

Handbook

Handbook

RX

SR8  
RX



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No. 7252 V1  
10/12 – 100

**Owners handbook 1/2**

This section must be completed by the original selling distributor or Radical Sportscars.

VEHICLE IDENTIFICATION		
<b>MODEL: SR8 RX</b>	_____	
<b>CHASSIS No</b>	_____ _____	
<b>DATE</b>	/	/ 20
_____		

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# introduction

Dear Radical owner,

Thank you for purchasing a Radical SR8 RX and welcome to the worldwide Radical family. The SR8 RX is Radical's ultimate racer, and it provides the definitive visceral driving experience. Physics-defying grip, relentless acceleration and powerful brakes add up to a two-seater track car that can lap Silverstone in the same time as a Formula 3 single-seater. The SR8 RX is a truly unique sportscar and, if properly maintained, will give you an amazing driving experience whether on the open road or on a race circuit. Although your car has been carefully constructed, inspected and run-up on our in-house rolling road dynamometer, please do not press the Engine Start button until you have read through this Owner's Handbook, carried out all the checks and learnt how to get the best from your car.

You will find all the help and support you need via the information and contacts on our global website network:

**<http://www.radicalsportscars.com>**

Parts, consumables and merchandise can be purchased online while technical advice, sales and aftersales advice is just an email or telephone call away.



Phil Abbott  
Radical Co-Founder



# Disclaimer

## **CAUTION:**

The Radical SR8 RX is a high-performance race and track vehicle, with extreme handling and speed capabilities. Due to the intense nature of the SR8 RX, Radical advises all owners to read this owner's manual thoroughly before driving, always driving within your own capabilities, paying close attention to the prevailing weather conditions, track surface and other circuit users.

Radical recommends that SR8 RX owners seek professional performance driving instruction on purchase of an SR8 RX.

# Pre delivery check

Before you take receipt of your new Radical SR8 RX, your local Radical distributor has performed the following checks to ensure that it is ready for use:

## **BODYWORK/EXTERIOR**

- > Check for damage during transit
- > Ensure all body catches are tight
- > Clean and polish bodywork

## **TYRES**

- > Visual inspection for damage during transit
- > Tyre pressure check and adjustment to factory settings
- > Ensure valve caps present

## **DASHBOARD**

- > Check functionality of all buttons and functions
- > Zero hour meter

## **ENGINE BAY**

- > Visual inspection of engine bay

- > Check oil level, adjust level as required
- > Check coolant level in swirl pot, adjust level as required, check coolant is circulating when engine running
- > Clean airbox and area around engine

## **ELECTRONICS**

- > Check ECU/sensor operation and rectify any faults indicated, clear ECU of data



# Pre delivery check

## **DOCUMENTATION**

- > Complete, sign and stamp Pre-Delivery Inspection entry on page 09
- > Compile customer pack containing:
  1. SR8 RX Owner's Manual (this document)
  2. Dipstick and wheel nut socket
  3. ECU Data Download Cable

## **DISTRIBUTOR-CUSTOMER HANDOVER**

Your local Radical distributor will carry out the following handover to ensure you are completely happy in the operation and everyday maintenance of your new Radical SR8:

- > Adjustment of the seat, harnesses and controls
- > Instrumentation and dashboard
- > Driving including paddleshift operation
- > Location of oil filling points, coolant and filters
- > Location of jacking and towing points

- > Explanation of safety points regarding harnesses, tyres etc.
- > Adjustment of pedals for first owner
- > Customer and distributor sign on page 09; copy returned to Radical Sportscars UK

24 hours after delivery is taken by the SR8 RX customer, your local Radical Distributor will contact you to ensure you are happy with the operation of your new purchase.



# Pre delivery check

**Date:**   /   /

I confirm that (distributor stamp)

has carried out the Radical SR8 RX Handover Procedure and I am satisfied with the vehicle's operation, maintenance and service schedule upon delivery.

**Customer Signature:**

**Print Name:**





# Getting started

Exterior overview

Interior overview

Controls

LCD dashboard

Safety and security



# Exterior overview



# Exterior overview

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# Interior overview

LCD Dashboard  
Safety and security

# LCD dashboard



# LCD dashboard

## **LOW FUEL PRESSURE WARNING LIGHT**

May be caused by a low fuel level in the tank, or other reasons when the fuel pressure drops below 2.5bar. If the light illuminates whilst driving under normal conditions, stop and investigate as soon as possible.

## **LOW WATER TEMPERATURE WARNING LIGHT**

Illuminates if the engine coolant water is below 60°C. The vehicle should not be driven under load until the engine coolant temperature has passed 60°C. If the light illuminates whilst driving under normal conditions, stop as soon as possible.

## **HIGH WATER TEMPERATURE WARNING LIGHT**

Illuminates if the engine coolant water exceeds 95°C. The vehicle should not be driven if the engine coolant temperature has passed 110°C. If the light illuminates whilst driving, stop and investigate as soon as possible, allowing the car to cool down slowly to avoid damage. An external fan directed

into the side air intakes is recommended when the car is stationary.

## **LOW OIL PRESSURE WARNING LIGHT**

Illuminates to warn of low oil pressure. If this light illuminates under normal driving conditions **STOP DRIVING IMMEDIATELY**, switch off the engine and investigate the fault. Occasionally, if the engine is at operating temperature and idling, this light may momentarily illuminate; this is normal.

## **LOW OIL TEMPERATURE WARNING LIGHT**

Illuminates if the engine oil temperature is below 50°C. The vehicle should not be driven under load until the engine oil temperature has passed 50°C. If the light illuminates whilst driving under normal conditions, stop and investigate as soon as possible

## **HIGH OIL TEMPERATURE WARNING LIGHT**

Illuminates if the engine oil temperature exceeds 120°C. The vehicle should not be driven if the engine oil temperature has passed 120°C. If the light illuminates whilst driving, stop and investigate as soon as possible, allowing the car to cool down slowly to avoid damage.



## ENGINE SHIFT LIGHTS

Illuminate towards the centre of the dash, from green-orange-red. The lowest green lights will illuminate at 8,000rpm, with the highest red light illuminating at 10,000rpm. Change up a gear before the lights enter the red zone; persistent driving on the rev limiter may damage the engine.

## TACHOMETER

Calibrated between 0-10,000rpm, the SR8 RX maximum revs are 10,500rpm. Once the engine is switched off, a tell-tale marker will remain indicating the highest revs reached during that run.

## GEAR INDICATOR

Shows the gear as a value **1-6**. Neutral is indicated with a **0** (zero). Reverse gear is indicated by a digital **'R'**.

## SPEEDOMETER

Displays vehicle speed in miles per hour or kilometres per hour, depending on the dash calibration. The units of measurement can be

changed within the dash menu using the AIM software supplied on the disc with the car, or downloaded from the AIM website.

## LAP TIME

Configurable between actual and predicted lap time.

## DASH MENU/RECALL BUTTONS

Ask your local Radical distributor for more details.

## ENGINE CONTROL TRIPS

The ECU incorporates fuel pressure, oil pressure, oil temperature and water temperature trips that will switch the engine off if any of the dash warnings are missed or not adhered to.

If the engine stops of its own accord, then one of these trips may have been activated; data on the ECU should be investigated and the fault remedied before driving any further. Despite the trips, the driver should **ALWAYS** remain vigilant to dash warnings and stop driving, should any fault appear.



# Safety and security

## **STEERING WHEEL REMOVAL/REPLACEMENT**

The steering wheel is removed by pulling the gold sprung steering wheel collar towards the driver, the wheel will then detach from the column. Uncrew the steering wheel-to-dash electrical connector in a counter-clockwise direction to detach from the dashboard and remove completely. Remove carefully to ensure the connector does not get damaged. To reattach the wheel, reverse procedure for the electrical connector, ensuring electrical pins line up. Push the steering wheel firmly back onto the column as far as possible, lining up the locating spline with the steering wheel collar. An audible 'click' will be heard when the collar locks onto the column.

## **ELECTRICAL MASTER SWITCH**

A red plastic electrical master switch is installed on the dashboard passenger side as the main

electrical cutoff in the event of an accident. This should also be turned off when the car is not in use.

**DO NOT** use the electrical master switch to turn off the engine; this will disrupt the ECU's after-run procedures and may damage the ECU. **ALWAYS** use the ignition switch on the dashboard to turn the engine off.

## **PEDAL ADJUSTMENT**

The position of the pedals can be adjusted by:

1. Adjusting the pedal face;
2. Adjusting the pedal angle and;
3. Moving the pedal pivot shaft.

Please note that (3) will require changing the master cylinder push-rods, which are available from Radical's online parts store.

The pedals will be setup for the first owner as part of the Distributor-Customer Handover process. Ask your local Radical distributor for more details.

## **HARNESS BUCKLE**

The Radical SR8 RX is fitted with five-point racing harnesses. To secure the harnesses, place the left- hand buckle into your lap, and insert the crutch strap and right-hand waist strap first, before tightening. Then bring both shoulder straps over your chest and insert pins into top of buckle. To tighten, pull on the loose ends of the straps.

To loosen, lift buckles against tension and allow the straps to slide back through. Twist buckle left or right 90 degrees to release the straps from the buckle.

## **USE OF HEAD & NECK RESTRAINT SYSTEMS**

Radical recommends the use of racing-specification head & neck restraint systems when driving on-track. Head and neck restraint systems are mandatory when racing in the Radical Masters Euro Series and many other FIA-approved championships.





# Driving your SR8 RX

## STARTING THE ENGINE

Turn the red electrical master switch clockwise to the 'on' (vertical) position. Then flick the ignition switch on the dash (marked with a lightning bolt).

With neutral selected, press the Engine Start button on the dashboard until the engine fires.

There is no need to press the throttle when cold, a small amount of throttle may be needed when the engine is warm. **DO NOT DEPRESS THE CLUTCH.**

When turning the master switch on, a buzzing noise may be heard from the rear bodywork; this is the paddleshift compressor system charging, and is normal. From time to time on the move this will activate to charge the paddleshift system.

## MOVING OFF

The Radical SR8 is fitted with a six-speed steering

wheel-mounted paddle-shift system. It is possible to flatshift when you are changing up the gearbox and to have clutchless downchanges. You will need to use the clutch to engage first gear, to pull away from stationary and when stopping the car. To select first gear, depress the clutch and steering wheel mounted neutral lock button and pull the right-hand paddle, release neutral lock and the clutch gently to pull away.

## CHANGING TO A HIGHER GEAR

To select second and higher gears, pull the right-hand paddle. A very slight delay will be felt as the engine ignition is cut, and the system selects the next gear.



# Driving your SR8 RX

## **CHANGING TO A LOWER GEAR**

When changing down the gearbox, simply brake where you need to and operate the left-hand paddle. The Radical SR8 RX has a throttle auto-blipper function fitted as standard, so the system will blip the throttle for you and select the gear. When changing down from second to first, it is recommended to use the clutch. **DO NOT** try to 'heel-and-toe' as this is carried out by the vehicle automatically.

## **PADDLESHIFT STRATEGY**

The paddleshift strategy is optimised for racetrack, high-speed use, changing up and down the gears between 7000rpm-9200rpm. If you change gear below this rev range, particularly down-shifting, a more 'mechanically-clunky action' may be felt. Smoother shifts are achieved at higher engine speeds.

Neutral can only be selected from first gear; change all the way down to first gear and flick the left-hand paddle with the clutch and steering wheel neutral lock button depressed. Neutral can only be selected with the engine at idle (below 2500rpm). It is strongly recommended that neutral is only selected once stationary, to avoid mis-shifting and selecting reverse, which could damage the gearbox. Neutral can only be selected when stationary.

**NOTE:** It is recommended that gearchanges are not made while experiencing wheelspin, such as exiting slow speed, hard acceleration corners, as this can damage the gearbox.

# Driving technique

## **SMOOTH DRIVING**

This is the art to getting the best out of the car and the available grip. It makes the car easier to control at higher speeds and more predictable through all speeds, utilising better control of weight transfer and aerodynamic grip, as well as mechanical grip and maximising the grip that the tyre has to offer.

The inputs that will make this achievable are:

1. steering input,
2. braking input,
3. throttle input,
4. gear changes.

## **STEERING INPUT**

Avoid being aggressive; the car should be eased into and out of corners. Using large amounts of lock initially or at any point through a corner will

unbalance the car and increase the chance of losing control. In most corners the initial (braking) phase is when the majority of the grip is available to you, but the largest demand on the grip of your tyres occurs between turn in and the apex. It is important not to place additional demands on the tyres by accelerating or braking hard. Although you can retain a constant speed, the important factor is that the car is in a neutral state until after the apex.

Placing additional demands on the tyre will increase the chances of losing control. It is important to get the majority of your steering done before applying throttle. This is even more important in low-grip conditions such as in the wet.



# Driving technique

## **BRAKING INPUT**

It is important to remember that the brakes on the Radical, although exceptionally good, are not like a family saloon. They are not servo-assisted and there is no ABS. It is also important to remember that the brakes are the most effective way of slowing the car, not the gears or engine. Braking, where possible, should be done in a straight line with steering input being minimal when the heaviest braking occurs. When braking for a corner, the initial brake pressure should be hard. The closer you come to the corner and as steering input increases, pressure on the brake pedal should start to be released.

If you have large amounts of lock and brake pressure, the end result may be that you and the car will not be going in the direction that you expect.

## **THROTTLE INPUT**

The throttle shouldn't be treated as a switch and should only be applied once the majority of your

steering has been completed. Again, applying large amounts of throttle and steering lock, may result in you and the car pointing in a direction other than intended. Throttle input should be as with all other inputs, one fluid movement. This may help aid traction and control over the car.

## **GEAR CHANGES**

Downward gear changes should always be done slowing before the corner. This will mean that the car is settled as you enter the corner and ready for you to apply the steering and throttle. Gear changes should also not be rushed; again, if they are this may upset the balance of the car.

On up changes, the only time this may affect the balance of the car is when needing to change up a gear mid-corner. Ideally this should be avoided, or if it is required, sometimes short shifting between corners into the next gear will help. Ensure you have sufficiently slowed the car and selected the optimum gear before steering towards the apex.



# Maintenance

Engine bay

User maintenance

Life ECU system

Jacking and towing

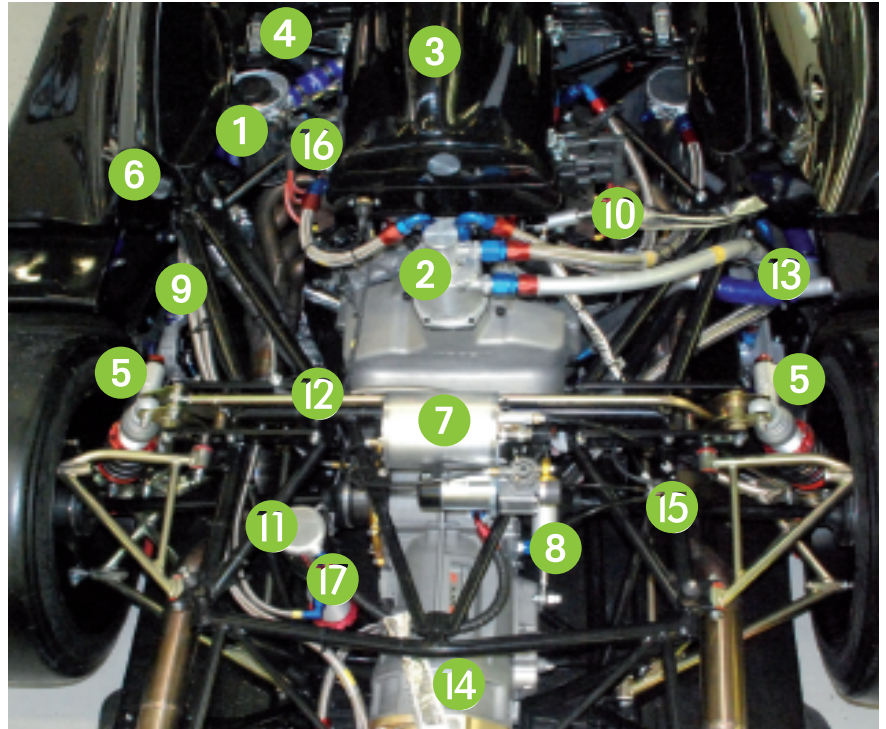
Suspension setup

Component lifing



# Engine bay

- 1 Engine coolant swirl pot
- 2 Engine oil dry sump tank filler cap
- 3 Air filter (inside housing)
- 4 Fuel filter (inside regulator housing)
- 5 Rear damper adjustment
- 6 Connector for rear bodywork loom
- 7 Paddleshift compressor
- 8 Gearshift actuator
- 9 Electric waterpump
- 10 Throttle autoblip actuator
- 11 Gearbox breather catchtank
- 12 Rear Nik-Link
- 13 Oil/water heat exchanger (Laminova)
- 14 Gearbox oil filler plug
- 15 Paddleshift control block
- 16 Alternator (aux belt on front of engine)
- 17 Rear air jack



## PREPARATION FOR SHAKEDOWN

Before your SR8 RX leaves the factory, it is thoroughly inspected, the suspension is setup on a flat patch to factory-recommended settings, and the car is fully run-up on our rolling road dynamometer.

Despite this, it is essential that before taking to the track, you carry out a thorough spanner check, paying particular attention to all hoses, connections and suspension fixings etc.

## SHAKEDOWN AND RUNNING CONDITIONS

Carry out several installation laps while monitoring the temperature and pressure readouts. Return to the pits regularly, and thoroughly check all fluid levels and around the engine and cooling system for leaks.

The SR8 RX uses a highly-tuned race-specification RPE V8 engine; whilst it develops incredible performance, this race engine requires more attention than a typical road engine to remain reliable and powerful. It will not tolerate neglect.

**WARNING: DO NOT** run the engine under load if:

1. Oil temperature is below 50°C
2. Oil temperature is above 120°C
3. Water temperature is below 60°C
4. Water temperature is above 110°C
5. Oil pressure, once up to temperature, is under 50psi at 4000rpm.

Should you run the engine in any of these situations for an extended period, it is advisable to contact Radical Performance Engines' technical department to arrange for the data to be emailed for analysis.

The oil pressure when the engine is started from cold should run at approximately 90psi at 4,000rpm. When up to temperature, the oil pressure should read above 65psi at 100°C.

## **MAXIMUM ENGINE REVS: 10,500rpm**

If over-revved from 10,500rpm-12,000rpm for more than two seconds, in any one hour of operation the engine will require stripping



# User maintenance

for inspection and repair, at the customer's cost, prior to any further running. (Any over-rev will be recorded on their ECU.)

If revved to over 12,000rpm for any length of time, the engine will require stripping for inspection and repair, at the customer's cost, prior to any further running. The rev limiter is set to 10,500rpm. Persistent use of the rev limiter will damage the engine.

It is important to log the number of hours the engine is run using the running log supplied with this manual. Under race conditions, Radical recommends that the engine should run for no more than 40 running hours before being returned to the factory for a rebuild. The 2.7 RPX V8 engine in your SR8 RX is warranted for up to 40 running hours between rebuilds.

## **BEDDING IN BRAKES**

The car comes fitted with carbon metallic brake pads. To bed in the brakes and achieve maximum stopping power, a film of carbon must be

transferred to the brakes. With new discs as well as pads, this will take a few laps and should be completed in the first ten minutes of the shake-down. This should not be attempted during qualifying or a race.

On-track, gently apply the brakes six to eight times at a medium speed, then increase speed and brake pedal pressure to race conditions, applying the brakes hard a further six to eight times. Allow the brakes to cool for 15 minutes.

Do not apply hot brakes whilst stationary, during the cooling down period. Use only Radical-recommended brake pads, available online.

Disc brake paint is recommended to monitor brake disc temperatures.

## ENGINE OIL CHECKING AND REFILLING

Your Radical SR8 RX is fitted with a dry-sump lubrication system. When the car has been switched off for a period of time, the oil will drain back into the engine. Therefore, any oil level checks must be carried out after a short period of running, to ensure an accurate reading.

**1.** Check oil is visible in the dry sump lubrication tank (aluminium casing between engine and gearbox). Whilst the coolant is still cold and at low pressure, check water level and ensure that the system is free of air. Crank engine to get oil pressure with the ignition coils disconnected.

**2.** Connect coils and turn ignition on. Start engine with no throttle, let engine idle at approx. 1500 - 1800rpm. Check oil pressure is at 65psi minimum. Check coolant is circulating through the coolant swirl pot.

**DO NOT** operate the paddleshift system until the engine oil is up to temperature. High oil pressure is

caused by the paddleshift blip, which can damage the lubrication system.

**3.** When engine water temperature reaches 80°C and oil temperature reaches 30°C, bring the engine up to 4000rpm for five seconds and turn ignition off.

**4.** Immediately check oil level, using the SR8 RX dipstick supplied as part of your New Car Customer Pack. The level should be above the minimum dipstick mark at this stage.

The level should be between the two marks when the oil is warm (approx. 80°C). If it below this level, add oil to bring up to the correct level.

**DO NOT** fill to the top mark when cold as oil expands as it warms, and the system will overflow.

The entire system holds approximately 9.5 litres of oil from drained and empty; note that oil may still sit within the engine oil cooler and pipework when drained.



# User maintenance

## **GEARBOX OIL CHECKING AND REFILLING**

The gearbox holds approximately 2.9 litres of oil from drained and empty, and 3.5 litres for the whole system including oil cooler and pipework.

**NOTE:** although the gearbox may be empty, oil will still sit within the oil cooler and pipework.

Radical recommends that the gearbox is drained completely from the gearbox bottom bung and refilled with new oil, rather than attempting to 'top-up' the oil level in the gearbox.

## **GEARBOX OIL CHECKING AND REFILLING WARMING-UP PROCEDURE**

Ideally, the engine should be started 45 minutes prior to going on track. Turn off the engine once the water temperature reaches 80°C, to allow heat soak into the engine block and oil.

Restart the engine 10 minutes before going on track and bring the water and oil temperature back up to 75°C. The oil temperature must be a minimum of 50°C before going out onto the track.

**DO NOT** rev the engine to more than 4000rpm until the oil is above 50°C. When cold the oil runs at excessive pressure, which may damage the engine. Radiator fans are not fitted as standard.

**DO NOT** let the water temperature exceed 95°C when warming the engine.

## **BODYWORK CATCH ADJUSTMENT**

The composite bodywork of your Radical SR8 RX is secured with a number of quick-release catches. From time-to-time, inspect the catches to ensure that the locking springs and/or screws are still tight and effective and adjust as required.

## FUEL FILTER

It is recommended to change the fuel filter after the initial runs, to remove any residue in the fuel system from the build process. It is located in a cast filter housing, mounted to the left of the engine on the cockpit bulkhead, behind the coolant header tank.

## BRAKE BIAS SETTINGS

Brake bias can be adjusted using the green dashboard adjustment knob. Set central to two turns towards the front of the car (clockwise on the adjustment knob). On cars fitted with brake pressure sensors, this is 52-55% towards the front of the car. Further adjustment can be made to suit individual circuits and tyre configurations. Adjust the bias towards the rear of the car when fitting wet tyres for wet conditions.

## AIR JACKS

Cars fitted with air jacks are supplied with an air lance, which is inserted into a valve mounted on the front-right corner of the cockpit surround. The lance requires connection to a bottled air supply, and the pressure should be regulated to 250-300psi.

## WHEEL NUTS

Central wheel nuts are threaded clockwise on the right-hand side of the car (**blue nuts**), and counter-clockwise on the left-hand side (**red nuts**). These can be loosened/tightened using the central wheel nut socket supplied by Radical Sportscars, and secured after torque-tightening by the wire safety clips provided.

Central wheel nuts should be torqued to 240ft/lbs. A **small** amount of light oil (e.g. WD40) may be used to lubricate the hub thread and nut.



# User maintenance

## TYRE SAFETY AND CARE

At high-speed circuits, therefore high aerodynamic loading circuits, special attention **MUST** be paid to the following three elements

**1. CAMBER:** At specific circuits, Dunlop and Radical have specified maximum permitted camber angles. These instructions **MUST BE ADHERED TO**. If in doubt, please contact the Radical Technical Department for clarity.

**2. TYRE PRESSURE:** Dunlop specifies a **MINIMUM** of 2.2bar hot, 1.6bar cold tyre pressure.

**3. TYRE WARMING:** Tyre temperature must be raised carefully and progressively during an out-lap; the driver **MUST NOT** leave the pit lane and immediately hit top speed. Maximum speed on the out-lap **MUST NOT EXCEED** 120mph (195km/h).

The Radical-specific Dunlop slick and wet tyres are an endurance compound and construction, and will take several laps to come up to temperature.

At 150mph the rear wing produces in excess of 350kg of downforce; if acting on cold, low-pressure tyres then damage will result. Tyre temperatures are initially increased by accelerating and braking repeatedly.

## AIR FILTER ELEMENT CLEANING

Operation in exceptionally dusty and dry conditions may require more regular inspection and cleaning of the air filter element. The panel-type air filter can be accessed by unclipping the top of the airbox housing to expose the filter, before separation from the airbox base.

Using a K&N Filter Care Service Kit, liberally spray air filter cleaner onto both sides of filter and allow to soak for 10 minutes to loosen the dirt.

Do not allow cleaner to dry on air filter. Rinse off air filter with cool low-pressure water applied to the clean side out in order to flush the dirt out of the filter. Continue to rinse the filter until all traces of cleaner are gone.



After rinsing, gently shake off excess water and only allow filter to dry naturally, then spray air filter oil evenly along the crown of each pleat holding nozzle about 3" (8 cm) away. Allow oil to wick for 20 minutes before refitment.

## **BODYWORK CLEANING AND CARE**

To keep your Radical looking at its best, any fibreglass or carbon fibre parts can be quickly and effectively cleaned with a non-abrasive general car polish, whilst all chassis, suspension and panel fixings can be kept looking new and corrosion-free by wiping down with WD-40 or similar spray.

## **COOLANT LEVEL**

The engine cooling system uses a 50/50 summer coolant/water mixture. The level should be 1" (2.5 cm) below the top of the swirl pot.



# Life ECU system

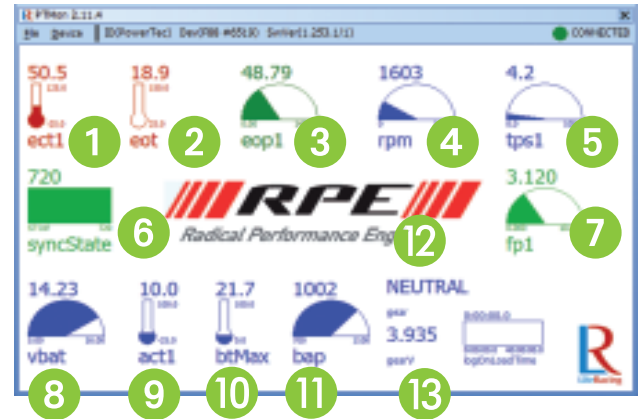
## LIFE ECU DATA DOWNLOAD

Software to download information from the SR8 RX's engine management unit can be found on the RPE website at:

[radicalperformanceengines.com/downloads/](http://radicalperformanceengines.com/downloads/)

The ECU is downloaded by connecting the data cable (supplied in your New Car Customer Pack) to the circular plug mounted on the cockpit RHS inspection panel (the ECU is mounted behind this). When starting the engine, connect a computer to the car and load up PTMon. This displays the following vital engine parameters on your computer screen:

- 1. ENGINE COOLANT TEMPERATURE (ect1):** changes from red to green when in the correct range of 60-95°C.
- 2. ENGINE OIL TEMPERATURE (eot):** changes from red to green when in the correct range of 50-120°C.
- 3. ENGINE OIL PRESSURE (eop1):** at idle, 70psi when cold.



When up to temperature, the oil pressure should read above 65psi at 100°C.

**4. ENGINE RPM (rpm):** engine should idle between 1500-1800rpm.

**5. THROTTLE POSITION SENSOR (tps1):** needs to be set to 4% at idle.

**6. ENGINE SYNC STATE (syncState):** should be at 720 when engine is running, turns green when correct.

**7. FUEL PRESSURE (fp1):** changes from red to green when in correct range 2.8-3.2bar.

**8. BATTERY VOLTAGE (vbat):** above 12.5 volts when engine is running.

**9. AIR CHARGE TEMPERATURE (act1):** air inlet temperature.

**10. ECU TEMPERATURE (btMax):** temperature of the engine ECU.

**11. BAROMETRIC SENSOR PRESSURE (bap):** below 1030mbar.

**12. GEAR INDICATOR (gear):** Should be Neutral when starting.

**13. GEAR POSITION VOLTAGE (gearV):** in neutral, should read  $1.051V \pm 0.02V$

## RETRIEVING DATA FROM THE LIFE ECU LOGGER

1. Connect a computer to ECU/car, turn the master switch on to power up the ECU.
2. A working directory now needs to be created. This selects the folder in which the data will be

stored once it has been downloaded, and sets a route to find the information. It contains the name of the driver and/or car number etc. For example C:\Program Files\Life Racing\Track Maps & Data\SR8\Customer\Track & Date.

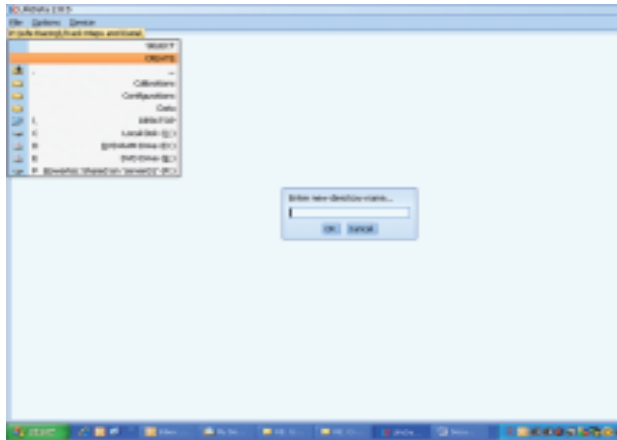
3. Open the Life Data icon on your desktop.

4. Select F for file, then W for working directory.

5. At the top of the screen, below the toolbar will be C:\Program Files\Life Racing\Track maps & Data. If not, correct this part by selecting the full stop button... it goes back one section. Then by selecting "create", a box comes up with "enter new directory name". Enter the appropriate information, such as car type, chassis number, circuit and date. Once this is done, press Enter. If on the other hand this has been set up the next part will be in the drop down box i.e. Track maps & Data, SR8, customer name, track & date. All you then need to do is select the appropriate item until it is complete.



# Life ECU system



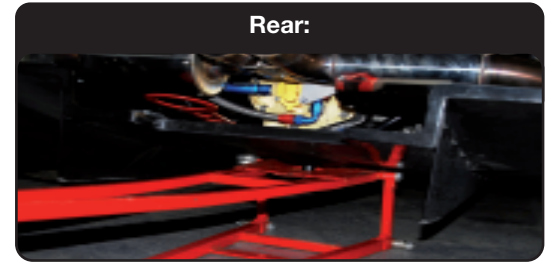
6. Highlight "select" & press return.
7. A box comes up with "there is no LR directories config file at: - Create one – select Yes.
8. Another box with "place shortcut on desktop" select No.

9. Then select D for device and R for read data.
10. In the next box select ok. If this data needs to be looked at, load up Life View, click on File, Load and then find as above the appropriate file. Once you have loaded up a data file, the channels will be listed down the right hand side of the screen, to display a channel highlight it using the arrows on the keyboard and press enter.

If the data needs to be e-mailed go through My computer, Program Files, Life Racing, Track maps & Data, SR3/SR5/SR8, customer, track & date select file or files to be e-mailed to:

[technical@radicalperformanceengines.com](mailto:technical@radicalperformanceengines.com)

# Jacking and towing



Your Radical SR8 RX should only be jacked up at the points shown in the pictures above.

These points are:

**Front:** Centrally under the nose, 100mm ahead of the front axleline (where the chassis meets front crash structure).

**Rear:** On the rear, central tubular jacking point that projects below the rear diffuser. This is sited directly below the transaxle.

**DO NOT ATTEMPT TO JACK UP THE VEHICLE AT ANY OTHER POINT.**

You risk damage to bodywork or other important components.



# Jacking and towing

## **TOWING**

Your Radical SR8 RX can be towed a short distance (*e.g. recovery from a gravel trap*) by the front towing eye situated under the nose (*between brake duct inlets*), or by the rear towing eye adjacent to the rear transaxle.

Your Radical SR8 RX should be transported on a transporter or trailer with all four wheels off the ground.

Radical can supply tie-downs, secured in the wheel centres, for safe transportation.

# Suspension setup

## **INTRODUCTION**

The Radical SR8 RX' suspension is set up at the factory, but the final settings should be determined by testing for driver preference and the particular circuit.

Try to check the tyre temperatures for balance across the contact patch within one minute of a fast lap. The inside edge can be 10° – 15°C higher than the outer edge on Radical-approved Dunlop tyres, on the front and 5° – 10°C higher on the rear. Temperature should be close to 100°C, while temperatures over 110°C will cause damage.

## **SUSPENSION PRELOAD**

Setting the front preload is achieved by raising the car front until the front wheels are off the ground. Unwind the spring platform until the spring is loose then retighten until finger tight. Only tighten three full turns beyond the point at which the spring 'grips' in its seat.

Front preload stops the front of the car from touching the ground, at higher speeds circuits, more will be required, and at low-speed circuits, less preload. Three turns is suitable for most tracks.

## **RIDE HEIGHT**

Measure the ride height at front of the chassis and at the seat back bulkhead, (below rollover bar) with the driver seated and 15 litres of fuel in the tank.

The ride height may need increasing when carrying a passenger. The ride height may be increased up to 100mm at the diffuser. This is achieved by either lengthening the threaded eye of the damper (three-way dampers only) or by using the adjustable pushrods on the front. If you intend carrying a passenger for the majority of the time, suspension adjustment should be carried out with him/her also in the car.



# Suspension setup

## CORNER WEIGHTS

For maximum performance, your Radical should have the corner weights accurately set with the driver in situ. The procedure is as follows:

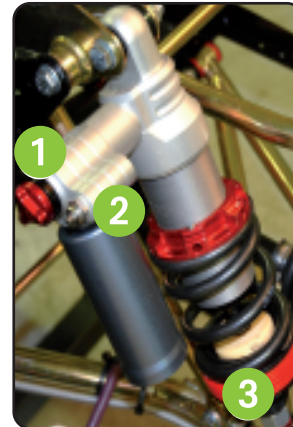
1. Position the car on a flat, absolutely horizontal surface.
2. Equalize all tyre pressures to 30 psi.
3. Take all readings with driver in-car, or equivalent weight in the seat.
4. Remove bolt from one end of the front and rear Nik-Link, and adjust shocks to full soft.
5. Ensure the factory springs have three turns of preload (new cars will have this done at the factory, and the top platform marked with a '3'). See information on page 39 to set preload.
6. Set the ride height at the front and rear by adjusting the push-rods.
7. Set the camber front and rear.
8. Set the toe-in front and rear.
9. Put car on corner-weight scales, and set corner-weights by adjusting rear spring platforms. It is usually difficult to achieve identical settings on each corner. Ensure that the sum of the diagonal weights are as near as possible.
10. Re-check ride height and diffuser height with the bodywork on.

11. Lock spring platforms.

12. Refit Nik-Links, rear anti-roll bars, reset shocks, and set tyre pressures.

## INTRAX TRIPLE-ADJUSTABLE DAMPER (OPTION)

High speed compression (bump), low-speed compression (bump), and rebound can be adjusted independently, enabling a more refined set up to be achieved:



1. Red adjuster on canister: High-speed compression, turn clockwise for more damping.
2. Small 4mm screw: Low speed compression, turn clockwise for more damping.
3. Black adjuster on spindle eye: Rebound, turn clockwise for more damping.



# Component lifing

This chart gives the recommended life expectancy of components under 'normal, on-track racing conditions'.

If some of your racing time is done 'off-track' or you hit kerbs, pot holes or other cars, then you will need to consider reducing the timescales recommended. On the other hand, more 'gentle' trackday use will obviously extend the recommended time.

One recent addition to the list is the wing support stays, the life of these is greatly shortened if the wing is used to push, and particularly pull the car around in the pit lane, garages and trucks. It works perfectly to support the wing and the downforce generated in the direction intended, and not at an angle to the centre-line of the vehicle.

## FLUID CHANGE INTERVALS (HOURS)

<b>Engine oil:</b>	6 hrs
<b>Gearbox oil:</b>	12 hrs
<b>Brake fluid:</b>	Within 6 hrs or as required
<b>Fuel filter:</b>	12 hrs
<b>Clutch fluid:</b>	Within 6 hrs



# Component lifing

Component	Hours	Action
2700cc RFX engine	40	Rebuild recommended, engine warranted to 40 hours
Ptec transaxle	6	Inspect, rebuild at 40 hours
Suspension bushes	30	Replace
Suspension rose joints	30	Replace
Front upright (including hub)	50	Replace
Front wishbones	60	Inspect/replace
Rear upright (including hub)	50	Replace
Rear wishbones	60	Inspect/replace
Driveshaft CV joints	6	Re-grease CV joints
Driveshafts	30	Replace
Calipers	60	Rebuild
Brake discs	10	Inspect/replace
Shock absorbers	60	Rebuild
Steering rack	50	Inspect/rebuild
Brake master cylinder	60	Inspect/replace
Wing support stays	60	Inspect/replace
Fuel tank	12 months	Remove & inspect annually

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