

Installation and Operation Manual

DVD-5x2-01-x

Dual Digital Video Disc Player

Document # 540356



(Model DVD-502-01-x shown)



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Document Revision History

Rev. Level	Date	Description
IR	12/2007	Initial Release
A	2/2008	Updated Outline Drawings corrected weight & power requirements.
B	7/2008	Updated Reference Documents & Drawings, includes addition of connector designator engraving. Added J3 & J4, (BNC1 & BNC2), Section 3.7.5. Separated "Instructions for Continued Airworthiness" and "Troubleshooting" into Sections 5.0 and 6.0. Added "routine cleaning" requirements to periodic scheduled maintenance, Section 5.1.
C	12/2008	Removed BNC references and changed to J3 & J4, per Outline Drawing, Sections 3.7.5 & 3.8. Clarified which connectors belong to which DVD slot. Upper connectors J2 & J4 belong to the upper slot or DVD2. Lower connectors J1 & J3 belong to the lower slot or DVD1, Section 3.8.2. Corrected the OP Mode Audio Setup, Section 4.4. Updated Reference Drawings designator engraving, labeled DVD slots, and corrected dimensions, Section 7.0.

Reference Documents (or latest revision)

Document #	Description
525954 Rev A1	DVD-502-01-x Outline Drawing
525956 Rev A1	DVD-512-01-x Outline Drawing

Service Bulletin List

Service Bulletin #	Subject	Manual Revision	Revision Date

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DVD-5x2-01-x

Dual Digital Video Disc Player

General Information

1.1 Introduction

This manual contains information for the proper installation and operation of DeCrane Aerospace Audio International's Dual Digital Video Disc Player, Model # DVD-5x2-01-x. The "x" in the "-5x2" designates the differences between units. The DVD-502-01-x is a base dual DVD unit. The DVD-512-01-x has additional mounting brackets and a wider cover bezel to support existing installations of past generation players. The "-x" suffix in the model number designates the type of connector utilized; "-1" = Positronic and "-2" = D-Subminiature. Also included are mechanical and electrical characteristics of the unit.

1.2 Purpose of the Equipment

DeCrane Aerospace Audio International's DVD-5x2-01-x is a high-quality dual video disc player built to support the navigation through and playback of up to two (2) DVD or CD Discs at the same time. This DVD player is designed with maximum shock isolation and an attractive removable cover bezel. Additionally, the DVD-5x2-01-x supports all DVD region codes for comprehensive international operation.

DVD-5x2-01-x can be mounted in a cabinet or bulkhead. A unique strapping feature allows up to four (4) similar devices to be used in the same system at the same time for a total of eight (8) selectable players, while maintaining independent control.

For installation ease, the DVD-512-01-x has been designed to replace any DeCrane Aerospace Audio International DVD-411-01-x DVD Player.

1.3 Operational Features

- ❑ Two (2) fully functional DVD disc drives
- ❑ Supports standard commercial audio/video CD and audio/video DVD (refer to Section 2.3 for a complete format list)
- ❑ Capability to channel stereo analog audio, DTS, and industry standard Digital sound through PCM
- ❑ Supports all DVD region codes for international operation
- ❑ NTSC Video Output
- ❑ Easy-to-use front panel controls

- ❑ Optional infrared remote control capability
- ❑ High fidelity, differential analog audio output
- ❑ Up to 45 advanced functions available for DeCrane Aerospace Audio International's remote control or any DeCrane Aerospace Audio International data bus device for complete system customization
- ❑ Full range frequency response
- ❑ Nine (9) language and subtitle options (dependent upon user-supplied disc capabilities)
- ❑ Easy to mount and connect
- ❑ Compact, lightweight package
- ❑ Multiple Forward and Reverse accelerated scanning speeds with DVD video
- ❑ Multiple Slow Forward and Reverse Speeds with DVD video
- ❑ Slot-Fed Drives

1.4 Optional Equipment

The DVD-5x2-01-x can be optionally controlled by infrared remote or DeCrane Aerospace Audio International's touch screen panels, and it is important to remember that some remote controls possess functions not duplicated by the Unit's front panel buttons, such as Menu and Set-Up. While the DVD-5x2-01-x is a complete and fully functional standalone DVD Player, it is strongly recommended that a remote control device also be employed for thorough enjoyment of the Unit.

DeCrane Aerospace Audio International also offers a wide variety of monitors, speakers, headphone jacks, video distribution devices, and other equipment that will perfectly complement the DVD-5x2-01-x and will be valuable and attractive additions to any cabin interior.

Contact your DeCrane Aerospace Audio International representative for details.

2.0 Application

2.1 Typical Application

The DVD-5x2-01-x video output typically interfaces with a video monitor or a video distribution device (i.e., AV-3232, VSS-0408, etc.). Additionally, the DVD-5x2-01-x is capable of providing audio output to various audio distribution devices (i.e., AV-3232, AI-LDC101, HDM-3 etc.)

2.2 Operating Parameters

Typically, the unit operates between +18 and +32 VDC with a power consumption of less than 1A at +28 VDC. Video output is designed for 75 ohm termination. The unit drives 2 VRMS audio into not less than 600 ohm.

DVD-5x2-01-x provides NTSC video output based on disc format. Once a DVD is inserted, the DVD-5x2-01-x will automatically begin playing the disc. If power is interrupted (>200 ms) or power drops below +18 VDC while a disc is playing, the player may shut down. When normal operating power is restored, the DVD-5x2-01-x will automatically start playing. It stops playback when the end of the disc is reached.

2.3 Media and Format Compatibilities

DVD-5x2-01-x is compatible with standard commercial audio/video CDs and audio/video DVDs. Note that since DVD disc format standards are constantly evolving, some DVD and CD discs may not play properly or may cause the unit to malfunction. DeCrane Aerospace Audio International does not guarantee the DVD-5x2-01-x is compatible with all media or formats.

Compatible Recordable Media Types	Compatible Formats
CD-R	Standard CD-Audio
CD-RW	Standard DVD-Video
DVD+R/+RW	VCD*
DVD -R/-RW	SVCD*
	MP3 Audio
	DVD [Plus]
	Dual Disc
	CD-Digital Audio (with CD text capability)
	SACD, CD layer only
	Multi-Session CD**
	Mixed Mode CD**
	CD Extra**
	Copy Protected CD
	12 cm Disc (8 cm with adapter only)

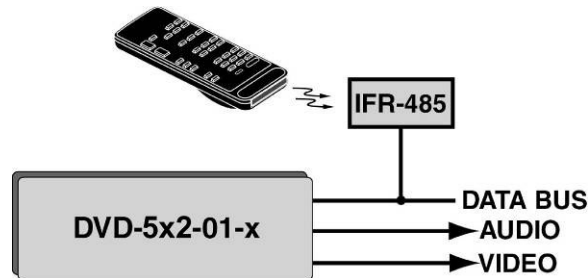
* Standard Video CDs are compatible, but those with DVD-like menus may not function properly.

** ROM multi session CD, only the closed sessions are played. CD with several sessions containing audio tracks, only the first audio session is read/played. Mixed Mode CD, only audio tracks will be played.

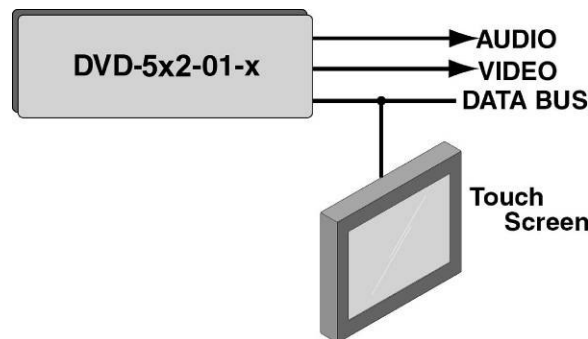
Typical DVD Authoring programs are compatible and produce playable movies. However, some programs may create menu structures or controls that are not compatible, or do not display or function as intended.

2.4 Typical System Block Diagram

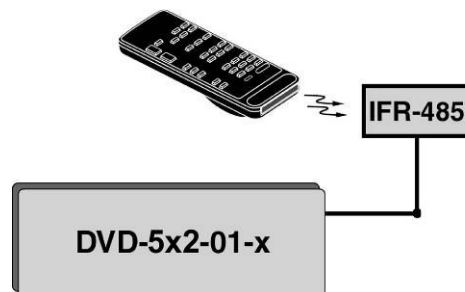
2.4.1 This unit is fully compatible with DeCrane Aerospace Audio International's proprietary RS-485 digital data bus system. It can be configured for IR remote control utilizing DeCrane Aerospace Audio International's remote control unit AI-RC5-7xxxx and IFR-485.



2.4.2 The unit can also be configured for Touch Screen or Remote Panel Control (i.e. entertainment control panels). The panels are on DeCrane Aerospace Audio International's proprietary RS-485 digital data bus system and configured to control the operational features of the DVD-5x2-01-x.



2.4.3 This unit has a digital IR input that can be directly connected to the digital output of an IFR-485 to allow for remote control on systems that do not utilize a RS-485 control data bus.



3.0 Installation

3.1 Preparation

3.1.1 Careful consideration of the location of this and all other audio/visual modules is necessary. Some of the items to be considered in the design and layout of the aircraft cabin include:

- Space
- Available power supply
- Environmental conditions (temperature, humidity, etc.)
- Length of cable runs
- Location of other aircraft systems (oxygen delivery)

3.1.2 The DVD-5x2-01-x shall be installed to conform to the standards designated by the customer, installing agency, and existing conditions as to the unit location and type of installation.

3.1.3 Mounting screws are required to secure the unit. Mounting points will vary depending on the kit used. Refer to Section 6.0, Reference Drawings, for mounting hole diameters and configurations.

3.1.4 All headphone amplifiers and line level amplifiers should be located no more than three (3) feet away from source equipment. Long low-level audio runs may introduce noise into the audio signal.

3.1.5 The installing agency shall supply and fabricate all external cables to the DVD-5x2-01-x. The length and routing of external cables shall be carefully studied and planned before attempting installation of the unit. Allow adequate space for installation of cable and connectors. Mating connectors are the responsibility of the installing agency. Correct pin assignments as outlined in Section 3.9 are the responsibility of the installing agency.

3.2 Unpacking and Inspection

3.2.1 Carefully open the packaging and remove the DVD-5x2-01-x. Verify that all components have been included in the package per the packing list. Inspect the unit for shipping damage.

3.2.2 If damage has occurred during shipping, a claim should be filed with DeCrane Aerospace Audio International WITHIN 24 hours and a **Return Request Authorization Number** shall be obtained from DeCrane Aerospace Audio International by contacting the Repair Department at 501-801-8101. Repackage the unit in its original packaging materials and return it to DeCrane Aerospace Audio International following instructions given by the DeCrane Aerospace Audio International representative. Refer to the front

cover of this manual for address. If no return is necessary, retain the packing list and the packing materials for storage.

- 3.2.3 **Return only the core unit for replacement or service.** Remove and retain for reuse the bezel, installed rails and pigtail (if used) as well as any mounting hardware.

3.3 *Cautions & Warnings*

- 3.3.1 It is important to do a pin-to-pin power and ground check on all connectors. Ensure that power and ground are applied only where specified. Damage to the unit may result if power or ground is applied to the wrong points.
- 3.3.2 **DO NOT** connect or disconnect the unit while power is applied.
- 3.3.3 **DO NOT** remove any factory-installed screws. Damage to the unit may result and void any warranties.
- 3.3.4 **DO NOT** drop the unit or subject it to strong shock. The unit contains glass parts that may break or crack.
- 3.3.5 **DO NOT** place foreign objects into openings. Contact with foreign objects may result in dangerous voltage or electric shock.
- 3.3.6 **DO NOT** place near strong magnetic fields, radiators or other heat sources.
- 3.3.7 **DO NOT** use this unit other than for its intended purpose. Doing so might lead to electric shock or injury.
- 3.3.8 **DO NOT** use near water, moisture, or volatile sprays. Do not use any type of solvent when cleaning (surface damage may occur).
- 3.3.9 **DO NOT** look directly into the laser beam through the disc slot opening. Eyesight may be damaged.
- 3.3.10 **DO NOT** place fingers in disc slot. Device may pinch fingers and may cause injury.
- 3.3.11 **DO NOT** expose unit to sun or bright light. Damage to the sensor may result.
- 3.3.12 The chassis material and structural design of this unit is such that the unit is not capable of containing fire within the unit. This unit does not provide for waterproof operation.

- 3.3.13 Operating temperature should not exceed -15C to $+55\text{C}$.
- 3.3.14 **NO** scheduled maintenance is required to ensure continued airworthiness.
- 3.3.15 **ESD** (Electro Static Discharge) guidelines shall be followed.



3.4 Wiring Requirements

3.4.1 Introduction

The installing agency shall supply and fabricate all external cables. The length and routing of external cables shall be carefully studied and planned before attempting installation of the equipment. Allow adequate space for installation of cable and connectors. Avoid sharp bends and placing cables near aircraft control cables. Maintain a minimum clearance of three (3) inches from any control cable. If wiring is run parallel to combustible fluid or oxygen lines, maintain a separation of six (6) inches between the lines.

3.4.2 Power Wires

All power and ground wires shall be in accordance with **NEMA WC 27500**, **MIL-W-22759**, or equivalent. Protect power wires with circuit breakers or fuses located close to the electrical power source bus.

3.4.3 Video Lines

Composite video connections shall be shielded coaxial cable in accordance with the military specifications of **M17/94-RG179**.

3.4.4 DeCrane Aerospace Audio International's Proprietary RS-485 Data Bus

3.4.4.1 The DVD-5x2-01-x is designed to interface with other DeCrane Aerospace Audio International equipment via DeCrane Aerospace Audio International's proprietary RS-485 serial data bus. The data bus shall be implemented

using a twisted shielded pair cable in accordance with **MIL-W-22759**. The wire size for the conductors in this cable shall be 22 AWG, MINIMUM. Shield pins are available for connecting data bus shields when required.

3.4.4.2 Refer to DeCrane Aerospace Audio International document 650007 for RS-485 Serial Data Bus design architecture.

3.4.5 Analog Audio Lines

DeCrane Aerospace Audio International recommends that all audio wire connections be twisted shielded cable with the shield properly grounded at the source (ideal practice). If shield cannot be grounded at the source, then ground at the load end with opposite end floating. Twisted shielded cable shall be in accordance with **MIL-W-22759**.

3.5 Physical Characteristics

3.5.1 Dimensions and Weight

Physical Specifications DVD-502-01-X	
Housing	Anodized Aluminum
Weight DVD-502-01-X	4.35 lb \pm .25 lb / 1.97 kg \pm .11 kg
Dimensions DVD-502-01-X (l x w x h)	6.53" x 6.0" x 3.25" 16.69 cm x 15.24 cm x 8.26 cm

Note: Dimensions provided do not include cover bezel information.

Physical Specifications DVD-512-01-X	
Housing	Anodized Aluminum
Weight DVD-512-01-X	4.90 lb \pm .25 lb / 2.22 kg \pm .11 kg
Dimensions DVD-512-01-X (l x w x h)	9.17" x 7.17" x 3.25" 23.29 cm x 18.21 cm x 8.26 cm

Note: Dimensions provided do not include cover bezel information.

3.5.2 When mounting the unit, allow sufficient space for mating connectors.

3.5.3 Allow a MINIMUM of one (1) inch of air space around the unit to allow for proper air circulation. This unit has an internal fan and ventilation holes in the chassis for cooling. Installation recommendation requires 1-inch spacing from other components

and structures except the mounting surface for which the unit should be in direct contact.

3.5.4 The cover bezel snaps easily on the DVD Player's faceplate without the need of special tools. The cover bezel does not require mounting bracket attachments.

3.5.5 Bonding between chassis mounting point and airframe installation to be <0.1 ohm resistance using <50 ohm impedance cable. No surface prep is required due to conductive chassis (except front bezel).

3.6 Clearance and Separation Requirements

When running cables, avoid sharp bends and placing cables near aircraft control cables. Maintain a MINIMUM clearance of three (3) inches from any control cable. If wiring is run parallel to combustible fluid or oxygen lines, maintain a separation of six (6) inches between the lines.

3.7 Electrical Characteristics

3.7.1 Electrical Specifications:

Electrical	Power	900 mA @ +28 VDC
	In-Rush Peak	2 Amps
	In-Rush Rise Time	850 microseconds
	In-Rush Return to 90% Nominal	20 msec
	Operating Voltage Range	+18 to +32 VDC
	Data Bus Type	DeCrane Aerospace Audio International Proprietary RS-485
	Audio Frequency Response	20 Hz – 20 KHz +/- 3dB
	Audio Output	2 VRMS (factory preset) into 600 ohm load
	Audio Signal to Noise Ratio	-90dB
	Dynamic Range	96dB
	Video Output	1 V(p-p) into 75 ohm
	Video Input Format	Multi-Regional (NTSC)
	Infrared Signal Input	+5 V digital logic level

3.7.2 The DVD-5x2-01-x utilizes one (1) 15-pin connector for electrical connections, which provides power, data bus control, infrared input, and three (3) address strapping pins and a strapping common for unit identification on the RS-485 data bus and for IR control.

- 3.7.3 Infrared input provides a ground reference connection (-). For optimum infrared signal transmission, this ground reference should connect to the IFR-9A or IFR-485 module being utilized.
- 3.7.4 The three (3) address strap pins are able to be connected to the strap common. This provides strapping configurations, allowing up to four (4) identical units to be individually controlled on a system.

The RS-485 sub-address of each player in the unit is set by strapping the appropriate ID STRAP pin to ID STRAP COMMON. Each connector must have a unique strapped ID for proper control of this unit via the RS-485 data bus or IR interface.

If both connectors are strapped with identical sub-address, the 2 individual players default to sub-address 0 and 1 respectively.

The RS-485 sub-address of this unit is based on ID Strapping as suggested below:

ID Strap 4	ID Strap 3	ID Strap 2	Sub-Address
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	0	0	4
1	0	1	5
1	1	0	6
1	1	1	7

Note: A value of 1 indicates the associated ID STRAP pin is connected ID STRAP COMMON. A value of 0 indicates the associated ID STRAP pin is a No Connect.

- 3.7.5 The J3 and J4 video output connectors provides video outputs to the video distribution system.

3.8 Mating Connector Information

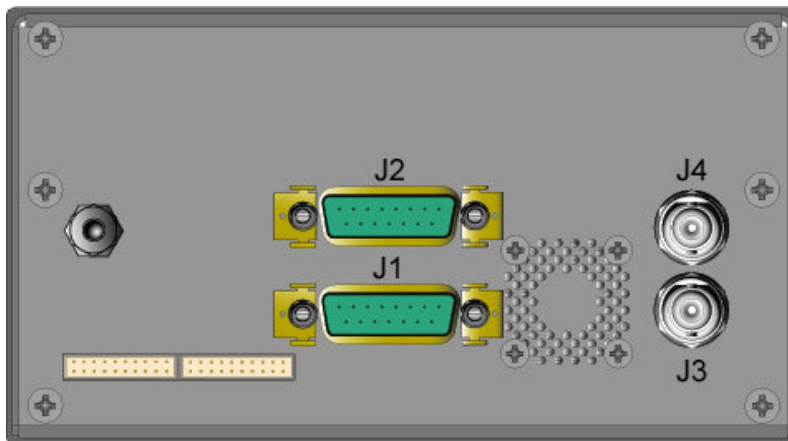
3.8.1 Mating Connector assignment as follows:

J1 and J2 Connectors		
Model #	Unit Connector	Mating Connector
DVD-502-01-1	RD15M10JV30 or equivalent (Positronic Industries)	RD15F10JVL0 (Positronic Industries)
DVD-502-01-2	DAMA-15P or equivalent (ITT Cannon)	DAMA-15S (ITT Cannon)
DVD-512-01-1	RD15M10JV30 or equivalent (Positronic Industries)	RD15F10JVL0 (Positronic Industries)
DVD-512-01-2	DAMA-15P or equivalent (ITT Cannon)	DAMA-15S (ITT Cannon)

J3 and J4 Video Output		
Model #	Unit Connector	Mating Connector
DVD-502-01-x	AMP 523-31-5431	31-71013 or equiv. (Amphenol)
DVD-512-01-x	AMP 523-31-5431	31-71013 or equiv. (Amphenol)

Note: The connector information provided above is the same for **both** DVD cards/slots.

3.8.2 Connector Locations



Note: Upper connectors J2 & J4 belong to the upper slot or DVD2. Lower connectors J1 & J3 belong to the lower slot or DVD1.

3.9 Pinout Assignment and Descriptions

DVD-5x2-01-x J1 and J2 Pinouts	
Pin #	Description
1	+ 28 VDC Power Input
2	Ground
3	R+ Audio Output
4	R- Audio Output
5	L+ Audio Output
6	L- Audio Output
7	RS485 Data Bus A (HI)
8	RS485 Data Bus B (LO)
9	Infrared Digital Input +
10	Infrared Digital Input -
11	ID Strap 2
12	ID Strap 3
13	ID Strap 4
14	ID Strap Common
15	"Pause Mode" Constant GND Input


3.10 Post Installation Test

Note that these steps should be taken with both DVD drives.

This section is designed to assist the user in determining whether the DVD Player has been properly installed. First, before applying power, ensure the unit is connected correctly, especially concerning Power and Ground wiring. The audio signal output of the unit is generally connected to cabin speaker systems in addition to headphone locations. Verify all connections before supplying power to the unit.

There are no ON/OFF controls on the unit so ensure that +28 VDC power has been connected. Normally if power is not properly connected, the front panel controls' backlighting will not be illuminated and the player will not respond to any commands.

Activate monitors and speakers from the appropriate control panels. Audio will be supplied through headphones and/or speakers per system design. Make certain that the monitor(s) connected to the DVD Player are on and functional.

Press the EJECT  button on the Front Panel Controls or by using a remote control device. The disk will eject. Carefully slide and load a clean, functional DVD disc into the slot. **Be certain to load the disc correctly—**

if the DVD has a sticker, it should be loaded with the sticker facing up! Gently push the DVD into the slot.

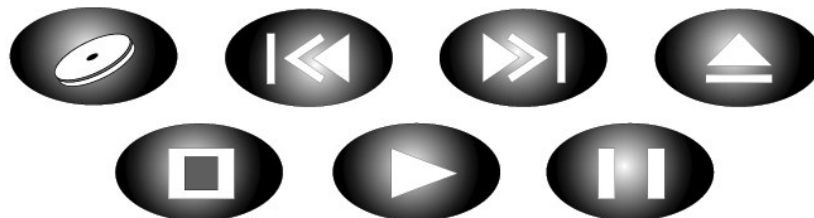
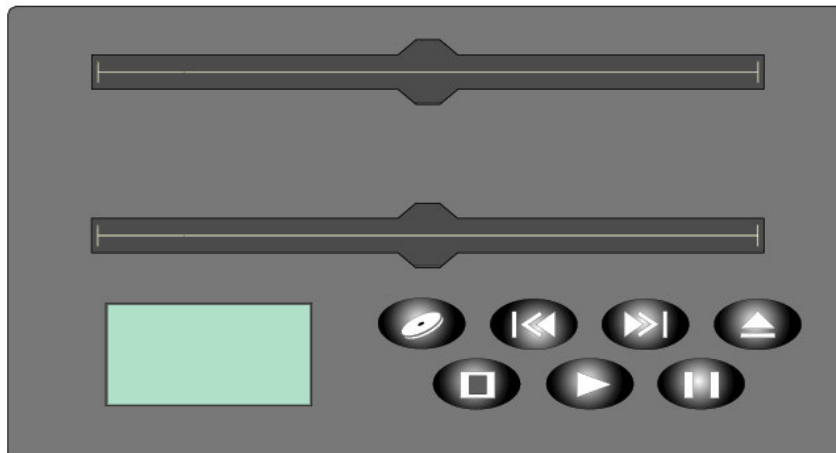
The disc should begin loading, which will be indicated on the monitor screen. If the disc does not start playing automatically after it has loaded, then use the DVD Player's front panel buttons or the handheld remote control unit to select **PLAY**. DVD material should appear on the appropriate monitor. This material is usually a menu, but this may vary, depending on individual DVD configuration. For CDs, the tracks should be listed on the side of the screen. Audio should channel through the speaker/headphone system.

If sound cannot be immediately heard through speakers or headphones, it may be that the volume is too low and should be increased appropriately. Note that there are no audio controls on the DVD-5x2-01-x. Any desired adjustments must be performed through other audio distribution devices.

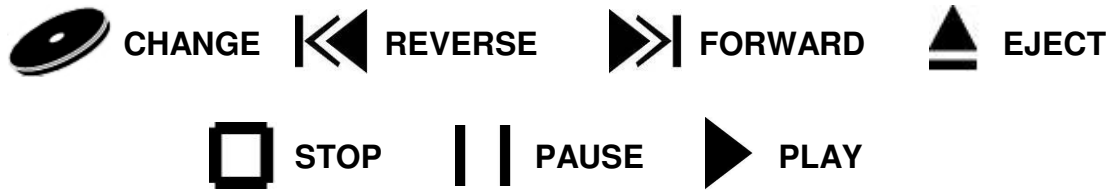
If power is interrupted (>200 msec) or power drops below +18 VDC while a disc is playing, the player may shut down. If a DVD disc is in the player, the unit will begin playback from the beginning of the disc automatically.

4.0 Operation

4.1 Front Panel Controls



From left to right, the buttons are:



4.2 Front Panel Control Functions:



The Change Button causes the front panel to alternate control between DVD 1 and DVD 2.

The Change Button is active when the DVD Player is powered on and not in Standby Mode. If the Change Button is pressed while the unit is in Standby Mode, the unit will power up, then press the Change Button again and the unit will respond.



During movie or audio play, press the Reverse Button to skip to the beginning of the previous chapter or CD track. The Fast/Slow Reverse Button is functionally dependent on the current mode of the DVD Player, and the media type being played.

Pressing and holding the Reverse Button will place the DVD Player in Fast Reverse x8 Mode with no audio output. Play will resume when Reverse Button is released.

The Reverse Button is active when the DVD Player is powered on and not in Standby Mode. If the Reverse Button is pressed while the unit is in Standby Mode, the unit will power up, then press the Reverse Button again and the unit will respond.



During movie or audio play, press the Forward Button to skip to the beginning of the next chapter or CD track. The Forward Button is

functionally dependent on the current mode of the DVD Player, and the media type played.

Pressing and holding the Forward Button once will place the DVD Player in Fast Forward x8 Mode with no audio output. Play will resume when the Forward Button is released.

The Forward Button is active when the DVD Player is powered on and not in Standby Mode. If the Forward Button is pressed while the unit is in Standby Mode, the unit will power up, then press the Forward Button again and the unit will respond.



EJECT BUTTON

The Eject Button allows the user to access the disc. After pressing the Eject Button it is then possible to retrieve the disc from the DVD Player. Note that the disc will slide out on its own. It is not necessary to force the disc to eject from the DVD Player.

The Eject Button is active when the DVD Player is powered on and not in Standby Mode. If the Eject Button is pressed while the unit is in Standby Mode, the unit will power up, then press the Eject Button again and the DVD or CD will respond.



STOP BUTTON

Press the Stop Button once during playback to place the DVD Player in Hold Mode. The stops playback and causes a blue screen to be displayed. Pressing the Play Button at this point will resume playback from the Held point.

The Stop Button is active when the DVD Player is powered on and not in Standby Mode. If the Stop Button is pressed while the unit is in Standby Mode, the unit will power up, then press the Stop Button again and the DVD or CD will respond.



PLAY BUTTON

The Play Button allows the user to begin or resume normal Playback when the DVD Player is in the following modes: Stop, Pause, Forward, and Rewind.

The Play Button can be used to access the DVD Root Menu at any time, by pressing and holding the Play button.

The Play Button is active when the DVD Player is powered on and not in Standby Mode. If the Play Button is pressed while the unit is in Standby Mode, the unit will power up, then press the Play Button again and the DVD or CD will respond.

PAUSE BUTTON

Press the Pause Button to place the DVD Player in PAUSE Mode.

The Step Mode becomes available when the DVD Player is in PAUSE mode and playing a DVD. Normal Playback can be resumed by pressing the Play Button.

The Pause Button is active when the DVD Player is powered on and not in Standby Mode. If the Pause Button is pressed while the unit is in Standby Mode, the unit will power up, then press the Pause Button again and the DVD or CD will respond.

OLED SCREEN

Screen Saver is active after 30 seconds of inactivity. OLED goes blank after 1 minute of Screen Saver Mode. Any press of a button wakes up the player, making the main screen active. An additional button must be pushed to perform a function.

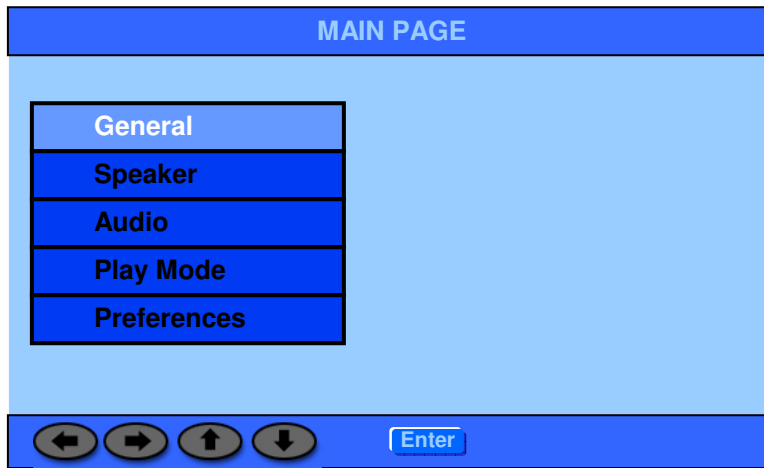
4.3 Setup Menu Control Functions

- The Setup Menu will display on the video output of the player.
- To access the DVD Player's Setup Menu push and hold the Stop button.
- If the unit is inactive for 30 seconds, the unit will require any button to be pushed to remove the unit from Sleep Mode. An additional button must be pushed to perform a function.
- To navigate Left push the Reverse Button, until the desired selection is highlighted.
- To navigate Right push the Forward Button, until the desired selection is highlighted.

- To navigate Up hold the Reverse Button, until the desired selection is highlighted.
- To navigate Down hold the Forward Button, until the desired selection is highlighted.
- To turn items On or Off, select the options then hit Play or Forward. The Checkmarks and Light Bulbs indicate whether items are On or Off.
- Certain selections will make access to other selections inaccessible. All active selections are indicated by blue boxes. All inactive selections are indicated by grey boxes.
- To Exit the Setup Menu, press Stop.

4.4 Setup Menu Navigation

Main Page Menu



General Menu



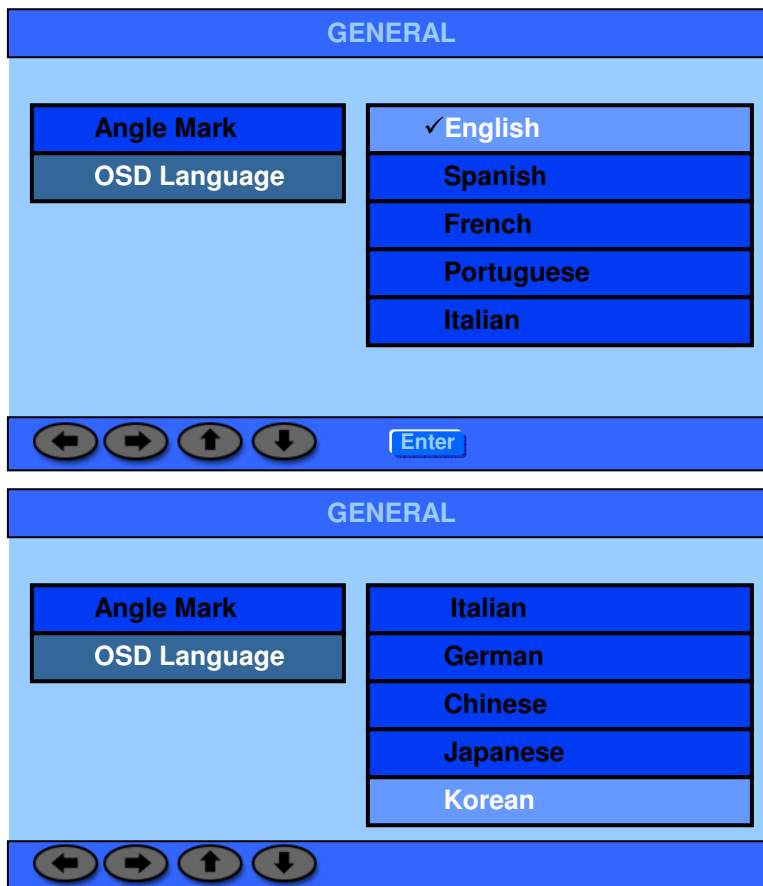
Angle Mark Selections

The ANGLE Mark allows the User to change angles on DVD Videos that offer angle selection.

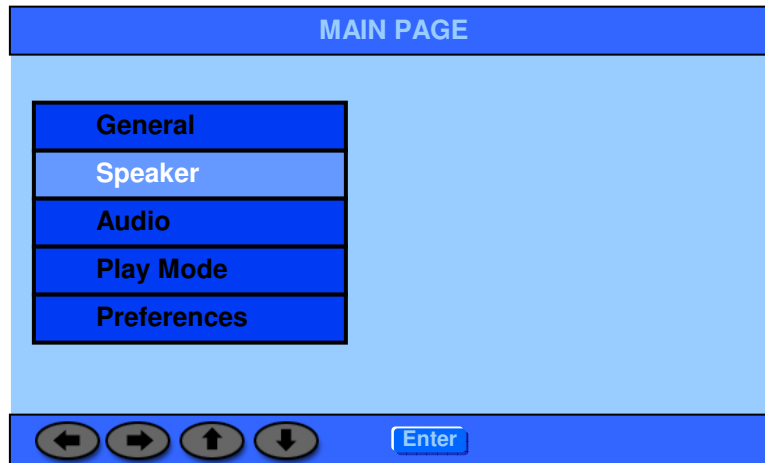


OSD Language Selections

The OSD Language allows the user to change the language displayed in the Setup Menu. There are nine (9) language selections.



Speaker Setup Menu



Downmix Speaker Setup

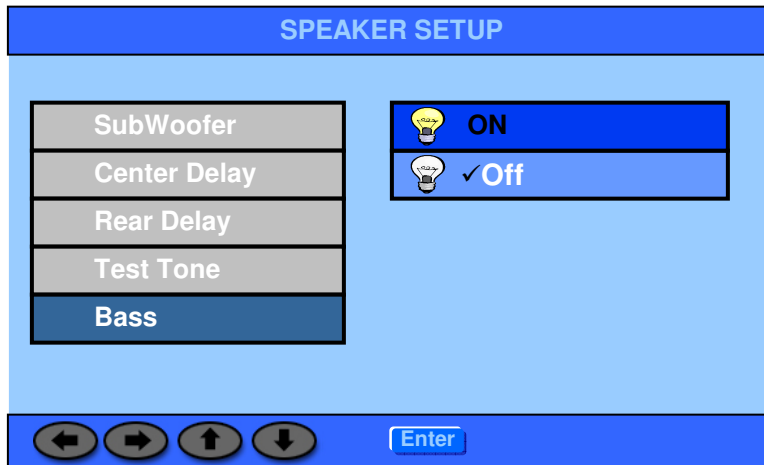
The Lt/Rt mode is not supported by the DVD-5x2-01-x and must not be selected.

The Stereo mode must be made active for the DVD-5x2-01-x. Correct audio playback from the DVD-5x2-01-x may not occur if this mode is not selected.

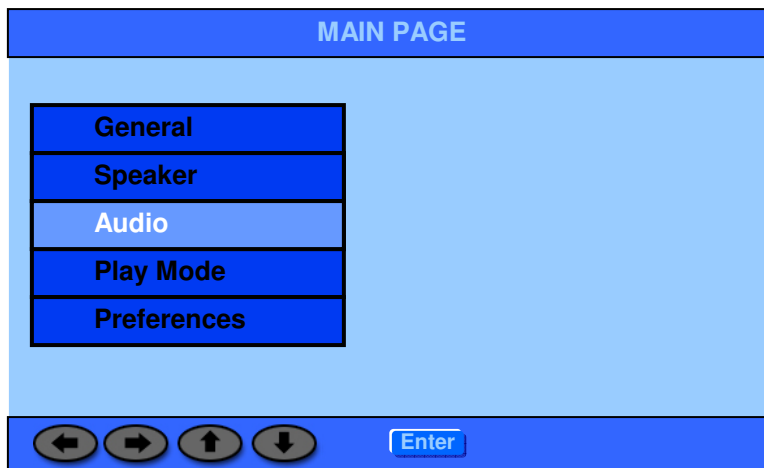
The Off mode is not supported by the DVD-5x2-01-x and must not be selected. Any functions that are enabled by selecting this setting are not supported by the DVD-5x2-01-x.



Bass Speaker Setup



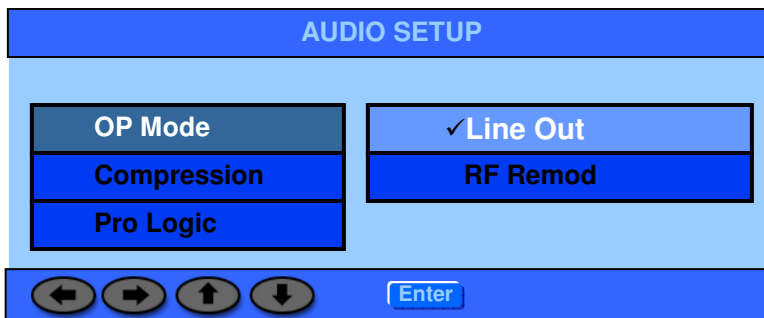
Audio Setup Menu



OP Mode Audio Setup

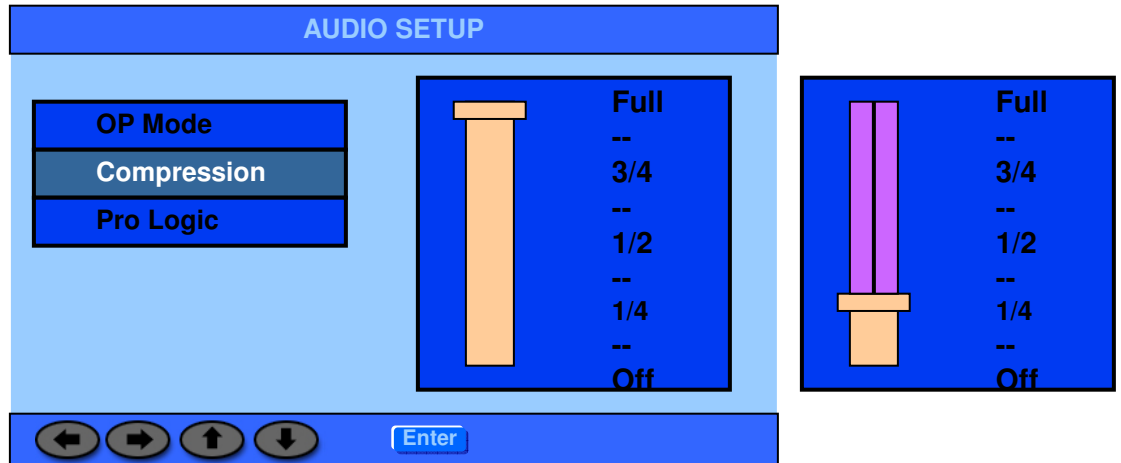
The Line Out mode is the recommended setting.

The RF Remod provides heavy compression, with no scaling allowed.



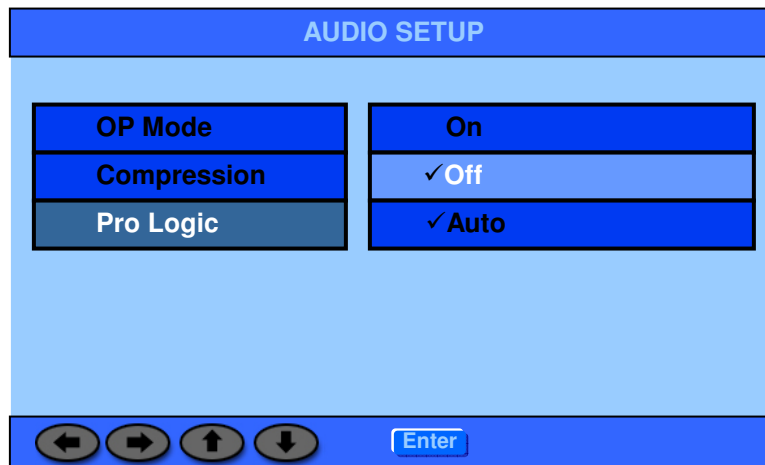
Compression Audio Setup

The Compression Audio will compress or expand the dynamic range of the signal depending on its content. This can be adjusted to the user's preference.



Pro Logic Audio Setup

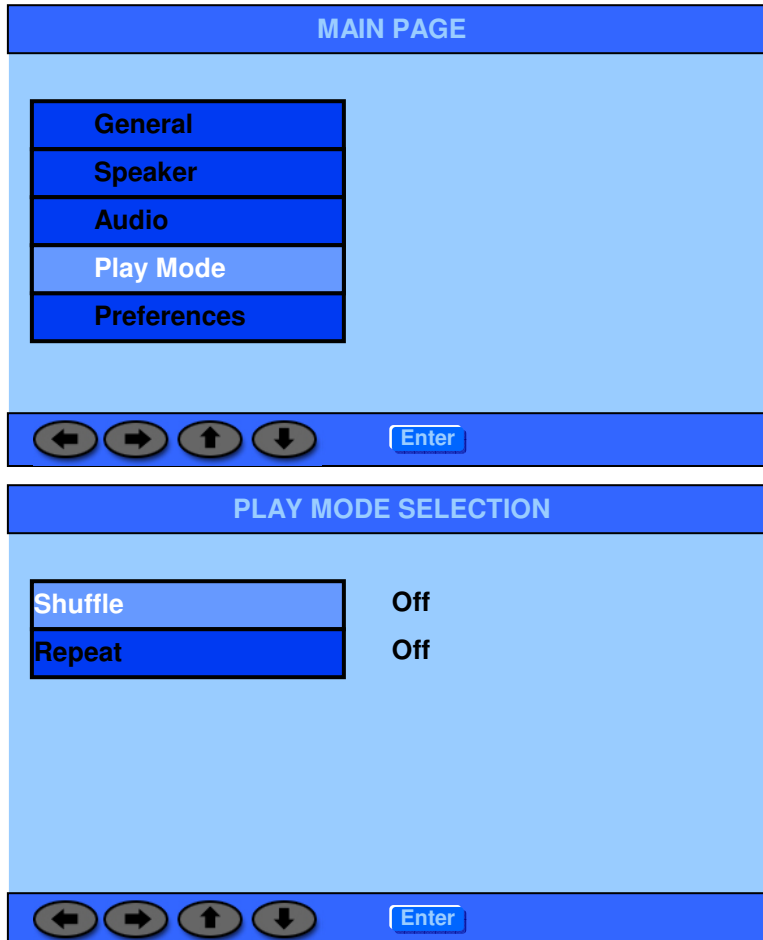
Pro Logic is an audio post processing technique for audio data which contains the Pro Logic information.



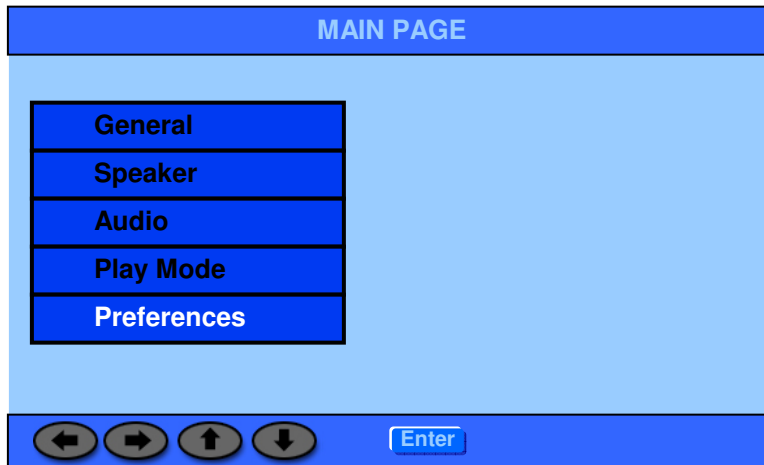
Play Mode Selection Menu

Shuffle mode enables the playable tracks or chapters to be played in a random order.

Repeat mode allows selection of chapter or title to repeat.

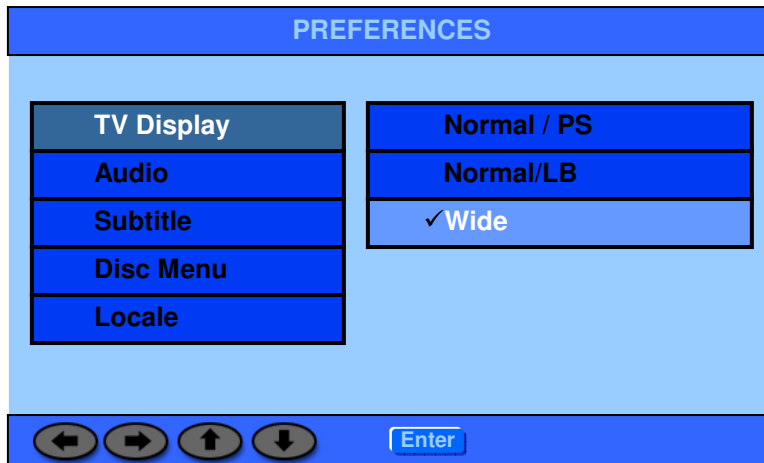


Preferences Menu



TV Display Preferences

The User can choose to display the video they are watching in Normal /Pan Scan, Normal/Letter Box, or Wide Screen.



Audio Preferences

This option allows the User to change the preferred audio language if available on the DVD. There are nine (9) language selections.



Subtitle Preferences

This option allows the User to change the preferred displayed subtitle if available on the DVD. There are nine (9) language selections.



Disc Menu Preferences

This option allows the User to change the preferred DVD menu language if available on the DVD. There are nine (9) language selections.



Locale Preferences

This option allows the User to specify the end user market. There are seven (7) language selections.



Note: The parental definition is dependent on the country setting.

Parental Preferences

PREFERENCES	
Locale	5
Parental	6 PG-R
Defaults	7 NC-17
Password	8 Adult
System Info	✓ No Parental
Password <input type="text"/>	
<input type="button" value="←"/> <input type="button" value="→"/> <input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="Enter"/> <input type="button" value="1-9"/>	

Note: Default password "3308" needs to be entered before navigation of Parental Preferences is allowed.

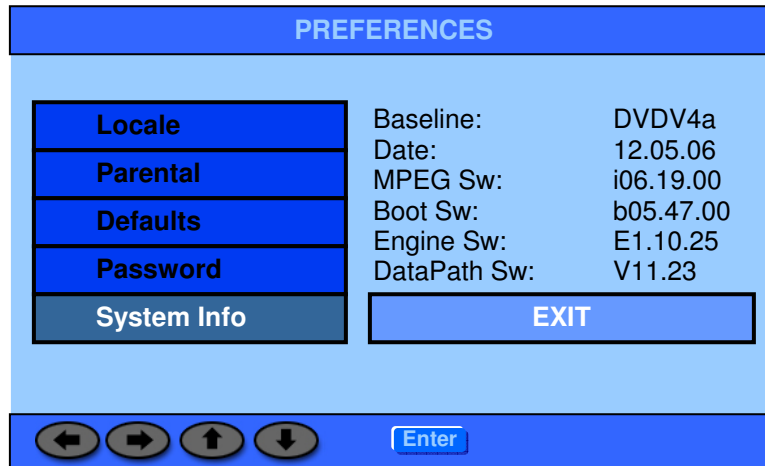
Defaults Preferences

PREFERENCES	
Locale	
Parental	
Defaults	
Password	
System Info	
<input type="button" value="←"/> <input type="button" value="→"/> <input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="Enter"/>	

Password Preferences

PREFERENCES	
Locale	Old Password: <input type="text"/>
Parental	New Password: <input type="text"/>
Defaults	Confirm: <input type="text"/>
Password	
System Info	EXIT
<input type="button" value="←"/> <input type="button" value="→"/> <input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="Enter"/>	

System Info Preferences



5.0 Troubleshooting

In addition to the cautions and warnings provided in Section 3.3, the following guidelines and instructions will help ensure proper functionality and performance from the DVD-5x2-01-x.

5.1 Recommended Cleaning Method

DVD-5x2-01-x should be cleaned routinely at least once every three (3) months to ensure proper functionality. Use a standard DVD cleaning disc (not included with the DVD-5x2-01-x) and follow the listed directions.

5.2 General Troubleshooting Procedures

- Verify +28 VDC power is applied to the proper pins on the unit. Use a voltmeter to verify correct level.
- Reset by removing power from the unit for at least one (1) minute and reapply power.
- Recheck all connections to the unit for security and all harness runs for possible pinching. Recheck all pinouts for application accuracy.
- Utilizing a voltmeter, oscilloscope, or other voltage instrument, verify proper input voltage on the data bus pins to check data bus integrity. Typical measurements are as follows:

A to Ground : 4.0 to 4.5 VDC

B to Ground : 0.1 to 0.2 VDC

If any device is transmitting (i.e., holding bus active), then these typical measurements would be reversed for the A-to-Ground and B-to-Ground measurements. This troubleshooting tool can help indicate a data bus lockup. If this occurs, remove the data bus from all other equipment one piece at a time. As each is removed, check the bus

status to see if it is now functioning properly. Once you have removed the piece or pieces of offending equipment, disconnect power and then reconnect everything but the suspect component, reapply power and test the functionality of the unit.

- The RS-485 data bus is a bi-directional bus that does not have a ‘bus controller’. The bus uses a differential digital signal that will transmit only when commands are entered via switch selection or other system synchronizing commands. The “A” leg of the bus is HI and the “B” leg LO.

5.3 Troubleshooting Chart

Problem	Possible Cause	Solution
No picture	<ul style="list-style-type: none"> ➤ Unit is improperly installed ➤ No disc in source unit ➤ No power to Monitor 	<ul style="list-style-type: none"> • Verify +28 VDC power and video input is present • Insert DVD in source unit • Apply power to Monitor
No sound	<ul style="list-style-type: none"> ➤ Unit is improperly installed ➤ Audio system not powered or active ➤ Volume too low 	<ul style="list-style-type: none"> • Verify +28 VDC power and audio input is present • Verify audio system is in active mode • Increase volume to acceptable level
Playback not functioning	<ul style="list-style-type: none"> ➤ Disc not in device ➤ Disc upside down or not aligned in guide ➤ Incompatible disc in device ➤ Dirty Disc ➤ Parental lock activated ➤ Menu on the monitor 	<ul style="list-style-type: none"> • Insert a disc into device • Reposition disc • Replace disc with compatible one • Clean the disc • Change or cancel parental lock feature • Exit the current menu
No power	<ul style="list-style-type: none"> ➤ Circuit breaker has opened 	<ul style="list-style-type: none"> • Reset circuit breaker
Poor video quality	<ul style="list-style-type: none"> ➤ Poor DVD quality ➤ Noise being introduced into system 	<ul style="list-style-type: none"> • Replace DVD • Move source equipment closer to monitor or distribution modules
Buttons not operating	<ul style="list-style-type: none"> ➤ Moisture may have condensed inside unit. 	<ul style="list-style-type: none"> • Allow unit to warm to room temperature and moisture has evaporated.
DVD disc cannot be loaded	<ul style="list-style-type: none"> ➤ Foreign object in disc slot 	<ul style="list-style-type: none"> • Remove foreign object

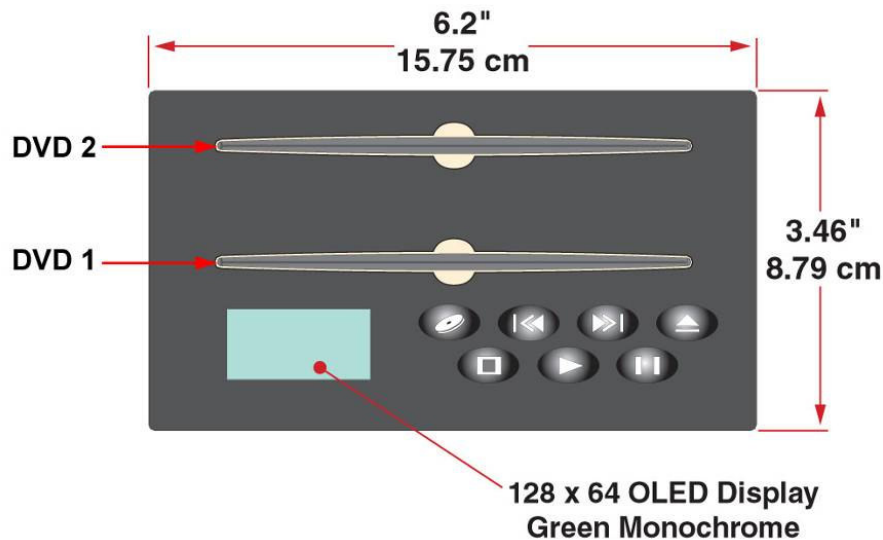
6.0 Instructions for Continued Airworthiness

Other than a routine cleaning (instructions listed above in Section 5.1), no periodic scheduled maintenance or calibration is required for continued airworthiness of the DVD-5x2-01-x. If the unit fails to perform to specifications, it must be removed and serviced by a qualified service facility.

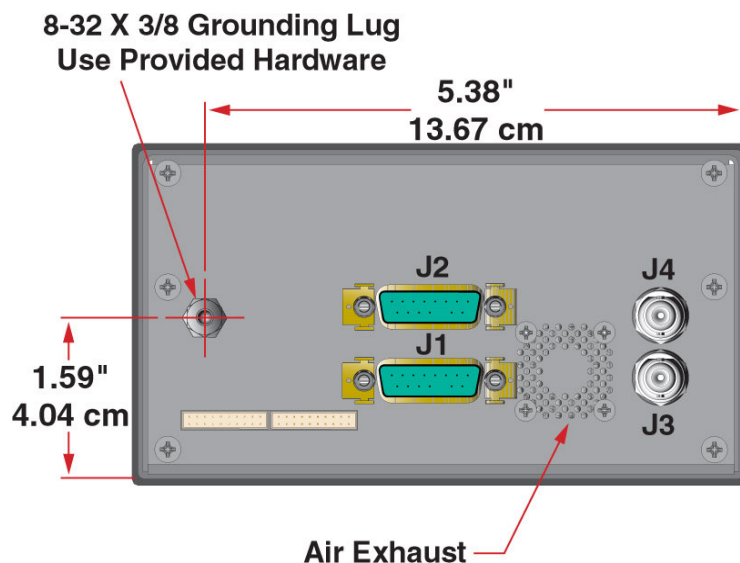
7.0 Reference Drawings

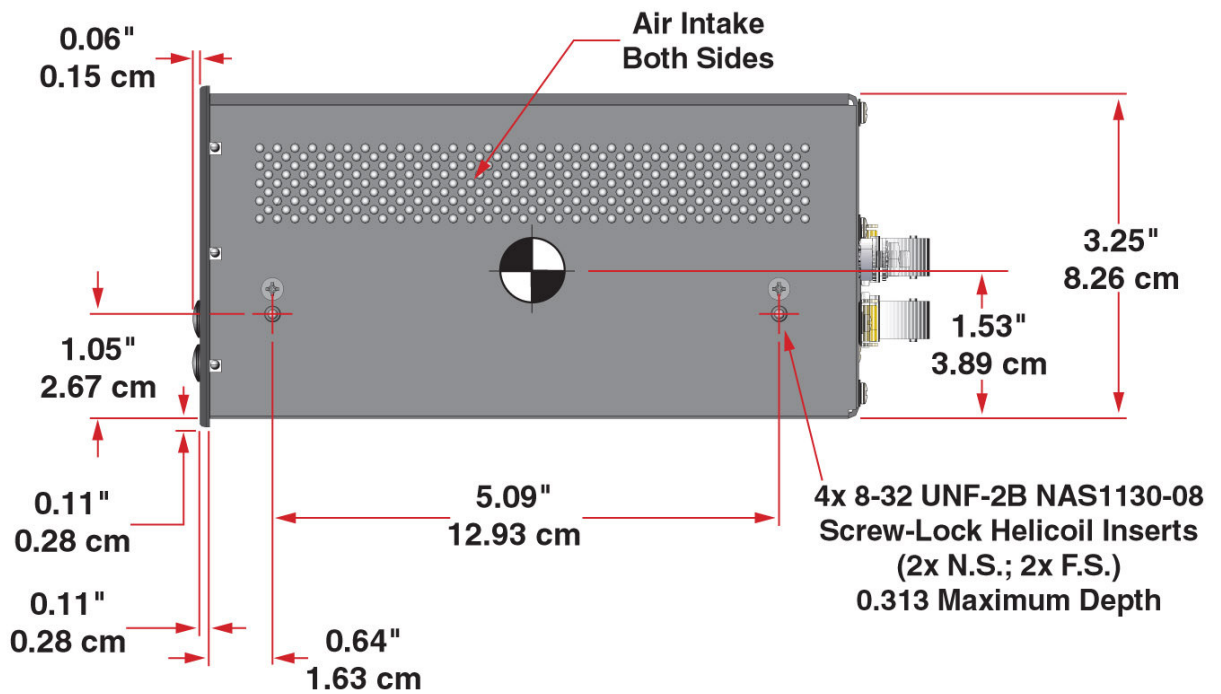
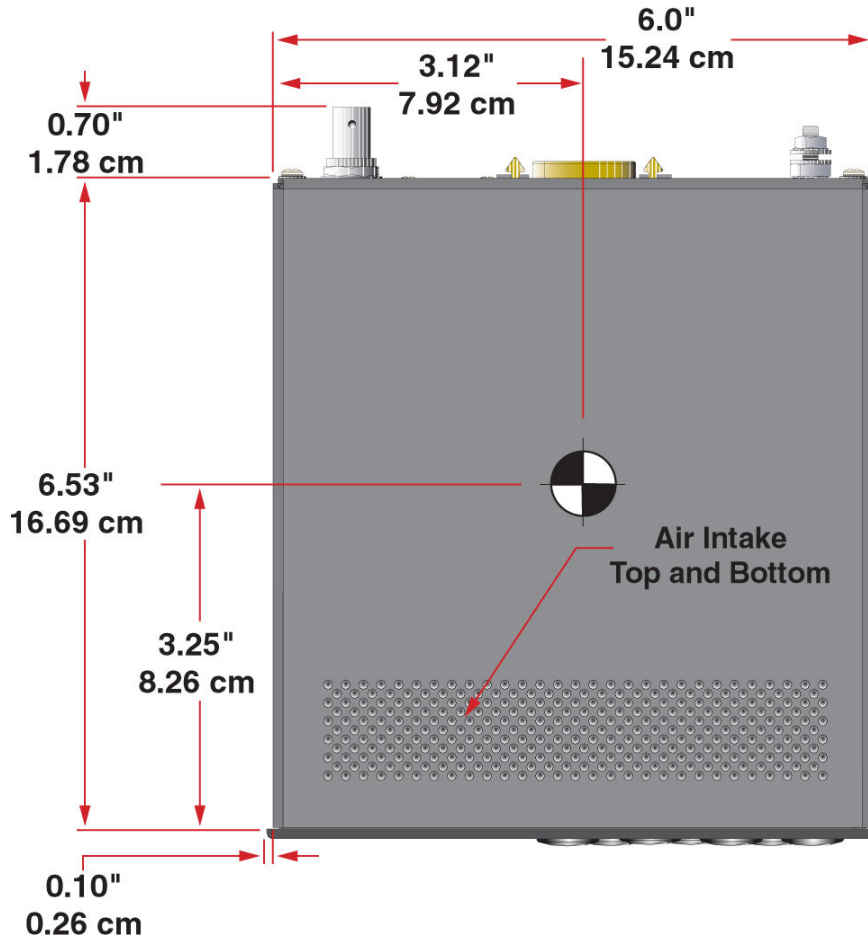
7.1 Dimensions and Connections: DVD-502-01-x

The following diagrams show the unit dimensions, mounting locations, and connector locations for the DVD-502-01-x.



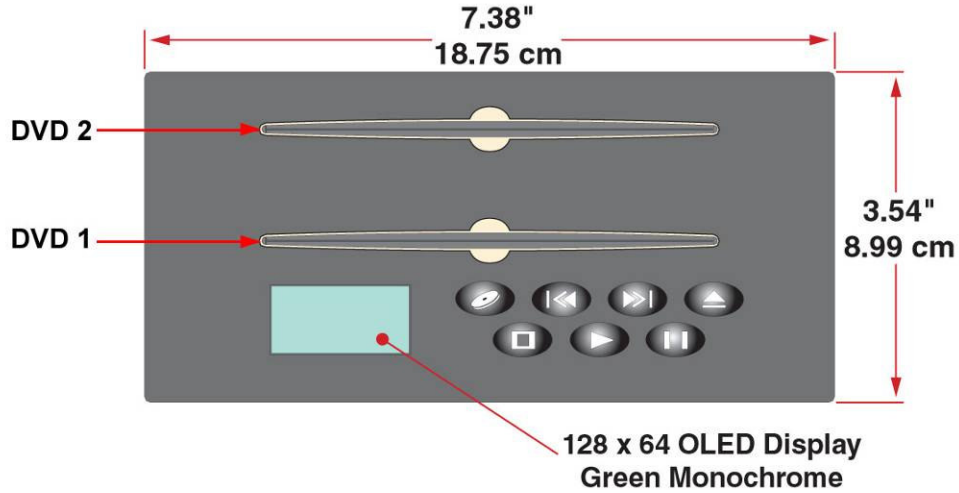
Note: These measurements include the front cover bezel.





7.2 Dimensions and Connections: DVD-512-01-x

The following diagrams show the unit dimensions, mounting locations, and connector locations for the DVD-512-01-x.



Note: This measurement is of the front cover bezel.

