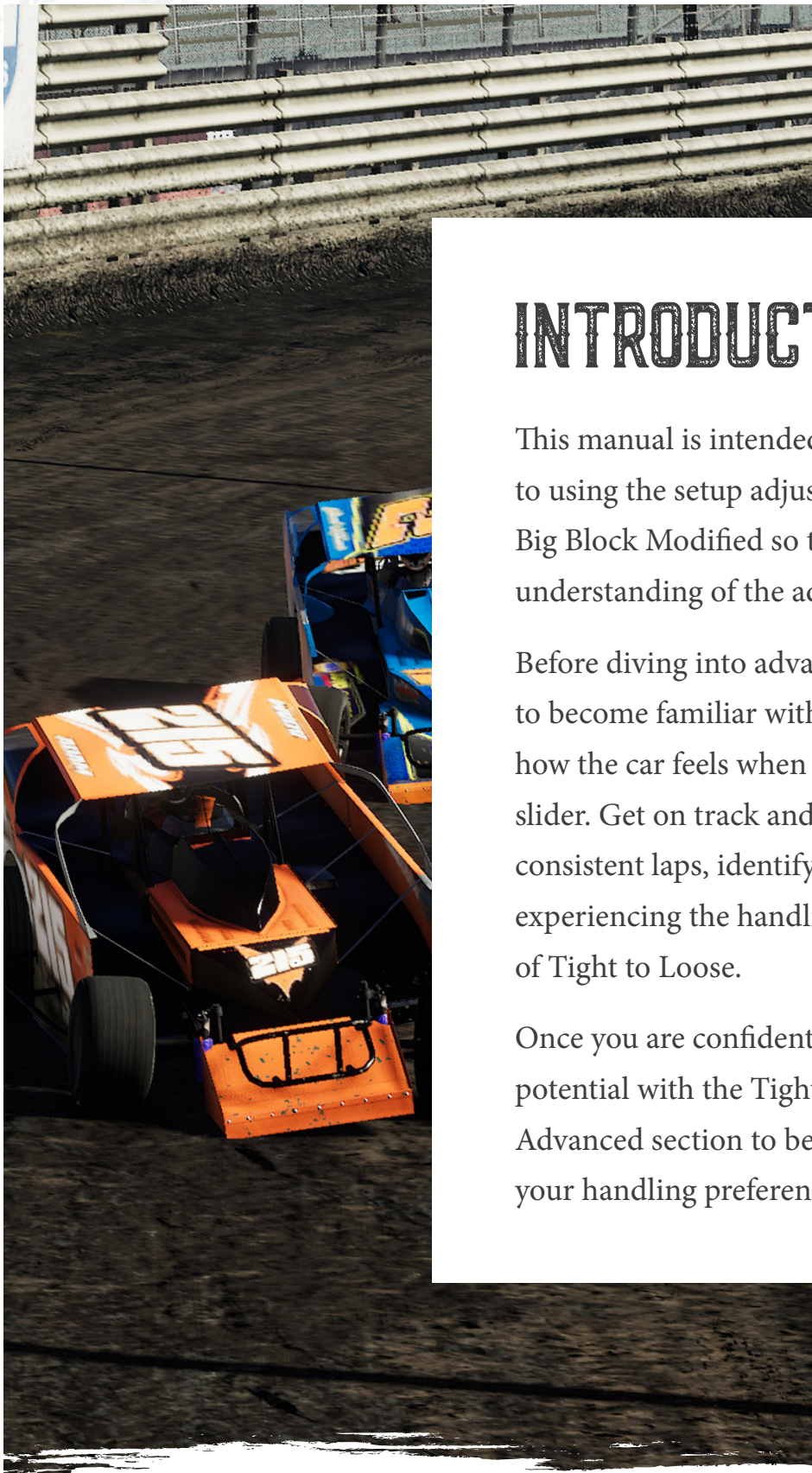




OWNERS' WORKSHOP MANUAL

GET TO KNOW YOUR BIG BLOCK MODIFIED





INTRODUCTION

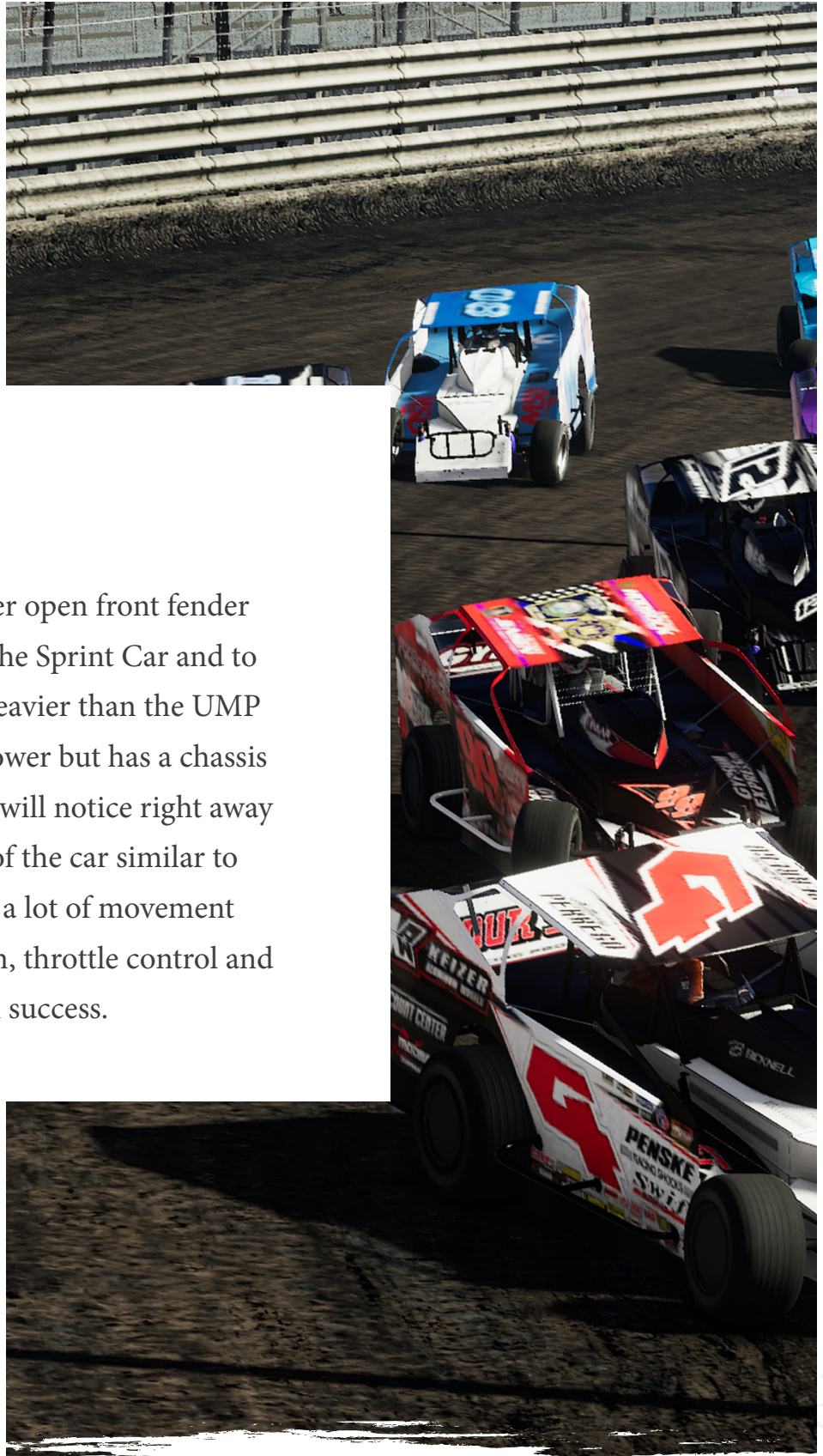
This manual is intended to provide you with a guide to using the setup adjustments available on the Dirtcar Big Block Modified so that you can have a better understanding of the adjustments available to you.

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

The Big Block Modified is another open front fender race car. It shares similarities to the Sprint Car and to the UMP Modified. It is a little heavier than the UMP Modified and has a little more power but has a chassis resembling a Sprint Car. Drivers will notice right away that you're sitting in the middle of the car similar to a Sprint Car but the rear end has a lot of movement like a UMP Modified. Once again, throttle control and contact-free driving will result in success.



TECH SPECS

CHASSIS

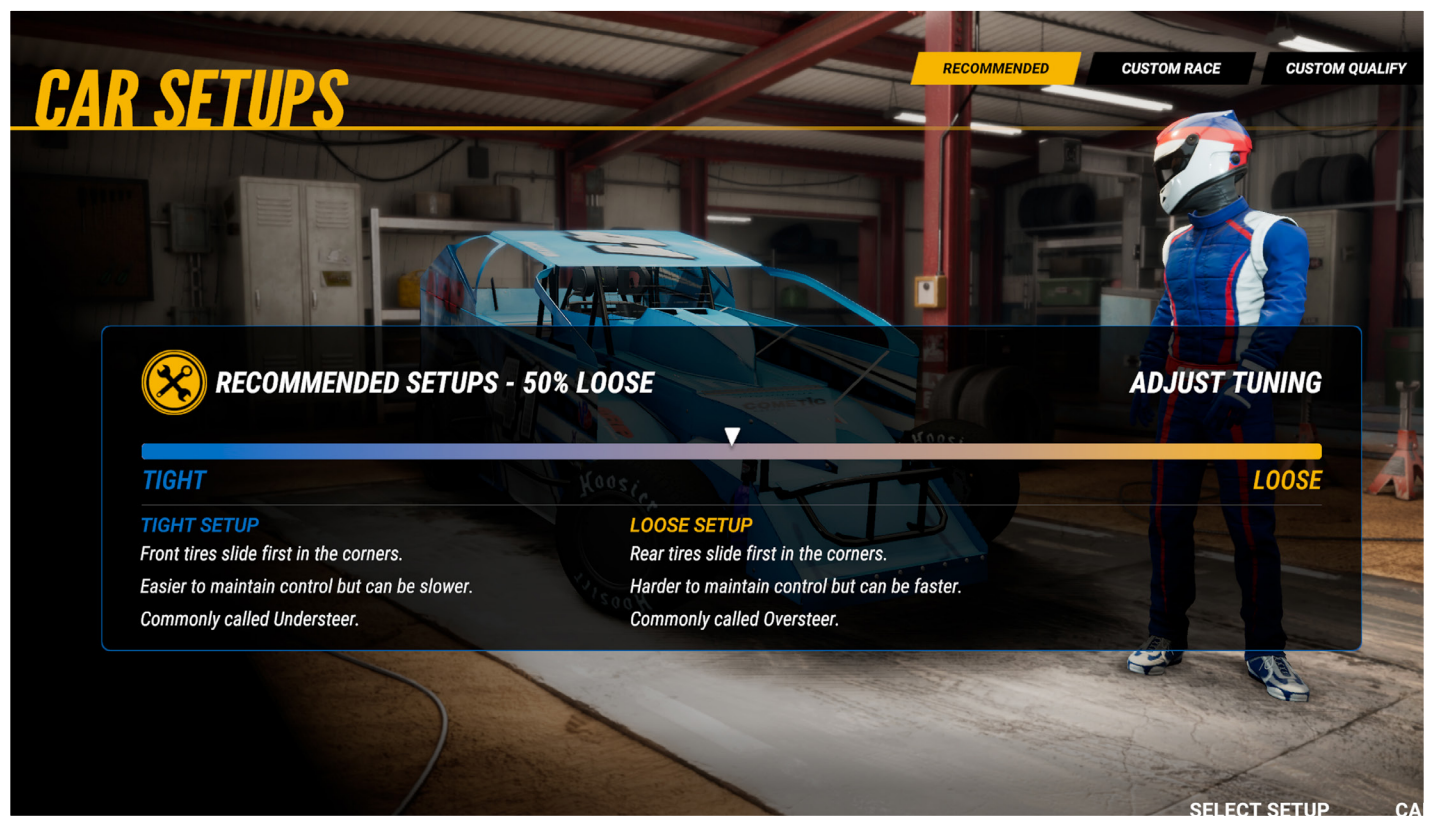
DESCRIPTION	Live Axle 4-link front suspension, Live Axle 3-link rear suspension	
LENGTH	---	---
WIDTH	86 in	--- mm
WHEELBASE	108 in	--- mm
DRY WEIGHT	2500 lbs	1134 kg
WET WEIGHT W/ DRIVER	2650 lbs	1202 kg

POWER UNIT

DESCRIPTION	Naturally aspirated steel block pushrod V8	
DISPLACEMENT	467 cid	7.6 Liter
TORQUE	646 lb-ft	877 Nm
POWER	757 bhp	564 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.

CUSTOM RACE SETUP

LEFT FRONT		RIGHT FRONT		FRONT		MISC	
Camber Angle	1.5 deg	Camber Angle	-2.5 deg	Front Brake Bias	40%	Wheel Lock	20 deg
Spring Rate	360 lbs	Spring Rate	320 lbs	Left Weight	54.5%	Steering Offset	0.000
Shock Bump	3.0 valving	Shock Bump	3.0 valving	Cross Weight	49.0%	Tire Compound	Soft
Shock Rebound	5.0 valving	Shock Rebound	9.0 valving	Ride Height	0.00"		
Tire Pressure	7.50 psi	Tire Pressure	7.00 psi				

LEFT REAR		RIGHT REAR		REAR		GEARS	
Spring Rate	350 lbs	Spring Rate	250 lbs	Chassis J-Bar Height	15.00"	Rear End Ratio	4.60
Shock Bump	9.0 valving	Shock Bump	3.5 valving	Axle J-Bar Height	13.00"		
Shock Rebound	3.0 valving	Shock Rebound	5.0 valving	Ride Height	0.00"		
Tire Pressure	7.50 psi	Tire Pressure	8.00 psi	Rear Weight	55.5%		
		Tire Stagger	0.0"				

SELECT RECOMMENDED SETUPS SAVE SETUP BACK

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

MORE TURN RESPONSE
CAR MAY BECOME LESS STABLE

LESS CAMBER

LESS TURN RESPONSE
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

MORE UNDERSTEER UNDER BRAKING

LOWER BRAKE BIAS

MORE OVERSTEER UNDER BRAKING

LEFT WEIGHT

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

HIGHER LEFT WEIGHT

LOOSER HANDLING

LOWER LEFT WEIGHT

TIGHTER HANDLING

CROSS WEIGHT

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

HIGHER CROSS WEIGHT

MORE TRACTION ON THROTTLE
MORE UNDERSTEER THROUGH THE CORNER

LOWER CROSS WEIGHT

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

MORE OVERALL OVERSTEER

HIGHER FRONT RIDE HEIGHT

MORE OVERALL UNDERSTEER

REAR

J-BAR

While the two ends of the J-Bar can be adjusted independently, changing both together will alter the overall handling characteristics instead of just entry or exit.

INCREASING BOTH J-BAR ENDS

LOOSER CENTER
LESS FORWARD TRACTION ON EXIT

DECREASING BOTH J-BAR ENDS

TIGHTER CENTER
MORE FORWARD TRACTION ON EXIT

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 CHASSIS J-BAR

LOOSER ON TURN-IN
TIGHTER ON EXIT

DECREASING CHASSIS J-BAR

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 AXLE J-BAR

TIGHTER ON TURN-IN
LOOSER ON EXIT

DECREASING AXLE J-BAR

LOOSER ON TURN-IN
TIGHTER 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

HIGHER STEERING RANGE
FASTER STEERING RESPONSE

LESS WHEEL LOCK

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 handling but can also influence tire life through a race.

SOFT

HIGH GRIP BUT SHORTEST LIFE
CAN INDUCE OVERSTEER

MEDIUM

BALANCED GRIP AND TIRE LIFE

FIRM

LOWER GRIP BUT LONGEST LIFE
CAN INDUCE UNDERSTEER

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 TOP SPEED
BETTER ACCELERATION

LOWER RATIO

HIGHER TOP SPEED
LESS ACCELERATION