

# Evinrude E-Tec V6

## The launch of the big one...

Paul Lemmer leaps over to the Continent to bring you the latest happenings from the world of E-Tec.



Following the acquisition of Evinrude and Johnson outboard motors by the Canadian giant Bombardier, February 12<sup>th</sup> 2003 saw the introduction of a completely new design of outboard motor possessing the much anticipated E-Tec technology. Last year RIB International was shown the first of this new breed of outboard engines ranging from 40hp through to 90hp. Amongst other things, these new motors required no 'running in' period or servicing for three years or 300 hours of use! Besides such an astounding technical breakthrough, the makers also promoted the E-Tec as the toughest and most economical in its class.

Certainly, those fortunate to have acquired or used the new E-Tecs have been singing their praises from the roof tops and my own personal experience of the 40hp and 90hp has been one of being genuinely impressed - from a performance and economy point of view. Nothing else currently on the market appears to provide the same

level of economy/performance allied to ease of ownership as these medium-sized engines. So, it was with great interest and enthusiasm that I accepted an invitation to travel to Portugal for the European press 'launch' of the larger V6 E-Tec outboard motors ranging from 200hp to 250hp.

Mounted on the transoms of an assortment of craft, from a small Zodiac RIB through to a modern two-berth sports cruiser and an open aluminium 'Buster' runabout, we were able to evaluate the various motors at different speeds and in varying sea conditions.

First up was the Evinrude E-Tec 225hp coupled to the 6.5m Buster; this was a surprisingly good combination, with the craft initially idling along in almost total silence before leaping onto the plane with absolutely no hesitation once the throttle had been 'planted'. I found this to be one of the best features of the new E-Tecs, the degree to which they spring to life the moment the throttle is applied, unlike the moderate

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slowness of response that four-strokes are known for.

The trial did not allow us to do back-to-back appraisals with comparable four-stroke or two-stroke motors, but it was the common view of the journalists present on the day, that these new motors appeared to perform outstandingly in terms of acceleration, top-end performance and mid-range torque. At tick-over, whilst the E-Tecs were commendably smooth and quiet, they were probably not quite as quiet as say, the Honda 225 four-stroke. Nevertheless, they still proved significantly quieter than a two stroke. At speed there was a reassuring and characteristic purr from the business end of the boat, quite unlike anything else I can recall and, whilst distinctive, it was a pleasant subdued sound that reminded me of a top-of-the-range sports Mercedes or BMW saloon car.

As we transferred from boat to boat, each of the new V6 E-Tec models displayed the same smooth, quiet



performance and it was interesting to compare the characteristics of the motors on the different styles of boat. All the assembled craft appeared to benefit from this new technology and the only 'hiccup' was as a result of yours truly attempting to bring a small French sports cruiser fitted with an E-Tec 200hp alongside the pontoon. Whilst showing off my usual 'party trick' of approaching the pontoon dead-on, at speed, I did what I usually do at about two metres from the inevitable collision: i.e. whip the wheel over and simultaneously shove her in reverse to bring the stern sharply round for a perfectly timed and graceful halt, with the side of the craft coming gently alongside the pontoon against the fenders. Unfortunately there appeared to be no reverse thrust from the propeller and increasing the power did little to reduce my progress; worse still the craft remained resolutely straight and suddenly the French tester who had allowed me to drive, probably against his better judgement, thrust his hand onto the throttle, forcing it to maximum power in reverse. This had a two-part effect, firstly the propeller just lost all grip, allowing the engine to hit maximum permissible revs, which then triggered something in the engine-management system to cut the motor! The resulting silence was swiftly followed by the inevitable sound of bow striking pontoon. Fortunately the craft rode up and over the pontoon before settling back into the water with a complement of ashen-faced crew wondering what had gone wrong.

Fortunately, damage was superficial; but once we had collected our thoughts we did get to wondering how it was the engine had responded with such a pathetic degree of zero thrust. Based upon my recent experiences aboard RIB International's Revenger 715, I would say that the problem seems to lie in the design of the propeller. Whatever the case, it could be expensive, if not catastrophic to have an emergency reverse procedure overruled by the engine management system.

This little incident aside, the latest V6 E-Tec motors are clearly a 'class act' with superb performance, outstanding class leading economy and, best news of all, the claim at least, of the 'lowest pollution levels of any outboard motor in this horsepower range'. (The latter applying to both two and four-strokes.)

With environmental issues playing an ever-increasing role in combustion engine pollution outputs, it is no longer possible to simply increase power by over-fuelling the motor. Now it is essential to reduce emissions and take an environmentally responsible position. Evinrude, along with all other outboard engine manufacturers, have a duty to provide motors that not only help to reduce emissions, but actually exceed the latest stringent regulations laid down by various authorities throughout the world. Evinrude also claim to have the lowest emissions of any production internal combustion engine currently available, and because of the unique

technology employed, the efficiency of the motors also has the effect of ensuring excellent fuel-consumption figures.

Well, that actually forms the result of the test itself, but for the more technically minded of our readers, the following briefly lays out how Evinrude have achieved such a remarkable set of statistics.

Like all modern high-pressure injected outboard motors, the E-Tecs are managed by a very sophisticated computer that 'controls' just about every function on the motor. Electronic sensors are situated in all key areas of the engine and these constantly feed information back to the central 'hub', which in turn makes minute adjustments as required.

The stratified fuel combustion chamber is the secret of the new technology; with fuel reaching the exhaust port only after it has closed - which evidently occurs quicker than on many 'traditional' direct injection engines! With this design, fuel simply cannot escape from the chamber, even at tick-over. The amount of fuel introduced is carefully monitored, so that only exactly what is needed at any particular moment in the engine's cycle is introduced and then immediately burned without waste. As all operations are governed, including operating temperature, barometric pressure and injector variation, the power delivery from tick-over right up to maximum RPM is super smooth and the pay back is 80 per cent less carbon-monoxide emission than an equivalent four-stroke on tick-over.

Lubrication for any internal combustion engine comes from the presence of oil around all moving parts and the E-Tec is no exception. However, it is in the delivery that makes this engine so clever, because, unlike a conventional two-stroke, the E-Tec eliminates the mixing of oil and fuel. The special E-Tec oil is introduced into the engine at the exact rate required to provide just the right amount of lubrication; once again, at no time does the oil mix with the fuel. Lubricating oil passes up through the connecting rods to 'targeted' areas and because of the efficiency of this system approximately 50 per cent less oil is required than in the case of a conventional four-stroke or 75 per cent less than a conventional two-stroke would use. Because such a small amount of oil is used and there is no left over oil residue to drain off, Evinrude claim that the E-Tec motor is the cleanest running outboard motor ever developed and the bonus to the user is exceptionally low maintenance and servicing costs.

One could be forgiven for not understanding the words 'signature sound', but this is the name given to the effect generated by the special foam based sound-damping moulding that surrounds the engine. The acoustic treatment it provides, coupled with the T-Tec 'air silencer' on the induction system, all combine to reduce air-borne

sound and therefore operating noise levels.

So, there you have it. Ultimately of course, it's time that will prove if the E-Tec is truly as good as it would first appear. But if you would like to know more about these new engines, then contact your local Evinrude dealer or the UK distributors, Jets Marivent themselves, at [www.jetsmarivent.com](http://www.jetsmarivent.com) for further information.

Paul Lemmer



**EVINRUDE**  
**E-TEC V6**

## EVINRUDE E-TEC 250 V6

### TECHNICAL DATA

Model:	a) E250DPL b) E25DPX c) E250DCX d) E250DPZ e) E250DCZ
Shaft Length mm (in) / Colour:	a) 508 (20") / Blue b) c) 635 (25") / White d) e) 762 (30") / White
Weight kg (lbs):	a) 238 (524) b) c) 241 (532) d) e) 244 (538)
Engine Type:	V-6 90° E-TEC Direct Injection
Bore x Stroke mm (in):	98 x 73 (3.854 x 2.858)
Displacement cc in (cu):	3279 (200)
Starting:	Electric
Trim Method:	FasTrak™ Power Trim and Tilt
Propshaft Kilowatts (hp):	187kw (250 HP) @ 5150 RPM
Full Throttle Operating Range:	4500-5800 RPM
Gear Ratio:	1.85:1
Fuel Induction:	E-TEC Direct Fuel Injection with stratified low RPM combustion mode
Alternator:	Variable Voltage Computer, Controlled 133 Amp / 1800 watt output with regulator
Cooling:	Pressure and Temperature Control LED, Water Cooled
Steering:	Remote
Limited Warranty:	3 Years Non-Declining
Emissions Compliance:	EPA, CARB 3 STAR, EU 2006