

Chapter 12

POWER UNIT TYPE 797

LIST OF CONTENTS

	Para.		Para.
Introduction	...	Ripple test	9
Test rig	4	Dismantling instructions	12
Test procedure	5	Renewal of components	15
Voltage tests	7		

LIST OF TABLES

	Table
List of test equipment and additional test items	1
Connections for rotary transformer	2
Spares for power unit Type 797	3

LIST OF ILLUSTRATIONS

	Fig.
HT test layout	1
Ripple test layout	2
Power unit Type 797—circuit	3

LEADING PARTICULARS

Purpose of equipment	HT supply for ILS (airborne) receivers
Type of convertor	Rotary transformer
Input	26-volt (nominal) DC at approx. 1.5A
Output	200-volt DC at approx. 150 mA
HT fuse rating	250 mA
Stores ref.	10K 16691
Weight	3 lb. 2 oz.

Introduction

1. The power unit Type 397 is to be tested under normal load conditions by using a fixed resistor as the HT load. A LT power supply to the unit under test is required which will provide from 22V to 28V at approximately 1.5A.

2. Two types of rotary transformer have been fitted to the power unit Type 797. The earlier version (Type 261) was fitted with fixed brushgear

and the end cover carried a groove for holding the rubber ring sealing the fan compartment to the air filter. The later design of rotary transformer (Type 264) is fitted with trailing brush-gear and the shape of the cover is such that the rubber ring must be mounted on the air filter outlet point.

3. The electrical specifications of the two types are similar and there is thus no difference in the electrical tests to be performed.

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(A.L.5, June, 56)

Test rig

4. The test rig may be built up locally; the parts required are listed in Table 1. The connections for the test rig are given in the layout diagrams, fig. 1 and 2. When constructing the test rig it must be borne in mind that the resistor acting as HT load will dissipate up to 33 watts and thus the mounting of this component must be given due consideration.

TABLE 1

List of test equipment and additional test items

Item	Description	Remarks
1	Testmeter Type F	Used for AC and DC voltage tests
2	Socket Type 723 (10H/19664)	Supply connections
3	Fuse and holder (5A)	LT circuit protection
4	Resistor 1,500 ohms (30W)	Load resistor
5	8-10 μ F capacitor 250V DC working	DC isolation for ripple test

Test procedure

5. The tests to be undertaken on this unit are to ensure that the voltage output from the unit is as specified and additionally that the output ripple voltage produced is within a given limit.

6. The rotary transformer must be serviced in accordance with standing instructions. Before testing, the commutators must be examined to ensure that they are in good condition and the brush-gear inspected for cleanliness and wear.

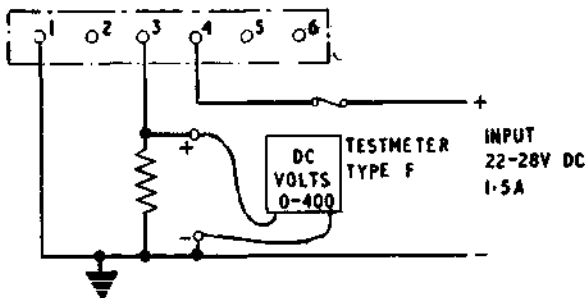


Fig. 1. HT test layout

Voltage tests

7. The first test is of the DC output voltage generated under full load conditions at two values of input voltage. With the power unit under test connected into the test rig illustrated in fig. 1, apply an input of 22 volts. Using the testmeter Type F, measure the output voltage appearing across the 1,500-ohm load resistor. This should be 170V to within plus or minus 5V.

8. Apply an input of 28 volts to the power unit under test and measure the output voltage appearing across the load resistor. The output voltage under these conditions should be 220V to within plus or minus 7V.

Ripple test

9. The second test is of output ripple voltage. This is measured with the testmeter Type F adjusted to read the AC voltage appearing across the load resistor. The capacitor (fig. 2) isolates the DC component of the output from the testmeter.

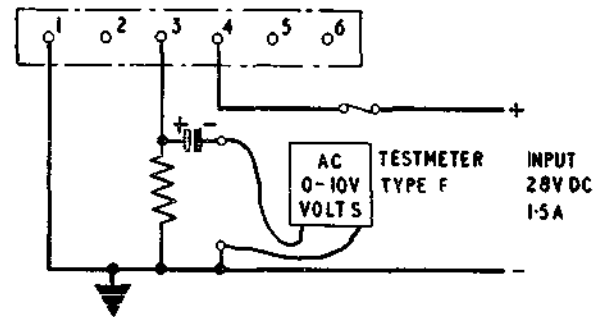


Fig. 2. Ripple test layout

10. The DC input should be adjusted to 28 volts and, with the equipment set up as in fig. 2, the reading on the testmeter Type F should not exceed 2V AC.

11. For the procedure on the servicing of the rotary transformer refer to A.P.1186D, Vol. 1, Sect. 3, Chap. 1.

Dismantling instructions

12. When removing a rotary transformer from the power unit, the five connecting wires must first be removed from their terminations below the chassis. The securing clips may then be released to allow the transformer to be lifted from its supports.

13. An examination of the brush-gear at the fan end of the transformer may be made without removal of the whole sub-unit. The end cover of the Type 264 is secured by two screws, one of which is situated between the lower edge of the cover and chassis. Access to this screw is by a narrow-bladed screwdriver passed through a hole in the chassis just below the screw.

14. When assembling the transformer on the chassis, care must be taken to ensure that the lower cover screw lies above the corresponding chassis hole.

Renewal of components

15. Renewal of the rotary transformer is covered, in all but the wiring connections, in the paragraphs headed "dismantling instructions"; the wiring connections are given in Table 2.

TABLE 2
Connections for rotary transformer

From	Wire colour	To chassis point
2 wire outlet	Red	Blue terminal of
	Brown	Chassis
3 wire outlet	Red	Blue terminal o
	Yellow	Blue terminal c
	Black	Chassis

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16. During initial examination of the units it may be found that the flexilant mountings of the rotary transformer have perished and thus require renewal. It will be seen that there are two types of mounting used on the unit; three similar types are used on the fixing points where no electrical connection is to be made and one of slightly shorter length is used on the point nearest to pin 1 of the six-way plug.

17. It is essential when renewing these items that no strain is imposed upon them in any way. Care must be taken to ensure that, in particular, no twist be imparted to the mounting during tightening of the nuts.

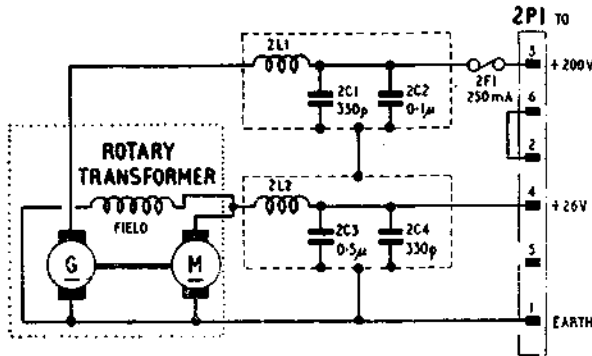


Fig. 3. Power unit Type 797—circuit

18. The Stores Reference Numbers for the items at the power unit Type 797 are given in Table 3.

TABLE 3
Spares for power unit Type 797

Scores Ref.	Nomenclature	Remarks
10H/18680	Fuses Type 153	250 mA cartridge type
10AE/256	Smoothing units Type 18	input (LT) filter
10AE/257	Smoothing units Type 19	output (HT) filter
10K/17072	Rotary transformer Type 264	Replaces Type 261
10AD/338	Brushes, Input	
10D/272	Brushes, Output	
10AJ/256	Mountings, anti-vibration Type 9485	'long' Type (para. 16)
10AJ/257	Mountings, anti-vibration Type 9486	'Short' Type (para. 16).

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