

# The STEN MKII

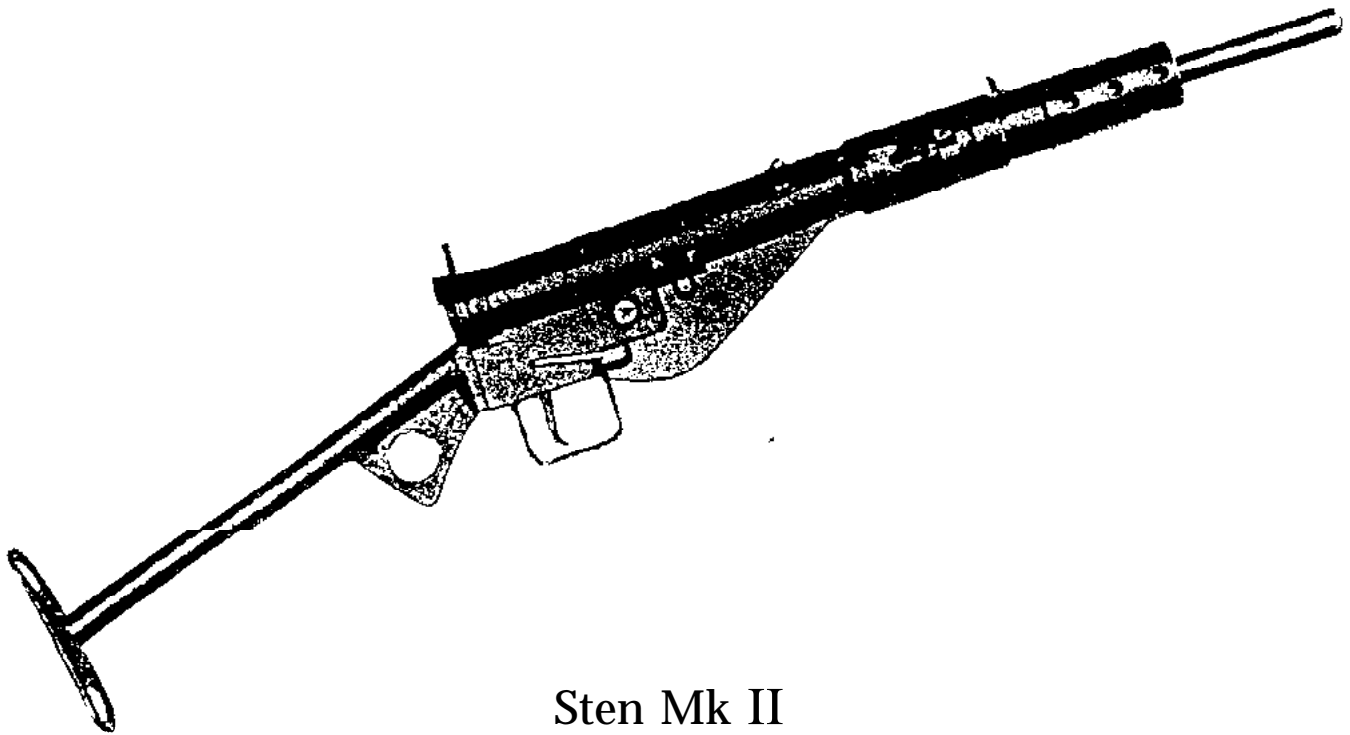
## Complete machine plans



STEN SUBMACHINE GUN, 9-millimetre submachine gun that became the standard such weapon in the British Commonwealth armed forces during World War II. Moreover, hundreds of thousands of Sten guns were provided to underground movements everywhere in Europe during that war. The gun was so ubiquitous that its name became all but a generic term for submachine gun. The Sten gun remained in service until the late 1950s.

The most common version of the Sten gun was 30 inches (76.2 cm) long with a barrel of 7.5 inches (19 cm). It fired at a rate of 550 rounds per minute, and it had a 32-round box magazine that, however, tended to jam if more than 30 rounds were loaded. The butt was a steel frame that, with the barrel, could be removed without difficulty so that the disassembled weapon could be easily hidden. Its weight was just over six pounds (2.7 kg) unloaded.

**Please set up Acrobat to “View - Bookmarks and Page”**



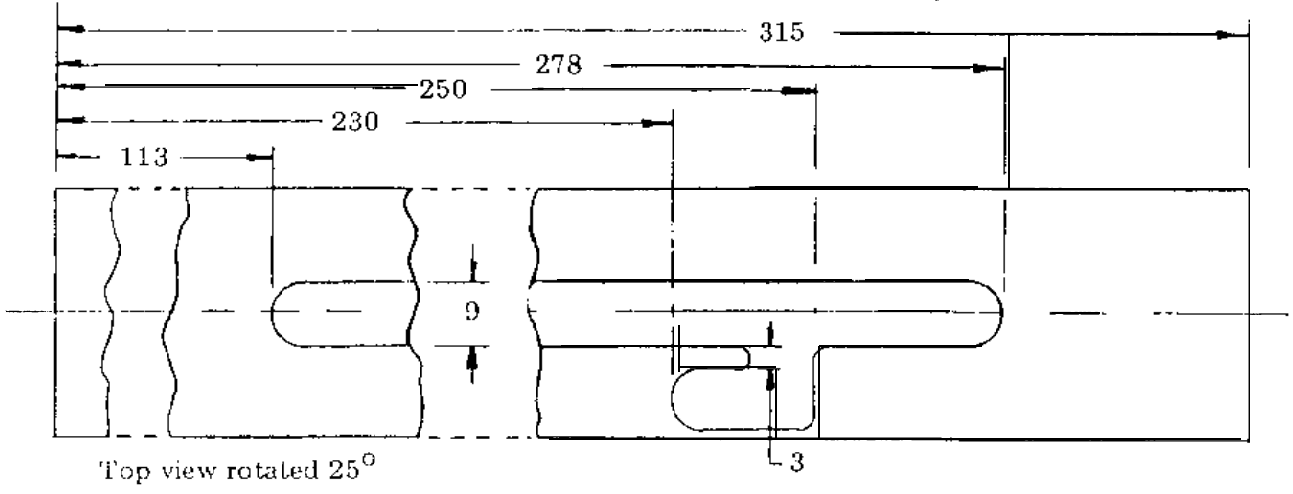
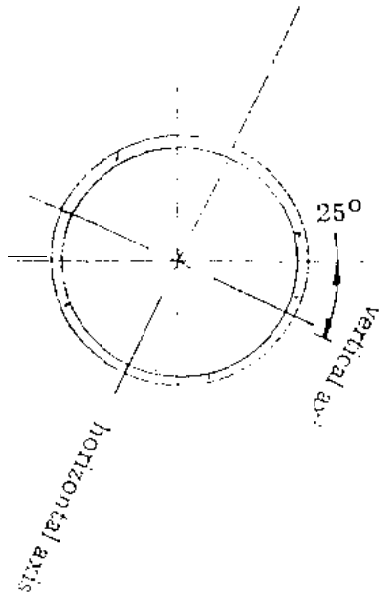
## Sten Mk II

### PARTS LIST

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| 1. Barrel                             | 24. Sear                            |
| 2. Barrel sleeve                      | 25. Sear spring                     |
| 3. Barrel sleeve lock                 | 26. Sear pin                        |
| 4. Barrel sleeve lock spring          | 27. Bolt                            |
| 5. Front sight                        | 28. Firing pin                      |
| 6. Barrel bushing                     | 29. Extractor                       |
| 7. Receiver tube                      | 30. Extractor spring                |
| 8. Receiver cap                       | 31. Extractor pin                   |
| 9. Trigger housing                    | 32. Bolt handle                     |
| 10. Butt stock assembly: stock tubing | 33. Closing spring                  |
| butt plate                            | 34. Closing spring cup              |
| stock grip                            | 35. Trigger housing cover           |
| stock ring                            | 36. Trigger housing cover screw (2) |
| 11. Magazine housing                  | 37. Magazine housing                |
| 12. Magazine housing spacer           | 38. Magazine follower               |
| 13. Magazine housing spacer screw     | 39. Magazine spring                 |
| 14. Magazine latch                    | 40. Magazine spring latch           |
| 15. Magazine latch spring             | 41. Magazine bottom                 |
| 16. Trigger                           | 42. Rear sight                      |
| 17. Trigger spring                    |                                     |
| 18. Trigger pin                       |                                     |
| 19. Disconnecter                      |                                     |
| 20. Disconnecter pin                  |                                     |
| 21. Selector                          |                                     |
| 22. Selector spring                   |                                     |
| 23. Selector plunger (2)              |                                     |

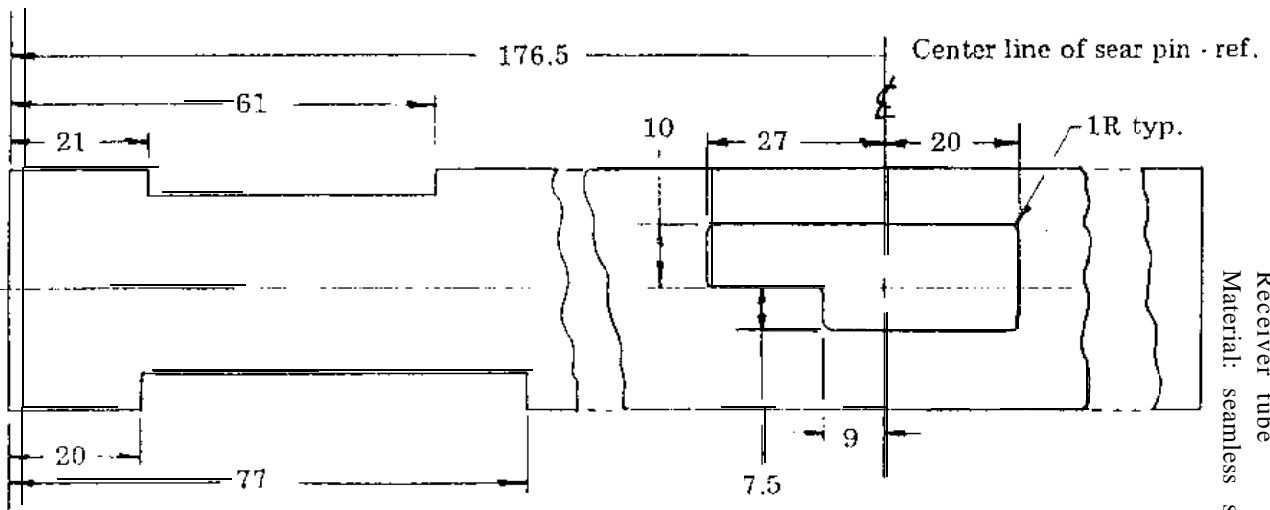
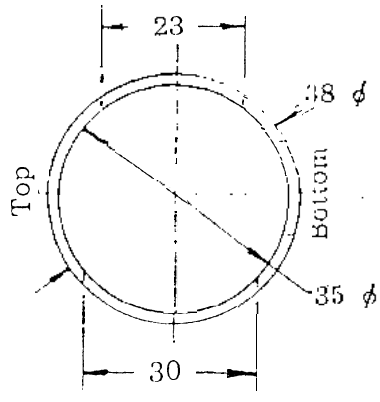
#### NOTES:

1. Bolt stopping surface on barrel is 1mm forward of magazine well slot.
2. Bolt stroke is



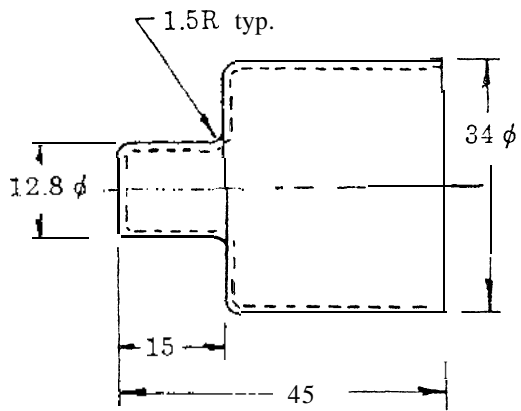
Top view rotated 25°

Scale: .87 : 1



Bottom view

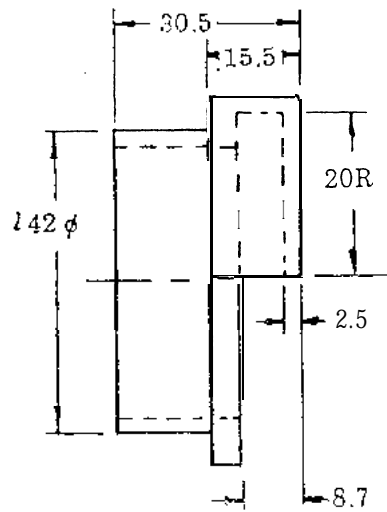
Receiver tube  
Material: seamless steel tubing



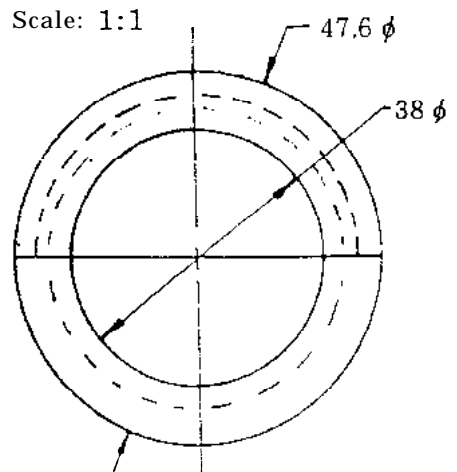
Main spring cap  
Material: 1mm stock

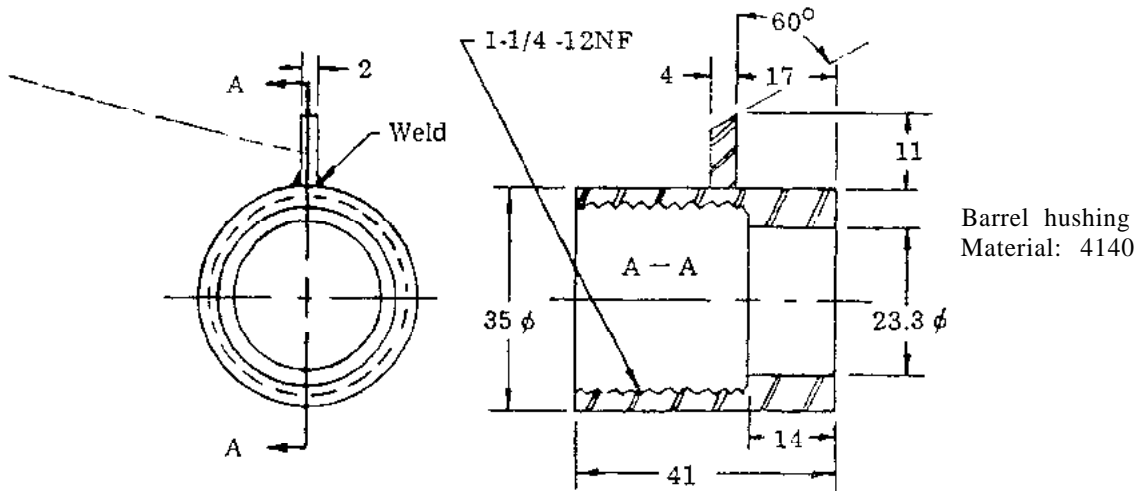
Scale: 1:1

Receiver rear end bushing  
Material: AISI 1010 or equivalent

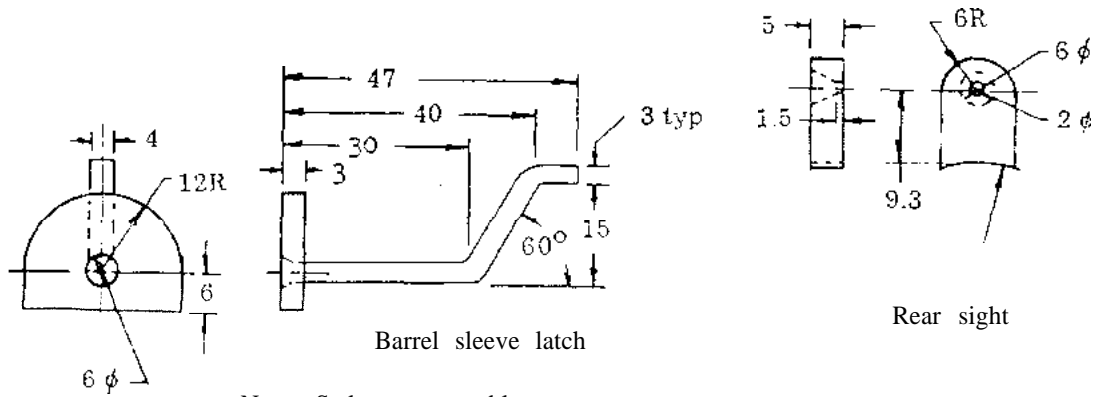
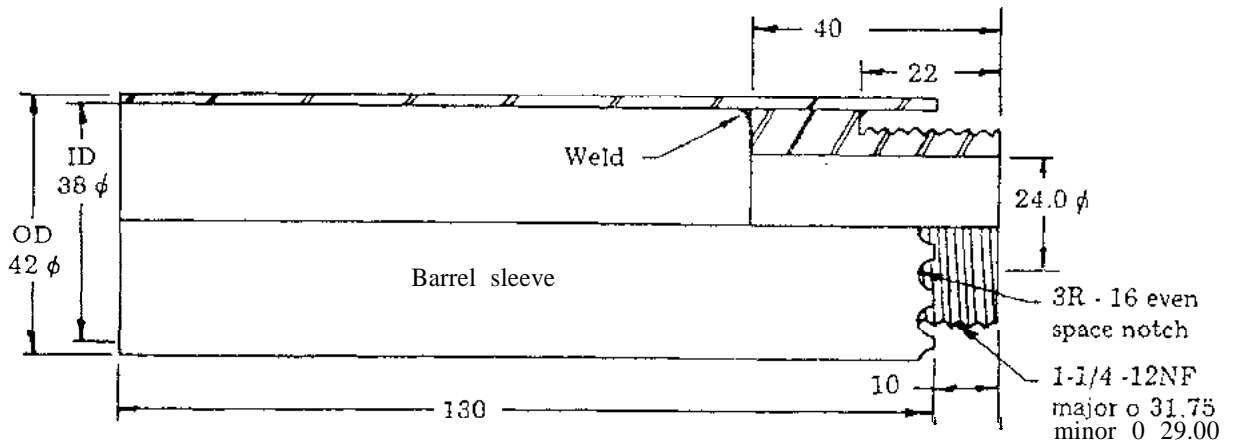


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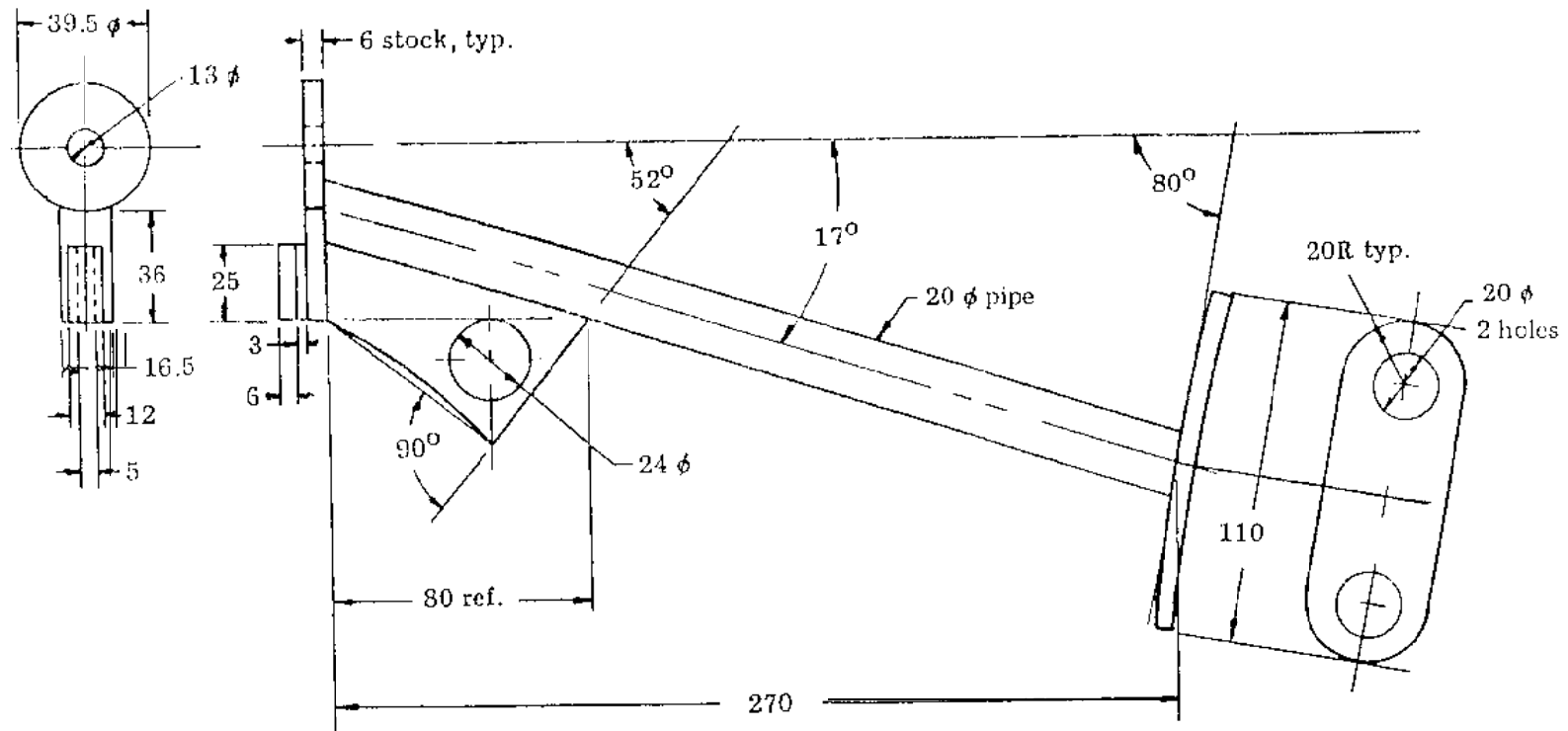


Scale:



Note: Stake at assembly  
with magazine housing

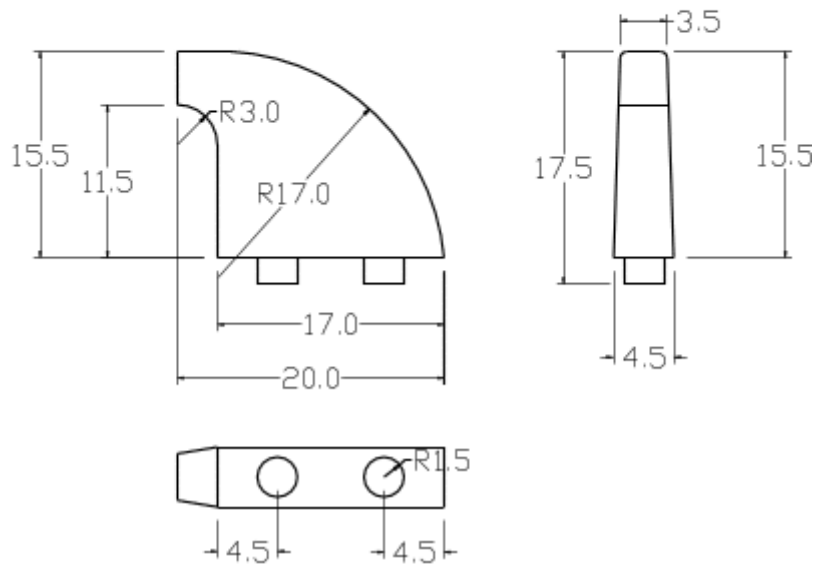
Butt-stock assembly  
Material: low carbon steel  
or aluminum, welded construction



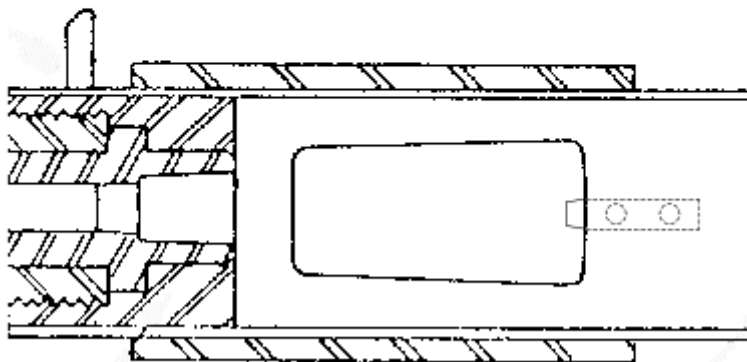
# Ejector

Material: 4140 steel, hardened.

Construction: Mill, or filed from stock, pins shown can be replaced by slotting the receiver and welding in place, although harder to position

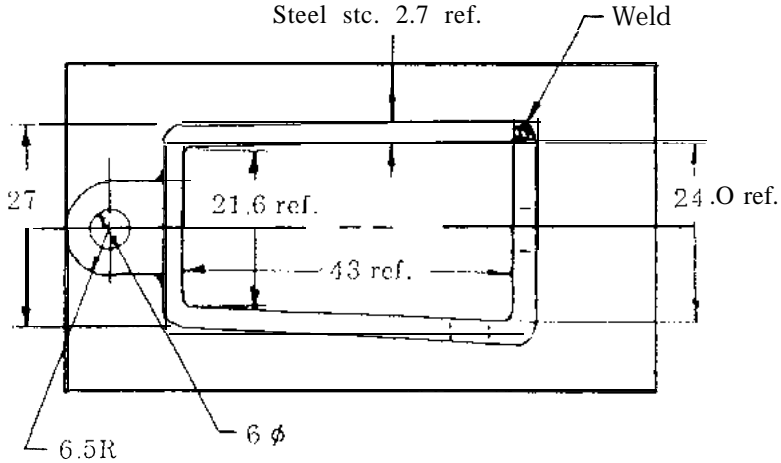
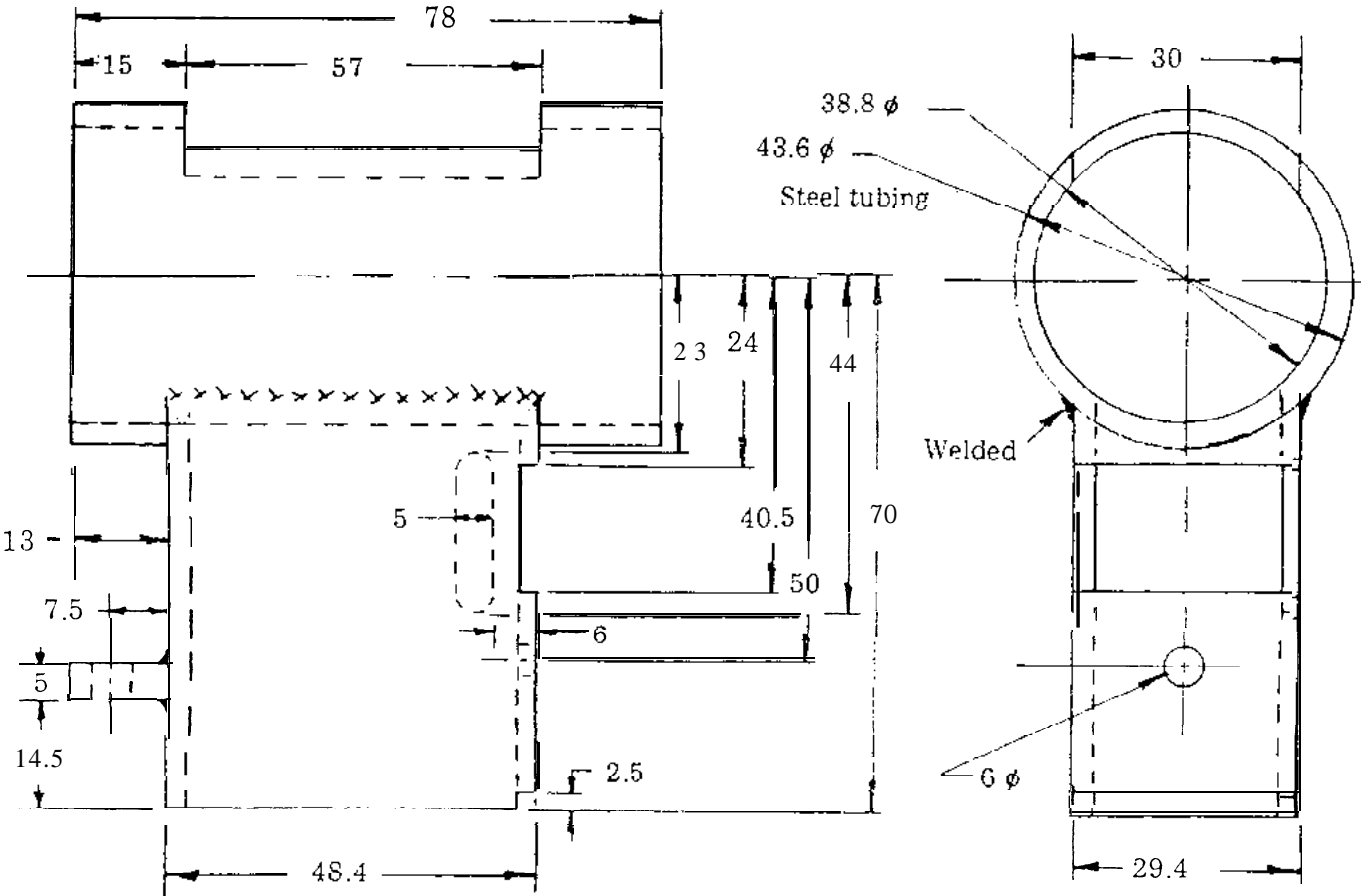


The ejector is positioned central with the magazine aperture of the receiver tube as shown. Construction can vary, here an ejector supported by two pins through the receiver tube is welded in place.



Magazine housing  
 Material: as noted

Scale: 1 : 1



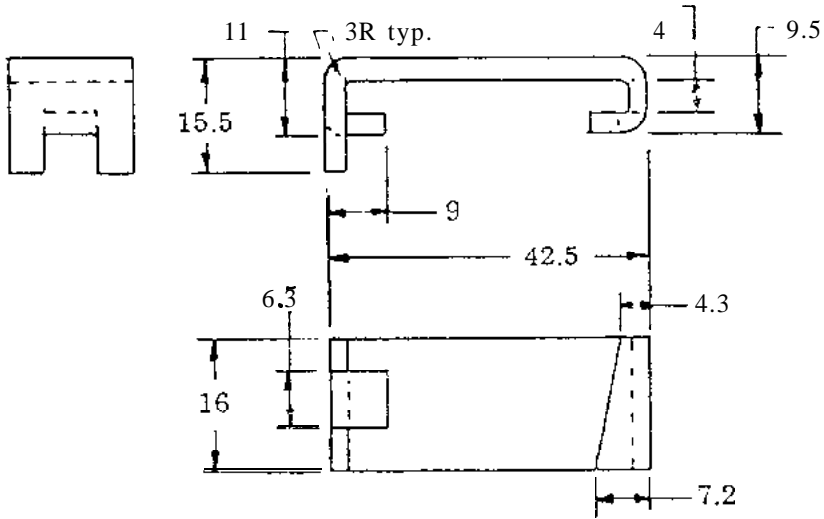


Magazine latch

Material: AISI 1010 or equivalent

2.7mm stock. Case harden 0.1mm deep

Scale: 1:1

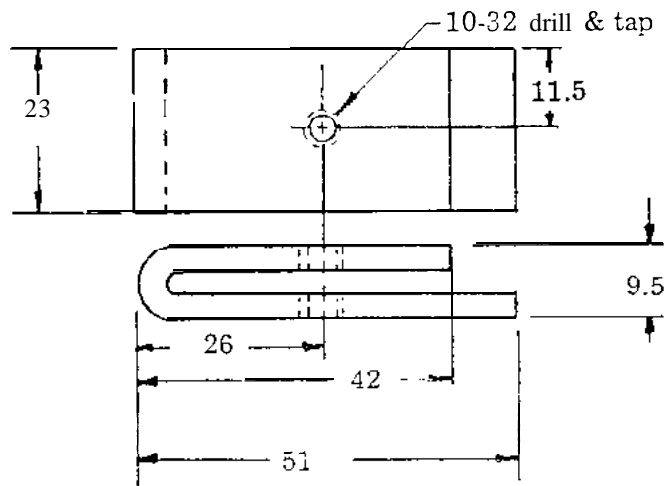


Magazine housing spacer

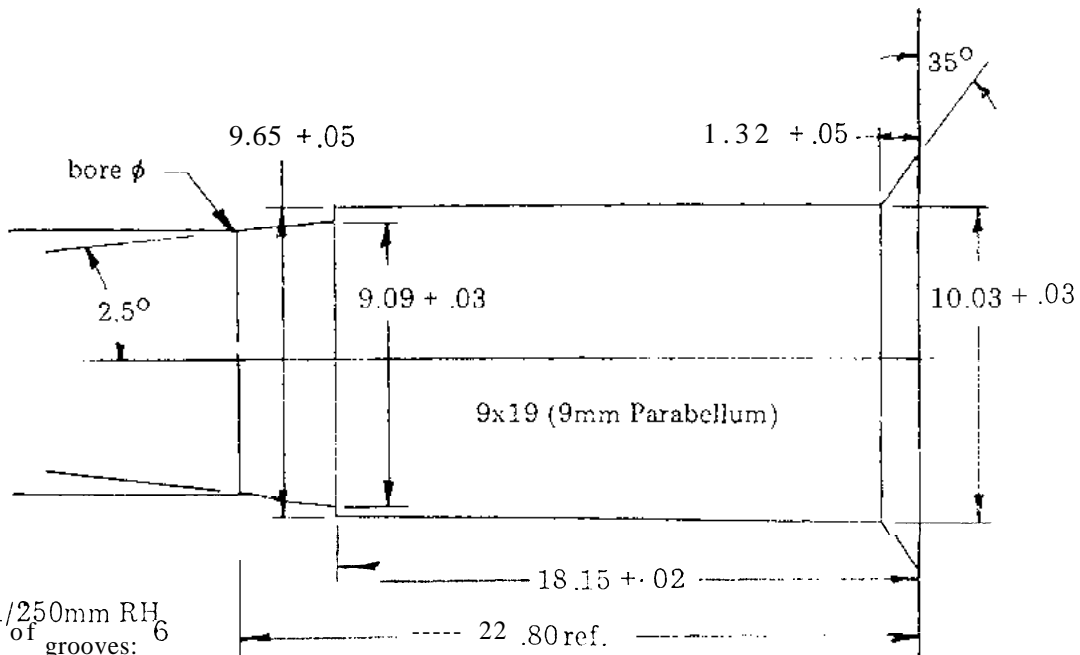
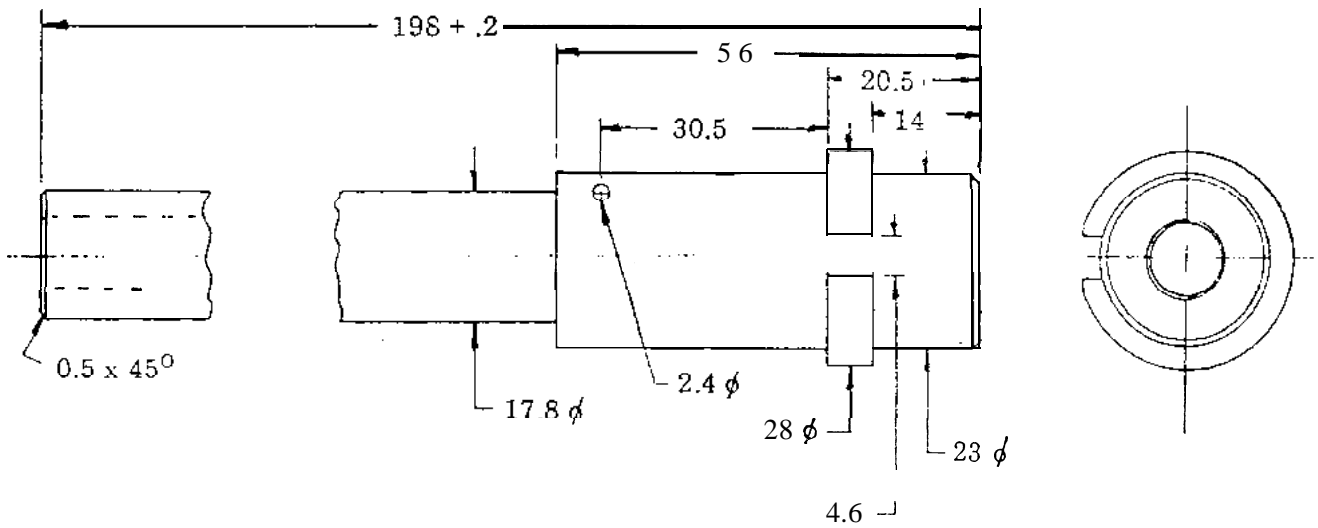
Material: AISI 1010 or equivalent

3mm stock. Heat treat: none

Scale: 1:1



Barrel  
 Material: AISI 4140  
 Harden to: Br 255-277



Twist:  $1/250$ mm RH  
 Number of grooves: 6  
 Groove width:  $2.5 + .02$   
 Bore diameter:  $8.84 + .02$   
 Rifling diameter:  $9.06 + .05$

## STEN Mk II SPECIFICATIONS

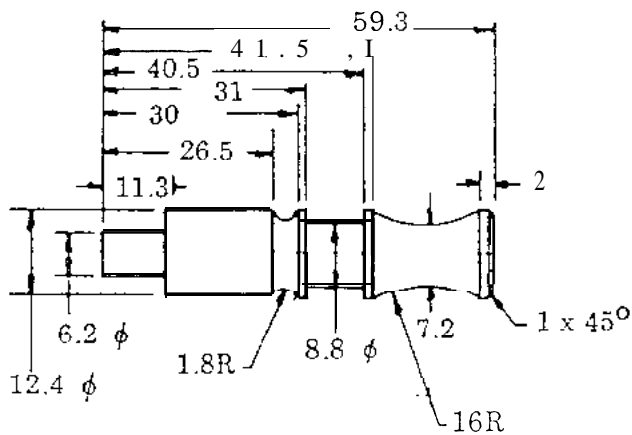
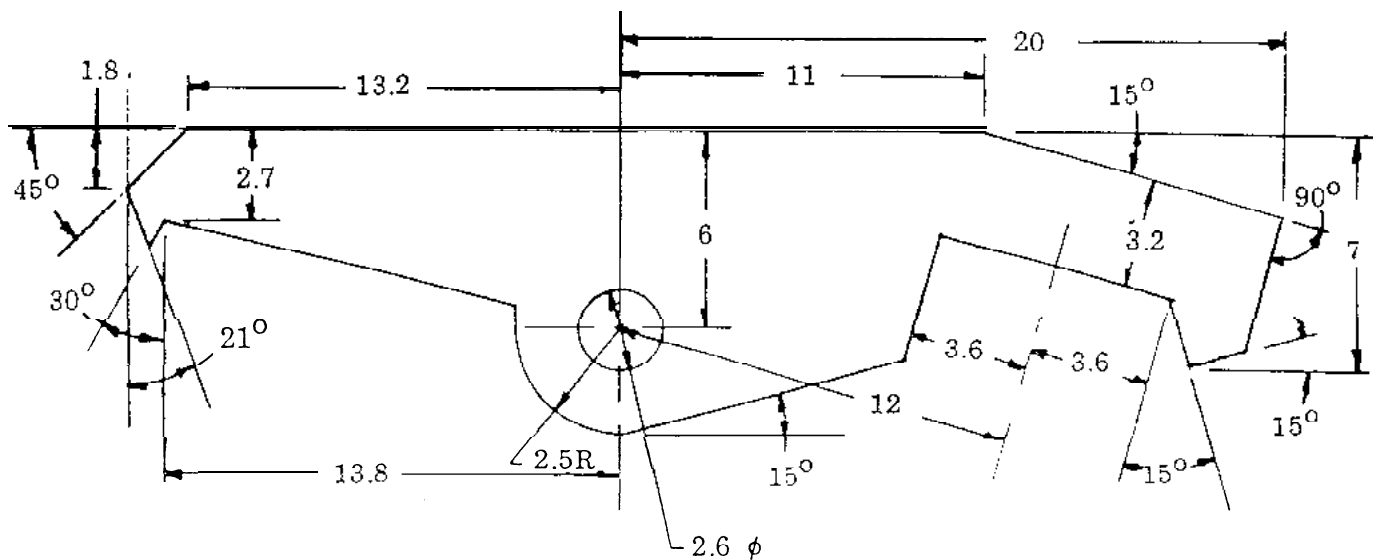
1. Cartridge:	9mm Parabellum	
	Bullet weight	116 grains
	Powder weight	5 grains
	Muzzle velocity	1400 ft./sec.
2. Recoil Spring:	Wire diameter	0.067 in.
	Spring OD	1.00 in.
	Active coils	15
	Free length	9.40 in.
	Initial length	6.80 in.
	Final length	3.20 in.
	Work stroke	3.60 in.
3. Bolt:	Weight	1.327 lb. (9290 grains)
	(including extractor)	
	Cocking handle	0.077 lb. (540 grains)
	Total recoiling weight:	1.404 lb. (9830 grains)
	Bolt maximum dia.	1.381 in.
	Bolt overall dia.	5.75 in.
	Bolt body length	4.21 in.

## SUGGESTED STEN MANUFACTURING MODIFICATIONS

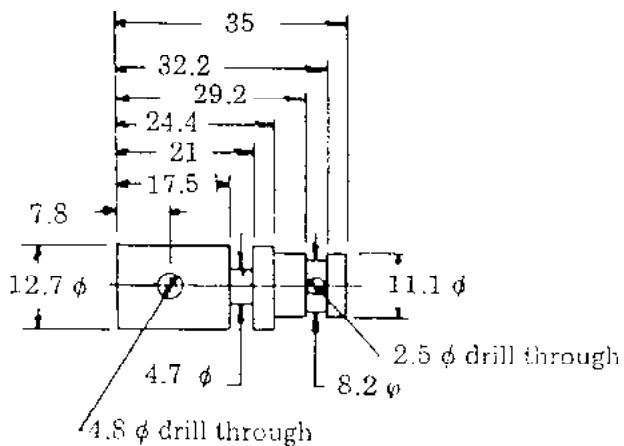
- |   |  |
|---|--|
| <p>1. Select suitable lightwall steel tubing which is commercially available. For example, a fence post pipe (galvanized) is 38.5mm OD and 35.0mm ID, most suitable for use as a receiver.</p> <p>2. Eliminate barrel sleeve.</p> <p>3. Weld barrel bushing into the front end of the receiver for simple, permanent assembly.</p> <p>4. Turn barrel blank OD (outside diameter) without any shoulder, fit the barrel in the bushing by sliding fit.</p> <p>5. Fasten the barrel in the bushing by two roll pins of 3/16" diameter, or equivalent.</p> <p>6. Turn the bolt OD to fit the receiver ID.</p> <p>7. The external portion of the cocking handle (sticking out of the receiver) may be a straight 8.8mm OD, the same as the inside.</p> | <p>8. The trigger housing cover acts only as a guard against dirt entering the trigger assembly. This cover can be eliminated or made from plastic.</p> <p>9. All pins can be roll pins of standard commercial size, or pieces of drill rod.</p> <p>10. All springs can be of a standard commercial size.</p> <p>11. Trigger material may be aluminum or plastic, side tabs may be replaced by spacers or washers to keep the trigger located neutrally.</p> <p>12. 1-1/4" diameter nominal size galvanized pipe, schedule 40 is suitable for a modified receiver:<br/> OD: 42.2mm<br/> ID: 35.05mm<br/> Wall thickness: 3.55mm</p> <p>Note: A 1" galvanized pipe fits loosely inside a 1-1/4" pipe and can be welded as a filler-spacer where needed,</p> |
|---|--|

Extractor  
Scale: 4.5 :1

Material: AISI 1040 or equiv., stock 4.7 wide  
harden to: Rc 48-52



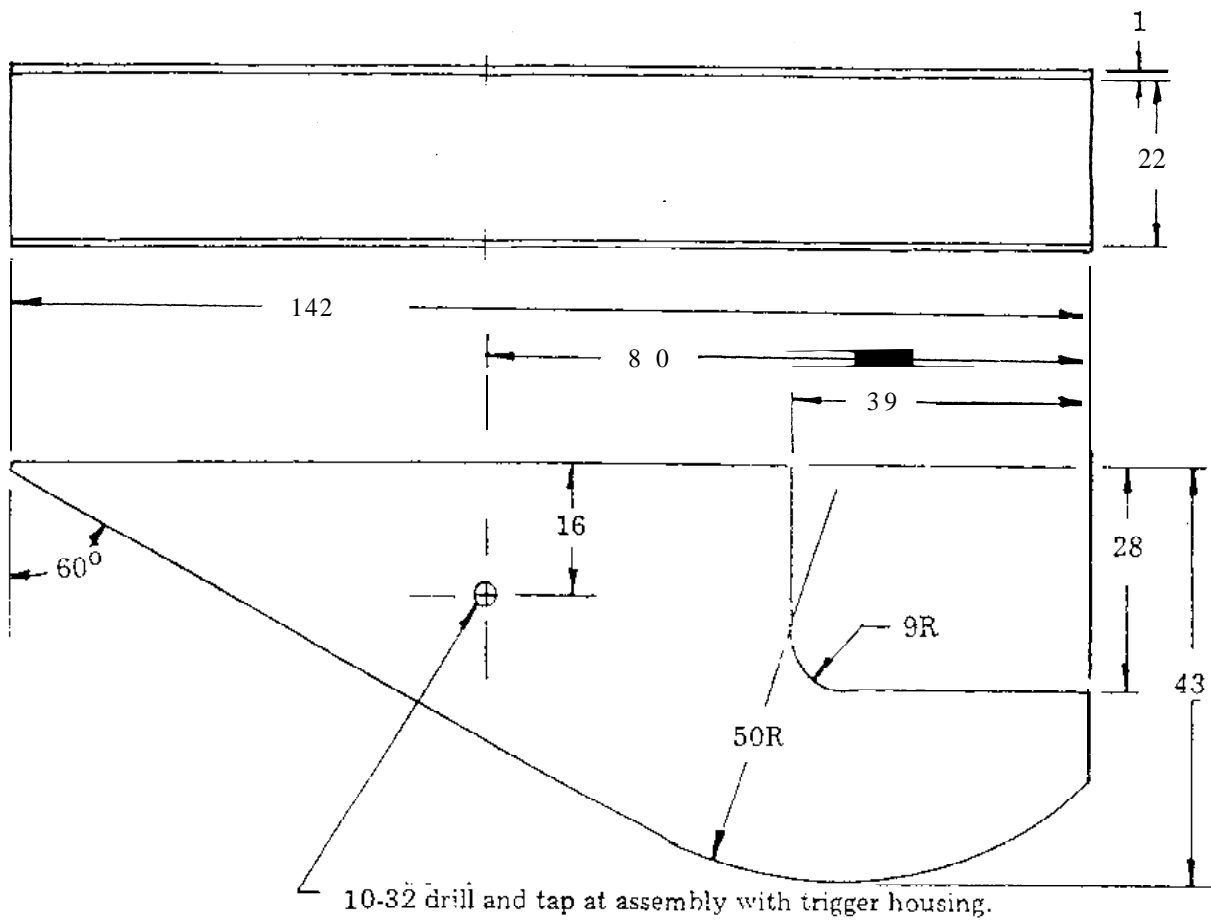
Bolt handle  
Scale: .87:1  
Material : mild steel  
Heat treat: none



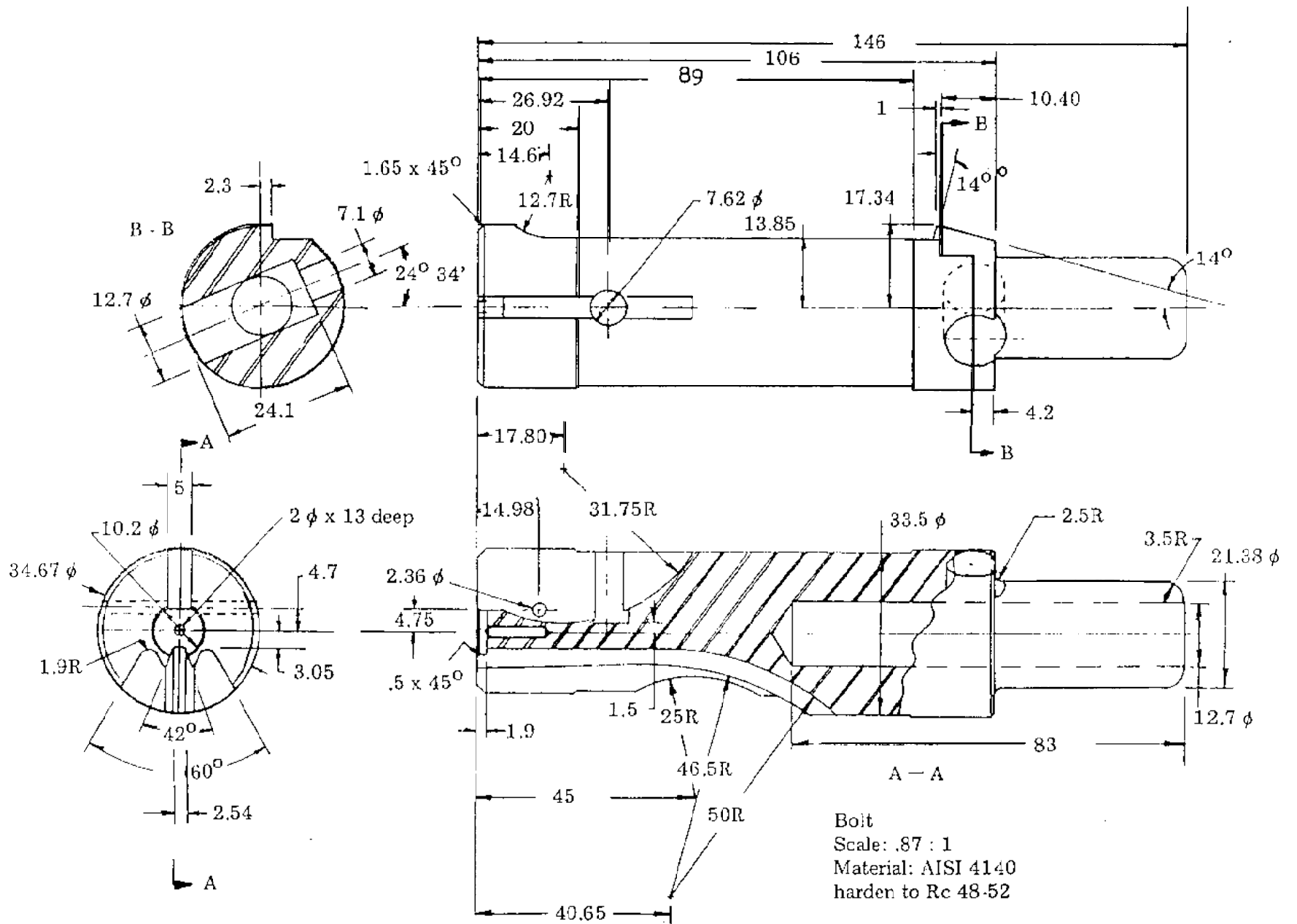
Selector  
Scale: .87:1  
Material:mild steel  
Heat treat :none

Trigger housing cover  
Material: 1mm stock, formed  
Required: 1

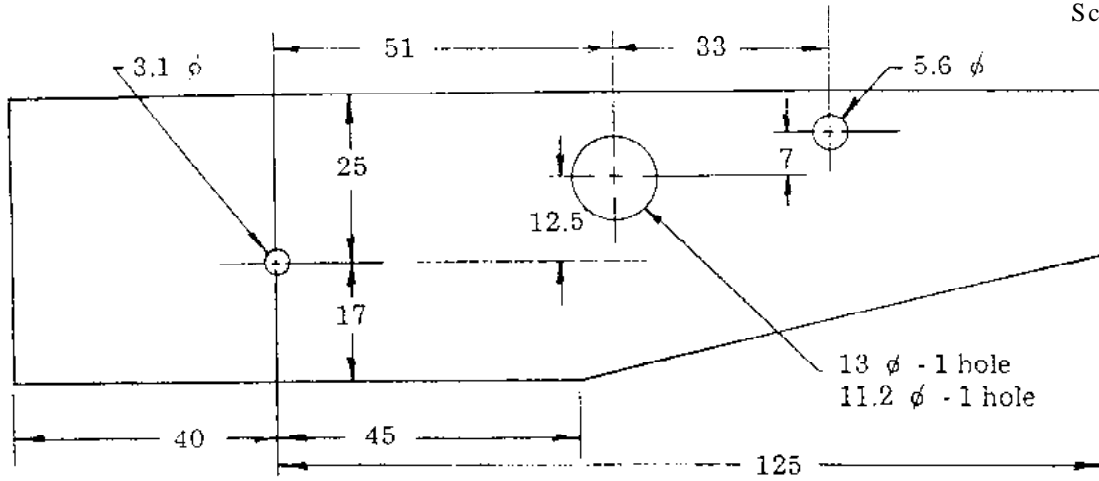
Scale: 1:1



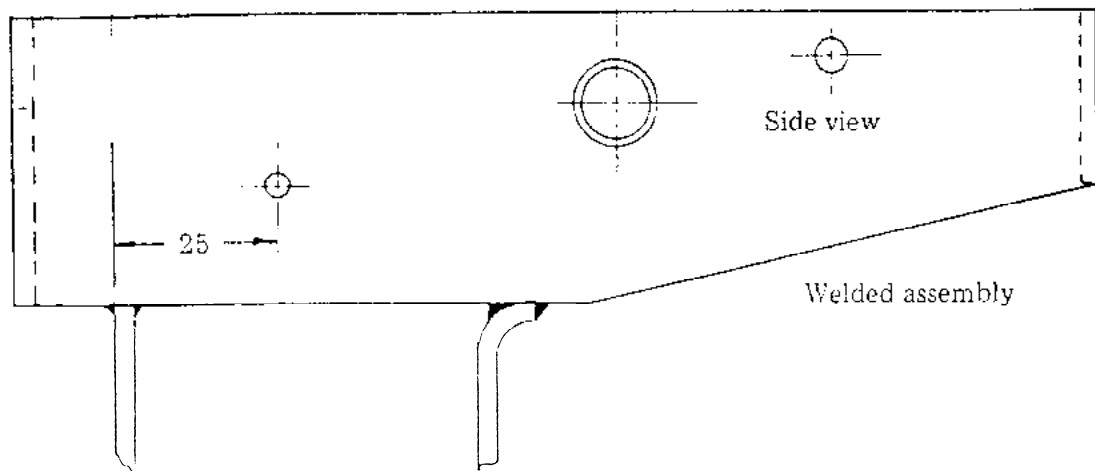
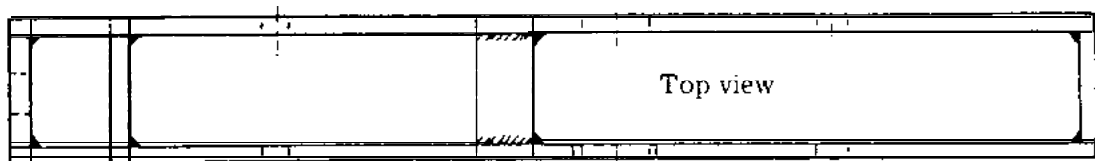
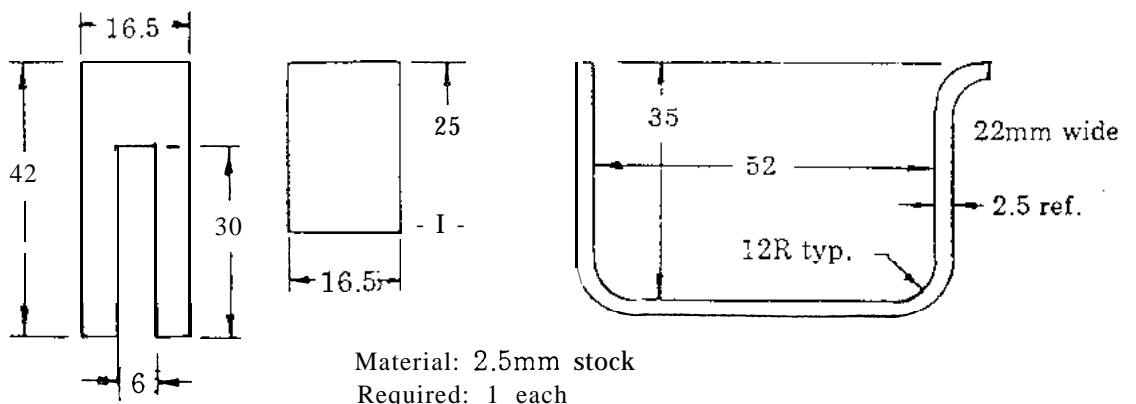
All Sten screws are 10-32 thread, round head type. Trigger housing screws (2) are 13mm long.

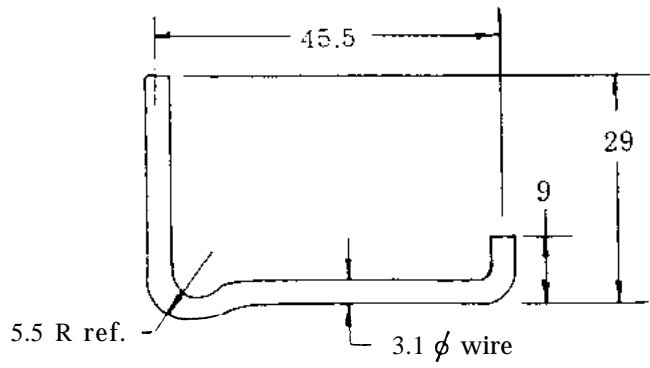


Trigger housing  
Scale: .87:1



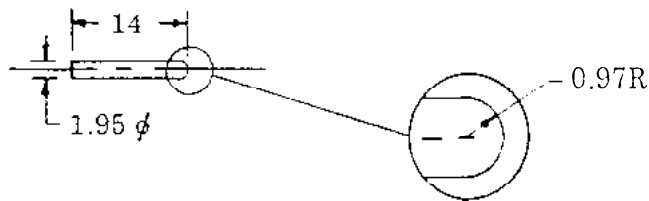
Material: 2.5mm stock  
Required: 2





Trigger pin

Note: Trigger pin may be substituted by spring pin 3.1  $\phi$  by 26 long.



Firing pin  
Material: Drill rod  
Harden to Rc 50

PINS (Spring pins)

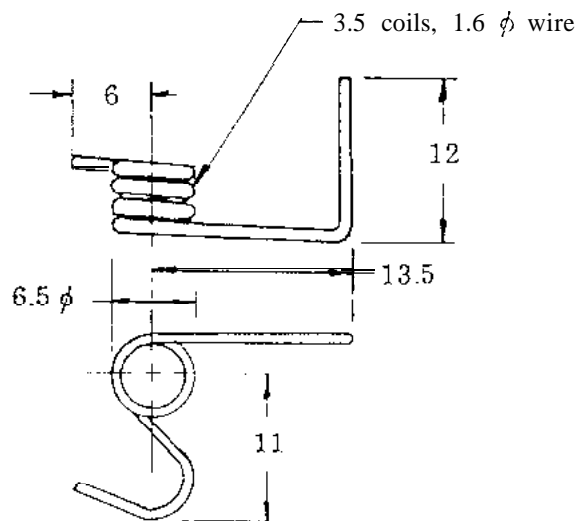
USE	DIAMETER	LENGTH
Extractor	2.5	25
Sear	5.5	24



### SPRINGS

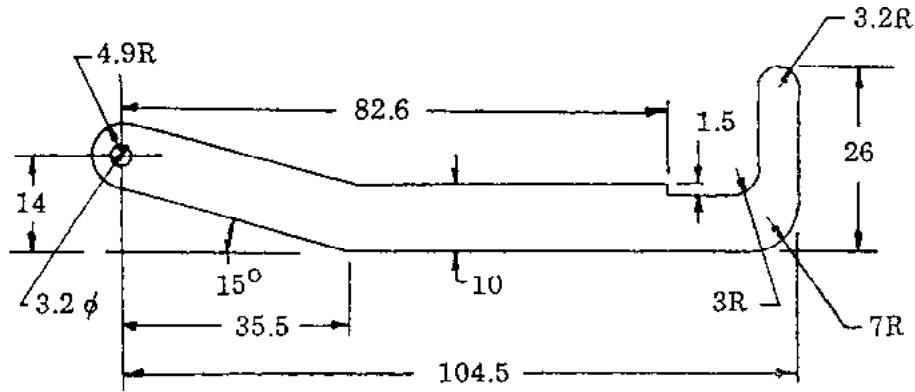
USE	Wire dia.	Coil OD	Free length	Number of coils	Coil ends	SUBSTITUTE":
Extractor	1	7.1	12	5.5	Sq.	LC-040C-4
Magazine latch	1	8.7	15.5	6	Gr.	LC-040C-6
Closing	1.6	26.5	245	17	Sq.	
Trigger	0.7	4.6	57	72	Extension spring loops	LE-026B-7 or LE-026C-8
Selector	0.45	4.6	14	8	Gr.	LC-018B-6
Barrel sleeve latch	1	8.7	35	15	Sq.	

Sear spring, formed substitute LT-059K-1-R



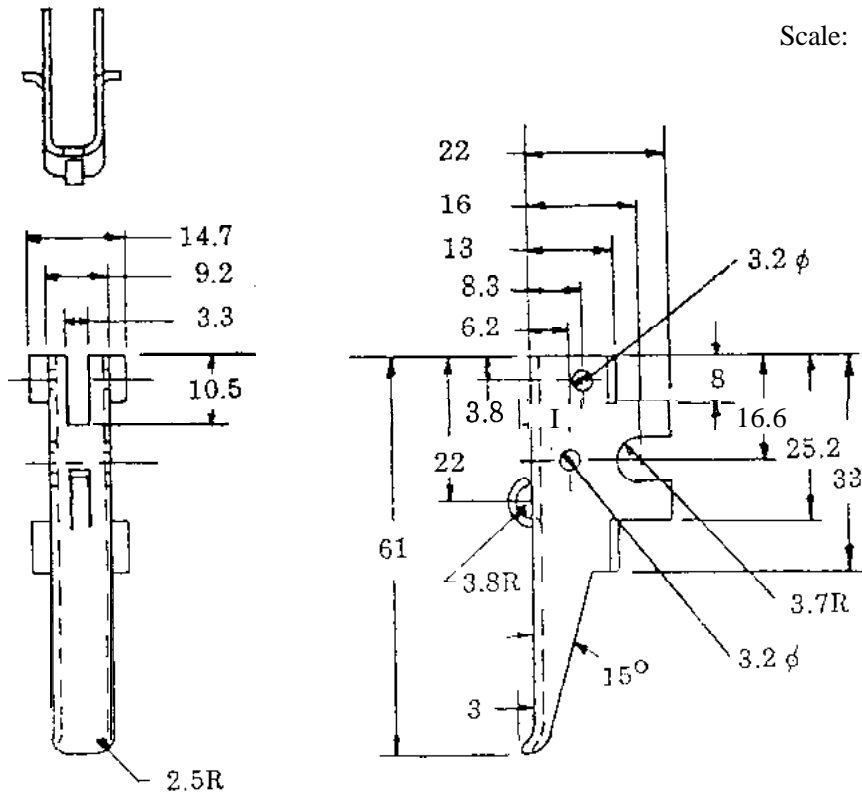
\*Lee Spring Company, 30 Main St., Brooklyn, NY 11201; catalog No. 112/1970

Scale: .87 : 1

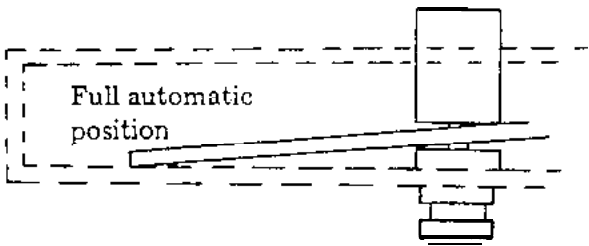


**Trigger**  
Material: AISI 1010 or equivalent.,  
1.6mm stock  
Heat treat: none

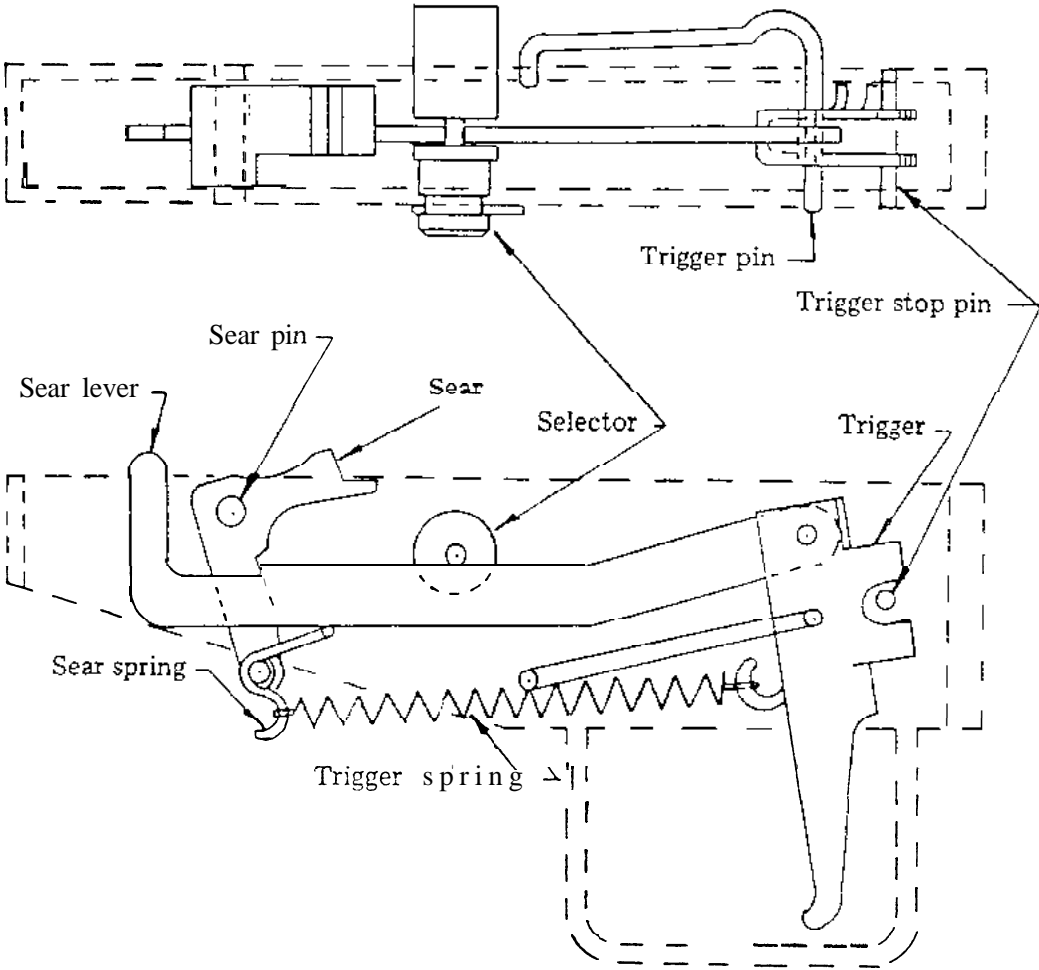
Scale: .87 : 1



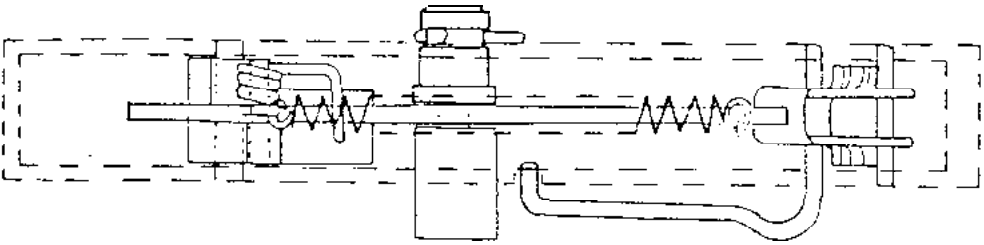
Trigger assembly



Top view

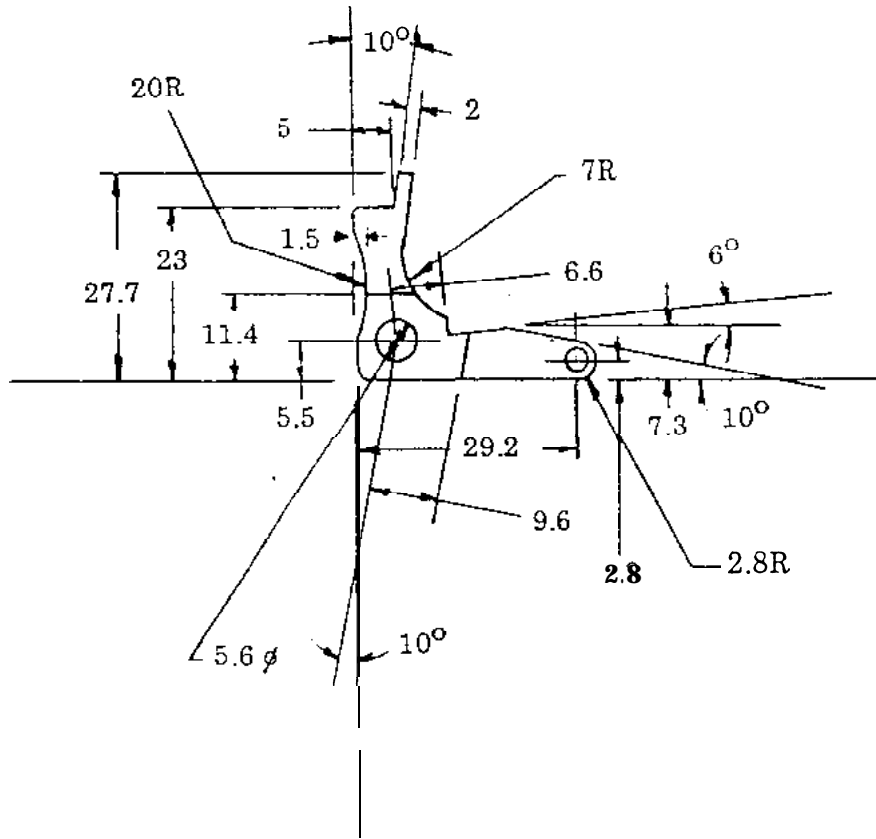
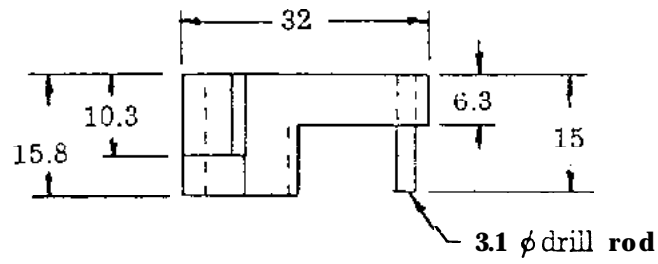


Bottom view

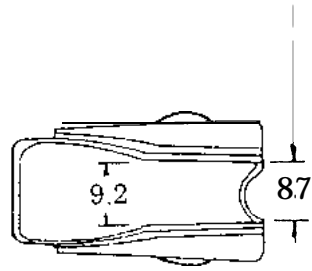


Sear  
Material: AISI 4140 or equivalent  
Harden to Rc 55

Scale: 1:1

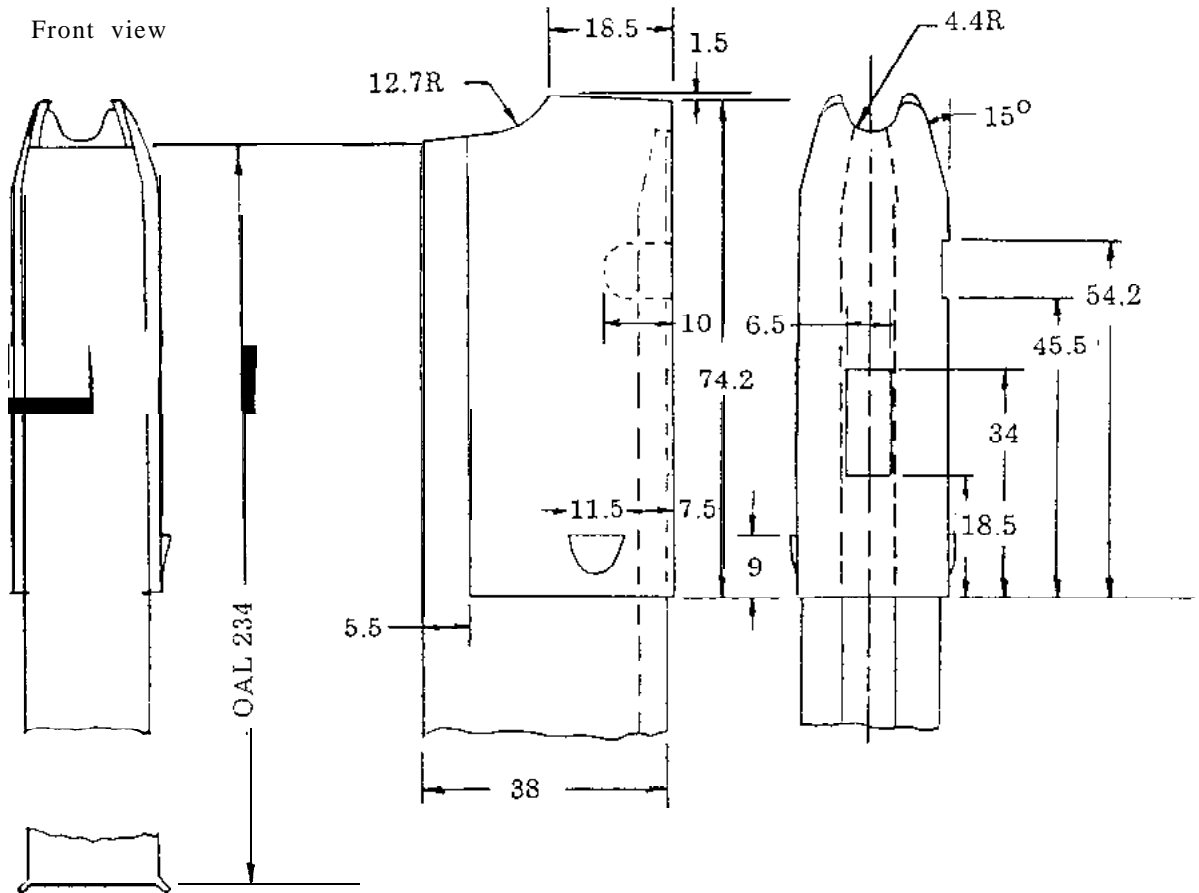


Top view

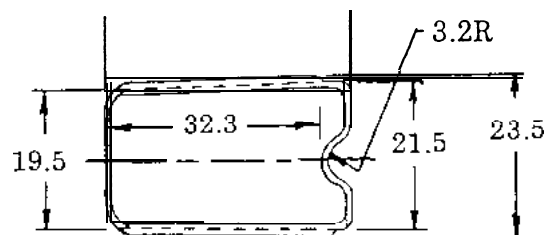


Magazine  
Material: 1mm steel stock

Front view



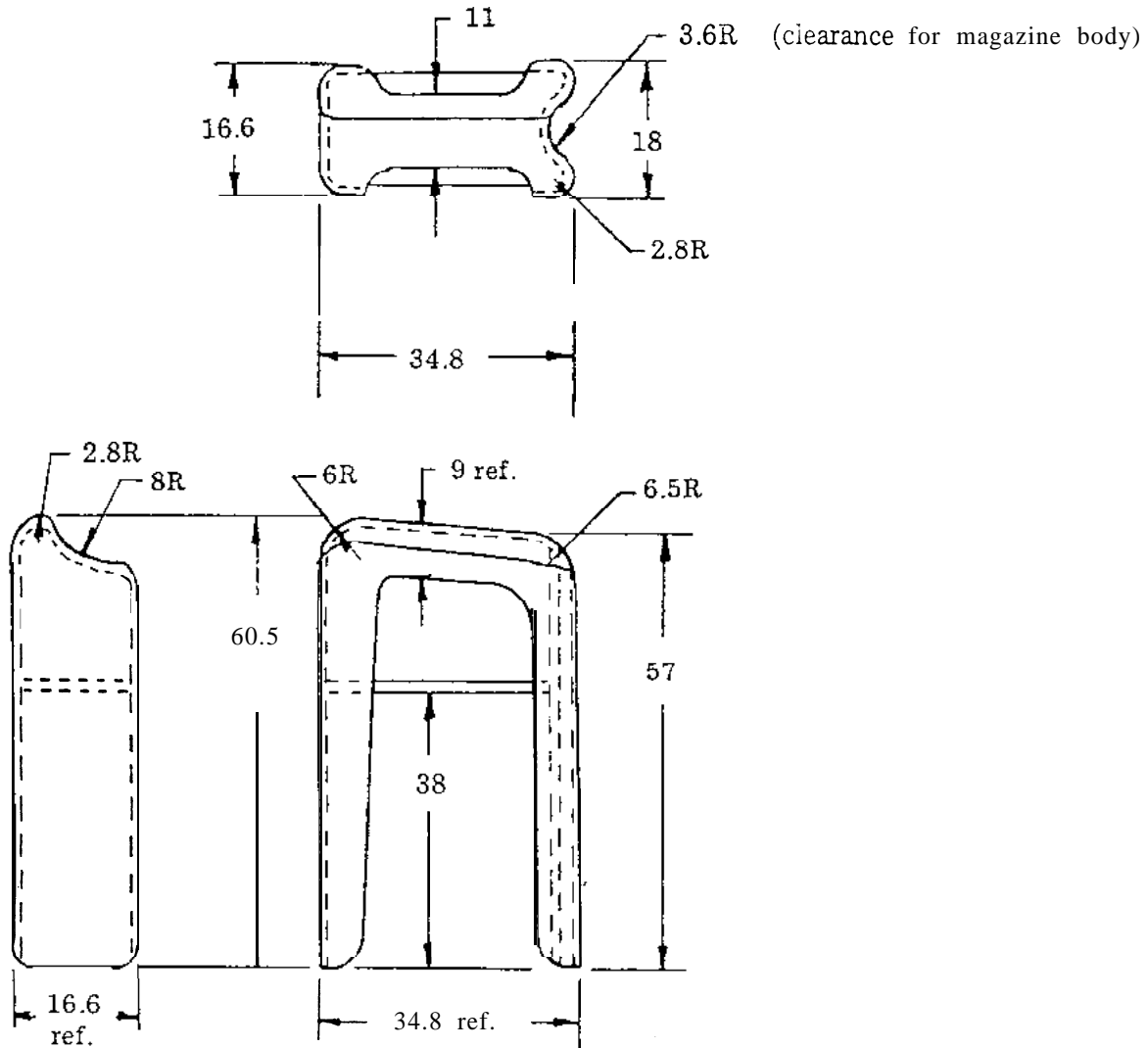
Rear view



Bottom view

Magazine follower  
Material: low carbon steel

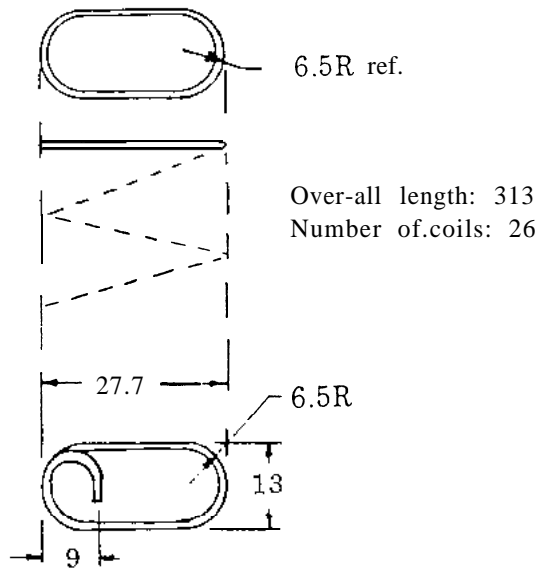
Scale: 1:1



Note: The magazine follower is a complex stamping made on a progressive die. To make a follower in a simpler way is to follow the Degtyarev DP LMG approach — using a dummy round as the last one in the magazine. Thus a simple, flat follower with a dummy round soldered and/or screwed to it will replace a complicated stamping.

Magazine spring

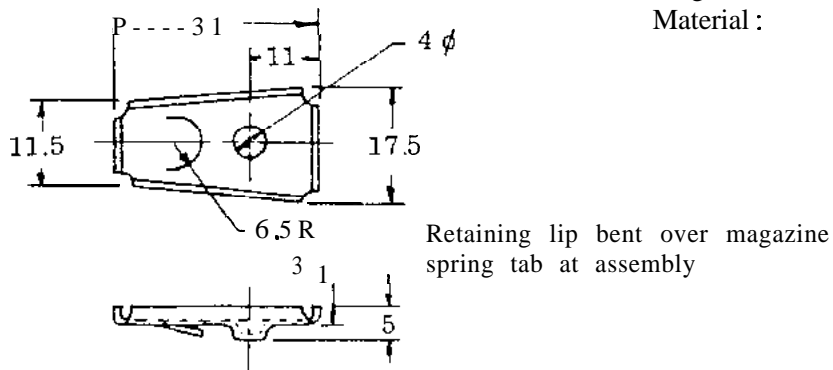
Material: Music wire 1.5mm dia.



Scale: .87:1

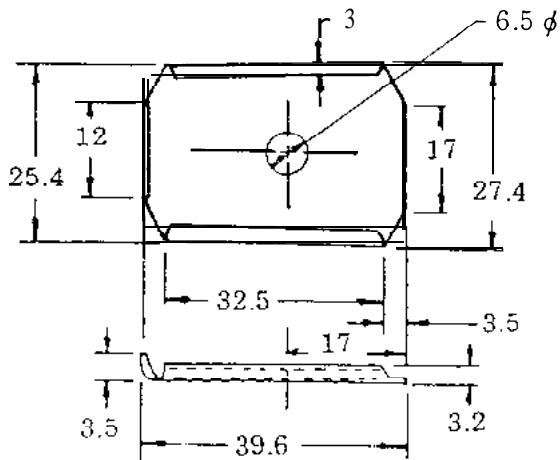
Magazine bottom retainer

Material: 1mm mild steel

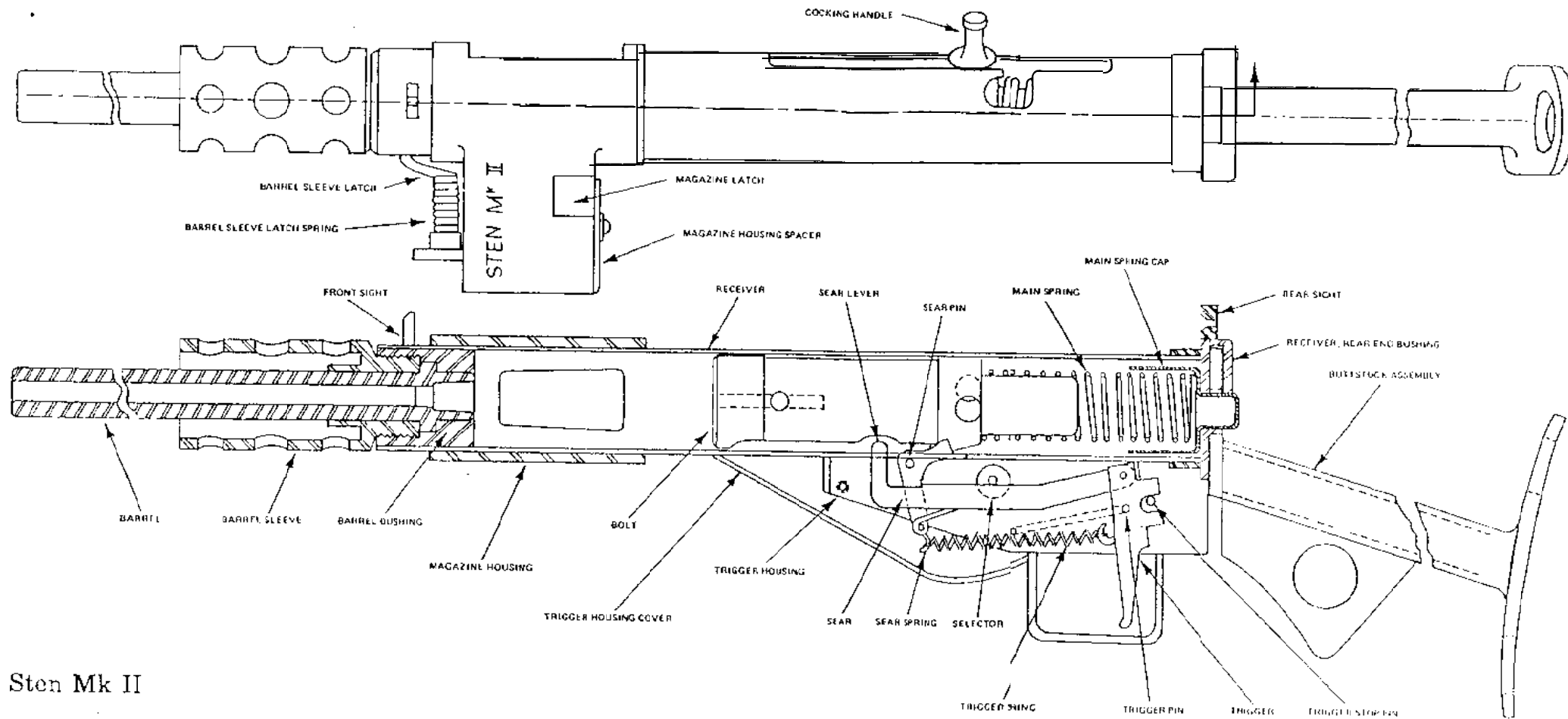


Magazine bottom plate

Material: 1mm mild steel



Scale: .87: 1



Sten Mk II