

OLDER 40312 S&CC won't work!

## Replacement of CD player types CDM3 and CDM4S to CDM12 / CD-PRO in Deutsche Wurlitzer GmbH jukeboxes

We have introduced a new CD player generation, in case of defect it is necessary to replace players of types CDM3 and CDM4S by the type CDM12. In case of exchange some changes at the electrical wiring, the gripper arm stop bracket and the gripper arm itself have to be made.

Three different conversion kits can be ordered.

Before ordering a conversion kit please check which EPROM version is installed in the S&CC unit.

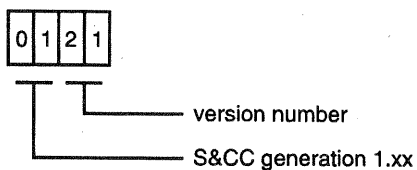
Please proceed as follows:

Set the slide switch 'Service' on the S&CC unit to ON and press the 'LT button'.

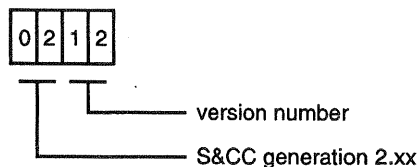
Then: Press selection button 4.

All display segments will be driven separately, after all the EPROM version number will be displayed.

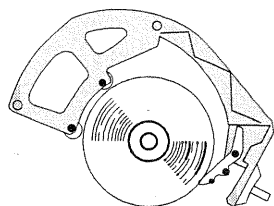
Example 1:



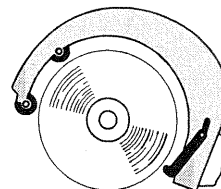
Example 2:



After this set service switch to OFF and press 'LT'. Jukebox will return to normal operation mode. Than have a look at the installed gripper arm.



old type



new type

### 1. Determination of the needed conversion kit:

Use the table to determine the needed conversion kit.

	S&CC unit 1.xx	S&CC unit 2.xx
Old gripper arm type	0042231	0047596
New gripper arm type	(0042231)	0037120

Example:

CD-jukeboxes with selection and credit computer (S&CC 40315) and EPROM 2.xx and old gripper arm type:

conversion kit part no.: 0047596

## 2. Component parts of the different kits:

### Replacement kit 0042231, machines with EPROMS 1.xx and old gripper arm type

1. This information.
2. CDM12 player with chassis:  
part no. 0046858
3. Butt strap for traction lever:  
part no. 0038313
4. Sub transformer with holder:  
part no. 0046783
5. Gripper arm stop bracket:  
part no. 0046926
6. **Complete gripper arm** with  
cone wheel: part no. 0038431
7. **S&CC unit 0040264**
8. Bolt (if lost): part no. 0013415
9. Retaining ring (if lost):  
part no. 0012543
10. Audio cable: part no.0043816

### Replacement kit 0047596, machines with EPROMS 2.xx and old gripper arm type

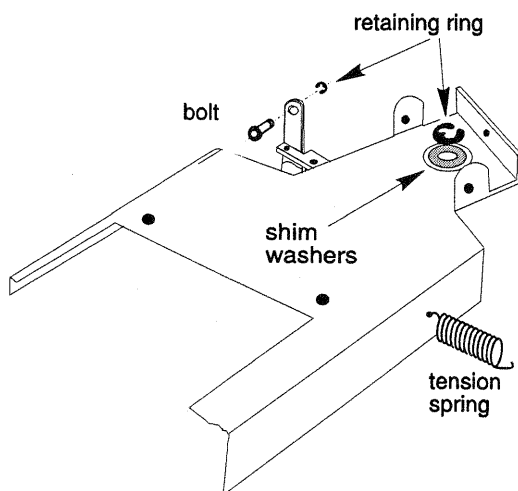
1. This information.
2. CDM12 player with chassis:  
part no. 0046858
3. Butt strap for traction lever:  
part no. 0038313
4. Sub transformer with holder:  
part no. 0046783
5. Gripper arm stop bracket:  
part no. 0046926
6. **Complete gripper arm** with  
cone wheel: part no.  
0038431
7. **EPROM (3.09):** part no.  
0040263
8. Bolt (if lost): part no.  
0013415
9. Retaining ring (if lost):  
part no. 0012543
10. Cover S&CC unit: part no.  
0040268
11. Audio cable: part no.0043816

### Replacement kit 0037120, machines with EPROMS 2.xx and new gripper arm type

1. This information.
2. CDM12 player with chassis:  
part no. 0046858
3. Butt strap for traction lever:  
part no. 0038313
4. Sub transformer with holder:  
part no. 0046783
5. Gripper arm stop bracket:  
part no. 0046926
6. **Gripper arm:** part no.  
0033533
7. **EPROM (3.09):** part no.  
0040263
8. Bolt (if lost): part no.  
0013415
9. Retaining ring (if lost):  
part no. 0012543
10. Cover S&CC unit: part no.  
0040268
11. Audio cable: part  
no.0043816

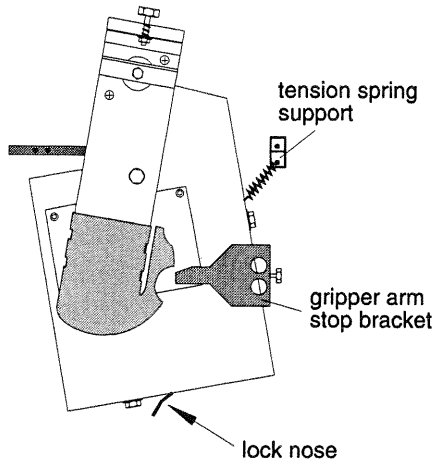
For an exchange please proceed according to following steps:

### 3. Remove old CD-player:



⇒ *Remark, for OMT-CD only:*

- For easier change it is helpful to turn the digital display to the left side, therefore remove the right screw and loose slightly the left one.
- Remove retaining ring from hollow shaft at lid arm pusher shaft.
- Take out shim washers from hollow shaft and keep them.
- Remove tension spring from the right side of the player chassis.
- Remove retaining ring from connection bolt between traction lever and gear. Remove the bolt.



**4. Change of the gripper arm stop bracket**

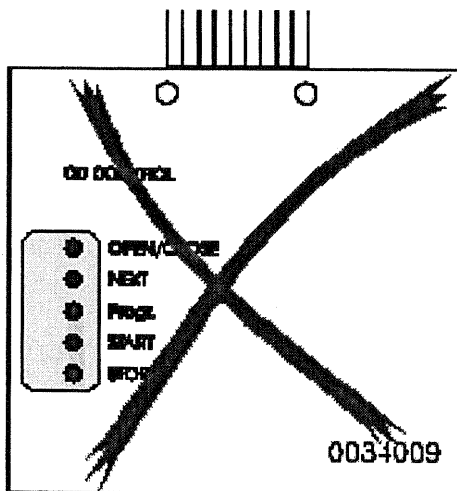
- Bend backwards the lock nose in front of the player chassis with a screw driver through the elongated hole of the main chassis.
- Loose nuts of gripper arm stop bracket, accessible through the holes on top.
- Take out the player. First lift it in the rear then take it out to the left hand side.

**5. Exchange of tension spring support**

- Remove fastening screws and exchange stop bracket for new one.
- ⇒ *Remark:* This can be done only if the old player had been removed. The stop bracket must be changed, otherwise it will be not enough space for the new player chassis.

- Remove fixings screw and exchange support for new one.
- ⇒ *Remark:* If the new support looks like the installed one it has not to be changed.

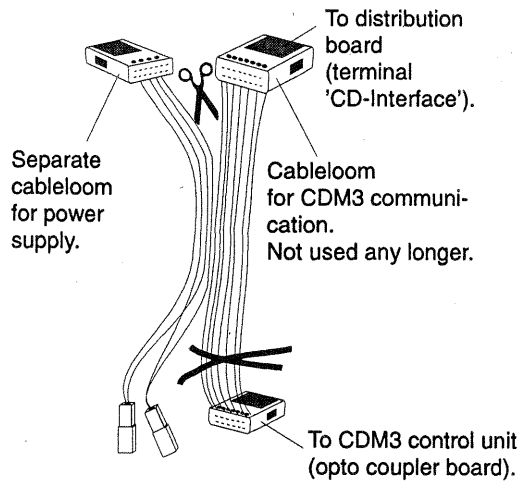
**6. Take out old CD control unit:**



CD control unit CDM3 / CDM4S  
No longer necessary

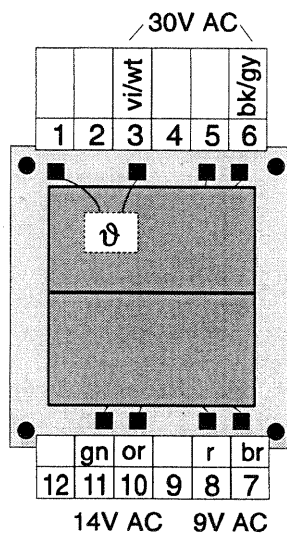
The CD control unit of the CDM12 player generation is integrated in the player unit. An additional unit is no longer necessary. The old CDM3 control unit can be taken out.

- Switch OFF the jukebox and pull out the mains plug.
- Disconnect the two cables of the player from the CD control unit.
- Disconnect the power wires from the sub transformer and disconnect the audio cable.
- Remove the rest of cable loom leading to the CD-control unit completely.



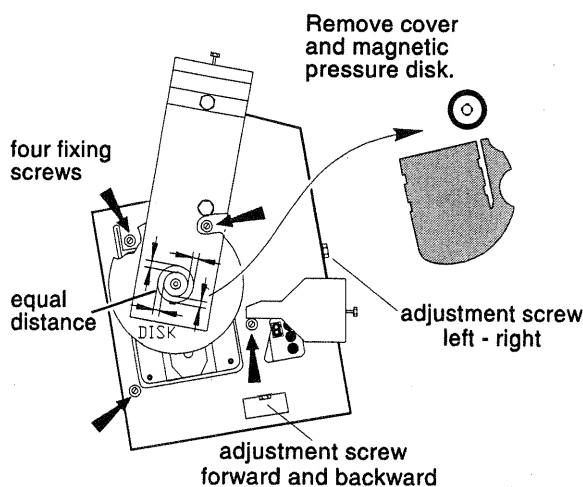
- Remove CD control unit and its mounting device (OMT).
- One part of cableloom part no. 0006807 consists of some wires for the CDM3 communication. It will not be used any longer and can be detached.

### 7. Installation of the sub transformer:

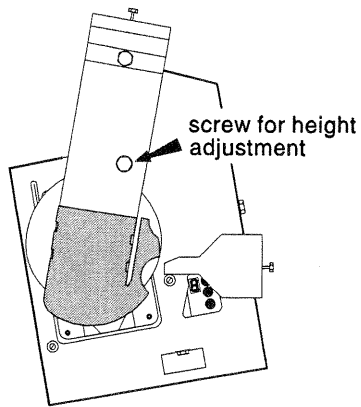


- Install sub transformer including adapter plate at the rear cabinet wall.
- Connect power wires to the terminals 3 and 6 of the transformer.
- Connect CDM12 power wires according to the colour marks to the sub transformer (7-br, 8-r, 10-or, 11-gn).
- OMT: pull connection harness through opening in intermediate panel. NEW YORK, NEW ORLEANS: Connection harness should be led provisionally to back wall.
- Lay 5pol. cable to the S&CC unit and connect it to terminal P5.
- Change audio leads if necessary (e.g. New Orleans).

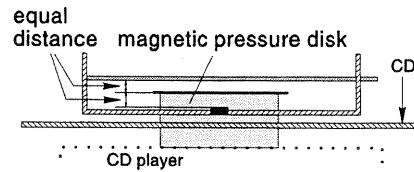
### 8. Check of the lid arm adjustment:



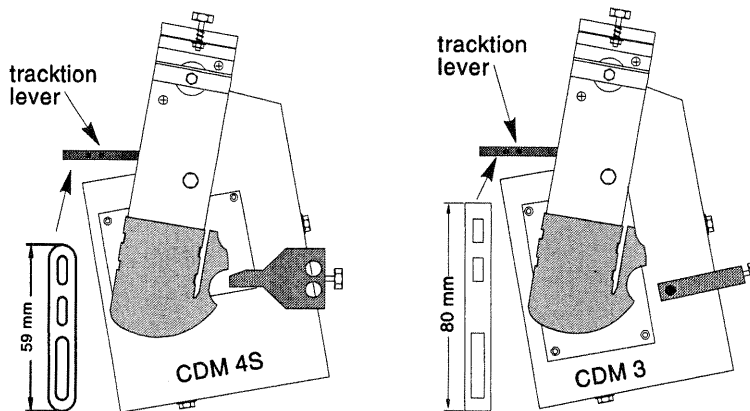
- Remove plastic cover from lid arm and take out magnetic pressure disc.
- The player hub and lid hole should be centred.
- If the distance is not equal, adjust as follows:
  - Slacken four fixing screws of Philips player.
  - Adjustment with screw in front of the player and on the right side.
  - Tighten four fixing screws again.
  - Insert magnetic pressure disc and plastic cover.



- Adjustment of lid arm height in play position:
  - Place a CD on turntable.
  - Adjust lid arm height with screw for height adjustment.
  - Top edge of magnetic pressure disk should be in middle position between plastic cover and nose in front of lid arm hole.



## 9. Modification of traction lever



CDM4S - butt strap part no 0038313 can be used as well.

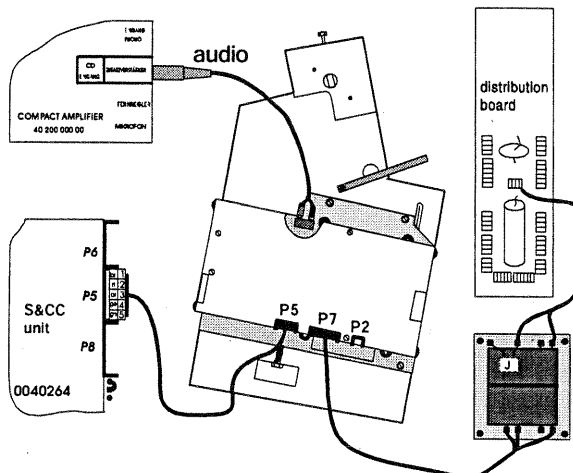
CDM3 - butt strap part no 0000608 has to be changed.

Not necessary to be modified if a **CDM4S** player is installed.

If a **CDM3** player is installed, the butt strap of the traction lever has to be replaced. Proceed as follows:

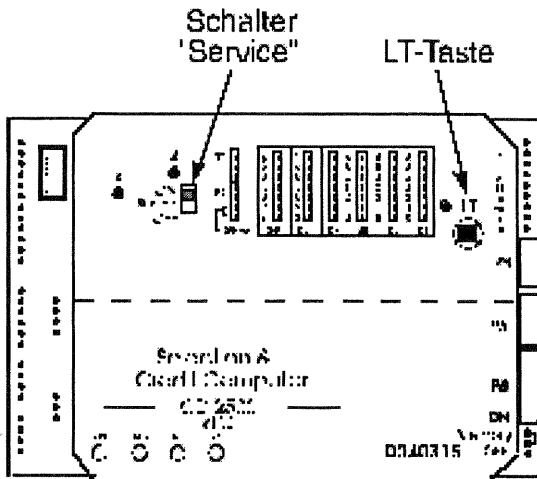
- Remove traction lever from old player by loosening retaining ring.
- Change butt strap at traction lever.
- Fix complete traction lever with butt strap at new player chassis.

## 10. Installation of the complete pre-adjusted CDM12 player

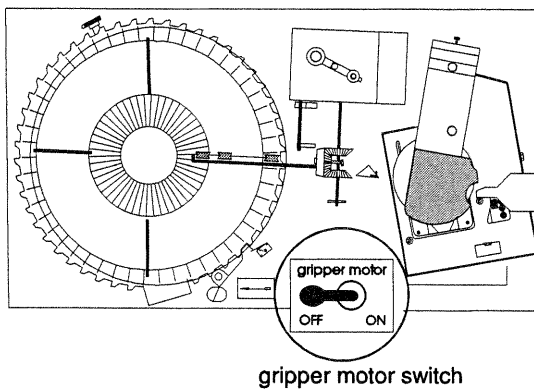


- Connect all three cables to the CDM12 player (power supply, cable from P5 S&CC unit and audio cable).
- Place player above lid arm pusher shaft and move it under gripper arm stop bracket.
- Insert distance washers at hollow shaft.
- Insert retaining rings at hollow shaft of player chassis
- Fix traction lever with bolt and retaining ring.
- Mount torsion spring at player chassis.
- Bend lock nose at player chassis slightly to the front.
- Connect ground wire to the rear cabinet wall.

## 11. Exchange of the gripper arm

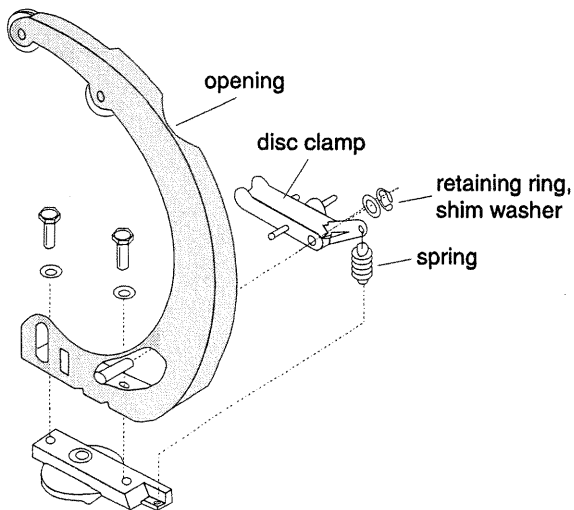


### 11.a. New gripper arm type



- Switch on the jukebox again.
- Set switch 'service' on the S&CC unit to ON.
- Press LT button at the S&CC unit.
- Lift lid arm to vertical position (to avoid collision with gripper arm).
- Depending on the installed gripper arm type proceed according to either chapt. 11.a. or 11.b.

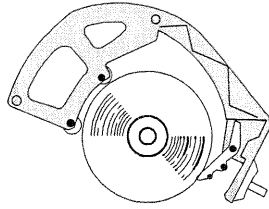
- Start the gripper arm by pressing selection button 7 then stop it in the middle of its way with the gripper motor switch.



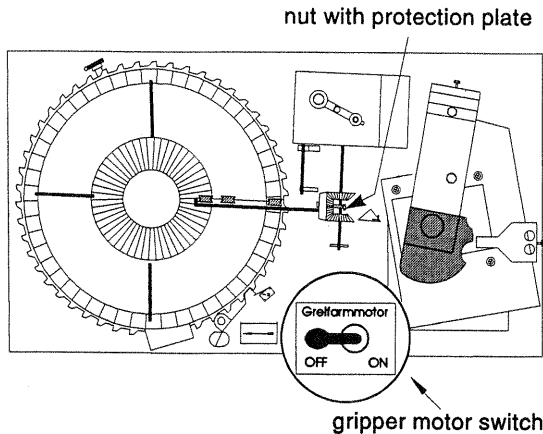
*The new gripper arm has an opening so that the arm cannot touch the player chassis in play position.*

- Remove the spring on the disk clamp with a pair of pliers.
- Remove retaining ring and washer and keep them.
- Remove the disk clamp and keep it.
- Remove the gripper arm and fix the new one in the same position.
- Mount disc clamp and spring.
- Switch ON the gripper motor switch (gripper arm moves on to play position).

## 11.b. Old gripper arm type



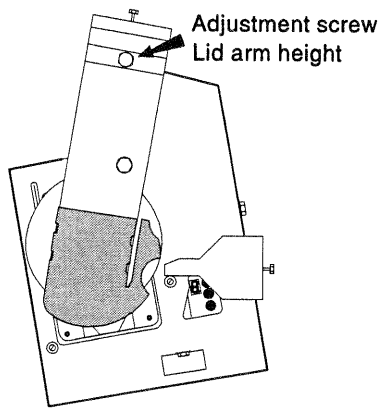
*If in the jukebox is equipped with a gripper arm shown in the picture opposite than this type has to be changed completely.*



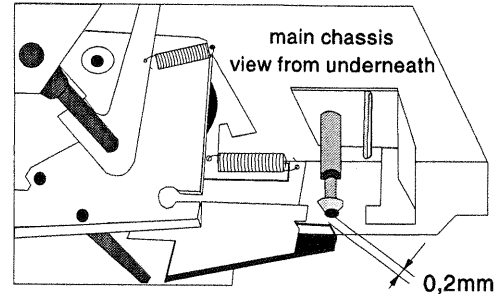
1. Gripper arm has to be in carrier position.
2. Undo the protection plate at the nut of the gripper arm shaft between the two bevel.
3. Slacken the nut, do not remove it yet.
4. Start movement of gripper arm by pressing button 7. If the gripper arm starts to rotate stop the gear with the gripper motor switch. The cam of the bevel wheel in front must touch the adjustment screw. At this point switch off the gripper motor.

5. If necessary repeat this procedure any times until the proper point is found.
6. Undo the nut completely and replace the gripper arm so that the new one is in the same position like the old one.
7. Put the protection plate on the gripper arm shaft and screw on the nut, but do not tighten it properly.
8. Switch ON the gear switch and let the gripper arm run until it stops.
9. Check the position of the gripper arm.
10. If the gripper arm is not in horizontal position, compared to the player chassis, let it move back by pressing button 7 again. Stop it again at the fulcrum and set the bevel wheel of the arm one tooth to the right or to the left side as you consider it necessary and check again the position.
11. If the gripper arm function is proper, tighten the nut and bend the protection plate.
12. Put a CD under the gripper arm in carrier position and check the position of the arm to the CD.
13. Start the gripper arm with a CD and check the pick up of the CD from the carrier and also the turntable lay down procedure. Interrupt the movement from time to time with the gear switch to find possible maleadjustments.
14. Check the function of the K8 switch while the CD is taken bak to the carrier. This switch must be switched through in carrier position of gripper arm. If necessary bend the lever of the switch to adjust it properly.

## 12. Adjustment of lid arm height:



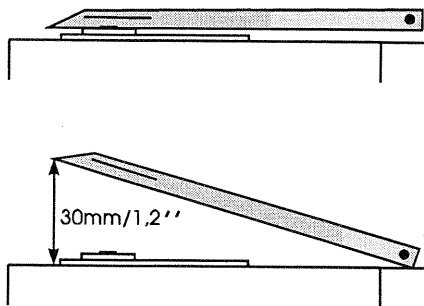
- Place a CD on turntable by pressing button 7.
- Swing lid arm on CD.
- Adjust screw at pusher shaft so that the clearance between lift lever and gear is approximately 0.2mm.



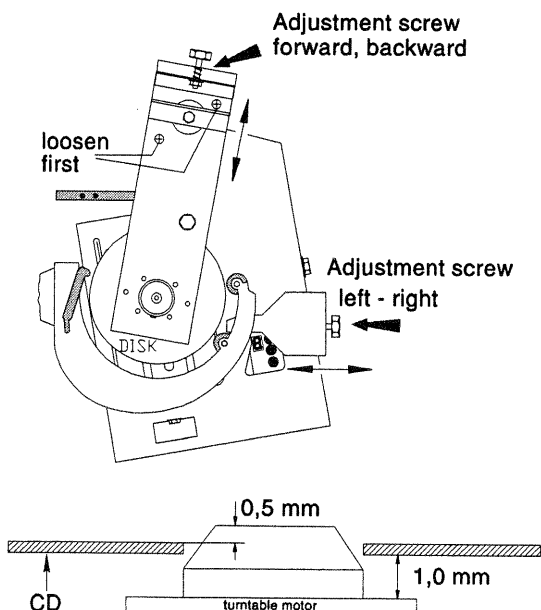
- Take CD back to carrier by pressing button 7.

**Attention:** This adjustment may cause two lid arm heights in standby position:

1. up to serial number 3208.....:  
In standby position lid arm lays on turntable.
2. starting serial number 3209.....:  
In standby position lid arm stays approximately 30 mm above the turntable.



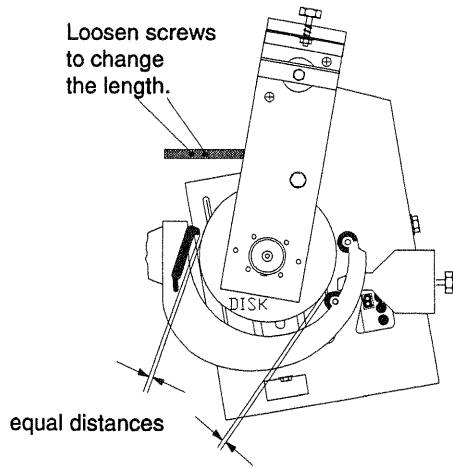
## 13. Adjustment of the player chassis:



- Place a CD on turntable again but interrupt gear motor by using gripper motor switch when gripper arm hits stop bracket.
- Position of turntable cone must be in centre of CD hole.
- Readjustment if necessary:
  - In left-right direction with screw at gripper arm stop bracket.
  - In front-rear direction:
    - Loosen the screws near the pusher shaft.
    - Turn screw at rear of player chassis.

- Switch gear service switch to ON again and stop gear motor short before gripper arm releases the CD.
- Clearance between CD and player hub should be approximately 1 mm.
- Adjust by bending the stop bracket.

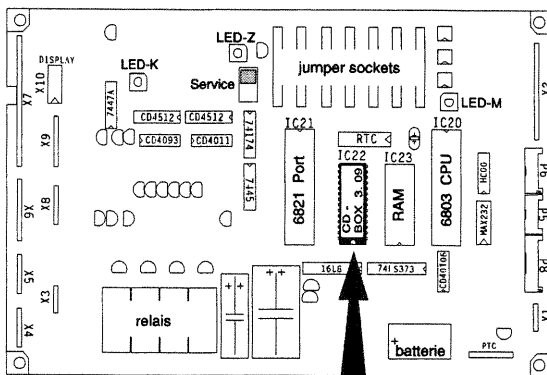




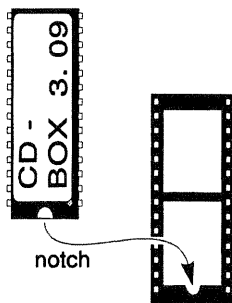
- Set gripper motor switch to ON gear motor runs to play position
- Check distance of gripper arm rollers relative to CD.
- The distance between the rollers and the disc clamp should be equal on both sides, but not less than 1 mm.
- Adjustment with screws by changing the length of the traction lever.

#### 14. S&CC EPROM change or change of the complete S&CC unit:

S&CC unit open:



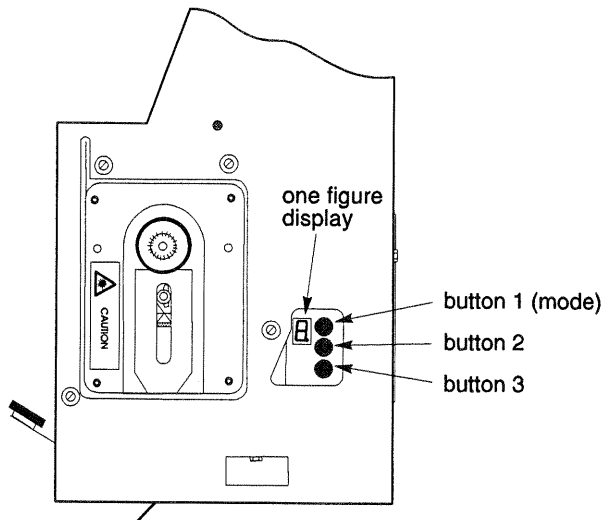
EPROM - IC22



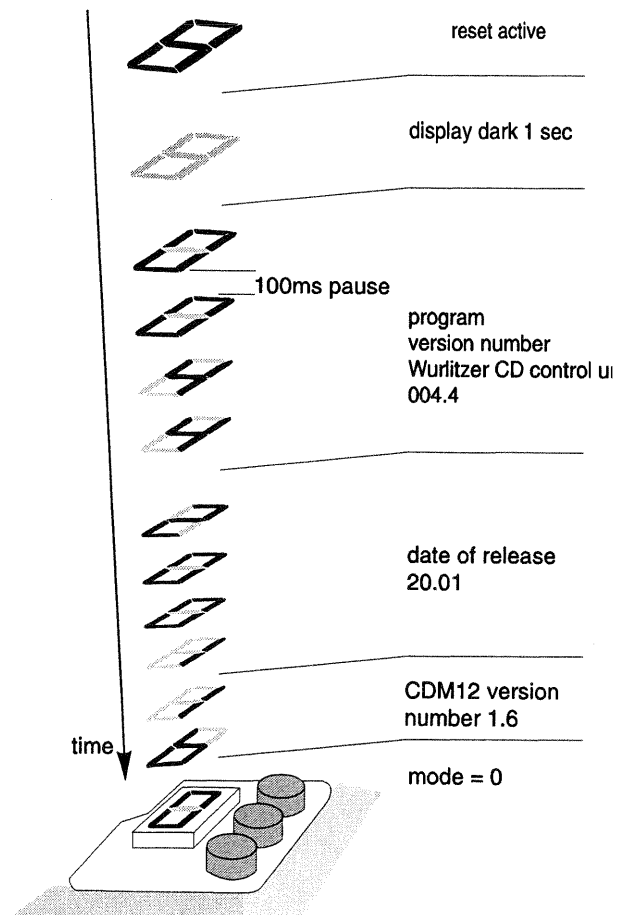
- Switch OFF the jukebox.
  - Note the settings of the bonus wires on the S&CC unit.
  - Remove these wires.
  - Remove S&CC cover by loosen its 4 nuts.
  - Remove EPROM (IC22) and change it to the new one. IC notch has to point in the same direction like the notch in the IC socket.
  - Mount the new S&CC cover.
  - Set the bonus wires depend your notice.
  - Set the switch 'service' to ON.
  - Press 'LT' button once.
  - Press selection button 3 - hold down - and press selection button R.
  - Set the switch 'service' to OFF.
  - Press 'LT' button once.
- **On a machine with EPROM version 1.xx the complete S&CC unit has to be changed.**  
(ref. to the beginning of this instruction)

## Integrated test program of the CDM12 player

### 1. Access to the player functions without S&CC unit

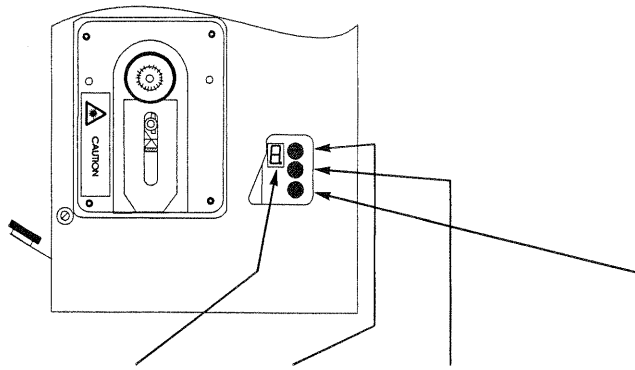


moment of power ON



- For a test the complete player unit CDM12 can be operated without S&CC unit.
- The power supply from the installed amplifier, the sub-transformer and an amplifier with CD input for the audio signal is required. A one digit digital display indicates the current operation mode and three command buttons are located on the player chassis.

- The one digit display is able to display more information.
- To display two or more digits the information starts with a dark phase of approx. 1 sec. followed by the digits shown one after another with dark phase of 100 msec. between each digit. The most significant digit will be displayed at first.
- After power on and after an general reset command (display shows „8“), the program version number of the Deutsche Wurlitzer GmbH CD control unit will be displayed with four digits followed by the version number of the CDM12 servo processor with two digits.
- If the player is in stand by and the three buttons on the player are pressed at the same time the above mentioned sequence will be displayed but without showing „8“ for „reset active“.



## TEST FUNCTIONS CDM 12

(Example: If mode display = 3 and button 2 will be pressed, then pause is switched on.)

mode display	button 1 (mode)	button 2	button 3	buttons 2 + 3 together
0	mode 1	start	stop	repeat CD
1	mode 2	next track	previous track	repeat track
2	mode 3	search forward	search backward	single, double speed.
3	mode 4	pause ON	pause OFF	
4	mode 5	volume +	volume -	mute
5	mode 0	track -1	track +1	play selected track (read TOC if necessary)

CDM 12 error code table:

Error code	Meaning
0	No error
2	Focus error or no disk
7	Subcode error, no valid subcode
8	TOC error
10	Radial error
12	Fatal sledge error
13	Turntable motor error
31	Search time out
32	Search binary error
33	Search index error
34	Search time error
40	Illegal command
41	Illegal value
42	Illegal time value
43	Communication error
44	Reserved
45	HF detector error
48	Emergency stop

- If „repeat CD“ had been selected with the buttons 2 + 3 in mode 0 the display will be „99“. On each beginning of a new track it will be displayed with two digits.
- If „repeat track“ had been selected with the buttons 2 + 3 in mode 1 the actual played track will be displayed.
- By pressing of two buttons at the same time additional values will be displayed:
  - Buttons 1 + 2: The last occurred error code will be displayed (ref. to error code table). his error code will be reset after this retrieval or after a CDM12 reset (e.g. the next power on).
  - Buttons 1 + 3: The actual playing track will be displayed.
  - Buttons 1 + 2 + 3:
    - a) No CD is playing: Program version and date of release.
    - b) CD is playing: Max. / min. track number will be displayed.

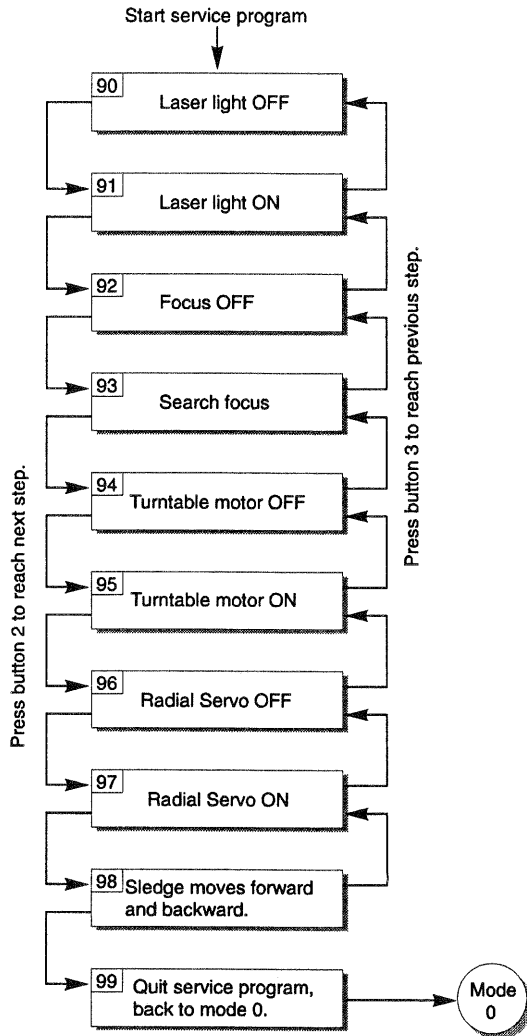
### Remark:

If commands will be sent to the CDM12 player, the display will flash. During this time no commands given by the buttons will be accepted. While the table of contents (TOC) is read an 8 flashes in the display. In this way, the necessary time to read the TOC can be prolonged. So bad CDs can be recognised and taken out.

## 2. Special test function of the CDM12 player

### Service program of CDM12 (mode 9)

With this service program different functions of the CDM12 player can be tested.



#### How to call:

Switch main power OFF. Press button 1 - hold down - and switch main power on. (Remark: „Power ON - OFF“ can also be done by disconnecting the wire bk/gy from pin 6 of the sub transformer.)

#### Function:

The Deutsche Wurlitzer GmbH CD control unit steps into mode 9 and runs the tests 90 up to 99. Mode 9 will be displayed continuously. While changing the test step it will be displayed with two digits.

#### Remarks:

Starting test step 94 a CD has to be placed on turntable.

The button 1...  
has no function during this test.

The button 2...  
switches to the next test step.

The button 3...  
switches to the previous test step.

#### Quit:

Press button 2 while test 98 is running. Control unit steps over test 99 to mode 0 automatically.

