

⚠ WARNING

WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

- Read and follow all instructions carefully.
- Disconnect and lock out the main power from the unit being serviced before installing the Evergreen VS motor. It is also a good practice to confirm that the power is disconnected with a voltmeter.
- Do not operate equipment without guards in place.
- Improper installation, adjustment, alteration, service, maintenance, or use could cause explosion, fire, electrical shock, or other conditions. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use the supplied or recommended parts when installing or servicing this product.
- After installing the Evergreen VS motor, it is the responsibility of the installing technician to verify the HVAC system matches the manufacturer's requirements for proper operation, capacity, efficiency and safety.

⚠ CAUTION

CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

- Periodic inspections should be performed. Failure to perform proper maintenance could result in premature product failure, in addition to minor or moderate injury.
- Installation and service of this Evergreen VS motor should be performed only by trained service technicians familiar with these products.
- This Evergreen VS motor should be installed in accordance with accepted practices and installation instructions, and in compliance with all national and local codes.

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INTRODUCTION

The Evergreen VS motor is designed to replace Genteq constant airflow (variable speed) ECM motors. This includes ECM indoor blower motors made by Regal and its predecessor manufacturer and sold under other Regal and predecessor manufacturer brands. The Evergreen VS motor is a constant airflow (variable speed) motor. It will operate in constant airflow mode when it is receiving digital serial interface (DSI) and constant torque mode when it is receiving pulse width modulation (PWM) communication.

APPLICATIONS - EVERGREEN VS PRODUCT LINE









The Evergreen VS motor can be used to replace multiple Genteq constant airflow motors either by itself or in conjunction with the correct accessory. See pages 2-3 for support selecting the correct components for your application.

APPLICATIONS - EVERGREEN® VS PRODUCT LINE

The Evergreen VS motor can be used to replace multiple Genteq® constant airflow motors either by itself or in conjunction with the correct accessory. Use the chart below to select the correct components for your application.

NOTE: When replacing model 2.0, Genteq models 2.3 and Eon® motors, use the installation instructions supplied with the Evergreen VS User Interface catalog # 5K010.

CONSTANT AIRFLOW ECM (VARIABLE SPEED) REPLACEMENT MOTOR OPTIONS

	INDOOR BLOWER MOTORS	EVERGREEN® VS MOTOR	REQUIRED ACCESSORY (SOLD SEPARATELY FROM MOTOR)
16-PIN SOLUTION	 <p>Model 2.0 Model 2.3 Eon® motor</p> <p>Constant Airflow (Variable Speed) ECM Motors (Model 2.0, Genteq® models 2.3 and Eon® motors)</p> <p>Note: The model 2.3 motor has the same physical appearance as the model 2.5 motor. Always confirm model name on motor, use ID guide information below if needed.</p>	 <p>Evergreen® VS motor</p>	 <ul style="list-style-type: none"> • The Evergreen® VS User Interface (#5K010) is required for this application and is installed permanently with the motor • This part is sold separately from the motor
	 <p>Model 2.5</p> <p>Constant Airflow (Variable Speed) ECM Motors (Model 2.5 motor)</p> <p>Note: The model 2.5 motor has the same physical appearance as the model 2.3 motor. Always confirm model name on motor, use ID guide information below if needed.</p>	 <p>Evergreen® VS motor</p>	 <ul style="list-style-type: none"> • The Genteq® 16-4 Pin Adapter (#5K015) is required for this application and is installed permanently with the motor • This part is sold separately from the motor
4-PIN SOLUTION	 <p>Model 3.0</p> <p>Constant Airflow (Variable Speed) ECM Motors (Genteq® model 3.0 motor)</p>	 <p>Evergreen® VS motor</p>	<ul style="list-style-type: none"> • Plug-n-play (Connect OEM plugs...DONE)

HOW TO ID GENTEQ® ECM MOTORS

1. Locate the model name (2.0, 2.3, 2.5, 3.0 or Eon®) on the motor label or the control label. See cross reference chart above for the proper Evergreen® replacement motor option.



Model name

Motor decal

Motor control decal



2. If the model name is not listed on either label, locate the **model number** on the **motor decal** or the **motor control code** on the **motor control decal**.



Model number

Motor control code



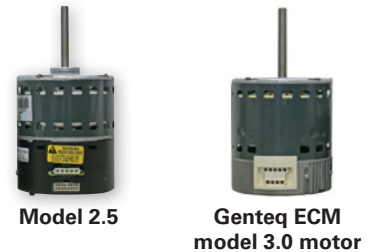
3. Go to SMART SEARCH at www.thedealertools.com. Enter the model number or motor control code of your Genteq motor to find the model name. Use the model name in the chart above to find the correct Evergreen replacement option. You can also use the ECM SEARCH tool in our app "Dealer Toolbelt" available on both Apple Store* and Google Play*.



APPLICATIONS - MODEL 2.5 AND GENTEQ® 3.0 MOTORS

The Evergreen® VS motor is designed for use in the following types of HVAC systems:

- Furnace, air handler and package units
- Fossil fuel, electric strip heat, A/C, heat pump and geothermal units
- Single stage, multi-stage, modulating and communicating HVAC systems



REPLACING MODEL 2.5 AND GENTEQ MODEL 3.0 MOTORS

- Install one (1) Evergreen VS motor
 - o For proper replacement of model 2.5 and Genteq model 3.0 motors, match the horsepower (HP) and voltage (VAC) ratings of the new Evergreen VS motor to the motor being replaced. It is not necessary for the RPM or the amperage (FLA) to match.
 - Stock # 6503V 1/3 HP 120/240 VAC CCW/CW
 - Stock # 6505V 1/2 HP 120/240 VAC CCW/CW
 - Stock # 6507V 3/4 HP 120/240 VAC CCW/CW
 - Stock # 6510V 1 HP 120/240 VAC CCW/CW
- All Evergreen VS motors are dual rotation (automatically configured at time of installation) and dual voltage (established by the OEM harness).
- For replacement of model 2.5 motors, the 16-4 pin adapter (catalog # 5K015) is required. This part is sold separately from the motor.



Genteq Evergreen VS motor



16-4 Pin Adapter # 5K015

REMOVAL AND INSTALLATION OF THE MOTOR

Remove the old motor

1. Turn off the main line voltage disconnect to the HVAC system.
2. Unplug the 5-pin line voltage plug and the 4-pin communication plug from the ECM model 3.0 motor or the 16-pin communication plug from the ECM model 2.5 motor.
3. Remove the old motor from the blower section. Leave the belly band mount connected to the blower section.

NOTE: If the original ECM motor is rated 3/4 or 1 horsepower (HP) and is installed in a 115 VAC application, there may be a power factor correction choke wired in series with the line voltage 5-pin plug. This device should be left in the system as connected by the HVAC OEM.



Install the new Evergreen VS motor

1. Install the new motor in the existing belly band mount so that the motor plugs are facing down between the 4 and 8 o'clock position as installed in the HVAC system. Also adjust the motor so that the belly band does not block any of the motor's vents.
 - If the old motor was built with welded legs or other type of motor mount other than belly band, one of the belly band mounts listed here should be a good match.



Stock # 5K002
48 Frame OEM mount



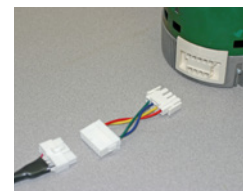
Stock # 5K003 / 5K004
48 Frame 10" / 11"



Stock # 5K005
48 Frame 13"



2. Reconnect the 5-pin line voltage plug.
3. Reconnect the communication plug.
 - **Replacing model 2.5 motors** - Use the 16-4 pin adapter to connect the original 16-pin harness to the 4-pin plug at the Evergreen VS motor. (The 16-4 pin adapter (catalog # 5K015) is sold separately from the motor.)
 - **Replacing Genteq model 3.0 motors** - Connect the 4-pin plug to the Evergreen VS motor.
4. **Operate the Evergreen VS motor for the first time in the HVAC system.** With the first demand to operate the motor, the motor will either operate in the correct direction of rotation or begin the rotation sensing process.
 - **Rotation Sensing** - During the rotation sensing process, the motor will operate approximately 5-15 seconds in each direction until it determines the proper direction of rotation. The motor will pause for a few seconds each time it stops before restarting. The rotation sensing process is complete when the motor noticeably increases in speed and continues to run in one direction for more than 30 seconds. From this point forward, the motor will always start in this direction. If this is not the correct direction of operation, see the next page for information about changing rotation.
5. Operate the HVAC system in all demands and adjust the airflow at the HVAC unit's controls if needed to match the measured temperature rise or CFM values to each HVAC system's capacity and/or rated requirements.



EVERGREEN® ROTATION REVERSING HARNESS (CATALOG # 5K016)

This part is sold separately from the Evergreen VS motor. If this part is needed, follow the instructions that come with this part.

This part is only needed if the motor does not operate the correct direction following the instructions on the previous page.



Rotation Reversing Harness # 5K016

EVERGREEN VS MOTOR SPECIFICATIONS

Voltage: 120/240 (Operating range 90-132 VAC/180-264 VAC)

Horsepower: 1/3, 1/2, 3/4, 1

Communication Input: PWM or DSI (Auto switch)

Rotation: CW/CCW (Auto Sensing)

- As viewed from lead end
- Communicated rotation with DSI communication

Bearing: Permanently lubricated ball bearing

Ambient Ratings:

- Powered, not operating: -20° to 65°C (non-icing conditions)
- Operating (1/3, 1/2, and 3/4 HP): -20° to 55°C (non-icing conditions)
- Operating (1 HP): -20° to 45°C (non-icing conditions)

Enclosure: Open Air Over (OAO), NEMA® 48-Frame (5.6" diameter)

Shaft: Single, ½" diameter, 5" length, 4.5" single flat

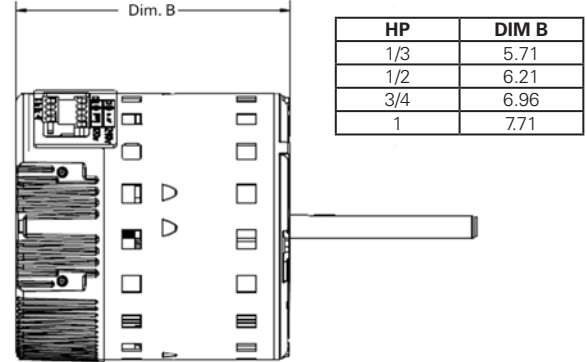
Mounting: Horizontal or vertical shaft-down (VSD), belly band

UL and CSA recognized component

Electronic overload protection

Encapsulated electronics

6kV surge protection



STOCK #	HP	VOLTAGE	FLA	ROTATION	RPM	FRAME
6503V	1/3	120/240	5.0/2.8	CCW/CW	1050	NEMA 48
6505V	1/2	120/240	7.7/4.3	CCW/CW	1050	NEMA 48
6507V	3/4	120/240	10.1/6.1	CCW/CW	1050	NEMA 48
6510V	1	120/240	12.8/7.4	CCW/CW	1050	NEMA 48

TECHNICAL SUPPORT

- Phone support: Between the hours 8am-5pm (CST) Monday-Friday at 866-503-8566 Option 3.

- Scan this code with your smart phone or go to www.EvergreenVS-motors.com



Terms & Conditions of Sale & Limited Warranty

Sales of the products described in this Installation Manual are subject to the "Regal Beloit Terms and Conditions of Sale" current at the time of sale. They are accessible on RegalBeloit.com – <https://www.regalbeloit.com> (click "Regal Terms and Conditions of Sale").

The full Limited Warranty, including the scope and period, remedies, exclusions and disclaimers, is described in Section 10 "Limited Warranty" of the Regal Terms and Conditions of Sale and applies except as described below:

Section 10(a)(1) is replaced with the following: Seller warrants that the Products shall be delivered free from defects in material, workmanship and title. This warranty shall expire twenty-four (24) months from first use of the Product or thirty (30) months from date of shipment of the Product, whichever occurs first.

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