

Car test

August 1992

Toyota Carina E

Featuring 1.6XLi



THE CARINA HAS BEEN THE BEST-selling Toyota in the UK for the last year or so and it's set to sell in even bigger numbers from now on. This Carina E (E stands for Europe) is also significant because it will spearhead Toyota's manufacturing effort at Burnaston, in Derbyshire. So with 1.6-litre engines to be built in Deeside, the Carina 1.6 will be as British as a Nissan Primera or a Peugeot 405 by 1993. But is it better?

At nearly 15ft long, the latest version is larger externally than its predecessor. Interior space, particularly legroom, reflects this convincingly, making the Carina one of the roomiest upper medium family cars available. It's not an easy car to place when parking, however, and the high facia and window lines can feel intimidating. Four- or five-door body styles do little to impair back seat comfort and despite an unexceptional ride over bumps, passengers feel very cosy and well supported.

There are serious efforts to keep the car thief-proof – even the luggage can be isolated from the interior of the five-door, and a burglar alarm is

standard on the cheapest version. This is arguably the most convincing model in the range, in value-for-money terms.

Its 1.6-litre engine (the one to be built here in Britain) is intriguing because it will run on very lean air/fuel mixtures, even though it's catalysed. The promised exceptional fuel economy is realised – we got 40mpg overall on test, improving to nearly 50 in gentle touring. Yet this 106bhp engine will also power the car to 115mph and achieve a swift 30–70mph overtaking burst in just 11 seconds. There's nothing to touch it at present for its blend of economy, performance, environmental friendliness and interior space.

Of course, the 145bhp 2.0GTi is a newcomer to the line-up, but we've seen the GLi/Executive's lower-tune 2.0 litre and the modest 72bhp diesel before. This is much slower (30–70mph in 18 seconds) and our last test on the older version gave 45mpg overall. Expect around 34mpg on the 2.0GLi, with about 1½ seconds carved off the 1.6's 30–70mph time.

Living with the Carina E . . .

Both the 1.6 and 2.0 versions have precise controls, tidy displays and benefit from the fact that the Japanese designed everything around right-hand drive; from the pedal layout to the wiper arcs, everything feels right. The 1.6's gears change easily but the lever clunks a bit and the car's cornering and ride are less composed than a Peugeot 405 or a Nissan Primera's. It grips the road well, however, and with pleasant and precise power steering on all versions, it's extremely safe through the bends.

The brakes are too over-servoed for our liking. As a result, skid avoidance (without ABS) in serious braking situations is made more difficult.

The nice interior touches include sophisticated ventilation and heating, with outlets at foot level in the rear. There are roof lamps and courtesy switches at back and front, and folding the back seats extends the load area on all versions.

Toyota's attention to detail is apparent even in the well-lined boot and the general fit and finish is very impressive; there are sound anti-rust measures, too.

A three-year/60,000-mile warranty, low fuel costs and a generous list of standard features on the cheapest 1.6XLi, make this the most impressive of the new range. You can buy some 1.6 rivals for less, and in terms of sheer driving appeal we can think of more rewarding medium-sized family cars. Passengers like it, however, and the 1.6XLi offers a set of statistics that make it a shrewd choice for drivers who have to meet their own motoring costs. "Carina E" might well stand for Economy.

At the Wheel

Driving position

Shorter drivers will find that the sun visors don't obliterate the evening sun and (in the XLi) they

may bemoan the absence of steering rake adjustment. There's a lumbar support adjuster, however, (best left firm) and another that plumps up the rear of the cushion, but thigh support may still be too insistent for some. For taller types, it's a good driving stance with plenty of legroom.

Controls and displays

The XLi's dials lack a tacho, but they're bold and clear, with most tell-tales in the main display. The stalks and switches have a quality, precision feel and the pedals are ideally placed, with a useful footrest beside the smooth, medium-weight (hydraulic) clutch. The 1.6's gearshift is clunky but light (as is the way with Toyota cable shifts), but a little "shunt" results from clumsy use of the accelerator in slow-moving traffic.

Vision

The wiper arcs are fine and we noticed how smooth and silent the wiper blades' action is, too. There's variable wipe on all except the XLi, which makes do with a single intermittent setting. The Carina has high window sills and a prominent fascia (like a Sierra's) which intimidate some people, and the rear view for reversing is a real problem. A centre roof lamp responds to all doors and there's another lamp above the interior mirror, which is itself an object-lesson to the stuck-on wobbly devices often used these days. The impressive headlamps have a beam-trimmer on the fascia. Only the XLi makes do with lever-adjusted door mirrors – the GLi's are electric – but all fold out of the way in tight spaces.

Driver satisfaction

Standard power steering has an ideal, weightier response than previously, making the Carina feel adept at grippy bend-swinging. The smooth-road handling is very rewarding, in fact, but when the bumps and bends come together, the Carina feels less unflappable

than a Primera or a Peugeot 405. If you press it at such times, it tends to hobble a bit on the outside wheel.

The 1.6's lean-burn characteristics betray themselves only in back-to-back comparison with the 2.0 litre; the latter naturally feels more gutsy, but there's also a trace of raggedness about the 1.6's part-throttle response at times. It's flexible, though, smoothly handling 25mph pull-aways in fourth and it will amble along at 30mph in top, as long as you don't expect much acceleration. Overall, the 1.6 engine feels coarsest in the mid-range; 60mph is more audible than 70 or 50, in fact. There's nothing about it that we couldn't live with, however, and the rewards are great.

Space & Comfort

Seating and ride comfort

The new Carina, like the VW Passat, is slightly longer than class average, but rewards occupants with a lot of space to stretch in. Indeed, our standard legroom and kneeroom measurements reveal more than in even the Camry! It's cosy all round, too – rear passengers feel secure and well supported, despite the absence of a centre arm-rest on the XLi; the door furniture is particularly praiseworthy.

The seating comfort goes a long way to mask the indifferent ride over rutted or pot-holed surfaces, when there's some thumping and roar from the tyres. The ride isn't bad – it leaves a similar impression to that of a Cavalier or Montego – but even a Sierra has the edge, while the 405 and Primera feel more composed over indifferent roads. There are no rattles, though, and wind noise suppression is excellent.

Getting in and out

No real problems here and the door sills and rear load sill are plastic covered. The latter entails a 9in lift when taking things out of the

PERFORMANCE

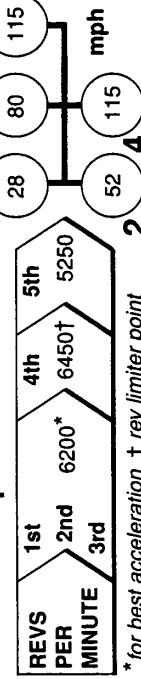
Acceleration

time in seconds

STANDING START	0-30mph 3.5	0-60mph 10.9	1/4 mile 18.2
THROUGH THE GEARS	30 40 50 60 70	2.0 4.2 7.4	11.0
IN 5TH GEAR	7.5 14.8 22.3	30.4	
IN 4TH GEAR	5.4 10.6 16.1	22.0	

20 mph	30 40 50 60 70	15.4/11.1 14.8/10.7	14.8/10.6 15.6/11.4
5TH/4TH SPEED RANGES			

Maximum speeds



FUEL CONSUMPTION

Fuel grade for tests: unleaded Premium/95 octane

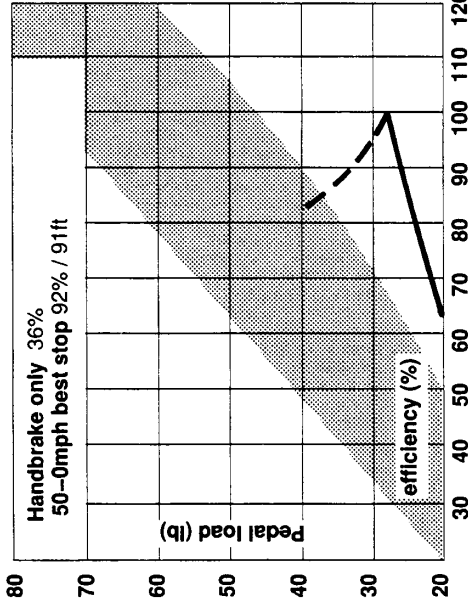
Normal range	mpg
Hard driving, heavy traffic	30
Short journeys in the suburbs	33
Motorway – 70mph cruising	38
Brisk driving, mixed roads	41 1/2
Gentle driving – rural roads	48 1/2
Typical mpg overall	40
Realistic tank range*	50 litres/440 miles

* based on gauge/warning lamp and filling station experience

SAFETY

Brakes

How pedal loads affect braking



Braking efficiency shown as a percentage of gravity (ie 100% = 1.0g). Ideally the braking curve should fall within the shaded zone of this graph. If it's above, the brakes are too heavy; if it's below, they are too light – particularly on cars without ABS. When the curve becomes broken, the wheels are skidding.

Fade test

How hard use or water affects braking. (Ideal brakes show no change.)

Pedal load needed for 75% stop (lb)

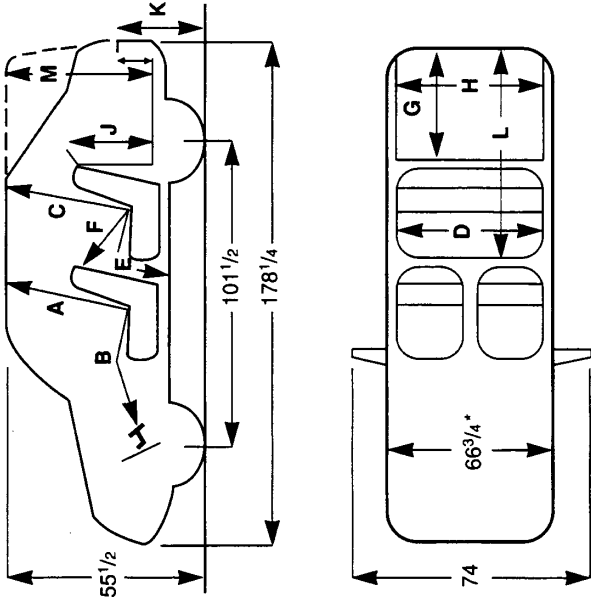
At start of test	23
After constant use	22
After severe use	27
After watersplash	-
Number of stops to recover	-

Safety check list

Steering	true 'feel' of the road?	<input checked="" type="checkbox"/>
Brakes	powerful?	<input checked="" type="checkbox"/>
	sensible effort?	<input checked="" type="checkbox"/>
	fade resistant?	<input checked="" type="checkbox"/>
Seatbelts	front – effective?	<input checked="" type="checkbox"/>
	convenient?	<input checked="" type="checkbox"/>
	rears – effective?	<input checked="" type="checkbox"/>
	convenient?	<input checked="" type="checkbox"/>
Head restraints	front – effective?	<input checked="" type="checkbox"/>
	rear – effective?	<input checked="" type="checkbox"/>
Interior	thoroughly padded?	<input checked="" type="checkbox"/>
	Fuel	shielded filler? protected tank?

MEASUREMENTS

Dimensions (inches) – Saloon and Liftback



* mirrors folded

Kerb weight in lb (full of fuel)

Inside (inches) Saloon (5 door Liftback in brackets, where different)

A Front headroom	36 1/2-38	G Load length	39
B Front legroom (min - max)	34-43	H Load floor width (mid - max)	38-62 1/2 (37 1/2/51 1/2)
C Rear headroom	36 (35)	J Load height	18 1/2-22 (19)
D Back seat width (between armrests)	53	K Sill height (inner/outer)	9 1/2/28
E Typical rear * legroom	42 1/2	L Load length (max)	68 (66)
F Typical rear * kneeroom	30	M Load height (to tailgate hinge)	NA (31)

* "Typical" represents the mean measurement behind the driver's seat set at 39in legroom and the passenger's seat set at 41in

saloon or Liftback, however. The central locking doesn't include the boot lid – this has its own keyhole or interior release trigger, which is a problem when you arrive back at the car with parcels and the burglar alarm is set.

Luggage and oddments stowage

Both four- and five-door versions have split/folding seatbacks, but the Liftback's cushions tilt forward as well; this is why there's less maximum load length, although they act as a protection against luggage. We're impressed by the serious attempts to retain security of the boot contents from outside or inside the car by various latches and inhibitors. Oddments spaces up front are plentiful, but they're not felt-lined; rear occupants are less well catered for – at least on the XLi. The boot is nicely lined in carpet, however, and Toyota thoroughness shows in the way that the spare wheel and tools are stowed, well-secured under a dummy floor panel. You can find room for your tin of paint under there, too – every Toyota is supplied with one.

Heating and ventilating

They're a bit stiff to rotate, but the controls give instant temperature variation and clever apportionment of fresh air to the facia vents. Restricted airflow (always at ambient temperature) accompanies floor and screen direction settings; a much stronger breeze, responsive to the heat slide, is delivered on the vent position. Thanks to the help of a quiet booster fan and separate rear footwell ducts, it's a very versatile system. The electric sunroof is equally hushed when it's tilted open, but there's more wind noise when it's fully open; this doesn't pummel your ears, though, as is sometimes the case.

Interior trim and equipment

The XLi doesn't look like a cut-price basic version, with its standard equipment inventory including power steering, central locking and an electric roof. The absence of the GLi's extra radio

speakers, electric mirrors and windows is no great sacrifice and there may be some private buyers who would welcome a really basic version for even less money. The RDS radio/cassette player has good scanning and reception on AM as well as FM (not always true of Japanese sets), but it's weaker on treble response and is distinctly hi-tech in control. Again, it's not a cut-to-the-bone ICE system for the cheapest model in the range.

Safety

Accident avoidance

Well-sorted suspension geometry ensures a mild mannered transition from nosedrift to obedient tuck-in, if you overdo things on a tight bend. The brake's servo, as on our non-ABS 1.6, on the other hand, takes too much upon itself. The best stop is powerful but occurs too suddenly and at too light a pedal pressure for easy skid-avoidance. This set-up would be well suited to cars fitted with the anti-lock option. The handbrake draw praise – its forward position is popular with shorter drivers who often have to contort themselves in other cars. It also feels light yet secure, handling a 1 in 3 hill with no trouble, as does the clutch.

Injury prevention

Our only reservation about the interior padding is the absence of reinforcement pads in the front seats. We don't like the belt height adjusters – they're stiff and don't make their way of working obvious enough – passengers tend to pull them apart! The same awkwardness applies to the rear sockets' stowage holes – pity, because they're a nice idea in principle.

Security

The standard-fitment burglar alarm went off for no reason in mid-test; we disarmed it afterwards by leaving a back door open when locking up. A tell-tale beside the ignition switch lets you know you've got it right. Two keys are provided – one won't operate the

glovebox or boot lid – and there's a really serious attempt to keep intruders out of the luggage area even if they've made a forced entry to the interior. This is especially commendable on a hatchback or saloon with the benefit of folding back seats. Of course, once the burglar alarm is set, you have to go back to the driver's keyhole; the central locking works only that side in any case, which can be inconvenient.

Money Matters

Value for money and depreciation

The starting price of the Carina E is quite a bit higher than its predecessor's and less well-equipped (often special editions) of rivals can be found at £2000 less than the price of the 1.6XLi. However, the exceptional performance of this 1.6 means that it often needs a rivals' 1.8 or even 2.0 litre version to keep pace with it. Our rivals chart illustrates this.

The other fact of motoring life is that depreciation is related to list price, so buying a "cheap" version, then adding the extras as options, is bad for depreciation. We don't know what UK production (and hence a greater supply of the Carina E) will do to the model's residual value; the scarcer previous version has certainly held its value well.

Warranty and servicing

This is a complex engine set-up, well beyond the scope of home maintenance so access to one of Toyota's 216-strong dealers is important. Servicing is due every 6000 miles: one hour for the short service and two hours, on average, for alternate 12,000-mile checks. Parts prices are more reasonable than one might expect – on a par with Rover's – and with UK production imminent, things are likely to become easier on the maintenance side. An interesting detail is that the platinum spark plugs aren't replaced for 60,000 miles on the 1.6 lean-burn engine.

Warranty terms give a generous

60,000-mile/three-year cover for mechanical and equipment items, the same three-year indemnity against surface paint blistering and twice as long for rust-through perforation. There are no nasty small print exclusions or chargeable checks.

Fuel economy

It's fatuous to look at fuel consumption in isolation – the performance and accommodation of any family car also have to be borne in mind. This is where the 1.6 version produces its irresistible hat trick – it's fit to meet the forthcoming controls on tailpipe emissions as well. The automatic uses a non-lean-burn, more powerful state of tune which suggests that it will be noticeably less frugal. Our last test on the old non-cat 2.0-litre manual gave 35mpg.

As things stand, this five-speed 1.6XLi leads the way in mpg terms, whether it's popping to the station or going on tour. Actually,

it's higher cruising speeds that spoil the figures most – our 70mph/motorway result is nothing special, whereas a cross-country journey always seemed to produce 40-45mpg, without our really trying. The alarmist gauge and tell-tale prevent you from exploiting the full tank range, but with this sort of economy, mileage between forecourt stops is magnificent anyway.

Durability

Build quality

It will be interesting to see if the new Burnaston assembly plant can match the impressive fit and finish of our Japanese-built test car. Whether you're peering at shutlines or simply marvelling at how effortlessly the sponge and leather glide over the sleek, windcheating body contours, this Carina is state of the art for a mass-produced offering.

Rust prevention

Vestigial mudflaps prevent stone-pecking at the backs of the wheel-arches, and the XLi's flush bumper shields, finished in unpainted polycarbonate, are the ideal nudge protectors; dearer versions are painted – more glamorous but less sensible. A lot of the new Carina is galvanised and with pre-painted sills, urethane-painted lower door panels and sound underbody coatings, the prospects for resisting rust on this Carina appear to be better than ever.

Reliability

People considering longer-term ownership should be aware that this Carina is bristling with high technology under the bonnet; if anything goes wrong, it will take an expert to fix it. On the other hand, Toyota has an enviable reputation for mechanical reliability, which should go a long way to assuage the fears of those who like to keep their cars a long time.

HOW IT COMPARES

	Engine cap/power (cc/bhp)	Max speed (mph)	30-70mph through gears (sec)	30-70mph in 5th/4th gears (sec)	Fuel economy (mpg)	Brakes best stop (%g/lb)	Maximum legroom – front (in)	Typical leg/kneeroom – rear (in)	Steering turns/circle (ft)	Overall length (in)
Toyota Carina E 1.6XL (4 door) (c)	1587/106	115	11.0	30.4/22.0	40	100/27	43	42 ¹ / ₂ /30	3.2/35 ¹ / ₂ (p)	178 ¹ / ₄
Vauxhall Cavalier 1.8iL (4 door) (c)	1796/90	112	12.3	31.9/21.7	37	107/90	42 ¹ / ₂	39 ¹ / ₂ /28 ¹ / ₄	3.4/34 (p)	174 ¹ / ₂
Peugeot 405 1.6GL (4 door) (c)	1580/89	106	13.3	31.3/21.5	36 ¹ / ₂	93/85	42 ¹ / ₄	39 ¹ / ₂ /28 ¹ / ₂	3.1/34 ¹ / ₂ (p)	173 ¹ / ₄
Nissan Primera 1.6LX (5 door)	1597/95	112	11.5	30.4/20.7	36 ¹ / ₂	100/50	43	39 ¹ / ₄ /28	3.1/35 ¹ / ₂ (p)	173 ¹ / ₄
VW Passat 1.8L (5 door) (c)	1781/90	111	12.6	25.1/19.0	35 ¹ / ₂	95/38	42 ¹ / ₂	43/32	3.3/33 (p)	180
Fiat Tempra 1.6SX (5 door)	1581/86	110	13.7	24.7/19.2	35	90/60	41 ¹ / ₂	40/28 ³ / ₄	3.0/35 ¹ / ₄	171 ¹ / ₂
Ford Sierra 2.0LX (4 door)	1998/109	112	11.4	26.0/18.5	33 ¹ / ₂	103/35	41 ¹ / ₂	39/30	4.0/34 ¹ / ₂	176
(c) catalyser fitted									(p) power assisted	





TECHNICAL SPECIFICATION

ENGINE

Type and size front-mounted, transverse 4 in line; water-cooled. 81mm bore x 77mm stroke = 1587cc. Iron block and alloy head; 5 main bearings

Compression ratio 9.5:1

Valve gear twin overhead camshafts (belt-driven inlet; skew gear drive from inlet to exhaust) actuating four valves per cylinder via bucket tappets. Special helical intake porting with swirl control valves

Fuel system Bosch multi-point electronic injection; 60-litre (13¹/₄-gallon) tank, with low-fuel warning lamp. Regulated three-way exhaust catalyser with Zirconia lean burn/oxygen sensor. Fuel required: unleaded only, 95 octane minimum

Ignition system fully programmed electronic, integrated with fuel system

Maximum power 106bhp at 6000rpm

Maximum torque 101 lb ft at 4600rpm

TRANSMISSION

Clutch 8.3in diaphragm spring; dry plate; hydraulically operated. Pedal load/travel: 25 lb/5in. Maximum gradient: 1 in 3

Gearbox 5-speed (all synchromesh) and reverse; cable operated. Ratios: first 3.55, second 1.90, third 1.23, fourth 0.89, fifth 0.73 and reverse 3.25:1.

Final drive 4.31:1, to front wheels

Mph per 1000rpm 21.9 in top, 17.9 in 4th

Rpm at 70mph 3200 in top gear

CHASSIS

Suspension front: independent by MacPherson damper/struts with L-shaped lower link, integral coil springs and an anti-roll bar. Rear: independent by MacPherson struts, lower twin transverse and single longitudinal arms, with coil springs and an anti-roll bar. Dampers: gas-filled telescopic all round

Steering power-assisted rack and pinion with 3.2 turns between full locks. Turning circles average 35¹/₂ft between kerbs, with 56¹/₄ft for one turn of the wheel

Wheels 5¹/₂in steel with 175/70R14 84H tyres (Dunlop SP200 on test car)

Brakes 10in ventilated discs front, 7.9in drums rear, with vacuum servo