

TITLE: Introduction of 2008 model year Elise/Exige

REASON: To identify new features.

ACTION: The Elise and Exige range for '08 model year incorporate new features as described below:

IDENTIFICATION

VIN character 10 identifies the model year; '8' designates 2008.

The VIN serial number sequence (last 4 digits) restarts at 0001 for '08 model year.

SUMMARY

The Elise S (not USA), Elise R ('Elise' in USA) and Exige S continue with enhancements detailed in this bulletin. Due to very low demand, the naturally aspirated Exige will be built only for certain markets and to special order. All cars will now be equipped with dual airbags and an engine start button, with the fascia structure featuring a new charcoal grey matt finish. Option packs have been reconfigured as detailed in recent sales communications, with a new Performance Pack option available for the Exige S, providing 243 PS.

A new alarm system uses a bespoke Lotus branded transmitter key and a new instrument pack features additional functionality. To meet new legislation, USA models are fitted with low tyre pressure monitoring, and all cars benefit from enhanced 'CAN bus' diagnostics, and a revised body colour range.

VEHICLE SECURITY ALARM

The Lotus Elise/Exige for '08 model year onwards is fitted as standard with a PFK 457 immobiliser/alarm which includes the following features:

- U.K. approval to Thatcham category 1.
- 'Dynamic coding' of the transmitter keys; Each time the transmitters are used, the encrypted rolling code is changed to guard against unauthorised code capture.
- Passive activation of immobiliser, central locking and alarm system.
- Ingress protection using sensing switches on the latches of both doors, the front body access panels, and the engine lid/tailgate.
- · Selectable cockpit intrusion sensing using a microwave sensor.
- Self powered siren to maintain protection if the vehicle battery is disconnected.
- Personal protection by 'on demand' activation of the siren.
- Emergency alarm override and transmitter key programming using an alarm/owner specific Personal Identification Number (PIN).

Transmitter Keys

Two new Lotus designed and badged transmitter keys are provided with the car, and combine a mechanical key blade with a three button transmitter unit incorporated into the key head. The mechanical key operates the ignition switch, emergency manual door locks, fuel filler cap (not USA) and Elise engine/boot lid. The transmitter operates the electronic immobiliser, alarm system and the central locking. The two transmitter keys should be kept separate, and a replacement obtained immediately after any loss to ensure that a spare is always available.



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The 4-digit code for the mechanical key, the unique serial number of the immobiliser/alarm, and the vehicle owner's 5-digit alarm Personal Identification Number (PIN), are supplied on plastic tags attached to the key ring of a new vehicle. In order to allow replacement transmitter keys to be programmed, it is essential that these numbers are recorded and kept safely by the owner with the vehicle documents. It is also recommended that the dealer stress this issue to their customers and, in the interests of customer service, keep a record in their own database.

Replacement Keys: Additional or replacement transmitter keys may be purchased uncut/uncoded from Lotus under part number A120H0008S and will be supplied with a blank mechanical blade for copy cutting to an existing key. Alternatively, a cut key may be ordered from Bolton Lock Company, quoting the 4 digit 'L' key code, under part number A120H0009S (using form LSL482c). In either case, the transmitter will then need matching to the vehicle using the vehicle owner's 5-digit PIN, as described later in this bulletin.

Disarming the Alarm/Unlocking

When approaching the car, it is likely that the vehicle is locked and the alarm armed. The alarm red tell tale lamp in the speedometer face will be triple flashing. To disarm the alarm and unlock the doors:

- Press the central, unlock, button on the transmitter key. The first press will unlock just the driver's door. Two presses in quick succession will unlock both the driver and passenger doors.
- This command will be acknowledged by a double flash of the hazard lamps.
- The engine will be mobilised (see below).
- The interior lamp will fade on, and remain lit for up to 2 minutes (if set to the 'courtesy' position).
- The alarm tell tale will be extinguished.

If a door is not opened within 2 minutes, the doors will passively re-lock and the alarm system re-arm.

Passive Immobilisation

In order to provide a measure of automatic vehicle security, independent of any driver initiative, the system will 'passively' immobilise the engine's cranking and fuel pump circuits after the ignition has been turned off for 40 seconds, or a similar period has elapsed since the last mobilising command. With the ignition off, the alarm tell tale will indicate that immobilisation is in effect by briefly flashing every second. With ignition on, immobilisation is indicated by a continuously lit tell tale.

To mobilise the car (i.e. allow engine starting) with ignition on or off, press once the transmitter centre button; the alarm tell tale will be extinguished.

Arming the Alarm/Locking the Doors

To lock the doors and arm the alarm, remove the ignition key, close both doors, and check that the engine lid/tailgate and body front access panels are secure:

- Press once the raised logo button on the transmitter fob.
- This command will be acknowledged by a single flash of the hazard lamps.
- Both doors will be locked, the engine immobilised and the alarm system armed. A settling period of 40 seconds must expire before the ingress sensors become active.
- The alarm tell tale will repeatedly triple flash.

Note:

- i) If the system is armed when a door is not fully shut, three **triple** beeps will sound as a warning and the doors will not be locked. Opening a door will *not* trigger the alarm.
- ii) If the system is armed when the engine lid/tailgate or a front access panel is not fully closed, three warning double beeps will be heard, and the doors will not be locked. Opening a door in this instance will trigger the alarm.
- iii) If one transmitter is used to disarm the alarm, and a second transmitter to re-arm, a system test mode will be initiated, and operational variations will occur. Allow an undisturbed period of 2 minutes to elapse to restore normal operation.

When fully armed, and after the settling period of 40 seconds has expired, the alarm will be triggered by any of the following actions:

- Interruption of the car battery power supply or siren cables.
- Energising the ignition circuit ('hot wiring').
- Opening a door;
- Opening the engine lid/tailgate or a front access panel.
- Movement detected within the cabin (unless de-selected).

If the alarm is triggered, the hazard warning lamps will flash and the wailing siren will sound for a period of approximately 30 seconds before closing down and resetting, ready for any further triggering input. If a trigger is continuously present (e.g. door left open), the alarm will repeat for a maximum of eight 30 second cycles before excluding the triggering sensor for the remainder of the armed period.

To silence the siren, press once the central, disarm button on the transmitter key. If necessary, press a second time to disarm the alarm.

Alarm Tell Tale Summary

Tell tale off;Alarm disarmed, engine mobilised.Tell tale on;Immobilised with ignition on.Brief flash every second;Immobilised with ignition off.Repeating triple flash;Alarm armed.

Interior Movement Sensor

A microwave sensor is mounted behind the cabin rear bulkhead trim panel, and is able to detect substantial physical movement within the cockpit, and trigger the alarm. Microwave transmissions are blocked by metal objects, so it is important not to shield the signal by placing such items on the bulkhead ledge.

If an animal is to be left in the vehicle, or if for any other reason it is desired to exclude the interior movement sensor when the alarm is set, press once the transmitter logo button in the normal way to set the alarm, and then press a second time (within 2 seconds) to exclude the interior movement sensor. A single beep will be heard as confirmation. This exclusion will be automatically cancelled when the alarm is disarmed.

The sensitivity of the sensor is factory set for the Elise/Exige, and should never need any adjustment. Such a facility is, however, provided on the unit, and is accessible after removal of the cabin rear bulkhead trim panel. Turning the adjustment screw clockwise will increase sensitivity.



Manual Activation of Siren

If, for personal security reasons, it is desired to manually activate the siren at any time when the ignition is off, press for 3 seconds the transmitter auxiliary (3rd) button. The wailing siren sound, and the hazard lamps flash for a period of 30 seconds. To stop the siren, press once any of the transmitter buttons.

Manual siren activation will not affect the status of the alarm arming.

Transmitter Key Battery Replacement

The transmitter keys will normally operate within a range of 5 metres from the car, but this may be reduced by the presence of other radio signals in the vicinity. The transmitters are powered by a long life 3V Lithium battery, type CR2032, which with normal use should last for 3 years. To ensure continuity of operation, it is recommended to renew the batteries every 12 months:

- Using a small screwdriver, prise open the back panel of the key case using the slot by the keyring hole.
- Remove the old battery and wait for 10 seconds before inserting the new battery with +ve sign uppermost, and holding the battery only by the periphery.



- Refit the back panel, engaging the retaining tongue, and pressing firmly to engage the clip.
- The transmitter should now operate normally.

Disconnecting the Vehicle Battery

In order to prevent the alarm being triggered, before disconnecting the vehicle battery, ensure that the alarm is disarmed.

Emergency Disarming/Mobilising

If the transmitter keys are lost or damaged, the alarm system owner's 5-digit PIN may be used to disarm the alarm **provided that** access is available to the cabin:

- Turn on the ignition. The alarm tell tale will light.
- If the alarm is armed, accessing the cabin, or turning on the ignition will trigger the alarm until completion of this emergency process.
- Within 10 seconds, turn the ignition off; the tell tale will begin to flash.
- After a number of flashes corresponding to the first digit of the PIN, turn on the ignition Note that the first flash may not be of full duration (but is still to be counted) dependent on the waveform position at time of ignition switch off.
- Turn off the ignition and after a number of flashes corresponding to the second digit of the PIN, turn on the ignition. Repeat this process until all 5 digits have been completed. Note that 10 flashes correspond to a zero digit.
- If the PIN is entered correctly, the alarm will now be overridden and the engine mobilised. However, passive immobilisation will still occur after an ignition off time of 40 seconds, requiring a repeat of the above procedure to mobilise. Passive arming and passive door locking cannot occur until a transmitter is used to operate the alarm.

If, at any stage of the process, a number is entered incorrectly, the system will immediately revert to the start, so that the whole PIN must be re-entered.

Programming Additional Transmitters

A maximum of 6 transmitters may be programmed to the car, any thereafter overwriting the first to have been programmed.

- With the engine immobilised (tell tale flashes briefly once per second), turn on the ignition.
- Enter the PIN as detailed above, followed by the additional two digits 1, 1.
- The tell tale will flash rapidly for one second, then turn off.
- Within 8 seconds, press any button on the transmitter to be programmed. The tell tale will then pulse rapidly and the siren will beep.
- Within 10 seconds press any button on the next transmitter to be programmed (if applicable), and repeat this process for all remaining transmitters.
- When all transmitters have been programmed, wait for 10 seconds, or turn off the ignition.

To disable a lost or stolen transmitter from the system, use the above procedure to programme 6 transmitters, if necessary repeatedly reprogramming the same transmitter if less than 6 programmed transmitters are to be used.

TYRE PRESSURE MONITORING SYSTEM (TPMS) - USA ONLY

USA market Elise/Exige models from '08 model year onwards are fitted with a tyre pressure monitoring system, as required by legislation. A sensor incorporated into each of the tyre valves monitors the air pressure inside the tyre, and supplies an onboard control module with this data by radio transmission. If any tyre pressure should fall below 75% of the recommended value, an alert message is sent to the instrument panel,

and the tyre pressure tell tale will light up amber. The fuel gauge display will then be overwritten with a message to indicate which tyre is concerned, with text such as: **LF Low** (left hand front tyre low pressure). This message will show for 5 seconds before the display reverts to the fuel level bar graph, but will repeat for 5 seconds at 30 second intervals.

The TPMS incorporates self-malfunction recognition, and if a fault is detected, the tell tale will flash for one minute and then remain constantly lit. The LCD panel will also flash 'TPMS FAULT' for 5 seconds, and repeat at 30 second intervals; no indication of low tyre pressure will be displayed.

Tyre fitters and service technicians should be made aware that TPMS is fitted, and that the tyre valves include pressure sensors. If the emergency tyre inflator aerosol has been used, it will be necessary to renew the tyre valve/pressure sensor. If a fault is indicated after wheel or tyre replacement, it is likely that a sensor has been incorrectly fitted or damaged. If a tyre valve is renewed, or is moved to a different wheel position, the TPMS will automatically identify the new configuration.

Note that the pressure sensors are powered by integral batteries, with an average service life of 10 years. It is recommended to renew all pressure sensors at this time interval.

WARNING 'TELL TALE' LAMPS

The instrument panel tell tales and LCD functionality have been revised for '08 M.Y. New features are described below:

Security Tell Tale

The security function is separated from the combined security/rpm tell tale and is moved into the face of the speedometer.



High RPM Tell Tales

Three red tell tales are incorporated into the tachometer face to warn that maximum engine speed is being approached. Maximum transient engine speed in all gears at normal running temperature, is 8,500 rpm (7150 rpm for Elise S), at which point the engine is governed, but as the rate of rpm increase is potentially greater in the lower gears, the tell tale trigger points are tailored to accommodate the reaction time available. As maximum rpm is approached, the tell tales will light in the following left to right sequence:

- one red light
- two red lights
- three rapidly flashing lights

When exploiting maximum acceleration, gearchange upshifts should be made immediately the three flashing lights appear.

NOTICE:

- A 6,000 rpm limit is imposed on a cold engine to reduce possible damage and wear from an unsympathetic driving style.
- At normal running temperature, maximum continuous engine speed is 8,000 rpm (6,800 rpm for Elise S).
- Using maximum rpm and the above tell tale facility should be restricted to occasions when maximum acceleration is required. Overuse will compromise powertrain service life.
- The engine is not protected from overspeeding caused by erroneous or premature downchanging. Such misuse could result in catastrophic failure, not covered by the vehicle warranty.

SCHEDULED SERVICE TELL TALE (IF FITTED)

Note that this feature will not be available on early '08 cars using an 'A' level engine ECU programme. However, during routine servicing, the programme should be updated, when available, with 'B' level software which will allow tell tale functionality.

Under normal usage conditions, a routine maintenance service should be performed at the first occurring of 9,000 miles (15,000 km) or 12 months from the previous service (USA; 7,500 miles/6 months). The approved service period extends to 500 miles before/after or one month before/after the stipulated distance/time.

As a driver aid to distance servicing, an amber wrench icon in the face of the speedometer will flash for 10 seconds following each ignition turn on, when within 500 miles (800 km) of the service period, allowing plenty of time for booking arrangements to be made. Once the service period is reached, the tell tale will remain constantly lit with ignition until reset using the Lotus Techcentre (see later).

Note that this feature is provided only as a secondary aid, and uses only *distance* criteria, and not the *time* factors which may predominate. It is the owner's responsibility to ensure that servicing is carried out at the prescribed intervals.

TRIP DISTANCE/DIGITAL SPEED DISPLAY/TIME CLOCK

The top left portion of the LCD panel may be cycled through the following displays:

- Trip distance.

- Digital road speed in alternative units to those indicated by the analogue instrument (either mph or km/h).
- Digital time clock (if fitted this feature will not be available initially).

To cycle, one at a time, through these three displays, briefly press the small button on the right hand side of the steering column shroud. (Note that this button also adjusts the brightness of the instrument and HVAC panel illumination if held pressed when road speed is selected).

Trip distance: Units displayed are miles, and range from 000.0 to 999.9. To reset to zero; when the trip function is displayed, press the button on the column shroud for longer than 1 second.

Time Clock Setting: To adjust the 24 hour time clock (if fitted);

- when the time function is displayed, press the button on the column shroud for longer than 1 second. The hour display will then flash.
- Repeated brief presses of the button will increment the hour figure. Pressing the button for longer then 1 second will store the hour setting and start the minute display flashing.
- Further brief button presses will increment the minute figure.
- When the correct time is displayed, press the button for longer than 1 second to store the setting and start the clock.

VARIABLE TRACTION & LAUNCH CONTROL (IF FITTED)

Exige S models specified with the 'Performance Pack' option, include variable Lotus Traction Control (LTC), allied with Variable Launch Control (see below) and have a rotary control knob mounted on the left hand side of the steering column shroud.

Each time the ignition is turned on, normal full LTC is activated. To enable variable traction control, turn on the ignition and hold the LTC 'off' button pressed for 2 seconds. Check that the tell tale in the switch button is lit. Start the engine. Note that if the ignition is switched off (e.g. prior to a second start attempt), the above procedure must be repeated in sequence.

With the switch button tell tale lit and the engine running, the rotary knob may then be used to select the degree of traction control desired, with the setting shown on the instrument panel LCD in the form '#% SLIP', with a possible range between 0 and 9%. The display will revert to showing the fuel level after a few seconds.

- For maximum traction control (0% slip) turn the knob fully counterclockwise to 'MAX'.
- To reduce traction control (to allow up to 9% slip), turn the knob progressively clockwise.
- Fully clockwise ('0'), traction control is disabled, as indicated by the lighting of the instrument panel tell tale, and an LCD message of 'LTC OFF'.

If at any time during that ignition cycle, the control knob is turned, the LCD will again show the traction control setting for a few seconds.

When the ignition is next turned on, normal full LTC will be activated unless the above procedure is repeated.

Variable Launch Control

CAUTION: This feature is designed for competition use, and as such, its employment will invalidate vehicle warranty on any components subject to the extreme loads associated with racing starts.

Variable Launch Control allows the engine rpm to be limited during a competition start in order to balance engine power against available grip and provide a controlled degree of wheelspin for the first moment of acceleration, until superseded by the traction control system at around 6 mph.

To enable this feature, turn on the ignition and hold the LTC 'off' button pressed for 2 seconds. Check that the tell tale in the switch button is lit. Then;

- With ignition on, engine **stopped**, fully depress the throttle pedal for 5 seconds.
- Tacho will now show launch rpm. Turn the rotary knob as necessary to select any desired launch rpm between 2000 and 8000.
- Release throttle and start engine.
- Turn the rotary knob to select the desired level of traction control (see above), noting that the launch control setting will not be affected.
- Engage first gear, apply full throttle (ECU limits engine speed to selected launch rpm), and rapidly 'drop' clutch.
- Maintain full throttle throughout the transition from launch to traction control (at around 6 mph) until the first gear change is required.
- To disable launch control when variable traction control is still required, reset launch rpm to 8,000.

NOTE

- Do not attempt to slip the clutch during this process, as overheating or damage to the clutch mechanism may occur. An instant clutch engagement is required to 'break' rear tyre traction and initiate wheelspin.
- Do not attempt LC starts in any gear other than first.
- Do not hold the engine at or near maximum rpm for more than a few seconds.
- Under no circumstances should this track feature be employed on the public road.
- Use of Launch Control is an ultimate technique designed to produce the fastest possible race start. Always allow the clutch to cool and recover before repeating a launch controlled start. The extreme loads associated with such starts will result in reduced transmission component life cycles.
- At the next key-on, the system will default to full LTC and Launch Control off. Turning on the ignition and holding the LTC 'off' button pressed for 2 seconds will restore the previous traction and launch settings.

Adjustment Tips

Note that the optimum settings for variable traction and launch control will differ for each set of track surface, tyre and ambient conditions. A suggested adjustment logic follows:

- Set the traction control to a mid position.
- Start with a low launch rpm e.g. 4,000 rpm.
- Trial launch and assess initial wheelspin control and transition into traction control.
- If launch control is set too low, the engine may 'bog down' and fall out of the power band. If set too high, too much initial wheelspin may result, with poor step off from the line.
- Similar logic applies to traction control adjustment when this system takes over above about 6 mph.

PERFORMANCE PACK

Exige S models specified with the 'Performance Pack' option include the following:

- # Peak engine power uprated from 221 to 243 PS and featuring unique engine management calibration, high flow injectors and a reprofiled chargecooler roof duct extending to the front edge of the roof, with an enlarged intake.
- # Variable Lotus Traction and Launch Control (see above).
- # Uprated clutch plate and cover. Clutch release hydraulic damper valve.
- # A.P. Racing 4-piston alloy front brake callipers (normally 2-piston), with front discs enlarged from 288 to 308mm. Longer wheel bolts with no coded bolt. Uprated brake pads.

BODY COLOURS

The colour range has been revised for '08 M.Y. with new additions, some deletions and a new 'Premium' range offered at additional cost.

Standard colours	Lotus	Du Pont	Primer Notes shade	
British Racing Green (dark green solid) Ardent Red (bright red solid)	B04 B94	K9349 P4485	5 1	
Metallic colours				
Canyon Red (mid/dark red)	B117	X2909	1	Ford laser tint red base with std. clear
Solar Yellow (bright yellow with gold metallic)	B114	X2915	1	B106 Saffron base with tinted clear @ 1% AM76
Arctic Silver (light silver)	B130	TBA	5	C
Storm Titanium (medium silver/grey)	B121	X2913	5	
Starlight Black (with gold metallic)	B93	P4832	5	
Persian Blue (NEW - bright medium/dark)	B131	TBA	5	
Liquid Blue (NEW - light blue/silver)	B133	TBA	5	
Lifestyle colours				
Chrome Orange (bright orange with gold metallic)	B25	F7504	1	
Isotope Green (NEW - dayglo green/yellow met.)	B132	TBA	1	Solid base with tinted clear @ 1% AM76
Aspen White (with gold metallic)	B113	X2914	1	B01 Monaco base with tinted clear @ 1% AM76

	Lotus	Du Pont	Primer shade	Notes
Graphite Grey (dark silver/steel grey)	B122	X2911	5	
Phantom Black (solid)	B123	X2917	5	Same as B02
Laser Blue (bright blue metallic)	B120	X2910	5	
Saffron Yellow (bright yellow solid)	B106	X0908	1	
Premium colours				
Prism Green (NEW - greeny turquoise)	B127	KK764	5	Chromalusion colour with black ground coat. 3 coat system
Moonstone Silver (NEW - light silver with				-
spectrum effect)	B128	XB-X1450	5	Spectraflair colour with AM17 silver ground coat. 3 coat system
Candy Red (NEW - Red/purple metallic)	B134	TBA	5	
Ice White (NEW - White/silver pearl)	B129	TBA	1	Maserati Bianco Fuji 3 coat system
Burnt Orange (NEW - Orange/gold pearl)	B135	TBA	1	Lamborghini orange double pass through

FORGED WHEELS

The optional forged wheels are now available with front rims only in 6J width (vs. 6.5J) to allow fitment of either Yokohama AD07 or A048 tyres.

REAR LAMP CLUSTERS

A running change to the LED tail lamp clusters will occur shortly after '08 introduction. The new 'B' level lamps incorporate features allowing the previously separate radio supression inductor jump harnesses and (for USA cars) the ballast resistors to be deleted. The new lamps are identified by using a grey moulding for the lamp rear body instead of the previous black colour. If replacing black body lamps on any car with 'B' level grey body lamps, the inductor jump harnesses and ballast resistors (as applicable) may be discarded.

TECHNICAL DATA (WHERE DIFFERENT) Wheels	
Size - optional forged - front	6.0J x 16
Engine Peak power - Performance Pack Peak torque - Performance Pack	179 kW (240 bhp; 243 PS) @ 8,000 rpm 230 Nm (170 lbf.ft; 23.5 kgf.m) @ 5,500 rpm
Brakes Performance Pack	A.P. Racing 4-piston front alloy callipers; 308mm dia. front discs; Uprated brake pads.

CAN BUS DIAGNOSTICS

Controller Area Network (CAN) is an electronic standard to allow high speed communication between modules and controllers, via a serial data bus. The bus is a circuit linking the modules to the controller, consisting of a pair of cables, twisted together to reduce electromagnetic interference, and carrying a square wave voltage signal corresponding to '0's and '1's, coded in such a way as to identify and prioritise the individual messages. On the Elise/Exige range, CAN based systems include; engine management system, instrument pack and tyre pressure monitoring system (USA).

All USA market cars from '08 model year onwards, are required by legislation to use a CAN compliant on-board diagnostic system. This has been commonised for all Elise/Exige models. The Lotus Scan 3 tool is replaced by a 'stand alone' lap top PC loaded with 'Lotus Techcentre' software to allow the CAN based serial data to be read. An '08 model year update kit T000T1494F will shortly be issued mandatorily to all dealers.

The Vehicle Communication Device (T000T1476F) introduced for the Europa model is used to connect the vehicle to the laptop Lotus Techcentre. Engine programming, live data display, diagnostics of engine, ABS and airbag systems, and service tell tale lamp resetting are all carried out via the Lotus Techcentre.

The minimum specification of the laptop computer for installation of the Lotus Techcentre is as follows:

Processer 1.70 Ghz; 1 GB RAM; 40 GB HDD; CDRW DVD ROM; WIN XP PRO; USB interface; Ethernet or Wireless LAN

Note that this laptop should be dedicated totally to the Lotus Techcentre, with no other software installed.

MAINTENANCE

Lubrication and maintenance are unchanged apart from the the requirement to reset the Service tell tale using the Lotus Techcentre. Note that early '08 model year cars are loaded with 'A' level ECU programmes which do not support Service tell tale operation. 'B' level programmes will be introduced as a running change, and allow Service tell tale functionality and resetting via the Lotus Techcentre. Revised Maintenance Schedules will be issued shortly.