RESCUE[®] EZ16[™] Motor

Installation and Operation Manual

For technical assistance or questions related to your RESCUE[®] EZ16[™] Motor call the Technical Hotline: 1-888-540-5540

Read the entire manual prior to installation of the RESCUE[®] EZ16[™] Motor. Follow all instructions contained herein.





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Important Safety Information



Only trained and qualified professionals familiar with RESCUE[®] EZ16[™] motors should service the motor and control.

- Before connecting or disconnecting cables or other electrical connections, verify that the electrical power to the system is removed. Failure to comply may cause serious damage to the motor or HVAC system or injury to personnel.
- Because of the risk of electric shock, only individuals thoroughly trained in the use of multimeters should conduct voltage tests.
- Never touch the metal contacts on the multimeter during a test.
- Always check testing equipment for proper operation before use.

Installation, operation, and maintenance must be performed by qualified personnel. Familiarization with and adherence to the National Electrical Code (NEC) and National Fire Protection Association (NFPA) standards and to local codes are required. It is important to observe safety precautions to protect personnel from possible injury. Personnel should be instructed for handling each of the following:

- Insulate all connections carefully to prevent grounding or short circuits. Reinstall all conduit and terminal box covers. To avoid overheating or loss of performance, voltage to the motor control unit must be within plus or minus 10% of the nameplate voltage.
- Make sure the unit is electrically grounded and that proper electrical installation wiring and controls are
 used consistent with local and national electric codes. Refer to NEC Handbook and NFPA No. 70. Employ
 qualified electricians.
- Code requirements differ from state to state. Install equipment using qualified electricians in accordance with the applicable codes and ordinances in your area and in accordance with NEC. All electrical connections should be made and maintained by a qualified or licensed electrician.
- Make sure there are no unusual noises or vibrations when the motor is running.
- Avoid contact with energized circuits or rotating parts.
- Provide proper safeguards for personnel against rotating parts.

MARNING

- All aspects of the installation must conform to the applicable requirements of the NEC, including Article 430 (Motor Circuits and Controllers), as well as all local codes.
- Always disconnect electrical power at the fuse box or circuit breaker panel before handling electrical connections or performing maintenance on this unit. Allow the motor to come to a complete stop and wait four (4) minutes. This allows the capacitors to discharge any residual voltage for safety.
- Double-check to make sure that electrical power is removed and that it cannot be turned on while you are working on the equipment.
- A poor electrical connection can overheat and cause terminal and/or terminal board failures. Examine the wiring harness quick-connect terminals carefully for any signs of physical deterioration or loose fit to the terminals on the motor terminal board.
- If there is evidence of deterioration or loose fit, remove the quick-connect terminals from the wiring harness and then connect the harness wires directly to the motor terminal board wiring terminals.
- Care must be taken to assure connections are made to the proper terminals and adequate electrical clearances are maintained.
- The control unit on the motor contains potentially hazardous voltage.
- Use only specially designed motors where explosive atmospheric hazards exist. See the *National Electrical Code (NEC) Article 500* or check with local codes for explanation of hazardous or classified atmospheres and locations. Unless the motor is specifically marked "Electric Motor for Hazardous Locations," it is not suitable for use in Class I or II hazardous locations as defined by the NEC.

• Wear safety glasses to inspect the equipment while it is running or while working on equipment, especially if cover plates are removed.

NOTICE

The motor and control unit are assembled and calibrated as a set. Replacing either the motor or control unit with other unsuitable parts could drastically affect performance tolerance.

- To prevent permanent damage to the unit, only apply nameplate voltage.
- Do not apply 240 Vac to the motor with a jumper in **positions 1** and **2**. Refer to the diagram on **page 16**.
- Do not strike the motor shaft with a hammer or other tool as this may damage the bearings.
- Do not operate the motor without the blower wheel attached. Without the blower wheel attached, the motor will run continuously to a maximum speed and then stop.
- Voltage symbols vary among different multimeters and may be displayed as Vac, AC, V, or a V beneath a
 wavy line. Select the correct symbol and set the multimeter to the voltage closest to but higher than the
 voltage you are measuring.
- Read all instructions thoroughly and be familiar with the equipment before installing or working on it.

NOTICE

- The RESCUE[®] EZ16[™] motor is properly packaged for shipment and storage and should be kept in a clean and dry indoor area.
- The motor should be stored indoors in a clean, dry location. Proper selection, installation, and maintenance will assure longer life and more dependable service.
- The RESCUE[®] EZ16 motor may is designed for direct-drive centrifugal blower applications only.
- The RESCUE[®] EZ16 motor is designated for continuous, air-over duty, and must be mounted in the air stream of an air moving device, such as a fan. **Do not** operate the motor outside of the air stream as that may overheat and damage the motor.

Product Overview

The RESCUE[®] EZ16[™] provides an easy drop-in solution for systems using legacy 16-Pin controls.

The RESCUE[®] EZ16[™] motor is the solution to meet the increasing demand for electrically commutated motors (ECM) in modern HAC and ventilation systems. With a wide range of control options, voltages, and mechanical configurations, the motor offers the high efficiency and airflow control needed in a broad array of air-moving applications, all backed by Nidec's extensive ECM experience and close application support.

Features

- Drop-in replacement
- Field adjustable
- Dual voltage
- Flexible control methods
- 24 Vac or PWM inputs
- Selectable rotation and voltage

Specifications

- Horsepower: 1/3, 1/2, 3/4, or 1HP
- Voltage: 115 or 208-230 Vac
- Speeds: 1075 / Variable Speed
- Inputs: 24 Vac or PWM
- Frequency: 50 / 60 Hz
- Frame: NEMA® 48
- Enclosure: Open Air Over (OAO)
- Efficiency: Up to 82%
- Mounting: Belly-band



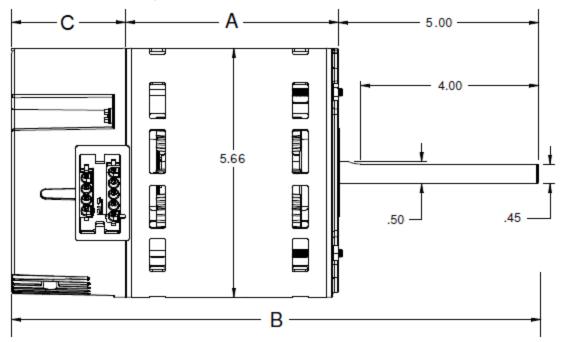
EZ16 Motor



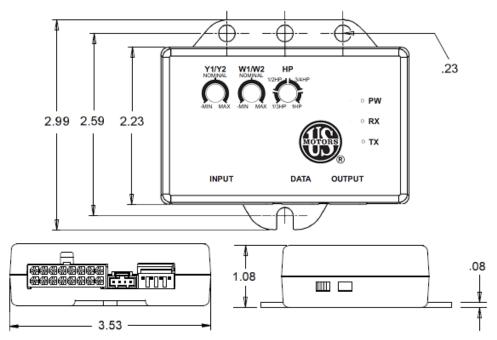
EZ Interface (EZI)

Motor Dimensions

All dimensions are for reference only.



HP	Dim. A	Dim. B	Dim. C
1/3	3.41	10.48	2.06
1/2	3.66	10.73	2.06
3/4	4.04	11.10	2.06
1	4.41	11.98	2.56



Remote mounting of the EZ Interface is recommended using either double-sided tape or screws in combination with the integrated mounting tabs on the unit.

General Information

Materials Enclosed

- RESCUE[®] EZ16 Motor
- EZ Interface (EZI)
- RESCUE[®] EZ16 Motor Installation and Operation Manual
- 4-Pin Output Harness
- Auxiliary Wire for connecting 24V power

Initial Inspection

Check the RESCUE® EZ16 motor to verify the following:

- The nameplate data conforms to the specifications of the motor ordered.
- The shaft spins freely by hand.

NOTICE

The RESCUE[®] EZ16 motor may look visually different than the motor it is replacing. The external appearance is not an exact replica of the motor it is replacing. However, when properly installed, the motor will fit in the blower housing and function according to specifications.

Note: ECM 2.5 and Less Than 6 Leads

If the nameplate on the original ECM motor reads **ECM 2.5** and the number of leads on the system 16-Pin connector harness is **less than 6**, the RESCUE[®] EZ16 is **not** your solution.





Installing the Motor

- Always disconnect electrical power at the fuse box or circuit breaker panel before handling electrical connections or performing maintenance on this unit. Allow the motor to come to a complete stop and wait four (4) minutes. This allows the capacitors to discharge any residual voltage for safety.
- Double-check to make sure that electrical power is removed and that it cannot be turned on while you are working on the equipment.
- A poor electrical connection can overheat and cause terminal and/or terminal board failures. Examine the wiring harness quick-connect terminals carefully for any signs of physical deterioration or loose fit to the terminals on the motor terminal board.

Handling and Care

The motor should be stored indoors in a clean, dry location. Proper selection, installation, and maintenance will assure longer life and more dependable service.

NOTICE

The RESCUE[®] EZ16 motor may is designed for direct-drive centrifugal blower applications only.

The RESCUE[®] EZ16 motor is designated for continuous, air-over duty, and must be mounted in the air stream of an air moving device, such as a fan. **Do not** operate the motor outside of the air stream as that may overheat and damage the motor.

STEP 1: Turn Off Electrical Power

These instructions provide field technicians a guide for installing a RESCUE[®] EZ16 motor and are intended for a typical air handler/furnace equipment system. These instructions **do not** override or replace instructions by the HVAC system manufacturer.

- 1. Turn **OFF** electric power to the HVAC unit at the disconnect or the main service panel before making any electrical connections.
- 2. Make sure electrical power cannot be accidentally switched on while you are working on the equipment.

STEP 2: Locate and Verify the Connector

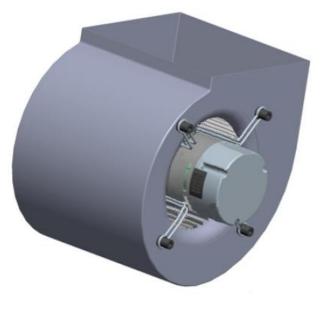
- 1. Disconnect the 16-Pin HVAC wiring harness from the motor.
- 2. Connect the 16-Pin HVAC wiring harness to the bottom of the EZI to ensure proper fit.



3. Disconnect the 16-Pin HVAC wiring harness from the EZI and set aside.

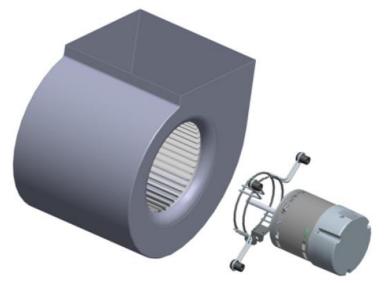
STEP 3: Remove the Blower Housing from the HVAC Equipment

1. Remove the blower housing from the air handling unit. Refer to the manufacturer's installation manual for blower removal instructions.



STEP 4: Remove the Original ECM Motor

- 1. Loosen the set screw on the motor shaft.
- 2. Remove the screw that secures the belly-band mounting bracket to the original motor and set them aside.
- 3. Remove the original motor from the belly-band.
- 4. Verify that the RESCUE[®] EZ16 motor provides the same horsepower and voltage rating as the original ECM motor.



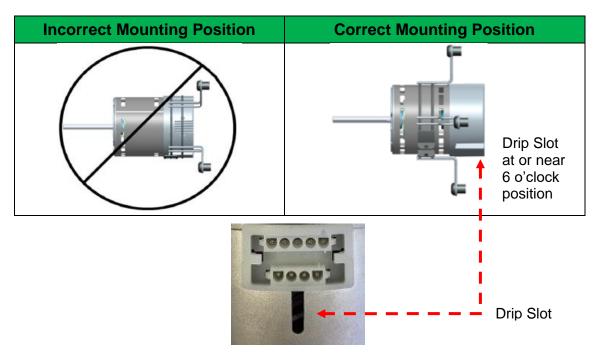
STEP 5: Install the Replacement Motor

1. Insert the RESCUE[®] EZ16 motor into the mounting bracket. The belly-band can be positioned anywhere on the motor shell **except** the end bell (i.e., the control). The preferred position is at the midpoint between the motor vents. **Do not** cover any of the vents with the belly-band.

NOTICE

The RESCUE[®] EZ16 motor can be installed with the mounting bracket from the original ECM motor. If a replacement bracket is needed, contact your authorized U.S. Motors[®] distributor.

Placing the belly-band on the control housing can damage the motor.



- 2. When mounting the motor and control into the belly-band ensure that the **Drip Slot** is positioned at or near a 6 o'clock position to allow any condensation build-up to drain from the motor.
- 3. Secure the bracket to the motor by tightening the bracket mounting screw.



The motor must be securely fastened to minimize noise and prevent vibration. Ensure the belly-band legs cannot be moved. For secure mounting, use high-quality bolts of the largest possible diameter.

STEP 6: Install the Replacement Motor in the Air Handling Unit

1. Insert the motor shaft into the blower wheel, securing the motor to the blower housing.



- 2. Align the blower wheel so it is properly centered in the blower housing, aligning the wheel's set screw to the flat of the motor shaft.
- 3. Secure the blower wheel to the motor shaft by tightening the set screw to a torque setting of 157 in-lbs.

STEP 7: Reinstall the Blower Assembly in the HVAC System

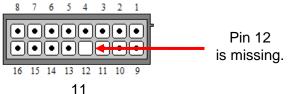
- Follow the manufacturer's installation manual for blower installation instructions.
- 2. Connect the HVAC wiring harness to the replacement motor.

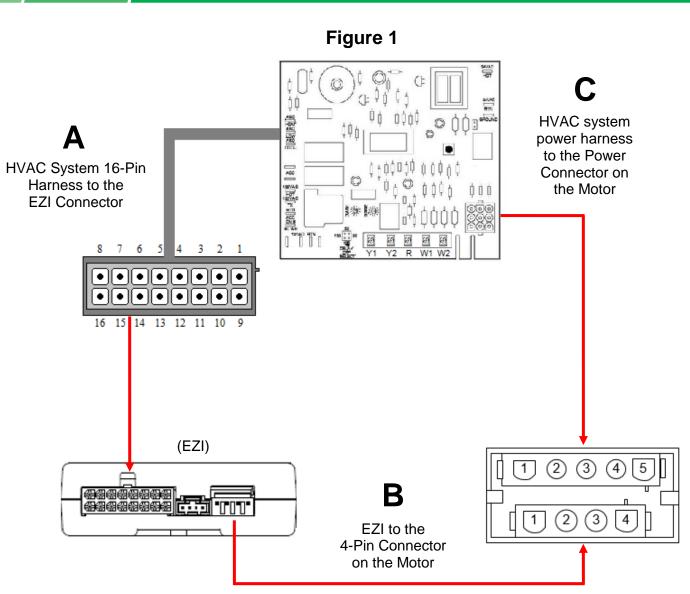
STEP 8: Set Up EZI Connections

- 1. Determine the number of pin used on the HVAC system Connector Harness for proper setup of the 16-Pin connections.
 - If the system Connector Harness is using all 16 Pins, proceed to **Figure 1** to connect the system, the motor, and the EZI.

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	16	15	14	13	12	11	10	9	

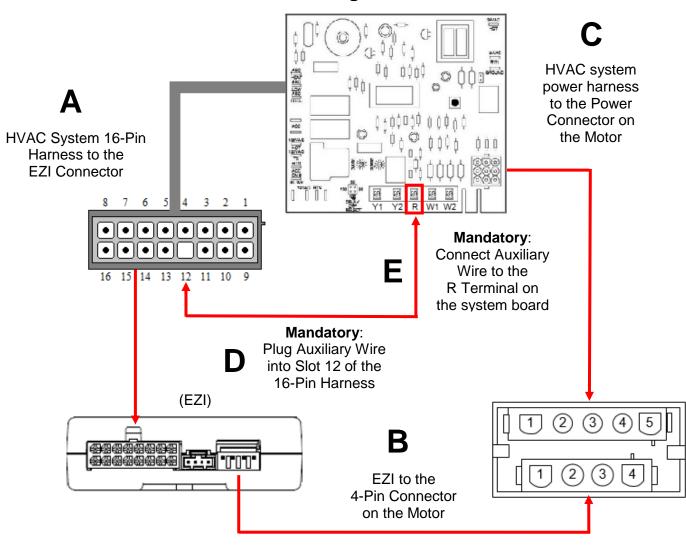
If the system Connector Harness is using 15 Pins (Pin 12 is missing), proceed to Figure 2 to connect the system, the motor, and the EZI.





- A. Connect the HVAC system harness to the 16-Pin Input Connector on the bottom of the EZI.
- B. Connect the 4-Pin Output Harness on the EZI to the 4-Pin Connector on the motor.
- **C**. Connect the power harness from the HVAC system to the 5-Pin Connector on the motor.
- 2. Proceed to STEP 9: Set Up EZI Communications.

Figure 2



If the 16-Pin harness from the HVAC system control board is missing a lead at **Pin 12**, use the **Auxiliary Wire** that shipped with the motor to provide power to the EZI.

- A. Connect the HVAC system harness to the 16-Pin Input Connector on the bottom of the EZI.
- **B**. Connect the 4-Pin Output Harness from the EZI to the 4-Pin Connector on the motor.
- **C**. Connect the power harness from the HVAC system to the 5-Pin Connector on the motor.
- D. Mandatory: The Auxiliary Wire is needed to power the EZI. Plug the crimped end of the Auxiliary Wire into the empty Pin 12 slot on the 16-Pin harness. The schematic view of the 16-Pin harness shown above is from the back.
- E. Mandatory: Connect the stripped end of the Auxiliary Wire to the R Terminal of the thermostat input on the system control board.
- 2. Proceed to STEP 9: Set Up EZI Communications.

STEP 9: Set Up EZI Communications

Ensure that the dials and switches are set to the following baseline settings for initial setup. Make sure the HP is set to the proper nameplate rating.

				Quick Set	up Guide
				24VAC (defaults)	PWM
			Setup EZI Box ^a	PWM/24VAC	PWM/24VAC
PWI	PWM/24VAC CCW/CW		Rotation	ccw/cw	Auto-Rotation Sensing
	Match HP dial h nameplate HP		HP Setting ^b	1/2HP 3/4HP 1/3HP 1HP	N/A with PWM, HP on motor must match OEM HP rating
Alf	RFLOW SETTIN NOMINAL Recommended start position	GS	Y1 / Y2 Cooling ^c		N/A with PWM , determined by
MIN Decrease Airflow	for baseline testing of heating and cooling for all HP options	MAX Increase Airflow	W1 / W2 Heating ^c		the system PWM signal
K	1		lf Less Than 16 Leads	Refer to Step 8: Set Up EZI Connections	N/A
			^a Use PWM if t	he motor does NOT s	tart in 24VAC.
			^b Select the ap for PWM.	propriate horsepower	. Not applicable
				unctional with 24VAC or CW as needed.	applications only.

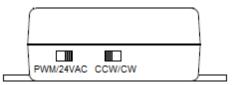


For detailed setup instructions, see the next page.

It is difficult to determine if the motor is operating on 24VAC or PWM. Use 24VAC for the initial setup. Switch to the PWM setting, if the motor does **not** start in 24VAC application.

For PWM setup, refer to the section called For PWM Inputs Only on page 17.

- 1. Selecting 24VAC: Ensure the communication switch on the side of the EZI is flipped to the right for 24VAC.
- 2. Selecting Rotation: Specify the rotation using the CCW/CW switch.



3. Selecting HP: Turn the HP dial on the EZI to match the horsepower on the OEM motor nameplate.



Note: You can run a higher HP motor at a lower setting on the HP dial, but you cannot run a lower HP motor at a higher setting on the HP dial. Default settings scale automatically.

4. Adjusting Airflow: Adjust the Y1/Y2 (cool) and W1/W2 (heat) inputs. Turn the dial clockwise to increase airflow. Turn the dial counter-clockwise to decrease airflow.

Baseline Settings

These are the recommended start positions for the baseline testing of heating and cooling for all HP options. Turn each dial to the left to decrease airflow. Turn each dial to the right to increase airflow.

Setting	1/3HP	1/2HP	3/4HP	1HP	Input
Y1/Y2	NOMINAL	NOMINAL	NOMINAL	NOMINAL	24VAC
W1/W2	NOMINAL	NOMINAL			24VAC

Preferred Method to Meet OEM System Performance Requirements

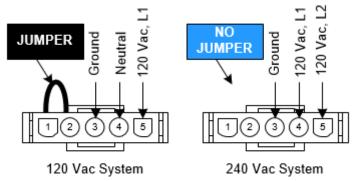
Temperature rise is a calculated difference between the temperatures in the supply air outlet and the return air inlet of the HVAC system. The temperature reading should be taken inside of the return air and supply air ducts, as close to the HVAC system as possible. If there is no access to the ductwork, then take the measurement in a return and supply grill, closest to the HVAC system. Refer to the furnace/air handler manufacturer's rating plate for temperature rise specifications.

STEP 10: Connect the HVAC System Power Harness to the Motor



If the system is wired for **120 Vac**, confirm that a jumper wire is installed between **positions 1** and **2** on the Power Connector. Without a jumper wire installed the motor will not start.

 Operating the motor at 240 Vac with a jumper wire installed on the Power Connector will cause significant damage to the motor.

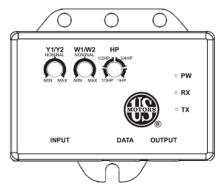


- 1. Apply electrical power to the motor.
- 2. Observe LED activity on the Interface to determine proper connection. **Note**:
 - (1) The PW, RX, and TX LED lights on the EZI will blink intermittently.
 - (2) LED activity represents communication taking place between the motor and the EZI. There is no correlation between LED activity and airflow or horsepower.

STEP 11: Mount the EZI

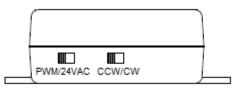
Remote mounting of the EZI is recommended.

1. Install the EZI using the double-sided tape provided or screws in combination with the integrated mounting tabs on the top and bottom of the EZI.



For PWM Inputs Only

1. Flip the **PWM/24VAC** switch on the side of the EZI.



Note:

- (1) The PWM signal is determined by the HVAC system.
- (2) **HP Setting**: The HP setting on the EZI is **not** functional in PWM applications. For PWM applications, it is important that the HP on the motor **matches** the HP on the OEM motor.
- (3) Y1/Y2 and W1/W2 Settings: The airflow settings on the EZI are not functional in PWM applications.
- (4) **Rotation**: In PWM Mode, the motor uses rotation sensing technology to determine rotation the first time the motor is powered up. It runs for about 20 seconds in each direction to determine the proper direction, then stores the data. In the event of a power loss longer than 60 seconds, rotation sensing takes place again when power is restored.



Operating Mode Checklist

- For air moving applications, all enclosure covers and panels must be in place before measuring the amperage.
- Voltage and moving parts around motors and motor driven equipment can cause serious or fatal injuries. Turn OFF electrical power before connecting or servicing the motor.

After installation, motor operation should be tested in all system modes for the following:

Check #	System Test	Description
1	Start-Up and Shut-Off Delays	After the motor is powered ON , it is normal for the motor to experience a 10-12 second delay before beginning operation and may take 30 seconds before reaching full speed. When the motor is turned OFF , it is normal for the motor to experience a 30 second delay before turning OFF .
2	Unusual Noise or Vibration	If unusual noise or vibration is detected, refer to the Troubleshooting section on page 19 .
3	Motor Amperage	Amperage reading at the highest speed setting should be within 10% of the specification shown on the nameplate.
4	Air Flow	Verify that the correct airflow is present in all operating modes.

Final Checks

- Check the mounting and fastening of both the motor and the control. Make sure the motor and control are securely attached together and mounted tightly in HVAC system.
- Check the wiring harness. Inspecting for shorts and detached wiring. Ensure that the wiring harness is securely connected to the control connector.
- Check the wiring harness and signal connections. Make sure both are securely connected to the control connectors.
- Check the blower motor and verify wheel rotation. Make sure it spins freely manually without effort or assisted means in both directions.
- Verify that the set screw on the blower wheel is securely tightened.
- Check that the circuit breaker is **ON**.

Troubleshooting

This section provides field technicians with recommendations for accurately diagnosing and troubleshooting certain problems experienced by the RESCUE[®] EZ16 motor. It does not override or replace instructions suggested by the manufacturer of the HVACR system. To prevent misdiagnosis and unneeded repairs, try these steps first.

General

Symptom	Possible Cause	Corrective Action
	Blown Fuse or Tripped Circuit Breaker	Turn OFF the motor. Replace the fuses with a time-delay type or reset the circuit breaker.
Motor/Control fails to start.	Incorrect Voltage to Motor/Control	Verify that motor voltage to the terminals matches the nameplate voltage requirements. If there is a timer, counter, or line switch, verify they are in the ON position.
	Improper terminal connections	Turn OFF electrical power. Verify that the connections are per the nameplate connection diagram.
Motor does	Low Voltage	Verify the motor voltage to the terminals matches the nameplate voltage requirements +/- 10%.
not come up to full speed.	Low Temperature	Full shaft output power is available in a temperature range of 0°C to 40°C (32°F to 104°F). Control temperatures in -40°C to 0°C & 40°C to 60°C (-40°F to 0°F & 104°F to 140°F) limits shaft output power until the temperature returns to an acceptable range.
Motor stalls	Overloaded Motor	Disconnect electrical power. Verify that the fan rotates freely.
during operation.	Low Voltage	Verify that the motor voltage matches the nameplate voltage requirements.
Motor vibrates or makes excessive noise.	Area Around Motor and Fan	Inspect the motor and fan for accumulated dirt, debris, or other signs of damage.
	Blower Wheel	Before taking any corrective actions, ensure that the power is OFF. Verify that the fan blade is properly mounted to the motor shaft. Check for bent or missing fan blades, debris on or around blade, or poor blade balance. Verify that the shaft is not bent and the motor shaft spins freely in both directions.
	Motor Base	Verify that the motor base is not cracked and that the mounting bolts are securely tightened to the system chassis.
Motor is not operating properly.	Command Signal	Verify that the control signal is issuing call for activity. Note: In 10-0 Vdc mode, the voltage range is reversed with 10V being OFF. Check the line voltage.
	Motor Connectors	Verify that the signal cable and power leads are securely connected to the control connectors. Inspect for shorts, detached wiring, or loose connections.

Symptom	Possible Cause	Corrective Action
EZI does not power up	Wire Connections to Output Transformer	The stripped end of the auxiliary wire must be secured to the proper side of the system transformer. First, determine the correct AC side of the transformer for the connection. Using a voltage meter, see if there is a voltage potential present.
No LED activity	Connections to the Motor	Note : LED activity represents communication taking place between the motor and the Interface. There is no correlation between LED activity and CFM demand.

For technical assistance call the Rescue EZ16 Motor Hotline: 1-888-540-5540

Warranty Information

LIMITED WARRANTY

Nidec Motor Corporation (NMC) extends the following LIMITED WARRANTY to the purchaser and to its customers (collectively referred to as the "Purchaser") of the enclosed motor and components: the motor and components are free from defects in materials and workmanship under normal use, service and maintenance FOR A PERIOD OF 24 MONTHS FROM THE DATE OF ORIGINAL PURCHASE FROM NMC OR THE NMC DEALER/RETAILER, NOT TO EXCEED 30 MONTHS FROM THE DATE OF MANUFACTURE BY NMC. THE FOREGOING WARRANTY IS THE ONLY WARRANTY GIVEN AND NO OTHER WARRANTY IS PROVIDED, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Certain aspects of disclaimers are not applicable to consumer products, i.e., motors and components acquired by individuals and used for personal, family or household purposes (as distinguished from industrial or other purposes). Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Certain repairs or services are the responsibility of the Purchaser and the Purchaser is expected to pay for them. This warranty does not extend to any losses or damages due to misuse, accident, abuse, neglect, negligence, unauthorized modification or alteration, use beyond rated capacity, or improper installation, maintenance, application or use, including, without limitation, use in a manner contrary to the accompanying instructions or applicable codes.

If within thirty (30) days after Purchaser's discovery of any warranty defects within the above stated warranty period, Purchaser notifies NMC or the dealer from whom the motor was purchased in writing, NMC shall, at its option and as Purchaser's exclusive remedy, repair or replace or refund the purchase price for that portion of the motor and components found by NMC to be defective. Failure by Purchaser to give such written notice within the applicable time period shall be deemed an absolute and unconditional waiver of Purchaser's claim for such defects. Purchaser must write or call the dealer from whom the motor was purchased for directions regarding the shipment of the motor, with freight prepaid by the Purchaser, to an authorized service location for warranty service. If Purchaser is unable to contact the dealer to obtain sufficient instructions regarding the handling of the motor, Purchaser should write NMC at the address below, giving the motor model number, the dealer's name, address and number of dealer's invoice; and describing the nature of the alleged defect. Arrangements for warranty service will then be made by NMC.

If the motor is damaged in transit, Purchaser should file a claim directly with the carrier.

IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE), SHALL NIDEC'S LIABILITY TO PURCHASER OR ITS CUSTOMER EXCEED THE PRICE PAID BY PURCHASER FOR THE SPECIFIC MOTOR OR OTHER GOODS PROVIDED BY GIVING RISE TO THE CAUSE OF ACTION. IN NO EVENT SHALL NIDEC'S LIABILITY TO PURCHASER OR ITS CUSTOMER EXTEND TO INCLUDE INCIDENTAL CONSEQUENTIAL OR PUNITIVE DAMAGES. WITH RESPECT TO CONSUMER PRODUCTS, SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. †All marks shown in this document are properties of their respective owners.

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For more information Visit us at <u>www.nidec-motor.com</u>

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