

Background: - Rolling Radius.

When considering suspension and ground clearance it is important to know the rolling radius of the road wheels and tyres

What is Rolling Radius: -

When a vehicle stands on its wheels in 'Static Laden' condition (complete vehicle with fluids and a tank of fuel but no passengers or luggage and correct tyre pressures) the tyres will be squashed at the bottom. A measurement from the road to the centre of the wheel will give the rolling radius. The wheel in the picture has a rolling radius of 300mm. This will be LESS than the overall diameter of the wheel and tyre. Note that the back may be different to the front.

Ground Clearance: -

Ground clearance is a measurement between the lowest point of the vehicle and the road. This may seem obvious but does require explanation. On chassis car such as a TR2-6 the chassis at the point where the wheels are attached is where the measure is taken. On a TR7-8 with no chassis the lower edge of the sill is used. In competition the sporting rules may include any bodywork, spoilers etc. and exhaust but this is not relevant here.

Relationship between Ground Clearance and Rolling Radius: -

Ground clearance can either be required to be low for racing, be high for rally purposes or simply be an esthetic requirement in the eye of the vehicle owner. Whatever the reason for measuring ground clearance it is important to know the rolling radius of the wheels in use as the rolling radius directly affects ground clearance. Changing the wheels and tyres with a change in rolling radius of +20mm will result directly in a change in ground clearance of +20mm.

When we are asked to give advice on the ground clearance a specific road spring will give, it should now be obvious we cannot properly advise unless we know the wheel and tyre rolling radius.



Figure 1 Rolling radius measurement

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