

## **RUSH SR, Getting Started**

Thank you for purchasing a RUSH SR. We hope our car will bring you years of enjoyment and help you develop your on-track skills and bring you many wins in wheel-to-wheel competition. This Tech Talk has been written to help you get from the trailer to the track as quickly as possible.

The RUSH SR is a purpose-built race car that you will run hard on track. To ensure you get reliable on track performance, it is necessary that the car be maintained. The maintenance requirements are not excessive, a couple of hours prepping the car before each event is all that's required. If you are handy with a wrench, then the maintenance requirements are well within the capabilities of most track day and racing enthusiasts. If you consider yourself mechanically challenged, or just prefer not to do the work yourself, we encourage you to get with a mechanic with race experience that can help get you going, and assist with your maintenance between events.

### **WARNING**

- The RUSH SR race car is a high-performance vehicle designed for Track use only. Its proper maintenance and operation are critical for your safety. Improper maintenance, use, high performance events or competitive racing in general, can result in major injury or even death. Never drive the RUSH SR beyond your ability, and beware of other vehicles on track at all times.
- During the Winter the SR may be shipped to you without any coolant for freeze protection. We do not use Glycol based coolants as they present a major safety issue if spilled on track. Only use water with water wetter. Fluids should be checked before each startup of the car. Never remove the Radiator cap while the system is hot!
- It is NOT recommended to ever engage gear on the car with the body work removed as there are unprotected moving components such as the chain and driveline that could cause sever harm or injury.
- Never operate the RUSH SR without the seat belts securely fastened and with the driver wearing appropriate safety gear. Full FIA / SFI fire rated safety gear is recommended, at all times, together with a full-face race approved helmet.

### **Seat Mounting**

We prefer that customers visit our factory at time of completion of their car. This allows us to ensure that the seat is mounted where the driver is comfortable and that the seat and pedals are positioned where they will best suit the owner.

Where a customer cannot visit our factory for seat fitment, we do not mount the seat. Our reason for this is we simply cannot guess where you will want it and will end up drilling holes where you didn't want them.

The car is shipped with the pedals mounted full forward. Don't worry about them until you have the seat mounted. It's important to get your seat placed where you are in a comfortable driving position first, and then adjust the pedals where you want them.

We have a you tube video on how to mount the seat [link here](#).

Please ensure that once you have the lower mounts in place, that you install the seat back mounts to support the seat back.

### **Body work removal**

Removal of the front and rear clips is best done by 2 people, but with practice can be done single handedly. The car is shipped with the front strobe lights disconnected, as most people will unknowingly remove the front clip and immediately pull the wiring from its connector. Before removing the front clip, look through the right-hand air inlet in the front bumper and ensure the cable is unplugged from the socket, in the right-hand chassis side plate.

Removal of the clips first require that all six AeroCatch fasteners are unlatched. This is done by pressing the moon shaped segment at the wide end of the fastener, which will release the handle. GENTLY lift the handle until the pin can be seen to have released from the hole in the mounting rod. If it's sticking its best not to force the handle but slightly jiggle the body work to release any load. A flat ended screwdriver can also be used to move the mounting rod sideways if necessary.

With the AeroCatch's unlatched there are a total of 14 Quick Latch fasteners that hold the front and rear clip to the car. These are release by pressing the button in the center. These work well when there is NO load on them. Oftentimes they are under load, and the body panel will have to be pushed or lifted to release the load on them before the button can be pressed released. We find it is easiest to work from the middle out.

Front clip removal is easiest with a person either side holding the wheel arch and the front light relief. Lift the rear of the clip upwards, tilting the clip forward like opening the hood on an old Jag E-type! Once the AeroCatches are clear of their mounting rods, hold the clip at that angle, and slide the whole clip forward to release the splitter supports. The whole clip can be placed on the ground on the splitter, but something should be placed under the rear edge of the hood to support the weight at the rear, or you will cause damage to the fenders around the wheel arch.

Rear clip removal again is easiest, with one person either side holding the clip by the side of the ducktail and the edge of the fender that mates with the sidepod. The rear clip must be lifted straight upwards to clear the cooling duct mount and radiator. The straight upward movement will also allow the rear fenders to clear the roll hoop front edge. The rear clip can be stored in the vertical position standing on the back edge of the ducktail and the rear wing. If doing this, put something down on the ground to prevent scratching. Also be aware that wind can easily blow this over!

When not mounted to the car we prefer to sit the front and rear clips on body work stands. Some will go for custom stands costing a pile, but we find that the Harbor Freight, 200lb Portable work Stands, \$21.95, work perfectly and are light weight to put in your trailer.

## **Pedal Box Placement**

The pedal box is mounted to the floor with four bolts. Removing the nuts from under the car will allow placement of the pedal box where you want it. The gold-colored foot plate will have to be removed to get access from the top. If it's necessary to move the pedal box further back than the mounting holes provide, then additional holes can be drilled in the mounting rails. If moving the pedal box back significantly for shorter drivers, it is required to cut slots in the foot plate to clear the steering rack mounting pedestals.

## **Dash Panel**

The dash panel is equipped with the following controls from left to right.

- Master switch with red safety cover
- Starter button
- Run switch
- Fuel pump switch
- Steering wheel controls, Paddle shift controls, black NSEL button and red PTT Button
- Aim dash / data logger
- Auxiliary switch
- Rain light strobe switch
- DRL strobe / running lights 3 position switch
- Mechanical brake bias control

**Master Switch** - With the cover pushed down all power to the car is disconnected. Lift the cover and raise the master switch to power the car up. The shift system air compressor will be heard running, and it is common to hear the secondary throttle plates perform their power on calibration. The Aim dash will also power on and will show gear position.

**Run switch** – The run switch must be moved to the upward position to start the car. Moving the run switch downward will kill the engine.

**Fuel pump switch** – The fuel pump switch must be in the upward position to start the car. The fuel pump switch allows the fuel pump to be switched off in the event of a fuel leak. Moving the fuel pump switch downward will kill the engine.

**Starter button** – With the master switch on, and the run and fuel switches on (all in the upward position) the engine can be started when in Neutral. The engine must be in Neutral to be started. It will not start if in gear, even with the clutch pedal depressed. Start the engine by momentarily pressing the starter button. It is not necessary to hold the button, as the ECU will run the starter for 5 seconds or until the engine starts.

**Paddle shift controls** – The paddle shift controls are positioned behind the steering wheel rim. They are operated by lightly pulling the paddle rearward toward the wheel. The left-hand paddle is used to effect a down shift. The right-hand paddle is used to effect an up shift.

**Black Nsel button** – The black neutral select button is provided to allow selection of Neutral while operating the gearbox via the paddle shift controls. The gearbox is a sequential six speed gearbox, with Neutral positioned between first and second gears. The black Nsel button tells the GCU you are trying to select Neutral. When pressed, the shift paddle commands the GCU to make only a half shift up or down respectfully.

**Red PTT button** – The red Push to Talk button is provided should you wish to use a communication radio. The wires are connected through the wheel jumper cable to the wiring harness. A black and white wire can be found in the left-hand wiring harness and are not connected to anything. These wires can be connected to your radio harness to allow control of the PTT function.

**Aim dash logger** – Your aim dash logger has been set up at the factory with our basic setup. Alarms have been set for Water Temperature and Oil Pressure. If you see warning lights coming on while on track, assess the situation and either pull off and shut down, or slow down and exist that track immediately, then shut down. The primary page of your dash logger will display your basic engine data and lap time. The Top LEDs have been set up as shift lights. Page 2 of your Aim Dash setup will show front and rear brake pressures. ALWAYS check your brake pressures and balance before entering the racetrack.

**Auxiliary switch** – The auxiliary switch is not connected, it is provided as a spare for owner installed options.

**Rain light strobe switch** – The rain light strobe switch controls the rear center positioned red led strobe to provide better visibility for approaching vehicles in wet conditions.

**DRL strobe / running lights 3 position switch** – The DRL strobe / running lights 3 position switch is off when in the center position. In the upward position, the front DRL's are switched on in the strobe manner to provide additional visibility to cars ahead of you, so that they have a better chance of seeing you approaching from behind. When moved to the lower position, this switch turns on the front DRL's continuously, and also activates the outward rear red led lights at half brightness. This can be useful in darker overcast conditions. These are NOT night driving lights. In this position, the rear brake lights are still active at full brightness under braking.

**Mechanical brake bias control** – The mechanical brake bias control allows you to adjust the brake Bias balance front to rear. CAUTION It can also set you perfectly to spin the car when you mess with it and get it wrong! Page 2 of your AIM dash / logger will show you the pressure you generate when pressing the brake pedal for both the front and rear brakes. Typically, you want this set 60-55% to the front, 40-45% to the rear. Do not turn the bias adjuster while pressing the brake pedal. Turning the bias adjuster to the left, dials in more front brake. Conversely, turning it clockwise will dial in more rear brake. ALWAYS Check your brake balance before entering the track, kids love to turn knobs!

### **It's time to drive this thing!**

Driving the RUSH SR is very simple. It's doing it fast that's going to take you a bit of practice! The clutch is only used to engage 1<sup>st</sup> gear to get going, and again when you come to a stop. You will be starting in Neutral so depress the clutch and using the left-hand paddle, shift down to first. Remember Neutral is between first and second. The clutch is pretty fierce so you're going to stall unless you give it considerable revs, 3,000 -3,500 and gently find the bite point to get the car rolling. During demos we get someone to give the car a push, since

most people will just stall the car. If you stall, press the clutch, press the N/Sel button, and up shift to Neutral to allow the car to be restarted,

Once rolling, up shifts can be made with the right-hand paddle. Upshifts must be made under power, and if you lift off it won't work. Downshifts should be made with the left-hand paddle while off the gas. If you're on the gas it won't work. While in the paddock, perform a few brake checks to make sure you are finding the brake pedal. We had one demo driver wearing large shoes manage to get the gas and not the brake!!!

DO NOT try operating the gear box through the range of gears while stationary, as this can result in damage to the gear box.

### **Hold Up, Lets break the engine in!**

Before you set a new track record... Let's think about that brand new engine. Be kind to it and it will be kind to you and your wallet! The engine should be given three break-in sessions. 1) keeping RPM Below 7,500. 2) Keeping RPM Below 10,500. 3) First half session Below 10,500 then allowing full rev out to limiter. Engine should be allowed to cool after each session.

This also give you a chance to get broken into the car. Fluids should be checked after each session. Following these three sessions, you are good to go. The car is very balanced but will bite back if you horse it around. Find your limits slowly and work into the car. It likes to be balanced in the corners, deep trail braking and yanking your foot off the brake at mid corner, will not give you the results you want. Learning to use the shift lights will take some time too, most people are tuned into changing gear by 7,000 rpm. Short shift and you are not even in the powerband.

### **Now go have some fun....**

Thank you again,

Without you our customers, this was all for nothing!

**David Hosie**  
**RUSH Auto Works Inc.**