

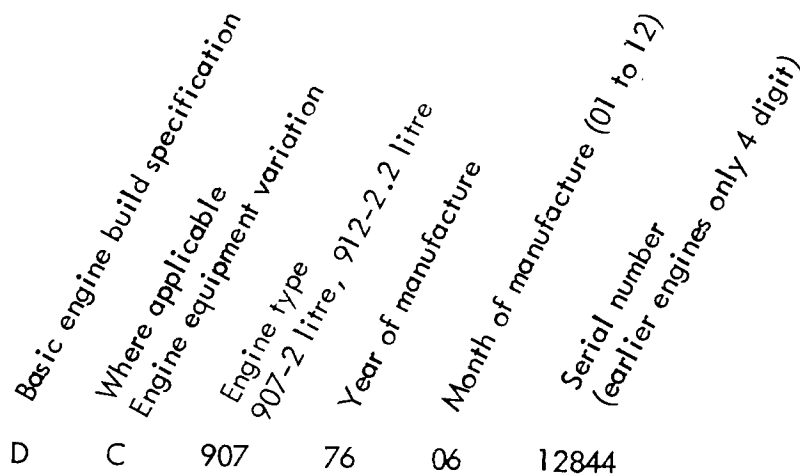
TECHNICAL DATA

SECTION TD A - ENGINE TYPE 907/912

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Before commencing work on any Lotus engine, first check the engine number and prefix letters to establish the engine specification. This number is stamped on the right hand rear of the cylinder block, above the starter motor, and is duplicated on the vehicle identification plate fixed to either the right or left hand inner wheelarch under the front bonnet.

Example



For the purpose of clarification in the TECHNICAL DATA SECTION ONLY, a specification number is allocated to various specifications as listed below. In some countries, prefix letters may differ from those listed, in which case reference should be made to the Lotus Distributor of that country for the relevant specification.

FIRST PREFIX LETTER	SECOND PREFIX LETTER	REMARKS	TECHNICAL DATA SECTION SPEC. NO.
(907) D - Domestic Std. G - Domestic A/C J - Domestic A/C & PAS	Single Prefix Letter Only.	1974	1
(907) F - U.S.A. Std. I - U.S.A. A/C K - U.S.A. A/C & PAS	Single Prefix Letter Only.	U.S.A. 1974	2

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FIRST PREFIX LETTER	SECOND PREFIX LETTER	REMARKS	TECHNICAL DATA SECTION SPEC. NO.
(907) X - Domestic Std. W - Domestic A/C Y - Domestic PAS L - Domestic A/C & PAS AML - Domestic A/C, PAS & Auto.	Single Prefix Letter Only.	1975	3
(907) P - U.S.A. Std. N - U.S.A. A/C Z - U.S.A. PAS M - U.S.A. A/C & PAS	Single Prefix Letter Only.	U.S.A. 1975	4
(907) C - Esprit D - Elite/Eclat	C - Std. D - A/C Z - PAS L - A/C & PAS R - Auto. S - Auto. & A/C T - Auto. & PAS M - Auto, A/C & PAS	EUROPEAN 1976 - '80	5
(907) A - Esprit B - Elite/Eclat	C, D, Z, L, R, S, T, M, as for Spec. 5	CALIFORNIA '76-'79 49-STATES '76-'77	6
(907) G - Elite/Eclat H - Esprit	C, D, Z, L, R, S, T, M, as for Spec. 5	49-STATES 1978-'80	7
(907) J - Esprit K - Elite/Eclat	C, D, Z, L, R, S, T, M, as for Spec. 5	1980 CALIFORNIA	8
(912) C - Esprit D - Elite/Eclat/Excel	C, D, Z, L, R, S, T, M, as for Spec. 5	EUROPEAN 1980 ONWARDS	9
(912) C - Esprit D - Excel	A - H.C. B - H.C. PAS N - H.C. PAS & A/C P - H.C. & A/C Y - H.C. PAS & A/C & Auto.	EUROPEAN HIGH COMPRESSION Excel 86 MY Option Esprit Feb. 1987	10

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ENGINE

Max. rpm of engine		7,000
No. of cylinders		4
Firing order		1,3,4,2
Capacity - type 907		1973cc (120.4 cu.in.)
- type 912		2174cc (132.8 cu.in.)
Stroke - type 907		69.2mm (2.72 in.)
- type 912		76.2mm (3.00 in.)
Bore (nominal)		95.29mm (3.75 in.)
Compression ratio	spec. 1,3,5	9.5 : 1
	spec. 2,4,6,7,8	8.4 : 1
	spec. 9	9.44 : 1
	spec. 10	10.9 : 1
Compression pressure	spec. 1,3,5,9	11.2 - 12.6 bar (165 - 185 lb/in ²)
	spec. 2,4,6,7,8	10.2 - 11.6 bar (150 - 170 lb/in ²)
	spec. 10	11.5 - 13.0 bar (170 - 190 lb/in ²)
Engine number location		On top of cylinder block adjacent to starter mounting
Engine belt tensions - Toothed timing belt, using Burroughs gauge part number T000T0025J, 90 - 95 units cold (60°F/20°C) See Section EA.8.		

Total movement using moderate finger pressure on longest belt run.	(-	Alternator 'V' belt	12 mm (0.5 in.)	($\frac{1}{2}$ in.)
	(-	Compressor 'V' belt (A/C)	9 mm (0.35 in.)	($\frac{3}{8}$ in.)
	(-	Power steering pump 'V' belt	12 mm (0.5 in.)	($\frac{1}{2}$ in.)

CYLINDER HEAD

Material	Aluminium alloy
Gasket	Steel / Asbestos
Combustion Chamber Depth (nos. 1 & 4)	12.32-12.57mm(0.485-0.500 in)

CAMSHAFTS AND VALVE TIMING

Cam Type Designation		Identif. on shank between pulley & cam hsg.	Duration (crank degrees)		Inlet M.O.P. ATDC*	Cam Pulley Timing Dot	Exhaust M.O.P. BTDC*	Cam Pulley Timing Dot
Spec.No.				Lift				
1	D	1 groove	270°	0.350"	110°	red	110°	red
2,3,7	C	plain	272°	0.340"	110°	red	110°	red
4,6	C	plain	272°	0.340"	100°	blue	110°	red
5	E	2 groove	260°	0.344"	102½°	yellow	102½°	yellow
8	C	plain	272°	0.340"	102½°	yellow	110°	red
9,10(EX)	107	777....	252°	0.378"	104°	green	104°	green
10(IN)	104	444....	272°	0.410"	104°	green	104°	green

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* All cams are symmetrical opening closing

VALVES

Angle of valve seats and faces	45°
Head diameter - Inlet	35.47 - 35.65 mm (1.396 - 1.404 in.)
- Exhaust	30.73 - 30.91 mm (1.210 - 1.217 in.)
Stem diameter - Inlet & Exhaust	7.125 - 7.137 mm (0.2805 - 0.2810 in.)
Stem clearance in guide - Inlet & exhaust	0.008 - 0.046 mm (0.0003 - 0.0018 in.)
Valve clearance (cold)	
Spec. 1. ('D' Cams) - Inlet	0.10 - 0.15 mm (0.004 - 0.006 in.)
- Exhaust	0.20 - 0.25 mm (0.008 - 0.010 in.)
Spec 2,3,4,5,6,7,8,9,10 - Inlet	0.13 - 0.18 mm (0.005 - 0.007 in.)
- Exhaust	0.25 - 0.31 mm (0.010 - 0.012 in.)

Valve Seat Inserts

Bore in head:

Standard	- Inlet	37.235/37.260 mm. (1.466/1.467 in.)
	- Exhaust	34.290/34.315 mm. (1.350/1.351 in.)

Valve seat insert bore (cont.)

+ 0.025 mm (0.001 in)	- Inlet	37.260/37.285 mm. (1.467/1.468 in.)
	- Exhaust	34.315/34.340 mm. (1.351/1.352 in.)
+ 0.050 mm (0.002 in)	- Inlet	37.285/37.315 mm. (1.468/1.469 in.)
	- Exhaust	34.340/34.365 mm. (1.352/1.353 in.)
+ 0.127 mm (0.005 in)	- Inlet	37.365/37.390 mm. (1.471/1.472 in.)
	- Exhaust	34.415/34.440 mm. (1.355/1.356 in.)

Outside diameter of seat

Standard	- Inlet	37.325/37.350 mm. (1.4695/1.4705 in.)
	- Exhaust	34.380/34.405 mm. (1.3535/1.3545 in.)
+ 0.025 mm (0.001 in)	- Inlet	37.350/37.375 mm. (1.4705/1.4715 in.)
	- Exhaust	34.405/34.430 mm. (1.1345/1.3555 in.)
+ 0.050 mm (0.002 in)	- Inlet	37.375/37.400 mm. (1.4715/1.4725 in.)
	- Exhaust	34.430/34.455 mm. (1.3555/1.3565 in.)
+ 0.127 mm (0.005 in)	- Inlet	37.450/37.475 mm..(1.4745/1.4755 in.)
	- Exhaust	34.505/34.530 mm. (1.3585/1.3595 in.)

Valve Springs

Type

Dual

Type	Free Length		Rate	
	Inner	Outer	Inner	Outer
All 907 engines plus 912 up to eng. no. 18104	37.5 mm (1.48 in)	46.9 mm (1.85 in)	10.7 kg/cm (60 lb/in)	22.4 kg/cm (126 lb/in)
912 engines 18105 on	42.2 mm (1.66 in)	48.5 mm (1.91 in)	11.0 kg/cm (61.5 lb/in)	22.5 kg/cm (126 lb/in)

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Valve Guides

Length - Inlet	53.34 mm. (2.100 in.)
- Exhaust	53.34 mm. (2.100 in.)
Internal diameter (to ream after fitting)	7.145 - 7.170 mm. (0.2813 - 0.2823 in.)
Bore in head - Inlet and Exhaust	
Standard	11.915 - 11.925 mm. (0.4690 - 0.4695 in.)
+ 0.025 mm. (0.001 in.)	11.940 - 11.950 mm. (0.4700 - 0.4705 in.)
+ 0.050 mm. (0.002 in.)	11.965 - 11.975 mm. (0.4710 - 0.4715 in.)
+ 0.127 mm. (0.005 in.)	12.040 - 12.050 mm. (0.4740 - 0.4745 in.)
Outside diameter of guide	
Standard	11.940 - 11.950 mm. (0.4700 - 0.4705 in.)
+ 0.025 mm. (0.001 in.)	11.965 - 11.975 mm. (0.4710 - 0.4715 in.)
+ 0.050 mm. (0.002 in.)	11.990 - 12.000 mm. (0.4720 - 0.4725 in.)
+ 0.127 mm. (0.005 in.)	12.065 - 12.080 mm. (0.4750 - 0.4755 in.)

Camshafts

End float - Dimension	0.03 - 0.20 mm. (0.001 - 0.008 in.)
- Controlled by	Selective thrust washers
Running clearance (except front)	0.050 - 0.090 mm (0.0020 - 0.0035 in.)
(front only)	0.075 - 0.115 mm (0.0030 - 0.0040 in)

Cam Followers

Bore in camshaft housings	34.925 - 34.940 mm. (1.3750 - 1.3756 in.)
Outside diameter	34.904 - 34.912 mm. (1.3742 - 1.3745 in.)

Auxiliary Shaft

Running clearance	0.025 - 0.065 mm. (0.0009 - 0.0025 in.)
End float	0.013 - 0.038 mm. (0.0005 - 0.0015 in.)

Crankshaft

Balance (inc. flywheel and clutch)	Within 15 gr.cm. (0.2 oz.in.)
Diameter - Main journal (No.1. to 4 inc.)	63.487 - 63.513 mm. (2.4995 - 2.5005 in.)
- Main journal (No. 5 only)	63.500 - 63.513 mm. (2.5000 - 2.5005 in.)
- Crankpin	50.736 - 50.762 mm. (1.9975 - 1.9985 in.)
End float - Dimension	0.08 - 0.20 mm. (0.003 - 0.008 in.)
- Max wear limit	0.30 mm. (0.012 in.)
- Controlled by	Selective thrust washers on rear main bearing
Bearings (main) - Number	5
- Type	Steel backed, leaded bronze
- Static clearance*	0.013 - 0.056 mm. (0.0005 - 0.0022 in.)
Max. undersize for regrind	0.508 mm. (0.0200 in.)

* Bearing clearance is measured with Plastigage.

MAIN BEARING SHELL CONFIGURATION

ENGINE TYPE		MAIN BEARING NUMBER				
		FRONT 1	2	CENTRE 3	4	REAR 5
907 Elite/Eclat 907 Esprit with NON X-drilled crank	UPPER	Groove/Hole	Groove/Hole	Groove/Hole	Groove/Hole	Groove/Hole
	LOWER	Groove/Hole	Groove/Hole	Groove/Hole	Groove/Hole	Groove/Hole
907 Esprit with X-drilled crank 912 Esprit	UPPER	Groove/Hole	Groove/Hole	Groove/Hole	Groove/Hole	Groove/Hole
	LOWER	Plain	Plain	Plain	Plain	Plain
912 Elite/Eclat 912 Excel with NON X-drilled crank	UPPER	Groove/Hole	Groove/Hole	Plain/Hole	Groove/Hole	Groove/Hole
	LOWER	Groove/Hole	Groove/Hole	Plain	Groove/Hole	Groove/Hole
912 Excel with X-drilled crank 912 Esprit HC	UPPER	Groove/Hole	Groove/Hole	Plain/Hole	Groove/Hole	Groove/Hole
	LOWER	Plain	Plain	Plain	Plain	Plain

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Flywheel (fixed)

Max run out (lateral)	0.10 mm. (0.004 in.)
Starter ring gear - run out - lateral	0.41 mm. (0.016 in.)
- radial	0.15 mm. (0.006 in.)

Flexplate Flywheel

Max. run out (radial)	0.18 mm. (0.007 in.)
Max. run out (lateral) at clutch face	0.13 mm. (0.005 in.)

Connecting Rod

Type	'I' section
Material	Steel forging
Distance between centres	139.70 mm. (5.500 in.) ± 0.25 mm. (0.001 in.)
Bearings (big end) - Type	Steel backed, leaded bronze
- Static clearance *	0.025 - 0.081 mm. (0.0010 - 0.0032 in.)
- End float on crankpin	0.10 - 0.25 mm. (0.004 - 0.010 in.)
Small end bore (bushed)	25.405/25.410 mm. (1.0002 - 1.0004 in.)
Permissible weight variation between rods 2 grammes (in any set)	
* Bearing clearance is measured with Plastigage	

Gudgeon (Piston) Pin

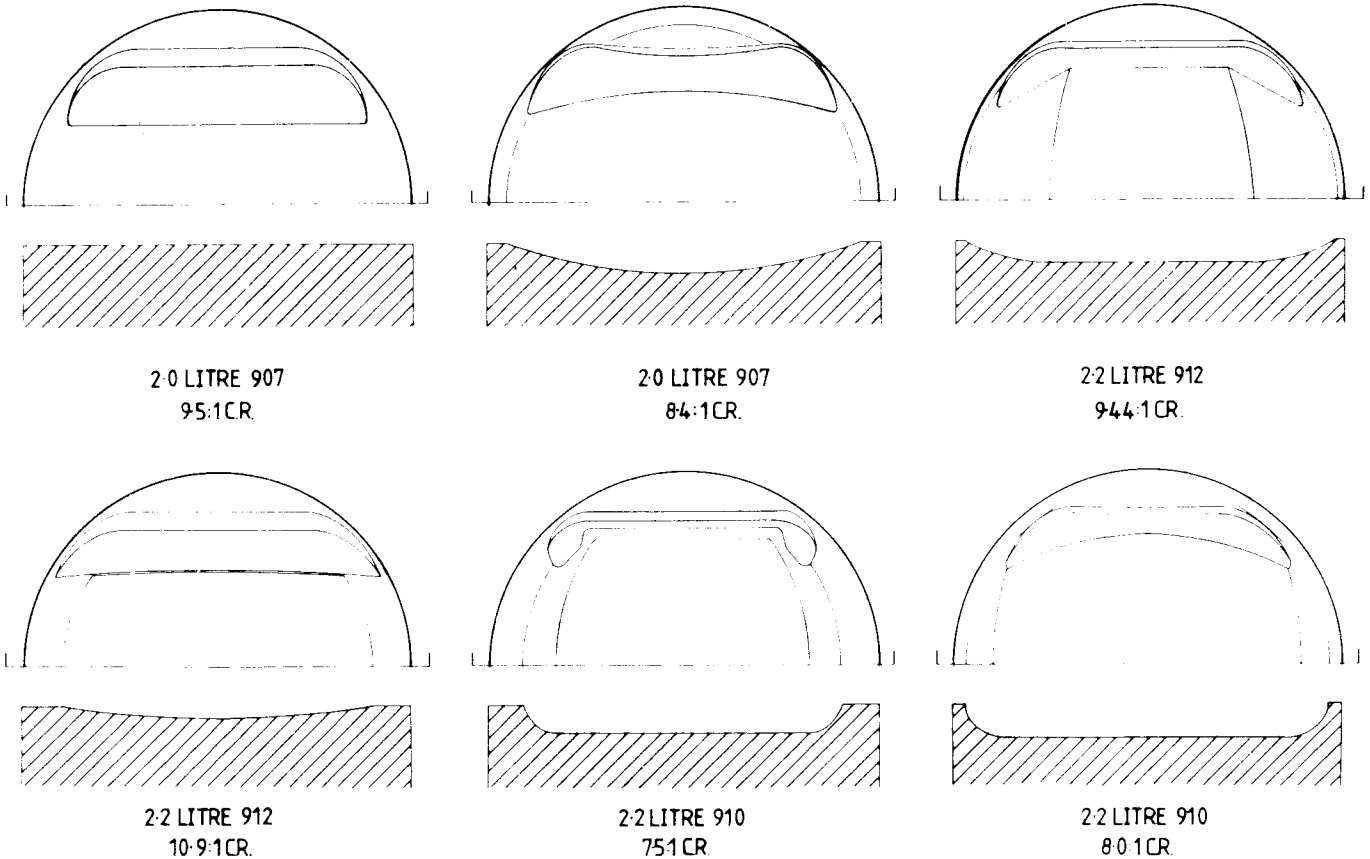
Type	Fully floating
Location	Circlips
Diameter	25.40 mm. (1.00 in.)
Class of fit	Finger push fit at 20°C (68° F)

Piston and Liner

Piston - Type	Solid skirt
- Material	- 907/912 - 912 HC
	Die-cast aluminium alloy
	Forged aluminium alloy

Piston - (Cont.)

Identification



- Rings 2 compression, 1 oil control
- Diameter

907 - grade 'A'	95.166/95.179 mm (3.7467/3.7472 in)
907 - grade 'B'	95.179/95.192 mm (3.7472/3.7477 in)
912 Std - grade 'A'	95.148/95.161 mm (3.7460/3.7465 in)
912 Std - grade 'B'	95.161/95.174 mm (3.7465/3.7470 in)
912 HC - grade 'A'	95.205/95.219 mm (3.7482/3.7488 in)
912 HC - grade 'B'	95.217/95.231 mm (3.7487/3.7493 in)
- Grade diameter - 907/912 Std 15 mm (0.6 in) up from skirt edge } 90° to
 - 912 HC 10.2mm (0.4 in) up from skirt edge } pin axis
- Gudgeon pin bore offset 907/912 Std 1.52 mm (0.060 in) towards thrust face
 912 HC 1.50 mm (0.059 in) towards thrust face
- Permissible weight variation

between pistons	907/912 Std	3.5 grammes
	912 HC	3.0 grammes
- Ring gap 907/912 Std - top 0.38/0.51 mm (0.015/0.020 in)
 - second 0.48/0.61 mm (0.019/0.024 in)
 - scraper (rails) 0.38/1.14 mm (0.015/0.045 in)
- 912 HC
 - top & second 0.40/0.65 mm (0.016/0.026 in)
 - oil control 0.30/0.60 mm (0.012/0.024 in)

Piston (cont.)

-Piston ring to groove clearance

907/912 Std	- Compression	0.038/0.089 mm (0.0015/0.0035 in)
	- Oil control	0.038/0.064 mm (0.0015/0.0025 in)
912 HC	- Compression	0.040/0.072 mm (0.0016/0.0028 in)
	- Oil control	0.020/0.052 mm (0.0008/0.0020 in)

Cylinder Liner

- Type	Wet, slip fit
- Material - 907/912 Std	Cast Iron
-912 HC	Nikosil coated, forged aluminium alloy
- Internal diameter	
- 907/912 Std	Measured 50mm from top across thrust axis
Grade 'A'	95.275/95.288 mm (3.7510/3.7515 in)
Grade 'B'	95.288/95.308 mm (3.7515/3.7520 in)
- 912 HC	Measured 70mm from top across thrust axis
Grade 'A'	95.255/95.269 mm (3.7502/3.7507 in)
Grade 'B'	95.267/95.281 mm (3.7507/3.7512 in)
- Fitted height above block - 907/912 Std ('nip')	0.10/0.15 mm (0.004/0.006 in) up to engine number 12477 0.025/0.13 mm (0.001/0.005 in) from engine number 12478
- 912 HC	minus 0.025 to + 0.050mm (minus 0.001 to + 0.002 in)
- Permissible variation between liners	0.03 mm (0.001 in)
- Piston clearance in cylinder liner	907 0.10/0.13mm (0.004/0.005 in)
	912 Std 0.11/0.15mm (0.005/0.006 in)
	912 HC 0.05/0.08mm (0.002/0.003 in)

Lubrication System

Oil pressure under normal running condition (hot)

- Not below 5 lb/sq.in. (0.35 kg./sq.cm.) at idle speed
- Not below 35 lb/sq.in. (2.5 kg./sq.cm.) at 3,500 rpm
- Not below 45 lb/sq.in. (3.2 kg./sq.cm.) at 6,500 rpm

Filter

Full-flow, disposable canister type with anti-flow back valve)

Pump - type

Eccentric rotor

- Drive

Toothed belt

- Rotor/annulus tip clearance

0.05 - 0.15 mm (0.002 - 0.006 in)

- Annulus end float

0.03 - 0.08 mm (0.001 - 0.003 in)

- Rotor end float

0.06 - 0.09 mm (0.0025 - 0.0035 in)

- Annulus to housing clearance

0.18 - 0.30 mm (0.007 - 0.012 in)

Dellorto Carburettors

Spec 1	Spec 3	Spec 5	Elite) Eclat)man. Excel Std. Spec 9	Elite) Eclat)auto Esp.S3 Std Spec 9	Excel HC manual Spec 10	Excel HC auto Spec 10	Esprit S3 HC Spec 10
DHLA 45E B907E0789W B907E0790W - - - 38 mm 142 110 7772-5 55L 7850-1 10g 16.5-17.0 170 45 70 7482-1 900-1000 2.0-3.0%	DHLA 45E D907E0789W D907E0790W - - - 35 mm 130 110 7772-5 56 7850-6 10g 16.5-17.0 170 45 70 7482-1 900-1000 2.0-3.0%	DHLA 45E E907E0789F E907E0790W 5295A 5294P Green 36 mm 160 230 7772-8 50 7850-7 10g 16.5-17.0 170 38V 42H 70 7482-1 900-1000 2.0-3.0%	DHLA 45E A912E0789F A912E0790F 5324A 5323P Blue+Black 37 mm 160 230 7772-8 58 7850-9 8.5g 14.5-15.0 170 50H 95 7482-3 850-950 0.7-1.5%	DHLA 45E A912E0940J A912E0941J 5324A 5324P Blue 37 mm 160 230 7772-8 55 7850-9 8.5g 14.5-15.0 170 50H 95 7482-3 850-950 0.7-1.5%	DHLA 45D A912E9207F A912E9208F 5382A 5381P Black 37 mm 135 150 7772-8 55 7850-9 8.5g 14.5-15.0 170 45H 95(R/B 80) 7482-3 70 900-1000 0.5-1.5%	DHLA 45D A912E9226 A912E9227 5387A 5386P 37 mm 135 150 7772-8 55 7850-9 8.5g 14.5-15.0 170 33 80 7482-3 70 900-1000 0.5-1.5%	DHLA45D A912E2336F A912E2337F 5395A 5394P Black 37 mm 135 150 7772-8 56 7850-9 8.5g 14.5-15.0 170 45H 80 7482-3 70 900-1000 0.5-1.5%

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Carburettor Type (2 off)
 Lotus Part No. (Front)
 (Rear)
 Tag No. (Front)
 (Rear)
 Paint Spot on 'Dellorto'
 Choke
 Main Jet
 Main Air Corrector Jet
 Main Emulsion Tube
 Idle Jet
 Idle Jet Holder
 Float Weight
 Float Setting Height (mm)
 Float Needle Valve
 Pump Jet
 Starter Jet
 Starter Emulsion Tube
 Power Jet
 Slow Running Speed (rpm)
 Idle OO Level (hot)

Zenith Carburettors

Type and number	Zenith 175/CD SE (two)
Needle	B I D K
Spring Colour	Blue
Damper Oil	SAE 20W/50
Lotus part number - Spec 2	front B907E0791W rear B907E0792W
- Spec 4,6,7,8	front C907E0791F* rear C907E0792F*

* Red paint spot on air valve housing. These carbs are to the same specification as the B prefix carbs, except for the inclusion of internal/external float vent valves.

Fast idle setting (engine warm)

- Spec 2	2.16 - 2.41 mm. (0.085 - 0.095 in.) between starter cam and screw head in 'off' position
- Spec 4,6,7,8	1.27 mm. (0.050 in.)
Slow running speed	950 - 1000 rpm

Idle CO level (normal running temperature)

- Spec 2	(without air injection) 2.5 - 4.0 % CO
- Spec 4, 6	This must be checked with the air injection disconnected and a reading taken via a sample pipe <u>before</u> the catalyst. To disconnect the air injection remove the air outlet hose (between outlet and non-return valve) from the air pump, and blank off the hose. Adaptor and sample pipe - Part No. T000T0321A. Blanking plug (for air hose) - Part No. T000T0322A Setting 3.5 - 4.5% CO
- Spec 7	with <u>air pump</u> (and no catalyst) Tailpipe idle check - less than 1.0% C.O. with air on, 2.0 - 3.5% C.O. with air off.
- Spec 7	With <u>pulse air injection system</u> Upstream of catalyst 0.2 - 1.0% C.O.

IGNITION SYSTEM

- Type - Spec 1,2,3,4,5,6 Coil and Distributor
 - Spec 7, 8, 9 (Esprit up to 1983. Not Excel) Coil and distributor with infra-red solid state 'Lumenition' system.
 - Spec 9 (Esprit 1983 on and Excel only) Coil and distributor with Lucas Constant Energy System
- Number 1 cylinder Toward front
- Ignition advance control Fully automatic
- Sparking plugs:
- With Lucas ignition leads - spec 1,3,5 NGK BP6ES
 - spec 2,4,6,7 NGK BP5ES
 With NGK ignition leads - spec 1,3,5,9 NGK BPR6ES
 - spec 2,4,6,7,8 NGK BPR5ES
 - spec 10 NGK BPR7ES

Spark plug gap - with contact breaker 0.6 mm. (0.023 in.)
 - with high energy ignition 0.9 mm. (0.035 in.)

DISTRIBUTOR & IGNITION TIMING (All figures + 2°)

	Distributor Type	Vacuum Capsule (crank°)	Static Ignition Timing BTDC	Idle Speed Ignition Timing BTDC	Centrifugal Advance Characteristics (vacuum disconnected) crank rpm	crank° ± 2°	Ignition Timing to be set at
Spec 1	25D (41584)	8° Retard	12°	4°	Below 1,000 2,000 3,000	nil 8° 16°	28° BTDC @ 3,500 - 4,000 rpm (vacuum disconnected)
Spec 2	25D (41584)	8° Retard	8°	0°	as Spec 1		24° BTDC @ 3,500 - 4,000 rpm (vacuum disconnected)
Spec 3	25D (41584)	blanked off	16°	16°	as Spec 1		32 - 34° BTDC @ 3,500 - 4,000 rpm (vacuum disconnected)
Spec 4,6	25D (41634A) or 45D (41626)	8° Retard	8°	0°	Below 1,000 2,000 4,000 5,000 6,000	nil 8° 18° 22° 26°	22 - 24° BTDC @ 3,000 rpm (vacuum disconnected)
Spec 5	23D4 or 43D (41623)	-	9°	-	as Spec 1		25° BTDC @ 3,500 - 4,000 rpm
Spec 7,8	45D (41626) with Lumenition	8° Retard	10°	2°	as Spec 4,6		24 - 26° BTDC @ 3,000 rpm (vacuum disconnected)
Spec 9	43D with Lumenition or Constant Energy Ign.	-	9°	-	as Spec 1		25° BTDC @ 3,500 - 4,000 rpm
Spec 10	45D (41946) Constant Energy Ign.	22° Advance	10°	10° (hot)	as Spec 1		10° BTDC @ hot idle 950 ± 50 rpm

Distributor

Direction of rotation (from drive end)	Clockwise
Drive	Offset dog
Contact breaker gap (where fitted)	0.35 - 0.40 mm. (0.014 - 0.016 in.)
Contact breaker spring tension (measured at contact points)	0.51 - 0.68 kg.f. (18 - 24 oz.f.)
Cam dwell angle	
- 25D, 23D	$60^{\circ} \pm 3^{\circ}$ changed during 1978 to $64^{\circ} \pm 3^{\circ}$
- 45D, 43D	$52^{\circ} \pm 4^{\circ}$ changed during 1978 to $60^{\circ} \pm 3^{\circ}$
Firing angles	$0^{\circ}, 90^{\circ}, 180^{\circ}, 270^{\circ}, \pm 1^{\circ}$
Capacitor value	0.18 - 0.23 Microfarad

Cooling System

Type	Centrifugal pump and electric fan
Header tank cap relief valve pressure	0.7kg/cm^2 (10lb/in^2) or 1.1kg/cm^2 (15lb/in^2)
Thermostat - (Temperate climates)	82°C
- (High ambient temperatures)	74°C
Impellor vanes to water pump housing clearance	907 : 0.50 - 0.75 mm (0.020 - 0.030 in) 912 : 0.25 - 0.40 mm (0.010 - 0.016 in)
Cooling system anti-freeze/inhibitor (year round)	'Shell Safe' or Union Carbide 'UT 184' minimum 25% maximum 60%

TORQUE LOADING FIGURES

ENGINE	<u>kgf.m</u>	<u>lbf.ft</u>
Cylinder head (tighten cold)		
both pairs (front and rear) nuts (oiled thread)	9.7	70
3 pairs (in middle) nuts (oiled threads)	10.4	75
Sparking plugs	3.3 - 3.9	24 - 28
Camshaft covers	0.40 - 0.55	3 - 4
Camshaft housing	1.9 - 2.2	14 - 16
Camshaft sprockets	3.5	25
Main bearing housing - 907 - 12mm	7.6	55
(oiled threads) - 912 - 12mm	9.0	65
- 907/912 - 8mm	1.9 - 2.2	14 - 16
Crankshaft pulley	8.0 - 8.3	58 - 60
Connecting rod (big end) caps (oiled thread)	11.6 - 11.9	84 - 86
Fixed Flywheel - 907/912	6.5 - 6.8	47 - 49
Flexplate flywheel (inc. auto flexplate)	7.6	55
Clutch assembly	2.3 - 2.6	17 - 19
Torque convertor to flexplate	3.5	25
Oil sump to main bearing housing - 907	1.0 - 1.1	7 - 8
Oil sump to main bearing housing - 912	2.2 - 2.5	16 - 18
Auxiliary housing to cylinder block	1.8 - 2.1	13 - 15
Auxiliary shaft sprocket	3.5	25
Oil pick-up pipe union	7.6	55
Retaining nut (belt tensioner)	3.5 - 4.2	25 - 30
All other 6mm nuts or setscrews	1.0 - 1.1	7 - 8
Stud - Cylinder head to cylinder block - 12mm	4.1	30
- Main bearing housing - 8mm	1.7	12
- Main bearing housing - 12mm	5.5	40
- Camshaft housing to cylinder head - 8mm	1.7	12
- Sump to main bearing housing - 6mm	0.7	5
- All other non-specified 8mm studs	1.7	12
Exhaust manifold to cylinder head	1.9 - 2.2	14 - 16
Inlet manifold to cylinder head	1.9 - 2.2	14 - 16
Banjo bolt (fuel line to carburettors)	2.2	16
Purge pump thermal switch	2.1	15