

Bike on a stand.

Bike on the ground.

Bike with rider on.

Setup data

Shock absorber length
Shock absorber stroke
Spring pre-load
Rebound damping adjuster
Compression damping adj.

316 mm
50 mm
14 mm
14 clicks
14 clicks
12 clicks

Checking sag and ride height

Front suspension

F1. Bike on a stand with the suspension fully extended =

F2. Bike on the ground without rider =

F3. Bike on the ground with rider =

Free sag

Ride height

F1 - F3 =

F1 - F2 =

R1 - R2 =

Part No. BM 344. Issued 09 05 13

Rear suspension

R1. Bike on a stand with the suspension fully extended

R2. Bike on the ground without rider =

R3. Bike on the ground with rider =

Free sag

Ride height R1 - R3 =

Recommendations

F1 - F2: 40 - 50 mm F1 - F3: 55 - 65 mm

R1 - R2: 20 - 30 mm R1 - R3: 55 - 65 mm



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Rebound

damping

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Öhlins shock absorber 46 ERS

Your Öhlins shock absorber type 46 ERS features the following adjusters:

Rebound damping adjuster

Mounting Instructions

Öhlins shock absorber kit BM 344 for BMW F 650 GS

Adjuster wheel on the piston shaft above the end bracket.

Spring pre-load adjuster

Adjustments are made by turning the knob on the hydraulic adjuster. Clockwise for harder adjustment, counter clockwise too release the pre-load.

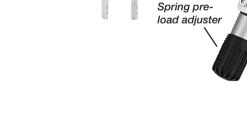
NOTE!

When delivered the Öhlins shock absorber is dialed to recommended settings for the specific brand and make of the motorcycle. If you have changed the settings, check like this:

The adjusters have a normal right hand thread. Turn the damping adjusters clockwise to fully closed (pos. zero [0]). Turn counter clockwise to open and count the clicks until you reach the recommended number of clicks. See Setup data at last page.

CAUTION!

Do not use too much force, delicate sealing surfaces can be damaged.





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.

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.

▲ WARNING!

- 1. Installing a shock absorber, 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 shock absorber. 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 shock absorber 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 shock absorber

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 shock absorber.

Kit contents

Before installing the shock absorber, please check the contents of the kit. If anything is missing, contact your Öhlins dealer.

Description	Pcs.	Part No.
Shock absorber 46 ERS	1	BM 344
Tie-rap	2	00231-01
Sticker memo notes	1	01180-01
Sticker Öhlins	2	00192-01
Owners manual	1	_ \





The shock absorber is provided with a separate type reservoir filled with high pressure nitrogen gas. To prevent danger of explosion, study and make certain that you fully understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for damage to property or personal injury that may result from improper handling.

- 1. Never tamper with or attempt to disassemble the cylinder or the reservoir.
- 2. Never expose the shock absorber to an open flame or other excessive heat. The shock absorber may othervise explode due to too high pressure.
- 3. Be careful not to damage any part of the gas reservoir. A damaged gas reservoir will impair the damping performance or cause malfunction.
- 4. Take care not to scratch the contact surface of the piston rod of the cylinder; oil could othervise leak out.
- 5. Never attempt to remove the plug at the bottom of the nitrogen gas reservoir. Any attempt to remove the plug implies serious danger.
- 6. When scrapping the shock absorber, follow the instructions for disposal.

Notes

Mounting instructions

Put the motorcycle on a stand so the rear wheel is clear of the ground. Make sure it's steadily fixed so it will not fall over.

A WARNING!

- 1. It's advisable to have an Öhlins dealer or other qualified person to fit your shock absorber.
- 2. Instructions in the vehicle service manual are to be followed when changing the shock absorber.
- 3. When working on a lifted vehicle it must be securely supported to prevent it from falling.

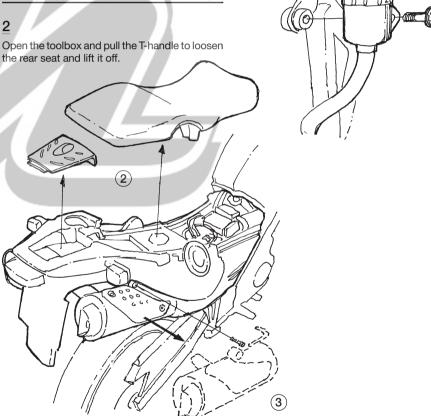
the rear seat and lift it off.



Loosen the exhaust pipe with a 15mm key and remove the left silencer by pulling it straight rearwards.

5

Loosen the brake fluid reservoir on the right side and let it hang down.

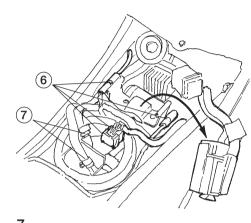


Loosen the screw of the right silencer bracket and remove the right silencer just by pulling it outwards.

Remove the control box and all electric connections (4 pcs) and let the loose wiring hang out to the right side of the motorcycle.

CAUTION!

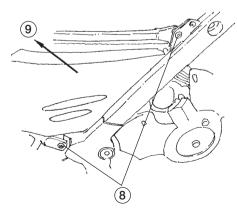
When removing the fuet ank it must be emptied or contain very small amounts of fuel. Otherwise it will flow over when the fuel lines are loosened.



Loosen the two fuel lines.

8

Loosen the four bolts holding the rear subframe unit.



10

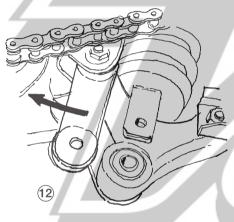
Remove the original reservoir by loosening the two o-rings of the bracket.

11

Loosen and remove the original hydraulic preload adjuster and the bracket.

12

Loosen the lower bracket of the right droplink and pull it backwards, so the lower shock absorber mount is reachable.



13

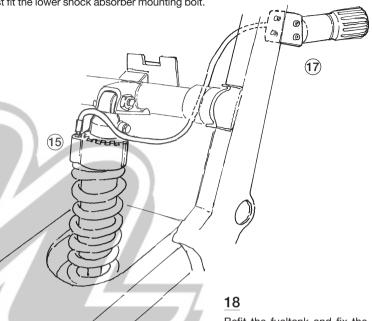
Loosen the lower shock absorber mounting bolt to release the shock absorber from the triangle link.

14

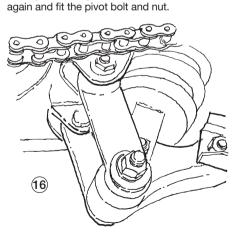
Loosen the upper shock absorber mounting bolt and remove the shock absorber by lifting it upwards.

<u>15</u>

Fit the Öhlins shock absorber in reverse order. First fit the lower shock absorber mounting bolt.



Then fit the upper shock absorber mounting bolt and tighten. Bring the droplink back in position



17

Attach the new pre-load adjuster bracket to frame and attach the hose with the tie-rap provided.

Refit the fueltank and fix the bolts. Refit the fuellines and the electrical connections. Refit the control box.

19

Put the brake fluid reservoir back in position.

20

Refit first the left and then the right silencer.

21

Put the seat back in position and lock it. Close the toolbox lid.

NOTE!

Make sure that all bolts are tightened to the correct torque and that nothing fouls or restricts movement of the shock absorber when the suspension is being fully compressed or extended.

22

Continue your work according to the Owners Manual, section adjustments.

9

Lift the rear unit backwards, uppwards and remove it from the motorcycle.