



Clio 2 RS 172 / 182 Turbo



The Brief

As some may know we have been involved with Turbo Renault's for many years. From the 5 GT Turbo onwards. When Renault delivered the Mk1 Clio 16v and Clio Williams we soon set about offering turbo kits to get our boost fix! In the case of the Renault Clio 2 RS, we were the first to turbo charge the 2.0 litre F4R (73* engines) back in 2002 and to this day they are more popular than ever. Since this time we have produced or been involved with a lot of various Road Cars, Track Cars, Daily drivers and some extremely high boost high powered setups. In recent times our attention has been aimed at producing more reachable performance packages that offer good genuine gains in performance, but also deliver impeccable road manners and a factory like drive.

Key targets met for the Clio 2 RS Turbo conversion are listed below:-

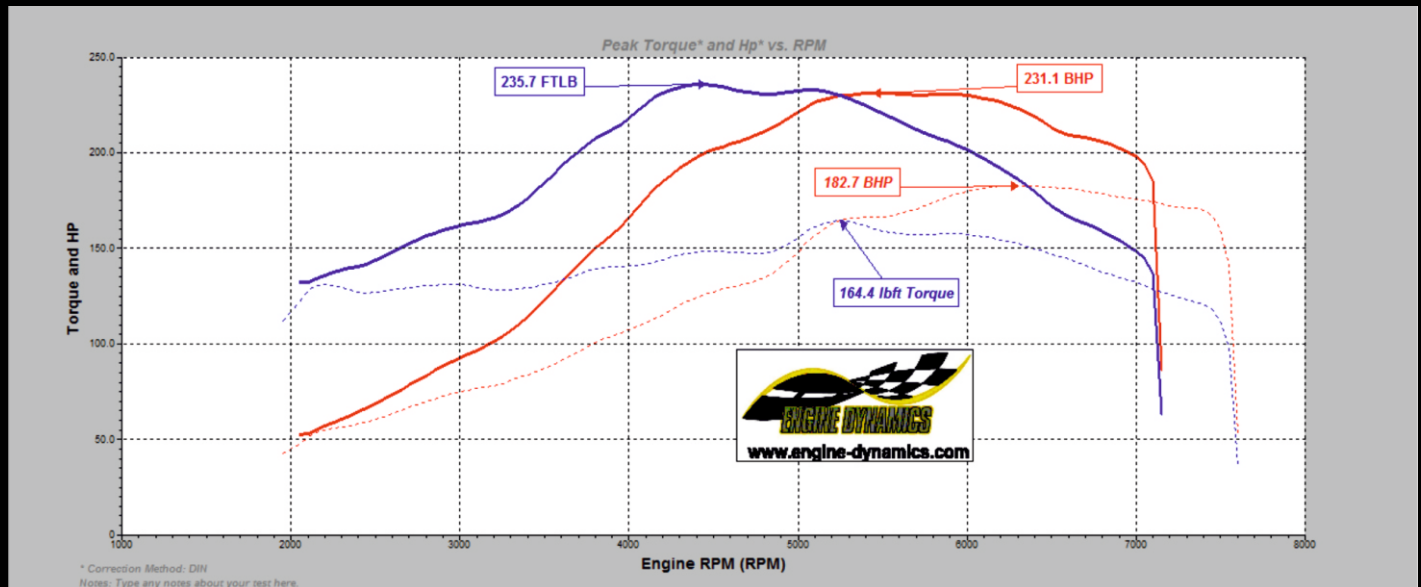
- 230 BHP Conversion based on the STD engine (11.2:1 CR) with a good spread of torque. The 230 conversion gives us a better power to weight ratio over a Megane 275 Trophy-S.
- Fully upgradable to 280 BHP (Potentially 320 BHP with a larger turbo)
- Keep the engine "Rev Happy" and not dilute the rev range of the engine.
- 230 Conversion must run safely on 98+ Ron Unleaded Pump Fuel. (95+ Octane options available)
- Retains Air conditioning, but can be used with Air Con Delete Kits.
- Retains factory EOBD engine diagnostics (Even your local garage should be able to plug in)
- No unwanted dashboard warning lights.
- Fully working factory cruise control and traction control for applicable models.
- Reliability and performance to satisfy the Daily Driver and Fast Road User.
- Applicable for track use (Upgraded clutch and oil cooler suggested).
- Will pass a MOT emissions test with a catalyst fitted.
- Full cycle of Air Bag and Engine Warning Lights as STD.
- Low maintenance costs with no major decline in Fuel MPG for daily sensible driving.

The Conversions

We are proud to present the Engine Dynamics 230 And 280 Turbo Conversions to suit all models of Clio 2 RS 172 / 182. Having met all the targets above and more, the dyno and performance figures shown over the next few pages are only taste of how impressive our conversions are. From flat out performance to motorway cruising with good mpg return, we have achieved a truly all-round package that really does deliver.

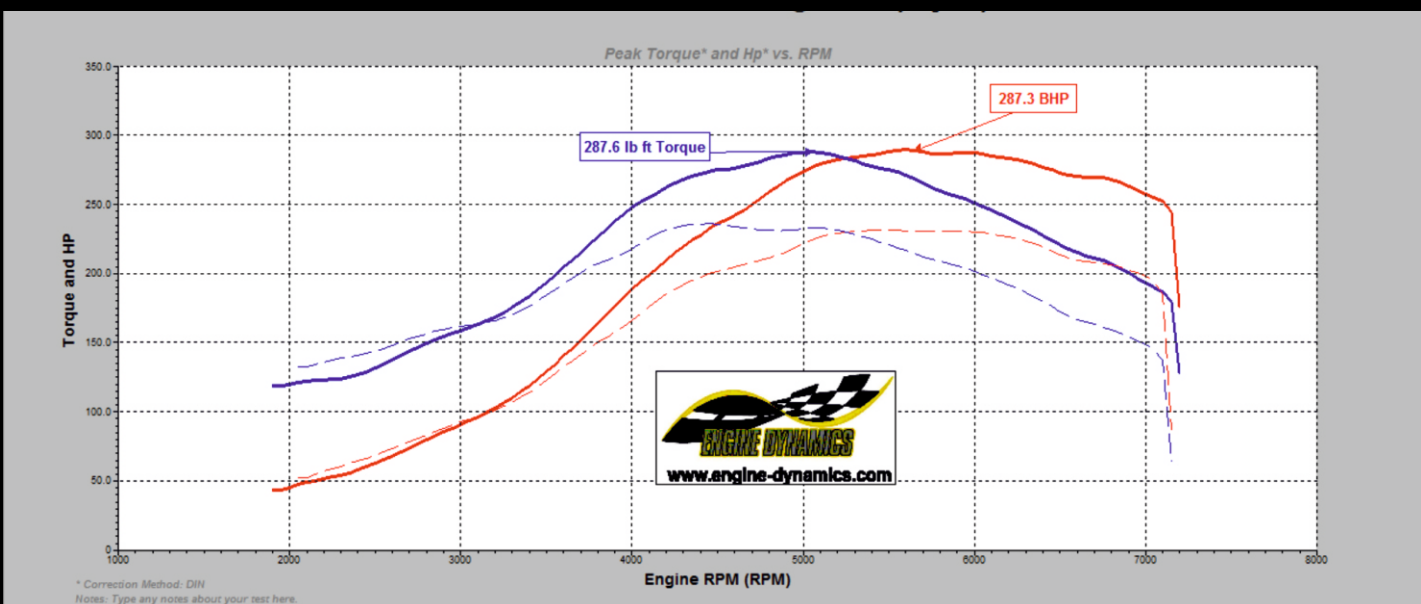
Case Study

A interesting case study to show the difference our conversions really make. In this instance the customer approached us looking for that little bit extra from his Mk2 Clio 172. His car was recently modified by another company and featured their air filter kit, full exhaust system with sports catalyst, a Clio 182 4-2-1 exhaust manifold, Catcams 438 camshafts and their custom map suit. His comments were that the car felt a little more eager in the upper rpm, but the rewards didn't quite live up to the 195 BHP the engine was now (apparently) producing. After a demo of our 230 Turbo conversion he was hooked and booked in with us some weeks later to have the cams removed and our kit fitted. A dyno run was carried out before we started work, so we can show the customer the difference to what they were used to driving. Sadly it didn't produce the 196 BHP on our dyno that the others companies dyno had shown! See graph below.



With kit fitted and mapped on our dyno the engine is now producing 231 BHP and a torque curve to match, the customers reaction initially was simply "WOW!" after the drive home.

The car now becoming more of a weekend toy due to the use of another vehicle, he returned to us a year later for an upgrade to the 280 Conversion. The great part about our 230 kit is the fact that its fully up gradable to our 280 conversion without the need to start a fresh. With the additional engine parts, clutch and electronic boost control fitted, another dyno session is all that's needed to set the car up safely to the next level. As the results show in the dyno graph below the peak gains are very similar to what the 230 kit offers over the NA setup.





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So how does it compare?

Its too easy to be blinkered by big dyno numbers to appreciate how fast a car can be, let alone being able to use the power being produced!

We get many calls from customers looking to go straight into the 280 Conversion or asking us if we offer higher powered conversions! With most not having actually experienced the thrill and acceleration our kits offer, we like to educate our customers to influence their choice. Power to weight ratio plays a big part of how quickly you can move the cars mass (i.e. accelerate) and as you can see from the example table our 230 kit alone shames some popular hot hatches.

Further improvements to suspension and tyres also determine 0-60 times, plus most owners are now tending to strip out unused back seats etc to further reduce vehicle weight.

Vehicle	Weight	BHP	BHP Per Ton
Renault Clio 172 / 182 Turbo Conversion (230)	1080 KG*	230	212.96
Renault Clio 172 / 182 Turbo Conversion (280)	1080 KG*	280	259.26
Renault Clio 172 / 182	1070 KG*	175	163.55
Renault Clio 197 / 200	1240 KG	197	158.87
Renault Clio RS 200T EDC (13 on)	1204 KG	197	163.62
Renault Megane Sport 230 R26	1355 KG	227	167.52
Renault Megane Sport 265	1379 KG	262	189.99
Renault Megane Sport 275 Trophy-S	1394 KG	271	194.40
Ford Focus ST Mk2	1317 KG	221	167.80
Ford Focus RS Mk2	1467 KG	301	205.18
Ford Focus RS Mk3 (AWD)	1547 KG	347	224.31**
Ford Focus ST Mk3 Ecoboost	1437 KG	246	171.19
Ford Fiesta ST 180 Ecoboost	1163 KG	179	153.91
Peugeot 208 GTI	1160 KG	347	169.83
Mazda 3 MPS	1483 KG	256	172.62
Vauxhall Corsa VXR	1223 KG	189	154.54
Vauxhall Astra VXR	1230 KG	236	191.86
Vauxhall Astra VXR (12 on)	1475 KG	276	187.12
Vauxhall VX220 Turbo	930 KG	197	211.83
VW Polo GTi 1.4 TSI DSG	1269 KG	177	139.48
VW Golf GTI 2.0 TSI (13 on)	1361 KG	216	158.70
Kia Pro Cee'd (13 on)	1382 KG	201	145.44
BMW M3 (E36)	1515 KG	321	211.88
* Represents an average of the models weights, some models are lighter and some slightly heavier.			
** Does not account for additional power losses through AWD system.			



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If you are looking to take that first step on the boosted Clio ladder, then the points below show why we are the number 1 choice!

- *More experience than anyone other company, with conversions on the Clio 2 carried out since 2003.*
- *Professional VAT registered company with customer service that's second to none.*
- *Help and advice only a phone call or email away, we are open Monday - Saturday.*
- *Conversions are carried out fully in house from pre-inspection to fitment to Dyno tuning.*
- *Efficient turnaround, most pre booked 230 conversions are completed within 4-5 days.*
- *Warranty provided on both DIY parts and fully fitted conversions.*





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Frequently asked questions

Q) Do you have a demo car that I can view?

A) Yes, please contact us to make an appointment and we will be happy to talk you through and demonstrate one of our kits.

Q) Does the car need any other modifications to suit?

A) The kits are complete, however to produce the results shown you would need a 2.5" (63mm) exhaust system with a decat pipe or sports catalyst; most cars have had such items fitted already. If the vehicle is going to be used in motor sport or track days then an engine oil cooler is recommended.

Q) I don't have 98+ Ron fuel available?

A) We appreciate that some remote or overseas customers have issues with fuel quality or availability. Please contact us as to speak about options available to you.

Q) Im an overseas customer is the kit suitable?

A) Yes, the kit is applicable with both Right and Left hand drive models.

Q) I live in a hot climate is that an issue?

A) The charge air temps are kept minimal due to low boosts used, plus there is built in ECU strategies to aid performance and engine safety in such case. However if there are concerns, then supplementary cooling can be used i.e. water injection.

Q) My timing belt service is due and id like to get a clutch fitted, can you offer a package deal?

A) We are always happy to put a package deal together and look at discounts, please contact us.

Q) Are you offering higher powered kits?

A) No, 280 is more than enough for the chassis and transmission.

Q) Do you offer finance?

A) Not currently, but to be honest there is better rates on personal loans that can be found online.

Q) Are you modifying the gearbox, are there any issues?

A) No we don't modify the gearbox. To be honest there's not much you can do to them to strengthen them. The transmission is one of the reasons we tend to offer more sensible powered conversions. Saying that we have converted many cars over the years and the gearbox's have been holding up well with some mechanical sympathy from the owner.

Q) Is the engine strong enough as its not a turbo engine from the factory?

A) The main difference with a factory turbo engine is that it has a lower compression ratio, saying that modern turbo engines are coming away from the low compression. The real key is engine management, with correct mapping and 98+ Ron fuel there is no concern for engine reliability as we proven over the years.

Q) My Clio RS has covered 100,000 miles do I need to refresh the engine?

A) If its been well serviced, then probably not. We have converted many 172 / 182 engines well over 100K and no issues. We can always give the engine a health inspection if you have any concerns.

Q) Do I need an uprated clutch?

A) We suggest that the OEM clutch is borderline on the 230 kit for road use, the 280 kit is supplied with an uprated clutch.

Q) Which turbo do you use and how much boost does it run?

A) We have used the same turbos for well over 10 years which are suited to our conversions. They are constructed to our specification with the correct air ratios to produce good spool up whilst retaining good top end power. The same turbo is used on both our kits and has been pushed up to 310 BHP for testing. Boost wise the 230 kit uses around 0.5 bar and the 280 kit uses around 0.9 Bar.

Q) My car is modified with performance camshafts are they OK to use?

A) We have tried the kit with most performance camshafts that are designed for normally aspirated use. Sadly such cams have proved to be not compatible with a turbo setup, so your only solution may be to put the OEM cams back in. Contact us first.

Q) Do you give a warranty?

A) 3 months or 3000 mile warranty parts and labour is provided for conversions fitted in house. After this period has passed it carries through as 12 months or 12,000 mile parts only warranty from the fitted date. This excludes clutches.

Any further questions? Email: info@engine-dynamics.com