

FE 250

Undergoing multiple revisions to further enhance its proven technical abilities, the FE 250 features a new engine, frame, and suspension for 2024 for improved performance. Featuring a lightweight, compact, and redesigned engine, all riders are set to benefit from the refinements with the power delivery easily customisable for a personalised riding experience. Together with a new frame and WP suspension, the rideability and handling is much improved with the revised, ergonomic bodywork offering even greater control. Complete with a fresh, Swedish-inspired look and assembled with premium components throughout, the FE 250 is capable of competing at the highest level of enduro in standard form.

Engine

The newly designed FE 250 engine is tilted 2° backwards and therefore comes with a repositioned sprocket, which is 3 mm lower compared to the previous generation.

The total engine height has been reduced by 8 mm to improve mass centralization and reduce weight (ca. 100 g lower weight). Another benefit of this new design is an improved anti squat behaviour of the whole chassis.

Service markers on the engine (▲) clearly show where to use washers, making maintenance and servicing easier than in the past.

All major components and shaft arrangements are carefully designed and placed to best suit the performance and handling characteristics of the overall package. The 250cc engine is not only light at 27.8 kg but also remarkably powerful.

- Light and compact engine design for optimised mass-centralisation
- Outstanding, high revving performance engine with over 12,800 rpm rev-limit
- Low friction design, reducing overall drag and vibrations
- Engine tilted 2° backwards with repositioned sprocket (3 mm lower)
- Engine height reduced by 8 mm for improved mass centralization, reduced weight and improving anti squat behaviour
 - Weight of 2024 engine: 27.8 kg
 - Weight of 2023 engine: 27.9 kg
 - Including oil, shift lever, sprocket and vent hose
- Improved serviceability of engine internals with added service markers
- Maps (1 white, 2 green) differ mainly in the partial load range and in the acceleration functions, which makes the difference clearly noticeable, but difficult to measure.

Cylinder head

The fully redesigned DOHC cylinder head features finger followers with a Diamond Like Carbon (DLC) coating resulting in minimal friction and optimal performance. These actuate large titanium valves (32.5 mm intake, 27.5 mm exhaust) which at the 12,800-rpm rev-limit open and close multiple times each second introducing fuel/air mixture to the carefully designed combustion chamber, delivering efficient and optimal power throughout the rev-range.

The new 27.5 mm exhaust valve is a result of the revised bore/stroke ratio, delivering an optimized gas flow. Valve timings have been unchanged compared to the previous generation, but the new valve measurements now improve the overall package in combination with the redesigned camshaft.

For improved serviceability and maintenance works within the engine, the redesigned camshaft bearing bridge is screwed and increases stiffness. Also, the head gasket comes with a new “stopper design”, improving the sealing function under extreme conditions.

- Fully redesigned cylinder head for improved durability and serviceability
- Finger followers with DLC coating, reducing friction and guaranteeing optimal performance
- Large titanium valves (32.5 mm intake, 27.5 mm exhaust) with new 27.5 mm exhaust valve for optimized gas flow with revised bore/stroke
- New lightweight valve cover with reduced number of mounting screws (only 2)
- Redesigned camshaft
- New camshaft bearing bridge increasing stiffness and improving serviceability (screwed design)

- New cylinder head gasket with stopper design, improving sealing function under extreme conditions

Cylinder and piston

The new 81 mm bore cylinder houses a forged bridged-box-type piston made by CP. Both, the cylinder and piston are professionally engineered from high strength aluminium resulting in outstanding performance and reliability. The compression ratio is 14.4:1, which is nearly identical to the FC 250 model. The stroke has been adapted to 48.5 mm.

Thanks to the CFD optimized combustion chamber, the inlet port got smaller resulting in improved engine responsiveness.

- Larger 81 mm bore and larger diameter exhaust valves for high-revving and quick response
- Forged bridged-box-type piston guaranteeing high performance and reliability
- New 81 mm bore and 48.5 mm stroke ratio
- CFD optimized combustion chamber with smaller inlet port for improved engine responsiveness
- Increased compression ratio to 14.4:1 → increased torque and peak power

Crankshaft

The crankshaft is designed to offer the best possible performance all while being placed in the perfect position to centralize oscillating masses for optimal handling. The plain big end bearing features two force-fitted bearing shells ensuring maximum reliability and durability guaranteeing long service intervals of 135 hours (big engine service in normal usage, in competition usage > 70 hours).

- Plain big end bearing with force-fitted bearing shells for increased durability and service intervals
- Friction bearing on the counter-balancer shaft for increased durability

Crankcases

The crankcase of the FE 250 engine has been redesigned and now comes with identical engine mounting points as the 350 and also FE 450 engines.

The new FE 250 engine is designed with mass centralisation as one of the main criteria. As a result, the crankcases have been designed to house the internal components of the engine in the perfect position to achieve the ideal centre of gravity while adding the least possible weight. The casings are manufactured using a high-pressure die cast production process, resulting in thin wall thickness while retaining exceptional reliability. The Husqvarna crown logo gives the bronze powder coated enduro specific and noise reducing clutch cover a premium and durable look. Additional oil scrappers on the ignition cover round of the package.

- Light and compact crankcase, optimised mass-centralisation
- Redesigned crankcase with new, unified engine mounts
- High pressure die-cast production process with thin walls for reduced weight, while maintaining strength
- Enduro specific clutch cover (same look but lower noise compared to FC models)

Gearbox

Produced by Pankl Racing Systems, the new 6-speed gearbox is designed to be extremely light and durable, featuring a primary gearing ratio of 24:72.

A redesign of the shift shaft reduces the operating forces of gear changes. On the shift drum a new Quickshift sensor is positioned, allowing clutchless upshifts. The function can be activated/deactivated via the new QS button on the Map Select Switch, located on the left side of the handlebar.

The new gear lever is designed to prevent dirt build-up and ensures perfect gear selection in all conditions. An advanced gear sensor allows for specific engine maps delivering the best possible performance in each gear.

- 6-speed gearbox by Pankl Racing Systems with enduro-specific transmission ratio for exceptional durability and improved shifting
- Redesigned shift shaft, reducing operating force of gear changes

- Quickshift sensor positioned on the shift drum allows clutchless upshifts, the function can be activated/deactivated via the QS button on the Map Select Switch on the left side of the handlebar
- Integrated gear sensor for specific engine maps for each gear and seamless upshifts

DDS clutch

The FE 250 features a DDS (Dampened Diaphragm Steel) clutch. The exclusive characteristics of this system include a single diaphragm steel pressure plate instead of traditional coil springs. It integrates a damping system for better traction and durability. The clutch basket is a single-piece CNC machined steel component that allows the use of thin steel liners and contributes to the compact design of the engine.

The main improvement includes a better clutch cooling from the pressure lubrication, reducing clutch fade in high stress usage. The clutch basket has been redesigned and adapted for the new 6-speed transmission.

- Lightweight DDS clutch featuring consistent action and exceptional durability
- Improved clutch cooling from pressure lubrication, reducing clutch fade from high stress
- Redesigned clutch basket for adapted 6-speed transmission ratio
- Enduro specific clutch cover for reduced noise output