Yanmar 4TNV94-FHT (69-88 kW)

Three power nodes, one integration plan

YANMAR'S THREE-TIER DIESEL ENGINE STRATEGY DELIVERS OPTIMISED POWER, PACKAGING AND FUEL EFFICIENCY ACROSS COMPACT TO HEAVY CONSTRUCTION EQUIPMENT

For OEMs, specifying a diesel engine isn't merely a numbers game. It involves aligning combustion, controls, and aftertreatment with the duty cycle, all while minimising packaging and total cost of ownership. Yanmar's 4TNV94FHT, 4TN101, and 4TN107 form a consistent range, from smaller, compact equipment to heavy construction machinery.

Each engine is built on a standard set of technologies, resulting in a three-tier power strategy that covers everything from skid steers and compact loaders to 23-tonne excavators, motor graders and much more.

On the newly developed high-power nodes (4TN101/4TN107), Yanmar's combustion development targets double-digit reductions in fuel consumption compared to similar-sized engines with equivalent output, while maintaining a compact aftertreatment layout.

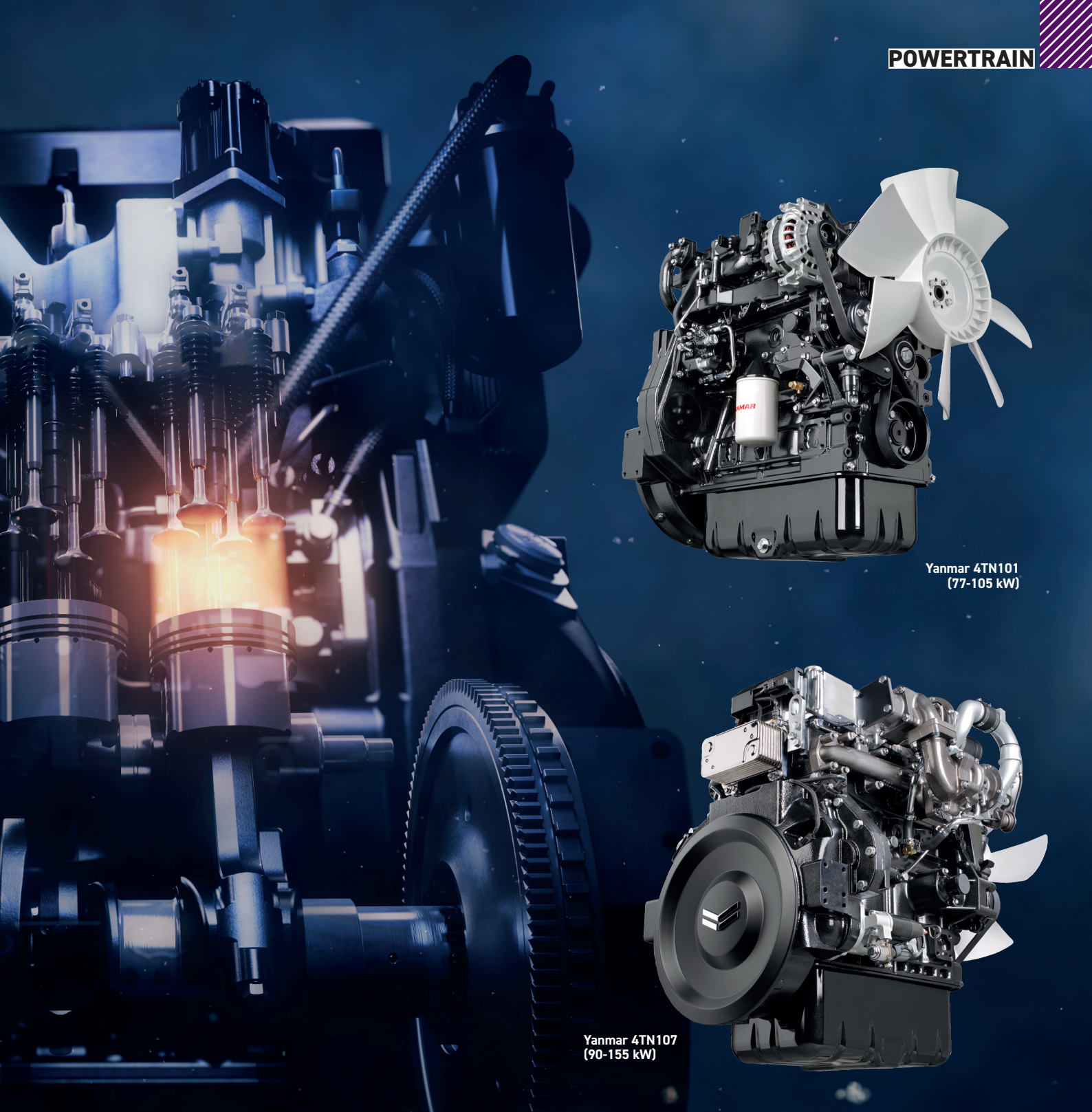
Compact, responsive and easy to package

The 4TNV94FHT targets skid steer loaders, compact wheel loaders, telehandlers, tractors, site dumpers, and road sweepers. With a displacement of 3.054L, it delivers 69.8–88.4kW at 2,000–2,500rpm and produces 378-410Nm at 1,450–1,700rpm. It uses common rail direct injection, turbo-intercooling, and cooled EGR. The aftertreatment is designed to be compactly mounted on top of the engine, and the long block remains easy to install.

The mid-power linchpin

The 4TN101 is designed for mid-size excavators (over 10 tonnes), backhoe loaders, soil compactors, wheel loaders, telehandlers, tractors, forestry machinery and road pavers. At 3.8L, it falls within the 77–105kW range and is characterised by a very flat torque curve, peaking at 550Nm at 1,500rpm.

It combines a common rail system, full authority electronics, and after-cooled turbocharging with a separate DPF and SCR layout, a deliberate choice that enhances durability and allows for more flexible placement on the machine. A primary design aim was to reduce the total cost of ownership, including measures to decrease lube oil



Yanmar 4TN101 (77-105 kW)

Yanmar 4TN107 (90-155 kW)

consumption and achieve the best fuel efficiency in its class.

High output for heavy equipment

The 4TN107 targets large excavators (23-tonne), wheel loaders, soil compactors, tractors, and motor graders.

The 4.6L engine delivers 90–155kW, emphasising high power density and rapid transient response. In its two-stage turbo setup, it reaches 34kW/L and produces a maximum torque of up to 805Nm.

The compact aftertreatment and cooling design was prioritised to optimise installation space and visibility, while maintaining easy access to daily service points.

Emissions, uptime, and operator experience

All three engines utilise a DPF control strategy designed to maintain operation across a wide range of loads and ambient conditions, including high altitudes, low temperatures, and light- and heavy-duty cycles. On the 4TN101 and 4TN107, the DPF+SCR architecture and controls were developed specifically to comply with EU Stage V, while maintaining machine operation without forced stops.

From the operator's perspective, the combination of early torque, stable mid-range response, and calibrated regeneration logic preserves hydraulic feel during precise work and minimises unnecessary derates.

For fleet owners, the extended DPF interval and fuel efficiency reduce downtime and exposure to consumables costs, which are key factors in the total cost of ownership.

Local dressing

Finally, the Local Dressing programme in Italy accelerates prototypes and early builds by fitting base engines to regional application specifications. For OEMs managing multiple derivatives from a single chassis family, this can reduce timeline risks and streamline the transition from pilot to series production, while maintaining quality. **iVT**

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