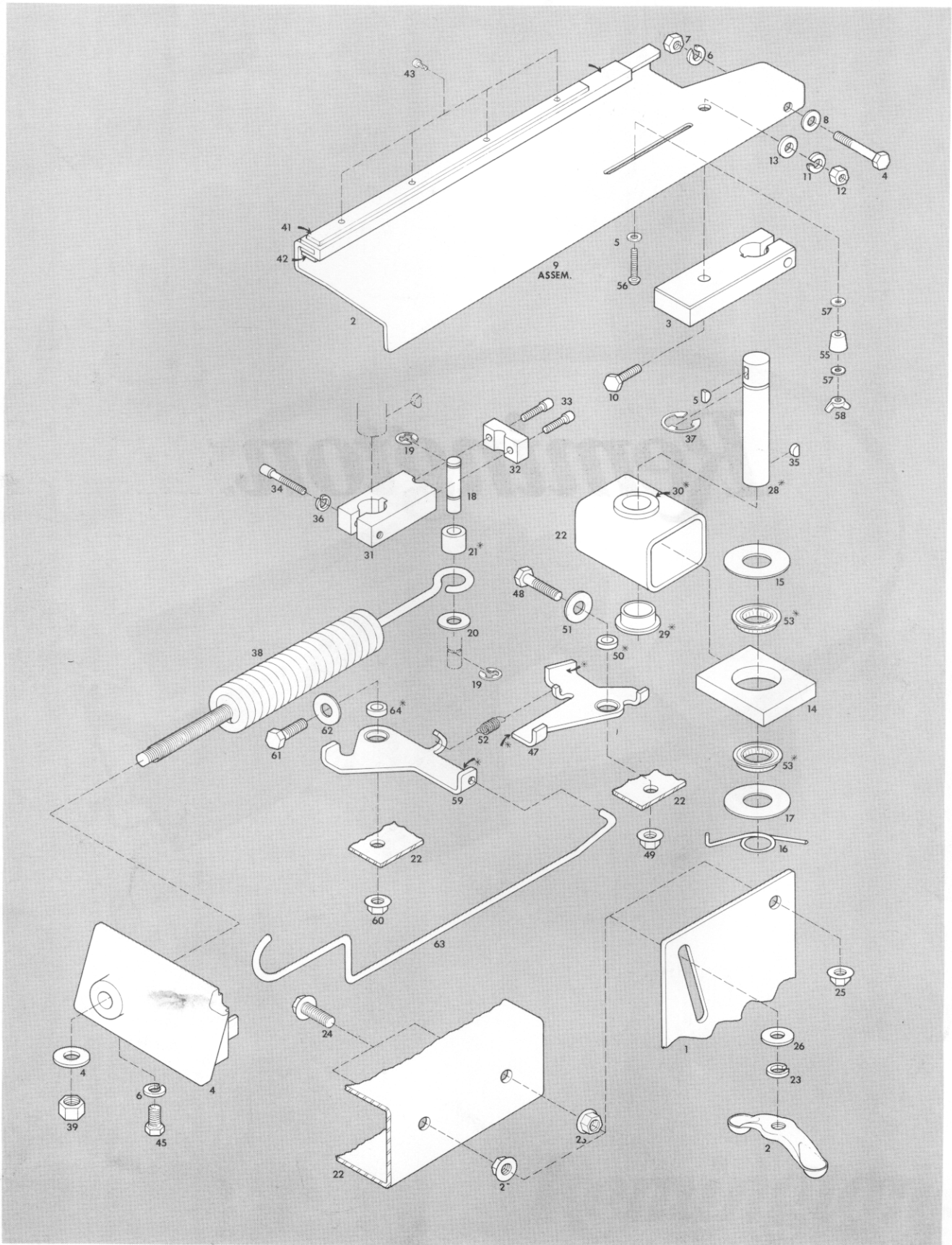
## MODEL BR-78

View No.	Part No.	NAME OF PART	View No.	Part No.	NAME OF PART
1	13570	Base - - - - -	55	15028	Target Stop - - - - -
2	13572	Carrier - - - - - 53.15	56	13615	Target Stop Adjusting Screw - - - - -
3	13574	Carrier Arm - - - - -	57	90663	Target Stop Washer (3) - - - - -
4	90694	Carrier Arm Clamp Screw - - - - -	58	13060	Target Stop Wing Nut - - - - -
5	90651	Carrier Arm Key - - - - -	59	13612	Trigger Assembly - - - - -
6	90685	Carrier Arm Lock Washer - - - - -	60	13631	Trigger Nut - - - - -
7	90717	Carrier Arm Nut - - - - -	61	90704	Trigger Pivot Bolt - - - - -
8	90675	Carrier Arm Washer - - - - -	62	90693	Trigger Pivot Washer - - - - -
9	13571	Carrier Assembly - - - - -	63	13617	Trigger Rod - - - - -
10	13575	Carrier Bolt - - - - -	64	13605	Trigger Spacer - - - - -
11	90685	Carrier Lock Washer - - - - -		13620	Perimeter Ring Assembly - - - - -
12	90717	Carrier Nut - - - - -	65	13624	Front Ring Support - - - - -
13	90675	Carrier Washer - - - - -	66	90704	Front Ring Support Bolt - - - - -
14	13576	Clutch Housing - - - - -	67	13625	Front Ring Support Brace - - - - -
15	13619	Clutch Housing Cover Washer - - - - -	68	13631	Front Ring Support Nut - - - - -
16	13577	Clutch Housing Spring - - - - -	69	13626	Perimeter Ring, Front - - - - -
17	13578	Clutch Housing Thrust Washer - - - - -	70	13627	Perimeter Ring, Rear - - - - -
18	13579	Crank Pin - - - - -	71	13622	Perimeter Ring Bolt (4) - - - - -
19	13580	Crank Pin Retaining Ring (2) - - - - -	72	90685	Perimeter Ring Lock Washer (7) - - - - -
20	13618	Crank Pin Thrust Washer - - - - -	73	90675	Perimeter Ring Washer - - - - -
21	13581	Eyebolt Bushing - - - - -	74	13623	Perimeter Ring Wing Nut (4) - - - - -
22	13582	Frame Assembly - - - - -	75	13629	Rear Ring Support - - - - -
23	90682	Frame Lock Washer (2) - - - - -	76	13598	Rear Ring Support Lock Washer - - - - -
24	13630	Frame Mounting Bolt (4) - - - - -	77	13597	Rear Ring Support Nut - - - - -
25	13631	Frame Nut (6) - - - - -			
26	90693	Frame Washer (2) - - - - -		13603	Mounting Bolt (2)
27	13589	Frame Wing Nut - - - - -		13604	Mounting Washer (4)
28	13590	Mainshaft - - - - -		13597	Mounting Nut (2)
29	13584	Mainshaft Bearing, Lower - - - - -			
30	13585	Mainshaft Bearing, Upper - - - - -			
31	13591	Mainshaft Crank - - - - -			
32	13592	Mainshaft Crank Extension - - - - -			
33	13593	Mainshaft Crank Extension Screw (2) - - - - -			
34	90689	Mainshaft Crank Clamp Screw - - - - -			
35	90651	Mainshaft Crank Key - - - - -			
36	90690	Mainshaft Crank Lock Washer - - - - -			
37	90649	Mainshaft Retaining Ring - - - - -			
38	33480	Mainspring Assembly - - - - - 66.25			
39	13597	Mainspring Adjusting Nut - - - - -			
40	13598	Mainspring Adjusting Washer - - - - -			
41	13632	Mounting Bracket, Top - - - - -			
42	13633	Mounting Bracket, Bottom - - - - -			
43	13634	Mounting Bracket Screw - - - - -			
44	13599	Rear Frame Closure - - - - -			
45	13600	Rear Frame Closure Screw - - - - -			
46	90682	Rear Frame Closure Lock Washer - - - - -			
47	13601	Sear Assembly - - - - -			
48	13588	Sear Pivot Bolt - - - - -			
49	13631	Sear Pivot Nut - - - - -			
50	13605	Sear Pivot Spacer - - - - -			
51	90693	Sear Pivot Washer - - - - -			
52	13607	Sear Spring - - - - -			
53	90625	Sprag Clutch (2) - - - - -			
54	13573	Target Guide Rubber - - - - -			

# Remington®

## MODEL BR-78

EXPLODED VIEW



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