

# Useful info

1. The picture is displaced towards the top of the screen (approx. 4cm to 10cm).  
Fault 1: DL39 has a short circuit.      Fault 2: DL 40/41 has a short circuit.
2. Replacing the TL19. Fault 1: If replacing the line amplifier TL19, the ampli OP must be systematically replaced. TL082 (IF01) must be replaced by a Motorola circuit.
3. Production mode. It is possible that in certain conditions (eg. electrostatic loads), the appliance goes automatically into production mode ("PROMO" is indicated in the menu).  
To get out of this mode:  
1st instance: For all types of microprocessor, except IKC2-7A  
- press the volume key "+" on the control panel.  
2nd instance: Microprocessor IKC2-7A  
- Switch off the TV      - Press simultaneously PROG keys "+" and "-" on the control panel and switch on the TV using the ON/OFF switch.
4. Modification of connector on TXT IKC2-VT4P. Phono plug = 009620153  
In order to add TXT board on TVs manufactured in Europe with audio/video front entry phono plug, remove connector LK44 from TXT board and fit connector (code no. 009610447), unsolder bridge LK43 from component side and solder in an insulated bridge on track side.
5. AV switching threshold for camcorders. To avoid AV switching problems encountered with some camcorder models, the triggering threshold TV □ AV is shifted from 8.8V to 7.8V. To this end it is enough to replace melf resistor RE06 (SCI 2010) or RE07 (SCI 2020/SCI 2030) 120Kohm with 100Kohm 0.16W.
6. Observation: On appliances which have a teletext board, the above mentioned resistor is in position RS06 (DVT 2001) or RE07 (DVT 2012). Note that the appliances manufactured at present already contain these modifications. Scart television socket board (SCI 2010/SCI 2020/SCI 2030)
7. At the start of production of the new IKC2 chassis, in TVs not fitted in series with teletext, the following components have not been fitted. TP 66 - diode BA 157 ; CP 66 - capacitor 1000 uF 25V  
RP 65 - resistor 0.33 ohm ; BR 03 - 5 pin plug.
8. When fitting the teletext check the presence of all the components of the chassis and if necessary fit those which are missing.
9. Use of the lithium battery. In some appliances, the rechargeable cadmium nickel battery may be replaced by a non rechargeable lithium battery.  
THESE TWO TYPES OF COMPONENTS ARE NOT INTERCHANGEABLE.  
Being mindful of the risks of explosion, fire or burning which may result from incorrect handling (s/c, recharge, overheating to over 100°C...) below are the safety recommendations :  
- At the moment of replacing the battery pay attention to the polarity of the battery.  
- Replacement of the battery should be carried out by specialized staff and with the original spare parts.  
- Do not recharge the battery. - Do not expose the battery to excessive heat.  
- Do not leave a used battery within reach of children (risk of chemical burning...).
10. Control board CDI 2000. DevelopmentS. In order to improve the linearity characteristics of the automatic cut off control, the integrated circuit ID01 (TA8751N/BN) is replaced by version TA8751AN (code 276 TX 4025) with the following modifications:  
- RD16 melf resistor from 39kohm goes to 12Kohm 0.16W - RD18 melf resistor from 1.5Kohm goes to 3.3Kohm 0.16W  
- RD19 melf resistor from 56ohm goes to 82ohm 0.16W  
- CD04/06/07 electrolytic capacitors from 22µF go to 2.2µF 50V.
11. Value of RL26? RL26 = 1K.
12. Value on the power supply of TP19.  
TP19=BC546C, if defective, change the power supply kit ref: 925TX1281.
13. Synchronisation during PB of the VCR. This can be improved thanks to the following modifications: (circuit pin 36 of IV01) Melf resistor RL44 1R5 is changed to - 3R3 0R16.  
Electrolytic capacitor CL44 22uF is changed to - 4.7uF/25V.
14. Method to remove protection. Fault 1: Lift DL16 (1N4148) which grounds oscillator.
15. Contents of Thomson power supply repair kit. 47uF/16V CP14 ; 47uF/100V CP24 ; 100uF/63V CP28  
2.2nF/1K CP29 ; 220uF/25V CP55; BA157 (BY201) DP28; IN4148 DP54; BZX55C4V7 DP55; 1A6AT fuse  
FP01; 100K/0.40W 1% RP51; 3K32/0.40W 1% RP52\*; 4K32/0.40W 1% RP52\* BC557C TP03; BC547C  
TP02-TP09-TP12; BC548C TP13; BC368 TP16; BD434 TP17; BC558B TP18; BC546B TP19; S2000N  
TP29
- RP52 is a safety component and the value depends upon model number. Please refer to the service manual for the correct value of this resistor.
16. Value of RP26. On documentation : 90' = 3K3 ; 110' = 2K7. However it may be necessary to fit a 1K2 on some 90' (sudden tripping of the power supply).
17. To improve operation of mute circuit.  
Reduce value of RM13 on main board from 15K to 13.3K 1%, part number 41207300.
18. To improve alignment. Change value of preset coil LC43 (10uH) in chroma delay line circuit to 8uH/4.43MHz, part number 47332000.

19. To improve IF response. Increase value of RS03 (10R) to 22R. Add resistor RS33 (2K7) between video output pin 21 of IS10 and earth, on IF module. RS03 22R 5% , RS33 2K7 5%

## Power

1. Power supply transistor TP20 blows and so does the mains fuse FP01 after operating for a few mins.  
Fault 1: Check the annexed transistor on the power supply and also 1000 micro which often leaks.
2. EHT S20000AF blows every three days. Solder joints have already been checked. Voltages are ok.  
Fault 1: Check CP29 (2.2nf), RP51 (110K) is o/c. Fault 2: Change the line transformer.
3. FBT is s/c twice a year. On collector TL19. 1200V instead of 1000V. CL21, CL22, CL24, CL23 replaced but fault persists. US adjusted to 143V. FBT 470034-81 CTV TA6326. Fault 1: Check LL19 and RL19 (47R). Change TL19 (1000V voltage should be non gradual and constant). If replacing TL19 (line amplifier) change operational amplifier TL082 (IF01). TL 082 MUST be replaced by a Motorola IC.
4. At switch on, the appliance goes to stand by. After trying to start several times the TP19 and TP29 are damaged. Fault 1: Check RP51 (110K).
5. Tripping. Fault 1: Change CP57 (10nF) and RP02. Fault 2: Replace transistors TV01, TV02 and TV17.  
Fault 3: Check TV01 (BC558) and field output chip IF01.
6. After a short time the US voltage increases so that the TV cuts out. Fault 1: Change DP54 (1N4148).
7. The appliance goes to safety mode after a short time. Fault 1: DP56 is defective.  
Fault 2: Check the THT (LL05), CF10 (1000MF) and RF01 (1.5MR).
8. No start up of power supply. Fault 1: Check CP10 (22NF), DP16 (1N4148) and RP06 (12K). Also check CR83 (1000uF), DP09 (1N4148), DP28 (BA157), TP18 (BC546C) and TV01 (BC547C). Fault 2: CP 06 O/C. Fault 3: DP 63/CP 63 S/C. Fault 4: DP 65/CP 62 S/C. Fault 5: DP 65 O/C. Fault 6: CP 54 O/C.  
Fault 7: Before changing power kit check RP36 (120K or 56K depending on tube).  
Fault 8: [Power supply kit changed but fault persists. TP29 (314V) ok.] Unsolder line BU, check power supply. If the same, check TP02 (BC547C), TP03 (BC557C), RP02, RP04. If ok, test CP09 and CP29. If the same, check the 1N4148 and electrolytics on the primary.
9. Locked in safety mode. Fault 1: Change IA05 (TDA2030).  
Fault 2: Check power supply DP50 (114V) and DP65 (15V). If ok, check IG01 pin 4 and 6 for S/C. If not, check on IF01 pin 8 and 4. Suspect TV01, TV02, CP51 and RP51.
10. The TV cuts out. Fault 1: CL 24 is s/c. Fault 2: CL 21 is s/c. Fault 3: CL14 is s/c. Fault 4: DL11 is o/c.  
Fault 5: DL13 is s/c.
11. Trips when plugged in. Fault 1: FP01 cuts out and TP29 S/C. TL19 is S/C B-C. Fault 2: Arcing between resistors RL23 and RG09 because they have been fitted vertically side by side and not insulated.
12. FP01 blows. Fault 1: DP 01/04 has a short circuit. Fault 2: DP 02/03 has a short circuit.  
Fault 3: CP 04/03 has a short circuit. Fault 4: CP 10 has a short circuit. Fault 5: CL06 is short circuit.
13. The appliance hesitates on start up. Fault 1: CP 12 has a short circuit.
14. The power supply blows. Fault 1: CP 54 has a short circuit. Fault 2: CP 64/CP 70 has a short.
15. The appliance does not start up and no 15V on U2. Fault 1: Check CP10 (22nF) DP16 (1N4148) and RP06 (12K).  
Fault 2: DR78 is leaky. Check the following: RL12 :3.3K TP69 :BC 547C DP56 is leaky  
TV01 : BC 547C CR83 : 1000µF TP18 : BC 546C DP09 : 1N4148 is leaky TP02 : BC547C has a short.
16. The TV blows. Fault 1: CL24 has a short circuit. Fault 2: CL21 has a short circuit.  
Fault 3: CL14 has a short circuit.
17. TP29 has a short circuit and FP01 blows after a short time. Fault 1: CP24 is short circuit or open circuit.  
Fault 2: CP29 is open circuit. Fault 3: DP 57 is short circuit. Fault 4: DP 14 is short circuit.  
Fault 5: DP 16/17 is short circuit. Fault 6: DP13 is S/C. Fault 7: TP 53 C/E is s/c
18. The fuse blows and TP 29 has a short circuit. Fault 1: TP 53 collector/emitter has a short circuit.
19. New transformer, TV starts up and the US voltage increases to 122V instead of 140.  
Note: The transformer functions. After 10 seconds the signal on the TL19 base collapses if TL19 or TL29 is allowed to function. Fault 1: IF01 TL082CP has a short circuit.
20. The appliance is put into secondary safety mode. Fault 1: Check if DL11(BA157) goes into short circuit and RL11 cuts out (200V video power supply). An ohmmeter may be necessary.
21. Blows erratically. Fault 1: Replace the following: - CP54 (10nF) for 220nF 63V (code 207 TX 2838).  
- RP55 (melf 120K) by 220K. - Wire on copper side, a resistor (22K) between base and transmitter of TP54. Fault 2: Check value of CP06 which should be 150µF, 385V (code 207TX2636). If there is an erratic circuit break, check also CP06. Fault 3: Adjust U system in the following manner: 36cm 108V  
40cm 112V 42cm 110V 44cm 112V 51cm 113V 55cm 116V
22. TP29 is destroyed after 30 minutes. Check RP51 (110K) which is open circuit. DP54 (1N4148) and CP29 (2.2NF).
23. The appliance trips when switched on. Fault 1: The transformer is in short circuit.
24. No sound and no picture. Appliance remains in stand by. Fault 1: Incorrect power supply voltages. US is at 135V instead of 143 and 135V on the collector of the line transistor. 28V = 19V, 15V=10V, 7V=10V Remove pin 3 from the FBT and check 145V. By doing this deduce if the problem is in the power supply or in the line. Check DF01 (TL082), CL14 (1000mf) and DL13 (BY397). Check if RR83 (270) is o/c. Check DP50, cP50, dp20.

25. No start up. No U1 47V, U2 5V voltages. Fault 1: Check IF01 (TL082) and CF24 (2200mf). Remove pin 3 of FBT and check the 145V on DP50. If missing restore the 28V on DP63, -28V on CP64, 15V (LP70/DP65), 7V (CP66).
26. After changing the FBT which sparks the FBT is ok. No light on the screen even when you push G2 44469905. Fault 1: Check the secondary voltages on the FBT, US on RL05 (114V/90 145V/110), UL1 on DL11 (+200V), UL2 on CL14 (13V), UL2A on LL16 (13V). Check the RGB input on the CRT: DT08, 18, 28 and the power supply of these amplifiers.
27. Occasionally the TV pulsates at start up.  
Fault 1: Change RP 26 (1K8 for 36cm TV, 1K5 for 40 or 44 cm TV, 1K2 for 44cm TV).
28. US voltage is 57V. If you unplug pin 3 from the line stage transformer the voltage returns to 113V. Line stage transformer has been changed. Fault 1 : Check TP53, TP54, TV01, TV02 and DP 54.
29. Line stage transformer starts up even after it has been replaced.  
Fault 1: Check that the collector signal TL19 has an amplitude of 960V, and that the power supply voltage is not too high. Check the printed circuit on the line stage transformer side.
30. Fault 1: Check that the collector signal TL19 has an amplitude of 960V, and that the power supply voltage is not too high. Check the printed circuit on the line stage transformer side.
31. The TV starts up. A white line appears at the top of the screen. System tension: voltage is approximately 58V, and the other voltages are low. Fault 1: Check TF16 (ESM740) and DF16 (BY398).
31. No start up, power supply remains in standby, 5V and bus ok, but U1=8.5V instead of 15V on DP65.  
Fault 1: FBT is defective.
32. Transistor TP 29 short circuits after operating for a certain time.  
Fault 1: Replace transformer S.M. with an Orega transformer instead of a Vogt one.
33. Appliance switches off and switches on again, changes channel and there are great variations in the beam current.  
Fault 1: Resistor RV 79 must be 39 kohm.  
Fault 2: Change the value of resistor RP 26 to : 1.8 kohm for a 14" TV 1.5 kohm for a 15", 16" and 17" TV 1.2 kohm for a 20" TV. Fault 3: With a raster generator: Brightness at 50% Contrast at maximum  
Connect the oscilloscope to pin 11 of the picture tube (blue cathode) and adjust pot PV 79 to get 70 Vpp.
34. US and other voltages are half of their value. 3cm white band at the top of the screen.  
Fault 1: RL11 220ohms o/c.
35. FP01 blows when switched on. Power supply BU and lines are s/c. FBT has been replaced.  
Fault 1: Change the power supply kit. Check TV01-TV02-DV03-DV08-CP51.
36. In breakdown mode with 2.2K, pin 20 and 32 have been removed, EHT but 300V pulsates instead of 600 or 700V. 100V at the start of video but everything collapses if you refit DL13.  
Blockage of TL17 (BSR50) on line driver, the base signal seems correct, in fact it lacks amplitude. Check if TV02 (BC547C) is s/c 2V on the SP line. Check if TV01 (BC547C) is leaky. 3V on line SP DL16.
37. Power supply S2000 blows approx every 10 hours. Fault 1: Before replacing the kit check: DP21, CP09, DP19 et DP09.  
Fault 2: Check CP06, CP10, DP21. Check the signal on S2000. Check 1N4148.
38. CTV trips. Fault 1: Disconnect the connector from the raster deflector. If the TV no longer trips, IF01 (TL082) must be defective.
39. At start up US 80V instead of 114V and siren noise in the speaker. TP29, TL19 and FBT have been changed. CP06 and CP51 are ok. Fault 1: Replace RA03 by 15 KOhms, RA13 by 33 KOhms, CA01 by 22MF/ 25V. Add CA15 10MF/25V between the earth and the junction point RA13 and RA15, the negative point earthed.
40. No EHT, US ok, 15V is 9V, 28 is 20V. Line command exists but too weak if RP56 is disconnected. 15V OK, on power supply primary 800V seems ok, 13V OK, CP64, CP59, TP53 have been changed as tests, pt 3 FBT has been removed.  
Fault 1: Check if the signal on TP29 on collector 980 VPP-H is ok. Check TL7 and DL18 or unsolder the collectors, check the 15V. Check DP57, DP54, DP56 and DP58.
41. S2000AF in the line heats up and blows. FBT, CL22, CL21 have been replaced but 1200V on the collector of TL19. Power supply U correct, E.W. geometry correct. Fault 1: Check if the signal on the base of TL19 is incorrect, check on collector of TL17 if 30Vpp ok, check LL19 and CL18. If signal is clear, Check the secondary of the FBT.
42. No HT. 300V OK, BU OK, TP19 OK. US=70V and on the cathode of DL11 5V with BU disconnected.  
Fault 1: Disconnect line BU: measure the voltages (poor). Check the secondary voltages (as well as 145V). If poor, check DP50, CP50 and CP51). Check the power supply. Check the line scanning and raster. Suspect the IG01 and the line transformer.
43. Power supply voltage: 15V: 8V; 140: 80V. The same with the line transformer disconnected.  
Fault 1: Check the signal on the secondary of the power supply transformer pin 20: 300VPP, pin 4: 40 VPP. If the same, replace the power supply kit, DP21 and check 1N4148.
44. No voltages at the secondary of LP36. No 300V only 147V, TP29 ok. Other components appear to be ok, standby light on. Fault 1: Check the positor and CP06. Replace power supply kit and before this check the 1N4148 and DP21.  
Disconnect the line BU, check the secondary voltages. Check the line BU and the line transformer.
45. At start up line transformer powers up then appliance goes into standby. Line transformer replaced, U1A voltage 8V, US voltage 110V. Fault 1: U1A: 15V, check CP59 or unsolder point 6 of the IG01. If ok, check IG01.
46. Line transistor blows after 10 mins. DL11 98V instead of 200V. Fault 1: Check C111, DL39, RL12 and RL1. If ok, check CT05, TT07, TT17, TT27 on video amplifier board.
47. By unsoldering pin 3 of the line transformer, 120V is measured. By placing a 100W bulb at the power supply output, the voltage falls to 80V and the standby light goes off. Fault 1: No standby, 15V cuts out. Check the power supply primary DP19, DP09, DP21, CP14 or replace the power supply kit. Suspect 13V on DL13 and CP66.
48. Repeated failure of BU508DF in power supply.  
Fault 1: Replace capacitor CP29 (2,2nF/1600V) and check resistors RP31 and R33 and diode DP31.

49. Red LED, US=101V, U2=7V, U1=8V, UL2=0V. Power supply kit has been changed, line transformer ok, line transistor and power supply ok. CP06, CP50 ok, TV01 02 ok (TV01 defective). Fault 1: Check TV01, TV02, DV03, DV08. Check the driver signal on IV01 pin 39: TV: 9.8V, standby: 0V, signal 3.7VPP. Check the line BU and the line transformer.

50. Capacitor 8nF 1600V burns and has been replaced. Line transformer ok, BU ok and still no EHT.

Fault 1: Check driver signal on TL17 base: 2Vpp; collector:30VPP. If ok, suspect LL19; RL21. If not, check pin 39 of IV01.

51. Dead, TS2000AF, power supply fuse ok. Scanning TS2055AF ok. Fault 1: Check TP29 C: 313V, B: -1V, E: 0V in signal B: 8VPP, C: 980VPP, E: 800MVPP. If not, replace power supply kit and check the 1N4148, CP24, CP14, CP12 and DP21.

52. Power supply pumps when cold, red light flashes. Fault 1: Suspect diodes 1N4148. Check if CP30 (47uF) is dry and if CP54 (10nF) is O/C.

53. At switch on appliance is in safety mode. RF01 (1M5) ok, on S2000 collector 316V, emitter 0V, base: 50mV. Many transistors checked and unsoldered as well as diodes 4148, 30V zener ok; 2.9V on 6.8V.

Fault 1: [CF10, LL05, C changed]. Check safety TV01, TV02, DV08, DV03 and TV12. Check CF10. If ok, suspect line transformer and IG01. Fault 2: Standby light does not come on at start up. Unsolder pin 2 of line transformer, check power supply. If ok, check if IG01 pins 6 and 4 S/C. If not, suspect IF01.

54. No EHT. Base signal of TL17 ok, U1 = 9.2V instead of 15V. Alarm noise in loudspeaker, U system ok.

Fault 1: Base signal looks ok but it actually has insufficient amplitude. Check TL17 (BSR50), IF01(TL082). TV02 (BC547C) S/C (2V on sp line). If not, check DV08 and zener ZPD13 13V leaky.

55. Appliance goes into safety mode.

Fault 1: Check the flyback transformer (LL05), CF10 (1000uF) and RF01 (1M5).

56. No picture, no sound. Remains in standby. Incorrect power supply voltages. US is 135V instead of 143V and 135V on collector of line transistor. 28V=19V, 15V=10V, 7V=10V.

Fault 1: Remove pin 3 from flyback transformer and check 145V. Then determine if problem is in the PSU or in the horizontal part. Check DF01 (TL082), CL14 (1000uF) and DL13 (BY397). Check if RR83 (270) O/C. Check DP50, CP50 and DP20.

57. At switch on the TV starts up for an instant, line transformer powers up then goes into standby. No function of the RCU. Fault 1: [Line transformer has been changed]. Check IG01 and TL082.

58. S2000 blows, the secondary voltages are the following: US=132, U2=11, transformer UUA=17, U1=7.9V.

59. Fault 1: [Transformer has been changed]. S2000 power supply, check CP06, DP21. Suspect CP66 U2:7V.

60. Blows on a white picture. Power supply as new. Fault 1: Check the safety circuit: TV01-TV02-DV03-DV08. On the CRT board, check if TT53 is O/C. Check the beam limiter from pin 4 of the line transformer to pin 59 of the TDA8659.

61. Dead. 300V present, no US, no U1. Check TP29 in relation to its ohm value and check the power supply primary. Then check the signals. Unsolder the line BU and measure the voltages. Suspect DP21, CP09.

62. Line transformer blows a few secs later after appliance is started up, line transformer has been changed but fault persists. Output voltage 8.2V instead of 15V on the power supply secondary with the line transformer removed. Fault 1: U:15V check CP59. Suspect IG01 and line transformer. Check base command: 12UPP. Check the RL19.

63. Dead. No voltage on the secondary. 300V on collector TP29. All the transistors and diodes are ok. Even no standby light. Fault 1: Use oscilloscope to check if signal is missing on TP29. Check on TP09. Suspect CP09, DP21, CP29.

Unsold the line BU and check the voltages.

64. Does not start up, USYS 119V present, still remains in standby. Fault 1: Measure the power supply voltages without the BU. If the line is ok, check TL19, IG01, DL13, DL11, CL11, CL14. Suspect the line transformer.

65. Power supply tripping with standby light lit. Fault 1: Check if BA157 180V supply rectifier diode DL11 in the line output stage is s/c, also its surge limiting resistor RL11 which could be o/c.

66. No voltages on the secondaries and no light. Fault 1: [DP21, CP14, 24, 28, power supply kit, line transformer have been changed]. Check the signals on TP29 C: 980VPP and 313V; E: 800MVPP and 0V; B: -1V. If not, check on TP16: B: 13VPP and 1.4V; E: 8VPP and 1.8V; C: 9.7V. If not, check on TP09: B: 840VPP; E: 800MVPP. If not, check DP05, CP07, RP02 and TP02.

67. US voltage increases, CTV stops. Power supply kit has been changed, DP54 also.

Fault 1: Check TP53, DP55, TP54, TP69, RP51 and CP51. Check the power supply via the PP52 setting.

68. PSU pulsates. Fault 1: [Tip: Disconnect collector from line BU and charge U1 (143V) with 60W bulb] Electrolytic CP55 (220uF/16V) which is in front of PP52 (U1) or split diode is defective, although high voltage build up! Interturn short circuit can be measured.

T7045 LOPT part no.: 4900 071 821 or 4900 256 967 (Telefunken part no: 309 311 967)

69. Appliance goes to Stand By with humming and hissing. Fault 1: Check RL 11 and DL 11.

70. Set dead. Voltage at the emitter of transistor TP18 in the power supply trip circuit low (should be about 21V). Fault 1: Check whether DP16 (1N4148) is S/C.

71. Dead. Fault 1: Check CP06 for S/C. Fault 2: Check CP59 for O/C. Fault 3: Check DR83 (1N4148) for O/C. Fault 4: Check fuse FP02 for O/C and DP65 for S/C. Fault 5: Check TR82 and DR82 on RC for S/C.

Fault 6: [Voltage at emitter TP18 (21V) is low]. Check DP16 (1N4148) for S/C.

Fault 7: [Continuous pulsing of pin 20]. Check line output transistor LL05. Fault 8: [Pin 20 on IR01 toggling high and low]. Check jungle chip IV01. Fault 9: [No line output stage, power supply correct]. Check pin 40 of TA8659CN signal and timebase processing chip IV01; check TR17 (BC5558C) for open circuit. Fault 10: [No line drive]. Check TV01 (BC558C) for leaks. If after replacement colour is missing plus a ticking sound from line output transformer, replace timebase generator/colour decoder IV01 (TA8659CN) and line output transformer.

72. Appliance is dead, remains in standby. Fault 1: Check DR83 for open circuit.

Fault 2: [5V at base of TR15 is missing]. Check between TR16 base and link J009 for print open circuit.

73. After approximately one hour appliance trips. Fault 1: Check RP32 and RP34.
74. Appliance trips. Fault 1: Check DL11 (BA157) for short circuit and RL11 (22R) for open circuit.
75. Appliance trips slowly. Fault 1: Check zener DL39 (13V).
76. After replacing the line transformer which was arcing, all the secondary voltages are low. 13V becomes 9V, 200V becomes 170V. Fault 1: Unsolder the collector of the low line BU. Replace the power supply kit. If ok, check the line BU and replace the line transformer by an original part.
77. Too much EHT. Sparks towards anode cap then TL19 blows. [Line transformer and BU have been changed but fault persists]. Check tube board. Suspect tube holder. Replace by original line transformer.
78. Does not switch on because the protection intervenes. Regular stand-by. Fault 1: Replace CP55 (220uF).
79. TV switches off when changing channel and with great variations in the beam current.  
Fault 1: Resistor RV79 must be 39K.
80. Safety mode comes into play. Fault 1: Replace capacitor CP29 (2200pF/1250V).
81. HT oscillates and appliance stops. Fault 1: RF01 (1R5) in vertical has altered in value.
82. Tripping. Standby led pulsing. Fault 1: Check/replace CP51 (100uF/250V).
83. Fuse cuts out without apparent reason. When it has been replaced, the CTV functions for several weeks.  
Fault 1: Replace zener and capacitor in the primary. Suspect the posistor. Line transformer starts up three times then nothing. LED stays red, US=82V. If the collector of the line BU is removed US=82V, U2=17V +Ua=19V 84. Land line command present on base S2055. Line transformer ok, TL082 ok. Fault 1: Check TV02, TV01, DV08. If ok, US for 90:114V, 110:140V. Suspect LL19.
85. The light comes on. Power supply starts up for 1-4secs then cuts out. TP 19,29 ok.  
Fault 1: Unsolder the line BU. Check the power supply DP50:114V, DP65:15V. If ok, suspect the line transformer or check pin 4 and 6 of IG01 S/C. If not, check on IF01 8 and 4. Suspect TV01, TV02.  
Value of LP51 or RP51 pin 20 of the power supply transformer is 0R22.  
Does not start up. Ok if power supply is 110V. Normal scanning.  
Fault 1: Check or replace CP24, CP14, CP12 and DP21. Suspect CP66 or replace the power supply kit. If the fault persists, check signal on the line BU, 12Vpp at the base, 1000Vpp on the collector.
86. Starts up then cuts out, starts up again every 10 secs and so on.  
Fault 1: Check the solder joints on the line transformer and the line BU. If ok, check signals on TL19, base:12Vpp, col:960Vpp. If ok, suspect line transformer.
87. FBT is started up by a signal but appliance does not start. In standby mode.  
Fault 1: TV01 (BC557C) on the scanning is defective.
88. TV in standby. Hum in the speaker. If pin 1 of the line transformer is disconnected, the line transformer attempts to start up. Voltage with pin 1 lifted up: 114V=80V, 28V=20V, 15V=9V, 7V=0V, 180V=80V and 13V=0V.  
Fault 1: [TV01 has been changed]. Check CP66, TP66 and RP66. If ok, replace power supply kit and check DP21, DP10, CP14, CP24 and CP28.
89. Power supply crackles once then dead.  
Fault 1: [Line transformer changed]. Unsolder pin 3 of line transformer. Check power supply. If defective, replace power supply kit. If fault persists suspect pots G2 and G3 and tube holder.
90. No start up of power supply. No standby light. No noise. No base signal on transistor.  
Fault 1: [Semi-conductors seem ok]. Check 313V on pin 2 of power supply transformer. If not, check RP01 and RP22. If ok, suspect LP01. If ok, check CP19, CP24 and CP09 or replace power supply kit.
91. Occasionally goes into safety mode. Fault 1: DF16 is leaky.
92. Switches on, EHT arrives and appliance goes into standby immediately. Voltage US 105V increases to 140V and appliance goes into safety mode.  
Fault 1: Unsolder collector of line BU. Check 105V. If defective, check CP24, CP14. Suspect DP21 or replace power supply kit. If ok check TV01 and TV02. If ok, suspect line transformer.
93. Starts up, works for 30 secs then goes into standby. Starts up again by itself after 2 mins.  
Fault 1: Replace or check RP126 (22R/2W), RP26 (2.2K for 44cm, 1.2K for 51cm). Remove bridge J138 and connect it on copper side below line transformer. Replace RP02 with a 180R and connect it in parallel to 2K2 (ref. 207TX3243).
94. Chopper goes short circuit; after replacement appliance functions correctly for approx 1 minute.  
Fault 1: Check CP29 (2200nF) in power supply for open circuit.
95. No start up of PSU. 300V on power supply BU. No oscillation. Fault 1: No voltage supply to power supply start up oscillator (TP03/TP02). TP19 (BC546) and TP18 (BC556) are leaky. RP36 is O/C.  
Fault 2: Diode DP28 between BU and line transformer on left is S/C. Fault 3: RP36 (120K) O/C.
96. No power supply regulation. Standby LED flashes red every single second. EHT starts up but cuts out immediately after. No visible S/C. Oscillations seem normal on line BU.  
Fault 1: US power supply (114V on 90s) decreases to +/-60V before appliance trips. Pulses on collector of TP69 ok. Change capacitor CP28 (100uF) and diode DP28 on primary circuit.
97. No EHT. Abnormal noise in loudspeaker and whistling in sound. U (114V 90s) = +/-50V.  
Fault 1: Electrolytic capacitor CP51 (100uF/250V) is dry or O/C.
98. Power supply pulsates every single second. Standby LED flashes.  
Fault 1: Check joints on CP29 near power supply BU. If not, check state of local capacitor.
99. No start up of PSU, sometimes intermittently. 300V on power supply BU.  
Fault 1: Check if RP36 (120K) O/C.
100. BU transistor TP29 blows again. Fault 1: Replace capacitor CP29 (2.2uF/1500V) near power supply BU.
101. Power supply starts up for a few secs then collapses while pumping on standby light.  
Fault 1: UL2 13V is defective. Change DL13 and CL14.

102. US (110V 90ş - 143V 110ş) goes high after a few mins and TV trips. Fault 1: Incorrect regulation. DP54 (1N4148), zener DP55 (4V7) and DP56 (1N4148) are intermittently defective.
103. Power supply BU blows again. Fault 1: Check capacitor CP29 (2.2nF/1500V) near power supply BU.
104. No start up of PSU. No oscillation on emitter of TP09 in power supply primary.  
Fault 1: Check if resistor RP36 O/C and safety circuit TP03 and TP02. Note: Oscillator works for approx x 2 secs. only at switch on if power supply does not work.
105. No power supply regulation. Live power supply is too low.  
Fault 1: Check transistors TP53 and TP54 and zener DP55 (4.7V).
106. Goes into safety mode. 8V on connector TV01. Fault 1: Check line transformer, TV01, TV02, TV12. Change line transformer 90ş 534TX0257, line transformer 110ş 534TX0267.
107. No start up of line transformer (no oscillation on line BU). 145V on line BU (110ş). No oscillation on pin 39 of TA8659. uP in standby mode. U1 = 6V instead of 8V at switch on. Fault 1: uP is not properly supplied with power. Abnormal output on 15V line. Replace line driver transistor TL17 which is leaky.
108. Power supply pulsates after a frame fault. No pulsating when thyristor control disconnected.  
Fault 1: Fit a damping resistor in circuit at pin 5 of line transformer. Check coil LL19 (driver transformer + frame coil) if TV starts up with insufficient amplitude.
109. Power supply pumps every single second.  
Fault 1: Change leaky transistors TV01 and TV02 which may be defective due to EHT flashes.
110. Incorrect oscillations on line BU (S2055). No power supply regulation. Fault 1: Check if TV12 (BC557) is leaky and if safety circuits are ok. Note: TV12 is not fitted on all versions.
111. No start up. 114V, 28V, 15V FONT, 80V, 17V, 8V.  
Fault 1: Check CP29, CP24, CP14 and CP28. If ok, replace power supply kit. Suspect 1N4148.
112. No start up. Fault 1: [Power supply kit changed]. Unsolder pin 3 of FBT. Check power supply. Check RP02, TP03 and TP02 on primary. Suspect 1N4148. If ok, suspect line transformer and 200V power supply on DL11. Fault 2: [300V on power supply BU]. Check 1V on base, 980Vpp on collector and 800mVpp on emitter of TP29. If not, check CP24, DP10, CP28 and DP21 or replace power supply kit.
113. Power supply S2000 and line S2000 blow at switch on. Fault 1: Check CP29 and posistor. Check 1N4148, DP21, CP14 and CP24. If fault persists replace power supply kit.
114. No switch on at start up. Standby light is off. At stop light comes on weakly then goes off.  
Fault 1: [Line transformer, IV01, IF01, CP59, CP64, CR83, line transistor and power supply kit replaced. Us=112V, 15V at 2.1V, 28V at 13.2V]. Unsolder pin 3 of line transformer and check power supply. If ok, check TL19 or check control signal. If not, replace power supply kit.
115. Works for 10 secs then goes into standby. TV ok after switching off then on again.  
Fault 1: Check TV02, TV01, DV08. Check joints on TF16, DF16 and line transformer. Check 200V and 13V, DL13 and DL11. If ok, check tube board and line BU.
116. When 120V at variac, UL1 reaches 280V.  
Fault 1: Replace power supply kit. Suspect DP21 and 1N4148. Check CL21.
117. Us is too high at 121Vpp instead of 52Vpp. Check RP51, DP55, DP54, DP57, TP54 and TP69. Check signal on DP57: anode at 2Vpp, base of TP69 at 800mVpp and collector at 1.8Vpp. Check 13V.
118. After clicking and tripping a few times, power supply remains blocked in standby at switch on.  
Fault 1: Remove bridge J138 and insert it on copper side. Replace RP02 (18R) parallel to RP81 (2K2).  
RP02 18R 207TX3243      RP81 2K2 207TX3233
119. S2055 blows. Fault 1: [U:9V, U2:15V]. Unsolder pin 3 of line transformer and check power supply. If the same, replace power supply kit. If ok, suspect IG01 and line transformer.
120. Intermittently trips off for approx 1 sec. Fault 1: Replace RP26 (2K2) with 1K5.
121. Power supply fuse blows at switch on. Everything seems ok. Fault 1: Check posistor of On/Off switch. Check RP38 (470R). Replace power supply kit. Suspect DP21 and diodes (1N4148).
122. At switch on protection is activated; power supply voltages present; horizontal drive blocked. Functions regularly by disconnecting protection diodes DL16 and DP57.  
Only affects Saba T5501.  
Fault 1: TV12 loses insulation and carries a voltage of approx 12V on the collector of TV01.
123. Dead. Starts up but shuts down. Fault 1: Check IF01B, TL082 and TF16.
124. Standby light on, no start up of power supply.  
Fault 1: [Secondary voltages 15V:8V, 13V:1V, 7V:15V. Power supply kit changed, CP10, CP6, diodes (1N4148) checked but fault persists.] Unsolder TL19, check on TL17 B:2VPP C:30VPP. If not, check RL18 (15V). Ok on base of TL19 (12VPP). Check RL21, RL19 and LL19 ok. Suspect line transformer.
125. No line drive. HT correct at switch on with no line output operation. Fault 1: Check pin 40 IV01 (T8659) 9V= on, 0V = standby trip. Voltage from TR17 may be incorrect due to O/C.
126. Remains in standby. After replacing power supply kit, seems to start up but then stops.  
Fault 1: Check TL19: base = 12Vpp; collector = 960Vpp. If not, check 145V: if ok, suspect line transformer and IF01. Check line transformer secondary.
127. Intermittently blows chopper transistor. Fault 1: Check CP29 (2.2nF) in snubber network.

## Function

1. Remains in safety mode. When earthing collector TV01, TV starts up but horizontal amplitude is reduced. All the correcting functions are ok. Line stage transformer, TDA4950, TL082, DG01, DG10 have been replaced. Fault 1: Lift pin 3 of the line stage transformer, fit 470 Ohms/7W on U sys and check signals: K4, K1, H3, M2, K5 (start up) and K2, K3, M1, N3 (recovery).
2. The power supply goes to stand by. Fault 1: Check the following; :CF24 (2200MF) :DV08 (BZX83C13) :IF01 (TL082) :RF02 (1.5MR) :PP52 (1K) :DP58 (1N4148) :RL11 (22OHMS). Fault 2: DP 50/CP 50 has a short circuit. Fault 3: Check IF01 and DF16 for S/C.
3. Occasionally the appliance goes to stand-by. Fault 1: Change TV02 (BC547C) and TP69 (BC547C).
4. The appliance goes to stand-by if the programme is changed. Check TP69 (BC547C) and TP54 (BC557B).
5. The appliance is locked in stand-by. Fault 1: Check DR78 and RL12. Fault 2: Check for collector/emitter leakage in TV01 (BC558C) in the safety circuit. Fault 3: 4.7V zener diode DP55 in the HT error sensing stage may be O/C. Fault 4: Defective TL082 field drive chip IF01 (field output thyristor TF16 driven heavily throughout the field scan period). Fault 5: [If field scan coil plug temporarily removed, the appliance comes back on]. Check DF16 (BY398) for short circuit.
6. The appliance accepts no function. Fault 1: Check the following; :CP09 (3.3NF) :DL11 (BA157) :DP21 (zener 6.8V) :DP50 (BY399) :RL11 (22R) :TR73 (BC547B) :DV03 (ZPD6v8).
7. The appliance accepts no functions and IR01 does not accept reset. Fault 1: Change TR73 (BC547B).
8. The power supply goes to stand-by and the stand-by light is lit up. Fault 1: DP 50 is open circuit.
9. The appliance goes to safety mode. Fault 1: Check the FBT (LL05), CF10 (100MF) and RF01 (1.5MR).
10. The appliance goes to safety mode and no scanning possible. Fault 1: TV01 (BC547C) is defective.
11. Noise in the speaker power supply. The appliance goes to stand-by, starts up again and after 3 minutes goes to stand-by. Fault 1: DP 55/54 is open circuit.
12. The appliance goes to safety mode after 10 seconds. Fault 1: Check TF25 (BC547B).
13. The appliance carries out no function. Reset does not react. Fault 1: TR73 (BC547B) is defective.
14. The appliance takes a few seconds to start up. Fault 1: DP 58 is open circuit.
15. The TV starts up for a few seconds with a jerky noise then stops and so on. Fault 1: The raster deflector has a short circuit.
16. No function. Fault 1: DR83 (1N4148) is defective. RP36 (120k) in power supply has changed value. Fault 3: TV01 (BC558) in protective circuit has a short.
17. The TV does not start up or stops. Fault 1: TL 19B is in open circuit. Fault 2: TL 19E is in open circuit. Fault 3: TL 19C are in open circuit.
18. The TV does not start up. Fault 1: TL 17 has a C/E s/c ((C/E, B/C or B/E) Fault 2: DL 18 is s/c. Fault 3: CL 16 is s/c. Fault 4: CP 30 is o/c. Fault 5: (standby light disappears, 300V ok). Check 1N4148, DP18, CP24, CP14, DP21 or replace power supply kit. Unsolder the line BU and check the power supply. Suspect FBT. Fault 6: (Frame connector removed and G2 pushed: blue stripe on screen. Red standby light is still on). Check IF01 pin 8: 12V. Check if pin 8 and 4 are s/c. If ok, check on IG01 if pins 4 and 6 are s/c. If they are ok, check 13V on DL13 and 200V on DL11. Fault 7: (primary voltage ok). Check TL19 base: 12Vpp, collector: 960Vpp. If not, check pin 3 of the FBT 145V, 15V on the collector of TL17.
19. In stand-by the light does not light up and the TV does not come on again. Fault 1: DP 30 is S/C or O/C. Fault 2: TP 02 B/E is S/C.
20. The TV starts up 7 to 8 seconds after going to stand-by. Fault 1: DP 56 is open circuit.
21. Switches to standby during programme or scene change, caused by incorrect beam current regulation. Fault 1. Check value of RP26 - if 2.2k, replace with the appropriate value: 14in. models - 1.8k 15in., 16in. and 17in. - 1.5k 20in. - 1.2k  
Note: Do not use lower values than those listed or failure of TP29 may result.
22. LED does not light up. Appliance is in standby. Fault 1: DP28, DP30, DP20, tp02 : B/E. Control unit : connector BE01: U1a (+15V) on pin 2. U1a : LP70, CP59 : DP65. Check the power supply ground.
23. Stand by light lights up for 2 seconds then goes off. Appliance does not start up. 300V ok. Fault 1: Check 145V on DP50. Check DP18, DP20, DP30, TP02, RP06, DP16, CP10, TV01, CR83, TP18, DP28, DP09, TP02, TR73, DR83.
24. Remains in stand by. Fault 1: Check if high state on pin 20 of IR01. If so check IR01 (TMP47C-634). Check if RR83 (270), DR83 (1N4148) O/C and if TR73 (BC547B) is leaky. Fault 2 : Pin 40 (TA8659) 0V. Check zener diode DR78 (5.6V). TR76. Fault 3: [Starts up if you unsolder pin 6 from line transformer. IF01 has been changed, PSU ok]. Check TF16 and DF16. Check raster signal at pin 7 of IF01: 1.7Vpp. If ok, suspect LL19. Check TV01, TV02, DV08 and DV03. Fault 4: [Line transformer and TA8659 have been changed]. Check TV01, TV02, DV08, DV03 and IJ01. Fault 5: [If collector TV01 grounded, functions well but picture lacks contrast and G2 can only be poorly controlled.] Unsolder anode of DP57 and check TV01, if the same: unsolder DV47 and check DL16, DV03, DV08 and TV02. Fault 6: [Tries to start up 3 times]. Change line transformer. Fault 7: [Tries to start up 3 times]. Check TV01, DV08, CP50. Fault 8: [Occasionally tries to start up.] Remove 25. J138 shorting bridge and wire from copper side. Replace RP02 by a 180R resistor and add in parallel 2K2. 207TX3243, 207TX3233.  
Fault 9: [Siren noise in the speakers.] Remove J138 shorting bridge and wire from the copper side. Replace RP02 by a 180R resistor and add in parallel 2K2. 207TX3243, 207TX3233. Check driver signal. If ok, suspect line transformer. Fault 10: (Power supply is correct, line scanning transistor receives a voltage of 143V but there is no base control signal. TV victim of storm damage). Check the control signal on IV01 pin 39: 3.7VPP, pin 40: TV 9.8V, standby 0V, pin 61: 11.6V. Check IF01. Check the safety transistors, the TA8659 needs a feedback, if missing it remains in standby. Fault 11: Check DR78 or RL12. Fault 12: Check RR83 (270R). Fault 13: Check diodes on line transformer secondary. If ok, check TL1 and power supply. Unsolder point 6 of line transformer. Check line BU command. If ok, suspect line transformer. Fault 14: C/E leak at TV01 (BC558C) in protector circuit. Fault 15: Diode DP55 (4.7V zener) in HV error recognition circuit is O/C.

Fault 16: Picture drive chip IF01 (TL082) is defective. (Picture output thyristor TF16 is driven too hard during picture scanning.)

Fault 17: [Runs if vertical deflection coil is removed for a short time.] Check DF16 (BY398) for S/C.

26. Occasionally appliance does not start up from standby. Infra commands go to the processor. Power supply and deflection are ok. Fault 1: Stand by transformer ? check the secondary voltage.

TV starts up for a few secs and leaves a motor noise in the speaker. By disconnecting DL13, the appliance starts up again.

Fault 1: Problem in the 13V. Check if this appliance has a teletext module, thyristor TP66. If not in IF lift RI15 (10R) to see if problem is not due to one of the 12V IF voltages.

27. Functions for half an hour then stops and the diode flashes, attempts to start up again then stops.

Fault 1: Check the value of RP36 which may change. This resistor does not exist in the power supply kit.

28. CTV remains in standby. HT at 127V, 15V at 9V, 28 at 20. Fault 1: [TP16/19/18/12/09/17/29, CP55/24/14/29 have been changed]. Change transformer THT9.

Fault 2: [Line transformer, TL082, TV01 and TV02 have been changed. Collector TV01 grounded without any result].

Unsolder pin 3 from the line transformer, collector TV01 and TV02. Check on TL19 B:12Vpp, C:145V. If not, check IV01 pin 39:3.7Vpp, 40 TV: 9.8V, standby:0.5V. If ok, suspect LL19.

29. Programmed on channels, still only snow. The selector does not react on channel inputs.

Fault 1: IC in KK MC44802P has been replaced. Replace RH04 27K.

30. Does not start up, stand by lit up. Slight motor noise in the speaker, power supply kit has been changed but there is still nothing. Fault 1: CP54 o/c (10nF). Check RP06 (12K), DP16 (1N4148) and CP10 (22nF), TV01 (BC547C) or CR83 (1000uF), TP18 (BC546C), DP28 (BA157), DP09 (1N4148), CP59 (1000uF).

31. Under certain conditions (static discharge etc.) may revert to factory set up mode. In this mode "PROMO will be displayed on screen. In order to clear this factory mode, carry out the following sequence:

1st case: For all types of microprocessor, except IKC2-7A - press "+" volume key on front control panel.

2nd case: Microprocessor IKC2-7A - Switch off TV - Press PROG "+" and "-" keys on front control panel and switch on by On/Off switch.

32. Does not pick up in UHF or in VHF. 13V is ok.

Fault 1: The 2 resistances coming from the 150V to manufacture the 33V are o/c.

33. Goes into safety mode when changing advertisement or on the pub end logo on M6.

Fault 1: Check TV01, TV02, DV03, DV08, IG01.

34. Correct power supply but appliance does not start up. Fault 1: Check TV01-TV02-DV08.

35. Does not find any station in search. Microprocessor has been changed and HF head. Seems to have poor power supply filtering in station. Fault 1: Check the signals on II06 DATA on point 15 SCL in 14: 5.1V on 3. Oscillator on 16 (ok).

Check II06.

36. Cuts out and then starts up from time to time after working for several hours. Fault 1: Adjust the power supply voltage and the G2. Check the base signal of the line BU. Check the FBT.

37. Occasionally loss of memory from the transmitters. When warm the channels run through from 1 to 39 without a loss from the transmitters. When IR01 has been replaced, VDD on 42: 4V6.

Fault 1: If there is no 5V on pin 36/IR01. Change TM18 (BC557) which is leaky when warm. Otherwise change the UHF/VHF head.

38. Red LED flashes. No start up. Fault 1: Change power supply transistors. Check power supply diodes and capacitors. Also check the line transistors.

39. Goes into standby after approx 10 secs. All the voltages are ok. Fault 1: Often the EHT causes this fault.

40. At start up for 2 secs the FBT starts up then the TV goes into standby. The power supply voltages seem to be correct.

Fault 1: Disconnect the collector of TL19 - make 20 and 21 of IR01 work in s/c. Supply the cathode of DL13 with 13V, check line signal of IV01, the C voltage of TV01 (0V), the B signal of TL19, the operating threshold level of DV08, if the 13V increases then TV01, 02, DV08 is defective.

Fault 2: Check field timebase generator chip IF01 (TL082) for short circuit; also check DF16 (BY398).

41. After operating for some time the channels begin to run through. Nothing occurs when the circuits are cooled down.

Fault 1: Remove the pre-ampli IR (same). Check the 4MHz quartz and check on IR01 at point 42: 4.3V, on 41: CLOCK and 40: DATA. Fault 2: Replace control plate 103TX1100 on the front.

42. Contrast cannot be adjusted with the RCU.

Fault 1: Circuit O/C between pin 3 of the line transformer and RL05 or RL05 O/C.

43. The channels run through and do not stop. Fault 1: Change TM16.

44. When warm, RCU and front control panel no longer function. Check the signal on BR01 pin 2. If not, check 5V on pin 1. If ok, suspect the IR preamplifier module. If ok, check pin 35 of IR01. Suspect the IR01.

45. TV only starts up very rarely, when it does start up, RL26 smokes, the deflectors heat up and smoke, distorted picture and the colours fade. Fault 1: Check DL22, CL22 and IG01. Remove bridge J138 and the cable on the copper side (below the line transformer).

46. Line transformer starts up then stops. 15V at 12V. Defective TV01 and IF01 have been changed. Line transformer test. TF16, CL14, CP59, TV01, TG01 have been checked.

Fault 1: Replace TV01, TV02, DV08, DV03, DV04 and CF24. Suspect IG01.

47. No reception but functions via scart UL2 ok, 33V ok, tuner ok, tuner power supply ok. Fault 1: Check IF 2108 unit or 2130 AGC feedback signal. Fault 2: Check DL13 (BY397) and RH04 (27K) 5.1V at the terminals of DH02 (ZPD5V1). Then check DL11 (BA157). Check the deprogrammed IR01.

48. Pulsates if the TV is started up after being put into standby. Fault 1: Replace RP02 by 180R and 2.2K wired in parallel. Ref 207TX3243;207TX3233.

49. Switches on but no user controls from front control panel nor from RC. Does not even switch to FF.



Fault 1: [TMP has already been changed]. Check 5V on E of TR82. If ok, disconnect IR and check. If ok, suspect IR module; if same, suspect mylar control panel.

50. Nofunction. Sound at maximum. Fault 1: Check the control panel or replace the control panel membrane.

51. Remains blocked on CH 15 and PR8 at start up. Occasionally the CTV functions normally.

Fault 1: Check the storage battery. Check TR82, CR82, CR83. If ok, check CP59.

52. Does not switch on immediately when pressing switch, only after loudspeakers click 3 times and standby LED reduces brightness 3 times. Fault 1: Check 13V, TXT module and thyristor TP66. Lift R115 (10R) in IF to check 12V IF. Check DP58 for O/C.

53. Channel memory loss approx every fortnight. [New IR01, battery has been changed]. Check RR10, replace bridge J001 by a coil 102TX3249. Remove CR72, connect CR63 (470pF/50V) pin 34 and ground.

54. Standby light lights up for 2 secs then goes off. Does not come on. 300V ok. Check 145V on DP50. Check DP18, DP20, DP30, TP02, RP06, DP16, CP10, TV01, CR83, TP18, DP28, DP09, TP02, TR73, DR83.

55. No function. No standby light. No secondary voltages even when disconnecting the C from the TL19. By disconnecting IG01 (TDA4950) US increases to 125V instead of 145V, UA 10V, U1 7V.

Fault 1: Unsolder pin 6 of IG01 and check the voltages. If low, replace the power supply kit and check CP19, CP14, CP24, DP21 and the 1N4148. Suspect IG01.

56. At switch on, EHT seems to establish itself then TV goes into standby. If safety transformer LP42 is disconnected, EHT functions. Oscilloscope reads OK. Fault 1: Check TV01, TV02, DV03, DV02, IF01.

57. Sound has increased to maximum, after a moment, neither the RCU nor the manual commands work. Microprocessor has been changed. Fault 1: Disconnect before the control panel. If ok, change it.

Fault 2: Change the microprocessor. Check 5V.

Fault 3: Check on pin 5 of the microprocessor if there is a voltage variation of 0 to 4.2V. If not, change the microprocessor. If there is, follow the path: 1 of II50-> output at pin 20 -> 1 of IA05.

58. No function. 300V ok. Transistors, power supply transformer, line transformer and TA8659AN have been changed.

Fault 1: Check TV01, TV02, DV08, DV03, IG01.

Fault 2: Check 7V and its electrolytic. Check 22V and its electrolytic.

59. TV goes to standby after operating for a few mins and starts up again by itself after some time.

Fault 1: Check TV02 (BC547C), TP69 (BC547C) and DP56 which is o/c.

60. TV does not start up. TV01 not in safety mode. US98V 28V/15 15V/9V. If LF amplifier is disconnected 28V/26V US/105. Reset OK, has already been replaced. Line transformer, TL082, DL11, CL11, DL13, CL14, TV01, 02, BSR50 have been checked. Fault 1: Disconnect point 3 from the line transformer. If ok, suspect the line transformer and the TL19. (If the fault persists) check DP50, CP51, RP51 and RP52.

61. Goes into safety mode after a few moments. Fault 1: DP56 is defective.

62. TV does not start up. Siren noise in the speaker. DL11 S/C. Fault 1: [Power supply kit and various capacitors have been changed]. Replace RA03 and RA23 by 15K, RA13 by 33K, CA01 by 22uF/25V. Add CA15 (10uF/25V) between the ground and the junction point of RA13 and RA15.

63. Goes into safety mode for no apparent reason, after operating for 30 mins. Starts up again from the switch. Fault 1: Replace RP26 by 1K5. Remove the bridge on the copper side below the line transformer. Suspect TV01, TV02, DV08 and DV03.

64. TV does not start up. Siren noise in the speaker. DL11 S/C. Fault 1: [Power supply kit and various capacitors have been changed]. Replace RA03 and RA23 by 15K, RA13 by 33K, CA01 by 22uF/25V. Add CA15 (10uF/25V) between the ground and the junction point of RA13 and RA15.

65. Starts up one time out of ten then functions ok with a nominal voltage. The rest of the time it collapses. Start up and operation ok with the variac. Fault 1: Check the power supply without the line BU. If low, replace the power supply kit. If ok, suspect the line transformer, TV01 and TV02.

66. 4 mins after switch on, TV does not respond to commands from the RCU or the buttons on the front panel. Fault 1: Defective buttons on the front panel.

67. Cuts out intermittently. Fault 1: Check CP29. Fault 2: Check TL19 B: 12Vpp, C: 960Vpp. If ok, suspect line transformer, TV01 and TV02. If the same, unsolder pin 3 of line transformer and check power supply. If low, replace power supply kit. Suspect QL45.

68. TV stops and starts up again immediately. Standby light is on.

Fault 1: Check the solder joints on the line transformer. Check the connectors BF01 and BL01. Measure 114V on DP50, 15V on DP65 on the oscilloscope.

69. Starts up with difficulty. Line transformer only starts up after several attempts.

Fault 1: Capacitor CP59 in the U1 power supply is defective.

70. Switches on, line transformer comes on then goes into standby immediately. US voltage 105V increases to 140V and goes into safety mode. Fault 1: Unsolder the collector from the line BU. Check the power supply 105. If missing, check CP24, CP14. Suspect DP21 or replace the power supply kit. If ok, check TV01, TV02. If ok, suspect line transformer.

71. Does not switch on. Fault 1: tv12.

72. Teletext does not function. Fault 1: Replace RP65 (+7V).

73. At switch on appliance goes to standby. If programme button is held appliance slowly trips.

Fault 1: Check DF16 (BY398) between pin 6 of line output transistor and chassis for short circuit.

74. Intermittently appliance goes to standby when programmes or scenes are changed.

Fault 1: Change RP26 on 20 inch models for 1k2ohm on 14 inch models for 1k8ohm and on 15, 16 and 17 inch models for 1k5ohm.

75. Teletext is missing. Fault 1: Check TP66 (ESM740) and thyristor DP66.

76. TV starts up well but with a lot of noise. Line transformer arcs everywhere and a few secs after the line BU shorts. Fault 1: Unsolder LGO8. Check if TL19 is defective. Suspect line transformer.
77. Impossible to change standard, remains in SECAM. Picture inverted in PAL. Fault 1: Check the state of XR81. If ok, check the service mode. If ok, suspect microprocessor.
78. No raster signal on pin 31 of IV01. Fault 1: [TA8659N, TF25 and IF01 has been changed]. Check pin 32:1.8V. Unsolder base of TF25, check pin 31 of IV01:10Vpp, on RL42:14Vpp. If not, check DL39, DL49 and DL41.
79. Functions for a few secs then goes into safety mode. Functions without the raster deflector. Fault 1: Check 12V on pin 8 of IF01. If low, suspect CL14. If ok, check TF14, DF16 and IF01. Suspect CF10 and CF02.
80. 1 flyback transformer pulse then standby. If the picture appears, one time out of five there is crackling in the transformer then standby. Fault 1: [TDA4950, TL82 and flyback transformer have been replaced unsuccessfully]. Disconnect the raster deflector. If ok, check RF01, RF02, TF16, DF16 and IF01.
81. No RC. No sound, no channel change after changing IR receiver, with or without RC. Manual controls ok. Fault 1: Check power supply. If ok, suspect mylar control panel. If ok, check data and clock signals and tuner module on pin 7 and 8. If incorrect suspect tuner.
82. At switch on starts up with severe noise in loudspeaker then stops and remains in standby. Voltages correct except the 7V which is 16V. 16V remain even after switching off by ON/OFF switch. Fault 1: Unsolder pin 3 of line transformer. Check power supply and replace capacitors on primary. If fault persists, replace power supply kit. If power supply ok, suspect line transformer and E/W circuit.
83. Remains in standby. Line transformer starts up. 112V on collector. Fault 1: 15V on RL18 (100R). Check TL17 (driver control), M6 (driver transformer) and DL17 (1N4148). Suspect TV01 and TV02. Check line control on pin 39 of IV01 (TA8659): 3V.
84. Goes into safety mode after frame fault. Fault 1: Check transistor TF08, 200V line transformer on RL11 (on left of line transformer), DL11 near thyristor, RF01 and RF02. Fault 2: No vertical ramp on pin 3 of IC IF01. No frame pulses on pin 31 of IC IV01 (TA8659). Coil LL16 unsoldered or O/C on right of IV01.
85. Starts up when in standby, sometimes when cold. Standby display normal. Pin 20 of uP IR01 is 4V. Fault 1: Change diode DP65 and capacitor CP59.
86. Goes into safety mode intermittently due to an intermittent frame fault. Fault 1: Check joints on capacitor CF15 near line transformer.
87. No start up. Red LED on. 145V on collector of line BU, no line BU driver. 0V on collector TV01. Fault 1: 6V instead of 9.1V. Pin 40 TA8659AN loose. Replace TA86597N.
88. Starts up in standby. Standby display ok. Pin 20 of uP 0V. Pulses on pin 39 of TA8659 ok. Fault 1: Change transistor TL17 and check capacitor CL16.
89. At start up, starts up then stops. Standby light remains lit. Fault 1: [On oscilloscope, signal on line BU is ok. If line BU is unsoldered, main power supply ok but the others are weak]. Check TV01, TV02, DV08 and DV03. Check line transformer and IG01. Fault 2: Check if on TL19 B: 12VPP, C: 960VPP cut out. Check line transformer and E/W circuit.
90. No function after changing tuner - neither from control panel nor RC. No OSD. Fault 1: [System uP already changed]. Disconnect control panel: if OK, change control panel. Check 5V and uP. Check signal on 5/uP (0 to 4.5V): if ok, check II50/pin 20; if incorrect, check uP.
91. Starts up then goes into protection mode. Standby light on. Starts up if collector of TV01 grounded. Various voltages ok as well as RGB. Sound ok but no picture. Bluish screen with shadows. Fault 1: Replace TV01, TV02, DV08 and DV09. Check 13V on DL13, 200V on DL11. Suspect voltage G2.
92. Remains in standby, light on. UL voltage ok for half a sec then standby. Fault 1: [IR01, TL082, THT, TR73 and DR83 changed.] Check TV01, TV02. Unsolder line BU and check if power supply ok. Check 5V on uP ok. Suspect TF13 and DF16.
93. Standby light remains on at switch on. No picture, no sound, no function from RC or control panel. Slight noise from PSU as if TV trying to switch on. Fault 1: Check TL19 on base (12Vpp) and C: 960Vpp. If signal cuts out, suspect line transformer and TL19.
94. No start up and remains permanently in standby. Fault 1: [Line transformer, TL19 and TDA changed]. Remove bridge J138 and connect it on the copper side. Below the line transformer, check signal on TL19 B:12Vpp and C960Vpp. Check 114V on pin 3 of line transformer. Also check IF01, IF16 and DF16.

## Deflect

1. Occasionally horizontal tearing. Horizontal stripes. IC IV01 has been changed. Line stage transformer has been changed. Same faults via the aerial and in scart. Fault 1: Check CL23, CL21, CL22. Check the launching signal of the line BU.
2. No picture scanning. Fault 1: Check IF01 (TL082), RF01 and RF02. Fault 2: Check RL11 (22R).
3. No line scanning. Fault 1: Change TL17 (BSR50).
4. No saw tooth signal on raster and a horizontal bar appears at the bottom of the picture. Fault 1: Change TF25 (BC547B).
5. Occasionally no scanning is possible. Fault 1: Check RR16 (1.5K).
6. No more line scanning possible. RL25 cuts out. Fault 1: CL 24 is open circuit.
7. Scanning at the bottom of the screen. Fault 1: CF 25 has a short circuit.
8. Slight raster scanning in the middle of the screen. Fault 1: The raster deflector is open circuit.

9. Mini raster scanning. Fault 1: CF 10 or PF 11 may be open circuit.
10. The line frequency drifts slightly. Fault 1: Check CL43 (220 nF).
11. No vertical deflection after fitting the teletext board. Fault 1: Change RF 32 from 560 ohm to 1.8 Mohm.
12. PSU ok, CTV blows. If connector BF01 remains connected, vertical scanning line is at the bottom of the screen. Voltage 114V on DP50 OK, IF01, FBT, TL17, CF24, TF16 have already been changed.  
Fault 1: When FBT has been changed especially if it sparks (sparking pot G2, focus with the chassis side TL82), change IC TL 82 and resistive kit RF13.
13. Intermittent fault especially when cold. No vertical stability and no luminance for a few seconds then everything ok.  
Fault 1: Check if the 13V on the DL13 is weak. Suspect CL14. Check RF24, CF14, DF17, DF19. Check CF10 and RF02. Check 200V.
14. Arcing of the line transformer and the focus G2. Now picture with large horizontal foldover from top to bottom of the screen. Fault 1: [Line transformer and TL082 have been changed]. Check CL23, CL21, CL22. Check the launching signal of the line BU. Check regulation DL46 (zener 9V1) -13V.
15. Vertical stability faults. Fault 1: Check DF01, DF04, RF12, DF03, RF04, CF04. Check 13V voltage. Check signal on IF01 at point 5, 6 and 7. If ok check RF21, TF16, DF16, RF16.
16. Line transistor blows after a few hours. Fault 1: Check if CL24 is o/c. Then check CP24/29. DP13,14,16,17,57 TP53, TP29.
17. Field foldover. Fault 1: Check if DF16 (BY398) is leaky.
18. Shorted line transformer has been changed. Now fault at the top of the picture (4cm) after 30 minutes. Line transformer and line BU boiling hot. If G2 at max, TV trips.  
Fault 1: Check line BU B: 12VPP, C: 960VPP. If ok, suspect line transformer, replace by the original part.
19. No frame sync in PB of recent rented cassettes. Fault 1: Replace RL44 by a 3K3 and CL44 by a 4.7uF/25V.
20. Excessive frame amplitude which is impossible to control. Pot. is at min.  
Fault 1: [FBT and TL082 changed]. Check 200V on DL11, RF01, RF02, CF01 and 13V on DL13. Check DF02, DF03, DF04 and DF06. Suspect IF01.
21. No start up of line transformer and LED pulsates slightly. Fault 1: Unsolder LT19 and check PSU. Remove bridge J138 wired to the copper side and check TV01, TV02 and CF24. Suspect line transformer.
22. 4cm vertical scanning for a few secs. Fault 1: [TL082 changed.] Check signal on anode of DF16 (116Vpp). Check DF16, TF16, RF16, DF19, DF17 and power supply on DL13 (13V). If ok, suspect LL19.
23. No start up. If pin 9 unsoldered from line transformer, starts up but weak amplitude due to U 80V instead of 140V.  
Fault 1: Unsolder line BU and check power supply. If low, replace power supply kit. If ok, suspect line transformer or check line transformer secondary for S/C.
24. Small flyback line at top of screen on left side. Fault 1: [TL82 (TDA4950) changed.] Check RF01 and CF10. If ok, check signal on DF16 (116Vpp). If ok, check CF24, DF17, DF19 and LL19.
25. No scanning. Fault 1: Check quartz QL45. Check driver signal 3.7Vpp at pin 39 of IV01. If ok, check 15V on DP65. Check TL19 at B:12Vpp and C:960Vpp and 145V.

## Colour

1. Following a fault on the line there is no colour. Composite video is ok on 53 of IV01 but there is no RGB on 41, 42 and 43. Fault 1: With the VCR read the cassette in scart. Check the signals on pins 47, 49, 53 of IV01. If there is still no colour, change IV01 (TA8659N).
2. The tinge varies. Fault 1: Check the 56k 2W and 22K 2W resistors, on the cathode tube holder board and a resistor of each value using a gun.
3. The grey scale is incorrect. Fault 1: Check RT09, RT19, RT26 RT29 on the CRT2000S board.
4. Chroma fault occurs although the tuning discriminators and the grey scale function correctly.  
Fault 1: Check IV01 (TA8659N).
5. Colour saturation. Fault 1: TT11 (BF883S) is defective.
6. Chroma fault. Fault 1: Check LC43 (delay line) and CC18 (68pF).
7. Blue flash in Secam. Fault 1: Add a switching circuit between pin 20 of the IV01 and the TV29 collector. If the appliance already has an R120 1M ohms resistor, positioned between pin 22 of the IV01 and cable terminal 4 of the IF module, this resistor (double use) must be removed.
8. Chroma decoding. The remedy involves adding a switching circuit between pin 20 of the IV01 (between pal chroma) and the TV29 collector. If the appliance already contains an R120 1 megaohm resistor, and it is wired between pin 22 of the IV01 and cable terminal 4 (STD input) of the module FI, it must be removed.
9. Chroma fault. Intermittent coloured interference lines.  
Fault 1: Add a 1m ohm resistor on pin 22 IV01 and B4 IF IF2108.
10. No colour. Fault 1: In scart, check 200V on B111 (BA157), RL 11(22) then check on CRT. Also check RGB on the CRT. Fault 2: On CRT (tube board), check the shape of the RGB signals from pins 41, 42, 43 of IV (01) on RT08, 18, 28 (1 Kohms). Check +200V on pin 8 of BT01. Check RT07, 17, and RT27 (1 Kohm). Check TT07, 17, 27 (BF422), TT11, 21 and 31 (BF883S).
11. No colour from aerial or scart. IC TA8559CN has been replaced. Wave peaks at MP output are correct.  
Fault 1: Check on pin 7 of TA8659 if there is a variation from 2.3V to 3.8V. This should occur when you use the colour control. If it does not check if there is a variation from 0 to 4.3V on pin 3 of the micro: if there is not the micro is defective; if there is check RC41-CC41.

12. Excessive contrast and colour. Fault 1: Fit a 10kohm variable resistor in series with resistors RR44 and RR42. Adjust the resistors which have been added to obtain the level desired.

13. When playing back a cassette previously recorded by the same VCR, colours may be lost or blue flash interference due to the PAL pulse of the TV being triggered. Fault 1: Make the following modifications at the level of IV01 (TA8659CN, pins 25/26): - CC66 melf 18pF goes to 22pF 50V - RC62 melf 5K6 goes to 1K5

- RC63 melf 4K7 goes to 1K5. NB: If this persists, you can force the switching of the LL' standard by soldering a resistor 1M between pin 22 of IV01 and cable eye (STD input) of the IF module (2108, 2130 or 2133).

14. Chroma lacks green. Tube board ok.

Fault 1: Check the green signal on pin 42 of IV01. If ok, check RV51 and CV51. If not, suspect IV01.

15. Luminance streaks and flyback lines.

Fault 1: Check if there is a good earth between video amplifier board and chassis.

16. Black and white picture via the scart. Fault 1: Check chroma signal on IV01 pin 58, in SECAM on pin 18. If missing, suspect scart board. Check TE10 and IE10 pin 5 TV: 0V, AV: 12V.

17. Grey scale incorrect. Yellow-green picture. High voltage on the blue cathode (170V). Voltage on the red cathode, as well as on the green, is normal (135V).

18. Fault 1: Check on cathodes DT28 and DT08: 75Vpp, DT18:72Vpp. If defective, check TT27, RT27, RT26 and RT28. Suspect the tube holder.

19. Grey screen, no sound, no video in scart output. OSD ok.

Fault 1: Check 12V on pin 11 of IF module. If ok but no video, change IF module. If not, check 12V on RI15.

20. Blue tinge in picture in SECAM, ok in PAL. Black and white picture ok.

Fault 1: Incorrect separation of the blue. Change coil LC13 O/C near TA8659.

21. Black and white picture in PAL and SECAM.

Fault 1: No chroma on IC (TA8659) due to an open track on scart board around BE06 pin. Repair track.

## Audio

1. Sound is distorted and low in scart. Fault 1: Earth solder joint of the tuner housing is poor.

2. A noise which sounds like "Motor boating" can be heard. Fault 1: DF 15 is open circuit.

3. Mute function is randomly activated. Fault 1: Check TM12 (BC557A).

4. Occasionally the sound volume varies. Fault 1: Check II50 (TDA2460) and IF2108.

5. Mute function does not react when the appliance goes from normal/stand-by. Fault 1: RA15 (47K) is defective.

6. Occasional sound problem. Fault 1: Check IF 2133.

7. The sound occasionally crackles (volume at minimum). Fault 1: Check II50 (TDA2460).

8. The quality of the sound is poor. Fault 1: Change F12108. Fault 2: Check IC50 (TDA2460). Check the speaker socket and the speaker itself. On the TDA2030, check +28V on cathode of DF63, CA30 (4.7uF), TA15 (BC547C).

9. Mute is constantly active. Fault 1: Change CM07 (150pF).

10. Humming on sound and the appliance goes to stand-by after 5 minutes. Fault 1: DP 16/17 is open circuit.

11. Noise on loud speaker and the screen is black. The appliance goes to stand by after a few minutes.

Fault 1: CF 24 has a short circuit.

12. Humming on sound and the screen is dark. The appliance goes to standby after 2-5 minutes.

Fault 1: TP53 B (or C or E) is open circuit or has a B/E s/c. Fault 2: TP54 B (or C or E) is open circuit.

Fault 3: DP55 is short circuit. Fault 4: CP54 is short circuit. Fault 5: TP69 B/E (or C/B or C/E) is s/c or o/c.

Fault 6: CP57 is o/c.

13. Noise in the HP power supply. The appliance goes to stand-by and starts up again. Dark screen and after 3 minutes the appliance returns to stand-by. Fault 1: DP 55/54 is open circuit.

14. Audio TDA2030 fails. Power supply is correct. Fault 1: Check the +28V on cathode DF63 (BYW72), the speaker, CA30 (4.7MF), TA15 (BC547C) and the speaker socket (ext BA021).

15. No sound or picture via the tuner aerial. Functions in scart.

Fault 1: Check DL13 (BY397) 13V power supply. UL2 and UL2A RH 04 (27K) O/C. RH06 (12K) is O/C.

16. Even in normal tuning, audio occasionally disappears.

Fault 1: Check that capacitor CM 01 is 120 pF. Change RM 01 from 4.7 Kohm to 2.2 Kohm.

17. No sound, no picture, slight whistling. EHT 300V is ok, low secondary voltage, FBT is ok.

Fault 1: Check if signal on TL19 on base 12 Vpp and on collector 960 Vpp is correct. Check DL13, CL14, RL11, CL11. Check IG01.

18. White screen, no sound like video. IF tuner and microprocessors have already been changed. Voltage on pins 6 and 7 of the uP are ok. No video signal on point 3 of the tuner. Programming of the channels is ok.

Fault 1: Check on pin 4: 33V, on 8: the CLOCK. Check on IR01 on pin 6: TV: 0V, EXT: 4.8V on pin 7: TV: 4.2V and AV: 0V.

19. The channel nos run through, no sound or picture but it works in video. Fault 1: Check DL13 BY397 (13V power supply). Check UL2 and UL2A (RH04 o/c). Check if RH06 is o/c (12K).

20. Sound ok via the tuner, poor sound via scart RA09, CA11, TA15, CA01 ok. 14V ok on IA05.

Fault 1: Check TA1, TA35, CA34 and DA32.

21. TV functions, thermal tube noise on the screen but no picture. RCU does not work. Dark display. TMP47C634 has been changed, a channel is displayed, programme nos run through and stops on AV, no sound.

Fault 1: Check 15V on DP65 with the oscilloscope. Check 5V on emitter of TR82. Suspect CR83, DR83, DR78, XR81.

22. White screen in scart, picture ok via the tuner, white screen and no sound. Programmes and the sound level etc displayed, micro AN and video amplifier have been changed but still the same problem. Fault 1: Check the video signal on pin 11 of II40. If not, check on 13: 11V, on 2 LL': 2V and BG I: 6.8V. Suspect the IC.
23. No function. Sound at maximum. Fault 1: Check the control panel or replace the control panel membrane.
24. Black bands on picture and very loud whistling in the sound.  
Fault 1: [IF module and tuner have been changed]. If there is a problem in the sound, check the 28V on DP63 with the oscilloscope. Suspect the CP64 and quartz. Audio noise at start up: replace RA03 and RA23 by 15kohm, RA13:33 kohm, CA01:22MF, add CA15:10MF, 25V between the earth and junction RA13 and RA15.
25. Sound ok in slow motion. A hum can be heard if you increase the power.  
Fault 1: Check if II50 (TDA2460), F12108 and DP16/17 are O/C.
26. Normal sound via the aerial, no sound via scart.  
Fault 1: Follow LF scart 2 and 6->TA32->4 of II50->2 of II50. On pin 3 of II50, there should be 11.5V in FF.
27. At start up, speaker hum for 30 secs, then OK. Diodes, electrolytic capacitors and line transformer have been changed but problem persists. Fault 1: In the inhibition/start up circuit, check or replace: DP05: ZPD 30V, DP21:ZPD 8.2V, RP02:169R, RP07: 681R, RP04:470R/0.25W, RP36: 56K/0.70W.
28. 5cm wide band at top of the screen. No picture or sound with a lack of width. Fault 1: Check IF01, CF10 and RF02. Check voltages 200V and 13V (CL14 and CL11). Check the signals on IF01.
29. Picture and sound hang up. Fault 1: This may occur with sounds of very low frequencies. To remedy this remove resistor RP54 (680kohm or 820kohm).
30. Hum. Tuner and IF have been changed but to no avail. OK via scart socket.  
Fault 1: This may occur at very low frequencies. Remove RP54:680K or 820K.
31. Hum, if one signal enters via the scart socket, the sound is correct.  
Fault 1: Check the TDA2460, the quartz Q156-Q155 and the capacitors around the TDA2460.
32. The sound increases by itself. Fault 1: Change the flexible control panel, ref 103TX0900.
33. Sound mutes intermittently and OSG are missing. Fault 1: Check RM03 for open circuit.
34. At start up crackling in the sound and arcing on the picture for a few mins then ok. Fault 1: Check 13V on CL14 with the oscilloscope. If ok suspect the line transformer or check via scart. Suspect the IF.
35. Occasionally sound and video drift on channel 64. Operation is good on the other channels.  
Fault 1: Check the varicap voltage. If ok, suspect the IF module.
36. IC (TDA4445B) functions for one day then sound hums when IC is changed.  
Fault 1: Check or replace RA03, RA23 (15K), RA13 (33K), CA01 (22µF/25V). Add CA15 (10µF/25V) between ground and junction point RA13/RA15.
37. No sound. No line transformer and standby LED is on. 100V on line BU (90s- 150V 110s). 8V on pin 40 of TA8659.  
Fault 1: TA8659 (ref. 276TX3432) is defective (perhaps after line transformer flashing).
38. No sound, grey screen, no video in scart output. OSD ok.  
Fault 1: Check 12V on pin 11 of IF module. If ok but no video, change IF module. If not, check 12V on RI15.
39. Noise in loudspeakers in standby.  
Fault 1: Poorly filtered 28V. Replace CP64 (1000uF) to left of power supply transformer.
40. No sound and no video not even in scart. 3cm white line at top of picture. Green LED on. U system voltage low at approx 60V. No 200V UL1. Fault 1: Check if RL11 and pin 9 of line transformer O/C. If they are, change line transformer (ref. 534TX0257).
41. Crackling in sound and picture, even in VHF. No 33V varicap on pin 4 of tuner.  
Fault 1: Change RH04 (27K) to a resistor (1W) on left of frame thyristor.
42. Standby light remains on at switch on. No picture, no sound, no function from RC or control panel. Slight noise from PSU as if TV trying to switch on.  
Fault 1: Check TL19 on base (12Vpp) and C: 960Vpp. If signal cuts out, suspect line transformer and TL19.
43. Sound and picture distorted as if there is a hum in the PSU. Fault 1: RH04 O/C.

## Memory

1. No reception. Fault 1: Check the following power supplies; UL2 (13V) ,UL2A , DL13 (BY397) ,RH04 (27K).
2. No UHF reception.Fault 1: There should be a 5.1V voltage on the terminals of the DH02 (ZPD5V1). Also check the DL11 (BA157).
3. No reception when you do a channel search. Snowy picture. Fault 1: Check 33V on DH04, 200V on RH04 and RH04.
4. No reception but the TV starts up. Fault 1: IR01 is deprogrammed, then return to service mode for the standard display of the country.
5. Loss of memory on random channel settings when CTV starts up.  
Fault 1: Replace RR10 by 10 KOhms. Remove strap J001 and connect 100 MH 102 TX3249. Pin 34: remove CR72 connect 470pF/ 50V between pin 34 and the earth of CR63.
6. Loses programmes from memory at irregular intervals.  
Fault 1: Replace IR01 (276TX3444). Change quartz 4MHz (102TX6872). Add a diode (1N4148) between pin 31 and the 5V on emitter of TR82 (anode side at pin 31 of IR01).
7. Memory loss or random deprogramming of uP.  
Fault 1: Increase power supply voltage of uP (0.6V) by adding a diode to uP power supply circuit.

8. Channel reception is defective. Fault 1: 33V varicap and zener diode DH02 (5.1V) are defective. Check zener DH04 (33V) and resistors RH04 and RH06.

## Geometry

1. The picture is displaced vertically. Fault 1: Check DF04 (ZPD6v8).
2. After a while the picture shrinks and a white band appears at the bottom of the screen.  
Fault 1: Change IF01 (TL082) which is heat sensitive.
3. After a while the picture is displaced horizontally. Fault 1: Check IF01 (TL082).
4. East/west cushion problem. Fault 1: DG01 (1N4148) is defective.
5. No east/west cushion correction. Fault 1: Check DG10 (zener 8.2V).  
Fault 2: [DG01, DG10 and TDA4950 have been changed with no success. TDA4950 blows constantly]. Check CL22, DL2 and DG01. If still no success, check the 145V power supply and LG08.
6. The picture is displaced towards the bottom of the screen (approx. 5cm to 15cm).  
Fault 1: CL14 is open circuit Fault 2: DL 40/41 is open circuit. Fault 3: DF04 is open circuit.
7. The picture is displaced slightly towards the top of the screen. Fault 1: CL 23 is open circuit.
8. Slight reduction of raster amplitude. Fault 1: DF 17 or 19 has a short circuit.
9. Slight raster distortion at the top or bottom of the screen, depending on the defective diode.  
Fault 1: DF 17 or 19 is open circuit.
10. The picture is slightly displaced towards the bottom of the screen. Fault 1: DF 15 has a short circuit.  
Fault 2: DF04 is open circuit.
11. The picture is displaced from the frame towards the top part of the screen (approx 4cm).  
Fault 1: DL 40/41 is S/C. Fault 2: DL39 is S/C.
12. Intermittently increases and decreases in size both width and height.  
Fault 1: Check DP55 (4.7V) zener diode plus a 1N4148 diode in series with it.
13. North/South adjustment does not function. Fault 1: Check RG87.
14. At switch on the vertical centering is off by 2cm at the top. Fault 1: Change IF01 for TL082/CP.
15. Amplitude varies with the voltages. US=86V, 15V is at 12V, 28V at 23V, 13V at 9.5V and 200V at 158V. If the power supply pot is at maximum US=96V, 15V is 13V, 28V is 27V, 13V is 11V and the 200V is 173V.  
Fault 1: Unsolder pin 3 of the line transformer. If the voltage US is ok, suspect the line transformer and TL19. Check on TL19: base at 12Vpp and collector at 960Vpp.
16. E/W correction IC (TDA4950) blows each time. Fault 1: [TDA4950, DG01 and DG10 have been changed]. Check DG01, CG12 and CG11. Suspect LG08 and DL22.
17. Amplitude and/or alignment vary intermittently.  
Fault 1: Change zener diode DL39 (13V) below EHT, below pots G2/G3.

## Other

1. TV01 and TV02 are in safety mode. Fault 1: TV01 and TV02 are ok. Check TV12 which is leaky.
2. No memory during programming. Fault 1: RR82 (3.3K) is defective.
3. No OSD display. Fault 1: Check IR01 (TMP47C-634).
4. The display is incorrect. Fault 1: Check DR78 (ZPD5V6) and DH08 (zener 5.1V).
5. Only the LL' display functions in the Multistandard version. Fault 1: Check IR01 (TMP47C-634).
6. The lamp is weak. Fault 1: DP 20 has a short circuit. Fault 2: DP28 has a short circuit.
7. The lamp lights up, then goes out. Fault 1: DP28 is open circuit.
8. The appliance switches on at random when the remote control is used.  
Fault 1: On the chassis where TV12 exists: a) Check CV12 b) Check the power supply on the IR01 micro-processor on pin 42 (4,3v) c) Check the secondary 15v voltage which must be 8v during stand-by. If it is below this, check that FP02 is not resistive.
9. Modification to improve AGC adjustment. Fault 1. Replace link JS05 with an 8.2k 5% 0.25W resistor, P/No. 41427112. The value of potentiometer PS21 should be 40k.
10. IR01 loses memory without any apparent reason. Fault 1: The 4 Mhz oscillator of IR01 continues to function even if the appliance is not working, and results in battery XR82 discharging very quickly. Fit a diode 1N4148 (DR84), on the copper side, between contacts 31 and 42 of IR01 (with anode side contact 31).
11. NOTE: The appliances manufactured now already contain these modifications.
12. Channels run through, sound whistles and there are lines if picture present.  
Fault 1: Change resistance of the 33V zener is o/c.
13. OSD fades on all the colours. Fault 1: Check or replace: CC66: 22pF, RC62: 1.5 KOhms, RC63: 1.5 KOhms. Check the video amplifier adjustment.
14. No OSD. IR01 has already been changed and does not switch to SECAM. Fault 1: Check if ok via scart. Check on IR01 pin 37: LL': 0V and BGH: 8V. Check the quartz, check the SECAM identification on pin 24: 6V and 23:8.4V. Suspect IV01.
15. DL13 is S/C. Fault 1: Suspect CL14, CL13. Check DF17, DF19. Check the 13V on the oscilloscope.

16. No PIP. Line transformer ok, only snow.

Fault 1: [TMP47C634N has been changed]. Check on tuner pin 3: 50 MVPP. Check on IF pin 3: input and 6: video S. If not, check 12V pin 11, pin 4: LL:08V, BGI: 8.3V. Suspect the IF.

17. TDA8178 heats up too much and blows. Fault 1: Check the signal at pin 1: 4VPP. If not, check CF01, CF16, TF08 and CF06. If ok, check pin 5 70VPP. If ok, check on 6: 25V, suspect DF16, DF18 and DF17.

18. Comes on for a few secs with a sudden noise then goes off etc. Fault 1: Raster deflector S/C.

19. TV goes into safety mode when first switched on. After heating up for a few mins, start up ok. Change all the semi-conductors on the power supply primary: line safety lifted but fault persists.

Fault 1: Check TV01, TV02, DV03, DV08, IG01.

20. TV starts up for a few secs with a jerky noise then stops and continues like this. Fault 1: Raster deflector is S/C.

21. On the CRT board TT33 is S/C for the second time in a month.

Fault 1: TT33 = BC557. E = 2.3V, B = 1.6V, C = ground. Suspect CT33 (2U2) and DT31, 32 (1N4148).

22. Intermittently and at start up, TP29 shorts. CP29 has been replaced.

Fault 1: Change TP29, TP19, DP19, RP51 (110K). Check if DP56 (1N4148) is leaky, RP26 changes value. Also check if bridge II38, situated below the line transformer, sparks with the ferrite. There is a power supply kit available.

23. TV01 blows after operating for 30 mins. Transistor S/C between the collector and the emitter.

Fault 1: Replace TV01, TV02, DV02, DV08 and CV01.

## Picture

1. Random coloured flash. Fault 1: Check 470K resistor between pin 4 on the IF head and pin 21 of IV01.

2. No light. Poor picture. Occasional horizontal tearing. If G2 is pushed in as far as it will go picture is better. Varies from 100 to 950V, 90 degree model, 114V on DP50.

Fault 1: Resistor between G2 and the FBT may be defective.

3. Fault 2: On line BU collector check if signal=960V peak to peak. Check the solder joints below the chassis especially the earths. Perhaps the FBT or G2/G3 pot is defective.

4. White picture and flyback line. New FBT. S2055AF replaced by S2000AF which heats up and blows after a min. Fault 1: Check earth between video amplifier board and chassis. Check if IF01 (TL082) is S/C and RP51 (110K) which cuts out.

5. Black and white picture. No RGB on 41, 42, 43 of IV01. 200V on DL11 is correct.

Fault 1: Check presence of composite video on pin 11 of II40 (TDA4453F), IF picture. Check the presence of composite video on pin 58 of IV01 (TA8659N).

6. The picture is unstable. Fault 1: Check TR17 (BC557B) and IV01 (TA8659N).

7. Wavy picture. Fault 1: Check the DL46 (9.1V zener).

8. Interference bands at the bottom of the screen. Fault 1: Check CL23.

9. The top of the picture is defective. Fault 1: DL39 (ZPD13) is defective.

10. Horizontal unstable picture. Fault 1: Check the signal on pin 38/IV01 and CL39 (10NF).

11. Streaky luminance and flyback lines. Fault 1: Check if earth is ok between video amplifier board and chassis.

12. White line in the middle of the screen. Fault 1: DL13 is open circuit.

13. Occasionally there is no light at all. Fault 1: Check IV01 (TA8659N).

14. Interference bands at the bottom of the picture. Fault 1: Check CL23.

15. There is little light. Fault 1: IV01 (TA8659) is defective. Fault 2: CT01 (10NF) is defective.

16. Little or no light. Fault 1: change TT33 (BC557) on the CRT2000S board.

17. Occasional crackling effect on the video signal. Fault 1: Check the DH02 (BZX83C5V1).

18. Crackling effect on video and echo. Fault 1: Check FOS FI45 (TSF5316).

19. The picture blows. Fault 1: Check the IF tuner (LL/BGI) IF2108).

20. Dark screen and the RL11 is open circuit. Fault 1: DL11 has a short circuit. Fault 2: CL11 has a short circuit.

21. Distorted picture (line amplitude, linearity). Fault 1: LL 26 has a short circuit.

White line, slightly tilted at the bottom of the screen. Fault 1: CF 25 is open circuit.

22. Horizontal white line at the bottom of the screen. Fault 1: CF 06 has a short. Fault 2: PF 04 is open circuit.

Fault 3: DF 04 has a short circuit.

23. Picture modulation in power function. Fault 1: DP 63 is open circuit.

24. Humming on sound and the screen is dark. The appliance goes to stand-by after 2-5 minutes.

Fault 1: TP 53 B/C has a short circuit. Fault 2: TP 53 B is open circuit. Fault 3: DP 55 has a short circuit.

25. The picture is smaller and at the bottom of the screen. Fault 1: DP 54 has a short circuit.

26. Oblique lines towards the top of the screen and there may be a demagnetization fault and the demagnetization coil is ok. The PTC has already been changed. Fault 1: Check CL23, DL39 and DL46 (9.1V).

27. The TV starts up. A white line appears at the top of the screen. System tension: voltage is approximately 58V, and the other voltages are low. Fault 1: Check TF16 (ESM740) and DF16 (BY398).

28. After changing FBT which sparks, the very high tension is ok. No light on the screen even when forcing G2 44469905.

Fault 1: Check the secondary voltages of the FBT, RL05 (114V/90 145V/110), UL1 on DL11 (+200V), UL2 on CL14 (13V), UL2A on LL16 (13V). Check the RGB start up on the CRT: DT08, 18, 28 and check if these amplifiers are powered up.

29. The picture disappears, drifts then reappears for a few fractions of a second and then drifts again. A whistling noise can be heard when the picture reappears.

30. Fault 1: Check the surface wave filter FI45 (TSF5316), the 5.1V on DH02 (ZPD5 1V), DL13 (BY397), RH04 (27K) and FI2108.
31. At switch-on, vertical centring of picture offset by 2 cm towards the top of screen. Fault 1. Check type number of IF01 - TL082/P (manufacturer's imprint ST), should be replaced with TL082/CP, P/No 256.407 (Motorola).
32. Contrast too high at minimum setting. Fault 1. Change values of following: RR41 to 6.8k, RR42 to 18k, RR43 to 8.2k, RR44 to 5.6k, RR45 to 8.2k and RR46 to 15k.
33. White line in the middle of the screen. TL 082, ESM740, PF01, CF01 have been changed but the fault persists. Fault 1: Change IG01 and check RF02.
34. No sound or picture via the tuner aerial. Functions in scart. Fault 1: Check DL13 (BY397) 13V power supply. UL2 and UL2A RH 04 (27K) O/C. RH06 (12K) is O/C.
35. In playback, especially with prerecorded cassettes the picture oscillates horizontally or is distorted like a flag in the top part of the screen.
36. Fault 1: Replace capacitor CL 44 22uF with a 4.7 uF capacitor and resistor RL 44 1.5 Kohm with a 3.3 Kohm resistor.
37. Excessive contrast and colour. Fault 1: Fit a 10kohm variable resistor in series with resistors RR44 and RR42. Adjust the resistors which have been added to obtain the level desired.
38. US and other voltages are half of their value. 3cm white band at the top of the screen. Fault 1: RL11 22Ohms o/c.
39. Horizontal bars on picture during operation. This is accompanied by an audible signal distorting the sound.
40. Fault 1: Check that 13V and 200V from the FBT are ok and well filtered. In the IF module check TDA4453F.
41. Picture width varies with picture content. Fault 1: Check the 200V and 15V voltage. Check signal on cathode DL39 (14VPP-H). Check CL11, DL39, DL40, DL41.
42. Picture with red as the predominant colour and flyback line apparent on the screen. Fault 1: Check the G2. Check the RGB signal. Check the raster circuit and the FBT circuit.
43. After changing FBT twice, light varies when you turn focus pot; FBT ok, after a few moments light decreases at switch on, light picture with G2 set to minimum then darkens.
44. Fault 1: Check RGB signals at IV01 on pins 41, 42, 43. Check control signal on 39. Check quartz and video amplifier board.
45. No sound, no picture, slight whistling. EHT 300V is ok, low secondary voltage, FBT is ok. Fault 1: Check the signal on TL19 on base 12 Vpp, on collector 960 Vpp is correct. Check DL13, CL14, RL11, CL11. Check IG01.
46. White screen, no sound like video. IF tuner and microprocessors have already been changed. Voltage on pins 6 and 7 of the uP are ok. No video signal on point 3 of the tuner. Programming of the channels is ok. Fault 1: Check on pin 4: 33V, on 8: the CLOCK. Check on IR01 on pin 6: TV: 0V, EXT: 4.8V on pin 7: TV: 4.2V and AV: 0V.
47. No picture. Fault 1: TT33 on the tube support board is s/c. Fault 2: Check ICAfter replacing the FBT, the vertical scanning line is at the bottom of the screen and the CTV blows. 12 (MC14053BCP).
48. After replacing the FBT, the vertical scanning line is at the bottom of the screen and the CTV blows. Fault 1: TL082CP 276 TX1047. Check UL1: 13V, check CL14 and UL2: 145V. Check CL11 and check DF16, TF16. Check LL19.
49. Very white lines at the top of the screen. Line transistor S2055, ESM 740, DF16 been changed. Fault 1: Check if DL39 (ZPD13) is defective.
50. Poor switch off of picture tube. Fault 1: Check CT05, CT02, DT04 and DT03. Suspect video amplifier board.
51. The channel nos run through, no sound or picture but it works in video. Fault 1: Check DL13 BY397 (13V power supply). Check UL2 and UL2A (RH04 o/c). Check if RH06 is o/c (12K).
52. Sound but no picture. White screen with flyback line. Fault 1: Check signal on IF01 pin 7: 1.7Vpp. If ok check on RF16: 116Vpp ok. Check video amplifier board. Check G2 and TF16.
53. Dark screen, sound OK. Nothing in scart nor in RGB, power supply, 200V, G2, line transformer, video are all correct. Fault 1: Check RL1 (O/C), DL11/CL11 S/C. Check TF16 S/C.
54. Picture slowly darkens. The cathode voltages are ok. Fault 1: RT01 on the CRT module is O/C (while measuring the G2 at the connection of the CRT, the latter goes off straight away).
55. Intermittently blue picture with traces of blue flyback lines. Signal OK on blue input of video amplifier board. Fault 1: [On video amplifier board, three blue track transistors already replaced]. Replace CC66 by 22pF, RC62 and RC63 by 1K5. If same, wire 1M at point 22 of IV02 and cable terminal 4 (STD input) of IF 2108 module.
56. Moire effect picture according to sound frequencies, on some frequencies the picture is ok for a fraction of a second. Melf RP54 is not present on the CTV chassis. Fault 1: Check Q156, Q154, Q155 are ok. Suspect module IF2108.
57. TV functions, thermal tube noise on the screen but no picture. RCU does not work. Dark display. TMP47C634 has been changed, a channel is displayed, programme nos run through and stops on AV, no sound. Fault 1: Check 15V on DP65 with the oscilloscope. Check 5V on emitter of TR82. Suspect CR83, DR83, DR78, XR81.
58. After changing power supply kit and line transformer, picture is narrower. When making adjustments, the picture is wavy at the sides. Picture remains the same even when the power supply voltage is adjusted. Fault 1: Check the signal on the base line BU: 12VPP and collector: 960 VPP distorted. Check the driver signal. Suspect LL19 and check 13V on DL13 with an oscilloscope. Suspect IF01.
59. Picture runs through, impossible to stabilise. Fault 1: Check CF04, DF04. Check on IF01 pin 6 and 5: 8.1V. Check RF01 and RF02. Suspect IF01.
60. White screen in scart, picture ok via tuner, white screen and no sound. It displays the programmes and the sound level etc, AN microprocessor and video amplifier have been changed but problem persists. Fault 1: Check video signal on pin 11 of II40. If not, check on 13: 11V, on 2 LL': 2V and BG I: 6.8V. Suspect IC.



61. Very dark picture.

Fault 1: Check the G2 voltage. If ok, check RGB signal on IV01 pin 41, 42, 43: 4Vpp. Suspect IV01.

62. Snow on the screen, scart ok. Voltages 5V, 12V, 33V ok, on 7 and 8 tuner CLK SDA, signal incorrect.

Fault 1: [Tuner and microprocessor changed but fault persists]. Check the DATA and CLOCK signals II06 pin 14 and 15, on 3: 5.1V. If not, suspect DH02. If ok, check the signal. If ok, check on II40 at point 11: video signal. If not, suspect II40.

63. Too bright with flyback lines. Fault 1: Check TT33 BC557C on CRT.

64. Picture with predominant yellow/green.

Fault 1: Add 15K between pin 20 of IV01 and the ground. Replace CL47 by 330pF 207TX3369.

65. No luminance, white is black.

Fault 1: [IV01 has been replaced]. Check variation on pin 48 of IV01 in brightness 2.3V to 4V. If ok, check contrast on pin 59, if poor suspect IR01. If ok, check video amplifier board, 200V and G2.

66. Hum on sound and dark screen. Goes into standby. Fault 1: DP 55 is S/C.

67. Snowy picture. No reception in channel search. Fault 1: Check 33V on DH04, 200V on RH04 and RH04.

68. 5cm wide band at top of the screen. No picture or sound with a lack of width. Fault 1: Check IF01, CF10 and RF02. Check voltages 200V and 13V (CL14 and CL11). Check the signals on IF01.

69. White screen with no snow. Normal sound. OSD functions. Same fault via scart. Ok in RGB. On pin 60 and 62 signals ok. On pin 35 8V pulse during 5 micro seconds and 4V pulse during the remaining 5 micro seconds.

Fault 1: [TA 8659 has been replaced]. Check IR 01 pin 6: TV0V: EXT: 4.8 Pin 7: TV4.2 AV2 0V.

\*RF 02 IF01 Pin 6 in signal pin 12.2 of IV01 Pin 31.

70. Occasionally small horizontal black line at the top of the screen and line transformer whistles slightly.

Fault 1: TL19-DL39 has already been changed. When the TL19 is changed, also change the output amplifier TL082 (IF01) to a Motorola.

71. After some time, the picture cuts out then returns immediately, standby light weakens but stays on, then CTV has a frizzy picture. Fault 1: [New line transformer, power supply kit IF01, TL19 have been replaced. Replace RP26 (1K2/0.25W); RV79:(39K). Check 16 (15R/2W).

72. Picture for 30 secs then white screen. Fault 1: Check the line signals. If ok, replace the line transformer, check 200V, 13V or check the video amplifier circuit.

73. White stripe at the top of the screen. It is 1cm high and not as wide as the screen. No picture.

Fault 1: Complete power supply kit 925TX1281 must be replaced then check the power supply secondary, especially the 13V regulation and associated components.

Fault 2: Check U200V, suspect CL11 and RF01. Check IF01 and zener DF04 and CF04.

74. Picture and sound hang up. Fault 1: This may occur with sounds of very low frequencies. To remedy this remove resistor RP54 (680kohm or 820kohm).

75. Black bands on picture and very loud whistling in the sound.

Fault 1: [IF module and tuner have been changed]. If there is a problem in the sound, check the 28V on DP63 with the oscilloscope. Suspect the CP64 and quartz. Audio noise at start up: replace RA03 and RA23 by 15kohm, RA13:33 kohm, CA01:22MF, add CA15:10MF, 25V between the earth and junction RA13 and RA15.

At switch on, the tube flashes on the loudspeaker and stops. Negative picture.

Fault 1: Check RA03 and RA23: 15K, RA13: 33K, CA01: 22uF/25V. Add 10uF/25V between the ground and junction RA13/RA15. Check the standard of the channels.

76. Line at the bottom of the screen then goes into standby.

Fault 1: [CF25 and TF16 have been changed]. Check IF01 pin 8: 12V. If not, check DL13 and LL13. If ok, check pin 3: 2VPP, pin 7: 1.7VPP. If not, suspect IF01, RF01, RF02. Check 200V on DL11.

77. White screen, flyback line. Fault 1: Check G2 voltage, if not, suspect line transformer.

Fault 2: TT33 on tube board BC558 S/C.

78. Excessive contrast at minimum level.

Fault 1: Change RR41 to 6.8k, RR42 to 18k, RR43 to 8.2k, RR44 to 5.6k, RR45 to 8.2k and RR46 to 15k.

79. Vertical stripes. Fault 1: Check CV01 (470uF).

80. Black picture like in AV at switch on. OSD and channel display function. In AV picture ok but no reception via the aerial. No snow. Fault 1: Check IF2108 pin 9: TV 0V; AV: 11.5V. If ok, suspect the IF module. In AV check on IR01 pin 6: TV 0V; EXT 4.8V, on pin 7 TV: 4.2V; AV 0V.

81. Picture with very poor contrast. Fault 1: [NB: TA8659CN has been changed]. Check the G2 voltage. If ok, suspect line transformer. Check pin 2: 0V to 4.3V.

82. When the focus pot is varied the brightness varies after a few minutes, the picture turns dark.

Fault 1: [Line transformer has been changed]. Check G2 voltage: 200V on DL11. If ok, check the video amplifier board. Suspect the tube holder.

83. Red picture with flyback lines. Nothing defective on the tube board.

Fault 1: Remove the red track. If the fault persists, suspect the discharger of the tube holder.

84. Picture becomes dark. Fault 1: Change resistor RT01 (1.2k) which is o/c on the base board.

85. At start up crackling in the sound and arcing on the picture for a few mins then ok. Fault 1: Check 13V on CL14 with the oscilloscope. If ok suspect the line transformer or check via scart. Suspect the IF.

86. Snow. Fault 1: RH04 (27K) is O/C.

87. Reddish picture. Flyback lines. Fault 1: Replace RT06 (22K).

88. Smearing in high channels. Fault 1: Defective tuner.

89. Occasionally sound and video drift on channel 64. Operation is good on the other channels.

Fault 1: Check the varicap voltage. If ok, suspect the IF module.

90. No contrast adjustment. Fault 1: [TA8259CN changed]. Command has effect on IC. Check contrast on pin 59 of IV01 which varies from 2.7V to 3.5V. If defective, suspect IR01.
91. White horizontal line at top of screen. Rest of screen is black. No 200V UL1.  
Fault 1: Check safety resistor RL11 and diode DL11.
92. Frame fault. Black screen. No 6V on collector of TF25. Fault 1: Zener DF04 (6.8V) leaky near frame pots.
93. Snow on picture. No HF. 30V varicap ok on pin 4 of tuner. 5V ok on pin 6 of tuner. 12V ok on pin 2 of tuner.
94. Fault 1: Change IC SDA3202/3 (part no. 276TX4819 = U6202) in tuner or tuner MTP2015 itself (part no. 503TX0367)
95. 3cm white line at top of picture. No sound and no video, not even in scart. Green LED on. U system tension is low at approx. 60V. No 200V UL1.  
Fault 1: Check RL11 and pin 9 of FBT for O/C. If they are, change FBT (ref. 534TX0257).
96. Crackling in picture and sound, even in VHF. No 33V varicap on pin 4 of tuner.  
Fault 1: Change RH04 (27K) to a resistor (1W) on left of frame thyristor.
97. Picture with flyback line on one colour. Fault 1: One resistor RT06, RT22 or RT26 O/C on tube board.
98. One colour is weak. Fault 1: On tube board check RT06 for red colour, RT16 for green and RT26 for blue. Change defective resistors to a 1W.
99. Black screen. No RC. Line transformer ok. No I2C bus. Fault 1: Diode DH02 (5.1V) S/C.
100. No picture at switch on. Picture appears when changing channel. Fault 1: Check voltages. Check driver signal on IV01 pin 31: 10Vpp and pin 39: 3.7Vpp. Check 5V on pin 42 of IR01. Suspect XR82.
101. No picture, black screen. Fault 1: RI15 (10R) O/C. Disassemble IF module, remove ground solder joint where bridge JI12 is situated since it touches intermittently and grounds the 12V.
102. Blackish bar after whites. Fault 1: RT02 (10R) O/C on CRT ground connection. This resistor is situated on CRT video board.
103. Standby light remains on at switch on. No picture, no sound, no function from RC or control panel. Slight noise from PSU as if TV trying to switch on.  
Fault 1: Check TL19 on base (12Vpp) and C: 960Vpp. If signal cuts out, suspect line transformer and TL19.
104. Picture and sound distorted as if there is a hum in the PSU. Fault 1: RH04 O/C.
105. White screen, no picture. Sound ok on all channels. Same via scart. RGB signals ok on tube. Perhaps power supply problem on IF unit. Fault 1: Check on DT08, DT18, DT28, S RGB 72Vpp. Check 200V on RT05 on tube board. Suspect line transformer and CRT board.
106. White picture, flyback line and too bright. Fault 1: [Line BU overheats]. Check 12Vpp on base and 960Vpp on collector of TL19. Check power supply on oscilloscope at pin 3 of line transformer. If ok, suspect line transformer.
107. No picture. Line transformer ok.  
Fault 1: [RT01 (1K2) changed but fault persists]. G2 is approx 0V. Replace CT01 (10nF/3000V) which is leaky.