



F.I.A. Recognition No. 634  
Group 4

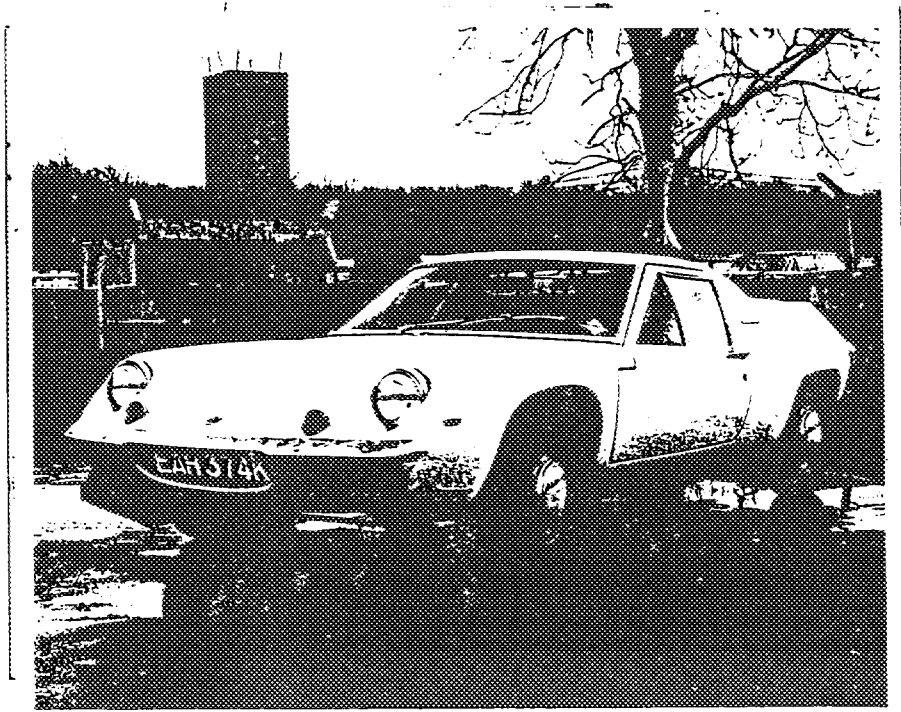
# ROYAL AUTOMOBILE CLUB

31, Belgrave Square, London, S.W.1

Form of recognition in accordance with appendix J to the International Sporting Code of the  
FEDERATION INTERNATIONALE DE L'AUTOMOBILE

Cylinder-capacity 1558 cm.<sup>3</sup> 95.1 in.<sup>3</sup>  
 Manufacturer Lotus Cars Ltd. Model Europa Twin Cam  
 Serial No. of chassis/body 710918100P onwards Manufacturer Lotus Cars Ltd.,  
 Serial No. of engine V24969 onwards Manufacturer Lotus Cars Ltd.  
 Recognition is valid from 1/4/72 List 72/4  
 The manufacturing of the model described in this recognition form started on September 10th 1971  
 and the minimum production of 1000 identical cars, in accordance with the specifications of  
 this form was reached on May 23rd 1972

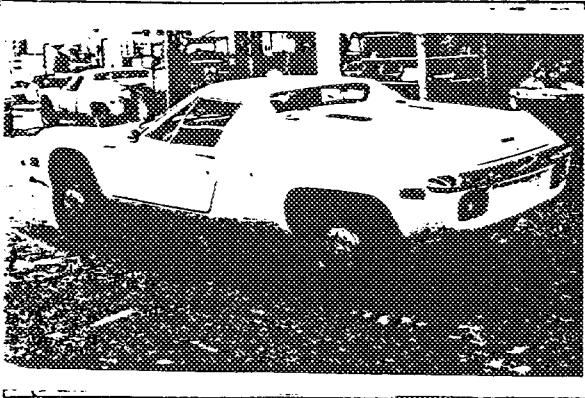
Photograph A. 1/2 view of car from front



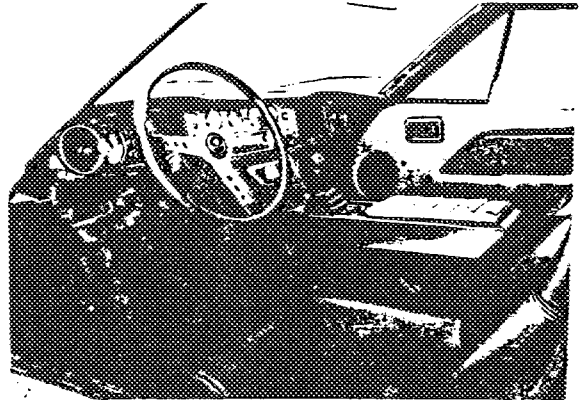
F.I.A. Stamp

R.A.C. Stamp

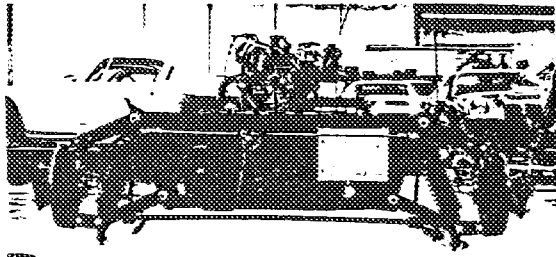
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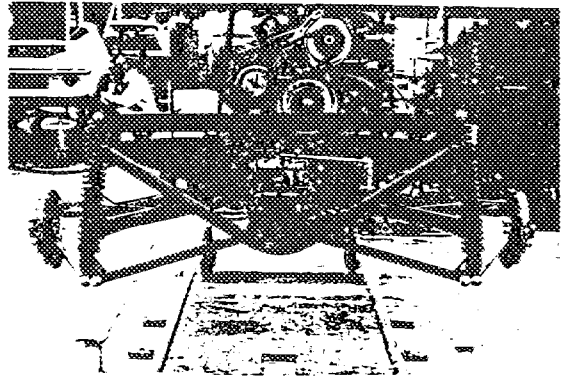
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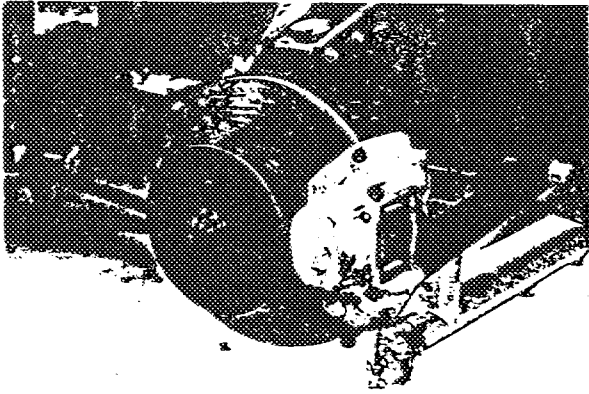
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D



E

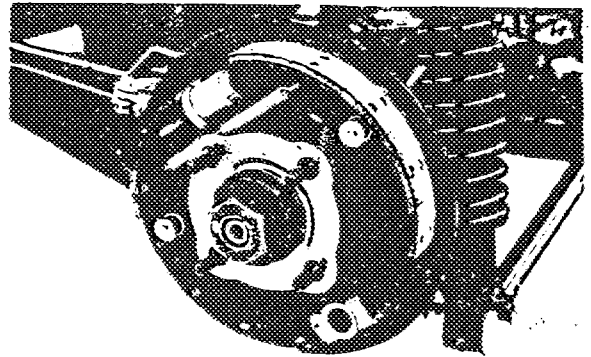


F

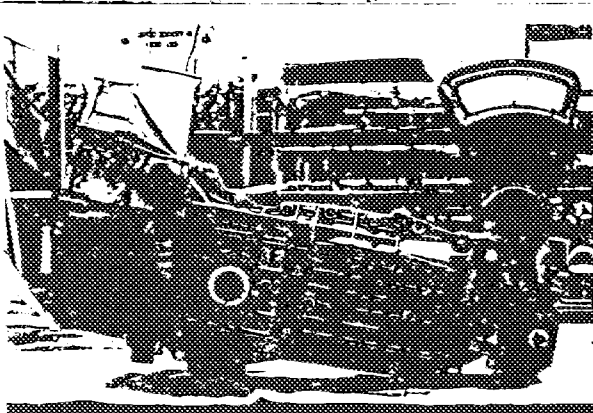
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H

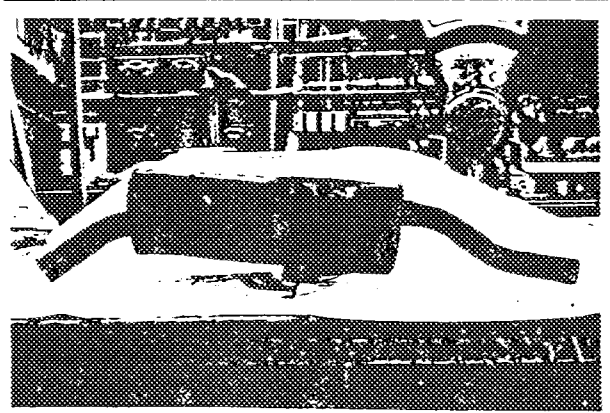
I



G

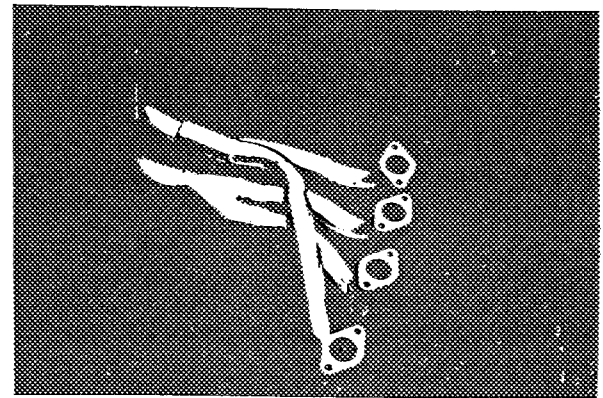
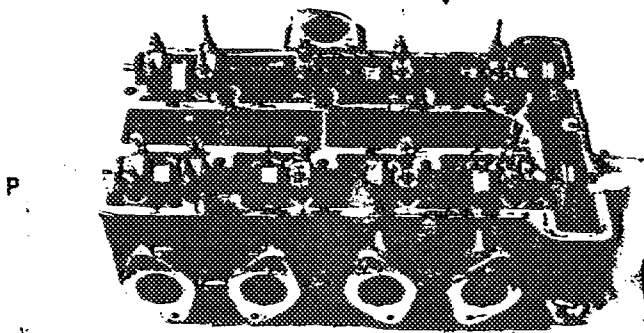
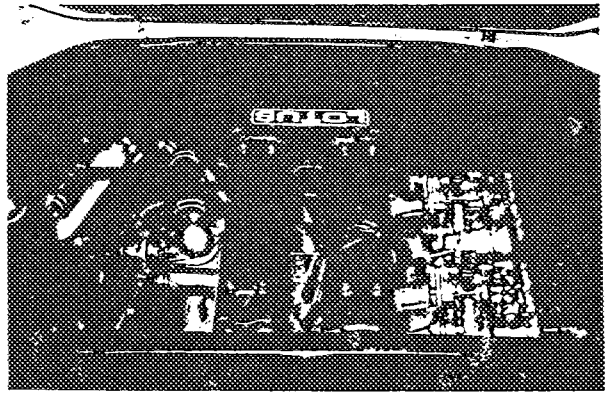
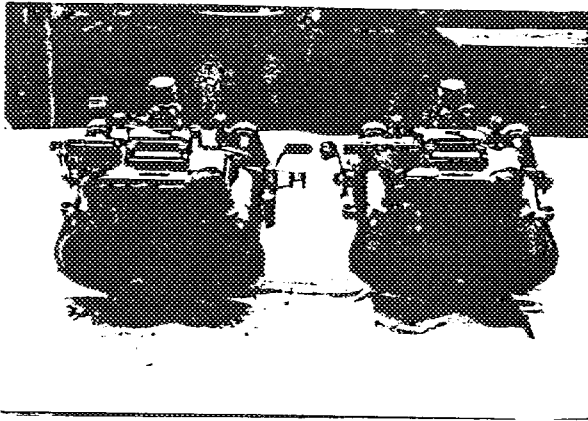
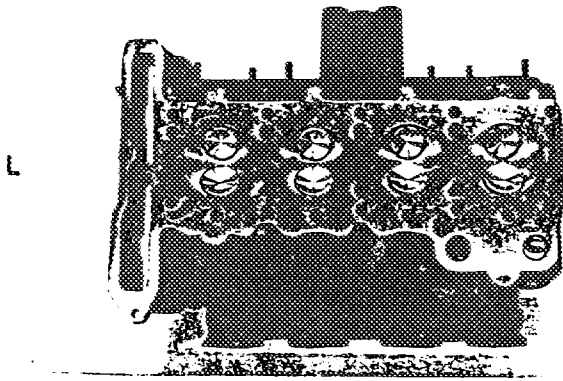
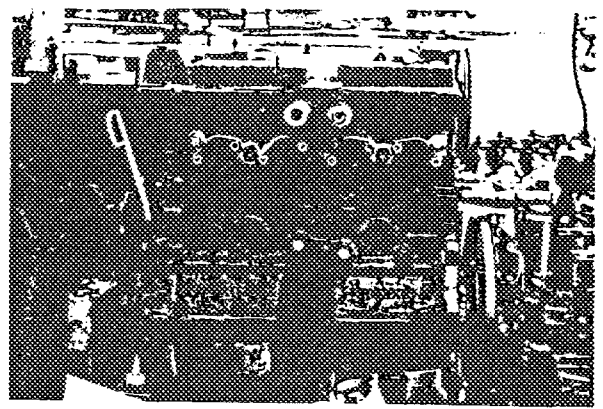
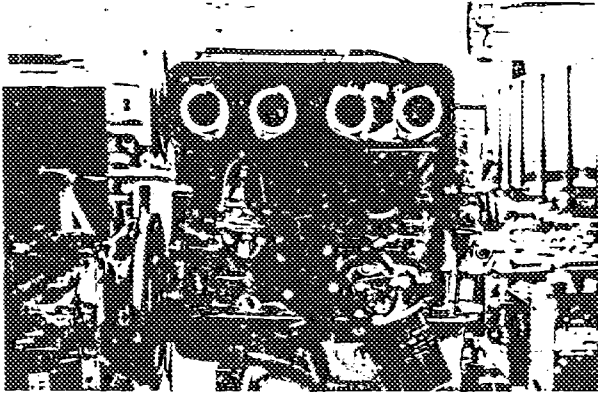


H



I

63h



Make Lotus

Model Europa T/C

F.I.A. Rec. No. 634

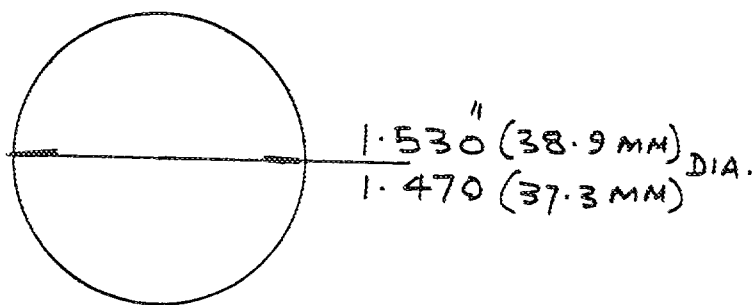
Drawing inlet manifold ports, side of cylinderhead. Indicate scale or dimensions and manufacturing tolerance.

N/A

Manifold integral with head

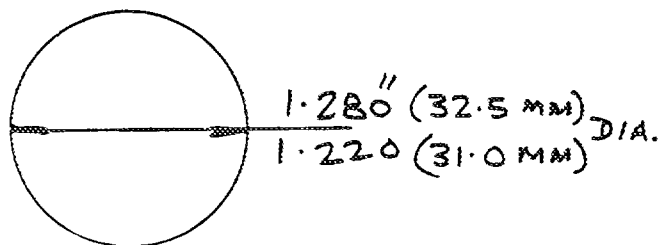
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Drawing of entrance to inlet port of cylinderhead. Indicate scale or dimensions and manufacturing tolerance.



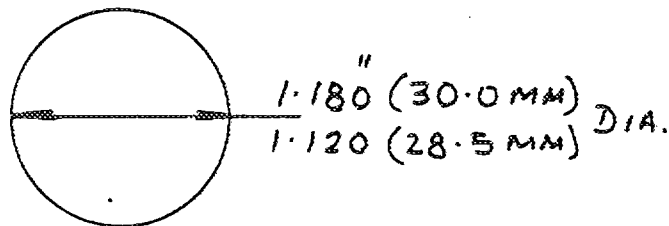
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Drawing of exhaust manifold ports, side of cylinderhead. Indicate scale or dimensions and manufacturing tolerance.



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Drawing of exit to exhaust port of cylinderhead. Indicate scale or dimensions and manufacturing tolerance.



Make Lotus Model Europa F.I.A. Rec. No. 63h

**NOTE 1.**

All dimensions must be given in two measuring systems, see Note 3.

**CAPACITIES AND DIMENSIONS**

- |                |          |             |
|----------------|----------|-------------|
| 1. Wheelbase   | 2337 mm. | 92 inches   |
| 2. Front track | 1358 mm. | 53.5 inches |
| 3. Rear track  | 1346 mm. | 53 inches   |

Ground clearance under Chassis Front Section between wishbones is 6.43 in. : 16.27 cm.  
See Note 2  
  
See photograph D

Ground clearance under lowest point of Gearbox Mounting Cross Member is 6.43 in. : 16.27 cm.  
See Note 2  
  
See photograph E

- |  |           |                               |
|--|-----------|-------------------------------|
| 4. Overall length of the car   | 400 cm.   | 157.5 inches                  |
| 5. Overall width of the car  | 163.8 cm. | 64.5 inches                   |
| 6. Overall height of the car   | 107.9 cm. | 42.5 inches                   |
| 7. Capacity of fuel tank (reserve included)  | 56 ltrs.  | 15 gall. U.S. 12.5 gall. Imp. |
| 8. Seating Capacity.   | 2         |                               |
| 9. Weight. Total weight of the car with normal equipment, water, oil, and spare wheel but without fuel or repair tools : | 710 kg.   | 1513 lbs. 13.5 cwts.          |

**NOTE 2.** Overall width at front axle centre 159.1 cm. 62.2 ins.  
" " " rear " " 163.8 cm. 64.5 ins.

Differences in track caused by the use of other wheels with different rim widths must be stated when recognition is requested for the wheels concerned. Specify ground clearance in relation to the track and give drawing of two easily recognisable points at front and rear at which measurements are taken. These ground clearance dimensions are only for information when checking the track and can in no way affect the eligibility of the car.

**NOTE 3.**

**CONVERSION TABLE**

1 inch/pouce	— 2.54	cm.	1 quart US	— 0.9464	ltrs.
1 foot/pied	— 30.4794	cm.	1 pint (pt)	— 0.568	ltrs.
1 sq. inch/pouce carre	— 6.452	cm. <sup>2</sup>	1 gallon Imp.	— 4.546	ltrs.
1 cubic inch/pouce cube	— 16.387	cm. <sup>3</sup>	1 gallon US	— 3.785	ltrs.
1 pound/livre (lb)	— 453.593	gr.	1 hundred weight (cwt.)	— 50.802	kg.

**CHASSIS AND COACHWORK (Photographs A, B and C)**

- 20. Chassis/body construction: separate/unitary construction    Separate
- 21. Unitary construction, material(s)
- 22. Separate construction, Material(s) of chassis    Steel
- 23. Material(s) of coachwork    Glass-fibre reinforced plastic
- 24. Number of doors 2    Material(s) Glass-fibre reinforced plastic
- 25. Material(s) of bonnet    Glass-fibre reinforced plastic
- 26. Material(s) of boot lid    Glass-fibre reinforced plastic
- 27. Material(s) of rear-window    Tempered safety glass
- 28. Material(s) of windscreen    Laminated safety glass
- 29. Material(s) of front-door windows    Tempered safety glass
- 30. Material(s) of rear-door windows
- 31. Sliding system of door windows    Electric
- 32. Material(s) of rear-quarter light

**ACCESSORIES AND UPHOLSTERY**

- 38. Interior heating : yes — no    Yes    39. Air conditioning : yes — no    No
- 40. Ventilation : yes — no    Yes    41. Front seats, type of seat and upholstery Bucket. PVC
- 42. Weight of front seat(s), complete with supports and rails, out of the car :  

10.42 kg.	23 lbs.
-----------	---------
- 43. Rear seats, type of seat and upholstery
- 44. Front bumper, material(s) Steel    Weight    2.38    kg.    5.25 lbs.
- 45. Rear bumper, material(s) Steel    Weight    2.83    kg.    6.25 lbs.

**WHEELS**

- 50. Type Pressed steel bolt-on
- 51. Weight (per wheel, without tyre)    5.32    kg.    11.75    lbs.
- 52. Method of attachment    4 stud-bolt-on
- 53. Rim diameter 329.5 mm.    13 ins.    54. Rim width    114.3 mm.    4.50 ins.

**STEERING**

- 60. Type Rack and Pinion
- 61. Servo-assistance : yes — no    No
- 62. Number of turns of steering wheel from lock to lock    2 1/2
- 63. In case of servo-assistance

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**SUSPENSION**

70. Front suspension (photograph D), type Independent Double-Wishbone  
 71. Type of spring Coil  
 72. Stabiliser (if fitted) Anti-roll bar  
 73. Number of shock absorbers 2 74. Type Telescopic - Hydraulic  
 78. Rear suspension (photograph E), type Independent - Radius arm and link  
 79. Type of spring: Coil  
 80. Stabiliser (if fitted)  
 81. Number of shock absorbers 2 82. Type Telescopic - Hydraulic

**BRAKES** (photographs F and G)

90. Method of operation Hydraulic  
 91. Servo-assistance (if fitted), type Vacuum  
 92. Number of hydraulic master cylinders 1

	FRONT		REAR	
93. Number of cylinders per wheel	1		1	
94. Bore of wheel cylinder(s)	48.0 mm.	1.89 inches	19.0 mm.	.75 inches

**Drum Brakes**

95. Inside diameter	mm.	inches	203 mm.	8 inches
96. Length of brake linings	mm.	inches	104.7 mm.	7.70 inches
97. Width of brake linings	mm.	inches	31.7 mm.	1.25 inches
98. Number of shoes per brake	2			
99. Total area per brake	mm. <sup>2</sup>	sq. in.	12710 mm. <sup>2</sup>	19.20 sq. in.

**Disc Brakes**

100. Outside diameter	247.6 mm.	9.75 inches	mm.	inches
101. Thickness of disc	9.3 mm.	.375 inches	mm.	inches
102. Length of brake linings	42 mm.	1.65 inches	mm.	inches
103. Width of brake linings	62 mm.	2.44 inches	mm.	inches
104. Number of pads per brake	2			
105. Total area per brake	5032 mm. <sup>2</sup>	7.82 sq. in.	mm. <sup>2</sup>	sq. in.

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ENGINE (photographs J and K)

- |   |  |   |                     |
|---|--|---|---------------------|
| 130. Cycle  | Otto                                   | 131. Number of cylinders                        | 4                   |
| 132. Cylinder Arrangement   | In Line                                |   |                     |
| 133. Bore   | 82.55 mm. <b>3.25</b> in.              | 134. Stroke                                     | 72.75 mm. 2.864 in. |
| 135. Capacity per cylinder  |  | 389.5 cm. <sup>3</sup>                          | 23.8 cu. in.        |
| 136. Total cylinder capacity  |  | 1558 cm. <sup>3</sup>                           | 95.1 cu. in.        |
| 137. Material(s) of cylinder block  | Cast iron                              | 138. Material(s) of sleeves (if fitted)         | -                   |
| 139. Cylinder head, material(s)   | Alumn. alloy                           | Number fitted                                   | 1                   |
| 140. Number of inlet ports  | 4                                      | 141. Number of exhaust ports                    | 4                   |
| 142. Compression ratio  | 9.5:1                                  |   |                     |
| 143. Volume of one combustion chamber                                       |  | 45.8 cm. <sup>3</sup>                           | 2.80 cu. in.        |
| 144. Piston, material   | Tin-plated Alumn. alloy                | 145. Number of rings                            | 3                   |
| 146. Distance from gudgeon pin centre line to highest point of piston crown |  | 1.536 mm.                                       | 1.538 in.           |
|   |  | 39.014/39.065                                   |                     |
| 147. Crankshaft: moulded/stamped  | Moulded                                | 148. Type of crankshaft: integral/              | Integral            |
| 149. Number of crankshaft main bearings                                     | 5                                      | Crankshaft material: Nodular Graphite Cast Iron |                     |
| 150. Material of bearing cap  | Cast iron                              |   |                     |
| 151. System of lubrication: <del>dry sump</del> /oil in sump                |  |   |                     |
| 152. Capacity, lubricant  | 4 ltrs. 7.5 pts. 4.5 quarts U.S.       |   |                     |
| 153. Oil cooler: yes/no   | No                                     | 154. Method of engine cooling                   | Water-cooled        |
| 155. Capacity of cooling system   | 10.8 ltrs. 19 pts. 11.4 quarts U.S.    |   |                     |
| 156. Cooling fan (if fitted) dia.   | Electrically driven, not engine driven | 25.4 cm.  | 10 in.              |
| 157. Number of blades of cooling fan  | 4                                      |   |                     |

Bearings

- |                                   |                   |      |        |      |        |     |
|-----------------------------------|-------------------|------|--------|------|--------|-----|
| 158. Crankshaft main, type        | Plain Thin-Walled | dia. | 53.987 | m.m. | 2.1255 | in. |
| 159. Connecting rod big end, type | Plain Thin-Walled | dia. | 54.000 | m.m. | 2.1260 | in. |
|                                   |                   |      | 49.199 | m.m. | 1.9370 | in. |
|                                   |                   |      | 49.211 | m.m. | 1.9375 | in. |

Weights

- |   |                   |                     |         |       |      |
|---|-------------------|---------------------|---------|-------|------|
| 160. Flywheel (clean)                         |                   | 7.02                | kg.     | 15.50 | lbs. |
| 161. Flywheel with clutch (all turning parts) |                   | 11.89               | kg.     | 26.25 | lbs. |
| 162. Crankshaft                               | 10.37 kg. 24 lbs. | 163. Connecting rod | .53 kg. | 1.19  | lbs. |
| 164. Piston with rings and pin                |                   | .57                 | kg.     | 1.25  | lbs. |



**FOUR STROKE ENGINES**

170. Number of camshafts Two 171. Location Overhead  
 172. Type of camshaft drive Chain  
 173. Type of valve operation Twin O.H.C. Cam followers actuating valves directly

**INLET** (see page 4)\*

180. Material(s) of inlet manifold EN52  
 181. Diameter of valves 38.760/38.862 mm. 1.526/1.530 ins.  
 182. Max. valve lift 8.89 mm. 0.350 in. 183. Number of valve springs 2  
 184. Type of spring Helical 185. Number of valves per cylinder 1  
 186. Tappet clearance for checking timing (cold) .177/.127 mm. .007/.005 ins.  
 187. Valves open at (with tolerance for tappet clearance indicated) 26° B.B.D.C. **WARM:**  
 188. Valves close at (with tolerance for tappet clearance indicated) 66° A.T.D.C. .228/.177 mm  
 189. Air filter, type Paper Element (Dry) .009/.007 in.

**EXHAUST** (see page 4)\*

195. Material(s) of exhaust manifold 21-4N-S 1.325  
 196. Diameter of valves 33.553/33.655 mm. 1.321 ins.  
 197. Max. valve lift 8.89 mm. 0.350 in. 198. Number of valve springs 2  
 199. Type of spring Helical 200. Number of valves per cylinder 1  
 201. Tappet clearance for checking timing (cold) .279/.229 mm. 0.011/0.009 ins.  
 202. Valves open at (with tolerance for tappet clearance indicated) 66° B.B.D.C. **WARM:**  
 203. Valves close at (with tolerance for tappet clearance indicated) 26° A.T.D.C. .330/.279 mm  
 204. Diameter outlet orifice exhaust manifold 34.9 mm. 1.375 ins.

**CARBURETION** (photograph N)

210. Number of carburetors fitted Two 211. Type Twin barrel Fixed Choke Side Draught  
 212. Make Dell'Orto 213. Model 4 1/2 DHLA  
 214. Number of mixture passages per carburetor 2  
 215. Flange hole diameter of exit port(s) of carburetor 40 mm. 1.575 ins.  
 216. Minimum diameter of venturi/minimum diam., with piston at maximum height (example: SU)  
30 mm. 1.181 ins.

**INJECTION** (if fitted)

220. Make of pump 221. Number of plungers  
 222. Model or type of pump 223. Total number of injectors  
 224. Location of injectors  
 225. Minimum diameter of inlet pipe mm. ins.

\* For additional information concerning two-stroke engines and super-charged engines, see page 13.

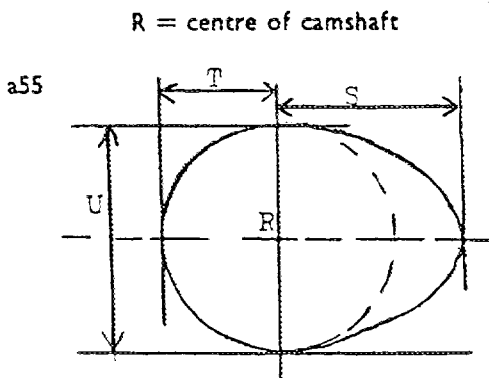
Make Lotus Model Europa T/C F.I.A. Rec. No. 634

**ENGINE ACCESSORIES**

230. Fuel pump : mechanical and/or electrical      Mechanical
231. No. fitted      One
232. Type of ignition system      Coil      233. No. of distributors      One
234. No. of ignition coils      One      235. No. of spark plugs per cylinder      One
236. Generator, type : dynamo/alternator—number fitted      Alternator - one
237. Method of drive      V-belt
238. Voltage of generator      12      volts
239. Battery, number      One
240. Location      in engine bay
241. Voltage of battery      12      volts

**ENGINE AND CAR PERFORMANCES** (as declared by manufacturer in catalogue)

250. Max. engine output      105      (type of horsepower:      SAE Nett      ) at      6000      r.p.m.
251. Max. r.p.m.      6500      output at that figure      98
252. Max. torque      14.240 kg.m. (103 lb/ft)      at      4,500      r.p.m.
253. Max. speed of the car      189      km./hour      117      miles/hour



**Inlet cam**

S =	24.15	mm.	0.950	inches
T =	15.24	mm.	0.600	inches
U =	30.48	mm.	1.200	inches

**Exhaust cam**

S =	24.15	mm.	0.950	inches
T =	15.24	mm.	0.600	inches
U =	30.48	mm.	1.200	inches

Make Lotus

Model Europa T/C

F.I.A. Rec. No. 636

DRIVE TRAIN

CLUTCH

Diaphragm Spring

- 260. Type of clutch
- 261. No. of plates 1
- 262. Dia. of clutch plates 21.43 cm. 8.437 ins.
- 263. Dia. of linings, inside 13.61 cm. 5.750 ins.
- outside 21.43 cm. 8.437 ins.
- 264. Method of operating clutch Cable

GEAR BOX (photograph H)

- 270. Manual type, make Renault Method of operation Manual - remote
- 271. No. of gear-box ratios forward 4 272. Synchronized forward ratios All
- 273. Location of gear-shift on central tunnel.
- 274. Automatic, make N/A type
- 275. No. of forward ratios 276. Location of gear shift

277.	Manual		Automatic		Alternative manual/automatic			
	Ratio	No. teeth	Ratio	No. teeth	Ratio	No. teeth	Ratio	No. teeth
1	3.61:1	13/47						
2	2.26:1	19/43						
3	1.48:1	25/37						
4	1.03:1	31/32						
5								
6								
reverse								

- 278. Overdrive, type Not fitted
- 279. Forward gears on which overdrive can be selected
- 280. Overdrive ratio

FINAL DRIVE

- 290. Type of final drive Transaxle 291. Type of differential Hypoid gear
- 292. Type of limited slip differential (if fitted in series-production) N/A
- 293. Final drive ratio 3.56:1 Number of teeth 9/32

Make Lotus Model Europa 7/C F.I.A. Rec. No. 634

**IMPORTANT:**

During the scrutineering of cars entered in group 5 (Sportscars) only the following items of the present recognition form are to be taken into consideration: 1, 2, 3, 9, 20, 21, 22, 23, 24, 25, 26, 70, 71, 78, 79, 90, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 147, 148, 149, 150, 158, 159, 170, 171, 172, 173, 185, 200, 270, 271, 274, 275, 290, 291, 292 and photographs A, B, D, E, F, G, H, J, K and O.

The vehicle described in this form has been subject to the following amendments:

on.....19..... rec. no..... List..... on.....19..... rec. no..... List.....  
on.....19..... rec. no..... List..... on.....19..... rec. no..... List.....  
on.....19..... rec. no..... List..... on.....19..... rec. no..... List.....  
on.....19..... rec. no..... List..... on.....19..... rec. no..... List.....  
on.....19..... rec. no..... List..... on.....19..... rec. no..... List.....

Optional equipment affecting preceding information. This to be stated together with reference number.

Normal Manufacturers Tolerances

± .005" General Machining

± .030" to ± .060" Fabrications

53. Rim Dia.            54. Rim width

Optional wheel size:

Rim dia.: 329.5 mm        13 ins.  
Rim width: 139.7 mm      5.50 ins

This option does not affect the front or rear track.



LOTUS - EUROPA TWIN CAM

4/72

634

MARQUE ET MODELE

VALIDITE HOMOLOGATION

FICHE NR.

Contrôle de ce moteur extension

4 / 1800

GROUPE / CLASSE

EXTENSIONS	DEBUT VALIDITE	DESCRIPTION	NOTES

Autres homologations du modèle 3045

Vérifiée le 25/10/95 par  visée ce jour le \_\_\_\_\_ par \_\_\_\_\_