



# RB7

RADIO CONTROLLED • BUILD IT YOURSELF • NITRO ENGINE

## Pack 1



## Stages 1-4



# RB7



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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. RED BULL RACING RB7 complies with CE regulations. Items may vary from those shown.

# YOUR RED BULL RACING RB7 AT A GLANCE

**MODERN TECHNOLOGY AND A RANGE OF TUNING OPTIONS MAKE THE RED BULL RACING RB7 RACING CAR A FASCINATING MODEL FOR BEGINNERS AND EXPERIENCED MODELLERS ALIKE.**

Based on Kyosho's proven technology, your 1:7-scale model Red Bull Racing RB7 delivers exciting motor racing action. With its rear-mounted engine powering the rear wheels – as on the full-sized original Red Bull Racing RB7 – its nimble handling and rapid acceleration promise an entertaining, authentic driving experience.

## EASY ASSEMBLY

Assembling the model is simple and straightforward, even for inexperienced modellers. Simple step-by-step instructions take you through the assembly process in easy stages. Each component is illustrated for easy identification, and its installation is clearly explained.

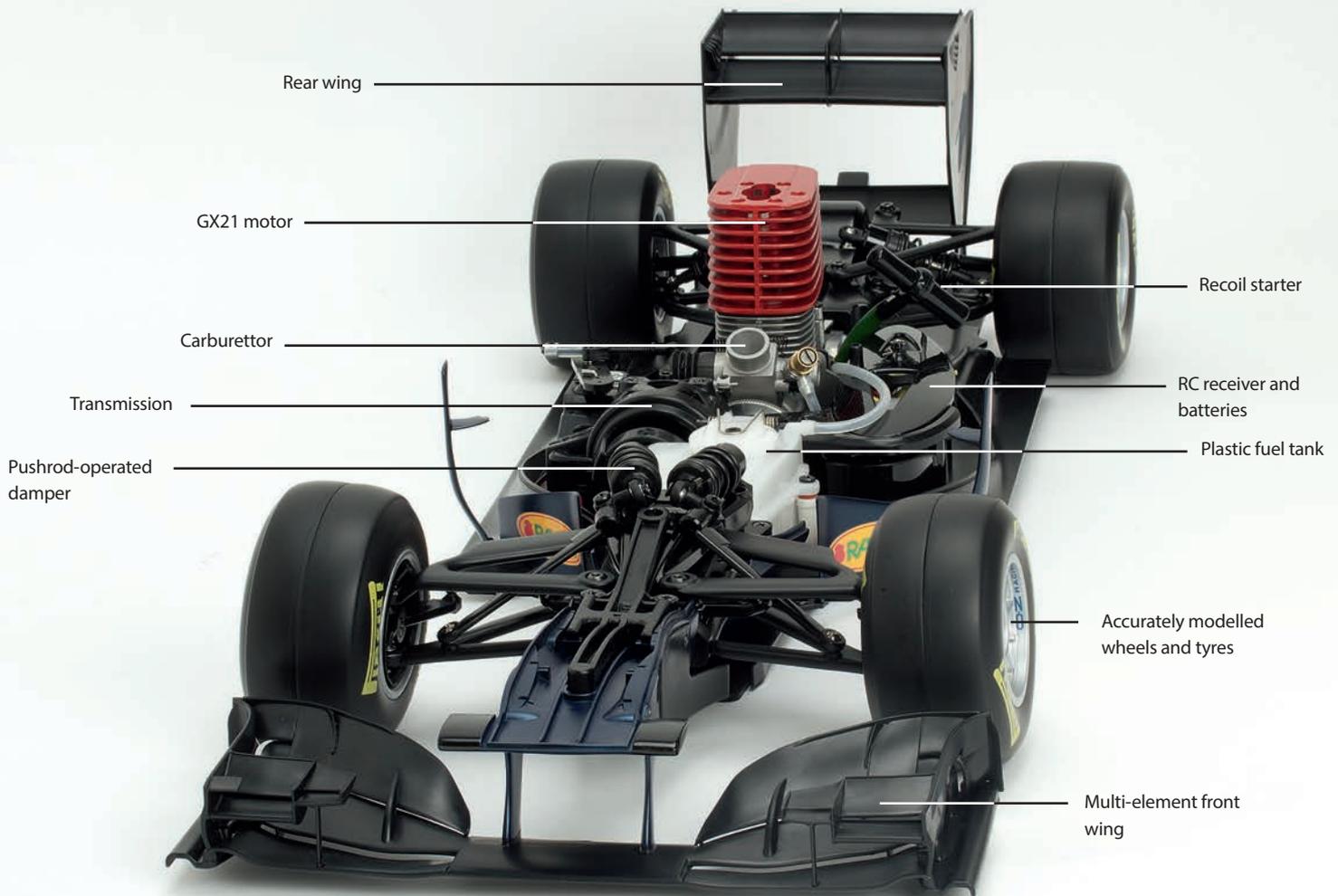
And with each pack, alongside the assembly guides, introductory articles will provide a wealth of in-depth background information about RC modelling.

## THE ENGINE AND TRANSMISSION

This little car is a thoroughbred circuit racer, and with its 3.5cc nitro motor, it has enough power to challenge any of its competitors on the track. The Red Bull Racing RB7 is driven by the powerful Kyosho GX21 engine, which delivers 1.8 horsepower at the crank. Being a short-stroke design (with 16.6 x 16mm bore and stroke), it is free-revving, with an even spread of torque. The engine delivers great acceleration from standstill, as

Fitting detailed display bodywork makes the Red Bull Racing RB7 model a very realistic representation of Sebastian Vettel's car. An additional racing body is supplied for use on the track, so there is no need to risk damaging the display body when the car is in action.





well as at higher speeds – enough to see off the stiffest competition. The car's simple single-speed transmission saves having to make complex adjustments to ensure that the GX21 achieves its optimum performance on the track, and is driven by the engine through an automatic, centrifugal clutch.

To ensure a long, trouble-free life, the transmission is made of tough high-performance plastic, while the engine's twin ball bearings reduce wear, and its technically sophisticated, aerodynamic aluminium cylinder head provides excellent cooling. (The GX21 engine is designed to operate only with model fuels with a nitro content of 15-25%, and is not suitable for use with other fuels).

## THE CHASSIS

The centrepiece of the Red Bull Racing RB7 model – its race-proven chassis – provides numerous adjustments so that the performance of the car can be precisely matched to a specific track or the personal preferences of the driver. For example, the ride height can be adapted to suit the individual characteristics of different race circuits.

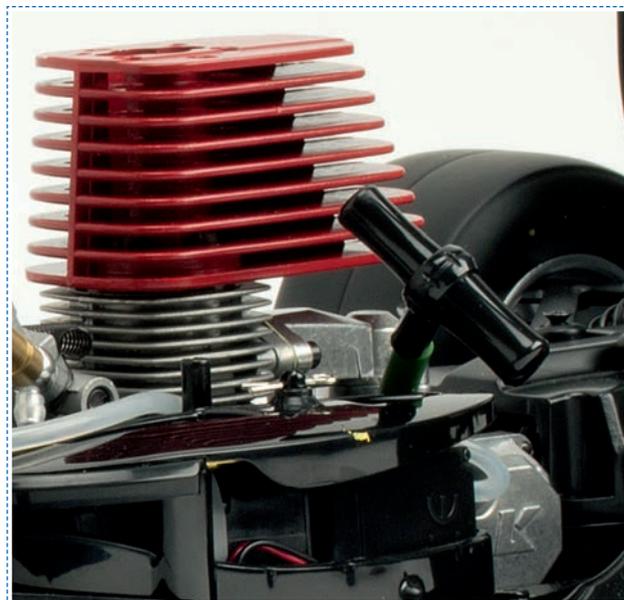
The car has four hydraulic dampers – and, in a similar way to a full-size Formula 1 car, the front ones are installed horizontally, operating via pushrods that link them to the suspension wishbones. Together with the stiff, well-balanced chassis and the grippy tyres, this gives your Red Bull Racing RB7 optimum stability when

cornering. Even under the fastest acceleration, the large 90 x 52mm rear tyres deliver the traction of the GX21 engine to the track, while smaller 90 x 45mm front tyres handle the steering. Along with the rear-wheel drive system, this set-up allows hot burnouts and fast drifts that would not be possible with four-wheel drive cars, providing an 'authentic' Formula 1 feel, and long-lasting driving pleasure on the circuit. The all-important ability to decelerate is provided by a powerful central disc brake built into the drive train, which slows down the two rear wheels of the car.

## THE BODYWORK

The 1:7-scale Red Bull Racing RB7 racer is an impressive 689 x 250 x 150mm with its bodywork fitted. During the course of the series, you'll be building a 'showcase display' body that is an authentic miniature of Sebastian Vettel's Red Bull Racing RB7, down to the smallest detail. This includes the prominent Red Bull and sponsors' logos, which are exact replicas of the originals, supplied in the form of self-adhesive decals. You have received the first components for the display body with this pack, and on page 5, you can start to assemble some of the elements that go together to make up the front wing – one of the most important aerodynamic elements of the full-size car.

When the display body is complete, it will make the model a star in any showcase – but you naturally won't want to submit it to the rigours of the racetrack, and possible damage. So, in addition to the display bodywork, towards the end of the series you will be provided with a second, robust racing body to fit your model. This is also a detailed replica of the body of Vettel's car, but has been specially designed for use on the racetrack, so that it will survive minor racing incidents without damage. In particular, while the wings and other external aerodynamics of the racing body are still very much the same as that of the full-size Red Bull Racing RB7, they are made a little more robust for racing



With its large fins (anodised red to prevent corrosion), the aerodynamically designed cylinder head ensures optimum cooling of the GX21 engine under all driving conditions. The handle of the recoil starter can be seen on the right, in front of the cylinder head.

purposes. The racing body can be swapped for the display body and fitted in just a few simple steps. Then, even if the car is involved in a major collision, or swerves off the track, the tough bodywork and strong chassis should prevent the model from suffering any serious damage.

## THE REMOTE CONTROL SYSTEM

Your model Red Bull Racing RB7 is designed to work with a Kyosho Syncro digital remote control system. This has a handset that sends out signal pulses to operate the model's steering, throttle and brake, via a radio that operates in the 2.4GHz band, transmitting through an integrated antenna. Unlike an analogue system, a digital remote control requires no special tuning and after switching on, the handset will link up with the model by means of a coded 'handshake' signal that prevents any interference with other RC systems.

The driving controls are mounted on a pistol grip, which is more comfortable to use than a simple joystick. The trigger on the grip controls the car's acceleration



During the course of the collection, you will have the opportunity to acquire a superb 2.4GHz radio control system, including a receiver. If you already have a suitable remote control system, however, you will be able to use it to operate your Red Bull Racing RB7.

and deceleration, while a 'steering wheel' on the side makes the model turn. Other features of the handset include a servo reverse, and an LED display that indicates the charge of the four batteries housed in a compartment underneath. The sophisticated technology of the Kyosho Syncro remote control device means that it is even possible to use it to operate several different vehicles. The digital system that enables this is available as an accessory.

## MODERN ELECTRONICS

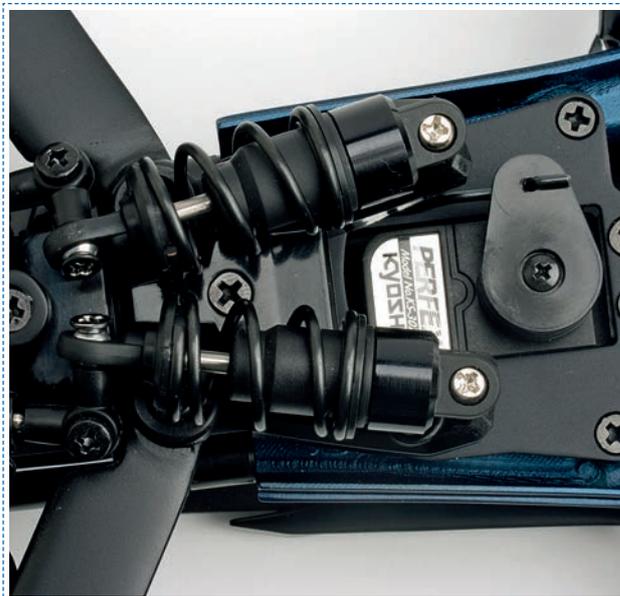
The radio signals from the remote control handset are picked up by an RC receiver unit located in the radio box on the chassis of your Red Bull Racing RB7 racing car, on the left of the engine. The receiver unit converts the radio signals into electrical pulses and passes them on

to the car's control servos, which operate the throttle, brake and steering. The servos have a very compact design, and are tough enough to withstand the forces of acceleration or deceleration acting on them.

## ON THE TRACK

After you have completed your racing car, it is ready to be started for the first time. Later in the series, this section of the pack will tell you everything you need to know about preparing your model Red Bull Racing RB7 for its first run under power, and how to adjust the car and its engine to achieve the best possible performance.

You will also find detailed information on using many other features of the model, such as how to tailor the chassis specifically for the particular track on which you are racing.

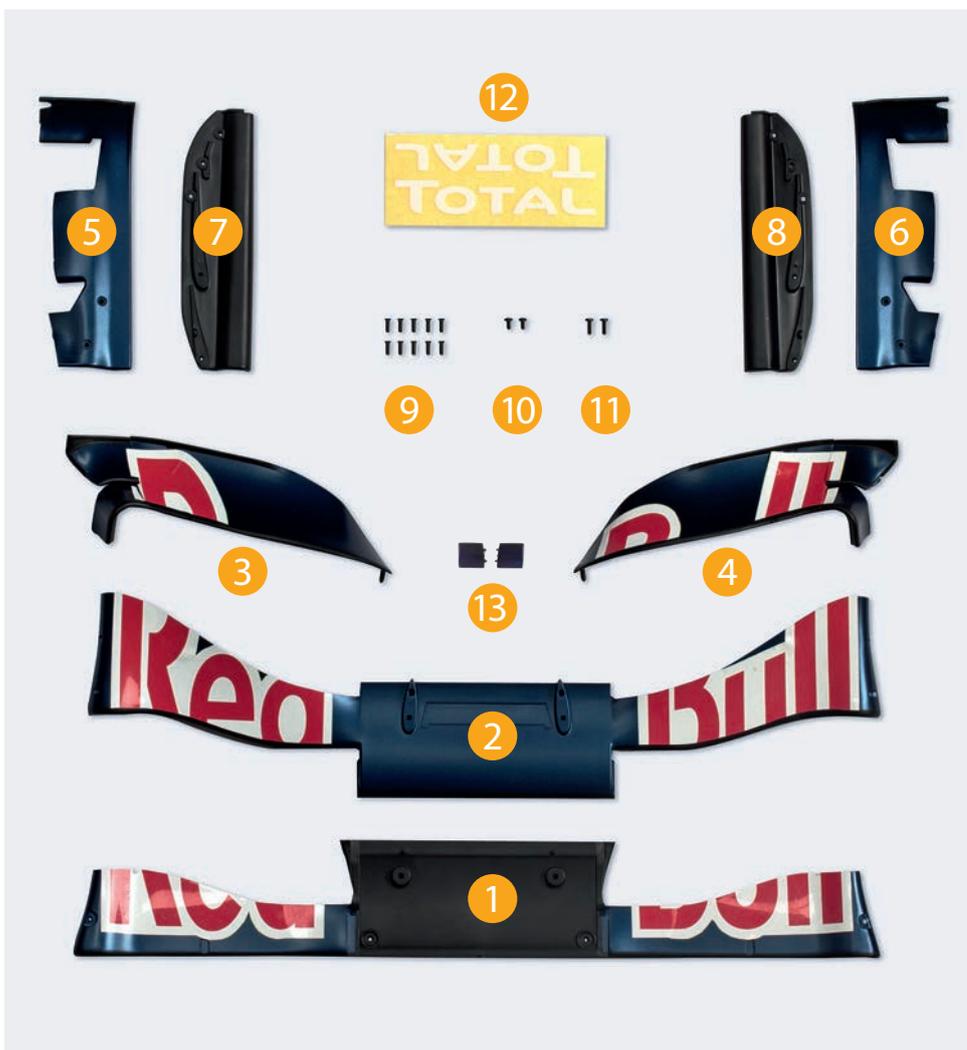


The model's steering servo can be seen on the right of the picture, mounted behind the front suspension dampers – which are installed horizontally and operated by pushrods.

## Stage 1

# ASSEMBLING THE FRONT WING

BEGIN THE ASSEMBLY OF YOUR REALISTICALLY DETAILED RB7 MODEL BY FITTING TOGETHER THE LOWER AND CENTRAL PARTS OF THE FRONT WING, ALONG WITH ITS LEFT AND RIGHT BASEPLATES.



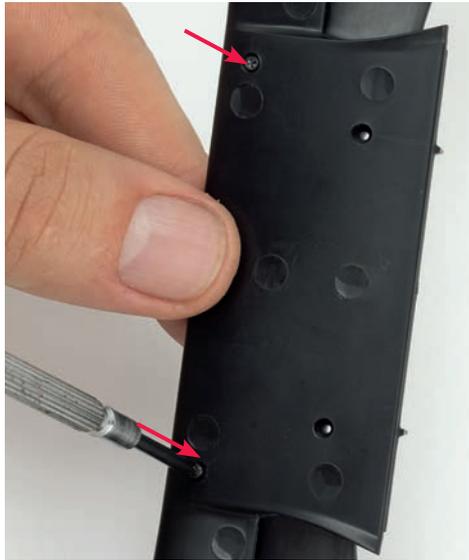
## Tools & Materials

Phillips screwdriver (size 0)

- 1 Lower front wing
- 2 Centre front wing
- 3 Upper right front wing
- 4 Upper left front wing
- 5 Right front wing endplate
- 6 Left front wing endplate
- 7 Right front wing baseplate
- 8 Left front wing baseplate
- 9 10 countersunk screws, 1.4 x 4mm
- 10 2 cap screws 1.4 x 2.5mm
- 11 2 cap screws 1.4 x 4mm
- 12 Stickers
- 13 2 small upper fins



**01** Place the centre front wing on the lower front wing, as shown. The middle part of the centre front wing should be flush with the front edge of the lower wing.



**02** Turn the assembly over. Take the two 1.4 x 2.5mm screws and fix them into the two holes on the underside of the lower front wing (as arrowed), using a Phillips screwdriver.



**03** Lay the left front wing baseplate on your work surface, as shown. Position the left side of the front wing above it, so that its two ends are located exactly above the two raised areas on the baseplate (see arrows).



**04** Fix the baseplate to the wing by screwing three 1.4 x 4mm countersunk screws into the three holes (arrowed) on the underside. Repeat Steps 3 and 4 for the right side.



**05** At the end of this first stage of the assembly, the characteristic shape of the front wing is already clearly visible. Store the wing in a safe place, along with any unused parts, as these will be needed for future assemblies. It is recommended that you keep the parts in a box with several compartments, so that even very small components are unlikely to be lost.

## Stage 2

# ASSEMBLING THE REAR WINGS

CONTINUE PUTTING TOGETHER THE COMPONENTS OF THE FRONT WING, FOLLOWED BY ASSEMBLING THE COMPONENTS FOR THE REAR WING OF YOUR RB7 MODEL.



## Tools & Materials

Phillips screwdriver (size 0)  
Superglue

- 1 Rear upper wing
- 2 Rear wing adjuster
- 3 Rear middle wing top plate
- 4 Rear wing endplate (left)
- 5 Rear wing endplate (right)
- 6 Rear middle wing baseplate
- 7 Stickers
- 8 4 countersunk screws 1.4 x 6mm



**01** Lay the front wing on your work surface with the underside facing up. Using the Phillips screwdriver, remove the six screws screwed through the two baseplates into the wing, then remove both baseplates.



**02** Position the stored left endplate as shown. Hold the front wing above the endplate, so that the holes at the front of both parts align (arrowed). Connect both parts using a 1.4 x 4mm screw. Repeat this step on the right side.



**03** Position the right baseplate, removed in Step 1, as shown. Place the front wing onto the baseplate, so that the profiles on the underside are located on the projections of the baseplate (arrowed). Secure the parts with three 1.4 x 4mm screws (inset), and repeat this step on the left side.



**04** Place the upper right wing at the rear of the wing assembly. Align the holes at the arrow on the right and secure using a 1.4 x 4mm screw. Repeat this step on the left side.



**05** This completes this phase of the front wing assembly. The front wing of your Red Bull Racing RB7 should now look like the example shown above. Store the assembly in a safe place until it is needed.



**06** Position the rear middle wing top plate as shown, and apply superglue to the sunken area of the part.



**07** Take the back of the rear middle wing baseplate and press it into the sunken area of rear middle wing top plate. Hold in place while the glue sets.



**08** Place the assembly on the raised areas on the inside of the left rear wing endplate, as shown.



**09** Hold both parts in position. Take one of the 1.4 x 6mm screws, and insert it into the hole of the rear wing endplate. Tighten to secure the two parts from Steps 07 and 08.



**10** Position the rear upper wing on the left rear wing endplate, as shown.



**11** Holding the components in this position, turn the assembly, so that the outer side of the endplate is exposed. Fit a 1.4 x 6mm screw into the hole of the rear wing end piece to secure the parts.



**12** Position the right endplate of the rear wing endplate, as shown. Then take the rear wing assembly, and place it on the raised part of the end piece.



**13** Secure the endplate in place using two 1.4 x 6mm screws.



**14** Take the the rear wing adjuster and apply superglue to the flat surface, as shown.



**15** Place the adjuster in the small recess in the centre of the rear wing, as shown in the picture. Hold the part in place until the glue is dry.

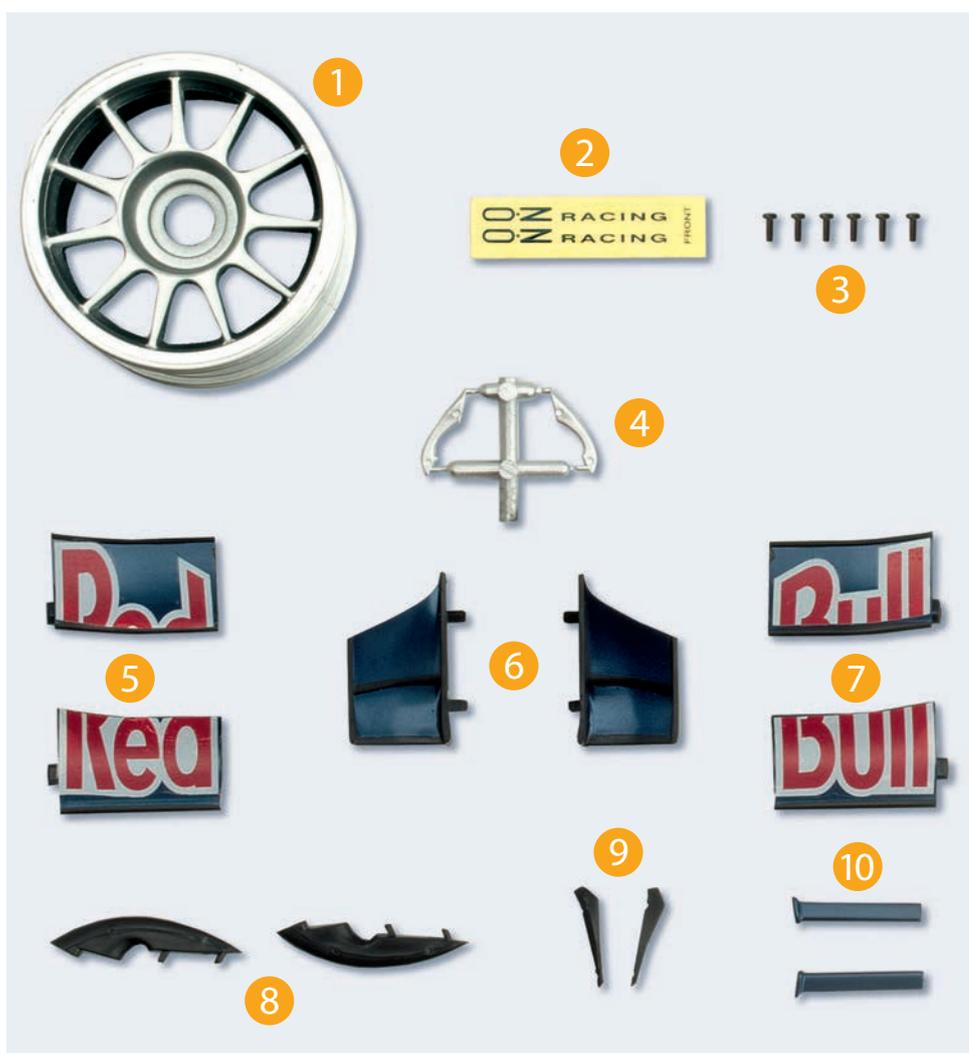


**16** At the end of this stage of the assembly, the rear wing has already begun to take shape. Store the wings in a safe place so they can not be damaged.

## Stage 3

# ASSEMBLING THE FRONT WING

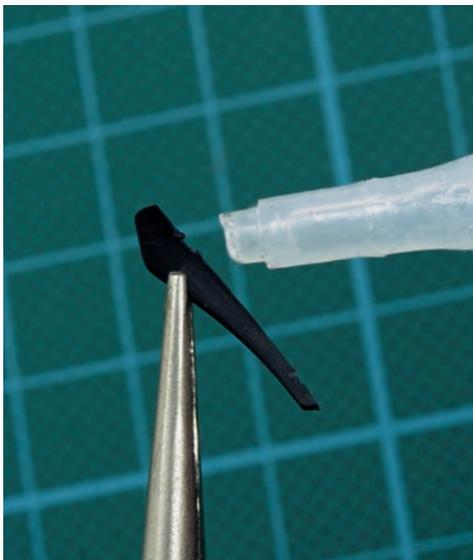
AERODYNAMIC ADD-ONS GIVE THE FRONT WING SOME FINISHING TOUCHES. IN ADDITION, YOU GET THE FIRST WHEEL FOR YOUR MODEL.



## Tools & Materials

Phillips screwdriver (size 3)  
 Knife  
 Needle-nose pliers  
 Superglue

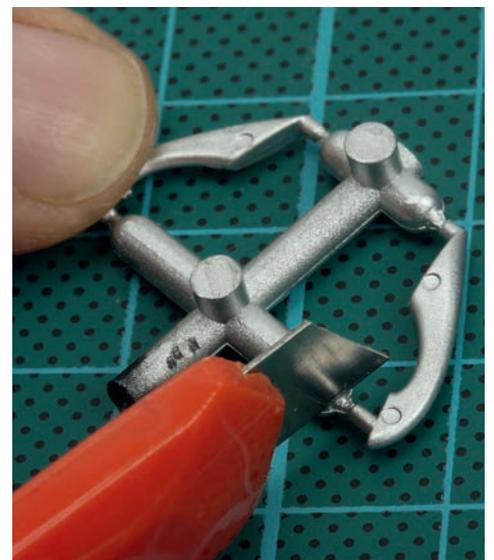
- 1 Wheel
- 2 Stickers
- 3 6 cap screws 1.4 x 4mm
- 4 Front wing supports (small)
- 5 Right upper flaps
- 6 Inner upper flaps
- 7 Left upper flaps
- 8 Front wing supports (large)
- 9 Front wing fins
- 10 Inner flap supports



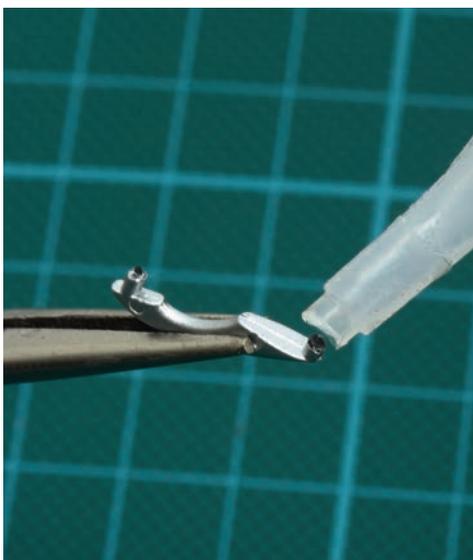
**01** Hold one of the two fins of the front wing with your pliers and apply superglue to the flat bottom, as shown. Handle the superglue carefully, applying a small amount.



**02** Fit the fins at the indicated positions on the front wing (see green arrows). The dashed green lines show how the two parts should sit.



**03** Using a knife carefully separate the two small front wing supports from the moulding. Note: The two pegs at the ends of the supports must not be removed.



**04** Apply a small amount of superglue to the two pegs of the small front wing supports.



**05** Place the two supports on the front wing, as shown above (see green arrows). The dashed green lines show how the two parts should sit.



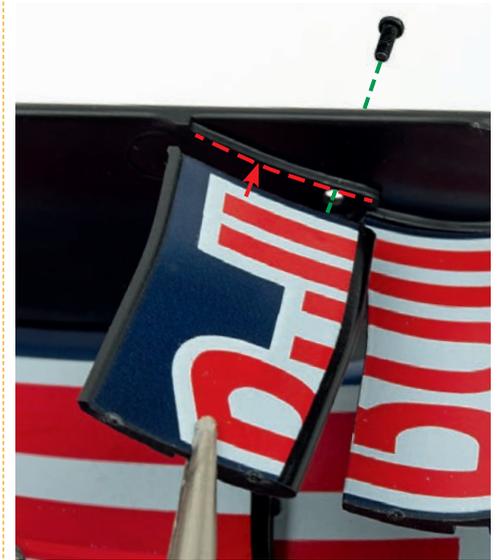
**06** Place the two large front wing supports, as shown above. Use the dashed green lines to find the correct position on the front wing. Position with the wide end of the supports toward the front of the wing (see arrows).



**07** Fit a 1.4 x 4mm screw into the hole on the underside of the wing and screw into the hole in the supports to secure them in place.



**08** Take the first left upper flap and position on the inside of the left endplate (red dashed line). Take a 1.4 x 4mm screw and place through the hole to hold the the upper flap in place, as shown (green dashed line).



**09** Position the second upper flap behind the previous one (red dotted line). Take another 1.4 x 4mm screw and place through the hole to hold the flap in place (green dashed line).



**10** Tighten both screws placed in Steps 08 and 09 to secure the upper flaps in place. Repeat Steps 08 to 10 for the right upper flaps and the right endplate.



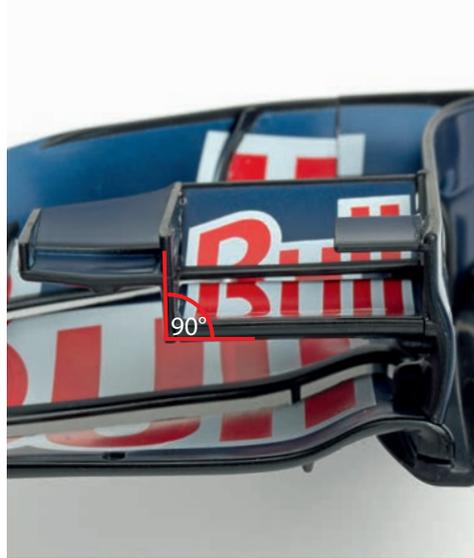
**11** The following steps detail the installation of the two small upper fins supplied with Stage 1. Using needle nose pliers, grip one of the two fins, as shown, and apply superglue to the pegs and edge of the fin.



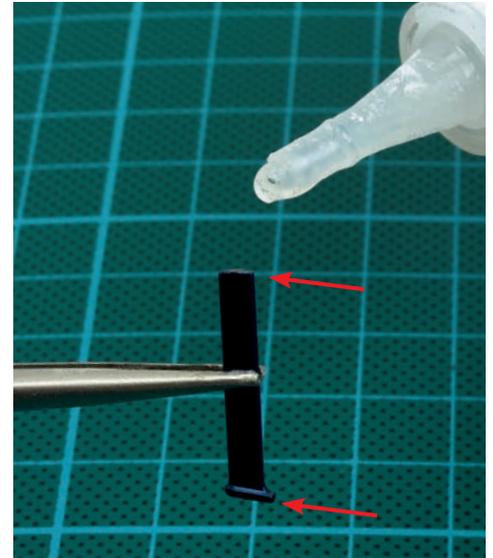
**12** Position the fin so that its upper edge is aligned to the inside of the endplate (see arrows), pushing the pegs into the holes. Press it in until it is flush with the endplate. Repeat Steps 11 and 12 for the other endplate.



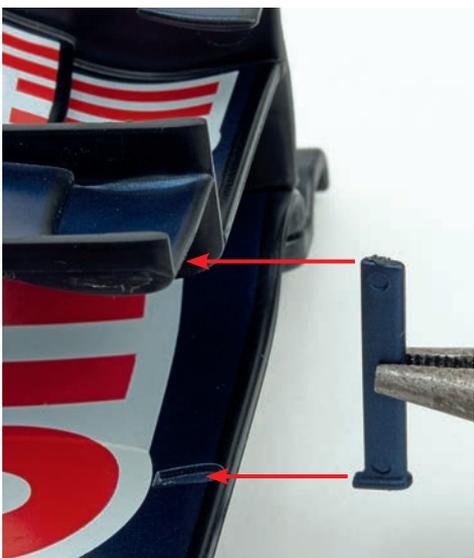
**13** Apply superglue to the two tabs of one of the inner upper flaps. Using needle-nose pliers, position the tabs into the two recesses underneath the upper flaps (indicated by the green arrows and dashed lines).



**14** Hold the inner upper flap in place while the glue dries, ensuring it dries at a right angle. Repeat the Steps 13 and 14 on the right side of the front wing.



**15** Apply glue to the top and bottom of one of the supports.



**16** Position the support, as shown, between the underside of the inner upper flap and the front wing. Place its ends into the recesses of the two parts (see arrows). Repeat Steps 15 and 16 for the right side.



**17** At the end of this session, the front wing of your Red Bull Racing RB7 should look like the one shown above. Store the wings until they are needed again.

## Stage 4

# THE FIRST SHOCK ABSORBER

AFTER ASSEMBLING THE FRONT AND REAR WINGS, WE BEGIN TO BUILD THE CHASSIS, STARTING WITH THE ASSEMBLY OF THE FIRST SHOCK ABSORBER FOR YOUR MODEL.



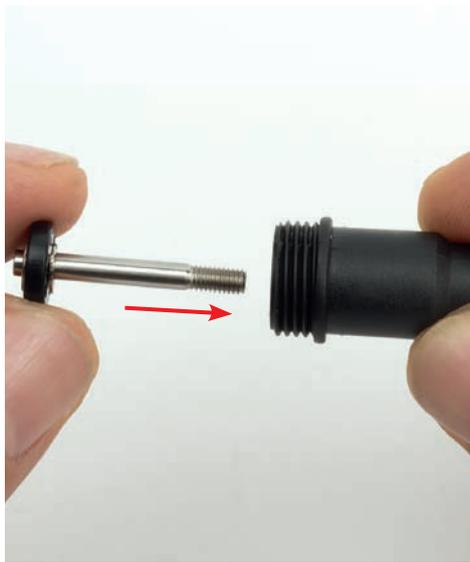
## Tools & Materials

Pliers

- ① Shock oil
- ② Stickers
- ③ Ball end
- ④ Shock shaft
- ⑤ Shock top
- ⑥ Shock spring
- ⑦ Lower spring holder
- ⑧ Diaphragm
- ⑨ Shock case
- ⑩ Upper spring holder
- ⑪ Cross wrench



**01** Take the shock casing and remove the shock cap. Keep the cap to one side.



**02** Holding the shock casing as shown, push the shock shaft into the case until the shaft protrudes through the hole at the other end of the casing (see Step 3).



**03** Pull the shaft, using some needle-nose pliers, until it stops (see arrow). Use pliers with a smooth inside surface to avoid damaging the part.



**04** Place the ball end onto the threaded end of the shaft.



**05** Hold the shock shaft with pliers. Screw the ball end onto the shaft (see arrow). Don't fully tighten it yet, as this will aid you in further steps.



**06** Holding the shock cap as shown, push the shock top into the hole in the cap (see red arrow), until it stops.



**07** Take the shock oil and fill the shock case to about halfway. Move the shock shaft slowly up and down, so that the oil spreads throughout the assembly, below the piston, which in turn pushes the air under the piston up through the oil. Ensure the shaft is always covered by oil.



**08** By moving the piston up and down, air is forced upward, and air bubbles form in the oil. Wait until no more air bubbles are seen in the oil. Place the assembly for two to four hours in a vertical position. You can use the spring for this.



**09** When the bubbles are gone, move the shaft up and down again. If this creates more bubbles, wait until these are gone. Repeat until no more air bubbles form.



**10** When the air bubbles have completely disappeared, carefully fill the case to the brim with shock oil. Make sure that no oil overflows, so that the damper housing is not contaminated.



**11** Hold the diaphragm so that the domed side is facing downward. Place it onto the shock case as shown, to avoid air pockets.



**12** The edge of the diaphragm must be flush with the top of the case. If some oil gets onto the case, you will need to wipe it off carefully using a cloth. Keep the assembly as upright as possible, so that no oil can leak out.



**13** Now take the shock top and cap and place it on the thread at the top of the shock case assembly. Screw the top until tight.



**14** Hold the case assembly as shown. Place the upper spring holder so that the wider ring is facing down, and push it down the case as far as it will go.



**15** Place the spring over the end of the case with the shaft.



**16** Hold the case assembly in one hand and pull back the spring, as shown. Place the lower spring holder in the gap on the shaft between the spring and ball end. Gently release the spring so that it comes to rest (see Step 17).



**17** This completes the first shock absorber of your RB7.