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## Grundfos SCALA1 3-45

# Grundfos SCALA1 3-45 Booster Pump User Manual

Model: SCALA1 3-45

## 1. INTRODUCTION

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The Grundfos SCALA1 3-45 is a self-priming, multistage pump designed for pressure boosting applications. It integrates all necessary components into a compact unit, providing a reliable water supply for various residential uses, including city water, well water, groundwater intake, and rainwater harvesting. This manual provides essential information for the safe and efficient installation, operation, and maintenance of your SCALA1 3-45 booster pump.



Figure 1: Grundfos SCALA1 3-45 Booster Pump

## 2. SAFETY INFORMATION

Always adhere to local codes and regulations during installation and operation. Read all instructions carefully before installing or operating the pump. Failure to follow safety instructions can result in serious injury or property damage.

- Ensure the power supply is disconnected before performing any installation, maintenance, or repair work.
- The pump must be properly grounded to prevent electrical shock.
- Do not operate the pump with damaged electrical cords or plugs.
- Protect the pump from freezing temperatures.
- Keep children and unauthorized personnel away from the pump during operation.
- Do not exceed the maximum inlet pressure of 43 PSI.

## 3. PRODUCT OVERVIEW

The SCALA1 3-45 is a compact, all-in-one pressure boosting unit. Its self-priming design allows it to pump water from a level below the pump, capable of lifting water from a depth of 26 feet in less than 5 minutes when filled with water. Key features include:

- **Integrated Protection Features:**

- **Dry Running Protection:** Automatically stops the pump if water shortage occurs.
  - **Cycling Protection:** Prevents frequent pump starts due to minor leakages in the installation.
  - **Max Runtime Protection:** Stops the pump after a set period of continuous operation to prevent damage from pipe breakages.
  - **Motor Protection:** Built-in protection against excessive temperature, seizure, or overload to prevent motor burnout.
- **Bluetooth Connectivity:** Allows communication with the Grundfos GO app for detailed pump monitoring and customization.
  - **Twin Booster System Capability:** Can be set up as a duty/standby or duty/assist system via the Grundfos GO app.

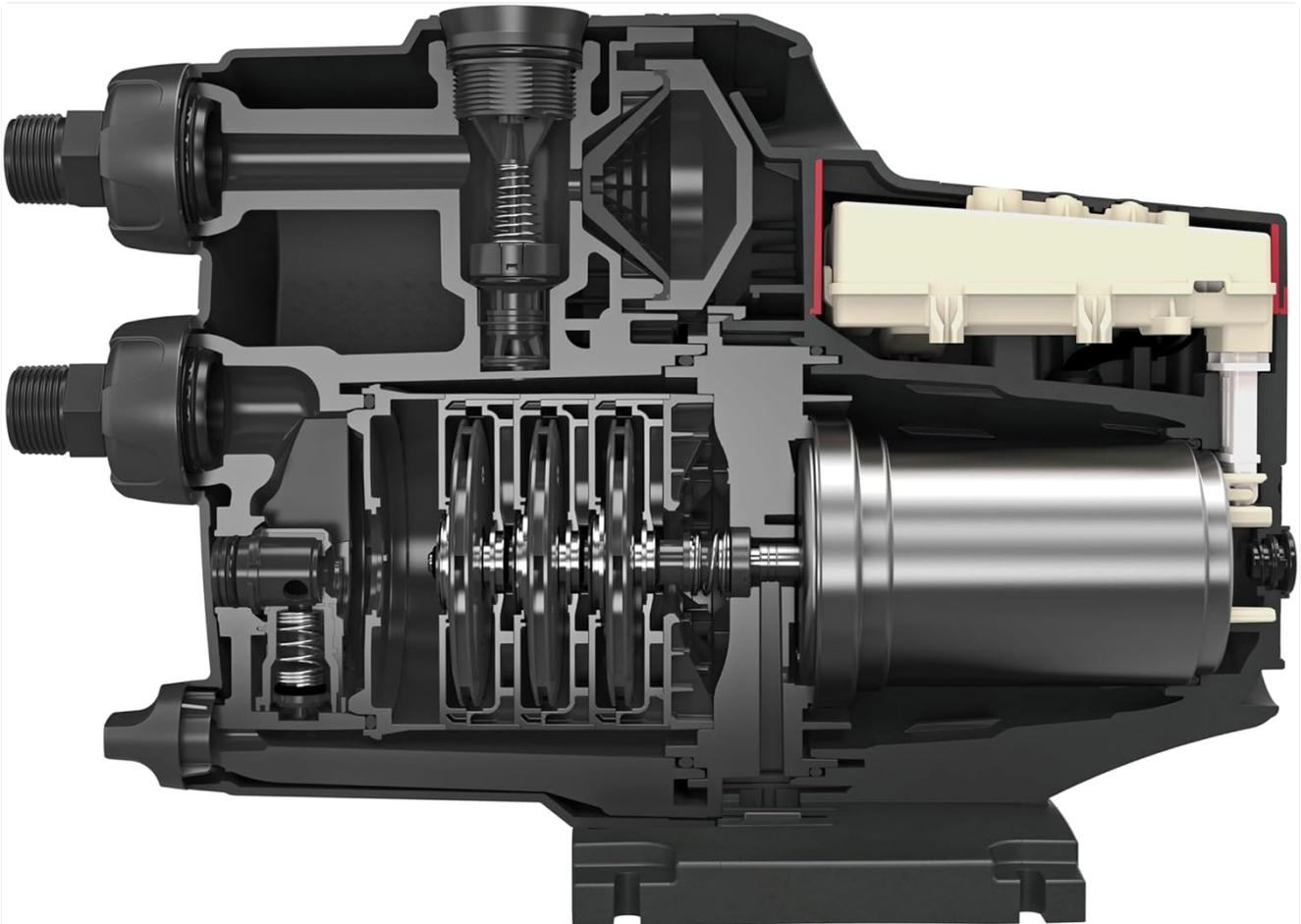


Figure 2: Internal components of the SCALA1 3-45

This image illustrates the internal design of the SCALA1 3-45, showcasing its multistage impeller system and integrated motor, which contribute to its efficient and reliable operation.

## 4. SETUP AND INSTALLATION

Proper installation is crucial for the optimal performance and longevity of your SCALA1 3-45 pump. Refer to the detailed installation guide provided with the product for comprehensive instructions.

### 4.1. Placement

- Install the pump on a stable, level surface.
- Ensure adequate ventilation around the pump.
- Protect the pump from direct sunlight, rain, and freezing temperatures.

### 4.2. Plumbing Connections

Connect the suction and discharge pipes to the pump. Ensure all connections are watertight to prevent leaks and maintain pump efficiency.



Figure 3: Rear view showing plumbing connections

This image displays the rear of the SCALA1 3-45, highlighting the inlet and outlet ports for plumbing connections. Proper sealing is essential for preventing air leaks and ensuring efficient operation.

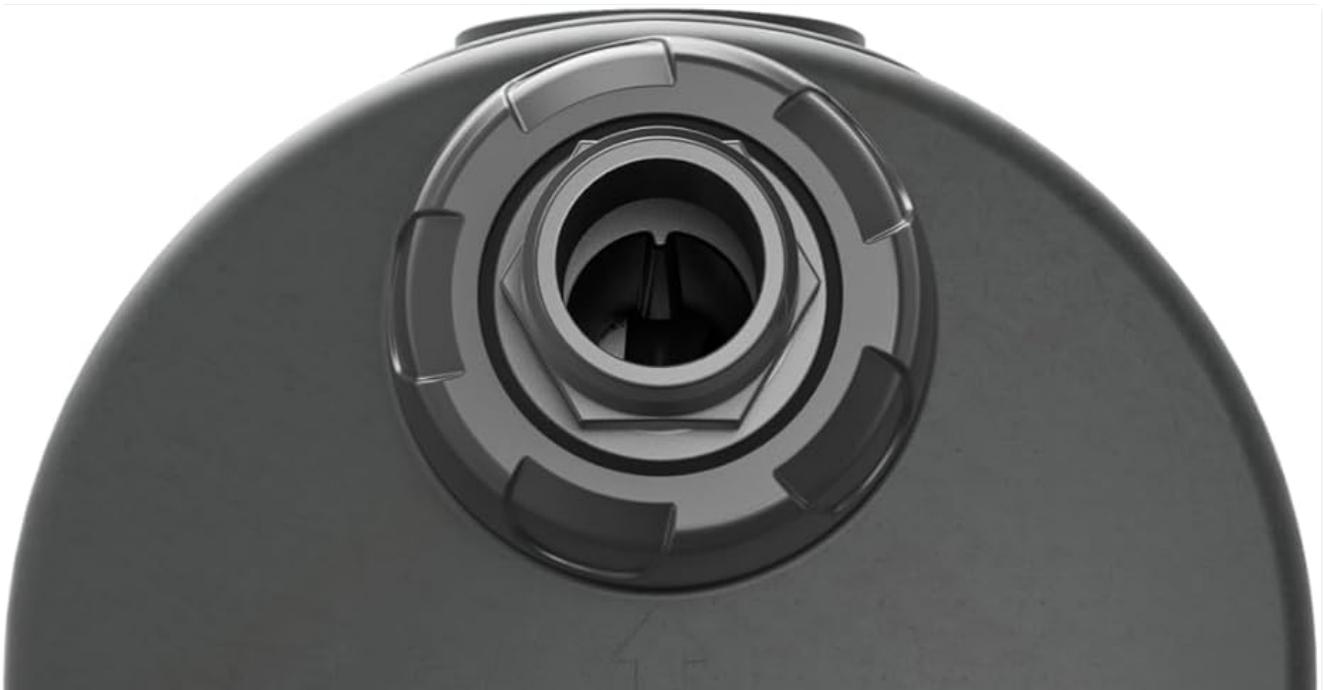




Figure 4: Top view of connections

The top view provides a clear perspective of the connection points, aiding in correct pipe alignment and installation.

- For city water or well water applications, use a **PRLV-30 Pressure Reducing Limit Valve** on the suction side of the pump. Set it to 30 PSI to prevent inbound water from exceeding the 43 PSI maximum inlet pressure.
- A small, **2-4 gallon pressure tank** is recommended in installations with a water heater to accommodate thermal expansion and prevent frequent pump cycling due to minor leaks.

#### 4.3. Electrical Connection

- Connect the pump to a grounded 115 Volt (AC) power supply.
- Ensure the electrical connection complies with all local electrical codes.

#### 4.4. Priming the Pump

As a self-priming pump, the SCALA1 3-45 will automatically prime itself once filled with water. Ensure the pump casing is filled with water before initial startup.

## 5. OPERATING INSTRUCTIONS

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Once installed and primed, the SCALA1 3-45 operates automatically, maintaining desired water pressure. The pump starts when water demand is detected and stops when demand ceases.

### 5.1. Grundfos GO App

The SCALA1 can communicate with the Grundfos GO app via built-in Bluetooth. This app allows for:

- Detailed pump monitoring.
- High customization options for pump settings.
- Setup of Twin booster systems (duty/standby or duty/assist).
- Access to diagnostic information and error codes.

Download the Grundfos GO app from your device's app store and follow the in-app instructions to connect to your SCALA1 pump.

### 5.2. Protection Features in Operation

The pump incorporates advanced protection features to ensure reliable and safe operation:

- **Dry Running Protection:** If the water supply runs out, the pump will automatically stop to prevent damage. It will attempt to restart periodically.
- **Cycling Protection:** In case of small leaks in the system, the pump will detect frequent starts and adjust its operation to prevent excessive cycling, extending its lifespan.
- **Max Runtime Protection:** If the pump runs continuously for an extended period (e.g., due to a burst pipe), it will shut down to prevent flooding and damage.
- **Motor Protection:** The pump's motor is protected against overheating caused by high ambient temperatures, seizure, or electrical overload.

## 6. MAINTENANCE

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Regular maintenance ensures the long-term performance and reliability of your Grundfos SCALA1 3-45 pump. Always disconnect power before performing any maintenance.

- **Regular Inspection:** Periodically check the pump and connections for any signs of leaks, corrosion, or damage.
- **Keep Area Clear:** Ensure the area around the pump is clean and free from debris to allow for proper ventilation.
- **Winterization:** If the pump is installed in an area subject to freezing temperatures, drain the pump completely or protect it from frost to prevent damage.
- **Filter Cleaning (if applicable):** If an external pre-filter is installed, clean it regularly according to its manufacturer's instructions.

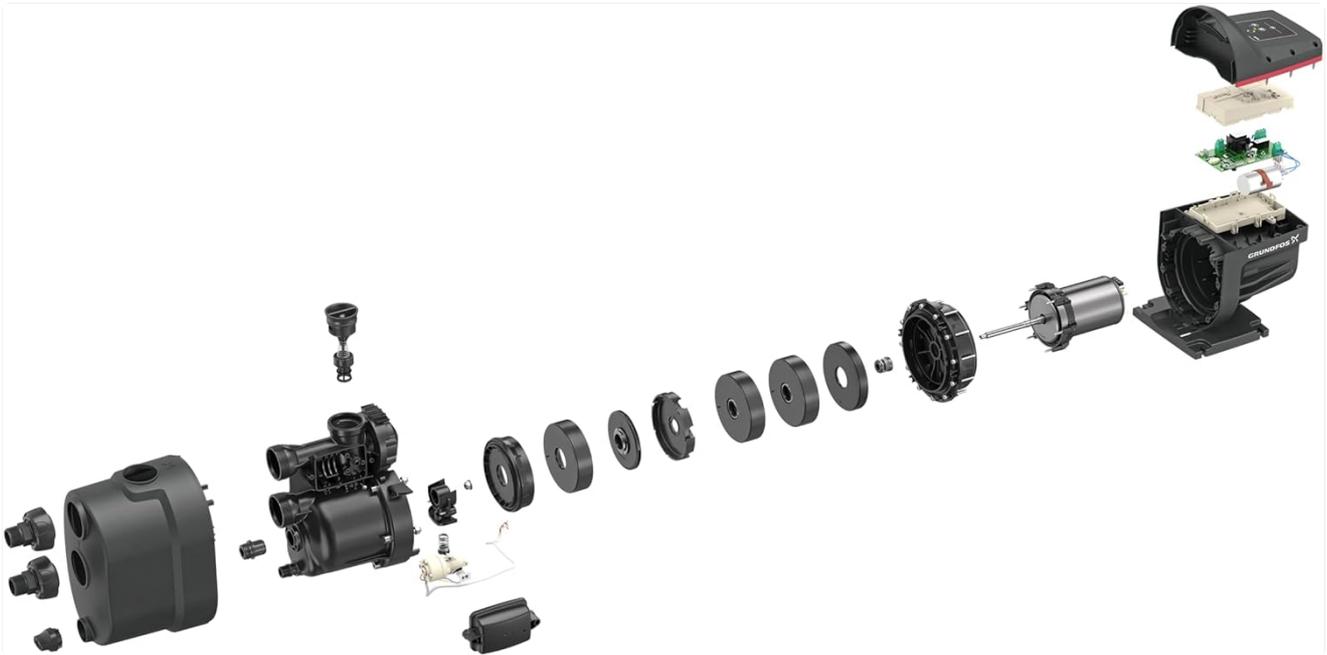


Figure 5: Exploded view of SCALA1 3-45 components

This exploded view illustrates the various components of the SCALA1 3-45, which can be useful for identifying parts during maintenance or repair, though internal servicing should generally be performed by qualified personnel.

## 7. TROUBLESHOOTING

Before contacting support, review the following common issues and their solutions. For more detailed diagnostics, use the Grundfos GO app.

Problem	Possible Cause	Solution
Pump does not start or hums loudly.	No power supply. Motor stuck (e.g., due to long inactivity). Air in the pump casing.	Check power connection and circuit breaker. Disconnect power, then attempt to manually turn the motor shaft (refer to detailed manual for procedure). Ensure pump is properly primed and filled with water.
Pump starts and stops frequently (cycling).	Minor leak in the system. No pressure tank with water heater.	Inspect plumbing for leaks and repair. Install a 2-4 gallon pressure tank if a water heater is present.
Pump runs but no water is delivered.	Dry running (no water in suction line). Suction line blockage or air leak.	Check water supply. Pump will attempt to restart after dry run protection activates. Inspect suction line for blockages or air leaks. Ensure proper priming.
Pump overheats and shuts down.	High ambient temperature. Motor overload or seizure.	Ensure adequate ventilation around the pump. Check for obstructions in the pump. Allow pump to cool down.

## 8. SPECIFICATIONS

Technical specifications for the Grundfos SCALA1 3-45 Booster Pump:

Attribute	Value
Brand	Grundfos
Model Number	99631742
Material	Stainless Steel
Product Dimensions (L x W x H)	15.9" x 7.6" x 11.9"
Power Source	Electric
Item Weight	26.5 Pounds
Maximum Flow Rate	15.8 Gallons Per Minute
Maximum Lifting Height	26 Feet
Voltage	115 Volts (AC)
Horsepower	1 Horsepower
Wattage	200 watts
Specific Uses	Plumbing: Pressure Boosting; Residential groundwater intake; Residential water pressure boosting; Residential rainwater harvesting



Figure 6: SCALA1 3-45 Dimensions

This image provides the key dimensions of the SCALA1 3-45 pump, essential for planning installation space.

## 9. WARRANTY AND SUPPORT

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The Grundfos SCALA1 3-45 Booster Pump comes with a manufacturer's warranty. The warranty period is **24 months from startup or 30 months from the date code**, whichever comes first.

For technical support, warranty claims, or further assistance, please contact Grundfos customer service or your authorized Grundfos dealer. You can also utilize the Grundfos GO app for diagnostics and access to support resources.