

# Roadie ChristieTWIST™ Warping Module Installation Instruction Sheet

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## SAFETY AND WARNING GUIDELINES

**⚠ DANGER** HIGH VOLTAGES MAY BE EXPOSED! Always power down and disconnect power sources prior to servicing. Once the projector is powered down, allow the cooling fans to automatically turn OFF before disconnecting from AC and opening the projector.

**⚠ WARNING** QUALIFIED SERVICE TECHNICIANS REQUIRED! All module replacement procedures must be performed by Christie accredited service technicians.

**⚠ WARNING** NON-INSULATED DANGEROUS VOLTAGES MAY BE EXPOSED! Always disconnect from AC prior to disassembly.

**⚠ WARNING** OBSERVE ALL ELECTROSTATIC PRECAUTIONS! Use a grounded wrist strap when handling electronic assemblies.

**⚠ CAUTION** Never operate the projector (or the fans) without all the covers installed.

## INTRODUCTION

These instructions explain how to upgrade the following Christie products to include the ChristieTWIST™ Warping Module:

Warping Module P/N 113-109101-01
Roadie 25K
Roadie 25K LE
Roadie HD+30K
Roadie HD+30K

With the Module and related software both installed, you can use your PC to shape projected images as desired, defining new corner points and/or applying custom curved (i.e., warped) boundaries typically needed for curved walls. You can also utilize special edge blends to smooth multiple adjacent warped images into a single large seamless display.

## KITS REQUIRED

- CD containing:
  - ChristieTWIST™ PC application
  - ChristieTWIST™ Install and Users Guide
- ChristieTWIST™ Warping Module PCB
- KoRE 10-Bit Librarian Setup PC application (available at [www.christiedigital.com](http://www.christiedigital.com))
- warp\_20.rff (available at [www.christiedigital.com](http://www.christiedigital.com))
- Projector software 1.9C119 or higher
- Blower fan assembly
- (5) M3x6mm screws
- (4) washers
- (1) M3x16mm stand-off

## TOOLS REQUIRED

- Phillips™ #1, #2
- 7/32" socket wrench
- adjustable wrench

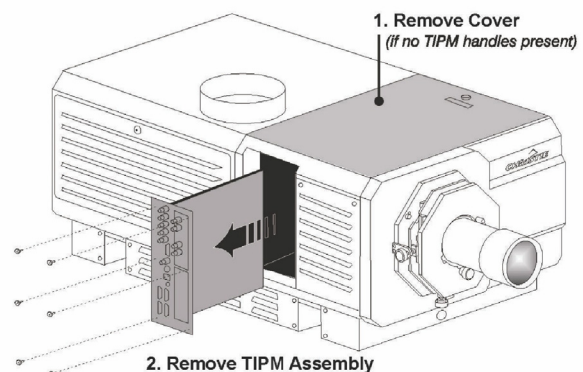
## INSTRUCTIONS

### INSTALLING THE MODULE

The ChristieTWIST™ Warping Module is installed onto the projector's TIPM (10-bit Image Processing Module).

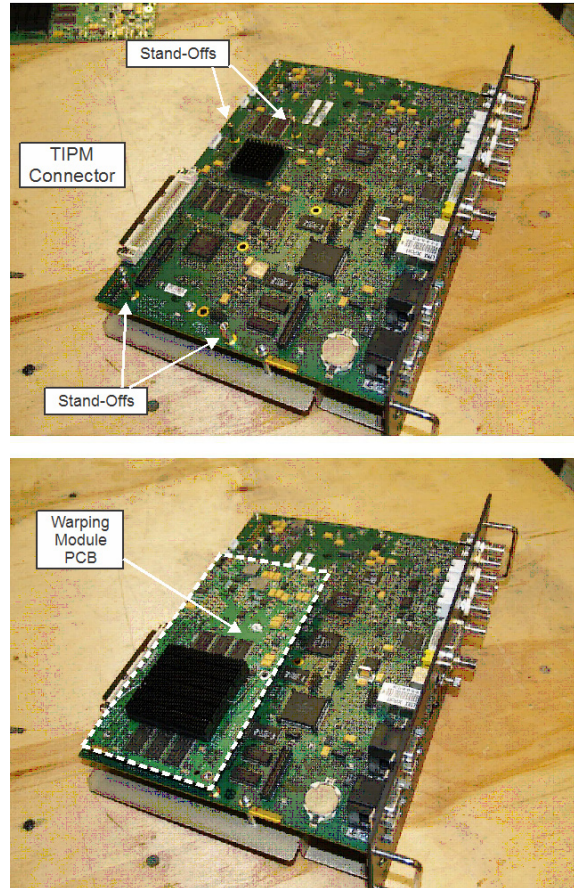
1. Turn the projector OFF and wait for cooling fans to stop.
2. Disconnect all power sources to the projector.
3. Remove the (6) #2 screws surrounding the TIPM faceplate and slide out the TIPM assembly.

**NOTE:** *On earlier units with no handles on the drawer, remove the projector lid and push the drawer out from within. Do not pull on exterior connectors.*



**FIGURE 1 ACCESSING THE TIPM FOR INSTALLING CHRISTIEWIST**

4. Install the ChristieTWIST™ Warping Module
  - a. Align the Warping Module to the four TIPM stand-offs, taking care to mate the single large connector. Refer to *Figure 2 Warping Module Installation - Top*.
  - b. Carefully press the module into place and secure to the TIPM using the 4 of the screws and washers provided. Refer to *Figure 2 Warping Module Installation - Bottom*.



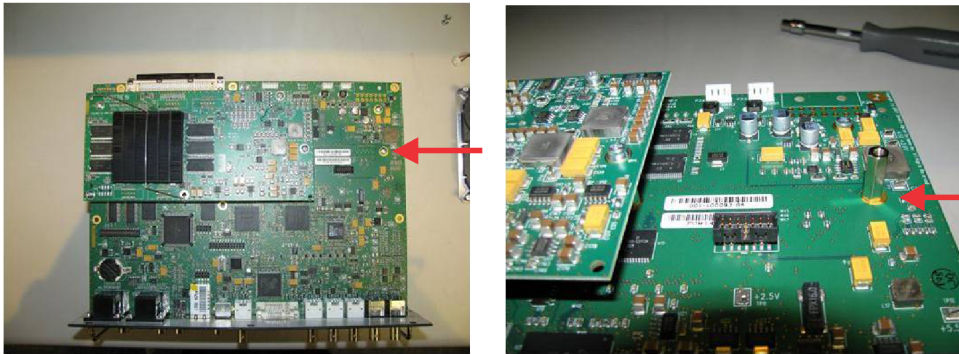
**FIGURE 2 WARPING MODULE INSTALLATION**

## **INSTALLING BLOWER ASSEMBLY**

The Warp blower assembly provides enhanced cooling to the Warp Module heatsink. This considerably lowers thermal stress on the board and will increase reliability of the module.

1. Swap Backplane Screw For Stand-Off
  - a. Remove the #1 screw indicated by the red arrow in *Figure 3 Replace #1 Screw with 16mm Stand-Off*.

- b. Replace the screw with the 16 mm stand-off provided with the kit and gently tighten it.

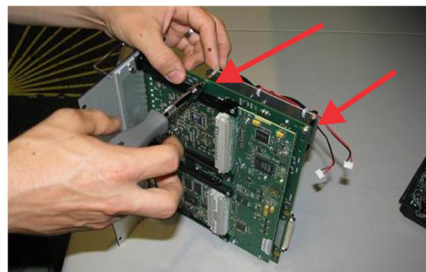


**FIGURE 3 REPLACE #1 SCREW WITH 16MM STAND-OFF**

- 2. Attach blower assembly Via Center Screw
  - a. Move blower assembly into position, lining up the three mounting points.
  - b. Loosely install center screw provided in the kit (not the previously removed screw). Center screw is marked by the red arrow in *Figure 4 Install Center Screw*.
  - c. Loosely install the nuts on the two stand-off's on the bottom of the TIPM.
  - d. Gently tighten the screw and 2 nuts indicated with red arrows in *Figure 5* and *Figure 5 Tighten Screw and Nuts*.



**FIGURE 4 INSTALL CENTER SCREW**



**FIGURE 5 TIGHTEN SCREW AND NUTS**

- 3. Plug In Fan Power Connectors
  - a. Plug each fan connector into the TIPM connectors P23 and P24 shown in *Figure 6 Plug In Fan Power*.
  - b. The longer harness plugs into P24, the shorter harness into P23 (No electrical difference)
- 4. Visual Inspection of Blower Kit Installation
  - a. Check that the screw and two nuts are tight.
  - b. Check that the plate is parallel to the TIPM PCB.
  - c. Check that both fan harnesses are fully seated.



**FIGURE 6 PLUG IN FAN POWER**



- d. Check that the harnesses do not protrude past the edge of the plate as indicated by the red arrow below. Refer to *Figure 7 Inspection of Blower Kit Installation*.



**FIGURE 7 INSPECTION OF BLOWER KIT INSTALLATION**

5. Re-Install TIPM Card Cage
  - a. Line up edges of TIPM with the guides.
  - b. Gently push TIPM Card Cage into the projector. Extra caution needs to be taken when blowers are passing the inlet of the projector as Blower Kit has reduced clearance.
  - c. If cage catches then gently bias the card cage towards the front of the projector.
  - d. Once fully inserted into the projector apply a firm force to seat the TIPM with the backplane.
  - e. Re-install (6) #2 screws around the edges of the cage.

## **INSTALLING SOFTWARE**

### **ON YOUR PC**

Install the ChristieTWIST™ software application provided on the CD shipped with the module. For instructions, refer to the ChristieTWIST™ Install and Users Guide included on the CD.

Install the KoRE Librarian setup v1.2 (or higher) software application. This can be downloaded from [www.christiedigital.com](http://www.christiedigital.com). For instructions, refer to the Using KoRE 10-Bit Librarian Upgrade Instructions.pdf file for details.

### **IN THE PROJECTOR**

Follow the typical main software installation/update process and install version 1.9D. If version 1.9D or higher is not available install version 1.9C119.

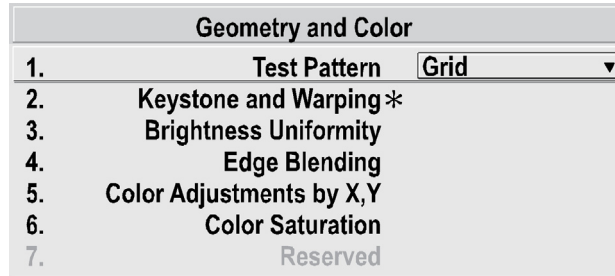
### **INSTALL WARP SOFTWARE 2.0**

Use KoRE Librarian to install the Warp Software (warp\_20.rff) onto the projector. This can be downloaded from [www.christiedigital.com](http://www.christiedigital.com).

### **USING CHRISTIETWIST™ PROJECTOR CONTROLS**

NOTE: The following section describes projector software only. Refer to separate documentation such as the ChristieTWIST™ Install and Users Guide for information about using the PC application for defining custom image warps.

The ChristieTWIST™ Warping Module and software enables a new Geometry and Color menu for accessing additional Keystone and Warping controls in the projector.



\* Requires ChristieTWIST warping module, standard in Matrix projectors.  
Replaces Vertical Keystone standard in other models.

FIGURE 8 GEOMETRY AND COLOR

### KEYSTONE AND WARPING

Use the Keystone and Warping submenu to shape your images using new corner points and/or to apply customized curved image boundaries called “warps”.

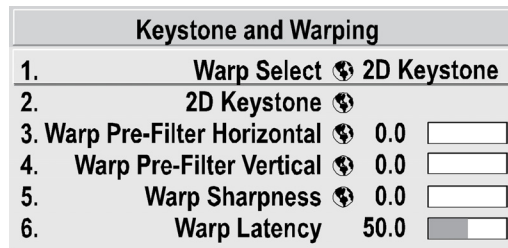


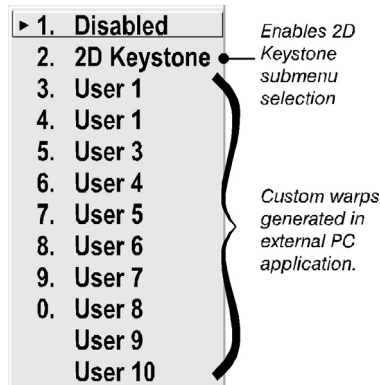
FIGURE 9 KEYSTONE AND WARPING

### WARP SELECT

Choose a type of image shaping to apply, or choose to disable these adjustments. Note: Settings apply to all sources:

- **Disabled:** Display standard (rectangular) images with no warping or keystone adjustments applied.
- **2D Keystone:** Move 4 corners of the image to correct for a keystone image and/or to create an unusual 4-sided image exhibiting perspective or distortion. See 2D Keystone, below.
- **User 1-10:** Note: The user-defined options are titled User 1-10 by default; they can be changed using the ChristieTWIST™ Software. Apply a custom image shape or twist that has been defined in the ChristieTWIST™ PC application and downloaded to projector memory, typically creating one or

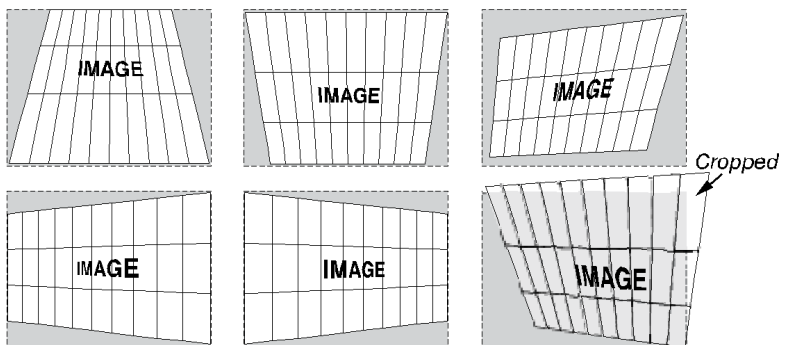
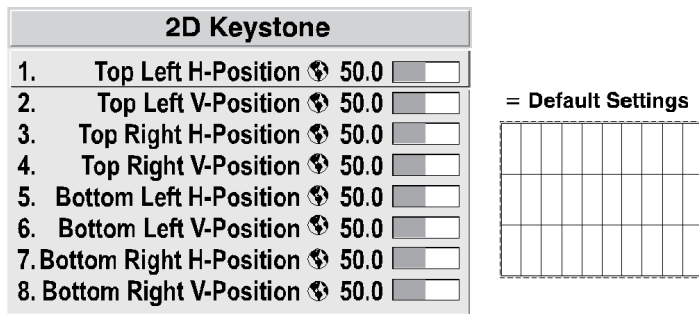
more “squeezed” or stretched areas in the display. If no custom warps have been created, the User options will have no effect.



**FIGURE 10 WARP SELECT**

**2D KEYSTONE**

Move one or more corner points as desired for your application. Traditionally, keystoneing adjustments simply correct an image in which opposing sides are inclined away from each other (caused by tilting the projector in relation to the screen). If the lens surface is parallel to the screen and settings are 50.0, the image should appear rectangular. Alternatively, move the corner points as desired to create a specific 4-sided image in which corners are up to 25% closer to the center of the image, or which are cropped off.



**FIGURE 11 MOVING THE CORNERS FOR 2D KEYSTONE**

**WARP PRE-FILTER**

**HORIZONTAL:** Adjust as desired to smooth or sharpen side-to-side clarity in a warped image. An increase will appear to blur horizontal lines.

**WARP PRE-FILTER VERTICAL:** Adjust as desired to smooth or sharpen top-to-bottom clarity in a warped image. An increase will appear to blur vertical lines.

**WARP SHARPNESS:** Adjust as desired to soften or sharpen the overall image, similar to a Detail adjustment.

**WARP LATENCY:** Set the percentage of frame delay (default = 50.0) desired for displaying incoming data. A higher or lower setting will typically be needed with significant warps, ensuring that the entire

image appears. Warp latency also provides a means of synchronizing one display with adjacent displays or other equipment such as audio.

## BLENDING

Choose a type of image blending to apply, or choose to disable these adjustments. Note: Settings apply to all sources:

- **Disabled:** This setting provides no Blending options.
- **Standard:** This setting activates the standard edge blending functionality to the projector without the warp board and is not intended for use with warped images. Please refer to your projector's Users Guide for further details.

- **User 1-5:** Note: The user-defined options are titled User 1-5 by default; they can be changed using the ChristieTWIST™ Software. Apply a custom edge blend, generated and defined in the ChristieTWIST™ PC application and downloaded to projector memory, typically creating one or more types of edge blend. If no custom blends have been created, the User options will have no effect.

**NOTE:** *If a ChristieTWIST™ Warping Module is installed, the Edge Blending menu controls are expanded to include user-defined blends appropriate for a warped image. The new blend ranges are 0-80 for side blends, and 0-60 for top or bottom blends. If no warping is currently applied but you still need to use edge blending for a tiled wall, select “Standard”.*

**NOTE:** *The installation of a Warping Module will disable the Black Level Blending feature on 3-chip projectors.*

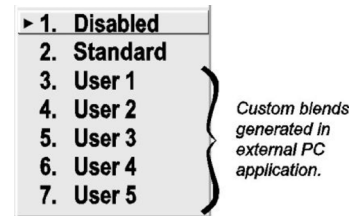


FIGURE 12 BLENDING