

REPAIRMANUAL2005-2010



WP SHOCK ABSORBER

5018 DCC

5018 SXS

5018 SMR

REPARATURANLEITUNG

MANUALE DI RIPARAZIONE

MANUEL DE RÉPARATION

MANUAL DE REPARACIÓN

ART.NO.: 3.211.208-E

suspension
WP

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2 GENERAL INFORMATION

3 DISASSEMBLING AND ASSEMBLING THE SHOCK ABSORBER

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INTRODUCTION

This repair manual offers extensive repair-instructions and is an up-to-date version that describes the latest models of the series. However, the right to modifications in the interest of technical improvement is reserved without updating the current issue of this manual.

A description of general working modes common in work shops has not been included. Safety rules common in the work shop have also not been listed. We take it for granted that the repairs are made by qualified professionally trained mechanics.

Read through the repair manual before beginning with the repair work.

⚠ WARNING ⚠

**STRICT COMPLIANCE WITH THESE INSTRUCTIONS IS
ESSENTIAL TO AVOID DANGER TO LIFE AND LIMB.**

! CAUTION !

**NON-COMPLIANCE WITH THESE INSTRUCTIONS CAN LEAD TO
DAMAGE OF MOTORCYCLE COMPONENTS OR RENDER MOTORCYCLES
UNFIT FOR TRAFFIC !**

„NOTE” POINTS OUT USEFUL TIPS.

Use only **ORIGINAL KTM/WP SPARE PARTS** when replacing parts.

The KTM high performance shock absorber is only able to meet user expectations if the maintenance work is performed regularly and professionally.



REG.NO. 12 100 6061

In accordance with the international quality management ISO 9001 standard, KTM uses quality assurance processes that lead to the highest possible product quality.

KTM Sportmotorcycle AG reserves the right to modify any equipment, technical specifications, colors, materials, services offered and rendered, and the like so as to adapt them to local conditions without previous announcement and without giving reasons, or to cancel any of the above items without substituting them with others. It shall be acceptable to stop manufacturing a certain model without previous announcement. In the event of such modifications, please ask your local KTM dealer for information.

KTM Sportmotorcycle AG
5230 Mattighofen, Austria

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REPLY FAX FOR REPAIR MANUALS

We have made every effort to make our repair manuals as accurate as possible but it is always possible for a mistake or two to creep in.

To keep improving the quality of our repair manuals, we request mechanics and shop foremen to assist us as follows:

If you find any errors or inaccuracies in one of our repair manual – whether these are technical errors, incorrect or unclear repair procedures, tool problems, missing technical data or torques, inaccurate or incorrect translations or wording, etc. – please enter the error(s) in the table below and fax the completed form to us at 0043/7742/6000/5349.

NOTE to table:

- Enter the complete item no. for the repair manual in column 1 (e.g.: **3.211.208-E**).
You will find the number on the cover page or in the left margin on each right page of the manual.
- Enter the corresponding page number in the repair manual (e.g.: **2-3**) in column 2.
- Enter the current text (inaccurate or incomplete) in column 3 by quoting or describing the respective passage of the text. If your text deviates from the text contained in the repair manual, please write your text in German or English if possible.
- Enter the correct text in column 4.

Your corrections will be reviewed and incorporated in the next issue of our repair manual.

Item no. of repair manual	Page	Current text	Correct text

Additional suggestions, requests or comments on our Repair Manuals (in German or English):

Name mechanic/shop foreman

Company/work shop

SPECIAL TOOLS

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T 107S
Depth Stop



T 120
Dismounting/mounting tool



T 125S
Pin wrench



T 132
Loctite 2701



T 145S
Dismounting/mounting tool



T 146
Dismounting/mounting tool



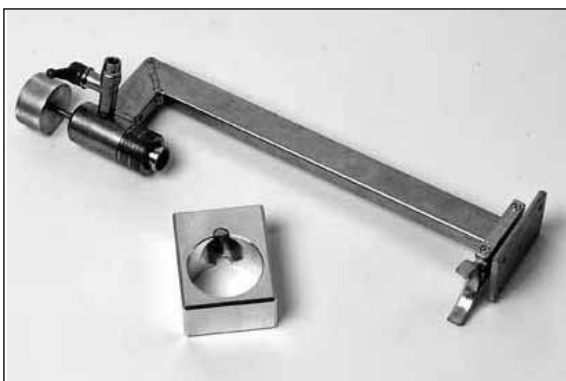
T 152
Lubricant



T 158
O-Ring Grease



T 159
Water-resistant grease



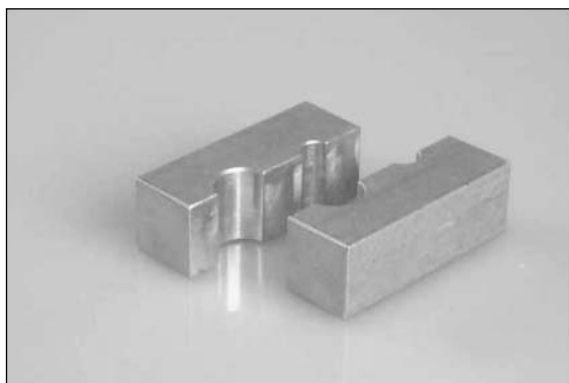
T 170S1
Nitrogen Filling Device



T 625
Lubricant



T 1201
Bushing



T 1202S
Clamping Blocks



T 1204
Mounting tool for dust boot



T 1205
Calibration pin



T 1206
Mounting tool



T 1207S
Dismounting/mounting tool (A+B)



T 1208
Dismounting/mounting tool



T 1209
Dismounting/mounting tool



T 1214
Centering bushing



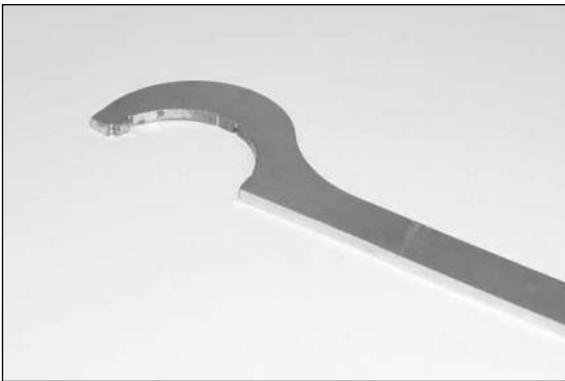
T 1215
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GENERAL INFORMATION

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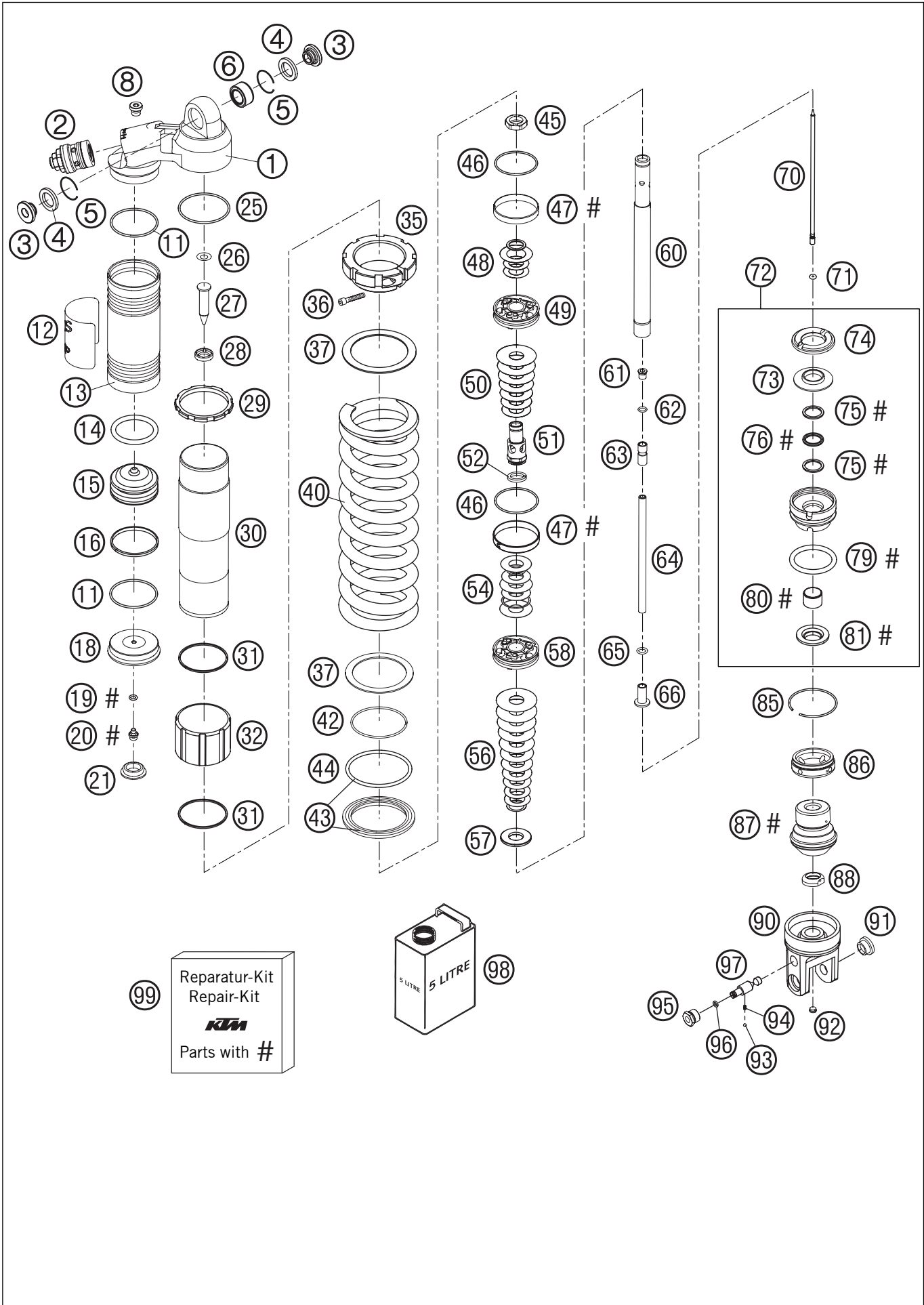
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EXPLODED VIEW PDS 5018 DCC 20072-4
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NOTE: UPDATED SETTING LISTS ARE AVAILABLE AT KTM-DEALER.NET.

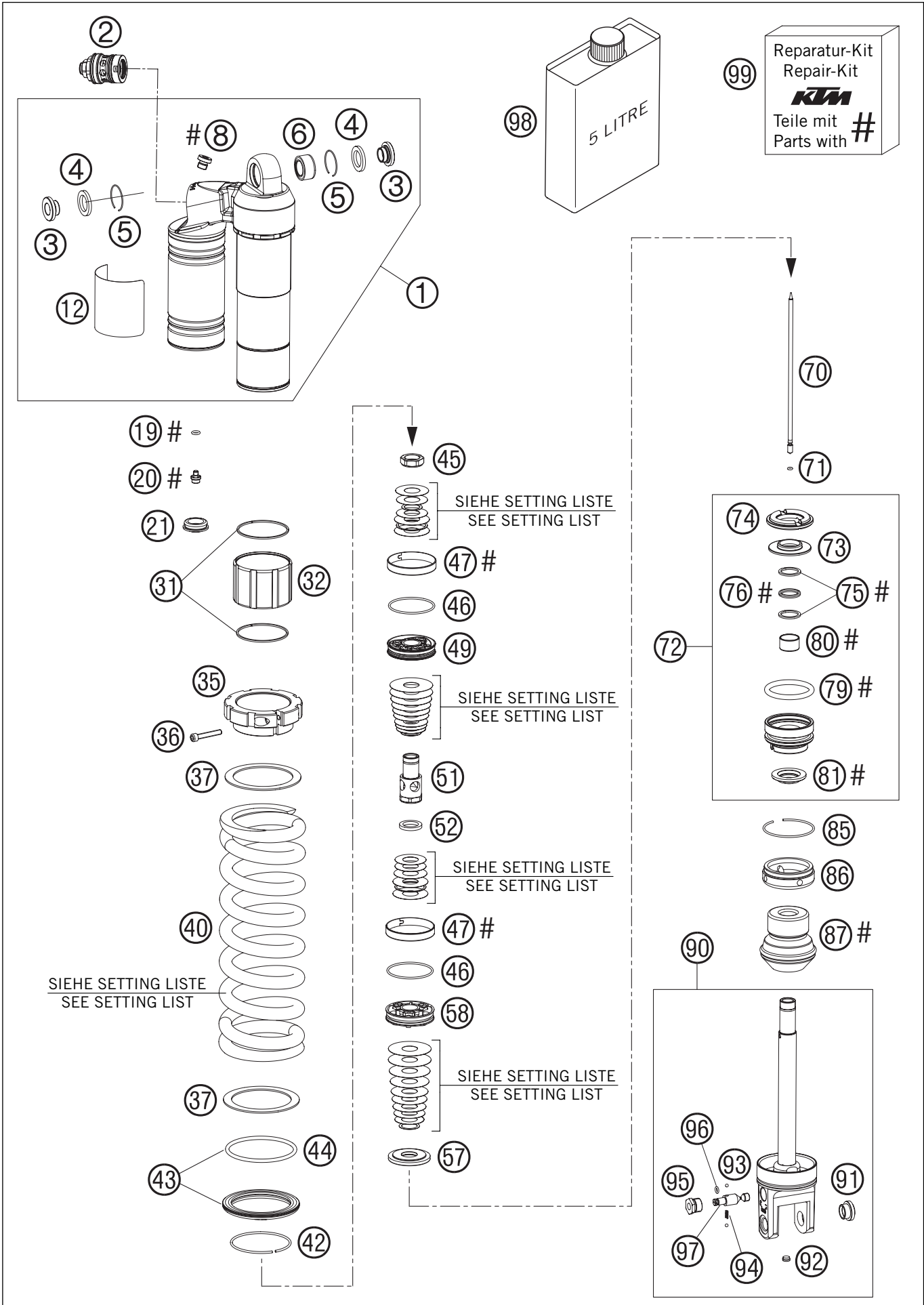
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RECOMMENDED PERIODIC MAINTENANCE INTERVALS

PDS 5018 DCC 2006/07	SEE KTM-REPAIR MANUAL
PDS 5018 SXS/SMR 2005-20072-10

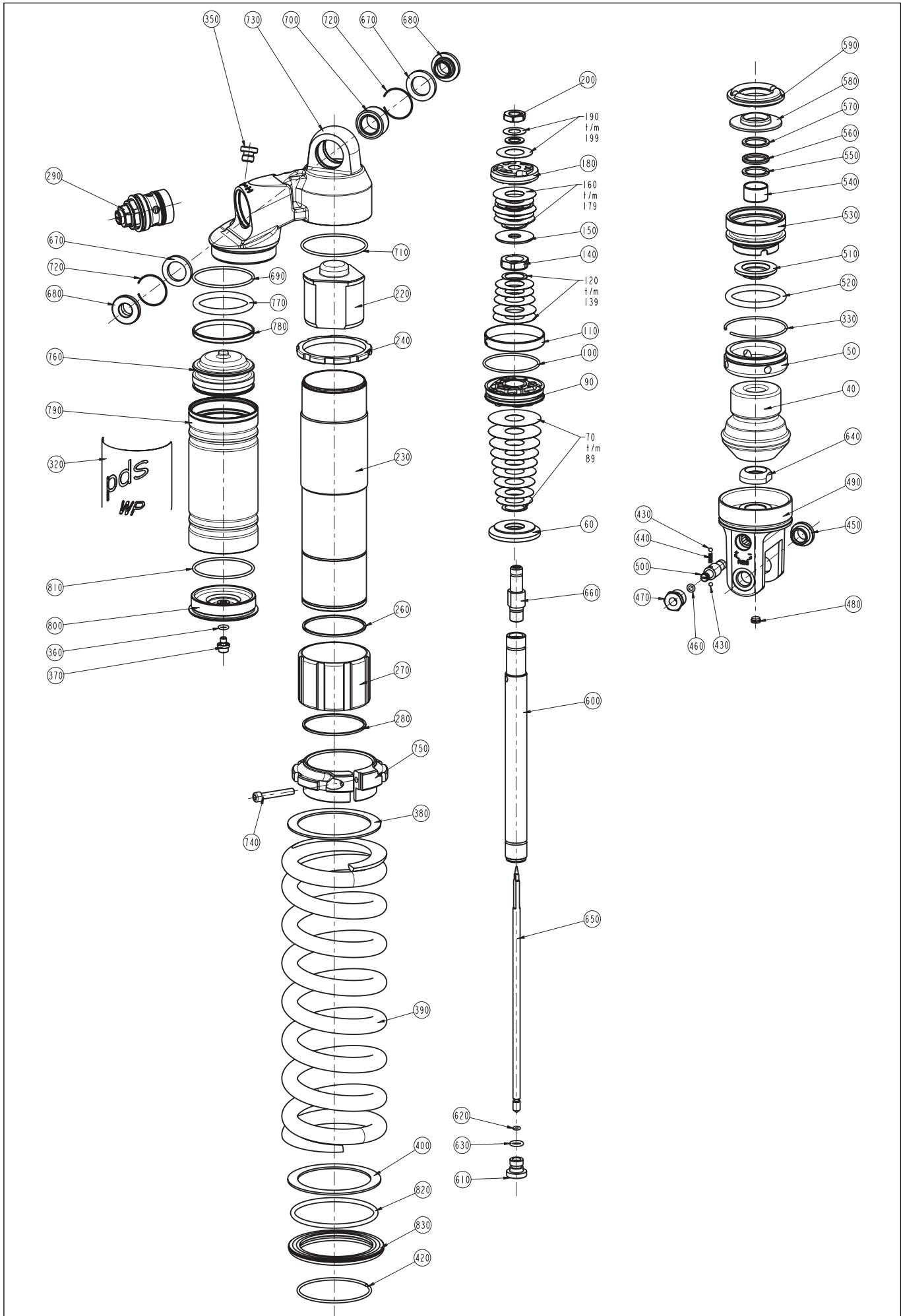


Item	Description		
1	Upper shock absorber case	56	Shim 16x34x0.15
2	DCC (dual compression control)	56	Shim 16x34x0.20
3	Distance bushing 12x24	56	Shim 16x36x0.20
4	Seal ring D=25	56	Shim 16x38x0.20
5	Lock ring	56	Shim 16x40x0.20
6	Bearing	56	Shim 16x42x0.20
8	Bleeder screw	56	Shim 16x44x0.20
11	O-ring 48x2	56	Shim 16x28x0.25
12	WP Caution (PDS KTM)	56	Shim 16x30x0.25
13	Reservoir	56	Shim 16x32x0.25
14	O-ring 41x5	56	Shim 16x34x0.25
15	Dividing piston	56	Shim 16x36x0.25
16	Piston ring 3.9x1.5x156	56	Shim 16x38x0.25
18	Reservoir cap	56	Shim 16x44x0.25
19	O-ring 5.28x1.78	56	Shim 16x40x0.25
20	Plug	56	Shim 16x42x0.25
21	Rubber cap "Do not open"	57	Shim for rebound damping D=34; H=8
25	O-ring 52x2	58	Piston 6+6x7/4.5 Vb 1.0
26	Shim 16x8.2x0.6	60	Piston rod
27	Needle	61	Bushing M8x1
28	Screw cap	62	O-ring 7x1.5
29	Lock ring	63	Needle seat
30	Pipe	64	Pipe
31	Circlip	65	O-ring 8x2
32	Spring guide	66	Tube adapter
35	Adjusting ring	70	Needle
36	AH screw	71	O-ring 2.2x1.6
37	Spacer	72	Adaptor
40	Spring	73	Steel washer 18.5x43.7x6
42	Spring ring	74	Rebound rubber
43	Spring retainer	75	Safety ring 22.55x1.5
44	O-ring 66.27x3.53	76	Quad seal ring 18x2.62
45	Piston rod nut	79	O-ring 41x5
46	O-ring 44.17x1.78	80	bush
47	Piston ring	81	Dust boot
48	Spacer plate	85	Lock ring
48	Shim 16x30x0.20	86	Cover
48	Shim 16x32x0.20	87	Rubber buffer plug
48	Shim 16x34x0.20	88	Nut
48	Shim 16x36x0.20	90	Fork part
48	Shim 16x21x1	91	Threaded bushing
49	Piston 6+6x3.5/4.5	92	Rubber plug
50	Spacer plate 16x21x0.30	93	Steel ball
50	Spacer plate 16x22x0.30	94	Spring
50	Shim 16x23x0.30	95	Reservoir cap
50	Shim 16x40x0.25	96	O-ring 4x1.5
50	Shim 16x30x0.30	97	Adjusting screw
50	Shim 16x32x0.30	98	Shock absorber oil
50	Shim 16x34x0.30	99	Seal ring repair kit 5018 PDS
50	Shim 16x36x0.30		
50	Shim 16x38x0.30		
50	Shim 16x40x0.30		
51	Holder D=16 M16x1 L=48		
52	Spacer plate D=23 D=16 H3		
54	Spacer plate 16x20x0.30		
54	Shim 16x28x0.15		
54	Shim 16x30x0.20		
54	Shim 16x28x0.20		
54	Shim 16x32x0.20		
54	Shim 16x34x0.20		
54	Shim 16x36x0.25		



Item	Description
1	Upper shock absorber case
2	DCC (dual compression control)
3	Distance bushing
4	Seal ring
5	Lock ring
6	Bearing
8	Bleeder screw
12	WP Caution (PDS KTM)
19	O-ring
20	Plug
21	Rubber cap "Do not open"
31	Circlip (not for SX)
32	Spring guide (not for SX)
35	Adjusting ring
36	AH screw
37	Spacer
40	Spring
42	Spring ring
43	Spring retainer
44	O-ring
45	Piston rod nut
46	O-ring
47	Piston ring
49	Piston
51	Holder
52	Spacer plate
57	Shim for rebound damping
58	Piston
70	Needle
71	O-ring
72	Adaptor
73	Steel washer
74	Rebound rubber
75	Safety ring
76	Quad seal ring
79	O-ring
80	Bush
81	Dust boot
85	Lock ring
86	Cover
87	Rubber buffer plug
90	Fork part
91	Threaded bushing
92	Rubber plug
93	Steel ball
94	Spring
95	Reservoir cap
96	O-ring
97	Adjusting screw
98	Shock absorber oil
99	Seal ring repair kit 5018 PDS

Exploded view PDS 5018 SXS/SMR 2005/2006



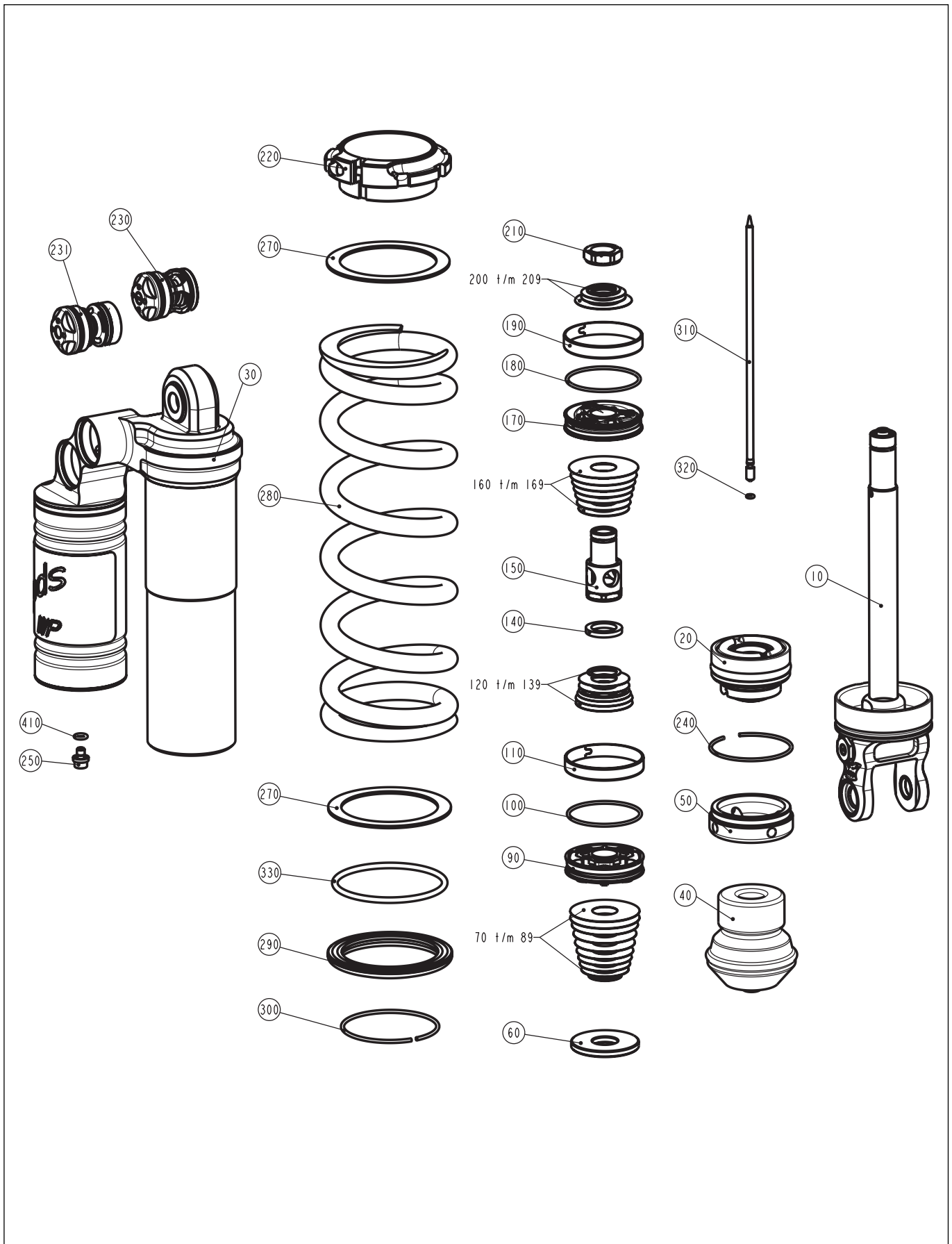
Part list SXS/SMR 2006

Pos.	Part description	Part number	
Pieces			
40	Bump rubber	5018.0480	1
50	Reservoir cap	5018.0473	1
60	Rebound disc	5018.0483	1
90	Piston 6+6x7/4,5	5018.0197	1
100	O-ring 44,17x1,78	5018.0099	1
110	Piston ring	5018.0135	1
140	Piston rod nut	5018.0496	1
150	Support disc	5018.0477	1
180	Piston	5018.0476	1
200	Piston rod nut	5018.0470	1
220	Sleeve	5018.0469	1
230	Tube	5018.0467	1
240	Lock washer tube	5018.0241	1
260	Circlip	5018.0133	1
270	Spring guide	5018.0081	1
280	Circlip	5018.0133	1
290	DCC complete	5018.0213S6	1
320	Wp Caution (PDS Ktm)	5200.0041	1
330	Circlip Stainl.steel	5018.0126	1
350	Bleed plug	5018.0095	1
360	O-ring 5,28x1,78	4681.0893	1
370	Nitrogen plug	3612.0151	1
380	Interm. ring screw spring ret.	5018.0114	1
400	Interm. ring screw spring ret.	5018.0114	1
420	Circlip	5018.0273	1
430	Ball-steel	4054.0603	2
440	Spring	4860.0028	1
450	Mount.f.adapt.	5018.0105	1
460	O-ring	5018.0222	1
470	Reservoir cap Reb.	5018.7039	1
480	Rubber plug	5018.0297	1
490	Mount	5018.0502	1
500	Adj.screw reb.	5018.0434	1
510	Dust seal	5018.0082	1
520	O-ring	5018.0103	1
530	Adaptor	5018.0435	1
540	Bush	4618.0119	1
550	Backup ring	5018.0102	1
560	Quad ring	5018.0101	1
570	Backup ring	5018.0102	1
580	Disc steel	5018.0113	1
590	Rebound rubber	5018.0107	1
600	Piston rod	5018.0471	1
610	Needle guiding	5018.0482	1
620	O-ring	4681.0339	1
630	O-ring	4618.0018	1
640	Nut	5018.0481	1
650	Needle	5018.0478	1
660	Tap piston rod	5018.0472	1
670	Oil seal	4618.0003	2
680	Adaptor bush	4618.0007	2
690	O-ring	4681.0016	1
700	Heim joint	5018.0005	1
710	O-ring	5018.0097	1
720	Lock washer	5018.0168	2
730	Shock absorber housing	5018.0468	1
740	Allen screw M5x30	5018.0327	1
750	Spring ret. (adjust)	5018.0474	1
760	Separation piston	4618.0002	1
770	O-ring	4618.0014	1
780	Piston rin	4618.0015	1
790	Reservoir	5018.0479	1
800	Reservoir cap	5018.0236	1
810	O-ring	4681.0016	1
820	O-ring	5018.0352	1
830	Spring ret.	5018.0319	1

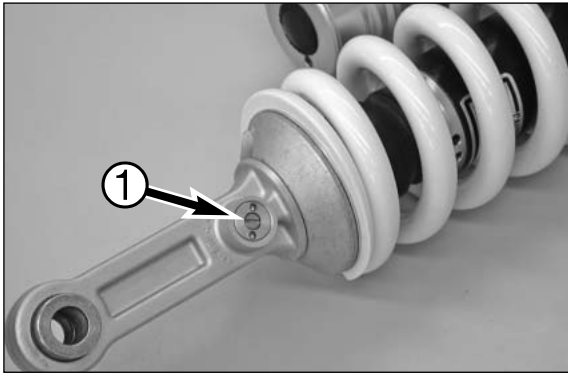
Art.No.: 3.211.208-E

Workshop Manual WP 5018 DCC with SXS/SMR

Exploded view PDS 5018 SXS 2007



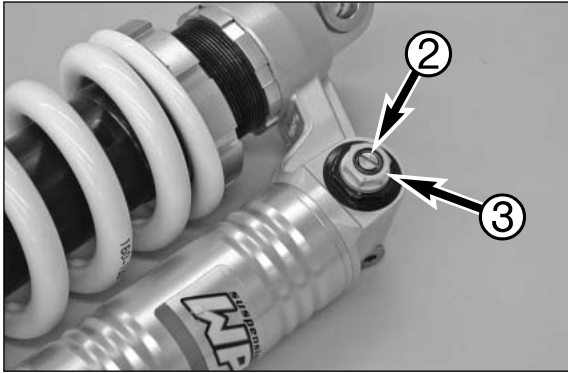
Pos.	Part description	Part number	Pieces
10	Mount	5018.0583S1	1
20	Adaptor	5018.0435S1	1
30	Shock absorber housing	5018.0581S1	1
40	Bump rubber	5018.0480	1
50	Reservoir cap	5018.0580	1
60	Rebound disc	5018.0516	1
90	Piston	5018.0197	1
100	O-ring	5018.0099	1
110	Piston ring	5018.0135	1
140	Support disc	5018.0578	1
150	Adaptor	5018.0510	1
170	Piston	5018.0446	1
180	O-ring	5018.0099	1
190	Piston ring	5018.0135	1
210	Piston rod nut	5018.0141	1
220	Spring ret.	5018.0582S	1
230	DCC complete HS	5018.0586S1	1
231	DCC complete LS	5018.0590S	1
240	Circlip Stainl.steel	5018.0126	1
250	Nitrogen plug	3612.0151	1
270	Interm. ring screw spring ret.	5018.0114	1
290	Spring ret.	5018.0463	1
300	Circlip	5018.0273	1
310	Needle	5018.0513	1
320	O-ring	4681.1265	1
330	O-ring	5018.0352	1
410	O-ring	4681.0893	1



Adjusting the position of the compression and rebound damping

Rebound damping:

- Turn in the adjusting screw ❶ in a clockwise direction all the way to the stop.
- Turn back the respective number of clicks in a counterclockwise direction.

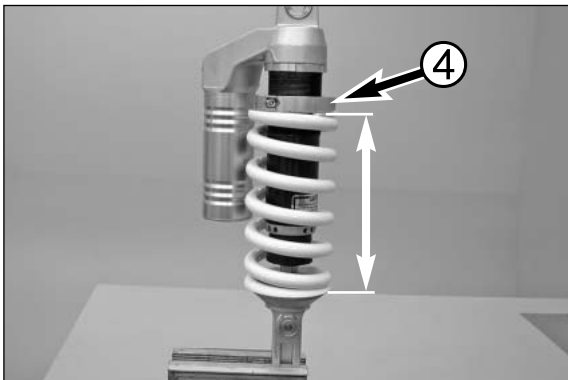
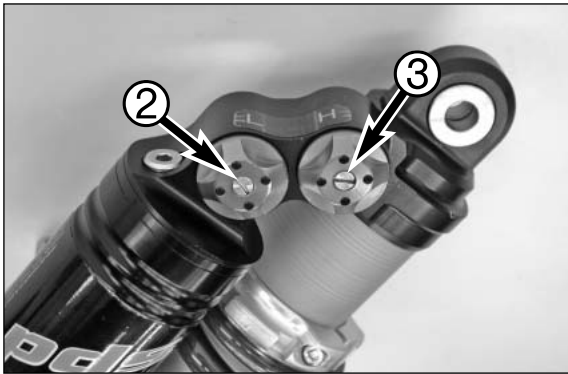


Compression damping, low speed:

- Turn in the adjusting screw ❷ in a clockwise direction all the way to the stop.
- Turn back the respective number of clicks in a counterclockwise direction.

Compression damping, high speed:

- Turn in the adjusting screw ❸ in a clockwise direction all the way to the stop.
- Turn back the respective number of clicks in a counterclockwise direction.



Adjusting the spring preload

NOTE: the spring preload is the difference between the unloaded and preloaded length of the spring.

- Tighten the adjusting nut ❹ with the special tool T106 until you have the prescribed spring preload.
- Tighten the lock screw on the adjusting nut.

Recommended periodic maintenance and inspection

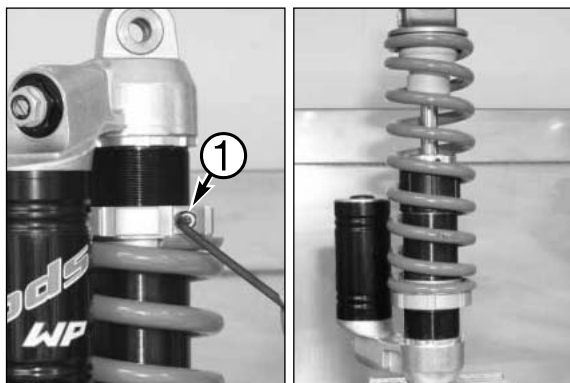
of the 5018 SXS/SMR Shock absorber

A 100 liter fuel consumption is equivalent to approx. 15 operating hours	10 hours 65 liter	20 hours 130 liter	30 hours 200 liter	40 hours 260 liter	50 hours 325 liter	60 hours 400 liter	70 hours 455 liter	80 hours 520 liter	90 hours 600 liter	100 hours 665 liter
Check the bearing in the shock absorber top / replace if necessary				●				●		
Check the piston rod on scratches / leakage	●	●	●	●	●	●	●	●	●	●
Check the static sag - before riding										
Check the spring					●					●
Check the bump rubber					●					●
Check the O-ring of the spring retainer / replace if necessary	●		●		●		●		●	
Complete maintenance of the shock absorber		●				●				●

DISASSEMBLING AND ASSEMBLING THE SHOCK ABSORBER 3

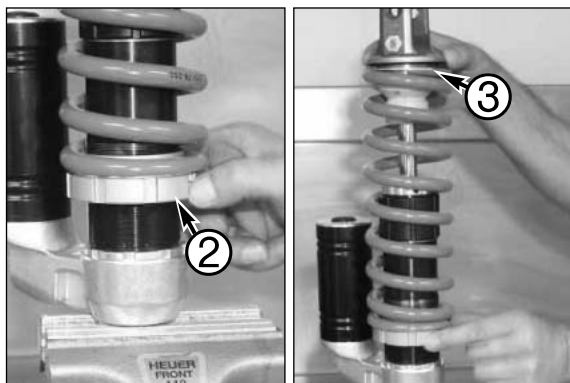
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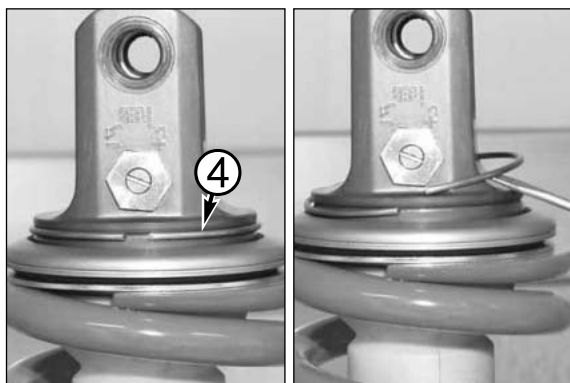


Disassembling the shock absorber

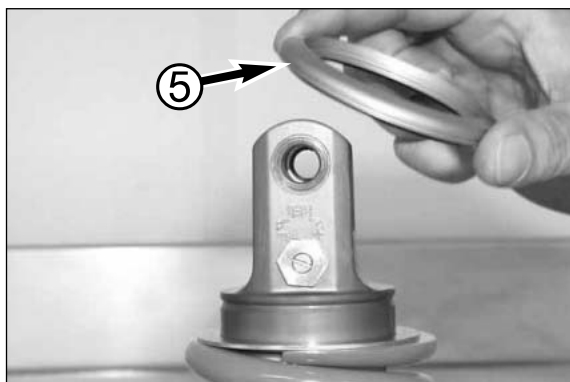
- Unscrew the Allen bolt **1** of the spring retainer (Size 5).
- Place the shock absorber in the vice according to the picture.



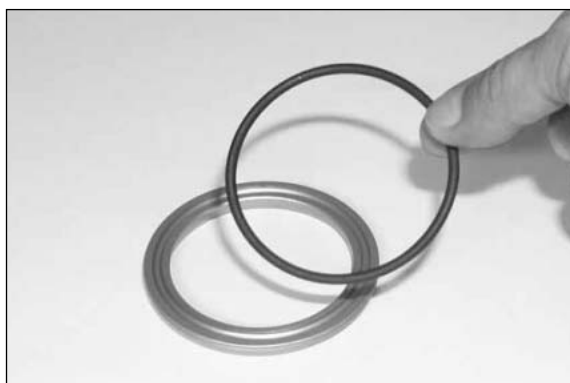
- Screw the spring retainer **2** downwards.
- Push the spring retainer **3** downwards so that you are able to remove the springring **4**.



- Disassemble the spring ring.



- Remove the spring retainer **5**.



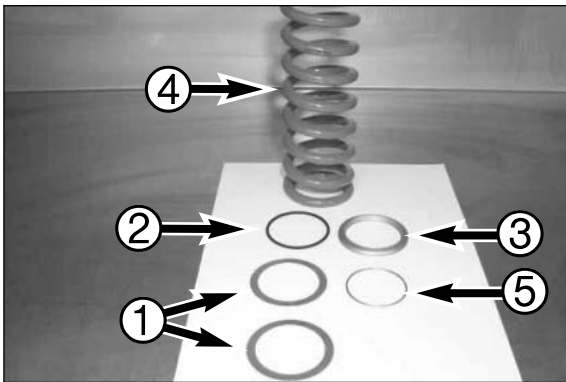
- Disassemble the O-ring out of spring retainer.



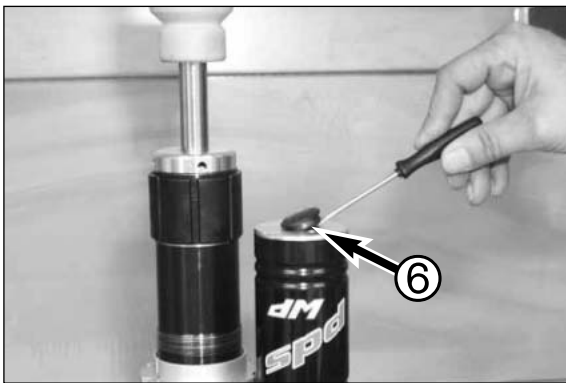
- Remove the washer.



- Remove the spring.
- Remove the second washer ①.

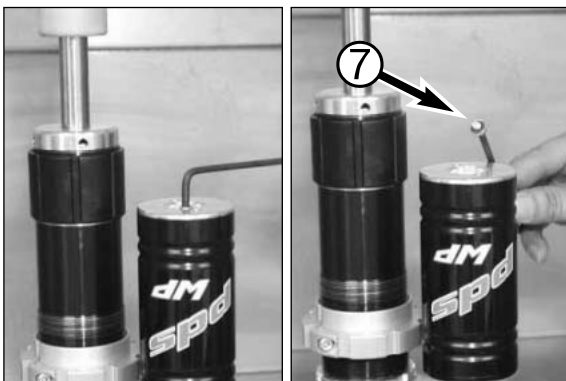


- Lock washer ⑤
- Spring ④
- Spring retainer ③
- O-Ring ②
- Washers ①

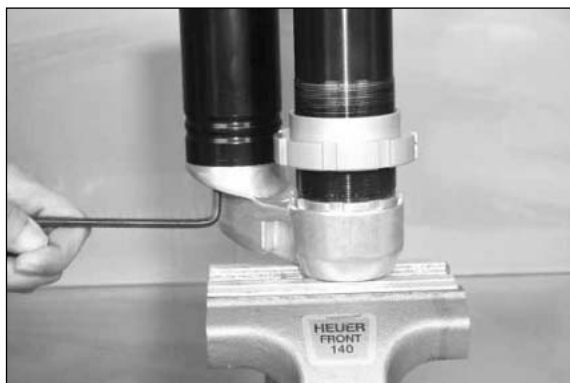


- Disassemble the rubber plug ⑥ "do not open" out of the screw cap of the nitrogen reservoir.

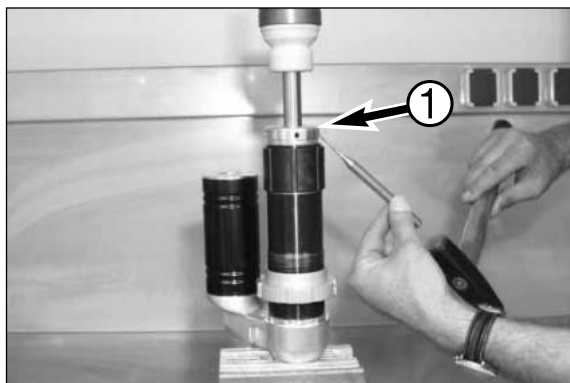
NOTE: the SXS/SMR shock absorber does not have a rubber cap.



- Slowly loosen the nitrogen filling plug ⑦ (Size 4). This will cause the nitrogen pressure to build up.
- Pay attention to the O-ring of the nitrogen filling plug.



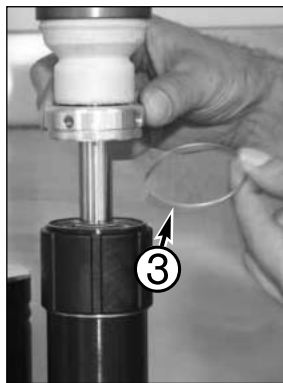
- Unscrew the oil filling plug for about two turns. (size 5)
This will help you later by removing the piston rod "complete" out of the shock absorber!



- Tap the cap ❶ from the tube.



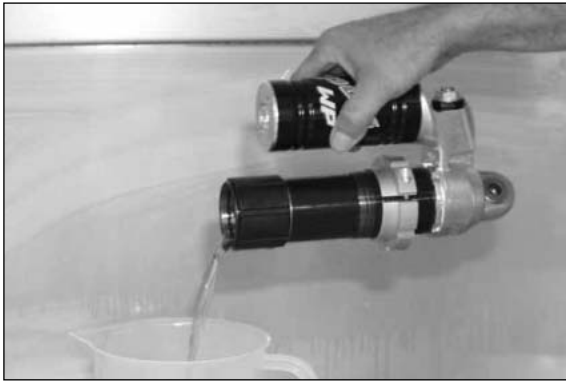
- Place disassembling bush T 1216 ❷ on the adaptor and push the adaptor downwards.



- Disassemble the spring ring ❸ out of the groove of the tube.



- Pull careful but firmly the piston rod "complete" out of the tube.
NOTE: usually takes a great deal of effort

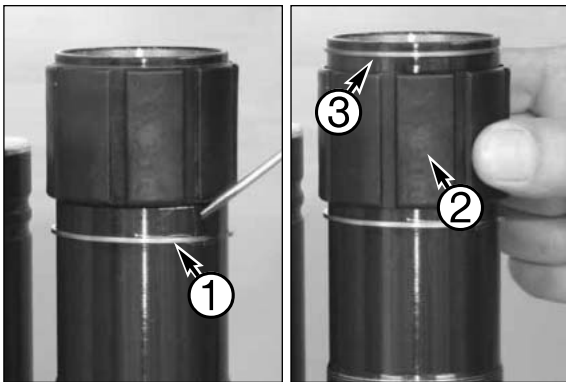


Disassembling the tube side

- Drain the oil out of the tube.

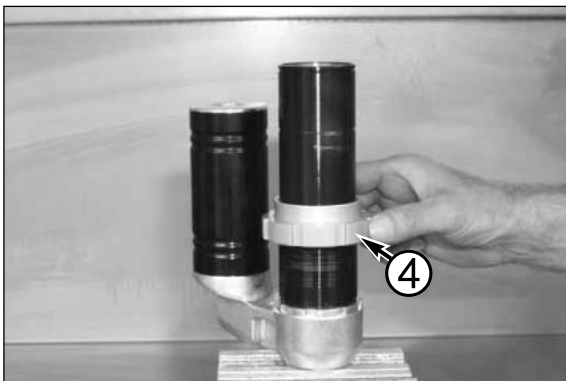


- Clamp the tube side in the vice according to the picture.

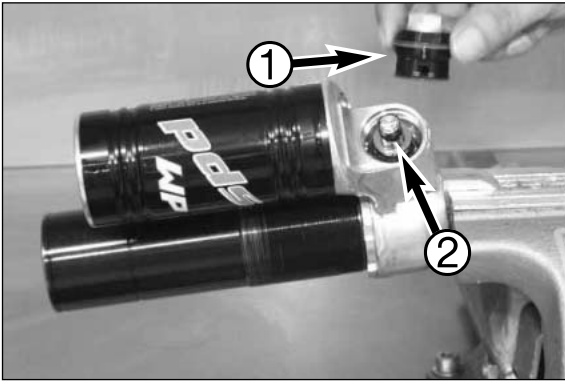


- Remove the spring ring ❶ out of the groove and slide it downwards.
- Slide the guiding bush ❷ downwards.
- Remove the upper spring ring ❸.
- Remove the guiding bush.
- Remove the springring.

NOTE: does not apply to the 2007 SX/SXS models (no spring guide used).



- Turn the screw retainer ❹ of the tube.

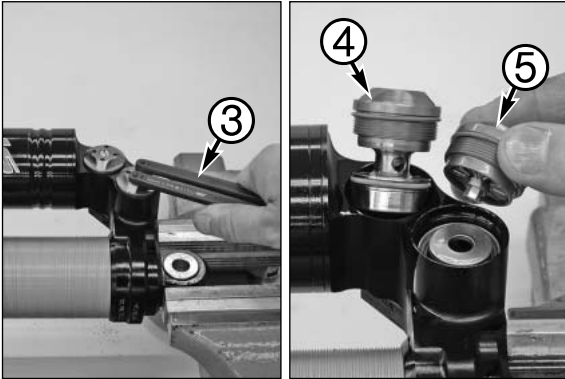


All models accept SXS 2007:

- Clamp the tube side in the vice according to the picture.
- Unscrew the screw cap ❶ of the DCC out of the shock absorber housing (size 24).

NOTE: DDC = Dual Compression Control.

- Remove the screw cap ❶.
- Pull the DCC mechanism ❷ out of the shock absorber housing.

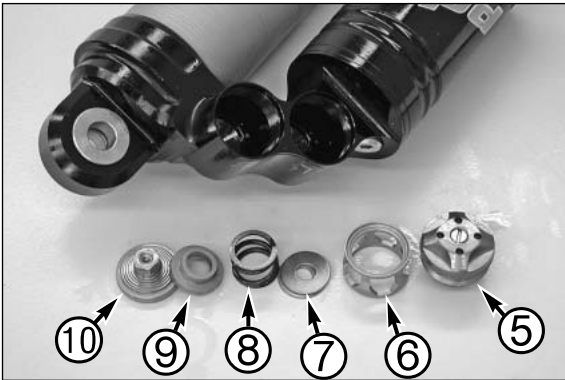


SXS 2007:

- Clamp the tube side in a vise as shown in the photo (use protective jaws).

- Loosen and remove both compression controls with T 1218 ❸.

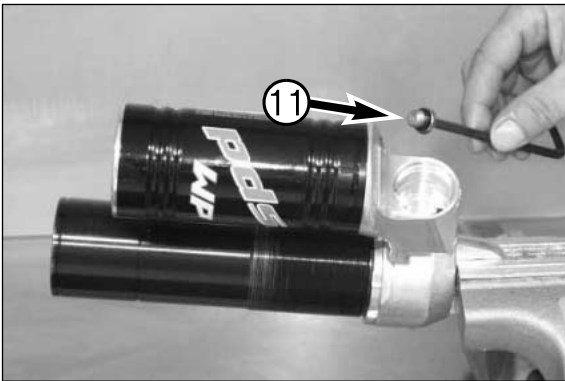
NOTE: the LS compression control ❹ is completely removed, the HS compression control ❺ by individual parts (see photo below).



Individual HS compression control parts:

- HS compression control ❺
- Cage ❻
- Washers ❼
- Spring ❸
- Spring alignment ❾
- Compression damping piston ❿

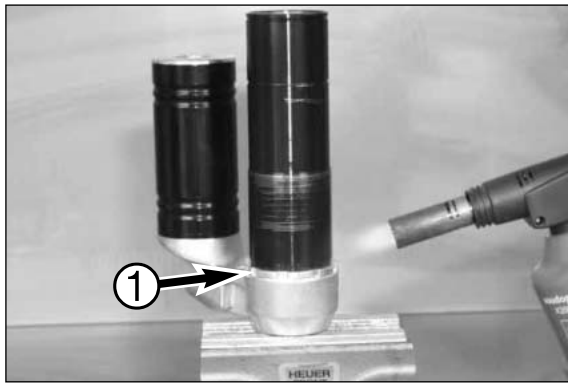
- Turn the oil filling plug ❾ out of the shock absorber housing (AH, Größe 5).



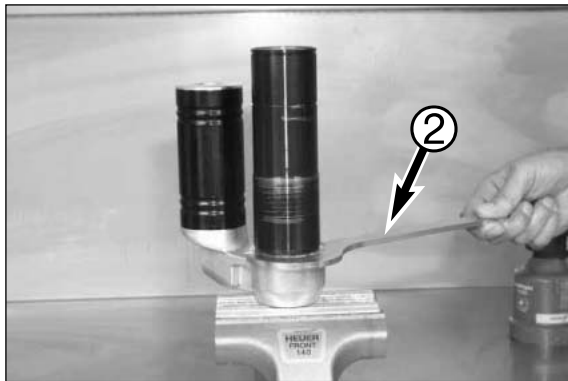
NOTE: since only assemblies are available for shock absorbers starting with the 2007 model, no further disassembly is necessary.

- Remove the sticker ❿.





- Heat the shock absorber housing ❶ near the tube.



- Unscrew the lock ring several turns with T 1233 ❷.



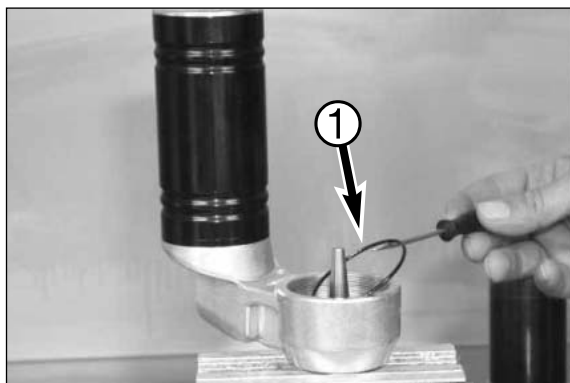
- Clean the tube with brake cleaner.
- Heat the shock absorber housing near the tube.
- Unscrew the tube out of the bottom with slide-spanner T 146 and bush T 1201.



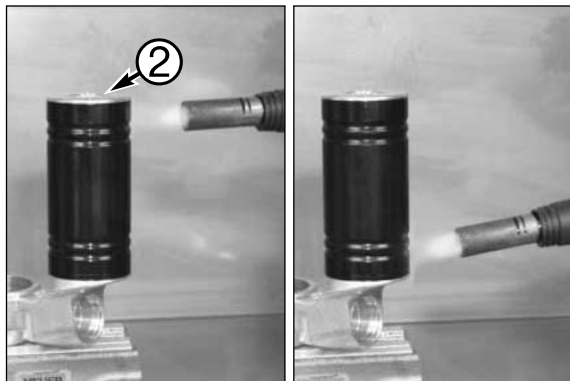
- Screw the tube out of the shock absorber housing.



- SXS/SMR models only: tap sleeve ❸ out of the pipe

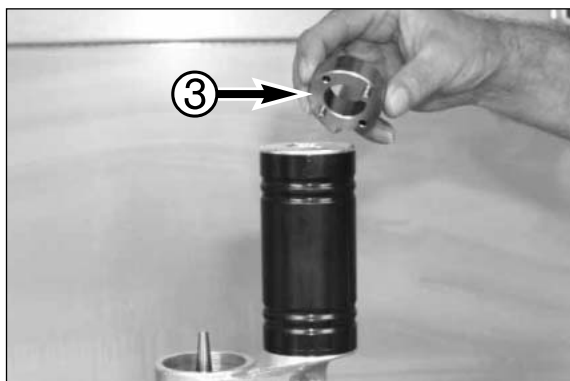


- Remove the O-ring **1** inside the shock absorber housing out of the groove.

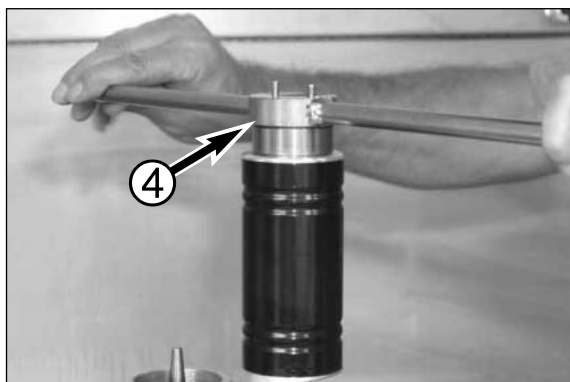


NOTE: only when you want to disassemble the screw cap of the nitrogen reservoir **2**!

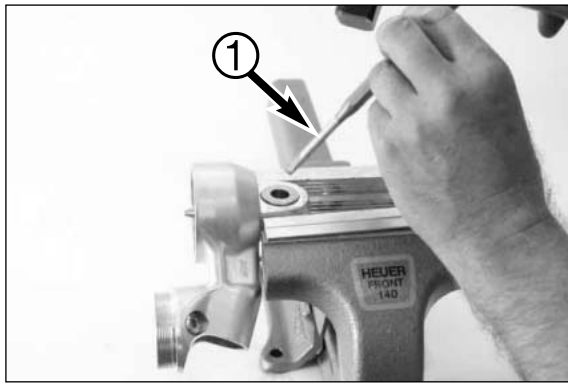
- Heat the nitrogen reservoir near the screw cap.



- Place T 145S **3** on the screw cap.



- Place T 125S **4** on T 145S and unscrew the nitrogen reservoir.
- Remove the O-ring.

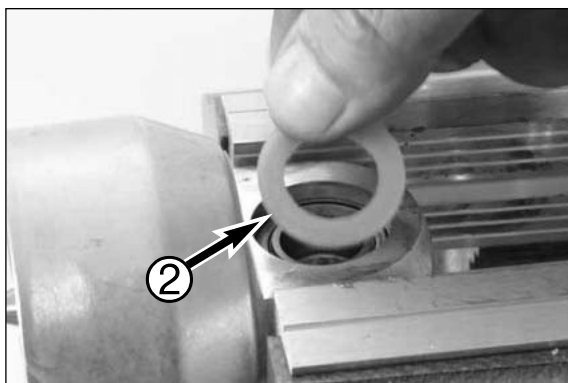


Disassembling adaptor bushes and heim joint

- Clamp the shock absorber housing in the vice.
- Use Disassembling tool T 120 ❶ for disassembling the adaptor bushes.



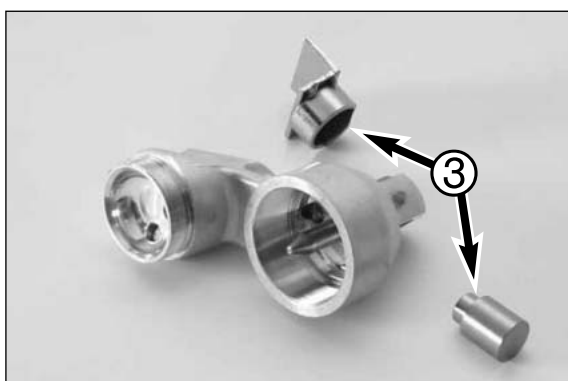
- Tap the adaptor bush out of the heim joint.



- Remove the seal ❷.



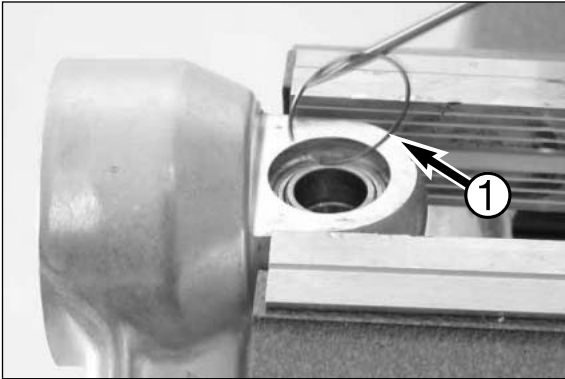
- Tap the other adaptor bush out of the shock absorber housing and remove the seal.



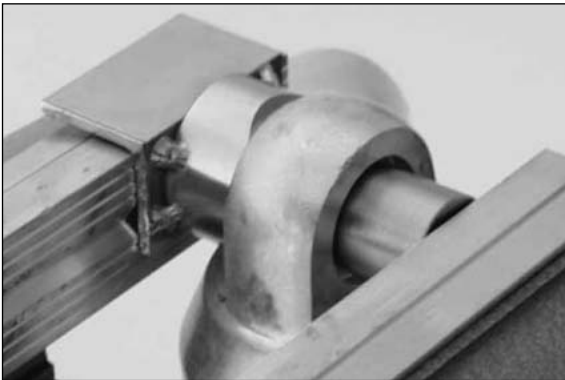
- Use dis- / assembling tool T 1207S (A+B) ❸.



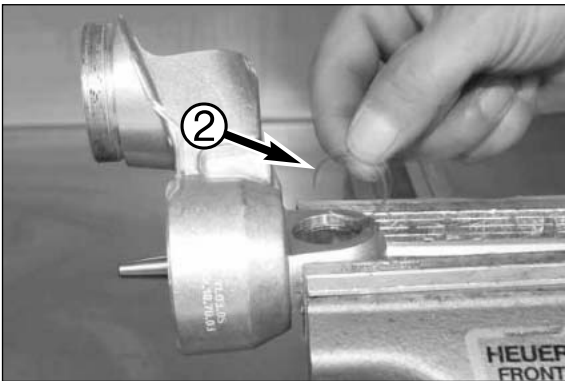
- Press the heim joint against the springing.



- Disassemble the springing ①.



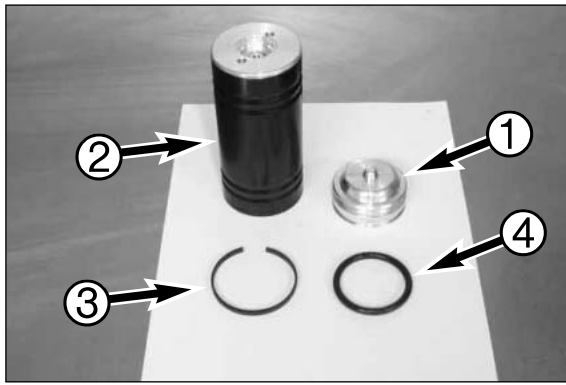
- Press the heim joint out of the shock absorber housing.



- Disassemble the other spring ring ②.



- Individual parts of the heim joint.



Disassembling the nitrogen reservoir

- Push the dividing piston ① out of the reservoir ②.
- Remove the piston ring ③.
- Remove the O-ring ④ out of the groove of the separation piston.



Assembling the nitrogen reservoir

- Check the inner side of the nitrogen reservoir for scratches.



- Apply the groove of the separation.
- Assemble the O-ring in the groove.
- Apply the O-ring with T 158.



- Apply the running surface of the nitrogen reservoir with a little bit of T158.
- Assemble the separation piston.

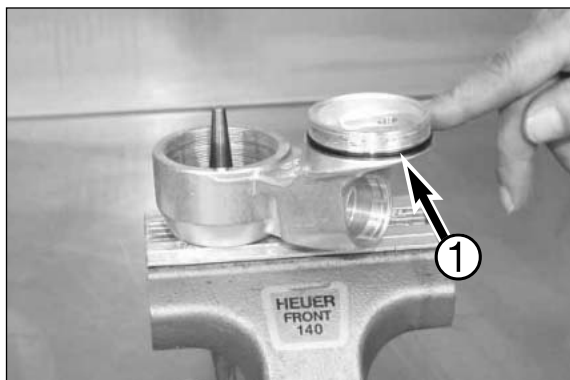
NOTE: the reservoir has an identification groove that must be mounted facing the shock absorber housing.

- Push the separation piston further into the nitrogen reservoir.

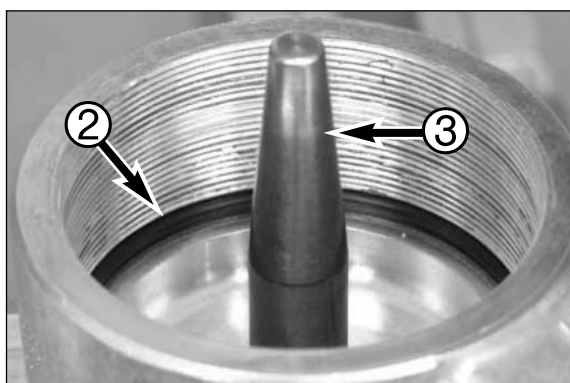


Assembling the tube side

- Clean the thread of the nitrogen reservoir.



- Place the new O-ring **1** in the groove of the shock absorber housing.

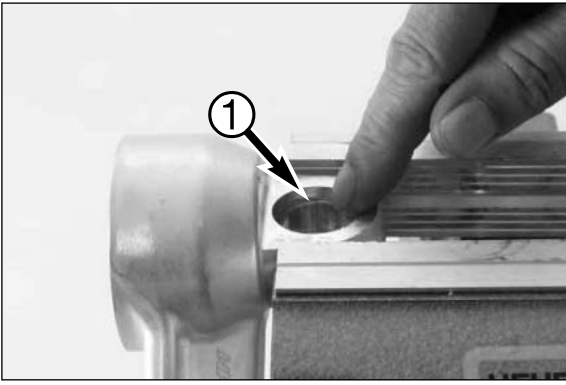


- Assemble the O-ring **2** inside the groove of the shock absorber housing.

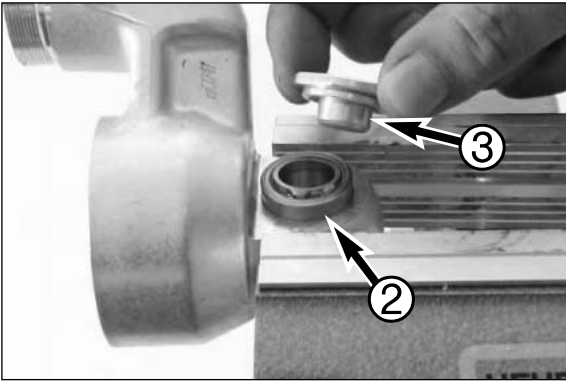
NOTE: the SXS/SMR shock absorber does not have the needle **3**.

Assembling adaptor bushes and heim joint

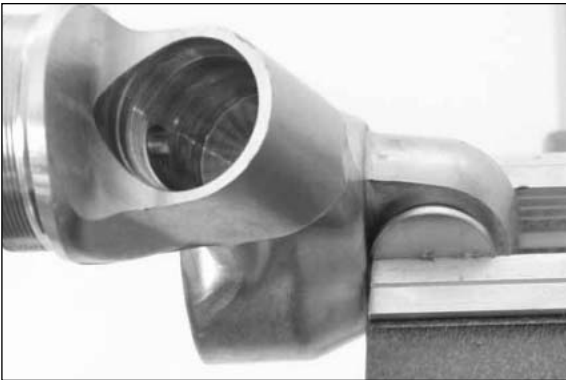
- Place the spring ring ① in the shock absorber housing.



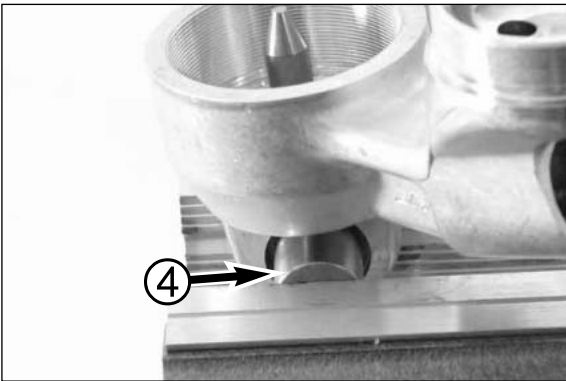
- Assemble the heim joint ② with the bevelled edge into the direction of the shock absorber housing with assembling tool T 1206 ③.



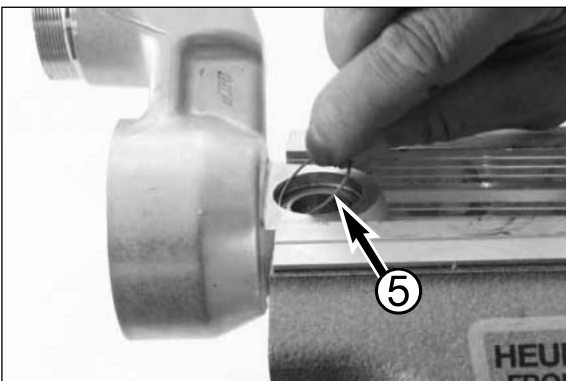
- Press the heim joint into the shock absorber housing.

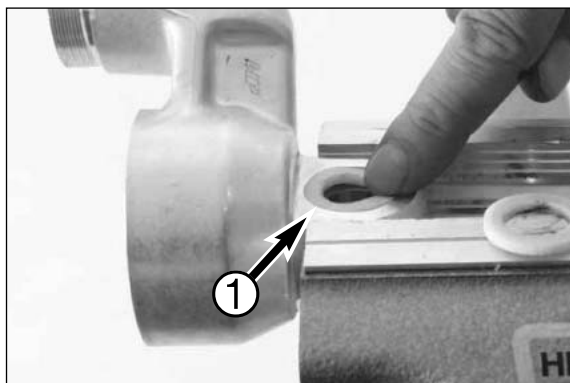


- Press with T 1207(A) the heim joint ④ against the spring ring.

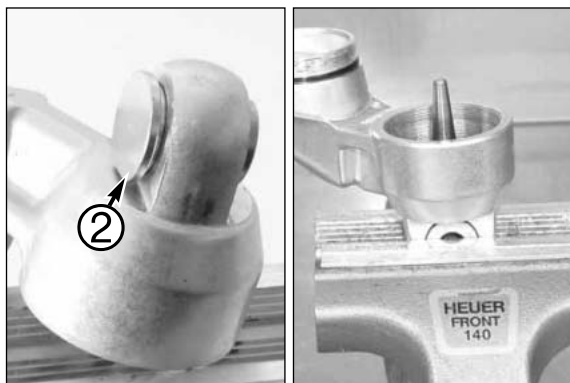


- Assemble the spring ring ⑤.





- Assemble both seals ❶.

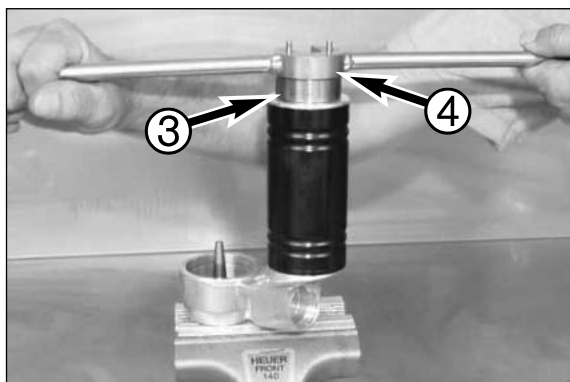


- Assemble one adaptor bush with support of T 1206 ❷ in the heim joint.
- Press the other adaptor bush with support of the vice in the heim joint.



Mounting the reservoir

- Wet the thread of the shock absorber housing with T 132.

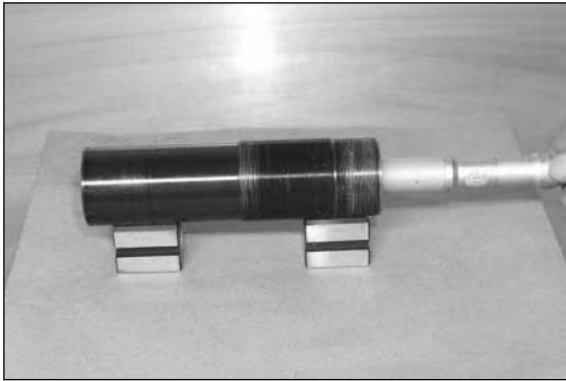


- Screw the nitrogen reservoir on the shock absorber housing and tighten it with T 145S ❸ and T 125S ❹.



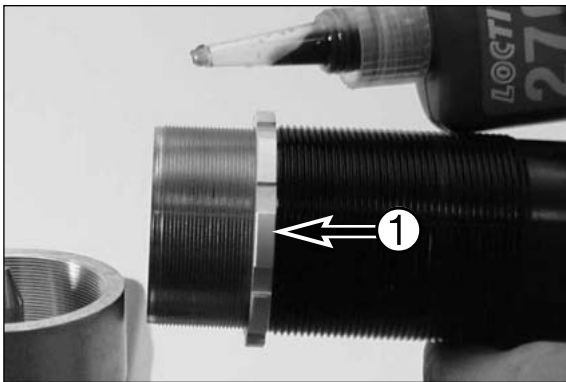
Inspection of the tube

- Inspect the running surface of the tube. If necessary polish the running surface with sandpaper 600.



- Measure the inner diameter at both ends and in the center of the pipe.

The maximum diameter is: 50,12mm



Mounting the pipe

- Screw the lock ring ❶ as far as possible on the thread or the tube.
- Wet the thread of the tube with T 132.

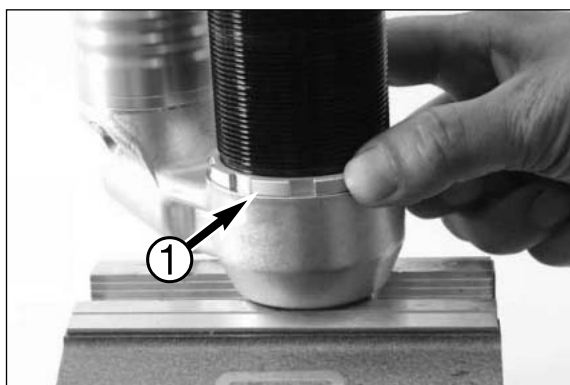


SXS/SMR shock absorber only:

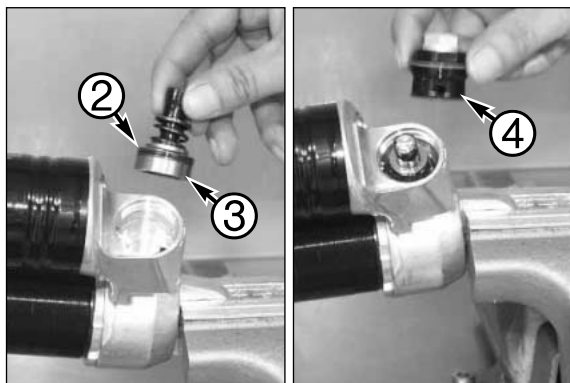
- Mount the sleeve ❷.



- Screw the tube into the shock absorber housing.
- Tighten the tube with T 146 and T 1201.



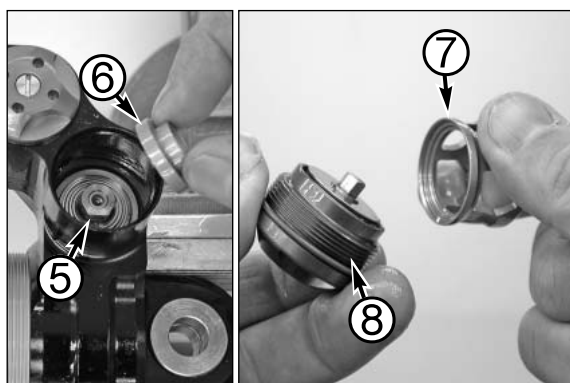
- Screw the lock ring ① against the shock absorber housing and tighten it with T 1233.



Mounting the DCC mechanism

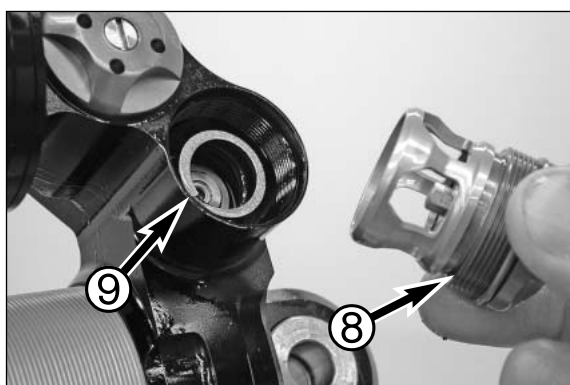
All models accept SXS 2007:

- Wet the O-ring ② with T 158.
- Place the DCC mechanism ③ in the shock absorber housing.
- Turn the screw cap ④ in the the shock absorber housing.
- Tighten the screw cap to a torque of 50 Nm.

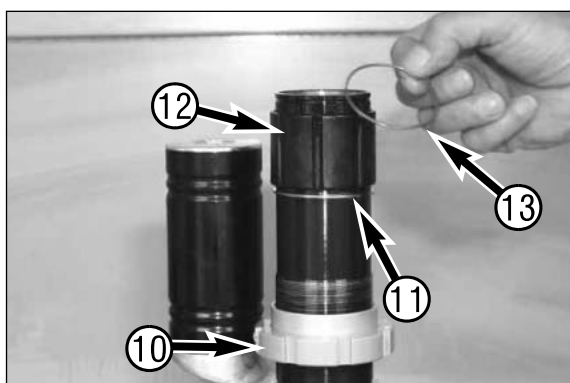


SXS 2007:

- Apply T 158 to the O-ring and mount the compression damping piston ⑤.
- Slip on the spring alignment ⑥, see photo.
- Position the cage ⑦ on the HS compression control ⑧.



- Position the spring ⑨ on the spring alignment, mount the HS compression control ⑧ with the cage, making sure it is correctly seated.



Assembling the shock absorber body

- Screw the Allen bolt in the screw retainer ⑩ and assemble the screw retainer on the tube.
- Assemble the springring ⑪ past the second groove.
- Assemble the guiding bush ⑫.
- Assemble the spring ring ⑬ in the upper groove of the tube.
- Slide the guiding bush over the upper spring ring and place the second spring ring ⑪ in the groove.

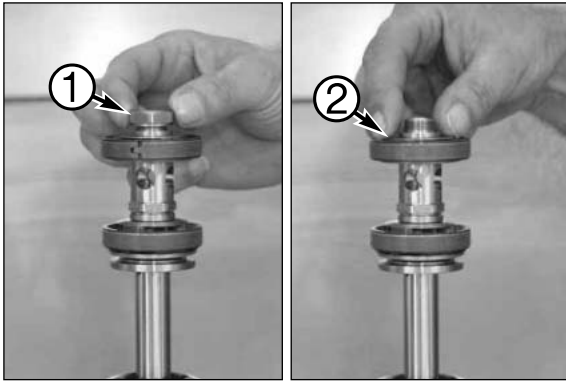
NOTE: does not apply to the 2007 SX/SXS models (no spring guide used).



Filling the shock absorber body

- Fill the tube till approximately 10 mm under the inner side spring ring groove of the tube.

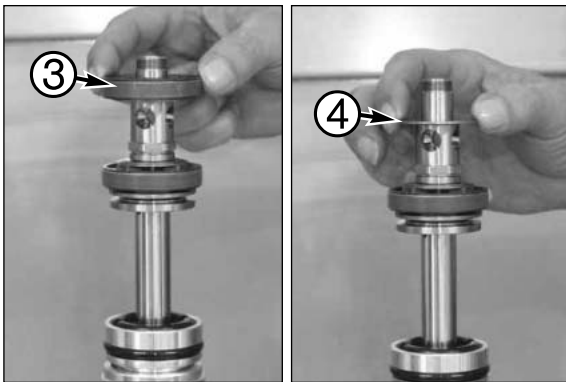
NOTE: only use the specified oil.



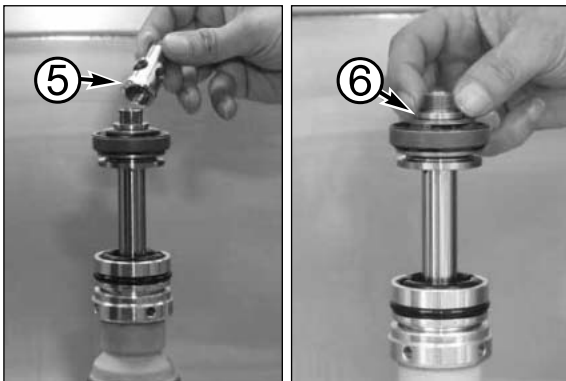
Disassembling the piston rod (also applies to SXS 2007 but not to SXS up to 2006/SMR)

- Untighten the piston rod nut ① with spanner size 22 mm.

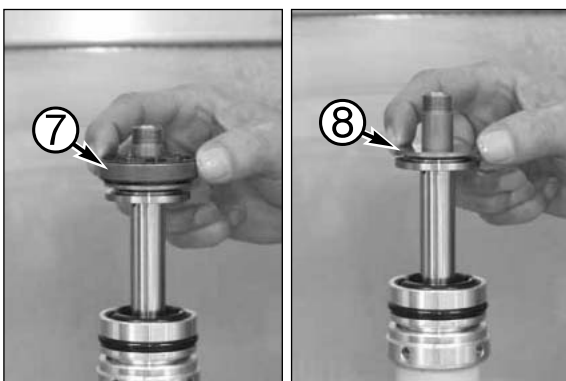
- Remove the piston rod nut.
- Remove the rebound setting ②.



- Remove the piston ③ (“piston 2”).
- Remove the compression setting ④.



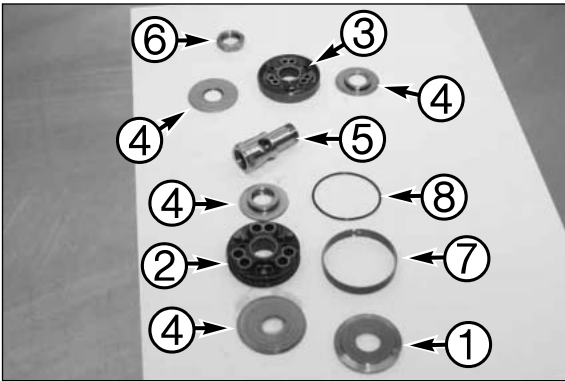
- Untighten the piston rod tap ⑤ (Size 22).
- Screw the piston rod tap of the piston rod.
- Remove the rebound setting ⑥.



- Remove the piston ⑦ (“piston 1”).
- Remove the compression setting ⑧.



- Remove the rebound disc **1**.



- Rebound disc **1**
- Piston 1 **2**
- Piston 2 **3**
- Settings **4** (rebound and compression)
- Piston rod tap **5**
- Piston rod nut **6**
- Piston ring(s) **7**
- O-ring(s) **8**

Disassembling the piston rod (for SXS up to 2006/SMR only)

– Loosen the nut on the piston rod ❶ with a 17 mm wrench.

– Remove the nut from the piston rod.

– Remove the shims from the rebound ❷.

NOTE: the lower large shim is centered with a smaller shim

– Remove the piston ("piston 2") ❸.

NOTE: the compression shims usually stick to the piston.

– Remove the set of shims from the compression damping ❹ together with the compression disk.

– Loosen and remove the adapter ❺ (A/F 13).

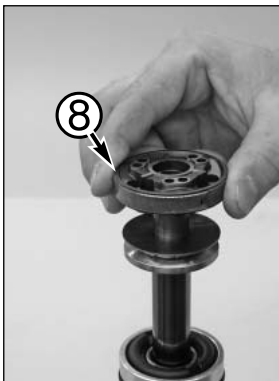
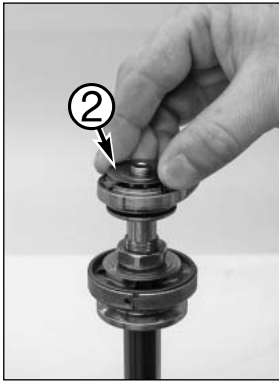
– Loosen and remove the piston rod nut ❻ (A/F 22).

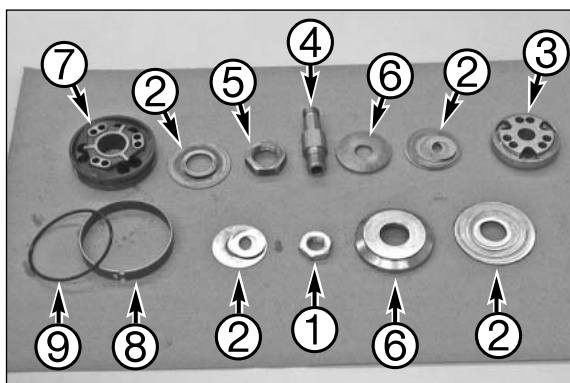
– Remove the set of shims from the rebound ❼.

– Remove the piston ("piston 1") ❽.

– Remove the set of shims from the compression ❾.

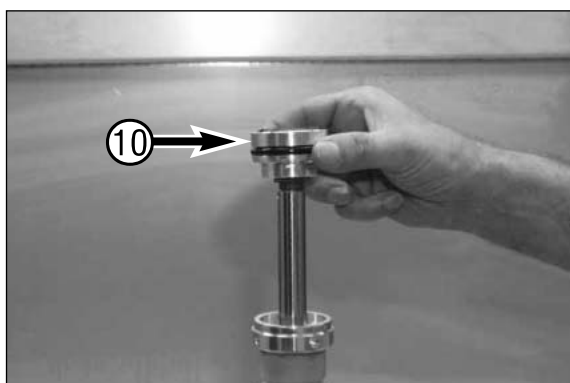
– Remove the rebound disk ❿.





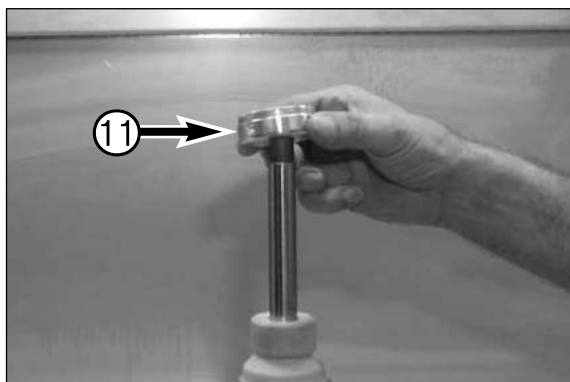
- Piston rod nut A/F 17 ❶
- Set of shims ❷ (rebound and compression damping)
- Piston ("2") ❸
- Adapter ❹
- Piston rod nut A/F 22 ❺
- Rebound disk ❻
- Piston ("1") ❼
- Piston ring ❸
- O-ring ❾

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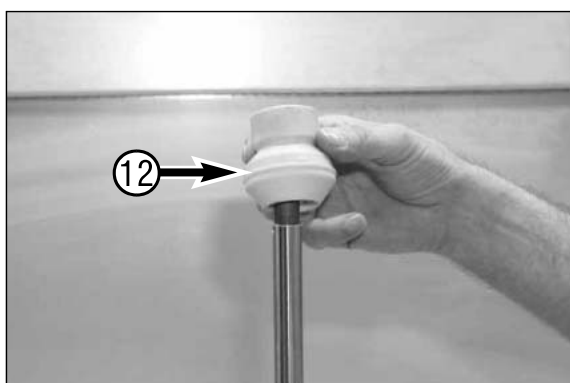


- Slide the adaptor ❿ from the piston rod.

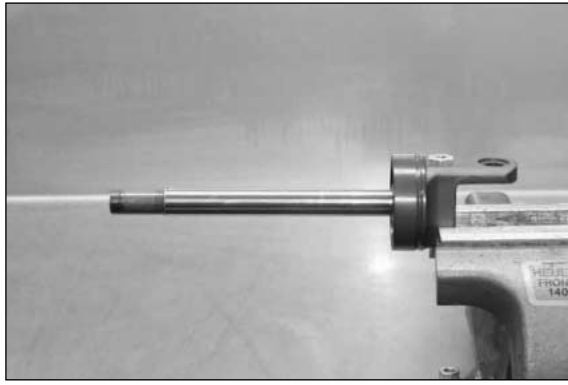
Workshop Manual WP 5018 DCC with SXS/SMR



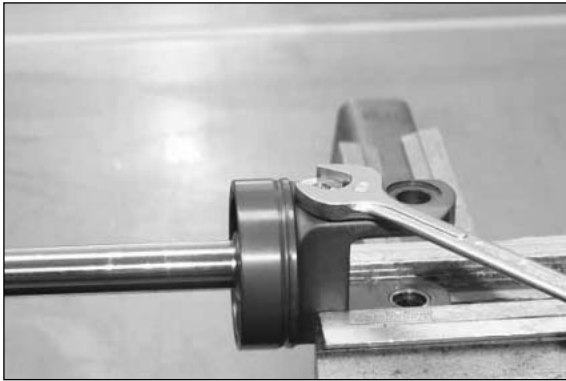
- Remove the cap ⓫.



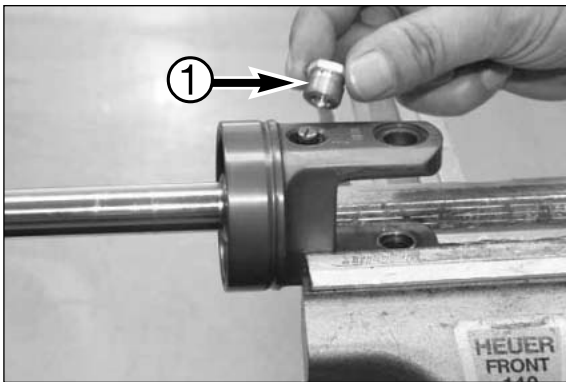
- Remove the bump rubber ⓬.



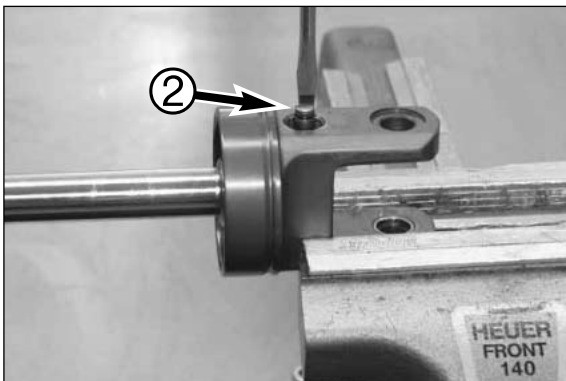
- Clamp the piston rod in the vice according to the picture.



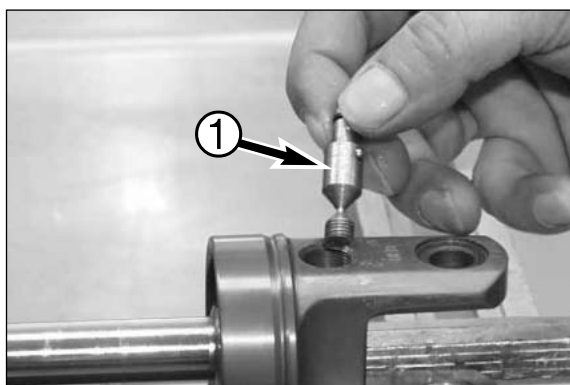
- Unscrew the screw cap ❶ of the rebound adjustment.



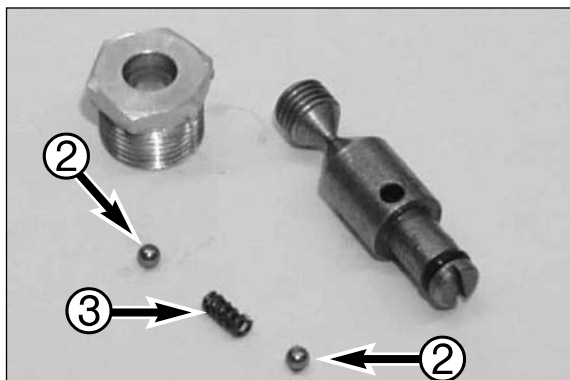
- Remove the screw cap ❶.



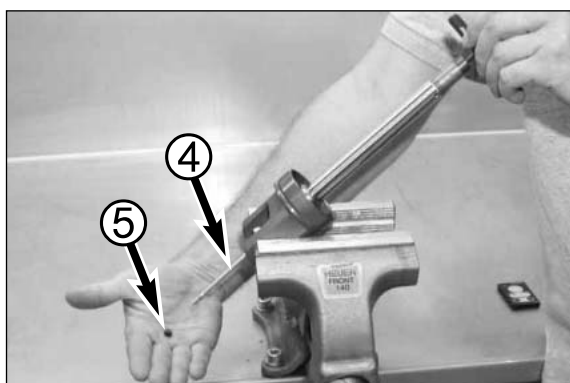
- Turn anti clockwise the rebound adjustment screw ❷ out of the mounting fork.



- Remove the rebound adjustment screw ①.
- Pay attention to the steel balls ② and spring ③.



- Parts of the rebound adjustment screw.



- Push with a pin (size 2,5mm) the rebound adjustment needle ④ through the mounting fork out of the piston rod.
- Pay attention to the rubber plug ⑤ of the mounting fork.



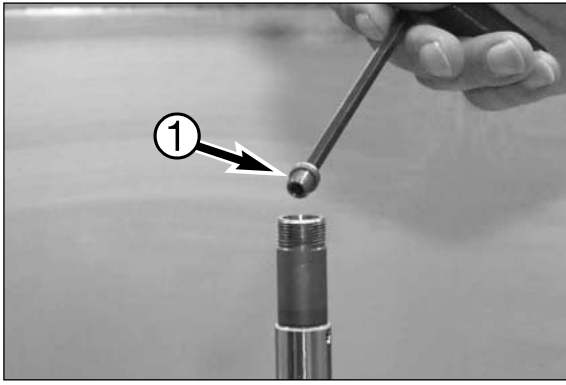
NOTE: further disassembly of the piston rod only applies to models for which individual parts are available (see exploded view).

- Heat the top of piston rod according to the picture.



- Place Allen key (size 5) in the piston rod and unscrew the seat.

NOTE: SXS/SMR with HH, A/F 13



- Remove the seat ❶ - does not apply to SXS/SMR
- Always assemble a new O-ring on the seat.



NOTE: since only assemblies are available for shock absorbers starting with the 2007 model, no further disassembly is necessary.

- Heat the lock nut of the piston rod/mounting fork.



- Unscrew the lock nut, (Size 24)



- Clamp the piston rod in clamping block T 1202S.



- Heat the mounting fork.



- Untighten the mounting fork.



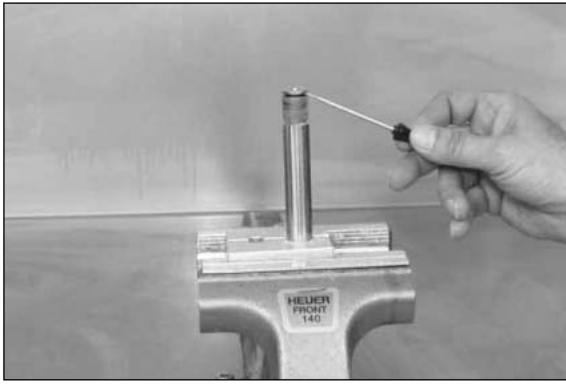
- Remove the mounting fork.



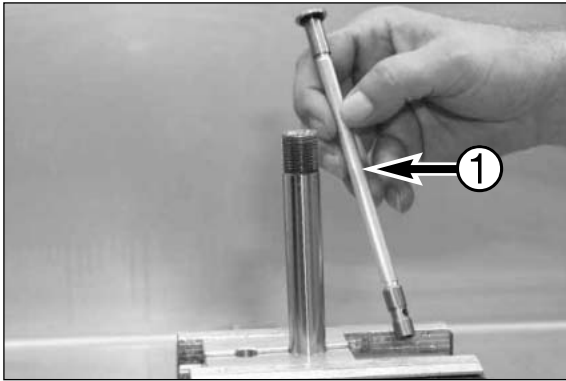
- Brush the thread of the piston rod clean.



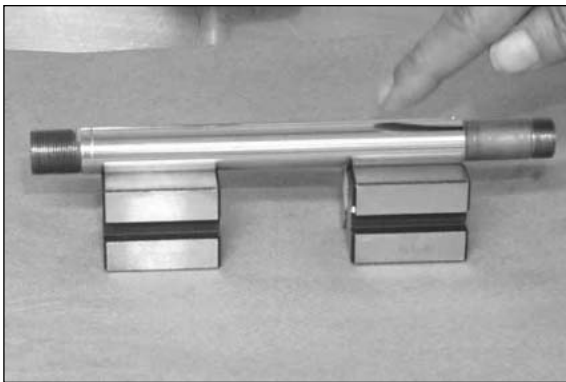
- Unscrew the lock nut.
- Remove the lock nut.



- Disassemble the rebound adjustment tube - does not apply to SXS/SMR
- Always assemble a new O-ring!

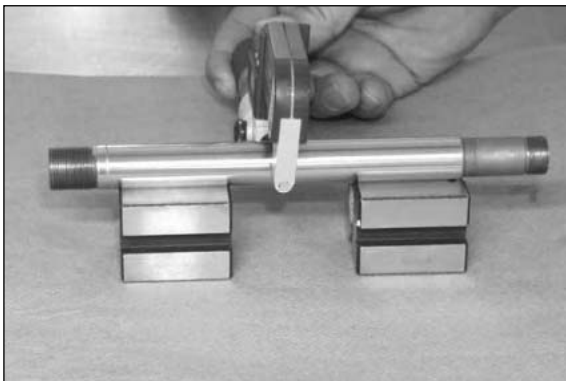


- Rebound adjustment tube. ❶



Inspection of the piston rod

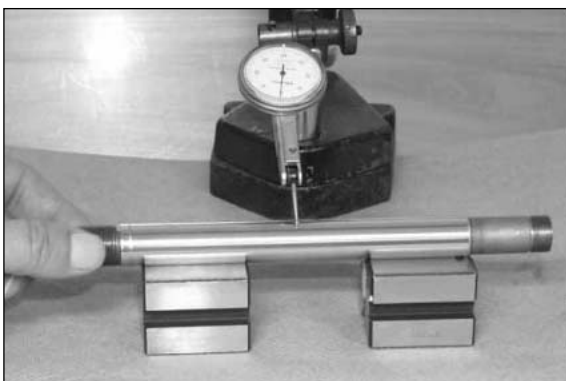
- Replace the piston rod if you have inspect that the running surface of the piston rod has scratches and or indentations.
- Always replace also the bush of the adaptor.



- Place the V-blocks as far as possible at the outside running surface of the piston rod!
- Measure the diameter of the piston rod, rotate the piston rod 90° and measure the diameter again.
- Repeat these measurements on several places of the piston rod.

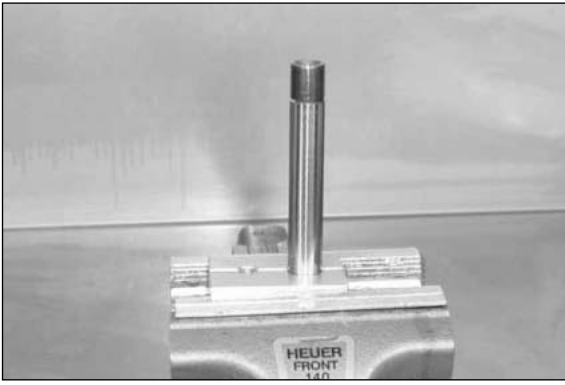
The maximum diameter is: 17,98 mm

The minimum diameter is: 17,94 mm



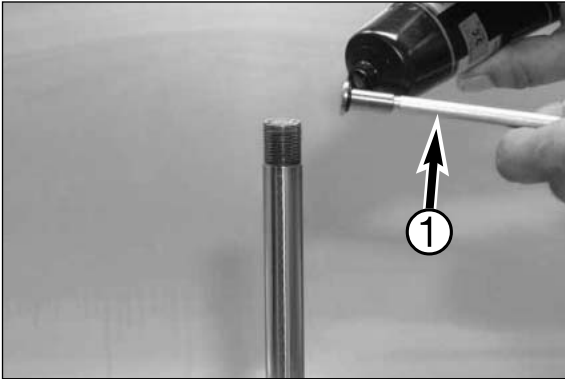
- Measure the straightness of the piston rod, rotate the piston rod 360°.

The maximum travel is: 0,06 mm.



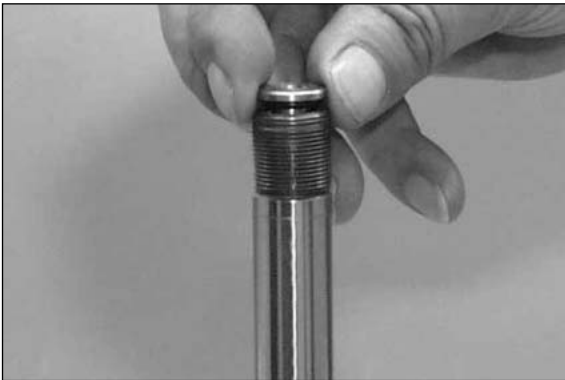
Assembling piston rod side

- Clamp the piston rod in the clamping block T 1202S.

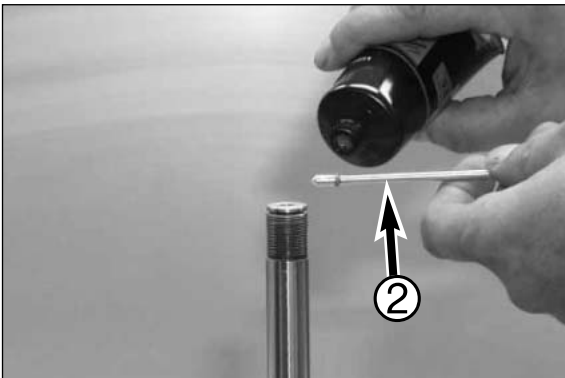


- Apply the new O-ring of the rebound adjustment tube ❶ with T 158.

NOTE: the shock absorber on SXS/SMR models does not have an adjusting pipe for the rebound damping.



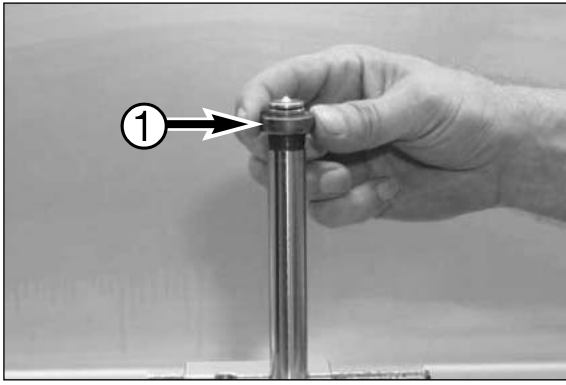
- Assemble the rebound adjustment tube in the piston rod.



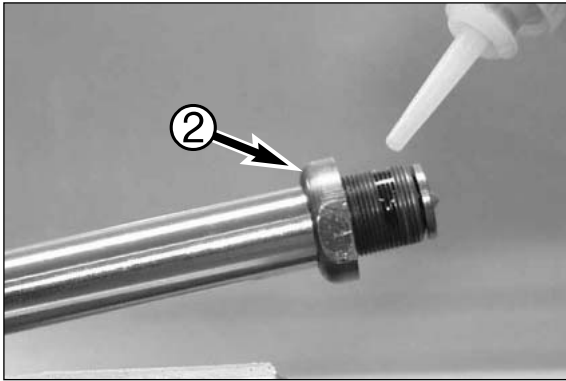
- Apply the O-ring of the rebound adjustment needle ❷ with T 158.



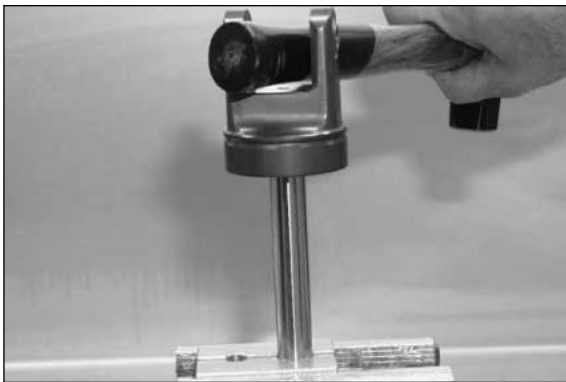
- Assemble the rebound adjustment needle in the piston rod.



- Screw the lock nut ① on the piston rod.
- Pay attention to the assembling direction! The rounded side ② should face the center of the piston rod.
- Screw the lock nut fully on the thread of the piston rod.



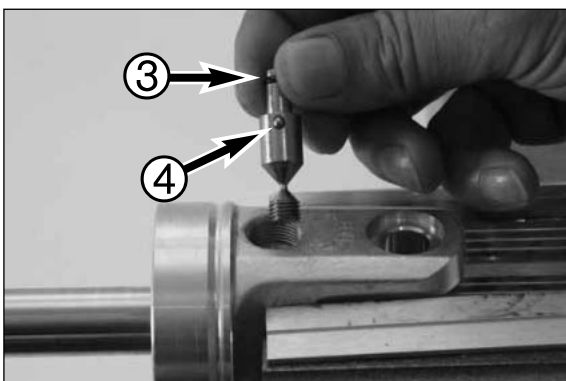
- Wet the thread of the piston rod with T 132.



- Clamp the piston rod in T 1202S and screw the mounting fork on the piston rod
- Tighten the mounting fork.



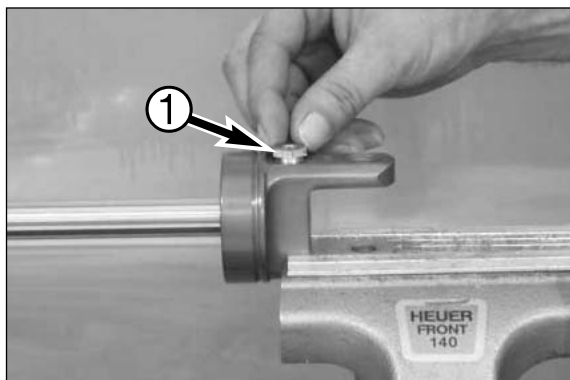
- Tighten the lock nut.



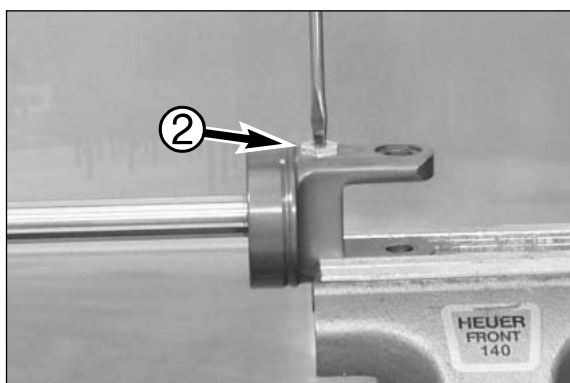
- Place the piston rod / mounting fork in the vice according to the picture.
- Grease the O-ring ③ and steel balls ④ of the rebound needle with water proof grease T 159.
- Assemble the rebound adjustment needle in the mounting fork.



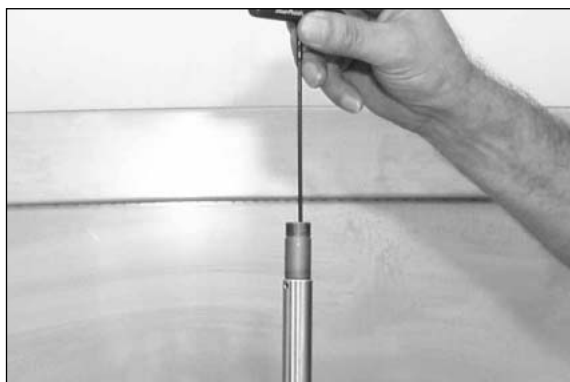
- Screw the rebound adjustment needle in the mounting fork.
- When you feel the clicks turn the rebound adjustment needle two turns further.



- Assemble the screw cap ❶ of the rebound adjustment.
- Tighten the screw cap.



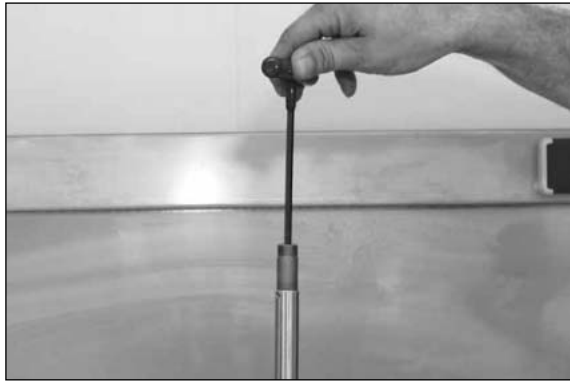
- Turn the rebound adjustment screw ❷ anti clockwise fully open.



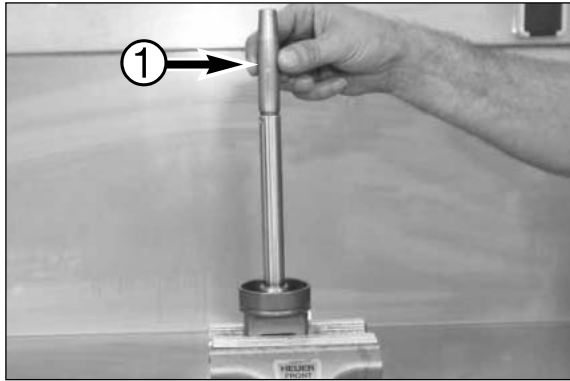
- Push the rebound adjustment needle fully downwards.



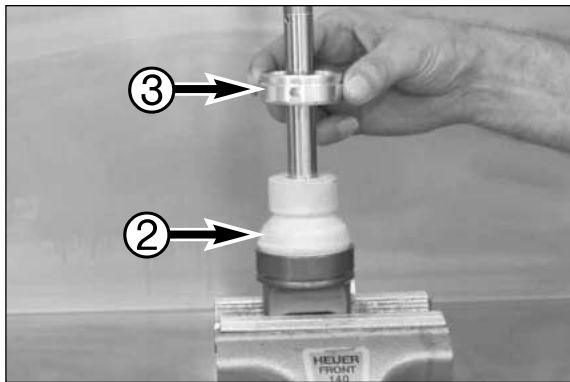
- Apply the thread of the seat with T 132.
- Grease the O-ring of the seat with T 158.



- Tighten the seat! (PDS 2006/07: AH 5 mm; SXS/SMR: A/F 13).

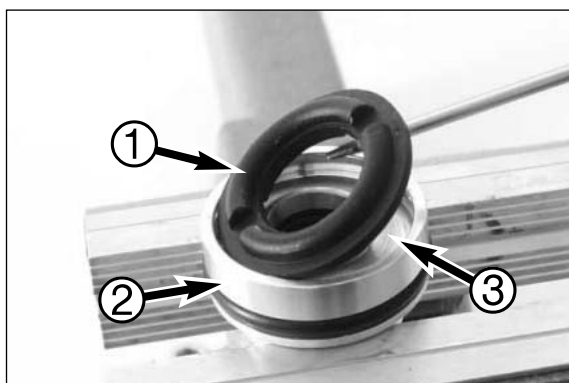


- Place assembling tool T 1215 ❶ on top of the piston rod.



- Assemble the bump rubber ❷.

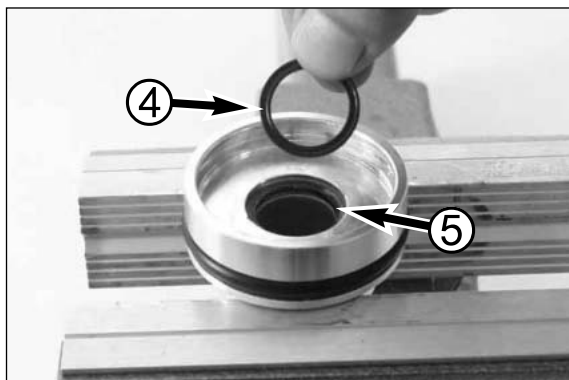
- Assemble the cap ❸.



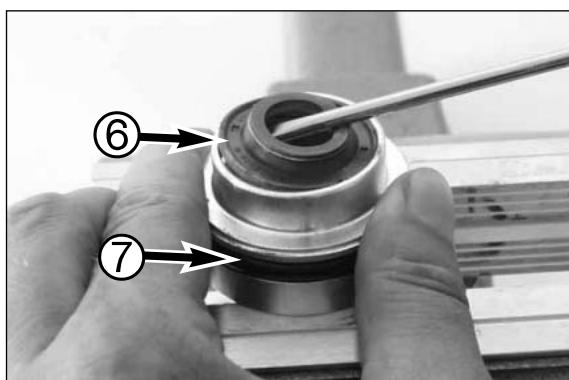
Disassembling adaptor

NOTE: only applies to models for which individual parts are available (see exploded view).

- Lift the rebound rubber **1** out of the adaptor **2**.
- Remove the steel plate **3**.



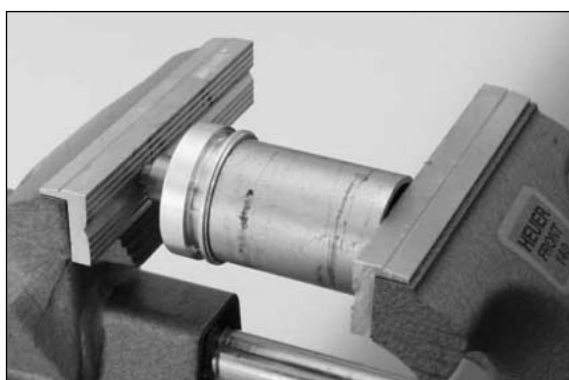
- Remove the back-up ring **4**.
- Remove the quad ring **5**.
- Remove the second back-up ring.



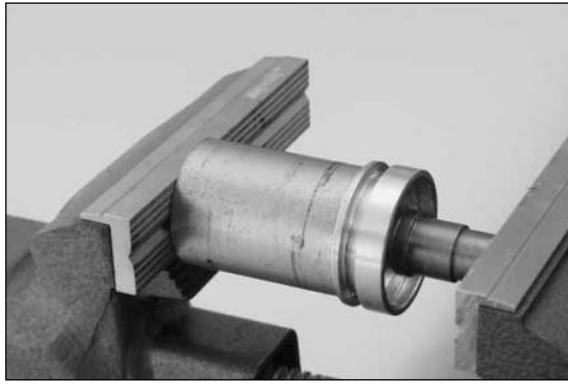
- Lift the dirt scraper **6** out of the adaptor.
- Disassemble the O-ring **7** out of the groove of the adaptor.



- Dis-/assembling tool T 1208 (up to model 2006) or T14031 (model 2007 on), adaptor and T 1209.

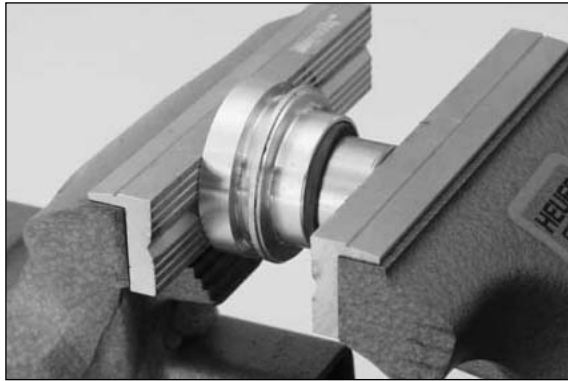


- Press the bush out of the adaptor.

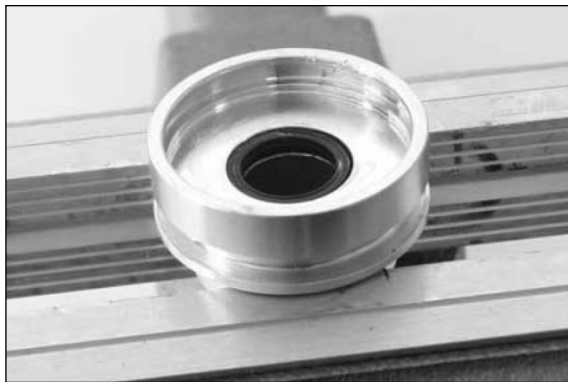


Assembling adaptor

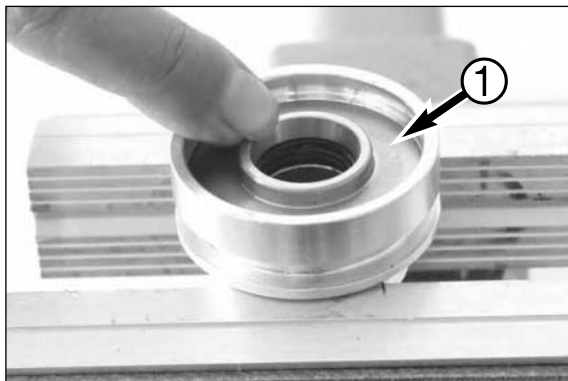
- Press the bush into the adaptor with T 1208 (up to model 2006) or T14031 (model 2007 on) and T 1209.
- Wet the calibration thorn with shock absorber oil!
- Calibrate the bush with calibration thorn T 1205 with support of T 1209.
- Press the calibration thorn completely through the bush.



- Press the dirt scraper with T 1204 into the adaptor.



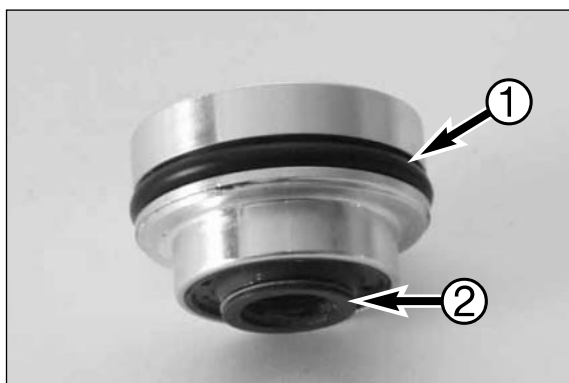
- Assemble in correct order the back-up rings and quad ring!!! See disassembling.



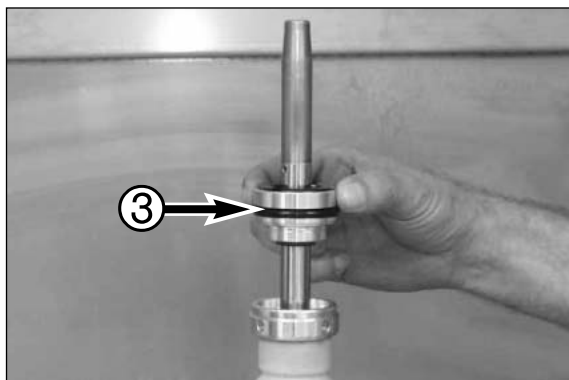
- Assemble the steel plate ❶.



- Assemble the rebound rubber ❷.
- Ensure that you can rotate the rebound rubber in the adaptor.



- Grease the groove of the adaptor with T 158.
- Assemble the O-ring ①.
- Grease the inside lip of the dirt scraper ② with T 625.

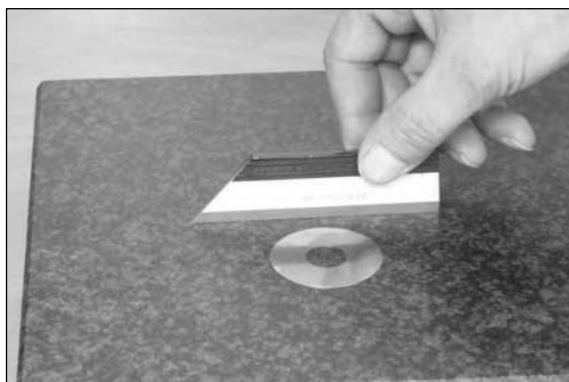


- Put special tool T 1215 onto the piston rod.
- Slide carefully the adaptor ③ over the tool on the piston rod.



Checking the parts

- Inspect the surface of the rebound disc.
- If necessary polish the surface of the rebound disc with sandpaper 600 on a flat plate.



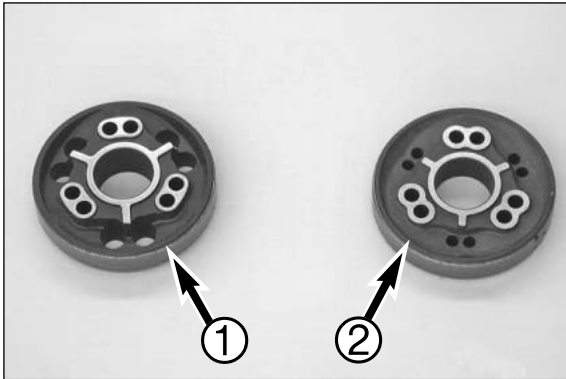
- Always check the first shim that is assembled on the piston if it is not bended. If bended check the second shim and so on.



- Disassemble the piston ring and the O-ring of the piston.
- Inspect the surface of the piston ring.
- Replace the piston ring when you see through the surface a bronze color. Also replace the piston ring if the surface is feeling rough. The best way to do this is to compare it with a new one!



- Polish the surface of both sides of the pistons on a flat plate with sandpaper 600.

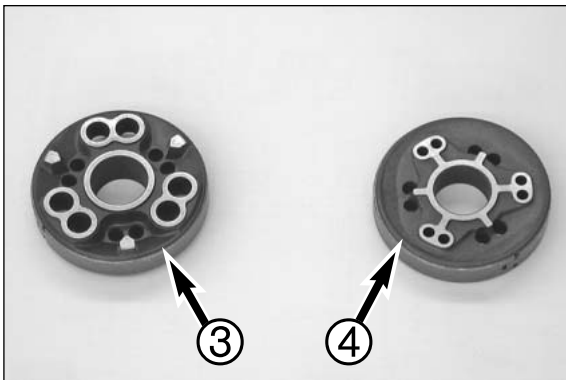


Pistons

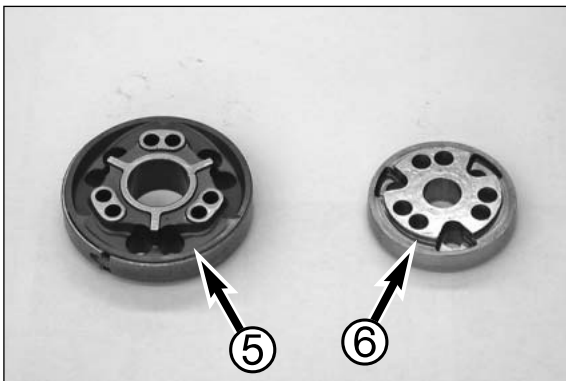
NOTE:

- The "piston 1" and "piston 2" designations refer to assembling, i.e. the piston mounted on the piston rod first will be designated "piston 1".
- Since pistons are mounted on the piston rod from above, "upper view" will refer to the side of the piston facing up after mounting before the respective set of shims is mounted.

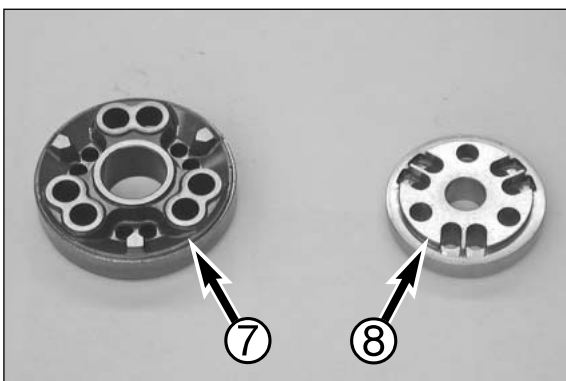
- ❶: Piston 1, upper view for PDS 5018 2006/07, not for SXS up to 2006/SMR
- ❷: Piston 2, upper view for PDS 5018 2006/07, not for SXS up to 2006/SMR
- ❸: Piston 1, lower view for PDS 5018 2006/07, not for SXS up to 2006/SMR
- ❹: Piston 2, lower view for PDS 5018 2006/07, not for SXS up to 2006/SMR

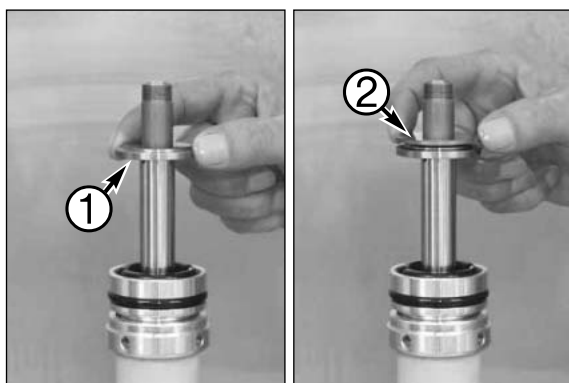


- ❺: Piston 1, upper view for PDS 5018 SXS up to 2006/SMR
- ❻: Piston 2, upper view for PDS 5018 SXS up to 2006/SMR



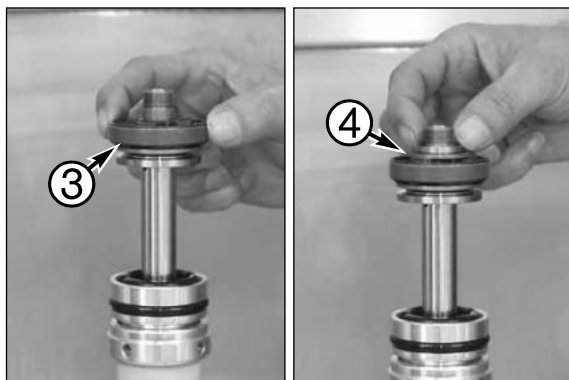
- ❼: Piston 1, lower view for PDS 5018 SXS up to 2006/SMR
- ❽: Piston 2, lower view for PDS 5018 SXS up to 2006/SMR



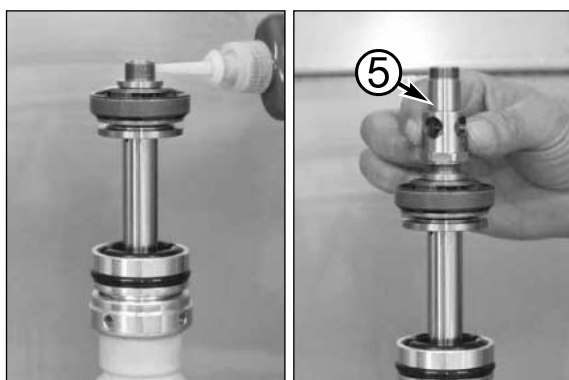


Continuing to assemble the piston rod (also applies to SXS 2007 but not to SXS up to 2006/SMR)

- Assemble the rebound disc ①.
- Assemble the compression setting ②, mounting the shims with the smaller diameter first.

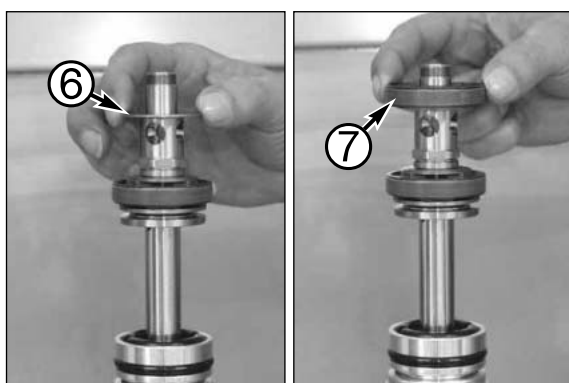


- Place the piston ("piston 1") ③.
- Assemble the rebound setting ④, mounting the shims with the larger diameter first.

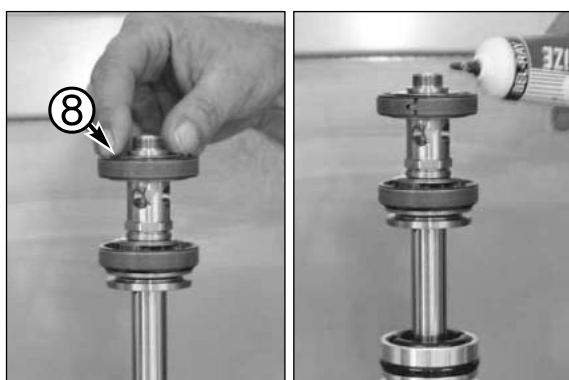


- Wet the thread of the piston rod with T 132.
- Screw the piston rod tap ⑤ on the piston rod.

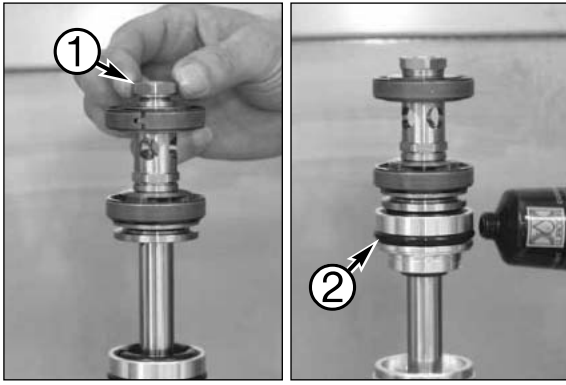
NOTE: Screw the piston rod tap on the piston rod so far as that the piston can still be rotate!



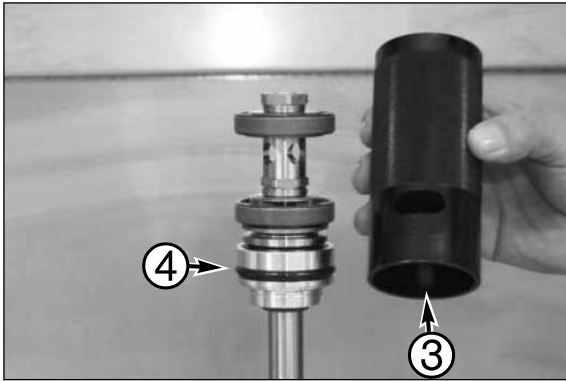
- Place the second compression setting ⑥, mounting the shims with the smaller diameter first.
- Assemble the second piston ("piston 2") ⑦.



- Assemble the second rebound setting ⑧, mounting the shims with the larger diameter first.
- Grease the thread of the piston rod tap with T 152.



- Screw the piston rod nut **1** with the collar downwards on the piston rod tap.
- Grease the O-ring **2** of the adaptor with T 158.



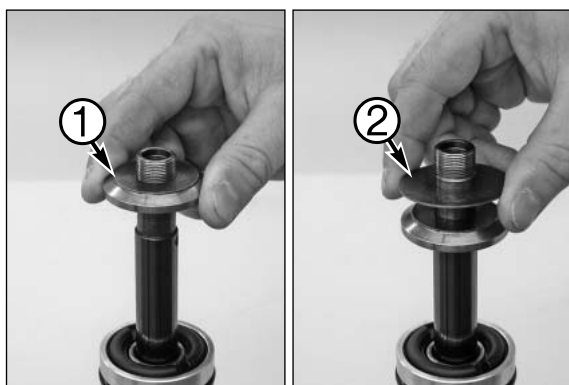
- Place center sleeve T 1214 **3** over both pistons and push the adaptor **4** in the center sleeve.



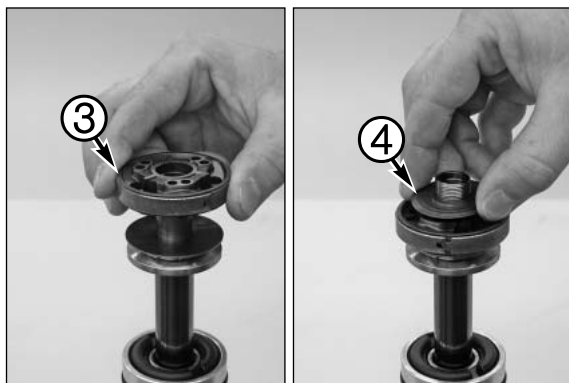
- Tighten the piston rod nut to a torque of 40 Nm and remove the centering sleeve T 1214 again.

Continuing to assemble the piston rod (applies to SXS up to 2006/SMR only)

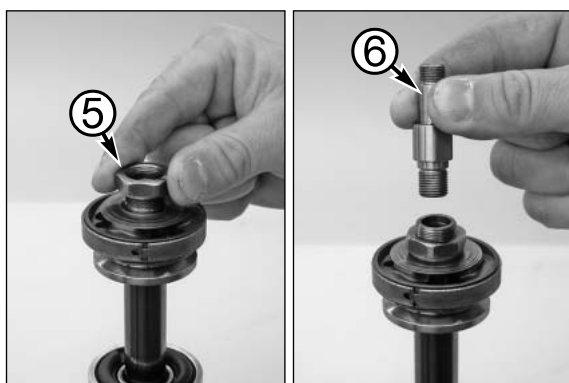
- Mount the rebound disk ❶.
- Mount the set of shims for the compression ❷.



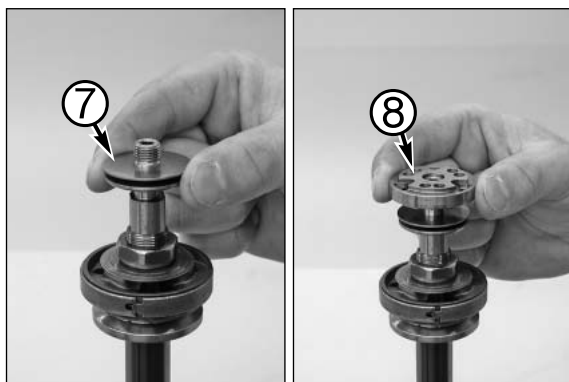
- Mount the piston ("piston 1") ❸.
- Mount the set of shims for the rebound damping ❹.



- Apply T 132 to the thread of the piston rod, screw on the nut (A/F 22) ❺ and tighten to 40 Nm.
- Apply T 132 to the thread of the adapter ❻ and screw on.



- Mount the set of shims for the compression damping ❼ together with the compression damping disk.
- Mount the piston ("piston 2") ❽.



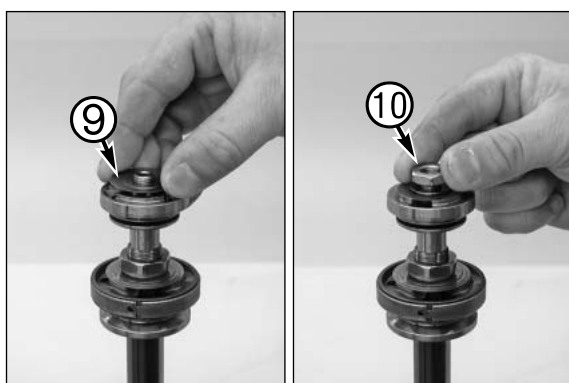
- Mount the shims for the rebound damping ❾.

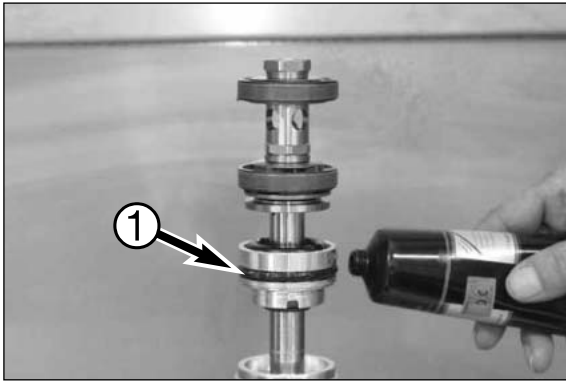
NOTE: the lower large shim is centered with a smaller shim.

- Apply T 132 to the thread of the piston rod and screw on the piston rod nut.

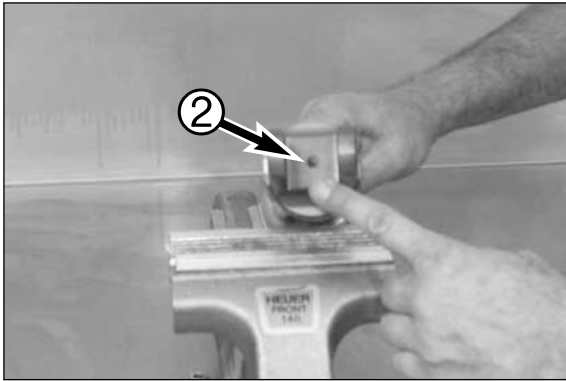
NOTE: mount the piston rod nut with the collar facing down.

- Tighten the piston rod nut (A/F 17) ❿ to 25 Nm.





- Grease again the O-ring ❶ of the adaptor with T 158.

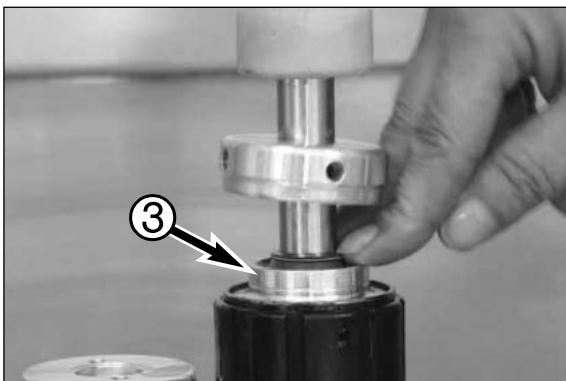


- Assemble the rubber plug ❷ into the mounting fork.



Assembling the shock absorber

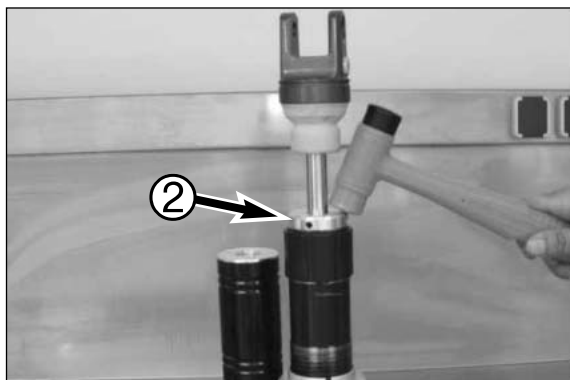
- Assemble the piston rod "complete" into the tube.



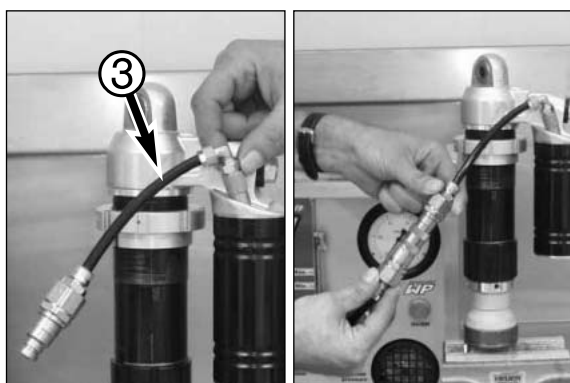
- Push the adaptor ❸ beyond the springing groove of the tube.



- Assemble the spring ring ❶ first with the closed side into the groove.



- Pull the piston rod “complete” fully out.
- Tap the cap ❷ with a plastic hammer in the tube.

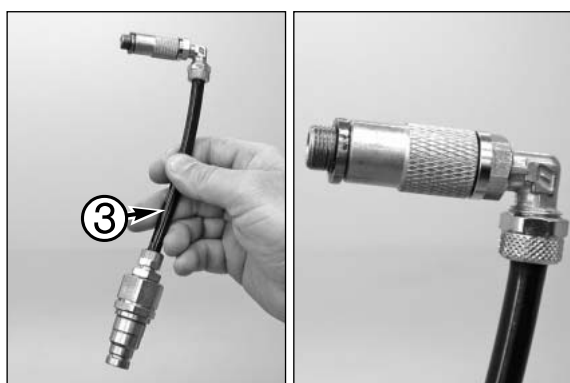


Evacuating and filling the shock absorber

! CAUTION !

BEFORE YOU START TO WORK WITH THE VACUUM/FILLING DEVICE, CAREFULLY READ THE INSTRUCTIONS PROVIDED IN CHAPTER 4 (OWNER'S MANUAL) TO AVOID MAKING ANY ERRORS WHEN FILLING THE SHOCK ABSORBER.

- Loosen all adjusting screws in a counterclockwise direction.
- Screw the filling adapter ❸ in the opening in the shock absorber, tighten by hand and attach to the connector on the vacuum filling device T 1240S.

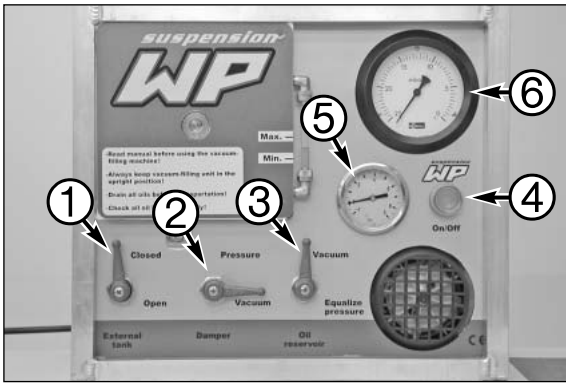


- Hold the shock absorber as shown in the photo. The filling connection with the adapter must be in the highest position.

⚠ WARNING ⚠

DO NOT HOLD THE PISTON ROD SINCE IT WILL MOVE IN AND OUT DURING THE FILLING PROCESS.





1. Ventilation/filling process

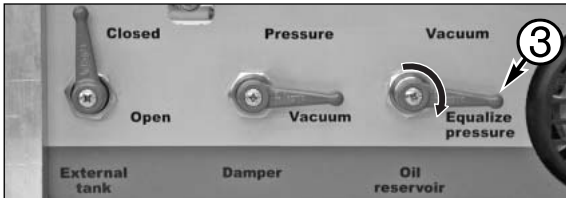
- Move the control levers into the positions shown in the photo.

NOTE: "External tank" control lever ① to "Closed", "Damper" ② to "Vacuum" and "Oil reservoir" ③ to "Vacuum".

- Press the "On/Off" ④ switch to start the ventilation process.

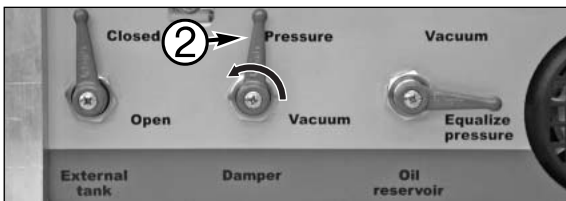
NOTE:

- The pressure gauge ⑤ (bar) will drop below 0 bar (almost -1).
- The vacuum gauge ⑥ (mbar) will drop to 4 mbar.



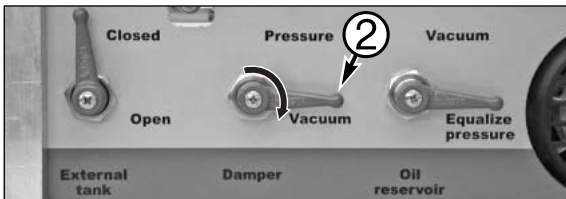
- As soon as the vacuum gauge ⑥ (mbar) reaches approx. 4 mbar, turn the "Oil reservoir" control lever ③ to "Equalize Pressure".

NOTE: the pressure gauge ⑤ (bar) will rise to 0 bar.



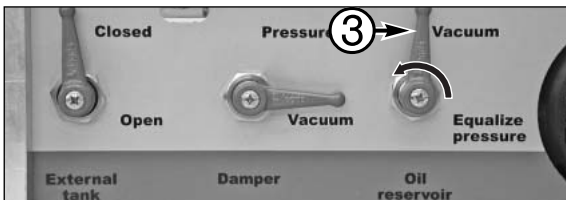
- As soon as the pressure gauge ⑤ (bar) reaches 0 bar, turn the "Damper" control lever ② to "Pressure".

NOTE: oil will be pumped into the shock absorber, the pressure gauge ⑤ (bar) will rise to approx. 3 bar; this value is preset (see Chapter 4).



- As soon as the pressure gauge ⑤ (bar) reaches approx. 3 bar, turn the "Damper" control lever ② back to "Vacuum".

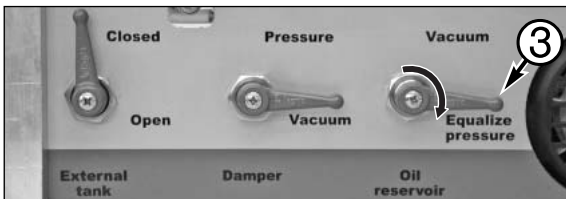
NOTE: the pressure gauge ⑤ (bar) will drop to 0 bar.



2. Ventilation/Filling process

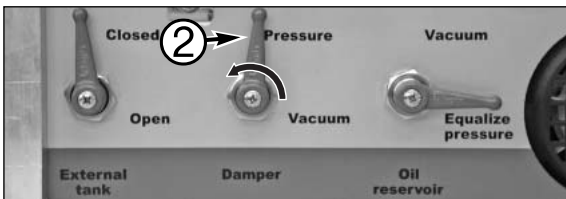
- As soon as the pressure gauge ⑤ (bar) reaches 0 bar, turn the "Oil reservoir" control lever ③ to "Vacuum".

NOTE: the vacuum gauge ⑥ (mbar) will drop to 8 mbar.



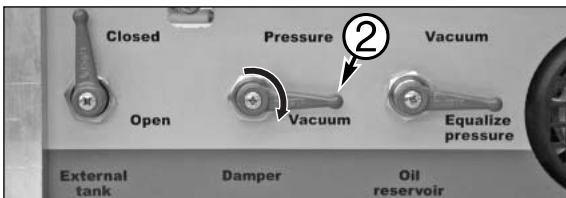
- As soon as the vacuum gauge ⑥ (mbar) reaches 8 mbar, turn the "Oil reservoir" control lever ③ to "Equalize Pressure".

NOTE: the pressure gauge ⑤ (bar) will drop to 0 bar.



- As soon as the pressure gauge ⑤ (bar) reaches 0 bar, turn the "Damper" control lever ② to "Pressure".

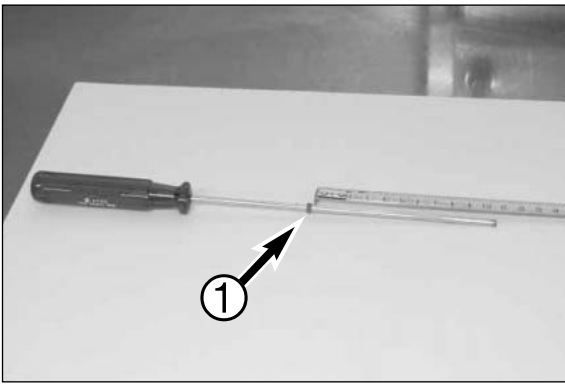
NOTE: oil will be pumped into the shock absorber, the pressure gauge ⑤ (bar) will rise to approx. 3 bar; this value is preset (see Chapter 5).



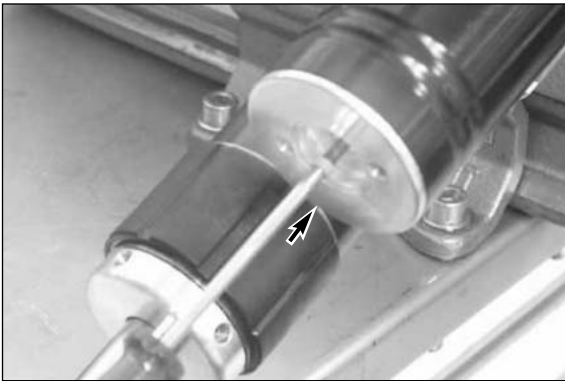
- As soon as the pressure gauge ⑤ (bar) reaches approx. 3 bar, turn the "Damper" control lever ② to "Vacuum".

NOTE: the pressure gauge ⑤ (bar) will drop to 0 bar.

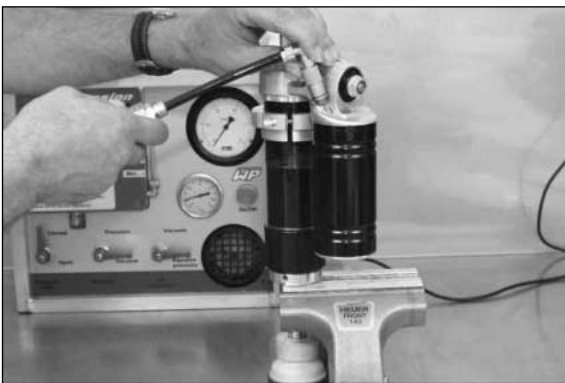
- As soon as the pressure gauge ⑤ (bar) reaches 0 bar, actuate the "On/Off" ④ switch. The shock absorber is filled.



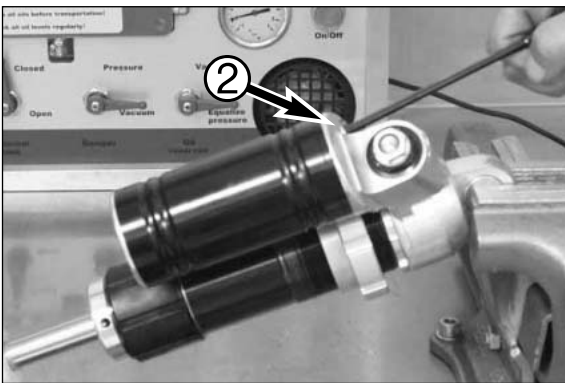
- Adjust the O-ring ❶ on the shaft of T 107S to 106mm.



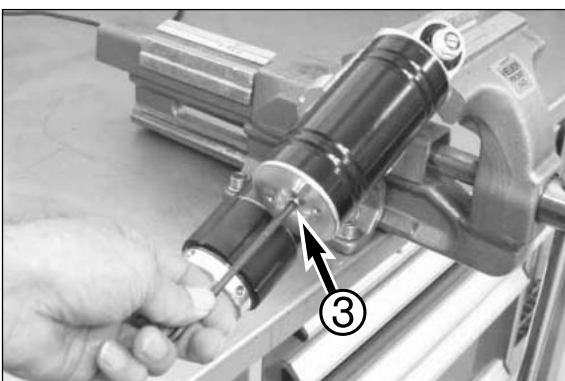
- Push the separation piston with T 107S to the correct position, the O-ring must have a distance for about 10 mm from the screw cap.



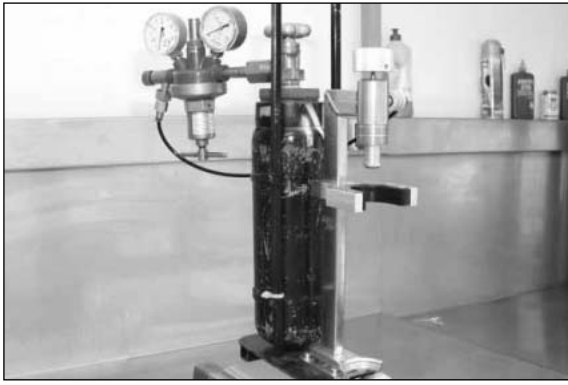
- Unscrew the adapter from the opening in the shock absorber.



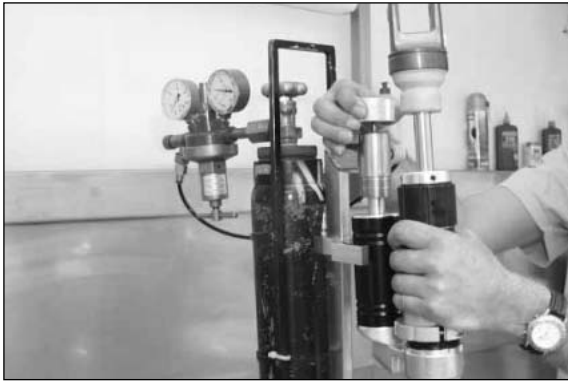
- Screw the oil filling plug ❷ in the shock absorber housing and tighten it.



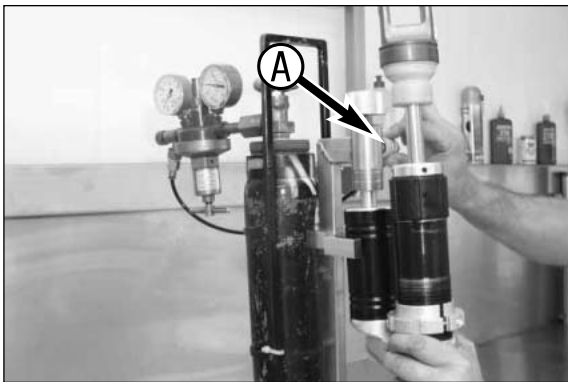
- Screw the nitrogen filling plug ❸ with O-ring several turns in the screw cap of the nitrogen reservoir.

**On pressure with nitrogen**

- Nitrogen charging device T 170S1. Adjust the nitrogen gas pressure to 10 - 11 bar.



- Place the shock absorber in the Nitrogen charging device and ensure that the Allen key is fitting in the nitrogen filling plug.



- Open the tap **A** for about 20 seconds.



- Close the nitrogen filling plug.



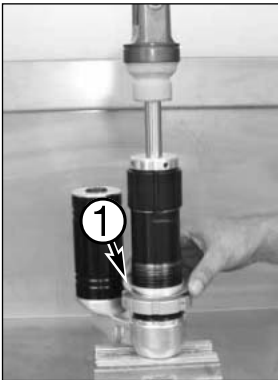
- Close the tap and pull the Allen key of the nitrogen charging device out of the nitrogen filling plug.



- Remove the shock absorber out of the nitrogen charging device.

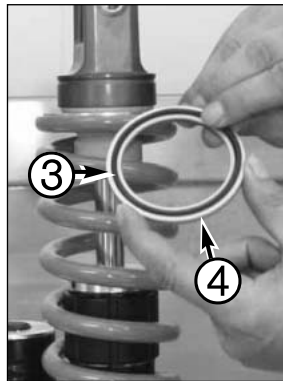


- Place the rubber plug 'do not open'.

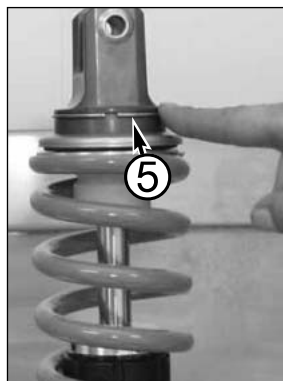
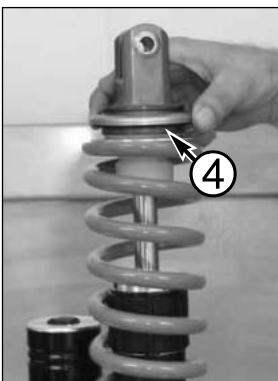


Assembling the spring

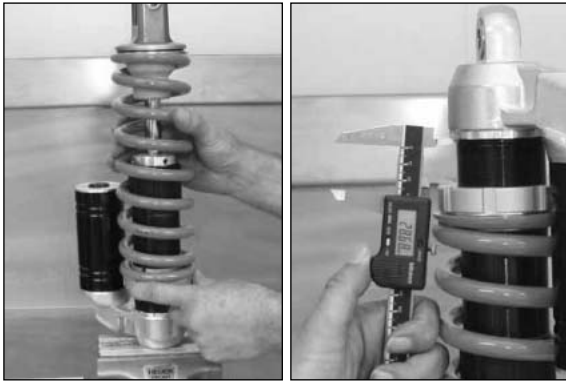
- Place the washer ❶.
- Place the spring.



- Place the first washer ❷.
- Assemble the (new) O-ring ❸ in the groove of the spring retainer ❹.



- Place the spring retainer ❹.
- Place the spring ring ❺ in the groove of the mounting fork.



- Adjust the spring to the correct spring preload as noticed before.



- Tighten the Allen bolt of the screw retainer to a torque of 5 Nm.



- Clean the nitrogen reservoir.
- Assemble a new sticker.

- Set the shock absorber in the correct mounting position.

NOTE: adjustments of the rebound and compression damping should be on the same side.

- Move the rebound and compression damping adjustments in the right position.