



# Custom Brass Template Instructions

Cutting brass confinement templates has always been a mystery to most people trying to install projectors and therefore left to professional installers, adding frustration and cost to the project. The Phantom™ Contour Projector is designed with the installer in mind and cutting confinement templates has never been easier. Sure, practice makes perfect, but that can only be made simpler by knowing the tricks of the trade.

The confinement template or brass slide is designed to allow you, the installer, to illuminate single objects, multiple objects and irregular shaped objects by cutting an opening in the slide. Theoretically, as long as the object is within the projected field of light, the object can be illuminated. However, there are limitations due to focusing in extreme situations. Until you get your feet wet, keep things simple. Above all, remain calm as this will be a frustrating experience the first time. After one or two, you'll be cutting templates like a pro. So take your time, take a deep breath, have some fun and enjoy the results!

**REFER TO THE PROJECTOR SUPPLEMENT TO SELECT LENSES AND BEAM ANGLES**

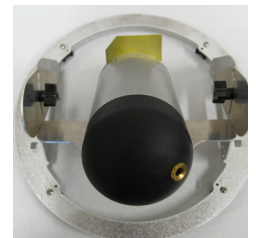
**THE FOLLOWING INSTRUCTIONS ADDRESS SOME OF THE BASIC STEPS OF THE TEMPLATE CUTTING PROCESS:**

- 1 Orientation of brass slide in the projector
- 2 Orientation of brass slide when cutting
- 3 Finding the target on the wall
- 4 Tracing the slide
- 5 Establishing straight lines
- 6 Cut one side at a time
- 7 Flexing the slide
- 8 Filing instead of cutting
- 9 Wedging the slide

## 1 Orientation of brass slide in the projector

**FIGURE 1** It is absolutely critical to the adjustment process that you install the brass slide correctly into the projector each time. Remember, that all projected light is upside down and backwards. Don't worry – I just want you to be aware of what is going on before you get started.

Start by positioning the brass slide in the gate (between the silver front aluminum spacer and the silver template ring) with the notch on the top left, facing the art on the wall. This will be your position every time you remove and reinstall the brass slide. Otherwise, you will cut the wrong side, spill the light onto the wall and have to start over. So, it's very important that you pay attention to this detail.

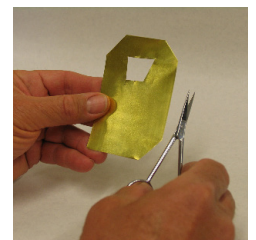


**FIGURE 1**

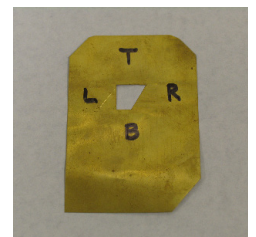
## 2 Orientation of brass slide when cutting

**FIGURE 2** Remove the brass slide from the projector and rotate the brass slide clockwise without flipping the slide. The notch should now be on the bottom right hand corner. This will be your position every time you cut the brass slide. Otherwise, you will cut the wrong side, spill the light onto the wall and have to start over. This is another very important detail you need to pay attention to.

**FIGURE 2B Hint:** I like to scribe on the brass slide with my scissors the letters T, L, R, and B for top, left, right and bottom around the opening. This is a good safety net and reference point when cutting the template and also reminds you which side to cut!



**FIGURE 2**



**FIGURE 2B**

### 3 Finding a target on the wall

**FIGURE 3** Cutting a brass slide confinement template involves the trial and error method. That means you simply cut or punch a small hole in the brass slide to find the target and or targets on the wall. Once you have positioned the light on the art, make a few cuts to see what happens. The goal is to establish straight lines.

Hint: This is also a good time to double check and set the focus. Double check and tighten all mounting screws. Check that the cover plate fits flush with the ceiling and does not hit the projector body or front cone. If so, you may have to reposition the projector before cutting the brass slide. It's always a good idea to use the first slide to practice.

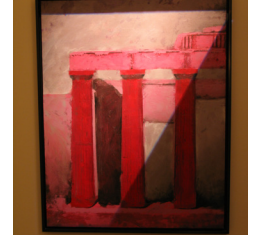


**FIGURE 3**

### 4 Tracing the slide

**FIGURE 4** Position your brass test slide over a new slide in the cutting position. Carefully scribe the opening shape using your scissors onto the new brass slide.

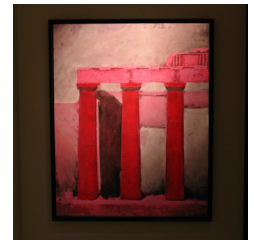
Hint: It is best to use a good flat surface such as a metal plate or piece of ceramic tile to make things easier when tracing and rubbing the brass slide.



**FIGURE 3B**

### 5 Establishing a straight line

Reinstall the test slide into the projector and make the necessary adjustments to your new slide to fine tune the projected image and establish straight lines. This is a good time to make some big cuts with goal of covering the majority of the art with light. Take a third slide, trace your second slide and repeat as many times as necessary until you get it right.

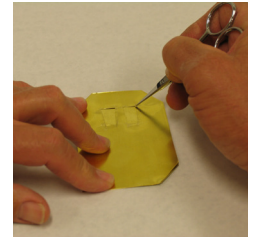


**FIGURE 3C**

### 6 Cut one side at a time

Finish one side before going to the next. This will ensure that you have the brass slide in the same position each time it is removed and replaced. The slide may be cocked to the left or right as you will see. Find the best position and stick with it throughout the cutting process.

**Hint:** It is absolutely critical that you position the slide the same way each time you take it in and out and establish a reference point on the art. If it just doesn't look right, reset the brass slide until you get it back into the reference position. Start with the bottom first, followed by the side, and cut the top last. If you spill the bottom cut, trim a little off the bottom of the slide – this allows the slide to go in farther, which raises the projected image.



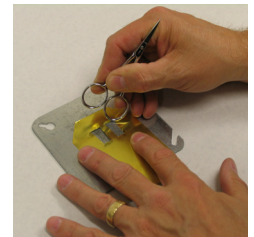
**FIGURE 4**

### 7 Flexing the slide

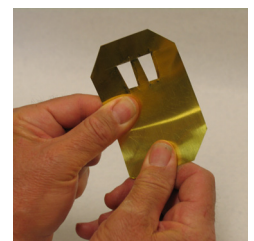
**FIGURE 5** It is a good idea to gently rub the edge of the brass slide with your scissor handles to prevent the brass slide from becoming bent or tearing when going in and out of the projector cone during the cutting process.

It is also possible and often necessary to manipulate the projected image by rubbing the brass slide more firmly. This is called flexing the slide. Rubbing on the side towards the art, forces the slide to bend inward, closer to the condensing lenses, which causes the projected image size to reduce. Consequently, rubbing on the back side of the brass slide, causes the slide to flex towards the focusing lenses, resulting in a slightly larger image. This is good technique to use when you have a small spill to deal with on the wall.

**FIGURE 5B Hint:** Flexing the slide does change the projected image. Be careful after flexing that you do not over-cut a side of the brass slide that was previously finished. This may result in having to start over.



**FIGURE 5**



**FIGURE 5B**

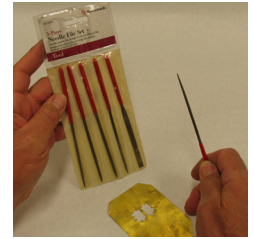
## 8 Filing instead of cutting

**FIGURE 6** If you plan to do this often, you may want to pick up a set of small jewelers files from your local computer store or online. These files come in assorted shapes and are very helpful when making small adjustments or working on irregularly shaped objects, such as sculptures or ornate frames.

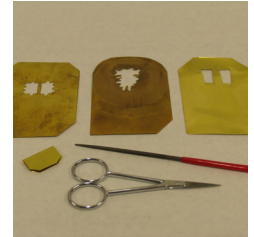
**FIGURE 6B** Some custom brass templates can only be done with jewelers files as it would be impossible to cut the shape with your scissors.

**MULTIPLE OPENINGS** It is possible to cut two or more openings in a slide to individually illuminate the objects without spill light between. Punch or cut two holes in the brass template, then return the slide into the projector to check projected light. Enlarge cut holes as needed, working on one side at a time and testing projection in between cuts.

**Hint:** When you reach 90% completion on both, file the openings instead of cutting to avoid spill. If needed, trace the slide and repeat until you get the desired result. **Take your time!!**



**FIGURE 6**

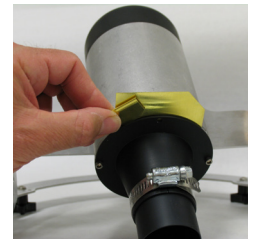


**FIGURE 6B**

## 9 Wedging the slide

**FIGURE 7** Cutting a brass slide confinement template involves the trial and error method. That means you simply cut or punch a small hole in the brass slide to find the target and or targets on the wall. Once you have positioned the light on the art, make a few cuts to see what happens. The goal is to establish straight lines.

**Hint:** This is also a good time to double check and set the focus. Double check and tighten all mounting screws. Check that the cover plate fits flush with the ceiling and does not hit the projector body or front cone. If the cover plate does not fit flush, you may have to reposition the projector before cutting the brass slide.



**FIGURE 7**

## Examples of Complex Masking

### IRREGULAR-SHAPED PIECES

To the right is an example of a hand-cut and filed custom brass template, paired with our LED optical framing projector, designed to precisely illuminate your fine art of any shape and not the walls behind it.



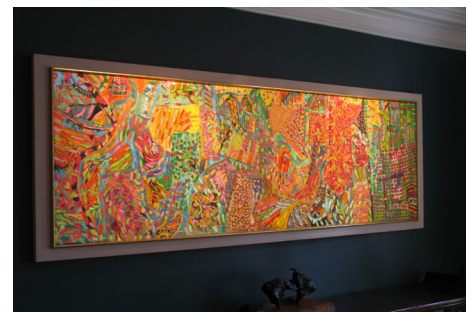
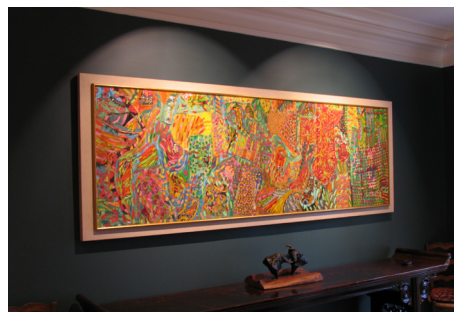
**IRREGULAR-SHAPED ART**

### MULTIPLE OPENINGS

To the far right is an example of how multiple openings can be hand-cut into one template to light a series of pieces that hang together.



**MULTIPLE OPENINGS**



**OVERSIZED ART** To light an oversized piece of art, you'll need to use more than one Phantom™ contour projector. Begin by using one projector to light one half of the piece, then install a second projector to cover the other half. Finally, use one of our masking methods to sculpt the light to the exact shape of your art and eliminate spill light. Once completed, your oversized art will appear to be illuminated from within!