

LOTUS EUROPA 1969 SPECIFICATION S2 (NOT FEDERAL)



	Units	RACE 2002	LAPPING 2005	LAPPING 2007	LAPPING 2008
ENGINE		Renault Gordini 4 cylinder	Renault Gordini 4 cylinder	Honda H22A, 4 cylinder	Honda H22A, 4 cylinder
General engine comment		Very reliable engine, no power under 3500 rpm, need to replace connecting rod bearing every 5 to 8 hours on race track	Engine project, never run, never trust the head Gasket and sleeve, sold the engine, but a lot of engineering done	Very nice, power every where, but complicated set-up since the engine is turning wrong side. A lot of vibration with the engine without counterbalance shaft belt	A lot of vibration with the engine without counterbalance shaft.
Power					
Measured Wheel horsepower	hp			181	
at rpm	rpm			7000	
Estimated crank power	hp	165	190	218	230
at rpm		7200	7200	7000	7200
Bore	mm	79	82.5	87	87
Crankshaft		Renault Fuego Turbo	Renault Fuego Turbo	Stock	Stock
Stroke	mm	84	84	90.7	90.7
Displacement	cc	1647	1796	2157	2157
Redline	rpm	7 400 rpm (rev. limiter)	8000	8000	8000
Block		Aluminum, Renault Fuego turbo, modified oil drain passage	Aluminum, Renault Fuego turbo, modified oil drain passage; Modified on mechanical fuel pump area for oil drainage; Oil passage to fill oil under the piston into the block. Modified for sleeve XX mm OD, machined centered to existing hole.	Stock	Stock
Compression ratio		9.8	11.10	10.6 stock	10.6 stock
Piston		OEM PISTON, FLAT TOP	ROSS custom (volume combustion chamber det. By drawing)	Stock	Stock
Head		R17 Gordini, ported, 36 mm intake port,	Aluminum, R17 Gordini, ported, 40 mm intake port, head opening modified for oil drain, and for coolant passage.	Stock	Slightly ported
Valve size		Stock	Mecaparts intake, mecaparts exhaust	Stock	Stock
-inlet	mm	42 mm	44	40	40
-exhaust	mm	35.35 mm	37	35	35
Valve spring				Stock	Stock
-outside origine		Renault Fuego Turbo	Crower 68106	Stock	Stock
-outside OD	inches		1.225	Stock	Stock
-outside ID	inches		0.915	Stock	Stock
-outside free length	inches	2.105	2.225	Stock	Stock
-outside collapse length	inches	1.010	0.91	Stock	Stock
-outside fitted length	inches		1.61	Stock	Stock
-inside origine	inches		Crower 68208	Stock	Stock
-inside OD	inches		0.91	Stock	Stock
-inside ID	inches		0.68	Stock	Stock
-inside free length	inches		1.97	Stock	Stock
-inside collapse length	inches			Stock	Stock
-inside fitted length	inches		1.490	Stock	Stock
-TOTAL SPRING RATE	#/in		259	Stock	Stock
-SEAT PRESSURE	pounds		129	Stock	Stock
-TOTAL SPRING PRESSURE OPEN	pounds		265	Stock	Stock
Valve spring retainer		Fuego Turbo 33.9 gr	Titanium GR5 custom made, 11 gr	Stock	Stock
Cam spec.		race cam from France	ELGIN	Stock	Stock
-valve lift				Stock	Stock
-inlet	inches	0.39	0.460	0.469	0.469
-exhaust	inches	0.39	0.460	0.438	0.438
Lifter		Renault Fuego Turbo	Renault Fuego Turbo	na	na
Pushrod		Renault Fuego Turbo	Renault Fuego Turbo	na	na
Carburator		2 x Dellorto 45 dhla	2 x Dellorto 45 dhla	EFI	EFI
-venturi	mm	36	38	stock	stock
-idle jet	mm	50	50	na	na
-emulsion tube		7772.6	7772.6	na	na
-main jet		150	160	na	na
-air jet		180	180	na	na
Intake		?	?	stock	shunk2 SK-307-05-0300
Air box		Aluminum custom made, welded construction, large volume	Aluminum custom made, welded construction, large volume	no	no
Fuel pump		Carter 5 psi 72 gph #p4070	Carter 5 psi 72 gph #p4070	low pressure: Carter 5 psi 72 gph #p4070; high pressure: Accel...	low pressure: Carter 5 psi 72 gph #p4070; high pressure: Accel...
Exhaust system		4 into 1, 1 1/2 ID primary pipe, 1 7/8" ID secondary, flowmaster 42452 muffler, 2 1/2 outlet pipe	4 into 1, 1 1/2 ID primary pipe, 1 7/8" ID secondary, flowmaster 42452 muffler, 2 1/2 outlet pipe	Custom made 4 into 1, 1 5/8 ID primary pipe, 2 3/8" ID secondary,	Custom made 4 into 1, 1 5/8 ID primary pipe, 2 3/8" ID secondary,
Connecting rod		Renault Fuego Turbo	Fuego Turbo	stock	stock
Ignition		Ducelier dist. (Renault Fuego Turbo), MSD-8981 Timing Computer, MSD-6AL Spark Amplifier, adv/retard remote adj, Cam sensor (hall effect MSD-8276), HVC coil MSD-8252	Ducelier dist. (Renault Fuego Turbo), MSD-8981 Timing Computer, MSD-6AL Spark Amplifier, adv/retard remote adj, Cam sensor (hall effect MSD-8276), HVC coil MSD-8252	Stock	Stock
-timing		21 deg. under 1500 rpm, 43 deg over 3500 rpm	21 deg. under 1500 rpm, 43 deg over 3500 rpm	Stock	Stock
Oil pump		Renault Fuego Turbo, 31 mm pump, pressure regulator spring stretch	Renault Fuego Turbo, 31 mm pump, pressure regulator spring stretch	Stock	Stock
Oil filter		Remote kit from Summit, filter Bosch B72102	Remote kit from Summit, filter Bosch B72102	Remote kit from Summit, ph8	Remote kit from Summit, ph8

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Oil sump		modified standard sump to increase the capacity, with divider plate, modified pick-up	modified standard sump to increase the capacity, with divider plate, modified pick-up, plumbing for oil jet for piston	modified standard sump to increase the capacity, xtra width (13 inches) bottom	modified standard sump to increase the capacity, xtra width (13 inches) bottom
Oil qty	liters	6	6	11	11
Motor oil cooler		Earl's 19 row, located on front	Earl's 19 row, located on front	Earl's 19 row, located on front, hose 3/4	Earl's 19 row, located on front, hose 3/4
Coolant radiator		Relocated to the front with duct, Griffin 22 x 13 x 2 1/2 aluminum (#2-58185-X), custom shroud, Perma-Cool fan 14 inches (#19114)	Relocated to the front with duct, Griffin 22 x 13 x 2 1/2 aluminum (#2-58185-X), custom shroud, Perma-Cool fan 14 inches (#19114)	Relocated to the front with duct, Griffin 22 x 13 x 2 1/2 aluminum (#2-58185-X), custom shroud, Perma-Cool fan 14 inches (#19114)	Relocated to the front with duct, Griffin 22 x 13 x 2 1/2 aluminum (#2-58185-X), custom shroud, Perma-Cool fan 14 inches (#19114)
Expansion tank		VW Rabbit, deaeration type	VW Rabbit, deaeration type	VW Rabbit, deaeration type	VW Rabbit, deaeration type
Other					balance shaft removed, hydraulic circuit modified for the purpose.
TRANSMISSION					
General transmission comment		very very very nice, a dream	very very very nice, a dream	very nice shifting, but the rear bearing holder too fragile, need reinforcement	
Model		Renault NG3, close ratio gear kit gear kit, dog on 1 and 2, synchro on 3, 4 and 5, flanged output shaft hub	Renault NG3, close ratio gear kit gear kit, dog on 1 and 2, synchro on 3, 4 and 5, flanged output shaft hub	Renault NG3, close ratio gear kit gear kit, dog on 1 and 2, synchro on 3, 4 and 5, R5 alpine casing and diff., Fuego shifter housing, custom adapter plate. Quaiffe limited split diff.	Renault NG3, close ratio gear kit gear kit, dog on 1 and 2, synchro on 3, 4 and 5, R5 alpine casing and diff., Fuego shifter housing, custom adapter plate. Quaiffe limited split diff.
Flywheel		Lightened standard flywheel 11 pounds	Lightened standard flywheel 11 pounds	Fidenza Aluminum	Fidenza Aluminum
Clutch		Dry, 215 mm, Fuego Turbo	Dry, 215 mm, Fuego Turbo	Stock pusher plate, ceramic 6 pucks disc, sprung center	Stock pusher plate, ceramic 6 pucks disc, sprung center
Gearbox		Five speeds	Five speeds	Five speeds	Five speeds
Gear ratio					
-First		2.62	2.62	2.62	2.62
-Second		1.89	1.89	1.89	1.89
-Third		1.48	1.48	1.48	1.48
-Forth		1.21	1.21	1.21	1.21
-Fifth		1.03	1.03	1.03	1.03
Final drive		Hypoid bevel	Hypoid bevel	Hypoid bevel	Hypoid bevel
Final drive ratio		3.78	3.78	3.78	3.78
km/hr per 1000 rpm with tire below					
-First	km/h	10.99	11.56	11.56	11.56
-Second	km/h	15.22	16.01	16.01	16.01
-Third	km/h	19.48	20.48	20.48	20.48
-Forth	km/h	23.75	24.98	24.98	24.98
-Fifth	km/h	27.79	29.23	29.23	29.23
Km/hr at		7500	7500	8000	8000
-First	km/h	82	87	92	92
-Second	km/h	114	120	128	128
rpm drop	rpm	5417	5417	5778	5778
rpm drop delta		2083	2083	2222	2222
delta kmh	km/h	32	33	36	36
-Third	km/h	146	154	164	164
rpm drop	rpm	5861	5861	6252	6252
rpm drop delta		1639	1639	1748	1748
delta kmh	km/h	32	34	36	36
-Forth	km/h	178	187	200	200
rpm drop	rpm	6150	6150	6560	6560
rpm drop delta		1350	1350	1440	1440
delta kmh	km/h	32	34	36	36
-Fifth	km/h	208	219	234	234
rpm drop	rpm	6409	6409	6837	6837
rpm drop delta		1091	1091	1163	1163
delta kmh	km/h	30	32	34	34
Other		Shortened drive shaft, mounted with flange yoke on transmission, all spherical bearing on shifter rod.	Shortened drive shaft, larger universal joint, u-bolt on wheel shaft side, all spherical bearing on shifter rod.	Shortened drive shaft, universal joint serie 1310, u-bolt on wheel shaft side, all spherical bearing on shifter rod.	Shortened drive shaft, universal joint serie 1310, u-bolt on wheel shaft side, all spherical bearing on shifter rod.
CHASSIS					
General handling comment		Quite neutral, understeer to oversteer, rear a little bit too soft. All a time loose on the halfshaft, and broke few.	Quite neutral, understeer to oversteer, rear a little bit too soft. All a time loose on the halfshaft, and broke few.	with all adjustment at the extreme, too much oversteer. Without the rear roll bar, was just too much understeer. Better than ever, but edgy at the limit. Rear shock needs to be revalved. The quaiffe diff is pushing the car. Suspension rigid, but not extreme.	
Front suspension		Double A-arm, Tubular, adjustable camber, from Banks	Double A-arm, Tubular, adjustable camber, from Banks	Double A-arm, Tubular, adjustable camber, from Banks	Double A-arm, Tubular, adjustable camber, from Banks
-Spring rate	#/in	150	150	150	150
-Roll bar dia.	inches	5/8	5/8	5/8	3/4
-Roll bar length	inches	37 approx.	37 approx.	37 approx.	37 approx.
- Max roll bar link adjustment	inches	5	5	5	5
- Min roll bar link adjustment	inches	8	8	8	8
-Shock absorber		Adjustable (rebound and preload) Spax low pressure gaz shock,	Adjustable (rebound and preload) Spax low pressure gaz shock,	Adjustable (rebound and preload) Spax low pressure gaz shock,	Adjustable (rebound and preload) Spax low pressure gaz shock,
Rear suspension		Trailing arm, all solid joint	Trailing arm, all solid joint	Trailing arm, all solid joint	Trailing arm, all solid joint
-Spring rate	#/in	160	150	210	210
-Roll bar dia.	inches	na	na	9/16	9/16
-Roll bar length	inches	37 approx.	37 approx.	37 approx.	37 approx.
- Max roll bar link adjustment	inches	na	na	8	8
- Min roll bar link adjustment	inches	na	na	12	12

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	Units	RACE 2002	LAPPING 2005	LAPPING 2007	LAPPING 2008
- Shock absorber		Carrera 6253, adjustable 3 positions	Carrera 6253, adjustable 3 positions, with rod extension 1 1/4	Carrera 6253, adjustable 3 positions, with rod extension 1 1/4	Carrera 6253, adjustable 3 positions, with rod extension 1 1/4
- Bearing hub		Billet bearing housing	Billet bearing housing	Billet bearing housing	Billet bearing housing
- Halfshaft		stock	stock	inverted design, billet shaft with the flange	inverted design, billet shaft with the flange
Front brake		Wilwood vented disc, Dual opposite piston caliper (spitfire)	Wilwood vented disc, Dual opposite piston caliper (spitfire)	Wilwood vented disc, Dual opposite piston caliper (spitfire)	Wilwood vented disc, Dual opposite piston caliper (spitfire)
- disc dia.	inches	10.25	10.25	10.25	10.25
Front caliper		Triumph Spitfire	Triumph Spitfire	Triumph Spitfire	Triumph Spitfire
- piston dia.	mm	48	48	48	48
Front brake pad		Hawk Blue	Hawk Blue	Hawk Blue	Hawk Blue
Rear brake		Wilwood vented disc Dual opposite piston caliper (spitfire)	Wilwood vented disc Dual opposite piston caliper (spitfire)	Wilwood vented disc Dual opposite piston caliper (spitfire)	Wilwood vented disc Dual opposite piston caliper (spitfire)
- disc dia.	inches	10.25	10.25	10.25	10.25
Rear caliper		Triumph Spitfire	Triumph Spitfire	Triumph Spitfire	Triumph Spitfire
- piston dia.	mm	48	48	48	48
Rear brake pad		Hawk Blue	Hawk Blue	Hawk Blue	Hawk Blue
Master cylindre		Wilwood master 3/4 bore front and rear, pressure reducing valve Wilwood, residual pressure valve	Wilwood master 3/4 bore front and rear, pressure reducing valve Wilwood, residual pressure valve	Wilwood master 5/8 front and 3/4 rear, pressure reducing valve Wilwood, residual pressure valve, Wilwood remote balance bar, and Wilwood balance bar attachment.	Wilwood master 5/8 front and 3/4 rear, pressure reducing valve Wilwood, residual pressure valve, Wilwood remote balance bar, and Wilwood balance bar attachment.
Tire			TOYO RA1	TOYO RA1	TOYO RA1
-Front			185/60-13	185/60-13	185/60-13
width	mm	185	185	185	185
profile	%	60	60	60	60
-Rear					
width	mm	205	225	225	225
profile	%	60	50	50	50
Wheel					
-Front			Keizer Aluminum Wheel (8.4 pounds)	Keizer Aluminum Wheel (8.4 pounds)	Keizer Aluminum Wheel (8.4 pounds)
width	inches		6	6	6
backspacing	inches		4.88	4.88	4.88
offset	inches		1.5	1.5	1.5
dia.	inches	13	13	13	13
tire OD	mm	552.2	552.2	552.2	552.2
-Rear			Keizer Aluminum Wheel (10.6 pounds)	Keizer Aluminum Wheel (10.6 pounds)	Keizer Aluminum Wheel (10.6 pounds)
width	inches		7.5	7.5	7.5
backspacing	inches		5.26	5.26	5.26
offset	inches		1.1	1.1	1.1
dia.	inches	13	15	15	15
tire OD	mm	576.2	606	606	606
Other		Reinforced engine support with standard bushing, reinforced frame on T junction, banks front suspension tubular wishbone, trailing mounted with spherical bearing, reinforced frame to support the transmission solid mounted, roll cage with 1 3/8 tube	Reinforced engine support with standard bushing, reinforced frame on T junction, banks front suspension tubular wishbone, trailing mounted with spherical bearing, reinforced frame to support the transmission solid mounted, roll cage with 1 3/8 tube	Engine directly mounted, reinforced frame on T junction, banks front suspension tubular wishbone, trailing mounted with spherical bearing, reinforced frame to support the transmission solid mounted, roll cage with 1 3/8 tube	Engine directly mounted, reinforced frame on T junction, banks front suspension tubular wishbone, trailing mounted with spherical bearing, reinforced frame to support the transmission solid mounted, roll cage with 1 3/8 tube
WEIGHT & MEASURES					
Kerb weight					
-measured	pounds	1465			
-Estimated	pounds		1500	1600	1570
Fuel tank			ATL SP108 8 gallons, located in the front trunk	ATL SP108 8 gallons, located in the front trunk	ATL SP108 8 gallons, located in the front trunk
Weight distribution with driver 200#		47% F/53% R			
Front track	inches	55	55	55	55
Rear track	inches	57	57	58	58
Ground clearance	inches	3	3	3	3
PERFORMANCE					
Maximum speed	km/hr				
Acceleration					
-1/4 mile	sec				
speed	km/hr				
-0-60 mph	sec				
-1-60 mph	sec				
Brake					