



**Boekel**

**Orbitron V**

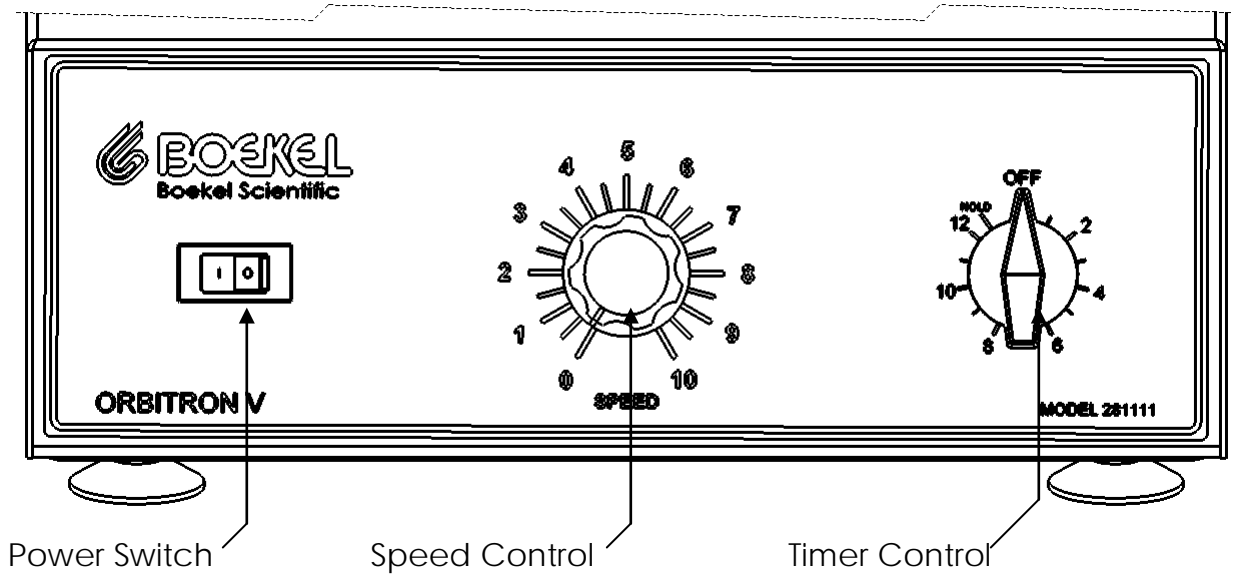
**Models 281111, 281111-2**

**Operating Instructions**

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Figure 1  
Rotator Front Panel



## 1.0 Safety

The following symbol marked on the equipment means:



**Caution:** Read these operating instructions fully before use and pay particular attention to sections containing this symbol.

**Attention:** Suivre attentivement les instructions avant l'usage et prêtez une attention particulière aux sections comportant ce symbole.

Always observe the following safety precautions :



- Use only as specified by the operating instructions or the intrinsic protection may be impaired.
- After transport or storage in humid conditions, dry out the unit before connecting it to the supply voltage. During drying out the intrinsic protection may be impaired.



- Do not lift the Rotator by the Tray.
- **Risk of Binding:** Assure that other equipment close to the Rotator does not cause interference with the tray movement.
- Connect only to a power supply that provides a safety ground terminal.
- Before moving, disconnect at the power supply socket. Do not remove the plug from the rear of the unit.
- Ensure that the power switch is easily accessible during use.
- Do not block or restrict ventilation slots.
- If liquid is spilled on top of the unit, disconnect it from the power supply and have it checked by a competent person.
- It is the user's responsibility to carry out the appropriate decontamination if hazardous material is spilled on or inside the equipment.
- This product must be used with an UL / CSA Certified power supply cord set rated for a minimum temperature of 90°C.
- The Power Cord supplied with the unit is the disconnect means.
- Do not position the unit so that it is difficult to operate the disconnecting means.
- Caution should be taken when operating the Orbitron V with heavy loads at high speed. Always start the Orbitron V at low speed and gradually increase the speed to the desired setting.



## 2.0 Product Information

The Boekel Orbitron V is a heavy duty 3-Dimensional gyratory mixer that is designed for gentle as well as vigorous agitation, making it suitable for a wide variety of applications. The Orbitron V is supplied with a 30 cm square platform and a non skid rubber mat.

## 3.0 Assembly

### 3.1 Unpacking the Unit

Remove the packing materials carefully, and retain for future shipment or storage of the unit. Inspect for damage. Report all shipping damage to the carrier immediately. Shipping damage is covered by the carrier and repair/replacement for shipping damages must be coordinated through the carrier. Complete and return the Warranty Registration Card. Packages should contain:

- Orbitron V
- Power line cord
- One 3/16" Hex key for tilt adjustment
- Operating instructions

### 3.2 Installation

Place the Orbitron V on a clean, flat, and stable work surface to ensure that the suction feet on the base of the unit will adhere to the surface and adequately secure the system for use. Make sure that the unit is placed a minimum of 8" from the edge of the workbench and there is adequate clearance for the tray rotation to ensure user safety.



## 4.0 Operation

### 4.1 Identification of Controls (See Figure 1)

The **Power Switch** controls power to the unit.

The **Speed Adjustment Knob** is used to increase or decrease the rotational speed of the platform.

Note: The Orbitron V is equipped with a soft start motor control feature. Upon activation of the speed control the motor will have a three second delay and softly start the shaking motion.

The **Timer** is used for timed operation. The maximum timer duration is 12 hours.

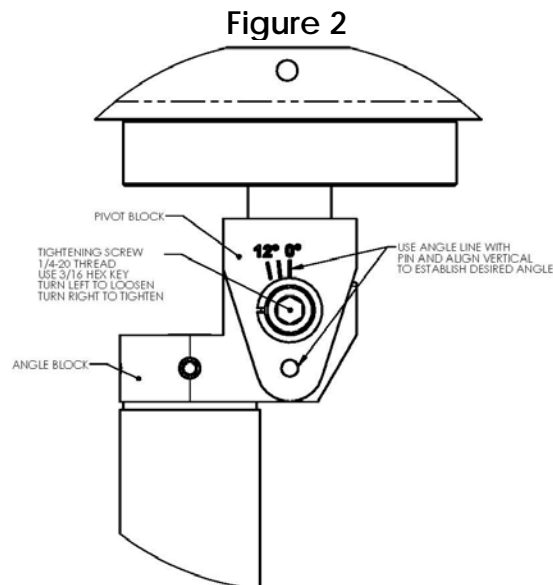
## 4.2 Timer Operation

For continuous operation turn the Timer to the Hold position. The unit will continue to operate until either the timer is turned off, or until the power switch is turned off. For timed operation turn the Timer until the pointer is aligned with the desired time. The timer markings are in hour units. The unit will shut off when the time expires.

## 4.3 Tray Angle Adjustment (See Figure 2)

**Warning!** Remove power from the equipment before adjusting Tray angle.

- Remove load from Tray.
- Rotate Speed Adjustment Knob counterclockwise until the Tray is rotating slowly.
- When the pivot block is easily accessible for adjustment turn the Power Switch off.
- Insert the supplied 3/16" hex key into the Tightening Screw and turn it counterclockwise to loosen the screw.
- To Increase the Tray angle, pivot the tray clockwise to a maximum set angle of 12°.
- To decrease the Tray angle, pivot the platform counterclockwise to a minimum set angle of 0°.
- After adjusting the angle, tighten the Tightening Screw turning it clockwise until it is tight.
- Remove hex key and ensure that there are no obstructions before starting the operation the Orbitron V.



## 5.0 Technical Specifications

This equipment is for indoor use only and will meet its performance figures within the ambient temperature range of 0°C to 40°C, with maximum relative humidity of 80% non-condensing. Installation category II (transient voltages). Pollution degree 2 in accordance with IEC 664. For operation at altitudes of up to 2000 meters (6500 feet).

Ambient Operating Temperature	0°C to 40°C
Tilt Range	0° to 12°
Load Capacity	9 Kg (20 lb)
Supply Ratings	Model 281111: 115 VAC ± 10%, 0.73 A, 60 Hz Model 281111-2: 230 VAC ± 10%, 0.7 A, 50/60 Hz
Power Rating	Model 281111: 50 W Model 281111-2: 60 W
Rotational Speed	Variable from 5 to 120 rpm



This product has been tested to the requirements of CAN/CSA - later version of the same standard incorporating the same level of testing requirements.

## 6.0 Accessories

Model Number	Description
260312	Double Stacking Tray
C2202208	Dimpled Rubber Mat

## 7.0 Fault Diagnosis

Symptom	Possible Cause	Action Required
Unit does not operate	<ul style="list-style-type: none"> <li>a. Unit not switched on</li> <li>b. Unit not plugged into power supply</li> <li>c. Fuses blown</li> <li>d. Power supply failure</li> </ul>	<ul style="list-style-type: none"> <li>a. Switch on</li> <li>b. Plug in, switch on</li> <li>c. Replace fuses (see section 8.2)</li> <li>d. Check that other electrical appliances on the same circuit are</li> </ul>

		working
No rotation	<ul style="list-style-type: none"> <li>a. Speed Adjustment Knob is positioned to off position.</li> <li>b. An obstruction prevents tray rotation</li> <li>c. Motor failure</li> </ul>	<ul style="list-style-type: none"> <li>a. Turn Speed Adjustment Knob clockwise until desired rotation speed is reached</li> <li>b. Remove obstruction</li> <li>c. Have unit checked by a competent service person</li> </ul>

## 8.0 Maintenance and Service

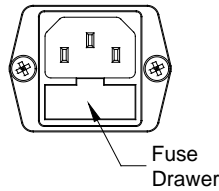
All Boekel laboratory products are designed to comply with IEC1010-1. No routine maintenance is required.

### 8.1 Cleaning

Disengage power cord prior to cleaning. If a spill occurs, use appropriate clean-up procedures as required for radiation or biohazard control. The outer casing can be cleaned with a cloth dampened with water. Periodic inspection of the work surface should be performed to ensure that the surface is clean and the suction feet on the base of the unit adhere to the work surface to stabilize the system for use. Do not immerse the Orbitron V in water.



**Figure 3**



## **8.2 Replacement of Fuses**

There are two supply fuses located in the fuse drawer. To change the fuses:

- Turn power switch to the off position
- Disconnect the unit from the power supply
- Remove the line cord from the power entry module on the back of the unit
- Pull back on the fuse drawer catch
- Pull out the fuse drawer (See Figure 3)
- Check and replace with the correct fuses if necessary. The fuses should be 5mm x 20mm quick acting, rated 250V for 230V units, 5mm x 20mm time delay, rated 250V for 115V units.
- Model 281111 (115 V AC): 1.25AT
- Model 281111-2 (230 V AC): 1.00AF
- Push the fuse drawer back in. Reconnect unit to power supply.

## **9.0 Warranty**

When used in laboratory conditions and according to these operating instructions, Boekel warrants this product to be free of defective material and workmanship for a period of two years from the date of manufacture. The liability of Boekel for any defective equipment during the warranty period shall be limited to the repair of such equipment or replacement thereof without charge for parts or labor.

## 10.0 Service

Should service be required, contact Boekel Scientific Customer Service. A Returned Material Authorization (RMA) number is required before this Boekel product can be returned for any reason. A Decontamination Certificate must be completed, signed by the user, and returned to Boekel Scientific prior to receiving the RMA number. Please be sure to mark the outside of the returned goods package with this RMA number to ensure prompt handling.

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