

Tohatsu TLDI 90

The TLDI 90 is based on the carbide two-stroke M90A released locally in 1987, but has the Orbital Combustion Process (OCP) developed by the Orbital Engine Corporation of West Australia, which is also used in Mercury OptiMax engines.

Tohatsu's TLDI or Tohatsu Low Pressure Direct Injection system differs from OptiMax in that diagnosis of any engine faults can be done in the field without needing a laptop computer. A total of 28 troubleshooting codes are available using combinations of lights in the analogue tachometer.

The TLDI system differs from E-TEC in that fuel is mixed with air and injected as an atomised spray into the combustion chambers. The air/fuel mix is injected at relatively low 6.4bar or 90psi enabling standard injectors to be employed, but a belt-driven air compressor and an external battery are used.

A minimum battery voltage of 10.8 is needed to operate the electronic engine management system and a single throttle body inducts the air, while an electric oil pump accurately distributes engine oil.

A nice touch is the variable trolling revs achieved by pushing in the ignition key for a second at a time. The rev increments are every 100, from 700 to 900, for precise setting of favourite trolling speeds.

All Tohatsu dealers have to do to break in a new engine is 'force feed' the engine oil for the first half hour, achieved by re-setting the oil pump control lever and running the engine at idling speed in a test tank. Owners then follow the normal 10-hour break-in procedure.

Currently, the TLDI 90 meets OEDA '2 Star' exhaust emission requirements, but Tohatsu Corporation says the engine will meet '3 Star' next year.

Mounted on a 5.05m Haines Signature 520C Cuddy Cabin, pushing a total of 920kg including two adults and spinning a 15in stainless steel Power Tech prop, the demo 90 was an ideal engine for this hull, which is rated to 115hp. It started instantly hot or cold and didn't blow any oil smoke, nor was there an oil smell when backing upwind. Vibration and noise levels across the entire rev range were low for a three-cylinder engine, though slightly higher than the E-TEC 90.

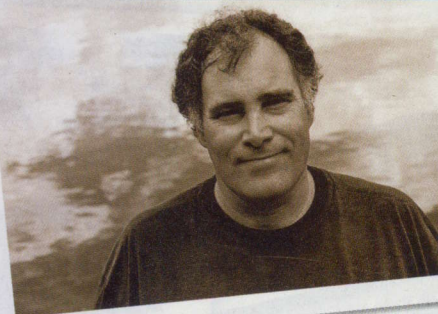
Shifting into forward or reverse was not as smooth as the E-TEC 90. The trolling averages were 2.2kt and 0.7Lph at 700 revs and a clean plane was achieved at 13.8kt and 3000 revs. Cruising at 4000 revs the averages were 22.0kt and 12.8Lph, but through full lock figure-of-eight turns there was some prop ventilation.

The WOT averages were 31.8kt and 27.6Lph at 5600 revs with

reasonably low noise levels.

Powerhead access is very good, much better than the E-TEC 90 without having to remove the lower cowl halves. Recommended servicing intervals after the 10-hour initial check-up are every 50 hours or six months and the water pump impeller should be replaced every 100 hours or annually.

The warranty is three years for recreational usage.



SPECIFICATIONS – Tohatsu TLDI 90

Engine type	Loopcharged three-cylinder DFI two-stroke
Prop hp/RPM	88.7/5500
WOT rev range	5150–5850
Piston displacement (cc)	1267
Ignition system	Electronic engine management
Charging circuit (amps)	23 amps
Fuel type	ULP 91 RON
Fuel capacity (L)	25 plastic remote tank
Oil type	Valvoline TC-W3 High Performance
Fuel/oil ratios	50:1–450:1
Gear ratio	2:1
Transom height (in)	20/25
Weights (kg)	144/146
Rec retail	
longshaft April 07TBA	\$11,465