

## Chapter 2

# RECTIFIER, WESTINGHOUSE, TYPE 16K2

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### LEADING PARTICULARS

Rectifier, Westinghouse, Type 16K2	...	Stores Ref. 5CZ/5012
Overall length	...	3.875 in.
Maximum diameter	...	0.53 in.
Weight	...	$\frac{1}{2}$ oz.
Current rating		
Temperate climate (25 deg. C.)	...	25 mA
Sub-tropical climate (35 deg. C.)	...	20 mA
Tropical climate (45 deg. C.)	...	15 mA

#### Introduction

1. The Westinghouse rectifier, Type 16K2, is used in the 24V d.c. circuit of the refuelling system on Swift aircraft. It acts as a spark quencher for preventing damage that might otherwise be caused to the float switch by an inductive spark.

#### DESCRIPTION

2. The rectifier is of a metal, dry-plate type, the action of which is based on the fact that selenium-covered steel washers have a greater resistance to current flow in one direction than in the opposite direction.

3. The unit consists of two selenium-covered steel discs, nine spacing washers and a coil spring, arranged in a bakelite body as shown in fig. 1. Steel covers with soldered-on wire terminals are crimped on each end of the body, and the whole assembly is hermetically sealed by Neoprene washers located between the covers and the ends of the body.

4. The negative end of the rectifier is painted black and the positive end red. Electrical connection is made at the wire terminals protruding from each end, and these also serve as anchorages for installation purposes.

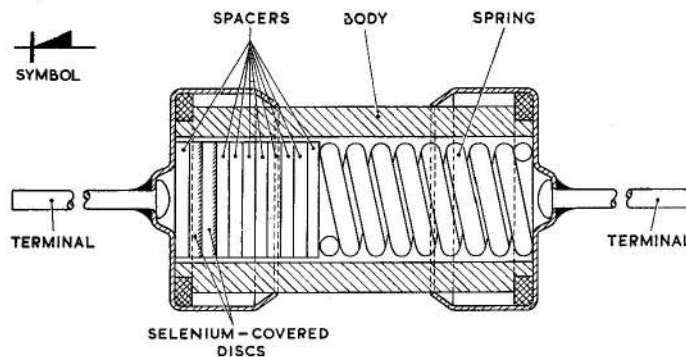


Fig. 1. Sectional view of rectifier, Westinghouse, Type 16K2

#### SERVICING

5. No servicing is practicable on this rectifier, and if dismantling is attempted, the unit will be rendered unserviceable. Consequently, a faulty rectifier must be removed and a serviceable one fitted in its place.

#### Insulation test

6. The wire terminals on the rectifier must be connected together before an insulation test to earth is made. Using

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a 500V insulation resistance tester, a reading of not less than 20 megohms is required for the unit to be fit for service. If a reading of less than 20 megohms is obtained, the rectifier will be unfit for service. The reverse resistance must not be tested by an insulation resistance tester as this will cause damage to the rectifier.

**Load test**

7. The input voltage for a load test must be obtained from a low impedance source such as a transformer, adjustments in voltage being made by tappings thereon.

8. The current ratings shown in the Leading

Particulars are the maximum continuous ratings permissible at the stated ambient temperatures. The forward voltage drops that may be anticipated at a rectifier temperature of 30 deg. C., which is a representative initial temperature, are as follows:—

(1) In a temperature climate (25 deg. C), 2.5V.

(2) In a sub-tropical climate (35 deg. C), 2.4V.

(3) In a tropical climate (45 deg. C), 2.2V.

A slight reduction in the forward voltage drop is likely to occur as the actual temperature of the rectifier increases.

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