FC 350

Engine

The FC 350 engine is tilted 2° backwards when compared to the previous generation which repositions the front sprocket to be 3 mm lower. The engine is designed to offer improved mass centralisation for enhanced handling.

Added service markers on the engine (▲) clearly show where to use washers, making maintenance and service 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 27.2 kg, but also remarkably powerful with an overall output of more than 57 hp.

- Engine design → light and compact for optimised mass centralisation
- Low-friction design → reduces overall drag and vibration
- Outstanding high-revving performance engine → over 57 hp peak power and 13,400-rpm rev limit
- Easy serviceability of engine internals with added service markers

Cylinder head

The DOHC cylinder head features finger followers with a DLC (Diamond Like Carbon) coating resulting in minimal friction and optimal performance. These actuate large titanium valves (36.3 mm intake, 29.1 mm exhaust) which at the 13,400-rpm rev limit, open and close multiple times every second to deliver the fuel/air mixture to the carefully designed combustion chamber for optimal power throughout the rev-range. Valve timings have been adapted to work perfectly in harmony with the camshaft.

For advanced serviceability and maintenance work within the engine, the camshaft bearing bridge is screwed and thus increases stiffness.

- DOHC cylinder head → Outstanding durability and serviceability
- Finger followers with DLC coating → reduce friction and guarantee optimal performance
- Large titanium valves (36.3 mm intake, 29.1 mm exhaust) → optimal gas flow
- Optimized camshaft → optimal valve timing and improved durability
- 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 to create a compression ratio of 14.6:1 for outstanding torque and peak performance.

Optimized valve guides and valve shaft diameters in the Computational Fluid Dynamics (CFD) optimised combustion chamber provide exceptional engine responsiveness.

- Large 88 mm bore and diameter optimized exhaust valves → high-revving, quick response
- CFD optimised combustion chamber → optimized valve guides and valve shaft diameters for exceptional engine responsiveness
- Compression ratio of 14.6:1 → outstanding torque and peak power
- Forged bridged-box-type piston → high performance and reliability

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 90 hours.

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

Crankcases

The FC 350 engine is designed with mass centralisation and weight minimization as the main criteria. As a result, the crankcases have been designed to house the internal components of the engine in the perfect positions to achieve the ideal centre of gravity at the lowest possible weight. Engine mounting points are the same as on the FC 450 engine.

The casings are manufactured using a high-pressure die-cast production process, resulting in thin wall thickness while retaining exceptional reliability.

- Light and compact crankcases → optimised mass centralisation
- Optimized engine mounting points (as on FC 450)
- High-pressure die-cast production process → thin walls for reduced weight while maintaining strength

Gearbox

Produced by Pankl Racing Systems, the 5-speed gearbox is designed to be extremely light and durable while featuring an optimized transmission ratio (24:72). The optimized shift shaft reduces the operating forces required for gear changes with a Quickshifter allowing smooth upshifts. The function can be activated/deactivated via the QS marked button on the Map Select Switch, located on the left side of the handlebar.

The shift fork has a low-friction coating for smoother shifting, while the gear lever is designed to prevent dirt build-up and ensure perfect gear selection in all conditions. An advanced gear sensor allows for specific engine maps to deliver the best possible performance in each gear.

- 5-speed gearbox by Pankl Racing Systems → optimized transmission ratio (24:72) and exceptional durability and effortless shifting
- Optimized shift shaft → reduced operating force required for gear changes
- Integrated Quickshifter allows clutchless upshifts → seamless shifting function can be activated/deactivated with Map Select Switch
- Integrated gear sensor → specific engine maps for each gear

DS clutch

The FC 350 features a Diaphragm Steel (DS) clutch. The exclusive characteristics of this system include a single diaphragm steel pressure plate instead of traditional coil springs.

The clutch basket features the same design as on the FC 450 but adapted to the transmission ratio. It 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.

- Clutch basket with same design as FC 450 → adapted for transmission ratio

DS clutch → lightweight with consistent action and exceptional durability