

T *TRACTIVE* Suspension The Art of Suspension

MOTORBIKE




THE COMPANY

TracTive Suspension was established on June 1st 2010. Starting a suspension company in the middle of the 'Dutch Suspension Valley' meant having to avoid being a dime a dozen.

An unconventional approach was needed. For TracTive, this meant focussing on its speciality, electronically controlled suspension systems. Before 2010, the founders of TracTive had already been active in electronic shock absorbers in motorsport since the mid-nineties, aftermarket shock absorbers since the 2000's, and BMW's Electronic Suspension Adjustment since 2005.

Following TracTive's founding in 2010, TracTive Suspension soon became a development partner with Tenneco Monroe, BMW, BRP Lynx, Touratech AG, Dallara, RUF Automobile, etc., while simultaneously developing its own technology base.

In 2011, TracTive patented the Dynamic Damping Adjustment (DDA) valve, which is still THE benchmark in electronic damping control. Apart from the DDA valve, TracTive has a wide variety of electronic technologies at its command: control units, remote controls, sensors, height adjustment systems etc. Above all, TracTive's team combines the highest level of technology with flexibility and passion. Exactly these characteristics make sure we always aim to deliver the ultimate solution for our customers: from motorsport to tuners and manufacturers, from a manually adjustable shock to a complete semi-active Plug & Play system for Automotive and Motorbike products.

 Developed and manufactured in The Netherlands



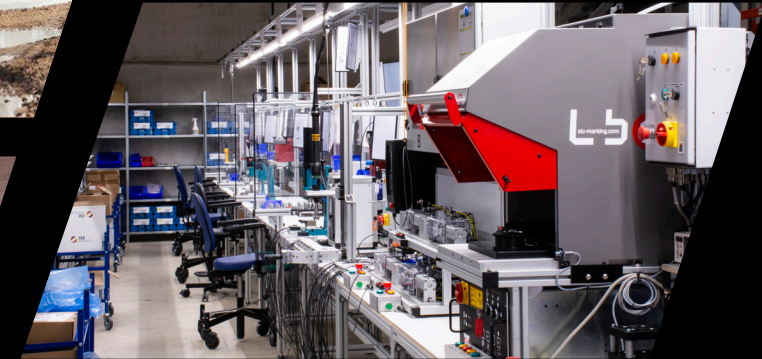
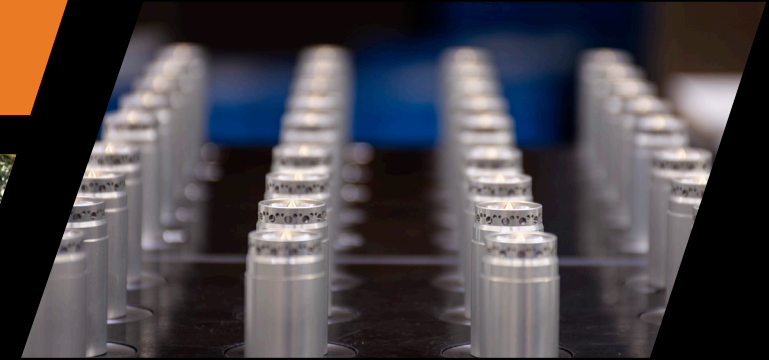
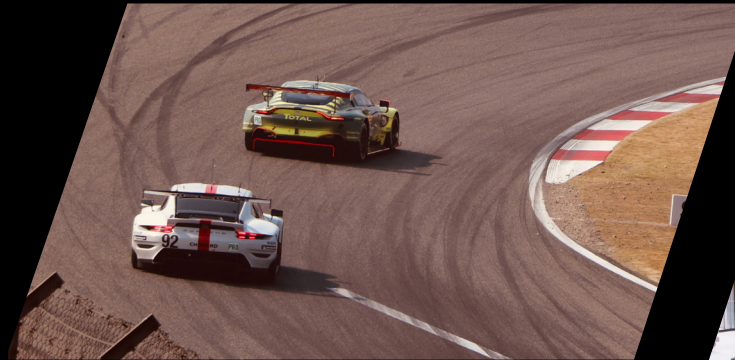
WHAT WE DO

TracTive supplies suspension systems to Original Equipment Manufacturers (OEM's) and aftermarket customers.

- ▶ **Motorbike:** Road, Off-Road, Adventure, Motorsport
- ▶ **Automotive:** Road, Motorsport, Off-Road
- ▶ **Snowmobile:** Motorsport

For international B2B customers we offer suspension prototyping, R&D, engineering, ride work and industrialisation support.

TracTive performs mass production of electronic suspension components like the DDA solenoid valve from 10.000 to 200.000 pcs annually.



ELECTRONIC SUSPENSION

Many high-end motorbikes nowadays come equipped with electronic suspension. Adjustable by the touch of a button to the preferred mode, it continuously modifies damping and ride height to the changing road conditions and load. How can it be improved? TracTive Suspension!

Electronic suspension - a new art

Despite how sophisticated it may appear; all original shocks and forks are mass-produced with a compromise between functionality and price. Developed for the average rider, with an average weight and riding style. Based on decades of working with electronic suspension in road racing and off-road applications, TracTive R&D has developed a range of Plug & Play shocks and fork cartridges with superior components and technologies.

At the core of our electronic dampers is our patented Dynamic Damping Adjustment (DDA) valve. Compared to the factory suspension the TracTive DDA valve has a larger adjustment range and adjusts faster, in only 6-10 milliseconds.

TracTive DDA is the world's fastest valve!

Considering the human brain reacts within 150 milliseconds, you realise what a gamechanger the TracTive DDA valve is compared to all conventional suspension systems. Traction levels in all conditions are vastly improved, maximising the tyre's contact patch, providing a safer ride and the ability to push your motorbike to limits you wouldn't have thought possible.

All our electronic products plug in directly to the original connectors. The motorbike's control unit will not notice a difference, so all safety systems and original functions of the motorbike keep working without errors.




X-CITE SHOCKS

The **X-CITE** shock is the first upgrade for riders who want improved suspension. Each shock has a damping setting specifically developed for its application, and the spring is selected for the rider's weight and intended use.

The **X-CITE** shock is equipped with a separation piston to separate damping oil from pressurised nitrogen gas. As the damping piston is moving in oil only, this creates more stable behaviour. For applications where there is no room for a separated gas chamber or when a very smooth initial movement is more important, an emulsion of damping oil and nitrogen gas is used.

The spring preload can be set for the loading. The preload adjuster has a large adjustment range and supports the highest loads. The rebound adjuster affects rebound damping and compression damping in a natural balance. Every adjustment brings a noticeable change in damping level.





 The electronic **eX-CITE** fits Plug & Play applications. Damping is controlled by the motorbike's control unit and original handlebar buttons.



Intended use

SPORT			TOURING			ADVENTURE		
			X-CITE					

Technical highlights

-  Emulsion or separated oil and gas*
-  CNC machined high quality materials
-  Plug & Play electronic damping*
-  Manual, hydraulic or electronic preload adjuster*

* Depending on the application

X-PERIENCE & X-CELLENT SHOCKS

High performance shocks for demanding riders. The **X-PERIENCE** is developed for adventure motorbikes where the **X-CELLENT** is developed for road and sport bikes.

Both shocks have an external reservoir with separated damping oil and nitrogen gas. The reservoir is forged from one piece of aluminium and large oil channels offer minimal flow restriction. High oil capacity and a large cooling area keep the oil temperature low, which results in thermal stability and long-lasting fade free performance.

The high- and low-speed compression adjusters offer fine tuning possibilities. The robustness of the preload adjuster supports rides in the toughest conditions. The large adjustment range can compensate large load changes.

The **X-PERIENCE** has a damping setting for adventure motorbikes where the **X-CELLENT** shock has a sportier road setup and is equipped with a top out spring. A top out spring creates suspended negative travel, allowing the shock to move easier at maximum extension during hard braking, which keeps the bike more stable.



The electronic **eX-PERIENCE** and **eX-CELLENT** fit Plug & Play applications. Damping is controlled by the motorbike's control unit while fine adjustments can be done manually with the dual compression adjusters.

Intended use

SPORT	TOURING	ADVENTURE	RALLY
		X-PERIENCE	
X-CELLENT			



Technical highlights

- ▶ External reservoir for optimal cooling
- ▶ High- and low-speed compression adjustment
- ▶ Plug & Play electronic damping*
- ▶ Manual, hydraulic or electronic preload adjuster*


* Depending on the application

X-TREME SHOCKS

Top of the line shocks and the ultimate choice for Adventure riders who require maximum off-road performance and durability.

In addition to the X-PERIENCE shocks the X-TREME shocks are equipped with a Position Dependent Damping System (PDSII) which resists bottoming.

At the end of the compression stroke, a second damping piston enters a cup and creates an additional damping level. It effectively is a cushion that absorbs high compression energy and prevents hard bottoming of the shock absorber. This happens only at high suspension speeds during the compression stroke. The bottoming impacts on the motorbike chassis are minimised leading to less stress on other components and increased comfort and safety.





 The electronic eX-TREME fits Plug & Play applications. Damping is controlled by the motorbike's control unit while fine adjustments can be done manually with the dual compression adjusters.



Intended use

TOURING		ADVENTURE		RALLY	
		X-TREME			

Technical highlights

-  PDSII anti bottoming
-  External reservoir for optimal cooling
-  Plug & Play electronic damping*
-  Manual, hydraulic or electronic preload adjuster*

* Depending on the application

X-CHANGE SHOCKS

X-CHANGE is a modular suspension upgrade solution which combines TracTive high-end components with original parts.

More motorbikes come with an Electronic Preload Adjuster (EPA) as standard equipment to adjust the ride height according to the load. The EPA may be located in a specific location on the motorbike where space can be limited. The X-CHANGE products combine a high-end shock with the original EPA.

The X-CHANGE shocks are built the same way as our other products with one exception: the shock absorber tube is made from a high strength steel. This allows the outside diameter of the tube to be compatible with the original EPA and to accommodate the 46mm high flow TracTive piston.

The X-CHANGE range has a similar line-up as our other products:

X-CHANGE

- ✓ Emulsion or seperated oil and gas
- ✓ CNC machined high quality materials
- ✓ Rebound adjustable

X-CHANGE PRO/ST

- ✓ External reservoir for optimal cooling
- ✓ High- and low-speed compression adjustment

X-CHANGE PRO PDS

- ✓ PDSII anti bottoming



For motorbikes with electronic damping the eX-CHANGE fits Plug & Play applications. Damping is controlled by the motorbike's control unit and original handlebar buttons.



Intended use

SPORT		TOURING		ADVENTURE		RALLY	
		X-CHANGE					
			X-CHANGE PRO				
				X-CHANGE PRO PDS			
X-CHANGE ST							

X-TREME & X-CELLENT CARTRIDGES

High performance cartridges for demanding riders. **X-TREME** and **X-CELLENT** are similarly built with a different rider in mind. Where the **X-TREME** was designed for both on-road and adventure, the **X-CELLENT** is on-road focused.

The cartridges are designed for ultimate feel and control under varying loads and riding conditions. The cartridges are closed, meaning that the cartridge has specific damping oil and a separated, pressurised nitrogen gas chamber. The largest cartridge piston on the market, with 35mm diameter, ensures a high oil flow and a stable, well-controlled damping behaviour.

The **X-TREME** cartridge is designed for adventure motorbikes and has a hydraulic end stop to prevent bottoming during hard impacts.

The **X-CELLENT** cartridge is developed for road and sport bikes. Inside the cartridges are top out springs that create suspended negative travel, allowing the fork to move easier at maximum extension during acceleration. This maximizes grip keeping the bike more stable, improving safety and performance.



The large size of the piston allows the use of the TracTive electronic DDA valve for motorbikes with electronic suspension adjustment. The electronic **eX-TREME** and **eX-CELLENT** cartridges fit Plug & Play with the original connector. Damping is controlled by the motorbike's control unit and original handlebar buttons.

Intended use

SPORT	TOURING	ADVENTURE	RALLY
		X-TREME	
X-CELLENT			



Technical highlights

- ▶ 35mm piston diameter
- ▶ Closed damping system
- ▶ CNC machined high quality materials
- ▶ Plug & Play electronic damping available*

* Depending on the application

INTENDED USE

Shocks

SPORT	TOURING	ADVENTURE	RALLY
	X-CITE		
	X-PERIENCE		
	X-TREME		
X-CELLENT			
	X-CHANGE		
	X-CHANGE PRO		
	X-CHANGE PRO PDS		
X-CHANGE ST			

Cartridges

SPORT	TOURING	ADVENTURE	RALLY
	X-TREME		
X-CELLENT			



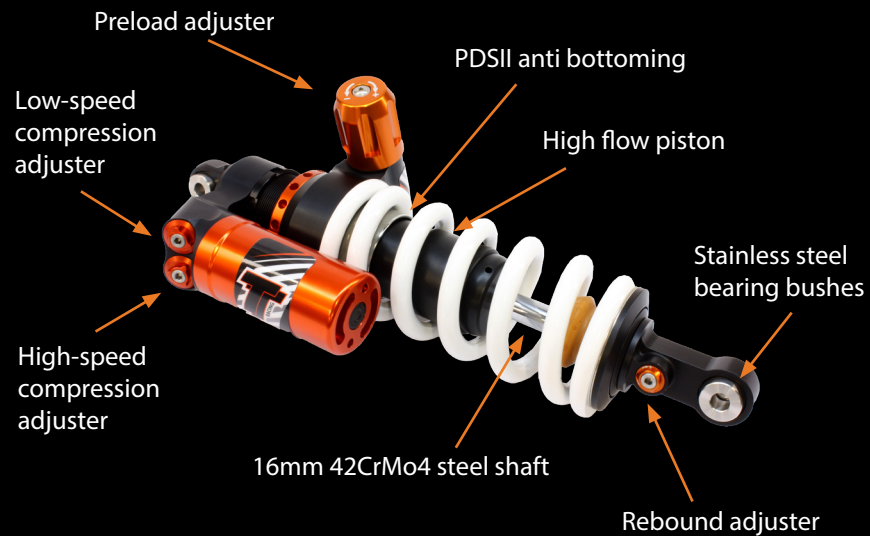
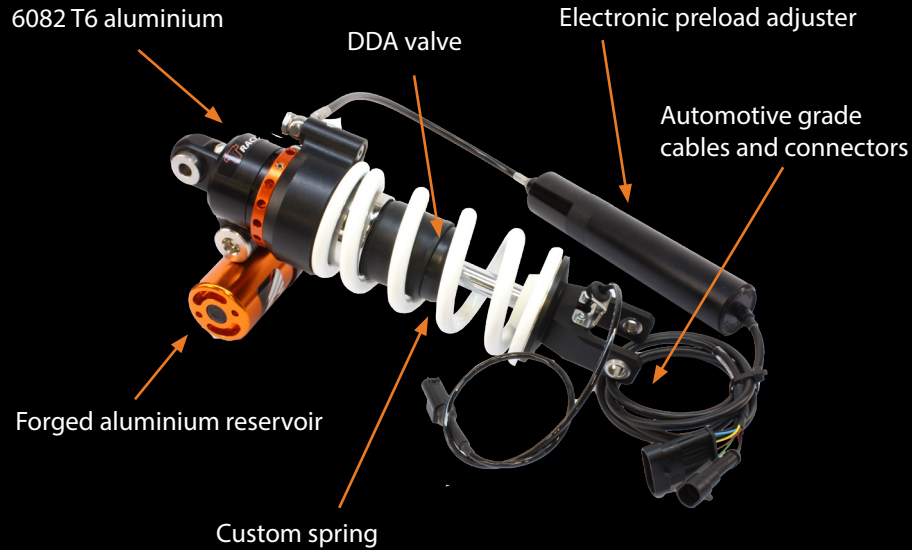
TECHNICAL SPECIFICATIONS

* 38mm on some applications

** Depending on application/chosen version

	SHOCKS				SHOCKS				CARTRIDGES	
	X-CITE	X-PERIENCE	X-TREME	X-CELLENT	X-CHANGE	X-CHANGE PRO	X-CHANGE PRO PDS	X-CHANGE ST	X-TREME	X-CELLENT
Fully serviceable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Separated oil and nitrogen gas	✓**	✓	✓	✓	✓**	✓	✓	✓	✓	✓
Emulsion oil and nitrogen gas	✓**				✓**					
High flow piston	46mm*	46mm*	46mm	46mm	46mm	46mm	46mm	46mm	35mm	35mm
Steel shaft	16mm	16mm	16mm	16mm	16mm	16mm	16mm	16mm	10mm	10mm
CNC machined 6082 T6 aluminium body	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CNC machined 6082 T6 aluminium tube	✓	✓	✓	✓					✓	✓
CNC machined ST52 steel tube					✓	✓	✓	✓		
Stainless steel bearing bushes	✓	✓	✓	✓	✓	✓	✓	✓		
Best-quality ball bearings	✓	✓	✓	✓	✓	✓	✓	✓		
Low-friction seal with back-up ring	✓	✓	✓	✓	✓	✓	✓	✓		
De-aeration screw									✓	✓
Hydraulic end stop									✓	
Top-out spring				✓						✓
Rebound adjustment electronic Plug & Play**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rebound adjustment**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compression high-speed adjustment		✓	✓	✓		✓	✓	✓		
Compression low-speed adjustment		✓	✓	✓		✓	✓	✓	✓	✓
Position Dependent Damping System (PDSII)			✓				✓			
Low or high seat height versions**	✓	✓	✓		✓	✓	✓	✓	✓	
Long travel / Rally version**			✓				✓		✓	
Length adjustment	✓	✓	✓	✓	✓	✓	✓	✓		
Electronic preload adjustment**	✓	✓	✓	✓	Original	Original	Original	Original		
Hydraulic preload adjustment**	✓	✓	✓	✓						
Manual preload adjustment**	✓	✓	✓	✓					✓	✓

SHOCK SPECIFICATIONS



CARTRIDGE SPECIFICATIONS





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www.tractivesuspension.com



motorbike@tractivesuspension.com



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