



## STANDARD OPERATING PROCEDURE

### HYBRIDIZATION OVEN

**Introduction-**The Biometra MINI Hybridization Oven is a sophisticated laboratory instrument designed for precise and efficient hybridization procedures, particularly in molecular biology and genetics research. This compact and versatile oven provides researchers with a controlled environment for nucleic acid hybridization, Southern and Northern blotting, as well as other applications requiring stable and elevated temperatures. The MINI Hybridization Oven offers programmable temperature settings, ensuring optimal conditions for specific protocols, and its compact design makes it suitable for laboratories with limited bench space. Equipped with a user-friendly interface and advanced heating technology, this oven facilitates uniform and reproducible results, critical for experiments involving DNA and RNA analysis. The Biometra MINI Hybridization Oven stands out as a reliable tool, contributing to the accuracy and efficiency of molecular biology workflows.

The Biometra Hybridization Oven 645i (Figure 1) is a general purpose laboratory oven with a rotating rotisserie designed for hybridization of Applied Biosystems GeneChip™ cartridge

arrays. Electronic controls accurately govern the oven temperature and provide visible status information to the operator.

Key features of the oven include:

- Programmable temperature range from 30.0°C to 70.0°C
- Programmable rotation rate range from 10 rpm to 80 rpm
- Keypad programming
- Excellent temperature accuracy and uniformity
- Ergonomic design for ease of use
- Holds up to 64 GeneChip™ cartridge arrays
- Pause / Jog control
- Highly visible status indicators
- Status information available via RS232 serial port
- Stackable (2 units high)
- Error detection and shutdown in case of malfunction

The oven has a glass door for observing samples during processing. Interior surfaces are of stainless steel for high durability and low maintenance

### **Quick reference guide**

**Turn on/off power.** 1. Press the front, left I/O button.

2. Press PAUSE to view the current settings and operate the oven.

Controls line power to the unit.

### **Adjust rotisserie motor speed, pause the motor or jog the motor.**

1. Press the UP or DOWN button until the set point blinks to access the set point.
2. Press the UP or DOWN button to set the speed (rpm).
3. Press PAUSE to pause the rotisserie.
4. Press PAUSE again to take the unit out of pause to program and run the oven.
5. 5. When the door is open, you can use the PAUSE button as the JOG button.  
These controls adjust the speed of the rotisserie motor.

### **Adjust the oven temperature.**

1. Press the UP or DOWN button until the set point blinks to access the set point.
2. Press the UP or DOWN button to set the temperature (centigrade)

**Safety information** These instructions contain important operating and safety information. You must carefully read and understand these instructions before using the hybridization oven. Applied Biosystems has designed the hybridization oven to optimize function, reliability, safety, and ease of use. It is your responsibility to install and use the hybridization oven properly.

**Follow these safety instructions regarding the hybridization oven:**

- This equipment is for indoor use only.
- Connect the unit to a properly grounded electrical outlet of the correct voltage and current handling capacity. Check the nameplate on the back of the unit for the voltage and current rating.
- Do not remove or modify the grounded power plug. Use only properly grounded outlets to avoid a shock hazard.
- If replacing fuses, note that the oven employs double pole fusing. The power entry module, located on the rear panel of the unit, contains two fuses, one for each side of the AC power circuit. Replace these only with 5x20 mm F6.3A (fast acting) 250V rated fuses, as marked on the rear panel of the oven. (See "Replacing the fuses" on page 22.)
- Disconnect the unit from the power outlet before performing any cleaning, maintenance, or service.
- The power cord is the disconnect device. Do not position the equipment so that it is difficult to operate the disconnecting device.
- Always verify that the rotisserie has stopped turning before reaching into the oven.
- The interior of the oven and its contents can reach temperatures that can cause burns. Avoid immediate contact with the oven interior upon opening the door, or wear protective gloves. The interior of the unit will remain hot without visual indication for some time after the door is open or power is switched off.
- If you plan to use the unit with any procedure that will give off fumes, be sure to operate the unit in a fume hood or with proper ventilation.
- The hybridization oven is not intended for use with flammable materials. If used with flammable materials, fire or explosion hazard may result.
- If radioactive materials are used in processing, user must comply with all regulations regarding the acquisition, use, and disposal of such materials. **CAUTION!** If you use this instrument in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired and the warranty may be voided. **WARNING!** The oven weight is approximately 67 pounds (30 kg). To avoid injury, use 2 persons when lifting the oven.

- Do not continue to use the oven if the temperature or rotisserie controllers fail, as evidenced by errors E01 through E12 being displayed (see the section, "Error codes and troubleshooting" on page 21). Contact Thermo Fisher Scientific Technical Support.
- Use appropriate hand and eye protection when handling hazardous chemicals

**IMPORTANT!** In case of power interruption, if the interruption is no longer than 10 seconds, the oven will restart automatically at the originally programmed temperature set point and rotation rate. If the interruption lasts longer than 10 seconds, the oven will restart in PAUSE mode, in which both heating and rotation are suppressed. You must press the PAUSE button to reactivate the oven. If you experience frequent power interruptions in your locality, consider purchasing an uninterruptible power supply (UPS).