

This quick start guide is intended to provide a quick overview of your FIREBOY's (FB) key features and to offer basic instructions for getting started. For detailed information, please refer to the latest operating instructions that can be found at www.integra-biosciences.com in different languages.





Important: Read this quick start guide carefully so as to familiarize yourself with the FIREBOY plus/eco before connecting it to the gas supply. Keep these instructions for further reference.

Intended use and choice of gas type

FIREBOY plus/eco is an automatic safety Bunsen burner for heating or flame-sterilizing suitable laboratory materials. For continuous operation the optionally available long burner head must be used. FIREBOY shall only be used with natural gas or with commercial gas cylinders containing butane-propane mixtures with a minimum of 10 % propane (LPG grades A-D), where the maximum input pressure must be guaranteed.



FIREBOY may only be operated with the nozzle that corresponds to the gas type in use.


Type of gas	Nominal = maximum gas input pressure	Inscription nozzle	Nominal thermal rate
Natural gas E (~94 % methane)	20 mbar	N80 	2.0 kW
Natural gas LL (~81 % methane)			1.0 kW
Butane/propane gas (liquid gas)	50 mbar	P60 	0.8 kW

The P60 nozzle for butane/propane gas is fitted ex-factory. If necessary, replace the nozzle. Unscrew the brass screw on the lower side of the device with a small coin. Turn over the device and allow the nozzle to drop out. Insert the new nozzle and retighten the brass screw.



Safety information

Regardless of the listed safety notes, all locally applicable regulations must be observed.

- 1) FIREBOY may only be used by properly trained personnel under constant supervision in a manner specified by INTEGRA Biosciences.
- 2) Use only original INTEGRA Biosciences mains adapter or rechargeable batteries (FB plus only).
- 3) Do not use a FIREBOY or adapter which is leaking, damaged or which does not operate properly.
- 4) Use only in well ventilated location in accordance with national requirements for the supply of combustion air.
- 5) The FIREBOY shall be operated horizontally or with a maximum inclination allowed by the folding stand at the base.
- 6) Do not use the FIREBOY near flammable material or in explosive areas.
- 7) Gas cartridges shall be changed in a well ventilated location, away from any sources of ignition and from other people. Make sure to discharge static electricity accumulated beforehand, e.g. by touching a metallic water tap.
- 8) If there is a leak on your device (smell of gas), immediately turn off the gas supply, extinguish any open flames and ensure a sufficient supply of fresh air. Pull out the mains plug. If possible, wrap the FIREBOY in a fire blanket and take it outside immediately, into a well ventilated flame free location. Check all gas connections for tightness. Never detect leaks using a flame, use soapy water. If the smell of gas persists, the appropriate authorities must be notified, e.g. fire brigade. Leaking gas can cause a fire or an explosion. This may result in severe injuries, fatal accidents and damage to property.
- 9) Be sure to close off the gas supply and switch off the device before: Transport of the device; changing the nozzle, the adapter, the gas cartridge or the battery; longer breaks; cleaning work. 

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Gas connection



When replacing the adapters, always close off the gas supply, switch off the device, disconnect the mains plug and remove the gas cartridge.



- Insert the appropriate adapter in the brass gas adapter opening on the rear side, make sure it audibly clicks into position.
- To remove the adapter, use a pointed tool to press the grey adapter release pin on the lower side inward and pull the adapter to the rear.

Connect the cartridges as described in the enclosed instructions for the adapters.
Connection of the gas tubing:



- Connect the tubing from the central gas supply or from the gas cylinder to the previously installed adapter and fix it with a clip, if necessary.



Use only approved and tested safety gas tubing with threaded or hose connectors. Avoid twisting of the tubing.

Before using the FIREBOY, firmly tighten all gas connections and verify tightness, e.g. check for smell of gas; apply soapy water or leak detection spray to all connections.

Electricity supply and connecting a switch

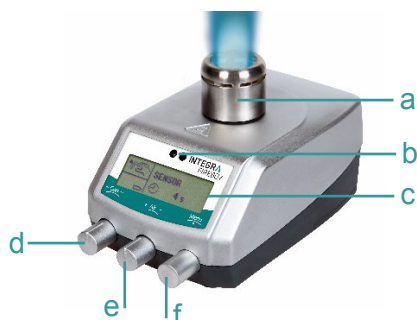


- Insert the mains plug in the socket on the rear side of the FIREBOY and plug it to the electricity mains. (FIREBOY plus can also be operated with the optional battery.) Switch on the device.
- Insert the plug of the foot or benchtop switch in the socket on the rear side, if required.

Getting started



Set up the instrument on a planar surface according to the IQ/OQ document (PN 144953).
Operating conditions: 15-35 °C, 15-80 % r. H. (not condensing).
Supply voltage: 100 – 240 VAC, 50 – 60 Hz, 5 W.



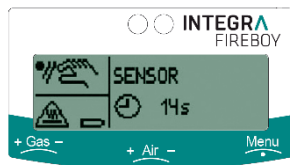
- a. Burner head
- b. Motion sensor (FB plus only)
- c. LCD display (FB plus only)
- d. GAS KNOB, to adjust the flame size
- e. AIR KNOB, to adjust the flame temperature
- f. MENU KNOB (FB plus) / PUSH BUTTON (FB eco), to switch on/off, for flame ignition or extinguishing and for menu navigation

Switch on/off:

ON: Press (f) briefly, OFF: Press (f) for 2 sec

Settings and language selection (FIREBOY plus only)

Rotate the MENU KNOB to switch between the operating modes and select them by pressing. Adjustable parameters are displayed on a black background. These can be changed by rotating the MENU KNOB and confirmed by pressing.



- **SENSOR:** flame is ignited, if an object passes (2x, recommended setting) the sensor.
- **BUTTON:** flame is ignited by pressing the MENU KNOB.
- **FOOTSWITCH:** flame is ignited via the foot or benchtop switch.
- **SETTINGS:** To set general system parameters.

For language selection rotate the MENU KNOB and navigate to the **SETTINGS** menu. Select a language and confirm it by pressing. Set other system parameters to your requirements.

Operating



Observe the hazard warnings on the device. The burner head and the device may become very hot. There is the risk of burns.

The flame is ignited and extinguished by one of the following methods:

- **Footswitch:** by pressing the foot or benchtop switch. The flame burns as long as the switch is pressed or when the defined burning time is over (FB plus only).
- **Button:** by pressing the MENU KNOB / PUSH BUTTON. Defined maximum burning time.
- **Sensor** (FB plus only): if an object passes the sensor. Defined burning time.

Note: Pressing the MENU KNOB / PUSH BUTTON extinguishes the flame at any time.

If finish your work, close off the gas supply and activate the flame again to depressurize the gas tubing and to burn the residual gas. Switch off the FIREBOY.

Working with liquids



- In order to protect the burner chamber from contamination when working with liquids, the folding stand at the base can be used to incline the FIREBOY.
- The inclination direction can be modified by removing the folding stand after pressing it together and inserting it on the opposite side.

Maintenance



Allow the burner head to cool off before cleaning the device. Switch off the device and disconnected it from the gas supply. Allow the device to dry before operating it again.

- Clean the FIREBOY with a cloth moistened with soapy water or with a 70 % ethanol solution.
- If the FIREBOY has been contaminated, wipe it with a lint-free cloth lightly soaked with a suitable disinfectant and wipe dry directly.
- If the burner head get soiled, it can be pulled vertically out for disinfection. In error case, carefully clean the ignition electrode (white ceramic posts) with a lint-free cotton swab saturated with 70% ethanol solution. If a ceramic post is loose or broken, the burner head must be replaced.
- Check the gas tubing regularly for brittle or porous areas. Replace it, if damaged, or at the latest 8 years after production (year imprinted on the tubing).

When FIREBOY is not in use for a long time, remove the gas cartridge and store it in a well-ventilated, dry and cool place, at a safe distance from heat sources.

Servicing work and repairs may only be performed by INTEGRA Biosciences or an authorized after-sales service member.

Equipment Disposal



FIREBOY must not be disposed of with unsorted municipal waste or incinerated. Dispose of the FIREBOY and the optional, discharged NiMH battery separately in accordance with the regulations in your area governing disposal of devices.

Manufacturer

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Declaration of conformity

INTEGRA Biosciences AG – 7205 Zizers, Switzerland

declares on its own responsibility that the devices

Description	Models
FIREBOY plus	144000
FIREBOY eco	144010

comply with:

EU Directives

Low Voltage Equipment	2014/35/EU
Electromagnetic Compatibility	2014/30/EU
Restriction of Hazardous Substances	2011/65/EU
Waste Electrical and Electronic Equipment	2012/19/EU
Battery Directive	2006/66/EC

EU Regulations

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)	1907/2006
Capacity Labelling of Portable Secondary Batteries	1103/2010
Ecodesign - Power supplies	278/2009

Standards for EU

Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.	EN 61010-1: 2010
Electrical equipment for measurement, control and laboratory use - EMC requirements.	EN 61326-1: 2013

Standards for Canada and USA


Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.	CAN/CSA-C22.2 No. 61010-1
Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.	UL 61010-1

Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

**Part 15 of the
FCC Rules
Class A**

Zizers, March 02, 2020


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