



## GEMINI INCORPORATED Heavy Product Installs

Many mounting options are available for installing Letters, Logos and Plaques.

While our catalog provides information on common mounting methods and options, additional considerations must be taken into account when installing.

This document is intended to provide additional technical information and areas to review when installing heavier products such as larger metal letters, logos and plaques.

### **Engineering Consultation**

As a general rule, always consult with an Architect or Structural Engineer to review your final installation plans - especially when installing larger or heavier products.

### **Goal of a good install:**

*Securely and permanently affix letters - logos - plaques to a predetermined mounting surface in a manner that is pleasing to the viewer while meeting the needs of the establishment.*

While you can choose from many mounting options and methods, additional considerations must be reviewed before conducting your final installation.

#### 1. What is the mounting surface?

Are you installing on drywall, brick, block, steel, etc. How much weight will this *wall* hold?  
Is there enough structural support in the *wall*? Can you get to the back side?

#### 2. What is the texture / shape of the mounting surface?

Is the surface flat, smooth, textured stucco, uneven block, stone, ribbed, etc.  
Will you be able to lay your part flat on the wall? Spacers needed? Rails needed?

#### 3. Can you drill into the mounting surface?

Are there code restrictions on drilling holes? Landlord or mall restrictions?  
Can you drill into the surface or do you need to affix the parts to a rail, panel, raceway first?

### **Blind Stud Mounts**

Blind stud mounting letters, logos and plaques is the most common installation method.

When producing heavier parts, adjustments are made to the size and number of studs provided, to accommodate the extra weight.

**ie: Cast letters over 15" high will be produced with 1/4-20 studs.**

If in doubt as to using a blind stud on a larger plaque - order plaques with through holes to allow for stronger anchors or toggle bolts (based on wall).

**Note:** the risk of an install failure is more a function of the actual mounting surface, surface structure and the adhesive used - NOT the studs.

*The point of failure will be the Aluminum screws in shear, at the minor thread diameter.*

*144 mph wind speed is equal to 82.7 lb./sq.ft. (0.574 lbs./sq.in.)*

*Tensile strength at break for 3003 Aluminum is 16,000 psi.*

*Minor thread area in shear of a 10-24 Aluminum Screw is .015 sq.in. at 2 threads depth.*

**Therefore, each screw has a holding force in shear of 240 pounds.**

*Testing and Calculations done and confirmed by David Schmitt, VP Operations, BSME, MMSE.*

### **What adhesive should I use with a blind stud?**

Lighter and smaller parts can be installed with silicone (a good universal adhesive).

Heavier and larger parts should be installed with a "stronger" adhesive.

Match your adhesive to the mounting surface and part weight.

If in doubt, use a stronger industrial adhesive such as liquid nails or epoxy.

**Tip:** Coat all studs and fill drilled holes with ample adhesive.

Coat the back side of flat parts, if possible (such as a flat plaque or flat cut letter).

