

GROUP C, 5

#### FUEL FILTER DE-ICING (CCDE EFD)

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#### Equipment employed

1. The major components employed in the fuel filter de-icing circuit are quoted below, together with the appropriate Air Publications to which

reference should be made for a detailed description and the necessary servicing required to maintain them in an efficient condition.

## DESCRIPTION

### General

2. An electrically driven pump, mounted on the port side of the engine bay, injects alcohol from a tank, also located in the engine bay, into the fuel filter via the delivery pipe. The alcohol flow is controlled by a solenoid valve attached to a bracket below and forward of the pump. The system is automatically controlled by a differential pressure switch situated, with the fuel filter, on the starboard side of the engine. A manually operated switch fitted to the solenoid valve bracket is provided for test purposes. For a full description of the fuel filter de-icing system, reference should be made to Sect.4, Chapter 2 of this volume.

### Operation

3. Ice which collects at the fuel filter is detected by an increase in pressure drop across the filter, resulting in the operation of the differential pressure switch. When this switch is operated, its contacts close and energize relay S1. When energized, this relay makes both sets of contacts and supplies the solenoid valve, via the contacts fed from the control circuit fuse. It also supplies the pump motor from the other set of contacts which are independently fused. The solenoid valve opens when energized, allowing the pump to inject de-icing alcohol into the fuel filter via the delivery pipe. When the ice is cleared and the pressure drop returns to normal, the pressure switch will open, thus de-energizing relay S1 to break its contacts and isolate the supply from the solenoid valve and the pump motor. The solenoid valve will then close and the pump cease to operate.

4. The test switch is wired in parallel with the pressure switch and when closed to test the system on the ground without running the engine, will operate the circuit in a similar manner to that described in Para.3.

## SERVICING

### General

5. For general servicing of the electrical system as a whole, reference should be made to Group A of this chapter. The components should be kept clean and periodically checked for security and serviceability. For electrical testing of the components reference should be made to the appropriate Air Publications quoted in para.1 of this group.

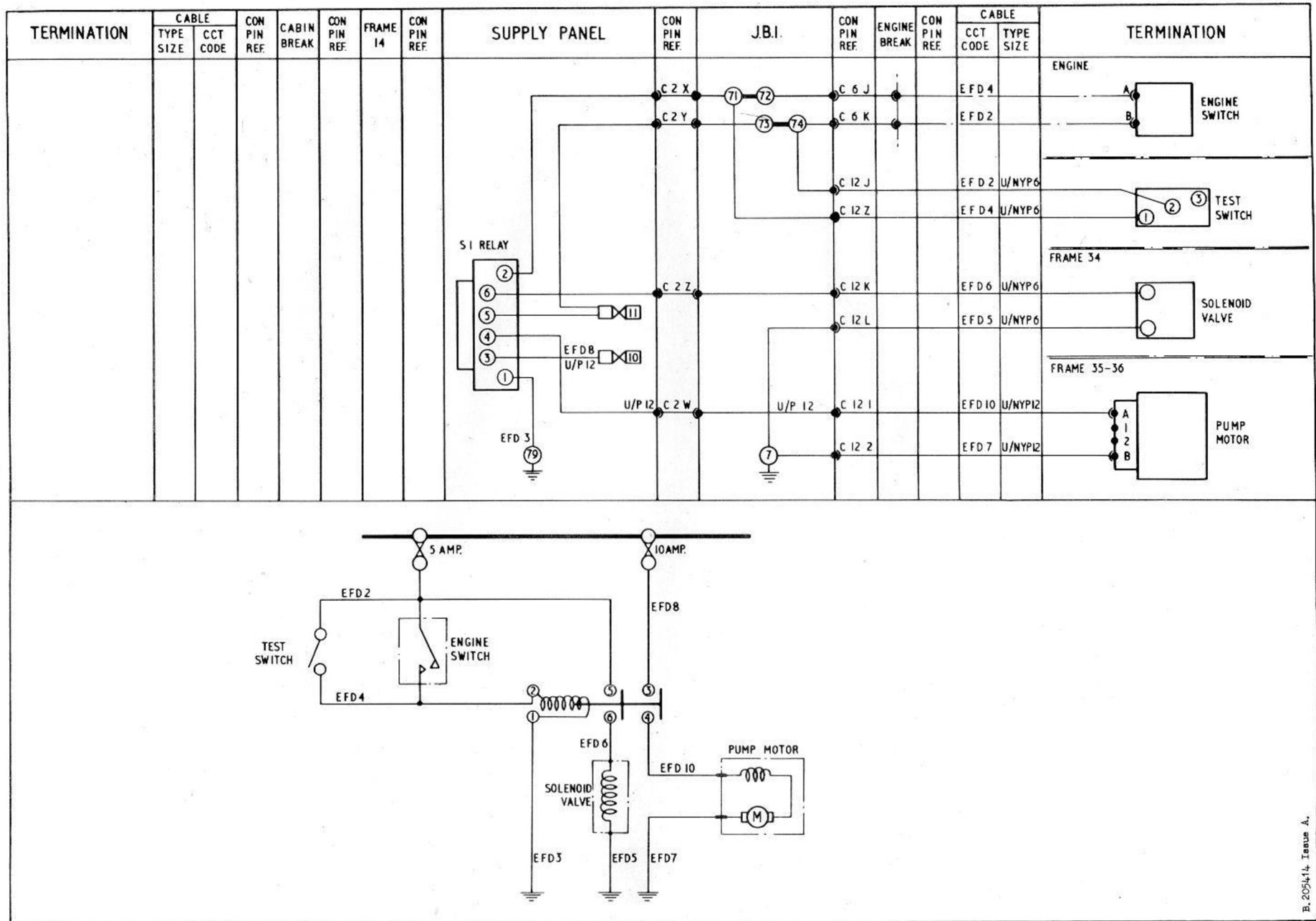
### Circuit test

6. The test switch is provided to test the system on the ground at the times quoted in the Servicing Schedule. The switch must not be used until a pressure gauge and relief valve assembly is fitted to the King drain valve on the engine delivery pipe as described in Sect.4, Chapter 2 of this volume.

## REMOVAL AND ASSEMBLY

### General

6. Once access has been obtained, the removal and assembly of the components forming the fuel filter de-icing circuit, should present no unusual difficulties. The location and access to all the components is indicated in Group A of this chapter.



**FIG. I FUEL FILTER DE-ICING**

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