

Owners Manual

MX & Enduro steering dampers SD 415, 425



Including:

Safety

Design
features

Basic
adjustments

Technical
information

Safety signals

Important information concerning safety is distinguished in this manual by the following notations:



*The Safety alert symbol means:
Caution! Your safety is involved.*

⚠ WARNING!

*Failure to follow warning instructions could result in **severe or fatal injury** to anyone working with, inspecting or using the suspension, or to bystanders.*

CAUTION!

Caution indicates that special precautions must be taken to avoid damage to the suspension.

NOTE!

This indicates information that is of importance with regard to procedures.

Introduction

Öhlins steering dampers are designed to withstand very tough treatment in conjunction with competitions. Many years experience and close cooperation with World Championship teams in motocross and enduro has helped us develop unique know-how.

Before installation

Öhlins Racing AB can not be held responsible for any damage whatsoever to shock absorber or vehicle, or injury to persons, if the instructions for fitting and maintenance are not followed exactly.

Similarly, the warranty will become null and void if the instructions are not adhered to.

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Printed in Sweden.

⚠ WARNING!

1. *Installing a steering damper, that is not approved by the vehicle manufacturer, may affect the stability of your vehicle. Öhlins Racing AB cannot be held responsible for any personal injury or damage whatsoever that may occur after fitting the steering damper. Contact an Öhlins dealer or other qualified person for advice.*

2. *Please study and make certain that you fully understand all the mounting instructions and the owners manuals before handling this steering damper kit. If you have any questions regarding proper installation procedures, contact an Öhlins dealer or other qualified person.*

3. *The vehicle service manual must be referred to when installing the Öhlins steering damper.*

CAUTION!

Make sure that the steering stops work properly. If not, it's necessary to adjust the steering stops (use washer or suchlike). If the damper is used as stop it can be damaged.

Öhlins products are subject to continual improvement and development. Consequently, although these instructions include the most up-to-date information available at the time of printing, there may be minor differences between your suspension and this manual. Please consult your Öhlins dealer if you have any questions with regard to the contents of the manual.

NOTE!

During storage and transportation, especially at high ambient temperature, the oil and grease used for assembling may run out inside the packing and damage the expanded polystyrene packing material. This is not unusual and is in no way detrimental to the steering damper.

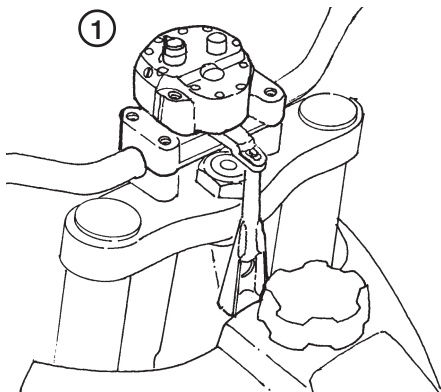
NOTE!

Please note that all bikes require bars with a minimum of 40 mm between crossbar and main bar for damper to fit. For applications with less than this clearance use: PROTAPERS, Scotts Renthals or special handlebars with no crossbar. You're going to pre-assemble everything before permanently mounting or drilling anything. This will insure proper alignment and fit, otherwise you may find some hidden problems you didn't anticipate.

Design

The Öhlins steering damper is a hydraulic damper that counteracts wobble, alleviates shock against the front wheel and prevents head shake/cast by the motorcycle, which gives safer riding.

The damper is fitted on the upper fork crown, in the centre over the steering stem (fig.1). When turning, and in the event of wobbling, shock, etc, the link arm of the damper is twisted, thus forcing fluid through three independently acting valve systems in the damper cover.



Setting

The steering damper has three external setting possibilities, ie, setting of the damper valve, high-speed valve and sweep valve, which regulate the damping area (fig.2).

Low speed valve

Öhlins steering damper is delivered with the low speed valve set in a basic position that gives maximum basic damping. For enduro and motocross it is suitable to set the low speed in position 4-8, depending on the track and the rider.

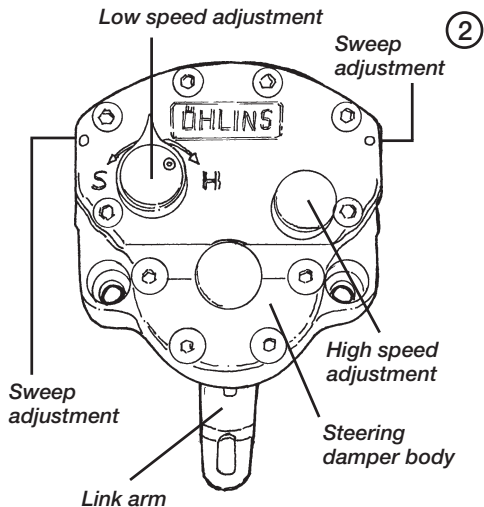
Turn clockwise to increase damping and counter clockwise to reduce it (fig.3).

High speed valve

The high-speed valve (fig.4) is set between 1 1/4 to 2 turns from the bottom position, suitable for enduro, motocross and off-road.

⚠ WARNING!

For all riding purposes the high-speed valve must be loosened at least 1 turn from the bottom. Otherwise the damping forces will become too high, making the ride hazardous.



Damping sweep controls

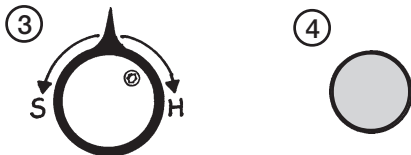
Damping sweep controls (fig.8) are located on each side off the damper body. Damping is in position 2, (12 o'clock), when delivered from Öhlins. This setting is fitted for enduro, motocross and off-road riding.

⚠ WARNING

Always ensure that valve setting is within the permitted ranges.

NOTE!

*Both damping sweep controls must always be set in identical positions.
Always use positions according to the clock.*



Sweep control valve Damping range

Located on the side of the unit

⑤

Position 1
9 o'clock



Position 1
Damping 34°



Position 2
12 o'clock



Position 2
Damping 44°



Position 3
3 o'clock



Position 3
Damping 54°



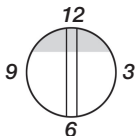
Position 4
6 o'clock



Position 4
Damping 90°



Sweep controls located on each side are normally set at the twelve o'clock position.



Suitable starting position:

Motocross	pos.1 or 2
Enduro	pos.2 or 3
Off-Road	pos.2, 3 or 4

Technical data

External measures	70x70x35 mm
Seals	Low friction type
Oil	Öhlins part no. 01306-01

Maintenance and inspection

The steering 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 by an authorised service center.

- After washing the motorcycle wipe clean and spray with all-round oil.

CAUTION!

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

CAUTION!

Ensure that there is no leakage of fluid and that there is no visible damage to the housing and mounts.

Change the fluid regularly. In new dampers after 10 hours riding and then every 20 hours riding.

Use only recommended fluid that is tested and approved by us. We cannot guarantee fully acceptable operation using other fluids.

NOTE!

Regular maintenance and inspection counteracts possible malfunction.

If the steering damper needs service, Öhlins agents have the proper tools and know-how to solve all technical problems.

NOTE!

Discarded Öhlins products should be handled over to an authorized work shop or distributor for proper disposal.

Trouble Shooting

Little or no damping

1

Debris in valving or worn parts internally, need service.

2

Shear pin on bottom has broken due to a crash or over stressing. This can be replaced easily by removing the link-arm with a link-arm puller (4954-01) and installing a new shear pin.

Dampens more to one side than the other

1

It's new, give it a little time to seat the valving.

2

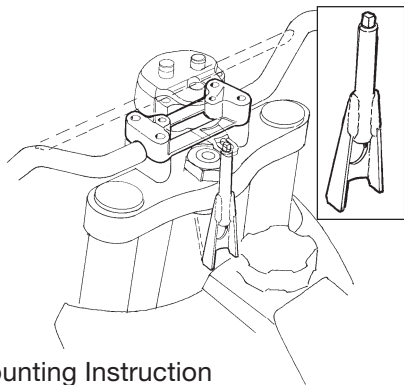
The oil is dirty and it need servicing.

Knob has come off

1

Don't panic, it will still work. To repair it, remove the set screw, put the knob back on and allow it to seat over the o-ring. Reinsert the steel ball, then the spring and finally the set screw until flush with the top of the knob.

Weld-on tower for Öhlins Off Road steering dampers



Mounting Instruction

- 1 Remove the original upper handlebar mounting clamps and the fuel tank of the motorcycle.
- 2 Install the one-piece upper handlebar mount provided. Tighten the bolts evenly to allow fine adjustment later. Keep the gap equal as shown in figure. According to the handle bar clamp mounting instruction.

8

3

Install the damper to the new handlebar mount. Use the two Allen bolts provided.

NOTE!

If the damper does not fit between the main bar and the crossbar, bow or bend the crossbar slightly to allow clearance. Minimum 40 mm is required.

4

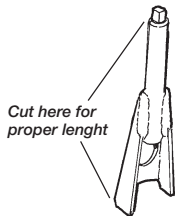
With the damper fitted and the handlebar bolts evenly seated, hold the weld-on tower temporarily in position. Mark where it must be cut for perfect fit between the frame and the link-arm of the damper.

NOTE!

The "tower pin" is not to be installed into the tower yet.

5

The weld-on tower can be cut at either end for proper length. Cutting at the top is usually the easiest way. Sometimes grinding at the base of the tower to match the frame is required.



CAUTION!

When installed the tower pin must reach 0.5 mm above the upper surface of the link-arm. This is specially important when handlebar has rubber mounted lower mounts, where handlebar is allowed to flex downwards. If the link-arm touches the frame bracket the damper can be damaged.

CAUTION!

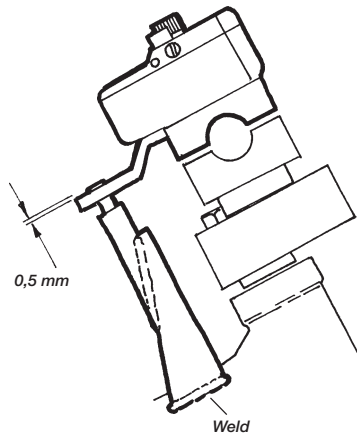
The weld-on tower is made of steel and can be welded with standard welding rod. This should be carried out by qualified personnel. Tig welding is preferred.. Gas welding requires carefull protection of the bearings and seals of the triple clamps.

6

With tower cut to correct height, deburr the hole in top before installing the tower pin. Grease the pin slightly before installation.

7

Weld the tower to the frame (tig welding recommended). Make welds om both sides of the tower. (A tower of correct height will need no additional holding devices to the frame)



CAUTION!

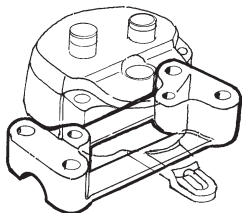
To gain a strong weld it is of importance to carefully remove paint and debris.



WARNING!

Certain modifications can be necessary to install the weld-on tower. It is vital that the mounting instructions are carefully followed.

Handlebar clamp for Öhlins Off Road steering damper



Mounting instructions

1

Replace the stock handlebar upper brackets mount with the handlebar clamp provided.

CAUTION!

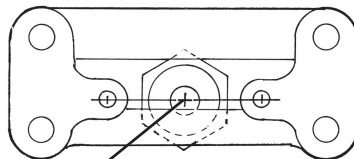
It is vital that the centre of the steering damper mounting bolts are aligned with the centre of the steering stem

2

When the lower handlebar brackets are reversible, the brackets must be positioned according to the above mentioned caution.

10

Handlebar clamp



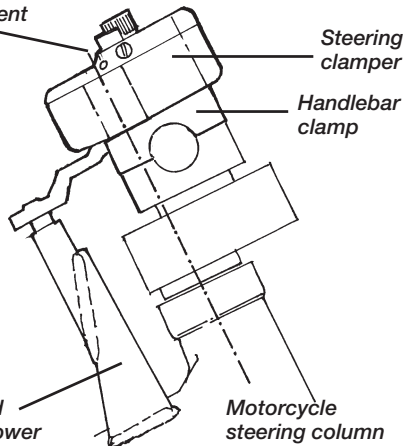
Alignment

Steering
clamper

Handlebar
clamp

Weld
on tower

Motorcycle
steering column



Steering damper

1

Attach the steering damper with the bolts enclosed.

NOTE!

The steering damper link arm should be at least 0.5 mm below the upper edge of the lower pin.

2

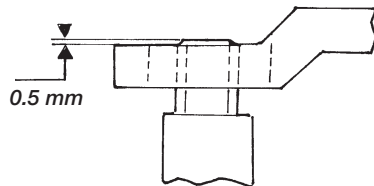
It is possible to make smaller adjustments with the four bolts holding the handlebar clamps. If the front bolts are tightened and the rear bolts are slackened the distance is decreased and vice versa.

NOTE!

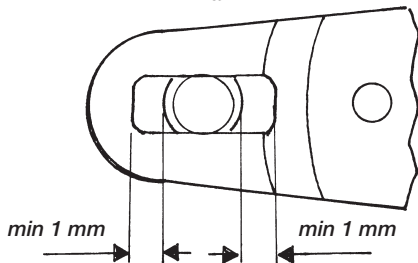
Ensure that the pin is in the middle of the link arm groove (see illustration).

CAUTION!

Make certain that the steering stops are working properly. If the damper acts as a stopper it can be damaged.



Link arm

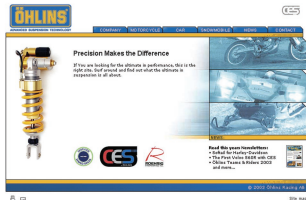


NOTE!

Make sure that all bolts are tightened to the correct torque and that nothing fouls or restricts the handlebar when being turned to each side. When testing, the damper adjuster must be in soft damping position)

More info

www.ohlins.com



The ultimate suspension site.
Find out everything about your suspension.
Download mounting instructions, manuals and
brochures. And a lot more.



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