

**A**

4CM4200.  
 4CM4200/75T.  
 4CM4270.  
 4CM4270/00T.  
 4CM4270/05T.  
 4CM4270/06T.  
 CM-4200.  
 CM-4200/75T.  
 CM-4270.  
 CM-4270/00T.  
 CM-4270/05T.  
 CM-4270/06T.

**B**

**B**

**MAURITRON**  
**115**  
 01844-351694

**CM 4000**

CL26532121/011, AREF  
 150792

1100	C28	3358	E13
1103	A 4	3359	N17
2301	L 9	3360	G21
2302	M 6	3361	C15
2303	M 5	3362	F15
2304	C 7	3363	I15
2306	F 7	3364	B13
2307	N11	3365	J19
2308	B 8	3366	A14
2311	J 8	3367	L18
2312	K24	3368	D14
2313	K24	3369	M17
2314	K 8	3370	M 7
2315	K 9	3371	N12
2316	J12	3372	G14
2317	D12	3373	A20
2318	G12	3374	B20
2321	K23	3375	B21
2323	K 9	3376	C21
2324	K16	3377	C21
2325	D15	3378	D20
2326	G15	3379	M18
2327	I15	3380	K18
2328	B13	3381	E20
2331	E13	3382	E21
2332	H13	3383	E21
2333	B14	3384	F21
2334	B16	3385	G20
2335	E16	3386	H20
2336	E14	3387	H21
2337	G14	3388	H21
2338	G16	3389	C16
2339	M22	3390	F16
2341	J25	3391	I21
2342	E26	3392	I16
2343	E27	3393	M20
2344	L25	3394	M22
2345	D16	3397	E25
2346	G16	3399	E27
2347	I16	3801	J25
2353	J 7	3802	K24
2354	K23	3803	L 9
2355	E25	3804	N 6
2356	J26	3805	K23
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2359	H26	3808	M23
2360	L26	3809	M20
2361	K26	5301	B15
2362	J24	5302	E15
2363	J24	5303	G15
2364	J23	5304	E25
2365	M23	5305	A14
2366	C21	5306	D14
2367	F21	5307	G14
2368	I21	5310	J26
2371	C23	6301	O12
2372	C23	6302	J13
2373	C24	6303	J12
3301	I 5	6307	L24
3302	C 6	6309	M 5
3303	F 6	6311	B19
3304	H 8	6312	B20
3305	B 7	6313	E19
3306	E 7	6314	E20
3307	L 9	6315	H19
3308	H 9	6316	H20
3309	L 8	6317	I26
3310	M 8	6318	I26
3311	H 5	6321	E26
3312	C 6	6322	N10
3313	F 6	6323	N11
3314	M13	7301	A 8
3315	O12	7302	C15
3316	M12	7303	B15
3317	L 8	7304	F15
3318	J 8	7305	E15
3319	M 8	7306	I15
3320	N 5	7307	H15
3321	O 5	7308	K15
3322	L 7	7309	L 6
3323	M 7	7310	L 9
3324	M10	7311	L 7
3325	M11	7312	B20
3326	G12	7313	E20
3327	B12	7314	H20
3328	E12	7315	N21
3329	N 5	7316	M18
3330	L 6	7317	N 6
3331	I12	7319	N12
3332	C12	7320	N 7
3333	F12	7321	L18
3334	H12	7322	K19
3335	B12		
3336	E12		
3337	J15		
3338	K15		
3339	O 6		
3340	B21		
3341	I13		
3342	C13		
3343	F13		
3344	K10		
3345	M22		
3346	O21		
3347	M21		
3348	K25		
3349	N21		
3350	E21		
3351	C14		
3352	F14		
3353	H14		
3354	C15		
3355	F15		
3356	I15		
3357	G13		

## 1102-3A MAIN PANEL (DEFLECTION PART)

### H+V Blanking

### Horizontal Sync. 2

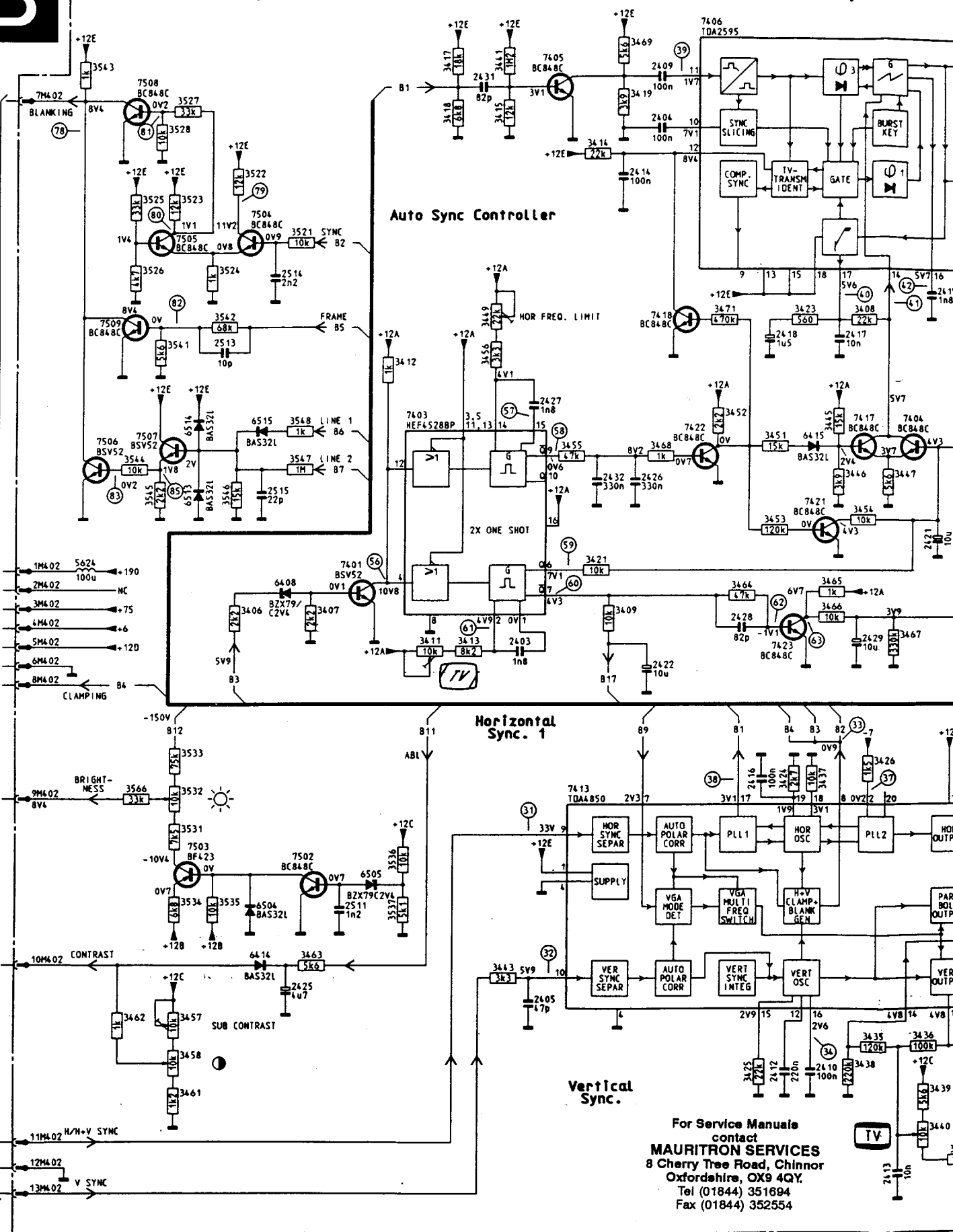
### Auto Sync Controller

### Horizontal Sync. 1

### Vertical Sync.

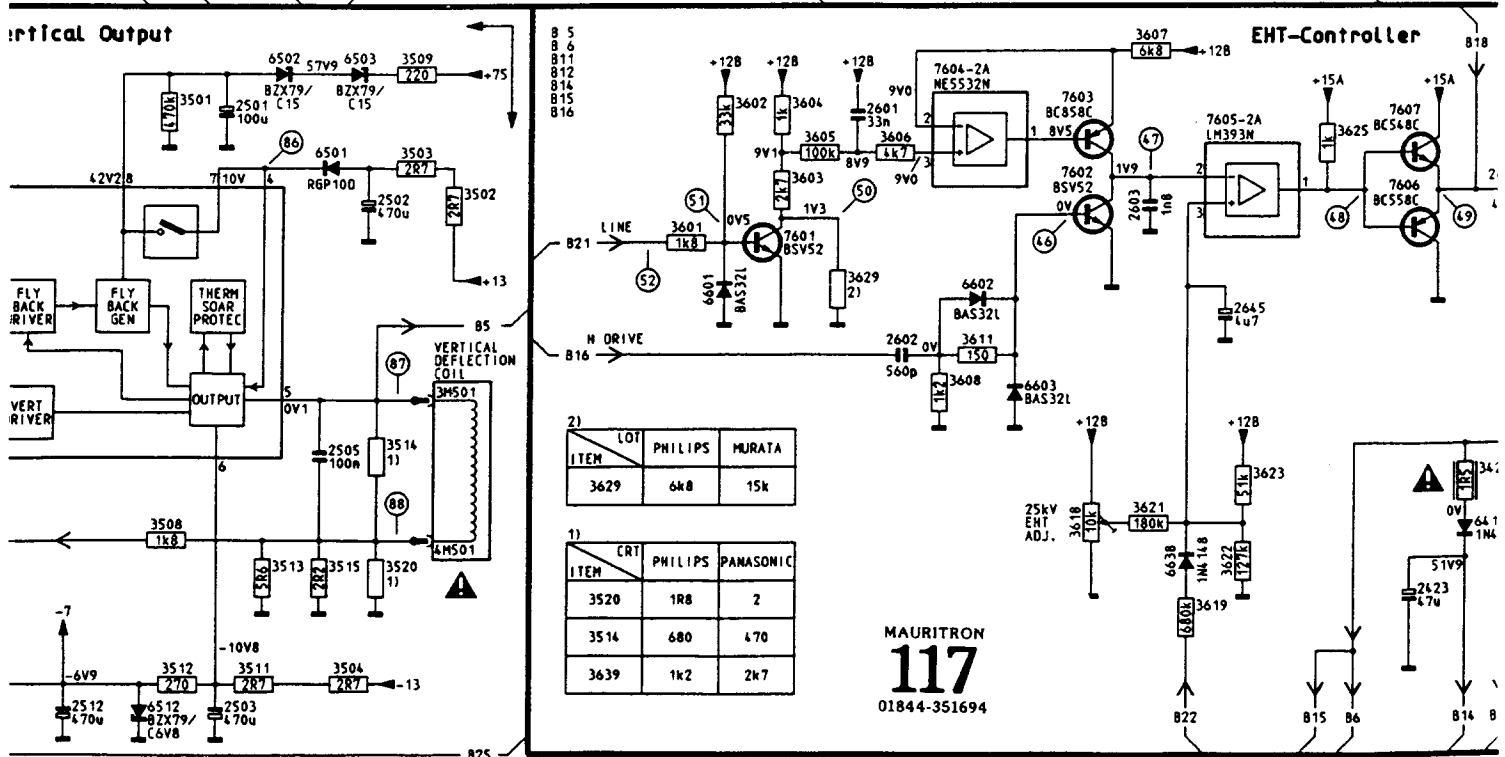
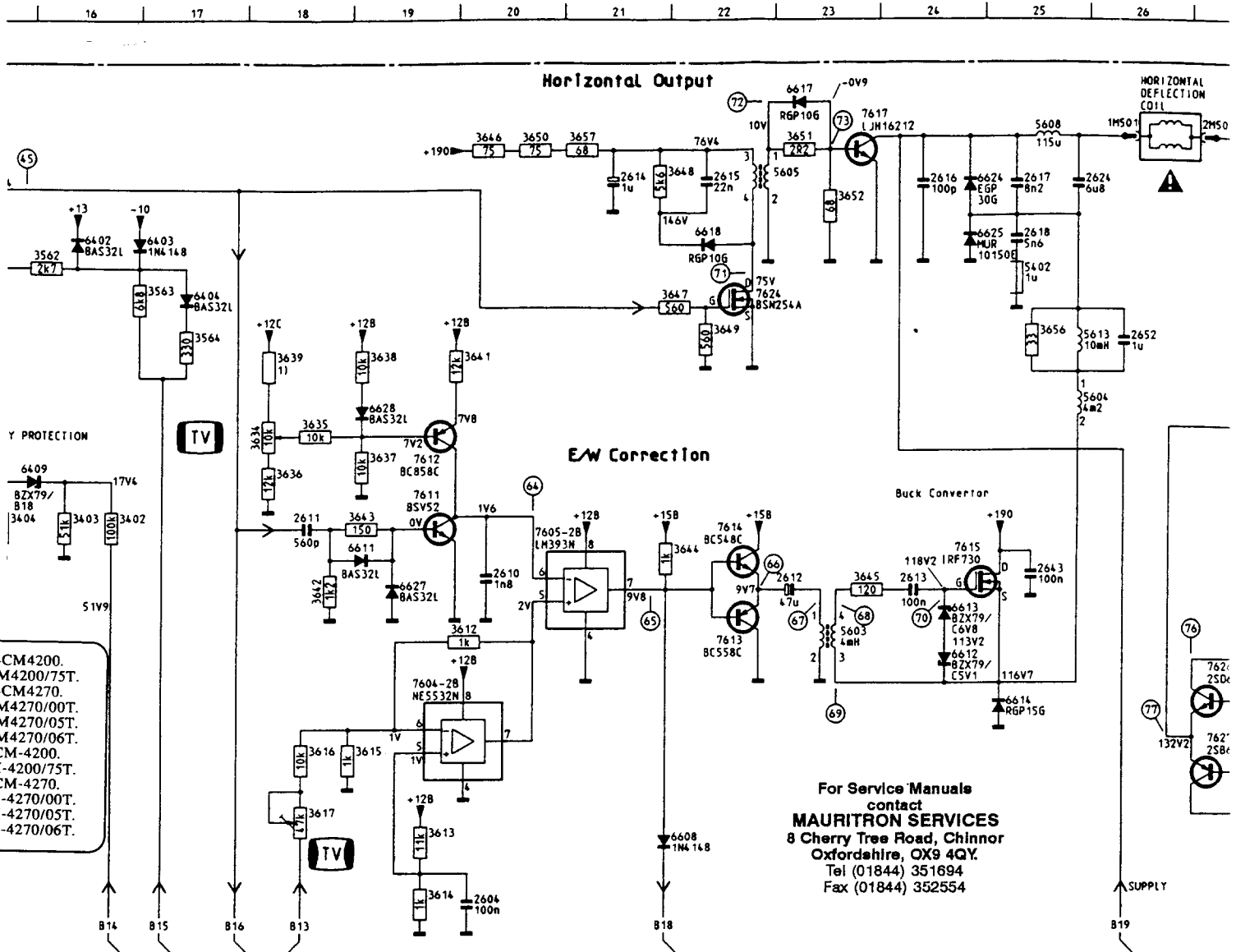
**B**

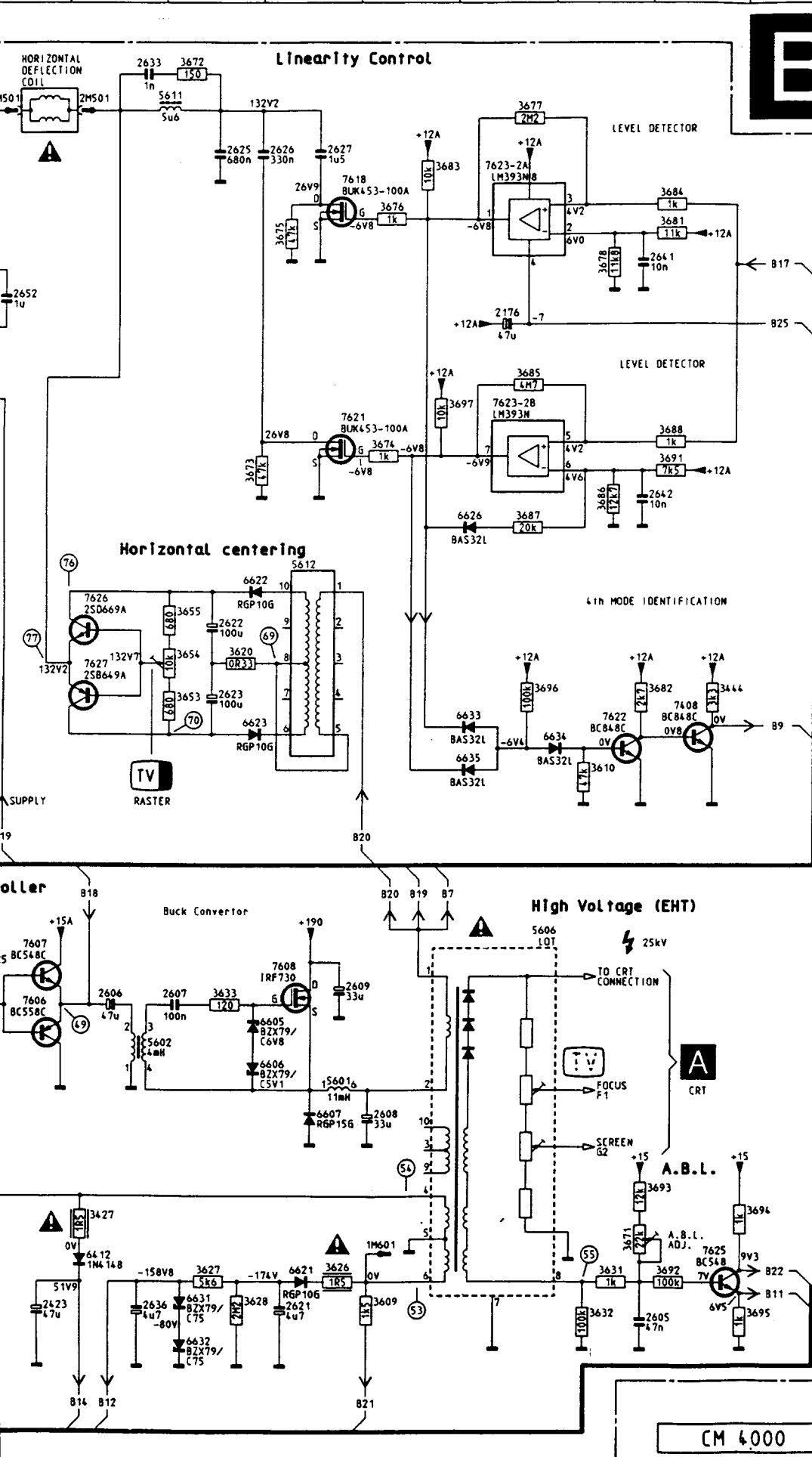
**A**  
VIDEO PANEL  
M305



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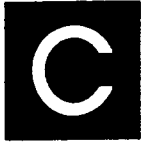




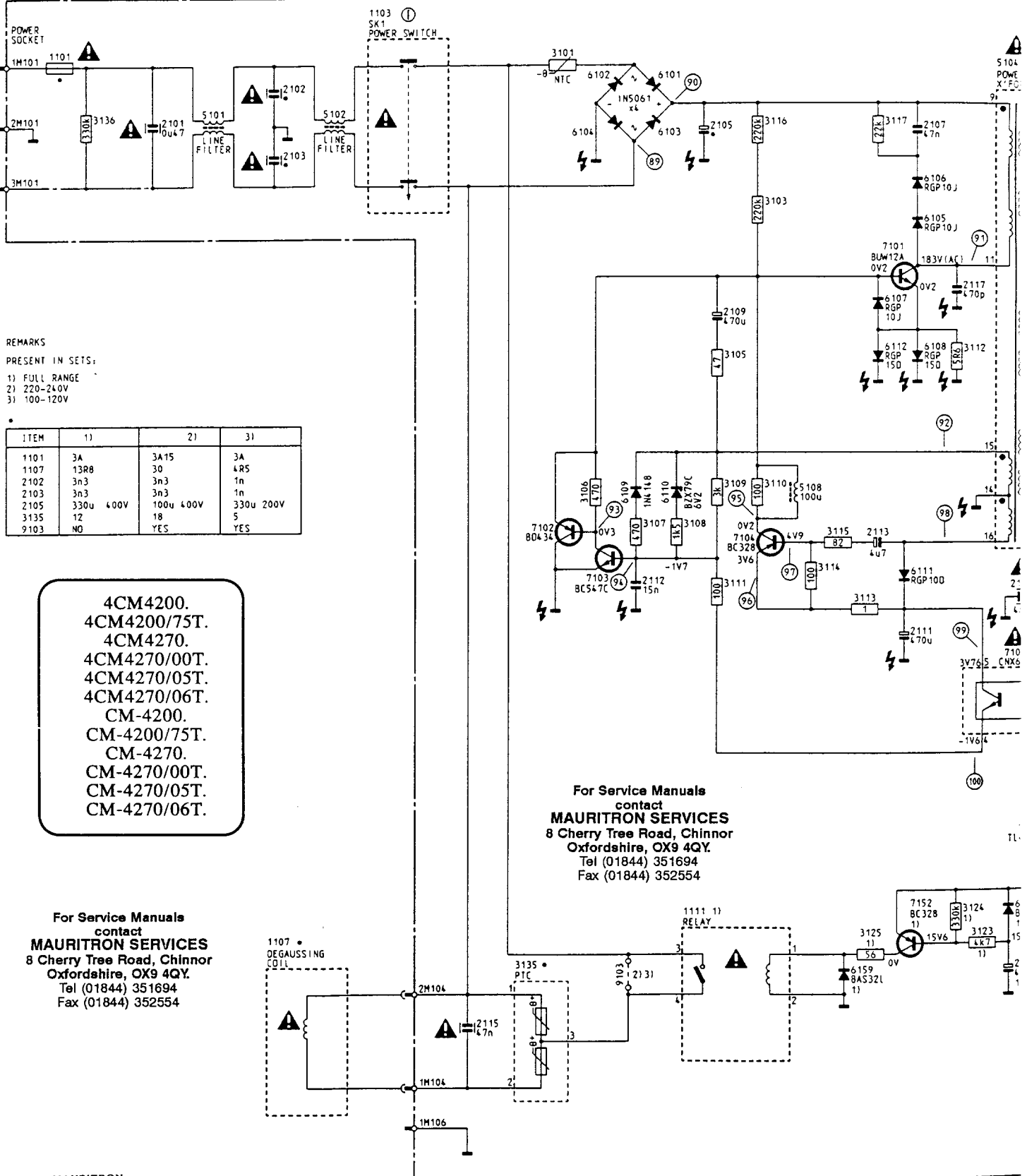


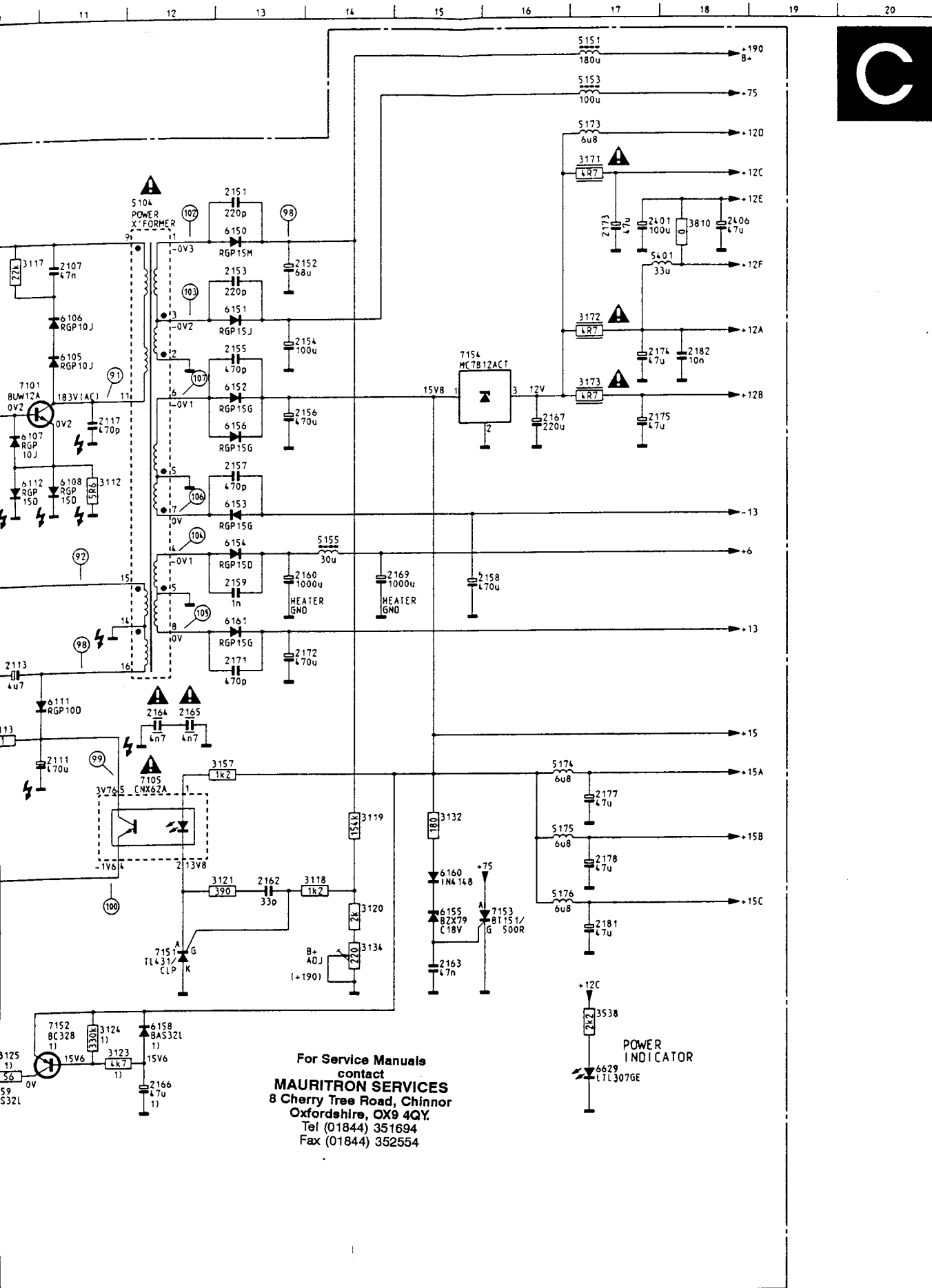
**B**

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2402	E13	3453	G10	3674	E30	7608	J29
2403	I 7	3454	G11	3675	C29	7611	E19
2404	B 9	3455	F 7	3676	B30	7612	D19
2405	M 7	3456	E 7	3677	A31	7613	F22
2407	H15	3457	M 3	3678	C32	7614	E22
2408	F14	3458	M 3	3681	C33	7615	E24
2409	B 9	3461	M 3	3682	G32	7617	A23
2410	M10	3462	M 2	3683	B30	7618	B29
2411	I14	3463	L 5	3684	B33	7621	E29
2412	M10	3464	H 9	3685	D31	7622	H32
2413	O11	3465	H11	3686	E32	7623	B31
2414	C 8	3466	H11	3687	F31	7623	D31
2415	O12	3467	H11	3688	E33	7624	C22
2416	J10	3468	F 9	3691	E33	7625	H33
2417	E11	3469	A 8	3692	H33	7626	F27
2418	E10	3471	E 9	3693	L32	7627	G27
2421	G12	3501	J17	3694	H34		
2422	I 8	3502	K19	3695	H34		
2423	M26	3503	J18	3696	G31		
2424	E15	3504	M18	3697	D30		
2425	M 4	3505	M14	3698	C25		
2426	G 8	3506	M13	3699	K29		
2427	F 7	3507	M14	3699	K27		
2428	H 9	3508	M17	3699	F23		
2429	H11	3509	J18	3699	D25		
2431	B 6	3510	M14	3699	B22		
2432	G 8	3511	M17	3699	J32		
2501	J17	3512	M17	3699	A25		
2502	K18	3513	M17	3699	A28		
2503	O17	3514	M18	3699	F29		
2505	M18	3515	M18	3699	C25		
2511	L 5	3520	M18	3699	H 2		
2512	O16	3521	D 4	3699	B16		
2513	E 3	3522	C 4	3699	B17		
2514	D 4	3523	C 3	3699	C17		
2515	G 4	3524	D 3	3699	F12		
2601	J22	3525	C 2	3699	G12		
2602	L22	3526	D 2	3699	H 4		
2603	K24	3527	B 3	3699	E15		
2604	L20	3528	B 3	3699	M27		
2605	M32	3531	K 3	3699	G13		
2606	K27	3532	J 3	3699	L 4		
2607	K28	3533	J 3	3699	F10		
2608	L30	3534	K 3	3699	I13		
2609	K29	3535	K 3	3699	J18		
2610	F20	3536	K 5	3699	J17		
2611	E18	3537	L 5	3699	J18		
2612	F23	3541	E 3	3699	K 4		
2613	F24	3542	E 3	3699	L 5		
2614	B21	3543	B 2	3699	O16		
2615	B22	3544	F 2	3699	G 3		
2616	B24	3545	G 3	3699	F 3		
2617	B25	3546	G 4	3699	F 4		
2618	B25	3547	F 4	3699	K21		
2621	M29	3548	F 4	3699	K23		
2622	G28	3562	C16	3699	L23		
2623	G28	3563	C17	3699	K28		
2624	B25	3564	C17	3699	K28		
2625	B28	3566	J 2	3699	L29		
2626	B29	3601	K21	3699	M22		
2627	B29	3602	J21	3699	E19		
2633	A27	3603	K21	3699	F24		
2636	M27	3604	J21	3699	F24		
2641	C32	3605	J22	3699	G25		
2642	E32	3606	J22	3699	A23		
2643	F25	3607	L24	3699	B22		
2645	L25	3608	L23	3699	M29		
2652	C26	3609	N30	3699	F28		
3402	E16	3610	H32	3699	H28		
3403	E16	3611	L23	3699	B24		
3404	E15	3612	F20	3699	B24		
3405	D14	3613	H19	3699	F31		
3406	H 4	3614	I19	3699	F19		
3407	H 5	3615	G19	3699	D19		
3408	E11	3616	G18	3699	M28		
3409	H 8	3617	H18	3699	N28		
3411	I 6	3618	M24	3699	H31		
3412	E 5	3619	N25	3699	H32		
3413	I 6	3620	G28	3699	H31		
3414	C 8	3621	M24	3699	M24		
3415	B 7	3622	N25	3699	H 5		
3416	E14	3623	M25	3699	O14		
3417	B 6	3625	J26	3699	F 6		
3418	B 6	3626	M29	3699	F11		
3419	B 8	3627	M28	3699	B 7		
3420	M12	3628	M28	3699	A 9		
3421	H 8	3629	K22	3699	H33		
3422	G12	3631	M32	3699	B15		
3423	E10	3632	N32	3699	A15		
3424	J10	3633	K28	3699	J 7		
3425	M10	3634	D18	3699	H14		
3426	J11	3635	D18	3699	G14		
3427	M27	3636	E18	3699	H13		
3428	G13	3637	D19	3699	F11		
3429	A14	3638	C19	3699	E 9		
3431	F14	3639	C18	3699	G10		
3432	G13	3641	C20	3699	F 7		
3433	M13	3642	F18	3699	H11		
3434	I14	3643	E19	3699	J11		
3435	M11	3644	E22	3699	K 5		
3436	M12	3645	F23	3699	K 3		
3437	J10	3646	A20	3699	D 6		
3438	M11	3647	C22	3699	O 3		
3439	M12	3648	B21	3699	F 2		
3440	M12	3649	C22	3699	F 3		
3441	B 7	3650	A20	3699	B 2		
3443	L 7	3651	A23	3699	E 2		
3444	G33	3652	B23	3699	K21		
3445	F11	3653	G28	3699	K24		
3446	F11	3654	G28	3699	J24		
3447	F11	3655	G28	3699	G19		
3448	F13	3656	C25	3699	J22		
3449	E 7	3657	A21	3699	E20		
3450	M12	3671	M32	3699	I25		



## 1102-3B MAIN PANEL (SUPPLY PART)



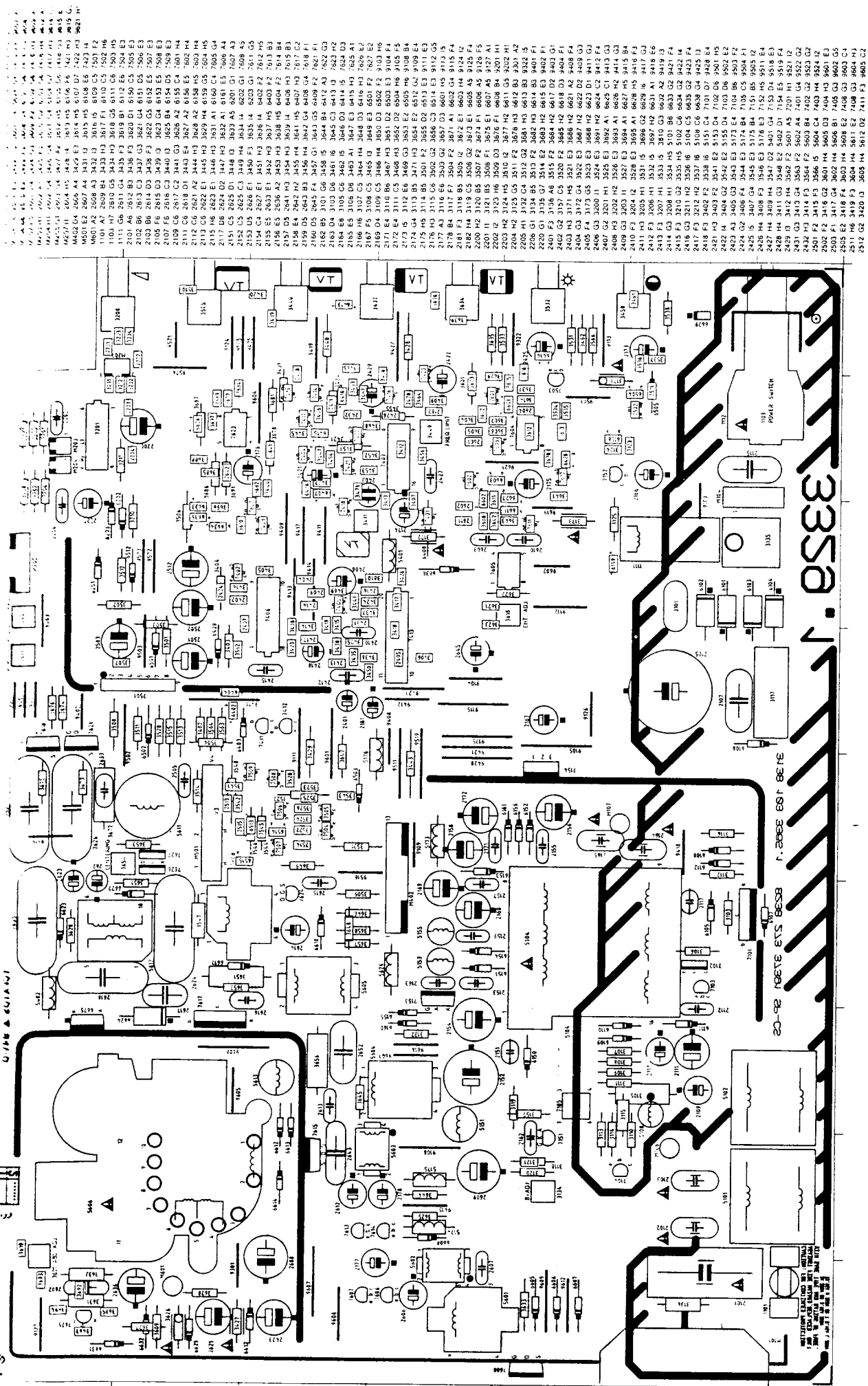


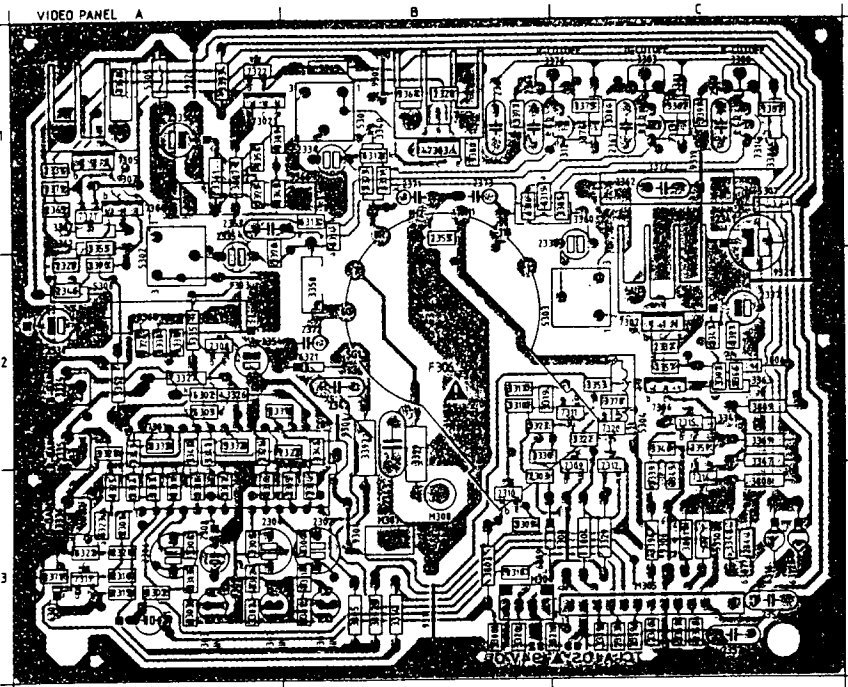
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2103	C 4	
2105	C 8	
2107	C 11	
2109	E 9	
2111	I 11	
2112	H 8	
2113	H 10	
2115	M 6	
2117	E 11	
2151	B 13	
2152	C 13	
2153	C 13	
2154	D 13	
2155	D 13	
2156	E 13	
2157	E 13	
2158	G 13	
2159	G 13	
2160	J 13	
2162	J 13	
2163	K 15	
2164	H 12	
2165	H 12	
2166	L 12	
2167	E 16	
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2171	H 13	
2172	H 13	
2173	C 17	
2174	D 17	
2175	E 17	
2177	I 17	
2178	J 17	
2181	K 17	
2182	D 18	
2401	C 17	
2406	C 18	
3101	B 7	
3103	O 9	
3105	F 9	
3106	G 7	
3107	G 8	
3108	G 8	
3109	G 9	
3110	G 9	
3111	H 9	
3112	E 11	
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3114	H 10	
3115	H 10	
3116	C 9	
3117	C 10	
3118	J 14	
3119	I 14	
3120	J 14	
3121	J 13	
3123	L 11	
3124	L 11	
3125	L 10	
3132	L 15	
3134	K 14	
3135	L 6	
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3157	I 13	
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3172	D 17	
3173	D 17	
3538	L 17	
3810	C 18	
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5102	C 4	
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5153	A 17	
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5175	J 16	
5176	J 16	
5401	C 18	
6101	C 8	
6102	C 8	
6103	C 8	
6104	C 7	
6105	D 11	
6106	D 11	
6107	E 10	
6108	F 11	
6109	G 7	
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6111	H 11	
6112	F 10	
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6153	F 13	
6154	F 13	
6155	J 15	
6156	E 13	
6158	L 12	
6159	L 10	
6160	J 15	
6161	G 13	
6629	L 17	
7101	D 11	
7102	H 6	
7103	H 7	
7104	H 9	

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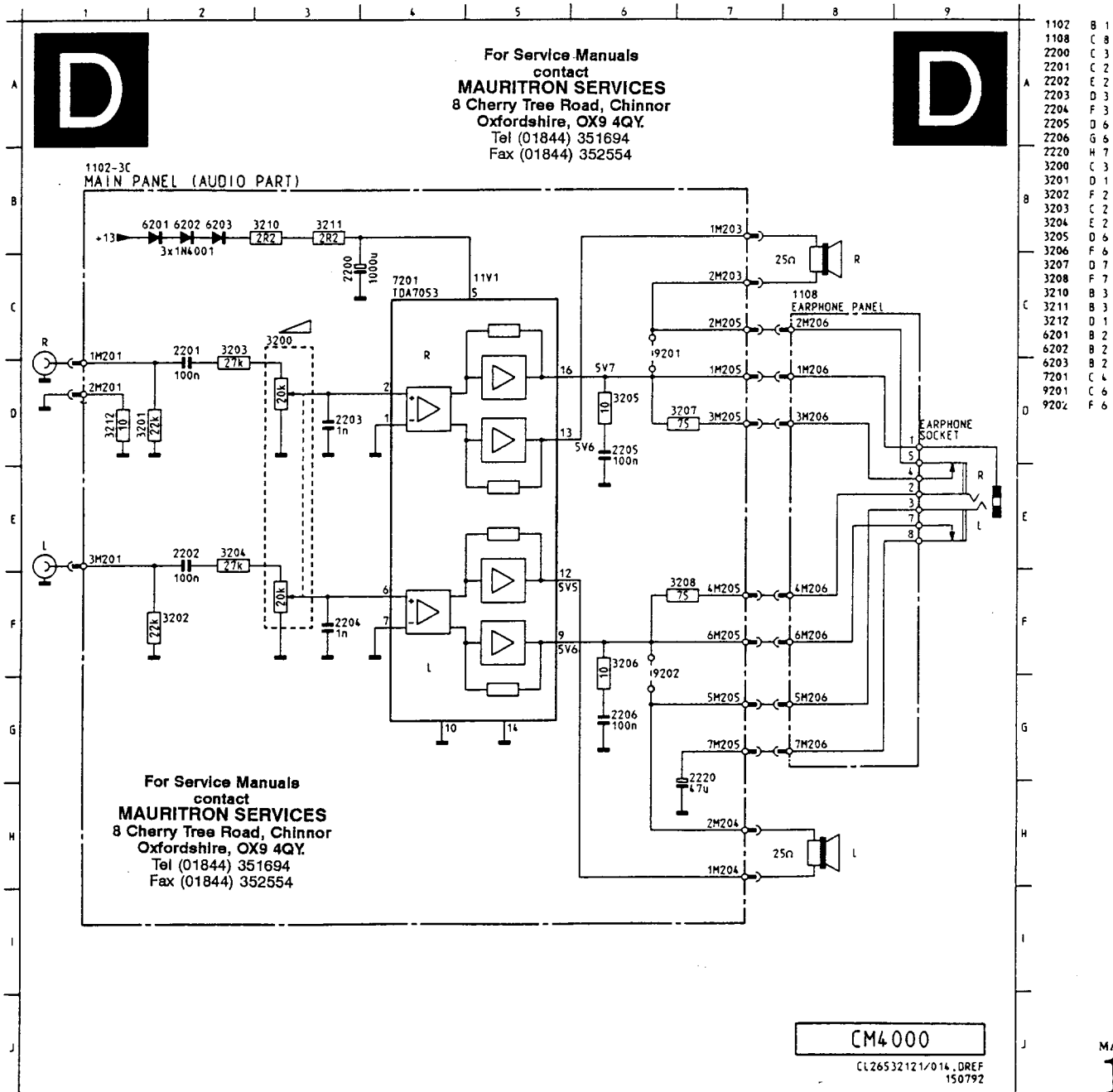
CM 4000

CL2653212/013, CREF  
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CM-4200/75T.  
CM-4270.  
CM-4270/00T.  
CM-4270/05T.  
CM-4270/06T.



## Electrical instructions

### General :

When carry-out the electrical setting in many cases a video signal must be applied to the monitor. A computer with an "ATI1024 V6-1.04/PH beta4" interface card (1024 \* 768) is used as the video signal source. The signal pattern are selected from the "service test software" package.

### Installation instruction for the ati card :

- Place the ATI interface card in the computer.
- Select the "vsetup" file from the utility disk belonging to the card.
- Select "8 bits" or "16 bits" rom operation depends on your computer type.
- Select "analog monitor".
- Select the "magnavox CM5000" from video rom bios.
- Re-boot your computer again.
- Put the floppy disk with the "service test software" package in the computer and select the test pattern indicated for the following setting.

### 1. B+ supply voltage (3134)

- Set the brightness control 3532 and the contrast control 3458 to minimum.
- Set the trimming pot-meter 3134 in the mechanical mid-position (this is a pre-setting).
- Connect a dc voltmeter between capacitor 2152 and ground (b+ output).
- Switch on the monitor.
- Apply a video signal in the 1024 \* 768 with 56 kHz/70 Hz mode.
- Select the "cross-hatch" pattern.
- Adjust trimming pot-meter 3134 until the dc voltmeter reads 190V  $\pm$  0.5V.

### 2. Horizontal synchronization (3411)

- Set H-shift front control 3432 at mechanical mid-position.
- Short the junction of 2414 and 7406 pin 12 to ground.
- Apply a video signal in the 1024 \* 768 with 56 kHz/70 Hz mode. Select the "cross-hatch" pattern.
- Adjust trimming pot-meter 3411 until the picture is straight.

### 3. Horizontal frequency limit (3449)

- Connect an oscilloscope to pin 9 of 7403.
- Using pot-meter 3449, set the timing of pulses at pin 9 of 7403 to  $2.4 \pm 0.02$  us.

### 4. EHT setting (3618)

- Pre-set H-width front control 3634 to min. position.
- Apply a video signal in the 1024 \* 768 with 56 kHz/70 Hz mode. Select the "cross-hatch" pattern.
- Adjust trimming pot-meter 3618 to make EHT reaching  $25KV \pm 0.2 KV$ .

### 5. Picture geometry setting (general)

- For the following setting apply a video signal (cross-hatch) in the 640 \* 480 with 31.5 KHz/60 Hz to the monitor.
- Pre-set H-shift front control 3432 and V-shift front control 3505 to mid-position.
- Pre-set contrast control 3458 and brightness control 3532 to mechanical center position.

#### 5.1 Horizontal image centering (3654, 3432)

- Set pot-meter 3654 for the correct horizontal centering of the whole raster.
- Adjust pot-meter 3432 for the correct horizontal centering of the video display.

#### 5.2 Horizontal width (3634)

- Adjust pot-meter 3634 for a picture width of 250 mm.

#### 5.3 Vertical height (3440)

- Adjust pot-meter 3440 for a picture height of 188 mm.

#### 5.4 Vertical centering (3505)

- Adjust pot-meter 3505 for the correct vertical centering of the video display.

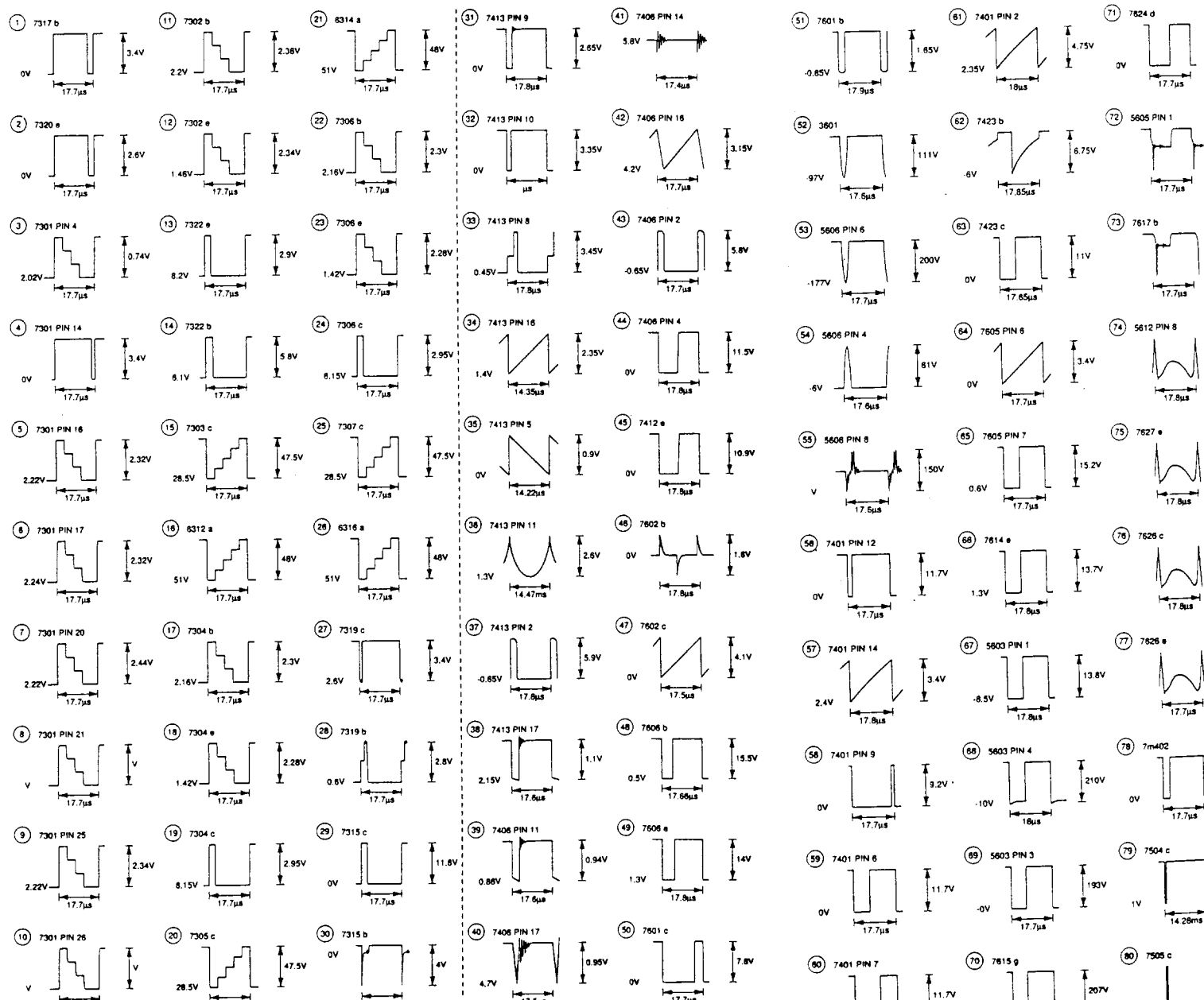
#### 5.5 East-west correction (3617)

- Apply video signal in 640 \* 480 with 31.5 KHz/60 Hz mode.
- Adjust pot-meter 3617 until the vertical lines on the left and right-hand sides of the screen are as straight as possible.

### 6. Alignmen

- VG2 (bottom kn)
- Cut-off points of
- White "d" (3335)

- Pre-set pot-meter 3388 to the mid-position.
- Apply a video signal 56 kHz/70 Hz.
- Set brightness control 3458 to minimum.
- Adjust VG2 pot-meter among red, green, blue.
- The pot-meter 3376, 3383 and 3388 to an optimal position.
- Adjust brightness control 3458 to maximum.
- Set sub-contrast control 3458 to maximum.
- Adjust pot-meter 3458 output level so that optimal light is obtained.
- If necessary, adjust optimal light our brightness no longer.
- Adjust contrast control 3458 checking the display.



### 6. Alignments of :

- \* VG2 (bottom knob on the line output transformer).
- \* Cut-off points of the picture tube (3376, 3383, 3388).
- \* White "d" (3335, 3336, 3334, 3457).

- Pre-set pot-meter 3336, 3334, 3457 and 3376, 3383, 3388 to the mid-position.
- Apply a video signal (full white) in the 1024 \* 768 with 56 kHz/70 Hz.
- Set brightness control 3532 at click position, sub-contrast 3457 and contrast 3458 to mechanical mid-position.
- Set VG2 pot-meter on the line output transformer to minimum.
- Adjust VG2 pot-meter to increase VG2 until any colour among red, green and blue becomes "just visible".
- The pot-meter adjustment of the "two remaining" color (3376, 3383 and 3388) to the same light output level, so that an optimal background (raster) color is obtained.
- Adjust brightness front control 3532 to maximum for double checking the background (raster) color.
- Set brightness control 3532, and contrast control to 3458 to maximum.
- Set sub-contrast pot-meter 3457 at the mid-position.
- Adjust pot-meter 3335, 3336 and 3334 to the same light output level so that an optimal display color (white "D") is obtained.
- If necessary, adjust sub-contrast pot-meter 3457 for the optimal light output of the video display (until the brightness no longer increases).
- Adjust contrast control 3458 to maximum, for double checking the displayed color.

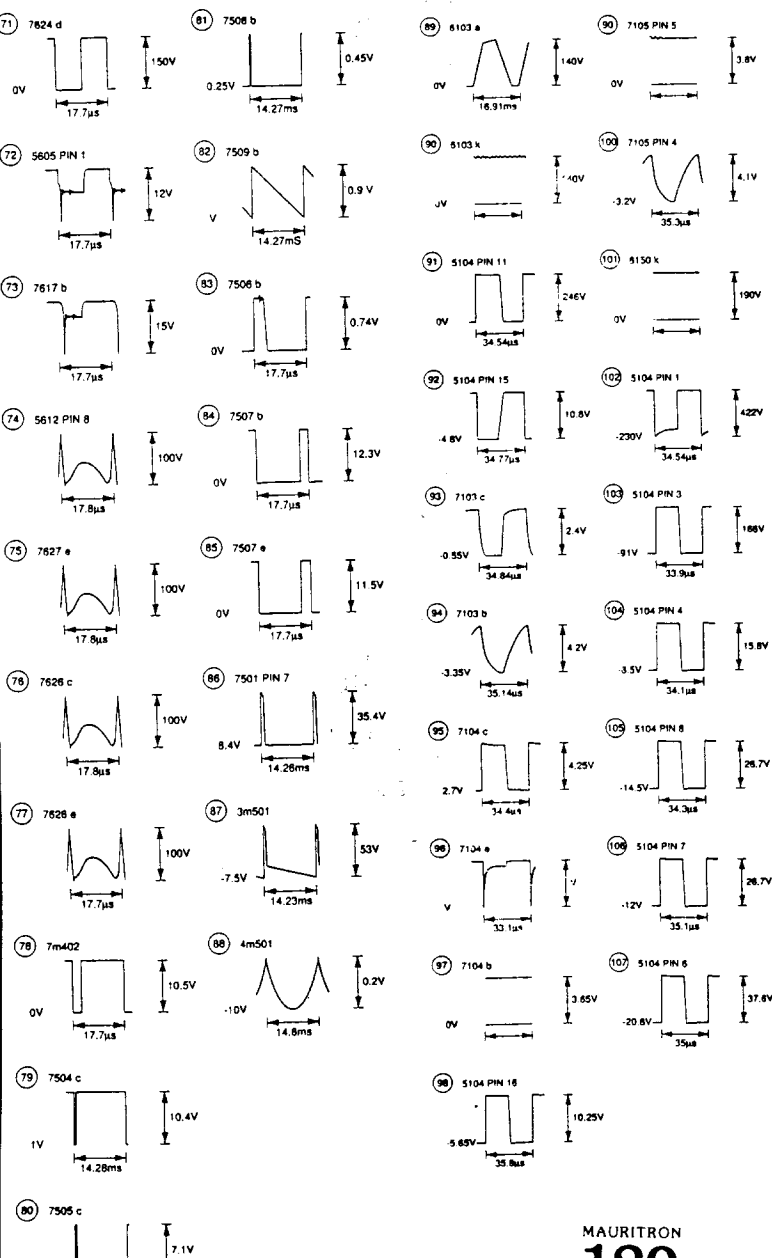
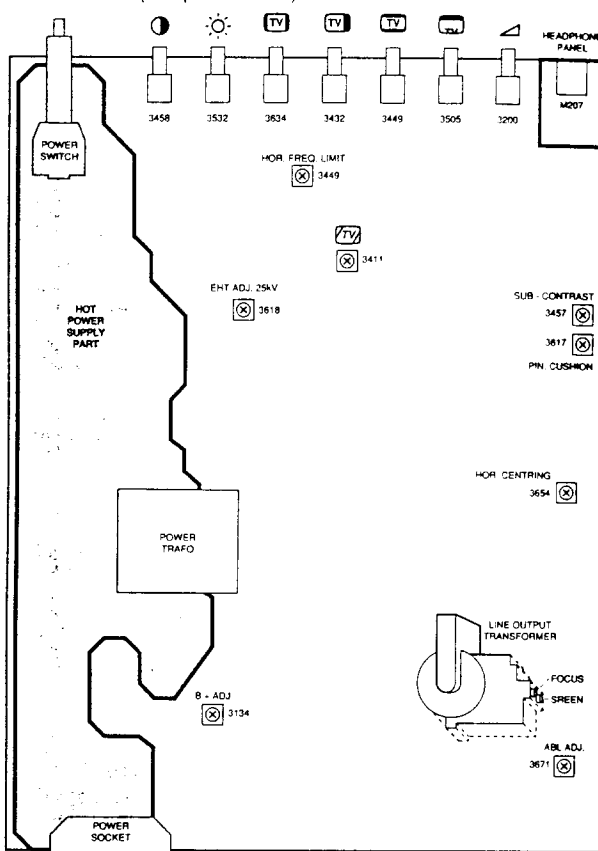
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CM-4200.  
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CM-4270/06T.

## 7. Focussing

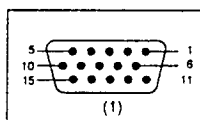
- Apply a video signal ("M" characters) in the 640 \* 480 with 31.5 KHz/60 Hz.
- Set brightness control 3532 at click position and contrast control 3458 to maximum.
- Adjust focus pot-meter (top knob on the line output transformer) so that the picture at 2/3 of the diagonal lines (from center to four corners) of the displayed screen is as sharp as possible.

**For Service Manuals  
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Tel (01844) 351694  
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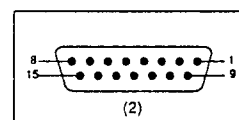
MAIN PANEL (component view)



Pin assignment 15p "D" shell  
(3 rows)



Pin assignment 15p "D" shell  
(2 rows)

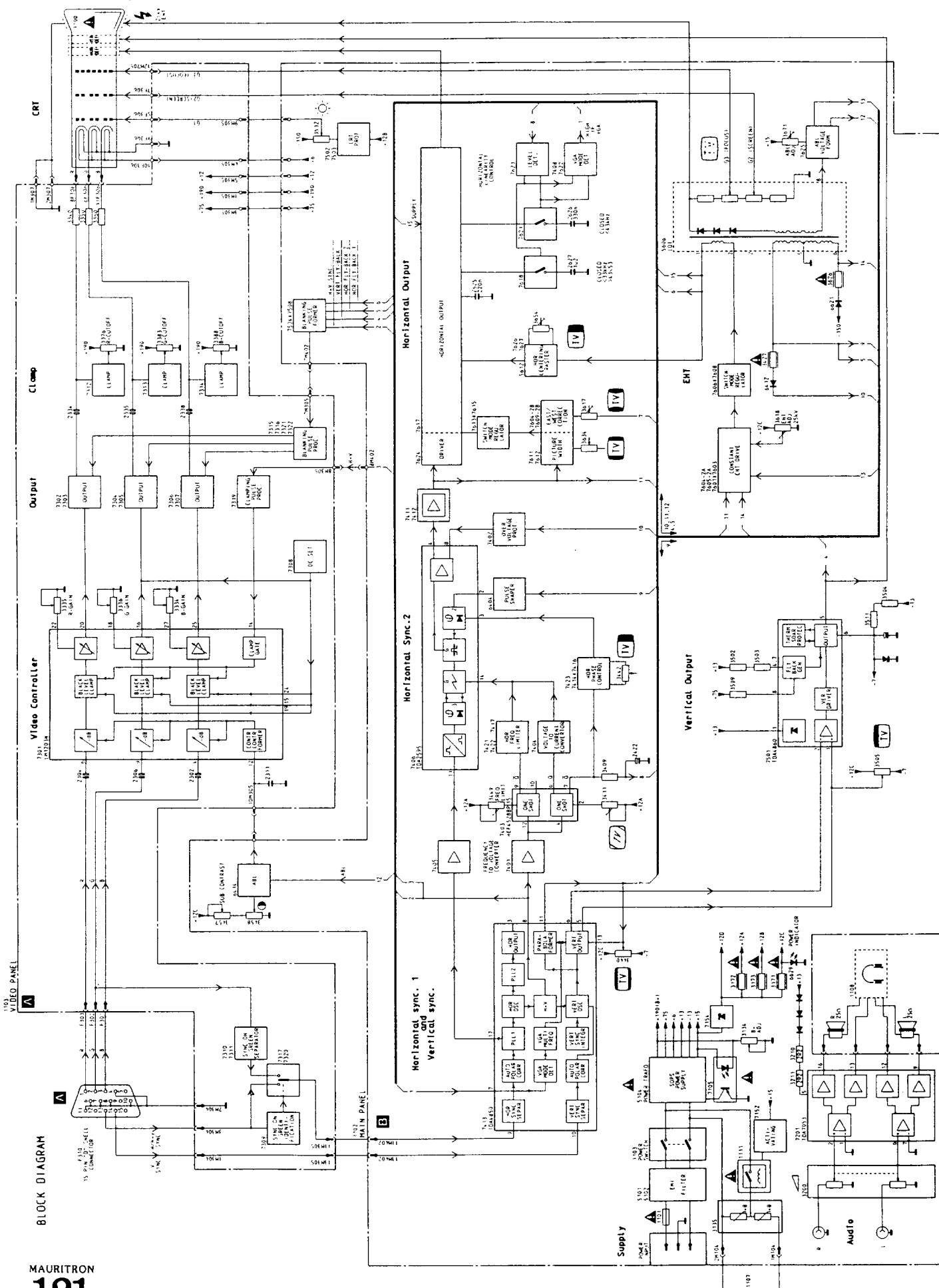


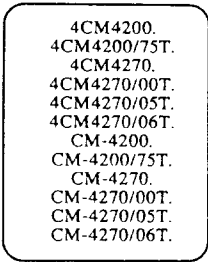
### INPUT- OUTPUT SIGNALS

15 pins D-Shell connector

D-Shell adapter (3 rows to 2)

Pin	Assignment	Sensitivity	Terminal Impedance	Assignment	Sensitivity	Terminal Impedance
1	Red Video input	RGB-analog	75Ω	Red ground		
2	Green Video input/ sync. on green	RGB-analog	75Ω	Red Video input/ sync. ground	RGB-analog	75Ω
3	Blue Video input	RGB-analog	75Ω	Composite sync.		2.2 kΩ
4	Ident output (connected to 10)					
5	Self test input (ground)			Green Video input	RGB-analog	75Ω
6	Red Video ground			Green ground		
7	Green Video ground			Not connected		
8	Blue Video ground					
9	Not connected (no pin)			Blue Video input	RGB-analog	75Ω
10	Logic ground			Not connected		
11	Ident output (connected to 10)			Not connected		
12	Not connected			Not connected		
13	Horizontal sync. (or Hor. + Vert. sync)	TTL Level L=0-0.8V H=2.4-5V	2.2 kΩ pull down	Blue ground		2.2kΩ pull down
14	Vertical sync.	TTL Level L=0-0.8V H=2.4-5V	2.2 kΩ pull down	Not connected		2.2kΩ pull down
15	Not connected (no pin)			Not connected		





MAURITRON