BlueJay
FJ
User Guide

WARNING

- **Modifying the Motor Controller parameters can damage equipment, property and cause INJURY/DEATH to yourself/others.**
- **Modifications may VOID your WARRANTY**
- **Factory/Dealer settings should only be performed by trained technicians**

Questions? Feedback? Send email to: **support@bluejaytuning.com**

Table of Contents

What BlueJay Does

BlueJay is a DIY performance tuning application for the motor controllers used in electric golf carts and utility vehicles.

BlueJay automatically detects your controller, saves and restores settings, and makes motor tuning simple - even for beginners.

Get the latest version: https://bluejaytuning.com

- **Automatic controller detection**: BlueJay queries your connected controller to detect the brand/model/type

- **One application for many controllers**. No manual guesswork of which 'pirated' OEM tuning application to use

- **Highlights the most important and commonly adjusted tuning parameters**, making them quick and intuitive to edit.

- **Save and Restore**: Snapshot your current configuration or roll back to a known-good one

- **Supports tuning profiles**, including:

  - Sporty and Fast

  - Casual About Town

  - Better Hills

  - Many other community supported

- Fully **English interface** with simple and clear parameter descriptions

BlueJay works with a wide range of vehicles using compatible AC motor controllers, including Advanced EV, Bintelli, Coleman, Denago, Evolution / HDK, ExCar, EZKruiser, Gotraxx, Gorilla, Moto Electric, Icon, PDG, Racka, Royal, Spartan, Star, Tao, Many others with FJ, EV48-400-C and Tercel/LVTong/JHL controllers!

Getting Started

Look at the BlueJay Quick Start Guide PDF to get up and running fast.

Settings

By default, BlueJay is configured to probe for all supported controllers.

To save time, you may want it look for just your controller brand.

Click the Setting selection on the left side and then check/uncheck the controllers that you want.

Be sure to click Save if you make changes to the settings.
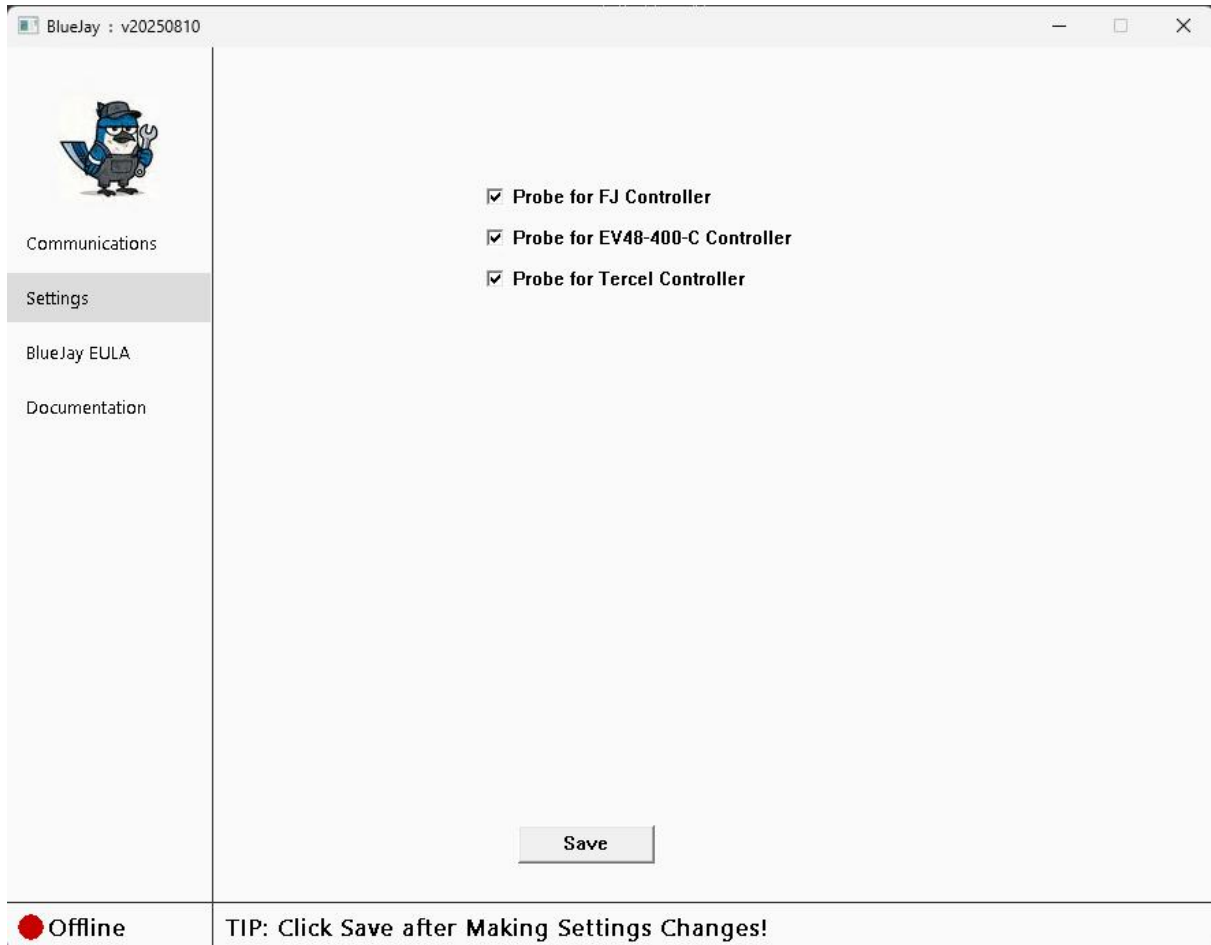
Trouble Shooting

BlueJay can't identify controller

- Make sure your cart is powered on. The controller must have power in order to communicate

- Make sure that you installed your cable's device driver

    - Most cables require a Windows Device Driver to be installed. If you purchased from Cart Cables, go here to find the appropriate driver:

        - https://www.cartcables.com/pages/drivers

- Make sure your controller is supported by BlueJay.

    - Identify your controller brand/model/type here:
        - https://www.cartcables.com/pages/controller-id-guides

Can't edit a parameter

- Make sure you are double-clicking the "set" cell of the parameter row.

- Grey Parameter rows are read-only and can not be edited.

Won't load backup

- Make sure you are loading the correct controller brand/model/type

- Make sure you haven't hand edited the backup file

Won't load profile

- Make sure you are loading the correct controller brand/model/type

- Make sure you have the parameter named spelled correctly

- Make sure the parameter value is within min/max range

Something Else

- Send email describing issue to: **support@bluejaytuning.com**

FAQs

An updated list of FAQs can be found at: https://bluejaytuning.com/faqs.html

Why isn't BlueJay free?

Since the OEM controller programs like GEF12Host or Fj Programming tool are free, why isn't BlueJay also free?

- Actually those OEMs programs are NOT free. They are licensed applications that have been pirated and copied onto various download sites.

- BlueJay is supported multi-controller application that provides many features that the OEMs applications do not, such as:

  - Save/Restore

  - Profiles

  - User Guide

  - Every common tuning parameter defined and described in the User Guide

  - Email application support, bug fixes, new versions

Where can I find the latest BlueJay version?

- Go to: **https://bluejaytuning.com**

Where can I find a list of reported bugs?

- Go to: **https://bluejaytuning.com/downloads.html#issues**

- Report bugs to: **support@bluejaytuning.com**

Will you give me personal support to tune my controller?

- No, we offer application support via email and bug fix support but we cannot tell you what parameter values to use for tuning your controller.

- Read the user manual for general guidance

  - There is NOT a one size fits all. Use caution and intelligence

- Get community support by posting tuning questions for the various Golf / Utility Cart forums and sites.

Fanji Technology (FJ) Tuning

BlueJay can auto-detect FJ controllers. The FJ S1 series are AC motor controllers used in many commodity golf carts such as Evolution/HDK, Tao, Denago, PDG, EZKruiser, Racka, Coleman, Gotraxx, Gorilla and many others.

Common models include:
- EV48-400
- EV48-400-A
- FJ 350A
- FJZC-S1-350A
- FJZC-S1-350A-TT-48V-01
- FJZC-S1-001-WHL-48V-06
- etc

The FJ G1 series also are showing up on some carts such as Denago. The G1 controllers have not been examined by us but they do appear to follow the same S1 communication protocol
- FJZC-G1-001-TT-48V-02
- FJZC-G1-001-BK-48V-02
- FJZC-G1-001-BK-72V-01
- etc
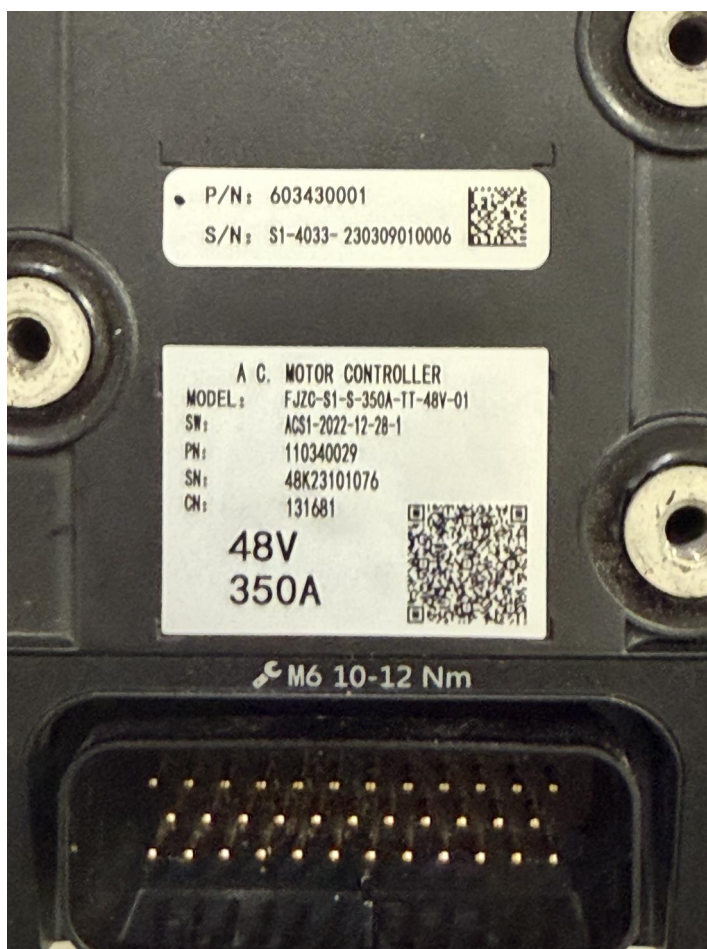
A 4-pin square programming port located beneath the fuse block in the battery bay allows for customization and tuning of vehicle settings.

To connect and program the FJ controller, you'll need:
- A programming cable such as the [CartCables](#) CC-CBL-EVO2SE

Tuning is not complicated but it does come with risks that MUST be understood and accepted:

- **Modifying the Motor Controller parameters can damage equipment, property and cause INJURY/DEATH to yourself/others.**
- **Modifications may VOID your WARRANTY**
- **Factory/Dealer settings should only be performed by trained technicians**

Before you make any changes, you should make a backup of the current parameters by clicking the Save button.

This section discusses an approach to performance tuning. What values do you want to tune your cart? It depends on what you want. **There is not a one size fits all**.

- Don't just enter numbers that someone told you about

- Look at your existing values

- Determine your goals

- Make small changes

- **Test with caution**

To change a parameter, double-click on the the "set" cell of the parameter row. Make sure your change is between the valid min and max for that parameter. After editing, the "set" cell will highlight in yellow to show that it has changed.

Changes are not written to the connected controller until you click the Write button.

If you want to discard changes before writing, click the Reset button.

You can return to a previous saved state by clicking the Load button and choosing a previously saved file for the connected controller. After loading, differences from the current state and the loaded files will be highlighted in yellow. Be sure to review both the Tuning and Sink tables to see changes. Changes are not actually written to the controller until you click the Write button.

Common tuning areas are:

- Speed

- Acceleration

- Regen/Deceleration

<u>**Note:**</u>

- BlueJay's parameter names might be slightly different than the OEM name in an attempt to simply/clarify the parameter's purpose.

Speed

Speed tuning controls how fast the golf cart can travel under various conditions. This involves adjusting the maximum RPM in forward in Low and High gear and then reverse in Low and High gear.
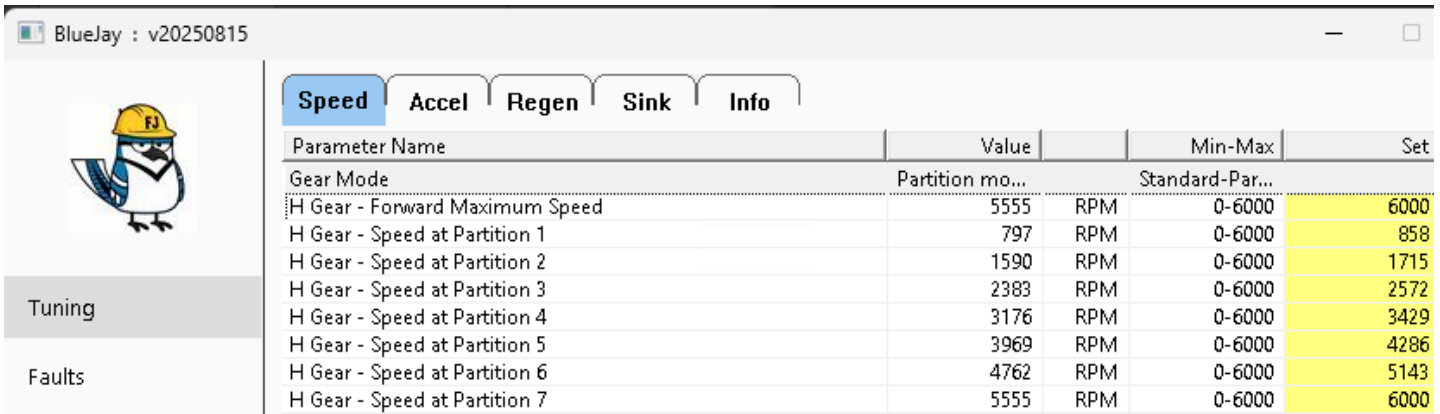
Your FJ controller will have its "gear mode" system parameter set to "partition". This means that you tune 7 "partitions" or "zones" related to speed, acceleration, deceleration and torque.

In the Tuning tab, set "H Gear - Forward Maximum Speed" to whatever safe max RPM you want up to 6000 RPM. The value you set is the Motor Maximum Speed for High Gear and Forward direction. In that mode you are never allowed to spin faster than this no matter what.

The "H Gear – Speed at Partition 7" parameter should match "H Gear - Forward Maximum Speed" or be ~5% RPM lower than this value.
- After editing "H Gear - Forward Maximum Speed", BlueJay will auto scale the 7 "H Gear – Speed at" partitions linearly. You can edit these if you want different values.

You can edit and set these partitions as you choose but usually you will want the speed partitions to be mostly linear so the speed ramps up smooth and continuous.

An easy method is divide your divide "H Gear - Forward Maximum Speed" by 7 and enter the multiples something like:

	Partition 1	Partition 2	Partition 3	Partition 4	Partition 5	Partition 6	Partition 7
Max RPM 4000	571	1143	1714	2286	2857	3429	4000
Max RPM 4500	643	1286	1929	2571	3214	3857	4500
Max RPM 5000	714	1429	2143	2857	3571	4286	5000
Max RPM 5500	786	1571	2357	3143	3929	4714	5500
Max RPM 6000	857	1714	2571	3429	4286	5143	6000

Example Partition Values for Various Max RPMs

Set safe RPMs for the Low gear Forward max, High gear Reverse max and Low gear Reverse max.

Now that you defined the max RPM in each speed partition, you'll want to set a plan on how to get there by adjusting the acceleration partitions.

Acceleration

The acceleration partitions tells the controller how quickly in RPM/S that you want to get from one partition to the next.

Acceleration and deceleration tuning determine how quickly the cart speeds up or slows down. This is managed by ramp rate settings in the controller. A smoother, slower acceleration may be ideal for comfort and safety, while a sharper ramp gives a snappier, sportier feel.

Each partition has its own acceleration limit, expressed in RPM/s. This lets you shape how quickly the vehicle gains speed at different motor RPM ranges. So instead of one global "acceleration" setting, the controller can:

- Give strong punchy acceleration at low RPM

- Then taper off smoothly at higher RPM to avoid jerkiness, overcurrent, or wheel slip.

Set your Acceleration partitions as mild or aggressive as you want:

IMPORTANT!
- Do NOT start with large numbers. Take your existing values and add 10-50 to a partition slowly and test.
- **Too large of values will make your cart dangerous and out of control.**
- Go slow, test.

Example:
- If you set the partitions apart by ~714 RPMs (as in the figure "*Example Partition Values for Various Max RPMs*" above for 5000 max rpm)
  - If you set an acceleration partition to 100 rpm/s, it would take roughly 714/100 = 7.14 seconds to get up to speed in that partition.
  - Or if you set the acceleration partition to 350 rpm/s, it would take 714/350 = 2.04 seconds to get up to speed in that partition

In reality, acceleration isn't always perfectly flat like that example calculation as load, torque limits, and current draw also factor in.

Driving Torque

The torque partition is the "muscle" behind your acceleration plan. Each torque partition value limits or defines the force the motor can use to achieve the acceleration plan.

Torque is the rotational force that the motor produces to turn the shaft. Think of it like how hard you twist a wrench - torque is that "twisting" force. Torque tuning affects how well the cart can climb hills, carry loads, or launch from a stop. Adjusting torque levels can help balance power, hill climbing, efficiency, and battery life.

Just like acceleration, the motor's RPM range is divided into partitions (0 → max RPM). Instead of controlling "how quickly you can gain RPM," these parameters control "how much torque is allowed" at different parts of the speed curve. Each torque partition is a value from 10-100 which is the % of max available torque for a RPM range.

Relationship with acceleration limits:
- Acceleration parameters (RPM/s) = how fast you're allowed to climb through each speed band.
- Driving torque factors (%) = how much "push" (torque) is available to make that climb.

Together, they shape the drive feel:
- High torque + high acceleration = aggressive, sporty launch.
- Lower torque + lower acceleration = smoother, safer, or economy driving.

If you set a high acceleration but a low torque, you might notice the vehicle feels sluggish or lags when climbing or starting under load.

If you set high torque but low acceleration, you'll have more pulling power, but the controller will deliberately slow down how fast you ramp up.

Be conservative at low speed to avoid jerky starts, higher torque at higher speeds when needed for hills or carrying load.

You can tune "Driving Torque Factor 0 RPM->Partition 1" and "Driving Torque Factor Partition 1->2" for launch feel/traction (wheel-spin vs. snappy start).

Shape mid bands "Driving Torque Factor Partition 2->5" for the pull you want at road speeds.

Keep "Driving Torque Factor Partition 6->7+" lower if you're faulting or over-temp or near current/voltage limits.

IMPORTANT!
- Do NOT start with large numbers. Take your existing values and add 5-10 to a partition slowly and test.
- **Too large of values will make your cart dangerous and out of control.**
- Go slow, test.

Deceleration

Deceleration partitions are used to used to slow down the vehicle when the throttle is released. Larger values (rpm/s) represent faster response (strong deceleration feeling), small values (rpm/s) represent slower response (soft deceleration feeling).

These Deceleration parameters are targets for how quickly speed should drop when the pedal is released (by speed partitions). The controller tries to hit those targets but it's limited by:
- Regen Torque Factors

◦ BMS charge-current/SOC/temp limits,
◦ DC-bus over-voltage protection,
◦ traction limits, temps, etc.

Its recommended to adjust the 1-7 partition deceleration value synchronously otherwise the deceleration process may not be smooth, **you may experience uncomfortable deceleration and eat the windshield.**

How fast will you slow in a partition?
- "H Gear – Speed at Partition 1" / your value = seconds
  - if " H Gear – Speed at Partition 1" is 800 RPM and you enter "300" for "H Gear – Deceleration Partition 1→ ~0 RPM" then:
    - 800 / 300 = 2.67 seconds to slow from 800 RPM to ~0

Regen Torque

These factor ranges limit the regen torque (pedal-off, brake-blend, etc.) for RPM ranges defined in the parameters.
For example: if the controller could deliver 100% regen at 1800 rpm but the factor for 2000->1500 is 60%, the actual regen in that range can't exceed 60% of the controller's internal max.

Start with a gentle shape for regen:
 0 RPM: low (avoid lurch)
 500–3000 RPM: higher (pleasant decel, good energy capture)
 3000–6000 RPM: taper down (protect bus voltage / comfort)

Decide your parameter values using feel with the RPM/s targets. Do a few coast-downs and note where it can't meet target - those are bins to raise (if safe).

Too high can spike the bus or make it grabby.

FJ Parameters

This section describes all FJ parameters that BlueJay supports. Refer to the above Fanji Technology (FJ) Tuning section for discussion on an approach to performance tuning.

If you feel that there are needed parameters that are missing, send us an email.

BlueJay presents tuning parameters into 4 tuning tabs.

- Just because a parameter is in these tabs does NOT mean you need to adjust.

- Only change what you need to.

- Change in small increments and test. Go slow, be careful, be smart.

The most common tuning parameters are in the Speed, Acceleration or Deceleration tabs. The Sink tab (aka 'the 'kitchen sink') are other important tuning parameters that may be useful to advanced/experienced tuners.

Note:

- BlueJay's parameter names might be slightly different than the OEM name in an attempt to simply/clarify the parameter's purpose.

These are listed in alphabetical order.

Driving Torque Factor 0RPM->Partition 1
- Driving Torque scaling factor applied to the motor's maximum available torque in that speed band (partition).

- Actual delivered torque is the minimum of this ceiling (while in this RPM range), pedal request, acceleration partition map and any current/temperature/bus-voltage limits.

- Located in Speed tab

- Range: 0-100%

    ◦ 100% means full available torque (as defined by the motor and controller).

    ◦ Lower percentages scale torque down proportionally

Driving Torque Factor 0RPM->Partition 2
- Driving Torque scaling factor applied to the motor's maximum available torque in that speed band (partition).

- Actual delivered torque is the minimum of this ceiling (while in this RPM range), pedal request, acceleration partition map and any current/temperature/bus-voltage limits.

- Located in Speed tab

- Range: 0-100%

    ◦ 100% means full available torque (as defined by the motor and controller).

    ◦ Lower percentages scale torque down proportionally

Driving Torque Factor 0RPM->Partition 3

- Driving Torque scaling factor applied to the motor's maximum available torque in that speed band (partition).

- Actual delivered torque is the minimum of this ceiling (while in this RPM range), pedal request, acceleration partition map and any current/temperature/bus-voltage limits.

- Located in Speed tab

- Range: 0-100%

  ○ 100% means full available torque (as defined by the motor and controller).

  ○ Lower percentages scale torque down proportionally

Driving Torque Factor 0RPM->Partition 4

- Driving Torque scaling factor applied to the motor's maximum available torque in that speed band (partition).

- Actual delivered torque is the minimum of this ceiling (while in this RPM range), pedal request, acceleration partition map and any current/temperature/bus-voltage limits.

- Located in Speed tab

- Range: 0-100%

  ○ 100% means full available torque (as defined by the motor and controller).

  ○ Lower percentages scale torque down proportionally

Driving Torque Factor 0RPM->Partition 5

- Driving Torque scaling factor applied to the motor's maximum available torque in that speed band (partition).

- Actual delivered torque is the minimum of this ceiling (while in this RPM range), pedal request, acceleration partition map and any current/temperature/bus-voltage limits.

- Located in Speed tab

- Range: 0-100%

  ○ 100% means full available torque (as defined by the motor and controller).

  ○ Lower percentages scale torque down proportionally

Driving Torque Factor 0RPM->Partition 6

- Driving Torque scaling factor applied to the motor's maximum available torque in that speed band (partition).

- Actual delivered torque is the minimum of this ceiling (while in this RPM range), pedal request, acceleration partition map and any current/temperature/bus-voltage limits.

- Located in Speed tab

- Range: 0-100%

    ◦ 100% means full available torque (as defined by the motor and controller).

    ◦ Lower percentages scale torque down proportionally

Driving Torque Factor 0RPM->Partition 7

- Driving Torque scaling factor applied to the motor's maximum available torque in that speed band (partition).

- Actual delivered torque is the minimum of this ceiling (while in this RPM range), pedal request, acceleration partition map and any current/temperature/bus-voltage limits.

- Located in Speed tab

- Range: 0-100%

    ◦ 100% means full available torque (as defined by the motor and controller).

    ◦ Lower percentages scale torque down proportionally

Gearbox Reduction Ratio

- This is the final drive ratio between the motor and the wheels, taking into account any gearbox, chain/belt drive, or differential gearing.

    ◦ Example: If the motor spins 16 times for every 1 wheel rotation, your gear ratio is **16.0**

- Located in Sink tab

- The controller uses this number to calculate vehicle speed from motor RPM.

- Range 1.0-1000.0

Gear Mode

- Sets the FJ controller into Standard or Partition mode.

- Don't confuse this parameter with High/Low Gear, this is really a tuning system "mode"

- Read-Only

- Your FJ controller will have its gear mode parameter set to "partition". This means that you tune 7 "partitions" or "zones" related to speed, acceleration, deceleration and torque.

- "H Gear – Speed at Partition N" values define the RPM boundaries that slice the speed axis into partitions/bins. The controller doesn't try to reach those RPMs, it uses them to decide which row of your torque/acceleration/deceleration tables applies.

  - If your FJ gear mode is set to "standard", then many BlueJay FJ parameters will be incorrect, stop using BlueJay and send us an email.

- Located in Speed tab

- Range: Standard-Partition

H Gear – Acceleration at Partition 1

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and High Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  - High values in low partitions -> snappy launch.

  - Lower values in higher partitions -> smoother cruising.

H Gear – Acceleration at Partition 2

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and High Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  - High values in low partitions -> snappy launch.

  - Lower values in higher partitions -> smoother cruising.

H Gear – Acceleration at Partition 3

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and High Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  ○ High values in low partitions -> snappy launch.

  ○ Lower values in higher partitions -> smoother cruising.

H Gear – Acceleration at Partition 4

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and High Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  ○ High values in low partitions -> snappy launch.

  ○ Lower values in higher partitions -> smoother cruising.

H Gear – Acceleration at Partition 5

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and High Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  ○ High values in low partitions -> snappy launch.

  ○ Lower values in higher partitions -> smoother cruising.

H Gear – Acceleration at Partition 6

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and High Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  ○ High values in low partitions -> snappy launch.

  ○ Lower values in higher partitions -> smoother cruising.

H Gear – Acceleration at Partition 7

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and High Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  ○ High values in low partitions -> snappy launch.

  ○ Lower values in higher partitions -> smoother cruising.

H Gear – Deceleration at ~0 RPM

- Base deceleration constant used when the motor is already at very low speed (near 0 RPM)

- Defines how quickly the controller allows the motor to bleed off those last few hundred RPM until it reaches standstill.

- Located in Deceleration tab

- Range: 100-2000 RPM/S

  ○ Raise it for a crisper stop

  ○ Lower it to soften the final roll-down to avoid nose-dip or jerk at parking speeds.

H Gear – Deceleration Partition 1-> ~0 RPM

- Base deceleration constant used when the motor is coming down from the "H Gear – Speed at Partition 1" towards stop.

- Located in Deceleration tab

- Range: 100-2000 RPM/S

- ○ Raise it for a faster stop in that RPM range

- ○ Lower it to soften the final roll-down

H Gear – Deceleration Partition 2->1

- Base deceleration constant used when the motor is coming down from the "H Gear –"H Gear – Speed at Partition N" values define the RPM boundaries that slice the speed axis into bins. The controller doesn't try to reach those RPMs; it just uses them to decide which row of your torque/accel/decel tables applies. Speed at Partition 2" towards "H Gear – Speed at Partition 1".

- Located in Deceleration tab

- Range: 100-2000 RPM/S

  - ○ Raise it for a faster stop in that RPM range

  - ○ Lower it to soften the roll-down

  - ○ How fast will you slow in this range?

    - ■ "H Gear – Speed at Partition 1" / your value = seconds

    - ■ if " H Gear – Speed at Partition 2" is 800 RPM is 1600 and " H Gear – Speed at Partition 1" is 800 RPM and you enter "300" for "H Gear – Deceleration Partition 1→ ~0 RPM" then:

      - (1600-800) / 300 = 2.67 seconds to slow from 1600 RPM to 800 RPM

H Gear – Deceleration Partition 3->2

- Base deceleration constant used when the motor is coming down from the "H Gear – Speed at Partition 3" towards "H Gear – Speed at Partition 2".

- Located in Deceleration tab

- Range: 100-2000 RPM/S

  - ○ Raise it for a faster stop in that RPM range

  - ○ Lower it to soften the roll-down

H Gear – Deceleration Partition 4->3

- Base deceleration constant used when the motor is coming down from the "H Gear – Speed at Partition 4" towards "H Gear – Speed at Partition 3".

- Located in Deceleration tab

- Range: 100-2000 RPM/S

  - Raise it for a faster stop in that RPM range

  - Lower it to soften the roll-down

H Gear – Deceleration Partition 5->4

- Base deceleration constant used when the motor is coming down from the "H Gear – Speed at Partition 35 towards "H Gear – Speed at Partition 4".

- Located in Deceleration tab

- Range: 100-2000 RPM/S

  - Raise it for a faster stop in that RPM range

  - Lower it to soften the roll-down

H Gear – Deceleration Partition 6->5

- Base deceleration constant used when the motor is coming down from the "H Gear – Speed at Partition 6" towards "H Gear – Speed at Partition 5".

- Located in Deceleration tab

- Range: 100-2000 RPM/S

  - Raise it for a faster stop in that RPM range

  - Lower it to soften the roll-down

H Gear – Deceleration Partition 7->6

- Base deceleration constant used when the motor is coming down from the "H Gear – Speed at Partition 7" towards "H Gear – Speed at Partition 6".

- Located in Deceleration tab

- Range: 100-2000 RPM/S

  - Raise it for a faster stop in that RPM range

  - Lower it to soften the roll-down

H Gear – Forward Maximum Speed

- Maximum forward RPM in High gear.

- ◦ This is the Motor Maximum Speed

- ◦ You are never allowed to spin faster than this no matter what.

- "H Gear - Partition 7 Speed" parameter should match or be ~5% RPM lower than this value.

- When you edit this parameter, BlueJay will auto calculate and edit "H Gear - Partition 1-7 Speed" in a linear fashion with Partition 7 set to "H Gear – Forward Speed"

  - ◦ You can redit the Partitions 1-7 if you don;t like what BlueJay calculated.

- Located in Speed tab

- Range: 0-6000 RPM

H Gear – Partition 1 Speed

- Maximum forward RPM in Partition 1.

- The "H Gear - Speed at Partition N" values define the RPM boundaries that slice the speed axis into bins. The controller use the partition "boundaries" to index into the torque/accel/decel tables.

- See above Speed paragraph for a discussion on partition values and how to calculate for partitions 1-7

- Located in Speed tab

- Range: 0-6000 RPM

H Gear – Partition 2 Speed

- Maximum forward RPM in Partition 2.

- See above Speed paragraph for a discussion on partition and how to calculate values in partitions 1-7

- Located in Speed tab

- Range: 0-6000 RPM

H Gear – Partition 3 Speed

- Maximum forward RPM in Partition 3.

- See above Speed paragraph for a discussion on partition and how to calculate values in partitions 1-7

- Located in Speed tab

- Range: 0-6000 RPM

H Gear – Partition 4 Speed

- Maximum forward RPM in Partition 4.

- See above Speed paragraph for a discussion on partition and how to calculate values in partitions 1-7

- Located in Speed tab

- Range: 0-6000 RPM

H Gear – Partition 5 Speed

- Maximum forward RPM in Partition 5.

- See above Speed paragraph for a discussion on partition and how to calculate values in partitions 1-7

- Located in Speed tab

- Range: 0-6000 RPM

H Gear – Partition 6 Speed

- Maximum forward RPM in Partition 6.

- See above Speed paragraph for a discussion on partition and how to calculate values in partitions 1-7

- Located in Speed tab

- Range: 0-6000 RPM

H Gear – Partition 7 Speed

- Maximum forward RPM in Partition 7.

- "H Gear - Partition 7 Speed" parameter should match or be ~5% RPM lower than "H Gear – Forward Maximum Speed".

  - If going downhill, heavy load, strong tailwind, slight overrun, the motor can momentarily spin up and attempt go beyond the Motor Maximum Speed limit and then fault out.

- Some controllers don't handle hitting their max rpm very gracefully and can trigger "Over-speed Protection" faults or cause sudden motor braking.
  - Unless you are soaking every RPM out of the controller, consider putting Partition 7 Speed about ~5% less than "H Gear – Forward Maximum Speed" value.
- See above Speed paragraph for a discussion on partition and how to calculate values in partitions 1-7
- Located in Speed tab
- Range: 0-6000 RPM

H Gear – Reverse Acceleration

- Defines the rate of speed increase (RPM/s) allowed allowed for Reverse mode
- Typically kept low for safety
- Located in Acceleration tab
- Range: 100-2000 RPM/S
  - Keep low!

H Gear – Reverse Maximum Speed

- Maximum reverse RPM in High gear.
- Located in Speed tab
- Range: 0-6000 RPM

L Gear – Acceleration at Partition 1

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and Low Gear
- These parameters let you tune launch feel, midrange pull, and top-end smoothness.
- Located in Acceleration tab
- Range: 100-2000 RPM/S
  - High values in low partitions -> snappy launch.
  - Lower values in higher partitions -> smoother cruising.

L Gear – Acceleration at Partition 2

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and Low Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  - High values in low partitions -> snappy launch.

  - Lower values in higher partitions -> smoother cruising.

L Gear – Acceleration at Partition 3

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and Low Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  - High values in low partitions -> snappy launch.

  - Lower values in higher partitions -> smoother cruising.

L Gear – Acceleration at Partition 4

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and Low Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  - High values in low partitions -> snappy launch.

  - Lower values in higher partitions -> smoother cruising.

L Gear – Acceleration at Partition 5

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and Low Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  - High values in low partitions -> snappy launch.

  - Lower values in higher partitions -> smoother cruising.

L Gear – Acceleration at Partition 6

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and Low Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  - High values in low partitions -> snappy launch.

  - Lower values in higher partitions -> smoother cruising.

L Gear – Acceleration at Partition 7

- Defines the rate of speed increase (RPM/s) allowed within a Speed partition when in Forward and Low Gear

- These parameters let you tune launch feel, midrange pull, and top-end smoothness.

- Located in Acceleration tab

- Range: 100-2000 RPM/S

  - High values in low partitions -> snappy launch.

  - Lower values in higher partitions -> smoother cruising.

L Gear – Forward Maximum Speed

- Maximum forward RPM in Low gear.

- Located in Speed tab

- Range: 0-6000 RPM

L Gear – Reverse Maximum Speed

- Maximum reverse RPM in Low gear.

- Located in Speed tab

- Range: 0-6000 RPM

Regen Torque Factor 500->0 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  - Raise it for a faster stop in that RPM range

  - Lower it to soften the roll-down

Regen Torque Factor 1000->500 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  - Raise it for a faster stop in that RPM range

  - Lower it to soften the roll-down

Regen Torque Factor 1500->1000 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  - Raise it for a faster stop in that RPM range

  - Lower it to soften the roll-down

Regen Torque Factor 2000->1500 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

- ○ Raise it for a faster stop in that RPM range

- ○ Lower it to soften the roll-down

Regen Torque Factor 2500->2000 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  - ○ Raise it for a faster stop in that RPM range

  - ○ Lower it to soften the roll-down

Regen Torque Factor 3000->2500 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  - ○ Raise it for a faster stop in that RPM range

  - ○ Lower it to soften the roll-down

Regen Torque Factor 3500->3000 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  - ○ Raise it for a faster stop in that RPM range

  - ○ Lower it to soften the roll-down

Regen Torque Factor 4000->3500 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  - ○ Raise it for a faster stop in that RPM range

  - ○ Lower it to soften the roll-down

Regen Torque Factor 4500->4000 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  ○ Raise it for a faster stop in that RPM range

  ○ Lower it to soften the roll-down

Regen Torque Factor 5000->4500 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  ○ Raise it for a faster stop in that RPM range

  ○ Lower it to soften the roll-down

Regen Torque Factor Max->5000 RPM

- Limits the regen torque (pedal-off, brake-blend, etc.) for this RPM range.

- Located in Deceleration tab

- Range: 0-100% of controller's max torque

  ○ Raise it for a faster stop in that RPM range

  ○ Lower it to soften the roll-down

Tire Diameter

- The outer diameter of the tire, measured in millimeters (mm).

- Located in Sink tab

- Range: 10-3000mm

  ○

Comments, questions, corrections? Send email to: **support@bluejaytuning.com**