FAST & FURIOUS™

104

Build the Legendary

DODGE CHARGER R/T



UNIVERSAL

FANHOME

DODGE

FAST & FURIOUS

Build the Legendary
DODGE CHARGER R/T



United Kingdom
Published by De Agostini UK Ltd c/o Royds Withy King, 69 Carter Lane, London EC4V 5EQ

USA
Published by De Agostini Publishing USA, Inc. c/o Becker, Glynn, Muffly, Chassin & Hosinski LLP, 299 Park Avenue, New York, New York 10171

ISBN: 978-1-4439-5247-7
FFN104: 22 08 31

ISSN 2631-9799 (Print)
ISSN 2732-4583 (Online)

Picture credits: NBCUniversal Archive; FCA Archives; Shutterstock

Fast & Furious Franchise © 2022 Universal City Studios LLC.
All Rights Reserved.

Dodge, HEMI and related logos, vehicle model names and trade dress are trademarks of FCA US LLC and used under license by Premium and Collectibles Trading Co. Ltd. ©2022 FCA US LLC.

Printed in Poland

CUSTOMER SERVICES
United Kingdom
Email support@uk.fanhome.com or ask your newsagent to reserve future issues for you to collect.

USA
Email support@usa.fanhome.com

The price of this issue includes the magazine and the attached pieces for model assembly.

TO OUR READERS
The publisher reserves the right to modify any components as required during the course of the collection. Not suitable for children under the age of 14. This product is not a toy and is not designed or intended for use in play. The collection is complete in 110 parts. Items may vary from those shown.

WARNING
Any reproduction, even partial, of the contents of the magazine is prohibited without permission from the Publisher. the model and the magazine that accompanies it are strictly for private use, and within the family, in accordance with Article L122 - 5 10 of the Code of Intellectual Property. Any reproduction other than that provided for in Article L122 - 5 20 of the Intellectual Property Code is prohibited. The magazine and/or elements of the collection may not be distributed, loaned, resold, rented or exploited for commercial purposes. All rights reserved.

The driving sequences in the Fast & Furious motion pictures were filmed with professional stunt drivers, under carefully-controlled conditions, for entertainment purposes only. No attempt should be made to duplicate any of the racing activities or sequences depicted therein. Universal neither condones nor endorses the use of this or any related product in any manner whatsoever other than in strict accordance with applicable federal, state and local laws and speed limits.



IN SEARCH OF LOCATIONS

Location scouts perform a silent but essential task in a franchise like *Fast & Furious*. Thanks to them, audiences have been able to enjoy our heroes' adventures in some of the most beautiful parts of the world.

The last thing that many people might think is that the cinema needs explorers. But it does, and they do a very important job, above all in a franchise like *Fast & Furious*, where the main characters are always on the move. The people whose job it is to explore different places in the world to look for the ideal settings in which to shoot a film are called location scouts.

For *The Fast and the Furious* it was only necessary to find attractive sites in the Los Angeles area, and the same was true for *2 Fast 2 Furious*, although the action was set in Miami. The work of the scouts began to get even more complicated from the third movie onwards, *The Fast and the Furious: Tokyo Drift*, the franchise's first experience in another country.

GOING INTERNATIONAL

Fast and Furious signaled the move towards a greater broadening of horizons, which would become definitive in the following movies, when the action would take place in places as diverse as Río de Janeiro, London and Abu Dhabi.

Although the story played out in Brazil, for *Fast & Furious 5* (2011) some Puerto Rican locations were used, like the well-known Teodoro Moscoso bridge that connects San Juan with Isla Verde.

ERIC HOOGE

Born in Newark, Ohio, some years ago Eric showed that he had a special eye for gauging if a place in a city might be cinematographic or not. He started out in this singular profession as a location scout for the romantic comedy *Sol Goode* (2003) and soon afterwards joined the team of scouts of directors Bobby and Peter Farrelly, searching for exterior locations suitable for their movie *Stuck on You* (2003). Continuing in the comedy genre, he also worked on the filming of *Envy* (2004), *Dodgeball: A True Underdog Story* (2004), and *Miss Congeniality 2: Armed and Fabulous* (2005). Still as a locations assistant, he took on greater challenges with action movies of the calibre of *XXX: State of the Union* (2005) and *Superman Returns* (2006). Hooge took a break after that and tried his hand in TV, finding exteriors for the series *Californication*, *Entourage* and *Big Love*, but he soon returned to the excitement of big movie productions. He joined the *Fast & Furious* family, now as locations supervisor, finding the striking exteriors that were filmed for the seventh and eighth movies in the series, and which would take him from Abu Dhabi and Azerbaijan to the frozen wastes of Iceland.



Although most of the movie was shot in Los Angeles, for *The Fast and the Furious: Tokyo Drift* (2006) a small team went to the Japanese capital to film outside locations.

The biggest international leap in the franchise possibly came with *Fast and Furious 6*. Much of the story was set in London, for example the unforgettable chase featuring the Flip Cars. The difficulties with closing off main streets in the city centre in order to film the sequence forced the movie's location scouts to put their thinking caps on. It was they who suggested the possibility of filming part of the chase in Glasgow. With the help of the special effects department, which used mapping tools and LIDAR measurement techniques in the filming locations, they successfully managed to present the exteriors in Glasgow and a tunnel in Liverpool as the capital of the United Kingdom.

For *Fast and Furious 6*, architect and location scout Yanira de Armas-Tosco worked to find the most incredible places in the Canary Islands, where other emblematic scenes in the film, like the tank chase, would be shot.

"Tenerife was chosen by the film's makers due to the variety of landscapes it offered," Yanira recalls. "Here we have South American and Spanish colonial architecture, as well as haciendas, banana plantations and blue skies. For the movie, the producer and the local government reached an agreement to close 15 kilometers of a real highway and film an action scene for seven weeks; there are not many countries that can offer a movie that."

THE BIG CHALLENGES

Generally speaking, the production team has location supervisors who in turn hire local scouts wherever the action is going to be set, as they are usually the people who know the area best. For example, in *Fast Five*, Luis R. Estrella-Rivera acted as a scout in Puerto Rico, while Claudio Sousa did the same in Río de Janeiro.

Although travelling around the world in search of attractive places in which to make a movie may strike you as a dream job, the experts in discovering locations assure us that their work is much harder than it seems. The difficulties they have to face sometimes seem impossible to overcome. This was the case, for example, when the idea was floated of beginning the action in *The Fate of the Furious* in Cuba. Locations supervisor Eric Hooge remembers it as an extraordinary adventure that he had together with producer Michael Fottrell. Apart from applying for permits, attending meetings and having to perform an unending stream of diplomatic negotiations, when they finally obtained the necessary permits from the Cuban authorities, the moment came to go round Havana looking for locations. As no airline flies there from the United States, Hooge took a charter flight from Florida with the film's director of photography Bill Brzeski. After that they began walking round the streets of Havana.



The best location for a scene does not always mean the most beautiful background. Sometimes the rougher areas of a town can play their part, too.

The team had the inestimable help of the local locations assistant Paola Larramendi, who found some excellent places for them in the city that ended up as the main settings for the film's prologue.

BEYOND THE NICE SCENERY

But the locations in a movie are not always chosen for aesthetic reasons. For example, the fact that the crew of *The Fate of the Furious* ended up filming the awesome pursuit by the submarine in Iceland was due to reasons that had more to do with security than the beauty of the surroundings. According to the movie's screenplay this pursuit takes place somewhere in the icy Barents Sea.

"First we thought of shooting in Alaska and northern Canada," Hooge explains, "and then in places in the southern hemisphere, like Argentina. But to have 20 or so vehicles driving over an icy surface, the ice has to have a specific thickness."

After consulting a number of experts, they were advised that due to El Niño, weather conditions in 2016 would make it virtually impossible to find suitable frozen lakes in North America.

"We monitored the meteorological models to get a long-term idea of ice thicknesses all over the world and we discovered that northern Iceland was the best option."

The franchise's wanderlust continued in *Fast & Furious 9*, in which new countries are visited. In this case, one of the latest destinations to be incorporated was in the Caucasus: Georgia, and specifically its capital, Tbilisi, whose Rustaveli Avenue was used for one of the sequences in the movie.



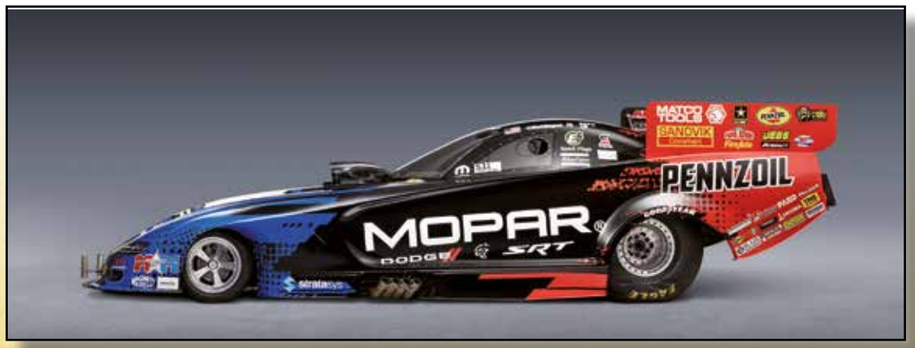
DODGE CHARGER FUNNY CAR

Although its full name is the Dodge Charger SRT Hellcat, any similarity between this vehicle, designed for drag racing, and the standard model of the same name is purely coincidental. The only thing they share, apart from the name, is their appearance at the front, where the Funny Car has the same grille and headlights as the road car.

Unlike Top Fuel cars, those in the Funny Car category have carbon fibre bodywork that recalls that of a saloon car, in this case a Dodge Charger Hellcat.

The Dodge Charger SRT Hellcat Funny Car, presented in the summer of 2019, was destined for drag racing, acceleration races that are very popular in the USA. Built to compete in the NHRA Dodge Mile-High series sponsored by the brand, its bodywork reproduces the front end and the logos of the Dodge Charger SRT Hellcat, a high-performance saloon with a 707hp engine. This figure, impressive for a production model, is tiny if we compare it to the 11,000hp (not a mistake) of this racing monster that takes part in the category of acceleration over a quarter-mile. It is driven by Matt Hagan, a specialist in this type of race and two-time champion in the category.

Hidden beneath the fiber bodywork recalling that of the Dodge Charger Hellcat is a vehicle in the Funny Car category (the second in drag racing, behind Top Fuel) with an 8.2-litre, supercharged, fuel injected engine whose power is transmitted directly to the rear axle, without a gearbox, through a multi disk clutch. The top speed of these vehicles exceeds 500km/h and they cover a quarter-mile (about 400 meters) in 3.8 seconds.



A Funny Car's wheelbase is shorter than that of a Top Fuel car, and the spoiler is set lower down.



INSTALLING THE REAR WHEEL ARCHES

In this assembly session you will install the rear wheel arches on your model. Please follow our instructions and the accompanying illustrations 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

104A



104B



FM

104A Rear left wheel arch

104B Rear right wheel arch

FM Screws 2 × 5mm (× 5)*

* Some of the parts are spares.

ASSEMBLY AREA



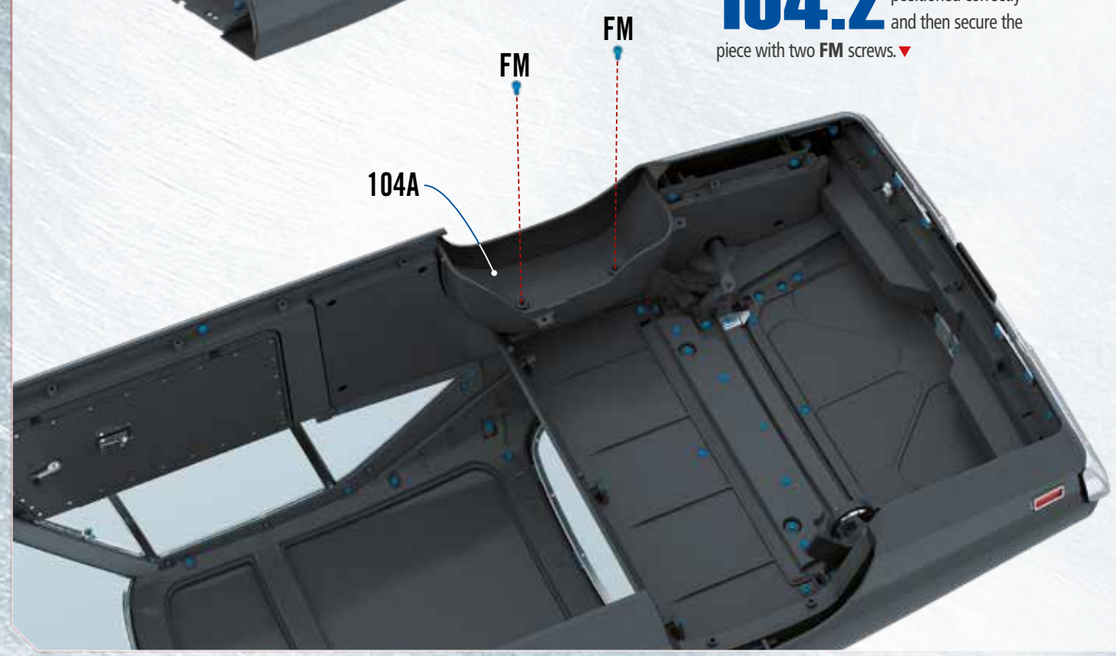
REAR WHEEL ARCHES

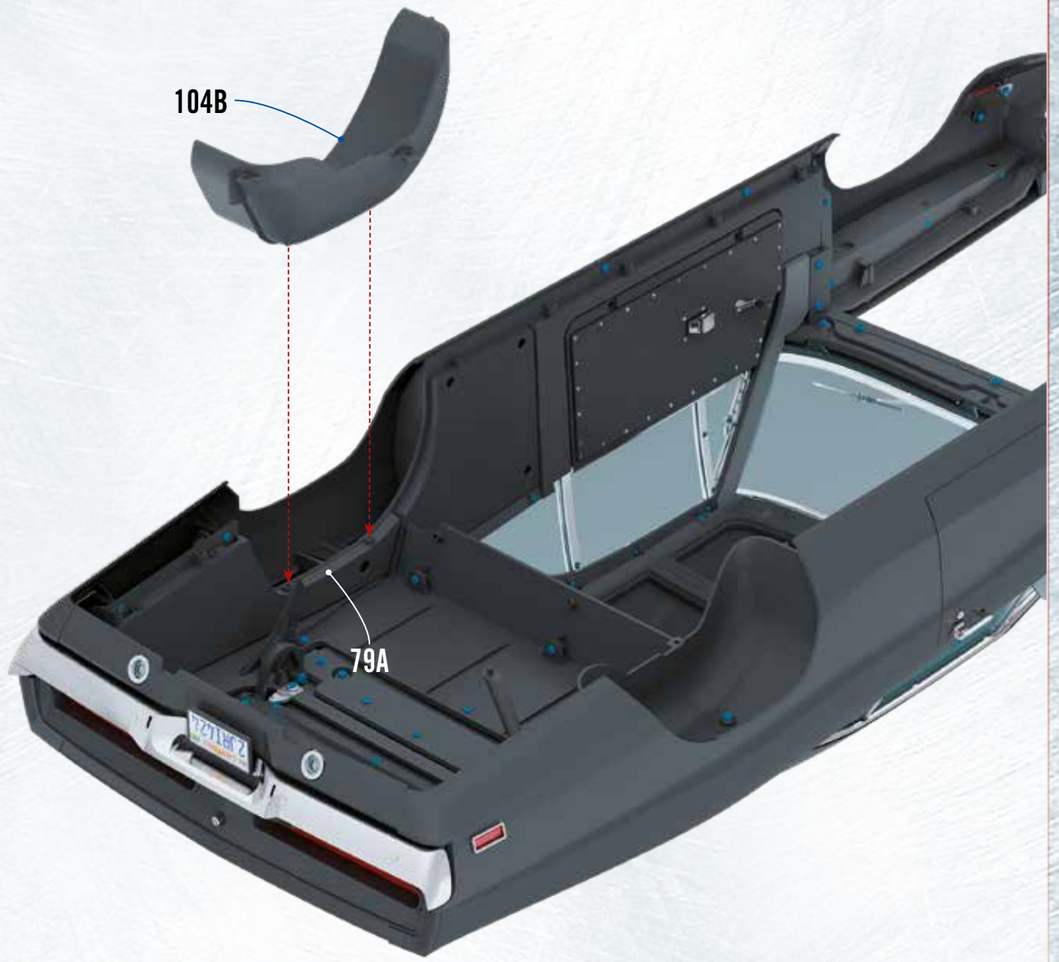
Installing the rear wheel arches



104.1 **TURN** the car body over and position the rear left wheel arch **104A**, as shown in the illustration. ▶

104.2 **CHECK** that it is positioned correctly and then secure the piece with two **FM** screws. ▼





104.3 **IN THE SAME WAY,** position the rear right wheel arch **104B**. ▲

Installing the rear wheel arches



104.4 **FINALLY,** secure the rear right wheel arch **104B** to the car body using two **FM** screws. ▼

RESULTS OF STAGE 104

You have now attached the rear wheel arches to the body of your model car.



TYPES OF DIFFERENTIAL



The differential is one of the most important inventions in the automotive industry, because it allows modern cars to take corners with maximum stability and speed. Over the years, thanks to its continuous evolution, the differential has become an indispensable component to guarantee traction for all types of vehicles in the most critical situations. In this edition, we shall examine how it works.

First of all, understand that there are several types of differential. To begin with, the "ordinary" (open) differential fitted on most production cars is a mechanical device. It consists of two shafts connected to each other through bevel gears, and serves to distribute the same amount of torque to both drive wheels, independent of their rotation speed. On a bend in the road, that speed can vary considerably between the inside and the outside wheels, because they all have a different angular speed to each other, and because they travel different distances while following the curve.

Off-road vehicles are often equipped with manually lockable differentials. This guarantees the same amount of power to all the wheels and avoids a wheel with poor grip stealing precious torque from one with greater grip.

The position where the differential is installed depends on the type of traction of each car. On four-wheel-drive vehicles, the differential is located in the centre between the front and rear axles, and on two-wheel-drive vehicles, the differential is located in the centre of the drive axle.

If the wheels on an axle were rigidly connected to each other there would be continuous slippage or skidding on one side, with all the consequences that that implies, such as excessive tread wear or even loss of control. The differential is not needed when both the wheels have perfect grip. However, when one wheel begins to lose traction the differential balances the rotation of that wheel by transmitting two torque levels at the same time: the wheel with less grip increases speed, while the wheel on the opposite side slows down almost to a standstill. In certain circumstances, this behaviour is not ideal, for example in off-road or racing cars. There are several alternative solutions: first, a manually lockable differential for off-road vehicles. This fixes the rotation of the wheels at the same speed, allowing the vehicle to use two-wheel traction to negotiate difficult terrain.

Then there is the self-locking differential, usually used on sports cars, which makes it possible to compensate for any loss of grip by increasing the speed of rotation of the wheel that has greater grip on the road surface, thanks to asymmetrical distribution of the engine torque in cases where the tyres are in different grip states.



Torque Vectoring

Dynamic Traction Control (Torque Vectoring) is a technology that provides the differential with the ability to distribute the torque transmitted to each wheel using data from sensors, such as the steering angle, vehicle yaw and speed. Dynamic traction control (DTC) is used on both four-wheel-drive and two-wheel-drive cars and allows for better tyre grip when pulling away and cornering. Torque Vectoring made its first appearance in the world of rally cars and racing, before progressing to production cars. DTC has only one task: to independently vary the torque on each wheel. As we have seen, standard differentials are usually made up exclusively of mechanical parts, while Dynamic Traction Control differentials obviously require an electronic monitoring system capable of indicating the appropriate moment to vary the torque. As you can imagine, the greater the number of wheels to which power is distributed, the more complex the differential system needs to be.

The distributed torque generates a yawing moment resulting from longitudinal forces and consequently modifies the lateral drag generated by each tyre. Applying more longitudinal force reduces the lateral resistance that can be generated. Depending on the driving conditions, the electronics determine what the correct balance should be and act by increasing or decreasing the yaw acceleration. But how does this happen? Torque Vectoring Control technology uses the car's braking system to constantly balance the distribution of engine torque between the drive wheels, thus adapting it to driving conditions and the road surface. When accelerating in corners, for example, the system activates the brake on the inner wheel and delivers more torque to the outer wheel, improving handling and road holding.

SELF-LOCKING DIFFERENTIALS

There are different types of self-locking differential, each more suited to the specific needs of the models on which they are fitted. For example, there are fully mechanical multi-plate systems and others that use a friction braking system (Limited-slip Differential). Then there are the viscous couplings, which use the friction generated by two discs immersed in a silicone fluid (Ferguson differential), and electronic self-locking differentials, which improve grip through the management of the Anti-lock Braking System (ABS) and the Electronic Stability Programme (ESP). In this case, when the electronic control unit (ECU) detects a loss of grip on one of the two wheels, it immediately brakes the internal spinning wheel, transferring torque to the external one, thus achieving a behaviour similar to that of limited-slip differentials.

THE TORSEN DIFFERENTIAL

The Torsen is one of the most common types of self-locking differential and is fitted on all-wheel-drive cars as well as on front or rear-wheel-drive cars. Its name is composed of the words Torque and Sensing and therefore means: "torque sensitive".

This is not a simple self-locking unit, as it behaves in a very similar way to a classic differential, allowing the wheel with less grip to increase its rotation speed - but with a big difference: When a tyre begins to lose grip, it immediately shifts more torque to the wheel with the most traction.

In summary, it is a compromise solution which combines the best of the traditional system (i.e. allowing the drive shafts to rotate at different speeds) with the effectiveness of a pure self-locking system, transmitting greater torque to the wheel with more grip.

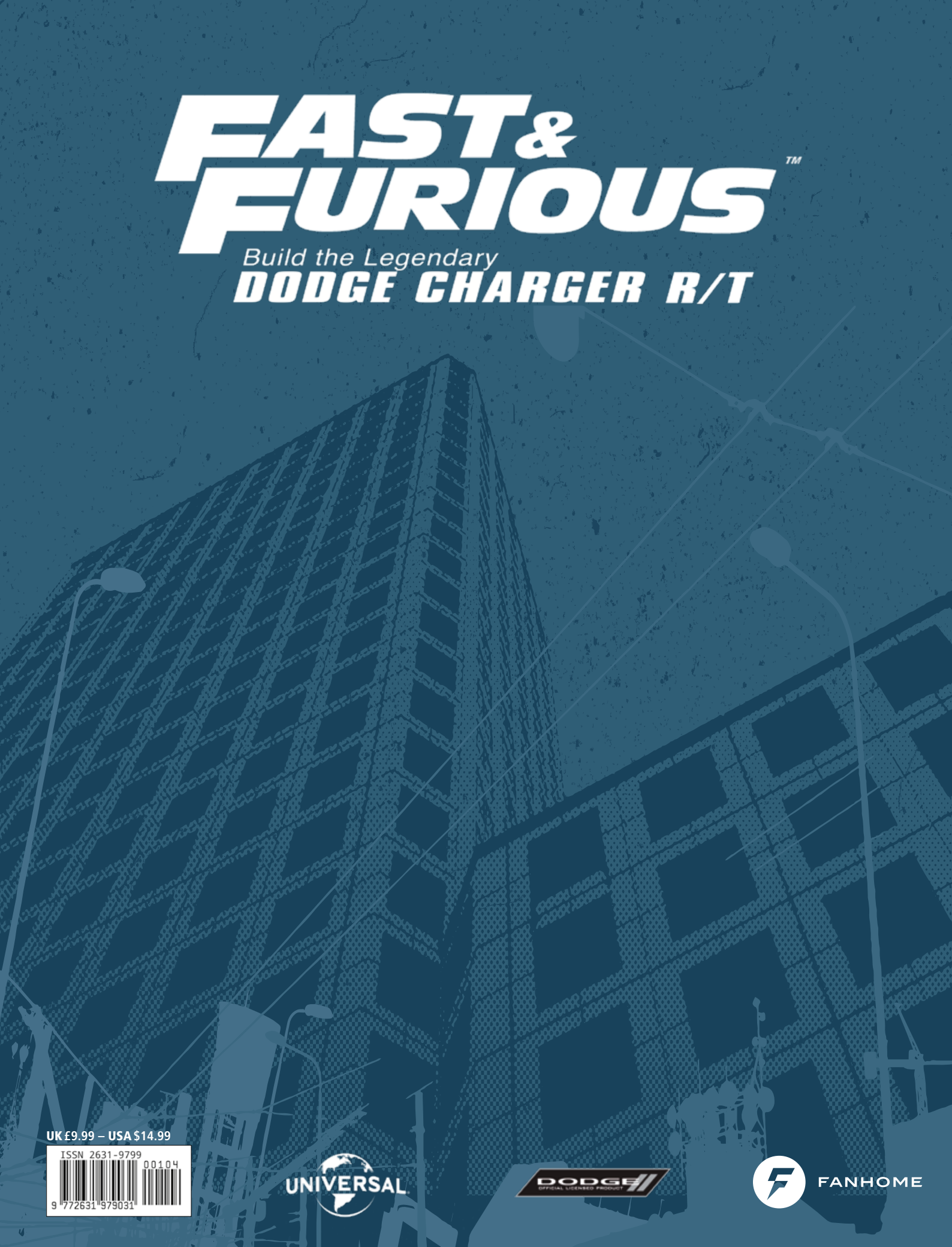
It is helpful to understand the TBR (Torque Bias Ratio, or Traction Ratio) of a Torsen, which varies from 2 to 6. This is the ratio between the torque applied to the wheel that rotates more slowly and the torque applied to the one that spins faster. For example, if you have available torque of 2000Nm to distribute, a Torsen with TBR 3 (3:1 traction ratio), will send 1500Nm to the wheel with the most grip and 500 to the one that has lost grip.

THE VARIABLE DIFFERENTIAL

The latest invention is the variable locking differential. This differential works according to the following principle: the difference in speed of the driving wheels (for example when one of them is on a very slippery surface) generates a spontaneous pressure in an integrated pump. This pressure is transmitted from a piston to a disc joint, which in turn transmits the driving torque to the wheel which has the greatest grip. In an extreme case, and the coefficient of grip permitting, the entire drive torque could be sent to the road surface by the wheel that has the best grip. When the difference in speed between the two wheels decreases, the pump pressure also decreases and the locking torque decreases proportionally. The pump, which contains highly viscous silicone oil, is maintenance-free.

FAST & FURIOUS™

Build the Legendary DODGE CHARGER R/T



UK £9.99 – USA $14.99

ISSN 2631-9799 00104

UNIVERSAL

DODGE OFFICIAL LICENSED PRODUCT

FANHOME