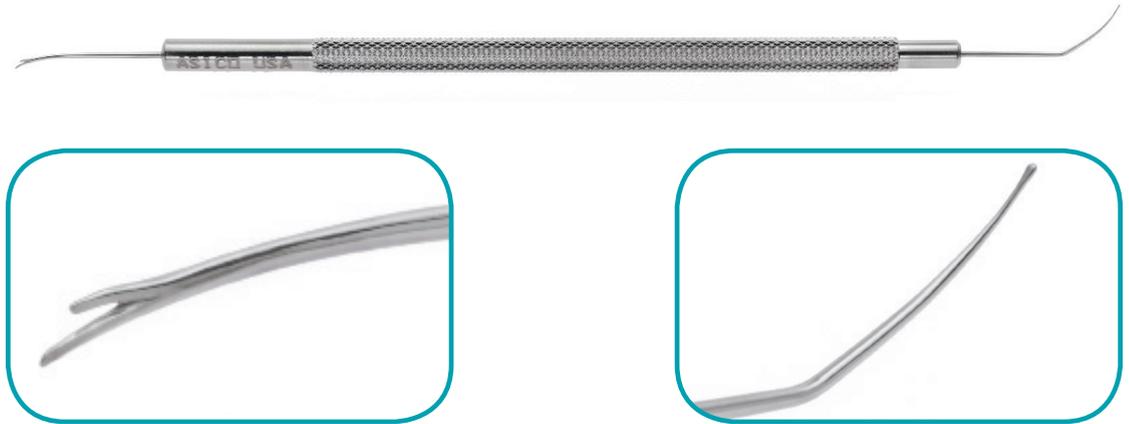




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AE-2336: Tan DMEK Stripper

The Tan DMEK Stripper is an instrument designed to facilitate DMEK donor dissection with minimal risk of radial Descemet's membrane (DM) tearing. The instrument is double ended. The double tipped end is designed for cutting the peripheral margins of DM circumferentially without radial tears, while the curved single tipped end is designed for lamellar separation of DM from the stroma.

DMEK donor stripping technique with the Tan DMEK Stripper

The donor cornea is first positioned on a corneal trephination block, endothelial surface up. The longer bottom tip of the double-ended tip is first used to pierce DM at one aspect of the peripheral margin of DM. Care should be taken to ensure that the blunt tip does not engage the corneal stroma, but just breaks through DM. This blunt tip is then carefully inserted through the small opening made, between DM and the underlying stroma (and oriented parallel to the DM surface), and the instrument is then circumferentially advanced along the peripheral margin of the donor. The DM is thus sandwiched between the upper and lower tips of the dissector, and the sharper inner angulation between the top and bottom blunt tips cuts DM cleanly without rips as the instrument is advanced around. It is often possible to hold the instrument steady and instead rotate the cornea around the instrument tip using conjunctival forceps to move the cornea for a smoother dissection. To aid in visualization of DM, trypan blue can be used repeatedly along the cut edge of DM to identify the cut margins. When the instrument has dissected the DM all the way around, the dissector may be withdrawn.

Next, the curved single ended rounded tip of the stripper is used to carefully separate DM from underlying stroma. Two techniques may be used to fully detach DM:

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Technique 1: Complete DM separation with the Stripper

The curved rounded single tip of the stripper is used to carefully separate DM from underlying stroma, starting at the DM periphery, and then slowly working to the corneal centre, all the way around until DM is fully separated. Care should be taken to maintain the dissector tip in the same parallel orientation as the curved DM layer, with gentle forwards or side to side movement of the tip to gently separate DM away from the stroma. Trypan blue can again be used periodically to identify areas which have already been dissected. During the entire procedure, minimal BSS should be used, so as to ensure that the detached areas of DM do not scroll up and impede lamellar dissection. Care should be taken in any isolated areas of DM which stain heavily with trypan blue – these areas denote possible pre-existing endothelial cell and DM layer damage, and tend to be more adherent to DM, and are then more likely to tear.

Technique 2: Initial DM separation with the Stripper, DM trephination, and peeling away DM

The curved rounded single tip of the stripper is used to carefully separate DM from underlying stroma, starting at the DM periphery, and working inwards to around 3-4mm inwards from the limbal margin, and working all the way round. Next, DM is very lightly trephined to the required diameter (e.g. 8.0-8.5mm), ensuring that DM is cut all round, but within minimal stromal incursion with the trephine. The outer annular strip of DM is discarded. Two Kelmann Macpherson forceps are then used to carefully grasp the edges of the DM, and used to peel away DM from the central stroma. This may be achieved in 2 separate stages if need be. The DM is then carefully laid back onto the stroma in the correct anatomical orientation, ready for insertion.