

Chapter 21

SOLENOID UNIT, TYPE A5151Y, Mk. 6

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LEADING PARTICULARS

Solenoid unit, Type A5151Y, Mk. 6	Stores Ref. 5CW/5779
Nominal voltage	28 volts
Current consumption	0.4 amp.
Coil resistance	68-72 ohms

Introduction

1. The solenoid unit, Type A5151Y, Mk. 6, forms part of the hydraulic selector units, Types C6734Y, C7429Y and C6739Y and is incorporated in the shut-off valve, Type C6736Y. This unit is also known as the Type C5151Y, Mk. 6; the discrepancy being due to a change in drawing number.

2. Two solenoid units are incorporated in the selectors, Type C6734Y and C7429Y and one in the selector, Type C6739Y and shut-off valve Type C6736Y, and in each case the solenoid controls a pilot valve.

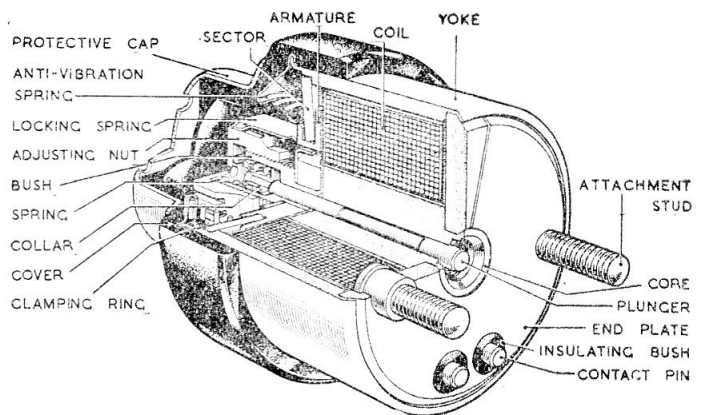


Fig. 1. Solenoid unit, Type A5151Y, Mk. 6

DESCRIPTION

General

3. 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

4. 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 soldered into contact pins which are carried in insulating bushes located in holes in an end plate.

5. The end plate also carries two attachment studs, one of which is spigoted to prevent incorrect mating with the unit upon which it is mounted. A hollow soft-iron core passes through the end plate and is spun over to retain it in position. A shallow slot is machined in the face of the plate to provide an air vent.

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Armature assembly

6. The soft-iron armature has an annular recess in which are located soft-iron sectors; these are retained in a machined recess in the yoke by a rubber clamping ring. A threaded bush carrying a locking spring is fitted to the armature and is spun 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.

7. The spring loaded plunger is retained by an adjusting nut, which has a spring locking attachment, and passes through the bore of the armature bush and solenoid core. A rubber shroud covers the end of the assembly and a metal protective cap is fitted to prevent inadvertent manual operation.

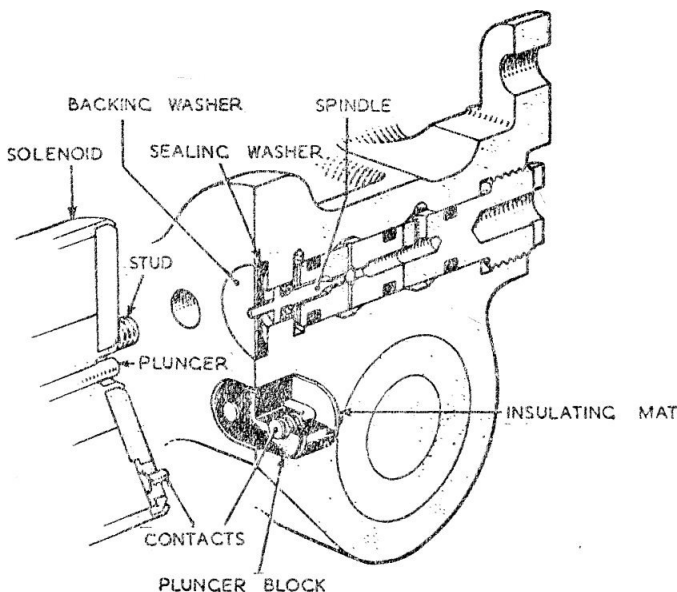


Fig. 2. Sectional view showing method of attachment

Solenoid attachment

8. Sleeve nuts pass through the body of the unit on which the solenoid is mounted and engage with the attachment studs. The contact pins mate with contacts in plunger blocks (fig. 2) on the valve body, and these contacts are electrically connected with a plug also mounted on the valve body.

PRINCIPLE OF OPERATION

De-energized

9. 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

10. 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.

SERVICING

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

12. 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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