dallara

USER MANUAL

DALLARA P217 LMP2

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DEAR iRACING USER,

Congratulations on your purchase of the Dallara P217 LMP2! From all of us at iRacing, we appreciate your support and your commitment to our product. We aim to deliver the ultimate sim racing experience, and we hope that you'll find plenty of excitement with us behind the wheel of your new car!

Dallara's return to prototype racing for the first time since the original Audi R18 TDI, the P217 made its debut in 2017. The car competes in the LMP2 class in both the FIA World Endurance Championship and European Le Mans Series, while a Daytona Prototype International-spec version of the car races at the top level of the IMSA WeatherTech SportsCar Championship with Cadillac branding as part of a relationship with General Motors.

The LMP2 P217 is powered by a 4.2-liter Gibson V8, and features a six-speed sequential paddle shift transmission by Xtrac. Drivers who raced in the car in its 24 Hours of Le Mans debut included Formula 1 legend Rubens Barrichello, former Le Mans winner Jan Lammers, and IndyCar veteran Mikhail Aleshin. Other Formula 1 veterans who have driven the car at Le Mans include Felipe Nasr, Sergey Sirotkin, and Giedo van der Garde.

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

DOUBLE WISHBONE INDEPENDENT PUSHROD SUSPENSION

LENGTH	WIDTH	WHEELBASE	DRY WEIGHT	WET WEIGHT WITH DRIVER
4745 mm	**1900 mm**	**3010 mm**	**950 kg**	**1081 kg**
186.8 in	74.8 in	118.5 in	2094 lbs	2384 lbs

POWER UNIT

NATURALLY ASPIRATED GIBSON GK-428 V8

DISPLACEMENT	RPM LIMIT	TORQUE	POWER
4.2 Liters	**8500**	**355 lb-ft**	**540 bhp**
256 CID	8000 in 1st-5th	482 Nm	403 kW

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.

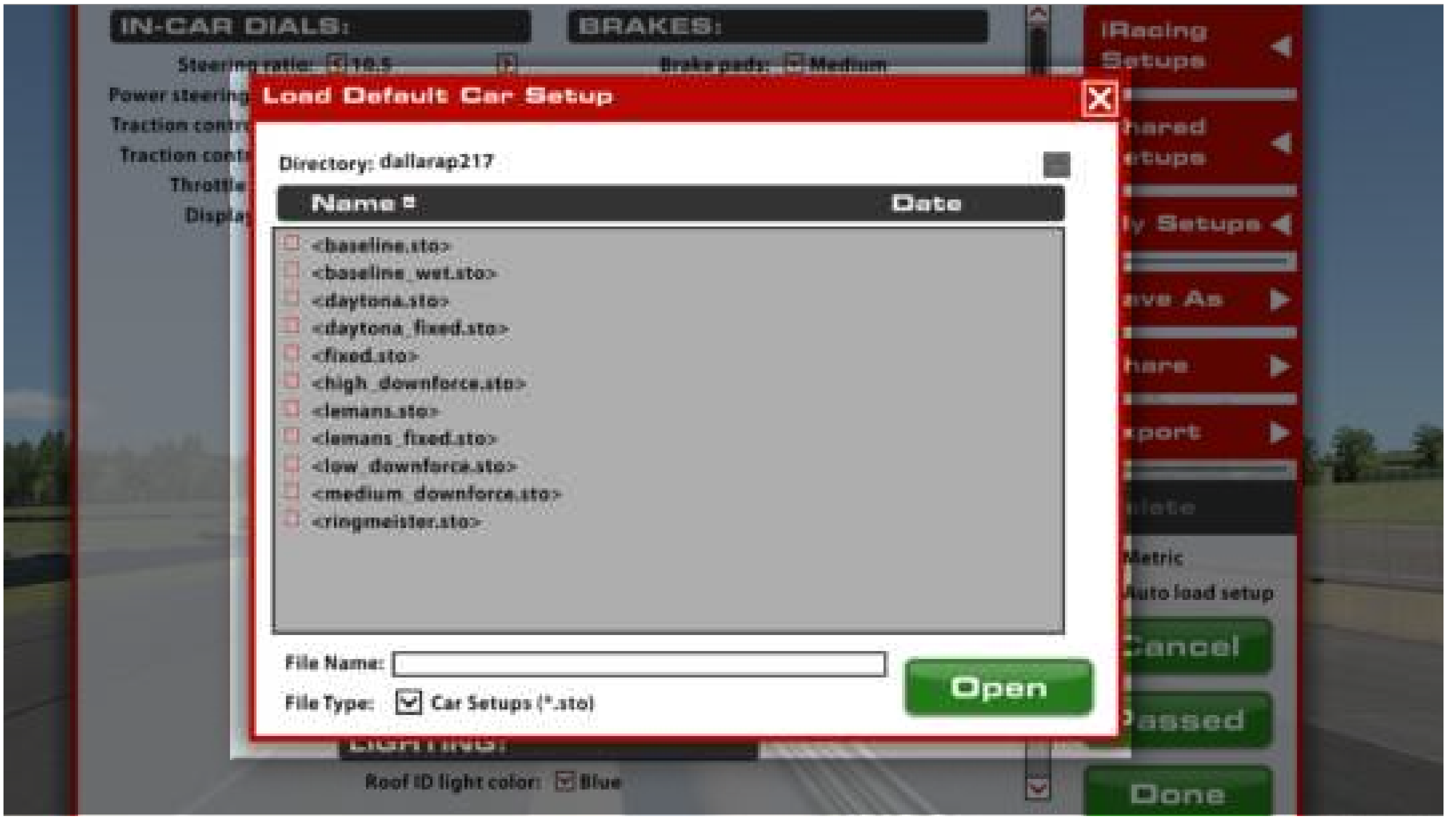
After you have selected an appropriate setup, get on track and focus on making smooth and consistent laps, identifying the proper racing line and experiencing tire wear and handling trends over a number of laps.

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

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 in either direction. 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. If that is the case, the gear change command will simply be ignored.

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

DASH PAGE 1

Left Cluster	
Speed	Vehicle speed in kph or mph
Live Fuel	Fuel level in the tank in liters or gallons
Brake Balance	% Front Brake Bias
Oil T	Engine Oil Temperature in °C or °F
Water T	Engine Water Temperature in °C or °F

Right Cluster	
Lap Fuel	Laps remaining at current fuel level
Delta	Time difference to session best lap time
Lap Time	Current lap time
Last	Previously completed lap time

Center	
Gear Indicator	Currently selected gear, shown in the center of the display
RPM	located at the top of the display above the gear indicator

Bottom	
Slip	TC Slip Setting
EPS	Power Steering Setting (pit change only)
TPS	Throttle Shape setting
ENG	Engine Mode Number. This value is not changeable
Gain	TC Slip setting

DASH PAGE 2

Left Cluster	
Press (psi)	Brake (Line) Pressure
Balance	% Front Brake Bias
°F	Brake Rotor Surface Temperature (°F)

Right Cluster	
Tires	Tire Pressure (psi)
°F	Tire Surface Temperature (°F)

Center	
Gear Indicator	Currently selected gear, shown in the center of the display
RPM	located at the top of the display above the gear indicator

Bottom	
Slip	TC Slip Setting
EPS	Power Steering Setting (pit change only)
TPS	Throttle Shape setting
ENG	Engine Mode Number. This value is not changeable
Gain	TC Slip setting

DASH PAGE 3

Left Cluster	
Battery Voltage (V)	Battery Voltage output in Volts
Oil Press	Engine Oil Pressure in bar or psi
Oil Temp	Engine Oil Temperature in °C or °F

Right Cluster	
Lap Time	Current Lap Time
Water Press	Engine Water Pressure in bar or psi
Water Temp	Engine Water Temperature in °C or °F

Center	
Gear Indicator	Currently selected gear, shown in the center of the display
RPM	located at the top of the display above the gear indicator

Bottom	
Slip	TC Slip Setting
EPS	Power Steering Setting (pit change only)
TPS	Throttle Shape setting
ENG	Engine Mode Number. This value is not changeable
Gain	TC Slip setting

PIT LIMITER

Left Cluster	
Pit Lane	Vehicle speed in kph or mph
Clutch P	Clutch pedal travel percent
Balance	% Front Brake Bias

Right Cluster	
Throttle	Throttle travel percent
Tires P	Tire pressure in bar or psi
ECT	Engine Water Temperature in °C or °F

Center	
Gear Indicator	Currently selected gear, shown in the center of the display
RPM	located at the top of the display above the gear indicator

WHEEL LOCKUP WARNING LIGHTS

Two clusters of three status lights are placed in the upper corners of the display areas, with the inner two lights each representing the status of a wheel on that side of the vehicle. Whenever a wheel is locked under heavy braking, its corresponding status light will illuminate red, with the left-front wheel shown by the upper-left light, the right-front wheel shown by the upper-right light, and so forth.

TRACTION CONTROL ACTIVATION LIGHTS

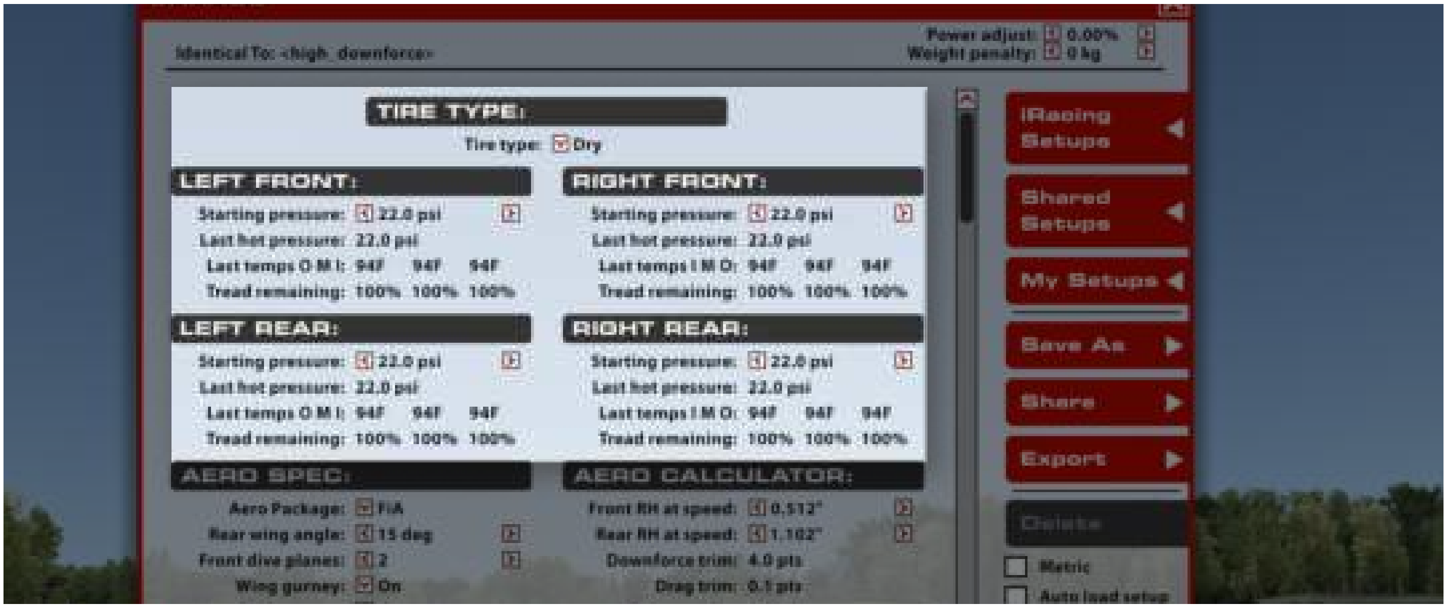
The outermost status lights at the top of the dash display area show when the Traction Control system is active and attempting to control wheel spin. Whenever the system is activated, these lights will both illuminate in red.

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

TIRE DATA



TIRE TYPE

Selects which type of tire is installed on the car when loaded into the world. Dry, or slick, tires are used for dry racing conditions while Wet tires are intended for raining and wet track conditions.

COLD PRESSURE / STARTING PRESSURE

The air pressure in the tires when the car is loaded into the world. Lower pressures will provide more grip but will produce more rolling drag and build temperature faster. Higher pressures will feel slightly more responsive and produce less rolling drag, but will result in less grip. Generally, higher pressures are preferred at tracks where speeds are higher while lower pressures work better at slower tracks where mechanical grip is important.

LAST HOT PRESSURE

When the car returns to the garage after an on-track stint, the tire pressure will be displayed as Hot Pressure. The difference between cold and hot pressure is a good way to see how tires are being loaded and worked while on track. Tires seeing more work will build more pressure, and paying attention to which tires are building more pressure and adjusting cold pressure to compensate can be crucial for optimizing tire performance.

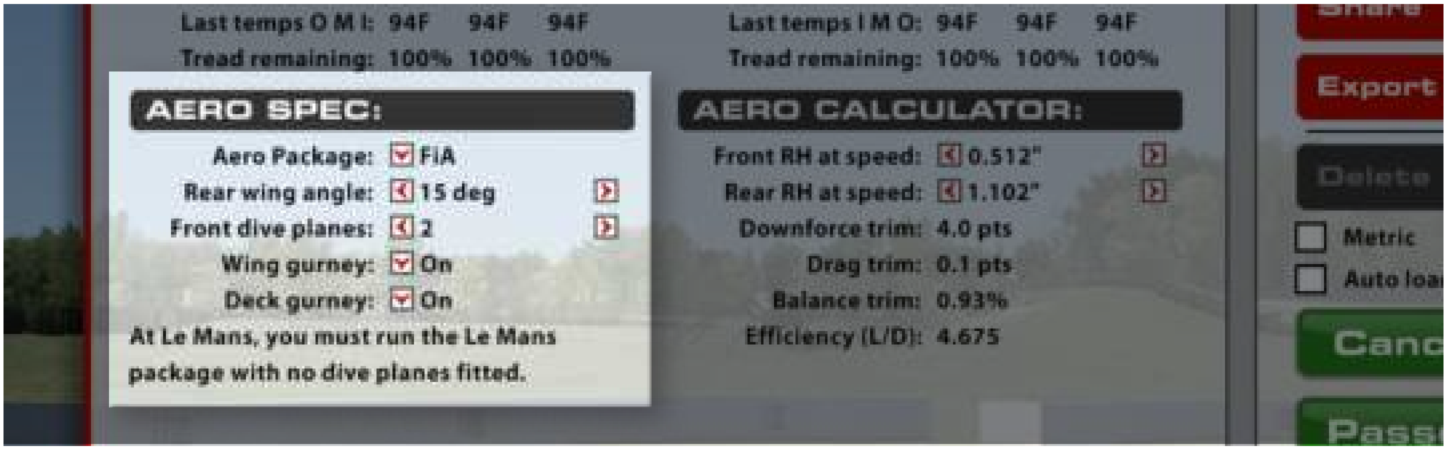
LAST TEMPS

The tire carcass temperatures (measured within the tread) are displayed after the car returns from the track. These temperatures are an effective way to determine how much work or load a given tire is experiencing while on track. Differences between the inner and outer temperatures can be used to tune individual wheel alignment and the center temperatures can be compared to the outer temperatures to help tune tire pressure.

TREAD REMAINING

The amount of tread on the tire, displayed as a percentage of a new tire, is shown below the tire temperatures. These values are good for determining how far a set of tires can go before needing to be replaced, but don't necessarily indicate an under- or over-worked tire in the same way temperatures will.

AERO SPEC



AERO PACKAGE

The Dallara P217 will run in one of two aerodynamic configurations based on the track. At all tracks excluding Le Mans, the car will default to the standard FiA specification. At the Circuit de La Sarthe, the car will default to a special low-downforce configuration titled “Le Mans”. This setting cannot be changed.

REAR WING ANGLE

The Rear Wing Angle setting changes the angle of attack of the rear wing. Increasing the angle will increase the amount of downforce produced and move the aero balance rearward but will increase the amount of drag the wing produces. Reducing the angle will reduce overall downforce and shift aero balance forward, but will reduce drag and allow for a higher top speed. This angle is expressed as a reference measurement, not an absolute angle relative to the ground.

FRONT DIVE PLANES

The Front Dive Planes are aerodynamic surfaces attached to the front fenders beneath the headlights. These can dramatically increase the downforce produced at the front of the car while shifting the aero balance forward but will increase drag slightly. Increasing the number of dive planes will increase overall downforce and shift aero balance forward (more oversteer in high-speed corners) but will increase drag significantly.

When the Le Mans Aero Package is in use, the dive planes will be reduced and locked to zero.

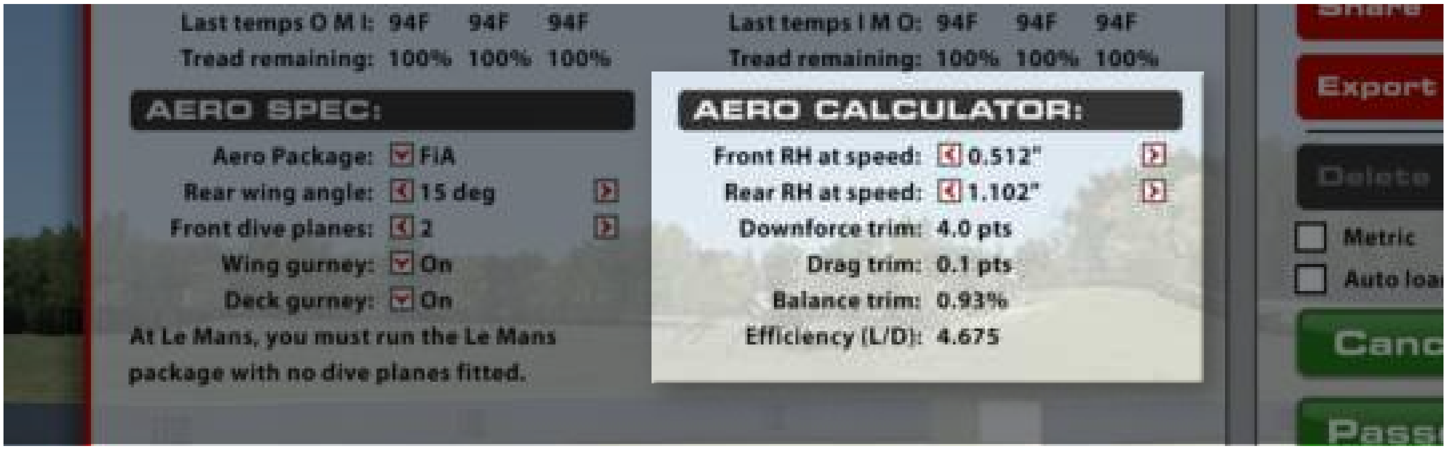
WING GURNEY

The rear wing Gurney Flap is a small, vertical tab attached to the rear of the wing oriented perpendicular to the wing. Adding a gurney flap will increase the downforce generated by the wing along with an increase in drag.

DECK GURNEY

Similar to the rear wing Gurney Flap, the Deck Gurney is a small tab attached to the rear of the main bodywork, between the rear wheels. Adding a Gurney to the deck will increase rear downforce but will increase drag.

AERO BALANCE CALCULATOR



The Aero Calculator is a tool provided to aid in understanding the shift in aerodynamic balance associated with adjustment of the rear wing setting and front and rear ride heights. It is important to note that the values for front and rear ride height displayed here DO NOT result in any mechanical changes to the car itself, however, changes to the rear wing angle here WILL be applied to the car.
This calculator is a reference tool ONLY.

FRONT 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 Ride height via telemetry at any point on track and input that value into the "Front RH at Speed" setting.

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 Rear Ride height via telemetry at any point on track and input that value into the "Front RH at Speed" setting.

DOWNFORCE TRIM

The Downforce Trim is a numerical representation of how much the baseline aero map has been altered with the car's current configuration. Higher values indicate higher amounts of downforce while lower values indicate an decrease in downforce.

DRAG TRIM

Similar to the Downforce Trim, the Drag Trim is a representation of how much drag is being generated by the vehicle. Higher values indicate a higher amount of drag on the car, lower values indicate less drag.

BALANCE TRIM

The Balance Trim value indicates how much the aerodynamic balance has shifted from the base aero map based on the car's current configuration and the At Speed RH settings. Higher values indicate a more forward aero balance (oversteer), lower values indicate a rearward shift towards more understeer.

EFFICIENCY (L/D)

The Efficiency 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 working more efficiently. 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 RATE

The Heave Spring is a suspension element configured to provide resistance only in vertical suspension movement without affecting roll stiffness, used to control increasing aerodynamic loads and maintain the proper aerodynamic attitude around a circuit without sacrificing the grip caused by stiffer corner springs. The front end's heave spring is crucial in maintaining and controlling splitter height around a circuit to maximize the downforce produced by the front bodywork.

The Heave Spring can be set to either a progressive or linear setting. The Soft, Medium, and Hard settings are all non-linear bump rubbers, becoming stiffer in rate as they compress. Linear springs are represented by a rate value. Stiffer Heave Spring rates will control the chassis attitude better and increase aerodynamic stability and performance, but can hurt mechanical grip over bumpy surfaces.

HEAVE SPRING GAP

The Heave Spring Gap displays how much the Heave element must compress before the spring is engaged. Having a positive gap will allow the suspension to travel more before engaging the spring, useful to help the car drop quickly under building aerodynamic loads. Lower values will control the aerodynamic attitude better, but can hurt mechanical grip if the spring is engaged too early. Preloading the Heave Spring (negative value) is not allowed.

ARB STIFFNESS

The ARB (Anti-Roll Bar) stiffness influences the behavior of the front suspension in roll, such as when navigating a corner. Increasing the ARB stiffness 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 for the driver. Conversely, reducing the ARB stiffness 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 BLADE POSITION

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 ARB Stiffness. Conversely, lower values reduce the roll stiffness of the front suspension and produce the same effects as decreasing the ARB stiffness. These blade adjustments can be thought of as fine-tuning adjustments between ARB stiffness 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.

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.

RIDE HEIGHT

Distance from ground to the bottom of the front skid blocks projected outward to the edges of the reference surface. 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 front ride height will decrease front downforce as well as increase overall downforce, but will allow for more weight transfer across the front axle when cornering. Conversely, reducing ride height will increase front and overall downforce, but reduce the weight transfer across the front axle.

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 SIZE

Similar to an Anti-Roll Bar in how force is transferred to the suspension, 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.

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.

RIDE HEIGHT

Distance from ground to the bottom of the rear skid blocks projected outward to the edges of the reference surface. 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 rear ride height will increase front downforce as well as slightly decreasing overall downforce, but will allow for more weight transfer across the rear axle when cornering resulting in an increase in rear mechanical grip. Conversely, reducing ride height will reduce front and overall downforce, but reduce the weight transfer across the rear axle, resulting in a decrease in mechanical grip.

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 the 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.

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

Camber 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 RATE

The rear Third Spring is a suspension element configured to provide resistance only in vertical suspension movement without affecting roll stiffness, used to control increasing aerodynamic loads and maintain the proper aerodynamic attitude around a circuit without sacrificing the grip caused by stiffer corner springs. The rear end's third spring is crucial in maintaining and controlling splitter height around a circuit to maximize the downforce produced by the front bodywork.

Like the front Heave Spring, the rear Third Spring can be set to either a progressive or linear setting. The Soft, Medium, and Hard settings are all non-linear bump rubbers, becoming stiffer in rate as they compress. Linear springs are represented by a rate value. Stiffer Third Spring rates will control the chassis attitude better and increase aerodynamic stability and performance, but can hurt mechanical grip over bumpy surfaces.

THIRD SPRING GAP

The Third Spring Gap displays how much the Third Spring element must compress before the spring is engaged. Having a positive gap will allow the suspension to travel more before engaging the spring, useful to help the car drop quickly under building aerodynamic loads. Lower values will control the aerodynamic attitude better, but can hurt mechanical grip if the spring is engaged too early. Preloading the Third Spring (negative value) is not allowed.

ARB STIFFNESS

The ARB (Anti-Roll Bar) stiffness influences the behavior of the rear suspension in roll, such as when navigating a corner. Increasing the ARB stiffness will increase the roll stiffness of the rear suspension, resulting in less body roll but increasing mechanical oversteer. This can also, in some cases, lead to a more responsive steering feel for the driver. Conversely, reducing the ARB stiffness will soften the suspension in roll, increasing body roll but decreasing mechanical oversteer. This can result in a less-responsive feel, but grip across the rear axle will increase.

ARB BLADE POSITION

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 ARB stiffness. Conversely, lower values reduce the roll stiffness of the rear suspension and produce the same effects as decreasing the ARB stiffness. These blade adjustments can be thought of as fine-tuning adjustments between ARB stiffness settings.

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). Typically this should be kept as close to 50% as possible to avoid asymmetrical handling issues.

DAMPERS

LOW SPEED COMPRESSION

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.

For shocks on the front end, increasing Low-Speed Compression can induce understeer under braking and at turn-in, reducing it will reduce understeer. Increasing Low-Speed Compression on the rear of the car will increase traction on initial throttle application, while reducing it can reduce on-throttle understeer.

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.

HS COMPRESSION SLOPE (BLOW OFF)

The High-Speed Compression 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, which can be helpful in resisting compression and raising the chassis above a bump in the track surface. 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.

LS REBOUND

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.

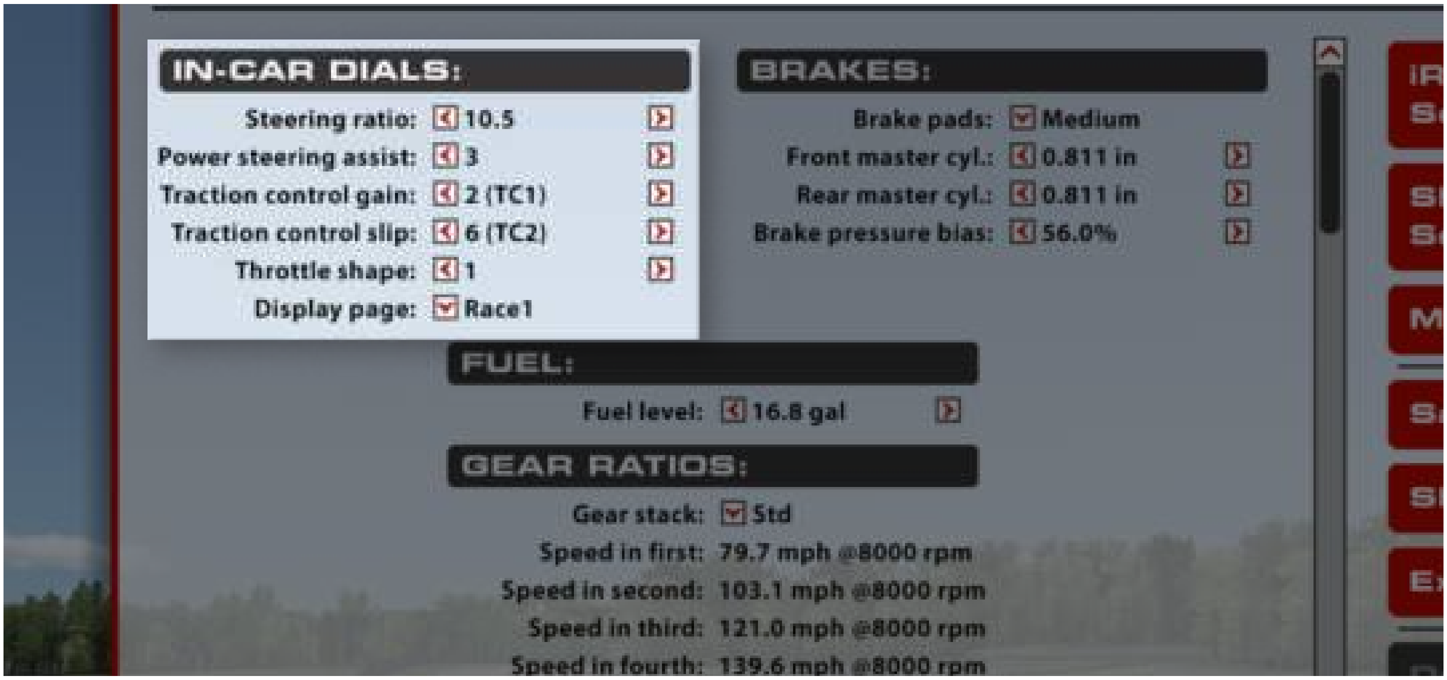
On the front of the car, higher Low-Speed Rebound can induce understeer on throttle application while higher settings on the rear of the car can induce understeer under braking.

HS REBOUND

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.

IN-CAR/SYSTEMS

IN-CAR DIALS



STEERING RATIO

The Steering Ratio is a numerical value for how fast the steering response is in the vehicle's steering box. This ratio can be thought of as the degrees of steering input needed to produce one degree of turn on the steering box output shaft. Two options are available: 10.5 and 11.6. The 10.5 steering ratio will provide a faster steering response while the 11.6 will be slightly slower to respond. This is often a driver preference and has no real impact on chassis balance.

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.

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. This value can be changed in the F8 black box while driving.

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. This value can be changed in the F8 black box while driving.

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.

DISPLAY PAGE

Sets the default display page on the steering wheel display when the car is loaded into the world.

BRAKES

BRAKE PADS

Braking performance can be altered via the Brake Pad Compound. The “Low” setting provides the least friction, reducing the effectiveness of the brakes, 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.

FUEL & GEAR RATIOS

FUEL LEVEL

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

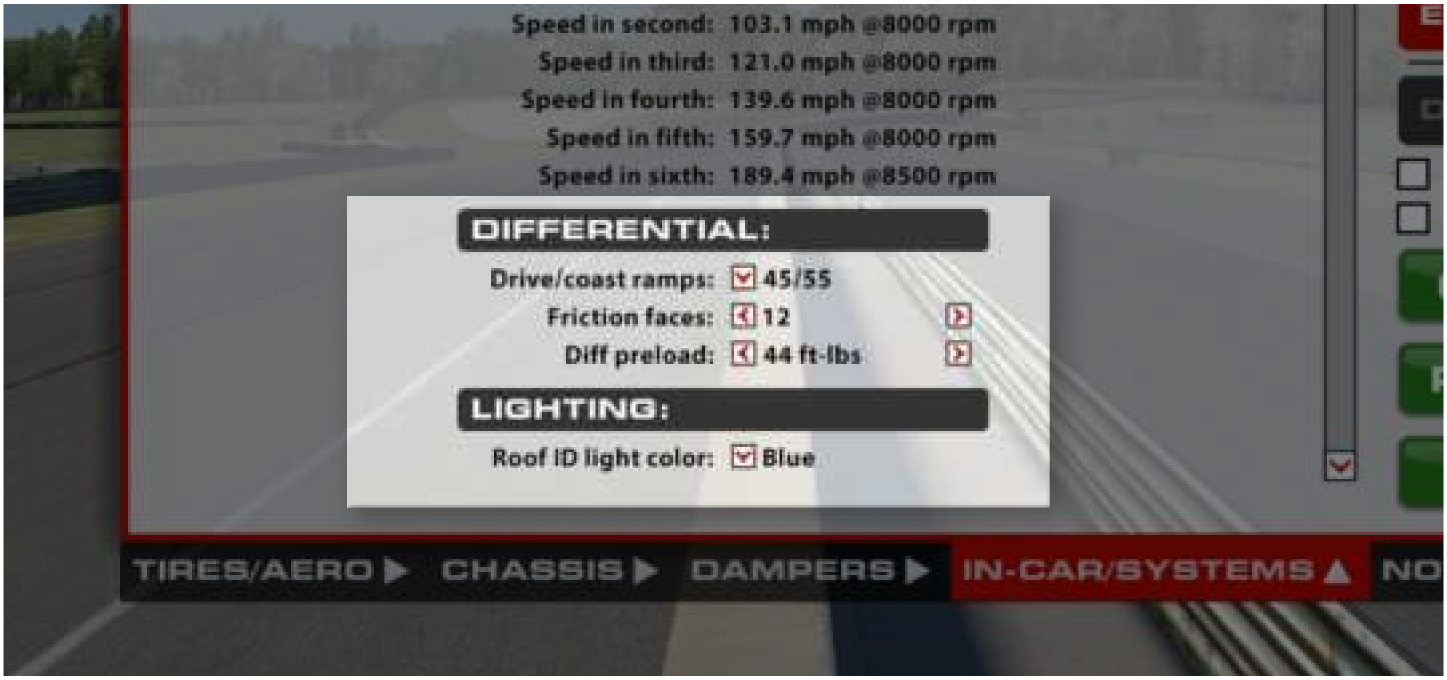
GEAR STACK

Gear Stack changes the gear ratios in the transmission. Standard is a shorter set of gears suited for most tracks, while the Tall stack provides higher stop speeds at the cost of acceleration, intended for use at Le Mans.

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.

DIFFERENTIAL & LIGHTING



DRIVE/COAST RAMPS

The Differential 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.

FRICTION FACES

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.

DIFF 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.

ROOF ID LIGHT COLOR

The color of a small light on the roof of the car can be changed to aid in identifying the vehicle, especially helpful in events where multiple cars are running the same livery.

SETUP TIPS

This section is aimed toward helping users who want to dive deeper into the different aspects of the vehicle's setup.

SETUP TIPS

PROVIDED SETUPS

If the setup fails tech inspection, it is likely the ride heights require adjustment. This is performed by using the torsion bar turns at the front of the car and the spring perch offset at the rear of the car. Left clicks (negative) will increase the ride height while right clicks (positive) will reduce the ride height.

More rake (high rear ride heights compared to front ride heights) will move aero balance forward, inducing oversteer, and less rake will shift the aero rearward and induce understeer.

You can affect the dynamic ride heights (without changing the roll stiffness) on track by adjusting the front heave spring and the rear heave spring.

PROVIDED SETUPS

In the iRacing Setups folder you will find a variety of setups:

BASELINE

Baseline is a 100% fuel load setup which is intended solely for loading the car. As such, this setup should always pass tech inspection at every fuel load and track but will not provide ultimate performance.

WET

Setups labeled '_wet' have wet tyres pre-fitted and setup adjustments to suit wet conditions.

FIXED

The setup titled 'fixed' is the setup used in the fixed setup series and is similar to the high_downforce setup. Similarly, setups suffixed with '_fixed' are used when a track demands a non-standard configuration.

LEMANS

The setup titled 'lemans' is the setup used to suit the special aerodynamic requirements for Le Mans which forces the low downforce package to be fitted and both dive planes removed.

The following boundaries are suggestions for what trim level may be optimal but please note that other factors such as track design (number of high speed corners, etc), altitude and ambient conditions will also impact your decision here with higher altitude tracks and hotter ambient conditions favoring more downforce.

Max Speed under 270 km/h (167 mph) - High Downforce
Max Speed 270 to 290 km/h - Medium Downforce
Max Speed over 290 km/h (180 mph) - Low to Minimum Downforce

AERODYNAMIC TARGETS AND ADJUSTMENTS

The P217 is very sensitive to small variations in ride heights at both the front and rear axle and this must be kept in mind when making setup adjustments such as static ride heights, corner spring rates and rear wing angle.

The optimal configuration for most total downforce is as follows:
Rear Wing Angle: +17 deg
Dive Planes: 2
Wing Gurney: On
Deck Gurney:On
Dynamic Front Ride Height: 5.0 mm
Dynamic Rear Ride Height: 50.0 mm

Should you go over or under the ride height targets stated above you will begin to lose overall downforce. It is very important to consider all aspects of the track when aiming for this maximum downforce target. Consider that if the rear ride height increases beyond the target during braking, you will experience both a balance shift forwards and a loss in overall downforce resulting in a destabilizing situation. It is these braking considerations that will govern how closely you can approach this maximum in a real world situation.

The optimal configuration for the least total drag is as follows:
Rear Wing Angle: +12 degrees
Dive Planes: 0
Wing Gurney: Off
Deck Gurney: Off
Dynamic Front Ride Height: 5.00 mm
Dynamic Rear Ride Height: 5.00 mm

For the majority of tracks, it will be difficult to achieve ride heights low enough to hit these drag targets; however, it is possible at a track such as Daytona. Please keep in mind that your absolute minimums are governed by the road surface and that while aerodynamic drag will decrease as you approach these targets, overall drag may increase if the car starts to make ground contact. It should also be stated that this low drag trim is neither optimal for total downforce nor handling balance.

When adjusting the rear wing angle, the following adjustments should be made to retain aerodynamic balance assuming a starting wing position of 15 degrees and 15.0 mm front, 25.0 mm rear ride heights:

Rear Wing Angle: +1
Front Ride Height: -3.0 mm
OR
Rear Ride Height: +3.5 mm

Rear Wing Angle: -1
Front Ride Height: +2.0 mm
OR
Rear Ride Height: -5.0 mm

It is also possible to combine adjustments of front and rear ride height together if necessary (such as when lower rear heights cannot be easily achieved), this can result in more overall downforce being retained when reducing wing angle without detrimentally impacting the balance but at the cost of slightly increased aerodynamic drag.

These reference values are provided as targets to aim for, however, overall car balance should remain the priority. It may not be possible to achieve a good balance at these targets in certain situations and as such, you should elect to sacrifice some raw performance for a better balance.

Lower Rear Wing Angle = More oversteer, less downforce, less drag, lower cornering speed, higher straight line speed.

Higher Rear Wing Angle = More understeer, more downforce, more drag, higher cornering speed, lower straight line speed.

A SPECIAL NOTE ON HEAVE & THIRD SPRINGS

Non-linear options can provide better ride height control (less variation in min-max heights) over the expected speed range but can be more difficult to work with.

Linear rates may be used in the same way as a conventional spring but may result in the chassis sitting higher than is optimal in the middle of the speed range.

A smaller heave/third spring gap loads the spring earlier and can be used to keep the chassis off the ground. This is particularly relevant for the front of the car where it is vital to run low for maximum performance but not so low that the floor is stalled.

By varying the ride heights in the garage through adjusting the torsion bar turns and spring perch offset, you may infer at the on-track ride height at which the heave/third spring will be loaded.

It is not permitted to preload the front heave and rear third springs.

CHASSIS ADJUSTMENTS

Should you wish to adjust the underpinning balance of the car without impacting the aero platform significantly in pitch and heave, or adjusting the differential then front and rear adjustable anti-roll bars are available.

Stiffer front ARB → More Understeer

Softer front ARB → More Oversteer

Stiffer rear ARB → More Oversteer

Softer rear ARB → More Understeer

Softer front AND rear ARB → Reduced aerodynamic performance, more mechanical grip (good for rough surfaces) and slower response to inputs.

Stiffer front AND rear ARB → Increased aerodynamic performance (good for fast sweeping corners), less mechanical grip and increased response to inputs.

When changing springs in more than one increment, it may not be possible to rebalance with ARB’s alone.

DIFFERENTIAL ADJUSTMENTS

Three adjustment options are available for the differential.

More friction faces → More off throttle understeer, more on throttle oversteer, less inside wheelspin-up on rough surfaces and kerb strikes.

Less friction faces → Less off throttle understeer, less on throttle oversteer, more inside wheelspin-up on rough surfaces and kerb strikes. Typically better at tracks like Spa or those with smooth surfaces and flat kerbing.

Friction faces are dominant at high input torques such as full throttle, sustained braking or pure coastdown.

Differential ramp angles act similarly to friction faces but in finer increments and are adjusted as a set pair on this car, thus, some trade off in either coast or drive may be required.

Lower ramp angle → More locking, similar effects to more friction faces.

Higher ramp angle → Less locking, similar effects to less friction faces.

Preload is additive to the total locking torque of the differential and acts as an offset torque which is always present, even at zero input torque. This means that it is more dominant during transition behavior where the differential input torque is near zero, such as at throttle lift and/or during initial trail braking.

More preload → Less liftoff oversteer, more corner entry stability, more off throttle understeer, more on throttle oversteer.

Less preload → More liftoff oversteer, less corner entry stability, less off throttle understeer, less on throttle oversteer.