

The BMW 318d Touring showed a much better reaction and higher performance with all boxes.



MORE POWER!!!!

The subject of chip tuning has come back to public attention again over the last few years, due to the modern turbo-diesel and gasoline vehicles with a technology that makes performance increases comparatively easy. Especially the „Power boxes“ are highly popular, since they are relatively low-priced, promising a quick and clear performance increase with little installation effort. However, there are many prejudices against the – usually universal – boxes, specifically in respect of drivability, actual performance yield and durability. The providers, however, wave away these concerns, promising more power and lower consumption without regrets! We have used five models of renowned manufacturers to find out what the systems really can do and whether they will live up to their promises! **Text: Christopher Otto, Photos: Sebastian Brühl**



Chip tuning via Power box generally is rather ingenious! The performance of turbo-charged direct injection engines, no matter if gasoline- or diesel-powered, can be increased with little effort. The Tuning boxes manipulate the values of certain sensors to get the original control unit to increase the corresponding parameters and tickle a little more power out of the engine. There are big differences there, however. While many providers focus on injection pressure only, some also affect charging pressure or even the adjustable inlet camshaft. Greatest caution is required here, since this manipulation can also cause a lot of damage. Programming and coordination of the system therefore require a lot of knowhow and experience, so that we generally advise against using cheap

The measuring software also requires information on weather conditions to calculate its results.




Determination of the wheel diameter is essential for accuracy of the measured values.



The wheel sensor of the Insonic system is attached to the hub cap.





The Swiss Box is pleasantly small and entices with its refined, anodised housing.

boxes from eBay. In theory, the more values can be recorded and modified, the more precisely and accurate will the effect be as well. We performed a practice test to find out whether this theory is correct and what kind of performance will finally be achieved. In addition to this, things such as easy installation, operating instructions, support and the subjective driving experience are of importance. The test vehicle was a BMW 318d Touring. The precise measurements were performed with the Insorik RealPower / RealSpeed system. To create the same conditions for all participants, all boxes were tried out in the same vehicle, on the same route and day. Four drives were measured for each, and the averages were used for the evaluation to eliminate interferences such as wind or route profile.

Speedbuster Chip Tuning Box

The Speedbuster Box comes in a refined box and entices by very detailed instructions with many pictures. This box

records three values at the vehicle, making installation of the cable trunk a little more difficult since three sensors have to be connected. The plug connection to the camshaft encoder is a little hard to reach. Therefore, the Speedbuster box takes the longest to install, at 30 minutes. The plastic housing is the largest in the test, taking up quite a lot of space in the engine compartment. The good thing is that the scope of supply includes a blind plug that permits recovery of the serial condition within minutes without having to remove the cable trunk. Additionally, the box offers the option to perform fine adjustment with a potentiometer in coordination with customer service. This holds true for all boxes, however. Where the meter technology is concerned, this box – the most expensive one in the test at 699.00 € – was relegated to place 2 by a narrow margin. The box performs particularly well in the range

of 80-120 km/h in the 4th gear, where it exceeds the serial value by almost 1.5 seconds.

Swiss Box LET 11 by Rameder

The Swiss Box is delivered in a pretty box as well. The very small, blue anodised aluminium model has a refined look with an additional protective pocket and can be well hidden in the engine compartment. Since this box is only connected to the rail pressure sensor, it can be installed much faster. The entire system is ready for use in about 15 minutes. The installation instructions unfortunately comprise only one page of paper, badly copied. In spite of this, they provide all the information needed for installation. Where performance is concerned, the Swiss Box is among the weaker ones of our tested devices, even though differences were very small in general. In coordination with the provider, fine adjustment can be performed with three different potentiometers here to


increase performance or prevent motor problems. At 599.00 €, the refined Swiss Box is among the more expensive models in this test.

Asa Multi XC

The Multi Xc Tuningbox by Asa initially impresses us with the lowest price by far. At 259.00 €, the small module costs only a little more than one third of the price demanded for the most expensive model tested. In the light of this price, it doesn't really matter that the system is delivered in a simple bag and that the scope of delivery does not include cable ties for secure placement in the engine compartment. At least the aluminium housing is very small. The Asa box requires tapping of two sensors, putting its installation time in the middle range. The cost-efficient module surprises us with its measured results. In spite of a slightly lower motor output, it ties exactly with the much more expensive Swiss Box in its driving values. Subjectively, the engine reacts very spontaneously and accelerates harmoniously through the revolutions range. The box also offers many change and programming options that are well described in the highly detailed instructions.

Race Chip CR Ultimate


Race Chip sends us its flagship „CR Ultimate“, still perfectly fairly priced at 479.00 €. The refined packaging and the high-quality and completely illustrated instructions promise quite a lot. The Race Chip System really does provide the best values. In addition to the power, torque, draft and acceleration values, the Race Chip



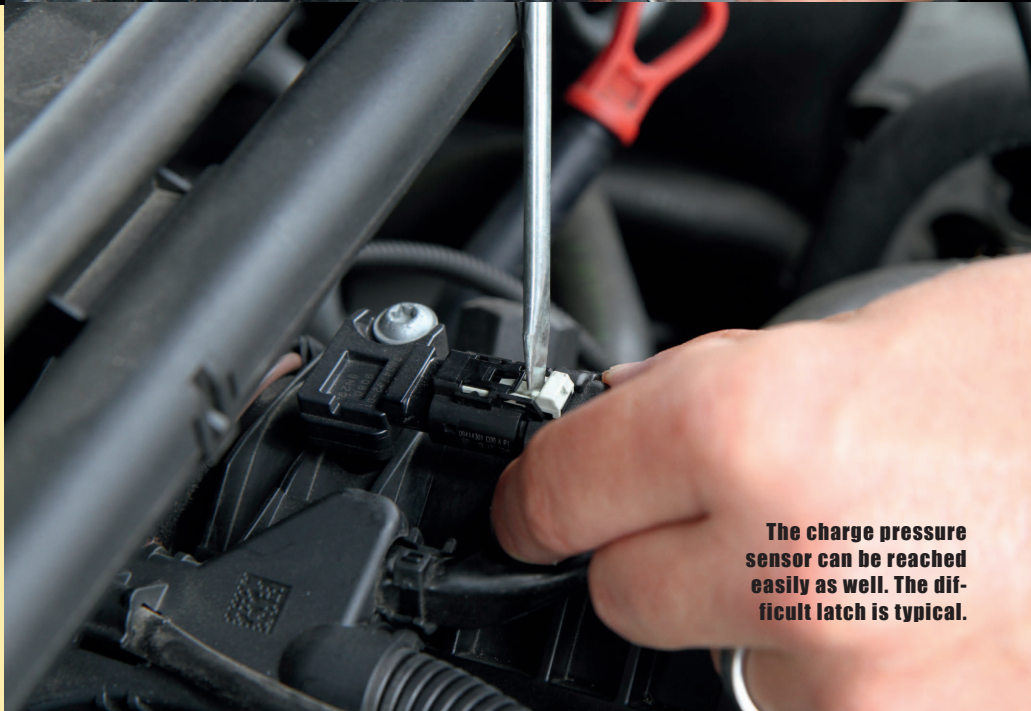
In spite of the lowest price, the small aluminium Asa-module passes the test.




The individual lines of the Diesel Power system have even been labelled to prevent wrong connections!



The rail pressure sensor plug is easily accessible in this engine.



The charge pressure sensor can be reached easily as well. The difficult latch is typical.



The new cable is connected easily. Close two plugs – done!

Test winner Race Chip entered the test with its top model „Ultimate CR“, which shone particularly with its state-of-the-art insides.

The Diesel Power plastic module has a nice design and can be integrated into the engine compartment easily.

also comes out best in the subjective driving experience. The BMW has much more pressure than in the serial trim, with the power being put out very evenly. Installation is very simple, since the rail pressure sensor is the only thing that needs to be connected. A blind plug to recover the serial condition is also part of the scope. On demand, there are several fine adjustment controllers, even though as many as six screws need to be removed to access them. Free shipping and fast support make this a well-rounded offer.

Diesel Power DIGI CR Multimotion
The tuning module by Diesel Power is in the mid-range where measurements are concerned. The absolute values here are much better than in the serial trim as well, however. The box does not stand out in its other properties either. The connection of two sensors makes the installation time a little longer than in the fastest systems. It should be noted on the positive side that the individual cables are even marked with flags to make connection easier. The medium-sized plastic housing has a protective pocket. The instructions are good. We would like to emphasize the fact that the Diesel Power box is the only one tested that is delivered with a TÜV parts expert report, which makes it easier to have it entered in the vehicle certificates. At 599.00 €, this system is in the upper price range of this test. *tuner*

The engine cover has to be removed first. It is only snapped on.

CHRISTOPHER OTTO



Result: In spite of the big price differences, all boxes perform very similarly, as evidenced by the almost identical acceleration time of 0-100 km/h. The power and performance gain as compared to the series can be felt and measured clearly, with some subjective differences. The BMW-engine seems to develop the most power with the Race Chip box while still unfolding its new found strength very harmoniously, making this box the test winner in connection with top processing, outstanding instructions and the best measured values. The Asa Tuning module is our special recommendation to you, since it can do almost everything that the much more expensive systems do in spite of a much lower price. The other boxes keep their promises as well, though. This area offers a pleasantly high performance level by now. All plugs fit without problems, and not a single system showed any errors after installation. Not even such problems as error messages or engine stutter occurred. To prevent legal problems all power increases should be entered in the vehicle documents at once. Otherwise, the vehicle's ABE and therefore also its insurance protection, may expire. The Diesel Power module with its parts expert report offers an extra benefit here. Individual acceptance must be requested for the others. If you are looking at the measured values, you will notice that all the boxes remain clearly below the promised performance increase at times. This is partially due to the expected serial distribution of the engines in order to avoid problems with the electronics. All boxes therefore permit a further performance yield increase at fine adjustment that should only be performed in coordination with the provider and by a qualified person.

Measuring conditions: Temperature: 17.7 °C, barometric pressure 1005 hpa, dry asphalt, route length 2.1 km

	Power / torque	0-100 km/h	80-120 km/h 4th gear	Price (RRP)
Series	101.25 kW 137.7 PS 285.6 Nm	9.44 s	7.44 s	
Speed Buster Acc. to manufacturer 131 kW / 178 PS / 374 Nm	116.6 kW 158.58 PS 326.2 Nm	8.64 s	6.08 s	699 €
Swiss Box Acc. to manufacturer 132 kW / 180 PS / 370 Nm	113.15 kW 153.9 PS 308.3 Nm	8.64 s	6.8 s	599 €
Asa Multi xC Acc. to manufacturer 128 kW / 174 PS / 390 Nm	110.08 kW 149.7 PS 307.58 Nm	8.64 s	6.8 s	258 €
Diesel Power DIGI CR Acc. to manufacturer 123 kW / 167 PS / 386 Nm	112.45 kW 152.93 PS 314.95 Nm	8.64 s	6.48 s	599 €
Race Chip CR Ultimate Acc. to manufacturer 138 kW / 188 PS / 387 Nm	118.4 kW 161.02 PS 331.5 Nm	8.48 s	5.92 s	479 €



The large cover conceals an insulation mat that also has to be removed carefully.

Now the components are exposed before you. The precise plug assignment can be taken from the usually well-illustrated installation instructions.