



FC 450 2025

Media information



For 2025, the motocross line-up from Husqvarna Mobility expands to seven models. Each competition-focused machine is expertly crafted with the latest technology and premium components.

The range also includes two new 2-stroke models – the TC 150 and TC 300.

Every machine is built around an updated chassis, which was first introduced for 2024. Now, with material removed around the upper shock mount and steering head, the flex characteristics of the frame are optimised for improved cornering while retaining straight-line stability. In addition, new engine mounts for the FC range further enhances the agility of each machine.

The new TC 150 has been introduced to bridge the gap between the TC 125 and the TC 250. Based upon the class-leading TC 125, the 150 cc machine provides riders competing against 250 cc 4-stroke machines with improved levels of power and torque. The same philosophy applies to the TC 300. Built from the proven foundations of the TC 250, the 300 cc model is capable of racing with 450 cc 4-strokes thanks to its versatile engine, which delivers exceptional torque and peak power.

The FC 250 and FC 350 retain their state-of-the-art, DOHC engines, which are designed to be lightweight and play a vital role in elevating overall handling. Together with the FC 450 – the flagship model in the line-up – all 4-stroke models are equipped with the latest technology and electronic rider aids for unrivalled performance.

All motorcycles are finished with updated bodywork and new graphics, lower friction linkage bearing seals, a slightly taller and wider seat, and premium components including Dunlop MX34 tyres, Brembo clutch and brake systems, ProTaper handlebars, and ODI grips.

Technical highlights

- Revised chassis for enhanced flex and cornering agility
- New linkage seals and linkage bolt for smoother shock performance and weight savings
- New Dunlop Geomax MX34 tyres for exceptional grip on all surfaces
- New engine mounts on FC models further improve chassis flex
- New WP suspension settings adapted to the revised chassis
- Revised radiator shrouds finished with new graphics
- Revised swingarm improves durability of the chain slider
- Slightly higher and wider seat with a high-grip cover for maximum control and manoeuvrability
- Multifunctional Map Select Switch offers two engine maps and houses the Quickshifter, Traction, and Launch Control buttons on all 4-stroke models
- Aluminium-polyamide hybrid subframe construction provides specifically calculated rigidity and advanced durability
- WP XACT 48 mm front forks with AER technology offer progressive end-of-stroke damping
- WP XACT rear shock design with CFD-optimised main piston and tool-free adjusters
- High-performance Brembo hydraulic clutch system
- Premium-quality ProTaper handlebars and ODI grips
- Electric starter on all models powered by a lightweight Li-Ion 2.0 Ah battery



Features and benefits

Frame

The hydro-formed, laser-cut and robot-welded frame is expertly crafted. Constructed with specifically calculated parameters of longitudinal and torsional flex, the frame provides exceptional rider feedback, energy absorption and straight-line stability. Additionally, the frame features forged brackets for mounting the skid plate available as technical accessory.

Rotational masses in the frame and the forged steering head connection have been specifically positioned to reduce chassis squat. Together with the shock mounting, which is not connected to the main tube, the anti-squat of the chassis has been optimised for exceptional balance on acceleration and turning. Also, the wall thickness of the frame has been optimised to achieve reliability and specific rigidity in high stress areas. New engine mounts with cut-outs on the FC models improve the chassis flex characteristics and reduce weight while keeping stability at an unrivalled level.

For all 2025 models, material around the shock mount and steering head on the frame has been removed with the wall thickness towards the front of the frame reduced.

The effects of these changes are improved chassis flex and a 300 g weight saving. On track, the changes are noticeable with refined cornering behaviour, particularly on the approach to corners. Riders of all levels will benefit from these revisions.

Another highlight of the frame design is that the footrest mounts are positioned inwards, which makes them less susceptible to hooking on deep ruts or when scrubbing jumps. The overall size of the footrests has been optimised, designed with the help of state-of-the-art computational fluid dynamics (CFD). The one-piece steering head seal allows easier mounting in case of replacement or service and offers outstanding reliability.

The frame is finished off in a premium metallic blue powder coating. The standard frame protectors feature an optimised topology, guaranteeing superior protection, durability, and advanced grip in any condition.

- Revised frame offers improved flex and a 300 g weight reduction
- New engine mounts on FC models with cut-outs improve flex characteristics while reducing weight
- Specifically engineered longitudinal rigidity → exceptional rider feedback, energy absorption, and stability
- Optimised placement of rotational masses and shock mounting → refined anti-squat behaviour of the chassis
- Topology-optimised frame wall thickness for specific rigidity and reliability in high-stress areas
- Footrest mounts positioned inwards for reduced risk of hooking on deep ruts or when scrubbing
- Service friendly one-piece steering head seal → easier mounting, outstanding reliability
- Durable powder coated finish with standard frame protectors

Polyamide-reinforced aluminium subframe

Using 60% polyamide and 40% aluminium, the two-piece subframe has a total weight of just 1.8 kg. With the help of computational dynamics, specific rigidity was engineered into the light and robust subframe to deliver outstanding handling and rider comfort.

The lower subframe spars and frame mounts are made from cast aluminium to guarantee robustness and reliability where needed. The upper subframe is made from injection-moulded polyamide, enabling specific flex characteristics and allowing a lightweight construction.

- Topology-optimised polyamide/aluminium hybrid construction
- Lower subframe spars and frame mounts made from cast aluminium profiles → extremely robust and reliable with no weld joints
- Upper subframe made from injection-moulded polyamide → specific rigidity and flex benefit handling and comfort

Swingarm

The hollow die-cast aluminium swingarm is designed to offer optimal stiffness and reliability at the lowest possible weight. The topology has been optimised for optimal rigidity, while a state-of-the-art casting process reduces weight. To optimise and match the chassis flex characteristics, a 22 mm rear axle is fitted.

Additionally, the chain guard and chain slider have been designed for exceptional durability and less susceptibility to hooking on external objects. This design will help reduce dirt build up around the swingarm and chain guard, especially in extreme muddy conditions.

The machining of the swingarm has been revised for 2025 to improve the durability of the chain slider. The geometry of the chain slider itself has also been updated.

Chain adjustment markings are also visible from above to make for simpler adjustment.

- Update of swingarm and chain slider → more durable design
- Transitions aligned with swingarm surface; spring-steel mounted for optimal durability
- Die-cast swingarm → topology-optimised for optimal rigidity
- 22 mm rear axle optimised to match chassis flex characteristics

WP XACT front fork with AER technology

The 48 mm split air fork features a capsulated air spring and pressurised oil chamber for progressive and consistent damping. Oil and air bypasses reduce pressure peaks and, in combination with a midvalve damping system, the fork provides exceptional feedback and rider comfort. A hydrostop helps prevent bottoming in the last 40 mm of travel. Additionally, rebound is also reduced leading to the fork being lower on initial acceleration after a hard landing.

Settings are easily adjusted via a single air-pressure preload valve, as well as via easy access click adjusters for compression and rebound.

The fork protection ring increases protection against dirt intrusion on the fork seals. Additionally, the air pump needed to adjust the pressure of the air spring is provided as standard.

- Updated suspension settings → adjusted to updated frame (less weight, more flex) and rear linkage changes (weight, stiffness)
- WP XACT front fork → 48 mm air type with split damping function
- Midvalve damping system → exceptional damping and consistent performance
- Capsulated air spring and pressurised oil chamber → progressive and consistent damping
- Hydrostop in fork legs → exceptional bottoming resistance and reduced rebound
 - More progressive damping in last 40 mm of travel (total 305 mm)
 - Reduced rebound → fork stays lower on initial acceleration after hard landing
- Easy access clicker dials → simple and fast clicker settings
- Fork protection rings → increased protection against dirt intrusion

CNC-machined triple clamps

Made from high-grade aluminium, the 22 mm offset CNC-machined triple clamps provide a precise geometry of the fork clamps to ensure perfect alignment of the fork tubes and highly responsive and smooth fork action. The upper triple clamp works in harmony with the front forks offering superior handling and stability. A 3-way handlebar adjustment is standard and allows for customisable ergonomics.

Topology-optimised handlebar mounts provide increased grip surface for less handlebar twist at the same weight as the previous generation. Additionally, they allow for both rubber-damped and fixed mounting providing a customisable handlebar flex.

- Rubber-damped → less vibration, less precise front-end feel (OE)
- Fixed → increased vibration, more precise front-end feel
- The front number plate integrates a protector which covers the lower triple clamp and prevents wear caused by roost.
- CNC-machined aluminium with anodised surface → finest quality and reliability
- Perfect clamping and alignment → smooth fork action

- Topology-optimised handlebar mounts → large grip surface for less handlebar twist
- Rubber damping on top clamp → reduces vibration, increases comfort
- Adjustable handlebar position → customisable ergonomics

WP XACT rear shock

The computational fluid dynamics (CFD) optimised main piston is used for exceptional initial comfort and provides strong hold-up. Differently sized flow holes allow the shims to open more easily and reduces the overall stress of oil flow and pressure on the shims. Reduced weight also means less moving mass, resulting in lower forces on the main piston. A pressure balance inside the shock ensures consistent damping, resulting in superior rider comfort and feel.

A fully hand-adjustable dual compression control concept allows high and low-speed settings to be changed by hand. Together with the rebound adjuster, which is hand or tool adjustable, riders can adjust their shock settings without tools and without the help of a mechanic at the racetrack.

On top of the tool-free setting adjustment possibilities, the preload adjuster brings increased resistance to dirt intrusion. A two-piece spring retainer allows for quick mounting without splitting the shock.

The rear linkage has been updated for 2025 with new seals and a smaller linkage bolt, which provides a weight saving when compared to the previous model year.

- Updated suspension settings → adjusted to revised frame and rear linkage changes
- New linkage seals for refined rear shock response and advanced damping characteristics
- Smaller diameter linkage bolt for weight reduction and chassis flex
- CFD-optimised main piston for exceptional initial comfort and guarantees strong hold-up
- Optimised ground clearance → lower risk of damage in extreme bottoming-out situations
- Dual compression control allows high- and low-speed settings to be adjusted by hand

- Rebound adjuster allows changing setting by hand or tool
- Preload adjuster prevents dirt intrusion and features a quick mounting concept
- Pressure balance inside the shock body → consistent damping
- Two-piece spring retainer allows for quick mounting and assembly of preload adjuster and shock

Brembo hydraulic clutch

The high-performance Brembo hydraulic clutch system guarantees even wear, near maintenance-free operation, and perfect action in every condition. It means that play is constantly compensated so that the pressure point and function of the clutch remain identical in cold or hot conditions, as well as over time. Countless hours of race-focused testing have proven the exceptional reliability of the high-quality, Italian-made Brembo hydraulic system.

- Brembo hydraulic clutch system → perfect action and outstanding reliability in every condition



Brakes

The highest level of quality is guaranteed with class leading Brembo calipers and controls. The 260 mm front and 220 mm wave rear discs deliver superior stopping power, instilling confidence in all conditions.

For 2025, the rear brake pedal material has been updated to be stronger. The pedal is now less susceptible to bending due to impact from external objects.

- Brembo brake calipers and high-performance discs → superior stopping power with greater control and confidence
- New material for rear brake pedal (stronger, less susceptible to bending)

ProTaper handlebar

The ProTaper handlebar is second to none for function and style. Manufactured to exacting standards, the handlebar features class-leading fatigue resistance at a minimal weight. The handlebar bend provides comfort for all riders.

- ProTaper handlebar → class-leading function and style
- Husqvarna bend → optimal comfort

Grips and throttle assembly

The ODI lock-on grip on the left side does not require gluing, while on the right, the vulcanised grip features an innovative and integrated throttle mechanism. The assembly has easy free-play adjustment and, by changing a cam, throttle progression can be altered.

- Throttle assembly and ODI grips → easily alter throttle progression; easy grip mounting without glue

Footrests

The CFD designed footrests offer a large surface for boot soles while being less susceptible to hooking on deep ruts, take-offs when scrubbing, or trackside barriers. This is achieved by a narrower mounting concept integrated into the frame design which also reduces weight. The result is better control of the bike in all conditions.

- Topology-optimised, die-cast footrests → low weight and less susceptible to dirt build-up
- Footrest mount integrated into frame → narrow profile is less susceptible to hooking on deep ruts

Map Select Switch, Traction and Launch Control

Designed for easy and intuitive operation, the Map Select Switch comes as standard. It activates Traction and Launch Control, selects between two engine maps (aggressive/smooth) and activates the Quickshifter feature on the 4-stroke models. Map 1 is the standard map for linear, predictable power, while map 2 is an aggressive map for added throttle response and a stronger power output.

The Quickshifter only works for upshifts and can be activated or deactivated via the Map Select Switch. The function works by interrupting the ignition for a fraction of a second. This allows upshifting while the throttle is fully opened without the use of the clutch lever. A sensor on the shift drum registers the force from the shift lever, sends the signal to the ECU, and the ignition timing is interrupted. To prevent unintended shifts and false neutrals, the function is only active from second gear upwards.

With the engine at idle, Launch Control can be engaged by pressing the Traction Control and Quickshifter buttons simultaneously. Both symbols will start flashing to indicate that Launch Control is active. This function limits the amount of power to the rear wheel, improving traction and preventing loss of control under hard acceleration. Once the rider shifts up a gear, the Launch Control will deactivate automatically. Additionally, the Quickshifter function is deactivated while Launch Control mode is engaged.

Traction Control on 4-stroke models is engaged by a switch marked ‘TC’ and functions by analysing throttle input from the rider and the rate at which engine RPM increases. If the RPM increases too quickly, the Engine Management System (EMS) registers a loss of grip and reduces the amount of power to the rear wheel for maximum traction. This is a distinct advantage in wet or muddy conditions.

- Handlebar-mounted Map Select Switch → alters engine characteristics according to conditions and rider preference
- Quickshifter function → clutch-free upshifting

- Traction Control → optimal traction in all conditions
- Launch Control → maximum traction for perfect starts

Start/stop switch

The combined start/stop switch on right side of handlebar allows for easy, intuitive starting and stopping of the engine.

Engine Management System (EMS)

The Keihin EMS is specifically designed to be small, light, and fast at processing data. It integrates Launch Control for perfect starts, selectable engine maps, as well as the Quickshifter function. Combined with the gear sensor, power delivery is tailored for each gear.

A Rollover Sensor (ROS) cuts the ignition in the event of extreme crashes, adding another level of safety to the machines. Additionally, the hour meter comes with an integrated FI status LED and a fuel level indicator.

- Keihin EMS → small, light and fast at processing engine data for more efficient engine management
- Rollover Sensor (ROS) → automatic cutting of ignition in extreme crashes
- Hour meter with integrated FI status LED and fuel level indicator
- Gear sensor → specific engine maps for each gear

Keihin throttle body

The 4-stroke range feature a 44 mm Keihin throttle body while the 2-stroke range features a 39 mm throttle body. The injectors are positioned to ensure the most efficient flow into the combustion chamber. To ensure optimal throttle response, the throttle cable is mounted directly without a linkage to provide a more immediate throttle response and feel.

The 39 mm Keihin throttle body features dual injectors positioned for optimal flow and a more immediate throttle response thanks to direct cable mounting. Idle is controlled over the throttle valve (not over a bypass system as per Transfer Port Injection) with a dual injector setup – one low load injector (positioned as per 4-stroke models) and one “top-feed” oriented injector for maximum performance before throttle valve.

All in all, this provides much better idle control, more stable idle behaviour, and much better fuel-air mixture preparation. The results are more power, more response, and a larger possible fuel-air mixture operation window in comparison to TPI. Therefore, it reduces engine stalling, hesitations, and is less sensitive to different ambient conditions (e.g. temperature, altitude, humidity).

- 4-stroke throttle body → 44 mm, injector positioned for optimal flow, more immediate throttle response thanks to direct cable mounting
- 2-stroke throttle body → 39 mm with two injectors positioned for optimal flow and more immediate throttle response thanks to direct cable mounting



Exhaust system

Tailored specifically for each model using an innovative 3D design process, the 2-stroke header pipes offer optimal geometry, performance, and ground clearance, making them less susceptible to damage. The 2-stroke mufflers also feature an aluminium mounting bracket and advanced internal construction for excellent noise damping and weight saving.

The 4-stroke exhaust systems are expertly designed to deliver leading performance at the lowest possible weight. The header pipe features a flow-designed resonance chamber integrated into the header pipe with the overall design manufactured in two pieces to be as compact as possible. The position of the joint allows it to be removed without needing to remove the rear shock. Further innovation allows for a short, compact silencer without increased noise levels. The silencer is crafted from lightweight aluminium and is stylishly finished in a black coating that highlights its premium quality.

- Compact exhausts → lightweight and engineered for optimal performance
- Header pipe mounted directly onto engine mount for easy serviceability
- Header joint position → removal of exhaust without removing rear shock

Electric start and Li-Ion battery

Along with the benefit of an easy electric starting system, a Li-Ion 2.0 Ah battery is fitted to the full range. The Li-Ion battery weighs approximately 1 kg less than a conventional lead/acid battery, so the convenience of electric starting is delivered while minimising overall weight.

- Electric starter → easy starting at all times
- Li-Ion battery → lightweight, 1 kg lighter than a conventional battery

Integrated cooling system and radiators

The WP radiators are expertly crafted using high-strength aluminium. CFD optimisation is used to channel air through the radiators more efficiently and provide optimal cooling in any condition. A large centre tube running through the frame reduces the pressure at this point, eliminates the need for additional hoses, and ensures a more consistent coolant flow. An

internal thermostat adds reliability. Additionally, the radiators are mounted close to the centre of gravity for to assist with the agile handling of each machine.

- Integrated cooling → maximum efficiency
- Bayonet closure radiator cap
- WP radiators → efficient for optimal cooling
- Large central tube → consistent coolant flow

Fuel tank

The 7.2 litre polythene fuel tanks incorporate a threaded filler cap and the fuel pump. A one-piece fuel pump with integrated filter provides optimal fuel supply and allows the tank to be emptied further at low fuel levels. The external fuel line is specifically positioned to make it less exposed and susceptible to damage.

The fuel tank rubber is revised for 2025 to hold the tank firmly in place and keep the frame protected against chafing.

- New fuel tank rubber for better fitment of tank and less chafing of the frame
- 7.2 litre polythene fuel tanks → larger capacity for extended running times
- One-piece fuel pump and filter for optimal fuel supply → tank can be emptied further at low fuel levels
- External fuel line routing → less exposed and susceptible to damage

Airbox and tool-less air filter access

The Computational Fluid Dynamics (CFD) optimised airbox is designed with precisely positioned inlet ducts to prevent air deformation and ensure maximum airflow and filter protection. The air filter is easily accessed, without tools, by removing the left side panel. Easy maintenance is guaranteed by the Twin Air filter element and filter cage design, which offers a simple fail-proof mounting system for safe and accurate filter installation.

New for the MY25 is an updated design for the air inlet sleeve and snorkel. Now a 1-piece part, it prevents deformation through a more robust and stronger design.

- Updated air intake sleeve and snorkel → 1-piece design prevents deformation
- CFD optimised airbox → exceptional air flow and maximised filter protection
- Intuitive filter mounting system → safe and accurate protection against dirt
- Tool-less filter access → quick and easy maintenance
- High-flow airbox cover in the by-pack → added customisability of the engine response

Wheels

Black high-strength alloy rims by D.I.D with laser engraved logos are coupled to CNC-machined hubs using lightweight spokes and silver anodised aluminium nipples. The nipples incorporate an advanced design reducing the frequency of spoke checks and maintenance.

- Lightweight but strong and reliable construction → minimum unsprung weight

Tyres

The new Dunlop GEOMAX MX34 motocross tyres feature next generation PCBT “Progressive Cornering Block Technology” on the shoulder tread blocks for a softer surface. This provides increased absorption and improved contact feel with the ground.

Additionally, the tyre tread pattern is designed to enhance control, traction, and durability.

- Developed in top-level AMA Supercross and Pro Motocross → enhanced acceleration, cornering performance, and steering feel
- Wide range of applications including sand, mud, and hard pack
- Increased performance through innovative carcass casing material

Bodywork

The Motocross range features bodywork which clearly showcases Husqvarna Motorcycles progressive approach to offroad motorcycles and striking white, blue, and yellow graphics stylishly adorn the Swedish-inspired design. An optimised rider triangle for better knee contact,

especially when riding in the standing position, inspires confidence for riders of every ability and enables them to perform at the highest level for extended periods of time. The slim contact surfaces on the bodywork allow the rider to move around easily on the machine for total control at all times.

Revised tank shrouds add a fresh, progressive, and distinctive new look to the motocross range. This visual design change underlines the many small and not visually noticeable technical changes. In terms of ergonomics there is no real change to the previous model years, but access to the rear shock adjusters has been improved as the right-hand side shroud is now made from a single piece of plastic.

The seat profile has also been revised and is now 5 mm higher and wider at the pocket of the seat. This reduces excessive rearward slipping while seated during heavy acceleration. A recessed pocket under the seat, just above the airbox, allows gripping and lifting of the bike.

- Revised tank shrouds → fresh, progressive new look with single piece design on the right side

- Revised seat profile → heightened seat profile and high grip seat cover for exceptional control in all conditions
- Rider triangle optimised for exceptional knee contact, especially when riding in the standing position
- Large contact surfaces → allows riders to grip the machine with their legs for maximum control
- Recessed grip pockets → allowing better grip to lift the machine

Connectivity Unit Offroad - CUO

Husqvarna Motorcycles has introduced the CUO as a Technical Accessory for the TC and FC line-up for 2025. The CUO offers a wide range of functionalities and adjustability options through the Ride Husqvarna Motorcycles app. The hardware consists of two parts: 1) The CUO itself, mounted on the right upper fork between lower and upper triple clamp 2) The GPS sensor on the front fender. A special front fender designed to house the GPS sensor is also available as a Technical Accessory.

- The engine function only works with 4-stroke/FC model line-up. All other features (e.g. Rider) can be used with all models (2-stroke and 4-stroke)



Engine

The SOHC engine is the perfect example of the advanced engineering techniques used by Husqvarna Motorcycles. With a peak power of more than 63 hp and an overall weight of just 26.8 kg, then engine is light and powerful.

Mass centralisation is key to the engine design with it positioned close to the centre of gravity for exceptional handling and manoeuvrability. Together with the benefits of mass centralisation and low weight, the anti-squat behaviour of the chassis is optimised.

Attention was paid to the serviceability of the FC 450 engine. Drain bosses for fluids and added service markers on the engine → clearly show where to use washers to simplify maintenance and servicing.

- Engine design → optimised mass centralisation and anti-squat behaviour
- Peak performance and minimal weight → 63 hp and only 26.8 kg
- Easy serviceability of engine internals → added service markers and drain bosses for liquids

Cylinder head

The SOHC cylinder head is incredibly compact and lightweight, with a short profile and with the camshaft located as close to the centre of gravity as possible. Parallel frame mounts ensure exceptional handling and agility.

Lightweight valves are actuated via a rocker arm and feature timing specifically designed to deliver precise levels of torque and throttle response. The diameter of each intake valve is 40 mm while the exhaust valves are 33 mm. A valve cover reduces the number of mounting screws (only two needed) and a single oil-spray jet guarantees efficient cooling while keeping weight to a minimum. A fine punched cam chain, low-friction chain guides, and the low-friction DLC rocker arm coating offers optimum efficiency, reliability, and durability. Attention was paid to maintenance tasks with lock positions for the cam chain to provide easy serviceability of the valve train.

- SOHC cylinder head → more compact design, parallel frame mounts, and the camshaft positioned close to centre of gravity
- Lightweight valve cover → only two mounting screws and one oil-spray jet for cooling
- Fine punched cam chain for added durability
- DLC coating and low-friction chain guides → optimum efficiency, reliability, and durability
- Easy serviceability of valve train → lock positions for cam chain



Cylinder and piston

The lightweight aluminium cylinder is an engineering masterpiece and features a 95 mm bore. The CP bridged-box-type piston features anodised annular grooves, adding durability and longer service intervals while weighing only 327 g. The compression ratio of 13.1:1 provides an outstanding peak performance of more than 63 hp.

- Lightweight aluminium cylinder → 95 mm bore / 63.4 mm stroke
- Lightweight, high-performance CP forged bridged-box-type piston → reduced oscillating masses
- Compression ratio of 13.1:1 → outstanding peak performance
- Anodised annular groove → added durability and longer service intervals

Crankshaft

The inertia produced by the crankshaft has been carefully calculated to deliver optimal traction and rideability from the powerful 450 cc engine. The crankshaft is specifically positioned to harness the rotational mass at the ideal centre of gravity resulting in a lightweight, agile handling feel. A plain big-end bearing comprising two force-fitted bearing shells ensure maximum reliability and durability, guaranteeing long service intervals of 90 hours.

- Crankshaft position → located at the ideal centre of gravity for agile handling
- Plain big-end bearing and force-fitted bearing shells → exceptional durability and extended service intervals

Crankcases

The crankcases are designed to arrange the shafts and engine internals in the ideal positions to offer the best-possible handling. Additionally, the position of the clutch shaft keeps the clutch above the oil level resulting in decreased drag and increased efficiency. A steel oil pump gear and oil jet increase the overall oil pressure to prevent overheating and aids the outstanding durability of the FC 450. High-pressure die-cast production processes keep overall weight to a minimum, resulting in thin wall thickness while retaining reliability.

- Design → optimised mass centralisation and increased efficiency
- Steel oil pump gear and increased oil pressure → outstanding durability and resistance to overheating
- High pressure die-cast production process → thin walls for reduced weight while maintaining strength

Gearbox

The lightweight 5-speed gearbox is produced by Pankl Racing Systems and ensures the highest level of durability and reliability. A weight-optimised shift shaft reduces the operating force required for gear changes and the gearbox also features a transmission ratio of 29:72. A Quickshifter is positioned on the shift drum to ensure smooth, clutchless upshifts. The function can be activated/deactivated via the QS marked button on the Map Select Switch, located on the left side on the handlebar.

The gear lever features a design that prevents dirt build-up and keeps the lever tip in its original position, even in the toughest conditions. An advanced gear sensor selects a specific engine map tailored for each gear.

- 5-speed gearbox → optimised transmission ratio of 29:72 with smooth and precise shifting
- Weight-optimised shift shaft → reduced operating force required for gear changes
- Integrated Quickshifter sensor positioned on the shift drum allows clutchless upshifts → seamless shifting function can be activated/

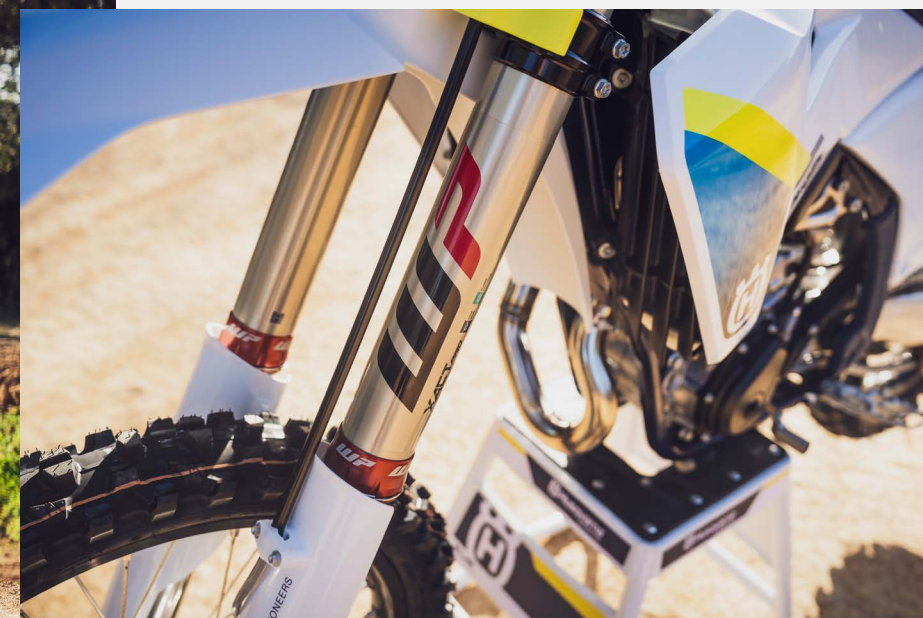
- deactivated with Map Select Switch
- Integrated gear sensor → specific engine maps for each gear

DDS clutch

The FC 450 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 plates and contributes to the compact design of the engine.

The pressure lubrication provides exceptional clutch cooling, reducing clutch fade from frequent usage while the clutch basket has been optimised for the 5-speed transmission.

- DDS clutch → lightweight with consistent action and exceptional durability
- Advanced clutch cooling from pressure lubrication → reduced clutch fade from frequent use
- Optimised clutch basket → contributes to the compact engine design





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