

# **MACKENZIE.**

## **DVCD-3000**

**Compact Disc Autoload,  
Message-On-Hold System**



**User's Manual**  
**Version 1.2 Revised 05, Sep 2008**  
**Doc 99-20-191 - \$25.00**

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**General Safety Instructions**

Always follow these basic safety precautions when using the system:

1. Read carefully and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. DO NOT block or cover ventilation slots and openings.
4. DO NOT place the product in a closed enclosure or cabinet unless proper ventilation is provided.
5. Never spill liquid on the product or drop objects into the ventilation slots and openings. Doing so may result in serious damage to the components.
6. Repair or service must be performed by a factory authorized repair facility.
7. DO NOT staple or otherwise attach the power supply cord to building surface.
8. DO NOT use the product near or in wet or damp places, such as wet basements.
9. DO NOT use extension cord. Install within 6 feet of a grounded outlet receptacle.
10. DO NOT install during lightning storm.
11. Never touch un-insulated wires or terminals unless the unit is disconnected from both power and the rest of the phone system.
12. Use Caution when installing or modifying configuration switches or control lines.
13. Install in a protected location where no one can step on, or trip over, power and line cords.
14. The unit must be securely attached to a wall board, rack or table mounted.
15. Use correct power source. Use only the power pack supplied.



**CAUTION:**

If any wiring from the system leaves the premises, you must use proper electrical protectors.

**Regulations:**

This product contains a Class 1 Laser Product which complies with 21CFR, Subchapter J, Parts 1040.10 and 1040.11. This product contains no user serviceable parts or adjustments. Do not open or disassemble product.

**CAUTION** - use of controls or adjustments or performance of procedures other than those herein may result in hazardous radiation exposure.

FCC (Part 15) Radio Frequency Interference - The DVCD-3000 generates and uses radio frequency energy and if not installed and used in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. Unit complies with the limits for Class A devices in accordance with the specifications in Subpart J of Part 15 of the FCC Rules. This testing is designed to provide reasonable protection against such interference. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the unit off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the radio or TV receiving antenna.
- Relocate the unit with respect to the radio or TV receiver or vice-versa.
- Plug the unit into a different outlet so that it and the radio or TV receiver are on different branch circuits
- If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

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**Shipping Container Contents**

The following items should be found in the container of the DVCD-3000.

- DVCD-3000 System
- Wall mount power pack
- Audio cable
- Mounting hardware
- User's manual

**Models:**

Model #	Capacity	Bandwidth
DVCD-3000	20 minutes	20KHz
DVCD-3000/40	40 minutes	20KHz
DVCD-3000/80	80 minutes	20KHz

## 1. OVERVIEW

### 1.1 Features and Benefits:

The DVCD-3000 is a highly reliable audio playback system specifically designed for Message-On-Hold applications. Message material is loaded into the system by Compact Disc and stored in non-volatile FLASH memory. Messages play continuously from memory until new messages are loaded

The DVCD-3000 is compatible with variety of Compact Disc formats. This includes Red Book audio CD's for the ultimate in audio performance as well as space saving MP3 data CD's.

The DVCD-3000 is designed to interface with the Message-On-Hold port of a wide variety of phone systems. This allows your marketing messages to be played to customers while they are on hold, reducing hang ups and increasing sales.

The DVCD-3000 incorporates a ruggedized, electronically controlled Compact Disc mechanism originally designed for automotive applications and providing years of reliable service. Messages are digitized and stored in non-volatile FLASH memory that protects them from loss during power outage.

Multiple audio outputs (600ohm, 8ohm) with level and tone control and high quality sampling allow the sound of the DVCD-3000 to be optimized for almost any phone system, insuring that your message gets heard.

### 1.2 General Specifications:

#### Power:

12VDC, power pack included

#### Audio Fidelity

100Hz - 20KHz

80dB Signal to Noise

#### Audio Outputs:

RCA, mono, 600 ohm, +2dBv max

RCA, mono, 2.5W @ 8 ohm

Monitor speaker

#### Manual Controls:

Output Level, Tone Control

Eject, Speaker Enable

#### LED Indicators:

CD Ejected, Recording, MOH playing(audio)

#### Package:

8.0" H x 5.4" W x 2.3" D

3 position wall mount

Painted steel chassis

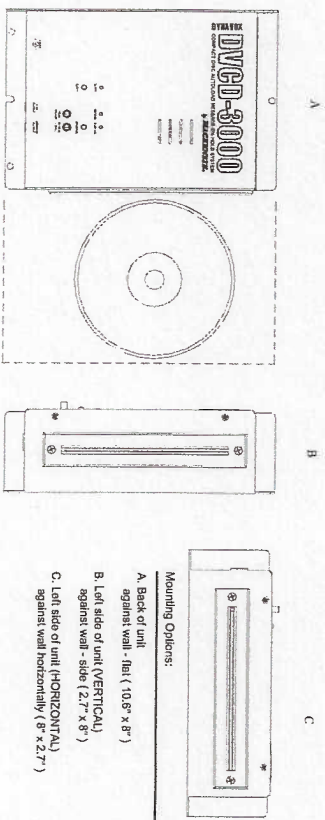
## 2. Installation:

This section provides complete instructions for mounting the DVCD-3000. Before you install the DVCD-3000 system, make sure you have:

- A message or music on hold input on your phone system.
- A non-switchable 110VAC electrical outlet near the location where the unit is to be installed.

### 2.1 Wall or Table Installation:

1. Locate a proper space on the telephone equipment board or wall. You can mount the DVCD-3000 unit in one of three positions: flat, side, or horizontal.
2. Position the unit on the board; mark the mounting hole locations.
3. Using the mounting screws provided, secure the DVCD-3000 system to the board or wall.
4. If table top mounting the DVCD-3000, stick the enclosed rubber feet onto the bottom of the unit.



#### Mounting Options:

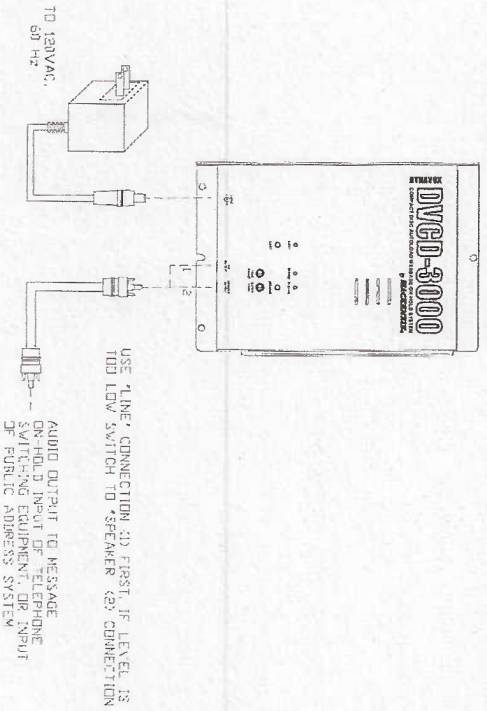
- A. Back of unit against wall - flat (10.6" x 8")
- B. Left side of unit (VERTICAL) against wall - side (12.7" x 8")
- C. Left side of unit (HORIZONTAL) against wall horizontally (8" x 2.7")

### 2.2 Connecting the power pack

1. Plug the power pack into a 110VAC power outlet which is not connected to a switch.
2. Plug the power plug into the DVCD-3000 system's power jack marked POWER.
3. There is no power switch on the DVCD-3000 system, so as soon as power is connected, the system will be active.

### 2.3 Connection to Telephone equipment

Connect one side of the supplied RCA cable to the telephone equipments Message-On-Hold input. Connect the other side of this cable to the DVCD-3000's LINE OUT. There are two audio outputs on the DVCD-3000, LINE OUTPUT (Low, +2dB into 600 ohms), and SPEAKER OUTPUT (High, 2.5W into 8 ohms). Use the LINE OUT first adjusting the audio output volume potentiometer to obtain the correct audio level. If this does not provide enough audio level, then switch to the SPEAKER OUTPUT.



### 3. Operation:

#### 3.1 Message Downloading:

When you receive the new DVCD-3000 system, its memory will be blank. To load new messages into the DVCD-3000's memory, simply insert a properly formatted Compact Disc into the DVCD-3000 unit. Make sure to insert the CD with the data side down.

The DVCD-3000 supports Red Book audio CD's and MP3 data CD's. Reference Section 4, Compact Disc Formatting for additional information on CD formats.

When a new Compact Disc is inserted, the DVCD-3000 will automatically start playing it from the beginning. The DVCD-3000 will record the audio program, ignoring the silence before and after the audio recorded on the CD. When the Audio program on the CD starts, the red Record light will come on signifying that Audio is being recorded. At the end of the Audio program, when the DVCD-3000 detects 10 seconds of silence, the Record LED will go out.

The audio being recorded will be output through the LINE and SPEAKER outputs during the recording process. This audio may also be monitored by the user by pressing the Speaker button.

**WARNING:** When a CD is inserted into the DVCD-3000, the previous recording is deleted immediately. If the CD is then ejected, prior to recording any audio, the DVCD-3000's memory will be empty.

#### 3.2 Message playback

After a message has been recorded into memory, the DVCD-3000 will automatically begin playing them through the audio outputs. There is no control, or user input, required to initiate the playback. The green, Audio LED will light whenever the system is playing messages.

#### 3.3 Pushbutton descriptions

Two pushbuttons are provided on the DVCD-3000 system.

##### Eject (Record Stop) pushbutton – Black, momentary

Allows the user to stop the recording process and/or eject the tape as follows:

- When the system is not recording, the button functions as an Eject button.
- When the DVCD-3000 is recording audio, (whenever the Record LED is on) pressing this button momentarily will stop the recording and save the Audio which was just recorded. The system will not eject the CD.
- If this button is pressed and held for two seconds while the DVCD-3000 is recording, the message just recorded will be deleted, and the CD will be ejected.
- If the button is pressed momentarily while the DVCD-3000 is recording audio, and then pressed momentarily again, the system will stop the recording process, save the Audio just recorded, and eject the CD.

##### Speaker pushbutton – Black, momentary

A monitor speaker, on the front side of the unit, allows the local user to hear the Audio being output by the DVCD-3000. Pressing this button will toggle the setting of the monitor speaker.

The volume of the monitor speaker is pre-set and is independent of the volume setting of the Audio output.

**Note: Do not adjust the Audio output level adjustment in order to hear the monitor speaker level better. Doing this will adjust the level of the Audio output which may not be acceptable.**

#### 3.4 LED (Light Emitting Diodes) descriptions

Three LED's are provided on the top of the DVCD-3000 unit to display the current status of the system.

##### EJECT LED, Yellow

This LED will light whenever the CD is ejected, i.e. no CD in the system. When a CD is inserted, and loaded, i.e. CD is completely inside the machine, this LED will go out.

##### RECORD LED, Red

This LED will light when the DVCD-3000 starts recording an Audio program, and will go out when the recording process stops.

The Record LED will blink one time when the DVCD-3000 is powered on, indicating that the memory operational.

##### PLAYING LED, Green

This LED will light whenever the DVCD-3000 is playing a recorded message

**Model DVCD-3000  
COMPACT DISC AUTOLOAD  
MESSAGE-ON-HOLD SYSTEM**

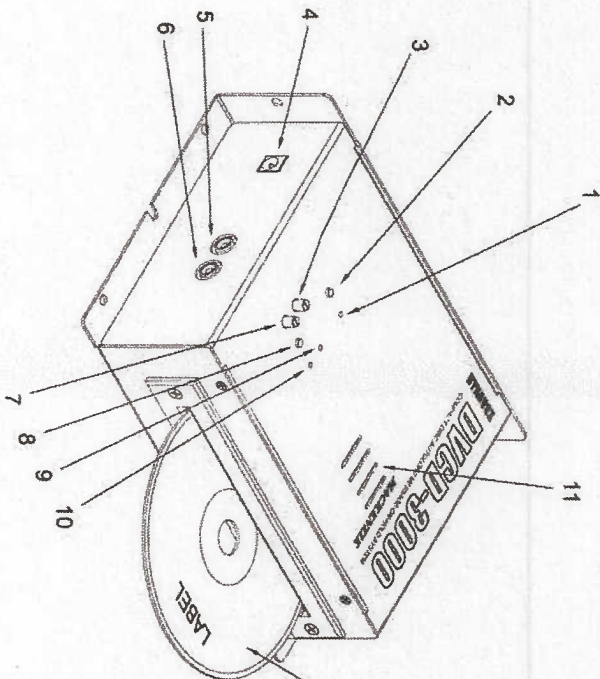
**1 EJECT LED:**  
Yellow light ON indicates there is no CD inserted.  
Yellow light OFF indicates the CD is in place.

**2 EJECT / RECORD STOP PUSH-BUTTON:**  
This ejects the CD when the system is playing downloaded messages. If pressed during the recording process the recording will be stopped.

**3 TONE ADJUST KNOB:**  
Adjusts the Bass & Treble amount to deliver the best overall system performance.

**4 POWER JACK:**  
Insert supplied power adapter.

**5 LINE OUTPUT:**  
Audio output level of up to +4dB into 600  $\Omega$ , this is a standard level for most applications.



**THE MACKENZIE DYNAVOX  
DVCD-3000 Quikey**

12 JUN 2008, Version 1.0  
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**NOTE:**  
Insert Pre-Recorded CD as shown (CD label facing up), system will then start loading (Red LED is on) at the end of downloading the message (s), the Red LED will turn off, system will automatically start playing the enabled message (s) from digital audio memory.

**6 SPEAKER OUTPUT:**  
Audio output level of up to 2.5W into 8 Ohm. Use this output if more drive is needed to reach a more comfortable listening level.

**7 AUDIO OUTPUT LEVEL KNOB:**  
Adjusts the volume to both the line level and speaker audio outputs.

**8 SPEAKER PUSHBUTTON:**  
Turns local Monitor speaker ON/OFF.

**9 RECORD LED:**  
Used to display recording mode. Red light ON, indicates message (s) is being loaded into memory from CD or from Handsel.

**10 PLAYING LED (GREEN):**  
This green LED is ON when the system is playing Pre-Recorded messages.

**11 MONITOR SPEAKER:**  
Allows user to preview message play back.

### 3.5 Audio adjustments

There are two potentiometers on the DVCD-3000 system allowing the user to tailor the audio output level and frequency response of the unit. These potentiometers are located on the top cover of the device near the LEDs.

#### Audio level

The level of the both 600 and 8 ohm Audio outputs are simultaneously adjusted using the Audio level adjustment pot. Turning this potentiometer counter clockwise will lower the Audio level. Turning this potentiometer clockwise will raise the Audio level.

#### Tone Control

A tone control is provided to tune the audio for the phone system. Adjusting this control clockwise increases the high frequencies, while lowering the lower frequencies. Adjusting the control counter clockwise raises low frequencies, and lowers high frequencies.

### 3.6 Connections

#### 12VDC, 2.5mm Barrel connector

The system is powered by 12VDC. Use only the AC-DC power adapter supplied by the manufacturer to guarantee proper operation.

#### LINE OUT, RCA connector

This output is a 600 ohm audio output, capable of driving +2dBv. When installing the DVCD-3000 system, connect this output to the phone system first.

#### SPEAKER OUT, RCA connector

This output is an amplified audio output capable of driving 2.5 watt into 8 ohms. Use this Audio output if the audio from the Line output can't drive the on-hold circuit to a high enough level.

### 4. Compact Disc Formatting:

Compact Discs for the DVCD may be formatted in either Audio CD/Red Book) or Data CD containing MP3(44, 1kHz, 32-320kbps, or VBR) files. For seamless messaging, it is recommended that you create your production as a single file to avoid the silence that would be recorded as the unit switches tracks. The DVCD will play the audio from your CD while simultaneously digitizing it to FLASH memory.

- For data CDs, all Audio files must be in the root folder of the CD
- Messages may be recorded as mono, or stereo, but unit will only play the left side audio.
- The user can choose to have a single, longer message, or multiple shorter messages on the unit.
- The length of each individual message does not have to be the same.
- The audio should be set to a nominal level of -4dBm.
- The dynamic range of the production should be held low so as to allow the production to be recorded at the highest possible level without exceeding 0dBm.
- If multiple messages are used, the files will be played in alphanumeric order by the DVCD-3000. It would be beneficial to name the files in a way that the user can easily determine what they are, and the order they play. Some examples are shown below:
  1. mpg or 1\_brownies.mpg will play first.
  2. mpg or 2\_apples.mpg will play second.
  3. mpg or 3\_top sirloin.mpg will play third.
  4. mpg or 4\_salmon.mpg will play fourth.
- If more than 20 messages are detected by the system, the messages following the 20<sup>th</sup> in the ordering sequence will not be played.
- The system will NOT play .WAV files on a data CD

### 5. Power failure recovery

The DVCD-3000 uses FLASH memory which is not dependent upon power or battery backup to retain its memory. This eliminates problems associated with brown outs or unexpected power losses. When power is returned, the system will immediately start operating in the mode it was in prior to power being removed.

## 6. Troubleshooting guide

Before contacting the factory, please review the following answers to some common problems.

### No LEDs are active on the DVCD-3000.

- When a compact disc is inserted, and before audio is detected by the system, all LEDs will be off.
- Verify that the AC-DC power adapter is plugged into non-switched AC power outlet.
- Verify that the power connector is plugged completely into the jack on the DVCD-3000.

### The system will not mechanically load the compact disc.

- Push the compact disc completely into the DVCD-3000.
- Verify that the AC-DC power adapter is plugged into non-switched AC power outlet.
- Verify that the power connector is plugged completely into the jack on the DVCD-3000.

### The Record LED never comes on after the compact disc is loaded into the system

- Verify the compact disc is formatted as an audio CD (Red Book) or data CD with MP3 files.
- Verify that the compact disc is inserted with the data side down.
- If the compact disc is blank, the Record LED will never come on.
- Verify that the nominal level of the Audio recorded on the compact disc is over -20dB.

### After recording, the compact disc ejected, and the system is not playing a message.

- Pressing, and holding the eject button while recording will eject the compact disc immediately and delete the recorded audio.
- Verify that the compact disc is inserted with the data side down.
- Verify that the CD has properly formatted audio files on it.

### Can't hear anything from the audio output

- If both REC and AUDIO LEDs are off, there is no audio being output by the system.
- Verify that the RCA to RCA connector is securely attached to the DVCD-3000 and the phone system.
- Turn the output level adjustment clockwise to increase the Audio output level.
- Use the 8 ohm output instead of the line level output.

### Can't hear anything through the monitor speaker

- If both REC and AUDIO LEDs are off, there are no recorded messages on the system.
- Press the Speaker button to toggle the speaker ON/OFF setting.

## 7. WARRANTY, SERVICE & RETURNS

The industrial grade housing and quality construction of the Mackenzie DVCD-3000 virtually eliminates the need for service or maintenance. There are no user-serviceable components within the Mackenzie DVCD-3000. Refer all servicing to the factory.

### 7.1 Warranty Coverage:

The Mackenzie DVCD-3000 is tested and checked before shipment and are guaranteed against defective material or workmanship for a period of three (3) year from the date of purchase. Should trouble ever develop, contact the Factory directly by telephone or in writing. If it is determined that the equipment requires Factory service, return it to the Factory. If our inspection shows that the trouble was caused by defective material or workmanship, we will repair or replace the equipment without charge and return prepaid. Repairs made necessary by abuse, improper use, unauthorized service or maintenance, and/or improper installation, as well as out of warranty repairs, will be charged at our regular repair prices in effect at the time. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period.

This warranty is in lieu of and excludes all other warranties, expressed or implied, and in no event shall MACKENZIE be responsible for damage to other equipment or property, for any anticipated profits, consequential damages, loss of item, or other operation or use of this product, and MACKENZIE'S maximum liability shall not ever be greater than the price paid for the equipment. This warranty gives you specific legal right. Your rights may vary from state to state. Inquiries regarding use, repair and service should be made to:

MACKENZIE LABORATORIES, INC.  
1163 Nicole Court, Glendora, CA 91740 USA  
Telephone: (909) 394-9007  
FAX No: (909) 394-9411  
Email: [info@macklabs.com](mailto:info@macklabs.com)  
Web: [www.macklabs.com](http://www.macklabs.com)

### 7.2 What we ask you to do:

To get warranty service for your DVCD-3000 system, you must provide proof of the date of original purchase. In the event you need to ship your DVCD-3000 system to the factory for service, call us for a return authorization number. When you ship your DVCD-3000 system, you must prepay all shipping cost. We suggest that you retain your original packing material in the event that you need to ship your DVCD-3000 system. When sending your DVCD-3000 system to the factory, include your name, address, phone number, proof of date of purchase, and a description of the operating problem. After repairing or replacing your DVCD-3000 system, we will ship it to your return address at no cost to you within the USA. Repair or replacement of your DVCD-3000 system at our factory is your exclusive remedy.

### 7.3 What this warranty does not cover:

This warranty does not cover defects resulting from accidents, damage while in transit to factory, alterations, unauthorized repairs, failure to follow instructions, misuse, fire, flood, and acts of God.