Hanna Trephine System

THE HANNA CORNEAL TREPHINE SYSTEM
Select and insert the appropriate size disposable blade in the trephine.

Incision depth: A nonperforating incision may be made by presetting the blade descent shallowly and not compressing the eye during trephination. Visualization of the blade as it cut the tissue. The depth of cut can be set in 50 micron increments from 0 to 1.2 mm.

A perforating incision is obtained by setting the blade descent deeper, usually 0.8 mm for keratoconus and 1 - 1.2 mm in the case of Bullous Keratopathy without any risk of damaging inner structures. In the case of Anterior Synechiae Comma Here, a nonperforating incision is mandatory.

The center of the intended trephination is marked with a methylene blue surgical pen. The trephine is brought over the cornea, the external rectus is grasped, and the eye is moved to position methylene blue mark within the central hole of the obturator.

The trephine is then pressed slightly onto the surface of the eye and suction is applied for fixation. The incision is made by rotating the knob in clockwise direction. When Descemet’s membrane is cut, a small egress of aqueous humor is noted.

The suction is released and the trephine removed.

Cleaning and maintenance: The Hanna Trephine requires no special handling. It can be autoclaved, gassed or soak sterilized.

Pre-Mounted & Single Use Blade

Disposable blade of diameters from 7 to 9 mm with 0.25 mm steps, and 9 to 10.5 mm with 0.5 mm steps.

Controlled trephination depth

Ability to select the depth of the incision and avoidance of damage to inner structures of the eye during trephination. Visualization of the blade as it cut the tissue. The depth of cut can be set in 50 micron increments from 0 to 1.2 mm.

Performing the

Accurate centering

Accurate centering of the trephine with a fenestrated inner obturator. This will support the cornea during trephination.

8 suction holes

The suction at the limbus secures the Trephine to the eye during trephination.
• Center the donor corneoscleral rim epithelial side down on the teflon well.
• Mount the disposable blade on the end of the cylindrical blade holder.
• Screw the cylindrical guide onto the base unit.
• The surgeon or assistant applies suction on the syringe. Leave out this will seal the cornea to the teflon well.
• Lower the cylindrical blade holder into the cylindrical guide so the blade rests on the endothelial side of the cornea.
• Push down the blade holder briskly with fingertip pressure only to cut the donor button. Maintain suction to keep the button in place as the cylindrical blade holder and cylindrical guide are removed.
• Cleaning and maintenance: The punch block requires no special handling. It can be autoclaved, gassed or soak sterilized.
Donor Trephination from epithelial Side

HANNA ARTIFICIAL CHAMBER

A vertical and uniformly shaped trephination

The uniform support of the entire cornea on both sides of the trephine blade prevents corneal vaulting, and stabilizes the cornea during trephination.

Trephine the donor button from epithelial

The use of the Artificial Chamber and the Hanna Trephine allows the surgeon to cut the donor tissue in conditions similar to the recipient, thus reducing shape disparity.

Water-tight and pressure control

As all donor tissues can have different sizes, the Artificial Chamber has been specially designed to give the optimal pressure even for small diameter donor tissues.

Cutting the donor button

- Insert the appropriate size disposable blade in the trephine. In some cases a 0.25 mm oversizing of the donor button may be selected.
- Select 1.2 mm (the maximum) depth setting to obtain a perforating cut.
- Place viscoelastic on corneal endothelium of the donor filling up the concavity. The cornea is then centered over the Artificial Chamber endothelial side down.
- Seal the Artificial Chamber and adjust the pressure by injecting corneal storage medium or balanced saline solution.
- Couple the Hanna Trephine to the Artificial Chamber over the donor cornea. The trephine blade is rotated by turning the knob until corneal perforation is observed.
- Cleaning and maintenance: The Artificial Chamber requires no special handling. It can be autoclaved, gassed or soak sterilized.
Minimizing postoperative astigmatism is important for visual rehabilitation after penetrating keratoplasty. Surgeons agree that a uniform, symmetrical trephination in both donor and host corneas minimizes postoperative astigmatism after sutures are removed.

The Hanna trephine attaches firmly to the eye through suction applied to the limbal conjunctiva. Uniform support over the whole cornea during trephination prevents corneal vaulting.

From a fully retracted position the blade rotates descending to a preset depth, after which the blade rotates, without further descent, cutting the displaced tissue and creating a uniform incision.

The Hanna trephine and the new Artificial Chamber replace with allow the surgeon to trephine both the recipient and donor cornea from the epithelial side, thus reducing shape disparity and postoperative astigmatism.
Garth A. WILBANKS, Sandra COHEN, Mary Chipman, Daid S. ROOTMAN,
Clinical outcomes following penetrating keratoplasty using the Baron-Hess and Hanna Corneal trephination systems, Cornea 15(6) 589-598, 1996

CUTARELLI P.E., SMITH JM, CAVANAUGH TB,
Refractive results of triple procedure with standardized keratoplasty technique and Hanna trephine, The Castroviejo Cornea Society, 10/26/1996

PFLUGFELDER, S.C., T.J. & AL,

WARING GO, HANNA KD;
The Hanna suction punch block and trephine system for penetrating keratoplasty, Arch.