State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-37-18
Relating to Certification of New Motor Vehicles

LOTUS CARS LIMITED

Pursuant to the authority vested in the Air Resources Board by the Health and Safety Code, Division 26, Part 5, Chapter 2; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Orders G-45-3 and G-45-4;

IT IS ORDERED AND RESOLVED: That 1990 model-year Lotus Cars Limited emission control systems are certified as described below for gasoline-powered passenger cars:

Engine Family: LLT2.2V5F1C9 Displacement: 2.2 Liters (133 Inches^3)

Equipped with the following exhaust emission control systems:

Heated Oxygen Sensor
Turbocharger
Charge Air Cooler
Three-Way Catalyst
Multipoint Electronic Fuel Injection
On-Board Diagnostic System

Vehicle models, transmissions, engine codes and evaporative emission control families are listed on attachments.

The following are the emission standards for this engine family:

Hydrocarbons (Grams per Mile)	Carbon Monoxide (Grams per Mile)	Nitrogen Oxides (Grams per Mile)
0.41	7.0	0.7

The following are the certification emission values for this engine family:

Hydrocarbons (Grams per Mile)	Carbon Monoxide (Grams per Mile)	Nitrogen Oxides (Grams per Mile)
0.16	1.2	0.3

BE IT FURTHER RESOLVED: That the listed models are certified to the optional NOx emission standard thereby making the vehicle manufacturer subject to Section 1960.1.5 of Title 13, California Code of Regulations which includes recall liability for emission control components up to 7 years or 75,000 miles if found defective by the Executive Officer.

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying to the optional NOx standard based on actual sales of 1989 model-year California-certified passenger cars.

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Gasoline-Powered Motor Vehicles".

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" (Title 13, California Code of Regulations, Section 2290) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's high altitude requirements and highway emission standards as stipulated in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles".

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the "California Motor Vehicle Emission Control Label Specifications" (Title 13, California Code of Regulations, Section 1965) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the vehicle models listed also comply with the "Malfunction and Diagnostic System for 1988 and Subsequent Model Year[s]..." (Title 13, California Code of Regulations, Section 1968) for the aforementioned model year.

BE IT FURTHER RESOLVED: That for the listed vehicles, the manufacturer has submitted and the Executive Officer hereby approves the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (California Health and Safety Code Section 43205).

Vehicles certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachment.

Executed at El Monte, California this 10th day of October, 1989.

(for) K. D. Drachand, Chief
Mobile Source Division

E.O. A-37-17

1990 MODEL YEAR CERTIFICATION REVIEW SHEET
EXHAUST/EVAPORATIVE SYSTEM & FILL PIPE SPECIFICATION COMPLIANCE

Mfgr. LOTUS CARS LTD Engine Family LLT2.2V5FP40

Rated HP 228 @ 6500 RPM Rated Torque 218 @ 4000 RPM

Cert. Type - CA ___ 49S ___ 50S ✓ Type Cert. - 50K ✓ 100K ___

		Section/Page			Section/Page
1	Authorized Representative	01:01:00:00	13	Evap. Bench Test Procedure	Assigned D.F's
2	Fuel, Test Equipment, Procedures & Route	Sections 3, 4 & 5	14	Gen. Std., Increase in Em., Safety, Mtg. All Req'ments	16:01:00:00
3	Warr. State & Parts List	17:01:00:00	15	Prod. Veh. Same as Test Veh.	16:03/4:00:00
4	Maint: Cert/Req'd/Recm'd	06:01:01:01	16	Label Durability	17:03:00:00
5	Tune-up Lab./Vac.Hose Diag.	07:01:00:00	17	Driveability	06:01:02:00
6	Evap. Control System	09:00:00:00	18	Fill Pipe Specs.	17:03:05:00
7	Engine Parameters	10:00:00:00	19	Altitude A/F Req'ment	06:02:04:00
8	Fuel/Ignition Systems	10:03/4:00:00	20	Cert. Preview Program	Yes
9	Exhaust Control System	10:07:00:00	21	OBD System	17:04:00:00
10	Projected Sales	10:10:25:00	22	EPA Certificate	To follow
11	Vehicle Descript.	10:10:40:00	23	Two Yr./24k Warranty	No

12 Test Veh.Information	Dur. ID	Dur. MY	Emis. ID	Emis. MY
C/O MY or C/A EF	Assigned D.F		62011	1989
Vehicle Logs			12:00:00:00	
Zero Mile Books			12:00:00:00	
Maint. Logs & Engr. Eval.			16:04:00:00	

						PROJECTED EMISSIONS (1)							(2)
Veh. ID	Code (Displ)	Trans	Axle Ratio	ETW	RLHP	MPG City/Hwy	Test Loc.	HC	CO	NOx	Hwy NOx	50k Evap or part
62011	2.2 (132.6)	M5	3.889	3250	5.7	19.3/ 35.6	EPA	0.08	0.72	0.41	.33	1.62
								(with D.Fs added)				

(1) The emission data vehicle/s above comply with stds of 0.41 7.0 0.7 - 2.0

and includes deterioration factors of 1.2 1.2 1.1 1.1 0.5

(2) Evaporative DF is the average of Vehicle DF ASSIGNED and Bench DF ASSIGNED

Remarks : Carry-over application based on 1989 model year KLT2.2V5FP4X engine family

Application Processed By [signature] Date 10/5/89 Reviewed By [signature] Date 10/6/89

511c (2c)

17:03:00:00
LLT2.2V5F1C9

Attachment 3

E.O. A-37-18

1990 Air Resources Board Supplemental Data Sheet

Manufacturer LOTUS CARS LTD Engine Family LLT2.2V5F1C9

Evaporative Family LT4 Engine Type I-4

Litres (CID) 2.2 (132.6)

ABBREVIATIONS

Ignition System

CA-Centrifugal Advance
ECU-Electronic Control Unit
EI-Electronic Ignition
ESAC-Electronic Spark Advance Control
VA- Vacuum Advance
VR-Vacuum Retard

Fuel System

CFI,EPFI,MPFI, SFI, DID, DIP, HOS, OS
nV-nVenturi Carburetor
VV-Variable Carburetor

Exhaust Emissions Control System

AIP-Air Injection - Pump
AIV-Air Injection - Valve
EGR-Exhaust Gas Recirculation
EIC-Electronic Injection Control (Diesel only)
EM-Engine Modification
SPL-Smoke Puff Limiter or Throttle Delay
TOC-Trap Oxidizer, Continual
TOP-Trap Oxidizer, Periodical
DBC-Dual Bed Catalyst

TWC-Three way Catalyst
WUOC-Warm up Oxidation Catalyst
WUTWC-Warm up Three way Catalyst
OS-Oxygen Sensor
HOS-Heated Oxygen Sensor

Special Features

CFI-Central Fuel Injection or Throttle Body Injection.
EPFI-Electronic Port Fuel Injection
MPFI-Mechanical Port Fuel Injection
SFI- Sequential Fuel Injection
DID-Diesel Injection-Direct
DIP-Diesel Injection Prechamber
TC-Turbocharger
SC-Supercharger
IC-Intercooler or Aftercooler
CCV-Combustion Chamber Valve
OBD-On board Diagnostics

VEHICLE MODELS

Engine: Front ____ Mid ✓ Rear ____

Drive; FWD ____ RWD ✓ 4WD Full Time ____ 4WD Part Time ____

1990 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

E O A-37-18

PASSENGER CARS ✓ LIGHT DUTY TRUCKS .... MEDIUM DUTY VEHICLES .... GAS ✓ DIESEL....

MANUFACTURER: LOTUS CARS LTD ENGINE FAMILY: LLT2.2V5F1C9

LITRE (CID) (132.6) 2.2 ENGINE FAMILY: L-4

EMISSION CONTROL SYSTEM (SPECIAL FEATURES) TWC/H O2S/OBD/MFI/TC/CAC

ENGINE CODE	VEHICLE MODELS (IF CODED SEE ATTACHMENT) (DYNO HP)	TRANS TYPE WEIGHT	EQUIV TEST	IGN SYSTEM PART NO.	FUEL SYSTEM PART NO.	EGR VALVE PART NO.	CATALYST PART NO.
LLT2.2V5F1C9	LOTUS ESPRIT TURBO (7.0 Hp)	M5	3250	A910E6940 Direct ignition system	A910E6946 (Fuel rail assembly)	None	C08256045

Comments: See Page 1 for abbreviations and evaporative emission family identification. Please refer to manufacturer's Hp list for correct dyno test Hp settings based on model and equipment. If two test weights are listed, the lower weight will be used for testing.

Date of Issue .....Revisions: