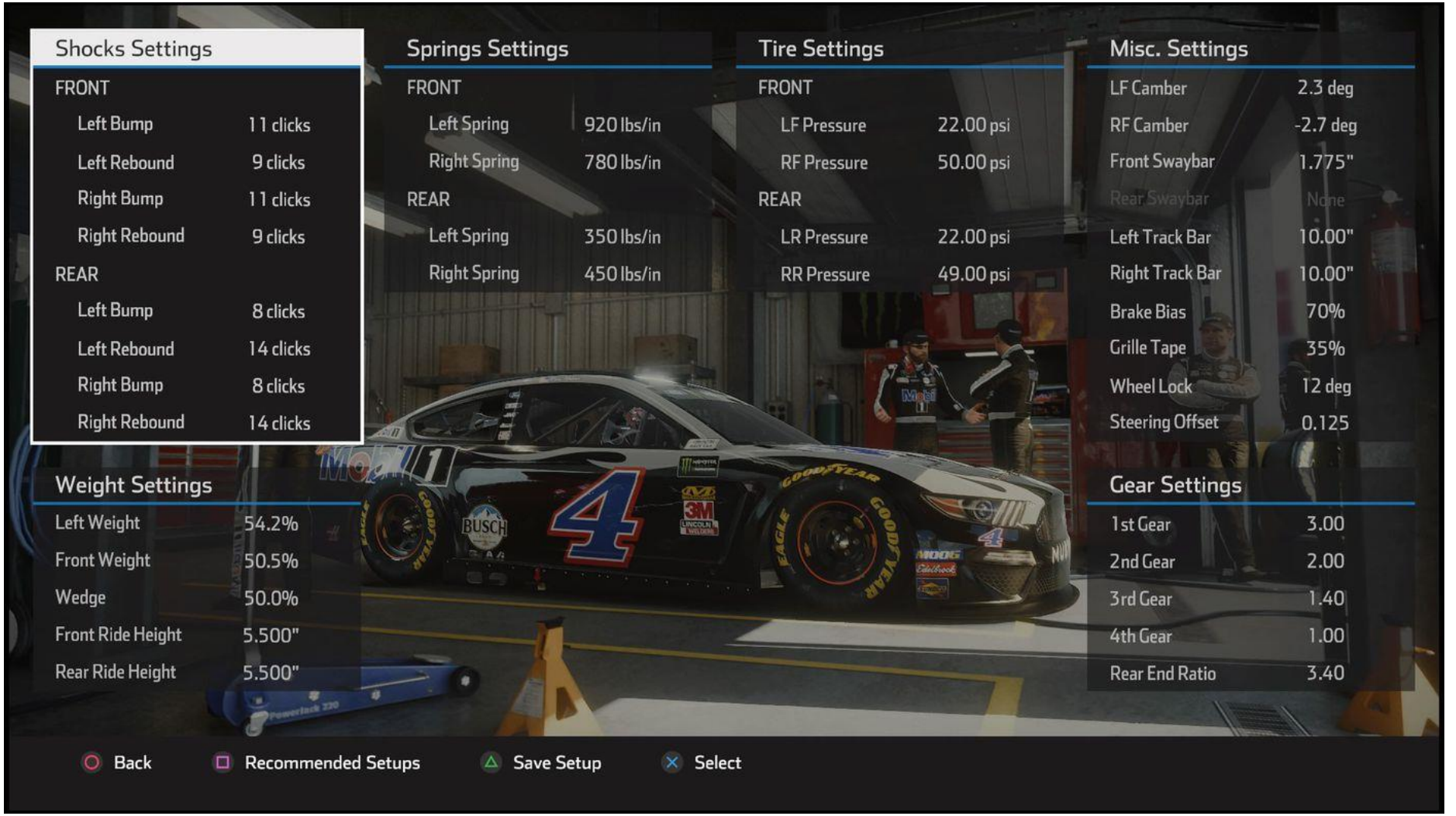
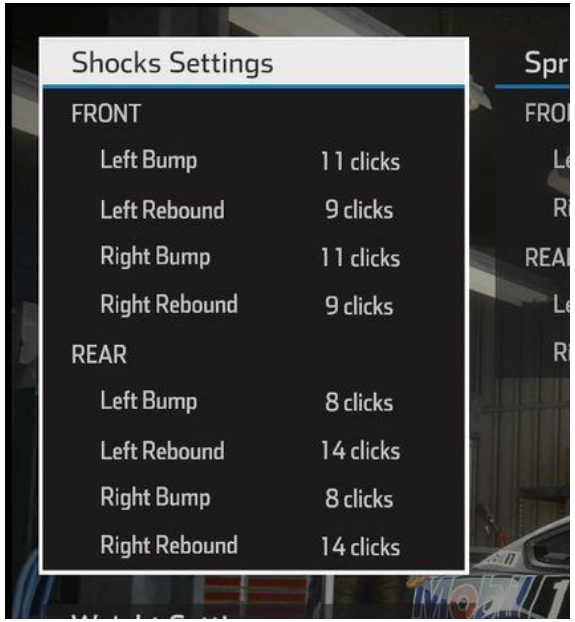
3 WIDE RACING
ESPORTS LEAGUE

Working With Custom Setups



Working With Custom Setups



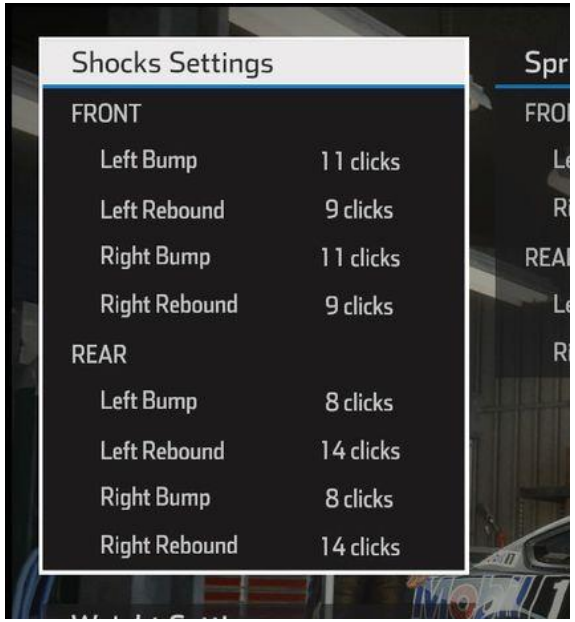
Shocks Settings

Shocks are designed to control the up & down movement of the suspension caused by weight transfer as well as bumps. A shock controls the speed at which the spring moves. Without shocks a car would handle like a boat in the water, swaying back & forth while moving up & down. Understanding shocks & how they work will give you a major advantage over those that don't. Controlling the chassis with the proper shocks is the key to getting through a corner smoothly & effortlessly. Shocks are used to help control handling problems & can even be used to induce desirable handling characteristics.

Bump: Bump, or compression, occurs when the shock shaft is being moved into the body. This occurs on the front of a bump, the back of a rut, the right side when turning left, the left side shocks when exiting a left turn, the front under braking and the rear under acceleration.
A higher front (left or right) shock bump will make the car tighter on corner entry. A lower front shock bump will make the car looser. A higher rear (left or right) shock bump will make the car looser on corner exit. A lower rear shock bump will make the car tighter.

Rebound: Rebound, or extension, occurs when the shaft is being pulled from the body. This occurs on backside of a bump, the front of a rut, the left side shocks in a left turn, the right side shocks exiting a left turn, the front under acceleration and the rear under braking.
A higher front (left or right) rebound will make the car loose on corner exit. A lower rebound will make the car tighter. A higher rear rebound will make the car loose on corner entry. A lower rear rebound will make the car tighter on corner entry.

Working With Custom Setups



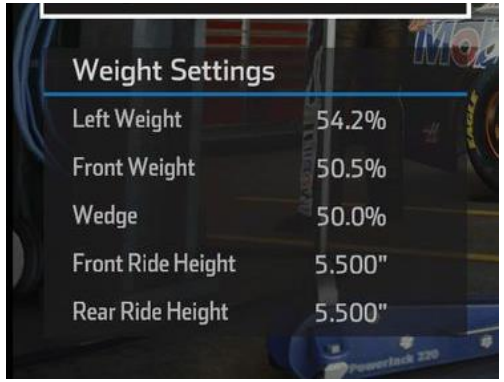
Shocks Settings

SHOCK COMPRESSION:
The stiffer the FRONT shocks, (higher the number) the tighter the car will be when braking.
The softer the FRONT shocks, (lower the number) the looser the car will be when braking.
The stiffer the REAR shocks, (higher the number) the looser the car will be under acceleration.
The softer the REAR shocks, (lower the number) the tighter the car will be under acceleration.

SHOCK REBOUND:
The stiffer the FRONT shocks, (higher the number) the tighter the car will be under acceleration.
The softer the FRONT shocks, (lower the number) the looser the car will be under acceleration.
The stiffer the REAR shocks, (higher the number) the looser the car will be under braking.
The softer the REAR shocks, (lower the number) the tighter the car will be under braking.

Shocks do NOT control the amount of weight transfer in a corner. They will however control how quickly the weight is transferred.

Working With Custom Setups



Weight Settings

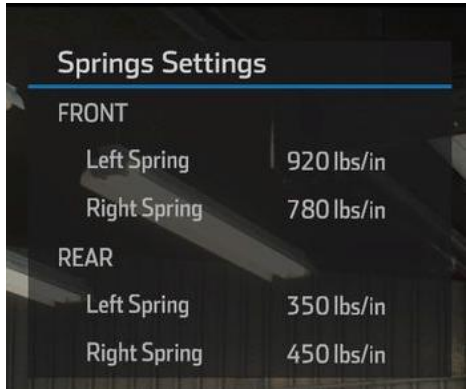
Left Weight: On an oval, use the maximum left weight allowed (54.2%). On road courses, it's usually best to keep the weight equal on the left and right sides.

Front Weight: Shifting weight to the front (a higher front bias) can help the car turn in better but may give more mid-corner push. Shifting weight back can stabilize the car at turn entry but may loosen in mid-corner.

Wedge: Less wedge will loosen the car, allowing it to turn better. More wedge tightens the car and can help in putting the power down. On a road course, use 50% wedge to keep the car from pulling to the left or right under power. A setup with a higher gear ratio or one that does not spin the tires will require less wedge. Wedge is required to get through the corners. Excessive amounts of wedge can slow the car down & wear the RF & LR tires prematurely.

Ride Height: Ride height is simply the distance between the track and the chassis. If the ride height is set too low the car may bottom out on the track. This will more likely occur at high speed high banked tracks where the centrifugal forces are higher or at road courses where there are dips in the track. If the car bottoms out in the rear, you will most likely get loose. Bottoming out up front will result in a push. If you bottom out, you can do one of two things. You can raise the ride height or run stiffer springs. Another thing you must consider when raising the ride height in the rear is how it affects the aerodynamics of the car. Raising the rear ride height raises the back of the car higher into the air. With that big spoiler running across the back, it will create more drag because it will be catching more wind. This will slow your straightaway speed. With more wind catching the spoiler it will also create more down force on the back of the car which should allow the back of the car to stick better in the corners.

Working With Custom Setups

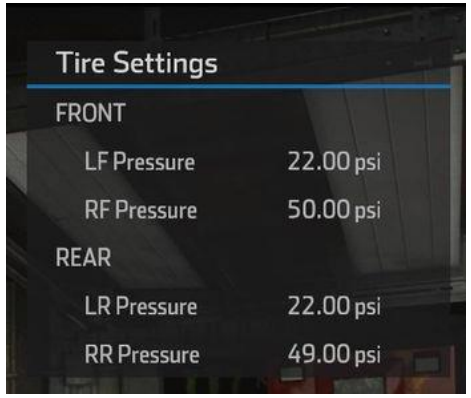


Springs Settings

In general stiffer front springs will make the car tighter. Stiffer rear springs will loosen the car. Weaker front & rear springs will have just the opposite effect. By changing the spring stagger between the LF & RF as well as the LR & RR, you are able to effect the way the car reacts under acceleration & braking. Spring stagger is the difference in spring rating between the left & right side of the chassis. Running more spring stagger up front, with a weaker left side spring, will tighten the car under acceleration while loosening it under braking. The RF & RR springs change the roll couple distribution of the chassis. A stiffer RF spring will make the car tighter. This is because the stiffer corner won't accept the body roll & will continue forward creating a push. A stiffer RR spring will have just the opposite effect & create a loose condition. The LF & LR springs effect the chassis by changing the wedge or cross weight in the car. A stiffer LF spring will make a car looser going in & coming out of a turn because it takes wedge out of the car. A stiffer LR spring will tighten the car from the middle, out of a corner because it keeps cross weight in the car.

Weaker LF will make the car tight.
Weaker RR will make the car tight.
Weaker RF will make the car loose.
Weaker LR will make the car loose.
Stiffer RF will make the car tight.
Stiffer LR will make the car tight.
Stiffer LF will make the car loose.
Stiffer RR will make the car loose.
Overall stiffer front springs will make the car tight.
Overall stiffer back springs will make the car loose.
Overall weaker front springs will make the car loose.
Overall weaker back springs will make the car tight.
Increasing front spring stagger will tighten the car under acceleration & loosen it under braking.
Increasing rear spring stagger will loosen the car under acceleration & tighten it under braking.
(This will become more apparent as the RF tire wears and may cause the chassis to snap lose in the latter stages of a tire/fuel run)

Working With Custom Setups



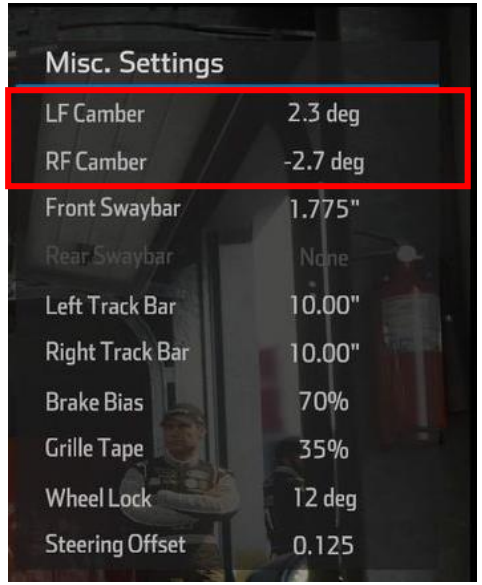
Tire Settings

Tires are the most important component on a race car. You can have the fastest engine or the best possible setup, but if you don't have a set of tires between you & the track, everything else is meaningless. In fact, everything you adjust on a race car is for the benefit of the tires.
Tire pressure is yet another adjustment that will aid you in achieving the best possible grip. Tire pressure is simply how much air you have in a tire. The hotter tires get, the more they expand. Air contains moisture. Moisture becomes steam as the air gets hot & increases pressure.

Improper tire pressure can cause an ill handling car. Correct tire pressure can be determined by reading tire temperatures. A tire with a temperature reading higher in the center of a tire indicates an over inflated tire. A tire with a lower center temperature, when compared to the inside & outside of a tire indicates a under inflated tire. Over inflated tires will have a tendency to make the car tight. Under inflation can slightly loosen a chassis but give better grip. Lower tire pressure will also increase the amount of heat in that tire. Excessively low tire pressure produces more heat which can result in quicker wear. Higher pressure tires run cooler, have less drag & will be quicker at higher speeds.

Higher psi in RF will loosen the car.
Lower psi in the RF will tighten the car.
Higher psi in RR will loosen the car.
Lower psi in the RR will tighten the car.
Higher psi in the LR will tighten the car from the middle out.
Lower psi in the LR will loosen the car from the middle out.
Higher psi in the LF will tighten the car.
Lower psi in the LF will loosen the car.
The lower the psi in a tire the hotter it will run.
The higher the psi in a tire the colder it will run.
Excessively low front tire psi will create a push.
Excessively low rear tire psi will create a loose condition.
Increasing the split (more RR psi than LR) increases stagger, helping the car to turn in the middle of a corner.
Increasing the split of the left & right side psi (more psi on the right) increases the pull to the left.

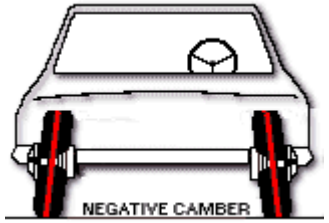
Working With Custom Setups



Misc. Settings

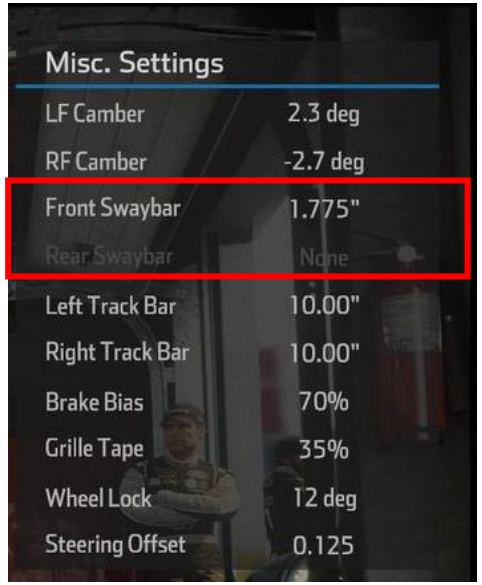
Camber: Camber is the inward or outward tilt of the wheel at the top of the tire. Negative camber is the tilt of the top of the tire towards the center of the vehicle.

Positive camber is the tilt of the top of the tire away from the center of the vehicle. Camber adjustments are utilized to help maintain the maximum grip allowable from the surface of the tire through the corners of the track. Proper camber adjustments are very critical for achieving maximum cornering speeds.



When camber is set correctly it allows the entire surface of the tire to adhere to the track thus maximizing the use of the tire contact patch when taking a corner at high speed. On all tracks except road courses you'll want to run with negative camber on the right front & positive camber on the left front. Running camber as such will create part of the pull to left that will help the car get through the corner easier. The more excessive the cambers the greater the pull can be. Running excessive amounts of camber will cause premature tire wear due to the fact that the tires aren't running on the full contact patch of the racing tire. As a general rule, the flatter or slower the track the more camber you'll need on both front tires. More positive camber on the left front & more negative camber on the right front would be required at a track like Martinsville over a high speed high banked track like Talladega

Working With Custom Setups



Misc. Settings

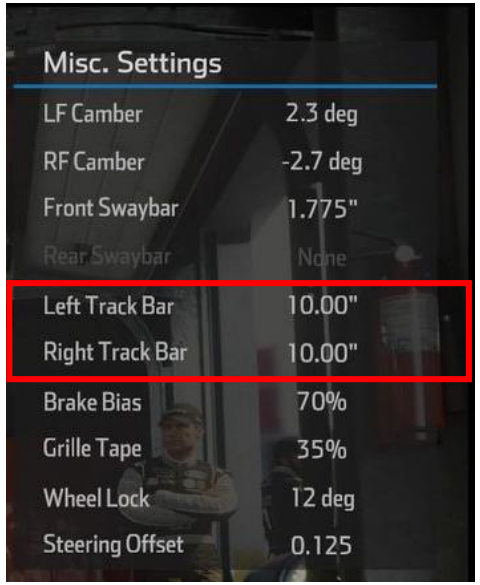
Front Swaybar: The purpose of a sway bar is to control body roll through a corner. This is done with a bar that connects to both front lower a frames. a sway bar acts as a third spring to help balance out weight transfer during cornering.

By changing the diameter of the bar we are able to adjust the amount of roll or weight transfer that occurs at the front of the car. Generally speaking, the larger the bar the less the body roll up front. The less the body roll the tighter the car becomes. Therefore the smaller the bar, the more body roll & the looser the car becomes. Fine tuning with sway bars is an easy way to compensate for roll couple or body roll.

The larger the bar the tighter the chassis.
The smaller the bar the looser the chassis.

Rear Swaybar: ***Not available on oval tracks***. The purpose of the rear sway bar is the same as the front sway bar except it controls body roll at the rear of the car. The rear sway bar connects in the back between both rear lower trailing arms.
Stiffening the rear sway bar (larger diameter) loosens the car and reduces body roll when cornering. It has just the opposite effect that occurs at the front.

Working With Custom Setups



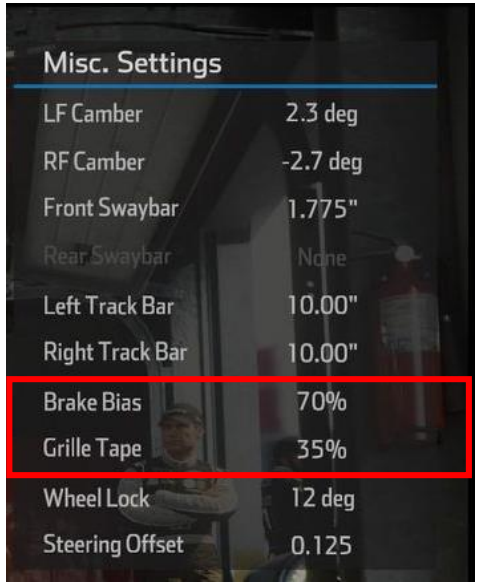
Misc. Settings

The **track bar** is simply a bar that is mounted behind the rear-end that keeps the rear end from moving from side to side while cornering. The left side of this bar is mounted to the rear-end, while the right side is mounted to the frame. Both of these mounts are adjustable up & down & change the rear roll center of the car. Rear roll center directly effects the body roll experienced in the car.

Raising the right side of the track bar, or lowering the left side, will make the car looser under acceleration while at the same time tighten you up under braking.

Lowering the right side of the track bar or raising the left side will have the opposite effect & will make the car tighter under acceleration & loosen you up while braking.

Working With Custom Setups



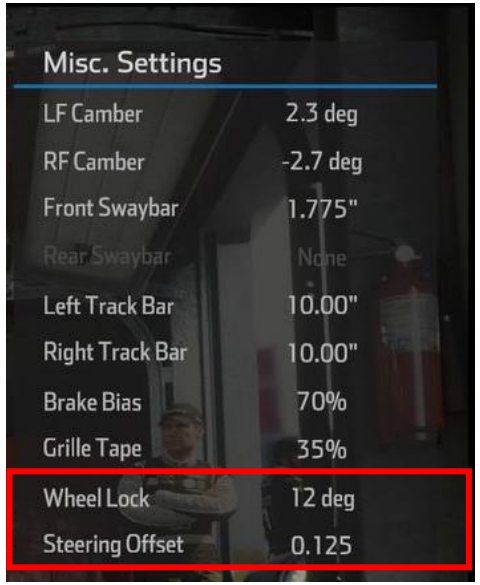
Misc. Settings

Brake Bias: When entering a corner 60 to 80% of the weight is transferred to the front of the car. The exact amount depends on the speed of the car, track, corner, & how much brake is applied upon entry. Because of these varying factors more or less front brake needs to be "dialed" into the car. Between the front & rear master cylinders is a balance bar that can be adjusted to allow more or less brake pressure to be applied towards the front when the brake pedal is pushed.
The more front brake bias (higher the number) you have set in the car the tighter the car will be on entry. The lower the number the looser the chassis will be. This tight or loose condition from front brake bias will only occur while you're on the brakes entering the turn
If the car doesn't turn well under braking, decrease the front brake bias. If it wants to spin under braking, increase the front brake bias. Go with the lowest front bias you can control.

Grille Tape: Grill tape is nothing more than duct tape. This tape is applied to the front bumper & air dam of the car covering the openings for air flow to the various components that are cooled through the force of air. Taping off the openings in the front of the car reduces drag & increases speed. Instead of air going through the car, air is being forced around the car. This places more down force on the front end. More down force will make the front of the car turn into the corner quicker. Excessive amounts of tape can cause too much down force making the rear of the car light, creating a loose condition.

Higher tape % will increase speeds.
Higher tape % equals higher water temperatures.
Higher tape % will loosen the chassis.
The hotter the weather the less tape you can use.
Tape causes aerodynamic changes that have very little affect at speeds less than 140 MPH

Working With Custom Setups



Misc. Settings

Wheel Lock: Controls how far the wheels can turn. The higher the number, the more sensitive the car is to steering wheel movements. Road courses and smaller tracks are best to have lower wheel locks while faster, bigger tracks that require minor wheel movement can have higher settings.

Steering Offset: The steering offset is used to adjust how the car travels when the steering wheel is in the neutral position. If the car is pulling to the left, raise the steering offset to force the car to drive straighter.

Working With Custom Setups

Gear Settings

Most of your ratio changes will be made at the rear end in the differential. The most important factor in selecting proper transmission ratios, is to make sure you're not geared too high causing excessive wheel spin. You must also be sure you have a good split between ratios through all 4 gears. You'll want to maintain as high an rpm as possible when shifting through the gears. Too large a split ratio between gears will cause slow acceleration and lost time whenever shifting is required. Most notably on a road course & or while exiting the pits.

The higher the ratio/number (6.56) the higher the rpm. Provides quicker acceleration, but slower top speeds.
The lower the ratio/number (2.86) the lower the rpm. Provides slower acceleration, but higher top speeds.