

# RS 2000-GROUP 1

Having campaigned Group 1 RS2000's for the last three years, I have probably come across most failures that could occur (I hope) and found a remedy for it. To cover the full preparation of Gp 1 cars would take as long as this book: As much as I would like to do this, space is limited and I shall cover the main points and add the most important tweeks as I go along.

But first of all, a brief description of how Gp 1 works. The formula was conceived to bring a section of the sport back down to ground - rally cars like the ones from your dealer showroom.

For cars to be approved in this Class of competition their manufacturers have to supply evidence to the sport's governing body (FIA) to prove that sufficient quantities of a particular model have been made, that is, 5,000 in any 12 consecutive months. Suspension and engine kits, and anything else come to that, must also meet this quantity requirement. This process of approval is known as homologation, and homologation forms for cars in this country are issued by the RAC, Belgrave Square, London, SW1. There is a separate form for each car and it contains lists of all homologated parts for that model. At the time of writing, these cost £3.50 each.

## 13.1. SUSPENSION

The Gp 1 owner really scores here as the works-type Gp 4 Bilstein struts are legal (albeit without adjustable spring seats); with these you need to use the ball bearing top mounts and spring cup kit. As far as springs go, you have a choice of two - both rated at 145 lb/in; the green/white for forest and general rally (finis 905 2707) and the blue/white for tarmac (finis 905 2706), which gives a 1" lower ride height.

Anti-roll bars can get confusing if you're not careful, but here's the fact :

There are three types of anti-roll bar fitted to the Escort II, one at 20mm diameter (finis 147 2919), a heavy duty 22mm bar (601 0163), and the Mk II RS bar measures in at 21.3mm (157 1182), but due to different geometry needs, special mountings (RH - 157 1184; LH - 157 1185) to give improved castor characteristics. However, the bar which most people tend to use is the original Mk I RS (905 2549) which measures 20.5mm - to use this though, you need to use the standard Mk I RS anti-roll bar mounting (RH - 146 7796; LH - 146 7800).

This leads us neatly onto anti-dive kits which basically lower the point of action of the anti-roll bar. The use of these anti-dive kits is a matter for personal preference, but they are certainly at their best on tarmac. There are two kits marketed, a tarmac version (905 2989) using your standard Mk II RS 21.3mm roll bar; and rally (905 3384) which comes complete with the thinner, Mk 1 anti-roll bar - this promotes the desired oversteer for forest use.

At the back, things are far easier. Single leaf springs are the name of the game (available from RS Parts, of course) and Group 1 Race rear shock absorbers, are ideal for both forest and tarmac use.

I shall bring in sumpguards at this stage, as the RS Parts steel guard plays a vital part in the location of the roll bar. It's probably the best sumpguard to use anyway, but it also has an extra pair of mounts for the roll bar, which means that you effectively have the equivalent of the Group 4 twin-roll bar clamp kit, and is very effective.

If you do decide to use an anti-dive kit (which has three double mounts on to the roll bar) you can still use the sumpguard after cutting a strip off at the front wide enough to clear the anti-dive kit.

Remember that all the above are only homologated for Mk II RS2000's.

Listed below are the relevant finis codes:

Front Suspension

1st stage	Struts	905 2655 RH	905 2656 LH
	Springs	905 2707	
	Rubber top mounts	600 5147 (include metric studs)	
2nd stage	Struts	905 3062 RH	905 3063 LH
	Top mount kit	905 4002	
	Springs	905 2707	
	Anti-dive kit	905 3384	

Rear Suspension

	Rear springs	905 1947
	Rear shock absorbers	905 2890
Sumpguard		905 2879
Fitting kit		905 2780

H/D Bushes

Stabiliser bar mounting		905 1301 (without a-dive kit)
		905 1302 (with a-dive kit)
Track control arm outer		905 3166
" " " inner		905 3168
Radius arm front		905 3167
" " rear		905 3168
Rear spring Std front		905 3169
" " " rear		905 3170
Rear spring single leaf* front		905 3169
" " " " rear		905 1564

\*Use 105E shackles

A point about non-roller top mount struts is that if you need to tighten up the top mount nut on your strut, make sure to do so with the wheels in the straight ahead position. The rubber can get 'wound up' as the steering tries to centre itself if you've tightened up with lock applied. A foolproof check is to slacken the top nuts, drive down the road, and retighten. This should cure any pulling.

## 13.2. BRAKES

The stopping power of a Mk II RS2000 is now unbelievably good. A ventilated disc brake kit (finis code 905 1676) which fits onto the standard hubs is homologated in Group 1 and cures any possibilities of fade, which was a problem in the Mk I days. You must also use a back plate kit, listed under finis code 905 1556. Brake pads to use are type P16 DS11's finis code 905 2124.

At the rear, a larger wheel cylinder ( $\frac{3}{4}$ ") has been homologated and VG95 brake shoes (finis code 905 2876) should be used.

The ultimate in braking consists in a Balance bar pedal box kit, which allows adjustment of brake bias, and does away with the existing servo and turret assembly in the engine compartment. No servos are used at all, which means a lighter car, extra accessibility in the engine compartment and something less to go wrong. The pedal box is available from RS Parts in kit form under finis code 905 3064.

Ferodo DS11 pads are the best all rounders in my experience, with preference going to the P16 type rather than the M16 - they wear more evenly. The lock tabs from the bolts holding the calipers onto the struts can effectively be thrown away; and remember to use coil protection around the front brake hoses. Remember when you fit new pads, to carry out a pre-fade test to bed them in properly. After a bit of normal use, give the brakes a series of hard applications until they start to fade (there will be a pungent smell of hot linings, but don't worry). Then let the brakes cool and give the pedal several more medium/high speed applications until stabilised braking conditions are reached and there is no increase in pedal pressure. After this, you may note a thin film of copper on disc and pad, but this is perfectly normal and does not impair braking efficiency.

At the rear, if you are a "handbrake merchant", and use the middle lever a lot, AM8's are a bit softer and therefore easier on the old arm muscles. For cars equipped with the Gp 1 exhaust system, you must reroute the rear brake pipe because the downpipe comes very close to it and overheats the brake fluid.

It is essential to watch the half shaft bearings as the seals often pack up. The results in grease getting onto the rear linings, and the already small effort from the Mk I 8" drums becomes virtually zero! The Mk II Escort RS2000 incidentally, and thankfully, has 9" drums fitted.

### 13.3. BRAKE WARNING LIGHT

Originally fitted to comply with European requirements, a dashboard brake-failure warning light is fitted to all RS2000's. This is a simple pendulum type valve affair, but often it can play up - the mode of operation is that the system pressure should be equal on both sides of the pendulum valve for front and rear.

If the warning light does come on, slowly bleed the front system until the light goes off. If that doesn't work, bleed the rear system in the same way. If the light still stays on, you can flick the pendulum in the valve on earlier RS2000's by jiggling with a small screwdriver under the valve, returning the pendulum to a central position. If you can't get a screwdriver in the 'ole, it's a later fitting and sometimes a hard stab on the brakes will cure the problem. After that, either disconnect the wire (!) or place a pinch-bolt on the warning switch on the valve to stop pendulum movement.

Lastly, rear brake pipe skids are a good idea. They are standard fitment on some export markets, or are obtainable through RS dealers on special order.

### 13.4. STEERING RACKS

A high ratio rack is also homologated (RH, 905 2871; LH, 905 2872), and fits without further modification.

As on Group 4 cars, it is advisable to revert to a Mk I steering shaft and a heavy duty steering coupling (905 4084). Remember though, that you will have to get a Mk I RS steering wheel (splines are different). When bolting the rack to the cross member, don't bother with the time consuming standard tab washers; use a flat washer, then a spring washer and plenty of 'Loctite'.

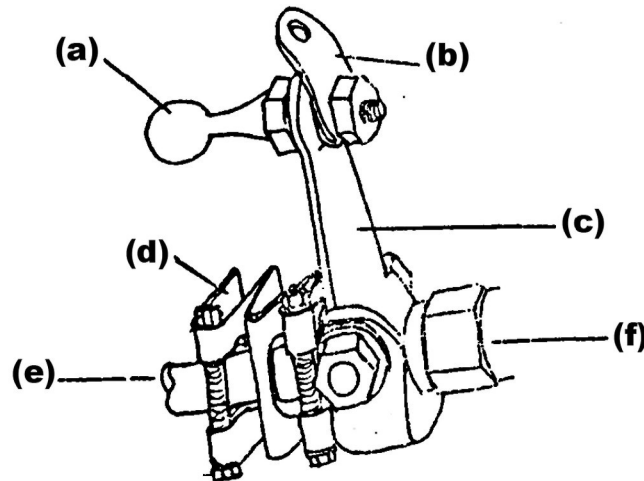
It's an idea to replace the standard castellated nuts and split pin on the track rod ends with a nylock - replacement is so much easier. On most stage events, it's all too easy to upset the steering geometry by bending steering arms, so as a precaution, slit a length of small bore heater hosing onto the track rods which will protect them to a certain degree, but most important, helps to keep the threads on the rod clean and therefore easy to adjust. Simple preparation like this can pay real dividends against time.

### 13.5. CARBURATION

The twin downdraught Solex carburettor kit has been replaced by a twin Weber (finis code 905 3032). The Weber kit gives more power, better fuel economy, improved tractibility, and has been homologated in Group 1 for both Escort RS2000 Mk I and Mk II.

The complete Solex Kits will no longer be available, but the details will continue to be serviced.

Aircleaner assembly	905 2791
Replacement element	905 3042
Ram pipes	905 2792
Carburettor	905 2793
Inlet manifold assembly	905 2794
Throttle bracket	905 3044
Return spring bracket	905 3045



		<u>Previous Pt No</u>
(a) Ball joint	905 3036	PP 0251
(b) attachment - throttle return	905 3037	PP 0459
(c) Lever	905 3038	AVE 202
(d) Coupling	905 3039	AVE 75
(e) Spindle extension - long	905 3040	FCO 544A
- short	905 3041	FCO 544

The twin downdraught Weber carburettor kit, gives approx 7-10b.h.p. more than previous Solex kit. Kit comprises: carburettors, inlet manifold, air cleaner, camshafts, valves, etc.

Kit	905 3032
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### 13.6. EXHAUSTS

Anyone wishing to fit a complete exhaust system to an Escort RS2000 Mk I can fit the high efficiency system, currently fitted in production to RS2000 Mk II. The following parts can then be ordered from any Ford dealer (not just RS).

Manifold	156 8147
Gasket	156 5558
Downpipe	156 4770
Centre pipe	156 5562
Rear pipe	156 5563
Front pipe	156 5556

### 13.7. TRANSMISSION

Ideally, you want to use the competition clutch cover assembly, available from AP Racing (CP 2511/1) together with the Heavy Duty clutch disc 905 1404. I strongly recommend the self centering release bearing (mainstream Finis Code 155 5006), as the standard early type tends to be short lived.

Gearbox wise, a 905 1637 Rocket gear kit will fit straight into your gearbox (if you have an RS2000, that is) or if you are building from scratch, a 905 2507 Rocket gearbox will save you buying a standard box and having to strip it.

ALWAYS carry a spare gearlever (they can break, and they can also come loose), and a clutch cable in the car. Also, you should drill and rivet the gear lever at the sound-deadening rubber joint, otherwise the vulcanising can let go at the most embarrassing times, leaving you with a 3" stub!!

### 13.8. REAR AXLES

As far as back axles are concerned, if you can't afford a Group 1 Atlas axle, a 905 0828 LSD in your axle (using 142 7779 crown wheel bolts) is all you need do, as well as change the diff ratio to either a 4.124 or a 4.7, as both are homologated.

The Atlas axle is infinitely stronger, and the half shaft bearings are much bigger.

Group 1 Atlas axle:	905 3540	3.5:1
	905 3541	3.75:1
	905 3546	4.11:1
	905 3545	4.63:1

these four being the homologated ratios.

#### Seats

Don't get caught out by seats - they also have to be homologated, but don't despair, there is a whole range of seats listed in the homologation form to suit most shapes.

### 13.9. WORLD CUP CROSS MEMBER

Also recently added to the list of allowable extras is the old faithful heavy duty World Cup cross member (905 1874) which is much stronger than the standard item, and recommended for all rough use.