

## Husqvarna Motorcycles – Enduro Model Year 2023

### Media information

Husqvarna Motorcycles introduces its 2023 TE and FE enduro line-up, a range of seven 2-stroke and 4-stroke machines aimed at enduro riders of all levels of experience and skill. Dynamic performance and advanced ergonomics combine in the 2023 enduro range to deliver unrivalled power and handling to the competitive enduro rider.

Riders of every level, from amateur to professional, will find a machine in a line-up unequalled in its sector for technical advancement and race-winning reliability and durability. The model range is made up of the TE 150, TE 250 and TE 300 2-strokes and the FE 250, FE 350, FE 450 and FE 501 4-strokes.

The enduro range has a number of attributes shared across all TE and FE models. A unique carbon composite subframe weighs just over 1 kg and aids handling and comfort, while the bodywork has narrow contact points for easy movement between riding positions. WP suspension is specified – an XPLORE 48mm front fork with split damping and easy access preload adjusters, and a rear shock with a motocross-developed progressive linkage and 300 mm of travel. By sharing BRAKTEC hydraulic braking and clutch systems, all models are guaranteed perfect clutch modulation in every condition, as well as superior stopping power with outstanding feel specifically tailored for enduro riding.

The winning intent of the 2023 enduro series is apparent in a bodywork embodying Husqvarna Motorcycles' progressive approach to Swedish-inspired offroad motorcycle design. Dark blue graphics with electric yellow accents use the familiar colours in all-new combinations for 2023.

Having just won his second successive FIM SuperEnduro World Championship title, Husqvarna Factory Racing team star Billy Bolt has again validated the highly efficient technical package of his FE 350. His success further enhances the reputation of Husqvarna Motorcycles, underlining the status of the entire enduro line-up as the competition benchmark.

### 2023 Technical Highlights:

- All-new colours, trim and distinctive dark blue graphics with electric yellow accents contribute to a unique look and stylishly adorns the Swedish inspired design, and complement the new metallic blue of the frame
- A two-piece carbon fibre composite subframe weighs just over 1 kg and is a major contributor to outstanding handling and rider comfort
- WP XPLORE front forks and WP XACT monoshock for consistent damping and exceptional handling
- Two switchable Electronic Fuel Injection (EFI) maps on 4-stroke models plus traction control. Two selectable ignition curves and automatic fuelling adjustment on 2-strokes
- Advanced linkage progression, shared with the Husqvarna motocross range, for optimum control and comfort
- Pankl Racing Systems 6-speed gearbox with enduro-specific ratios for perfect command in any conditions
- Unparalleled attention to detail and high-quality components for a pure riding experience
- The enduro range is fitted with class-leading Michelin Enduro tyres for superior traction; tyres that are race-proven by the Husqvarna Factory Racing team

## Features and benefits

### Frame

The chrome-moly steel frame is expertly crafted using hydro-formed tubes which are laser-cut and robot-welded to ensure the highest level of precision and quality. The specifically calculated geometry utilises advanced longitudinal and torsional flex characteristics for unparalleled rider feedback, energy absorption and exceptional straight-line stability.

Forged aluminium cylinder head mountings on all models deliver optimal handling characteristics and comfort. The frame is finished off in a premium metallic blue powder coating and standard frame protectors guaranteeing superior protection and durability.

- Advanced longitudinal and torsional flex characteristics → unparalleled rider feedback, energy absorption and exceptional straight-line stability
- Forged aluminium cylinder head mountings on all models
- Durable powder coated finish with frame protectors as standard

### Composite carbon fibre subframe

Unique to Husqvarna Motorcycles, the carbon composite subframe displays advanced production technologies and innovation. Using 70% polyamide and 30% carbon fibre, the two-piece subframe has a total weight of just over 1 kg. Through the use of computational dynamics, specific rigidity was engineered into the light and robust subframe, delivering outstanding handling and rider comfort.

- Two-piece subframe → weight just over 1 kg
- Carbon fibre composite construction → lightweight and robust
- Specific rigidity characteristics → exceptional handling and comfort

### Swingarm

The hollow, cast aluminium swingarm offers optimal stiffness and reliability at the lightest possible weight. Specific machining lets the chain adjustment slots be seen from above for easy maintenance.

- Optimal stiffness and reliability in a lightweight construction

### WP XPLOR fork

The WP XPLOR front fork consists of a 48 mm spring-type layout with split rebound and damping functions, so that compression damping is controlled solely by the left leg and rebound damping solely by the right leg. The result is simple adjustment through easy access clickers (30 clicks) located on the top of each fork leg. Additionally, preload adjusters as standard allow for three-way preload adjustment without the use of tools.

Offering unsurpassed performance and comfort, the XPLOR fork features an advanced mid-valve piston delivering consistent damping, and its setting allows the fork to operate higher in the stroke for exceptional rider feedback and resistance to bottoming out. An oil bypass in the outer tube reduces friction for smooth, consistent travel through the stroke.

- WP XPLOR front fork → 48 mm spring type with split damping function
- Easy access preload adjusters

- Advanced mid-valve piston and setting → superior performance, feel and comfort

### CNC-machined triple clamps

The 22 mm offset black-anodised CNC-machined triple clamps offer premium quality and are standard on all Husqvarna enduro models. The triple clamps are expertly crafted using superior techniques and materials to provide high levels of quality and reliability. Two-way handlebar adjustment is standard and allows for customisable ergonomics.

- CNC aluminium → finest quality and reliability
- Adjustable handlebar position → adjustable ergonomics

### WP XACT rear shock

The WP XACT monoshock provides advanced damping characteristics in a compact and lightweight design. Pressure balance inside the shock keeps damping consistent, resulting in superior rider comfort and handling.

Using the same linkage progression as the Husqvarna motocross range, the rear end sits low for optimal control and comfort in extreme enduro conditions. The shock is fully adjustable and delivers unrivalled traction, feeling and energy absorption. Rear wheel travel is 300 mm.

- Advanced linkage progression → exceptional control and comfort
- Pressure balance → consistent damping
- 300 mm wheel travel

### BRAKTEC hydraulic clutch

The high-quality BRAKTEC clutch system guarantees even wear, and reliable and near maintenance-free operation as well as perfect modulation in all conditions. Play is constantly compensated so that the pressure point and function of the clutch remain consistent in cold or hot conditions, as well as over time.

- BRAKTEC hydraulic clutch → perfect modulation in all conditions

### BRAKTEC brakes

The BRAKTEC braking system guarantees the highest level of quality and exceptional braking performance. The brakes are specifically tailored to enduro riding, delivering a precise and modulated feel. The front brake consists of an 11 mm master cylinder, 2x25 mm piston monoblock caliper and a 260mm GSK wave disc. The rear brake has a 12,7 mm master cylinder, 25 mm piston caliper and a 220 mm GSK disc. The cast aluminium brake system keeps weight to a minimum while offering complete braking confidence by delivering superior stopping power in all conditions.

- BRAKTEC brake system and high-performance GSK discs → superior stopping power with outstanding sensitivity and modulation

### ProTaper handlebar

The ProTaper handlebar is second to none for function and style. Manufactured to exacting standards, the ProTaper handlebar features class-leading fatigue resistance while adding minimal weight. ProTaper logos are chemically applied and are scratch and peel resistant.

- ProTaper handlebar → class-leading function and style

### 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 integrated throttle mechanism. The assembly has easy free-play adjustment and, by changing its cam, throttle progression can be altered.

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

### Map switch, traction control

Designed for easy operation, a map switch is standard on all 4-stroke models. It selects between two electronic fuel injection (EFI) maps and activates the traction control feature. Traction control offers improved grip and control on slick terrain.

Traction control is turned on and off by the switch, and functions by analysing throttle input from the rider and the rate at which RPM increases in the engine. 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 ensuring maximum traction.

Additionally, all 2-stroke models are fitted with a standard map switch allowing selection between two ignition curves, based on conditions or rider preference.

- Standard handlebar map switch → alters engine characteristics according to conditions and rider preference
- Traction control → optimal traction in all conditions

### Engine management system (EMS)

Apart from controlling EFI parameters on the 4-strokes, the Keihin EMS features selectable engine maps via the handlebar switch, as well as traction control. Combined with the gear sensor, power delivery is tailored for each gear.

- Keihin EMS → smaller, lighter and faster at processing engine data for more efficient engine management
- Gear sensor → specific engine maps for each gear

On the 2-strokes, the EMS features an electronic control unit (ECU) which is responsible for several functions. The unit determines the ignition timing, the amount of fuel and oil injected and receives information from the throttle position sensor, ambient air and intake pressure sensors, as well as crankcase pressure and water temperature sensors, to adapt values and make corrections for automatic temperature and altitude compensation. This means there is no need to change carburettor jetting as in the past.

- 2-stroke EMS → modern engine management eliminating the need for jetting changes

### Throttle body

The 4-stroke range features a 42 mm Keihin throttle body. The injector is positioned to ensure the most efficient flow into the combustion chamber. To ensure optimal throttle response, the cable is mounted directly without a throttle linkage, providing more immediate response and control.

- Throttle body → 42 mm injector positioned for optimal flow, more immediate throttle response thanks to direct cable mounting

The 2-strokes use a 39 mm throttle body which regulates the amount of air entering the engine via a butterfly operated by dual throttle cables connected to the handlebar throttle assembly. Unlike 4-stroke throttle bodies, fuel is not introduced at this point, but instead 2-stroke oil is mixed with the air entering the engine to lubricate the crankshaft, cylinder and piston. Additionally, a throttle position sensor (TPS) relays airflow data to the ECU, which in turn calculates the amount of oil and fuel delivered to the engine. A bypass screw regulates the idling speed and a cold start device opens a bypass providing more air for cold starts to prevent too rich air and fuel mixture.

- 39 mm throttle body → regulates air flow, TPS relays airflow data

### Exhaust system

Tailored specifically for each model using an innovative 3D design process, the 2-stroke header pipes feature advanced geometry and performance. The TE 250/300 header pipe offers more ground clearance making it less susceptible to damage, while a corrugated surface makes the header pipe more resistant to dents from rocks and other hazards found on the enduro trail. The 2-stroke silencers feature an aluminium mounting bracket and advanced internal construction for excellent noise damping and weight saving.

The 4-stroke exhaust system is expertly designed to deliver class-leading performance at the lowest possible weight. The header pipe is designed and manufactured in two pieces to be as compact as possible. It is joined so that it can be removed without having to take out the rear shock. Further innovation allows for a short, compact silencer without increasing noise levels. The component is crafted from lightweight aluminium and is stylishly finished in a black coating that highlights its premium quality.

- Corrugated surface on TE 250/300 → more resistant to damage
- Header joining position on 4-stroke → can be removed without removing rear shock

### Electric start and wiring harness

All TE and FE models come with an electric starter as standard. The system uses a compact and lightweight Li-Ion battery which is 1 kg lighter than a conventional battery. After several years of experience with electric starters on Husqvarna Enduro models, reliability is second to none and the system ensures a quick and seamless start in any condition.

Additionally, the wiring harness concentrates all necessary electrical components in a common area below the seat for easy accessibility.

### Integrated cooling system and radiators

The radiators are expertly crafted using high-strength aluminium and are CFD (computational fluid dynamics) designed to channel air more efficiently. The cooling system is intelligently integrated into the frame, eliminating the need for additional hoses. The large centre tube running through the frame reduces pressure at this point, allowing for consistent coolant flow.

Additionally, the radiators are mounted close to the centre of gravity for improved handling agility. All 4-stroke models are fitted with radiator fans as standard, and there is the option to fit fans from the accessories catalogue on all 2-strokes.

- Integrated cooling → maximum efficiency in minimal space
- Large central tube → consistent coolant flow

### Fuel tank

The 8,5 litre polythene fuel tanks incorporate a quick release filler cap and an integrated fuel pump. The fuel pump features internal line routing directly from the pump to the flange for optimal fuel flow. Additionally, the external fuel line is specifically positioned to make it less exposed and susceptible to damage. A fuel level sensor is incorporated on all models.

### Airbox and tool-less air filter access

The airbox is designed with precisely positioned inlet ducts to prevent air deformation, ensuring maximum airflow and maximum 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 and cage design that features a simple fail-proof mounting system for safe and accurate filter installation.

- Airbox → maximum air flow and filter protection
- Filter mounting system → safe and accurate protection against dirt
- Tool-less filter access → easy and rapid maintenance

### 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 to reduce the frequency of spoke checks and maintenance.

- Lightweight but strong and reliable construction → minimal unsprung weight

### Tyres

The enduro range features Michelin Enduro tyres as used by the Husqvarna Factory Racing team. The FIM-approved tyres offer exceptional grip in a wide variety of terrain and riding conditions.

- Michelin Enduro tyres → advanced grip in all conditions

## Bodywork

The enduro range features bodywork which clearly demonstrates Husqvarna Motorcycles' progressive approach to offroad motorcycles, while dark blue and electric yellow graphics stylishly adorn the Swedish-inspired design. The ergonomics are specifically tailored to deliver great comfort and control. A result of extensive testing, slim contact points make shifting between riding positions easier and allow the rider a seamless flow of movement.

The flat seat profile, together with the textured seat cover, deliver superior comfort and control in all conditions.

- Progressive bodywork → distinctive looks, modern design and graphics
- Ergonomics → confidence-inspiring riding position in all riding situations
- Seat → flat seat profile for exceptional comfort and control in all conditions

## Technical information by model

### FE 250

The FE 250 is the smallest-capacity 4-stroke in the enduro line-up. This small capacity means it is very lightweight, and shines in tough technical terrain while delivering a torquey and manageable 4-stroke performance. Combined with class-leading WP suspension, selectable engine maps and a BRAKTEC hydraulic clutch, the FE 250 features an array of premium components for unsurpassed quality and reliability.

#### Engine

The 250cc engine is designed to be powerful, light and compact. All major components and shaft arrangements are carefully arranged to best suit the performance and handling characteristics of the overall package. As a result, despite weighing just 27.9 kg, the engine displays a torquey character, making the FE 250 accessible to both professionals and amateurs.

- Engine design → light and compact for optimised mass centralisation
- Powerful engine → accessible to all skill levels

#### Cylinder head

The cylinder head features advanced technology aimed at reducing weight and drag: from the low-friction surface against which the twin overhead camshafts rotate, to the four lightweight titanium valves – intake 32.5 mm, exhaust 26.5 mm – that are actuated by DLC (diamond like carbon) coated finger followers. This helps the engine rev freely while maintaining smooth, efficient power throughout the rpm range.

- Cylinder head → minimum drag for maximum performance
- Finger followers with DLC coating → reduced friction, increased performance

#### Cylinder and piston

The cylinder is carried over from the successful FC 250 motocross model and features the same 78 mm bore. It also houses a forged box-type piston, professionally engineered from high-strength aluminium. The compression ratio of 13.8:1, in combination with the state-of-the-art cylinder and head gasket, provides outstanding performance and reliability.

- State-of-the-art cylinder and head gasket → optimal compression ratio and engine performance
- Forged box-type piston → low weight, low oscillating mass

#### Crankshaft

The plain big-end bearing features two force-fitted bearing shells ensuring maximum reliability and durability, guaranteeing long service intervals of 135 hours.

- Plain big-end bearing with force-fitted bearing shells → 135-hour service interval



### Counter-balancer shaft

In order to counteract the rotational force of the crankshaft and reduce vibration, the FE 250 engine uses a multifunctional counter-balancer shaft which also drives the water pump and timing chain.

- Multifunctional counter-balancer shaft → reduced vibrations, compact design

### Crankcases

The FE 250 engine is designed to be compact while centralising rotating masses. As a result, the crankcases are engineered to house the shaft arrangements at the ideal centre of gravity and integrate the oil supply to the main bearing. The casings are manufactured using a high-pressure die-cast production process and are optimised for minimal weight while retaining exceptional reliability. The iconic Husqvarna logo adorns the bronze-finished crankcase covers.

- Crankcases → light and compact, mass-centralisation
- High-pressure die-cast production process → minimal weight, while maintaining strength

### Gearbox

The 6-speed gearbox from Pankl Racing Systems uses specific wide-range enduro type gearing. Additionally, a gear sensor allows the EMS (Engine management system) to tailor a specific engine character suited for each gear.

- Pankl 6-speed gearbox → enduro-specific ratios
- No-dirt gear lever → prevents dirt build-up for perfect control

### 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, making the clutch action very light while also integrating 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 BRAKTEC hydraulic system ensures perfect modulation in all conditions.

- DDS clutch → compact with better modulation and improved durability
- BRAKTEC hydraulic system → perfect clutch modulation

### Benefits

- Class-leading performance and weight
- Centralised mass for top-level handling and manoeuvrability
- Advanced electronics for unsurpassed usability
- Hydraulic clutch and reliable gearbox for precise and smooth shifting
- Dependable electric start

## **FE 350**

The FE 350 is known for its versatility in all types of terrain. With a lightweight chassis and ample performance, the FE 350 possesses a 450-rivalling power-to-weight ratio while keeping the light and agile feel of a 250. Combined with WP suspension, traction control and comfortable ergonomics, the FE 350 is second to none when the going gets tough.

### Engine

The DOHC 350cc engine is second to none in terms of versatility. Sharing much of its architecture with the FE 250 engine, the FE 350 delivers a significant increase in power and torque giving its lightweight character 450-rivalling power.

- Performance, weight, mass centralisation → ride-ability
- Lightweight and compact → 450 rivalling power-to-weight ratio

### Cylinder head

The FE 350 features an advanced DOHC cylinder head layout meticulously engineered to deliver performance and reliability. Internally, the DOHC layout features polished camshafts and low-friction DLC-coated finger followers. Together with the lightweight titanium valves – 36.3 mm intake and 29.1 mm exhaust – they aid in delivering optimal performance.

- Lightweight titanium valves → 36.3 mm intake and 29.1 mm exhaust
- Polished camshafts, Finger followers with DLC coating → minimal friction

### Cylinder and piston

The 88 mm bore and 57.5 mm stroke cylinder features a compression ratio of 13.5:1, and a large diameter yet lightweight forged box-type piston. As a result, the low oscillating mass delivers exceptional power, high revs and a broad, usable power band.

- Lightweight 88 mm diameter piston → reduces oscillating masses
- Forged box-type piston → optimised fit in combustion chamber
- 13.5:1 compression ratio → high performance and reduced danger of engine knock

### Crankshaft

The crankshaft is optimised for overall reliability to guarantee long service intervals of 135 hours. This has been made possible by a bush-type bearing at the connecting rod and two force-fitted bearing shells at the big-end bearing. Additionally, an oil supply to the main bearing is integrated within the engine casing.

- Bush-type bearing on connecting rod → maximum reliability and long service interval
- Plain big-end bearing with force-fitted bearing shells → 135-hour service interval

### Counter-balancer shaft

In order to counteract the rotational force of the crankshaft and reduce vibration, the FE 350 engine uses a multifunctional counter-balancer shaft which also drives the water pump and timing chain.

- Multifunctional counter-balancer shaft → reduced vibrations, compact design

## Crankcases

The engine cases are engineered to house the shaft arrangements at the ideal centre of gravity. The casings are manufactured using a high-pressure die-cast production process, resulting in thin wall thickness while retaining exceptional reliability. The iconic Husqvarna logo adorns the bronze-finished crankcase covers.

- Crankcases → light and compact, mass-centralisation
- High-pressure die-cast production process → thin walls for reduced weight, while maintaining strength

## Gearbox

The 6-speed gearbox from Pankl Racing Systems uses specific wide-range enduro type gearing. Additionally, a gear sensor allows the EMS (Engine management system) to tailor the power delivery to each gear.

- Pankl 6-speed gearbox → enduro-specific ratios
- No-dirt gear lever → prevents dirt build-up for perfect control

## DDS clutch

The FE 350 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, making the clutch action very light while the integrated damping system improves 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 BRAKTEC hydraulic system ensures perfect modulation in all conditions.

- DDS clutch → compact with better modulation and improved durability
- BRAKTEC hydraulic system → perfect clutch modulation

## Benefits

- 450 performance with added manoeuvrability
- 250 manoeuvrability and agility
- Standard map switch and traction control
- BRAKTEC hydraulic clutch for consistent, maintenance-free operation

## **FE 450**

The FE 450 features class-leading technology and premium components as standard. The chromium molybdenum frame is expertly crafted to offer ideal flex while the powerful engine features shaft arrangements aimed at balancing mass centralisation and improving handling. Combined with traction control, WP suspension and progressive rear linkage, the FE 450 is without compromise in pure enduro performance and precision.

### Engine

Weighing only 29.2 kg, the 450cc engine is not only light and compact but features the latest technology available offering unequalled performance, ride-ability and reliability in its class. Additionally, the engine is suited specifically to enduro type riding with a standard electric start, 6-speed wide-ratio gearbox and an array of electronic rider aids.

- Engine → lightweight and compact
- Class leading electronics → traction control, map select

### Cylinder head

The SOHC cylinder head is incredibly compact and lightweight using a short profile with the camshaft located as close to the centre of gravity as possible, significantly improving handling and agility. The lightweight valves are actuated via rocker arms and feature timing specifically designed to deliver precise levels of torque and throttle response. Additionally, 40 mm titanium intake valves, 33 mm steel exhaust valves, low-friction DLC coating on the rocker arms and low-friction chain guides offer optimum efficiency and reliability.

- SOHC cylinder head → compact, low weight design, camshaft close to centre of gravity
- DLC coating and low-friction chain guides → low friction

### Cylinder and piston

The lightweight aluminium cylinder features a 95 mm bore and a lightweight Konig forged bridge-box-type piston. This is perfectly matched to the high-compression combustion chamber, producing very little oscillating mass. The high compression ratio of 12.75:1 reduces vibration and engine knock, further increasing rider control and comfort.

- Lightweight aluminium cylinder → 95 mm bore
- Lightweight forged box-type piston by Konig → high performance, reduced oscillating masses

### Crankshaft

A plain big-end bearing comprising two force-fitted bearing shells ensures maximum reliability and durability, guaranteeing long service intervals of 135 hours.

- Plain big-end bearing and force-fitted bearing shells → increased durability and service intervals

### Counter-balancer shaft

In order to counteract the rotational force of the crankshaft and reduce vibration, the FE 450 engine uses a multifunctional counter-balancer shaft which also drives the water pump.

- Multifunctional counter-balancer shaft → reduced vibration, compact design

### Crankcases

The crankcases are designed to house the engine shafts and internals in the best possible positions, centralising mass for lightweight handling characteristics. High-pressure die-cast production processes result in thin but robust wall thicknesses and keep weight to a minimum.

- State-of-the-art design → mass-centralisation for light handling
- High-pressure die-cast production process → thin walls for optimised weight while maintaining strength

### Gearbox

The lightweight 6-speed gearbox ensures smooth and precise shifting thanks to a low-friction coating on the shifting fork. 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, while a gear sensor allows for specific engine maps to be matched to each gear.

- 6-speed gearbox → lightweight
- Fork coating → smooth and precise shifting
- Gear sensor → specific engine maps for each gear

### DDS clutch

The FE 450 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 making the clutch action very light while the integrated damping system improves 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 BRAKTEC hydraulic system ensures perfect modulation in all conditions.

- DDS clutch → compact with better modulation and improved durability
- BRAKTEC hydraulic system → perfect clutch modulation

### Benefits

- Class-leading performance and reliability
- Intuitive and confidence-inspiring riding experience
- Advanced electronics include traction control and selectable engine maps
- Exclusive DDS clutch with BRAKTEC hydraulics for smooth and light clutch action
- Electric starter and compact Li-Ion battery

## FE 501

The FE 501 houses the most powerful engine in the Husqvarna enduro range. With large moving components, vibration is kept to a minimum through a counter-balancer shaft while a map select switch changes the power characteristics to best suit riding conditions. High-quality finishes and premium components ensure the FE 501 meets the highest level of quality and craftsmanship.

### Engine

Delivering the highest level of performance in the Husqvarna enduro line-up, the 510.9cc power plant is more advanced than ever while weighing only 29.4 kg. Although delivering high performance the FE 501 can be tamed using the numerous advanced electronic rider aids, such as traction control and the handlebar map select switch, delivering accessibility for all terrain and skill levels.

- Engine → light and powerful
- Class-leading electronics → Keihin EFI, traction control

### Cylinder head

The SOHC cylinder head is incredibly compact and lightweight using a short profile with the camshaft located as close to the centre of gravity as possible, significantly improving handling and agility. The lightweight valves are actuated via a rocker arms and feature timing specifically designed to deliver precise levels of torque and throttle response. Additionally, 40 mm titanium intake valves, 33 mm steel exhaust valves, and low-friction DLC coating on the rocker arms and low-friction chain guides offer optimum efficiency and reliability.

- SOHC cylinder head → compact design, camshaft close to centre of gravity
- DLC coating and low-friction chain guides → low friction

### Cylinder and piston

The lightweight aluminium cylinder features a 95 mm bore and a lightweight Konig forged bridge-box-type piston. This is perfectly matched to the high-compression combustion chamber, producing very little oscillating mass. The high compression ratio of 12.75:1 reduces vibration and engine knocking, further increasing rider control and comfort.

- Lightweight aluminium cylinder → 95 mm bore
- Lightweight forged box-type piston by Konig → high performance, reduced oscillating masses

### Crankshaft

A plain big-end bearing comprising two force-fitted bearing shells ensures maximum reliability and durability, guaranteeing long service intervals of 135 hours.

- Plain big-end bearing and force-fitted bearing shells → increased durability and service intervals

### Counter-balancer shaft

In order to counteract the rotational force of the crankshaft and reduce vibration, the FE 501 engine uses a multifunctional counter-balancer shaft which also drives the water pump.

- Multifunctional counter-balancer shaft → reduced vibration, compact design

### Crankcases

The crankcases are designed to house the engine shafts and internals in the best possible positions, centralising mass for light handling. High-pressure die-cast production processes result in thin but robust wall thicknesses and keep weight to a minimum.

- Design → mass centralisation, lightweight handling
- High pressure die-cast production process → thin walls for optimised weight, while maintaining strength

### Gearbox

The lightweight 6-speed gearbox ensures smooth and precise shifting thanks to a low-friction coating on the shifting fork. 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 while a gear sensor matches specific engine maps to each gear.

- 6-speed gearbox → lightweight
- Fork coating → smooth and precise shifting
- Gear sensor → specific engine maps for each gear

### DDS clutch

The FE 501 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 making the clutch action very light while the integrated damping system improves 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 BRAKTEC hydraulic system ensures perfect modulation in all conditions.

- DDS clutch → compact with better modulation and improved durability
- BRAKTEC hydraulic system → perfect clutch modulation

### Benefits

- Most powerful Husqvarna enduro engine available
- Intuitive and confidence-inspiring riding experience
- Advanced electronics include traction control and adjustable engine maps
- Exclusive DDS clutch with BRAKTEC hydraulics for smooth and light clutch action
- Electric starter and compact Li-Ion battery

## **TE 150**

Displaying the best character and attributes of a lightweight and nimble 2-stroke, the TE 150 features the latest 2-stroke fuel injection technology giving it all the convenience of modern 4-strokes at a fraction of the weight. The TE 150 is fitted with an electric starter as standard for easy starting in challenging situations. Additionally, the chassis offers precise flex characteristics, and in combination with WP suspension offers advanced handling characteristics and comfort in the most difficult conditions.

### Engine

Using the latest 2-stroke fuel injection technology, the TE 150 has all the convenience of modern 4-strokes eliminating the need to premix fuel or adjust jetting at different altitudes. The engine uses specific shaft arrangements designed to harness the rotating mass of the engine at the ideal centre of gravity. The lightweight and compact engine provides a enduro-specific power delivery with the inherently low maintenance costs of a 2-stroke.

- Latest generation 2-stroke → fuel injection, powerful, light and compact
- Mass-centralisation → significant benefits in handling and manoeuvrability

### Cylinder and piston

The cylinder features a 58 mm bore which features an innovative power-valve design that delivers controllable power throughout the RPM range. The piston is designed to perfectly match the combustion chamber contour delivering the highest level of 2-stroke performance.

Additionally, the cylinder features two inlet positions on the transfer ports at the rear of the cylinder where a pair of fuel injectors are mounted. The injectors deliver the fuel downwards into the transfer port which guarantees excellent atomisation with the air travelling upward to the combustion chamber. This ensures more efficient combustion resulting in reduced fuel consumption and emissions.

- Cylinder and piston → optimal combustion chamber contour
- Fuel injection → increased efficiency and reduced emissions

### Crankshaft

With a 54.5 mm stroke, the crankshaft is perfectly balanced to reduce vibrations. The weighted flywheel attached to the crankshaft provides abundant torque and controllable enduro-specific power while the large alternator provides all the power needed for the EFI system.

- Lightweight crankshaft → very little vibration
- Large alternator → ample electrical power to power EFI system

### Crankcases

The crankcases are manufactured using a high-pressure die cast production process resulting in a thin wall thicknesses and minimal weight. To centralise mass, the layout features a shaft arrangement precisely positioned to harness rotating masses at the ideal centre of gravity. The reed block features optimised carbon reeds for consistent sealing.



- High-pressure die-cast production process → thin walls resulting in light weight
- Shaft arrangement → ideal mass centralisation

### Oil tank & pump

The TE 150 features an electronic oil pump which feeds vital 2-stroke oil into the engine to keep it lubricated. The pump is located just below the oil tank and feeds the oil via the throttle body meaning the oil is not mixed with the fuel, eliminating the need for pre-mixing as on traditional 2-stroke engines. The pump is controlled by the EMS (Engine management system) and delivers the optimal amount of oil according to the current RPM and engine load, reducing waste and preventing excessive smoke being emitted from the exhaust.

The oil tank is located beneath the fuel tank and is connected to a filler hose which runs through the upper member of the frame to a filler cap conveniently located for easy refills. The tank capacity is 0.7 litre and is fitted with a sensor which illuminates a warning visible to the rider when the oil needs to be refilled.

- Oil pump and tank → convenient solution, eliminates pre-mix

### Gearbox

The TE 150 is fitted with a Pankl 6-speed wide range gearbox. The enduro-specific ratios are tailored to the 150cc engine's power delivery, while an innovative gear lever reduces dirt build-up ensuring perfect operation in all conditions.

- Pankl 6-speed gearbox → specific enduro gearing
- Innovative gear lever → prevents dirt build-up ensuring precise control

### DS clutch

The TE 150 features a DS (Diaphragm Steel) clutch. The exclusive characteristics of this system include a single diaphragm steel pressure plate instead of traditional coil springs. 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.

- DS clutch → excellent modulation and durability

### Benefits

- Continuous 2-stroke development offering maximum performance and low running costs
- Low weight and agile handling
- Hydraulic clutch
- High quality standard components

## TE 250

The TE 250 offers the perfect balance between usable 2-stroke power and nimble lightweight handling. The TE 250 features revolutionary 2-stroke electronic fuel injection. This new-age technology redefines 2-stroke competition motorcycles, cementing their position in the enduro segment for the foreseeable future. The TE 250 adds convenience and simplicity doing away with the premixed fuel and jetting changes of the past, and adding efficiency and low emissions while retaining the simple character and inexpensive ownership of a 2-stroke.

### Engine

The 250cc 2-stroke engine has for long been the best combination of unsurpassed power and lightweight construction. The simplicity and low maintenance cost of the 2-stroke motor has made it a favourite amongst enduro riders for generations. The TE 250 features an advanced electronic fuel injection system. This comprises of a set of fuel injectors positioned at the transfer ports which deliver the ideal amount of fuel to the engine in every condition. This not only reduces fuel consumption and emissions but also delivers a clean and smooth power giving the beloved 2-stroke the edge. Additionally, the TE 250 engine has an advanced construction featuring shaft arrangements precisely positioned for greater mass centralisation, a counter-balancer shaft reducing vibration, a twin-valve controlled power valve and 6-speed enduro gearbox.

### Cylinder

The 66.4 mm bore cylinder in the TE 250 features a twin valve-controlled power valve system which delivers smooth and controlled power throughout the RPM range. Optimal exhaust port timing is achieved with the combination of a state-of-the-art, adjustable power valve drive and machined port window.

Additionally, the cylinder features two inlet positions located on the transfer ports at the rear of the cylinder where a pair of fuel injectors are mounted. The injectors deliver the fuel downwards into the transfer port which guarantees excellent atomisation with the air travelling upward to the combustion chamber. This ensures more efficient combustion resulting in reduced fuel consumption and emissions.

- Dual fuel injectors → excellent atomisation, reduced fuel consumption
- Power valve → machined port window

### Piston

The lightweight piston is perfectly matched to the cylinder and transmits minimal oscillating mass ensuring high levels of reliability and performance.

- Piston → fits perfectly to cylinder and combustion chamber

### Engine casings

The TE 250 engine is designed to improve mass centralisation. Consequently, the lightweight, die-cast engine casings are developed to accommodate the shafts in the ideal positions, centralising oscillating mass and improving ride-ability. Additionally, the counter-balancer shaft is compactly integrated having little effect on the overall design.

Additionally, the water pump casing is designed for effective cooling by optimising the flow of coolant.

- Die-cast engine casings → mass centralisation, optimal handling
- Water pump casing → optimal flow of coolant for effective cooling

### Counter-balancer shaft

The engine houses a laterally mounted counter-balancer shaft. The balancer significantly reduces vibration resulting in a smoother and more comfortable ride.

- Counter-balancer shaft → significantly reduced vibration

### Crankshaft

The crankshaft features a 72 mm stroke and is balanced in conjunction with the counter-balancer shaft for minimum vibration. By incorporating a heavier ignition rotor, the crankshaft produces more inertia than its motocross counterpart, which improves control in the lower RPM range.

### Gearbox

A 6-speed Pankl gearbox features enduro-specific ratios while an innovative shift lever reduces dirt build-up guaranteeing easy operation in all conditions.

- 6-speed gearbox → enduro-specific ratios
- Gear lever → prevents dirt build-up and blockage

### Clutch

The TE 250 features a DDS (damped diaphragm steel) clutch. What this means is the clutch uses a single diaphragm spring instead of the more common coil spring design, resulting in a much lighter clutch action. This design also incorporates a damping system which increases both traction and durability. Additionally, the light and robust basket and inner hub guarantee optimal oil supply and cooling to the clutch.

Combined with the BRAKTEC hydraulic system, this guarantees a light, modulated clutch feeling which is almost maintenance and adjustment free.

- DDS clutch → light action with integrated damping system, increased traction and reliability
- BRAKTEC hydraulic system → light and modulated clutch action, almost maintenance free

### Oil tank & pump

The TE 250 features an electronic oil pump which feeds vital 2-stroke oil into the engine to keep it lubricated. The pump is located just below the oil tank and feeds the oil via the throttle body, meaning the oil is not mixed with the fuel eliminating the need for pre-mixing as on traditional 2-stroke engines. The pump is controlled by the EMS (Engine management system) and delivers the optimal amount of oil according to the current RPM and engine load, reducing waste and preventing excessive smoke being emitted from the exhaust.

The oil tank is located beneath the fuel tank and is connected to a filler hose which runs through the upper member of the frame to a filler cap conveniently located for easy refills. The tank capacity is 0.7 litre and is fitted with a sensor which illuminates a warning lamp visible to the rider when the oil needs to be refilled.

- Oil pump and tank → convenient solution, eliminates pre-mix

### **Benefits**

- State-of-the-art 2-stroke technology
- Reduced fuel consumption
- No premix needed
- Smooth and clean power delivery
- Low maintenance costs
- Hydraulic clutch
- Excellent handling and agility

## **TE 300**

The flagship TE 300 offers astonishing power in a light and agile package. While retaining solid reliability and low maintenance costs, the TE 300 also features innovative electronic fuel injection. Although it offers the greatest 2-stroke performance in the Husqvarna enduro range, the TE 300 is controllable and also eliminates the need for premixing fuel and tedious jetting changes inherent with carburettor models. Additionally, the injection system significantly reduces emissions and fuel consumption, allowing the rider to stay on the trail for extended periods of time.

### Engine

The 300cc 2-stroke engine is a benchmark in unrivalled power in a lightweight construction. The engine features precisely arranged shafts for optimal mass centralisation, a counter-balancer shaft reduces vibration, and there is a twin-valve controlled power valve and 6-speed enduro gearbox.

The TE 300 features an advanced electronic fuel injection system. This comprises of a set of fuel injectors positioned at the transfer ports which deliver the ideal amount of fuel into the engine for every condition. This not only reduces fuel consumption and emissions but also delivers clean and smooth power delivery giving the revered 2-stroke the edge.

### Cylinder

The 72 mm bore cylinder features a twin valve-controlled power valve system which delivers smooth and controlled power throughout the RPM range. Optimal exhaust port timing is achieved with the combination of a state-of-the-art, adjustable power valve drive and machined exhaust port window.

Additionally, the cylinder features two inlet positions located on the transfer ports at the rear of the cylinder where a pair of fuel injectors are mounted. The injectors deliver the fuel downwards into the transfer port which guarantees excellent atomisation with the air travelling upward to the combustion chamber. This ensures more efficient combustion resulting in reduced fuel consumption and emissions.

- Dual fuel injectors → excellent atomisation, reduced fuel consumption
- Power valve → machined port window

### Piston

The lightweight piston is perfectly matched to the cylinder and transmits minimal oscillating mass ensuring high levels of reliability and performance.

- Piston → fits perfectly to cylinder and combustion chamber

### Engine casings

The TE 300 engine is designed to improve mass centralisation. As a result, the lightweight, die-cast engine casings are developed to accommodate a shaft arrangement aimed at centralising oscillating mass and improving ride-ability. Additionally, the counter-balancer shaft is compactly integrated having little effect on the overall design.

Additionally, the water pump casing is designed for effective cooling by optimising the flow of coolant.

- Die cast engine casings → mass centralisation, optimal handling
- Water pump casing → optimal flow of coolant for effective cooling

### Counter-balancer shaft

The engine houses a laterally mounted counter-balancer shaft. The balancer significantly reduces vibration resulting in a smoother and more comfortable ride.

- Counter-balancer shaft → significantly reduced vibration

### Crankshaft

The crankshaft features a 72 mm stroke and is balanced in conjunction with the counter-balancer shaft for minimum vibration. By incorporating a heavier ignition rotor, the crankshaft produces more inertia than its motocross counterpart which improves control in the lower RPM range.

### Gearbox

A 6-speed Pankl gearbox features enduro-specific ratios while an innovative shift lever reduces dirt build-up guaranteeing easy operation in all conditions.

- 6-speed gearbox → enduro-specific ratios
- Gear lever → prevents dirt build-up and blockage

### Clutch

The TE 300 features a DDS (damped diaphragm steel) clutch. What this means is the clutch uses a single diaphragm spring instead of the more common coil spring design resulting in a much lighter clutch action. This design also incorporates a damping system which increases both traction and durability. Additionally, the light and robust basket and inner hub guarantee optimal oil supply and cooling to the clutch.

Combined with the BRAKTEC hydraulic system, this guarantees a light and modulated clutch feel which is almost maintenance and adjustment free.

- DDS clutch → light action with integrated damping system, increased traction and reliability
- BRAKTEC hydraulic system → light and modulated clutch action, almost maintenance free

### Oil tank & pump

The TE 300 features an electronic oil pump which feeds vital 2-stroke oil into the engine to keep it lubricated. The pump is located just below the oil tank and feeds the oil via the throttle body, meaning the oil is not mixed with the fuel eliminating the need for pre-mixing as on traditional 2-stroke engines. The pump is controlled by the EMS (Engine management system) and delivers the optimal amount of oil according to the current RPM and engine load, reducing waste as well as preventing excessive smoke being emitted from the exhaust.

The oil tank is located beneath the fuel tank and is connected to a filler hose which runs through the upper member of the frame to a filler cap conveniently located for easy refills. The tank capacity is 0.7 litre and is fitted with a sensor which illuminates a warning visible to the rider when the oil needs to be refilled.

- Oil pump and tank → convenient solution, eliminates pre-mix

### **Benefits**

- State-of-the-art 2-stroke technology
- Reduced fuel consumption
- No premix needed
- Smooth and clean power delivery
- Low maintenance costs
- Hydraulic clutch
- Excellent handling and agility

## **2023 Functional Enduro Apparel**

The 2023 Husqvarna Motorcycles Functional Enduro Apparel range features everything enduro riders require to dress to win. Every item in the collection is packed with innovative technical features designed to deliver the highest levels of comfort, durability and protection. The Enduro Apparel is also exclusively styled to match the striking design of the 2023 Enduro Range of machinery.

### Moto 9 MIPS® Gotland Helmet

Designed for race-long comfort and made exclusively for Husqvarna Motorcycles by Bell, the Moto 9 MIPS® Gotland Helmet combines maximum protection with optimal fit. The offroad helmet has a Velocity flow ventilation system for highly efficient cooling and a fully adjustable vented visor. There is an integrated ventilated mouthpiece and an XT-2® Extended Wear, removable and washable interior liner with Magnefusion™ cheek padding. Weight is 1.450 g (±50 g).

### Racecraft Goggles

Maintain your race-winning vision with another Husqvarna Motorcycles exclusive – top-quality offroad goggles by 100%. The injected polycarbonate shield lens offers protection against UVA, UVB and UVC and features anti-fog technology as well as an anti-scratch coating. The nose guard is removable. The goggles have a four-layer, fleece-foam lining and a headband with adhesive silicone strips.

### Gotland Shirt

Both light and robust, the Gotland Shirt has timeless style and is perfect for enduro riding. Available in two distinctive colourways – blue and olive – it features a woven fabric front, mesh inserts and perforated ventilation zones. There is an elastic mesh collar and foam padding at the elbows. Taped sleeve cuffs resist wear.

### Gotland Pants

A perfect match with the Gotland Shirt, the Gotland pants are lightweight, durable and are made from a hard-wearing nylon/polyester material. Cordura® reinforced, they also have heatproof and abrasion-resistant leather knee protection. There are mesh inserts and reinforced elasticised panels in movement-intensive areas.

### Ridefit Gotland Gloves

Made exclusively by 100% for Husqvarna Motorcycles, the premium Ridefit Gotland Gloves have perforated palms and a silicone print for better grip. Other features include touchscreen operability, Lycra® finger gussets, neoprene cuffs, and adjustable TPR Velcro fasteners at the wrists.

### Crossfire 3 SRS Boots

Stylish and robust, the Crossfire 3 SRS Boots are packed with features to ensure comfort, control and safety, and are made exclusively for Husqvarna Motorcycles by SIDI. There is a nylon inner sole with removable foot bed, a stitch-free and replaceable boot leg, and an exclusive and patented flex system with hyper extension block. The shin plate is replaceable, the toe area has plastic reinforcement while the heel protector is robust, shock-absorbing, and anatomically shaped. As well as a fully adjustable calf area, there is a micro adjustable and replaceable buckle system.



## **Technical Accessories**

Husqvarna Motorcycles has developed a comprehensive selection of premium performance parts in conjunction with the FIM World Championship-winning Factory Racing team. Designed to take the performance and aesthetics of the 2023 TE and FE models to a new level, the Technical Accessories range combines innovative technology with premium quality and ease of fitment. Every enduro rider has access to the refinements that make the Factory Racing team world beaters.

### Factory Racing Triple Clamp

Not only a visual highlight with its elegant anodised surface, this CNC-milled aluminium triple clamp is also used by the Factory Racing Team for its handling and stability benefits. The steering stem is tuned for optimal stiffness and ensures 100% alignment and correct geometry of the WP fork tubes used on the enduro range. It also prevents ovalisation of the fork outer tubes. The result is precise and smooth fork response. Offset can be easily adjusted to either 20 or 22 mm. Shorter offset means more stability on the straights while longer offset contributes to faster steering. The triple clamp is supplied with the steering head bearing already pressed on.

### Akrapovič "Racing Line"

Increased torque and performance means better power delivery at all engine speeds with the Akrapovič „Racing Line“ exhaust system. Engine braking is more balanced too. Throttle response is more sensitive and traction is refined. The design emphasises the rich engine note and the manifold is optimally designed to suit the production engine. The header is stainless steel and the silencer housing is high-grade titanium. As used by Factory Racing.

### Factory Wheels

With anodised hubs milled from a single piece of aluminium and anodised aluminium spoke nipples, the Factory Wheels offer a significant weight saving compared to the standard wheels. The result is maximised handling gains along with stability in challenging off-road situations. Sizes are 1.6x21" front and 2.15x18" rear.

### Factory Seat

A custom designed seat for an uncompromising look with maximum grip and unrestricted freedom of movement. Standard seat height is retained. The cover has transversely stitched ribs with a wear resistant coating.

### Preload Adjuster

The easy operation mechanical-drive Preload Adjuster is lightweight and allows fast preload adjustment of the rear shock spring. It works across the entire length of the thread on the shock absorber and is resistant to dirt. As fitted to the factory racing machines.

### Supersprox Stealth Rear Sprocket

With high-strength steel teeth for extra-long service life, the Supersprox Stealth Rear Sprocket features an aluminium centre section to reduce unsprung mass. As well as being 50 % lighter than an all-steel rear sprocket, the Supersprox Stealth offers at least three times the service life of all-aluminium rear sprockets. Used by Factory Racing.

### Factory Racing LED Headlight

Specially developed for the enduro range, the Factory Racing LED Headlight is exceptionally robust. LED technology offers very high light output with an intensity of 1500 lm and light colour of approximately 5500 K. It can be installed in the standard headlight cowl.

### Factory Racing Handguard Kit

Extremely light and with an uncompromising race look, these 2-component plastic handguards have black-coloured middle sections with maximum strength for optimum protection, while the coloured outers are highly flexible under the roughest conditions. They are the same as those used by the Factory Racing Team. Special mountings allow direct attachment at the levers.

### Skid Plate

Endurance-tested for the toughest off-road applications, the 3 mm thick C-SMC material (Carbon Sheet Molding Compound) Skid Plate offers effective protection for frame and engine. Easy to mount and extremely light and durable, it is isolated from the frame by rubber pads. The custom design boasts the highest quality workmanship.

### Hinson Clutch Cover

The Hinson Clutch Cover is CNC-milled from high-strength aluminium, resists the hardest knocks and has an uncompromising race look. Made to the same specifications as those fitted to the factory racing machines.