

Chapter 26

LANDING LAMP, HARLEY, TYPE 6 MK. 2.

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LEADING PARTICULARS

<i>Lamp landing, Harley, Type 6, Mk. 2</i>	<i>Ref. No. 5CX/5558</i>
<i>Filament lamp, (special cap) double filament</i> 28 volt 280/280 watt	<i>Ref. No. 5L/9959702</i>
<i>Front glass Part No. D.377</i>	<i>Ref. No. 5CX/</i>
<i>Lens Part No. D.378</i>	<i>Ref. No. 5CX/</i>
<i>Operating unit, Plessey Jaguar, CZ64337/1/A</i>	<i>Ref. No. 5W/2405</i>
<i>Electrical connection, Plessey terminal block,</i> <i>Type F, CZ50188</i>	<i>Ref. No. 5X/</i>
<i>Extended angle</i>	90 degrees
<i>Weight</i>	7 lb. 15 oz.

Introduction

1. The Harley, Type 6 Mk. 2 landing lamp fits into a circular aperture in the underside of the aircraft wing or fuselage and is extended and retracted by an electrically driven actuator. The lamp gives a main beam and a dispersed beam by means of a twin filament

lamp. The landing lamp is remotely controlled by switches in the aircraft cabin.

DESCRIPTION

2. The Harley landing lamp Type 6 Mk. 2 consists of the following: the outer housing, the operating mechanism, the filament housing and the filament lamp, shown in fig. 1.

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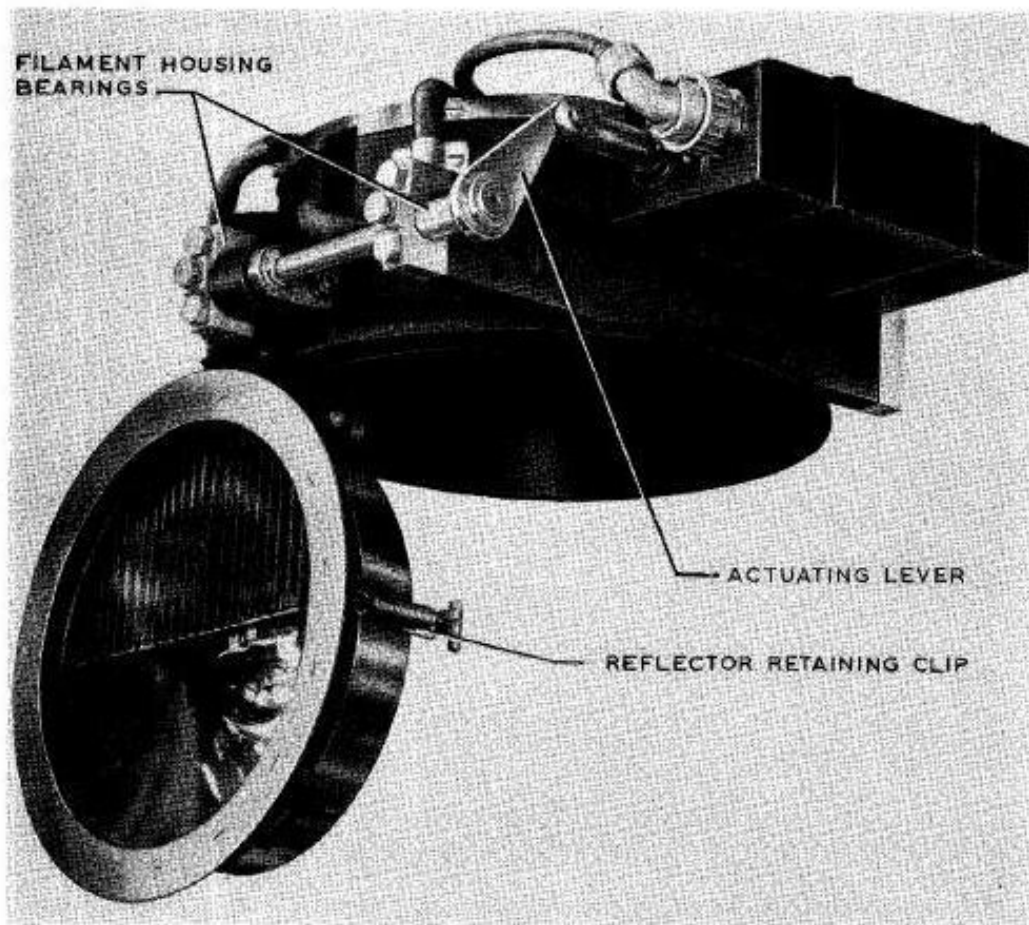


Fig. 1. Harley Landing Lamp, Type 6MK 2.

Outer housing

3. The outer housing is a mechanical casting which incorporates a mounting flange in which are six 2 B.A. bolt-holes by which the lamp is mounted. The housing also carries the bearings in which the filament housing pivots, the bracket for the actuator trunnion attachment, the terminal block and the back cover.

Operating mechanism

4. Viewed from the front, the right hand journal of the filament housing carries an actuating lever to which the actuator ram end is connected by means of a forked-eye extension. The rear trunnion of the actuator is pivoted to a spring loaded lever which in turn pivots on the bracket of the outer

housing. This arrangement permits the actuator to move as a solid link for the final portion of movement when the lamp is retracted, compressing the spring which absorbs any slackness in the operating linkage, preventing excessive vibration being set up within the lamp.

5. The actuator limit switches and brake adjustments are set up by the manufacturer and should not normally require alteration in service. Details of the actuator will be found in A.P.4343D, Vol. 1, Sect. 14, Chap. 44.

Filament housing

6. This is the moving part of the lamp and comprises: an outer frame casting, lens, front glass, filament lamp and reflector. The lens

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is carried by lens clips which are screwed to the outer frame casting, expansion of the lens due to heat generated by the filament is compensated by spring loaded plungers in the lens clips. The front glass is held in position by the front face ring which is secured to the outer frame by fifteen 4 B.A. countersunk headed screws, and sealed by a rubber sealing ring.

7. The filament lamp is held in the left hand side of the outer frame by a clamp, which has a locating hole for the lamp cap locating pin.

The clamp is secured by two 2 B.A. screws which also hold the cable clip and the reflector retaining plate. The reflector is held by a spring clip on the right hand in addition to the retaining plate.

Filament lamp

8. The light source of the Harley, Type 6 Mk. 2 landing lamp has two filaments. The main filament is at the focal point of the reflector whilst the auxiliary filament is a little to the rear and above it. The filament

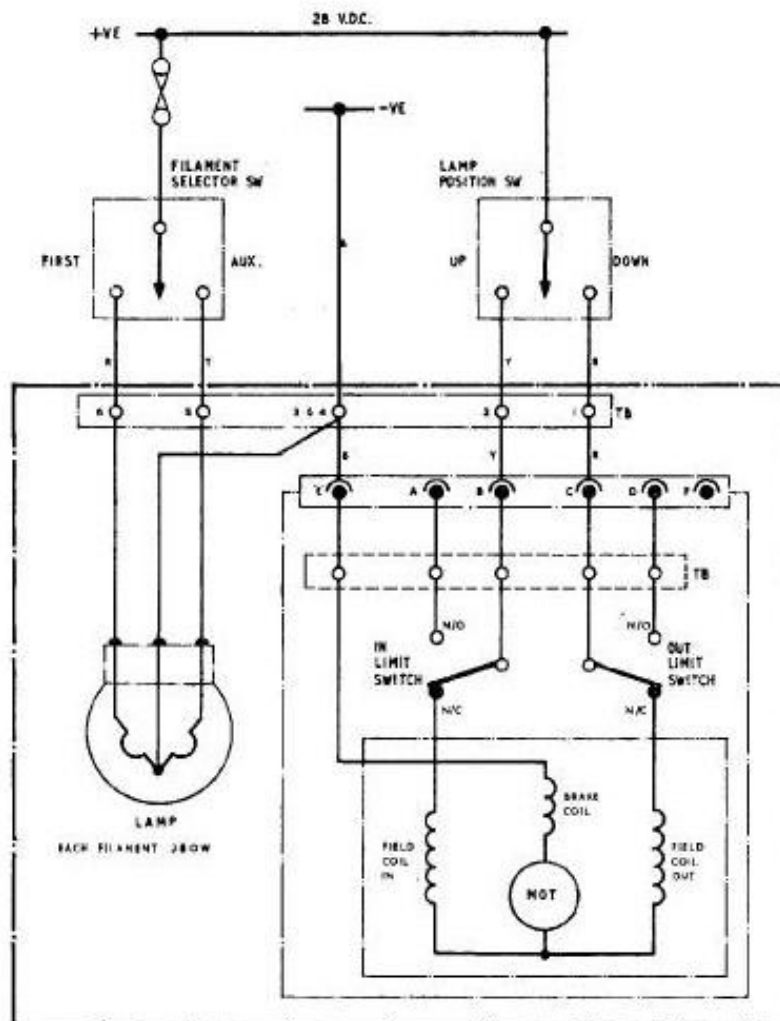


Fig. 2. Circuit Diagram

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lamp has a special cap with a locating pin at one side to ensure that the filaments are correctly aligned in the lamp. The three terminal stud connections are coded:—

Red	main filament
Yellow	auxiliary filament
Blue	negative

Electrical connections

9. The filaments and actuator are supplied from a 28 volt d.c. source. The filament lamp is controlled by a centre-off two way switch which permits selection of the main or auxiliary filaments for landing and taxiing. The actuator is controlled by a two way, ON-ON switch, selecting either extend or retract. Connection to the lamp is by ring or eye type 4 B.A. cable-ends to a Plessey, Type F terminal block, and is extended from the terminal block to the filament lamp and actuator by two flexible cables. The flexible cable to the actuator terminates in a miniature Mk. 4, 6 pole socket (Ref. No. 10H/Z560080) which connects to the fixed plug on the actuator. A circuit diagram is given in fig. 2.

SERVICING

10. Fully extend the lamp to the open position, clean and examine the front glass and lens for damage. Check the flexible cables for damage, chafing and deterioration, especially at the filament lamp terminals where heat may more rapidly cause deterioration. Switch on each filament in turn for 5-10 secs. only. As the filament lamp cools check the glass envelope for smoke lines or blackening which will indicate that the filament lamp sealing has failed. Should the front glass, lens or filament lamp require renewing proceed as given in para. 10-14.

Note . . .

The time of lighting in still air for both filaments, which should not be exceeded except in cases of emergency is, 10 minutes.

Renewing the filament lamp

11. With the lamp extended to the fully open position disconnect the filament lamp terminal connections. Unclip the reflector retaining clip, remove the two 2 B.A. screws securing the cable clip, reflector retaining plate and filament lamp clamp. Remove the filament lamp and reflector, clean the interior of the lamp with a clean soft cloth, if necessary wash the reflector, lens and front glass with soapy water and dry with a clean soft cloth. Do not use any polish or abrasive and avoid fingerprinting the glass or reflector.

12. Fit the new lamp filament ensuring the correct engagement of the lamp cap locating

pin. Replace the filament clamp, reflector retaining plate and cable clip. Reconnect the filament lamp terminals, care being taken not to overtighten the nuts and ensure that the colour coding is correct. Test the lamp for correct functioning whilst checking that the cable to the filament lamp does not foul the outer housing.

Renewing the front glass

13. With the lamp extended, remove the fifteen 4 B.A. countersunk head screws securing the front face ring and remove the face ring, sealing ring and damaged glass. Fit the new front glass, sealing ring and front face ring.

Renewing the lens

14. Remove front glass as in para. 13, remove one lens clip and the damaged lens. Fit the new lens with the fluted face toward the front glass and replace the lens clip. Replace the front glass.

Renewing the actuator

15. With the lamp fully extended disconnect the actuator socket and remove the two split pins securing the bearing pins at the actuator fork-end and trunnion end. Remove the bearing pins and the actuator. Unscrew the fork-end and locknut from the actuator ram and assemble to the ram of the new actuator, ensuring that they are screwed as close as possible to the shoulder of the actuator ram.

16. Fit the new actuator, replace the bearing pins to the fork end and trunnion end and renew the split pins. Actuate the lamp to the closed position and measure the compressed length of the trunnion lever spring, adjust the position of the fork end if required, to give a reading of $\frac{3}{16}$ in.; lock the fork end by means of the locknut after adjustment.

Testing

17. After all servicing the lamp should be functionally tested checking each filament and the actuator. The actuator should move freely and the cables should not foul any portion of the lamp. The filament housing bearings may be lubricated with a thin film of grease XG275 if required.

Insulation test

18. Using a standard 250V insulation tester, test the insulation resistance between all terminals and frame in turn, the minimum permissible reading is 10 megohms with the actuator disconnected. For testing of the actuator reference should be made to A.P.4343, Vol. 4, Part 6.

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