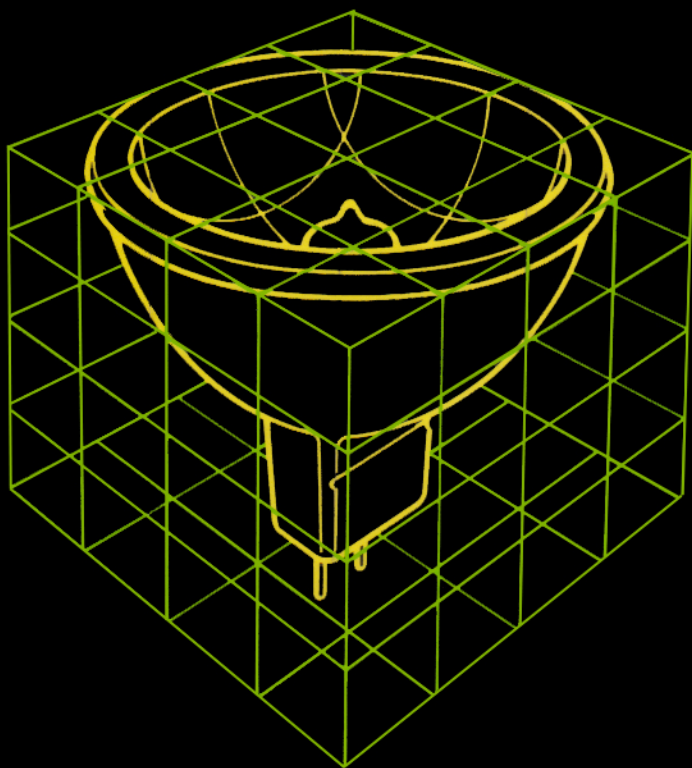


THE  
COMPREHENSIVE  
CATALOGUE  
**1987/8**



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 **THORN EMI Lighting**

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## DISCHARGE CONTROL GEAR & ACCESSORIES

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<b>Discharge lamp control gear circuit components</b>	254
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# DISCHARGE LAMP CONTROL GEAR CIRCUIT COMPONENTS FOR 240V 50HZ SUPPLY

## SON LAMPS‡ (SON-E, SON-T, SON-TD, SON-R, SONDL-E, SONDL-T)

Lamp type	Lamp wattage	Ballast	Capacitor	Ignitor	HBC/MCB	Fuse rating † re-wire	Circuit diagram
SON	50	G 53451-4	GC 2383	G 53353	4A	5A	A
	70	G 53438-4	GC 2442	G 53353	4A	5A	A
	150	G 53400-T	GC 2331	G 53282/B	4A	5A	A
	250	G 53398-T	GC 2386	G 53282/B	10A	5A	A
	400	G 53371-T	2 x GC 2331	G 53282/B	16A	10A	A
	1000	3 x G 53425-T	2 x GC 2346 + GC 2382	G 53316	20A	15A	B

‡ For Δ (external ignitor) marked lamps only

## SOX LAMPS

SOX	18	G 53376-4	GC 2420	—	3A	5A	C
	35	G 53331-4	GC 2435	G 53311	4A	5A	D
	55	G 53331-4	GC 2435	G 53421	4A	5A	D
	90	G 53365-4	GC 2346	—	4A	5A	E
	135	G 53369-4	GC 2386	—	4A	5A	E

## MBF LAMPS (MBF, MBF DELUXE, MBFR)

MBF	50	G 53327-T	GC 2435	—	4A	5A	F
	80	G 53333-T	GC 2383	—	4A	5A	F
	125	G 53439-T	GC 2383	—	4A	5A	F
	250	G 53399-T	GC 2370	—	10A	5A	F
	400	G 53397-T	GC 2331	—	16A	10A	F
	700	G 53399-T + G 53397-T	GC 2386	—	16A	10A	G
	1000	G 53350-4	2 x GC 2346	—	20A	15A	F

## METAL HALIDE LAMPS

Arcstream	150	G 53400-T	GC 2331	G 53455	4A	5A	H
MBI/MBIF	250	G 53398-T	GC 2386	G 53455	10A	5A	H
MBI/MBIF	400	G 53397-T	GC 2346	G 53455	16A	10A	H
MBI/MBIF*	1000	G 53351	GC 2413	G 53342	16A	10A	J
MBIL	750	G 53402-4	3 x GC 2346	—	16A	10A	K
MBIL*	1500	G 53308-T	GC 2411	G 53342	16A	10A	J
CSI	1000	G 53307-T	7 x GC 2346	G 53444	20A	20A	H

Ballasts suffix -4 240V operation only.  
Ballast suffix -T 220/240V operation. Luminaires normally wired for 240V.

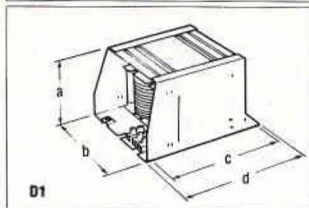
\* Circuit for 380/415V 3 phase supply.  
Add G 47102 step-up transformer for single phase operation.

† Data sheet 4:90-2 provides information regarding fusing recommendations for discharge lamps.

Special control gear components are used in street lanterns, SONPAK, Hipak and Invincible ranges. These are listed in the relevant fittings section.

# DISCHARGE BALLAST DIMENSIONS

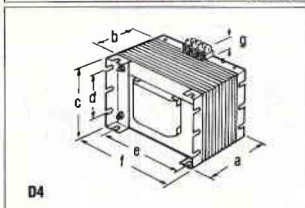
	a	b	c	d
mm	87	100	135	150



D1

G 53371-T    G 53397-T    G 53398-T  
G 53399-T    G 53400-T    G 53425-T

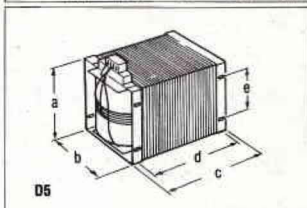
	a	b	c	d	e	f	g
mm	120	93	115	70	120	150	26



D4

G 53350-4  
G 53351

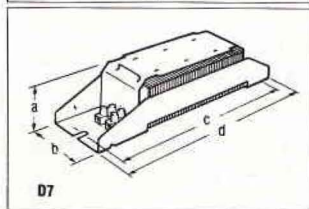
	a	b	c	d	e
mm	190	150	190	125	100



D5

G 53402-4

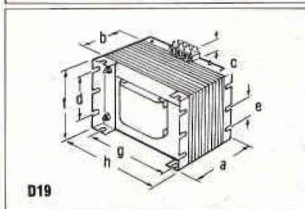
	a	b	c	d
mm	40	48	150	170



D7

G 53327-T    G 53331-4  
G 53333-T    G 53376-4

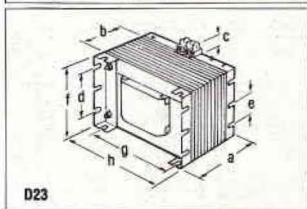
	a	b	c	d	e	f	g	h
mm	162	117	26	100	50	155	159	190



D19

G 53307-T

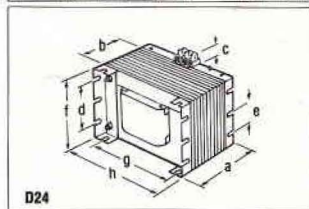
	a	b	c	d	e	f	g	h
mm	131	86	26	100	50	153	160	194



D23

G 53308-T

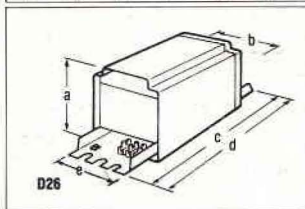
	a	b	c	d	e	f	g	h
mm	120	82	29	80	40	138	143	178



D24

G 47102

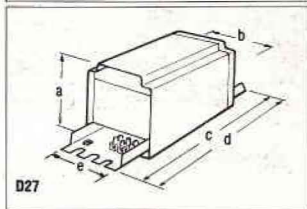
	a	b	c	d	e
mm	88	92	165	178	45



D26

G 53365-4

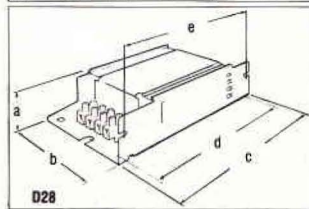
	a	b	c	d	e
mm	86	109	165	178	51



D27

G 53369-4

	a	b	c	d	e
mm	83	73	150	135	135

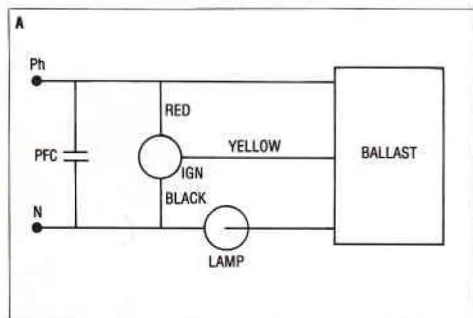


D28

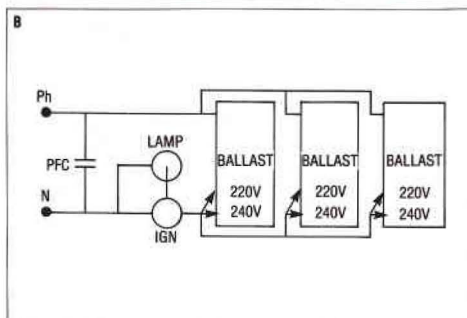
G 53438    G 53439-T    G 53451-4



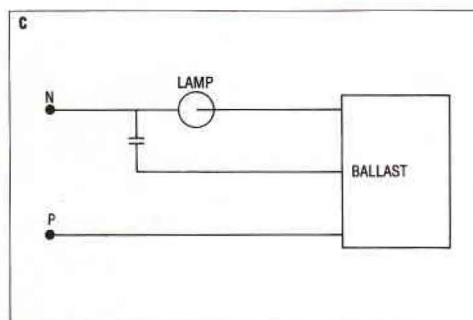
# DISCHARGE CIRCUIT DIAGRAMS



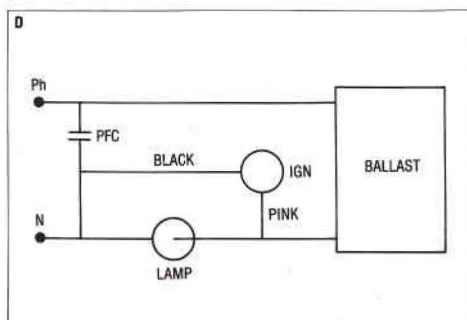
SON 50W - 400W



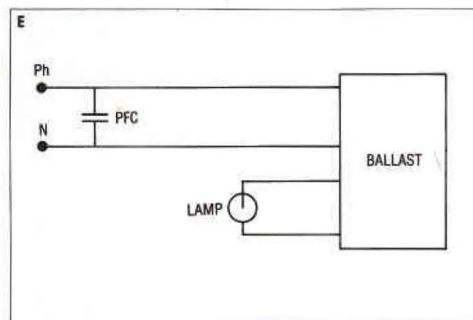
SON 1kW



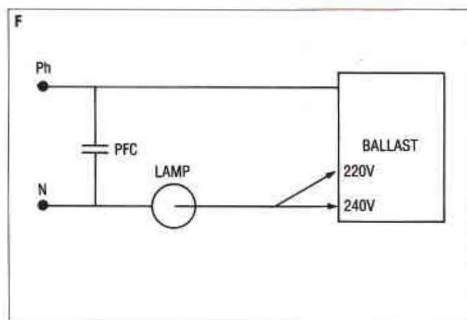
SOX 18W



SOX 35 - 55W

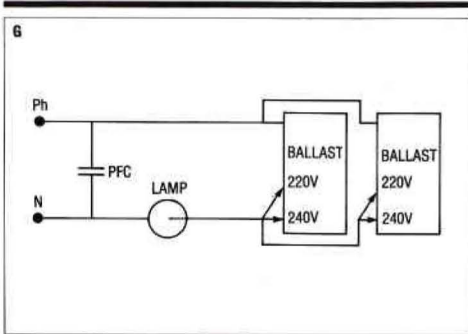


SOX 135W

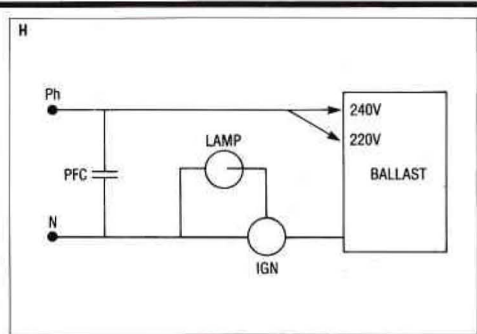


MBF ALL BUT 700W

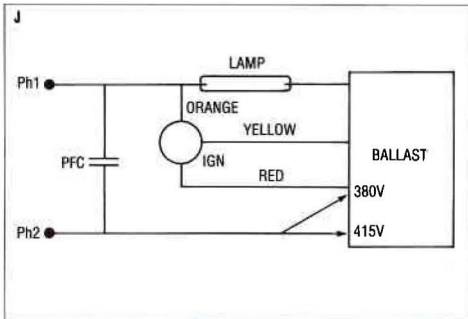
# DISCHARGE CIRCUIT DIAGRAMS



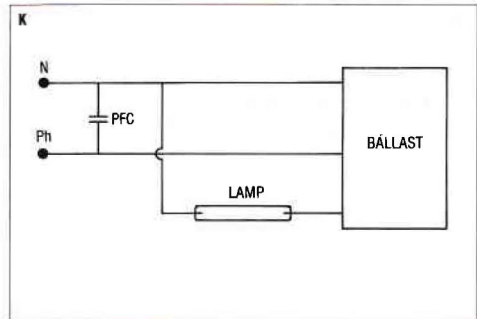
700W MBF



ARCSTREAM + 250 - 400W MBIF



1kW MBIF  
1500W MBIL



750W MBIL

# DISCHARGE LAMP BALLASTS

## DISCHARGE LAMP BALLASTS (240V 50Hz)

Cat. no.	Lamp type	Lamp power (W)	Weight kg	Fig. no.	tw °C	Δt °C	Terminal
G53307-T	CSI	1000	19.3	D19	120	80	4 x TB + E
G53308-T*	MBIL	1500	19.7	D23	120	70	4 x TB + E
G53327-T	MBF	50	1.1	D7	130	60	3 x TB
G53331-4	SOX	35/55	1.1	D7	120	65	2 x TB
G53333-T	MBF	80	1.3	D7	130	60	3 x TB
G53350-4	MBF	1000	7.6	D4	120	75	2 x TB + E
G53351*	MBI	1000	7.6	D18	120	80	4 x TB + E
G53365-4	SOX	90	4.3	D26	130	85	4 x TB + E
G53369-4	SOX	135	5.7	D27	130	85	4 x TB + E
G53371-T	SON	400	4.7	D1	140	75	3 x TB + E
G53376-4	SOX	18	1.1	D7	130	45	3 x TB
G53397-T	MBF/MBI	400	3.5	D1	140	75	3 x TB + E
G53398-T	MBI/SON	250	3.5	D1	140	90	3 x TB + E
G53399-T	MBF	250	2.3	D1	140	80	3 x TB + E
G53400-T	SON	150	2.3	D1	140	80	3 x TB + E
G53402-4	MBIL	750	17.0	D5	130	65	3 x TB + E
G53425-4	SON	1000†	4.7	D1	140	65	3 x TB + E
G53438-4	SON	70	1.9	D28	130	65	4 x TB
G53439-4	MBF	125	1.9	D28	130	75	5 x TB
G53451-4	SON	50	1.9	D28	130	65	4 x TB

## STEP UP TRANSFORMER

G47102	—	1500	9.8	D24	120	70	3 x TB + E
Step up transformer 220/240V — 380/415V							

Ballasts suffix -4 240V operation.

Ballasts suffix -T 220/240V operation. Luminaires normally wired for 240V

\* for 380/415V three phase supply

† 3 ballasts required per lampway.

TB terminal block

Nx number of wireways

E earth connection.

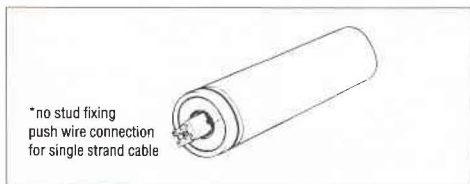
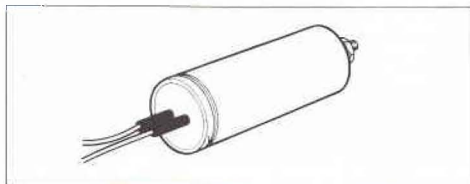
# DISCHARGE LAMP CAPACITORS

These capacitors comply with the requirements of BS 4017 and are of either the self healing metallised polypropylene (dry) film type, or the self healing metallised paper mineral oil filled leakproof type.

The capacitors have an end fixing stud (8 - 12mm length) and are complete with M8 nut and shakeproof washer. \*An alternative method of fixing is by spring clip.

The suffixes /BO, /PED or /RIC should be added to catalogue numbers where particular dimensions are required.

The capacitors are supplied with flying leads (300mm).



GC 2435

## CAPACITORS

Catalogue number	Capacitance $\mu\text{F} \pm 10\%$	Working voltage a.c.	Can diameter mm	Can length mm	Suitable capacitor clip
GC 2331/PED	20	250	45	72	GY 5313
GC 2331/BO	20	240	35	80	GY 5320
GC 2331/RIC	20	250	45	98	GY 5313
GC 2346/PED	25	250	45	97	GY 5313
GC 2346/BO	25	240	40	80	GY 5244
GC 2346/RIC	25	250	45	98	GY 5313
GC 2370/PED	13	250	45	72	GY 5313
GC 2370/BO	13	240	30	80	—
GC 2370/RIC	13	250	45	73	GY 5313
GC 2382/PED	35	250	45	125	GY 5313
GC 2382/BO	35	240	45	120	GY 5313
GC 2382/RIC	35	250	45	123	GY 5313
GC 2383/PED	8	250	35	69	GY 5320
GC 2383/BO	8	250	25	80	GY 5200
GC 2383/RIC	8	250	35	73	GY 5320
GC 2386/PED	30	250	45	100	GY 5313
GC 2386/BO	30	250	45	105	GY 5313
GC 2386/RIC	30	250	45	98	GY 5313
GC 2411/PED	30	440	63	135	—
GC 2411/BO	30	440	45	175	GY 5313
GC 2413/PED	15	440	45	107	GY 5313
GC 2420/PED	5.5	250	35	77	GY 5320
GC 2420/RIC	5.5	250	35	73	GY 5320
GC 2435/PED	6	250	35	77	GY 5320
GC 2435/RIC	6	250	35	73	GY 5320
GC 2442	10	250	35	77	GY 5320

Fig. 1

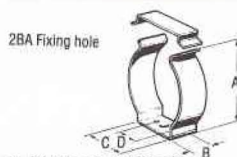


Fig. 2

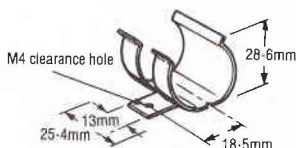


Fig. 3

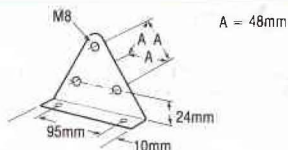
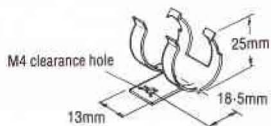


Fig. 4



## CAPACITOR CLIPS

Catalogue number	Safety strap	Capacitor dia. mm	Dimensions* see fig 1			
			A	B	C	D
GY 5200	—	25	34	9.5	12	—
GY 5244	GY 5245 (35) GY 5325 (38)	35-40	45	19	25	17
GY 5313	GY 5314	45	52	25	35	21
GY 5320	—	35	see fig 2			
GY 5321	—	53	59	25	40	27
GY 5330	—	35	see fig 4			
GM 6203	bracket for three 45mm dia capacitors see fig 3					

\*All dimensions shown are in mm.

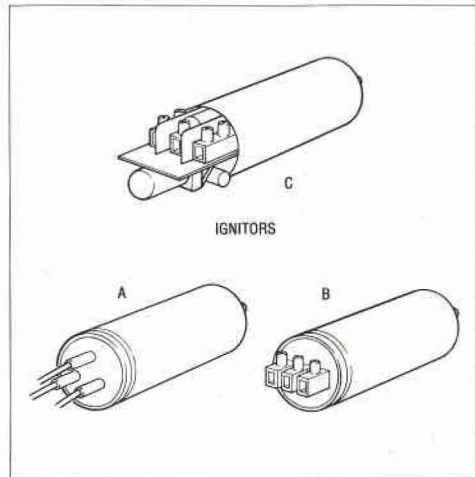


# DISCHARGE LAMP IGNITORS

The maximum recommended cable length for any lamp/ignitor combination can be found by dividing "Maximum Cable Capacitance" by "Capacitance per metre" listed for calculation for the particular type of cable to be used.

The ignitors have an end fixing stud (8-12mm length) and are complete with M6 nut and shakeproof washer. The capacitor clips listed on page 259 provide an alternative mounting method.

Note that the maximum operating temperature for ignitors is  $T_a$  85°C and this should be checked when mounting in restricted spaces and in close proximity to ballasts or lamps.



## DISCHARGE LAMP IGNITORS

Catalogue number	Termination drawing	Lamp type	Lamp power W	Can length mm	Can diameter mm	Maximum cable capacitance at 240V (pF)
G 53282/B	A	SON	150	102	38	2750
			250			2500
			400			2000
G 53311	B	SOX	35	102	38	20000
G 53316	C	SON	1000	102	51	200
G 53342	B	MBI	1000			18500*
		MBIL	1500			15500*
G 53353	B	SON	50	102	38	700
			70			10000
G 53421	B	SOX	35	102	38	80
			55			80
G 53434	B	SON	50	102	38	80
			70			80
G 53444	C	CSI	1000	178	51	20
G 53455	A	MBI	250/400	102	38	100
			Arcstream			150

\* Also apply for 415V operation

## CAPACITANCE OF TYPICAL PVC CABLES

PVC insulated 1.0-4.0mm <sup>2</sup>	Typical measured capacitance of pulse carrying core to all others connected together (including earth cores or armour)	Capacitance per metre for use in calculating cable length
Unsheathed single cores loose packed (2 cores) in 20mm earthed conduit	70 pF/m	70 pF/m
Unsheathed single cores tightly packed (8 cores) in 20mm earthed conduit	120 pF/m	120 pF/m
Twin and Earth (loose contact with earth)	115 pF/m	115 pF/m
Twin SWA (armoured or sheathed)	225-300 pF/m	300 pF/m
Multicore SWA (armoured or sheathed)	225-300 pF/m	300 pF/m
Multicore (non-armoured)	225-300 pF/m	300 pF/m

**Warning:** Mineral insulated (MICC) cables should not be used in ignitor circuits, or circuits where no power factor correction capacitors are used, as the transient voltages will exceed the voltage rating of that cable

# DISCHARGE CONTROL GEAR BOXES AND TRAYS

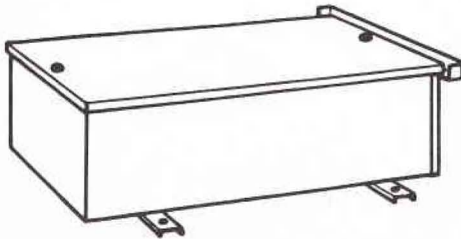
These trays and boxes are complete with HPF SON control gear and are prewired.

The OHA 4615-4 cast aluminium gear box has a stirrup fixing bolt for suitable luminaire mounting. It can also be mounted on floor or wall and on poles using two OHA 4613 clamps (48-89mm o/d).

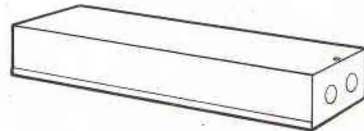
The RBSG 1000A is less ignitor as this component has to be mounted in close proximity to the lamp. A suitable housing for lamp and ignitor is in Hipak Range page 61.

## DISCHARGE CONTROL GEAR BOXES AND TRAYS

Cat. no.	Lamp type	Lamp power W	Fixing centres mm	External dimensions mm			Weight kg	Material /finish	Protection	Ta °C
				l	w	d				
RBSG 70-4	SON	70	360 x 55	403	94	58	3.1	Steel-gloss white	IP20	25
RBSG 1000A	SON	1000	324 x 415	501	390	150	24.0	Steel-grey	IP21	40
OHA 4615-4	SON	400	102 x 350	390	192	115	9.5	Aluminium-black	IP24	35
OHA 4617-4	SON	400	178 x 279	420	168	163	9.4	Steel-black	IP23	45



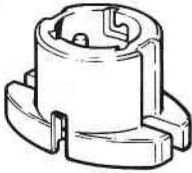
RBSG 1000A



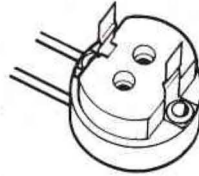
RBSG 70-4

For details of OHA gear boxes, see page 166

# DISCHARGE LAMPHOLDERS



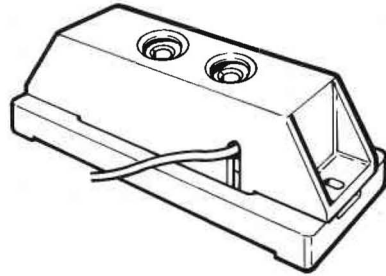
3BC DISCHARGE LAMPHOLDER GL 1086/B22-3



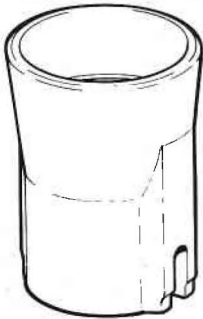
ARCSTREAM LAMPHOLDER GL 1235



ES DISCHARGE LAMPHOLDER GL 1087/E27



CSI DISCHARGE LAMPHOLDER GL 1198



GES DISCHARGE LAMPHOLDER GL 1196