

BMW R90S(英)

BMWR905

In 1885 Gottlieb Daimler made a successful trial run on a mechanically propelled two-wheeled vehicle. This was probably the world's first motorcycle, and they have been with us ever since! In the early days motorcycles were used exclusively as a practical means of transport because motor cars were very expensive to buy and were therefore beyond most peoples reach. Owing to modern mass production by Henry Ford in the early part of this century, motor cars gradually came into general use, and less attention was paid to the practicality of motorcycles and they came to be enjoyed more as a sport. It is not surprising that this came to pass because motorcycles are not suitable as a practical means of transport. They do not afford protection against weather, nor are they able to carry any luggage or in fact anything else except the rider and perhaps a pillion rider. Also they are very unstable machines and, as any motorcyclist knows, momentary lack of balance, especially on a wet road, can cause a fall and in many cases injury. It is therefore obvious that as a practical means of transport they are very definitely inferior to motor cars. These disadvantages are the very reason why motorcycling has become such a pleasurable and skillful sport.

Two-wheeled motoring requires that a rider and the machine should be one in order to maintain delicate balance according to conditions. To do so the rider needs experience and good judgement to control the amount of lean, acceleration and braking. The motorcyclist must also be mentally and physically strong because exposure to bad weather conditions hastens fatigue.

It is no wonder that motorcycling has become a great sport. Sports cars in the truest sense of the term, are disappearing from the social scene because of crowded road conditions and cost, but motorcycling has become a very popular sport in many parts of the world. Because of this machines have been developed for specialised purposes such as trials, cross-



country racing, speed racing and road sports models. In the last few years machines with large engines and power have gained in popularity.

(BMW R90S)

It is said that the Directors of BMW considered discontinuing the production of their motorcycles in 1969. This was when the "/5" series, including the R75/5, was in course of development. The reason for this was that BMW had successfully gained an undisputed position as a high performance manufacturer. But they found that motorcycles were not very profitable and did not warrant high development costs of a new series. However, a new "/5" series was developed to maintain the long tradition of BMW motorcycles, but this gained much greater popularity than they ever expected, and the production of BMW motorcycles was doubled in a very short time.

Because of the demand for large-displacement machines, BMW released in the Autumn of 1973 the new "/6" series which included the R90S, a sports machine of the very highest



class. The R90S has an engine displacement of approximately 900 cc, and has "streamlining", which amounts to a semi-cowling. It is also fitted with a double-disc brake on the front wheel. The colouring is a unique shade of dark silver. It gives a great impression of a high performance machine and does not have the conventional BMW shape. The R90S has become the topic of conversation among the worlds motorcycle fans.

BMW engineers have developed the R9OS specifically as a combination of great reliability, safety and comfort. The engine has extreme reliability, having a displacement of 898 cc and an output of 67 bhp. This is not much when compared with the power of Japanese and Italian machines. Japanese motorcycles of 750 cc produce as much power. However, the overwhelming victories gained by BMW, not only at the T.T., but at other long distance races, have shown that the machine's performance does not depend entirely upon engine power. It is a balanced combination of power, comfort, safety and technical reliability that ensure victories.

As was the case with the R75/5, it is one of BMW's production policies not to increase engine power unnecessarily. Reasonable engine power together with BMW's traditional high quality, makes for extreme reliability.

BMW says of the R90S "the reliability of the machine is such that the rider indulging in longer journeys, can reach his destination without getting his hands dirty.

This motorcycle has a performance which puts it in the fore-front of the worlds first-class machines. It has a maximum speed of over 220 km/h and from a standing start it can cover 400 meters in only 13.3 seconds. Also from a standing start it can accelerate to 160 km/h (approximately 100 mph), in only 12.6 seconds. The R90S, in road trim, weighs approximately 215 kg. It is therefore about 30 kg lighter than Japanese motorcycles of the 750 cc class. This is one of the reasons why it has a high performance in spite of its moderate power output. The frame is of the double-cradle type and is basically the same as that of the R75/5, but the rear suspension arm is increased in length to provide better stability at high speeds and this results in an increase of 80 mm in the wheel-base which is 1.465 mm. The stability of the machine is further enhanced by the fitting of two hydraulic steering dampers and also because the BMW has a very low centre of gravity due to its

well-balanced horizontally opposed twin cylinder type of engine.

Great attention has been paid to the satety of rider and machine. As already mentioned, the double-hydraulic disc brake is fitted to the front wheel. The master cylinder and the oil reservoir are located under the fuel tank to minimize damage in the event of an accident. Incidentally an indicator is fitted to show any discrepancy of brake fluid. The rear brake drum has small inspection holes in it so that it can easiliy be seen if wear has taken place. A large diameter quartz iodine headlight is employed for greater safety at night. The semi-cowling not only presents an attractive appearance, but also reduces air resistance and overall lessens the rider's fatique. The instruments are fitted inside the cowling and each one is located in a rubber housing in order to reduce vibration There are considerable small differences between the R90S and the R75/5. The R90S uses a five-speed gear box, whereas the R75/5 has only four, and also a new type of carburettor is fitted. These changes are made in order to obtain higher reliability, comfort, and safety. The BMW R90S provides the joy of motorcycling with more safety and comfort than probably any other machine. It has not only upheld but enhanced the tradition of BMW motorcycles which are known as "Running works of art"



TAMIYA



★Study the instructions and photographs before commencing assembly. ★You will need a sharp knife, a screwdriver, a pair of pliers.

★Do not break parts away from sprue, but cut off carefully with a pair of pliers.

★Before finally cementing each part together be sure that parts fit correctly together. And that you are aware of the next sequence to be followed.

★Use glue sparingly. Use only enough to make a good bond. Apply cement to both parts to be joined. Only blue shaded parts should be glued.

This mark shows the colour this part should be painted. Colours are indicated in the construction drawings and also on page 13. For tips for better painting refer to PAINTING on almost each page.

(Construction of Dampers)

Make two sets of Dampers, for each right and left sides. See the structural plan on the right and assemble.

Construction of Wheels

Construct Wheels as shown in the figure at right. Paint the letters on Tyres white.



PAINTING

Many Parts in this kit are self coloured. However by painting other parts in the correct colours you will add extra realism to your model and will have created a true masterpiece. One of the keys to successful painting is to paint only after you have constructed a particular part. Before painting be sure that the adhesive has properly dried and that surplus glue has been removed. Surplus glue and any uneven joints should be carefully filed. If you always use glue spareingly and pay great attention to even the smallest detail, you will be assured of a better result.



(Construction of Front Fork 1) Front Fork is movable through Brass Pipe and Spring. Cut off extra part of Brass Pipe with a file and adjust in order to move smoothly.



(3) (Fixing of Brake Calipers) Bottom Cases and Brake Calipers are symmetrical on right and left sides. Make sure of their numbers and fix.









Installation of Front Wheel
First, apply paint and decal to Fender.
Then, fix Fender. Lastly, install Front
Wheel.

《Painting and Marking of Front Fender》



(Construction of Electric Parts) Vinyl Cords should be joined to Electric System Parts. Make sure that what parts Vinyl Cords should be joined.



(Assembling of Frame Parts) Construct Upper Frame and Rear Fork. C1 in Rear Fork is to hold Rear Damper in place. Fix this part with sufficient cement.

(Fixing of Rear Damper)

Fix Rear Dampers before construction of Left and Right Main Frame. Right and left control levers are fixed symmetrically, as shown below.





(Construction of Frame)

Cement Frame Upper, Frame Right and Frame Left together. Paint Frame before fixing painted Fender.

() (Fixing of Rear Fork) Fix Rear Fork, Battery, Main Stand, etc. to constructed frame. Nuts for holding Rear Fork in place should be tightened with a wrench C12.



(Construction of Rear Brake) Rear Brake is movable through Spring. The position of fixing Brake is the inside of Frame. See the photo below.



PAINTING

(Painting of Frame)

Paint black parts in Gloss Black. Frame should be carefully painted one side at a time so as not to finger mark.





(Installation of Rear Wheel)

Install Rear Wheel and Side Stand by means of Screws and Nuts. Both of them are movable.



(Construction of Handleber)

Both Clutch lever and Brake lever are movable. Be careful when you fix these parts. Make sure that together what parts Vinyl Cords from each lever should be joined.



Construction and Fixing of Meter Unit

Apply decal to Meters before fitting N2. Never reverse the order.



PAINTING

(Repair of Worn-off Plating) Apply silver paint with a very fine pointed brush to make good any damaged chrome work.







TAMIYA (Mounting of Engine) Put Engine into Frame before fixing Cylinder. Secure the only front part 26 Mounting of Engine of Engine with G55's. Engine D 8 K 32 0 L 3 Also fix on opposite side. Gloss Black Matt Black Inside letters: Gloss Red @ (Construction of Muffler)
When constructing Muffler, make sure K13 Also fix on right side. Ø of their numbers prior to assembly. G 55 Also fix on right side. Construction of Muffler J1 J 9 J10 J 8 (Construction of Carburettors) Each Right and Left Carburettor has three Vinyl Cords. Check the number of Carburettor. (2:) Construction of Carburettors Carburettor Left Accelerator Wire Left 19 Choke Wire Left 45 mm G 2 Carburettor Right G 27 Insulator Left 3 Acclerator Wire Right G 4 G 28 G 3 Matt Black Matt Metallic Grey 20 Choke Wire Right 90 mm 18 Fuel Pipe D 33 G 4 G 2 D 34 G 3 G 1 K 23 Insulator Right 17Fuel Pipe 0) Matt Black G 1 G 29 D35 G 26 0 D 36

K 23

Matt Metallic Grey



First fix Cylinder with Push-rod onto Engine. Muffler should be firstly fixed onto Cylinder, and then fix it together with step-bar onto the body.



● ⟨Fixing of Carburettors⟩ Each right and left Carburettor should be fixed correctly. The left side part of Insulator is a little longer than right side. Fix them with care.

PAINTING

(Painting Bolts)

All the bolts used in the frames and the engine are chrome plated. Paint them with care, since they serve to enhance to overall appearance of your finished model.





10







Gloss Black

Rear View Mirrors

D15



TAMIYA



*Metallic Grey Iron colour. Apply to metallic surfaces, such as the engine.

* Silver

Lustrous silver. Use for repairing the plating and painting the bolts, nuts, etc.



*Matt Black Flat black. Apply to the parts on handlebar.

*Gloss Green Paint letters of Japanese number plate with this colour





Apply to fuel tank.

Symbol of the BMW.

Tachometer and speedometer.



Voltmeter and ammeter



Stickers of West German insurance.



(Painting of Number Plate)



(Before painting)

drawings.

coat on them are gradat-

ed. For the gradation, see

the assembly and part

Remove all dust, dirt, and adhesive smears before attempting any painting. Remember painting does not generally hide bad workmanship. Remove excessive glue or joins with a file, sharp knife or very fine emery cloth. Most parts are best painted after assembly, but some inaccessible parts may be painted before removing from the sprue.

(Painting materials)

You will find it neccessary to buy at least two paint brushes. The better the quality the better the result. One brush should be of the chisel type for large surfaces. The other should have a fine point for more detailed working. Some form of mixing palette will also be neccessary. Use any of the modelling paints your supplier recommends.

Seven basic colours are recommended for painting your R90S model.



Glossy black. Apply to the frame. The frame of most two-wheeled vehicles is painted in this colour.

#Gloss White Glossy white. Apply to the number plate.



PARTS





1. Carburettor F Carburettor C . Carburettor G . Carburettor D 2 5. Master Cylinder A Master Cylinder B 6 Master Cylinder C Master Cylinder D 8 9. Fuel Cock A 10. Regulator 11. Rear Brake Arm B 12. Rear Brake Arm A 13. Kick Starter Arm 14. Rear Brake Drum A 15. Rear Brake Drum B 16. Bevel gear case 17. Front Hub A 18. Front Hub B 19. Brake Pipe Left 20. Brake Pipe Right 21. Winker Relay 22. Brake Crank Arm 23. Side Stand 24. Crank Case Parts Left 25. Crank Case Parts Right 26. Carburettor A Right 27. Carburettor A Left 28. Carburettor B Right 29. Carburettor B Left 30. Front Hub C 31. Fuel Cock B 32. Rear Brake Drum D 33. Brake Arm 34. Air Pump B 35. Rear Brake Drum C 36. Air Pump A 37. Air Pump C 38. Brake Pedal 39. Choke Lever B 40. Step Arm Right 41. Step Arm Left 42. Oil Level Gauge 43. Choke Lever A 44. Oil Pipe Stopper A Right 45. Oil Pipe Stopper A Left 46. Oil Pipe Stopper B Left 47. Oil Pipe Stopper B Right 48. Cable Joint 49. Fuel Pipe Joint 50. Front Fork Right A 51. Front Fork Left A 52. Front Fork Right B 53. Front Fork Left B 54. Engine Stopper A 55. Engine Stopper B 56. Windshield Stopper Pin



1. Headlight Stopper 2. Push Rod Left 3. Push Rod Right 4. (Not used) 5. Fuel Filler Cap 6. (Not used) 7. (Not used) 8. Muffler Left B 9. Muffler Right A 10. Muffler Right B



4, 6, and 7 are unnecessary

TAMIYA



PARTS

PARTS

1.Front Wheel A 2.Front Wheel B 3. Rear Wheel A 4. Rear Wheel B



Seat Upside
 Tachometer Cable Joint
 Rear Fork Cover
 Change Pedal Rubber

- 5. Rear Step Rubber 6. Step Rubber
- 7. Damper Boots 8. Grip Rubber



1. Side Grip 2. Rear Step Right 3. Rear Step Left 4. Exhaust Flange Lexnaust Flange
5. Front Fender Fixing Bolt
6. Choke Lever C
7. Number Plate (W. German)
8. Oil Cap 9. Fork Top Bridge 10. Disc 11. Number Plate (Japanese) 12. Headlight Reflector 13. Emblem 14. Rear Brake Rod 14. Rear Brake Rod 15. Rear View Mirror B 16. Rear Damper A 18. Rear Damper D 10. Change Pedal 21. Exhaust Parts 22. Taillight Base 23. Carburettor E 24. Plug Cap 25. Handle Pine 17. Rear Damper C 19. Rear Damper B 25. Handle Pipe 26. Rear Damper E Left 27. Rear Damper E Right 27. Kear Dampe. _ 28. Assist Grip 29. Front Winker Base 30. Rear Winker Base 31. Rear Suspension Cover 32. Horn A 33. Rocker Cover Fixing Bolt 34. Accelerator Lever Bolt 35. Steering Damper A 36. Rear Damper Stopper



1. Electric Bulb 2. Meter Glass

- 3. Headlight Lens
- 4 Windshield of Cowling

M PARTS

- 1.Brass Pipe Short 2.Brass Pipe Long 3.Coil Spring Large 4.2¢ Shaft Short 5.2¢ Shaft Medium 6.2 φ Shaft Long 7. Coil Spring Small
- 8. Stretching Spring Long 9. Stretching Spring Short 10. Universal Boots
- 12.2 ¢ Nut 11.2 d Screw



PARTS



PARTS





Winker Lens





MMMM

M 7

M 8

M 9

M10





Tail Lens