

FE 350

Striking a competitive balance between power and handling, the FE 350 is undoubtedly the most versatile enduro machine on the market. Powered by a new engine, which is positioned inside the new frame to centralise mass, together with new WP XACT Suspension, handling and overall performance is much improved for 2024. Complete with a fresh, Swedish-inspired look and assembled with premium components throughout, the FE 350 is capable of competing at the highest level of enduro in standard form.

Engine

The newly designed FE 350 engine is tilted 2° backwards and therefore comes with a repositioned sprocket, which is 3 mm lower compared to the previous generation. The big benefit of this new design is 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 350cc engine is not only light at 28.8 kg but also remarkably powerful.
- Light and compact engine design for optimised mass-centralisation
 - Weight of 2024 engine 28.8 kg
 - Weight of 2023 engine 28.0 kg
 - Including oil, shift lever, sprocket, and vent hose
- Outstanding, high revving performance engine with 11,500 rpm rev-limit
- Low friction design, reducing overall drag and vibrations
- Engine tilted 2° backwards with repositioned sprocket (3 mm lower)
- 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 steel valves (36.3 mm intake, 29.1 mm exhaust) which at the 11,500-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 29.1 mm exhaust valve is a result of the redesigned engine to deliver an optimized gas flow. Valve timings work perfectly in harmony with the redesigned and new camshaft.

For improved serviceability and maintenance works within the engine, the redesigned camshaft bearing bridge is screwed and increases stiffness.

- Fully redesigned cylinder head for improved durability and serviceability
- Finger followers with DLC coating, reducing friction and guaranteeing optimal performance
- Large steel valves (36.3 mm intake, 29.1 mm exhaust) for optimized gas flow
- New lightweight valve cover with reduced number of mounting screws (only 2)
- Redesigned camshaft and adapted valve timings
- New camshaft bearing bridge increasing stiffness and improving serviceability (screwed design)

Cylinder and piston

The 88 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 13.7:1.

- Large 88 mm bore and diameter optimized exhaust valves for high-revving and quick response
- Forged bridged-box-type piston guaranteeing high performance and reliability
- CFD optimized combustion chamber with optimized valve guides and valve shaft diameters for improved engine responsiveness
- Compression ratio of 13.7:1 for increased torque and peak power

Crankshaft

The crankshaft is designed to offer the best possible performance 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. This guarantees 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 350 engine has been redesigned and now comes with identical engine mounting points as the 250 and also FE 450 engines.

The new FE 350 engine is designed with mass centralisation as one of the main criteria. 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 off 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 and 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 350 features a Dampened Diaphragm Steel (DDS) 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