

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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| - 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 | | | | | |