

THE MARCONI INTERNATIONAL MARINE
COMMUNICATION COMPANY, LTD.

RECEIVER TYPE 1060A

Fitting, Description and Operating Instructions

R.30

MARCONI OFFICES, ELECTRA HOUSE,
VICTORIA EMBANKMENT, LONDON W.C.2.

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RECEIVER TYPE 1060 A

NG & OPERATING INSTRUCTIONS

BRIEF SPECIFICATION

(Circuit Diagram N/WD.1640)

DESCRIPTION

An eight-valve superheterodyne with automatic gain control beat oscillator and self-contained power supply unit. Designed primarily for use on small craft in conjunction with a low power R/T. Transmitter.

CIRCUIT

The eight-valve superheterodyne circuit consists of the following stages: S.F. amplifier, Frequency changer, I.F. Amplifier, 2nd Detector with A.G.C. and 1st L.F. Amplifier, Noise Limiter, B.F.O., and output.

FREQUENCY RANGE

Continuous from 4 Mc/s. to 0.17 Mc/s. in three ranges:-

- (a) 4.0 Mc/s. - 1.35 Mc/s. (75 - 222 M.)
- (b) 1.35 Mc/s. - 0.46 Mc/s. (222 - 652 M.)
- (c) 0.46 Mc/s. - 0.17 Mc/s. (652 - 1765 M.)

Intermediate frequency 120 kc/s. \pm 2 kc/s.

CONTROLS

- (a) Main tuning condenser (fast and slow drive) calibrated in Mc/s.
- (b) Volume control.
- (c) Selectivity and beat frequency oscillator switch.
- (d) Frequency range selector switch.
- (e) Power supply "ON/OFF" switch.
- (f) Phones, internal or external Loudspeaker switch.

VALVES

S.F. Amplifier	1 Type KTW61
Frequency Changer	1 Type X66
I.F. Amplifier	2 Type KTW61
2nd Detector, A.G.C. and 1st L.F. Amplifier	1 Type DH63
Noise Limiter	1 Type D63
B.F.O.	1 Type KTW61
Output	1 Type KT63
Rectifier (Power Supply)	1 Type 6X5G

SUPPLIES

The receiver is designed to work from a 24 volt battery and can be used on a 36 volt supply by the insertion of a 6 ohm 40 watt resistor in the supply line. The valve heaters are connected in series-parallel, each taking 6 volts 0.3 amps. H.T. is provided by a vibrator unit contained in the same case as the receiver at 180 - 200 volts and 40 milliamps. A 3 amp. cartridge fuse is fitted into the front panel.

CONSUMPTION

The total consumption at 24 volts is approximately 2 amps.

OUTPUT

To low impedance (600 ohms) headphones or 3 ohm 2 watt built in loudspeaker. Provision is made for fitting an external loudspeaker.

EXTERNAL CONNECTIONS

Power supply, aerial, earth and extension loudspeaker connections are made to a terminal block at the rear of the instrument. A jack for the phone plug is fitted on the face of the panel.

AERIAL

The aerial used for the R/T transmitter is satisfactory.

CASE AND CHASSIS

All components are mounted on a sheet steel chassis and front panel. For replacement of valves etc., the lid of the case is hinged. For servicing the complete chassis may be withdrawn from its case by the removal of six screws. Finish is grey cellulose and chromium plating.

DIMENSIONS

Length	-	19.3/8" (21" over fixing straps).
Depth	-	12.3/8" overall.
Height	-	10.11/16" overall.

WEIGHT

54 lbs.

INSTALLATION

(Installation Wiring Diagram N/WD 1792 or N/WD 1612)

MOUNTING

The receiver is designed for bench mounting and for this purpose two straps are attached to the base with $\frac{1}{4}$ " diameter holes at 20" x 7" centres for fixing screws.

Sufficient space should be allowed between the back of the receiver and the bulkhead for making the connections.

EXTERNAL CONNECTIONS

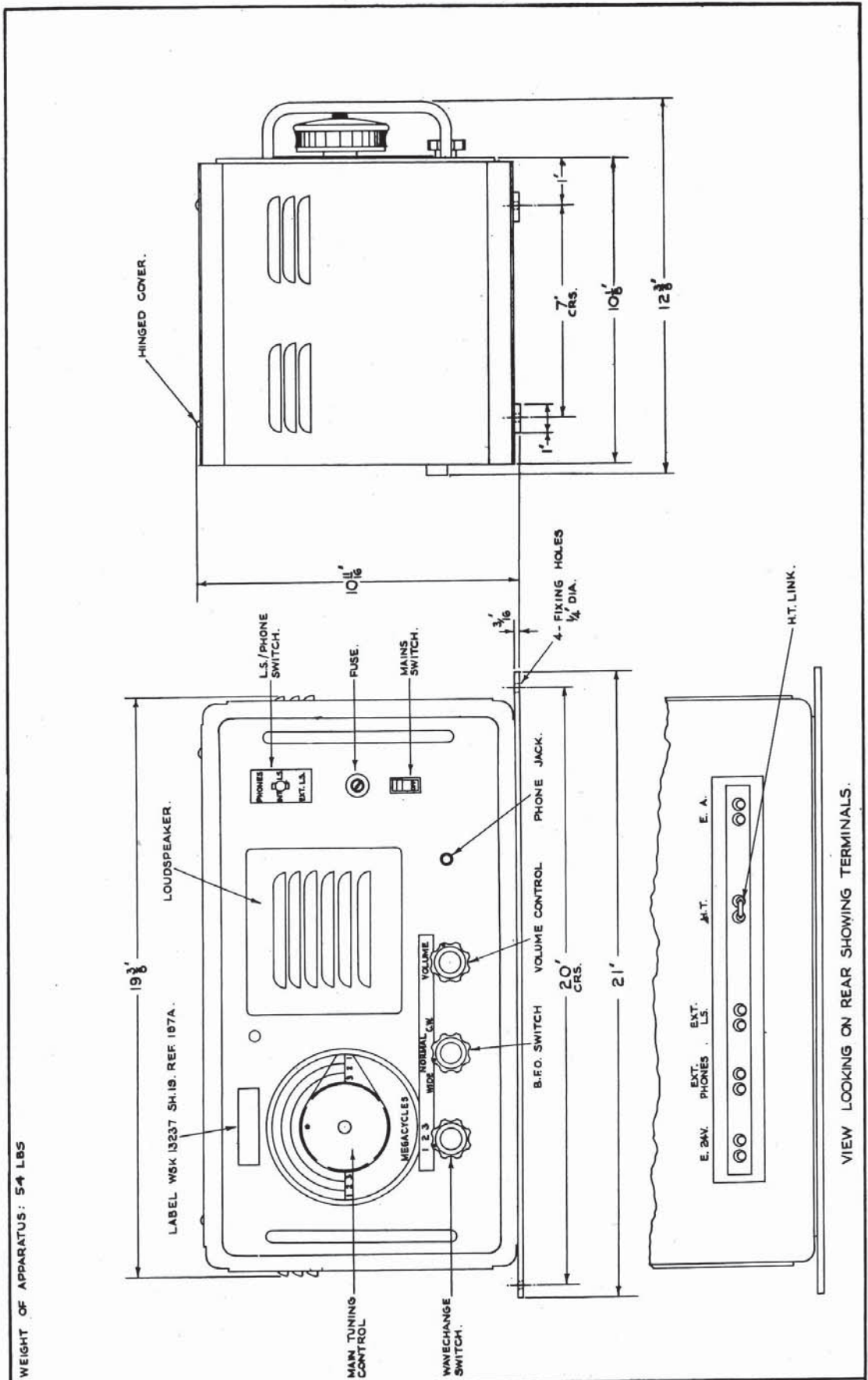
Wiring is to be carried out in accordance with the appropriate installation diagram. The earth lead, to a separate earth bolt, must be as short as possible. If an extension loudspeaker is required it must be capable of handling 2 watts and have an impedance of 3 ohms. When fitted as part of an R/T Installation the transmitter aerial should be used for reception via the S/R relay circuit and the output for the handset receiver connected to the terminals marked. "Extra phones" on the terminal block at the rear of the receiver. As a 3 amp. fuse is fitted to the receiver supply input it is not necessary to provide additional protection if not already existing.

OPERATION

The arrangement of controls is shown on drawing N/S.2642.

- (a) Make the 24 volt supply at the battery control board or other source of supply.
- (b) Set the mains switch, at the lower left hand side of the receiver, when the indicator and tuning dial lights will become illuminated.
- (c) Rotate the volume control in a clockwise direction for approximately three quarters of its travel.
- (d) Turn the B.F.O., switch anticlockwise to "Wide".
- (e) Set range switch and main tuning control to the frequency it is desired to receive.
- (f) If reception by phone is required the phone plug should be inserted in the socket above the mains switch and the phone Loudspeaker switch placed to "Phone". For Loudspeaker reception the switch should be placed to either the internal or external position as required. It should be noted that phones and loudspeaker cannot be used simultaneously and that only one of the loudspeakers, if an extension one is fitted, may be used at the same time.
- (g) When the required signal is heard the volume control should be adjusted to give the desired level. If interference is experienced place the B.F.O. switch at "normal" and readjust the tuning and volume to eliminate or reduce the unwanted signal. The "CW" position is only required for the reception of telegraph signals, e.g. Beacon Station Transmissions.
- (h) To switch off, put the mains switch to "OFF".
Should the receiver refuse to function and the dial lights not come on when the supply switches are closed the fuse on the left hand side of the front of the panel should be examined and if found defective replace by one of a similar value. The correct replacement pattern is the Belling Lee Type 11055, 3 amps.

NOVEMBER 1949



WEIGHT OF APPARATUS: 54 LBS

ISSUE No. 1									SHEET No. 1
C. N. No.									
DATE 20-7-49									CONTIN. OM. -
THE MIMC. CO LTD	TYPE 1060A RECEIVER. OUTLINE DRAWING.							N/S.2 6 4 2	

REF.	DESCRIPTION	VALUE	DRG. N°	REMARKS
	<u>Condensers.</u>			
C1	Condenser	0.1 μ F \pm 20% 350V DC Wkg.	WIS.3955/C Sh.1.Ref.1	TCC.Type CP45N.
C2	Condenser	0.1 μ F \pm 20% 350V DC Wkg.	As C1.	
C3	Condenser	0.5 μ F \pm 20% 350V DC Wkg.	WIS.2904 Sh.1.Ref.39	TCC.Type 345.
C4	Condenser	100 pF \pm 20% 350V DC Wkg.	WIS.4342/B Sh.1.Ref.4.	TCC.Type M3N.
C5	Condenser, Trimmer	3-30 pF.		S. Bird. Type IP.30.
C6	Condenser, Trimmer	3-30 pF.		As C5.
C7	Condenser, Trimmer	3-30 pF		As C5.
C8	Condenser, Variable.	520 pF.	Aerial	Jackson Type 4674/1/ME
C9	Condenser.	0.1 μ F \pm 20% 350V DC Wkg.	As C1.	
C10	Condenser Trimmer	3-30 pF		As C5.
C11	Condenser, Trimmer	3-30 pF		As C5.
C12	Condenser, Trimmer	3-30 pF		As C5.
C13	Condenser, Variable.	520 pF.	H.F. Ganged with C28.	Jackson Type 4674/2/ME
C14	Condenser.	.001 μ F \pm 20% 750V DC Wkg.	WIS.4341/B Sh.1.Ref.4.	TCC.Type MBU.
C15	Condenser	0.1 μ F \pm 20% 350V DC Wkg.	As C1	
C16	Condenser	100 pF \pm 20% 350V DC Wkg.	As C4.	
C17	Condenser	200 pF \pm 5% 350V DC Wkg.		U.I.C. Type SMP401
C18	Condenser	200 pF \pm 5% 350V DC Wkg.		As C17.
C19	Condenser	250 pF \pm 20% 350V DC Wkg.	WIS.4342/B Sh.1.Ref.2.	TCC.Type M3N.
C20	Condenser	64.00 pF \pm 20% 350V DC Wkg.		U.I.C. Type SMP.601.
C21	Condenser	0.1 μ F \pm 20% 350V DC Wkg.	As C1.	
C22	Condenser, Trimmer	3.5-30 pF.		U.I.C. Type TC.0330.
C23	Condenser, Trimmer	3.5-30 pF.		As C22.
C24	Condenser, Trimmer	3.5-30 pF.		As C22.
C25	Condenser	2000 pF \pm 2% 350V DC Wkg.		U.I.C. Type SMP.601.
C26	Condenser	1000 pF \pm 2% 350V DC Wkg.		U.I.C. Type SMP.401.
C27	Condenser.	100 pF \pm 20% 350V DC Wkg.		U.I.C. Type SMP.401.
C28	Condenser, Variable.	520 pF.	Osc. Ganged with C13.	See C13.
C29	Condenser	0.1 μ F \pm 20% 350V DC Wkg.	See C1.	
C30	Condenser	200 pF \pm 5% 350V DC Wkg.		As C17.
<p>Symbols C1 etc. correspond to those on Circuit Diagram N/WD.1640 & Component Layout N/S.2650. When ordering spares quote Ref.No. Description, Value & Drawing No. or Makers Type No.</p>				
ISSUE N°				SHEET N°
C.N.N°				CONTIN. N° 2
DATE 27.7.49				
The M.I.M.C. Co. Ltd.	Type 1060.A. Receiver Component Schedule.			N/S. 2641

REF.	DESCRIPTION	VALUE	DRG. N°	REMARKS
C62	Condenser	2 μ F \pm 25% 150V DC Wkg.		As C60.
C63	Condenser	2 μ F \pm 25% 150V DC Wkg.		As C60.
C64	Condenser	2 μ F \pm 25% 150V DC Wkg.		TCC. Type 82.
C65	Condenser, Electro.	8 μ F \pm 50% -20% 500V FK Wkg.		TCC. Type CE10P.
C66	Condenser, Trimmer	3-30 pF.		S. Bird. Type IP.30.
C67	Condenser, Trimmer	3-30 pF.		As C66.
C68	Condenser	50 pF \pm 20% 350V DC Wkg.		As C57.
C69	Condenser	40 pF \pm 2% 350V DC Wkg.		As C57.
	<u>Coils</u>			
L1	Coil.	Range 1 Aerial Coil.		W.C.Co. Type RD.56 Ed.B.
L2	Coil.	Range 2. Aerial Coil.		W.C.Co. Type RD.57 Ed.B.
L3	Coil	Range 3 Aerial Coil		W.C.Co. Type RD.58 Ed.B.
L4	Coil.	Range 1. RF. Coil.		W.C.Co. Type RD.60 Ed.B.
L5	Coil.	Range 2 RF Coil.		W.C. Co. Type RD.61 Ed.B.
L6	Coil.	Range 3 RF Coil.		W.C. Co. Type RD.62 Ed.B.
L7	Coil.	Range 1 Osc. Coil.		W.C.Co. Type RD.64 Ed. B.
L8	Coil	Range 2 Osc. Coil.		W.C.Co. Type RD 65 Ed.B.
L9	Coil	Range 3 Osc. Coil.		W.C. Co. Type RD73 Ed.B.
L13	Coil	B.F.O.		W.C. Co. Type RD.73 Ed.B.
L14	Choke L.F.			Wright & Wesire Type CLF 1
L16	Choke	20 Turns.		W.C.Co. Type Y.6196.
L17	Choke	210 Turns.		W.C. Co. Type Y.6193.

ISSUE N° 1											SHEET N° 3
C.N.N°											CONTIN. N° 4
DATE 27.7.49											

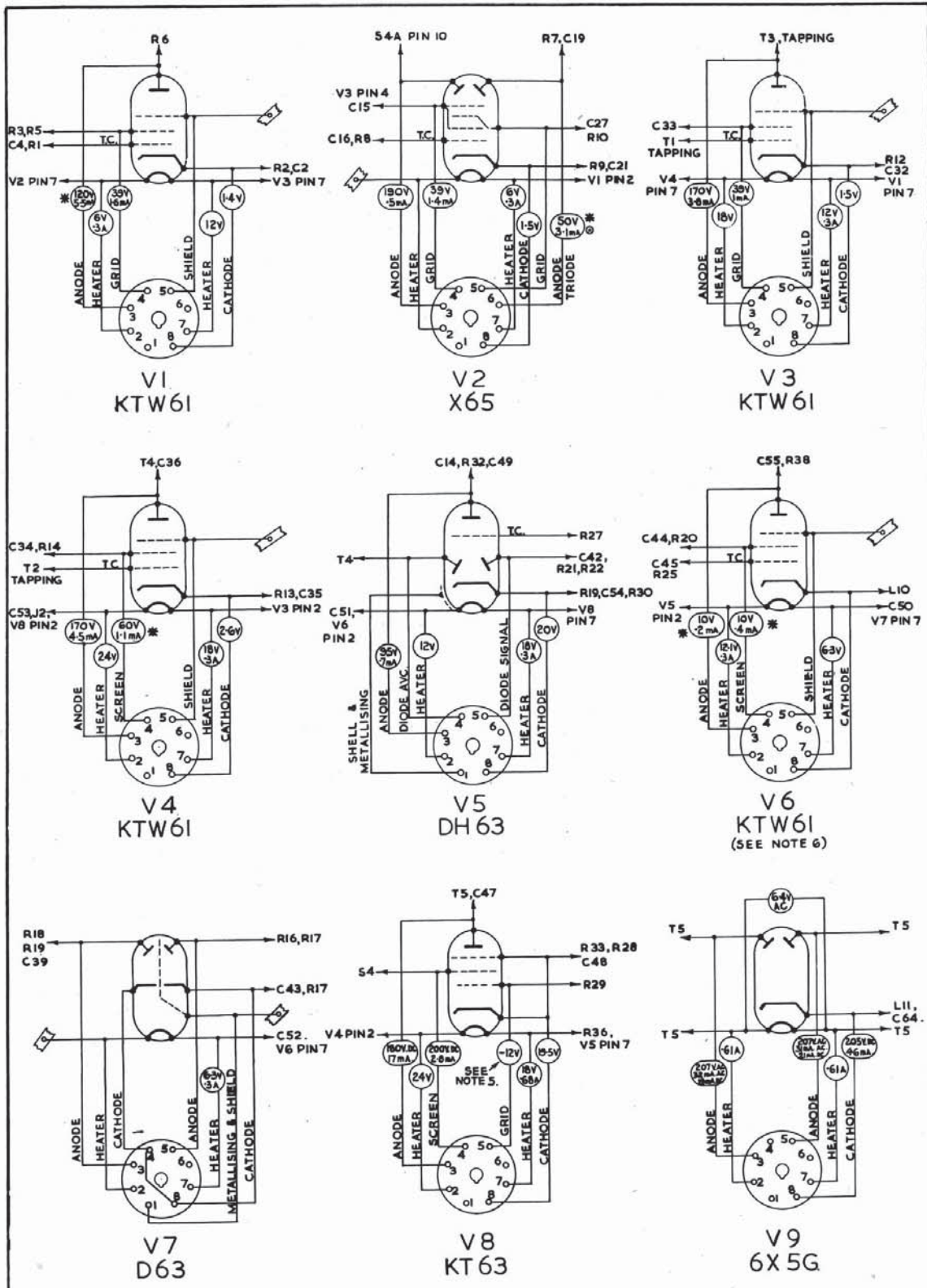
The M. I. M. C.
Co. Ltd.

Type 1060.A. Receiver
Component Schedule.

N/S. 2641

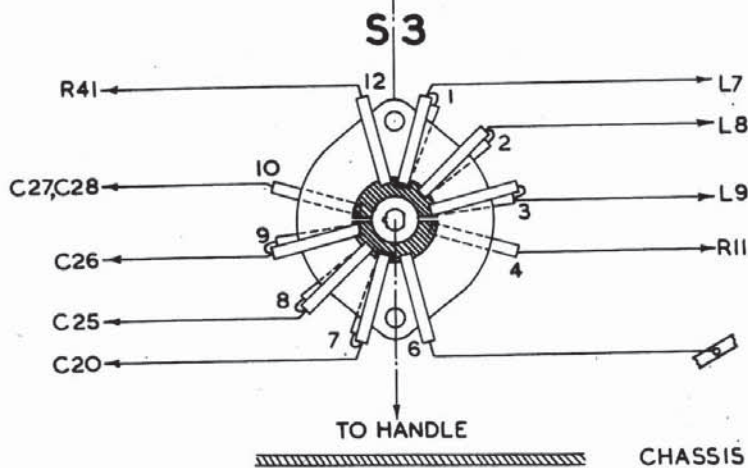
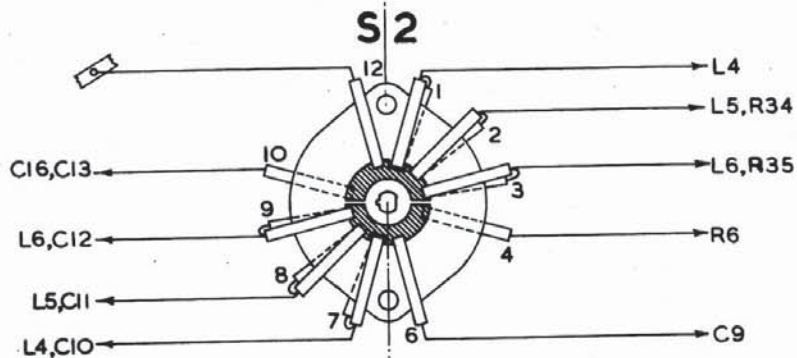
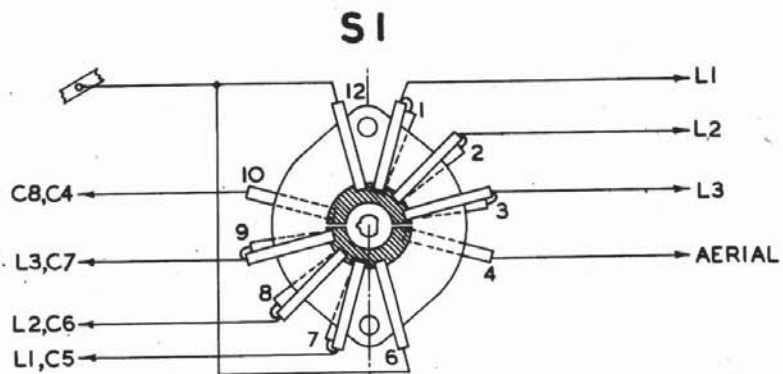
REF.	DESCRIPTION	VALUE	DRG. N°	REMARKS
	<u>Fuses.</u>			
F1	Fuse, Cartridge.	2A. 1.1/4".	WIS.2947/C Sh.1.Ref.9.	Belling Lee Type L.1055.
	<u>Jacks.</u>			
J1	Jack, Phone.	8 Point	WIS.3150/C Sh.1.Ref.1.	
J2	Jack, Lamp.	P.O. Type 237.	WIS.1877 Sh.1.	Siemen's Q.2750.
	<u>Loudspeakers.</u>			
LS1	Loudspeaker.	3 Ω.5".		Goodman's Type T3/510/3.
	<u>Lamps.</u>			
PL.1.	Lamp.	24 V. 0.1A		W.C. Co. Type Y.6204.
PL.2.	Lamp.	24 V. 0.1A		As PL1
PL.3.	Lamp.	36 V .075A	WIS.3429/C Sh.1.Ref.4.	Siemens Type Q.2838.
	<u>Resistors.</u>			
R1	Resistor.	220 Ω ± 20%	WIS.3903 Sh.1.Ref.6.	Erie Type 9.
R2	Resistor.	220 Ω ± 20%	As R1.	
R3	Resistor.	22 K Ω ± 20%	WIS.3903 Sh.1.Ref.5.	Erie Type 9.
R5	Resistor.	27 K Ω ± 20%	WIS.3903 Sh.1.Ref.2.	Erie Type 1.
R6	Resistor.	10 K Ω ± 20%.	As R1	
R7	Resistor.	33 K Ω ± 20%.	As R3	
R8	Resistor.	220 K ± 20%.	As R6.	
R9	Resistor.	330 Ω ± 20%	As R6.	
R10	Resistor.	47 K Ω ± 20%	As R6.	
R11	Resistor.	1 K Ω ± 20%	As R6.	
ISSUE N° 1				SHEET N° 4
C.N.N°				CONTIN. N° 5
DATE 27.7.49				
The M. I. M. C. Co. Ltd.	Type 1060.A. Receiver. Component Schedule.			N/S.2641

REF.	DESCRIPTION	VALUE	DRG. N°	REMARKS
	<u>Switches.</u>			
S1	Switch	Aer. Sect. W/C.		} W.C. Co. Type
S2	Switch	RF. Sect. W/C.		
S3	Switch	Osc. Sect. W/C.		
S4	Switch	BFO/Wide.		W.C. Co. Type Y. 6200.
S5	Switch	4 P.C. O.	WIS. 3351 Sh. 1. Ref. 31	Ericsson P.O. Type 212.
S6	Switch	D.P. On/Off.		Diamond H. Type 2/T.
	<u>Transformers.</u>			
T1	Transformer IF1.	120 Kc/s.		W.C. Co. Type RD. 68 Ed. B.
T2	Transformer IF.	Wide Band.		W.C. Co. Type RK/SU/4
T3	Transformer IF2.	120 Kc/s.		As T1.
T4	Transformer IF3.	120 Kc/s.		W.C. Co. Type RD69 Ed. B
T5	Transformer.	Output		Plessey Type CP. 65671/11
T6	Transformer.			Wright & Weaire Type 1357
	<u>Valves.</u>			
V1	Valve	KTW. 62.		
V2	Valve	X65		
V3	Valve	KTW. 62.		
V4	Valve	KTW. 62.		
V5	Valve	DH. 63.		
V6	Valve	KTW. 62.		
V7	Valve	D. 63.		
V8	Valve	KT. 63.		
ISSUE N°				SHEET N° 6
C.N. N°				CONTIN. N° 7
DATE				
The M. I. M. C. Co. Ltd.		Type 1060.A. Receiver Component Schedule.		N/S. 2641



- NOTES**
1. FOR CIRCUIT DIAGRAM SEE N/WD 1640.
 2. ALL VALVE BASES ARE INTERNATIONAL OCTAL & ARE VIEWED FROM UNDERSIDE.
 3. FIGURES IN CIRCLES INDICATE VOLTAGE & CURRENT.
 4. FIGURES TAKEN WHEN HT. VOLTAGE IS 200V. & LT. 24V. DC. USING UNIVERSAL AVOMETER.
 5. GRID LEAK RETURNED TO POINT 7.5V. ABOVE EARTH POTENTIAL ON V8.
 6. MEASUREMENTS ON V6 TAKEN WITH SWITCH AT C.W.
 7. READINGS MARKED THUS * TAKEN ON 1200V RANGE.
 8. READINGS MARKED THUS @ TAKEN AT 170 KC/S.-BAND 3.

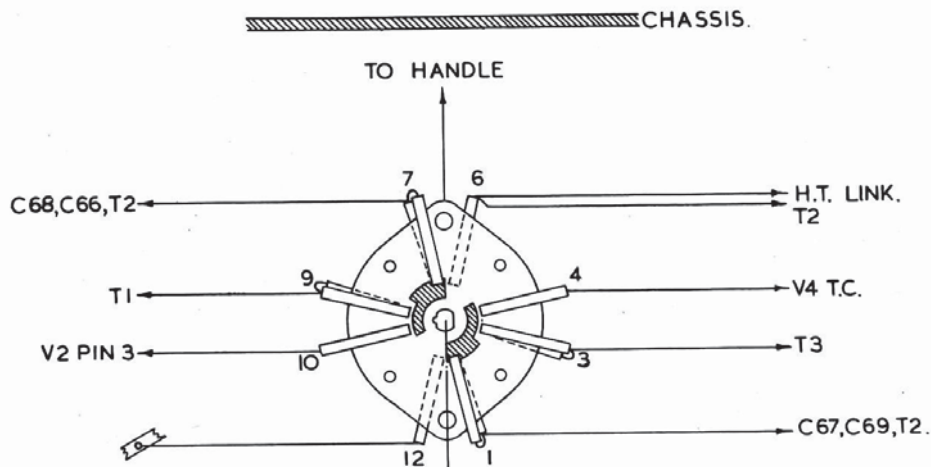
ISSUE No. 1						SHEET No. 1
C. N. No.						CONTIN. ON. —
DATE 9-8-49						
THE M.I.M.C. Co. Ltd					TYPE 1060A RECEIVER. VALVE CONNECTIONS.	
					N/S.2652	



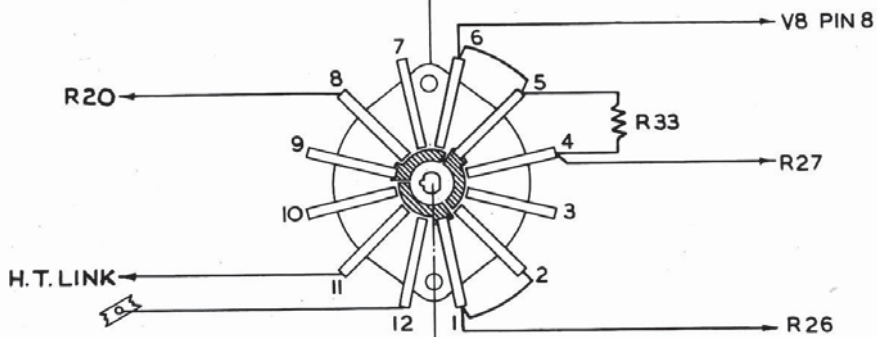
NOTE

SWITCHES ARE SHOWN LOOKING ON UNDERSIDE OF UNIT & ARE VIEWED FROM DRIVING END, IN POSITION 1.

ISSUE No. 1							SHEET No. 1
C. N. No.							CONTIN. ON. 2
DATE 2-8-49							
THE MIMC. CO. LTD.	TYPE 1060A RECEIVER. SWITCH CONNECTIONS.					N/S 2653	



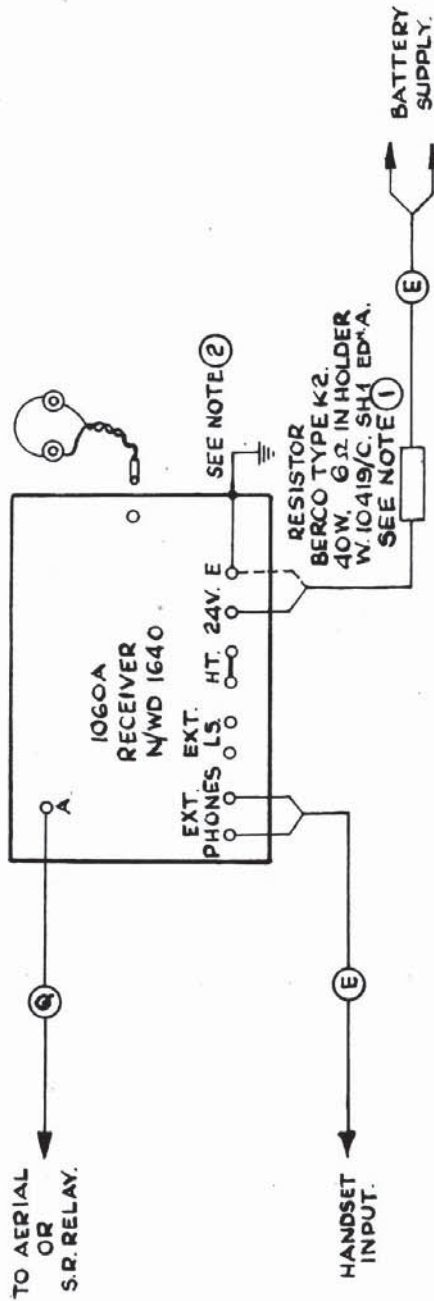
S4 A



S4 B

NOTE. SWITCH IS SHOWN LOOKING ON UNDERSIDE OF UNIT & IS VIEWED FROM REAR, IN POSITION 'WIDE'.

ISSUE No. 1											SHEET No. 2.
C. N. No.											CONTIN ON. —
DATE 2.8.49											
THE M.I.M.C. Co L ^{td}		TYPE 1060A RECEIVER. SWITCH CONNECTIONS.							N/S 2653		



- NOTES.**
1. FOR 36 V. SUPPLY - AS DRAWN
 2. FOR 24 V. SUPPLY - RESISTOR IS NOT REQUIRED.
 3. SEPARATE EARTH BOLT, THIS LEAD TO BE AS SHORT AS POSSIBLE.
 3. (E) DENOTES 3/029" CIRCULAR TWIN CABLE, LEAD COVERED.
 3. (A) DENOTES 16/012' 5C. SCREENED FLEX.

ISSUE No. 1										SHEET No. 1
C.N. No.										CONTIN. ON -
DATE 12. 9. 49.										
THE M.I.M.CC ^o .LTD		INSTALLATION WIRING DIAGRM. CONNECTIONS TO 1060A. REC ^{VR} .							N/W.D. 1792.	

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