

Instruction Manual

Models DVD-204 and DVD-212

Control Units for Pioneer DVD Players



New with Version 2.03

On-Screen Programming

See Addendum at back of this manual

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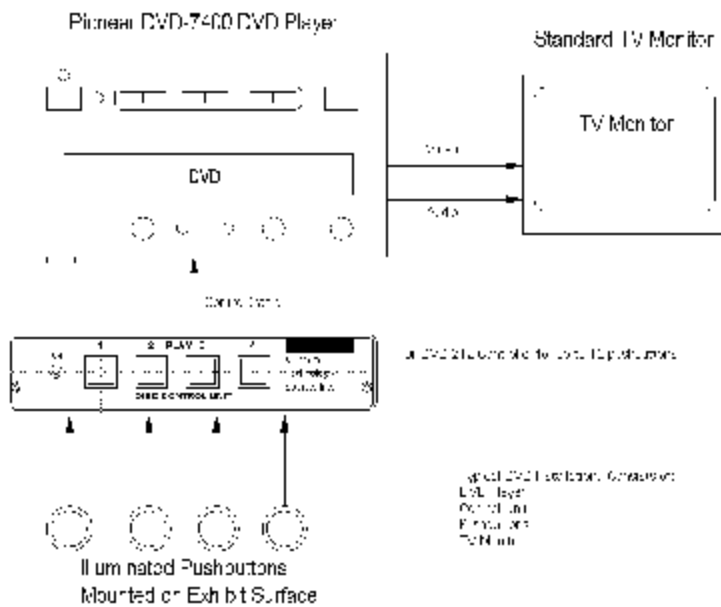
SETUP SHEET

DVD-204 AND DVD-212 CONTROL UNITS FOR USE WITH PIONEER DVD PLAYERS

Introduction:

The DVD-204 and DVD-212 are controllers for use with the Pioneer DVD-7200 and DVD-7400 Industrial DVD Players. **The DVD-204 and DVD-212 are identical except for the number of selection pushbuttons: 4 vs 12.**

Typically, the controller is mounted out of sight in close proximity to the DVD player. Activation is by means of pushbuttons mounted on the exhibit surface, where they are accessible to the viewing public.



Typical Installation showing Controller, Pushbuttons, Player and Monitor. Power connections not shown.

When pushed, each pushbutton will cause the Pioneer DVD player to play a particular video selection. When a selection is not playing in response to a button push, the DVD-204 / 212 can be set to play another selection to serve as an attract loop. Pushing any button will interrupt the attract loop and the unit will immediately begin playing the new selection.

Connection to the external pushbuttons is made via standard telephone RJ-11 modular connectors. Two of the 4 wires (Green and Red) are used to start the selection, while the other two wires (Yellow and Black) provide 12 volts DC to illuminate the pushbutton lamp.

Connection to the Pioneer DVD player is via the supplied cable, with a 3 pin DIN circular connector on one end, and a 15 pin male "D" connector on the Pioneer end. Communication between the controller and the player is RS-232 serial data at 9600 Baud.

Prior to final installation, two steps must be taken: setting up the Pioneer player, and programming the DVD-204 or DVD-212 with the desired frame numbers or chapters taken from the DVD disc being used.

Pioneer DVD Setup:

It is necessary to configure the Pioneer DVD player to work in this application. As shipped from Pioneer, the factory default settings need to be changed. This settings are all in the Pioneer's Advanced Setup menu. It would be a good idea to review the Pioneer manual for more detail, however, the basic technique to hold down the SETUP button on the Pioneer remote control until the following menu appears on the screen. Use the UP and DOWN buttons to scroll through the menu, and use the RIGHT and LEFT buttons to change a setting. Press ENTER to save the settings.

Remove the DVD disc from the player before changing the settings. If the disc is in, the settings will not be saved. Keep in mind that the DVD-204 or DVD-212 **will not work until the Pioneer player is configured.** For instance, the DVD-204/212 operate at 9600 Baud, while Pioneer's factory default setting is 4800 Baud. Here are the required settings:

Settings for Pioneer 7400 DVD Player

ADV SETUP	page 1 / 2
WEEKLY TIMER	OFF
POWER ON START	T00:C00
TITLE PLAY MODE	SINGLE
REPEAT MODE	OFF
BAUD RATE	9600bps
TRAY LOCK	OFF
BLACKBOARD LOCK	OFF
STACK MODE OSD	ON
REV STEP/REV PLAY	VOBU
ADV SETUP	page 2 / 2
PLAYER CONTROL PANEL	SELECTABLE
SETUP LOCK (MOUSE)	ON
EXTERNAL OPTION SW	STANDARD
SYNCH OUT (DURING SQ)	ON
EXTERNAL SYNC	OFF
AV SYNC COMPENSATE	ON

**See addendum at
back of this manual
for settings for
Pioneer DVD-V5000
Player**

Settings for the Pioneer 7200 (not in production as of Feb. 2000) are basically the same as for the 7400. To access the 7200's menu, hold down the MENU button on the remote control. Settings are as follows:

Settings for Pioneer 7200 DVD Player

MENU	PAGE 1 / 2
WEEKLY TIMER	OFF
POWER ON START	T01:C01
TITLE PLAY MODE	SINGLE
REPEAT MODE	OFF
BAUD RATE	9600bps
TRAY LOCK	OFF
STILL MODE	FIELD
D.R. COMP	OFF
MENU	PAGE 2 / 2
MARK FRAME SQUELCH	OFF
SQUELCH DURING SEARCH	ON
SYNC OUT (DURING SQ)	ON
STACK MODE OSD	OFF

Preparing for Programming:

Reviewing the DVD Disc:

Connect the Pioneer player to the video monitor such that the DVD disc may be viewed normally. Place the disc in the player and press the Play button, either on the player itself or on the Pioneer remote control. Press the DISPLAY button. Pressing the DISPLAY button a second time should display the frame number count. Scan through the disc, writing down the starting and ending frame numbers for each desired selection. If an attract loop is to be used, make note of the start and stop frame numbers also. These numbers will be assigned to the buttons on the DVD-204/DVD-212.

If no video is to be played between button pushes, locate a frame of black and make a note of the number. This will be entered as a still frame. These numbers will be assigned to the buttons on the DVD-204/DVD-212.

If chapters are being used, make a note of the desired chapter numbers. Keep in mind when using chapters that there must be one more chapter on the disc than will actually be played. This is because of the Pioneer command protocol. For example, to play chapter 3, the player is instructed to seek to the beginning of chapter 3, and play to the beginning of chapter 4. Hence, there must always be an extra chapter at the end. If your disc does not have this, then use the frame mode of addressing.

In preparing the disc, a minimum of "authoring" is required. No commands should be encoded on the disc. All control functions are taken care of by the DVD-204/DVD-212. Problems arise if a disc has been authored to "have a mind of its own"; in other words to have been set up such that the disc may be accessed, using the remote control, via a title screen. In this case all the "intelligence" resides in the DVD-204/212. Discs that are authored to play on their own will frequently present will conflicts as to who is in charge.

Configuring the computer used for programming:

Double click on the Hypertrm.exe icon. The program will open with a New Connection dialog box, with the instruction to enter a name and select an icon. Enter a name of your choosing, such as DVD-204, or the name of the product you are about to program. Choice of icon is immaterial. Click OK.

The next dialog box will ask for a phone number. Go to the 4th box down, CONNECT USING, and select DIRECT TO COM1. (This assumes that COM port 1 is free on your machine, sometimes the internal modem occupies this position. If this is the case, select COM2). Click OK

The next dialog box is entitled PORT SETTINGS. Use the following settings:

Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

Click OK. The main screen will appear, and at the bottom left the message "Connected" will appear.

Connect the PC-9 programming cable from the 9 pin COM port on the back of the PC to the 5 pin circular connector on the back of the Museum Technology product. Make sure power is connected. Press the red PROGRAM button on the back of the Museum Technology control unit; the red LED should illuminate, and the programming menu should appear on the computer screen.

Trouble Shooting:

In virtually all cases, problems may be traced to having the wrong COM port selected. If the computer has more than one 9 pin connector on the back, try the other one.

If gibberish appears, this is generally due to having the **wrong baud rate** selected.

Keep in mind that the Museum Technology box just sends the main menu immediately after the red PROGRAM button has been pushed; to get the main menu again, merely press the RESET button and then the PROGRAM button.

If any changes are made in Hyperterminal, they will not take effect until a disconnect has been made, and a reconnection established. To do disconnect, click on the icon of a phone off the hook. The message on the lower left of the screen will now say Disconnected. Reconnect by clicking on the icon of the phone on hook.

Programming the DVD-204 /DVD-212

Once communication has been established between the PC and the DVD-204 / DVD-212 it is a simple matter to type in the frame or chapter numbers, as well as to set the desired options. Please refer to the following programming example for the available commands and settings. In this example, what appears on the computer screen is on the left side of the page in `courier` while the description is on the right.

Programming Example DVD-204 / DVD-212

Museum Technology Source, Inc.
DVD Controller model DVD-204
Player: Pioneer DVD-V7200/7400
Firmware version 1.22
(C)2000 Museum Technology Source Inc.

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Pressing the red "Program" button on the back of the DVD-204 / DVD-212 will cause this main menu to appear

---- Main Menu ----

A = select address mode (FRAME, CHAPTER, or

CHAPTER start/FRAME end)

B = view or edit a Button's selection

I = view or edit the Idle selection

T = Test the buttons and lamps

O = go to Options menu

Please choose a command: A

Current addressing mode is: CHAPTER.

Would you like to change this (Y/N)? Yes

C = CHAPTER

F = FRAME

S = CHAPTER start, FRAME end

Please choose a command: F

- Resetting Defaults -

*** Programming: done ***

Current addressing mode is: FRAME.

---- Main Menu ----

A = select address mode (FRAME, CHAPTER, or

CHAPTER start/FRAME end)

B = view or edit a Button's selection

I = view or edit the Idle selection

T = Test the buttons and lamps

O = go to Options menu

Please choose a command: B

Which button's selection do you want to
view or edit?

Button 1 plays from frame 1000 to frame 1100.

Do you want to change this (Y/N)? Yes

Enter the start FRAME for the button
and press RETURN: 12

Enter the end FRAME for the button
and press RETURN: 600

*** Programming: done ***

Selecting Chapter, Frame, or Chapter Start/Frame End

Units are shipped set to work with Chapters. In this instance, we wish to use Frame Numbers, hence typing A will allow us to select Frame mode by typing F. In general Frame mode offers the most versatility. In the following examples frame numbers will be used. If the disc has been prepared with Chapters, they may also be used. Chapter Start / Frame end is primarily used with the older Pioneer 7200 players, which were much slower seeking frames than chapters. The Pioneer 7400 model overcame this issue.

Programming the Buttons

Having already determined by Start and Stop frame numbers for each selection, it is a simple matter to enter them. Type **B** for the Button Menu, then type the number of the Button you wish to program.

Enter the Start frame number and press enter on the key-board. Then type the Stop frame and press Enter again. The new frame numbers are displayed.

In this example frame 12 is entered as the new Start frame, while from 600 is the new stop frame.

Button 1 plays from frame 12 to frame 600.

---- Main Menu ----

A = select address mode (FRAME, CHAPTER, or
CHAPTER start/FRAME end)
B = view or edit a Button's selection
I = view or edit the Idle selection
T = Test the buttons and lamps
O = go to Options menu

Main Menu (again)

Please choose a command: B

Which button's selection do you want to
view or edit? 2

Button 2 plays from frame 2000 to frame 2100.
Do you want to change this (Y/N)? Yes

Enter the start FRAME for the button
and press RETURN: 650
Enter the end FRAME for the button
and press RETURN: 1500

Here Button 2 is being set to play from
frame 650 to 1500

*** Programming: done ***

Button 2 plays from frame 650 to frame 1500.

---- Main Menu ----

A = select address mode (FRAME, CHAPTER, or
CHAPTER start/FRAME end)
B = view or edit a Button's selection
I = view or edit the Idle selection
T = Test the buttons and lamps
O = go to Options menu

Main Menu

Programming the Idle or Attract Loop

Please choose a command: I

When idle, the player plays from FRAME 13000
to FRAME 13100.
Do you want to change this (Y/N)? Yes

When no selection is running,
the player can freeze on a single frame
or play moving video.

Do you want the player to
play moving video (Y/N)? Yes
Enter the start FRAME for the idle selection
and press RETURN: 7000
Enter the end FRAME for the idle selection
and press RETURN: 7500

When not playing in response to a Button press, the
DVD-204 / 212 will cause the player to repeatedly play
a selection of the disc. This can be either moving video
or a still frame. If a black screen is desired, locate a
frame of black on the DVD and program it in as a still
frame.

For moving video, start and stop frame numbers are
entered as above in the button programming example.

In this example, the unit is set to play from frame 7000
to frame 7500 while awaiting a button press.

*** Programming: done ***

When idle, the player plays from FRAME 7000
to FRAME 7500.

Confirmation of settings

---- Main Menu ----

A = select address mode (FRAME, CHAPTER, or
CHAPTER start/FRAME end)
B = view or edit a Button's selection
I = view or edit the Idle selection
T = Test the buttons and lamps
O = go to Options menu

Please choose a command: T
Testing buttons and lamps.
Type any letter to stop.
Button 1 pressed...released.
Button 2 pressed...released.
Button 3 pressed...released.
Button 4 pressed...released.
Done testing buttons.

--- Main Menu ---
A = select address mode (FRAME, CHAPTER, or
CHAPTER start/FRAME end)
B = view or edit a Button's selection
I = view or edit the Idle selection
T = Test the buttons and lamps
O = go to Options menu

Please choose a command: O

--- Options Menu ---
L = view or edit button 1 Lamp inversion
I = view or edit Interruptibility
R = view or edit button 4 Reset
S = view or edit Slave Delay
C = Clear all button selections
M = go back to Main menu

Please choose a command: L

Button 1's lamp is now normal.
Do you want to change this (Y/N)? Yes
Do you want button 1's lamp to be inverted
(Y/N)? Yes

*** Programming: done ***

Button 1's lamp is now inverted.

--- Options Menu ---
L = view or edit button 1 Lamp inversion
I = view or edit Interruptibility
R = view or edit button 4 Reset
S = view or edit Slave Delay
C = Clear all button selections
M = go back to Main menu

--- Options Menu ---
L = view or edit button 1 Lamp inversion
I = view or edit Interruptibility
R = view or edit button 4 Reset
S = view or edit Slave Delay
C = Clear all button selections
M = go back to Main menu

Please choose a command: I

Button selections can be uninterruptible (they
always play to the end) or interruptible (they can
be interrupted by pressing another button). If

Testing the Lamps and Buttons

Typing the letter T enables the button and lamp test function. When this is done, pressing any of the front panel buttons will cause the button to illuminate. This function can be useful in testing buttons mounted remotely. It is also useful as a quick check of the computer - controller connection.

Options Menu

List of Options

Button 1 Lamp Inversion

Normally, the pushbutton lights when it has been pressed, to indicate which selection is playing. In special circumstances it might be desirable to have button 1 illuminated when it is *not* playing. This is useful when the button is located in a darkened room. Since this function only applies to button 1, it is best used in single-button applications.

Interruptibility or Button Lock-out Function.

interruptible, a safe time can be set, specifying the minimum amount of time before a selection can be interrupted.

Selections are now interruptible
after 0 seconds.
Do you want to change this (Y/N)? Yes

Do you want button selections to be interruptible (Y/N)? No

*** Programming: done ***

Selections are now uninterruptible.

— Options Menu —

L = view or edit button 1 Lamp inversion
I = view or edit Interruptibility
R = view or edit button 4 Reset
S = view or edit Slave Delay
C = Clear all button selections
M = go back to Main menu

Please choose a command: R

Button 4 can be either a normal button or an instant reset button. If it is an instant reset button, then pressing it will immediately stop any other button's program, regardless of the interruptibility and safe time settings.

Button 4 is now a normal button.
Do you want to change this (Y/N)? Yes

Do you want button 4 to be an instant reset button (Y/N)? Yes

*** Programming: done ***

Button 4 is now an instant reset button.

— Options Menu —

L = view or edit button 1 Lamp inversion
I = view or edit Interruptibility
R = view or edit button 4 Reset
S = view or edit Slave Delay
C = Clear all button selections
M = go back to Main menu

Please choose a command: S

Slave Delay is set to 0 tenths of seconds
Do you want to change this (Y/N)? Yes

How many tenths of seconds delay would you like? 10

*** Programming: done ***

— Options Menu —

L = view or edit button 1 Lamp inversion
I = view or edit Interruptibility
R = view or edit button 4 Reset
S = view or edit Slave Delay
C = Clear all button selections
M = go back to Main menu

Interruptibility refers to the action of the pushbuttons while a selection is playing. If the buttons are set to be non-interruptible, they remain locked out while the selection is playing. If the buttons are set to be interruptible, a press of a button while any selection is playing will cause the system to immediately play the new selection. It is also possible to set a "safe time" during which the buttons are locked out, becoming active again after the "safe time" period.

Button 4 (or Button 12) Reset

This function converts the last pushbutton (#4 on the DVD-204; #12 on the DVD-212) from a normal selection button to an "instant reset" function. When configured for instant reset, pressing the button will cause the player to revert immediately to its Idle function. Instant reset over-rides any button lock-out settings. This function can be useful when the selections are of great length, and the buttons have been set to non-interruptible (locked out)

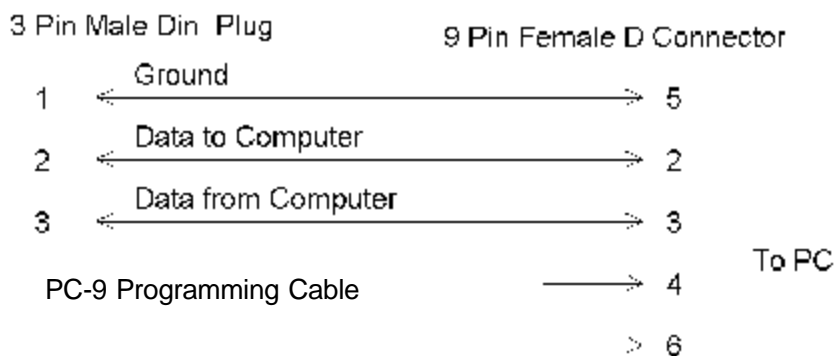
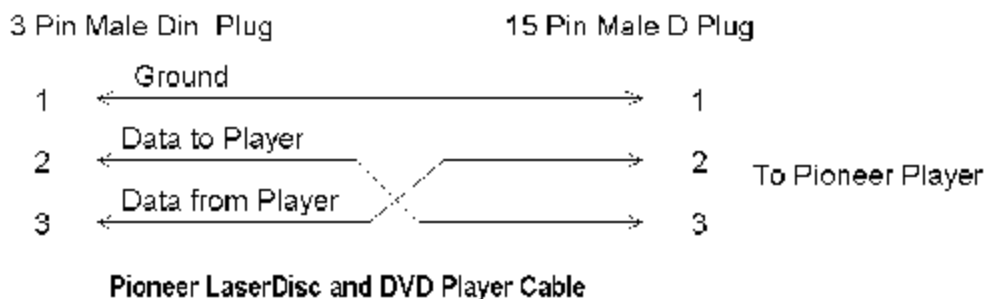
confirming button 4 is now instant reset

Slave Delay Multiple Player Installations

When a DVD-204 / DVD-212 is used to drive more than one DVD player (using a special cable) the Slave Delay should be set for 1 second (10 tenths). This is to ensure that the slowest of the players had had sufficient time to carry out its instructions. Slave Delay refers to the amount of time that the players sit on their first frame before actually starting to play.

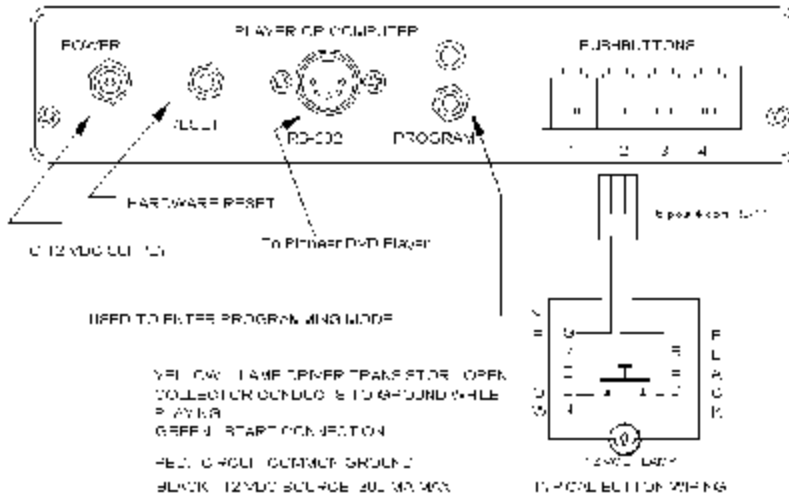
If only one player is used, Slave Delay should be set to zero.

This completes the programming of the control unit. Unplug the Programming Cable from the back of the unit, and store it away for the next programming session. Connect the supplied LDV cable (3 pin round to 15 pin) from the player to the controller. At this point it is recommended that both the controller and the player have their power shut off for 10 seconds. When they are turned back on, the DVD-204 /DVD-212 will wait 45 seconds before sending any commands to the player. This is to ensure that the player has had time to spin up. During this time, the red "Program" light on the back of the controller will wink. When it goes out, the player will go to its Idle (or Attract) sequence, and the pushbuttons will be enabled. Note that the pushbuttons will only illuminate once the player is up to speed.



Player and Programming Cable Pinouts

Rear Panel, DVD-204 Control Unit



Rear Panel Connections, DVD-204 and DVD-212

ON-SCREEN PROGRAMMING

Addendum to DVD-204 / DVD-212 Manual

Effective with version 2.03, most programming tasks can be accomplished without having to connect the DVD-204 /DVD-212 to a computer. Using only a DVD-204 /DVD-212, a Pioneer 7200 /7400 DVD player, and a video monitor, it is possible to program the DVD-204 /DVD212. Please note that only frame numbers (not chapters) can be used when programming on-screen. Many of the other setup options may be implemented by the on-screen technique.

First, set up the DVD player, the video monitor, and the DVD-204 /DVD212. The DVD to be used must be in the player. Apply power to all three components. Make sure that the DVD player and video monitor are turned on. Press the red "Program" button on the back of the DVD-204 /DVD-212. The monitor screen should now display the model and version number as well as information on how to contact Museum Technology Source. A few seconds later, the screen will display:

```
***Main Menu***  
  
View or Edit...  
1-Button Program  
2-Idle Program  
3-Button 4 Reset  
4-Option Menu  
PROGRAM button-Exit & Run  
  
Button Idle Reset Options  
  1   2   3   4
```

At this point, pressing button 1 on the front of the DVD-204 /DVD-212 will instruct the DVD-204 /DVD-212 that you wish to place new frame numbers into memory, or to determine what frame numbers are currently stored. Note: whenever a button can be usefully pressed, it will be flashing: here, buttons 1 though 4 are chasing.

Note: "PROGRAM button" refers to the red button on the rear panel of the DVD-204 or DVD-212

Upon pressing button 1, the following message will appear on the screen:

Press the BUTTON
you would like to VIEW
or EDIT:

> Press a Button <

In this example let's say that we wish to program button number 3; we simply press button 3 to do so. The screen will now say:

Button 3 Plays
Frames: 3000 to 3100.
Change this?

Yes			No
1	2	3	4

This indicates that button #3's memory is at the factory default setting. If the unit had been previously programmed, the start and stop frame numbers would appear instead of "Frames: 3000 to 3100." Since we do indeed wish to change this, we press button #1 to answer "Yes" to the question. In response, the screen will display:

Button: 3

Select new START frame.
Use player front panel
or remote control

Press 1 to select.
Start
1 2 3 4

At this point, you may use the Pioneer DVD player's controls as you normally would, to find the exact frame on the disc to begin your button sequence. In this example, let's say frame "5678". After the start frame is located on the DVD, press button 1 on the DVD-204 /DVD-212. As mentioned earlier, only button 1 will be flashing now. Upon pressing button 1, the following screen will appear:

```
Button: 3
Select new END frame.
Use player front panel
or remote control

Press 1 to select.
End
1   2   3   4
```

Using the same procedure as used in finding the start frame, use the player's controls to locate the last frame of the sequence. For this example, let's say frame "5800". Press button 1, which will be flashing, when you are done.

In this example, the screen will now be reading:

```
Button 3 plays
Frames: 5678 to 5800.

Change this?

Yes           No
1   2   3   4
```

Since these are the desired settings, we press button 4 to indicate that no change is desired (Here, frames 5678 and 5800 are used as an example, in reality, the actual frame numbers would be displayed).

The screen will now revert to the main menu where we began. Use the above technique to program the remaining buttons. It is not necessary to program more buttons than you are using. If your application calls for just one button, that is all that needs to be programmed. When you have finished all programming, return to the main menu and press the red "Program" button on the back of the DVD-204 /DVD-212, which

is the Exit and Run command. The player will now revert to it's normal state, ready for use.

You may wish to program what the DVD does between plays. This is done on the main menu by pressing button 2 to bring up the Idle program. By following the steps shown on-screen, you may have the video freeze on a still frame until a button is pushed, play from a start frame to an end frame over and over, or do nothing.

From the main menu, pressing button 4 will take you to the Option menu, which includes the Interruptability, slave delay, and button test functions. These are described earlier in this manual.

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Addendum

Setup Instructions

Pioneer DVD-V5000 Player

April 2005

Like the Pioneer DVD-V7400 Player mentioned in the DVD-204 and DVD-212 Instruction Manual, the Pioneer DVD-V5000 Player must also be configured prior to use. In order for the player to be able to communicate with the control unit certain settings must be made. The system will not work until these are done.



DVD-V5000
Remote Control

Locate the remote control supplied with the Pioneer player, and install the batteries that came with it.

Connect the player's video output to the video monitor using the appropriate cables.

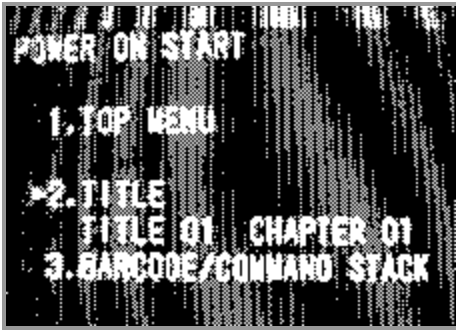
Turn on the player and the monitor. Make sure that there is no disc in the player.

Press and hold the HOME MENU button for one second. The monitor screen will now show the Advanced Setup Menu (ADV.SETUP)



The Advanced Setup Menu is covered in detail in Chapter 9 of the Pioneer Instruction Manual

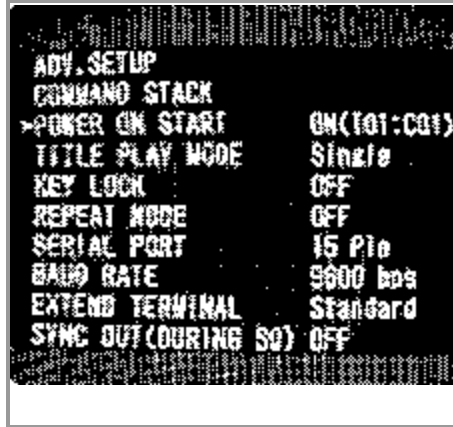
Using the UP and DOWN arrow keys, move to line 2 POWER ON START. Press ENTER, and scroll down to 2. TITLE. While TITLE flashes, use the UP and DOWN buttons to input the number 1. Press ENTER, and while CHAPTER is flashing, use the UP and DOWN keys to input the number 1. Press ENTER again to confirm settings, then press RETURN to go



The player is now set such that when power is applied to it, it will automatically "wake up" on Title 1, Chapter 1.

Using the same technique, make the following settings:

Title Play Mode	Single
Key Lock	OFF
Repeat Mode	OFF
SERIAL PORT	15 Pin
BAUD RATE	9600 bps
EXTEND TERMINAL	Standard
SYNC OUT (DURING SQ)	OFF



This completes the setup for the Pioneer DVD player.

Press the SETUP button to exit the menu. The player is now ready for use. Complete the rest of the installation following the instructions in the DVD-204 / DVD-212 Manual

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