

**Millenium** Drums

MD-90

Mobile Drum

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# 1 General information

This document contains important instructions for the safe operation of the product. Read and follow the safety instructions and all other instructions. Keep the document for future reference. Make sure that it is available to all those using the product. If you sell the product to another user, be sure that they also receive this document.

Our products and documentation are subject to a process of continuous development. They are therefore subject to change. Please refer to the latest version of the documentation, which is ready for download under [www.thomann.de](http://www.thomann.de).

## 1.1 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this document.

Signal word	Meaning
<b>DANGER!</b>	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
<b>WARNING!</b>	This combination of symbol and signal word indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.
<b>NOTICE!</b>	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.
Warning signs	Type of danger
	Warning – danger zone.

## 2 Safety instructions

### Intended use

Mobile Drums are used to convert digital trigger signals from drum pads into various drum sounds. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

### Safety



#### **DANGER!**

#### **Risk of injury and choking hazard for children!**

Children can suffocate on packaging material and small parts. Children can injure themselves when handling the device. Never allow children to play with the packaging material and the device. Always store packaging material out of the reach of babies and small children. Always dispose of packaging material properly when it is not in use. Never allow children to use the device without supervision. Keep small parts away from children and make sure that the device does not shed any small parts (such knobs) that children could play with.



#### **WARNING!**

#### **Possible hearing damage due to high volumes on speakers or headphones!**

With speakers or headphones connected, the device can produce volume levels that may cause temporary or permanent hearing impairment. Over an extended period of time, even levels that seem to be uncritical can cause hearing damage. Do not operate the device permanently at a high volume level. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment.



### **NOTICE!**

#### **Damage to the device if operated in unsuitable ambient conditions!**

The device can be damaged if it is operated in unsuitable ambient conditions. Only operate the device indoors within the ambient conditions specified in the “Technical specifications” chapter of this user manual. Avoid operating it in environments with direct sunlight, heavy dirt and strong vibrations. Avoid operating it in environments with strong temperature fluctuations. If temperature fluctuations cannot be avoided (for example after transport in low outside temperatures), do not switch on the device immediately. Never subject the device to liquids or moisture. Never move the device to another location while it is in operation. In environments with increased dirt levels (for example due to dust, smoke, nicotine or mist): Have the device cleaned by qualified specialists at regular intervals to prevent damage due to overheating and other malfunctions.



### **NOTICE!**

#### **Damage to the external power supply due to high voltages!**

The device is powered by an external power supply. The external power supply can be damaged if it is operated with the incorrect voltage or if high voltage peaks occur. In the worst case, excess voltages can also cause a risk of injury and fires. Make sure that the voltage specification on the external power supply matches the local power grid before plugging in the power supply. Only operate the external power supply from professionally installed mains sockets that are protected by a residual current circuit breaker (FI). As a precaution, disconnect the power supply from the power grid when storms are approaching or if the device will not be used for a longer period.



### **NOTICE!**

#### **Risk of fire due to incorrect polarity!**

Incorrectly inserted batteries may cause fires and destroy the device and the batteries. Observe the markings on the batteries and on the device. Ensure that proper polarity is observed when inserting batteries.



### **NOTICE!**

#### **Possible damage due to leaking batteries!**

Batteries can leak and cause permanent damage to the device. Take the batteries out of the device if it is not going to be used for an extended period of time.





**NOTICE!**

**Possible staining due to plasticiser in rubber feet!**

The plasticiser contained in the rubber feet of this product may react with the coating of the floor and cause permanent dark stains after some time. If necessary, use a suitable mat or felt slide to prevent direct contact between the device's rubber feet and the floor.

### 3 Features

- Seven velocity-sensitive drum pads, terminals for kick and hi-hat pedals
- Three-digit LED display
- Connection for headphones and USB/MIDI
- 45 drum kits, 5 user kits
- 265 percussion voices, 16 MByte voice data
- 128 MIDI sounds
- 100 songs
- One demo song
- One recording track
- Standby function
- Battery operation possible
- Including kick and hi-hat pedals, sticks and power supply
- Operating system: Windows® 8 and later, Mac OS X® 10.8 and later

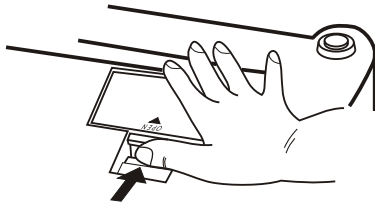
## 4 Installation and starting up

- Connecting the power supply**      Connect the power supply to the 12 V input on the device, and then insert the power plug into the socket-outlet.
- Connecting pedals**                      Connect the bass drum pedal and the hi-hat controller to the corresponding inputs on the rear of the module.
- Connecting headphones**                Connect the headphones to the corresponding input on the rear of the module.
- USB/MIDI interface**                    Connect external MIDI or USB-enabled devices to the USB/MIDI interface on the rear of the module.



*Use a current operating system still supported by the provider to avoid technical difficulties.*

### Battery change



To insert or replace the batteries, flip over the device, press lightly on the battery compartment cover and slide it down in the arrow direction. Remove the cover. Insert or replace the batteries while paying attention to the polarity markings and push the cover back into its original position until it engages.



#### **NOTICE!**

##### **Risk of fire due to incorrect polarity!**

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Observe the markings on the batteries and on the device.

Ensure that proper polarity is observed when inserting batteries.



#### **NOTICE!**

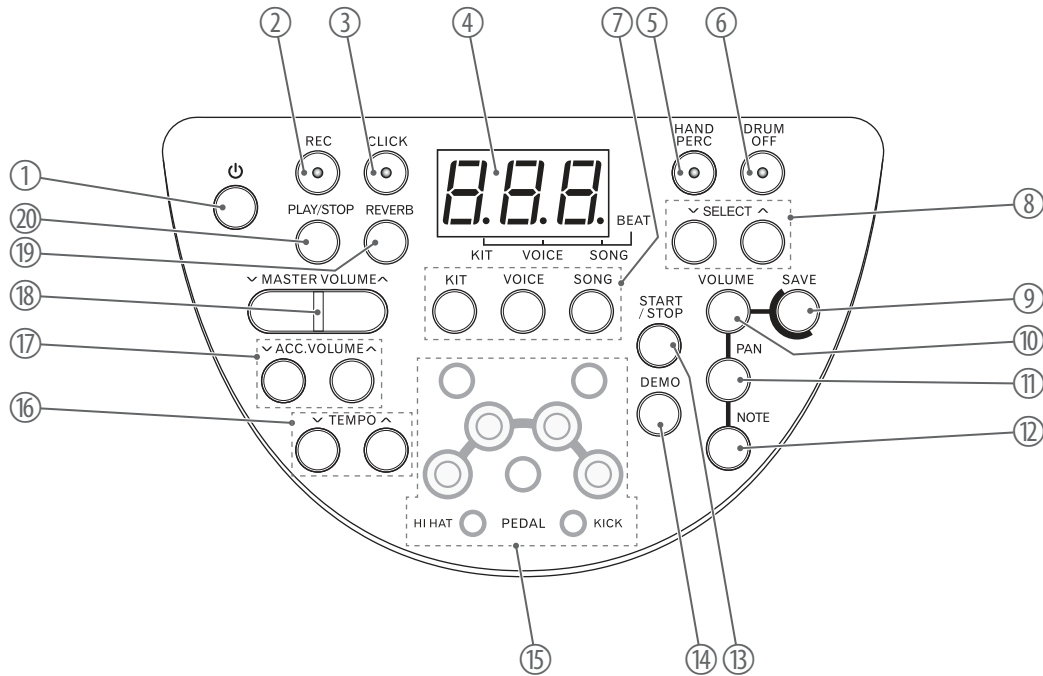
##### **Possible damage due to leaking batteries!**

Batteries can leak and cause permanent damage to the device.

Take the batteries out of the device if it is not going to be used for an extended period of time.

## 5 Connections and controls

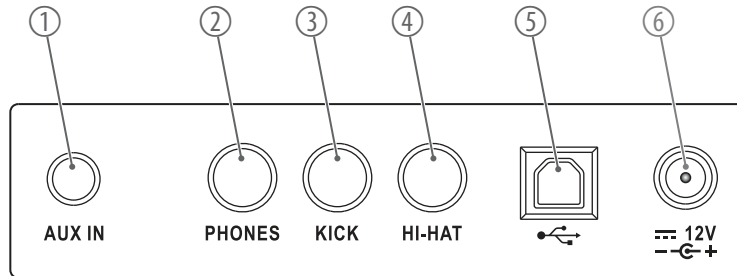
### Front



1	[POWER]   Main switch to turn the device on and off
2	[REC]   Button with LED indicator for turning the recording function on and off
3	[CLICK]   Button with LED indicator for turning the metronome on and off
4	Three-digit LED display   Display for showing all parameters of the currently open menu
5	[HAND PERC]   Button with indicator LED for activating hand percussion mode
6	[DRUM OFF]   Button with indicator LED for muting the drum track
7	[KIT]   Button for opening the KIT menu
	[VOICE]   Button for opening the VOICE menu
	[SONG]   Button for opening the SONG menu
8	[SELECT -/+ ]   Buttons for selecting parameters and editing values in menus
9	[SAVE]   Button for saving the current settings as a user kit
10	[VOLUME]   Pad volume adjustment button
11	[PAN]   Button for adjusting the panorama setting
12	[NOTE]   Button for editing the MIDI notes of the pads
13	[START/STOP]   Button to start and stop the playback of songs and patterns
14	[DEMO]   Button to start and stop demo song playback.
15	Indicator LEDs   In practice mode, these LEDs light up briefly to indicate the pad that is being played.

- 
- |    |                     |   |
|----|---------------------|---|
| 16 | [TEMPO -/+]         | Buttons for adjusting the playback speed                          |
| 17 | [ACC.VOLUME -/+]    | Buttons for adjusting the volume of accompanying tracks           |
| 18 | [MASTER VOLUME -/+] | Buttons for adjusting the device volume                           |
| 19 | [REVERB]            | Button for adjusting the reverb level                             |
| 20 | [PLAY/STOP]         | Button for starting and stopping playback of the recording tracks |

### Back



- |   |  |
|---|--|
| 1 | [AUX IN]   Input socket for the connecting an audio device (e.g. MP3 or CD player), designed as a 3.5-mm jack socket |
| 2 | [PHONES]   Output socket for connecting headphones, designed as a 6.35-mm jack socket                                |
| 3 | [KICK]   Input socket for connecting the kick pedal, designed as a 6.35-mm jack socket                               |
| 4 | [HI HAS]   Input socket for connecting the hi-hat pedal, designed as a 6.35-mm jack socket                           |
| 5 | USB connection   |
| 6 | Connection socket for the 12-V power supply.   |



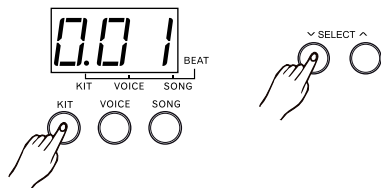
## 6 Operating

### Switching on/off, standby

Turn the device on or off using the main switch.

The device automatically switches to standby mode if you don't press a button or strike a connected pad for about 30 minutes. To turn the device on again after an automatic shutdown, press the main switch.

### Selecting a drum kit



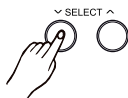
When the device is switched on, it opens the KIT menu by default. The default value is '001'.

Press [*KIT*] to open the menu. The indicator LED of the button lights up and the three-digit LED display shows the current kit number. You can now select the desired kit using [*SELECT -/+*].



The drum kit list is available for download on the product page at [www.thomann.de](http://www.thomann.de).

## Pad voice



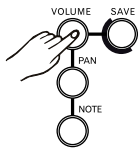
Press **[VOICE]** to enter the VOICE menu. The default value corresponds to the voice number that is assigned to the crash pad in the respective kit, e.g. '96' in kit '001'.

The indicator LED of the button lights up and the three-digit LED display shows the voice number that is assigned to the activated pad (activation by pressing a button or hitting the pad). You can now select the desired voice using **[SELECT -/+]**.



The voice list is available for download on the product page at [www.thomann.de](http://www.thomann.de).

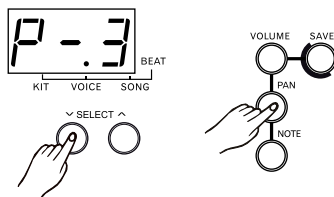
## Setting the pad volume



Press **[VOLUME]** to open the VOICE menu.

The indicator LED of the button lights up and the three-digit LED display shows the current volume setting of the activated pad (activation by pressing a button or hitting the pad). Now you can adjust the volume using **[SELECT -/+]**.

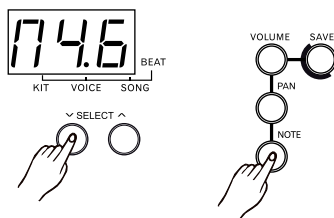
## Panorama setting



Press *[PAN]* to open the VOICE menu.

The indicator LED of the button lights up and the three-digit LED display shows the assignment of the activated pad (activation by pressing a button or hitting the pad). You can now adjust the position of the pad within the stereo panorama using *[SELECT -/+]*.

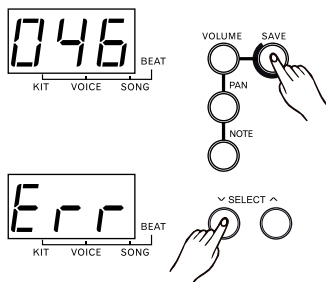
## Assigning a MIDI note



Press *[NOTE]*, to open the VOICE menu.

The indicator LED of the button lights up and the three-digit LED display shows the currently assigned MIDI note. You can now assign any MIDI note using *[SELECT -/+]*.

## Saving a setting as a user kit



Press **[SAVE]** to open the SAVE menu. You can now assign the current settings to a user kit number using **[SELECT -/+]**. During this process the display value flashes on the three-digit LED display.

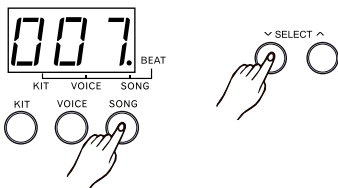
Press **[SAVE]** again to save the setting. Once it has been successfully saved, the user kit is automatically activated via the KIT menu.

If an error occurs, the three-digit LED display shows **[Err]**.



*Any unsaved changes will be discarded by the selection of another kit.*

## Song playback



Press **[SONG]** to open the SONG menu. The default value is '001'.

The indicator LED of the button lights up and the three-digit LED display shows the current song number. You can now select the desired song using **[SELECT -/+]**.

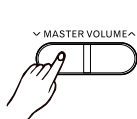


*The song list is available for download on the product page at [www.thomann.de](http://www.thomann.de).*

The first 80 songs can be played in a loop. Use the *[START]* and *[STOP]* buttons to start or pause playback. When you skip to the beginning of the next song during playback, the current bar of the current song will be completed first.

For each song, the “tempo” and “drum kit” parameters are stored in the system. The corresponding values are loaded automatically when you play the song.

### Device volume



In the main menu, the three-digit LED display shows the main volume in the 'Lxx' format. Use the *[MASTER VOLUME /+]* buttons to adjust the volume incrementally from 0...9.

The set value is automatically saved.

### Accompaniment track volume



In the ACC.VOLUME menu, the three-digit LED display shows the accompaniment volume in the 'Axx' format. Use the *[SELECT -/+]* buttons to adjust the accompaniment volume incrementally from 0...9.

The set value is automatically saved.

## Muting the drum track



Use the *[DRUM OFF]* button to mute or unmute the drum track during the playback of songs. The indicator LED of the button lights up when this function is enabled and the drum track is muted.

## Tempo



Press one of the *[TEMPO -/+]* buttons once to enter the TEMPO menu. Use the *[TEMPO -/+]* buttons to adjust the playback tempo (click and song) incrementally in a range of 30...280. To restore normal playback tempo press both buttons simultaneously.

## Metronome



During song playback, the beat indicator (indicator LED) of the metronome is automatically activated. Press the *[CLICK]* button once to enable a human voice counting. Press twice to enable the click sound of the metronome. Press the *[CLICK]* button again to turn the metronome off.

## Hand percussion



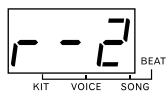
Use the *[HAND PERC]* button to enter hand percussion mode (song number 5, kit number 21). The indicator LED of the button lights up when this function is enabled.

## Demo song



Use the *[DEMO]* button to enter demo mode. The three-digit LED display shows the value 'dE'. Use the *[START]* and *[STOP]* buttons to start or pause the playback of demo songs.

## Reverb effect

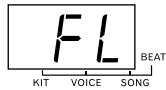


Use the *[REVERB]* button to enter the REVERB menu. The three-digit LED display shows the currently selected reverb level in the 'Rxx' format. Use the *[SELECT -/+]* buttons to adjust the level incrementally from 0...3.

The set value is automatically saved.

## Recording mode

1. ▶ Prepare recording: Select a song and a drum kit. Determine the desired tempo and the settings for DRUM OFF and REVERB.
2. ▶ Start recording: Press *[REC]*. The indicator LED of the button starts flashing. Press *[START/STOP]* or hit a pad to start recording. The indicator LED of the button goes out.
3. ▶ Stop recording: Press *[REC]* or *[START/STOP]*. The indicator LED of the button goes out. If the memory is used up the recording is automatically stopped and the three-digit LED display shows 'FL'



*When recording starts, the metronome is automatically activated but is not recorded. Press [CLICK] to turn off the metronome.*

## Playing back recordings



Use the [PLAY/STOP] button to start or stop the playback of recordings.



*When a new song is recorded, the previous recording is overwritten. When the power supply is disconnected, the recorded track is deleted.*



## 7 MIDI implementation

Function		Transmitted	Recognised	Remarks
Basic channel	Default	Ch 10	Ch 1...16	
	Changed	No	No	
Mode	Default	No	1	
	Messages	No	No	
	Altered	*****	No	
Note number	True voice	27...88	0...127	
		*****	0...127	
Velocity	Note ON	Yes (9nH, V=1...127) No (9nH, V=0)	Yes (9nH, V=1...127) No (9nH, V=0; 8nH, V=0...127)	
	Note OFF	Yes (99H, V: 0)	Yes	
Aftertouch	Keys	No	No	
	Channels	No	No	
Pitch bender		No	Yes	


Function		Transmitted	Recognised	Remarks
Control change	0	No	Yes	Bank select
	1	No	Yes	Modulation
	5	No	Yes	Portamento time
	6	No	Yes	Data entry
	7	No	Yes	Volume
	10	No	Yes	Pan
	11	No	Yes	Expression
	64	No	Yes	Sustain pedal
	65	No	Yes	Portamento ON/OFF
	66	No	Yes	Sostenuto pedal
	67	No	Yes	Soft pedal
	80	No	Yes	Reverb program
	81	No	Yes	Chorus program
	91	No	Yes	Reverb level
	93	No	Yes	Chorus level
120	No	Yes	All Sound Off	

Function		Transmitted	Recognised	Remarks
	121	No	Yes	Reset All Controllers
	123	No	Yes	All Notes Off
Program change		No	Yes	
	Variable range	No	0...127	
System exclusive		*****	Yes	
System common	Song Position	No	No	
	Song Select	No	No	
	Tune	No	No	
System real time	Clock	No	No	
	Command	No	No	
Aux messages	Local ON/OFF	No	No	
	All Notes OFF	No	Yes	
	Active Sense	No	Yes	
	System reset	No	Yes	

- Mode 1: OMNI On, Poly
- Mode 2: OMNI On, Mono

- Mode 3: OMNI Off, Poly
- Mode 4: OMNI Off, Mono

## 8 Technical specifications

Input connections	Power supply	1 × connection socket for the power adapter
	AUX IN	1 × 3.5 mm jack socket
Output connections	Audio	1 × USB 1.0/2.0 (MIDI IN/OUT)
	Headphones	1 × 6.35-mm jack socket
	Kick pedal	1 × 6.35-mm jack socket
	Hi-hat pedal	1 × 6.35-mm jack socket
Drum kits	45 drum kits, 5 user kits	
Voices	265 percussion voices, 16 MByte voice data	
MIDI sounds	128 (The MIDI lists are available for download on the product page at <a href="http://www.thomann.de">www.thomann.de</a> .)	
Demo and practise songs	100 pre-programmed songs, 1 demo song	
Effects	Reverb	
Power supply	External power adapter, 100 - 240 V ~ 50/60 Hz	
Operating voltage	12 V  / 2,000 mA, centre positive	
Battery	6 C batteries (C, LR14, 1.5 V)	

## Technical specifications

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Operating system		Windows® 8 and later, Mac OS X® 10.8 and later
Dimensions (W × H × D)		500 mm × 157 mm × 370 mm
Weight		3.3 kg
Ambient conditions	Temperature range	0 °C...40 °C
	Relative humidity	20%...80% (non-condensing)

## 9 Plug and connection assignment

### Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment in such a way that a perfect sound experience is ensured.

Please note these advices, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into the socket, an incorrect connection may result in a destroyed power amp, a short circuit or 'just' in poor transmission quality!

### Balanced and unbalanced transmission

Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

Unbalanced transmission is susceptible to electromagnetic interference, especially at low levels, such as microphone signals and when using long cables.

In a professional environment, therefore, the balanced transmission is preferred, because this enables an undisturbed transmission of signals over long distances. In addition to the conductors 'Ground' and 'Signal', in a balanced transmission a second core is added. This also transfers the signal, but phase-shifted by 180°.

Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

## 1/4" TS phone plug (mono, unbalanced)



1	Signal
2	Ground, shielding

## Three-pole 1/8" mini phone jack (stereo, unbalanced)

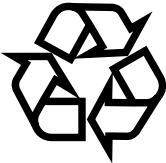


1	Signal (left)
2	Signal (right)
3	Ground, shielding



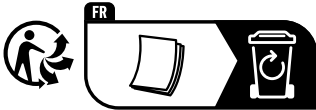
# 10 Protecting the environment

## Disposal of the packing material



Environmentally friendly materials have been chosen for the packaging. These materials can be sent for normal recycling. Ensure that plastic bags, packaging, etc. are disposed of in the proper manner.

Do not dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the instructions and markings on the packaging.



Observe the disposal note regarding documentation in France.

## Disposal of batteries

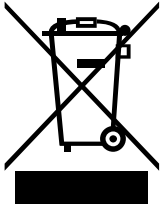


Batteries must not be thrown away or burnt, but must instead be disposed of in line with the local regulations on the disposal of hazardous waste. Use the available collection sites.

Before disposing of your old device, remove the batteries if this is possible without destroying it.

Dispose of the batteries or rechargeable batteries at suitable collection points or through your local waste facility.

### Disposal of your old device



This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) as amended.

Do not dispose of your old device with your normal household waste; instead, deliver it for controlled disposal by an approved waste disposal firm or through your local waste facility. If in doubt, consult your local waste management facility. You can also return the device to a retailer if they offer to take the device back for free or if they are legally obliged to do so. When disposing of the device, comply with the rules and regulations that apply in your country. You can also return your old device to Thomann GmbH at no charge. Check the current conditions on [www.thomann.de](http://www.thomann.de).

Proper disposal protects the environment as well as the health of your fellow human beings. This is because the proper handling of old devices negates the potential negative effects of hazardous substances, and because it conserves resources by recycling them.

Also note that waste avoidance is a valuable contribution to environmental protection. Repairing a device or passing it on to another user is an ecologically valuable alternative to disposal.

If your old device contains personal data, delete those data before disposing of it.



