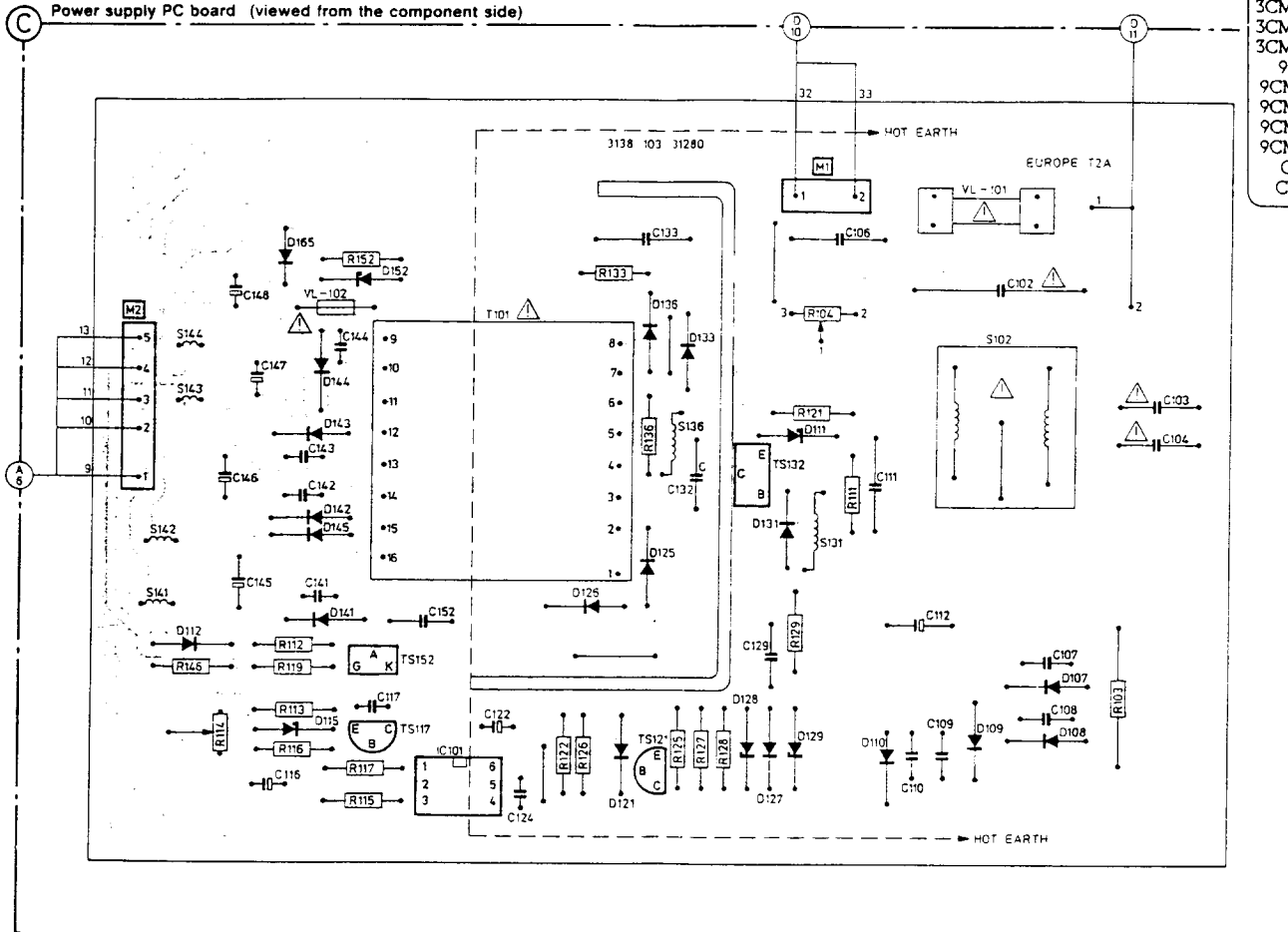


C Power supply PC board (viewed from the component side)

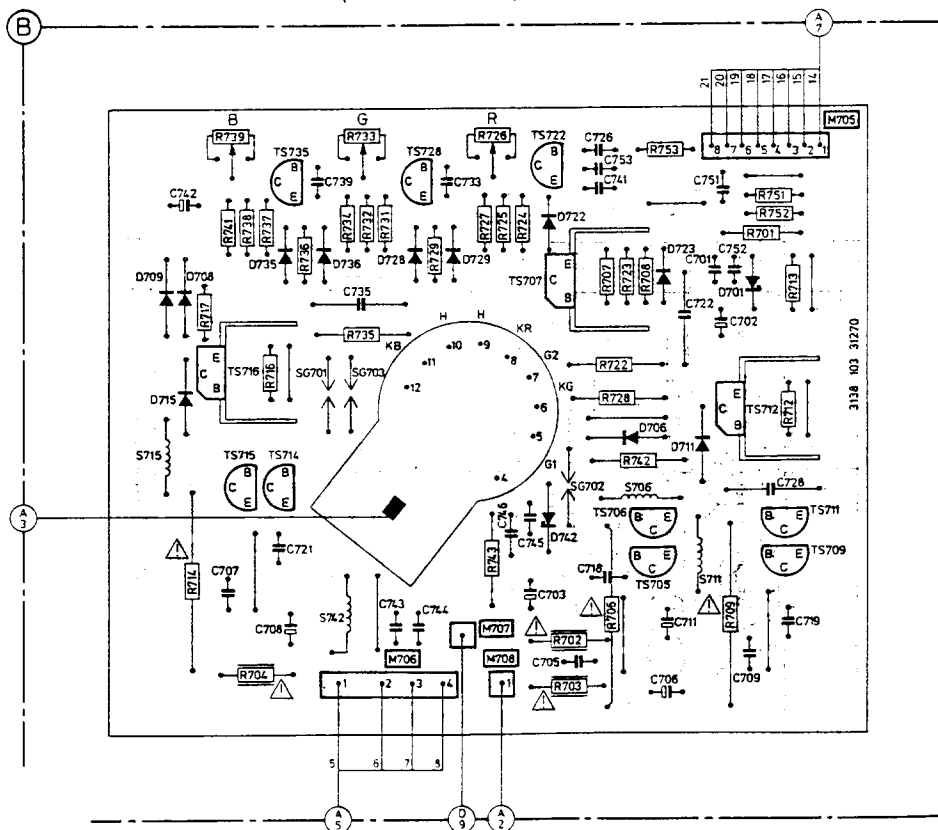


3CM9809
3CM9809/00
3CM9809/01
3CM9809/02
3CM9809/03
3CM9809/04
3CM9809/05
3CM9809/06
3CM9809/07
3CM9809/08
3CM9809/09
3CM9809/10
3CM9809/11
3CM9809/12
3CM9809/13
3CM9809/14
3CM9809/15
3CM9809/16
3CM9809/17
3CM9809/18
3CM9809/19
3CM9809/20
3CM9809/21
3CM9809/22
3CM9809/23
3CM9809/24
3CM9809/25
3CM9809/26
3CM9809/27
3CM9809/28
3CM9809/29
3CM9809/30
3CM9809/31
3CM9809/32
3CM9809/33
3CM9809/34
3CM9809/35
3CM9809/36
3CM9809/37
3CM9809/38
3CM9809/39
3CM9809/40
3CM9809/41
3CM9809/42
3CM9809/43
3CM9809/44
3CM9809/45
3CM9809/46
3CM9809/47
3CM9809/48
3CM9809/49
3CM9809/50
3CM9809/51
3CM9809/52
3CM9809/53
3CM9809/54
3CM9809/55
3CM9809/56
3CM9809/57
3CM9809/58
3CM9809/59
3CM9809/60
3CM9809/61
3CM9809/62
3CM9809/63
3CM9809/64
3CM9809/65
3CM9809/66
3CM9809/67
3CM9809/68
3CM9809/69
3CM9809/70
3CM9809/71
3CM9809/72
3CM9809/73
3CM9809/74
3CM9809/75
3CM9809/76
3CM9809/77
3CM9809/78
3CM9809/79
3CM9809/80
3CM9809/81
3CM9809/82
3CM9809/83
3CM9809/84
3CM9809/85
3CM9809/86
3CM9809/87
3CM9809/88
3CM9809/89
3CM9809/90
3CM9809/91
3CM9809/92
3CM9809/93
3CM9809/94
3CM9809/95
3CM9809/96
3CM9809/97
3CM9809/98
3CM9809/99
3CM9809/100

43 142 C12

For Service Manuals
contact
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY
Tel (01844) 351694
Fax (01844) 352554

B Picture tube PC board (viewed from the component side)



43 144 C12

△ ADJUSTING THE PICTURE

Remark:

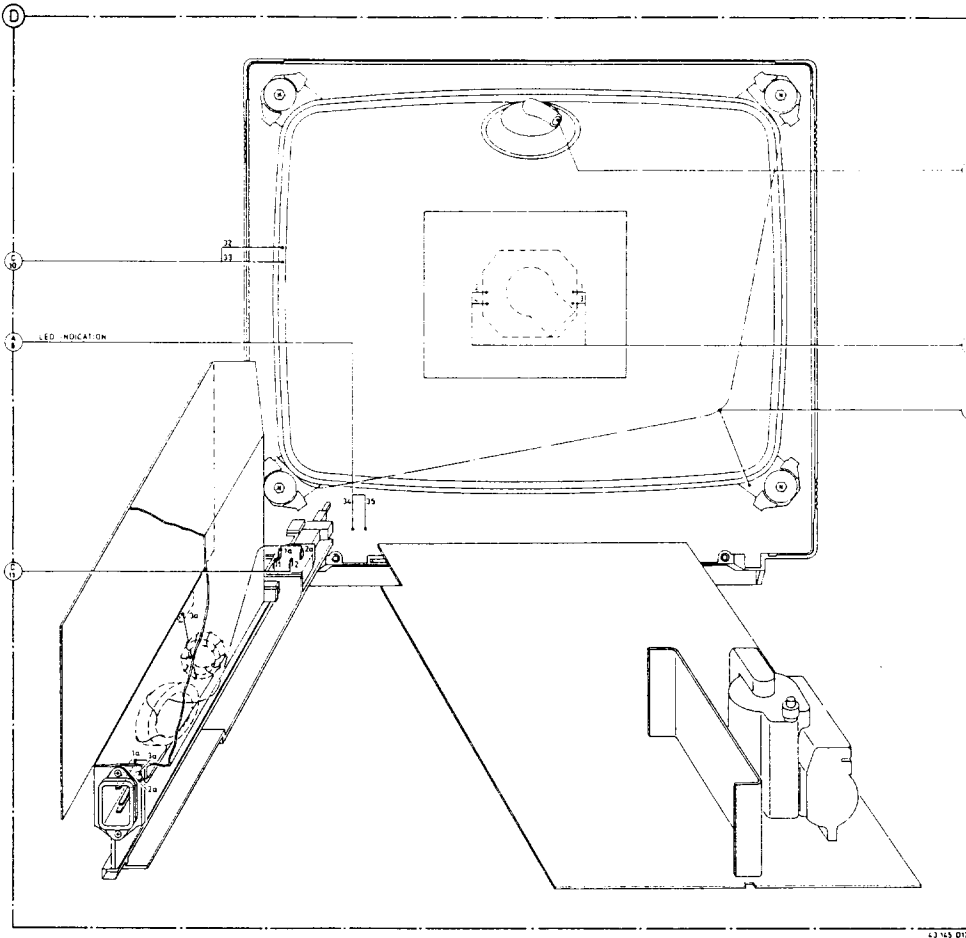
The colour purity and convergence adjustments described hereafter need only be carried out if a new adjustment is called for or if a new picture tube has been fitted. Otherwise, for instance after replacement of the deflection unit, it will not be necessary to adjust the colour purity (G in Fig. 3). Corrections by the multi-pole unit will then suffice.

I. Colour purity, see Fig. 3

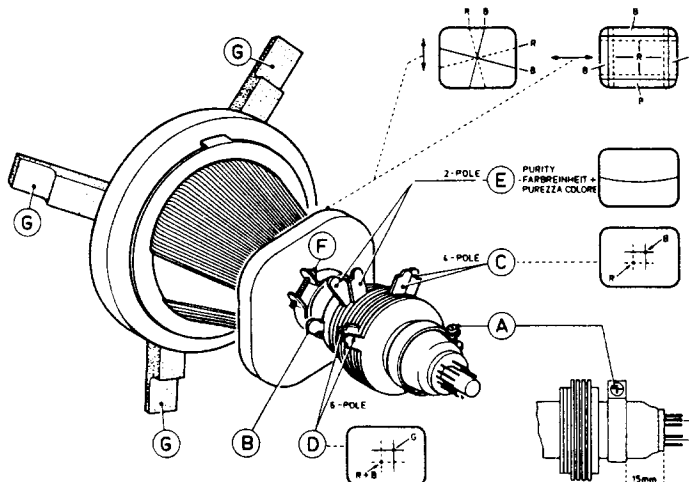
1. Loosen fixing screw "F" of the deflection unit.
2. Move the deflection unit and remove the rubber wedges "G".
3. Slide the deflection unit forward as far as possible against the glass of the picture tube and fix it with screw "F" in such a manner that the unit can be moved with some friction.
4. Place the multi-pole unit in the position of screw "A" and turn securing ring "B" and set.
5. Let the apparatus face East or West and set.
6. Supply a cross-hatch pattern and set brightness control to maximum. Allow for a warming-up time of 10 minutes.
7. Adjust the static convergence, using tags (if necessary, see point II).
8. Turn R524 for the vertical centring to its Switch-off the green and the blue gun by resistors R728 and R735.
9. By turning the colour purity rings with the vertical red bar is adjusted nearest to the screen, whilst also the central horizontal bar is as straight as possible.
10. Supply a white pattern signal and check that the bar is in the centre of the screen indeed. If not, turn on the cross-hatch pattern again and move the bar in the right direction, taking care that the bar does not move too much in vertical direction.
11. Switch-on the green and the blue gun patches may occur in the white picture. In the affirmative, a minor connection can be made by slightly turning the colour purity rings slightly moving the deflection unit.
12. Turn on screw "F" tightly.
13. Adjust the vertical centring with R524.
14. Proceed to the static and next the dynamic adjustment.

II. Static convergence, see Fig. 3

1. Supply a cross-hatch pattern and allow for a warming-up time of 10 minutes.



- DE** Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
- BE** Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.
- FR** Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
- IT** Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambio identici a quelli specificati.



3CM9809
3CM9809/00B
3CM9809/00T
3CM9809/05B
3CM9809/05T
3CM9809/06B
3CM9809/06T
3CM9809/75B
3CM9809/75T
9CM082
9CM082/00B
9CM082/02B
9CM082/05B
9CM082/06B
CM-082
CM-9809

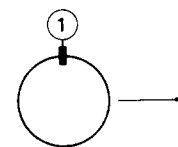


Fig. 4a

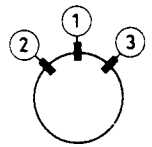


Fig. 4b

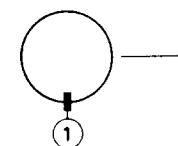


Fig. 5a

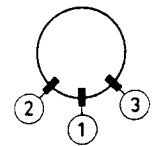


Fig. 5b

THE PICTURE

and convergence adjustments described only be carried out if a completely new picture tube has been fitted, for instance after replacing the deflection unit. It is not necessary to remove the deflection unit (Fig. 3). Corrections by means of the deflection unit will suffice.

Fig. 3

Remove "F" of the deflection unit a few centimetres and remove the three rubber

on unit forward as far as possible. The picture tube cone and turn on the deflection unit in such a manner that the deflection unit is in the position drawn, turn on the deflection unit by loosening the deflection unit, as shown in Figs. 4d or 5d. Two wedge thicknesses are available, one 7 mm thick, code 4822 462 40356, the other 11 mm thick, code 4822 462 40357.

1. First check the colour purity and the static convergence, using tags "C" and "D" (point II).

2. Supply a cross-hatch pattern and switch-off the green gun by loosening resistor R728.

3. Eliminate the crossing of the central horizontal blue and red line and the crossing of the central vertical blue and red line, by vertical tilting of the deflection unit. If the position of the deflection unit is correct, then place rubber wedge ①, paper strip not removed, at the top (Fig. 4a) or at the bottom (Fig. 5a).

Fig. 4a is applicable if the deflection unit is tilted upwards and Fig. 5a if the unit is tilted downwards.

4. By horizontal tilting of the deflection unit, now both the horizontal blue and red lines in the upper and lower halves of the picture and the vertical blue and red lines on the left and right hand side of the picture are placed on top of the other.

If the position of the deflection is correct, then place the wedges ② and ③ with paper strips removed, as shown in Fig. 4b or 5b. Firmly press the adhesive sides of these wigs against the glass of the picture tube.

5. Now place wedge ④ as shown in Fig. 4c or 5c and press on the adhesive side firmly.

6. Remove wedge ①, so that the situation according to Fig. 4d or 5d occurs.

7. Switch-on the green gun.

For Service Manuals contact MAURITRON SERVICES 3 Cherry Tree Road, Chinnor Oxfordshire, OX9 4QY. Tel (01844) 351694 Fax (01844) 352554

see Fig. 3

atch pattern and allow for a warming-up time of 15 minutes.

2. Switch-off the green gun by loosening resistor R728 and turn locking ring "B" anti-clockwise.
3. By turning the four-pole rings with tags "C", the red and blue cross-hatch patterns in the centre of the screen are placed on top of each other.
4. Switch-on the green gun with R728 and switch-off the blue gun by loosening resistor R735.
5. By turning the six-pole rings with tags "D" the red and green cross-hatch patterns in the centre of the screen are placed on top of each other.
6. Switch-on the blue gun again and tighten ring "B" again.

III. Dynamic convergence

Remark:

The dynamic convergence is achieved by vertical and horizontal tilting of the deflection unit. To secure the right position of the deflection unit, three rubber wedges are fitted between the glass of the picture tube cone and the deflection unit, as shown in Figs. 4d or 5d. Two wedge thicknesses are available, one 7 mm thick, code 4822 462 40356, the other 11 mm thick, code 4822 462 40357.

1. First check the colour purity and the static convergence.

2. Supply a cross-hatch pattern and switch-off the green gun by loosening resistor R728.

3. Eliminate the crossing of the central horizontal blue and red line and the crossing of the central vertical blue and red line, by vertical tilting of the deflection unit. If the position of the deflection unit is correct, then place rubber wedge ①, paper strip not removed, at the top (Fig. 4a) or at the bottom (Fig. 5a).

Fig. 4a is applicable if the deflection unit is tilted upwards and Fig. 5a if the unit is tilted downwards.

4. By horizontal tilting of the deflection unit, now both the horizontal blue and red lines in the upper and lower halves of the picture and the vertical blue and red lines on the left and right hand side of the picture are placed on top of the other.

If the position of the deflection is correct, then place the wedges ② and ③ with paper strips

removed, as shown in Fig. 4b or 5b. Firmly press the adhesive sides of these wigs against the glass of the picture tube.

5. Now place wedge ④ as shown in Fig. 4c or 5c and press on the adhesive side firmly.

6. Remove wedge ①, so that the situation according to Fig. 4d or 5d occurs.

7. Switch-on the green gun.

For Service Manuals contact MAURITRON SERVICES 3 Cherry Tree Road, Chinnor Oxfordshire, OX9 4QY. Tel (01844) 351694 Fax (01844) 352554

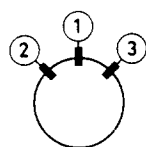


Fig. 4b

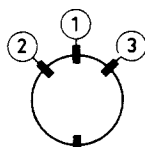


Fig. 4c

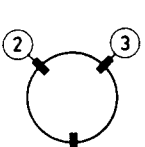


Fig. 4d

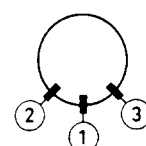


Fig. 5b

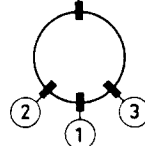


Fig. 5c

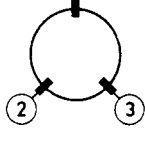


Fig. 5d

CAUTION

- 1) Safety requirements stipulate that, during repair, the set should be restored in its original state and that parts, identical to the specified ones, should be applied.
- 2) For safety reasons, the parts provided with the sign should be replaced by identical parts (for code numbers see electrical parts lists).
- 3) To avoid damages to ICs and transistors, flash-over of the high-tension should be avoided.
- 4) Be careful when performing measurements in the high-tension section and on the picture tube.
- 5) Never change parts when the set is still switched on.
- 6) Safety goggles must be worn during replacement of the picture tube.

ADJUSTMENTS AFTER REPAIR

1) +120 V supply voltage

Contrast and brightness to minimum.

Connect the voltmeter (DC position) between C145 and ground.

Adjust R114 until the voltmeter indicates $120 \text{ V} \pm 0.5 \text{ V}$.

2) Synchronisation

Horizontal synchronisation

Apply a cross-hatch pattern and short R413/C415 to ground.

Now adjust R419 until the picture is straight.

Then remove the short-circuit.

Vertical synchronisation

Adjust R504 for 47 Hz at pin 3 of IC501.

Then remove the short-circuit.

3) Focus

Adjust the focus control for optimal focus.

4) Adjustment picture geometry

Apply a cross-hatch pattern and set brightness and contrast to the mechanical mid-position.

East-West correction

Adjust R539 so that the vertical lines at the left-hand and the right-hand side are straight.

Vertical linearity

Adjust R516 so that a good linearity is obtained between upper and lower side of the picture.

Horizontal amplitude

Set the horizontal width to 240 mm by R541 (480 lines).

Horizontal position

The horizontal centering can be adjusted with R441.

Adjust R411 so that R408 allows as much shifting to the left as to the right.

Vertical amplitude

Adjust the vertical height to 180 mm by R513 (480 lines), R507 for 400 lines and R509 for 350 lines.

The vertical centering can be adjusted with R524.

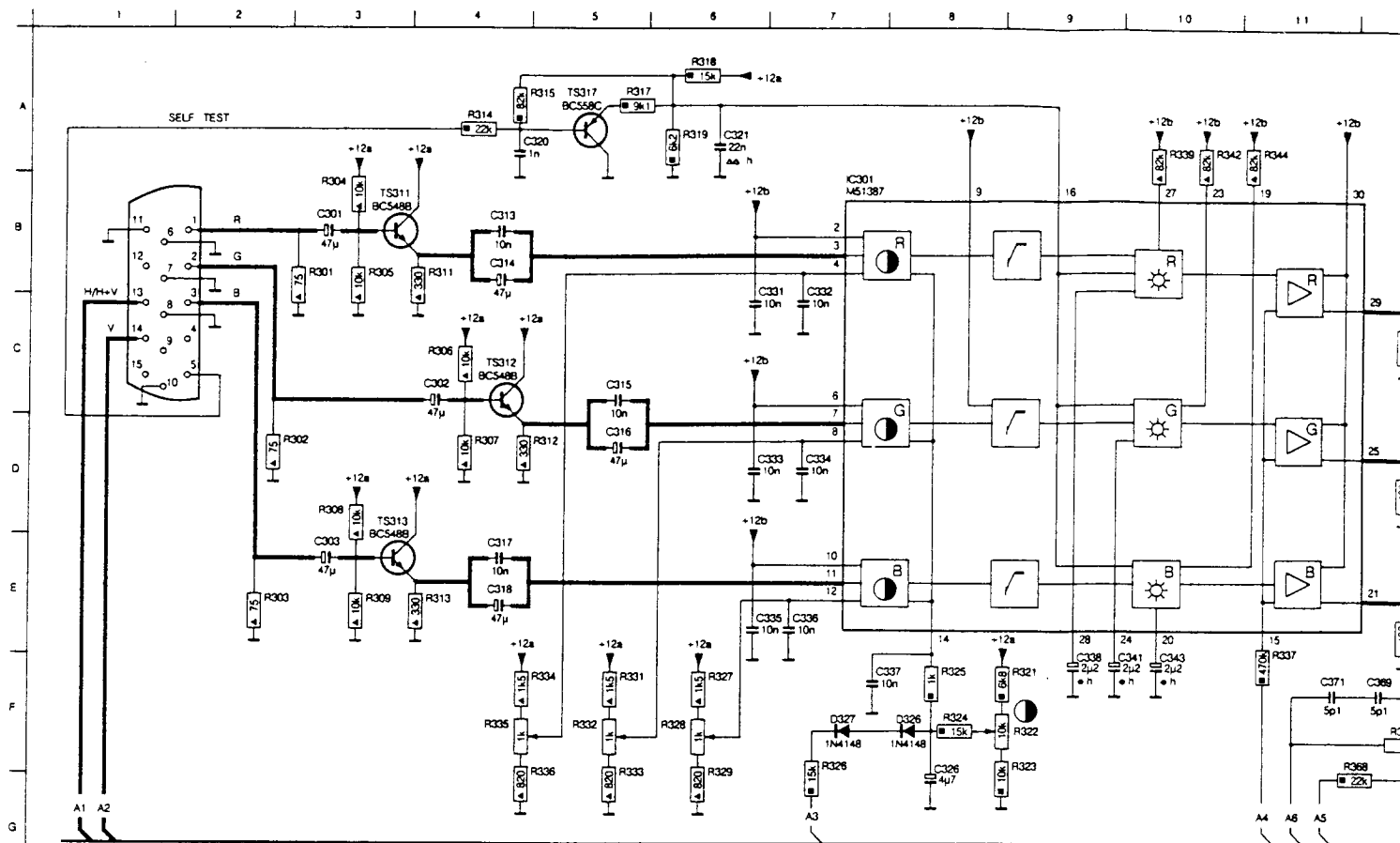
Brightness presetting

Set brightness to mechanical mid-position.

Adjust R567 so that the voltage across C555 is -41 V .

5) VG2 adjustment and cut-off points in picture tube

- Adjust brightness for mechanical mid-position and adjust contrast for maximum.
- Adjust VG2 (screen) for minimum.
- Adjust R726, R733 and R739 in mechanical mid-position.
- Apply a white frame and adjust VG2 (screen) until one colour becomes visible.
- Set the pattern generator to purity with the colour that was first visible.
- Readjust VG2 to just visible light.
- Adjust the 2 remaining colours with their corresponding purity colour for the same light output using potentiometers R726-R733 or R739. Now return to white frame and adjust potentiometers R726-R733 and R739 until an optimum background colour is formed.
- Using potentiometers R328-R332 and R335 (with white frame), adjust the background colour such that at minimum brightness and maximum brightness the background colour is the same.



- 3CM9809
3CM9809/00B
3CM9809/00T
3CM9809/05B
3CM9809/05T
3CM9809/06B
3CM9809/06T
3CM9809/75B
3CM9809/75T
9CM082
9CM082/00B
9CM082/02B
9CM082/05B
9CM082/06B
CM-082
CM-9809

- SAFETY RESISTOR**
RESISTENZA DI SICUREZZA
- SFR25H 0.25W 5%
SFR16T 0.2W 5%
SFR25 0.12W 5%
- CERAMIC
CERAMICO
FLAT FOIL
PIATO
ELECTROLYTIC
ELECTRO
- e - 18V
f - 25V
g - 40V
h - 63V
i - 100V
j - 250V
u - 400V
v - 500V
w - 630V

1 ONLY FOR M37 PICTURE TUBE

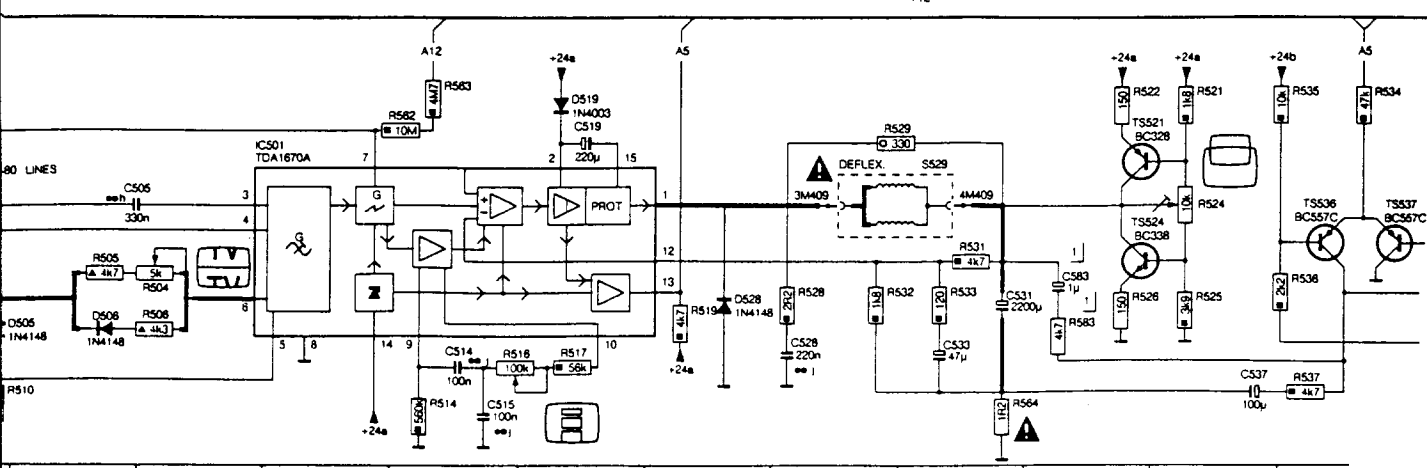
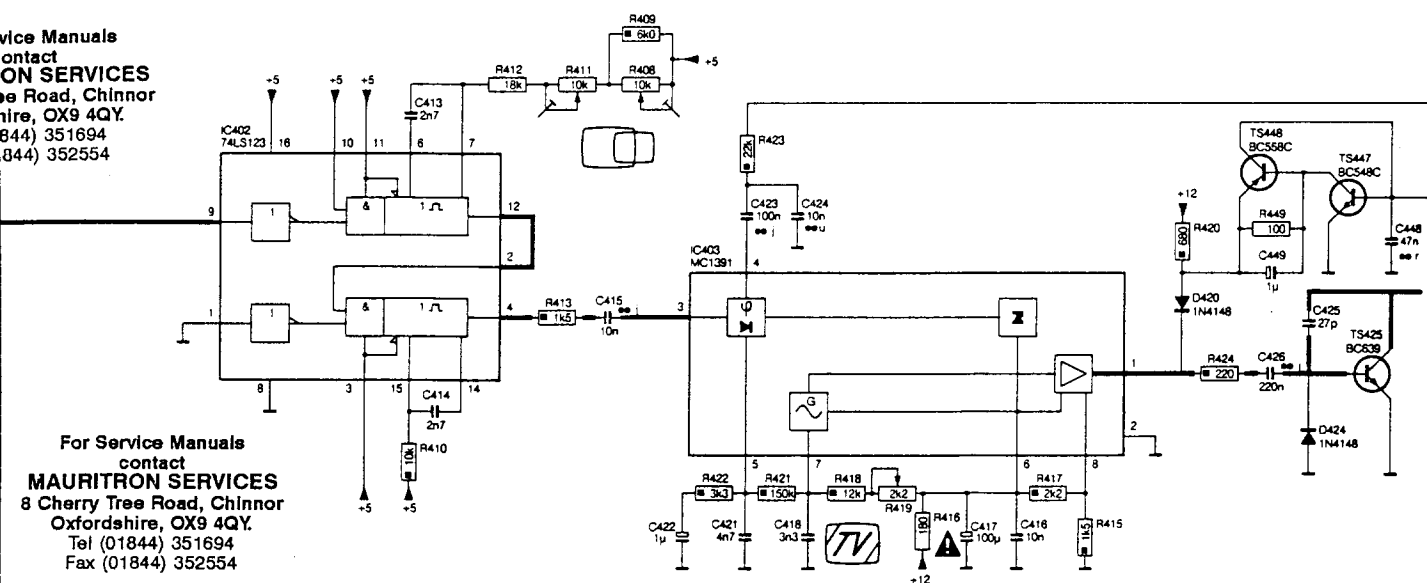
For Service Manuals
contact
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY
Tel (01844) 351694
Fax (01844) 352554

For Service Ma
contact
MAURITRON SE
8 Cherry Tree Road
Oxfordshire, OX
Tel (01844) 35
Fax (01844) 35

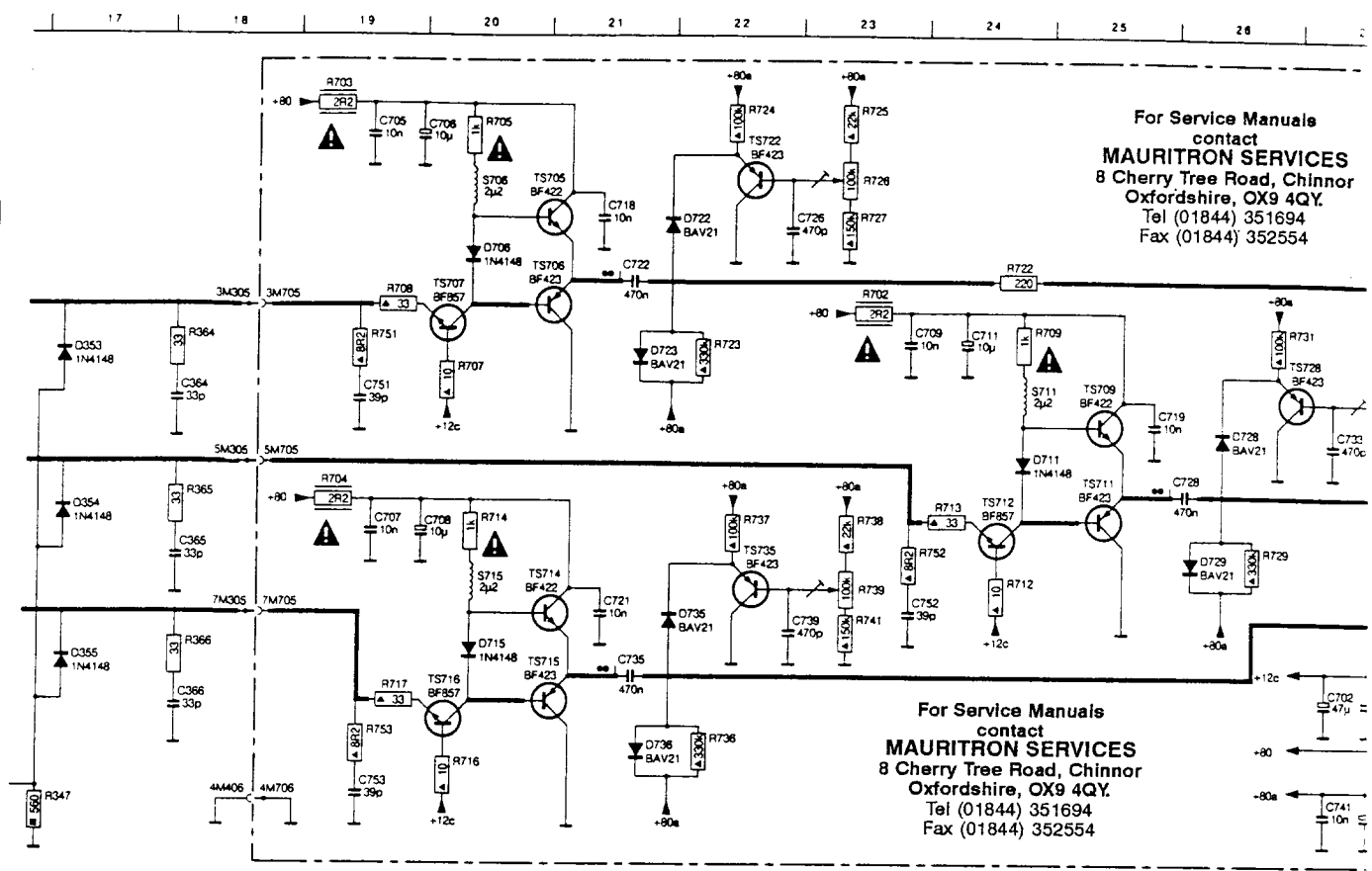
PHILIPS

Service Manuals
Contact
ON SERVICES
 100 Road, Chinnor
 Oxfordshire, OX9 4QY.
 Tel: (0444) 351694
 Fax: (0444) 352554

**For Service Manuals
contact
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554**

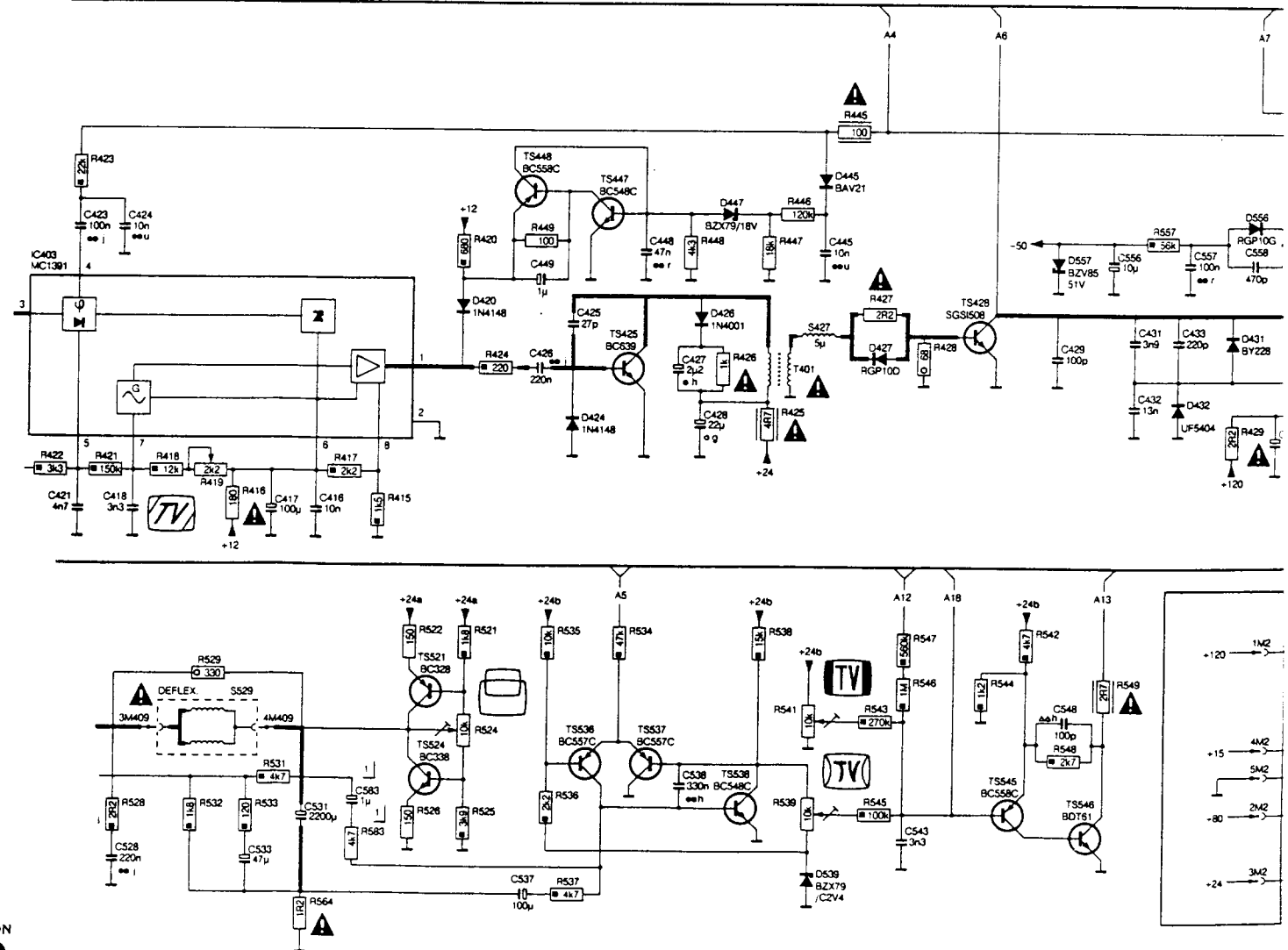


3CM9809
3CM9809/00B
3CM9809/00T
3CM9809/05B
3CM9809/05T
3CM9809/06B
3CM9809/06T
3CM9809/75B
3CM9809/75T
9CM082
9CM082/00B
9CM082/02B
9CM082/05B
9CM082/06B
CM-082
CM-9809

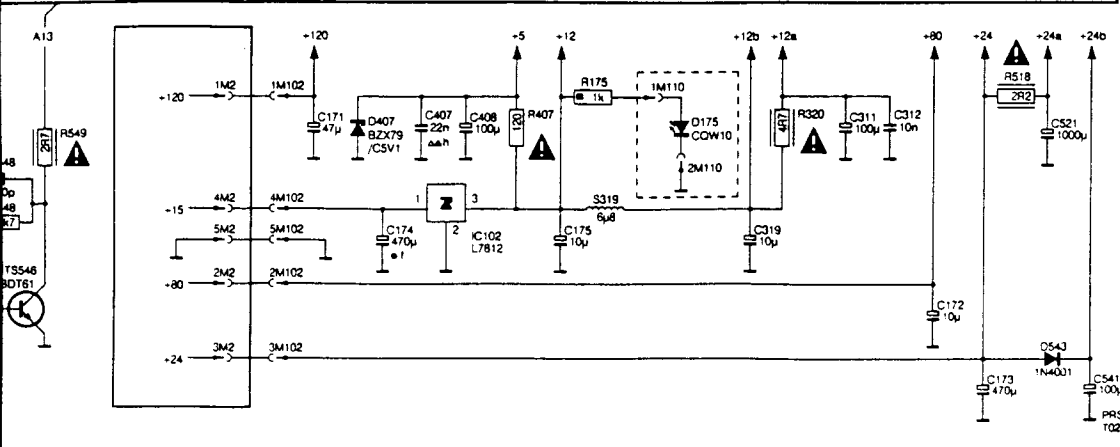
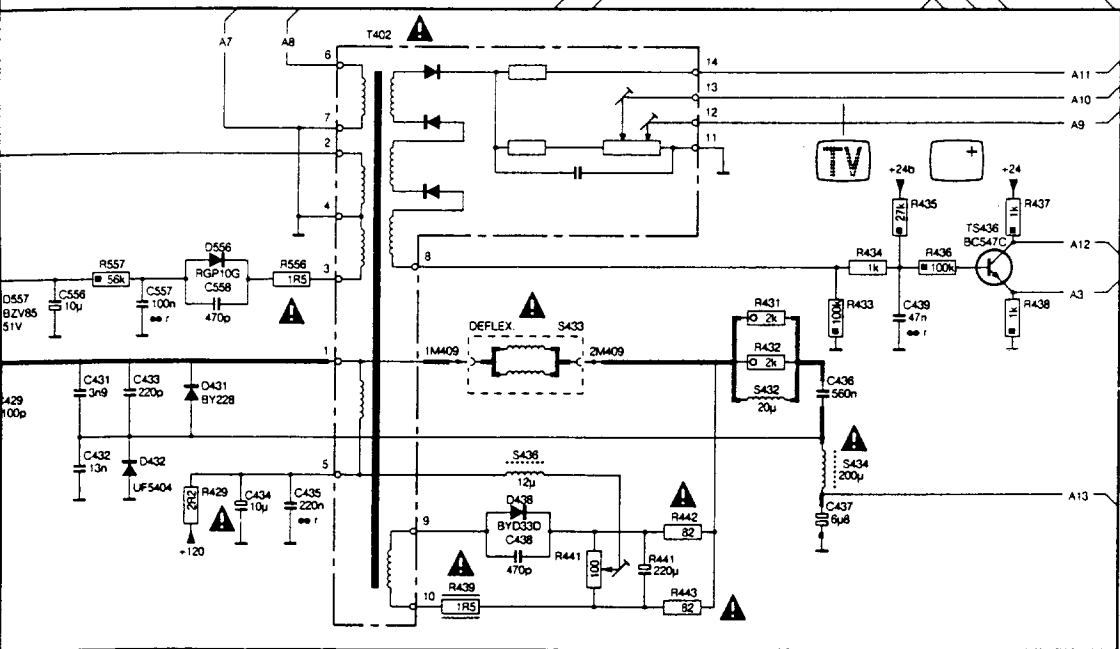
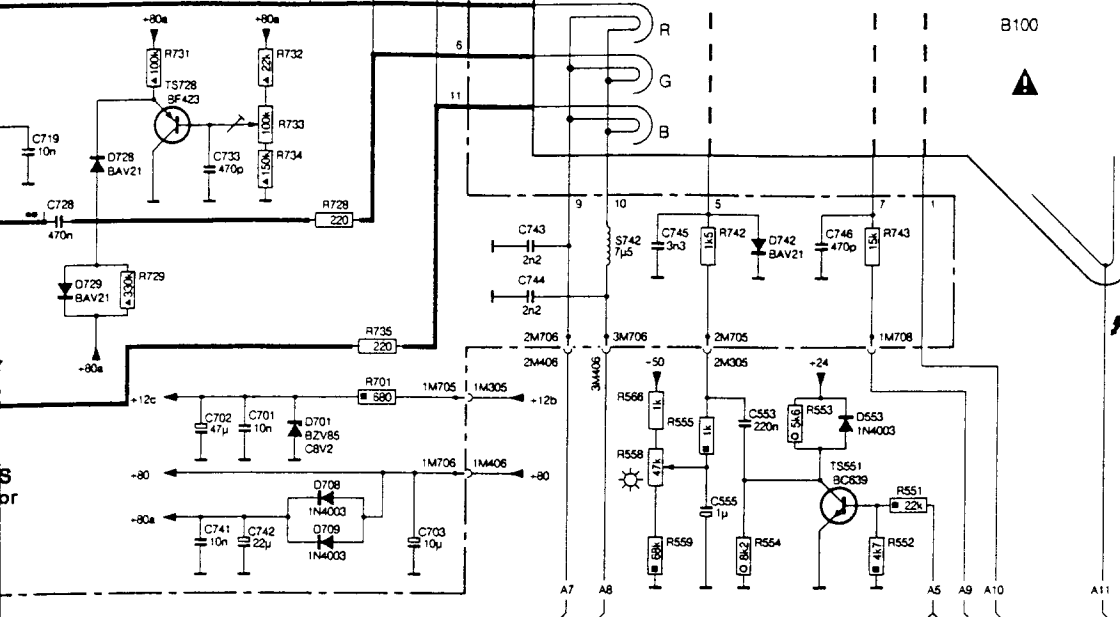


For Service Manuals
contact
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY
Tel (01844) 351694
Fax (01844) 352554

For Service Manuals
contact
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY
Tel (01844) 351694
Fax (01844) 352554



For Service Manuals
contact
AURITRON SERVICES
Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554



B100	B33	O538	N18	R519	N16
C171	M28	O539	O23	R521	M20
C172	O33	O543	O34	R522	M19
C173	O33	O553	E32	R524	N20
C174	N28	O556	I27	R525	N20
C175	N30	O557	I25	R526	N19
C301	B 3	O562	A 7	R528	N17
C302	C 4	O701	E28	R529	M17
C303	E 3	O706	B20	R531	N18
C311	M22	O708	F28	R532	N18
C312	M22	O709	F28	R533	N18
C313	B 4	O711	D24	R534	M21
C314	E 8	O715	E20	R535	M21
C315	C 5	O722	B22	R536	N21
C316	D 5	O723	C21	R537	C21
C317	E 4	O728	C26	R538	M23
C318	E 4	O729	D25	R539	N23
C319	N31	O735	E22	R541	M23
C320	A 5	O736	F21	R542	M23
C321	A 6	O742	D31	R543	M23
C326	F 8	I C102	N29	R544	M25
C331	B 7	I C301	B 7	R545	N23
C332	B 7	I C401	I 5	R546	M24
C333	O 7	I C402	I 12	R547	M24
C334	O 7	I C403	I 16	R548	M25
C335	E 7	I C501	M13	R549	M28
C336	E 7	R175	M0	R551	F32
C337	F 8	R301	B 3	R552	F32
C338	F 9	R302	D 3	R553	E32
C341	F10	R303	E 2	R554	F31
C343	F10	R309	E 3	R555	F31
C345	F14	R305	B 3	R556	E27
C346	F15	R306	C 4	R557	I26
C361	C16	R307	D 4	R558	F30
C362	D16	R308	D 3	R559	F31
C384	C18	R309	E 3	R562	M14
C385	D18	R316	E 4	R563	M24
C386	E18	R312	D 5	R564	O19
C367	F12	R313	E 4	R566	E30
C368	F12	R314	A 4	R571	K 7
C369	F12	R315	A 5	R572	L 6
C371	F11	R317	A 5	R573	J 8
C402	K 4	R318	A 6	R574	K 8
C404	L 4	R319	A 6	R575	J 8
C406	H 5	R320	M2	R576	K 8
C407	M29	R321	F 9	R577	J 9
C408	M29	R322	F 9	R579	J 9
C413	H14	R323	F 15	R581	K 9
C414	K14	R324	F 16	R582	J 7
C415	J15	R325	F 3	R583	O19
C416	L19	R326	F 7	R701	E28
C417	L18	R327	F 6	R702	B23
C418	L17	R328	F 5	R703	A19
C421	L16	R329	F 5	R704	O19
C422	L16	R331	F 5	R705	A20
C423	L16	R332	F 5	R707	C20
C424	L17	R333	F 5	R708	B19
C425	J21	R334	F 5	R709	C24
C426	J20	R335	F 4	R712	E24
C427	J22	R336	F 5	R713	D24
C428	K22	R337	E11	R714	D20
C429	J25	R338	C12	R716	F20
C431	J25	R339	A10	R717	E19
C432	K25	R341	D12	R722	B24
C433	J26	R342	A10	R723	C22
C434	K27	R343	D12	R724	A22
C435	K28	R344	A11	R725	A23
C436	J32	R345	F14	R726	A23
C437	K32	R346	F15	R727	B23
C438	K39	R347	F17	R728	O28
C439	I32	R348	F15	R729	O26
C445	I23	R354	O15	R731	C27
C448	I22	R355	O15	R732	C27
C449	I20	R356	F14	R733	C27
C461	O 6	R357	C16	R734	C27
C462	O 7	R358	D16	R735	E28
C501	N 7	R359	F15	R736	F22
C502	M 7	R361	C16	R737	D22
C503	O10	R362	O16	R738	O23
C505	M11	R364	C18	R739	E23
C510	O10	R365	D18	R741	E23
C514	O14	R366	E18	R742	D31
C515	O14	R368	F11	R743	O32
C519	M15	R369	F12	R751	O19
C521	M04	R401	K 3	R752	D24
C528	O17	R402	K 3	R753	F19
C531	N18	R403	O 3	R319	N30
C533	O18	R404	L 3	R321	J23
C537	O20	R405	O 3	R432	J31
C538	N22	R406	K 4	R433	J30
C541	O34	R407	M29	R434	K32
C543	O24	R408	H15	R436	K29
C548	M25	R409	H15	R437	M18
C553	E31	R410	K14	R438	A20
C555	F31	R411	H15	S711	C24
C556	I26	R412	H14	S715	E20
C557	I26	R413	J15	S742	O30
C558	I27	R415	L19	SG701	A28
C577	K16	R416	K18	SG702	A28
C578	K 9	R417	K19	SG703	A29
C583	N19	R418	K17	T401	J23
C701	E27	R419	K17	T402	G28
C702	E27	R420	I20	T3311	B 3
C703	F29	R421	K17	T3312	C 4
C705	A19	R422	K16	T3313	J 3
C706	A20	R423	I17	T3317	A 5
C707	O19	R424	J20	T3345	F14
C708	O20	R425	K23	T3353	O15
C709	C24	R426	J22	T3354	B15
C711	C24	R427	J23	T3355	E15
C718	B21	R428	J24	T3356	F13
C719	C25	R429	K27	T3425	J21
C721	E21	R431	I31	T3428	J24
C722	B21	R432	J31	T3436	I33
C728	B23	R433	I32	T3447	I 21
C729	O26	R434	I32	T3448	H20
C733	C27	R435	I32	T3461	N 6
C735	E21	R436	I33	T3501	M 7
C739	E23	R437	I33	T3502	M 7
C741	F27	R438	I33	T3521	M19
C742	F27	R439	I33	T3524	N19
C743	O29	R441	K30	T3536	N21
C744	O29	R441	K30	T3537	N21
C745	D30	R442	K31	T3538	N22
C746	D32	R443	L31	T3545	N25
C751	O19	R445	H23	T3546	N25
C752	E24	R446	H23	T3551	F32
C753	F19	R447	I23	T3571	J 7
D175	M01	R448	I22	T3572	K 8
C326	F 8	R449	I20	T3575	J 8
C327	F 7	R462	O 6	T3576	K 8
C353	C17	R501	N 4	T3705	A20
C354	D17	R502	M 5	T3706	B20
C355	E17	R503	N10	T3707	B20
C368	F12	R504	N12	T3709	C25
D407	M28	R505	N11	T3711	D25
D470	J20	R506	N11	T3712	D24
D424	K21	R507	N 9	T3714	E20
D426	J22	R508	N 9	T3715	E20
D427	J23	R509	M 8	T3716	E20
D431	J27	R510	O11	T3722	A22
D432	K28	R511	M 9	T3728	C27
D438	K29	R512	M 9	T3735	C22
D445	I23	R513	M 9		
D447	I22	R514	O14		
D505	O11	R516	O14		
D506	O11	R517	O15		
D519	M15	R518	M03		

