

## Chapter 20

## TRIMMER RESISTORS, ROTAX, ZA 5700 SERIES

## LIST OF CONTENTS

	<i>Para.</i>		<i>Para.</i>
<i>Introduction</i> ... ..	1	<b>Servicing</b> ... ..	5
<b>Description</b> ... ..	2	<i>Testing</i> ... ..	6
<b>Installation</b> ... ..	4	<i>Resistance tests</i> ... ..	7
		<i>Insulation resistance tests</i> ... ..	8

## LIST OF ILLUSTRATIONS

	<i>Fig.</i>
<i>Typical trimmer resistor in ZA 5700 series</i>	1
<i>Sectional view</i> ... ..	2
<i>Circuit diagram</i> ... ..	3

## LEADING PARTICULARS

<i>Type</i>	<i>Ref. No.</i>	<i>Resistor values (ohms)</i>	
		<i>M.V.</i>	<i>L.V.</i>
ZA 5701	5CZ/	1.0 - 22.3	0.2 - 8.5
ZA 5702	5CZ/5084	1.0 - 22.3	1.0 - 22.3
ZA 5703	5CZ/6151	0.15- 4.9	0.15- 4.9
<i>Overall dimensions—</i>			
<i>Length</i> ... ..			5.401 in.
<i>Width</i> ... ..			2.0 in.
<i>Height</i> ... ..			4.437 in.
<i>Weight</i> ... ..			13.5 oz.

**Introduction**

1. The trimmer resistor units in the ZA 5700 series are similar in design and differ only in the value of their resistance. The units contain two variable resistors which can be connected

into the M.V. and L.V. circuits of an aircraft electrical system to provide voltage control. The resistance values of each unit are as shown under Leading Particulars.

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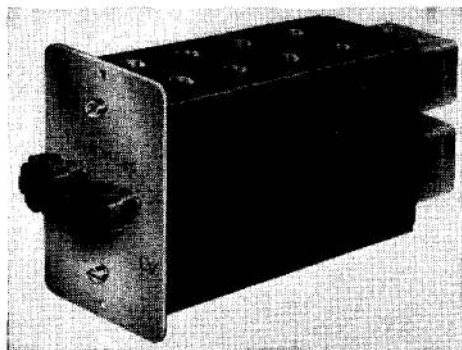


Fig. 1. Typical trimmer resistor in ZA 5700 series

### DESCRIPTION

2. Each unit contains two pairs of resistors, the resistors in each pair being connected in series. One pair of resistors is intended for connection into the M.V. circuit and the other into the L.V. circuit. In each resistance circuit a threaded spindle, which is attached to an external control, carries two wiper contacts which connect with each resistor in the pair. When the control is turned the wiper contacts move along the threaded spindle and give the variation in resistance required. The resistors in each pair are bolted at either end to a mounting plate.

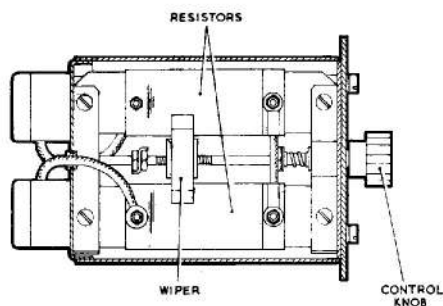


Fig. 2. Sectional view

3. The welded case of the units is of anodised aluminium and has sufficient apertures to provide adequate ventilation. The face plate, on which are mounted the two external controls, is of anodised aluminium alloy finished in black enamel. Two 2-way terminal blocks are fitted to the rear cover plate to enable electrical connections to be made.

### INSTALLATION

4. The units should be mounted in a position that places the ventilating holes at the top and bottom, and secured by two bolts through the

0.156 in. diameter mounting holes in the face plate. Electrical connections should be made to the 4 B.A. studs in the 2-way terminal blocks on the rear cover plate.

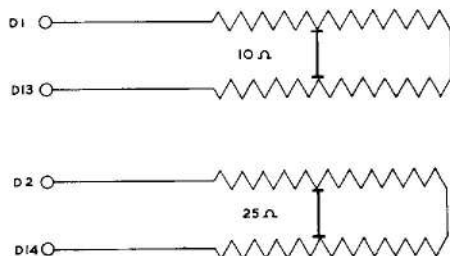


Fig. 3. Circuit diagram

### SERVICING

5. Servicing is normally confined to ensuring that the units are clean and free from damage. All internal and external nuts and bolts should be checked for tightness. The insulation of the connecting leads should be examined for signs of deterioration and all connections checked for security.

### Testing

6. All soldered connections should be carefully inspected for signs of dry or high resistance joints.

#### Resistance tests

7. (1) L.V. (a) Turn the L.V. control fully clockwise and measure the resistance between terminals D1 and D13. The reading obtained should not be less than:

ZA 5701	8.5 ohms
ZA 5702	22.3 ohms
ZA 5703	4.9 ohms

(b) Turn the L.V. control fully anti-clockwise and measure the resistance between terminals D1 and D13. The reading obtained should not be more than:

ZA 5701	0.2 ohms
ZA 5702	1.0 ohms
ZA 5703	0.15 ohms

(2) M.V. (a) Turn the M.V. control fully clockwise and measure the resistance between terminals D2 and D14. The reading obtained should not be less than:

ZA 5701	22.3 ohms
ZA 5702	22.3 ohms
ZA 5703	4.9 ohms

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(b) Turn the M.V. control fully anti-clockwise and measure the resistance between terminals D2 and D14. The reading should not be more than:

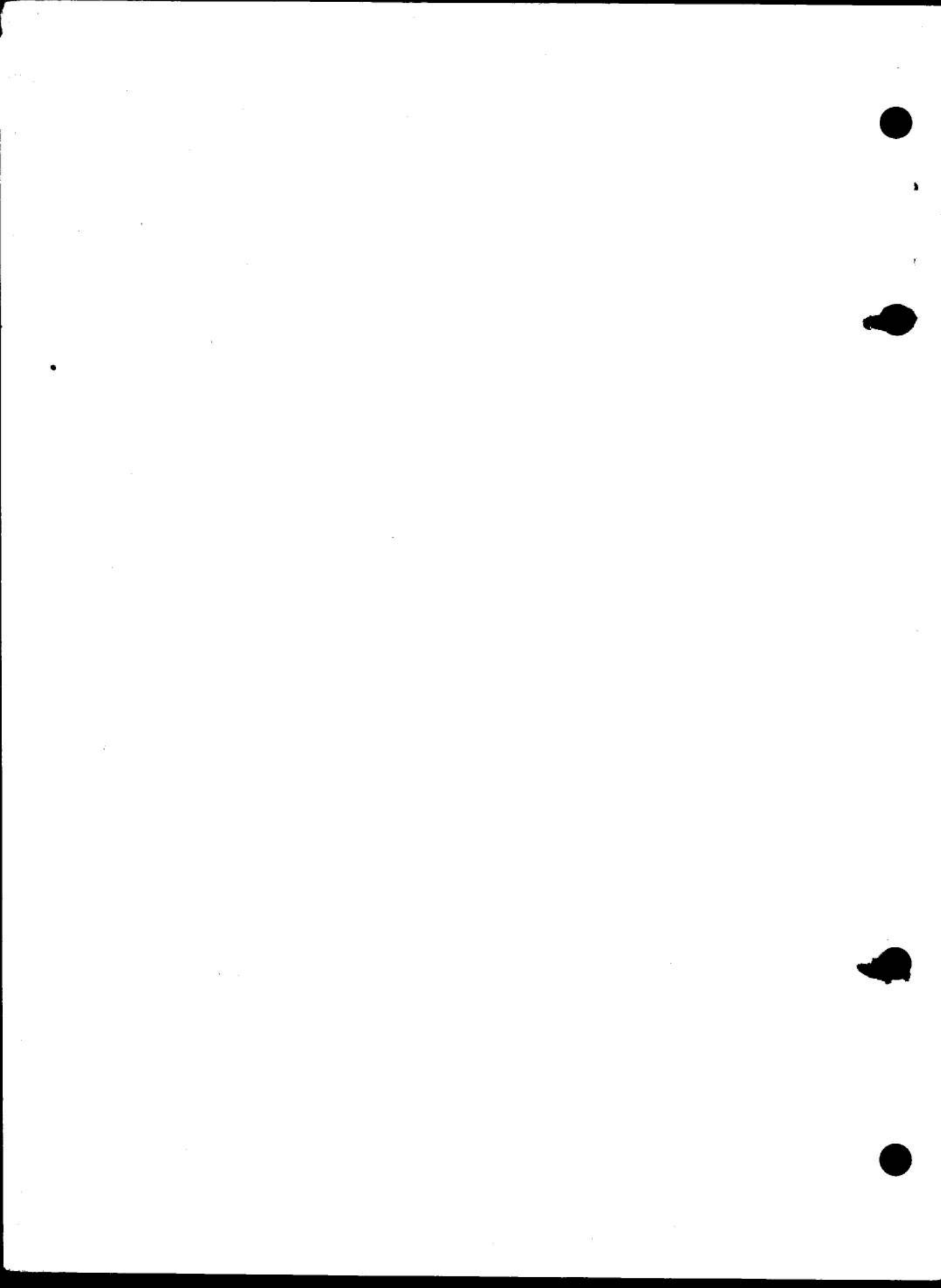
ZA 5701	1.0 ohms
ZA 5702	1.0 ohms
ZA 5703	0.15 ohms

*Insulation resistance tests*

8. The resistance between the following points should be measured with a 250 volt insulation resistance tester and, in each case, a reading of not less than 0.5 megohm (R.N.) or 5 megohms (R.A.F.) obtained.

- (1) Terminal D1 and the frame.
- (2) Terminal D2 and the frame.
- (3) Terminal D1 and terminal D2.

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