

KW ELECTRONICS

transmitters

- ★ NO EXTERNAL ANTENNA SWITCHING REQUIRED
- ★ ALL PARTS CONSERVATIVELY RATED
- ★ MODERN EFFICIENT P.A. TUBE—SPARES INEXPENSIVE
- ★ ATTRACTIVE APPEARANCE
- ★ OUTPUT IMPEDANCE ADJUSTABLE
- ★ R.F. COMPARTMENTS DOUBLE SCREENED TO REDUCE TVI

The KW 600

Linear Amplifier

for 10, 15, 20, 40 and 80 meters

The K.W. 600 Linear Amplifier is designed to be driven by the K.W. 2000, K.W. 2000A, K.W. Viceroy or similar medium powered SSB transmitters and transceivers. Good linear operation is achieved for Single Sideband or CW with useful power gain.

The unit employs a 572B triode valve amplifier in a grounded grid circuit and incorporates internal power supplies. The H.T. supply produces approximately 2000 volts, which can run the P.A. at over 500 watts input on CW and SSB. A rockette type switch reduces the power input to 150 watts for carrier insertion conditions when tuning up, or for reduced power operation.

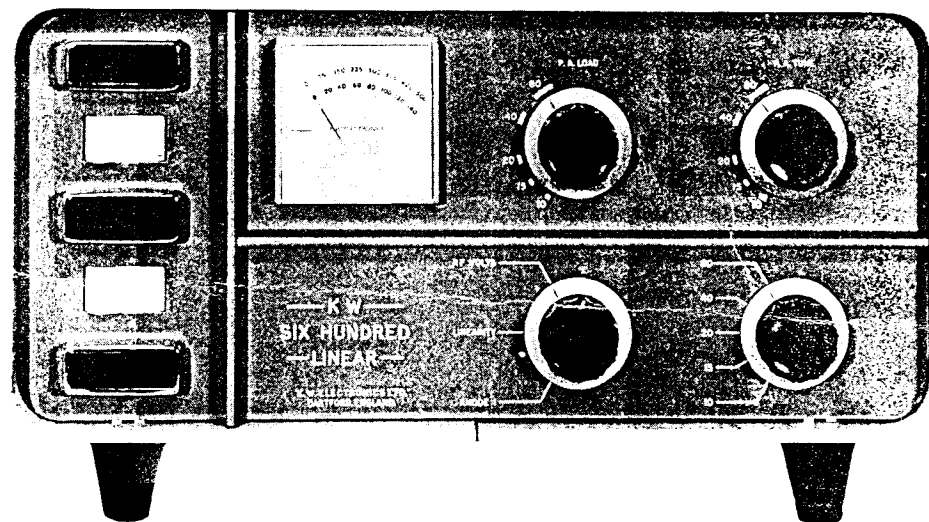
The amplifier operates on the 10, 15, 20, 40 and 80 meter bands. The antenna output is low impedance from a pi-section filter and the antenna is connected automatically to the exciter when the linear is switched off. It is thus possible to switch from the 'bare foot' exciter to the linear merely by switching on the mains supply to the linear amplifier.

Drive from the exciter is applied to the cathode (heater) of the 572B. The driving power required is approximately 20 watts of R.F., which is additive to the output of the power amplifier.

The power supply employs the latest type of silicon rectifiers which are virtually free from hash.

A special meter is incorporated for 'P.A. current', 'R.F. output voltage' and 'linearity'. The 'linearity' scale enables the operator to tune and adjust the P.A. for correct loading and minimum distortion.

The P.A. stage is completely screened (double screened with cabinet) and a small fan is used for cooling. Front panel markings are engraved and lamps indicate 'MAINS ON', HIGH and LOW POWER operation.



VALVES	—	1 x 572B plus silicon rectifier printed circuit module using BY100 or 80AS
OUTPUT SOCKET	—	SO239, Plug PL259
INPUT SOCKET	—	Belling & Lee Socket L-604, Plug L-734P
A.C. MAINS OUTPUT	—	200-250v A.C. 45-65 cycles (115v available to order)
Attractive Cabinet with Lift-up Lid	—	12½" deep, 6" high and 13½" wide
WEIGHT	—	40 lbs. approximately

PRICE COMPLETE WITH VALVES: £115 0. 0.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
 8 Cherry Tree Rd, Chinnor
 Oxon OX9 4QY
 Tel: 01844-351694 Fax: 01844-352554
 Email: enquiries@mauritron.co.uk

KW ELECTRONICS LTD
 VANGUARD WORKS, 150 CHERRY TREE ROAD, CHINNOR, OXFORDSHIRE, ENGLAND

THE QUALITY OF
 THIS MANUAL IS
 THE BEST THAT
 IS AVAILABLE

OPERATING INSTRUCTIONS

KW 600 LINEAR AMPLIFIER

The KW 600 Linear Amplifier is designed primarily for single-sideband and C.W. operation. The unit employs a 572B ^{(T160-L) EQUIV.} tube in grounded-grid configuration with RF drive applied from the exciter through resonant input circuits to the valve heater. The self-contained power supply using solid-state devices produces over 2 Kv.

IT IS IMPORTANT TO OBSERVE THAT THE VOLTAGES IN THIS EQUIPMENT ARE DANGEROUS AND EVERY CAUTION MUST BE TAKEN WHEN REMOVING TOP AND BOTTOM PLATES

The amount of drive required from an exciter for an optimum output of the KW 600 is approximately 20 watts under two-tone conditions and slightly more on the high frequency bands. It is not necessary to use an external antenna change-over relay as this is incorporated in the unit.

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INSTALLATION

The unit has both mains transformers set for 240 volt operation at the factory. This is suitable for 230-250 volt supply. To change the transformers to 200-215 volt or 215-230 volt it is necessary to remove the chassis and carry out the adjustments on both tag strips. The **wiring** colour code is yellow for 210v, green for 225, and red for 240 volts, the heavy red wire being the adjusting link.

Connect the mains lead to the A.C. supply - green wire to earth. By means of a short length of 52 or 75 ohm co-axial cable connect output of exciter to the small co-ax socket at the rear of the KW 600. Connect antenna by means of a PL259 plug to the S0239 type socket. The 2 pin socket at the rear of the chassis should be connected with a pair of wires to the VOX relay contacts in the Exciter. These contacts should close when on 'transmit' and are used to operate the relay in the KW 600 which takes its coil voltage from the incorporated power supply.

Note that the main fuse is a 3A Anti-Surge type should replacement be necessary.

FRONT CONTROLS Rockette Switches - Bottom, Mains ON/OFF - Top Power HIGH/LOW. By pushing the left edge of the mains switch it clicks into the OFF position. The ON position is reached by pressing the right edge and click to the centre and then again click to flush position.

CONTROLS

Bottom right - Waveband Switch. Top left PA TUNE.
Top Right - Antenna Loading. Bottom left - Meter Switch with three positions - Plate current - Linearity - RF Volts.
BEFORE SWITCHING ON make sure that both Rockette Switches are in the OFF position.

SWITCHING ON AND TUNING

Select waveband desired on switch and tune-up exciter in the normal way on the same band. Set PA TUNE and LOAD controls to appropriate dial calibration. (This is correct for 52 ohm feed impedance). Set function switch to ANODE I.
Switch ON by pressing bottom rockette to the right -
Note that the indicator light shows MAINS and LOW (Low Power)
Apply drive with carrier inserted from exciter and adjust exciter P.A. for a maximum KW 600 plate current of 120 m/a.
Tune PA TUNE control for minimum dip on meter. Adjust PA LOAD and re-adjust PA TUNE for minimum dip until meter reads 120 m/a. Quickly check the P.A. TUNE off resonance for a plate current of 140 m/a and re-adjust exciter PA tuning and drive if necessary. Re-resonate PA TUNE for minimum dip 120 m/a.

SWITCHING ON AND TUNING - Cont'd.

Operate top rockette switch for the HIGH power position. The minimum dip should then be approximately 175 m/a (off resonance 230 m/a). Switch exciter to SSB operation and adjust audio for speech peaks about 180 m/a with average 125 m/a. (KW 600 on HIGH power). Exceeding these conditions could produce poor linearity. Standing plate current is approximately 0-10 m/a and on high power 0-15 m/a. Slight variation is due to valve characteristics.

LINEARITY CONTROL

The internal adjustment for this is set up at the factory under two-tone conditions and should not require further adjustment. With the function switch in the LINEARITY position and the KW 600 operating normally the meter should only just flicker around the '0' mark on the meter scale. Considerable meter movement could be caused by too much drive or incorrect loading. The optimum PA loading is with PA TUNE in resonance and the PA LOAD adjusted for maximum RF output - this can best be measured on an SWR indicator such as the KW Match. It is desirable to make the optimum PA tuning adjustments in conjunction with the drive adjustment from the exciter. It should, however, be possible to switch off the KW 600 at the mains switch thus allowing the exciter to directly feed the antenna without returning the exciter P.A. Normally this can only be achieved when there is a very low SWR on the antenna system, and some slight adjustment to the PA tuning may be necessary.

R.F. VOLTS

With the meter switch in this position, the meter measures a small amount of rectified R.F. at the antenna output.

This is an accurate measurement of volts from which power output can be calculated - e.g. 80 volts into 50 ohm - $E^2/R = 128$ watts.

C.W. OPERATION

The tuning procedure for C.W. operation is exactly the same as for SSB. Carrier insertion on the exciter should be adjusted to provide the amount of drive as for SSB operation. It should be noted that under carrier insertion conditions with a plate current of 150 m/a the H.T. voltage is just under 1 Kv, therefore the D.C. input is $1000 \times .15 = 150$ watts.

REMOVING THE CHASSIS

This can be done by removing the screws from the underside of the cabinet including the two rear feet. Chassis can be withdrawn from the front by pushing chassis from rear. *and two front feet*

Note:- When the top and bottom plates are removed from chassis an H.T. shorting device automatically grounds the high voltage rail.

ALWAYS LEAVE FREE ACCESS FOR AIR ABOVE AND BEHIND THE KW 600

CHANGING THE 572B

A special retainer holds the P.A. tube in position. The two clips at the base of the tube should be opened out slightly away from the tube base whilst gently extracting the tube.

K.W. ELECTRONICS GUARANTEE.

This equipment is conditionally guaranteed by us for a period of twelve months from date of purchase by the actual user. In the event of any failure during this period, due to faulty workmanship or material the dealer from whom the equipment was purchased should be notified. The dealer reserves the right to make a reasonable charge for labour, obtaining from us any necessary part for replacement free under this guarantee.

Equipment should not be returned to us direct without prior arrangements having been made. Equipment returned must be sent carriage paid by the sender and well packed. If rail transport is used, the package should be consigned at Railway Company's Risk rate. We also reserve the right to make a charge for labour, handling expenses and return carriage.

Any interference or alteration to equipment without our consent, renders this guarantee void. The guarantee does not apply to equipment purchased second hand or at less than our standard list price. The guarantee is not transferable.

Valves used in this equipment are guaranteed by the valve manufacturer for a period of three calendar months from the date of purchase. This guarantee is only given in respect of faulty workmanship and material and does not cover misuse or consequential damage. Claims under this guarantee will only be considered if the valve is returned to the valve manufacturer through the dealer from whom the equipment was purchased supported by proof of the date of purchase of the equipment as issued by K.W. Electronics Limited. To ensure proper examination, the right is reserved to break open any valve, if necessary, without obligation to return or replace.

REPAIRS UNDER GUARANTEE

If the material or equipment was purchased direct from K.W. Electronics Ltd., and you wish to return it for service under guarantee, you should write to the address shown below giving full particulars including the details listed. Upon receipt of such notice, KW will promptly advise you respecting the return. Failure to secure our advise prior to the forwarding of the goods or failure to provide full particulars may cause unnecessary delay in handling of your returned merchandise.

ADDRESS: KW.Electronics Limited,
 Service Section,
 Viceroy Works,
 20/23 High Street,
 CRAYFORD, Kent. TEL: Crayford 22040

INFORMATION NEEDED

- (a) Type number, name and serial number of equipment.
- (b) Date of delivery of equipment.
- (c) Nature of trouble.
- (d) Number of hours of service.
- (e) Cause of trouble if known.

If the equipment was purchased from an agent it should be returned to the agent for service.

OUT OF GUARANTEE REPAIRS

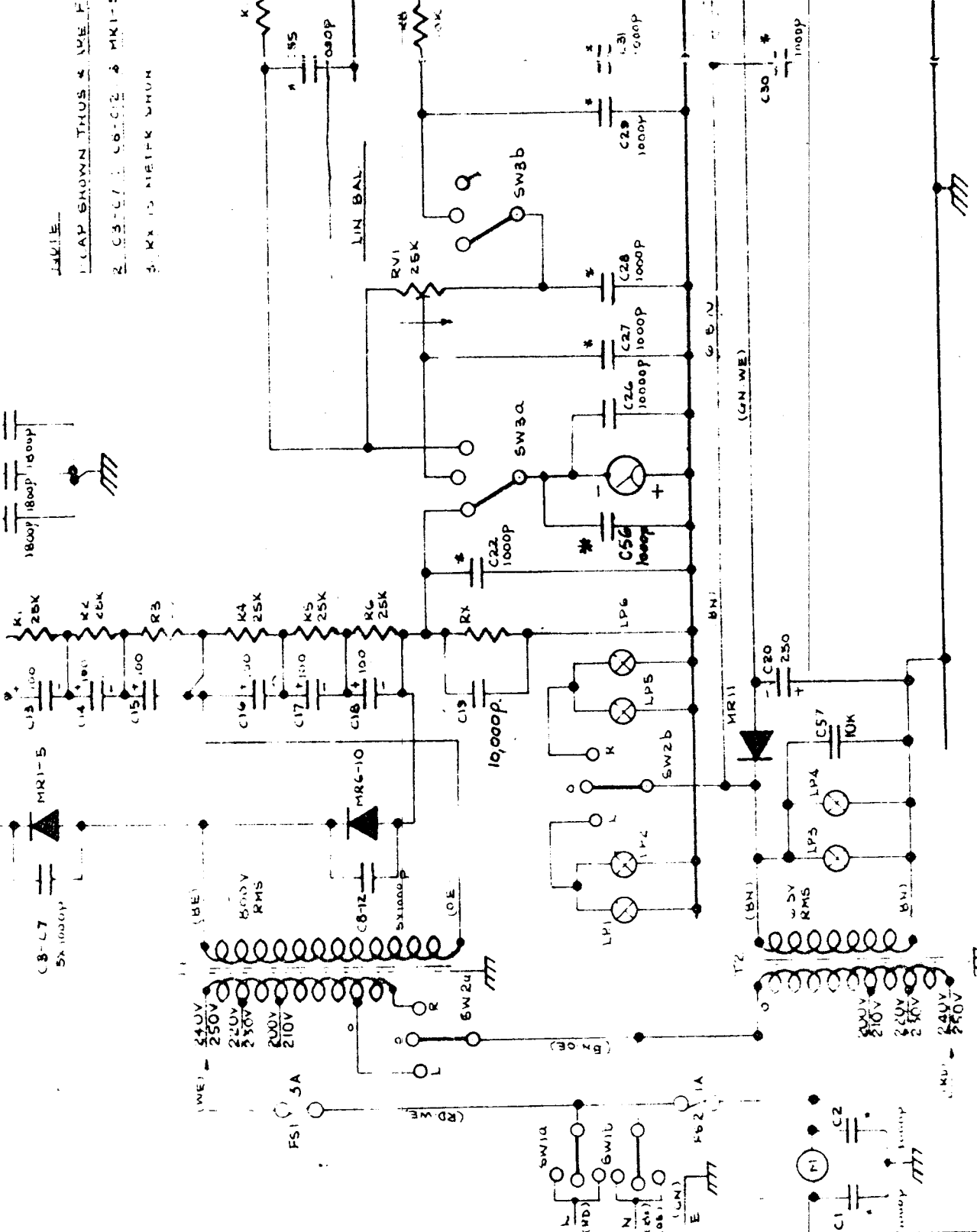
If you wish to return your equipment for repairs, write to the above address giving full particulars including the details listed. Upon receipt of such notice, KW will advise you respecting return. Do not send the goods without first obtaining our advise.

- INFORMATION NEEDED:
- 1) Type number, name and serial number of equipment.
 - 2) Number of hours of service.
 - 3) Complete instructions detailing work to be performed.
 - 4) Your return address. 5) Method of shipment.
 - 6) Special instructions.

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MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
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Tel: 01844-351694 Fax: 01844-352554
Email: enquiries@mauritron.co.uk

TABLE

- 1. CAP SHOWN THUS * ARE P.P.
- 2. C3-C7, C8-C12 & MK1-5
- 3. RX IS METRIC DRUM



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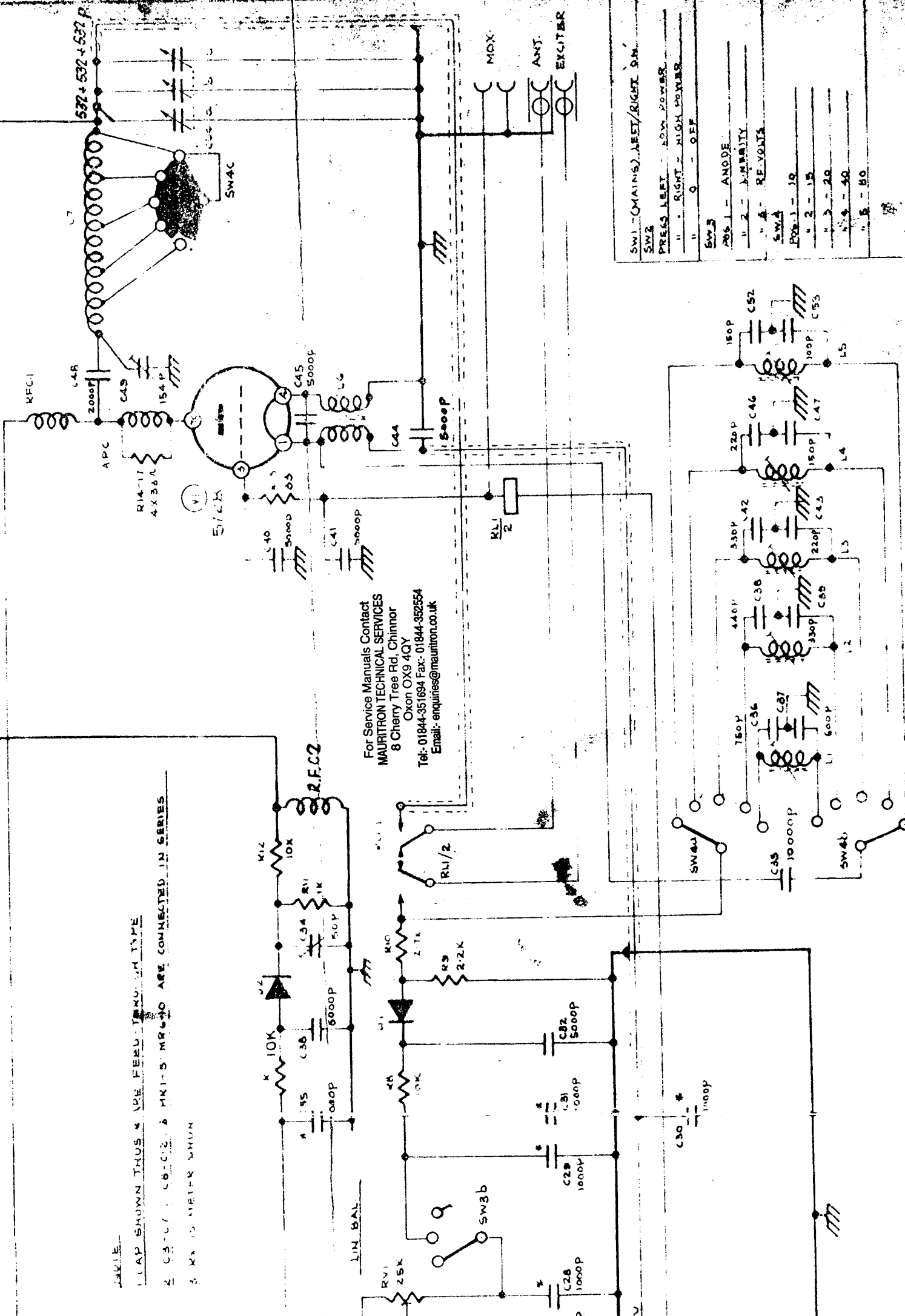
SER NO.	4 11-65	SEE AM SHT 4062	MATERIAL	TOLER.
	21 10 65	SEE AM SHT 4056		
	6 65	SEE AM SHT 4050		
	9 65	L61 AND " DELTED. REPL ANL " ADDED		

E-174

APP 12

TABLE

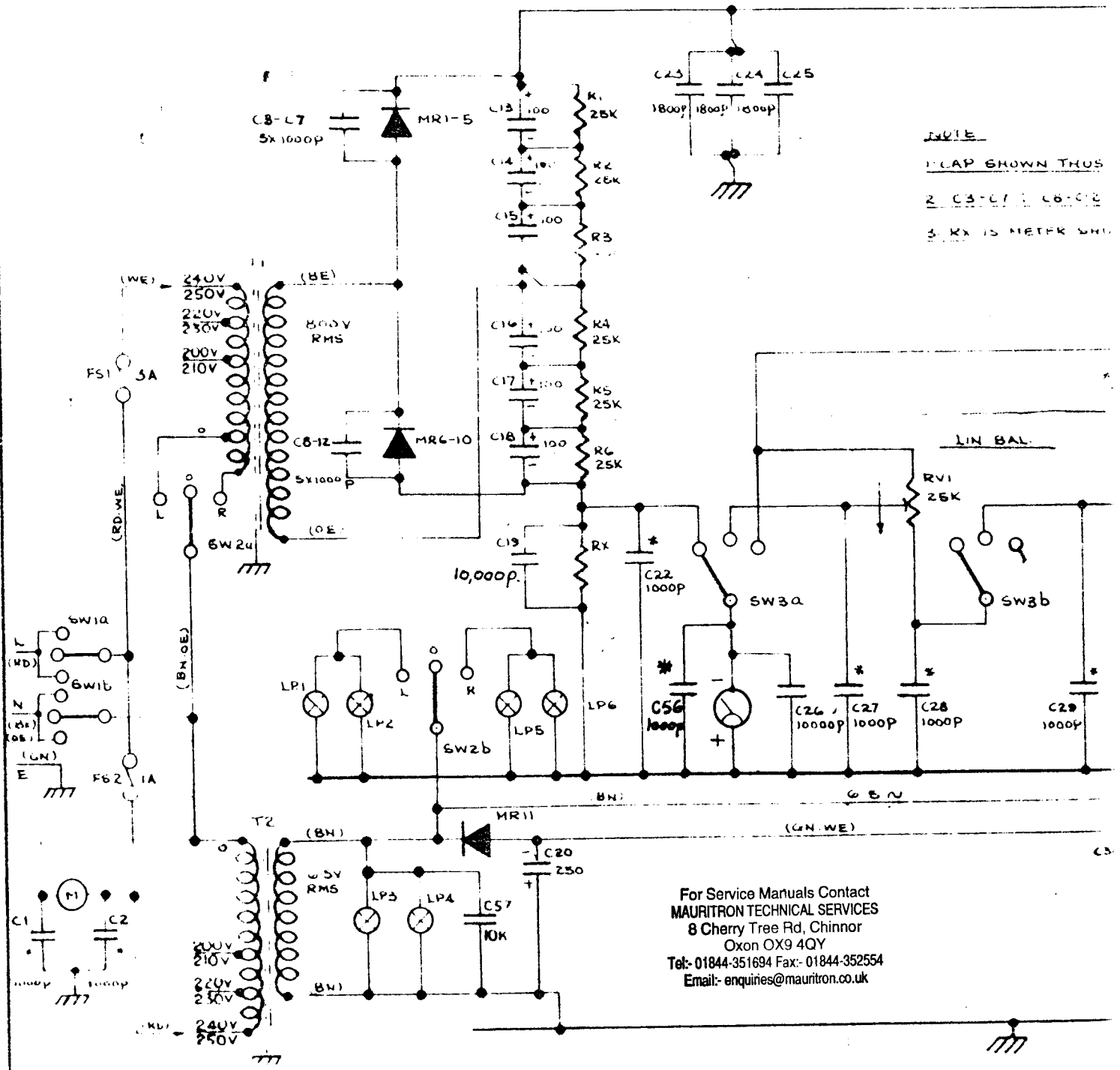
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2. C30, C7, C8, C12 & MK1-5 MK6-10 ARE CONNECTED IN SERIES
3. RX IS METER SHOWN



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SW1	(MAINS) LEFT/RIGHT ON
SW2	PRES LEFT - LOW POWER
"	" RIGHT - HIGH POWER
"	" 0 - QEF
SW3	
POS 1	ANODE
" 2	ANATALLY
" 4	RE-VOLTA
SW4	
POS 1	10
" 2	15
" 3	20
" 4	40
" 5	80

(110)
(80) (0)
K1077



NOTE
1. CAP SHOWN THUS
2. C3-C7, C6-C12
3. R1 IS METEK 50K

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5	4 11-65	SEE AM SHT 4062
4	21 10 65	SEE AM SHT 4056
3	6 10 65	SEE AM SHT 4050
2	10 65	LP1 AND LP2 DELETED. RFC2 AND C57 ADDED AMEND SHEET 4041
1	4 2 65	
ISSUE	DATE	

MATERIAL

FINISH

DRAWING N^o

B 9005

THIRD ANGLE

CAPACITORS

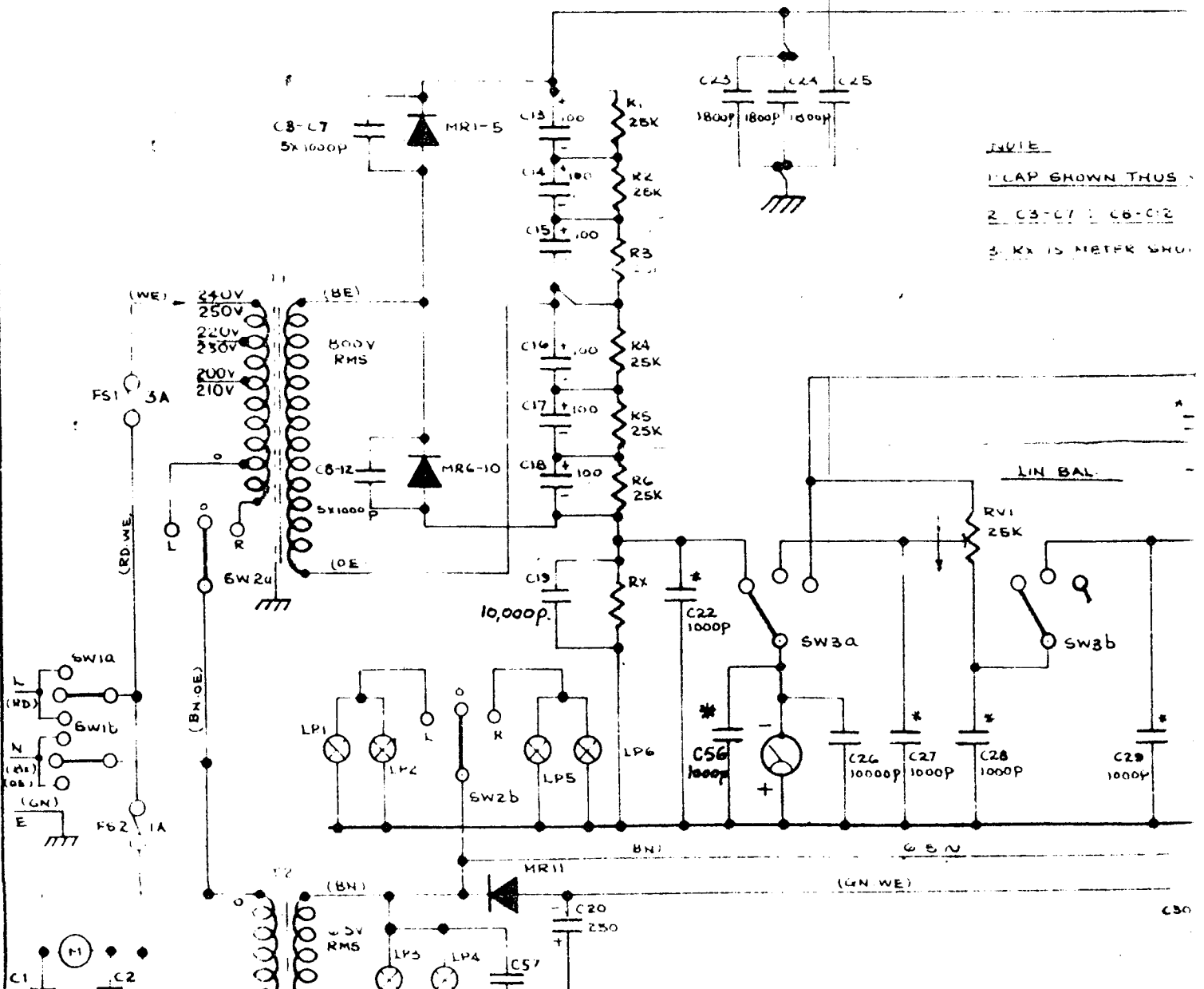
100 (0)

10

180 (0)

100

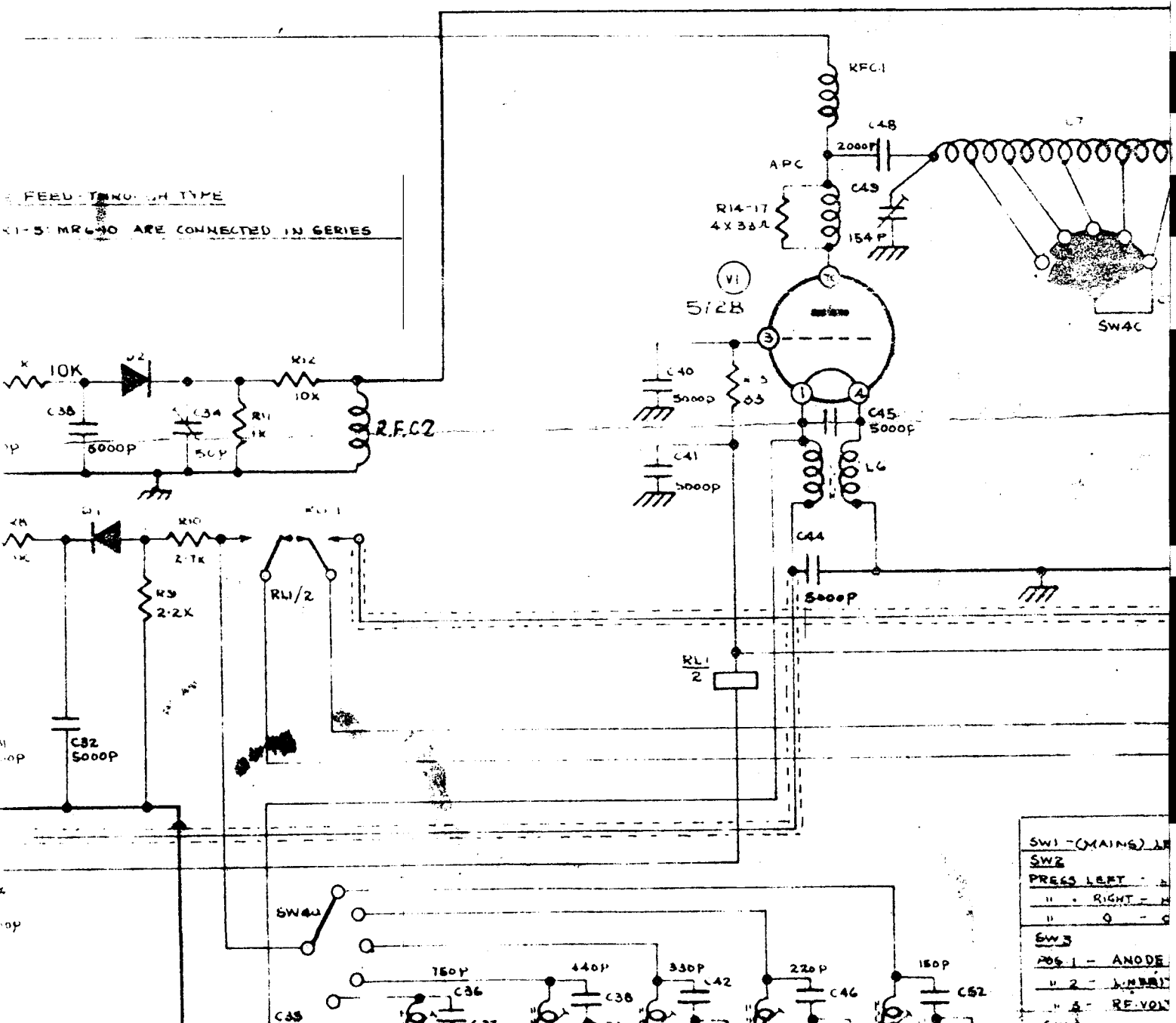
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NOTE
 1. CAP SHOWN THUS
 2. C3-C7 : C6-C12
 3. RX IS METER SHU

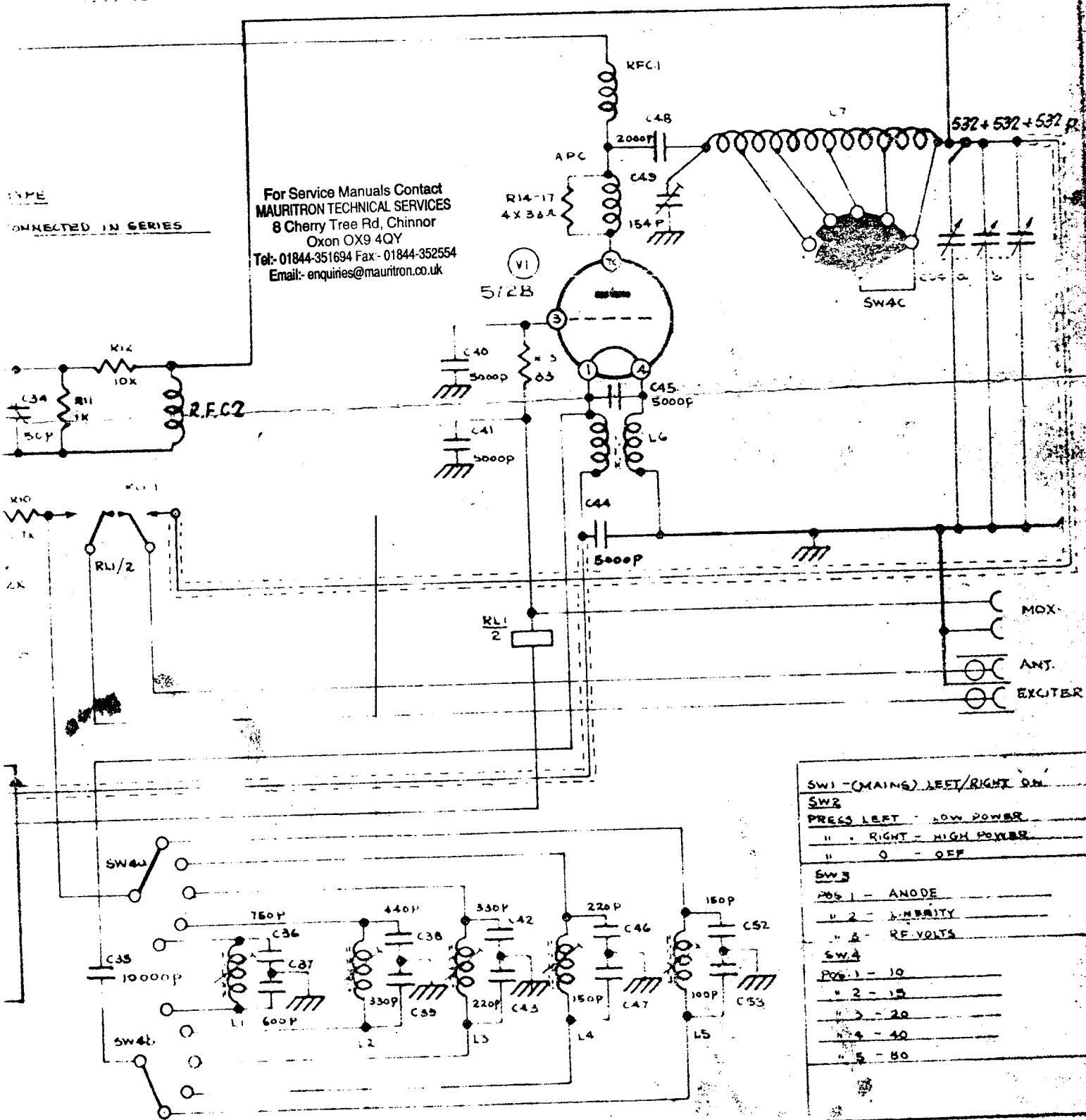
PROJECTION

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 Email: enquiries@mauratron.co.uk



TYPE
CONNECTED IN SERIES

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SW1 - (MAINS) LEFT/RIGHT DM
SW2
POS LEFT - LOW POWER
" " RIGHT - HIGH POWER
" " 0 - OFF
SW3
POS 1 - ANODE
" 2 - BATTERY
" 3 - RE-VOLTS
SW4
POS 1 - 10
" 2 - 15
" 3 - 20
" 4 - 40
" 5 - 80

K. W. ELECTRONICS DARTFORD KENT

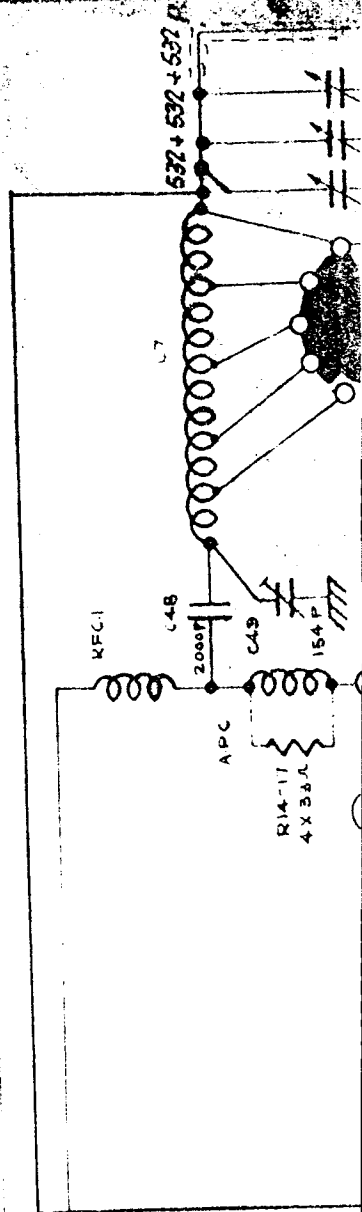
TITLE
 CIRCUIT DIAGRAM
 (KW600)

DRG. NO
 B9005

NS IN INCHES

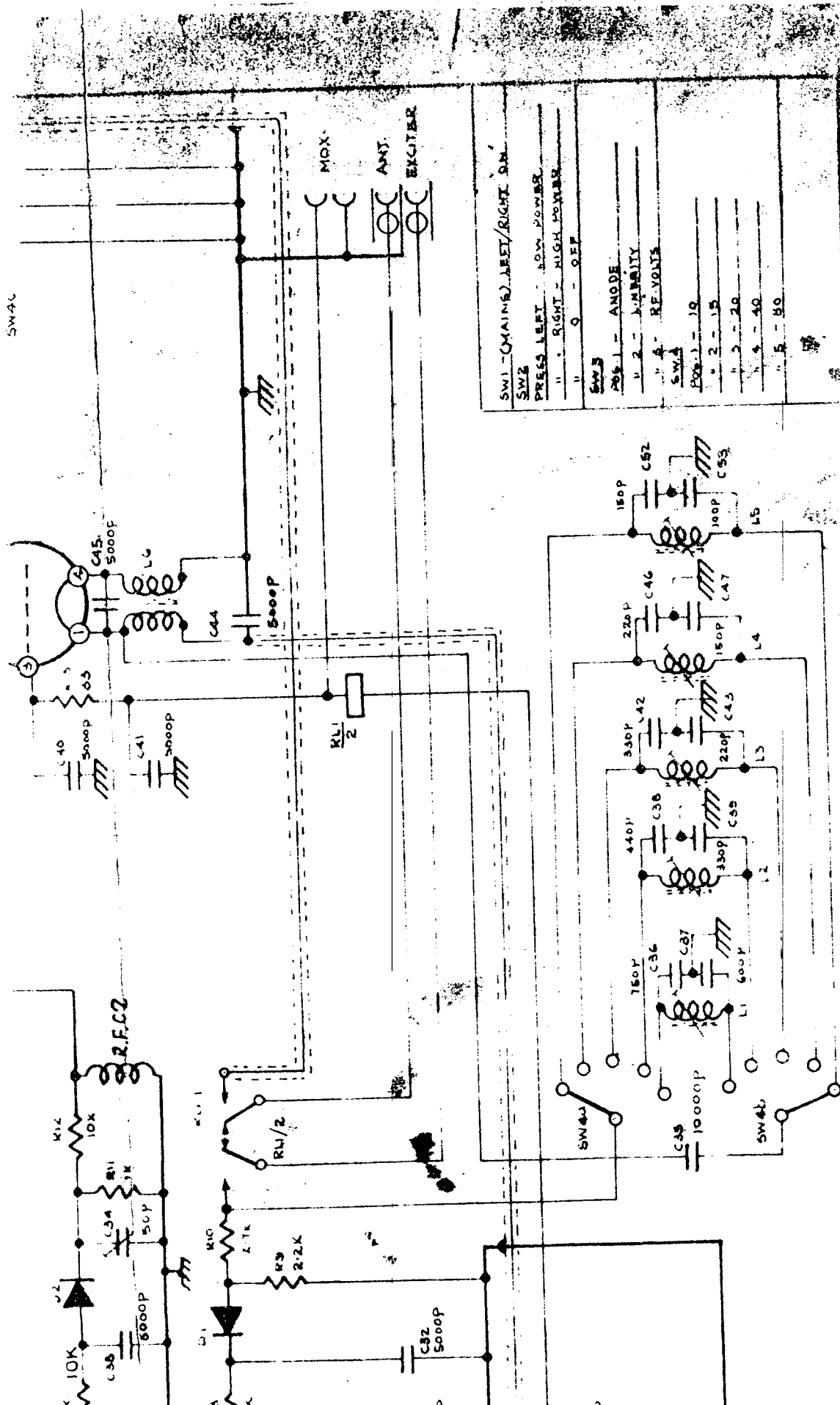
PROJECTION

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FEED THROUGH TYPE
X1-5: MR2-10 ARE CONNECTED IN SERIES

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SW1 - (Mains) LEFT / RIGHT SW.
 SW2
 PRESS LEFT - LOW POWER
 " " RIGHT - HIGH POWER
 " " 0 - OFF
 SW3
 POS. 1 - ANODE
 " 2 - CATHODE
 " 4 - RE-VOICE
 SW4
 POS. 1 - 10
 " 2 - 15
 " 3 - 20
 " 4 - 40
 " 5 - 80

REFERENCES	TITLE	DRG. NO.
		PAS 005
K. W. ELECTRONICS DARTFORD KENT		
CIRCUIT DIAGRAM (KW 600)		
DIMENSIONS IN INCHES		

USED BY: 1WJ00

DRAWING NO:

B 4005

THIRD ANGLE

100 (20) (15)

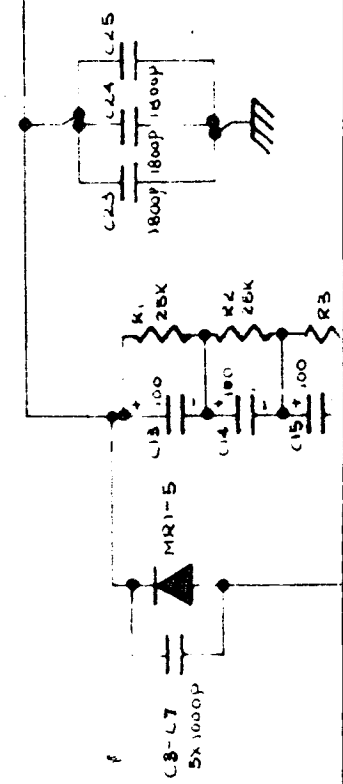
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(80)

(5)

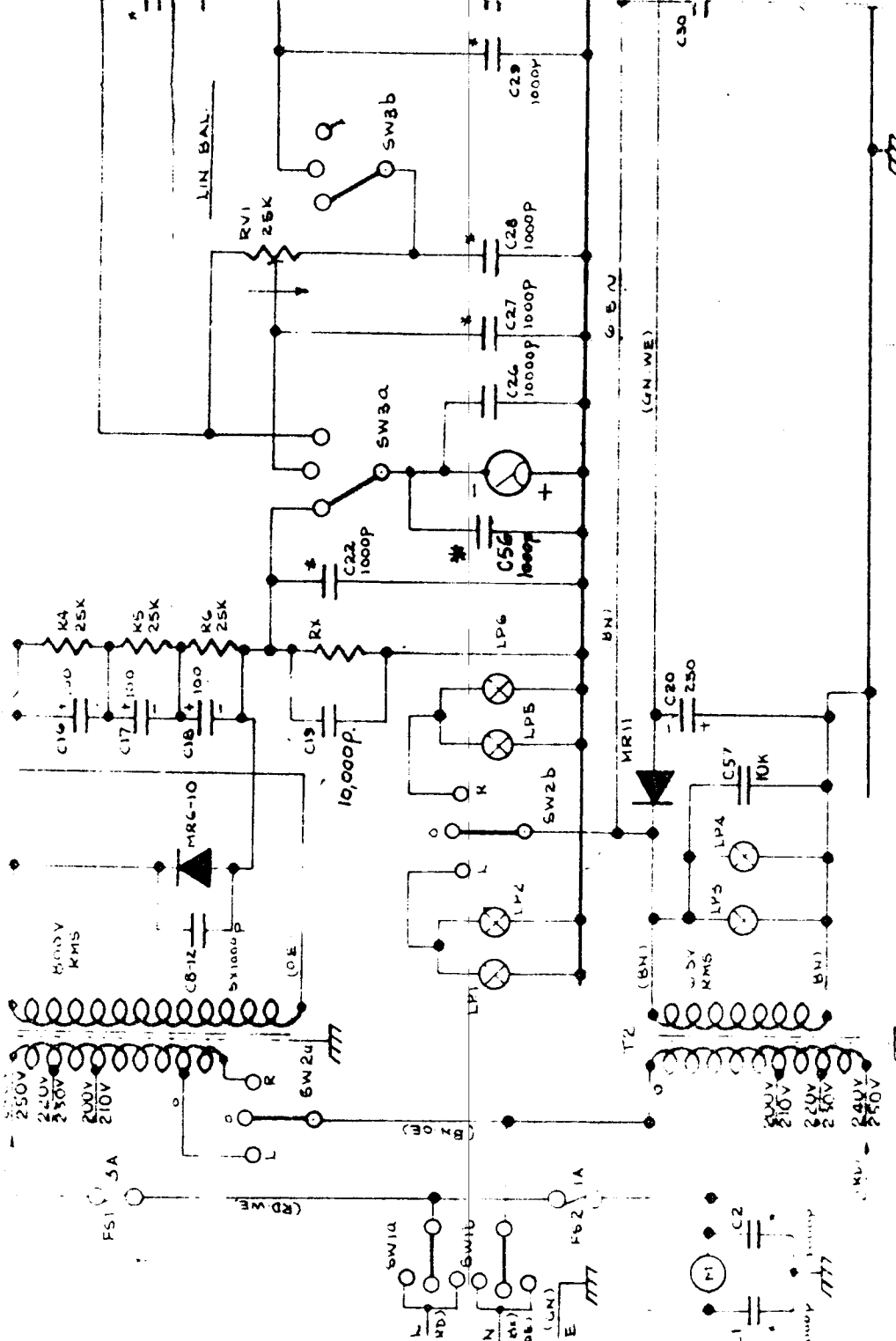
1000

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NOTE

1. CAP SHOWN THUS *
2. C3-C7 1800pF
3. R1 IS 100K R2 R3



ISSUE	DATE	MATERIAL	FINISH	SCALE
5	4 11-65	SEE AM SHT 4062		
4	21 10 65	SEE AM SHT 4056		
3	6 6 65	SEE AM SHT 4050		
	9-65	LOG AND CORR DETEDED. REC'D AND CORR ADDED AMEND SHEET 4041		
	2-65			

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E-174

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