

The following questions and answers have been designed to assist you with evaluating your current Raster® Braille Pen practices to see if your Pen problem can be prevented in the future.

**How to properly use the Raster® Braille Pen:**

The Raster® Braille Pen should always be held vertically (not at an angle) when inserting Raster® Spheres into braille holes. Hold onto the Raster® Braille Pen with the black, acrylic pen grip. The Pen should be positioned so that the flat, metal plate at the tip of the pen should be facing to your left (where your thumb would be if you are right-handed). Place the tip of the pen directly over a braille hole and push down to insert a Raster® Sphere into the hole. Lift the pen up off of the sign surface and place it directly over the next hole and push down. Continue this process until all braille holes are filled with the Raster® Spheres.

Using the pen at an angle can cause the metal plate at the tip of the pen to bend outward over time, which will result in too many Raster® Spheres trying to be released at one time. A bent plate can also occur when the pen is slid across the sign surface to find holes and this can also be damaging to the sign surface by causing scratches.

Raster® Braille Pens are set to tight tolerances with special tools so that only one Raster® Sphere is released at a time. If these settings are thrown off by operator misuse, the Pen will not function properly and it will need to be sent into Accent Signage Systems, Inc. for repair and re-adjustment.

**How to properly handle and store Raster® Spheres:**

Always use a Raster® Sphere funnel to load Raster® Spheres into the Raster® Braille Pen and always try to avoid touching the spheres. Never pour the Raster® Spheres into the palm of your hand and then pour them into the pen. The grease, dirt and oil from your hands may rub off onto the Spheres and cause the Raster® Braille Pen to jam or malfunction.

Never leave a jar of Raster® Spheres open with the lid off. The jar can become contaminated with debris from minuscule plastic particles floating around in the air from within the engraving shop (these particles are large enough to clog the pen mechanism).

**To understand your Raster® Pen problem ...Please answer the following general questions.....**

1. Are too many Raster® Spheres feeding at one time, all at once? (Yes/No)
  - a. If “yes” this could be from: a bent metal plate at the tip of the Pen, the internal agitation pin could be pushed up too far into the Pen, or there could other causes - see #1 below
2. Are Raster® Spheres feeding randomly and sometimes or often missing holes? (Yes/No)
  - a. The Raster® Pen works better if the tube is at least 2/3 full of Raster® Spheres. If the pen misses a hole, shake it and the next Raster® Sphere should come out with ease - see#2 below
3. Are Raster® Spheres not feeding through at all? (Yes/No)
  - a. If “yes” this means there probably are broken Raster® Sphere particles or other debris stuck inside of the chamber – see #2 and #3 below
4. Are Raster® Spheres not fully inserted in holes or are Raster® Spheres falling out of holes? (Yes/No)
  - a. If “yes” this means the hole depth is too shallow and the Raster® Spheres aren’t locking into place or you could be using the wrong cutter size. Your engraver depth to drill holes should be between .040 to .043. If you are installing in acrylic materials, you may also need an acrylic .0615 cutter.
5. Other problems? (See below)

Please answer the following specific questions, so that we have enough data to understand and isolate your problem to a specific cause:

1. **Look at the tip of the Raster® Pen. There is a plate held in place by two screws. Is this plate bent in any way?**
  - a. No: Proceed to #2
  - b. Yes: If the screw is loose, try tightening them. If the metal plate is bent, it is due to operator misuse. The Raster® Pen needs to be used perpendicular to the sign face at all times and directly over each hole. A bent plate will result over time if the pen is consistently used at an angle or if slid across the sign surface to the hole. This will cause Raster® Spheres to flow freely from the tip once the plate is bent. If this is happening, your Raster® Pen will need to be sent into Accent Signage for repair.
  
2. **Click the tip of the Raster® Pen by hand. Are Raster® Spheres coming out of the tip when the spring is compressed?**
  - a. Yes: Proceed to #3
  - b. No (Part 1): The Raster® Spheres should come out one by one as you depress the spring. If there are no Raster® Spheres coming out of the tip, then there is a clog inside of the chamber that needs to be removed. Below are the troubleshooting tips to dislodge the debris.
    - i. Remove all Raster® Spheres from the Pen.
    - ii. Blow compressed air into the tip of the Pen and you should be able to feel the air come out the other side, then blow the air into the tube of the Pen and you should feel the air come out of the tip.
      1. Only use air from an air compressor with an airline filter or you may worsen the clog.
      2. Do not use canned air as its air pressure is usually insufficient to remove clog.
  - c. No (Part 2): If you are using acrylic Raster® Spheres and they are not feeding consistently, there could be static. If you hold the pen horizontally in front of you and slowly rotate it, do the acrylic spheres want to ride up the side of the clear tube? If so, you're probably experiencing static issues and you'll need to find a way to eliminate this problem by increasing the humidity level within the room and reducing the amount of static amongst all the spheres by grounding the Pen. Ground the static by touching a ground appliance, wiring a ground circuit, or applying a neutralizing charge. Static accumulates in areas where the charge cannot escape.
    - i. The Raster® Sphere jar should never be stored on a metal or plastic surface because that will cause additional static electricity.
    - ii. There will be less static when the Raster® Braille Pen is just about full of Spheres.
    - iii. Never use an anti-static spray on the acrylic Raster® Spheres since it most likely contains an alcohol that can cause the Spheres to discolor and crack.
  
- 3) **Do you fill the Raster® Pen by pouring the Raster® Spheres into the palm of your hand first?**
  - a. No: Proceed to #4
  - b. Yes: You should never handle the Raster® Spheres bare-handed to fill the tray, because grease and oil from your hands may cause the Raster® Pen to jam or malfunction. You should use a clean funnel or pour the Raster® Spheres from the jar without touching them.
    - i. Raster® Sphere Funnels are sold through Accent Signage Systems.
    - ii. You should never leave a jar of Raster® Spheres open with the lid off in your shop. The jar will become contaminated with debris from the air. Most engraving shops have fine plastic particles in the air from the engraving process and these particles are large enough to clog the pen mechanism.
  
- 4) **Are you using the correct Raster® Cutter for the material you are installing in?**
  - a. Yes: Proceed to #5

- b. No: Other brands of Raster® Cutters often do not cut the hole to the precise size required for Raster® Braille. It is extremely important to use an Accent Raster® Cutter as one of the key elements in the matched set of precision sized Raster® Braille components.
  - i. Some materials require a larger Raster® Cutter and a deeper hole depth for the Raster® Pen to work correctly.
  - ii. Plastic Materials: You should use our standard Raster® Cutter for plastic materials at the recommended depth and the Raster® Pen will work perfectly.
  - iii. Acrylic Materials: Acrylic materials require our special acrylic cutter bit.
  - iv. If you are installing into metal, stainless steel, or any other harder material, you will need to use a different type of cutter set to produce the correct size hole. It is best to run a test sign first before running a complete job with each new material that you use. See “Cutter & Accessories” Flyer on website.

### 5) Are you using Accent Raster® Spheres?

- a. Yes: Are you using Metal or Acrylic Raster® Spheres?
  - i. Acrylic: Acrylic Raster® Spheres are friction-fit into the engraving plastic material. Acrylic Raster® Spheres are lighter than Metal Raster® Spheres. Make sure that you do not use any liquid glue when installing Raster® Spheres. This will cause the Raster® Pen tip to jam and lock up. Always use the adhesive assist method when installing Raster® Spheres in metal materials.
  - ii. Metal: Metal Raster® Spheres are installed by using the “adhesive-assist method.” Metal Raster® Spheres are heavier and can also be used as a cleaning agent for the inside of the pen chamber. Make sure that you do not use any liquid glue when installing Raster® Spheres. This will cause the Raster® Pen tip to jam and lock up. Always use the adhesive assist method when installing Raster® Spheres in metal materials.
- b. No: Raster® Spheres purchased from another company may be “molded” rather than precision machined during manufacture. “Molded” beads can vary greatly in size and may clog the Raster® Pen and even break inside of the loading chamber. Due to this, using products other than Raster® Spheres in the Raster® Pen will void the Pen’s warranty.
  - i. The variation in sphere sizes will also cause problems when trying to insert the spheres into holes. Smaller and larger sphere sizes will not stay inside of the holes properly and cause inconsistent braille heights which cause the sign to not be ADA compliant.
  - ii. Raster® Spheres are precision machined under tight tolerances to ensure that each and every sphere is consistent in size. The Raster® Braille Pen and Braille Cutters have been designed to work in harmony with the Raster® Spheres. If you use any other braille products in combination with the Raster® Braille system, you are bound to experience problems since they were not designed to work together. As long as you use Raster® Braille Cutters, Raster® Spheres, and the Raster® Braille Pen, you should be successful in creating Raster® Braille signs.

### 6) If these technical support topics did not help or if you know that your pen needs repair, contact Accent Signage Systems, Inc. for assistance....



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