## EVERGREEN GENTEQ - 6205E

# Instruction Manual for EVERGREEN X-13 Furnace Blower Motor

Model: GENTEQ - 6205E

## Product Overview

The Evergreen EM X-13 Direct Replacement Motor is designed to replace all X13 Style Constant Torque ECM Motors in residential and light commercial indoor furnaces, air handlers, and package systems. This motor offers a multi-speed, constant torque, brushless DC operation, providing efficient and reliable performance. Its fully encapsulated, one-piece design ensures a lower profile and simplifies installation. The motor features bi-directional CW and CCW rotation sensing technology and requires no programming for replacement.

## Safety Information

- **Electrical Hazard:** Always disconnect power to the furnace or air handler before installing or servicing the motor. Failure to do so can result in serious injury or death.
- **Qualified Personnel:** Installation and servicing should only be performed by qualified HVAC technicians or electricians.
- **Proper Grounding:** Ensure the motor is properly grounded according to local electrical codes.
- **Motor Compatibility:** Verify that this motor is the correct replacement for your existing unit. This motor is designed to replace X13 style constant torque ECM motors and **DOES NOT REPLACE EON, 3.0, 2.3, and 2.5 ECM Motors.**
- **Shaft Handling:** Be cautious when handling the motor shaft, especially if the old motor shaft is rusted or seized, as specialized tools may be required for removal.

## Components and Features

- **Motor Body:** Fully encapsulated, one-piece design.
- **Shaft:** 5-inch long, 1/2 inch diameter shaft.
- **Mounting:** NEMA 48-frame (5.6 inch diameter) belly band mount.
- **Wiring Harness:** Includes necessary electrical connectors for direct replacement.

- **Control Module:** Integrated control for multi-speed operation and rotation sensing.

Figure 1: Front view of the Evergreen EM X-13 Furnace Blower Motor, showing its compact design and integrated control module.

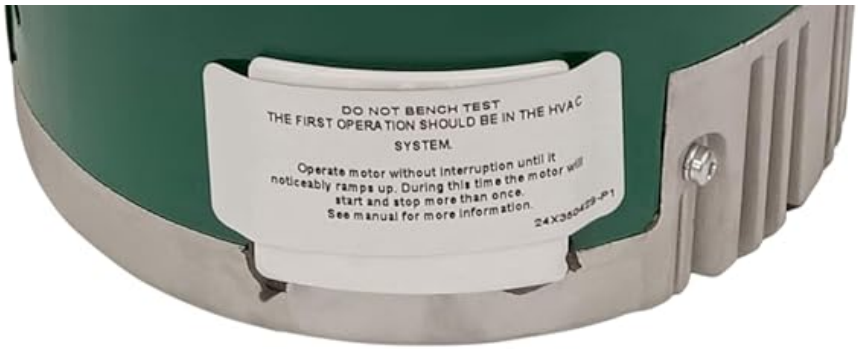


Figure 2: Side view of the motor, highlighting the robust casing and shaft.

Figure 3: Top view of the motor, showing the mounting points and shaft.


Figure 4: Bottom view of the motor, displaying the product label with model and electrical specifications.

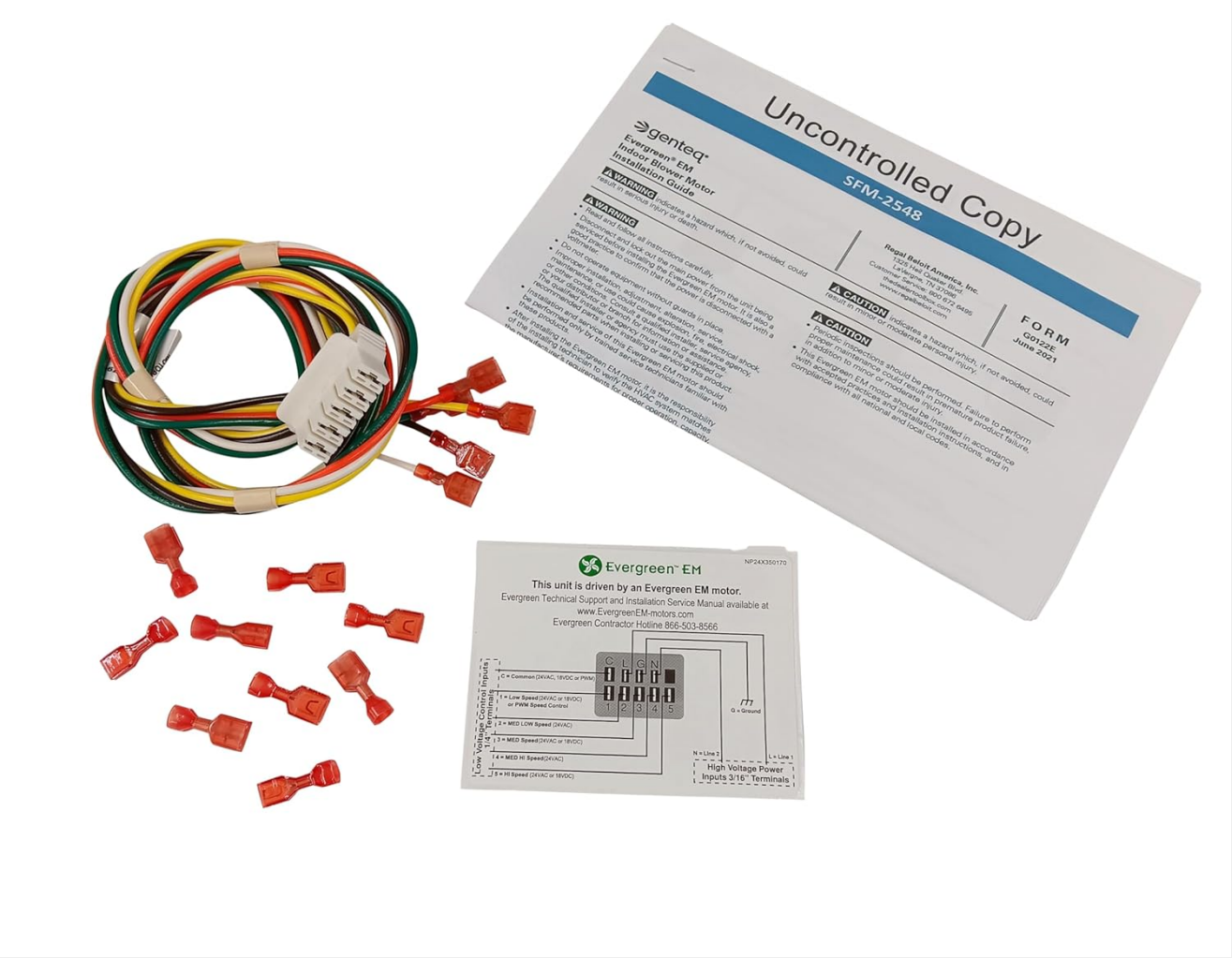


Figure 5: Included wiring harness and a sample of the technical documentation for the motor.

## Installation Guide

This motor is designed for direct replacement of existing X-13 style constant torque ECM motors. No programming is required for installation.

1. **Power Disconnection:** Before beginning, ensure all power to the HVAC unit (furnace or air handler) is completely disconnected at the circuit breaker.
2. **Access Old Motor:** Locate and access the existing blower motor within the HVAC unit. This may involve removing panels or the blower assembly.
3. **Disconnect Wiring:** Carefully disconnect the electrical wiring from the old motor. Note the connections or take pictures for reference if needed, although this motor is designed for direct plug-and-play replacement.
4. **Remove Old Motor:** Unmount and remove the old motor. The blower wheel may need to be detached from the old motor shaft. If the shaft is seized, a specialized puller tool may be necessary.
5. **Install New Motor:** Mount the new Evergreen EM X-13 motor in the same position as the old one. Ensure it is securely fastened using the NEMA 48-frame belly band mount.
6. **Attach Blower Wheel:** Reattach the blower wheel to the shaft of the new motor, ensuring it is properly aligned and secured.
7. **Connect Wiring:** Connect the new motor's wiring harness to the HVAC unit's electrical system. The connectors are designed to match existing X-13 setups.
8. **Secure Panels:** Replace all access panels and ensure they are securely closed.
9. **Restore Power:** Restore power to the HVAC unit at the circuit breaker.

10. **Initial Operation:** Upon initial startup, the motor will perform a rotation sensing sequence (rotating in both directions for a few seconds) to determine the correct operational direction. Allow a few minutes for this process to complete before normal operation begins.

## Operating Instructions

The Evergreen EM X-13 motor operates automatically in conjunction with your HVAC system's thermostat and control board. It is a constant torque motor, meaning it maintains consistent airflow across varying static pressures.

- **Speed Control:** The motor offers four discrete speeds using 24VAC signals, plus an automatic continuous fan speed. An additional three speeds are available using 18VDC. These speeds are typically controlled by the furnace or air handler's control board based on heating, cooling, or continuous fan demands.
- **Airflow Adjustment:** The motor's ability to maintain constant torque and its multiple speed settings allow for adjustment of airflow, which can compensate for faulty duct systems and designs, optimizing system performance.
- **Rotation Sensing:** The integrated CCW/CW Rotation Sensing Technology automatically detects and sets the correct rotation direction upon startup, eliminating the need for manual configuration.

## Maintenance

The Evergreen EM X-13 motor is designed for minimal maintenance. However, regular inspection of your HVAC system is recommended.

- **Cleanliness:** Ensure the motor and surrounding area within the blower compartment remain free of dust, debris, and obstructions. Excessive buildup can hinder performance and lead to overheating.
- **Blower Wheel:** Periodically inspect and clean the blower wheel. A dirty blower wheel can reduce airflow and put strain on the motor.
- **Air Filters:** Regularly replace or clean your HVAC system's air filters. Clogged filters restrict airflow, forcing the motor to work harder.
- **Professional Inspection:** It is advisable to have your entire HVAC system, including the blower motor, inspected by a qualified technician annually.

## Troubleshooting

If you experience issues with your Evergreen EM X-13 motor, consider the following common troubleshooting steps:

| Problem | Possible Cause | Solution |
|---|---|---|
| Motor not running | No power to the unit; tripped circuit breaker; faulty wiring connection; thermostat setting. | Check circuit breaker and reset if tripped. Verify all wiring connections are secure. Ensure thermostat is set to a mode that calls for fan operation (e.g., "Fan ON" or "Cool"). |
| Motor runs intermittently | Overheating due to restricted airflow; control board issue. | Check and replace dirty air filters. Inspect blower wheel for obstructions or dirt buildup. Ensure proper ventilation around the motor. If problem persists, consult a qualified technician. |
| Unusual noises (e.g., grinding, squealing) | Blower wheel imbalance or obstruction; motor bearing issue (less common for new motors). | Inspect blower wheel for debris or damage. Ensure the blower wheel is securely attached to the motor shaft and balanced. If noise persists, professional inspection is recommended. |

| Problem | Possible Cause | Solution |
|---|---|---|
| Reduced airflow | Dirty air filter; dirty blower wheel; ductwork issues. | Replace or clean air filter. Clean blower wheel. Check ductwork for blockages or leaks. |

For issues not listed here or if troubleshooting steps do not resolve the problem, contact a qualified HVAC professional.

## Specifications

| Attribute | Detail |
|---|---|
| Brand | EVERGREEN |
| Model Number | GENTEQ - 6205E |
| Horsepower | 0.5 hp (1/2 HP) |
| Voltage | 208-230 Volts |
| Speed | 1075 RPM (Multi-speed, constant torque) |
| Frame Type | NEMA 48-frame (5.6 inch diameter) |
| Shaft Dimensions | 5-inch long, 1/2 inch diameter |
| Rotation | Bi-directional CW and CCW with Rotation Sensing Technology |
| Certifications | UL and CSA recognized component |
| Product Dimensions (Approx.) | 8"W x 16"H (as per product specifications) |

## Warranty and Support

For specific warranty information and technical support, please refer to the official Evergreen or Genteq manufacturer's website or contact their customer service directly. Warranty terms typically cover manufacturing defects and may vary. It is recommended to retain your purchase receipt for warranty claims.
For additional resources and support, you may visit TheDealerToolbox.com, as indicated on some product labels.



### Related Documents - GENTEQ - 6205E

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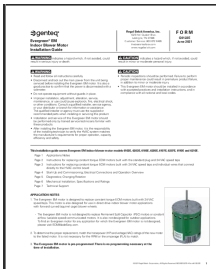
|  | Genteq Evergreen EM Indoor Blower Motor Installation Guide<br>Comprehensive installation guide for Genteq Evergreen EM Indoor Blower Motors (models 6103E, 6203E, 6105E, 6205E, 6107E, 6207E, 6110E, 6210E), covering wiring, startup, diagnostics, mechanical installation, and specifications. |

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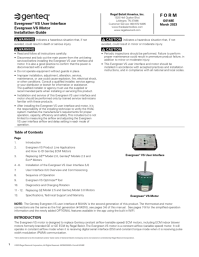
|  | [Azure Constant Torque ECM Blower Motor Replacement Guide]<br>Information on the Azure Bluetooth-enabled drop-in replacement for OEM constant torque ECM blower motors, featuring autosizing technology for customized motor torque to ductwork. |
|  | [Genteq Evergreen VS Motor and User Interface Installation Guide]<br>Comprehensive installation guide for the Genteq Evergreen VS motor and user interface, covering replacement of older ECM motors, wiring diagrams, setup, commissioning, diagnostics, and specifications for HVAC systems. Features advanced capabilities via the Evergreen VS Optimizer tool. |
|  | [MARS Motors Catalog - High-Quality HVAC and Refrigeration Motors]<br>Explore the comprehensive MARS Motors catalog, featuring a wide range of high-efficiency ECM and PSC motors for HVAC, refrigeration, and various industrial applications. Find detailed specifications, model numbers, and cross-references for easy selection. |
|  | [RTC FSC-1 Digital EC Motor Control Manual]<br>This manual provides detailed information on the RTC FSC-1 Digital EC Motor Control, including its features, operation, programming, installation, and wiring diagrams for various motor types. |
|  | [MARS Motors, Components, Service & Installation, Parts & Accessories Catalog]<br>Comprehensive catalog from MARS featuring a wide range of motors, components, service and installation parts, and accessories for the HVAC/R industry. Includes detailed specifications and product information. |