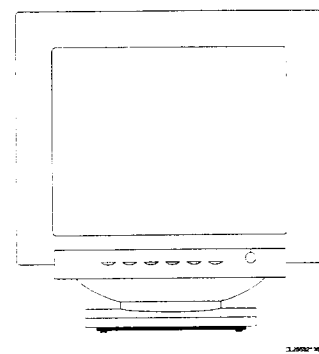


Service
Service
Service

For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554
email:- mauritron@dial.pipex.com



Service Manual

Horizontal frequencies
31.5 - 35.2 - 35.5 kHz

Contents

Page

1. Technical data	1.2
2. Control locations and connection facilities	2.1
3. Warnings and notes	3.1
4. Mechanical instructions and wiring diagram	4.1
5. Electrical diagrams and PCB lay-outs	
Block diagram	5.1
Print lay-out Video Panel	5.3
Circuit diagram A, Video Panel	5.5
Print lay-out Main panel	5.8
Circuit diagram B, Deflection	5.11
Circuit diagram C, Supply	5.14
6. Electrical adjustments	6.1
7. Exploded view	7.1
8. Parts indicated on exploded view	8.1
Electrical parts lists	8.1



Technical Data*

General

- Mains voltage : AC 230 V 15%
- Mains frequency : 50 Hz
- Power consumption : 65 W (nominal)
80 W (max)
- Operating temperature : 10°C to 40°C
- Weight : 11 kg
- Dimensions (W x H x D) : 356 x 376 x 385 mm

Picture tube

- Size : 14 inch
- Light transmission : 57 % (dark glass)
- Deflection angle : 90 Degrees
- EHT voltage : 24 kVolt
- Pitch : 0.28 mm
- Phosphor : P22 medium short

Video

- Dot rate : 45 MHz
- Video signal : 0.7 Vpp Linear/75 Ω
- Image size : 250 x 188 mm
- H-Shift range : 6 mm
- V-Shift range : 9 mm

Sync. signal

- Sync. level : TTL level
- Sync. polarity : positive or negative
- Vertical frequency : 50 - 100 Hz
- Horizontal frequency : 31.5/35.2/35.5 KHz
(catch in range 600 Hz)

Image geometry

- Total geometrical distortion of the image (pincushion and barrel distance) : 3.00 mm Max Horizontal
3.00 mm Max Vertical
- Horizontal tilt (rotation) : 2.00 mm Max
- Image non linearity (according IEC 107-73,74) : 7% Max Horizontal
5% Max Vertical

* Specifications are subject to change without notice !

RESOLUTION MODES AND SYNC POLARITIES

Modes	Resolution	Frequency		Sync. Polarity	
		H (kHz)	V(Hz)	H	V
VGA	640x350	31.5	70	+	-
VGA	640x400	31.5	70	-	+
VGA	640x480	31.5	60	-	-
S-VGA	800x600	35.2	56	+, -	+, -
XGA *	1024x768 Interlaced	35.5	87	+	+

* The monitor is preset on VGA and SVGA (600*800 35.2kHz/56Hz) modes. For an alternative SVGA mode i.e. XGA (1024*768 35.5kHz/87Hz) the controls at the rear are available to optimize the picture adjustments. The default mode SVGA (600*800 35.2kHz/56Hz) will be replaced by re-adjust preset.

Warnings

1. Safety regulations require that the unit should be returned in its original conditions and that components identical to the original components are used. The safety components are indicated by the symbol ▲
2. In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 3.1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0 V (after approx. 30s).
3. **ESD** ▲
All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten the life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the earth of the unit. Keep components and tools also at this same potential.
4. When repairing a unit, always connect it to the mains voltage via an isolating transformer.
5. Be careful when taking measurements in the high-voltage section and on the picture tube panel.
6. It is recommended that safety goggles are worn when replacing the picture tube.
7. When making settings, use plastic rather than metal tools. This will prevent any short-circuit and the danger of a circuit becomes unstable.
8. Never replace modules or other components while the unit is switched on.
9. Together with the deflection unit the picture tube is used as an integrated unit. Adjustment of this unit during repair is therefor not recommended.
10. After repair the wiring should be fastened once more in the cable clamps for this purpose.

Notes

1. The direct voltages and oscillograms are average voltages. They have been measured by using the Service testsoftware (see user guide 4822 727 19896) and under the following conditions:
 - * **DC Voltages**
 - Adjust brightness and contrast control for the mechanical mid-position (click position)
 - Mode: 640 * 480 (31.5kHz/60Hz)
 - Pattern: grey scale
 - Remark: On some points in the diagrams the DC values are also indicated for 800 * 600 35.2kHz/56Hz and 1024 * 768 35.5kHz/87Hz modes).
 - * **Wave forms**
 - Adjust brightness and contrast control for the mechanical mid-position (click position)
 - Mode: 800 * 600 (35.2kHz/56Hz)
 - Signal pattern: grey scale
2. The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
3. The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

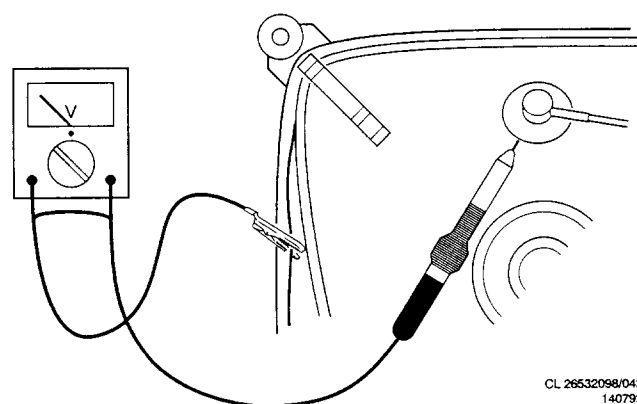

CL 26532098/042
140792

Fig. 3.1

General

To be able to perform measurements and repairs on the "circuit boards", these unit should be placed in the service position first:

Video panel

- Remove the rear cover (4 screws).
- Remove the metal shielding on rear side of Video panel by desolder 5 lags.

Main panel

- Remove the rear cover (4 screws).
- Disconnect the degaussing coil from Main PCB.
- Remove the video panel from CRT.
- Disconnect the I/F cable from metal bracket.
- Slide the main panel out of bottom plate.
- Place Main panel in service position as shown in Fig.4.1.
- Mount Video panel again on CRT.

Remark:

To connect also the degaussing coil to the Main PCB in service position 1 extension cable is required.
The service code number of this cable is 4822 321 61698 (2p to 2p cable).

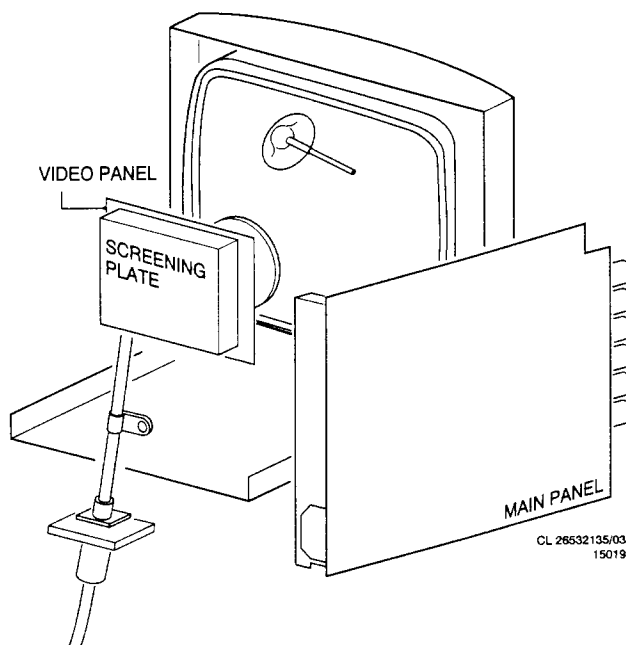
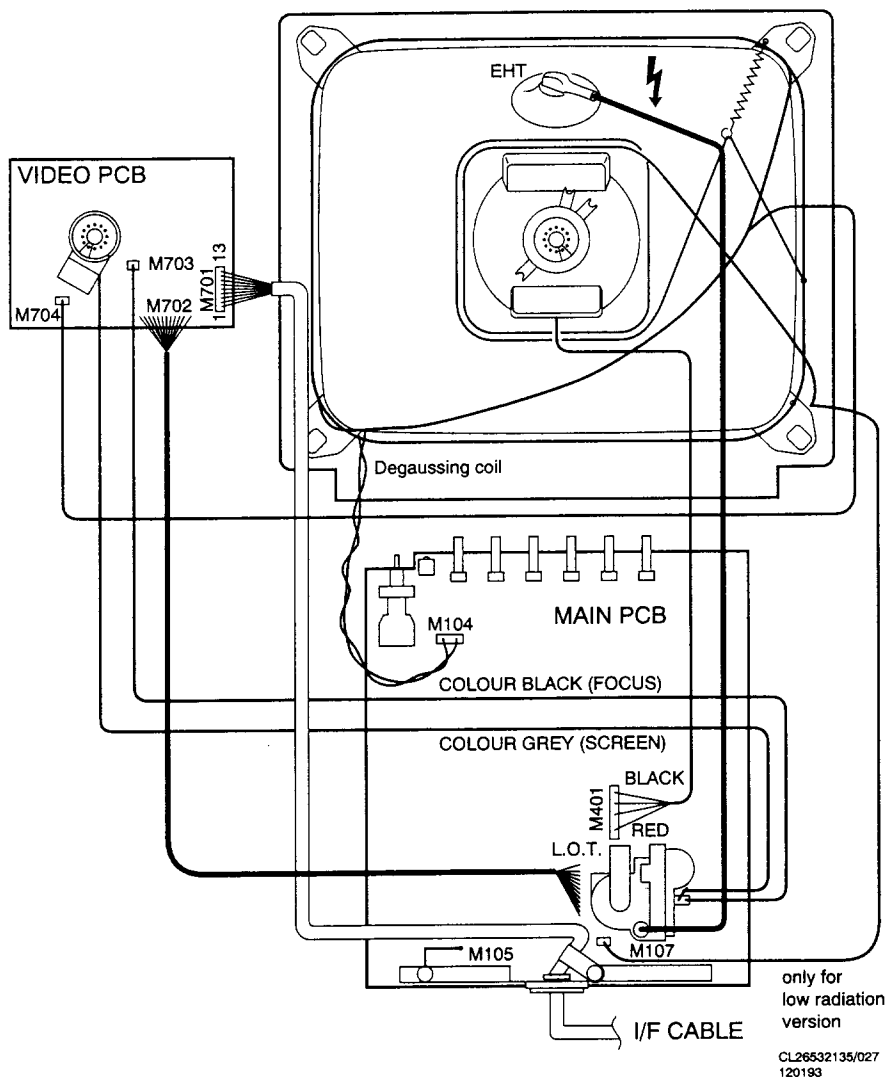


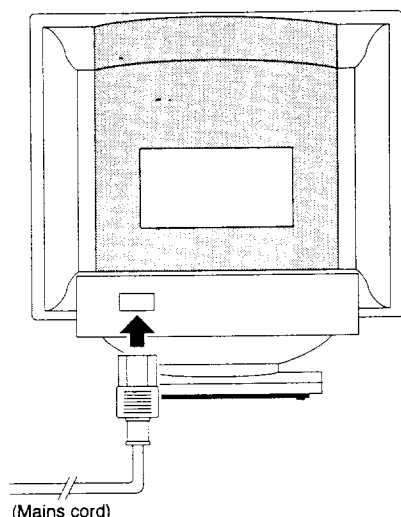
Fig. 4.1

WIRING DIAGRAM

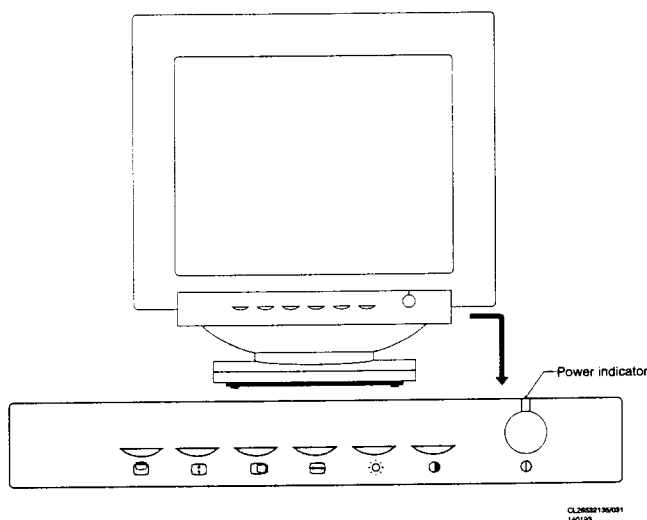


Connection to the mains

(Rear of the monitor)


CL28632136/028
120183

Front controls


CL28632136/031
140183

For an optimized adjustment of the picture following controls are available at the front.

① POWER

- Press this knob, the green LED lights and power is ON.
- Press this knob again, the green LED disappears and the power is OFF.

② CONTR.

- Used to adjust contrast.

☀ BRIGHT.

- Used to adjust brightness.

⏏ H-SIZE

- Used to adjust image width.

⏏ H-SHIFT

- Used to adjust image position horizontally.

⏏ V-SIZE

- Used to adjust image height.

⏏ V-SHIFT

- Used to adjust image position vertically.

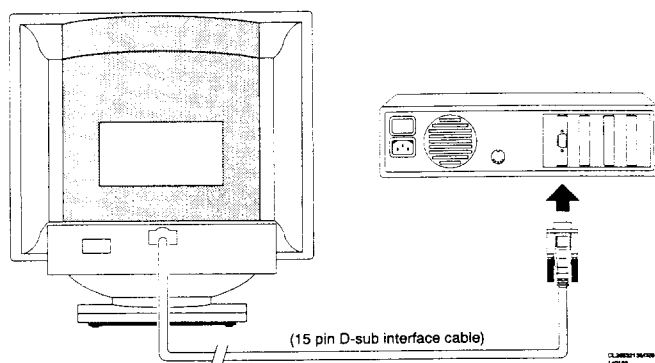
Connection to the computer

NOTE: please be sure the AC power to the computer is "OFF" before connecting or disconnecting any display peripheral. Failure to do so may cause serious personal injury as well as permanent damage to the computer equipments.

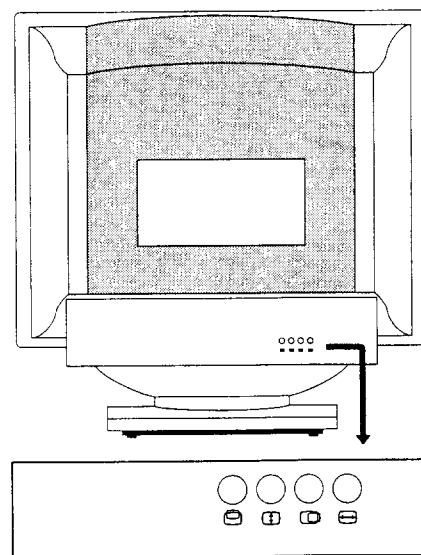
IBM PC, PC/XT, PS/2 or the compatibles:

Connect the fixed 15-pin D-sub connector of the video signal cable to the computer at the video connector on the video card, and fix it firmly with the screws on the plug.

(Rear of the monitor)


CL28632136/030
140183

Additional controls at the rear of the monitor


CL28632136/030
140183

The monitor is pre-set on 800x600 mode as default SVGA Mode. For an alternative mode, i.e. 1024x768, the following controls are available at the rear to optimize adjustment of the picture: (The default mode will be replaced by re-adjust pre-set)

⏏ H-SIZE

- Used to adjust image width.

⏏ H-SHIFT

- Used to adjust image position horizontally.

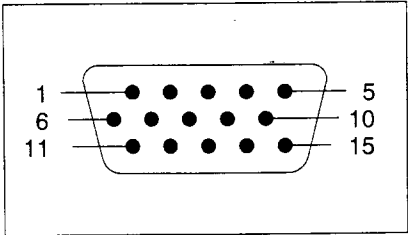
⏏ V-SIZE

- Used to adjust image height.

⏏ V-SHIFT

- Used to adjust image position vertically.

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



CL26532135/034
180193

INPUT-OUTPUT SIGNALS

15 pins D-Shell connector

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

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 (see user guide 4822 727 19896).

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 monitor type from video rom bios (two selections):
Select "NEC 3D" for the resolutions:
600 x 400 31.5KHz/70Hz
600 x 350 31.5KHz/60Hz
600 x 480 31.5KHz/60Hz
1024 x 768 35.5KHz/87Hz
Select "NEC 5D" for the resolution:
800 x 600 35.2KHz/56Hz
- 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 (3109)

- Set the brightness control 3617 and the contrast control 3624 to minimum.
- Set the trimming pot-meter 3109 in the mechanical mid-position (this is a pre-setting).
- Connect a dc voltmeter between capacitor 2515 and ground (b+ output).
- Switch on the monitor.
- Apply a video signal in the 640 * 480 31.5KHz/60Hz mode.
- Select the "cross-hatch" pattern.
- Adjust trimming pot-meter 3109 until the dc voltmeter reads 90.7V $\pm$ 0.2V.
- Remark: In the 800 * 600 35.2kHz/56Hz mode the B+ voltage should be now 102V $\pm$ 1V.

2.Horizontal synchronization (3520)

- Set H-shift front control 3533 at click position.
- Disable H SYNC. by grounding pin 19 of IC7504.
- Apply a video signal in the 800 * 600 35.2KHz/56Hz or 1024 * 768 35.5KHz /87Hz mode.
- Select the "cross-hatch" pattern.
- Adjust trimming pot-meter 3520 until the picture is straight.
- Remove the grounding of pin 19 of IC7504.

3.Horizontal raster centering (3552)

- Apply a video signal in the 800 * 600 with 35.2KHz/56Hz mode.
- Set pot-meter 3552 for the correct horizontal centering of the whole raster.

4.Picture geometry settings

General

- The recommended alignment steps are that first proceeding in VGA mode, then proceeding in SVGA mode.
- For the following settings apply a video signal with cross-hatch pattern.
- Pre-set H-shift front control 3533 and V-shift front control 3422 to click position.
- Pre-set contrast control 3624 to mid position and brightness control 3617 to click position.

4.1 VGA mode

Apply a video signal in the 640 * 480 31.5KHz/60Hz mode.

Horizontal Phase centering (3528)

- Set pot-meter 3528 for the correct horizontal phase centering.

horizontal size (3581)

- Adjust pot-meter 3581 for a picture width of 250 mm.

Vertical centering (3419)

- Adjust pot-meter 3419 for the correct vertical centering.

Vertical size (3404)

- Adjust pot-meter 3404 for a picture height of 188 mm.

East-west correction (3574)

- Adjust pot-meter 3574 until the vertical lines at the left and right sides of the screen are as straight as possible

4.2 SVGA mode

Apply a video signal in the 800 * 600 35.2KHz/60Hz mode.

Horizontal Phase center (3529)

- Set pot-meter 3529 for the correct horizontal phase centering.

horizontal size (3591)

- Adjust pot-meter 3591 for a picture width of 250 mm.

Vertical centering (3420)

- Adjust pot-meter 3420 for the correct vertical centering.

Vertical size (3405)

- Adjust pot-meter 3405 for a picture height of 188 mm.

East-west correction (3575)

- Adjust pot-meter 3575 until the vertical lines in the left and right sides of the screen are as straight as possible.

5.Alignments of :

- * VG2 (bottom knob on the line output transformer).
- * Cut-off points of the picture tube (3741, 3771, 3711)
- * White "D" (3763, 3703, 3623)
- Pre-set pot-meter 3763, 3703, 3741, 3371 and 3711 to mid-position.
- Apply a video signal (full white) in the 640 x 480 31.5KHz/60HZ mode.
- Set brightness control 3617 at click position, sub-contrast 3623 and contrast 3624 to minimum.
- 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".
- Adjust the pot-meters of the "two remaining" colours (3741, 3771 and 3711) to the same light output level, so that an optimal background (raster) colour is obtained.
- Adjust brightness front control 3617 to maximum for double checking the background (raster) colour.
- Set brightness control 3617 to click position, contrast control 3624 and sub-contrast control 3623 to mid position.
- Adjust pot-meter 3763 and 3703 to the same light output level, so that an optimal display colour (white "D") is obtained.
- If necessary, adjust sub-contrast pot-meter 3623 for the optimal light output of the video display (until the brightness no longer increases).
- Adjust contrast control 3624 to maximum, for double checking the displayed colour.

6.Focussing

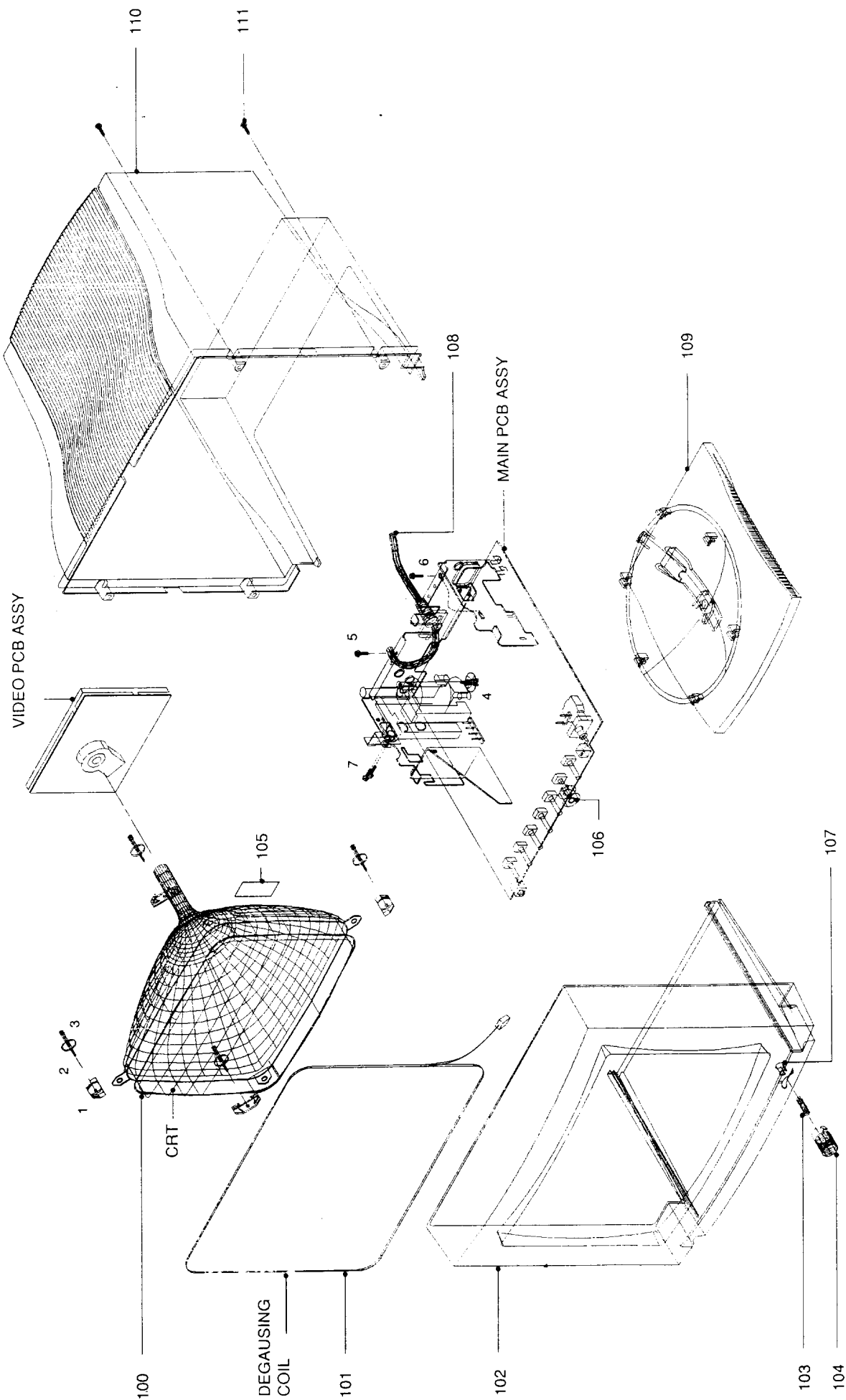
- Apply a video signal ("M" characters) in the 640 * 480 31.5 KHz/60 Hz mode.
- Set brightness control 3617 at click position and contrast control 3624 to maximum.
- Adjust focus pot-meter (top knob on the line output transformer) so that the picture at 2/3 of the diagonal lines (from center to four corners) of the displayed screen is as sharp as possible.

7.Mode detector (3504)

- Apply video signal (cross-hatch pattern) in the 640 * 480 31.5KHz/60Hz mode.
- Connect oscilloscope to pin 10-7502.
- Adjust potentiometer 3504 so that the positive going part of the pulse on 10-7502 is 30.3 μ s.

For Service Manuals
MAURITRON SERVICES
 8 Cherry Tree Road, Chinnor
 Oxfordshire, OX9 4QY.
 Tel (01844) 351694
 Fax (01844) 352554
 email:- mauritron@dial.pipex.com

Exploded view



Parts indicated on exploded view.

100	▲ 4822 131 20494	Picture tube (item 1100) for 7CM5209/00T M34EDC12X36 /F14
100	▲ 4822 131 20491	Picture tube (item 1100) 7CM5279/00T M34EDC13X36
101	▲ 4822 157 70505	Degaussing coil (item 5107)
102	4822 430 10439	Front (complete) with item 103, 104 and 107 for 7CM5209
102	4822 430 10438	Front (complete) with item 103, 104 and 107 for 7CM5279
103	4822 701 13013	Spring for power push button
104	4822 410 62588	Power push button
105	4822 526 20183	Spoiler
106	4822 413 41781	Knob
107	4822 381 11403	Lens power indicator
108	4822 321 61984	Flying lead I/F cable
109	4822 462 10539	Pedestal (complete) Rear cover
110	4822 438 10418	Screw fix. rear cover
111	4822 502 21238	

Accessories

▲ 4822 701 11934	Power cord -/00
------------------	-----------------

Auxilliary tools

4822 321 61698	Extention cable 2p-2p for deg. coil (when Main Panel in service position)
4822 727 19896	Service test software kit (user guide with floppy)

Main panel **B C**

Various

1101	▲ 4822 070 32002	Fuse T2A
1103	▲ 4822 276 12445	Power switch
	▲ 4822 265 31077	Power socket (M101)
	4822 265 30375	4P socket (J101)
	4822 492 71337	For fix Fuse (item 1101)
	4822 267 30987	2p socket (M104)
	4822 492 62076	Spring fix. (item 7101, 7521)
	4822 492 71345	Spring fix. (item 7108, 7523)
	4822 255 40893	Isolating plate for item 7523
	5322 390 20011	Silicon grease



2101	▲ 5322 121 44212	1μF 10% 250V
2102	▲ 4822 122 33535	4,7nF 20% 400V
2103	▲ 4822 122 33535	4,7nF 20% 400V
2105	4822 124 41819	100μF 20%

2106	4822 126 12646	1nF 10% 1KV
2107	4822 121 70294	22nF 10% 630V
2108	5322 122 32818	2,2nF 10% 100V
2109	5322 122 32331	1nF 10% 100V
2110	5322 122 32331	1nF 10% 100V

2111	4822 121 51625	27nF 10% 630V
2113	4822 126 10757	22nF 20% 50V
2115	4822 124 22669	1μF 20% 50V
2116	4822 124 22669	1μF 20% 50V
2117	4822 124 40737	150μF 20% 25V

2118	▲ 4822 122 33535	4,7nF 20% 400V
2119	4822 124 40255	100μF 20% 63V
2120	4822 122 33691	330pF 2KV
2121	5322 124 41802	220μF 20% 100V
2122	4822 122 33645	220pF 500V

2123	4822 124 40214	1000μF 20% 25V
2124	5322 124 10617	100μF 20% 16V
2125	4822 122 33645	220pF 500V
2126	4822 124 42144	470μF 63V
2127	▲ 4822 122 33535	4,7nF 20% 400V

2128	4822 124 42172	1000μF 16V
2129	4822 126 10757	22nF 20% 50V
2131	4822 122 33645	220pF 500V
2134	4822 121 51626	47nF 250V
2151	4822 122 33691	330pF 2KV

2401	4822 122 33966	10nF 10% 50V
2402	4822 122 33966	10nF 10% 50V
2403	4822 124 40198	470μF 20% 16V
2405	4822 124 40198	470μF 20% 16V
2406	4822 121 43696	100nF 100V

2407	4822 124 42359	47μF 100V
2501	4822 121 70297	3,3nF 5% 100V
2502	4822 121 70297	3,3nF 5% 100V
2503	4822 121 43699	220nF 100V
2504	4822 121 70073	100nF 10% 250V

2505	4822 121 43698	470nF 100V
2506	4822 121 70299	1,2nF 5% 100V
2507	4822 121 70295	10nF 5% 100V
2508	4822 121 43696	100nF 100V
2509	4822 126 10851	10pF 50V

2510	4822 121 43696	100nF 100V
2511	4822 121 43699	220nF 100V
2512	4822 124 42172	1000μF 16V
2513	4822 126 10757	22nF 20% 50V
2514	4822 126 10757	22nF 20% 50V

2515	4822 124 22365	47μF 160V
2516	4822 124 22669	1μF 20% 50V
2517	4822 124 22686	10μF 16V
2518	4822 124 22686	10μF 16V
2519	4822 124 22499	10μF 160V

2521	4822 121 40336	47nF 10% 250V
2522	4822 126 12647	220pF 10% 2KV

2523	4822 126 12096	4,7nF 5% 1,6KV
2524	4822 121 70296	4,7nF 400V
2525	4822 121 70236	1μF 400V

2527	4822 121 43696	100nF 100V
2528	4822 122 32835	1nF 500V
2529	4822 121 70191	4,7nF 5% 250V
2530	4822 121 43678	15nF 5% 400V
2532	4822 124 22461	6,8μF 50V

2533	4822 121 43698	470nF 100V
2534	4822 121 70298	2,2nF 10% 100V
2536	4822 126 10757	22nF 20% 50V
2538	4822 122 32027	56pF 2% 100V
2539	4822 124 80132	47μF 20% 25V

2540	4822 121 43696	100nF 100V
2541	4822 121 70073	100nF 10% 250V
2542	4822 121 70298	2,2nF 10% 100V
2543	4822 121 43696	100nF 100V
2544	4822 124 41659	4,7μF 20% 25V

2601	4822 121 43694	22nF 100V
2602	4822 121 43698	470nF 100V
2603	4822 124 80132	47μF 20% 25V
2604	4822 126 10757	22nF 20% 50V
2605	4822 124 22669	1μF 20% 50V



3101	4822 113 80628	4Ω 7.5W
3102	4822 050 11509	15Ω 1% 0,4W
3103	4822 050 21801	180Ω 1% 0,6W
3104	4822 050 22202	2k2 1% 0,6W
3105	4822 050 23301	330Ω 1% 0,6W

3106	4822 113 80629	1,2k 3W
3107	4822 050 23301	330Ω 1% 0,6W
3108	▲ 4822 052 10338	3Ω 3% 0,33W
3109	4822 100 20166	10k 30% Lin pot.
3110	4822 050 22203	22k 1% 0,6W

3111	4822 050 24702	4k7 1% 0,6W
3112	4822 050 21208	1Ω 2 1% 0,6W
3113	4822 050 11504	150k 1% 0,4W
3114	4822 050 12709	27Ω 1% 0,4W
3115	4822 050 22702	2k7 1% 0,6W

3116	4822 050 24701	470Ω 1% 0,6W
3117	4822 053 12153	15k 5% 3W
3118	4822 050 21208	1Ω 2 1% 0,6W
3119	▲ 4822 052 10108	1Ω 5% 0,33W
3121	4822 050 11002	1k 1% 0,4W

3122	4822 053 11822	8k2 5% 2W
3123	4822 050 21203	12k 1% 0,6W
3124	4822 050 21003	10k 1% 0,6W
3125	▲ 4822 052 10108	1Ω 5% 0,33W
3129	4822 050 24704	470k 1% 0,6W

3130	4822 116 52218	300Ω 5% 0,5W
3131	4822 050 21208	1Ω 2 1% 0,6W
3132	4822 117 10291	39k 3W
3133	4822 113 80628	4Ω 7.5W
3134	▲ 4822 052 10108	1Ω 5% 0,33W

3135	4822 116 40233	DUAL PTC
3136	4822 053 21334	330k 5% 0,5W
3401	4822 050 12204	220k 1% 0,4W
3402	4822 050 22704	270k 1% 0,6W
3403	4822 050 15603	56k 1% 0,4W

3404	4822 100 11141	10k Lin. pot.
3405	4822 102 90036	22K (part of combi
3406	4822 050 16802	6k8 1% 0,4W
3410	4822 050 22704	270k 1% 0,6W
3411	4822 050 11504	150k 1% 0,4W

3412	4822 100 90081	10k 20% pot.
3413	4822 050 21204	120k 1% 0,6W
3414	4822 050 13304	330k 1% 0,4W
3415	4822 050 26803	68k 1% 0,6W
3416	4822 050 23902	3k9 1% 0,6W

3417	4822 050 26803	68k 1% 0,6W
3418	4822 050 21002	1k 1% 0,6W
3419	4822 100 11141	10k lin. pot.
3420	4822 102 90036	5K (part of combi pot.)
3421	4822 116 82046	2k2 5% 1/6W

Spare parts list

7514 4822 130 44121 BC338
 7515 4822 130 44104 BC328
 7516 5322 130 60068 BC558C
 7519 4822 130 41078 BC640
 7520 4822 130 63081 BSN254A

7521 4822 130 63271 BU2508AF
 7522 5322 130 60068 BC558C
 7523 4822 130 41484 BD677
 7527 5322 130 60068 BC558C
 7528 5322 130 60068 BC558C

7529 4822 130 44196 BC548C
 7601 5322 130 60068 BC558C
 7602 5322 130 60068 BC558C
 7603 4822 130 41782 BF422
 7604 4822 130 41646 BF423

Video panel **A**

Various

1103 4822 212 30524 Video panel
 complete
 4822 265 20366 1p socket (M703)
 4822 265 41308 11P socket (M701)
 ▲ 4822 255 70245 CRT socket



2701 4822 126 10757 22nF 20% 50V
 2702 4822 122 40257 100pF %
 2703 4822 126 10757 22nF 20% 50V
 2704 4822 124 22499 10µF 160V
 2705 4822 122 31072 47pF 2% 100V

2711 4822 126 10757 22nF 20% 50V
 2712 4822 122 31237 82pF 2% 100V
 2713 4822 126 10757 22nF 20% 50V
 2714 4822 124 22499 10µF 160V
 2715 4822 122 31072 47pF 2% 100V

2721 4822 126 10757 22nF 20% 50V
 2722 4822 122 31237 82pF 2% 100V
 2723 4822 126 10757 22nF 20% 50V
 2724 4822 124 22499 10µF 160V
 2725 4822 122 31072 47pF 2% 100V

2726 4822 126 10757 22nF 20% 50V
 2727 4822 122 30031 820pF 10% 500V
 2728 4822 122 40427 470pF 2KV
 2731 4822 126 10757 22nF 20% 50V
 2732 4822 126 10757 22nF 20% 50V

2741 4822 124 22499 10µF 160V
 2742 4822 121 42191 10nF 500V
 2743 4822 126 10757 22nF 20% 50V
 2744 5322 124 10617 100µF 20% 16V
 2745 4822 126 10757 22nF 20% 50V



3701 4822 050 17509 75Ω 1% 0,4W
 3702 4822 116 82044 120Ω 5% 1/6W
 3703 4822 100 11141 10k lin.pot.
 3704 4822 050 21006 10M 1% 0,6W
 3705 4822 050 28209 82Ω 1% 0,6W

3706 4822 116 82059 150Ω 5% 1/6W
 3707 4822 050 24709 47Ω 1% 0,6W
 3708 4822 116 83931 3K3 3W
 3709 4822 117 10292 53K3 1%
 3710 4822 050 21201 120Ω 1% 0,6W

3711 4822 100 11212 2k2 30%
 3712 4822 116 52184 18Ω 5% 0,5W
 3713 4822 050 23909 39Ω 1% 0,6W
 3714 4822 116 82996 10Ω 5% 0,33W
 3715 4822 050 24222 4K22 1% 0,6W

3731 4822 050 17509 75Ω 1% 0,4W
 3732 4822 116 82044 120Ω 5% 1/6W
 3734 4822 050 21006 10M 1% 0,6W
 3735 4822 050 28209 82Ω 1% 0,6W
 3736 4822 050 23301 330Ω 1% 0,6W

3737 4822 050 24709 47Ω 1% 0,6W
 3738 4822 116 83931 3K3 3W

3739 4822 117 10292 53K3 1%
 3740 4822 050 21201 120Ω 1% 0,6W
 3741 4822 100 11212 2k2 lin.pot.

3742 4822 116 52184 18Ω 5% 0,5W
 3743 4822 050 23909 39Ω 1% 0,6W
 3744 4822 116 82996 10Ω 5% 0,33W
 3745 4822 050 24222 4K22 1% 0,6W
 3761 4822 050 17509 75Ω 1% 0,4W

3762 4822 116 82044 120Ω 5% 1/6W
 3763 4822 100 11141 10k lin.pot.
 3764 4822 050 21006 10M 1% 0,6W
 3765 4822 050 28209 82Ω 1% 0,6W
 3766 4822 050 23901 390Ω 1% 0,6W

3767 4822 050 24709 47Ω 1% 0,6W
 3768 4822 116 83931 3K3 3W
 3769 4822 117 10292 53K3 1%
 3770 4822 050 21201 120Ω 1% 0,6W
 3771 4822 100 11212 2k2 30%

3772 4822 116 52184 18Ω 5% 0,5W
 3773 4822 050 23909 39Ω 1% 0,6W
 3774 4822 116 82996 10Ω 5% 0,33W
 3775 4822 050 24222 4K22 1% 0,6W
 3781 4822 116 82046 2k2 5% 1/6W

3782 4822 050 21001 100Ω 1% 0,6W
 3783 4822 050 21002 1k 1% 0,6W
 3785 4822 050 21001 100Ω 1% 0,6W
 3786 4822 050 22201 220Ω
 3787 4822 116 80547 1k5 5% 0,5W

3788 4822 116 80548 15k 5% 0,5W
 3789 ▲ 4822 052 10109 10Ω 5% 0,33W
 3791 4822 116 82046 2k2 5% 1/6W
 3792 4822 050 21002 1k 1% 0,6W
 3795 4822 050 22202 2K2 1% 0,6W



5701 4822 157 70479 22µH
 5702 4822 157 52496 15µH
 5711 4822 157 70479 22µH
 5712 4822 157 52496 15µH
 5721 4822 157 70479 22µH

5722 4822 157 52496 15µH
 5733 4822 152 20587 7,5µH
 5734 4822 157 52496 15µH



6701 4822 130 30621 1N4148
 6702 4822 130 30842 BAV21
 6703 4822 130 30621 1N4148
 6711 4822 130 30621 1N4148
 6712 4822 130 30842 BAV21

6713 4822 130 30621 1N4148
 6721 4822 130 30621 1N4148
 6722 4822 130 30842 BAV21
 6723 4822 130 30621 1N4148
 6725 4822 130 30621 1N4148

6727 4822 130 30621 1N4148
 6728 4822 130 30621 1N4148
 6736 4822 130 34173 BZX79-F5V6
 6738 4822 130 42489 BYD33G



7701 4822 130 63269 2SC3467D
 7702 4822 130 41782 BF422
 7703 4822 130 41646 BF423
 7711 4822 130 63269 2SC3467D
 7712 4822 130 41782 BF422

7713 4822 130 41646 BF423
 7721 4822 130 63269 2SC3467D
 7722 4822 130 41782 BF422
 7723 4822 130 41646 BF423
 7731 4822 209 32285 TDA4881

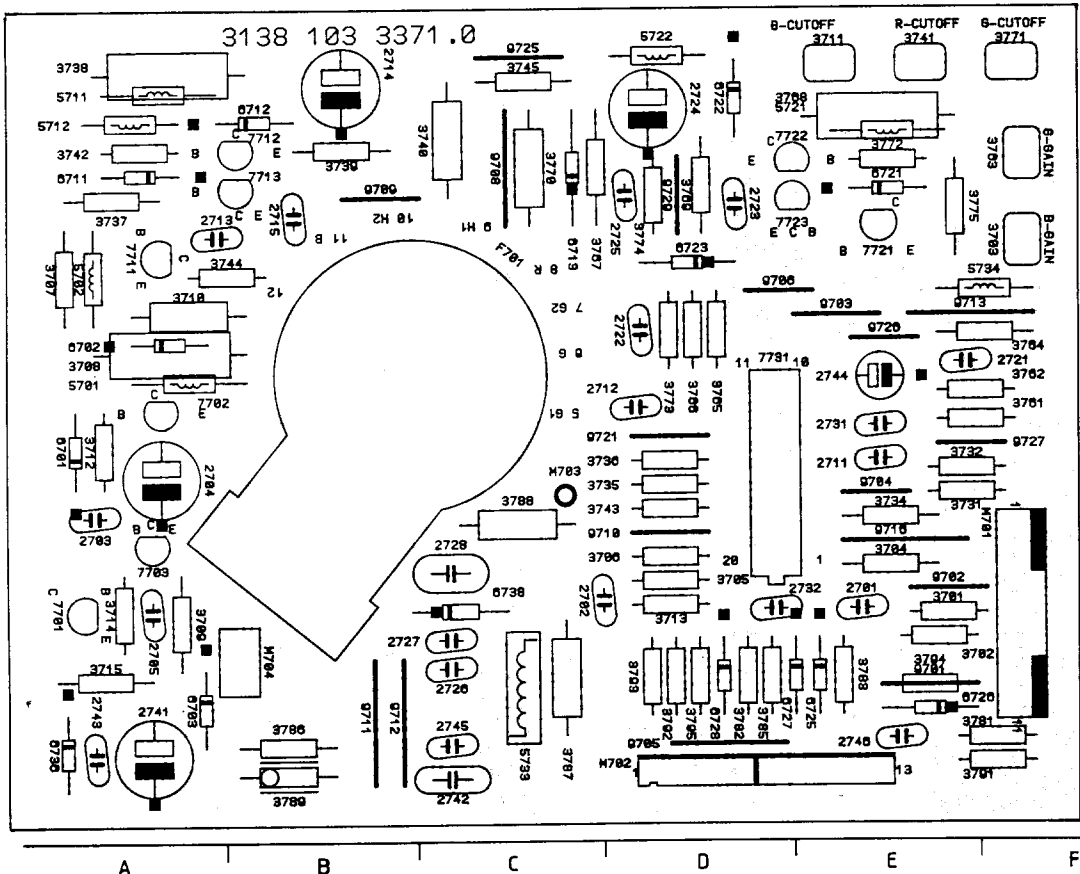
Spare parts list

3422	4822 100 90081	10k pot.meter	3569	4822 050 25601	560Ω 1% 0,6W	5507	4822 156 50102	Linearity coil
3423	4822 050 21802	1k8 1% 0,6W	3570	4822 050 26202	6k2 1% 0,6W	5508	4822 157 70477	3,9μH
3424▲	4822 052 11478	4Ω7 5% 0,5W	3571	4822 050 24701	470Ω 1% 0,6W			
3425▲	4822 052 11478	4Ω7 5% 0,5W	3573	4822 116 52255	200k 5% 0,5W			
3426	4822 050 21802	1k8 1% 0,6W	3574	4822 100 11319	4k7 lin.pot.			
3428	4822 116 81155	3Ω9 5% 0,5W (7CM5279 only)	3575	4822 100 11319	4k7 lin.pot.	6101	4822 130 81497	1N4005
3429	4822 050 24704	1Ω5	3576	4822 116 81154	2Ω2 5% 0,5W	6102	4822 130 81497	1N4005
3430▲	4822 052 10568	5Ω6 5% 0,33W	3577	4822 050 25604	560k 1% 0,6W	6103	4822 130 81497	1N4005
3432	4822 050 21002	1k 1% 0,6W	3579	4822 050 21001	100Ω 1% 0,6W	6104	4822 130 81497	1N4005
3433▲	4822 052 10221	220Ω 5% 0,33W	3580	4822 050 22203	22k 1% 0,6W	6105	4822 130 31393	RGP10J
3434	4822 050 24704	470k 1% 0,6W	3581	4822 100 11141	10k lin.pot.	6106	4822 130 31393	RGP10J
3435	4822 116 52278	390k 5% 0,5W	3582	4822 050 25602	5k6 1% 0,6W	6107	4822 130 30621	1N4148
3436	4822 050 26803	68k 1% 0,6W	3583	4822 050 15603	56k 1% 0,4W	6108	4822 130 30621	1N4148
3437	4822 116 52248	160k 5% 0,5W	3584	4822 050 26803	68k 1% 0,6W	6109	4822 130 30842	BAV21
3438	4822 050 22704	270k 1% 0,6W	3585	4822 050 21503	15k 1% 0,6W	6110	4822 130 31933	1N5061
3501	4822 050 21002	1k 1% 0,6W	3586	4822 050 22402	2k4 1% 0,6W	6111	4822 130 31393	RGP10J
3502▲	4822 052 10101	100Ω 5% 0,33W	3588	4822 116 52278	390k 5% 0,5W	6112	4822 130 83362	1N4004GP
3503	4822 050 21002	1k 1% 0,6W	3589	4822 100 90081	10k pot.	6113	4822 130 42606	BYD33J
3504	4822 100 20166	10k lin. pot.	3590	4822 100 11141	10k lin.pot.	6114	4822 130 31607	RGP10D
3506	4822 050 24702	4k7 1% 0,6W	3591	4822 102 90036	10K (part of combi pot.)	6115	4822 130 31607	RGP10D
3507	4822 050 21203	12k 1% 0,6W	3592	4822 050 21202	1k2 1% 0,6W	6116	4822 130 31933	1N5061
3508	4822 050 25602	5k6 1% 0,6W	3594	4822 116 52306	9K1 5% 0,5W	6118	5322 130 32184	BYV27-50
3509	4822 050 21802	1k8 1% 0,6W	3595	4822 050 21503	15k 1% 0,6W	6120	4822 130 33742	LT4234
3510	4822 050 22203	22k 1% 0,6W	3596	4822 117 10012	12Ω 5% 2W	6122	4822 130 34197	BZX79-C12
3511	4822 116 52271	33k 5% 0,5W	3597	4822 050 21003	10k 1% 0,6W	6150	4822 130 42488	BYD33D
3512▲	4822 052 10479	47Ω 5% 0,33W	3598	4822 116 82976	82k 5% 1/6W	6401	4822 130 30621	1N4148
3513	4822 050 21503	15k 1% 0,6W	3599	4822 050 16802	6k8 1% 0,4W	6402	4822 130 30621	1N4148
3514	4822 050 25602	5k6 1% 0,6W	3601	4822 050 21003	10k 1% 0,6W	6403	4822 130 30621	1N4148
3515	4822 050 21503	15k 1% 0,6W	3604	4822 050 21502	1k5 1% 0,6W	6404	4822 130 30621	1N4148
3516	4822 050 25602	5k6 1% 0,6W	3605	4822 050 13903	39k 1% 0,4W	6405	4822 130 30621	1N4148
3518	4822 050 11803	18k 1% 0,4W	3606	4822 050 24702	4k7 1% 0,6W	6406	4822 130 31607	RGP10D
3519	4822 050 11803	18k 1% 0,4W	3607	4822 050 21003	10k 1% 0,6W	6407	4822 130 34441	BZX79-C22
3520	4822 101 10927	470Ω lin.pot.	3608	4822 050 24702	4k7 1% 0,6W	6408	4822 130 34441	BZX79-C22
3521	4822 116 82046	2k2 5% 1/6W	3609	4822 050 21003	10k 1% 0,6W	6502	4822 130 30621	1N4148
3522	4822 116 52267	30k 5% 0,5W	3611	4822 050 26803	68k 1% 0,6W	6504	4822 130 30621	1N4148
3523	4822 050 28202	8k2 1% 0,6W	3612	4822 050 21503	15k 1% 0,6W	6505	4822 130 30621	1N4148
3524	4822 050 25101	510Ω 1% 0,6W	3614	4822 050 21502	1k5 1% 0,6W	6506	4822 130 30621	1N4148
3526	4822 050 13903	39k 1% 0,4W	3615	4822 050 15603	56k 1% 0,4W	6507	4822 130 34441	BZX79-B22
3527	4822 050 16802	6k8 1% 0,4W	3616	4822 050 21001	100Ω 1% 0,6W	6508	4822 130 31607	RGP10D
3528	4822 100 11212	2k2 lin.pot.	3617	4822 100 90081	10k pot.	6509	4822 130 42489	RGP10G
3529	4822 102 90036	5K (part of combi pot.)	3619	4822 050 22201	220Ω 1% 0,6W	6510	4822 130 42489	RGP10G
3530	4822 050 25602	5k6 1% 0,6W	3620	4822 050 21002	1k 1% 0,6W	6513	4822 130 32834	BY329
3531	4822 116 52271	33K 5% 0,5W	3621	4822 050 21001	100Ω 1% 0,6W	6514	4822 130 31607	RGP10D
3532	4822 050 22203	22k 1% 0,6W	3622	4822 050 21002	1k 1% 0,6W	6516	4822 130 41602	BYW95C
3533	4822 100 90081	10k pot.	3623	4822 100 11141	10k lin.pot.	6517	4822 130 30842	BAV21
3534	4822 050 13302	3k3 1% 0,4W	3624	4822 100 11895	10k pot.	6518	4822 130 30621	1N4148
3535	4822 050 21002	1k 1% 0,6W	3625	4822 050 13302	3k3 1% 0,4W	6519	4822 130 30621	1N4148
3536▲	4822 052 10479	47Ω 5% 0,33W	3626	4822 050 22702	2k7 1% 0,6W	6520	4822 130 30621	1N4148
3537	4822 116 52234	100K 5% 0,5W	3627	4822 050 21203	12k 1% 0,6W	6521	4822 130 34382	BZX79-C8V2
3538▲	4822 052 10108	1Ω 5% 0,33W	3801	4822 116 52305	820k 5% 0,5W	6522	4822 130 34278	BZX79-C6V8
3539▲	4822 052 10108	1Ω 5% 0,33W	3802	4822 050 22203	22k 1% 0,6W	6523	4822 130 30621	1N4148
3540▲	4822 052 10478	4Ω7 5% 0,33W	3803	4822 050 21001	100Ω 1% 0,6W	6524	4822 130 30621	1N4148
3541	4822 050 22205	2M2 5%	3804	4822 050 21002	1k 1% 0,6W	6525	4822 130 30621	1N4148
3542	4822 050 25602	5k6 1% 0,6W	3805	4822 116 52271	33K 5% 0,5W	6527	5322 130 32184	BYV27-50
3543	4822 050 22203	22k 1% 0,6W	3807	4822 050 11002	1k 1% 0,4W (7CM5279 only)	6528	4822 130 34197	BZX79-C12
						6601	4822 130 30621	1N4148
3544	4822 050 24702	4k7 1% 0,6W	3809	4822 116 52295	620k 5% 0,5W (7CM5279 only)			
3545	4822 050 13302	3k3 1% 0,4W						
3546	4822 116 82046	2k2 5% 1/6W						
3547	4822 050 11803	18k 1% 0,4W						
3548	4822 050 21003	10k 1% 0,6W						
3549	4822 050 22003	20k 1% 0,6W	5101▲	4822 157 10292	14mH	7101	4822 130 63287	MTP6N60
3550	4822 050 21604	160k 1% 0,6W	5102	4822 157 70483	Bead coil	7102	4822 130 63272	BSS100
3551	4822 050 24704	470k 1% 0,6W	5103	4822 157 70483	Bead coil	7105	4822 209 83909	UC3842N
3552	4822 100 11348	1k lin.pot.	5104▲	4822 146 31222	Power transformer	7106	4822 130 41078	BC640
3553	4822 053 10181	180Ω 5% 1W	5151	4822 156 21399	180μH	7107	4822 130 41782	BF422
3556	4822 050 15603	56k 1% 0,4W	5152	4822 156 21399	180μH	7108	4822 209 72554	MC7808CT
3560	4822 050 11503	15k 1% 0,4W	5153	4822 157 52234	100μH	7401	5322 130 60068	BC558C
3561	4822 116 83914	10k 5% 3W	5154	4822 157 52234	100μH	7402	4822 209 31676	TDA4860
3562	4822 050 23301	330Ω 1% 0,6W	5155	4822 157 52234	100μH	7502	5322 209 10422	HEF4538
3563	4822 050 23901	390Ω 1% 0,6W	5401	4822 157 51998	6.8μH	7503	4822 130 44196	BC548C
3564	4822 050 21502	1k5 1% 0,6W	5503▲	4822 140 10482	Line output transformer	7504	4822 209 32284	TDA4851
3565	4822 117 10293	3k3 5%	5504	4822 157 70478	7mH	7505	4822 130 44196	BC548C
3566	4822 050 21202	1k2 1% 0,6W	5505	4822 140 10455	Hor. drive transformer	7506	4822 130 44196	BC548C
3567	4822 053 12181	4Ω7 5% 3W				7507	4822 130 44196	BC548C
3568	4822 050 26809	68Ω 1% 0,6W	5506	4822 157 90246	120μH	7508	5322 130 60068	BC558C
						7509	4822 130 44196	BC548C
						7512	4822 130 44196	BC548C
						7513	4822 130 44196	BC548C



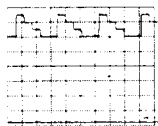
2701 E6	2745 C6	3739 B9	3783 E6	6713 C9	9705 D6
2702 D6	2746 E6	3740 C9	3785 D6	6721 E9	9706 E8
2703 A7	3701 E6	3741 E9	3786 B6	6722 D9	9708 C9
2704 A7	3702 E6	3742 A9	3787 C6	6723 D8	9709 B8
2705 A6	3703 F8	3743 D7	3788 C7	6725 E6	9710 D7
2711 E7	3704 E7	3744 B8	3789 B5	6726 E6	9711 B6
2712 D7	3705 D6	3745 C9	3791 F5	6727 E6	9712 B6
2713 B8	3706 D7	3761 F7	3792 D6	6728 D6	9713 F8
2714 B9	3707 A8	3762 F7	3793 D6	6736 A6	9716 E7
2715 B8	3708 A8	3763 F9	3794 E6	6738 C6	9721 D7
2721 E8	3709 A6	3764 F8	3795 D6	7701 A6	9725 C9
2722 D8	3710 A8	3765 D8	5701 A8	7702 A7	9726 E8
2723 D8	3711 E9	3766 D8	5702 A8	7703 A7	9727 F7
2724 D9	3712 A7	3767 D9	5711 A9	7711 A8	9729 D8
2725 D8	3713 D6	3768 E9	5712 A9	7712 B9	F701 C8
2726 C6	3714 A6	3769 D9	5721 E9	7713 B9	M701 F6
2727 C6	3715 A6	3770 C9	5722 D9	7721 E8	M702 D5
2728 C7	3731 E7	3771 F9	5733 C6	7722 E9	M703 C7
2731 E7	3732 E7	3772 E9	5734 F8	7723 E8	M704 B6
2732 D6	3734 E7	3773 D8	6701 A7	7731 D7	
2741 A6	3735 D7	3774 D8	6702 A8	9701 E6	
2742 C5	3736 D7	3775 E8	6703 A6	9702 E6	
2743 A6	3737 A8	3781 F6	6711 A9	9703 E8	
2744 E8	3738 A9	3782 D6	6712 B9	9704 E7	

For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554
email:- mauritron@diat.pipex.com



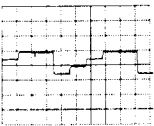
Wave forms for diagram A

A1 7731-5



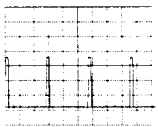
0.5V/DIV 10μS/DIV

A9 7711-C



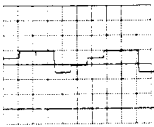
20V/DIV 5μS/DIV

A2 M701-8



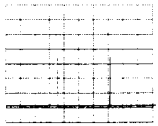
1V/DIV 10μS/DIV

A10 7712-B



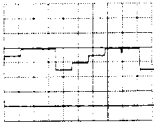
20V/DIV 5μS/DIV

A3 M701-10



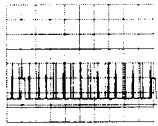
1V/DIV 5mS/DIV

A11 7712-E



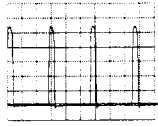
20V/DIV 5μS/DIV

A4 7731-10



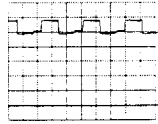
1V/DIV 2mS/DIV

A5 7731-9



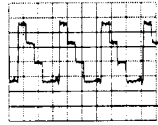
1V/DIV 10μS/DIV

A6 7731-15



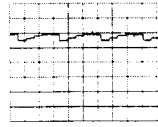
1V/DIV 10μS/DIV

A7 7731-16



0.2V/DIV 10μS/DIV

A8 7731-17



1V/DIV 10μS/DIV

9

8

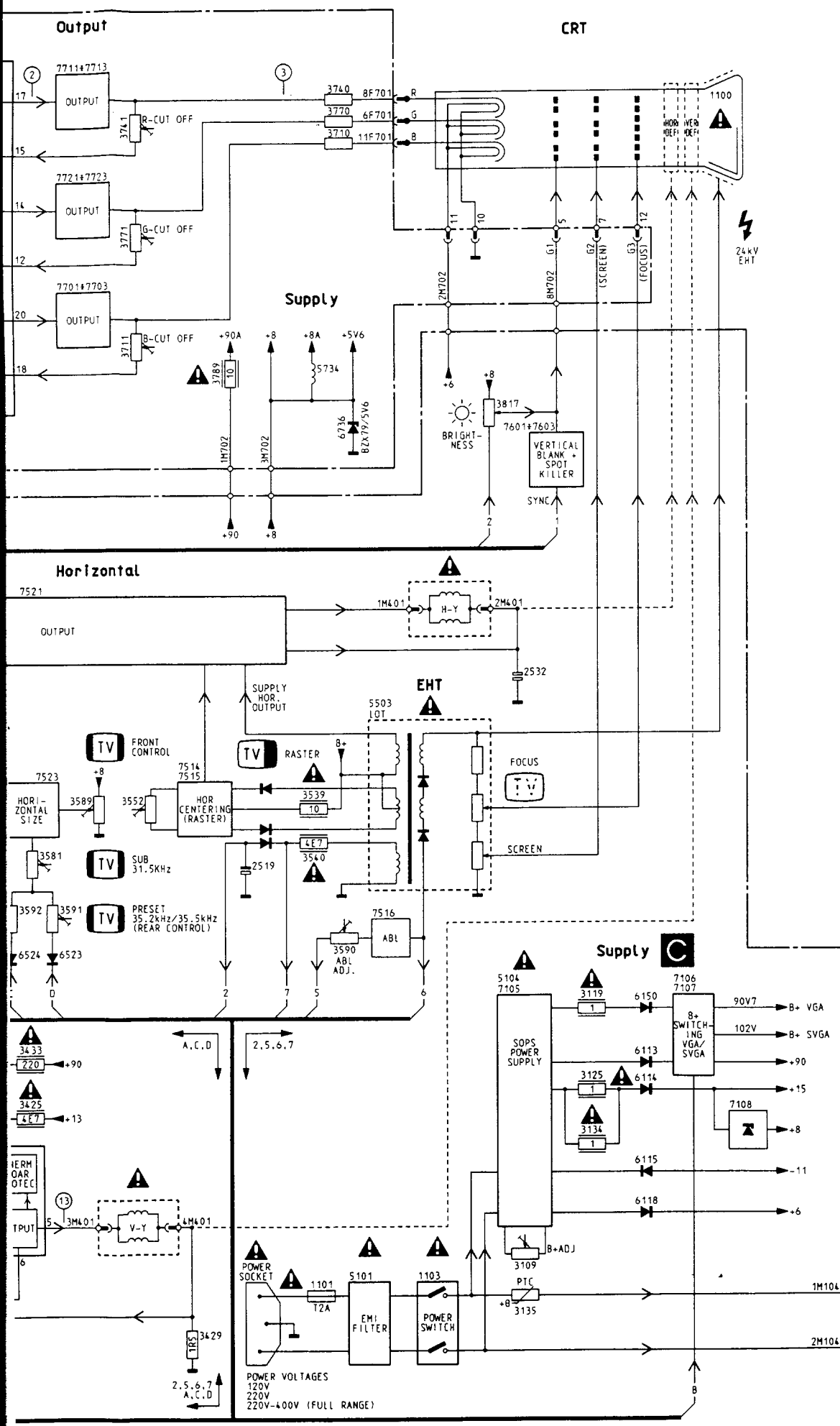
7

6

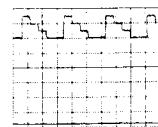
5

7CM52../..T 5.1

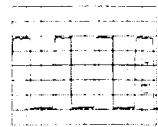
[illegible]



1 7731-5 8 7504-3

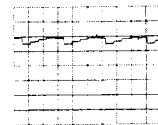


0.5V/DIV 10μS/DIV

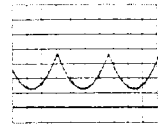


1V/DIV 5mS/DIV

2 7731-17 9 7504-11

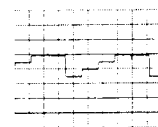


1V/DIV 10μS/DIV

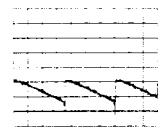


1V/DIV 5mS/DIV

3 7712-E 10 7504-6

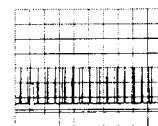


20V/DIV 5μS/DIV

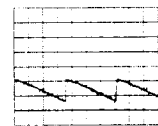


0.5V/DIV 5mS/DIV

4 7731-10 11 7504-5

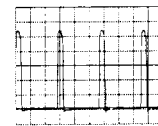


1V/DIV 2mS/DIV

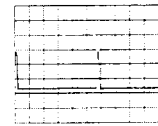


0.5V/DIV 5mS/DIV

5 7731-9 12 7502-12

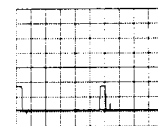


1V/DIV 10μS/DIV

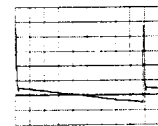


2V/DIV 5μS/DIV

6 7504-9 13 7402-5

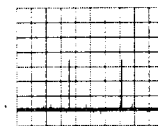


0.2V/DIV 5μS/DIV

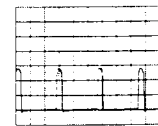


10V/DIV 2mS/DIV

7 7504-10 14 7504-2

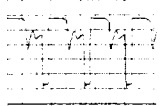


1V/DIV 5mS/DIV



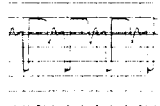
2V/DIV 10μS/DIV

C1 5104-18



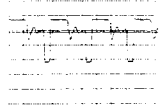
20V/DIV 10μS/DIV

C2 5104-3

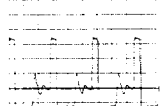


100V/DIV 10 μ S/DIV

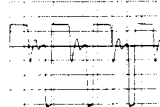
C3 5104-6

20V/DIV 10 μ S/DIV

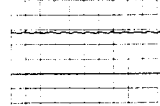
C4 5104-8

10V/DIV 10 μ S/DIV

C5 5104-5

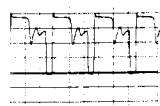
5V/DIV 10 μ S/DIV

C6 5104-11

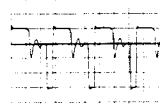
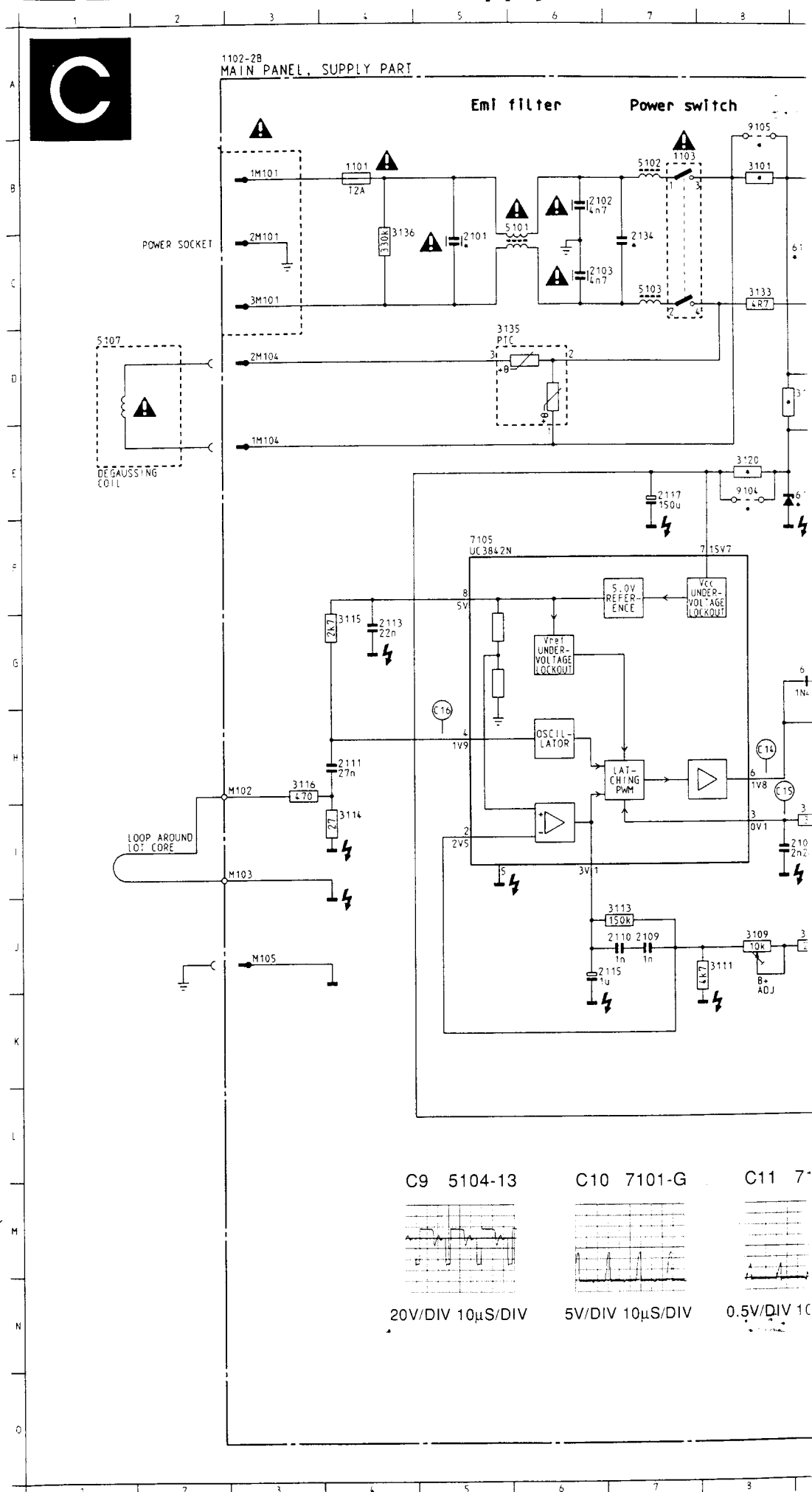


100V/DIV 100mS/DIV

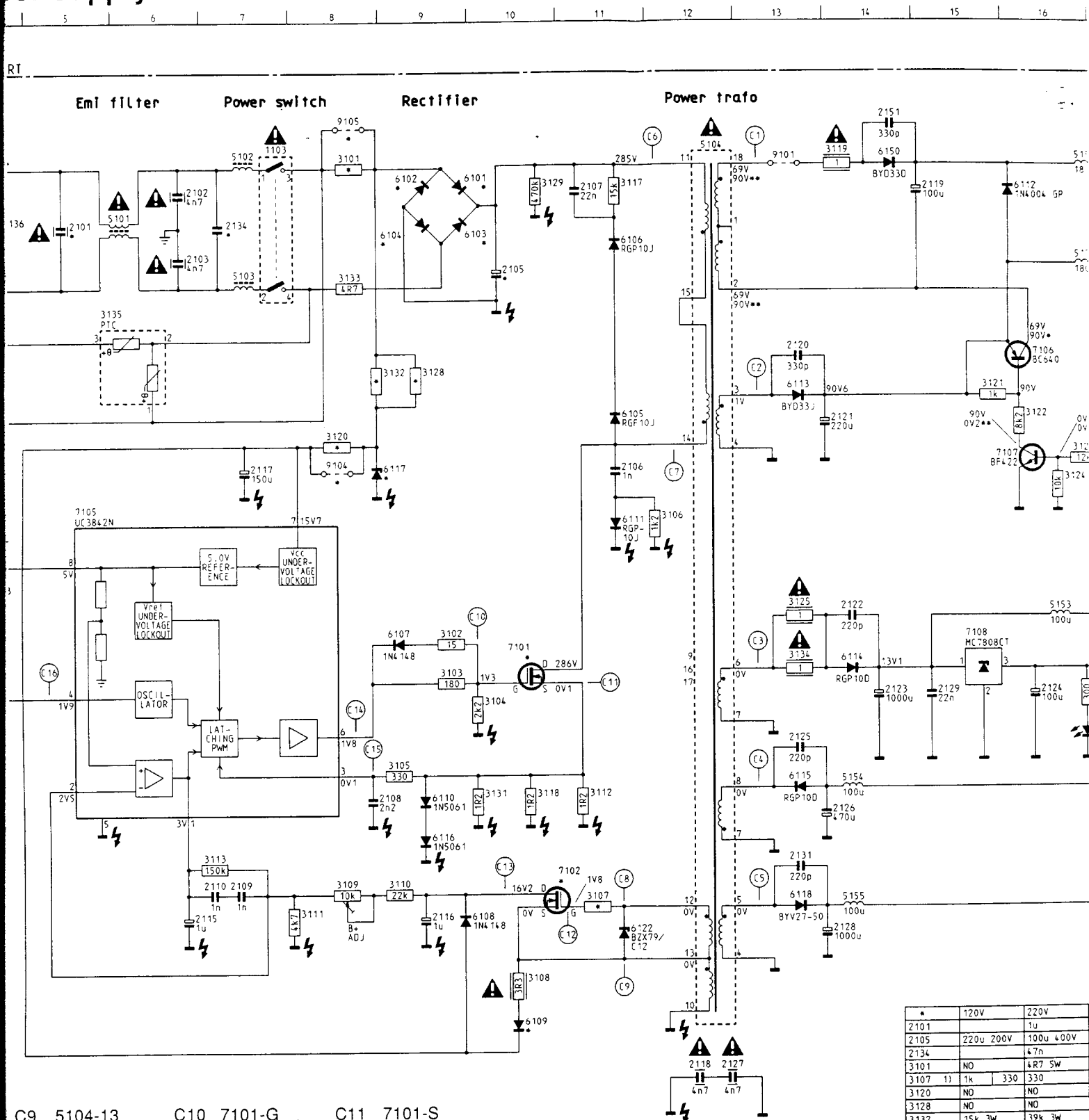
C7 5104-14

100V/DIV 10 μ S/DIV

C8 5104-12

20V/DIV 10 μ S/DIV

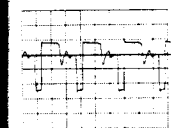
Power supply



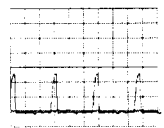
C9 5104-13

C10 7101-G

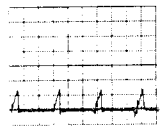
C11 7101-S



0V/DIV 10μS/DIV



5V/DIV 10μS/DIV



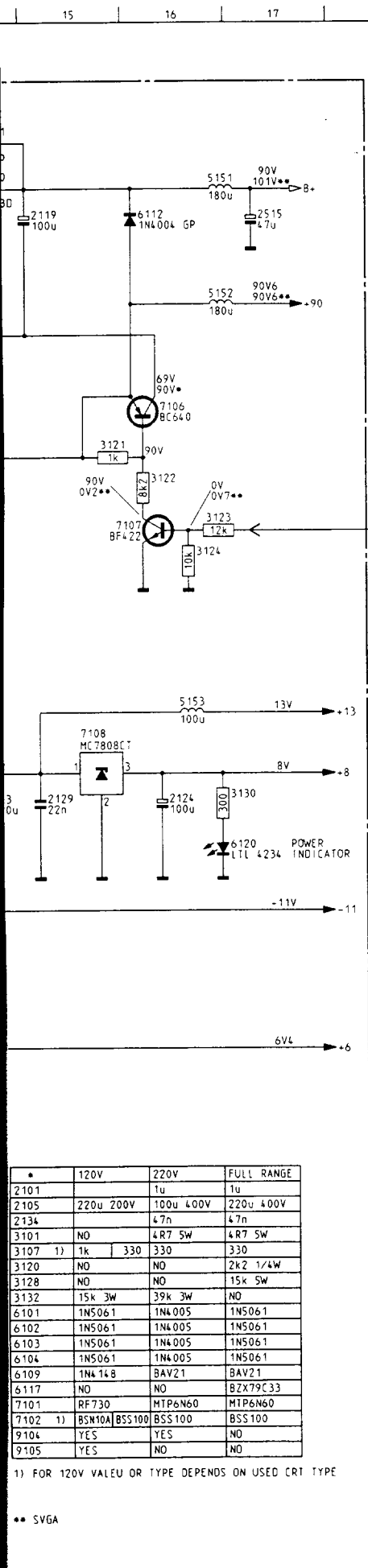
0.5V/DIV 10μS/DIV

	120V	220V
2101		1u
2105	220u 200V	100u 400V
2134		47n
3101	NO	4R7 5W
3107 11	1k	330
3120	NO	NO
3128	NO	NO
3132	15k 3W	39k 3W
6101	1N5061	1N4005
6102	1N5061	1N4005
6103	1N5061	1N4005
6104	1N5061	1N4005
6109	1N4148	BAV21
6117	NO	NO
7101	RF730	MTP6N60
7102 11	BSN10A BSS100	BSS100
9104	YES	YES
9105	YES	NO

1) FOR 120V VALEU OR TYPE DEPENDS

•• SVGA

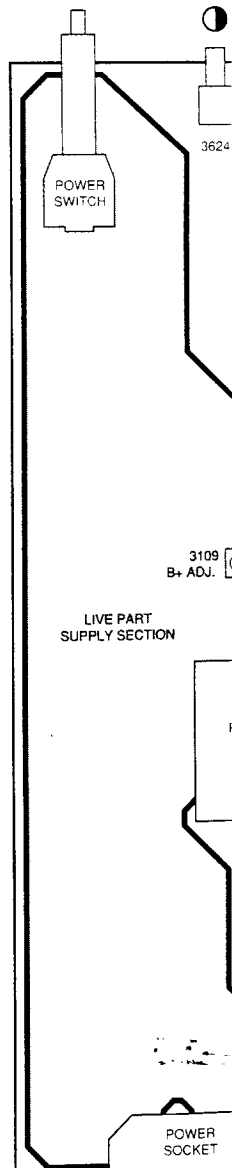
LOCATION



CM 2000

CL26532Z08/013, CREF
14.0193

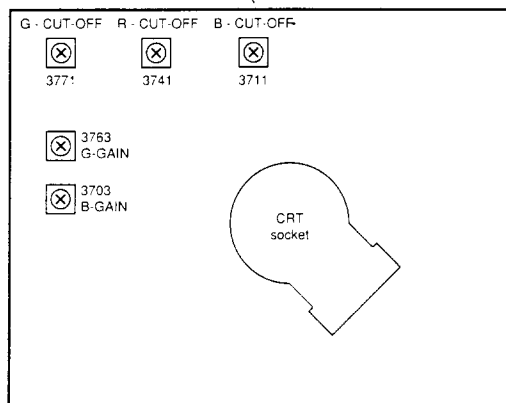
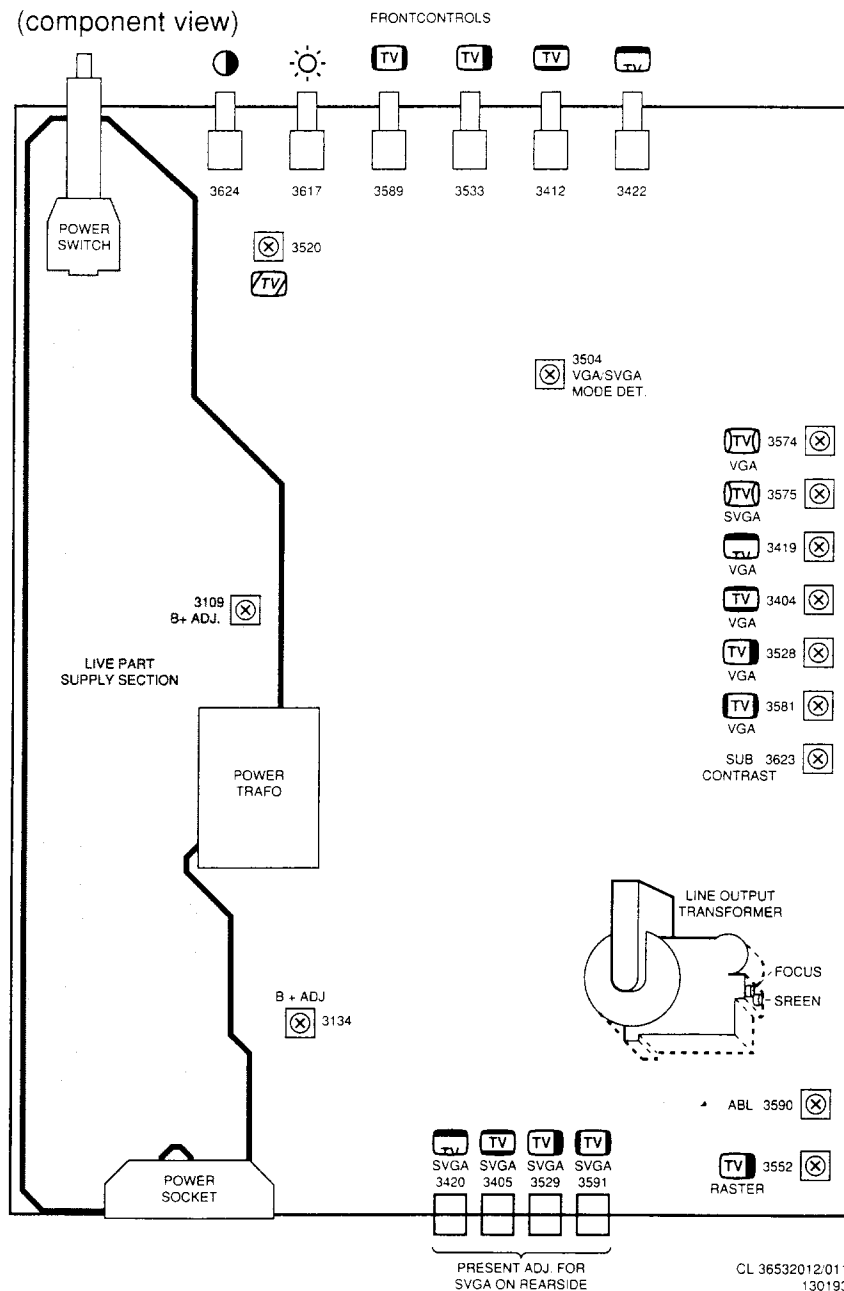
1101 B 4
1102 A 2
1103 B 7
2101 C 5
2102 B 6
2103 C 6
2105 C10
2106 E11
2107 B11
2108 I 8
2109 J 7
2110 J 7
2111 H 4
2113 G 4
2115 J 6
2116 J 9
2117 E 7
2118 L12
2119 B15
2120 D13
2121 E14
2122 G14
2123 H14
2124 H16
2125 H13
2126 I14
2127 L12
2128 K14
2129 H15
2131 J13
2134 C 7
2151 A14
2515 B17
3101 B 8
3102 G 9
3103 H 9
3104 H10
3105 I 9
3106 F12
3107 J11
3108 K10
3109 J 8
3110 J 9
3111 J 8
3112 I11
3113 J 7
3114 I 4
3115 G 4
3116 H 3
3117 B11
3118 I10
3119 B14
3120 E 8
3121 D15
3122 E16
3123 E16
3124 E16
3125 G13
3128 D 9
3129 B10
3130 H17
3131 I10
3132 D 9
3133 C 8
3134 G13
3135 D 5
3136 B 4
5101 C 6
5102 B 7
5103 C 7
5104 B12
5151 B16
5152 C16
5153 G16
5154 I14
5155 J14
6101 B 9
6102 B 9
6103 C 9
6104 C 9
6105 E11
6106 C11
6107 G 9
6108 J10
6109 L10
6110 I 9
6111 F11
6112 B16
6113 D13
6114 G14
6115 I13
6116 I 9
6117 E 9
6118 J13
6120 H17
6122 K11
6150 B14
7101 G10
7102 J10
7105 F 5
7106 D16
7107 E16
7108 G15
9101 B13
9104 E 8
9105 A 8

MAIN PANEL
(component view)

Electrical instructions

LOCATION OF ADJUSTING COMPONENTS

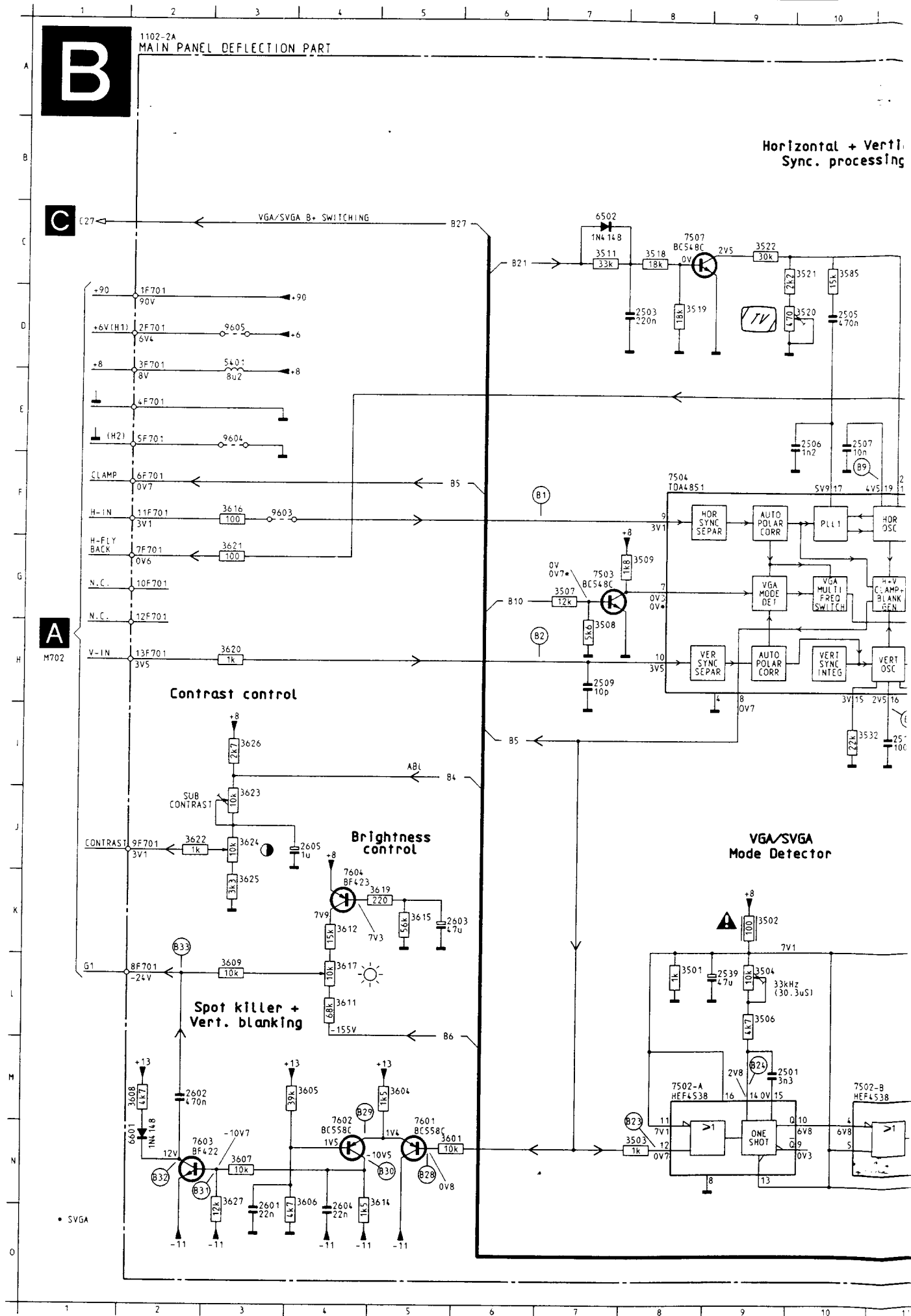
VIDEO PANEL (TRACK SIDE VIEW)

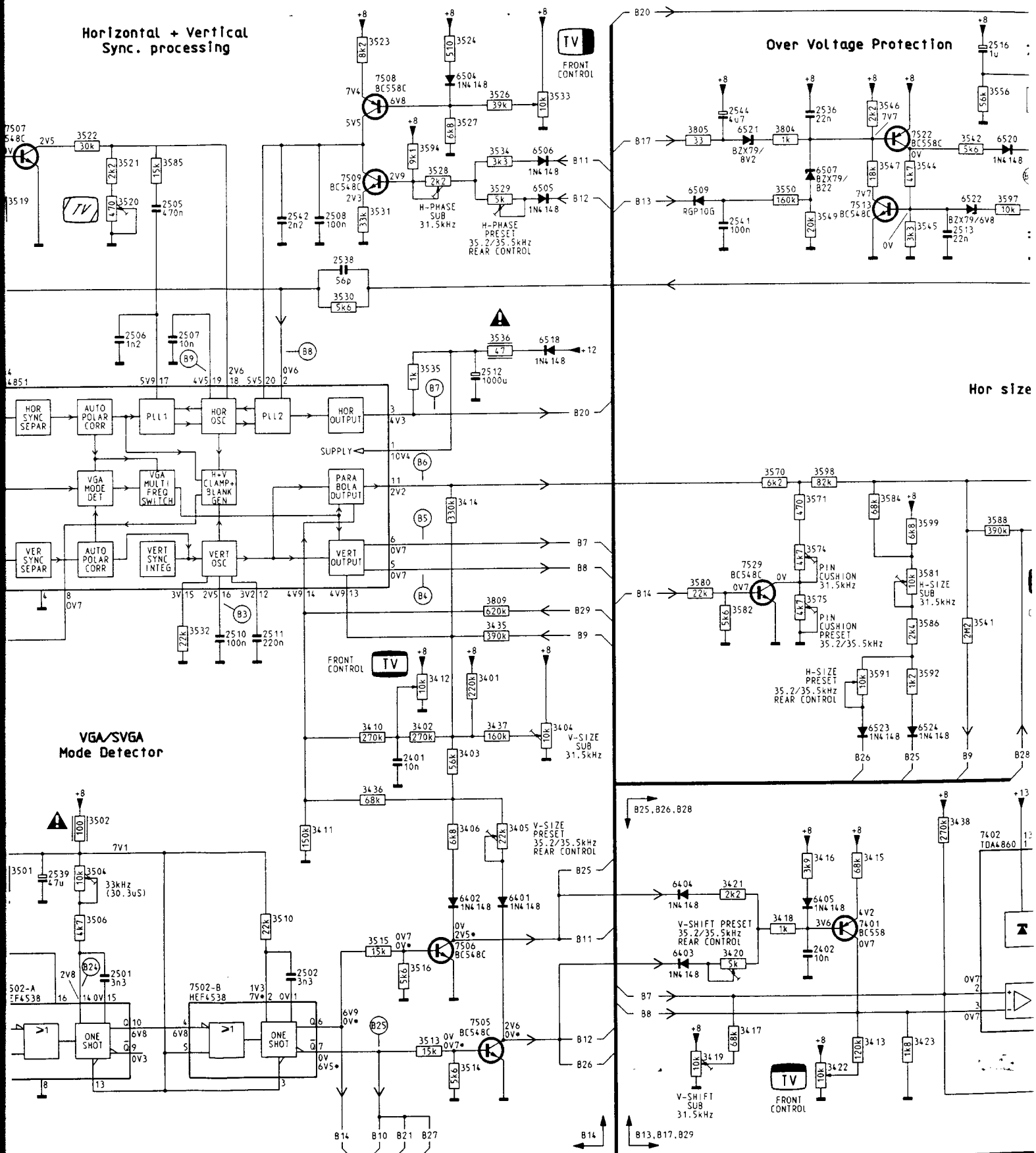
MAIN PANEL
(component view)

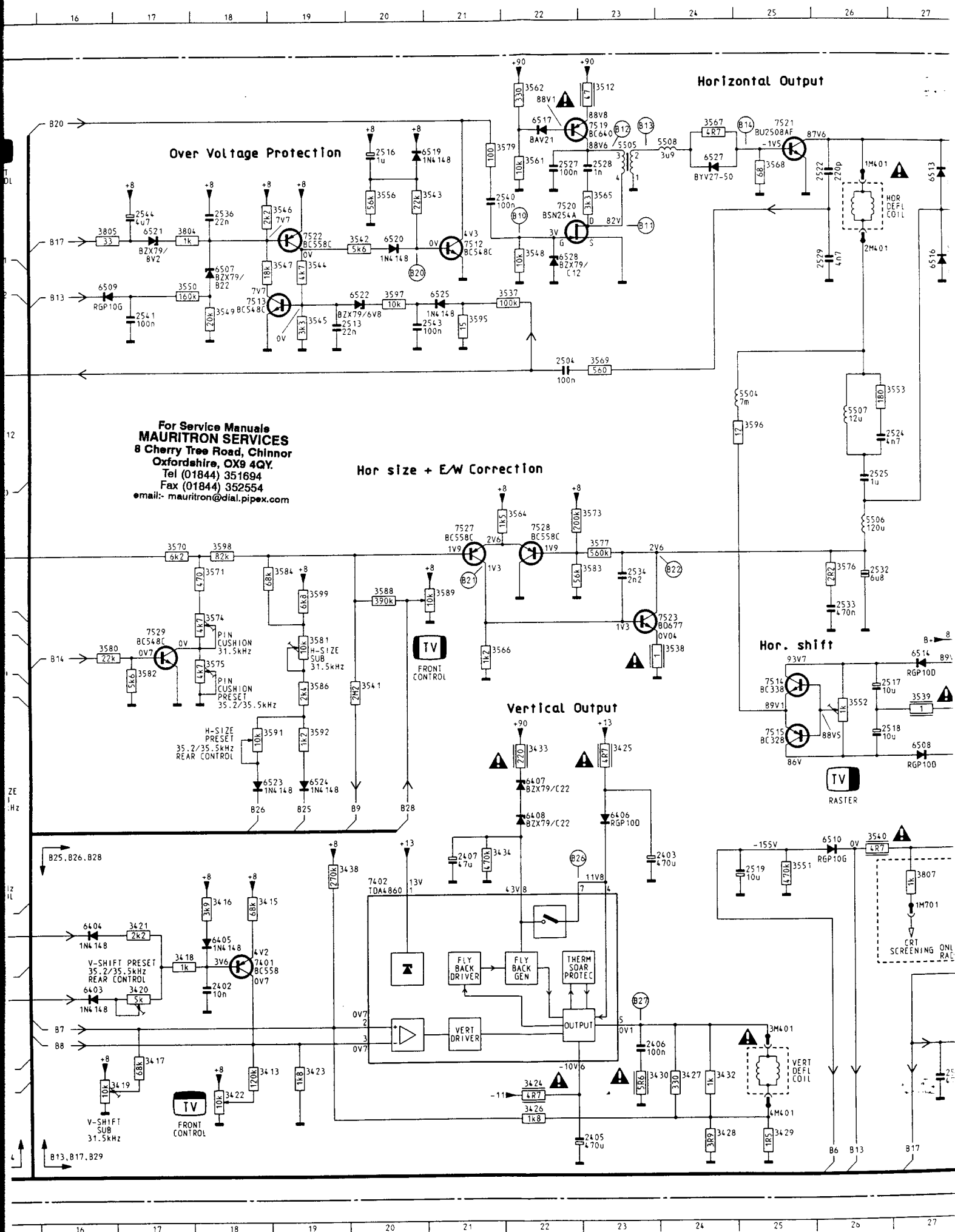
Deflection

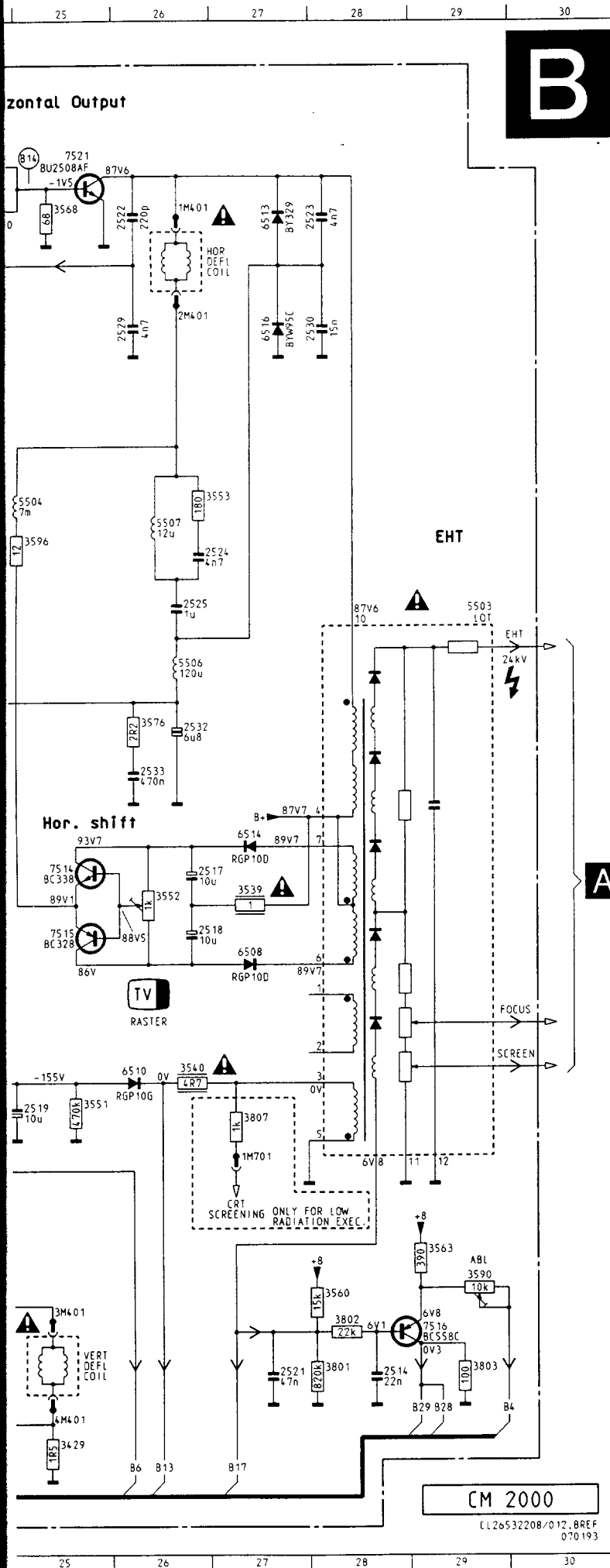
7CM52../..T

5.11

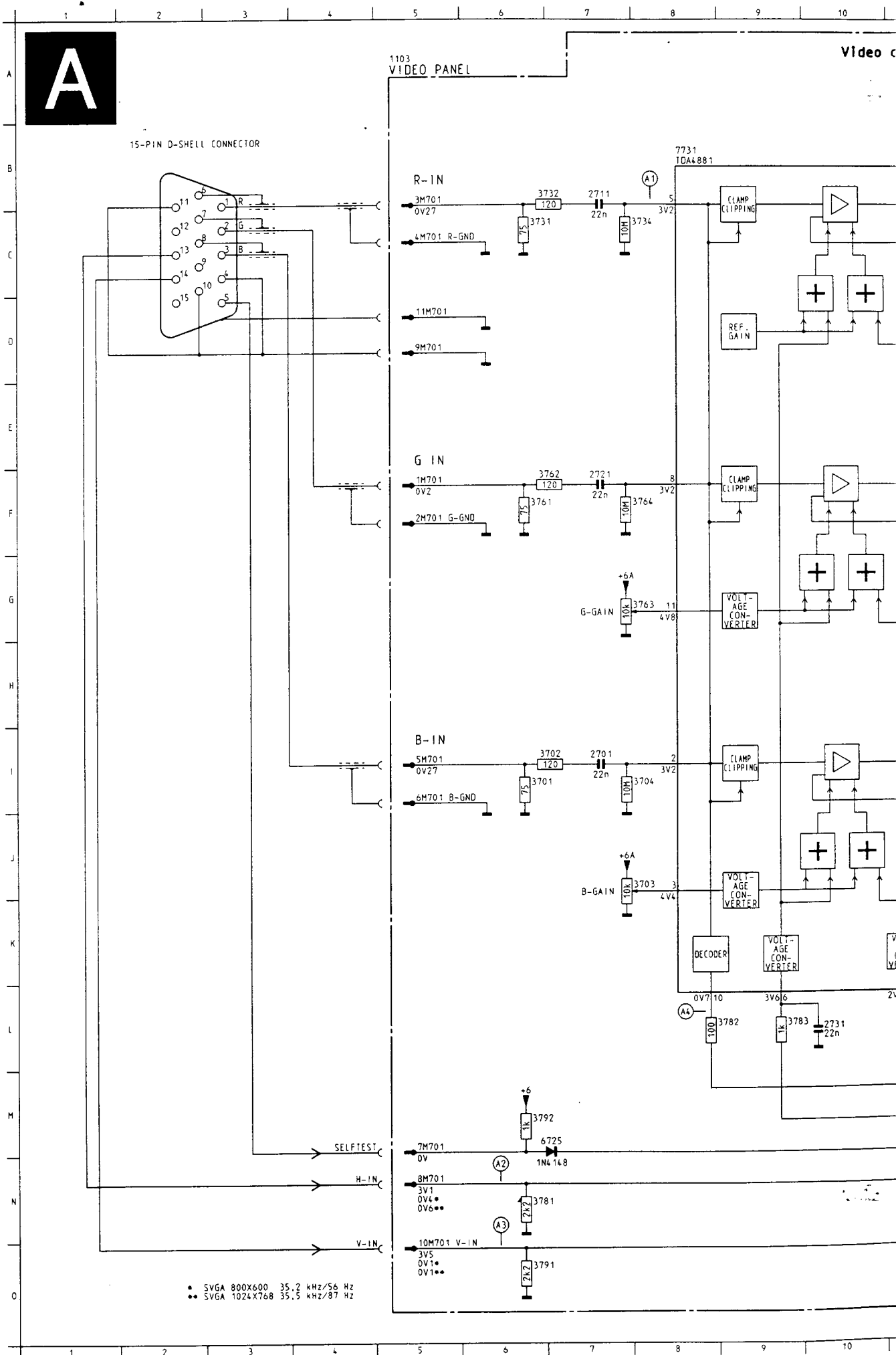


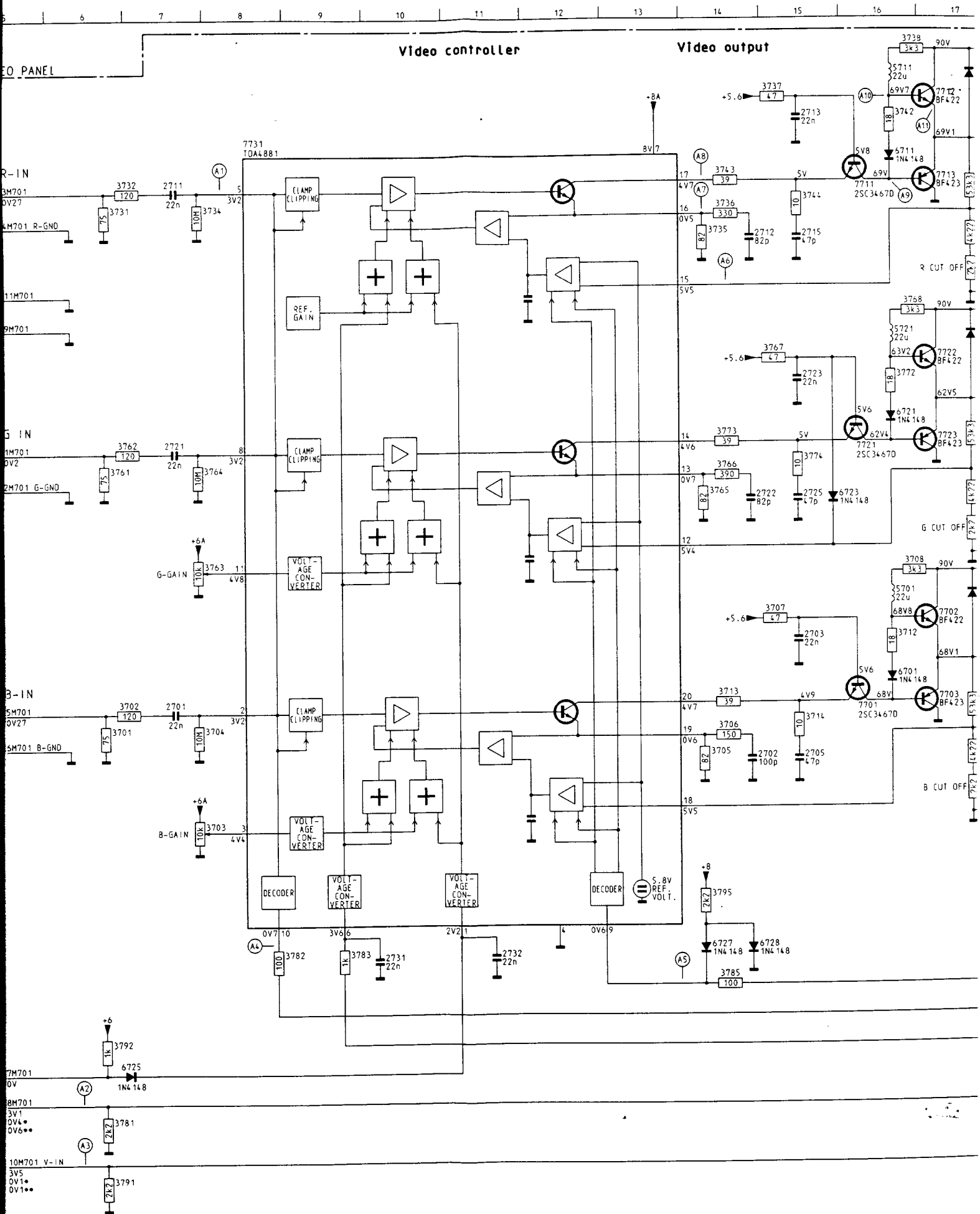


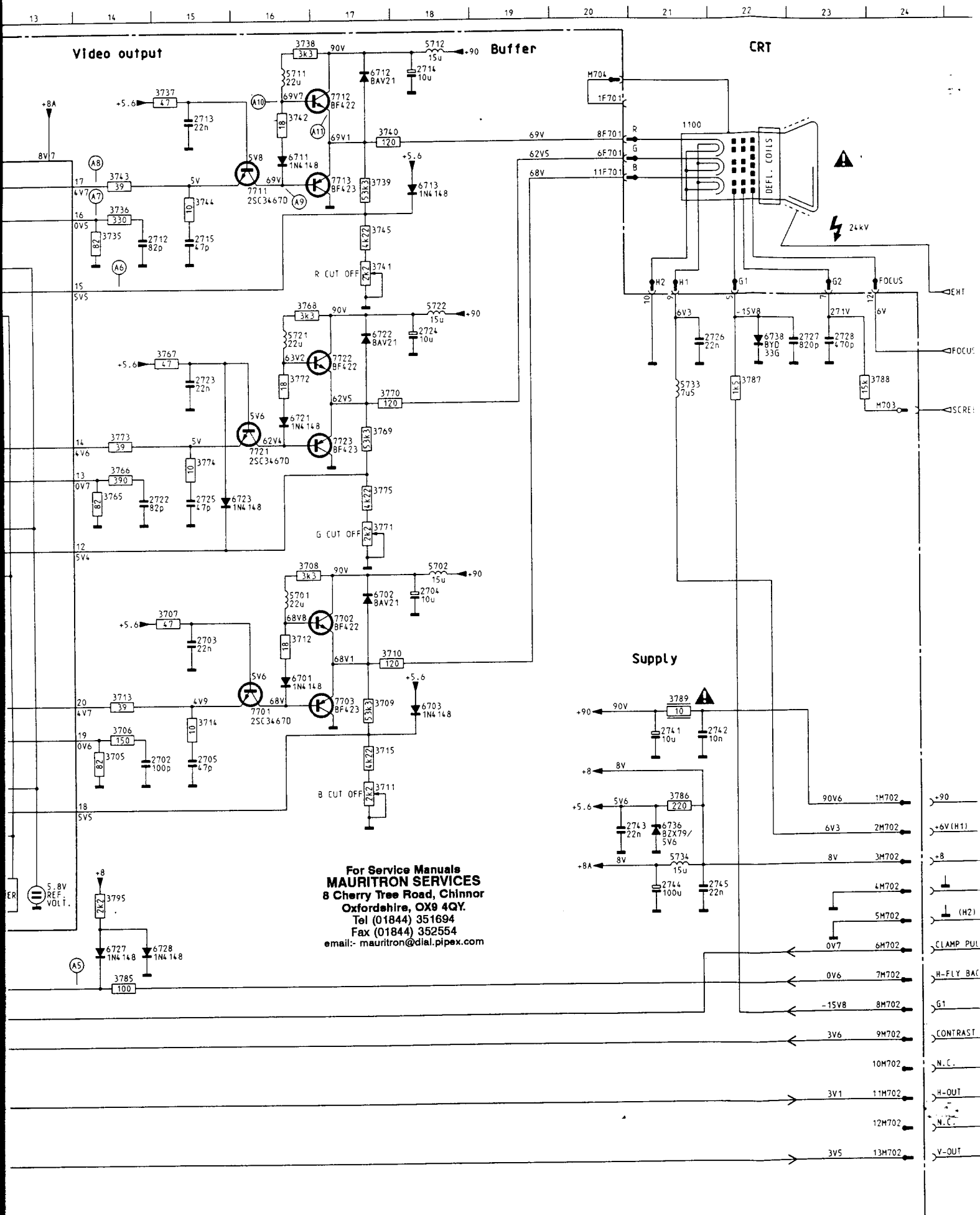


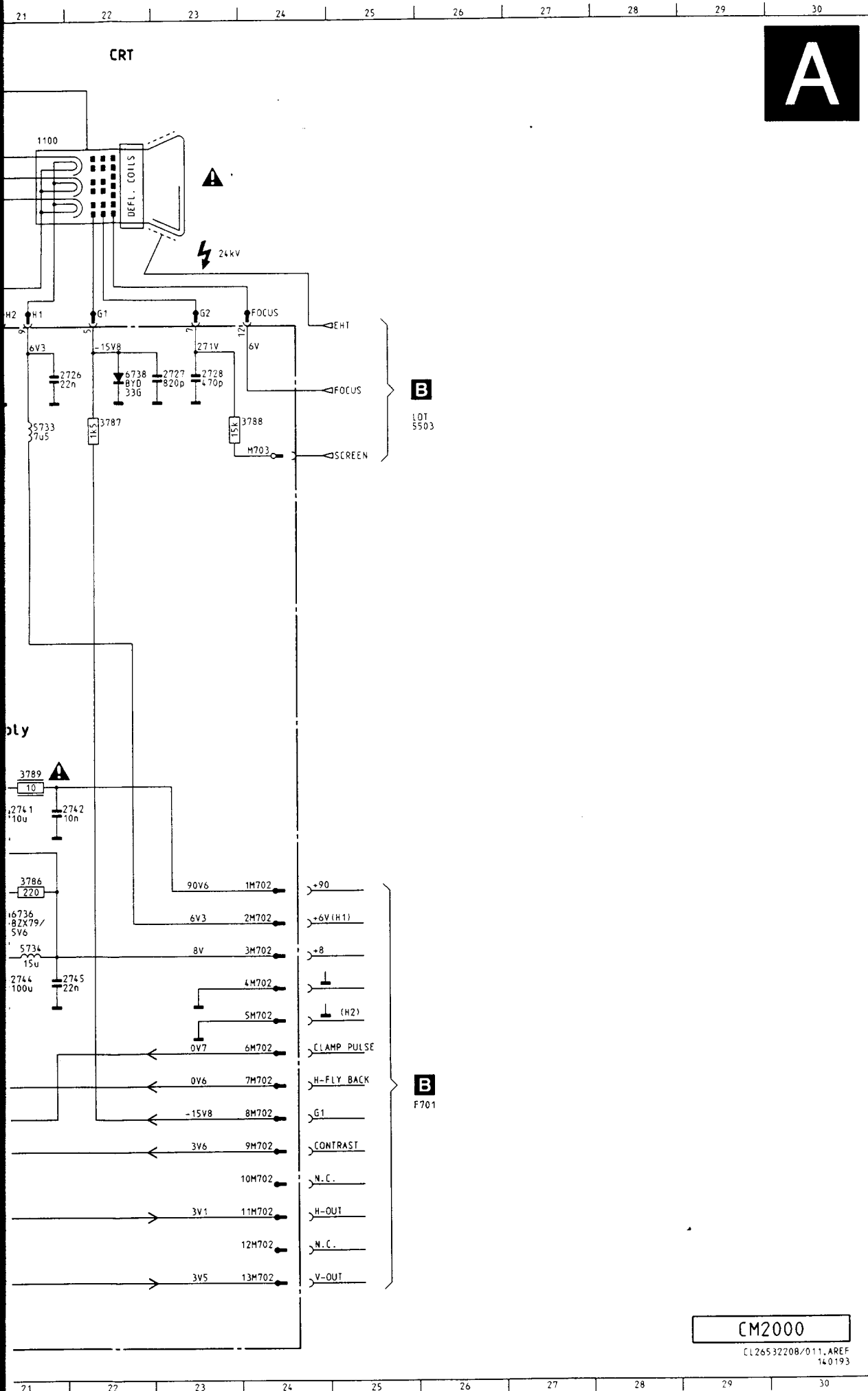


1102	A 2	3536	E14	6523	J18
2401	J13	3537	D22	6524	J19
2402	M18	3538	H24	6525	D21
2403	K23	3539	I27	6527	B24
2405	O23	3540	K26	6528	C22
2406	M23	3541	I20	6601	N 2
2407	K21	3542	C20	7401	L18
2501	M 9	3543	B20	7402	K20
2502	M12	3544	C19	7502	M 8
2503	D 8	3545	D19	7502	M10
2504	E22	3546	C19	7503	G 7
2505	D10	3547	C19	7504	F 8
2506	E10	3548	C22	7505	N14
2507	E10	3549	D18	7506	M13
2508	D12	3550	D17	7507	C 8
2509	H 7	3551	K25	7508	B13
2510	I11	3552	I26	7509	D12
2511	I11	3553	E26	7512	C21
2512	F14	3556	B20	7513	D18
2513	D19	3560	M28	7514	I25
2514	N28	3561	B22	7515	I25
2516	B20	3562	A22	7516	M29
2517	I26	3563	M29	7519	B23
2518	I26	3564	G22	7520	C22
2519	K25	3565	C23	7521	B25
2521	N27	3566	H21	7522	C19
2522	B26	3567	B24	7523	H24
2523	B28	3568	B25	7527	G21
2524	F26	3569	E23	7528	G22
2525	F26	3570	G17	7529	H17
2527	B22	3571	G18	7601	N 5
2528	B23	3573	G23	7602	N 4
2529	C26	3574	H18	7603	N 2
2530	C28	3575	H18	7604	K 4
2532	G26	3576	G26	9603	F 3
2533	H26	3577	G23	9604	E 3
2534	G23	3579	B21	9605	D 3
2536	C18	3580	H16		
2538	E12	3581	H19		
2539	L 9	3582	I17		
2540	C21	3583	G23		
2541	D17	3594	G19		
2542	D12	3585	C10		
2543	D20	3586	I19		
2544	C17	3588	H20		
2601	O 3	3589	H21		
2602	M 2	3590	M29		
2603	K 5	3591	I18		
2604	O 4	3592	I19		
2605	J 4	3594	C13		
3401	I14	3595	D21		
3402	J13	3596	E25		
3403	J14	3597	D20		
3404	J15	3598	G18		
3405	K14	3599	H19		
3406	K14	3601	N 5		
3410	J13	3604	M 5		
3411	K12	3605	M 4		
3412	I13	3606	N 4		
3413	N18	3607	N 3		
3414	G14	3608	M 2		
3415	L18	3609	L 3		
3416	L18	3611	L 4		
3417	N17	3612	K 4		
3418	L17	3614	N 5		
3419	N16	3615	K 5		
3420	M17	3616	F 3		
3421	L17	3617	L 4		
3422	N18	3619	K 5		
3423	N19	3620	M 3		
3424	N22	3621	G 3		
3425	J23	3622	J 2		
3426	N22	3623	J 3		
3427	N24	3624	J 3		
3428	O24	3625	K 3		
3429	O25	3626	I 3		
3430	N23	3627	N 3		
3432	N24	3801	N28		
3433	J22	3802	M28		
3434	K21	3803	N29		
3435	I14	3804	C17		
3436	K13	3805	C16		
3437	J14	3807	K27		
3438	K19	3809	I14		
3501	L 8	5401	D 3		
3502	K 9	5503	F29		
3503	N 8	5504	E25		
3504	L 9	5505	B23		
3506	L 9	5506	G26		
3507	G 7	5507	E26		
3508	G 7	5508	B24		
3509	G 8	6401	L14		
3510	L11	6402	L14		
3511	C 7	6403	M16		
3512	A23	6404	L16		
3513	N13	6405	L18		
3514	N14	6406	K23		
3515	M13	6407	J22		
3516	M13	6408	K22		
3518	C 8	6502	C 7		
3519	D 8	6504	B14		
3520	D10	6505	D15		
3521	C10	6506	C15		
3522	C 9	6507	D18		
3523	B13	6508	J27		
3524	B14	6509	D16		
3526	C14	6510	K26		
3527	C14	6513	B27		
3528	C13	6514	I27		
3529	D14	6516	C27		
3530	E12	6517	B22		
3531	D13	6518	E15		
3532	I10	6519	B20		
3533	C15	6520	C20		
3534	C14	6521	C17		
3535	F13	6522	D20		





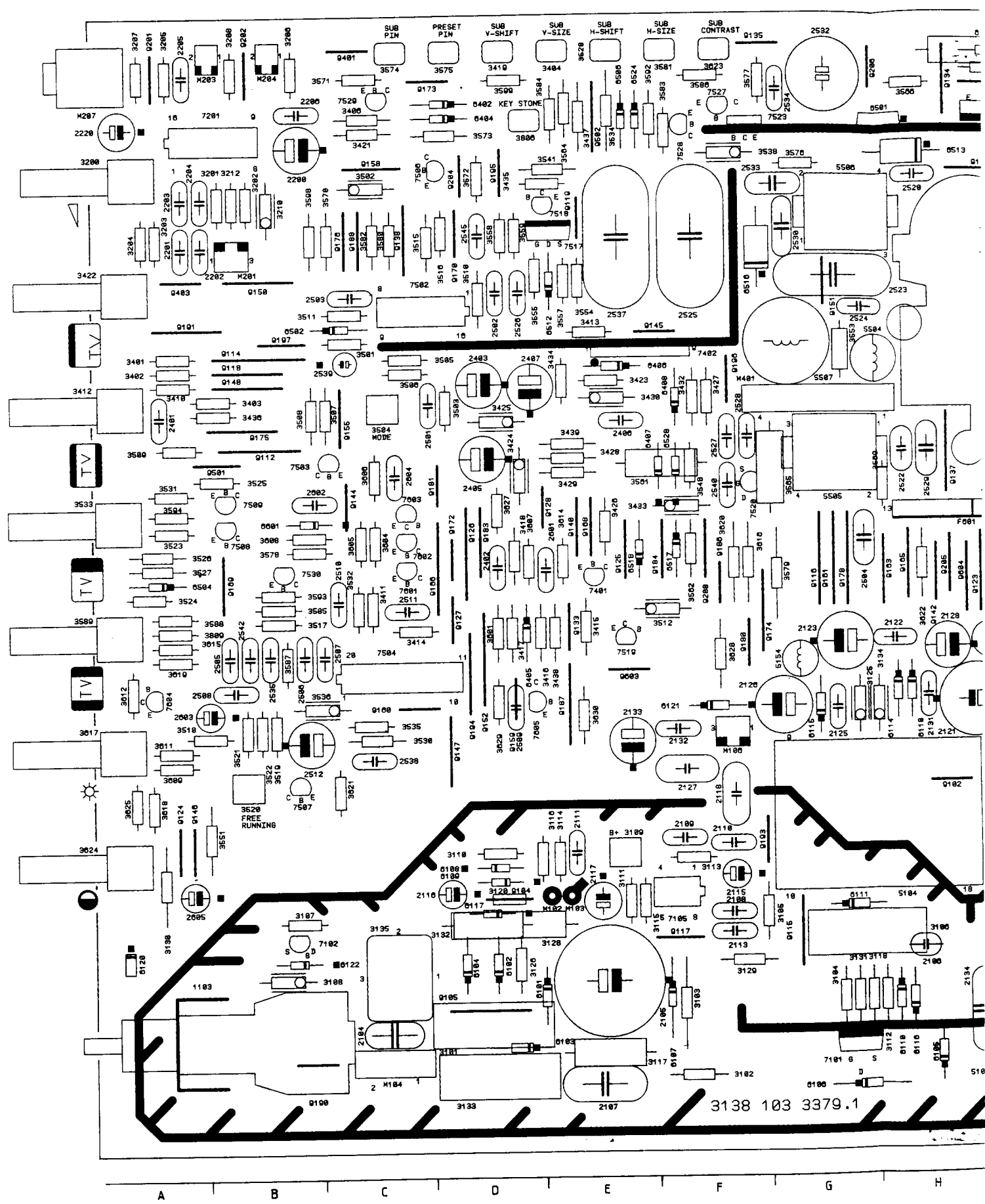




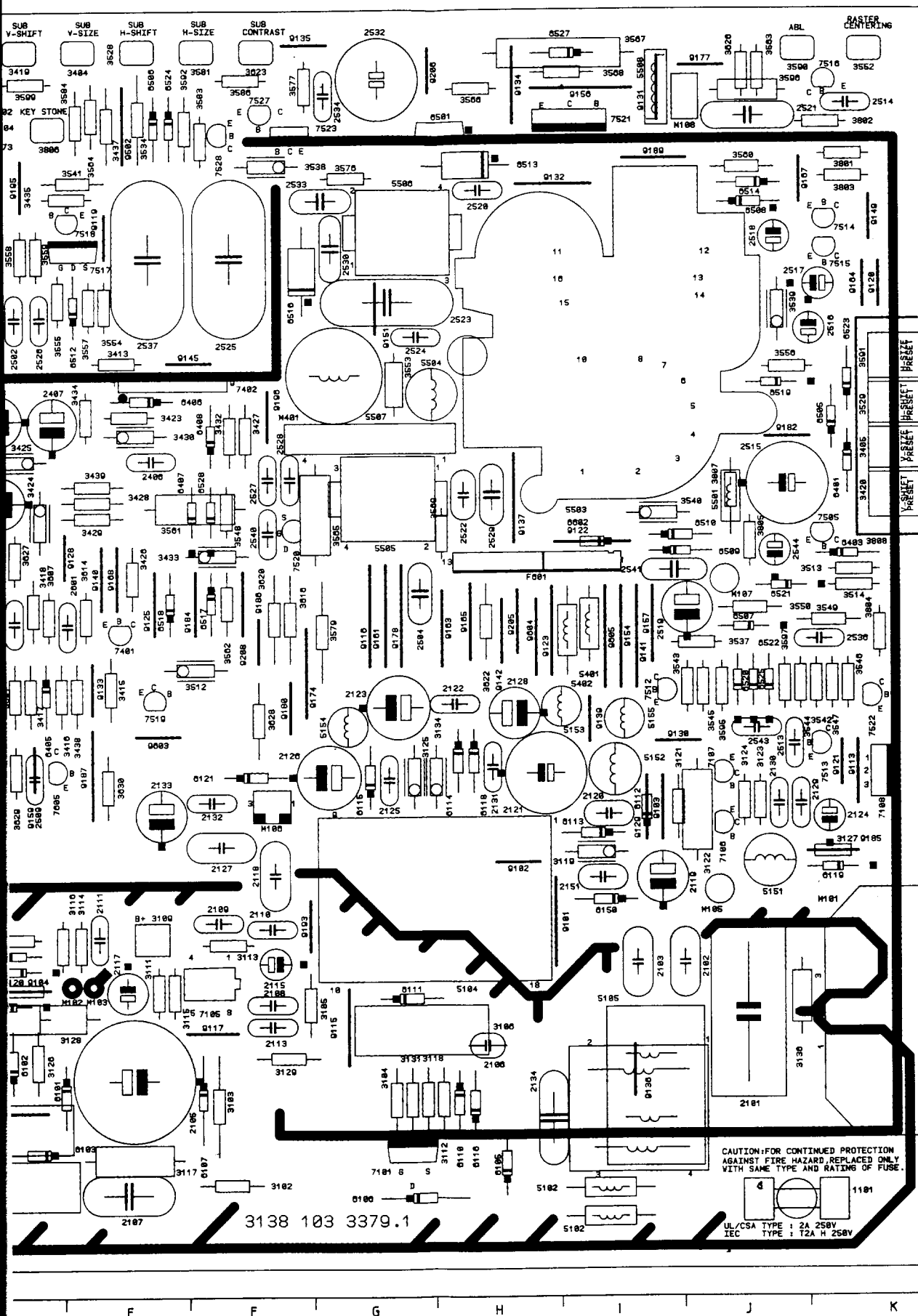
A

1100 B21
1103 A 5
2701 I 7
2702 J14
2703 H15
2704 G18
2705 J15
2711 B 7
2712 C14
2713 B15
2714 A18
2715 C15
2721 F 7
2722 F14
2723 E15
2724 D18
2725 F15
2726 D21
2727 D23
2728 D23
2731 L10
2732 L11
2741 I21
2742 I21
2743 J20
2744 K21
2745 K21
3701 I 6
3702 I 7
3703 J 8
3704 I 8
3705 I14
3706 I14
3707 H15
3708 G16
3709 I17
3710 H17
3711 J17
3712 H16
3713 I14
3714 I15
3715 I17
3731 C 6
3732 B 7
3734 C 8
3735 C14
3736 C14
3737 A15
3738 A16
3739 B17
3740 B17
3741 C17
3742 A16
3743 B14
3744 B15
3745 C17
3761 F 6
3762 F 7
3763 G 8
3764 F 8
3765 F14
3766 F14
3767 D15
3768 D16
3769 E17
3770 E17
3771 G17
3772 E16
3773 F14
3774 F15
3775 F17
3781 N 6
3782 L 8
3783 L 9
3785 L14
3786 J21
3787 E22
3788 E24
3789 I21
3791 O 6
3792 M 6
3795 K14
5701 H16
5702 G18
5711 A16
5712 A18
5721 D16
5722 D18
5733 E21
5734 K21
6701 I16
6702 H17
6703 I18
6711 B16
6712 A17
6713 B18
6721 E16
6722 D17
6723 F15
6725 M 7
6727 L14
6728 L14
6736 J21
6738 D22
7701 I16
7702 H17
7703 I17
7711 B16
7712 A17
7713 B17
7721 F16
7722 E17
7723 F17
7731 B 8

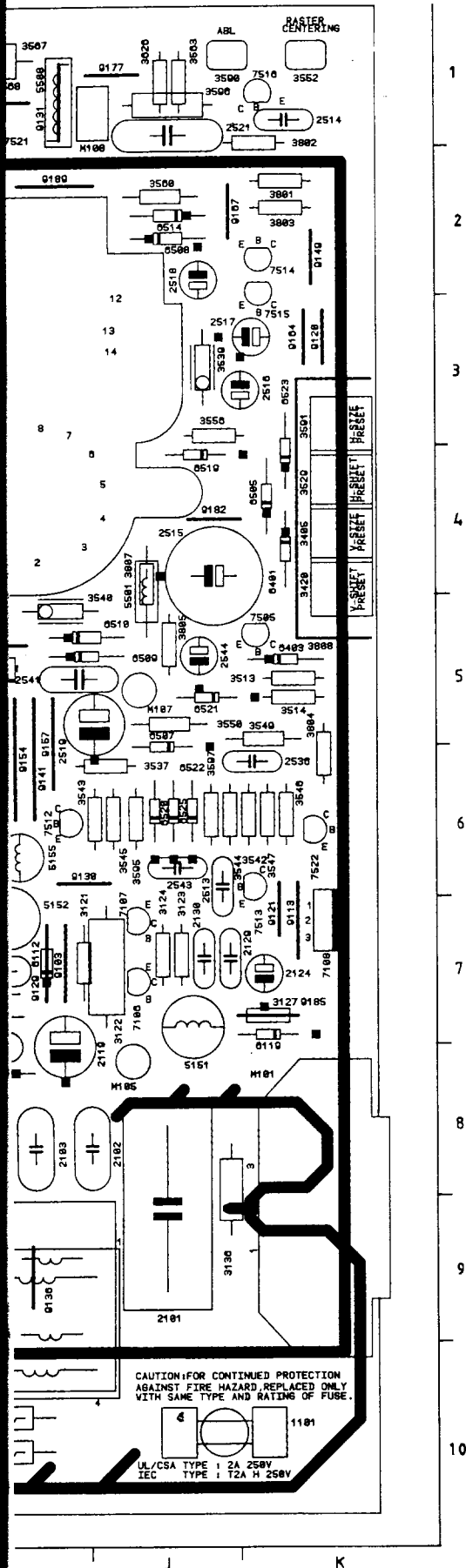
Main panel



The PCB drawings are given in position all components indicated.
In some executions not all components are present.



1101 K11
1103 B10
2101 J9
2102 J8
2103 I8
2104 C1
2105 E9
2106 H9
2107 E10
2108 F8
2109 F8
2110 F8
2111 E8
2113 F9
2115 F8
2116 D8
2117 E8
2118 F7
2119 J7
2120 I7
2121 I7
2122 H6
2123 G6
2124 K7
2125 G7
2126 G7
2127 F7
2128 H6
2129 K7
2130 K7
2131 H7
2132 F7
2133 F7
2134 I9
2151 I7
2200 C2
2201 B3
2202 B3
2203 B2
2204 B2
2205 B1
2206 C1
2220 A2
2401 A4
2402 D5
2403 D4
2405 D4
2406 E4
2407 E4
2501 D4
2502 D3
2503 C3
2504 H5
2505 B6
2506 C6
2507 C6
2508 B7
2509 D7
2510 C6
2511 D6
2512 C7
2513 K6
2514 K1
2515 K4
2516 K3
2517 K3
2518 J2
2519 J5
2520 H2
2521 J1
2522 H4
2523 G3
2524 H3
2525 F2
2526 E3
2527 F4
2528 G4
2529 H4
2530 G2
2532 G1
2533 G2
2534 G1
2535 B6
2536 K6
2537 E2
2538 C7
2539 C4
2540 F5
2541 J5
2542 B6
2543 J6
2544 J5
2545 D2
2601 E5
2602 C5
2603 B7
2604 C5
2606 B8
3101 D9
3102 F1
3103 F9
3104 G9
3105 G8
3106 H9
3107 C9
3108 B9
3109 E8



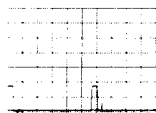
1101 K10	3110 D8	3535 C7	5155 I6	9103 J7	M204 B1
1103 B10	3111 F8	3536 C7	5401 I5	9104 D8	M401 G4
2101 J9	3112 H9	3537 J6	5402 I5	9105 D9	
2102 J8	3113 F8	3538 F2	5501 J4	9112 B4	
2103 I8	3114 E8	3539 K3	5503 I4	9113 K7	
2104 C10	3115 F8	3540 J5	5504 H4	9114 B4	
2105 E9	3116 E8	3541 E2	5505 G4	9115 G9	
2106 H9	3117 E10	3542 K6	5506 G2	9116 G5	
2107 E10	3118 H9	3543 J6	5507 G3	9117 F9	
2108 F8	3119 I7	3544 K6	5508 I1	9118 B4	
2109 F8	3120 D8	3545 J6	6101 E9	9119 E2	
2110 F8	3121 J7	3546 K6	6102 D9	9120 K3	
2111 E8	3122 J7	3547 K6	6103 E10	9121 K7	
2113 F9	3123 J7	3548 F5	6104 D9	9122 I5	
2115 F8	3124 J7	3549 K5	6105 H10	9123 I5	
2116 D8	3125 H7	3550 J5	6106 H10	9124 A8	
2117 E8	3126 E9	3551 B8	6107 F9	9125 E5	
2118 F7	3127 K7	3552 K1	6108 D8	9126 D5	
2119 J7	3128 D9	3553 G4	6109 D8	9127 D6	
2120 I7	3129 G9	3554 E3	6110 H9	9128 E5	
2121 I7	3130 A8	3555 E3	6111 H8	9129 I7	
2122 H6	3131 H9	3556 K3	6112 I7	9130 J6	
2123 G6	3132 D9	3557 E3	6113 I7	9131 J1	
2124 K7	3133 D10	3558 D2	6114 H7	9132 I2	
2125 G7	3134 H7	3559 E2	6115 G7	9133 E6	
2126 G7	3135 C9	3560 J2	6116 H9	9134 H1	
2127 F7	3136 K8	3561 F5	6117 D8	9135 G1	
2128 H6	3200 A2	3562 F5	6118 H7	9136 I9	
2129 K7	3201 B2	3563 J1	6119 K7	9137 H4	
2130 K7	3202 B2	3564 E1	6120 A9	9138 D2	
2131 H7	3203 A2	3565 G5	6121 F7	9139 I6	
2132 F7	3204 A2	3566 H1	6122 C9	9140 E5	
2133 F7	3205 A1	3567 I1	6150 I8	9141 I6	
2134 I9	3206 C1	3568 I1	6401 K4	9142 H5	
2151 I7	3207 A1	3569 H5	6402 D1	9144 C5	
2200 C2	3208 B1	3570 C2	6403 K5	9145 F3	
2201 B3	3210 B2	3571 C1	6404 D1	9146 B8	
2202 B3	3212 B2	3572 D2	6405 E6	9147 D7	
2203 B2	3401 A4	3573 D2	6406 E4	9148 B4	
2204 B2	3402 A4	3574 C1	6407 F5	9149 K2	
2205 B1	3403 B4	3575 D1	6408 F4	9150 B3	
2206 C1	3404 E1	3576 G2	6501 H1	9151 G3	
2220 A2	3405 K4	3577 G1	6502 C3	9152 D6	
2401 A4	3406 C1	3578 C5	6504 A6	9154 I6	
2402 D5	3410 A4	3579 G5	6505 K4	9155 C4	
2403 D4	3411 C6	3580 C2	6506 E1	9156 I1	
2405 D4	3412 A4	3581 F1	6507 J5	9157 I5	
2406 E4	3413 E3	3582 C2	6508 J2	9158 C2	
2407 E4	3414 D6	3583 F2	6509 J5	9159 D7	
2501 D4	3415 E6	3584 E1	6510 J5	9160 D7	
2502 D3	3416 E6	3585 B6	6512 E3	9161 G5	
2503 C3	3417 D6	3586 F1	6513 H2	9163 H5	
2504 H5	3418 D5	3587 B6	6514 J2	9164 K3	
2505 B6	3419 D1	3588 A6	6516 G3	9165 H5	
2506 C6	3420 K4	3589 A6	6517 F5	9166 D5	
2507 C6	3421 C2	3590 K1	6518 F5	9167 K2	
2508 B7	3422 A3	3591 K3	6519 J4	9168 E5	
2509 D7	3423 E4	3592 F1	6520 J6	9169 B6	
2510 C6	3424 E5	3593 B6	6521 K5	9170 D2	
2511 D6	3425 D4	3594 A5	6522 J6	9172 D5	
2512 C7	3426 E5	3595 J6	6523 K3	9173 D1	
2513 K6	3427 F4	3596 J1	6524 F1	9174 G6	
2514 K1	3428 E4	3597 K6	6525 J6	9175 B4	
2515 K4	3429 E5	3598 C2	6527 I1	9176 C2	
2516 K3	3430 E4	3599 D1	6528 F5	9177 J1	
2517 K3	3432 F4	3601 D6	6601 C5	9178 G5	
2518 J2	3433 F5	3604 C5	6602 I5	9180 G6	
2519 J5	3434 E4	3605 C5	7101 H10	9181 D5	
2520 H2	3435 E2	3606 C5	7102 C9	9182 K4	
2521 J1	3436 B4	3607 E5	7105 F8	9183 D5	
2522 H4	3437 E1	3608 C5	7106 J7	9184 F5	
2523 G3	3438 E6	3609 A7	7107 J7	9185 K7	
2524 H3	3439 E4	3611 A7	7108 K7	9186 F6	
2525 F2	3501 C3	3612 A7	7201 B2	9187 E7	
2526 E3	3502 C2	3614 E5	7401 E5	9188 C2	
2527 F4	3503 D4	3615 A6	7402 F3	9189 J2	
2528 G4	3504 C4	3616 G5	7502 D3	9190 C10	
2529 H4	3505 D4	3617 A7	7503 C4	9191 B3	
2530 G2	3506 D4	3618 A8	7504 C6	9193 G8	
2532 G1	3507 C4	3619 A6	7505 K5	9194 D6	
2533 G2	3508 C4	3620 F5	7506 D2	9195 D2	
2534 G1	3509 B4	3621 C7	7507 C7	9196 F4	
2535 B6	3510 D3	3622 H5	7508 B5	9197 B3	
2536 K6	3511 C3	3623 F1	7509 B5	9201 A1	
2537 E2	3512 F6	3624 A8	7512 J6	9202 B1	
2538 C7	3513 K5	3625 A8	7513 K6	9204 D2	
2539 C4	3514 K5	3626 J1	7514 K2	9205 H5	
2540 F5	3515 D3	3627 D5	7515 K2	9206 H1	
2541 J5	3516 D2	3628 F6	7516 K1	9208 F5	
2542 B6	3517 B6	3629 D7	7517 E2	9401 C1	
2543 J6	3518 B7	3630 E7	7518 E2	9403 B3	
2544 J5	3519 B7	3801 K2	7519 E6	9501 B4	
2545 D2	3520 B7	3802 K1	7520 G5	9502 E1	
2601 E5	3521 B7	3803 K2	7521 I1	9603 F6	
2602 C5	3522 B7	3804 K6	7522 K6	9604 I6	
2603 B7	3523 A5	3805 J5	7523 G1	9605 I6	
2604 C5	3524 A6	3806 E1	7527 F2	F601 I5	
2605 B8	3525 B5	3807 J4	7528 F1	M101 K9	
3101 D9	3526 A5	3809 A6	7529 C1	M102 E8	
3102 F10	3527 A5	5102 I10	7530 B5	M103 E8	
3103 F9	3528 E1	5103 I10	7601 D5	M104 C1	
3104 G9	3529 K4	5104 H8	7602 D5	M105 J8	
3105 G8	3530 C7	5105 I9	7603 D5	M106 F7	
3106 H9	3531 A5	5151 J7	7604 A7	M107 J5	
3107 C9	3532 C6	5152 I7	7605 E7	M108 J1	
3108 B9	3533 A5	5153 I6	9101 I8	M201 B3	
3109 E8	3534 E1	5154 G6	9102 H7	M203 B1	

Wave forms for diagram B

9103 J7
9104 D8
9105 D9
9112 B4
9113 K7
9114 B4
9115 G9
9116 G5
9117 F9
9118 B4
9119 E2
9120 K3
9121 K7
9122 I5
9123 I5
9124 A8
9125 E5
9126 D5
9127 D6
9128 E5
9129 I7
9130 J6
9131 J1
9132 I2
9133 E6
9134 H1
9135 G1
9136 I9
9137 H4
9138 D2
9139 I6
9140 E5
9141 I6
9142 H5
9144 C5
9145 F3
9146 B8
9147 D7
9148 B4
9149 K2
9150 B3
9151 G3
9152 D6
9154 I6
9155 C4
9156 I1
9157 I5
9158 C2
9159 D7
9160 D7
9161 G5
9163 H5
9164 K3
9165 H5
9166 D5
9167 K2
9168 E5
9169 B6
9170 D2
9172 D5
9173 D1
9174 G6
9175 B4
9176 C2
9177 J1
9178 G5
9180 G6
9181 D5
9182 K4
9183 D5
9184 F5
9185 K7
9186 F6
9187 E7
9188 C2
9189 J2
9190 C10
9191 B3
9193 G8
9194 D6
9195 D2
9196 F4
9197 B3
9201 A1
9202 B1
9204 D2
9205 H5
9206 H1
9208 F5
9401 C1
9403 B3
9501 B4
9502 E1
9603 F6
9604 I6
9605 I6
F601 I5
M101 K9
M102 E8
M103 E8
M104 C1
M105 J8
M106 F7
M107 J5
M108 J1
M201 B3
M203 B1

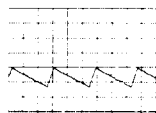
M204 B1
M401 G4

B1 7504-9



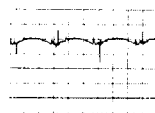
0.2V/DIV 5μS/DIV

B9 7504-19



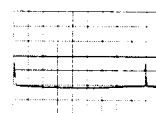
2V/DIV 10μS/DIV

B22 7523-C



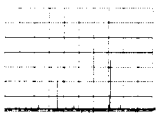
1V/DIV 10μS/DIV

B30 7602-C



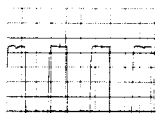
5V/DIV 2mS/DIV

B2 7504-10



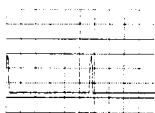
1V/DIV 5mS/DIV

B10 7520-G



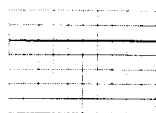
2V/DIV 10μS/DIV

B23 7502-12



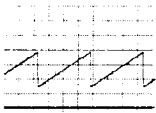
2V/DIV 5μS/DIV

B31 7603-B



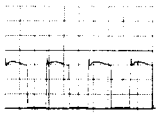
2V/DIV 5mS/DIV

B3 7504-16



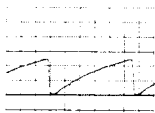
1V/DIV 5mS/DIV

B11 7520-E



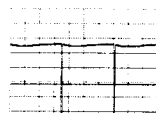
50V/DIV 10μS/DIV

B24 7502-14



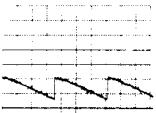
2V/DIV 5μS/DIV

B32 7603-C



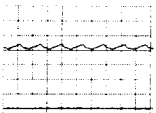
5V/DIV 5mS/DIV

B4 7504-5



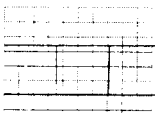
0.5V/DIV 5mS/DIV

B12 7519-C



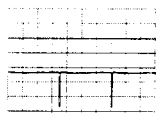
20V/DIV 20μS/DIV

B25 7502-7



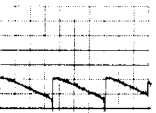
2V/DIV 5mS/DIV

B33 F701-8



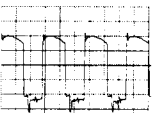
10V/DIV 5mS/DIV

B5 7504-6



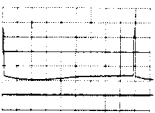
0.5V/DIV 5mS/DIV

B13 5505-2



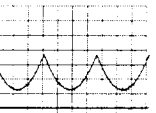
2V/DIV 10μS/DIV

B26 7402-7



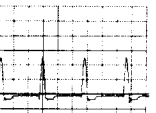
10V/DIV 2mS/DIV

B6 7504-11



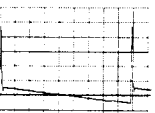
1V/DIV 5mS/DIV

B14 7521-B



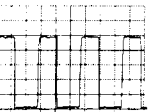
0.2V/DIV 10μS/DIV

B27 7402-5



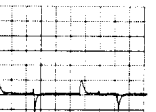
10V/DIV 2mS/DIV

B7 7504-3



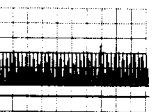
1V/DIV 5mS/DIV

B20 7512-B



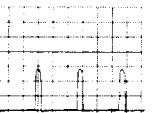
0.5V/DIV 5μS/DIV

B28 7601-B



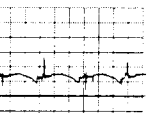
1V/DIV 5mS/DIV

B8 7504-2



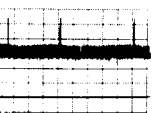
2V/DIV 10μS/DIV

B21 7527-C



1V/DIV 10μS/DIV

B29 7601-E



0.5V/DIV 5mS/DIV