

**STIHL**®



**Redefining world class**

**STIHL TS 500i**  
cut-off saw

**NEW**



**STIHL**  
Injection

The world's first handheld  
saw with electronically controlled  
fuel injection.

# The new STIHL TS 500i with STIHL Injection

The STIHL TS 500i with electronically controlled fuel injection doesn't just set new standards when it comes to engine technology: it is the new standard. It features revolutionary and innovative technology, making it an indispensable tool on every building site. When it comes to building roads and construction work above or below ground, the STIHL TS 500i makes light work of tough jobs. Whether you're cutting concrete, steel girders, pipes or asphalt – the STIHL TS 500i will take the strain out of the daily grind. This compact power packet is easier to start than ever before and ensures optimized engine performance and excellent handling. But it has even more to offer: with outstanding efficiency and targeted diagnosis for fast service, this exceptional saw will also help you cut costs.





# A global first: STIHL Injection

Discover a whole new kind of cutting, with STIHL Injection. At the heart of this revolutionary technology is the electronic engine management system. For the first time ever, the saw's ignition timing is defined not only by the engine speed – but also the load. The ideal settings for ignition and fuel injection are calculated constantly while the tool is in use, so you can rely on an optimal performance at all times. And thanks to this new technology, you won't have to compromise when it comes to the engine settings: it makes the carburetor and all manual settings redundant. The fully automatic engine settings guarantee optimized performance and fuel consumption and first-class power delivery for any kind of cutting job.



Fuel injector **5**

**1** Generator



## The most important STIHL Injection components and their functions:

### 1 Generator

The generator produces all the electricity required to power the control unit and operate the cut-off saw. And it does this right from the first rotation of the crankshaft during start-up. But that's not all: while the tool is running, the generator continually updates the control unit about the position of the crankshaft and the current engine speed.

### 2 Sensor

The sensor measures the temperature and pressure in the crank chamber. This information is then transmitted to the control unit.

### 3 Control unit

The control unit is the most crucial part of the STIHL Injection system. It continuously analyses the information transmitted by the generator and sensor and regulates the fuel injection and ignition accordingly. For example, it calculates the air mass, i.e. the load on the machine, using data from the sensor regarding the current temperature and pressure. Together with the engine speed information supplied by the generator, it can accurately determine the necessary amount of fuel as well as the optimal ignition timing and duration. As a result, the fuel injector and ignition are always triggered at just the right moment. The control unit also regulates the electronic water control.

### 4 Fuel injection pump

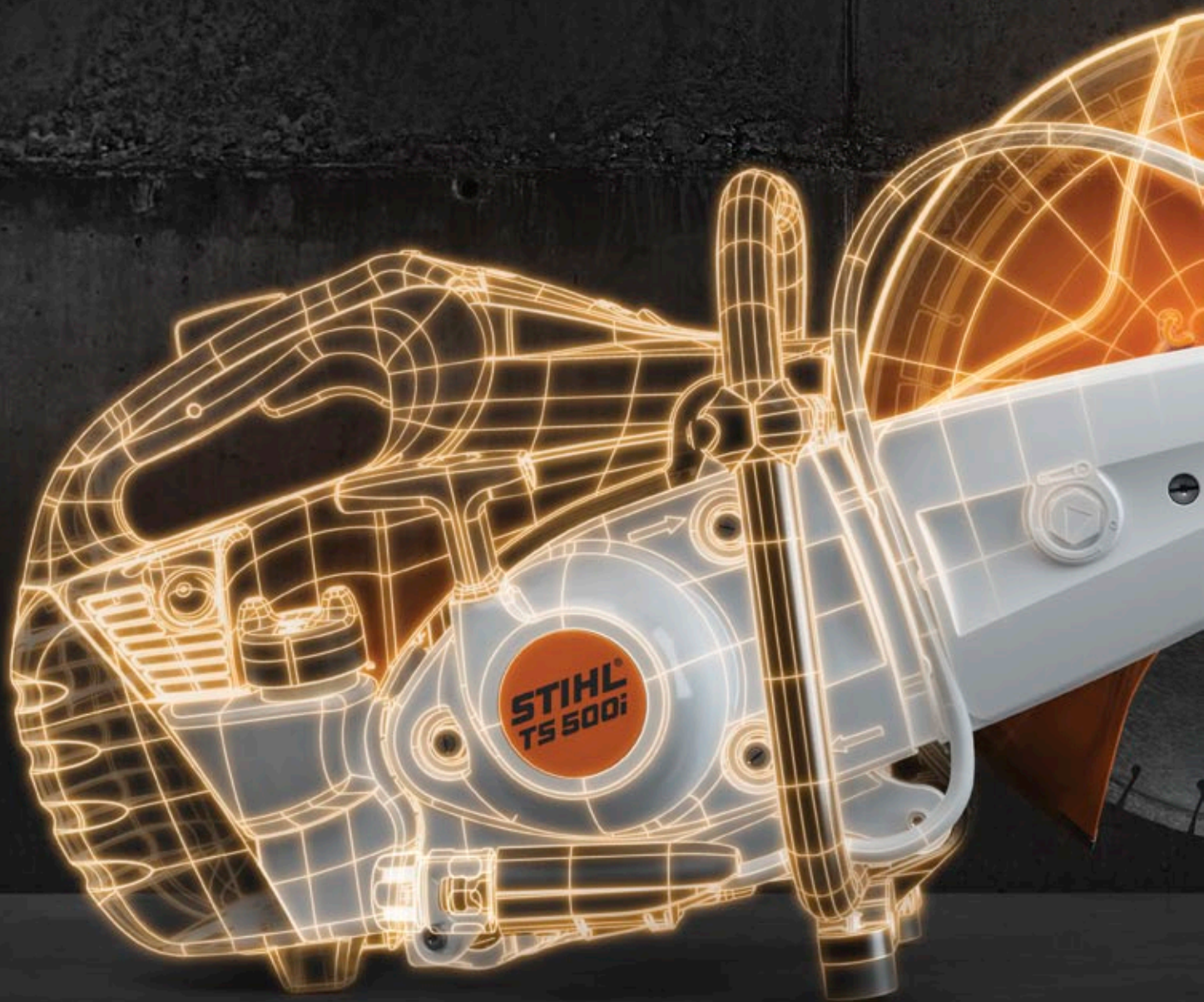
The fuel injection pump keeps the fuel pressure constant. This guarantees that the fuel injector is always supplied with sufficient fuel at just the right pressure.

### 5 Fuel injector

The control unit triggers the fuel injector, which injects the optimal amount of fuel directly into the crankcase. This procedure is synchronized with the engine cycle, i.e. perfectly attuned to the combustion cycle.

## The benefits for STIHL users

If you work on a construction site, you'll know that delivering a fast, quality result is what really counts. The STIHL TS 500i with STIHL Injection is the most reliable workmate you could hope for. It combines precision, efficiency and user-friendliness with cutting-edge technology. So you can focus on what matters most – your work.





### **Easy to start**

STIHL Injection technology makes a choke and priming redundant. The system automatically registers the external temperature, so only one start position is necessary. The intelligent control unit assesses the temperature, as well as the elevation and fuel quality and automatically calculates the required amount of fuel. It's never been easier to get started: simply move the switch from 0 to I, purge the engine, start the saw and away you go.

### **Optimal engine performance**

Thanks to the new STIHL Injection system, the saw's engine performance is world class: the cutting performance of the powerful 3.9 kW STIHL TS 500i is 20 % greater than that of the STIHL TS 420. And it's virtually the same size. It also delivers high torque over a wide rpm range for a significant increase in power delivery. The STIHL TS 500i is also a true professional when it comes to engine tuning: if the operating conditions change, the engine settings adapt to ensure smooth running and excellent acceleration.

### **Exceptional handling**

Its high torque over a wide rpm range means the STIHL TS 500i is unaffected by feed pressure and can simply forge ahead to produce an even cut. The special top handle makes it even easier to perform jobs that require a high degree of precision. The STIHL TS 500i doesn't require a carburetor, making it a real lightweight champion for heavy-duty work. Its compact dimensions and excellent power-to-weight ratio really come to the fore in cramped or confined working conditions. In short: it's easy to accurately guide this saw, so you can focus entirely on the job at hand and create perfectly even cuts.

### **Effective anti-vibration system**

The STIHL Injection system reduces the mechanical complexity of the two-stroke engine. The piston has been simplified and is therefore lighter, so there's less oscillating mass in the cylinder. This means up to 35 % less engine vibrations compared to the STIHL TS 420. Add to that the special spring elements that reduce the transmission of engine vibrations to the user's arms and hands. The STIHL TS 500i produces a vibration level of just 2.4 m/s<sup>2</sup>, so you can work for longer without tiring and guide the saw with outstanding precision, even under the toughest conditions.

## The benefits of increased efficiency

For building projects where timing is of the essence, you need a tool that allows you to work quickly and efficiently. And the STIHL TS 500i is ideal for getting the job done fast – with high-quality results. The saw can also be quickly and easily serviced, as the STIHL Injection control unit and engine diagnosis device deliver a targeted electronic diagnosis of any maintenance work required. This minimizes downtime – to maximize cutting time.





## Intelligent maintenance in two steps

### Diagnosis during use

During use, all engine-related data is constantly recorded. The control unit automatically registers any irregularities in the electronic components and stores this information. This diagnosis takes place while you work and the results can be accessed later. The STIHL TS 500i is currently the only STIHL tool equipped with this advanced feature.

### Diagnosis using the MDG 1

With the MDG 1 engine diagnostic unit, servicing your cut-off saw has never been easier. Simply attach it to the saw to generate a precise analysis. It uses special PC diagnostic software to check all the electronic components and analyze the tool's stored data. Even irregularities that only appear occasionally can be recognized and corrected before they lead to the failure of components. This software is guaranteed to improve the servicing of your tool, and we'll even put it in writing: every analysis performed by the MDG 1 is summarized in a report.

## Top efficiency across the board

### Engine diagnosis for greater efficiency

Saving time means saving money. Targeted maintenance using the MDG 1 reduces the time required to make a diagnosis by 50 %, freeing up your service team's capacity. Speedy analysis also makes it possible to correct errors with greater accuracy, which in turn reduces the time required for maintenance, so you can get back to work faster.

### STIHL Injection for greater efficiency

The fully automatic engine settings reduce fuel consumption by up to 15 % compared to the STIHL TS 420. The saw's engine capacity has also been increased by 0.7 kW, allowing you to cut more material in the same amount of time while using less fuel. Fast, precise cutting becomes par for the course.

While you're sawing, the STIHL Injection system independently controls all the settings to ensure optimized engine performance and running characteristics.

The STIHL TS 500i also raises the bar when it comes to durability: every last detail is designed specifically for use on construction sites. For premium quality, you can count on STIHL.



# Proven technologies



## 2-MIX engine with STIHL Injection

The STIHL 2-MIX engine with STIHL Injection features the world's first electronically controlled fuel injector, which supplies exactly the right amount of fuel directly into the crank chamber. It truly sets new standards, with greater performance, fewer emissions and high torque over a wide rpm range.



## Electronic water control

The electronic water control is now governed by the intelligent STIHL Injection control unit. It delivers perfect dust suppression at the push of a button. The electronic water control allows you to precisely meter the water supply – simply by pressing the plus and minus buttons – for a more convenient, more efficient and safer cut.



## Long-life air filter system with cyclone air routing

The long-life air filter system with cyclone air routing increases the service life of the filter by up to a year, depending on the working conditions. You also won't have to worry about cleaning the filter regularly and you'll benefit from long-lasting performance and extremely long service intervals.



## ElastoStart Plus

STIHL ElastoStart Plus makes the saw even easier to start. This special shock absorber grip on the starter cord ensures jerk-free starting without load peaks. The integrated damping element smooths the force generated during start up. Plus the wear-resistant starter cord means you'll enjoy smooth starting for a long time to come.



## Semi-automatic belt tensioning

Light and uniform re-tensioning increases the service life of the belts and shaft bearings. That means less time spent on maintenance and less money spent on operating costs.





# Technical details: STIHL TS 500i



## TS 500i

Displacement (cm <sup>3</sup> )	72.2
Power output (kW/hp)	<b>3.9/5.3</b>
Weight (kg)*	10.2
Sound pressure level** (dB(A))	98
Sound power level** (dB(A))	111
Vibration level left/right*** (m/s <sup>2</sup> )	2.4/2.0
Cutting wheel (mm)	350
Maximum cutting depth (mm)	125
Total length (cm)	73.0
STIHL Injection	●
Electronic water control (A)	●
Cyclone air routing	●

\* Without fuel or cutting wheel \* K factor according to Dir. 2006/42/EC = 2.5 (dB(A)) \*\*\*K factor according to Dir. 2006/42/EC = 2 m/s<sup>2</sup> ● Standard



For further information and advice:

[www.stihl.com](http://www.stihl.com)