

Chapter 24**VISUAL SMOKE INDICATOR, TYPE AIS 4****LIST OF CONTENTS**

	<i>Para.</i>		<i>Para.</i>
<i>Introduction</i>	1	<i>Functional test</i>	10
Description	2	<i>Insulation resistance test</i>	11
Operation	5	<i>Pressure leak test</i>	12
Servicing	7		

LIST OF ILLUSTRATIONS

	<i>Fig.</i>
<i>General view</i>	1
<i>Main body with front flange removed</i>	2
<i>Part sectional view</i>	3

LEADING PARTICULARS

Visual smoke indicator, Type AIS 4 ...	Ref. No. 6DM/4845
<i>Operating voltage</i>	28V d.c.
<i>Max current consumption</i>	1.5A
<i>Weight</i>	2.4 lbs
<i>Diameter</i>	5 in

Introduction

1. The visual smoke indicator, Type AIS 4 is designed as a central check point in aircraft where signals from four separate smoke detectors may be checked with simultaneous control.

DESCRIPTION

2. The indicator comprises three aluminium alloy castings consisting of the main body, a

reflector, and a front flange. The main body contains a lamp housing around which are positioned eight compartments into which light beams from the lamp are projected by means of collimating tubes. Electrical connection to the lamp is by means of two 6 B.A. terminals.

3. Of the eight compartments, four are used to monitor the smoke detectors, one is arranged to be floodlit by the lamp and is used as a pilot

RESTRICTED

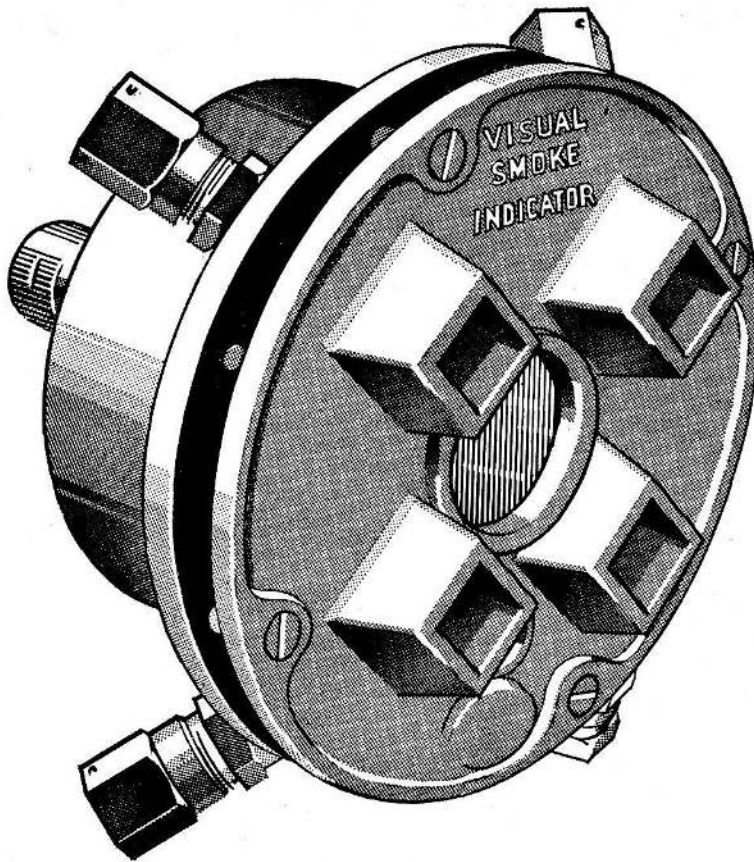


Fig. 1. General view

light to indicate that the illuminating lamp is functioning, and the remainder are unused. Each of the four inspection compartments used is fitted with a pipe coupling, where smoke from the detection point may enter.

4. The reflector casting provides a common suction point to draw the smoke from the detection point, through the connecting pipe and into the inspection compartment. It also improves the efficiency of the individual light beams emitted from the illuminating lamp. The front flange incorporates four inspection windows, a press to test switch, and a coloured window for the pilot light.

OPERATION

5. The indicator is generally used in conjunction with the smoke detector Type MSDA1. A smoke collecting bell is mounted in

close proximity to the smoke detector and is connected to the visual smoke indicator by means of a $\frac{1}{4}$ in. o/d pipe. Smoke is drawn into the tube by suction caused by the vacuum set up in the indicator. The vacuum is created from external sources and not by the indicator.

6. With the illuminating lamp switched on, upon smoke entering the inspection compartment the beam of light through the collimator tube is reflected onto the inspection window and appears as a white line, the intensity of the line depending upon the smoke density. The beam is clearly visible with a smoke density of one per cent obscuration.

SERVICING

7. Access to the filament lamp for removal and replacement is by unscrewing the reflector cap at the rear of the instrument. Remove the

RESTRICTED

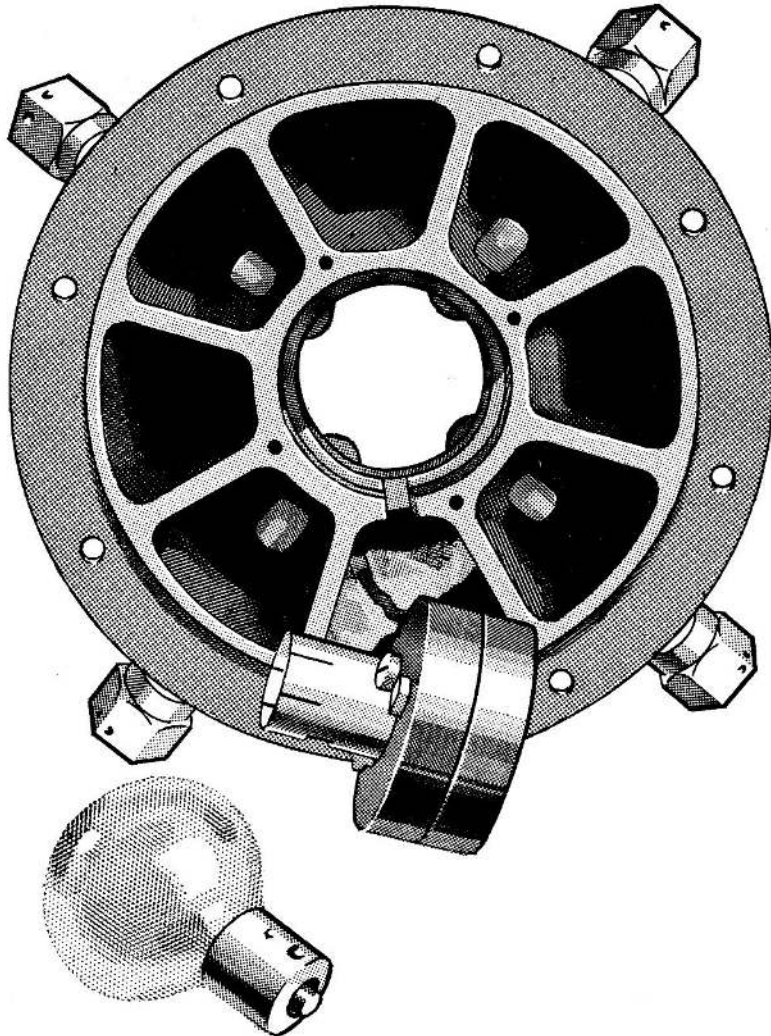


Fig. 2. Main body with front flange removed

four front flange retaining screws, front flange, perspex window, and neoprene gasket. The complete switch and lampholder may then be withdrawn and examined for signs of deterioration of the electrical cables, corrosion, and damage.

8. Clean the internal faces of the inspection compartments with a soft rag and examine the perspex window for cracking or crazing. Do not remove the glass wool from the pilot light compartment. Examine the main body for security of attachment and damage. Examine the front casting for damage and refit

to the main body with the perspex window and neoprene gasket.

9. Examine the electrical connections to the indicator for security of attachment and freedom from corrosion and damage. Examine all pipe couplings for security and damaged threads. Ensure that the couplings screw well home on the threads.

Functional test

10. The illuminating lamp may be functionally tested by depressing the push switch and

RESTRICTED

ensuring that the pilot window illuminates. With the suction device operating, introduce smoke into each inlet in turn and with the filament lamp switched on ensure that the presence of smoke is indicated in the inspection window for each inlet.

Insulation resistance test

11. Using a 250V insulation resistance tester, test between each supply terminal and the main body, ensuring a good electrical contact to the body. The reading obtained should be not less than 5 megohms.

Pressure leak test

12. Remove each inlet coupling and blank off the indicator orifices. Remove the suction pipe coupling and pressurise the indicator to 20 lb/in². The pressure should not fall below 15 lb/in² over a period of one minute.

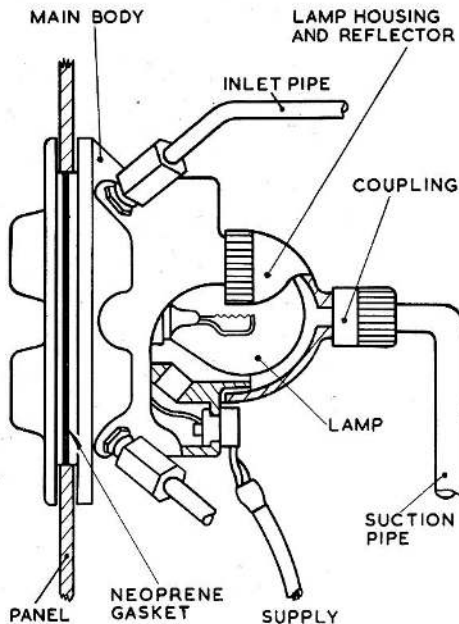


Fig. 3. Part sectional view

RESTRICTED

This file was downloaded
from the RTFM Library.

Link: www.scottbouch.com/rtfm

Please see site for usage terms,
and more aircraft documents.



LIGHTNING MK. 1
COVER PITOT HEAD
EB2-88-5111