

7" LCD DISPLAY

WideScreen Model Number

7001

ROSEN AVIATION

ELECTRONIC REVISION CONTROLLED

ROSEN AVIATION



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7001 TECHNICAL MANUAL

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## **Introduction and Display Overview**

Welcome to the *7001 series Technical Manual*. This manual provides an overview of display details including:

- Pinouts
- Installation
- Operation
- Troubleshooting
- Specifications

The 7001 model includes the following features:

- 7" Diagonal Viewing Area
- NTSC
- 480 x 234 Screen Resolution
- 28 Volt Power Supply
- 16x9 Aspect Ratio
- DO160D Compliant
  
- Optional Select Switch

This monitor has front panel buttons as its only control method.

## Pinouts

<b>Warning!</b>
This Display is for Entertainment Purposes Only! Connect to the Non-Critical Power Bus.

To obtain pinout information, download our engineering *Outline & Installation* drawing from:

[www.rosenaviation.com](http://www.rosenaviation.com).

Once you access the home page, click on **Support & Documentation**, and then click on **Technical Drawings & Pinouts**. Search options include searching by model number or browsing by category.

Pinout descriptions are provided to assist in the wiring process. Pay close attention to the pinout information while completing wiring connections.

## Installation Guidelines

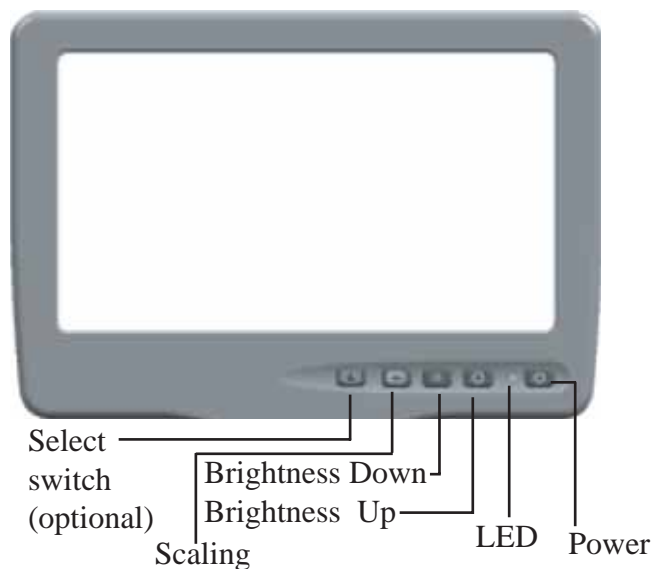
<b>Handling Warning!</b>
Touching the LCD with excessive force may leave pressure spots that show in video display. Handle with care.

To obtain product dimensions and/or rotation information, download our engineering *Outline & Installation* drawing from [www.rosenaviation.com](http://www.rosenaviation.com).

Once you access the home page, click on **Support & Documentation**, and then click on **Technical Drawings & Pinouts**. Search options include searching by model number or browsing by category.

Drawings are provided to assist in the installation process. Pay close attention to dimensions and rotations when considering installation requirements.

## Operation



### **Power On/Off:**



Pressing this button switches the display between “on” and “standby” mode. The LED indicator is red when the display is in standby, and green when the display is on. Previously adjusted settings of brightness and scaling mode are retained in memory when power is turned off, or when aircraft power is removed.

### **Brightness:**



Pressing the brightness up or down buttons will increase or decrease the backlight brightness in 16 steps. If the button is held down for more than one second the brightness will continue to step up or down in ¼ second intervals.

**Scaling:** 

The Rosen 7" widescreen display has 4 scaling modes to allow adjustment of the picture expansion to most closely match the encoding of the source image. These modes, and how various source images will look, are described below.

**Select Switch:** 

Optional Momentary select switch (Customer Configurable)

**Normal Mode:** Displays standard 4:3 aspect video without alteration. A standard 4:3 source image will appear with vertical black bars on the left and right side of the screen (Fig. 1A). If the image source is letterboxed, then there will be horizontal bars at the top and bottom of the image as well. Widescreen 16:9 images will appear horizontally compressed with vertical black bars on the left and right side of the screen . (Fig. 1B)

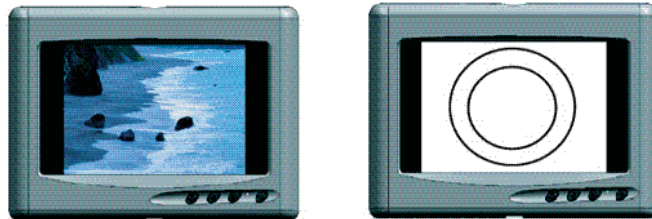


Fig. 1A

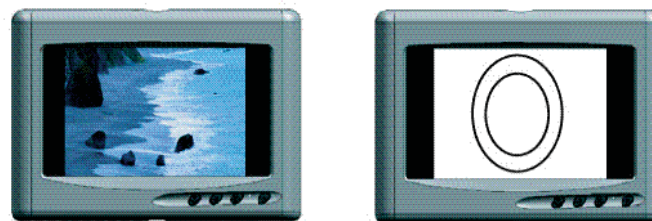


Fig. 1B

**Wide Mode:** Displays standard 4:3 source video in 16:9 aspect ratio by expanding the image horizontally. The expansion maintains normal aspect in the center region while stretching the rest of the image to fill the screen

Widescreen 16:9 will be displayed full screen with minor central compression (Fig. 2B). If the source image is letterboxed, there will be black bars at the top and bottom of the image (Fig. 2A).

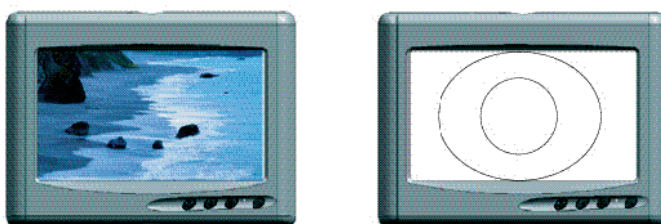


Fig. 2A

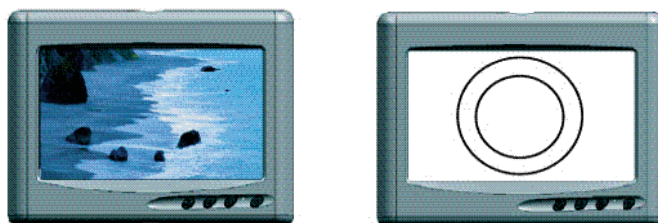


Fig. 2B

**Full Mode:** Displays standard 4:3 source video in 16:9 aspect ratio by expanding the entire image horizontally (Fig. 3). If the source image is letterboxed, there will be black bars at the top and bottom of the image only. Widescreen 16:9 will be displayed full screen without distortion.



Fig. 3



**Cinema Mode:** Expands the source video in the vertical and horizontal dimensions to fill the display screen (Fig. 4). Letterbox format DVD disks will have little or no bars showing in this mode, while 4:3 & 16:9 aspect video sources will be expanded beyond the boundaries of the screen, appearing cropped.

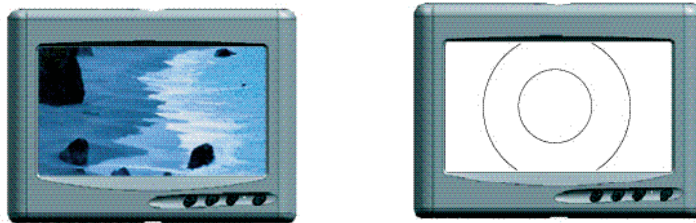


Fig. 4

### Adjustments

The Rosen 7" WideScreen display also has fine tuning adjustments located on the back of the display. To adjust, remove label on back of the display. ( see Fig. 5)

With the label removed use a small flat head screwdriver to make your adjustments. (see Fig. 6)

Fig. 5 Adjustments under Label

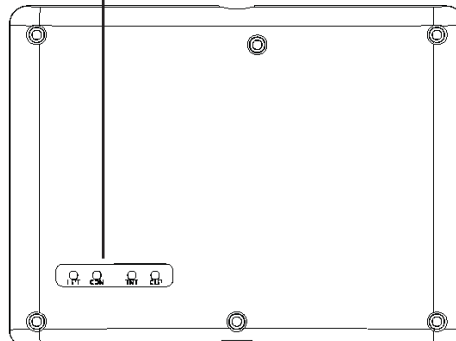


Fig. 6

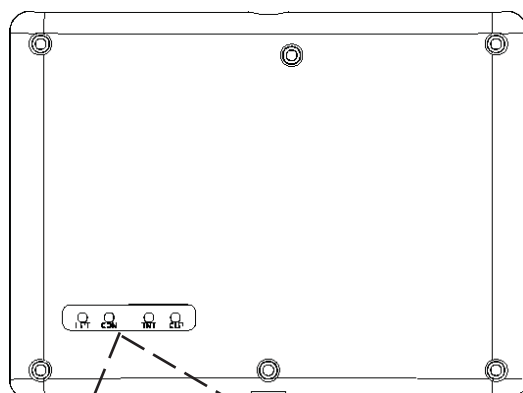
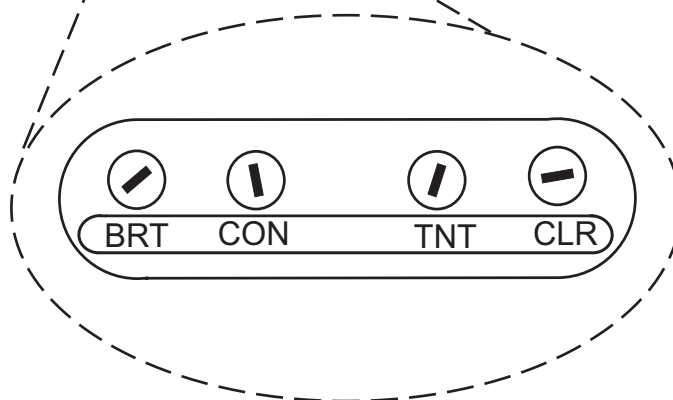


Fig. 6A/



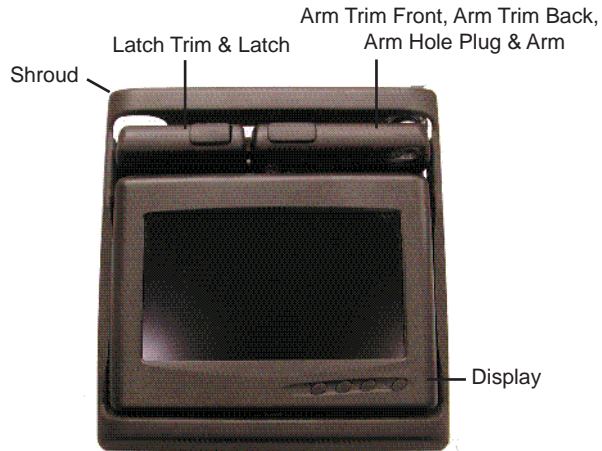
BRT = Brightness  
CON = Contrast  
TNT = Tint  
CLR = Color

Note: Fig. 6A represents factory default settings

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## Maintenance

### Description of Components



### Shroud Removal & Installation

Open Display (See Fig.1) Remove shroud by pulling forward on top of shroud and working shroud until shroud is free (See Fig.2A).

Slip shroud over Arm trim and over and down the display (See Fig. 2B).



Fig.1

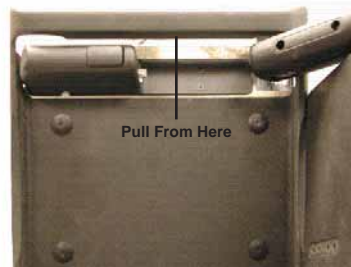


Fig.2A

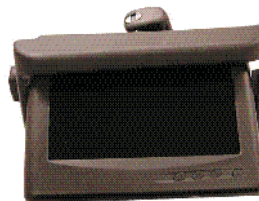


Fig 2B

## Swapping Arm

### Tools Needed for Swapping Arm

1. 5/32" Hex Driver
2. #10 Torx Driver
3. #1 Phillips Screw Driver

- 1.Remove arm assembly by removing two socket head cap screws (see Fig 3).
- 2.Remove the latch trim by removing two phillips head screws (See Fig. 4).
- 3.Remove the Latch by removing four phillips head screws (see Fig. 5).

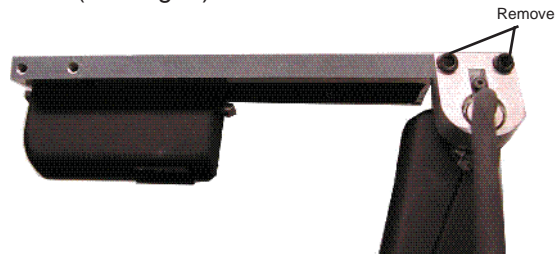


Fig. 3



Fig. 4

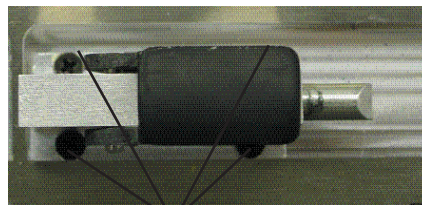


Fig. 5

Maintenance

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4. Reinstall latch and latch trim on opposite side
5. Remove two phillips screws from rotation stop  
(See Fig 6)
6. Flip rotation stop over 180°(See Fig 7) Rotate spring to accommodate new stop location.  
**Note:** spring location in Fig 7

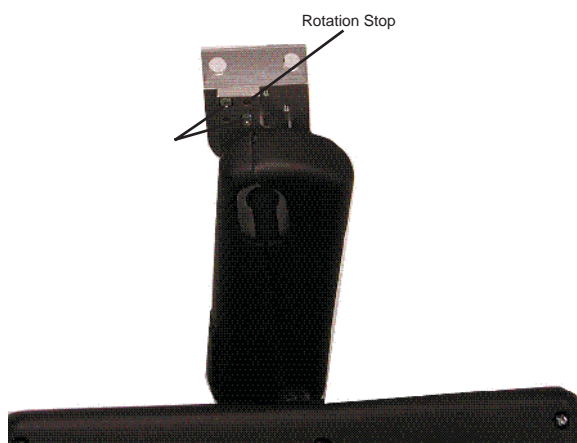


Fig. 6

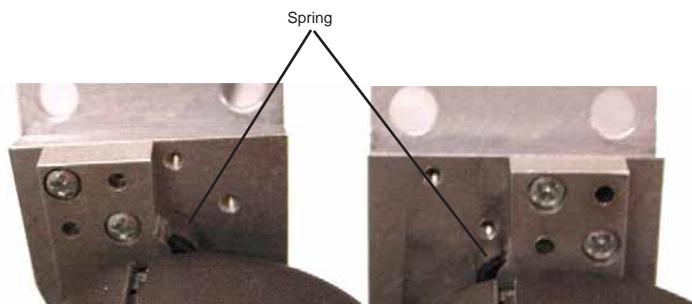


Fig. 7

7. Remove Arm trim by removing two torx screws see (Fig 8)
8. Rotate Arm trim front and back so fake button is facing forward (See Fig 9)

**Note:** Make sure arm hole trim is in place and textured side faces up.

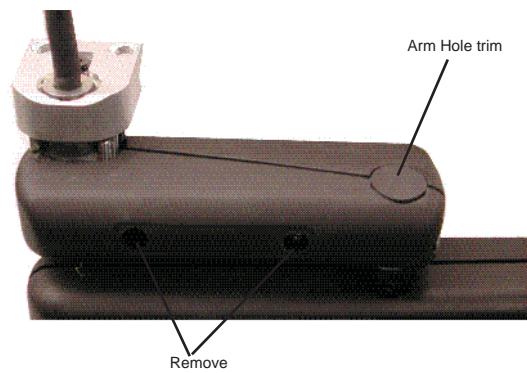


Fig 8



Fig 9

## Troubleshooting

Problem	Possible Solution
Power LED does not illuminate (neither RED nor GREEN)	Verify pinout is correct (power input connection) Verify voltage to display is correct
Power LED is Red	Push the power button. If pushing the power button does not turn it GREEN, the display failed, call customer service
Power LED is Green no video displayed (black screen)	Verify pinout is correct (video input connection) Check connectors for damaged pins Verify that video source is on and displaying video Verify that video source is in play mode Verify video signal at display connector
Picture Needs Adjustment	Use a flat screw driver and adjust color, contrast, brightness and tint.
Distorted Image	Verify pinout is correct Verify signal is present and accurate Verify for pinched or damaged cables Verify NTSC input Check for damaged pins
Monitor Flashes	Check voltage is correct (28 VDC)
Monitor Will Not Stow (close)	Ensure shroud is fully seated and not out of alignment

## Specifications

### LCD Performance

Screen Resolution (pixels)	480 w x 234 h
Display Viewing Area	6.06 x 3.42 In
Viewing Angle	( At contrast ratio 10:1 )
Horizontal	±60 °
Vertical	±45° Up ±60 ° Down
Contrast Ratio	200:1 (typical)
Backlight Lamp Life (hours)	10,000 hrs
Screen Brightness	260cd/m <sup>2</sup> (Minimum) 350 cd/m <sup>2</sup> (Typical)
Mechanical Packaging	
Weight	3.75 lbs. ±5%
Power Requirements	28VDC 310 mA Nominal
Video Performance	
Video Standards	NTSC
Video Input	1V Peak-to-Peak, 75 Ohms
Operating Temperature	0°C - 60°C
Warranty	2yr

### Cleaning Display

The LCD should be cleaned with a lens grade tissue for cleaning optical surfaces and isopropyl alcohol.

### Technical Support

For technical support or to order parts, contact  
Rosen Aviation Displays at: 888-668-4955  
or visit us at: [www.rosenaviation.com](http://www.rosenaviation.com)



**7" Monitor DO-160D Test Matrix**

Section	Description	Category
4	Temp & Alt	A1
5	Temp Variation	C
6	Humidity	A
7	Op Shock & Crash Safety	B
8	Vibration	SB
9	Explosion Proofness	X
10	Waterproofness	X
11	Fluids Susceptibility	X
12	Sand & Dust	X
13	Fungus Resistance	X
14	Salt Spray	X
15	Magnetic Effect	Z
16	Power Input	AB
17	Voltage Spike	B
18	AF Cond Suscept – Pwr	A
19	Induced Signal Suscept	Z
20	RF Suscept (Cond&Rad)	TT
21	Emission of RF Energy	B
22	Lightning Induced Trans	X
23	Lightning Direct Effects	X
24	Icing	X
25	Electrostatic Discharge	A

Note X = Not Required

## **Disclaimer**

All information, including illustrations, is believed to be reliable. Users and/or installers, however, should independently evaluate the suitability of each product for their application. Rosen makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use or installation. Rosen's only obligations are those in the Rosen Standard Terms and Conditions of Sales for this product, and in no case will Rosen be liable for any incidental, indirect or consequential damages arising from the sale, resale, use or misuse of the product. Specifications are subject to change without notice. Rosen reserves the right to make changes - without notification to buyer - to materials or processing that do not affect compliance with any applicable specifications.