Supercar by Stealth

By expanding the 4C's engine from 1.75 to 2.0 litres, AlfaWorks has unleashed a 410hp, 600Nm monster. As we discover, it delivers supercar pace with Q-car looks

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A long straight at our private test track beckons invitingly. It would be the height of rudeness not to bury the throttle pedal into the floor and experience full beanage. After all, this is no ordinary Alfa Romeo 4C – despite its stock appearance – and behind me sits no ordinary engine. I've got the new AlfaWorks 2.0-litre stroked engine with 410hp at my disposal. OK, here we go: with just a little shimmy of the tail, I'm off. Yup, this is quick. Make that very quick indeed. But not supercar quick. Then I glance down at the speedometer and I have to recalibrate my senses. It's reading well into three figures. I take it all back: this is indeed supercar pace.

The phrase 'deceptively fast' could have been invented for this car. Maybe it's because regular supercars explode with a full symphony of sound and spectacle; in contrast the four-cylinder 4C deploys its pace with far more coolness. Maybe it's because regular supercars have become so damn heavy, and in contrast the lightweight 4C – which tips the scales at well under a ton, remember – just picks itself up and goes. Whatever the reason, you certainly don't get a sense from the driver's seat just how fast you're going.

This force-fed 4C is a ticket into the world of supercar performance by stealth, which suits its owner just fine: it's his everyday transport. Top man. So far, AlfaWorks has built two 2.0-litre engine conversions for 4Cs. While the other one is used exclusively as a track car, this is a 'stealth build' road car. It's a 2017 4C that's kept its regular white paint and resisted the temptation to have carbon goodies added. The only clues to the big changes under the skin are wider wheels and discreet '410' shields on the front wings. That's it.

Even when you open up the engine lid, it pretty much looks the same as any other 4C. Only a few small clues give it away: a different manifold, some new silicone hoses and a bespoke ECU bolted to the rear bulkhead.

The team behind this conversion is AlfaWorks, the Royston-based Alfa specialist run by Jamie Porter that has very much made the Alfa 4C its own. We've tested several AlfaWorks 4Cs with clever tweaks to the steering and suspension. We've also been impressed with the extra power that AlfaWorks has succeeded in extracting from the 1750 engine (up to 330hp).

This 2.0-litre conversion is on a totally different level, though, as the headline figures of 410hp and 600Nm attest. The 2.0 engine has been tested and proven in another AlfaWorks machine: the amazing Alfa Romeo MiTo racer that's been tearing up the circuits in recent Alfa Championship events. There's no greater test of a car than the heat of competition and the upgraded engine has

proven itself to be not only high-performing but also robust.

The engine has expanded from its original 1742cc to 1995cc. This increase is achieved not by boring the cylinders liners but by stroking the engine. New Omega CNC pistons and rings are fitted, while there's an all-new modified and balanced crank, different thrust bearings and Arrow con rods. The cylinder head is gas-flowed to increase flow rate as the original 4C engine was designed to create swirl in the combustion chamber to lower emissions rather than maximise flow.

The camshafts (by Colombo & Bariani) are hotter, too, but only mildly so (Stage 1), the reason being that this engine is really about getting air into the turbocharger. And that's the other big change: the fitment of a twin-scroll turbo made by Borg Warner. This is attached to a free-flowing tubular exhaust manifold which, since it sits so close to the bulkhead, requires some new shielding to alleviate heat soak. The boost pressure control valve is new, while there's silicone hosing from turbo to intercooler. The turbo oil return pipe is also modified, gaining extra heat protection, while a wastegate actuator is fitted on a specially machined mounting plate to enable fitment into the engine bay.

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One other arena of major development is the engine management system. This is performed by an SCS Delta Motorsport ECU that bolts unobtrusively into the back of the engine bay. Described as 'Stage 2', SCS has put in a massive amount of time and effort to get it just right, including integrating it with the car's other electronic systems via the computer network (CAN).

Two very different engine maps are dialled in depending on which driving mode you're in. You only get the full 410 horses and torque of 600Nm in Dynamic and Race modes. In Normal and All-Weather modes, power is restricted to 300hp. But I can tell you, even when you're in these lesser modes, the 4C remains a very feisty machine with the capacity to challenge the driver.

Luckily our test day is dry and sunny, albeit cold. That means we can happily play in Dynamic mode. Press the accelerator at low revs and you might initially wonder what all the fuss is about. There's not much power below 2500rpm but as soon as the twin-scroll turbo wakes up, all hell breaks loose. Put your foot down in the fun zone and acceleration is monumental. It just picks it up and pelts you at the horizon. AlfaWorks hasn't done 0-60 runs (this is a customer car, after all) but it has compared 70-100mph times and the difference is massive: the standard 4C does it in 6.8 seconds; the 410 takes just 3.8 seconds.

Since peak power is delivered at below 6000rpm, the upper rev limit has not really needed to be raised. What you really notice is the epic wall of torque available in the mid-range: an instant kick in the back, notably in the 3000-5000rpm range. It all feels so smooth, too, even at idle.

To fit in with the everyday, discreet nature of this car, it retains the factory-fitted 'Racing' exhaust system. The exhaust note is a bit like a modern Abarth 595's: raspy, charismatic and with a pleasing volume level, but it's certainly not over the top. For me personally, it could do with a little more oomph, a little extra drama, more of a sense of occasion. For the sheer performance you have on tap, the sound of a four-cylinder engine going through a standard exhaust is, for me, too subtle. Luckily there are upgrade options available, and the owner of AlfaWorks' other Alfa 4C 410 – the track-focused one – has gone in a very different direction. His car is fitted with a Sound Architect system, which incorporates an active electronic flap-valve system. This allows you to switch from sensible, muted and refined to the complete opposite – full-on monster volume – all controlled via Bluetooth using an app on your phone.

The original Alfa Romeo TCT automatic gearbox has also been left completely standard, as it's proven itself more than capable of handling extremely high outputs. One change that has been made is the clutch. Having tried but rejected a Kevlar clutch, AlfaWorks has opted for an organic clutch from LUK, boasting increased clamping pressure. Incidentally, the MiTo racer uses a manual gearbox taken from a Giulietta 1750. Would it be possible to do a manual conversion on the 4C? I think it's fair to say, judging by Jamie Porter's expression when I ask him just such a question, that we should watch this space...

So how about the twisty stuff? AlfaWorks has, of course, made a big name for itself in the field of suspension geometry for 4Cs. Small changes can make a big difference to stability under braking and sure-footedness through corners. Since the owner of this particular car loves the way the 4C behaves as standard – and let's acknowledge that some people do like that feeling of feistiness – the only suspension mod this car has is a set of eight 'Fast Road' spacers (you can also order 'Race' spacers with more aggressive camber and castor settings but these increase wear on the inside edge of

Wider wheels are the only external clue to the 410's modded nature. Sheer pace demands that the driver concentrates at all times

the tyres). The spacers do have a notable effect on stability and steering predictability; the car doesn't insist on darting about under braking or over less than billiard smooth tarmac.

This 4C's handling is massively enhanced by the bigger wheels and tyres. Don't those Titan 7 forged alloys look great in their matt gold finish? They're the same diameter as the original Alfa teledials but significantly wider than standard: 8.5x18 up front and 9.5x19 at the back. No spacers are needed for them to fill the wheelarches perfectly. The Michelin Pilot Sport Cup 2 tyres that they're wrapped in (225/40 front and 255/35 rear) are super-grippy on this 4C. At low speeds on cold tyres, the front end offers benign understeer. As your pace and tyre temperatures increase, turn-in sharpens up noticeably. But even with rubber this grippy, it's still possible to loosen the rear end very easily with all that torque on offer. If the regular 4C is a lairily snappy terrier, this 2.0 is a Rottweiler that's just itching to bite you. It definitely demands respect – and not a little circumspection.

As we've discovered in other AlfaWorks 4Cs we've driven, it's possible to make even greater changes to the handling, for instance by eliminating the rubber from the rear suspension and fitting adjustable coilspring/damper units. In just a couple of minutes, you can dial in a full-on track weapon spec, then just as easily change it back to B-road benign friendliness.

Another intriguing new development at AlfaWorks – although not fitted to this 4C – is electronic power steering. Part of us asks why on earth you'd want power assistance on a helm that's as light, delicate and full a feel as the 4C's. There are two significant benefits, says AlfaWorks: low-speed manoeuvring is easier and you can actually vary the power assistance available. One downside, though, is that you're forced to lose the rake adjustment on the steering wheel, as it's fixed in place. At north of £5000 for the job, it's likely to be a conversion for the few, not the many, but one 4C customer has already bitten the bullet.

This 4C is a little lighter than the standard 900kg because its forged alloy wheels weigh quite a bit less than Alfa's teledials. As a result, the brakes don't need much of an upgrade. Gripped by yellow callipers, uprated DS2500 brake pads on standard discs are all that's needed to bring it to a halt in sharp measure, even with so much extra performance.

So here's the big question: just how much will a 2.0-litre 4C 410 cost you? The full conversion certainly isn't cheap at £23,148 but that simply reflects the amount of work involved – it takes four to six weeks to complete at AlfaWorks. Considering you can buy a used 4C for as little as £30,000 these days – and surely it's now reached the bottom of its depreciation curve – that's a significant premium.

But then the AlfaWorks 2.0-litre 4C is in a completely different performance league to the regular car; indeed, pretty much to every other car on the road. Its perfectly tailored 410hp of power means that very few cars can touch it. And I love the fact that such astonishing performance exists in such an innocuous-looking, stealth-spec, everyday-driving 4C. Deceptively quick? As I said, the phrase could have been invented for this car.

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