

Published by:
Service Department BG Audio

SERVICE NEWSLETTER

09.01 TYPENUMBER(S): **AS440, AS445, AS450, AS455, AS540, AS545, AS550, AS640, AS641, AS642, AS645, AS650, AS655, AZ6820, AZ6821, AZ6822, AZ6823, AZ6825, AZ6827, AZ6830, AZ6831, AZ6832, AZ6833, AZ6834, AZ6835, AZ6836, AZ6839, AZ6840, AZ6841, AZ6843, AZ6844, AZ6845, AZ6846, AZ6847, AZ6848, AZ6850, AZ8040, CD60, CD70, CD80, CD91, CD163, CD165, CD410, CD690/2x, CD692/2x, CD710, CD720, CD730, CD732, CD733, CD740, CD750, CD910, CD911, CD920, CD921, CDC263, CDC265, CDC745, CDC751, CDC794, CDC796, CDC915, CDC916, CDC925, CDC926, CDC935, CDC936, CS1600, CS2600, FW14, FW15, FW20, FW21, FW30, FW31, FW36, FW40, FW41, FW54, FW56, FW66, FW70, FW76, FW80**

INFORMATION : Additional to Newsletter issue 58 (95-04-07) concerning CDM12.1 and CDM12.3 modules: objective lens cleaning.
The cleaning solvent "Kodak lens cleaner CAT 176 71 36" is available in most photoshops.
ALCOHOL MAY NOT BE USED for plastic lenses.

REMARKS :

09.02 TYPENUMBER(S): **AW7560**

INFORMATION : **Service Manual, Tape Deck partslist**
The type number of the motor is changed to M9T90U24-T.
Service code is 4822 361 10888.

REMARKS : Design changed since production start.

09.03 TYPENUMBER(S): **AW7760**

INFORMATION : **Service Manual, Electrical partslist**
L4 of AW7760/11 is changed to fixed inductor 0.47µH.
Service code is 4822 157 10686.

REMARKS : Design changed since production start.

09.04 TYPENUMBER(S): **AZ1000**

INFORMATION : **Service Manual, Exploded View diagram**

The Magnet (4822 526 10659) is not drawn on the exploded view diagram. It is located under item 23 4822 401 11641, Clamper.

REMARKS :

09.05 TYPENUMBER(S): **AZ1307, AZ1308, AZ1407, AZ1508**

INFORMATION : **Service Manual, Recorder Module, Electrical partslist**

2715 and 2722 are changed from 22nF to 33nF to improve ALC distortion at strong signal.

2733 is changed from Tubular type to Mylar capacitor to improve high temperature characteristic of bias modulation.

2732 is changed from 3.3nF to 4.7nF to increase the bias oscillation level.

item	Service code	Description
2715	4822 126 13174	Cer Tub. 33nF 30% 50V
2722	4822 126 13174	Cer Tub. 33nF 30% 50V
2732	4822 126 11714	Cer Tub. 4.7nF 20% 50V
2733	4822 121 43144	Cap Poly 22nF 10% 50V

REMARKS : Modifications are implemented in production from week 9638 onwards.

09.06 TYPENUMBER(S): **AZ2600, AZ2605, AZ2615**

INFORMATION : **Service Manual, Tape Board, Electrical partslist**

2721 is changed from Tubular type to Mylar capacitor to improve high temperature characteristic of bias modulation.

2722 is changed from 3.3nF to 4.7nF to increase the bias oscillation level.

item	Service code	Description
2721	4822 121 43144	Cap Poly 22nF 10% 50V
2722	4822 126 11714	Cer Tub. 4.7nF 20% 50V

REMARKS : Modifications are implemented in production from week 9638 onwards.

09.07 TYPENUMBER(S): **AZ2805, AZ2808**

INFORMATION : **Service Manual, Recorder Module, Electrical partslist**
2721 is changed from Tubular type to Mylar capacitor to improve high temperature characteristic of bias modulation.
2722 is changed from 3.3nF to 4.7nF to increase the bias oscillation level.

item	Service code	Description
2721	4822 121 43144	Cap Poly 22nF 10% 50V
2722	4822 126 11714	Cer Tub. 4.7nF 20% 50V

REMARKS : Modifications are implemented in production from week 9638 onwards.

09.08 TYPENUMBER(S): **AZ2805, AZ2808**

SYMPTOM : The CD drawer does not open or close.

CURE : The ECO Short Loader is out of position at the rear fixing slot. This fault might be caused when the set has been dropped.

Short term and service solution:

Add brackets to the rib at both sides of the ECO Short Loader Chassis (item 206).

The parts are available via following service codes:

4822 420 10641 Bracket
4822 502 11473 Screw M3x8
4822 505 10758 Nut M3

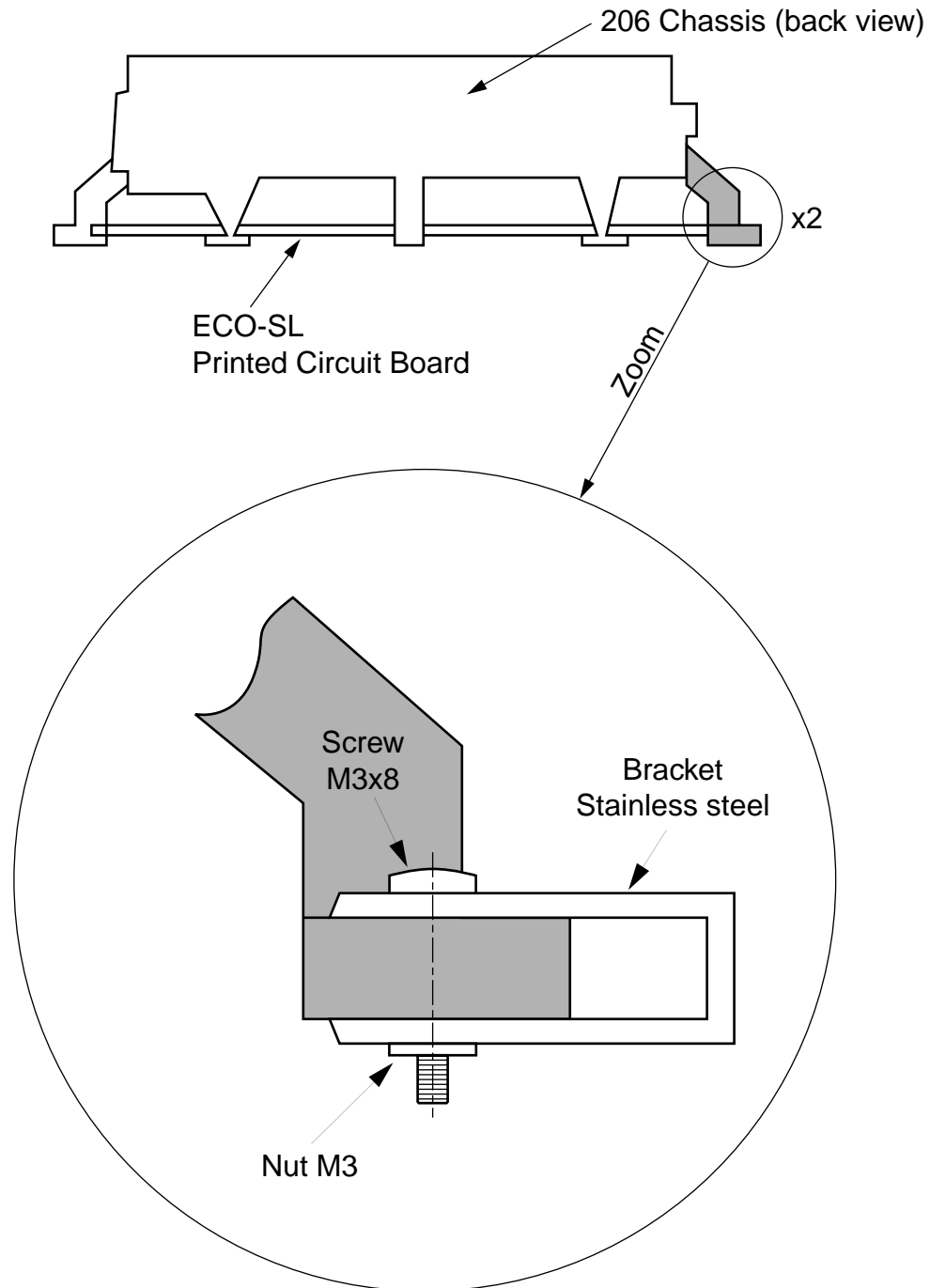
Mount the bracket with screw and nut as shown in the drawing on next page.

Long term solution:

Ribs will be added on the rear cabinet to strengthen the bracket for holding the ECO Short Loader.

REMARKS : It is advised to add the brackets in every set, brought in for repair, with production stamp before week 9642.
New Rear Cabinet will be implemented in production from week 9645 onwards.

MOUNTING OF BRACKET



09.09 TYPENUMBER(S): AZ3805, AZ3808

INFORMATION : **Service Manual, MTF Module, Electrical partslist**
The recording bias oscillation level is too low.
Change the capacitor 2732 from 3.3nF to 4.7nF (4822 126 11714).

REMARKS : Modifications are implemented in production from week 9638 onwards.

09.10 TYPENUMBER(S): AZ6820, AZ6821, AZ6822, AZ6823, AZ6825, AZ6827, AZ6830, AZ6831, AZ6832, AZ6833, AZ6834, AZ6835, AZ6836, AZ6837, AZ6839, AZ6840, AZ6841, AZ6843, AZ6844, AZ6845, AZ6846, AZ6847, AZ6848, AZ6850, AZ6856, AZ6858

INFORMATION : Above mentioned sets use CD mechanism CDM12.3B (4822 691 30335) or CDM12.3BL (4822 691 30359). The CDM might be exchanged because the guide block (linear toothed bar) is out of position. It has too much play.

REMARKS : Guide block has been modified and the new guide block has been introduced from production week 9611 onwards.
In the beginning, the CDM with a modified guide block can only be recognized from the week code printed on the label stucked on the CDM. Later on, the colour of the guide block is changed from black into white. Only CDM12.3 marked 9611 and higher should be applied.

09.11 TYPENUMBER(S): AZ6830, AZ6831, AZ6832, AZ6833, AZ6839, AZ6840, AZ6841

INFORMATION : The Battery Door is available with service code number 4822 444 60911.

REMARKS :

09.12 TYPENUMBER(S): AZ8050, AZ8051, AZ8052, AZ8055, AZ8056, AZ8057, AZ8061, AZ8068, AZ8150, AZ8262, AZ8267, AZ8268

INFORMATION : The Recording Lever (pos. 506) is now available with service code number 4822 402 10651.

REMARKS :

09.13 TYPENUMBER(S): **AZ8050, AZ8051, AZ8052, AZ8055, AZ8056, AZ8057, AZ8061, AZ8068, AZ8150, AZ8262, AZ8267, AZ8289**

INFORMATION : During production, the Clamper Disc Assembly is changed. Followings are the service codes of the two Clamper Disc assemblies.

Original Clamper Disc Assembly (Soft disc):

Item 407 4822 532 51871 Pressure Ring Assy

Item 411 4822 535 60096 Disc

New Clamper Disc Assembly (hard disc):

Item 407 4822 532 12412 Pressure Ring Assy

Item 411 4822 466 93464 Disc

REMARKS : Both Clamper Disc Assemblies will be used in production.
NOTE: THIS INFORMATION IS NOT VALID FOR /..D VERSIONS.

09.14 TYPENUMBER(S): **AZ8349**

INFORMATION : **Service Manual, Mechanical partslist**

The Cassette Door is assembled of two parts:

Item 4 Cassette Door Assy (R):

4822 256 10318 Cassette Door Holder (R)

4822 443 64604 Cassette Door Cover (R)

Item 5 Cassette Door Assy (L):

4822 256 10317 Cassette Door Holder (L)

4822 443 64603 Cassette Door Cover (L)

REMARKS :

09.15 TYPENUMBER(S): **AZ9055**

INFORMATION : **Service Manual, Mechanical partslist – Cabinet**

Following parts are added to the service partslist:

Item 2 4822 454 13181 Badge (Philips)

2 4822 454 13179 Badge (Magnavox)

8 4822 442 00306 EQ Cover

22 4822 529 10317 Damper for Cass. Door

22 4822 466 93504 Damper for CD Door (for all versions)

34 4822 410 10429 EQ Knob (A) - 100 Hz

34 4822 410 10431 EQ Knob (B) - 1 kHz

34 4822 410 10432 EQ Knob (C) - 10 kHz

Electrical partslist:

IC551 PT2249A can be replaced by TC9149P (4822 209 61529).

REMARKS :

09.16 TYPENUMBER(S): CDC771V

INFORMATION : Service manual

The published service code number of the flat cable (WS03) is not correct. The service code number should read 4822 320 11791.

REMARKS :

09.17 TYPENUMBER(S): FR731, FR751

SYMPTOM : Tuner does not receive any radio stations.

CURE : On the tuner board, the crystal X101 does not operate because the loading capacitors C150 and C151 are not matched with the crystal and IC103.
Change C150 and C151 from 33pF to 18pF (4822 122 31061).

REMARKS : Modification is implemented in production from week 9635 onwards.

09.18 TYPENUMBER(S): FR731, FR732, FR751, FR752

INFORMATION : The Posistor Assembly (CN302) which is loose mounted on the Mains Transformer is now available with service code number 4822 117 12656.

REMARKS :

09.19 TYPENUMBER(S): FW11

INFORMATION : Service Manual, Mechanical partslist

The CD Clamper assembly consists following parts:
Item 204 4822 462 72062 Magnet Holder Cover
206 4822 256 02249 Magnet Holder
241 4822 526 10667 Magnet Ring Plate

REMARKS :

09.20 TYPENUMBER(S): ND7500

INFORMATION : Version ND7500/46 was introduced since December 1993.
For repair information please refer to service manual ND7500/48/59 (4822 725 24549) except the Cassette Door (L), which is available with service code number 4822 444 60944.

REMARKS :

09.21 TYPENUMBER(S): **ND7600, RD7060**

INFORMATION : **Service Manual, Mechanical partslist**

The Cassette Door is assembled of two parts:

Item 4 Cassette Door Assy (R):

4822 256 10318 Cassette Door Holder (R)

4822 443 64604 Cassette Door Cover (R)

Item 5 Cassette Door Assy (L):

4822 256 10317 Cassette Door Holder (L)

4822 443 64603 Cassette Door Cover (L)

REMARKS :

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PRODUCT SURVEY

09.22 TYPENUMBER(S): **AE1595**

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 303 14019 Aerial
4822 443 10344 Battery Cover
4822 101 11476 Volume Control
4822 267 31921 Earphone Jack
4822 240 10145 Speaker 2.25" 8 ohm

REMARKS :

09.23 TYPENUMBER(S): **AE1695**

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 303 14021 Aerial
4822 443 10345 Battery Cover
4822 101 21248 Volume Control
4822 267 31921 Earphone Jack
4822 240 10146 Speaker 2.25" 4 ohm

REMARKS :

09.24 TYPENUMBER(S): **AE2140, AE2145**

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 303 14018 Aerial
4822 443 10326 Battery Cover
4822 101 11458 Volume Control
4822 146 10505 Transformer 120V
4822 146 10504 Transformer 230V
4822 146 10515 Transformer 120/230V
4822 498 10586 Handle
4822 240 10142 Speaker R102 4 ohm
4822 276 13763 Push Switch (POWER)
4822 267 31468 Earphone Jack
4822 209 62192 IC TA7368P
4822 267 30738 Mains Socket (VDE)
4822 265 20706 Mains Socket (UL)
4822 277 21794 Voltage Selector

REMARKS :

09.25 TYPENUMBER(S): AE6545

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 443 10319 Battery Cover
4822 101 11457 Volume Control
4822 267 31862 Headphone Jack
4822 242 10423 Headphone AY3655 w/winder

REMARKS :

09.26 TYPENUMBER(S): AE6550

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 443 10321 Battery Cover
4822 101 11457 Volume Control
4822 267 31862 Headphone Jack
4822 240 10141 Speaker 40mm 7 ohm
4822 242 10423 Headphone AY3655 w/winder

REMARKS :

09.27 TYPENUMBER(S): AE6745

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 423 41275 Battery Cover
4822 102 10472 Volume control
4822 466 10677 Zebra connector
4822 410 10534 Rubber Keypad
4822 267 31863 Headphone Jack
4822 135 00051 LCD Display
4822 242 10423 Headphone AY3655 w/window

REMARKS :

09.28 TYPENUMBER(S): AJ3140

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 423 41163 Battery Cover
4822 101 21256 Volume Control
4822 146 10451 Transformer 120V
4822 146 10452 Transformer 120V White
4822 146 10448 Transformer 230V
4822 146 31456 Transformer 120/230V
4822 146 10514 Transformer 240V BS
4822 146 10679 Transformer 240V SAA White
4822 410 10398 Knob-Clock Function
4822 410 10417 Knob-Clock Function White
4822 209 32851 IC LM8562
4822 130 90817 Display LTC637D1G
4822 276 13577 Tact Switch
4822 240 10118 Speaker 2.5" 8 ohm
4822 272 10225 Voltage Selector

REMARKS :

09.29 TYPENUMBER(S): **AQ6340**

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 443 10279 Battery Cover
4822 492 11097 Cassette Door Spring
4822 443 10278 cassette Door
4822 100 20868 Volume Control
4822 450 10111 Lens-Cassette
4822 458 10518 Grille-speaker
4822 410 10456 Knob-Voice Act.
4822 134 10031 Knob-BNS
4822 277 11526 Contact-Switch
4822 240 10151 Speaker 36mm 8 ohm
4822 242 10366 Mic KUB2823
4822 265 10504 Phone Jack (Green)
4822 265 10505 Mic Jack (Black)
4822 265 10506 DC Jack
4822 276 13726 Switch-Push 4P2T
4822 277 11527 Switch-Slide 2P3T
4822 277 11528 Switch-Slide 1P2T
4822 349 11012 Counter
4822 358 10165 Counter Belt
4822 691 10496 Tape Deck
4822 249 10525 R/P Head
4822 249 10524 E. head
4822 361 10837 DC Motor

REMARKS :

09.30 TYPENUMBER(S): **AQ6463**

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 443 10383 Battery Cover
4822 492 11196 Cassette Door Spring
4822 443 10384 Cassette Door
4822 101 11459 Volume Control
4822 443 10385 Door Insert
4822 450 10165 Lens-cassette
4822 401 11629 Belt Clip
4822 410 10601 Knob-DBB
4822 265 10506 DC Jack
4822 267 31861 Headphone Jack
4822 277 11579 Switch-Slide DBB
4822 242 10441 Headphone AY3660

REMARKS :

09.31 TYPENUMBER(S): AQ6547, AQ6567

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 443 10378 Battery Cover
4822 492 42743 Cassette Door Spring
4822 443 11382 Cassette Door (PHI)
4822 443 10379 Cassette Door (MVX)
4822 101 11429 Volume Control
4822 401 11627 Belt Clip
4822 442 00445 Cassette Door Cover
4822 450 10164 Cassette Lens
4822 462 10769 Rubber Keypad
4822 267 31862 Headphone Jack
4822 265 10662 DC Jack
4822 691 10516 Tape Deck MCT-7

REMARKS :

09.32 TYPENUMBER(S): AQ6560

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 443 10308 Battery Cover
4822 492 42743 Cassette door spring
4822 459 04171 Front Cabinet Assy (PHI)
4822 449 80074 Front Cabinet Assy (MVX)
4822 101 11429 Volume Control
4822 401 11627 Belt Clip
4822 492 11172 Cassette Spring Plate
4822 267 31862 Headphone Jack
4822 691 10516 Tape deck
Following parts are for blue colour versions only:
4822 443 10452 Battery Cover
4822 443 10465 Cassette Door (PHI)
4822 443 10453 Cassette Door (MVX)
4822 401 11649 Belt Clip
4822 492 11336 Cassette door Spring

REMARKS :

09.33 TYPENUMBER(S): **AQ6562**

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 443 10328 Battery Cover
4822 492 11186 Cassette Door Spring
4822 443 10327 Cassette Door
4822 101 11459 Volume Control
4822 401 11629 Belt Clip
4822 381 11743 Dial Lens
4822 410 10554 Knob-DBB
4822 209 13626 IC MM1104CF
4822 265 10621 DC Jack
4822 267 31861 Headphone Jack
4822 277 11566 Switch-Slide DBB
4822 242 10441 Headphone AY3660
4822 691 10528 Tape Deck

REMARKS :

09.34 TYPENUMBER(S): **AQ6563**

INFORMATION : ADDITIONAL INFORMATION TO SERVICE INFORMATION A96-550
4822 443 10328 Battery Cover
4822 492 11186 Cassette Door Spring
4822 443 10381 Cassette Door
4822 101 11459 Volume Control
4822 401 11629 Belt Clip
4822 381 11756 Dial Lens
4822 458 10545 Grille-Speaker
4822 410 10554 Knob-DBB
4822 209 13626 IC MM1104CF
4822 265 10621 DC Jack
4822 267 31861 Headphone Jack
4822 277 11566 Switch-Slide DBB
4822 240 10151 Speaker 36mm 8 ohm
4822 242 10441 Headphone AY3660
4822 691 10528 Tape Deck

REMARKS :

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08.01 TYPENUMBER(S): **AE3350**

SYMPTOM : IC1 is defective.

CURE : IC1 is probably damaged by wrong polarity while using the AC/DC adaptor. IC1 CXA1019S is available via service code 4822 209 15034. Following text is added into IFU (via addendum) as a temporary solution.

You can connect the set to the mains using a mains adaptor.

- Make sure that the local voltage corresponds to the voltage of the 3V adaptor.

Important!

- The 2.1 mm centre pin of the 5.5mm adaptor plug must be set to minus pole, as indicated under the 3V DC IN socket.
- Connect the mains adaptor to the 3V DC socket of the set and plug the mains adaptor into a wall socket.
The battery supply will now be disconnected.
- Always disconnect the mains adaptor if you are not using it.

Note: Remove the batteries if you intend to operate the set permanently on the mains supply.

For long term, protection circuitry will be added to prevent IC1 damage caused by wrong polarity supply.

REMARKS : Addendum had been added for sets produced from week9634 onwards.

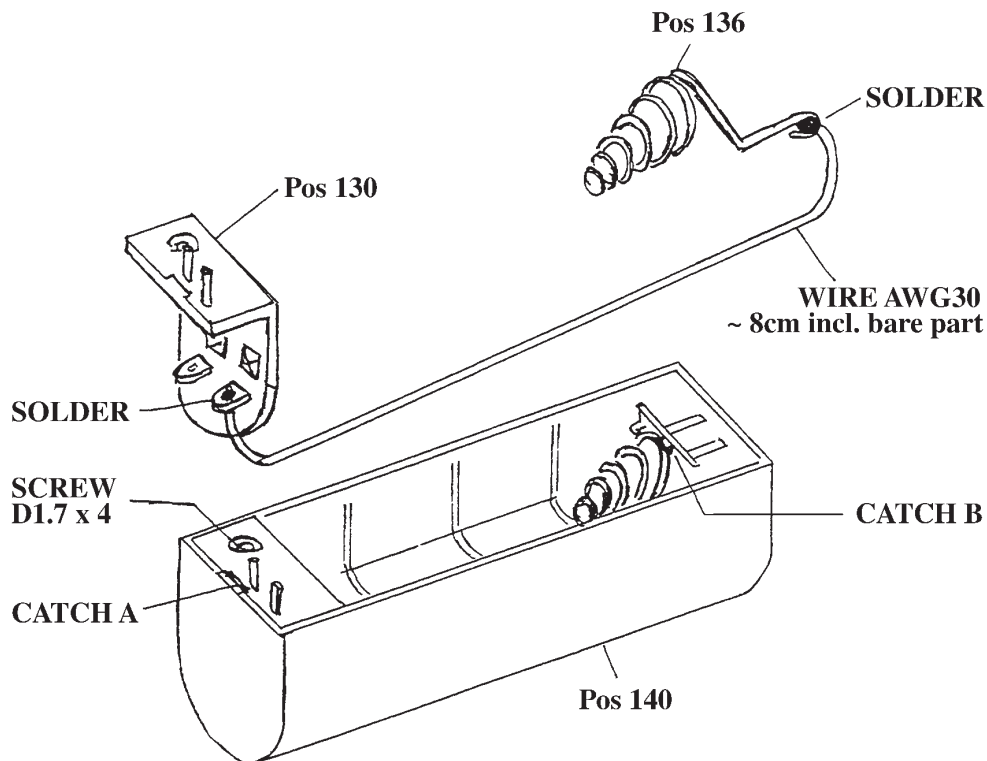
08.02 TYPENUMBER(S): **AQ6613, AQ6619**

INFORMATION : The battery holder pos. 191 service code: 4822 256 60325 in PCS does not come a wire soldered between the spring connection pos.136 and one of the contacts pos.123. For this reason it becomes necessary that during replacement of this part, the technician must solder this additional piece of wire. Material: Any Black wire of thickness AWG30 cut to length of 8cm including the bare portion at both ends.

Steps:

1. Unscrew D1.7 x 4 and remove pos.130 by uncatching at catch A
2. Remove pos. 136 by uncatching at catch B
3. Solder the wire as indicated in picture 1
4. Reassemble pos. 130 and pos. 136 into the Battery holder pos.140
5. Dress the wire such that it does not obstruct the battery insertion (into the small groove provided and if necessary hold it down with a small tape).

See next drawing:



REMARKS :

08.03 TYPENUMBER(S): **AZ1101, AZ1102**

SYMPTOM : CD SEARCH has no function and replaced by SKIP function.

CURE : When we start the CD and press PLAY button before reading the TOC, there will be possible that the CD SEARCH function will be deleted and be replaced by SKIP function even when the SEARCH button was keep pressing. When the CD is restart, symptom may not be reproduced.

REMARKS :

08.04 TYPENUMBER(S): **AZ7260, AZ7261, AZ7262, AZ7263, AZ7264, AZ7265, AZ7266, AZ7267, AZ7268, AZ7360, AZ7361, AZ7362, AZ7363, AZ7364, AZ7365, AZ7366, AZ7367, AZ7461, AZ7464, AZ7465, AZ7466, AZ7467**

SYMPTOM : Set skips tracks/slide motor does not turn in PLAY-mode.
The phenomenon mainly occurs at low temperatures (< -10 C).

CURE : Reason: Conceptual failure of the set. In PLAY-mode the gain of the slide servo control loop is too low. The gain depends on a software parameter of the CD7 (set by the microprocessor), the gain of the servo driver, temperature behaviour of slide motor and friction of gear. In worst case (low gain of servo driver / low impedance of slide motor) the set can already be inoperative at ambient temperature !! During production only selected servo driver / CD-drive combinations are in use. In addition the low pass filter of the slide motor control loop has been redesigned.
As long term solution the software will be changed.
Microprocessors with software versions $\leq v70$ already cover all tolerance problems.

Note: Software version numbers are counted downwards.
That means the lower the number, the newer the software. The software version is displayed when entering the service test program.

Cure: Because selection can not be done in the service field and upgrading of the microprocessor is rather expensive following service strategy has been worked out:

In case of defective servo driver or defective CD-drive and software version $>v70$

- replace defective part
- solder resistor 12Ω in parallel to slide motor (simulates low temperature)
- enter PLAY-mode and check slide movement (watch tooth wheel of slide motor)
- if slide does not move or still skips tracks modify low pass filter (if not already carried out)
 - pos. 3817 $\rightarrow 470\Omega$ (4822 051 20471)
 - pos. 3818 $\rightarrow 0\Omega$ (4822 051 20008)
 - pos. 2817 $\rightarrow 47nF$ (4822 122 32542)
 - pos. 2818 $\rightarrow 47nF$ (4822 122 32542)
- repeat PLAY-test
- if set is still inoperative upgrade microprocessor (see table below)
- desolder resistor 12Ω

TYPENUMBER	FACTORY CHANGE CODE	UPGRADE MICROPROCESSOR TO
AZ7263, AZ7264	KT01 onwards	TMP47C823F-AZ7264.2 or TMP47P823VF (OTP) software version: v70 service code: 4822 209 13566 ¹⁾
AZ7260, AZ7261, AZ7262, AZ7265, AZ7266, AZ7267, AZ7268 ²⁾	KT01 only (printed board 1)	TMP47C823F-AZ7264.2 or TMP47P823VF (OTP) software version: v70 service code: 4822 209 13566 ²⁾
	KT02 onwards (printed board 2)	TMP47C422F-AZ7262.2 software version: v70 service code: 4822 209 15023
AZ7360, AZ7361, AZ7362, AZ7363, AZ7364, AZ7365, AZ7366, AZ7367	KT01 onwards	TMP87CK20AF-AZ7466.3 software version: v69 service code: 4822 209 13133
AZ7461, AZ7464, AZ7465, AZ7466, AZ7467	KT01 onwards	TMP87CK20AF-AZ7466.3 software version: v69 service code: 4822 209 13133

¹⁾ Service stock of old processors has been cleared, only new version will be delivered.

²⁾ These typenumbers are produced with two different versions of the printed board.

REMARKS :

08.05 TYPENUMBER(S): AZ8050, AZ8051, AZ8052, AZ8061, AZ8150

INFORMATION : For solving recording unstable problem, new Combi PCB (issue 4) will be implemented in production from week 9642.

REMARKS :

08.06 TYPENUMBER(S): AZ8055, AZ8056, AZ8057, AZ8068

INFORMATION : For solving recording unstable problem, new Combi PCB (issue 7) will be implemented in production from week 9641.

REMARKS :

08.07 TYPENUMBER(S): AZ8262, AZ8267, AZ8289

INFORMATION : For solving recording unstable problem, new Combi PCB (issue 8) will be implemented in production from week 9642.

REMARKS :

08.08 TYPENUMBER(S): CS2600, CS2700

INFORMATION : **Service Manual**
Add to Specifications survey:
AUX input impedance: 47kΩ
HEADPHONES output impedance: 220Ω

REMARKS :

**08.09 TYPENUMBER(S): ESA-mode, general
All portable CD-players with CDM12.3B, CDM12.3BL and
CDM12.3BLC in ESA-mode (double speed application)**

- SYMPTOM** : Set skips tracks or mutes in ESA-mode (double speed), memory is not filled-up properly. In normal play-mode with ESA off (single speed) the set operates without problems.
- CURE** : Bearing of turntable motor is worn out (lifetime problem).
Replace CDM12.3B (4822 691 30335), CDM12.3BL (4822 691 30359) resp. CDM12.3BLC (4822 691 10487).
- REMARKS** : The phenomenon can hardly be reproduced and even might disappear in vertical playing position. In case of customer complaints the sets should always be checked in both, ESA and non-ESA-mode.

08.10 TYPENUMBER(S): FR310, FR320, FR330, FR340

- INFORMATION** : The microprocessor, item 7471 TMP47C870N, marked with stamp "TUNLEU-C3-C" (service codenumber 4822 209 31507) is not longer available.
A new microprocessor is available with the same service codenumber 4822 209 31507 but this is an OTP version with the following text TMP47P870N with hand-written marked "M3 310".
If this type of μ P is used we have to add 4 pull down resistors (10k Ω) on this μ P (item 7471).
1 resistor 10k Ω on pin 14 to ground
1 resistor 10k Ω on pin 15 to ground
1 resistor 10k Ω on pin 16 to ground
1 resistor 10k Ω on pin 17 to ground
- REMARKS** : A problem is the power consumption of this type OTP.
The backup batteries have to deliver 2.5mA to the μ P if the set is switched off, so the batteries will be empty much faster as before.
When the batteries are empty only the clock loses the time.
Pre-set memory stays OK.

08.11 TYPENUMBER(S): FW56

- INFORMATION** : Correction of Parts list in Service Manual and newsletter 96.04.22.
4822 426 51751 = Philips Front without Karaoke for FW56/20/22/25
4822 426 51752 = Philips Front with Karaoke for FW56/21/21M/30
- REMARKS** :

08.12 TYPENUMBER(S): **FW610, FW620C, FW630, FW650C, FW680V**

INFORMATION : **Additional information to newsletter item 96.07.11.**
Service Information with repair hints and faultfinding guide concerning the Power management of the above mentioned sets is available now.
For FW610 use Service Information A96-363.
For FW620C use Service Information A96-364.
For FW630 use Service Information A96-365.
For FW650C use Service Information A96-366.
For FW680V use Service Information A96-367.

REMARKS :

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07.01 TYPENUMBER(S): **AS440, AS445, AS450, AS540, AS545, AS550, AS555, AZ1307, AZ1308, AZ1407, AZ1508, AZ2805, AZ2808, AZ8640, FW17, FW18, FW24, FW26, FW46, FW47, FW66, FW76, FW330, FW331, FW610, FW630**

SYMPTOM : CD Drawer does not open or close because items 202 & 204 have been damaged.

CURE : The root cause of the problem is the insufficient guidance of the drawer that can jump over the gear wheel 202, such that the drawer cannot be closed completely. If the drawer is pulled or pushed, the cam gear will be damaged.
Two guiding-brackets items 503 & 504 have been added at item 216 (tray). Also the pinion gear 213 has been modified.
These actions reduce the risk of misalignment or damage to gear wheel 202 and the cam gear 204 when the CD tray is pulled or pushed.

REMARKS : This information concerns module called "Short Loader" and "ECO Short Loader". These modules have been applied in all above mentioned sets and this phenomenon may occur. This information also refers to newsletter publications issue 64.40, 65.01 and 96.06.05. In newsletter 65.01 was also the typenumber FW33 included. However in this set a 3 disc changer is applied and not the short loader module.

07.02 TYPENUMBER(S): **AZ3705, AZ3708**

INFORMATION : **Service Manual**
Add to electrical parts list:
Add capacitor 2869 22µF 20% 50V (4822 124 41596) which is accidentally left out of the CDC-7 Module parts list.

For AZ3708/01:

Item 215 Front cabinet should be 4822 459 04261 instead of 4822 459 04125.

Item 216 Window display should be 4822 381 11763 instead of 4822 381 11719.

For AZ3705 & AZ3708:

Item 280 Door Battery should be 4822 443 10397 instead of 4822 423 41277.

REMARKS :

07.03 TYPENUMBER(S): **AZ3708/01**

INFORMATION : Change of Tuning grid frequency
The procedure on changing the Tuning grid frequency published in the service manual on page 2-4 has been changed.
The new procedure is as follows:
1. Switch on the unit
2. Press and hold the BAND button for 5 seconds, the display will show "Grid 9" or "Grid 10" depending on the last grid setting.

REMARKS :

07.04 TYPENUMBER(S): **AZ8048, AZ8348**

INFORMATION : **Service Manual**
Add to mechanical parts list:
The mounting screw (item 101) for new CD Mechanism KSM-2101BDM, is available via service code 4822 502 21383.

REMARKS :

07.05 TYPENUMBER(S): **AZ8061, AZ8068**

INFORMATION : **Service Manual, Mechanical partslist:**
The service ordernumber for item 444 "BUTTON SET CD" 4822 410 63658 as already published in the Service Manual concerns a standardized black coloured part.
On special request the original green metallic lacquered button set has been taken on stock. This part can be ordered with service code number 4822 410 10802 "button set CD green metallic".

REMARKS :

07.06 TYPENUMBER(S): **AZ8340, AZ8350, AZ8351, AZ8352, AZ8440, AZ9040, AZ9338, AZ9340, AZ9350**

INFORMATION : Service hint RCD drive mechanism

Analyses of exchanged RCD drives in service workshops showed that a reasonable quantity of these drives has no fault and is according to specifications.

For sets equipped with CD1-D module (produced from week 9452 onwards) the following faults may occur:

- **COLD or BROKEN SOLDER JOINTS** in the areas of connectors 1801 and 1802 and bridge wires connecting the vertical bended board with the tact switches.

Due to handling during exchanging the disc drive, a bad solder joint may be temporarily reconnected. So it seems that the exchange was successful but after some time the set may fail again.

- **MARGINAL FOCUS SEARCH TRIANGLE AMPLITUDE**

In case the set does not start-up due to FOCUS-error the following actions have to be done:

Check whether the amplitude of the electrical triangle signal during FOCUS SEARCH is too low.

Use for this service testprogram, measuring point "3" in schematic diagram.

If FOCUS cannot be found in the normal position of the set, then turn set upside down and try again (Gravity influences focus coil).

If FOCUS will now be found the electronic circuit has to be changed to increase the amplitude of the triangle signal.

Change	3816 to	68kΩ	4822	116	52297
	3819 to	3.3kΩ	4822	116	83864
	3820 to	100kΩ	4822	116	83878
	3924 to	2.7kΩ	4822	116	52263

Delete 3818

REMARKS : These changes were implemented in production from approx. June 1995 onwards.

07.07 TYPENUMBER(S): **FR731, FR751**

INFORMATION : Service Manual, electrical parts list

The type of IC303 is TDA7313D with SO-28 package.
The service code should read 4822 209 14856.

The type of IC305 is NJM2177AF with QFP package.
The service code should read 4822 209 14929.

REMARKS :

07.08 TYPENUMBER(S): **FW372C/21, FW362/21/21M & FW395C/21**

INFORMATION : Tuning Grid for MW band

Due to Software bug, sets produced between week 9627 and 9644 will not be able to switch between 9kHz and 10kHz as described in the instruction for use (Operation Manual).

For this reason the tuning grid is set according to the destination countries by the manufacturer. In case a set was purchased outside the country, the tuning grid can be changed by hardware adaptation. This is done by adding or deleting resistor 3157 100kΩ 5% 0.5W (4822 116 52234).

By adding 3157 the tuning grid becomes 9kHz

By deleting 3157 the tuning grid becomes 10kHz

With the resistors 3157 added the Software will recognize the Tuner version as "CHI" instead of "OSC" and the new Service frequencies loaded during the Service Test Program are as follows:

Preset	Frequency
1	87.5 MHz
2	108 MHz
3	531 kHz
4	1602 kHz
5	558 kHz
6	1494 kHz
7	87.5 MHz
8	87.5 MHz
9	87.5 MHz
10	98 MHz
11	87.5 MHz

REMARKS : For the purpose of identification a new stroke version will be created during this period to identify between 9kHz and 10kHz

9kHz = /21 & /21M

10kHz = /41 & /41M

This information concerns sets produced between week 9627 and week 9644 only.

07.09 TYPENUMBER(S): **FW12**

SYMPTOM : Too much mechanical noise (whistling) during CD play.

CURE : The problem is due to a "hissing" noise which can be annoying to some customer. Problem is resolved by adding a capacitor 2.2nF across resistor 3830.

REMARKS :

07.10 TYPENUMBER(S): **FW15**

INFORMATION : **Service manual, Mechanical partslist**

The service code number for AM Aerial Frame with JST connector reads 4822 303 50082 and applied in FW15.

The service code number for AM Aerial Frame with loose wires reads 4822 158 60622. This part is not applied in this set but in other sets.

REMARKS :

07.11 TYPENUMBER(S): **FW610, FW620C, FW630, FW650C**

INFORMATION : **Service manual**

Additional information to circuit description Power Board of above mentioned typenumbers.

PREREGULATION (primary control):

- The Power Board is equipped with a primary control.

The purpose of this circuit is:

a. Smaller transformer. The power board has to supply nominal power at nominal mainsvoltage -10%. The transformer has to withstand nominal mainsvoltage +10% as well. Some countries have more than 10% overvoltage.

Normally this difference will be converted into heat, (higher temperature).

With the primary control circuit it is possible to adjust the mainsvoltage at about 180V (=nominal voltage -20%). This is done by cutting the top of the sine wave with a FET. This means that the mainstransformer is supplied with a "stabilized" mainsvoltage of about 180V respectively 90V for /17 version (USA). This saves about 20% loss.

b. In case of high current consumption (**overttemperature**), the circuit has the possibility to reduce the mains voltage. This reduces the temperature as well.

c. In **Standby mode** the circuit operates reducing the mainsvoltage to about 90V. This results in a stand-by power consumption less than 3W (with switched off display).

REMARKS : A faultfinding method about this Primary control circuit is in preparation.

07.12 TYPENUMBER(S): **FW630, FW650C, FW680V**

INFORMATION : **Service Manual, partslist**

The flexfoil-connector (17 fold) item 1830 reads 4822 267 51465.

REMARKS :

07.13 TYPENUMBER(S): **MC150**

INFORMATION : **Service Manual**
Add to Mechanical partslist:
The ordering code for Cover, Cassette door item 306 reads
4822 442 00579.

REMARKS :

07.14 TYPENUMBER(S): **General**

INFORMATION : **ESD (ELECTRO STATIC DISCHARGE) PREVENTION**

Attention has to be paid to the ESD phenomenon.
Find on next pages a copy of page 5 and 6 of Service Link magazine
June 1996, distributed by Philips Consumer Electronics, Euroservice,
which contains an article about ESD. It is recommended to use this
information in service workshops.

DURING REPAIR ESD CAN OCCUR WHICH DESTROYS
COMPONENTS AND/OR DEGENERATES COMPONENTS OR
CIRCUITS IN SUCH A WAY THAT SOONER OR LATER
MALFUNCTIONS WILL OCCUR.

BE AWARE OF THE ESD RISKS.

Prevention of ESD starts with being aware of the ESD risks. Stick to
the following rules:

1. Keep all ESD sensitive components in ESD protective packing
material when not in use.
2. ESD sensitive equipment, brought in for repair, must be
processed in an ESD protected working area with (at least) an
earthed dissipative mat. Persons should wear a wrist strap and be
connected to earth.

REMARKS :

What you should know about ESD!

It can damage almost any consumer electronic product!

Annually, millions of dollars are lost world-wide by the phenomenon of ESD (ElectroStatic Discharge), the invisible micro-lightning which damages sensitive electronic components and circuits. This article explains what ESD is and how its effects can be controlled.

What is ESD?

ElectroStatic Discharge is a spark jumping from one conductive surface, charged with static electricity, to another conductive surface. This incredible fast movement of static charge can have disastrous consequences, especially for electronic circuitry. We, humans, only feel ESD at a discharge of about 3,000 Volts. *However many semiconductors can be damaged by a discharge of just 60 Volts or less.*

What causes ESD?

Static electricity occurs whenever two substances are rubbed together or separated from each other. On non-conducting materials, such as plastics and textiles, charges remain stationary and cannot discharge and are therefore called static charges. Static electricity is present throughout our environment. Static charges are brought in by people and are generated during their normal movements. Clothing and articles of common plastic are prime generators of static charges, even people walking generate charges from the sliding and separation of their shoes from the floor.

How does ESD affect electronics?

ESD between people and components or products often

damages hardware and software. It can even cause catastrophic failure. In hardware ESD can degrade the product by overheating components or by causing "punch-through". In software ESD can cause failures such as false triggering and distortion of clock pulses in logic circuits. In a few cases it can even completely disable the component or circuit. However, in many more cases the component or circuit remains operational but is degenerated in such a way that sooner or later malfunctions will occur. This phenomenon is called "**latent failure**".

"Whenever electronic components are assembled, static electricity lies in wait," says Ger Frankenmolen,

Typical electrostatic voltages

Means of static generation	Low relative humidity	High relative humidity
Walking across carpet	35,000 V	1,500 V
Walking over vinyl floor	12,000 V	250 V
Work at bench	6,000 V	100 V
Vinyl envelopes	7,000 V	600 V
Common poly bag picked up from bench	20,000 V	1,200 V
Work chair padded with urethane foam	18,000 V	1,500 V

*When such a static charge is induced to a nearby conductor (e.g. our skin), the charge can jump to that conductor in a nanosecond: this is an **ESD!***



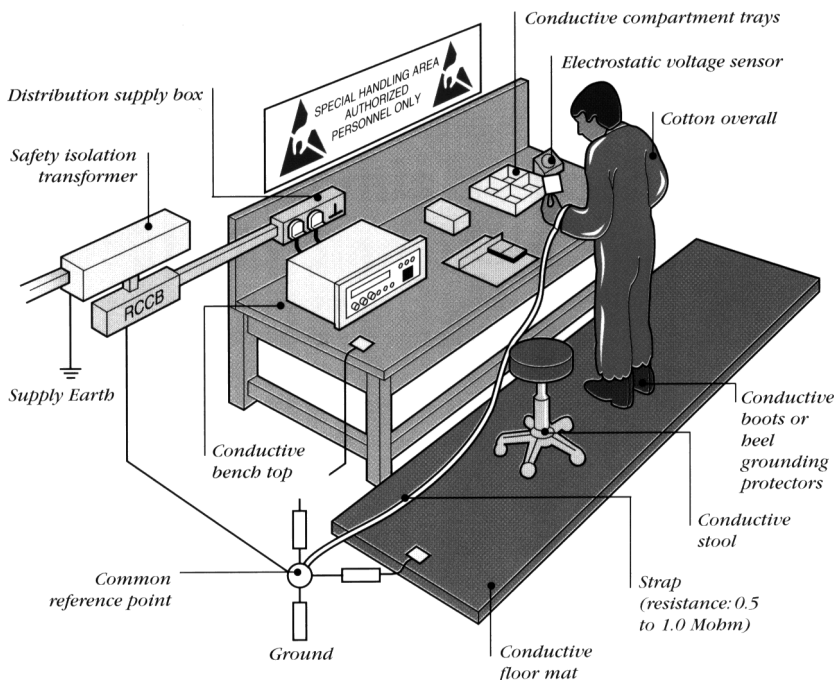
Philips Service offers a range of equipment and accessories to help prevent ESD.

consultant in electrostatic discharges with Novatronics, part of Philips Components. "Although strict standards are in place to minimise damage due to ESD, advances in technology continue to throw up problems. Tackling these is something which must be done throughout the production process and it is my job to put the appropriate precautions in place". ►

How to prevent ESD and ESD damage

Static electricity cannot be eliminated, but it can be kept under control. Charging can be prevented by an appropriate grounding system for people and objects that may come into contact with the component or product. Preventing ESD is relatively simple. It starts with training everybody in the workshop: **make people aware of the ESD dangers** and stick to the following rules:

- 1 All consumer electronic (CE) products being brought in for repair must be kept in ESD protective packing material when not in use.
- 2 All CE products being brought in for repair must be processed in an ESD protected working area with an earthed dissipative mat. People should wear a wrist strap and be connected to earth. ■



Essential features of an ESD-protected workstation

What ESD control equipment is available?

Philips Service has the following equipment and aids available to make your working environment an ESD safe working place:

1 Connection box 4822 320 11307

Key item in your ESD set. This box has 3 press stud connections and can easily be attached to a work bench. Comes with 3m of cable. Resistance 1 MOhm.

2 Anti-static wrist band 4822 395 10223

With press stud. Anti allergic. Resistant to hot water. Small metallic strip inside is isolated so that only tiny metal threads are in contact with the skin. Wrist band resistant to a minimum of 10 machine washes (40°C, no bleach). Resistance 0 Ω.

3 Extendible cable 4822 320 11305

2m cable with press studs. Connects wrist band to connection box. Resistance 2 MΩ.

4 Anti-static table mat

With 4 connecting press-studs:
 1200 x 650 x 1.25 mm **4822 466 10953**
 600 x 650 x 1.25 mm **4822 466 10958**
 Consisting of two different flexible materials.
 Top layer (blue) surface resistance = 10^7 - 10^8 Ω/square, bottom layer (black) surface resistance = 10^4 - 10^5 Ω/square.

5 Connecting cable 4822 320 11306

3m cable with press studs. Connects table mat to connection box. Resistance 2 MΩ.

6 Earth cable with Mueller clip (3m) 4822 320 11308

Connects any product to ESD mat or connection box. Press button at one end and Mueller clip at the other end. Resistance 1 MΩ.

KIT ESD3 4822 310 10671

Complete kit combining all six prior products (small table mat) above and ESD warning stickers for the complete ESD solution for any work station.

Wristband tester 4822 344 13999

Tests anti-static functioning of the wrist band. Works on 9V battery (included). There are three test outcomes: green light "PASS" lights when the resistance of the circuit (wrist band and cable together) is between 0.5 and 10 MΩ. Red light "FAIL" blinks and some beeps are heard when the resistance is below 0.5 MΩ or above 10 MΩ. In this case the wrist band and cable can not be used in this combination. Other combinations can be tried. Yellow light "LOW BATTERY" lights when the battery needs changing.

Anti-static jacket 4822 395 10224

Allows hands free working in ESD environment. Tiny carbon threads contained inside the textile.



The Philips approved anti-static jacket is lightweight and cool. Perfect for hands free working

The press buttons for connection to the connection box or anti-static table mat are placed on both side pockets on an extra strong textile to avoid tear damage. Surface resistance of the OFX-100 fabric is 10^6 Ω/square. This textile gives a very constant resistance all over the jacket and allows a discharge from 1000V to 100V in less than 0.1 sec. This textile (93% polyester, 7% "BASF RESISTAT" conducting fibres) allows long life (washing 30°C, no bleach) and weighs only 77 gr/m².

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SERVICE NEWSLETTER

06.01 TYPENUMBER(S): **AE3650**

- SYMPTOM : FM sensitivity is too low.
- CURE : FM IF is shifted because it might occur that it is not properly aligned in production: In some cases the input signal for IF-alignment was too strong.
Re-align FM IF following the procedure in the service manual.
Use weak input signal to avoid mis-alignment.
- REMARKS : From week 9546 onwards, the alignment procedure at production is strictly controlled by using weak input signal.

06.02 TYPENUMBER(S): **AJ3920, AW7150, AW7250, AZ2100, AZ2600, AZ8350, AZ8351, AZ8352, AZ8357, AZ9350, AZ9355**

- INFORMATION : In above mentioned sets, the output pins LED and BIAS of item 8110 are not used. From week 9621 onwards, a 4-pins socket is used in the position of 8110. Consequently resistors 3103 and 3105 are also deleted.
- REMARKS :

06.03 TYPENUMBER(S): **AJ3920**

- INFORMATION : Item 2309 is changed from 1000 μ F/10V to 1000 μ F/16V (4822 124 40201) to safeguard enough safety margin.
- REMARKS : Modification is implemented in production from week 9620 onwards.

06.04 TYPENUMBER(S): **AQ6524, AQ6542**

- INFORMATION : The IC BA3528FP is now available via service code 4822 209 13503. This IC can also be added to service information A96-550 (Spare part codenumbers for Service Category I products).
- REMARKS :

06.05 TYPENUMBER(S): **AS450, AS455**

- SYMPTOM : CD Drawer does not open or close because items 202 & 204 have been damaged.
- CURE : The root cause of the problem is the insufficient guidance of the drawer that can jump over the gear wheel 202, such that the drawer cannot be closed completely. If the drawer is pulled or pushed, the cam gear will be damaged.
Two guiding-brackets items 503 & 504 have been added at item 216 (tray). Also the pinion gear 213 has been modified. These actions reduce the risk of misalignment or damage to gear wheel 202 and the cam gear 204 when the CD tray is pulled or pushed.
For more information see newsletter publication issue 64.40 and 65.01.
- REMARKS : This modification has been implemented in production from week 9610 onwards.

06.06 TYPENUMBER(S): **AW7140**

- INFORMATION : Cloth Speaker Grilles 4822 458 30648 and 4822 458 30649 are no longer available. It is suggested to replace the cloth grills by Metal Grilles 4822 458 40565 (for "L") and 4822 458 40566 (for "R").
- REMARKS :

06.07 TYPENUMBER(S): **AW7520**

- INFORMATION : The cassette deck type TK20FX-SW is now available via service code 4822 691 10493.
- REMARKS :

06.08 TYPENUMBER(S): **AZ2100, AZ2600**

- INFORMATION : In order to improve the accuracy of the regulated output voltage, following changes have been introduced:
Diode 6304 has been changed to BZX79-F3V3 (4822 130 32806)
Resistor 3253 has been changed from 560Ω to 470Ω (4822 116 52224)
- REMARKS : Modification has been implemented in production from week 9611 onwards.

06.09 TYPENUMBER(S): **AZ2600**

INFORMATION : **Correction service manual**

Following modifications have been implemented since production start.

- Capacitor 2711 and 2712 have been changed from 220µF to 47µF (4822 124 41397) to improve low frequency over-load.
- Capacitor 2724 has been changed from 470pF to 680pF (5322 122 32052) for controlling bias frequency to 73kHz ±1kHz.
- Resistor 3708 has been changed from 82kΩ to 68kΩ (4822 116 52297) to improve Rec/Play distortion.

REMARKS :

06.10 TYPENUMBER(S): **AZ2600**

INFORMATION : **Service manual; added to Tape board partslist.**

The motor of the cassette mechanism has been changed from EG-530AD-9B to EG-530YD-9BH (4822 361 21592) in order to improve starting torque. Following components have been added on the cassette board to match the change of motor.

2703	4822 124 41397	Cap. 47µF/25V
3703	4822 116 52176	Resistor 10Ω
3705	4822 116 83863	Resistor 1kΩ
3758	4822 100 20165	Potm. trim 500Ω

Tape speed adjustment:

Adjust 3758 instead of the potmeter inside the motor.

REMARKS : Changes have been implemented in production since production start.

06.11 TYPENUMBER(S): **AZ6827**

INFORMATION : The Button Set-STOP 4822 410 62757 is not available. It can be replaced by 4822 410 62754.

For colour matching reason, the following substitutions are suggested:

Button Set-PLAY, 4822 410 62758 is replaced by 4822 410 62755,
Eject Button, 4822 410 62752 is replaced by 4822 410 62751.

REMARKS :

06.12 TYPENUMBER(S): **AZ6827**

INFORMATION : As the Front Panel 4822 444 30473 is no longer available, it can be replaced by 4822 444 30472. For colour matching reason, it is suggested to replace also the CD Door by existing CD Door 4822 444 60932.

REMARKS :

06.13 TYPENUMBER(S): AZ6835

SYMPTOM : NiCd batteries (SBC6445) cannot be recharged in the set.

CURE : Reason for malfunction can either be:
Bad contact of accu detection springs (especially spring contact via cabinet part) or over-discharge of NiCd batteries (voltage on battery <0.9V).
In both cases the microcontroller will never switch on charging because the accu_in line from the accu detection circuit remains low, assuming no accus inserted. The solution is:
1. Replace D6252 by a SMD jumper (4822 051 20008)
2. Desolder T7282
3. Short-circuit collector/emitter line of T7282 by use of SMD jumper (4822 051 20008)

WARNING

Above mentioned modification disables accu detection at two battery positions.

As a result also "normal" batteries can now be charged by the circuit, if they are inserted in those positions. These batteries may become leak and damage the CD-electronics.

CUSTOMERS MUST THEREFORE BE INSTRUCTED NOT TO MIX-UP DIFFERENT BATTERY TYPES!!

REMARKS : **This phenomenon has already been published in newsletter 65 and 96.04.05. However the concerned components were not indicated clearly. It is only valid for typenumber AZ6835 and not for AZ6834, AZ6836 and AZ6837 because only AZ6835 is rechargeable.**

The service solution stated in this edition could not solve all recharging complaints in the field. The new modifications will further improve the detection behaviour.

It is possible that completely discharged accus (voltage around 0V) cannot be recharged anymore.

For completely discharged accus an external charger can be used. If problems remain, customers should be informed to charge accus even if the set is not in use for a longer period of time.

IMPORTANT NOTE:

It is advised to modify all sets brought-in for repair.

06.14 TYPENUMBER(S): AZ6843, AZ6844, AZ6845

SYMPTOM : NiCd batteries (SBC6445) cannot be recharged in the set.

CURE : Reason for malfunction can either be:
Bad contact of accu detection springs (especially spring contact via cabinet part) or over-discharge of NiCd batteries (voltage on battery <0.9V).
In both cases the microcontroller will never switch on charging because the accu_in line from the accu detection circuit remains low, assuming no accus inserted. The solution is:
1. Replace D6251 by a SMD jumper (4822 051 20008)
2. Change R3275 from 470Ω to 2.2kΩ (4822 051 20222)
3. Change R3256 (4.7kΩ) and R3258 (5.6kΩ) to 22kΩ (4822 051 20223)
4. Desolder T7280 and T7282
5. Short-circuit collector/emitter line of T7280 and T7282 by use of SMD jumpers (4822 051 20008)

WARNING

Above mentioned modification disables accu detection at two battery positions.

As a result also "normal" batteries can now be charged by the circuit, if they are inserted in those positions. These batteries may become leak and damage the CD-electronics.

CUSTOMERS MUST THEREFORE BE INSTRUCTED NOT TO MIX-UP DIFFERENT BATTERY TYPES!!

REMARKS : **This phenomenon has already been published in newsletter 65.**
The service solution stated in this edition could not solve all recharging complaints in the field. The new modifications will further improve the detection behaviour.
It is possible that completely discharged accus (voltage around 0V) cannot be recharged anymore.
For completely discharged accus an external charger can be used. If problems remain, customers should be informed to charge accus even if the set is not in use for a longer period of time.

IMPORTANT NOTE:

It is advised to modify all sets brought-in for repair.

06.15 TYPENUMBER(S): AZ6843, AZ6844, AZ6845, AZ6856, AZ6858

INFORMATION : From week 9616 onwards, 7300 CS4331-KS "H" version (marked EYH____) has been used in production. Following changes have been implemented in order to improve total harmonic distortion of analogue output.

2311 and 2312 changed from 3.3nF to 1nF (4822 122 33446)

3305 and 3306 changed from 560Ω to 2.7kΩ (4822 051 20272)

3329 and 3330 changed from 33kΩ to 100kΩ (4822 051 20104)

REMARKS : In case the "old" IC is replaced by IC 4822 209 33969 (marked EYH____), the above mentioned components have to be changed too.

06.16 TYPENUMBER(S): AZ6846, AZ6847, AZ6848

SYMPTOM : NiCd batteries (SBC6445) cannot be recharged in the set.

CURE : Reason for malfunction can either be:
Bad contact of accu detection springs (especially spring contact via cabinet part) or over-discharge of NiCd batteries (voltage on battery <0.9V).
In both cases the microcontroller will never switch on charging because the accu_in line from the accu detection circuit remains low, assuming no accus inserted. The solution is:
1. Replace D6251 by a SMD jumper (4822 051 20008)
2. Change R3275 from 470Ω to 2.2kΩ (4822 051 20222)
3. Change R3256 (470Ω) and R3258 (560Ω) to 2.2kΩ (4822 051 20223)
4. Desolder T7280 and T7282
5. Short-circuit collector/emitter line of T7280 and T7282 by use of SMD jumpers (4822 051 20008)

WARNING

Above mentioned modification disables accu detection at two battery positions.

As a result also "normal" batteries can now be charged by the circuit, if they are inserted in those positions. These batteries may become leak and damage the CD-electronics.

CUSTOMERS MUST THEREFORE BE INSTRUCTED NOT TO MIX-UP DIFFERENT BATTERY TYPES!!

REMARKS : **This phenomenon has already been published in newsletter 65.**
The service solution stated in this edition could not solve all recharging complaints in the field. The new modifications will further improve the detection behaviour.
It is possible that completely discharged accus (voltage around 0V) cannot be recharged anymore.
For completely discharged accus an external charger can be used.
If problems remain, customers should be informed to charge accus even if the set is not in use for a longer period of time.

IMPORTANT NOTE:

It is advised to modify all sets brought-in for repair.

06.17 TYPENUMBER(S): **AZ8010, AZ8012, AZ8110, AZ8114, AZ8210, AZ8214, AZ8300, AZ8301, AZ8304, AZ8400, AZ8404, AZ8700, AZ8704, AZ8705, AZ8900, AZ8904, AZ9210, AZ9213, AZ9214, AZ9310, AZ9401, AZ9510, AZ9513, AZ9514, AZ9610, AZ9613, AZ9614**

INFORMATION : **In above mentioned Service manuals two items of the shock-absorber of the CD-mechanism (spring support and suspension grommet) have been interchanged.**

CORRECTION MECHANICAL PARTSLIST

INTERCHANGE OF 4822 404 60471 (spring support) AND 4822 325 20138 (suspension grommet)

Typenumber	interchanged item numbers
AZ8010, AZ8012	443 and 441
AZ8110, AZ8114	443 and 441
AZ8210, AZ8214	443 and 441
AZ8300, AZ8301, AZ8304	406 and 407
AZ8400, AZ9401, AZ8404	406 and 407
AZ8700, AZ8704, AZ8705	401 and 436
AZ8900, AZ8904	451 and 452
AZ9210, AZ9213, AZ9214	409 and 411
AZ9310	409 and 411
AZ9510, AZ9513, AZ9514	409 and 411
AZ9610, AZ9613, AZ9614	409 and 411

REMARKS : The shock-absorber consists of 3 parts of which above mentioned items are interchanged. Usually the 3 parts are ordered all together, that's why no service information will be prepared.

06.18 TYPENUMBER(S): **AZ8050, AZ8051, AZ8052, AZ8061, AZ8150**

SYMPTOM : Recording is unstable.

CURE : Problem is caused by high notes appearing in the music after the ALC-elco has been almost fully charged. The recording amplifier has high amplification for high notes and will thus intensify the problem. Following steps give a service solution.

1. Change 3264 and 3265 from 150kΩ to 330kΩ (4822 116 52272)
2. Change 3266 and 3267 from 180kΩ to 6.8kΩ (4822 116 52296)
3. Change 2258 and 2259 from 390pF to 4.7nF (4822 126 11714)
4. Remove 2282 (4822 126 11585) and connect it from pin3 of IC7250 to the nodal point of 3264, 3266 and 2258.
5. Remove 2275 (4822 126 11585) and connect it from pin14 of IC7250 to the nodal point of 3265, 3267 and 2259.

REMARKS : Above modification will be implemented in production from week 9626 onwards.

06.19 TYPENUMBER(S): AZ8055, AZ8056, AZ8057, AZ8068, AZ8262, AZ8267, AZ8289

- SYMPTOM** : Recording is unstable.
- CURE** : Problem is caused by high notes appearing in the music after the ALC-elco has been almost fully charged. The recording amplifier has high amplification for high notes and will thus intensify the problem. Following steps give a service solution.
1. Change 3264 from 150k Ω to 330k Ω (4822 051 20334)
 2. Change 3265 from 150k Ω to 330k Ω (4822 116 52272)
 3. Change 3266 from 180k Ω to 6.8k Ω (4822 051 20682)
 4. Change 3267 from 180k Ω to 6.8k Ω (4822 116 52296)
 5. Change 2258 from 390pF to 4.7nF (4822 126 11714)
 6. Change 2259 from 390pF to 4.7nF (4822 126 10223)
 7. Remove 2282 and replace it by tubular cap. (4822 126 11585) connected from pin3 of IC7250 to the nodal point of 3264, 3266 and 2258.
 8. Remove 2275 and replace it by tubular cap. (4822 126 11585) connected from pin14 of IC7250 to the nodal point of 3265, 3267 and 2259.
- REMARKS** : Above modification will be implemented in production from week 9626 onwards.

06.20 TYPENUMBER(S): AZ8562, AZ8567

- INFORMATION** : **Service Manual, mechanical partslist**
The service codes of item 429 and 453 are interchanged.
Correction:
item 429 should read 4822 529 10278
item 453 should read 4822 529 10257
- REMARKS** :

06.21 TYPENUMBER(S): AZ9055, SM6500, MS6050

- SYMPTOM** : A "plop" noise is recorded at the beginning and ending of a recording.
- CURE** : The noise is caused by the time difference between activation of the motor switch and the record switch. The record switch is adjusted to shorten the time difference so that problem is minimised. Situation becomes worse because the record switch can be dislocated afterwards. For service solution, adjust the position of the record switch so that the switch is activated earlier.
Add glue to protect record switch getting loose.
- REMARKS** : Glue for fitting the switch has been added in production sets from week 9542 onwards.
- For long term, the location of the record switch has been changed. It will be mounted near the middle of the record lever so that the time difference can be further shortened. Modified mechanism has been introduced in production from week 9621 onwards.

06.22 TYPENUMBER(S): **AZ9855**

INFORMATION : Two types of cassette tape deck are used. Production will use different factory code to identify the deck:
KZ00xxxx for CDS-83FBF-27
KZ01xxxx for TK20FX-S
For details of TK20FX-S, see service information A95-560 (available via service codenumber 4822 725 25403).

REMARKS : This publication will be followed by Service Information A95-560.

06.23 TYPENUMBER(S): **CD210**

INFORMATION : Microprocessor item 6530 service codenumber 4822 209 61894. When ordering 4822 209 61894, an OTP 4822 900 10837 loaded with software "MONO P113" for CD210 will be delivered.

REMARKS :

06.24 TYPENUMBER(S): **CS2600, SC2060**

SYMPTOM : The mains transformer is defective.

CURE : The thermal fuse of the mains transformer is blown. It is caused by short circuit of capacitor AC31 that connects across the secondary of transformer to ground. The problem may happen depending on the quality of the capacitor.
After the defective transformer is replaced and whenever a set is sent to workshop for repair, remove capacitors AC31, AC32 and AC33 that are not necessary in circuit.

REMARKS : It is advised to remove the capacitors AC31, AC32 and AC33 in every set brought-in for repair. From week 9540 onwards capacitors have been deleted in production.

06.25 TYPENUMBER(S): FR731, FR751, FR931, FR951, DSC950, FR920, FR930, FR940

INFORMATION : Test CD Dolby Surround 4822 395 10216

Dolby Surround sound is more and more included in today's Audio equipment.

To measure specifications and to test Dolby Pro Logic equipment and circuitry Philips developed a test CD for this purpose.

Below please find the composition of tracks together with a short description of the application.

- Track 1: Voice track to identify channels left, centre, right and surround to check speaker connections
- Track 2: 1kHz tone for electrical balance setting L/R, Centre/Surround.
- Track 3..6: Test signals from 20Hz to 20kHz to measure frequency response, harmonic distortion, signal-to-noise ratio and channel separation for each channel
- Track 7..12: Test signals from 20Hz to 20kHz, max. 0dB CD level, to check headroom for visible clipping for each channel.
- Track 13: Unmodulated track during 30 sec. to measure S/N ratio
- Track 14: Test signals from 100Hz to 7kHz to check the modified Dolby B-type noise reduction decode characteristics in Surround channel
- Track 15..23: Test signals of 20Hz to 20kHz to enable distortion measurements on all four channels at the same time
- Track 24: Tone bursts of 1kHz during 1msec. to check the time delay of the surround channel output
- Track 25: Signal of 8.3kHz to check time delay in surround channel by means of Lisajous phase test
- Track 26: Not correlated noise on all four channels to test temperature behaviour of output amplifiers
- Track 27: Pink noise repeated in sequence L->C->R->S->L->C, etc. to simulate the noise sequencer in the decoder to enable the user to match speaker levels for proper system balance
- Track 28..34: Dolby Surround recorded music tracks to experience Surround sound effect

Dolby Pro Logic Test CD is available with service code 4822 395 10216.

- REMARKS :** Service Information A96-450 (service code 4822 725 23980) describes the various tests to perform to check and measure Dolby Pro Logic equipment by using above mentioned test CD. A96-450 is an add-on to existing service manuals of Dolby Surround equipment.

06.26 TYPENUMBER(S): FR731, FR751

INFORMATION : Service Manual, Electrical partslist

Capacitors C466 and C467 with value 4700µF/50V are now available via service code 4822 124 42128.

REMARKS :

06.27 TYPENUMBER(S): **FW12**

INFORMATION : **Service Manual, Electrical partslist**

The ordering code for the Microprocessor IC 7401 on the Front/Power board should read 4822 209 90436 instead of 4822 209 52484.

The marking on the correct IC should be "12S50950".

REMARKS :

06.28 TYPENUMBER(S): **FW610, FW620C, FW630, FW650C, FW670P, FW680V**

SYMPTOM : Bias oscillator is not functioning properly.

CURE : In some cases it might happen that the bias oscillator is not functioning properly. In that case an AC voltage of about 3V~ will be measured on T162 instead of 30V~.

This phenomenon is caused by tolerances of FET J111.

To solve this problem the following actions should be performed:

1. Replace wirebridge 9524 by resistor 10k Ω .
2. Connect an electrolytic capacitor (elcap) 22 μ F/50V (4822 124 22337) with the negative pole on that side of the resistor that is close to diode 6777.
Connect the positive pole to the wirebridge 9598.
3. Remove SMD resistor 3781.
4. Add "resistor cable" (wire with a resistor 4.7M Ω in series) between cathode of 6778 and wirebridge 9518.

See next circuit diagram and printed board layout.

06.29 TYPENUMBER(S): **FW630**

INFORMATION : **Service Manual**

Correction of Electrical partslist on page 9-14.
Erroneously the same codenumber and description for item 7860 and
7861 has been published.

It should read:

7860	4822 209 90618	SAA7345GP/S5
7861	4822 209 32196	TDA1311AT/N2

REMARKS :

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SERVICE NEWSLETTER

DCC

06.30 TYPENUMBER(S): **FW68DCC**

INFORMATION : In an addendum the following information is added to the instruction for use of FW68DCC:

Renumbering on a DCC Tape

The tracknumbers of the complete DCC can be checked, and if necessary automatically corrected, if the beginning of the DCC was marked (see "General information on recording" - LEAD IN).

1. Insert the unprotected DCC that needs to be corrected.
2. Press repeatedly DCC/TAPE on the amplifier (DCC on the remote control) until DCC appears on the display.
3. Press STOP on the DCC deck or on the remote control for more than 2 seconds.

The "T"-message

Every time when the DCC deck marks the beginning of a track during recording procedure (either automatic or manual) a "T" will appear on the display.

REMARKS :

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05.01 TYPENUMBER(S): AQ4150

SYMPTOM : Defective mainstransformer.

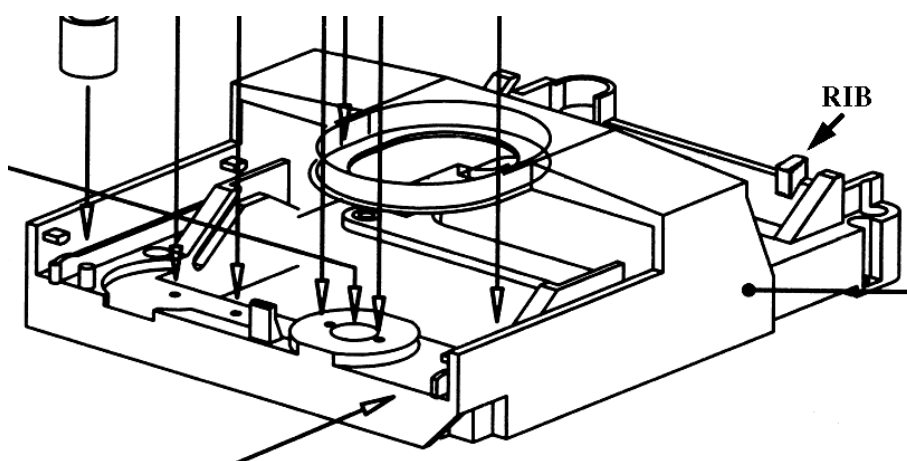
CURE : This fault is caused by the thermal fuse.
Solution:
New transformer has been implemented in production;
The old transformer was marked "NC-I1887TM"
The new transformer is marked "NC-I1887TM1"
(remark: "1" is added).
The transformer is available via service code 4822 146 31476.

REMARKS : This modification has been implemented in production from week 9550 onwards. This publication is a correction of newsletter 96.04.02 (Complete marked code has been offered instead of "1").

05.02 TYPENUMBER(S): CD711

SYMPTOM : Sub-chassis (item 109) is found to be loose on the right front side.

CURE : A rib has been added onto the frame, item 110 (see draft below).



REMARKS :

05.03 TYPENUMBER(S): **FW12**

INFORMATION : Wake-up volume adjustment
The wake-up volume level is controlled by the Microprocessor, making it impossible to adjust the level without affecting the power output of the set. However 2 solutions are available;
Solution 1:
Change resistors 3517/3518 from 39kΩ to 27kΩ - overall power output will reduce by about 3dB.
Solution 2:
If the problem is only in one of the source selections it is possible to reduce the level only for that particular source by reducing the input shunt-resistors' value.
For Tuner, reduce resistors' 3503 and 3504 value.
For CD, reduce resistors' 3507 and 3508 value.
For Tape, reduce resistors' 3511 and 3512 value.

REMARKS : On Customer request this modification can be built-in.

05.04 TYPENUMBER(S): **FW630**

INFORMATION : **Service Manual**
Correction of the electrical partslist (page 9-14)
Concerning item 7860 and 7861; for both ICs the same service codenumbers have been published.
The correct service codenumbers should read:
7860 4822 209 90618 SAA7345GP/S5
7861 4822 209 32196 TDA1311AT/N2

REMARKS :

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SERVICE NEWSLETTER

DCC

05.05 TYPENUMBER(S): **DCC170**

INFORMATION : When in battery mode the service testmode is entered, the message DAIO NG will be displayed (False condition).
With connected mains adapter the message reads: DAIO OK (Good condition).
This is due to the Battery operation mode in which Digital I/O cannot be used. In the Instructions For Use the warning "Digital I/O cannot be used in battery mode" is already given.

REMARKS :

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SERVICE NEWSLETTER

04.01 TYPENUMBER(S): **AE2340**

INFORMATION : **Additional to Newsletter 96.02.01**
Sets produced with new μ P are marked KZ0296xx onwards.

REMARKS :

04.02 TYPENUMBER(S): **AQ4150**

SYMPTOM : Defective mainstransformer

CURE : Fault is caused by the thermal fuse.

SOLUTION:
New transformer has been implemented in production;
the new transformer is marked "-1".
The transformer is available via service code 4822 146 31476.

REMARKS : This modification has been implemented in production from
week 9550 onwards.

04.03 TYPENUMBER(S): **AQ6446**

SYMPTOM : One channel gives no sound

CURE : This fault might be caused by the headphone socket:
The headphone socket mounted slanted or cold-soldered.

SOLUTION:
Re-solder headphone socket.
Mounting procedure in production has been modified to ensure that
the socket is flat mounted on printed board panel.

REMARKS : This modification has been implemented in production from
week 9534 onwards.

04.04 TYPENUMBER(S): AQ6548

SYMPTOM : Headphone interruption.

CURE : Fault might be caused by headphone wiring, which could have a dry joint connection to speaker, because temporarily two twisted wires have been applied with different lengths.

REMARKS : The modified headphones have been implemented in production from week 9536 onwards.

04.05 TYPENUMBER(S): AZ6834, AZ6835, AZ6836, AZ6837

SYMPTOM : NiCd batteries (SBC6445) cannot be recharged in the set

CURE : Reason for malfunction can either be:
Bad contact of accu detection springs (especially spring contact via cabinet part) or over-discharge of NiCd batteries (voltage on battery <0.9V). In both cases the microcontroller will never switch on charging because the accu_in line from the accu detection circuit remains low, assuming no accus inserted.
The solution is:
1. Replace D6252 by a SMD jumper (4822 051 20008)
2. Change R3275 from 470Ω to 2.2kΩ (4822 051 20222)
3. Change R3256 and R3258 from 4.7kΩ to 22kΩ (4822 051 20223)
4. Desolder T7280 and T7282
5. Short-circuit collector/emitter line of T7280 and T7282 by use of SMD jumpers (4822 051 20008)

WARNING

Above mentioned modification disables accu detection at two battery positions.

As result also "normal" batteries can now be charged by the circuit, if they are inserted in those positions. These batteries may become leak and damage the CD-electronics.

CUSTOMERS MUST THEREFORE BE INSTRUCTED NOT TO MIX-UP DIFFERENT BATTERY TYPES!!

REMARKS : **This phenomenon has already been published in newsletter 65.**
The service solution stated in this edition could not solve all recharging complaints in the field. The new modifications will further improve the detection behaviour.
It is possible that completely discharged accus (voltage around 0V) cannot be recharged anymore.
For completely discharged accus an external charger can be used.
If problems remain customers should be informed to charge accus even if the set is not in use for a longer period of time.

IMPORTANT NOTE:

It is advised to modify all sets brought in for repair.

04.06 TYPENUMBER(S): **AZ6834, AZ6835, AZ6836, AZ6837, AZ6843, AZ6844, AZ6845, AZ6846, AZ6847, AZ6848**

INFORMATION : The accessory SBC3546 stated in IFU and service manual is not correct.
The car base SBC3546 cannot hold the CD portable models from AZ6830 until AZ6850.
To mount these CD portable sets in a car, it is suggested to order car base SBC6560 (4822 466 93339) and car base adaptor SBC6562 (4822 466 93338 for Magnavox or 4822 466 93437 for Philips Modelnumbers).

REMARKS :

04.07 TYPENUMBER(S): **AZ8049, ND6600, RD6060**

SYMPTOM : The cassette door damper gear (item 14) moves out easily.

CURE : The cassette door (item 2; 4822 443 64542) has been modified by adding a rib to prevent the gear from moving off.

REMARKS : New doors are used in production with sets marked KY02 from week 9604 onwards. Consumer Service stock has been adapted.

04.08 TYPENUMBER(S): **AZ8052**

SYMPTOM : Crackling noise (servo noise) audible in left speaker during CD-play mode.

CURE : Add 2 wireconnections on Feature/Amplifier-board 2.
1 wire between Ground of potentiometer and Emitter 7261 and
1 wire between Emitter 7262 and Emitter 7260.

REMARKS : Phenomenon occurs only in sets with layout stage .5 of Feature/Amplifier-board 2.
From about production week 9531 onwards the 2 wires have been implemented in production.

04.09 TYPENUMBER(S): **AZ8310, ND7500, RD7050**

INFORMATION : **Service manual, Mechanical partslist**
The CD lens cover bracket (item 75 in exploded view diagram on page 18) is now available via service code 4822 402 10201.

REMARKS :

04.10 TYPENUMBER(S): **AZ8349, ND7600, RD7060**

INFORMATION : Service manual, Mechanical partslist:
The CD lens cover bracket (item 115 in exploded view diagram on page 15-3) is now available via service code 4822 402 10201.

REMARKS :

04.11 TYPENUMBER(S): AZ9350, AZ9355, AZ9555

SYMPTOM : Distorted sound in tape playback mode after making a CD recording.

CURE : The cause of the distortion is a poor recording quality due to a too low bias current (below 0.3mA). A correct bias current is about 0.36mA. The correct bias current can be achieved by changing the oscillator transistor 7770 from BC548B to BC548C (4822 130 44196).

REMARKS :

04.12 TYPENUMBER(S): FA775

INFORMATION : Service manual, additional electrical partslist:
Switch SR16 is available via service codenumber 4822 276 11933.

REMARKS : This is a correction of newsletter 25.17.

04.13 TYPENUMBER(S): FC290, FC291

INFORMATION : **Service manual, partslist**
Service codenumber for blue lamp LA1 and LA2 (5V/115mA) should read 4822 134 40829 instead of 4822 134 40952 (orange lamp).

REMARKS :

04.14 TYPENUMBER(S): FC911, FC931

SYMPTOM : Cassette cannot be ejected

CURE : It might happen that in case the set is placed as the lowest part of the system, the cassette cannot be ejected.
Fault is caused by a warped cassette door lever.
To solve this problem the following 2 solutions are proposed:
1. Push the upper cabinet (item 501) up by:
Loosen (not completely) the 2 screws of the top cover near the front panel.
Push the upper cabinet up.
Fasten the two screws again.
Or:
2. Cut adhesive tape on the four cabinet-supports on the front panel, so that the upper cabinet (item 501) is pushed up a little.

REMARKS :

04.15 TYPENUMBER(S): **FC731**

INFORMATION : **Service manual**
Additional Partslist information
Capacitor C203 changed from 3300µF into 4700µF/40V.
New Capacitor is available via service codenumber 4822 124 81305.

REMARKS : See also service newsletter 64.32.

04.16 TYPENUMBER(S): **FR400, FR410**

INFORMATION : **Service manual**
Service Manual Tuning-button and preset-button have been added to the mechanical partslist:

service code	description
4822 410 10391	button tuning
4822 410 10392	button preset

REMARKS :

04.17 TYPENUMBER(S): **FR731, FR751**

INFORMATION : **Service manual**
The capacitor C204, 0.047µF/5.5V for memory back-up is now available via service code 4822 124 80923.

REMARKS :

04.18 TYPENUMBER(S): **FR931**

SYMPTOM : In stand-by mode, a “buzz” is audible from the center speaker.

CURE : Add two additional mass wires from two below mentioned points to the screw at the main board (chassis ground).
– the centre point of connector CN13 (Printed Circuit Board M74)
– Collector of Q701 (Printed Circuit Board M78)

REMARKS : This solution will not be implemented in production because production has been stopped.

04.19 TYPENUMBER(S): **FW12**

INFORMATION : **Service manual**
The service code for the complete tape mechanism is 4822 691 20966.
When replacing the complete mechanism, the record lever pos. 119 must be exchanged with that used in the defective mechanism.
This is due to standardisation of the tape mechanism.

REMARKS :

04.20 TYPENUMBER(S): FW18

INFORMATION : **Service manual, Partslist correction**
The service code for the Remote control transmitter should be 4822 218 10733 instead of 4822 218 10562.

REMARKS :

04.21 TYPENUMBER(S): FW28, FW33, FW34

INFORMATION : **Service manual**
The optical pickup unit for the CD mechanism is now available as service spare part:
- pos. 62 for FW28 and FW33
- pos. 67 for FW34
The service code is 4822 691 10482.

REMARKS :

04.22 TYPENUMBER(S): FW56

INFORMATION : **Service manual, Partslist correction – Front cabinet item 200**

Modelnumber	Description	Published servicecode	Should read
FW56/20/22/25	Philips front	4822 426 51751	4822 426 51752
FW56/21/30	Philips front (Karaoke version)	4822 426 51752	4822 426 51751
FW56/37	Magnavox front	4822 426 51753	4822 426 51753

REMARKS :

04.23 TYPENUMBER(S): FW68

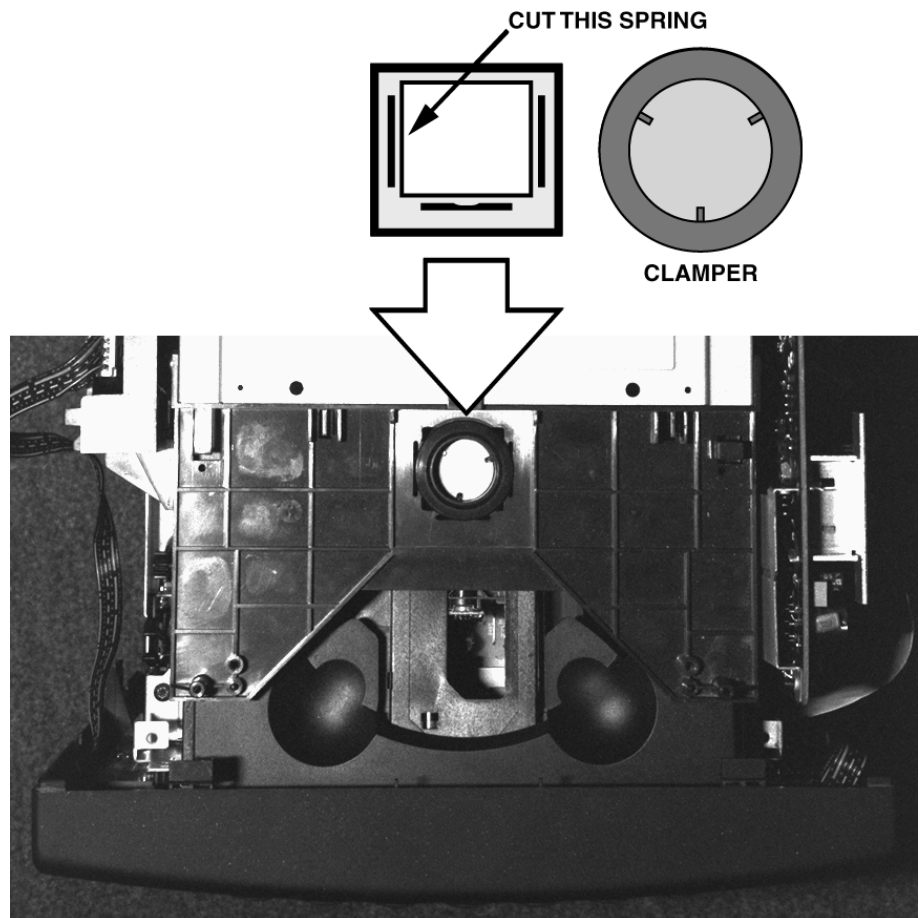
INFORMATION : **Service manual**
Item 212 of Short loader is incorrectly coded.
Service codenumber should read 4822 402 61412 instead of 4822 691 61412.

REMARKS :

04.26 TYPENUMBER(S): **FW650C**

SYMPTOM : After transports - when the set is dropped down at the right hand sidewall - sometimes the clamper is jammed. Sometimes the clamper is pushed back when the CDM comes into play-position, but it may also happen that the clamper jams completely.

CURE : Cut the left hand plastic spring (see sketch below), then the CDM is ALWAYS able to push the clamper back.



REMARKS :

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SERVICE NEWSLETTER

DCC

04.27 TYPENUMBER(S): **DCC730, DCC951, FW68**

- SYMPTOM** : DCC head defect, no recording, several isolation shorts on DCC head.
- CURE** : Isolation shorts are caused by ESD. To protect against ESD replace (or bridge) C2999 on Read/Write panel with a 4,7kΩ resistor (4822 051 20472). It is advised to introduce this in all mentioned sets which will be offered for repair, and the modification has not been implemented yet.
Implementation date: In R/W boards from production week 9540 onwards.
- REMARKS** :

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SERVICE NEWSLETTER

03.01 TYPENUMBER(S): **AZ8055, AZ8056, AZ8057, AZ8262, AZ8267, AZ8289**

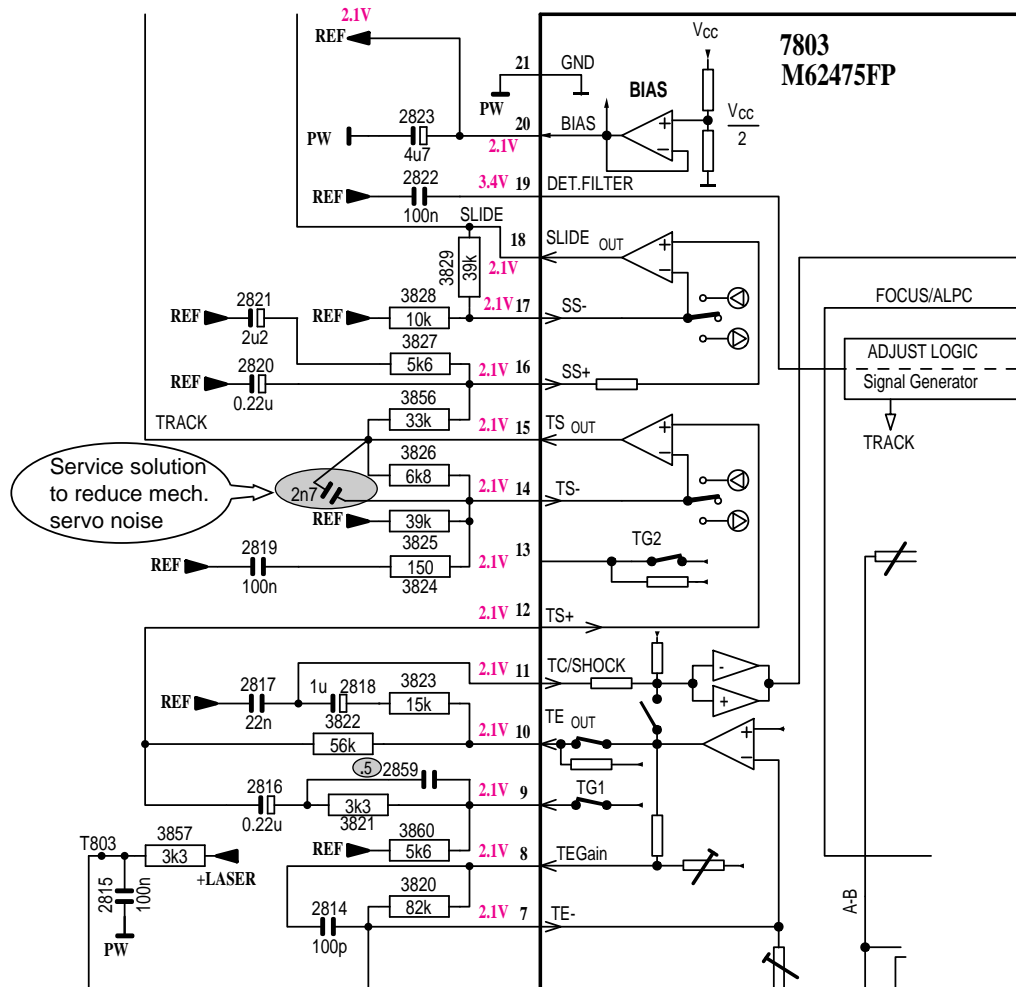
SYMPTOM : The set give a whistling sound when playing a disc.
It sounds like mechanical oscillation.

CURE : Fault is caused by a peak in the gain response curve of the track servo amplifier at about 15kHz. This is far above the bandwidth of 1.5kHz. This does not influence the behaviour of the track servo itself, but causes mechanical noise produced by the pick-up.
The lay-out of combi board has been modified.
With the modified board C2859 and C2858 have been added and the mechanical noise has been reduced by 5dB.

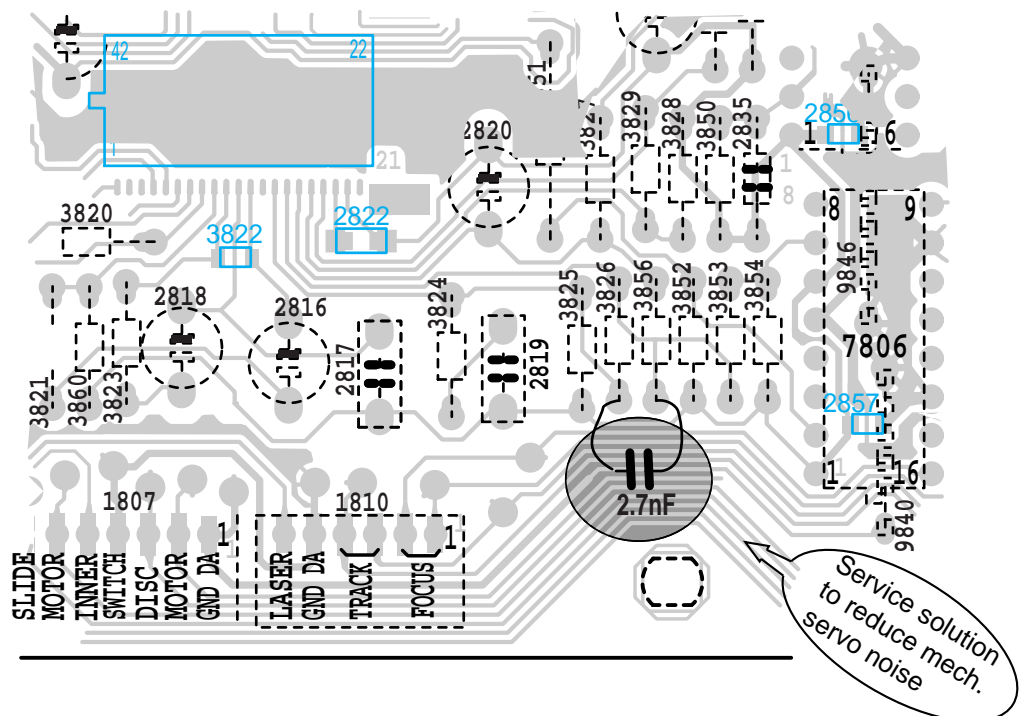
AZ8055, AZ8056, AZ8057:
Modified board is marked ".4" and has been introduced in week 9552.

AZ8262, AZ8267, AZ8289:
Modified board is marked ".5" and has been introduced in week 9601.

Service solution for sets without modified boards:
Add a capacitor of 2.7nF in parallel to R3826 (4822 126 12148).



CONTROL/CD-PART – COPPERSIDE VIEW



REMARKS :

03.02 TYPENUMBER(S): FR951

SYMPTOM : Remote control does not activate the volume knob at temperatures below 7°C.

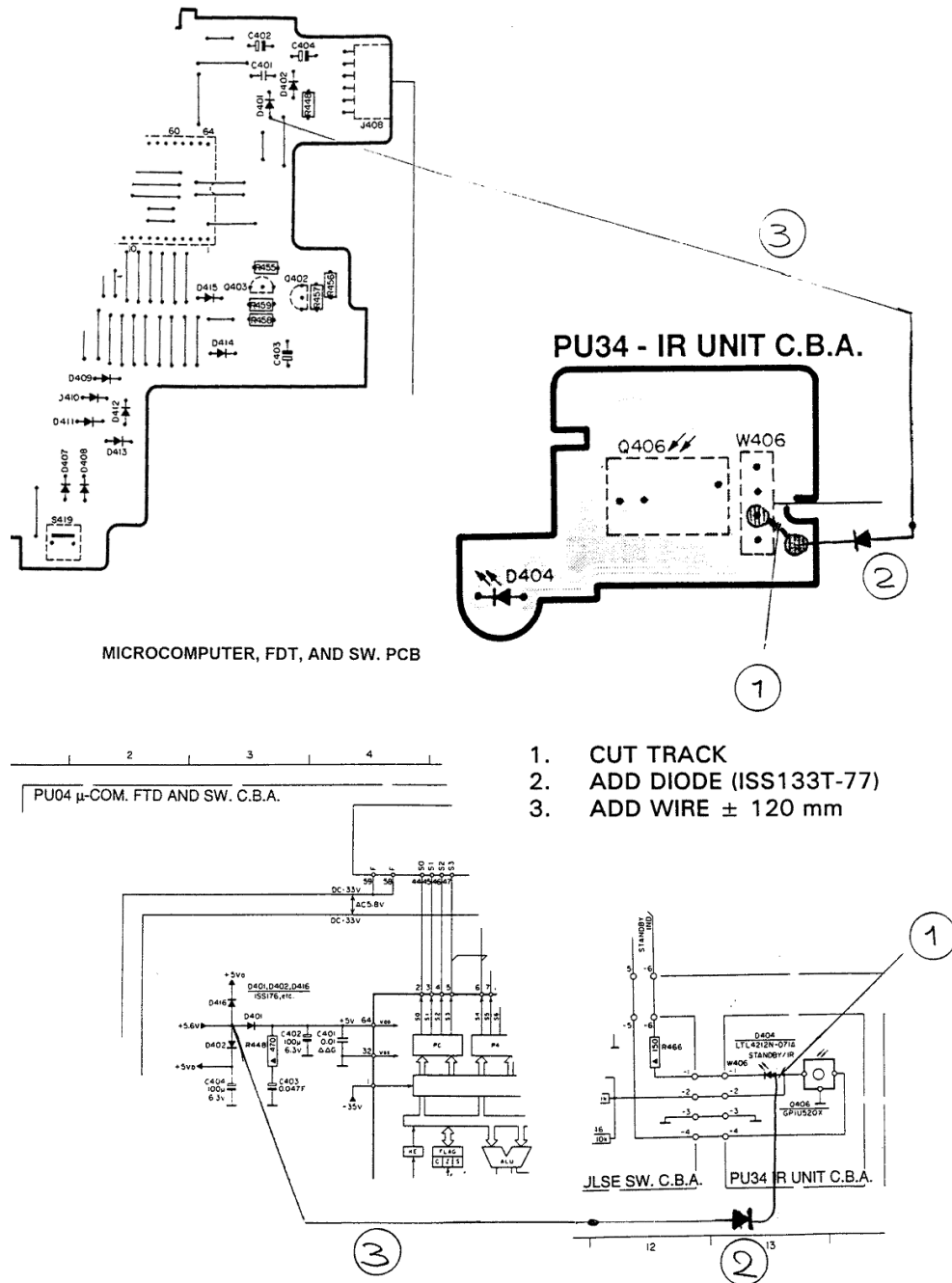
CURE : Cause:
The supply voltage of the IR-eye is not clean, but has a ripple of about 250mV peak-to-peak during IR reception. This ripple is caused by the blinking standby LED during IR reception due to a shared supply line.

Cure:

The problem can be solved by isolating the supply line as follows:

1. Cut PC Board track between D404 and Q406
2. Add diode 1SS133T-77 (4822 130 33305)
3. Add wire (~120mm) between junction D401/D402 to D404 positive

Referring to next Figure. Part of schematic and layout drawing.



1. CUT TRACK
2. ADD DIODE (ISS133T-77)
3. ADD WIRE ± 120 mm

REMARKS :

03.03 TYPENUMBER(S): FW14, FW15, FW36, FW56, FW350C, FW351C, FW360C, FW370G

SYMPTOM : The CD changer part is produces a scratching sound.

CURE : This can be solved by replacing the sub-chassis item 40,
service code: 4822 691 10477.

REMARKS :

03.04 TYPENUMBER(S): FW14, FW15, FW36, FW56, FW350C, FW351C, FW360C, FW370G

SYMPTOM : CD changer mechanism jammed and display shows "DEF".

CURE : Cause:
1. CD clamped between the carriage and the tray;
fault is normally not reproducible.
2. Disc can drop in when the tray is open.

Cure:
1. New software version 66 with improved timing of carriage
movement will prevent the CD from being clamped between
carriage and tray. Service code for μ P is 4822 209 91162.
2. Rib on the right side of the tray will be removed.
Implemented from week 9546 onwards.

REMARKS : See also newsletter issue 96.01.11.

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SERVICE NEWSLETTER

DCC

03.05 TYPENUMBER(S): **DCC730, DCC951**

INFORMATION : A demo mode have been defined in the software program:

Demo mode; Non protected:

After switching-on the power and with the set in STOP position, the Demo mode can be entered by pressing the SCROLL button. Pressing the STOP button will disable this mode.

Demo mode; protected (only for the trade):

When switching-on the power, while pressing the SCROLL button, the protected trade mode will be entered. In this mode the drawer cannot be opened. This mode can only be disabled by means of the O/C button of the remote control (or by erasing the EEPROM in service mode).

REMARKS :

03.06 TYPENUMBER(S): **DCC951**

SYMPTOM : Wrong "COPY PROHIBIT" indication

CURE : Cause:

DCC951 display gives the indication "COPY PROHIBIT" when recordings according to SCMS are made. Particularly recordings from SONY CD-players and MD-players (with pre-recorded software) cause problems.

Cure: Replace digital microprocessor, item 7700 on digital board of DCC module, by an OTP loaded with software programme D028 (service code 4822 209 12972).

REMARKS :

03.07 TYPENUMBER(S): DCC951

INFORMATION : USE OF EDIT MODE

When making a digital recording from CD player to DCC via CD dubbing (controlled by ESI), EDIT can be selected by most of the players e.g. CD931, CD940, CD911. CD951 (CD950) does not have this feature and will always add 4 seconds AUTOSPACE in the CD dubbing mode.

When EDIT mode has been entered, the CD player indicates the tracks that will be recorded on side A and B depending on the selected tape length. When recording on an Analogue recorder, the recording will be made as indicated by the CD player. When on side A, the last possible track has been recorded, the CD player will come into the pause mode. The next track which will be recorded is displayed. At the end of the tape, the recorder head (automatic reverse), will switch to side B. The tape starts running and after 6 seconds the recording will continue.

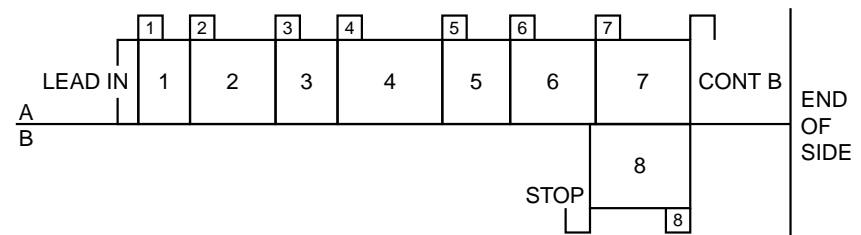
When recording digitally to DCC951, the way of recording is different.

1. CD911 (CD94 program)

The recorded CD of Peter Gabriel has 8 tracks with a total playing time of 45'48".

In edit mode the CD player selects tracks 1-7 on side A, track 8 on side B. When track 7 has been recorded, the CD911 change over to pause with track 8 selected. The DCC951 writes a "CONT. B" marker on side A, the recorderhead will be reversed, and the recording will continue with track 8. In comparison with a recording on an analogue tape, a greater section of the tape will not be used.

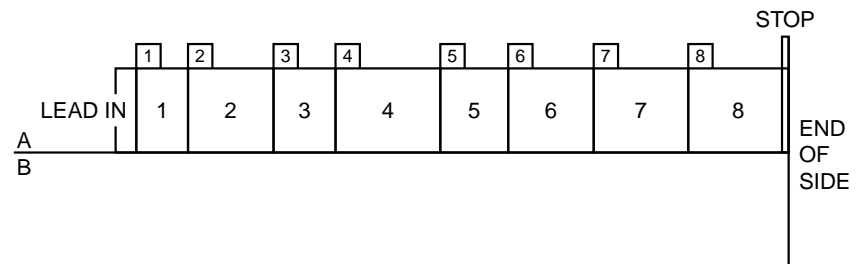
CD911 (EDIT)



2. CD931(= CD930, CD93 program)

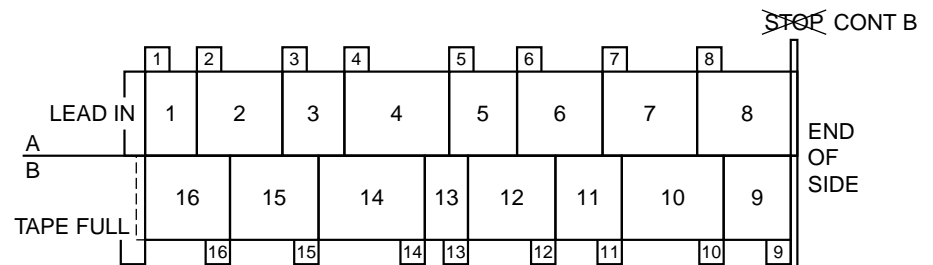
In edit mode, the CD player selects also tracks 1-7 on side A, track 8 on side B. When track 7 has been recorded, CD931 changes over to pause with track 8 selected. DCC951 continues the recording till end of side A. Then it rewinds to the last written marker, in this case startmarker of track 7, overwrites this marker by a "CONT. B" marker and continues recording of track 8 on side B, indicating recording track 7. When playing back the recorded tape, track 7 of the CD will not be audible, because it is marked by the "CONT. B" marker, forcing the tape to continue on side B.

CD931 (NO EDIT)



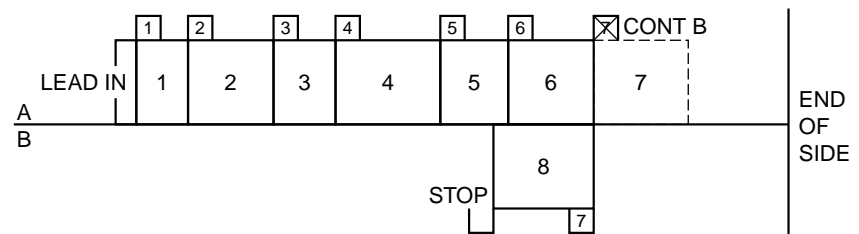
When recording without edit mode, all 8 tracks will be recorded on side A, because the tape length (46") seems to be sufficient for this CD.

CD931 (NO EDIT, NEXT RECORDING)



When making a next recording of the same CD via APPEND, DCC starts the recording but when reaching the end of side A after 30", DCC rewinds to the written start marker of track 9, replaces it by a "CONT. B" marker, and recommences the recording of track 9 on side B.

CD931 (EDIT)



Recording of a CD without edit mode results in a better utilisation of the tape, no tracks will be lost.

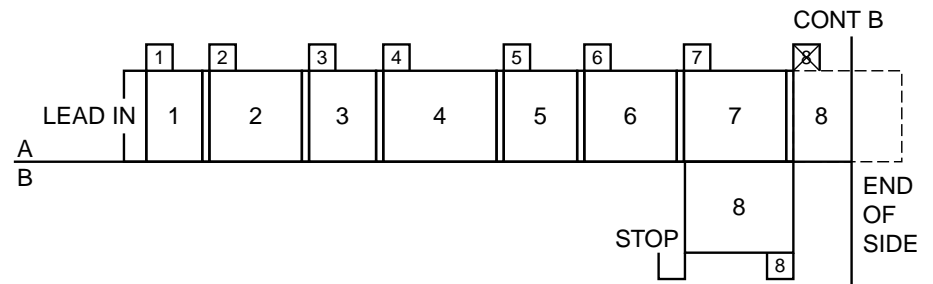
A peculiarity of DCC951 is that before the CD will be recorded a second time completely, DCC displays: "TAPE FULL" although one expects that enough space was left. This is caused by the procedure of calculating the used tape length.

3. CD951(= CD950, CD93 program)

CD951 has no EDIT mode and in CD dubbing, an AUTOSPACE of 4 seconds will be added between the recorded tracks. This AUTOSPACE cannot be switched off. Analogue recorders need this 4 seconds gap for the FAST TRACK ACCESS feature.

Before the recording of track 8 has been finished, the tape will reach the end of side A . DCC rewinds to startmarker of track 8, replaces it by a "CONT. B" marker and recommences the recording on side B. No tracks will be lost. The disadvantage of the 4 seconds AUTOSPACE is that when recording live recorded CDs, between tracks an undesired pause will be audible. This can only be solved by recording without CD Dubbing(CD SYNCHRO OFF).

CD951 (NO EDIT POSSIBLE, 4 SEC. AUTOSPACE)



CONCLUSION

EDIT mode has no use when recording digitally via CD Dubbing. When recording via CD dubbing without EDIT, the DCC recorder organises its own recording in an efficient way. Tracks interrupted by the end of side, will be repeated on the next side. This interruption is inaudible during play back.

Using EDIT mode might result in a loss of the last track on side A by an inadequate software in the CD player (CD931), or in loss of tape-space (CD911).

The EDIT feature is only useful for analogue recordings.

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SERVICE NEWSLETTER

02.01 TYPENUMBER(S): **AE2340**

- SYMPTOM** : A selected preset frequency is replaced by another frequency.
- CURE** : In case presets are used to change stations, the frequency of the last preset station may be lost, when waking up by Radio.
Temporarily an addendum sheet is packed by with the following content:
Protecting preset stations when using the alarm RADIO mode.
Your selected stored frequencies (presets) may be lost as a result of using the alarm RADIO mode. In order to safeguard your selected presets, please follow the 3 steps below:
1. Set the desired alarm time.
2. Press the POWER ON/OFF button twice.
3. Now set the alarm switch to RADIO mode.
- REMARKS** : An Addendum sheet is added in the Instruction for Use of sets produced from week 9606 onwards.
From April 1996 onwards, an updated Microprocessor IC will be mounted.
This updated Microprocessor will safeguard the last preset frequency.

02.02 TYPENUMBER(S): **AZ8006, ND6500, RD6050**

- INFORMATION** : In Service Information A94-576 (4822 725 25358), the test points were erroneously not given.
Please add on page 23 (circuit diagram) the location of test points as described below:
TP1 = junction of RV103 and JP1
TP2 = pin 18 of U101
TP3 = junction of R111 and JP1
TP4 = pin 31 (RF) of U101
TP5 = pin 1 of U101
TP6 = junction of RV104 and JP2
- REMARKS** :

02.03 TYPENUMBER(S): **AZ9055**

- SYMPTOM : CD does not start-up or uses too long time to start-up (8-10 sec.)
- CURE : Fault is caused by the cross-talk between track and focus servo.
The problem can be corrected by the following actions:
1. Replace J112, where temporarily a 1Ω resistor was mounted, by a jumper wire. J112 can be found on CD Main Board (layout diagram), near IC104 pin2. With this jumper pin2 of IC104 is connected to ground.
 2. Change R106 from 39kΩ to 33kΩ (4822 050 23303).
One side of R106 is connected to IC101 pin72 (HF SUM).
 3. Change C108 from 330pF to 220pF (5322 122 32346).
One side of C108 is connected to IC101 pin69 (BH).
- After this modification: Check the E/F balance for a value within range: **40mV ±20mV**.
- REMARKS : 1. This modification has been implemented in production from week 9546 onwards.
2. **CHANGING THE COMPLETE CD- DRIVE WILL NOT SOLVE THE PROBLEM SATISFACTORILY.**
-

02.04 TYPENUMBER(S): **FW11**

- SYMPTOM : In the stand-by mode, noise from the loudspeaker box is audible.
- CURE : The power supply switching circuit is defective, resulting in audio IC TA8216H (IC501) is still working at standby mode.
Check: 1. Pin 55 of IC106 should be "low".
2. Diode D116 (at CN302 pin 2) should be "low".
3. Q501 should be "low".
4. Pin 11 of IC501 should be "low".
If either one is not "low", the component concerned or the peripheral is defective.
- REMARKS :

02.05 TYPENUMBER(S): **FW11**

- INFORMATION : During production, in order to improve shock sensitivity, two suspension springs (item 243) at the rear side of CDM have been changed.
New service code is 4822 404 21354. While 4822 492 71613 is retained as the service code for the two suspension springs at the front side.
- REMARKS :

02.06 TYPENUMBER(S): **FW40, FW41**

INFORMATION : For tape deck CWA409RR the ARM FR assy, item 22 on tape deck exploded view, is available via service code 4822 403 71213 and command gear wheel (cam gear), item 31 on tape deck exploded view, is available via service code 4822 522 33524.

REMARKS :

02.07 TYPENUMBER(S): **FW46, FW56, FW610, FW630**

INFORMATION : For tape deck and CWA424RR the ARM FR assy, item 22 on tape deck exploded view, is available via service code 4822 403 71213.

REMARKS :

IMPORTANT—IMPORTANT—IMPORTANT

02.08 TYPENUMBER(S): **MS6500, SM6050**

SYMPTOM : CD does not start-up or uses too long time to start-up (8-10 sec.)

CURE : Fault is caused by the cross-talk between track and focus servo. The problem can be corrected by the following actions:

1. Replace J112, where temporarily a 1Ω resistor was mounted, by a jumper wire. J112 can be found on CD Main Board (layout diagram), near IC104 pin2. With this jumper pin2 of IC104 is connected to ground.
2. Change R106 from 39kΩ to 33kΩ (4822 050 23303). One side of R106 is connected to IC101 pin72 (HF SUM).
3. Change C108 from 330pF to 220pF (5322 122 32346). One side of C108 is connected to IC101 pin69 (BH).

After this modification: Check the E/F balance for a value within range: **40mV ±20mV**.

REMARKS : 1. This modification has been implemented in production from week 9546 onwards.
2. **CHANGING THE COMPLETE CD- DRIVE WILL NOT SOLVE THE PROBLEM SATISFACTORILY.**

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SERVICE NEWSLETTER

01.01 TYPENUMBER(S): **General**

INFORMATION : With this newsletter a modified issue numbering has been introduced. From now on the year in which the newsletter is published, will be added in front of the issue number and item number.
Example:
96.01.03 = itemnumber 3 of issue number 1 published in 1996.

REMARKS :

01.02 TYPENUMBER(S): **AQ6548, AQ6549**

SYMPTOM : No headphone output or headphone output signal is intermittent.

CURE : Fault is caused by a cracked copper-track at the headphone socket. Check copper-track and re-connect the broken track with jumpers.

REMARKS : Following modification had been implemented:
Main Cabinet tool from week 9516 onwards
Rear Cabinet tool from week 9531 onwards
Printed Circuit Board Copper-track from week 9538 onwards

01.03 TYPENUMBER(S): **AQ6548, AQ6549**

SYMPTOM : A squeaking sound is audible.

CURE : Pin 1 of IC LAG673 has loose contact due to the pressure from the rear cabinet. Check and touch up the solder connection at IC LAG673.

REMARKS : From week 9522 onwards, rear cabinet has been modified to avoid pressing the IC.

01.04 TYPENUMBER(S): **AZ8050, AZ8051, AZ8052, AZ8150, AZ8055, AZ8056, AZ8057, AZ8262, AZ8267**

INFORMATION : **Service Manual**
correction EXPLODED VIEW / drawing 1 page 8-1:
Description and position numbers 448 (knob slide MODE) and 449 (knob slide BAND) are interchanged in the Exploded View/drawing 1 of the service manuals.
The drawn position of item number 448 should read Knob slide Band and item number 449 should read knob slide MODE.
In the partslist service code numbers and descriptions are correct.
Ordering 4822 411 61999 will deliver knob slide "MODE"
Ordering 4822 411 62001 or 4822 411 62003 will deliver the desired knob slide "BAND"

REMARKS :

01.05 TYPENUMBER(S): **AZ8051**

INFORMATION : For Region Hongkong the new version AZ8051/11H will be introduced.
For further repair information see Service Manual AZ8050, AZ8051, AZ8052, AZ8150 (4822 725 24954).
Difference to AZ8051/01: mains cord 4822 321 10886

REMARKS :

01.06 TYPENUMBER(S): **AZ8340, AZ8345, AZ8350, AZ8357, AZ856**

INFORMATION : **Service Manual**, Addition to specifications
Microphone input impedance: approximately 2.5k Ω
Microphone input sensitivity: 0.1mV

REMARKS :

01.07 TYPENUMBER(S): **AZ9350, AZ9450, AZ9555**

INFORMATION : Service Manual Addition to specifications Microphone input impedance: approximately 10k Ω . Applied microphones may have output impedance of 30 till 600 Ω .

REMARKS :

01.08 TYPENUMBER(S): **AZ9350, AZ9355, AZ9555**

SYMPTOM : CD shows "Door open" or CD loaded but does not function.

CURE : The problem is due to heavy oxidation of the leaf switch 1920 causing poor contact (permanent or intermittent).

REMARKS : Switch of improved quality has been applied and the mechanical door activation has been re-designed. Both improvements have been implemented from week 9529 onwards.

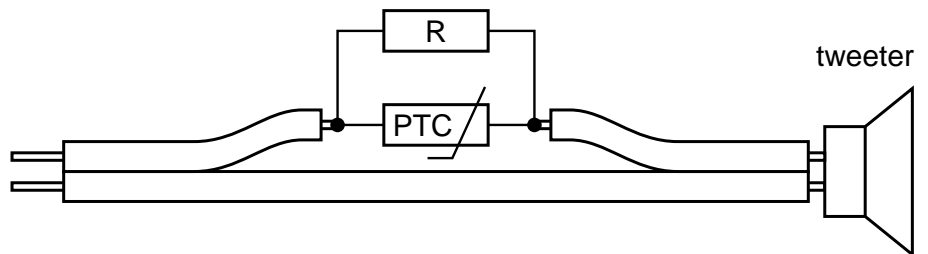
01.09 TYPENUMBER(S): CD400, CD410, FR400, FR410, FS400, FS410

INFORMATION : WARNING: DO NOT CONNECT CD400 WITH FR410!!!
 The CD400 (from system FS400) looks identical to CD410 (from system FS410). Even the cable to connect the CD-set to the receiver is the same.
 If only the set CD400 is brought-in for repair this set should NOT be connected to the FR410.
 USE ONLY CD400 TOGETHER WITH FR400
 USE ONLY CD410 TOGETHER WITH FR410.
 The voltages for CD410 and CD400 are not identical.
 Fuses might be blown after that connection!!

REMARKS :

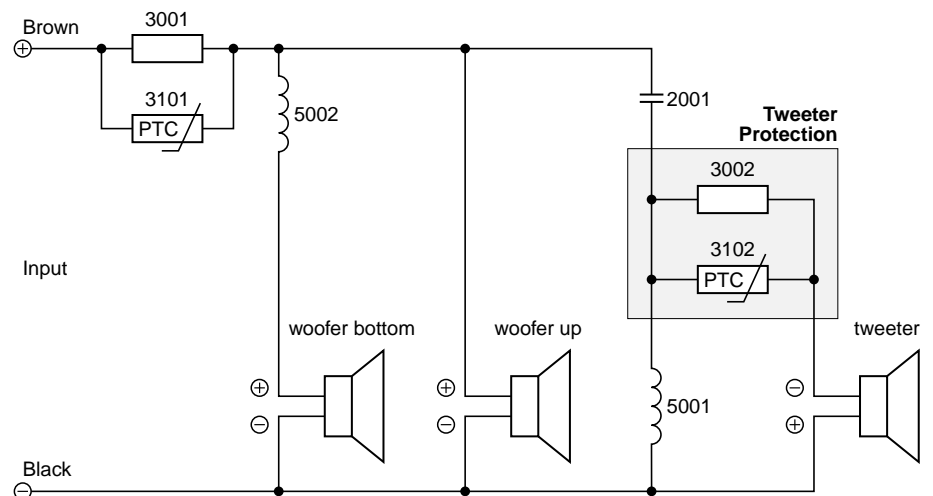
01.10 TYPENUMBER(S): FB695, FB696

INFORMATION : **Service hints:**
 For loudspeakerbox produced before week 9545 and brought in for repair of a defective tweeter AD11401/T6 (4822 240 70223), it is necessary to add a tweeter protection circuit in the wire to the tweeter.
 See next drawings or service information A95-101 (4822 725 24783).



The extra components used are:
 R = resistor 5.6Ω 5Watt (4822 053 32568)
 PTC = PTC RXE040 (4822 116 40264)

In boxes produced from week 9545 and onwards, this protection circuit has already been implemented.
 From week 9606 onwards the protection circuit has been integrated on the filter unit (4822 214 51297).



item	service code	description
5001	4822 157 62595	air coil 330µH
5002	4822 157 62596	ferrite coil 820µH
2001	4822 124 21436	bipolar capacitor 4.7µF 100VDC
3001	4822 116 82638	resistor 5.6Ω 25Watt
3002	4822 053 32568	resistor 5.6Ω 5Watt
3101	4822 116 40201	PTC RXE135
3102	4822 116 40264	PTC RXE040

REMARKS : This modification should be applied in each box FB695 and FB696 offered for repair.
This publication will be followed by Service Information A95-101.

01.11 TYPENUMBER(S): FW14, FW15, FW36, FW54, FW56, FW350C, FW351C, FW360C

INFORMATION : The microprocessor of the CDC Module is changed to 4822 209 91162 (software version 66) with printing mark "CDC51050".
Included in this new software are:
a) During Standby mode the cam gear will go into stocker mode making it safer for transportation and drop-test.
b) Improve disc detection to prevent the top disc from dropping into mechanism if 2 discs have been loaded.

REMARKS : Implemented in production from week 9550 onwards.

01.12 TYPENUMBER(S): FW36, FW351

SYMPTOM : In stand-by mode: LCD display shortly lights-up or CDC-unit makes noise.

CURE : When the unit is in Stand-by mode the units LCD display may flash On and then Off momentarily. The unit may also initialize the CDC Mechanism. The customer may complain that his unit is making noise when the unit is not being used.

This symptom is caused by:

AC (mains) voltage which might drop about 10 to 15 volts for about 30ms to 70ms.

This voltage drop is detected as a Powerdown (or AC interruption). The CDC Mechanism is then initialized and returns into Stand-by mode.

The Powerdown circuit is too sensitive to AC voltage drops.

The AC voltage drop may be caused by e.g. the Central Heat and Air installation in the home turning on.

The symptom can be solved by:

Add a 10kΩ resistor 5%, 0.5W (service number 4822 116 52233) between ground and AC connection AC2.

This component has to be added on the Combi Board.

(Mount resistor 10kΩ on printed board side between jumping wire 9318 and connector 17, pin 3 & 4). This solution has been applied and drawn in service manual FW360: resistor 3253.

REMARKS :

01.13 TYPENUMBER(S): FW46, FW56, FW610, FW620C, FW630, FW650C

INFORMATION : Partslist:

The complete (DOUBLE) tape deck mechanism (A1 + A2) is available via 4822 691 20928.

REMARKS :

01.14 TYPENUMBER(S): FW68

INFORMATION : Complete loudspeakerboxes are available as spareparts:

Left box 4822 445 10493

Right box 4822 445 10494

REMARKS :

01.15 TYPENUMBER(S): FW330, FW331G, FW360, FW370C

INFORMATION : Alarm or Wake-up volume problem

The wake-up volume is designed such that the buzzer is independent on the volume level. If CD or Tuner is selected the wake-up volume will start from volume 01 and gradually increases to a maximum volume 15 (3 bar on the display) after 1 min and 45 sec.

During this period if any buttons/knobs is activated, this gradual volume increase process will stop permanently even before the maximum volume 15 is reached. This may create an impression that the alarm or wake-up volume is not working if the customer turns the volume knob to check why there is no alarm sound.

REMARKS :

01.16 TYPENUMBER(S): FW610, FW620C

SYMPTOM : No sound

CURE : It has been found in showrooms where sets of FW610 and FW620C are shown together with FW630 and FW650C, the INCREDIBLE SOUND command from a FW630 or FW650C Remote control also activates the FW610 and FW620C. However than there remains no output signal.

The "incredible sound" remote control command causes the IC7553 (TEA6321) to switch from FRONT to REAR output.

See also Service manual block diagram on page 9-4.

Due to the fact that the FW610 and FW620C sets have not implemented the Incredible Sound feature no sound is audible at the speaker any more.

To make the set playing again one can choose out of two possibilities:

1) Press the INCREDIBLE Sound button on the FW650C or FW630 Remote Control again.

This causes the set to switch to normal Stereo again.

2) Use the EEPROM CLEAR Test as shown in the Service Test Program (Page 3-5).

This command will load the default data in the EEPROM.

A modification of the set is under investigation.

WARNING

DO NOT SHORT-CIRCUIT THE FRONT TO THE REAR OUTPUT OF IC 7553. This will damage the IC.

REMARKS : This publication will be followed by a service information.

01.17 TYPENUMBER(S): ST2010, ST4010, TS2100, TS4100

SYMPTOM : The record player does not move.

CURE : The ON/OFF switch assembly on the record player has to be replaced due to broken holder and oxidized contacts. The switch is known as "SW8" in the schematic for Tuner/EQ and it is available via service code 4822 277 11503.

REMARKS : From week 9537 onwards, the tooling of the plastic holder of the switch assembly had been modified. Also the surface of the contact plate is provided with a nickel plated finishing.