Eon
User Guide

Operating the Eon Motor

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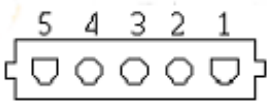
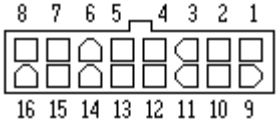
How do I connect it?

Power Connection: The Eon motor has the same power pin out as the ECM 2.3



Power Connector	
Pin	***Description***
1	JUMPER PIN 1 TO PIN 2 FOR
2	120 VAC LINE INPUT ONLY
3	CHASSIS GROUND
4	AC LINE
5	AC LINE

Signal Connection: The Eon motor has the same signal pin out as the ECM 2.3



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How do I program it?

Standard Eon Torque Program
This is the same development program as used on the ECM 2.3 to run the motor in torque mode.

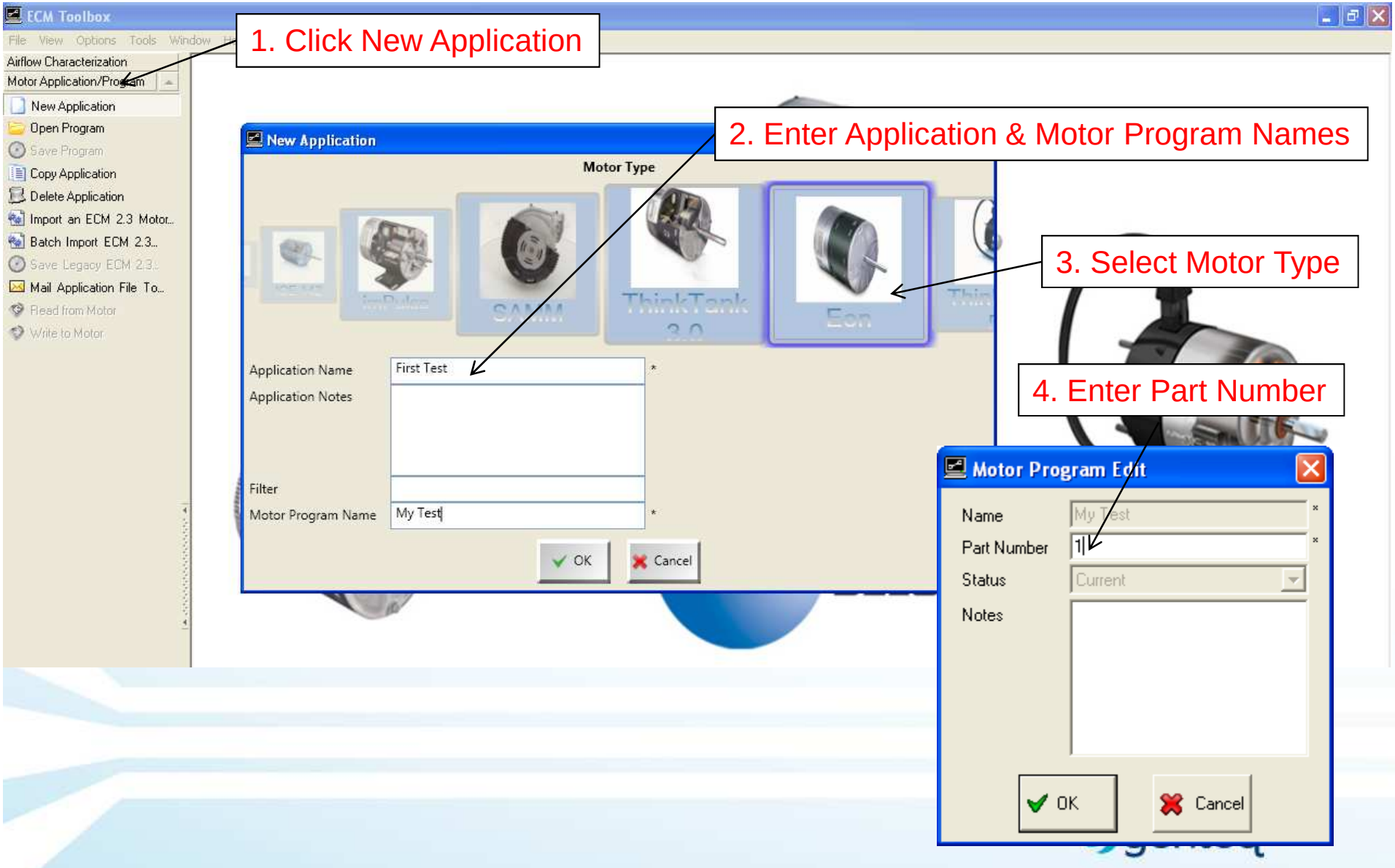
Import ECM 2.3 Program
This option allows you to import an existing ECM 2.3 program file created with the old ICM2 DOS software and convert it to the Eon format in the ECM Toolbox.

Emulate ECM 2.3 Performance
The Eon demonstrates improved torque regulation characteristics over all legacy products. As a result, in some cases, slight differences in airflow delivery at some operating points may be observed when comparing the Eon and 2.3 with imported 2.3 programs. We have provided an option in the ECM Toolbox to force the Eon to emulate the 2.3 torque regulation if so desired.

Eon Airflow Characterization
The airflow characterization process allows motor control, data recording and airflow constant calculation to be managed directly from the computer through the ECM Toolbox.

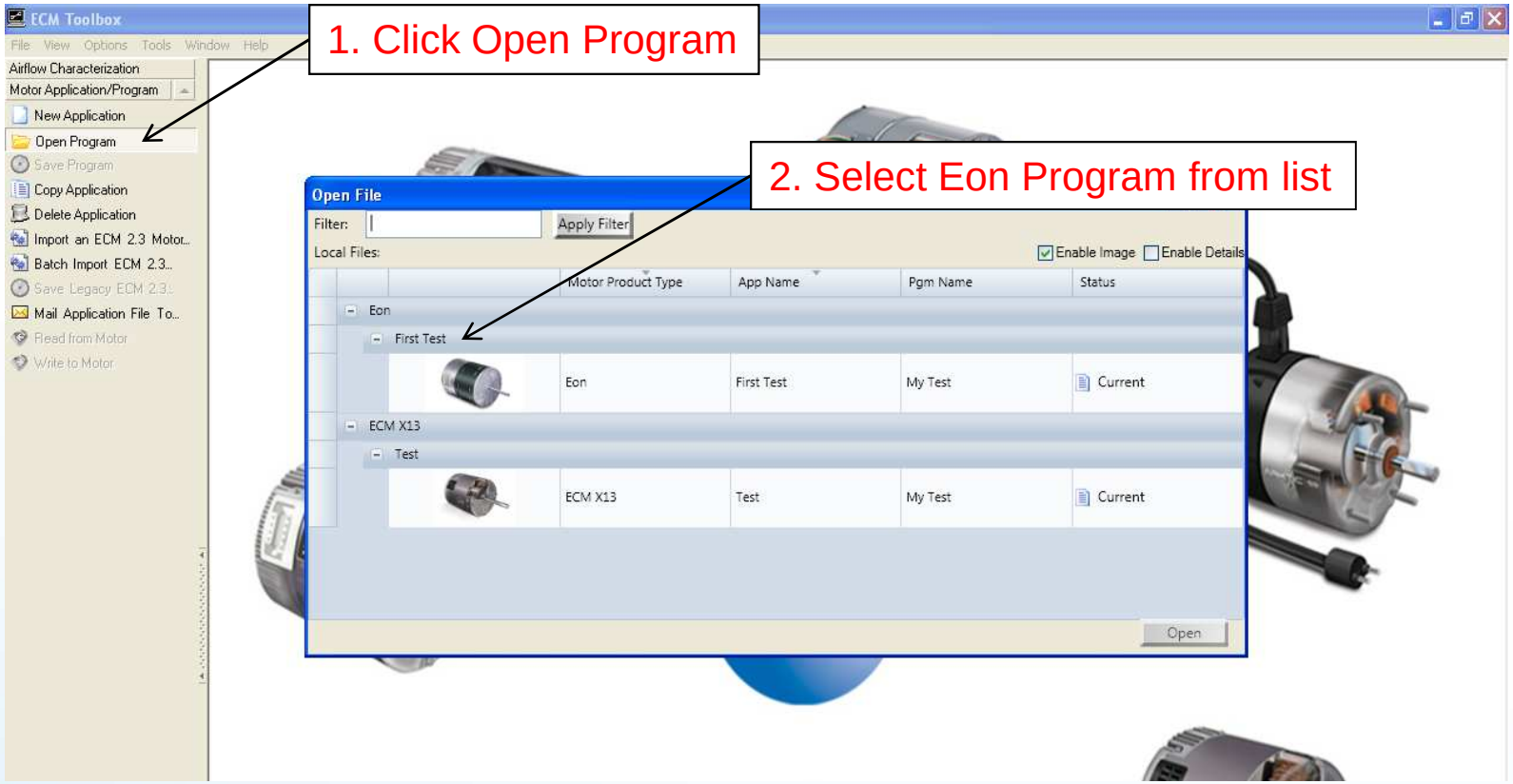
How do I program it?

Creating a new Program



How do I program it?

Opening an Existing Program



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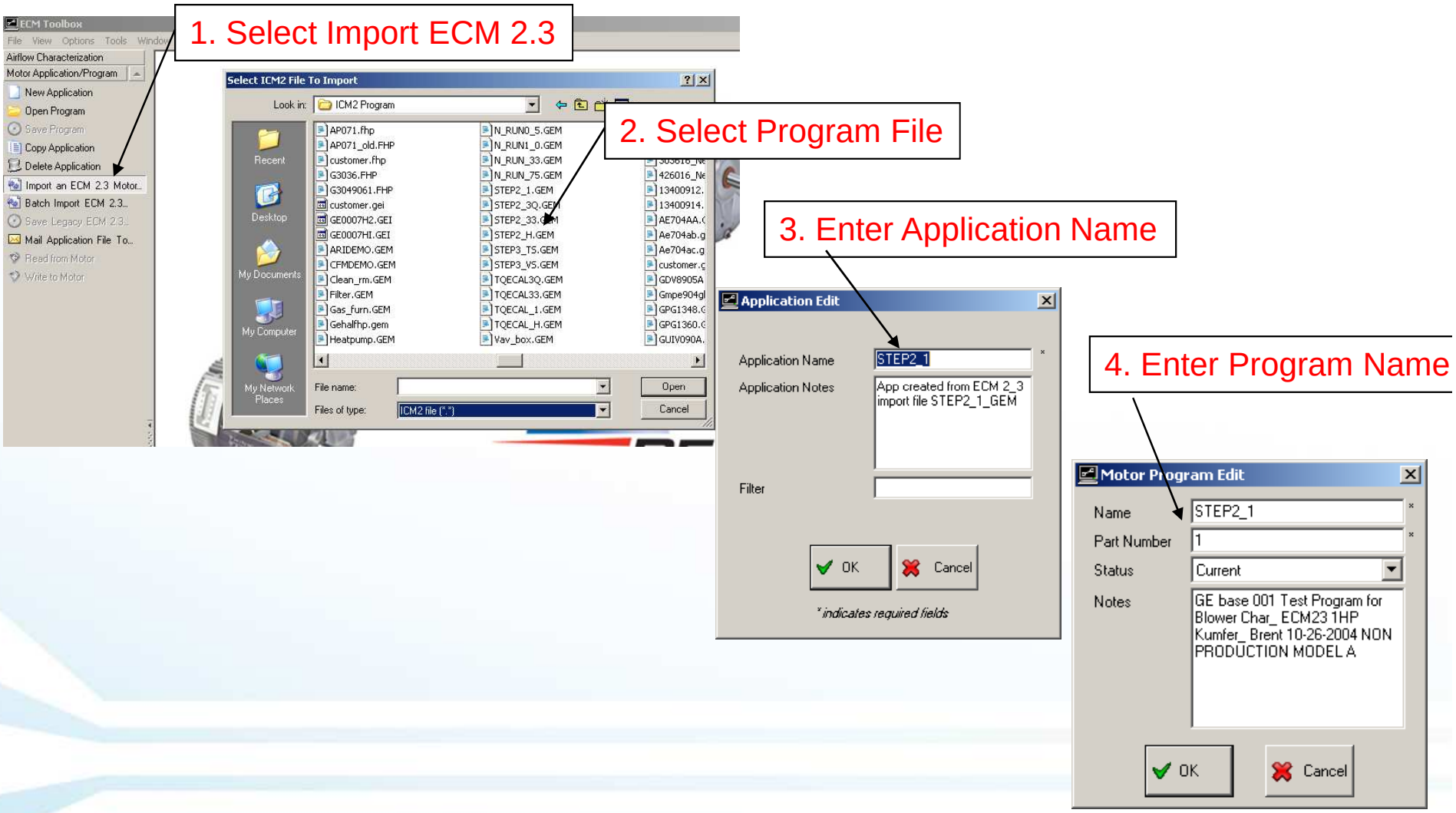
How do I program it?

Importing an ECM 2.3 Program



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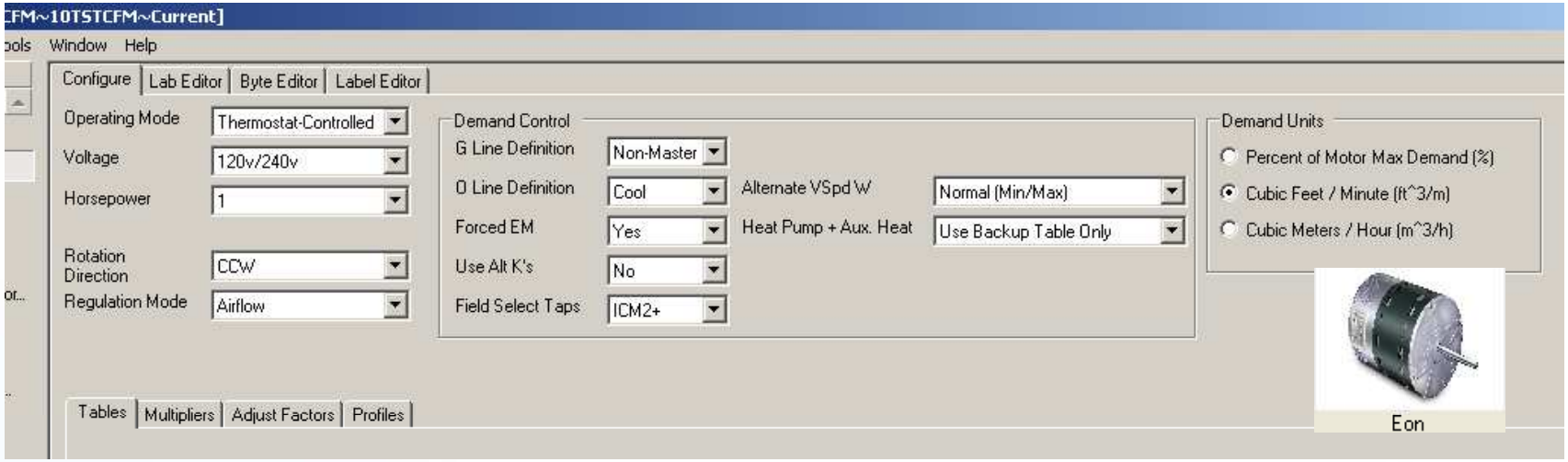
Configuring a Program

Configuration Inputs



The Configure tab contains many of the parameters that were previously part of the Flags settings in the ICM2 program.

The Tabs at the bottom contain the remainder of the parameter Settings and are shown on the following pages.

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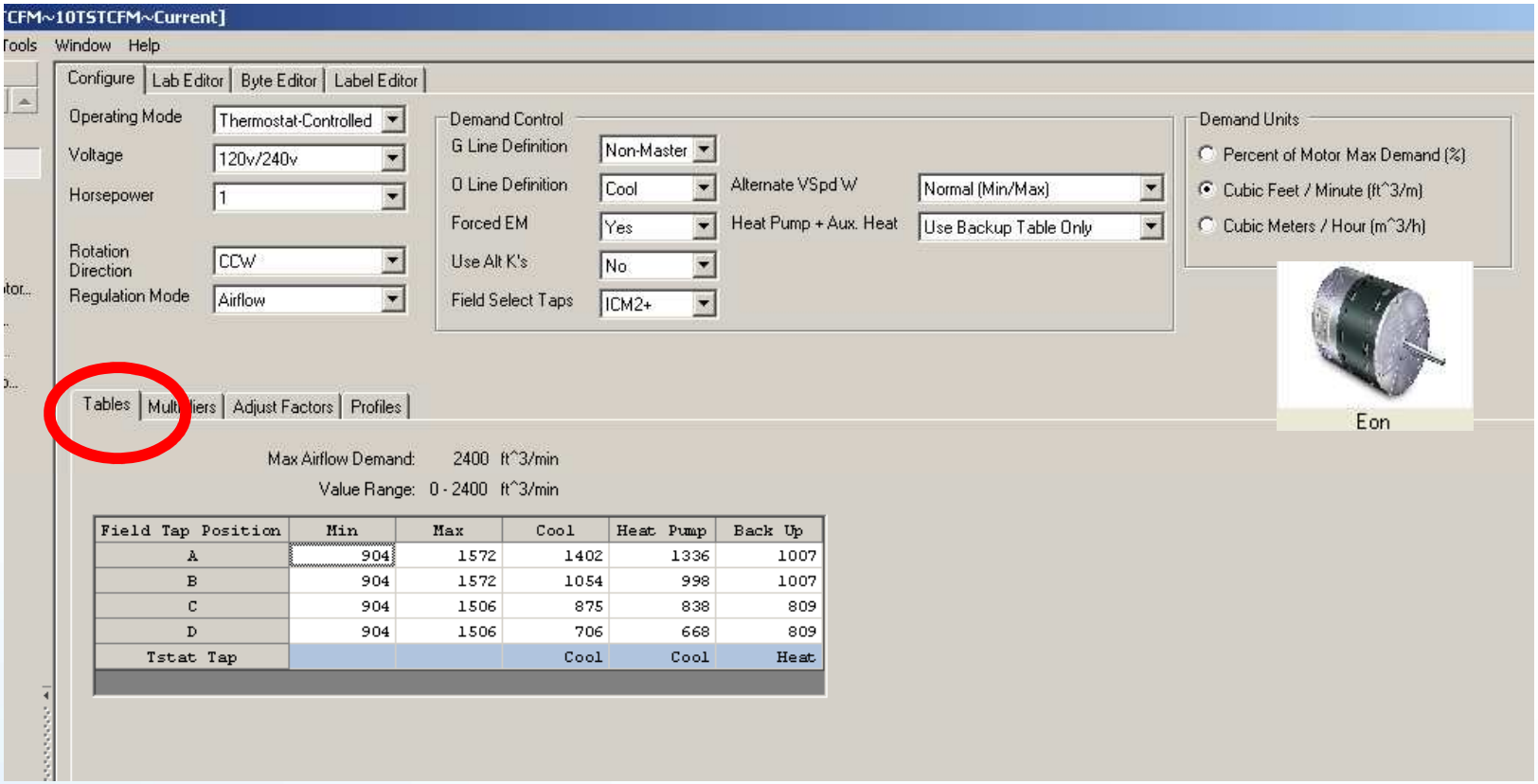
Configuring a Program

Tab 1 - Tables



The appropriate airflows or torque values should be entered in the Table as was previously done in ICM2.

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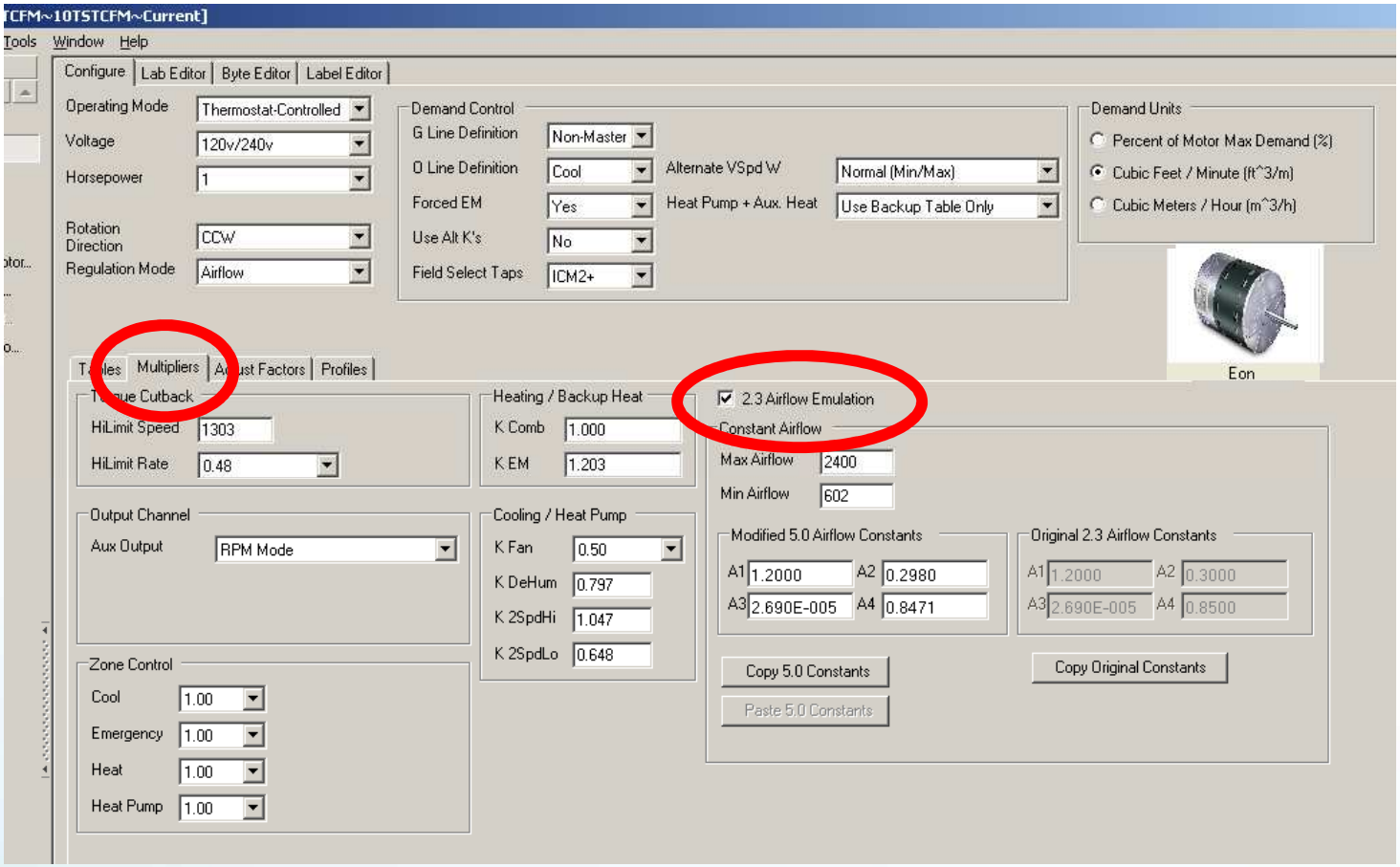
Configuring a Program

Tab 2 - Multipliers



The Multiplier Tab contains the same parameters as in ICM2.
Note the check box for emulating ECM 2.3 torque regulation.

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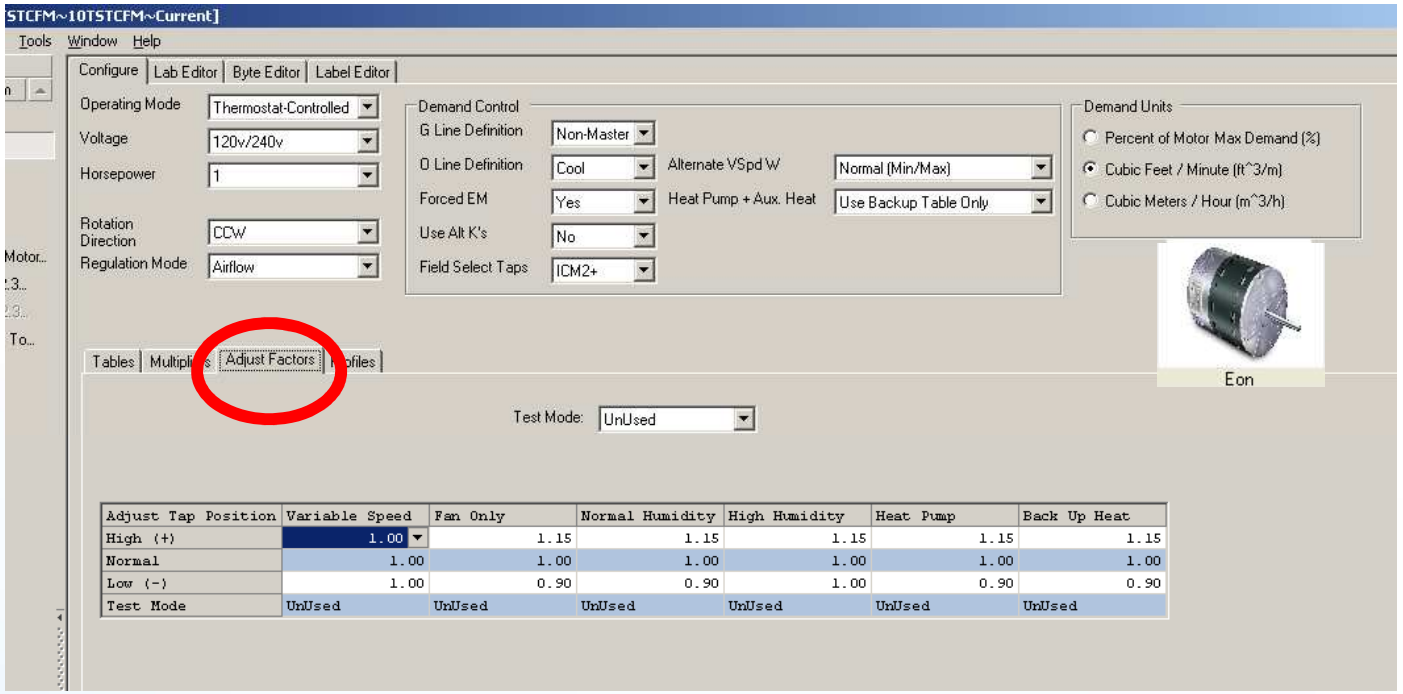
Configuring a Program

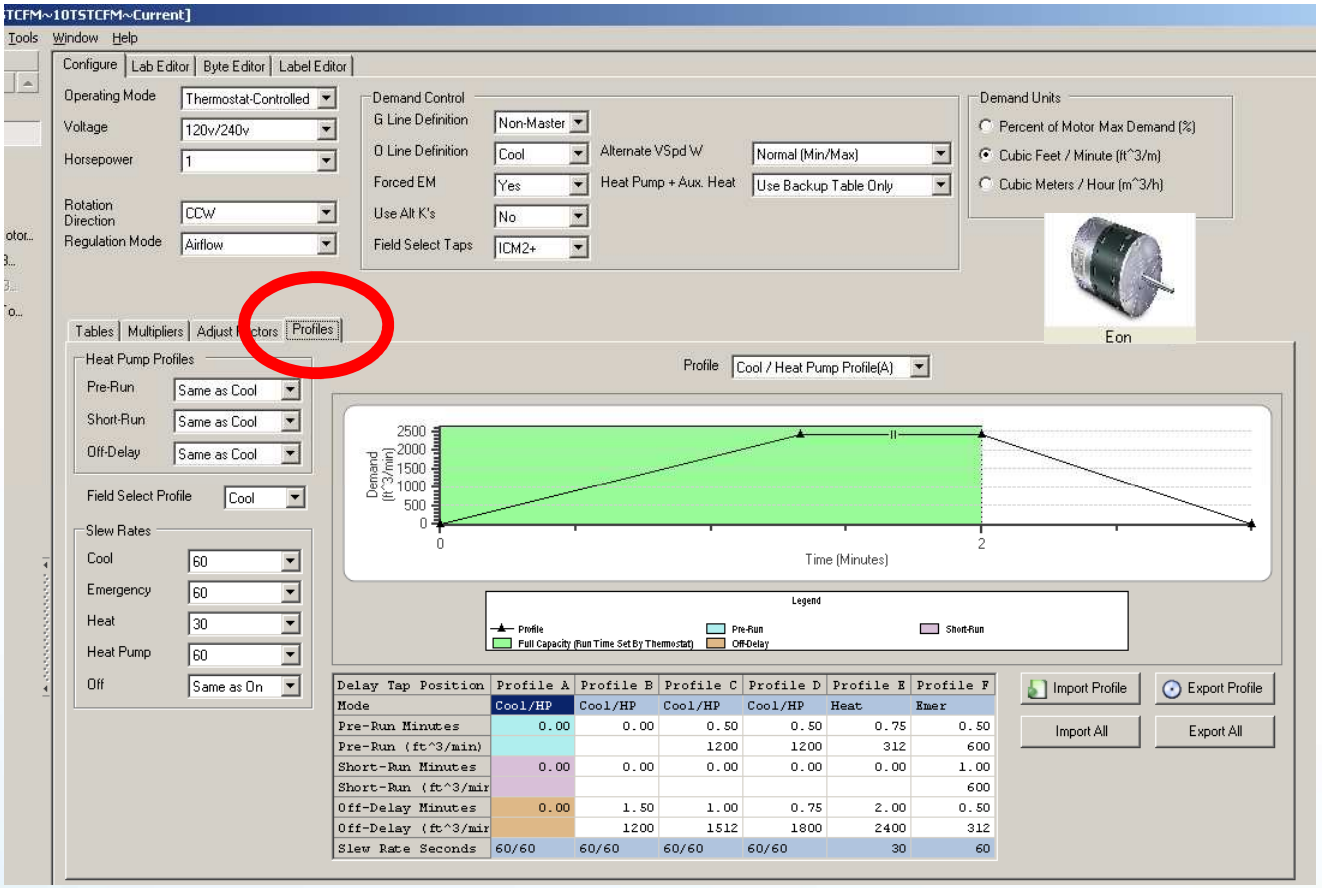
Tab 3 – Adjust Factors



The Adjust Factors Tab contains the same parameters as in ICM2.
Note that in Test mode, the Freeze option is not yet enabled.

Configuring a Program

Tab 4 - Profiles



Delay Tap Position	Profile A	Profile B	Profile C	Profile D	Profile E	Profile F
Mode	Cool/HP	Cool/HP	Cool/HP	Cool/HP	Heat	Emer
Pre-Run Minutes	0.00	0.00	0.50	0.50	0.75	0.50
Pre-Run (ft^3/min)			1200	1200	312	600
Short-Run Minutes	0.00	0.00	0.00	0.00	0.00	1.00
Short-Run (ft^3/mir						600
Off-Delay Minutes	0.00	1.50	1.00	0.75	2.00	0.50
Off-Delay (ft^3/mir		1200	1512	1800	2400	312
Slew Rate Seconds	60/60	60/60	60/60	60/60	30	60

The Delay Profiles have been enhanced graphically to illustrate visually the on and off delay timing and demand levels.

Configuring a Program

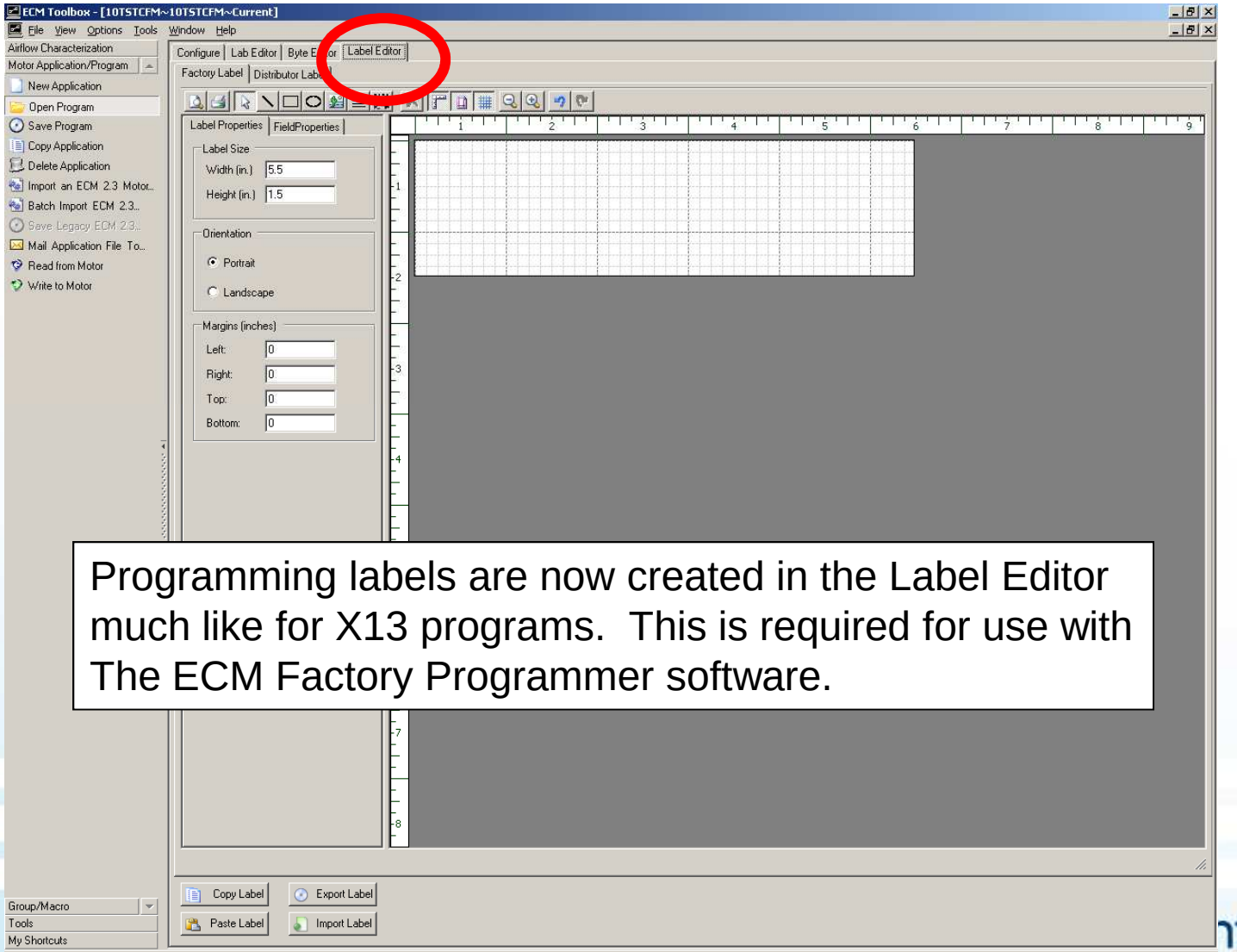
ICM2 Flags Cross Reference to ECM Toolbox

The old ICM2 terms for Flags have been replaced by more descriptive parameters. The table below is a cross reference that describes where the old ICM2 program Flag parameters can be found in the new ECM Toolbox Application program.

ECM 2.3 Flag#	Description	ECM 5.0 Toolbox Name	Location
1	Control line input freq.	Not required for the 5.0	n/a
4	Regulate mode	Regulation mode	Configure tab
6	Turn OFF for Vspd mode	Instant Off	Configure tab (Inside Demand control box, Only displayed for Vspd & Autoswitch modes)
7	Aux output definition	Aux Output	Multipliers tab
8	Test mode (adjust tap D)	Test Mode	Adjust factors tab
9	Control mode	Operating mode	Configure tab
10	Field select taps	Field select taps	Configure tab (Inside Demand control box)
11	G line def.	G line definition	Configure tab (Inside Demand control box)
12	W/W1 def. W/Vspd	Alternate VSpd W	Configure tab (Inside Demand control box)
13	HP prerun profile	Pre-Run	Profiles tab (Inside Heat Pump Profiles box)
14	HP shortrun profile	Short-Run	Profiles tab (Inside Heat Pump Profiles box)
15	HP offdelay profile	Off-Delay	Profiles tab (Inside Heat Pump Profiles box)
16	Rotation	Rotation Direction	Configure tab
17	HP + HEAT tables	Heat Pump+Aux. Heat	Configure tab (Inside Demand control box)
18	O line defintion	O Line Defintion	Configure tab (Inside Demand control box)
20	Vspd mode slew rate	VSpd Slew Rate	Configure tab (Inside Demand control box, Only displayed for Vspd & Autoswitch modes)
22	Field selectable profiles	Field Select Profile	Profiles tab
23	Tstat mode off slew rate	Off	Profiles tab (Inside Slew Rates box)
24	Norm/Alt K2spdlo, Kem	Use Alt K's	Configure tab (Inside Demand control box)
25	R line OFF for EM mode	Forced EM	Configure tab (Inside Demand control box)

Configuring a Program

Creating programming label data



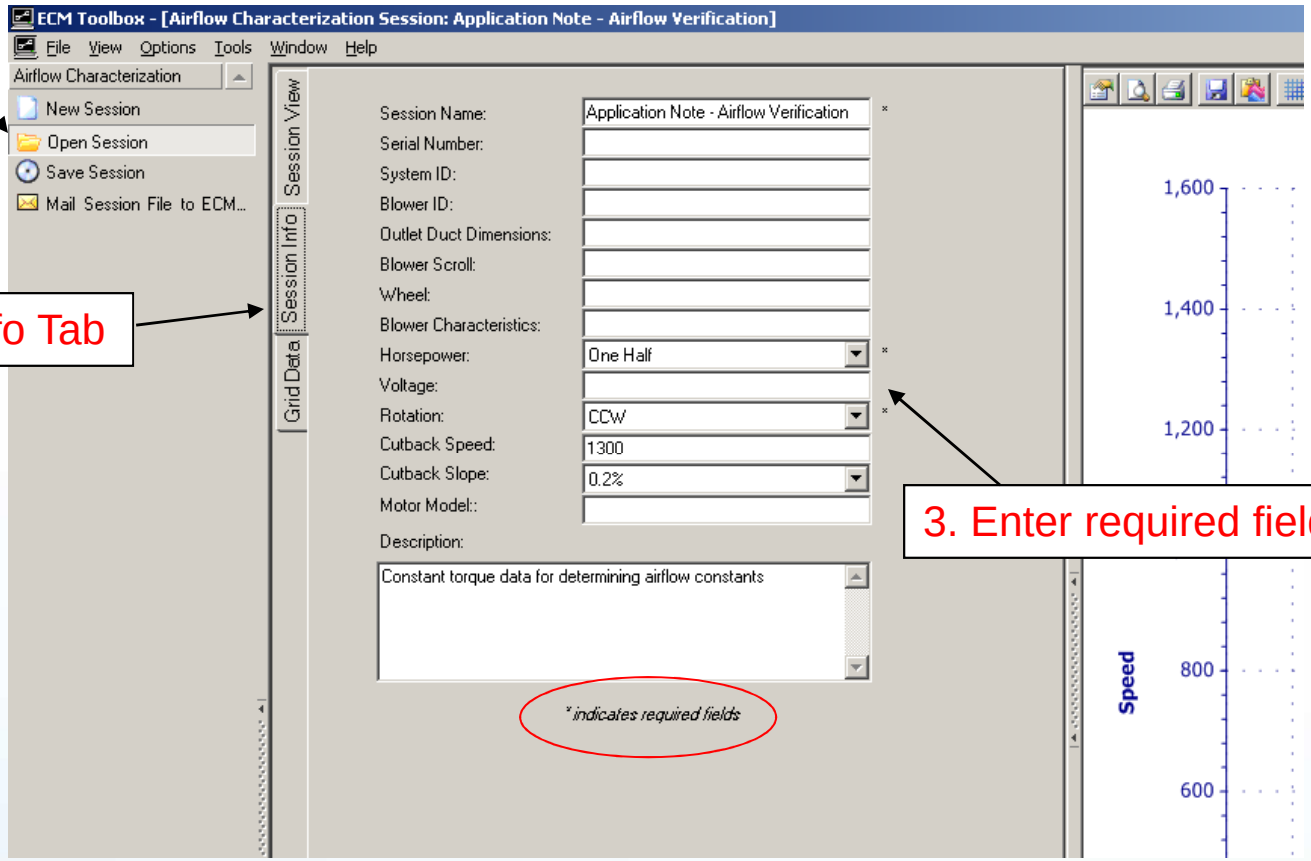
Programming labels are now created in the Label Editor much like for X13 programs. This is required for use with The ECM Factory Programmer software.

Airflow Characterization

Step 1 – Session Info

1. Select Open or New Session

2. Go to Session Info Tab



3. Enter required fields

The airflow characterization process now follows the same steps as the ECM 3.0. The 3.0 training video on Elitelink should be referenced for detailed instructions.

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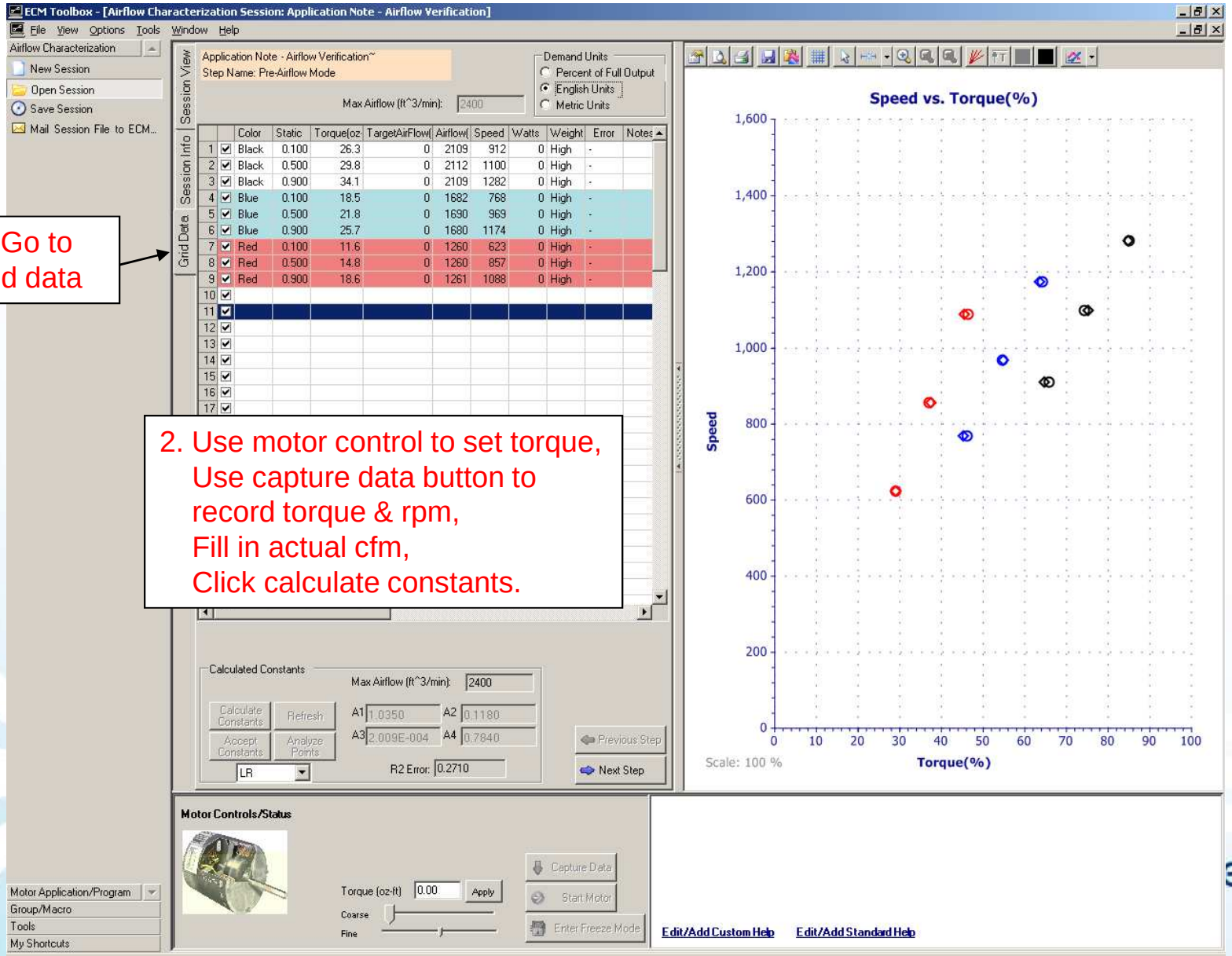
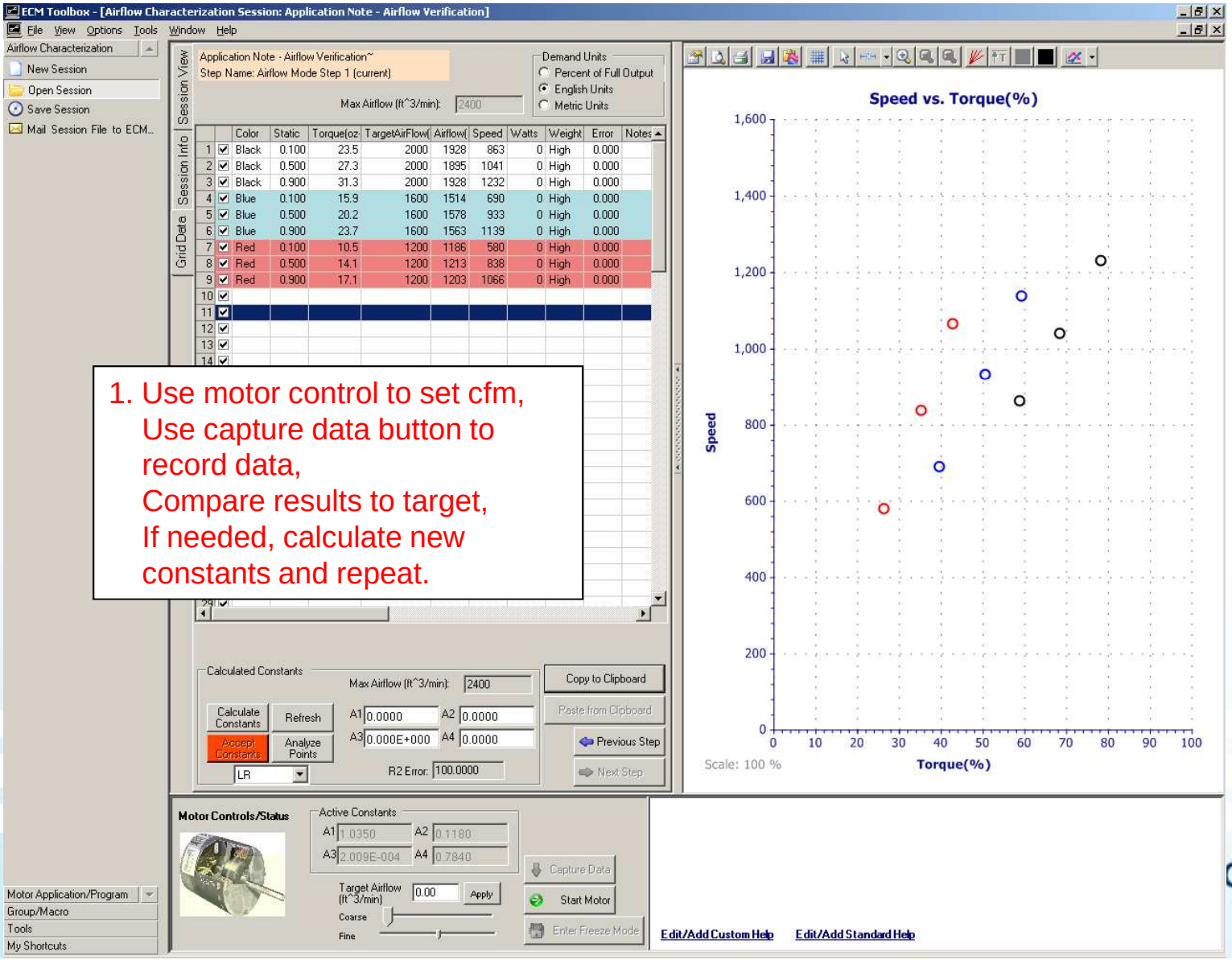
Airflow Characterization

Step 2 – Initial data points & calculating constants



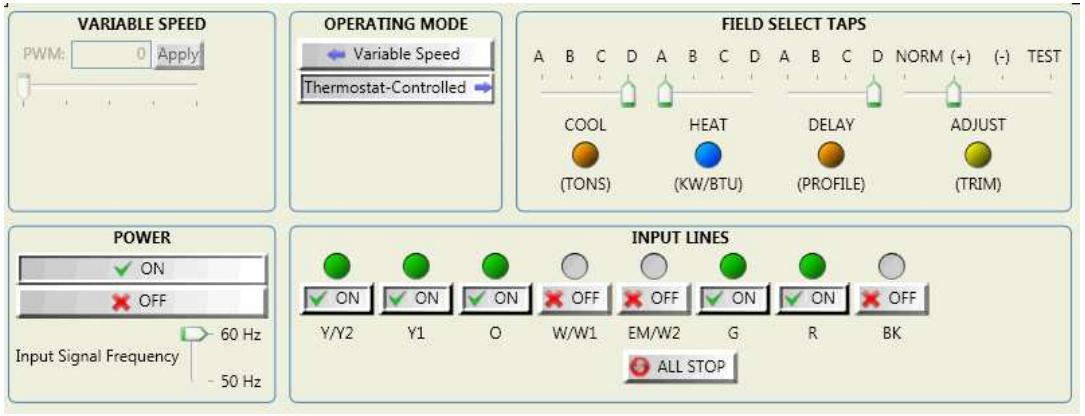
Airflow Characterization

Step 3 – Airflow confirmation & more



Development Unit

ECM Dev. Box



Development Unit

Serial Box

The old ECM Development box has been functionally replaced in the ECM Toolbox by the Development Unit & Genteq Serial box accessory.

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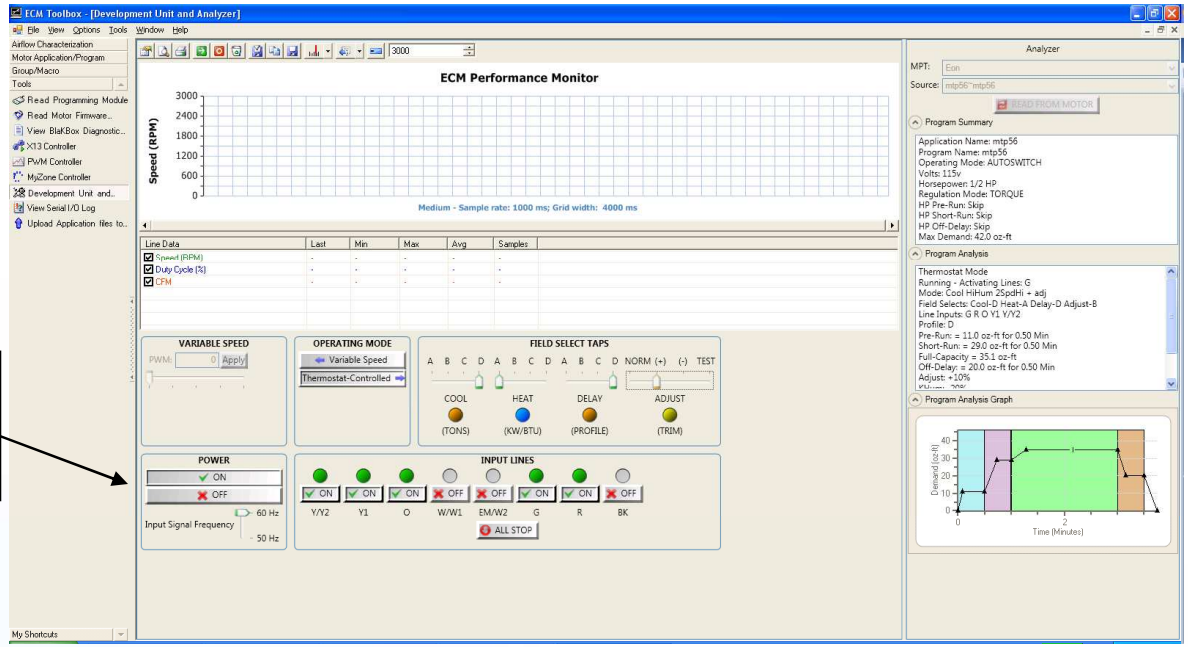
Development Unit & Analyzer

Power On/Off
Enables/disables
Input lines & taps.



ANALYZER:
Select motor type and Source for input lines to be sent to.

Results of program file Or motor output are Displayed for review.

Graphical representation of demand and profile Timing is displayed

It is now possible to send either 24VAC or PWM duty cycle input signals to the Eon motor directly from the computer thru the Serial box using development cable 8794707LR. Can be used in the lab to simulate control board or Tstat inputs.

The Analyzer allows input/output analysis for either a program file or connected motor.

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