

Chapter 20

SOLENOID UNIT, TYPE C5151Y, Mk. 1

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LEADING PARTICULARS

Solenoid unit, Type C5151Y, Mk. 1	Stores Ref. 5CW/5780
Nominal voltage	28 volts
Current consumption	0.4 amp.
Coil resistance	68-72 ohms

Introduction

1. The solenoid unit, Type C5151Y, Mk. 1, is incorporated in the cabin de-pressurising release valve, Type C5748Y, Mks. A and B.

DESCRIPTION

General

2. The solenoid unit (*fig. 1*) comprises a coil assembly and an armature assembly located in a yoke assembly, fitted with the necessary electrical connections.

Coil winding

3. The coil winding comprises enamelled copper wire and resistance wire wound on to a fibre-glass sleeve and suitably insulated. The ends of the coil are connected to contact pins which are mounted in insulated bushes located in holes in the end plate.

4. Also mounted on the end plate are two locating sleeves, which vary in length to ensure correct mating with the valve, and a hollow soft-iron core which is spun over where it passes through the end plate to hold it in position. A shallow slot is machined in the face of the end plate to provide an air vent.

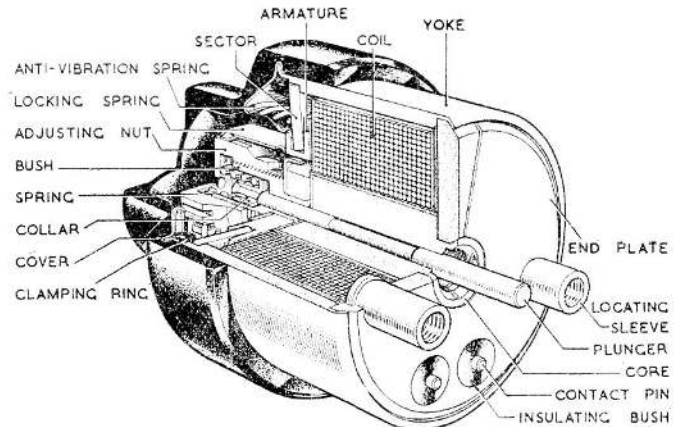


Fig. 1. Solenoid unit, Type C5151Y, Mk. 1

Armature assembly

5. The armature assembly comprises a soft-iron armature in which are located soft-iron sectors. These are retained in the yoke by a rubber clamping ring. A threaded bush carrying a locking spring is fitted to the armature and is secured by spinning over. An anti-vibration spring locates against the sectors, and the whole assembly is retained by a cover which is spun over a lip on the end of the yoke.

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6. The spring-loaded plunger is located in the bore of the armature bush and the solenoid core and is retained by an adjusting nut which is locked by a locking spring giving half notch adjustment. A rubber shroud covers the end of the assembly and permits manual operation.

Attachment of solenoid

7. The solenoid is positioned so that the contact pins will meet the contacts of the plunger block in the valve body (fig. 2). Securing bolts pass through the valve body from the opposite side and screw into the locating sleeves to secure the solenoid to the valve.

PRINCIPLE OF OPERATION

De-energized

8. In the de-energized condition the armature assembly is held away from the coil, against the light anti-vibration spring, by a small spring in the pilot valve bore of the valve.

Energized

9. When the coil is energized it attracts the armature assembly which, by means of the plunger, moves the valve. The spring in the adjusting nut provides the slight amount of flexibility necessary.

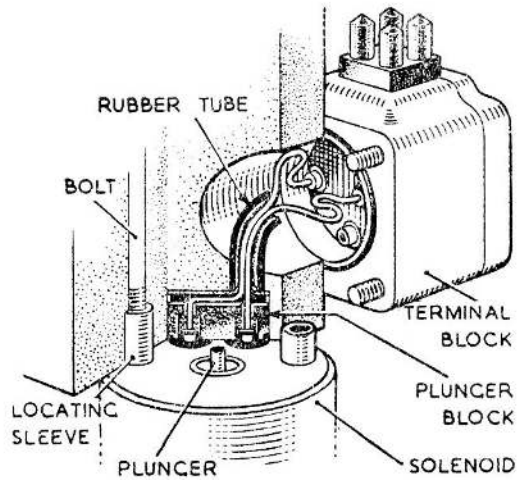


Fig. 2. Sectional view of electrical connections

SERVICING

10. Servicing of the solenoid unit is restricted to ensuring that the mechanism is clean and undamaged. No dismantling is necessary for normal servicing.

11. The coil resistance should be checked to ensure that it lies within the range 68-72 ohms. The insulation resistance between each contact pin and the body of the solenoid unit should be not less than 20 megohms measured with a 250-volt insulation-resistance tester.

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