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INTRODUCTION

About this Manual

About Phacoemulsification

COMPACT INTUITIV System

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Warnings

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About this Manual

This manual includes information about the design of the COMPACT INTUITIV System for anterior segment (phacoemulsification) surgical procedures.

This manual includes information about optional system enhancements. Your Johnson & Johnson Surgical Vision, Inc. representative can confirm the availability of these features for your system configuration in your area.

About Phacoemulsification

Over forty years ago, Doctor Charles Kelman conceived and developed phacoemulsification, a method of cataract removal by use of ultrasonic emulsification with aspiration of the cataract lens through a small incision. Phacoemulsification is advantageous for both patient and surgeon for the following reasons:

- Greater intraoperative control.
- The smaller incision requires fewer or no sutures, poses less risk of infection and induced astigmatism, and gives better long-term and short-term predictability of vision.
- Patients are able to resume normal activity much sooner and with fewer restrictions than with traditional cataract extraction surgeries.

AMO supports phacoemulsification with sophisticated instrumentation that optimizes the benefits of this surgical procedure.

Indications for Use

The COMPACT INTUITIV System is an AC-powered device with a fragmenting needle for cataract surgery to disrupt a cataract with ultrasound and extract the cataract.

COMPACT INTUITIV System

The COMPACT INTUITIV System is a modular ophthalmic micro surgical system that facilitates anterior segment (cataract) surgery. The modular design allows the users to configure the system to meet their surgical requirements.

The COMPACT INTUITIV System contains a number of features based on extensive research and clinical trials with highly trained and noted ophthalmologists with experience as phacoemulsification surgeons.

WHITESTAR Technology

The WHITESTAR Technology was the first to deliver finely modulated pulses of energy, interrupted by extremely brief cooling periods. This allows the system to achieve full ultrasound cutting efficiency and magnetic followability, while introducing less energy into the eye. Minimized or eliminated ultrasonic time reduces the risk of thermal damage.

Pulse Shaping

Pulse Shaping delivers finely modulated, shaped pulses of energy, interrupted by extremely brief cooling periods. You can adjust the percentage of Low and High “kick” and the power of the “kick”. Pulse Shaping allows the COMPACT INTUITIV System to achieve full ultrasound cutting efficiency and excellent followability while putting less energy into the eye.
Occlusion Mode Phaco

You can use the Occlusion Mode Phaco to regulate the vacuum rise time that follows the occlusion of the phaco tip, without limiting the choice of aspiration rate through an unoccluded needle. In order to independently control the aspiration rate and the vacuum rise time, it is possible to have a different aspiration rate for an occluded needle and an unoccluded needle.

You can use Occlusion Mode Phaco to regulate ultrasound power modulation. You can program the power modulation of the phaco handpiece (continuous, pulse, burst, etc.) to automatically change when the phaco tip changes from an unoccluded condition to an occluded condition.

Chamber Stabilization Environment (CASE)

CASE is an intelligent vacuum monitoring system that regulates the maximum allowable vacuum used following the occlusion of the phaco tip. When the phaco tip becomes occluded, the vacuum rises. Clearing of the occlusion while the vacuum is at a high-level can lead to a post occlusion surge. When CASE is on, the system monitors the actual vacuum levels. When the vacuum exceeds a specific threshold for a specified duration, the system automatically adjusts the maximum allowable vacuum setting to a lower predefined CASE maximum vacuum level. When the occlusion clears, the system automatically restores the settings to the original programmed maximum vacuum setting. This function makes it possible to have a different maximum vacuum setting when the needle occludes than when the needle is unoccluded.

CASE One Touch

The CASE One Touch button simplifies the programming of the CASE function and allows you to easily define the basic CASE settings once. You can adjust the CASE function with the CASE One Touch settings on the surgical screens. When you use CASE One Touch, the CASE functionality changes to provide enhanced control or improved efficiency for any combination of cataract density, surgical technique or personal preferences.

Advanced Fluidics System

One of the most advanced features of the COMPACT INTUITIV System is the fluids system that allows for intraoperative intraocular control. An integral part of the advanced fluidics is resident in the proprietary technology of the Single-Use packs. The closed and isolated fluidics system provides the maximum safety and minimum biohazard risk.

Accessories

Phacoemulsification Ultrasonic Handpiece

The design of the phaco handpiece has a straight-through aspiration channel for more efficient removal of nuclear fragments, to minimize clogging and to facilitate cleaning. The handpiece is lightweight, slim, and well-balanced, making it comfortable to use and easy to control.
ELLIPS FX Handpiece

The ELLIPS FX phaco handpiece is available for use with the COMPACT INTUITIV System. The ELLIPS FX handpiece provides both longitudinal and transversal movement. You can use the handpiece with a straight tip or a curved tip.

Foot Pedal

The operating modes (Diathermy, I/A, Phaco, and Vitrectomy) are controlled by the foot pedal. You can save the degree of travel for each foot pedal position for each surgeon/procedure.

The foot pedal design offers control through the use of increased linearity with the foot pedal movement. The design provides uniform pressure throughout the foot pedal movement, easing foot and leg fatigue. You can select the degrees of movement for each foot pedal position. You can save the foot pedal pitch settings for each surgeon. Programmable switches can activate reflux, which gives an immediate response. The system does not support the Sovereign Compact closed-toe foot pedal.

Wireless Remote Control

You can access the surgical modes and adjust the surgical settings with the use of the wireless remote control keypad. The back light supports low light operating room conditions.

COMPACT INTUITIV System Cart

The cart’s solid wheel base and two locking wheels make the cart stable and smooth rolling. An open design minimizes weight. A Mayo tray with a baling ring accommodates either an instrument tray that can be put in an autoclave or a solid tray. The Mayo tray provides easy access for the remote control under the sterile cover. The open bin and the foot pedal platform are available for storage.

IV Pole

The automated IV pole allows adjustment of the bottle height through each procedural phase. Use the up and down arrows on the screen or the remote control to raise and lower the balanced salt solution bottle; this maintains the sterility of the operating field. A separate up/down switch allows access at the rear of the system. You can remove the pole from the cart for transport.

COMPACT INTUITIV System Console

The COMPACT INTUITIV System screen is easy to read and easy to operate. You can see at a glance the exact status of the machine. The LCD display gives you visual indication of modes, settings, and system status. Event messages indicate improper connections. You can access all handpiece connections from the front for easy setup.

The design of the graphical user interface (GUI) gives you visual indication of the status for the control systems at all times. When you select a mode (DIA, PHACO, IA, or VIT), you see current settings on the screen. As you make adjustments to the settings, the screen shows the changes.
Each surgical mode and submode has its own distinct screen:

- Diathermy
- Phaco
- Irrigation/Aspiration
- Vitrectomy

**Figure 1.1 – Phaco Screen**

Additionally, there are screens or sub-screens for:

- Prime/Tune
- End Case
- Program Settings
- Surgeon Settings
- System Setup

**Prime/Tune**

Before the start of each surgical case, the system requires that you run prime or prime/tune. The prime mode incorporates the function of clearing the tubing of air. The prime mode then fills the tubing and completes the fluid aspiration check and the vacuum check. The tune mode incorporates an ultrasonic power calibration check and safety check for the attached phaco handpiece. The prime/tune mode allows the system to prime and then tune the handpiece.
Continuous Irrigation

Continuous Irrigation is immediately available by way of the touch screen. Surgeon control of continuous irrigation with the foot pedal is an available setting for the foot pedal. You can use continuous irrigation to fill cups prior to prime/tune. You can use the cup fill feature in place of continuous irrigation when you fill a cup. The cup fill feature is only available from the prime/tune screen. (See “Prime/Tune” on page 6-2, for detailed information.)

Programmable Operating Parameters

The COMPACT INTUITIV System is programmable through the GUI. The surgeon may preselect their desired settings for each portion of the surgical procedure. The instrument program memory can store 30 surgeon names, plus the AMO Default Surgeon settings. Each surgeon can setup 8 unique programs, plus the AMO Default settings program. This allows different users to preset their preferences, or an individual user to preselect setups for different procedures.

Multiple Mode Programming (MMP)

Multiple submode memories are available within the COMPACT INTUITIV System operating modes. The MMP allows users to preset their parameters for specific techniques such as phaco chop or viscoelastic removal.

COMPACT INTUITIV Operating Modes

The design of the system provides all the operating modes and surgical capabilities that the anterior segment surgeon or the cataract surgeon requires. These capabilities include:

Diathermy (DIA)

Most surgeons use diathermy to coagulate blood vessels during the procedure and some surgeons use diathermy to close the conjunctiva at the end of the procedure. An isolated output frequency allows non-contact tissue coagulation, eliminating adhesion and traction. Also, the depth of penetration of the energy field is less than that of higher frequency units, minimizing tissue shrinkage or charring. The gentleness of the diathermy mode allows the surgeon to stop bleeding within the incision with only minimal scleral shrinkage. The surgeon can stop bleeding from a 10-0 suture tract without melting the suture.

Phacoemulsification (Phaco)

The surgeon uses the Phacoemulsification mode to break up (emulsify) the nucleus of the lens. The surgeon then aspirates the nucleus of the lens from the eye through a small incision. The continuous auto-tuning circuitry maximizes the emulsification efficiency for each lens density, even varying densities within the same lens. The system displays Phaco time in minutes and seconds. Convenient selection of linear or panel-preset phaco power, in a variety of power delivery options (pulsed, burst, etc.), gives the surgeon increased precision and control.
Irrigation/Aspiration (I/A)

The Irrigation and Aspiration mode allows for controlled aspiration of cortical material from the eye, while maintaining intraocular stability by replacing the aspirated material with the irrigation solution. A peristaltic pump provides a predictable and stable aspiration rate. You can achieve complete control with “Aspiration” and “Vacuum”.

Note: The vacuum units are available in either mmHg or kPa. To set the vacuum units go to System Setup and select Vacuum Units.

Irrigation is gravity-fed. You can regulate the gravity-fed irrigation pressure by adjusting the height of the irrigation solution bottle. This mode gives you flexible control of each case with the independently adjustable vacuum level settings and flow rate settings. The adjustable volume tone indicates the vacuum level.

Vitrectomy (VIT)

You use Vitrectomy mode to remove vitreous from the anterior chamber of the eye during:

- a secondary IOL (intraocular lens) implant procedure
- following vitreous loss associated with trauma
- vitreous loss during primary cataract surgery

If there is vitreous loss during cataract surgery, the vitrectomy capability can be ready and available in seconds.

Safety Precautions

Once you have set the system up and you have verified that all the functions are operating properly, you are almost ready to use your system. Read the following safety precautions and warnings carefully before you use the system in surgery.

1. Do not use extension cords with your machine.
2. Do not overload your AC electrical outlet.
3. If there is damage to the cord or the plug, do not use the instrument. A damaged cable can cause an electric shock to the user or a fire hazard to the system. Call AMO customer service to order a new cord.
4. Do not block the openings; as heat build-up can cause system failures which can result in a fire hazard. The instrument has ventilation openings at the rear of the console to allow ambient air intake and the release of heat generated during operation.
5. Do not block the air fans on the bottom of the console; as heat build-up can cause system failures which can result in a fire hazard.
6. Do not try to roll the system cart on carpets or over objects on the floor such as cables and power cords.
7. Take care not to trip over the power cords and the foot pedal cords.
8. Do not place the instrument on uneven or sloped surfaces.
9. Only use disposables, accessories, or other surgical instruments designed for this system. Use only parts recommended by AMO to achieve the optimum performance and the safety of the system.
10. Do not operate the system in a condensing environment. Take care to protect the instrument from fluid sprays or fluid buildup.
11. Do not exceed maximum weight of 25 pounds (11.25 Kg) on the Programmable IV Pole bottle holder.
12. Do not use more than one IV pole extender with the IV pole.
13. If there is no IV pole attached to the system, hang the irrigation fluid container at least 77 cm from the patient’s eye.
14. To protect the patient from contaminated fluids or handpieces, use only:
   - sterile tubing sets
   - sterile irrigation fluid
   - sterile handpieces
15. Use caution when handling handpieces with sharp edges or pointed tips.
16. Wrap the excess power cord neatly around the cord wrap on the back of the IV pole or cart.
17. Always replace the Single-Use Pack and irrigation solution bottle between surgical cases.

**Changing Irrigation**

Use extreme caution when you lower or raise the irrigation solution bottle to decrease fluid flow or increase fluid flow, and fluid pressure. If you lower the bottle too much it can cause the anterior chamber to collapse or to become too shallow; take care to avoid abrasion of tissues during phacoemulsification. If you raise the bottle too high it can cause the anterior chamber to deepen.

**Note:** Use a new bottle of irrigation solution at the start of each case.

**Phacoemulsification Without Adequate Irrigation**

Operating phacoemulsification without an adequate irrigation flow can result in an elevated temperature of the tip and subsequent damage to the eye tissue or could cause the chamber to collapse. Confirm that there is irrigation flow before you initiate phacoemulsification. A tight wound or the angle of the needle next to the wound can also constrict the irrigation flow. Pinching of the coaxial irrigation sleeve assembly on the needle of the phaco handpiece causes the constriction.

**Power Failure During Surgery**

If there is a loss of power during a procedure, you need to:
- Withdraw the handpiece from the eye; and
- Release the foot pedal to position 0.

**When power is restored:**
- Select Prime/Tune to reprime the fluids and tune the phaco handpiece. Use Bypass to reduce the length of prime time.
- Select the mode that was in use when the system lost power (Phaco, IA, Vitrectomy, or Diathermy).
Connecting Handpieces
It is very important that the electrical connectors on the handpieces are completely dry prior to connecting them to the system receptacles. You may receive a “Phaco Handpiece Error” message if the connector is wet.

Handling the Phaco Handpiece
The phaco handpiece is a very delicate instrument and you must handle the handpiece with EXTREME care. If you drop the handpiece or the handpiece receives any other significant impact, the handpiece might not work properly. The ultrasonic titanium phaco tip must never touch any solid material while in use.

Always clear the handpiece of fluid immediately following surgery.
See cleaning instructions in Chapter 7 "Care and Cleaning".

Handpieces can be extremely hot immediately after sterilization. Use care and caution when handling.

Phaco and Vitrectomy Operation
Do not activate the Phaco and Vitrectomy handpieces with the tips in air, as this reduces the useful life of the handpiece and the cutter. When introducing power to the Phaco or Vitrectomy handpieces, the tips should be in one of the following:

- a test chamber filled with irrigating solution,
- a container of irrigating solution, or
- the patient’s eye.

Vitrectomy
Failure to properly attach the tubing to the appropriate vacuum source or pressure source affects the vitrectomy handpiece operation. Be sure to read the handpiece package insert for correct assembly procedures and connection procedures.

Diathermy
When you select the Diathermy mode, you hear a tone or a voice. Also, you hear an audible tone when you apply diathermy power.

You must check the diathermy cable periodically for damage. If the cable shows signs of damage, replace the cable immediately with the same type of cable. Use of other types of cables can affect the diathermy performance.

During surgery, the diathermy output power should be as low as possible for the intended purpose. AMO recommends 30% setting to start.

The patient should not come into contact with ungrounded metal parts when using diathermy.

Position the diathermy cable in such a way that the cable avoids contact with the patient or other leads.

For proper operation of the diathermy, replace the handpiece with the same type.

Power IV Pole
Do not exceed maximum weight of 25 pounds (11.25 Kg) on the IV pole bottle holder.
Foot Pedal
Never handle the foot pedal by its power cord.
Do not place the foot pedal on a wet surface.

Wireless Remote Control Battery Management System
This device complies with Part 15.19 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions:

• This device may not cause harmful interference.
• This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by AMO can void the user's authority to operate the equipment. (FCC Part 15.21)

Note: This equipment complies with the limits for a Class A digital device, pursuant to Part 15.105 of the FCC Rules. These limits provide reasonable protection against harmful interference when the equipment is operating in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user has to correct the interference at his own expense.

Warnings

WARNING: All personnel should read and understand the instructions in this manual before they use the system. Failure to do so may result in the improper operation of the system. Only a trained and licensed physician is to use this device.

WARNING: The system comes equipped with a 3-prong power plug which you must plug into an outlet with a ground receptacle. If the plug does not fit the outlet, contact an electrician. DO NOT modify or remove the ground pin.

WARNING: The surgical staff must monitor the irrigation solution bottle height and the fluid level at all times. A low bottle or empty bottle affects the fluid balance and the intraocular pressure (IOP) while aspirating. Low bottle height or low or empty bottle fluid level can result in:

• Inadvertent chamber shallowing or collapse
• Aspiration or abrasion of the iris or other eye tissue
• An ultrasonic wound heating commonly called wound burn (extreme case)
WARNING: DO NOT attempt to use the system if it fails to perform properly as stated in this manual.

WARNING: DO NOT use the system in the presence of any of the following as a fire can result:
- flammable anesthetics
- other flammable gases
- flammable fluids
- flammable objects
- oxidizing agents

WARNING: Make sure that the patient does not have a cardiac pacemaker as this unit might interfere with any cardiac pacemaker; therefore obtain qualified advice prior to such use.

WARNING: The patient must not come into contact with grounded metal parts or metal parts that have appreciable capacitance to ground. AMO recommends the use of an antistatic mat for this purpose.

WARNING: Use proper handling and disposal methods for biohazards when you dispose of the Single-Use Pack, Mayo stand cover, and monitor cover.

WARNING: Follow good operating room procedures to prevent injury or contamination.

WARNING: Use caution when you extend, retract, or swivel the Mayo stand articulating arm. Stay clear of the hinged hardware.

WARNING: Make sure that you unlock the wheels before you move the cart. Make sure that the wheels move freely when moving the cart.
WARNING: Place monitoring electrodes or other types of equipment as far from those of the COMPACT INTUITIV System as possible. AMO recommends high current limiting devices for the protection of such systems. Do not use needle monitoring electrodes.

WARNING: Keep the diathermy cord away from the patient and other handpieces or leads (for example, monitoring electrodes). Keep unused ACTIVE ELECTRODES away from the patient.

WARNING: The output power selected should be as low as possible for the intended purpose.

WARNING: This unit complies with all Electromagnetic Interference (EMI) standards and requirements. It is possible that interference provided by the operation of the HIGH FREQUENCY (HF) SURGICAL EQUIPMENT can adversely influence the operation of other electronic equipment.

WARNING: Do not have skin-to-skin contact on the patient. For example, between the arms and the torso. Insert dry gauze to avoid contact, as appropriate.

Note: The unit does not contain any neutral electrode.

Note: The diathermy output is bipolar.

Note: AMO recommends that you check the condition of all interconnecting and handpiece cables on a regular basis.

WARNING: Risk of burns and fire. Do not use near conductive materials such as metal bed parts, inner spring mattresses, and the like. Renew electrode cables on evidence of deterioration.

WARNING: Hazardous electrical output. This equipment is for use only by qualified personnel.
**WARNING:** Disconnect the power before you service the equipment.

**WARNING:** Remove the power cord from the power outlet when the equipment is not in use.

**WARNING:** Do not obstruct the power outlet so you can readily remove the power cord.

**WARNING:** Not recommended for use in condensing environment. If exposed to condensing environment, allow system to equilibrate to typical operating room conditions prior to use.

**WARNING:** You do not need to use a NEUTRAL ELECTRODE with this HIGH FREQUENCY (HF) SURGICAL EQUIPMENT.

**WARNING:** Failure of the HIGH FREQUENCY (HF) SURGICAL EQUIPMENT could result in an unintended increase of output power.

**WARNING:** Sterility assurance is the responsibility of the user. You must sterilize all non-sterile accessories prior to use.

**WARNING:** Prior to using any invasive portions of the handpiece assembly, examine under the microscope for any obvious damage, oxidation, or the presence of foreign material. You must note any questionable characteristics; use a backup handpiece for surgery. Use of contaminated or damaged system accessories can cause patient injury.
**WARNING:** Do not use non-AMO approved products with the COMPACT INTUITIV System, as this can affect overall system performance. AMO cannot be responsible for system surgical performance if you use these products in surgery.

## Symbol Definitions

The following symbols appear on the COMPACT INTUITIV System:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Power Symbol ON" /></td>
<td>This symbol on the power switch indicates Power is ON.</td>
</tr>
<tr>
<td><img src="image2" alt="Power Symbol OFF" /></td>
<td>This symbol on the power switch indicates Power is OFF.</td>
</tr>
<tr>
<td><img src="image3" alt="Warning Symbol" /></td>
<td>Indicates WARNING; a potentially hazardous situation which, if not avoided, could result in serious injury.</td>
</tr>
<tr>
<td><img src="image4" alt="Operator Manual Symbol" /></td>
<td>Indicates that there are important operating and maintenance instructions included in the Operator’s Manual.</td>
</tr>
<tr>
<td><img src="image5" alt="Manufacturer Symbol" /></td>
<td>Indicates manufacturer of the COMPACT INTUITIV System.</td>
</tr>
<tr>
<td><img src="image6" alt="High Voltage Symbol" /></td>
<td>Indicates the presence of uninsulated high voltage inside the instrument. Risk of electric shock. Do not remove the instrument cover.</td>
</tr>
<tr>
<td><img src="image7" alt="Fuse Symbol" /></td>
<td>Indicates fuse.</td>
</tr>
<tr>
<td><img src="image8" alt="Single Phase Symbol" /></td>
<td>Single phase alternating current.</td>
</tr>
<tr>
<td>Symbol</td>
<td>Definition</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td><img src="image1" alt="Symbol" /></td>
<td>Patient applied part is isolated from earth ground.</td>
</tr>
<tr>
<td><img src="image2" alt="Symbol" /></td>
<td>Patient applied part is grounded OR no direct electrical energy is involved.</td>
</tr>
<tr>
<td><img src="image3" alt="Symbol" /></td>
<td>Foot Pedal connection.</td>
</tr>
<tr>
<td><img src="image4" alt="Symbol" /></td>
<td>Communications Port</td>
</tr>
<tr>
<td><img src="image5" alt="Symbol" /></td>
<td>Ethernet Port</td>
</tr>
<tr>
<td><img src="image6" alt="Symbol" /></td>
<td>IV Pole Connection</td>
</tr>
<tr>
<td><img src="image7" alt="Symbol" /></td>
<td>Pack Eject</td>
</tr>
<tr>
<td><img src="image8" alt="Symbol" /></td>
<td>Diathermy Forceps Receptacle</td>
</tr>
<tr>
<td><img src="image9" alt="Symbol" /></td>
<td>Phaco Handpiece Receptacle</td>
</tr>
<tr>
<td><img src="image10" alt="Symbol" /></td>
<td>Vitrectomy Cutter Receptacle</td>
</tr>
<tr>
<td><img src="image11" alt="Symbol" /></td>
<td>Potential equalizer used to identify the terminals which, when you connect them together, bring the various parts of the equipment or of a system to the same potential, not necessarily being the earth (ground) potential, e.g. for local bonding.</td>
</tr>
<tr>
<td><img src="image12" alt="Symbol" /></td>
<td>IPX8 is the International Protection code that indicates that the device is protected against the effects of continuous immersion in water.</td>
</tr>
</tbody>
</table>
### Symbol Table

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IPX4</strong></td>
<td>IPX4 is the International Protection code that indicates that the device is protected against splashing water sprayed at all angles.</td>
</tr>
<tr>
<td><strong>IPX6</strong></td>
<td>IPX6 is the International Protection code that indicates that the device is protected against powerful water jets.</td>
</tr>
<tr>
<td><img src="image" alt="CE mark" /></td>
<td>Indicates compliance with the Medical Device Directive</td>
</tr>
<tr>
<td><img src="image" alt="EC REP" /></td>
<td>Indicates the authorized European Union representative.</td>
</tr>
<tr>
<td><img src="image" alt="ETL" /></td>
<td>Indicates product listed with Intertek Testing Services</td>
</tr>
</tbody>
</table>
| ![USB](image) | Universal Serial Bus (USB) port  
**Note:** Use only AMO recommended USB devices (flash drives). External hard drives are not supported on the COMPACT INTUITIV System. |
| ![FCC](image) | Federal Communications Commission (FCC)  
The FCC regulates interstate and international communications by radio, television, wire, satellite, and cable under the FCC’s jurisdiction. |
<p>| <img src="image" alt="No Open" /> | Mark on shipping container indicating not to open the container except by authorized personnel. |</p>
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="202x409" alt="Symbol" /></td>
<td>Do not reuse</td>
</tr>
<tr>
<td><img src="204x483" alt="Symbol" /></td>
<td>Do not re-sterilize.</td>
</tr>
<tr>
<td><img src="205x650" alt="Symbol" /></td>
<td>Symbol for sterile medical devices processed using Ethylene Oxide (EtO).</td>
</tr>
<tr>
<td><img src="205x279" alt="Symbol" /></td>
<td>Do not use if package is damaged. Do not use if the product sterilization barrier or its packaging is compromised.</td>
</tr>
<tr>
<td><img src="208x240" alt="Symbol" /></td>
<td>Standard Foot Pedal. Shows the current position of the foot pedal as you press the foot pedal and the activated foot switch. The number changes when the position of the foot pedal changes. When you press the icon, the Foot Pedal Configuration screen opens.</td>
</tr>
<tr>
<td><img src="208x110" alt="Symbol" /></td>
<td>Four Button Foot Pedal. Shows the current position of the foot pedal as you press the foot pedal and the activated foot switch. The number changes when the position of the foot pedal changes. When you press icon, the Foot Pedal Configuration screen opens.</td>
</tr>
<tr>
<td><img src="208x678" alt="Symbol" /></td>
<td>Timers. When pressed shows an enlarged version of the timer and allows the resetting of the timers to zero.</td>
</tr>
<tr>
<td><img src="208x622" alt="Symbol" /></td>
<td><strong>WHITESTAR</strong> technology is on.</td>
</tr>
<tr>
<td><img src="208x559" alt="Symbol" /></td>
<td><strong>WHITESTAR</strong> technology is on and pulse shaping is on.</td>
</tr>
<tr>
<td><img src="208x515" alt="Symbol" /></td>
<td><strong>ELLIPS FX</strong> handpiece is connected.</td>
</tr>
<tr>
<td><img src="208x452" alt="Symbol" /></td>
<td>Continuous Irrigation. Used to turn continuous irrigation on or off.</td>
</tr>
<tr>
<td>Symbol</td>
<td>Definition</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td>![Save Icon]</td>
<td>Used to save changes made to settings.</td>
</tr>
<tr>
<td>![Save As Icon]</td>
<td>Save As. Creates a new program with the current settings.</td>
</tr>
<tr>
<td>![Restore Program Icon]</td>
<td>Restore Program after to any modifications. Must be done before you save any changes.</td>
</tr>
<tr>
<td>![Restore Submode Icon]</td>
<td>Restore Submode after to any modifications. Must be done before you save any changes.</td>
</tr>
<tr>
<td>![Keyboard Icon]</td>
<td>Keyboard, when pressed the virtual keyboard shows on the screen.</td>
</tr>
<tr>
<td>![Exit Settings Icon]</td>
<td>Exit Settings without saving any changes.</td>
</tr>
<tr>
<td>![Selected Surgeon Icon]</td>
<td>Indicates the selected surgeon. When selected goes to the Surgeons and Programs screen.</td>
</tr>
<tr>
<td>![Lock Icon]</td>
<td>The program is locked. You cannot save any changes or delete the program.</td>
</tr>
<tr>
<td>![Brightness Icons]</td>
<td>Brightness indicators. The top icon increases the brightness of the screen. The bottom icon decreases the brightness of the screen.</td>
</tr>
<tr>
<td>![Volume Icons]</td>
<td>Volume indicators. The greater the number on the setup screen, the louder the volume.</td>
</tr>
<tr>
<td>![IV Pole Icon]</td>
<td>IV Pole</td>
</tr>
</tbody>
</table>
## System Setup

<table>
<thead>
<tr>
<th>Receipt and Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPACT INTUITIV System Components</td>
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<td>COMPACT INTUITIV System Single-Use Pack</td>
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<td>Setup Sequence</td>
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<td>OPO80 Installation</td>
</tr>
<tr>
<td>Handpiece Setup</td>
</tr>
<tr>
<td>System Check-Out</td>
</tr>
</tbody>
</table>
Receipt and Inspection

When you receive your COMPACT INTUITIV System, inspect the exterior packaging for any signs of shipping damage. Make a record of the damage on the shipping documents. If there is any damage to the packaging, immediately file a claim with the transporter. Transports accept claims only from the recipient (you), not the shipper (AMO).

Your AMO Representative will contact you to schedule both Installation and In-Service Training upon receipt of your new COMPACT INTUITIV System. Leave the COMPACT INTUITIV System in its original packaging and store it in a cool, dry environment until AMO installation personnel arrive to assemble, install, and test your equipment. Extreme heat, cold, or moisture can damage any electronic equipment.

COMPACT INTUITIV System Components

Your COMPACT INTUITIV System CAN consist of some or all of the following components:

- COMPACT INTUITIV System Console
- Programmable IV Pole (Optional)
- IV Pole Extension (Optional)
- Cart with Mayo Stand (Optional)
- Instrument Sterilization Trays
- OPO80 Phaco Pack, Single-Use
- Foot Pedal with Cord
- Power Cord (detachable)
- COMPACT INTUITIV System Operator’s Manual
- Spike Mat
- Wireless Remote Control (Optional)

See Figure 2.1 – COMPACT INTUITIV System for a detailed layout of the components.
Figure 2.1 – COMPACT INTUITIV System

1. Pack Loading Interface 3. Front Panel Connections (Vitrectomy, Diathermy, Phaco)
2. Pack Eject Button 4. Touch Screen

Figure 2.2 – Main Surgical Screen
Figure 2.3 – Front Panel

1. Vitrectomy Connection
2. Diathermy Connection
3. Phaco Connection

Figure 2.4 – Side Panel

1. Pack Loading Interface
2. Pack Eject Button
Power Connections

1. Connect the Foot Pedal to the back of the COMPACT INTUITIV System console. See Figure 2.2.
2. If you have a cart, store the foot pedal in the bottom storage bin of the cart without disconnecting the foot pedal.
3. Connect the COMPACT INTUITIV System power cord to the rear of system. Plug the power cord into a grounded power outlet.
4. Turn the system ON.

Figure 2.5 – Power Connections

COMPACT INTUITIV System Single-Use Pack

Each phacoemulsification procedure requires a disposable OPO80 Single-Use Pack. The OPO80 Single-Use Pack contains the following components:

- Single-Use Pack
- Test Chamber - for testing and protecting Phaco Tips and I/A Handpiece Tips
- Optional Tray Cover - to cover the instrument tray and the tray arm
- Touch Screen Cover - to cover the front of the touch screen
Figure 2.6 – OPO80 Single-Use Pack Components

Setup Sequence

The following is a general overview of the steps to take to prepare the COMPACT INTUITIV System for surgery:

1. Attach the power cord to the rear of the system. Plug the power cord into a grounded power outlet.
2. Attach the foot pedal to the rear panel receptacle.
3. Place the foot pedal within easy reach to the surgeon.
4. Attach the IV Pole connector (optional).
5. Turn the system on at the back of the console.
6. After completion of the self test, select the surgeon and program.
7. Pair the remote control with the system (optional).
8. Install the Single-Use Pack.
9. Assemble and attach the needed accessories (phaco, vitrectomy, or diathermy handpieces).
10. Prime and tune the phaco handpiece.
11. Perform the final test of the fluidics for the phaco and vitrectomy handpieces and the handpiece integrity with the foot pedal.

Note: If there is no IV pole attached to the system, hang the irrigation fluid container at least 77 cm above the patient’s eye.

Use proper handling and disposal methods for biohazards when you dispose of the single-use pack, optional tray cover, and touch screen cover.
OPO80 Installation

The OPO80 is a single-use pack (disposable).

Figure 2.7 – OPO80 Single-Use Pack

1. Open the Single-Use Pack packaging.
2. Follow good operating room practices when spiking the irrigation fluid container.
   
   Note: Replace the irrigation solution with a new bottle at the start of each case. Make sure that there is enough fluid in the bottle to complete the procedure.

3. Hang the irrigation solution container on the hanger.

   Note: If there is no IV pole attached to the system, hang the irrigation fluid container at least 77 cm above the patient’s eye.

4. Make sure the irrigation solution container is secure on the hanger.

5. Install the pack into the side receptacle, as shown below. Make sure you loaded the pack correctly.

   Note: Make sure the tubing is free to move with the IV pole and is not caught on the cart handle.
Figure 2.8 – Loading the Single-Use Pack

Note: Press the button (1) above the pack to remove the pack.

Handpiece Setup

This section presents information about setting up the handpieces.

• Phacoemulsification Handpiece Setup
• Irrigation/Aspiration Handpiece Setup
• Diathermy Handpiece Setup
• Vitrectomy Handpiece Setup

Phacoemulsification Ultrasonic Handpiece

**WARNING:** Sterility assurance is the responsibility of the user. Sterilize all non-sterile accessories prior to use.

**WARNING:** Prior to using any invasive portions of the handpiece assembly, examine under the microscope for any obvious damage, oxidation, or the presence of foreign material. If there are any questionable characteristics, use a backup handpiece for surgery. Use of contaminated or damaged system accessories may cause patient injury.

Note: Use caution to prevent burns when handling the handpieces directly from sterilization.

1. Remove the sterile handpiece and accessories from the packaging and place them in the sterile area.
2. Assemble the ultrasonic handpiece as shown in Figure 2.6 – Assembling the Phaco Handpiece. To assemble the handpiece you need the handpiece, titanium phaco tip, the appropriate tip wrench, the irrigation sleeve, and the test chamber.
3. Make sure the handpiece tip is the correct type to use with your settings.
4. Verify that the tip and sleeve combination is correct.

Note: If you change a tip during surgery, we recommend that you tune the handpiece.
CAUTION: NEVER ATTEMPT TO STRAIGHTEN A BENT NEEDLE. STRAIGHTENING A BENT NEEDLE CAN PRODUCE A BROKEN TIP WHEN YOU APPLY PHACO POWER.

WARNING: Do not use the tip or sleeve beyond the recommended number of uses. See the tip or sleeve Directions for Use (DFU) for detailed information.

Figure 2.9 – Assembling the Phaco Handpiece


Figure 2.10 – ELLIPS FX Handpiece

Note: You can use the ELLIPS FX handpiece with WHITESTAR Technology phaco settings.
Figure 2.11 – Phaco Surgical Screen with ELLIPS FX Active

Note: The FX icon shows on the Phaco surgery screen when you attach the ELLIPS FX handpiece to the system.

5. Attach the connector end of the handpiece to the phaco receptacle on the front of the COMPACT INTUITIV System. Make sure there is no moisture on the connectors prior to attaching. Moisture prevents the handpiece from operating properly.

Figure 2.12 – Handpiece Receptacles

1. Vitrectomy
2. Diathermy
3. Phaco
6. Insert the male luer (white) end of the irrigation tubing into the phaco handpiece.
7. Attach the female luer (blue) fitting end of the aspiration tubing to the phaco handpiece.
   Note: To protect the patient from contamination, use only:
   • sterile tubing sets
   • sterile irrigation solution
   • sterile handpieces

Figure 2.13 – Phaco Handpiece Connections

Irrigation/Aspiration Handpiece

1. Assemble the Irrigation/Aspiration (I/A) Handpiece by attaching the irrigation sleeve and test chamber.

   The test chamber is part of the COMPACT INTUITIV System Pack, OPO80.

   Use the LAMINAR Flow irrigation sleeves and LAMINAR phaco tips that are compatible with the COMPACT INTUITIV System.

Figure 2.14 – I/A Handpiece
Diathermy Handpiece Setup

1. Attach the diathermy cord to the diathermy forceps or pencil.
2. Attach the diathermy cord to the diathermy receptacle on the front panel.

Figure 2.15 – Diathermy Forceps

Figure 2.16 – Diathermy Pencil

Vitrectomy Cutter Setup

If you need to use vitrectomy during surgery:

1. Attach the vitrectomy cutter as shown in Figure 2.14 – Vitrectomy Cutter. Vitrectomy requires the following components:
   • I/A Tubing
   • Vitrectomy cutter
   • Vitrectomy irrigation sleeve, or a 23 or a 25 Gauge Limbal Infusion Needle.
2. Use the instructions provided with the vitrectomy cutter to assemble the handpiece.

Figure 2.17 – Vitrectomy Cutter

3. Attach the connector end of the vitrectomy cord to the vitrectomy receptacle on the front panel.
System Check-Out

The purpose of the check-out sequence is to verify that the installation is complete and that the COMPACT INTUITIV System is operating properly. Perform the check-out sequence prior to the first case of the day and any time you make program changes as outlined in the following steps. Test the I/A function and handpiece first, then the Phaco function and handpiece, so that the phaco handpiece (which you use first) is setup and ready for surgery.

Repeat any of the check-out steps if not successfully performed. If the instrument is still not working correctly, refer to Chapter 8 "System Messages, Troubleshooting, and Diagnostics".

Prime/Tune

Refer to Chapter 6 "Surgical Mode" for instructions on priming/tuning the system.

Irrigation/Aspiration

1. Attach the tubing to the I/A handpiece.
2. Select I/A mode on the touch screen.
3. Hold the test chamber near the tip.
4. Press and hold the foot pedal in position 2.
5. Observe the irrigation flow.

Phacoemulsification

1. Attach the irrigation and aspiration tubing to the Phacoemulsification Ultrasonic Handpiece.
2. Screw the phaco tip onto the handpiece. Use your fingers to first engage the screw thread, then use the tip wrench to tighten the tip so that it is quite snug. Screw the irrigation sleeve over the tip.
3. Make sure you have primed and tuned the system.
4. Select the Phaco mode on the touch screen.
5. Remove the test chamber from the handpiece.
6. Press and hold the foot pedal in position 2. Use a cup to capture the fluid.
7. Observe the irrigation flow.
8. Hold the handpiece approximately at patient’s eye level.
9. Fill the test chamber with irrigation fluid.
10. Place the test chamber over the irrigation sleeve.
11. Occlude the aspiration line just below the phaco handpiece. The actual vacuum level should rise to the preset level.
12. Release the occlusion and watch the test chamber to make sure that it does not collapse. A slight shallowing of the chamber is normal.
13. To test irrigation, pinch the irrigation tubing at the I/A handpiece and watch for the test chamber to collapse.
14. Release the irrigation line and the test chamber should refill.
15. Press and hold foot pedal in position 3.
16. Observe the Phaco the timers are recording phaco time.
17. Press NEXT CASE to reset the phaco timer.

Phacoemulsification check-out is complete.
Diathermy
1. Connect the Diathermy forceps to the cable, then connect the cable to the front panel.
2. Select the Diathermy mode on the touch screen.
3. Press the foot pedal. When you press the foot pedal you should hear a tone.

CAUTION: IF YOU DO NOT HEAR A TONE WHEN YOU PRESS THE FOOT PEDAL, THE MODE IS NOT FUNCTIONING PROPERLY. REFER TO Chapter 8 "System Messages, Troubleshooting, and Diagnostics" FOR THE APPROPRIATE CORRECTIVE ACTION.

Vitrectomy
1. Connect the I/A tubing to the vitrectomy handpiece.
2. Connect tubing to vitrectomy receptacle on the left front of the COMPACT INTUITIV System.
3. Select Vitrectomy Mode on touch screen.
4. Submerge the cutter tip in a cup of irrigation solution.
5. Press the foot pedal to position 2 or 3 and observe:
   • irrigation fluid flows
   • aspiration line is full and clear of air
   • cutter blade operates

Vitrectomy check-out is complete.
System Settings

System Setup Screen
Self Test
Set Date and Time
IV Pole (Optional)
Vacuum Units
Wireless Remote Control (Optional)
Foot Pedal Test
Touch Screen Calibration
Language Setup
Surgical Media Center (Optional)
Feature Activation (Optional)
Event Log
Software Versions
Import/Export Database
System Setup Screen

Press the System Setup button from the Surgeon Settings screen, the Program Settings Screen, or the Surgeons and Program screen.

Figure 3.1 – System Setup Selections

Self Test

To run the system self test from the System Setup screen:

1. Press the System Self Test button.
   
   Note: The green check mark indicates a pass of the Self Test. The yellow warning icon indicates a failed Self Test.

Figure 3.2 – Self Test Screen

2. Press Run Test to run the test again.
3. Press OK to close the screen when the test completes.
**Set Date and Time**

Follow these steps to set the system date and the system time from the System Setup screen.

1. Press the Date/Time button.
2. Use the Left and Right arrows to change the Year and Month.

**Figure 3.3 – Set Date/Time Dialog Box**

3. Press the date on the calendar.
4. Select either mm/dd/yyyy or dd/mm/yyyy to select the date format.
5. Select the either 12 hour or 24 hour button to select the time format.
6. Use the Up and Down arrows to set the Hours and Minutes.
7. Select either AM or PM.
8. Press OK to close the screen.

**IV Pole (Optional)**

The programmable IV pole is controlled by the up and down arrows on the touch screen, next to the bottle height indicator. You can use the buttons on the remote control and the switch on the side of the IV Pole to control the IV pole. Use these controls to raise and lower the pole. The IV pole moves at a rate of approximately 6 cm (2 inches) per second.

The IV pole is adjustable from 0 to 77 centimeters. You can set the unit of measurement for either inches or centimeters. The height measurement is relative to the distance from the irrigation valve to the center of the drip chamber. The system memory retains the IV pole height for each fluidic mode or submode (phaco, irrigation/aspiration, vitrectomy). You can set an IV pole height for each submode.

When you select a surgical mode, the IV pole automatically moves to the preset height. To manually adjust the IV pole height, use the up and down arrows on the touch screen. You can make manual adjustments to the IV pole by pressing the rocker switch on the side of the console.
Use IV Pole Setup and Test screen to select the units displayed and to test the movement of the IV Pole.

1. Press the IV Pole button.
2. Press the units, either inches or centimeters.

**Figure 3.4 – IV Pole Setup and Test Screen**

3. Select the Extension Added check box, if you are using an extension.
4. Press the buttons on the right of screen to move the IV pole.
5. Press OK to close the screen.

**Vacuum Units**

Follow these steps to set the units of measure for vacuum from the System Setup screen.

1. Press the Vacuum Units button.
2. Press the applicable units button.
3. Press the OK button to close the screen.

**Wireless Remote Control (Optional)**

Use the wireless remote control keypad to move between the surgical modes and submodes. You can make adjustments to the surgical mode and submode settings using the remote control. On the remote keypad, press the I/A, Vacuum, Power or Cut Rate button, then use the Up and Down buttons to change the value. (Numbers 11 and 12 in Figure 3.6 – Wireless Remote Control.)

Note: Remove the batteries when shipping or transporting the remote control.

**Figure 3.6 – Wireless Remote Control**

1. Prime/Tune
2. Diathermy
3. Phaco
4. I/A
5. Vitrectomy
6. Select Program
7. Bluetooth Light (Remote Paired)
8. Battery Light
9. IV Pole
10. Continuous Irrigation
11. I/A, Vacuum, Power Selections
12. Up and Down arrows to change settings (11)
When not in use, store the wireless remote control in the storage bin on the cart, if available.

After you turn the system on, press any of the buttons to activate the remote control.

Note: After two (2) minutes of idle time, the remote control goes into a power-save mode. To turn the remote control on, press any of the buttons.

Use the Wireless Remote Control function to pair the remote control to the system and then to test the paired remote control.

Note: Make sure that the wireless remote control is active before you start the wireless setup process.

1. Press the Remote Control button on the System Setup screen.
   Note: The system shows if the wireless remote control is paired. The display shows the battery life as a percentage.

2. Press the Pair button to synchronize the remote control to the system.

Figure 3.7 – Wireless Remote Control Pairing Screen

3. Press the buttons in the order as indicated on the screen. Press Cancel Pairing to stop the pairing process.
4. Press the Unpair button to break the Bluetooth connection with the system. You must do this before you can pair another remote control with this system or use this remote with another system.

5. Follow the instructions on the screen to test the wireless remote control.

**Foot Pedal Test**

**Three Button Foot Pedal**

To run the Foot Pedal test from the System Setup screen.

1. Press the Foot Pedal Test button.

**Figure 3.9 – Three Button Foot Pedal Test Screen**

2. Follow the instructions on the screen to test the foot pedal.

3. Press OK to close the screen.
Four Button Foot Pedal Test
To run the Foot Pedal test from the System Setup screen.

1. Press the Foot Pedal Test button.

Figure 3.10 – Four Button Foot Pedal Test Screen

2. Follow the instructions on the screen to test the foot pedal.
3. Press OK to close the screen.

Touch Screen Calibration
You should calibrate the system touch screen as part of the system setup. Follow the steps below to calibrate the touch screen from the System Setup screen.

1. Press the Touch Screen Calibration button.

Figure 3.11 – Calibration Target

2. Press and hold the target until the next target appears.
3. Repeat Step 2 for all the calibration points.
4. Press OK on the confirmation screen to complete the calibration process.
   Note: If you do not press OK or you cannot press OK, the Touch Screen calibration process restarts after 20 seconds.
Language Setup

Follow these steps to select a language from the System Setup screen.

1. Press the Language button.
2. Press the applicable language button.

Figure 3.12 – Select Language Screen

3. Press the OK button to close the screen.

Language Installation

Note: The Install additional languages button is not active until the system recognizes the USB device in the USB port.

Follow these steps to install a new language from the System Setup screen:

1. Make sure that the Language USB device is in the USB port on the back of the console.
2. Press the Install additional languages button on the Select Language screen.
3. Select the languages to install from the USB device
4. Follow the instructions on the screen.
5. Press OK to close the screen when the system completes the installation.
Surgical Media Center (Optional)

The Surgical Media Center (SMC) integrates and records the video image from the surgical microscope and the surgical operating data for viewing at another date and time. You can view the surgery on a separate monitor with the instrument settings. Attach the SMC hardware to the communications port on the rear panel. (Figure 2.2 – Power Connections.)

Follow these steps to configure the Surgical Media Center from the System Setup screen:

1. Press the SMC button.
2. Press the applicable button.
   - Automatic - SMC starts recording when you start surgery and stops when you select Next Case.
   - On - To start SMC recording; does not stop recording until you select Off.
   - Off - SMC does not record

Figure 3.13 – SMC Recording Screen

3. Press OK to close the screen.
Feature Activation
(Optional)

Feature Activation is not available.

Event Log

Follow these steps to view the event log from the System Setup screen.

1. Press the Event Log button.
2. Select the:
   - All button to show all of the events written to the log.
   - Events Only to see the events considered warnings or messages in the log.
   - By Date button to sort the log by date. Use the Up and Down arrows to select the starting date.
3. Press the Search button.

Figure 3.14 – Event Log By Date

4. Press the Export Log button to export the Event Log to an external storage device.
5. Press OK to close the screen.
Software Versions

Follow these steps to see the software versions installed on the system.

1. Press the Software Versions button on the System Setup screen.

Figure 3.15 – System Software Versions

2. Press OK to close the screen.
Import/Export Database

Import
Follow these steps to import a database.

1. Press the Import/Export button on the System Setup screen.
   Note: Make sure that you place the USB device into the USB port on the back of the system.

2. Select the Import tab if necessary.

Figure 3.16 – Import Database Screen

3. Select the database you want to import from the list. Use the up and down arrows to locate the file name.
4. Press the Import button to import the database from the USB device.
5. Select OK on the dialog box to complete the import process.
6. Select OK to close the screen.

Export
You cannot export Default Surgeon or Default Anterior Program settings.

Follow these steps to export a database.

1. Press the Export tab from the System Setup screen.
2. Select Edit to enter the name of the file.
3. Use the keyboard to enter the name.

Figure 3.18 – Export Database Name

4. Select OK to close the screen.
5. Press the Export button to export the database to the USB device.
6. Select Erase USB Device to remove existing data from the USB device if more room is needed for the exported file. At the dialog box, select OK to erase all of the files on the USB device.
SURGEON SETTINGS

- Surgeons and Programs Screen
- Add a New Surgeon
- Import Surgeon Settings
- Export Surgeon Settings
- Edit a Surgeon
- Remove a Surgeon
- Foot Pedal
- Sounds
- Display Adjustment
- Reflux Modes
- Vent Modes
AMO Default Settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Available Settings</th>
<th>AMO Default Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tap for Continuous Irrigation</td>
<td>On, Off</td>
<td>Off</td>
</tr>
<tr>
<td>Reflux</td>
<td>Bottle, Motor</td>
<td>Bottle</td>
</tr>
<tr>
<td>Side Foot Switches</td>
<td>Disabled, Reflux, CASE Up/Down, IV Pole Up/Down, Major Mode Next/Previous, Submode Next/Previous, Active Mode Next/Previous, Continuous Irrigation, Single Cut</td>
<td>Right Switch = Submode Left Switch = Reflux</td>
</tr>
<tr>
<td>Foot Pedal Tactile Feedback</td>
<td>On, Off</td>
<td>Off</td>
</tr>
<tr>
<td>Foot Pedal Threshold FP1</td>
<td>FP0 - FP1</td>
<td>5%</td>
</tr>
<tr>
<td>Foot Pedal Threshold FP2</td>
<td>FP1 - FP3</td>
<td>25%</td>
</tr>
<tr>
<td>Foot Pedal Threshold FP3</td>
<td>FP2 - 100%</td>
<td>55%</td>
</tr>
<tr>
<td>Sound Volume</td>
<td>0 (None) - 10 (Max)</td>
<td>5</td>
</tr>
<tr>
<td>High Vacuum</td>
<td>On, Off</td>
<td>On</td>
</tr>
<tr>
<td>Occlusion/CASE</td>
<td>On, Off</td>
<td>Off</td>
</tr>
<tr>
<td>Key Press</td>
<td>On, Off</td>
<td>On</td>
</tr>
<tr>
<td>Voice Confirmation</td>
<td>On, Off</td>
<td>On</td>
</tr>
</tbody>
</table>

The AMO Default settings are the starting point for creating new surgeons and programming for your COMPACT INTUITIV System.

Surgeons and Programs Screen

This chapter covers the information needed to define your personal settings. Refer to Chapter 5 "Program Settings" for information on specific program settings.

You can continue on to surgery using the Default Surgeon and the Default Anterior Program as the program. If you make any changes to the default surgeon settings during surgery, you can not save those changes.
Add a New Surgeon

When you create a new surgeon, the system automatically assigns the Default Anterior Program settings to that surgeon. You can customize the settings with your preferred settings. You can also create new settings for existing surgeons. You can define 30 different surgeons on the system. When you reach the system’s limit, the system disables the Add function on the Surgeon Setup screen.

1. Press Surgeon Settings.
2. Press Add. The keyboard screen opens.
3. Enter the name of the surgeon.
Figure 4.3 – Keyboard Screen

4. Press OK to save the new surgeon and exit the keyboard screen. The new surgeon is now on the list of available surgeons.

**Import Surgeon Settings**

1. Press the Surgeon Settings button on the Surgeons and Programs screen.  
   Note: Make sure that you place the USB device into the USB port on the back of the system.

2. Press the Import button.
3. Select the file to import from the list.
4. Press the Import button.
5. Press OK to close the screen.

**Export Surgeon Settings**

1. Press the Surgeon Settings button on the Surgeons and Programs screen.  
   Note: Make sure that you place the USB device into the USB port on the back of the system.

2. Press the Export button.
3. Enter the name of the file to export.
4. Press OK to complete the export.

**Edit a Surgeon**

1. Select Surgeons & Programs.
2. Select a surgeon on the list.
4. Make any corrections to the name.
5. Press OK to save the changes and close the screen.
Remove a Surgeon

Use Remove to remove a surgeon from the Select Surgeon screen. You cannot delete the Default Anterior Program.

1. Press Surgeon Settings.
2. Select the surgeon from the list to remove.
3. Press Remove.
4. Press OK at the dialog box.

Foot Pedal

The foot pedal controls all of the system functions, therefore, it is essential that you understand the foot pedal operation.

The system software automatically detects if a foot pedal is present and the type of foot pedal.

Note: The system does not support any closed-toe foot pedals.

You can select and set the foot pedal settings and adjustments in the Foot Pedal Configuration screen. The foot pedal housing incorporates a handle, making the foot pedal easy to grip for repositioning and storage.

The foot pedal cable attaches to the foot pedal connector on the rear of the console.

Note: You must NEVER handle the foot pedal by the cable.

Figure 4.4 – Three Button Foot Pedal

1. Handle
2. Left switch
3. Right switch
4. Right heel switch
5. Heel rest
Foot Pedal Operation

The foot pedal has three active “pitch” ranges, which are positions 1, 2 and 3 (P1, P2, P3). Position 0 is the off position, and position 3 is the fully pressed position.

Note: Take care not to inadvertently press the foot pedal or the foot pedal switches while in surgery.

Figure 4.5 – Pedal Pitch

Note: The foot pedal position determines the function of the handpiece. The delivery of that function depends on the mode selected. Once you attach the foot pedal, place your foot on the pedal and press the pedal to the desired position. Refer to Table 4.2 – Foot Pedal Positions and the associated Handpiece Behavior.

Select any of the following options and adjustments to preset the foot pedal:

- Threshold = P1, P2, P3
- Switch Actions = Off, Reflux, CASE Up/Down, IV Pole Up/Down, Major Mode Next/Previous, Submode Next/Previous, Active Mode Next/Previous, Continuous Irrigation, Single Cut

Note: If Side Vit is selected as a vitrectomy setting, any settings for either side switch will be over written by this setting. For example, if Reflux was selected as a foot pedal switch setting, Side Vit will be used for that switch when you are in vitrectomy.

The foot pedal position determines the function of the handpiece, which depends on the selected mode (Diathermy, Phaco, Irrigation/Aspiration, or Vitrectomy). The foot pedal display indicates foot pedal position (0, 1, 2, or 3). Refer to Table 4.2 – Foot Pedal Positions and the associated Handpiece Behavior for a description of each position.
Table 4.2 – Foot Pedal Positions and the associated Handpiece Behavior

<table>
<thead>
<tr>
<th>Modes</th>
<th>Diathermy</th>
<th>Continuous Irrigation Enabled</th>
<th>Phaco</th>
<th>Irrigation/Aspiration</th>
<th>Vitrectomy IAC</th>
<th>Vitrectomy ICA</th>
<th>Vitrectomy Side VIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Off</td>
<td>On</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>1 On</td>
<td>On</td>
<td>Irr (Only)</td>
<td>Irr (Only)</td>
<td>Irr (Only)</td>
<td>Irr (Only)</td>
<td>Irr (Only)</td>
<td></td>
</tr>
<tr>
<td>2 On</td>
<td>On</td>
<td>Irr/Asp</td>
<td>Irr/Asp</td>
<td>Irr/Asp</td>
<td>Irr/Cut</td>
<td>Irr/Asp</td>
<td></td>
</tr>
<tr>
<td>3 On</td>
<td>On</td>
<td>Irr/Asp/Phaco</td>
<td>Irr/Asp</td>
<td>Irr/Asp/Cut</td>
<td>Irr/Cut/Asp</td>
<td>Irr/Asp</td>
<td></td>
</tr>
</tbody>
</table>

**Threshold P1, P2, and P3** – Allows the surgeon to program where the foot pedal transitions from Position 0 to Positions 1, 2, and 3. The basis of the percentage figure is on 100% of total foot pedal travel. (Halfway down = 50% travel.)

**Tactile Feedback** – When ON, provides tactile feedback that allows the surgeon to feel when the foot pedal transitions between the different positions.

**WARNING**: Reflux is a user selectable switch option. In the event of a blockage and there is a vacuum, to stop reflux the user needs to release the foot pedal to position 0 to open the vent valve.

**Reflux** – Assigned to any of the switched. When ON, reflux occurs when you press the assigned switch. When OFF, the switches have no function. Reflux is essentially a reversal of aspirated fluid flow to assist in the release of unwanted material. Activate Reflux by pressing the assigned foot pedal switch.

The pinch valve opens the aspiration line to the positive bottle head pressure (dependent on IV pole height and gravity). This action causes fluid to flow toward the handpiece. When the system releases the pinch valve, Reflux turns off.

Do not use Reflux to clear clogged handpieces but you can use Reflux to identify a blockage.

**Tap for Continuous Irrigation** – This is a feature that allows surgeon control of Continuous Irrigation. When ON, the surgeon may quickly tap the foot pedal from P0 (foot position 0) to P1 (foot position 1) to toggle Continuous Irrigation ON/OFF.

Table 4.3 – Foot Pedal Side Switch Functions

<table>
<thead>
<tr>
<th>Function Selected</th>
<th>Left Switch</th>
<th>Right Switch</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>None</td>
<td>None</td>
<td>No side switch actions</td>
</tr>
<tr>
<td>Next/Previous Submode</td>
<td>Move to Previous submode</td>
<td>Move to Next/Previous submode</td>
<td>The system skips Inactive submodes</td>
</tr>
</tbody>
</table>
Follow these steps to set the foot pedal thresholds from the System Setup screen.

1. Press the Foot Pedal button.
2. Press the Threshold tab if not active.

3. Select Tactile Feedback to be able to feel when the foot pedal moves into the different pitch zones.
4. Use the Up and Down arrows to change the threshold for each of the foot pedal pitch zones. P1 is the first zone, P2 is the second, and P3 is the final zone.
5. Press OK to close the screen or select the Configuration tab to set up the foot pedal switches.

**Configuration**

Follow these steps to configure the foot pedal switches from the System Setup screen.

1. Press the Foot Pedal button.
2. Press the Configuration tab.

**Figure 4.7 – Three Button Foot Pedal Configuration Screen**

3. Select each switch on the Configuration screen to assign functionality to the foot pedal switches.
4. Select the foot pedal switch setting from the list.
   
   **Note:** If you select Next Major Mode, Previous Major Mode, Next Active Mode or Previous Active Mode as a foot pedal switch setting, the Vitrectomy mode cannot be selected as you cycle through the different modes and submodes.
Follow these steps to set the foot pedal thresholds from the System Setup screen.

1. Press the Foot Pedal button.
2. Press the Threshold tab if not active.
3. Select Tactile Feedback to be able to feel when the foot pedal moves into the different pitch zones.
4. Use the Up and Down arrows to change the threshold for each of the foot pedal pitch zones. P1 is the first zone, P2 is the second, and P3 is the final zone.

5. Press OK to close the screen or select the Configuration tab to set up the foot pedal switches.

**Configuration**

Follow these steps to configure the foot pedal switches from the System Setup screen.

1. Press the Foot Pedal button.
2. Press the Configuration tab.

**Figure 4.10 – Four Button Foot Pedal Configuration Screen**

3. Select each switch on the Configuration screen to assign functionality to the foot pedal switches.

4. Select the foot pedal switch setting from the list.

   **Note:** If you select Next Major Mode, Previous Major Mode, Next Active Mode or Previous Active Mode as a foot pedal switch setting, the Vitrectomy mode cannot be selected as you cycle through the different modes and submodes.
Figure 4.11 – Foot Pedal Switch Options

<table>
<thead>
<tr>
<th>Left Switch</th>
<th>Continuous Irrigation</th>
<th>Single Cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflux</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CASE Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CASE Down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV Pole Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV Pole Down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next Major Mode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous Major Mode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next Submode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous Submode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next Active Mode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous Active Mode</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Press OK to close the screen. Repeat this step for each switch.
6. Press OK to close the screen.

Note: If the Foot Pedal handle blocks the movement of your foot on the pedal, you can remove the handle.

Removing the Handle from the Foot Pedal

1. To remove the handle, press the clips on either side of the handle.

Figure 4.12 – Removing the Foot Pedal Handle

2. Remove the cover of the handle.
3. Remove the screws and store the screws and handle in a safe place.
   Note: Do not lose the handle as it cannot be replaced.
### Sounds

Sound settings are unique to each surgeon.

**Sounds** – Adjusts system volume on a scale of 0 (off) to 10 (loudest). The diathermy tone volume cannot be turned off. You can make the volume louder.

1. Press the Sounds button on the Surgeon Setting screen.
2. Move the cursor with your finger or tap on the on the speaker icons to raise or lower the volume.
   
   Note: You can use the cursor only when the cover is not over the touch screen. The cover may fall off if you try to use the cursor with the cover on the touch screen.

![Figure 4.13 – Sounds Settings Screen](image)

3. Select the applicable buttons to activate sound for each of the following:
   - Occlusion/CASE
   - High Vacuum
   - Key Press
   - Voice Confirmation

4. Press OK to close the screen.

### Display Adjustment

Follow these steps to set the display brightness from the Surgeon Settings screen.

1. Press the Display button.
2. Move the cursor with your finger or tap on the brightness indicator to change the brightness level.
   
   Note: You can use the cursor only when the cover is not over the touch screen. The cover may fall off if you try to use the cursor with the cover on the touch screen.
3. Press OK to close the screen.

**Reflux Modes**

Select either the Bottle or Motor buttons to set the type of reflux and the type of venting.

Reflux is the controlled back flow of fluid through the aspiration port of the handpiece. Use Reflux to gently release or dislodge unwanted material from the handpiece tip. You can also use Reflux to “tent” the incision site allowing easier tip insertion. Reflux does not clear a clogged handpiece. However, you can use Reflux to identify a blockage.

You can program the Reflux action on any available foot pedal switch. Reflux is active until you release the foot pedal switch.

For Bottle Reflux: When reflux is requested, fluid is expelled from the aspiration line via the bottle. Reflux pressure is dependent on bottle head pressure (IV pole height and gravity).

For Motor Reflex: When reflux is requested, fluid is expelled from the aspiration line via the peristaltic pump running backwards.

**Vent Modes**

Venting is the process of the system alleviating any residual vacuum when you release the foot pedal to position 1 or 0.

For Bottle Venting: During an occlusion and after you release the foot pedal, the pinch valve opens and the line pressure vents to the bottle pressure until the vacuum reaches 20 mmHg. The bottle vent results in a "passive micro-reflux" or "pool" function that gently pushes particles away from the handpiece tip.

For Motor Venting: During an occlusion and after you release the foot pedal, the peristaltic pump runs backwards until the vacuum reaches 20 mmHg.
Program Settings

Program Settings
Add a Program

Import or Export a Program
Import
Export

Edit a Program Name

Remove a Program

Settings

Diathermy
Phaco

Irrigation and Aspiration (I/A)

Vitrectomy
This section provides instructions on how to set up and select a program (preset parameters) for phacoemulsification procedures in the COMPACT INTUITIV System.

Use the Default Anterior Program settings as the starting point for creating new presets and programming for your COMPACT INTUITIV System.

Program Settings

This chapter covers the information needed to define your program settings. Refer to Chapter 4 "Surgeon Settings" for information on specific surgeon settings.

You can continue on to surgery using the Default Surgeon and Default Anterior Program for the program. If you make any changes to the default settings during surgery, you can not save those changes. The system allows the creation of eight (8) programs for each surgeon. You can use either a Standard Name or create your own name for the program.

Figure 5.1 – Program Screen

Select Initial Submode for the first submode used when you start surgery.
Add a Program

1. Press Program Settings on the Surgeons and Programs screen.
2. Press the Add button.

**Figure 5.2 – Add Program Screen**

3. Press the Standard Names button or enter a name using the keyboard.
4. Select a name from the list if you opened the Standard Names list.
5. Press OK to close the screen.
6. Press OK again to close the keyboard screen and to save your selection.

Import or Export a Program

**Import**

1. Press Program Settings on the Surgeons and Programs screen.
   
   **Note:** Make sure that you place the USB device into the USB port on the back of the system.

2. Press the Import button.
3. Select the program you want to import from the list. Use the up and down arrows to locate the file name.
4. Press the Import button to start the import process.
5. Select OK to complete the import.

**Export**

Follow these steps to export a surgeon’s program.

1. Press the Export button
2. Enter a Surgeon’s name.
3. Press OK to complete the export.
Lock a Program

Once you lock a program, you cannot save any changes to the settings. You would need to create a new program with a different name to save the setting changes. A locked program cannot be unlocked or deleted.

1. Press Program Settings on the Surgeons and Programs screen.
2. Select a program to lock.
3. Press the Lock Program (*) button. An asterisk (*) to the left of the program name indicates a locked program.

Edit a Program Name

1. Press Program Settings on the Surgeons and Programs screen.
2. Press the Edit Name button

![Figure 5.3 – Edit Program Name Screen]

3. Press the Standard Names button or enter a name using the keyboard.
4. Select a name from the list if you opened the Standard Names list.
5. Press OK to close the screen.
6. Press OK again to close the keyboard screen and to save your selection.

Remove a Program

You can remove a program from the database if you no longer need or use that program.

1. Press Program Settings on the Surgeons and Programs screen.
2. Select the program to remove from the list.
3. Press the Remove button
4. Press OK to close the screen and complete the process.
Settings

You must program at least one submode “Active” in each of the major modes.

Diathermy

The system provides power for bipolar coagulation or diathermy. The Diathermy screen shows the amount of diathermy power. Press the up or down arrows on the Power control panel to increase or decrease Panel power. If you selected the linear mode, the power is controlled with the foot pedal up to the maximum preset value.

Table 5.1 – Default Diathermy Settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Available Settings</th>
<th>AMO Default Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Power</td>
<td>5% to 100% in 5% increments</td>
<td>DIA 1: 30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DIA 2: 50%</td>
</tr>
<tr>
<td>Power Delivery Type</td>
<td>Linear, Panel, Burst</td>
<td>Linear</td>
</tr>
</tbody>
</table>

1. Press the Program Settings tab. You can configure the other major mode buttons by pressing the applicable button.
2. Select the Diathermy button.

Figure 5.4 – Diathermy Submode Program Screen

3. Press the Standard Names button.
4. Select a submode name from the list.
5. Press the OK button.

6. Press Edit Name to make changes to a submode name.

7. Press OK to close the screen.

8. Select Linear, Panel, or Burst.

9. Use the up and down arrows to change the Maximum Power setting.

10. Make sure that the Submode Active button has a green check mark. This box must have the check mark to have the submode available during surgery.

11. Press Save or Save As if you changed any of the AMO Default settings.

12. Press another major mode button to continue with program configuration.
Phaco

The purpose of phacoemulsification or phaco is to emulsify the lens material. The phaco handpiece provides ultrasonic energy, irrigation, and aspiration simultaneously so that the handpiece can extract the emulsified lens material. The phaco handpiece has a hollow needle that vibrates longitudinally at an ultrasonic frequency or a blend of longitudinal and transversal vibration, if you use the ELLIPS FX handpiece. The rapid movement of the needle and the resulting cavitation energy disintegrates the cataract on contact. The hollow needle (aspiration) uses suction to remove the debris. Incoming irrigation solution (irrigation) compensates the resulting loss in volume of the anterior chamber.

Phaco Submodes

There are four phaco submodes. Within each submode, there are programmable parameters for General (Occlusion Mode), Aspiration (Limits and Pump Mode), Vacuum (Limits and CASE), and Power (Limits, Modality, WhiteStar, and Pulse Shaping).

Phaco power is a combination of stroke length, frequency, and handpiece efficiency. A preset power setting of 30% using linear control allows you the ultimate control during phaco. Adjustments to phaco power depend on factors that include nuclear density, your preferences, and your experience.

Phaco mode lets you set four submodes with different settings. You can adjust the individual parameters of each submode.

Figure 5.7 – Phaco Submodes Settings Screen
For each phaco submode, you can change the following settings:

- General
- Aspiration
- Vacuum
- Power

Before performing phaco, you must complete the steps to Verify Irrigation/Aspiration Balance, as recommended in Chapter 6 "Surgical Mode".

**Override Phaco Submode Settings During Surgery**

You can override the settings for a phaco submode by selecting the submode, and either press the up and down arrows to increase or decrease Aspiration Rate, Vacuum, or Power settings, or press Settings. If you pressed the Settings button, the Settings dialog box opens.

Note: The default settings are based on a 20 gauge tip phaco tip.

**General Tab**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Available Settings</th>
<th>AMO DEFAULT Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sculp</td>
</tr>
<tr>
<td>IV Pole Height</td>
<td>0 - 77 cm</td>
<td>65 cm</td>
</tr>
<tr>
<td></td>
<td>15 - 92 cm</td>
<td></td>
</tr>
<tr>
<td>Max Vacuum</td>
<td>0 - 650 mmHg</td>
<td>50 mmHg</td>
</tr>
<tr>
<td>Max Aspiration Rate</td>
<td>10 - 60 cc/min</td>
<td>20 cc/min</td>
</tr>
<tr>
<td></td>
<td>10 - 60 cc/min</td>
<td>20 cc/min</td>
</tr>
<tr>
<td>Occlusion Threshold</td>
<td>35 mmHg</td>
<td>125 mmHg</td>
</tr>
<tr>
<td>Occlusion Mode On, Off</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>Max Power</td>
<td>0 - 100% in 5%</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>increments</td>
<td></td>
</tr>
<tr>
<td>Power Delivery Type</td>
<td>Linear, Panel</td>
<td>Linear</td>
</tr>
<tr>
<td>Power Delivery Modes</td>
<td>Continuous</td>
<td>Long Pulse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Pulse Rate</td>
<td>1 - 14 pps</td>
<td>6 pps</td>
</tr>
<tr>
<td>Long Pulse Rate</td>
<td>1 - 6 pps</td>
<td>4 pps</td>
</tr>
<tr>
<td>WHITESTAR Mode (Occluded)</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>WHITESTAR Technology - Pulse On/Off Duty Cycle</td>
<td>6/12 (33%)</td>
<td>6/12 (33%)</td>
</tr>
<tr>
<td>CASE mode</td>
<td>On, Off</td>
<td>Off</td>
</tr>
<tr>
<td>Pump Ramp</td>
<td>10% - 100%</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 5.2 – Default Phaco Settings
1. Press the Program Settings tab on the Surgeons and Programs screen.
2. Press the Phaco button if not already selected.
3. Press the applicable submode tab.
4. Press the General tab.

**Figure 5.8 – Phaco General Settings Screen**

5. Press the Standard Names button.
6. Select a submode name from the list.

**Figure 5.9 – Phaco Standard Names List**

7. Press the OK button.
8. Press **Edit Name** to change the submode name, if needed.
9. Press the OK button.
10. Use the up and down arrows to change the Bottle Height settings.
11. Make sure that the Submode Active button has a green check mark. This box must have the check mark to have the submode available during surgery.

12. Check the Occlusion Mode box to activate the Occlusion Mode function. If Occlusion Mode is selected, adjust the Pump Ramp settings for both Unoccluded and Occluded on the Aspiration tab.

Note:

• Occlusion Mode
  With Occlusion Mode phaco, you can set different aspiration rates for occluded aspiration as opposed to unoccluded aspiration. You can set a different vacuum rise time for when the phaco tip occludes without changing the aspiration rate through an unoccluded needle.

• Occlusion Vacuum Threshold
  In Occlusion Mode phaco, you can set an occluded threshold value for vacuum. When in Occlusion Mode phaco, there is an additional control panel for vacuum. The vacuum threshold setting lets you choose the vacuum level at which occluded settings take effect. To adjust the occluded vacuum threshold, press the up or down arrows, in occlusion mode, to increase or decrease the occluded vacuum threshold. When you decrease the threshold, the occlusion settings take effect sooner.

• Occlusion Aspiration Rate
  In Occlusion Mode phaco, you can set a different maximum flow value for aspiration. There is an additional control panel for occluded aspiration below the standard aspiration control panel.

13. Press Save or Save As, if you changed any of the AMO Default settings.

14. Press the Aspiration tab to configure the Aspiration Settings.

Aspiration Tab
The aspiration flow rate is the speed the system removes material from the eye through the aspiration tubing. A pump provides the necessary aspiration flow to withdraw the fluid and the lens material from the eye chamber through the handpiece. With this aspiration flow system, the vacuum builds when material blocks or occludes the aspiration port. The vacuum reduces as the occlusion clears. Adjust the aspiration rate in 1 cc increments from 0 to 60 cc per minute. You can also choose panel or linear flow.

The flow rate decreases as the vacuum approaches maximum.
Figure 5.10 – Phaco Aspiration Settings Screen

1. Press the Aspiration tab.
2. Select Linear or Panel.
   
   - Linear – Aspiration is controlled with the foot pedal, the aspiration increases from the minimum preset level to the maximum preset level (0% - 100%). When you press the foot pedal completely down, the aspiration level is at the maximum preset level. This is the same for Vacuum and Power.
   
   - Panel – The aspiration rate is at the maximum rate when you press the foot pedal to foot pedal position 2. This is the same for Vacuum and Power, foot pedal position 3.

3. Use the up and the down arrows to change the Maximum Aspiration setting.
4. Use the up and the down arrows to change the Minimum Aspiration setting, if you selected Linear.
5. Press the Pump Ramp tab.
6. Use the up and the down arrows to change the Unoccluded setting.
7. Use the up and the down arrows to change the Occluded setting, if you selected Occlusion Mode on the General tab.
8. Press the Vacuum tab to configure the Vacuum Settings.

**Vacuum**

The vacuum is the exerted force on the aspirated fluid in the aspiration tubing. To make sure you have fluidic balance while in phacoemulsification, adjust the maximum vacuum from 0 to 650 mmHg (Peristaltic pump), as indicated on the Vacuum panel.
1. Press the Vacuum tab.
2. Select the Limits tab.
3. Select Linear or Panel.
4. Use the up and the down arrows to change the Maximum Vacuum setting.
5. Use the up and the down arrows to change the Minimum Vacuum setting, if you selected Linear.
6. Use the up and the down arrows to change the Occlusion Threshold setting, if you selected Occlusion Mode on the General tab.
7. Press the CASE tab.

### Figure 5.13 – CASE Settings Screen

CASE is an intelligent vacuum monitoring system that regulates the maximum allowable vacuum that follows an occlusion of the phaco tip. When the phaco tip becomes occluded, the vacuum rises. Clearing of the occlusion while the vacuum is at a high-level can cause a post-occlusion surge. With CASE enabled, the system monitors the actual vacuum levels and when the vacuum exceeds a specific threshold for a specified duration, the system automatically adjusts the maximum allowable vacuum setting to a lower predefined CASE maximum vacuum level. When the occlusion clears, the system automatically restores to the original programmed maximum vacuum setting. It is possible to have a different maximum vacuum setting when the tip occludes than when the tip is unoccluded.

8. Select CASE to activate the CASE function.
9. Use the up and the down arrows to change the Up Threshold setting and the Down Threshold setting.
10. Use the up and the down arrows to change the CASE Vacuum setting.
11. Use the up and the down arrows to change the CASE Up Time setting.
The CASE screen shows an example of the CASE settings as a graph.

- **Up Threshold** – The maximum threshold vacuum setting when CASE activates. You define the amount for the upper threshold by the up time threshold setting.

- **CASE Vacuum (CASE)** – This is the vacuum setting when CASE activates.

- **Down Threshold** – After the occlusion clears, the vacuum level drops to the lower vacuum threshold setting to allow the occlusion to safely clear, and then gradually return to the previous non-CASE levels.

- **Up Time** – Use the up and down arrows to change the up time threshold. The Up Time threshold is the maximum time that the system maintains the maximum threshold vacuum.

CASE maintains a stable chamber by detecting an impending occlusion break, and reducing the vacuum before occlusion surge can occur. When the system detects the occlusion, the system waits long enough to allow you to grasp the particle firmly, and then reduces the vacuum to a lower level that allows the occlusion to clear safely. When you clear the occlusion, the vacuum returns to the previous vacuum level.

**CASE One Touch**

To simplify the programming of the CASE function, you only need to define the basic CASE parameters once. You can adjust the CASE function quickly and easily from the CASE One Touch settings on the surgical screen. Use CASE One Touch to change the CASE functionality for greater efficiency, +1 or +2, or more control, -1 or -2.

When CASE is On, use the CASE One Touch buttons to adjust the CASE parameters.

**Figure 5.14 – CASE One Touch and CASE One Touch Expanded**

![CASE One Touch and CASE One Touch Expanded](image)

**Table 5.3 – CASE One Touch Parameter Settings**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>CASE -2</th>
<th>CASE -1</th>
<th>CASE STD</th>
<th>CASE +1</th>
<th>CASE +2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Ramp Setting</td>
<td>Program default</td>
<td>Program default</td>
<td>Program default</td>
<td>CASE STD +10%</td>
<td>CASE STD +20%</td>
</tr>
<tr>
<td>CASE Occlusion Delay</td>
<td>CASE STD -200 ms</td>
<td>CASE STD -100 ms</td>
<td>Program default</td>
<td>CASE STD +100 ms</td>
<td>CASE STD +200 ms</td>
</tr>
<tr>
<td>CASE Upper Threshold</td>
<td>CASE STD -5%</td>
<td>Program default</td>
<td>Program default</td>
<td>Program default</td>
<td>CASE STD +5%</td>
</tr>
</tbody>
</table>
Power Tab

1. Press the Power tab. The system defaults to the Limits tab.

**Figure 5.15 – Power Limits Tab Screen**

2. Select Linear or Panel.
3. Use the up and the down arrows to change the Maximum Power setting.
4. Use the up and the down arrows to change the Minimum Power setting, if you selected Linear.
5. Press the Mode tab to select the power mode from the list.

**Figure 5.16 – Power Mode Settings Screen**

6. Select one of the eight choices for delivery of phaco power:
• Continuous Phaco Power delivers continuous, uninterrupted phaco power to the handpiece and requires no pulse rate setting.

• High Power Pulse generates continuous Phaco Power when you enter position 3. When you press the foot pedal, the continuous pulse changes into long pulses and then gradually changes to short pulses.

• Low Power Pulse generates short pulses of ultrasonic power in foot pedal position 3. When you press the foot pedal, the pulses become longer and eventually blend together to become continuous phaco power.

• Pulse Mode delivers phaco in pulses of 1 to 100 ms when the foot pedal is in position 3. You can set this in a range of 1 to 100 pulses per second (pps). The default setting is 20 pps.

• Short Pulse delivers phaco in pulses of 50 ms when the foot pedal is in position 3. You can set this in a range of 1 to 14 pulses per second (pps). The actual number of pps is on the button to the right of the Short Pulse button.

• Long Pulse delivers Phaco in pulses of 150 ms when the foot pedal is in position 3. You can set this in a range of 1 to 6 pulses per second (pps). The actual number of pps is on the button to the right of the Long Pulse button.

• Continuous Burst can deliver an ultrasonic burst duration from 50 to 150 ms. As you press the foot pedal through position 3, the bursts get closer together. At the maximum level of foot pedal position 3, the bursts blend together, and the power becomes continuous (at the preset power level). The default setting is 110 ms.

• Multiple Burst generates a burst of ultrasonic power of 110 ms duration, with additional bursts deployed beginning at approximately 1 burst per second when you press the foot pedal to position 3. The frequency of burst increases as you press the foot pedal. At the maximum level of foot pedal position 3, the delivered rate of the bursts are 4 bursts per second. Multiple Burst is only available with Panel Mode.

**WHITESTAR Technology Tab**

You can apply WHITESTAR Technology in any phaco power delivery mode. This technology is an advanced phacoemulsification power mode that delivers finely modulated energy pulses alternating with extremely brief cooling periods. This technology is available in linear or panel mode. When you select the

**WHITESTAR Mode**, either ⚡ or ⛈️ (pulse shaping) appears on the touch screen.

The system expresses the Duty Cycles as pulse time on/pulse time off, to achieve a desired duty cycle. For example, the duty cycle setting 6/12 means that the pulse time on is 6 ms, and the pulse time off is 12 ms, that results in a 33% duty cycle.

1. Press the WhiteStar tab to configure the Duty Cycles for Power.
2. Select the mode type: Off, WhiteStar, or Variable WhiteStar.  
   Note: Variable WhiteStar is only available with the Continuous Power mode.

4. Press the << button to set each quadrant value.
5. Press the Custom tab to create unique Duty Cycle settings.
6. Use the up and the down arrows to change the Custom On and Off times.
7. Press the << button to set the custom value for each quadrant.
When the variable WHITESTAR Technology is on, the system applies different duty cycles as the foot pedal moves through the power delivery zone. The zone has four equal size quadrants, and you can apply a different duty cycle in each quadrant.

The system maintains duty cycles to use with the Variable WHITESTAR Technology. (Variable WS). Variable WS contains the four duty cycles for the different quadrants. You can also use the Up/Down arrows to create custom duty cycles for Variable WS.
Pulse Shaping Tab
The Pulse Shaping technology modifies the standard square wave pulse, by increasing the amplitude of the first millisecond of the on time “kick”, and then setting the remaining part of the on time to the standard power setting. This repeats for each on time period, resulting in increased control and efficiency in phacoemulsification.

There are four settings for pulse shaping:
• Low Power Limit
• High Power Limit
• Percent Kick Low End of Range
• Percent Kick High End of Range

The Low Power setting and High Power settings define the range of the applied pulse shaping. When the applied phaco power is outside these limits, there is no pulse shaping.

The Percent Kick settings determine the amplitude, or amount of the applied phaco power “kick” in the first millisecond of phaco power, either in the low end or the high end of the power range. As the phaco power increases from the Low Power limit to the High Power limit, the percentage of kick interpolates for the power ranges in between the two limits.

As an example, if you establish a small kick setting for the low end of the range and establish a large kick setting for the high end of the range, the kick percentage gradually increases as the phaco power increases. When the percent kick at the low end is the same as the high end, then the kick remains constant throughout the low to high range.

1. Press the Pulse Shaping tab.

Figure 5.21 – Pulse Shaping Screen
2. Select the Pulse Shaping box to activate.
3. Use the up and the down arrows to change the Percent Kick and Power for the Pulse Shaping settings.

Figure 5.22 – Pulse Shaping

1. Kick Amplitude
2. 1 Millisecond Kick
3. Burst Width
4. Phaco Power Level

Irrigation and Aspiration (I/A)

General Tab
Aspiration flow is necessary to remove the emulsified cataract material from the eye. An irrigation supply is necessary to replace fluid removed through aspiration of cortical material and fluid that leaked from the incision.

This fluid balance maintains the anterior chamber during surgery. Irrigation is controlled by gravity.

The height of the drip chamber (head pressure) determines the flow rate of irrigation solution through the irrigation sleeve on the phaco tip. The drip chamber hangs from the bottle on the programmable IV pole. AMO recommends that at the start of a procedure, place the drip chamber approximately 65–70 cm above the patient's eye level. To increase irrigation pressure, raise the IV bottle. To decrease irrigation pressure, lower the bottle.

The irrigation tubing runs through the Single-Use Pack and irrigation is controlled by the foot pedal. When you press the foot pedal, the pinch valve opens and the irrigation fluid flows. Irrigation runs in foot pedal positions 1, 2, and 3.
Table 5.4 – Default Irrigation and Aspiration (I/A) Settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Available Settings</th>
<th>AMO Default Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cortex Cap Vac Viscoelastic</td>
<td>Cortex Cap Vac Viscoelastic</td>
</tr>
<tr>
<td>IV Pole Height</td>
<td>0 - 77 cm 15 - 92 cm</td>
<td>77 cm 77 cm 77 cm</td>
</tr>
<tr>
<td>With IV Pole extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max Vacuum</td>
<td>0 - 650 mmHg 500 mmHg 10 mmHg 600 mmHg</td>
<td></td>
</tr>
<tr>
<td>Max Aspiration Rate</td>
<td>0 - 60 cc/min 32 cc/min 5 cc/min 50 mmHg</td>
<td></td>
</tr>
<tr>
<td>Vacuum</td>
<td>Linear Panel Linear Panel</td>
<td></td>
</tr>
<tr>
<td>Aspiration</td>
<td>Linear Panel Linear Linear</td>
<td></td>
</tr>
<tr>
<td>Pump Ramp</td>
<td>10% - 100% 60 60 60</td>
<td></td>
</tr>
</tbody>
</table>

1. Press the Program Settings tab on the Surgeons and Programs screen.
2. Press the Settings button.
3. Press the I/A button.

Figure 5.23 – I/A General Settings Screen

4. Press the applicable submode tab.
5. Press the General tab.
6. Press the Standard Names button.
7. Select a submode name from the list.
8. Press the OK button.
9. Press Edit Name to change the submode name, if needed.
10. Press OK to close the screen.
11. Make sure the Submode Active button is checked.
12. Use the up and down arrows to change the Bottle Height setting.
13. Press the Aspiration tab.
Aspiration Tab

1. Select the Aspiration tab.

Figure 5.25 – I/A Aspiration Settings Screen

2. Select Linear or Panel for Aspiration.
3. Use the up and the down arrows to change the Maximum Aspiration setting.
4. Use the up and the down arrows to change the Minimum Aspiration setting, if you selected Linear.
5. Select the Pump Ramp tab.
6. Use the up and the down arrows to change the setting.
7. Select the Vacuum tab.

Figure 5.26 – I/A Vacuum Settings Screen
8. Select Linear or Panel for Vacuum.
9. Use the up and the down arrows to change the Maximum Vacuum setting.
10. Use the up and the down arrows to change the Minimum Vacuum setting, if you selected Linear.

**Vitrectomy**

The system uses a pneumatic guillotine vitrectomy cutter. The design of the handpiece is for cutting vitreous during anterior segment surgery and to operate in conjunction with the irrigation/aspiration mode. You can change the cutting speed on the touch screen. There are four adjustments related to the vitrectomy mode:

- Aspiration rate
- Vacuum
- Cut rate
- Foot pedal

**Table 5.5 – Default Vitrectomy Settings**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Available Settings</th>
<th>AMO Default Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV Pole Height</td>
<td>0 - 77 cm 15 - 92 cm</td>
<td>40 cm 40 cm</td>
</tr>
<tr>
<td>Max Vacuum</td>
<td>0 - 650 mmHg 20 cc/min</td>
<td>250 mmHg 20 cc/min</td>
</tr>
<tr>
<td>Max Aspiration Rate</td>
<td>100 - 1200 cpm 450 cpm</td>
<td>1200 cpm 450 cpm</td>
</tr>
<tr>
<td>Cut Delivery Type</td>
<td>Linear, Panel (Side Vit is Panel only)</td>
<td>Panel Linear</td>
</tr>
<tr>
<td>Cut Rate</td>
<td>ICA, IAC, Side Vit</td>
<td>ICA IAC</td>
</tr>
<tr>
<td>Foot Pedal Mode</td>
<td>ICA, IAC, Side Vit</td>
<td>ICA IAC</td>
</tr>
<tr>
<td>Pump Ramp</td>
<td>10% - 100% 75%</td>
<td>75% 75%</td>
</tr>
</tbody>
</table>

Note: If Side Vit is selected, any settings for either side switch will be overwritten by this setting. For example, if Reflux was selected as a foot pedal switch setting, Side Vit will be used for that switch when you are in vitrectomy.
General Tab

1. Press the General tab.

Figure 5.27 – Vitrectomy General Settings Screen

2. Press the Standard Names button.

Figure 5.28 – Vitrectomy Standard Names

3. Select a submode name from the list.

4. Press the OK button.

5. Press Edit Name to change the submode name.

6. Press OK to close the screen.

7. Make sure that the Submode Active button has a green check mark. This box must have the check mark to have the submode available during surgery.
8. Use the up and the down arrows to change the Bottle Height setting.
9. Select either ICA, IAC, or Side Vit. Refer to Chapter 4 "Surgeon Settings" for additional information.
10. Press the Aspiration tab.

**Aspiration Tab**

1. Press the Aspiration tab.

**Figure 5.29 – Vitrectomy Aspiration Settings Screen**

2. Select Linear or Panel.
3. Use the up and the down arrows to change the Maximum Aspiration setting.
4. Use the up and the down arrows to change the Minimum Aspiration setting, if you selected Linear.
5. Select the Pump Ramp tab.
Figure 5.30 – Vitrectomy Pump Ramp Screen

6. Use the up and the down arrows to change the Unoccluded setting.
7. Press the Vacuum tab.

Vacuum Tab

1. Select Linear or Panel.

Figure 5.31 – Vitrectomy Vacuum Settings Screen

2. Use the up and the down arrows to change the Maximum Vacuum setting.
3. Use the up and the down arrows to change the Minimum Vacuum setting, if you selected Linear.
4. Press the Cut Rate tab.
Cut Rate Tab
The rate of the vitrectomy cutter varies from 100-1200 CPM (cuts per minute) in increments of 50 CPM.

1. Select Linear or Panel.

Figure 5.32 – Vitrectomy Cut Rate Settings Screen

2. Use the up and the down arrows to change the Maximum Cut Rate setting.
3. Use the up and the down arrows to change the Minimum Cut Rate setting, if you selected Linear.
   Note: Linear is not available with Side Vit.
Surgical Mode

Prime/Tune

Verify Irrigation/Aspiration Balance

Priming for Vitrectomy

Selecting and Changing Mode Parameters

Diathermy

Phacoemulsification

Irrigation and Aspiration (I/A)

Vitrectomy

End Case

System Shutdown
Prime/Tune  Cup Fill

To collect the irrigation solution:

1. Use the test chamber, a medicine cup, or similar container.
2. Press the Prime/Tune button.
   Note: Make sure that the IV Pole is set to 77 cm before you start Cup Fill.
3. Select one of the following to start the cup fill feature:
   - 30 cc
   - 60 cc
   - 90 cc
   Note: The fill rate and time is based on using the irrigation tubing with no
   handpiece attached. If you use an attached handpiece to fill the cup,
   the fluid amount dispensed is less during the time allowed.
4. Press the button again to turn off cup fill. This stops the process before the
   system dispenses the requested amount of fluid.
5. Perform a full phaco Prime & Tune. The Prime/Tune screen indicates the
   progress of the priming process.

Figure 6.1 – Prime & Tune Screen

Prime/Tune

You must prime/tune:
• before each procedure
• anytime you reattach the handpiece
• after you have inserted or replaced a Single-Use Pack

The prime/tune process fills the I/A tubing with fluid, performs a vacuum check,
and tests and characterizes the phaco handpiece.
You can select Continuous Irrigation to allow fluid to free flow from the bottle to collect fluid.

The design of I/A Prime allows for a procedure that does not require a phaco handpiece. The design of tune allows for a quick tune of the phaco handpiece with an I/A tubing set. You can use tune if you replace a phaco tip during a procedure.

To shorten the overall prime sequence, select Bypass prime. Using Bypass also reduces the time to prime the system. Use Bypass if Continuous Irrigation is On or if the I/A tubing is already primed.

**WARNING:** If you do not properly prime the I/A tubing, errors can occur.

To access the prime/tune routines, press the Prime/Tune button. The console shows the Prime/Tune screen with all the prime and the tune options.

Note: Prime/tune is a combination of I/A prime then tune.

The system tracks the successful completion of the prime and tune cycles independently. If you need to tune the system again (new tip, failed tune), you only need to select and run the tune process.

**CAUTION:** DO NOT ACTIVATE THE PHACO HANDPIECE AND VITRECTOMY CUTTER WITH THE TIP IN THE AIR. EXPOSURE OF THE TIP TO AIR DRASTICALLY REDUCES THE USEFUL LIFE OF THE HANDPIECE. IF YOU INTRODUCE POWER TO THE PHACO HANDPIECE OR VITRECTOMY CUTTER, THE TIP MUST BE IN A TEST CHAMBER FILLED WITH IRRIGATION SOLUTION, IN A CONTAINER OF IRRIGATION SOLUTION, OR IN THE PATIENT’S EYE.

**Suggestions for Priming the Handpieces**

Always fill the test chamber completely prior to running the prime/tune cycle.

Do not lay the handpiece and the empty test chamber down and have the system fill the test chamber. When you lay down the handpiece, this allows air to collect in the test chamber and can produce an error. Point the tip of the handpiece up to reduce the amount of bubbles.

1. Use the Cup Fill feature to fill the test chamber with fluid and to eliminate all air. Remember to remove the test chamber from the handpiece, if needed, before you start the cup fill process.
2. Place the test chamber over the handpiece tip and the sleeve hub.
3. Press the Prime & Tune button, this starts the prime and the tune sequences.
   - To perform a prime only, press the Prime button.
   - To perform a tune only, press the Tune button.
4. Make sure that low ceilings do not block the movement of the IV pole.
5. Watch the fluid fill the drip chamber. The fluid moves toward the handpiece and fills the test chamber.

6. The touch screen indicates the progress of the prime and the tune process.

7. As the tubing lines fill, the system software performs functional checks. The checks include:
   - Monitoring for the presence of irrigation flow (bottle height)
   - Leaks (via vacuum rise checks)

8. When you attach the phaco handpiece and you select Prime & Tune, the system automatically includes a handpiece tuning test concurrently with the prime cycle.
   - At the end of the priming sequence, the system tells you that the prime process is complete.
   - At the end of the phaco tuning test, the system tells you that tune process is complete.

9. To discontinue prime or tune during the process, select Cancel.

10. When prime and tune are complete, the system automatically proceeds to the first phaco operating mode or the Initial Submode. It is important that you verify the Irrigation and Aspiration balance prior to operating.

   **Verify Irrigation/Aspiration Balance**

   We strongly recommend that you verify the balance of Irrigation/Aspiration.

   **Figure 6.2 – Irrigation/Aspiration Balance Procedure**
To verify irrigation/aspiration balance:

1. In the first Phaco mode, hold the handpiece at the approximate patient eye level. Refer to Figure 6.2 – Irrigation/Aspiration Balance Procedure.
2. Occlude the aspiration line just below the handpiece, as you press and hold the foot pedal in position 2.
3. The actual vacuum level should rise to the preset level.
4. Release the aspiration line and then watch the test chamber to make sure that the test chamber does not collapse. A slight shallowing of the test chamber is normal.
5. If the test chamber collapses, raise the IV bottle height or lower the vacuum setting.
6. Pinch the irrigation tubing at the handpiece and watch for the test chamber to collapse.
7. Release the irrigation line and the test chamber should fill.
8. Press the Time icon in the middle of the screen to open the Reset Timers dialog box.
9. Press Reset Timers to set the timers back to zero.
10. Touch anywhere on the screen to close the dialog box. You are now ready to begin surgery.

**Priming for Vitrectomy**

Before performing vitrectomy, we recommend priming the handpiece to reduce the chance of errors. Each time you select vitrectomy mode, a dialog box displays asking you to prime the vitrectomy handpiece. If you do not need to prime, press Bypass.

To prime the handpiece:

1. Attach the irrigation tubing and the aspiration tubing of the pack together.
2. Press Prime on the Prime/Tune screen.
3. Press the VIT button to access VIT mode.
4. Follow the instructions on the screen.
5. Press the Start button. The screen closes automatically after the system primes the handpiece.

Note: If you must perform vitrectomy in the middle of phaco surgery, perform steps 3 through 5.
Selecting and Changing Mode Parameters

The design of the system's graphical user interface (GUI) and touch screen is for ease-of-use, consistent look, and maximum informational display during all operating modes.

Your interface with the system requires only three basic steps, which apply to all the selections, settings and operations. Once you understand this basic organization, you can move quickly and easily through all the system functions and system operations.

Panels organize the text on the touch screen. The top panel shows current status, configuration options, the bottle height, and the foot pedal icon. The left-side column lists the operating modes and submodes. The main panel that dominates the screen shows current operating levels for aspiration, vacuum and power.

- To switch operating modes, press a button in the left panel. The control panels in the main panel show the operating levels for that mode.
- To make basic changes to the settings, press the up and down arrows to increase or decrease a value.
- To change other control panel settings, such as Panel or Linear power, press the Settings button on that control panel. A Settings screen opens, and you can make your selections.
Diathermy

While the system is priming, you can select the diathermy (DIA) mode and perform diathermy procedures. This process is diathermy during prime.

**Figure 6.4 – Diathermy During Prime Screen**

When you are in diathermy mode during prime, the screen indicates the prime/tune status and any messages associated with the prime or tune.

The system provides power for bipolar coagulation or diathermy. The Diathermy screen shows the amount of diathermy power. Press the up or down arrows on the Power control panel to increase or decrease diathermy power. If you selected the linear mode, the power is controlled with the foot pedal up to the maximum preset value.

**Figure 6.5 – Diathermy Surgical Screen**
Using Diathermy

To begin diathermy:

1. Press DIA.
2. Press the desired diathermy submode button (DIA 1 is the default).
   Note: The elapsed diathermy time (DT) is in the upper center of the screen.
3. Press the up or down arrows to increase or decrease the power. You can use the foot pedal to increase or decrease the linear power up to the maximum preset value. See Chapter 5 "Program Settings" for the system default settings.
   Note: Take care then using a high power setting during Diathermy.
4. Press the Settings button to change the power delivery.
   - Panel – Diathermy power delivered consistently at the power level (%) selected and indicated on the screen as Panel Maximum Power.
   - Linear – Diathermy power delivered from 1% to the maximum selected value (Maximum Power) as you press the foot pedal.
   - Burst – Diathermy delivered as a single 150 ms pulse, at the selected power, as you press the foot pedal.

Phacoemulsification

The purpose of phacoemulsification or phaco is to emulsify the lens material. The phaco handpiece provides ultrasonic energy, irrigation, and aspiration simultaneously so that the handpiece can extract the emulsified lens material. The phaco handpiece has a hollow needle that vibrates longitudinally at an ultrasonic frequency or a blend of longitudinal and transversal vibration, if you use the ELLIPS FX handpiece. The rapid movement of the needle and the resulting cavitational energy disintegrates the cataract on contact. The hollow needle (aspiration) uses suction to remove the debris. Incoming irrigation solution (irrigation) compensates for the resulting loss in volume of the anterior chamber.

1. Press Phaco.
2. Press Sculpt, Chop, Quadrant, or Epinucleus to select the submode. The main panel shows the settings for Aspiration, Vacuum, and Power. Each submode has different default settings.
   Note: Make sure the handpiece tip is the correct type to use with your settings.
3. Press the foot pedal to activate phacoemulsification. The Aspiration, Vacuum, and Power control panels indicate the associated levels throughout the procedure. The foot pedal icon in the upper portion of the screen shows the position of the foot pedal.
   Note: Take care then using a high vacuum setting or a high power setting during Phaco.
Override Phaco Submode Settings

You can override the settings for a phaco submode by selecting the submode, and press the up and down arrows to increase or decrease the Aspiration, Vacuum, or Power settings. You can also press the Settings button.

Figure 6.6 – Phaco Surgical Screen

Venting an Occlusion

When there is a blockage or an occlusion to the aspiration port by some tissue or other material, the vacuum pressure builds up. The aspiration flow vents to the bottle when you release the foot pedal. Another choice is that you can release the foot pedal to position 1 and that causes the aspiration system fluid to vent using pump rotation (Motor Vent).

Note: For chamber stability, maintain foot pedal position 1 or use Continuous Irrigation.

Both of the methods release the material at the aspiration port and give you full control if the tip accidentally grabs the capsule or iris. The internal fluidic system maintains the desired vacuum level when you hold the foot pedal at a constant position. The two adjustments associated with aspiration flow are the Maximum Vacuum setting and Maximum Aspiration setting.
Irrigation and Aspiration (I/A)  

Aspiration flow is necessary to remove the emulsified cataract material from the eye. An irrigation supply is necessary to replace fluid removed through aspiration of cortical material and fluid that leaked from the incision.

This fluid balance maintains the anterior chamber during surgery. Irrigation is controlled by gravity.

The height of the drip chamber (head pressure) determines the flow rate of irrigation solution through the irrigation sleeve on the phaco tip. The drip chamber hangs from the bottle on the optional IV pole. AMO recommends that at the start of a procedure, place the drip chamber approximately 65–70 cm above the patient's eye level. To increase irrigation pressure, raise the IV bottle. To decrease irrigation pressure, lower the bottle.

The irrigation tubing runs through the Single-Use Pack and irrigation is controlled by the foot pedal. When you press the foot pedal, the pinch valve opens and the irrigation fluid flows. Irrigation runs in foot pedal positions 1, 2, and 3.

Figure 6.7 – Irrigation and Aspiration Surgical Screen

To change I/A submodes settings:

1. Press I/A.
2. Select the desired I/A submode. I/A 1 is the system default.
3. Press the up or down arrows in the control panels on the main panel to increase or decrease the aspiration rate or the vacuum. You can also press the Settings button to change the aspiration mode or the vacuum settings.

Note: Take care then using a high vacuum setting when aspirating.
4. Use the up and down arrows to change the minimum parameters. (Minimum vacuum is available only in Linear mode.)

5. Use the up or down arrow to change the Maximum parameters.
   Note: The maximum value can force the minimum value lower, but the minimum value cannot force the maximum value higher.

**Vitrectomy Using Vitrectomy**

Note: Each time you select the vitrectomy mode there is a prompt for you to prime the vitrectomy handpiece. Select Bypass if you have already primed the handpiece.

**Figure 6.8 – Vitrectomy Prime Screen**

Instructions:
1. Connect the tubing to the vitrectomy cutter.
2. Immerse the cutter tip into a container filled with balanced salt solution.
3. Press Start to start priming the vitrectomy cutter.
1. Press the up or down arrows to increase or decrease the aspiration rate, vacuum, or cut rate. You can also press the Settings button to change aspiration mode, vacuum mode, or cut rate settings.
   Note: Take care then using a high vacuum setting or a high Cut Rate during Vitrectomy.

2. Use the up and down arrows to change the minimum parameters. (Minimum vacuum is available only in linear mode.)
   Note: The maximum value can force the minimum value lower, but the minimum value cannot force the maximum value higher.
End Case

End Case is available in the left panel from any surgical mode. End Case allows you to terminate the surgical case. If you made changes to the program settings, select Yes, No, or Cancel at the prompt. If you make any changes to the default settings during surgery, you cannot save those changes.

Figure 6.10 – End Case Screen

The timers indicate:

- Effective Phaco Time (EPT). Effective Phaco Time is ultrasound time as a weighted total that takes into account the amount of power being used:
  - at 100% power: 1 sec. U/S Time = 1 sec. EPT
  - at 50% power: 1 sec. U/S Time = 0.5 sec EPT
  - Average phaco power (AVG) = EPT/UST.
- Ultrasonic (U/S) time (UST) in foot pedal position 3 (FP3)
- EFX when you attach an ELLIPS FX handpiece

Note: For ease of viewing, the EPT, EFX, and UST times are in a large font size on the End Case screen. The EFX shows only when you attach an ELLIPS FX handpiece.

Purge - Select Purge to remove all the fluid from the irrigation and aspiration tubing before you remove the Single-Use Pack

Shutdown – Select the Shutdown button to turn the system off.

Continue Case – Select Continue Case to return to the current case.

Note: Use a new bottle of irrigation solution at the start of each case.

Next Case – Select Next Case to install a new Single-Use Pack.

If you have made any changes to the settings during surgery, the following screen displays after you select Next Case.
Figure 6.11 – Save Settings Screen

Save - Saves the changes to the existing Surgeon Name/Program settings.

Note: If you made any changes to the default settings during surgery, you cannot save those changes.

Save As - To create a new program from the changes made to this program to with new program name.

- Enter the new program name.
- Press OK to create the new program. This program is now the active program.

Continue Without Saving - Does not save any setting changes made during surgery and returns to you to the Prime and Tune screen.
System Shutdown

The following is a general overview of the steps to take to shut the system down after surgery:

1. Select End Case.
2. Select Shutdown.
   
   Note: If changes were made to any settings Figure 6.11 – Save Settings Screen is shown before you see the Shutdown screen.

3. At the prompt, select Yes on the Shutdown screen.
4. Wait for shutdown sequence to complete.
5. Turn the system off at the back of the console when the system says it is safe to do so.
6. Remove the power cord from the power outlet.
7. Wrap the power cord neatly around the cord wrap on the back of the cart, if using the cart.
8. Place the foot pedal in the storage area on the cart or another secure area.
9. Place the wireless remote control in the storage bin or another secure area.
10. Refer to Cleaning and Sterilization Procedures in Chapter 7 "Care and Cleaning" for additional information.
Care and Cleaning

Cleaning and Sterilization Procedures

Phaco Handpiece

Irrigation/Aspiration Handpiece

Diathermy Handpiece

Vitrectomy Cutter

Touch Screen Cleaning

Fan Filter Cleaning

COMPACT INTUITIV System Cleaning
Cleaning and Sterilization Procedures

Handle all previously used reusable items according to the Directions for Use for the particular product. Dispose of all single-use items or items which have completed their recommended useful life in accordance with:

- accepted hospital practices and hospital procedures
- local governing ordinance and recycling plans

The items for disposal can include the following:

- waste materials
- waste collection bags
- tubing
- Phaco tip
- irrigation sleeves
- test chambers

Note: Inspect the Diathermy, Vitrectomy and Phaco handpiece cables for possible damage on a daily basis.

Phaco Handpiece

Refer to the phaco handpiece product Directions for Use for cleaning, handling, and sterilization instructions.

Irrigation/Aspiration Handpiece

Refer to the irrigation/aspiration handpiece product Directions for Use for cleaning, handling, and sterilization instructions.

Diathermy Handpiece

Refer to the diathermy handpiece product Directions for Use for cleaning, handling, and sterilization instructions.

Vitrectomy Cutter

The vitrectomy cutter is a disposable, single-use instrument.

Touch Screen Cleaning

Use a soft cloth dampened with either:

- alcohol
- ethanol
- neutral detergent

Note: Never use organic solvents on the touch screen. Use only those items listed above.
**Fan Filter Cleaning**

There are two air filter fans located on the bottom of the system. You need to inspect and clean the filters once a year. To clean the filters of dust and lint:

1. Disconnect the power cord and all other cables from the system.
2. Place the console on its side. If the system is on the cart you do not need to remove the console from the cart.

**Figure 7.1 – Bottom of Console**

3. Remove the fan filter assembly from the system.

**Figure 7.2 – Front Filter Removal**

4. Separate the filter from the assembly.
5. Inspect and clean the filter of debris or replace with a new filter. Contact Technical Service to order a replacement if the filter (2601-0157-L) or assembly is damaged.
6. Reassemble the filter and the filter retainer.
7. Snap the fan filter assembly back on to the fan. Be careful not to break the tabs on the cover.

Figure 7.4 – Filter Installation
COMPACT INTUITIV System Cleaning

1. Turn the power switch on the back of the system Off before you unplug the system from the wall outlet.
2. At the end of the day, thoroughly wipe down the system, cart, IV pole and foot pedal using a cloth dampened with a germicidal detergent and sterile non-pyrogenic water. Be careful not to saturate any part of the system or the foot pedal with liquid. Excessive liquid can damage the system electronics.
3. Do not push or pull on the system components.
4. AMO recommends that you leave the foot pedal cable and the power cords attached to the system to prevent loss and unnecessary wear on the electrical connectors.
5. Although the foot pedal is water-resistant, make sure that you keep the foot pedal as dry as possible.
6. Place the foot pedal in the storage bin on the cart, if applicable.
7. Place the wireless remote control in the storage bin on the cart, if applicable.
SYSTEM MESSAGES,
TROUBLESHOOTING, AND
DIAGNOSTICS

- Fuse Replacement Procedure
- Wireless Remote Control Battery Replacement
- Most Common User-Correctable Problems
- Advisory, Warning, and System Messages
If you have set up the COMPACT INTUITIV System in accordance with the instructions given in this manual and have been unable to successfully complete the System Check-Out, the information presented in this section may be helpful to you. Before calling AMO for technical service, consult this chapter to see if you can find a solution to the problem you are experiencing.

**Fuse Replacement Procedure**

Replace the fuse if the COMPACT INTUITIV System does not boot up when the power switch is ON and you have:

- confirmed that you have connected the power cord to the console, and
- plugged the power cord into the wall outlet.

To prevent the risk of fire or damage to the instrument, replace the fuses with the exact type and rating as indicated below (check the voltage sticker on the back panel of the COMPACT INTUITIV System to confirm your machine voltage)

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Quantity</th>
<th>Fuse Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Console 100/120/240</td>
<td>2</td>
<td>6.3A, 250V, Bussmann GDA 6.3 (or equivalent)</td>
</tr>
</tbody>
</table>

To replace the console fuses:

1. Unplug the COMPACT INTUITIV System from electrical power and the power cord from the back panel.
2. Locate the fuse holder on the back panel of the COMPACT INTUITIV System, as shown in Figure 8.1 – Back Panel Fuse Holder.

**Figure 8.1 – Back Panel Fuse Holder**

1. Fuse Holder

3. Use a small screwdriver to gently pry open the cover to expose the fuse holder.
4. Gently pry out the fuse holder.
5. Remove the bad fuse and replace it with a new fuse (value and size specified above).
6. Replace the fuse holder, make sure that the arrows are pointing to the right of the back panel. Tilt the fuse holder slightly to the right and push in.
7. Push the fuse holder cover up and in until it snaps closed.
8. Reconnect the power cord to the back panel and the power cord plug into the wall receptacle.

### Wireless Remote Control Battery Replacement

To replace the alkaline batteries in the wireless remote control:

Note: Remove the batteries when shipping or transporting the remote control.

**Figure 8.2 – Back View Wireless Remote Control**

1. Use a coin or a flat-head screwdriver to remove the battery cover.
   
   Note: The screws cannot be separated from the cover.

2. Remove the two AA batteries.
   
   Note: Dispose of the used batteries in the proper manner.

3. Insert two new alkaline AA batteries.

4. Replace the cover and tighten the screws.
   
   Note: It is not required to pair the remote control to the system after replacing the batteries.

### Most Common User-Correctable Problems

Before you call AMO for service:

1. Be sure you plugged in the COMPACT INTUITIV System to the wall outlet.

2. Be sure that there is electrical power at the wall outlet.

3. If no phacoemulsification, be sure to tighten the phaco needle on the handpiece.

4. If no phacoemulsification, be sure that the phaco needle is compatible with the handpiece (i.e., non-AMO phaco needle on an AMO handpiece may not work properly).

5. If no phacoemulsification, confirm there is no damage to the phaco needle or phaco handpiece.

6. If no irrigation occurs, shake the drip chamber to confirm that the ball rattles freely. If the drip chamber does not rattle, replace it with another OPO80 Single-Use Pack.
### Table 8.2 – General Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| **COMPACT INTUITIV System does not come on when you turn the system power switch to On.** | 1. Turn the power switch Off.  
2. Confirm that you connected the power cord to the console back panel.  
3. Confirm that you connected the power cord into an electrical outlet or other power source.  
4. Confirm that there is electrical power at the wall outlet or other power source.  
5. If machine still does not boot up, turn Off. Check for blown fuses and replace if necessary. See “Fuse Replacement Procedure” on page 8-2.  
6. Contact AMO for Technical Service. |
| Foot pedal is not operating properly.                                    | 1. Check foot pedal operation. See “Foot Pedal Test” on page 3-7.  
2. Confirm that you connected the foot pedal cord to the rear of console. |
| Programmable IV Pole does not respond.                                  | 1. Verify that the IV pole has not reached the maximum or minimum height.  
2. Attempt Programmable Power Pole height adjustment via the touch screen or the remote control.  
3. Confirm you connected the IV pole cord to the rear of the console.  
4. Perform an IV Pole Test. |
| Priming Errors                                                          | 1. Verify no kinks, clogs, loose fittings.  
2. Replace handpiece and tip. Reprime.  
3. Reload or replace tubing pack.  
4. Check the test chamber for proper installation and for any leaks. |
| No irrigation flow.                                                      | 1. Turn Continuous Irrigation on and check the flow.  
2. Check for kinks in the irrigation tubing.  
3. Check tubing connection to handpiece.  
4. Tap drip chamber to ensure valve is operating properly.  
5. Check bottle height.  
6. Press the foot pedal to position 1 and check for flow (in Phaco or I/A).  
7. Listen for the irrigation pinch valve in the tubing manifold area to confirm that it is operating when you press the foot pedal.  
8. If still no flow, replace pack. |
| Reduced/insufficient irrigation flow.                                   | 1. Check for kinks in tubing, leaks in tubing or handpiece.  
2. Check bottle height.  
3. Check tubing connections.  
4. Check for pinched irrigation sleeve at incision.  
5. Check foot pedal operation. See “Foot Pedal Test” on page 3-7. |
### Table 8.3 – Troubleshooting Phaco

<table>
<thead>
<tr>
<th>Problem</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| Irrigation flow continues even when foot pedal is Off (position 0). | 1. Check that foot pedal is unobstructed and not stuck in position 1.  
2. Check foot pedal operation. See “Foot Pedal Test” on page 3-7.  
3. Verify that Continuous Irrigation is not active. |
| Anterior chamber too shallow or too deep. | 1. Check bottle height.  
2. If too shallow, check for pinched irrigation sleeve at incision.  
3. Check aspiration rate.  
4. Check that irrigation line is unobstructed. |
| Using large amounts of fluid. | 1. Check bottle height.  
2. Check incision size.  
3. Check aspiration rate (too high).  
4. Check that no fluid is entering the collection bag when not using irrigation.  
5. Reconnect or replace tubing. |
| Cannot remove luer from handpiece connection. | Use a pair of hemostats to remove the luer. |

<table>
<thead>
<tr>
<th>Problem</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| No phacoemulsification. | 1. Make sure you selected Phaco.  
2. Check foot pedal operation. See “Foot Pedal Test” on page 3-7.  
3. Make sure you connected the phaco handpiece cord to phaco receptacle on left side of machine.  
4. Check the phaco power setting.  
5. Make sure to tighten the phaco tip.  
6. Check for damage to the phaco tip.  
7. If damaged, replace with a new tip or replace the handpiece and prime/tune. |
| Poor or intermittent phacoemulsification. | 1. Check all of the corrective steps above for “No phacoemulsification”.  
2. Remove the phaco tip, then attach and tighten the tip.  
3. Check phaco power delivery setting for both unoccluded and occluded (if applicable) settings.  
4. Tune phaco handpiece. |
Table 8.4 – Troubleshooting Aspiration

<table>
<thead>
<tr>
<th>Problem</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| No aspiration. | 1. Make sure you selected the appropriate mode (Phaco, I/A, VIT).  
               2. Check for kinks or clogs in tubing.  
               3. Check tubing connection to the handpiece.  
               4. Make sure there are no clogs in the handpiece.  
               5. Press the foot pedal to position 2 and check the pump function. |
| Poor aspiration. | 1. Check the Aspiration rate.  
                2. Check foot pedal operation. See “Foot Pedal Test” on page 3-7.  
                3. Check for kinks or clogs in tubing.  
                4. Make sure there are no clogs in the handpiece.  
                5. Check tubing connection to handpiece.  
                6. Check I/A handpiece o-rings for excessive wear. Replace o-rings, if needed. |
| Not building vacuum.  Pump does not turn. | 1. Check submode programming. If the surgeon is in “linear vacuum” as opposed to “panel vacuum”, you must press the foot pedal through position 2 for the vacuum to reach the preset maximum.  
            2. Make sure to press the foot pedal to position 2 for I/A and Phaco. Press the foot pedal to position 2 or 3 for vitrectomy.  
            3. Check tubing connection to handpiece.  
            4. Check for air in irrigation/aspiration tubing.  
            5. Check the machine vacuum settings.  
            6. Replace tubing.  
            7. Run I/A prime.  
            8. Check vacuum preset.  
            9. Check Aspiration rate. |
| Chamber shallowing or partially collapses. | 1. Check the bottle height and the handpieces for correct position.  
               2. Check Aspiration rate.  
               3. Check tubing fittings to handpiece.  
               4. Check for kinks in tubing.  
               5. Remove handpiece and perform test chamber test to assure balance. See “Verify Irrigation/Aspiration Balance” on page 6-4. |
### Table 8.5 – Troubleshooting Diathermy

<table>
<thead>
<tr>
<th>Problem</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| No diathermy or poor diathermy. | 1. Make sure you selected Diathermy on the touch screen.  
2. Check foot pedal operation. See “Foot Pedal Test” on page 3-7.  
3. Check the diathermy power setting.  
4. Check the diathermy cord for secure connection to the forceps and to the diathermy receptacles on the front panel.  
5. Make sure the diathermy cord connections are dry.  
6. Re-attempt diathermy starting at a low power setting and gradually increase.  
7. Replace the diathermy cord.  
8. Replace the diathermy handpiece. |
| No sound when using diathermy. | Make sure volume setting displays as 5 or greater in Surgeon Preferences. |

### Table 8.6 – Troubleshooting Vitrectomy

<table>
<thead>
<tr>
<th>Problem</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| No vitrectomy cutting or poor cutting. | 1. Make sure you selected Vitrectomy on the touch screen.  
2. Verify that the surgeon is in foot pedal position 3, if you programmed IAC vitrectomy. Press the foot pedal to position 3 if ICA.  
3. Check the foot pedal operation. See “Foot Pedal Test” on page 3-7.  
4. Check tubing connections to vitrectomy handpiece.  
5. Check vitrectomy tubing connection to the front panel receptacle.  
6. Check the vitrectomy rate (CPM) setting on the touch screen. Lower the CPM, if necessary.  
7. Check that irrigation and aspiration are working correctly.  
8. Verify that cutter blade is stroking.  
9. Replace the vitrectomy cutter and try again. |
Advisory, Warning, and System Messages

The display on the COMPACT INTUITIV System is capable of displaying Status, Warning, and Event Messages for certain problems. Frequently, the message shows possible solutions to resolve the event or recommendations to clear the event. Event messages can also indicate available options should a component or subsystem fail.

The messages listed in the following pages have possible corrective actions to clear the error.

If you are not successful in correcting an error, be sure to document the message prior to calling AMO for Technical Service. This information helps Technical Service to diagnose and correct the problem.

Table 8.7 – System Operation Messages

<table>
<thead>
<tr>
<th>ID#</th>
<th>Possible Cause</th>
<th>Message</th>
</tr>
</thead>
</table>
| 1   | Self test process is not responding | Run Self Test  
If the problem continues, turn off the system and restart.  
If the problem continues, record the event ID and contact technical service. |
| 11  | A process is no longer running or is nonresponsive | Turn off the system and restart.  
If the problem continues, record the event ID and contact technical service. |
| 13  | System unable to allocate memory | Turn off the system and restart.  
If the problem continues, record the event ID and contact technical service. |
| 86  | A process has been shutdown | Event 86 has occurred.  
Turn off the system and restart.  
If the problem continues, contact technical service. |
| 101 | A parameter written to the Fluidic Microcontroller is out of range. | Turn off the system and restart.  
If the problem continues, record the event ID and contact technical service. |
| 102 | Unable to save EEPROM variables or complete configuration. | Turn off the system and restart.  
If the problem continues, record the event ID and contact technical service. |
| 103 | Unable to read EEPROM | Turn off the system and restart.  
If the problem continues, record the event ID and contact technical service. |
| 110 | RAM memory event | Turn off the system and restart.  
If the problem continues, record the event ID and contact technical service. |
<table>
<thead>
<tr>
<th>ID#</th>
<th>Possible Cause</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>ROM memory event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>112</td>
<td>Fluidics communication timeout</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>118</td>
<td>Fluidics state mismatch</td>
<td>Reprime the system. If the event continues, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>120</td>
<td>Irrigation valve event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>121</td>
<td>Vent valve event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>130</td>
<td>Pack loading event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>133</td>
<td>Pack loading event</td>
<td>Eject and insert the pack. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>135</td>
<td>Pump speed out of range</td>
<td>Eject and insert the pack. Prime the system. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>140</td>
<td>System voltage out of range</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>141</td>
<td>Unable to initialize fluidics system</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>145</td>
<td>Incorrect foot pedal state</td>
<td>Verify the foot pedal is properly connected and is not pressed. Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>149</td>
<td>Vacuum readings out of range</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>ID#</td>
<td>Possible Cause</td>
<td>Message</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>151</td>
<td>Pump stalled</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>152</td>
<td>Subsystem event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>201</td>
<td>Out of range phaco value</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>202</td>
<td>High phaco voltage</td>
<td>Retune the handpiece and continue the case. If the event is not cleared, change the handpiece and tune. If the event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>203</td>
<td>High phaco current</td>
<td>Retune the handpiece and continue the case. If the event is not cleared, change the handpiece and tune. If the event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>204</td>
<td>Low phaco current</td>
<td>Retune the handpiece and continue the case. If the event is not cleared, change the handpiece and tune the system again. If the event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>205</td>
<td>Low phaco voltage</td>
<td>Retune the handpiece and continue the case. If the event is not cleared, change the handpiece and tune. If the event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>206</td>
<td>Unable to monitor power supply voltage and current</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>210</td>
<td>Unable to read or write to phaco RAM memory</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>211</td>
<td>Unable to read or write to phaco ROM memory</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>ID#</td>
<td>Possible Cause</td>
<td>Message</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>212</td>
<td>Phaco communication timeout</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>213</td>
<td>Phaco communication event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>214</td>
<td>Phaco communication event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>281</td>
<td>Phaco communication timeout</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>282</td>
<td>Controller initialization event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>283</td>
<td>Phaco driver event</td>
<td>Retune the handpiece and continue the case. If the issue is not cleared, change the handpiece and tune. If the issue persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>284</td>
<td>Phaco power supply event</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>285</td>
<td>Tune event. Loose tip.</td>
<td>Tighten the tip and retune. If the event is not cleared, replace the handpiece and tune. If the event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>286</td>
<td>Tune event. Handpiece impedance too high or too low</td>
<td>Tighten the tip and retune. If the event is not cleared, replace the handpiece and tune. If the event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>288</td>
<td>Diathermy current too high or too low</td>
<td>Select End Case, start a new case and try again. If the event is not cleared, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>ID#</td>
<td>Possible Cause</td>
<td>Message</td>
</tr>
<tr>
<td>------</td>
<td>----------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>290</td>
<td>Incorrect foot pedal state</td>
<td>Verify the foot pedal is not in use and is properly connected. Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>291</td>
<td>Diathermy voltage too low</td>
<td>Select End Case, start a new case and try again. If the event is not cleared, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>335</td>
<td>Vitrectomy pressure too low</td>
<td>Release the foot pedal and try again. If the problem continues, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>336</td>
<td>Vitrectomy pressure too high</td>
<td>Release the foot pedal and try again. If the problem continues, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>337</td>
<td>Unable to build vitrectomy pressure</td>
<td>Run Self Test. If the event is not cleared, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>338</td>
<td>Vitrectomy pressure leak</td>
<td>Run Self Test. If the event is not cleared, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>339</td>
<td>Vitrectomy pressure leak</td>
<td>Run Self Test. If the event is not cleared, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>340</td>
<td>Vitrectomy pressure leak</td>
<td>Remove and insert the handpiece and run VIT prime. If the event is not cleared, replace the handpiece and run VIT prime. If the event continues, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>351</td>
<td>Corrupt files detected</td>
<td>Run Self Test. If the problem continues, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>ID#</td>
<td>Possible Cause</td>
<td>Message</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>352</td>
<td>Process timeout</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>360</td>
<td>Fluidics communication timeout</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>361</td>
<td>Fluidics communication timeout</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>370</td>
<td>Phaco communication timeout</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>371</td>
<td>Phaco communication timeout</td>
<td>Turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>374</td>
<td>Handpiece removed after being tuned</td>
<td>Insert the handpiece and retune. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>416</td>
<td>Unable to communicate with foot pedal</td>
<td>Disconnect and reconnect the foot pedal. If event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>417</td>
<td>Invalid foot pedal range</td>
<td>Disconnect and reconnect the foot pedal. If the event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>418</td>
<td>Invalid foot pedal state</td>
<td>Disconnect and reconnect the foot pedal. If the event persists, turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>501</td>
<td>Prime event. Vacuum too high.</td>
<td>Verify the following: the test chamber is not inverted, the tubing is not pinched, and the tip and the handpiece have no debris. If the event persists, replace the tubing pack. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>502</td>
<td>Prime event. Low bottle pressure.</td>
<td>Verify the tubing pack and administration set then prime again. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>ID#</td>
<td>Possible Cause</td>
<td>Message</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>503</td>
<td>Prime event. Low vacuum.</td>
<td>Verify the tubing connections and the test chamber, then prime again.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the event persists, replace the tubing pack.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>509</td>
<td>Pack removed while priming</td>
<td>Insert the pack properly and prime again.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>511</td>
<td>IV pole invalid command</td>
<td>Manually adjust the IV Pole height using the switch on the IV pole and to continue, press Close.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>512</td>
<td>IV Pole timeout</td>
<td>Manually adjust the IV Pole height using the switch on the IV pole and to continue, press Close.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>513</td>
<td>IV Pole disconnected or no communication</td>
<td>Manually adjust the IV Pole height using the switch on the IV pole and to continue, press Close.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>514</td>
<td>IV Pole not functional</td>
<td>Manually adjust the IV Pole height using the switch on the IV pole and to continue, press Close.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>516</td>
<td>IV Pole communication event</td>
<td>Manually adjust the IV Pole height using the switch on the IV pole and to continue, press Close.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>601</td>
<td>Excessive vacuum during tune</td>
<td>Verify the following: the test chamber is not inverted, the tubing is not pinched, and the tip and the handpiece have no debris.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the event persists, replace the tubing pack.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record event ID and contact technical service.</td>
</tr>
<tr>
<td>602</td>
<td>Pack was removed while tuning</td>
<td>Insert pack properly and tune again.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>605</td>
<td>Tune event. Handpiece removed or not connected.</td>
<td>Connect the handpiece and retune.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the event persists, connect a different handpiece and retune.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>ID#</td>
<td>Possible Cause</td>
<td>Message</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>701</td>
<td>Corrupt database</td>
<td>Using backup database due to database corruption. Review the settings before continuing the case.</td>
</tr>
<tr>
<td>702</td>
<td>Corrupt database. Unable to load surgeon.</td>
<td>Unable to load the surgeon due to an error in the database. Note that the settings have not changed if you continue the case.</td>
</tr>
<tr>
<td>703</td>
<td>Corrupt database. Unable to load program.</td>
<td>Unable to load the program due to an error in the database. Note that the settings have not changed if you continue the case.</td>
</tr>
<tr>
<td>711</td>
<td>Unable to play requested .wav file</td>
<td>Unable to play sounds. Complete the current case then turn off the system and restart. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1000</td>
<td>Corrupt database. Unable to load program. Default settings loaded.</td>
<td>Unable to load the program. The program will be reset to the default program settings. Review the settings before you continue the case.</td>
</tr>
<tr>
<td>1001</td>
<td>Unable to save program settings</td>
<td>Unable to save the program settings. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1002</td>
<td>Unable to delete program</td>
<td>Unable to delete the program. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1003</td>
<td>Unable to surgeon database</td>
<td>Unable to load the surgeon database. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1004</td>
<td>Unable to load surgeon data</td>
<td>Unable to load the surgeon data. The surgeon data will be reset to the default program and surgeon settings. Review the settings before you continue the case.</td>
</tr>
<tr>
<td>1006</td>
<td>Unable to load program database</td>
<td>Unable to load the program database. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1011</td>
<td>Unable to save surgeon data</td>
<td>Unable to save the surgeon data. Use the Save As option to save as a new surgeon. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1012</td>
<td>Unable to load data or defaults</td>
<td>Unable to load the data or defaults. Restart the system. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>ID#</td>
<td>Possible Cause</td>
<td>Message</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1016</td>
<td>Unable to delete surgeon database</td>
<td>Unable to delete the surgeon database. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1017</td>
<td>Unable to add surgeon</td>
<td>Unable to add a surgeon. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1018</td>
<td>Unable to add program</td>
<td>Unable to add a program. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1019</td>
<td>Remote control not functional</td>
<td>The remote control is paired but not working. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1020</td>
<td>Remote control lost connection</td>
<td>The remote control lost connection and may be out of range. If the problem continues, record the event ID and contact technical service.</td>
</tr>
<tr>
<td>1023</td>
<td>Unable to save surgeon settings</td>
<td>Unable to save the surgeon settings. If the problem continues, record the event ID and contact technical service.</td>
</tr>
</tbody>
</table>
Warranty and Maintenance
Warranty Statement

AMO Sales and Service, Inc ("AMO") warrants for a period of twelve (12) months from the date of installation of the COMPACT INTUITIV System console, foot pedal, wireless remote control, IV pole, and the phaco handpiece to be free from defects in materials and workmanship when properly installed, maintained, and used for its intended purpose. Notwithstanding the foregoing, the warranty period for the Irrigation/Aspiration Handpiece Set, Diathermy Forceps and Diathermy Cord shall be ninety (90) days from the date of installation. In no event shall the date of installation be deemed to occur later than six months from the date of delivery of the COMPACT INTUITIV System by AMO to the common carrier.

You are required to provide AMO with prompt written notice of any defect or defects and permit AMO to have access to the COMPACT INTUITIV System within a reasonable time after notification of any defect. In the event that you do not provide AMO with prompt notification of a defect or permit access to the COMPACT INTUITIV System within a reasonable time after notification, AMO is hereby released from all liability with reference to such defect and subsequent damage, if any, resulting from the inability of AMO to correct such defect.

MISUSE AND MISHANDLING ARE NOT COVERED AND WILL VOID THIS WARRANTY.

This warranty is null and void if:

- The Customer attempts to service, modify or repair the COMPACT INTUITIV System itself (other than performing the maintenance described in the operator and technician manuals),
- The COMPACT INTUITIV System is serviced or modified by any person who is not certified by AMO to perform such service, or
- The COMPACT INTUITIV System is used in a manner not provided for in this manual.

In the event of a breach by AMO of this warranty, AMO's sole and exclusive liability to you and your sole and exclusive remedy shall be limited, at AMO's option, to either (1) the repair or replacement of the COMPACT INTUITIV System, or (2) a refund of the purchase price paid by you for the COMPACT INTUITIV System (which may be conditioned upon returning the COMPACT INTUITIV System). You may be responsible for any shipping charges incurred in connection with the repair or replacement of the COMPACT INTUITIV System.

This warranty applies only to the original purchaser/user of the device and may not be transferred. This warrant will be void if and only so long as the equipment is used in any country other than the country to which it was originally shipped by AMO. This warranty does not apply to any used equipment unless otherwise stated by AMO in writing.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL AMO BE LIABLE TO THE PURCHASER/USER FOR CONSEQUENTIAL, SPECIAL, INCIDENTAL, OR PUNITIVE DAMAGES, LOSS OF PROFITS OR LOSS OF USE.
Service Contracts

Service Contracts (excluding the phaco handpiece) are available. Contact AMO for information on the availability of a Service Contract.

Note: If outside the United States, contact your local AMO office or representative for service information.

Maintenance

User maintenance of the COMPACT INTUITIV System may only be performed in connection with those adjustments and corrective actions specified in Chapter 8 "System Messages, Troubleshooting, and Diagnostics" chapter of this manual. There are no user serviceable components within the console and you must not attempt to access the internal components. Any attempt by you to perform any maintenance, adjustment, or corrective actions not expressly permitted by this manual will void the warranty.

AMO recommends, at least once every two (2) years, routine or periodic maintenance of the COMPACT INTUITIV System by an AMO representative. AMO recommends the measurement of PE resistance and leakage current according to IEC 601-1 every two (2) years.

If a problem continues following setup, check-out and troubleshooting as per the procedures in this manual, then contact AMO for corrective action (1-800-511-0911). Please contact your local AMO office for region-specific phone numbers.
Specifications

Physical Specifications

Electrical Specifications

Environmental Specifications

Storage Conditions

Diathermy Specifications

Phaco Specifications

I/A Specifications

Vitrectomy Specifications

Bottle Height Pressure

Power Graphs
## Physical Specifications

<table>
<thead>
<tr>
<th></th>
<th>English / U.S.</th>
<th>Metric:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPACT INTUITIV</strong> System Console:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Console Dimensions (with display)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>14 inches</td>
<td>35.6 cm</td>
</tr>
<tr>
<td>Depth</td>
<td>18 inches</td>
<td>45.7 cm</td>
</tr>
<tr>
<td>Height</td>
<td>7.5 inches</td>
<td>20.8 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>31 pounds</td>
<td>14 kg</td>
</tr>
<tr>
<td>Power Cord Length</td>
<td>10 feet</td>
<td>305 cm</td>
</tr>
<tr>
<td>Electrical Enclosure Current Leakage</td>
<td>IEC 60601 compliance</td>
<td></td>
</tr>
<tr>
<td>Cart Dimensions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>15 inches</td>
<td>38 cm</td>
</tr>
<tr>
<td>Depth</td>
<td>22 inches</td>
<td>56 cm</td>
</tr>
<tr>
<td>Height</td>
<td>42 inches</td>
<td>107 cm</td>
</tr>
<tr>
<td>Wheel Base</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>25 inches</td>
<td>64 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>24 inches</td>
<td>61 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>66 pounds</td>
<td>30 kg</td>
</tr>
<tr>
<td>Foot Pedal Dimensions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>6 inches</td>
<td>15 cm</td>
</tr>
<tr>
<td>Depth</td>
<td>10 inches</td>
<td>25 cm</td>
</tr>
<tr>
<td>Height</td>
<td>5 inches</td>
<td>13 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>9 pounds</td>
<td>4 kg</td>
</tr>
<tr>
<td>Cord Length</td>
<td>11.8 feet</td>
<td>360 cm</td>
</tr>
<tr>
<td>Four Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>9.82 inches</td>
<td>25 cm</td>
</tr>
<tr>
<td>Depth</td>
<td>15.57 inches</td>
<td>39.6 cm</td>
</tr>
<tr>
<td>Height</td>
<td>4.88 inches</td>
<td>12.4 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>13 pounds</td>
<td>5 kg</td>
</tr>
<tr>
<td>Cord Length</td>
<td>12 feet</td>
<td>366 cm</td>
</tr>
<tr>
<td>Power IV Pole:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. Power IV Pole Travel*</td>
<td>30 inches</td>
<td>77 cm</td>
</tr>
<tr>
<td>Settings Range*</td>
<td>0-30 inches</td>
<td>0-77 cm</td>
</tr>
<tr>
<td>Velocity</td>
<td>2.4 inches/sec.</td>
<td>6 cm/sec.</td>
</tr>
<tr>
<td>Maximum Lift Weight</td>
<td>10 pounds</td>
<td>4.5 kg</td>
</tr>
<tr>
<td>Remote Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>4 inches</td>
<td>10.2 cm</td>
</tr>
<tr>
<td>Depth</td>
<td>4 inches</td>
<td>10.2 cm</td>
</tr>
<tr>
<td>Height</td>
<td>1 inch</td>
<td>2.5 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>6.35 oz</td>
<td>180g w/o batteries</td>
</tr>
<tr>
<td></td>
<td>8.47 oz</td>
<td>240g w/batteries</td>
</tr>
</tbody>
</table>
* If using IV pole extender, maximum travel is 92 cm and settings range is 15-92 cm.

### Electrical Specifications

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Frequency</th>
<th>Power Consumption</th>
<th>Fuse Rating</th>
<th>Enclosure Current Leakage</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>100-240 Vac</td>
<td>50-60 Hz</td>
<td>225 VA</td>
<td>6.3A, 250V, Bussman GDA 6.3 (or equivalent)</td>
</tr>
</tbody>
</table>

### Environmental Specifications

| Operating Temperature Humidity | 10 to 40°C  
| 0 to 95% RH, non-condensing   |
| Ambient Pressure              | See Vitrectomy Specifications for additional information. |

### Storage Conditions

| Storage Temperature Humidity | -20 to 60°C  
| 0 to 95% RH, non-condensing  |
### Diathermy Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Adjustment</td>
<td>5 to 100%, in 5% increments</td>
</tr>
<tr>
<td>Diathermy Frequency</td>
<td>386 KHz +/- 10 KHz</td>
</tr>
<tr>
<td>Diathermy Power (maximum power into rated load)</td>
<td>8.5 Watts +/- 20% into a 350 ohm load</td>
</tr>
<tr>
<td>Diathermy Type</td>
<td>Bipolar</td>
</tr>
<tr>
<td>Rated Peak Voltage (No Load)</td>
<td>160 Volts</td>
</tr>
<tr>
<td>Connector of diathermy forcep/probe</td>
<td>Ø.072 RECEPTACLE (2)</td>
</tr>
</tbody>
</table>

All measurements are in inches.

### Phaco Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phaco Power</td>
<td>0 to 100%, in 5% increments</td>
</tr>
<tr>
<td>Phaco Vacuum Levels</td>
<td>0 to 650 mmHg, in 5 mmHg increments</td>
</tr>
<tr>
<td>Pump Flow Rate</td>
<td>10 to 60 cc/minute, in 1 cc increments</td>
</tr>
</tbody>
</table>

### I/A Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacuum Level</td>
<td>0 to 650 mmHg, in 5 mmHg increments</td>
</tr>
<tr>
<td>Pump Flow Rate</td>
<td>0 to 60 cc/minute, in 1 cc increments</td>
</tr>
</tbody>
</table>

### Vitrectomy Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutter Rate</td>
<td>100 to 1200 cuts per minute (CPM)</td>
</tr>
<tr>
<td>Atmospheric Pressure/Altitude</td>
<td>Density Altitude (DA) conditions are 1,200 cpm from sea level to 3,000 feet (914.4 m) elevation and shall be de-rated by 100 cpm per 1,000 ft (304.8 m) additional elevation up to a maximum of 10,000 ft (3,048 m).</td>
</tr>
</tbody>
</table>
Phaco Tip Velocity

Nominal Velocity for the ELLIPS FX handpiece and the WHITESTAR handpiece at 100% power, continuous, with the OPOR3020L phaco tip is shown in the following table.

<table>
<thead>
<tr>
<th>Handpiece</th>
<th>Nominal Longitudinal Velocity (m/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELLIPS FX (690880)</td>
<td>8.14</td>
</tr>
<tr>
<td>WHITESTAR (690697)</td>
<td>10.38</td>
</tr>
</tbody>
</table>

Bottle Height Pressure

The COMPACT INTUITIV System has an optional IV pole to generate positive pressure using balanced salt solution to provide positive irrigation fluid. All measurements are taken with a pressure meter reference point defined as 36 inches or 91.5 cm from the floor using the COMPACT INTUITIV cart.

Figure 10.1 – Pressure Measurement Reference Point

1. Pressure measurement point is 36 inches or 91.5 cm from the floor
An IV bottle height reported as 0 cm includes an offset of 8.7 inches or 22 cm to make sure that positive pressure is always provided.

<table>
<thead>
<tr>
<th>Bottle Height cm</th>
<th>Theoretical pressure mmHg</th>
<th>Corrected pressure vs IV pole height mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.00</td>
<td>16.28</td>
</tr>
<tr>
<td>20</td>
<td>14.80</td>
<td>31.08</td>
</tr>
<tr>
<td>40</td>
<td>29.60</td>
<td>45.88</td>
</tr>
<tr>
<td>60</td>
<td>44.40</td>
<td>60.68</td>
</tr>
<tr>
<td>76</td>
<td>56.24</td>
<td>72.52</td>
</tr>
</tbody>
</table>
Power Graphs

**Figure 10.2 – Diathermy Output Power Typical (10 ohm rated load)**

![Graph showing diathermy output power for a 10 ohm rated load.]

**Figure 10.3 – Diathermy Output Power Typical (50 ohm rated load)**

![Graph showing diathermy output power for a 50 ohm rated load.]

Figure 10.4 – Diathermy Output Power Typical (200 ohm rated load)

Figure 10.5 – Diathermy Output Power Typical (350 ohm rated load)
Figure 10.6 – Diathermy Output Power Typical (500 ohm rated load)

Figure 10.7 – Diathermy Output Power Typical (1000 ohm rated load)
Figure 10.8 – Diathermy Output Power VS Load Impedance (100% power)

Figure 10.9 – Diathermy Output Power VS Load Impedance (50% power)
11

Accessories and Parts Reordering
Parts Reordering

Following is a list of accessories that you may periodically need to reorder for your COMPACT INTUITIV System. Your AMO representative can advise you of recommended inventory levels based on the volume of phacoemulsification procedures that you do in your facility. You can order all of the items listed below through your AMO representative or directly through AMO Customer Service. Your AMO representative can confirm the availability of these items in your area.

### Table 11.1 – COMPACT INTUITIV Console

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPACT INTUITIV System Console</td>
<td>An ophthalmic micro surgical system.</td>
<td>SCP680300</td>
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<th>Part No.</th>
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<tr>
<td>Phaco Handpiece</td>
<td><strong>WHITESTAR</strong> Phaco Handpiece, Coaxial</td>
<td>690697(A)</td>
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<tr>
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<td><strong>ELLIPS FX</strong> Phaco Handpiece</td>
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<tr>
<td>IA Handpiece</td>
<td>Titanium handle</td>
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<td>Tip, straight, .3 mm port</td>
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<td>Tip, 90-degree, .3 mm port</td>
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<td>Tip, 45-degree, .3 mm port for silicone sleeve</td>
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<td>Tip, straight, .3 mm port for silicone sleeve</td>
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<td>Tip, curved, .3 mm port</td>
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<td>Tip, 45 degree, .3 mm port</td>
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<td>Tip, Binkhorst, .3 mm port</td>
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<td>Tip, luer adapter, irrigation</td>
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<td>Tip, luer adapter, aspiration</td>
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<td>Duet aspiration handle</td>
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<td>Duet irrigation handle</td>
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<td>Curved irrigator, closed end</td>
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<td><strong>MST MAESTRO Handpiece</strong></td>
<td>MHP-0001</td>
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<td>Aguirre chopper</td>
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<td>Sterilization Tray</td>
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<td>Multi-use, 18-gauge diathermy pencil</td>
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<td>Single-Use Pack</td>
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<td>100/120V Power Cord with Hospital Plug</td>
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