



*Digital Adrenaline For Your...
Range Rover 4.0*



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A division of Powerchip Group

This data sheet explains why the POWERCHIP is the best way of improving your vehicle, to give you faster, smoother acceleration, in all conditions.

Make	Land Rover
Model	Range Rover 4.0
Engine	
Year	May 99 to Jan 02
Powerchip Code	LAN0014



Power

In standard form the Land Rover Range Rover 4.0 produces 188 hp, however the addition of a Powerchip will improve the engine power to 206 hp.

Power (hp)			
Standard	Bronze/ Silver	Gold 91	Gold 93
188	N/A	203	206

The extra performance attained by the POWERCHIP, means that your car responds so much better than a standard Range Rover 4.0. You will find the car responds with less effort, really pushing you back in the seat, to give you a much more enjoyable and safe driving experience. The POWERCHIP will tap into your Land Rover's 'hidden reserves', for more punch, more pull, and more driving fun - and you really notice the power increase!

Torque

*Torque is a measurement of your engines pulling power, and it's torque that pulls you up hills. With the POWERCHIP, you really notice the increase in torque right throughout the rev range, giving you far greater flexibility at low engine revolutions. Towing will become effortless, and you will no longer **need** to take the engine to the redline in each gear to get the performance you demand...It's always on tap for when you really need it!*

Torque (lb.ft)			
Standard	Bronze/ Silver	Gold 91	Gold 93
220	N/A	235	239



Acceleration

Increased Power and Torque results in faster acceleration. And it is not just standing start acceleration that is improved, your in-gear acceleration is improved and faster.

If overtaking is important to you, you will feel safe knowing that you spend less time on the "wrong side of the road", improving the safety of your car, for you and your family or passengers.

Maybe you feel that you need that extra bit of power when you are lined up at the "traffic light grand prix" against another car with similar (or more) power. If you want to have an unfair advantage to give you more of a leap away from the lights, you need a POWERCHIP for your Range Rover 4.0.

Fitting Details

Your car uses a Surface Mount Chip. Our North American Upgrade Centre is located in Santa Monica, Los Angeles, California. You simply read and follow the full fitting instructions (including diagrams and photos) to remove the computer from your car. This can be done using simple tools, and it is designed so that any home handyman can complete the task, quickly, simply and easily. You then simply ring for a Fedex pickup, who will then deliver your computer to our Upgrade Centre, and we will Fedex the computer back to you with the Powerchip installed. Our turnaround time is same day, so the day the computer arrives, it is sent right back to you by Fedex Next Day service (except some remote areas).



Manufacturers Tolerances

Land Rover de-tunes its cars to allow for drivers that do not service their cars regularly or those who are non-enthusiasts. The Range Rover 4.0 is 'de-tuned' to be able to run on the poorest grade of fuel that the car is likely to encounter anywhere in the world, and also to allow for the small percentage of owners who put their cars reliability to the test due to their lack of knowledge. In general, our clients are enthusiasts who place more emphasis on the performance of the vehicle, and as such the POWERCHIP does not need to be programmed as conservatively as the standard software.

Modified Spark Advance

The Powerchip modifies the ignition timing on the Range Rover 4.0 where possible on both part and full throttle to ensure the car is running at optimum tune throughout the rev range. We are able to achieve significant gains because of the time spent adjusting these settings for optimal performance.

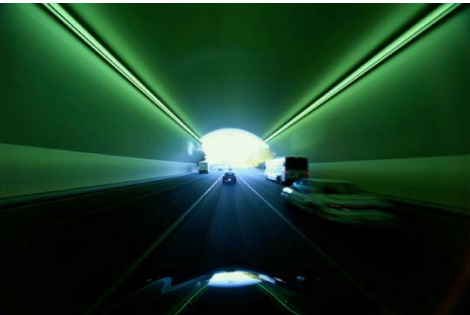
Driveability

Beyond the impressive torque and power gains on full throttle, many hours were spent refining the part throttle timing maps for maximum throttle response and driveability. Both the full throttle and part throttle maps are changed for improved driveability in day-to-day driving.

So you don't need to be on the racetrack to use the POWERCHIP and to notice the improvements in the way the car responds.

49 State Emissions Legal

The Powerchip complies with U.S. EPA Memorandum 1A, or it has not been found nor is believed to be unlawful for use under the provisions of the Clean Air Act. Currently, Powerchip is not legal in California for vehicles that may be used on a highway.



Our Satisfaction Guarantee

Every Powerchip sold in North America comes with an unconditional 14 day money back guarantee. This ensures that the Powerchip will live up to your expectations, not ours! If for any reason you are unsatisfied with the Powerchip, you may return the Powerchip to your place of purchase for a full refund of the purchase price (not including shipping and handling).

Our satisfaction guarantee offers you total peace of mind, and makes the purchase of the Powerchip risk free.

By purchasing a Powerchip you have nothing to loose.

Warranty

The Powerchip Gold 93 comes with a thirty six month warranty, offering you peace of mind knowing that if anything happens to the Powerchip in that time, we will replace it without charge to you. An optional extended Powerchip warranty is also available at an additional \$90 at the time of ordering. This extends the warranty period on any Power chip to six years. An optional Powertrain Warranty is also available for \$190 at the time of ordering your Powerchip. This would cover damage to the drivetrain in the unlikely event of damage caused by the Powerchip.

The terms and conditions of the Powerchip warranties can be viewed in detail on our web site at <http://www.powerchipgroup.com>.



If your car is covered by a new or dealer warranty, the dealer may not 'void' a warranty simply because you have fitted an aftermarket product. SEMA, the automotive aftermarket industry body has made the following statements regarding aftermarket products such as performance chips...

"The vehicle manufacturer is not allowed to void the vehicle warranty just because aftermarket equipment is installed on the vehicle. ..."

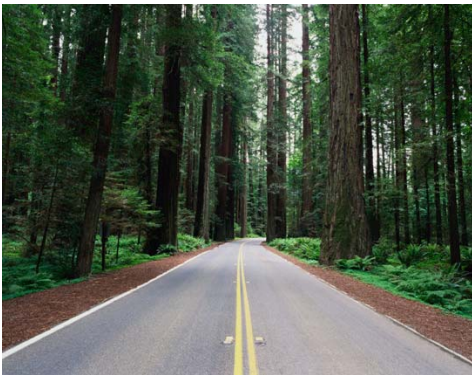
"...In cases where such a failed aftermarket part is responsible for a warranty claim, the (vehicle) manufacturer must arrange a settlement with the part manufacturer, but the new vehicle warrant is not void under the law."

"If the failure to honor a claim involves the new-vehicle warranty, and it appears that the (vehicle) manufacturer is improperly denying a claim, the incident should be reported to the Federal Trade Commission (FTC)."

Octane ratings

The Powerchip is designed to get the best from your engine, and to do this you must use a good quality of fuel. It's simply not possible to get more power from late model fuel injected cars using poor quality fuels, such as 87 octane.

The Powerchip takes advantage of the tolerances that motor manufacturers build in to allow the car to run well on poor fuel. By removing this tolerance, the additional spark advance of a Powerchip unleashes the potential that is locked away with the restrictive factory presets.



Powerchip Gold 91 is designed to run on fuel with an octane rating of either 91 or 92. Powerchip Gold 93 is designed to run on fuel with an octane rating of 93 or higher.

The minimum octane fuel that can be used with the Powerchip is 91 octane. We recommend that you use the highest-octane fuel available to you, such as 92, 93 or 94 octane if a higher than 91 octane fuel is available.

Value for a Lifetime

The investment you make in the Powerchip will last for as long as you keep your car, and for most of our customers, that is normally for 3 or 4 years. So when you consider the benefits of the chip over a number of years, it is not a lot to pay for extra performance. As a percentage of the total cost of your car, the Powerchip works out to be very cost effective. Also, with the Powerchip, you can expect your car to command a higher price when it comes to sell your car.

Cost Effectiveness

As we all know, modifying late model vehicles is not a cheap exercise, however, when you look at it on a horsepower per dollar basis, the POWERCHIP comes in ahead of any other modification you could make to your Land Rover. Have a look at just how well the POWERCHIP stacks up:

Price	\$490
hp Gain	18 hp
Price/hp	\$27.22

As you can see, the POWERCHIP is excellent value for money compared with other modifications you might be planning in the future.



COST USD(\$)			
Bronze	Silver	Gold 91	Gold 93
N/A	N/A	\$490	\$490

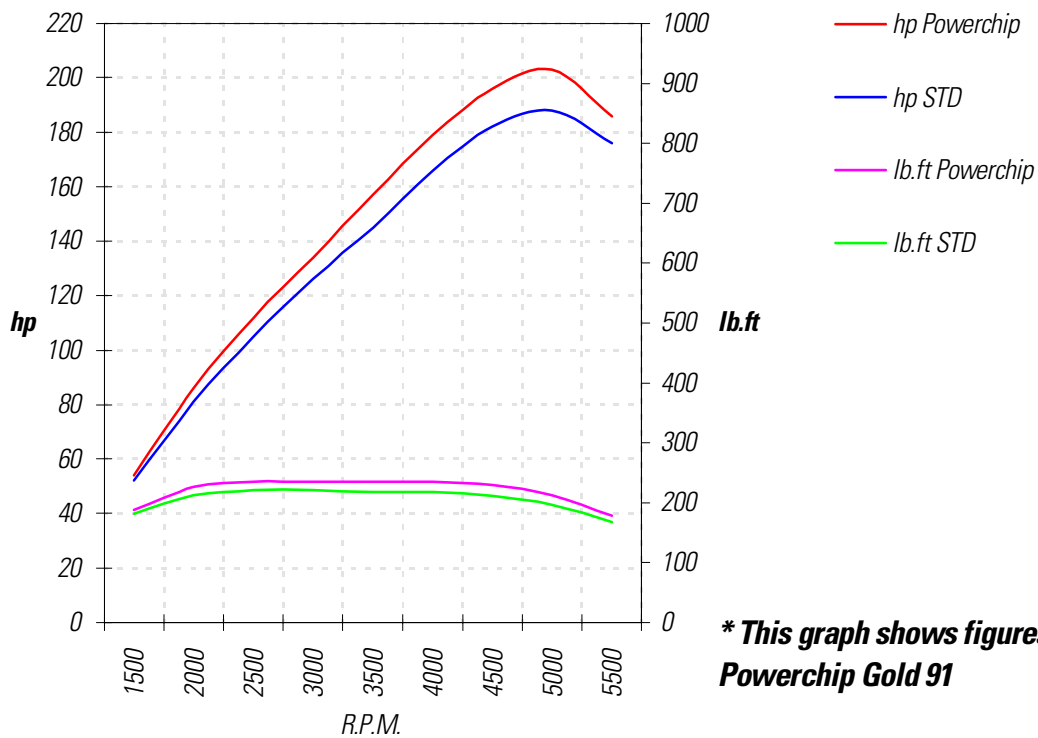
Ask the Experts

Your POWERCHIP Power Consultant is trained to provide you with the best information about getting more performance for your car. We have a specific Power Consultant who is responsible for the Land Rover range, and he is an expert at answering all of your technical questions, especially about the Range Rover 4.0.

Gold 91 Performance Data for your...

*Land Rover Range Rover 4.0 **

R.P.M.	hp STD	hp Powerchip	hp Gain	lb.ft STD	lb.ft Powerchip	lb.ft Gain
1500	52	54	2	181	188	7
2000	81	86	5	213	226	13
2500	105	112	7	220	235	15
3000	126	134	8	220	235	15
3500	145	157	12	218	235	17
4000	166	179	13	218	235	17
4500	182	196	14	212	229	17
5000	188	203	15	197	213	16
5500	176	186	10	168	178	10

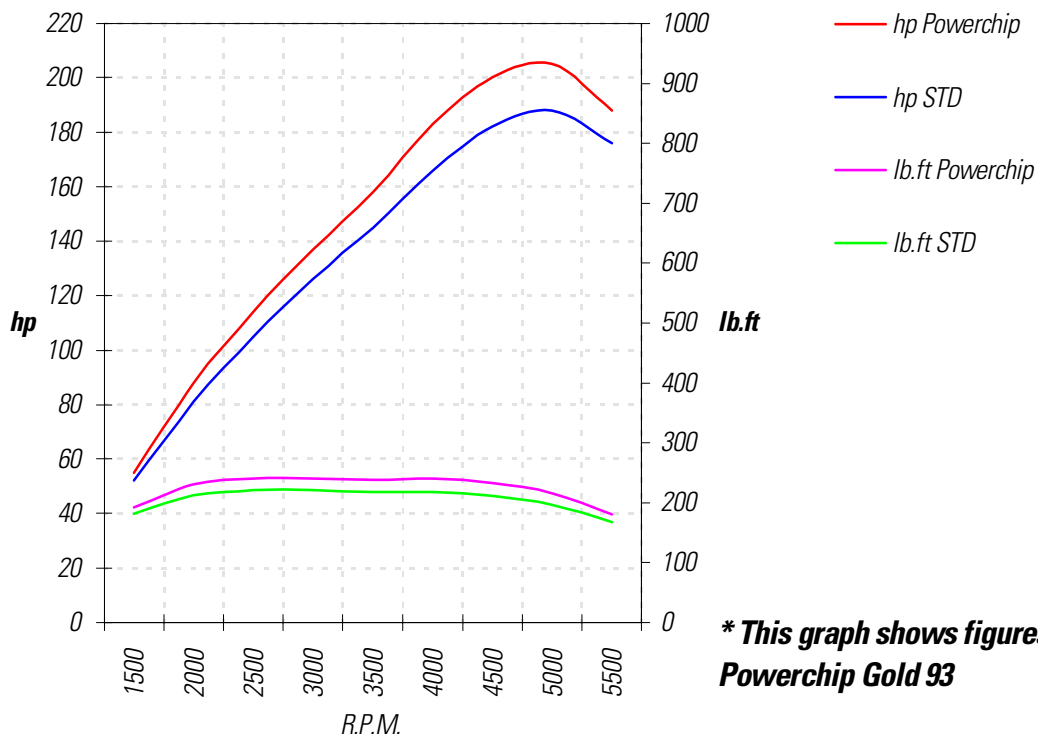


MODEL	ENGINE	VERSION	CAPACITY	Max hp	Max lb.ft	0-60 Auto	0-60 Man
Range Rover 4.0		Standard	3947cc	188	220	N/A	N/A
Range Rover 4.0		Gold 91	3947cc	203	235	N/A	N/A

Gold 93 Performance Data for your...

*Land Rover Range Rover 4.0 **

R.P.M.	hp STD	hp Powerchip	hp Gain	lb.ft STD	lb.ft Powerchip	lb.ft Gain
1500	52	55	3	181	192	11
2000	81	88	7	213	230	17
2500	105	114	9	220	240	20
3000	126	137	11	220	240	20
3500	145	158	13	218	238	20
4000	166	183	17	218	240	22
4500	182	200	18	212	233	21
5000	188	205	17	197	216	19
5500	176	188	12	168	180	12



MODEL	ENGINE	VERSION	CAPACITY	Max hp	Max lb.ft	0-60 Auto	0-60 Man
Range Rover 4.0		Standard	3947cc	188	220	N/A	N/A
Range Rover 4.0		Gold 93	3947cc	206	239	N/A	N/A



Fitting Instructions

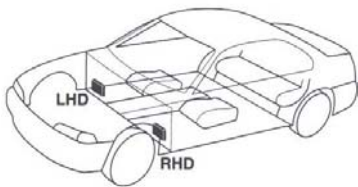
Range Rover 4.0

Tools Required.

- 10mm Socket with extension
- Long Flat Blade Screwdriver
- Phillips Head Screwdriver

Locating & Access To ECU.

The car is fitted with a BOSCH manufactured E.C.U, and is silver in colour.
This Located Drivers Side under dash mounted on A - Post.



Late Model

For easy access to the ECU, remove the panel just above the foot pedals.

Then remove the kickpanel. It is held by 2 plastic “push bolts” this can be easily removed using a flat blade screw driver.

The car is fitted with a BOSCH manufactured E.C.U, and is SILVER in colour. It should have the numbers 0 261 204 476 or 0 261 204 901.

The ECU is held in by 2 black 10mm plastic bolts. Remove these bolts.

The BOSCH unit fitted to the DISCOVERY uses numerous multi plugs. These need to be removed one at a time in sequence.



Using flat head screwdriver, remove the first and last plug. This enables better access to the other plugs.

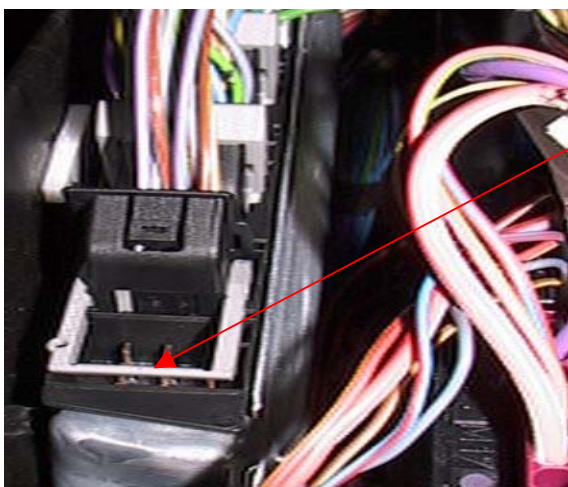
Remove First and Last Plug First

To remove the middle plugs all that is push the release button on the plug and pull the plug.

Push button to release lever



required to do is lever releasing



Pull lever down releasing plug

Once this is done the ECU may be removed, by gently manoeuvring the ECU upwards. When refitting the ECU ensure that the ECU lines up in the channel in the cradle.

As arranged this computer will now need to be packaged up in a Courier bag supplied and sent to Powerchip to be modified. Your computer will be modified and returned to you overnight, the day we receive your computer.