

Obsolete

Chapter 3

GENERATOR, TYPE RK

LIST OF CONTENTS

| | Para. | | Para. |
|-----------------------|-------|---------------------|-------|
| Introduction | 1 | Terminals | 7 |
| Description | 2 | Installation | 8 |
| A.C. generator | 3 | Servicing | 9 |
| Brushgear | 5 | Testing | 10 |
| Bearings... .. | 6 | | |

LIST OF ILLUSTRATIONS

| | Fig. |
|---------------------------|------|
| Generator, Type RK | 1 |

LEADING PARTICULARS

| | |
|----------------------------------|-------------------|
| Generator, Type RK | Ref. No. 5UA/1546 |
| Rotation | Anti-clockwise |
| Generator, Type RK | Ref. No. 5UA/1547 |
| Rotation | Clockwise |
| D.C. output | 1,000W, 24V |
| A.C. output | 500W, 80V |
| Frequency at 6,000 r.p.m. | 2,600 c/s |
| Excitation voltage | 24 to 28V, d.c. |
| Brush grade | HAM (EGO) |

Introduction

1. The generator, Type RK is a dual purpose a.c./d.c. generator, the a.c. portion of which is essentially the same as the standard Type R generator. The output from the dual machine is 1,000W at 24V, d.c. and 500W at 80V, a.c.

DESCRIPTION

2. The a.c. rotor and d.c. armature are located on a common shaft (fig. 1).

A.C. generator

3. At the a.c. end the d.c. exciting winding is wound round a magnet ring. The flux set up by this winding is transmitted across the air gap to the rotor, through the rotor to the rotor teeth and then across the main air gap to the stator teeth. As the rotor revolves, passage of the rotor teeth past the stator teeth induces an alternating current in the stator windings.

4. There are 26 teeth on the rotor and 24 on the stator giving a frequency of 2,600 c/s at a generator speed of 6,000 r.p.m.

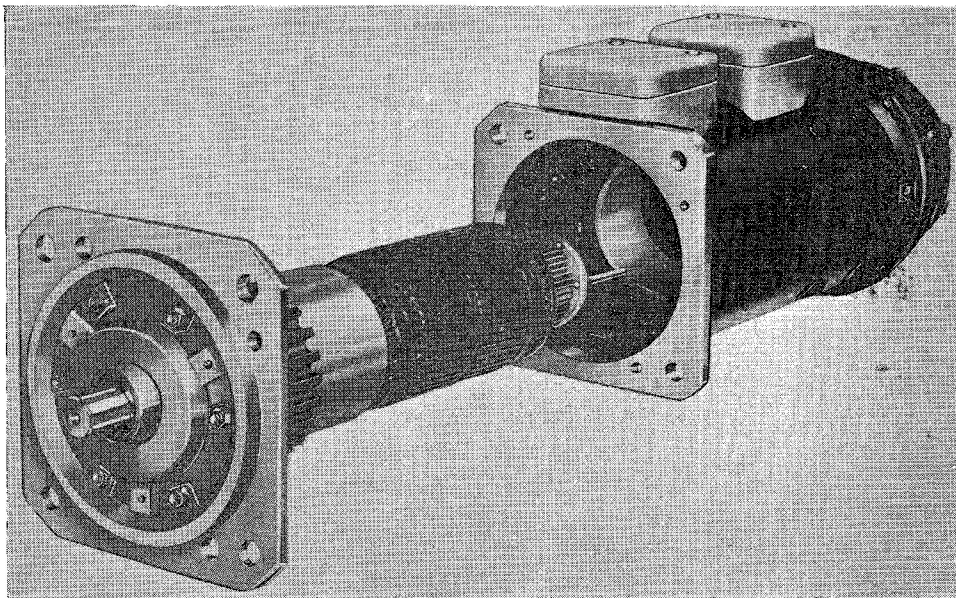


Fig. 1. Generator, Type RK

Brushgear

5. At the d.c. end the four brush boxes are carried on an adjustable brush rocker and the brushes are held in position by coiled springs.

Bearings

6. The main shaft is carried on ball bearings at the drive-end and a roller bearing at the other. Each bearing is lubricated by means of an oil-retaining felt ring.

Terminals

7. The electrical connections for the a.c. and d.c. outputs are brought out to separate terminal boxes. The a.c. box being that nearest the drive-end. In the a.c. box the black and white spots indicate exciting field connections and the blue and yellow spots the a.c. output. In the d.c. terminal box the yellow spot indicates the terminal connected to the positive output, the blue spot indicates the negative output and the grey spot is the connection for the shunt field.

INSTALLATION

8. The drive-end flange is drilled for a four hole fixing to the engine gearbox. Care should be taken to see that terminal boxes are easily accessible and that there is sufficient clearance for all cables, cooling pipes, etc.

SERVICING

9. Little servicing can be done on the a.c. end, except to see that all terminal connections are secure. The d.c. generator can be serviced with regard to brushgear, commutator, etc., in accordance with A.P.4343, Vol. 1, Sect. 2, Chap. 1. The felt lubricating pads must be kept charged with oil (OM-170), and a little of this oil should be squirted into the bearings themselves.

TESTING

10. The insulation resistance of all live parts to the frame should be not less than .05 megohms when measured with a 250V insulation resistance tester.

RESTRICTED