



# Boekel Orbitron Rotators

**Models**  
**260200 and 260200-2**  
**260250 and 260250-2**

## Operating Instructions

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# 1. Safety

**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.
- Plug the Power Pak into a receptacle of the appropriate voltage.
- Ensure that the power switch is easily accessible during use.
- If liquid is spilled inside 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 appropriate decontamination if hazardous material is spilled on or inside the equipment.

## 2. Product Information

The Boekel Orbitron Rotators are designed to provide a gentle, low-foam mixing motion for uniform mixing of samples in test tubes and glass trays. Application areas include” Hybridization, Electrophoresis, Hematology, RIA, Biochemical preparation, resin suspension and other areas requiring complete mixing. There are two basic models of the Boekel Orbitron Rotator. The Model 260200 is a fixed angle/fixed speed version and the Model 260250 is a variable angle/variable speed version. The Boekel rotators come with standard 12-inch trays and mats.

The Boekel Rotator I Model 260200 has a rotating speed of approximately 25 RPM with the tray set at a fixed tilt angle of 23 degrees. The Boekel Rotator II Model 260250 has a variable speed of 6 to 25 RPM and a variable tray tilt angle of 0 to 23 degrees. Each Rotator comes with a 12-inch tray and one dimpled mat for use with test tubes. The Model 260250 also includes one flat mat for use with other vessels. The trays when mounted to the Boekel rotator are capable of supporting and rotating up to 1 kilogram (2.2 lbs.) of mass centered on the tray.

## 3. Assembly

### 3.1 Unpacking

Remove 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. Packs should contain:

- Orbitron Rotator
- Operating Instructions
- Tray
- Mat

### 3.2 Installation

Place the Orbitron Rotator on a flat and stable surface and allow adequate clearance space around the unit for tray rotation. Install the Rotator tray by first removing the two screws from the top of the Rotator neck and then align the two holes in the tray with the screw holes in the neck. Reinsert the screws through the tray into the Rotator neck. Plug the power pak into a receptacle of the appropriate voltage. When moving the instrument, always carry by the base, never by the tray.

## 4. Operation

### 4.1 Controls

The Power Switch controls power to the unit.

## 4.2 Setting the Tray Tilt Angle

The Model 260200 Rotator has a fixed tray tilt angle of 23 degrees. The Model 260250 Rotator is shipped with the tray support neck set at the maximum tilt angle of 23 degrees. After the tray has been securely fastened to the neck, the tilt angle can be adjusted by firmly applying pressure to the high edge of the tray while lifting upward on the low edge. This should be done with the tray empty. It is advisable to practice this adjustment several times until the amount of pressure required is apparent.

## 4.3 Loading the Tray

Insure that the power is off before loading the tray. The Rotators are designed to handle total loads of up to 1 kilogram. For best results, always evenly distribute the load over the surface of the tray from the center outward. Do not place objects on the tray, which are not stable on the mat. Do not place objects on the Rotator, which do not lie stable on the mat. In general, objects greater than 25mm in diameter are unstable.

## 4.4 Adjusting the Rotation Speed

Start the Rotator by activating the power switch. On the Model 260250 Rotator, the speed can be adjusted by turning the Speed Control knob clockwise to increase speed. For loads approaching 1 kilogram, it may be necessary to first start the rotating motion at high speed and then back off the speed to the desired lower setting.

## 4.5 Avoid Overloading

Avoid stalling the Rotator motor through overloading or blocking the rotation of the tray. Motor life may be affected or motor damage may occur if the motor is repeatedly stalled.

# 5. Accessories

## 5.1 Tray 12" x 12"

Boekel Part Number C2202773

## 5.2 Dimpled Mat 12" x 12" (vinyl)

Boekel Part Number C2202208

## 5.3 Flat Mat 12" x 12" (rubber)

Boekel Part Number C2202162

## 5.4 8" Tray and Mats Kit

Boekel Part Number 260288

# 6. Fault Diagnosis

## Symptom

1. Unit does not operate

## Possible Cause

- a. Unit not switched on
- b. Unit not plugged into power supply

## Action Required

- a. Switch on
- b. Plug in, switch on

- c. Power supply failure
- c. Check that other electrical appliances on the same circuit are working

## 7. Technical Specifications

This equipment is intended for indoor use and will meet its performance figures within the ambient temperature range of 10°C to 35°C, with maximum relative humidity of 80% (non-condensing). Installation Category II (transient voltages). Pollution Degree 2 in accordance with IEC 664. Suitable for operation at altitudes of up to 6500 feet.

### Specifications:

Temperature Range:	+4°C to 55°C
Supply Voltage Range:	115V +/- 10%, 50/60 Hz 230V +/- 10%, 50/60 Hz
Power Rating:	Model 260200: 22 W Model 260200-2: 22 W Model 260250: 22 W Model 260250-2: 22 W
Load Capacity	1 kilogram (2.2 lbs.)
Approximate Tray Test Tube Capacity	
Tube Size Capped	Quantity
13mm x 125mm	42
13mm x 100mm	54
13mm x 75mm	64
13mm x 50mm	84

## 8. 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. In the event of a spill, clean the mat under running water. Use a damp cloth with water to wipe the tray and the unit surface. Do not submerge or immerse the Rotator in water. Before using any cleaning or decontamination method except those recommended by the manufacturer, users should check that the proposed method would not damage the equipment.

## 9. 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. Service

A Returned Goods Authorization (RGA) number must be obtained before any Boekel products are returned for any reason. A Decontamination Notice must be completed, signed by the user, and returned to Boekel Scientific prior to receiving the RGA number. Please be sure to mark the outside of the return goods package with this RGA number to ensure prompt handling.

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