OVERHAUL MANUAL

for

MINIATURE DIMMER RESISTORS

This manual complies with British Civil Airworthiness Requirements, Section A, Chapter A6-2. The technical accuracy of this manual has been verified and is certified as correct.

Signed . . . . . .
(H.F.Uphill)

Date 1st. September, 1961

A.R.B. Design Approval No. AD/1316/54.

Thorn Electrical Industries Limited,
Special Products Division,
Gt. Cambridge Rd., Enfield,
Middlesex, England.

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THORN ELECTRICAL INDUSTRIES LTD.

SPD 1035-OM

Special Products Division

OVERHAUL MANUAL 33-10-13

(Miniature Dimmer Resistors)

LETTER OF TRANSMITTAL

FOR

REVISION NO.1

Issued 26th February 1963.

ACTION	REASON
1. Remove Pages 1 - 8 and 1101 - 1104 dated September 1961 and insert revised pages dated FEBRUARY 1963.	Mod.2969 introduces a friction washer to replace spring and ball bearings on Front Plate and Spindle (Pt. No. 01-0125-1 to -7). Modified part is interchangeable with old part.
2. Retain this Letter of Transmittal.	This certifies compliance with Section A, Chapter A6-2 of British Civil Airworthiness Requirements.

This revision complies with British Civil Airworthiness Requirements, Section A, Chapter A6-2. The technical accuracy of this revision has been verified and is certified as correct.

Signed .....

(S.A. Gibbons)

Chief Engineer and General Works Manager

Date 26th February, 1963.

A.R.B. Design Approval No. AD/1316/54.

OVERHAUL MANUAL

THORN ELECTRICAL INDUSTRIES LTD.

Special Products Division

OVERHAUL MANUAL 33-10-13

(Miniature Dimmer Resistors)

LETTER OF TRANSMITTAL
FOR
REVISION NO. 3

Issued 31st. May 1965.

ACTION	REASON
1. Remove pages 1, 3 and 7 dated February/63 and page 5 dated January/64, replace with revised pages 1, 3, 5 and 7 dated May/65.	To introduce a range of twin circuit dimmer resistors fitted with two switches.
2. Remove pages 1101 and 1103 dated February/63 and page 1105 dated January/64, replace with revised pages 1101, 1103, 1105, 1107 and 1109 dated May/65.	To enlarge the existing range of non-standard dimmer resistors. Mod. No. 4406 introduces new part Nos. for clamping bolts (Fig.1101 - 5 to 11).
3. Complete the revision record on page 1.	
4. Retain this Letter of Transmittal.	This certifies compliance with Section A, Chapter A6-2 of British Civil Airworthiness Requirements.

This revision complies with British Civil Airworthiness Requirements, Section A, Chapter A6-2. The technical accuracy of this revision has been vertified and is certified as correct.

Signed S.A. Gibbons.
(S.A. GIBBONS)

Director and Chief Engineer.

Dated 31st. May, 1965.
A.R.B. Design Approval No. AD/1316/54.

THORN ELECTRICAL INDUSTRIES LIMITED

OVERHAUL MANUAL

MINIATURE DIMMER RESISTORS

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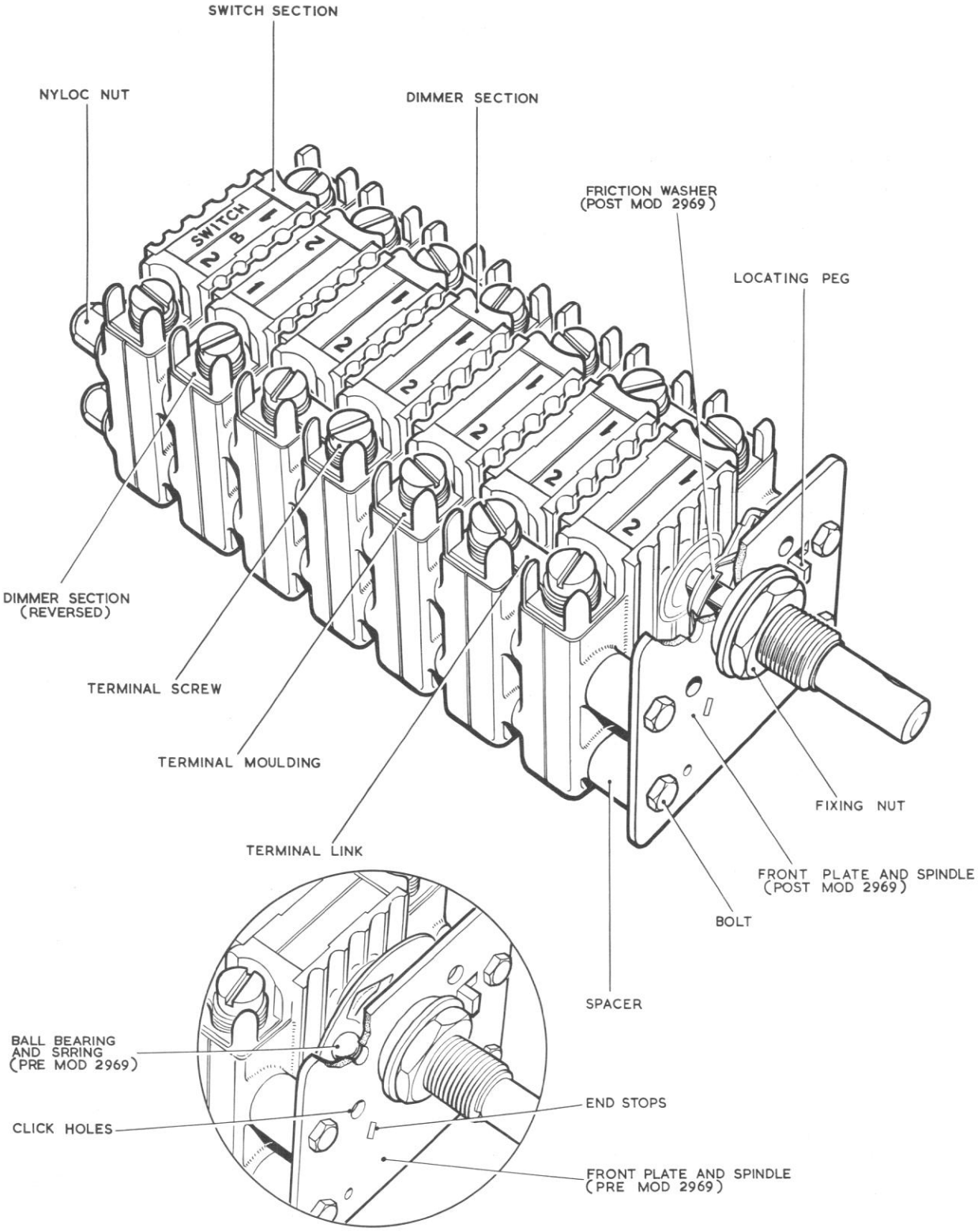
REVISION RECORD

The introduction of any amendment or revision not certified in accordance with British Civil Airworthiness Requirements Section A, Chapter A6-2, will invalidate the statement of certification on Page i. Amendments or revisions embodied in this manual, which have been certified under an approved authorisation other than that applicable to the initial certification must be recorded on separate record sheets.

Rev. No.	Insertion Date	By	Rev. No.	Insertion Date	By	Rev. No.	Insertion Date	By
1	26 Feb.63	-						
2	14 Jan.64							
3	(MAY65) 16.2.66							



Typical miniature dimmer resistor
Figure 1

1. Description, operation and data

A. Description

This manual covers a range of units which control the brightness of groups of 28 volt, 0.04 amp. midget panel lamps (995-9118 or L 1004) in transilluminated panels and other lighting schemes. A list of the unit part numbers and details of the groups of lamps are given in Tables 1, 2 and 3.

The units control brightness from maximum to fully off and the range of resistance values necessary to achieve this is based on five sections, having a total resistance of 100, 150, 200, 300 and 600 ohms respectively. These sections are used either singly or two or more are connected in parallel by external links which fit under the heads of the terminal screws.

A typical dimmer section consists of a metal case containing a resistor card and a moving contact mounted on an insulating bush. The case of the section is secured by four hollow bushes and mounted on to a front plate and spindle, the spindle passing through a shaped hole in the insulating bush. The section is attached to the front plate by four bolts which pass through the hollow bushes and is secured by nyloc nuts and washers.

The unit part numbers listed in Tables 1 and 2 have an 'off' i.e. open circuit position. Those listed in Table 3 have no 'off' position. Units may be identified by the finish of the case, which is a black anodised finish in the case of sections with an 'off' position, and a gold coloured cadmium finish in the case of sections with no 'off' positions.

Pre-mod 2969 units have a front plate containing a ball bearing and spring arrangement which prevents spurious operation of the unit and assists smooth control. Spindle travel is limited by end stops and in the 'on' and 'off' positions the ball bearings locate into end stop click holes in the front plate. Post-mod units have the ball bearing and spring replaced by a friction washer.

Switches contained in similar cases and mounted and secured in the same manner as the dimmer sections, provide facilities for isolating the dimmer sections from the electrical supply or may control some separate function as in the case of special units (See Table 2).

A - type switches provide on-to-off action and B - type switches off-to-on action when turned clockwise.

Electrical connections are made to 6BA screws in shrouded terminals, one of which is connected to the moving contact and the other to the resistor card.

B. Operation

Clockwise rotation of the spindle transfers the moving contact from an open circuit position on the resistor card to the track of the card (except in the units with no 'off' position). Further rotation decreases the resistance in the lamp circuit causing an increase in brightness. Full rotation transfers the contact to a short circuit position i.e. fully on, where there is no resistance in the circuit. At this point the lamps are at fully brightness. Anti-clockwise rotation dims the lamps by increasing the resistance; full anti-clockwise rotation returns the contact to the open circuit position i.e. fully off. This is classified as standard rotation.

NOTE : The direction of rotation and sequence of operation of some units or certain sections of some units may be the opposite to that described above. For details refer to Table 2.

C. Data

Voltage range	Maximum 30v.d.c.
Insulating test voltage	250v.d.c.
Terminal screws	6BA
Rating	Continuous
Weight	Single section unit 0.17 lb. Add 0.05 lb. for each additional section.
Overall dimensions	1 5/8 inches square x 1.175 inches to 3.375 inches overall according to number of sections.

Colour Code

Colour	Value (ohms)
Blue	100
Red	150
Green	200
Yellow	300
White	600

Item No.	Unit Part No. Mod.2969 State		Recommended No. of Lamps 28v. 0.04a.	Total Resistance Required (Ohms)	Description of Assembly		
	Pre	Post			Total No. of Sections	Individual Value (Ohms)	External Connection
1	80/10/0946	01-0021	2	600	1	600	None
2	80/10/0938	01-0014	3-5	300	1	300	None
3	80/10/0940	01-0015	6-10	150	1	150	None
4	80/10/0941	01-0016	11-16	100	1	100	None
5	80/10/0926	01-0010	17-23	75	2	150	Parallel
6	80/10/0935	01-0011	24-31	50	2	100	Parallel
7	80/10/0942	01-0017	32-50	33	3	100	All Paralleled
8	80/10/0949	01-0023	2x2	600x2	2	600	None
9	80/10/0947	01-0022	2x3-5	300x2	2	300	None
10	80/10/0936	01-0012	2x6-10	150x2	2	150	None
11	80/10/0937	01-0013	2x11-16	100x2	2	100	None
12	80/10/0943	01-0018	2x17-23	75x2	4	150	Each Pair Paralleled
13	80/10/0944	01-0019	2x24-31	50x2	4	100	Each Pair Paralleled
14	80/10/0945	01-0020	2x32-50	33x2	6	100	Each 3 Paralleled
15	- -	01-0102-30	2	600	1 + switch	600	None
16	- -	01-0102-31	3-5	300	1 + switch	300	None
17	-	01-0102-32	6-10	150	1 + switch	150	None
18	-	01-0102-24	11-16	100	1 + switch	100	None
19	-	01-0103-36	17-23	75	2 + switch	150	Parallel
20	-	01-0103-37	24-31	50	2 + switch	100	Parallel
21	-	01-0104-28	32-50	33	3 + switch	33	All Paralleled
22	-	01-0104-29	2x2	600x2	2 + 2switches	600	None
23	-	01-0104-30	2x3-5	300x2	2 + 2switches	300	None
24	-	01-0089	2x6-10	150x2	2 + 2switches	150	None
25	-	01-0091	2x11-16	100x2	2 + 2switches	100	None
26	-	01-0106-24	2x17-23	75x2	4 + 2switches	150	Each Pair Paralleled
27	-	01-0106-25	2x24-31	50x2	4 + 2switches	100	Each Pair Paralleled
28	-	01-0108-5	2x32-50	33x2	6 + 2switches	100	Each 3 Paralleled

NOTES:

1. Switch sections are not connected to dimmer sections.
2. Item Nos. 8-14 and 22-28 will control the recommended number of lamps in two separately wired circuits.
3. All units listed have standard rotation (see 1.B.).
4. All switch units are Type - B.

DETAILS OF MINIATURE DIMMER RESISTORS
BASIC RANGE (WITH 'OFF' POSITION)

TABLE 1

Item No.	Unit Part No. Mod.2969 State Pre	Post	Recommended No. of Lamps 28v. 0.04a.	Total Resistance Required (Ohms)	Description of Assembly: Total No. of Sections	Individual Value (Ohms)	External Connection
1	80/10/2521	01-0076	17-23 Front Secs. 24-31 Rear Secs.	75 and 50	4	100 & 150	Each Pair Paralleled
2	80/10/2653	01-0082	2x11-16	100+2	2 + switch	100	None
3	80/10/2654	01-0083	6-10	150	1 + switch	150	None
4	80/10/2655	01-0084	32-50	33	3 + switch	100	All Paralleled
5	-	01-0090	24-31 Front Secs. 32-50 Rear Secs.	50 and 33	5	100	Front Pair Paralleled Rear 3 Paralleled
6	-	01-0102-25	2x6-10	150x2	2	150	None
7	-	01-0103-26	11-16 Front Secs. 24-31 Rear Secs.	100 and 50	3	150	Rear Pair Paralleled
8	-	01-0104-19	4x11-16	100x4	4	100	None
9	-	01-0105-13	4x11-16	100x4	4 + switch	100	None
10	80/10/1339	01-0038	2	600	1 + switch	600	None
11	80/10/1332	01-0031	3-5	300	1 + switch	300	None
12	80/10/1333	01-0032	6-10	150	1 + switch	150	None
13	80/10/1334	01-0033	11-16	100	1 + switch	100	None
14	80/10/1328	01-0027	17-23	75	2 + switch	150	Parallel
15	80/10/1329	01-0028	24-31	50	2 + switch	100	Parallel
16	80/10/1335	01-0034	32-50	33	3 + switch	100	All Paralleled
17	80/10/1341	01-0040	2x2	600x2	2 + switch	600	None
18	80/10/1340	01-0039	2x3-5	300x2	2 + switch	300	None
19	80/10/1330	01-0029	2x6-10	150x2	2 + switch	150	None
20	80/10/1331	01-0030	2x11-16	100x2	2 + switch	100	None
21	80/10/1336	01-0035	2x17-23	75x2	4 + switch	150	Each Pair Paralleled
22	80/10/1337	01-0036	2x24-31	50x2	4 + switch	100	Each Pair Paralleled
23	80/10/1338	01-0037	2x32-50	33x2	6 + switch	100	Each Pair Paralleled

NOTES :
1. Items 1 to 23 have standard rotation. (See 1.B.)
2. All switch sections are Type A.
3. Switch sections are not electrically connected to dimmer sections

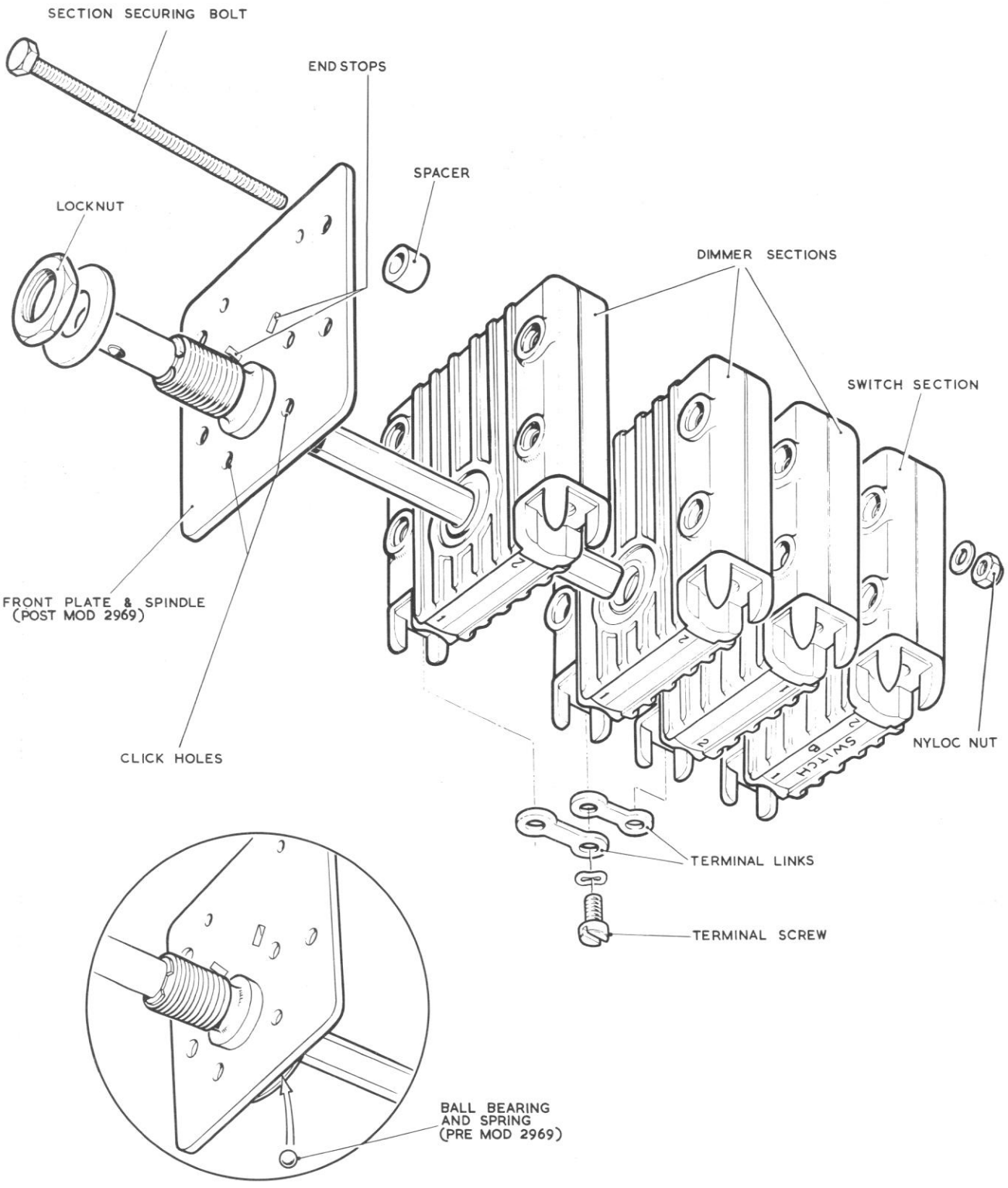
DETAILS OF MINIATURE DIMMER RESISTORS
SPECIAL UNITS WITH 'OFF' POSITION)

Item No.	Unit Part No.	Recommended No. of Lamps 28v. 0.04a.	Total Resistance Required (Ohms)	Description of Assembly		
				Total No. of Sections	Individual Value (Ohms)	External Connection
1	01-0201-7	2	600	1	600	None
2	01-0201-8	3-5	300	1	300	None
3	01-0201-9	6-10	150	1	150	None
4	01-0201-10	11-16	100	1	100	None
5	01-0202-3	17-23	75	2	150	Parallel
6	01-0202-2	24-31	50	2	100	Parallel
7	01-0203-1	32-50	33	3	100	All Paralleled
8	01-0202-4	2x2	600x2	2	600	None
9	01-0202-5	2x3-5	300x2	2	300	None
10	01-0202-6	2x6-10	150x2	2	150	None
11	01-0202-7	2x11-16	100x2	2	100	None
12	01-0204-1	2x17-23	75x2	4	150	Each Pair Paralleled
13	01-0204-2	2x24-31	50x2	4	100	Each Pair Paralleled
14	01-0206-1	2x32-50	33x2	6	100	Each 3 Paralleled

NOTE: 1. Items 1 to 14 have standard rotation.

RANGE OF DIMMER RESISTORS
BASIC UNITS (WITHOUT 'OFF' POSITION)

TABLE 3



Typical exploded view
Figure 2

2. Disassembly
(See Fig.2)

No instructions are considered necessary for this procedure which consists of the removal of nuts and bolts and will be obvious on inspection of the unit. It is not recommended that sections and the front plate and spindle be disassembled beyond the standard shown in Fig.2.

3. Cleaning

Clean all parts with a good grade of commercial cleansing fluid that has been approved for use on metal and electrical parts.

4. Inspection/Check

A. General Procedure

(1) Examine all metal and bakelite parts, as applicable, for:-

(a) Cleanliness.
(b) Distortion.
(c) Cracking (visual).
(d) Scoring.
(e) Denting.
(f) Deterioration of protective treatment-corrosion.
(g) Serviceability of threads.
(h) Security of sub-components not dismantled.

(2) Examine the track of the ball bearings on rear of front plate for evidence of wear (pre-mod. 2969 only).

(3) Measure the total resistance of each dimmer section. The values obtained should be within +5% of the figures shown below.

Colour Code	Value (ohms)
Blue	100
Red	150
Green	200
Yellow	300
White	600

(4) Complete functioning test on switch section(s) (if fitted).

5. Repair

Repair will usually consist of the replacement of a faulty component by a new item. See Page 1101 Illustrated Parts List.

6. Assembly
(Refer to Fig.2)

See Table 1 for details of any external connections between sections and ensure that all sections are in the fully dimmed or open circuit positions before assembly on to the spindle. During assembly, check that the sections are accurately lined up on the spindle. Grease track for ball bearings on rear of front plate with MS4 Silicone Compound (pre-mod. 2969 only). MS4 may be obtained from:-

Midland Silicones Ltd., 19 Upper Brook St., London W.1. ENGLAND.

7. Testing

(1) Measure the insulation resistance at 250v.d.c. between terminal screws and between each terminal screw and case with the spindle fully anti-clockwise. The values obtained should be not less than 20 megohms. In the case of units with no off position, Insulation Resistance shall be measured between each terminal screw and the case only.

(2) Connect the unit to a supply of 28v.d.c. through an equivalent of the lamp load specified in Table 1. Clockwise rotation of the spindle must increase and anti-clockwise rotation decrease the brightness relatively smoothly. There is to be no evidence of open circuit position in the operational sector and full anti-clockwise rotation must switch off the lamps (see also 1.B.).

8. Storage Instructions

A. Conditions

The unit should be stored in a sealed polythene bag and placed in a cardboard carton. For tropical storage first wrap the unit in water resistant paper.

B. Limiting Period

Temperate areas	3 years
Tropical areas	2 years

9. Overhaul Period

The overhaul, by component replacement, of these units is on condition. The life of the units is 20,000 cycles of operation.

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MINIATURE DIMMER RESISTORS

10. Illustrated Parts List

A. Dimmer Section Colour Code

Code	Value (ohms)
Blue	100
Red	150
Green	200
Yellow	300
White	600

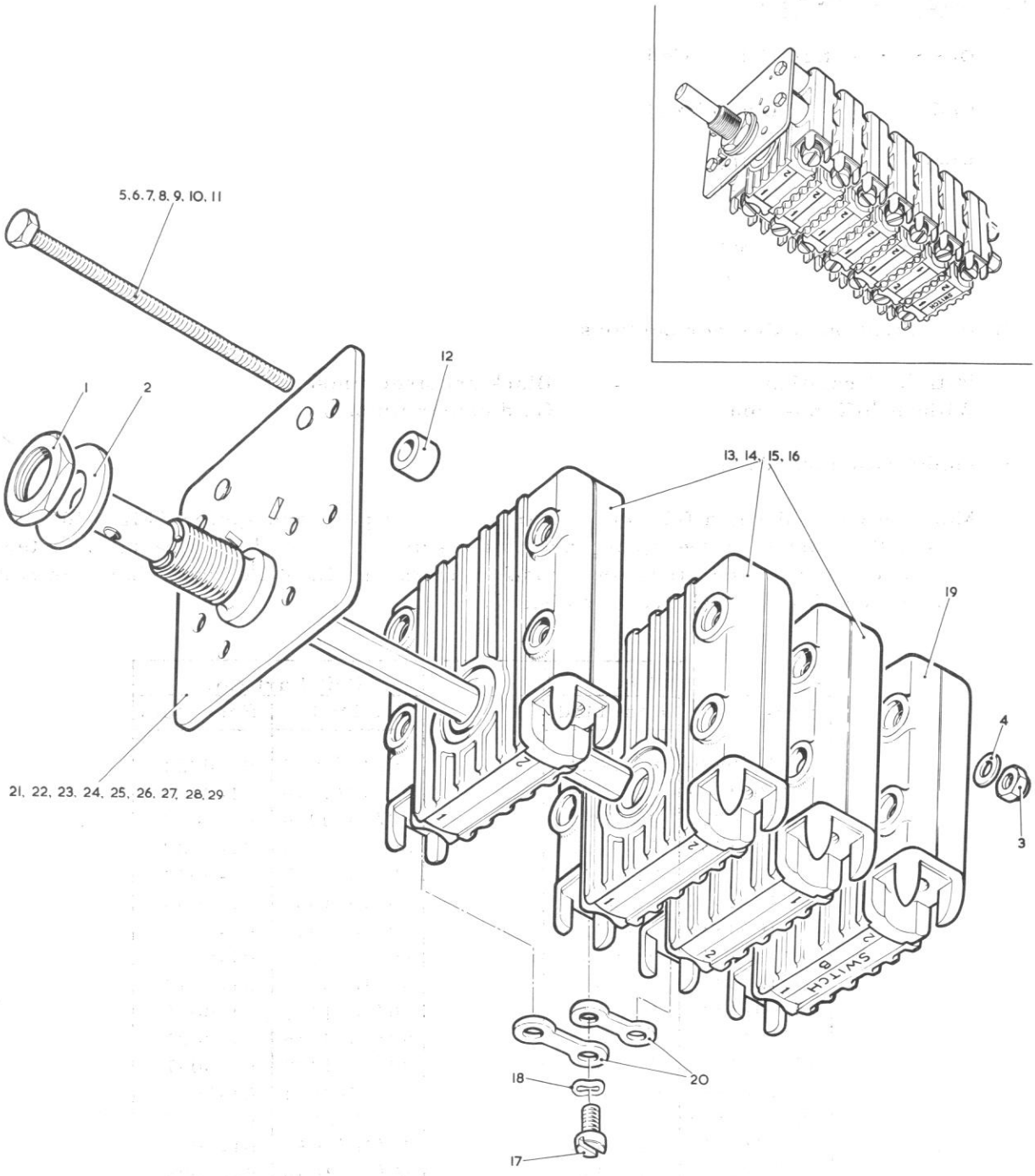
B. Identification of Dimmer Sections

With 'off' position - Black anodised finish
Without 'off' position - Gold colour finish

C. Modification Standard

Mod. 2969 introduces a friction washer in the front plate and spindle (Fig. 1101 - 21 to - 29) in place of the spring and ball bearings. Pre. and post. parts are interchangeable with each other and modified units are identified by a change in part number, details of which are given below.

Unit Part No.			Unit Part No.	
Pre.Mod.	Post Mod.		Pre.Mod.	Post Mod.
80/10/0946	01-0021		80/10/0947	01-0022
80/10/1339	01-0038		80/10/1340	01-0039
80/10/0938	01-0014		80/10/0936	01-0012
80/10/1332	01-0031		80/10/1330	01-0029
80/10/0940	01-0015		80/10/0937	01-0013
80/10/1333	01-0032		80/10/1331	01-0030
80/10/0941	01-0016		80/10/0943	01-0018
80/10/1334	01-0033		80/10/1336	01-0035
80/10/0926	01-0010		80/10/0944	01-0019
80/10/1328	01-0027		80/10/1337	01-0036
80/10/0935	01-0011		80/10/0945	01-0020
80/10/1329	01-0028		80/10/1338	01-0037
80/10/0942	01-0017		80/10/2521	01-0076
80/10/1335	01-0034		80/10/2653	01-0082
80/10/0949	01-0023		80/10/2654	01-0083
80/10/1341	01-0040		80/10/2655	01-0084



Typical exploded view
Figure 1101

10. Illustrated Parts List (cont'd)

D. Modification No.4406 introduces a series of new part numbers for bolts (Fig. 1101 - 5 to 11). Post and pre-mod. bolts are fully interchangeable and part numbers are as detailed below.

Part Numbers	
Pre. Mod. 4406	Post Mod. 4406
A25 - 7A	01-0151/1
A25 - 11A	01-0151/2
A25 - 16A	01-0151/3
A25 - 20A	01-0151/4
80/10/1452	01-0151/5
80/10/0955	01-0151/6
80/10/1421	01-0151/7

E. Parts List

1. Basic Units (with 'off' position)

	Fig. & Index No.	Part No.	Nomenclature 1 2 3	Usage Code	Units per Assy.
	1101-	01-0021	Resistor, miniature dimmer	1	Ref.
R		01-0102-30	ditto	2	Ref.
		01-0014	ditto	3	Ref.
R		01-0102-31	ditto	4	Ref.
		01-0015	ditto	5	Ref.
R		01-0102-32	ditto	6	Ref.
		01-0016	ditto	7	Ref.
R		01-0102-24	ditto	8	Ref.
		01-0010	ditto	9	Ref.
R		01-0103-36	ditto	10	Ref.
		01-0011	ditto	11	Ref.
R		01-0103-37	ditto	12	Ref.
		01-0017	ditto	13	Ref.
R		01-0104-28	ditto	14	Ref.
		01-0023	ditto	15	Ref.
R		01-0104-29	ditto	16	Ref.
		01-0022	ditto	17	Ref.
R		01-0104-30	ditto	18	Ref.
		01-0012	ditto	19	Ref.
R		01-0089	ditto	20	Ref.
		01-0013	ditto	21	Ref.
R		01-0091	ditto	22	Ref.
		01-0018	ditto	23	Ref.
R		01-0106-24	ditto	24	Ref.
		01-0019	ditto	25	Ref.
R		01-0106-25	ditto	26	Ref.
		01-0020	ditto	27	Ref.
R		01-0108-5	ditto	28	Ref.
	1	80/10/0953	. Locknut, special	All	1
	2	SP.13-J	. Washer, for above	All	1
	3	AGS.2001-A1	. Nut, nyloc	All	4
	4	SP23A	. Washer, for nyloc nut	All	4
R	5	01-0151/1	. Bolt	1,3,5,7	4
R	6	01-0151/2	. Bolt	2.4.6.8,9,11, 15,17,19,21	4
R	7	01-0151/3	. Bolt	10,12,13,16, 18,20,22	4
R	8	01-0151/4	. Bolt	14,23.25	4
R	9	01-0151/5	. Bolt,	24,26	4
R	10	01-0151/6	. Bolt	27	4
R	11	01-0151/7	. Bolt	28	4
	12	80/10/0833	. Spacer	All	4
	13	80/10/0950	. Section, dimmer, 600 ohms	1,2	1
	13	80/10/0950	. Section, dimmer, 600 ohms	15,16	2
	14	80/10/0845	. Section, dimmer, 300 ohms	3,4	1

Fig. & Index No.	Part No.	Nomenclature 1 2 3	Usage Code	Units per Assy.
14	80/10/0845	. Section, dimmer, 300 ohms	17,18	2
15	80/10/0801	. Section, dimmer, 150 ohms	5,6	1
15	80/10/0801	. Section, dimmer, 150 ohms	9,10,19,20	2
15	80/10/0801	. Section, dimmer, 150 ohms	23,24	4
16	80/10/0843	. Section, dimmer, 100 ohms	7,8	1
16	80/10/0843	. Section, dimmer, 100 ohms	11,12,21,22	2
16	80/10/0843	. Section, dimmer, 100 ohms	25,26	4
16	80/10/0843	. Section, dimmer, 100 ohms	27,28	6
16	80/10/0843	. Section, dimmer, 100 ohms	13,14	3
17	A31-A6	. Screw, terminal	1,3,5,7	2
17	A31-A6	. Screw, terminal	2,4,6,8,9,11,15, 17,19,21	4
17	A31-A6	. Screw, terminal	10,12,13,16,18, 20,22	6
17	A31-A6	. Screw, terminal	14,23,25	8
17	A31-A6	. Screw, terminal	24,26	10
17	A31-A6	. Screw, terminal	27	12
17	A31-A6	. Screw, terminal	28	14
18	80/10/1648/2	. Washer, terminal, special	1,3,5,7	2
18	80/10/1648/2	. Washer, terminal, special	2,4,6,8,9,11,15, 17,19,21	4
18	80/10/1648/2	. Washer, terminal, special	10,12,13,16,18, 20,22	6
18	80/10/1648/2	. Washer, terminal, special	14,23,25	8
18	80/10/1648/2	. Washer, terminal, special	24,26	10
18	80/10/1648/2	. Washer, terminal, special	27	12
18	80/10/1648/2	. Washer, terminal, special	28	14
19	80/10/1327/B	. Section, switch (off to on)	2,4,6,8,10,12,14	1
R 19	80/10/1327/B	. Section, switch (off to on)	16,18,20,22,24, 26,28	2
20	80/10/0835	. Link, terminal	9,10,11,12	2
20	80/10/0835	. Link, terminal	13,14,23,24,25, 26	4
20	80/10/0835	. Link, terminal	27,28	8
21	01-0125-1	. Front plate and spindle	1,3,5,7	1
22	01-0125-2	. Front plate and spindle	2,4,6,8,9,11,15, 17,19,21	1
23	01-0125-4	. Front plate and spindle	10,12,13,14,16, 18,20,22	1
24	01-0125-6	. Front plate and spindle	23,25	1
25	01-0125-3	. Front plate and spindle	24,26	1
26	01-0125-5	. Front plate and spindle	27	1
27	01-0125-7	. Front plate and spindle	28	1

2. Non-Standard Units (with 'off' position)

Fig. & Index No.	Part No.	Nomenclature 1 2 3	Usage Code	Units per Assy.
1101	01-0038	Resistor, miniature dimmer	1	Ref.
	01-0031	ditto	2	Ref.
	01-0032	ditto	3	Ref.
	01-0083	ditto	4	Ref.
	01-0033	ditto	5	Ref.
	01-0102-25	ditto	6	Ref.
	01-0040	ditto	7	Ref.
	01-0039	ditto	8	Ref.
	01-0029	ditto	9	Ref.
	01-0030	ditto	10	Ref.
	01-0082	ditto	11	Ref.
	01-0027	ditto	12	Ref.
	01-0028	ditto	13	Ref.
	01-0103-26	ditto	14	Ref.
	01-0084	ditto	15	Ref.
	01-0034	ditto	16	Ref.
	01-0076	ditto	17	Ref.
	01-0104-19	ditto	18	Ref.
	01-0104-13	ditto	19	Ref.
	01-0035	ditto	20	Ref.
	01-0036	ditto	21	Ref.
	01-0090	ditto	22	Ref.
	01-0037	ditto	23	Ref.
1	80/10/0953	. Locknut, special	All	1
2	SP.13-J	. Washer, for above	All	1
3	AGS.2001-A1	. Nut, nyloc	All	4
4	SP23A	. Washer, for nyloc nut	All	4
6	01-0151/2	. Bolt	1,2,3,4,5,6	4
7	01-0151/3	. Bolt	7,8,9,10,11,12, 13,14	4
8	01-0151/4	. Bolt	15,16,17,18	4
9	01-0151/5	. Bolt	19,20,21,22	4
10	01-0151/7	. Bolt	23	4
12	80/10/0833	. Spacer	All	4

Fig. & Index No.	Part No.	Nomenclature 1 2 3	Usage Code	Units per Assy.
13	80/10/0950	. Section, dimmer, 600 ohms	1	1
13	80/10/0950	. Section, dimmer, 600 ohms	7	2
14	80/10/0845	. Section, dimmer, 300 ohms	2	1
14	80/10/0845	. Section, dimmer, 300 ohms	8	2
15	80/10/0801	. Section, dimmer, 150 ohms	3,4	1
15	80/10/0801	. Section, dimmer, 150 ohms	6,9,12,17	2
15	80/10/0801	. Section, dimmer, 150 ohms	20	4
16	80/10/0843	. Section, dimmer, 100 ohms	5	1
16	80/10/0843	. Section, dimmer, 100 ohms	10,11,13,17	2
16	80/10/0843	. Section, dimmer, 100 ohms	14,15,16	3
16	80/10/0843	. Section, dimmer, 100 ohms	18,19,21	4
16	80/10/0843	. Section, dimmer, 100 ohms	22	5
16	80/10/0843	. Section, dimmer, 100 ohms	23	6
17	A31-A6	. Screw, terminal	1,2,3,4,5,6	4
17	A31-A6	. Screw, terminal	7,8,9,10,11,12, 13,14	6
17	A31-A6	. Screw, terminal	15,16,17,18	8
17	A31-A6	. Screw, terminal	19,20,21,22	10
17	A31-A6	. Screw, terminal	23	14
18	80/10/1648/2	. Washer, terminal, special	1,2,3,4,5,6	4
18	80/10/1648/2	. Washer, terminal, special	7,8,9,10,11,12, 13,14	6
18	80/10/1648/2	. Washer, terminal, special	15,16,17,18	8
18	80/10/1648/2	. Washer, terminal, special	19,20,21,22	10
18	80/10/1648/2	. Washer, terminal, special	23	14
19	80/10/1327/B	. Section, switch (off to on)	1,2,3,4,5,7,8,9, 10,11,12,13,15, 16,19,20,21,23	1
20	80/10/0835	. Link, terminal	12,13,14	2
20	80/10/0835	. Link, terminal	15,16,17,20,21	4
20	80/10/0835	. Link, terminal	23	8
21	01-0125-2	. Front plate and spindle	1,2,3,5	1
22	01-0125-38	. Front plate and spindle	4,6	1
23	01-0125-3	. Front plate and spindle	7,8,9,10,12,13,14	1
24	01-0125-39	. Front plate and spindle	11	1
25	01-0125-40	. Front plate and spindle	15,18	1
26	01-0125-4	. Front plate and spindle	16,17	1
27	01-0125-41	. Front plate and spindle	19	1
28	01-0125-5	. Front plate and spindle	20,21,22	1
29	01-0125-7	. Front plate and spindle	23	1

3. Basic Units (with no 'off' position)

Fig. & Index No.	Part No.	Nomenclature 1 2 3	Usage Code	Units per Assy.
1101	01-0201-7	Resistor, miniature dimmer	1	Ref.
	01-0201-8	ditto	2	Ref.
	01-0201-11	ditto	3	Ref.
	01-0201-10	ditto	4	Ref.
	01-0202-3	ditto	5	Ref.
	01-0202-2	ditto	6	Ref.
	01-0203-1	ditto	7	Ref.
	01-0202-4	ditto	8	Ref.
	01-0202-5	ditto	9	Ref.
	01-0202-6	ditto	10	Ref.
	01-0202-7	ditto	11	Ref.
	01-0204-1	ditto	12	Ref.
	01-0204-2	ditto	13	Ref.
	01-0206-1	ditto	14	Ref.
1	80/10/0953	. Locknut, special	All	1
2	SP.13-J	. Washer for above	All	1
3	AGS.2001-A1	. Nut, nyloc	All	4
4	SP23A	. Washer, for nyloc nut	All	4
5	01-0151/1	. Bolt	1,2,3,4	4
6	01-0151/2	. Bolt	5,6,8,9,10,11	4
7	01-0151/3	. Bolt	7	4
8	01-0151/4	. Bolt	12,13	4
9	01-0151/6	. Bolt	14	4
12	80/10/0833	. Spacer	All	4
13	01-0212	. Section, dimmer, 600 ohms	1	1
13	01-0212	. Section, dimmer, 600 ohms	8	2
14	01-0214	. Section, dimmer, 300 ohms	2	1
14	01-0214	. Section, dimmer, 300 ohms	9	1
15	01-0211	. Section, dimmer, 150 ohms	3	1
15	01-0211	. Section, dimmer, 150 ohms	5,10	2
15	01-0211	. Section, dimmer, 150 ohms	12	4
16	01-0210	. Section, dimmer, 100 ohms	4	1
16	01-0210	. Section, dimmer, 100 ohms	6,11	2
16	01-0210	. Section, dimmer, 100 ohms	7	3
16	01-0210	. Section, dimmer, 100 ohms	13	4
16	01-0210	. Section, dimmer, 100 ohms	14	6

Fig. & Index No.	Part No.	Nomenclature 1 2 3	Usage Code	Units per Assy.
17	A31/A6	. Screw, terminal	1,2,3,4	2
17	A31-A6	. Screw, terminal	5,6,8,9,10,11	4
17	A31-A6	. Screw, terminal	7	6
17	A31-A6	. Screw, terminal	12,13	8
17	A31-A6	. Screw, terminal	14	12
18	80/10/1648/2	. Washer, terminal, special	1,2,3,4	2
18	80/10/1648/2	. Washer, terminal, special	5,6,8,9,10,11	4
18	80/10/1648/2	. Washer, terminal, special	7	6
18	80/10/1648/2	. Washer, terminal, special	12,13	8
18	80/10/1648/2	. Washer, terminal, special	14	12
20	80/10/0835	. Link, terminal	5,6	2
20	80/10/0835	. Link, terminal	7,12,13	4
21	01-0125-1	. Front plate and spindle	1,2,3,4	1
22	01-0125-2	. Front plate and spindle	5,6,8,9,10,11	1
23	01-0125-3	. Front plate and spindle	7	1
24	01-0125-4	. Front plate and spindle	12,13	1
25	01-0125-6	. Front plate and spindle	14	1