AUDI RS 3 LMS

USER MANUAL

Table of Contents

CLICK TO VIEW A SECTION

Dear iRacing User,

Congratulations on your purchase of the Audi RS 3 LMS! 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!

Touring car racing has exploded in popularity around the world over the past few years, and the Audi RS 3 LMS has proven to be one of the most popular cars. Utilized by drivers on four continents, the RS 3 LMS found success quickly after its debut and was voted "Model of the Year 2018" among vehicles from 12 manufacturers.

Light and quick, the Audi RS 3 LMS produces up to 350 horsepower from its turbocharged two-liter powerplant. Sequential shifting and a quick 0-60 time mean that this front-wheel drive touring car produces plenty of exciting action, no matter where or when it's racing.

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

FRONT-ENGINE, FRONT-WHEEL DRIVE WITH FRONT MCPHERSON STRUT & REAR MULTILINK SUSPENSION

LENGTH	WIDTH	WHEELBASE	DRY WEIGHT	WET WEIGHT WITH DRIVER
4589 mm	**1950 mm**	**2665 mm**	**1180 kg**	**1354 kg**
180.6 in	76.8 in	104.5 in	2601 lbs	2985 lbs

POWER UNIT

TRANSVERSELY MOUNTED IN-LINE 4 CYLINDER

DISPLACEMENT	TORQUE	POWER	RPM LIMIT
2.0 Liters	**310 lb-ft**	**350 bhp**	**6800**
122 cid	420 Nm	257 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.

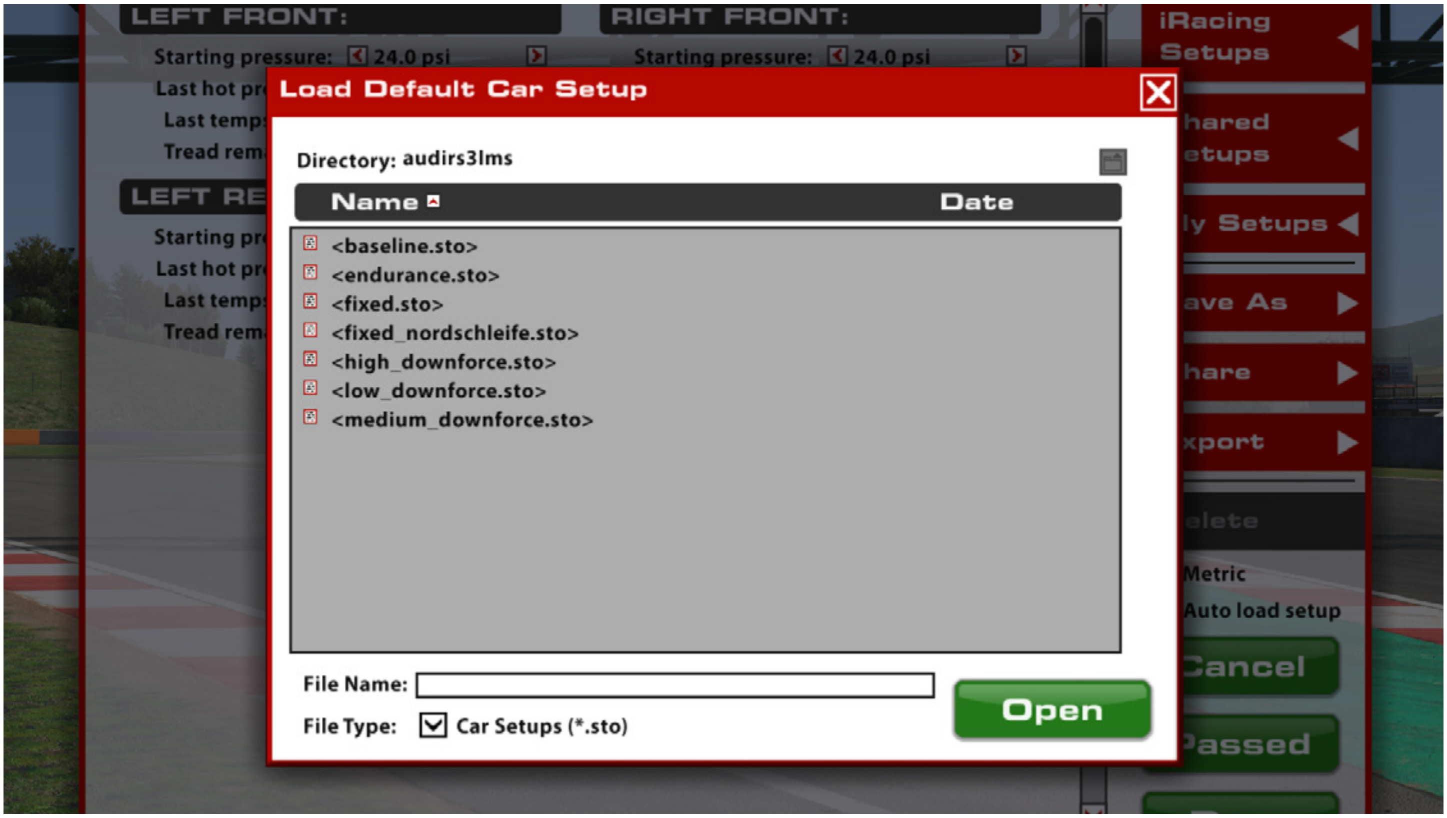
GETTING STARTED

Before starting the car, it is recommended to map controls for Brake Bias adjustment. While this is not mandatory, this will allow you to make quick changes to the brake bias to suit your driving style while on track.

Once you load into the car, getting started is as easy as pulling the "upshift" paddle to put it into gear, and hitting the accelerator pedal. This car uses an automated sequential transmission and does not require manual clutch operation 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 requested. If that is the case, the downshift command will simply be ignored.

Upshifting is recommended when all shift lights on the dashboard are all fully illuminated. This is at 6500 rpm.

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 digital dash display in this car features two selectable pages.

LED BANKS

LED Alarms (Both dash pages
Right of Shift light cluster
Left Light stack top
Left Light stack second from top
Left Light stack second from bottom

DASH PAGE ONE

Upper Row	
Gear	The currently selected gear is shown in the center of the display
Current Speed	The car's speed (khp or mph) is displayed at the upper center of display
Tachometer	The Engine RPM is shown in the top right of the display

Middle Row	
Lap	The current lap is shown in the center of the display
+- Best Time	The time delta between the current and best lap

Bottom Row	
Fuel	Fuel quantity remaining in the tank in Gallons or Liters
T_Water	Engine water temperature in °C or °F
Start RPM	Current setting for the Launch Control's RPM Limiter

DASH PAGE TWO

Upper Row	
Gear	The currently selected gear is shown in the center of the display
Current Speed	The car's speed (khp or mph) is displayed at the upper center of display
Tachometer	The Engine RPM is shown in the top right of the display

Middle Row	
T_Water	The current lap is shown in the center of the display
Lap	The current lap is shown in the center of the display
Laptime	Time elapsed on the current lap

Bottom Row	
Fuel	Engine water temperature in °C or °F
P_Fuel	Fuel Pressure
POS_GBOX	Selected Gear
POS_DIFF	Current differential setting (not applicable in sim)
V_FCY	Full Course Yellow Speed Limiter Speed
V_PIT	Pit Lane Limiter Speed

DASH SHIFT LIGHTS

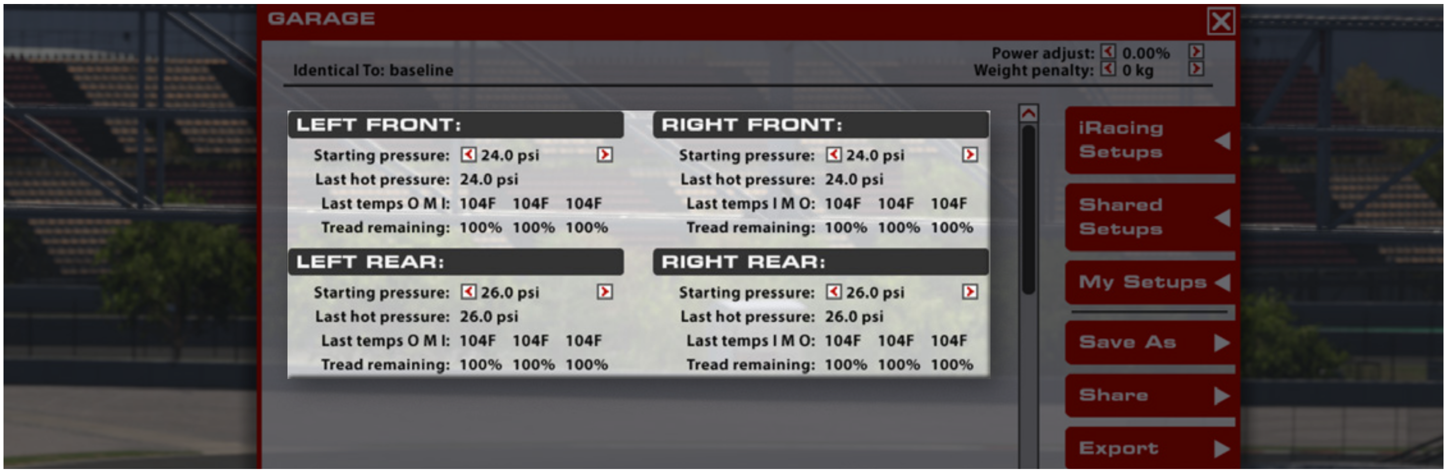
From left to right the lights become lit at the following RPM:

1 Green	5350 rpm
2 Green	5500 rpm
3 Green	5700 rpm
4 Yellow	5900 rpm
5 Yellow	6050 rpm
6 Yellow	6200 rpm
7 Red	6300 rpm
8 Red	6350 rpm
9 Red	6400 rpm
10 Red	6500 rpm

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



COLD AIR 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 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. Generally speaking, it is advisable to start at lower pressures and work your way upwards as required.

HOT AIR 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. Hot pressures should be analyzed once the tires have stabilized after a period of laps. As the number of laps per run will vary depending upon track length a good starting point is approximately 50% of a full fuel run.

TIRE TEMPERATURES

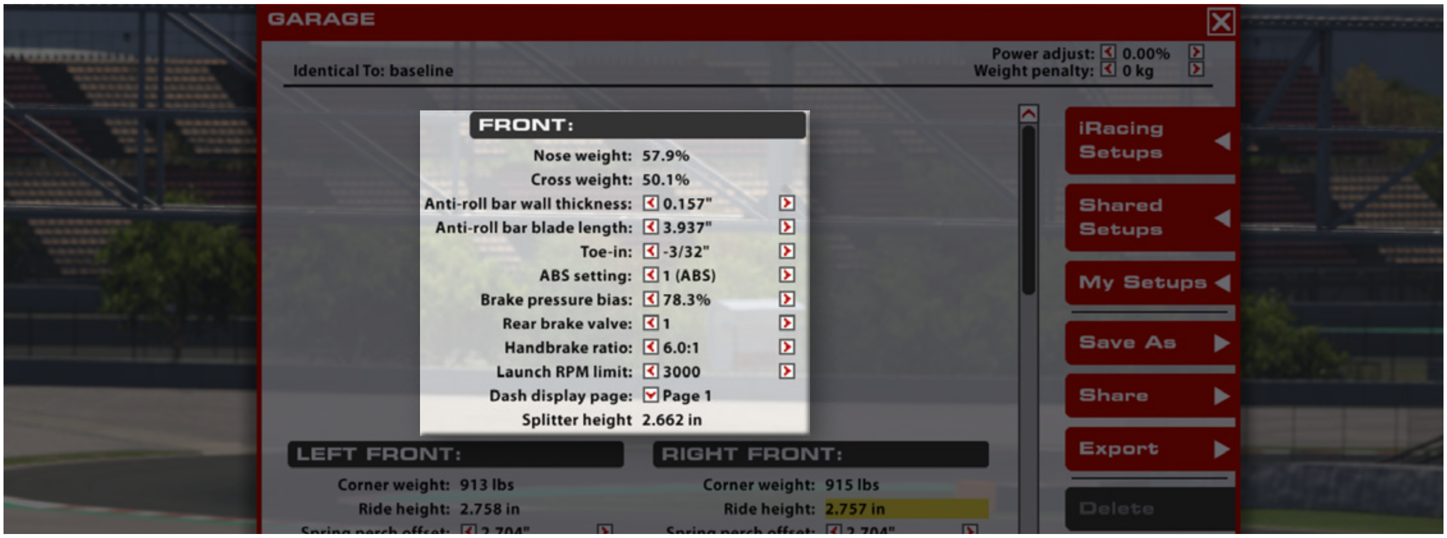
Tire carcass temperatures, measured via Pyrometer, once the car has returned to the pits. Wheel Loads and the amount of work a tire is doing on-track are reflected in the tire's temperature, and these values can be used to analyze the car's handling balance. These values are measured in three zones across the tread of the tire: Inside, Middle and Outer. Middle 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 (predominantly camber) after returning from the track.

TREAD REMAINING

The amount of tread remaining on the tire once the car has returned to 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 the same zones as the temperatures.

Chassis

FRONT



NOSE WEIGHT

The percentage of total vehicle weight in the garage across the front axle. Higher Nose Weight values will induce understeer when cornering and promote straight-line stability, while lower Nose Weight values will increase oversteer while cornering. This is not directly adjustable and is altered by other adjustments, such as Fuel Level.

CROSS WEIGHT

The percentage of total vehicle weight in the garage situated on the right front and left rear corners. 50.0% is generally optimal for non-oval tracks as this will produce symmetrical handling in both left and right hand corners providing all other chassis settings are symmetrical. Higher than 50% cross weight will result in more understeer in left hand corners and increased oversteer in right hand corners, cross weight can be adjusted by making changes to the spring perch offsets at each corner of the car.

ANTI-ROLL BAR WALL THICKNESS

The front Anti-Roll Bar is a hollow tube instead of a solid bar, and changing the thickness of the tube wall will change the bar's stiffness. A thicker wall will increase bar stiffness, stiffening the front suspension in roll, while a thinner wall will decrease bar stiffness, softening the front suspension in roll. Generally a stiffer front bar will induce understeer while a softer front bar will reduce understeer. At high speeds a stiffer front bar will better maintain the car's roll attitude, which can help maintain a constant level of downforce in high-speed corners. A softer bar will result in higher roll angles but will increase mechanical grip in slower corners.

ANTI-ROLL BAR BLADE LENGTH

To fine-tune the front Anti-Roll Bar's stiffness the length of the arms can be changed. Shorter arms will slightly increase the effective stiffness of the bar and longer arms will decrease the effective stiffness. This works in the same way the Wall Thickness adjustment does, with stiffer settings inducing understeer and softer settings reducing understeer.

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 front end, adding toe-out will increase slip in the inside tire and decrease straight-line stability while adding toe-in will reduce the slip and increase straight-line stability.

ABS SETTING

The Anti-Lock Brake System (ABS) can be turned on or off through this setting. Setting 1 will enable ABS while Setting 0 will disable ABS. This value can be adjusted via the F8 Black Box.

BRAKE PRESSURE BIAS

Brake Bias is the percentage of braking force that is being sent to the front brakes. Values above 50% result in greater pressure in the front brake lines relative to the rear brake lines which will shift the brake balance forwards increasing the tendency to lock up the front tires but potentially increasing overall stability in braking zones. This should be tuned for both driver preference and track conditions to get the optimum braking performance for a given situation. This value can be adjusted via the F8 Black Box.

REAR BRAKE VALVE

The Rear Brake Valve setting can be used to increase or decrease the braking force going to the rear brakes without reducing the force going to the front brakes (This is counter to the Brake Pressure Bias setting which reduces front brake force when increasing rear brake force). Increasing the rear brake valve setting will increase the braking force on the rear wheels while a lower setting will decrease the force to the rear wheels. This value can be adjusted via the F8 Black Box.

HANDBRAKE RATIO

The Handbrake Ratio setting changes how aggressively the handbrake is applied. Larger ratios will apply a more aggressive force, making it easier to lock the rear wheels when the handbrake is applied, while a lower ratio will not lock the wheels as easily.

LAUNCH RPM LIMIT

When launching the car from a standstill, either at the race start or from the pits, the Launch RPM Limit will set the rev limiter to whatever this setting is set to until the car is rolling. This will help to keep wheelspin to a minimum and can be set higher or lower depending on track surface grip levels to get an optimum launch. This value can be adjusted via the F8 Black Box.

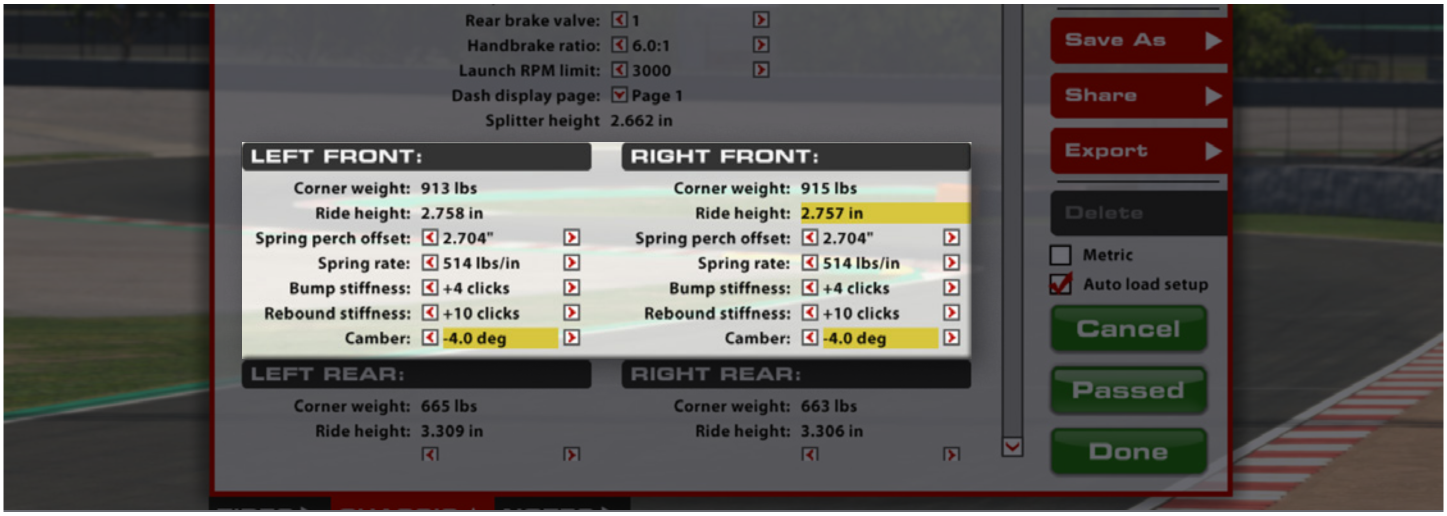
DASH DISPLAY PAGE

The default page displayed on the vehicle's dash can be set in the garage. This value can be adjusted via the F8 Black Box.

SPLITTER HEIGHT

The front splitter ground clearance is shown in the garage. This is not directly adjustable but will change based on other settings in the garage. There are no tech-inspection checks on this value and it only serves as a reference for the car's attitude under static conditions.

LEFT/RIGHT FRONT



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 adjustments at each corner.

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 front ride height will decrease front downforce as well as decrease 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. Minimum legal front ride height is 70 mm.

SPRING PERCH OFFSET

Used to adjust the ride height at the corners of the car by changing the installed position of the spring. Increasing the spring perch offset will result in lowering the corner of the car while reducing the spring perch offset will raise the corner of the car. These changes should be kept symmetrical across the axle (left to right) to ensure the same corner ride heights and no change in cross weight. The spring perch offsets can also be used in diagonal pairs (LF to RR and RF to LR) to change the static cross weight in the car.

SPRING RATE

This setting determines the installed corner spring stiffness. Stiffer springs will result in a smaller variance in ride height between high and low load cases and will produce superior aerodynamic performance through improved platform control; however, they will also result in increased tire load variation which will manifest as a loss in mechanical grip. The drawbacks of stiffer springs will become more pronounced on rougher tracks where softer springs will result in increased overall performance. Corner spring changes will influence both roll and pitch control of the platform and ARB changes should be considered when altering corner spring stiffnesses in order to retain the same front to rear roll stiffness and handling balance. When reducing corner spring stiffness the ARB stiffness should be increased to retain the same roll stiffness as before the spring change. Spring perch offsets must be adjusted to return the car to the prior static ride heights after any spring rate change.

BUMP STIFFNESS

The bump stiffness setting is a paired adjustment controlling both the low and high speed compression damping characteristics of the damper. Increasing the compression damping will result in faster weight transfer to the front of the car during transient movements such as braking and quick direction changes. High front bump settings can help maintain a more consistent aerodynamic attitude and feel more mechanically responsive, but can cause a loss of front traction on rougher tracks due to large amounts of tire load variation.

REBOUND STIFFNESS

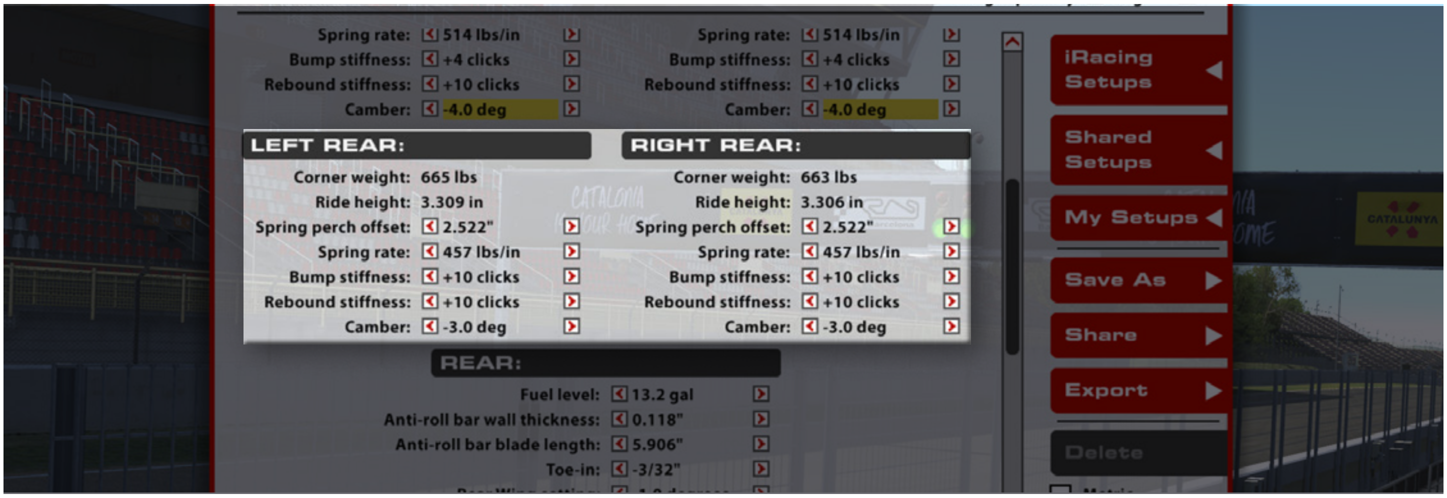
The rebound stiffness setting is a paired adjustment controlling both the low and high speed damping characteristics of the damper with identical ranges to those of the front dampers. Increasing rebound damping will slow down the rate at which the damper extends in both low and high speed situations. As with the front of the car, high rebound stiffness will result in improved platform control for aerodynamic performance and overall chassis response. However, it is important to avoid settings where the shock is too slow in rebounding as this will result in the tire losing contact with the track surface. This can be particularly detrimental during braking events and during the initial turn-in phase when the rear tires are under relatively low load.

The Rebound Stiffness setting is a paired adjustment to both low and high speed rebound damping characteristics. Increasing rebound damping will slow down the rate at which the damper extends in both low and high speed situations as load is removed from the suspension. A typical low speed situation would be as the car rolls back to level on a corner exit while a high speed situation would be where the suspension is extending after large kerb contact. Setting 0 is minimum damping (least resistance to extension) while 18 is maximum damping (most resistance to extension). While high rebound stiffness will result in improved platform control for aerodynamic performance and overall chassis response it is important to avoid situations where the shock is too slow in rebound as this will result in the tire losing complete contact with the track surface which can induce or exacerbate severe oscillations.

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. Increasing front camber values will typically result in increased front axle grip during mid to high speed cornering but will result in a loss of braking performance and necessitate a rearward shift in brake bias to compensate.

LEFT/RIGHT REAR



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 adjustments at each corner.

REAR RIDE HEIGHT

Distance from ground to a reference point on the rear of the chassis. Increasing rear ride height will decrease rear downforce but will increase overall downforce and will allow for more weight transfer across the rear axle when cornering. Conversely, reducing ride height will increase rear downforce percentage but reduce overall downforce while reducing the weight transfer across the rear axle. Rear ride height is a critical tuning component for both mechanical and aerodynamic balance, and static rear ride heights should be considered and matched to the chosen rear corner springs for optimal performance. Minimum legal rear ride height is 70 mm while maximum legal rear ride height is 85 mm.

SPRING PERCH OFFSET

Used to adjust the ride height at the corners of the car by changing the installed position of the spring. Increasing the spring perch offset will result in lowering the corner of the car while reducing the spring perch offset will raise the corner of the car. These changes should be kept symmetrical across the axle (left to right) to ensure the same corner ride heights and no change in cross weight. The spring perch offsets can also be used in diagonal pairs (LF to RR and RF to LR) to change the static cross weight in the car.

SPRING RATE

Similar to the front axle, stiffer springs will result in a smaller variance in ride height between high and low loads and will produce better aerodynamic performance through improved platform control at the expense of mechanical grip. Spring stiffness should be matched to the needs of the racetrack and set such that the handling balance is consistent between high and low speed cornering. Increasing rear spring rate will allow for a lower static rear height which will reduce rear weight transfer during slow speed cornering while maintaining or even increasing the rear ride height in high speed cornering to shift the aerodynamic balance forwards and reduce understeer. Spring perch offsets must be adjusted to return the car to the prior static ride heights after any spring rate change.

BUMP STIFFNESS

The bump stiffness setting is a paired adjustment controlling both the low and high speed compression damping characteristics of the damper with identical ranges to those of the front dampers. Increasing the compression damping will result in faster weight transfer to the rear of the car during transient movements such as accelerating and quick direction changes. High rear bump settings can help maintain a more consistent aerodynamic attitude, but can cause a loss of rear grip on rougher tracks due to large amounts of tire load variation.

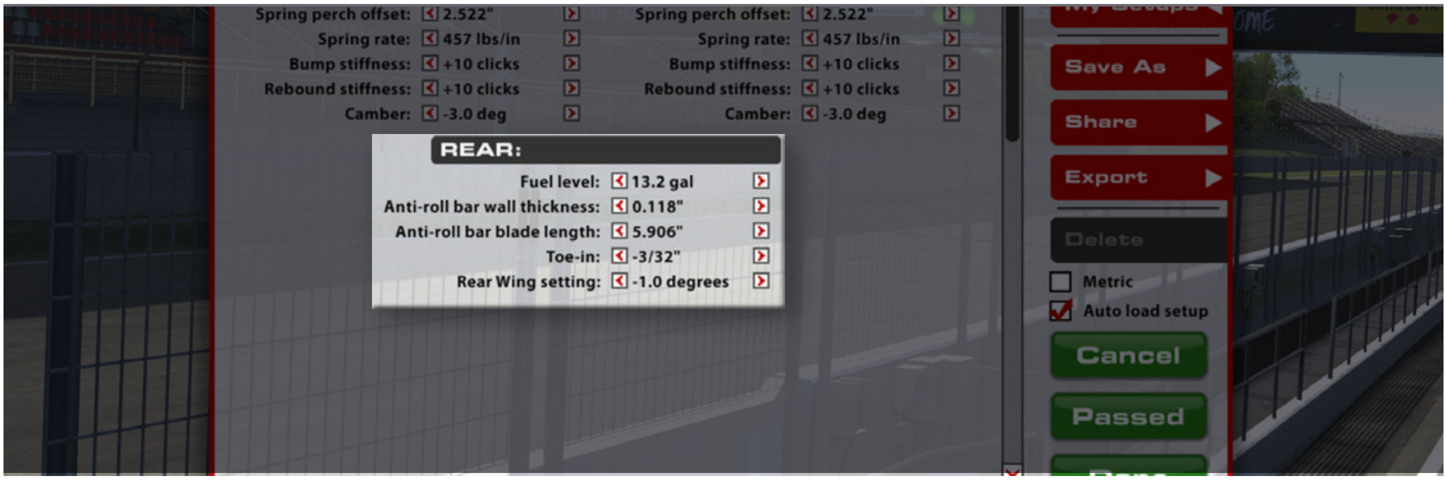
REBOUND STIFFNESS

The rebound stiffness setting is a paired adjustment controlling both the low and high speed damping characteristics of the damper with identical ranges to those of the front dampers. Increasing rebound damping will slow down the rate at which the damper extends in both low and high speed situations. As with the front of the car, high rebound stiffness will result in improved platform control for aerodynamic performance and overall chassis response. However, it is important to avoid settings where the shock is too slow in rebounding as this will result in the tire losing contact with the track surface. This can be particularly detrimental during braking events and during the initial turn-in phase when the rear tires are under relatively low load.

CAMBER

As with the front of the car it is desirable to run significant amounts of negative camber in order to increase the lateral grip capability. Since the rear wheels are not driven and are typically under less load than the fronts, the rear tires will usually see better performance with less camber than the front tires. More rear camber will increase cornering forces from the tires as increasing wear and heat buildup, but will decrease maximum braking capacity from the tires.

REAR



FUEL LEVEL

The amount of fuel in the fuel tank. Tank capacity is 100 L (26.4 gal), adjustable in 1 L (0.26 g) increments

ANTI-ROLL BAR WALL THICKNESS

The front Anti-Roll Bar is a hollow tube instead of a solid bar, and changing the thickness of the tube wall will change the bar's stiffness. A thicker wall will increase bar stiffness, stiffening the rear suspension in roll, while a thinner wall will decrease bar stiffness, softening the rear suspension in roll. Generally a stiffer rear bar will induce oversteer while a softer rear bar will reduce oversteer. At high speeds a stiffer rear bar will better maintain the car's roll attitude, which can help maintain a constant level of downforce in high-speed corners. A softer bar will result in higher roll angles but will increase mechanical grip in slower corners.

ANTI-ROLL BAR BLADE LENGTH

To fine-tune the rear Anti-Roll Bar's stiffness the length of the arms can be changed. Shorter arms will slightly increase the effective stiffness of the bar and longer arms will decrease the effective stiffness. This works in the same way the Wall Thickness adjustment does, with stiffer settings inducing oversteer and softer settings reducing oversteer.

TOE-IN

At the rear of the car it is typical to run toe-in. Increased toe-in will result in improved straight line stability and a reduction in response during direction changes. Large values of toe-in should be avoided if possible as this will increase rolling drag and reduce straight line speeds.

REAR WING SETTING

The rear wing's angle of attack can be changed via the Rear Wing Setting. Higher angles will cause the wing to produce more downforce and shift aero balance rearward, inducing understeer in mid- to high-speed corners, but will increase drag. Lower angles will reduce the amount of downforce generated and shift aero balance forward, increasing oversteer in mid- and high-speed corners, but will also reduce the amount of drag produced by the wing. Angle settings are available from -4.0° to +4.0°, however it is important to note that all angles will produce downforce, and negative angles do not produce lift.