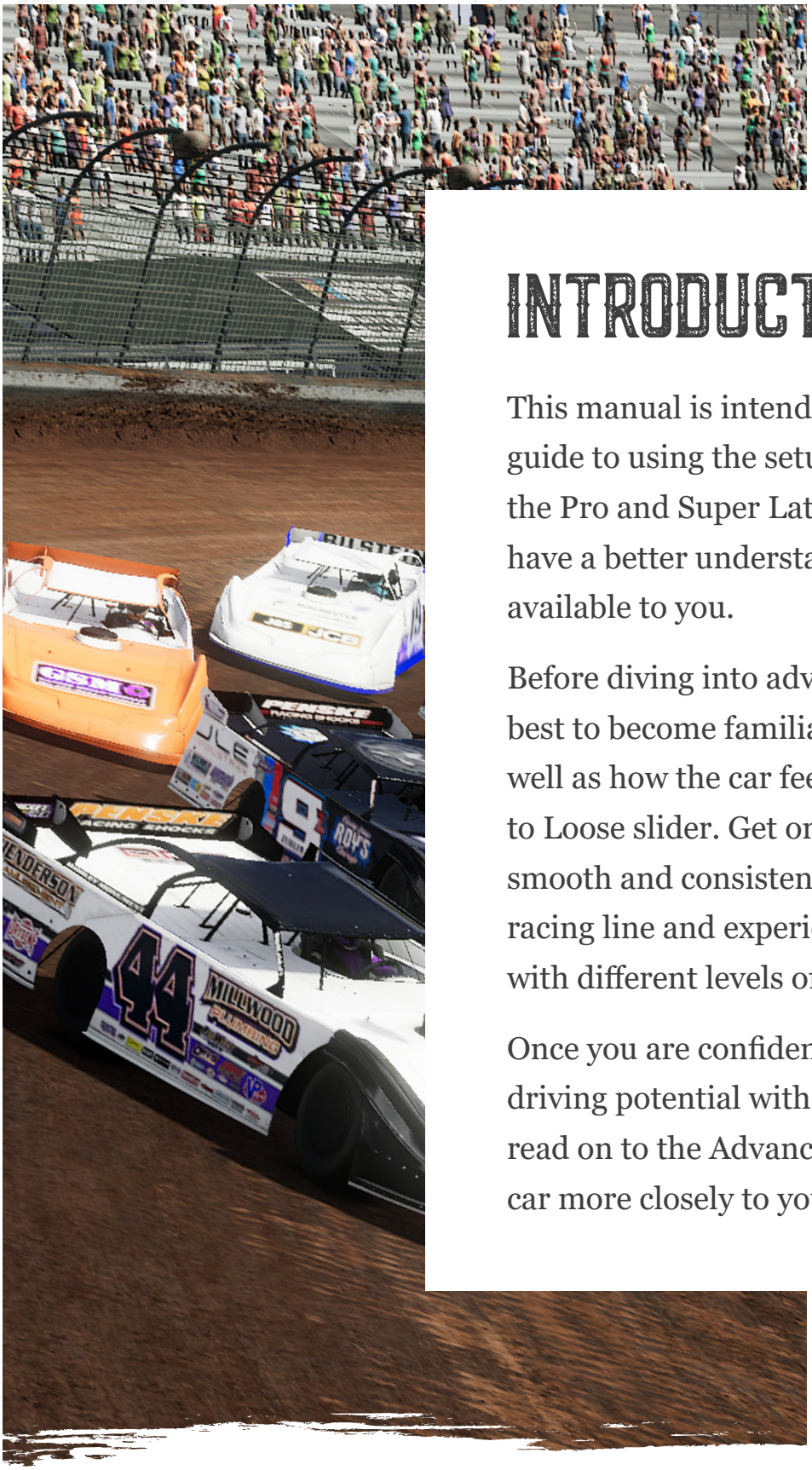
WORLD OF OUTLAWS DIRT RACING 24

OWNERS' WORKSHOP MANUAL

GET TO KNOW YOUR DIRT LATE MODEL

PRO // SUPER

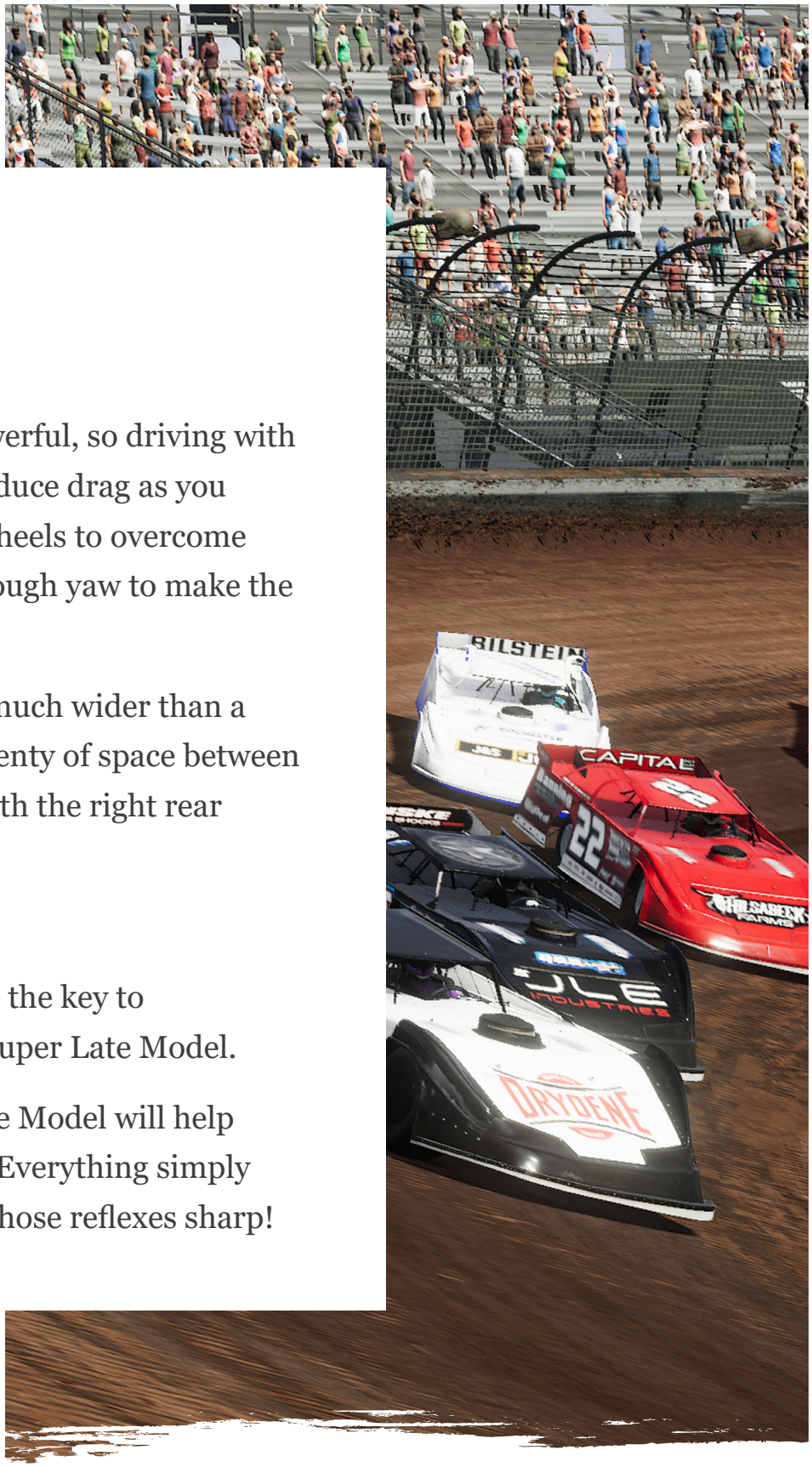


INTRODUCTION

This manual is intended to provide you with a guide to using the setup adjustments available on the Pro and Super Late Models so that you can have a better understanding of the adjustments available to you.

Before diving into advanced setup changes, it is best to become familiar with the car and track as well as how the car feels when you adjust the Tight to Loose slider. Get on track and focus on making smooth and consistent laps, identifying the proper racing line and experiencing the handling of the car with different levels of Tight to Loose.

Once you are confident that you are nearing your driving potential with the Tight to Loose slider, read on to the Advanced section to begin tuning the car more closely to your handling preferences.



DRIVING TIPS

PRO LATE MODEL

Pro Late Models aren't as powerful, so driving with the rear end 'hung out' can induce drag as you don't have the power to the wheels to overcome this. Only give the car just enough yaw to make the corner to maximize lap times.

The body on a Late Model is much wider than a Sprint Car, so give yourself plenty of space between the wall. Touching the wall with the right rear might just suck you in.

SUPER LATE MODEL

Balancing tire spin and yaw is the key to maximizing lap times in the Super Late Model.

All tips learned in the Pro Late Model will help you in the Super Late Model. Everything simply happens a bit faster, so keep those reflexes sharp!

TECH SPECS

CHASSIS BOTH CARS

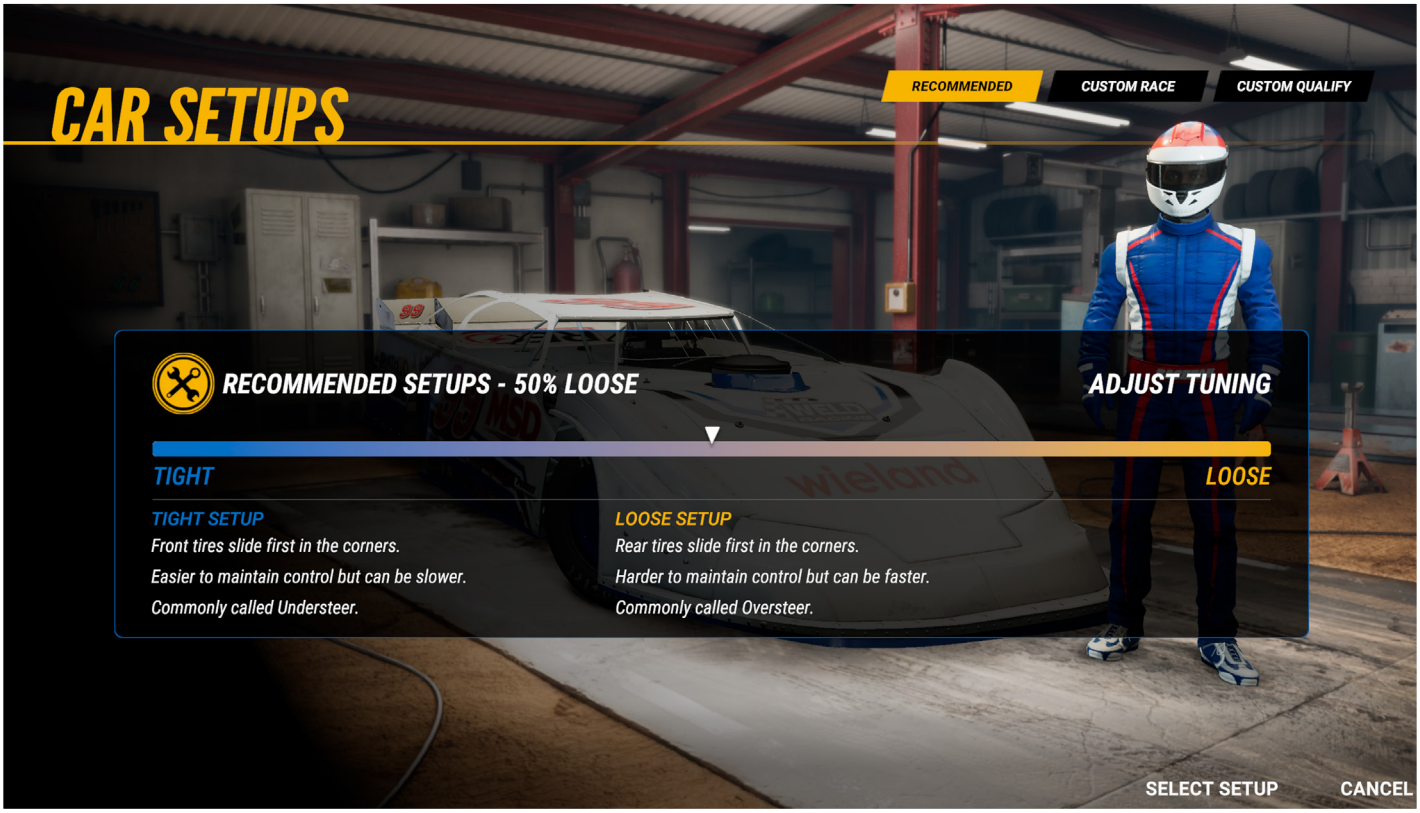
DESCRIPTION	Double Wishbone Independent front, 4-link solid axle rear suspension	
LENGTH	199 in	5054 mm
WIDTH	94 in	2387 mm
WHEELBASE	103 in	2616 mm
DRY WEIGHT	2150 lbs	975 kg
WET WEIGHT W/ DRIVER	2531 lbs	1148 kg

POWER UNIT

DESCRIPTION	Naturally aspirated steel block pushrod V8			
CAR	Pro Late Model		Super Late Model	
DISPLACEMENT	358 cid	5.9 Liter	438 cid	7.2 Liter
TORQUE	485 lb-ft	657 Nm	650 lb-ft	881 Nm
POWER	615 bhp	458 kW	800 bhp	596 kW

BASIC CAR SETUP

For those who wish to change the car's handling characteristics without diving into the Custom Setup options, the Recommended setups can be adjusted with the Tight/Loose slider in the Car Setups menu. Changing the slider setting towards either Loose or Tight will automatically adjust the car's setup to behave that way.



TIGHT SETUP

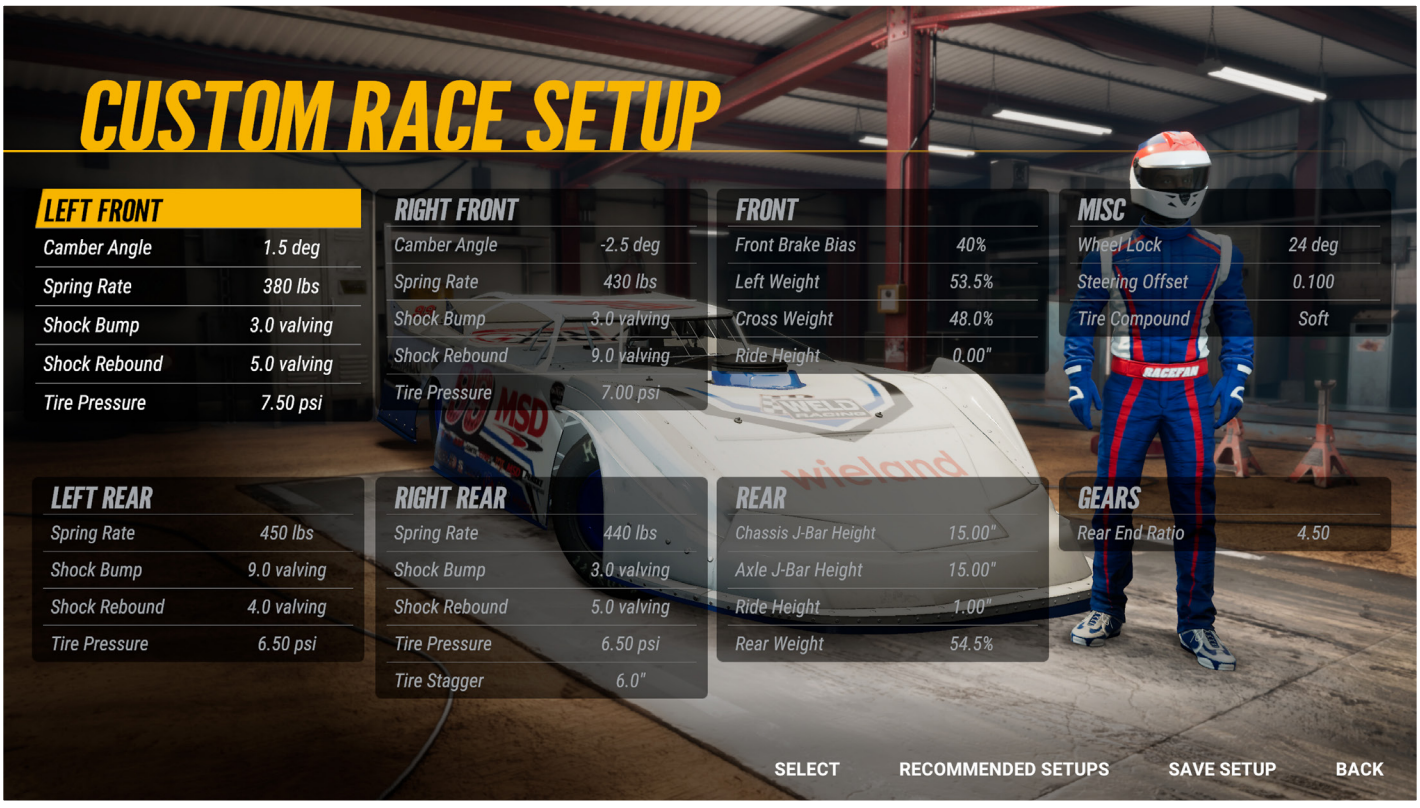
A Tight setup will generally be easier to control, especially when applying throttle because they will lose some front grip while cornering, a condition known as Understeer. These setups will not turn quite as easily, and can sometimes be slower, but will be easier to apply the throttle due to increased grip.

LOOSE SETUP

A Loose setup is more difficult to control because it will tend to lose rear grip when cornering, a condition known as Oversteer. These setups will turn better, but be more difficult to apply the throttle due to the reduced grip. This can be faster in some cases, but an excessively loose setup, will be slower due to the lack of rear grip.

ADVANCED CAR SETUP

Once you are confident that you are nearing your driving potential with the Tight to Loose slider, begin tuning the car more closely to your handling preferences with the following adjustments.



CORNERS

CAMBER ANGLE

Camber is the vertical angle of the wheel. Set the left side positive (tire leaning away from the car) and the right side negative (tire leaning towards the car).

MORE CAMBER	LESS CAMBER
MORE TURN RESPONSE	LESS TURN RESPONSE
LESS STABILITY	MORE STABILITY

SPRING RATE

Spring Rate describes how stiff the corner spring is. Softer springs allow for more mechanical grip and deal with bumps better, while stiffer springs produce better response to driver inputs. Smaller, slower tracks will benefit from softer springs while stiffer springs will work better at fast, high-banked tracks.

LEFT FRONT	
STIFFER	LOOSER ON TURN-IN
SOFTER	TIGHTER ON TURN-IN

RIGHT FRONT	
STIFFER	TIGHTER ON TURN-IN
SOFTER	LOOSER ON TURN-IN

LEFT REAR	
STIFFER	TIGHTER ON EXIT
SOFTER	LOOSER ON EXIT

RIGHT REAR	
STIFFER	LOOSER ON EXIT AND THROTTLE
SOFTER	TIGHTER ON EXIT

SHOCK BUMP

Shock Bump affects how stiff the shock is in compression (reduction in length). Higher values will make the shock harder to compress (good for smooth conditions), while lower values make the shock easier to compress (good for bumpy conditions). Differences between corner bump stiffnesses change the overall balance of the car on corner entry and exit, but not in the center of the corner.

FRONT SHOCK BUMP

HIGHER	TIGHTER ON ENTRY
LOWER	LOOSER ON ENTRY

REAR SHOCK BUMP

HIGHER	TIGHTER ON EXIT
LOWER	LOOSER ON EXIT

SHOCK REBOUND

Shock Rebound affects how stiff the shock is during expansion (increase in length). Higher rebound values will slow expansion of the shock, which is good for aero and smooth conditions, while lower values will allow the shock to extend faster, which is good for bumpy conditions to prevent unloading the tires. Differences between corner rebound stiffnesses change the overall balance of the car on corner entry and exit, but not in the center of the corner.

LEFT FRONT

HIGHER	TIGHTER ON EXIT
LOWER	LOOSER ON EXIT

RIGHT FRONT

HIGHER	LOOSER ON EXIT
LOWER	TIGHTER ON EXIT

LEFT REAR

HIGHER	LOOSER ON ENTRY
LOWER	TIGHTER ON ENTRY

RIGHT REAR

HIGHER	TIGHTER ON ENTRY
LOWER	LOOSER ON ENTRY

TIRE PRESSURE

Air pressure in the tire. Higher pressures will reduce grip while lower pressures will increase grip. Higher speeds and loads will require higher pressures, while lower speeds and loads will see better performance from lower pressures. Pressures should be set to track characteristics for best performance.

LEFT FRONT

HIGHER	LOOSER ON TURN-IN
LOWER	TIGHTER ON TURN-IN

RIGHT FRONT

HIGHER	TIGHTER ON TURN-IN
LOWER	LOOSER ON TURN-IN

LEFT REAR

HIGHER	TIGHTER ON EXIT
LOWER	LOOSER ON EXIT

RIGHT REAR

HIGHER	LOOSER ON EXIT AND THROTTLE
LOWER	TIGHTER ON EXIT

TIRE STAGGER

Stagger is the difference in size of the left-rear and right-rear tire.

HIGHER STAGGER

BETTER TURN-IN
MORE OVERSTEER THROUGH CENTER AND EXIT

LOWER STAGGER

MORE UNDERSTEER ON TURN-IN AND CENTER
BETTER TRACTION ON EXIT

FRONT

FRONT BRAKE 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 driver preference and track conditions.

HIGHER BRAKE BIAS	LOWER BRAKE BIAS
MORE UNDERSTEER UNDER BRAKING	MORE OVERSTEER UNDER BRAKING

LEFT WEIGHT

The percentage of vehicle weight that is over the left-side tires.

HIGHER LEFT WEIGHT	LOWER LEFT WEIGHT
LOOSER HANDLING	TIGHTER HANDLING

CROSS WEIGHT

Percentage of total weight in the right front and left rear tires.

HIGHER CROSS WEIGHT	LOWER CROSS WEIGHT
MORE TRACTION ON THROTTLE MORE UNDERSTEER THROUGH THE CORNER	MORE OVERSTEER THROUGH THE CORNER LESS TRACTION ON CORNER EXIT

RIDE HEIGHT

Distance from ground to the front end. A lower front ride height can increase front grip, but can also make the car too loose.

LOWER FRONT RIDE HEIGHT	HIGHER FRONT RIDE HEIGHT
MORE OVERALL OVERSTEER	MORE OVERALL UNDERSTEER

REAR

CHASSIS J-BAR HEIGHT

Increasing the chassis j-bar relative to the axle j-bar will make the car looser on corner entry and tighter on corner exit. Increasing the overall j-bar height (both ends together) generally increases roll angle and helps the car steer through the center, but reduces drive off the corner. Lowering the overall j-bar height tightens the center and provides more drive off.

INCREASING BOTH J-BARS	INCREASING CHASSIS J-BAR
LOOSER CENTER LESS FORWARD TRACTION ON EXIT	LOOSER ON TURN-IN TIGHTER ON EXIT
DECREASING BOTH J-BARS	**DECREASING CHASSIS J-BAR**
TIGHTER CENTER MORE FORWARD TRACTION ON EXIT	TIGHTER ON TURN-IN LOOSER ON EXIT

AXLE J-BAR HEIGHT

Increasing the axle j-bar relative to the chassis j-bar will make the car tighter on corner entry and looser on corner exit. Increasing the overall j-bar height (both ends together) generally increases roll angle and helps the car steer through the center, but reduces drive off the corner. Lowering the overall j-bar height tightens the center and provides more drive off.

INCREASING BOTH J-BARS

LOOSER CENTER
LESS FORWARD TRACTION ON EXIT

INCREASING AXLE J-BAR

TIGHTER ON TURN-IN
LOOSER ON EXIT

DECREASING BOTH J-BARS

TIGHTER CENTER
MORE FORWARD TRACTION ON EXIT

DECREASING AXLE J-BAR

LOOSER ON TURN-IN,
IGHTER ON EXIT

RIDE HEIGHT

Distance from ground to the rear end. Lowering the rear ride height can increase rear grip, but can make the car too tight.

LOWER REAR RIDE HEIGHT

MORE OVERALL UNDERSTEER

HIGHER REAR RIDE HEIGHT

MORE OVERALL OVERSTEER

REAR WEIGHT

Percentage of total weight on the rear tires.

HIGHER REAR WEIGHT

MORE OVERSTEER IN HIGH-SPEED CORNERS
MORE TRACTION OUT OF LOW-SPEED CORNERS

LOWER REAR WEIGHT

MORE UNDERSTEER IN HIGH-SPEED CORNERS
LESS TRACTION OUT OF LOW-SPEED CORNERS

MISC

WHEEL LOCK

The amount of steering range available at maximum input.

MORE WHEEL LOCK	LESS WHEEL LOCK
HIGHER STEERING RANGE FASTER STEERING RESPONSE	LOWER STEERING RANGE SLOWER STEERING RESPONSE

STEERING OFFSET

This is used to compensate for chassis settings which cause the car to pull in one direction by re-centering the steering wheel to eliminate steering input on the straights.

TIRE COMPOUND

Tire compound changes the softness of the tires on the car. This directly affects grip and will impact handling.

SOFT	MEDIUM	FIRM
HIGH GRIP CAN INDUCE UNDERSTEER	BALANCED GRIP AND HANDLING	LOWER GRIP CAN INDUCE OVERSTEER

GEARS

REAR END RATIO

The Rear End Ratio is the gear ratio between the driveshaft pinion and the differential ring gear. This will affect top speed and acceleration, and should be changed to reach maximum engine RPM by the end of the track's longest straight.

HIGHER RATIO	LOWER RATIO
LOWER TOP SPEED	HIGHER TOP SPEED
BETTER ACCELERATION	LESS ACCELERATION