



DVT Software

HOW-TO GUIDE

IMPORTANT

These instructions are strictly used for the Evolution series mowers. (Evo, Rival, Vanquish, Fury.)

COMMERCIAL GRADE. ALL DAY POWER.

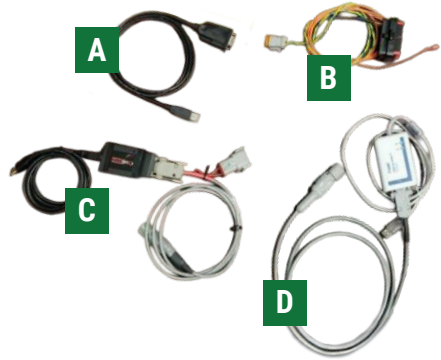


fig. 1 – CANDapter shown connected to the RIVAL's CANbus port and USB near the RH Drive Controller under the seat.



fig. 2A – CANDapter shown connected to the RIVAL's CANbus port and USB near the RH Drive Controller under the seat.



fig. 2B – CANDapter shown connected to the EVO's CANbus port and USB located in the battery compartment near the RH Drive Controller.



fig. 2C – CANDapter shown connected to the VANQUISH's CANbus port and USB on stand up models. VANQUISH's port is located under the tower below the display. FURY's port is located inside the controller compartment above the LH Drive Controller.

BEFORE YOU BEGIN

Ensure the necessary tools are available and properly connected when accessing the mower's systems, including the cables shown in fig. 1:

A. Orion / BMS RS232 Direct Connection Cable

B. Single Sevcon Controller Programming Jumper Cable

C. Orion / BMS CANBus Connection

D. Sevcon/Borgwarner Controller and CANBus Connection

If you are missing any of the cables listed, please contact us at Service.MeanGreenProducts.com.

DVT Software Overview

When a Mean Green representative mentions a Node for troubleshooting they are referring to a controller. Controllers are numbered right to left.

PLEASE NOTE

- Node 1 is always the right wheel drive controller.
- Node 2 is the left wheel drive controller.
- Blade motor controllers will vary depending on the mower model.

Once the machine is connected to the software you will see a couple of things:

- A Node Menu** – Allows you to select which controller (Node) to work on.
- B Get Controller Report** – Generates a full report of controller health and previous fault codes.
- C Get Controller Info** – Displays the firmware version currently running on the selected Node.
- D** If any of the Node tabs at the bottom of the screen are red, this indicates that the Node (controller) is in Pre-Operational (Pre-op) state. When in Pre-op, the controller will not function. You must set that specific Node to Operational.

Always have 250kbit as your setting

These are the CANbus Messages being sent through the controllers when the machine is active.

All the nodes will be present at the bottom of the screen.

A Node Menu

B Get Controller Report

C Get Controller Info

D

Throttle Adjustments

WHEN TO PERFORM A THROTTLE ADJUSTMENT

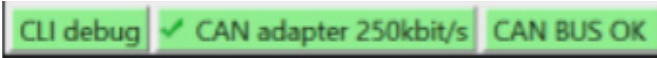
Perform a throttle adjustment if any of the following conditions are present:

- Mower tracking issues
- Drive controllers have been replaced
- Mower moves when handlebars are in neutral
- RTN assembly has been replaced
- Error codes such as: SV03001, SV03101, SV03002, SV03102, SV02801, SV02802, SV03301, SV03302

Note: These codes may not always be present. If you are unsure, please contact us for further assistance.

REPROGRAMMING THE THROTTLE

1. Plug the IXXAT USB-to-CAN adapter into your computer and connect it to the mower being programmed. (See fig. 2A, B, and C for connection points.)
2. Open DVT and confirm that the connection icons at the bottom left of the screen are green.



3. Power on the unit, but do not enter the passcode yet.
4. From the Node ID dropdown menu, select Node 1.
5. Place Node 1 and Node 2 into Pre-Operational.

Note: This is for safety. The wheels must not turn at any point during this procedure.

6. In DVT, click Tree.
7. Select Status.
8. Select Raw Analog Inputs.
9. On the right side of the DVT screen, locate Analog Input 1 Voltage. This changing value identifies the throttle input for the following steps. You will see the value change as you move the right handlebar through Neutral, Forward, and Reverse.
10. Return the handlebars to the neutral position. Observe Analog Input 1 Voltage and determine its average value in neutral.
11. Enter this average value for Analog Input 1 into the "N" row for Node 1 in your throttle value table.

Note: On your computer, open the Evolution Series folder and then open the Excel Throttle Value Sheet for the specific mower being adjusted.

	Node#1	Node#2	Descriptions
N			Neutral
Start V#1	-0.12	-0.12	Safety band (No input)
EndV#1			All the way Forward
Start V#2	-0.12	0.12	Safety band (No input)
EndV#2			All the way reverse

12. Hold the right handle forward and determine the average

Analog Input 1 Voltage. Enter this value into the "End V #1" row for Node 1.

Note: The "Start V #1" and "Start V #2" values will populate automatically.

13. Hold the right handle in reverse and determine the average Analog Input 1 Voltage. Enter this value into the "End V #2" row for Node 1.
14. Return the lap bars to neutral. Repeat steps 4–13 for Node 2 (left handle).

Note: Be sure to change the Node ID to Node 2 before repeating the steps.

15. When finished, the table should now be fully populated. These values will be used to set the throttle voltages.

Node#1	Node#2	Descriptions
2.3	3.01	Neutral
2.42	2.89	Safety band (No input)
3.23	2.07	All the way Forward
2.18	3.13	Safety band (No input)
1.6	3.42	All the way reverse

Important: Do not use the "N" values for the next steps.

16. Change the Node ID back to Node 1.
17. In DVT, click Tree.
18. Use the search box and type "Throttle Start 1 Voltage". Double-click Throttle Start 1 Voltage to open it on the right side of the screen.
19. Enter your "Start V #1" value into the corresponding Throttle Start 1 Voltage field. Press Ctrl + Enter to save the value to the throttle input.
20. Press Tab twice to move to the next field and enter the remaining Node 1 values (you will enter a total of 4 values for Node 1).
21. Repeat steps 16–20 for Node 2.

Note: Again, make sure to change the Node ID to Node 2 before entering its values.

22. Set both Node 1 and Node 2 to Operational.
23. Turn the mower off and then back on using the push-button start.
24. Enter the passcode and verify proper functionality of the left and right drive.

If issues persist, contact Service.MeanGreenProducts.com.

Firmware Updates

UPDATING BLADE/DRIVE CONTROLLER FIRMWARE

BEFORE YOU BEGIN

- Ensure the Evolution Series folder is downloaded on the computer being used.
- Confirm the new or blank controller is installed in the machine so that it can be powered.
- Ensure the IXXAT USB-to-CAN adapter and the Single Sevcon programming jumper cable are connected (these form a single connection to the machine).

1. Plug the IXXAT USB-to-CAN adapter into the computer.

2. Connect the 35-pin connector from the jumper cable to the controller that needs the firmware update.

3. Connect the red pin connector from the jumper cable to one of the empty slots near the brown fuses on the fuse panel. This supplies power to the controller.

4. Open DVT and confirm that all connection icons at the bottom left of the screen are green.

5. Confirm that the bit rate is set to 250 Kbit/s.

6. When prompted by a dialog box asking if you want to "Create file", click Yes. This is required any time you are updating a new controller or reprogramming a used controller. A loading bar will appear at the bottom of the screen.
7. After the initial update, you will see only one node at the bottom of the screen (default Node 1). Set this Node to Pre-Operational.

8. From the Node ID dropdown menu, select Reprogram Firmware. Click OK through the warning messages.

9. Your file explorer will open. Navigate to and select the latest version of the MG firmware. Open the file. A loading bar will appear at the bottom of the DVT screen.

10. When the loading bar completes, verify that the new firmware was applied by checking the software version displayed in DVT.

11. Once verified, the controller now has the correct firmware. The next step is to program the controller to the correct Node. (See Controller Node Programming instructions below.)

Important: Do not reset or power off the mower or the computer during this process.

Note: You can program a specific Node while still connected to a single controller with the jumper cable. Follow the Controller Node Programming procedure to continue.

Controller Node Programming

PROGRAMMING CONTROLLERS TO SPECIFIC NODES

PLEASE NOTE

For this portion of the DVT guide, you will only need your computer and the IXXAT USB-to-CAN adapter, unless you are already connected to the controller via the jumper cable. You will be plugging directly into the mower to access DVT.

WHEN TO PROGRAM A CONTROLLER NODE

Program a controller Node if:

- A controller has failed and you are installing a spare that is not set to the correct Node.
- You received a controller with up-to-date firmware but it is programmed for a different Node.
- A systematic error has reset the Node and you now see duplicated Node IDs.

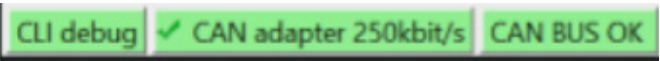
NODE PROGRAMMING PROCEDURE

1. Ensure the controller (Node) being changed is installed in the mower.

2. Plug the IXXAT USB-to-CAN adapter into the mower and the computer.

3. Open DVT and turn the mower on.

4. Confirm that the connection icons at the bottom left of DVT are all green.



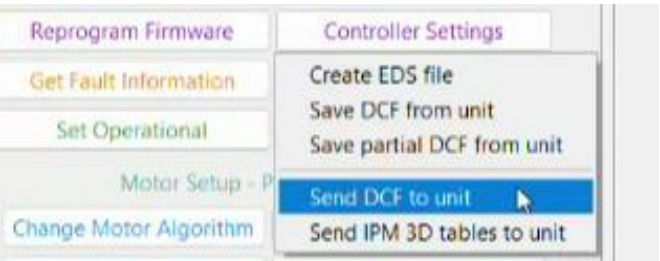
5. To determine which Node needs to be replaced, refer to the Evolution Series Technical Training 2024 document in your Evolution Series folder.

6. Once you know which Node to change, select that Node from the Node ID dropdown menu.

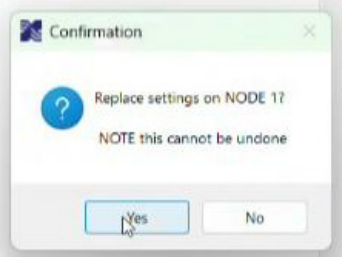
7. Ensure the selected Node is in Pre-Operational state.

8. From the main menu, click the Controller Setting tab.

9. Scroll and click Send DCF to Unit.



10. A dialog box will appear asking if you would like to replace settings on the Node. Click Yes to continue.



11. Your computer's file explorer will open to the mower-specific files. If it does not open to the correct location automatically, navigate to the appropriate folder in the Evolution Series directory.

Example: If you are changing the Node ID for a Rival 60, open the Rival 60 folder.

12. Select the file corresponding to the Node you are changing and open it. A loading bar will appear at the bottom of the DVT screen.

13. Once the process is complete, set the Node back to Operational.

14. Turn the mower off and then back on to reset.

15. Test mower functionality. The Node should now operate correctly.

If you are still receiving error codes on the display, take a clear photo of the codes and email it to Service.MeanGreenProducts.com for further assistance.

Troubleshooting Checklist for DVT Software

FIRMWARE UPDATE ISSUES

- **Problem:** Controller firmware update fails, or the mower does not function after the update.
- **Solution:**
 - Confirm the IXXAT USB-to-CAN adapter and Single Sevcon programming jumper cable are properly connected between the controller and the computer.
 - Verify that the bit rate in DVT is set to 250 Kbit/s.
 - If the update continues to fail, contact Service.MeanGreenProducts.com for assistance.

NODE PROGRAMMING ISSUES

- **Problem:** Duplicate or incorrect Node settings.
- **Solution:**
 - Ensure the controller is installed in the mower and connected to the computer via the IXXAT USB-to-CAN adapter.
 - Confirm that the Node selected from the Node ID dropdown menu matches the Node identified in the Evolution Series Technical Training guide.
 - If error codes persist, take a clear photo of the displayed codes and email it to Service.MeanGreenProducts.com for further assistance.

ACCESS THE DVT SOFTWARE

- **Problem:** I do not have the DVT Software.
- **Solution:**
 - Download and install the DVT Software from the Evolution Series folder labeled “DVT”.
 - Send software license credentials request to Service.MeanGreenProducts.com.
 - After installation, enter your license credentials to activate the software.
 - If you experience issues accessing or activating the DVT software, please contact Service.MeanGreenProducts.com for further assistance.

Contact Us

EMAIL

Service@MeanGreenProducts.com

Notifies the Mean Green Service Team for immediate assistance with user questions and concerns. Email is the preferred method of contact, especially during periods of high call volumes.

PHONE NUMBER

513-738-4736

For use when an Urgent Response is required. In event that all agents are busy, please leave a detailed voice message including your name and contact number, model of machine experiencing the issue, and any error code displayed or other relevant details. An agent will return your call as soon as possible.

PARTS DEPARTMENT

Parts@MeanGreenProducts.com

Email us directly for parts inquiries. For fast service, please include a PO#, Account#, and shipping address.

WARRANTY DEPARTMENT

Warranty@MeanGreenProducts.com

Contact the Warranty Department directly with questions about your Mean Green warranty or to process a claim.

DEALER360

Dealer.Generac.com

Visit the Generac Dealer360 portal to access a complete library of service documents, model schematics, and “How-To” information.



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