

# **COMMON PROCEDURES FOR ENABLING CUSTOMERS TO PROGRAM REGAL ECM MOTORS**

**Application and Sales Engineering – Regal Corporation  
John Haverstock**

## **RBC PROPRIETARY AND CONFIDENTIAL INFORMATION**

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IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed by its duly authorized representative.

**RBC Manufacturing Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

e: \_\_\_\_\_

**EXAMPLE**

Receiving Party (name & address): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

On behalf of Receiving Party

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

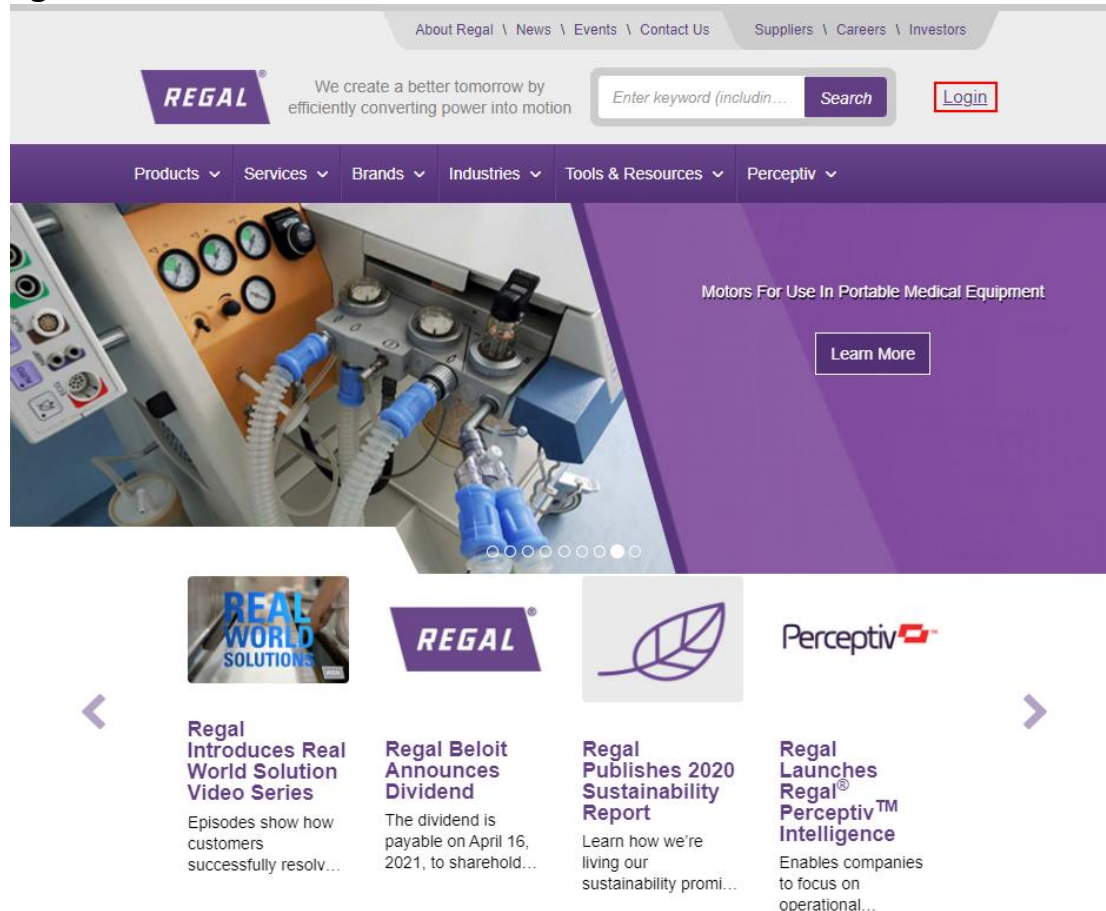
\*include name, State in which organized/incorporated, and type of organization (i.e. corporation, LLC, etc.)

- ii.
- c. Send both copies of the NDA to your Regal Representative.
- d. Your Regal Representative will send both copies of the NDA to Regal Corporate for review.
- e. After Regal Corporate signs both copies, Regal will keep one copy on file. The other copy will be sent back to your Regal Representative.
- f. Your Regal Representative will make a copy of the signed document for their file and return the second to you for your Company's files.
- g. Once this process is completed, your electronic License File will be created and emailed.
  - i. The License file gives access to use ECM Toolbox.

## 2. Register for Access on Regal’s Website

a. Navigate to [www.regalbeloit.com](http://www.regalbeloit.com)

b. Click Login



i.  
c. Click Register

Home ▶ Login

▶ Login

Please login below to access additional functionality, including our newest eCommerce experience. If you are looking for one of our legacy eCommerce systems, you can find links to those sites on our eCommerce page.



Login | [Register](#)

i.  
d. Create a Profile (Fill-in required information)



Home ▶ Register for Access

## ▶ Register for Access

Need access to Regalbeloit.com? You're in the right place. You can request access using the form on this page. You will be granted immediate access by filling out the "Create Profile" section below. If you select options to add additional access, an approval process is required that may take several days before that functionality is provided.

### Create a Profile

First Name \*

Last Name \*

Job Title \*

Company Name \*

Email Address \*

## e. Add Additional Access to Your Profile

### i. Purchase directly from Regal, Genteq Technical Information

#### Add Additional Access to Your Profile



**eCommerce access (submit orders, check availability, review invoices, etc.)**

In order to purchase directly from Regal Beloit, you must be an original equipment manufacturer or qualify as an authorized distributor. If you are an existing customer, you will need your account number(s) to expedite access.

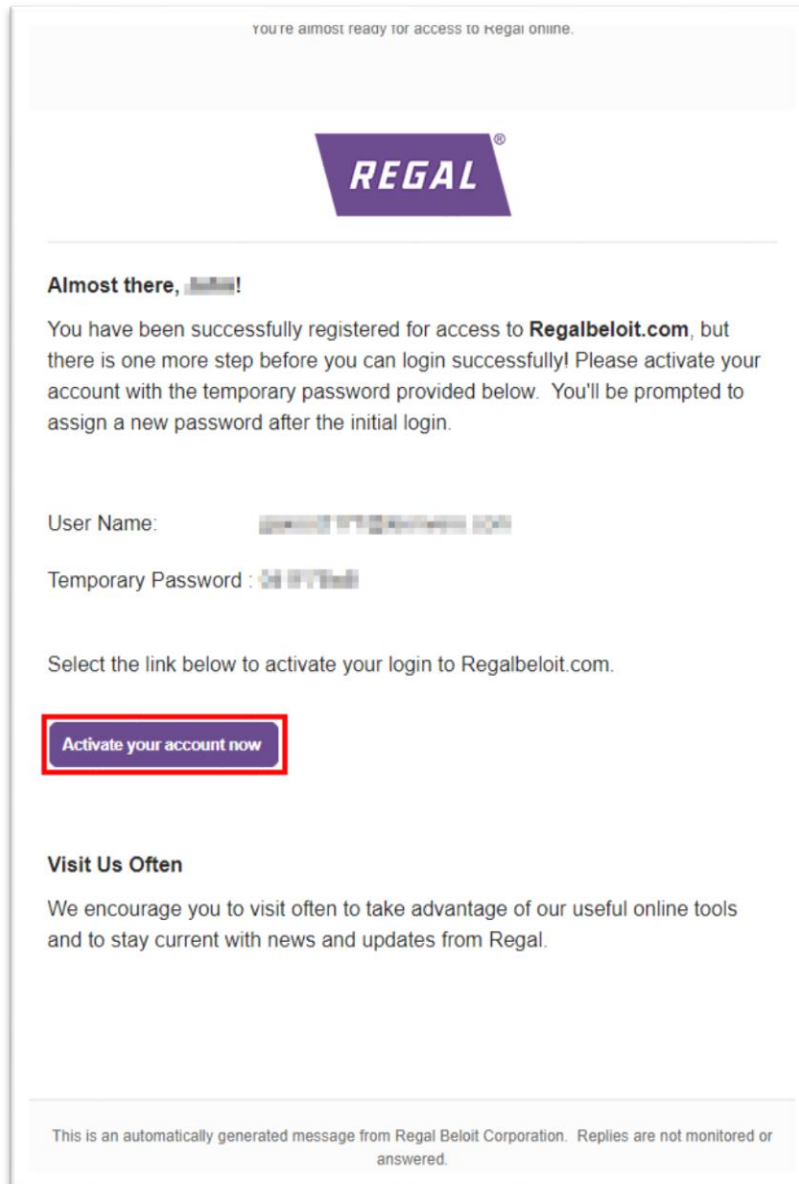


**Request access to Genteq technical information.**

 I'm not a robot 

### ii.

- f. Click Submit
- g. Open email from Regal (sent to email listed in Profile creation)
  - i. Username and temporary password information will be included in the email
- h. Click Activate your account now
  - i. This will open [www.regalbeloit.com](http://www.regalbeloit.com)



ii.

- i. Enter Username and Temporary Password
- j. Click Sign In
- k. Enter Old Password and Create New Password
- l. Click Change Password

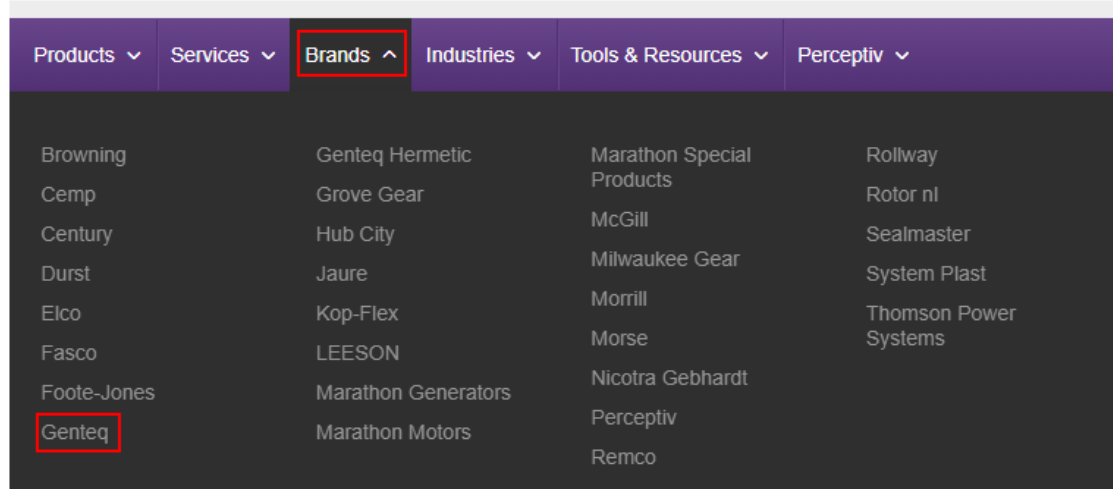
The screenshot shows two side-by-side panels from the Regal application. The left panel is titled "Sign In" and contains two input fields: "Username" and "Password". Below these fields is an orange "Sign In" button. Below the "Sign In" button are three options: "OR", "Registration", and "Forgot Password". The right panel is titled "Your password has expired" and contains a paragraph of text: "Password requirements: at least 8 characters, a lowercase letter, an uppercase letter, no parts of your username. Your password cannot be any of your last 30 passwords." Below this text are three input fields: "Old password", "New password", and "Repeat password". Below these fields is an orange "Change Password" button. Red boxes highlight the "Sign In" form on the left and the "Change Password" form on the right.

i.

**Congratulations!**  
**You have setup your Regal Account.**

### 3. DOWNLOAD - ECM Toolbox & ECM Factory Programmer

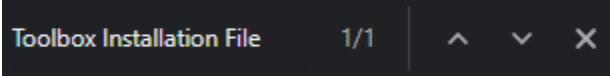
- a. Navigate to [www.regalbeloit.com](http://www.regalbeloit.com)
- b. Log in with Username and NEW Password
- c. Hover over Brands (Purple Bar)
- d. Click Genteq



- i.
- e. Click Genteq Technical Information (left side of screen)
- i. [www.regalbeloit.com/brands/Genteq/genteq-technical-information](http://www.regalbeloit.com/brands/Genteq/genteq-technical-information)



- ii.
- f. Hold CTRL (on keyboard) + F to open search field
- g. Copy and Paste “ Toolbox Installation File ” into search field.



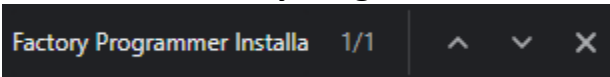
Toolbox Installation File 1/1 ^ v x

- i.
- h. Click on the highlighted link to begin downloading.

**Toolbox Installation File**

- 142R
- 3.0
- Endura Pro
- EON
- EON 42

- i.
- i. Hold CTRL (on keyboard) + F to open search field
- j. Copy and Paste “ Factory Programmer Installation File ” into search field.



Factory Programmer Installa 1/1 ^ v x

- i.
- k. Click on the highlighted link to begin downloading.

**Factory Programmer Installation File**

- 3.0
- Endura Pro
- EON
- EON 42

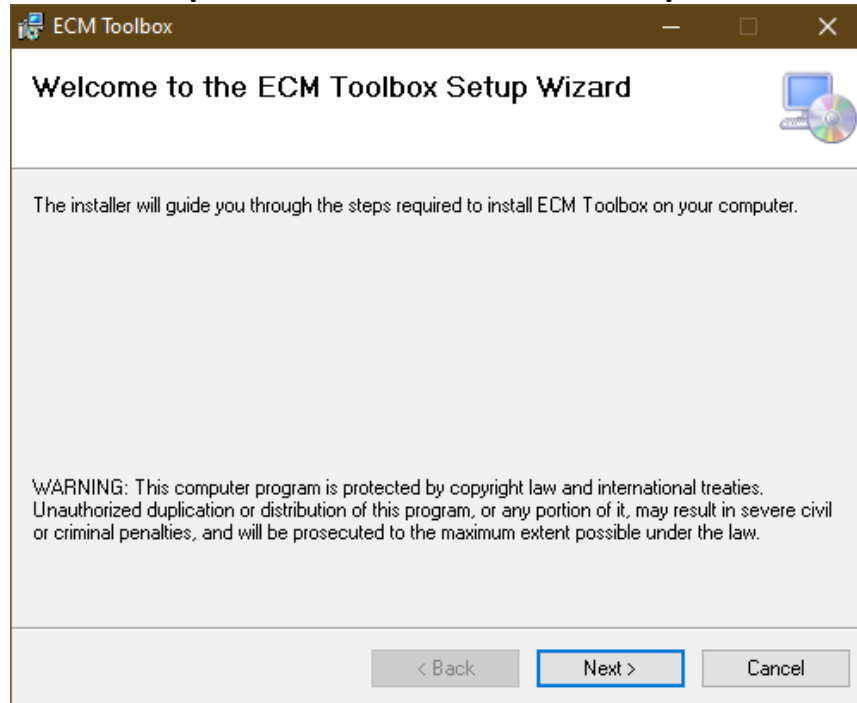
i.

**Congratulations!**  
**You have downloaded ECM Toolbox  
& ECM Factory Programmer.**

## 4. INSTALL - ECM Toolbox

a. Open downloads folder (file explorer)

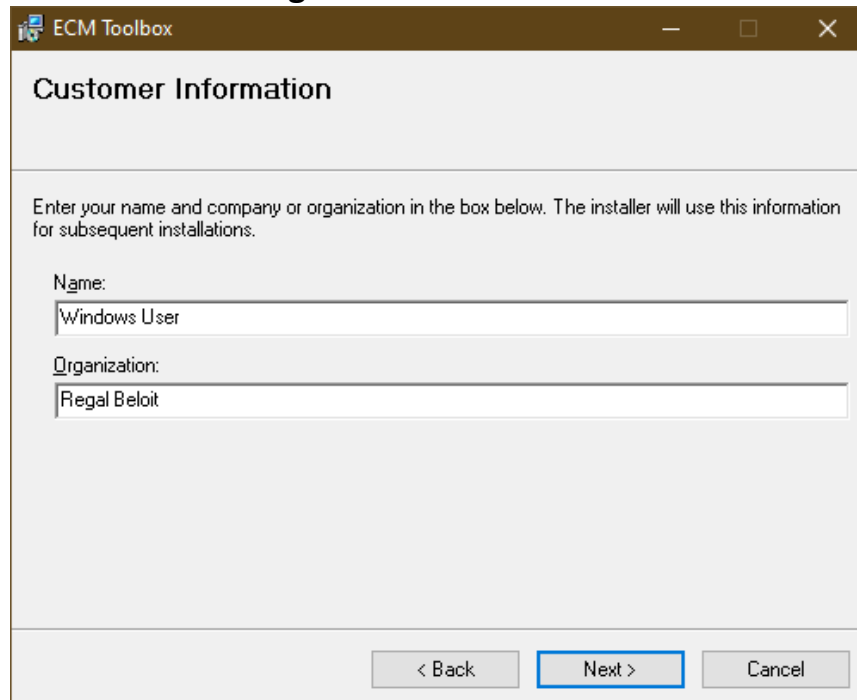
b. Click ToolboxSetup-6xxx to start the installation process



i.

c. Click Next

d. Enter Your name and Organization name

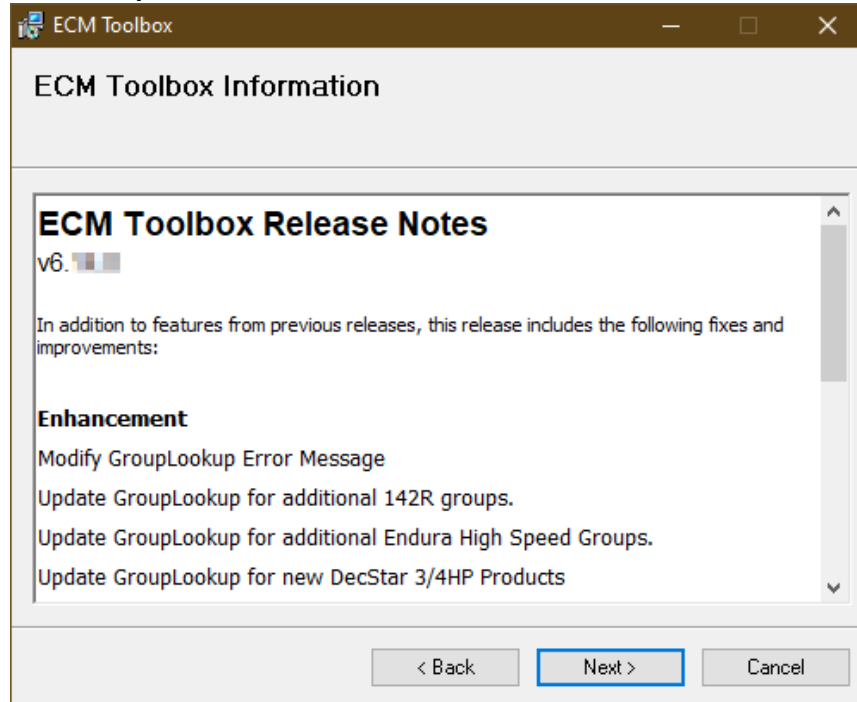


i.

e. Click Next

f. ECM Toolbox Release Notes

i. Review Updates

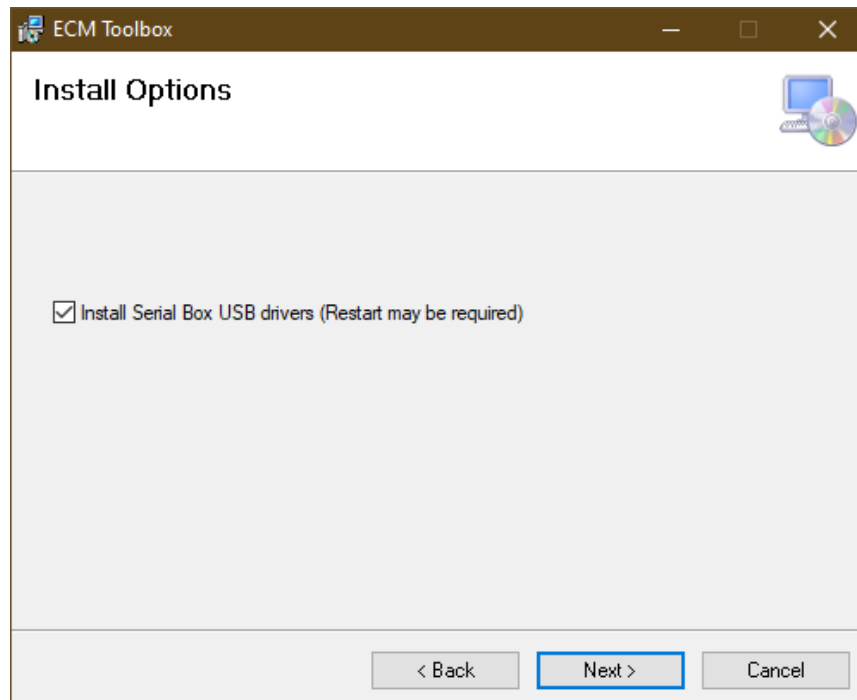


ii.

g. Click Next

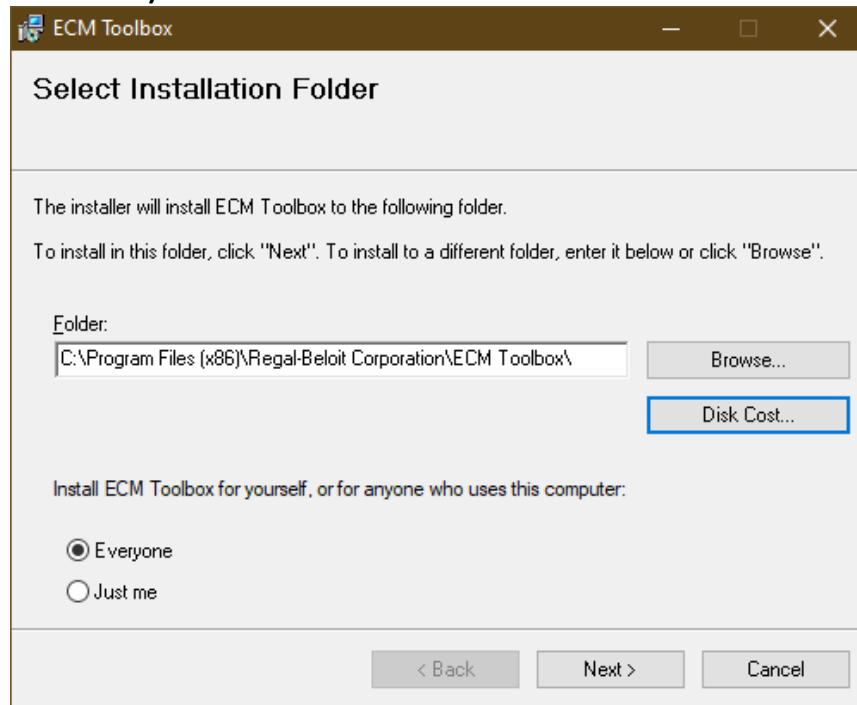
h. Install Options

i. Make sure the checkbox is checked if this is the first time installing.

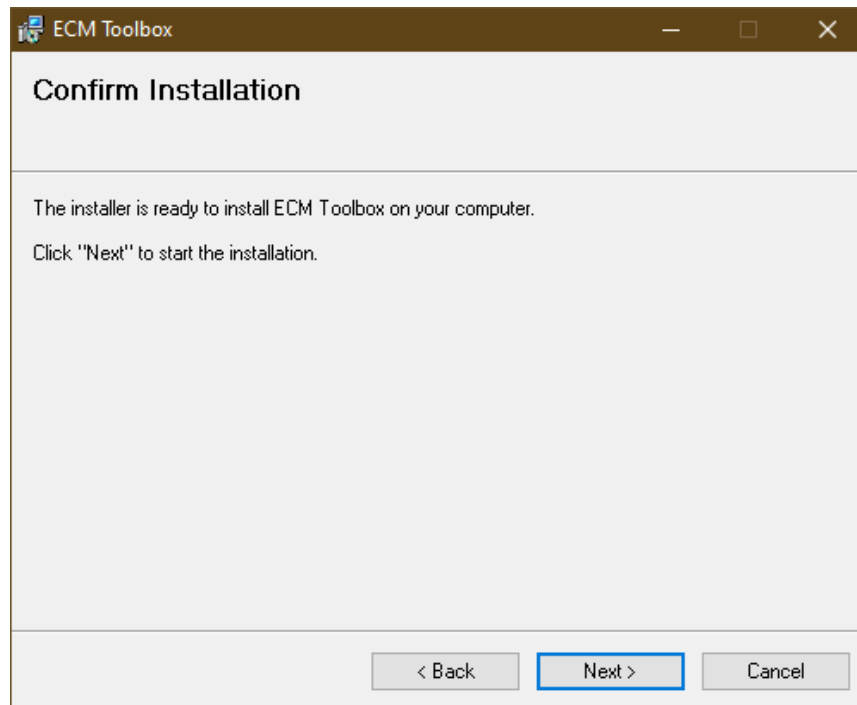


ii.

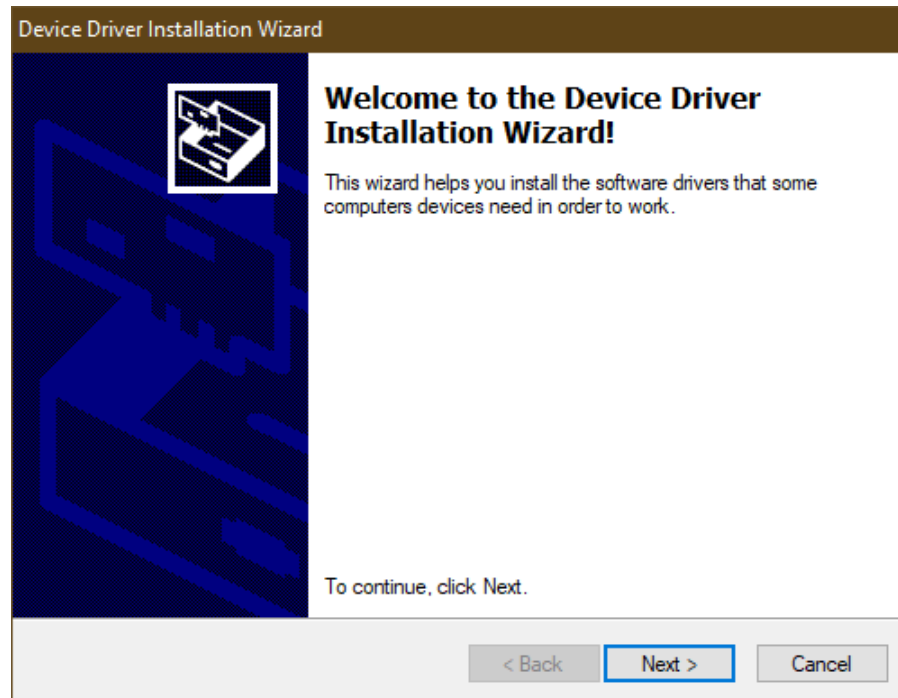
- i. Click next
- j. Select Installation Folder.
  - i. Default folder: C:\Program Files (x86)\Regal-Beloit Corporation\ECM Toolbox\
  - ii. Install ECM Toolbox Option
    1. Install for yourself, or for anyone (Everyone) who uses this computer (Just me).



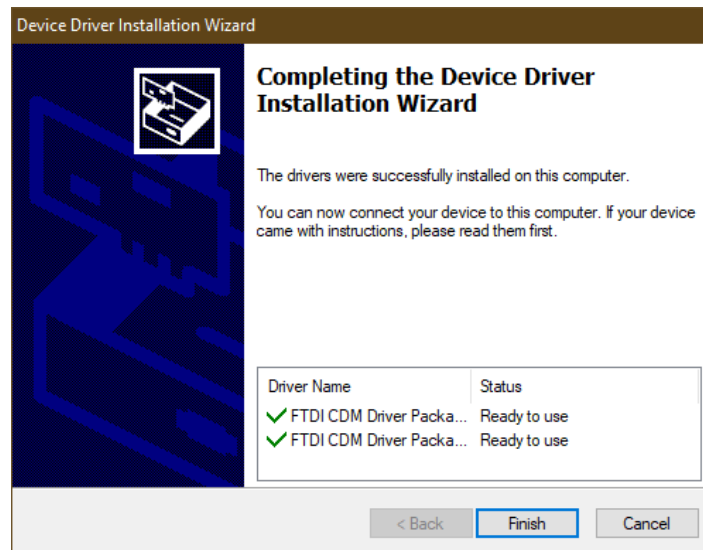
- iii.
- k. Click Next
- l. Confirm Installation
  - i. Software is ready for installation



- ii.
- m. Click Next
- n. Software will begin installation
  - i. Welcome to the Device Driver Installation Wizard!



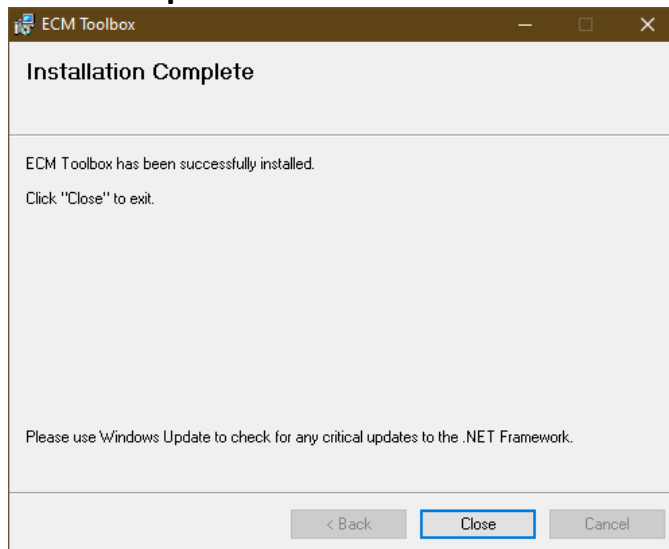
- 1.
  - ii. Click Next
  - iii. Drivers Successfully Installed



1.

iv. Click Finish

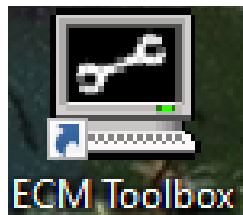
o. Installation Complete



i.

p. Click Close

i. Now the ECM Toolbox icon will be on the desktop

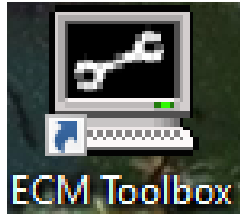


1.

**Congratulations!**  
**You have installed ECM Toolbox.**

**5. Activate ECM Toolbox**

- a. Click on ECM Toolbox icon.



i. **ECM Toolbox**

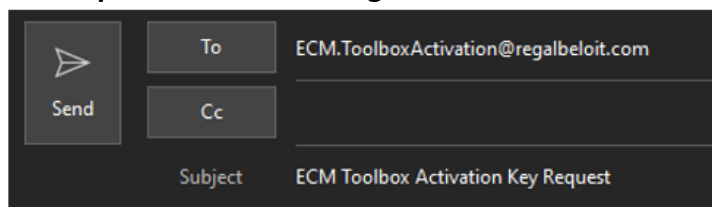
**b. ECM Toolbox License Activation**

- i. This window will only show the first time software is running or if activation key has been deleted.



1.

- ii. Click Request Activation Key
- iii. Email will be auto generated,
  - 1. Do NOT add any extra information into email before sending
    - a. If any extra information is added, then the automated activation key process will take longer.



Please send me my ECM Toolbox Activation Key. My License Number is:



2.

- iv. Click Send and wait for email reply.

- v. Once reply is received, copy activation key and paste into Activation Key box.

Regal Beloit Corp. Software Activation

### ECM Toolbox License Activation

Use of this software requires activation of your license. You can get your activation key from Regal Beloit by providing your License Number. You will be provided an Activation Key, which should be entered below.

*If you change your computer hardware significantly you may need to re-activate your license. We apologize for the inconvenience.*

The license number and activation key aren't easily typed. We highly recommend using Copy and Paste if at all possible. The buttons provided below will help with this.

**Thanks for using Regal Beloit ECM Products!**

License Number

Activation Key

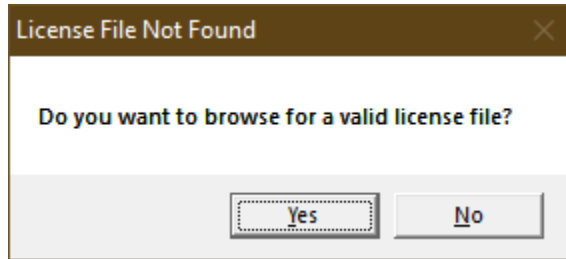
**You've got an RBC License. If you're connected to the intranet, you can [get your own activation key!](#)**

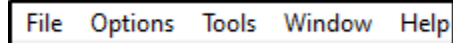
1.  
vi. Click OK

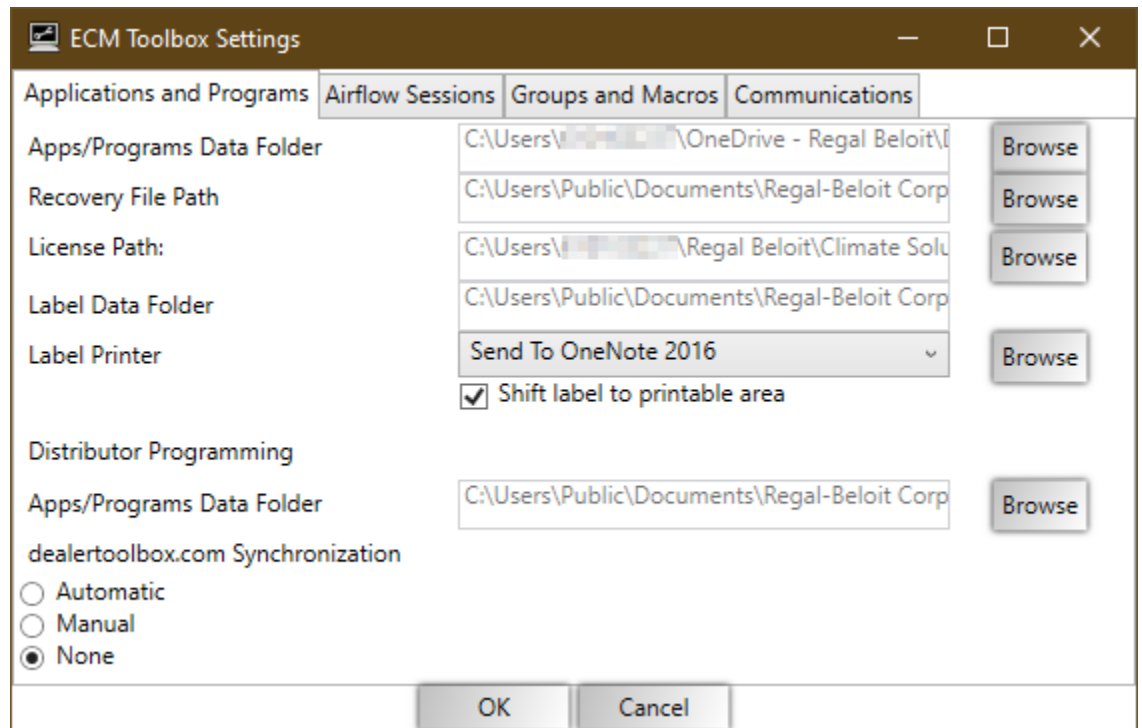
**Congratulations!**  
**You have activated ECM Toolbox.**

## 6. Setup ECM Toolbox

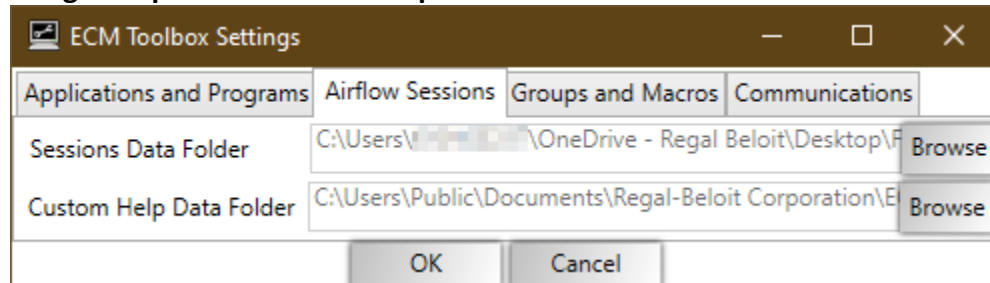
- a. Launch ECM Toolbox
- b. Browse for valid license file



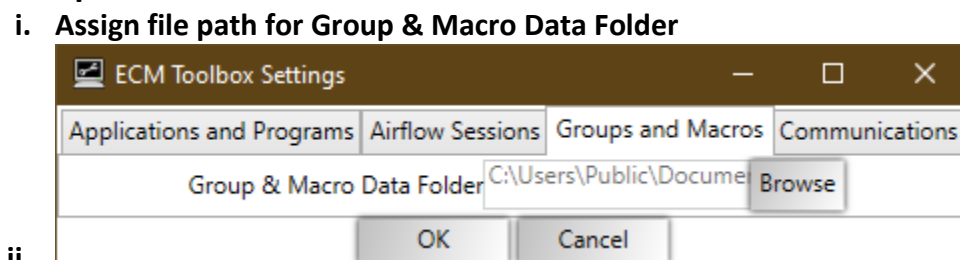
- i.
- c. Click Yes
- d. Use file explorer to locate license file
  - i. License file should have been received from Regal Representative
- e. Close "Welcome to the ECM Toolbox!" window
- f. Click Options
  - i. Located on the top menu bar
  - ii. 
- g. Click Settings
- h. Set file paths and printer
  - i. Assign file path for Apps/Programs Data Folder
  - ii. Assign file path for Recovery File Path
  - iii. Assign file path for License Path
  - iv. Assign file path for Label Data Folder
  - v. Assign printer for Label Printer



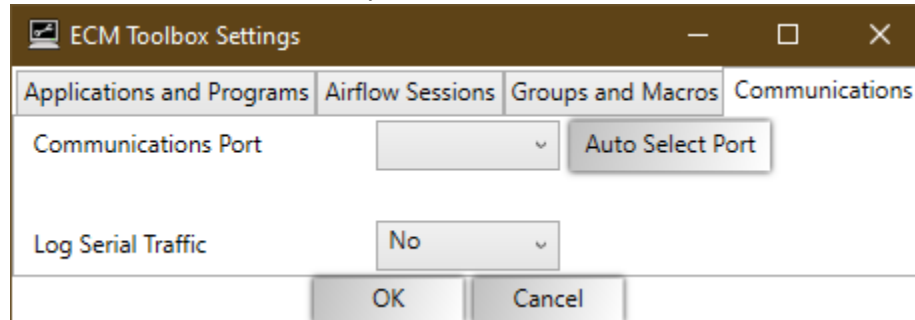
- vi.
- i. **Set Synchronization**
  - i. Synchronization refers to web based data that is linked to Regal.
  - ii. For most customers, Manual or None should be selected.
- j. **Click Airflow Sessions Tab**
- k. **Set file paths**
  - i. Assign file path for Sessions Data Folder
  - ii. Assign file path for Custom Help Data Folder



- iii.
- l. **Click Groups and Macros Tab**
- m. **Set file paths**



- n. Click Communications Tab
  - i. Click Auto Select Port
    - 1. This will assign a COM Port for the Serial Box
  - ii. Click Log Serial Traffic option dropdown
    - 1. For most customers, No should be selected.



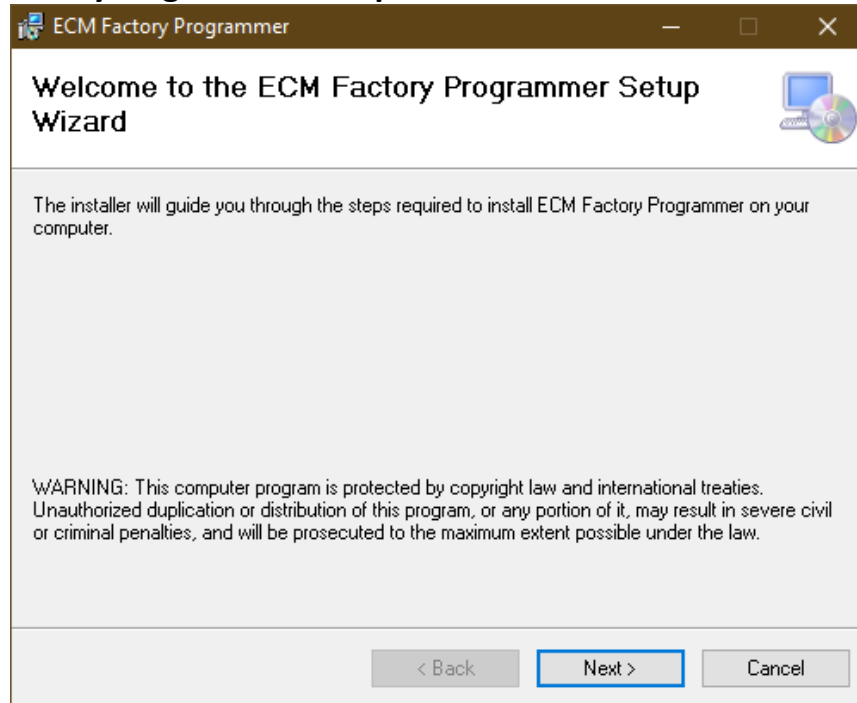
- iii.
- o. Click OK

**Congratulations!**  
**You have setup ECM Toolbox.**

## 7. INSTALL – ECM Factory Programmer

a. Open downloads folder (file explorer)

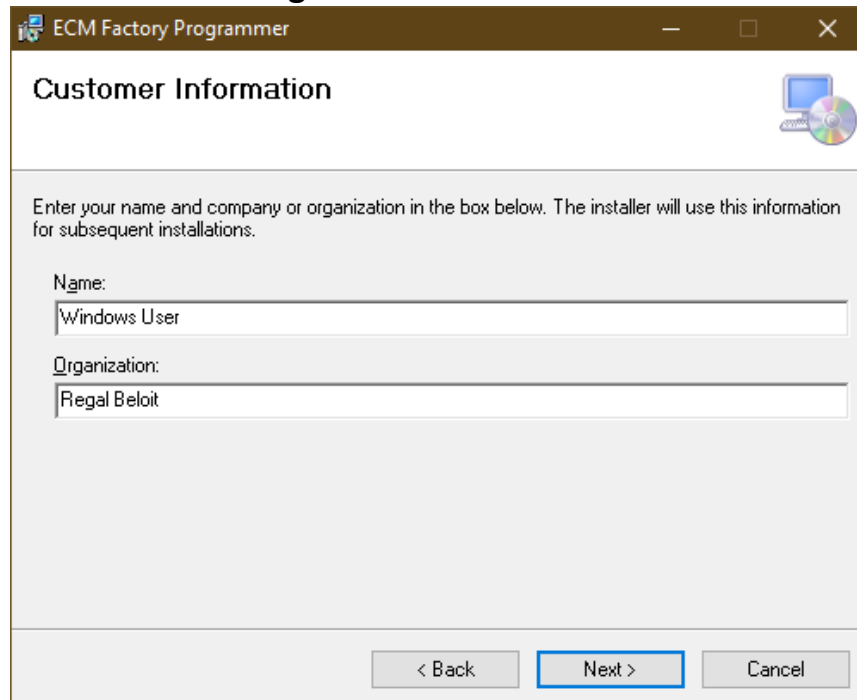
b. Click FactoryProgrammerSetup-v6xxx to start the installation process



i.

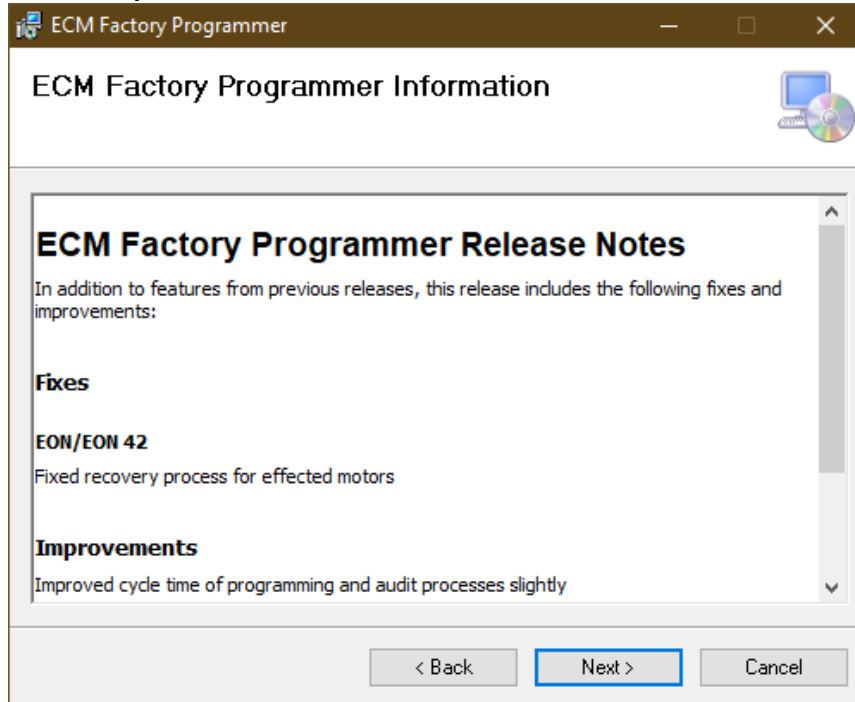
c. Click Next

d. Enter Your name and Organization name

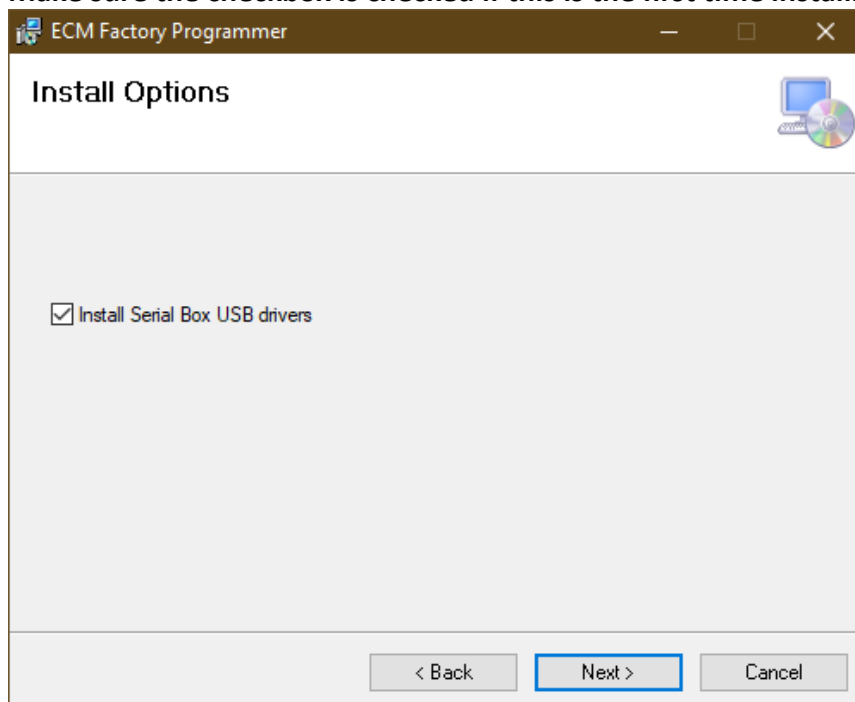


i.

- e. Click Next
- f. ECM Factory Programmer Release Notes
  - i. Review Updates

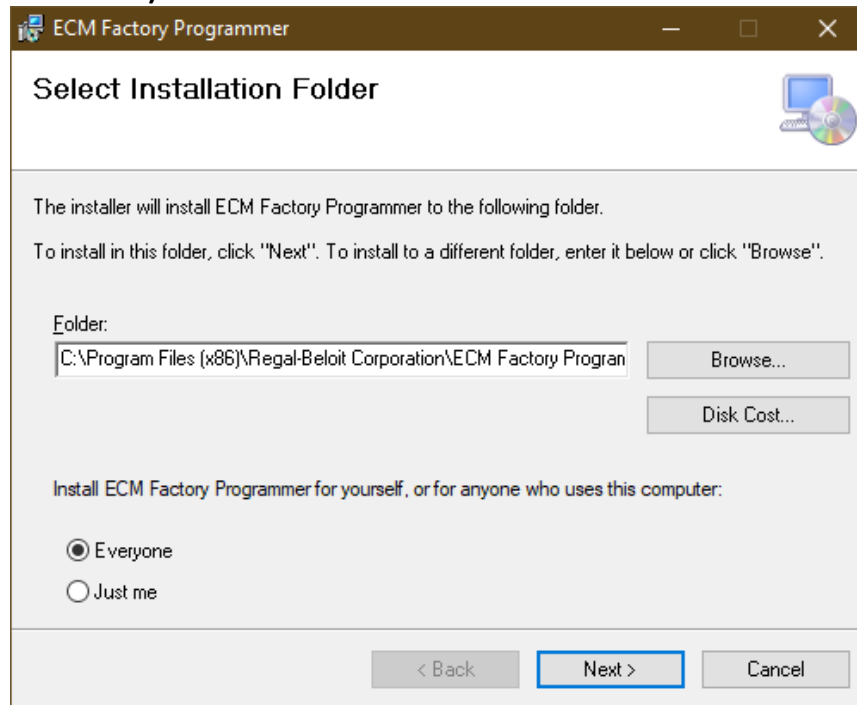


- ii.
- g. Click Next
- h. Install Options
  - i. Make sure the checkbox is checked if this is the first time installing.

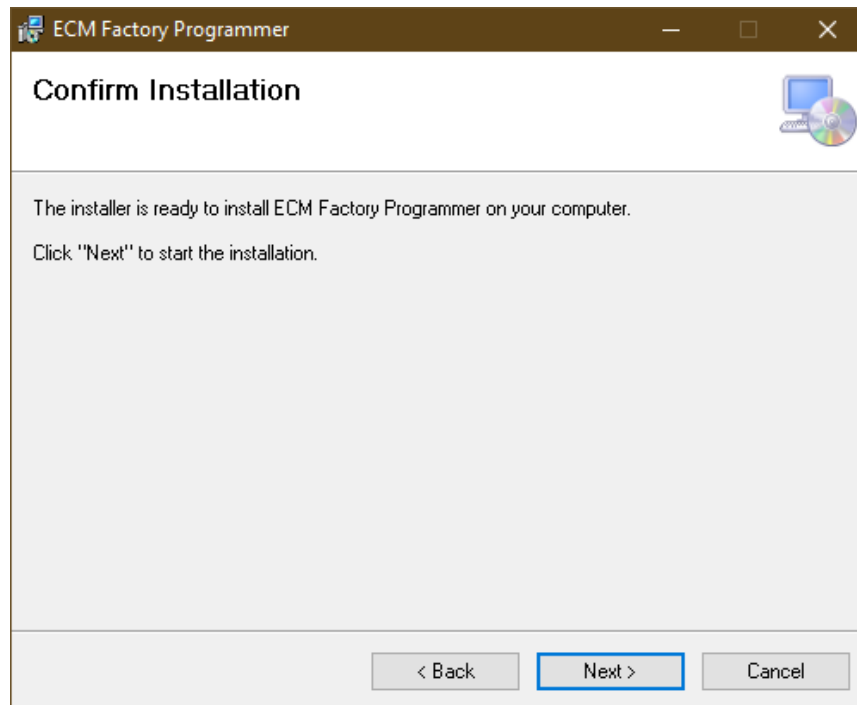


ii.

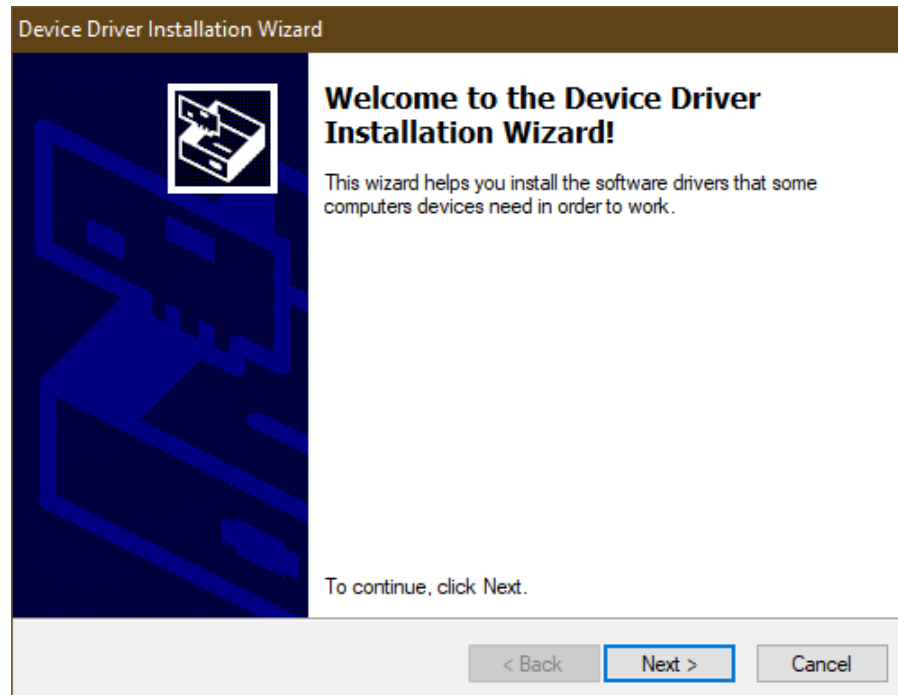
- i. Click Next
- j. Select Installation Folder.
  - i. Default folder is: C:\Program Files (x86)\Regal-Beloit Corporation\ECM Toolbox\
  - ii. Install ECM Toolbox Option
    1. Install for yourself, or for anyone (Everyone) who uses this computer (Just me).



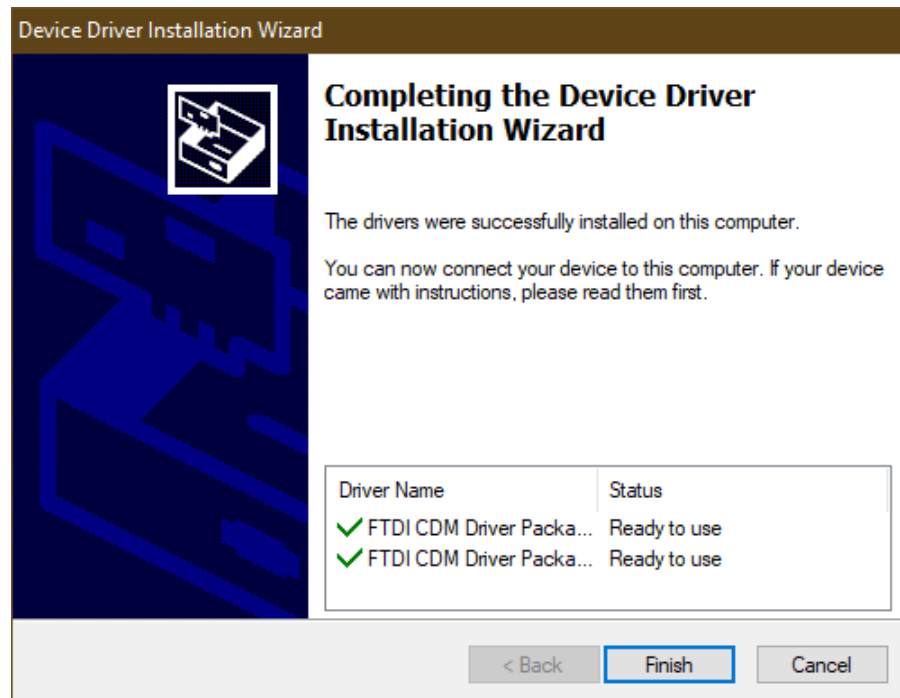
- iii.
- k. Click Next
- l. Confirm Installation
  - i. Software is ready for installation



- ii.
- m. Click Next
- n. Software will begin installation
  - i. Welcome to the Device Driver Installation Wizard!

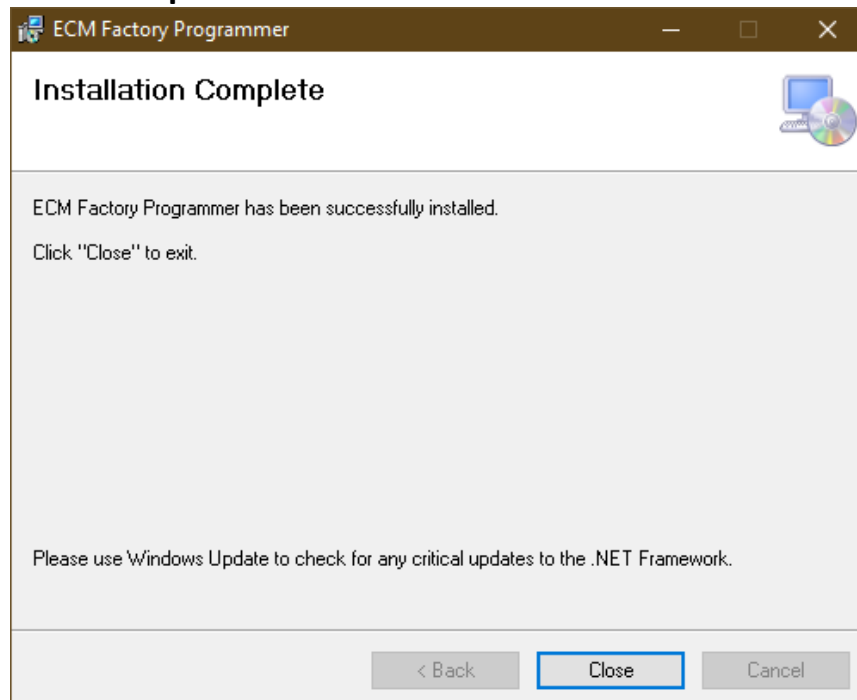


- 1.
  - ii. Click Next
  - iii. Drivers Successfully Installed

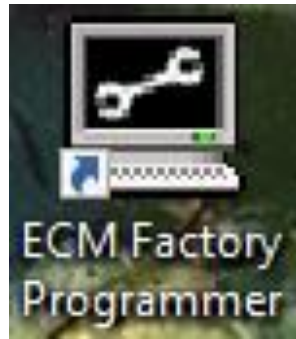


1.
  - iv. Click Finish

#### o. Installation Complete



- i.
  - p. Click Close
  - i. Now the ECM Factory Programmer icon will be on the desktop



1.

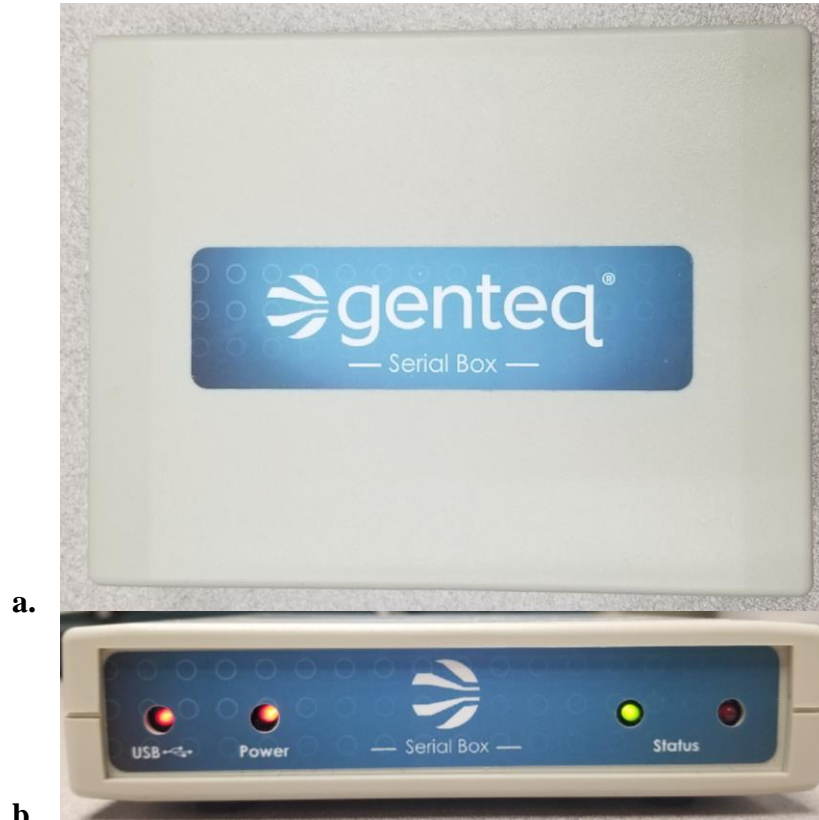
**Congratulations!**  
**You have installed ECM Factory Programmer.**

## 8. Serial Box Driver Installation (if necessary)

### a. ECM Programming Requirements

#### i. Use either Serial Box or TIB (Test Interface Box)

##### 1. Serial Box



a.

b.

##### 2. If using TIB, a USB to Serial converter is required

a. Sewel: SW-1301

b. <http://sewelldirect.com/usbtoserial.asp>

- ii. Computer OS should be Windows XP – Windows 10
- iii. ECM Toolbox and/or ECM Factory Programmer should be installed
- iv. Regal License file is required

### b. Downloading Drivers

i. Navigate to <http://www.genteqserialbox.com/>

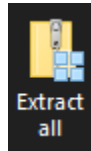
1. Do NOT use Internet Explorer



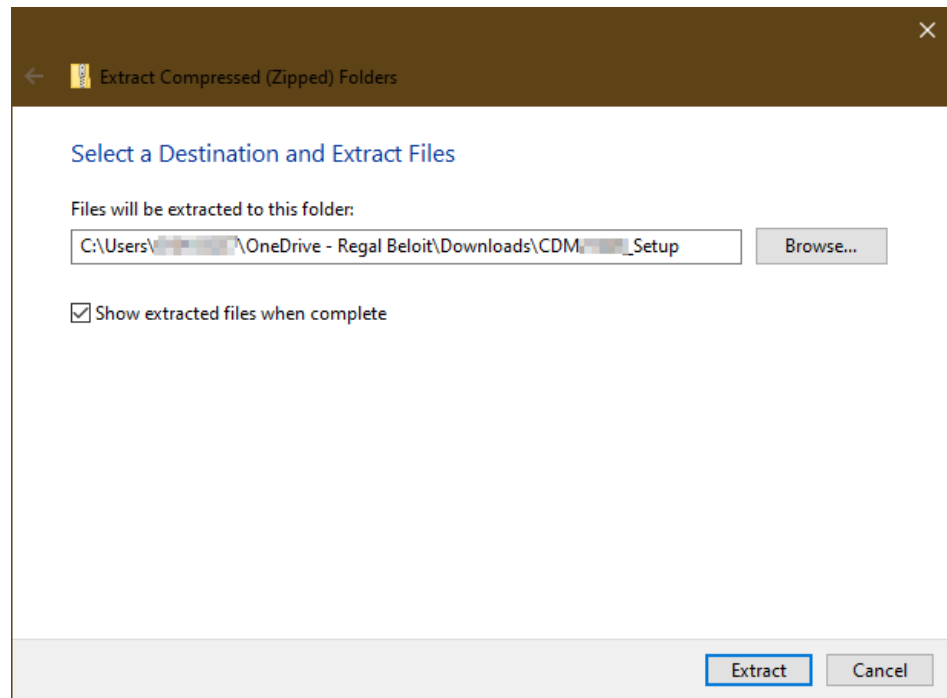
- 2.
- ii. Click on Drivers for Genteq Serial Box Installation
  1. This will open a new webpage (<https://ftdichip.com/drivers/vcp-drivers/>)
- iii. Find the appropriate OS
  1. In this example, OS will be Windows
- iv. Click setup executable, in Comments column, to begin downloading

Operating System	Release Date	Processor Architecture							Comments
		X86 (32-Bit)	X64 (64-Bit)	PPC	ARM	MIPSII	MIPSIV	SH4	
Windows*	2017-08-30	<a href="#">2.12.28</a>	<a href="#">2.12.28</a>	-	-	-	-	-	WHQL Certified. Includes VCP and D2XX. Available as a <a href="#">setup_executable</a> . Please read the <a href="#">Release Notes</a> and <a href="#">Installation Guides</a> .

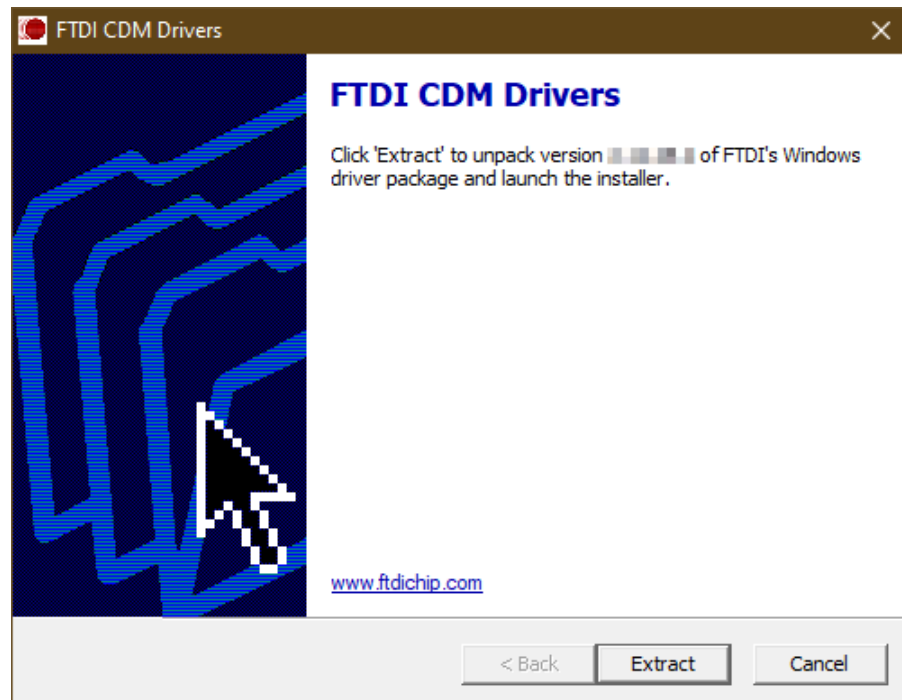
- 1.
- v. Open downloads folder (file explorer)
- vi. Click CDMxxxxx\_Setup to open compressed file
- vii. Click Extract all



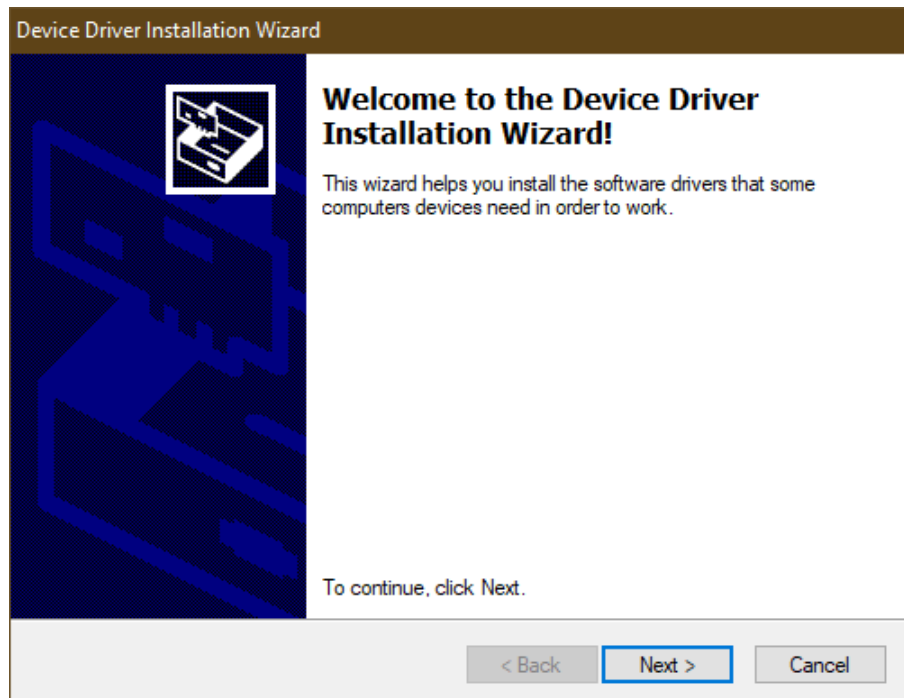
- 1.
- viii. Browse for destination for where files should be extracted



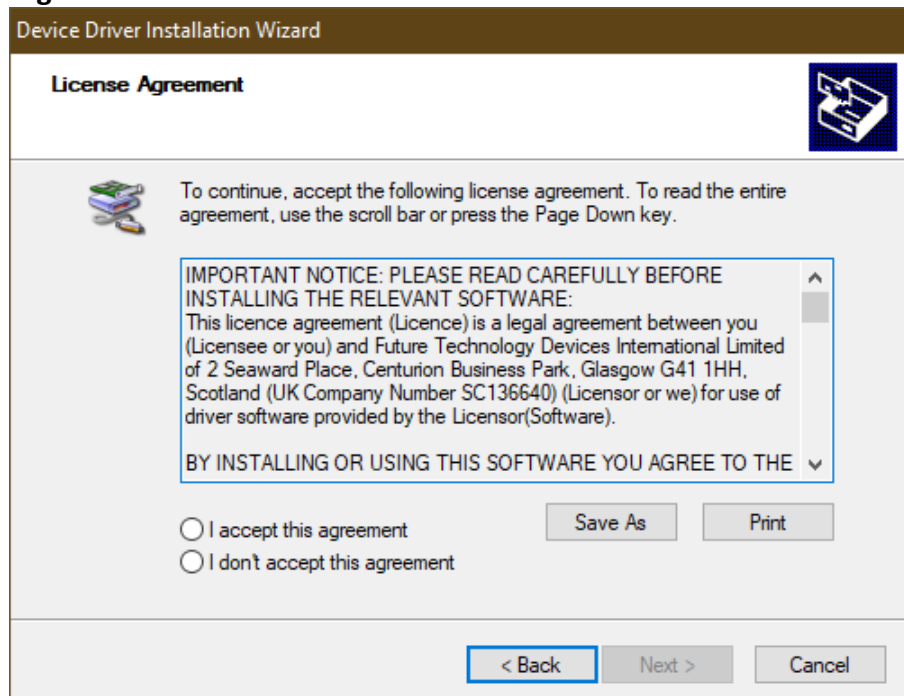
- 1.
- ix. Click Extract
- x. Click CDMxxxxx\_Setup
- xi. FTDI CDM Drivers



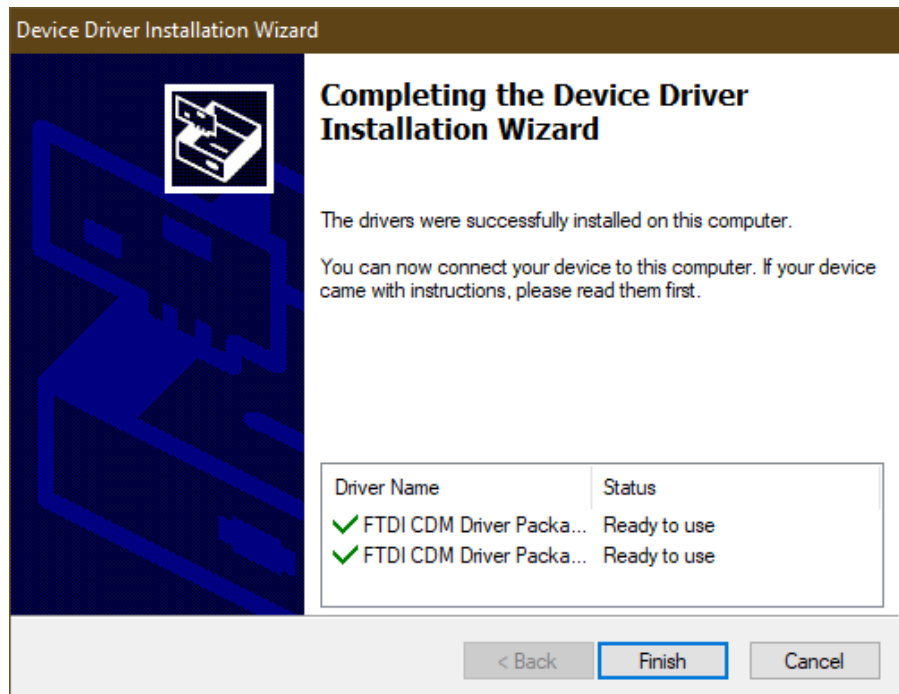
- 1.
- xii. Click Extract
- xiii. Software will begin installation
  1. Welcome to the Device Driver Installation Wizard!



- a.
2. Click Next
3. License Agreement



- a.
4. Read Agreement
5. Accept or Do Not Accpet agreement
6. Click Next
7. Drivers Successfully Installed



- a.  
8. Click Finish

**Congratulations!**  
**You have installed Drivers for the Serial Box.**

## 9. Hardware Setup – Serial Box

### a. Serial Box

- i. Plug the 24VAC Power Supply into the far right port



1.



- ii. Plug the 24VAC Power Supply into wall outlet
- iii. Plug USB cable into middle port



- 1.
2. There are two USB cables that can be used.
  - a. Standard USB cable (comes with Serial Box Kit)



- i.
- b. Serial Cable (ordered separately; used with computers requiring serial adapter)



- i.
- iv. Plug motor programming cable into left port (RJ45)



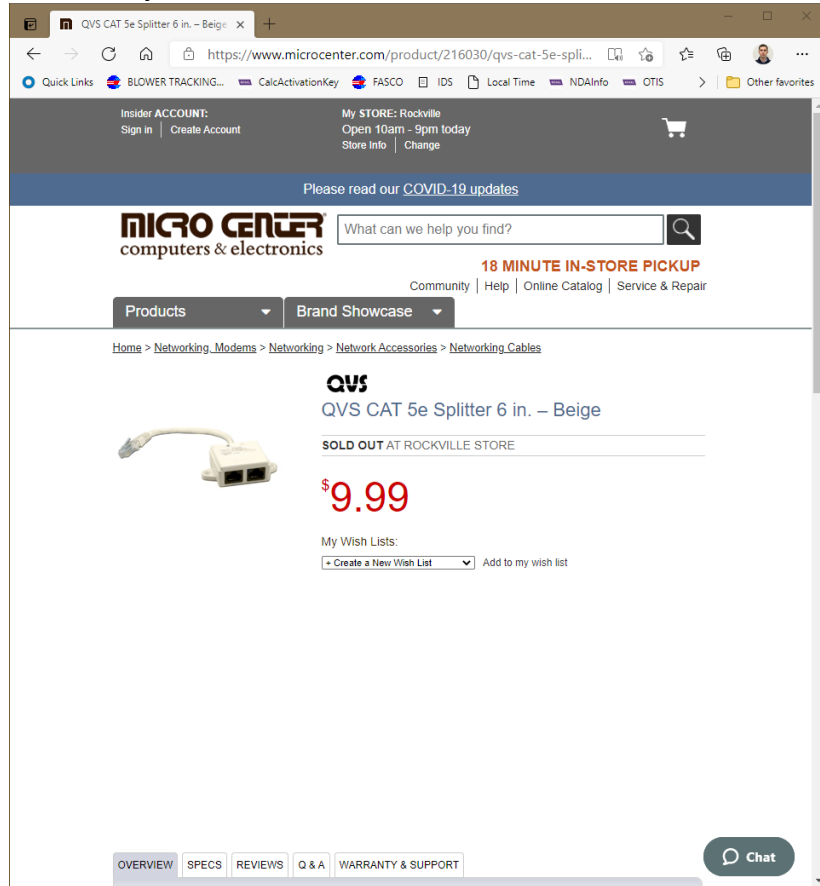
- 1.
- 2. Motor programming cable



- a.

3. [QVS CAT 5e Splitter 6 in. – Beige - Micro Center](#)

- a. This cable allows more than one set of input connectors. The Factory could have EnduraPro and Eon programming cables connected to splitter. This would eliminate the need to unhook the programming cables each time a different motor platform is going down the production line.



- b.
- v. Plug other end of motor programming cable into motor
  - 1. For this example, the Eon will be used. The motor connections for other products will be similar.
  - 2. Plug the signal connector into the bottom receptacle.



a.

3. Plug the power connector into the top receptacle.



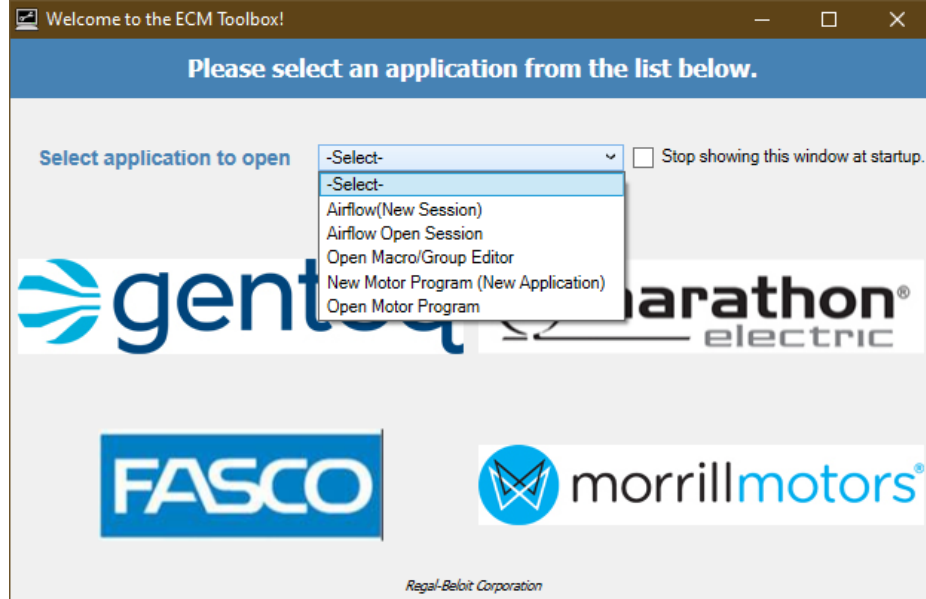
- a.
- b. This connection will provide enough voltage to activate control so it can be programmed, but it will NOT allow the motor to run at full speed.
- c. A cable is available to provide full power to the motor and plugs into a wall outlet.
  - i. Caution should be used if this is desired, make sure Motor is supported and no objects are close to the rotating shaft. If you are using this cable, the preferred method is to plug into motor first and then into wall outlet. A spark can happen at the power connector on the motor because of the inrush current powering up the bulk capacitors.

**Congratulations!**  
**You have setup the hardware for the Serial Box.**

**10. ECM Toolbox Programming (Basics)**

**a. Creating New Motor Program(s)**

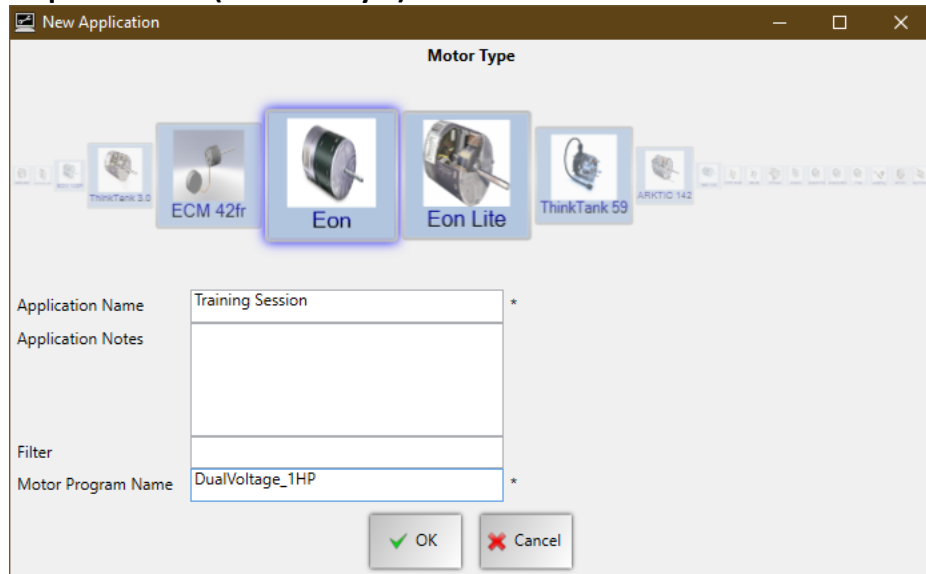
**i. Select New Motor Program from dropdown**



**1.**

**ii. Select motor type (purple outline indicates selection)**

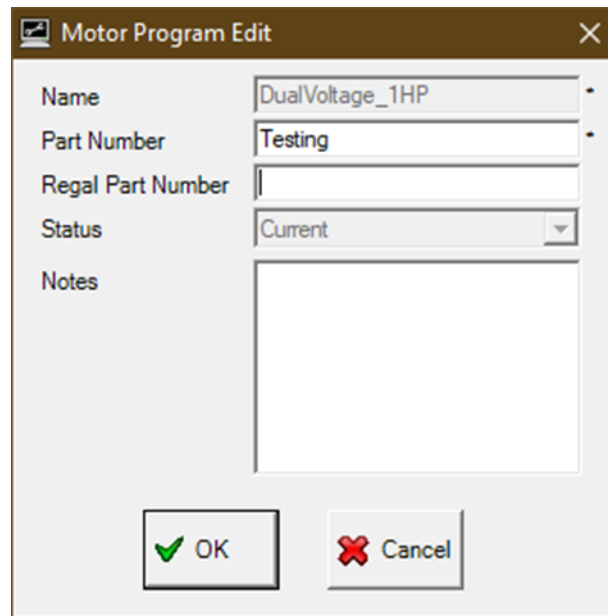
**iii. Fill out required fields (denoted by \*)**



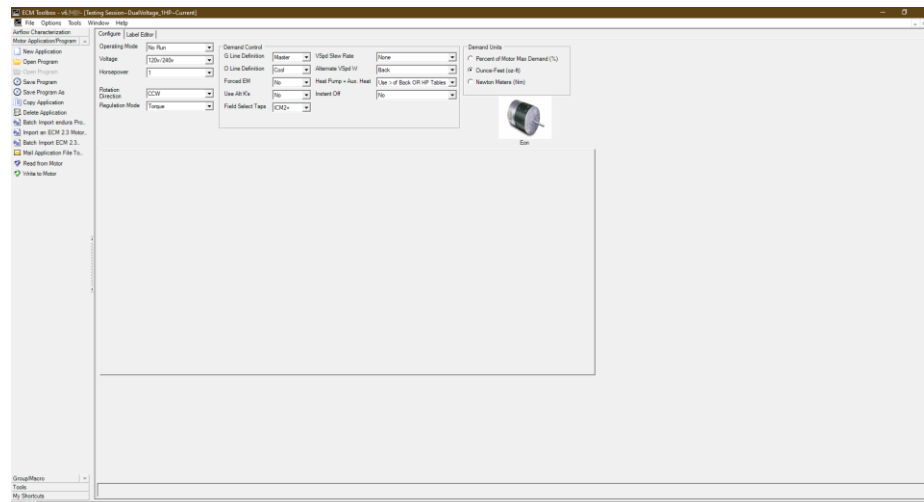
**1.**

**iv. Click OK**

**v. Fill out required fields**

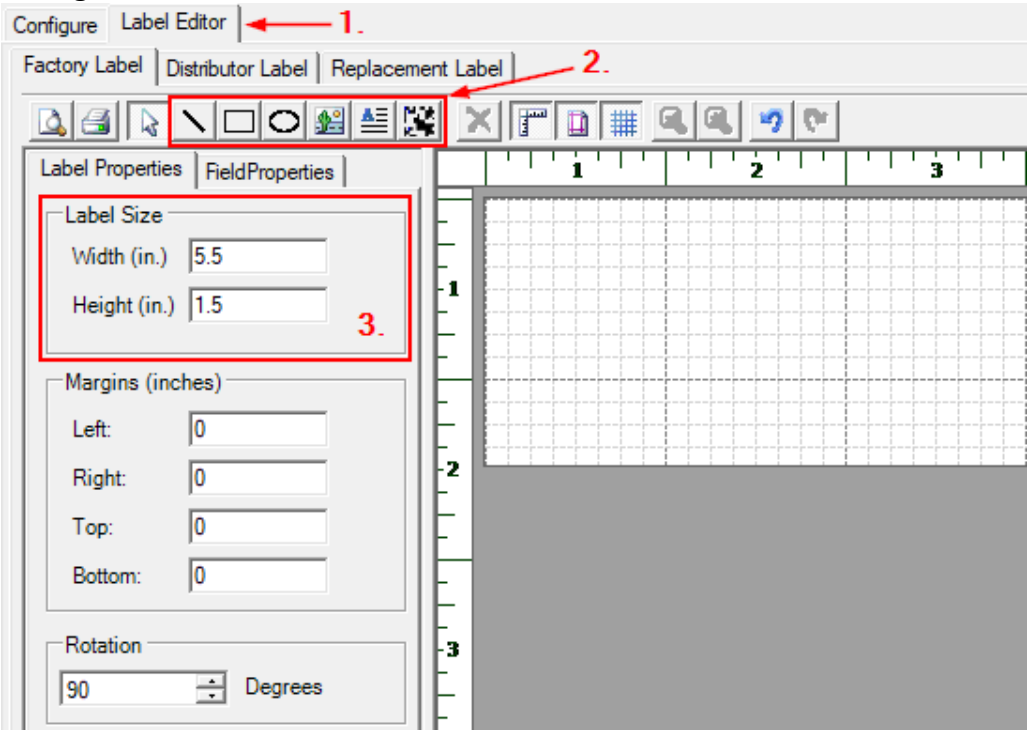


- 1.
- vi. Click OK
- vii. ECM Toolbox will generate the programming interface for the specific product chosen above.

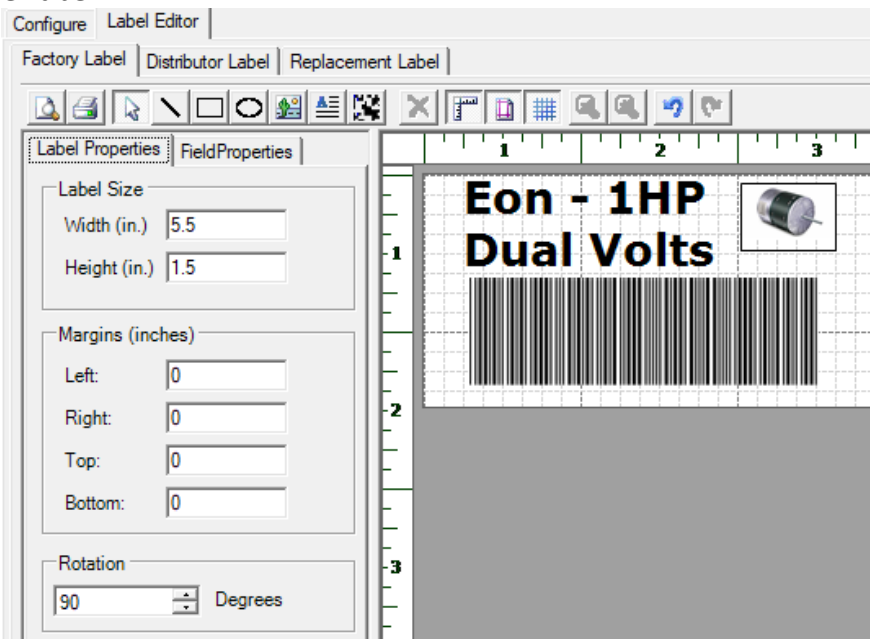


- 1.
- viii. Select desired operating mode.
  1. Thermostat-Controlled, Variable Speed w/ Enable, Autoswitch, No Run, Variable Speed w/o Enable, or Discrete Speed.
    - a. Operating Mode with depend on product selected.
- ix. Select appropriate Voltage
  1. Voltage selection will depend on product selected.
- x. Select appropriate HP
  1. HP selection will depend on product selected.
- xi. Select appropriate Rotation Direction
  1. CCW or CW
- xii. Select appropriate Regulation Mode

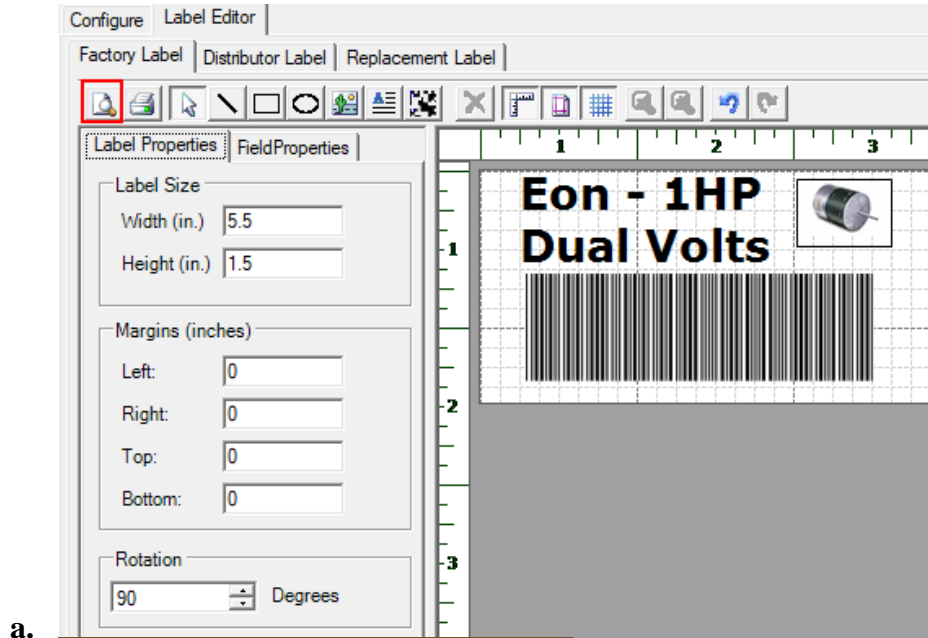
1. Regulation Mode selection will depend on product selected.
- xiii. Configure Label (if necessary)
  1. Click Label Editor
  2. Use tools to create label
  3. Set Label height and width



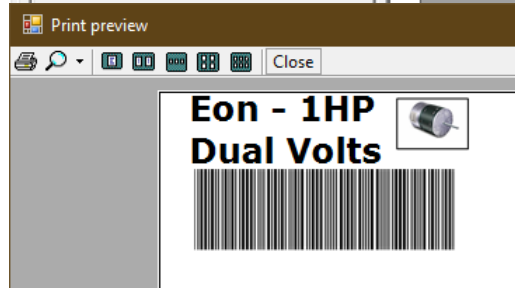
- a.
4. Example Label



**5. Click Print Preview button to view label**

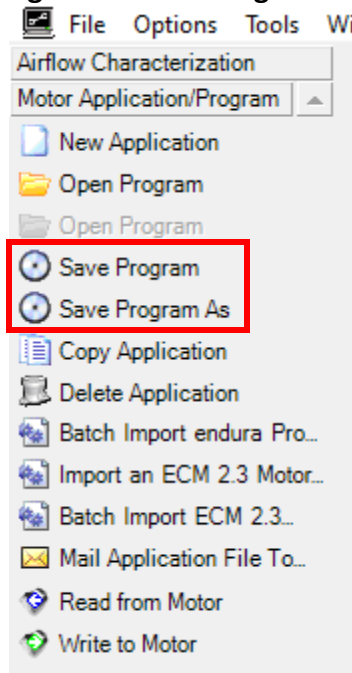


a.



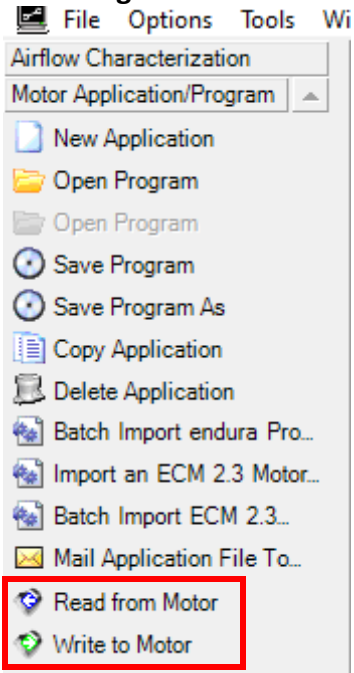
b.

**6. Save Program or Save Program As**



a.

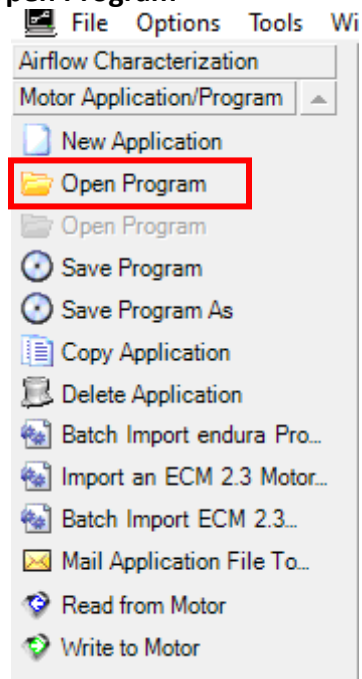
## 7. Read/Write Program to Motor



a.

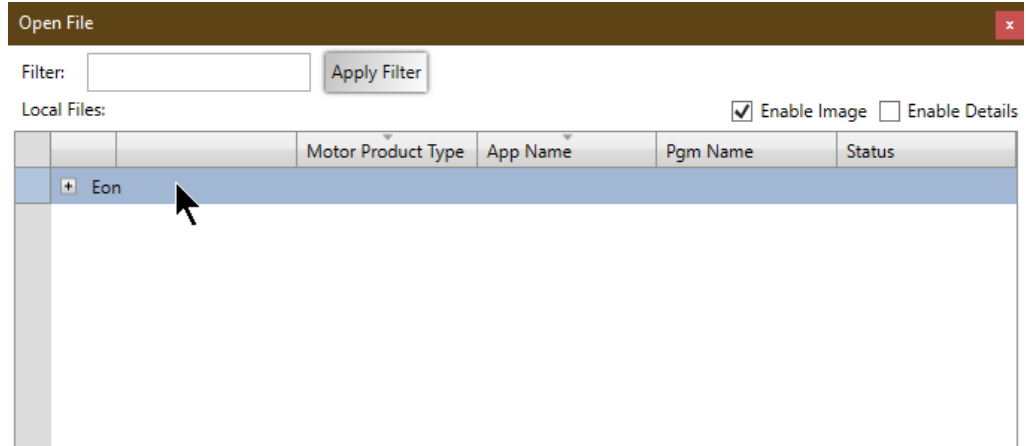
### b. Existing Programs

#### i. Click Open Program

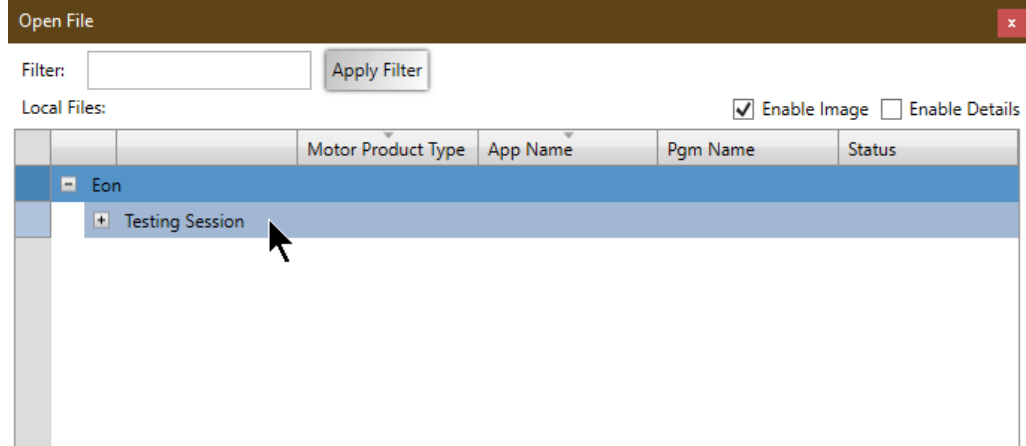


1.

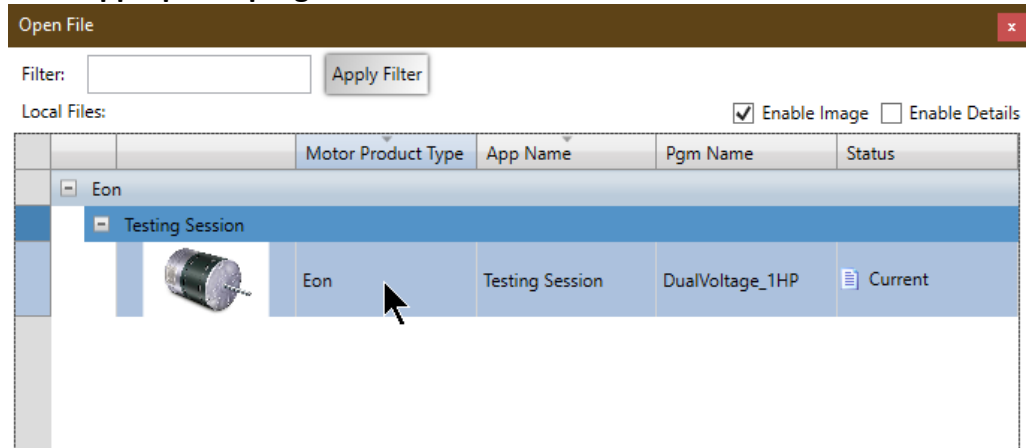
#### ii. Double Click appropriate motor



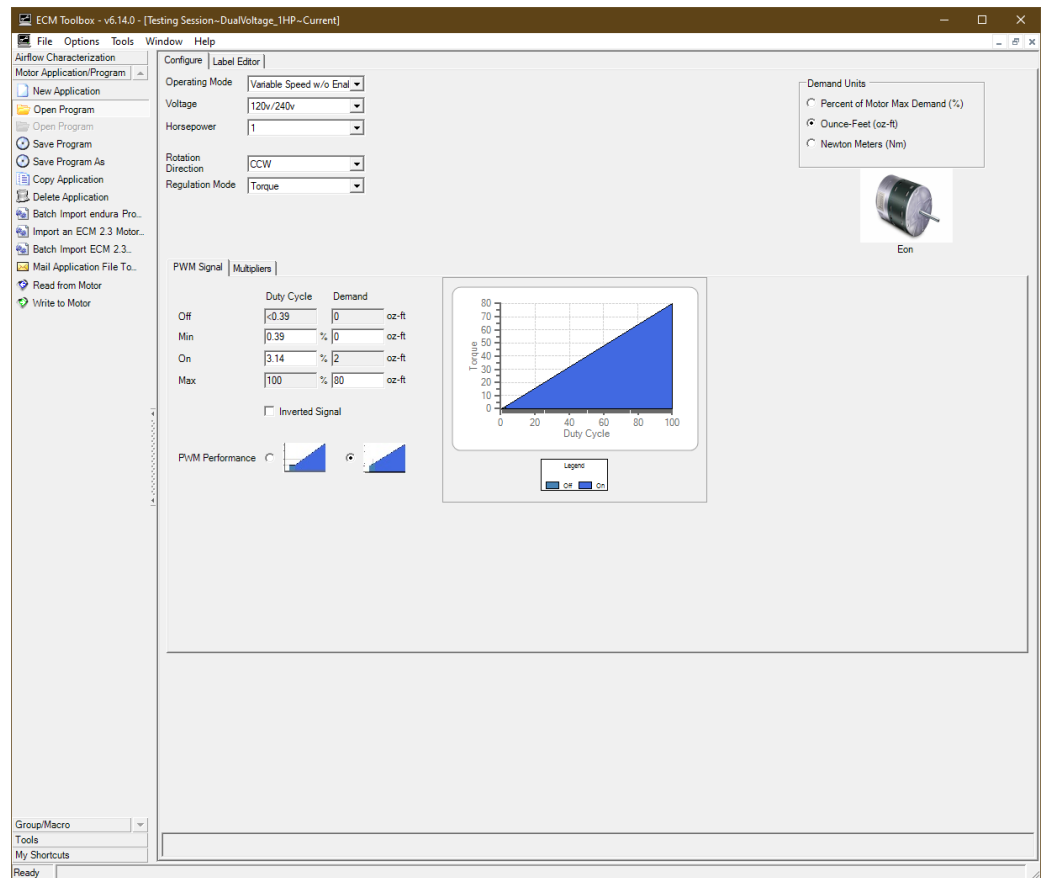
1.  
iii. Double Click appropriate application



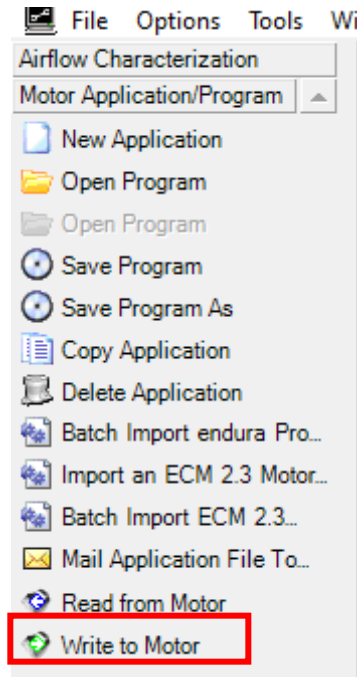
1.  
iv. Double Click appropriate program



1.  
v. The program has now been loaded properly for review and modification



1.
  - c. **Programming Variable Speed Motor**
    - i. **Select Operating Mode**
      1. **Choose Variable Speed w/ Enable or Variable Speed w/o Enable**
    - ii. **Select appropriate Voltage**
      1. **Voltage selection will depend on product selected.**
    - iii. **Select appropriate HP**
      1. **HP selection will depend on product selected.**
    - iv. **Select appropriate Rotation Direction**
      1. **CCW or CW**
    - v. **Select appropriate Regulation Mode**
      1. **Regulation Mode selection will depend on product selected.**
    - vi. **Enter desired PWM Signal demands for range of operation**
    - vii. **Click Write to Motor**



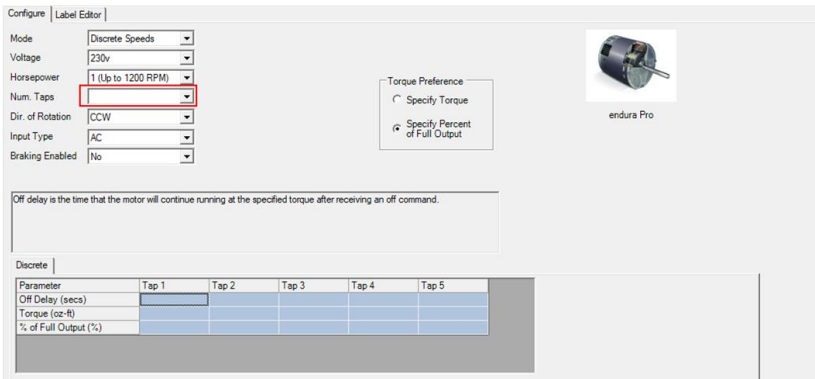
1.

**d. Program Discrete Speed Motor**

**i. Select Operation Mode**

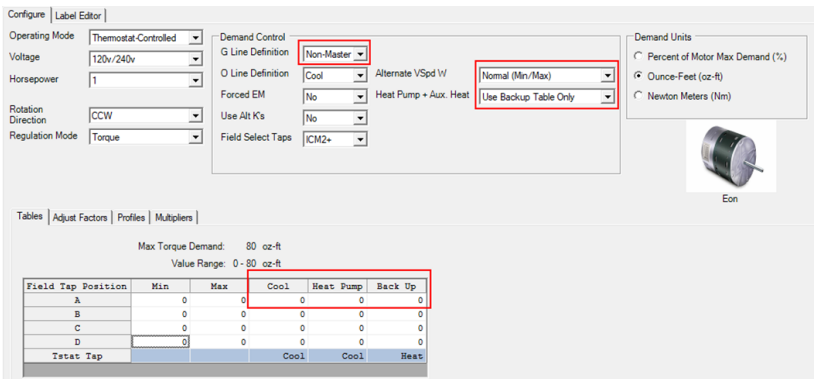
**1. Discrete or Thermostat-Controlled**

**a. Discrete**



i.

**b. Thermostat-Controlled**



i.

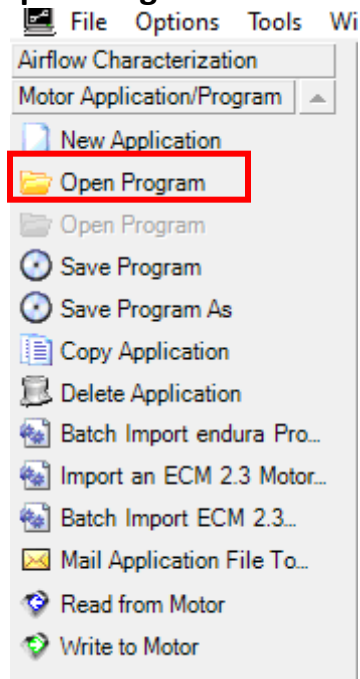
**ii. Select appropriate Voltage**

1. Voltage selection will depend on product selected.
- iii. Select appropriate HP
  1. HP selection will depend on product selected.
- iv. Select appropriate Rotation Direction
  1. CCW or CW
- v. Select appropriate Regulation Mode
  1. Regulation Mode selection will depend on product selected.
- vi. Enter desired discrete demands for range of operation
- vii. Click Write to Motor

**Congratulations!**  
**You have learned the basics for ECM Toolbox.**

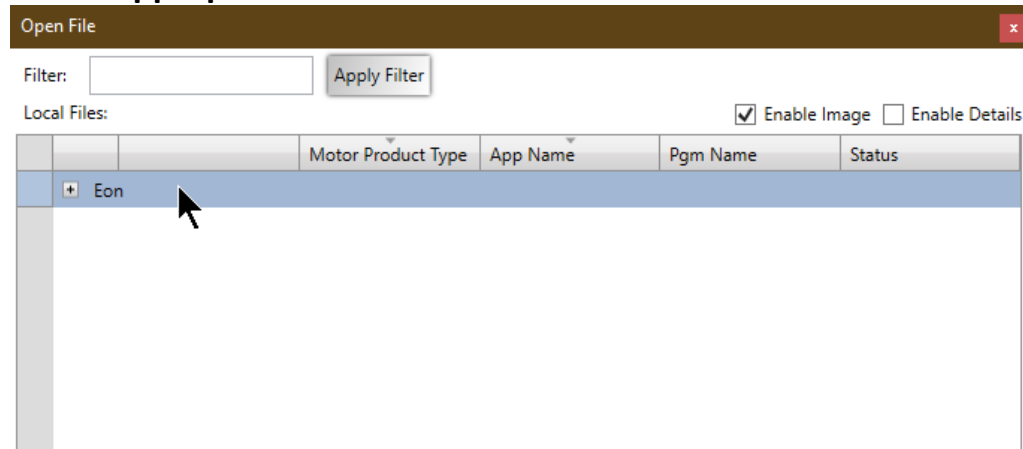
**11. How to Publish Program for Production (in ECM Toolbox)**

**a. Click Open Program**



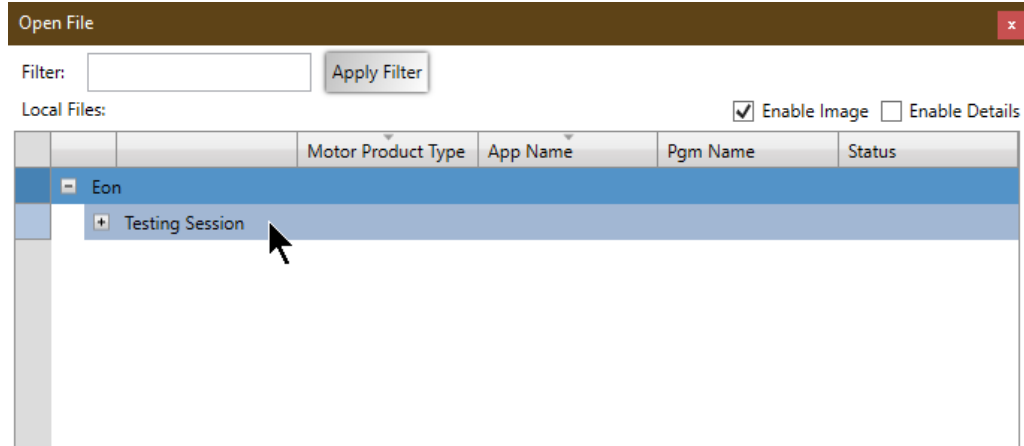
i.

**b. Double Click appropriate motor**

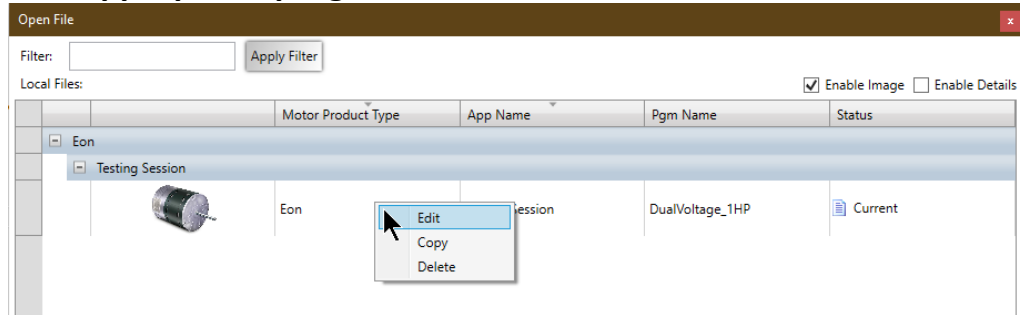


i.

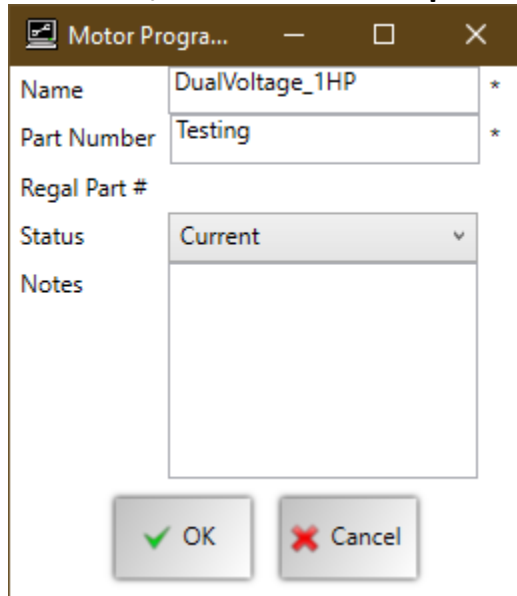
**c. Double Click appropriate application**



- i.
- d. Right Click appropriate program

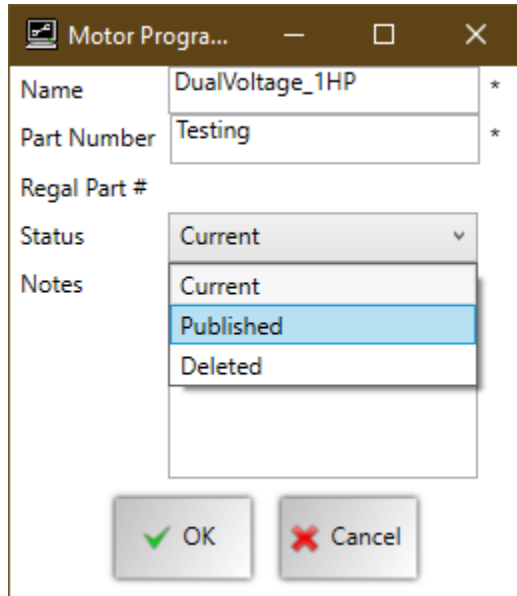


- i.
- e. Click Edit
- f. In new window, Click Current dropdown menu



- i.

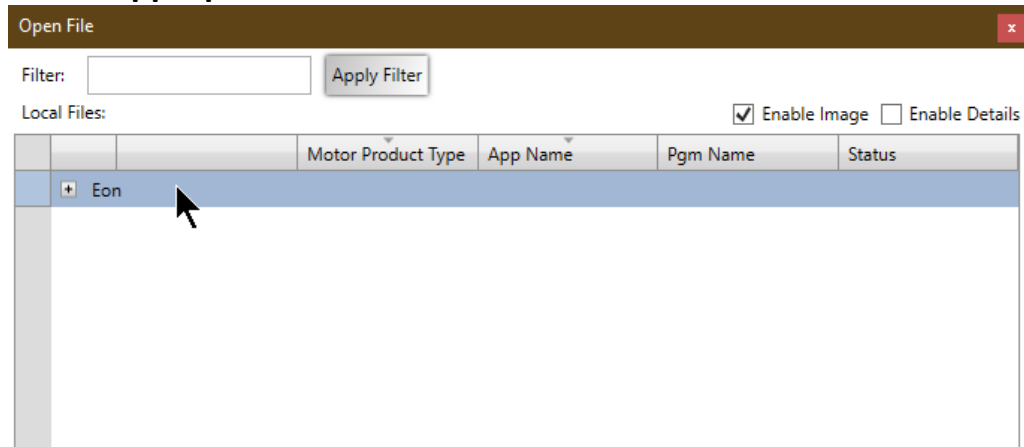
**g. Click Published**



i.

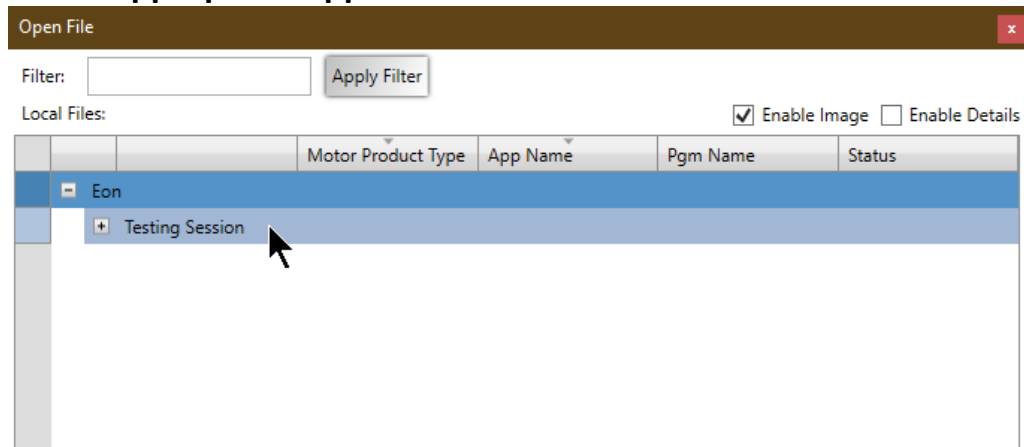
**h. Click OK**

**i. Double Click appropriate motor**



i.

**j. Double Click appropriate application**



i.





### k. The status has been updated to Published

Open File

Filter:

Local Files:  Enable Image  Enable Details

	Motor Product Type	App Name	Pgm Name	Status
[-] Eon				
[-] Testing Session				
	Eon	Testing Session	DualVoltage_1HP	 Published

i.

### I. Double Click Published Program

- i. This will open the programming interface for the specific product.
- ii. All parameters are now disabled for modifications

1.

Configure | Label Editor

Operating Mode: Variable Speed w/o Enal

Voltage: 120v/240v

Horsepower: 1

Rotation Direction: CCW


Regulation Mode: Torque

Demand Units

Percent of Motor Max Demand (%)

Ounce-Feet (oz-ft)

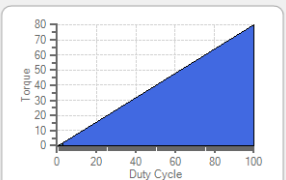
Newton Meters (Nm)

  
Eon

PWM Signal | Multipliers

	Duty Cycle	Demand	
Off	<0.39	0	oz-ft
Min	0.39 %	0	oz-ft
On	3.14 %	2	oz-ft
Max	100 %	80	oz-ft

Inverted Signal



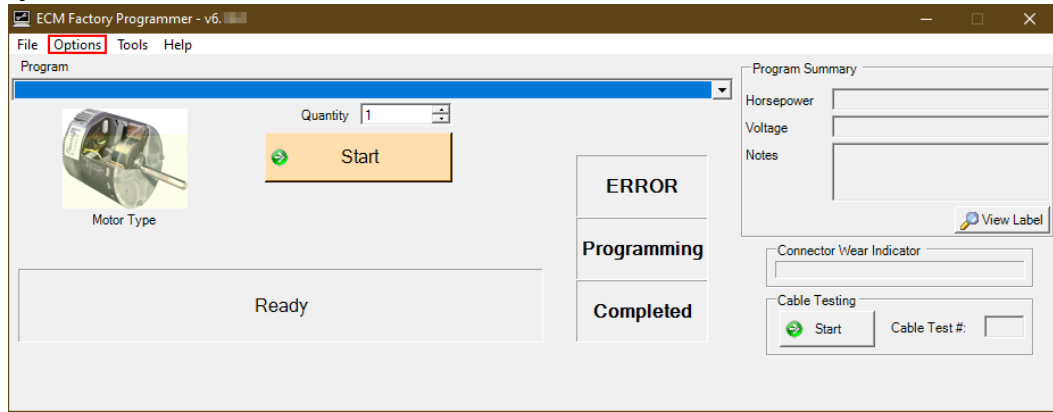
# Congratulations!

## You have Published a program in ECM Toolbox.



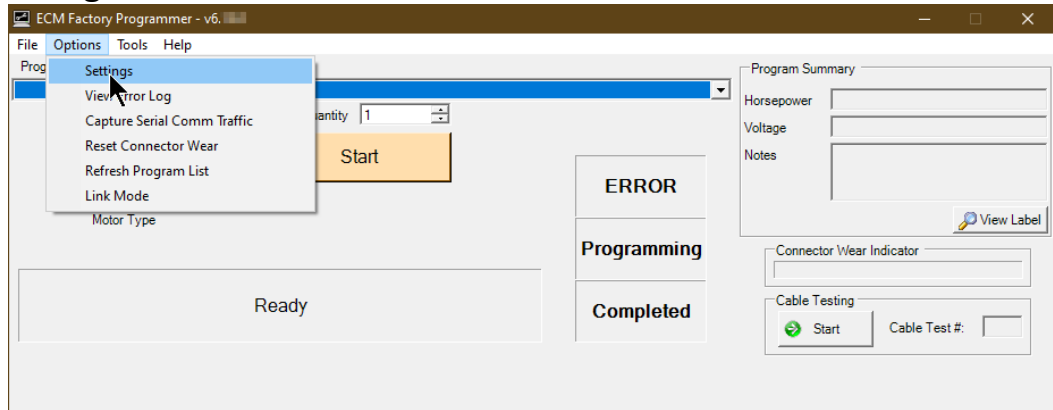
## 12. Setup ECM Factory Programmer

### a. Click Options



i.

### b. Click Settings

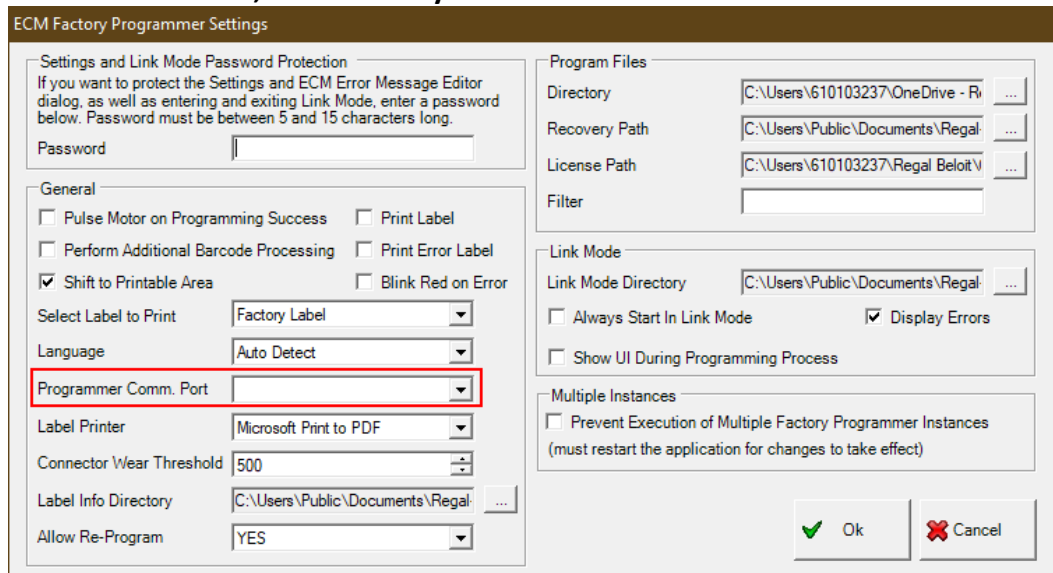


i.

### c. Select Programmer Comm. Port

i. Click dropdown

ii. Select Comm. Port, if not already selected



iii.

- d. Set file paths and printer
  - i. Assign file path for Directory Folder
  - ii. Assign file path for Recovery Path
  - iii. Assign file path for License Path
  - iv. Assign printer for Label Printer

ECM Factory Programmer Settings

Settings and Link Mode Password Protection  
If you want to protect the Settings and ECM Error Message Editor dialog, as well as entering and exiting Link Mode, enter a password below. Password must be between 5 and 15 characters long.  
Password

General  
 Pulse Motor on Programming Success  Print Label  
 Perform Additional Barcode Processing  Print Error Label  
 Shift to Printable Area  Blink Red on Error  
Select Label to Print: Factory Label  
Language: Auto Detect  
Programmer Comm. Port:  
Label Printer: Microsoft Print to PDF  
Connector Wear Threshold: 500  
Label Info Directory: C:\Users\Public\Documents\Regal...  
Allow Re-Program: YES

Program Files  
Directory: C:\Users\610103237\OneDrive - R...  
Recovery Path: C:\Users\Public\Documents\Regal...  
License Path: C:\Users\610103237\Regal Belot...  
Filter:

Link Mode  
Link Mode Directory: C:\Users\Public\Documents\Regal...  
 Always Start In Link Mode  Display Errors  
 Show UI During Programming Process

Multiple Instances  
 Prevent Execution of Multiple Factory Programmer Instances  
(must restart the application for changes to take effect)

Ok Cancel

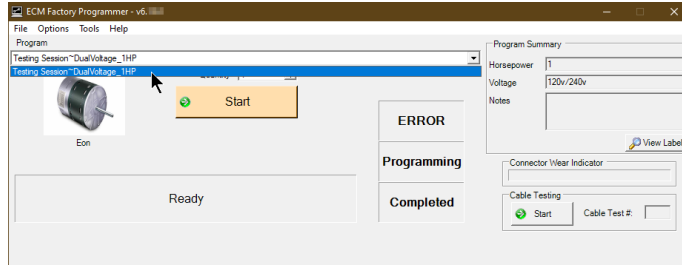
- v. Click OK

**Congratulations!**  
**You have setup ECM Factory Programmer.**

**13. Program motor (ECM Factory Programmer)**

**a. Select program from dropdown**

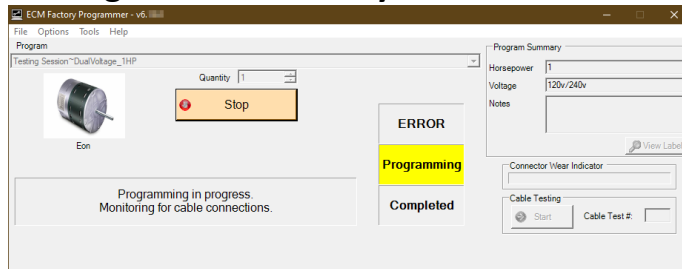
**i. Program will only show here, if it has been published in ECM Toolbox**



**ii.**

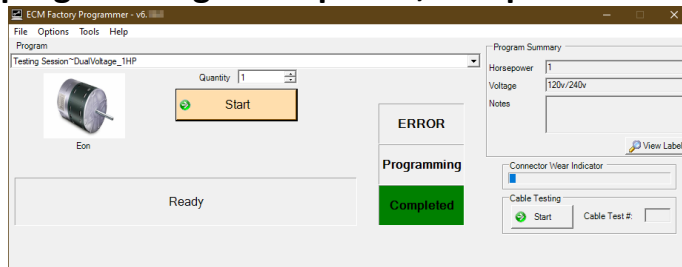
**b. Click Start to begin programming**

**c. Programming Status will turn yellow**



**i.**

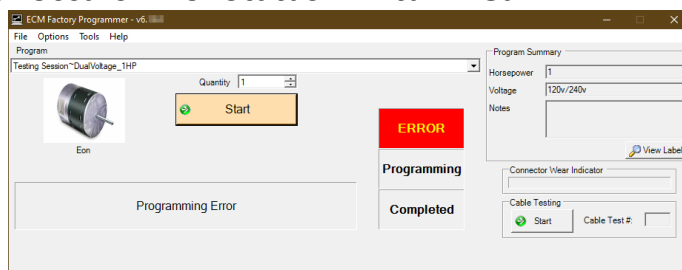
**d. Once programming is completed, Completed Status will turn green**



**i.**

**e. Repeat these steps for multiple motors.**

**f. If error occurs Error Status will turn red**



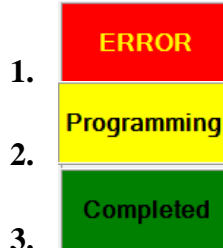
**i.**

**Congratulations!**  
**You have programmed a motor  
 with ECM Factory Programmer.**

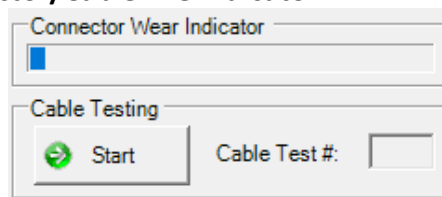
## 14. ECM Factory Programmer Basics

### a. Designed to be used in a factory environment

- i. Simple Interface
- ii. Programming Status Indicators



### iii. Connector/Cable Life Indicator



### iv. Integration with customer applications

### b. Features

- i. Has the ability to program all HVAC ECM products
- ii. Prints label upon programming completion.
  1. This is the only way to know if a motor has been programmed or if it is unprogrammed
- iii. Keeps records of all operations completed
- iv. Ability to recover failed programming
- v. Cable testing

### c. Program Requirements

- i. Programs must contain label information
- ii. Programs must be Published in ECM Toolbox before ECM Factory Programmer can program to motor.

**Congratulations!**  
**You have learned the basics  
for ECM Factory Programmer.**

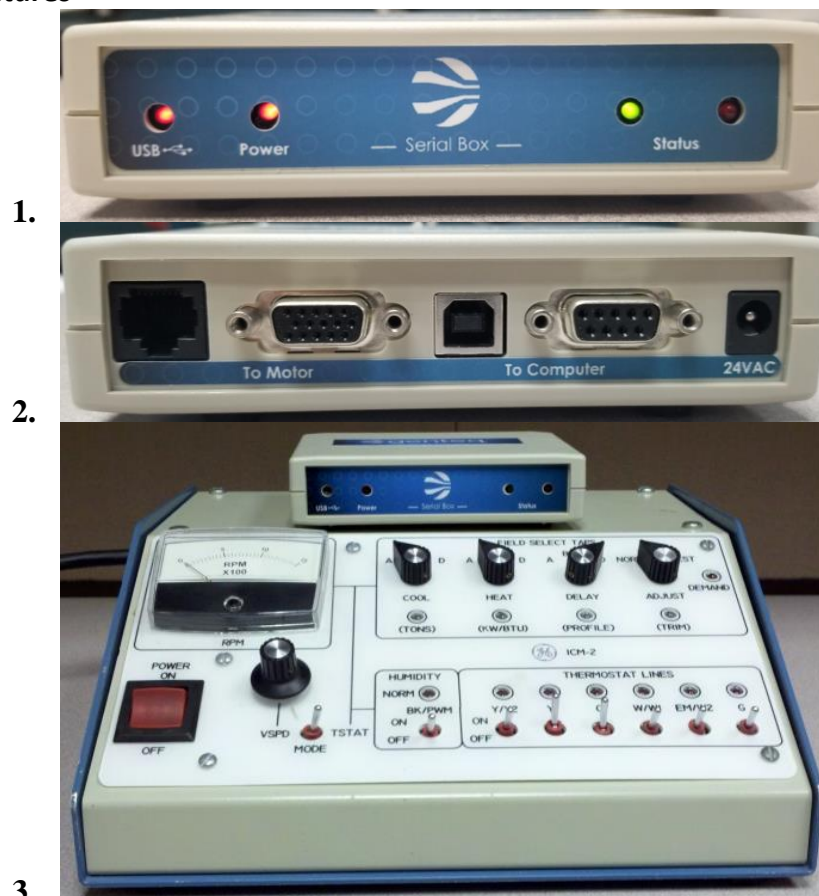
## 15. Additional Information

### a. Serial Box

#### i. What does it do?

1. Provides a programming interface between a PC and all HVAC ECM Products.
2. Enables ECM Toolbox to be used in a lab environment, exercising discrete or PWM inputs, and reading output signals (e.g. RPM out or Blink Mode).
3. Contains hardware capable of performing cable checks on interface cabling.
4. Supplies the motor with a safe voltage level when performing programming operations (i.e. rated line voltage not needed).
5. USB or traditional serial port interface.
6. Standard programming cable (RJ45) interface or complete 15 pin connector interface for exercising all Eon functionality.
7. Can be used for 0-10V control and RS485 interface.

#### ii. Pictures



### b. ECM Toolbox

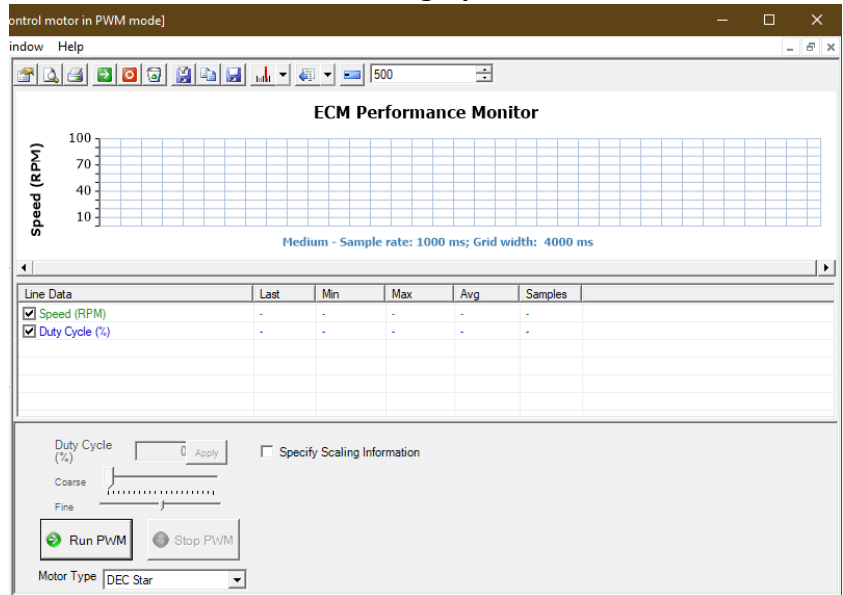
#### i. Engineering tool to aid in applying ECM Products

#### ii. Functions

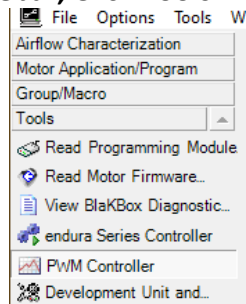
1. Airflow Characterization

- 2. Applications and Programs
- 3. Serial Macros and Groups
- iii. Tools
  - 1. BlakBox Diagnostics Report
  - 2. Dev Unit and Analyzer
  - 3. PWM Controller

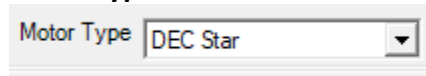
a. Allows the user to visualize results on graph in real time



- i.
- b. On sidebar, Click Tools



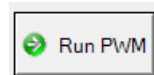
- i.
- c. Click PWM Controller
- d. Select Motor Type



- i.
- e. Click Start Graph (top bar)

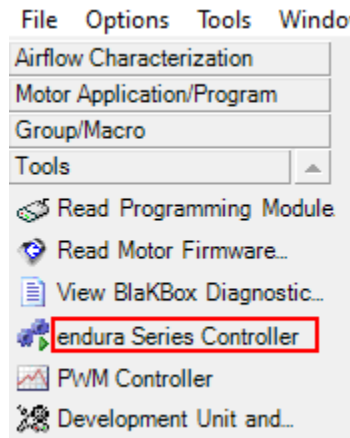


- i.
- f. Click Run PWM



- i.
- 4. Firmware Version Reader

5. thedealertoolbox.com file Upload
6. endura Series Controller
  - a. Useful to modify endura motor without having to use the programming method. This will allow the user to change the torque and rotation on the fly
  - b. On sidebar, Click Tools
  - c. Click endura Series Controller



- i.
  - iv. Applications and Programs
    1. A unique interface tailored to the specific needs for all ECM products.
    2. Customers can group several programs in one application or chose to have only one program per application.
    3. Captures how the customer intends on using the product. That is, what type of operating mode, regulation mode, number of inputs, direction of rotation, slew rates, off-delays, etc.
    4. Contains label design and details used by ECM Factory Programmer

## Congratulations!

You now have the knowledge required to use ECM Toolbox, ECM Factory Programmer, and Serial Box.