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DODGE CHARGER R/T



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CARTER VERONE
THE VILLAIN IN WHITE

He's smartly dressed, refined and attractive. There's nothing to suggest that behind his distinguished appearance there lurks a cruel and ambitious man. But Carter Verone, one of the most outstanding villains in the world of *Fast & Furious*, is like that.

Whereas in *The Fast and the Furious*, the heroes of the franchise had to deal with Johnny Tran, the leader of a gang that was trying to expand its influence in Los Angeles, in *2 Fast 2 Furious* the antagonists are on a different level. No longer is it a simple motorcycle gang with small arms but an authentic criminal organization led by a seriously dangerous man: Carter Verone.

BRIAN'S PENANCE

On the run from the law after allowing Dominic Toretto to escape at the end of the first movie in the franchise, Brian O'Conner has now moved to the city of Miami, where he takes part in street races whenever he gets the opportunity. But his former colleague in the FBI, agent Bilkins, has tracked him down and wants him to pay for what he did in a very special way. Bilkins is in Miami because he is helping customs agent Markham to tighten the net around Verone. And both have agreed to use Brian as an undercover driver working for the gangster in order to gather enough proof to send him to jail.

Once Brian has been taken to the police station, agent Markham brings him up to date with the target: "Carter Verone was born in Argentina, but he's lived most of his life in Miami. Now he owns the biggest import / export business in the state. Unfortunately, the cartels have been successful getting drugs into Miami. But they've had a hard time getting the cash out. We've been surveilling him for a year, but we've never been able to put him and the money together."

Brian's mission will be to try to infiltrate Verone's organisation as a driver. For this he will have the valuable assistance of Monica Fuentes, an undercover agent who has managed to become the criminal's right-hand woman.

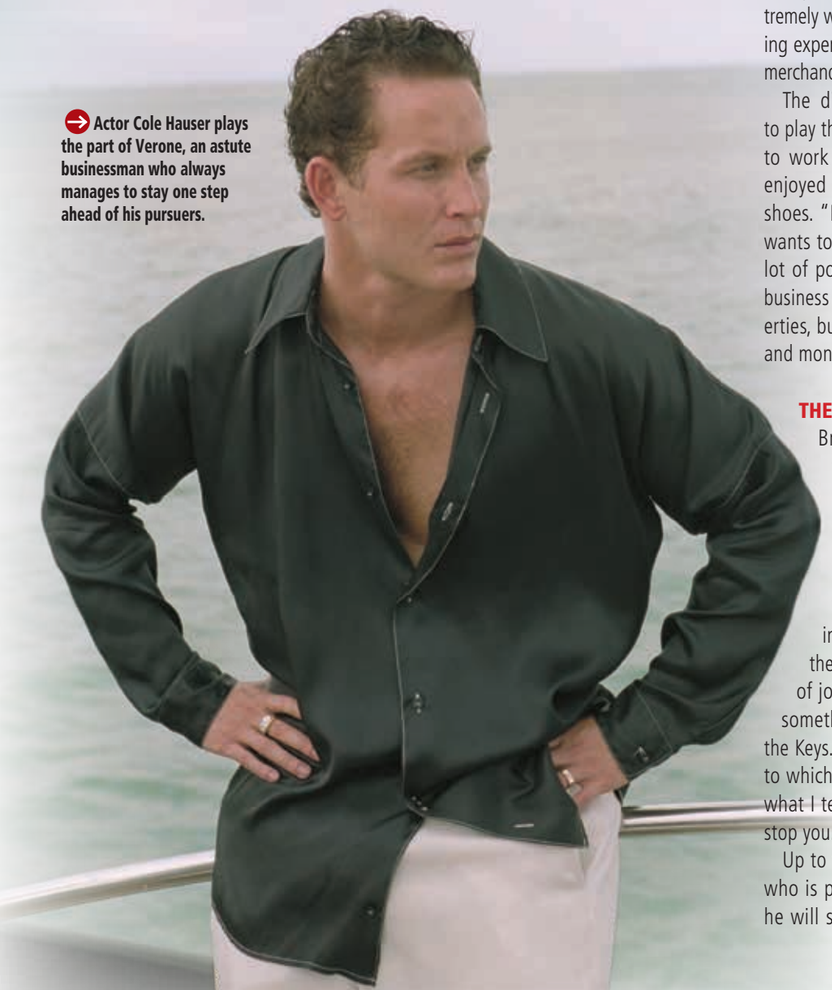
A VERY POWERFUL MAN

The first time we see Carter Verone on screen is when he is getting ready to choose some new drivers. Always dressed

Undercover agent Monica Fuentes lives in the menacing shadow of Argentine businessman Carter Verone.

COLE HAUSER

In *2 Fast 2 Furious* Carter Verone is a terrifying presence. And it is all down to the actor Cole Hauser, in one the best roles of his career. Born in Santa Barbara, California, in 1975, the movies run in Cole's family. He is the great-grandson of the legendary Harry M. Warner, one of the founders of Warner Bros. Most of his family has gone into the film industry, as script-writers and producers, and he followed in their footsteps, although as an actor. In the early 1990s, he began playing small parts in Hollywood films. Through one of them, in *Higher Learning* (1995), he met the director John Singleton, who later remembered him and cast him in the part of Verone. As well as appearing in several TV series, Cole has now acted in almost 50 films. Some of his best roles were in movies like *Good Will Hunting* (1997), which he made with his friends Matt Damon and Ben Affleck; *Pitch Black* (2000), alongside Vin Diesel; *Olympus Has Fallen* (2013), and *Transcendence* (2014).



Actor Cole Hauser plays the part of Verone, an astute businessman who always manages to stay one step ahead of his pursuers.

in impeccable suits, he gives the impression of being extremely well mannered. He needs to have drivers with racing experience in his organization to help him move the merchandise and the money with which he traffics.

The director John Singleton wanted Cole Hauser to play this part, an actor he had already had the chance to work with in the movie *Higher Learning*. Hauser enjoyed stepping into the businessman's expensive shoes. "He's charming, the kind of person everybody wants to meet," says the actor. "Besides that he has a lot of power in Miami, as he's involved in legitimate business activities, like clubs and other goods and properties, but also in far shadier dealings related to drugs and money laundering."

THE TWO FACES OF VERONE

Brian and Roman manage to pass the test that the businessman sets the drivers who are hoping to join his team. Satisfied, Verone invites them to eat in the gardens of his residence, and shows them that the only things in the package were a cigar and a cigar cutter. "Do you really think that I would let somebody impound my car? The boatyard's mine," he tells them arrogantly. When Roman asks him what kind of job they have to do, Verone tells them: "I have something I want you to take from North Beach to the Keys." Brian asks about the content of the delivery, to which the businessman replies: "Just put in the car what I tell you to, drive it to me and don't let anyone stop you."

Up to that moment, Verone has behaved like a man who is polite, calm and has refined habits. However, he will show them another very different side to his personality that night in his club, La Perla. There, Roman confesses to him that he has a problem with authority. Carter agrees and says it's the same for him, especially with the police. To demonstrate this, he invites them into a private room where he has police detective Whitworth brought, who Verone says is one of the best in Miami. From what he says, Whitworth was on his payroll for a long time, until he decided to stop working for him. To teach him a lesson, the criminal orders his henchmen to lay the police officer down on a table and, in front of everybody, he cruelly tortures him with the aid of a rat, a bucket and a blowtorch. It turns Brian's stomach, but he knows that if he does anything he will risk the entire operation, so he resigns himself to remaining impassive until Whitworth agrees to start working for Verone again.



Cole Hauser and Eva Mendes in a scene from *2 Fast 2 Furious*. Verone is an unpredictable man and a kind gesture can easily be followed up by one of his habitual demonstrations of cruelty.

IN HIS SIGHTS

After this exhibition of his cruel personality, Carter Verone gives Brian and Roman a delivery job. But they will not go alone. His henchmen, Roberto and Enrique, will accompany them on the journey. The matter gets more and more complicated, as Monica warns Brian that it is a trap and that Verone plans to kill them as soon as they have finished the job.

Far from regarding the situation as a threat, Brian and Roman take advantage of the delivery to fool everyone with the help of Tej Parker and his friends. The objective: to save their lives and steal the gangster's money. "Come on, man. Guns, murderers and crooked cops? I was made for this, brother!" Roman exclaims, eager to have what will be one of the biggest adventures of his life. The operation gets underway. The customs agents go to the airstrip convinced that they will be able to arrest Verone there. The police operation fails however, because Carter doesn't show up. The handover point has been changed. Once again, Verone shows that he is really dangerous because he is extraordinarily intelligent and hard to pin down.

"There are no limits here," says the actor Cole Hauser about his character. "If you play a hero, you have to act in a certain way. But playing a villain depends only on your imagination. You can do what you like. And in this sense working with John Singleton is a gift. He trusts you implicitly and allows you to take it as far as you want."

THE FLYING CAR

The customs agents' failed operation has only served to blow Monica Fuentes's cover. Pointing at her with a rifle, Verone orders her to go on board his private yacht so they can take a little trip, while he tells his men to get rid of Brian. For a moment, it seems that all is lost and that the dangerous criminal is going to get away with it.

Meanwhile, Roman and Brian turn on the gangster's men who were planning to kill them. In a desperate race, they accelerate and with the car at top speed they make a spectacular jump to smash the car into Verone's yacht. After a shoot-out, Monica manages to put an end to Verone's criminal activities.



DODGE ASPEN

The Dodge Aspen was the brand's last rear-wheel-drive compact model. It was on sale from 1976 to 1980, when it was replaced by the new generation of front-wheel-drive "K-car" models. It was sold in three kinds of bodywork and mounted six- and eight-cylinder gasoline engines.

A 1979 Dodge Aspen sedan. In the last two years of its life, it went from being considered a compact to competing in the middle of the market. The Dodge Aspen was one of the brand's last cars with a classic structure.

The replacement of the veteran Dodge Dart, the Dodge Aspen shared engines with it. It had a new look, however, and above all it had more modern front suspension with crosswise torsion bars (instead of lengthwise), which, together with the silent-bloc rubber bushes of the rigid rear axle leaf spring suspension, improved comfort.



The Dodge Aspen R/T version, reserved for the coupe, had a look that recalled the "muscle cars" of the late 1960s, but its most powerful engine, the optional 5.9 litre V8, only gave 172 HP.

This model and the Plymouth Volaré, almost its identical twin, were sold in three kinds of bodywork: a two-door coupe with frameless windows, a four-door sedan, and a family station wagon. The coupe was shorter (5.05 metres, as opposed to the 5.10 of the other two) and its wheelbase was also shorter (2.76 metres against 2.86). All of them came in three finishes: base, Custom and SE.

The standard engine was a 3.7 litre straight six, but optionally the brand offered two V8s for the coupe. The first one, 5.2 litre, was standard in the special R/T version, while the second, 5.9 litre, was optional for that same version. Gearshift was three- or four-speed manual and three-speed automatic. The car sold well in the first two years and in 1980 its front was redesigned, this time with rectangular instead of round headlamps.

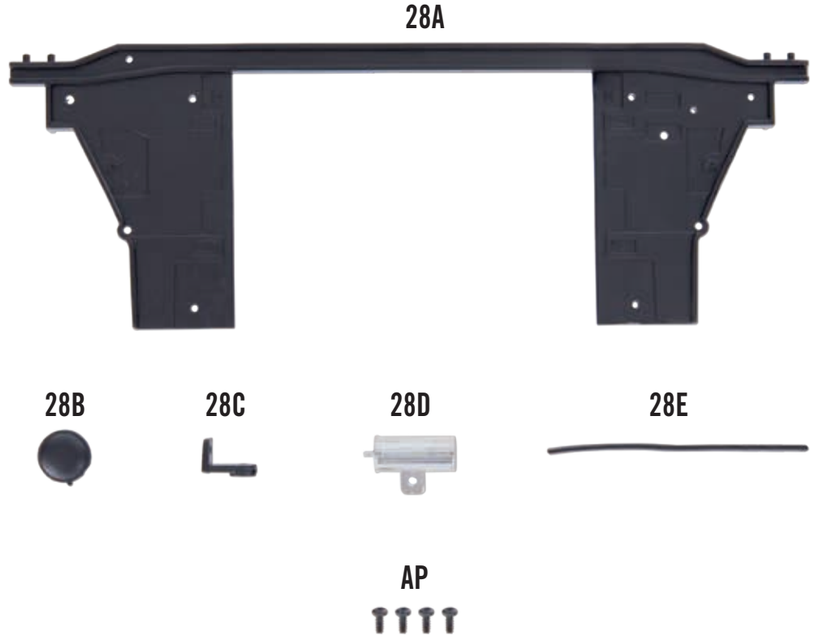


ASSEMBLING THE ENGINE HOUSING (III)

In this assembly session you will attach the horn and the expansion tank to the front panel of the engine housing. Follow our instructions and the illustrations that accompany them carefully.

Editor's note: The parts shown here may differ slightly from the parts supplied with this issue. This does not affect the quality or the assembly instructions in any way.

PIECES FOR THIS STAGE



28A Front panel of the engine housing
28B Horn
28C Horn mount bracket
28D Expansion tank
28E Expansion tube
AP Screws 1,7 × 4 mm, (x 4)*

* Some of the parts are spares.

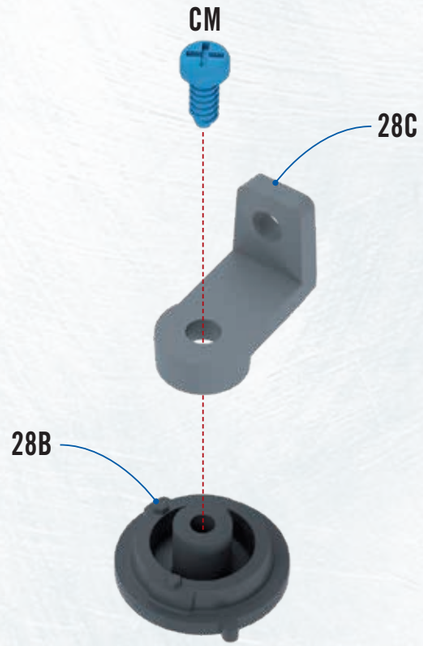
ASSEMBLY AREA

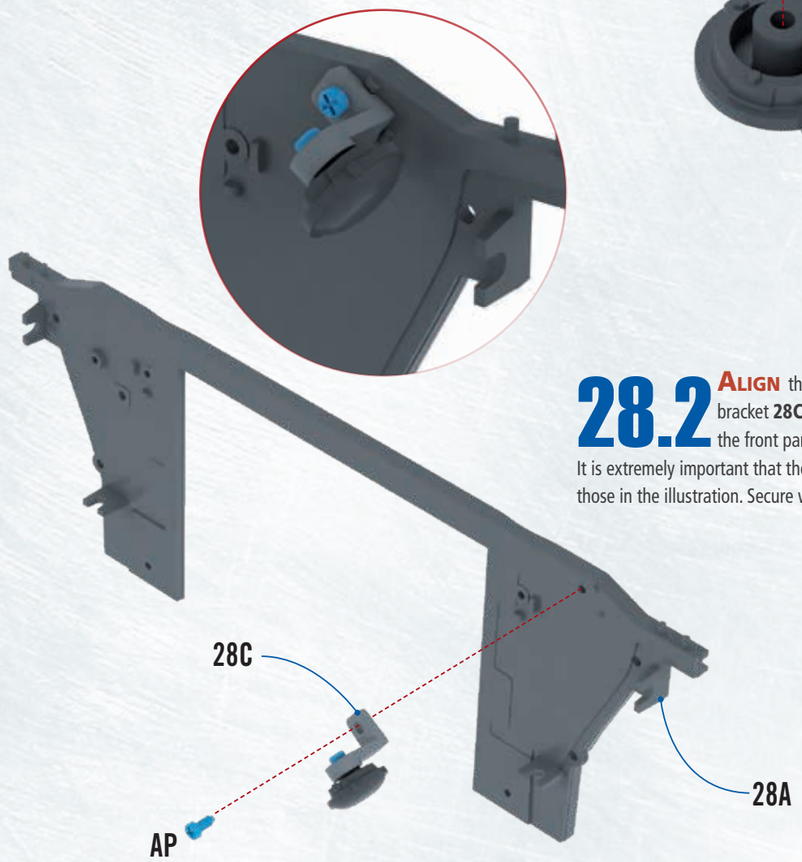


ENGINE HOUSING

Assembling the engine housing (III)

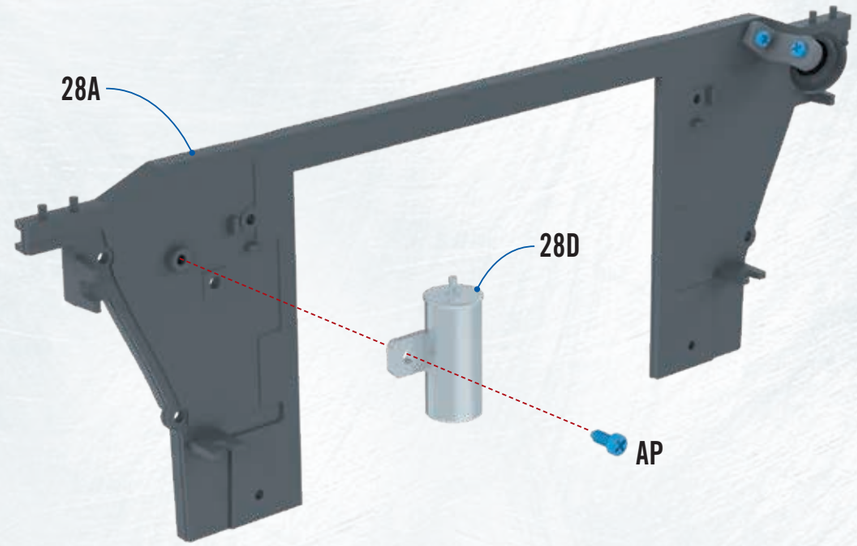
28.1 **JOIN** the horn **28B** to its mount bracket **28C** using an **AP** screw. Ensure the pieces face the same way as those in the illustration. ▶

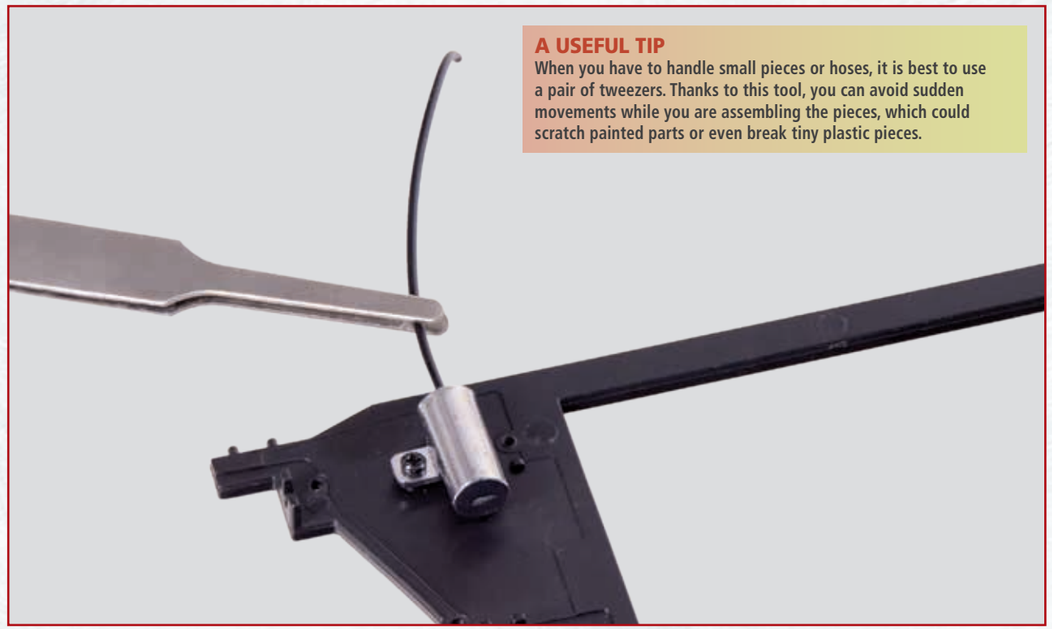




28.2 **ALIGN** the free hole in the horn mount bracket **28C** with the corresponding hole in the front panel of the engine housing **28A**. It is extremely important that the pieces face the same way as those in the illustration. Secure with an **AP** screw. ◀

28.3 **ATTACH** the expansion tank **28D** to the left side of the front panel of the engine housing **28A**. This piece is also secured with an **AP** screw. ▼

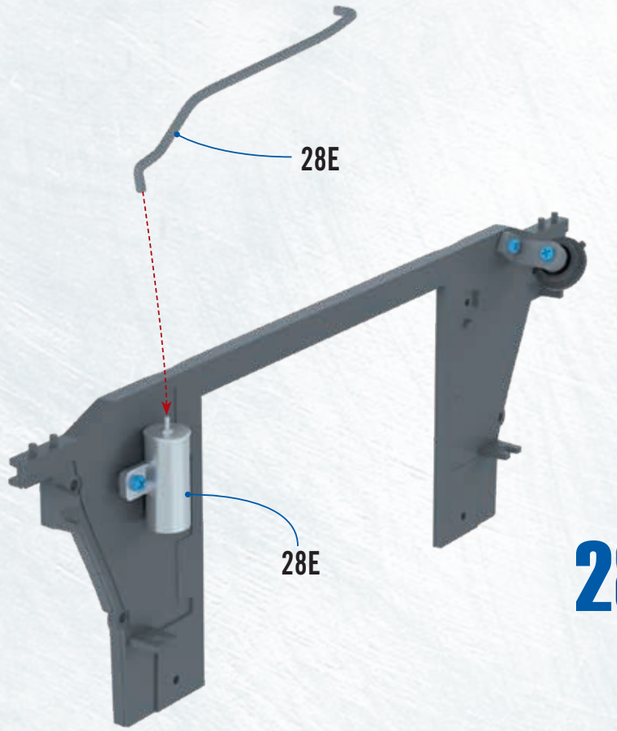




A USEFUL TIP

When you have to handle small pieces or hoses, it is best to use a pair of tweezers. Thanks to this tool, you can avoid sudden movements while you are assembling the pieces, which could scratch painted parts or even break tiny plastic pieces.

Assembling the engine housing (III)



HOW TO STORE THE PIECES
It is advisable to store the unused pieces or partially assembled parts of your model in a box, kept in a safe place, where they cannot be damaged. You must also ensure that any wires or hoses maintain their correct position. It can also be useful to attach labels made with paper tape to the pieces, indicating their codes.

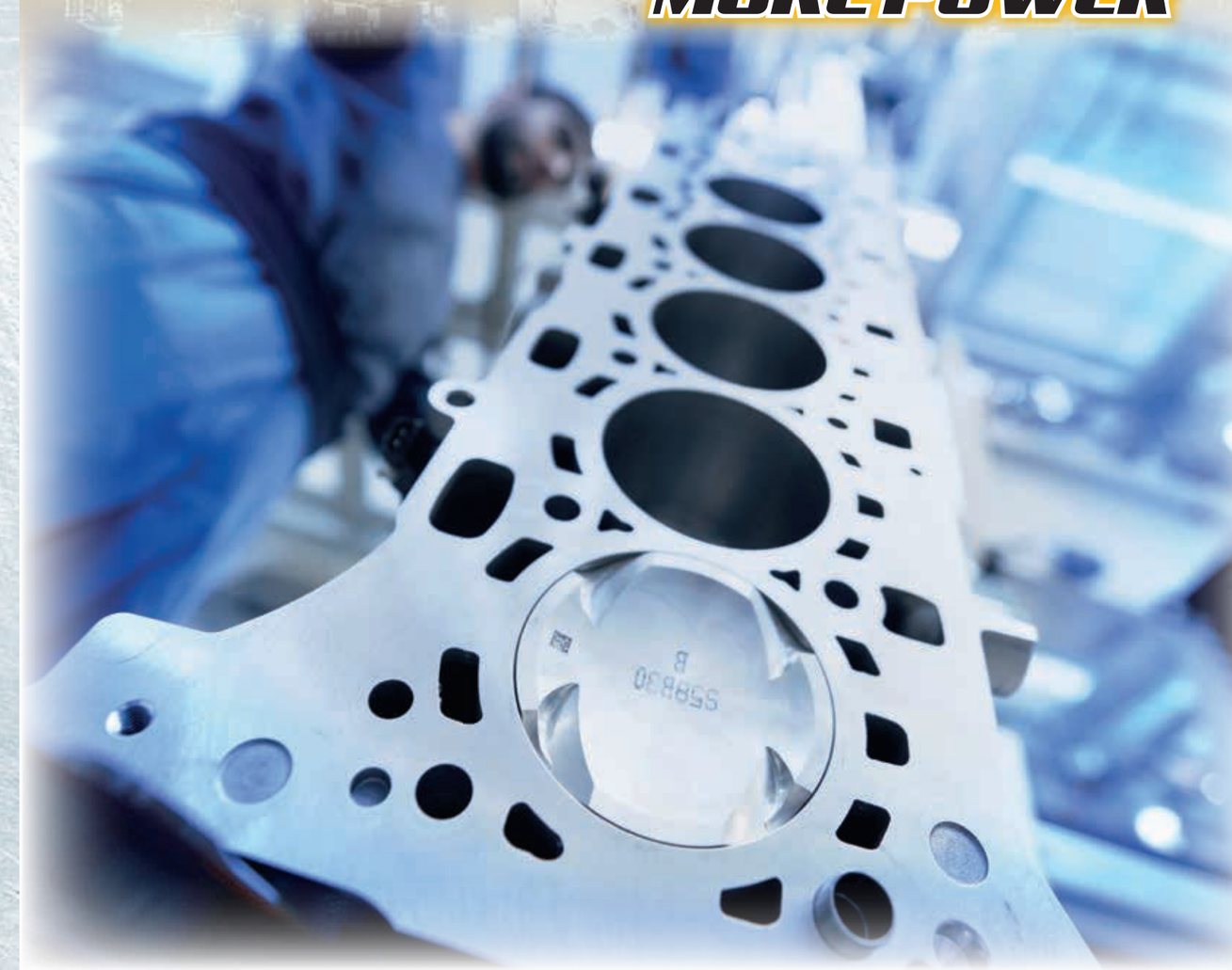
28.4 **SLIDE** one end of the hose **28E** onto the corresponding post on the expansion tank **28D**. ◄

STAGE 28 FINAL RESULT

During this simple assembly session you attached the horn, complete with its mount bracket, and the expansion tank to the front panel of the engine housing.



MORE COMPRESSION MORE POWER



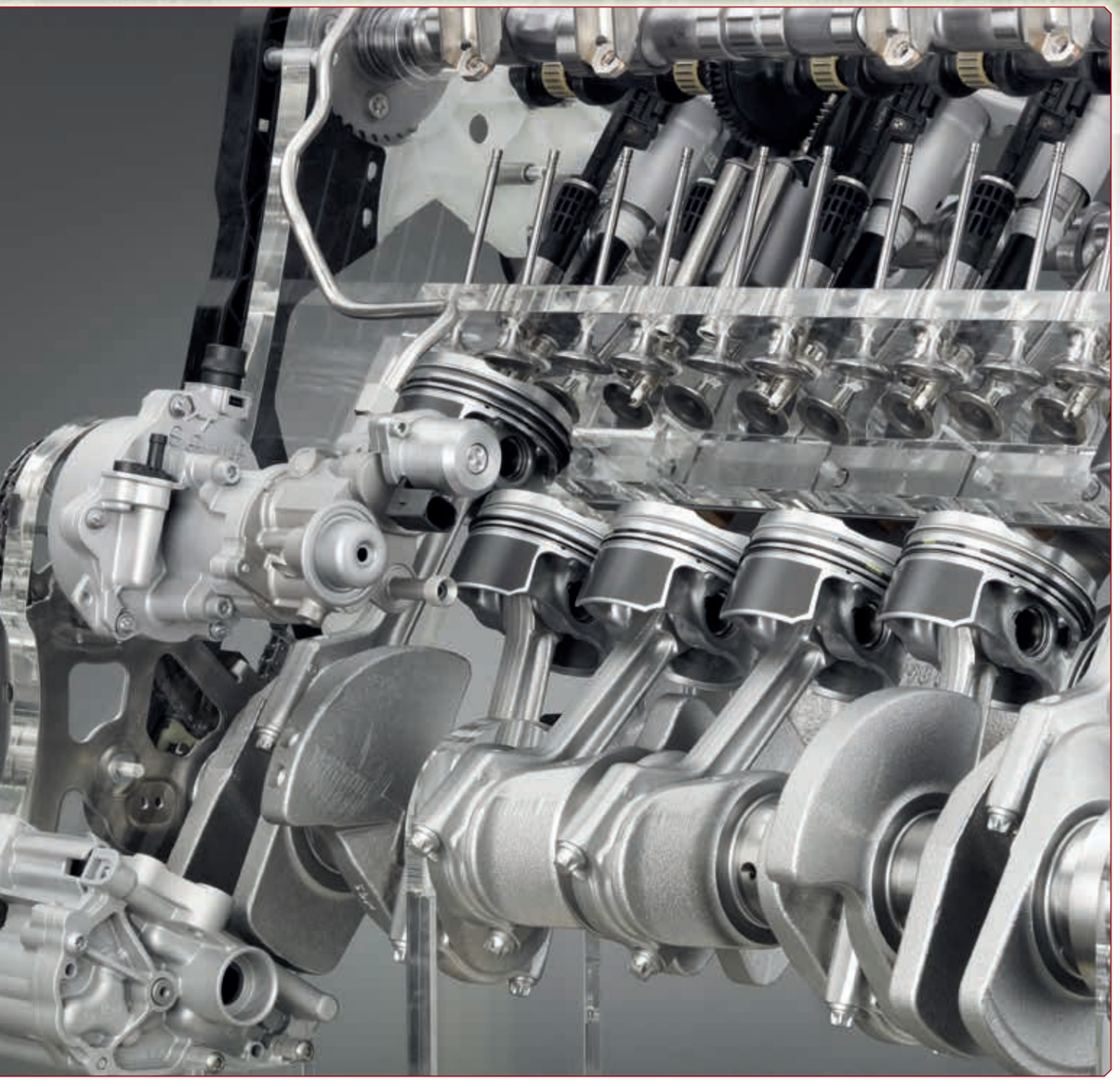
One of the modifications most used by tuners to increase the horsepower of an engine is perhaps also one of the simplest, namely, increasing the compression ratio. But we must be careful not to overdo it!

This is perhaps not the easiest way to do it, but almost. A fairly quick way to increase the performance of an engine is to increase the compression ratio. The operation is not particularly complicated, although obviously, you have to remove the cylinder head. In many cases, that can mean taking out all of the engine compartment components. The total cost is usually linked to labour hours (removal, checks and reassembly) involved in the procedure.

The rectifying workshop costs must be added. Rectifying involves skimming or flattening the head or the surface of the cylinder block. The gaskets must be replaced, but no

The modification of the head or cylinder block allows you to vary the compression ratio at a relatively low cost. It is essential to check that the machine shop is qualified and certified for the task.

More compression more power



What is "squish"? It is an effect which creates turbulence of the air-fuel mixture as the piston approaches top dead centre (TDC). In an engine designed to use the squish effect, the piston crown at TDC typically stops less than 1mm from the cylinder head.

other new components are required unless you want to install special pistons.

MORE POWER

As the compression ratio increases, the engine's thermal efficiency increases because the energy developed during the combustion phase is exploited better. This is why, even if the engine speed remains unchanged, performance increases because the torque and power curve values reached at each speed are optimised. To simplify, it is as if their range "moved upwards" while remaining parallel to each other.

BE CAREFUL NOT TO EXAGGERATE!

We cannot increase the compression ratio indefinitely, because the temperature and pressure at the end of the compression stroke come into play. In fact, there is a limit, depending on the engine, which cannot be exceeded if we do not want to cause damage.

If the fuel/air detonation is sufficiently powerful, it can cause severe mechanical damage, such as a perforating the piston crown. Of course, we must be very careful not to overdo it, relying on expert tuners who can give expert guidance on the subject.

In general, the limit decreases as the bore of the cylinder increases. Just for comparison, assume a sports car has a compression ratio of 10:1. Its octane number indicates the "resistance" to the detonation of fuel. As a result, an engine that detonates with "green" fuel can run perfectly when fuelled with higher octane gasoline such as special 100-octane. However, with the high-octane fuel, the compression ratio would be too high.

We can overcome this problem by using an "anti-knock" additive, but we cannot go too far. In some cases, we could also delay the ignition. Still, in reality, in addition to being impractical (we would have to reprogram the control unit), it also worsens performance. So it is best better to avoid this option.

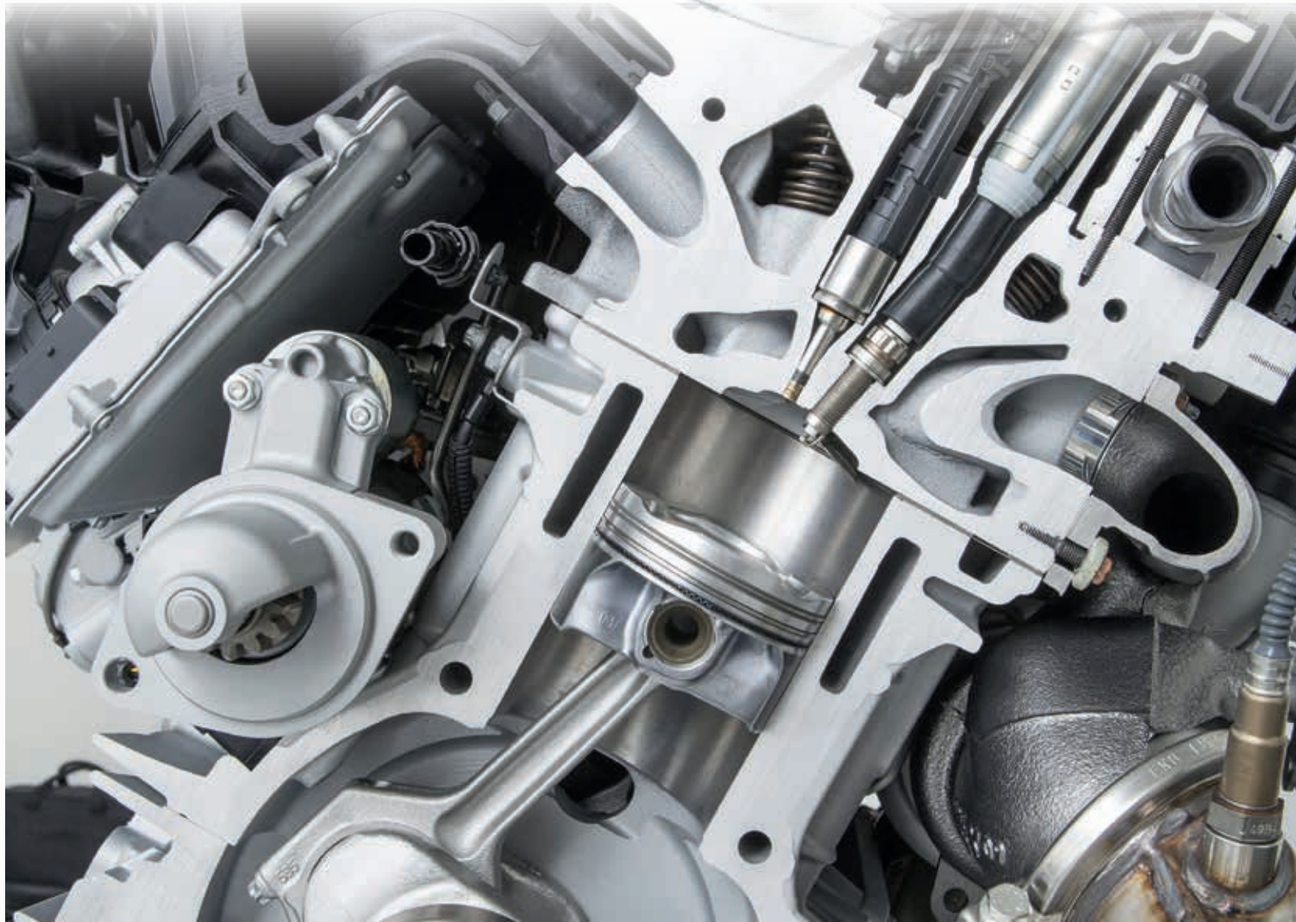
On the other hand, some of the latest-generation cars are equipped with a pre-ignition sensor that warns the control unit when you are about to reach a safe limit. In this case, it is the control unit itself that slightly delays the ignition in order to avoid problems (subsequently it automatically restores the timing to the original settings). These sensors, which can be installed in any engine, are undoubtedly a valuable aid for tuners.

With the latest developments in technology, the compression ratios of the sportiest cars are already high. But manufacturers always provide a certain safety margin and therefore it is possible to go even further. Let's not forget that the ratio indicated by the manufacturers is nominal. Therefore it could differ, sometimes even significantly, from cylinder to cylinder due to variations in machining tolerances.

LOWER THE HEAD

We understand that to improve performance, it is better to adopt the highest compression ratio that

The geometry of the combustion chamber is also determined by the shape of the piston crown. A compact chamber reduces the time needed for combustion.



How is it calculated?

The compression ratio is an absolutely fundamental engine parameter. It consists of the ratio between the maximum volume (piston at BDC) and the minimum volume (piston at TDC) available to the gases inside the cylinder. In simple terms, it is the ratio between the capacity of the combustion chamber plus the volume of the cylinder, and the capacity of the combustion chamber alone. If, for example, in a 2000cc four-cylinder engine (the unit displacement is, therefore, 500cc per cylinder) the combustion chamber has a capacity of 70cc, then the compression ratio is 500+70 (=570cc) divided by 70cc or 8.14 to 1.

the engine can withstand without pre-ignition occurring. If the displacement is not changed, the way to go is simple: we have to reduce the volume of the combustion chambers.

In this case, we have three possible choices: remove some material from the bottom of the cylinder head, remove it from the upper surface of the cylinder block, or mount pistons with a more "rounded" crown. With the first, after having disassembled the head and all its components, we need to take it to a rectifying workshop to have material removed by grinding it with a special machine tool (a milling machine or rectifying machine for heads). In this way, the height of the combustion chambers is reduced, and therefore their capacity is reduced. Naturally, attention must be paid to the "squish" areas, which after processing, must be restored as needed.

IF WE DON'T WANT TO TOUCH THE HEAD

Alternatively, if we don't want to touch the head, we can remove material from the cylinder block. However, we need to remove all internal components to expose the block itself.

How is the variation in the capacity of the combustion chambers calculated as a function of the thickness of the material removed, i.e. the decrease in height? It is not a complicated calculation: just multiply half the bore by itself and then by 3.1416. The result obtained must be divided by four (in the case of a 4-cylinder engine) and multiplied by the height of the material removed. In this way, we obtain the volume variation of the combustion chamber (which must be converted from cubic millimetres to cubic centimetres).

For example, suppose a cylinder block of a 2.0L engine with a bore equal to 90mm and a 65cc combustion chamber is lowered by 2mm (0.002cm). In that case, the reduction in the capacity of each chamber is 12.72cc (45x45x3.1416 x 0.002 divided by 4).

By definition, the compression ratio is the total swept volume of the cylinder with the piston at bottom dead centre (BDC), divided by the total compressed volume with the piston at top dead centre (TDC). You can often get this data from the manufacturer's specifications sheet, but remember that if the pistons are changed in any way, it distorts your calculations.

On paper, it looks straightforward to increase the compression ratio. But remember that we must not overlook the consequences. Remember that the pistons at TDC are located higher than they were initially. We must, therefore be careful to maintain an adequate distance between the head and the pistons. We can also carefully remove material from the top of the pistons themselves without reducing their thickness too much.

THERE IS AN ALTERNATIVE

If we do not want to go to the trouble of modifying the cylinder head or block, another option is to look for specific kits for our engine with domed, high compression pistons. These can be installed in place of the originals without any difficulty and without needing significant modifications or mechanical processing.

By using an aftermarket kit, we know from the start what the increase in the compression ratio is. Assuming the camshaft has not been replaced, the valves should be opening to a standard height, and so the squish height should also be right.

We could also mount pistons that are suitable for our engine even if they are not specific to our make and model.

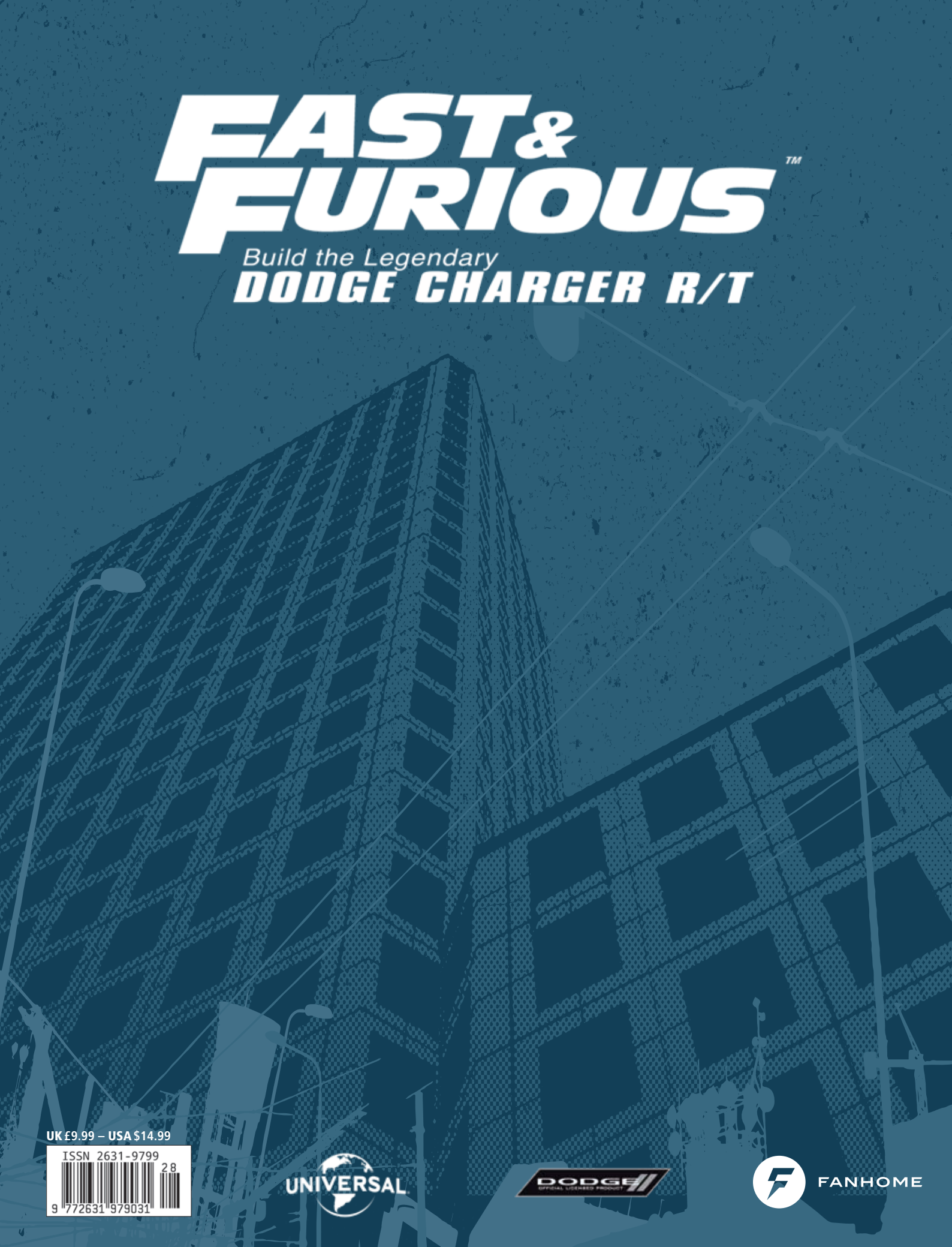
They must conform to the same standards as the originals; otherwise, they cannot be used, as the thickness of the crown may be insufficient for the stresses involved. Of course, the new pistons must all have the same weight, which, at least ideally, should be the same as the original components.



In many engines the combustion chamber is formed by the piston crown itself, which is designed with an extensive central depression that forms the chamber.

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