

SAMSUNG.

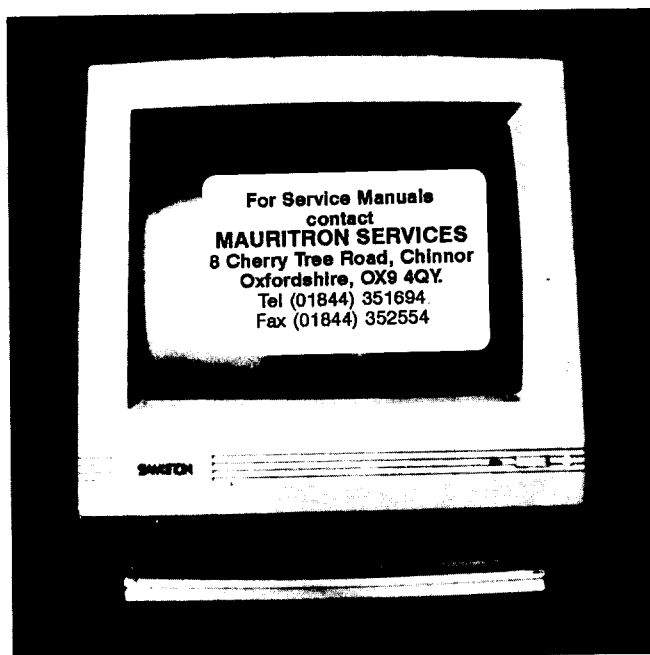
SAMTRON
SAMSUNG ELECTRON DEVICES

PERICOM

14" COLOR MONITOR

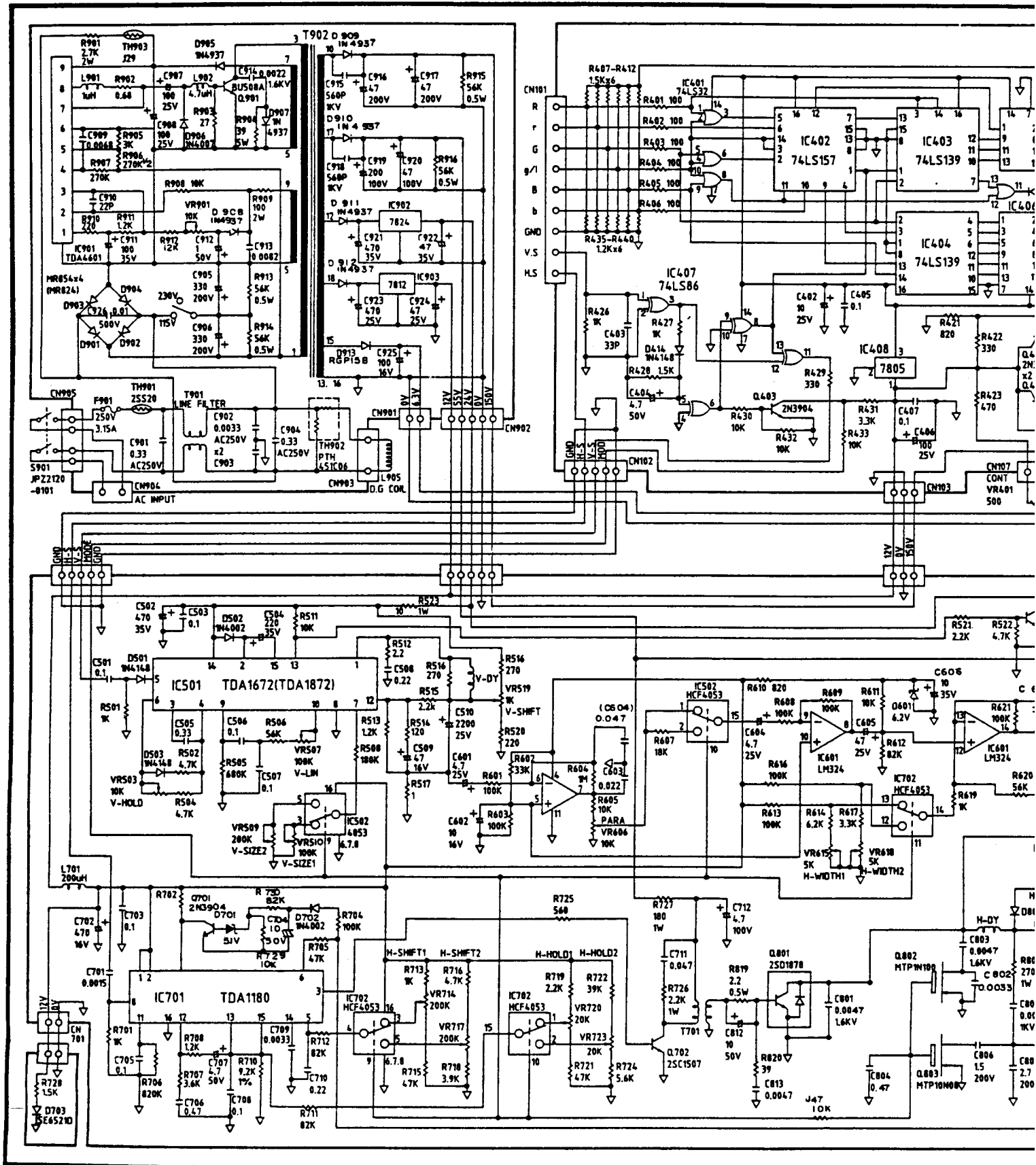
SERVICE MANUAL

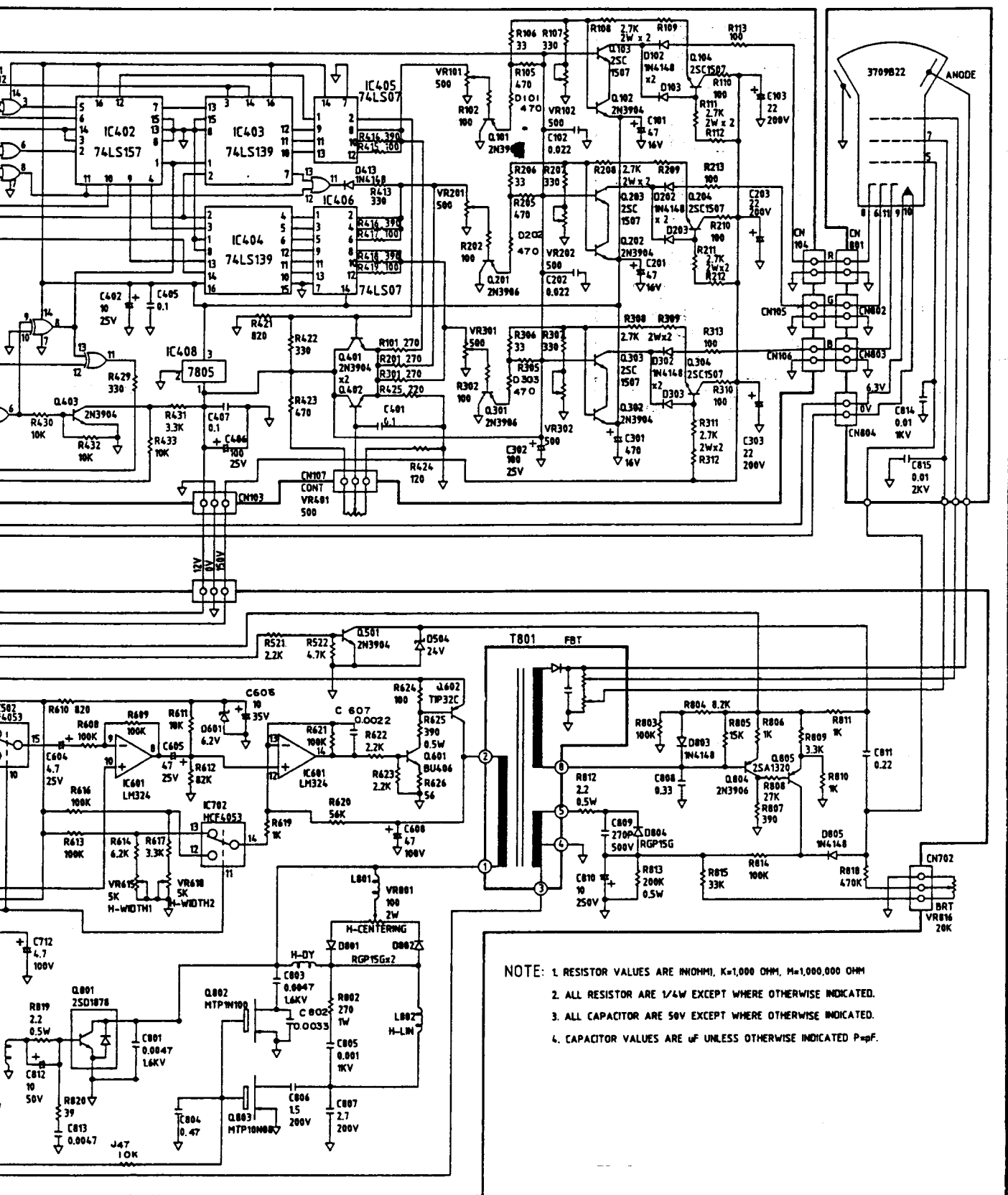
SC-431E



SPECIFICATION

Picture tube	3709 B22 14 Inches diagonal 90 degree deflection, 0.31mm dot pitch, black matrix
Input signal	Video : RGBI / RGBrgb TTL level positive Sync : TTL level positive / negative
Display	
-colors	16 colors / 64colors
Synchro	
-nization	Horizontal : 15.75KHz / 21.85KHz vertical : 47~63Hz
Resolution	21.8KHz Mode : 640 dots(H) × 350lines(V) 15.75KHz Mode : 640dots(H) × 200lines(V)
Video band	
-width	18MHz(−3dB)
Display area	Horizontal : 250±4mm Vertical : 170±4mm
AC input	
-voltage	AC 115V / 60Hz, AC 230V / 50Hz(Optional)
Power	
-consumption	80W(Max)
Dimension	357(W) × 393(H) × 400(L)mm
Weight	14.8Kg





[2] TROUBLE SHOOTING

I. TROUBLE SHOOTING INFORMATION CHART

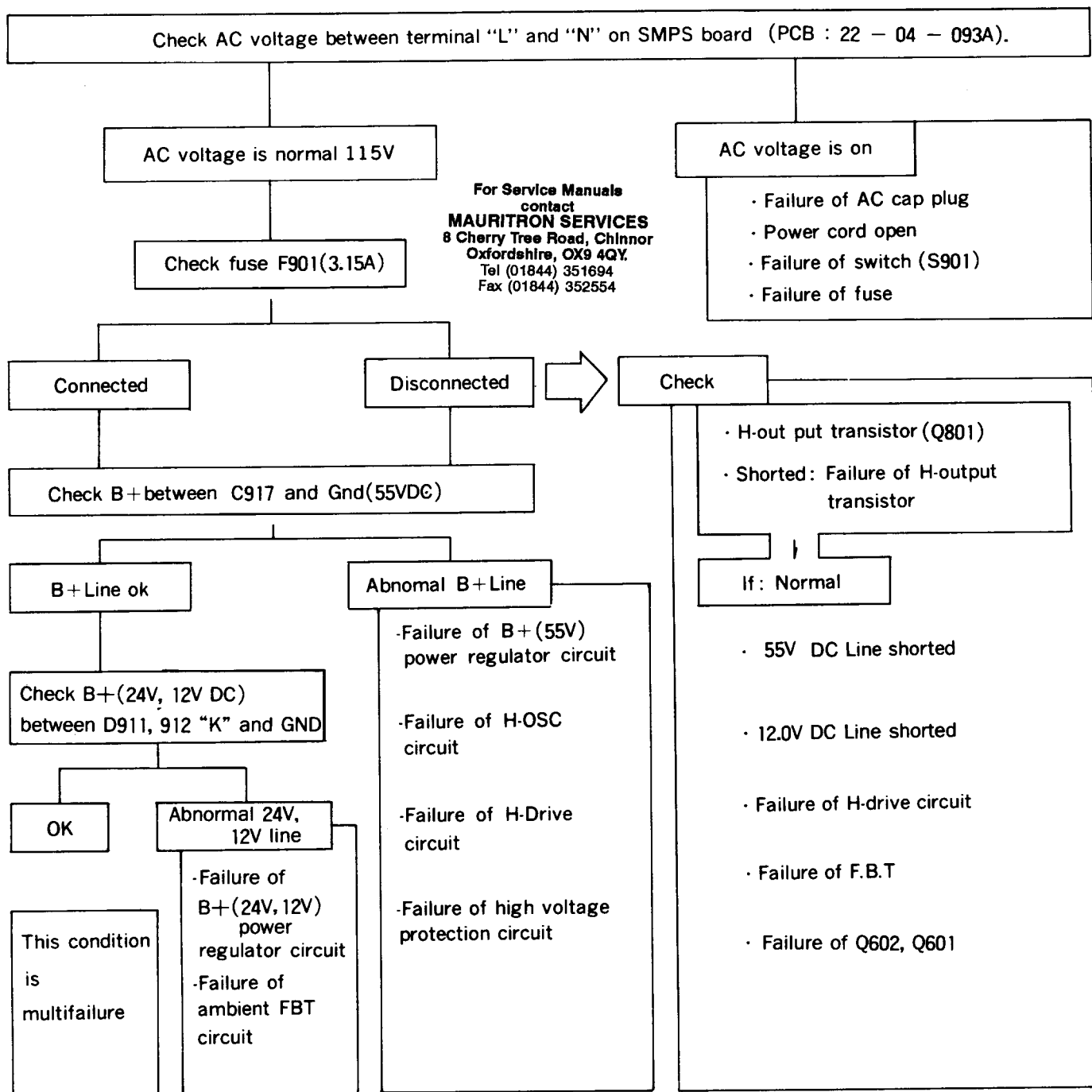
* INTRODUCTION

This is the trouble shooting section. It consists of a symptom chart, showing the symptom and an action to be taken to rectify the problem.

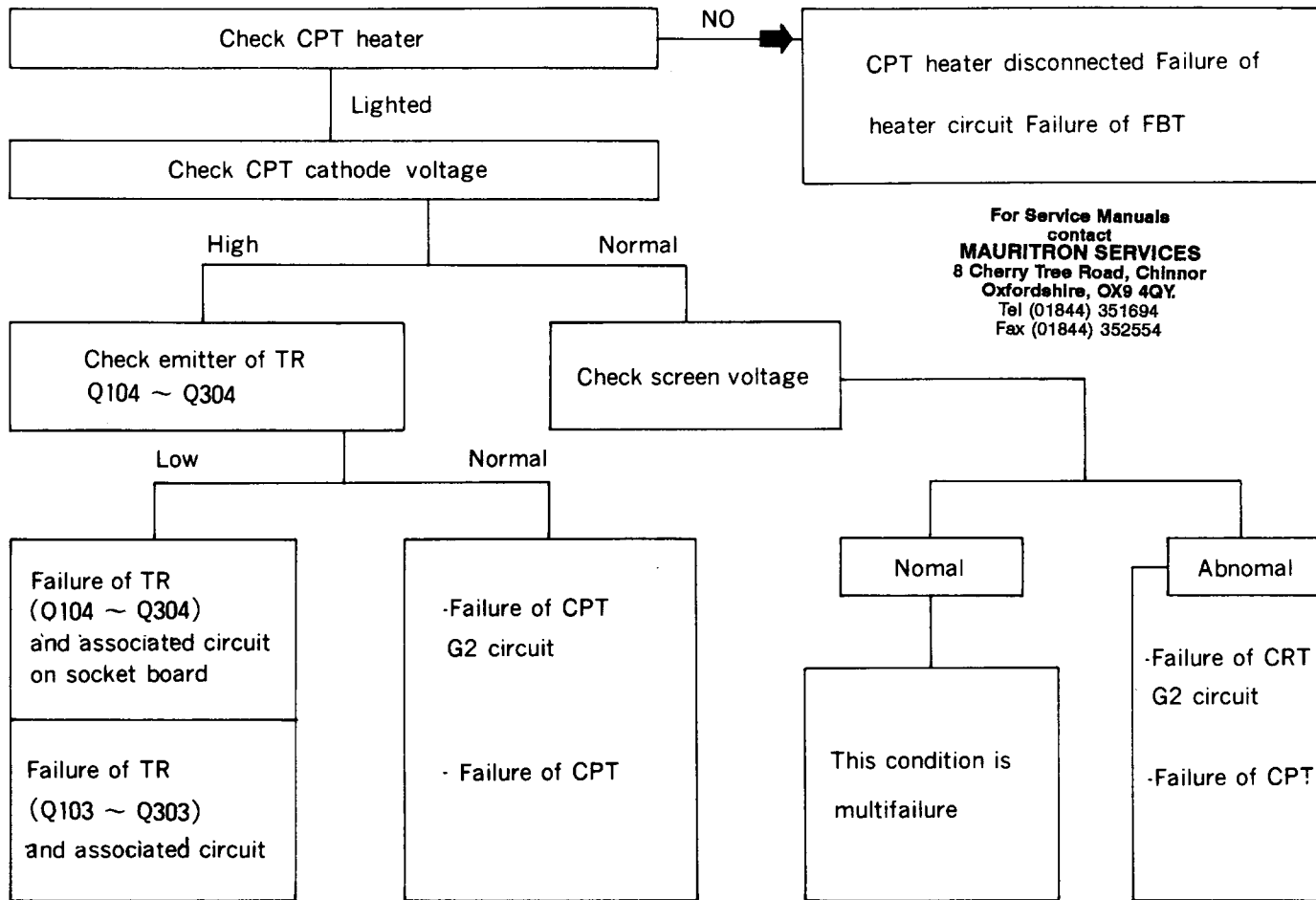
The best way to use this section is;

- ① Look on the chart to find the symptom that matches what the defective monitor is doing
- ② Try the recommended action.

① NO RASTER



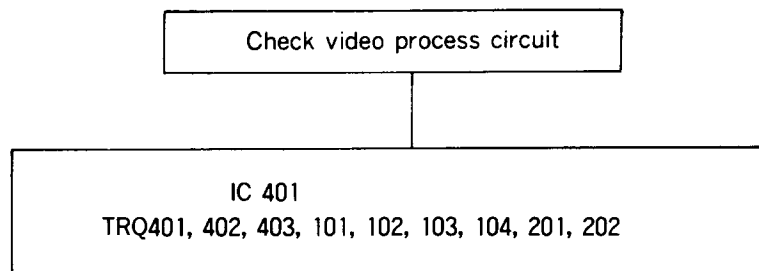
② B+(100V) NORMAL, NO RASTER



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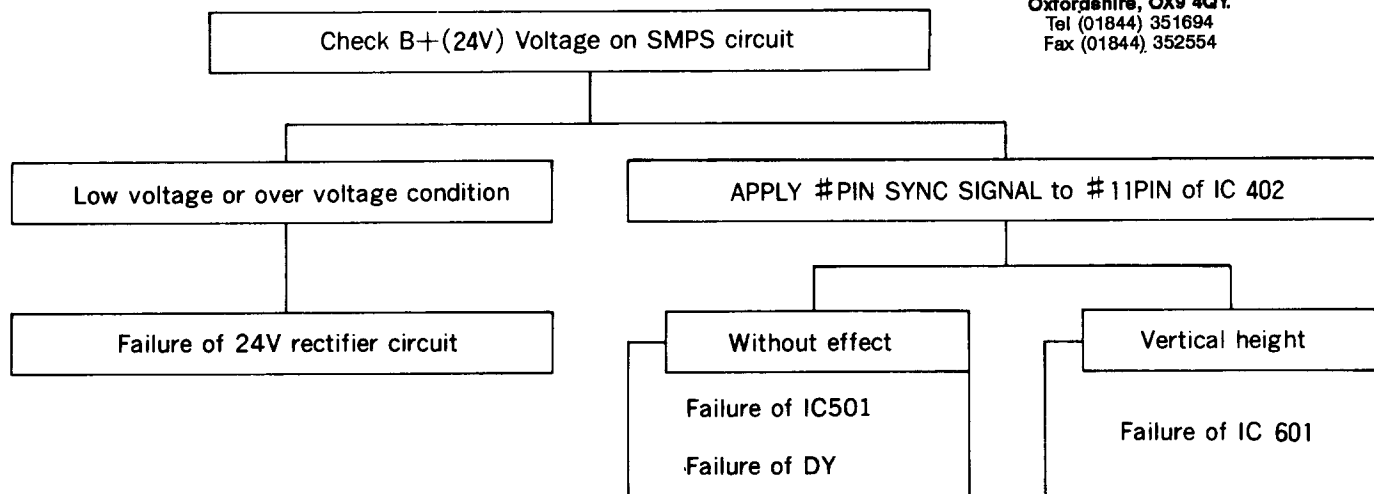
③ NOMAL RASTER, PICTURE ABNOMAL

* NOTE : Apply positive signal as input for RGB1 TTL

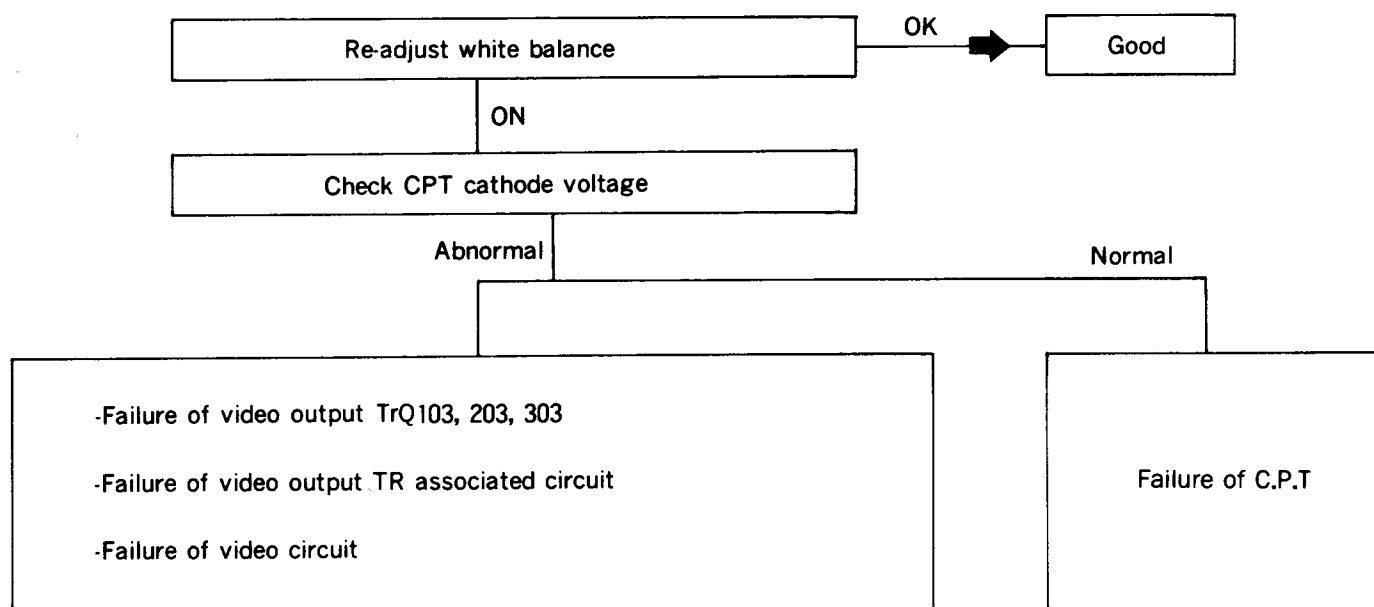


④ NO VERTICAL SWEEP

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⑤ FAILURE OF WHITE BALANCE



⑥ UNSTABLE VERTICAL

Check frequency variation with rotating V-HOLD

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Oscillation frequency shift

Failure of IC 501

Failure of IC 501 associated circuit

⑦ UNSTABLE HORIZONTAL

Check frequency variation with rotating H-HOLD

Lock of horizontal sync

Failure of IC 701

Oscillation frequency shifts

Failure of IC 701, 702

Failure of IC 701 associated circuit

2. TROUBLE SHOOTING FOR RESPECTIVE SYMPTOMS

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2.1 NO RASTER

- ① Turn the brightness control clockwise fully. If raster does not appear, check up next item.
- ② Check CPT heater
It is not on; CPT heater disconnect & failure heater of FBT
OK; Proceed to next check item
- ③ Check high voltage by HV voltage meter High voltage is not obtained
; Check of FBT (T801)
Check of Q801 Collector
Check of Q801 BASE
Check of HDT
Check of pin3 IC 701
OK ; Proceed to next check item
- ④ Check CPT electrode voltage as follow.
G2 : $500 \pm 50V$
G4 : $6K \pm 500V$
G1 : $-180 \sim 0V$
K : $100 \pm 10V$
Voltage of G2 and G4 are not obtained; check of T801
Voltage of K is not obtained ; Check of video oamp. and ambient circuit.
Voltage of G2,G4,G1 and K are normal ; CPT is faulty.
OK ; Proceed to next check item.
- ⑤ Check AC voltage at AC input point on SMPS AC voltage abnormal ; Failure of AC line
OK ; Proceed to text check item
- ⑥ Check fuse F901
Disconnected ; Failure of switching power transformer. Failure of bridge diode
Failure of degaussing circuit
OK ; Proceed to next check item
- ⑦ Check DC output voltage
Abnormal ; Failure of IC901 and ambient circuit.
OK ; Proceed to next check item.

2.2 ONLY ONE RASTER LINE APPEARS IN HORIZONTAL DIRECTION.

- ① Check of deflectin yoke vertical coil; Vertical coil open and shorted.
- ② Check of pin 1,2 of IC 701 when voltage is not obtained ; Check of 701,
- ③ Check of pin 3 of IC 701

2.3 UNSTABLE VERTICAL

- ① Check frequency variation with rotating V-Hold.
- ② Check of pin 3 of IC501.

2.4 UNSTABLE HORIZONTAL

- ① Check of frequency variation with rotating H-Hold.
- ② Check of pin 3 of IC501.

2.5 NO PICTURE

The nearly square pulses output of the oscillator applies it the base of Q702 to switch on and off this transistor, there by passing pulse current through the primary side transformer(HDT).
With each turning on and off of the transistor spiking occur because of inductance.
The horizontal output transistor Q801 is simply a switch which is turned on and off at the horizontal scan rate by the driving signal applied to its base, a sawtooth current through the deflection coil is required to sweep the beam linearly across the CPT screen. This happens when Q801 is turned on and its collector voltage droops to near zero, and the C801, 802 begins discharging through the deflection coil which deflects the beam to the right edge of the CPT. At that time, Q801 cuts off and C801, 802 ceases to supply current to the deflection coil. However, an induced voltage appears across the deflection yoke coil as the magnetic field collapses and an oscillation then occurs the deflection coils and C801, 802.
During the first half cycle of this oscillation, the induced voltage is felt across the collector of with cut off C801, 802 and the primary Q801, T801.
This voltage is stepped up T801 rectified to produce high voltage that is applied to anode of the CPT.

(3) SERVICE NOTE

Service precautions

The following precautions should be observed when service is required.

1. Replacement parts which have special safety characteristics are identified by shading on the schematics.
Replace these critical components with recommended replacement parts.
Don't degrade the safety of the set through improper servicing.
2. Comply with all cautions and safety-related notes on or inside the monitor cabinet, on the monitor chassis or on the picture tube.
3. Maintain correct lead dress and part placement.
Extra caution should be taken to assure proper dress in the high voltage circuit area.
Where a malfunction has occurred, those components or circuits that indicate evidence of abnormality should be replaced or corrected.
Always use the manufacturer's safety specified replacement components.

4. When replace a chassis in the cabinet, always make certain that all the protective devices are back in their proper place, such as: non metallic control knobs, insulating fishpapers, component cover/shields, isolation resistor capacitor networks etc.
5. Before returning the monitor to the owner, be sure that no protective device built into the set by the manufacturer has become defective, or inadvertently defeated during servicing. Therefore, the following checks are recommended for the continued protection of the customer and service engineer.

*** LEAKAGE CURRENT HOT CHECK**

Plug the AC line cord directly into a 115V AC outlet (do not use an isolation transformer in this check).

Use a leakage current tester which complies with American National Standards Institute (ANSI C101.1-1971, LEAKAGE FOR APPLIANCE), and UNDERWRITERS LABORATORIES (UL, 1410).

Measure current from all the exposed metal parts of the cabinet, (screwheads, metal overlays, etc.) to earth ground, particularly any exposed metal part having a return path to the chassis.

The test should be conducted with AC switch "ON" and then repeated with "OFF".

Any current measured must not exceed 0.5mA with to AC line cord inserted in the AC supply circuit receptacle.

Any measurement not within the limits outlined above are indicative of a potential shock hazard and corrective action must be taken before returning the set to the customer.

6. X-RADIATION PRECAUTION

This product contains critical electrical and mechanical parts essential for X-RAY protection, see CRITICAL COMPONENT LIST and other service adjustment.

Anode voltage normal is 23KV at 115V line and must not exceed 28KV under any operating condition. To measure anode voltage, set brightness for a very dim picture.

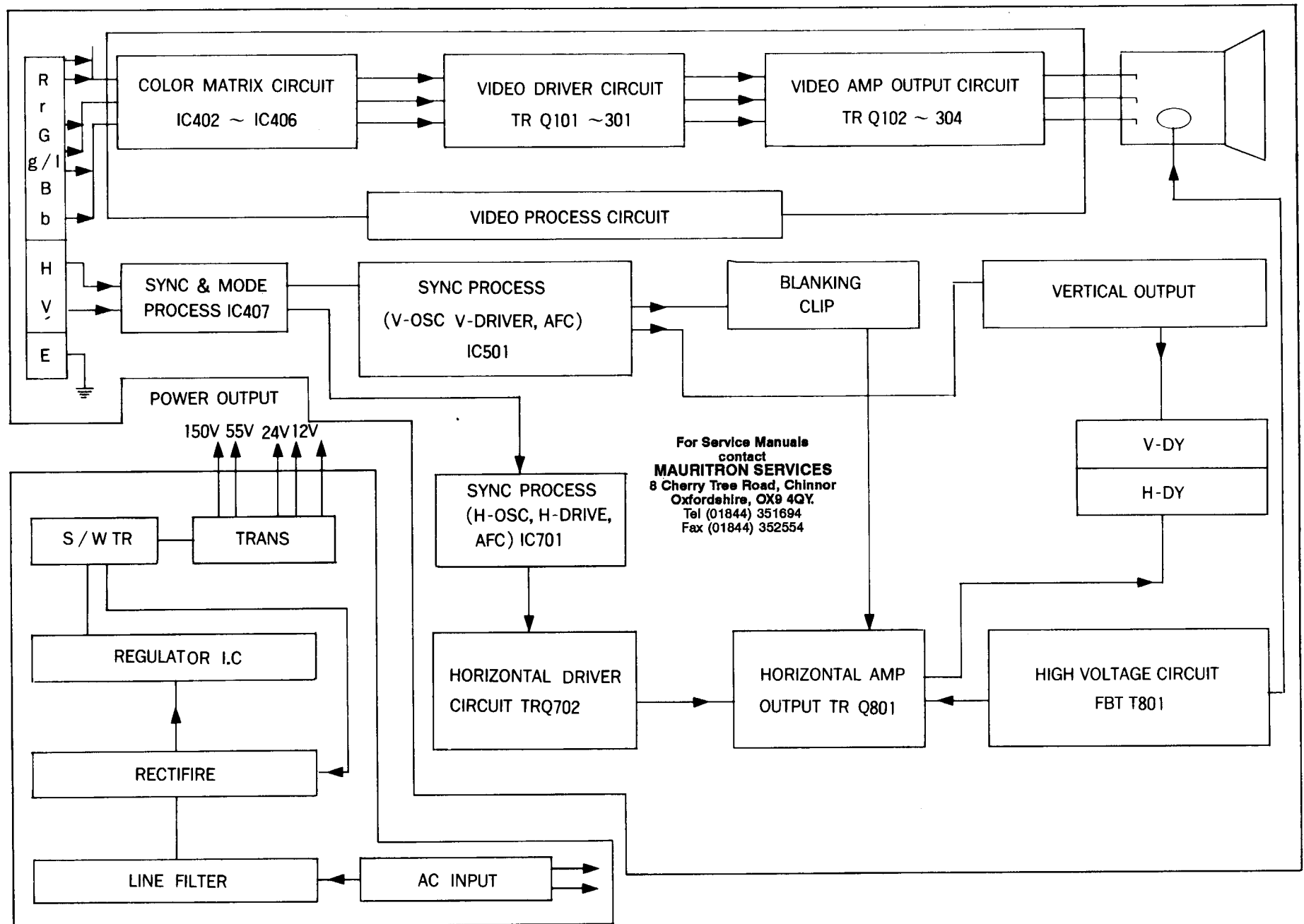
Use a high-voltage meter between the chassis and the anode lead to measure HV.

If high voltage exceeds the specified limits, check each components on the chassis and take necessary corrective action.

7. Do not remove, install or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while a picture tube is handled.

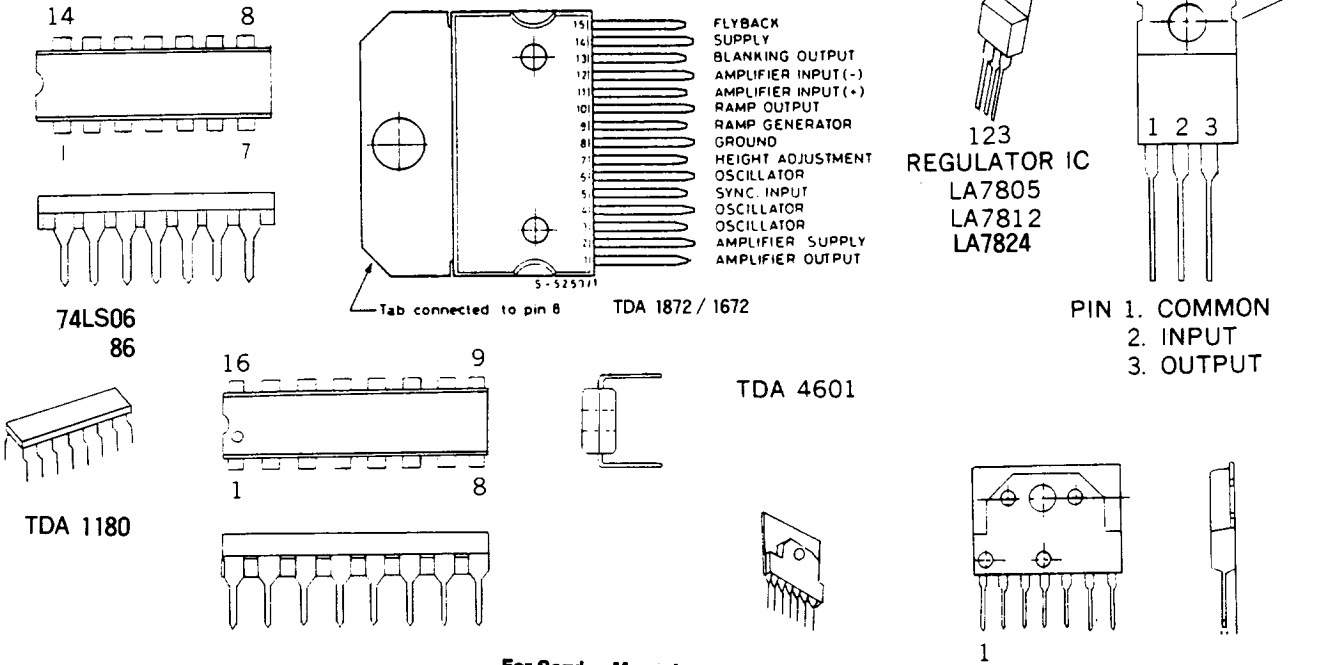
Keep the picture tube away from body while handling.

[4] BLOCK DIAGRAM



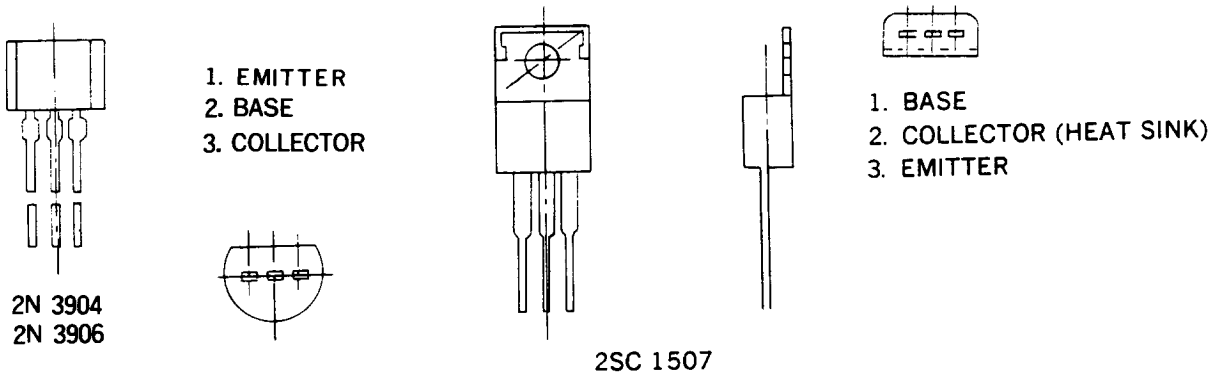
SEMICONDUCTORS BASING

IC

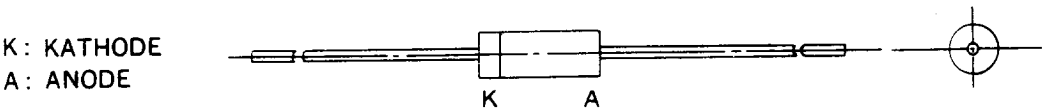


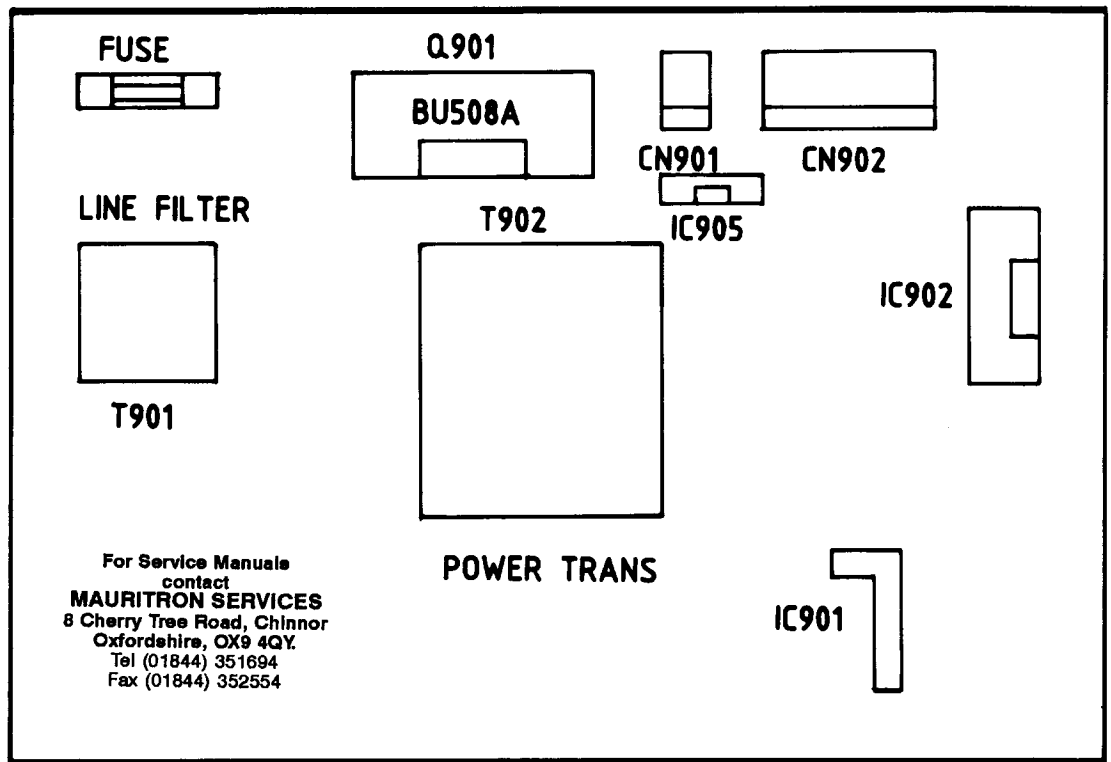
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TRANSISTOR

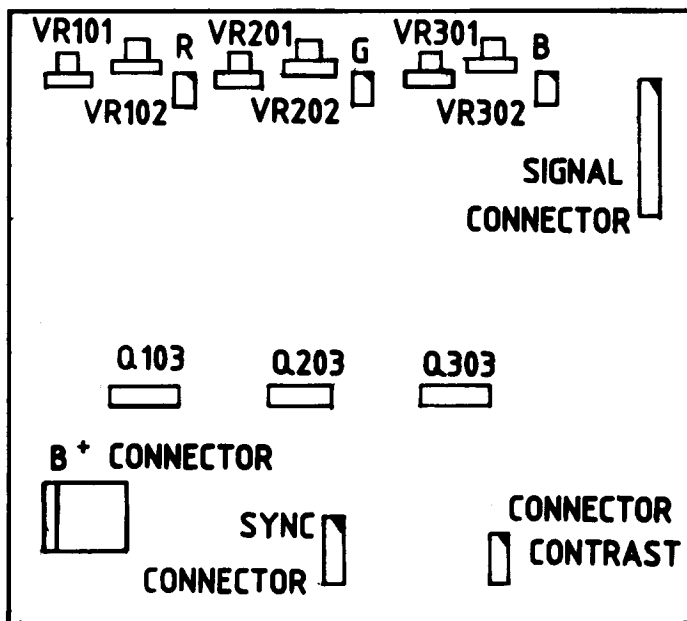


DIODE

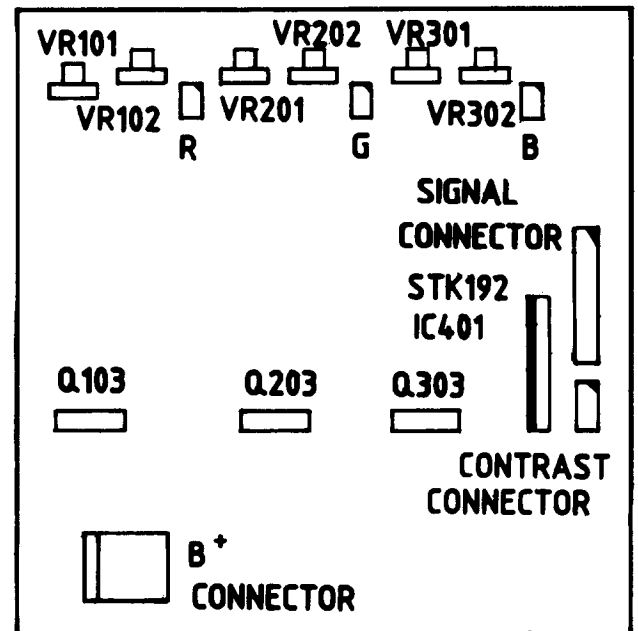




DISCRETE TYPE VIDEO PCB



PART NO.-22-04-105A

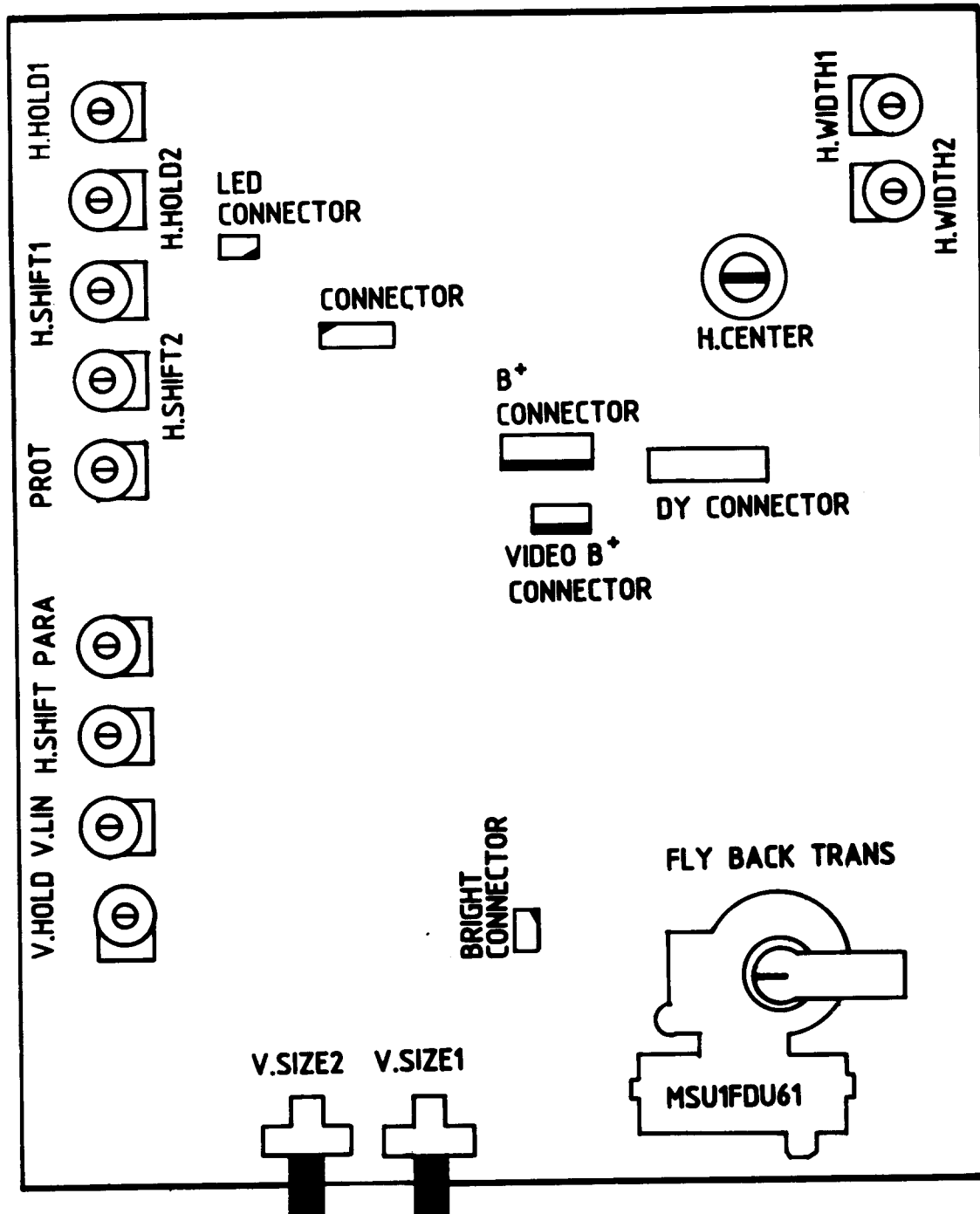


STK192 TYPE VIDEO PCB

PART NO.-22-04-095A

2. ADJUST
AND
CONNECTOR
FOR PCB

MAIN PCB



PART NO.-22-08-002A

SOCKET PCB

PART NO.-22-04-096A

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