

Drilling Lenses Made from Trivex™ Material

T*rivex* lens material is an excellent platform for rimless eyewear. The material is less sensitive to heat during drilling than other lens materials so holes are drilled cleanly with no distortion, melting or fracturing. Lenses made from *Trivex* material do not chip, flake or develop “spider cracks” around the rim of the holes like lenses made from polycarbonate and other lens materials. Due to the durability of *Trivex* material, the lens holes also retain their size and shape over time with normal wear.



Photo courtesy of Hoya Vision Care

Trivex material is also chemical resistant, making it compatible with adhesives often used in the assembly of rimless eyewear. Lenses made from *Trivex* material edge as easily as other plastic lenses and polish to a high luster.

From an eyecare professional’s perspective, all of these features – in combination with the high level of clarity, protection and ultra-light weight of *Trivex* material – complements the “barely there” style of rimless without the hassles often associated with this type of eyewear.

The following drilling tips will help you obtain the maximum benefit from using lenses made from *Trivex* material offer for rimless eyewear.

Keep It Sharp

Whether you are using computerized, mechanized or manual drilling equipment, the first rule of good drilling technique is to use a sharp drill bit. Even though *Trivex* material is less sensitive to heat, dull bits or burrs generate excessive heat around the holes which can burn, melt or distort any lens material. Use a good quality carbide bit if possible although stainless steel works fine as long as it is sharp.

Keep it Cool

Keep drilling temperatures cool by using a low RPM setting on your drill. Remember, you don't need to drill fast when the goal is accuracy and the perfect hole. Another means of keeping drilling cool is to use small pulses (down, up, down, up) of pressure during drilling with non-computerized drills, approximately 0.5mm at a time. When down to the last 0.25mm, it is a good practice to turn the lens over and drill the last 0.25mm from the opposite side. This helps prevent chipping the hole on the backside. It is also a good idea to remove the lens dust and drilling particles in between the pulsing by simply blowing it off the lens.

Protect It

Protect lens surfaces by placing lens protector tape or surface protector dots (small versions of surface protector tape) onto the lens surfaces prior to drilling. The point of the drill is caught by the tape just long enough to begin drilling the lens instead of slipping sideways on the slick lens surface. This helps prevent the drill bit from "skipping" because the slick lens surface is covered with the soft vinyl adhesive tape. It also helps when the lenses are clamped into place.

Double Check

Double check the measurements before you drill, especially on equipment that is not automated. If the mounting came with an adhesive drilling guide, place it on the lens. These stickers are generally well designed and increase the chance that lens holes will be placed where the mounting designer intended. Once you have determined the exact location of the holes with the guide, double check it against the mounting. Be sure to use a permanent marker with an ultra fine point to get a precise location.



Photo courtesy of Hoya Vision Care

Drill Perpendicular

Drilling holes perpendicular to the lens' base curve is the proper technique for most rimless eyewear. Some drills come with a tilting stage or a tilting drill head. Practice using it. If the drill doesn't have this feature, the angle can be changed manually. Try adding a couple of 3M LEAP pads onto the drilling stage in order to raise the lens on one side and get it perpendicular to the drill bit. Using double-sided tape and attaching a rubber faucet washer to the drill's stage directly below the drill bit may also work. Both of these options lift the lens' edge up off of the stage for a reasonably good drilling angle. The steeper the lens' base curve, the higher the lens edge will need to be.



Photo courtesy of Hoya Vision Care

Finish the Rim

Even though lenses made from *Trivex* material drill without flakes or chips around the holes, the lenses will have a more finished look if you bevel the front and back rims of the holes with a chamfering tool. It only takes a few seconds but it adds a nice clean look to the lenses.

Comfortable, Bright & Magnified

Make sure you have a comfortable, well lit, shadow-free area for the drilling station, and don't forget to use safety glasses. Consider adding a little extra plus to the lenses of the safety glasses for a slight magnification that will help with fine-tuning the detail work.