

THIRD SUPPLEMENT

RECEIVING TUBE SUBSTITUTION GUIDE BOOK



FEATURING:

More than 830 receiving tube substitutions.

More than 200 picture tube substitutions.

More than 230 American to European tube substitutions.

More than 200 European to American tube substitutions.

A cumulative index listing the tube types treated in the basic book and the 3 supplements.

14 TVA 1705
1504
BY H. A. MIDDLETON

A RIDER PUBLICATION



EUROPEAN — AMERICAN TUBE SUBSTITUTION

EUROPEAN	AMERICAN	PERF.	CIRCUIT CHANGES NECESSARY
B36	12SN7	G	No changes.
B65	6SN7	G	No changes.
B152	12AT7	G	No changes.
B309	12AT7	G	No changes.
B319	7AN7	G	No changes.
B329	12AU7	E	No changes.
B719	6AQ8	G	No changes.
D63	6H6	G	No changes.
D77	6AL5	E	No changes.
D152	6AL5	G	No changes.
DA90	1A3	E	No changes.
DAC32	1H5	E	No changes.
	1LH4	G	Reverse 1LH4 to DAC32 procedure.
DAF91	1LD5	G	Reverse 1LD5 to DAF91 procedure.
	1S5	E	No changes.
	1U5	G	Reverse 1U5 to DAF91 procedure.
DAF96	1AH5	E	No changes.
DC70	6375	G	No changes.
DC80	1E3	E	No changes.
DCC90	3A5	E	No changes.
DD6	6AL5	E	No changes.
DD7	6AL5	G	No changes.
DF33	1LC5	G	Reverse 1LC5 to DF33 procedure.
	1LN5	G	Reverse 1LN5 to DF33 procedure.
	1N5	E	No changes.
DF62	1AD4	E	No changes.
DF91	1T4	E	No changes.
DF92	1L4	G	No changes.
DF96	1AF4	G	No changes.
	1AJ4	E	No changes.
DF904	1U4	G	No changes.
DH63	6Q7	G	No changes.
DH77	6AT6	E	No changes.
DH149	7C6	G	No changes.
DK32	1A7	E	No changes.
	1LA6	G	Reverse 1LA6 to DK32 procedure.
DK91	1R5	E	No changes.
DK92	1AC6	E	No changes.

EUROPEAN-AMERICAN TUBE SUBSTITUTION

DK96-ECC91

EUROPEAN	AMERICAN	PERF.	CIRCUIT CHANGES NECESSARY
DK96	1AB6	E	No changes.
DL33	3Q5	E	No changes.
DL35	1C5	E	No changes.
DL36	1Q5	E	No changes.
DL91	1S4	G	No changes.
DL92	3S4	E	No changes.
DL93	3A4	E	No changes.
DL94	3Y4	E	No changes.
DL95	3Q4	E	No changes.
DL96	3C4	E	No changes.
DM70	1M3	G	No changes.
DP61	6AK5	E	No changes.
DY30	1B3	G	No changes.
DY80	1X2A	G	No changes.
EA76	6489	E	No changes.
EAA91	6AL5	G	No changes.
EABC80	6AK8 6T8	E G	No changes. No changes.
EB34	6H6	E	Parallel circuits only. No changes.
EB91	6AL5	E	No changes.
EBC33	1639	G	No changes.
EBC90	6AT6	E	No changes.
EBC91	6AV6	G	No changes.
EBF80	6N8	E	No changes.
EC70	5718	G	No changes.
EC80	6Q4	E	No changes.
EC81	6R4	E	No changes.
EC90	6C4	E	No changes.
EC91	6AQ4	E	No changes.
EC92	6AB4	E	No changes.
ECC33	6SN7	G	Parallel circuits only. No changes.
ECC35	6SL7	G	Parallel circuits only. No changes.
ECC81	12AT7	E	No changes.
ECC82	12AU7	E	No changes.
ECC83	12AX7	E	No changes.
ECC85	6AQ8	E	No changes.
ECC91	6J6	E	No changes.

EUROPEAN	AMERICAN	PERF.	CIRCUIT CHANGES NECESSARY
ECF82	6U8	E	No changes.
ECH35	6E8	E	No changes.
	6P8G	E	Parallel circuits only. No changes.
ECH81	6AJ8	E	No changes.
ECL80	6AB8	E	No changes.
ECL82	6BM8	E	No changes.
EF70	6487	G	No changes.
EF71	5899	G	No changes.
EF72	5840	G	No changes.
EF73	6488	E	No changes.
EF80	6BX6	E	No changes.
EF85	6BY7	E	No changes.
EF86	6267	E	No changes.
EF91	6AM6	E	No changes.
EF92	6CQ6	E	No changes.
EF93	6BA6	E	No changes.
EF94	6AU6	G	No changes.
EF95	6AK5	E	No changes.
EF96	6AG5	G	No changes.
EH90	6CS6	E	No changes.
EK90	6BE6	E	No changes.
EL33	6M6G	E	No changes.
EL34	6CA7	G	No changes.
EL37	6L6	E	No changes.
	5881	E	No changes.
EL38	6CN6	E	No changes.
EL70	6373	G	No changes.
EL81	6CJ6	E	No changes.
EL83	6CK6	E	No changes.
EL84	6BQ5	E	No changes.
EL85	6BN5	E	No changes.
EL90	6AQ5	E	No changes.
EL91	6AK6	G	Rewire as follows: Change pin No. 2 to pin No. 7 & 2 7 to 6
			 ORIG
			 SUB
	6AM5	E	No changes.
EL821	6CH6	G	No changes.

EUROPEAN-AMERICAN TUBE SUBSTITUTION

EM34-KT63

EUROPEAN	AMERICAN	PERF.	CIRCUIT CHANGES NECESSARY
EM34	6CD7	E	No changes.
EM80	6BR5	E	No changes.
EN91	2D21	E	No changes.
EQ80	6BE7	E	No changes.
EY51	6X2	E	No changes.
EY70	5641	G	No changes.
EY80	6U3	E	No changes.
EY84	6374	E	No changes.
EZ35	6X5	E	No changes.
EZ80	6V4	E	No changes.
EZ81	6BW4	E	No changes.
EZ90	6X4	E	No changes.
GZ30	5Z4	E	No changes.
GZ32	5V4	E	No changes.
GZ34	5U4	G	No changes.
H52	5U4	G	No changes.
H63	6F5	E	No changes.
HBC90	12AT6	E	No changes.
HBC91	12AV6	G	No changes.
HD14	1H5	G	No changes.
HD30	3B4	E	No changes.
HF93	12BA6	E	No changes.
HF94	12AU6	G	No changes.
HK90	12BE6	E	No changes.
HL90	19AQ5	E	No changes.
HL92	50C5	E	No changes.
HM04	6BE6	E	No changes.
HY90	35W4	E	No changes.
KBC32	1H6	G	Reverse 1H6 to KBC32 procedure.
KF35	1E5	E	No changes.
KK32	1C6	G	Reverse 1C6 to KK32 procedure.
	1C7	G	No changes.
	1D7	G	Parallel circuits only. No changes.
KL35	1F4	G	Reverse 1F4 to KL35 procedure.
	1F5	G	No changes.
KT32	25L6	G	No changes.
KT63	6F6	G	No changes.
	6J7	G	No changes.

EUROPEAN	AMERICAN	PERF.	CIRCUIT CHANGES NECESSARY
KT66	6L6	E	Parallel circuits only. No changes
KT81	7C5	G	No changes.
KTW63	6K7	G	No changes.
L63	6J5	G	No changes.
L77	6C4	E	No changes.
LN152	6AB8	G	No changes.
LZ319	8A8	G	No changes.
N14	1C5	G	No changes.
N17	3S4	E	No changes.
N18	3Q4	E	No changes.
N19	3V4	E	No changes.
N77	6AM5	E	No changes.
N78	6BJ5	E	No changes.
N144	6AN5	G	No changes.
N148	7C5	G	No changes.
N152	21A6	G	No changes.
N329	16A5	G	No changes.
N359	21A6	G	No changes.
N709	6BQ5	G	No changes.
PABC80	9AK8	E	No changes.
PCC84	7AN7	E	No changes.
PCC85	9AQ8	E	No changes.
PCF80	8A8 9A8	G E	No changes. No changes.
PCF82	9U8	E	No changes.
PL21	2D21	E	No changes.
PL81	21A6	E	No changes.
PL82	16A5	E	No changes.
PL83	15A6	E	No changes.
PY80	19X3	E	No changes.
PY81	17Z3	E	No changes.
PY82	19Y3	E	No changes.
QQV03-10	6360	G	No changes.
QQV03-28	6252	G	No changes.
QV05-25	807	G	No changes.
SP6	6AM6	E	No changes.

EUROPEAN-AMERICAN TUBE SUBSTITUTION

TD03-10-6A7E

EUROPEAN	AMERICAN	PERF.	CIRCUIT CHANGES NECESSARY
TD03-10	5861	G	No changes.
U50	5Y3	G	No changes.
U52	5U4	G	No changes.
U70	6X5	G	No changes.
U78	6X4	E	No changes.
U147	6X5	G	No changes.
U149	7Y4	G	No changes.
U154	19Y3	G	No changes.
U319	19Y3	G	No changes.
UF41	12AC5	E	No changes.
UBC41	14L7	E	No changes.
UCH42	14K7	E	No changes.
W17	1T4	E	No changes.
W63	6K7	G	No changes.
W77	6065	E	No changes.
W149	7B7	G	No changes.
W179	6BY7	G	No changes.
X14	1A7	G	No changes.
X17	1R5	E	No changes.
X18	1AC6	E	No changes.
X63	6A8	G	No changes.
X79	6AE8	E	No changes.
X81	7S7	G	No changes.
X148	7S7	G	No changes.
Y61	6U5	E	No changes.
Z14	1N5	G	No changes.
Z63	6J7	G	No changes.
Z77	6AM6	G	No changes.
	6064	E	No changes.
Z152	6BX6	G	No changes.
Z179	6BX6	G	No changes.
ZD17	1S5	E	No changes.
ZD19	1S5	G	No changes.
1F3	1T4	E	No changes.
1FD9	1S5	E	No changes.
1P10	3SF	E	No changes.
6A7E	6A7	E	No changes.

EUROPEAN	AMERICAN	PERF.	CIRCUIT CHANGES NECESSARY
6D2	6AL5	G	No changes.
6F12	6AM6	G	No changes.
8D3	6AM6	E	No changes.
30C1	8A8	G	No changes.
30L1	7AN7	G	No changes.

OA2-1C6

AMERICAN — EUROPEAN TUBE SUBSTITUTION

AMERICAN	EUROPEAN	PERF.	CIRCUIT CHANGES NECESSARY
OA2	150C2	E	No changes.
OA4	Z300T	E	No changes.
OB2	108C1	G	No changes.
OD3	150C3	E	No changes.
OE3	85A1	E	No changes.
OG3	85A2	E	No changes.
1A3	DA90	E	No changes.
1A7	DK32	E	No changes.
	X14	G	No changes.
1AB6	DK96	E	No changes.
1AC6	DK92	E	No changes.
	X18	E	No changes.
1AD4	DF62	E	No changes.
1AF4	DF96	G	No changes.
1AH5	DAF96	E	No changes.
1AJ4	DF96	E	No changes.
1B3	DY30	G	No changes.
1C5	DL35	E	No changes.
	N14	G	No changes.
1C6	KK32	G	Rewire as follows. Change socket to six pin.

Change Pin No. 1 to pin No. 2
 2 to 3
 5 to 4
 4 to 5
 3 to 6
 6 to 7



AMERICAN-EUROPEAN TUBE SUBSTITUTION

1C7-1Q5

AMERICAN EUROPEAN PERF. CIRCUIT CHANGES NECESSARY

1C7	KK32	G	No changes.
1D7	KK32	G	Parallel circuits only. No changes.
1E3	DC80	E	No changes.
1E5	KF35	G	No changes.
1F4	KL35	G	Rewire as follows: Change to five pin socket. Change pin No. 1 to pin No. 2 2 to 3 4 to 4 3 to 5 5 to 7



1F5	KL35	G	No changes.
1H5	DAC32	E	No changes.
	HD14	G	No changes.
1H6	KBC32	G	Rewire as follows: Change pin No. 6 to grid cap.
1L4	DF92	G	No changes.

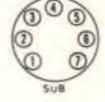
1LA6	DK32	G	Rewire as follows: Change pin No. 1 to pin No. 2 2 to 3 5 to 4 4 to 5 6 to Cap 3 to 6 8 to 7
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1LC5	DF33	G	Rewire as follows: Change pin No. 1 to pin No. 2 2 to 3 3 to 4 6 to Cap 8 to 7 5 to 7
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1LD5	DAF91	G	Rewire as follows: Change pin No. 1 to pin No. 1 4 to 3 3 to 4 2 to 5 6 to 6 8 to 7
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1LH4	DAC32	G	Rewire as follows: Change pin No. 1 to pin No. 2 2 to 3 4 to 5 6 to Cap 8 to 7
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1LN5	DF33	G	Rewire as follows: Change pin No. 1 to pin No. 2 2 to 3 3 to 4 6 to Cap 8 to 7 5 to 7
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1M3	DM70	G	No changes.
1N5	DF33	E	No changes.
	Z14	G	No changes.
1Q5	DL36	E	No changes.

AMERICAN	EUROPEAN PERF.		CIRCUIT CHANGES NECESSARY
1R5	DK91	E	No changes.
	X17	E	No changes.
1S4	DL91	G	No changes.
1S5	DAF91	E	No changes.
	ZD17	E	No changes.
	ZD19	G	No changes.
	1FD9	E	No changes.
1T4	DF91	E	No changes.
	W17	E	No changes.
	1F3	E	No changes.
1U4	DF904	G	No changes.
1U5	DAF91	G	Rewire as follows:
			Change pin No. 4 to pin No. 3
			3 to 4
			2 to 5
			6 to 6
			
			
1X2A	DY80	G	No changes.
2D21	EN91	E	No changes.
	PL21	E	No changes.
3A4	DL93	E	No changes.
3A5	DCC90	E	No changes.
	DL99	G	No changes.
3B4	HD30	E	No changes.
3C4	DL96	E	No changes.
3Q4	DL95	E	No changes.
	N18	E	No changes.
3Q5	DL33	E	No changes.
3S4	DL92	E	No changes.
	N17	E	No changes.
	1P10	E	No changes.
3V4	DL94	E	No changes.
	N19	E	No changes.
5U4	GZ34	G	No changes.
	H52	G	No changes.
	U52	G	No changes.
5V4	GZ32	E	No changes.
5Y3	U50	G	No changes.
5Z4	GZ30	E	No changes.
6A7	6A7E	E	No changes.
6A8	X63	G	No changes.
6AB4	EC92	E	No changes.
6AB8	ECL80	E	No changes.
	SN152	G	No changes.
6AE8	X79	E	No changes.
6AG5	EF96	G	No changes.

AMERICAN-EUROPEAN TUBE SUBSTITUTION

6AJ8-6CA7

AMERICAN	EUROPEAN	PERF.	CIRCUIT CHANGES NECESSARY
6AJ8	ECH81	E	No changes.
	DP61	E	No changes.
6AK5	EF95	E	No changes.
6AK6	EL91	G	Reverse EL91 to 6AK6 procedure.
6AK8	EABC80	E	No changes.
6AL5	D77	E	No changes.
	DD6	E	No changes.
	DD7	G	No changes.
	D152	G	No changes.
	EAA91	G	No changes.
	EB91	E	No changes.
6AM5	6D2	G	No changes.
	EL91	E	No changes.
6AM6	N77	E	No changes.
	N144	G	No changes.
	EF91	E	No changes.
6AM6	SP6	E	No changes.
	Z77	G	No changes.
	6F12	G	No changes.
	8D3	E	No changes.
	6AQ4	EC91	E
6AQ5	EL90	E	No changes.
6AQ8	B719	G	No changes.
	ECC85	E	No changes.
6AT6	DH77	E	No changes.
	EBC90	E	No changes.
6AU6	EF94	G	No changes.
6AV6	EBC91	G	No changes.
6BA6	EF93	E	No changes.
	HMO4	E	No changes.
6BE6	EK90	E	No changes.
6BE7	EQ80	E	No changes.
6BJ5	N78	E	No changes.
6BM8	ECL82	E	No changes.
6BN5	EL85	E	No changes.
6BQ5	EL84	E	No changes.
	N709	G	No changes.
6BR5	EM80	E	No changes.
6BW4	EZ81	E	No changes.
6BX6	EF80	E	No changes.
	Z152	G	No changes.
	Z179	G	No changes.
6BY7	EF85	E	No changes.
	W179	G	No changes.
6C4	EC90	E	No changes.
	L77	E	No changes.
6CA7	EL34	G	No changes.

AMERICAN	EUROPEAN	PERF.	CIRCUIT CHANGES NECESSARY
6CD7	EM34	E	No changes.
6CH6	EL821	G	No changes.
6CJ6	EL81	E	No changes.
6CK6	EL83	G	No changes.
6CN6	EL38	E	No changes.
6CQ6	EF92	E	No changes.
6CS6	EH90	E	No changes.
6E8	ECH35	E	No changes.
6F5	H63	E	No changes.
6F6	KT63	G	No changes.
6H6	EB34	E	Parallel circuits only. No changes.
	D63	G	No changes.
6J5	L63	G	No changes.
6J6	ECC91	E	No changes.
6J7	KT63	G	No changes.
	Z63	G	No changes.
6K7	KTW63	G	No changes.
	W63	G	No changes.
6L6	EL37	E	No changes.
	KT66	E	Parallel circuits only. No changes.
6M6G	EL33	E	No changes.
6N8	EBF80	E	No changes.
6P8G	ECH35	E	Parallel circuits only. No changes.
6Q4	EC80	E	No changes.
6Q7	DH63	G	No changes.
6R4	EC81	E	No changes.
6SL7	ECC35	G	Parallel circuits only. No changes.
6SN7	B65	G	No changes.
	ECC33	G	Parallel circuits only. No changes.
6T8	EABC80	G	No changes.
6U3	EY80	E	No changes.
6U5	Y61	E	No changes.
6U8	ECF82	E	No changes.
6V4	EZ80	E	No changes.
6X2	EY51	E	No changes.
6X4	EZ90	E	No changes.
	U78	E	No changes.
6X5	EZ35	E	No changes.
	U147	G	No changes.
	U70	G	No changes.

AMERICAN-EUROPEAN TUBE SUBSTITUTION

7AN7-21A6

AMERICAN	EUROPEAN PERF.		CIRCUIT CHANGES NECESSARY
7AN7	B319	G	No changes.
	PCC84	E	No changes.
	30L1	G	No changes.
7B7	W149	G	No changes.
7C5	KT81	G	No changes.
	N148	G	No changes.
7C6	DH149	G	No changes.
7S7	X81	G	No changes.
	X148	G	No changes.
7Y4	U149	G	No changes.
8A8	LZ319	G	No changes.
	PCF80	G	No changes.
	30C1	G	No changes.
9A8	PCF80	E	No changes.
9AK8	PABC80	E	No changes.
9AQ8	PCC85	E	No changes.
9U8	PCF82	E	No changes.
12AC5	UF41	E	No changes.
12AT6	HBC90	E	No changes.
12AT7	B152	G	No changes.
	B309	G	No changes.
	ECC81	E	No changes.
12AU6	B329	E	No changes.
	ECC82	E	No changes.
	HF94	G	No changes.
12AV6	HBC91	G	No changes.
12AX7	ECC83	E	No changes.
12BA6	HF93	E	No changes.
12BE6	HK90	E	No changes.
12SN7	B36	G	No changes.
14K7	UCH42	E	No changes.
14L7	UBC41	E	No changes.
15A6	PL83	E	No changes.
16A5	N329	G	No changes.
	PL82	E	No changes.
17Z3	PY81	E	No changes.
19AQ5	HL90	E	No changes.
19X3	PY80	E	No changes.
19Y3	U154	G	No changes.
	U319	G	No changes.
	PY82	E	No changes.
21A6	N152	G	No changes.
	N359	G	No changes.
	PL81	E	No changes.

AMERICAN	EUROPEAN PERF.		CIRCUIT CHANGES NECESSARY
25L6	KT32	G	No changes.
35W4	HY90	E	No changes.
50C5	HL92	E	No changes.
807	QV05-25	G	No changes.
1639	EBC33	G	No changes.
5641	EY70	G	No changes.
5718	EC70	G	No changes.
5840	EF72	G	No changes.
5861	TD03-10	G	No changes.
5899	EF71	G	No changes.
6064	Z77	G	No changes.
6065	W77	G	No changes.
6252	QQV03-28	G	No changes.
6267	EF86	E	No changes.
6360	QQV03-10	G	No changes.
6373	EL70	G	No changes.
6374	EY84	E	No changes.
6375	DC70	G	No changes.
6487	EF70	G	No changes.
6488	EF73	E	No changes.
6489	EA76	E	No changes.