

ADMIRALTY
AIR MINISTRY

Chapter 2

K.L.G. IGNITER PLUG TYPE 994/9

This chapter applies to Goblin Mk. 2 aero-engines

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GENERAL

1. This chapter deals with the reconditioning of the K.L.G. igniter plug type 994/9 as fitted to the Goblin Mk. 2 engine.

2. When dismantling it should be noted that the insulated centre assembly is a complete unit and no attempt, therefore, should be made to dismantle this unit into component parts.

3. Great care must be exercised when dismantling to avoid damaging the mica insulations projecting from the lower end of the steel gland.

DISMANTLING

4. Before commencing to dismantle the unit make certain that the following tools are available:—a vice block for holding the hexagon on the gland nut, and a double handed spanner for the hexagon of the body. A ring spanner may be used in the absence of a double handed spanner, but it is emphasised that on no account must an open ended spanner be used.

OP. 1. Insert the plug in the double ended spanner, so that the spanner is fitted over the hexagon of the plug body.

2. Invert, and place the gland nut hexagon in a vice block which must be firmly held in a vice.

3. By using the spanner, separate the plug into its two component parts.

CLEANING

5. The exterior of the plug body may be cleaned by the use of any standard degreasing compound. Remove excessive carbon from the threads by the use of a wire brush. Any carbon found inside the plug body must be removed. Lightly polish the mica-insulation of the centre electrode with fine emery, great care must be taken to preserve the mica-serrations. The parts must now be laid out in a clean and suitable work tray in readiness for detail inspection.

INSPECTION

6. Inspect the plug body for general condition, paying particular attention to the

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internal and external threads and the internal seating. On no account must any part of the igniter plug be sand blasted.

7. After visual inspection, the plug must be tested for insulation and resistance.

and place the plug upside down in the hexagon insert (Stores Ref. No. 4N/175) up to the stop collar (Stores Ref. 4N/174) which is fitted to the constant torque fixture. Tighten the gland nut by applica-

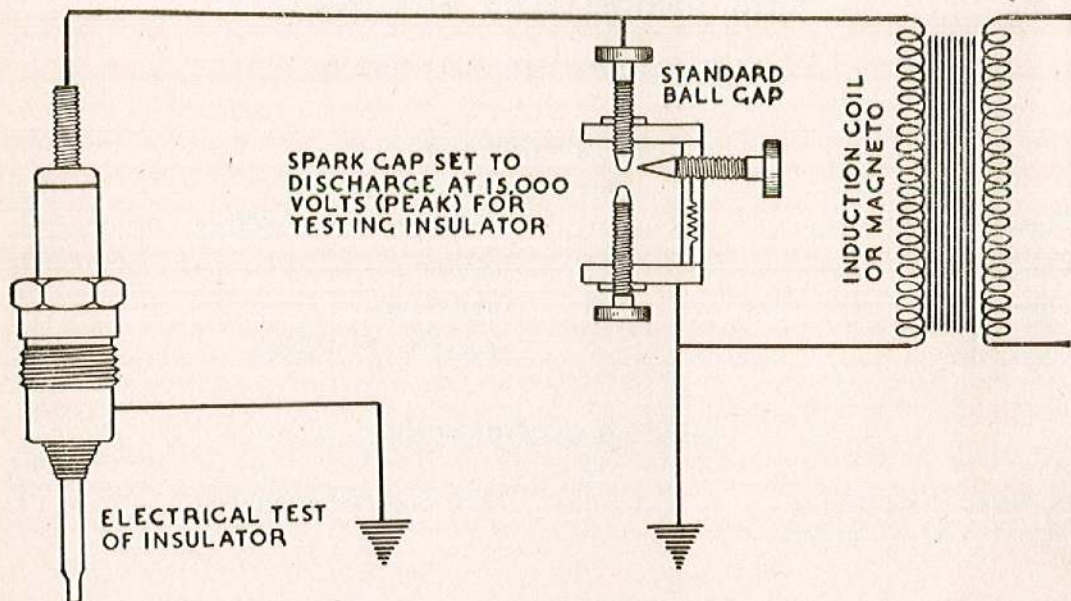


Fig. 1. Diagrammatic layout of test rig

TESTING PRIOR TO REASSEMBLY

8. The centre assembly must be tested before reassembly, and the equipment required is shown diagrammatically in fig. 1. This consists of a standard ball gap set to discharge at 15,000 volts (peak) and a high-tension supply.

9. Apply the high-tension lead to the terminal of the insulated centre assembly and with the steel sleeve earthed, sparking should occur at the ball gap if the insulator is electrically sound.

REASSEMBLY

10. Before commencing the reassembly operations, check that all surfaces are free from dust and lightly lubricate all seating surfaces, ensure that a new internal seating washer is in position in the plug body.

Op. 1. Insert the centre assembly into the plug body, fix the double ended spanner on to the body of the plug

tion of a spanner torque of 20-22 lb./ft.

Note . . .

The correct degree of tightening of the gland nut is essential to secure a pressure-tight joint. Insufficient pressure will result in leakage and subsequent failure, whilst excessive pressure is liable to distort the components of the plug.

Op. 2. Lock the gland nut by 'dimpling' (caulking) the sleeve into a slot in the nut. Two slots are provided in the nut but only one should be used for locking purposes. If on first overhaul, the gland nut tightens up to the original position relative to the sleeve, use the second slot for locking. On subsequent overhauls, if the gland nut tightens up to the same position again, choose a new internal sealing washer of a different thickness which will allow

the necessary 'dimpling' (caulking) to be done in a new position. It is important to ensure that the gland nut is locked after each reassembly by 'dimpling' (caulking) the sleeve into one of the slots in the nut; this should, however, not be done until the final test described in the following paragraphs has been satisfactorily completed.

11. Check that the spark gap is within 0.060 in. \pm 0.002 in.

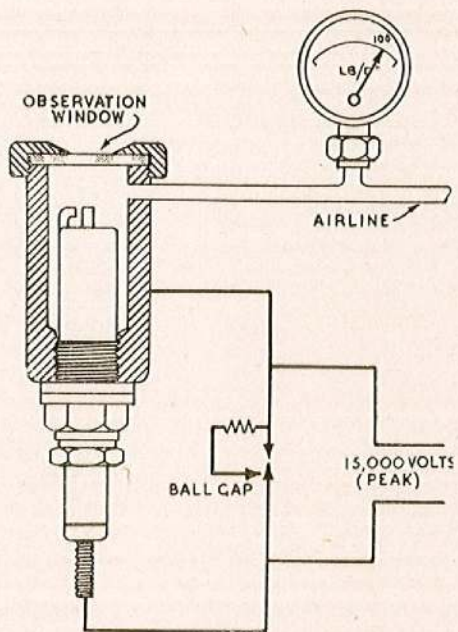


Fig. 2. Testing the plug under pressure

FINAL TESTING

12. Before final acceptance the plugs must be tested under pressure at 15 Kv. and 30 lb. per sq. in. (fig. 2) when regular sparking should take place at the plug gap.

13. Finally test the plug for gas leakage between the plug body and centre assembly. This test should be carried out with the plug in position in a pressure test fixture (fig. 3). Completely cover the body hexagon with fluid, in a beaker of methylated spirit, and apply a pressure of 100 lb. per sq. in. to the chamber.

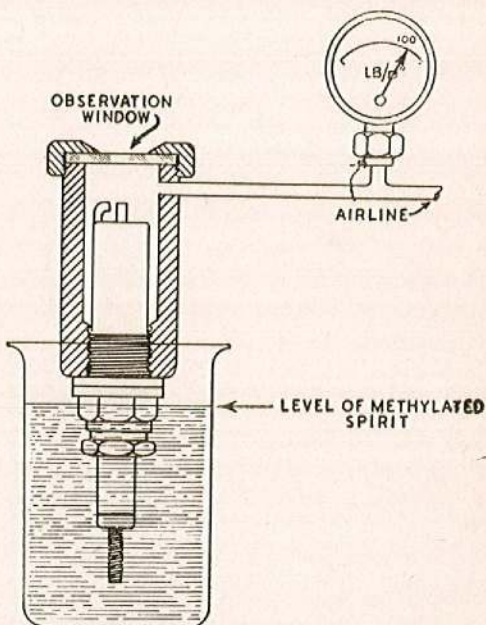


Fig. 3. Testing the plug for gas leakage

14. When submerged no more than a few small bubbles should emerge from the gland nut thread or from the exposed insulation.

15. On completion of these tests remove the plug from the testing fixture and blow off dry with a light air blast.

16. To guard against the gland nut vibrating loose caulk the body or sleeve into the slot in the nut as described in para. 10, Op. 2.

PREPARATION FOR DESPATCH

17. A new washer of the appropriate K.L.G. type should be placed in position over the threads against the lower external shoulder and the plug wrapped in grease-proof paper and packed in the special cardboard containers.

18. After servicing, if the plugs are not required immediately, they must be stored in a warm dry place.



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