



RICA
engineering



SPECIALIST IN REMAPPING ENGINE MANAGEMENT



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SINCE 1992, RICA ENGINEERING HAS ESTABLISHED ITSELF AS EUROPE'S LEADING SPECIALIST IN REMAPPING ENGINE MANAGEMENT SYSTEMS. USING ADVANCED TECHNIQUES COMBINED WITH MANY YEARS OF EXPERIENCE, RICA CAN OBTAIN THE BEST FROM EVERY CAR AND ENGINE TYPE. THE RICA TEAM IS ALWAYS AVAILABLE TO GIVE YOU MAXIMUM SUPPORT, ANSWER ALL YOUR QUESTIONS AND ALWAYS AIMS TO GIVE YOU THE VERY BEST IN CUSTOMER SATISFACTION.

hier zou eigenlijk een mooi beeld van (een) Rica pand moeten.

All Rica software is written in house at our own facilities. All the knowledge is under one roof, so you can always be assured of optimal performance, quality, and reliability. Rica has the capability of measuring the performance of any car on any of the dyno facilities because every Rica facility has its own rolling road dyno. The Rica main facility in Wateringen and the tuning centre in Enkhuizen both have a 4WD rolling road where cars with up to 850 hp can be measured. Rica also exports its products world wide via a network of dealers and tuning centres so that customers around the world can experience the quality of the Rica ECM upgrades. With our many years of experience and constant refinement of Rica software, we can guarantee that absolutely no damage will occur in the engine or transmission of your car when installed with a genuine Rica ECM upgrade.

RICA Wateringen

Rica Wateringen is the main headquarters and development centre of Rica Engineering. All Rica software and products are developed here in cooperation with Rica Engineering Enkhuizen. However, the actual modification of the software is performed at Wateringen only. Each product is checked and tested on the latest industry standard MAHA 4WD digital rolling road chassis dyno. This dyno can handle cars with up to 850 horsepower, either 2WD or 4WD. As well as research and development, Rica Wateringen is capable of satisfying any tuning requirements, whether its a normal road car, or a competition race engine!

Besides the development of performance software, Rica Engineering Wateringen also installs this software in your car while you wait. Further upgrades available at the Wateringen facility include airfilters and exhaust systems for almost every car on the market. Special projects in the quest for more horsepower is one of the specialisations of Rica Engineering Wateringen. Different or bigger turbos or other internal changes for your engine can always be done on request. To be sure that you can utilize all the extra power safely on the road we can also fit improved brake kits, made to fit every car on the market. You are also welcome to book an appointment for a simple run on the MAHA dynamometer in order to verify your car's power output.



Quality Software Developed In-House

All RICA software is developed in-house using state of the art ECM software engineering tools and rolling road technology combined with over 20 years of expertise in the field of automotive software engineering. This means that RICA has all the technical knowledge required to develop software of the highest quality to ensure maximum customer satisfaction in terms of optimised vehicle performance and driving pleasure.

Dealership Service Compliant

All RICA ECM software upgrades are designed to be 100% dealership service compliant. Your RICA enhanced vehicle can therefore be serviced at any dealership as normal and any factory updates can be installed by the dealer as and when required. Should the RICA software be overwritten by any factory updates, the RICA software will be re-installed and any factory updates will be included in this RICA update.

Emissions Compliant with Improved Fuel Economy

All RICA ECM upgrades are designed to maintain the same vehicle emissions specifications as set by the factory in compliance with current emissions legislation. But for some cars RICA goes even further to actively reduce CO2 emissions. Coupled with improvements in fuel economy, RICA are currently the only aftermarket company offering such unique upgrades to provide customer

Engineered for Maximum Reliability

All RICA ECM upgrades have been engineered with great skill to ensure that your vehicle's reliability is not compromised, providing of course that the vehicle is maintained correctly in accordance with the manufacturer's servicing requirements. All improvements in performance are achieved well within the maximum stress tolerances of the engine and transmission components. rs with more eco-friendly motoring.

WHY CHOOSE RICA

Customer Support and Backup

All RICA ECM upgrades come with free technical support and backup via an established network of approved RICA agents comprising franchised dealers, independent service specialists and automotive diagnostics centres. All RICA agents receive backup and support from the RICA distributor and from RICA direct to ensure that all customers receive the very best in technical support and diagnostics expertise.

TUV Approved

RICA software is TUV approved. Although technically this is only a requirement for Germany, it is an established mark of quality and safety which is recognised throughout Europe. RICA software has always been developed so as not to adversely affect the vehicle's safety in any way, and the TUV approval for RICA software certifies this.

ISO 9001 Certified

ISO 9001 is the internationally recognised standard for the quality management of businesses. It applies to the processes that create and control the products and services that RICA Engineering supplies. It prescribes systematic control of RICA ECU software development activities to ensure that the needs and expectations of customers are met.



SOFTWARE DEVELOPMENT

Beeld niet goed genoeg

Software development

The ECM (engine control module) is the main computer in the car which controls the engine. It is sometimes referred to as the PCM (Powertrain Control Module). The ECM controls many components and receives inputs from many sensors, however for simplicity we have only shown the three main components in a turbo engine that the ECM controls in order to achieve the required performance - fueling, ignition timing and turbo boost pressure.

Inside the ECM is a flash memory containing the software which contains thousands of variables and tables of data that define how the ECM controls the various engine components. By carefully altering this software, we can change how the ECM controls these engine components and consequently alter the engine performance characteristics.

The ECM software is modified using specialist software tools to manipulate the necessary tables and variables in order to optimize the engine performance characteristic. This process can take several days and is carried out on the rolling road to measure precisely how the engine is responding and to ensure optimum combustion for performance, economy, emissions and reliability.

Once the software optimization is complete, it forms a template as the basis for modifying other similar versions of software for other models. Often there are hundreds or even thousands of different software versions for each car and the templates have to be frequently revised and updated to ensure that the performance enhanced software in your car is perfect.

STEP 1: READ ECM



In order to tune your car, the first step is to read the original software from the ECM in your car via the OBD2 diagnostics port using special ECU reading tools. This process can take from several seconds up to one hour, depending on the car and the ECM technology. In many cases, RICA may already have an exact matching original version of software for your car, in which case reading the original software from the ECM is not required.

Once the original software is read from the ECM, it is uploaded to RICA for modification.

1

STEP 2: MODIFY ECM SOFTWARE



Once RICA receives the original ECM software, it is modified to a template as explained above. This process takes between 1-15 minutes to complete depending on the car and ECM type. If the original ECM software is a new version, then a new modified software version and template has to be created, which can take between 15-45 minutes.

Once complete, the modified software is made available for download to program into the car.

2

STEP 3: PROGRAM ECM



The modified software is downloaded from RICA and programmed into the ECM via the OBD2 diagnostics port, overwriting the original software in the ECM. The programming process, sometimes referred to as Flashing, is normally much faster than the reading process due to the ECM technology being optimised for programming.

After the ECM programming is complete, the car is road tested to ensure that it is performing correctly and that no DTCs (Diagnostic Trouble Codes) are present.

3

REDUCING CO₂ EMISSIONS FOR A CLEANER ENVIRONMENT

RICA ENGINEERING IS CURRENTLY THE ONLY AFTERMARKET PERFORMANCE TUNING COMPANY IN THE WORLD TO HAVE UNDERTAKEN INDEPENDENT EURO 4 EMISSIONS TESTING IN ORDER PROVE THAT THE RICA SOFTWARE MEETS THE STRICT EUROPEAN EMISSIONS LEGISLATION WHICH THE VEHICLE MANUFACTURERS MUST ALSO COMPLY WITH.

Rica have gone a step further and proved on some test vehicles that the Rica software is able to reduce CO₂ emissions by up to 15%. This is a significant reduction in emissions! The fact that Rica is able to achieve this demonstrates the high quality of the Rica software. As a result of this testing, Rica now offer a limited range of eco-friendly ECM upgrades called Rica E-Power, specifically designed to reduce CO₂ emissions and reduce fuel consumption.

Reducing fuel consumption to lower your running costs

Rica optimised software can reduce your fuel consumption by up to 15%. This of course is very good for the environment because less fuel is being burned, but it is also good for your wallet because it significantly lowers your vehicle running costs by reducing the amount you spend on fuel. The Rica E-Power range of software upgrades has been specifically designed to provide maximum fuel efficiency, rather than being optimised for performance, and the Rica E-Power upgrade can deliver real cost savings within 1-3 years. Even if you choose the Rica performance optimised software, you can still benefit from improved fuel economy by approximately 5-10% on average

E-Power

RICA E-Power is an ECM upgrade specifically designed to reduce vehicle emissions and improve fuel economy by carefully optimizing the software in the engine management system. To put it simply, it's an environmentally friendly ECM remap that is designed to save you money. You may be thinking that this is nothing new! After all, the RICA Performance upgrades also improve fuel economy. However, RICA Engineering have taken this concept to a new level and turned the art of ECM optimisation on its head. Traditionally, the focus of remapping has always been about increasing performance, with possible fuel economy improvements as an added bonus. With the RICA E-Power upgrades, the focus is solely on reducing emissions and improving fuel economy rather than focusing on outright performance. Independent testing by TNO has proved that RICA are able to reduce CO₂ emissions by up to 15% and improve fuel economy by more than 15%. These tests are the same tests that the manufacturers undertake in order to ensure their vehicles meet the latest European emissions legislation. The RICA test data enables car owners and drivers to make a direct comparison between a standard car and a RICA optimised car in order to accurately calculate the potential fuel cost savings. The data is not simply an estimated figure applied to all models. Each specific model has been separately tested to provide fuel consumption data specific to each individual model.

BENEFITS

Enhanced Performance

Rica optimised software delivers significant improvements in power and torque over a very wide range resulting in faster acceleration in all gears.

Improved Fuel Economy

Most Rica software upgrades will improve the fuel economy on average by 5-10%. This fuel saving can significantly reduce your running costs.

Improved Safety

Enhanced engine performance allows for safer overtaking as the manoeuvre can be completed faster. With automatic transmissions, the delay from standstill is reduced, therefore pulling out from junctions and onto roundabouts is much safer.

Improved Driveability

A sharper throttle makes the car more responsive and the increased torque results in a much more flexible engine allowing for a much more relaxed driving style.

Improved Towing Capability

Towing is made much easier through the increase in torque. The result is faster acceleration to cruising speed and the ability to maintain constant speed uphill without changing gears.

Eco-Friendly

All Rica software upgrades are fully compliant with strict European emissions legislation. The Rica E-Power upgrades go a step further and actually reduce CO₂ emissions even more!

Driving Pleasure

Rica software rewards you with maximum enjoyment from your car through enhanced performance and driveability, improved safety and reduced running costs

CUSTOM TUNING

Rica Custom Tuning

Rica Engineering can undertake any kind of custom tuning work which requires custom ECM software adjustments for any engine management system, including OEM and standalone. RICA custom tuning can be carried out at any of the four RICA dyno facilities. Alternatively custom tuning can be carried out remotely using the iSoftLoader or using the RICA agent's programming tools, at a dyno facility of your choice.

VOLVO V70 2.4D 163 EURO 4

Fuel Consumption	Standard	RICA E-Power
Urban	12.32 ltr/100 km 22.9 mpg	10.53 ltr/100 km 26.8 mpg
Extra-Urban	7.63 ltr/100 km 37.0 mpg	7.19 ltr/100 km 39.3 mpg
Combined	9.34 ltr/100 km 30.2 mpg	8.42 ltr/100 km 33.5 mpg
CO ₂ Emissions	Standard	RICA E-Power
Urban	325.48 g/km	277.60 g/km
Extra-Urban	202.16 g/km	190.41 g/km
Combined	247.01 g/km	222.39 g/km

VOLVO C30 1.6D

Fuel Consumption	Standard	RICA E-Power
Urban	6.9 ltr/100 km 40.9 mpg	6.0 ltr/100 km 47.1 mpg
Extra-Urban	4.6 ltr/100 km 61.4 mpg	3.9 ltr/100 km 72.4 mpg
Combined	5.8 ltr/100 km 48.7 mpg	4.9 ltr/100 km 57.6 mpg

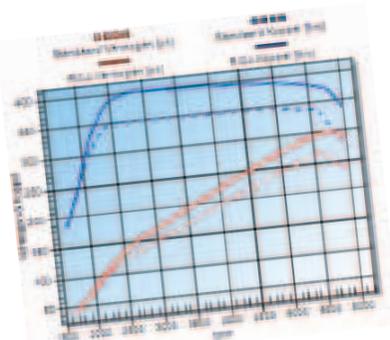
Custom tuning is where the software in the ECM is optimised to take advantage of non-standard components fitted to the car. For example, a larger turbocharger or a large bore downpipe would require custom tuning because they will exhibit different performance characteristics, often incompatible with the normal RICA software. Without custom tuning you will either not fully benefit from the hardware fitted, or potentially damage the engine or other components.

Custom tuning is a fairly lengthy procedure, so you should allow at least one day for a custom tuning session. Sometimes several days may be required depending on the car and the requirements. If you have chosen your own dyno facility for custom tuning, you should ensure that full datalogging equipment is available. The more information that is made available to RICA during the dyno runs, the better the end results will be from the custom tuning.

RICA Performance ECM Upgrades

Performance ECM upgrades zijn de meest voorkomende ECM upgrades die RICA aanbiedt en geven u waar voor uw geld. RICA Performance ECM upgrades zijn zo geoptimaliseerd, dat ze een aanzienlijke winst in vermogen en koppel leveren, terwijl ze ook nog eens het brandstofverbruik met 5-10% verbeteren. Om de maximale prestatie en brandstofverbruik van de ECM upgrade te bereiken, rijden benzine auto's het beste op super loodvrije benzine, 98 octaan. Voor dieselauto's is de standaard diesel prima.

- Meer vermogen
- Meer koppel
- Meer km per liter
- Verbeterd rijgedrag
- Snellere gasrespons
- Snelheidsbegrenzer verwijderd / verhoogd
- 100% volgens dealer service
- 100% volgens emissie wetgeving
- TUV goedgekeurd
- ISO 9001 gecertificeerd
- Geïnstalleerd bij uw lokale RICA dealer



THE NEW RICA ISOFTLOADER IS A HANDHELD PROGRAMMING DEVICE WHICH ALLOWS YOU TO PROGRAM YOUR VOLVO WITH RICA SOFTWARE BY YOURSELF. DESIGNED AND DEVELOPED ENTIRELY IN-HOUSE BY RICA ENGINEERING, THE RICA ISOFTLOADER BRINGS RICA ECM UPGRADES TO EVERYONE EVERYWHERE!



GIVE YOUR CAR AN EXTRA PERFORMANCE BOOST WITH THE PRESS OF A BUTTON!

The RICA iSoftLoader does not require a laptop whilst programming the car which means you don't need to carry a laptop around if you want to change the software tuning in the ECM. The RICA iSoftLoader can store the original and modified software inside which can be downloaded to the iSoftLoader device from any computer connected to the internet using a standard USB cable and special sync software.

Whichever tuning stage you purchase, all the lower tuning stages are automatically included in the price and made available for download to the RICA iSoftLoader. For example, if you purchase the D5 Euro 4 Stage 2 tune (240 hp / 480 Nm), then you automatically get the Stage 1 and E-Power tunes included in the price. To upgrade to a higher tune, you simply pay the difference in price. Although the RICA iSoftLoader device stores the original software and one modified tune internally, you can purchase an unlimited number of modified tunes which are then made available for you to download to the RICA iSoftLoader at any time.

If you own more than one Volvo, your RICA iSoftLoader can be used to program more than one car. You don't need a separate RICA iSoftLoader for each car - simply purchase the RICA tune software for each of your other cars and download them to the

RICA iSoftLoader as required. The RICA iSoftLoader has built in error checks to ensure you can only program a car with the correct software. The RICA iSoftLoader will also provide basic diagnostics functions in the near future, allowing you to read and clear DTCs, which is useful if you ever get a CEL or engine running problems that you wish to diagnose.

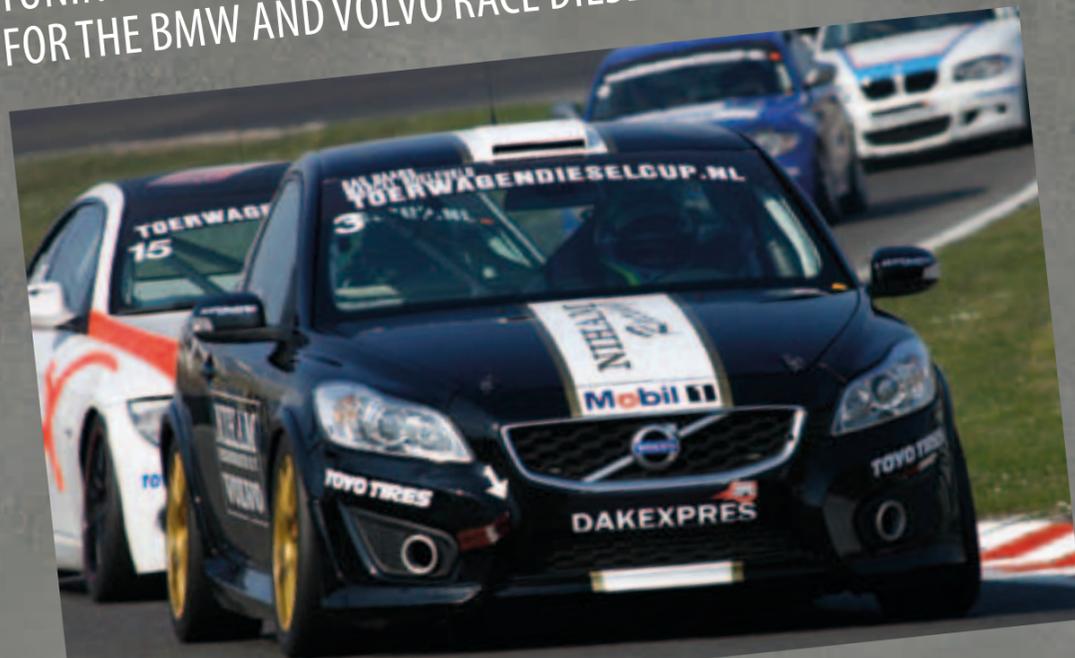
Vehicles supported: All Volvo models 1999-2011, including the new 2007+ S80/V70/XC60 Euro 4 and Euro 5 EDC17 diesels and the 2011 D3, D4 and D5 models. Vehicles not supported: S40/V40 classic

- Tune your car by yourself via the OBD2 diagnostics port.
- Program your car in minutes without the need for a laptop while programming.
- Unlimited tuning stages available for purchase and download to the iSoftLoader.
- Can be used to program more than one car.
- Available for all 1999-2011 Volvo models with petrol, diesel or bi-fuel engines.

I-SOFTLOADER

RICA IN MOTORSPORT

RICA ENGINEERING ARE VERY PROUD TO HAVE BEEN APPOINTED AS THE OFFICIAL SUPPLIERS AND SCRUTINEERS OF ECM TUNING SOFTWARE IN THE DUTCH TOURING CAR DIESEL CUP FOR THE BMW AND VOLVO RACE DIESEL RACE CARS IN 2010.



Dutch Power Pack, the organisation responsible for the cup, wanted to level the playing field by ensuring that all the cars are tuned to the same level and that no teams had an unfair advantage through non-approved tuning modifications. A target lap time of approximately 2:05 seconds was required for all the cars and any cars which were significantly faster would have to be scrutinised. RICA Engineering have long been established as leaders in performance diesel tuning both on the road and on the race track as well as being equipped with precise dyno measuring equipment (Maha LPS 3000) and specialist ECU software analysis capability. Dutch Power Pack therefore considered RICA Engineering to be the best company to fulfil this new role. All the BMW (120d and 123d) and Volvo race cars have RICA performance software installed, tuned to ensure that no team has any performance advantage. RICA Engineering are also responsible for dyno testing and examining the ECU software in any cars which require post-race scrutineering on request of the race officials.

RICA Engineering is very active in the motorsport field in Europe, providing various engine tuning and race preparation services to many teams and securing frequent podium finishes. RICA tunes many BMWs and Volvos for motorsport and specialises in diesel race car tuning. The knowledge and experience gained from such motorsport activity can then be used in the development of road car ECM upgrade technology.

The pictures below are of the Volvo C30 D5 race car, owned by Dutch Volvo dealer Niham and tuned by RICA Engineering. For a period of time it ran with the NIRA engine management system in order to promote the NIRA system, but it now runs the factory Bosch management system with RICA ECM software in order to comply with the new regulations. This car was also used as the development and testing platform for the RICA Sports Tune ECM upgrades. The racing conditions during the endurance events are ideal for testing the engine and transmission reliability.

TUNING KITS

Performance Exhaust Systems

Performance exhaust systems are a simple but effective way to improve the performance of your car. There are many different exhaust systems available on the market, of varying quality. RICA Engineering highly recommends Ferrita stainless steel sports exhaust systems for top quality, reliability and performance characteristic.

Sports Cat-Back Systems

- Stainless steel construction
- Improved appearance
- Sporty exhaust tone
- Improved gas flow
- Special silencers

High Performance Downpipes

- Larger bore downpipe
- Stainless steel construction
- High flow catalytic converter
- Reduced back pressure
- Significant improvements in power and torque
- Improved turbocharger spool-up
- Optimised RICA ECU software recommended
- Ideal for Stage 2 and Stage 3 upgrades





RICA

engineering



DEALERS

BELGIUM
BULGARIA
CANADA
CHINA
DENMARK
FINLAND
GERMANY
GREECE
ICELAND
IRELAND
ITALY
LATVIA
MALAYSIA
NETHERLANDS
NORWAY

PHILIPPINES
POLAND
RUSSIA
SINGAPORE
SOUTH KOREA
SPAIN
SWEDEN
SWITZERLAND
TAIWAN
THAILAND
TRINIDAD AND TOBAGO
TURKEY
UNITED KINGDOM
USA



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