



**iRacing**



**CADILLAC  
RACING**



# **CADILLAC V-SERIES.R GTP**

**USER MANUAL**



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Dear iRacing User,

The Cadillac V-Series.R is General Motors' latest top-level prototype entry for global sports car competition. Built to the universal Le Mans Daytona h regulations that made their debut for the 2023 season, the V-Series.R was launched in both the IMSA WeatherTech SportsCar Championship with entries from Chip Ganassi Racing and Action Express Racing, and internationally with another Ganassi-run team.

The Cadillac V-Series.R succeeds the Cadillac DPi-V.R, which scored five consecutive 24 Hours of Daytona wins from 2017 to 2021. Powered by a 5.5-liter V8, the V-Series.R has the largest engine of any cars to compete in the GTP class. It was able to score its first IMSA win in the 2023 12 Hours of Sebring with Alexander Sims, Pipo Derani, and Jack Aitken behind the wheel, recovering from an early incident and surviving a race of attrition in IMSA's hotly contested GTP class.

The following guide explains how to get the most out of your new car, from how to adjust its settings off of the track to what you'll see inside of the cockpit while driving. We hope that you'll find it useful in getting up to speed.

Thanks again for your purchase, and we'll see you on the track!





## CHASSIS

PUSHROD-ACTUATED INDEPENDENT TORSION BAR FRONT AND REAR SUSPENSION WITH FRONT HEAVE AND REAR THIRD-SPRING ELEMENTS.



LENGTH  
**5100 mm**  
201 in

WIDTH  
**2000 mm**  
78.74 in

WHEELBASE  
**3148 mm**  
124 in

DRY WEIGHT  
**1030 kg**  
2270 lbs

WET WEIGHT  
WITH DRIVER  
**1150 kg**  
2535 lbs

POWER  
UNIT

NATURALLY ASPIRATED DOHC V8ENGINE

DISPLACEMENT  
**5.5 Liters**  
336 cid

TORQUE  
**463 lb-ft**  
630 Nm

POWER  
**675 bhp**  
505 kW

RPM LIMIT  
**8770**



# Introduction

The information found in this guide is intended to provide a deeper understanding of the chassis setup adjustments available in the garage, so that you may use the garage to tune the chassis setup to your preference.

Before diving into chassis adjustments, though, it is best to become familiar with the car and track. To that end, we have provided baseline setups for each track commonly raced by these cars. To access the baseline setups, simply open the Garage, click iRacing Setups, and select the appropriate setup for your track of choice. If you are driving a track for which a dedicated baseline setup is not included, you may select a setup for a similar track to use as your baseline. After you have selected an appropriate setup, get on track and focus on making smooth and consistent laps, identifying the proper racing line and experiencing tire wear and handling trends over a number of laps.

Once you are confident that you are nearing your driving potential with the included baseline setups, read on to begin tuning the car to your handling preferences.

## GETTING STARTED

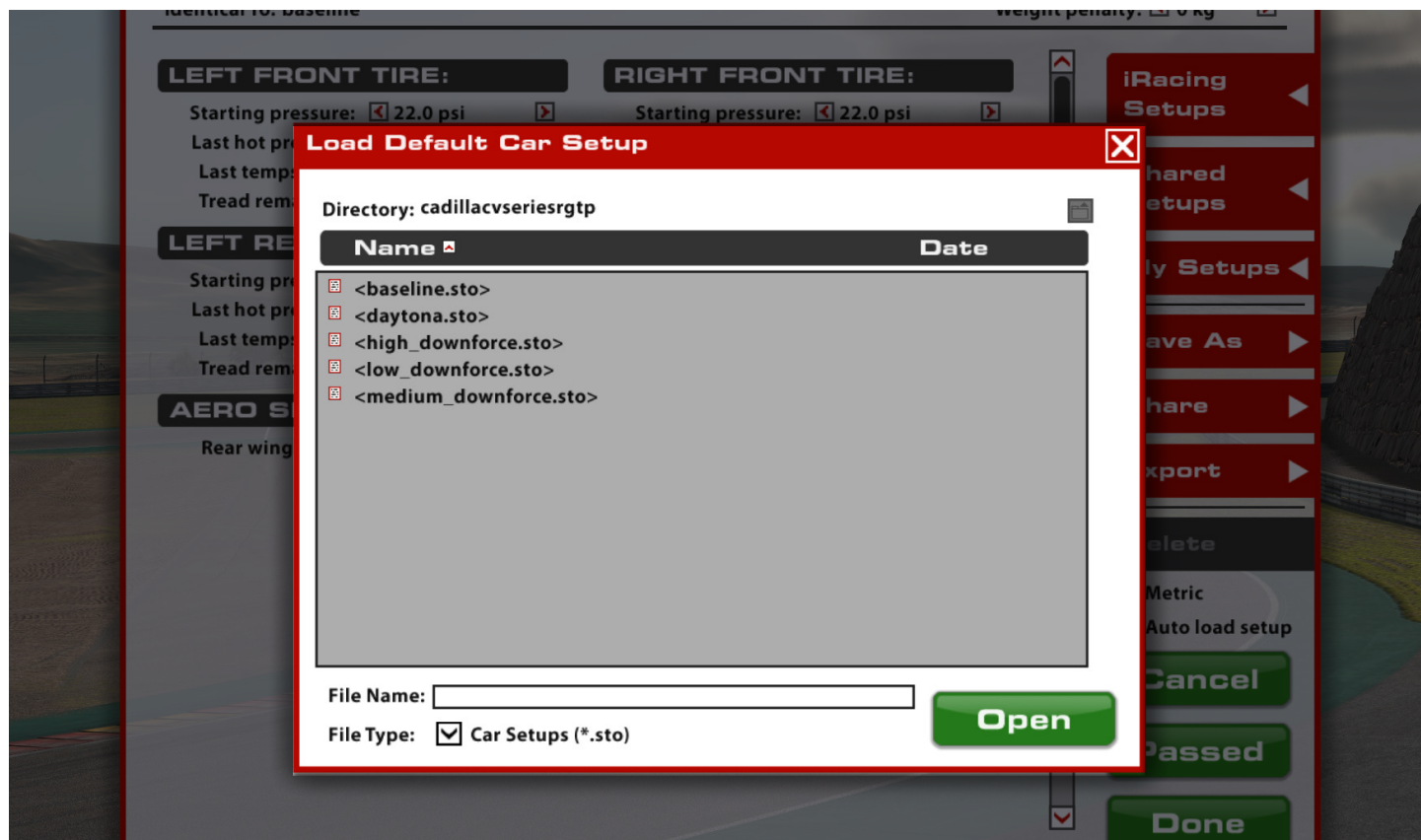


Before starting the car, it is recommended to map controls for Brake Bias, Traction Control and ABS adjustments. While this is not mandatory to drive the car, this will allow you to make quick changes to the driver aid systems to suit your driving style while out on the track.

Once you load into the car, getting started is as easy as selecting the “upshift” button to put it into gear, and hitting the accelerator pedal. This car uses a sequential transmission and does not require a clutch input to shift up or down. However, the car’s downshift protection will not allow you to downshift if it feels you are traveling too fast for the gear selected and would incur engine damage. In these situations the downshift command will simply be ignored. Upshifting is recommended when all of the shift lights on the steering wheel have changed to blue.



## LOADING AN iRACING SETUP



Upon loading into a session, the car will automatically load the iRacing Baseline setup [baseline.sto]. If you would prefer one of iRacing's pre-built setups that suit various conditions, you may load it by clicking Garage > iRacing Setups > and then selecting the setup to suit your needs.

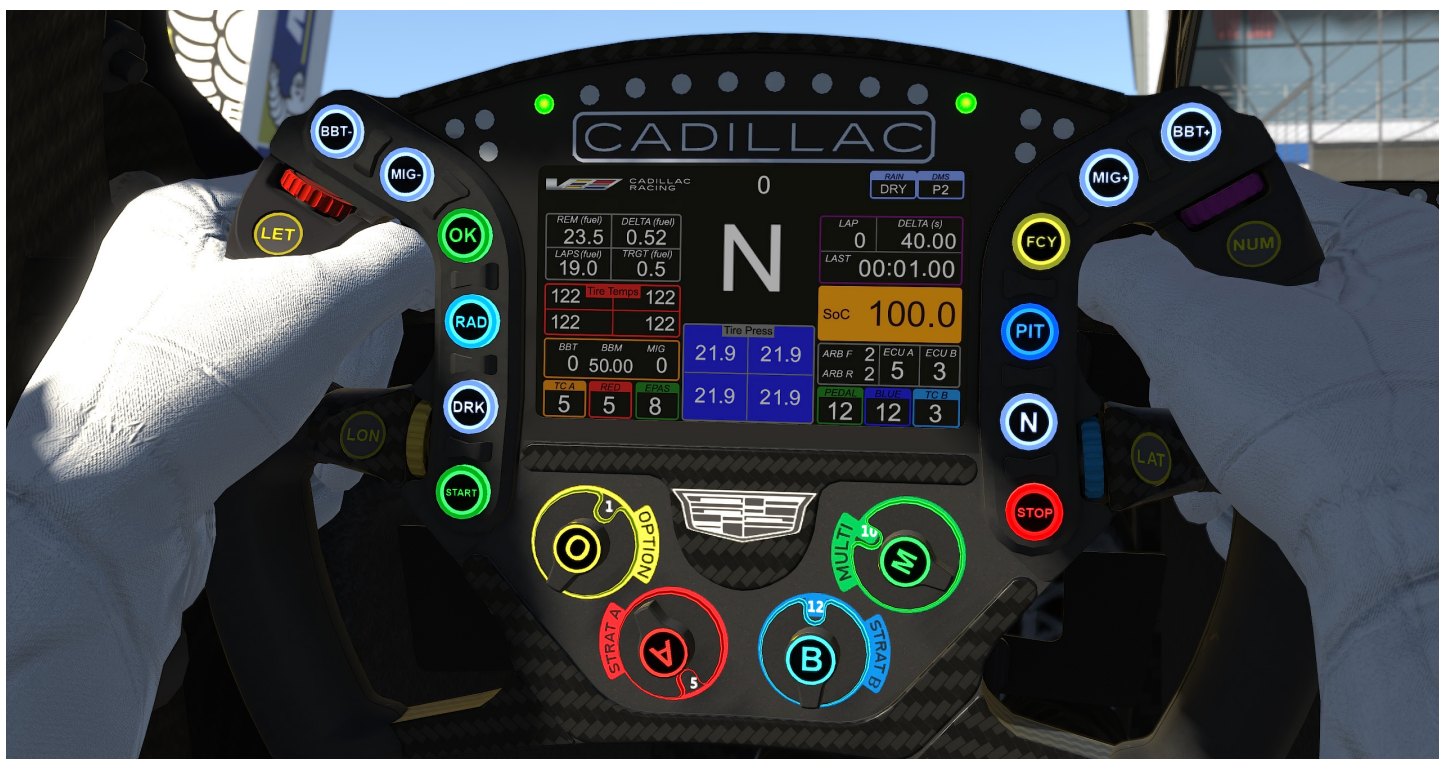
If you would like to customize the setup, simply make the changes in the garage that you would like to update and click apply. If you would like to save your setup for future use click "Save As" on the right to name and save the changes.

To access all of your personally saved setups, click "My Setups" on the right side of the garage.

If you would like to share a setup with another driver or everyone in a session, you can select "Share" on the right side of the garage to do so.

If a driver is trying to share a setup with you, you will find it under "Shared Setups" on the right side of the garage as well.

## Dash Configuration



The Cadillac V-Series.R features a single-page digital display installed within the steering wheel to show the driver quickly and easily all the information relevant to the car for a session. Information that is related is grouped into boxes and sorted into three columns.

### Left Column

REM (fuel)	Amount of fuel remaining in the fuel tank in gallons or liters
DELTA (fuel)	Difference between current per-lap fuel usage and the pre-set fuel usage target
LAPS (fuel)	Estimated number of laps remaining before the fuel tank is empty
TRGT (fuel)	Target per-lap fuel usage, set by the Fuel Target setting in the garage
Tire Temps	Average surface temperature of each tire in °F or °C
BBT	Brake Bias Target setting
BBM	Base Brake Pressure Bias setting
MIG	Brake Bias Migration setting
TC A	Current Traction Control Gain setting
EPAS	Power Steering Assist level



## DASH CONFIGURATION [CONTINUED]

### Center Column

Speed	Vehicle speed in miles-per-hour or kilometers-per-hour
Gear Indicator	Currently selected transmission gear
Tire Press	Live tire pressures, shown in PSI or kPa. The background of these values will change, with under-inflated tires shown in blue, overinflated tires in red, and optimum pressures shown with a black background.

### Right Column

Lap	Current lap number
DELTA (s)	Live time difference between the current lap and the session best lap
LAST	Previously completed lap time
SoC	Current Hybrid System State of Charge level
ARB F	Current Brake Bias setting, displayed as an offset from 50%. For example, if the brake bias is set to 54% this will display 4.00, while a 48% brake bias will display -2.00. When changing the Brake Bias, a graphical bar will appear on the right side of the display giving an indication of how far forward or rearward the Bias is currently set.
ARB R	Rear ARB blade setting
PEDAL	Current throttle pedal torque map setting
TC B	Current Traction Control Slip setting

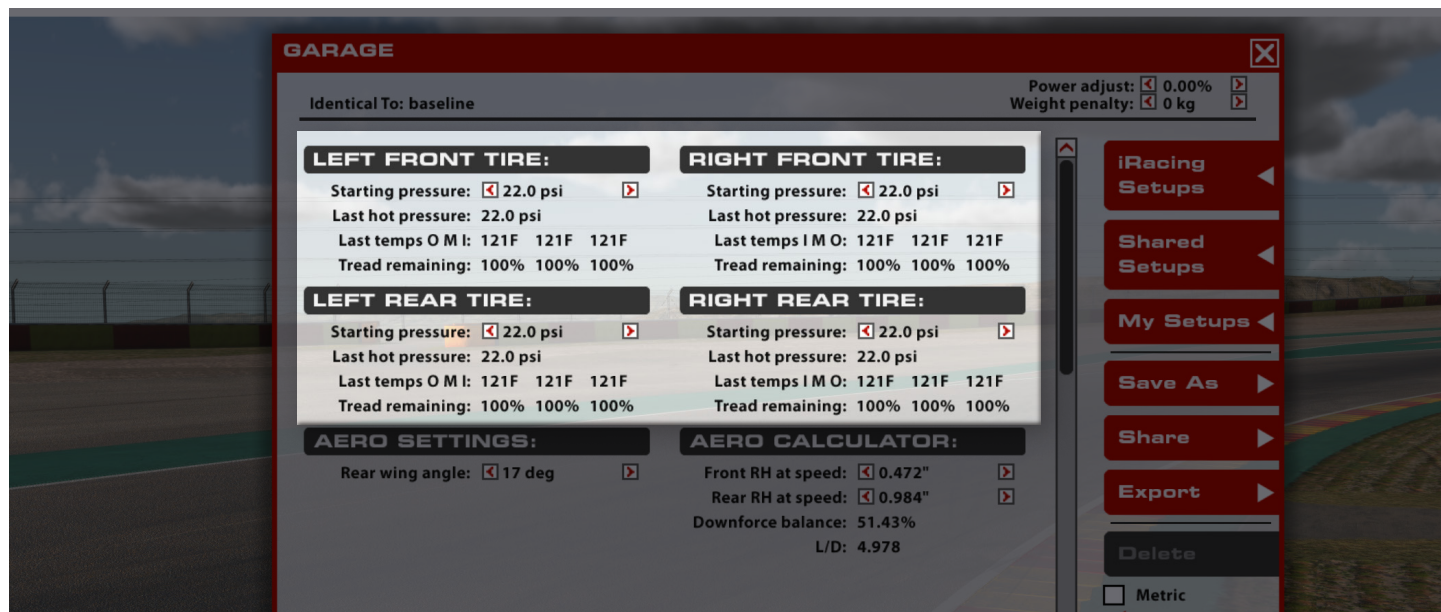
## Advanced Setup Options

This section is aimed toward more advanced users who want to dive deeper into the different aspects of the vehicle's setup. Making adjustments to the following parameters is not required and can lead to significant changes in the way a vehicle handles. It is recommended that any adjustments are made in an incremental fashion and only singular variables are adjusted before testing changes.



# Tires/Aero

## TIRES



### STARTING PRESSURE

Air pressure in the tire when the car is loaded into the world. Higher pressures will reduce rolling drag and heat buildup, but will decrease grip. Lower pressures will increase rolling drag and heat buildup, but will increase grip. Higher speeds and loads will require higher pressures, while lower speeds and loads will see better performance from lower pressures. Cold pressures should be set to track characteristics for optimum performance.

### LAST HOT PRESSURE

Air pressure in the tire after the car has returned to the pits. The difference between Cold and Hot pressures can be used to identify how the car is progressing through a run in terms of balance, with heavier-loaded tires seeing a larger difference between Cold and Hot pressures. Ideally, tires that are worked in a similar way should build pressure at the same rate to prevent a change in handling balance over the life of the tire, so Cold pressures should be adjusted to ensure that similar tires are at similar pressures once up to operating temperature.

### LAST TEMPERATURES

Tire carcass temperatures once the car has returned from the pits. Wheel loads and the amount of work a tire is doing on-track is reflected in the tire's temperature, and these values can be used to analyze the car's handling balance. Center temperatures are useful for directly comparing the work done by each tire, while the Inner and Outer temperatures are useful for analyzing the wheel alignment while on track. These values are measured in three zones across the tread of the tire.

## TREAD REMAINING

The amount of tread remaining on the tire once the car has returned from the pits. Tire wear is very helpful in identifying any possible issues with alignment, such as one side of the tire wearing excessively, and can be used in conjunction with tire temperatures to analyze the car's handling balance. These values are measured in three zones across the tread of the tire.

## AERO SETTINGS



### REAR WING ANGLE

The rear wing angle setting changes the Angle of Attack of the wing elements. Increasing wing angle increases the downforce generated by the wing but increases drag, while decreasing the wing angle reduces the downforce generated by the wing while reducing drag. Rear wing angle has a heavy influence on rear downforce, having a heavy influence on rear-end grip in mid- to high-speed corners.

### AERO CALCULATOR

The Aero Calculator is a tool used to display the car's approximate aerodynamic values in a given configuration. Changes to the car's aerodynamic settings will be reflected in the Aero Calculator, giving an idea of how the car will behave aerodynamically while on the race track. This calculator can also be used to determine what changes need to be made to the car to alleviate aerodynamically-induced handling issues.

### FRONT/REAR RH AT SPEED

The Ride Height (RH) at Speed is used to give the Aero Calculator heights to reference for aerodynamic calculations. When using the aero calculator, determine the car's Front and Rear Ride height via telemetry at any point on track and input that value into the "Front RH at Speed" setting.

### DOWNFORCE BALANCE

Displayed in percent of Front downforce, this value shows how much of the car's total downforce is over the front axle. A higher percentage value indicates more front downforce, increasing oversteer in mid- to high-speed corners and a lower percentage value indicates more rear downforce, increasing understeer in mid- to high-speed corners.

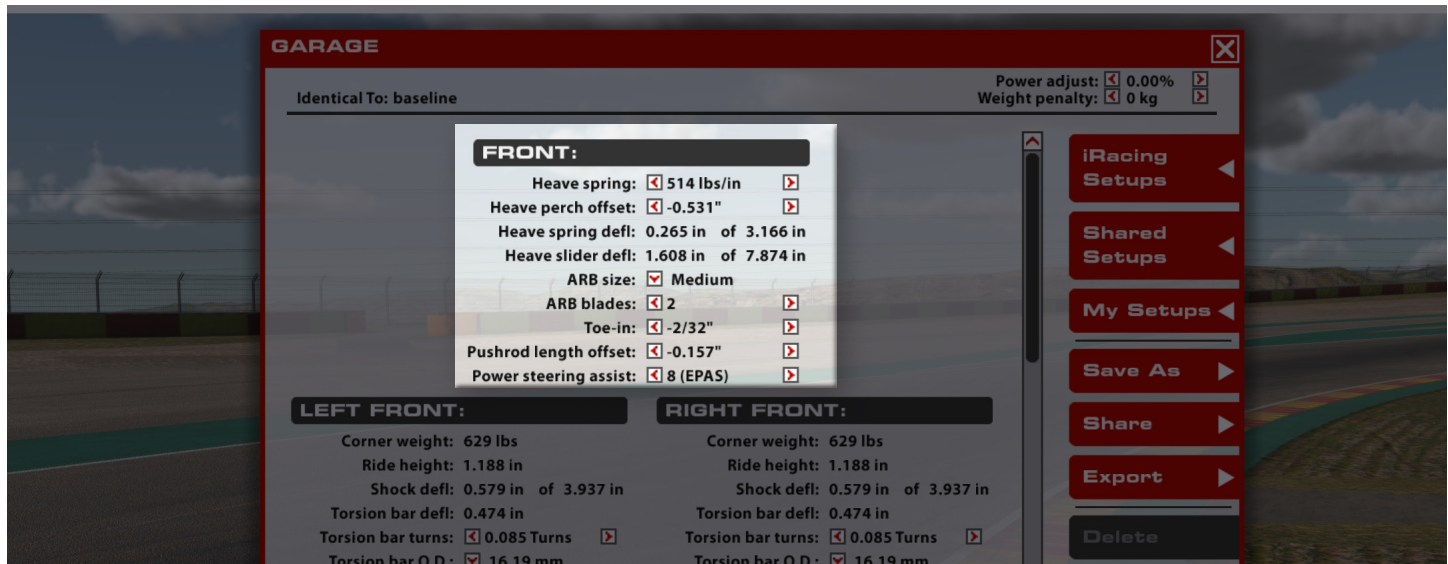
### L/D

The "L/D" value is the ratio of Lift (downforce) to Drag. This quantifies how efficiently the car's bodywork is producing downforce in terms of how much drag is being produced as a result. A higher L/D value means more downforce is being produced for each unit of drag, meaning the bodywork is being more efficient. Having a higher L/D value without sacrificing overall downforce will result in a faster, more efficient car. Optimum values for L/D can vary based on the aerodynamic configuration and track type.



# Chassis

## FRONT



### HEAVE SPRING

The front Heave Spring is a suspension element that handles external loads from purely vertical loads and doesn't control loads that would induce chassis roll when cornering. Generally these loads are present for increasing downforce loads at higher speeds, dips and crests in the track, or under heavy braking. Higher rate values will stiffen the suspension in heave, which is good for controlling ride heights to maintain a good aerodynamic platform, but can produce a bouncing effect on rough surfaces. Lower rates will absorb bumps and loads easier, but will hurt the aerodynamic platform due to excessive chassis movement.

### HEAVE PERCH OFFSET

The Heave Perch Offset is used to adjust preload on the Heave Spring. This is one of two methods to adjust ride height through the front Heave element, with lower values preloading the spring more and raising front ride heights. Conversely, higher values will unload the spring and lower front ride heights.

### HEAVE SPRING DEFLECTION

Heave Spring Deflection represents the amount the Heave Spring is compressed under static conditions. This is not directly adjustable but will change with adjustments to the Heave Perch Offset and front Torsion Bar settings.

### HEAVE SLIDER DEFLECTION

The Slider Deflection is how far the slider mechanism the Heave Spring is mounted on has compressed from fully extended. Similar to a shock but without any damping forces produced, this doesn't influence the suspension's behavior.

## ARB SIZE

The ARB (Anti-Roll Bar) size alters the stiffness of the front suspension in roll. Increasing the ARB size will increase the roll stiffness of the front suspension, resulting in less body roll but increasing mechanical understeer. This can also, in some cases, lead to a more responsive steering feel from the driver. Conversely, reducing the ARB size will soften the suspension in roll, increasing body roll but decreasing mechanical understeer. This can result in a less-responsive feel from the steering, but grip across the front axle will increase.

## ARB BLADES

The configuration of the Anti-Roll Bar arms, or “blades”, can be changed to alter the overall stiffness of the ARB assembly. Higher values transfer more force through the arms to the ARB itself, increasing roll stiffness in the front suspension and producing the same effects, albeit on a smaller scale, as increasing the diameter of the sway bar. Conversely, lower values reduce the roll stiffness of the front suspension and produce the same effects as decreasing the diameter of the sway bar. These blade adjustments can be thought of as fine-tuning adjustments between sway bar diameter settings.

## TOE-IN

Toe is the angle of the wheel, looking from vertical, relative to the chassis centerline. Toe-in is when the front of the wheels are closer to the centerline while Toe-out is when the front of the wheels are farther from the centerline than the rear of the tires. On the front end, Toe will alter how quickly the tires respond to steering inputs and influence how stable the car is in a straight line. Toe-out settings (negative garage value) will increase turn-in response and make the car less stable in a straight line, while Toe-in (positive garage value) will increase straight-line stability while making initial steering response more sluggish.

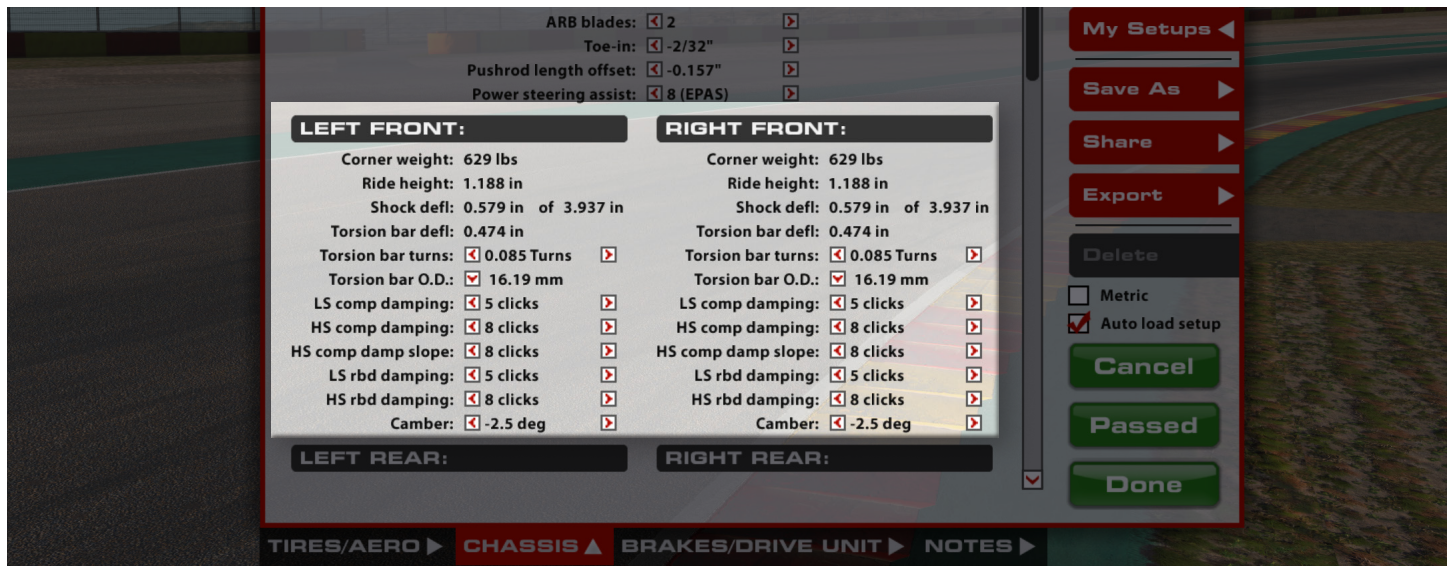
## PUSHROD LENGTH OFFSET

This adjusts the length of both front suspension pushrods together, shown as an offset from a baseline length figure. This is a great way to adjust front ride height without altering the preload on the Heave Spring or either front Torsion Bars.

## POWER STEERING ASSIST

Changes the assist level of the power steering system. Higher values will increase the assist and make the steering feel lighter, lower values will reduce assist and make the steering heavier.

## FRONT CORNERS



### CORNER WEIGHT

The weight underneath each tire under static conditions in the garage. Correct weight arrangement around the car is crucial for optimizing a car for a given track and conditions. Individual wheel weight adjustments and crossweight adjustments are made via the Torsion Bar Turns setting on the front corners.

### RIDE HEIGHT

Distance from ground to a reference point on the chassis. Since these values are measured to a specific reference point on the car, these values may not necessarily reflect the vehicle's ground clearance, but instead provide a reliable value for the height of the car off of the race track at static values. Adjusting Ride Heights is key for optimum performance, as they can directly influence the vehicle's aerodynamic performance as well as mechanical grip. Increasing the front ride height will decrease overall downforce and shift the aerodynamic balance rearward, but will decrease drag slightly. Conversely, reducing front ride height will increase downforce and shift aero balance forward while slightly increasing overall drag.

### SHOCK DEFLECTION

Shock Deflection is how much the shock has compressed from its fully extended length while under static conditions in the garage. This is useful for determining how much shock travel is available before a bump stop is engaged on the shock.

### TORSION BAR DEFLECTION

The Torsion Bar Deflection is a representation of how much the front torsion bar springs have been preloaded under static conditions. Higher deflection values show higher amounts of spring preload, lower values represent less spring preload.

### TORSION BAR TURNS

Used to adjust ride height and corner weight, adjusting this setting applies a preload to the torsion bar under static conditions. Decreasing the value increases preload on the torsion bar, adding weight to its corner and increasing the ride height at that corner. Increasing the value does the opposite, reducing height and weight on a given corner. These should be adjusted in pairs (left and right, for example) or with all four spring preload adjustments in the car to prevent crossweight changes while adjusting ride height.



## TORSION BAR O.D.

Similar to an Anti-Roll Bar in shape, a torsion bar is a spring that exerts resistive forces via applied torque generated through suspension travel. However, these torsion bars are fixed to the chassis at one end, and thus resist movement only on one wheel in the same way a coil spring resists movement and load changes. Increasing the torsion bar's diameter gives a higher spring rate, and reducing the diameter gives a lower spring rate. Stiffer springs are very helpful for smooth tracks and applications where a high level of aerodynamic attitude control is required, however stiff springs reduce mechanical grip significantly, especially over bumps. On low-grip and/or bumpy tracks, as well as lower speed tracks where aerodynamics may not be as effective, softer springs will increase mechanical grip while sacrificing aerodynamic control. Torsion Bar Diameter adjustments should be made in conjunction with ride height adjustments to prevent unwanted grounding of the chassis while on track.

## LOW-SPEED COMPRESSION DAMPING

Low Speed Compression affects how resistant the shock is to compression (reduction in length) when the shock is moving at relatively low speeds, usually in chassis movements as a result of driver input (steering, braking, & throttle) and cornering forces. Higher values will increase compression resistance and transfer load onto a given tire under these low-speed conditions more quickly, inducing understeer. Lower values will slow weight transfer to a tire, reducing understeer when applied to the front shocks.

## HIGH-SPEED COMPRESSION DAMPING

High Speed Compression affects the shock's behavior in high-speed travel, usually attributed to curb strikes and bumps in the track's surface. Higher compression values will cause the suspension to be stiffer in these situations, while lower values will allow the suspension to absorb these bumps better but may hurt the aerodynamic platform around the track.

## HIGH-SPEED COMPRESSION DAMPING SLOPE

The Compression Damping Slope setting controls the overall shape of the high-speed compression side of the shock. Lower slope values produce a flatter, more digressive curve while higher values result in a more linear and aggressive compression graph. The value of the slope setting is very important in controlling bump absorption at high shock velocities and controlling the aerodynamic platform. A lower slope will be helpful for rougher tracks in absorbing bumps and sharp impacts such as curbs, while a higher slope will keep the suspension more rigid. It's important to understand that these settings will affect the range the High-Speed Compression will have, with higher slope values producing a higher overall force for high-speed compression.

## LOW-SPEED REBOUND DAMPING

Low-speed Rebound damping controls the stiffness of the shock while extending at lower speeds, typically during body movement as a result of driver inputs. Higher rebound values will resist expansion of the shock, lower values will allow the shock to extend faster. Higher rebound values can better control aerodynamic attitude but can result in the wheel being unloaded when the suspension can't expand enough to maintain proper contact with the track. When tuning for handling, higher front low-speed rebound can increase on-throttle mechanical understeer (but reduce splitter lift) while lower values will maintain front end grip longer, helping to reduce understeer, but will allow more splitter lift. Excessive front rebound can lead to unwanted oscillations due to the wheel bouncing off of the track surface instead of staying in contact.

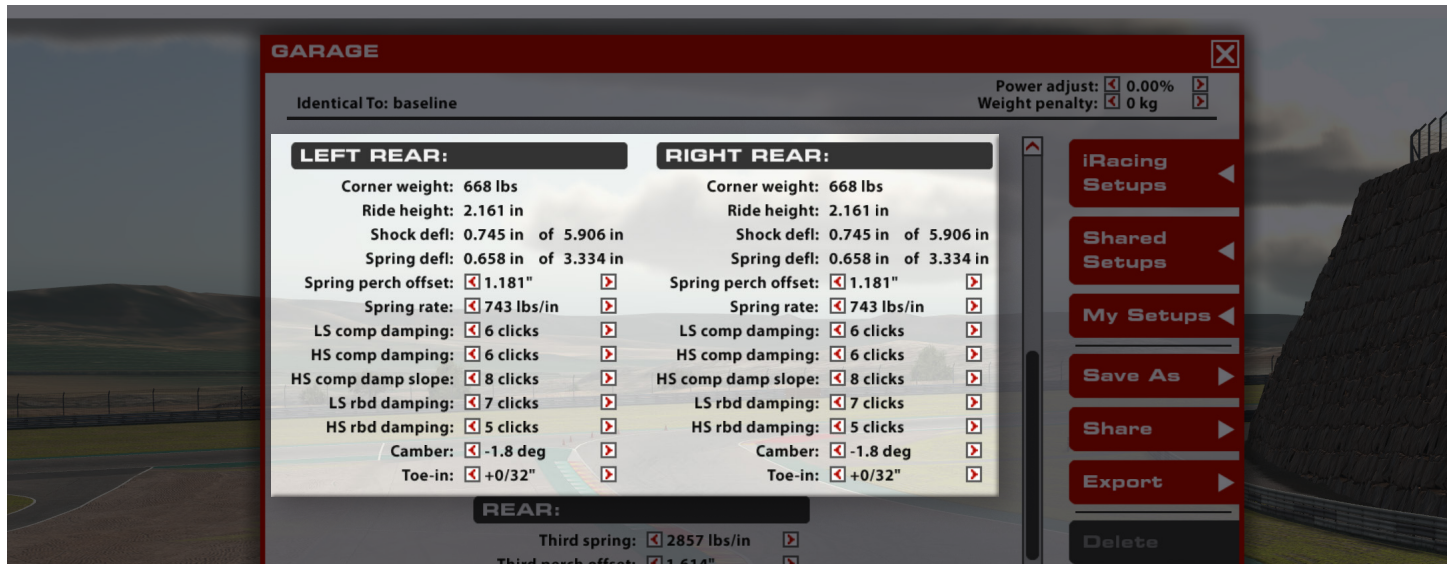
## HIGH-SPEED REBOUND DAMPING

High-speed rebound adjusts the shock in extension over bumps and curb strikes. Higher values will reduce how quickly the shock will expand, while lower values will allow the shock to extend more easily. Despite not having as much of an effect on handling in result to driver inputs, High-speed rebound can produce similar results in terms of aerodynamic control and uncontrolled oscillations if set improperly.

## CAMBER

Camber is the vertical angle of the wheel relative to the center of the chassis. Negative camber is when the top of the wheel is closer to the chassis centerline than the bottom of the wheel, positive camber is when the top of the tire is farther out than the bottom. Due to suspension geometry and corner loads, negative camber is desired on all four wheels. Higher negative camber values will increase the cornering force generated by the tire, but will reduce the amount of longitudinal grip the tire will have under braking. Excessive camber values can produce very high cornering forces but will also significantly reduce tire life, so it is important to find a balance between life and performance.

## REAR CORNERS



### CORNER WEIGHT

The weight underneath each tire under static conditions in the garage. Correct weight arrangement around the car is crucial for optimizing a car for a given track and conditions. Individual wheel weight adjustments and crossweight adjustments are made via the Spring Perch Offset setting for the rear wheels.

### RIDE HEIGHT

Distance from ground to a reference point on the chassis. Since these values are measured to a specific reference point on the car, these values may not necessarily reflect the vehicle's ground clearance, but instead provide a reliable value for the height of the car off of the race track at static values. Adjusting Ride Heights is key for optimum performance, as they can directly influence the vehicle's aerodynamic performance as well as mechanical grip. Raising the rear ride height will increase overall downforce and shift aero to the front of the car but will increase drag. Decreasing rear ride height will do the opposite, with aero shifting rearward and overall downforce and drag decreasing.

### SHOCK DEFLECTION

Shock Deflection is how much the shock has compressed from its fully extended length while under static conditions in the garage. This is useful for determining how much shock travel is available before a bump stop is engaged on the shock.

### SPRING DEFLECTION

Spring Deflection shows how much the spring has compressed from its unloaded length. This can be used to see spring preload under static conditions and compare it against other corners of the car, with higher values representing more preload on a given spring.

### SPRING PERCH OFFSET

Used to adjust ride height and corner weight, adjusting this setting applies a preload to the spring under static conditions. Decreasing the value increases preload on the spring, adding weight to its corner and increasing the ride height at that corner. Increasing the value does the opposite, reducing height and weight on a given corner. These should be adjusted in pairs (left and right, for example) or with all four spring preload adjustments in the car to prevent crossweight changes while adjusting ride height.



## SPRING RATE

Spring Rate changes how stiff the spring is, represented in a force per unit of displacement. Primarily responsible for maintaining ride height and aerodynamic attitude under changing wheel loads, stiffer springs will maintain the car's aero platform better while sacrificing mechanical grip. Softer springs will deal with bumps better and increase mechanical grip, but will cause the car's aerodynamic platform to suffer. Due to homologation rules, rear spring rates must be symmetrical across the rear axle and can only be changed in pairs.

## LOW-SPEED COMPRESSION DAMPING

Low Speed Compression affects how resistant the shock is to compression (reduction in length) when the shock is moving at relatively low speeds, usually in chassis movements as a result of driver input (steering, braking, & throttle) and cornering forces. Higher values will increase compression resistance and transfer load onto a given tire under these low-speed conditions more quickly, inducing understeer on throttle application.

## HIGH-SPEED COMPRESSION DAMPING

High Speed Compression affects the shock's behavior in high-speed travel, usually attributed to curb strikes and bumps in the track's surface. Higher compression values will cause the suspension to be stiffer in these situations, while lower values will allow the suspension to absorb these bumps better but may hurt the aerodynamic platform around the track.

## HIGH-SPEED COMPRESSION SLOPE

The Compression Damping Slope setting controls the overall shape of the high-speed compression side of the shock. Lower slope values produce a flatter, more digressive curve while higher values result in a more linear and aggressive compression graph. The value of the slope setting is very important in controlling bump absorption at high shock velocities and controlling the aerodynamic platform. A lower slope will be helpful for rougher tracks in absorbing bumps and sharp impacts such as curbs, while a higher slope will keep the suspension more rigid. It's important to understand that these settings will affect the range the High-Speed Compression will have, with higher slope values producing a higher overall force for high-speed compression.

## LOW-SPEED REBOUND DAMPING

Low-speed Rebound damping controls the stiffness of the shock while extending at lower speeds, typically during body movement as a result of driver inputs. Higher rebound values will resist expansion of the shock, lower values will allow the shock to extend faster. Higher rebound values can better control aerodynamic attitude but can result in the wheel being unloaded when the suspension can't expand enough to maintain proper contact with the track. When tuning for handling, higher rear low-speed rebound can increase off-throttle mechanical understeer (but reduce rear-end lift) while lower values will maintain rear end grip longer, helping to reduce oversteer, but will allow more rear end lift under deceleration. Excessive rear rebound can lead to unwanted oscillations due to the wheel bouncing off of the track surface instead of staying in contact.

## HIGH-SPEED REBOUND DAMPING

High-speed rebound adjusts the shock in extension over bumps and curb strikes. Higher values will reduce how quickly the shock will expand, while lower values will allow the shock to extend more easily. Despite not having as much of an effect on handling in result to driver inputs, High-speed rebound can produce similar results in terms of aerodynamic control and uncontrolled oscillations if set improperly.

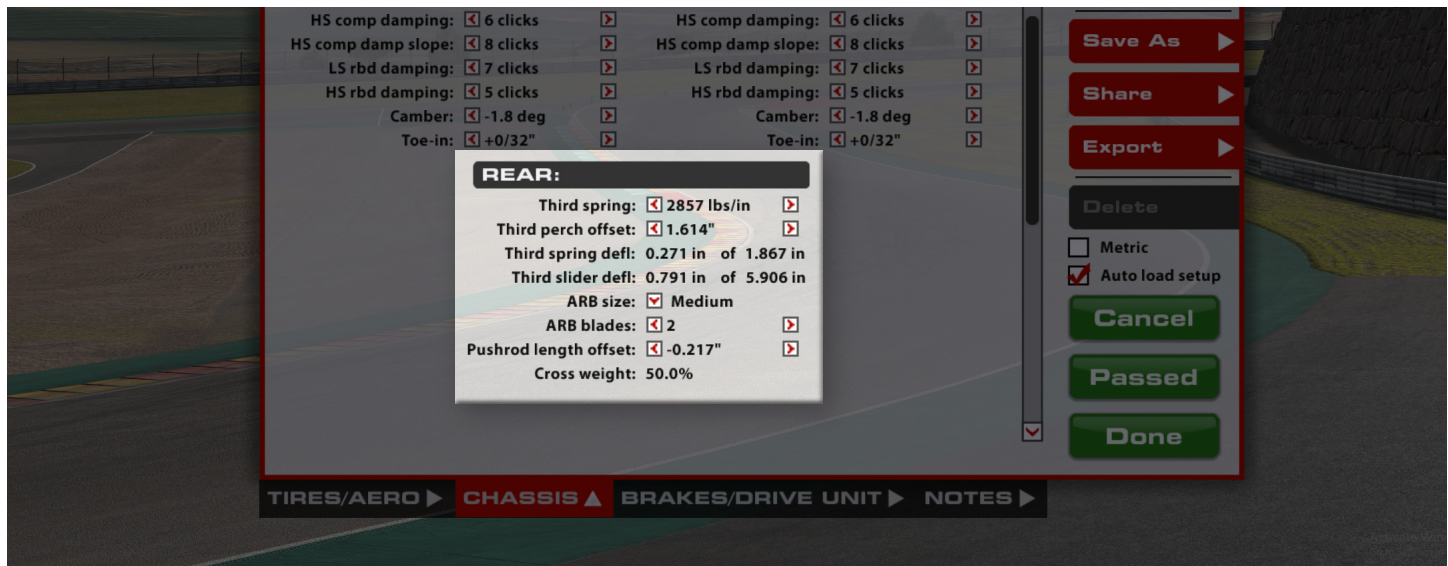
## CAMBER

Camber is the vertical angle of the wheel relative to the center of the chassis. Negative camber is when the top of the wheel is closer to the chassis centerline than the bottom of the wheel, positive camber is when the top of the tire is farther out than the bottom. Due to suspension geometry and corner loads, negative camber is desired on all four wheels. Higher negative camber values will increase the cornering force generated by the tire, but will reduce the amount of grip the tire will have under braking. Excessive camber values can produce very high cornering forces but will also significantly reduce tire life, so it is important to find a balance between life and performance. Higher rear camber values can increase cornering stability but reduce stability under braking.

## TOE-IN

Toe is the angle of the wheel, when viewed from above, relative to the centerline of the chassis. Toe-in is when the front of the wheel is closer to the centerline than the rear of the wheel, and Toe-out is the opposite. On the rear end, adding toe-in will increase straight-line stability but may hurt how well the car changes direction.

## REAR



### THIRD SPRING

The weight underneath each tire under static conditions in the garage. Correct weight arrangement around the car is crucial for optimizing a car for a given track and conditions. Individual wheel weight adjustments and crossweight adjustments are made via the Spring Perch Offset setting.

### THIRD PERCH OFFSET

The Third Perch Offset is used to adjust preload on the rear Third Spring. This is one of two methods to adjust ride height through the rear Third Spring element, with lower values preloading the spring more and raising front ride heights. Conversely, higher values will unload the spring and lower front ride heights.

### THIRD SPRING DEFLECTION

The Slider Deflection is how far the slider mechanism the Third Spring is mounted on has compressed from fully extended. Similar to a shock but without any damping forces produced, this doesn't influence the suspension's behavior.

### THIRD SLIDER DEFLECTION

The Slider Deflection is how far the slider mechanism the Third Spring is mounted on has compressed from fully extended. Similar to a shock but without any damping forces produced, this doesn't influence the suspension's behavior.

### ARB SIZE

The Slider Deflection is how far the slider mechanism the Third Spring is mounted on has compressed from fully extended. Similar to a shock but without any damping forces produced, this doesn't influence the suspension's behavior.



## ARB BLADES

The configuration of the Anti-Roll Bar arms, or “blades”, can be changed to alter the overall stiffness of the ARB assembly. Higher values transfer more force through the arms to the ARB itself, increasing roll stiffness in the rear suspension and producing the same effects, albeit on a smaller scale, as increasing the diameter of the Anti-roll bar. Conversely, lower values reduce the roll stiffness of the rear suspension and produce the same effects as decreasing the diameter of the Anti-roll bar. These blade adjustments can be thought of as fine-tuning adjustments between Anti-roll bar diameter settings.

## PUSHROD LENGTH OFFSET

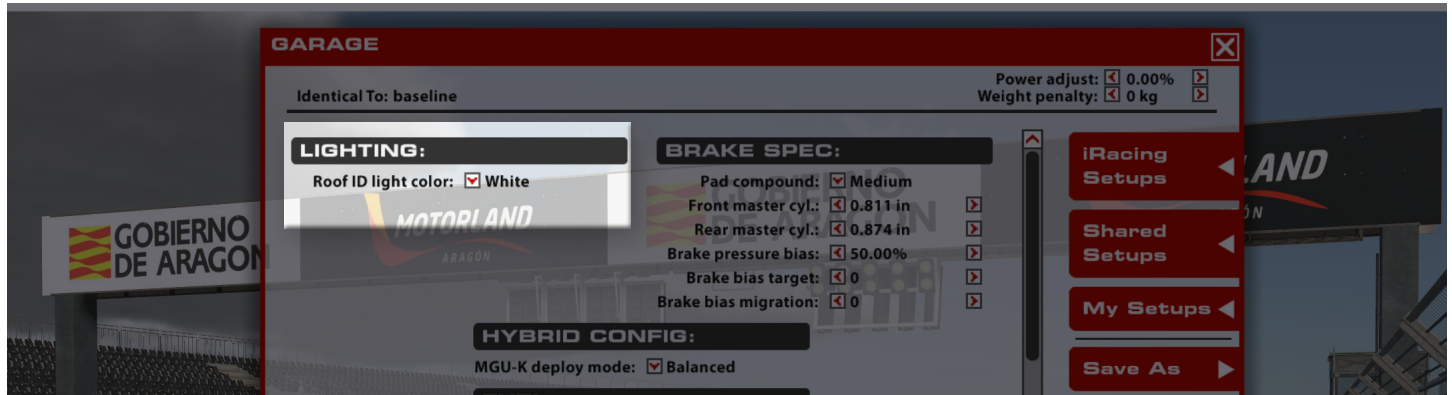
This adjusts the length of both front suspension pushrods together, shown as an offset from a baseline length figure. This is a great way to adjust front ride height without altering the preload on the Heave Spring or either front Torsion Bars.

## CROSS WEIGHT

Cross weight is the amount of weight on the car's Left-Rear and Right-Front tires relative to the entire weight of the car, displayed in percent. This is adjusted via the corner spring preload adjustments (Front Torsion Bar Turns and Rear Spring Perch Offset). This value should be around 50% for most tracks.

# Brakes/Drive Unit

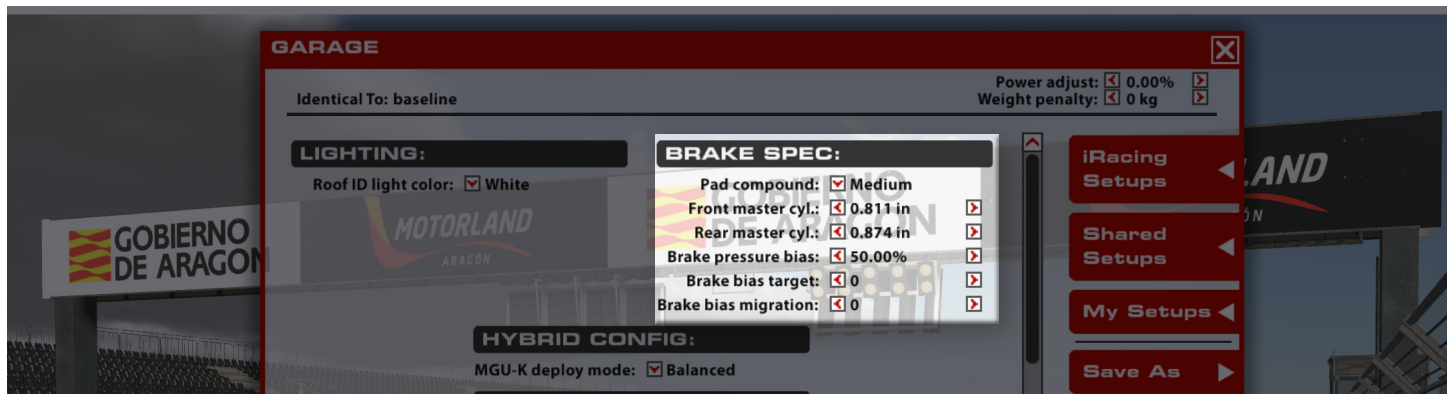
## LIGHTING



### ROOF ID LIGHT COLOR

This setting will change the color of the small LED cluster on the roof of the car. This is strictly a visual change for identifying the car in nighttime conditions and has no effect on the vehicle's handling.

## BRAKE SPEC



### PAD COMPOUND

The vehicle's braking performance can be altered via the Brake Pad Compound. The "Low" setting provides the least friction, reducing the effectiveness of the brakes but allowing for better brake pressure modulation, while "Medium" and "High" provide more friction and increase the effectiveness of the brakes while increasing the risk of a brake lockup.

### FRONT MASTER CYLINDER

The Front Brake Master Cylinder size can be changed to alter the line pressure to the front brake calipers. A larger master cylinder will reduce the line pressure to the front brakes, which will shift the brake bias rearwards and increase the pedal effort required to lock the front wheels. A smaller master cylinder will increase brake line pressure to the front brakes, shifting brake bias forward and reducing required pedal effort to lock the front wheels.

## REAR MASTER CYLINDER

The Rear Brake Master Cylinder size can be changed to alter the line pressure to the rear brake calipers. A larger master cylinder will reduce the line pressure to the rear brakes, which will shift the brake bias forwards and increase the pedal effort required to lock the rear wheels. A smaller master cylinder will increase brake line pressure to the rear brakes, shifting brake bias rearward and reducing required pedal effort to lock the rear wheels.

## BRAKE PRESSURE BIAS

Brake Bias is the percentage of braking force that is being sent to the front brakes. Values above 50% result in more pressure being sent to the front, while values less than 50% send more force to the rear. This should be tuned for both driver preference and track conditions to get the optimum braking performance for a given situation.

## BRAKE BIAS TARGET

Sets the brake bias with an offset from the Brake Pressure Bias. Positive values will set the brake bias higher than the Pressure Bias setting by 0.5% per click, negative values will set the bias lower than the Pressure Bias by 0.5% per click. For example, if the Brake Pressure Bias is 50% and the Target is "2", the actual brake bias will be set to 51%.

## BRAKE BIAS MIGRATION

This sets how far forward or rearward the brake bias will shift with brake pedal travel. Positive values will migrate the bias forward and increase the maximum brake bias by 1% per click, negative values will migrate it rearward and reduce the minimum brake bias by 1%.

## HYBRID CONFIG



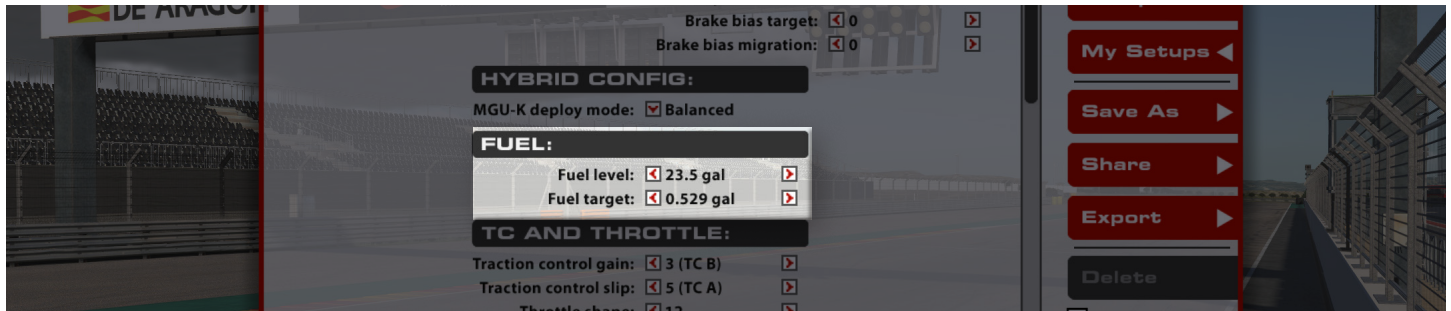
### MGU-K DEPLOY MODE

The Hybrid power system on the Cadillac V-Series.R GTP can be set to one of five modes to change the target battery State of Charge (SoC) after each lap. Each of these modes will use varying levels of energy throughout a lap to reach a target, and thus some will produce more power over the course of a lap and faster lap times at the cost of discharging the battery.

- **No Deploy** - In the "No Deploy" mode, the Hybrid system will not use any energy stored in the battery. This essentially disables the Hybrid drive system and will only charge the battery throughout a lap. This is only available in Qualifying and Test sessions and is used to fully charge the battery before switching to Qual mode.
- **Qual** - This mode is intended to be used on flying laps during qualifying sessions and will attempt to use all of the battery charge during a lap. This is only available during Qualifying and Test sessions and should be preceded by the No Deploy setting on outlaps and warmup laps to ensure the battery is fully charged before switching to the Qual mode.
- **Attack** - Attack mode reduces the target State of Charge to use more power during race sessions to help with overtaking. Generally the laptime gain from this mode is not enough to offset the loss in pace from having to recharge and recover from using Attack mode, so it should be used only when it is absolutely necessary to complete an overtake. This mode can also be used on the final lap for a burst of speed since the battery is no longer needed. This mode is only available for Practice, Race, and Test sessions.
- **Balanced** - The Balanced mode is the primary Race mode for the Hybrid system. This mode will attempt to deploy electrical charge to reduce lap times as much as possible while still maintaining a reasonable State of Charge over the duration of a lap. At the start of a session, it will take a few flying laps for the Hybrid system to learn the track and optimize deployment for the best lap times, and this mode is only available in Practice, Race, and Test sessions.
- **Build** - The Build mode will attempt to build battery charge as quickly as possible in the event of a low battery charge or if it is needed prior to switching to Attack mode. Note that this will compromise lap times significantly compared to Balanced, and it's important to switch back to Balanced mode once the battery has charged to avoid losing harvested energy and to prevent unnecessary loss in pace. This mode is only available in Practice, Race, and Test sessions.



## FUEL



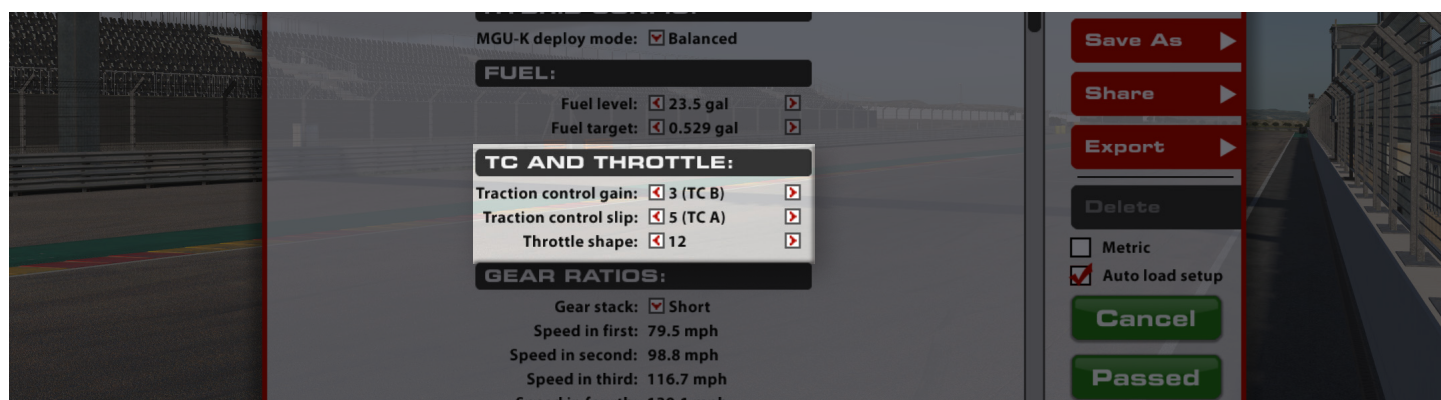
### FUEL LEVEL

Fuel level is the amount of fuel in the fuel tank when the car leaves the garage.

### FUEL TARGET

The dash display's Fuel Target value can be set via the garage's Fuel Target setting. This will have no effect on the chassis handling and only changes what is shown on the dash.

## TC AND THROTTLE



### TRACTION CONTROL GAIN

Gain is the amount of intervention the Traction Control will exert when wheel spin is detected. Higher values result in a more aggressive throttle cut to control wheelspin.

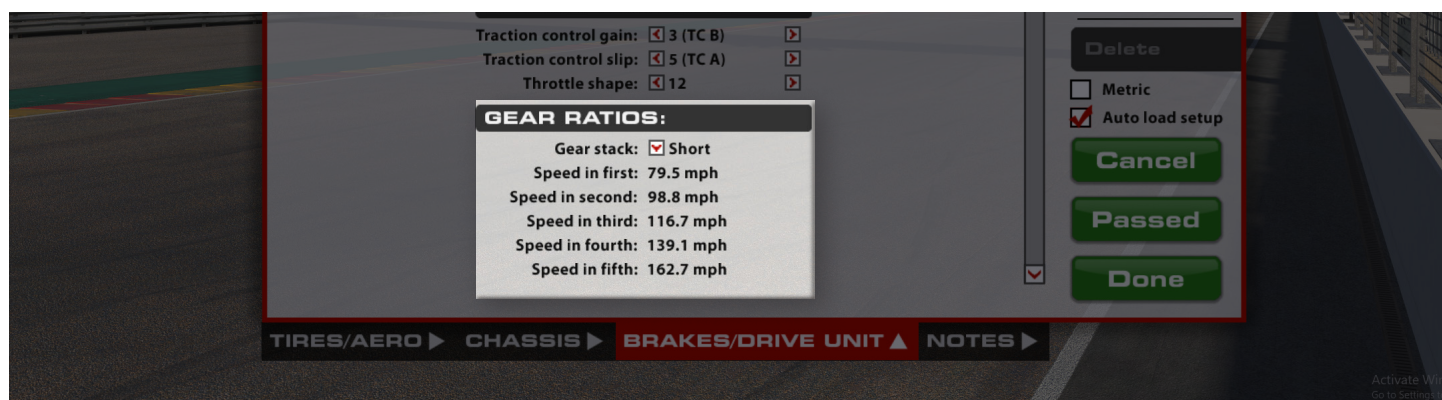
### TRACTION CONTROL SLIP

Slip is how sensitive the Traction Control system will be to wheelspin. Higher values will activate the Traction Control system with smaller amounts of wheelspin, while lower values will allow slightly more wheelspin prior to activating the system.

### THROTTLE SHAPE

The Throttle Shape setting will adjust how linear the torque delivery is based on the throttle pedal position. Setting “1” is purely linear, with a given percent of throttle delivering a similar percentage of max torque (25% throttle = 25% torque). As settings are increased the torque delivery becomes more non-linear, similar to a butterfly-style throttle: less torque increase at very low and very high throttle percentage and more torque increase in the throttle’s mid-range. This will change the feel of the car when throttle is initially applied and is a good tool for drivers with various driving styles.

## GEAR RATIOS



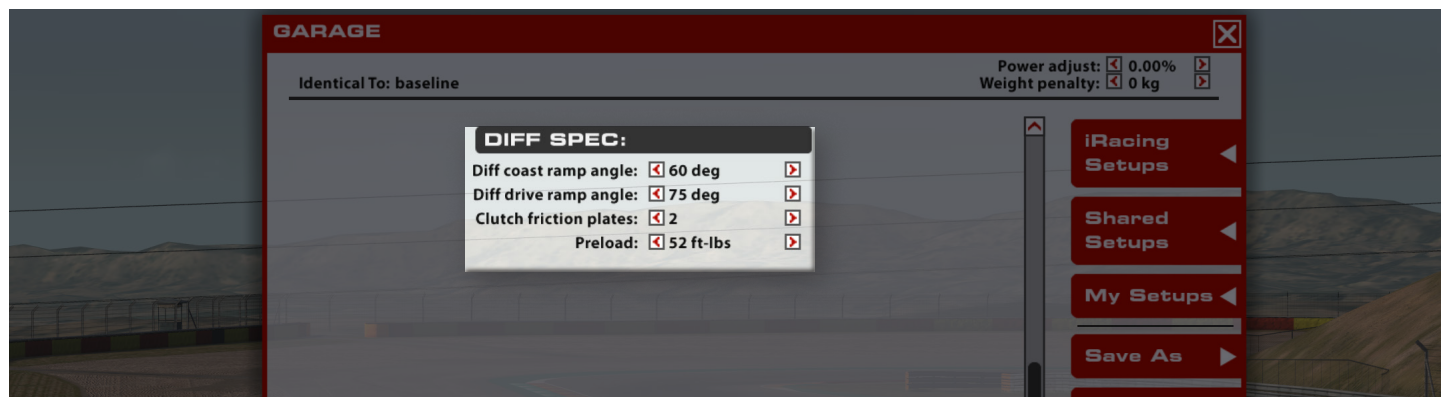
### GEAR STACK

Gear Stack changes the gear ratios in the transmission. Two choices are available: Short and Long. The Short setting will choose a more acceleration-focused gear set for tracks with shorter straights or slower corners, while the Long option will choose gears more suited to high-speed tracks with long straights.

### GEAR SPEEDS

Each of the transmission's seven forward gears will show the approximate ground speed at which the engine will reach maximum RPM. These values will change based on which Gear Stack is selected, but the true maximum speed may differ slightly due to on-track conditions.

## DIFF SPEC



### DIFF COAST/DRIVE RAMP ANGLES

Coast and Drive Ramp Angles affect the force exerted by the differential to keep both driven tires locked together under acceleration. Lower values produce more locking force, and more locking force increases understeer during braking and acceleration phases. Higher values will produce less locking force and induce oversteer in these situations.

### CLUTCH FRICTION PLATES

The number of clutch faces affect how much overall force is applied to keep the differential locked. Treated as a multiplier, adding more faces produces increasingly more locking force.

### PRELOAD

The differential can be set with a static load applied. Higher values produce more locking force in the differential in all conditions, producing more understeer under acceleration and deceleration. This value will also affect mid-corner performance, with higher values not allowing the differential to unlock as much, increasing mid-corner understeer.