

# Workshop Manual

**MXMA 4800 Cone Valve**

**2014**



**WP Performance Systems GmbH**

Gewerbegebiet Nord 8

5222 Munderfing

Austria

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## 1 INTRODUCTION

Read this Repair Manual carefully and thoroughly before beginning work. It contains useful information and tips that will help you repair and maintain your suspension.

This manual assumes that the necessary special WP tools and WP workplace and workshop equipment are available.

We shall not provide a description of general workshop methods. Likewise, safety rules that apply in a workshop are not specified here. It is assumed that repair work will be performed by a fully trained mechanic.

Special tools are necessary for certain tasks. The tools are not contained in the delivery contents but can be ordered under the number in parentheses. E.g.: (T1290 INNER T. DISASSEMBLY TOOL D35/D40 ) During assembly, non-reusable parts (e.g. self-locking screws and nuts, seals and seal rings, O-rings, pins, lock washers) must be replaced by new parts.

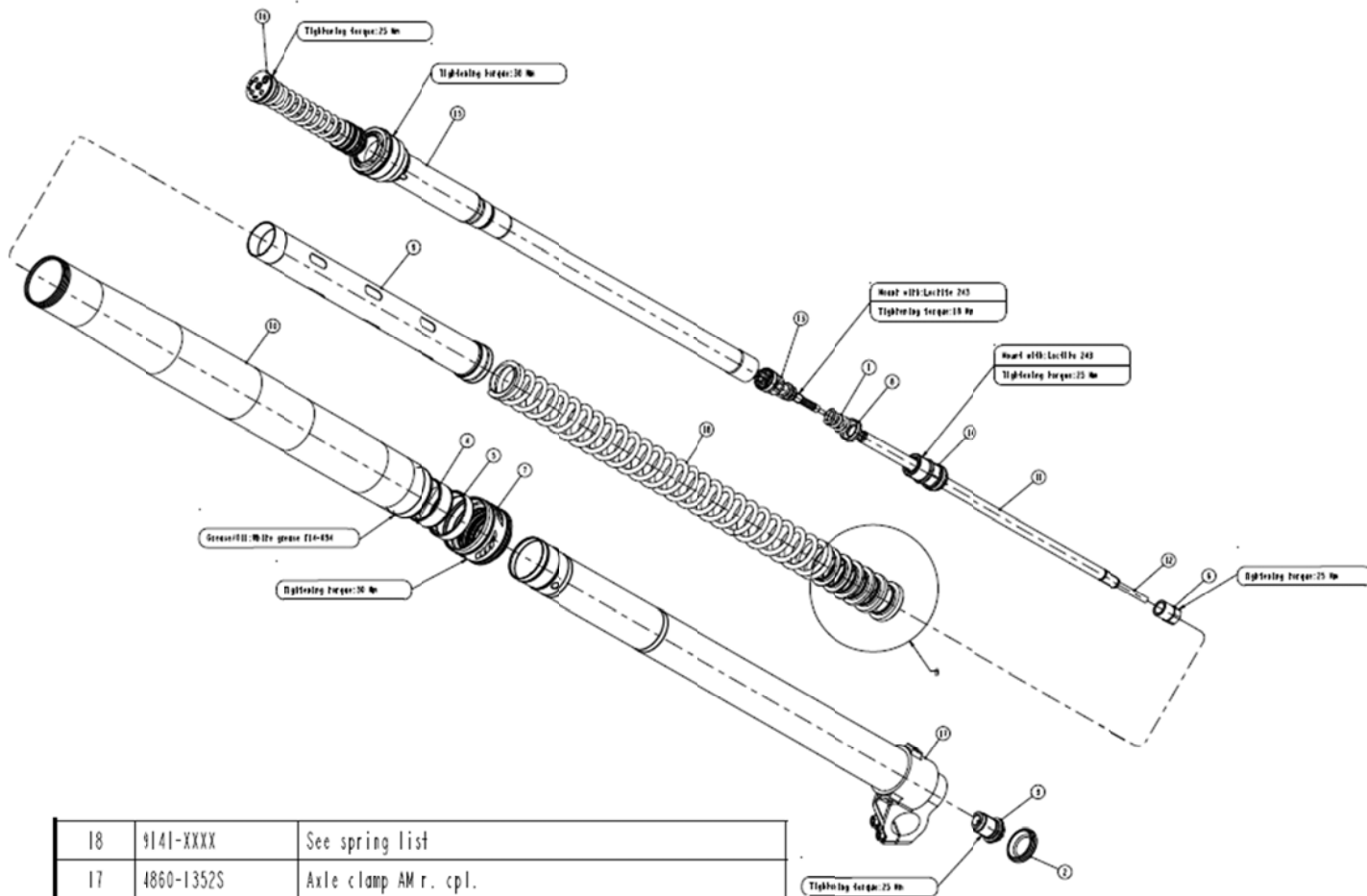
In some instances, a thread locker (e.g. **Loctite®**) is required. The manufacturer instructions for use must be followed.

After disassembly, clean the parts that are to be reused and check them for damage and wear. Change damaged or worn parts.

After you complete the repair or service work, check the operating safety of the vehicle.

The work prescribed in the service schedule must be carried out by an authorized WP workshop only otherwise, all warranty claims will be void. No warranty claims can be considered for damage resulting from manipulations and/or alterations to the vehicle.

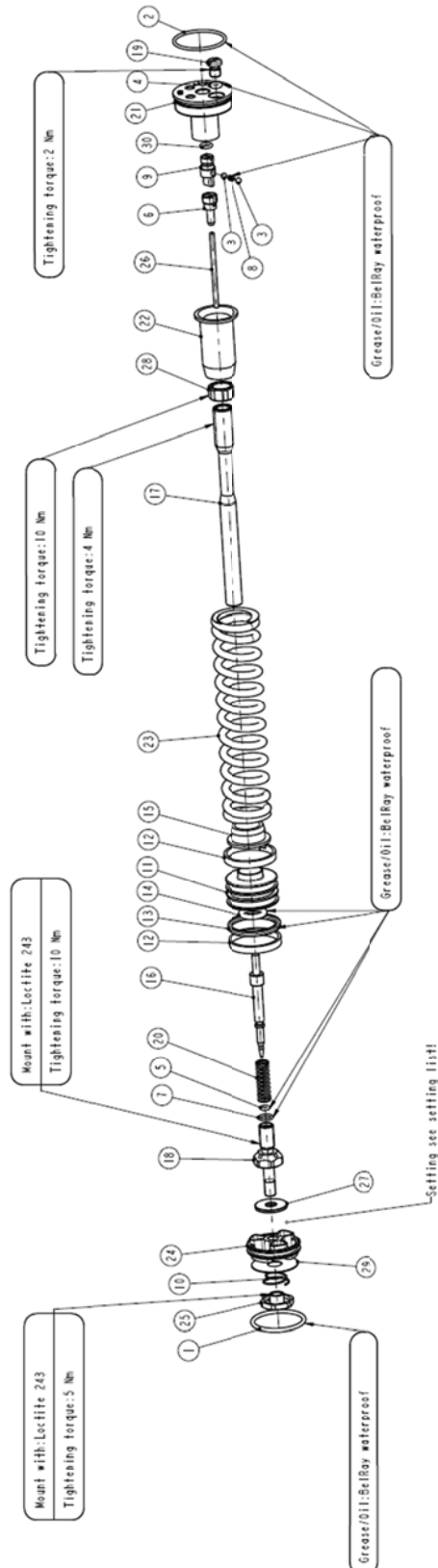
## EXPLODED VIEW



18	9141-XXXX	See spring list
17	4860-1352S	Axle clamp AM r. cpl.
16	4860-1256SI	Compression MXMA 4800 cpl.
15	4860-1255S	Cartridge MXMA 4800 cpl.
14	4860-1253S	Screw sleeve
13	4860-1252SI	Cone MXMA 4800 cpl.
12	4860-1251	stetbuis L= 351.2mm
11	4860-1250	Piston rod d12 L=390,5 Delox
10	4860-1204	Outertube MXMA
9	4860-0751SI	Spring spacer cpl.
8	4860-0625	ring d23.45x7
7	4860-0619SI	Seal holder MXMA 4800
6	4860-0459	Lock nut M12x1
5	4860-0429	Du bush Ø48xØ52x12
4	4860-0428	Du bush Ø47xØ49x20
3	4860-0280E	Bolt M20x1
2	4860-0141	Rubber Cap
1	4054-1346	reb.spring
Pos.	Article No.	Description

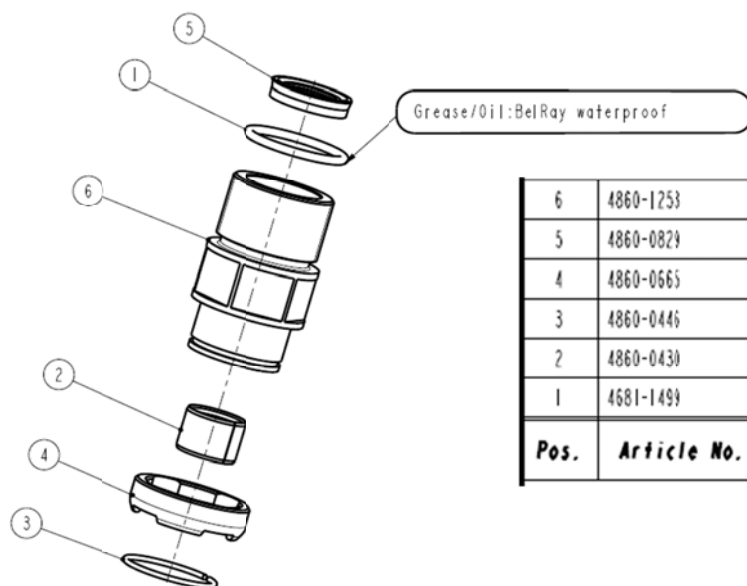


## 2 EXPLODED VIEW

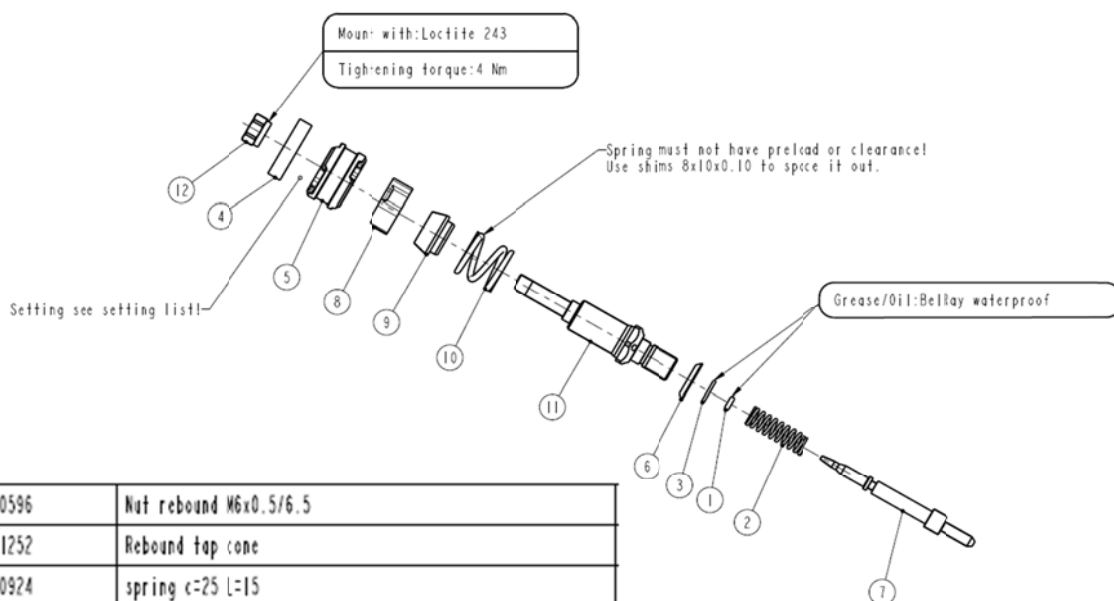


30	5018-0222	O-ring 4 x 1.5 NBR 70
29	4860-1266	Shim 8 x 26 x 0.4
28	4860-1263	counter nut M1x1
27	4860-1262	Piston cover MK 10
26	4860-1261	Pin DIN 6325 2,5x45
25	4860-1260	Check valve nut M6x0,5 L7
24	4860-1259	Compression piston Ø30
23	4860-1258	Reservoir spring C16
22	4860-1257	Reservoir spring spacer
21	4860-1256	Reservoir cap
20	4860-1215	Needle spring compression
19	4860-1205	Air screw
18	4860-1201	Compression top 109
17	4860-1200	Cartridge piston rod
16	4860-0914	needle XIMA 4800
15	4860-0668	reservoir spring spacer
14	4860-0667	O-ring 10 x 3 VITON 70
13	4860-0654	O-ring 25.07x2.62 QRAR04/20
12	4860-0653	Piston ring
11	4860-0652	separation piston Ø30
10	4860-0611	check valve spring comp.
9	4860-0523	Adjusting screw
8	4860-0522	Spring
7	4860-0299	O-ring 6 x 1.2 NBR 70
6	4860-0271	Tube retainer
5	4681-1265	O-ring 2.2 x 1.6 VITON 70
4	4054-0867	O-ring 3 x 2 NBR 70
3	4054-0603	Defent Ball Ø3 mm
2	3612-0678	O-ring 27 x 1.5 NBR 70
1	1446-0299	O-ring 27 x 2 NBR 70
Pos.	Article No.	Description

## EXPLODED VIEW

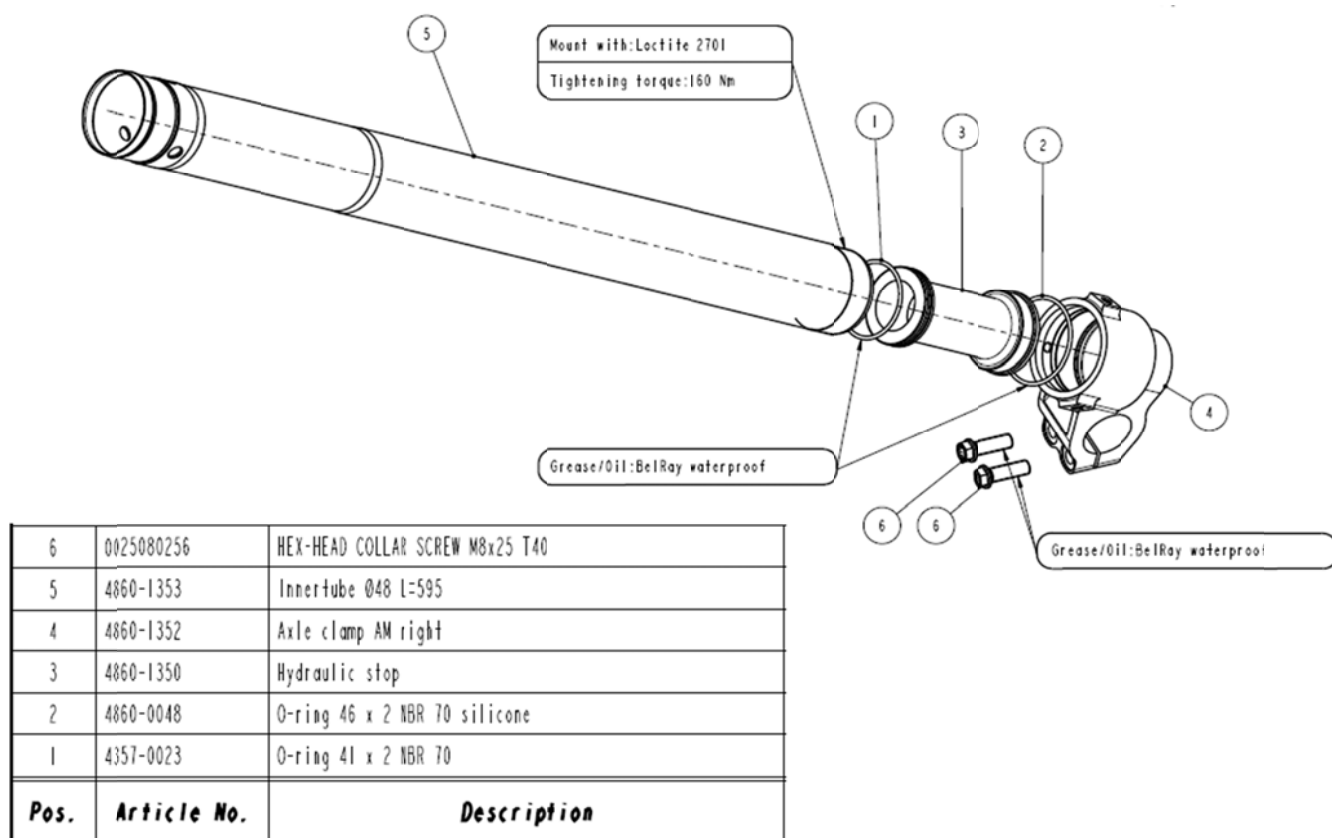
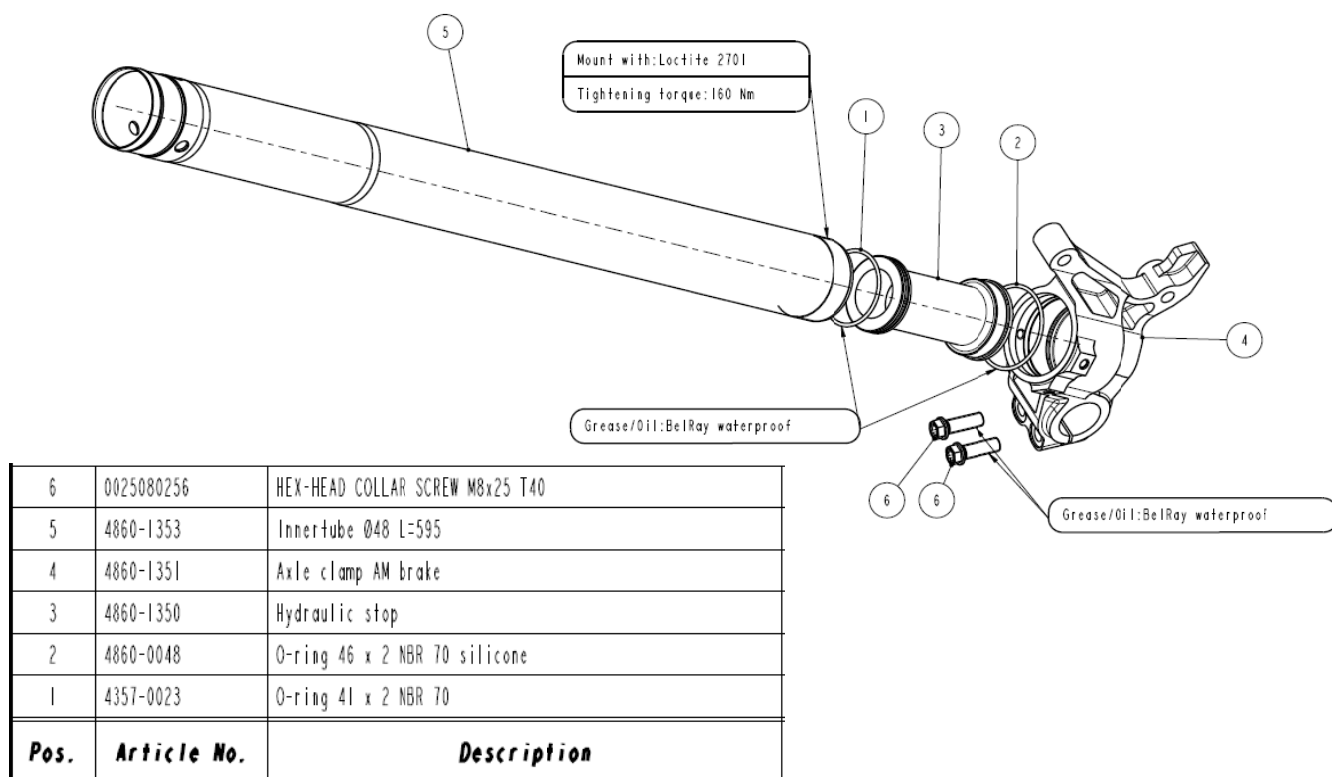


6	4860-1253	screw sleeve M24.5x1
5	4860-0829	Freudenberg 12mm seal
4	4860-0665	check valve stop
3	4860-0446	Spring ring d20
2	4860-0430	Du bush Ø12xØ14x10
1	4681-1499	O-ring 21 x 2 NBR 70
Pos.	Article No.	Description

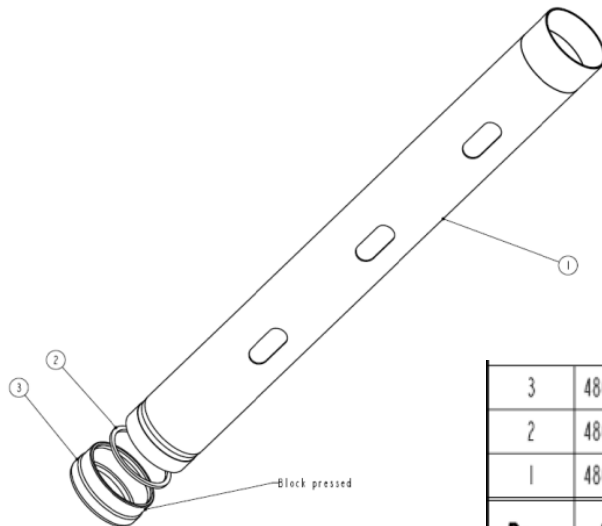


12	5018-0596	Nut rebound M6x0.5/6.5
11	4860-1252	Rebound tap cone
10	4860-0924	spring c=25 L=15
9	4860-0923	Check valve 15 deg
8	4860-0916	Piston adaptor cone
7	4860-0914	needle MXMA 4800
6	4860-0664	steel disk
5	4860-0575	Rebound piston
4	4860-0455	piston ring 5x1x68
3	4860-0449	O-ring 7 x 1 NBR 70
2	4860-0444	Spring needle C=4N/mm
1	4681-1265	O-ring 2.2 x 1.6 VITON 70
Pos.	Article No.	Description

## EXPLODED VIEW

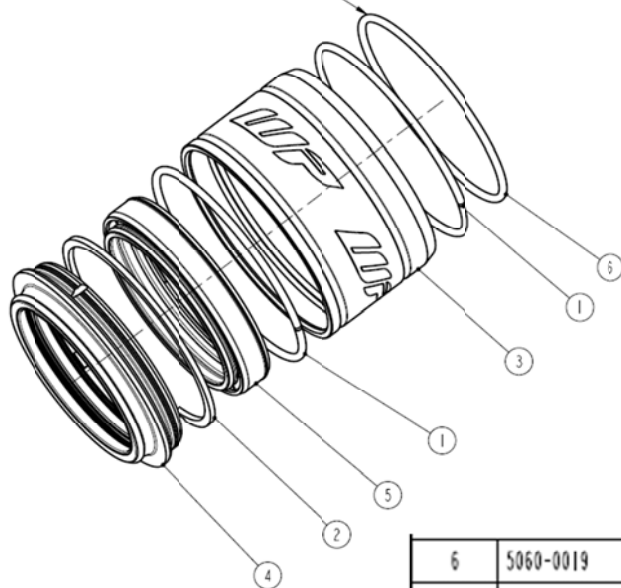


## EXPLODED VIEW



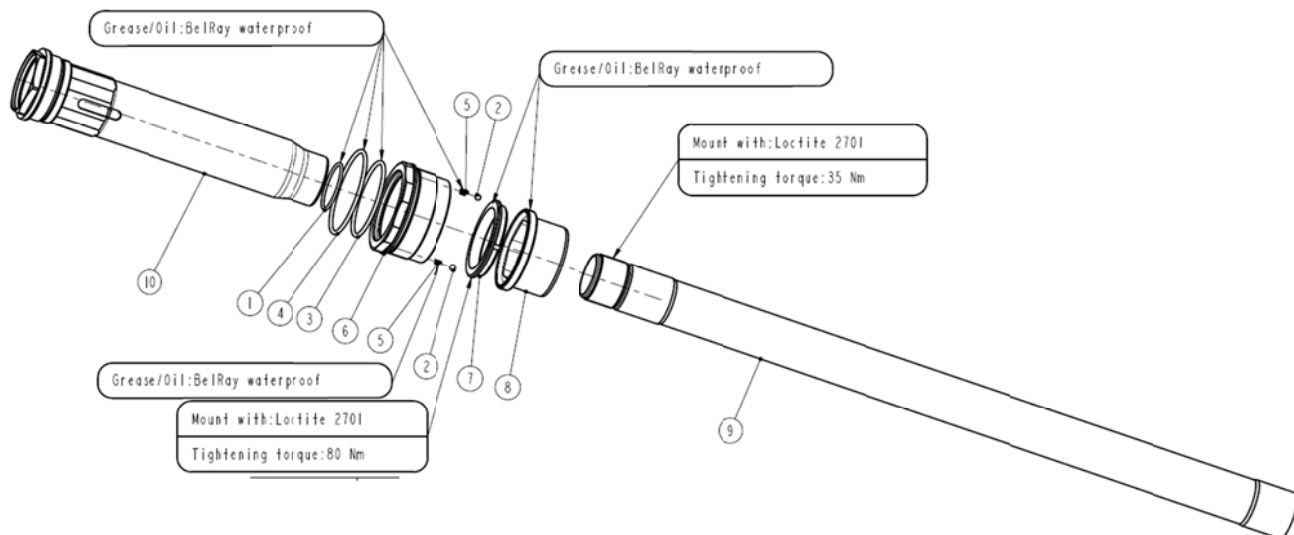
3	4860-1203	Spring support ring d38
2	4860-0752	Steel disk D38x33,5x1,5
1	4860-0751	Spring spacer d38 L330
Pos.	Article No.	Description

Grease/oil: BelRay waterproof



6	5060-0019	O-ring 56 x 2 NBR 70
5	4860-1179	Oil Seal SKF d48 x 57,9 x 11,4 Red
4	4860-1178	Dirt scraper SKF DL d48 x 58.4 x 5.7 Red
3	4860-0619	Sealholder d48
2	4860-0070	Spring ring SB58
1	4860-0016	Spring ring Ø58
Pos.	Article No.	Description

## EXPLODED VIEW



10	4860-1255	Reservoir d30 MXMA 5200
9	4860-1254	Tube 23mm L=427,5
8	4860-0753	p.a. nut d48
7	4860-0642	clicker disk
6	4860-0621	screw cap M50x1 d48
5	4860-0522	Spring
4	4860-0048	O-ring 46 x 2 NBR 70 silicone
3	4357-0023	O-ring 41 x 2 NBR 70
2	4054-0603	Detent Ball Ø3 mm
1	3548-0084	O-ring 25 x 1.5 NBR 70
Pos.	Article No.	Description

### 3.1.1 DISASSEMBLING THE FORK LEGS

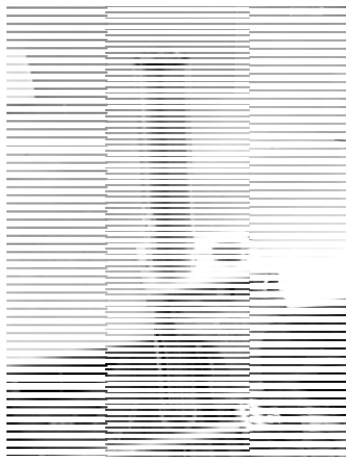


#### Info

The steps are identical for both fork legs

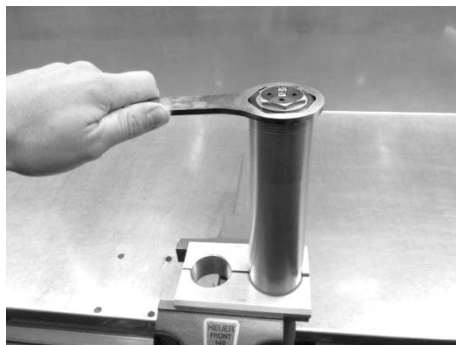
The fork legs are disassembled.

- Remove protective cover on the bottom of the fork legs
- Note down the present state of rebound and compression damping
- Completely open the adjuster of the rebound damping and compression damping.



- Clamp the fork leg in the area of lower triple clamp.

Clamping stand (T1403S)



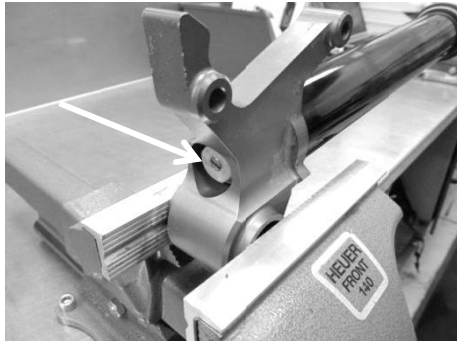
- Loosen cartridge.

Ring wrench (T14017)



- Take out the fork leg.
- Push the outer tube downward. Drain the fork oil.





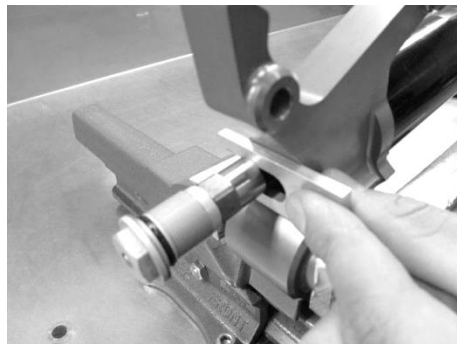
- Loosen rebound adjustment nut.

Use soft jaws



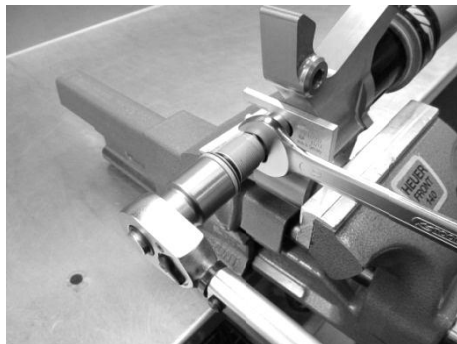
#### Info

Do not use impact wrench. Place a fluid collector beneath it, as usually some oil will drain out. The rebound adjustment cannot be removed.

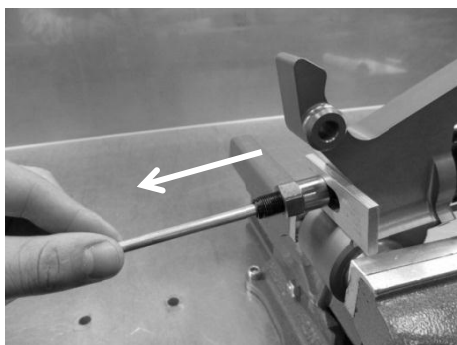


- Press the cartridge against the spring and remove special tool.

Support holder (T14020)



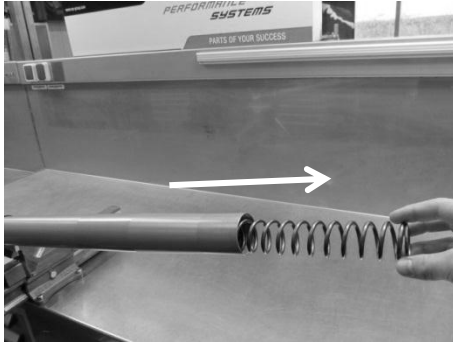
- Hold nut and remove the rebound adjuster.



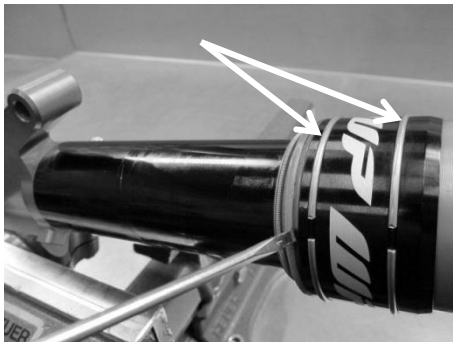
- Remove adjusting tube.

- Press the cartridge against the spring and remove special tool.

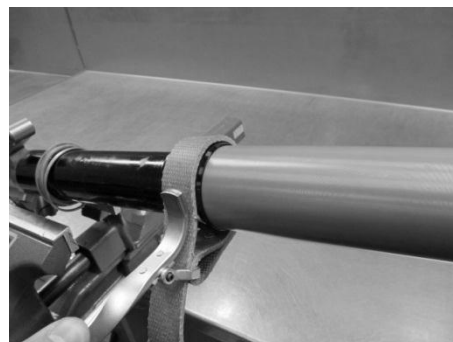




- Remove the cartridge and spring.

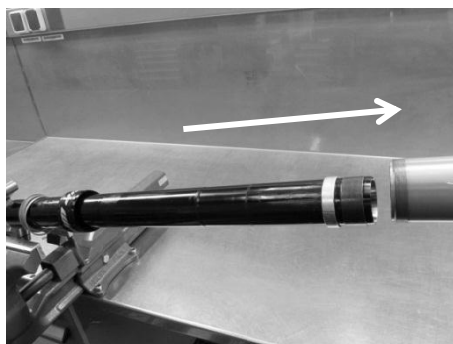


- Remove dust boot with a screw driver carefully.
- Remove the two rings.



- Remove the seal holder.

Strap spanner ( T14058)



- Pull out the outer tube.



#### Info

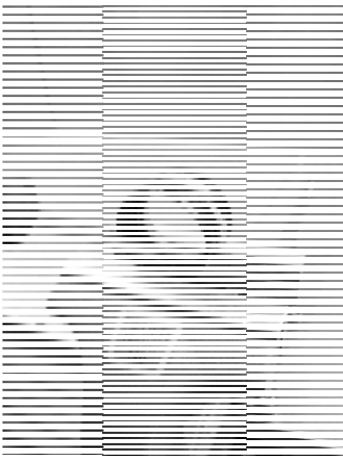
Heat up the outer tube ( 50°C/ 122°F) at the lower end of the outer tube. Check the guiding bushes after dismounting.



- Remove the seal holder and the dust boot.



- Remove the lock ring by using a small screw driver.



- Knock out the seal carefully.



**Info**

Turn the seal holder several times and give just small hits in each position to prevent cant.

### 3.1.2 ASSEMBLING THE FORK LEGS



#### Info

Before mounting, check every part for damages. Clean every part. Check the length of the main spring and compare the measure with the dates on the setting list.

- If the measured valve is greater than the specified value: Reduce the thickness of the spacers.
- If the measured valve is less than the specified value: Increase the thickness of the spacers.



- Greasy the seal holder inside on both sides.

Grease (T14034)



- Force in the new seal on the lower side of the ring.

Assembly tool (T14040S)



#### Info

Do not close the special tool completely.



- Mount lock ring.



#### Info

The lock ring must audibly lock into place



- Install dust boot.

Assembly tool (T14040S)



- Grease the seal and dust boot on the inside.

Grease (T14034)



- Slip on the mounted seal holder.

Protecting sleeve (T1401)



- Slide on the lower sliding bushing.
- Mount upper sliding bushing.



#### Info

Gently pull them apart without using a tool.  
Slather the tube with fork oil



- Greasy the fitting of the lower sliding bushing in the outer tube.

Grease (T14034)



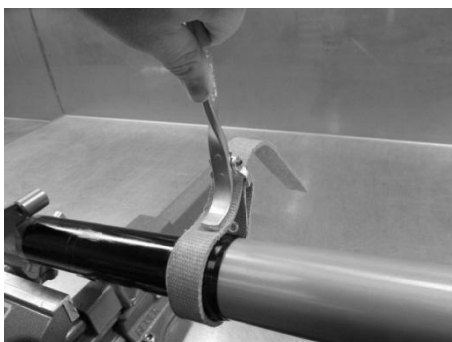
- Slide on the outer tube.
- Hold the lower sliding bushing with the longer shoulder of the special tool.
- Press the outer tube all the way in.

Assembly tool (T14040S)



#### Info

Heat up the outer tube ( 50°C/ 122°F) at the lower end of the outer tube. Check the guiding bushes after dismounting.



- Screw on the complete seal holder and mount rings.

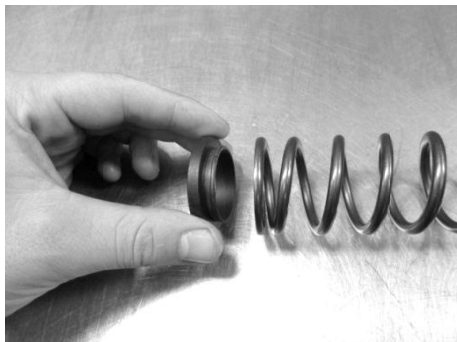
Strap spanner (T14058)



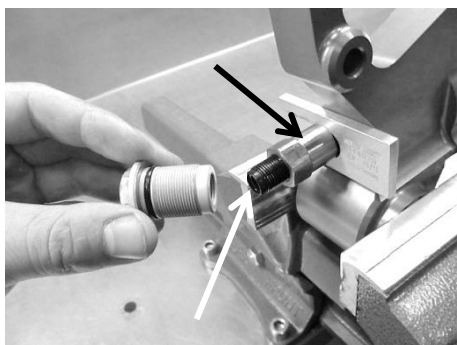
#### Info

Hand-tight.





- Mount the spring with the spacer on the bottom.



- Compress the fork and place special tool.

(T14020)

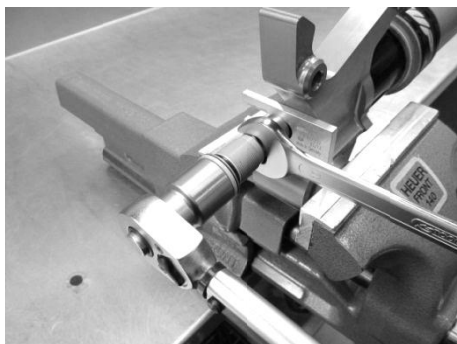
- Mount the damping adjustment tube

- Mount the hydro stop



#### Info

The mother screw has to be turned on the thread completely first.

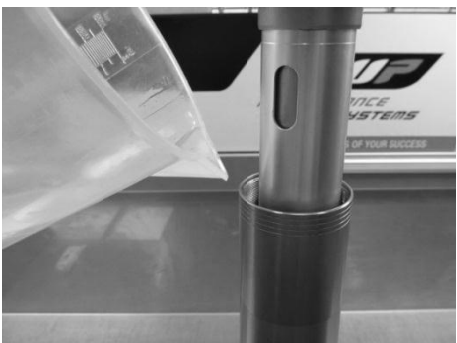


- Tighten the screwing.



#### Info

25 Nm



- Filling the outer tube with SAE 4 fork oil



#### Info

Motocross: 385 ml  
Enduro: 375 ml



- Tighten the fork cap with special tool.

(T14017)



**Info**

30 Nm



### 3.2.1 Disassembling the Cartridge

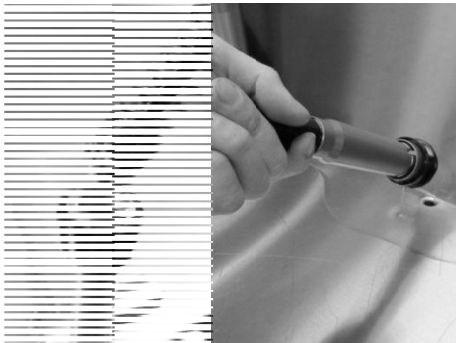


- Clamp the cartridge into a vise.

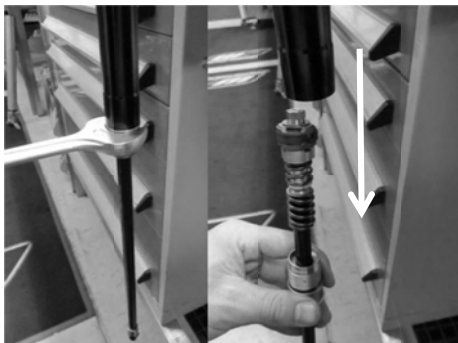
Clamping stand (T 14015)

- Loosen and remove screw cap.

Pin wrench (T103)



- Remove screw cap.
- Empty the cartridge.



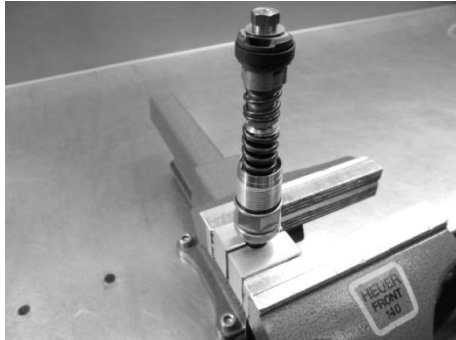
- loosen the screw sleeve and remove the piston rod.



#### Info

Heat up the cartridge ( 100<sup>0</sup>C/ 212<sup>0</sup>F) at the lower end next to the mother screw.

### 3.2.2 Disassembling the piston rod



- Clamp the piston rod into a vise.

Clamping stand ( T14016 )



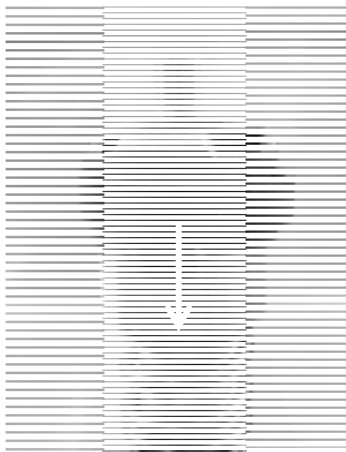
- Remove the nut on the top.
- Remove rebound shim stack.
- Remove piston.



#### Info

Make sure that the parts cannot be mixed up.

### 3.2.3 Assembling the piston rod



- Mount the piston and the delta rebound shim stack.
- Mount the new piston ring.



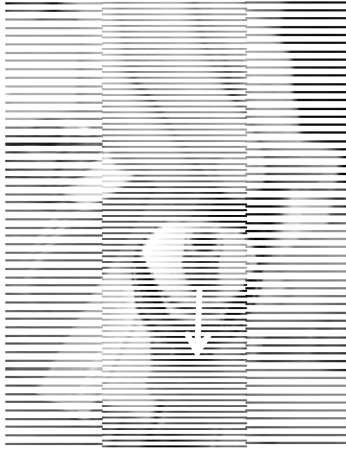
#### Info

The convexities has to be in one line.



#### Info

Grind the rebound piston on the top side on a surface plate with 1200 grid paper.



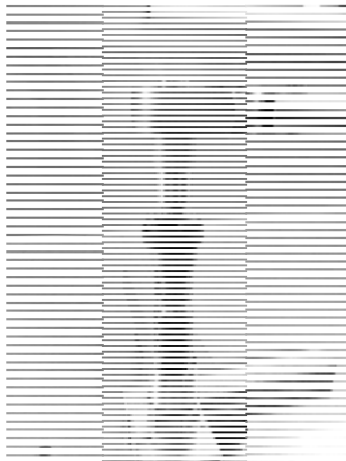
#### Info

Align triangular plates exactly with the openings of the rebound piston.



#### Info

Clean all the parts tidy before mounting.



- Mount and tighten new nut with the collar facing downward Guideline.



#### Info

5 Nm and Loctite 243

### 3.2.4 Disassembling the screw cap



- Clamp the cartridge in a vise using special tool.

(T14015)

- Open the spring preload adjuster completely.

(T14017)



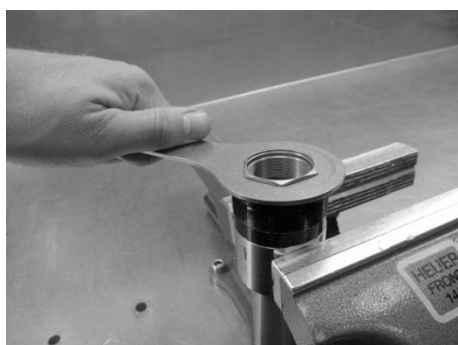
- Clamp special tool in a vise

Tool ( T 1285S)



#### Info

Heat up the cartridge ( 50°C/ 122°F) at the upper site.



- Open the spring preload adjuster.

Ring wrench (T 14028)



- Change the o- ring seal.



#### Info

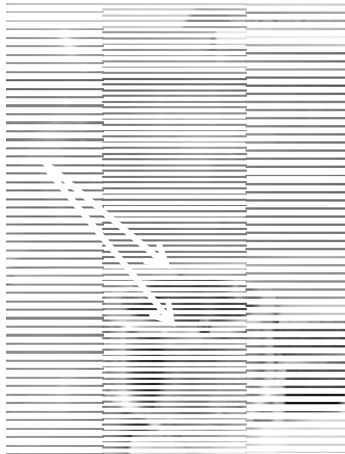
Grease every o- ring seal before mounting.

## 3.2.5 Assembling the screw cap



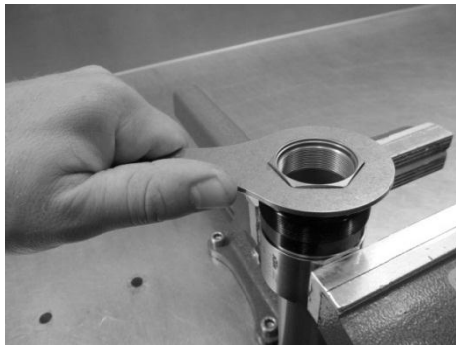
#### Info

Loctite 243



- Grease the balls.

(T159)



#### Info

80 Nm and Loctite 243

Ring wrench (T15028)

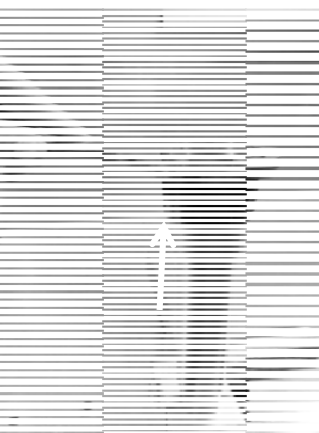


- Clamp cartridge in a vise using special tool.

(T14015)

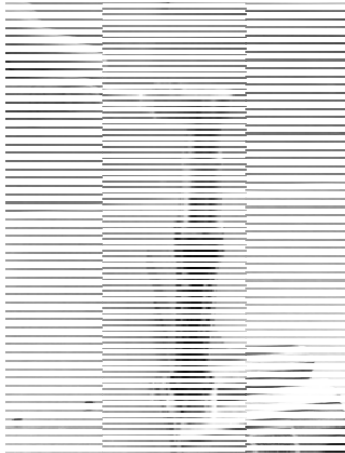
- Grease the thread of the preload adjustment nut.

(T159)



- Mount spring preload adjustment nut

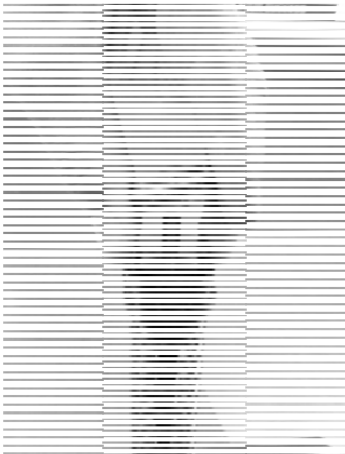
### 3.2.6 Disassembling the compression damping



- fix the part in a vise.

Support tool (T1286S)

- Remove nut.



- Remove piston and shim stack.

### 3.2.7 Assembling the compression damping



- change the o-ring seal and the piston ring if necessary.



**Info**

Clean all the parts tidy before mounting.





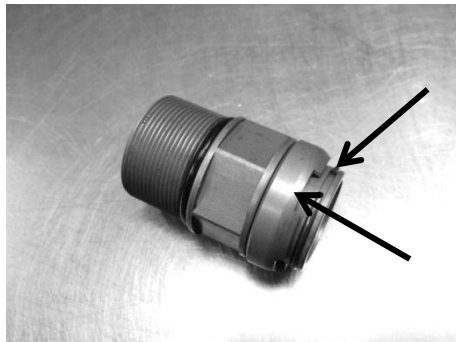
- Mount piston, the shim and the spring.
- Mount and tighten the nut.



**Info**

5,5 Nm

### 3.2.8 SERVICE SCREW SLEEVE



- Remove ring and check valve stop.
- Change O-ring



**Info**

Grease the new O-ring before mounting.

(T159)



- Screw the special tool onto the screw sleeve.
- Change the seal.

(T14023)



**Info**

The special tool must have an overhang of 1mm to protect the tread.



- Press the pilot bushing out of screw sleeve using special tool.

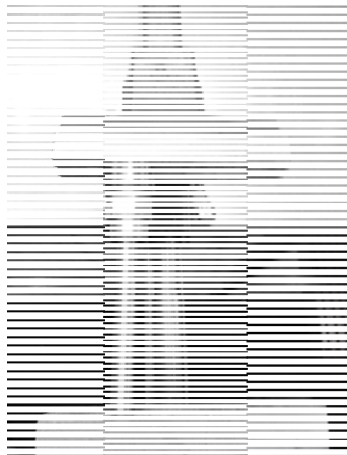
(T14022)





- Slide the new pilot bushing onto the special tool.

(T620)

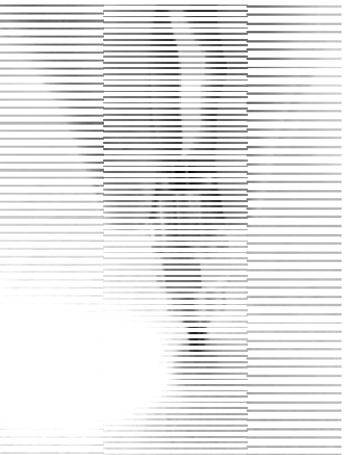


- Position the pilot bushing in the screw sleeve with the special tool and press it all the way.



#### Info

Ensure that special tool (T14023) is mounted and that there is an overhang to protect the thread.



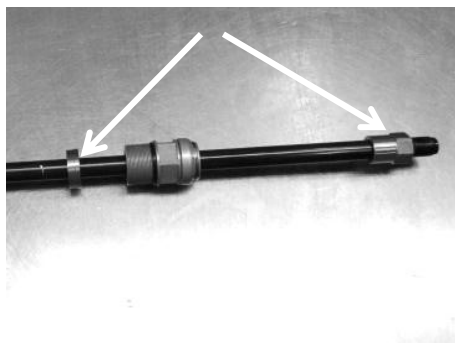
- Press the special tool through the new pilot bushing a number of times to calibrate the bushing.

(T14021)



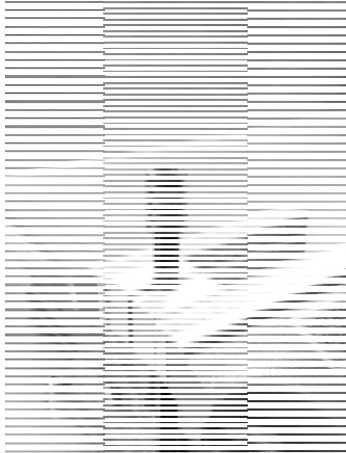
#### Info

Lubricate special tool with oil SAE 4.



- Mount the check valve stop and the ring on the screw sleeve.
- Mount the washer and the screw sleeve on the piston rod
- Mount the nut.

### 3.2.9 Assembling the cartridge



- Clamp the piston rod in a vise.

Support tool ( T 14016)



- Replace the needle.
- Mount and tighten the piston.



#### Info

18 Nm and Loctite 243



- Clamp the outer tube in a vise

Clamping stand (T14015)

- Lubricate the piston ring with oil SAE 4
- Mount the piston rod and tight the nut.



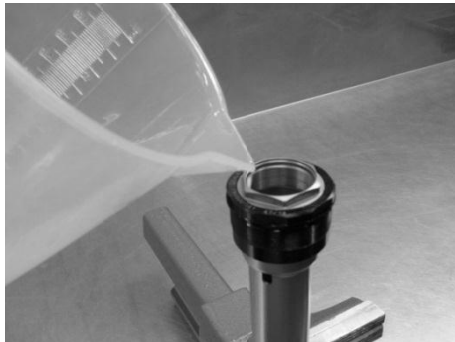
#### Info

25 Nm and Loctite 243



#### Info

Grease the O-ring seal with (T159)



- Filling with fork oil.

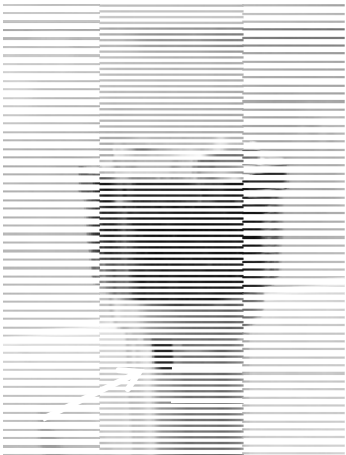


#### Info

160-180 ml SAE 4



- Move up and down the piston several times.



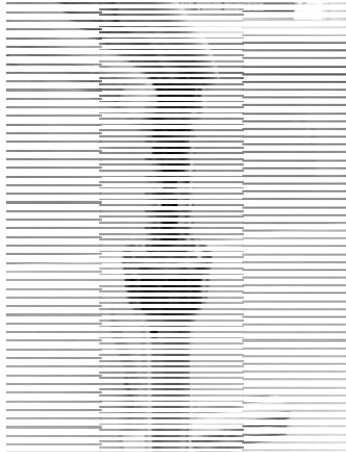
#### Info

Oil level 1,5 cm underneath the hole when piston is completely driven into.



- Grease the thread.

(T159)



- Mount the compression damping unit.



#### Info

To put on a higher pressure you can use special tool

(T1286S)



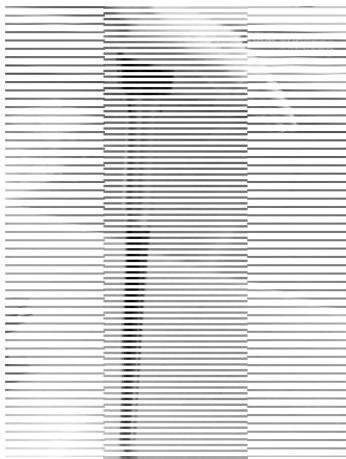
- tighten the unit.

Pin wrench (T103)



#### Info

hand tight.



- compress the cartridge completely several times.



#### Info

There can be a small oil flow throughout the holes.



#### Info

WP delivers all forks with a standard spring preload of 1 click.

→ See Chapter 3.1.2

NOTES: