BMW M8 GTE

USER MANUAL

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CLICK TO VIEW A SECTION

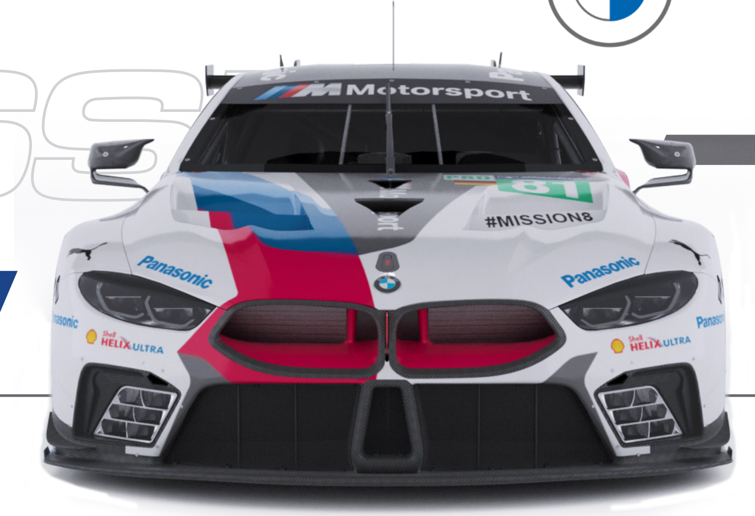
Dear iRacing User,

The twin-turbo, V8 powered beast joins the already impressive lineup of GTE cars in iRacing. With over 500 bhp the flagship racing car from BMW competes around the world. Racing in series including the FIA World Endurance Championship and the IMSA Weathertech SportsCar Championship. In iRacing you will see the BMW M8 in the multi-class IMSA Series as well as the iRacing Le Mans series.

A front engine car, the BMW has already earned a reputation for being tough to pass due to its performance and size. iRacers will have the opportunity to race the M8 wheel to wheel against the Porsche RSR, Ford GT and Ferrari 488 and find out for themselves which of the GTE cars will reign supreme.

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

CHASSIS



DOUBLE-WISHBONE PUSHROD FRONT AND REAR SUSPENSION

LENGTH	WIDTH	WHEELBASE	DRY WEIGHT	WET WEIGHT WITH DRIVER
4980 mm	**2224 mm**	**2880 mm**	**1313 kg**	**1380 kg**
196 in	87.5 in	113 in	2896 lbs	3044 lbs

POWER UNIT

TWIN-TURBOCHARGED V8

DISPLACEMENT	TORQUE	POWER	RPM LIMIT
4.0 Liters	**515 lb-ft**	**592 bhp**	**7,000**
243 cid	700 Nm	441 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 setups for each track commonly raced by these cars. To access the provided 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 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.

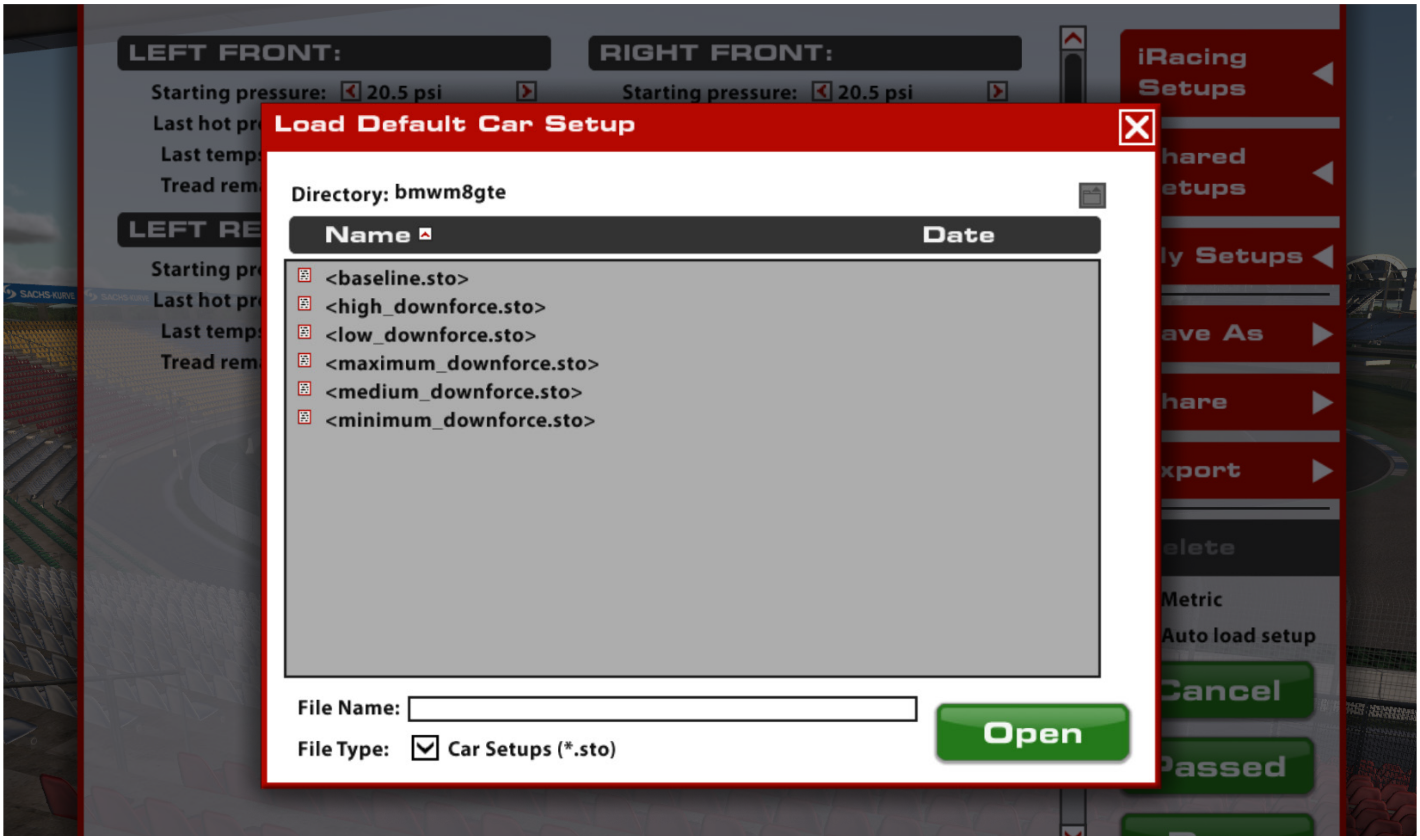
GETTING STARTED

Before starting the car, it is recommended to map controls for Brake Bias and Traction Control settings. While this is not mandatory, this will allow you to make quick changes to the brake bias and stability management systems to suit your driving style while out 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 the shift lights on the dashboard are all fully illuminated. This is just before the rev-limiter at 7000 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 BMW M8 GTE features a Bosch DDU S2 digital dash display that shows the driver all relevant information on a single, easy-to-read screen. Shift lights are situated above the display screen, and a set of warning/lockup lights are mounted to the left of the display module.

DIGITAL DISPLAY

The data in the main display is shown in multiple columns with each piece of data displayed in its own box.

Left Column	
Tyre Pressure	The current air pressure in each tire is shown in this box, in either PSI or Bar depending on the units selected in the garage. If a tire is under-inflated the number will be highlighted in orange.
Fuel	The amount of fuel remaining in the fuel tank in either Liters or US Gallons.
Gain - Loss	The difference between the current lap and the session best lap.
Laptime	Previously completed lap time.

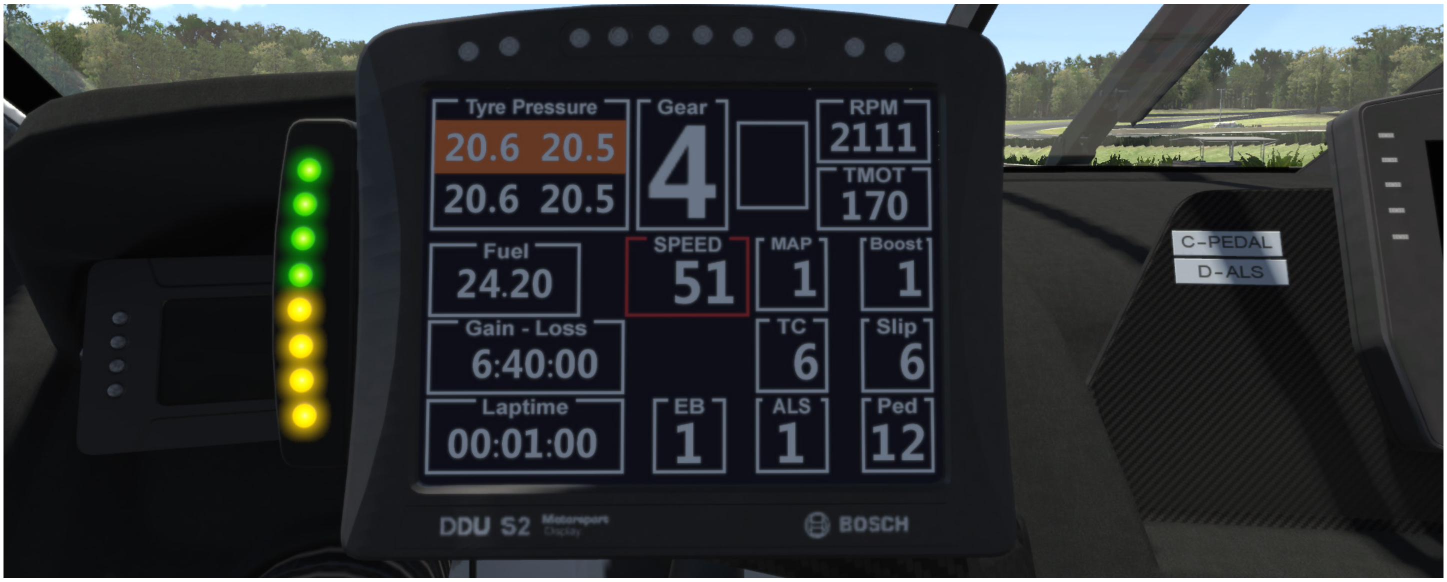
Center Column	
Gear	Currently selected gear
SPEED	Vehicle speed in either Miles-per-hour or Kilometers-per-hour depending on the units selected in the garage.
MAP	Currently selected Engine Map. This can be changed in the garage or with the F8 Black Box “Engine Map” setting.
TC	Longitudinal Traction Control setting. This can be changed in the garage or with the F8 Black Box “Trac Ctrl (TC)” setting.

Right Column	
RPM	Current engine RPM
TMOT	Engine cooling system temperature in °F or °C depending on the units selected in the garage
Boost	Currently selected Engine Boost setting. This can be changed in the garage or with the F8 Black Box “Boost Map” setting.
Slip	Lateral Traction Control Setting. This can be changed in the garage or with the F8 Black Box “Trac Ctrl (SLIP)” setting.
Ped	Currently selected Throttle Pedal shape. This can be changed in the garage or with the F8 Black Box “Throttle Shaping” setting.

PIT LIMITER

When the Pit Limiter is engaged, all of the shift lights will flash blue and a banner will be shown at the top of the display with the vehicle’s speed in the center.

WHEEL LOCKUP LIGHTS



A set of wheel lockup lights are mounted on the left side of the display cluster. These LEDs will illuminate whenever a front or rear lockup is detected, with the lockup's severity being shown by how many lights are illuminated. Initially the top and/or bottom LEDs will illuminate, more severe lockups are shown with more lights toward the middle of the display. The Green lights represent the front wheels and the Yellow lights represent the rear wheels.

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 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.

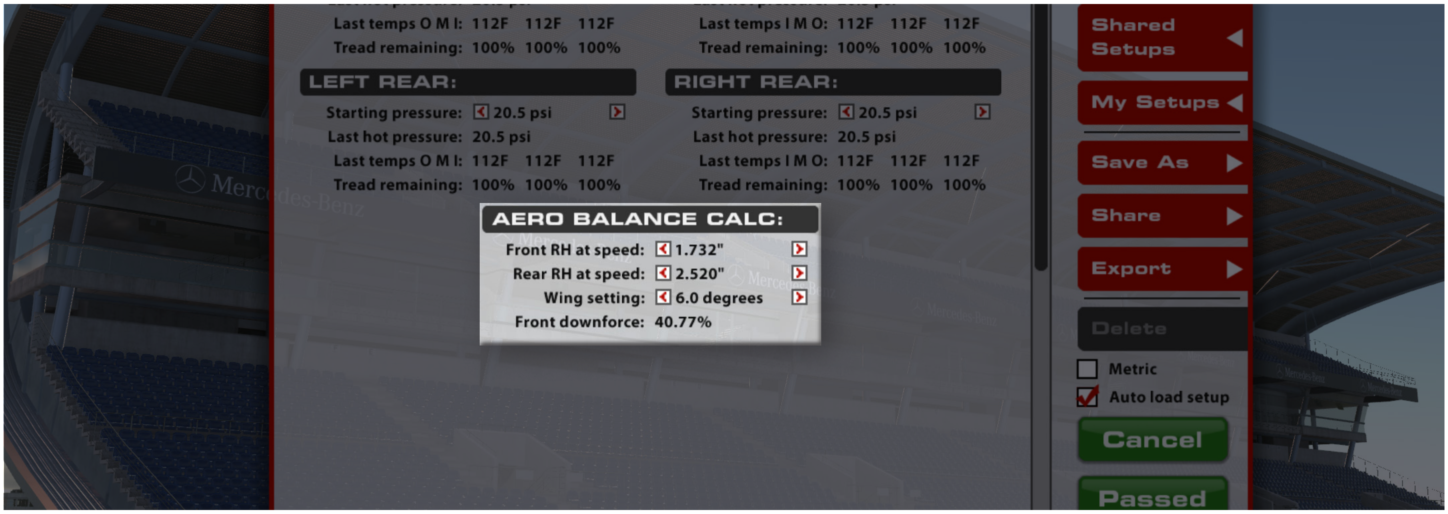
LAST TEMPS O.M.I.

Tire carcass temperatures once the car has returned to the pits or the driver has gotten out of the car. 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. 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 (predominantly camber) while on track. These values are measured in three zones across the tread of the tire. Inside, Middle and Outer.

TREAD REMAINING

The amount of tread remaining on the tire once the car has returned to the pits or the driver has gotten out of the car. 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 those of temperature.

AERO BALANCE CALCULATOR



RH AT SPEED

The Ride Height (RH) at Speed settings are inputs for the aero calculator to determine the approximate aero performance with the chosen aero package. Changing these values changes the displayed Front Downforce value as well as the Downforce-to-Drag ratio in the calculator. To check on-track performance, use the average of the front ride height sensors (Front RH) and the average of the rear ride height sensors (Rear RH) from telemetry. These can also be changed to observe how rake will affect aerodynamic performance prior to ride height or spring changes by observing their influence on the Aero Balance value in the Aero Calculator.

WING SETTING

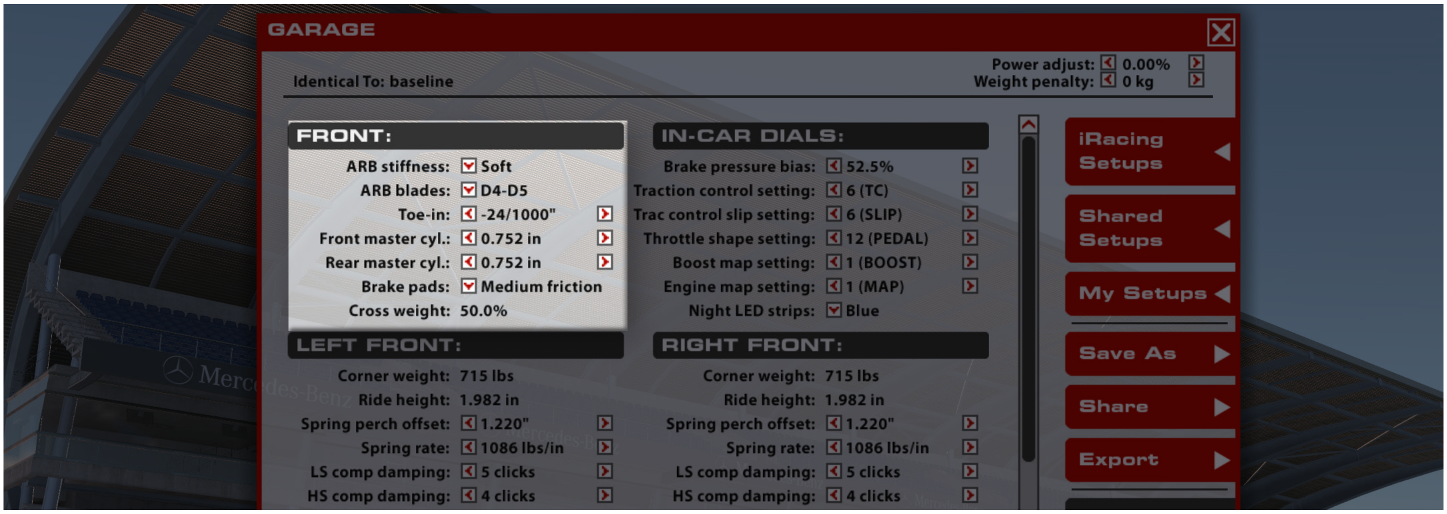
The wing setting refers to the relative angle of attack of the rear wing, this is an aerodynamic device which has a significant impact upon the total downforce (and drag) produced by the car as well as shifting the aerodynamic balance of the car rearwards with increasing angle. Increasing the rear wing angle results in more total cornering grip capability in medium to high speed corners but will also result in a reduction of straight line speed. Rear wing angle should be adjusted in conjunction with front and rear ride heights, specifically the difference between front and rear ride heights known as 'rake'. To retain the same overall aerodynamic balance it is necessary to increase the rake of the car when increasing the rear wing angle. This setting is linked to the Wing Setting on the Chassis page and the two will change together.

AERO BALANCE

Aero Balance represents the percentage of total downforce that is working on the front axle. This value is calculated with the At Speed Ride Height values for the given Wing Setting value, and should be monitored during the chassis setup process to prevent unexpected results. To ensure chassis adjustments don't become masked by aerodynamic changes, always refer to this value to ensure it remains constant before and after aerodynamic setup changes.

Chassis

FRONT



ARB STIFFNESS

The ARB Stiffness option changes the installed Anti-Roll Bar to alter the front suspension roll stiffness. The Stiff ARB option will increase front roll stiffness and induce understeer, but can lead to better aerodynamic performance in high-speed corners from the reduced body roll. The Soft ARB option will reduce front roll stiffness, increasing front end mechanical grip and reducing understeer, but can hurt aerodynamic performance in high-speed corners. If desired, the ARB can be disconnected completely, which will dramatically reduce front roll stiffness and shift the chassis balance towards oversteer.

ARB BLADES

To fine-tune the Anti-Roll Bar assembly stiffness the ARB Blades can be adjusted to one of 11 options. These settings are represented with two alphanumeric values starting with "D" and then a stiffness value for both values. Setting "D1-D1" is the softest option, which would produce the most mechanical grip and least understeer, while "D6-D6" is the stiffest option and would produce a better aerodynamic platform but the most understeer. Blade stiffness increases as the sum of the numbers increases (D2-D3, "5", is softer than D3-D3, "6"). If the front ARB Stiffness is set to "Disconnected", this option has no effect on the car's behavior.

TOE-IN

Toe is the angle of the wheels relative to the chassis centerline when viewed from above. Negative toe-in sets the front of the tires farther from the centerline than the rear of the tires while positive toe-in sets the front of the tires closer to the centerline than the rear of the tires. Toe-out will destabilize the car in a straight line but this will increase turn-in response at the cost of increased tire temperature and wear. Reducing toe-out (and even running toe-in) will stabilize the car in a straight line and reduce temperature and wear, but could make the car sluggish in response to steering inputs.

FRONT MASTER CYL.

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, this will shift the brake bias rearwards and increase the pedal effort required to lock the front wheels. A smaller master cylinder will do the opposite and increase brake line pressure to the front brakes, shifting brake bias forward and reducing required pedal effort. 7 Different master cylinder options are available ranging from 15.9 mm / 0.626" (highest line pressure) to 23.8 mm / 0.937" (lowest line pressure).

REAR MASTER CYL.

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, this will shift the brake bias forwards and increase the pedal effort required to lock the rear wheels. A smaller master cylinder will do the opposite and increase brake line pressure to the rear brakes, shifting brake bias rearward and reducing required pedal effort. 7 Different master cylinder options are available ranging from 15.9 mm / 0.626" (highest line pressure) to 23.8 mm / 0.937" (lowest line pressure).

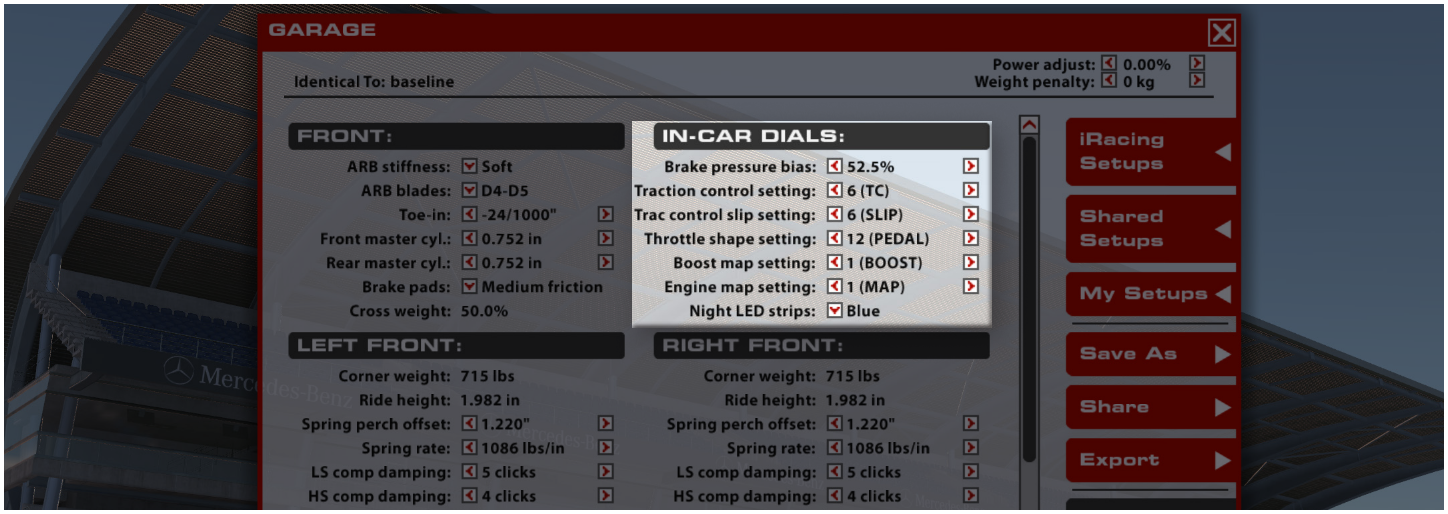
BRAKE PADS

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, while "Medium" and "High" provide more friction and increase the effectiveness of the brakes while increasing the risk of a brake lockup.

CROSS WEIGHT

The percentage of total vehicle weight in the garage acting across 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.

IN-CAR DIALS



BRAKE PRESSURE BIAS

The Brake Pressure Bias setting determines how much of the overall brake line pressure is sent to the front wheels. Higher percentages apply more braking pressure to the front wheels which can induce understeer under braking, while reducing the percentage will shift braking force rearward and induce oversteer under braking. If the bias is set too far forward or rearward it can cause wheel lockups under heavy braking, so it should be set to a value that allows for heavy braking without lockups on either axle.

TRACTION CONTROL SETTING

The position of the traction control switch determines how aggressively the ecu cuts engine torque in reaction to rear wheel spin. The system has nine active settings, with "1" providing the least assistance and "9" providing the most assistance. Setting "10" will disable the traction control system completely. This setting can be changed in-car via the F8 Black Box's "TC" setting.

TRAC CONTROL SLIP SETTING

The Traction Control Slip system attempts to maintain lateral traction (during small slides, for example) through the same methods as the main Traction Control system. As with the main system, the Slip Setting has nine active settings with "1" providing the least assistance and "9" providing the most, with setting "10" disabling the system. This setting can be changed in-car via the F8 Black Box's "SLIP" setting.

THROTTLE SHAPE SETTING

Throttle shape setting refers to how changes in the drivers pedal position result in changes in provided engine torque. The BMW M8 GTE offers 12 options to suit many driving styles. Setting 1 will produce an S-shaped throttle/torque map that is similar to butterfly-style throttle bodies. Increasing the setting will make the throttle shape more linear up to Setting 12, which is purely linear (50% throttle = 50% torque). This setting can be changed in-car via the F8 Black Box's "PEDAL" setting.

BOOST MAP SETTING

The Boost Map Setting alters the level of engine boost produced by the turbocharger system. Position 1 produces the maximum boost allowed by the WEC rules and each setting increase will reduce the amount of boost produced. This setting can be changed in-car via the F8 Black Box's "BOOST" setting, and more details on the system's behavior can be found in the garage Notes section.

ENGINE MAP SETTING

To allow for various fuel-saving strategies the Engine Map setting can be changed to reduce the fuel usage. Setting 1 will use the most fuel, and produce the most power, while settings 2 through 11 will reduce the amount of fuel used by the engine for fuel saving purposes. Setting 12 will greatly reduce fuel usage and power for Safety Car periods. This setting can be changed in-car via the F8 Black Box's "MAP" setting.

NIGHT LED STRIPS

To identify the car more easily, the color of the LED light strips at the top of the rear side windows can be changed with this setting. This has no impact on vehicle performance.

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 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.

SPRING PERCH OFFSET

Spring Rate is the stiffness of the suspension's corner springs controlling each wheel. The value is a representation of how much force (Pounds or Newtons) required to compress the spring a specific distance. Springs are used to keep the chassis from contacting the track under the loads seen on track and to manage the chassis' aerodynamic attitude, but their stiffness also has a major influence on the car's handling characteristics. On the front end, stiffer springs can keep the front splitter from moving too much under increasing aerodynamic loads but will decrease mechanical grip and can cause understeer in slower corners. Softer springs will result in more front end movement, which can hurt aero, but will increase mechanical grip in the front axle and reduce understeer (or cause oversteer, in extreme cases).

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LS COMP DAMPING

Low-Speed (LS) Compression affects how resistant the shock is to compression (reduction in length), usually in chassis movements as a result of driver input, such as the front shocks under braking. Higher LS Compression settings will prevent the shock from compressing quickly and can quickly increase the load transferred to the wheel when the suspension is in compression, but can prevent the suspension from absorbing smaller bumps and dips in the track. Lower LS compression settings will allow for better bump absorption, but can hurt aerodynamic stability due to excessive body movement with driver inputs.

HS COMP DAMPING

The High-Speed (HS) Compression controls how resistant the shock is to compression at higher shock shaft speeds, roughly 1.5 in/s, a range usually associated with very bumpy racing surfaces or curb strikes. Lower HS Compression values will reduce the force exerted in these situations, allowing these large forces to be absorbed by the suspension without changing the low-speed characteristics of the shock. This is great for very bumpy tracks or circuits where the car will see heavy curb usage, while smoother tracks will benefit from higher HS Compression values.

LS RBD DAMPING

Low-Speed (LS) Rebound affects how resistant the shock is to extension (increase in length), typically during body movement as a result of driver inputs, such as the front shocks under acceleration. Higher rebound values will slow extension 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 extend enough to maintain proper contact with the track. Excessive front rebound can lead to unwanted oscillations due to the wheel bouncing off of the track surface instead of staying in contact.

HS RBD DAMPING

High-Speed (HS) Rebound affects how resistant the shock is to extension (increase in length), at higher shock shaft speeds, usually above 1.5 in/s. This area is commonly seen as a response to high-speed compression, such as bumps in the racing surface or curb strikes. Higher values will prevent the shock from extending too quickly after a bump, which can help to maintain aerodynamic consistency in terms of body attitude, but too much rebound can keep the suspension from extending quickly enough and cause a loss of grip, especially over a series of bumps. Lower values will allow faster suspension extension, but can allow too much body movement and potentially hurt aerodynamics.

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.

CASTER

Caster is the vertical angle of the steering axis relative to the side view of the chassis. Positive caster angle is where the steering axis is leaned rearwards from this viewpoint, the more caster the larger the total trail of the contact patch behind the steering axis. More caster angle will result in the mechanical trail being a larger proportion of the felt steering weight relative to the tires pneumatic trail. This will result in a heavier overall steering feel but a possible loss in felt feedback from the tire. Increasing caster angle will also have secondary effects such as an increase in dynamic camber when turning the wheel through large steering angles which can be beneficial in chicances or hairpins. As well as this the more caster angle the greater the jacking effect during cornering which will result in lifting the inside front wheel while lowering the outside front wheel. This jacking effect will also result in the unloading and potentially lifting of the inside rear wheel which can aid in rotation around tight corners.

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 adjustments at each corner.

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 considerations and static rear ride heights should be considered and matched to the chosen rear corner springs for optimal performance.

SPRING PERCH OFFSET

Used to adjust the ride height at this corner of the car by changing the installed position of the spring. Increasing the spring perch offset will result in lowering this corner of the car while reducing the spring perch offset will raise this 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

Spring Rate is the stiffness of the suspension's corner springs controlling each wheel. The value is a representation of how much force (Pounds or Newtons) required to compress the spring a specific distance. Springs are used to keep the chassis from contacting the track under the loads seen on track and to manage the chassis' aerodynamic attitude, but their stiffness also has a major influence on the car's handling characteristics. On the rear end, stiffer springs can keep the wing and diffuser from moving too much under increasing aerodynamic loads but will decrease mechanical grip and can cause oversteer in slower corners. Softer springs will result in more rear end movement, which can hurt aero, but will increase mechanical grip at the rear axle and reduce oversteer.

LS COMP DAMPING

Low-Speed (LS) Compression affects how resistant the shock is to compression (reduction in length), usually in chassis movements as a result of driver input, such as the rear shocks under acceleration. Higher LS Compression settings will prevent the shock from compressing quickly and can quickly increase the load transferred to the wheel when the suspension is in compression, but can prevent the suspension from absorbing smaller bumps and dips in the track. Lower LS compression settings will allow for better bump absorption, but can hurt aerodynamic stability due to excessive body movement with driver inputs.

HS COMP DAMPING

The High-Speed (HS) Compression controls how resistant the shock is to compression at higher shock shaft speeds, roughly 1.5 in/s. This range of motion is usually associated with very bumpy racing surfaces or curb strikes. Lower HS Compression values will reduce the force exerted in these situations, allowing these large forces to be absorbed by the suspension without changing the low-speed characteristics of the shock. This is great for very bumpy tracks or circuits where the car will see heavy curb usage, while smoother tracks will benefit from higher HS Compression values.

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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. Higher negative camber values will provide more cornering forces in the direction of the tire's camber (more stability in high-speed cornering), but may reduce on-throttle traction at high camber angles.

TOE-IN

Toe is the angle of the wheels relative to the chassis centerline when viewed from above. Negative toe-in sets the front of the tires farther from the centerline than the rear of the tires while positive toe-in sets the front of the tires closer to the centerline than the rear of the tires. This setting can change the rear tire slip angle, with toe-in providing more straight-line stability but reducing the car's tendency to rotate into a corner. Lower toe-in values (moving towards toe-out) can provide a quicker steering response, but may produce an unstable steering feeling.

REAR

FUEL LEVEL

The amount of fuel in the fuel tank. Tank capacity is 92 L (24.3 gal), adjustable in 1 L (0.26 gal) increments.

ARB STIFFNESS

The ARB Stiffness option changes the installed Anti-Roll Bar to alter the rear suspension roll stiffness. The Stiff ARB option will increase rear roll stiffness and induce oversteer, but can lead to better aerodynamic performance in high-speed corners from the reduced body roll. The Soft ARB option will reduce rear roll stiffness, increasing rear end mechanical grip and reducing oversteer, but can hurt aerodynamic performance in high-speed corners. If desired, the ARB can be disconnected completely, which will dramatically reduce rear roll stiffness and shift the chassis balance towards understeer.

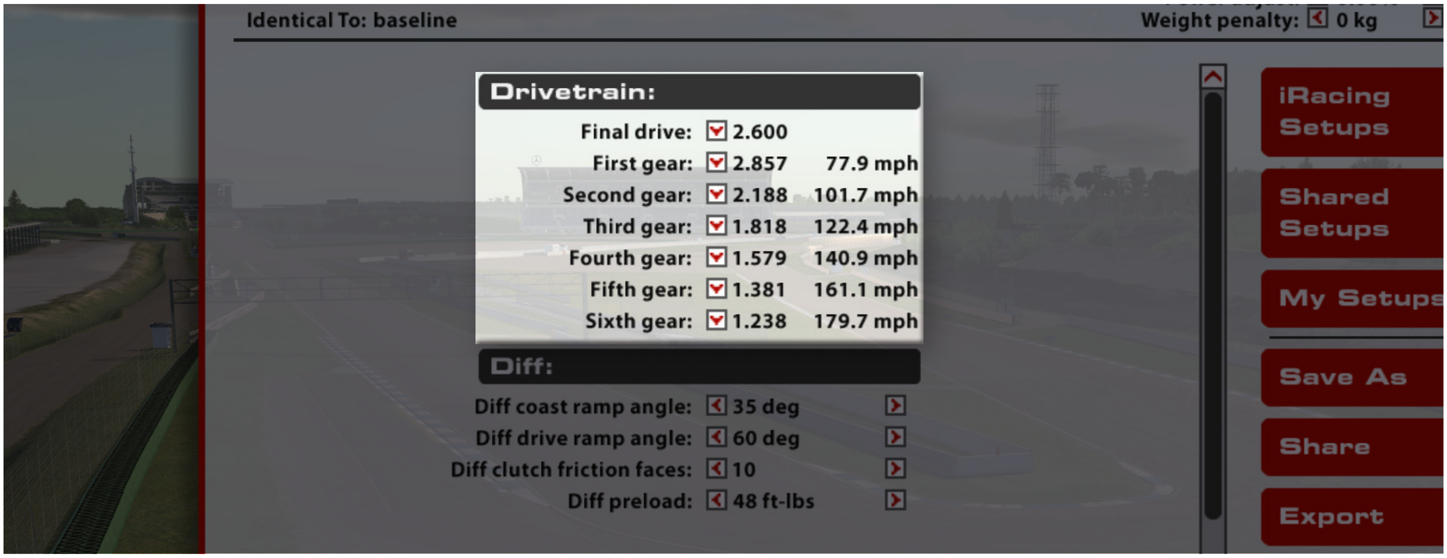
ARB BLADES

To fine-tune the Anti-Roll Bar assembly stiffness the ARB Blades can be adjusted to one of 7 options. These settings are represented with two alphanumeric values starting with “D” and then a stiffness value for both values. Setting “D1-D1” is the softest option, which would produce the most mechanical grip and least oversteer, while “D4-D4” is the stiffest option and would produce a better aerodynamic platform but the most oversteer. Blade stiffness increases as the sum of the numbers increases (D2-D3, “5”, is softer than D3-D3, “6”). If the rear ARB Stiffness is set to “Disconnected”, this option has no effect on the car’s behavior.

WING ANGLE

The Rear Wing Angle setting controls the angle of the rear wing’s uppermost flap. Higher angles will produce more downforce, more drag, and shift aero rearward, while lower angles will reduce both downforce and drag but shift aero forward. The Wing Angle setting on the Chassis page is linked to the Wing Setting on the Tires/Aero page and the two will change together.

Drivetrain



FINAL DRIVE

The Final Drive Ratio is the ratio between the driveshaft pinion and the differential ring gear. Higher number values produce better acceleration but reduce top speed, lower number values reduce acceleration but result in a higher top speed. Changing this value and then clicking "Apply" will change the expected maximum speeds for all six forward gear options.

TRANSMISSION GEARS

All six gears in the transmission can be changed to suit track conditions or driver preferences. Each gear is represented by the ratio of teeth on the input and output gears, with lower ratios reducing acceleration but increasing top speed and higher ratios increasing acceleration but reducing top speed. Once a gear is chosen and the "Apply" button is pressed, the expected top speed the gear is capable of is updated beside the ratio choice.

DIFF

DIFF COAST RAMP ANGLE

The Coast Ramp angle changes how much force is exerted to lock the differential under deceleration. Higher numbers exert less locking force, lower numbers exert more locking force. Generally, more understeer will be present with higher locking forces.

DIFF DRIVE RAMP ANGLE

The Drive Ramp angle changes how much force is exerted to lock the differential under acceleration. Like the coast ramp setting, higher angles produce less locking force and lower angles produce more force, with higher forces typically producing more understeer out of a corner. Too much locking force (very low angle), however, can sometimes result in a snap-oversteer on corner exit.

DIFF CLUTCH FRICTION FACES

Changing the number of clutch plates, or friction faces, in the differential will multiply the force produced by the differential to keep the rear axle locked. Higher numbers of faces will multiply the forces relative to the lowest setting of 2 friction faces. For example, 6 faces will have three times as much force as 2 plates, while 2 plates will have half the forces of 4 plates.

DIFF PRELOAD

Diff preload is a static amount of locking force present within the differential and remains constant during both acceleration and deceleration. Increasing diff preload will increase locking on both sides of the differential which will result in more understeer when off throttle and more snap oversteer with aggressive throttle application. Increasing the diff preload will also smooth the transition between on and off throttle behaviour as the differential locking force will never reach zero which can be helpful in reducing lift-off oversteer and increasing driver confidence. Typically diff preload should be increased when there is noticeable loss in slow corner exit drive and/or over-rotation during transition between the throttle and brake in low to mid speed corners.