



Johnson & Johnson VISION

Evolution of J&J/AMO Cataract Surgery Systems

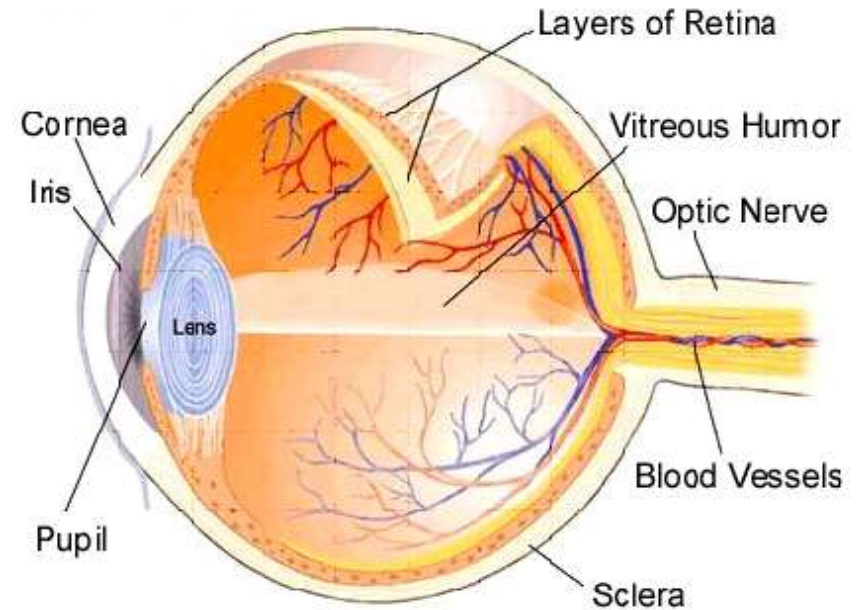
Jim Staggs

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Connected by Sight.™

Cataract Surgery (Phaco Emulsification)

- Cataracts are a condition that typically occurs as a function of aging.
- The cause of this is that the lens in the eye starts to become opaque.
- This is a progressive condition that usually is noticeable in people older than 70. However it can occur in younger patients.
- Occasionally juvenile cataracts can occur with patients younger than 20 years.
- It is also possible to get a cataract through a traumatic event.



Handpieces used in Surgery

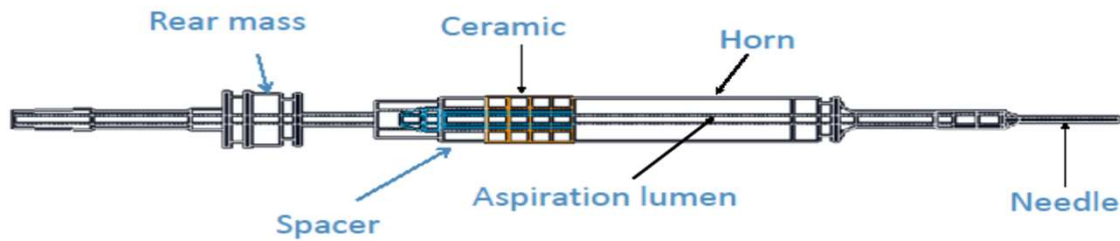
- Phaco and Irrigation / Aspiration Handpieces



Phaco Handpiece internal components

Phacoemulsification Handpiece

Internal Parts of a Handpiece



Allergan/AMO Phacoemulsification Systems

- Prestige was designed by Humphrey/Zeiss funded by Allergan/AMO (1992)
- Diplomax was designed by OMS which was acquired by AMO (1996)



Critical Allergan/AMO Patents Associated with Sovereign Systems

- PRESSURE TRANSDUCER MAGNETICALLY-COUPLED INTERFACE COMPLEMENTING MINIMAL DIAPHRAGM MOVEMENT DURING OPERATION #5,392,653 (Zanger)

Magnetically Coupled Vacuum Sensor directly to fluid (Prestige)

- PHACOEMULSIFICATION SYSTEM HAVING ULTRASONIC POWER CONTROLLED BY ASPIRATION VACUUM SENSOR #5700240 (Barwick)

Occlusion Mode allows for mode control as a function of vacuum level

- Multiple Frequency Unambiguous Phase Detector for Phacoemulsification System # 5852794 (Staggs)

Allow quantitative Phase Measurement of Ultrasound to use for control system (Sovereign)

- Rapid Pulse Phaco Power for Burn Free Surgery (Whitestar) #6629948 (Staggs, Kadz, Rock)

Whitestar that creates closed loop control of hyper pulse intervals (Sovereign)

AMO Designed Systems

Both Designs used Membrane Switches adjacent to LED Panel Displays

Sovereign design (1995 – 1999)



Sovereign Compact Designed (2001-2003)



Host Computer Technology

Sovereign Ziatech Card Cage



Sovereign Compact Versalogic VSB-6



AMO Signature Phacoemulsification System

- System was launched in 2007
- Non Isolated type B Phaco Driver
- Single Board Computer and Resistive Touch Screen
- Major upgrade was released in 2011 including wireless footpedal and Dual Pump Cassette
- Advanced Board Computer technology

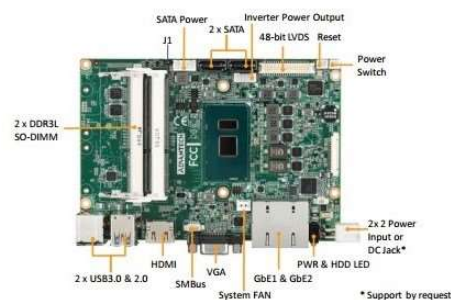


Figure 2.1 MIO-5272 Connector Locations (Top Side)

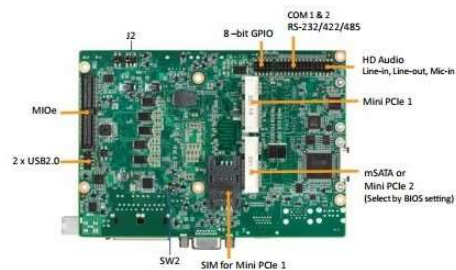


Figure 2.2 MIO-5272 Connector Locations (Bottom Side)



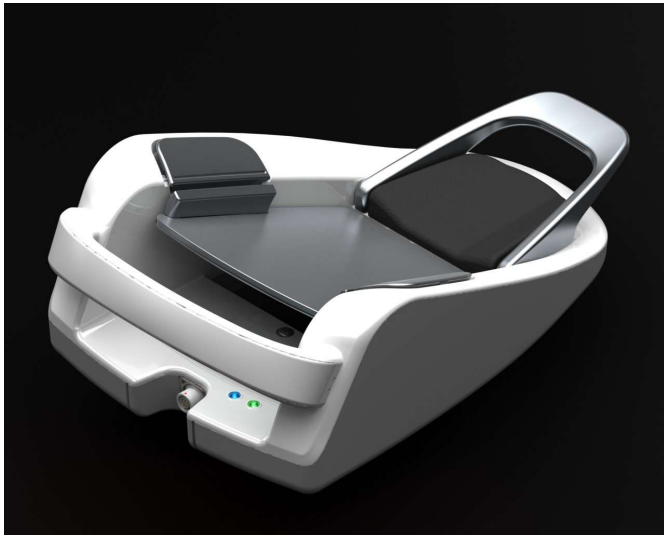
Compact Intuitiv

- System was launched in 2014
- Isolated type BF Phaco Driver
- Resistive Touch Screen
- Wired footpedal
- Peristaltic Pump only
- Improved Cassette and Tubing
- Pneumatic Vitrectomy



AMO Signature Pro Phacoemulsification System

- System was launched in 2015
- Isolated type BF Phaco Driver
- Resistive Touch Screen Interface
- New Wireless Bluetooth BLE Single Linear footpedal
- Dual Pump System with Improved Cassette and Tubing



J&J Veritas Phaco System

- **System was launched in 2021**
- **Isolated type BF Phaco Driver**
- **Capacitive Touch Screen Interface**
- **Ergonomic Wireless BLE Single Linear footpedal**
- **Dual Pump System with Improved Cassette and Dual Lumen Tubing**
- **Pressurized Infusion**



Life in the OR

