AIR PUBLICATION

113L-0301-1

PLESSEY IGNITION HARNESS FOR GIPSY MAJOR MK. 8 ENGINE

GENERAL AND TECHNICAL INFORMATION

BY COMMAND OF THE DEFENCE COUNCIL

I.T. Dunnett

Ministry of Defence

FOR USE IN THE

ROYAL NAVY

ROYAL AIR FORCE

(Prepared by the Ministry of Technology)

AMENDMENT RECORD SHEET

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Chapter 1

PLESSEY IGNITION HARNESS FOR GIPSY MAJOR Mk. 8 ENGINE

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TABLES

ILLUSTRATIONS

Introduction

1. The Plessey ignition harnesses Ref. No. 37B/3009 Right Hand and 37B/3010 Left Hand are fitted to the De-Havilland Gipsy Major Mk. 8 engine.

DESCRIPTION

General

2. Each harness, fig. 1 or fig. 2, comprises a manifold ssembly, magneto conduit assembly and four spark plug conduit assemblies. The left-hand harness incorporates four spark plug elbow assemblies and the right-hand harness one. Details of these assemblies are given in Para. 8 to 11.

SERVICING

Pre-testing

Continuity test

3. Test each complete cable for continuity, using a Multimeter Type 12889 from plug terminal to magneto terminal.

Insulation resistance test

4. Using Tester Ignition Type H.T. Mk. 2 (Ref. No. 5G/399) the insulation between the conduit and the contact stud of each conductor must be not less than 2 megohms.

Cleaning

5. All parts should be cleaned with Trichlorethylene Ref. No. 33C/547.

Painting

6. Paint used is Grey Cellulose to D.T.D. 772A.

Special Tools

7. The only special tool is C spanner see fig. 3.

TABLE 1
Length of Conductors

Right-Hand Cylinder No.	Cable cutting length Length
1	48 in.
2	46 in.
3	40 in.
4	35 in.
Left-Hand Cylinder No.	**Cable cutting length Length**
1	50 in.
2	45 in.
3	38 in.
4	43 in.

Make-up of Fittings

Spark plug elbow assembly

8. A spark plug elbow is silver soldered at one end to a threaded union. A coupling unit is slid on to the other end of the elbow and is retained by the shoulder of a ferrule silver soldered to the end of the elbow. A spring and washer located in the ferrule are retained by an insert swaged into the ferrule recess.

Spark lug conduit assembly

9. Each end of the spark plug conduit assembly is identical. The flexible conduit has a cap ferrule swaged to each end. A coupling nut is retained by the shoulder of a spring ferrule assembly fitted over the end of the conduit and soft soldered. A spring and washer located in the ferule are retained by an insert swaged into the ferrule recess. On the left-hand harness the four spark plug elbow assemblies fit on to the spark plug conduit ends. To make up the plug terminal a ceramic insulator fits over the end of the cable on to the copper washer and the end is sealed by a cup washer and contact stud. The length of the conduit is covered by a neoprene sleeve secured by two clamp rings.

Magneto conduit assembly

10. The two magneto conduit assemblies are identical except that the right-hand assembly is $\frac{3}{4}$ in. longer. The flexible conduit has a cap ferrule swaged to each end. A flange and ferrule assembly is fitted over one end of the conduit and is soft soldered. At the other end, a coupling nut is retained by the shoulder of a ferrule fitted over the end of the conduit and soft soldered. The length of the conduit is covered by a neoprene sleeve secured by two clamp rings.

Manifold Assembly

11. Manufactured from brass tube the manifold has four screwed lugs silver soldered to three extrusions and to the end of the tube on the right-hand harness, and to four extrusions on the left-hand harness. These lugs connect the spark plug conduit assemblies to the manifold. On the right-hand harness cylinder No. 1 connection at the end of the tube is through a spark plug elbow assembly. A screwed coupling silver soldered to the other end of the tube connects the magneto conduit assembly to the manifold through a copper washer. Two brackets wrapped around the tube are drilled for attachment bolts.

Replacement of Conductor

12. Remove old conductor.

(1) Strip off cap washer, contact stud and insulator from spark plug conduit assembly.

(2) Remove spark plug conduit assembly by disconnecting coupling nut at manifold tube screwed lug.

(3) Using special tool, fig. 3, disconnect coupling nut securing magneto conduit assembly to manifold tube screwed coupling.

(4) Remove tag and cable marker from end of cable.

(5) Withdraw conductor from magneto adapter end.

13. Fit new conductor.

(1) Cut cable to length given in Table 1.

(2) Smear cable with grease MS.4 (D.T.D. 900/4298).

(3) Feed cable through manifold assembly from the screwed lug, and feed through magneto conduit assembly.

Note . . .

Gradually rotate cable as it is fed into conduit. The cable must not be pulled through.

(4) Treat all threads with an approved anti-seize compound.

(5) Fit spark plug conduit assembly.

(6) Fit insulator, contact stud and cap washer to cable end.

(7) Using special tool connect and tighten coupling nut at magneto conduit to manifold tube joint.

(8) Fit cable marker.

(9) Refer to fig. 1 or fig. 2 as appropriate and strip back cable end and fit tag to give indicated length from magneto adapter.

TABLE 2
Provisioning schedule, right-hand

Ref. No.	Description	Quantity Per Set	Requirement
37B/3069	Manifold Assembly	1	Manifold Repair
37B/3059	Lug	3	" "
37B/3070	Bracket	2	" "
37B/3890	Serial No. Plate	1	" "
37B/3889	Nameplate	1	" "
37B/4353	Screwed coupling	1	" "
37B/3887	Label	1	" "
NIV Plessey No. Z5889	Screwed lug	1	" "
37B 3025	Magneto Conduit	1	General Assembly
37B 3022	Spark Plug Conduit	4	" "
37B 3028	Spark Plug Elbow	1	" "
37B 3072	Protective Cap	4	" "
37B/2376	Cup Washer	4	" "
37B/565	Contact Stud	4	" "
37B/3091	Insulator	4	" "
37B/4310	Markers	1	" "
37B 3029	Washer	1	" "
5K 14	Tag	4	" "
Uniplugsheath	Cable No. 4	15 ft	" "

TABLE 3
Provisioning Schedule, left-hand

Ref. No.	Description	Quantity Per Set	Requirement
37B/3026	Manifold Assembly	1	Manifold Repair
37B/3059	Lug	1	" "
37B/3067	Lug	3	" "
37B/3018	Bracket	2	" "
37B/3890	Label	1	" "
37B/3889	Nameplate	1	" "
37B/4353	Screwed Coupling	1	" "
37B/3887	Label	1	" "
37B/3024	Magneto Conduit	1	General Assembly
37B/3020	Spark Plug Conduit	3	" "
37B/3021	Spark Plug Conduit	1	" "
37B/3028	Spark Plug Elbow	4	" "
37B/3844	Protective Cap	4	" "
37B/2376	Cup Washer	4	" "
37B/565	Contact Stud	4	" "
37B/3091	Insulator	4	" "
37B/4310	Markers	1	" "
37B/3029	Washer	1	" "
5K/14	Tag	4	" "
Uniplugsheath	Cable No. 4	15 ft	" "

Testing

Continuity test

14. Test each complete cable for continuity, using a Multimeter Type 12889, from plug terminal to magneto terminal.

Insulation resistance test

15. Using Tester Ignition Type H.T. Mk. 2 (Ref. No. 5G/399) the insulation between the conduit and the contact stud of each conductor must be not less than 2 megohms.

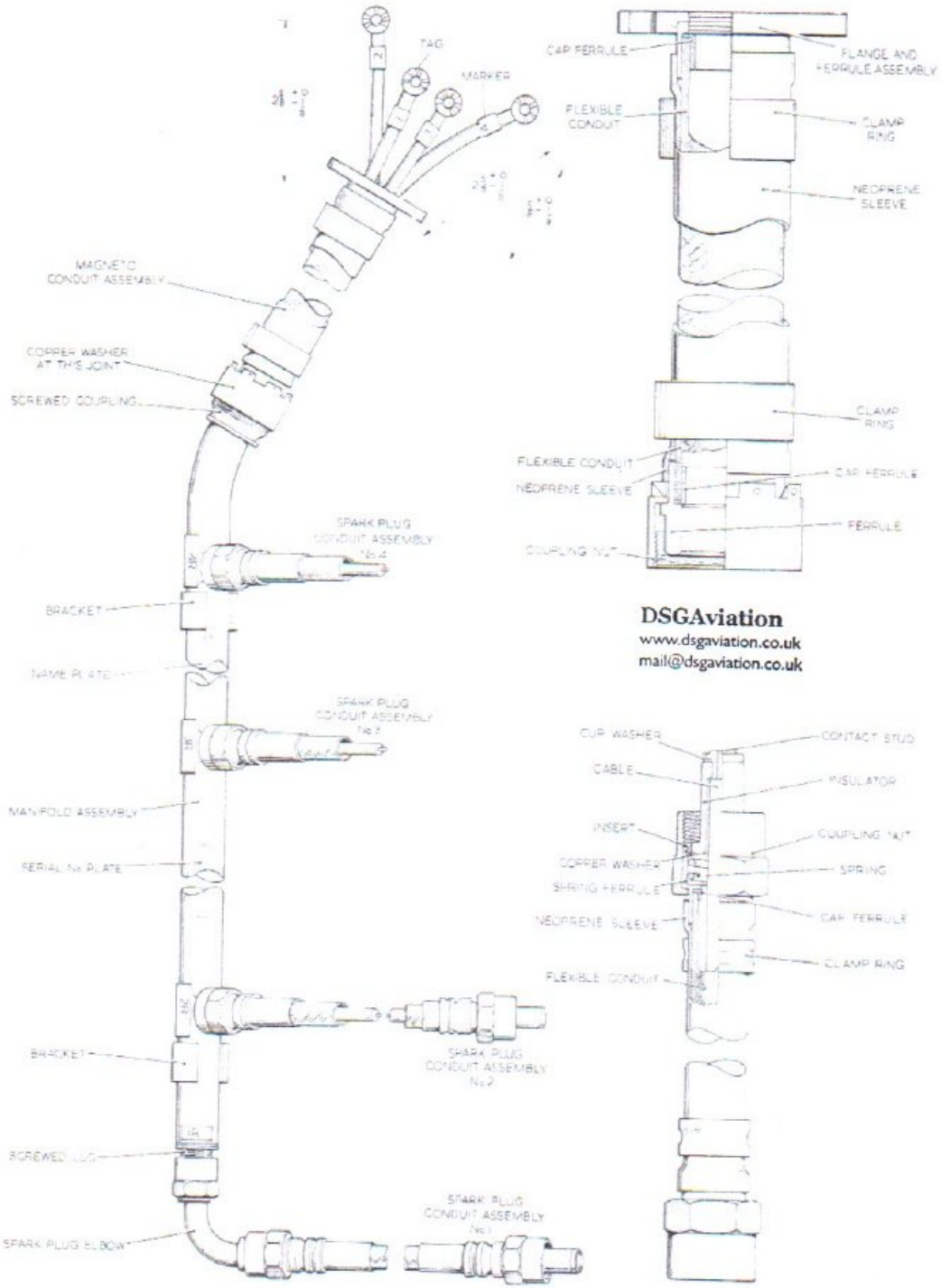

Fig. 1. Ignition harness, right-hand

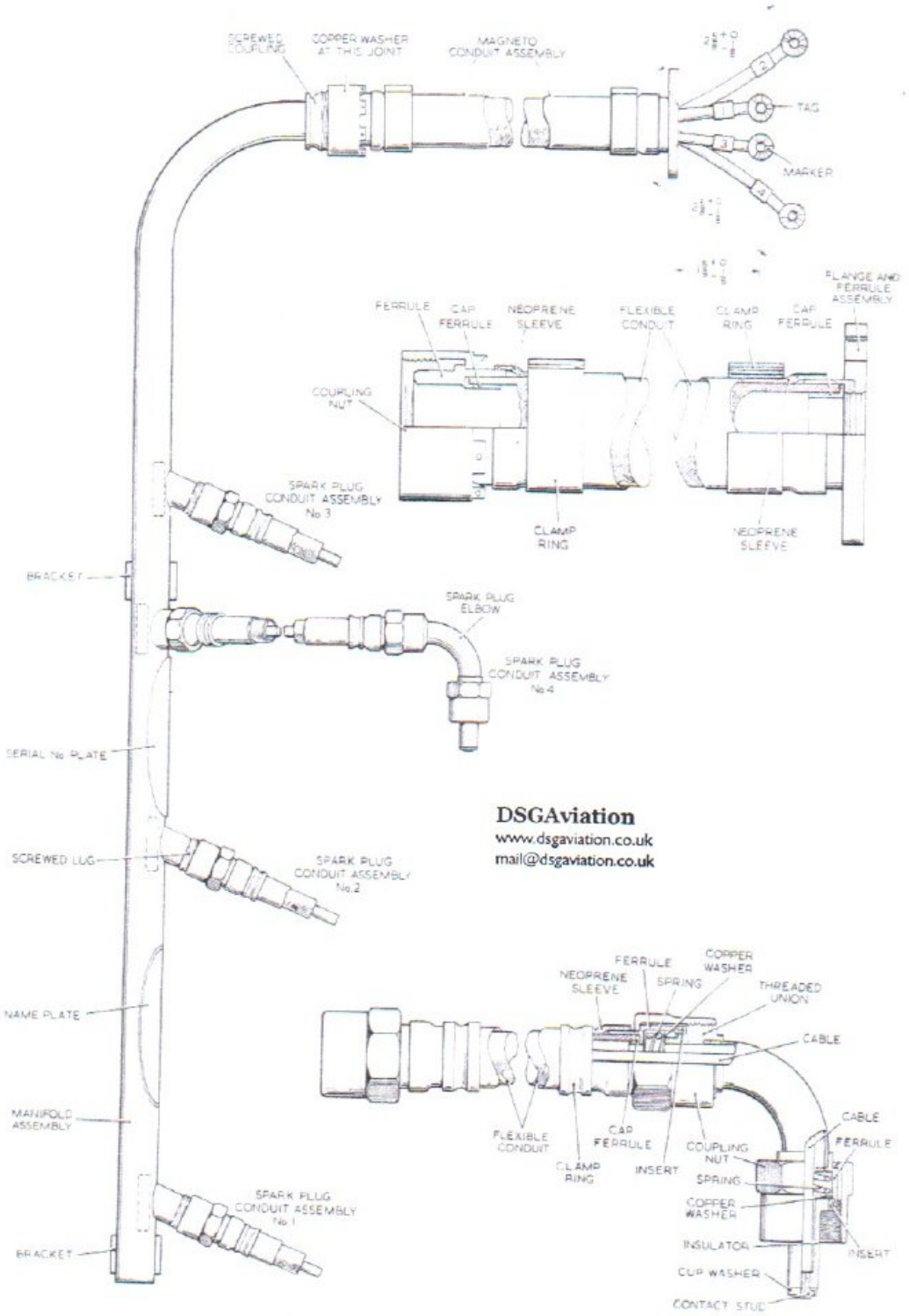

Fig. 2. Ignition harness, left-hand