## BMWR/55

$\rightarrow$ S - SUPERDETAIIEDBMWOPPOSED FLAT TWINENGINE COLLSPRUNG WORKNGFRONT \& REAR SUSPENSION SUPER SUPER DETAILED SEMI-PNEUMATIC RUBBER-LIKE TYRE

## BIG T DAMIYA <br> TAMIYA, INC.



# BMWRT/b5 

THE HISTORY OF B.M.W
B.M.W. was born on the 7th March, 1916 These famous initials stand for "Bayerischen Motoren Werke", which, translated into English means The Bavarian Motor Works.
We would emphasise here that they did, at that time, only make engines, and the German for engines is "Motoren".
B.M.W. was formed by the amalgamation of two Munich firms. One was known as Rapp Motoren Werke GBMH, which had been in existence since 1912 and manufactured engines for ships, aircraft engines under licence, and also their own 4 and 6 cylinder in-line aircraft motors.
The other firm was known as Gustav Otto Flugmaschinfabrik, which later became the Bayerischen Flugzeug Werke, and this Company occupied the actual site on which B.M.W. stands to this day.
On a cold January day in the third year of the First World War, a young engineer named Max Friz called at the factory and asked to see Mr Rapp, the Managing Director.
Mr. Rapp had plenty of troubles.
The problem of those days was that aircraft engines lost power rapidly as they gained height, and at that time this phenomena was not fully understood.


Max Friz

Now we come to the reason for Max Friz's visit He had designed a very advanced, 6 cylinder engine which, in effect, on the ground, had a carburettor setting for 2,000 metres. Also, this engine did not require a super-charger, and at that time the only way to get power at height was by super-charging the engine, thereby pushing in more air and so getting more power. Obviously weight was of terrific importance, and super-chargers were heavy. The Friz Motor did not employ a super-charger, and therefore was quite a break-through in design.
Friz and his associates finally convinced the "Powers that be" that this engine of his really was superior, and he came back to Munich with an order for 2,000 of these motors. This was . great day for B.M.W.
This engine was used with very great success by Baron von Richthofen and his famous "Flying Circus".
However, Friz was still not satisfied and tried to improve on the B.M.W. IIIa, which was the designation of this engine.
At this time many Banks were interested and wanted to finance B.M.W. However, a Banker by the name of Camillo Castiglioni was ready to put in four million marks, and it was at that time that the B.M.W. Company as it is today was formed. The date was the 13th August, 1918. In November, 1918 the Armistice was signed, and as everybody now knows, this was a very bad time for Germany. In the Works it was felt that very heavy and difficult times were ahead.
At B.M.W. they held the view that aircraft motors were, after all, not only useful in war, and hoped that they might be able to make engines for the Civil aircraft industry, but this was not to be, and Allied Officers, who inspected all factories producing war material, insisted that all tools and methods of making aero engines
or any other war weapons had to be destroyed. In a very small corner of the factory, and in complete secrecy, Chief Designer Friz had finished and assembled his improved B.M.W. IV Engine. He was convinced that the B.M.W. IV was capable of great things, and completely blind to the conditions then prevailing, felt compelled to satisfy his own convictions
Revolution was in the air. Food was short and there seemed to be no authority. Law and order and broken down.
Even under those conditions there was, in the corner of a hanger at Munich Airfield a very old biplane. Miraculously, the Allies had overlooked it. Friz got together a group of skilled engineers from the factory, and in secrecy they installed his brain child, the B.M.W. IV into this aircraft. This was done under great difficulties as the Revolutionaries had guards at the airfield entrances.
However, the aircraft, a DFW C IV, was finally ready for its test flights, and a pilot by the name of Zeno Diemer voluntecred to fly it. On a sunny morning on the 9th of June, 1919 the engine was started and Diemer proceeded to take off. Then he started to worry because he could not remember whether he had put a barograph in the aircraft or not!
The suspense lasted for two hours. At last, turning into wind the machine made a perfect landing. Not one, but two barographs were in the aircraft, and Friz and his friends could hardly believe the evidence that Diemer had reached a height of 9,700 metres, an amazing achievement. Word of this great venture soon got around Munich, and from that time onwards Friz could have anything he wanted, and so, with the blessing of all concerned, the second flight took place on the 17 th June, 1919, and again the record height was reached. This was indeed a world record, but regretfully it was never recognised as such because there was no Body then existing which could authorise such records. But it is generally acknowledged, even today, that this was a supreme achievement.
The success of this world altitude record gave terrific injection of confidence to B.M.W. during those very difficult times.
We realise that our readers are more interested in the Motorcycle story of B.M.W., but it should be stated that the Company did go on to build very fine aircraft engines, which not only powered many airliners in the inter-war years, but were also used extensively in military aircraft in World War II.
〈The First B.M.W. Motorcycle〉
At the Auto Salon in Paris in 1923 there was a sensational motorcycle exhibited for the first time. This machine had two horizontally opposed cylinders, the engine was fitted transversely ac ross the frame, and the drive to the back wheel was by means of a shaft. All moving parts except, of course, a little bit of shaft were totally enclosed from mud, dust and other types of fore ign matter, and the motoring press and other specialists were quite astounded by this new design. This machine was the first B.M.W. motorcycle design by Max Friz and it was known as the B.M.W. R32
Let us examine the events that led up to the appearance of the R32. It was in the year 1919. as we now know, that B.M.W.'s business was at ts lowest ebb.
Whilst the Managing Director, Mr. Rapp went to Vienna to visit his friend and banker, Castiglioni, to see what advice he could get, Max Friz was looking round the factory to see what bits and pieces he could get together, and whether some sort of manufacture could be started. Friz was successful to a limited degree. They were able to manufacture in small quantities engines for lorries and various stationary purposes, auxilliary motors for bicycles, and even a boat engine which went under the name of the "Bayern


## BMW R32

Motor". But all these efforts were insufficient to put B.M.W. on a business-like footing. B.M.W. decided to try and find sub-contract work. The German Railways required air brakes. Then the Kunze-Knorr-Bremse AG, a firm specialising in the manufacture of brakes, gave B.M.W. a fairly large order, and at the same time made quite a good offer to buy the whole factory. This was a dangerous point the in history of B.M.W.

It should, however, be noted here that they were making, even at that time, a $6 \frac{1}{2}$ h.p. 2 cylinder, horizontally opposed engine called the M2B15 which was for a motorcycle known as the "Victoria", and they were also building a complete motorcycle under the name "Helios".
However, Castiglioni and Rapp, in the Spring of 1922, found the answer to this situation. They sold the B.M.W. factory to the Kunze-KnorrBremse Brake people for a good price, and got their capital out. Then Castiglioni bought the neighbouring firm of Bayerischen Flugzeugwerke for 4 million D.M. (inflation was well under way at that time.)
Having made this purchase, Castiglioni then asked the new owners of the B.M.W. name and factory whether they would be prepared to sell the machine tools which B.M.W. had used for making engines, and also the name B.M.W. This they were very willing to do, as they had no use for these tools, nor for the name, and it was then that the tools were moved into the huge wooden halls of the former Bayerischen Flugzeugwerke, and with their own name of B.M.W., work was started once again in this new home.
A few days after the re-settling process, Works Director Popp turned round to Friz and said, about the Helios Motorcycle, "What do you think of this machine?". Friz answered that he felt it was completely unsaleable, and one had to be a tight-rope walker in order to ride it. Popp then said "And what do we do about it?" and Friz replied the best thing would be to find a very deep lake and throw it in, to which Popp replied "If we had only one piece I would follow your advice, but we have a whole stock of the damned things in various stages of manufacture, and therefore we must build them and sell them, or else find a lot of tight-rope walkers".
Friz was not very happy at this reply. After all, he was a specialist in the construction of aircraft engines, and did not like to give his name to the so-called improvement of such an object. Popp then said that if Friz could bring the motorcycle up to a reasonable standard he promised him, firstly that his name would not appear, and secondly he would give Friz a free hand to design his own machine.
Friz did re-design the "Helios" so that it became a roadworthy product.
During a discussion in Mr. Popp's office, Friz was trying to explain the design principle for his new motorcycle, which subsequently proved to be the R32. He could find no piece of paper handy except for a beer mat, and on this the very first sketches of this great engineering masterpiece were drawn. Unfortunately the beer mat no longer exists.
There were many doubts as to whether such a revolutionary machine would be practicable. So
many things were completely new: transverse engine, shaft drive, a cylinder sticking out either side which might stop the machine from cornering. But when, at long last, the prototype stood in the factory, all doubts disappeared. It was indeed a most beautiful creation. It really looked right. It was then taken out on to the road in and around Munich, quite openly, and seemed to justify all hopes.
Friz wanted to give the machine a better test. The local Automobile Club was running a OneDay Reliability Trial called "Through the Bavarian Mountains". Friz entered the new machine, finished the Course, and although there was not much wrong, there were one or two little things which were not quite right and which rather dimmed his optimism a little.
The 1920s and 30s -between the two World Wars - were the golden years of the motorcycle. It was thrilling to ride, reasonably cheap to buy, and also very useful as transport, but above all, gave an excellent outlet for sport and racing. In the world of sport Motorcycle Racing, and to a lesser degree, Motor Racing, was becoming very popular indeed, and racing riders were the heroes of the day.
In the motorcycle world, England was the undisputed leader. Norton, Sunbeam, A.J.S. and Rudge were names that made the heart of every motorcycle fan beat a little faster. Names of Swiss and Italian firms such as Moto Saccoche and Guzzi also had very fine international reputations. The Germans really had to fight in order to get business for their Brands such as N.S.U., D-Rad, Makeco, Wanderer and various other makes which appeared at local races, a few of which won, but were hardly heard of in foreign countries. B.M.W. meant nothing to anybody, and on hearing these initials people thought of aircraft engines and days gone by. In the year 1923, Friz decided to show the B.M.W., not only at the Auto Salon in Paris, but also at the famous Solitude Race Track. For the Racing version of the machine a special engine was made with steel cylinders and overhead valves. Friz went to the Course, but the machine did not finish the Race because of engine trouble. When they got back to Munich a new Racing engine was developed. The overhead camshaft M2 B36, which was then thoroughly tested. At the beginning of 1924 it was entered for a few minor Races where it proved very successful. Again B.M.W. entered for the Solitude, this time with three machines. The Riders were Schleicher, who was an Engineer who had worked on the construction of the machines, Reich and Bieber.

They had very great success. The three B.M.W. motorcycles, which were entered for all Classes - which was possible in those days - won all the First Prizes with such ease that the competition could have no hope in the future. In addition to this, Reich had the Best Time of the day. B.M.W. became famous overnight.

The Solitude Races were in the middle of May, 1924. A week later the Team were completely successful in the annual Avus Races in Berlin, where they obtained the first German Record, A month later they won the German Championship, and by the end of the year had obtained five further First Prizes and Best Times in various International Races.
The year 1925 ended with the greatly improved B.M.W. R37 500cc machine winning 91 First Prizes on the International stage. It was a success without equal. B.M.W. had at last overcome their post-war difficulties.
However, all their Continental successes did not count in World Classes. It was now essential to travel to England and to compete against the English on their own ground.
The English had, above all, a very famous Reliability Trial which lasted for six days. This was probably the greatest cross country Test for motorcycles, and in the year 1926 B.M.W. felt that they were ready to enter this famous Event, though unofficially,
Schleicher, the young engineer, who at that time was at the top of his form, received permission to compete with a B.M.W. R37 as a private entry. After arrival in England he decided to inspect the Course, and came to the conclusion that he would need cross country tyres. He contacted all possible Garages in England to obtain these, but there was not one cross country tyre to be had anywhere. He therefore decided to take his chance with normal road tyres, though realising that this might be a risk to his life. Nevertheless, when the day of the Race arrived, he accepted the situation, got on his machine and went like the devil.
At the Finish he won the first Gold Medal ever awarded to a German in the British Isles. B.M.W., with the basic design of the machine unaltered, went on, in later years, to win all the greatest Prizes in competitive motorcycle Racing. Obviously the engine was developed in both size and power, and it was eventually supercharged, but it still remained a transverse, horizontally opposed two cylinder!
The huge list of World Records and, Prizes won is too long to quote here, but some of the more outstanding successes are as follows:


ERNST HENNE, with streamlined versions of the machine reached the following speeds in obtaining the Absolute World Records as under:-

| 1929 | $216.8 \mathrm{Km} / \mathrm{H}$ | 1934 | $246.1 \mathrm{Km} / \mathrm{H}$ |
| :--- | :--- | :--- | :--- |
| 1930 | 221.5 | 1935 | 256.1 |
| 1931 | 238.3 | $\prime \prime$ | 1936 |
| 1932 | 244.4 | 272.0 | $\prime \prime$ |
| 1937 | 279.5 | $\prime \prime$ |  |

In addition, Henne held the following absolute World Records for Sidecar machines:-
$1931 \quad 190.8 \mathrm{Km} / \mathrm{H} \quad 1932$
$207.7 \mathrm{Km} / \mathrm{H}$
No chronicle of B.M.W. would be complete without the name of Georg Meier, who won the European Championship in 1938 on a 500 c.c. B.M.W. He also won the Senior Tourist Trophy in 1939. Second place in this Race was also taken by a B.M.W. machine ridden by an Englishman, Jock West. This was the last T.T. before World War II.
During the years 1939 to 1945 B.M.W. built the famous R75 machine for the German Army, amongst many other military vehicles. They also, of course, manufactured aircraft engines for the Luftwaffe.
At the end of World War II, B.M.W. still had a very fine name but not much else, because after the Armistice they were subjected to the humiliation of being torn apart by the Allies for the second time.
But they did have some luck. The American Forces of Occupation used the factory as a workshop and repair depot for their military vehicles and equipment, and because of this, B.M.W. were able to keep most of their skilled workers.
In 1948 they received permission to manufacture motorcycles again, up to a cylinder capacity of 250 cc . This machine was the single cylinder shaft drive known as the R24. For this it was impossible to satisfy the demand. However, in 1949, 9450 machines were made. In the next year production rose to 17,100 and then rapidly increased to 25,000 in 1951, and more than 28,000 were despatched from the factory in 1952.
In 1953 the sales for motorcycles began to fall sharply.
A 6 cylinder car of $60-65$ h.p. had been designed in 1951 but was not ready for delivery until 1952. However, it was not a great success. Shortly afterwards an 8 cylinder engine was fitted into this car and it made all the difference, and sales figures rose.
However, B.M.W. seemed to fall between two markets. They were selling a high quality car and also motorcycles, and they wanted something between these two extremes. The result was the Isetta, a basic 4 wheeled vehicle powered by a motorcycle engine, and this was followed by the 600 , which was a 4 seater. This led to the development of the B.M.W. 700, which was a marvellous little car and which did have great success.
In 1959, B.M.W. had another financial crisis. In that year they lost $9 \frac{1}{2}$ million DM.
It was then decided to produce a medium sized car which finally became the B.M.W. 1500. This vehicle was the forerunner of the now famous B.M.W. 1800 and 2,000 Series, which are very much in demand right up to the present day. As is now well known, the motor car range was supplemented by the 6 cylinder cars, 2500,2800 and the 3 litre, and this formidable range of vehicles has become very successful in all markets of the world.
B.M.W. still manufacture motorcycles of the highest quality. using the same principles which Chief Engineer Friz laid down in 1923. Their very latest and most beautiful model is the R75/5, the subject of this Kit.


* Before each assembly work, be sure to read instruction for the work.
$\star$ Get a knife, a driver, a pair of nippers and a file ready.
$\star$ When removing parts off the runner, don't do so by your hand but cut each parts off carefully with a knife or a pair of nippers. *First construct parts without gluing tentatively, and check up the adhesive part. And then construct these parts $\star$ Be sure not to apply adhesives too much but little by little onto both surfaces to be glued together.
$\star$ Blue-coloured portions in the fllowing figures indicate that they should be applied with adhesives.

$\checkmark$This mark in the figure indicates that the marked parts should be painted.

Fig. 1 Lengths of Vinyl Cords
Cut Black Vinyl Cords properly in lengths as shown in the figure. The cut ends should not be slanted.

Fig. 2 Construction of Main Stand and Rear Shock. Absorber
Parts of Main Stand and Rear Shock Absorber are weighted, so construct these parts first and take time enough to adhere.

Fig. 3 Construction of wheels Construct Wheels as shown in the figure at right. Paint the letters on Tyres white.


## PAINTING

Timing of painting:
Key to good painting of those parts which should be painted in a same colour is to paint them after they have been constructed. When portions to be painted are either smeared with overflown adhesives or unevenly jointed, file those adhesives off, or get uneven portions even with good filing.
Do your assembly work scrupulously, paying close attention even to fixing of a smal vis and you will be assured of a splendid model.
(1)Clutch Cable
(2) Earths Cord
(4)Accelerator Wire Left
(5) Front Brake Wire

| (6)Battery Cord (Long) |
| :--- |
| (7) Tacho-Meter Cable |


(9) Spark Plug Cord Right
(10Spark Plug Cord Left
(11) Choke Wire Right
(12) Choke Wire Left
(13) Battery Cord (Short)
(14) Stop Light Cord



Construction of Wheels


Fig. 4 Construction of Front Fork
Front Fork is movable through Brass Pipe and Spring. Cut off extra part of Brass Pipe with a file and adjust it in order to move smoothly.

Stractual drawing of Front Fork


G 11.12
(G 10,13 )

Fig. 5 Application of Decal
Apply Decal before fixing of Front Fender. Use a black mark when Body colour is either silver or golden, and use a white colour in blue Body.


## PAINTING

Painting of Front Fork)
Apply paint to Front Fork with Damper Boots masked before Fender is fixed to it.


Fig. 7 Fixing of Rear Shock Absorber Fix Rear Shock Absorber before constructing of Left and Right Main Frame. Right and Left control levers are fixed symmetrically.


Fig. 8 Application of Decal
Apply Decal before Rear Fender is fixed in Frame. Mark is the same colour as Front Fender.


Fig. 10 Construction of Parts
Vinyl Cords should be joined together Electric System Parts. Make sure that together what parts Vinyl Cords should be joined.


## PAINTING

〈Painting of Frame〉
Frame should be carefully painted by halves. Apply two thin coats of paint to Rear Fender.


7
Fixing of Rear Shock Absorber


Frame Right


Fig. 11 Fixing of Parts (to Frame) Fix each part to Main Frame. Basic Construction of Frame ends before fixing of Rear Tyre in Fig 13. Check up the adhesion of each parts.

(Completed Frame)


Fig. 12 Construction of Rear Brake
Rear Brake is movable through Spring.
Fig. 12 Construction of Rear Brake
Rear Brake is movable through Spring. The position of fixing Brake is the inside of Frame. See the picture below.
(Painting of Tires)
Paint letters on Tires in gloss white.


## PAINTING

(11)

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Fix nuts with C12.

(13)

Fixing of Rear Tyre

Fig. 14 Construction of Kick Pedal
Kick Pedal is movable though Spring. Be sure not to smear the shaft of Pedal, with adhesives.


Fig. 16 Construction of engine First construct Engine without gluing tentatively, and check up the adhesive part. And then construct it.


Fig. 17 Construction of Carburettor Each Right Carburettor and Left one has three Vinyl Cords. Check the part number of Carburettor.

## PAINTING

〈Painting of Engine〉
Paint Engine in silver as if to rub the silver into it. Use the half-dried silver.


4
Construction of Kick Pedal


Construction of Engine

(16) Construction of Engine

Fig. 18 Mounting of Engine
Put Engine into Frame before fixing Cylinder. Secure the only front part of Engine with B9s.


Fig. 19 Fixing of Handlebar Parts 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.


Fig. 20 Construction of Muffler When constructing of Muffler, check the parts number of Muffler parts.


## PAINTING

Repair of Worn-off Plating:
Use chrome silver to repair worn-off plating. In so doing, a thin brush with a long is preferred.


18 Mounting of Engine

TAMIYA


Engine

19
Fixing of Handlebar Parts



20
Construction of Muffler

(21)


Fig. 22 Installation of Left Side Parts First fix Cylinder with Push-lod onto Engine. Muffler should be firstly fix onto Cylinder, and then fix it with step-bar onto the body.


## PAINTING

(Painting of Number Plate〉
To obtain better result, hold Number Plate on a rest and apply paint carefully.


(3) 11 Liable insurance mark
in Japan is applied to the left head of Number Plate. Either one should be applied.


C 4 is used only when fixing of Japanese Number Plate.

## 23

Installation of Right Side Parts


Fig. 25 Fixing of Carburettor
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.

(Wiring and Fixing of Cords)


## PAINTING

(Painting of Protector)
Apply Flat Black to four grooves on Pro tector. In so doing, hold your right hand firmly with your left hand.



26
Fixing of Front Fork Construction of Rear View Mirror
K12


(23)

Wiring and Fixing of Cords


Fig. 28 〈Construction of Fuel Tank〉

First Construct A4, A5 and A1, and then fix another parts. Strip the plate from the adhered portion of plated Parts, and then glue Parts.

(Construction of Seat)
First apply Decals. Assist grips K 9, K 10 and K11 are breakable Parts. Take enough time in order to dry up the adhesive.


## PAINTING

(Finish of the Whole)
After decals have been glued and dried up, apply wax onto the whole to polish. In so doing, use a soft cloth with a little bit of wax.


28
Construction of Fuel Tank


J 5
(2)

Completion


## PAINTING

## APPLYING DECALS

## Painting:

Painting is done not to change the colour of each parts. It is done so that shape and function of a partic ular parts will be made all the more clear.
Six colours in all are to be used to increase a reality of the model. Name of each colour will be found in right side of this page.

## Before Painting:

Parts:
Before painting, sweep dust and greasy fat of hand left over off the surface of each parts with a soft cloth. If you want a full-proof clearing, further wash the surface with neutral cleanser. Those places which have been smeared with overflown adhesives could not be concealed by painting. So, get the adhesives off either with a cutter-knife, or by a fine sandpaper.
Irregular parting-line (place of joint between parts, or metals), too, should be corrected by filing.
Key to good painting of parts is to paint them after they have been assembled in their places. Parts of a same colour should be painted together as far as possible after they have been glued and their uneven jointed places, made fully even.


## Painting utensil:

Get a brush, a dissolving dish and a waste ready. For a painting brush. use one for design work. Use two kinds of brushes: A flat one and a thin one. And both should be of soft hairs and with long spikes.
For a dissolving dish, use either a china dish or a transparent pre package in which the model parts has been contained. Or again, a palette bought at a colourman will do. After painting, remove paints off brushes with lacquer thinner and then wash them with water. Keep the cleansed brushes in good state for future use.

## Paints and Solvents

There two kinds of paints for the plastics - the alcohol-induced ones and the enamel paints. For the former type, methyl-alcohol and for the latter, turpentine respectively can be used in place of thinner.

〈Body Colour)
As Body Colour of BMW R75/5 three kinds of colour are prepared. They are Blue, Silver and Golden, which are fashionable candy colours. It is pleasant that you paint it as you like.

〈Explanation of Decals)
(1) Emblem of BMW Company.

(2)Decals of speed meter and tacho-meter. Cut off the excess transparent portion around the decal before applying. (3) Liable insurance mark in Japan.
(4) Mark which is applied to Carburettors.
-BMW R75/5 (5) Emblem of BMW R75/5. (6) (7)Marks of the side of Battery Case.

## Applying Decals

Where to apply decals are indicated in the two-view plan below. However, each precise spot to be applied with a decal will be found in each figure for construction. See it for precise work.
(1)A decal to be applied should be cut off beforehand.
(2) Dip it in water. When the ground paper it is on arches, get the whole out of water to place on a cloth such as a towel.
(3) A minute or two later, hold edge of the ground paper to slide the decal onto the model from the ground paper.
(4) Then, get a little of water on your finger to wet the decal so that the latter will be moved more easily onto the right spot.
(5) Press the decal down with a soft cloth such as a towel to force air bubbles out of underside of the decal. Continue the work until the excess water, too, will be fully absorbed.
When the surface to be applied with a decal is uneven or curved, press the decal down with a steamed towel so that the warmed, wet decal will fit the surface well. Cut off the excess transparent portion around a decal before applying. When so done, you can expect a sharp finish with the decal precisely in its specified place.


A PARTS


PARTS Flat Black


- Parts not used.


1. Crank Case A
. Crank Case B
. Crank Case C
. Crank Case D
Crank Case E
Clutch Arm Stopper
. Clutch Arm
. Kick Starter Arm
. Cylinder Right Upper
. Cylinder Left Lower 1. Cylinder Left Upper 2. Cylinder Right Lower
. Locker Cover
2. Crank Case F
3. Crank Case G
4. Crank Case H
5. Crank Case J
6. Oil Sump
7. Kick Starter Part A
8. Kick Starter Part B


## PARTS

1. Fuel Cock B
2. Regulator
3. Air Pump A
4. Battery Terminal
5. Brake Drum A
6. Brake Drum A
7. Brake Crank Arm
8. Final Drive Unite
9. Front Fork Bottom Case Left A
10. Front Fork Bottom Case Right $A$
11. Front Fork Bottom Case Right B
12. Front Fork Bottom Case Left B
13. Front Brake Panel
14. Rear Brake Arm A
15. Rear Brake Arm B
16. Brake Pedal A
17. Shock Absorber Rod
18. Fuel Hose Joint
19. Brake Drum C
20. Air Pump C
21. Brake Pedal B
22. Number Plate (in Japan)
23. Step Arm Right
24. Step Arm Left
25. Number Plate (in West Germany)
26. Insulater Left A
27. Insulater Right A
28. Insulater Left B
29. Insulater Right B
30. Headlight Stopper
31. Push Rod Left
32. Push Rod Right
33. Horn B
34. Fuel Filler Cap
35. Meter Ring
36. Emblem
37. Muffler Right $A$
38. Muffler Left A
39. Muffler Right $B$
40. Muffler Left B
41. Handle Pipe
42. Front Fender Stay
43. Side Cover Right
44. Side Cover Left
45. Headlight Sealed Beam
46. Rear Shock Absorber C
47. Winker Indicator Lamp
48. Accelerator Lever Control Bolt
49. Assist Grip A
50. Assist Grip B
51. Assist Grip C
52. Rearview Mirror Stay
53. Fuel Tank Side Cover Right
54. Fuel Tank Side Cover Left
55. Front Fender Stay B
56. Rearview Mirror
57. Rear Winker Base
58. Bumper
59. Locker Cover Fitting Bolt
60. Bumper Stopper
61. Throttle Lever Right
62. Throttle Lever Left
63. Choke Lever D
64. Side Grip
65. Rear Wheel Part
66. Front Wheel Part
67. Rear Brake Rod
68. Rear Step
69. Spark Plug
70. Switch
71. Change Pedal
72. Front Winker Base Left
73. Front Winker Base Right
74. Fork Top Bridge
75. Taillight Base
76. Exhaust Part
77. Rear Shock Absorber
©
PARTS


When Body colour is either Silver or Golden, paint Flat Black. If Body is painted in Blue, paint Blue.


## - PARTS

1. Tacho-meter Cable Joint
2. Rear Fork Cover
3. Change Pedal Rubber
4. Rear Step Rubber
5. Step Rubber
6. Accelerator Grip Rubber
7. Seat
8. Front Wheel A
9. Front Wheel B
10. Rear Wheel A
11. Rear Wheel B
12. Rear Fork Part A
13. Frame B
14. Number Plate Bracket
15. Main Stand A
16. Stem Complete Part
17. Rear Fork Lower
18. Rear Fork Upper
19. Frame D
20. Frame A Left
21. Frame A Right
22. Wrench
23. Frame Part A
24. Frame Part B
25. Main Stand B
26. Main Stand B
27. Seat Hinge $A$
28. Seat Hinge B

##  <br> PARTS

1. Brass Pipe ( $6 \phi \times 39.5 \mathrm{~mm}$ )
2. Brass Pipe $(5.3 \phi \times 46 \mathrm{~mm})$
3. Brass Pipe ( $3 \phi \times 25 \mathrm{~mm}$ )
4. Brass Pipe ( $3 \phi \times 41 \mathrm{~mm}$ )
5. Brass Pipe ( $11.5 \times 20 \mathrm{~mm}$ )
6. Damper Boots
7. Universal Boots
8. Spring (for Rear Shock Absorber)
9. Spring (for Front Shock Absorber)
10. Spring (for Side Stand)
11. Spring (for Main Stand)
12. 2 mm Vis ( 6 mm below neck)
13. 2 mm Nut
14. Front Shaft ( $2 \phi \times 41 \mathrm{~mm}$ )
15. Rear Shaft ( $2 \phi \times 48 \mathrm{~mm}$ )
16. Rear Fork Shaft ( $2 \phi \times 52 \mathrm{~mm}$ )


Parts Gloss Black

(11) parts


Taillight $\square$ (Red)


PARTS


Gloss Black



3 PMCACOOX


