

# GUIDE TO TONAL COMBINATIONS

The Player may vary these permutations, and by experiment obtain hundreds of other colourful tones and effects.

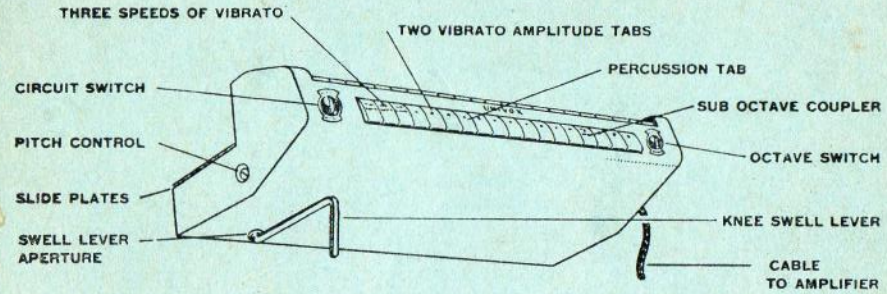
Instrument	Circuit	Vibrato	Amplitude	Letter	Range
<b>WOODWIND</b>					
Clarinet ...	1	Med. or Nil		FN	High
"Sub" Clarinet	1			FN	Med.
Bass Clarinet ...	1	Nil		FN	Low
Bassoon ...	1	Nil		DFHLO	Low
Oboe ...	1	Slow		DHMO	Med.
Flute ...	1	Nil or Med.		FHMO	High
Piccolo ...	1			Nil	EHO
<b>SAXOPHONES</b>					
Alto ...	1	Med.	B	FGKO	Med.
Tenor ...	1	Med.	B	FKO	Low
Baritone ...	1	Slow	B	GHKNS	Low
<b>BRASS</b>					
Post Horn ...	1	Fast	B-Nil	DS	Med.
Trumpet (1) ...	1	Med.	"	DFS	Med.
Trumpet (2) ...	1	Med.	"	(F)S	Med.
Cornet ...	1	Med.	"	DFLS	Med.
Trombone ...	1	Slow	"	FGHLS	Low
English Horn	1	Nil	"	FHLO	M-Low
Tuba ...	1	Nil	"	FGNO	Low
Muted Trumpet	1	Med.	"	EKMS	Med.
<b>STRINGS</b>					
Violin (1) ...	1	Med.	B	FP	High
Violin (2) ...	1	Med.	B	EHOPS	High
Viola ...	1	Med.	B	FHP	Med.
Cello ...	1	Med.	"	EHOP	Low
Bass (Bowed)	1	Nil	"	FGHNO	Low
Bass (Plucked)	2 or 3	Nil	"	DHNO	Low
Guitar ...	3 or 4	Fast	"	DO	Optional
Hawaiian ...	4	Fast	A & B	DFNO	M-High
Harpsichord ...	3	Fast	"	DO	High
Mandoline ...	2	F M & S	"	CDHMS	High
Banjo ...	2	F & M	"	CDFHLS	M-Low
<b>NOVELTY EFFECTS</b>					
Bagpipes ...	1	Nil	"	MS	Med.
Musical Saw ...	1	Fast	A & B	EGHO	High
Piano ...	3	Nil	"	DHNO	High
Pizzicato ...	2	Nil	"	DO	Optional
Univox ...	1	Fast	A & B	FK(N)S	"
<b>ORGANTONES</b>					
" "		Nil	AB	NS	Optional
" "		or	"	HNS	"
" "		Fast	B	KNS	"
" "		"	"	DFNS	"
" "		"	"	FHNS	"
" "		"	"	FHLNS	"
" "		"	"	FHGLNS	"
" "		"	"	NO	"
" "		"	"	ELNO	High
" "		"	"	HLNO	M-High
" "		"	"	HMNO	Med.
" "		"	"	EGHNO	Optional
" "		"	"	HNOS	Med.
" "		"	"	LNOS	High
" "		"	"	FLNOS	High
" "		"	"	FNP	Optional
" "		"	"	GNP	M-High
" "		"	"	FHN	Optional
" "		"	"	FKLMN	"

For normal effects use No. 1 Circuit. Circuits 2 or 3 may be used for novel effects, with "D" tab employed.

# Univox

## MODEL J6 INSTRUCTIONS

### CONSOLE



**ASSEMBLY:** Fit multi-pin plug from amplifier to console. Screw brackets are provided for piano or organ so that the slide plates on console engage for support. Alternatively, console may be fitted to collapsible stand, supplied extra.

**SWELL LEVER:** Insert into aperture. Push gently upwards at rear end, and turn to right.

**COUPLER TABS:** Are in the OFF position when the tops are flush with the console. THIS IS IMPORTANT.

**PITCH CONTROL:** This raises or lowers the pitch of entire instrument.

**VIBRATO:** The speed of vibrato can be increased by using more than one tab.

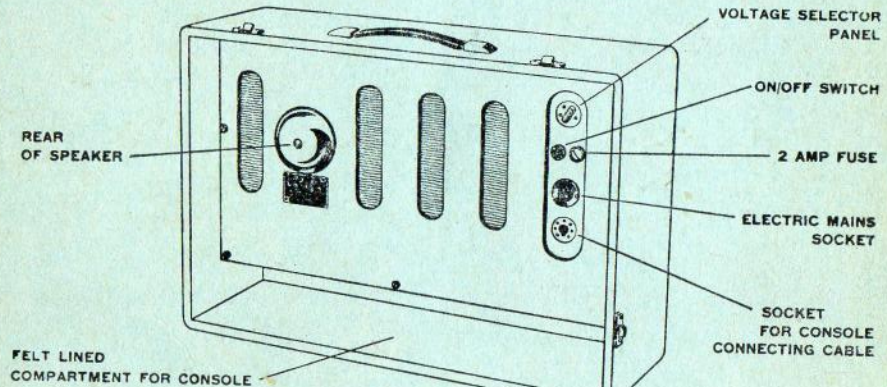
**CIRCUIT SWITCH:** Position 1. Normal. This circuit is required for most ordinary effects.

Position 2. Pizzicato and Reiteration effects.

Position 3. Short delay. Allows the sound to rapidly die away although the key is still depressed.

Position 4. Long delay. As 3, but with a longer time interval.

### AMPLIFIER



UNIVOX J6 for operation on 110 or 250 volts A.C. only. Make sure the voltage selector is set to the CORRECT voltage to ensure accurate performance.



**JENNINGS MUSICAL INDUSTRIES LIMITED**  
DARTFORD · KENT · ENGLAND

### J6, J7 & J10 PULSE GENERATOR SECTION

### J6 & J10 THYRATRON & AMPLIFIER SECTION

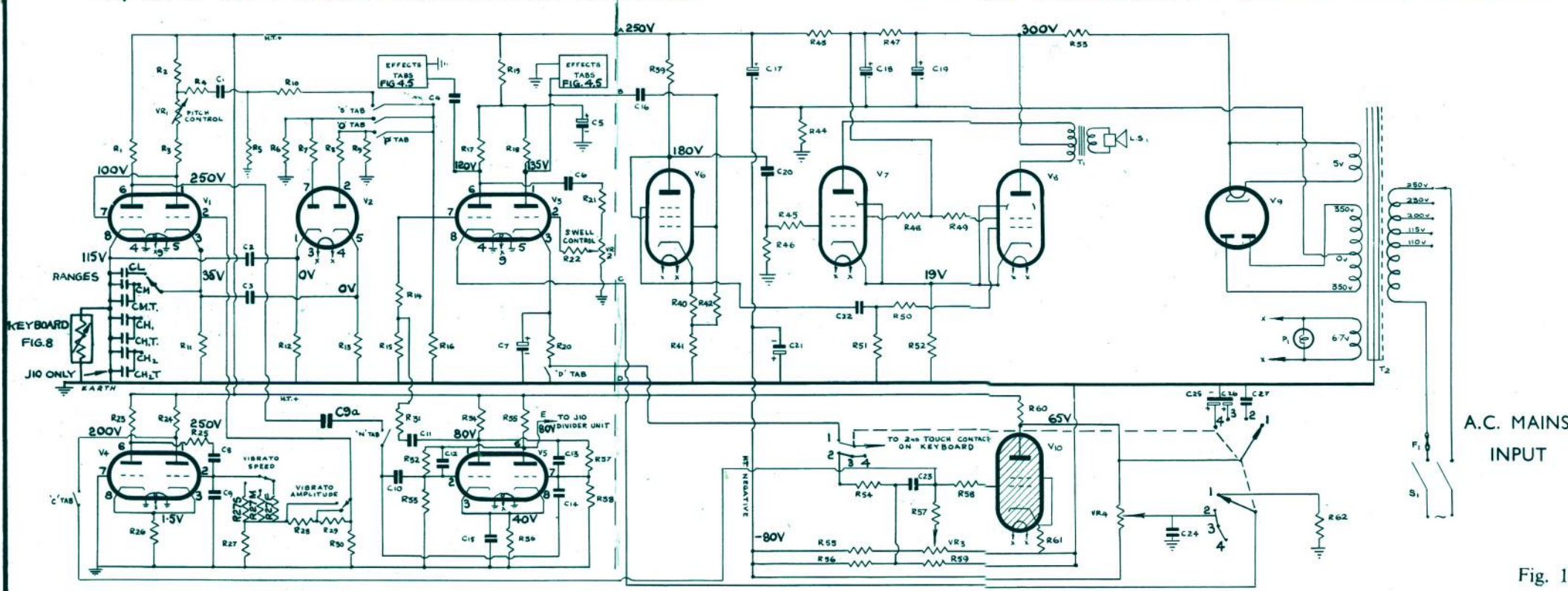


Fig. 1.

### RESISTORS

Resistor	Ohms	Watts	±	Fig
R1	1,500	...	10%	1
R2	22,000	...	10%	1
R3	22,000	...	10%	1
R4	1 Meg	...	10%	1
R5	3.3 Meg	...	10%	1
R6	1 Meg	...	10%	1
R7	1 Meg	...	10%	1
R8	1 Meg	...	10%	1
R9	1 Meg	...	10%	1
R10	2.2 Meg	...	10%	1
R11	1,500	...	10%	1
R12	10 Meg	...	10%	1
R13	3.3 Meg	...	10%	1
R14	10 Meg	...	10%	1
R15	1 Meg	...	10%	1
R16	3.3 Meg	...	10%	1
R17	33,000	...	10%	1
R18	33,000	...	10%	1
R19	22,000	...	10%	1
R20	4,700	...	10%	1
R21	100,000	...	10%	1
R22	100,000	...	10%	1
R23	100,000	...	10%	1
R24	22,000	...	10%	1
R25	330,000	...	10%	1
R26	2,200	...	10%	1
R27	2,200	...	10%	1
R27S	85,000	...	1%	1
R27M	70,000	...	1%	1
R27F	60,000	...	1%	1
R28	22,000	...	10%	1
R29	100,000	...	10%	1
R30	33,000	...	10%	1
R31	5.6 Meg	...	10%	1
R32	470,000	...	10%	1
R33	100,000	...	10%	1
R34	47,000	...	10%	1
R35	47,000	...	10%	1
R36	10,000	...	10%	1
R37	470,000	...	10%	1
R38	100,000	...	10%	1
R39	47,000	...	10%	1
R40	2,200	...	10%	1
R41	47,000	...	10%	1
R42	100,000	...	10%	1
R43	2,000	Wire Wound	10%	1
R44	1,000	Wire Wound	10%	1
R45	10,000	...	10%	1
R46	470,000	...	10%	1
R47	1,000	Wire Wound	10%	1
R48	47	...	10%	1
R49	47	...	10%	1
R50	10,000	...	10%	1
R51	470,000	...	10%	1
R52	250	Wire Wound	10%	1
R53	47,000	...	10%	1
R54	47,000	...	10%	1
R55	82,000	...	10%	1
R56	220,000	...	10%	1
R57	220,000	...	10%	1
R58	33,000	...	10%	1
R59	100,000	...	10%	1
R60	220,000	...	10%	1
R61	100	...	10%	1
R62	2,200	...	10%	1
R63	47,000	...	10%	1
R64	470,000	...	10%	2
R65	240	Wire Wound	10%	2
R66	4,700	...	10%	2
R67	470,000	...	10%	3
R68	100,000	...	10%	3
R69	10 Meg	...	10%	3
R70	100,000	...	10%	3
R71	100,000	...	10%	3
R72	22,000	...	10%	3
R73	470,000	...	10%	3
R74	10,000	...	10%	3
R75	10,000	...	10%	3
R76	33,000	...	10%	3
R77	33,000	...	10%	3
VR1	Pitch Control 25K W.W.	Linear	...	1
VR2	Swell Control 100K Log	...	...	1
VR3	25K Miniature Egen Linear	...	...	1
VR4	200K Miniature Egen Linear	...	...	1

### J7 AMPLIFIER SECTION

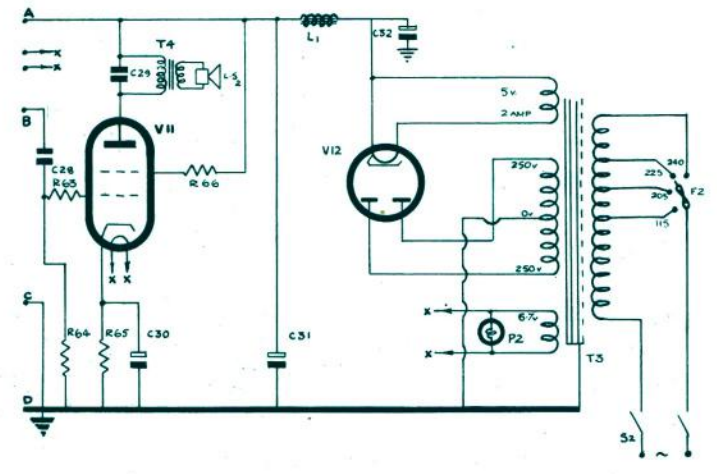


Fig. 2.

### J10 SUB-DIVIDER UNIT

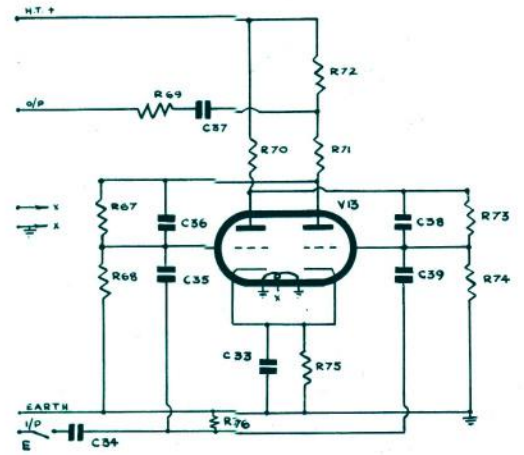


Fig. 3.

### CAPACITORS

Capacitor	Specification	Volts	±	Fig
C1	100pf SILVER MICA L.E.M.	...	15%	1
C2	0.1uf SILVER MICA L.E.M.	...	20%	1
C3	0.1uf SILVER MICA L.E.M.	...	20%	1
C4	0.1uf Tubular met. paper T.C.C.	500	20%	1
C5	4uf Electrolytic B.E.C. CE 501	500	20%	1
C6	1uf Tubular met. paper T.C.C.	500	20%	1
C7	25uf Electrolytic HUNTS	50	20%	1
C8	1uf Tubular met. paper T.C.C.	500	20%	1
C9	1uf Tubular met. paper T.C.C.	500	20%	1
C9A	100pf SILVER MICA HUNTS	...	10%	1
C10	100pf SILVER MICA L.E.M.	...	15%	1
C11	580pf SILVER MICA L.E.M.	...	15%	1
C12	580pf SILVER MICA L.E.M.	...	15%	1
C13	580pf SILVER MICA L.E.M.	...	15%	1
C14	100pf SILVER MICA L.E.M.	...	15%	1
C15	1uf Metallite T.C.C.	200	20%	1
C16	1uf Tubular met. paper T.C.C.	500	20%	1
C17	32uf Electrolytic B.E.C. CE 824	450	...	1
C18	32uf Electrolytic B.E.C. CE 824	450	...	1
C19	32uf Electrolytic B.E.C. CE 824	450	...	1
C20	1uf Tubular met. paper T.C.C.	500	20%	1
C21	50uf Electrolytic B.E.C. CE 4008/1	150	...	1
C22	1uf Tubular met. paper T.C.C.	500	20%	1
C23	1uf Metallite T.C.C.	200	20%	1
C24	5uf Tubular Paper T.C.C. type 246	250	20%	1
C25	8uf Electrolytic B.E.C. CE 821	450	...	1
C26	16uf Electrolytic B.E.C. CE 821	450	...	1
C27	5uf Tubular Paper T.C.C. type 246	250	20%	1
C28	0.5uf Tubular met. paper T.C.C.	150	20%	2
C29	0.02uf SILVER MICA T.C.C.	...	...	2
C30	25uf Electrolytic HUNTS	50	...	2
C31	32uf Electrolytic B.E.C. CE 824	450	...	2
C32	32uf Met. Paper HUNTS A300	150	20%	3
C33	100pf SILVER MICA HUNTS	...	5%	3
C34	100pf SILVER MICA HUNTS	...	5%	3
C35	100pf SILVER MICA HUNTS	...	5%	3
C36	500pf SILVER MICA HUNTS	...	5%	3
C37	1uf Met. Paper HUNTS A300	250	20%	3
C38	500pf SILVER MICA HUNTS	...	5%	3
C39	100pf SILVER MICA HUNTS	...	5%	3
CL	20500pf SILVER MICA HUNTS	...	1%	1
CM	10000pf SILVER MICA HUNTS	...	1%	1
CH1	5000pf SILVER MICA HUNTS	...	1%	1
CH2	2500pf SILVER MICA HUNTS	...	1%	1
CHT	600 600pf Lorlin	...	...	1
CH.T.	250pf Cylcon	...	...	1

### LOUDSPEAKERS

L.S.1 shown on fig. 1 for the J6 & J10 models : Vox 10"  
 L.S.2 shown on fig. 2 for the J7 model : Vox 8"

The negative H.T. voltage supplied to the Thyatron unit is 80v. neg.

The interconnecting plugs and sockets between the keyboard and amplifier are Belling & Lee

J6 & J10 — Seven pins  
 J7 — Five pins

The Mains plug is a Bulgin. list No. P73.

### TRANSFORMERS & INDUCTANCE

Transformer	Specification	Fig
T1	Output Trans. { Prim. 8,000 Ω C.T. ... Sec. 3 Ω ...	1
T2	Mains Trans. { Prim. 110v-250v Prim. Screened ... Sec. 350-0-350 ~ 120m.a.; 5v 2a; 6.7v 3a.	1
T3	Mains Trans. { Prim. 115v-240v Prim. Screened ... Sec. 250-0-250 ~ 100m.a.; 5v 2a; 6.7v 3a.	2
T4	Output Trans. { Prim. 5,000 Ω ... Sec. 3 Ω ...	2
L1	10 Henry 100m.a. Smoothing ...	2

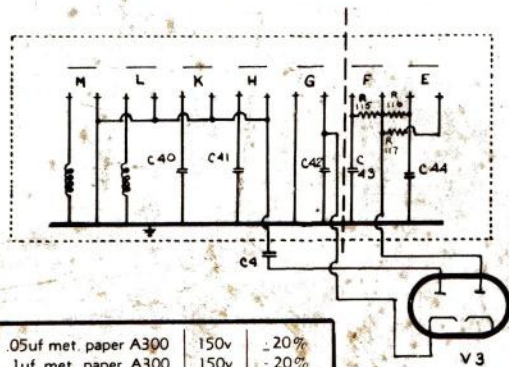
### FUSES

Fuse	Specification	Fig
F1	2 amp Belling Lee Cartridge type	1
F2	2 amp Fused Mains Selector Link	1

### SWITCHES & LAMPS

Switch/Lamp	Specification	Fig
S1	D.P. Single Throw toggle switch	1
S2	D.P. Single Throw toggle switch	1
R6	Range Switch—3 way single pole	...
R6	Circuit Switch—4 way 3 pole	...
R7	Vibrato Switch—3 way single pole	...
R7	Range Switch—3 way single pole	...
R10	Range Switch—4 way single pole	...
R10	Circuit Switch—4 way 3 pole	...
P1	7 volt 3 amp—pilot lamp	1
P2	7 volt 3 amp—pilot lamp	1

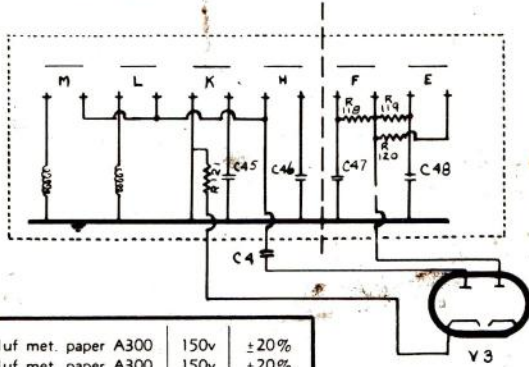
### EFFECTS TABS J6



C40	.05uf met. paper A300	150v	±20%
C41	.1uf met. paper A300	150v	±20%
C42	.1uf met. paper A300	150v	±20%
C43	.1uf met. paper A300	150v	±20%
C44	.1uf met. paper A300	150v	±20%
R115	10 Meg ohms type 8	1/2w	±10%
R116	10 Meg ohms type 8	1/2w	±10%
R117	4,700 ohms type 8	1/2w	±10%
L	1 Henry choke		
M	1/2 Henry choke		

Fig. 4.

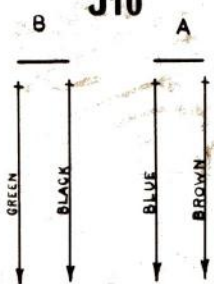
### EFFECTS TABS J7



C45	.1uf met. paper A300	150v	±20%
C46	.1uf met. paper A300	150v	±20%
C47	.01uf met. paper A300	150v	±10%
C48	.1uf met. paper A300	150v	±20%
R118	10 Meg ohms type 8	1/2w	±10%
R119	10 Meg ohms type 8	1/2w	±10%
R120	4,700 ohms type 8	1/2w	±10%
L	1 Henry choke		
M	1/2 Henry choke		

Fig. 5.

### EFFECTS TABS J10



Green :-To junction of R14, R15 & R31  
 Black :-Earth connection  
 Blue :-C34 on Double Divider  
 Brown :-Anode of First Divider (marked E)

Fig. 6.

### VALVE BASE CONNECTIONS

KEY	PIN Nos	1	2	3	4	5	6	7	8	9	BASE
VI, V3, V5.	12AU7.	g'	g'	k'	h	h	g'	g'	k'	h <sub>cap</sub>	B9A
V4.	12AX7.	g'	g'	k'	h	h	g'	g'	k'	h <sub>cap</sub>	B9A
V13.	12AT7.	g'	g'	k'	h	h	g'	g'	k'	h <sub>cap</sub>	B9A
V6.	6BR7.	NC	g1	k	h	h	s	a	g2	g3	B9A
V2.	6AL5.	k'	a'	h	h	k''	s	a'			B7G
V7, V8.	6BW6.	1C	g1	k	h	h	NC	a	g2	bp	B9A
V10.	2D21.	g1	k	h	h	g2	a	g2			B7G
V12	5Z4.	NC	h	NP	a'	NP	a'	NP	kh		OCTAL
V9.	5Y3.	NC	h	NP	a'	NP	a'	NP	kh		OCTAL
V11	6V6.	NC	h	a	g2	g1	NP	h	kbp		OCTAL

Fig. 7.

# UNIVOX

## SERVICE DATA

It is important that all agents familiarise themselves with the contents of these service sheets. Any queries regarding servicing should be addressed to the service department at Dartford.

circuit diagram of the

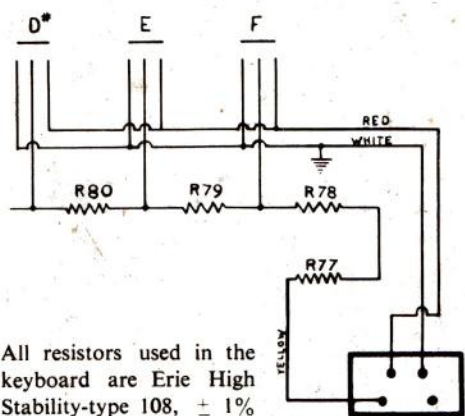
# UNIVOX

electronic keyboard  
 models J6, J7 & J10

JENNINGS MUSICAL INDUSTRIES LTD.

UNITY WORKS · DARTFORD · KENT · ENGLAND

### KEYBOARD - CONTACT WIRING & RESISTORS



	Ohms		Ohms
R77	100,000	R96	23,500
R78	12,000	R97	24,200
R79	9,000	R98	27,500
R80	8,800	R99	26,000
R81	10,500	R100	29,000
R82	9,500	R101	31,000
R83	11,000	R102	32,500
R84	12,300	R103	34,600
R85	12,000	R104	36,000
R86	14,000	R105	40,500
R87	13,000	R106	40,500
R88	16,000	R107	43,000
R89	15,000	R108	45,500
R90	16,000	R109	52,000
R91	17,500	R110	54,000
R92	18,000	R111	54,000
R93	20,000	R112	56,500
R94	20,000	R113	64,000
R95	22,000	R114	67,500

Fig. 8.

All resistors used in the keyboard are Eric High Stability-type 108, ± 1%