RADICAL SR3 RSX
OWNERS MANUAL

24 Ivatt Way Business Park
Westwood
Peterborough
PE3 7PG
United Kingdom

V1.92

TABLE OF CONTENTS

Dear Radical Owner,

Thank you for purchasing your Radical SR3 and 'welcome' to the worldwide Radical family.

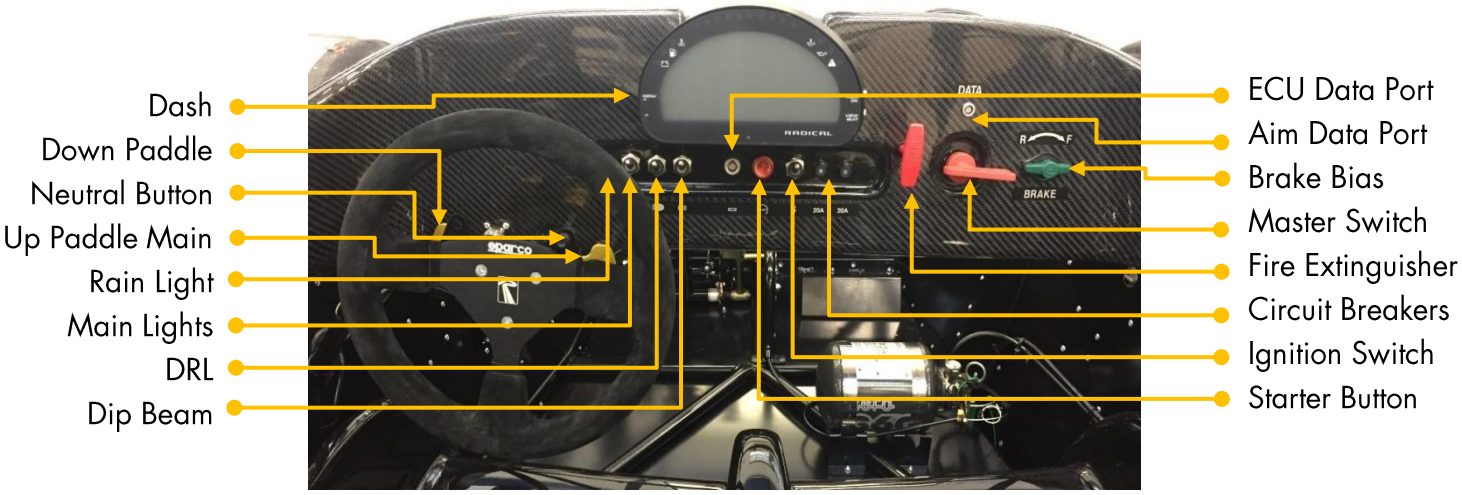
Since its launch in 2001 we have continually developed, refined and improved the SR3 into a truly unique Sportscars. Now in its 3rd generation the, SR3 has sold over 1100 units cementing its place as the world's most widely produced and successful prototype style Sportscar.

If properly maintained your SR3 will give you an amazing driving experience, every time you head down the pit lane. Although your car has been built and thoroughly inspected at the Peterborough factory prior to you reading this, please take the time to read through this manual to expand your knowledge of the car. This manual aims to guide you through every aspect of running and maintaining your car.

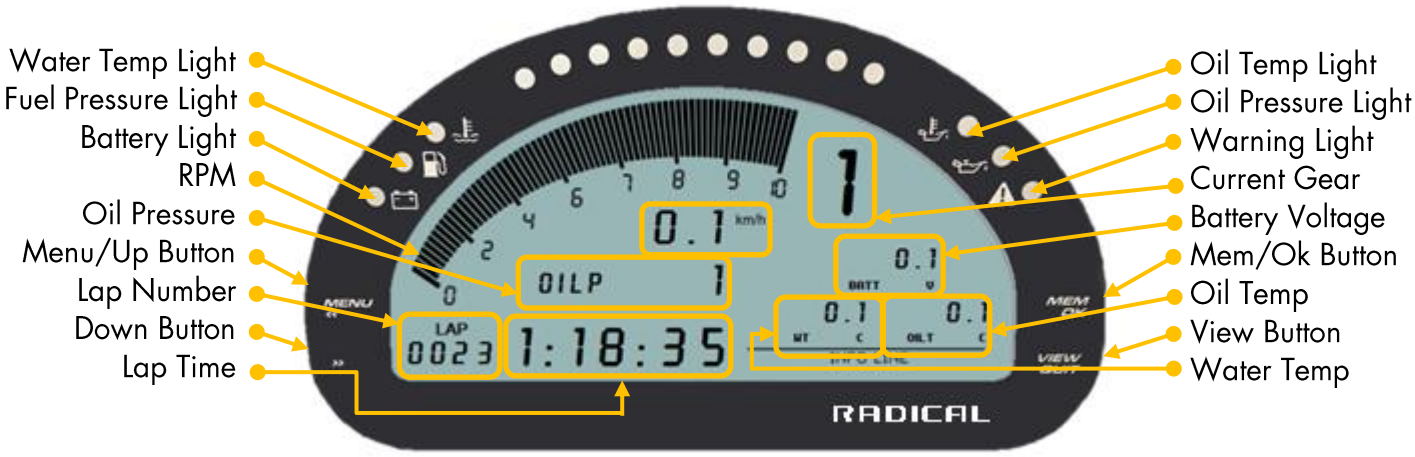
You will find any further help and support via our website www.radicalsportscars.com or alternatively please contact your local dealer. Parts and consumables can be purchased through our online store, whilst any race series information, sales or technical advice you may need is just an email away.

1. INTRODUCTION TO YOUR CAR

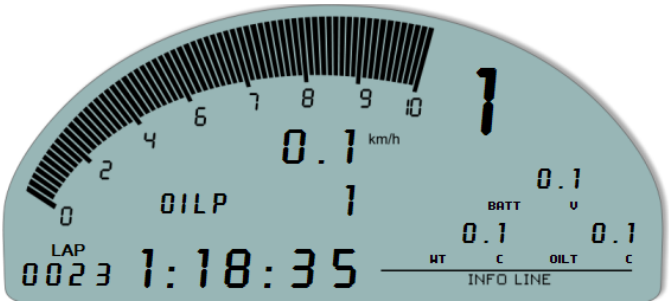
1.1 COCKPIT LAYOUT



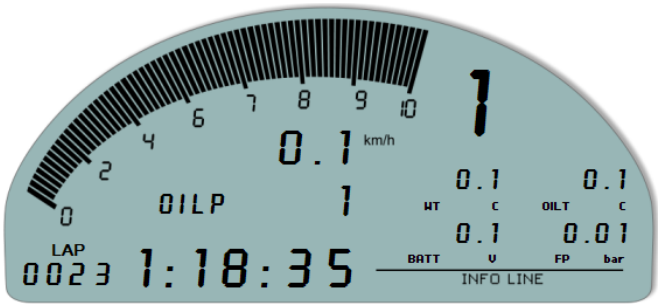
1.2 DASHBOARD LAYOUT



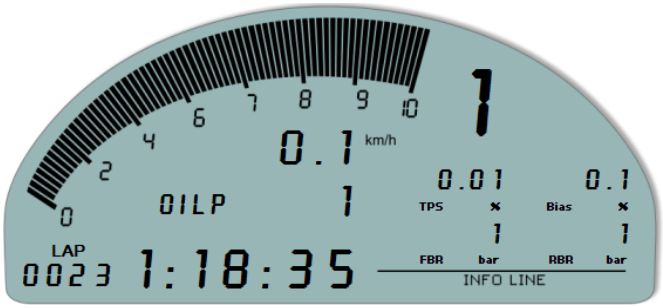
1.3 DASH CONFIGURATIONS



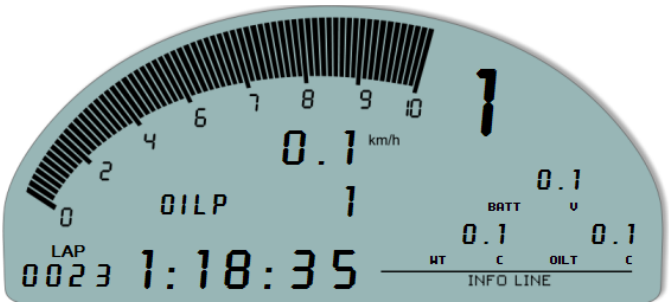
Page 1 – General Running Page



Page 2 – Additional Parameters Page

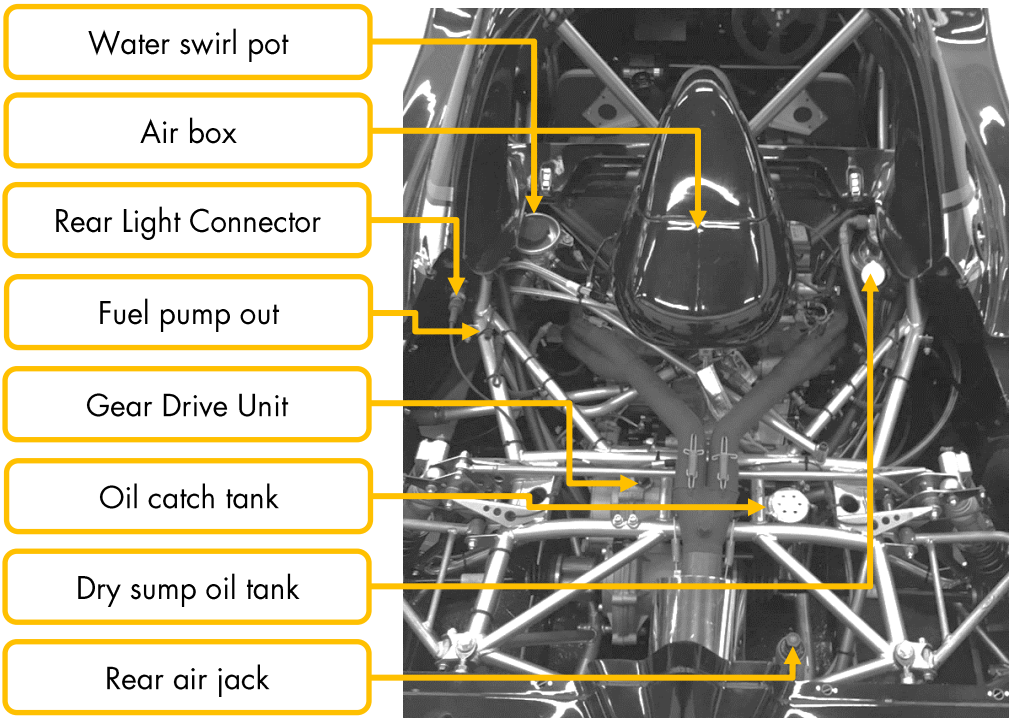


Page 3 – Calibration Page

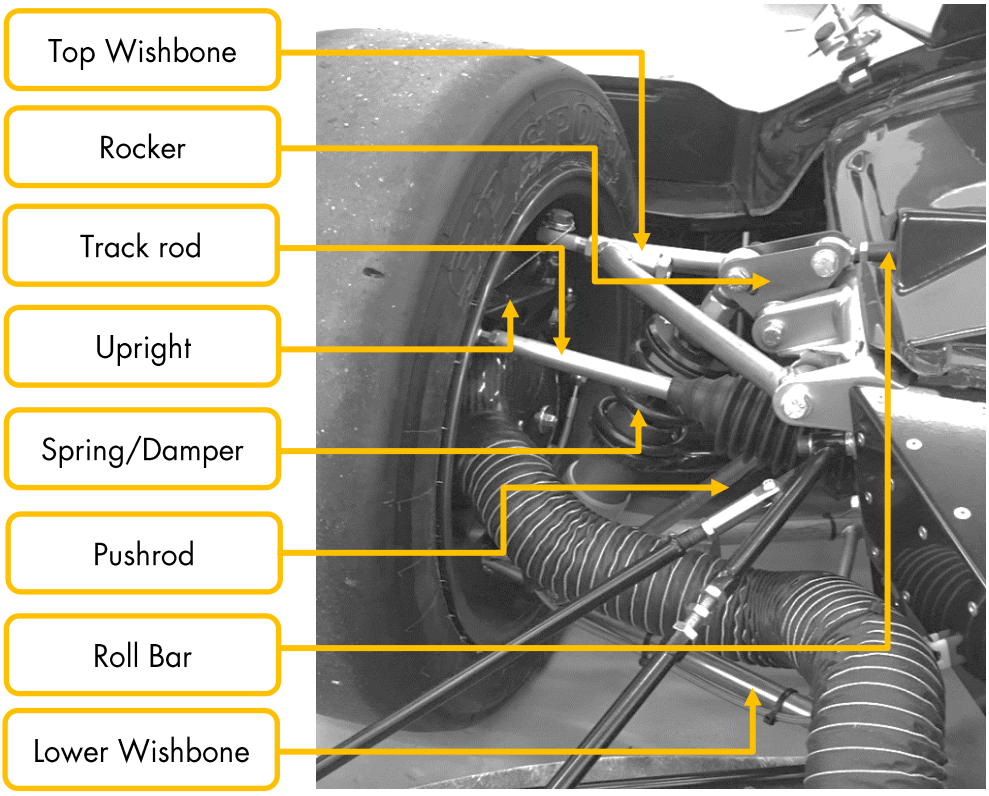


Page 4 – Predictive Time Page

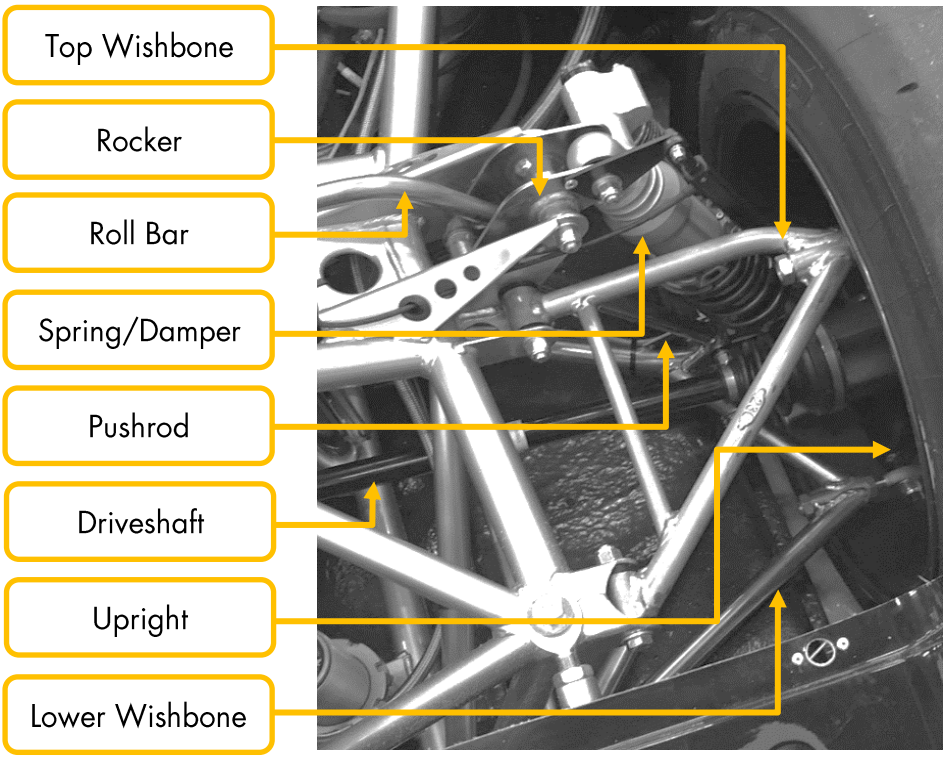
1.4 ENGINE BAY LAYOUT



1.5 FRONT SUSPENSION LAYOUT



1.6 REAR SUSPENSION LAYOUT

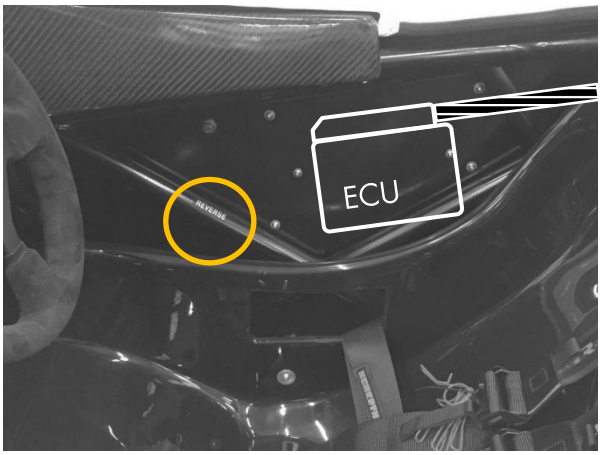


1.7 ELECTRICAL HARDWARE LOCATION

On the right-hand side of the SR3 cockpit you will find an access panel, behind this are the following items:

- ECU
- Barometric pressure sensor
- Electrical relays (Fuel pump, water pump, coolant radiator fan (optional)

To remove the ECU, undo the 4 bolts holding the plate on, then the two bolts in the bracket for the ECU. Then pull the silver clip upwards to an upright position. The connecting hairbrush can then be rotated off the ECU. To refit repeat these steps in reverse. This should not be removed unless there is an issue or the engine is being returned for rebuild.



1.8 REVERSE LEVER LOCATION

The reverse lever is located between the driver's seat and the edge of the cockpit as shown in the previous picture.

The lever moves a gear in the Gear Drive Unit putting the output drive into reverse.

To engage reverse gear the car must be stationary and in neutral. Push the lever forwards until the gear is fully engaged. Put the gearbox into first gear as normal and carefully reverse.

Upon delivery of your new car it is recommended you check the following items:

- If the car has been shipped, be sure to check the tracking of the front and rear wheels, it is possible that the securing straps may have been overtightened and pulled the car out of alignment.
- Make sure the master switch was not left on during transit and the battery hasn't run flat.
- Check that the driver is comfortable in the car. The seat can be adjusted forwards and backward by loosening off the 3 bolts either side of the seat. The pedals stops can also be adjusted. If the pedal adjustment is not enough a short pedal box is available, please contact your local dealer for more information.
- Remove the fire extinguisher safety pin prior to starting the car.
- Check all fluid levels; coolant, brake, clutch and engine oil. Fluid specifications can be found on page 38.
- Ensure there is a sufficient amount of fuel in the car. We strongly advise a minimum of 98 RON octane.

Minimum Fuel Octane Rating		
RON (Europe)	MON	PON or R+M/2 (USA)
95	87	91
96	88	92
98	90	94
100	91	96
105	95	100

For further information on fuel please contact engines@radicalsportscars.com

To ensure the reliability of your car and engine we would strongly recommend following this procedure every time you start running your SR3:

Dry cranking - Before starting the car ensure the oiling system is well lubricated, 'dry crank' the engine in neutral, by pressing the starter button for a few seconds before turning the ignition on. Keep an eye on the dash to check for oil pressure being displayed.

Warming up the car - Check the water level, then start the engine and allow it to idle until the water gets above 80°C and the oil has started to warm up. The oil will take longer to heat up than the water meaning you will need to switch the engine off when water reaches 80°C and allow the engine to rest for a short time whilst the water cools down before running up the engine again to get the oil up to temperature. Optionally you can use an engine oil pre heater to warm the oil prior to starting the engine, for more information please contact our stores department.

Oil Check - When the oil temperature is over 50°C raise the RPM to 4,000 for 5 seconds to fully scavenge the oil, then switch the engine off. Using the dipstick, check the oil level; the oil level should be in between the minimum and maximum marks of the dipstick. If the car requires oil, it is recommended to follow the same process of holding the RPM at 4,000 for 5 seconds, to re check the oil level.

2.1 PRE-SESSION CHECKS

Despite all the thorough checks which are carried out on all our cars before they leave the factory, it is important you also do some basic checks before you take the car to the track for the first time.

- Torque the centre lock wheel nuts to 260lb/ft. Fit the safety retaining clips.
- Use the tyre guide to get a rough idea on cold starting tyre pressures and ensure these are set correctly.
- Double check the fire extinguisher system is set to active (electrical specification) and the pin is out of the lever.
- Ensure the mirrors are all in the correct position for the driver
- Dependent on weather conditions, you may need to blank off the side-pod intakes in order to maintain recommended engine running temperatures. Running outside these temperature ranges can he harmful to the performance of your engine.

Target engine running temperatures:

Parameter	Temperature
Oil Temperature (EOT)	90° – 110°C
Water Temperature (ECT)	70°– 90°C

STARTING THE CAR

To start the car, turn on the master switch and wait for the dash to load. Switch down the ignition toggle. You can now press the starter button to turn over the starter motor.

IMPORTANT NOTE

As with any race car, it is important to put the car in neutral and release the clutch when stationary. This will significantly reduce clutch wear. Ensure the car is always started in neutral.

PADDLESHIFT CONTROLS

- To pull away, depress the Clutch, hold the neutral button in and shift down to get to first (remember the engine is from a motorbike). Once you have pulled away in first gear you can then shift up as normal all the way to 6th.
- The SR3 is fitted with an auto blipper and automatic ignition cut. This allows you to flatshift up the gearbox and means you ***do not*** have to blip the throttle on the way down.
- The paddleshift system has safety controls that can override paddle requests to help prevent damage to the gearbox caused by overrevs. Because of this, the system may deny shift requests if the RPM is too high for a downshift or you are still applying throttle whilst trying to downshift. These safety overrides are explained in more detail in the Radical Data Manual.
- When stopping the car and wanting to select neutral remember it is between first and second gear. To select neutral when the car is traveling at low speeds or has stopped; hold the neutral button and shift down from second, or up from first.

The gear order is shown below:

1 → N → 2 → 3 → 4 → 5 → 6

IMPORTANT:

Remember the engine is not designed to run backwards, if you have a spin make sure you depress the clutch. If the engine runs backwards without the clutch depressed it will damage the starter motor. ***Never restart the car if you did not depress the clutch.*** If the starter spins backwards the starter motor and starter clutch need to be inspected back at the pits to ensure there has been no damage.

STOPPING THE CAR

Use the ignition switch to turn off the car. Do not turn the car off via the master switch, unless in an emergency. Keeping the master switch turned on after the engine has stopped running allows the cooling fan and water pump to continue to run to prevent heat soak. After 120 seconds they will automatically turn off and the master can be switched off.

BRAKE BIAS

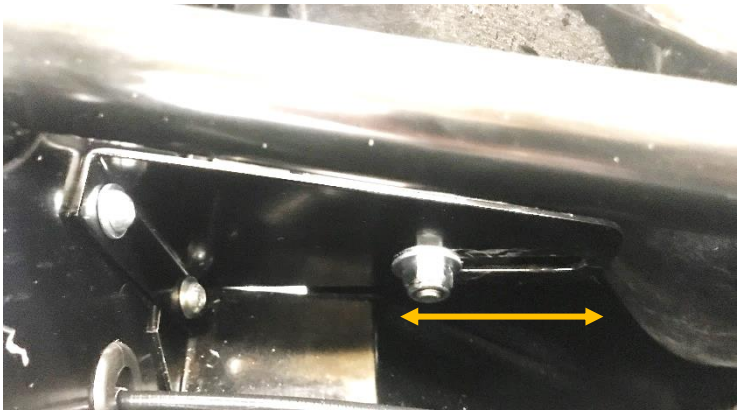
The brake bias can be adjusted to suit the drivers needs dependant on the circuit, driving style and weather conditions. As a starting point, we recommend starting at 57%, which is 7% biased towards the front. During wet conditions it is advisable to move the bias rearwards at around 5% (see wet setup guide).

2.3 ADJUSTING THE SEAT AND PEDALS

The pedals and seat can be adjusted to suit the driver.

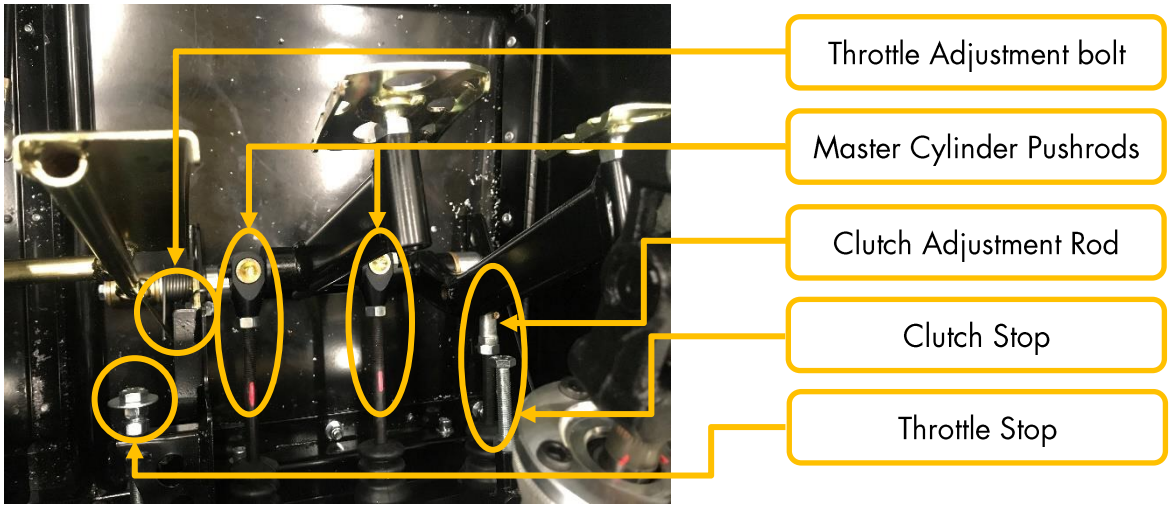
Seat Adjustment:

The seat is fitted on sliding rails which can be adjusted by loosening the 6 bolts on the seat. There are two M6 nylocs, one either side at the top of the seat between the chassis, two M6 button heads at the base of the seat and two M6 cap heads at the front lip of the seat. Once these are loose simply pull the seat forward or back whichever is desired, then tighten all six fixings.



Pedal Adjustment:

The pedals can be adjusted by either loosening the locknuts on the pedal pad, or by loosening the locknuts on the ***master cylinder pushrods***, then turning the rods to move the pedal. The pushrods must be moved evenly as this will affect the brake bias. The ***clutch pedal stop*** must be reset if the pedal is moved. Measure the gap between the pedal and the stop, once the pedal has been adjusted, move the stop until the same gap is achieved between the pedal and the clutch stop. The throttle pedal can be adjusted by lengthening or shortening the ***throttle adjustment bolt***. The throttle position must be checked after adjusting, the TPS should sit at 4% when at idle, you must then make sure full throttle can be achieved 100%+ if not the ***throttle stop*** must be adjusted. Also check the tension of the throttle cable if any adjustments are made.



If any further adjustment is required, pedal extension kits are available. Contact our stores department: stores@radicalsportscars.com

3. NEW CAR SHAKEDOWN

At Radical, we pride ourselves on our quality control and rigorous testing procedures that we have in place for every new car. All new cars are subject to a 100 point post production inspection and track simulation on our rolling road dynamometer prior to delivery. However, it is not possible to replicate the forces exerted driving around a race track. The first time you drive your new SR3 around a track is the first time the car has experienced the G-force you feel through the seat of the car. For this reason, we recommend our 'shakedown' procedure is followed for all new cars.

3.1 SHAKEDOWN GUIDE

Warm the car up and complete the pre-session checks. The first track session for a new car is also the first time the brakes have been used under load. All cast iron brake discs for competition use need to be bedded-in to ensure heat stabilisation and improve resistance to cracking. Cracks or warping can occur during the first few heavy stops if careful bedding is not carried out.

Your 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 discs. Additional notes on brake bedding can be found in the following section.

To help with brake bedding, initially blank the brake cooling ducts off ¾ to increase temperature build up.

RUN 1 (OUT & IN)

Driver:

- For the driver this is a good way for you to start to learn about the car. It is important to try and run through every gear if possible; it is advised to change gear at 5,000 rpm. During this run only use light pressure on the brake pedal. (See 'Bedding in Brakes' below)

Technician:

- Remove the engine cover and check for leaks and for any components rubbing

RUN 2 (3 LAP RUN)

Driver:

- Now the engine bay has been checked, it's time to start building up the temperature and speed. Be mindful that the brakes and tyres are still new and won't have reached their peak performance yet. Start to build up brake pressure, and roll some more speed in to the corners. Bring the RPM up to 8,000 before shifting up through the gears.

Technician:

- Check the tyre pressures
- Check the running temperatures of the oil and water and adjust any blankings in order to ensure the car runs at target temperatures
- Again, remove the engine cover and inspect the engine bay for leaks
- Re-check the wheel nut torque
- Allow the brakes to cool for a few minutes before heading back out on track.

RUN 3 (5 LAP RUN)

Driver:

- During this run build up to full brake pressure, and use the full rev range before shifting (10,000rpm).

Technician:

- Check the brake discs, they should now have started to 'blue' near the bell showing they have heated up sufficiently. Allow the brakes to cool once again and remove the blanking on the ducts for the next session
- Check the tyre pressures
- Check for play in the wheel bearings
- Re-check wheel nut torque for a final time

RUN 4 (NORMAL SESSION)

The car can now be run as normal. After this session is complete it is recommended to spanner check the whole car, again pay final attention for potential leaks and a give the car a good general inspection. When spanner checking the car, ensure suspension components are not overtightened as this will restrict the movement of these components.

3.2 BEDDING IN THE BRAKES

This procedure should be followed each time new discs are fitted to your car:

- The brake ducts should be ¾ blanked off in order to allow the brakes to warm up through the bedding in period, previously bedded pads should be used if possible.
- 3 lap run - use the brake lightly (<20bar application) on the slow down lap and allow brakes to cool for 5 mins (be sure to not sit stationary in the pits with the brake pedal depressed)
- Next run 5 laps – increase brake pressure to build up temperature in the discs (with a peak of around 40bar). The braking potential of the car will start to fade and any potential vibration will surpass; this is a sign that the bedding procedure is complete.
- It is possible to pick up a vibration or 'judder' through the brake pedal. This is due to the disk bell and disk becoming aligned for the first time; this is not a process that can be simulated in the build of the car. It is therefore very important that if the driver feels they have brake judder during this first full heatcycle they continue to build up brake pressure and heat in the disk. Do not decrease pedal pressure, to do so has the potential to make the vibration worse.
- Complete a cooling down lap with moderate brake pressure before stopping the car. Allow the brakes to cool for 15 minutes. Do not apply brakes whilst stationary during the cooling down period.
- We strongly advise AP Racing thermal paint is used; if so, then only the green paint (430°C) should have fully turned to white and the orange will have slightly turned (560°C) on the outside edges of the discs during the bedding procedure. If fitted, brake pressure sensors can be used to monitor the bedding in procedure.

IMPORTANT NOTES

With cast iron discs, brake pressures should not exceed 20bar during the out lap, even with pre-bedded discs. This is to prevent heat shocking which causes the discs to crack, this occurs when the disc is taken from ambient temperature up to 600°C very rapidly such as heavy braking on the out lap. When stationary never hold pressure on the brake pedal, this can cause warping and/or the discs and pads to bind.

The table below shows the suggested running pressures and pressures for race tyres:

Dunlop Cold Starting Pressure			
Slicks		Wets	
22	22	23	23
21	21	22	22

Hankook Cold Starting Pressure			
Slicks		Wets	
22	22	22	22
21	21	22	22

Dunlop Hot Pressure			
Slicks		Wets	
28	28	28	28
28	28	28	28

Hankook Hot Pressure			
Slicks		Wets	
28	28	28	28
28	28	28	28

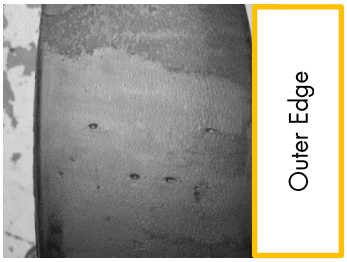
- Please note that the starting pressures are to only be used as a guide; conditions on the day will alter where you should start your pressures. Hot conditions will increase the pressure rise over the same period of time
- Fit valve caps when running
- Temperature spreads must not exceed 15°C across the front and 10°C on the rear
- Measure tyre temperature spreads, 3cm in from each edge of the tyres and in the centre, make sure you are not measuring the temperature of any pickup on the tyre
- Avoid kerbs on the out-lap when the tyres are cold
- It is important to take advice from your tyre manufacturer to ensure you are following their recommended setup parameters.

TYRE PERFORMANCE ANALYSIS

- Decisions based on handling should always be preceded with thorough examination of tyre working surface.
- Use the temperatures, pressures, data and driver feedback with the visuals of the tyre to get the best all round view of car and tyre behaviour.
- Measure the tyre temperatures and pressures as often as possible straight after a fast lap, get the driver to do a full pace in-lap, in order to get the best readings.

TYRE CONDITION FEEDBACK

When examining a tyre, always check both sides. The unloaded side can drag the inner wheel, causing excessive negative camber and overheating in the inner edge.
When measuring the temperature spreads start from the inner edge then work to the outer edge.
The picture on the left is an example of a rear tyre in good condition, more camber can be added if the rear is lacking grip.



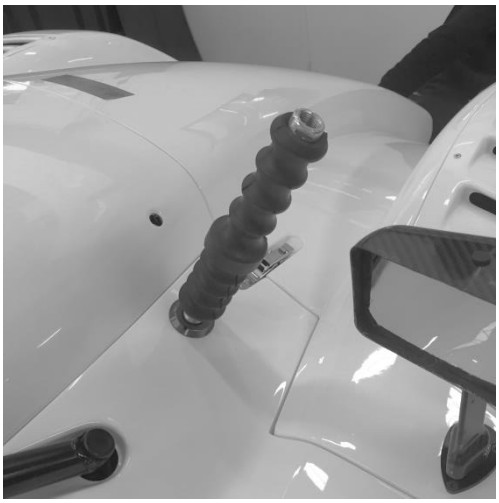
This is an example of a well-worn front tyre, judging by the wear indicators and the level of graining it suggests the car has been suffering with understeer. This could also be run with more camber. If a tyre is graining on either side, this can be used to judge whether the right level of camber is being used

After every day the car has run the car should be inspected thoroughly in a workshop environment.

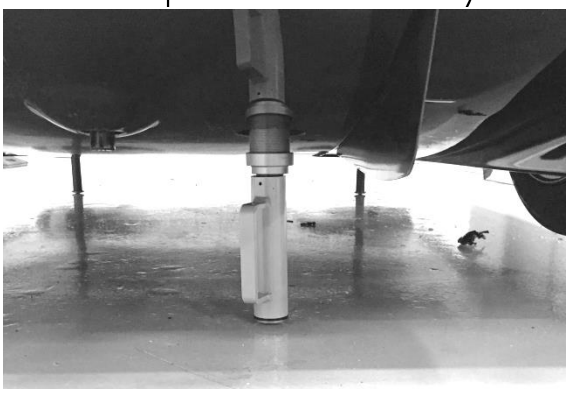
5.1 LIFTING YOUR CAR

AIR JACKS

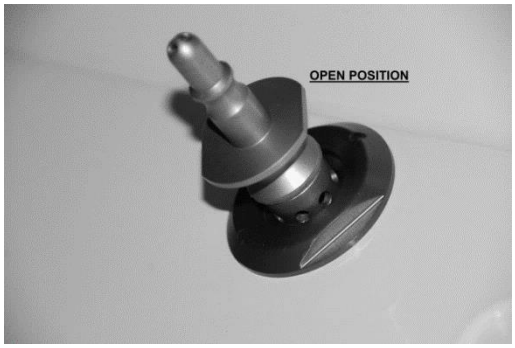
In order to raise the car, push the 'air jack lance' onto the fitting as shown in the picture below. Slowly build up the pressure in the regulator, until the car is fully off the ground. (250-300psi)



Before working on the car, the air jack safety clamps must be inserted, to do this simply push the open side of the yellow clamp around each of the three air jacks as shown until they click on.

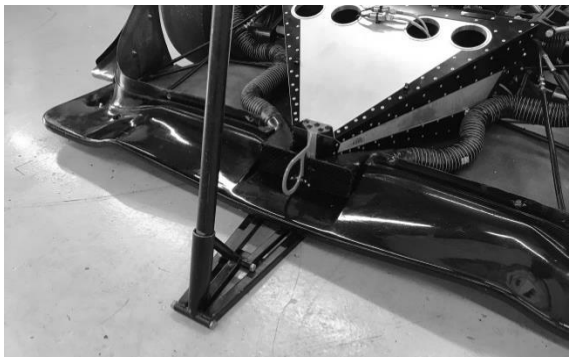


To release the air jacks, ensure it is safe to do so, then pull back on the fitting shown in the picture. Slowly pull the fitting to gradually release the pressure in the system, pulling it quickly will result in the car dropping to the ground rapidly. It is advised to leave the fitting on the open position when it is empty so that the system cannot re-pressurise.

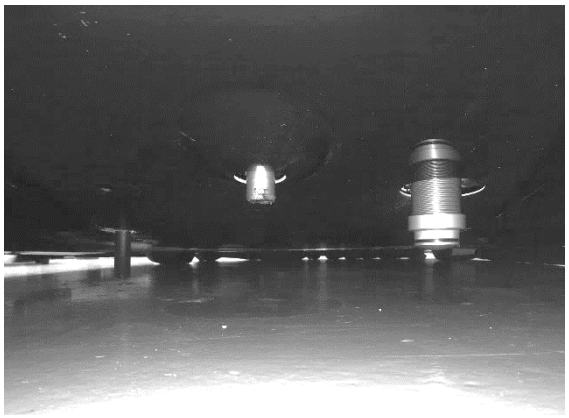


JACKING POINTS

The front jacking point is in the centre of the front diffuser, just under the front chassis rail. As shown in the picture.

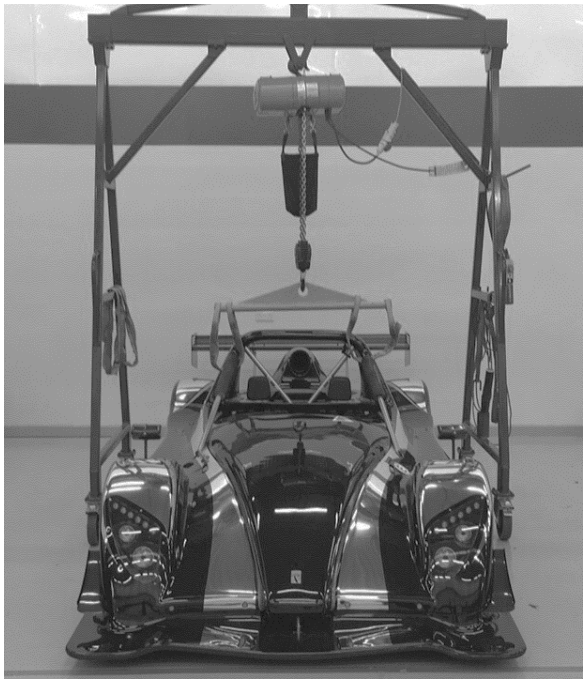


The rear jacking point is under the rear diffuser in the centre of the car, a welded bar protrudes the diffuser around the mid-point.



LIFTING POINTS

To lift the car onto a high stand we recommend lifting the car with a crane, rated to at least the weight of the car. To lift the car, mount a strap around the very top of the forward-facing stays, as shown. Be careful not to damage the bodywork. This is the advised lifting point for track extration too.



6. CAR SETUP

When the car leaves the factory, it will have a base setup on the car which is displayed below. This is a setup which has shown to work, over the years it has been adapted to suit various drivers' needs as they feel more comfortable with the car.

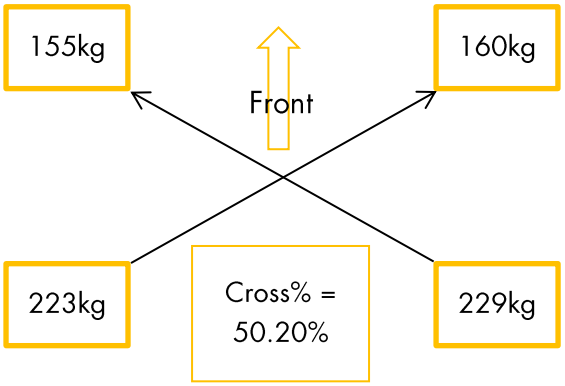
6.1 HOW TO SET UP THE CAR

Setting up the Radical may seem a daunting task at first; however, adjustments are incredibly simple with everything being of easy access allowing for fast setup changes whenever you feel the need to adjust certain areas. Below is a step by step guide of how to work with the car on the flat patch.

1. Check front pushrod lengths are equal & front springs have the correct turns of pre-load. The front pushrod is jigged from production at 230mm.
2. Check rear spring platform-to-cap distance is equal (approx. 125mm)
3. Ballast with 80Kg (10Kg in footwell by the pedals, 70Kg in seat) unless specific driver weight is known.
4. Lock steering to straight ahead using dummy steering wheel
5. Set tyre pressure to hot pressure from setup sheet
6. Disconnect front & rear anti-roll bars
7. Check dampers are set to full soft all round, bounce & roll car to settle suspension
8. Check drop heights and adjust average of front & rear to be within 1mm of target
9. Set cambers (+/- 0.1° from target)
10. Set toes (+/- 0.5mm from target)
11. Roll car off platform, turn on scales and zero
12. Roll car back onto platform, repeat bounce & roll
13. Check corner weights. Target is within 5Kg across front, and within 2% for diagonals
14. Adjust to correct using rear platforms only
15. Re-adjust drop heights equally on front pushrods and rear spring platforms to achieve target. (The drop height will probably not be equal, due to the offset seating position, so target drop height should be an average of the left & right readings.)
16. Re-connect anti-roll bars making sure there is no pre-load
17. Set dampers, they should always be set from fully closed.
18. Turn off scales
19. Check the diffuser is level side to side and front to back.

6.2 CORNER WEIGHTS

One of the most important factors is to ensure that the front corner weights are as equal as possible. The cross weight is not as crucial in comparison. (The offset driving position of the driver will usually mean that the weight cannot be made exactly equal.)To adjust the front corner weights, raise or lower the diagonal rear. The maximum difference in front weights should be no more than 5kg (11lb)



Camber	
-3.5	-3.5
-1.7	-1.7

Toes	
2mm OUT	2mm OUT
3mm IN	3mm IN

Triple Intrax		Springs/Preload	Triple Intrax	
Bump LS:	-7	FARB	Bump LS:	-7
Bump HS:	-25	Soft 15.8mm	Bump HS:	-25
Rebound:	-25	Medium 19mm	Rebound:	-25
Single Intrax		Hard 22.2mm	Single Intrax	
-25		X Hard 22.2mm black	-25	
	110Nm 100mm Preload 4 Turns			110Nm 100mm Preload 4 Turns

Triple Intrax		Springs/Preload	Triple Intrax	
Bump LS:	-12	RARB	Bump LS:	-12
Bump HS:	-25	Soft 12.7mm	Bump HS:	-25
Rebound:	-25	Medium 15.8mm	Rebound:	-25
Single Intrax		Hard 19mm	Single Intrax	
-25		X Hard 22.1mm	-25	
	95Nm 100mm Preload 0 Turns	Super hard 22.1 black		95Nm 100mm Preload 0 Turns

Corner weights (Est)/ Drop Height		
76	Front diffuser H	76
	45mm	
	Ballast Weight	
167	80kg	167
Weight Estimate	Cross%	Weight Estimate
142	Total weight kg	144
	620+80kg	
	Rake mm	
70	14mm	70
220		220
Weight Estimate	LHD / RHD	Weight Estimate
173	✓	184

Tyre Pressures PSI (Cold & Hot)		
22	Dunlop Tyre Compound	22
	CM004	
28		28
20		20
28		28

PADS
01

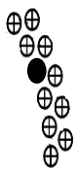
PADS
01

SR8 Gearing	
Short	n/a
Medium	n/a
Long	n/a
X long	n/a

SR3 Gearing	
3.409	
3.235	
3.071	Std
2.917	

Chain Drive Gearing	
FRONT	REAR
n/a	n/a

Rear bi wing



Note: When carrying out set-up on flat-patch, set tyre pressures to hot pressure. Ensure that they are returned to cold pressures after setup is complete.

SR3 - Factory setup sheet - Hankook

Note: When carrying out set-up on flat-patch, set tyre pressures to hot pressure. Ensure that they are returned to cold pressures after setup is complete.

Date		Chassis #		Job #	
		Technician 1		Technician 2	

Camber		Toes	
-3.2	-3.2	2mm out	2mm out
-1.8	-1.8	2mm IN	2mm IN

Triple Intrax		Springs/Preload			Triple Intrax	
Bump LS:	-14	Rate	FARB	Rate	Bump LS:	-14
Bump HS:	-25	110	Soft 15.8mm	110	Bump HS:	-25
Rebound:	-5		Medium 19mm		Rebound:	-5
		Length	Hard 22.2mm	Length		
		100	X Hard 22.2mm	100		
		Preload		Preload		
		4 turns		4 turns		

Ride	Front Diffuser H	Ride
77mm	40mm	77mm
	Ballast Weight	
Drop	80kg	Drop
163mm	Cross%	163mm
Weight	Total weight	Weight
kg	kg	kg

Triple Intrax		Springs/Preload			Triple Intrax	
Bump LS:	-10	Rate	RARB	Rate	Bump LS:	-10
Bump HS:	-35	110	Soft 12.7mm	110	Bump HS:	-35
Rebound:	-17		Medium15.8mm		Rebound:	-17
		Length	Hard 19 mm	Length		
		100	X Hard 22.2mm	100		
			XX Hard 22.2mm			
		Preload		Preload		
		0		0		

Ride	Rake mm		Ride
75mm	18mm		75mm
Drop			Drop
213mm			213mm
Weight	LHD	RHD	Weight
kg			kg

Fuel Level

Dive planes:	Y / N

Tyre Pressure (PSI) (Cold & Hot)			PADS
28	Hankook	28	01
22		22	
28		28	PADS
21		21	01

Rear Wing	
Holes (from the bottom)	
Main	3 out of 4
Bi-wing	6 out of 9

Comments:

QD141-1

6.5 DUNLOP DROP HEIGHTS (IN-DEPTH)

The drop heights are measured with a 4" bar, the bar is inverted for the front, as shown in the picture on the left. Chassis rake will be the difference between 'Calculated Ride Height' and 'Rear Ride Height'.

FRONT		
Measuring to Rocker Pivot		
Front Drop Height	Chassis Height	Calculated Ride height under lowest point on chassis
153mm	90mm	70mm
154mm	89mm	69mm
155mm	88mm	68mm
156mm	87mm	67mm
157mm	86mm	66mm
158mm	85mm	65mm
159mm	84mm	64mm
160mm	83mm	63mm
161mm	82mm	62mm
162mm	81mm	61mm
163mm	80mm	60mm
164mm	79mm	59mm
165mm	78mm	58mm
166mm	77mm	57mm
167mm	76mm	56mm
168mm	75mm	55mm
169mm	74mm	54mm
170mm	73mm	53mm
171mm	72mm	52mm
172mm	71mm	51mm
173mm	70mm	50mm
174mm	69mm	49mm
175mm	68mm	48mm
176mm	67mm	47mm
177mm	66mm	46mm
178mm	65mm	45mm
179mm	64mm	44mm
180mm	63mm	43mm
181mm	62mm	42mm
182mm	61mm	41mm
183mm	60mm	40mm
184mm	59mm	39mm
185mm	58mm	38mm
186mm	57mm	37mm

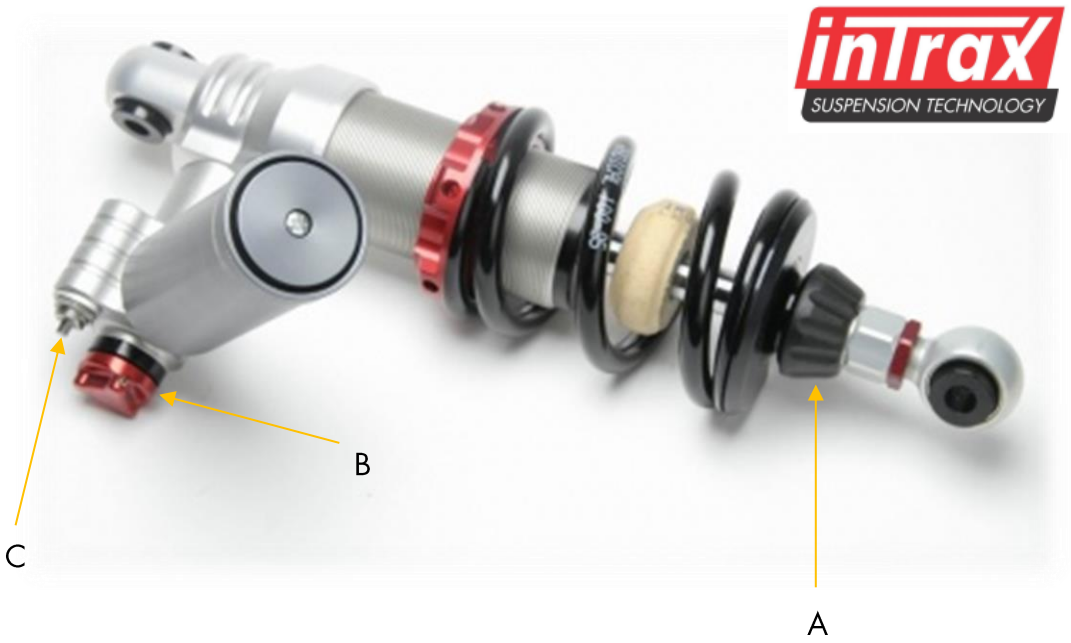
REAR	
To Front Bush on Rear Top Wishbone Bolt	
Rear Drop Height	Chassis Height
210mm	80mm
211mm	79mm
212mm	78mm
213mm	77mm
214mm	76mm
215mm	75mm
216mm	74mm
217mm	73mm
218mm	72mm
219mm	71mm
220mm	70mm
221mm	69mm
222mm	68mm
223mm	67mm
224mm	66mm
225mm	65mm
226mm	64mm
227mm	63mm
228mm	62mm
229mm	61mm
230mm	60mm
231mm	59mm
232mm	58mm
233mm	57mm
234mm	56mm
235mm	55mm
236mm	54mm
237mm	53mm
238mm	52mm
239mm	51mm
240mm	50mm
241mm	49mm
242mm	48mm
243mm	47mm

6.6 HANKOOK DROP HEIGHTS

The drop heights are measured with a 4" bar, the bar is inverted for the front, as shown in the picture on the left. Chassis rake will be the difference between 'Calculated Ride Height' and 'Rear Ride Height'.

FRONT		
Measuring to Rocker Pivot		
Front Drop Height (mm)	Chassis Height (mm)	Calculated Ride height under lowest point on chassis (mm)
153	87	67
154	86	66
155	85	65
156	84	64
157	83	63
158	82	62
159	81	61
160	80	60
161	79	59
162	78	58
163	77	57
164	76	56
165	75	55
166	74	54
167	73	53
168	72	52
169	71	51
170	70	50
171	69	49
172	68	48
173	67	47
174	66	46
175	65	45
176	64	44
177	63	43
178	62	42
179	61	41
180	60	40
181	59	39
182	58	38
183	57	37
184	56	36
185	55	35
186	54	34

REAR	
To Front Bush on Rear Top Wishbone Bolt	
Rear Drop Height (mm)	Chassis Height (mm)
210	78
211	77
212	76
213	75
214	74
215	73
216	72
217	71
218	70
219	69
220	68
221	67
222	66
223	65
224	64
225	63
226	62
227	61
228	60
229	59
230	58
231	57
232	56
233	55
234	54
235	53
236	52
237	51
238	50
239	49
240	48
241	47
242	46
243	45



A – Rebound:

The rebound controls the speed of the damper's extension. The more rebound resistance you add, the slower the damper will return out. This can be used on the front to fix mid-corner understeer, and on the rear to aid traction. This adjuster has approximately 50 clicks from fully closed.

B – High speed bump compression:

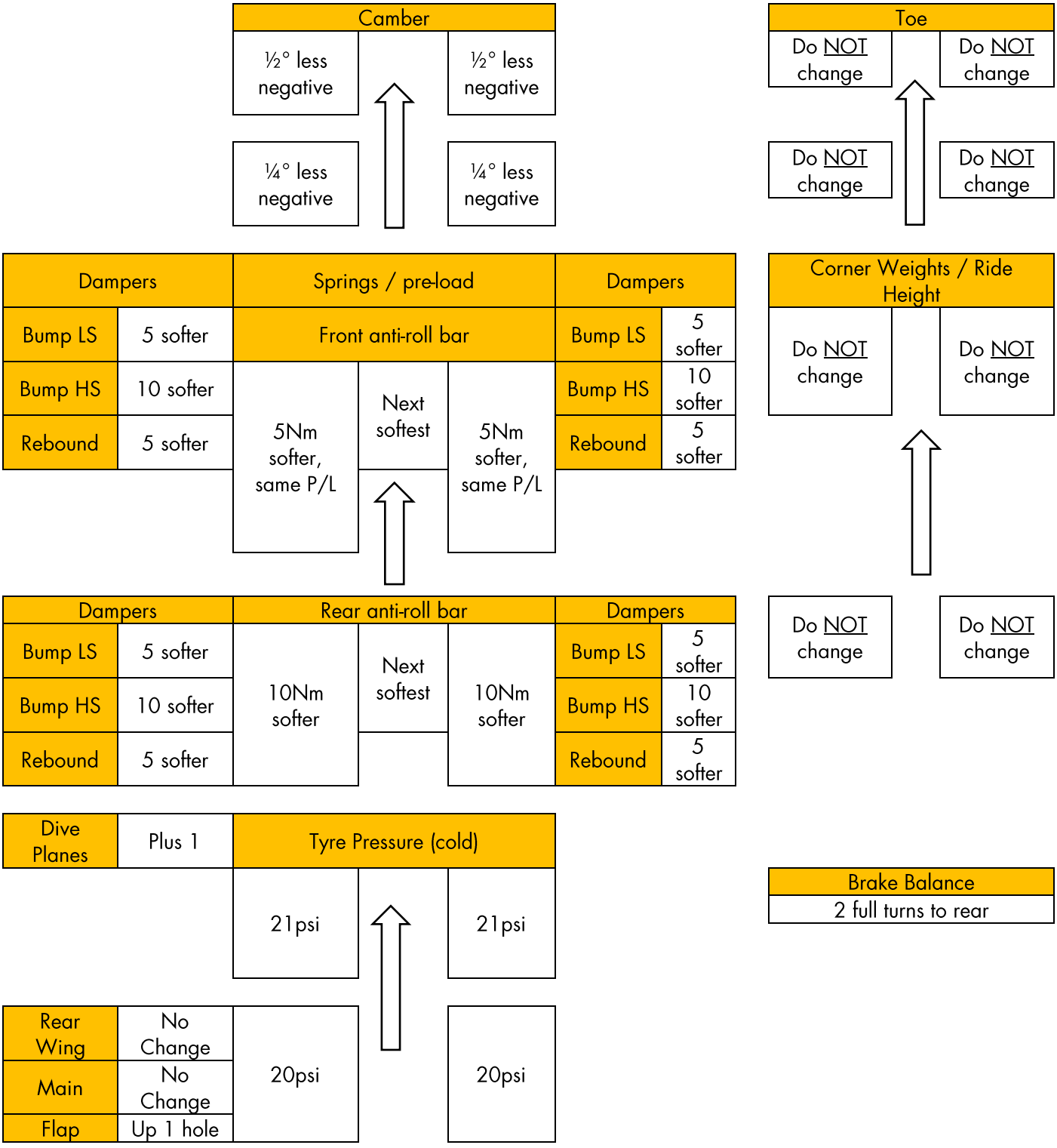
High speed bump compression (refers to the speed of the piston rod into the damper) controls the high frequency compressions of the damper. In simple terms it controls how the car reacts to small bumps and curbs. This adjuster has approximately 50 clicks from fully closed.

C – Low speed bump compression:

Low speed bump compression controls how slow or fast the damper reacts under compression. Increasing the low speed bump will have a similar (though smaller) effect to increasing the spring rate. This adjuster has approximately 15 clicks from fully closed.

6.8 WET WEATHER SET-UP

When you venture into the wet conditions, the car setup can be altered in order to give the driver the best chance of staying on the circuit. Shown below is a guide to the changes to make to the car in the wet.

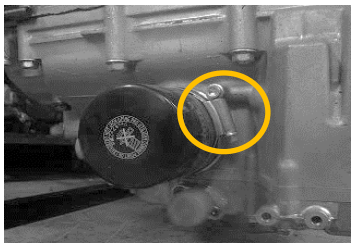


7. CAR SERVICING

7.1 FILTER SERVICING

Oil Change - We recommend changing engine oil every 6 hours. To do this remove the large oil pipe from the bottom of the oil tank, located in the right-side pod, underneath the engine cover. There will be a small amount of oil left in the engine, to drain the last bit of oil remove the 17mm sump bung on the side of the sump pan. It is recommended that this is fitted with a new crush washer and torqued back up to 17Nm, make sure it is Lockwired around the unused oil pressure switch.

Oil Filter Change - When the oil is changed, we recommend changing the oil filter at the same time to comply with our engine warranty conditions. Remove and discard the old filter. A thin film of oil should be applied to the o-ring on the new filter, use the Suzuki oil filter tool to torque the filter to 20Nm. Fill the engine back up with fresh oil to the correct level. A 50-70mm jubilee clip should be fitted as shown in the picture so it rests against the M6 oil gallery bung to stop it loosening.



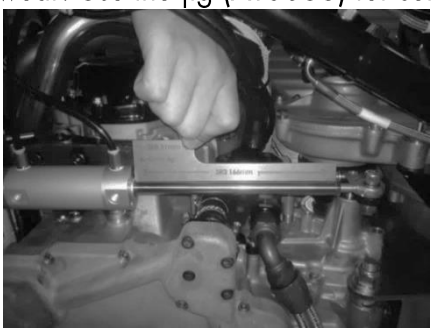
Fuel Filter - The fuel filter should be changed every 40 hours, it is located in the fuel regulator housing which is on the left-hand side of the car underneath the engine cover. The unit also houses the pressure sensor and the regulator itself which is in the centre of the unit. The filter is located on the right of the picture. It is secured by a circlip that when removed, the fuel filter can be removed.

Air Filter - The air filter should be inspected and cleaned before each race weekend/test day. When cleaned it should be oiled to the manufacturer's instructions.

GDU Oil Change – To change the GDU oil, remove the side cover and allow the oil to drain, re fit the side cover ensuring the o-ring is undamaged and tighten the bolts. Once all the oil has drained remove the top pipe and adapter to fill the GDU. Then remove the level bung in the side cover until the new oil begins to drip out of the level bung. Re fit the level bung, adapter and pipe. This must be done on a level surface.

7.2 GEARSHIFT ACTUATOR SETUP

The actuator is a key part in changing gear in the SR3, if the actuator is incorrectly setup it can cause gear shift issues and has the potential to damage the internals of your gearbox. While checking the length, check both bearings for excessive play and wear. Use the jig (AT0033) for setting the Actuator length on the SR3, the total length from the casing to the nut should be 166mm. This is simply done as shown in the picture below:



7.3 WHEEL SPEED SENSOR SETUP

Use the jig for setting the wheel speed sensor (AT0042). Using a pair of 13mm spanners, set the wheel speed sensor no closer to the pickup point than the thickness of the Wheel Sensor Gauge (2mm). The pickup point is the end of the brake disc bolts on an SR3. When fitted, check the sensor is working by ensuring it is plugged in, then turn the power on and spin the disc, the sensor should light up when it sees each disc bolt. This is shown in the image on the right.

7.5 BALANCING THE THROTTLE BODIES

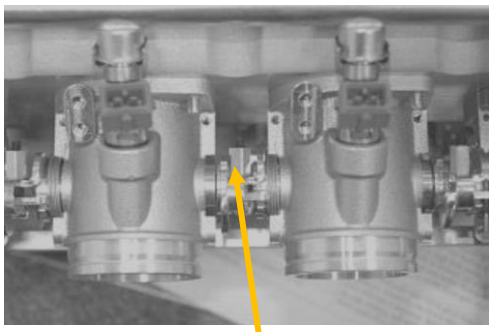
To set up the individual throttle bodies, please follow these rules:

When the engine is idling at around 1600rpm, the Syncrometer reading needs to be equal on each of the individual throttle bodes and the TPS should be 4.0%. The TPS value can be seen on a computer connected to the ECU or it is displayed on the dashboard. When adjusting the TPS ensure the engine is turned off.

This is achieved by adjusting the idle speed screw and throttle body adjusters.

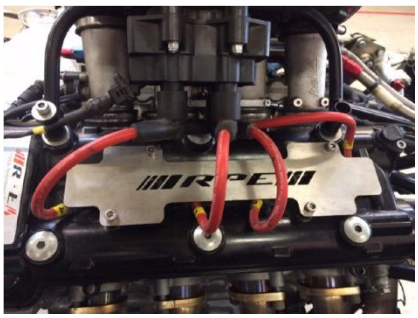
Ensure that all four of the bodies open fully and evenly.

During this procedure it is essential that you have a laptop connected, with PTmon displayed. Check the engine coolant temperature is a minimum of 50°c and maximum of 90°c while the engine is running.



7.8 COIL PLUG ORDER

The order of the coil leads is shown below, when re-fitting ensure there is a positive click onto the spark plug. 1+4 is near the plug and 2+3 on the opposite side.



7.6 SERVICING THE GEAR DRIVE UNIT

The Gear Drive Unit contains the final drive for a SR3, there are 4 ratio options to choose from dependent on the nature of the circuit. These can be found in the appendix of this manual. Below is a step by step guide to help with changing the ratios in the GDU:

Tools Required:

- Drain Tray
- 1/2" Impact Gun/Breaker Bar
- 33mm Socket
- 42mm Socket
- 5mm Hex Head Socket
- 1/2" Torque Wrench
- 1/4" Torque Wrench
- Gear Locking Device

Additional Parts Required:

- Different Ratios
- GDU Oil
- Hylomar Universal Blue Gasket Sealant

1. The first step with changing the ratios on the GDU is to place the drain tray under the car for the GDU oil to drain into. Whilst changing ratios it is important to check the conditions of the ones removed.

2. Once the drain tray is in a suitable position, begin removing the M6 cap head bolts on the GDU side casing. As the side casing is being removed, be careful as to not damage the rubber O ring. Whilst the case is being loosened, the oil will begin to drain out of the GDU

3. Once the casing has been removed, insert the locking device between the two gears in order to stop rotation

4. It is important to remember that each shaft has opposing threads; main shaft has a left-hand thread and the input shaft has a right-hand thread. Using the 42mm socket on the impact gun, remove the nut on the main shaft.

5. Using the 33mm socket, remove the nut on the input shaft

6. As both of the nuts are removed, it is advised to remove each part individually in order to make the rebuild process simpler

7. It is strongly advised to check the gear teeth as the gears are being removed; it is important to check for pitting on the gear teeth as this can sometimes occur over time

8. Before fitting the new ratios clean the threads and inside the GDU- be sure to look out for any metal fragments

9. Once the GDU has been inspected and cleaned, it is time to fit the new ratios. Simply slide the gears, bearings and spacers on the shafts

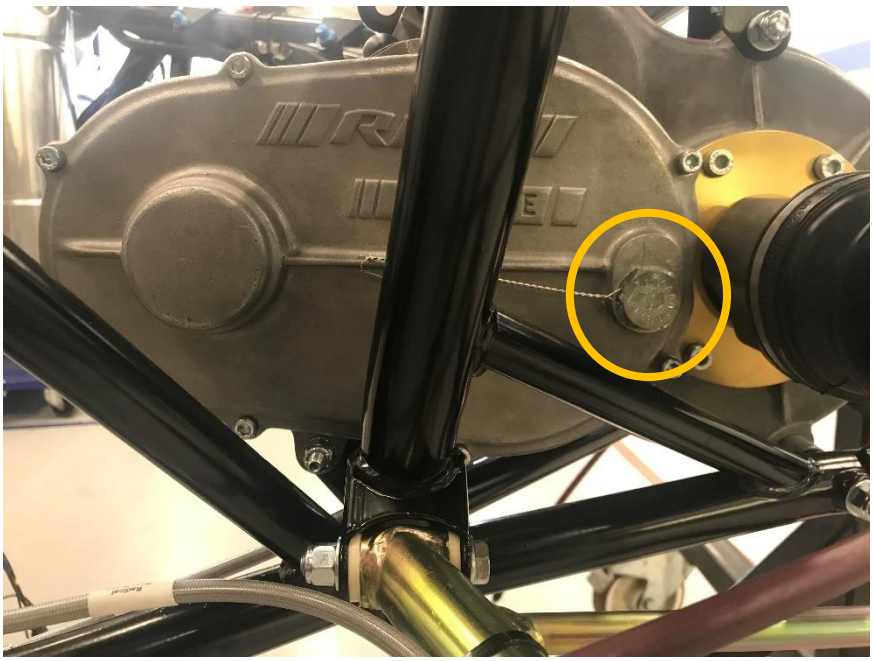
10. Re fit the two locking nuts with Loctite on the threads before peening over the edges as a locking method. These locking nuts should be torqued to 80 ft/lb

11. When all of the components are refitted, it is recommended to apply sealant to the O ring for re-fitment along with the edge of the side casing

12. Re-fit the side casing before re –inserting the M6 cap head bolts and torqueing to 12 ft/lb

13. Once all the side casing bolts have been fitted, the GDU oil will need to be replenished as normal (1.5 liters)

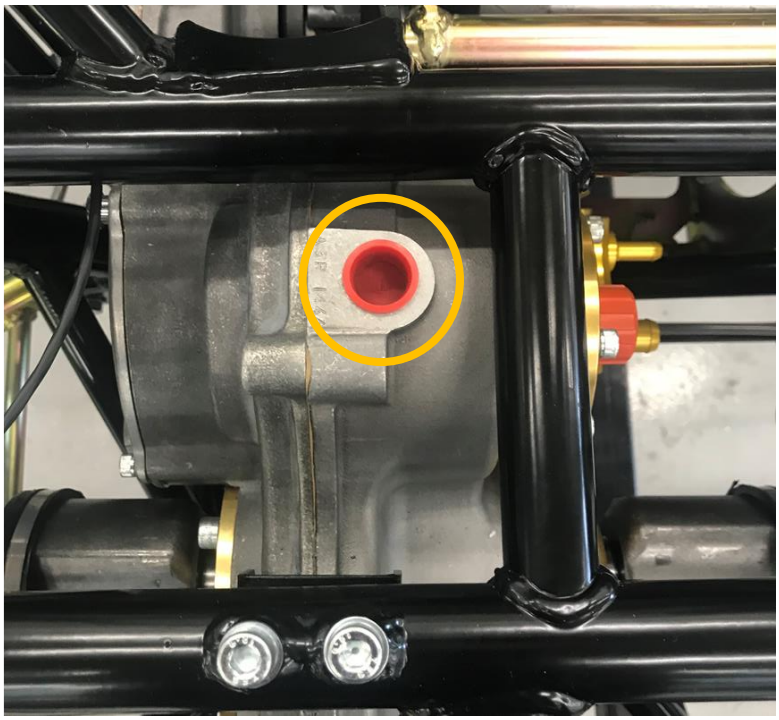
7.7 FILLING THE GEAR DRIVE UNIT WITH OIL



To fill the GDU with oil the 'level bung' which is picture above must be removed.

The oil should be filled through the top oil pipe (oil cooler return) pictured below. The adapter must be removed. The GDU will take roughly 1.5L from empty, the correct level is just as the oil starts to come out of the side bung.

The level bung must be re-fitted, there is no torque setting. It must be fitted with the sealing washer and lock-wired as a safety measure.



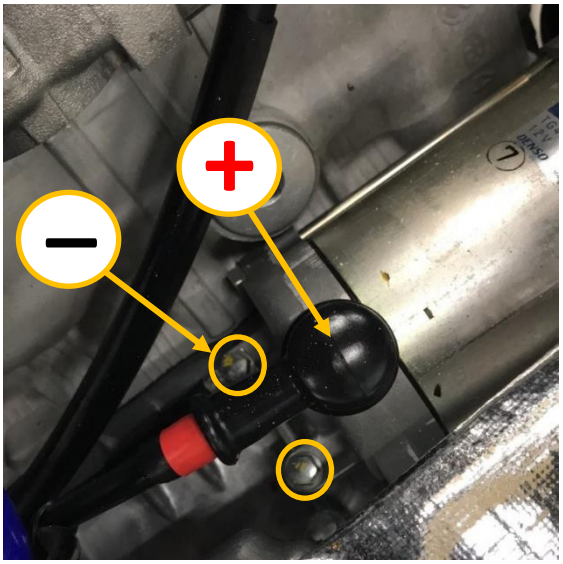
7.8 CHECKING THE STARTER MOTOR AFTER A SPIN

In the event of a spin, if the clutch is not depressed and the engine spins backwards, there is a chance that the starter and opposing gears can get damaged. If there are any doubts over whether the engine is damaged after a spin, it should not be started again prior to inspecting the starter motor.

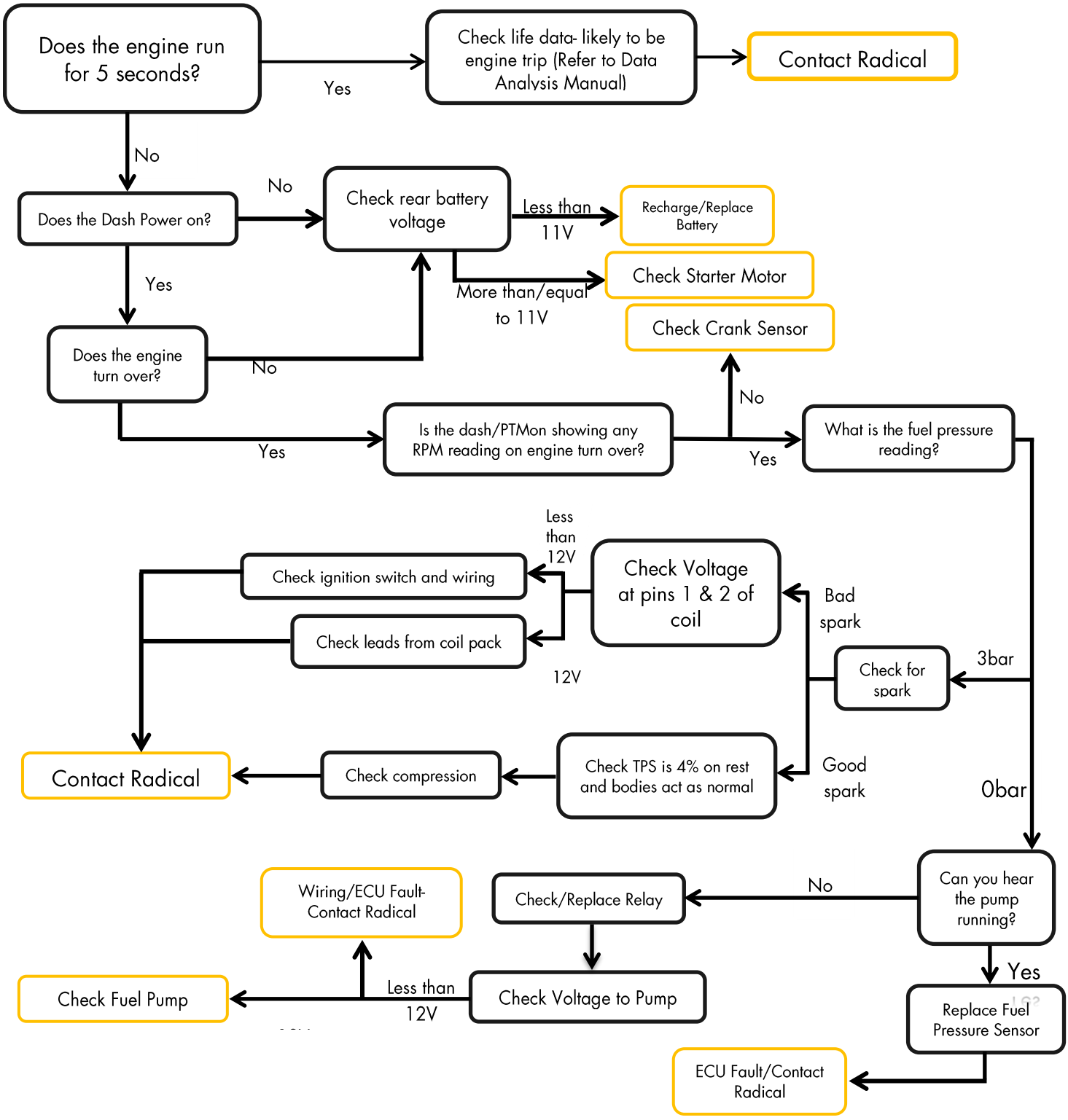
The first stage in inspecting the starter motor is to remove the positive terminal under the black cover, once it is removed cover it in tape. Then remove the two bolts going into the engine cases, noting which bolt holds the negative wire on.

The starter motor can then be pulled from the starter cover, the first check is to turn the shaft on the starter motor, this should turn normally. If it doesn't this will need to be replaced.

It is imperative to check the starter idler gear if the engine has turned backwards and damaged the starter motor, the gear will only turn one way, so they teeth may be stripped in the event of a spin. If the gear is damaged, you must consult a 'Radical Authorised Engine Builder'



8.1 NON STARTING



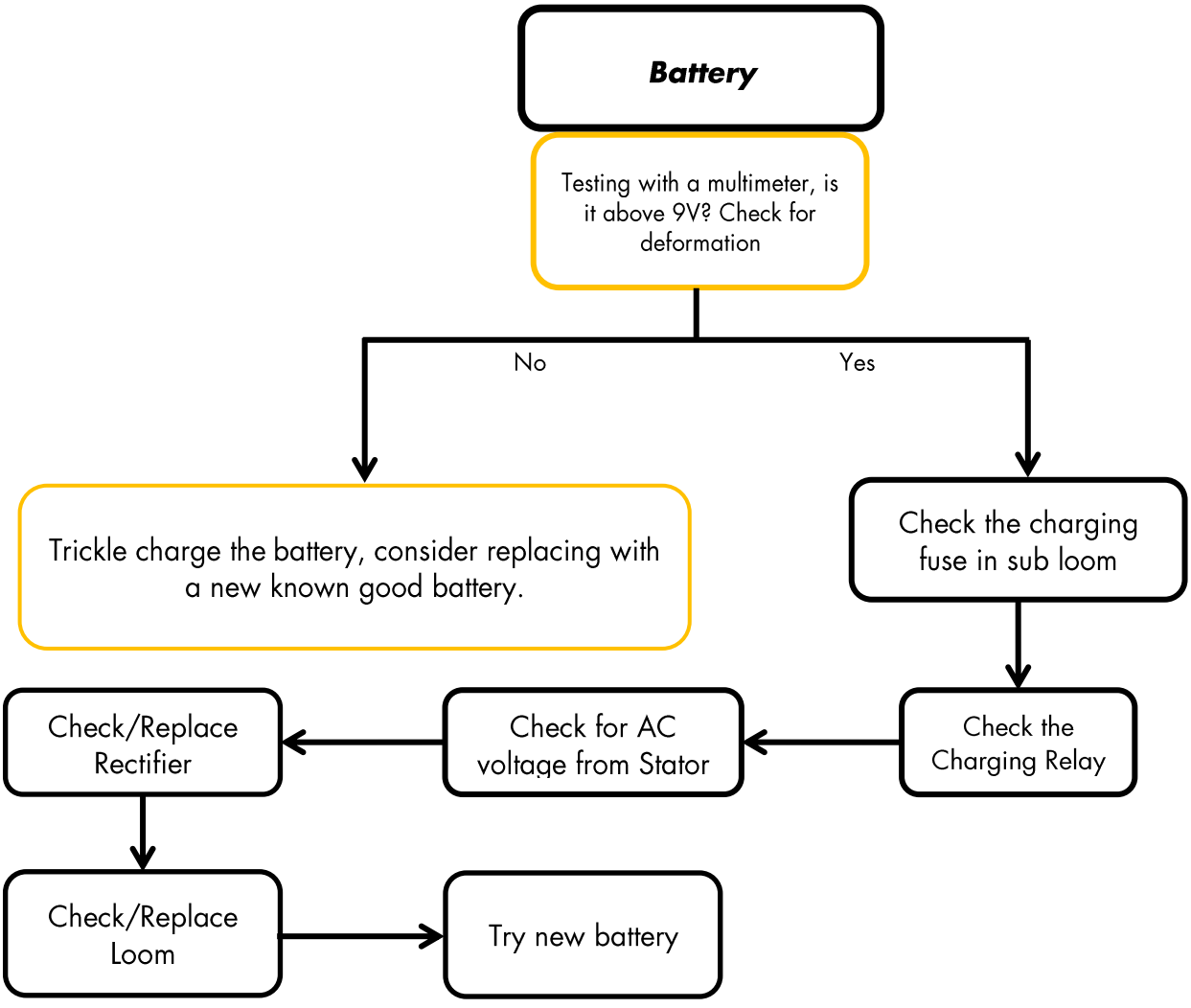
8.2 CHARGING ISSUES

Your SR3 should be charging between 13.5-14.5 V when running on circuit. If you see it running below this, it's likely you have some sort of issue with the charging of your car. After each run it is important to check the data on all areas with "vbat" being included; you'll notice the charging voltage in this section. Follow the below guide on how to diagnose the problem and deciding on the solution. When checking the car is charging, make sure the RPM is held above 3000rpm

For a 1500 SR3 an additional battery is fitted in the sidepod to allow for 24v starting to assist with the increased compression ratio. This additional battery is only discharged when the starter is depressed, aside from a physical wiring fault nothing else will discharge it. It is recharged using a charging module (silver box under passenger side of dash).

On this module you will find two lights, power (green when on) and charging (orange when charging). If no lights are showing check connections and consider replacing the module. If the charging light is not showing check the condition of the side pod battery and consider replacing.

The dash and data can only show the voltage of the engine bay battery, this is charged by stator on the engine. Problems with this battery can be diagnosed by following the below chart.



8.3 GEARSHIFT ISSUES

When first discovering a gear shifting issue, it is important to first follow a few steps before attempting any remedy for the issue.

- First of all, plug into the car and using the 'Data Analysis Manual' as a reference and download the data. Once the data has been downloaded, review the 'GearShiftDecision' channel to see if any shifts have been disallowed due to a breach in the cars normal parameters, TPS Too High/RPM Too High etc. The shift will not be allowed if it sees any of these.

- Next step is to open up LifeMon and check whether there is any output from the paddles. Do this by viewing the 'PaddleSwitch' channel, this will give a live reading of the paddle inputs, check the switches are registering on this channel by displaying up/down. If there is no output, check the wire from the steering wheel is still plugged in and has no breaks or tight bends.

- Is it shifting through all gears? Or just having trouble with one specific gear? If one specific gear this suggests it may be a mechanical issue and it is strongly advised to contact an authorised Radical engine shop for details and more advice on what to do. If you have carried out the first two steps and are still having issues shifting through all gears, take a look below for more help.

DOWNSHIFT ISSUES

Ensure the blip is between 20-35% also check it is blipping mechanically at the actuator end. Check actuator bearings for play, check actuator length using the jig, check the TPS is set at 4% at rest and operating normally, check 'GearShiftDecision' for any dis-allowed shifts.

ISSUES GETTING OUT OF NEUTRAL

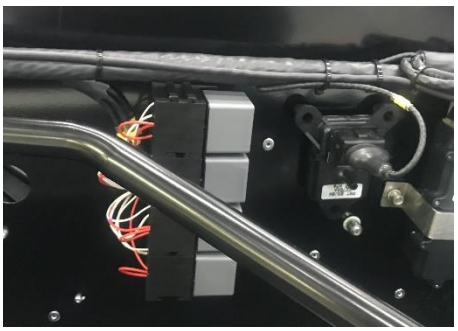
Check actuator bearings for play, check actuator length using the jig, check the TPS is set at 4% at rest and operating normally, check the clutch switch is sending a signal, check the clutch clearance is correct at the pedal.

UPSHIFT ISSUES

Check actuator bearings for play, check actuator length using the jig, check the TPS is set at 4% at rest and operating normally, check 'GearShiftDecision' for any dis-allowed shifts.

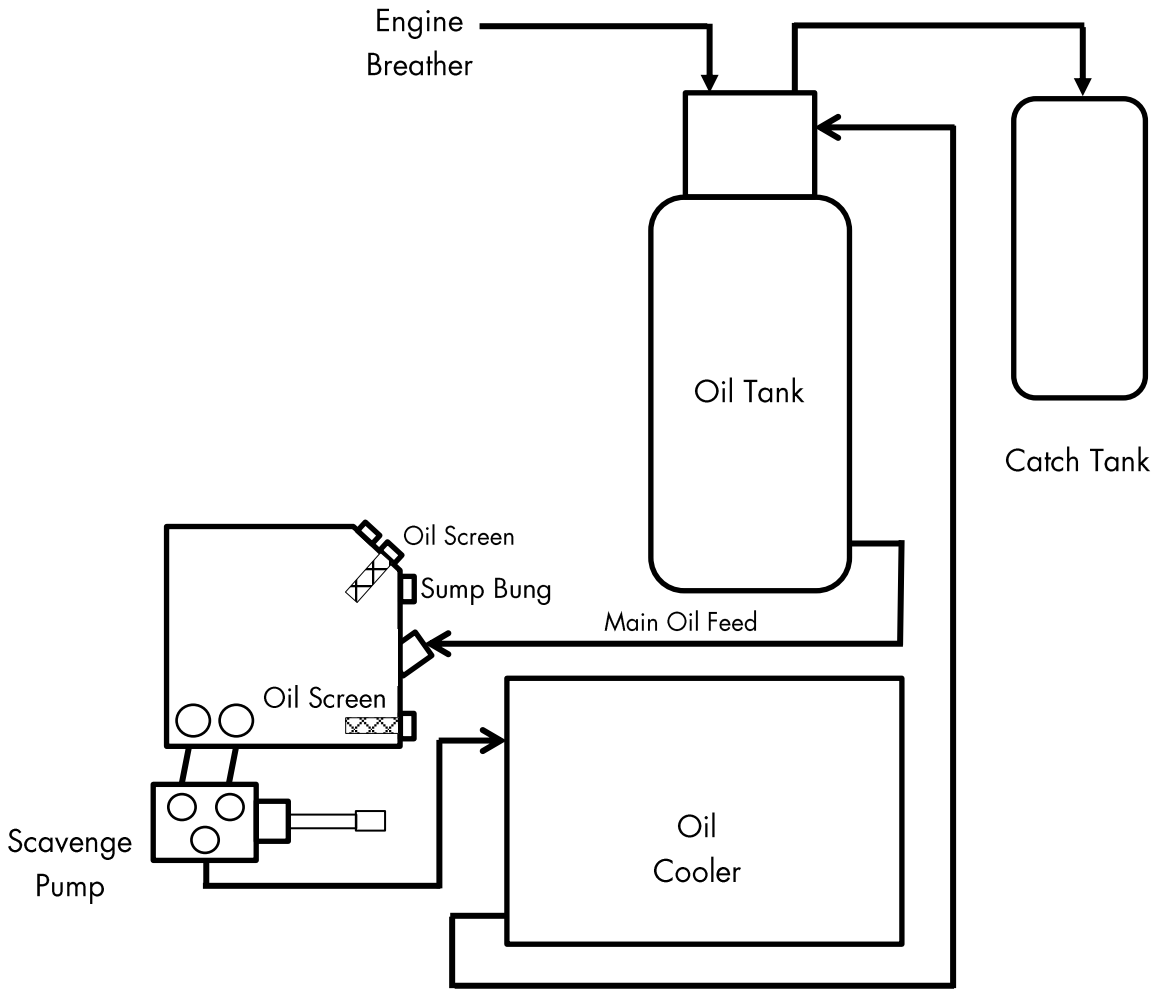
8.4 RELAYS

As of April 2018, the fuel pump, fan, water pump and paddleshift relays are all on the right-hand side of the car behind ECU cover plate. Cars built before April 2018 will have the paddleshift relay in the left-hand sidepod, with the remaining three in the same location. The charging relay is located on the charging loom which is on the bottom left side of the engine bay, near the main chassis earthing point.

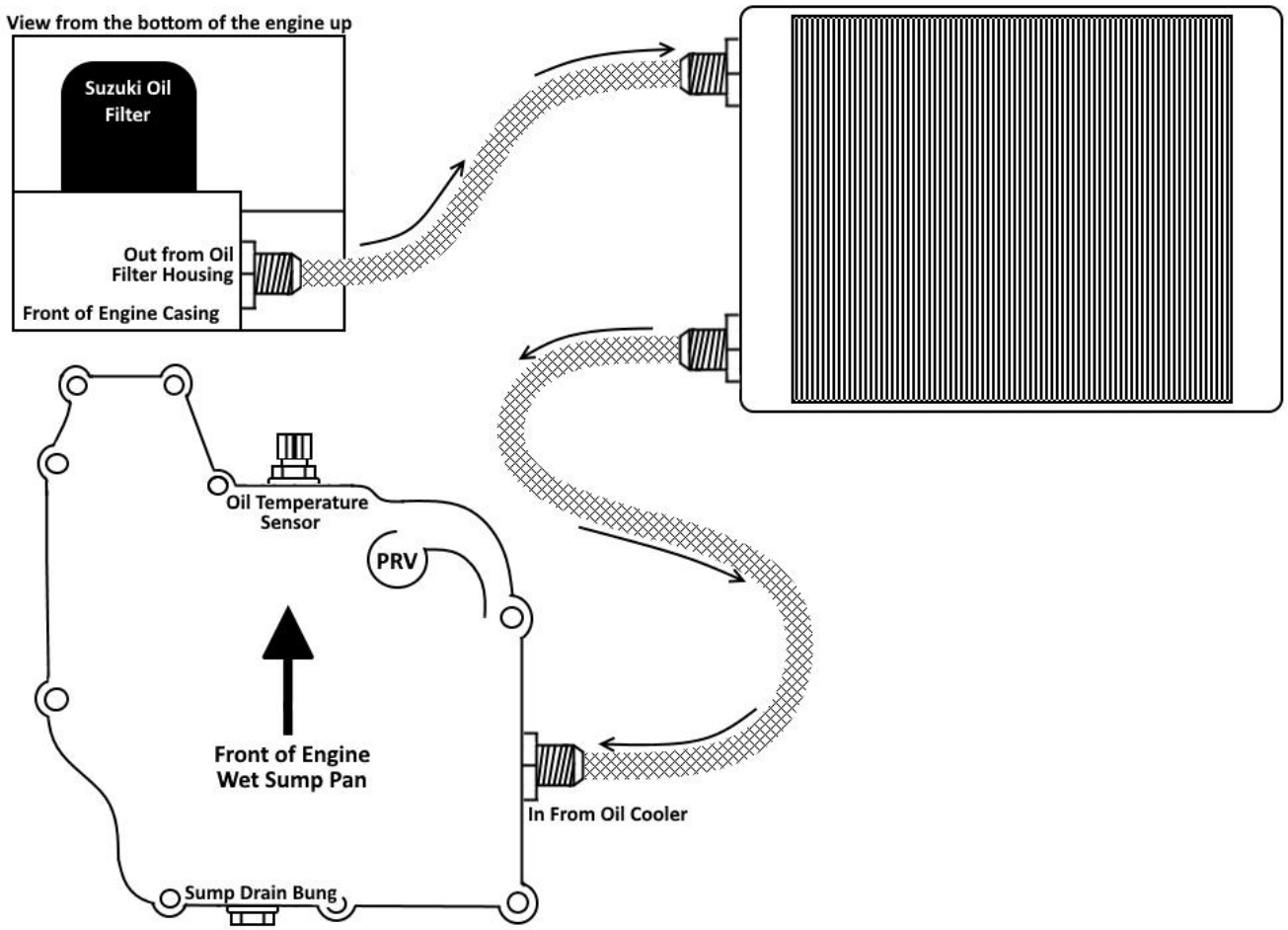


9. REFERENCE MATERIAL

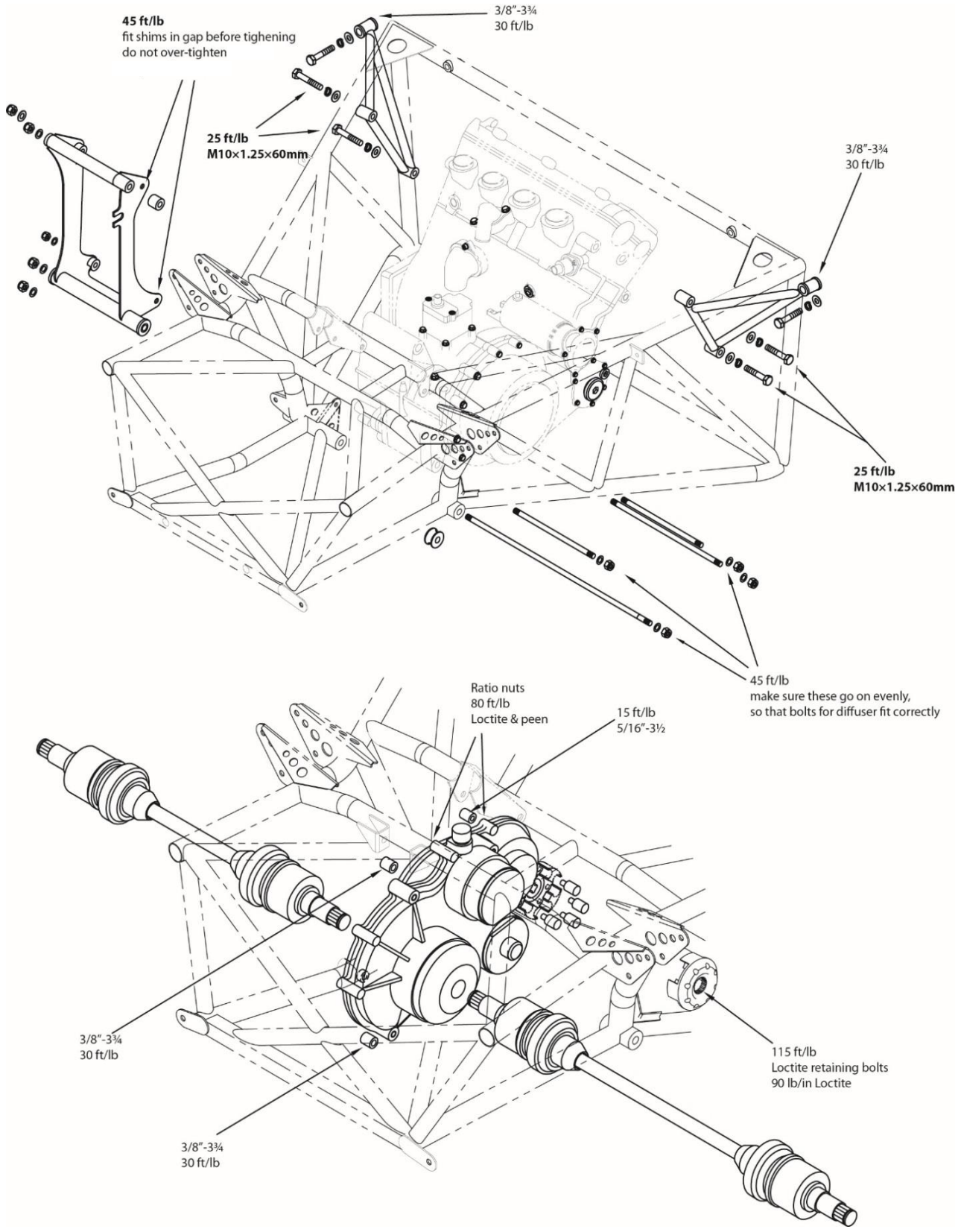
9.1 DRY SUMP LAYOUT



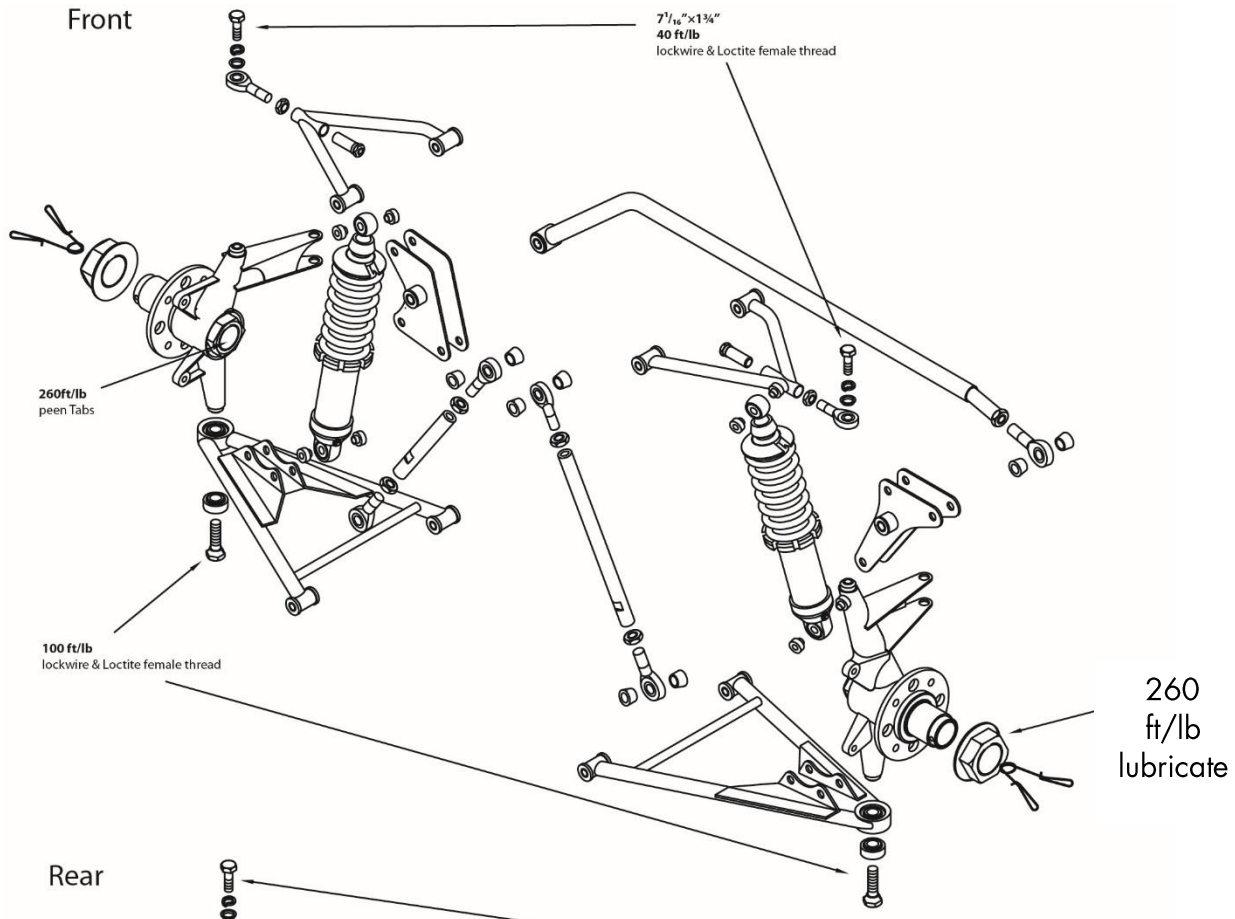
9.2 WET SUMP LAYOUT

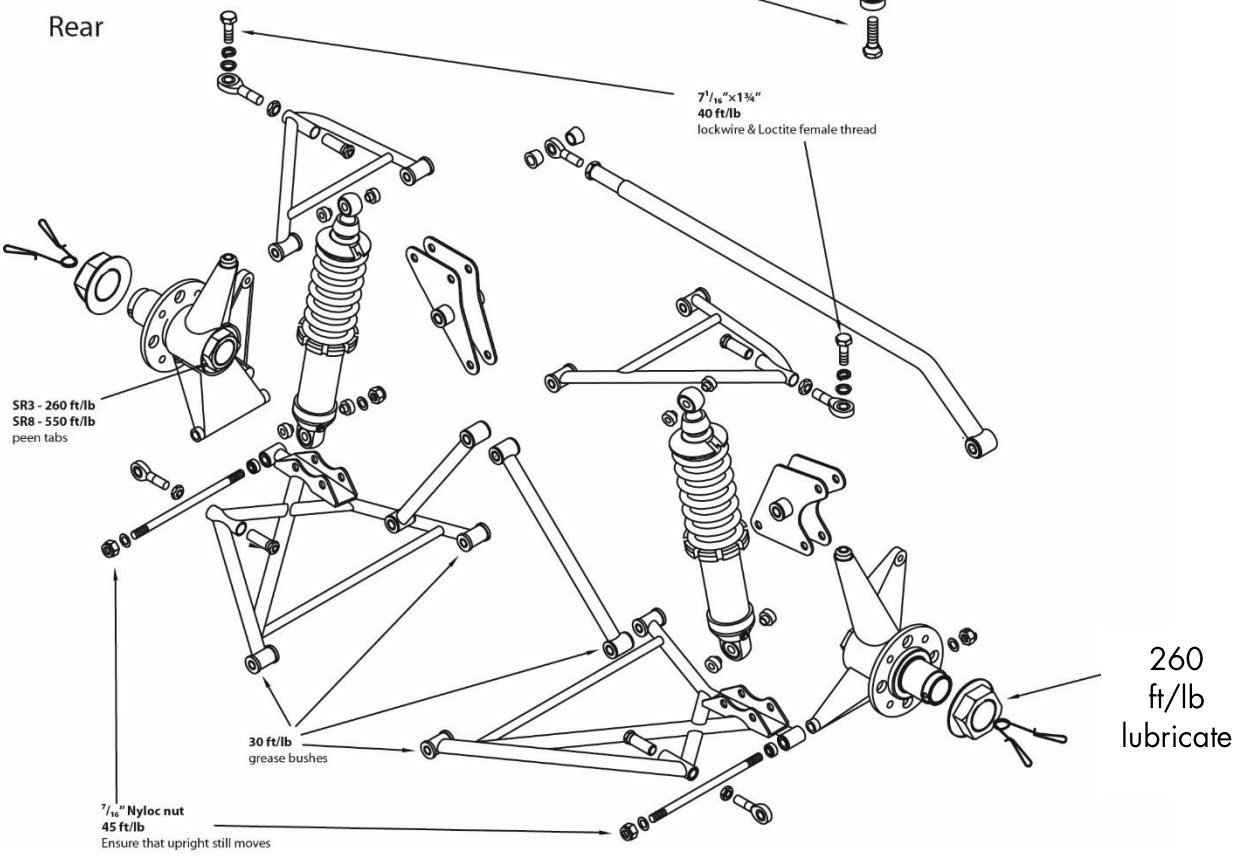


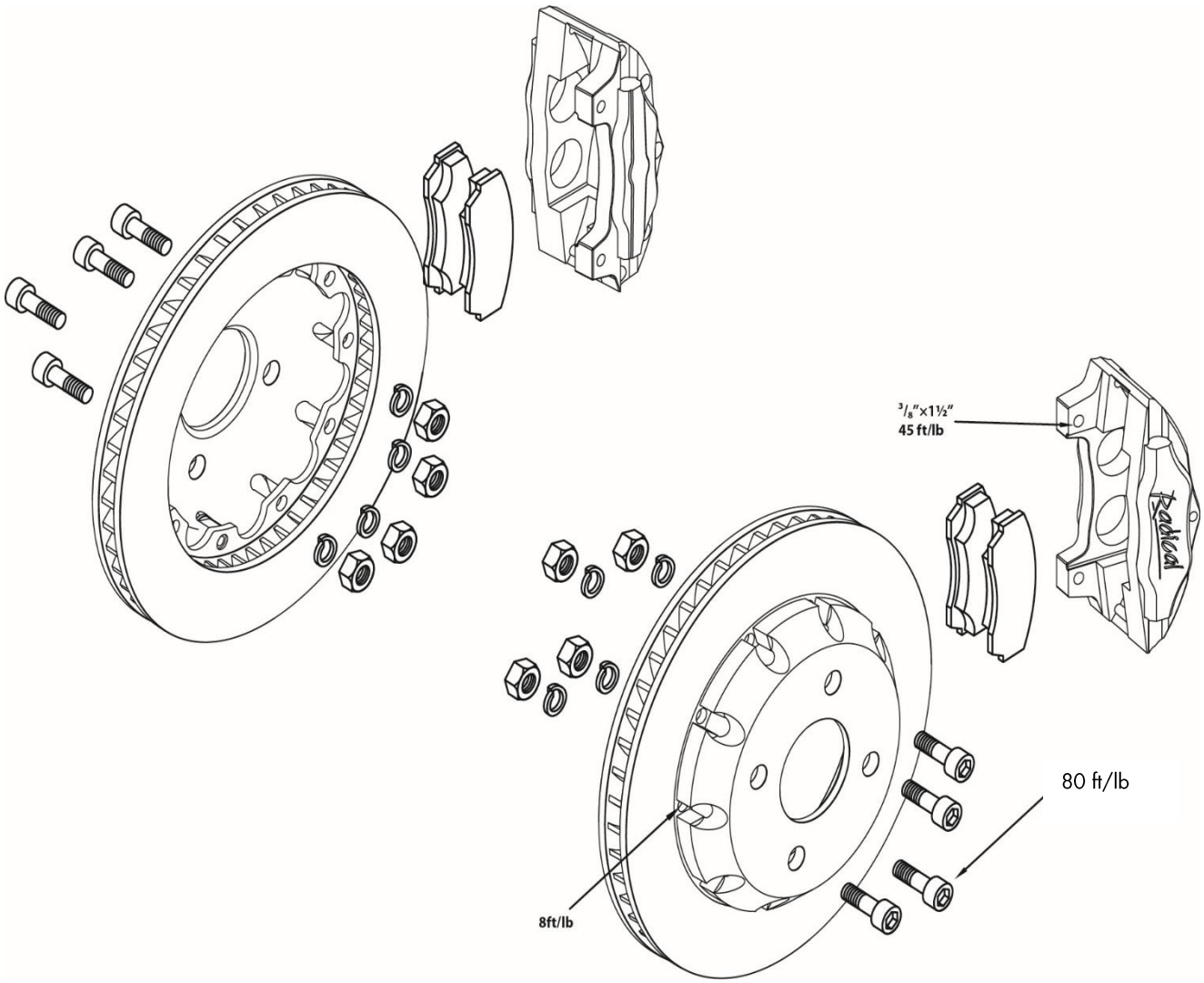
9.3 ENGINE AND GEAR DRIVE UNIT



9.4 SUSPENSION COMPONENTS






3/8"×1½"
45 ft/lb
Radical
80 ft/lb
8ft/lb

DRIVE SYSTEMS

To be used as a guide only, nuts and bolts should be checked often and tightened as necessary.

A3R/SR3:		
Drive Unit Ratio Nuts	648 Loctite/Peened	80 Ft/Lbs
Drive Unit Crownwheel Bolts	648 Loctite/Lockwire	60 Ft/Lbs

SUSPENSION

Wheel Bearing/Hub		
Front	Nyloc	180 Ft/Lbs
Rear All Models	Peened	180 Ft/Lbs
Wheel Nuts		
Centre Lock Nuts	Retaining Clip	260 Ft/Lbs
Uprights		
Front/Rear Upper Bolts	243 Loctite/Lockwire	40 Ft/Lbs
Front Lower Bolt	243 Loctite/Lockwire	100 Ft/Lbs
Braking System		
Floating Disc To Bells	Lockwire	8 Ft/Lbs
Brake Disc To Hub Bolts	Spring Washer	80 Ft/Lbs
Caliper Bolts	Schnorr Washer	48 Ft/Lbs

ENGINE

Engine (RPE)		
(4Cyl) Drive Coupling	648 Loctite	115 Ft/Lbs
(4Cyl) Engine Cradle	Nyloc	45 Ft/Lbs
(4Cyl) Spark Plugs	-	8 Ft/Lbs

Advisory generalized bolt torques:

Bolt size/Thread pitch	***Grade 2***	***Grade 5***	***Grade 8***
1/4-20	6	10	12
1/4-28	7	12	15
5/16-18	13	20	24
5/16-24	14	22	27
3/8-16	23	36	44
3/8-24	26	40	48
7/16-14	37	52	63
7/16-20	41	57	70
1/2-13	57	80	98
1/2-20	64	90	110
9/16-12	82	120	145
9/16-18	91	135	165
5/8-11	111	165	210
5/8-18	128	200	245
3/4-10	200	285	335
3/4-16	223	315	370

Bolt size (mm)	***Low Grade***	***Grade 8.8***	***Grade 10.9***	***Grade 12.9***
6	3-5	7	10	12
8	8-12	17	24	29
10	15-22	33	47	57
12	39	59	83	100
14	60	101	131	158
16	60-94	146	202	247
18	60-130	201	283	340
20	166-188	285	401	482

*All settings above are listed in Ft/Lb.

9.7 ENGINE CONTROL PARAMETERS

Feature	***Parameter***
Coolant Fan On	92°C
Coolant Fan Off	88°C
High Coolant Temperature Trip	120°C
Low Fuel Pressure Trip	2.2bar
Low Oil Pressure Trip	50psi @ 10,000rpm (RPM Dependant)
Rev Limit	10,500rpm
Fuel Pressure Target	3.0 Bar

9.8 COMMON PARTS

Part	Description	Part Number
Brake Disc L/R	280mm Sided	BD0062/63
Brake Bell	-	BD0060
Brake Bobbins	-	BD0061
Front Master Cylinder	7/10	BM0092
Rear Master Cylinder	3/4	BM0093
Clutch Master Cylinder	5/8	BM0091
Drive Pegs	Greased	TQ0100
Dzus Clips	-	MF0182
Wheel Speed Sensor	2mm airgap	LS0080
Oil Pressure Sensor	-	LS0076
Water Temp Sensor	-	LS0028
Oil Temp Sensor	-	LS0028
Spark Plugs	Without Caps	LP0011
Injectors	Ford Injectors	FB0060
Air Temp Sensor	-	LS0093
Mirror Glass	-	AM0022
Side Skirt	Black	MA0006
Paddle Set	-	TP0111
Fuel Pump	-	FP0030
Valve Block	-	TP0138
Driveshaft L/R	Sided	TQ0260/61
Water Pump	-	HP0012
BAP Sensor	-	LS0082
Fuel Regulator	-	FR0017
Brake Pads	-	BD0011
Paddle Shift Relay	-	LS0072
Paddleshift Loom	-	LH0176
Oil Filter	-	EF0003
Air Filter	-	EF0008
Fuel Filter	-	FF0005
Coil Pack	-	LE0020
Compressor Motor	-	TK0004

9.9 FLUIDS

Below is a list of all the fluids that you will need to run your SR3, including part numbers and quantities required: Radical recommends the use of Motul engine oil.

Type	Part Number	Capacity	Brand	Viscosity/Type	Required
Engine Oil	EO0048	12L	Motul 300V	15W/50 4T Factory Line	9L
Brake/Clutch Fluid	BF0007	0.5L	Motul	Dot 4 – 660 Factory	1L
Gearbox Oil	TO0002	1L	Neo Synthetics	75W/90	1.5L
Coolant	HW0009	5L	Motul	Inugel Optimal Pre-Mix	10.5L
Aluminium Paste	AC0040	Can	Tygris	Aerosol	N/A

9.10 GEAR RATIOS

Gear Ratio	***Part Number***
3.594:1	TQ0049
3.409:1	TQ0048
3.235:1	TQ0047
3.071:1	TQ0046
2.917:1	TQ0045

				Ratio	3.594:1	3.409:1	3.235:1	Standard factory fitted ratio 3.071:1	2.917:1	2.770:1
				No. Teeth/ Part No.	32 A-3R 1-20	33 A-3R 1-22	34 A-3R 1-24	35 A-3R 1-26	36 A-3R 1-28	37 A-3R 1-36
				No. Teeth/ Part No.	46 A-3R 1-21	45 A-3R 1-23	44 A-3R 1-25	43 A-3R 1-27	42 A-3R 1-29	41 A-3R 1-37
Gear	No. Teeth (input)	No. Teeth (output)	Ratio	Rev drop at 10,500 rpm	Speed in MPH drop	Speed in MPH drop	Speed in MPH drop	Speed in MPH drop	Speed in MPH drop	Speed in MPH drop
1st	13	34	2.615:1		49.61	52.30	55.10	58.05	61.13	64.36
2nd	16	31	1.938:1	2721.50	66.96	70.59	74.38	78.36	82.51	86.88
3rd	19	29	1.526:1	2228.35	85.00	89.61	94.42	99.46	104.74	110.29
4th	21	27	1.286:1	1655.17	100.91	106.38	112.09	118.08	124.34	130.92
5th	22	25	1.136:1	1219.70	114.17	120.36	126.82	133.60	140.69	148.13
6th	23	24	1.043:1	858.26	124.34	131.08	138.11	145.49	153.21	161.32
Primary reduction ratio			1.596:1 (83/52)							
Rolling tyre circumference			1.901m (0.605m dia)							

9.11 ROLL BAR SIZES

Front				
Soft	5/8″	15.8mm	Gold	SN0006
Medium	¾″	19.0mm	Gold	SN0005
Hard	7/8″	22.2mm	Gold	SN0004
Extra Hard	7/8″	22.2mm	Black	SN0071

Rear				
Soft	½″	12.7mm	Gold	SN0018
Medium	5/8″	15.8mm	Gold	SN0017
Hard	¾″	19.0mm	Gold	SN0016
Extra Hard	7/8″	22.1mm	Gold	SN0066
XX Hard	7/8″	22.1mm	Black	SN0073

9.12 COMPONENT LIFING

As the performance of our cars increases and the number of hours we log racing the cars grows, we are able to more accurately predict the lifespan of a car's components. Please see below, the 'Radical Component Lifespan Chart'.

The 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 reduce the timescales recommended and immediately replace damaged parts.

The recommended life expectancies in no way represent a parts warranty, due to the unpredictable and uncontrolled use of these racing car components Radical will not be held responsible or accountable for any parts failure. This information is provided solely as a guide to increase the safety of the cars.

Component	***Action***	***Interval***	
		Hours	Distance (km)
Engine (warranty)	Rebuild	40	N/A
GDU rebuild	Inspect/Rebuild	-	4000
Injectors	Service	40	-
Spark plugs	Replace	40	-
Valve block	Check/Tighten	-	4000
Calipers	Rebuild	-	4000
Shock absorbers	Dyno Check	-	4000
Driveshafts (complete)	Replace	-	10000
Driveshafts (complete)	Rebuild	10	-
Suspension bushes	Replace	-	4000
Suspension rose joints	Replace	-	8000
Front Uprights inc. hubs	Replace	-	6000
Rear Uprights inc. hubs	Replace	-	6000
Wishbones	Inspect/Replace	-	8000
Master cylinders	Replace	-	8000
Battery	Replace	Annually	-
Fuel Tank	Inspect	Annually	-
Steering rack	Rebuild	Annually	-

9.13 SERVICE SCHEDULE

The below intervals are intended as a guide to assist in components achieving full life and reliability of your engine and gearbox. These intervals are based on Radicals recommended oils which can be found in the fluid specifications section of this manual.

Component	***Action***	***Interval track (hours)***
Engine Oil	Replace	6
Engine Oil Filter	Replace	6
GDU Oil	Replace	6
Engine Air Filter	Replace	40
Fuel Filter	Replace	40
GDU Gear Inspection	Inspect/Replace	6

9.14 REPACKING DRIVESHAFT GREASE

The driveshafts should be stripped, cleaned and re-greased every 10 hours of running. To do this, remove the driveshafts from the car, then remove the CV boot clips and slide them back away from the housing. Remove both housings and clean all the old grease in a wash tank. When re-assembling the driveshafts a set amount of grease should be applied to each end of the driveshaft, the amount is listed below. New clips should be fitted to the CV boots to prevent them from coming off.

SR3 Driveshaft Grease (Per Joint): 70g

Total 400g Driveshaft Grease Part Number: TO0008

9.15 REPLACING CALIPER SEALS

The following guide is the supplier's recommendation for replacing the seals in their calipers:

1. Extend pistons for easy removal – unbolt callipers, take out brake pads and place a block in the caliper to prevent pistons from falling out. Then pump the pedal until all pistons are extended 10-15mm (or carefully use an airline in the fluid inlet if the callipers are off the vehicle).

2. Remove calipers from vehicle.

3. Remove pistons by hand – do not use pliers or any kind of tool that could damage the outside of the piston.

4. Remove old seals from the caliper body.

5. Clean and inspect the pistons. You are looking to remove all contaminates from the outside of the pistons and ensure that there is no scratches/damage. You can polish the pistons to get the surface perfect.

6. Thoroughly clean the calipers – use an airline to blow out any contaminates from piston bore and fluid ways,

7. Grease the new seals and pistons, recommended product for this is:

   Rocol Sapphire Aqua-Sil

   Alternately soak the seals in brake fluid for 24hrs prior to installation and lubricate the pistons with brake fluid.

8. Install the new seals in the caliper body – ensure that the seal is seated correctly to prevent damaging them when pushing the pistons in.

9. Push the pistons in by hand, the seal should offer minimal resistance when the piston goes in square. If resistance is high, the seal is not seated correctly.

10. Install calipers and bleed brakes. Make sure the outside of the calipers are dry then leave overnight. Check brake calipers after they have been left overnight for any leaks.

9.16 STANDARD PRE-RACE/ TEST CHECKLIST

The below checklist is intended as a guide only. This checklist is an expansion of the prep sheet which is on page 50.

1. Bodywork	
Check all bodywork for damage	
Check all the lights function	
Check the underside of the sidepods, diffuser and front splitter skid blocks	
Put the car on a stand	
Disarm the fire extinguisher	
Drain the fuel and measure the amount	
2. Shake Test	
Check all corners for play in wheel bearings and rose joints	
Check all steering components for play	
Check rockers and dampers for play	
Check the front diffuser	
Fit new tyres if necessary, clean and fit valve caps	
3. Data Check (See Data Manual for further information)	
Check engine hours and overrevs	
Check the data the following:	
High water temperature	
Oil surge, Low oil pressure	
Gearshift decision's	
Charging trace	
Full throttle, 4% on idle	
Faulty sensors	
4/5. Differential and Driveshafts	
Inspect and grease the driveshafts	
Check the clutch is working correctly	
Check the GDU oil level	
Check the GDU ratio's for pitting etc.	
6/7/8/9. Suspension and Brakes	
Clean the corners whilst checking for cracks on the following components:	
Uprights, wishbones, nik-links	
Chassis	
Wishbone pick up points	
Wishbone bushes	
Clean and lube wheel nuts	
Bleed the brakes and clutch	
Check the condition of the brake pads	
Check the balance bar	
Repack the silencer if needed	
10. Engine Bay	
Clean the engine bay	
Check wiring for signs of heat or chaffing	
Check all oil pipes	
Check all fuel lines	
Check engine mounting bolts	
Check all hose clamps	
Check GDU mounting bolts	
Check exhaust primary bolts	
Drain the catch tank	

Clean the air filter and check the airbox bolts	
Check the throttle cable, full throttle, tension.	
Check all coolant pipes	
11. Wiring	
Check wiring in the engine bay for chaffing and signs of heat	
Check HT leads	
Check the condition of all connectors	
Check the wheel speed sensor, gap (all four lights)	
Check wiring behind the dash	
Check all wiring is away or shielded from the exhaust	
12. Paddleshift	
Check paddleshift actuator bearings and length	
Check blipper and shifting lines for leaks	
Tighten valve block	
13. Oil Filter	
Drain the oil and remove the filter	
Remove the 17mm drain bung and check the magnet for debris	
Fill the car with new oil and fit new filter, re-Lockwire the bung when finished	
Ensure the hose clip is fitted correctly onto the new filter	
Dry crank the car to circulate the new oil	
14. Run Up	
Check coolant level	
Start the engine check TPS and balance bodies	
Warm the oil to 50deg	
Hold the rpm at 4000rpm for 5 seconds and then turn engine off	
Check the oil level and top up if needed	
Check for any other signs of leaks	
15. Spanner Check	
Check all the following components:	
Uprights, Wishbones, Pushrod's, Rocker's, Steering, Caliper's, Pedal Box	
Front Diffuser	
Hose clips, Oil lines, Fuel lines, Water pipes	
Air Jacks (Check for leaks)	
16. Safety Systems	
Check the seat belts are in date and are free from cuts and tears	
Check the fire extinguisher is in date and full	
17. Set Down/Set Up	
Measure the car as it left the previous track and record	
Set up the car for the next circuit	
18. Clean The Car	
Clean the interior, hoover the pedal box	
Clean the bodywork	
Polish the car	
19. Re-fit Bodywork	
Fit diffuser and bodywork ensuring lights are connected and working	
Check cockpit controls	
Check all the latches and dzus fasteners on the bodywork	
Fit the rear tie downs	

Technician:		Customer:	
Chassis Number:		Engine Hours:	
Mileage:		Pre/Post Event:	
Date:	/ /		

SR3 WORKSHOP PREPARATION SHEET

SR3					
Description	Faults/Advisory	Parts Fitted	Initials	Hours	+ Hours
1. Check for any loose bodywork or damage				0.5	
2. Shake Test remove wheels inspect for damage				0.75	
3. Check Life Data				0.5	
4. Inspect Drive Unit and change ratios if necessary				1	
5. Check and grease CV joints				1	
6. Check condition of braking system				0.5	
7. Bleed Brakes and Clutch				0.5	
8. Clean corners, checking for cracks and worn out bushes				1	

QD32-4

Description	Faults/Advisory	Parts Fitted	Initials	Hours	+ Hours
9. Check and clean engine bay				0.5	
10. Check wiring				0.75	
11. Check paddleshift, bearings etc. Valve block/pipe.				0.5	
12. Change oil and filter				1	
13. Run engine up				1	
14. Spanner check all components on the car				0.5	
15. Check fire extinguisher is full and in date, check seat belts aren't torn or showing wear marks and are in date.				0.5	
16. Set down on the car, set up the car.				2	
17. Clean interior and exterior				0.5	

Comments:

If prepping the car after a wet event make sure everything is sprayed with silicone spray or WD40. Make sure everything that came in with the car goes back, radios, spare seat, ratios etc.

DUNLOP SETUP SHEET

Camber	
-3.5	-3.5
-1.7	-1.7

Toes	
2mm OUT	2mm OUT
3mm IN	3mm IN

Triple Intrax		Springs/Preload	Triple Intrax	
Bump LS:	-7	FARB	Bump LS:	-7
Bump HS:	-25	Soft 15.8mm	Bump HS:	-25
Rebound:	-25	Medium 19mm	Rebound:	-25
Single Intrax		Hard 22.2mm	Single Intrax	
-25		X Hard 22.2mm black	-25	
	110Nm 100mm Preload 4 Turns		110Nm 100mm Preload 4 Turns	

Triple Intrax		Springs/Preload	Triple Intrax	
Bump LS:	-12	RARB	Bump LS:	-12
Bump HS:	-25	Soft 12.7mm	Bump HS:	-25
Rebound:	-25	Medium 15.8mm	Rebound:	-25
Single Intrax		Hard 19mm	Single Intrax	
-25		X Hard 22.1mm	-25	
	95Nm 100mm Preload 0 Turns	Super hard 22.1 black		

Corner weights (Est)/ Drop Height		
76	Front diffuser H	76
	45mm	
	Ballast Weight	
167	80kg	167
Weight Estimate	Cross%	Weight Estimate
142	Total weight kg	144
	620+80kg	
	Rake mm	
70	14mm	70
220		220
Weight Estimate	LHD / RHD	Weight Estimate
173	✓	184

Tyre Pressures PSI (Cold & Hot)		
22	Dunlop Tyre Compound	22
	CM004	
28		28
20		20
28		28

PADS
01

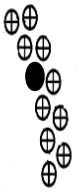
PADS
01

SR8 Gearing	
Short	n/a
Medium	n/a
Long	n/a
X long	n/a

SR3 Gearing	
3.409	
3.235	
3.071	Std
2.917	

Chain Drive Gearing	
FRONT	REAR
n/a	n/a

Rear bi wing



Note: When carrying out set-up on flat-patch, set tyre pressures to hot pressure. Ensure that they are returned to cold pressures after setup is complete.

SR3 - Factory setup sheet - Hankook

Note: When carrying out set-up on flat-patch, set tyre pressures to hot pressure. Ensure that they are returned to cold pressures after setup is complete.

Date		Chassis #		Job #	
		Technician 1		Technician 2	

Camber		Toes	
-3.2	-3.2	2mm out	2mm out
-1.8	-1.8	2mm IN	2mm IN

Triple Intrax		Springs/Preload			Triple Intrax	
Bump LS:	-14	Rate	FARB	Rate	Bump LS:	-14
Bump HS:	-25	110	Soft 15.8mm	110	Bump HS:	-25
Rebound:	-5		Medium 19mm		Rebound:	-5
		Length	Hard 22.2mm	Length		
		100	X Hard 22.2mm	100		
		Preload		Preload		
		4 turns		4 turns		

Ride	Front Diffuser H	Ride
77mm	40mm	77mm
	Ballast Weight	
Drop	80kg	Drop
163mm	Cross%	163mm
Weight	Total weight	Weight
kg	kg	kg

Triple Intrax		Springs/Preload			Triple Intrax	
Bump LS:	-10	Rate	RARB	Rate	Bump LS:	-10
Bump HS:	-35	110	Soft 12.7mm	110	Bump HS:	-35
Rebound:	-17		Medium15.8mm		Rebound:	-17
		Length	Hard 19 mm	Length		
		100	X Hard 22.2mm	100		
			XX Hard 22.2mm			
		Preload		Preload		
		0		0		

Ride	Rake mm		Ride
75mm	18mm		75mm
Drop			Drop
213mm			213mm
Weight	LHD	RHD	Weight
kg			kg

Fuel Level

Dive planes:	Y / N

Tyre Pressure (PSI) (Cold & Hot)			PADS
28	Hankook	28	
22		22	01
28		28	PADS
21		21	01

Rear Wing	
Holes (from the bottom)	
Main	3 out of 4
Bi-wing	6 out of 9

Comments:

QD141-1

10. VERSION HISTORY

2018-01-05 V1.0 Initial public release.

2018-01-30 V1.1 Motul part numbers added, Hankook information.

2018-03-20 V1.2 Consumables updated, Hankook update.

2018-06-13 V1.3 Gearbox update, Setup sheet update.

2018-07-16 V1.4 Gearbox oil level added. Torque units added. Master cylinder part numbers corrected.

2018-10-22 V1.5 Wet sump layout added.

2018-11-14 V1.6 Motul part numbers added.

2018-12-19 V1.7 Torque settings updated.

2019-02-04 V1.8 Driveshaft repacking added, caliper seal replacement added into service schedule.

2019-03-01 V1.9 Starter motor inspection added. Minimum octane rating table added, relay location updated. Prep sheet expansion added.

2019-07-19 V1.91 GDU oil change added, adjusting seat and pedals.

2020-01-03 V1.92 Engine oil spec elaboration.

technical@radicalsportscars.com