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K3G250-RR03-H4 Ebm Papst Centrifugal Fan Instruction Manual

Model: K3G250-RR03-H4 | Brand: Ebm Papst

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the K3G250-RR03-H4 Ebm Papst Centrifugal Fan. This fan is designed for industrial applications, specifically for cooling spindle servo motors. It is an upgraded model of GR25V-6IK.BD.1R, offering identical functionality.

Please read this manual thoroughly before installation and operation to ensure proper usage and to prevent damage or injury. Keep this manual for future reference.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent personal injury or damage to the equipment.

- Disconnect power before performing any installation, maintenance, or repair work.
- Ensure proper grounding to prevent electrical shock.
- Do not operate the fan if any part is damaged or missing.
- Keep hands, tools, and loose clothing away from moving parts.
- Installation and maintenance should only be performed by qualified personnel.
- Ensure adequate ventilation around the fan during operation.
- Protect the fan from moisture and extreme temperatures.

3. PRODUCT DESCRIPTION AND FEATURES

The K3G250-RR03-H4 is a high-performance centrifugal fan manufactured by Ebm Papst, designed for robust industrial cooling applications. It features a durable construction and efficient air movement capabilities.



Figure 3.1: Front view of the K3G250-RR03-H4 fan, showing the air intake.



Figure 3.2: Rear view of the K3G250-RR03-H4 fan, highlighting the motor and electrical connections.

Key Features:

- **Model:** K3G250-RR03-H4 (Upgraded model of GR25V-6IK.BD.1R)
- **Bearing Type:** Ball bearing for extended lifespan and smooth operation.
- **Voltage:** 230VAC, suitable for industrial power supplies.
- **Power:** 245W, providing substantial cooling capacity.
- **Material:** Constructed from Sheet Steel, Aluminum, and Plastic for durability.
- **Protection:** IP55 degree of protection, offering resistance against dust and water jets.
- **Application:** Specifically designed for motor cooling, including spindle servo motors.

4. TECHNICAL SPECIFICATIONS

The following table details the technical specifications of the K3G250-RR03-H4 fan:

Parameter	Value
Model	K3G250-RR03-H4
Bearing Type	Ball
Fan Diameter	250 mm
Maximum Fan Speed	2900 RPM
Voltage	230VAC
Power	245W
Current	1.1A
Maximum Airflow Volume	705m ³ /h
Pressure Increase Total	486psf/Pa
Frequency	50/60Hz
Degree of Protection	IP55
Housing Material	Die-cast aluminum
Impeller Material	PP plastic, galvanized
Number of Blades	7
Color	Black
Application Part No.	A5E37084747 / A5E35451911



Figure 4.1: Internal view of the fan, showing the motor and impeller assembly.

Figure 4.2: Technical drawing of the K3G250-RR03-H4 fan, including dimensions and electrical connection details.

5. SETUP AND INSTALLATION

Proper installation is crucial for the fan's performance and longevity. Follow these steps carefully:

1. **Unpacking:** Carefully remove the fan from its packaging. Inspect for any visible damage. Report any damage to the supplier immediately.
2. **Mounting Location:** Choose a stable, flat surface for mounting. Ensure there is sufficient clearance for airflow and maintenance access. The fan can be mounted in various orientations, but ensure the motor is adequately cooled.
3. **Mounting:** Secure the fan using appropriate fasteners through the designated mounting holes. Ensure the fan is firmly attached to prevent vibration during operation.
4. **Electrical Connection:**

- Ensure the power supply is disconnected before making any electrical connections.
- Connect the fan to a 230VAC, 50/60Hz power source. Refer to the technical drawing (Figure 4.2) for specific wiring diagrams and terminal assignments.
- Ensure all connections are secure and properly insulated.
- Verify proper grounding to prevent electrical hazards.

5. **Pre-Operation Check:** Before applying power, manually check that the impeller rotates freely without obstruction. Ensure all protective covers are in place.



Figure 5.1: Side view illustrating the mounting points and overall structure of the fan.

6. OPERATING INSTRUCTIONS

Once installed, the K3G250-RR03-H4 fan is designed for continuous operation within its specified parameters.

1. **Power On:** Apply power to the fan. The fan should start immediately and reach its operating speed.
2. **Initial Check:** Observe the fan for any unusual noises, vibrations, or smells during the first few minutes of operation. If any abnormalities are detected, immediately disconnect power and refer to the

troubleshooting section.

3. **Continuous Operation:** The fan is designed for continuous duty. Ensure the ambient temperature and operating conditions remain within the specified limits to prevent overheating.
4. **Power Off:** To stop the fan, simply disconnect the power supply.

For optimal performance, ensure the air intake and exhaust are unobstructed during operation.

7. MAINTENANCE

Regular maintenance ensures the longevity and efficient operation of your Ebm Papst fan. Always disconnect power before performing any maintenance.

7.1. Routine Inspection (Monthly)

- **Visual Inspection:** Check for any visible damage to the housing, impeller, or electrical connections.
- **Cleanliness:** Inspect the impeller and air intake/exhaust for dust, debris, or obstructions. Clean as necessary.
- **Vibration/Noise:** Listen for any unusual noises or excessive vibrations during operation.

7.2. Cleaning

- Disconnect power.
- Use a soft brush or compressed air to remove dust and debris from the impeller blades and housing.
- Do not use harsh chemicals or abrasive materials for cleaning.
- Ensure the fan is completely dry before reconnecting power.

7.3. Bearing Maintenance

The fan uses ball bearings, which are typically sealed and maintenance-free for their operational life. No lubrication is required.



Figure 7.1: Side view of the fan, emphasizing its robust construction for industrial environments.

8. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with the K3G250-RR03-H4 fan. For problems not listed here, contact qualified service personnel.

Problem	Possible Cause	Solution
Fan does not start	No power supply Incorrect wiring Motor fault	Check power connection and circuit breaker. Verify wiring against diagram (Figure 4.2). Contact service personnel.
Excessive noise or vibration	Loose mounting Impeller obstruction Bearing wear	Tighten mounting bolts. Disconnect power and clear any obstructions from impeller. Contact service personnel for bearing inspection/replacement.
Reduced airflow	Blocked intake/exhaust Dirty impeller	Clear obstructions from air pathways. Disconnect power and clean impeller blades (refer to Section 7.2).
Overheating	Insufficient ventilation Motor overload High ambient temperature	Ensure adequate space around the fan. Verify fan is used within specified parameters. Ensure operating environment is within temperature limits.

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided at the time of purchase or contact your supplier. Ensure you have your product model number (K3G250-RR03-H4) and purchase details available when seeking support.

This product is supplied by Captain Fan, specializing in ventilation and heat dissipation products. For further assistance, please contact Captain Fan directly or visit their official support channels.