

# **Instruction manual**

for

NSM Phonographs

## **GEM-SERIES ESVI**

part-no.: 180 079



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Part number of this manual:180 079

## For quick orientation

### Who should use this manual?

- This manual is made for the operator of the phonograph. It guides him through the installation and normal operation of it.

### How can I operate this appliance without risk of hazard?

- Regard the safety instructions - see page 1-1.

### How can I quickly find my way through this manual?

- Read this page.
- See table of contents on the following page.
- See catchword register at the end of this manual.

### How can I change single CDs?

- Via inserting it into the magazine - see page 4-7.

### How can I change many CDs at a time?

- By changing a whole magazine - see page 4-7.

### What to do in case of disturbances?

- See page 5-1.
- See page 7-3 (Service, Hot-line).

### How can I power-on the phonograph?

- See page 4-1 (Set-up) and 3-1.

### Are there options available for this phonograph?

- A list of available options is included within the "Spare parts list" – see page 6-2.

### How can I program individual settings to the phonograph?

- See Attachment B: "Service Program ES VI-technology".

## Document conventions

The following symbols are used to graphically identify residual risks of this product :

Symbol:



Meaning:

This symbol indicates that a dangerous voltage constituting a risk of electric shock is present within this unit

This symbol indicates that there are important operating and maintenance instruction in the literature accompanying this unit

**Caution:** Disregarding the following message may cause personal damage!

**Notes:** The following information simplifies the usage of this product.

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# 1 Important Safety Instructions

**Read these instructions.**

**Keep these instructions.**

**Heed all warnings.**

**Do not use the apparatus near water.**

**Clean only with dry cloth.**

**Do not block any ventilation openings. Install in accordance with manufacturer's instructions.**



**Secure installation:** Installation of this appliance must be carried out only by qualified and authorized technicians or NSM service staff.

→ Use NSM Mounting bracket.

**Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.**

To avoid heat build-up use NSM Mounting bracket.

**Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.**

**Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.**

**Only use attachments/accessories specified by the manufacturer.**

**Use only with the cart, stand, tripod, or table specified by the manufacturer, or sold with the apparatus. When**

**a cart is used, use caution when moving the cart/  
apparatus combination to avoid injury from tip-over.**



**Unplug this apparatus during lightning storms or  
when unused for long periods of time.**

**Repair :**

**Refer all servicing to qualified service personnel.  
Servicing is required when the apparatus has been  
damaged in any way, such as power-supply cord or  
plug is damaged, liquid has been spilled or objects  
have fallen into the apparatus, the apparatus has  
been exposed to rain or moisture, does not operate  
normally, or has been dropped.**

**Repair must be carried out only by the NSM service  
staff, or by qualified and authorized service staff.**

**Warning:**

**To reduce risk of fire or shock hazard, do not expose  
this appliance to rain or moisture.**

**Intended use**

**The phonograph is exclusively determined to play  
audio CDs according to the red book standard.**

**Any other usage apart from this is regarded as not  
intended.**

**The technology of the NSM phonograph corresponds to  
the state of the art and is very reliable when operating.**

**Improper use of the phonograph may cause residual  
risks if it is operated or used by non-authorized  
persons.**

**Any person who is engaged to operate the  
phonograph has to read and to understand this  
instruction manual, especially these safety  
instructions.**

**Residual risks**

**In this manual residual risks are marked as follows:**



**Warning:**



**Caution:**

**Disregarding the safety messages following “Warning“ can  
cause material damage (damage of parts).**

**Disregarding the safety messages following “Caution“ can  
cause personal damage.**

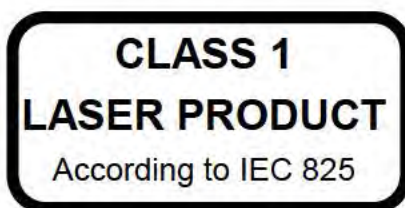
## Ban of arbitrary reversions and changes

The phonograph must not be changed in construction or concerning safety regulations.

Any change will lead to the exclusion of liability of NSM concerning the resulting damages. Especially defective parts must be replaced only by original spare parts of NSM.

### Caution:

**Disassembling parts and changing of any adjustments, apart from those specified within this manual, may result in exposure to hazardous laser radiation.**



This product is a Laser Class 1 device. Disk access is carried out by using a laser beam. The laser doesn't represent any risk for the user.

This product complies with the DHHS Rules 21CFR chapter 1, subchapter J, applicable at the date of manufacturing. Accession number: 9520184

## Explanation of Graphical Symbols



This symbol indicates that a dangerous voltage constituting a risk of electric shock is present within this unit



This symbol indicates that there are important operating and maintenance instruction in the literature accompanying this unit

## 1.1 Safety precautions



**Set-up:**

Before you connect this unit to the mains, please check your mains voltage and compare it with the setting of the unit. If your mains voltage does not correspond to the mains voltage setting of the unit, please change the setting according to the instructions in this manual. → Refer to chapter 4.



**Fire damages:**

To reduce risk of fire or shock hazard, do not expose this appliance to rain or moisture.



**Opening device:**

To prevent electrical shock, remove power cord before opening this appliance!



**Caution:**

Replace fuses only with same type and values!



**Fire prevention:** Position the appliance near to the wall outlet of the mains voltage. On fire risk or other disturbances pull out plug immediately.



**Heat build-up in the appliance:** Take care that the ventilation holes in the rear of the appliance are not covered. → Use NSM Mounting bracket.



**Save the environment:**

The Central Unit of this appliance is equipped with a battery buffered SRAM (IC21). Please take care to put this SRAM as toxic waste to the special waste dump for disposal.



**Caution:**

Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type.

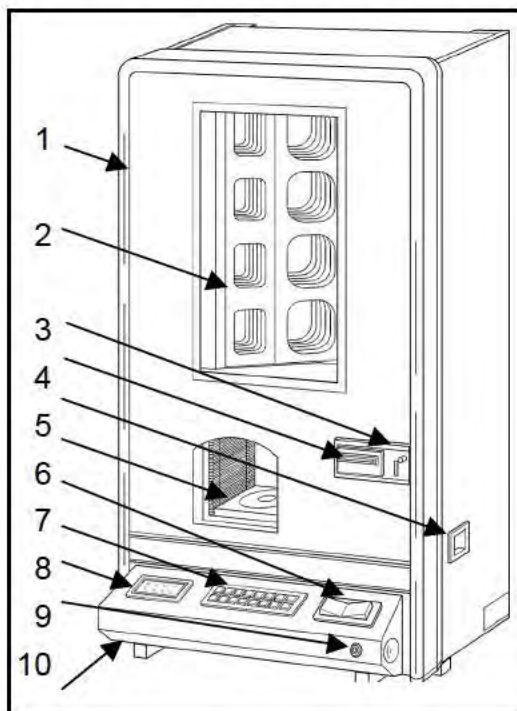
## 2 General survey of the unit

This phonograph is equipped with a CD changer MBC-PRO capable of storing up to 50 CDs in each magazine.

The magazine can be exchanged without much difficulty. The change of CDs is comfortably made with CD-tray inside the magazine.

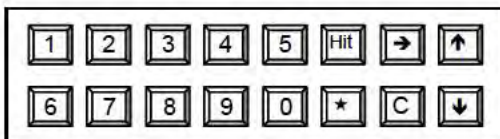
The basic functions are controlled manually via the keyboard and the LCD-display in the operators panel.

### 2.1 Survey of front side



- 1 = Front door
- 2 = Title display unit
- 3 = Coin insert, Coin return knob
- 4 = Bill insert (option)
- 5 = Coin return cup
- 6 = CD changer MBC-PRO
- 7 = Rocker button for moving title cards
- 8 = Operators keyboard
- 9 = Operators display
- 10 = Lock
- 11 = Power-on switch

### 2.2 Keyboard of the phonograph



The phonograph is equipped with a 2 x 8 keyboard. With the keyboard you may enter pre-operational commands or commands and data while operating the phonograph.

The functions of the keys are:

**1 to 0** = numeric input, e.g. title selection

**Hit** = to show hitparade

**→ ↑ ↓** = to move cursor on display/ to swap display pages in service mode

**★** = changing display mode during "Service operation"

**C** = to cancel input

## 2.3 Display of the phonograph

The LCD-display will give you information about the actual status of the phonograph.

The display is separated into three sections:



first line = information line

middle area = message window

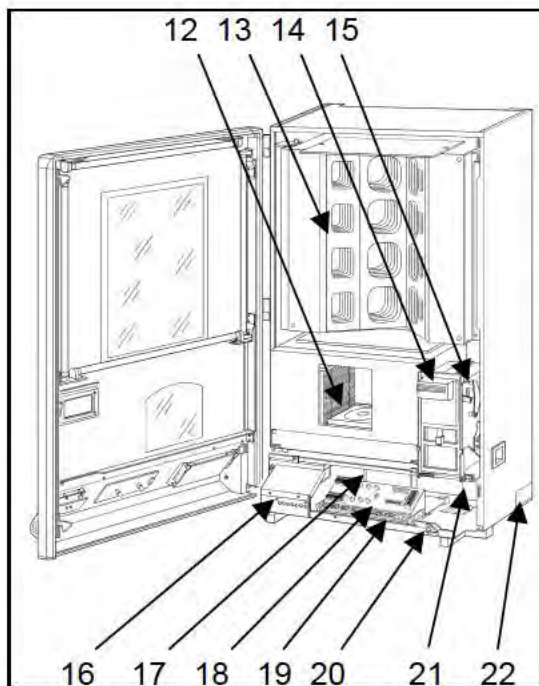
bottom line = Command line / "Help messages"

It is also possible to program customer specific information to be displayed on the LCD, refer to the attached programming manual.

**Note:**

***The messages shown on the display are depending on the functional state of the phonograph. They will have different meaning during "Service mode".***

## 2.4 Survey of the inner components



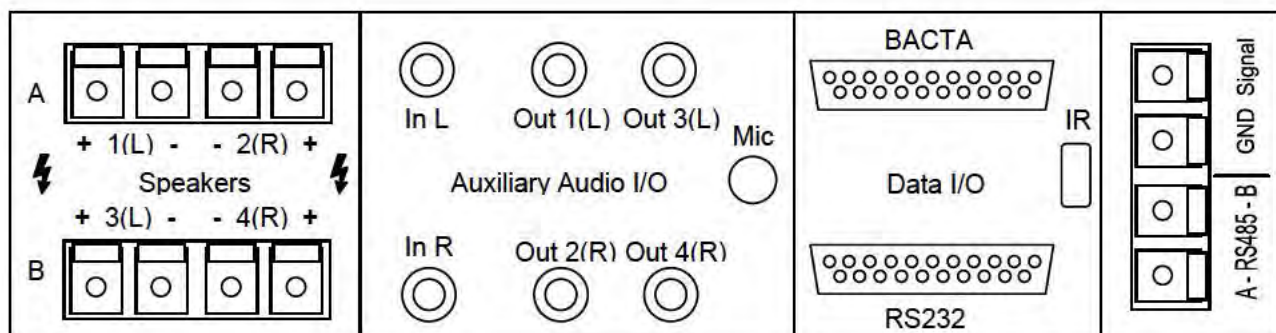
Inside the phonograph you will additionally locate the following:

- 12 = CD changer MBC III-Pro
- 13 = Title display unit
- 14 = Bill acceptor (option)
- 15 = Coin acceptor
- 16 = Power supply unit
- 17 = Amplifier channels C1 and C2 (module A)  
optional amplifier C3 and C4 (module B)
- 18 = Central unit ESVI board
- 19 = Interface board (I/O-panel)
- 20 = Service switch, pull to enter service mode
- 21 = Cash box
- 22 = *Type plate*

### 2.4.1 Survey of the interface board

The interface board offers all necessary terminals for

- ◆ Loudspeakers output
- ◆ Auxiliary Audio signals (input and output)
- ◆ Microphone input
- ◆ Selector wall box interface
- ◆ DATA I/O:
  - RS232 device
  - reserved for future use (prepared RS485)
  - Bacta interface
  - IR interface



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## 3 Operating

The phonograph is ready to operate using factory default settings.

Additionally you may program the phonograph for your personnel requirements or for the site requirements of the location the phonograph is to be operated. Therefore see the additional available manual "Service program ESVI technology".

This chapter will describe the basic functionality of the phonograph.

### 3.1 Power-on

#### Power-on:

Action	Display / status
Turn the power-on switch to position "on"	<p>The phonograph displays type and date of the firmware for some seconds.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>NSM M.U.S.I.C.</b>  Jukebox ES6 Technology  Software version 1.0</p> <p>Starting up . . .</p> </div>
	Afterwards several messages appear on the operators display.
Insert coins to earn credits.	<p>If enough credits are registered the phonograph offers the possibility to select titles.</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: right;">Credits:10</p> <hr/> <p style="text-align: center;"><b>NSM M.U.S.I.C.</b></p> <hr/> <p>Press key to select title</p> </div>
	The phonograph is ready.

### 3.2 Inserting coins

Credits: 1			
Price / Credits			
\$ 1.00	- 1	\$20.00	- 20
\$ 2.00	- 2		
\$ 5.00	- 5		
\$10.00	- 10		

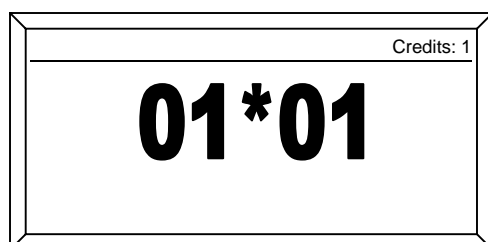
Fill in the required amount of coins necessary to earn credits at least to play one title.

One of the alternating display messages during idle mode will give an overview about the programmed prices for selecting titles at this location.

### 3.3 Selecting titles for playing

After insertion of coins to earn enough credit you may enter several titles.

Sequence of selection:

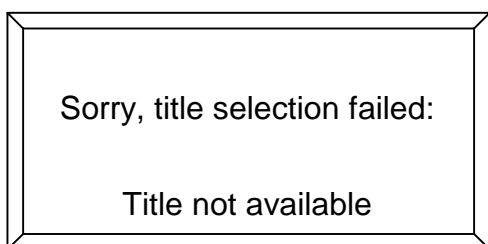


Type a 4-digit number using the numeric keys, representing

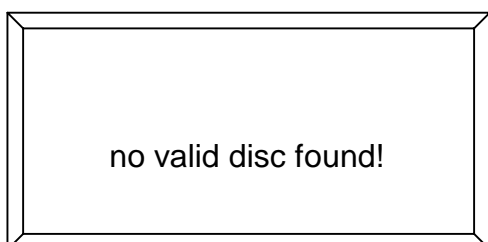
first 2 digits = CD.number from 00 to 99

second two digits = Title number of the desired track from 01 to xx (depending of the count of the selected CD)

Your input shall be automatically confirmed 2 seconds after pressing the fourth digit.



- If you have entered a wrong combination or
  - If the CD may be not initialized or
  - If the selected title is locked out from the operator
- the phonograph will give the corresponding error message.



During initialization process this message will be displayed only.

### 3.4 Viewing the title sheets in the title display

If you want to get an overview of the inserted CDs, press the illuminated red rocker button to turn the title pages of the title display.

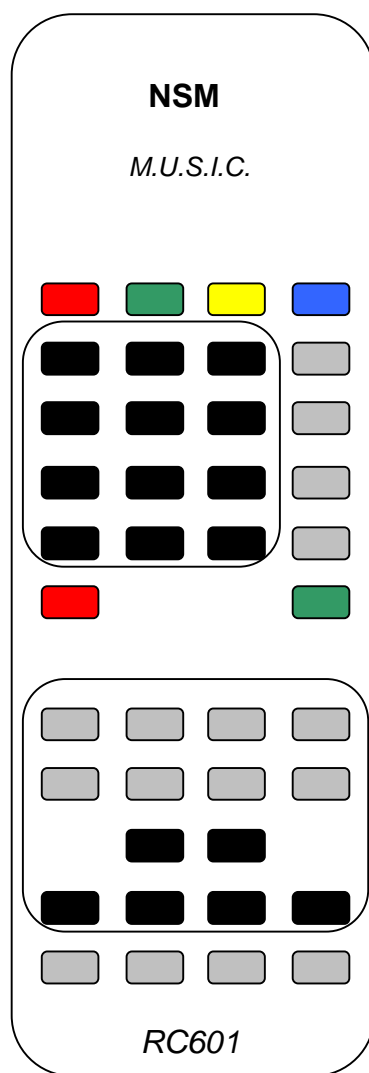
On each button press the next side of the respective direction (◀ ▶) is displayed (endless function).

### 3.5 IR Remote control RC601 and RC 602

Two infra-red remote controls are available to control the phonograph:

RC601 giving full functionality and control

RC602 with reduced functionality limited to basic functions.



The RC601 offers following possibilities

- ◆ selecting titles
- ◆ setting volume and sound
- ◆ function keys F1 to F4 programmable via service program (i.e. background mode, free credits, reject)

The functions of the keys are:

F1	F2	F3	F4
1ABC	2DEF	3GHI	↑
4JKL	5MNO	6PQR	↓
7STU	8VWX	9YZ	→
C	0Sym	★	Hit
Reject			VIP
C1	C2	C3	C4
C1/2	C3/4	C1-4	Mic
	Volume -	Volume +	
Treble -	Treble +	Bass -	Bass +
Surr	SRS	Mute	Norm

F1 to F4 = user defined function keys (free credit, background, etc.)

1 to 0 = numeric input keys

C = Cancel/Clear input

\* = Change display mode during "Service mode"

Hit = Show the Hitparade

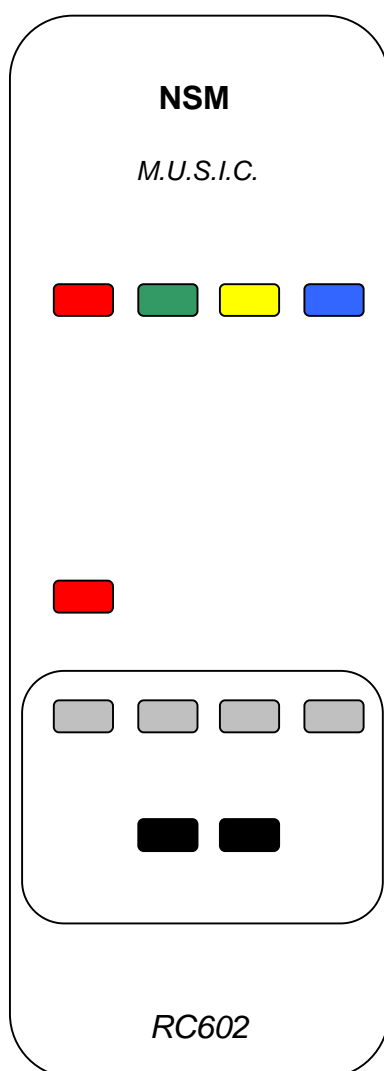
VIP = select a VIP title

MIC = select microphone channel

Surr = activate surround sound

SRS = activate SRS sound

C1 to C4 = select audio channels



RC602 also offers

- ◆ use of function keys
- ◆ volume control (per channel only)

F1	F2	F3	F4
Reject			
C1	C2	C3	C4
	Volume -	Volume +	

The IR-receiver is connected to the CB “CENTRAL UNIT ESVI” via the 4-pol. connector “IR” in the lower right edge of the board.

### 3.5.1 How to use the remote control

Following you will find some examples of how to set volume or sound of the phonograph using the IR remote control.

Set volume of all channels (C1-C4):

press [**C1-C4**] and then [**Vol+**] or [**Vol-**]

Set volume of channel (C1) only:

press [**C1**] and then [**Vol+**] or [**Vol-**]

Set volume of channels (C3+C4):

press [**C3-C4**] and then [**Vol+**] or [**Vol-**]

Set treble for channels (C1+C2):

press [**C1-C2**] and then [**Treb+**] or [**Treb-**]

Set bass for channels (C3+C4):

press [**C3-C4**] and then [**Bass+**] or [**Bass -**]

Set microphone volume for channel (C3):

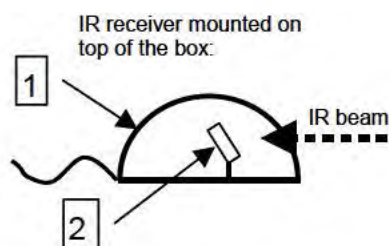
press [**C3**] [**Mic**] and then [**Vol+**] or [**Vol-**]

Set treble for this microphone channel:

press [**C3**] [**Mic**] and then [**Treb+**] or [**Treb-**]

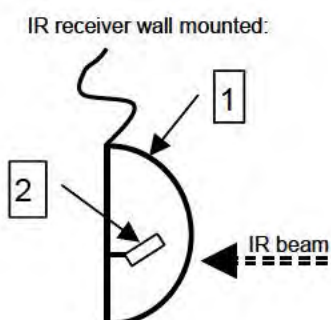
### 3.5.2 Mounting remarks for IR receiver

**Regard the following mounting instruction for best function results of the IR receiver.**



The IR receiver can be mounted either to the top of the phonograph or to a wall near the phonograph.

Regard the length of the connection cable.



Place the housing of the IR receiver (1) in that way, that the internally mounted IR-module (2) will meet the IR beam of the IR hand transmitter.

Take care to avoid that the IR beam "hits" the IR receiver from the side or the back (cable outlet). This will cause malfunction of the remote control.

### 3.6 Wired remote control

Alternatively the phonograph may be controlled with a wired remote control for:

- ◆ volume setting
- ◆ Mute
- ◆ Reject
- ◆ programmable functions F1 – F4

The function keys are:

F1 = user defined, i.e. "Stand-by"

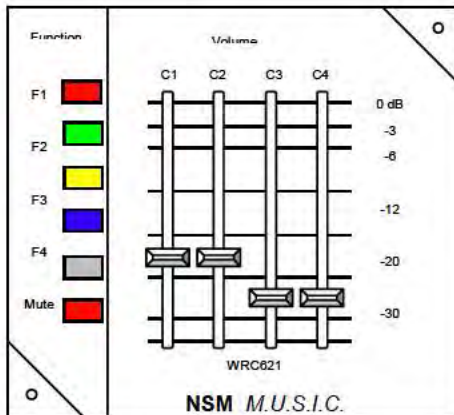
F2 = user defined, i.e. "Free credit"

F3 = user defined, i.e. "Voice canceler on/off"

F4 = user defined, i.e. "Background"

Mute = used to turn off/on the sound

Reject = used to reject the just playing title



Set the volume for the desired channel (C1 – C4) using the assigned slide control.

The wired remote control unit is to be fixed to a wall

It is connected to the CB "CENTRAL UNIT ESVI" via the 4-pol. connector "wired" in the lower right edge of the board.

## 4 Set-up

### Warning

### Read this set-up instructions.

In this chapter you will find all information being necessary to set-up the phonograph correctly.

### 4.1 Survey of Set-up

For the set-up perform the following steps. Details to the single steps are explained in the following subchapters.

#### Step

#### What to do at first?

Check if the delivery is complete; see below •

#### Prepare site

Mount the mounting bracket; see page 4-2 •

Mount unit to its final place; see page 4-5 •

Open the appliance; see page 4-5 •

Make external connections; see page 4-6 •

#### Prepare the appliance

Remove transportation fixtures; see page 4-5 •

Load CDs; see page 4-7 •

Feed title display; see page 4-8 •

Check all wiring/components; see page 4-8 •

Power-on; see page 4-8 •

### 4.2 What to do at first?

#### 4.2.1 Check if the delivery is complete



#### Warning:

**Depending on the heavy weight of the appliance we recommend that two persons should work together to unpack the phonograph.**

Unpack the unit and check if the delivery is complete:

1 phonograph

1 mains (power) cord

1 pair of keys to open the front door of the phonograph

1 instruction manual

If any parts are missing inform your supplier.

Please fill in the warranty card and send it back to  
*NSM MUSIC GmbH - Germany.*

#### Note:

***Store the shipping carton and the packaging material for a possible later transport. Thus you can transport your unit safely.***

### 4.3 Prepare site

In order to guarantee a correct functioning of the coin mechanism mount the appliance horizontally and vertically exactly.

#### 4.3.1 Use NSM Mounting bracket

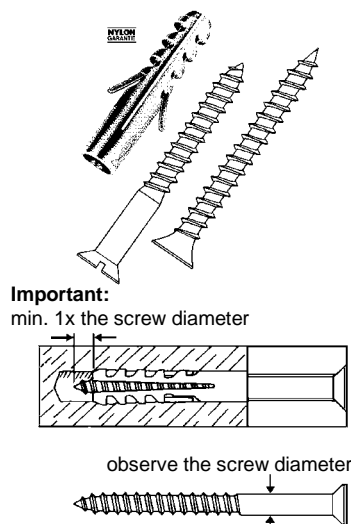
Therefore, we recommend usage of the practical NSM mounting bracket (part-no. 040 739).

Take care to mount the bracket untwisted since the rear of the cabinet otherwise can be twisted too.

When choosing the fastening material, take into account the weight of the appliance. We recommend nylon dowel pins in sufficient quantities.

**The screws should be at least 6 mm (1/4") in diameter!**

#### 4.3.2 Example of mounting the NSM mounting bracket using nylon dowel-pins



First a few tips:

The maximum bearing capacity of nylon dowel pins may only be achieved with the greatest possible screw diameters and with screws exceeding the dowel point by the screw diameter again.

Please ensure that with fixings in hollow brick and hollow blocks the expansion zone of the dowel is completely anchored in at least one stone web.

##### Calculation of minimum screw length:

1xd (d= nominal diameter of screw)  
 + dowel length  
 + thickness of plaster and / or insulating material  
 + thickness of mounting bracket 3 mm  
 = minimum length of screws to be used.

**Proposed length 60mm (2.5")**

#### 4.3.3 Drill hole geometry

The exact drill hole geometry dictates the load-bearing capacity of a dowel pin.

Therefore always drill at right-angles and do not change direction during drilling. This has especially to be observed in the case of soft materials.

#### 4.3.4 Drill process

The following drilling methods are possible depending on the type of drilling machine:

- Rotary - without impact
- Impact drill-many impacts with a low amount of impact energy. Fast rotation

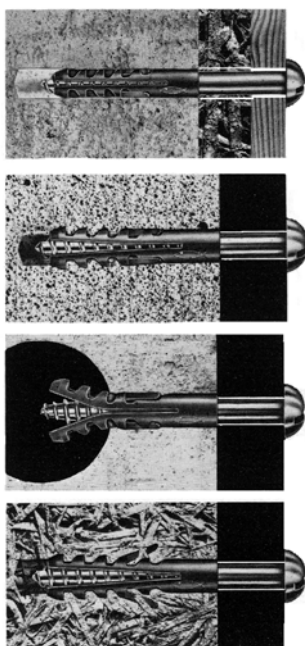
- Hammer drill - few impacts with a high amount of impact energy. Slow rotation

The material determines the drill process:

- Solid materials of dense structure: impact and hammer drilling
- Materials of low strength and aerated concrete: only rotary; so that the holes don't become too big.
- Hollow brick: only rotary; so that webs don't break out.

Never forget to remove the dust from the drill hole after drilling. Only then dowel pins performs safety fixing.

#### 4.3.5 Pull-out values, safety factors



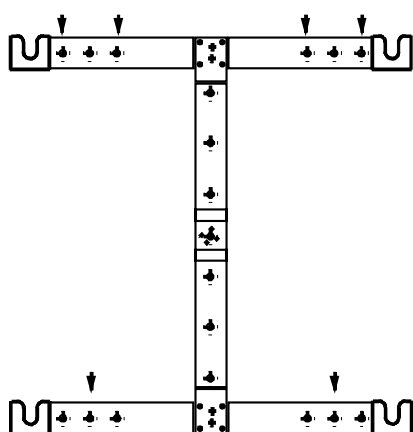
The pull-out values (breaking loads) given in this chapter are mean failure loads determined in at least 5 tests in un-cracked building material. Failure criteria may be: failure of building material, breaking of bolt, loosening of anchor, breaking of anchor.

Pull-out values in kN\*. Determined in each case with the largest screw diameter (steel screw) and with flush fixing of the dowel in the load-bearing anchorage base.

Dowel size:	<b>S8 (1.6x1/3")</b>
Wood screws Ø	<b>6 mm (1/4")</b>
Concrete B25	<b>4,5 kN</b>
Aerated concrete GB 3,3	<b>1,2 kN</b>
Aerated concrete G 4	<b>1,3 kN</b>
Solid brick Mz 20	<b>4,1 kN</b>
Perforated brick Hlz 20	<b>3,0 kN</b>

The following points must be observed when drilling, irrespective of the material:

Allowance must be made for an appropriate safety factor. As safety factor we recommend for dowel pins  $v > 7$ .



**Example:** In aerated concrete GB 3,3 the pull-out value for dowel pins of type S8 and wood screws with a diameter of  $\varnothing = 6\text{mm}$  is 1,2 kN.

This value divided by safety factor  $v \geq 7$  becomes  $1,2 \text{ kN} / 7$  is nearly  $0,17 \text{ kN} = 17 \text{ kp}$  for 1 screw.

The weight of the appliance is nearly 85 kg.

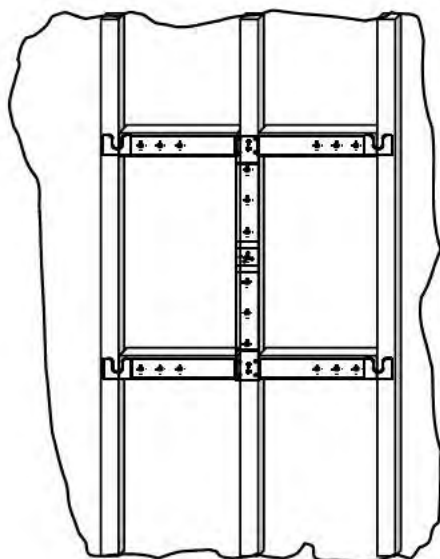
Therefore at least

$85 / 17 = 5$  screws are necessary.

For additional safety reasons and for better symmetry you should use 6 screws. Also see arrows in left hand figure.

#### 4.3.6 Installing the appliance to a plaster board wall

Installing the appliance to a plaster board wall is not allowed unless specification of the wall according to the description below is fully covered.



**Required Parts:**

Plaster board wall

Mounting bracket

Twelve wood screws of 1/4" X 3"

1. Build a plaster wall structure using at minimum 2" X 4" studs. The studs should be placed in such a way to allow the mounting bracket to be secured 8-1/4" on center (horizontally) and 19" on center (vertically).
2. Use a minimum of twelve wood screws of 1/4" X 3" or larger dimension, 8 horizontal (4 top and 4 bottom) and 4 vertical to secure mounting bracket to plaster board wall.
3. Test the holding strength of the bracket by pulling down on it with reasonable force in excess of the weight of the appliance of nearly 85 kg (about 177 lbs).

## 4.4 Prepare the appliance

### 4.4.1 Observe when fixing the appliance to the wall

**Note:** *Plug in connection cables before hanging up the appliance.*

To secure the appliance to the mounting bracket, a holding screw with sleeve M 10x20 (part no. 176 999) is to be used (->accessory bag).

**Caution**

**Secure mounting of the appliance is very important since besides the danger of severely damaging the appliance, the operator is responsible for all damages caused by an incorrectly mounted appliance.**

When fixing the appliance to the wall, make sure the air circulation is not hindered in its function.

When using the mounting bracket, there is normally enough distance between cabinet and wall for air circulation. Plush wall hangings decrease this distance; in that case the bracket has to be fastened to a flat board.



**Do not mount appliance above heaters!  
Keep ventilation holes free.**

Now you can mount the phonograph onto the mounting bracket. Regard your wellness.

**The phonograph is heavy weighting.**

Just do it only when you have a colleague or partner to help you.

After you have mounted the appliance to the wall or the stand you have to prepare it for operation.

### 4.4.2 Open the appliance

Insert the delivered key into the lock at the right hand side.  
Turn it clockwise to open the front door of the unit.

### 4.4.3 Transportation security devices



**Warning**

Before operating the appliance all security devices for safety and protection during transport have to be removed.

**The unit must be switched on only when the transportation fixtures have been removed.**

So first remove the transportation fixtures after hanging it onto the wall mounting bracket.

Prior to any further transportation the security devices for safety and protection during transport have to be re-inserted.

**Note:**

**Store the transportation fixtures in a safe place. Re-insert them always into the unit before any transportation.**

**Avoid static discharge** to the appliance. Electro Static Discharge (ESD) may destroy the opto-electronics and other ESD sensitive parts within the appliance.



**Caution:**

**Before connecting the power cord to the wall outlet:**

- 1. Check the setting of the line voltage and compare it with the setting of the unit.**
- 2. Remove all transportation fixtures.**  
**Otherwise the appliance might be damaged.**

#### 4.4.4 External connections

##### Connection of loudspeakers

The appliance is equipped with a semi-digital, high-power amplifier to connect the loudspeakers to.

Regard the right polarity of the connected speaker cables to get best sound results.



**Warning:**

**Installation of necessary wiring must be carried out only by qualified and authorized technicians.**  
**Otherwise the amplifier might be damaged.**

Lead the speaker cables through the outlet in the back of the phonograph housing phonograph through the cable channel in the bottom to the inside.

Two wires for each channel have to be connected to the connecting taps on the interface board.



**Caution:**

**Power-off the appliance before connecting loudspeakers.**  
**Do not touch loudspeaker connectors. Risk of shock hazard through high voltage. Abuse, shortening or interconnecting of cabling may cause serious damage to amplifier!**



**Warning:**

**CLASS 2 wiring may be used!**

There is a total power output of 250W RMS on each channel.

##### Remote control cabling

To simplify the operating of the phonograph you should use a remote control unit (infra-red or wired remote control).

Lead the connecting cable also through the outlet in the back of the phonograph through the cable channel in the bottom into the inside. Then connect it to the desired plug connector "IR" / "WIRED", located on the CENTRAL UNIT.

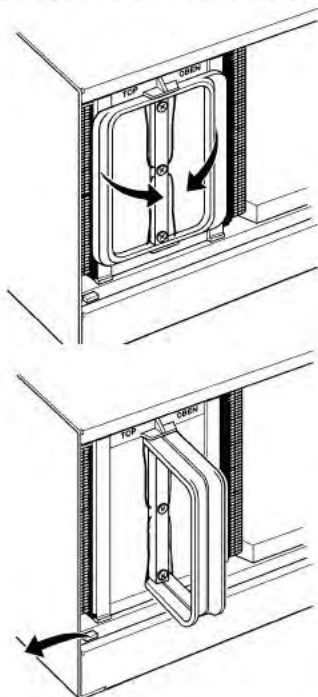
##### Mains cabling

After checking all cabling is done well insert the mains plug into the mains connector on the rear side of the phonograph.

#### 4.4.5 Check the CD trays after transport

While transportation of the phonograph it may happen that single trays jump out off their leadings in the CD-magazine.

Remove the magazine



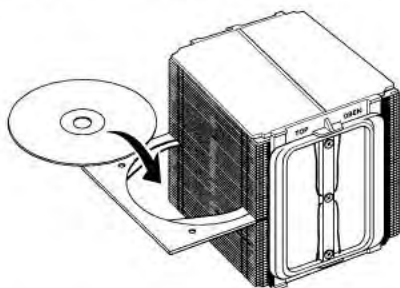
The magazine is equipped with tilting handles. Simply fold the two handles to the front.

Hold the magazine with one hand and press the release knob with the other to the left side.

The magazine will audible be released and jumps out of the lock.

Check that each tray is placed well in its parallel leadings.

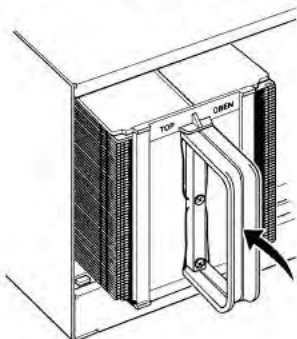
#### 4.4.6 Loading CDs



Remove a number of trays corresponding to the number of CDs to be inserted.

Always place CDs face up (label up) into the recess of each tray, and thereupon slide the tray into the first/next available slot of the magazine.

#### 4.4.7 Re-insert the CD magazine



**Note:**

When re-inserting the magazine take care that it locks audibly with a slight bump in the locking device. If you don't push the magazine strong enough, a malfunction of the CD changer may result herein!

Please don't store or transport magazine head foremost.

***Due to the construction of the CD magazine it can be transported outside the CD changer without any special transportation securities. Only when treated too rough the CD trays will be falling out of the magazine.***

#### **4.4.8 Loading title strips to the title display**

The title display consists of 14 carriers and is designed to show 104 title strips (13 times 8).

##### **Loading title strips and CD covers**

If you want to insert or remove title strips and /or CD covers you first have to open the phonograph, if not already done.

##### **Insert the title strips into the fields of the title display**

- You have to be careful while inserting the CD covers and title strips into the title holders. Be sure CD covers and title strips are inserted under all the black plastic tabs. This will insure that they don't fall out. The title display will always show eight covers of inserted CDs.
- You have to press the rocker button, placed in the operator console of the phonograph, if you want to move the title holders to the next position.
- You have to take care to insert only the corresponding number of title strips and CD covers.

#### **4.4.9 Check all wiring and components**

After finishing the installation of wiring, the insertion of CDs and title sheets you should check once more

- if all wiring is correctly made
- if all components are placed in a correct manner

Afterwards plug in the mains plug into the corresponding wall outlet.

#### **4.4.10 Power-on the appliance**

The power-on switch is located right hand at the bottom side of the appliance. To turn on the power just switch it to its opposite position.

If all installation was ok the lights should go bright and the initialisation routine should be displayed on the operators display.

After a moment the appliance is ready.

#### **4.4.11 Initialize the CDs to the central unit ES VI**

You have two possibilities to initialize the inserted CDs. After inserting

- if you only have inserted one or a few of CDs just play the first track of each CD.
- if you have inserted a lot of CDs it is easier to call up the service program and start the initialization routine of the phonograph.

See manual "Service program ES VI technology".

## 5 Disturbances

### 5.1 Avoiding disturbances

#### Reason of disturbances

Errors during the loading process of the magazine or a wrong manual insert of the CDs mostly result in mechanical disturbances.

To avoid disturbances please adhere to the following recommendations:

#### Use CD-tray

Put CDs only into the trays label-up.

Inside the CD changer CDs can only be transported if they are placed on trays.

#### Load CD magazine completely

Load the CD magazine completely with trays even if you do not fill in all trays with CDs.

Operate the phonograph only with all 50 trays installed.

By factory setting the magazine is equipped with all trays.

**Do not remove trays.**

#### Insert CD magazine correctly

When inserting a CD magazine pay attention to the **TOP** position.

The magazine must snap in clearly audible.

An incorrectly inserted CD magazine will lead to mechanical disturbances.

## 5.2 Reports on the display

The following table contains some display reports of the phonograph.

The given information is intended to help you to remove disturbances.

Report	Reason	Accomodation
Title not available	The corresponding CD is not available or unknown	Insert CD; initialize CD#
no valid disc found		terminate initialization routine

## 5.3 Replacing line fuses

### Caution

**Always unplug the power cord before exchanging line fuses. Use only fuses as specified below.**

**The two line fuses have the following values:**

- **T 5 AL for line voltage 230 V**
- **T 8 A for line voltage 120 V**

The line fuses are located in the bottom part of the phonograph cabinet. To get access to the fuses

- Power-off the phonograph and unplug the power cord.
- Open the front door.
- Remove 2 screw and fold the operator panel towards you.
- Nearly in the middle of the bottom part you will see the two fuse holders.
- Open the fuse caps and replace the fuses.
- Re-build the original state of the phonograph and power-on again.

### Warning

**Replace fuses only with same type and value! Otherwise the phonograph may be damaged in hole.**

## 5.4 Replacing the secondary fuses

The secondary fuses are placed on the two printed boards of the power supply unit.

**The secondary fuses have the following values:**

- **T 6,3 AL for 60 V<sub>A</sub>**
- **T 6,3 AL for 60 V<sub>B</sub>**
- **T 1 AL for 30 V**
- **T 3,15 AL for 15 V**
- **T 3,15 AL for 12 V**
- **T 3,15 AL for 5 V**

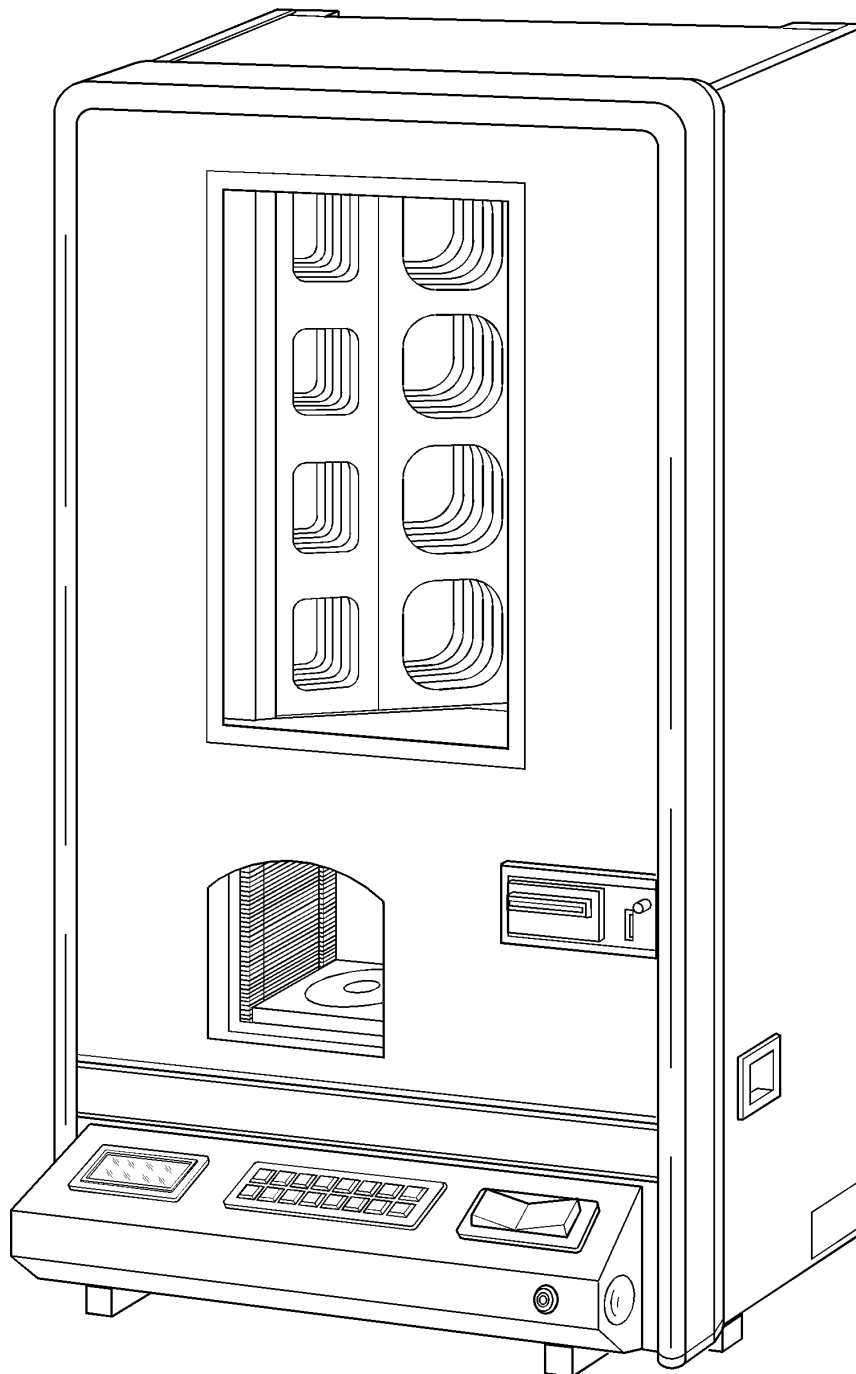
### Warning

**Replace fuses only with same type and value! Otherwise the phonograph may be damaged in hole.**

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## 6 Spare parts catalog

The following spare parts and options are available for the ESVI-phonograph:



This spare parts list is valid only for the "GEM-series" phonographs with ESVI-technology.

Each spare parts order must contain the following information:

1. Phonograph type
2. Serial number
3. Parts quantity
4. Parts number
5. Parts description

**Example of a correctly filled-out order sheet:**

Type	Serial no.	Qty.	Part-no.	Description	Remarks
Cosmic Burst	060431504	1	223 478	Transformer	900VA
		2	235 228	Interference filter	FN9222-10/06
		1	226 075	Fluorescent lamp	TL13W/33

**Note:**

***When ordering your spare parts please indicate model and serial number by all means. By doing so, you will avoid annoying further enquiry.***

Please forward your spare parts orders only to your wholesale dealer or to the NSM MUSIC-Organisation.

NSM MUSIC GmbH  
Im Tiergarten 20-30  
55411 BINGEN / Rhein  
Germany

Information and illustration contained in this spare parts list are correct at the time of printing.

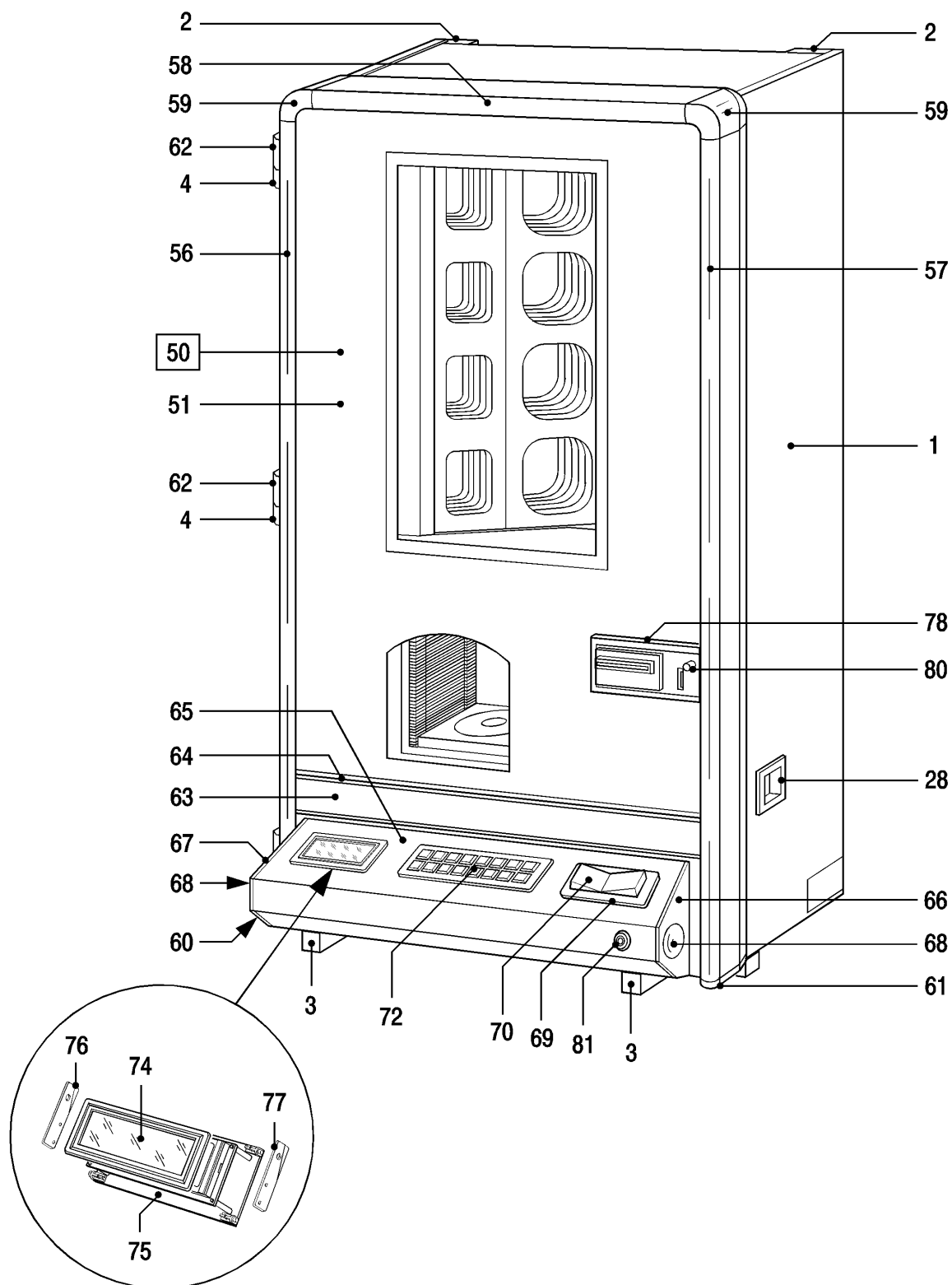
Subject to technical modification without obligation to modify equipment already delivered!

123 456

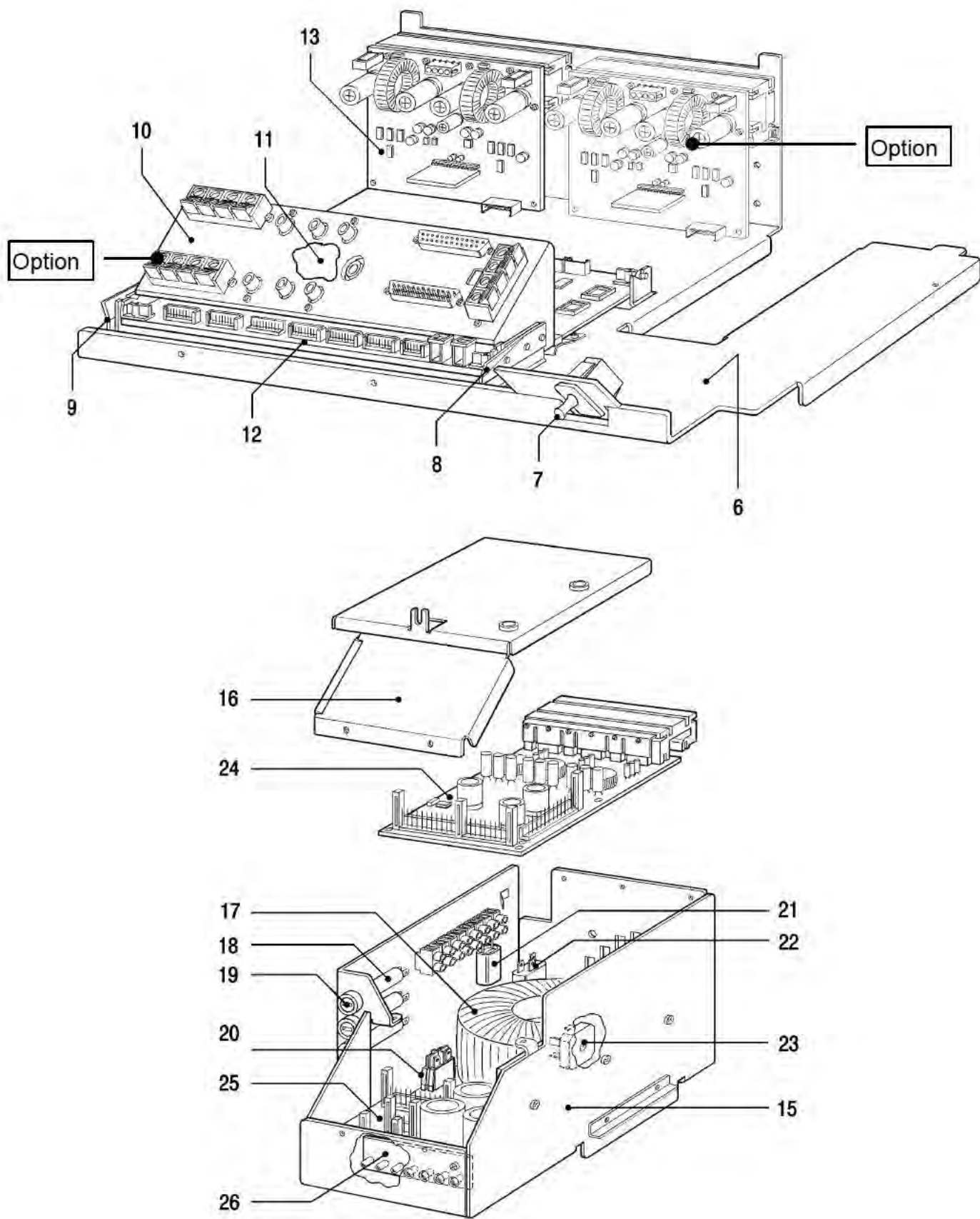
Table entries marked that way indicate the corresponding spare part as not available for all models.

## Options

Part no.	Description	Remarks / data
180 118	IR remote control unit, assy.	RC601
180 237	IR remote control unit, assy.	RC602
216 830	wired remote control unit, assy.	
180 189	Amplifier module, assy.	
180 079	Instruction manual, English	GEM-Series with ES VI technology

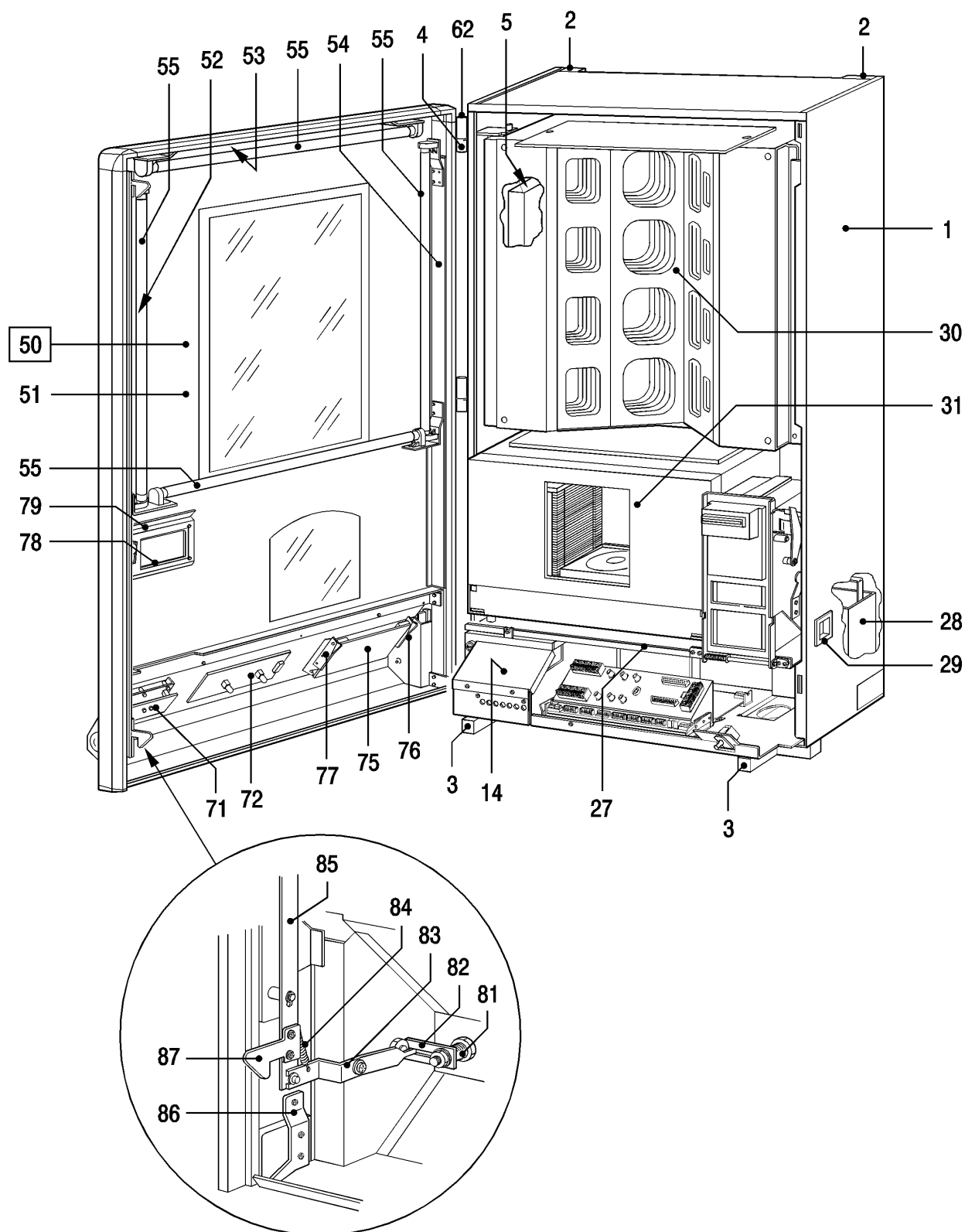


Pos.	Part no.	Description	Remarks / data
1	180 037	Cabinet, spot-welded	
2	179 553	Stopper, top	
3	179 539	Cabinet foot	
4	113 326	Hinge, lower part	



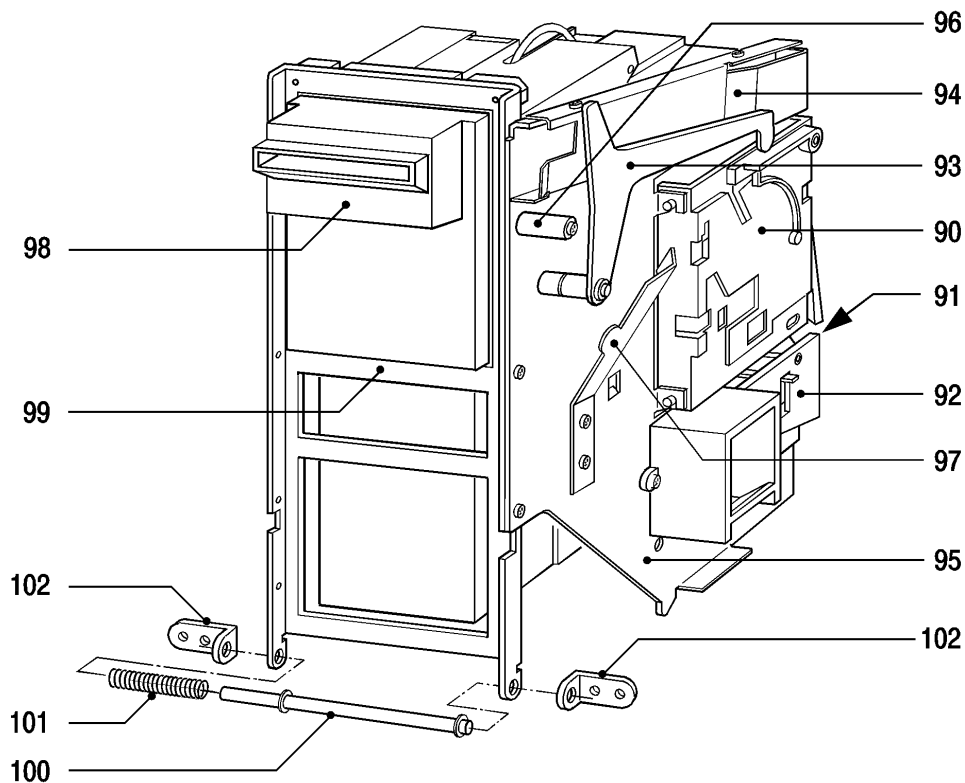
Pos.	Part no.	Description	Remarks / data
5	179 970	CB Electronic ballast, w/o PFC	120/230 V AC
6	180 056	Mounting plate	for electronics
7	222 509	Pushbutton switch	Service switch
8	171 626	Stop spring, right	
9	171 714	Stop spring, left	
	171 629	Holder for CB Central unit ESVI	red
10	179 872	Holding plate, printed	I/O-Panel
11	179 854*	CB I/O-Panel, assy.	
12	179 853*	CB Central Unit ESVI, assy.	
13	216 864*	Amplifier ESVI, assy.	Module
14	180 074*	Power supply unit ESVI, assy.	*120V*
14	180 075*	Power supply unit ESVI, assy.	*230V*
15	180 063	Transformer housing, spot-welded	
16	179 639	Cover for transformer housing	
17	223 478	Transformer with toroidal core	900 VA
18	235 135	G-fuse holder	120V
Si1, Si2	225 541	G-fuse	8A/125V (mains fuses)
Si3	225 760	G-fuse	1,6A/250V (illumination fuse)
19	235 138	Cap	60Hz
18	235 135	G-fuse holder	230V
Si1, Si2	225 537	G-fuse	T5A/250V (mains fuses)
Si3	225 227	G-fuse	T1A/250V (illumination fuse)
19	235 137	Cap	50Hz
20	222 574	Power-on switch	
21	221 110	NTC resistor	type S364/2,5/M
22	235 228	Interference filter	FN9222-10/06
23	221 085	Bridge rectifier	
24	179 956	CB Power Converter, assy.	
25	179 957	CB Power Filter, assy.	
26	179 971	CB LED-BAR, assy.	
27	179 727	Mounting plate	
28	180 049	Cash box, spot-welded	
	180 051	Cover for cash box	
29	179 664	Coin return cup	
30	179 540	Title display unit (type 104)	see page 6-9
31	179 155*	CD-changer MBC III-PRO, w/o Magazine	see Attachment A

\* = Exchange unit

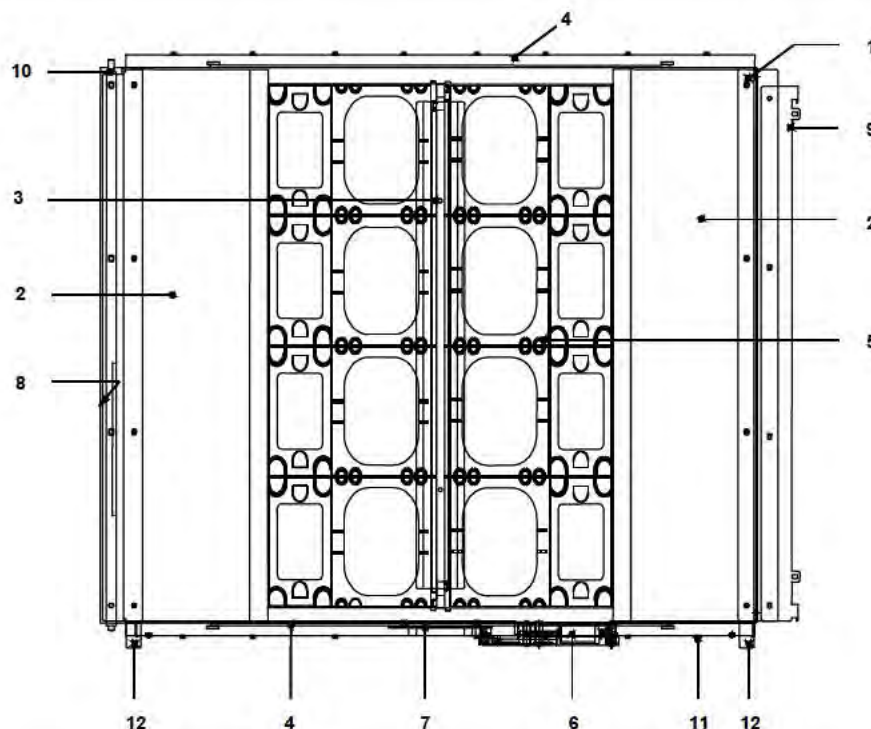


Pos.	Part no.	Description	Remarks / data
50	180 072	Front door, complete *USA*	USA version only
50	180 073	Front door, complete *USE*	export version
51	160 168	Front glass	*COSMIC BURST*
	217 507	Rubber profile	2x780mm; 2x600mm

Pos.	Part no.	Description	Remarks / data
52	179 746	Front glass holder, left	
53	179 737	Front glass holder, upper	
54	179 597	Front glass holder, right	
55	226 075	Fluorescent lamp	white, TL13W/33
56	250 564	Frame, left	black
57	250 565	Frame, right	black
58	250 566	Frame, upper	black
59	119 635	Edge connector	black
60	121 367	End connector, left	black
61	121 368	End connector, right	black
62	250 457	Hinge, upper part	
63	180 014	Pult plate, spot-welded	
64	250 529	Cross profile, bottom	
65	239 360	Cross profile, cover	
66	179 537	Pult plate cover, right	
67	179 538	Pult plate cover, left	
68	179 683	Decor plate, small	
69	176 574	Frame for rocker button	
70	175 974	Rocker button	
71	179 297	Cover, pre-mounted	
72	179 902	Keyboard, assy.	16 buttons
74	180 171	Bezel and glass for display, assy.	
75	179 900	CB Display, assy.	
76	171 626	Catch spring, right	
77	171 714	Catch spring, left	
	171 629	Holder for CB Display	red
78	179 551	Frame *USA*	for Dollar Bill Acceptor
78	179 552	Frame Standard	for Coin acceptor only
79	180 052	Holding plate for frame	
80	179 197	Coin return lever	
	205 683	Pressure spring	
	179 279	Washer, plastic	
81	206 903	Lock	*USA*
82	179 593	Lever for lock	
81	217 814	Cylinder lock	*UNI*
82	180 167	Lever for lock	
83	179 630	Closing lever	
	179 631	Flange sleeve	
84	205 582	Tension spring	
85	179 627	Closing bar, riveted	
86	179 821	Lifting protection	
87	179 629	Closing hook	



Pos.	Part no.	Description	Remarks / data
		<b>Coin and bill mechanism:</b>	
90	216 279	Coin acceptor MARS Cashflow 330	*D*
90	216 280	Coin acceptor MARS Cashflow 330	*GB*
90	216 254	Coin acceptor MARS Cashflow 330	*AUS*
	179 896	CB Coin adapter, assy.	for MARS Cashflow
90	216 675	Coin acceptor, mechanical	*USA* MP25c
91	222 602	Micro switch for mech. coin acc.	
92	179 573	Joining piece	cash box / coin return cup
93	179 736	Return lever, riveted	
94	179 654	Coin channel	
95	179 650	Holding plate for coin acceptor	
	179 655	Coin acceptor nest	
96	178 043	Stopper for coin return lever	
97	179 659	Locking lever for coin mechanism	
98	216 501	Dollar Bill Acceptor	
99	179 656	Holding plate for Dollar bill acc.	
100	179 658	Axle, slotted	
101	205 858	Pressure spring	
102	179 657	Axle bearing	
		Cable harnesses:	
	180 114	MARS coin acc. – CB Coin adapter	
	114 085	CB Coin adap. – Central unit ES VI	12 pole length=600mm
	179 886	Mech. coin acc. – Central unit ES VI	2 pole length=700mm
	179 887	Dollar bill acc. - Central unit ES VI	4 pole length=700mm



Pos.	Part no.	Description	Remarks / data
	179 540	Title display 104, complete	
1	179 541	Cabinet, complete	w/o design parts
	217 479	Edge protection	black, 4x102mm
	206 414	Edge protection	DX2, 2x155mm, for lower handle
2	179 792	Decor mask	white
3	179 688	Decor mask	black
4	212 967	Cover mask	white
5	179 225	Title holder	
	219 861	Adhesive sticker	00 – 99
6	179 542	Gear, pre-mounted	
	179 702	Cover plate for gear, riveted	
	179 544	Toothed wheel, double	z=69, z=15
	179 545	Toothed wheel	z=23
	179 707	Motor, complete	
	116 365	Step bearing	
	173 432	Worm gear	
	205 568	Tension spring	
7	179 709	CB Opto, complete	
	231 322	Opto coupler	LTH-301A-N
8	179 708	CB Title display 104, complete	
	229 157	Spacer	
9	179 718	Clamping bracket	
10	211 785	Bar with projection	
11	179 549	Guiding	
12	179 238	Foot, long	

## Cable harnesses

Part no.	Description	Remarks / data
227 433	Power cord EURO	*D*/*EXP*, length=2500mm
227 629	Power cord with plug	*GB*, length=2500mm
227 529	Power cord w/o plug	*AUS*/*NZ*, length=2500mm
227 528	Power cord (110-127V)	*USA*, length=2500mm
179 882	Power supply unit – CB Central Unit	8 pole, length=450mm
180 034	Power supply unit – Electronic ballast	6 pole, length=1100mm
179 885	Power supply unit – AMP	6 pole, length=600mm
179 962	CB Power Filter – CB Converter	12 pole, length=200mm
179 879	AMP – Loudspeaker connector	4 pole, length=450mm
179 905	CB Central Unit –AMP	8 pole, length=340mm
179 856	CB Central Unit – I/O-Panel	18 pole, length=100mm
179 857	CB Central Unit – I/O-Panel	20 pole, length=100mm
179 895	CB Central Unit –Service switch	2 pole, length=250mm
179 892	CB Central Unit – MBC III	15 pole, length=1200mm
178 012	CB Central Unit – Title display	10 pole, length=1470mm
177 478	CB Central Unit – CB Display	8 pole, length=1100mm
179 888	Display – Rocker button	6 pole, length=700mm
180 035	Front door illumination	

## 7 Appendix

### 7.1 Technical data

#### Electrical data

Mains voltage	120V / 230V	50/60Hz
Power consumption	115W 600W	stand-by play mode
RMS power / load (sine wave power)	each channel 170Wrms / 8Ω 250Wrms / 4Ω	
Music power (tone burst)	2 x 200W / 8Ω 2 x 300W / 4Ω 2 x 400W / 2Ω	4 x 175W / 8Ω 4 x 250W / 4Ω 4 x 250W / 2Ω *) *) = limited by overcurrent protection!

#### Operating conditions

Ambient temperature operating	10°C — 40°C	50°F — 104°F
Gradient of temperature	11°C/h	19,8°F/h
Relative humidity operating	10 % - 75 %	non condensing

#### Dimension and Weight

Dimension	Width	650 mm ≈ 25.5"
	Height	1042 mm ≈ 41"
	Depth	361 mm ≈ 14.2"
Weight w/o CDs	nearly	85kg

#### Interfaces

Auxiliary Interface	2 x input	4 x output
Serial interface	1 x RS232 1 x BACTA 1 x Selector box	
Operators panel	16 key keyboard LCD-display	

## 7.2 Wiring diagram

## 7.3 Service branch

Necessary service is supported by your distributor.

### Hot-line:

☎ UK 0044 113 271 3708

☎ Germany 06721 22 56 39 36

☎ USA 001 630 860 5100

## 7.4 Declarations

### 7.4.1 CE-declaration



EC-DECLARATION OF  
CONFORMITY

per **89/ 336 / EEC**.

This is to confirm that the product

phonograph  
ESVI-technology

is conform with the following  
standards or other normative  
documents:

**EN 55022**

**EN 55024**

NSM quality assurance system  
assures compliance.

NSM Music GmbH

D-55411 Bingen am Rhein,  
Germany

### 7.4.2 FCC declaration

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any change or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the user's authority to operate such equipment.

## 7.5 Catchword register

Appendix.....	7-1	IR.....	3-3
CD trays		Wired.....	3-6
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General survey		Values .....	5-3
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Initialize CDs .....	4-8	Replacing Fuses.....	5-3
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CDs .....	4-7	Front side .....	2-1
Title sheets .....	4-8	Inside.....	2-3
Mounting bracket .....	4-5	Interface board .....	2-3
Operators Display .....	2-1	Keyboard .....	2-1
Options.....	6-2	Set-up.....	4-1
Power-on.....	3-1	Technical data .....	7-1
Quantity delivered .....	4-1	Title display unit .....	4-8
Remote control		Viewing title sheets .....	3-2



## **Attachment A: The CD changer MBC III-PRO**

On the following pages please find the technical manual for the CD changer MBC III-PRO.



## **Attachment B: Service program ES VI-Technology**

On the following pages please find the programming manual for the “Service program ES VI-Technology”.

