

**Product**

Exploded View

Disassembly & Assembling



Frontfork

## 4357 / 4860 MX Multi Adjuster

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## Introduction

### General notice:

Pay attention to the following notes, when you are working with WP Suspension products as described in this workshop manual.

Always use clean and professional tools.  
Regular you need next to the general equipment, the special tools of WP Suspension.  
These tools with a unique "T" number (available at WP Suspension) protect you from damaging the parts.

Always use aluminium protector-plates, when clamping our products or parts in the vice.

Always replace damaged or worn parts.

Clean all parts before assembling.

### Caution:

Many times it is necessary to assemble parts with T131, T132 and T163.

These parts must dry for at least four hours!!



## Disassembly forkleg



Note the rebound position by turning the knob to the right.



After removing the rubber cap.  
Note the compression position by turning the screw to the right.



Clamp the outer-tube in (4357) T501S / (4860) T1403S and unscrew the screw-cap. (size 24)  
Cap PA with T103.





Clamp the forkleg (axle-clamp) in the vice and let the outer-tube down. Pull the spring downwards...



...and place open-end spanner (size 22) on the hydraulic stop.



Unscrew the screw-cap.

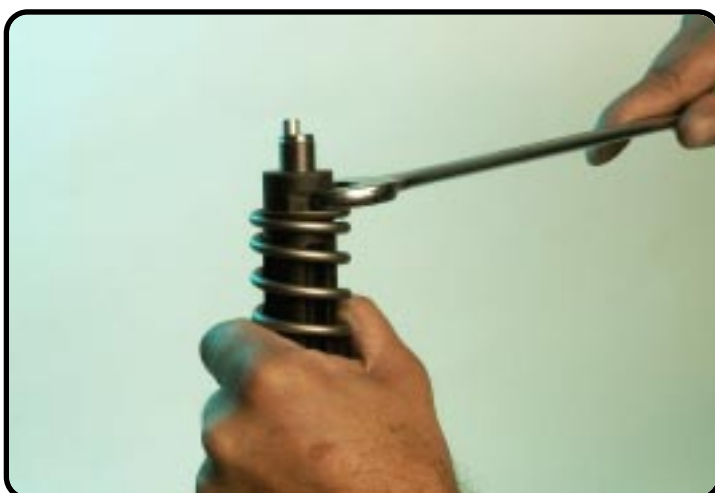




Remove the screw-cap from the piston-rod.



Remove the preload spacers.



Pull the spring downwards and remove the spanner.





Remove the spring.



Remove the adjustment tube with the O-ring.



Drain the oil out the forkleg.



Clamp the axle-clamp in the vice so that the forkleg is at an angle of  $\pm 45$  degrees.



Unscrew the compression holder out of the axle-clamp. (size 19)  
(when the cartridge is rotating with the holder, bend the piston-rod a little bit to the side)





Remove holder compression.  
Caution: oil is coming out the cartridge.



Disassemble the cartridge out the  
forkleg.



Disassemble the dust-wiper.



Disassemble the circlip.



Heat the outer-tube near the oilseal.  
(not too hot)



Pull with both hands the outer-tube from  
the inner-tube.



Remove DU-bush inner-tube.



Remove DU-bush outer-tube.



Remove support ring.



Disassemble the oil seal.  
Pay attention to the assembling  
direction!!!



Remove the circlip.



Remove the dust wiper.



- Dust wiper
- circlip
- oilseal
- support ring
- DU-bush outer-tube
- DU-bush inner-tube



Heat the axle-clamp.



Use (4357) T503S / (4860) T1404S...





...and unscrew the inner-tube from the axle-clamp.



Remove the inner-tube.



Remove the O-ring out the groove of the axle-clamp.



## Disassembly screw-cap



Disassemble the adjustment knob.  
Pay attention to the steel balls and spring!!!

For PA version: Manual PA Front Fork  
2000



Unscrew plastic holder adjustment tube  
out of the screw-cap.



Remove air release screw with O-ring.

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- Rebound adjusting knob with steel balls and spring
- holder adjustment tube
- airrelease screw with O-ring
- screw-cap with O-ring

## Assembling screw-cap



Assemble the air release screw



Screw the holder adjustment tube in the screw-cap.



Grease the O-ring, steel balls and spring with T158.  
Assemble the knob with steel balls and spring.

## Disassembly cartridge



1. Clamp the tube with plug in the clamping-block (Tool T508S + T509).



2.



3.



Unscrew the screw sleeve (size 22).



Turn the screw sleeve out of the tube.



Disassemble the piston-rod "complete".  
Pay attention to the piston ring!!!



Clamp the piston rod in T508S “**not too tight**” and unscrew the hydraulic stop from the piston-rod.



Remove the hydraulic stop.





Remove the screw sleeve with spring retainer.



Disassemble the DU-bush with T507 and press it out the screw sleeve with support of the vice.



- Spring retainer
- screw sleeve
- DU-bush

## Disassembly holder compression



Clamp the compression holder in the vice and unscrew the check-valve nut. (size 17)

Version with a locking: remove the locking with a file.



Remove the check-valve nut.



Remove the check-valve spring. Pay attention to the assembling direction!!!



Remove the check-valve shim.



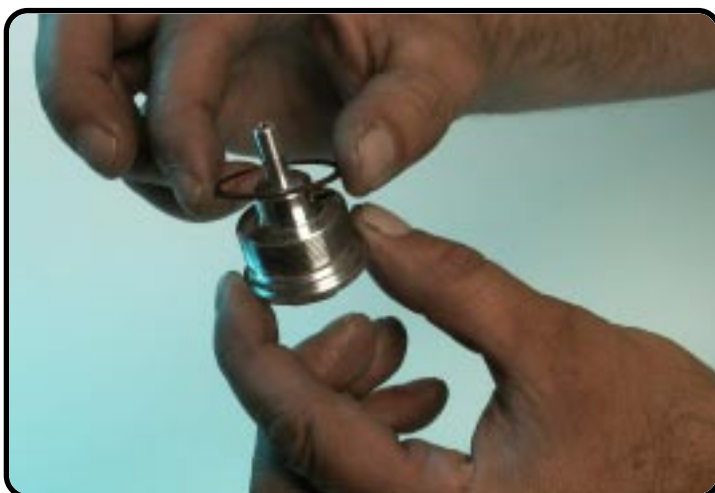
Disassemble the compression piston with O-ring.  
Pay attention to the assembling direction!!!



Place a screwdriver on top of the holder and remove the entire shim packet.



Disassemble the O-ring.



Remove the copper washer.



- Holder compression
- copper washer
- O-ring
- shims compression
- piston compression with O-ring
- shim check-valve
- spring check-valve
- nut check-valve

## Assembling holder compression

Replace copper washer.



Assemble the O-ring.



Replace the entire shim packet.







Replace piston.  
Pay attention to the assembling  
direction!!!



Replace shim check-valve.



Replace spring check-valve.  
Pay attention to the assembling  
direction!!!



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Wetting the thread of the nut with T132 and tighten it...



...to a torque of 5Nm.

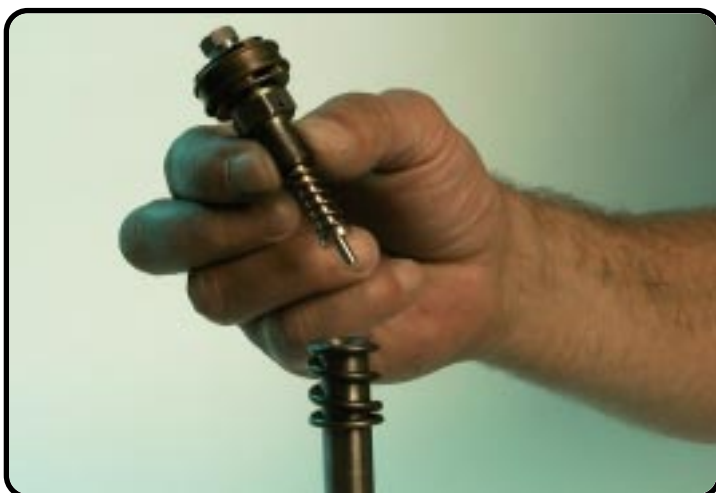


Check if the spring is correctly placed in the chamber of the nut.

## Disassembly tap rebound



Clamp the piston-rod (at the level where the hydraulic stop is mounted) in T508S and unscrew the rebound tap. (Size 17)



Remove the rebound tap "complete".



Remove the rebound spring.



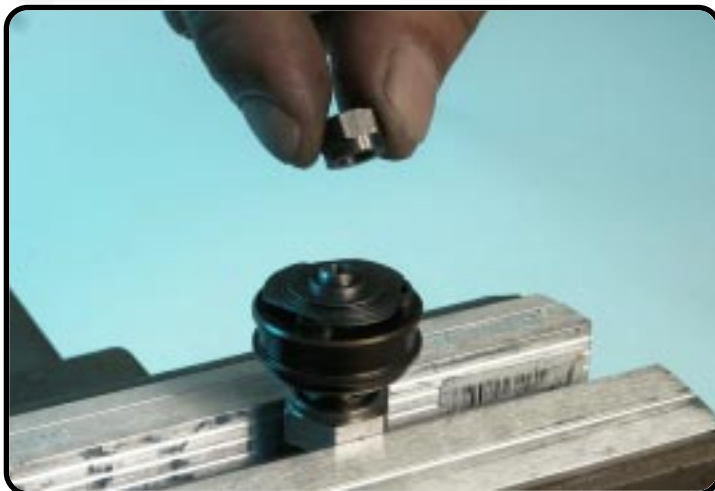
Pull the rebound needle with spring out of the tap rebound.



Check the O-ring.



Pay attention to the position of the triangular shims on the piston!!!  
Clamp the tap in the vice and unscrew the nut. (Size 10)  
Version with locking: Remove the locking with a file.



Remove the nut.  
Pay attention to the assembling  
direction!!!

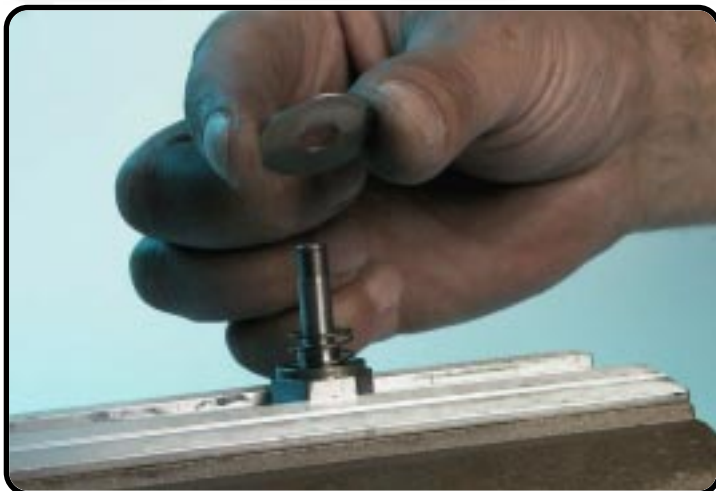


Place a screwdriver on top of the tap  
and remove the entire shim packet.



Remove piston rebound.  
Pay attention to the assembling  
direction!!!

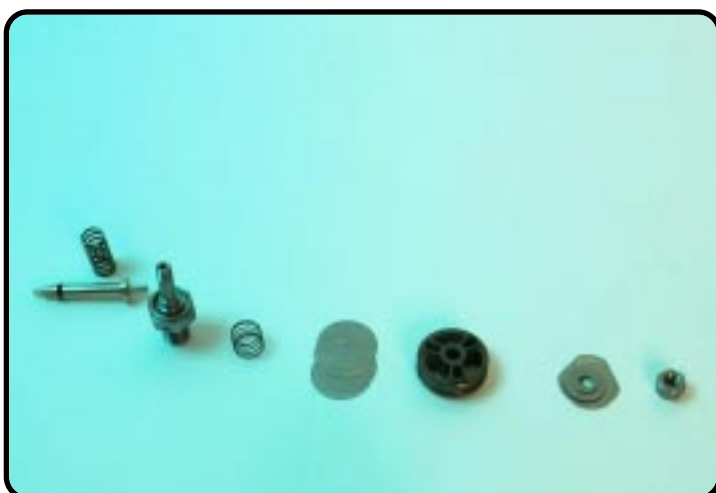




Remove check-valve shims.



Remove spring check-valve.

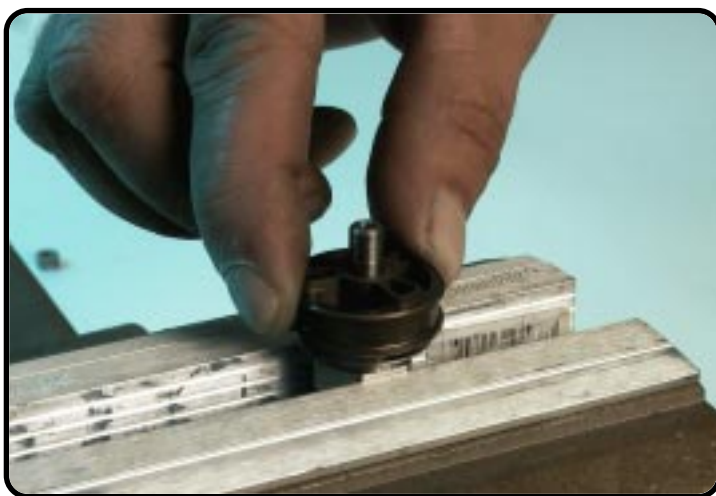


- Rebound adjustment needle with O-ring
- spring
- tap rebound
- spring check-valve
- shims check-valve
- piston rebound
- shims
- nut M6x0.5

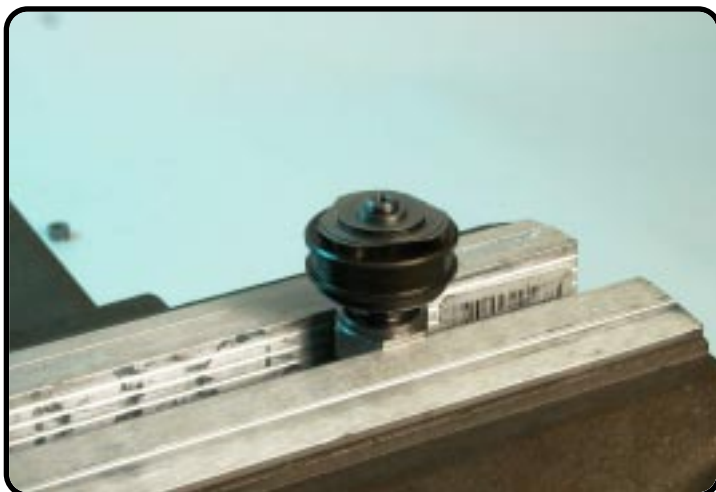
## Assembling tap rebound



Assemble the spring and shims check-valve.



Assemble the piston rebound.  
Pay attention to the assembling direction!!!

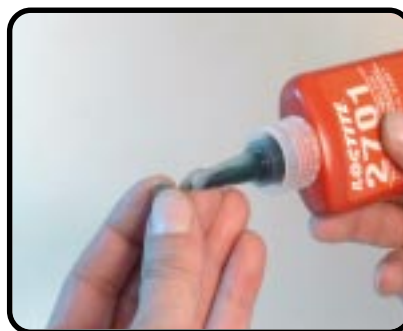


Replace the shims.  
Pay attention to the position of the triangular shims on the piston!!!





Wetting the thread of the nut with T132.  
Screw the nut on the tap...



...tighten the nut to a torque of 5 Nm.



Grease the O-ring of the adjustment  
needle with T158.



Mount the needle with spring into the tap rebound.

## Assembling cartridge



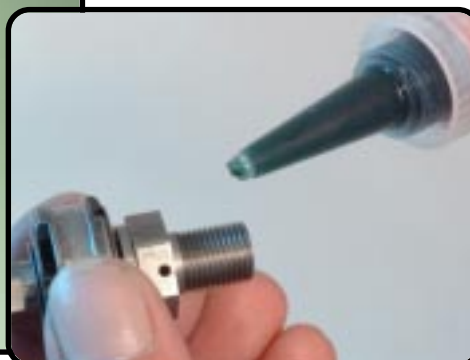
Press with T507 the DU-bush into the screw sleeve.



Clamp the piston-rod in T508S.  
At the level where the hydraulic stop is mounted.



Wetting the thread with T131.  
And screw the tap in the piston-rod.





Tighten the tap rebound.



Clamp the piston-rod **“not too tight”** in at the other side and replace the screw sleeve with spring retainer.



Screw the hydraulic stop **“hand tight”** to the end of the thread of the piston-rod.



Clamp the tube with plug in the clamping block (T508S and T509) and assemble the piston-rod "cpl." into the tube.  
Guide the piston ring!!!



**Before assembling wet the thread of the screw sleeve with T131.**

Screw the screw sleeve into the tube.



Tighten the screw sleeve.



## Assembling forkleg



Replace a new O-ring in the groove of the axle-clamp.



Wetting the thread of the axle-clamp with T132.



Wetting the thread of the inner-tube with T132.



Assemble the inner-tube in the axle-clamp.



Screw very tight the inner-tube with T503S / T1404S.



Apply the dust wiper with T511.



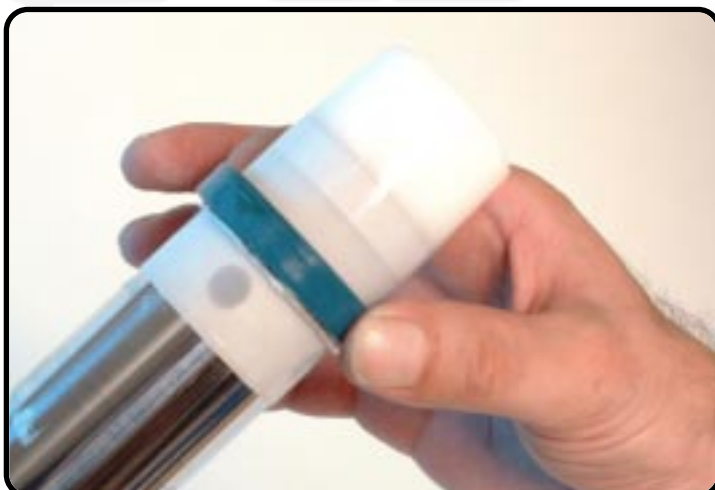
Place (4357) T512 / (4860) T1401 over the inner-tube and assemble the dust wiper.



Replace the circlip.



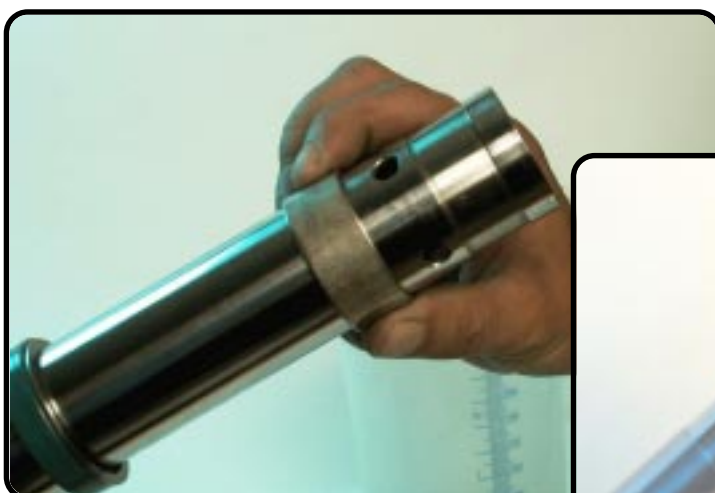
Apply the innerside of the oilseal with T511 and the outside with frontfork oil.



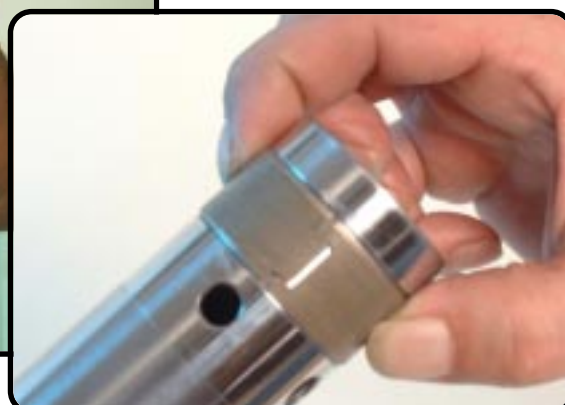
Assemble the oilseal.  
Pay attention to the assembling  
direction!!!



Remove the tool and replace the  
support ring.



Assemble both DU-bushes.







Slide carefully the outer-tube over the inner-tube.



Assemble with (4357) T502S / (4860) T1402S the DU-bush -with the flat side- and...



...tap or push it into the outer-tube.





Use the other side of T502S / T1402S...



...and tap the oilseal into the outer-tube.



Assemble the circlip into the groove of the outer-tube.

**Important: Check this very carefully!!!**



Assemble the dust wiper with T502S / T1402S.



Place the cartridge into the forkleg.



Apply the O-ring of the compression piston with frontfork oil.



Assemble the cartridge in the center of the axle-clamp and tighten the holder compression to a torque of 25Nm.



Assemble the adjustment tube with the O-ring into the piston-rod.

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Keep the outer-tube down and the piston-rod a little bit extended (like picture), fill the forkleg with oil till the edge of the outer-tube, wait a few moments, you will see air bubbles rising up.

The oil must stay **above** the 4 holes of the inner-tube, if necessary fill some extra oil in the forkleg.



Move the piston-rod (keep the adjustment tube on his place) several times up and down till you feel that the cartridge is full with oil, (the damping is smooth over the entire stroke) mostly it is necessary to fill some (not too much) extra oil in the forkleg.

Now compress the piston-rod and outer-tube fully down, and fill the forkleg with oil till about 25mm **under** the 4 holes of the inner-tube. Move the piston-rod and the outer-tube at the same time several times up and down over the entire stroke.



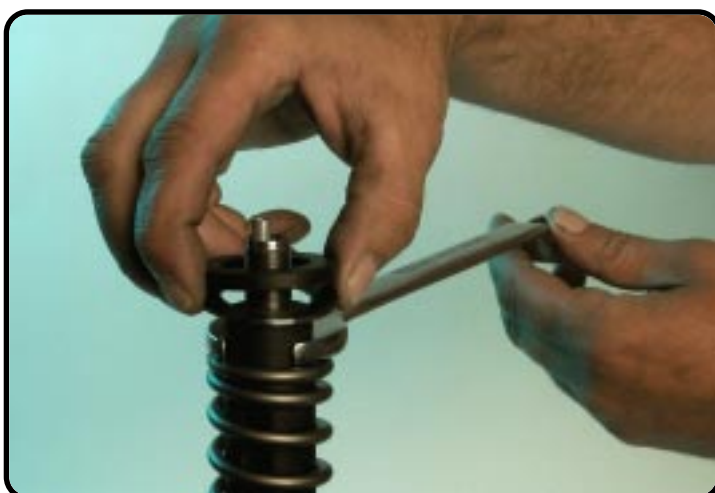
Push the piston-rod and outer-tube fully down and adjust the oil level (airchamber) with T137S.



Pull the piston-rod out and assemble the spring.



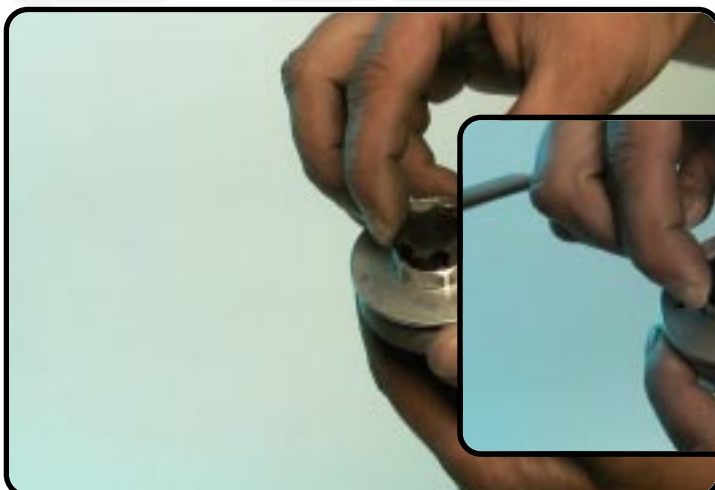
Pull the spring downwards and place open-end spanner 22 on the hydraulic stop.



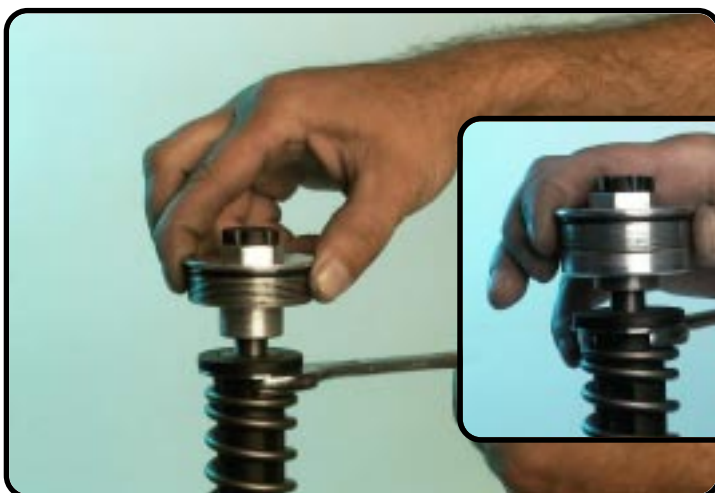
Replace first the steel washer on the spring, then the preload spacer(s).



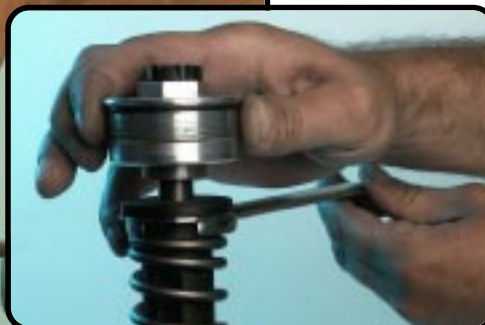
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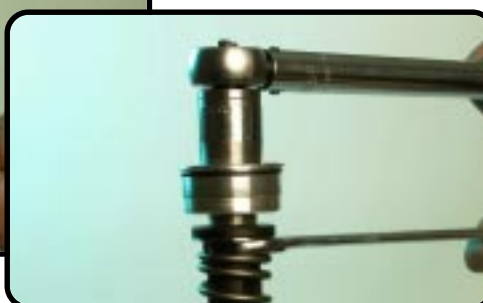
Turn the adjusting knob completely to the left.



Screw handtight the screw-cap on the piston-rod.

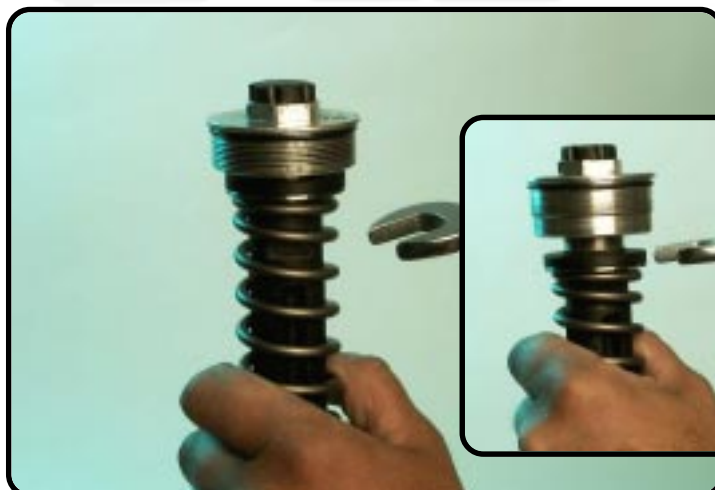


Screw down the screw-cap, till the hydr. stop is against the screw-cap and tighten it to a torque of 20Nm.

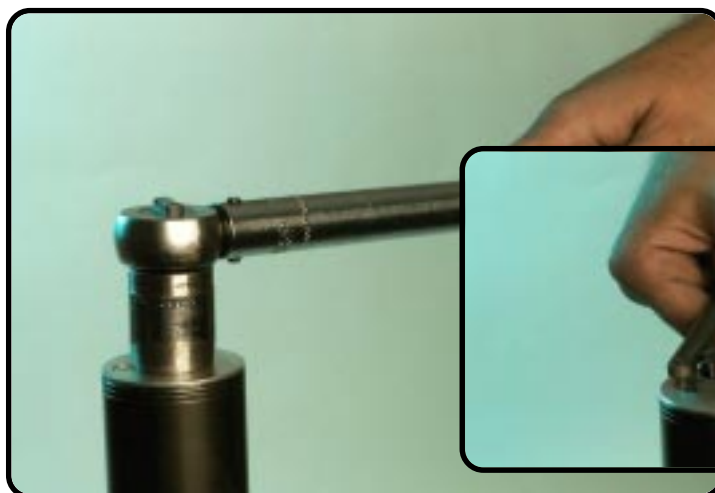


02/2002

Frontfork 4357/4860 MXMA



Pull the spring downwards and remove the spanner.



Tighten the screw-cap to a torque of 25Nm.  
Use T103 with the PA version.



Position rebound!



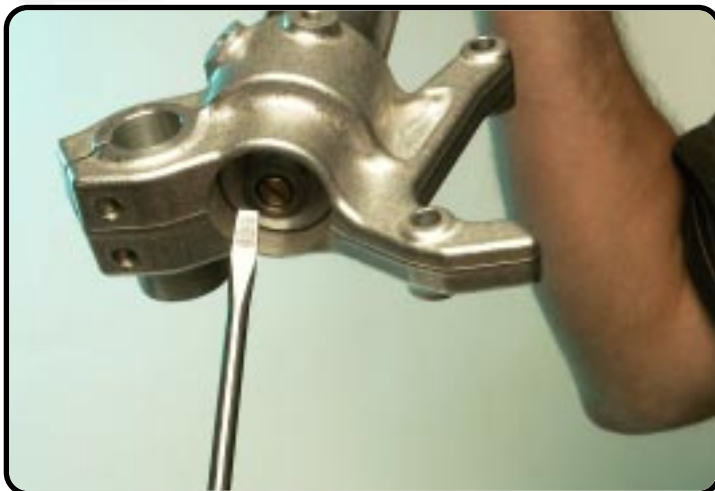
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Position compression!  
And replace the rubber cap.