

Riello 531SE

Riello Controller 531SE Instruction Manual

Model: 531SE (Part Number: 3001158)

1. INTRODUCTION

This manual provides essential information for the safe and effective installation, operation, and maintenance of the Riello Controller 531SE. This controller is designed for use with Riello 40 series oil burners, specifically compatible with models such as G2 426T1, G3R 432T1, G3RK 434T1, G5RK 453T1, and G5IR 456T1. Please read this manual thoroughly before proceeding with any installation or operation.

2. SAFETY INFORMATION

WARNING: HIGH VOLTAGE! This device operates with high voltage (8 kV - 16 mA). Improper handling can result in severe injury or death. All installation, maintenance, and troubleshooting procedures must be performed by qualified personnel only. Disconnect power before servicing.

Observe all local and national electrical codes and safety regulations. Ensure proper grounding. Use copper conductors only for electrical connections.



Image 2.1: Front view of the Riello Controller 531SE. The label clearly displays "ATTENZIONE! ALTA TENSIONE", "VORSICHT! HOCHSPANNUNG", "ATTENTION! HAUTE TENSION", "WARNING! HIGH VOLTAGE", and "ATENCION! ALTA TENSION" along with "8 KV - 16 mA", indicating the high voltage operation of the device. Two black electrical connectors are visible at the top.



Image 2.2: Side view of the Riello Controller 531SE. A red indicator light is visible on the side, and a label states "USE COPPER CONDUCTORS ONLY", emphasizing a critical wiring requirement for safety and proper function.

3. PRODUCT OVERVIEW

The Riello Controller 531SE (Part Number 3001158) is a vital component for Riello 40 series oil burners, responsible for managing the ignition and combustion sequence. It ensures safe and efficient operation of the burner by monitoring various parameters and initiating shutdown in case of a fault.

Key Features:

- Integrated ignition and flame control.
- Safety lockout function.
- Compatible with specific Riello 40 G series burners.
- High voltage output for ignition.



Image 3.1: Angled view of the Riello Controller 531SE. The label displays the model number "531SE" and part number

"080490223004" (which is likely a serial or internal production number, not the main part number 3001158). High voltage warnings are also visible, along with "ts 10/1s" which may refer to timing specifications.

4. SETUP AND INSTALLATION

Installation of the Riello Controller 531SE must be performed by a certified technician in accordance with all applicable electrical and safety standards. Incorrect installation can lead to equipment damage, fire, or severe personal injury.

Installation Steps (General Guidelines):

1. **Power Disconnection:** Ensure the main power supply to the burner system is completely disconnected and locked out before beginning any work.
2. **Mounting:** Securely mount the controller in the designated location on the burner, ensuring it is protected from moisture and excessive heat.
3. **Electrical Connections:** Connect the wiring according to the burner's specific wiring diagram. Pay close attention to phase, neutral, ground, and signal connections. **Remember to use copper conductors only.**
4. **Ignition Electrode Connections:** Connect the high-voltage cables from the controller to the ignition electrodes. Ensure these connections are secure and properly insulated.
5. **Flame Sensor Connection:** Connect the flame sensor (photocell or UV sensor) to the appropriate terminals on the controller.
6. **Testing:** After all connections are made and verified, restore power and perform a functional test of the burner system as per the burner manufacturer's instructions.

5. OPERATING PRINCIPLES

The Riello Controller 531SE manages the automatic startup and shutdown sequences of the oil burner. Upon receiving a call for heat, the controller initiates a pre-purge cycle, followed by ignition, and then monitors the flame. If a flame is not established within the specified safety time, or if the flame is lost during operation, the controller will enter a lockout state.

Indicator Light:

The controller typically features an indicator light (often red) that provides status information:

- **Steady On:** Normal operation or pre-purge.
- **Flashing:** Indicates a fault or lockout condition. The specific flash pattern may correspond to a particular error code (refer to the burner's main manual for detailed error codes).

Resetting a Lockout:

If the controller enters a lockout state, the burner will cease operation. To attempt a reset, press the reset button (often integrated with the indicator light) on the controller. If the burner fails to restart or locks out repeatedly, do not attempt further resets. Consult a qualified technician.

6. MAINTENANCE

The Riello Controller 531SE is designed for reliable operation and generally requires minimal maintenance. However, regular inspection of the overall burner system is crucial for longevity and safety.

Recommended Maintenance Practices:

- **Annual Inspection:** Have the entire burner system, including the controller, inspected annually by a qualified service technician.
- **Wiring Check:** Ensure all electrical connections are secure and free from corrosion.

- **Environmental Conditions:** Keep the controller and burner area clean and free from dust, debris, and moisture.
- **Component Integrity:** Visually inspect the controller for any signs of physical damage, overheating, or loose components.

Do not attempt to open or repair the controller unit. There are no user-serviceable parts inside.

7. TROUBLESHOOTING

This section provides general troubleshooting guidance. For detailed diagnostics, always consult the specific service manual for your Riello 40 series burner model or contact a qualified technician.

Common Issues and Potential Causes:

- **Burner Fails to Start (Controller in Lockout):**
 - No fuel supply.
 - Faulty flame sensor.
 - Ignition electrodes incorrectly gapped or fouled.
 - Air supply issues.
 - Electrical wiring fault.
 - Internal controller fault.
- **Burner Starts but Shuts Down Quickly:**
 - Flame not established or lost.
 - Flame sensor dirty or faulty.
 - Combustion issues (e.g., incorrect air/fuel mixture).
- **No Indicator Light:**
 - No power to the burner system.
 - Internal controller fault.

Action: If a lockout occurs, press the reset button once. If the problem persists, contact a qualified service technician. Do not repeatedly press the reset button without addressing the underlying cause.

8. SPECIFICATIONS


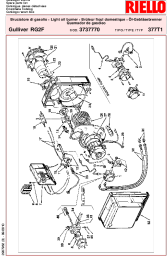


Specification	Value
Manufacturer	Riello
Model Number	531SE
Part Number	3001158
Item Weight	2 kg
Voltage Output (Ignition)	8 kV - 16 mA
Compatible Burners	Riello 40 G2 426T1, G3R 432T1, G3RK 434T1, G5RK 453T1, G5IR 456T1
Date First Available	8 Dec. 2020



9. WARRANTY AND SUPPORT

Specific warranty terms for the Riello Controller 531SE are typically provided by the point of purchase or the official Riello distributor in your region. Please retain your proof of purchase for warranty claims.

For technical support, service, or to locate an authorized service center, please contact Riello customer service or visit the official Riello website. Always provide the model number (531SE) and part number (3001158) when seeking support.

Related Documents - 531SE

	<p>Riello 40 Series Residential Oil Burners F3 & F5 Installation Manual</p> <p>This manual provides detailed installation instructions for Riello 40 Series Residential Oil Burners, models F3 and F5. It covers component identification, setup, mounting, electrical connections, nozzle placement, and adjustment procedures. The manual is intended for retrofit applications and includes technical data, specifications, and spare parts lists.</p>
	<p>Riello Gulliver RG2F Oil Burner Parts List and Diagram</p> <p>Detailed spare parts list and component diagram for the Riello Gulliver RG2F light oil burner (Model 377T1, Code 3737770), including part numbers and English descriptions.</p>
	<p>Priročnik za namestitev, uporabo in vzdrževanje gorilnika RIELLO Gulliver RG1NR na plinsko olje</p> <p>Ta dokument vsebuje podrobna navodila za namestitev, uporabo, vzdrževanje in odpravljanje napak enostopenjskega gorilnika RIELLO Gulliver RG1NR na plinsko olje, vključno s tehničnimi podatki, varnostnimi predpisi in postopki za odpravljanje težav.</p>
	<p>Riello 40 BF Single Stage Operation Oil Burner Installation and Operating Manual</p> <p>Comprehensive installation and operating manual for the Riello 40 BF single-stage oil burner, covering technical specifications, installation procedures, wiring diagrams, troubleshooting, and spare parts.</p>

	<p>Riello 40 Series F3 & F5 Residential Oil Burner Installation Manual</p> <p>Comprehensive installation manual for Riello 40 Series residential oil burners, models F3 and F5. Covers technical data, component identification, setup, mounting, electrical connections, oil line configuration, pump purge, adjustments, and spare parts.</p>
	<p>Riello 40 G10 Light Oil Burner Installation and Maintenance Manual</p> <p>This document provides comprehensive installation, use, and maintenance instructions for the Riello 40 G10 light oil burner. It includes technical data, diagrams, electrical wiring schematics, and combustion adjustment procedures.</p>