WORKSHOP MANUAL
FRONT FORK
KTM SXS
2005

03 - 2005

Contains **Page**

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.
Regalur you need next to the general equipment, the special tools of WP Suspension.
These tools with a unique “T” number (available by
WP Suspension & KTM) protect you from damaging the parts.

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

Always replace damaged parts.

Clean all parts before assembling.

Caution:
Many times it is necesarry to assemble parts with T131 and T132.
These parts must to dry for at least four hours!!!

= Always use the special WP Suspension tools!


= Use safety glasses!

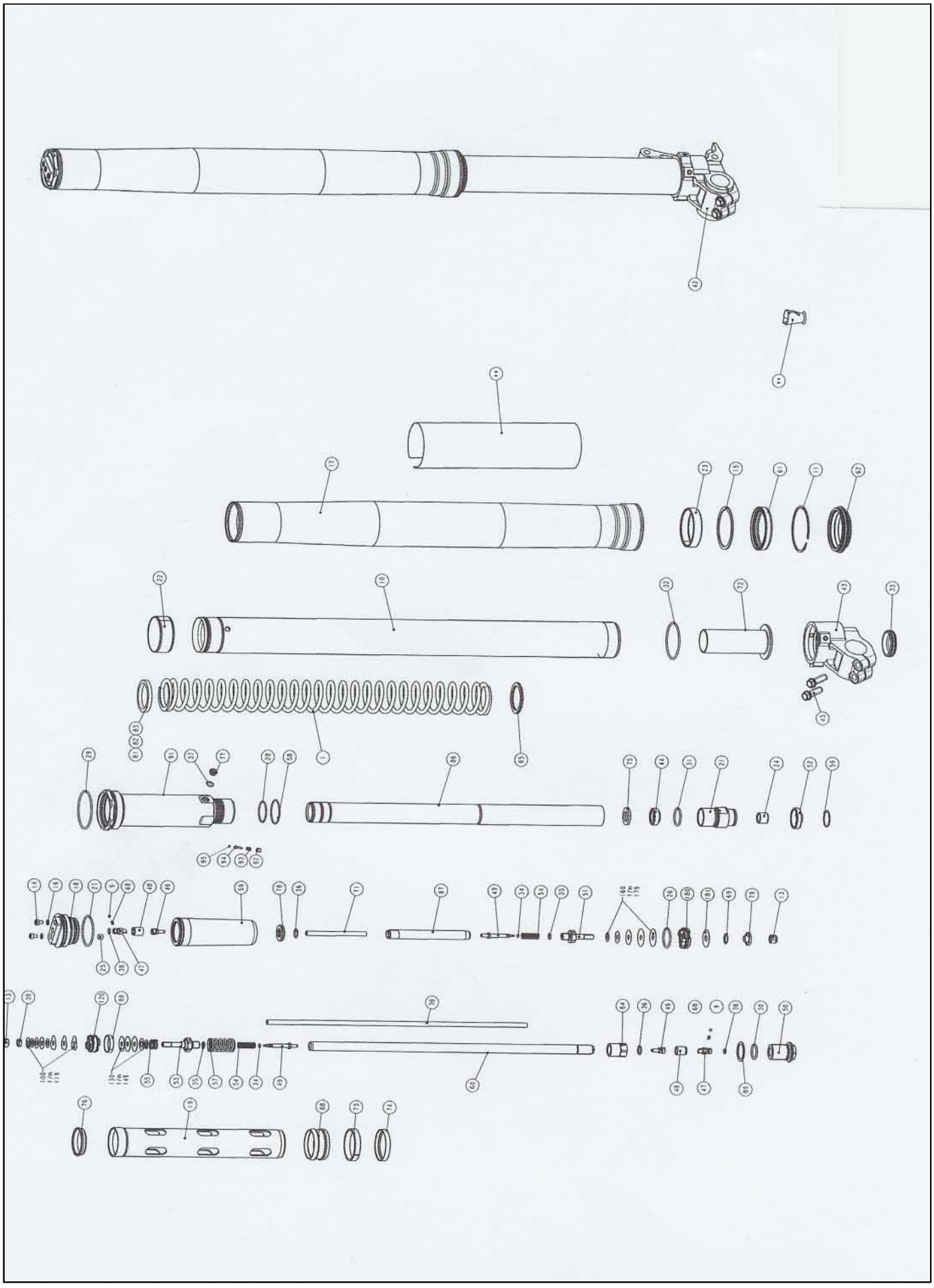

= Place a fire extinguisher near by in case of emergency!


= Use protecting glooves!


= Contains high pressure!


= Caution! - It needs your extra attention - for example the assembling direction!

Exploded view



Part list KTM front fork SXS

Pos.	Part description	Article no.	Pcs
9	Ball-steel d3	4054.0603.	4
10	Inner-tube SXS'05 d48 L595 Ti	4860.0439.	2
11	Lock washer SB58	4860.0070.	2
13	Lock nut M6x1	4860.0441.	4
14	Cil.head screw	4860.0443.	4
15	Support ring d50xd57.6x1.5	4860.0013.	2
16	Oil seal washer d4	4860.0440.	4
17	Outer-tube 54/60 L577	4860.0244	2
18	Screw cap	4860.0284.	2
19	Tube d35xD 37.5	4860.0468.	2
21	Screw sleeve M24.5x1	4860.0470.	2
22	DU-bush d47xd49x20 DDL02	4860.0428.	2
23	DU-bush d48xd52x12 DDL02	4860.0429.	2
24	DU-bush d14xd12x10 DDL02	4860.0430.	2
25	Rubber plug	1508.0017.	2
26	O-ring N.B.R. 24x2	3548.0320.	2
27	O-ring N.B.R. 38x2	4054.0037.	2
28	O-ring N.B.R. 261.5	4054.0230.	2
29	O-ring N.B.R. 48x2	4681.0016.	2
30	O-ring N.B.R. 17x2	4681.0811.	2
31	O-ring N.B.R. 21x2	4681.1499.	2
32	O-ring N.B.R. 46x2	4860.0048.	2
33	Rubber cap	4860.0141.	2
34	O-ring N.B.R. 2x1.5	4860.0298.	4
35	O-ring N.B.R. 6x1.2	4860.0299.	4
36	O-ring N.B.R. 9.5x1.5	4860.0301.	4
37	O-ring Viton 7x1.5	5018.0157.	2
38	O-ring N.B.R. 4x1.5	5018.0222.	4
39	Bush d10x3	4054.0497.	2
42	Axle-clamp Ma brake KTM SXR "03	4860.0465.	1
43	Axle-clamp MA ri KTM SXR "03	4860.0466.	1
44	Oil seal d12xd22x9.5	4860.0471.	2
45	Bolt with flange M 8x25	5060.0113.	4
46	Holder adj. tube d4 L=18	4860.0271.	4
47	Adj. screw 1.8	4860.0272.	4
48	Retainer Ring d10.8	4860.0273.	4
49	Needle bleed adj.	4860.0277.	4
50	Bolt M20x1 L33	4860.0280.	2
51	Tap compression d2.5 '03	4860.0282.	2
52	Check valve Stop	4860.0297.	2
53	Piston rod tap rebound	4860.0450.	2
54	Mechanism needle C=4N/mm	4860.0444.	4
55	Shuttle valve spring C0.4 Lo=8	4860.0382.	2
56	Lock washer d20	4860.0446.	2
57	Rebound spring L33.5 d=13 c=11	4860.0447.	2
58	Lock washer d30	4860.0448.	2
59	Membrane CC	4860.0281.	2
60	Piston rod d12 M9x1 L405	4860.0464.	2
61	Oil seal d48xd57.8x9.5 '03	4860.0347.	2
62	Dust stripper d48 d58.4 x11.8	4860.0400.	2

The amount of pieces are for both fork legs

Part list KTM front fork SXS

Pos.	Part description	Article no	Pcs
68	Spring d2.9 L6.5	4860.0490.	4
69	Chek valve spring th 0.7	4860.0202.	2
70	Adj. Tube L=371	4860.0269.	2
71	Adj. tube L=85	4860.0274.	2
72	Hydr.stop d28	4860.0286.	2
73	Guiding ring D44.2xs39.3	4860.0294.	2
74	Ring D42.4x6.5	4860.0295.	2
75	Ring D23.45x2.65	4860.0296.	2
76	Support ring D37.5	4860.0304.	2
77	Plug G1/8	4860.0452.	2
78	clamping disc	4860.0453.	2
79	check valve holder L=7	4860.0454.	2
80	Piston ring 5x1x68	4860.0455.	2
81	Spacer 43x35x2.5	4860.0456.	2
82	Spacer 43x35x5	4860.0457.	2
83	Spacer 43x35x1.5	4860.0458.	2
84	Contra nut M12x1 SLW17	4860.0459.	2
85	Washer 32x42x2.5	4860.0460.	2
86	Tube d23 L417 CC	4860.0461.	2
87	Piston rod d12 L117	4860.0462.	2
88	Adaptor guiding bush	4860.0463.	2
89	Washer copper 20.5x26x1	4860.0275.	2
91	Membrane holder cpl.	4860.0476.	2
92	Adj.screw M5	4860.0472.	2
93	Spring d=3.9 C=1.1N/mm Lo=8mm	4860.0473.	2
94	Pin valve	4860.0474.	2
95	O-ring Viton 1.5 x 1	4681.1351.	2
120	Piston rebound bleed 1.2	4860.0489.	2
180	Piston compression	4860.0047.	2

The amount of pieces are for both fork legs

Setting **4860 MXMA front fork 14.18.7A.14**
KTM 125 SXS 2005

> ⚠ **The amount of pieces is for <u>one</u> fork leg**

Compression

Pos	Part description	Article no.	Pcs
160	Shim 6x16x0.25	4054.0414.	1
161	Backpl. 6x8.5x0.20	4054.0425.	1
162	Shim 6x12x0.1	4054.0400.	1
163	Shim 6x14x0.1	4054.0401.	1
164	Shim 6x16x0.1	4054.0402.	1
165	Shim 6x18x0.1	4054.0403.	1
166	Shim 6x20x0.1	4860.0065.	1
167	Shim 6x22x0.1	4860.0064.	1
168	Shim 6x24x0.1	4860.0063.	4
	Compression check-valve setting		
181	Check valve d8xd24x0.4	4860.0061.	1

Rebound

100	Shim 6x14x0.25	4054.0314.	1
101	Backpl. 6x11x0.30	4054.1391.	1
102	Shim 6x12x0.10	4054.0400.	1
103	Shim 6x13x0.10	4860.0325.	1
104	Shim 6x14x0.10	4054.0401.	1
105	Shim 6x16x0.10	4054.0402.	1
106	Shim 6x12x0.10	4054.0400.	1
107	Shim 6x20x0.10	4860.0479.	3
	Rebound check-valve setting		
130	Shim 8x10x0.20	4860.0480.	2
131	Shim 8x14x0.10	4860.0213.	1
132	Shim 8x16x0.10	4860.0214.	1
133	Shim 8x18x0.10	4357.0120.	2
134	Check valve d8xd20x0.10	4860.0215.	3

Spring

1	Spring 4,2 N/mm	9141.0025.	1

Adjustments

Position compression	24
Position rebound	26
Oil volume (ml)	385
Code	14.18.7A.14
Stroke check-valve comp. (mm)	1,5
Stroke check-valve reb. (mm)	0,4
Total length (mm)	940
Stroke (mm)	300
Gas pressure (BAR)	1,0
Preload spring (mm)	5,5
Spring length with spacers (mm)	509

Setting **4860 MXMA Front fork 14.18.7A.15**
KTM 250 SXS 2005

> ⚠ **The amount of pieces is for <u>one</u> fork leg**

Compression

Pos	Part description	Article no.	Pcs
160	Shim 6x16x0.25	4054.0414.	1
161	Backpl. 6x9.5x0.20	4054.0427.	1
162	Shim 6x12x0.10	4054.0400.	1
163	Shim 6x13x0.10	4860.0325.	1
164	Shim 6x14x0.10	4054.0401.	1
165	Shim 6x15x0.10	4860.0327.	1
166	Shim 6x16x0.10	4054.0402.	1
167	Shim 6x17x0.10	4860.0329.	1
168	Shim 6x18x0.10	4054.0403.	1
169	Shim 6x19x0.10	4860.0331.	1
170	Shim 6x20x0.10	4860.0065.	1
171	Shim 6x21x0.10	4860.0332.	1
172	Shim 6x22x0.10	4860.0064.	1
173	Shim 6x23x0.10	4860.0333.	1
174	Shim 6x24x0.10	4860.0063.	5
<u>Compression check-valve setting</u>			
181	Check valve d8xd24x0.40	4860.0061.	1

Rebound

100	Shim 6x14x0.25	4054.0314.	1
101	Backpl. 6x11x0.30	4054.1391.	1
102	Shim 6x12x0.10	4054.0400.	1
103	Shim 6x13x0.10	4860.0325.	1
104	Shim 6x14x0.10	4054.0401.	1
105	Shim 6x16x0.10	4054.0402.	1
106	Shim 6x12x0.10	4054.0400.	1
107	Shim 6x20x0.10	4860.0479.	3
<u>Rebound check-valve setting</u>			
130	Shim 8x10x0.20	4860.0480.	2
131	Shim 8x14x0.10	4860.0213.	1
132	Shim 8x16x0.10	4860.0214.	1
133	Shim 8x18x0.10	4357.0120.	2
134	Check valve d8xd20x0.10	4860.0215.	3

Spring

1	Spring 4.4 N/mm	9141.0026.	1

Adjustments

Position compression	24
Position rebound	25
Oil volume (ml)	395
Code	14.18.7A.15
Stroke check-valve comp. (mm)	1,5
Stroke check-valve reb. (mm)	0,4
Total length (mm)	940
Stroke (mm)	300
Gas pressure (BAR)	1,0
Preload spring (mm)	5,5
Spring length with spacers (mm)	509

Setting **4860 MXMA Front fork 14.18.7A.16**
KTM 450/540 SXS 2005

The amount of pieces is for one fork leg

Compression

Pos	Part description	Article no.	Pcs
160	Shim 6x16x0.25	4054.0414.	1
161	Backpl. 6x9.5x0.20	4054.0427.	1
162	Shim 6x12x0.10	4054.0400.	1
163	Shim 6x13x0.10	4860.0325.	1
164	Shim 6x14x0.10	4054.0401.	1
165	Shim 6x15x0.10	4860.0327.	1
166	Shim 6x16x0.10	4054.0402.	1
167	Shim 6x17x0.10	4860.0329.	1
168	Shim 6x18x0.10	4054.0403.	1
169	Shim 6x19x0.10	4860.0331.	1
170	Shim 6x20x0.10	4860.0065.	1
171	Shim 6x21x0.10	4860.0332.	1
172	Shim 6x22x0.10	4860.0064.	1
173	Shim 6x23x0.10	4860.0333.	1
174	Shim 6x24x0.10	4860.0063.	6
	Compression check-valve setting		
181	Check valve d8xd24x0.40	4860.0061.	1

Rebound

100	Shim 6x14x0.25	4054.0314.	1
101	Backpl. 6x11x0.30	4054.1391.	1
102	Shim 6x12x0.10	4054.0400.	1
103	Shim 6x13x0.10	4860.0325.	1
104	Shim 6x14x0.10	4054.0401.	1
105	Shim 6x16x0.10	4054.0402.	1
106	Shim 6x12x0.10	4054.0400.	1
107	Shim 6x20x0.10	4860.0479.	3
	Rebound check-valve setting		
130	Shim 8x10x0.20	4860.0480.	2
131	Shim 8x14x0.10	4860.0213.	1
132	Shim 8x16x0.10	4860.0214.	1
133	Shim 8x18x0.10	4357.0120.	2
134	Check valve d8xd20x0.10	4860.0215.	3

Spring

1	Spring 4.6 N/mm	9141.0032.	1

Adjustments

Position compression	24
Position rebound	25
Oil volume (ml)	395
Code	14.18.7A.16
Stroke check-valve comp. (mm)	1,5
Stroke check-valve reb. (mm)	0,4
Total length (mm)	940
Stroke (mm)	300
Gas pressure (BAR)	1,0
Preload spring (mm)	5,5
Spring length with spacers (mm)	509

Disassemble the front fork out of the motorcycle

Place your motorcycle on a stand.

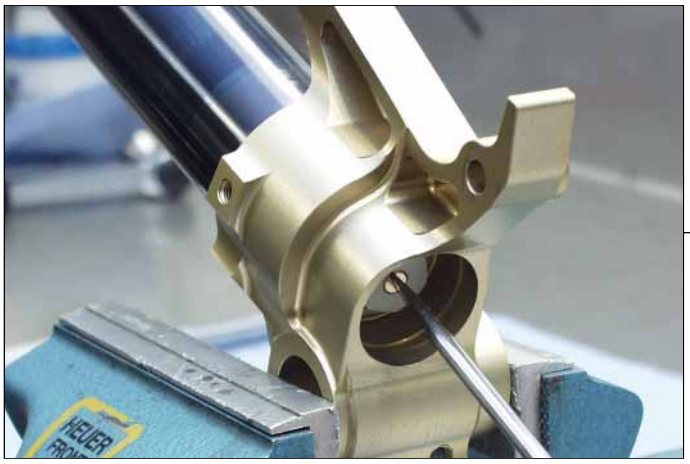
Notice the position of the front fork in the triple-clamps.

1. To remove the front fork. Read your KTM Instruction Manual or Workshop Manual.

2.

Take notice of the position of the compression adjustment!
Count the clicks by turning the adjustment screw clockwise till fully closed.
For the standard position see setting list.

Remove the rubber cap out of the axle-clamp.



Take notice of the position of the rebound adjustment!
Count the clicks by turning the adjustment screw clockwise till fully closed.
For the standard position see setting list.

Disassembling the cartridge out of the front fork leg

Place clamping block T1403S in the vice.

Clamp the outer-tube of the front fork leg in the clamping block at the level of the lower triple-clamp.

Place T14.017 on the screw-cap of the front fork leg.

Untighten the screw-cap.

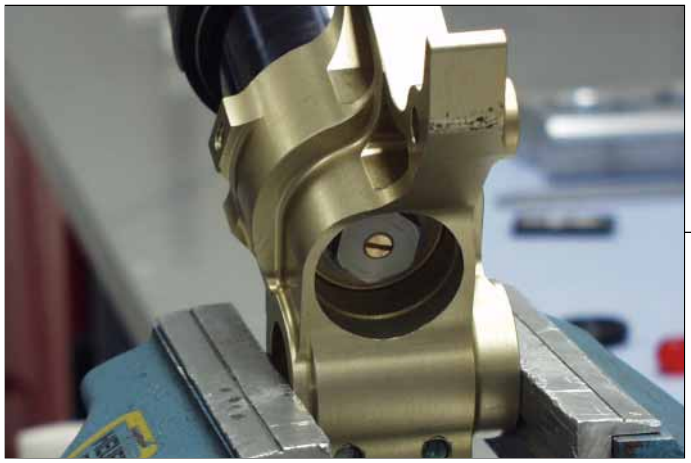
1. Remove the front fork leg out of the vice and move the outer-tube downwards to the axle-clamp.

2.

Drain the oil out of the front fork leg.

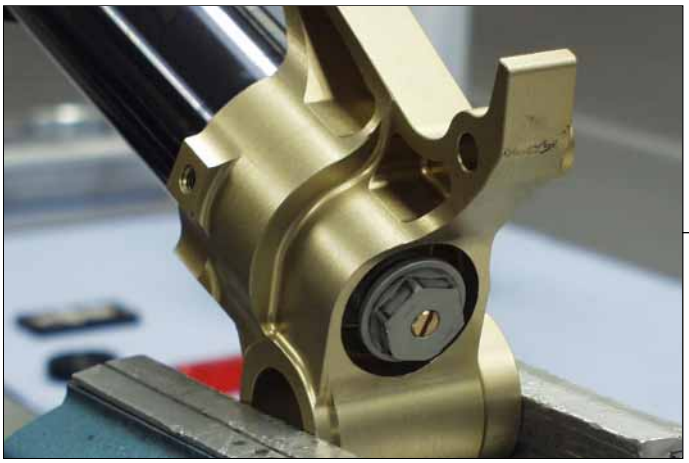
For only replacing the spring or changing the spring preload

Place the front fork leg in the vice according to the position in the picture.



3.

1. screw the rebound adjustment holder out of the axle-clamp.
(Size 19)



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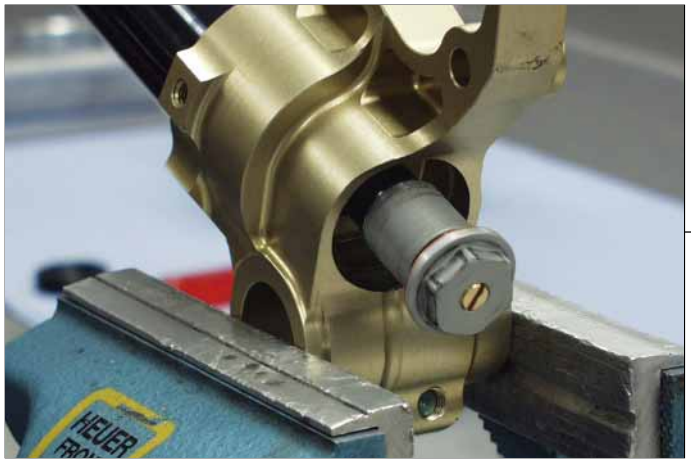


3.

Push the cartridge downwards and place...

(Do this with a second person)

...slide T14.020 over the piston-rod just below the contra nut. (art. no. 4860.0459)

Screw the rebound adjustment holder from the nut.
(Size 19 and 17)

Unscrew the rebound adjustment holder from the piston-rod.
Pay attention to the rebound adjustment tube, remove it when it comes out of the piston-rod!

Push the cartridge downwards and...

...remove T14.020.

Release the spring pressure on the cartridge slowly.

Remove the closed cartridge complete.

“The closed cartridge complete”

Remove the spring with the spacer.

Inspection of the spring

Only for replacing the spring or changing the spring preload!

It is necessarry to place the front fork leg according to the picture for about 5 minutes. The amount of rest oil that stay left in the front fork leg is ± 10ml.
See the setting list for the correct amount of oil volume, this oil volume is minus the 10ml of rest oil.
For example 385ml - 10ml = 375ml.

The total length of the spring (without spacers) is 505mm +/- 3mm.
Replace the spring when the total length is less then 495mm.

Inspect the coils of the spring if they are not flat, incase they are, you have to replace the spring.

Disassembling the inner-tube / outer-tube

Place the front fork leg in the vice according to the picture.

Remove the dust stripper very carefully .
Do not damage the inner- or outer-tube!

Slide the dust stripper downwards.

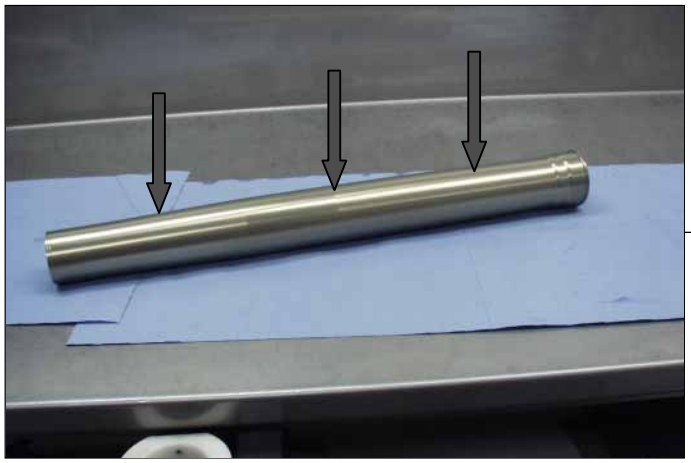
Remove the lock washer with a screwdriver.
The lock washer is on one side chamfered to disassemble it easier!

Heat the surface of the outer-tube near the oil seal to a temperature of ± 50°C.

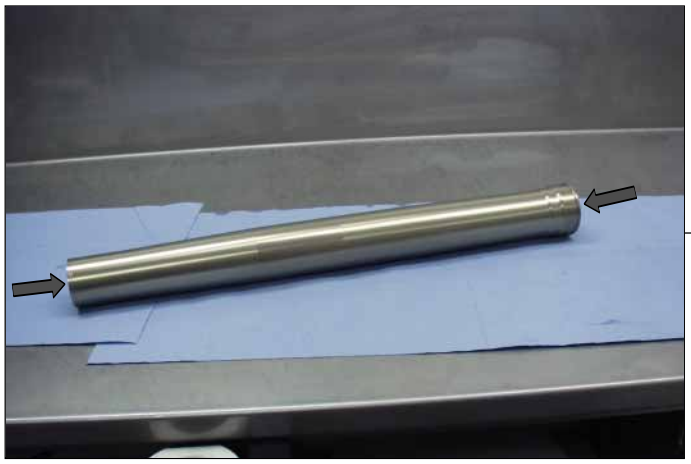
1. Remove the front fork leg out of the vice and pull with both hands the outer-tube from the inner-tube.

2.

The outer-tube.

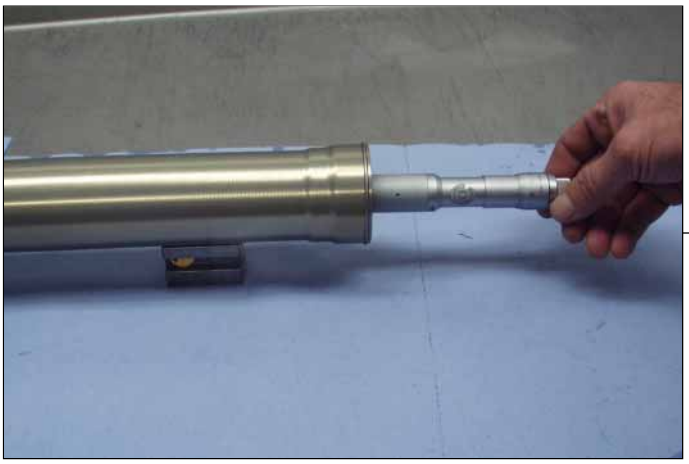


Inspect the outside surface of the outer-tube if there isn't any damage because of (for example) stones.



Inspect the inside running surface of the outer-tube on scratches.
Also inspect the anodized coating of the running surface.

Micrometer for measuring the oil seal and DU-bush chambers of the outer-tube.



Measure the chamber for the DU-bush.

The maximum diameter is: 52.15mm

Measure the chamber for the oil seal.

The maximum diameter is: 57.50mm

Micrometer for measuring the diameter of the running surface of the outer-tube.

Place at the side of the screw cap the micrometer ± 300mm into the outer-tube. Measure the diameter of the running surface and measure again after rotating the outer-tube 180°.

The maximum diameter is: 49.20mm

Place the inner-tube according to the picture in the vice.

Remove the DU-bush from the inner-tube.

Remove the outer-tube DU-bush.

Remove the support ring.

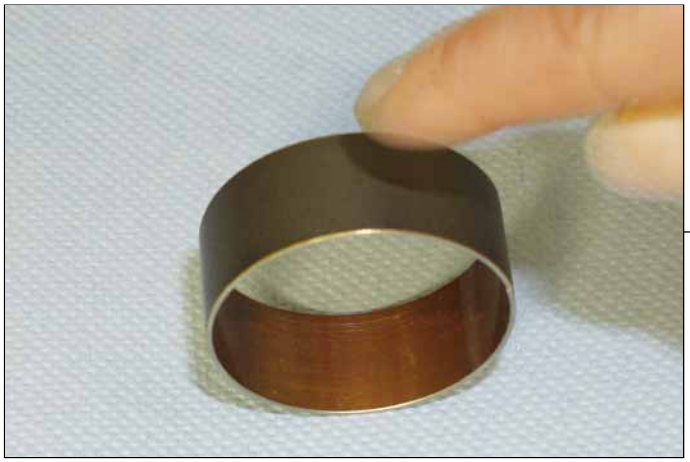
Remove the oil seal.

Remove the lock washer.

Remove the dust stripper.

- Dust stripper
- Lock washer
- Oil seal
- Support ring
- DU-bush outer-tube
- DU-bush inner-tube

Inspection of the DU-bushes, support ring and seals



Replace the DU-bush if the surface is feeling rough.
The best way to do this is to compare it with a new one!

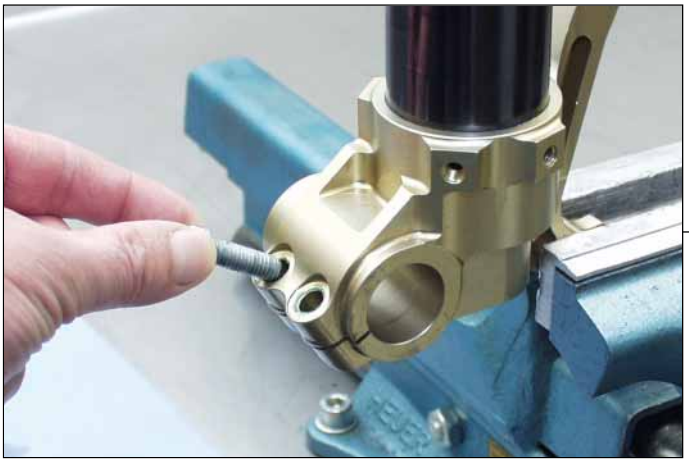
Replace the DU-bush when you see through the surface a bronze color.

Replace the DU-bush if the surface is feeling rough.
The best way to do this is to compare it with a new one!

Replace the DU-bush when you see through the surface a bronze color.

Check if the support ring is not bended.

Always replace the dust stripper and oil seal with every service!
See periodic service interval!



Unscrew both bolts out of the axle-clamp.

1. Heat the axle-clamp.

2.

Place T1404S in the inner-tube with...

2.

Place T1404S in the inner-tube with...

...the pin (T605) through the holes in the inner-tube.

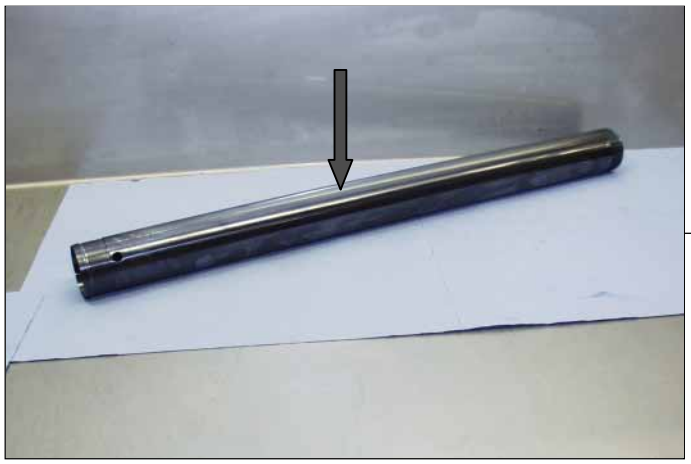
Untigthen the inner-tube.

Unscrew the inner-tube from the axle-clamp.

Take the axle-clamp out of the vice.

Axle-clamp complete!

Inner-tube.



Inspect the outside running surface of the inner-tube on scratches, wear and tear.

When the scratches are sharp and they are not to deep, try to polish them with a Scotch Brite hand pad.

Micrometer for measuring the outside diameter of the inner-tube.

1. Measure the outside diameter of the inner-tube, rotate the inner-tube 180° and measure again. Repeat these measurments on several places of the inner-tube.

The maximum diameter is: 48.005mm
The minimum diameter is: 47.950mm

2.

3.

Clock gauge for measuring the straightness of the inner-tube.

Measure the straightness of the inner-tube, rotate the inner-tube 360°.

The maximum travel is: 0.06mm

Take the spacer out of the axle-clamp.

Use air pressure to remove...

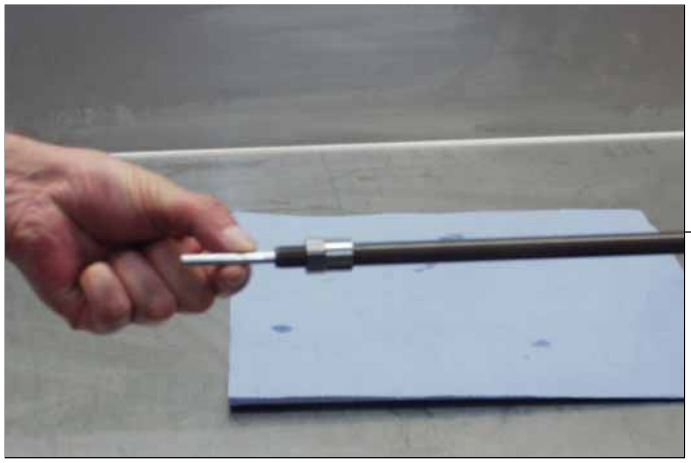
...the O-ring out of the nut of the axle-clamp.

Remove the hydraulic sleeve.

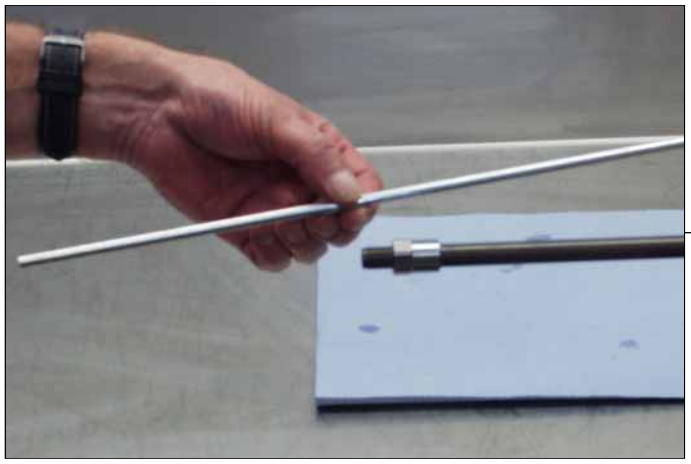
Axle-clamp with the components.

Disassembling the closed cartridge

The closed cartridge complete.



1. Remove the rebound adjusting tube.



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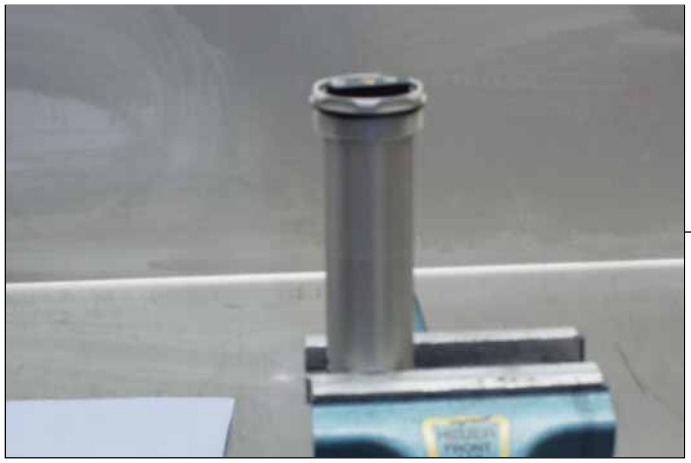
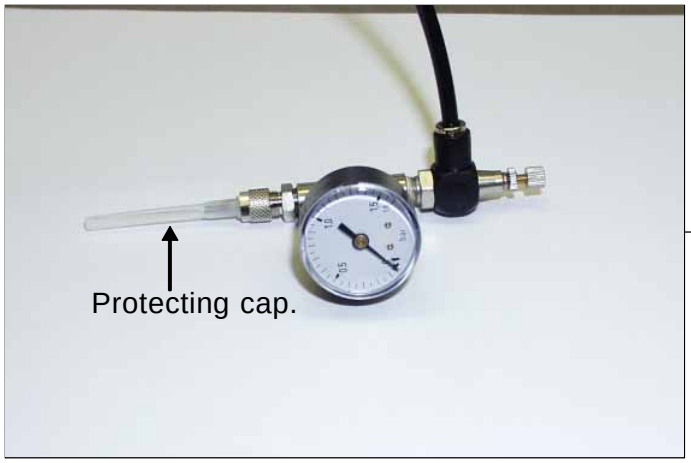


Clamp the reservoir of the cartridge in the vice according to position in the picture.

Unscrew the Allen bolt that is nearist to the compression adjustment screw.
(Size 3)

Remove the Allen bolt with seal out of the screw-cap.

Allen bolt with seal.



Special tool T14.019.

Remove the protecting cap of the needle and stick the needle through the middle of the filling rubber plug.
You will hear that the nitrogen pressure is releasing the membrane.

Place T14.018 on the screw-cap.

Untighten the screw-cap of the membrane holder.

Lift the screw-cap of the membrane holder out of the reservoir with a screw driver.

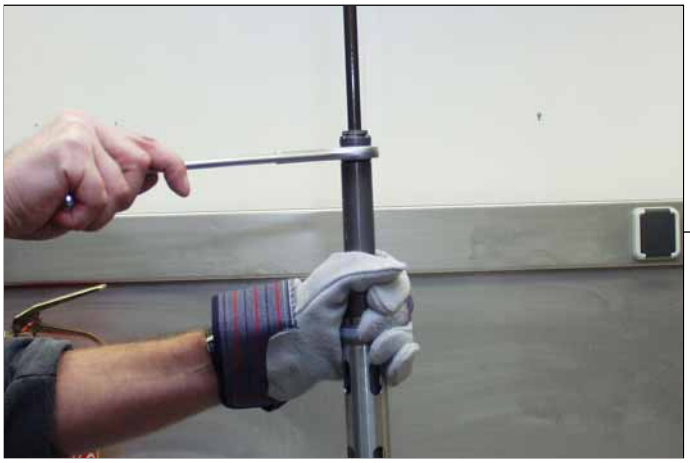
1. Take the membrane holder out of the reservoir.

2.

Drain the oil out of the cartridge.

Clamp the closed cartridge in the vice according to the picture!

Heat the screw sleeve.



Untighten the screw sleeve.
(Size 24)

Unsrew the screw sleeve out of the tube.

Pull the piston rod out of the tube.

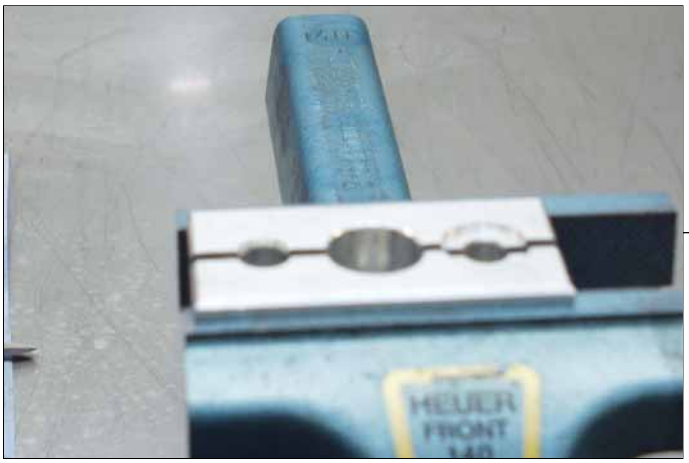
The complete piston rod with the rebound setting.
Pay attention to the piston ring!

Remove the tube d35xD37.5.

Tube d35xD37.5 with guiding ring.

1. Remove the guiding ring

2



Place clamping block T14.016 in the vice.

Place the piston rod in the vice according to the picture.

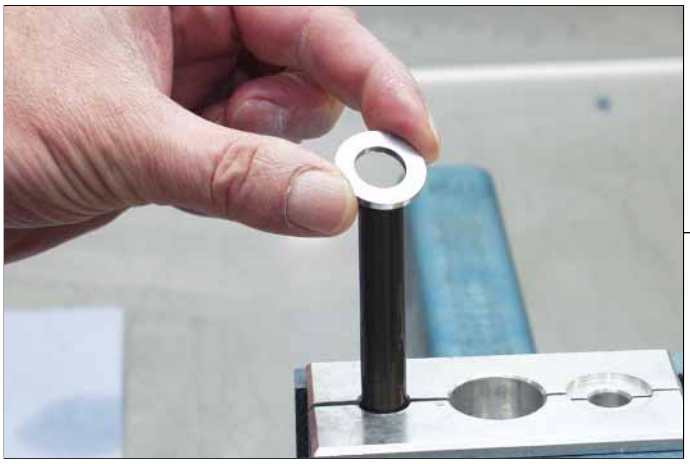
1. Remove the piston ring.

2.

Untighten the tap rebound.
(Size 17)

Screw the tap rebound with needle and spring out of the piston rod.

Remove the rebound spring.

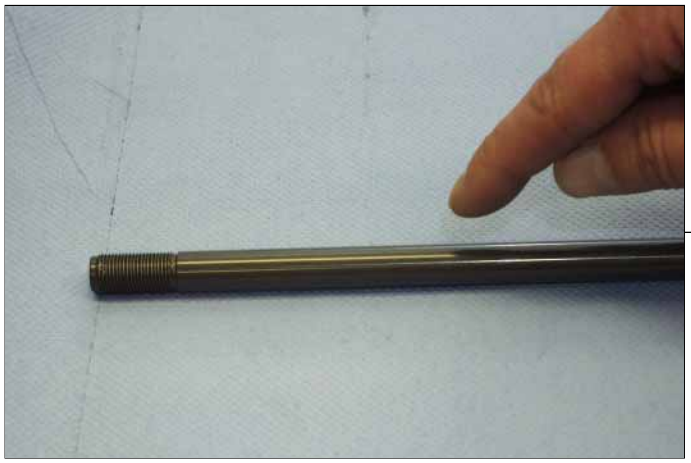


Remove the steel washer.

Remove the screw sleeve.

Inspection of the piston rod

Piston rod.



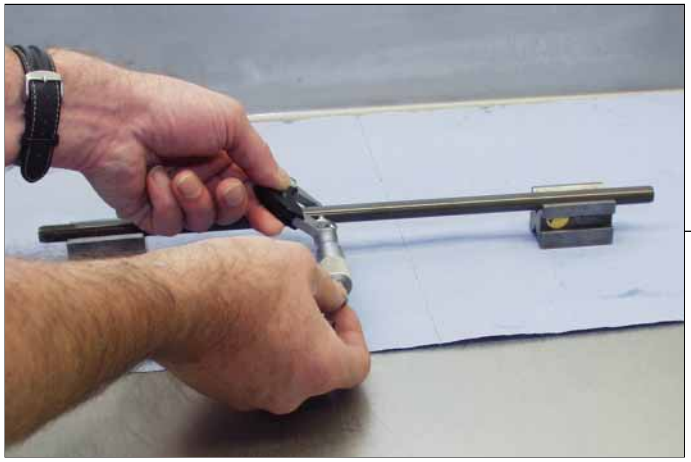
Replace the piston rod if you have inspect that the surface of the piston rod has scratches and or indentations.
Always replace also the DU-bush d12 of the screw sleeve.

Use a clock gauge for measuring the straightness of the piston rod.

Measure the straightness of the piston rod, rotate the piston rod 360°.

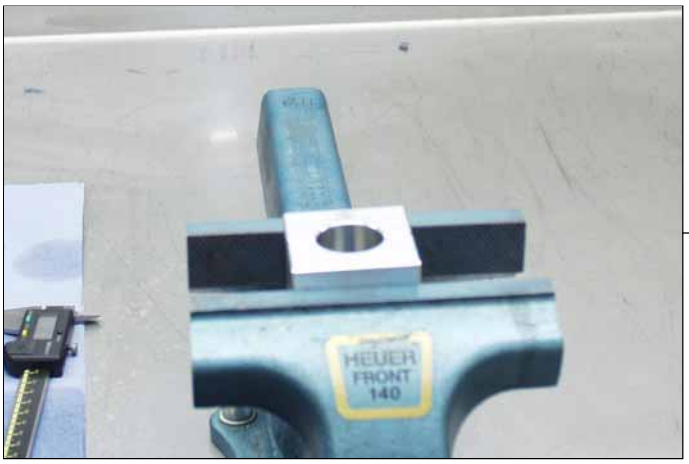
The maximum travel is: 0.12mm

Micrometer.
Measuring the outside diamater of the piston rod.



Measure the diameter of the piston rod, rotate the piston rod 180° and measure the diameter again.
Repeat these measurments on several places of the piston rod.

The maximum diameter is: 12.00mm.
The minumum diameter is: 11.92mm.



Place clamping block T14.015 in the vice.

Screw the screw sleeve handtight back into the tube...

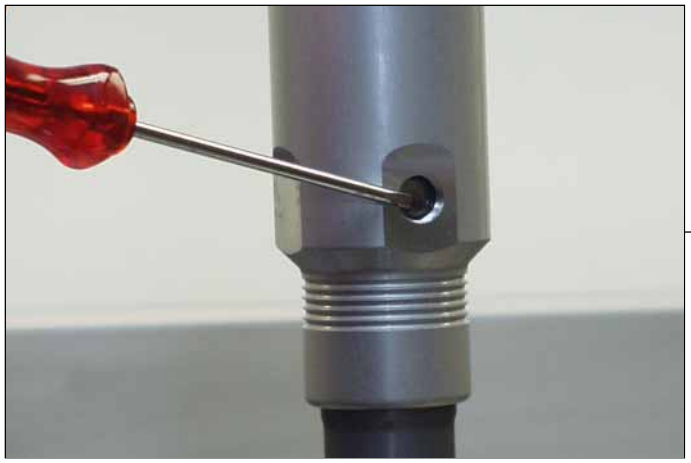
...completely.

Clamp the tube at the level of the screw sleeve in the clamping block.

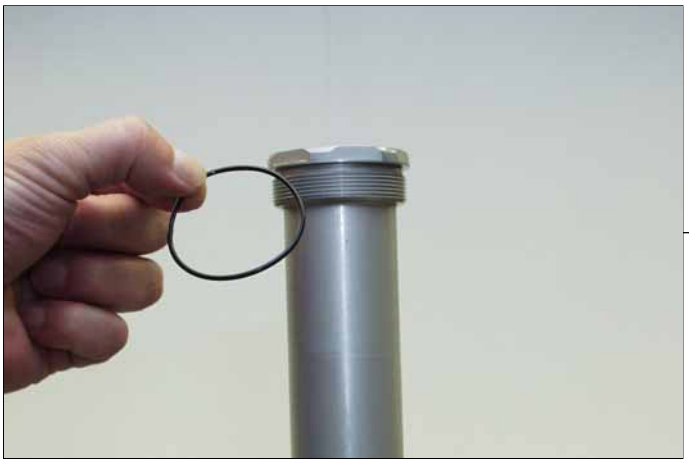
The membrane holder complete.

Screw the plug out of the membrane holder. (Size 4)
This plug is for factory production use!

Remove the plug.



Remove the O-ring.



Remove the O-ring.

Disassemble the springring.
Pay attention in wich groove the springring is assembled!
By changing the position of the springring in the groove you will change the spring preload!
The distance between the grooves is 2.5mm. This means 2.5mm more or less spring preaload!

Place the membrane holder in the vice according to the picture.

The adjustment screw of the pressure release valve.

Unscrew the adjustment screw with a correct fitting screwdriver.

1. Screw the adjustment screw out of the membrane holder.

2.

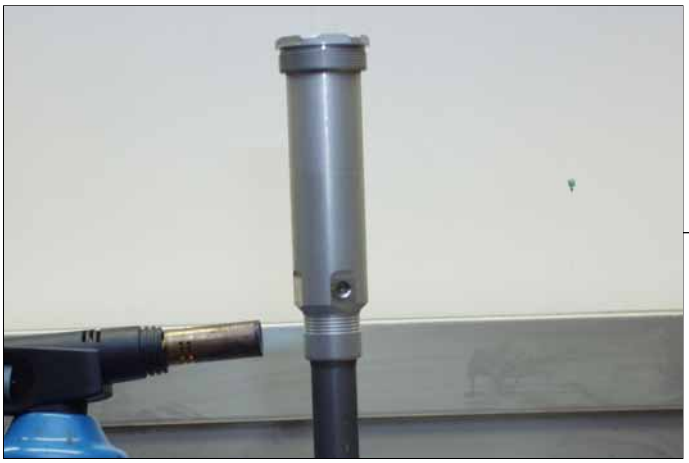
Turn the membrane holder up side down and remove the spring.

The check valve pin.
It is not possible to disassemble the check-valve pin out of the membrane holder!

Inspection of the check valve spring

Check valve spring.

The length of the spring must be
8.0 ± 0.2mm.
Replace the check valve spring if the length is less then 7.8mm.



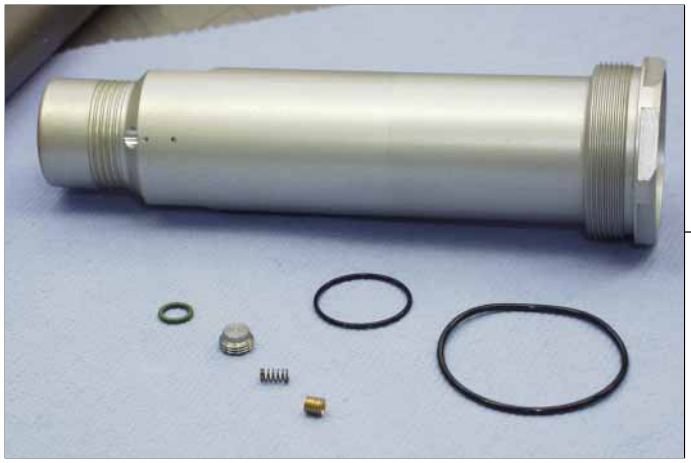
Place the tube in the clamping block T14.015 at the level of the screw sleeve. Heat the membrane holder at the level of the springring groove.

Untighten the membrane holder with T14.017.

Screw the membrane holder off the tube.

1. Remove the O-ring inside.

2.



The membrane holder with the componenets.

Disassembling the screw sleeve

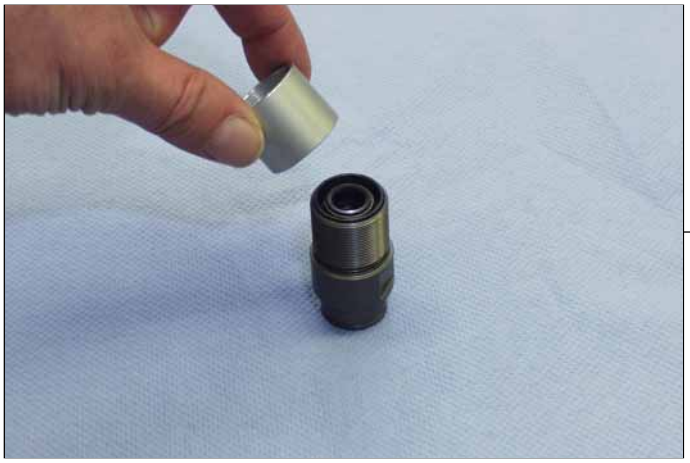
Turn the screw sleeve out of the tube.

Screw sleeve complete.

Remove the O-ring.

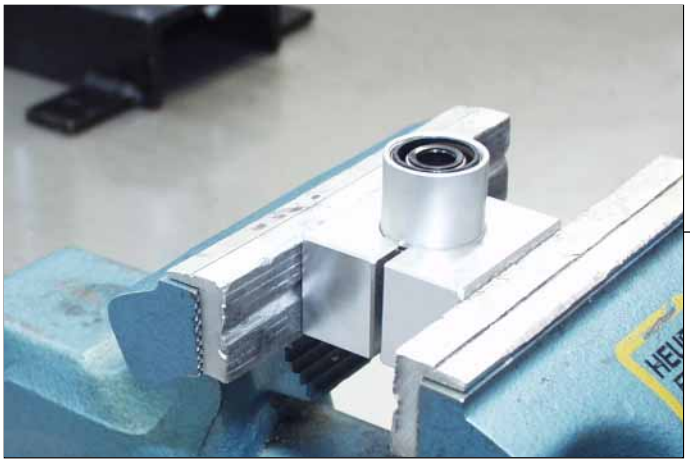
Remove the springring.

Remove the check-valve ring.

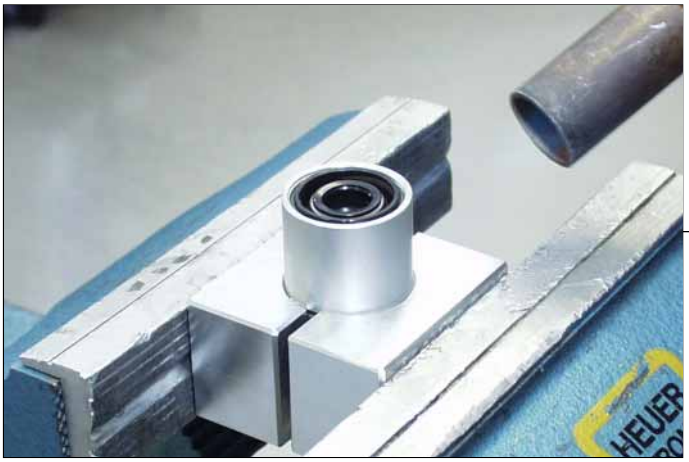


1. Screw the threaded bush T14.023 on the screw sleeve...

...till about 0.5mm just above the edge of the thread of the screw sleeve



Place the screw sleeve with clamping block T14.015 in the vice.



Heat the threaded bush to a temperature of ±50°C.

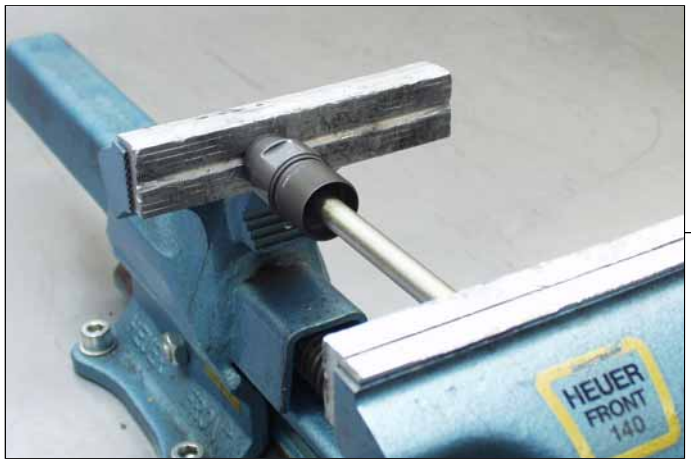
1. Lift the oil seal with a screw driver out of the screw sleeve.

2. Pay attention to the assembling direction.

This side of the oil seal is visible when the oil seal is assembled in the screw sleeve. Always replace the oil seal!

Remove the threaded bush.

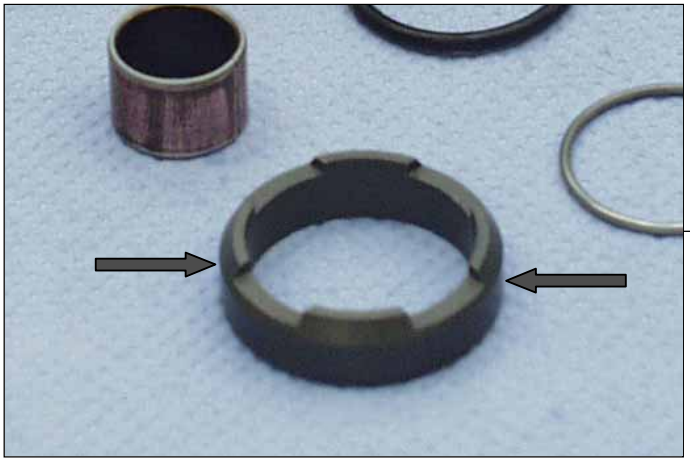
Use T14.022...



...to press,

...the DU-bush out of the screw sleeve.
Always replace the DU-bush d12!

The screw sleeve with components.

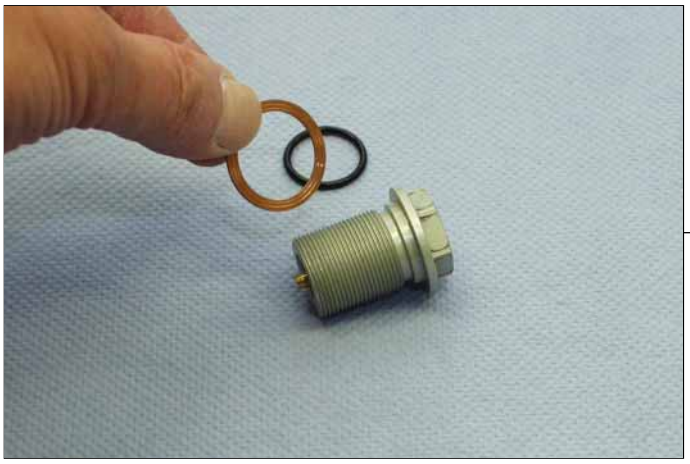


Inspect the surface of the check vakve ring on scratches, wear and tear.

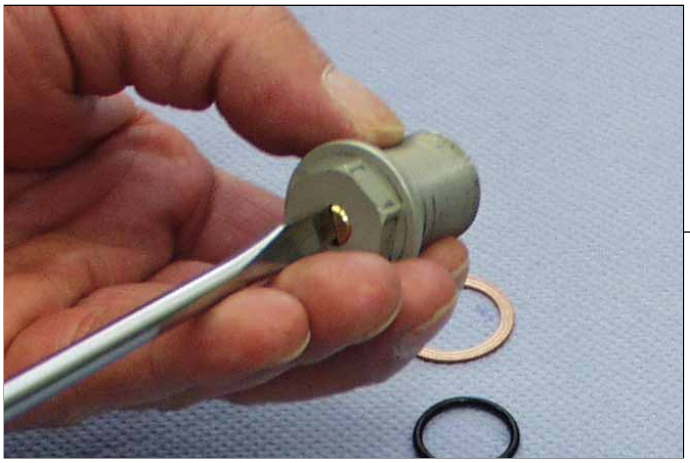
Disassembling the rebound adjustment adaptor

The rebound adjustment adaptor complete.

Remove the O-ring.

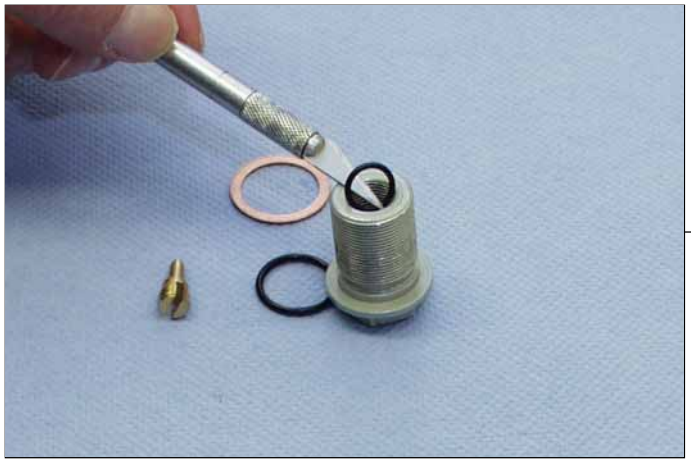


Remove the copper washer.
Always replace the copper washer.



Turn the adjustment screw clockwise...

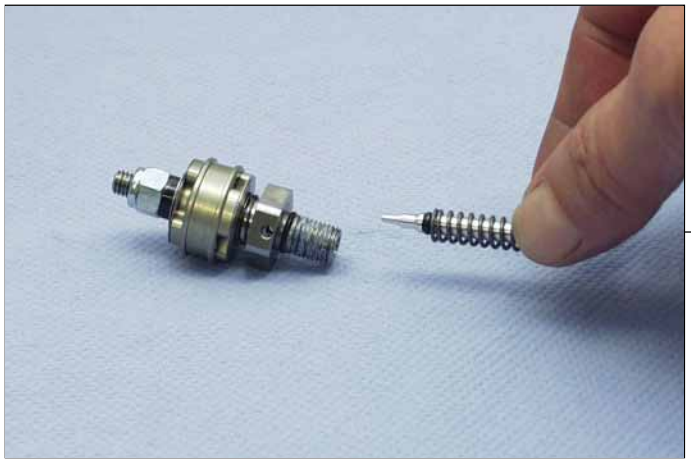
...and remove the needle.



Remove the O-ring inside the rebound adjustment adaptor with a hobby knife out of the groove.

The rebound adjustment adaptor with components.

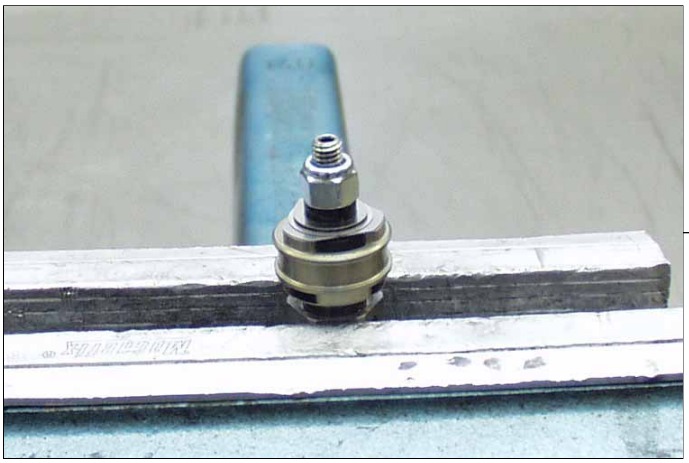
The tap rebound complete.



Pull the rebound adjustment needle out of the tap rebound.

Needle with spring.

Take the O-ring of the needle.



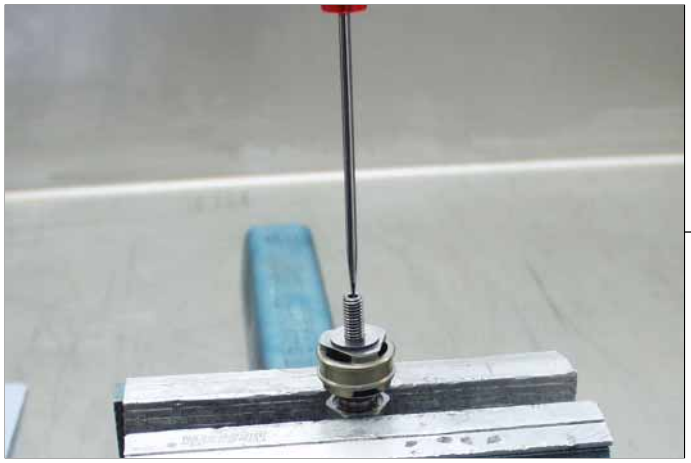
Place the tap rebound in the vice according to the picture.

Pay attention to the position of the rebound triangular shims!

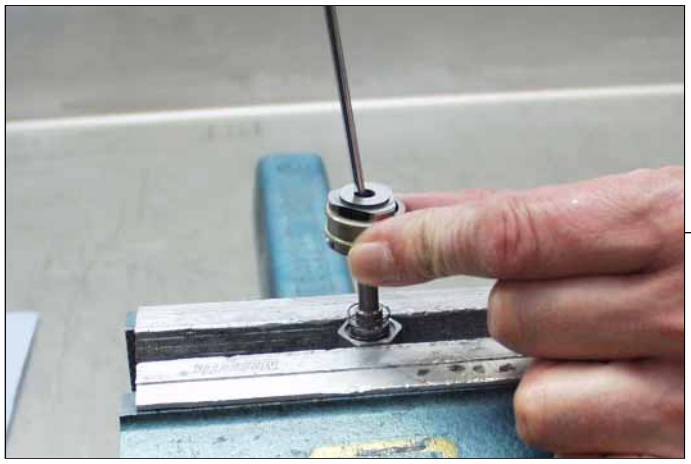
Untighten the lock nut.

Remove the lock nut.

Remove the bush.



Place a screwdriver on top of the tap rebound.

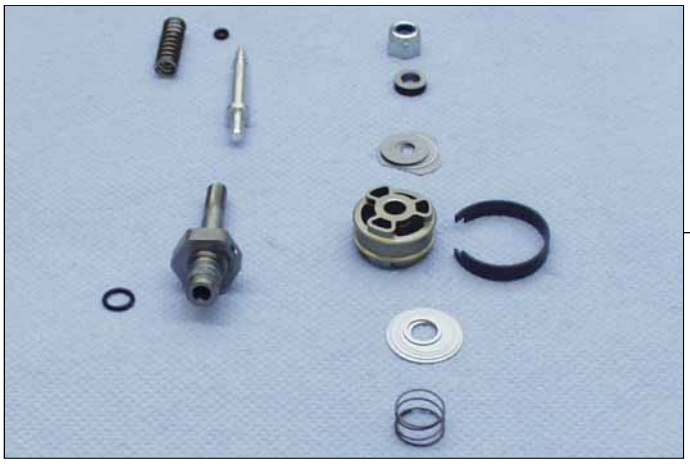


1. Slide the complete rebound setting over the shaft of the screwdriver.

2.

Remove the check-valve spring.

Remove the O-ring



The tap rebound with components.

Rebound piston.
Setting side!

Rebound piston.
Check-valve setting side!

Inspection of the rebound setting

Polish both sides of the rebound piston with sandpaper 600 on a flat plate.

Check the first shim of the rebound setting that is assembled on the rebound piston if it is not bended.
If bended check the second shim and so on.
Inspect also the check valve shim(s).
Always replace bended shims!

Disassembling the screw-cap / membrane CC

Place the screw cap / membrane CC in the vice according to the picture.
Untighten the Allen bolt.
(Size 3)

Remove the Allen bolt.

Take the seal out of the screw-cap.

Allen bolt with seal.

Remove the O-ring from the groove of the screw-cap.

Place the screw-cap in the vice according to the picture.

Untighten the tap compression.

Screw the tap compression out of the rod.

Remove the the tap compression complete.

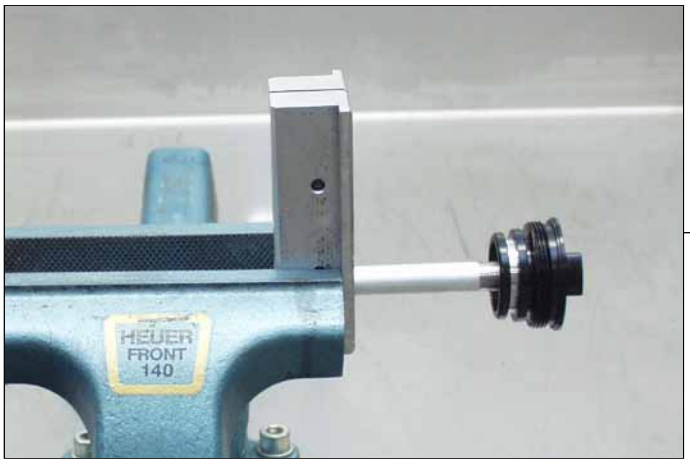
Remove the adjustment tube.

Take the membrane out of the groove of the screw-cap.

The screw-cap with the membrane CC with the components.

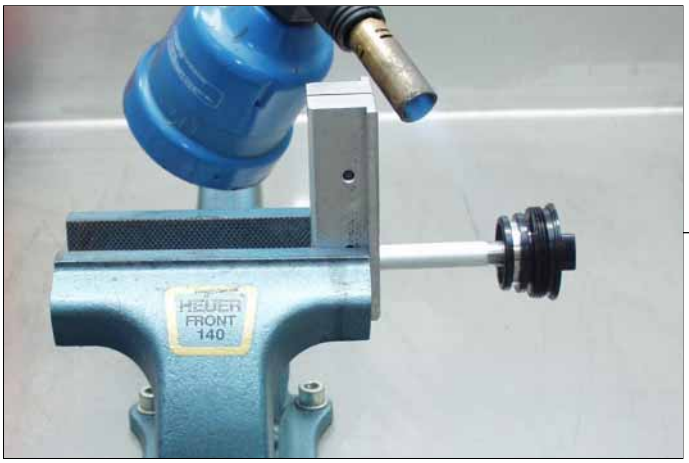
Place the rod of the screw-cap in clamping-block T14.016.

Push the rubber plug out of the screw-cap.



Place the rod with screw-cap in the clamping-block according to the picture.

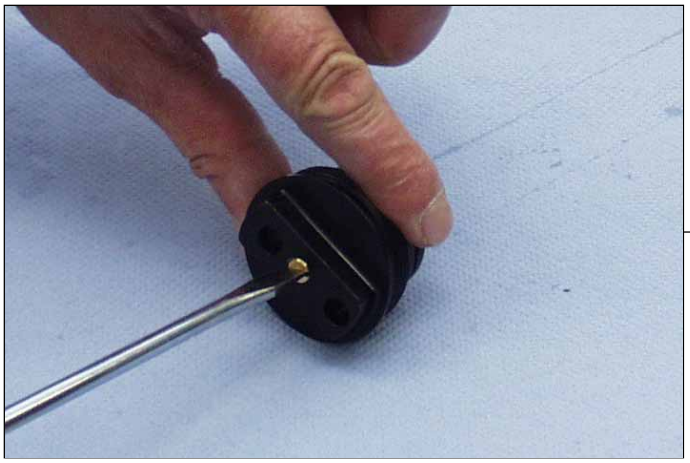
Heat the screw-cap to a temperature of ± 50°C...



...near the rod.

Untighten the screw-cap with T14.018.

Unscrew the screw-cap of the rod.



Turn the adjustment screw fully clockwise and...

...remove the adjustment needle.

- Screw-cap
- Adjustment needle
- Rubber plug
- Rod

Assembling the screw-cap / membrane CC

Always assemble a new rubber plug when the rubber plug is removed out of the screw-cap.

Push the rubber plug as far as posibble into the screw-cap.

Assemble the needle.

Turn the adjustment screw anti-clockwise fully open.

Wet the thread of the rod with T132.

Turn the rod in the screw-cap.

Clamp the rod in the clamping-block T14.016 and tighten the screw-cap with T14.018.

Assemble the Allen bolt with the seal.

Place the O-ring.

Place the screw-cap in the vice like picture.

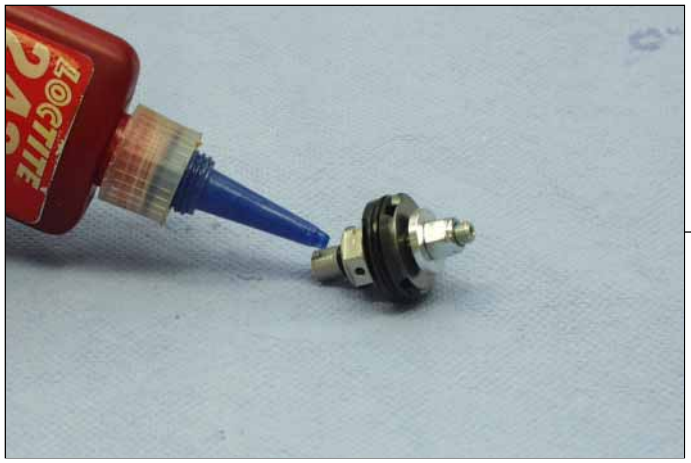
Place the membrane.

Assemble the membrane in the groove of the screw-cap.

Assemble the membrane over the rod.

The complete tap compression.

Remove the adjustment needle with spring.



Apply the thread with T131.

Remove the spring from the needle.
Grease the O-ring of the needle with T158.

Replace the adjustment needle with the assembled spring into the tap compression.

Place the adjustment tube on the end of the needle.

Place the compression unit in the vice according to the picture.

Place the Screw-cap with membrane CC over the adjustment tube.

Srew the membrane on the tap compression.

Place the screw-cap in the vice according to the picture.

Tighten the compression tap.

Disassembling the tap compression

Untighten the lock nut.
(Size 10)

Remove the lock nut.

Take off the shuttle valve.

Take off the check-valve spring.

Place a screwdriver on top of the tap.

Slide the complete compression setting...

...over the shaft of the screwdriver.

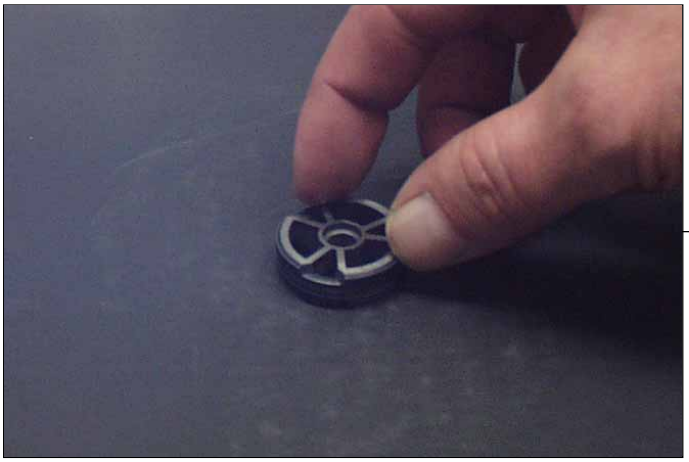
Disassemble the O-ring of the compression piston.

Compression setting with the components.

Compression piston.
Check-valve setting side.

Compression piston.
Setting side.

Inspection of the compression setting



Polish both sides of the compression piston with sandpaper 600 on a flat plate.

Check the first shim of the compression setting that is assembled on the compression piston if it is not bended.
If bended check the second shim and so on.
Inspect also the check valve shim(s).
Always replace bended shims!

Assembling the tap compression

Place the complete compression shim setting on the tap compression.

Place the O-ring in the groove of the compression piston.

Place the compression piston on the tap.

Place the compression check-valve setting.

Place the check-valve spring.

Place the shuttle valve.
Assure that the check-valve shim(s) is fitting over the shuttle valve!

Screw a new lock nut on the compression tap.

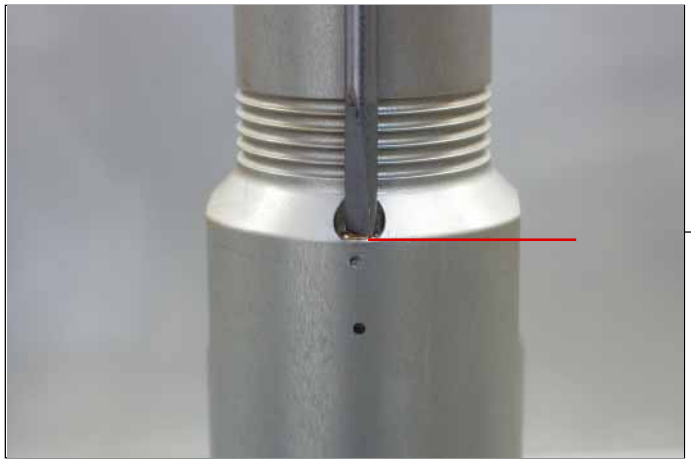
Tighten the lock nut to a torque of 6Nm.

Assure that the check-valve is functioning.

Blow with high air pressure through the valve.

Blow with high air pressure through the valve.

Place the valve spring.



Turn the adjustment screw at the level of the edge of the hole.

1. Adjust with one complete turn (clockwise) the adjustment screw

2.

Assemble the O-ring in the groove inside the membrane holder.

Place the O-ring.

screw the plug in the holder...

...and tighten the plug.

Assemble the springring in the correct groove.

Assemble the O-ring.

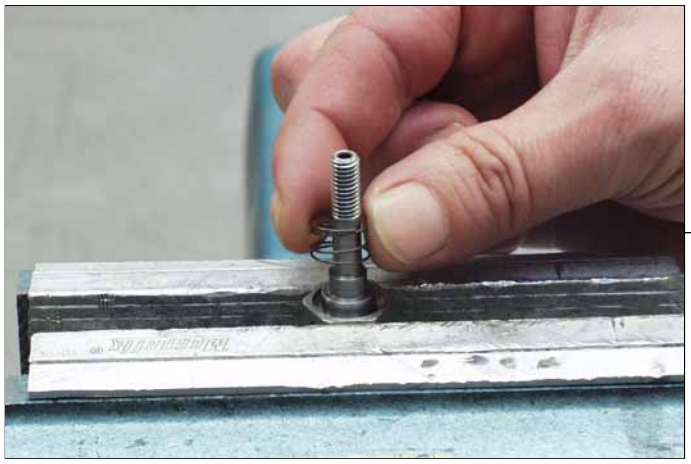
Apply the O-ring with T158.

Apply the inside O-ring with T158.

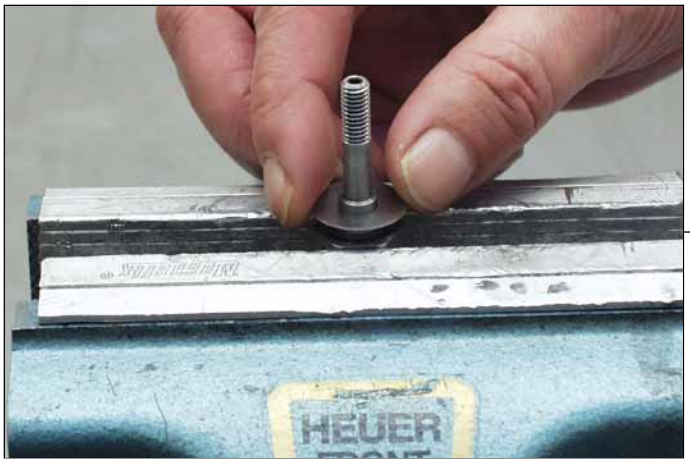
Membrane holder complete.

Place a new O-ring.

Place the tap rebound in the vice.

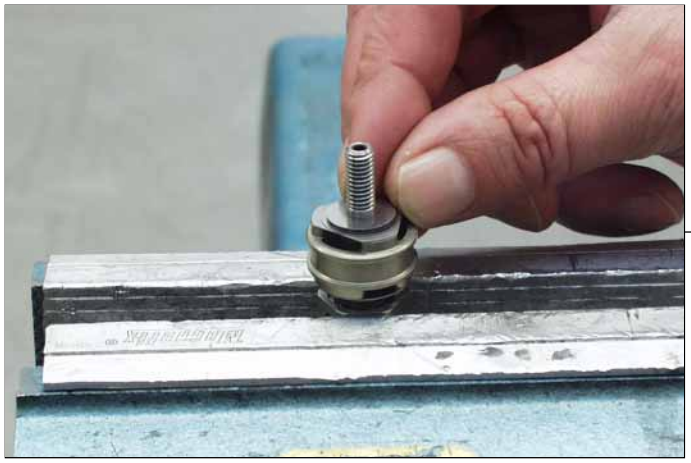


Place the check-valve spring.



Place the check-valve setting.

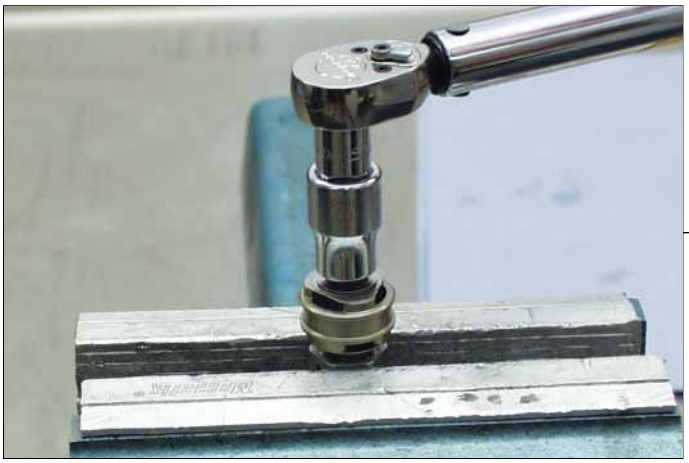
Place the rebound piston.



Place the shim setting.

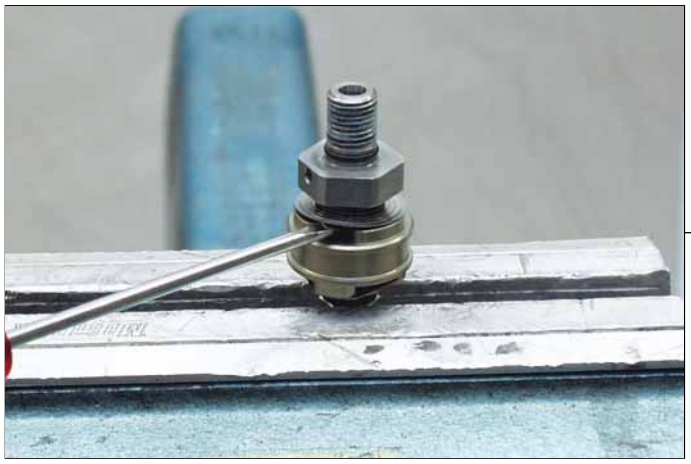
Place the bush.

Screw a new lock nut on the tap.



Tighten the lock nut to a torque of 6Nm.

Pay attention to the position of the triangular shims on the rebound piston!



Check the functioning of the check-valve.

Place the O-ring.

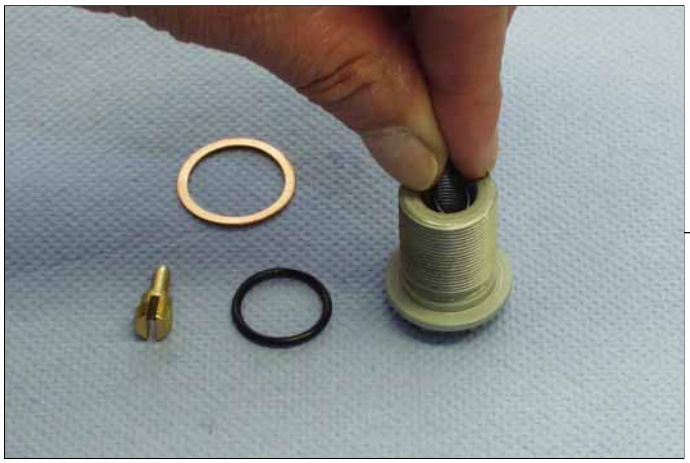
Place the spring.

Grease the O-ring with T158.

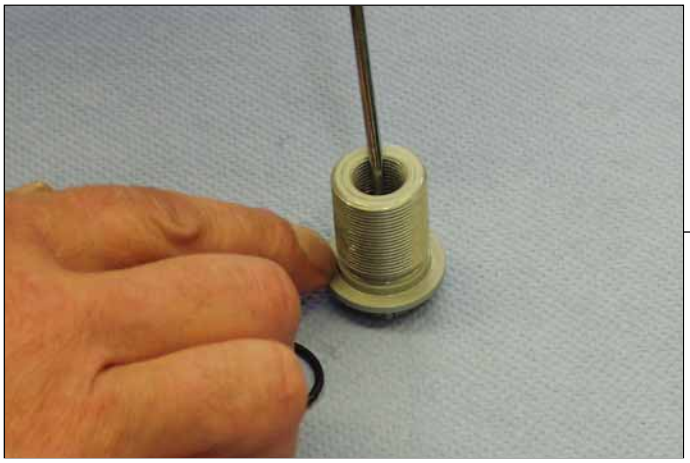
Assemble the adjustment needle...

...in the tap rebound.

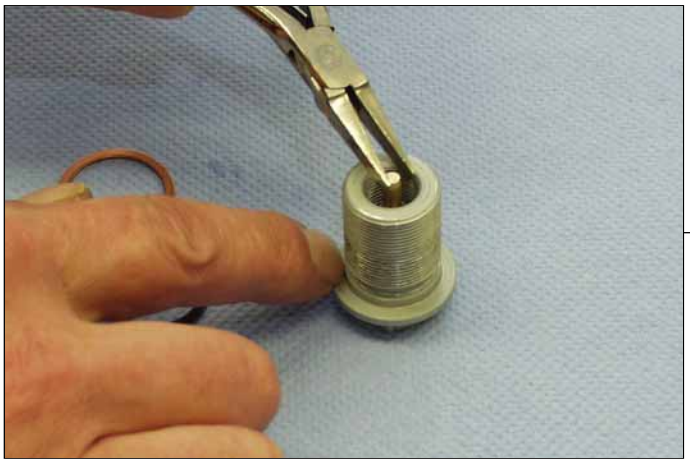
Assembling the rebound adjustment adaptor



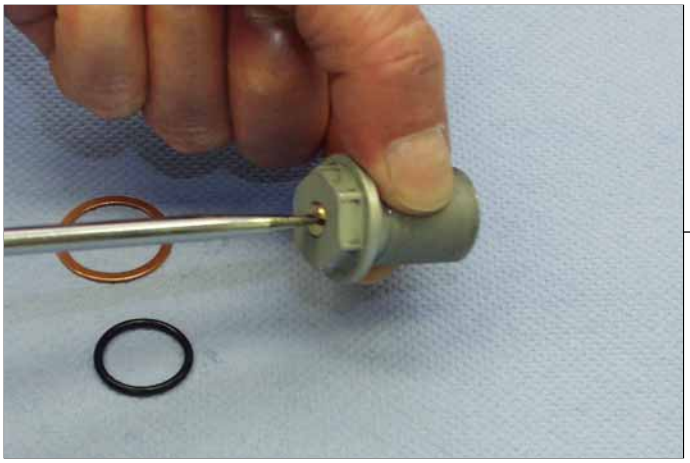
Place a new O-ring in the adaptor.



Assemble the O-ring in the groove inside the adaptor.

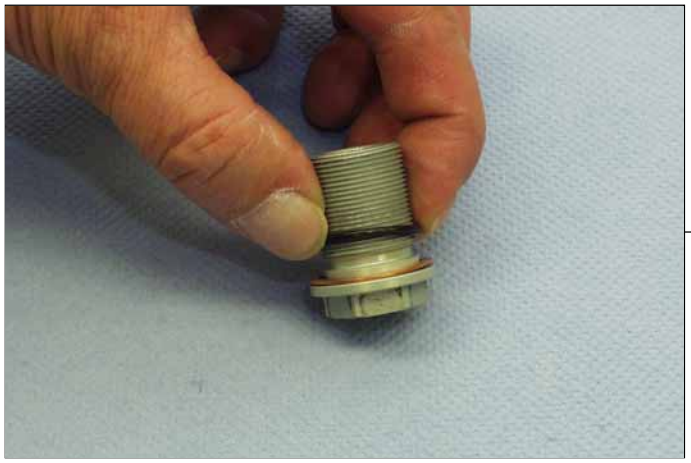


Assemble the needle.



Turn the adjustment screw anti-clockwise fully open.

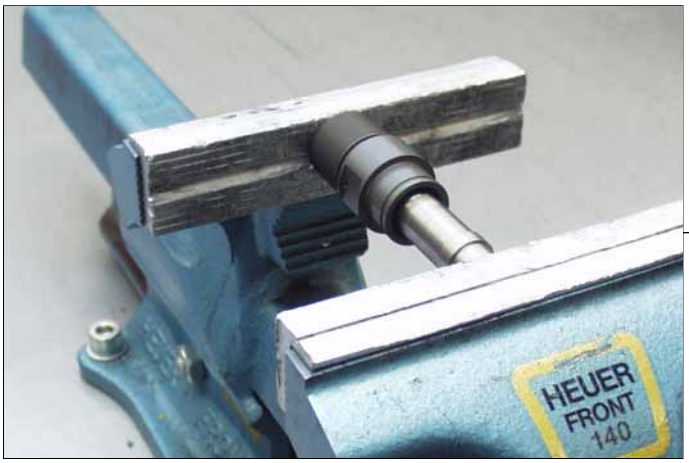
Place a new copper washer.



Assemble the O-ring in the groove.

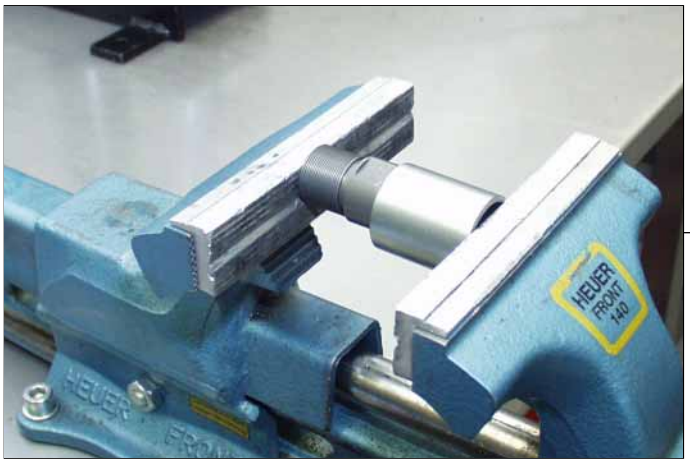
Rebound adjustment adaptor complete.

Assembling the screw sleeve

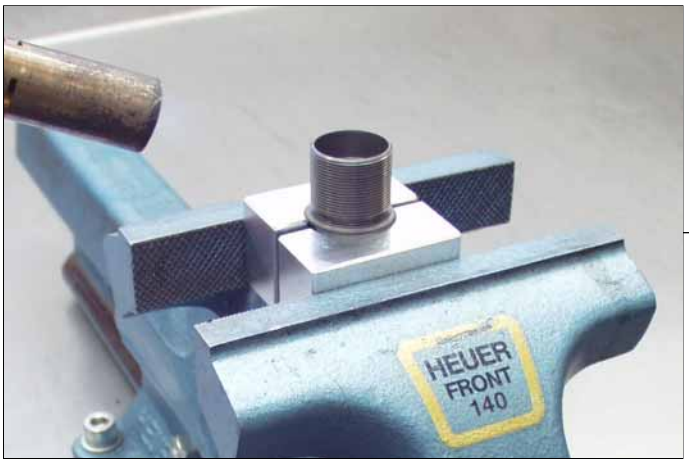


Press with T14.023 the new DU-bush into the screw-sleeve.

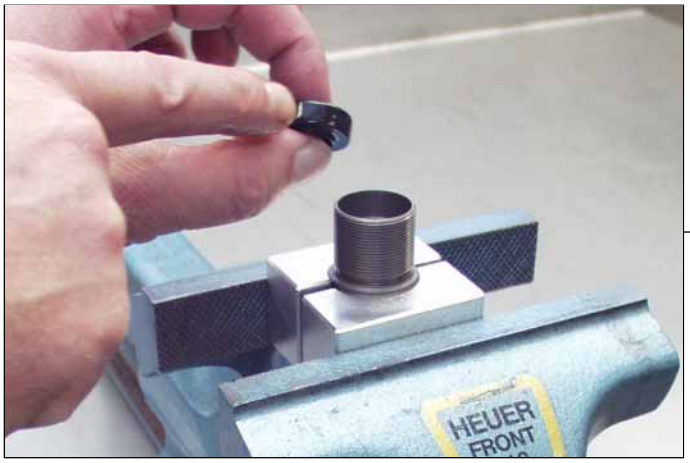
Apply the calibrate mandrel T14.021 with front fork oil.



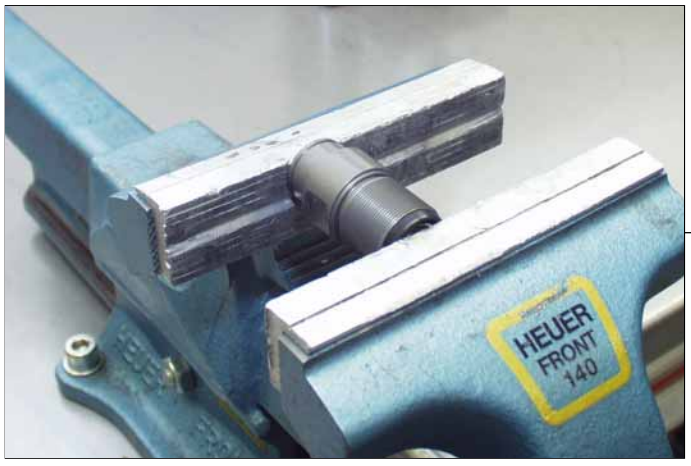
Press the mandrel with support of T14.024 completely through the DU-bush.



Place the screw-sleeve in the clamping-block and heat the screw sleeve to a temperature of ± 50°C.



Apply the outdide of the new oil seal with front fork oil.



Pay attention to the assembling direction! Press the oil seal into the screw sleeve.

2.

Place the check-valve ring.

Assemble the springring.

Assembling the closed cartridge

Assemble the guiding ring...

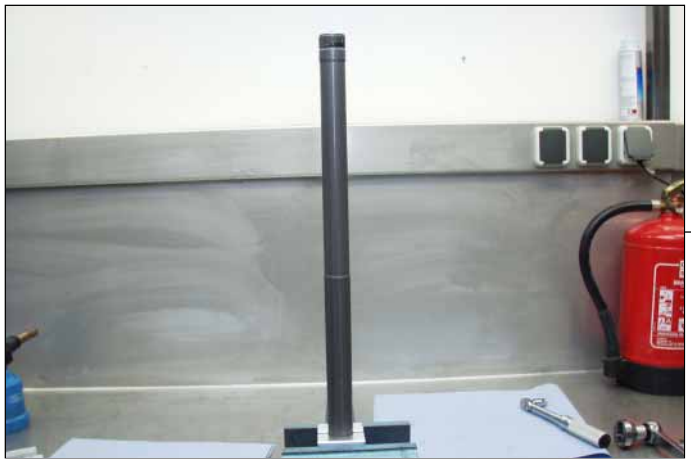
...in the groove of the tube.

Tube complete.

Screw the screw sleeve in the tube...

...completely.

Wet the thread of the tube with T132.



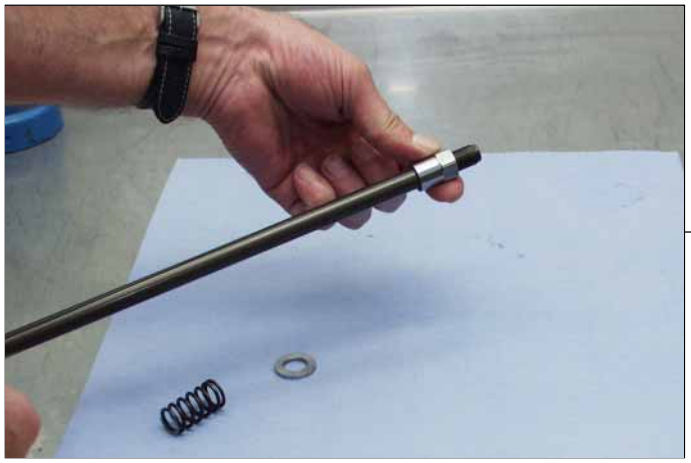
Clamp the tube in the clamping-block T14.015.

Screw the membrane holder on the tube.

Tighten the membrane holder with T14.017.

Unscrew the screw sleeve out of the tube.

- piston rod
- Rebound spring
- washer
- Contra nut



Screw the contra nut to the end of the thread of the piston rod.

Place the piston rod in the clamping block T14.016.

Slide carefully the screw sleeve over the piston rod.

Place the washer.

Assemble the rebound spring.

Wet the thread of the tap rebound with T131.

Screw the tap rebound in the piston rod.

Tighten the tap rebound.

T

Slide the tube on the tube of the cartridge.
Pay attention to the assembling direction!

Piston ring!
Always place a new piston ring!
Roll the piston ring over the shaft of a screwdriver!

Place the piston ring in the groove of the rebound piston.

Assemble carefully and slowly the piston into the tube of the cartridge.
Make sure the piston ring stays in position!

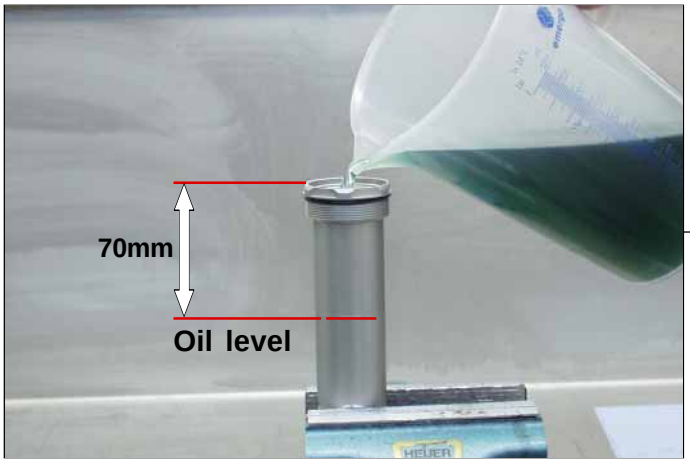
Wet the thread of the screw sleeve with T131.

Place the membrane holder in the vice according to the picture.

Tighten the screw sleeve.

Bleeding the closed cartridge

Place the membrane holder in the vice according to the picture.



Drain slowly front fork oil in the closed cartridge. The oil level must be about 70mm from the top of the membrane holder. The piston rod must be fully extended!

1.

2. Slowly move several times the piston rod up and down.
Be sure that all air is out of the oil, this can take several minutes!

Adjust the O-ring of the squeeze bottle T137S to 120mm.

Adjust the oil level in the membrane holder to 120mm, by keeping the O-ring of the squeeze bottle at the top level of the membrane holder.

If the membrane has not the correct shape...
(see picture)

...open the membrane at the groove of the screw cap and press with a little bit of air pressure the membrane to the correct shape.

1. Place slowly the membrane into the membrane holder.

2.

Screw the screw-cap in the membrane holder.
Oil has to overflow from bleedhole to assure 100% bleeding.

1. Place T14.018 on the screw-cap.

2. Tighten the screw-cap to a torque of 30Nm.

T

3.

Nitrogen filling gauge.
T14.019.

Remove the protecting cap of the needle.

Place the needle in the center of the filling hole of the screw-cap...

...and push the needle completely through the rubber plug!
Adjust the nitrogen pressure to 1 BAR!
-0% / +10%.
Push the piston rod inside the tube! Then when the piston rod is fully extend by it self remove the charging device out the rubber plug and close the tap of the device!

Place the seal in the screw-cap or on the Allen bolt.

Screw the Allen bolt into the screw-cap.

Tighten the Allen bolt.

Push through the complete stroke to release excessive oil and to assure a frction less extension of the piston rod.

Place the hydraulic sleeve in the axle-clamp.

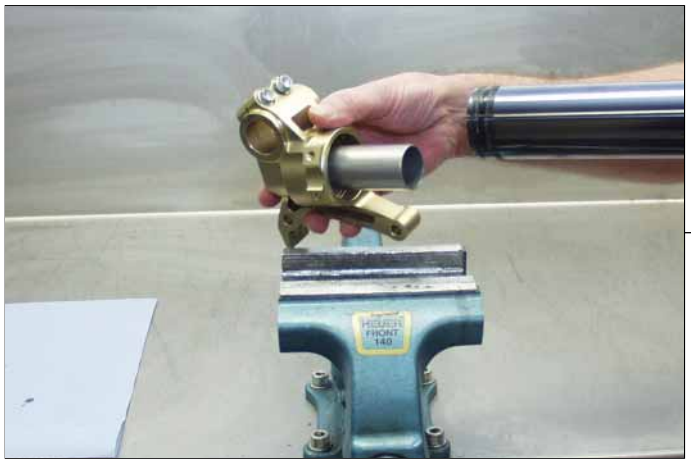
Place a new O-ring...

...in the groove inside the axle-clamp.

Place the spacer.

Grease the thread of bolts with T159.

Wet the thread of the inner-tube with T132.



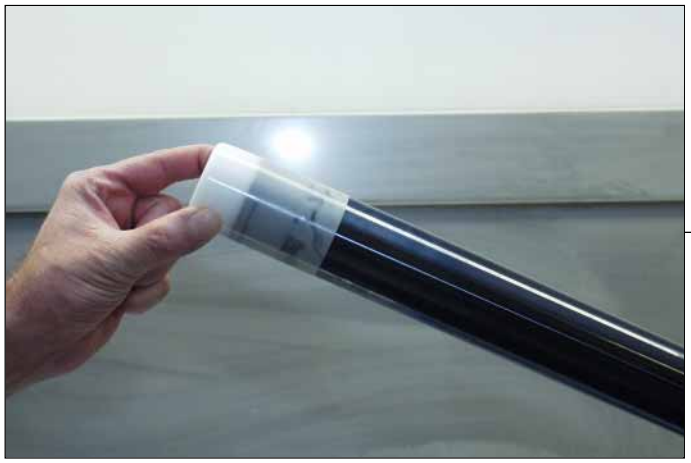
Screw the inner-tube...

...in the axle-clamp.

Place the inner-tube with axle clamp in the vice according to the picture.

Tighten the inner-tube with T1404S. T

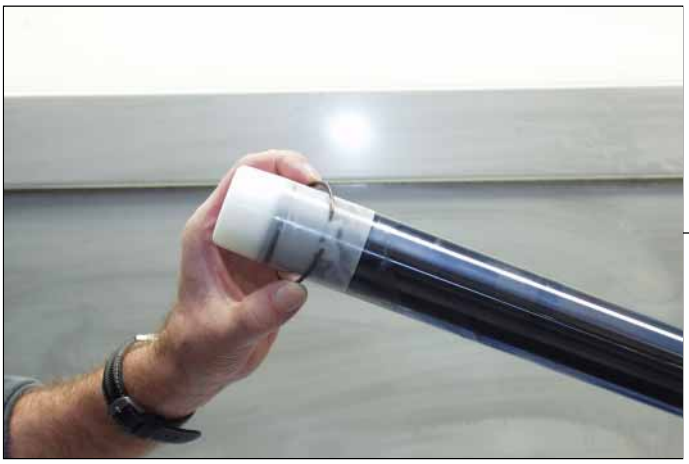
Apply the surface of the inner-tube with front fork oil!



Place T1401 on the inner-tube.
Apply also the special tool with front fork oil.

Grease the inside of the dust stripper with T511.

Slide the dust stripper over the tool and inner-tube.



Place the lock washer.

1. Grease the innerside of the oil seal with T511.

2.

Slide the oil seal over the tool and inner-tube.

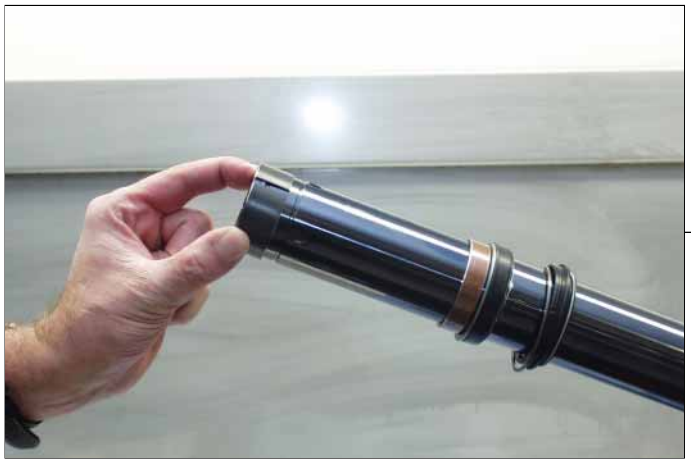
Remove T1401.

Place the support ring.

Polish with sandpaper the edges of the DU-bush outer-tube.
(Sandpaper 400 / 600)
Clean the DU-bush after polishing!

Place the DU-bush outer-tube.

Polish with sandpaper the edges of the DU-bush inner-tube.
(Sandpaper 400 / 600)
Clean the DU-bush after polishing!



1. Assemble the DU-bush inner-tube.

2.

Apply the outerside of the dust stripper and...

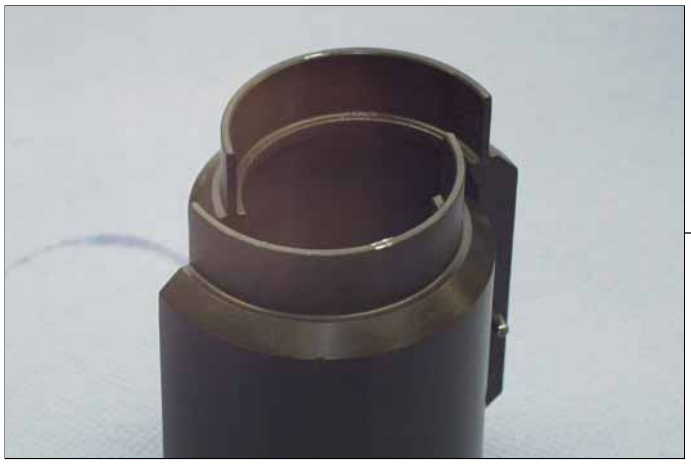
...oil seal with front fork oil.

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

Heat the outer-tube to a temperatur of ± 50°C at the level of oil seal chamber of the outer-tube.
Rotate the outer-tube while heating!

T1402S.
Assembling side for the DU-bush outer-tube.

Press the DU-bush with support ring into the outer-tube.



T1402S.
Assembling side for the oil seal.

Press the oil seal into the outer-tube.

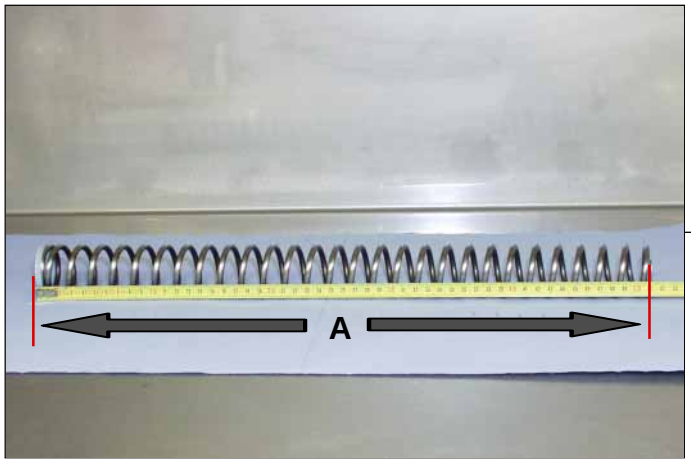
Assemble the lock washer in the groove of the outer-tube.

Be sure that the lock washer is correctly assembled into the groove!!!

Assemble the dust stripper.

Outer-tube / inner-tube complete!

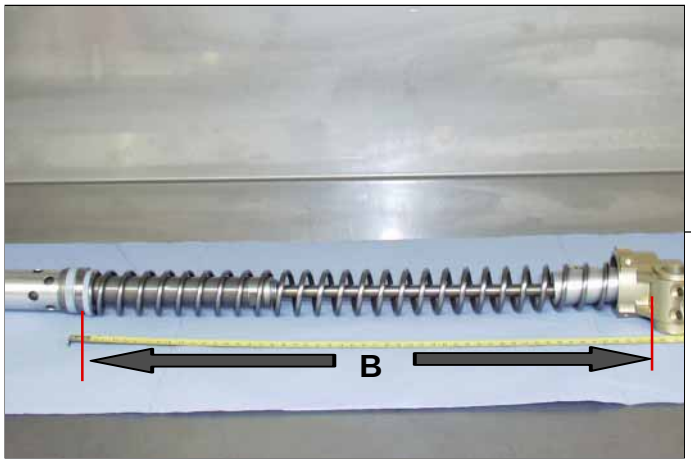
Total spring length without the spacers.
See chapter inspection of the spring!



1. Spring length with spacers.
(See the setting list)

Length “A”

2. Spring with the spacers.



The spring is assembled in the front fork leg.
The distance of “B” is less then the length of “A”.

A
- B
= Spring preload

Assembling the cartridge in the front fork leg

Place the front fork leg in the vice according to the picture.

Assemble the spring with spacer(s).

Assemble the closed cartridge into the front fork leg.

Push the cartridge against the spring preload and...

...place T14.020 between the contra nut and axle-clamp.

Assemble the adjustment tube into the piston rod.

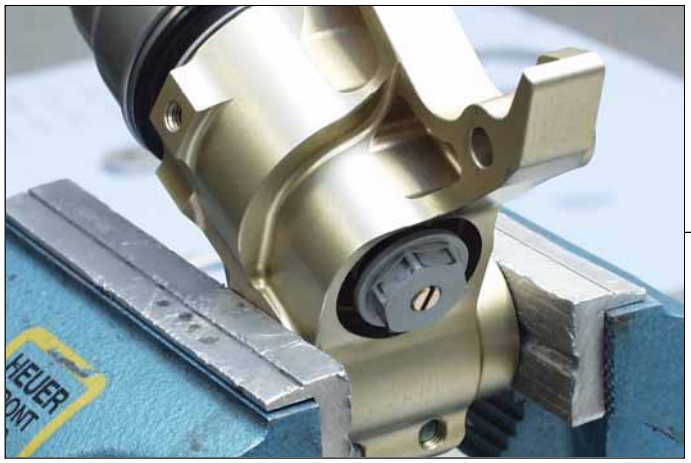
Place the needle of the rebound adjustment adaptor into the adjustment tube and...

...screw the rebound adjustment adaptor fully on the thread of the piston rod.

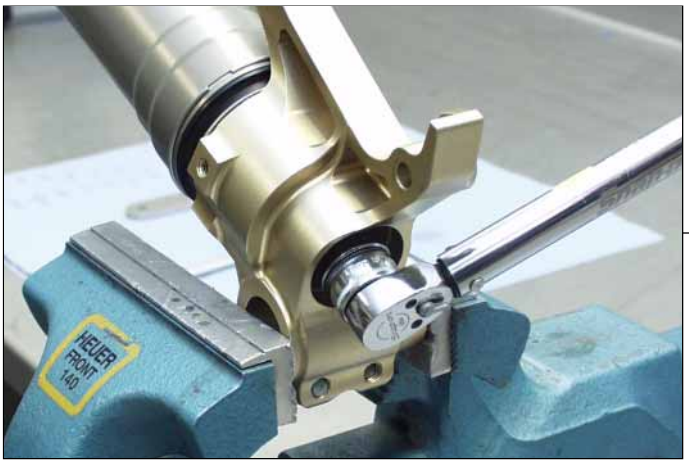
Tighten the rebound adjustment adaptor against the contra nut to a torque of 30Nm.

Push the closed cartridge downwards and...

...remove T14.020.



Release slowly the spring pressure on the cartridge.



Srew the rebound adjustment adaptor into the axle-clamp and tighten it to a torque of 30NM.

Set the position of the rebound adjustment!

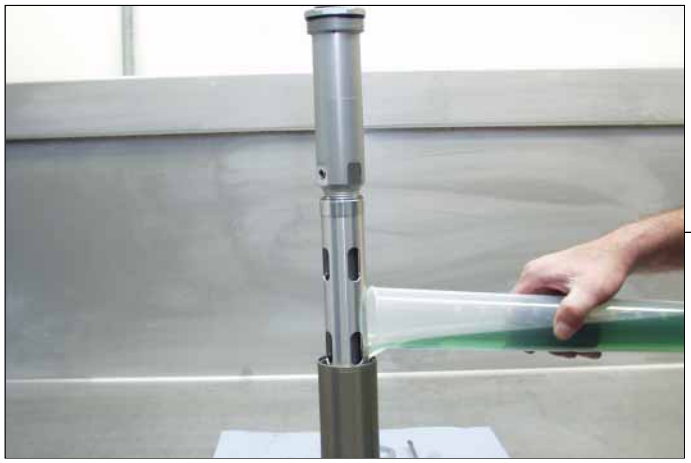
Replace the rubber cap!

Filling oil in the front fork leg

Fill the measuring jug with the correct amount of front fork oil.

See setting list!

Maximum amount of oil = 425 Ml.
Minimum amount of oil = 360 Ml.



Fill the amount of oil into the front fork leg.

Pull the outer-tube upwards and turn the membrane holder into the outer-tube.

Clamp the front fork leg in the clamping-block T1403S.

Tighten the membrane holder with T14.017.

Position of the compression and rebound adjustment

If necessary!
Set the rebound position!
Assemble the rubber cap.

Set the compression position!

Clean the innerside of the triple-clamps with brake cleaner.

Slide both fork legs into...

... the triple-clamps.

Pay attention to the position of the fork legs!
Standard riding height!

The maximum riding height is the level of the second groove!

1. Tighten the middle bolt of the lower triple clamp to a torque of 17NM!

2. Tighten the first bolt of the lower triple clamp to a torque of 17NM!

3. Tighten the third bolt of the lower triple clamp to a torque of 17NM!

Tighten both bolts of the upper triple-clamp...

...to a torque of 20Nm.

Assemble the front fork protecting schields and brake caliper.
See your KTM instruction manual!

Assemble the front wheel and the wheel axle.
Tighten the right axle-clamp.

Tighten the axle-nut of the wheel axle.
See your KTM instruction manual!

Tighten both bolts of the brake side axle-clamp to a torque of 15Nm.

Untighten both bolts of the right axle-clamp.

Before handling use the handbrake lever to set the brake system on pressure!!!

Remove the stand under the motorcycle.

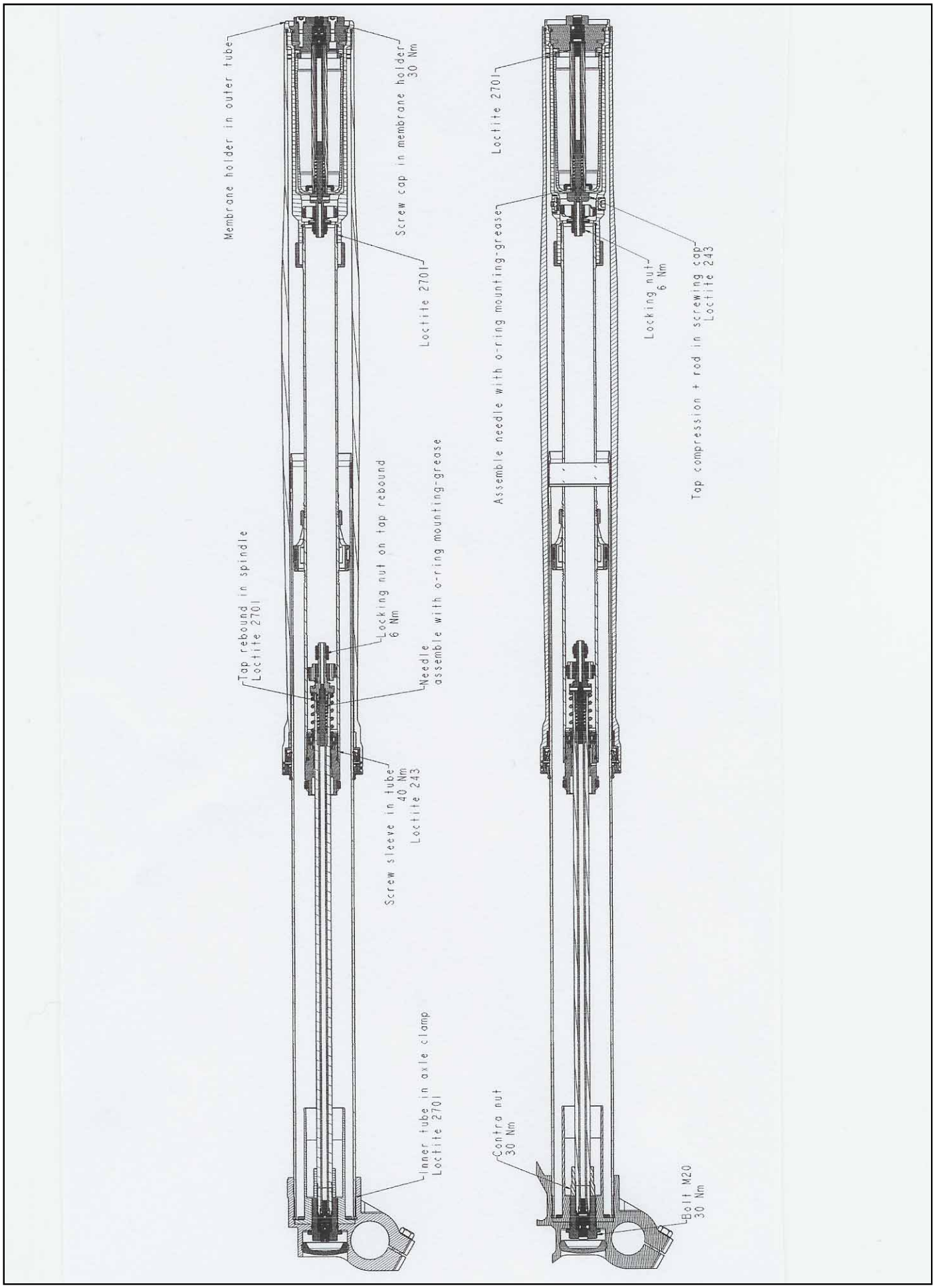
Push the front fork several times up and down to set the front fork legs without any tension to the wheel axle!

Tighten both bolts of the right axle-clamp to a torque of 15Nm.

Place the motorcycle on the stand.
The front wheel must be lift of the floor!

Unscrew the air release screw of the screw cap on top of the front fork...

...and tighten after ± 10 seconds the air release screw.


Membrane holder in outer tube
Screw cap in membrane holder
30 Nm
Loctite 2701
Tap rebound in spindle
Loctite 2701
Locking nut on tap rebound
6 Nm
Needle
assemble with o-ring mounting-grease
Screw sleeve in tube
40 Nm
Loctite 243
Inner tube in axle clamp
Loctite 2701
Loctite 2701
Assemble needle with o-ring mounting-grease
Locking nut
6 Nm
Top compression + rod in screwing cap
Loctite 243
Contra nut
30 Nm
Bolt M20
30 Nm

Recommended periodic service interval of the 4860 SXS 2005 front fork

a 100 liter fuel consumption is equivalent to approx. 15 operating hours	5 hours 30 liter	25 hours 165 liter	40 hours 260 liter	60 hours 400 liter	80 hours 520 liter	100 hours 665 liter				
Complete Service without disassembling the closed cartridge	●	●		●		●				
Complete Service including the closed cartridge			●		●					

T131.
Loctite 143. (50cc)

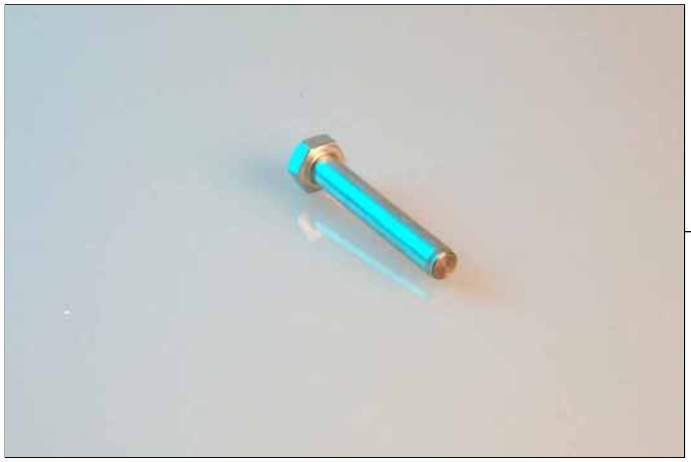
T132.
Loctite 2701. (50cc)

T137S.
Squeeze bottle.

T158.
O-ring grease (50CC).

T159.
Water proof grease.

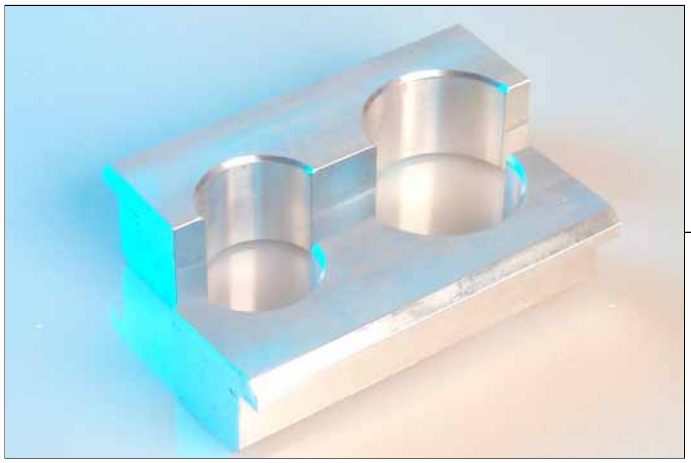
T511.
Grease for seals.



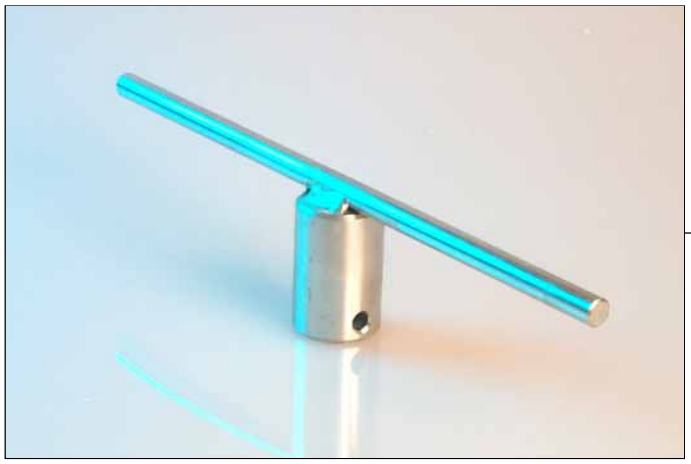
T605.
Pin for T1404.

T1401.
Assembling tool seal Du-bush d48..

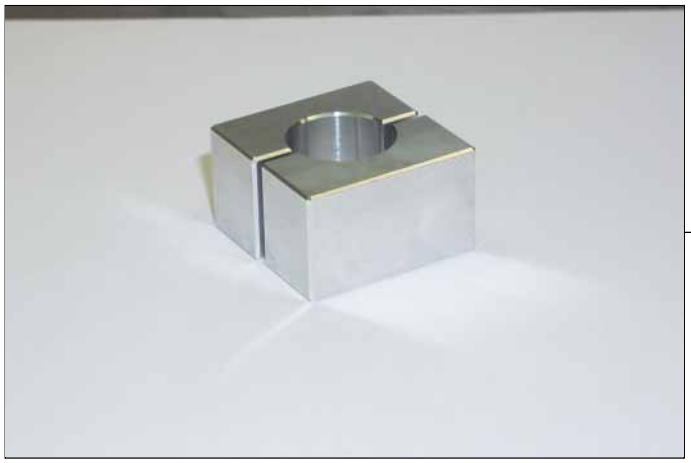
T1402S.
Assembling tool seal and DU-bush.



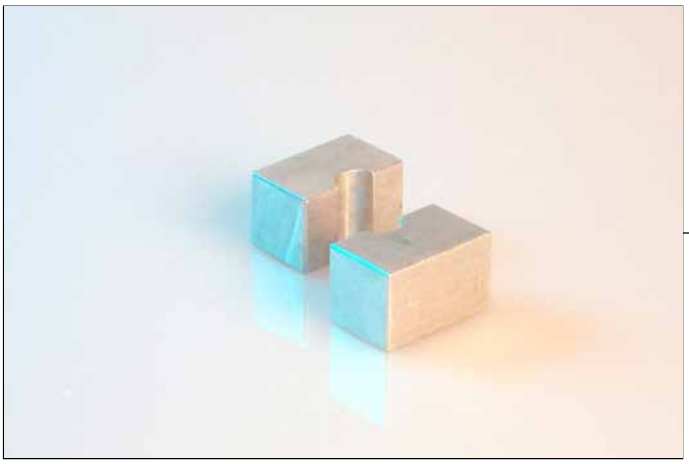
T1403S.
Clamping-block d48/d60.



T1404.
Pin spanner inner-tube.



T14.015.
Clamping block d27 (tube/screw sleeve).

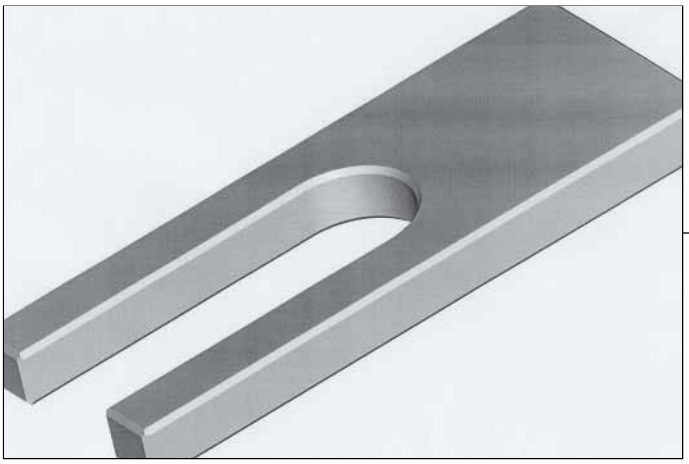


T14.016.
Clamping block d12.

T14.017.
Spanner 50.

T14.018.
Spanner screw-cap membrane holder.

T14.019.
Charging device tool.

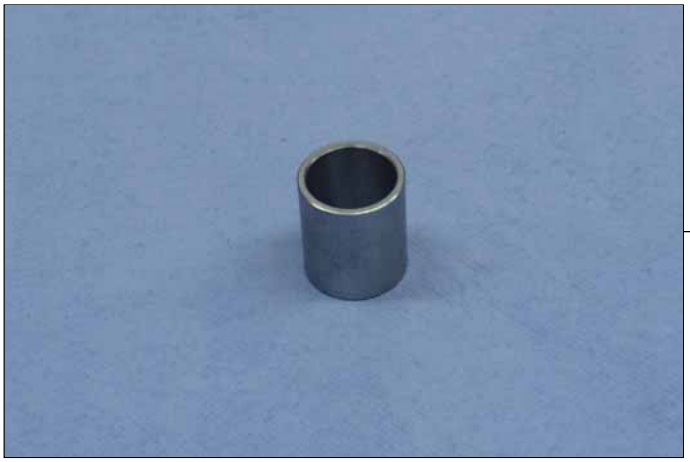


T14.020.
Support tool dis- / assembling closed cartridge.

T14.021.
Calibrate mandrel DU-bush d12.

T14.022.
Dis- / assembling tool DU-bush d12.

T14.023.
Threaded bush.



T14.024.
Support bush.

T