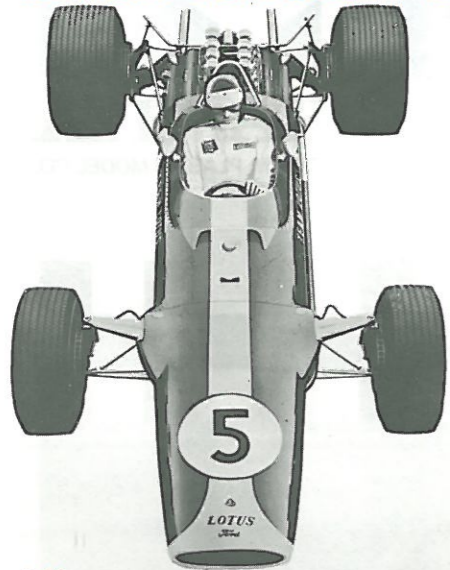


# LOTUS 49 FORD F-1



## ★ About the LOTUS 49 FORD

At the end the 1961-1965 Grand Prix Formula, Team Lotus was left without an engine to power its Grand Prix Cars, because of the retirement from the racing scene of the Coventry Climax concern. Colin Chapman, however, made an agreement with Ford, whereby Ford supplied Cosworth with £100,000 to build a Grand Prix Engine for the exclusive use of Team Lotus for one year. The engine, the Cosworth D.F.V. V8 was designed and built in 13 months and at the 1967 Dutch Grand Prix it made its winning debut in Colin Chapman's latest creation the Lotus 49.

The Lotus 49 has an aluminium monocoque chassis which is closed at the top forming a 'cigar' shape, unlike most monocoques which are 'bath tubs' with the top open. Inside the monocoque is carried about 40 gallons of fuel. The monocoque itself which weighs only 75 lbs. stretches from the front suspension mounting points to the rear of the cockpit where the engine is bolted straight to the rear bulkhead; this saves the weight of a subassembly on which to mount engine. This process has only been possible in recent times when engines have much become smoother, up till five years ago all engines had to be mounted on rubber bushes because of the heavy vibrations.

The front suspension on the Lotus, which is fairly conventional by Grand Prix standards is by upper and lower wishbones with coil spring/damper units mounted inside the body, out of the airstream. The rear suspension is hung on to the engine-gearbox unit and consists of an upper link, lower wishbone, twin radius arms and a coil spring/damper unit; the rear suspension units are interconnected by an anti-roll bar. Cast magnesium uprights are used all round, at first these supported 12 in. ventilated disc brakes but as these were becoming too cool (yes, cool) and tending to grab, non-ventilated discs have been substituted as a temporary measure. Four spoke cast magnesium 15 in. wheels are used all round shod with Firestone tyres.

The Cosworth D.F.V. engine is a fairly conventional V.8 with a bore and

stroke of 85.7 mm. x 64.8 mm. giving a capacity of 2,993 cc., it has four valves per cylinder and has excellent 'breathing'. The engine gives out about 420 b.h.p. at 9,000 r.p.m. which is a remarkable figure for a V.8. Lucas fuel injection is used along with the Lucas OPUS ignition system, and Autolite sparking plugs.



For the 1967 season the car was painted the familiar Lotus Green and Yellow colours, however this season it is painted in the red, white and gold colours of the newlyformed Gold Leaf-Team Lotus team. Throughout the 1967 season various changes were made to the car, such as the changing of the brakes, the placing of all the electrics under an aluminium shield between the vee of the engine and the most obvious change, that to the windscreen. The original windscreen consisted of a small screen not unlike that of the Eagles, extending to halfway along the cockpit with an 'intake' at the front to tunnel air over the cockpit with an 'intake' at the front to tunnel air over the driver's head, this screen was used only for the car's first two races. On the later type screen as drawn, however, the perspex extends to the rear of the cockpit, and is incidentally, tinted yellow.

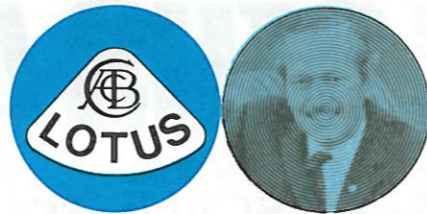
The racing career of the Lotus 49 is too well known to go into any great detail about; the highspots are the victories in the Dutch, British, American, Mexican and Spanish Grand Prix in 1967 and its success in the South African Grand Prix and the Tasman series this year. The late Jim Clark had a truly great drive in the Italian Grand Prix last year. After a pit stop to change a tyre, which lost him a lap, he drove like a man possessed to retake the lead when team mate Graham Hill retired, only to lose it through lack of fuel on the final lap. Clark finished 3rd in the World Championship and Hill 7th.

The Lotus 49T in which Jim Clark won his third Tasman Championship this year is outwardly the same as the normal 49, its Cosworth engine, however, was reduced to 2 1/2 litres to comply with the regulations of the Tasman series.

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JIM CLARK

GRAHAM HILL

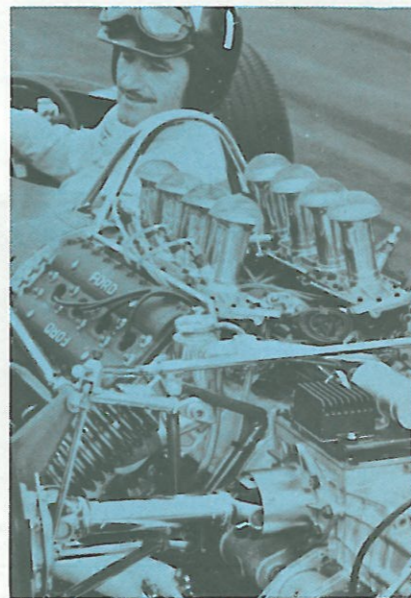


## EMBLEM

C. CHAPMAN

### About the Emblem:

The word 'Lotus' means a water plant flower represented in ancient Egyptian and Hindu arts. It is not clear, however, why Collin Chapman, the originator of this car, selected this flower for his emblem. Since the car is so famous nowadays, most people interested in the racing car, just don't bother about what kind of a flower it is, but immediately think of that energetic and mechanical machine itself and a laurel, the symbol of a victory. The four characters, C, A, B, C, simply represent his full name initials: Collin Antony Bruce Chapman.



### The Circuits where the Lotus Won:

The driver's championship is decided on the basis of marks gained through 11 grand prix races held at various circuits all over the world during a whole year. Six races are held in the first half while the remaining five ones in the latter half of the year. The circuits are located at various places in the U.S., Canada, Africa and Europe. Below, we shall show some outstanding records and circuits where the Lotus won the Gps.

#### ★Watkinsglen, (U.S.): 3.7 km circle.

The circuit at Watkinsglen, New York, has a simple, genuine American-like course of an extremely small scale. In this course, Jim Clark showed his overwhelming strength and won three here in 1962, 1966 and 1967. (He used a new-type Lotus). The maximum lap time: 1 min 6 sec 0, 201.90 km/h.

#### ★Silverstone, (Britain): 4.715 km circle.

Here the British Gp race had been held one after the other for seven succeeding years after the war. The 4.715 km circle course is flat and in a relatively simple shape. Each part of the circuit has its own name like 'Chapel Curve', 'Hunger Straight' and 'Crab Corner'. The maximum lap time: 1 min 27 sec 0, 194.918 km/h.

Please read the following instructions very carefully before assembly.

★This kit has a very large number of Parts, almost 180. Please read and study the diagrams very carefully before starting assembly.

Assemble all the parts in their respective numbers.

★You will need the following tools for the construction of this kit; a small screwdriver, tweezers, knife, cello tape and a rule.

★Remove each part of the twig before you assemble the various parts. ★In the diagrams the sections which have to be fixed either with adhesives or by heat-welding are shaded in blue. Always be certain that you apply the correct adhesive to the correct sections.

Fig. 1 - Assembling Cockpit  
Cement B8, C36, B11 and E11 to cockpit B15.

Construction of Meter Panel  
★Paste a sticker onto the Dashboard of meter E8.

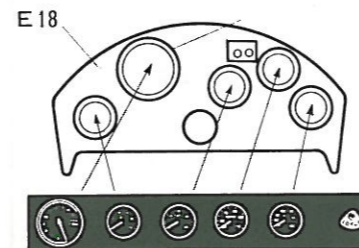


Fig. 2 Battery Mount Installation  
First fix Battery mount metals M1 to the underside of Cockpit by bending claws of M1.

Next attach each lead to metals as shown in the diagram, and then fix Switch Metal M2 without cement. Fix B14 by cementing B18 to Cockpit. Do not use too much cement. Be sure no cement touches B14 or it will not revolve.

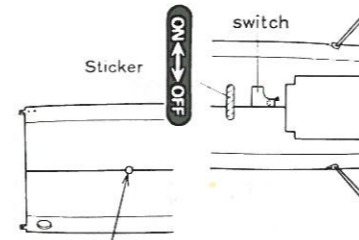
Fig. 3 - Assembling the Body  
Apply cement to fix A1 and A2 together, holding B1 and B10 in place.

Fig. 4 - Cowling Fixing Metal Installation  
Heat fix cowling fixing metal M6 onto B16.

Fig. 5 - Front Arm Installation  
Fix D42 and D40 by fitting them to A1 and A2 respectively. Next cement Front Bulkhead B16 to the body.

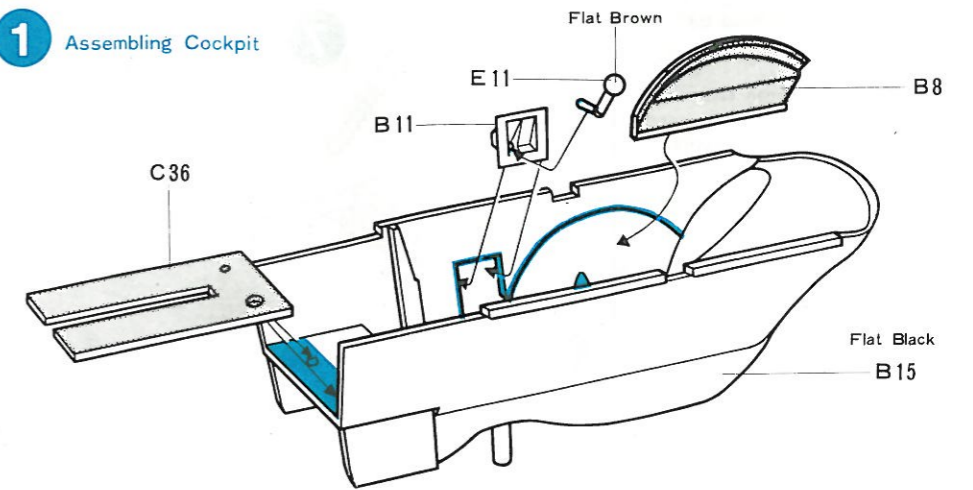
Fig. 6 Cockpit Installation  
After checking that switch is "on" position, apply cement to fix cockpit B15 onto the body. Pass switch leads through B10.

★Paste a sticker onto switch in the position as shown in the figure.

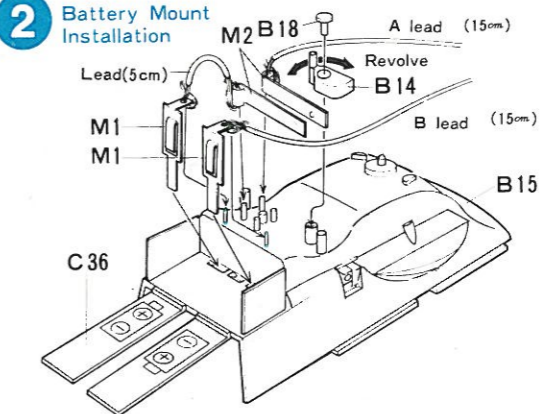


★Insert the pin of cockpit here.

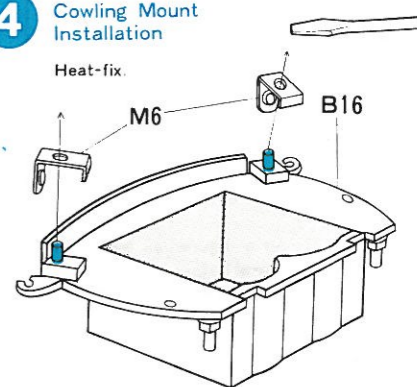
## 1 Assembling Cockpit



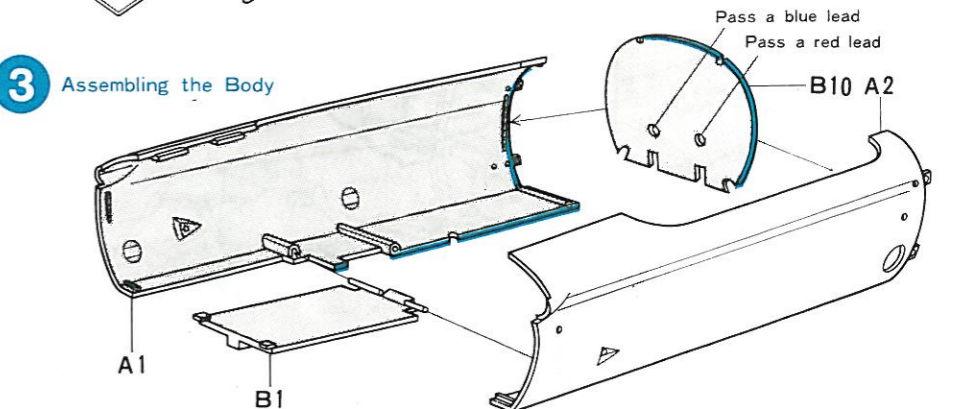
## 2 Battery Mount Installation



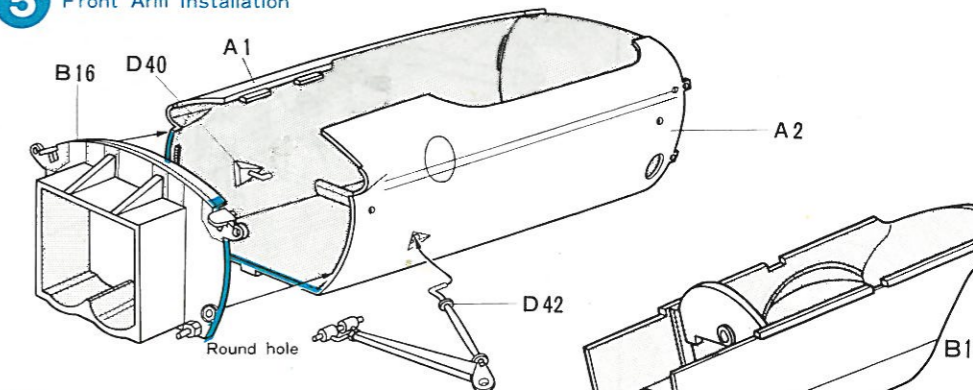
## 4 Cowling Mount Installation



## 3 Assembling the Body



## 5 Front Arm Installation



## 6 Cockpit Installation

