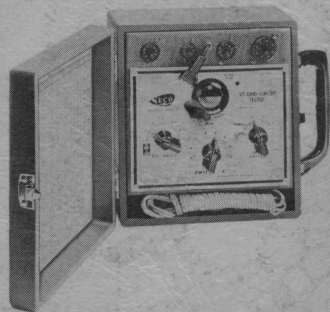




MODEL GCT-9S
or GCT-9W

TUBE SETUP DATA
and
OPERATING INSTRUCTIONS



PART NO. 990T

ENTERTAINMENT
TYPES

1

ENTERTAINMENT
TYPES

2

FOREIGN &
INDUSTRIAL

3

FOREIGN &
INDUSTRIAL

4

GENERAL INFO.
& OPER. INSTR.

5

ENTERTAINMENT

#1

TUBE TYPE	R SW	SP SW
{A4 Special Socket	D	Z
A5	D	
A6	D	
A7	D	
A8	D	
9A8	B	
"	E	
AB4	D	
AB5	D	Z
AB6	A	
AB7	C	X
AB8	B	
"	E	
AC5	D	X
6AC6	D	X
12AC6	A	
AC7	C	X
6AD5	D	X
12AD5	B	
AD6	A	
6AD7	A	X
"	D	"
12AD7	B	X
"	C	"
AD8	B	
"	C	
"	F	
AE5	D	X
6AE6	E	X

TUBE TYPE	R SW	SP SW
AK5	A	X
AK6	A	
AK7	C	X
AK8	F	
"	B	
"	A	
"	D	
{AL3 Special Socket	G	
AL5	B	
"	E	
AL6	D	X
AL8	F	
"	G	
AM5	A	
AM6	A	
AM8	B	
"	F	
AN4	B	Y
AN5	A	X
AN7	B	
"	E	
AN8	B	
"	F	
AQ4	A	Y
AQ5	A	X
AQ6	A	
"	D	
"	G	
AQ7	C	
"	A	
"	G	

TUBE TYPE	R SW	SP SW
AW6	A	
6AW7	B	
"	C	
"	G	
12AW7	A	
AW8	B	
"	C	
AX4	D	
AX5	D	
"	G	
AX6	D	
"	G	
AX7	B	X
"	C	"
AX8	B	
"	E	
AY7	B	X
"	C	"
AZ7	B	X
"	C	"
AZ8	D	
"	E	
{B3 Special Socket	B	
6B4	D	X
{12B4 Special Socket	D	Z
B5	D	
6B6	H	X
"	D	"
"	C	"

TUBE TYPE	R SW	SP SW
BG6	D	X
BH5	B	
BH6	A	
BH7	B	X
"	C	"
BH8	B	
"	C	
BJ5	A	
BJ6	A	
BJ7	B	
"	D	
"	F	
BJ8	A	
"	D	
"	F	
BK4	D	X
BK5	C	Z
BK6	A	
"	D	
"	G	
BK7	B	
"	C	
BK8	E	
BL4	D	
BL6	A	
BL7	A	
"	C	
BL8	B	
"	E	
BM5	A	X

TUBE TYPE	R SW	SP SW
BT8	F	
"	A	
"	B	
BU4	D	X
BU5	C	
BU6	A	
"	D	
"	G	
BU8	C	
BV7	F	
"	A	
"	D	
BV8	B	
"	E	
"	D	
BW4	A	
"	C	
BW5	D	X
{BW6 Special Socket	A	
BW7	B	Z
BW8	D	
"	A	
"	G	
BX4	A	
"	D	
BX6	B	Z
BX7	A	
"	C	
BX8	B	
"	C	

TUBE TYPE	R SW	SP SW
CH8	C	
"	F	
CJ5	D	
CJ6	B	
CK4	A	Z
CK5	D	
CK6	B	
CL6	B	X
CL8	A	
"	E	
CM4	B	Y
"	F	"
CM5	D	X
CM6	G	Y
CM7	C	
"	F	
CM8	B	
"	E	
CN5	B	Z
CN6	D	X
CN7	C	X
"	A	"
"	B	"
CQ4	D	
CQ6	A	
CQ8	B	
"	E	
CR5	F	Z
CR6	B	
"	E	

12AE6	A		
"	D		
"	G		
6AE7	C	F	X
"			
12AE7	B		X
"	C		
AE8	B		
"	C		
AF3	B		X
AF4	B	Y	
AF5	D		X
12AF6	A		
AF7	C		X
AG5	A		X
6AG6	F		X
12AG6	A		
AG7	C		X
AH4	A		X
AH5	F		X
AH6	A		
AH7	A		
"	D		
AH8	B		X
"	C		
AJ5	A		X
AJ6	A		
"	D		
"	G		
6AJ7	C		X
12AJ7	B		
"	E		
AJ8	B		
"	E		

AQ8	B		
"	C		
AR5	A		
AR8	D		
AS5	B		Z
AS6	A		
AS7	A		
"	C		
AS8	B		
"	D		
AT6	A		
"	D		
"	G		
AT7	B		X
"	C		"
AT8	A		
"	E		
AU4	D		
AU5	A		X
AU6	A		
AU7	B		X
"	C		"
AU8	B		
"	C		
AV4	A		
"	D		
AV5	A		X
AV6	A		
"	D		
"	G		
"	B		X
AV7	B		"
"	C		
AV8	B		
"	D		

12B6	H		X
B7	D		
5B8	B		
"	D		
6B8	H		X
"	D		"
"	C		"
12B8	H		X
"	E		"
BA6	A		
BA7	B		
BA8	B		
"	C		
BC5	A		X
BC6	A		
BC7	B		
"	D		
"	F		
BC8	B		
"	C		
BD4	D		X
BD5	A		X
BD6	A		
BD7	B		
"	D		
"	F		
BE6	A		
BE7	C		
BE8	A		
"	E		
BF5	A		X
BF6	A		
"	D		
"	G		

BM8	A		
"	G		
BN4	B		X
BN5	E		
{Special Socket			
BN6	G		
BN7	B		
"	C		
BN8	F		
"	A		
"	D		
{BQ5	E		
{Special Socket			
BQ6	D		X
BQ7	B		
"	C		
BR5	A		
6BR7	B		
12BR7	B		
"	C		
"	D		
BR8	A		
"	E		
{BS5	E		
{Special Socket			
BS7	H		
BS8	B		
"	C		
BT4	B		
"	D		
BT6	A		
"	D		
"	G		

BY5	C		X
"	D		"
BY6	A		
BY7	B		Y
BY8	A		
"	D		
BZ6	A		
BZ7	B		
"	C		
BZ8	B		
"	C		
C4	D		Z
6C5	D		X
12C5	B		Z
6C8	H		X
"	D		"
12C8	H		X
"	C		"
"	D		"
CA4	A		
"	C		
CA5	B		Z
CA7	D		X
CB6	A		
CD6	D		X
CE5	A		X
CF6	A		
CG6	A		
CG7	B		
"	C		
CG8	A		Z
"	E		"
CH6	B		
CH7	B		X
"	C		"

CR8	A		
"	E		
CS4	D		
CS5	D		Z
CS6	A		
CS7	C		
"	G		
CS8	B		
"	E		
CU5	B		Z
CU6	C		
"	F		
CW5	B		
CX6	A		
CX7	B		X
"	C		"
CX8	B		
"	C		
CY5	A		X
CY6	A		
CY7	B		Z
"	C		
CZ5	D		Z
6D4	A		
12D4	D		
D8	D		X
DA4	D		
DA5	A		
DA6	B		
DA7	C		
"	G		

ENTERTAINMENT

#1

ENTERTAINMENT

#2

TUBE TYPE	R SW	SP SW
DB5	D	Z
DB6	A	
DC6	A	
DC8	B	
"	C	
"	F	
DE4	D	
DE6	A	
DE7	B	Z
"	C	"
DE8	A	
"	G	
DF5	A	
"	D	
DF7	B	
"	C	
DG6	D	X
DG7	B	
DH8	A	
"	E	
DJ6	D	X
DJ8	B	
"	C	
DK5	B	
DK6	A	
DK7	A	
"	D	
"	E	
DL8	A	
"	G	
"		

TUBE TYPE	R SW	SP SW
DW8	B	
"	C	
"	E	
DY7	A	X
"	D	"
DY8	A	
"	E	
DZ6	A	
DZ7	A	X
"	D	"
DZ8	A	
"	G	
E5	D	X
E8	D	X
"	H	"
EA5	A	X
EA6	A	
EA7	A	
"	C	
EA8	B	
"	E	
6EB5	B	
"	E	
{12EB5	E	
{Special Socket		
EC7	B	Z
EC8	A	
"	E	
ED5	B	Z
ED7	B	

TUBE TYPE	R SW	SP SW
EW6	A	
EW7	B	Z
"	C	"
EW8	B	
"	C	
EX6	D	X
EY6	D	X
EZ5	D	X
EZ6	A	
F5	H	X
F6	D	X
6F8	H	X
"	D	"
12F8	F	
"	A	
"	D	
FA6	A	
FA7	C	
"	G	
{FB5	E	
{Special Socket		
FE5	D	X
FG5	A	
FG6	A	
FH5	B	
FH6	D	X
FH8	B	
"	D	
FK6	A	
"	D	
"	G	

TUBE TYPE	R SW	SP SW
12G7	H	X
"	C	"
"	D	"
G8	F	X
"	G	"
GA6	A	
GC5	D	Z
GC6	D	X
GC8	B	
"	E	
GE8	F	
"	G	
GH8	B	
"	E	
GJ8	B	
"	E	
GK6	B	
GL6	B	Y
GM6	A	
GM8	B	
"	C	
GN8	B	
"	C	
GS8	C	
GT8	B	
"	D	
"	F	
H4	C	X
H6	G	X
"	D	"

TUBE TYPE	R SW	SP SW
N7	C	X
"	D	"
N8	B	
"	C	
"	F	
P5	D	X
P8	H	X
"	D	"
6Q5	D	X
Q6	H	X
"	D	"
Q7	H	X
"	C	"
"	D	"
R3	D	Z
R5	B	Z
R6	H	X
R7	H	X
"	C	"
"	D	"
R8	F	
"	B	
"	A	
"	D	
{S2	H	X
{Special Socket		
6S4	G	Y
S5	C	X
S6	H	X
S7	H	X

TUBE TYPE	R SW	SP SW
SU7	A	
"	C	
SV7	B	
"	D	
SW7	B	
"	C	
"	D	
SX7	A	
"	C	
SY7	D	X
SZ7	B	
"	C	
"	D	
T4	B	Y
T6	H	X
T7	H	X
"	C	"
"	D	"
T8	F	
"	B	
"	A	
"	D	
U3	E	
6U4	D	
U6	D	X
6U7	H	X
12U7	B	X
"	C	"
U8	B	
"	E	

DM5	B	Z	
DM7	B	C	X
"	C		"
DN6	D		X
DN7	A	C	
"	D		X
DQ6	D		X
DQ7	B	Y	
DR7	B	C	Z
"	C		"
DS5	A		X
DS7	A	G	
"		E	
DT5	D		Z
DT6	A		
DT7	B	C	X
"	C		"
DT8	B	C	
DU7	A	C	
"	C	E	
DV7	C	B	
"	B	G	
DV8	A		
"	G	E	
"	E	D	
DW5	D		X
DW7	B	C	
"	C		"

EF6	D		X
EG6	A	B	
EH5	B	B	Z
EH7	B	B	Z
EH8	B	C	Y
"	B	C	Y
EJ7	B		Z
EK6	A		
EL6	A	D	
"	D	G	
"	G		Z
EM5	D		Z
EM6	A	E	
EM7	A	C	
"	C	D	X
EN6	D		X
EQ7	B	F	
"	F	B	X
ER5	B	B	X
ES5	B	B	X
ES6	A	B	
ES8	B	C	
ET5	D		X
ET6	A		
ET7	C	B	
"	B	G	
"	G	B	
EU8	B	C	
"	C	A	
EV5	C	A	
EV7	B	C	
"	C		

FM6	A		
"	D	G	
"	G	F	
FM8	B	D	
"	B	D	
"	B	C	
FQ8	B	C	
"	C		
FR8	A	G	
"	G	F	
"	F	A	
FT6	A	D	
"	D	G	
"	G	A	
FV6	A		
FV8	A	E	
"	E	A	
FW6	A	B	
FW8	B	C	
"	C	B	Y
FX5	B		Y
FX6	A	B	
FX8	B	D	
"	D		
FY5	B		
FY6	A	D	
"	D	G	
"	G	A	
FY8	A	G	
"	G	D	Z
G4	D		X
G6	D		X
6G7	H		X

H7	H		X
"	D	H	"
H8	H	C	X
"	C	D	"
"	D	B	"
HB8	B	E	
"	E		
HC8	A	G	
"	G	D	X
J5	D	D	X
J6	D	G	
"	G	H	X
J7	H	H	X
6J8	H	D	"
"	D		"
12J8	A	E	
"	E	F	
"	F	H	X
6K5	H	D	X
12K5	D	D	X
K6	D	H	X
K7	H	D	X
K8	D		X
L5	D	D	X
L6	D	H	X
L7	H	B	X
M5	B	D	X
M6	D	H	X
M7	H	H	X
M8	H	E	"
"	E	D	"
"	D	A	X
N4	A		X
N6	D		X

S8	H		
"	G	C	
"	C	A	
"	A	D	X
SA7	D		X
SB7	D		X
SB8	A	C	
"	C	G	
"	G	C	
SC7	C	C	X
"	C	E	X
SD7	C		X
SE7	E		X
SF5	G	B	
SF7	B	D	
"	D	C	Y
SG7	C	C	Y
SH7	C	C	X
SJ7	C		X
SK7	A		X
SL7	C	A	
"	C	A	
SN7	A	C	
"	C	B	
SQ7	B	C	
"	C	D	
"	D		
SR7	B	C	
"	C	D	X
"	D	C	
SS7	C	B	
ST7	B	C	
"	C	D	

JV3	D		
(Special Socket	A		
6V4	A	C	
"	C	D	X
V6	D	H	X
V7	H	C	"
"	C	D	"
"	D		
V8	D	C	
"	C	B	
"	B	E	
W4	D	D	X
W5	D	G	"
"	G	H	X
W6	D	A	X
W7	H	A	
(6 & 12	A	D	
X4)	D	D	X
X5	D	G	"
"	G	C	X
X6	C		X
X8	B	C	
"	C	H	X
6Y3	H	D	X
Y6	D	C	X
Y7	C	D	"
"	D		
Z6	D	G	X
"	G	C	X
Z7	C	D	"
"	D	D	X
ZY5	D	G	"
"	G		"

ENTERTAINMENT

#1

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
2C33	2	H	X
2D21	6	D	
2E26	6	D	X
6D2	6	B	
"	"	E	
6E8	6	D	X
6F12	6	A	
6H8	6	H	X
"	"	C	"
"	"	D	"
7D9	6	A	
8D3	6	A	
30C1	8	B	
"	"	E	
30L1	7	B	
"	"	D	
B36	12	A	
"	"	C	
B65	6	A	
"	"	C	
B152	12	B	X
"	"	C	"
B309	12	B	X
"	"	C	"
B319	7	B	
"	"	D	
B329	12	B	X
"	"	C	"
B339	12	B	X
"	"	C	"

ENTERTAINMENT

#2

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
EBC90	6	A	
"	"	D	
"	"	G	
EBC91	6	A	
"	"	D	
"	"	G	
EBF80	6	B	
"	"	C	
"	"	F	
EBF83	6	B	
"	"	C	
"	"	F	
EBF89	6	B	
"	"	C	
"	"	F	
EC80	6	E	Y
Special Socket			
EC81	6	A	
EC90	6	D	
EC91	6	A	Y
EC92	6	D	
ECC33	6	A	
"	"	C	
ECC35	6	A	
"	"	C	
ECC40	6	C	X
"	"	D	"
ECC80	12	B	X
"	"	C	"

FOREIGN AND INDUSTRIAL #3

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
ECH83	6	B	
"	"	E	
ECL80	6	B	
"	"	E	
ECL82	6	A	
"	"	G	
ED2	6	B	
"	"	E	
EF80	6	B	Z
EF83	6	B	
EF85	6	B	Z
EF86	6	E	
EF89	6	B	
EF91	6	A	
EF92	6	A	
EF93	6	A	
EF94	6	A	
EF95	6	A	
EF96	6	A	
EF97	6	A	
EF98	6	A	
EF180	6	B	
EF183	6	B	Z
EF184	6	B	Z
EH90	6	A	
EH91	6	A	
EK90	6	A	
EL32	6	H	X
EL33	6	D	X

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
EZ81	6	A	
"	"	C	
EZ90	6	A	
"	"	D	
H63	6	H	X
HBC90	12	A	
"	"	D	
"	"	G	
HBC91	12	A	
"	"	D	
"	"	G	
HF93	12	A	
HF94	12	A	
HK90	12	A	
HM04	6	A	
KT61	6	D	X
KT63	6	D	X
KT66	6	D	X
KT88	6	D	X
KTW63	6	H	X
L63	6	D	X
L77	6	D	Z
LN152	6	B	
"	"	E	
LZ319	8	B	
"	"	E	
N77	6	B	
"	"	E	
N78	6	A	

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
PY81	13	E	
SP6	6	A	
U70	6	G	
"	"	D	
U78	6	A	
"	"	D	
U147	6	G	
"	"	D	
UBF80	13	B	
"	"	C	
"	"	F	
U92	9	D	
UF89	12	B	
V2M70	6	A	
"	"	D	
W63	6	H	X
W77	6	A	
W179	6	B	Z
X63M	6	D	X
X79	6	B	
"	"	C	
X727	6	A	
Z63	6	H	X
Z77	6	A	
Z152	6	B	
Z179	6	B	
Z719	6	B	
Z729	6	B	
"	"	C	

B719	6	B		
"	"	C		
BPMO4	6	A	X	
D63	6	D	X	
"	"	G		"
D77	6	B		
"	"	E		
D152	6	B		
"	"	E		
DD6	6	B		
"	"	E		
DDR7	6	A		
DH63	6	H	X	
"	"	C		"
"	"	D		"
DH77	6	A		
"	"	D		
"	"	G		
DP61	6	A		
EAA91	6	B		
"	"	E		
EABC80	6	F		
"	"	B		
"	"	A		
"	"	D		
EB34	6	D	X	
"	"	G		"
EB91	6	B		
"	"	E		
EBC41	6	A		
"	"	D		
"	"	G		
EBC81	6	B		
"	"	D		
"	"	F		

ECC81	12	B	X	
"	"	C		"
ECC82	12	B	X	
"	"	C		"
ECC83	12	B	X	
"	"	C		"
ECC84	6	B		
"	"	D		
ECC85	6	B		
"	"	C		
ECC86	12	B	X	
"	"	C		"
ECC88	6	B		
"	"	C		
ECC90	6	D		
"	"	G		
ECC91	6	D		
"	"	G		
ECC92	6	D		
"	"	G		
ECC189	6	B		
"	"	C		
ECF80	6	B		
"	"	E		
ECF82	6	B		
"	"	E		
ECF83	6	B		
"	"	E		
ECH35	6	H	X	
"	"	D		"
ECH81	6	B		
"	"	E		

EL34	6	D	X	
EL37	6	D	X	
EL38	6	D	X	
EL80	6	B		
EL81	6	B		
EL83	6	B		
{EL84	6	E		
Special Socket				
EL85	6	B		
{EL86	6	E		
Special Socket				
EL90	6	A	X	
EL91	6	A		
EL95	6	A	X	
EL821	6	B		
EM80	6	A		
EM81	6	A		
EM84	6	A		
EM90	6	A		
EQ80	6	C		
ET80	6	B		
EY80	6	E		
{EY81	6	D		
Special Socket				
EY84	6	H		
{EY86	6	H	X	
Special Socket				
EZ35	6	G	X	
"	"	D		"
EZ80	6	A		
"	"	C		

N144	6	A		
N147	6	D	X	
N329	13	B		
{N709	6	E		
Special Socket				
N727	6	A	X	
PABC80	9	F		
"	"	B		
"	"	A		
"	"	D		
PCC84	7	B		
"	"	D		
PCC85	9	B		
"	"	C		
PCF80	9	B		
"	"	E		
PCF82	9	B		
"	"	E		
PCL81	12	A	Z	
"	"	E	"	
PCL82	13	A		
"	"	G		
PCL84	13	A		
"	"	F		
PL21	6	D		
PL82	13	B		
PL83	13	B		
PL84	13	B		
PM04	6	A		
PM05	6	A		
PM07	6	A		
PM84	6	A		

403B	6	A	X	
502	6	G	X	
717	6	C	X	
731	6	A		
884	6	G	X	
1201	6	A	Y	
1223	6	H	X	
1225	6	H	X	
1274	6	G	X	
"	"	D	"	
1282	6	D		
1381	6	A		
1611	6	D	X	
1612	6	H	X	
1613	6	D	X	
1614	6	D	X	
1620	6	H	X	
1621	6	D	X	
1622	6	D	X	
1626	12	D	X	
1631	12	D	X	
1632	12	D	X	
1634	12	G		
"	"	C		
1635	6	C	X	
"	"	D	"	
1638	6	D		
"	"	G		
1649	6	C	X	
1655	6	G		
"	"	C		

ENTERTAINMENT

#1

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
1664	12	H	X
"	"	C	"
"	"	D	"
1851	6	C	X
1852	6	C	X
1853	6	C	X
2050	6	G	X
2051	6	G	X
3223	6	A	
"	"	C	
5590	6	A	
5591	6	A	
5610	6	D	
5654	6	A	
5656	6	B	
"	"	G	
5661	12	C	X
5662	6	E	
5663	6	E	
5686	6	B	
5691	6	A	
"	"	C	
5692	6	A	
"	"	C	
5693	6	C	X
5694	6	C	X
"	"	D	"
5696	6	A	
5702	6	E	

ENTERTAINMENT

#2

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
5963	12	B	X
"	"	C	"
5964	6	G	
"	"	D	
5965	12	B	X
"	"	C	"
5975	6	G	
5992	6	D	X
5995	6	A	
5998	6	A	
"	"	C	
6004	5	H	
"	"	"	
6005	6	A	X
6006	6	C	X
6012	6	D	X
6024	6	A	
6026	6	C	
6045	6	G	
"	"	D	
6057	12	B	X
"	"	C	"
6058	6	B	
"	"	E	
6059	6	B	
6060	12	B	X
"	"	C	"
6061	6	E	
6062	6	F	

FOREIGN AND
INDUSTRIAL #3

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
6132	6	B	
6134	6	C	X
6135	6	D	
6136	6	A	
6137	6	C	X
6146	6	D	X
6150	6	E	
6152	6	G	
6156	6	A	
6157	6	H	
6158	12	B	X
"	"	C	"
6180	6	A	
"	"	C	
6186	6	A	
6187	6	A	
6188	6	A	
"	"	C	
6189	12	B	X
"	"	C	"
6197	6	B	
6201	12	B	X
"	"	C	"
6202	6	A	
"	"	D	
6203	6	A	
"	"	D	
6211	12	B	X
"	"	C	"

FOREIGN AND
INDUSTRIAL #4

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
6663	6	B	
"	"	E	
6669	6	A	X
6677	6	B	
6678	6	B	
"	"	E	
6679	12	B	X
"	"	C	X
6680	12	B	X
"	"	C	"
6681	12	B	X
"	"	C	"
6686	6	B	
6687	6	A	
6688	6	B	Z
6689	6	B	
6754	6	A	
"	"	E	
6760	13	B	
6761	6	B	
6792	6	D	X
6829	12	B	
"	"	C	
6840	12	F	
"	"	G	
6851	12	B	
"	"	C	
6870	12	B	
6883	12	D	

TUBE TYPE	Fil. V.	A. SW.	SP. SW.
7058	12	B	
"	"	C	
7059	12	B	
"	"	E	
7060	12	B	
"	"	F	
7061	12	D	Z
7062	12	B	X
"	"	C	"
7083	6	E	
7105	12	A	
"	"	C	
7125	6	E	
"	"	C	
"	"	F	
7167	13	A	X
7184	6	D	
7189	6	E	
Special Socket			
7199	6	C	
"	"	E	
7212	6	D	X
7236	6	A	
"	"	C	
7244	6	G	
"	"	D	
7247	6	B	
"	"	C	

5725	6	A	
5726	6	B	
"	"	E	
5727	6	D	
5732	6	H	X
5749	6	A	
5750	6	A	
5751	12	B	X
"	"	C	"
5755	12	G	X
"	"	D	"
5757	6	D	
5763	6	F	
5784	6	E	
5812	12	A	X
5814	12	B	X
"	"	C	"
5838	12	G	X
"	"	D	"
5844	6	G	
"	"	D	
5852	6	G	X
"	"	D	"
5871	6	D	X
5879	6	A	
5881	6	D	X
5915	6	A	
5920	6	G	
"	"	D	
5932	6	D	X
5961	6	D	X

6063	6	A	
"	"	D	
6064	6	A	
6065	6	A	
6066	6	A	
"	"	D	
"	"	G	
6067	12	B	X
"	"	C	"
6072	12	B	X
"	"	C	"
6080	6	A	
"	"	C	
6084	6	E	
6085	12	B	X
"	"	C	"
6086	13	B	
6095	6	A	X
6096	6	A	
6097	6	B	
"	"	E	
6099	6	G	
"	"	D	
6100	6	G	
6101	6	G	
"	"	D	
6113	6	A	
"	"	C	
6118	6	H	X
"	"	C	"
"	"	D	"
6125	6	D	

6216	6	B	
6218	6	B	
6227	6	B	
6245	6	E	
6265	5	A	
6267	6	E	
6287	6	F	
6305	4	H	
6325	6	G	
"	"	D	
6327	6	D	X
6350	12	G	
"	"	F	
6360	12	A	X
"	"	G	"
6374	6	H	
6414	12	B	X
"	"	C	"
6417	12	F	
6443	6	H	
6463	12	G	X
"	"	F	"
6485	6	A	
6516	6	A	
6520	6	A	
"	"	C	
6525	6	D	
6550	6	D	X
6660	6	A	
6661	6	A	
6662	6	A	

6887	6	B	
"	"	E	
6888	6	C	
6893	12	D	
6913	12	B	
"	"	C	
6919	6	B	
"	"	E	
6922	6	B	
"	"	C	
6927	6	G	
"	"	D	
6928	6	A	X
6954	6	A	
6955	12	B	X
"	"	C	"
6968	6	A	
6973	6	D	Z
7000	6	H	X
7025	12	B	X
"	"	C	"
7027	6	F	X
7032	6	A	
7036	6	A	
7054	12	B	
7055	12	B	E
"	"	E	
7056	12	A	
7057	12	B	
"	"	C	

7258	13	B	
"	"	F	
7308	6	B	
"	"	C	
7316	12	B	
"	"	C	
7318	12	B	
"	"	C	
7320	6	E	
Special Socket			
7355	6	F	X
7358	6	D	X
7360	6	G	
7408	6	D	X
7543	6	A	
7581	6	D	X
7591	6	F	X
7643	6	B	
"	"	E	
7687	6	B	E
"	"	E	
7752	6	A	
7755	6	A	X
9001	6	A	
9002	6	D	
9003	6	A	
9006	6	A	Z

I GENERAL INFORMATION AND SPECIFICATIONS

The Seco model GCT-9 supersedes previous GCT models. The amplifier test circuitry and sensitivity are much the same. Two additional testing features have been added which will be referred to as: Cathode continuity test and a Shorts Identification Test. These features are accomplished through switching. Greater tube coverage is now obtainable through suitable switching circuitry and only four sockets. The switches provide pin isolation as well as heater voltage transposition to different heater pins.

The GCT-9 provides fast, accurate test for Grid Emission, Leakage, Shorts and Gas in one operation. It indicates results instantly, visually on a 6AF6 "eye" indicator.

The GCT-9 is the first and only Grid Circuit Tester that offers you complete coverage of all TV tube types. With it you can spot common TV tube fault symptoms: Poor picture contrast; grainy picture; twisting; bending or pulling of picture; vertical jitter or bounce; sync. buzz in sound; and any symptoms caused by sync. pulse compression and sweep frequency drift or instability. It is easy to operate--just two rotary switches provide complete pin selection and isolation control. Complete tube set-up data is furnished with each tester.

In the Seco Model GCT-9, as well as other Seco tube testers, the tubes are tested for grid emission and shorts by a d-c testing process. (This is the industry-accepted and popularly named "GRID CIRCUIT TEST" developed and patented by SECO). This method

is considered much superior to the conventional a-c short test. This process of d-c testing for all types of existing as well as intermittent shorts covers the entire area where shorts will cause the malfunctioning of TV, radio, and many other types of military and industrial equipment.

Set-up information on large numbers of industrial and foreign tube types is also found on the card containing set-up information.

II HOW TO OPERATE YOUR SECO GCT-9 GRID CIRCUIT TESTER

1. Plug tester into 105-125 volt 60 cycle socket.
2. Turn tester on by moving "Spec. Switch" away from "off".
3. Allow the tester to warm up for thirty seconds.
4. Set the "Fil Volt" switch to the 2 volt position.
5. Adjust the Eye Adj. control to where the eye closes to a narrow slit (Screwdriver adjustment).
6. Best results in weeding out "trouble maker" tubes will be obtained with the tube well heated. Leakage problems increase with tube heat.
7. Set the "FIL VOLT" switch to the proper voltage position. (Example: 6AU6 set to 6-7 volt position.)
8. Set the Switch "R" to the letter indicated under "R" columns. In the case of a 6AU6, it is A.
9. Leave the switch labelled "Spec. Switch" in "normal position" unless indicated otherwise. For the 6AU6, it should be left in "normal position".
10. Insert the tube into proper socket. NOTE: Nearly

all of the nine pin tubes will be checked in the socket labelled "Nine Pin". Some few exceptions which will be so designated on the set-up card will have to be checked in the "Special" socket.

11. Tap the tube gently and note if the eye tube indicator opens.
12. A good tube should produce no change in deflection.
13. A tube should be considered unsatisfactory if the eye indicator opens beyond the "?" area. This is especially true if the tube is operating in a high grid return resistance circuit.
14. Grid emission or a gas condition which aggravates grid emission will cause the eye indicator to open gradually as heating increases.
15. Turn the "Fil Switch" to "standby" position when not in use. This position of the switch opens the cathode lead to the 6AF6 indicator tube. Target brilliance will be greatly prolonged by observing this procedure. The "Fil Volt" switch is also placed in this same position for the "Filament Continuity Test" described below.

III HOW TO MAKE THE FILAMENT CONTINUITY TEST

(Especially useful when testing series heater type tubes.)

1. Turn the tester on as above (section II steps 1-5) but turn the "Fil Volt" switch to the "Fil Cont and Standby" position.
2. No set-up is required for this test on 7 and 9 pin types. Refer to "SPEC. SW" column when testing octal types.

3. Inserting a good tube into the proper socket will cause the green light on the eye tube indicator to appear.
4. The eye tube indicator will remain dark if the heater of the tube is open.

IV HOW TO MAKE THE CATHODE CONTINUITY TEST

1. Set up the tester as you would for normal testing as described under Section II above.
2. Rotate switch "R" throughout its range (A-H) and watch the eye tube indicator.
3. The cathode of the tube under test will open the eye indicator whenever switch "R" is in the cathode pin position (or positions if the tube has more than one cathode).

V HOW TO MAKE THE SHORTS IDENTIFICATION TEST

The location of a short can be identified to specific tube pins by following the procedure given below. If the tube has a built in jumper between pins it must be understood that this condition will also show up as a short.

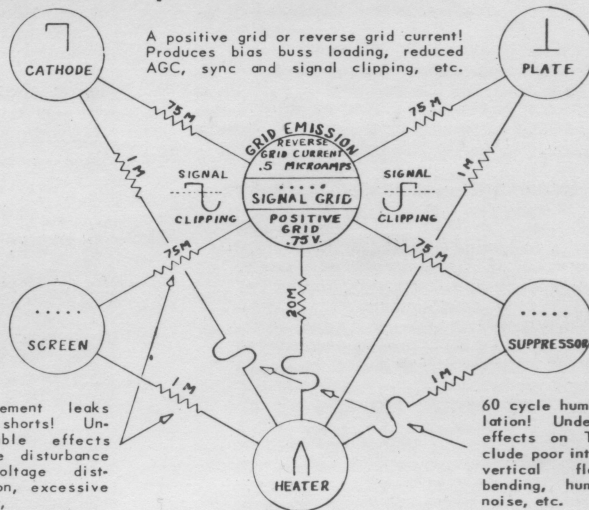
1. A cathode to heater short will cause the eye indicator to remain open regardless of the position of switch "R".
2. If the eye indicator opens when the Switch "R" is in any position (other than the cathode position), the short is associated with those pins opening the eye indicator. Refer to the electrical data of Switch "R" to identify the tube elements.

ORIGINAL SECO DEVELOPMENT

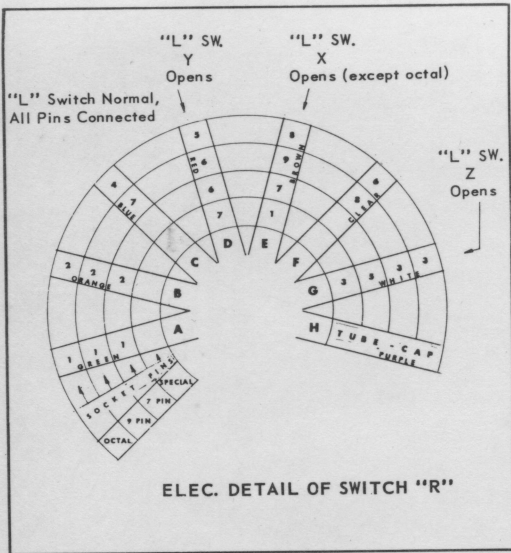
Grid Circuit & Compound Shorts Test



Resistance values between the various elements on the chart indicate the severity of short required to open the eye as illustrated. A more severe short will open eye wider.



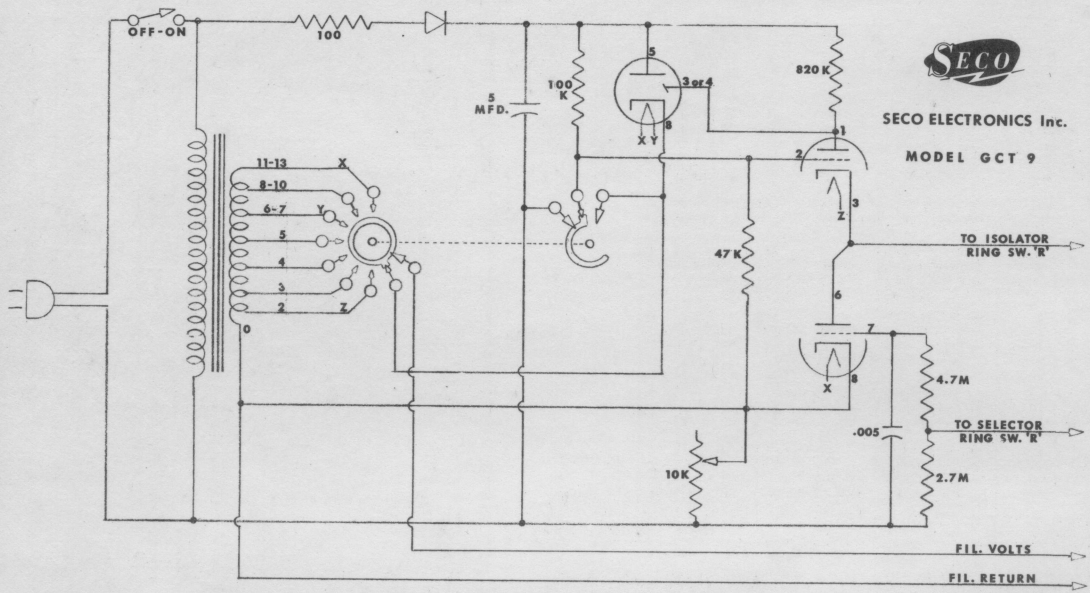
DETAIL OF SPECIAL SWITCH MODEL GCT-9 SECO TUBE TESTER



POSITION OF SPECIAL SWITCH	2 PIN (4 & 5 HTRS.)	7 PIN (3 & 4 HTRS.)	OCTAL	9 PIN SPEC. SOCKET
NORMAL	All socket pins except htrs. connected to circuit thru ROTARY switch "R".	All socket pins except htrs. in circuit thru switch "R"	Pins 7 & 8 are heater pins. Rest of pins in circuit thru switch "R".	This socket wired for 12B4, etc. Set SPEC. SW. as shown in set-up chart.
X	All pins in (same as above) except #9 is out of circuit.	All pins in the circuit except #7.	Pins 2 & 7 are the heaters. The rest of pins in circuit.	Pin #1 disconnected.
Y	All pins in the circuit except #6.	All pins in the circuit except #6.	Pins 2 & 8 are the heater pins for 5Y4, etc. Pin #5 open.	Pin #7 disconnected.
Z	All pins in the circuit except #3.	All pins in the circuit except #5.	Pins 2 & 7 are heater pins. #3 is out of circuit.	Pin #3 disconnected.

All modern TV and radio heater type tubes that have the following heater pin combinations may be tested on the Model GCT-9:

9 PIN	7 PIN	OCTAL	SPECIAL SOCKET FOR 12B4 etc.
4-5	3-4	2-7	
3-4-5	3-4-5	7-8	
4-5-6	3-4-6	2-8	
4-5-9	3-4-7	2-3-7	
		2-7-8	
		2-5-7	



SECO ELECTRONICS Inc.
MODEL GCT 9

TO ISOLATOR RING SW. 'R'

TO SELECTOR RING SW. 'R'

FIL. VOLTS

FIL. RETURN

Warranty

SECO ELECTRONICS INC. warrants each instrument and every other piece of equipment manufactured by it to be free from defects in material and workmanship. This warranty is limited to making good at its factory any device which shall, within 90 days after date of purchase, prove to be defective.



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