

Chapter 2

EJECTION GUN, TYPE 2

(Stores Ref. 27L/352)

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Introduction

1. The Type 2 ejection gun (*fig. 1*) has a stroke of 39 in., with an ejection velocity of 50 ft. per sec. It is used normally in an aircraft with tail booms; with no central fin, the trajectory curve need not be so high and so the use of one cartridge only is permissible. Reference to Sect. 1, Chap. 1 will make this point clear.

Function

2. The ejection gun provides the power for the ejection of the seat and occupant from the aircraft and consists of a pair of telescopic tubes. The outer or cylinder tube is attached at its lower end to the bottom mounting block fitted in the guide rail; the inner or piston tube is attached at its upper end to the top cross-beam of the seat structure. The explosive is contained in a cartridge (Stores Ref. 12D/1225) which is percussion fired by the action of pulling out the face screen, and is housed in the breech at the upper end of the piston tube.

3. When the face screen has been withdrawn approximately 12 in., the firing cable which is attached to the face screen pulls the wedge-shaped sear out of the firing body. The movement of the sear first compresses the firing spring and then releases the firing pin to strike the percussion cap of the cartridge.

4. The gas pressure developed by the cartridge first presses down the release piston, thus freeing the piston tube from the cylinder tube and, as the gas pressure rises, it propels the piston tube upwards. After 39 in. of travel the cylinder and piston tubes separate, the cylinder tube remaining attached to the guide rail in the aircraft and the piston tube remaining attached to the ejected seat.

Cylinder tube

5. This is a thin-walled steel tube with an accurately lapped bore and when dismantled it must be handled carefully. The release mechanism at the bottom end of the cylinder tube consists of the release piston, the cylinder head and the piston skirt. The two latter components are locked together by the release piston which is retained in

position by a spring below it. The external ring of the release piston expands the spring tabs of the slotted portion of the cylinder head so that they engage an internal collar in the piston skirt.

6. The initial gas pressure causes the release piston to move downwards, thus allowing the locking tabs of the cylinder head to close inwards and so disengage the piston skirt. The piston skirt may be unlocked manually by pulling out the release button. Similarly the piston tube can only be returned to the locked position after the release button has been withdrawn.

7. The ejection gun is retained in the bottom mounting block by the bottom latch which can be released by a pull on the ring provided. When the gun is installed in the guide rail, it is important that the bottom latch is positively home, otherwise the seat could move up the guide rail during inverted flight.

Piston tube

8. This is of similar construction to the cylinder tube and when dismantled must be handled as carefully. At its lower end is the piston skirt which is provided with three rings, and at its upper end is the breech into which is screwed the firing body. The breech is permanently screwed into the piston tube; it is locked by peening and should not be removed. The breech houses the cartridge and spring which are held in position by the firing body. When unscrewed, the firing body gives access to the cartridge which is pushed upwards by its spring to facilitate removal.

Firing body

9. The firing body houses the firing pin and spring. A slot machined at the upper end of the firing pin is provided with a roller which converts the horizontal movement of the sear to a vertical movement of the firing pin. The shaped bottom end of the firing pin protrudes normally approximately $\frac{3}{2}$ in., but is clear of the percussion cap; the firing of the cartridge is unaffected by the speed of movement of the sear.

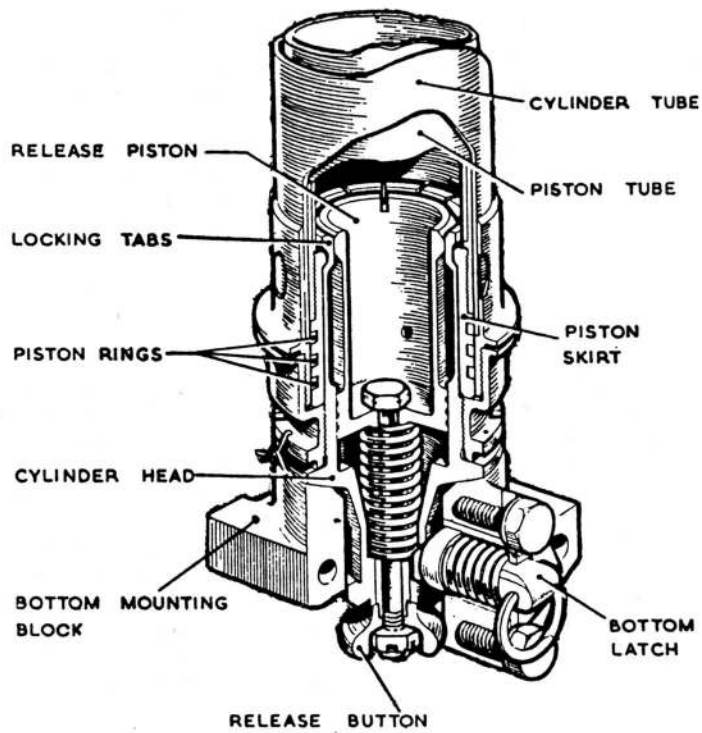
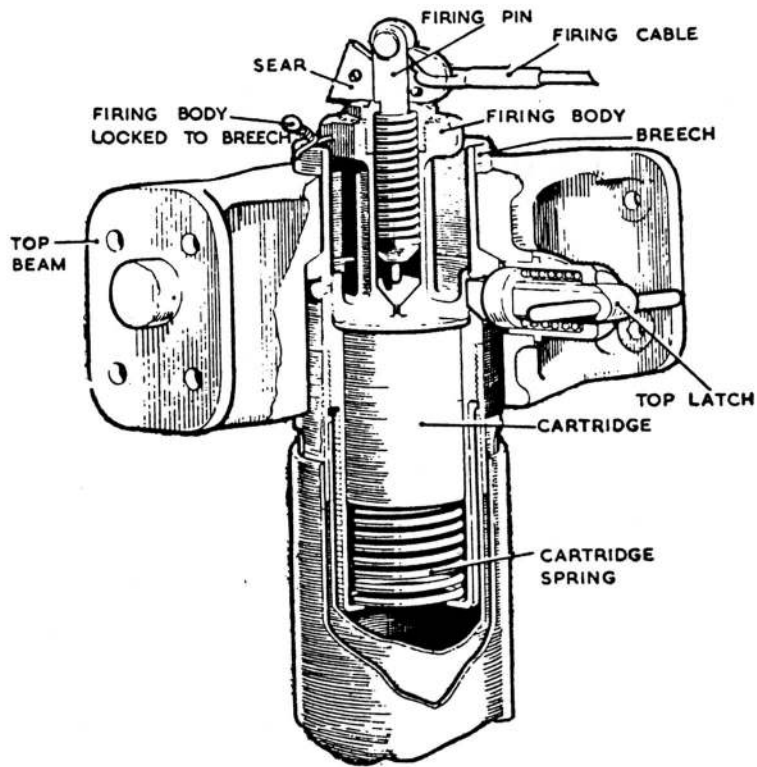


Fig. 1. Type 2 ejection gun assembly

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