Ferrari 312B

1/12th BIG SCALE SERIES 48

TAMIYA

1/12 ビッグスケールシリーズ NO.48

フェラーリ312B

TAMIYA,INC. 3-7 ONDAWARA, SURUGA-KU, SHIZUOKA 422-8610 JAPAN 12048 Ferrari 312B (w/PE Parts) (11051256-001,11061113-001)

FERRARI 312B

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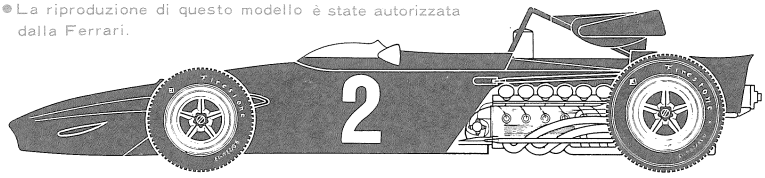
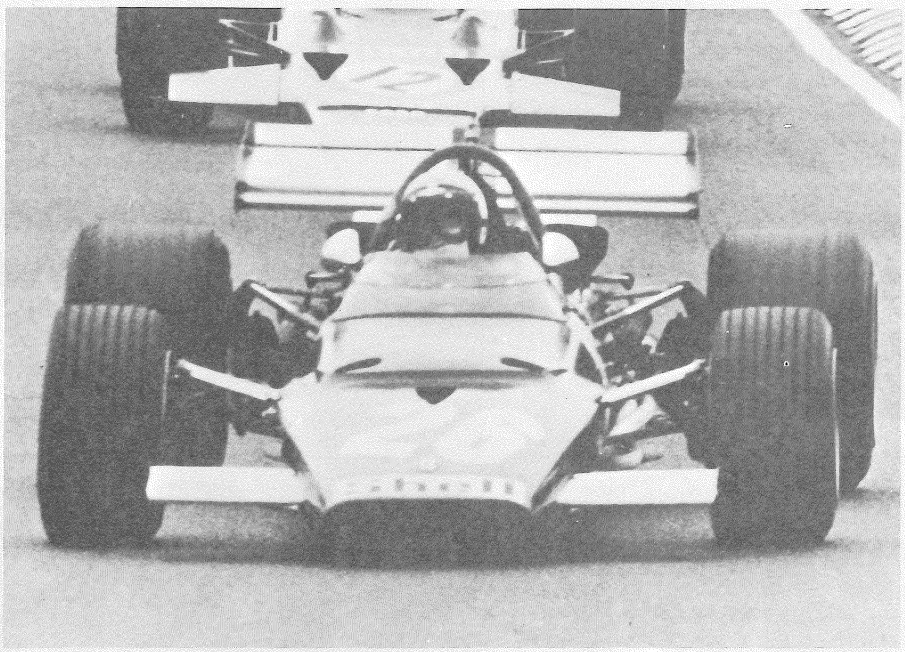




The Italian Car Manufacturing concern of Ferrari has never failed to inspire the motoring public of the world. The name "Ferrari" is synonymous with all that is best in sports and racing car design. This is especially true with the world motor racing fraternity.

It has always been, and we hope will always be every young man's dream to own and drive a Ferrari sports car. No other name in the motoring world has achieved such mystique and respect, such love and emotion. No other name has caused the hearts of true motor sports lovers to beat a little faster.

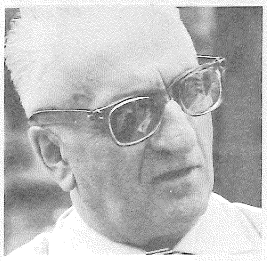
Ferrari cars produced so far have shown many ingenious engineering and mechanical components which have resulted in superior performance. Such renowned body builders as Bertoni and Pininfarina have produced incredibly beautiful yet functional body styles, adding to the overall image of this manufacturer.

The excellent productions of Ferrari have achieved many brilliant records and have always been amongst the most active participants in the front line of big racing events throughout the world. This fact is as true today as it has been in the past, and will be in the future.

Ferrari's positive attitude to racing has always warmed the hearts of the enthusiast and amply met the fans' expectations. They have also been rewarded by winning many of the world's richest racing prizes. Two of the Ferrari Team's most coveted and eagerly contested international feats are the Formula I Grand Prix and the Manufacturers Championship Prize. Winning either of these is every man's dream.

Established and led by Enzo Ferrari, the Ferrari Company of Maranello is comparatively young. The Commodore, which is the name by which Enzo Ferrari is known to his employees, has spent most of his life in motor racing, and it will be interesting, here, to repeat yet again a few of the remarkable exploits of this genius.

As a young man, Enzo Ferrari was a racing driver for another world-famous Italian Motor Manufacturer, Alfa-Romeo. As a young driver in 1923 Enzo Ferrari won a Race held at Ravena and afterwards a shield was presented to him by a Mr. and Mrs. Baraca. This shield depicted a black prancing horse on a yellow background. This spontaneous gift was the result of a great affection towards Enzo Ferrari, who resembled in many ways the son of the Baraca family who had been killed in an air battle in World War I. He is reputed to have been a great hero of the Italian Air Force and it is said that during his short career he shot down over 35 enemy aircraft. His machine always carried the prancing horse emblem. After the presentation of this shield the young Enzo Ferrari adopted this motif as his insignia and since this race every car which he either drove or manufactured carried the "Prancing Horse".



Ferrari

By 1929 Ferrari was in complete charge of all the Alfa-Romeo Racing activities, and formed a Racing Team, Scuderia-Ferrari. This team boasted such drivers as Nuvolari, Campari, Varzi and Chiron. Together, they stormed through the international racing calendar. However, in 1932, Alfa-Romeo withdrew their support from international motor racing, but the team, Scuderia-Ferrari, continued its activities, still based on the Alfa machines.

Before 1937, Ferrari was sufficiently far-sighted to see that the technical improvements of others would soon leave the Alfas behind, and he considered manufacturing his own machines. In 1939, Ferrari broke completely with Alfas and produced his first racing car. This was fitted with an improved version of the then popular Fiat push rod engine. The car was manufactured to race in the famous Mille Miglia of 1940. However, due to the advent of World War II this event did not take place.

The first all-Ferrari car did not, therefore, appear until the end of the Second World War in 1945. Three kinds of machine were then produced, each, however, being fitted with the same basic type of Ferrari-made engine. This was a V type, 12 cylinder OHC 1498 cc engine. Called the 125, this engine had been designed by Giocchini Colombo, another ex-Alfa employee, who had been responsible for the Alfa TYPO 158. One of these cars was the Grand Prix version called the 125GP. Another was the racing sports car designated Compezzione, and finally a sports car for the open market. Here, then, was the start of the Ferrari empire that we know today.

Ferrari and Grand Prix Racing.

In 1946 an International Body for the control of motor sport was reformed and was called F.I.A. (Federation International Automobiles). This Federation was recognised as the Governing Body of world motor racing. As a consequence, Grand Prix and other Race Formula and Rules were laid down or amended.

In the early years of the new Grand Prix Rules, Ferrari did not really excel. In 1948, the first year in which Ferrari really tried, he achieved only insignificant results. In 1949, however, the Ferrari Team won three Grand Prix with the 125GP machines. In 1950, the Drivers World Championship was inaugurated and was first won by Guiseppi Farina in an Alfa-Romeo. Alberto Ascari, Ferrari's leading driver, won this event in 1952.

Although the Grand Prix Rules were changed fairly frequently to ensure a better spectacle for the enthusiasts and a safer race for the drivers, it is noticeable how Ferrari and the British Manufacturer, Lotus, stand out from others in their successes. To be precise, Ferrari have produced six world Champions against four from Lotus. This is a remarkable post-war achievement.

The Ferrari winners of the World Championships were Alberto Ascari for the years 1952 and 1953, the legendary Fangio won in 1956; in 1958 an Englishman, Mike Hawthorne, obtained this coveted Award in a DINO 256, and the American, Phil Hill, was Champion in 1961. John Surtees, who came into motor racing after being a Championship motor cyclist, won the Award for 1964. But the most notable of these Championships was in 1952 when Ascari won all seven of the qualifying G.P. Races in that year.

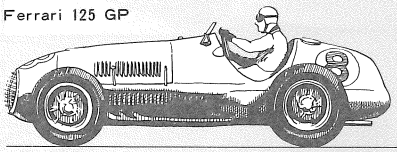
When the F.I.A. decided, in 1966, that the Formula I engine capacity should be increased to 3 litres, the Ferrari results for that year were not very successful. In that first year Surtees won the Belgian Grand Prix an Scarfiotti the Italian Grand Prix. In the course of the other Races that year, two Second, one Third and two Sixth places were recorded by the Team.

The World Championship that year was won by the Australian, Jack Brabham, who was driving a machine of his own make.

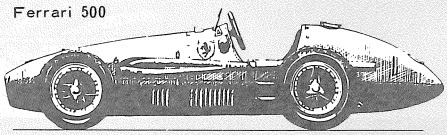
In 1967 the Ferrari Team was bedevilled by bad luck. In the very first race, the Monaco Grand Prix, their Number 1 driver, Lorenzo Bandini, was killed in a terrible accident. This left only Chris. Amon, a New Zealander, to battle for Ferrari.

Again, another lean year followed in 1968, when the only win was that scored by Jacky Ickx, a new member of the Team, who won the French Grand Prix.

Ferrari 125 GP



Ferrari 500



Still worse was to come in 1969, for Ferrari in this year did not win a single Grand Prix, the highest placing, in fact, being by Chris. Amon, who was Third in the Dutch Grand Prix. Apart from Amon, Pedro Rodrigues was the only other driver to obtain any placings that year, one Fifth and one Sixth.

The Ferrari 312B Formula I Racing Car.

After four years of racing to the 3 litre formula, Ferrari were forced to be satisfied with poor performances and placings. This obviously disheartened the Team, and especially the Boss, Enzo Ferrari. The basic trouble seemed to be the comparatively poor performance of the V 12 cylinder engine, which had been developed from the prototype sports car, the 275P2. This engine was always at a distinct disadvantage against the comparatively simple Repco and Ford Cosworth engines. Although built with as much care and precision as a Swiss watch, it was unfortunately, underpowered.

Although in theory a 12 cylinder engine has more torque than an 8 cylinder, its basic design was questionable, and to improve this, and to bring the Ferrari cars up to date, it was decided, late in 1968, that Mauro Forghieri should resign as Chief Engineer and Racing Manager for Ferrari and concentrate all his energies and efforts into the development of a completely new 3 litre engine. Thanks to his strenuous efforts a new, simplified 12 cylinder, horizontally opposed engine, the 312B, was produced. Ferrari had used the horizontally opposed layout in a previous 1.5 litre engine and Forghieri drew on this experience for his new venture. From experience he knew, for example, that with this type of layout the centre of gravity of the car could be lowered, and that the weight could also be reduced, both these factors be-

Essential Specifications:

ENGINE: Ferrari horinzontally opposed 12 cylinder, 4 valve
Capacity: 2911 c.c.
Stroke: 51.5 mm
Bore: 78.5 mm
Maximum Output: 465 B.H.P. at 12,000 r.p.m.
Fuel Feed System: Lucas Fuel Injection
Plugs: Champion
Ignition: Marelli-Dinoplex

TRANSMISSION:

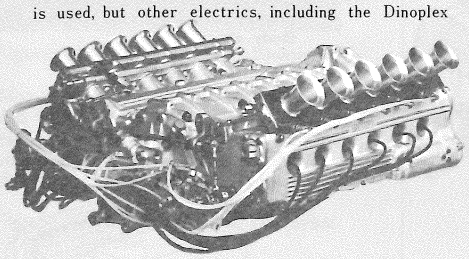
Gearbox: Ferrari 5-speed
Clutch: Borg & Beck
Chassis: Semi monocoque, steel and aluminium construction
Suspension: Double wishbones and coil springs at both front and rear.
Brakes: Girling
Steering gear: Rack & Pinion
Tyres: Firestone

MEASUREMENTS AND WEIGHT:

Overall length: 151 inches (383.54 cms.)
Body Width: 31 1/2 inches (80 cms.)
Overall height: (to top of Roll Bar) 36 inches, (91.44 cms)
Wheelbase: 92 3/4 inches (235.58 cms)
Track: Front: 54 1/2 inches (138.43 cms)
Rear: 56 inches (142.24 cms)
Hull Weight: 543 kgs.
Fuel Capacity: Approx. 50 gallons (220 Litres)

ing desirable in any Formula I car. Against these benefits, the engine would be wider unless the stroke distance could be shortened. As a result, the stroke was reduced to 51.5 mm and a bore of 78.5 mm. This drastic reduction in stroke and gain in compactness gave far greater weight reductions than were at first thought feasible. The weight of the new 312B was now about 184 kg., a good 18 kg. lighter than the old engine, and believed to be less than the very light and simple Cosworth DFV-V8 engine.

The 312B cylinder block is made of aluminium alloy and divides down the centre into two halves. Efforts to keep the weight to an absolute minimum are apparent in the crankshaft, and the number of main bearings is reduced to four. The camshafts are DOHC and two at each bank are employed, one for inlet, one for exhaust. The camshaft is gear-driven to improve upon reliability. The Champion spark plugs are set in the centre of the hemispherical combustion chambers. Attached to the top of the engine are two wedge shaped oil coolers which characterise the rear view of this engine. The Lucas fuel injection system is used, but other electrics, including the Dinoplex



Ferrari "BOXER" Engine

transistorised ignition system, are by Marelli.

When first tried competitively, the 312B engine developed 455 h.p. at 11,500 r.p.m. By the middle of the season it was 460 h.p. at 11,600 r.p.m. Further developments brought this figure to 475 h.p. at 12,000 r.p.m. These performance figures are the highest attained under the present 3 litre regulations.

In marked contrast with this advanced and unique engine, the chassis is most orthodox. In fact, when compared to the progressive designs of the Lotus it is positively old fashioned. The chassis is of semi monocoque construction, mated to a steel backbone, with light alloy reinforcements.

The rear and of the chassis is designed on the cantilever principle and projects behind the cockpit. At the extreme end a sturdy, steel bulkhead is fitted. This is further strengthened by a triangular support plate projecting behind the roll bar. The engine itself is placed below this cantilever sub-frame, the front being fitted by six bolts directly behind the cockpit. The rear section is mounted on to a bulkhead by means of a ring shaped plate which also serves as a clutch housing. The suspension system is also of orthdox design. The front consists of wishbone and A arms; the coil and spring damper unit made by Koni is mounted inside the body. The rear suspension consists of upper and lower arms and is a 4-link system by way of using twin radius rods. The rear coil spring dampers are also made by Koni. Immediately behind the cockpit, mounted above the engine, there is an aerofoil of the split type. This means that the right and left halves can be adjusted independently.

Aerofoil were first extensively used by Chaparral in motor racing. However, it is believed that Ferrari was the first to use these separately adjustable aerofoils in a Formula I Race. Cars with large aerofoils were used in great numbers in the world of Formula I racing, but because of accidents caused by these wings coming adrift, cars with suspension mounted aerofoils were prohibited to participate in the Monaco Grand Prix Race of 1969. After this, the size was severely limited by the F.I.A., and in the succeeding Dutch Grand Prix, much smaller wings were used for the first time, but with the introduction of the slot-flap as used on aircraft, the efficiency of the smaller wings was said to be greatly increased.

The tyres are made by Firestone. The performance of this vital link between car and road has recently become an increasingly important factor in winning races. It is obvious that as the performance of racing cars improves, the tyres have to take much more punishment. This has resulted in such a severe rivalry between the various tyre manufacturers that it has virtually become a "tyre war". All types of variations in uses of tyres have been tried and in the materials of manufacture and tread patterns, sometimes there are four types in one car, i.e. they are not always the same throughout. Different tread patterns and materials are used on a single car according to the changing conditions of the circuit.

The hull weight of the 312B was around 545 kg. at the start of the 1970 season. This was later reduced to 543 kg. This light weight was second only to the Lotus which had a power weight ratio of about 1:1.24, the best ever achieved by a car of this kind.

Recent records of the 312B engine are as follows:-

In the first half of 1970 the Ferrari Team was plagued by troubles, which are usual when a new design is first introduced.

Jacky Ickx joined the Ferrari Team, and during the middle of the season two other drivers joined. They were Ignatio Giunti and Clay Regazzoni. The strengthened Team's first entry was at the South African Grand Prix, the first race of the season. Unfortunately, they had to retire from the Race due to engine trouble.

In the next, the Spanish Grand Prix, Ickx's machine was put out of action, due to an accident.

Then again, in the Monaco Grand Prix of that year, retirement was the order of the day owing to a break-up of the drive shafts.

However, the season was not entirely without success, as in the Belgian Grand Prix, Giunti, a newcomer to the Team, won a prize, the first one for the car, for obtaining Fourth place, and at the Dutch Grand Prix, which is the fifth of the Season, Ickx obtained Third place and Regazzoni came in Fourth. Thanks to the results of these three drivers, the Ferrari Team could at last look forward to a brighter future.

In the French Grand Prix, Ickx established the highest road speed record at practice and got the pole position for the first time that year, but unfortunately during the actual race he was unable to keep up this performance and retired. Giunti, driving another Ferrari, finished in Fourteenth place.

In the 7th race of the season, the British Grand Prix, Ickx at one time was leading, but due to mechanical trouble was forced to retire. However Regazzoni continued, and managed to finish in Fourth place.

In the German Grand Prix, the eighth race of the season, Ickx battled for first place with Jochen Rindt of the Lotus Team, but unfortunately finished in second place by the very narrow margin of only 0.7 seconds. Regazzoni also led the rest for a brief period, but unfortunately was forced to retire.

As has already been stated, in the first half of the 1970 season the Ferrari Team was not in good shape. However, its strength greatly improved, and when the result of the German Grand Prix was announced it was increasingly apparent that the prospect of great success was within their grasp.

In the Austrian Grand Prix, which was the 9th race of the season, the 312B displayed its great qualities to the full and at long last the Ferrari Team won. In this race, Ferrari allowed three drivers to enter, and in practice, Regazzoni got second place, Ickx third and Giunto fifth. In the actual Race the Ferraris led the others in the first half with Ickx leading, Regazzoni in Second and Giunto in Forth place. However, Giunto was forced into the pits with a flat tyre on the 38th lap, but in spite of this he came back and finished in Seventh place, but throughout the race Ickx and Regazzoni continued in the first two places and finished First and Second.

This victory was the first for two years, the last one being in 1968 when Ickx won the French Grand Prix.

In the Italian Grand Prix, the tenth race of the season, Regazzoni was victorious. The event was hailed with great joy by the Team, but this success was marred by tragedy, because Jochen Rindt, the Ace Driver for Lotus, was killed during practice. He crashed violently against the guard rails on the south curve of the famous Monza Circuit. At the time of his tragic death Rindt had already got five victories and was the strongest candidate for the World Championship. He was far ahead in points over-all his competitors.

In the Canadian Grand Prix, the eleventh of the season, Ickx and Regazzoni held Second and Third places respectively for the first half of the Race. Later, Jackie Stewart, who was leading, was forced to retire in the 32nd lap, leaving the two Ferrari drivers in First and Second places.

In the American Grand Prix, Emerson Fittipaldi, a newcomer to the Lotus Team, won the Race and thereby restored victory to Lotus, and incidentally filled the gap left by the death of Jochen Rindt. Ickx, of the Ferrari Team, finished in Fourth place.

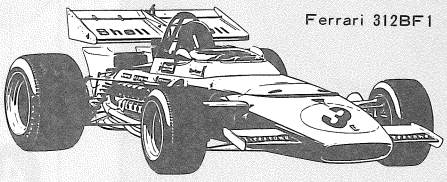
The result of this Race gave the World Championship posthumously to Rindt.

In the final race of the season, the Mexican Grand Prix, Ferrari obtained First and Second places for the third time. This really crowned the list of their efforts for the season. Immediately after the start Regazzoni was leading, with Stewart in Second and Ickx in Third place. Later, however, Ickx took the lead with Stewart in Second, and Regazzoni in Third place. When, in the 33rd lap Stewart retired, victory for the Ferraris was certain.

GRAND PRIX '70	CAR NUMBER DRIVER	RESULT
South Africa G·P	17·J·Ickx	Retire
Spanish G·P	②·J·Ickx	Retire
Monaco G·P	26·J·Ickx	Retire
Belgian G·P	27·J·Ickx 28·I·Giunti	8 4
Dutch G·P	25·J·Ickx 26·C·Regazzoni	3 4
French G·P	10·J·Ickx 11·I·Giunti	Retire 14
British G·P	③·J·Ickx ④·C·Regazzoni	Retire 4
German G·P	10·J·Ickx 15·C·Regazzoni	2 Retire
Austrian G·P	12·J·Ickx 27·C·Regazzoni 14·I·Giunti	1 2 7
Italian G·P	②·J·Ickx ④·C·Regazzoni ⑥·I·Giunti	Retire 1 Retire
Canadian G·P	18·J·Ickx 19·C·Regazzoni	1 2
U.S.G·P	③·J·Ickx ④·C·Regazzoni	4 13
Mexican G·P	③·J·Ickx ④·C·Regazzoni	1 2
'71 South Africa G·P	④·J·Ickx ⑤·C·Regazzoni ⑥·M·Andretti	8 3 1
Spanish G·P	④·J·Ickx ⑤·C·Regazzoni ⑥·M·Andretti	2 Retire Retire

The 1971 Season.

The 312B underwent many improvements in both body



Ferrari 312BF1

and suspension. After modification it was called the 312B-2. The shape of the body was changed into a wedge. This shape was regarded as more efficient and amenable to pneumo-dynamical force. The rear suspension was also radically altered. As previously stated, the 1970 car had quite an orthodox rear suspension system. The new modification was based on a bell crank which was made of five steel pipes, incorporating the coil spring damper unit laid horizontally. The aim of this new arrangement was to reduce loads on the spring and also to improve the road holding. Furthermore the oil tanks were moved to a new location behind the roll bar and were streamlined.

With these improvements the Ferrari Team has made rather a good start in the 1971 season. In the South African Grand Prix, the first of the year, Mario Andretti, a newcomer to the Team, was the winner, and Regazzoni obtained Third place. Ickx finished Eighth, due to a puncture.

In the second race of the season, the Spanish Grand Prix, Ickx finished in Second place, though unfortunately, both Regazzoni and Andretti were forced to retire.

In the Monaco Grand Prix, the third race of the season, Ickx finished in Third Place.

As will be seen from these results, the performance of the machine has been greatly improved, and the combination of Ferrari with Ickx, Andretti and Regazzoni as drivers, stands a very good chance of winning the World Championship for this year.

★Always use glue very sparingly. Too much glue will spoil your finished model.
★Before applying glue, construct each part and section to ensure that you are fitting the parts correctly.
★Before starting to build your kit, check all the parts.
★Where parts are shaded blue in these Instructions, it means that they are either to be flattened by heating, or are to be glued together with plastic cement.
★You will probably find it easier to paint smaller parts whilst they are still on the runner.
★To enhance the final appearance of your model, you may insert thin fuse wire into the vinyl tubing, so that it retains its shape over a period of time.
★Where plated plastic parts are to be cemented, gently scrape off the plating to expose the plastic. This ensures a good adhesion, since the plastic cement will not bond on the plated parts.

Figure 1. Construction of Nose Cowling.
Since the right and left spoilers G4 and G5 are different, do not confuse them when you are gluing them on to Part B1. Parts G1 and G3 are also differently shaped and care should be taken that they are fitted on the correct side respectively.

Figure 2. Construction of Wing.
The right and left wing parts are different shapes. So cut each individually as you need them for construction from the runner, but do not remove them both at the same time.

Figure 3. Construction of Oil Tanks.
First construct the oil tank as shown. Then glue Part D68 on to it. Next glue the respective parts on to D58. Lastly glue Part D58 on to the oil tank in the position indicated in the diagram.

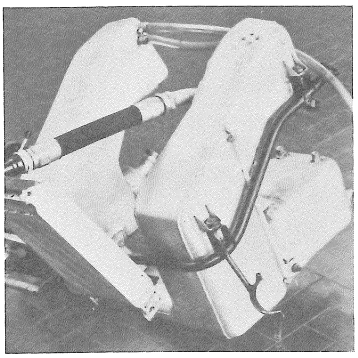
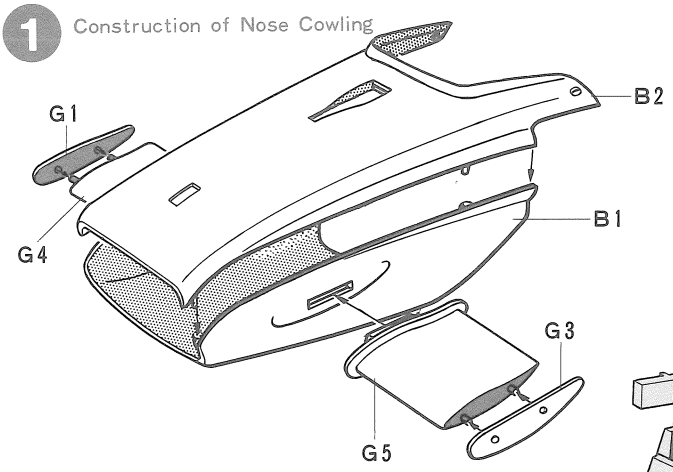


Figure 4. Construction of Oil Cooler.
Having constructed the oil cooler as shown in the diagram, connect the pins of Parts J6 and J16 with rubber pipe. Part D35 will also serve as a stopper for the exhaust.

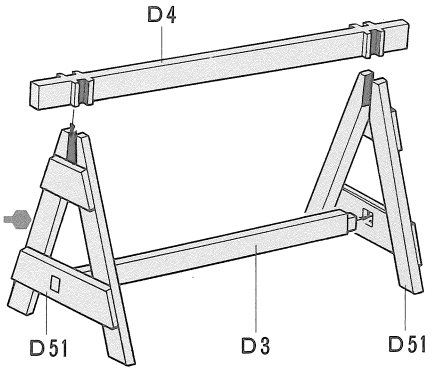
PAINTING

As well as improving the look of your completed model, detailed painting will give you greater satisfaction in the end. You will find painting hints on each page of these instructions to assist you while building your Ferrari 312B, and to help you create a truly realistic model.

1 Construction of Nose Cowling

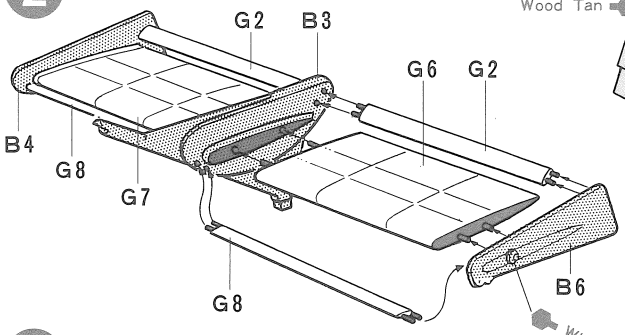


〈Construction of Stand〉



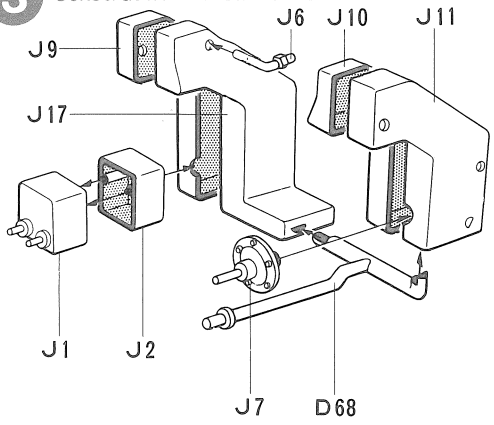
Construct two these Stands to display half Completed Engine, Body, etc.

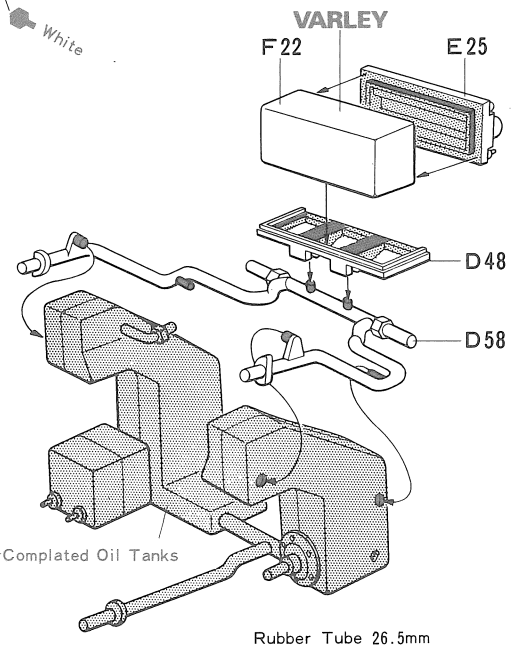
2 Construction of Wing



Wood Tan

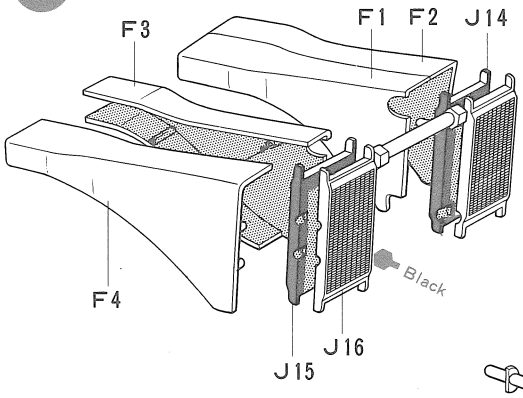
3 Construction of Oil Tanks

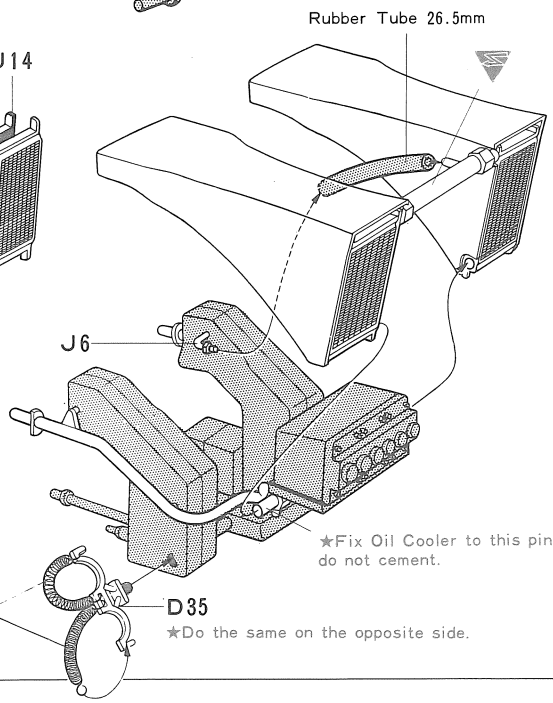




★Complated Oil Tanks

4 Construction of Oil Cooler

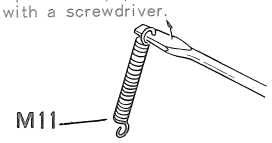




★Fix Oil Cooler to this pin, do not cement.

★Do the same on the opposite side.

Open the top part of M11 with a screwdriver.



Use as Muffler Support on Diagram 30.

Figure 5. Construction of Radiator.
Attach the metal part "L" shaped on D26 using B16, then assemble it. The shapes of parts D62 and D61 are different. So make sure you do not confuse them when fixing them.

Figure 6. Construction of Front Suspension.
Construct D63 and D67. Glue Part J8 disc on to part D47. Construct the other side with identical parts in the same way as shown in the diagram.

〈Front Upright〉

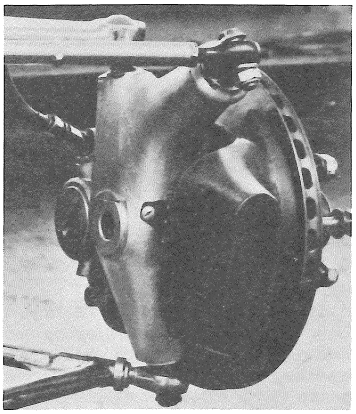


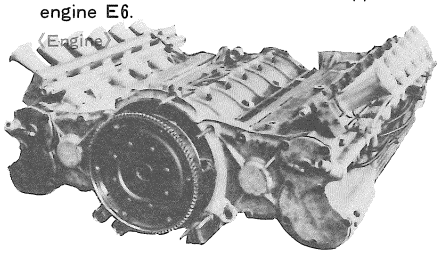
Figure 7. Construction of Shock Absorbers.
Glue respective Decals on to parts D42 and D45. Glue Parts D42 and D43 together and pass M3 through both. Then insert H20 into the unit as shown in the diagram. Construct two pairs.

Figure 8. Construction of Universal Joint.
Be careful not to apply cement on to Part H22. Construct 2 joints as shown in the diagram.

Figure 9. Installation of Ignition Plugs.
Holding Parts D28 with the tweezers, cement them straight into Parts E22 and E21.

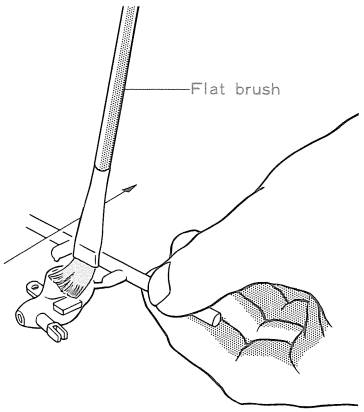
Figure 10. Construction of Engine.
Firstly, glue Parts E6 and E5 together. Then construct Parts E24 and E15, also E22 and E21. Glue Parts E9, E8, E1 and H11 together and fix on to upper engine E6.

〈Engine〉



PAINTING

Painting Uprights.
Small parts like the uprights should first be cleaned with a firm flat brush and then painted while still on the sprue. Only cut them from the sprue when they are dry.



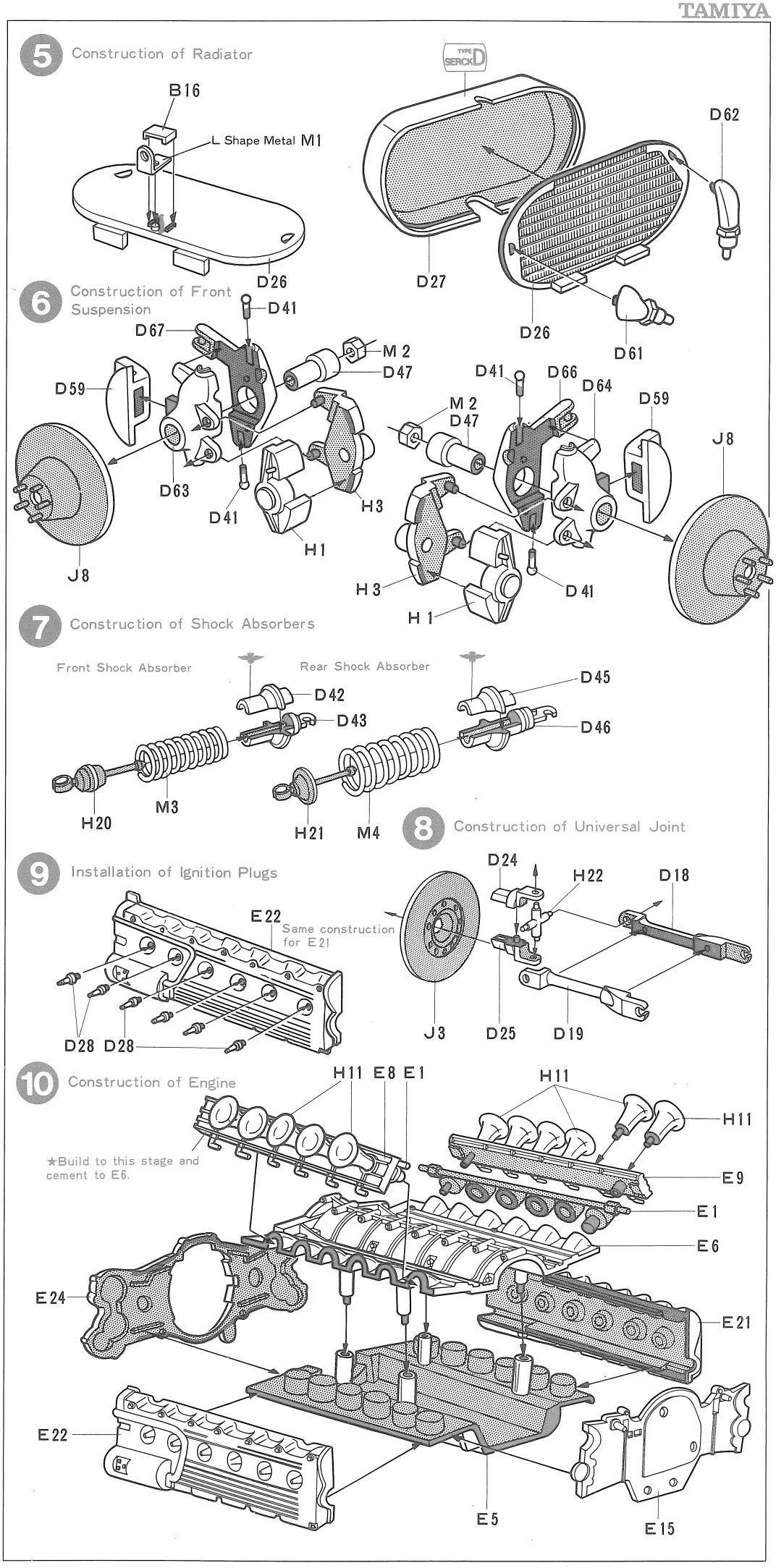


Figure 11. Construction of Transmission Box.

Before gluing E3, E4 and E28 together, place part D31 in between but do not glue. Glue half shaft pieces to D31 as shown, passing them through E3 and E4. Check that the half shaft revolves freely. Remember not to glue Parts H22. Cement this sub-assembly on to the engine. Place relative Decals on to parts E17 and E18.

〈Transmission〉

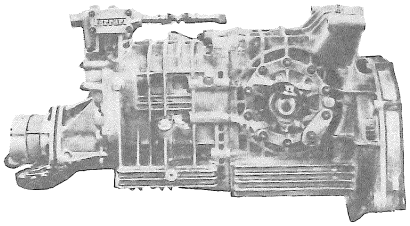


Figure 12. Construction of Fuel Injection Parts.

Construct fuel injection parts as shown in the diagram. Then cut clear vinyl into the lengths shown Ⓐ to Ⓛ. Cut the black vinyl piping into the lengths shown from ① to ⑫ and fix each on to the distributor in this order, starting from the place specified in the diagram.

〈Length of Fuel Pipes(Clear)〉

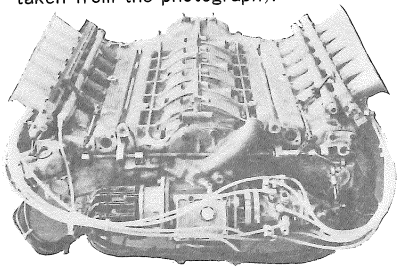
Ⓐ	60mm	Ⓖ	45mm
Ⓑ	75mm	Ⓗ	50mm
Ⓒ	80mm	Ⓘ	50mm
Ⓓ	90mm	Ⓙ	70mm
Ⓔ	100mm	Ⓚ	80mm
Ⓕ	110mm	Ⓛ	80mm

〈Length of Ignition Cords (Black)〉

①	28mm	⑦	75mm
②	33mm	⑧	79mm
③	42mm	⑨	88mm
④	51mm	⑩	96mm
⑤	60mm	⑪	105mm
⑥	70mm	⑫	120mm

Figure 13. Assembly of Front Engine Parts.

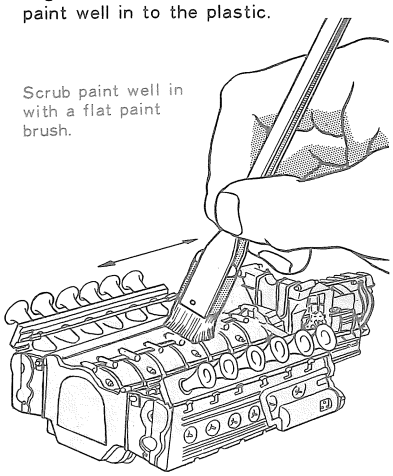
First, fix Parts D40 and then glue Part E19 on to the front of the engine, having passed D50 through E19. Then fix the fuel injection and distributor parts. Lastly, complete the wiring in the numbered order with the help of tweezers. (guidance for this operation may be taken from the photograph).



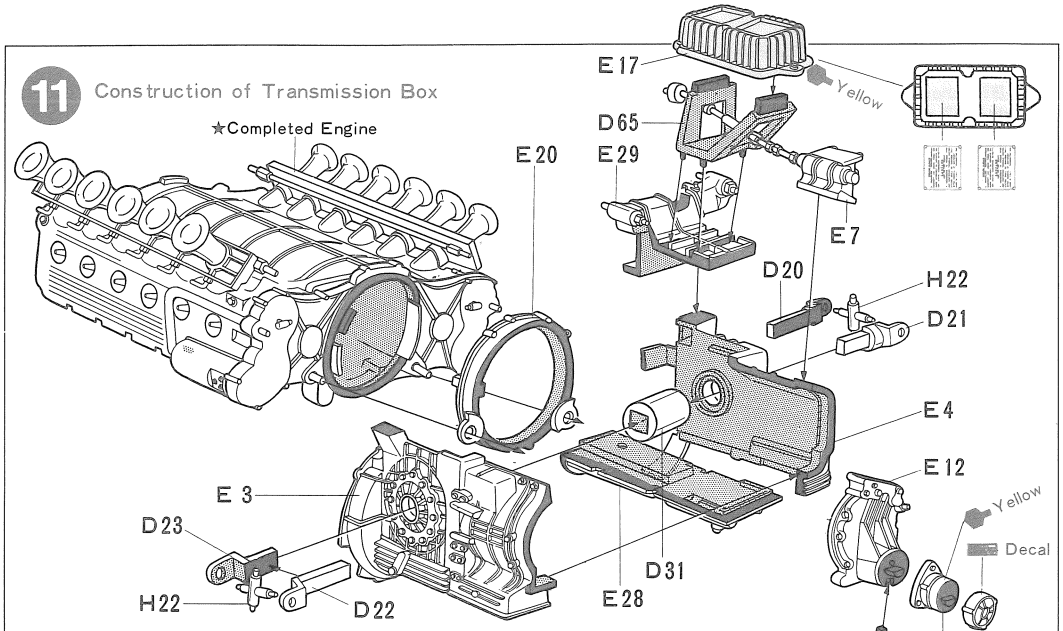
PAINTING

Painting the Engine.

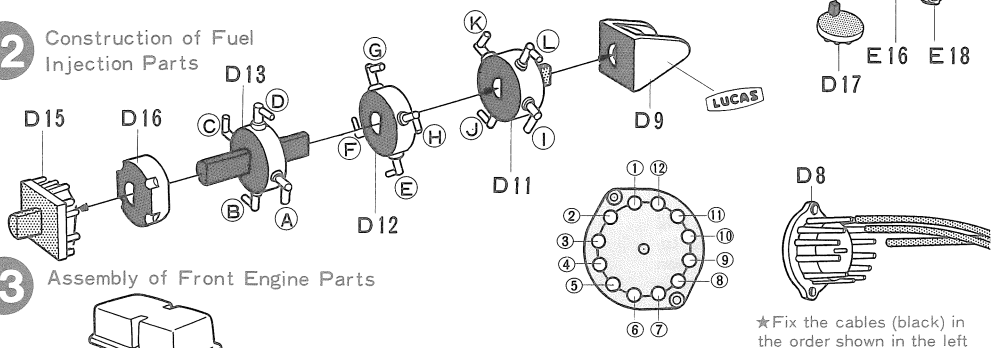
Apply flat metallic grey paint to the engine with a flat brush and scrub the paint well in to the plastic.



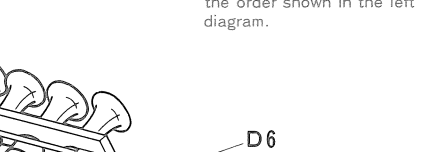
11 Construction of Transmission Box



12 Construction of Fuel Injection Parts



13 Assembly of Front Engine Parts



★Fix the cables (black) in the order shown in the left diagram.

For wiring of Ignition Cord and assembly Fuel Lines use Tweezers and refer to photograph and Diagram.

Wiring of Ignition Cord and assembly of Fuel Lines.

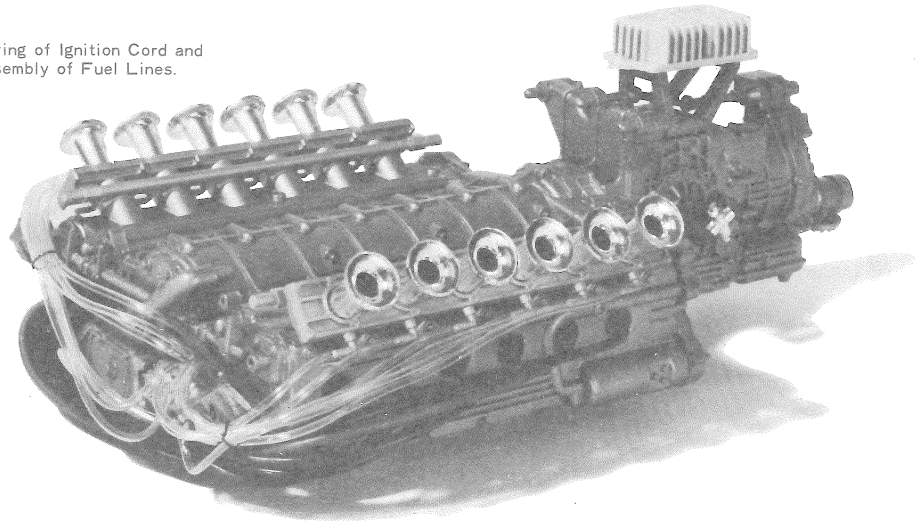


Figure 14. Fixing the Exhaust System Assembly.
Fix exhaust pipes on to the engine as shown in the diagram.

Photo of Completed Engine

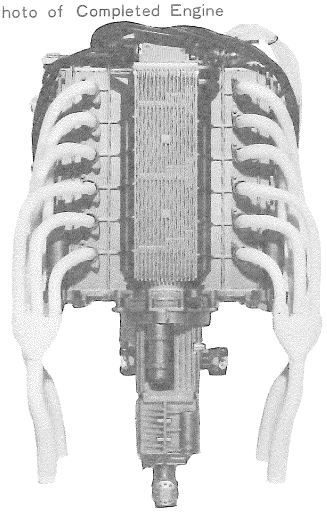


Figure 15. Painting the Driver.
First, select which driver you wish to reproduce: J. Ickx, M. Andretti or C. Regazzoni. Paint the driver in accordance with which of these you have selected. Remember, the driver cannot be painted once he has been placed and fixed into the car.

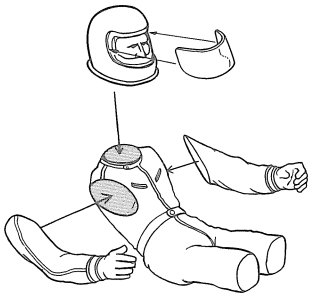


Figure 16. Cockpit Construction.
Glue the stickers on to the dashboard. Make sure you finish painting the interior of the cockpit at this stage. Assemble the cockpit as shown in the diagram.

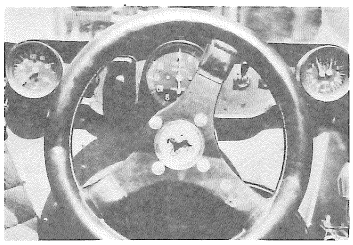
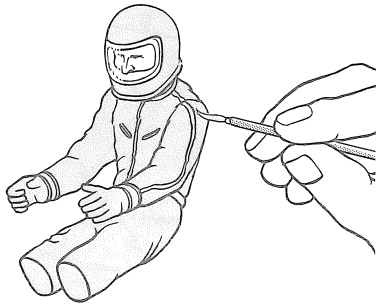


Figure 17. Fixing of the Seat Belt.
First place the driver into his seat. Then fix the seat belt as shown in the diagram.

Figure 18. Body Parts Construction.
Attach the metal parts "L" shaped to the part (C2) with using B16.

PAINTING

Painting the driver.
Paint the driver all over in white. When dry paint in facial and overall detail using a fine thin brush.



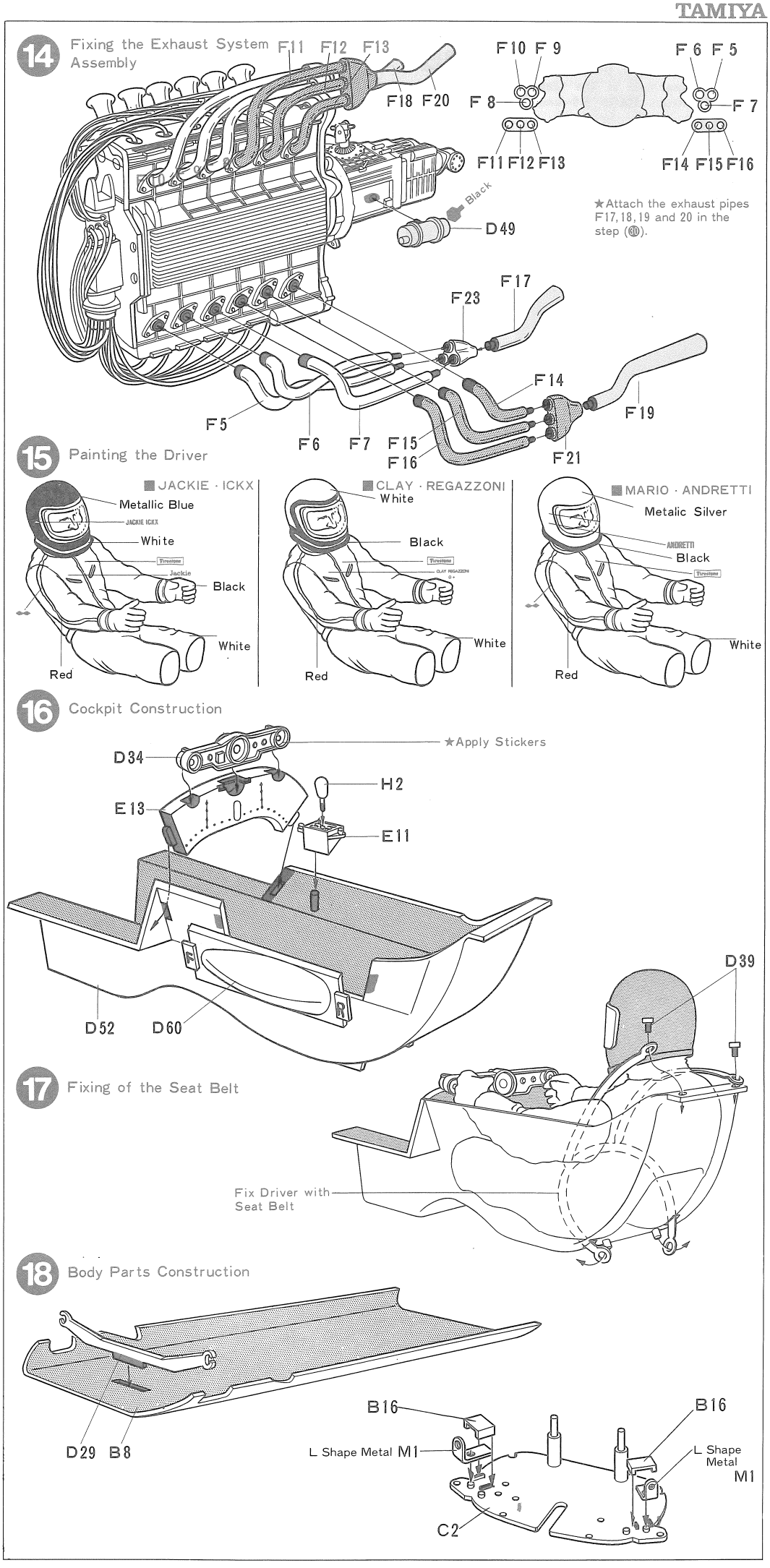


Figure 19. Construction of the Body.
Glue the bulkhead B10 and Part E23 together. Then fix it on to the body. Glue the cockpit on to the bulkhead at the place specified in the diagram. Lastly, construct Parts B8 and C3 respectively.

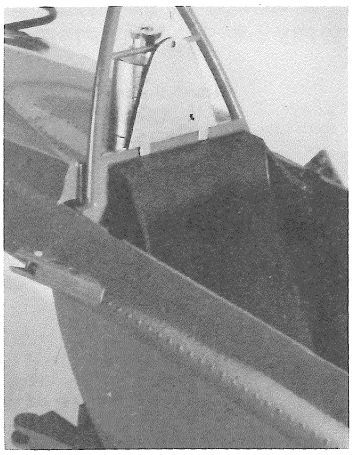
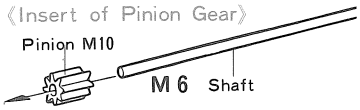


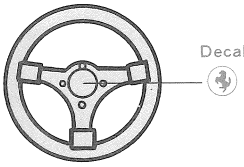
Figure 20. Bulkhead Construction.
Fix C2 and the parts which have been assembled in Figure 18 on to the body, and assemble further as shown in the diagram. Allow the coil springs M5 to project out, in the position shown in Figure 21.

Figure 21. Upper Arm Assembly.
Position the shaft M6 through Part E13. Whilst so doing, construct the upper arm as if to hold it in between those two parts. Fix, but do not glue, Parts H14. Ensure that you do not confuse the right H13 and left H14.

〈Insert of Pinion Gear〉



〈Steering Wheel〉



〈Bulkhead〉

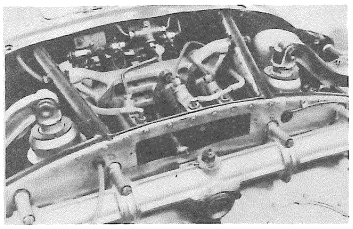
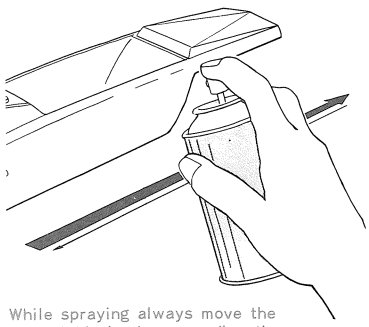


Figure 22. Rack Assembly.
Position the rack H10 into the lead arm H12 as shown, and then fix as shown in the diagram. Assemble other parts as shown in the diagram.

PAINTING

Spray Painting.
The body may be spray painted.



While spraying always move the can quickly in the same direction.

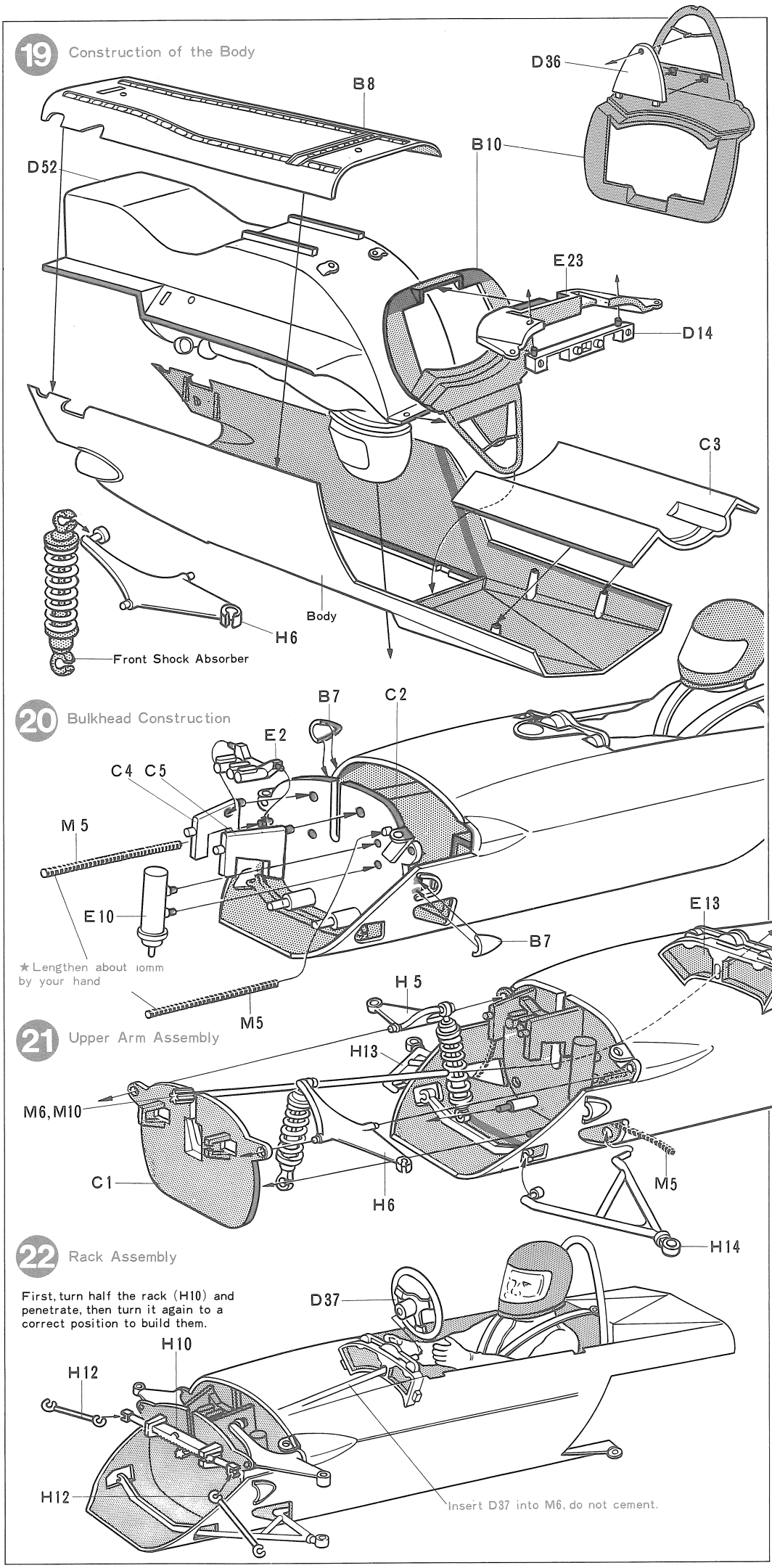


Figure 23. Assembly of the Uprights and clear parts.
Fasten the uprights at the top and the bottom with Parts D41. Then fix B9 and clear part on to the body. Finally, assemble and glue Part E14 on to the body.

〈Radiator〉

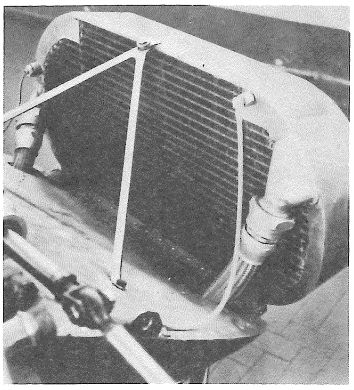


Figure 24. Radiator Assembly.
Fix the rubber piping on to the radiator. Then glue the whole assembly on to the body. Be sure not to glue, but just assemble, part B11. Assemble other parts as shown in the diagram.

〈Radiator Hose〉

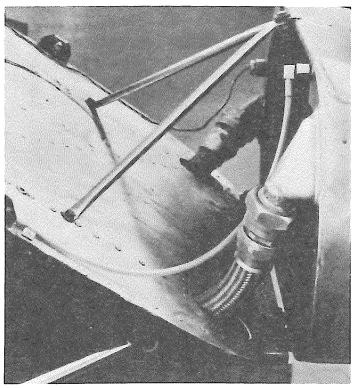
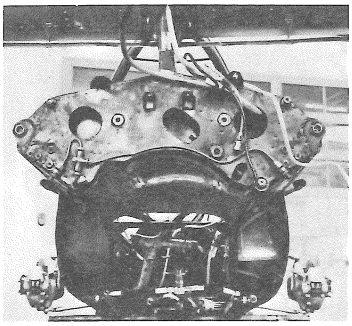


Figure 25. Nose Cowling Assembly.
Fasten the nose cowling with the three flat screws provided, as shown in the diagram.

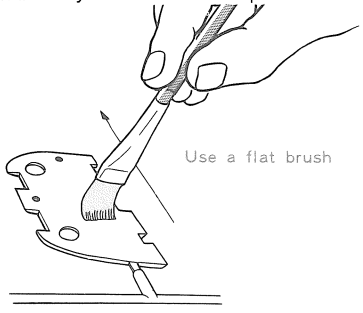
Figure 26. Bulkhead Assembly.
Glue bulkheads D32 and D33 together. Also glue the respective radius arm stoppers on to the body beforehand, as shown.

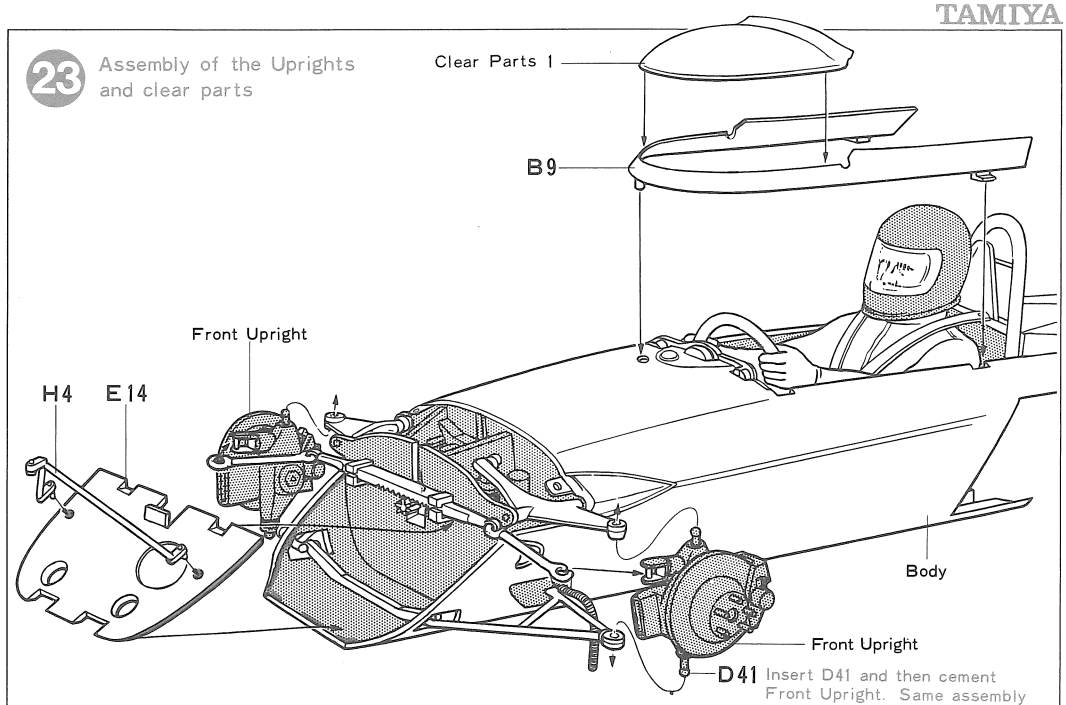
〈Rear Bulkhead〉

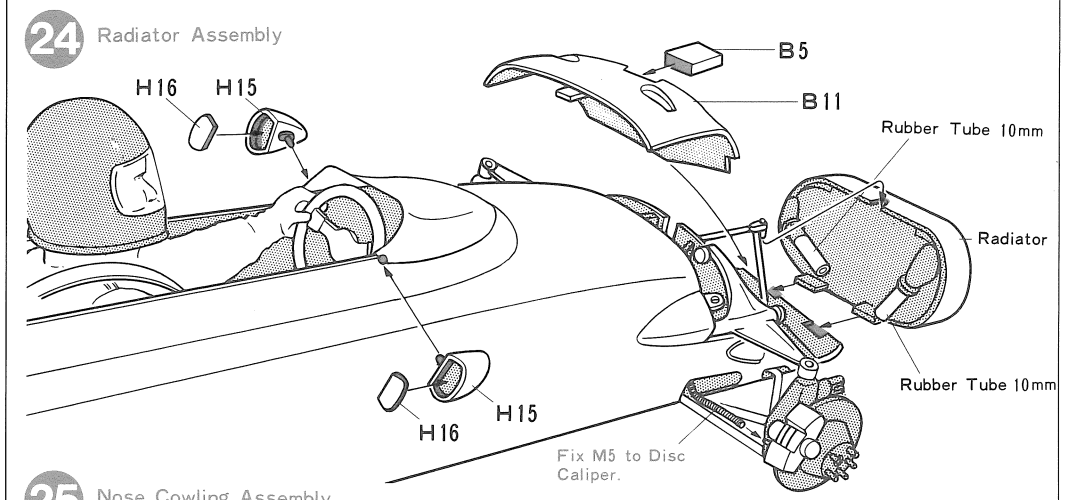


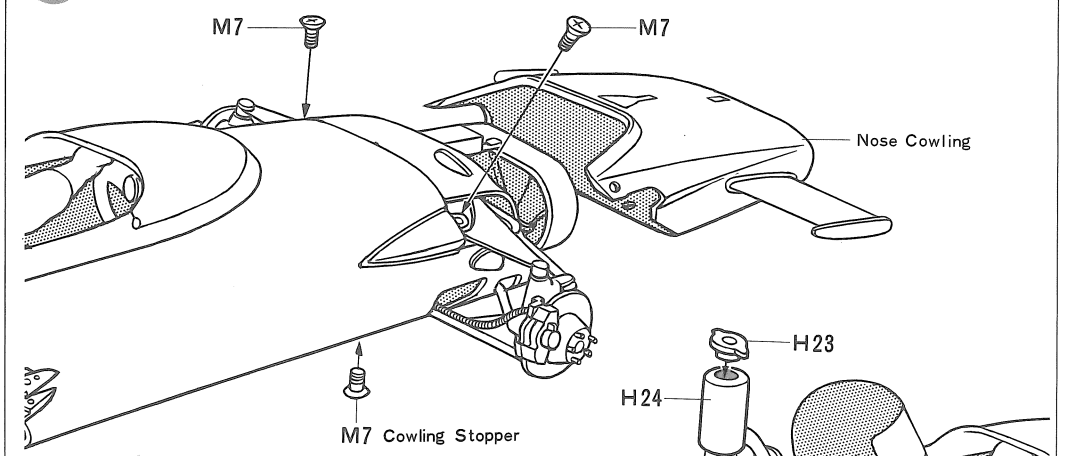
PAINTING

Using a Flat Brush.
For flat surfaces a thicker flat brush is required. Always paint small parts while they are still on the sprue.









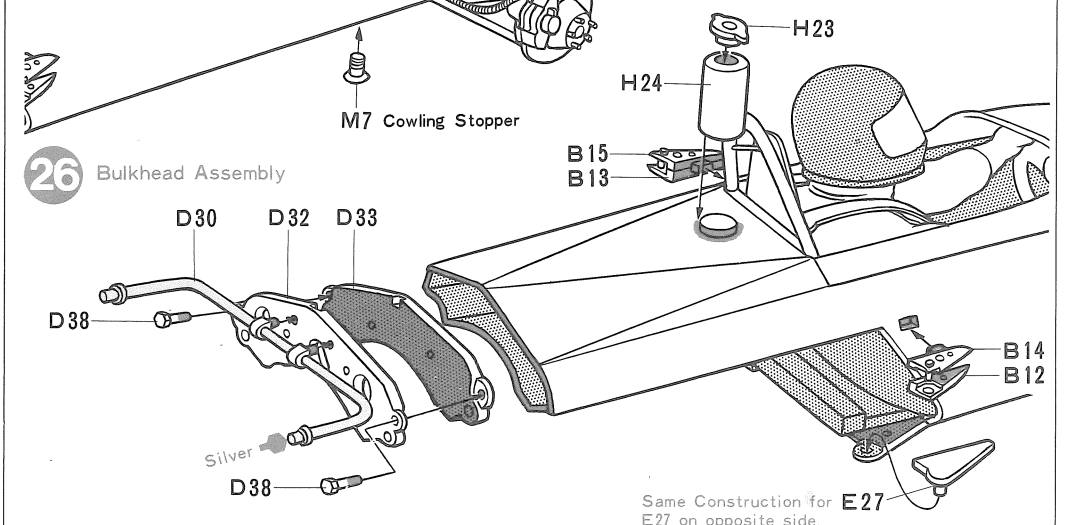


Figure 27. Rear Upright construction. Firstly, fix rear radius arm on to rear upright. Then glue the disc caliper on to the unit. Lastly glue the half shaft on to Parts D44,passing it through D55. Take care to assemble exactly as shown on the diagram.

〈Rear Suspension〉

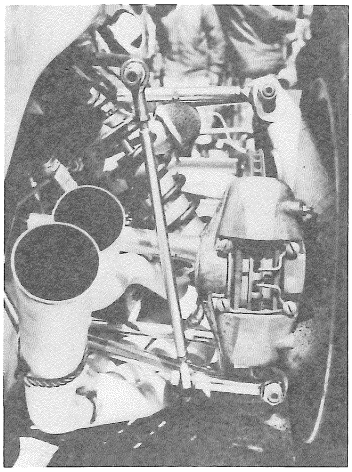


Figure 28. Rear Suspension Assembly. Fix lower arm on to the engine,connecting the half shafts to Parts H22 (Do not apply adhesive).

Figure 29. Engine Installation. Fix the rear shock absorbers on to the bulkhead. Then carefully fix the engine as shown in the diagram, suspending it from the body and the bulkhead as shown. (Do not apply adhesive).

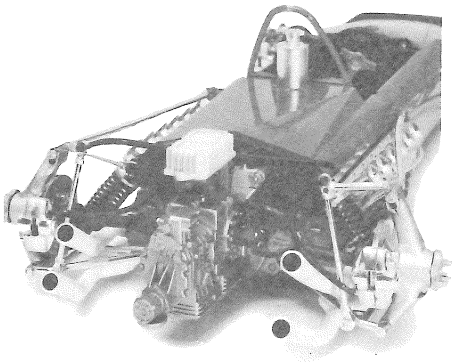
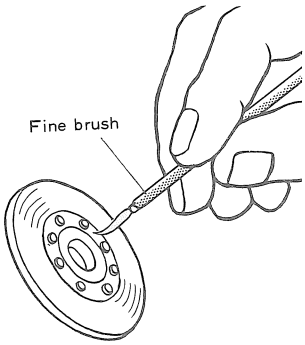


Figure 30. Oil Tank Installation. Place oil tank into the hole below the bulkhead and engine. In so doing,insert and fix the exhaust into the exhaust stopper. Fix Parts H9.

PAINTING

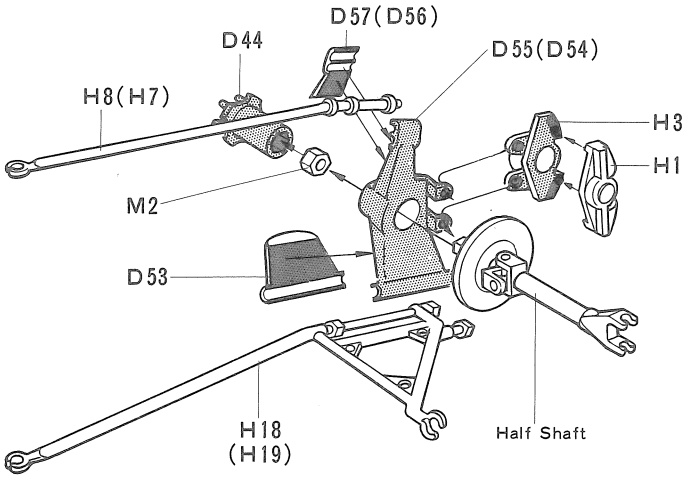
Painting in Detail

Increase the realism of your model by painting in your own detail on the engine, discs etc. Use a fine brush to accentuate nuts,bolts etc.

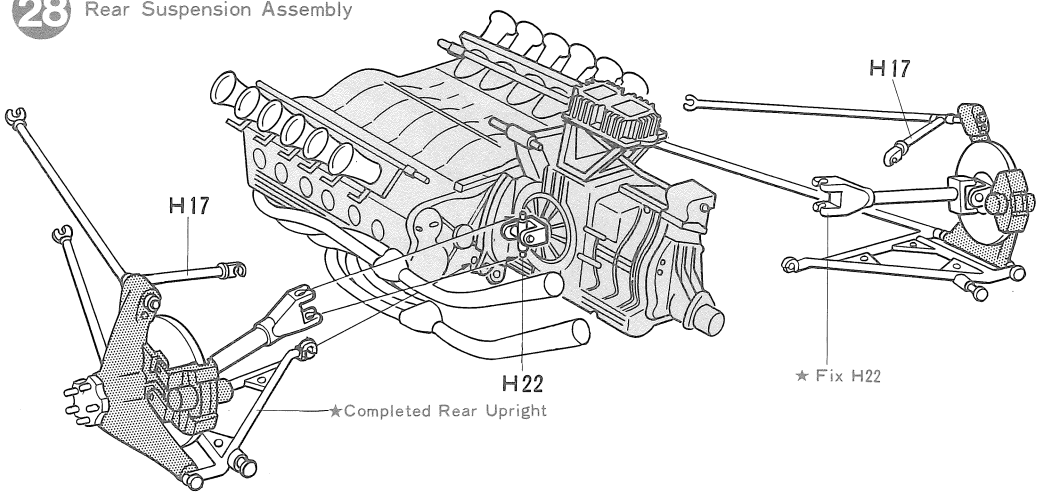


27 Rear Upright construction

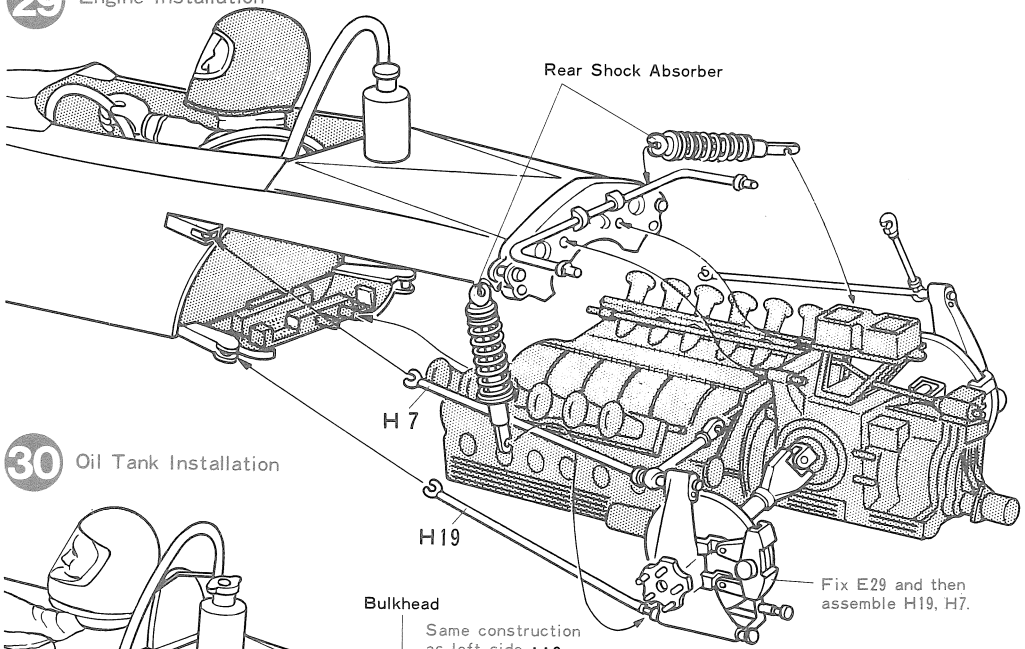
★Figures in brackets are part numbers for left Upright.



28 Rear Suspension Assembly



29 Engine Installation



30 Oil Tank Installation

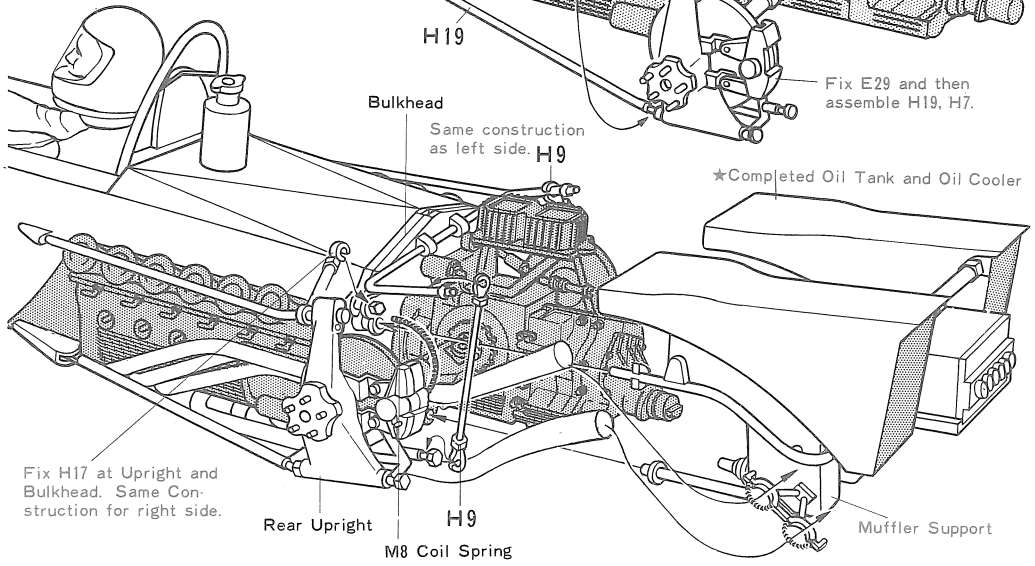


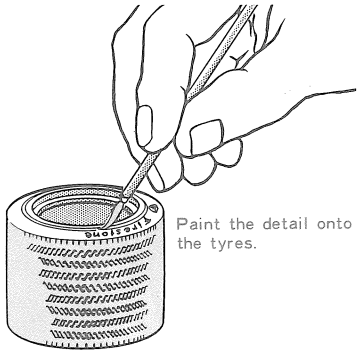
Figure 31. Wheel, Tyre and Wing Assembly.

Construct the wheels first, including the tyres. Then fasten them on to the uprights with the screws M8 and M9. The short screws are for the rear, the long ones for the front. Cement the wing on to the roll bar and bulkhead.

PAINTING

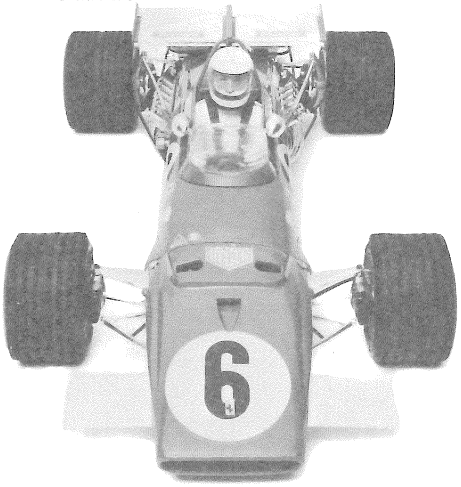
Finishing

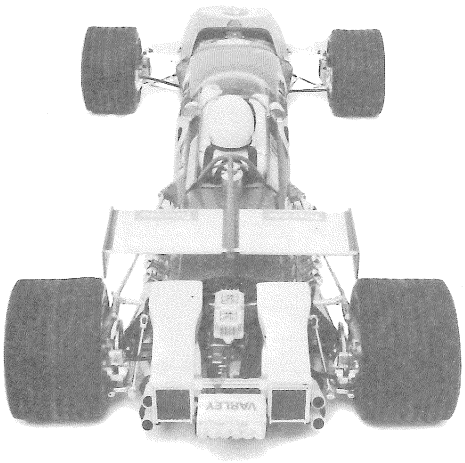
Use a fine liner brush to paint the detail onto the tyres. The completed model can be polished with wax to improve the finish still more.



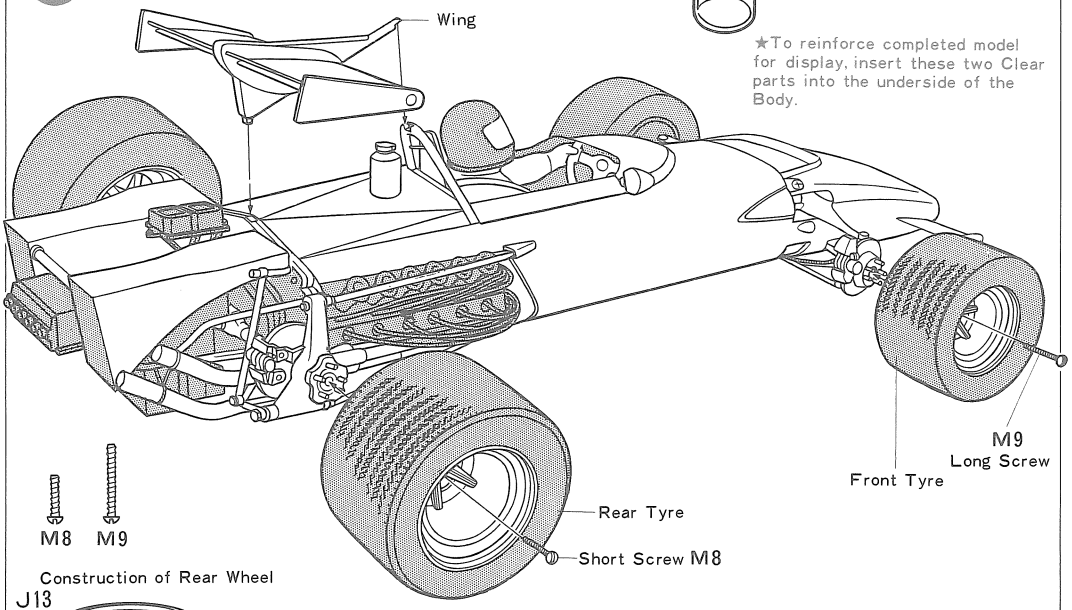
Paint the detail onto the tyres.

● MARIO · ANDRETTI

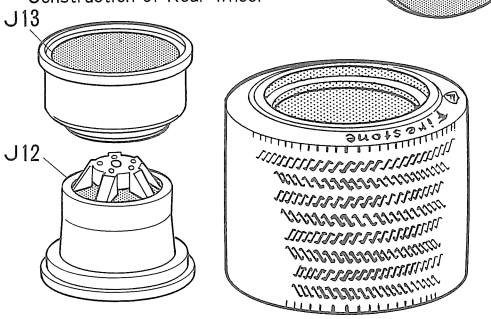




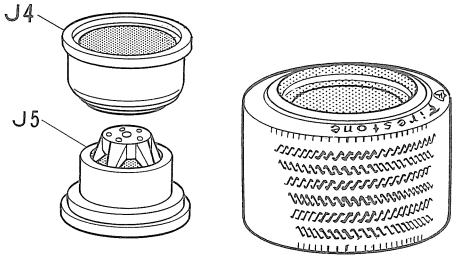
31 Wheel, Tyre and Wing Assembly



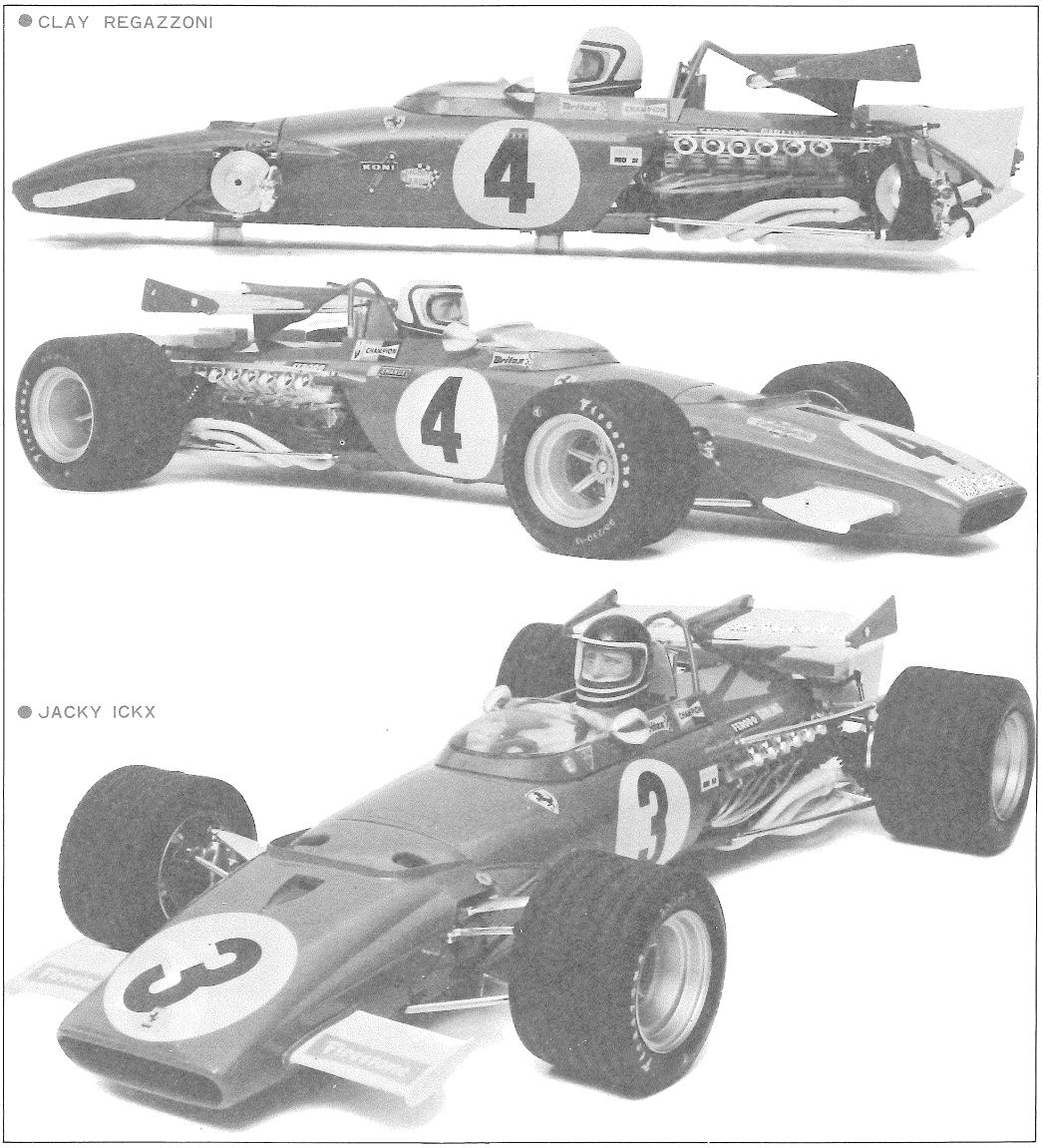
Construction of Rear Wheel



Construction of Front Wheel



● CLAY REGAZZONI



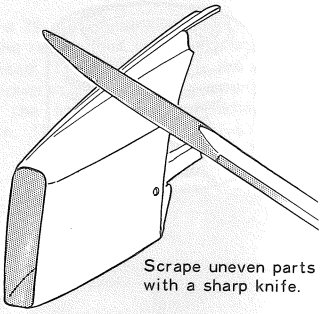
● JACKY ICKX

PAINTING

APPLYING DECALS

PAINTING

Painting should not be done simply to differentiate parts, but to accentuate the shape and function of each part. You are recommended to use various different colours with this kit and they are listed in columns two and three.

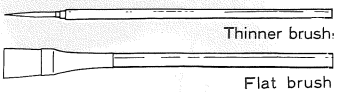


Scrape uneven parts with a sharp knife.

BEFORE PAINTING

Before starting to paint clean the plastic with a soft cloth to remove dust, dirt, hand stains etc. A neutral cleaner may be used to ensure a really clean surface.

Paint will not cover bad cementing, so this needs removing with either a knife or very fine sand-paper. Also cut or file away any uneven bits of plastic on the parts that may have been caused during moulding. Your model is going to look much better when completed, if you paint as many parts as you can. Small parts and internal parts should be painted while still on the sprue. However parts which fit together can be first constructed, the joining lines smoothed and finally painted, before assembly onto the model. This applies particularly where joining parts are are to be painted in the same colour.



Thinner brush

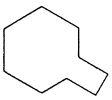
Flat brush

Instructions for Brush Painting.

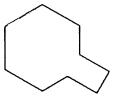
Plastic does not take paint well. It is therefore most important to remove all dust, dirt, hand stains, etc. But for a good finish, do not thin the paint more than necessary for smooth covering.

Brush painting of the wider body areas should be evenly applied in either a lengthwise or breadthwise direction. Always remember paint is inflammable.

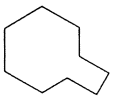
COLOURS NEEDED FOR THIS KIT.



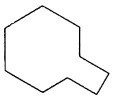
★BLACK
Gloss black to give a metallic impression on black parts.



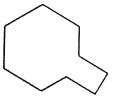
★CHROME / BRIGHT SILVER
Bright silver to touch up plated parts and to paint nuts, bolts etc.



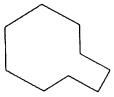
★SILVER
Slightly frosted dull colour for the rough metallic-coloured surfaces.

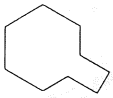


★Metallic Grey
Iron or steel colour for reproduction of casting parts.

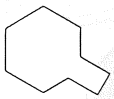


★GOLD
Ferrari wheels are painted gold.

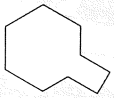




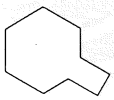
★YELLOW
Required for the transistor box on the rear of the Ferrari.



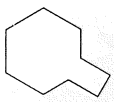
★IVORY WHITE
White tinged with yellow for painting the driver.



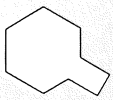
★FLESH
Needed for the drivers face. Add some brown to give extra light and shade to the features.



★ITALIAN RED
The racing colour of the Ferrari Team.

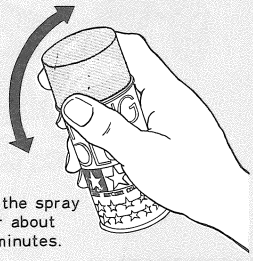


★MAT BLACK
To be used for the inside of the body, cockpit etc.



SPRAY PAINTING HINTS

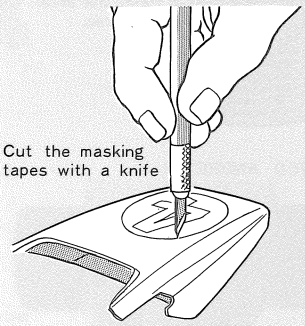
Firstly always spray indoors in windless and dust-free conditions. Spread newspaper under your work. Mix the paint well by shaking the can for three minutes and then test spray against some cardboard from about 20 cm, checking that the paint is properly mixed. When spraying the car body, hold the can about 20 cm from the plastic, moving the can quickly always in the same direction and ensure an even application. A good tip is to imagine you are spraying a larger surface, i.e. the surrounding newspaper - you will then probably achieve a more even finish.



Shake the spray can for about three minutes.

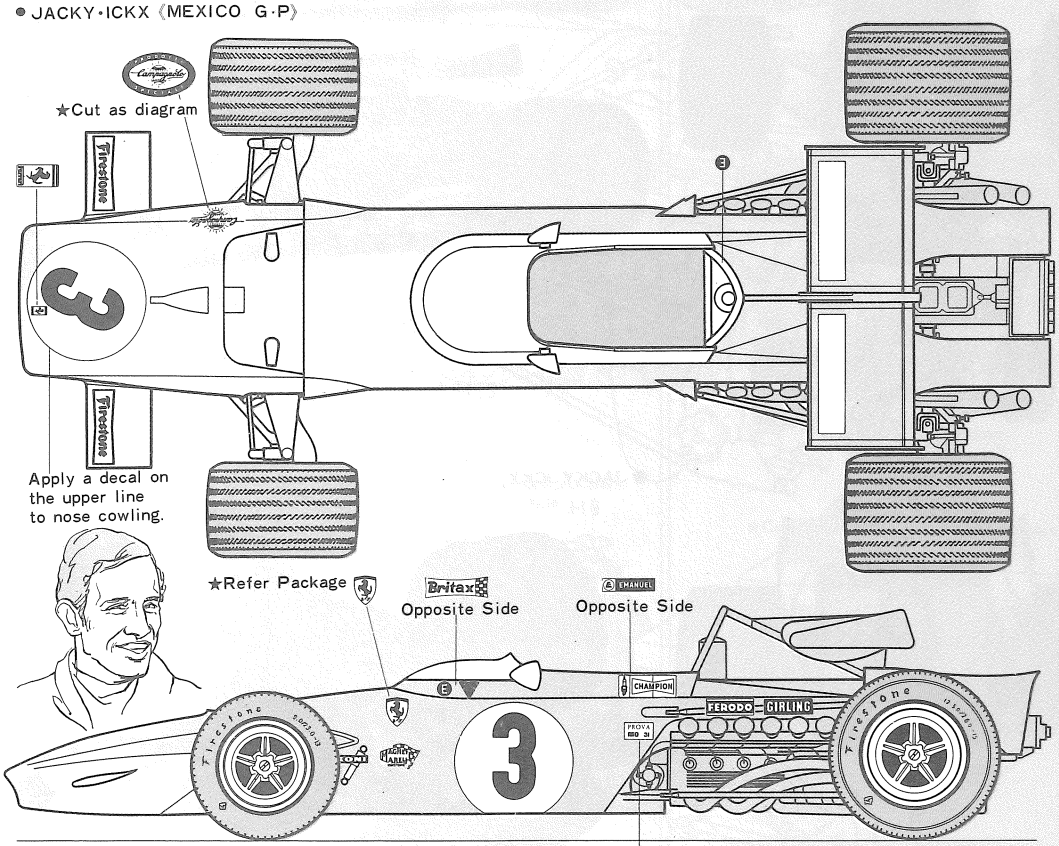
PAINTING WITH MASKING TAPE

When the paint is completely dry apply masking tape or sticky paper (not cellotape) over the whole area of the body. Draw out the required shape you want onto the paper with a hard pencil, then cut the paper along the lines you have drawn very carefully. Then remove the paper not required to mask the body. Finally press the mask firmly down on to the plastic to ensure it seals it from the paint. Then paint as instructed in previous paragraphs.



Cut the masking tapes with a knife

● JACKY·ICKX 〈MEXICO G·P〉

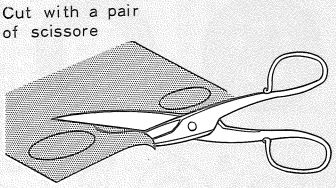


PROVA BRD 31 Do not applay opposite side.

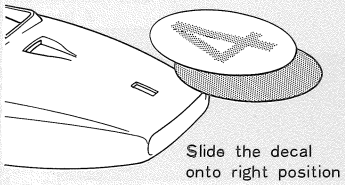
APPLYING DECALS

The illustrations on this page show the positions of the decals. More precise instructions for some decals will be found in the step by step building instructions.

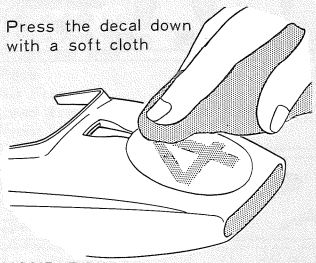
1. Before applying decals clean the surface of the plastic well with a soft cloth.
2. Cut the decal from the decal sheet before applying it to the plastic.
3. Place the decal in water. When the paper wrinkles take it out and place it on a cloth or towel.



4. A minute or two later slide the decal from the paper into position onto the kit.
5. You can move the decal gently into position on the plastic with some water on the end of your finger.



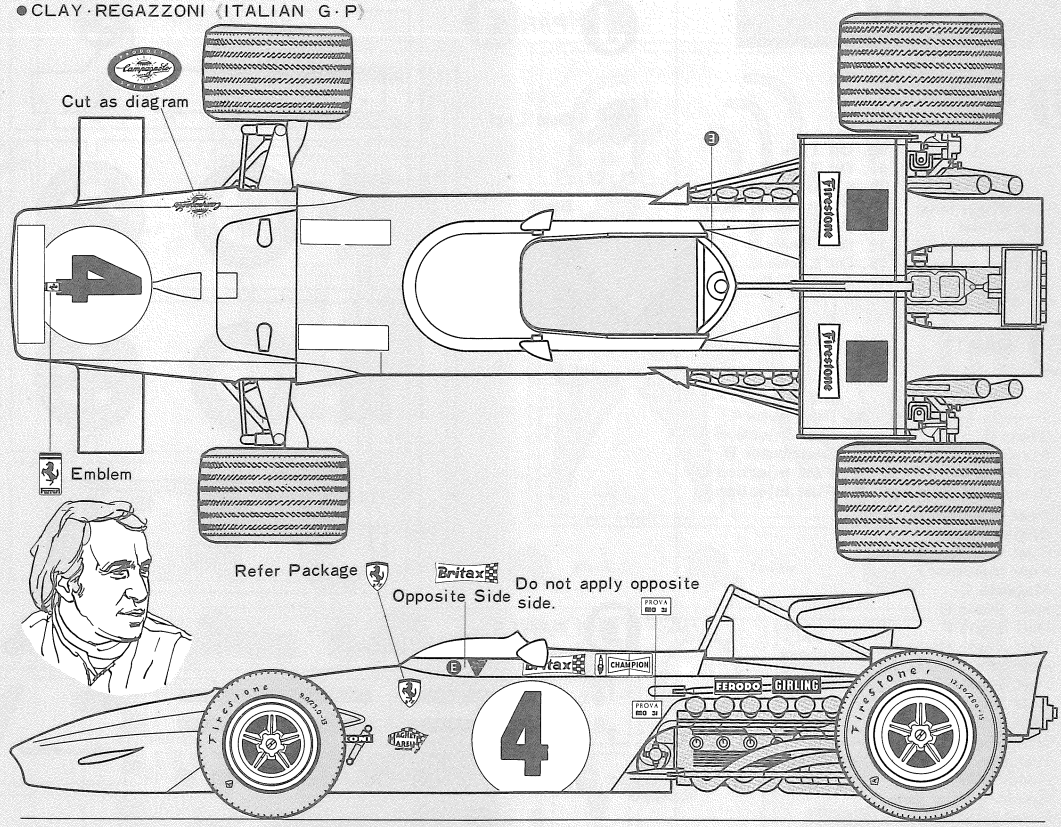
6. When in position force any air bubbles out from under the decals and absorb all the water by pressing and gently wiping with a soft cloth. When applying decals to an uneven or curved surface, press a warm moist cloth onto the decal. This will moisten and warm it to ensure a good application onto the plastic.



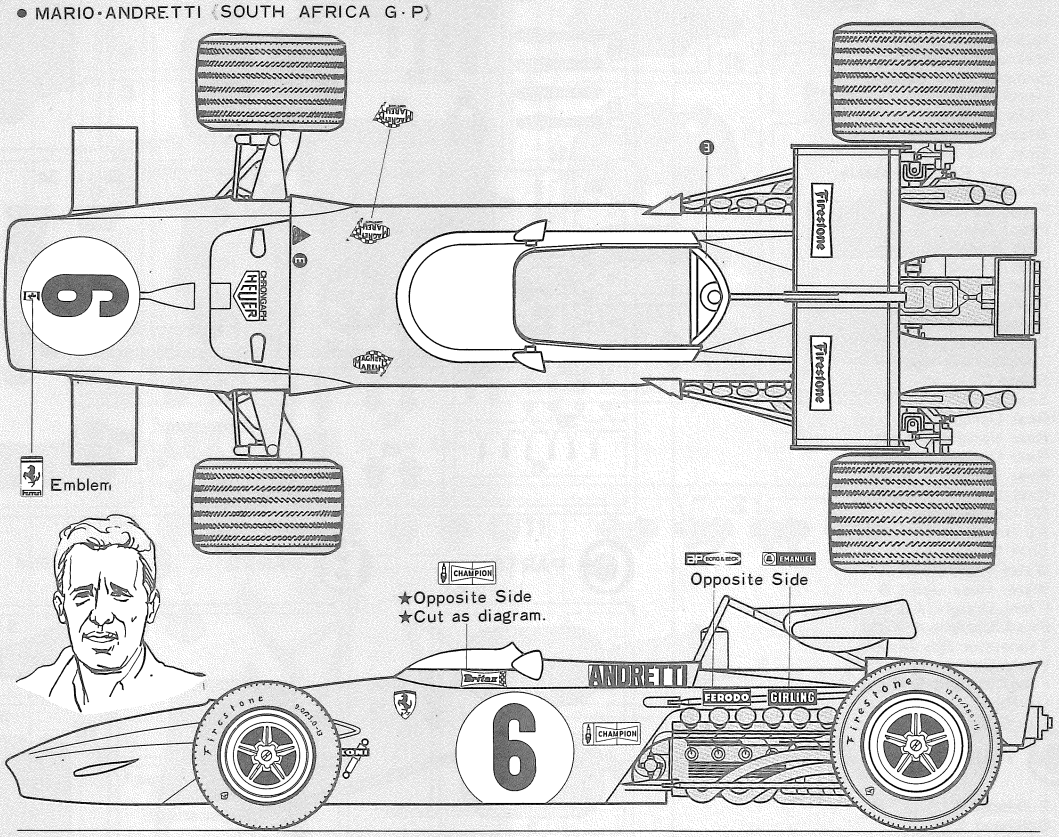
HAND PAINTING CAR NUMBERS

The numbers shown below are proper size for the kit. Trace the number required onto tracing paper and from this mark it out on the car body with a hard pencil. Then refer to instructions for painting with masking tape.

● CLAY·REGAZZONI 〈ITALIAN G·P〉



● MARIO·ANDRETTI 〈SOUTH AFRICA G·P〉



AUSTRIAN G.P·J·ICKX

12

AUSTRIAN G·P
C·REGAZZONI

27

CANADIAN G.P·J·ICKX

18

CANADIAN G.P·C·REGAZZONI

19

SPANISH G.P·J·ICKX

2

PARTS

J PARTS

1. Oil Catch Tank A
2. Oil Catch Tank B
3. Brake Disc Rear
4. Rear Wheel Inner
5. Rear Wheel
6. Oil Pipe Joint A
7. Oil Pipe Joint B
8. Brake Disc Front
9. Oil Tank A
10. Oil Tank B
11. Oil Tank C
12. Front Wheel
13. Front Wheel Inner
14. Oil Cooler A
15. Oil Cooler B
16. Oil Cooler C
17. Oil Tank D

D PARTS

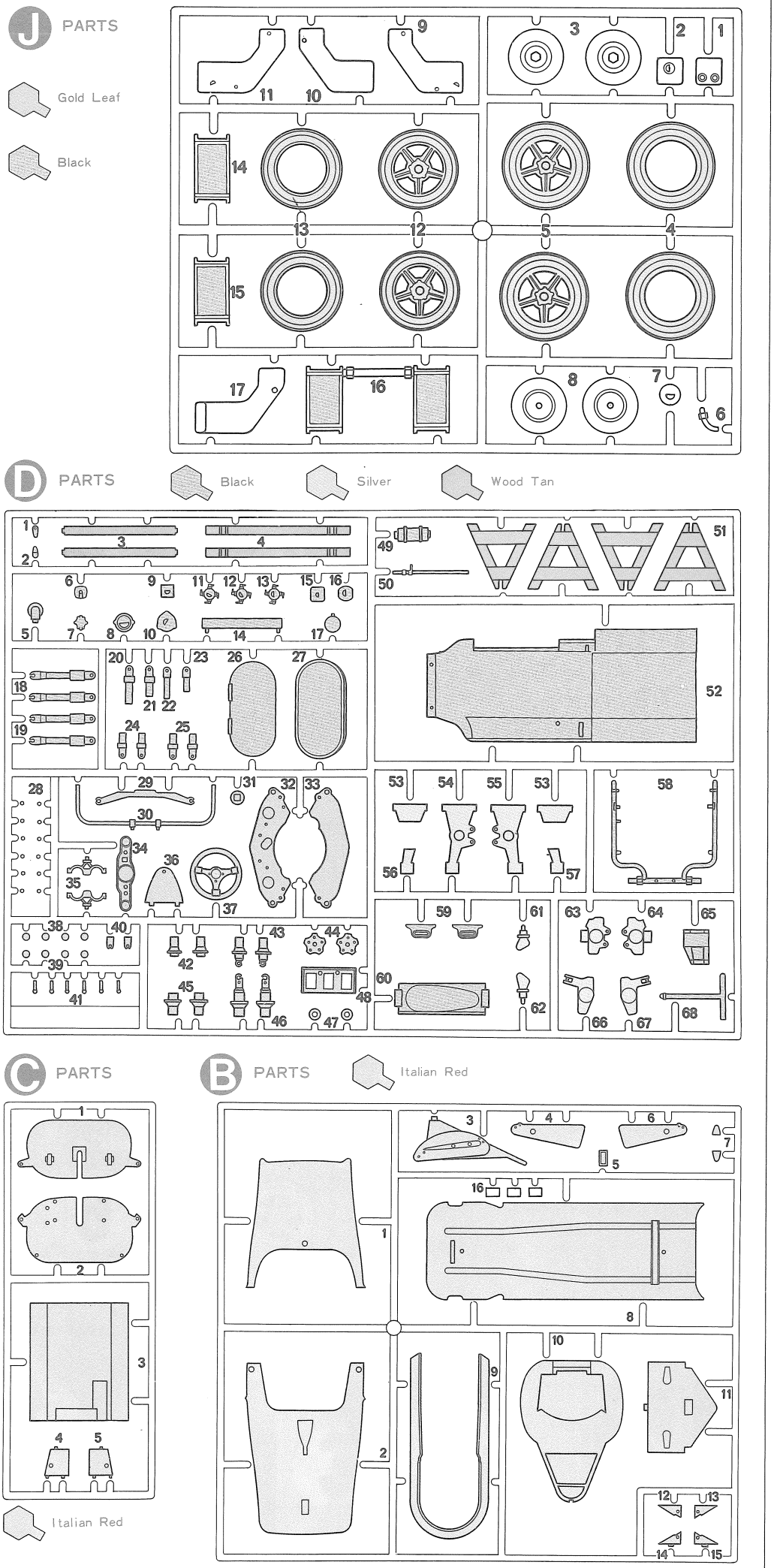
1. Throttle Linkage A
2. Throttle Linkage B
3. Stand A
4. Stand B
5. Oil Pump A
6. Cam Shaft Bearing
7. Oil Pump B
8. DistributorA
9. Fuel Injection A
10. Distributor B
11. Fuel Injection B
12. Fuel Injection C
13. Fuel Injection D
14. Engine Mount
15. Fuel Injection E
16. Fuel Injection F
17. Magneto C
18. Half Shaft E
19. Half Shaft F
20. Half Shaft Right B
21. Half Shaft Right A
22. Half Shaft Left A
23. Half Shaft B
24. Half Shaft C
25. Half Shaft D
26. Radiator A
27. Radiator B
28. Sparking Plug
29. Front Lower Arm Stopper
30. Stabilizer
31. Half Shaft Stopper Parts
32. Bulkhead B
33. Bulkhead C
34. Instrument Panel
35. Exhaust Pipe Stopper
36. Headrest
37. Steering Wheel
38. Stopper
39. Seat Belt Stopper Pin
40. Throttle Rod Receptacle
41. Front Upright Parts
42. Front Damper B
43. Front Damper C
44. Rear Wheel Stopper
45. Rear Damper B
46. Rear Damper C
47. Front Disc Stopper
48. Battery Mount
49. Self Starting Motor
50. Throttle link Rod
51. Stand C
52. Seat A
53. Rear Upright A
54. Rear Upright B Left
55. Rear Upright B Right
56. Rear Upright C Right
57. Rear Upright C Left
58. Oil Cooler Arm
59. Air Intake
60. Seat B
61. Water Hose Joint A
62. Water Hose Joint B
63. Front Upright A Left
64. Front Upright A Right
65. Transistor Box Mount
66. Front Upright B Left
67. Front Upright B Right
68. Oil Pipe

C PARTS

1. Bulkhead D
2. Bulkhead E
3. Middle Lower Body Part
4. Bulkhead G Right
5. Bulkhead G Left

B PARTS

1. Nose Cowling Lower
2. Nose Cowling Upper
3. Wing Support
4. Wing Fairing Plate Right
5. Nose Cowling B Air Duct
6. Wing Fairing Plate Left
7. Body Parts
8. Body B
9. Wind Shield B
10. Bulkhead H
11. Nose Cowling B
12. Radius Arm Support A Right
13. Radius Arm Support A Left
14. Radius Arm Support B Left
15. Radius Arm Support B Right
16. Catch stopper



PARTS

G PARTS

1. Front Fin Fairing Right
3. Front Fin Fairing Left
4. Front Fin Left
5. Front Fin Right
2. Wing B
6. Wing A Left
7. Wing A Right
8. Wing C

F PARTS

1. Air Duct Right A
2. Air Duct Right B
3. Air Duct Left A
4. Air Duct Left B
5. Exhaust Pipe
6. Exhaust Pipe
7. Exhaust Pipe
8. Exhaust Pipe
9. Exhaust Pipe
10. Exhaust Pipe
11. Exhaust Pipe
12. Exhaust Pipe
13. Exhaust Pipe
14. Exhaust Pipe
15. Exhaust Pipe
16. Exhaust Pipe
17. Exhaust Pipe
18. Exhaust Pipe
19. Exhaust Pipe
20. Exhaust Pipe
21. Exhaust Pipe Joint A
22. Battery Case
23. Exhaust Pipe Joint B

E PARTS

1. Intake Manifold
2. Master Cylinder
3. Transmission Left
4. Transmission Right
5. Engine Lower
6. Engine Upper
7. Gear Shift Train
8. Throttle Plate Right
9. Throttle Plate Left
10. Automatic Fire Extinguisher
11. Gear Shaft Lever Guide
12. Transmission Rear
13. Bulkhead A
14. Bulkhead F
15. Engine Front A
16. Magneto A
17. Transistor Box
18. Magneto B
19. Engine Front B
20. Clutch Case
21. Cam Cover Left
22. Cam Cover Right
23. Lower Arm Support
24. Engine Rear
25. Battery
26. Lower Arm Stopper B Right
27. Lower Arm Stopper B Left
28. Transmission Lower
29. Transmission Upper

H PARTS

1. Disc Brake Caliper A
2. Shift Lever Knob
3. Disc Brake Caliper B
4. Radiator Arm
5. Upper Arm Right
6. Upper Arm Left
7. Radius Arm Left
8. Radius Arm Right
9. Stabilizer Rod
10. Rack
11. Air Funnel
12. Lead Arm
13. Front Lower Arm Right
14. Front Lower Arm Left
15. Rear View Mirror A
16. Rear View Mirror B
17. I Arm
18. Lower Arm Right
19. Lower Arm Left
20. Front Damper A
21. Rear Damper B
22. Universal Joint Cross
23. Fuel Tank Cap
24. Refuel Duct

A PARTS

1. Body

SEAT PARTS

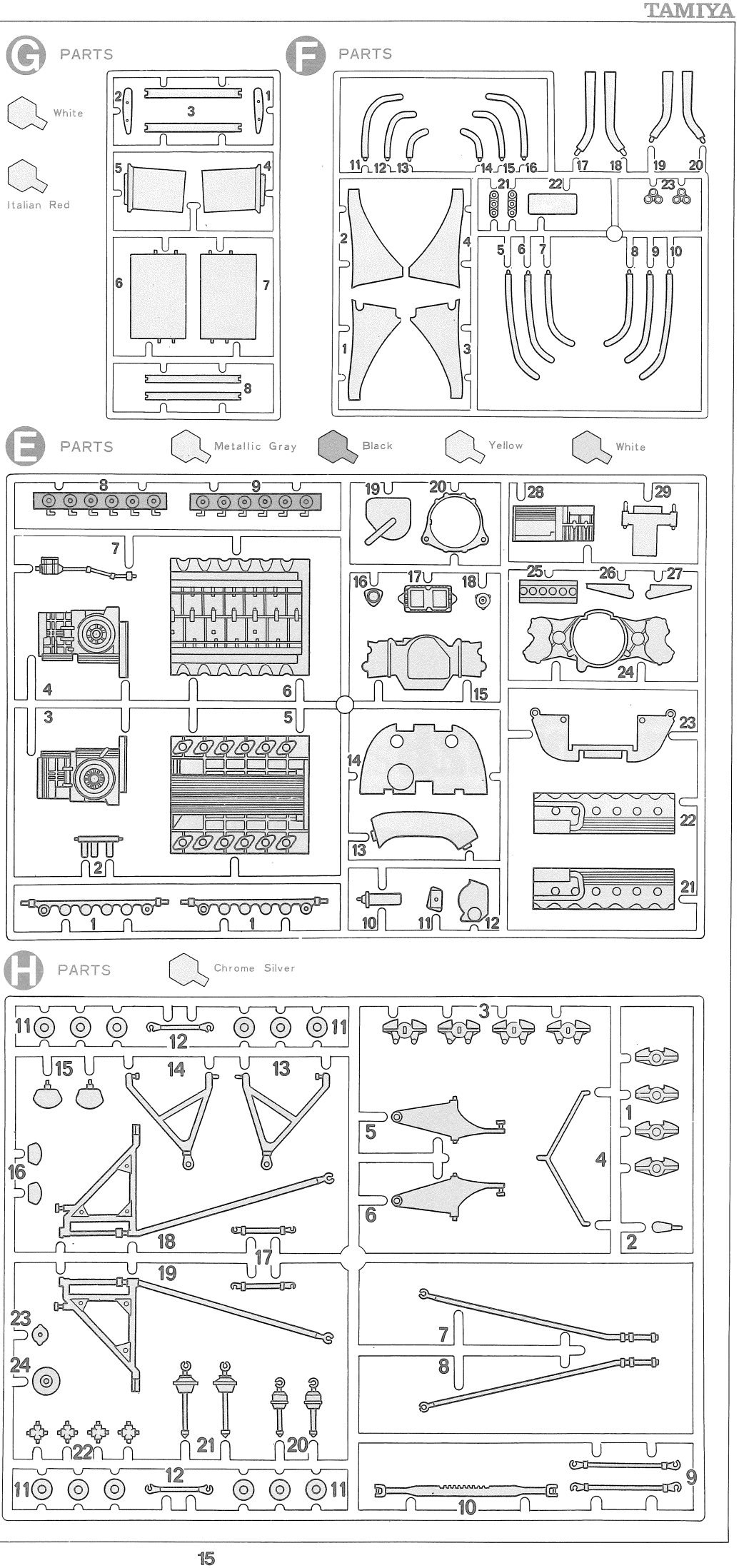
1. Seat Belt

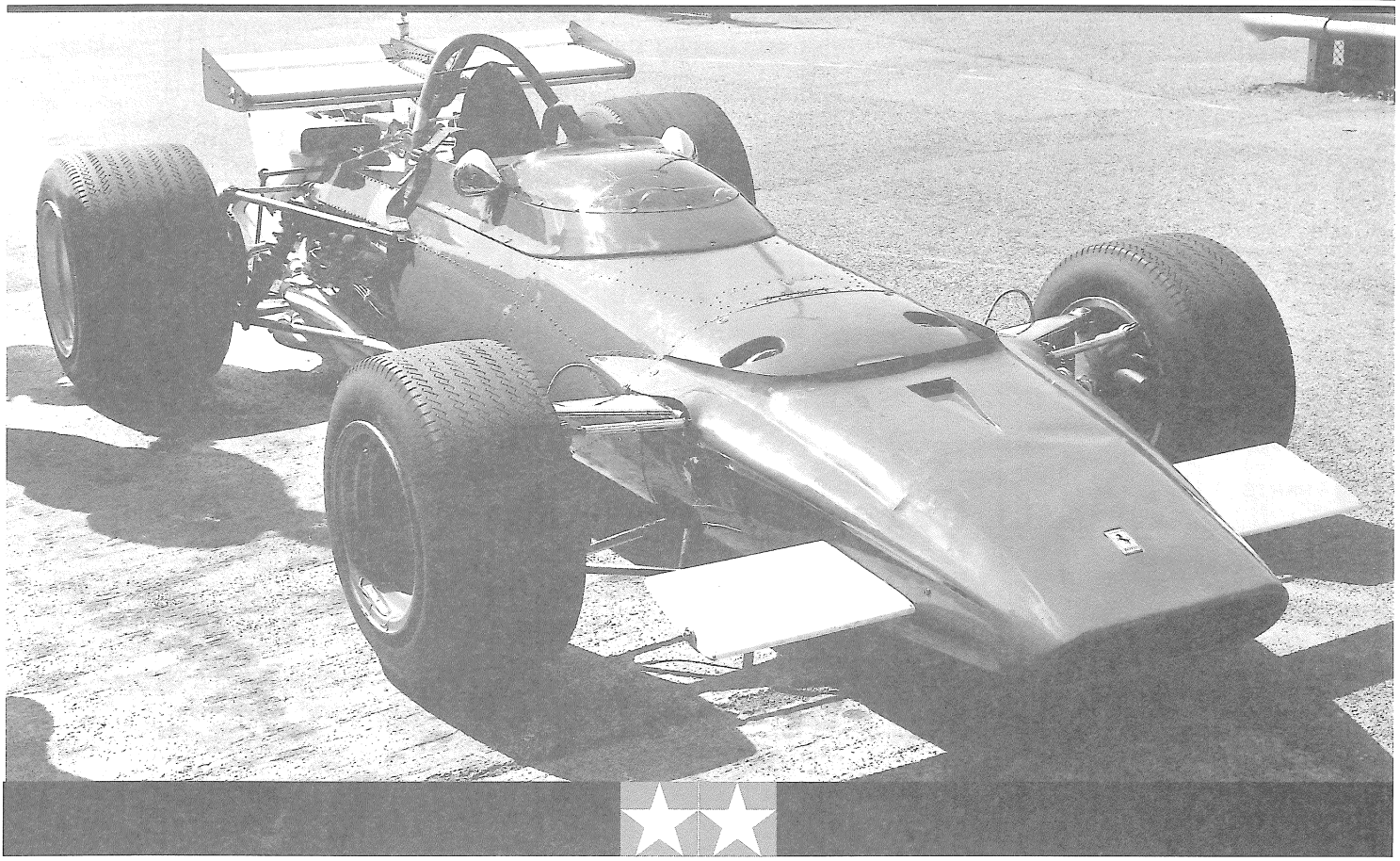
CLEAR PARTS

1. Wind Shield
2. Display Stand
3. Driver's Helmet Visor

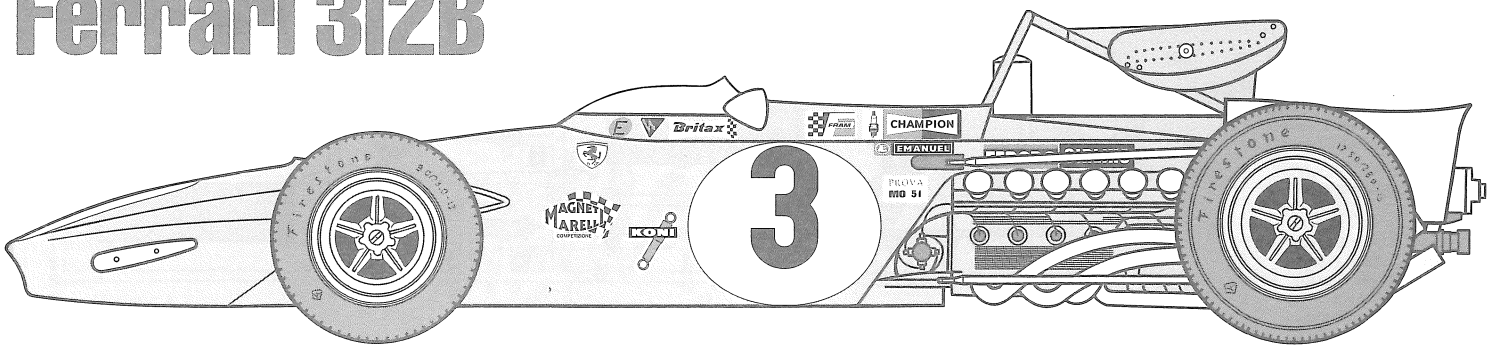
M PARTS

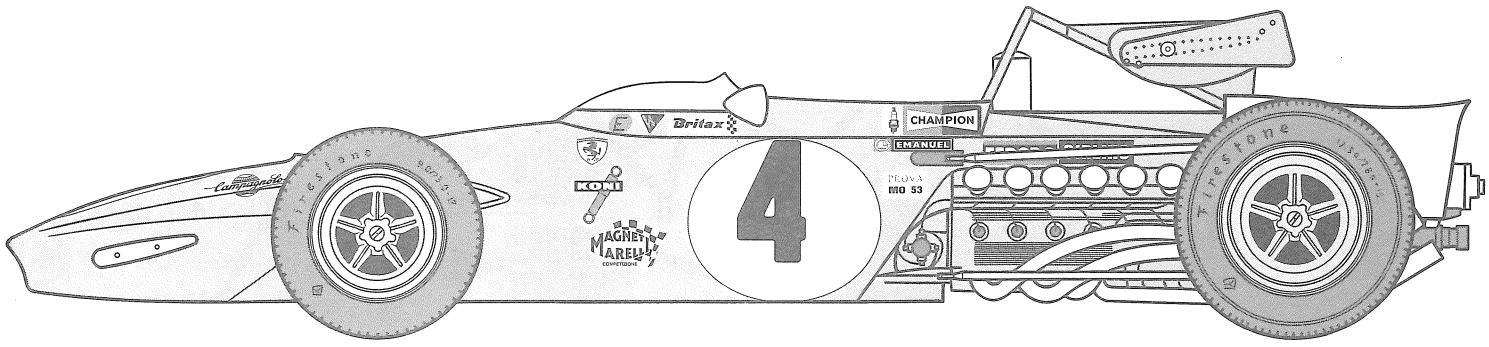
1. L Shape Metal (3)
2. Nut (4)
3. Spring (small•2)
4. Spring (large•2)
5. Coil Spring (4)
6. Steering Shaft
7. Cowling Securing Screw(3)
8. Wheel Securing Screw (short•2)
9. Wheel Securing Screw (long•2)
10. Pinion Gear
11. Muffler Support Spring (4)

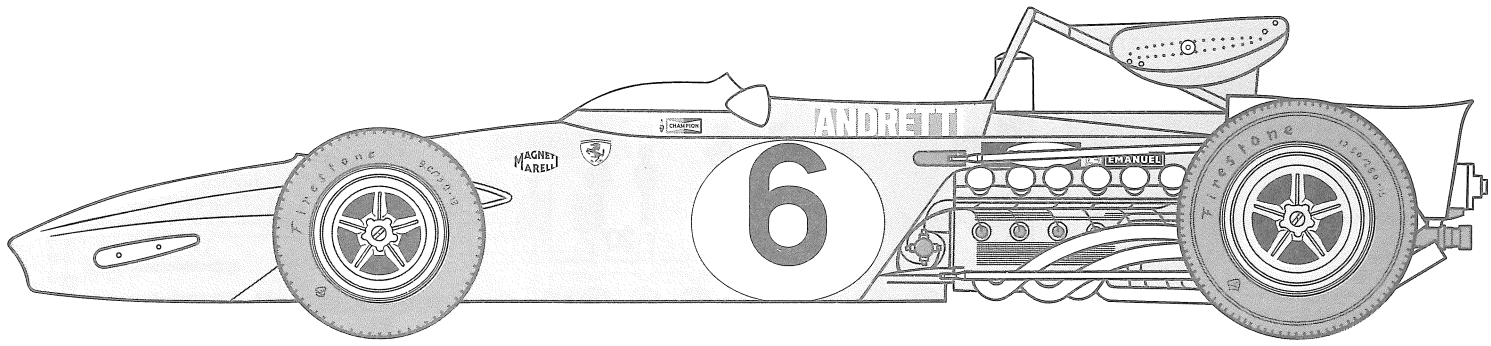




Ferrari 312B







Ferrari 312B

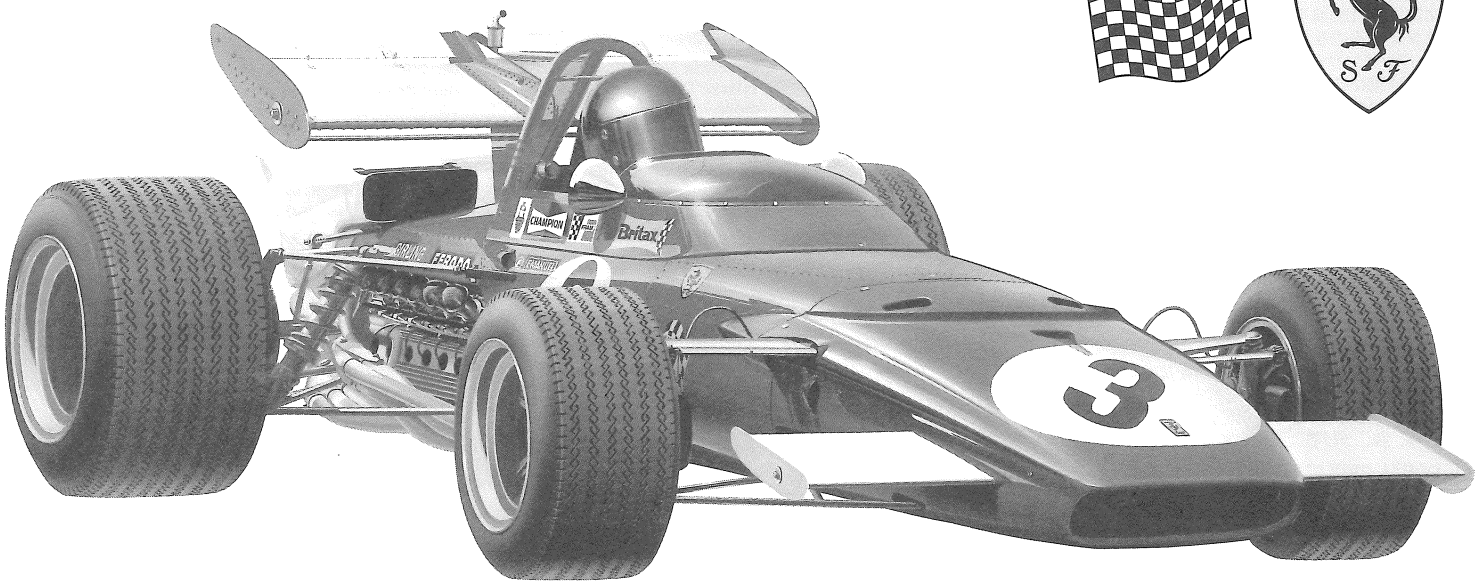
TAMIYA

1/12th BIG SCALE SERIES 48

補足説明図 Supplementary Instructions

1/12 ビッグスケールシリーズ NO.48

フェラーリ312B



この説明書を必ず、はじめにお読みください。
Read before assembly.
Vor Montage beachten.
Faire attention avant le montage.

この補足説明図には、エッチングパーツの取り付け、マーキング図が掲載されています。組み立ての際には別冊の組立説明図とともにご覧ください。なお、補足説明図の番号は組立説明図の番号に対応しています。

Refer to this supplementary instruction manual for attaching photo-etched parts and for applying decals. Also refer to the separate instruction manual for assembling the model. The assembly step numbers in this instruction manual correspond to those in the separate instruction manual.

Beachten Sie diese zusätzliche Anleitung zum Befestigen fotogeätzter Teile und zum Anbringen der Abziehbilder. Auch für den Zusammenbau des Modells liegt eine getrennte Anleitung bei. Die Nummern der Zusammenbau-Schritte in dieser Anleitung entsprechen jenen in der getrennten Anleitung.

Se reporter à cet additif à la notice de montage pour fixer les pièces en photo-découpe et apposer les decals. Se reporter à la notice de montage principale pour assembler le modèle. Les numéros d'étapes de ce document correspondent à ceux de la notice principale.

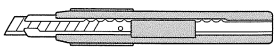
RECOMMENDED TOOLS

《用意する工具》
Recommended tools
Benötigtes Werkzeug
Outillage nécessaire

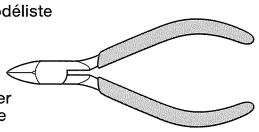
接着剤（プラスチック用）
Cement
Kleber
Colle

瞬間接着剤
Instant cement
Sekundenkleber
Colle rapide

ナイフ
Modeling knife
Modelliermesser
Couteau de modéliste



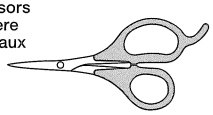
ニッパー
Side cutters
Seitenschneider
Pince coupante



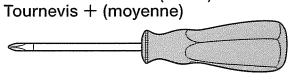
ピンセット
Tweezers
Pinzette
Précelles

タミヤメタルプライマー
TAMIYA Metal Primer

デカールバサミ
Scissors
Schere
Ciseaux



＋ドライバー（M）
＋ Screwdriver (medium)
＋ Schraubenzieher (mittel)
Tournevis + (moyenne)



★この他にエッチングバサミ、エッチングヤスリ、エッチングベンダーがあると便利です。
★Modeling scissors, modeling file and bending pliers will also assist in construction.
★Modellbauschere, Modellbaufeile und Biegezange sind beim Bau sehr hilfreich.
★Des ciseaux de modélisme, de la lime de modélisme et des pinces seront également utiles durant le montage.

PAINTS REQUIRED

塗装指示のマークです。タミヤカラーのカラーナンバーで指示しました。
This mark denotes numbers for Tamiya Paint colors.

TS-8	●イタリアンレッド / Italian red / Italienisches Rot / Rouge Italien
TS-17	●アルミシルバー / Gloss aluminum / Alu-Silber / Aluminium brillant
TS-26	●ピュアーホワイト / Pure white / Glanz Weiß / Blanc pur
TS-29 (X-18)	●セミグロスブラック / Semi gloss black / Seidenglanz Schwarz / Noir satiné
X-1	●ブラック / Black / Schwarz / Noir
X-2	●ホワイト / White / Weiß / Blanc
X-8	●レモンイエロー / Lemon yellow / Zitronengelb / Jaune citron
X-11	●クロームシルバー / Chrome silver / Chrom-Silber / Aluminium chromé
X-12	●ゴールドリーフ / Gold leaf / Gold Glänzend / Doré
X-13	●メタリックブルー / Metallic blue / Blau-Metallic / Bleu métallisé
XF-1	●フラットブラック / Flat black / Matt Schwarz / Noir mat
XF-2	●フラットホワイト / Flat white / Matt Weiß / Blanc mat
XF-7	●フラットレッド / Flat red / Matt Rot / Rouge mat
XF-15	●フラットフレッシュ / Flat flesh / Fleischfarben Matt / Chair mate
XF-16	●フラットアルミ / Flat aluminum / Matt Aluminium / Aluminium mat

⚠ 注 意

●工具の使用には十分注意してください。特にナイフ、ニッパーなどの刃物によるケガや事故に注意してください。●接着剤や塗料は使用する前にそれぞれの注意書きをよく読み、指示に従って正しく使用し、使用するときは換気に十分注意してください。●小さなお子様のいる所での工作はやめてください。小さな部品の飲み込みや、ビニール袋をかぶっての窒息などの危険な状況が考えられます。●エッチングパーツはたいへん薄く、手などを切りやすいので取り扱いには十分注意してください。

⚠ CAUTION

●When assembling this kit, tools including knives are used. Extra care should be taken to avoid personal injury. ●Read and follow the instructions supplied with paint and/or cement, if used (not included in kit). Use plastic cement and paints only. ●Keep out of reach of small children. Children must not be allowed to put any parts in their mouths or pull vinyl bags over their heads. ● Extra care should be taken to avoid personal injury when handling the photo etched parts.

⚠ VORSICHT

●Beim Zusammenbau dieses Bausatzes werden Werkzeuge einschließlich Messer verwendet. Zur Vermeidung von Verletzungen ist besondere Vorsicht angebracht. ●Wenn Sie Farben und/oder Kleber verwenden (nicht im Bausatz enthalten), beachten und befolgen Sie die dort beiliegenden Anweisungen. Nur Klebstoff und Farben für Plastik verwenden. ● Bausatz von kleinen Kindern fernhalten. Kindern darf keine Möglichkeit gegeben werden, irgendwelche Teile in den Mund zu nehmen oder sich Plastiktüten über den Kopf zu ziehen. ●Beim Umgang mit den fotogeäzten Teilen sollte man besondere Vorsicht walten lassen, um Verletzungen zu vermeiden.

⚠ PRECAUTIONS

●L'assemblage de ce kit requiert de l'outillage, en particulier des couteaux de modélisme. Manier les outils avec précaution pour éviter toute blessure. ●Lire et suivre les instructions d'utilisation des peintures et ou de la colle, si utilisées (non incluses dans le kit). Utiliser uniquement une colle et des peintures spéciales pour le polystyrène. ●Garder hors de portée des enfants en bas âge. Ne pas laisser les enfants mettre en bouche ou sucer les pièces, ou passer un sachet vinyl sur la tête.
●Manipuler les pièces en métal photo-découpé avec précaution pour éviter les blessures.

UNDERCOATING

《下塗り塗装》
色の濃い成形品を塗装するとき、もっと発色をよくしたいとき、または外側と内側の塗装色が異なるときには下塗り塗装をしましょう。発色をよくし、下地の色が透けるのを押さえます。まず、塗装する物をタミヤ・ファインサーフェイサー（ホワイト）で塗装します。完全に乾いたら本来の色を塗ってください。ツヤを出す場合はタミヤ・モデリングワックスで磨きあげます。

UNDERCOATING
When painting light color on dark-colored plastic, proper undercoating procedure provides a beautiful finish: firstly, apply Tamiya surface primer. When it dries, paint white. Finally, paint your desired color. Polish using Tamiya modeling wax for glossier finish.

VORLACKIERUNG
Sollen helle Farben auf dunklem Plastik lackiert werden, ergibt eine passende Vorlackierung die schönste Oberfläche: zuerst Tamiya Grundierung auftragen. Sobald diese trocken ist, weiß lackieren. Schließlich die gewünschte Farbe lackieren. Für Hochglanz mit Tamiya Modellbau-Wachs aufpolieren.

SOUS-COUCHE
Lorsqu'on peint une teinte claire sur une base sombre, l'application d'une sous-couche permet d'obtenir un fini impeccable. Dans un premier temps, appliquer de l'apprêt en bombe Tamiya Surface Primer. Une fois sec, passer une couche de blanc par dessus. Peindre ensuite la teinte définitive. Polir avec du polish Tamiya Modeling Wax pour obtenir un fini brillant.

APPLYING DECALS

《スライドマークのはりかた》
①はりたいマークをハサミで切りぬきます。
②マークをぬるま湯に10秒ほどひたしてからタオル等の布の上におきます。
③台紙のはしを手で持ち、貼る位置にマークをスライドさせてモデルに移してください。
④指に少し水をつけてマークをぬらしながら、正しい位置にずらします。
⑤やわらかい布でマークの内側の気泡をおし出しながら、おしつけるようにして水分をとります。

DECAL APPLICATION
①Cut off decal from sheet.
②Dip the decal in tepid water for about 10 sec. and place on a clean cloth.
③Hold the backing sheet edge and slide decal onto the model.
④Move decal into position by wetting decal with finger.
⑤Press decal gently down with a soft cloth until excess water and air bubbles are gone.

ANBRINGUNG DES ABZIEHBILDES
①Abziehbild vom Blatt ausschneiden.
②Das Abziehbild ungefähr 10 Sek. in lauwarmes Wasser tauchen, dann auf sauberen Stoff legen.
③Die Kante der Unterlage halten und das Abziehbild auf das Modell schieben.
④Das Abziehbild an die richtige Stelle schieben und dabei mit dem Finger das Abziehbild naßmachen.
⑤Das abziehbild mit weichem Stoff ganz andrückn, bis kein überflüssiges Wasser und keine Luftblasen mehr vorhanden sind.

APPLICATION DES DECALCOMANIES
①Découpez la décalcomanie de sa feuille.
②Plongez la décalcomanie dans de l'eau tiède pendant 10 secondes environ et poser sur un linge propre.
③Retenez la feuille de protection par le côté et glissez la décalcomanie sur le modèle réduit.
④Placez la décalcomanie à l'endroit voulu en l mouillant avec un de vos doigts.
⑤Pressez doucement la décalcomanie avec un tissu doux jusqu'à ce que l'eau en excès et les bulles aient disparu.

PHOTO-ETCHED PARTS

《エッチングパーツ》
①切りはなす時はカッターナイフなどを使用してパーツを切りはなします。
②塗装が必要なパーツは下地にメタルプライマーを吹きつけてから塗装します。
③切り出した時、部品に出っ張った部分が残っている場合は、ヤスリなどで丁寧に削り落とします。
●エッチングパーツはたいへん薄く、手などを切る恐れがあります。取り扱いには十分注意してください。

PHOTO-ETCHED PARTS
①Cut off photo etched parts using a modeling knife.
②Apply metal primer prior to painting.
③Carefully remove any excess using a file.
●Extra care should be taken to avoid personal injury when handling photo-etched parts.

FOTOGEÄTZTE TEILE
①Die fotogeätzten Teile mit einem Modellbaumesser abschneiden.
②Vor dem Lackieren Metall-Grundierung auftragen.
③Überstände vorsichtig mit einer Feile entfernen.
●Beim Umgang mit fotogeätzten Teilen sollte man besondere Vorsicht walten lassen, um Verletzungen zu vermeiden.

PIÈCES PHOTO-DÉCOUPÉES
①Détacher les pièces photo-découpées avec un couteau de modéliste.
②Appliquer de l'apprêt pour métal Tamiya avant de peindre.
③Enlever les parties excédentaires en les limant soigneusement.
●Manipuler les pièces photo-découpées avec précaution pour éviter les blessures.

INSTANT CEMENT

《瞬間接着剤について》
★通常は塗装する前に使用します。その際、接着面の油分を十分に取ってください。塗装後に接着する場合は接着面の塗料を落としてから使用します。この時、塗料が残っていると接着力が極端に低下するので注意しましょう。
★接着剤をつけすぎると接着力が落ちるだけでなく、白化しやすくなるので注意してください。
★劣化した接着剤は使用しないでください。不要な部品で試してから使用してください。
★使用する際は瞬間接着剤の取扱説明をよくよんでからご使用ください。

INSTANT CEMENT
★Remove any paint or oil from cementing surface before affixing parts.
★Use only a small amount of cement. Too much cement will make joints turn white and lose adhesion.
★Do not use old cement. Test cement first with unnecessary parts such as sprues before use.
★Carefully read instructions on use before cementing.

SEKUNDENKLEBER
★Entfernen Sie alle Farbe und Ölflecke von der Klebeoberfläche bevor sie Teile ankleben.
★Verwenden Sie nur geringe Mengen Klebstoff. Bei zuviel Klebstoff kann sich die Verbindung verschieben und die Haftkraft verloren gehen.
★Verwenden Sie keinen alten Klebstoff. Testen Sie den Kleber vor der Anwendung zuerst mit nicht benötigten Teilen etwa vom Spritzling.
★Vor dem Kleben die Gebrauchsanleitung sorgfältig lesen.

COLLE RAPIDE
★Enlever les traces de peinture ou de graisse des surfaces de contact avant de coller les pièces.
★N'utiliser qu'une petite quantité de colle. Un excès peut blanchir les lignes de joint et limiter l'adhésion.
★Ne pas utiliser une colle périmée. Tester la colle sur des pièces inutilisées comme des morceaux de grappes avant utilisation effective.
★Lire soigneusement les instructions avant de coller.

《フェラーリ312Bの塗装》
1970年のF1グランプリで活躍したフェラーリ312Bは、イタリアのナショナルカラーと言えるレッドで塗装され、フロントスポイラーやリヤウイングはホワイトとなっていました。当時は、現在のように年間を通してカーナンバーが決められていたわけではなく、レースによってまちまちでした。キットにはJ.イクスが優勝を飾ったメキシコGP時の3番とC.レガゾーニが優勝したイタリアGP時の4番、M.アンドレッティが勝利を収めた南アフリカGP時の6番のマークをセットしました。エンジンやサスペンション、コクピットなど細部の塗装は説明図中に示しましたので参考にしてください。

Painting the Ferrari 312B
The Ferrari 312Bs during the 1970 F1 season featured a Red body with the front spoiler and rear wing painted in White. Car numbers varied according to each race and the kit includes markings to depict Car No.3 driven by J. Ickx (Mexican GP winner), Car No.4 driven by C. Regazzoni (Italian GP winner), and Car No.6 driven by M. Andretti (South African GP winner). Refer to the instruction manual for information on painting details such as engine, suspension, and cockpit.

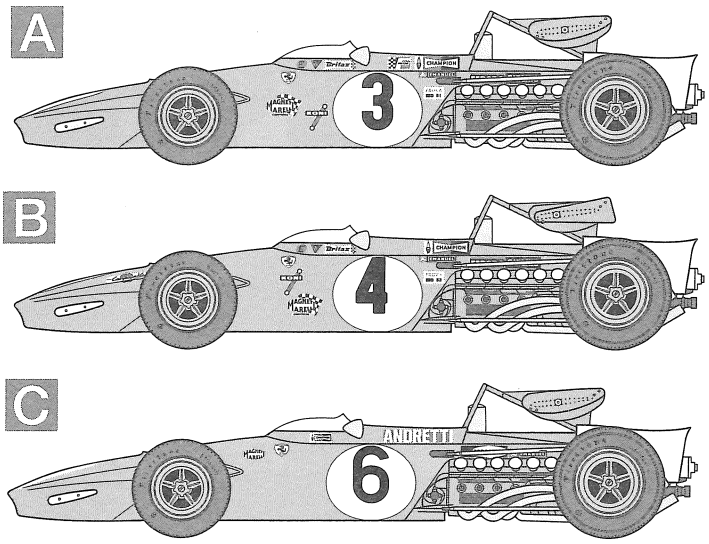
Bemalung des Ferrari 312B
Die Ferrari 312B´s der Formel 1 Saison 1970 waren rot lackiert mit weißen Front und Heckspoilern. Die Startnummern unterschieden sich von Rennen zu Rennen und der Bausatz enthält Schiebebilder zur Darstellung folgender Fahrzeuge ; Startnummer 3 gefahren von Jacky Ickx (Sieger des GP von Mexico), Startnummer 4 gefahren von Clay Regazzoni (Sieger des GP von Italien) und Startnummer 6 gefahren von Mario Andretti (Sieger des GP von Südafrika). Für die Bemalung der Details wie Motor, Radaufhängung und Fahrerplatz Bauanleitung beachten.

Décoration de la Ferrari 312B
Les Ferrari 312B de la saison F1 1970 avaient une carrosserie rouge avec spoiler avant et aileron arrière blancs. Les numéros des voitures variaient en fonction de la course et le kit comprend les marquages pour la voiture N°3 pilotée par J. Ickx (vainqueur du GP du Mexique), la N°4 pilotée par C. Regazzoni (vainqueur du GP d'Italie) et le N°6 pilotée par M. Andretti (vainqueur du GP d'Afrique du Sud). Se reporter à la notice d'assemblage pour la mise en peinture des détails tels moteur, suspensions, cockpit.

ASSEMBLY

注意！ NOTICE

★組み立てに入る前にこの補足説明書のP7、P8を参考に3種類のマーキングから一つ選んで組み立てます。また組み立ても異なる箇所があるので注意してください。
★Select one from Marking Option A to C, referring to pages 7 to 8.
★Entscheiden Sie sich unter Beachtung der Seiten 7 und 8 für eine Markierungsauswahl A bis C.
★Choisir une des trois options de marquages A à C, en se reportant pages 7 et 8.

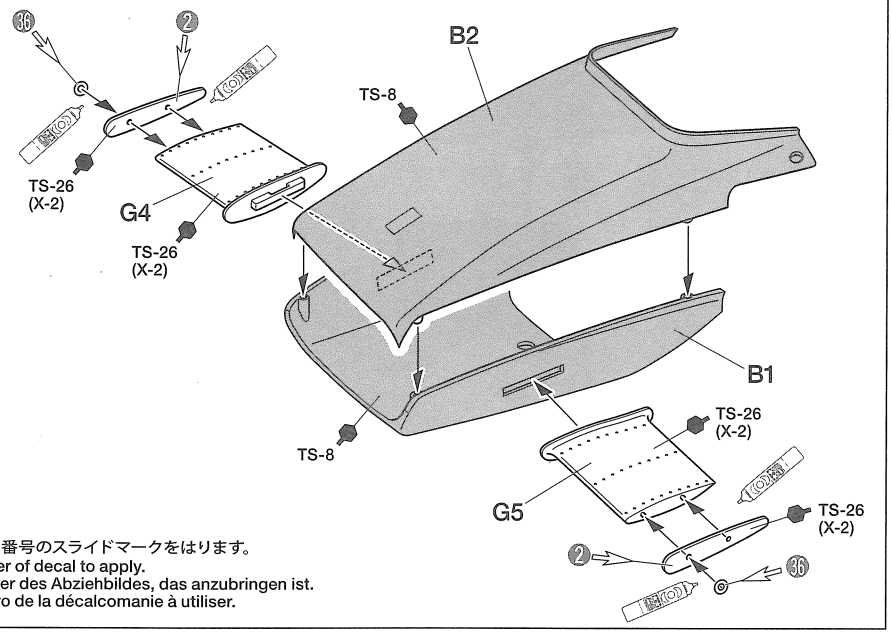


●組立説明図の中で塗装指示のない部品はP14、P15の部品図を参考にしてください。
●When no color is specified, paint the parts referring to page 14 and 15.
●Wenn keine Farbe angegeben ist, lackieren Sie die Teile unter Beachtung von Seite 14 und 15.
●Lorsqu'aucune teinte n'est spécifiée, peindre les pièces en se reportant aux pages 14 et 15.

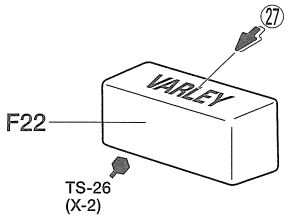
1 ノーズカウリングの組み立て
Nose cowling
Nasenverkleidung
Carénage avant

このマークの指示はエッチングパーツです。
Attach photo-etched parts.
Die Fotogeätzten Teile anbringen.
Fixer les pièces photo-découpées.

指示の部品を瞬間接着剤でとりつけます。
Apply instant cement.
Sekundenkleber auftragen.
Appliquer de la colle rapide.



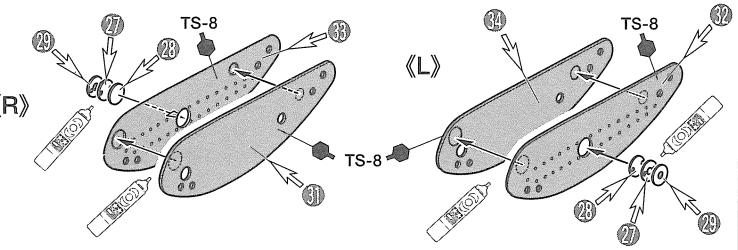
3 オイルタンクの組み立て
Oil tank
Öltank
Réservoir d'huile

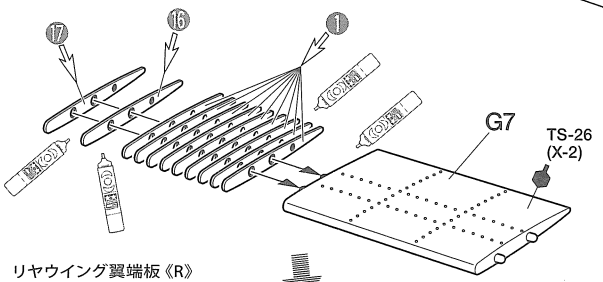


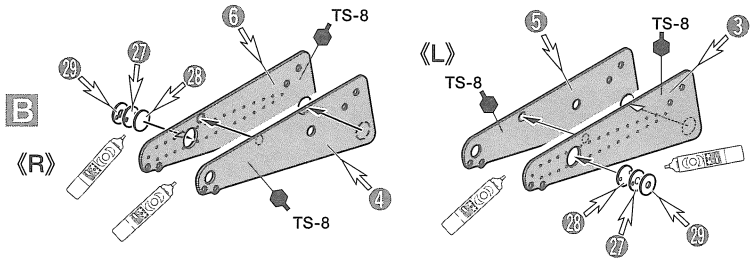
指示の番号のスライドマークをはります。
Number of decal to apply.
Nummer des Abziehbildes, das anzubringen ist.
Numéro de la décalcomanie à utiliser.

2 リヤウイングの組み立て
Rear wing
Hinterer Spoiler
Aileron arrière

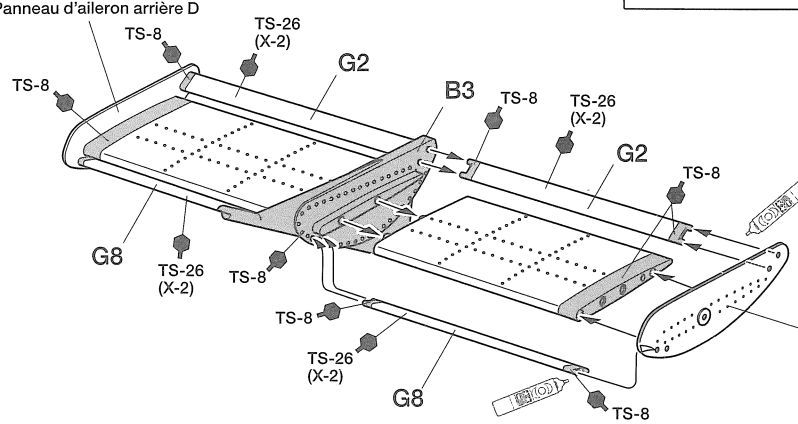
《リヤウイング翼端板》 A C
Rear wing panel
Hintere Flügelplatten
Panneau d'aileron arrière

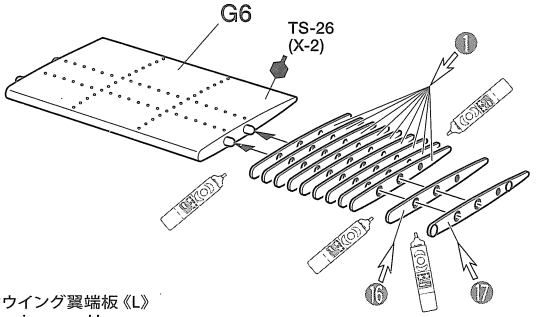






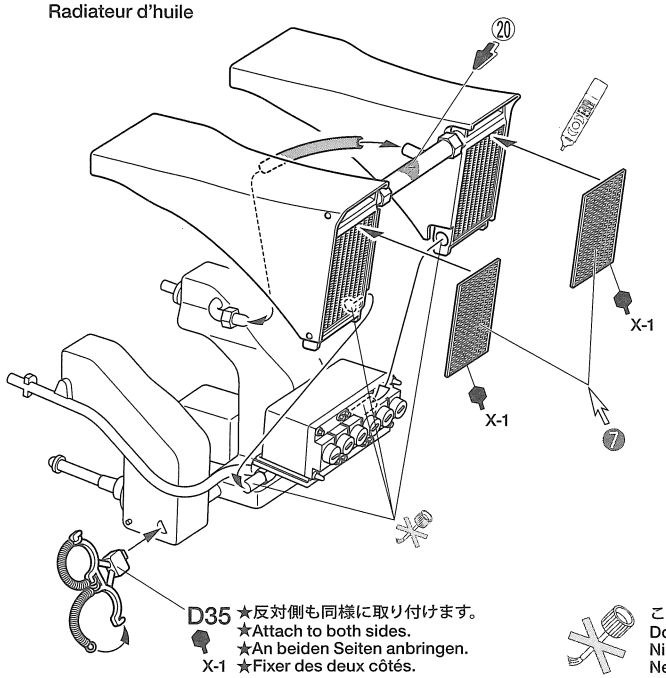
リヤウイング翼端板《R》
Rear wing panel R
Hintere Flügelplatten R
Panneau d'aileron arrière D





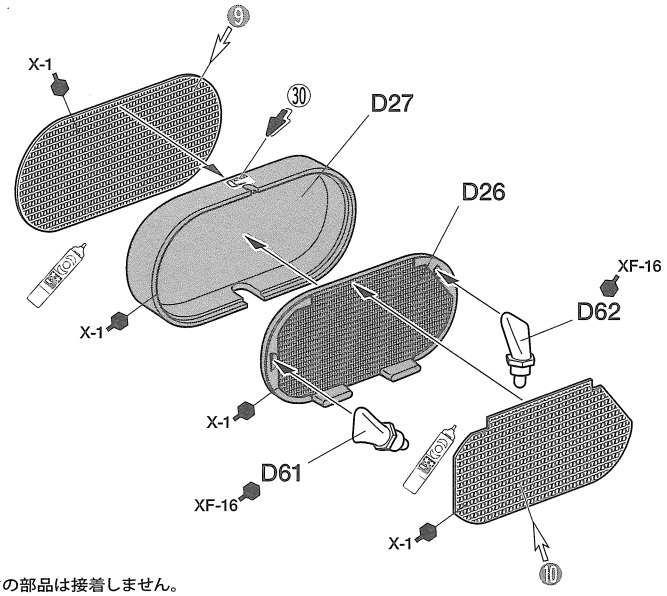
リヤウイング翼端板《L》
Rear wing panel L
Hintere Flügelplatten L
Panneau d'aileron arrière G

4 オイルクーラーの組み立て
Oil coolers
Ölkühler
Radiateur d'huile



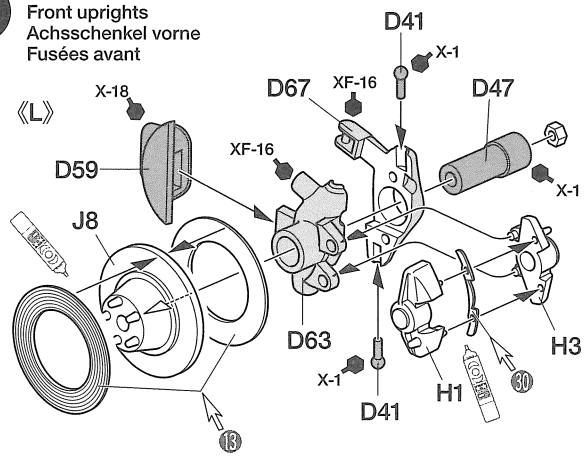
★反対側も同様に取り付けます。
★Attach to both sides.
★An beiden Seiten anbringen.
★Fixer des deux côtés.

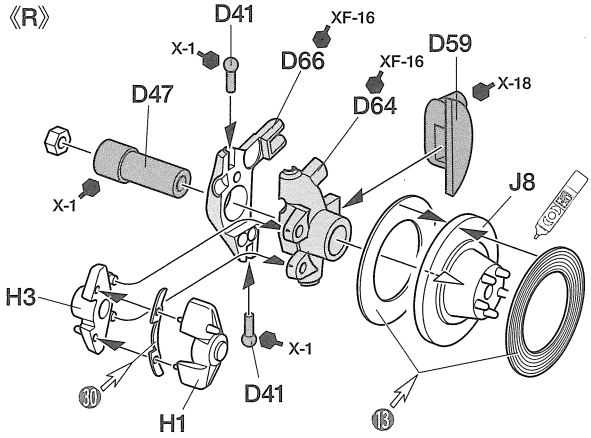
5 ラジエターの組み立て
Radiator
Kühler
Radiateur



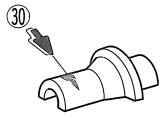
このマークの部品は接着しません。
Do not cement.
Nicht kleben.
Ne pas coller.

6 フロントアップライトの組み立て
Front uprights
Achsschenkel vorne
Fusées avant

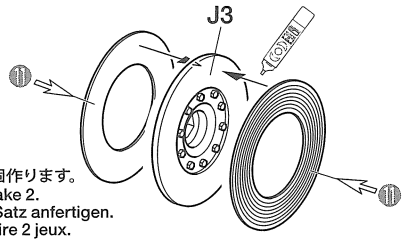




7 ダンパーの組み立て
Shock absorber
Stoßdämpfer
Amortisseur

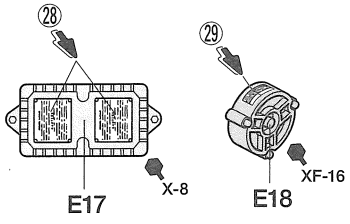


8 ユニバーサルジョイントの組み立て
Universal joint
Kardanteil
Pièce Universelle

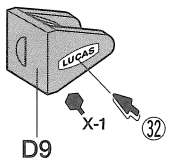


★2個作ります。
★Make 2.
★2 Satz anfertigen.
★Faire 2 jeux.

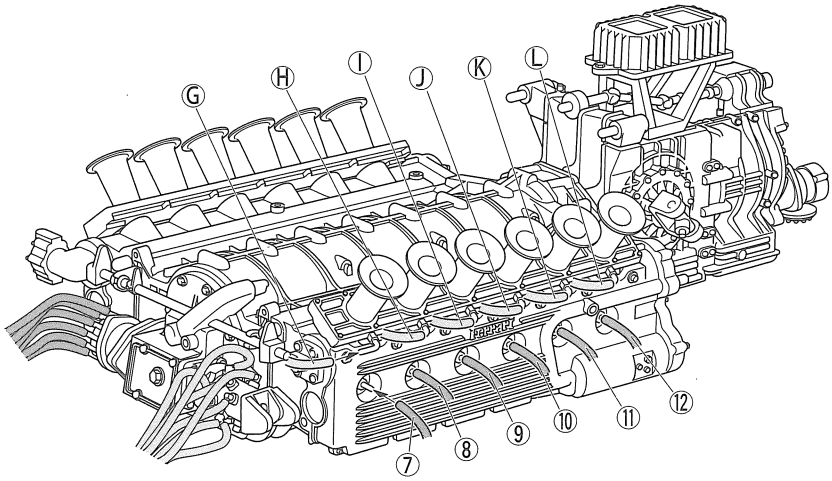
11 ミッションケースの組み立て
Transmission case
Getriebegehäuse
Carter de transmission



12 部品の組み立て
Injection system
Einspritzung
Injection

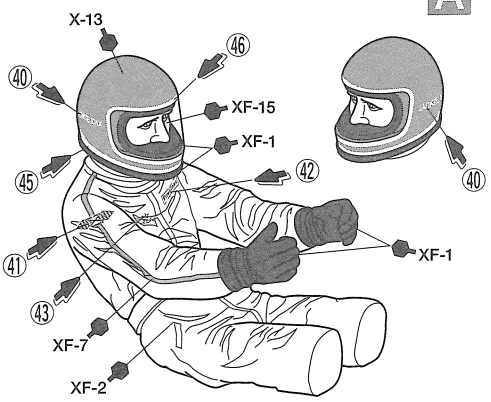


13 エンジン前部品の取り付け
Engine parts
Motorteilen
Pièces du moteur

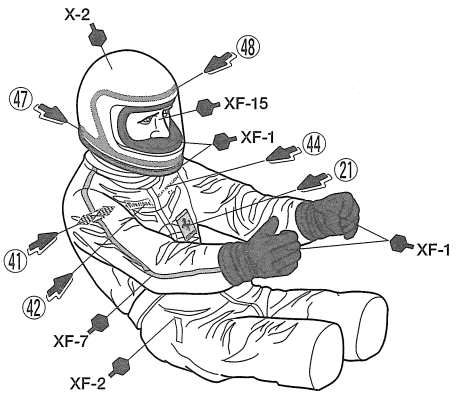


15 人形の塗装について
Driver figure
Fahrerfigur
Figurine du pilote

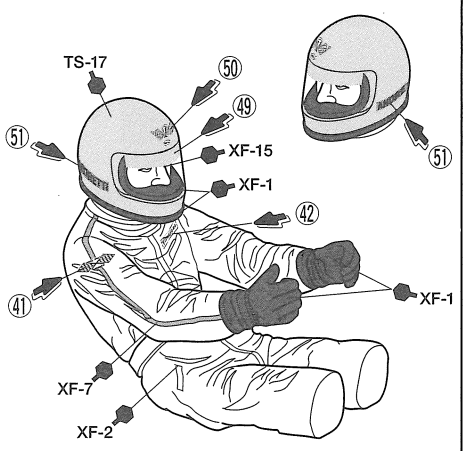
《ジャッキー・イクス》
Jacky Ickx
A



《クレイ・レガゾーニ》
Clay Regazzoni
B



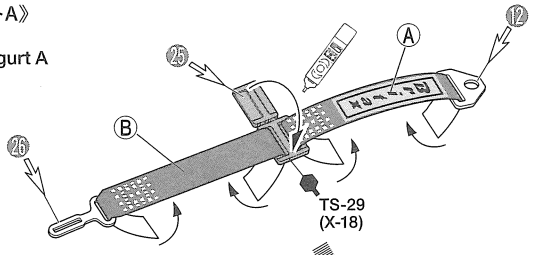
《マリオ・アンドレッティ》
Mario Andretti
C



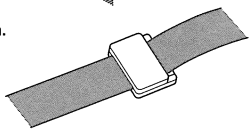
《シートベルトの組み立て》
Seatbelt assembly
Anordnung des Sicherheitsgurts
Assemblage du harnais

★人形を取り付けない場合
★When not attaching a driver figure
★Wenn keine Fahrerfigur eingebaut wird
★Sans figurine de pilote

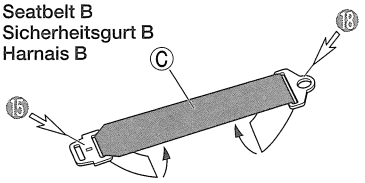
《シートベルトA》
Seatbelt A
Sicherheitsgurt A
Harnais A



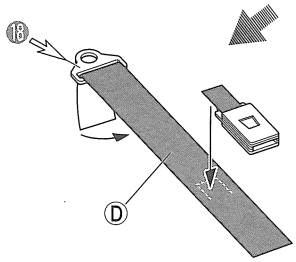
★2個作ります。
★Make 2.
★2 Satz anfertigen.
★Faire 2 jeux.

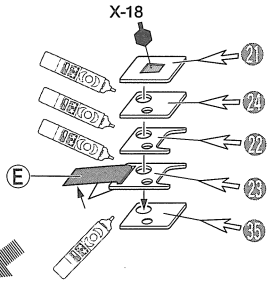


《シートベルトB》
Seatbelt B
Sicherheitsgurt B
Harnais B



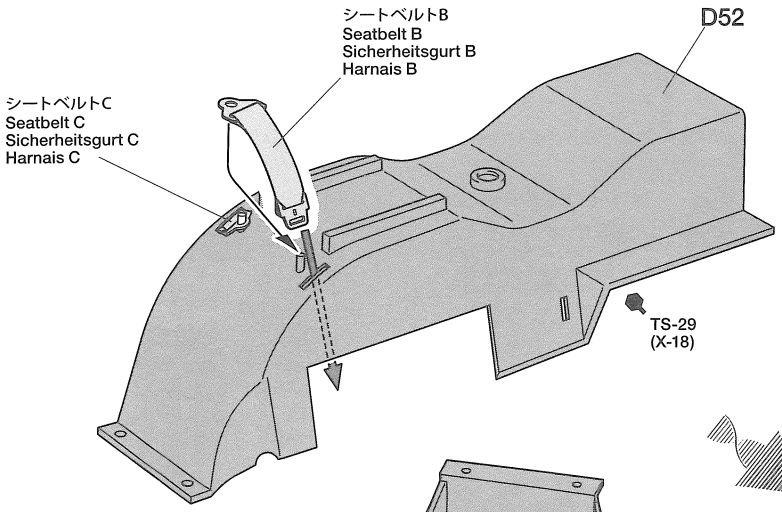
《シートベルトC》
Seatbelt C
Sicherheitsgurt C
Harnais C

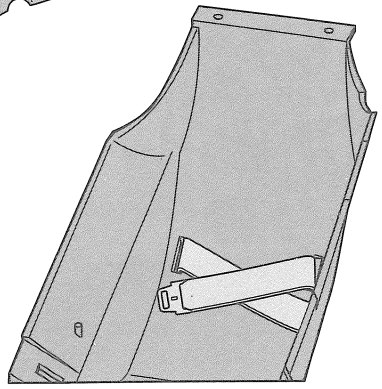




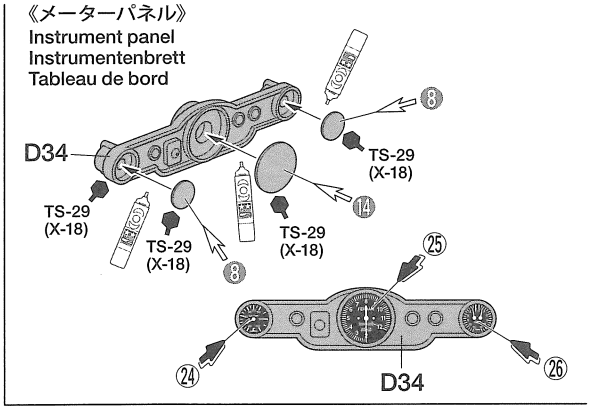
16 コクピットの組み立て
Cockpit assembly
Cockpit-Zusammenbau
Assemblage de l'habitacle

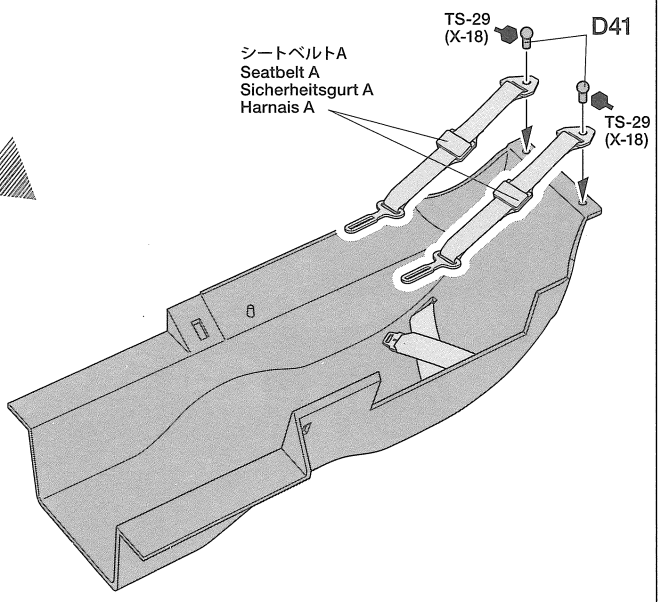
★人形を取り付けない場合
★When not attaching a driver figure
★Wenn keine Fahrerfigur eingebaut wird
★Sans figurine de pilote



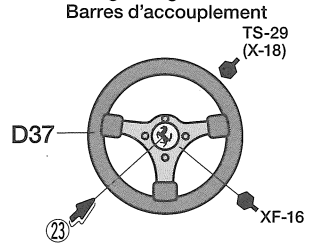


《メーターパネル》
Instrument panel
Instrumentenbrett
Tableau de bord



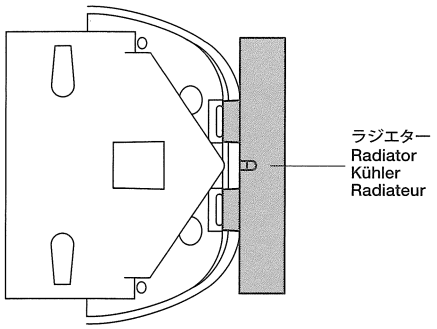


22 ラックの取り付け
Steering linkage
Lenkgestänge
Barres d'accouplement

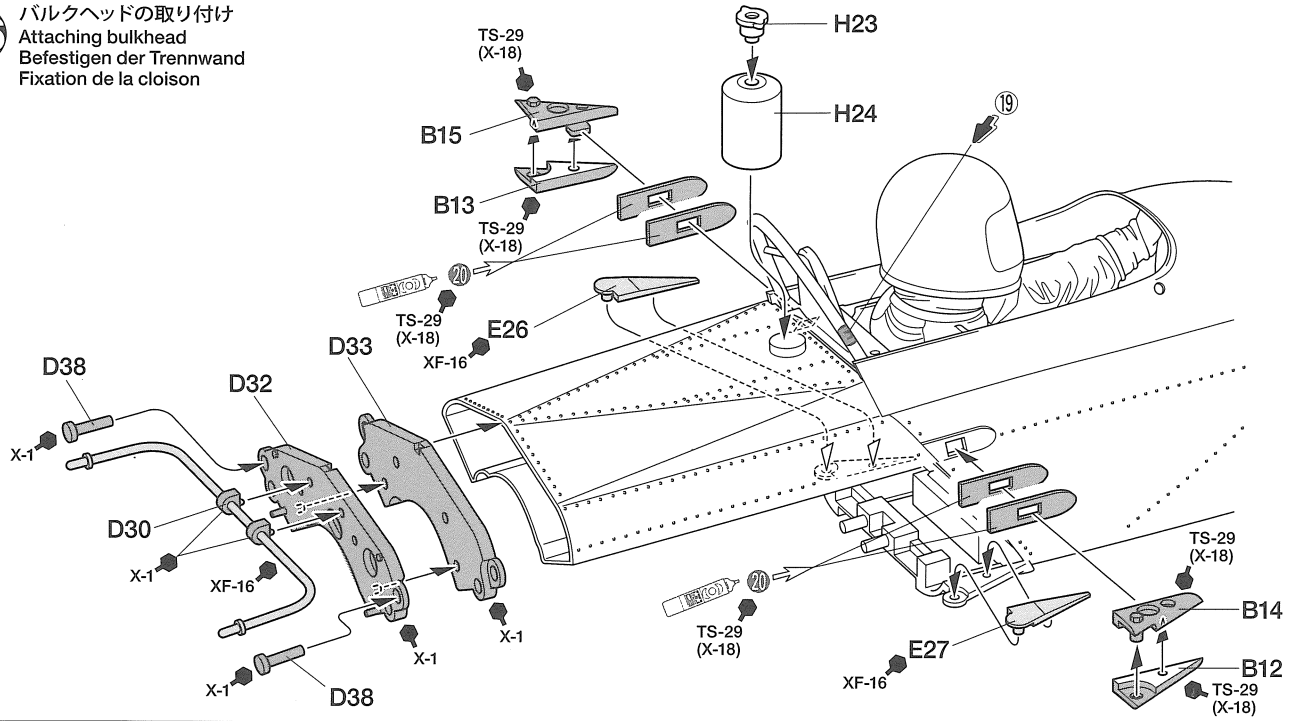


24 ラジエターの取り付け
Attaching radiator
Anbringung des Kühlers
Fixation du radiateur

《取り付け位置》
Attachment position
Anbringungs-Position
Point de fixation

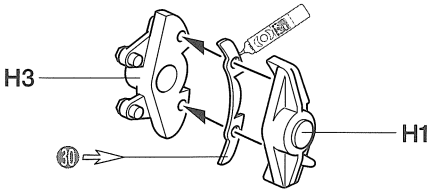


26 バルクヘッドの取り付け
Attaching bulkhead
Befestigen der Trennwand
Fixation de la cloison

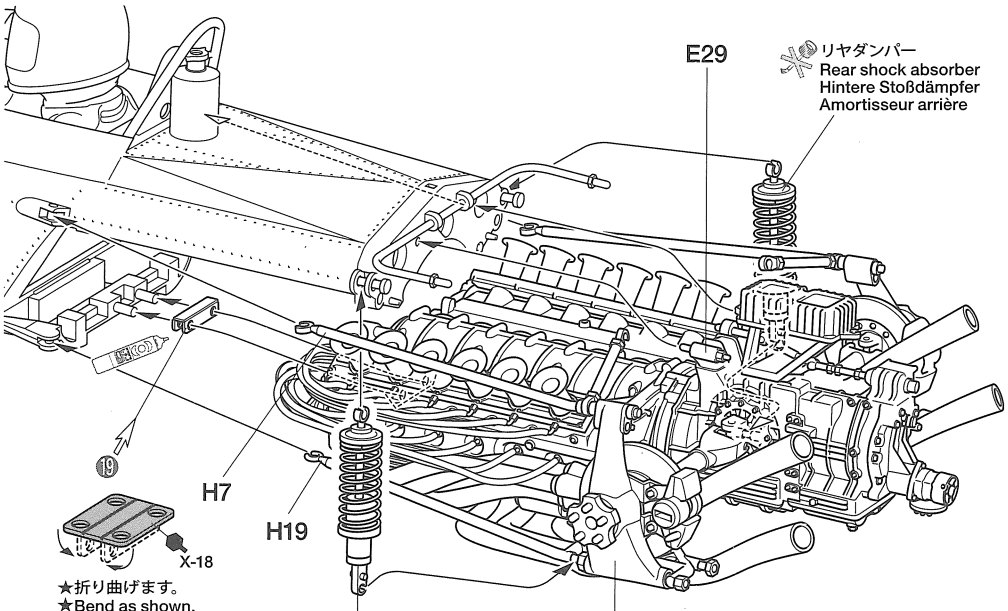


27 リヤアップライトの組み立て
Rear uprights
Achsschenkel hinten
Fusées arrière

★2個作ります。
★Make 2.
★2 Satz anfertigen.
★Faire 2 jeux.

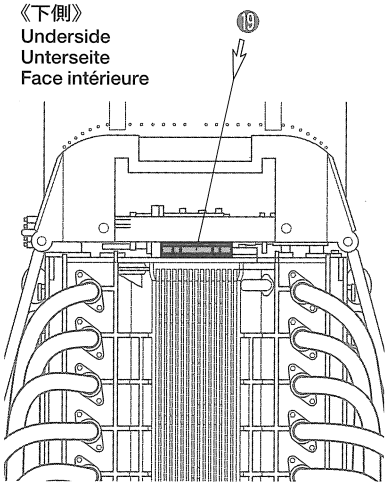


29 エンジンの取り付け
Attaching engine
Motor-Einbau
Mise en place du moteur



★折り曲げます。
★Bend as shown.
★Wie gezeigt biegen.
★Plier comme indiqué.

《下側》
Underside
Unterseite
Face intérieure



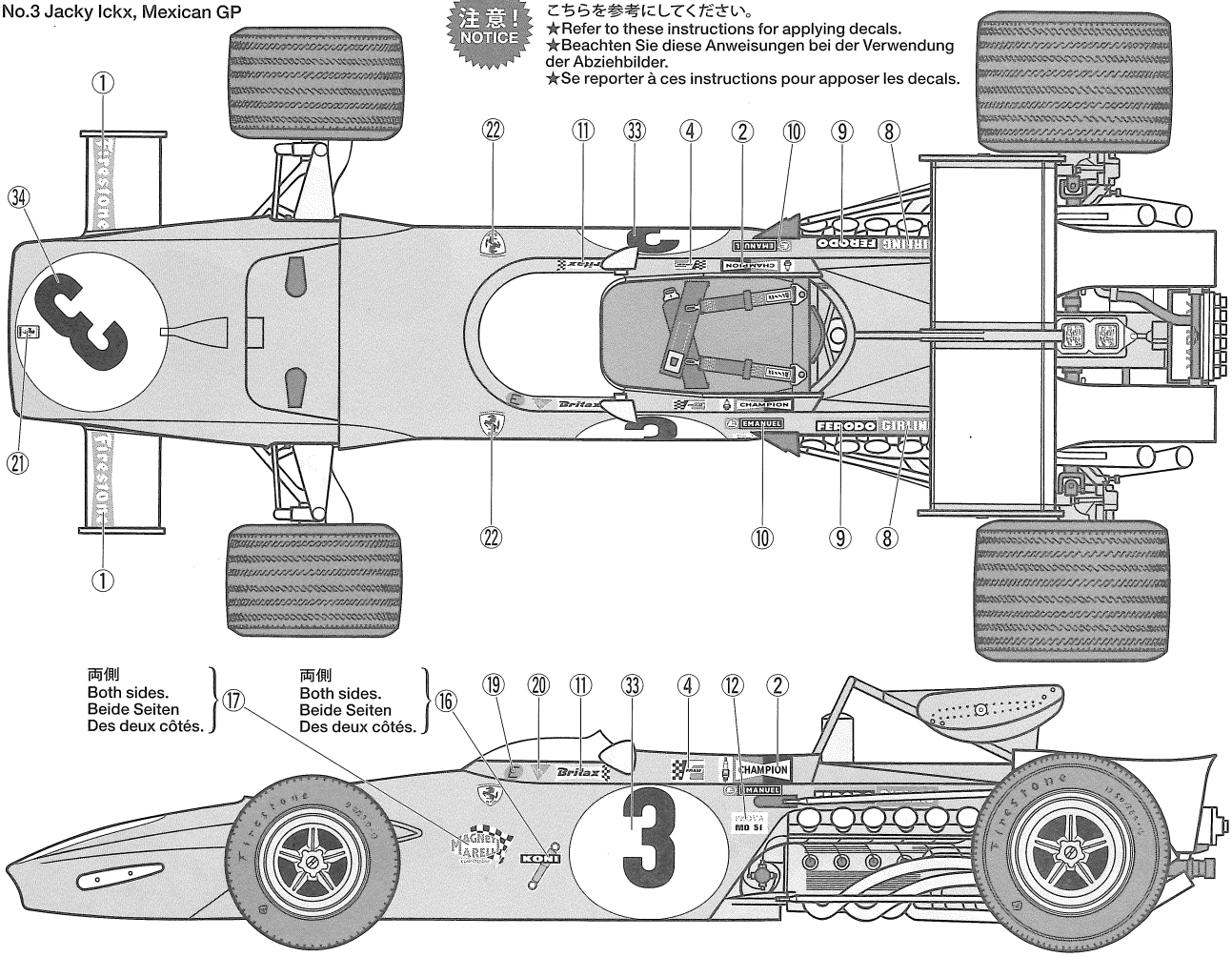
リヤダンパー
Rear shock absorber
Hintere Stoßdämpfer
Amortisseur arrière

★E29を差し込んでからH19（右側H18）、H7（右側H8）をはめてください。
★Attach E29 first, then connect H19 and H7 for left, H18 and H8 for right.
★E29 zuerst anbringen. Dann H19 und H7 für die linke Seite und H18 und H8 für die rechte Seite verbinden.
★Fixer E29 en premier, puis connecter H19 et H7 à gauche, H18 et H8 à droite.

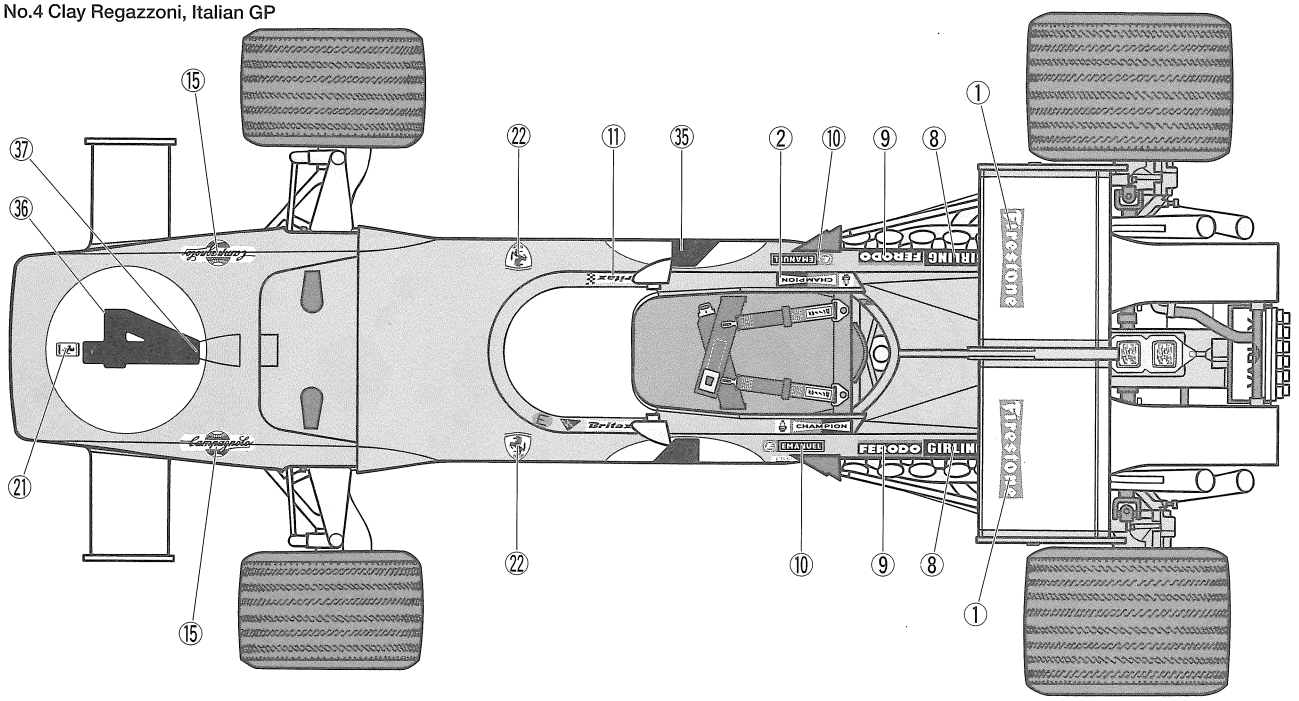
A 《メキシコGP仕様 No.3 ジャッキー・イクス》
No.3 Jacky Ickx, Mexican GP

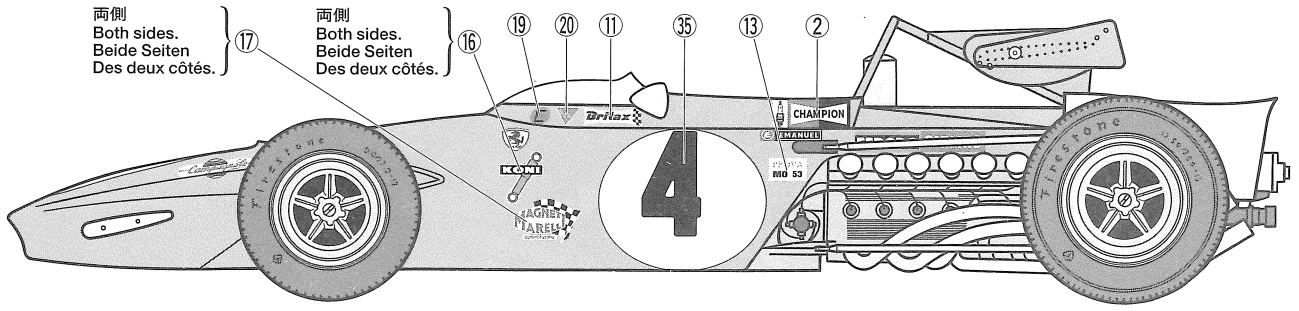
注意！ NOTICE

★組み立て説明書のマーキング図は使用しません。
こちらを参考にしてください。
★Refer to these instructions for applying decals.
★Beachten Sie diese Anweisungen bei der Verwendung der Abziehbilder.
★Se reporter à ces instructions pour apposer les decals.



B 《イタリアGP仕様 No.4 クレイ・レガゾーニ》
No.4 Clay Regazzoni, Italian GP





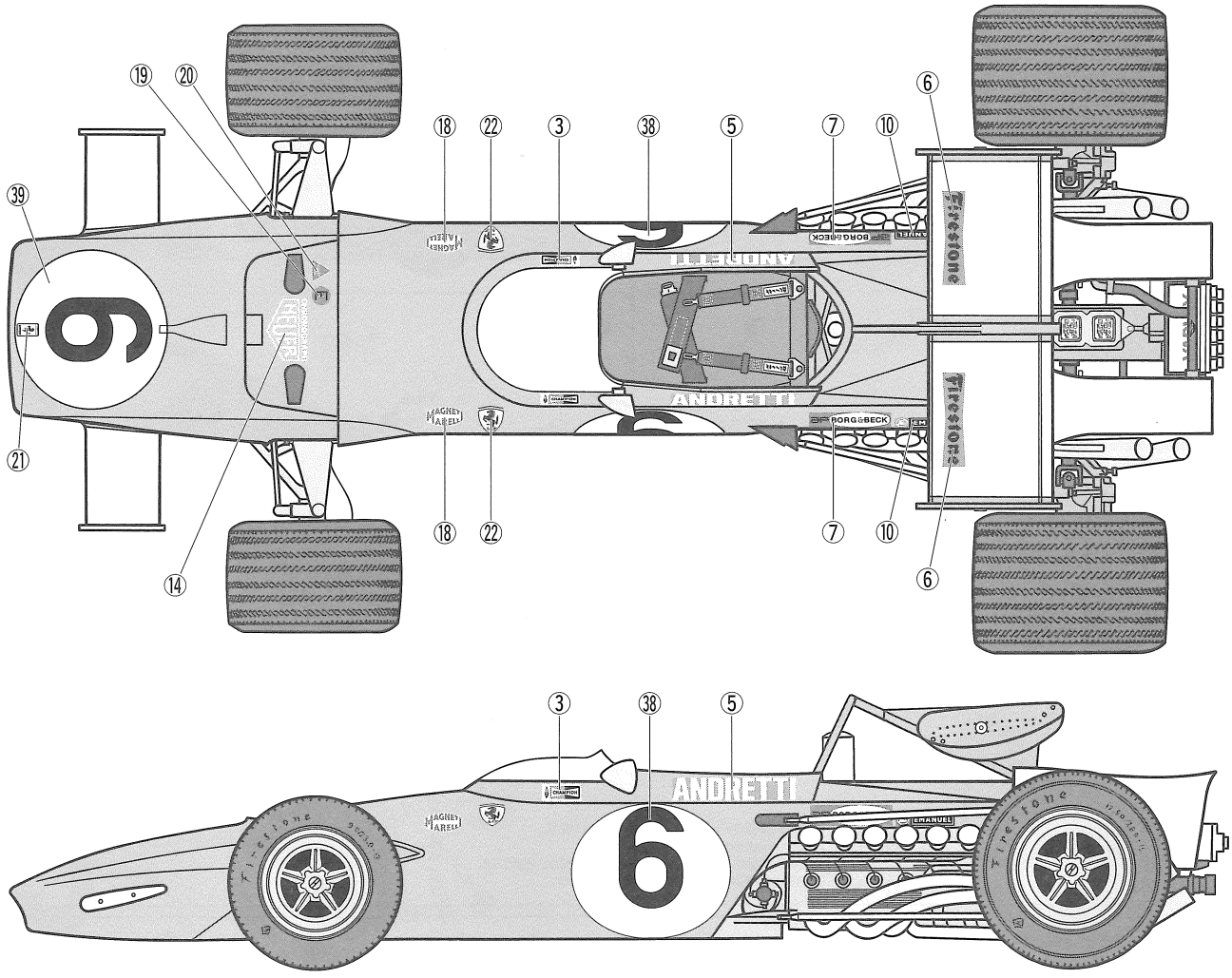
Ferrari 312B

不要部品…… B4, B6, G1, G3
Not used.
Nicht verwenden.
Non utilisées.

不要エッチングパーツ…… ①×2, ⑯×2, ㉖×1, ㉚×4
Not used.
Nicht verwenden.
Non utilisées.

★余ったマークはお手持ちの資料などを参考にご自由にお使いください。
★Apply extra decals referring to available reference sources.
★Bringen Sie zusätzliche Aufkleber unter Bezug auf verfügbare Quellen an.
★Apposer les decals supplémentaires en se référant à sa documentation.

C 《南アフリカGP仕様 No.6 マリオ・アンドレッティ》
No.6 Mario Andretti, South African GP



部品請求について

For use in Japan only!

★部品をなくしたり、こわした方は、このステッカーが貼られたカスタマーサービス取次店でご注文いただけます。また、当社カスタマーサービスに直接ご注文する場合は、右記の方法でご注文することができます。詳しくは当社カスタマーサービスまでお問い合わせください。

①《郵便振替のご利用法》
郵便局の払込用紙の通信欄に下のリストを参考にITEM番号、スケール、製品名、部品名、部品コード、数量を必ずご記入ください。振込人住所欄にはお電話番号もお書きいただき、口座番号・00810-9-1118、加入者名・(株) タミヤでお振込ください。

②《代金引換のご利用法》
パーツ代金に加えて代引き手数料 (315円) をご負担いただければ、電話またはホームページより代金引換によるご注文をお受けいたします。

③《タミヤカードのご利用法》
タミヤカードをご利用の場合、代金はご指定金融機関の口座引き落としとなります。ご注文は電話またはホームページよりお受けいたします。

《住所》 〒422-8610 静岡市駿河区恩田原3-7
株式会社タミヤ カスタマーサービス係

《お問い合わせ電話番号》
静岡 054-283-0003
東京 03-3899-3765 (静岡へ自動転送)

《カスタマーサービスアドレス》
http://tamiya.com/japan/customer/cs_top.htm

TAMIYA

1/12
Big Scale Racing Car
www.famiya.com

1/12 フェラーリ312B (エッチングパーツ付き) ITEM 12048

★価格は2012年2月現在のものです。予告なく変更となる場合があります。

部品名	税込価格	本体価格	部品コード
ボディ	682円	(650円)	19331058
風防	378円	(360円)	10441094
シートベルト	378円	(360円)	10441095
人形	651円	(620円)	19331060
B、Cパーツ(カウリング)	882円	(840円)	19001467
Dパーツ(シート)	882円	(840円)	19001468
Eパーツ(エンジン)	693円	(660円)	19001469
F、Gパーツ(エキゾーストパイプ)	630円	(600円)	19001470
Hパーツ(サスアーム)	714円	(680円)	19001471
Jパーツ(ホイール)	735円	(700円)	19111080
タイヤ袋詰	1,008円	(960円)	19401184
金具袋詰	693円	(660円)	19401185
エッチングパーツ	2,520円	(2,400円)	19401953
マーク	1,050円	(1,000円)	11401290
シートベルトステッカー	315円	(300円)	11421607
説明図	472円	(450円)	11051256
補足説明図	273円	(260円)	11052864

AFTER MARKET SERVICE CARD
When purchasing replacement parts, please take or send this form to your local Tamiya dealer so that the parts required can be correctly identified. Please note that specifications, availability and price are subject to change without notice.

Parts code	ITEM 12048
19331058	Body
10441094	Windshield
10441095	Seatbelt
19331060	Figure
19001467	B & C Parts
19001468	D Parts
19001469	E Parts
19001470	F & G Parts
19001471	H Parts
19111080	J Parts
19401184	Tire Bag
19401185	Metal Parts Bag
19401953	Photo-Etched Parts
11401290	Decals
11421607	Seatbelt Stickers
11061113	Instructions (EN)
11052864	Supplementary Instructions