



Selective Steering Stabilizer for MX & Enduro

S³

Owner's Manual



Introduction



Öhlins Racing AB - The Story

It was the 1970's, a young man named Kenth Öhlin spent most of his spare time pursuing his favourite sport: motocross.

A careful observer, Kenth's attention was continually drawn to one specific detail - motocross bikes had more engine power than their suspension could handle. It was not long before Kenth realised that better performance could be achieved by improving the suspension.

Öhlins Racing was established in 1976, and just two years later the company won its first World Championship title. Despite being in the business for 35 years, the search for perfection and new functions is still the main focus of the company.

Congratulations! You are now the owner of an Öhlins product.

Every product has gone through rigorous testing and engineers have spent thousands of hours, doing their very best to use every possible experience from our 35 years within the racing sport.

The product that you now have in your possession is pure racing breed that is built to withstand.

By installing this product on your vehicle you have made a clear statement... you are a serious rider with a focus on getting the maximal handling ability and outstanding feedback from your vehicle. Along comes the fact that your product will be a long lasting friend, delivering the very best of comfort and performance every time you go for a ride.

Go explore!

Safety Precautions

Note!

The Selective Steering Stabilizer is a very important part of the vehicle and will therefore affect the stability.

 *Read and make sure that you understand the information in this manual and the mounting instructions before you use this product. If you have any questions regarding installation or maintenance please contact your nearest Öhlins dealer.*

 *Öhlins Racing AB can not be held responsible for any damage to the product, vehicle, other property or injury to persons, if the instructions for installing and maintenance are not followed exactly.*

Warning!

This product was developed and designed exclusively for a specific vehicle model and should only be installed on the intended vehicle model in its original condition as delivered from the vehicle manufacturer.

 *After installing this product, take a test ride at low speed to make sure that your vehicle has maintained its stability.*

 *If the product makes an abnormal noise, or the function is irregular, or if you notice any leakage from the product, please stop the vehicle immediately and return the product to an Öhlins Service Centre.*

Caution!

Make sure that the steering stops work properly. If not, you must adjust the steering stops (use washer or likewise). If the damper is used as stop it will be damaged.

Note!

When working on this product, always consult your manual.

 *This manual should be considered a part of the product and should therefore accompany the product throughout its life cycle.*

Safety Symbols

In this manual, mounting instructions and other technical documents, important information concerning safety is distinguished by the following symbols:



The Safety Alert Symbol means: Warning! Your safety is involved.

Warning!

The Warning Symbol means: Failure to follow warning instructions can result in severe or fatal injury to anyone working with, inspecting or using the product, or to bystanders.

Caution!

The Caution Symbol means: Special precautions must be taken to avoid damage to the product.

Note!

The Note Symbol indicates information that is important regarding procedures.

In this Manual

Safety Precautions	2
Contents	2
Function and Design	3
Adjustments and Set-up	5
Troubleshooting and Maintenance	7

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Function and Design

Design

The Öhlins Selective Steering Stabilizer is designed to withstand very tough treatment in conjunction with competitions. Many years of experience, in close cooperation with World Championship teams in Motocross and Enduro, has helped us develop a unique know-how.

The Öhlins Selective Steering Stabilizer (S³) is a hydraulic damper that counteracts head shake and alleviates shock against the front wheel, which gives safer riding.

The S³ is a triple clamp, replacing the original upper triple clamp. There is a frame link (A) that is mounted on to the vehicles frame so when turning, the frame link affects a pivot arm (C) and the damper (B) inside the triple clamp slides, when thus forcing fluid through the valve system.

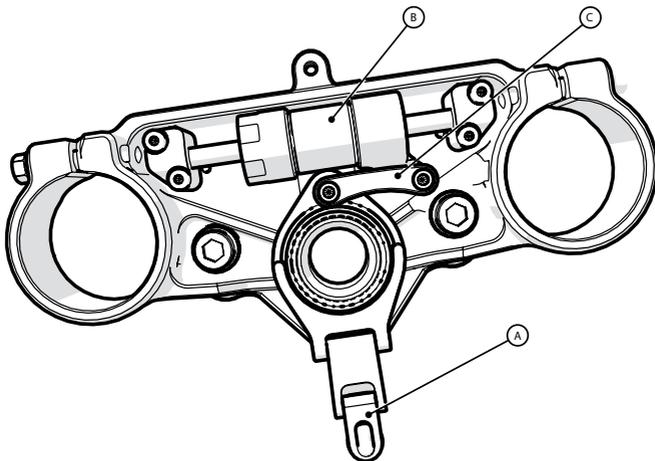
When the front wheel hits a foreign object (a stone, root, hard trails etc), it may want to turn the handlebar. This is what most traditional steering dampers is designed to avoid on motocross and enduro bikes. Until now all steering dampers can assist the driver to prevent the poor control of the bike in these situations. But that also means the steering damper is damping the riders efforts to handle the bike. If the terrain is demanding and the

steering damper is adjusted for strong damping, may cause unnecessarily high forces to work against when manoeuvring the motorbike.

The S³ is only active when the rider needs support! When no support is needed, there is no damping.

When turning left/right, the solid piston transports oil from the cylinder through the pipes, through the triple clamp and into the valve housing. All valves are in “no damping” position, and lets the oil pass through to the other side of the valve housing and down through the triple clamp and finally to the other side of the piston.

The great thing about the S³, is that it selects when to assist the rider. If the rider wants to steer the bike left/right, there is no damping. If an obstacle on the ground applies force to the front wheel, the S³ reacts instantly and without electronic gadgets.



Function and Design

This is how it works:

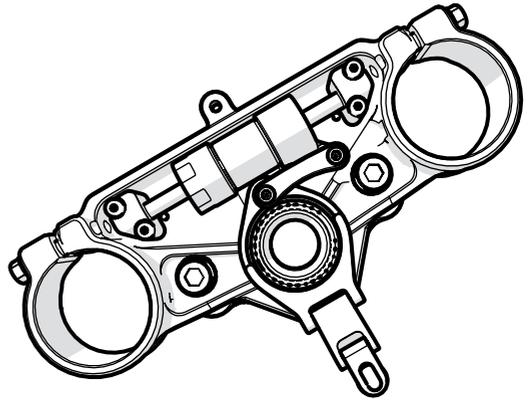
The rider hits an obstacle, and the wheel / handlebar wants to turn in either direction. This force from the contact between the front wheel and the ground, also turns the triple clamp. The rider holds his hands on the handle bars.

There will be a difference in angle between the triple clamp and the movable handle bar mounting point, thanks to a torsion bar in the S³.

There is a pivot arm, that moves the valves in the valve housing, to damp the oil flow. If the angle between the triple clamp and the mounting point is wide, the damping is higher.

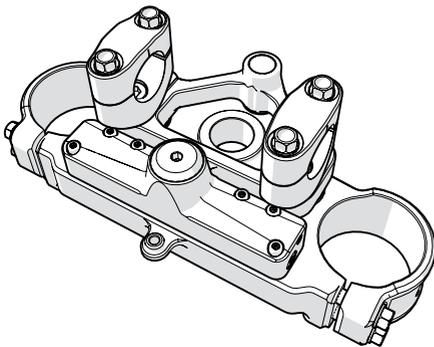
Once the damped movement is taken care of, meaning the upcoming force is filtered away, then the angle between the mounting point and the triple clamp will be zero degrees.

Then, the damping force is also neutralized.



Important Notice

Before using this product, make sure that you fully understand the mounting instructions and how the steering damper will affect your vehicle. It is very important that the S³ is correctly installed.



Caution!

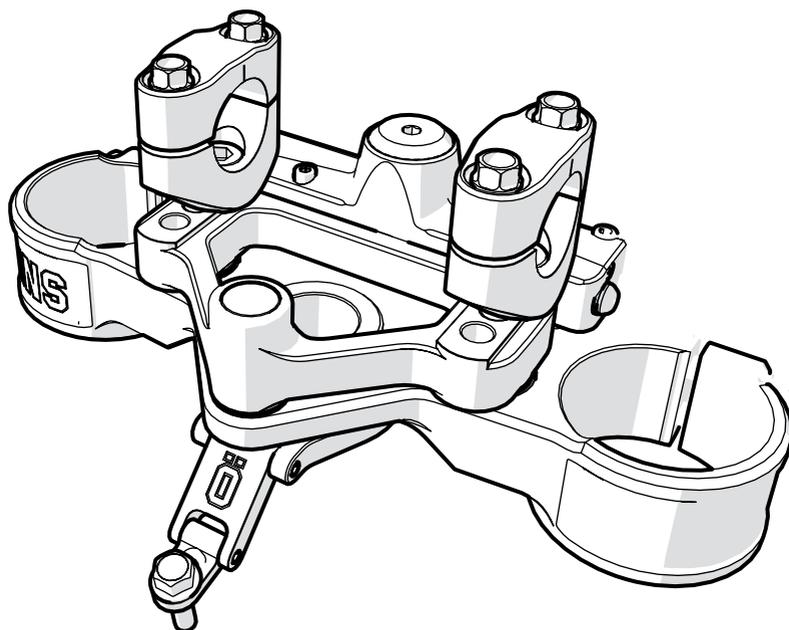
Incorrect installation will damage the damper unit.

Note!

Make sure that the steering stops work properly. If the damper acts as a stop it will be damaged. Make sure that all bolts are tightened to the correct torque and that nothing fouls or restricts the handlebar when turned to the left and right.

Adjustments and Set-up

There is not a need for adjusters, the engineers at Öhlins Racing have designed the damping force to suit all riding conditions and if the force initiated by the obstacle is high, the damping will automatically be adapted thanks to the larger angle between the mounting point and the triple clamp.



Troubleshooting and Maintenance

Troubleshooting

- **There is little or no damping:**

Debris in valving or worn parts internally, need service.

- **Leakage occurs:**

Contact an Öhlins service centre for service.

Inspection and Maintenance

Preventive maintenance and regular inspection reduces the risk of functional disturbance. If there is any need for additional service, please contact an authorized Öhlins Service Centre.

Note!

The S³ damper is a precision instrument, with extremely fine tolerances. It is therefore essential that it is maintained in a correct manner.

Maintenance and service should be carried out only by an authorised Öhlins Service Centre.

Cleaning

Clean the S³ damper externally with a soft detergent. Make sure that all dirt is removed. Keep the S³ damper clean and spray it with oil after washing. Wipe off excessive oil with a cloth.

Caution!

Never subject to direct high-pressure cleaning since water may penetrate the damper.

Recommended Service Intervals

After 50 hours of operation the fluid need to be changed. Also an inspection, and possible change, of plain bearings and bushings must be performed after 50 hours.

Caution!

Make sure that there is no leakage of fluid and that there is no visible damage to the housing and mounts. Use only recommended fluid that is tested and approved by Öhlins.

Disposal

Discarded Öhlins products should be handed over to an authorized Öhlins service centre or distributor for proper disposal.

Your Öhlins retailer:

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