

# Robison on Rovers

Welcome to the first installment of Robison on Rovers in the Rovers North newsletter.

Many of you have read my posts on the RN and DiscoWeb bulletin boards, and some have corresponded with me on various topics. For those

## “Just Ask John”

who don't know me – I am a Land Rover service manager in Springfield, Massachusetts. I've worked continuously with Land Rovers since their re-introduction to North America some fifteen years ago. I manage J E Robison Service – on the web at [www.robisonservice.com](http://www.robisonservice.com) - an independent Land Rover specialist shop in Springfield, Massachusetts. In my column I can answer your questions at more length than is possible on the bulletin boards. Each issue, I will take on a few of the interesting questions I receive.

I am a long time Land Rover owner. I've had many Rovers over the years. I currently have a 2000 Range Rover, a 1996 Disco, and a 1966 Series. My father has a 1995 Range Rover, and my brother has a 2003 Discovery. So we're a Land Rover family.

If you have questions or issues you'd like discussed email [robison@robisonservice.com](mailto:robison@robisonservice.com)

### Q. Can New Range Rover (1995-2001) models be converted to coil springs?

Yes. Kits are available that replace the air bags with coil springs. Make sure to only purchase a kit that provides a plug-in bypass unit that fools the body computer into thinking the air suspension is still there, so you do not drive around with a warning message all the time.

We recommend conversion for Rover owners who travel into rough country, where an air suspension failure might mean the loss of the vehicle, and for owners in remote areas where specialist service is not readily available. The factory air suspension does not materially improve the off road performance of the vehicles, it can only be serviced by a dealer or specialist shop with dedicated Land Rover test gear.

Your converted Range Rover will sit at a height between the former “standard” and “high” profiles. It's appearance will therefore remain stock. Off-road performance will be about the same as before, but you will not have the worry that your suspension will go flat and leave you stranded on the trail.

If you convert, our experience has been that you get a slightly softer ride than you had with air



springs. We usually replace the original shocks with Bilsteins at the time of conversion. The coil spring/Bilstein package gives

Rovers North offer Standard & Heavy Duty kits that include a plug-in bypass unit to disable error messages.

better lane-change maneuverability than the stock air suspension in my experience.

Installation of the spring conversion can be done in a day. No special tools are required. See the article in this issue showing pictures of this conversion.

### Q. The steering wheel in my Range Rover shakes violently when I hit expansion joints on the freeway.

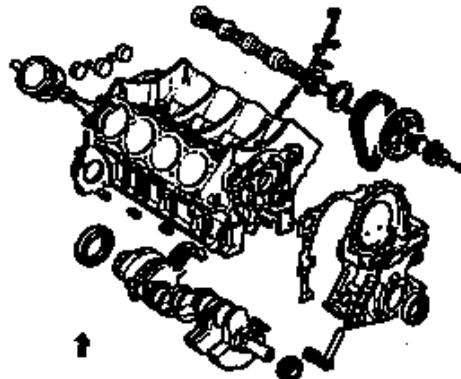
When I read replies to this question on bulletin boards a common theme is “fit a new steering damper.” Steering dampers mask the problem. They don't fix it.

A properly set up street Rover should not shake like this even with the steering damper removed. Many high performance cars don't have dampers at all, and they don't shake.

These are the things that cause shakes and wiggles in your front end

1. Improperly balanced tires, bent wheels or out-of-round tires;
2. Loose wheel bearings;
3. Loose tie rod end ball joints;
4. Worn out Panhard rod bushings, worn out bolts (yes, the bolts wear out and get sloppy) or loose bolts;
5. Worn out radius arm bushes;
6. Incorrect alignment – too much toe-in, which is adjusted on the cross tie rod;
7. Incorrect alignment – not enough caster, which comes from raising the vehicle, thereby rotating the front axle housing slightly;
8. Worn out steering box;
9. Wrong swivel pin preload – usually this only comes after doing a repair procedure incorrectly

Note that the list does not include a steering damper or shock absorbers. A steering damper may well get rid of the symptom but one or more of the above



items is almost always the root cause.

### Q. I've heard that if you need to replace a 1995 or older motor with 14CUX motor controller that there is an alternative motor that is much less expensive. Is that true?

Yes, it is true. Land Rover sells a short block that is much less than half the price of the original short block. This block was designed to fit 1999 and newer 4.0 Discoveries, but it can be used in 1995 and older 14CUX vehicles.

A short block is not a complete engine. It's the core – the engine block, crankshaft, connecting rods, and pistons. If you have an engine that's worn out, or if you have overheated your engine and damaged a cylinder liner a short block may be the answer for you.

This block is a great value for anyone

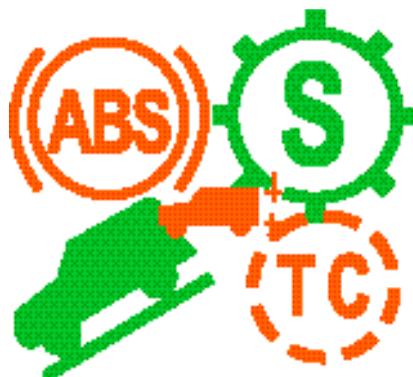
who has a worn out or damaged 14CUX motor. If you install this block in a 14CUX Rover made before 1995 you will need a crankshaft pulley bolt spacer and a different front cover gasket.

The block does not come with a cam or timing chain. You should buy the cam, chain, and gears appropriate for your vehicle. I do not suggest re-use of the cam and lifters in older engines because of the possibility of noise, and the difficulty of subsequent repair.

When fitting the heads you will see that the lower row of head bolts has been eliminated to reduce the chance of head gasket failure. When fitting heads to this block you should use the newer composite gaskets and new head bolts.

1999 and newer Land Rover blocks are different in construction from earlier blocks. It appears that the internal balancing may be different on these motors. If you are closely attuned to your Rover's feel you may notice it is different after fitting a new short block. In particular, users have noted slight resonant vibration in the 1,200-1,500 rpm range and there is a subtly different feel from the motor running through the gears.

If you replace a 4.2 motor in a County LWB you will notice a slight drop in torque. Owners of 3.5 and 3.9 powered Rovers will notice a slight gain in power. For most people a 4.0 installation



performs well and is a good value.

### Q. Which warning lights can an owner check and fix on Land Rovers?

Drivers of 1990-1995 Range Rover Classic and



Discovery vehicles can diagnose their own “Check Engine” lights. There is a box under the passenger seat with a 2-digit readout (see photo above). Instructions for interpreting the codes and clearing faults are on the both the Rovers North & Robison Service web site.

Drivers of newer 1996-on Land Rovers can use an OBD II scan tool to read and clear check engine codes. OBD II scanners are available for as little as a few hundred dollars or as much as a few thousand dollars, with the more expensive units offering real time data stream and graphing features, plus specialized tests for (non-Rover) cars. Most home mechanics will be well served with a basic scanner.

Antilock brake codes on pre-1996 Rovers can be read by counting blinks of the warning light after jumping wires under the driver seat. The procedure to do this is described in the factory workshop manuals and online on the Rovers North web site.

Note that an ABS light that's on after doing a brake job may be a result of an ABS sensor getting knocked out of place. The sensors should be tapped down lightly with a mallet whenever wheel service is done on the vehicle. Also, loose or damaged wheel and hub bearings will allow the reluctor ring to move enough to set an ABS fault. Check the tightness of your wheels.

“Service Engine” lights on Discovery I and Range Rover Classic models are connected to a 52,000-mile timer. The timer, in a brown box under the seat, kick panel, or dash has a removable foil label. You peel back the label and jump the reset inside with a paperclip to reset the light (see photos



below).

Low coolant, oil pressure, alternator, brake pad, park brake lights on Range Rover Classic and Discovery models are not computer driven. Those lights are connected directly to their respective circuits. Their systems can be serviced using common hand tools and the workshop manual.

The transmission temperature light is triggered by a switch on the transmission cooler pipe, down low by the steering box in most models. I have seen countless instances of switch failure, but actual transmission overheat problems are rare.

Air bag (SRS) lights on all models are only serviceable with specialist equipment. Other warning lights on Discovery II and new Range Rover also require specialist equipment.

### Useful tips:

Taking a distributor rotor off – if the rotor does not pull right off don't yank it. Doing so may pull apart the advance mechanism, and you'll be faced with a complete distributor teardown and in some cases you'll end up needing a new one. To avoid this problem use a sharp chisel to split the rotor so it falls off harmlessly.

See you next issue  
 John Robison