R414
Technical Manual
V2016.11
# General

## General Maintenance Information

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1 General

Validity
This manual describes the component specified on the front page and the footer. Deviations are possible and all items are subject to technical changes.

Safety
The safety instructions are classified as follows:

⚠️ DANGER
...indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠️ CAUTION
...indicates a hazardous situation that, if not avoided, could result in a minor or moderate injury.

⚠️ NOTICE
...indicates information considered important, but not hazard-related.

...characterizes further information, or information which supplement the respective steps.

Target Group
This manual is intended for end users and dealers.
It offers the possibility for experienced users to carry out small maintenance works on their own. If there are any doubts concerning the own skills, a DT Swiss service center should be contacted. Warranty will expire if works are not done properly.

Layout
The cover page and the footing provide information about the type of product and manual as well as the version of the manual.
The backside provides a list of the DT Swiss service centers. A list of all DT Swiss service centers can be found at www.dtswiss.com.
This manual is intended for being printed as an A5 booklet. Only print this manual if electronic usage is not possible.
DT Swiss Manual Concept

The DT Swiss manuals are split into the following types of manuals:

- User Manual
  Information for the end user on how to install and use the component.
- Technical Manual
  Detailed information for the end user and the dealer on how to maintain the component, spare parts and technical data.

How to Use this Manual

The steps described in this manual must be carried out in the order they are shown. If steps are ignored or executed in a wrong order, the function of the component cannot be guaranteed.

Instructions begin with the table «Preparatory Steps» and end with the table «Closing Steps». The instructions in these tables must be carried out.

Moving parts, threads, O-rings and sealings must be greased before assembling.

Cross References

In order to simplify the use of this manual, some text is edited as hypertext. Whenever the text is formatted blue and underlined, it is a reference to a chapter. If the text is formatted black and underlined, it is a reference to a figure. After clicking you will be automatically redirected to the target of the reference.

Example: Click here: chap. 1, page 2 to jump to the beginning of this chapter.

Warranty (Europe)

In addition to the general guarantee required by law, DT Swiss AG based in Biel/Switzerland, provides a guarantee for 24 months from the date of purchase. DT Swiss AG shall reject any liability for both indirect damage caused by accidents and consequential damage.

Any contradictory or extended national rights of the purchaser are not affected by this warranty. Place of performance and jurisdiction is Biel/Switzerland. Swiss law shall apply.

Submit any warranty claims to your retailer or a DT Swiss service center. Any defects recognized by DT Swiss AG as a warranty claim will be repaired or replaced by a DT Swiss service center.

Warranty and guarantee claims can only be made by the original purchaser with a valid sales receipt.

There shall be no claim under the guarantee for:

- Normal wear and tear caused by use of the components
- Incorrect assembly
- Incorrect or nonexistent maintenance
- Incorrectly completed repairs
- Use of unsuitable products
- Modification of components
- Incorrect use or misuse
- Carelessness
- Leasing, commercial use or use in competitions
- Damage caused by accidents
- Delivery and transport damage
- Modification, defacing or removal of the serial number
Limited Equipment Warranty USA

DT Swiss LTD makes every effort to assure that its product meets high quality and durability standards and warrants to the original retail consumer/purchaser of our product that each product is free from defects in materials and workmanship as follows:

2 YEAR LIMITED WARRANTY ON THIS DT SWISS PRODUCT. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities or to a lack of maintenance.

DT SWISS LTD LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF TWO YEARS FROM THE DATE OF INITIAL PURCHASE AT RETAIL. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS ARE EXCLUDED. SOME STATES MAY NOT ALLOW LIMITATIONS ON HOW LONG THE IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. DT SWISS LTD SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PEOPLE OR PROPERTY OR FOR INCIDENTAL, CONTINGENT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES MAY NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

To take advantage of this warranty, the product or part must be returned for examination, postage prepaid, to the dealer where you bought the product or to a DT Swiss service center. Proof of purchase date and an explanation of the complaint must accompany the product. If our inspection discloses a defect, DT Swiss will either repair or replace the product or refund the purchase price, if we cannot readily and quickly provide a repair or replacement. DT Swiss will return repaired product or replacement at DT Swiss expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of this warranty, then the user must bear the cost of shipping. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Legal venue and place of performance is Biel (Switzerland). Swiss law shall apply. Subject to technical changes. Please keep the user manual and warranty for future use.
1.1 General Maintenance Information

Cleaning
For an optimal result of the maintenance works, every component that will be disassembled must be cleaned. Only cleaners which do not damage the components may be used. Especially the cleaning of O-rings and sealings requires mild cleaners. Always consider the instructions of the respective cleaner.

DT Swiss recommends the following cleaners:

- Motorex Rex
- Motorex Swissclean
- Motorex OPAL 2400, OPAL 3000, OPAL 5000

Use soap water or similar mild cleaners for external cleaning.

Tools
If special materials like grease or oil are needed, they will be specified in the table «Required Material» at the beginning of a chapter. The symbol «ancellor» refers to the table «Required Material» in the respective steps.

Environmental Protection
Whenever possible, waste has to be avoided. Waste, especially carbon, lubricants, cleaners and any other fluids must be disposed in an environmentally compatible manner.

Only print this manual if electronic usage is not possible.

Disclaimer
The operations described in this manual should only be performed by experts. The user is liable for any damage or consequential damage caused by wrong maintained or wrong installed components. If you have doubts, please contact a DT Swiss service center.
2 Description

2.1 Spring

2.1.1 SAB (Smooth Auto Balancing)

The SAB (Smooth Auto Balancing) system only consists of a bypass located in the air chamber. The bypass ensures that the pressure inside the negative air chamber is higher than in the positive air chamber when the shock is fully extended. This reduces the force of the beginning stroke. The shock responds very smooth and offers more comfort and traction.

Detailed function, see following chapter.
Detailed Function

After inflating or changing the air pressure:
When the shock compresses, the piston moves over the bypass of the air chamber. When the piston is located on top of the bypass, the bypass ensures a pressure equalization of the positive and negative air chamber.

Function during operation:
Due to the pressure equalization, the pressure in the negative air chamber is higher than in the positive air chamber when the shock is fully extended.
This increased pressure inside the negative air chamber counteracts to the breakaway torque and improves the response characteristics drastically.

When the shock is compressed further, only the air inside the positive air chamber is compressed.
When the shock extends again, a pressure builds up in the negative air chamber and the cycles starts again.
2.2 Damping

The shock is a closed system. A preloaded floating piston keeps the shock oil under pressure, even if the shock is fully extended. This prevents the oil from foaming and ensures a constant damping performance even on long, rough downhills. The oil gets in contact with the inner wall of the oil chamber, which leads to a better heat dissipation.

2.2.1 Compression

The compression damping regulates the compression speed of the shock and can be adjusted in three stages via the lever on the shock or using the remote lever on the handlebars:

- **OPEN**
  
  In “OPEN” mode, the compression of the shock is in the most sensitive, factory-set setting. The shock responds sensitively to small unevennesses in the terrain. The fine-tuning is pre-set and can not be changed.

- **DRIVE**
  
  If the lever on the shock or remote lever on the handlebars is moved to the middle position, the compression is partially closed. This makes the bike much more firm and encourages effective pedalling in situations where no full performance of the shock is required (uphill climbing on roads or easy trails, rides on even ground).

- **LOCK**
  
  The «LOCK» mode blocks the shock in fully extended position. This is mostly suitable for situations where no suspension is needed (for example riding on the road or connecting trails).

  A blow-off valve protects rider and material from unexpected hits.
Detailed Function

When the shock compresses, the damping piston moves through the oil chamber. Thereby, the oil flows through the damping piston. At slow compression speed, the oil flows through the channel of the low speed compression (LSC). The oil flow is regulated by shims. These shims can be different, depending on the factory setting and thus affecting the damping characteristics.

At fast compression speeds, the oil flows through the oil channel of the high speed compression (HSC) additionally. Before the oil flows into the rebound reservoir, it has to pass the shims. These shims can be different too, depending on the factory setting and thus affecting the damping characteristics.

The volume on both sides of the piston is different, only part of the displaced oil can flow into the space behind the piston. This excess oil compresses a chamber filled with nitrogen, which is separated to the damping oil by a floating piston.
2.2.2 Blow Off

The blow off function is a safety mechanism for protecting the components of the shock from heavy loads.

**Detailed Function**

When the shock is blocked, a slider closes the oil channels of the low speed and high speed compression. The damping piston has two channels, which directly connect the compression chamber with the rebound chamber. These channels are blocked by shims. Oil can only flow from the compression chamber into the rebound chamber, when the force of the shims is overcome. Thus the channels have small pressure areas (2x Ø1.5 mm), there must be a high pressure that the oil can flow through the blow off channel.
2.2.3 Rebound

The rebound damping controls the decompression speed of the shock. Depending on the decompression speed, the low speed rebound or high speed rebound controls the decompression movement.

The low speed rebound can be set externally with the red rebound wheel. The rebound pin moves forward and backwards while turning the rebound wheel. According to the position of the rebound pin, more or less oil can flow through the low speed rebound channels.

**Detailed Function**

When the shock is released, the damping piston moves through the oil chamber. Thereby, the oil flows from the rebound chamber into the compression chamber. The entire oil flows through the damping piston, where the rebound damping happens.

At slow rebound speeds, the oil flows through the channel of the low speed rebound (LSR). The position of the rebound pin regulates the flowing resistance and thus the intensity of the damping. The higher the flowing resistance, the higher the damping.

Oil which cannot flow through the oil channels of the LSR (because of fast rebound speed and thus big displacement of the oil generated by the piston) flows through the oil channels of the HSR. This ensures separate damping characteristics on small and medium or on fast rebound speeds.

Like the HSC, the HSR is also controlled by preloaded shims. These shims can be different, depending on the factory setting and thus affecting the damping characteristics.
3 Assembly

3.1 Safety

⚠️ DANGER

Incorrect handling, installation, maintenance or servicing can lead to accidents causing severe injuries or death!

- Compliance with the following provisions is a prerequisite for accident-free use and faultless functioning.
- Assembly and maintenance of the component requires a basic knowledge of handling bicycle components. If in any doubt, consult your retailer.
- Components should only be used in accordance with their intended use, otherwise the user shall assume full responsibility.
- The component must be compatible with all parts of the bicycle.
- Only use original spare parts.
- The components must not be changed or modified.
- The component must not be used if it is damaged or there are any signs of damage. If in any doubt, consult your retailer.

⚠️ DANGER

Risk of death due to wrong installation of the shock!

- The built-in-length of the shock must be approved by the frame manufacturer.
- Only use fixing screws approved by the frame manufacturer.
- Only use bushing approved by the frame manufacturer.
**DANGER**

Risk of death due to wrong installation of the shock!

1. The longitudinal axis of both spherical bearings must be aligned horizontally and normally in drive direction.

2. Vertical shock mounts, which are mounted directly to the shock must not be used.

3. The shock mount of the bicycle frame must be such that the spherical bearings (1) are able to move freely.
3.2 Mounting the Shock to the Bike Frame

Preparatory Steps

1. Check the mounting hardware.
   An A or B set must be provided for the assembly side of the rear shock.

2. Check the bushings. The dimensions (±0.2 mm) must correspond to the specifications provided by the frame manufacturer.

3. Check, if the installation length of the rear shock is approved by the manufacturer of the frame.
4. Fully assemble the mounting hardware and the rear shock.  
   Caution: Only use fixing screws approved by the manufacturer of the frame.

5. Tighten the screws according to the torque specified by manufacturer of the frame.

6. Check the installation of the shock when the shock is decompressed.  
   Check the installation of the shock when the shock is compressed. Therefore, release the air from the shock (see section „Reducing the Air Pressure“, page 20).  
   →Caution: The rear shock must not touch the frame when installed.

<table>
<thead>
<tr>
<th>Closing Steps</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

3.3 Installation of the Remote Lever

Preparatory Steps

not required

<table>
<thead>
<tr>
<th>Required Material</th>
<th>Specification</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>cable</td>
<td>uncoated</td>
<td>as required</td>
</tr>
<tr>
<td>cable housing</td>
<td>Ø4,2 mm, maximum length 90 cm</td>
<td>as required</td>
</tr>
<tr>
<td>carbon fitting lubricant</td>
<td></td>
<td>as required</td>
</tr>
</tbody>
</table>

3.3.1 Installation of the Remote Lever [Two In One]

NOTICE

General Information: Two In One Lever

- The remote lever can be used for DT Swiss forks and/or DT Swiss shocks.
- The remote lever must be installed on the left top side of the handlebar.
- The remote lever is designed for a handlebar diameter of 22.2 mm. If the diameter of the handlebar is smaller, the clamp of the remote lever cannot be fixed strong enough.

1. Carbon handlebars: Apply a thin layer carbon fitting lubricant on the contact area of remote lever and handlebar.
2. Put the remote lever onto the handlebar and tighten the fixing screw with a torque of 1.3 Nm.
3. Check the proper function of the remote lever and the control elements next to it. Whether the remote lever nor any other control element may be affected in its proper function.
4. Push the remote lever into position «open» (see figure).

5. Cut the cable housing to the required length. Check if the handlebar with the installed cable housing can be turned without being affected.
6. Put the cable into the remote lever. Only use uncoated cables!

Closing Steps

not required
3.3.2 Assembling the Cable and the Cable Housing

Preparatory Steps

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>not required</td>
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</tbody>
</table>

![Remote-Unit Diagram](image)

1. Put the cable into the cable guide (see Abb.3-1/3) like shown in the figure.
2. Put the cable housing into the cable guide.
3. Screw out the fixing screw (see fig. 3-1/2) of the remote wheel (see fig. 3-1/1).
4. Put the cable around the remote wheel and tighten it.
5. Fix the cable with the fixing screw. Tighten the fixing screw with a maximum torque of 1.3 Nm.

6. Press the end cap onto the cable and bend the cable upwards.
7. Put the remote lever into the position «LOCK».
8. Adjust the position «LOCK» using the adjuster (see fig. 3-1/2).

Closing Steps

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>not required</td>
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</tr>
</tbody>
</table>
4 Operation and Setting

4.1 Setting the SAG (Negative Travel)

The SAG is the amount of travel of which the shock will be compressed by the weight of the rider with full equipment. If the SAG is adjusted correctly, the rear wheel can follow the ground during the ride much better.

The setting of the SAG depends on the riding style. If you prefer a firm suspension for cross country or marathon use, you should choose a low SAG value. If you ride all mountain or enduro, a higher SAG value should be chosen. The stroke of the shock will be used more efficient and the rear wheel will follow the bumps much better.

The following values can be used for setting the SAG:

To set the SAG, you should use the help of a second person.

1. Inflate the shock to approx. 15 bar (see chap. 4.2, page 19). Based on this pressure, the SAG can be set.
2. Deactivate the lockout: Turn the remote lever on the shock or on the handlebar in position «OPEN».
3. Push the O-ring to the bottom, until it touches the wiper seal.
4. Sit on the bike with full equipment (backpack, helmet, shoes...).

5. Sit on the bike as you would sit during the ride.
   → The shock compresses because of your own weight.
   → Avoid impact loads.

6. Get off your bike and measure the distance between O-ring and wiper seal.
   → This measurement is called SAG.
   → The SAG should be between 20% and 35% of the full travel and can be adjusted depending on the riding style and use.

7. Adjust the air pressure if necessary (see following). Repeat steps above until the correct SAG is set.

4.2 Setting the Air Pressure

Using the DT Swiss High Pressure Shock Pump

On shocks that have been purchased as aftermarket components, the DT Swiss shock pump is part of the supplied package.

The DT Swiss shock pump has a pressure gauge (1) which can be used to precisely adjust the shock's pressure. A release valve (2) allows the pressure in the shock to be reduced. A valve lever (3) on the pump head (4) allows the shock pump to be unscrewed without any loss of pressure.

Operating the shock pump

A Screw the pump head (4) fully onto the valve on the shock.

B Close the valve lever (3) (push the lever towards the valve) and pump up the shock.
   → Closing the valve lever (3) opens the valve on the shock.
   → Pressing the release valve (2) allows the pressure in the shock to be reduced.

C Open the valve lever (3) (push the lever towards the pump tube).
   → Opening the valve lever closes the valve on the shock. No air is able to escape when the pump is unscrewed.

D Unscrew the pump head (4) from the valve on the shock.
Increasing the Air Pressure
By adjusting the air pressure, the spring rate will be affected. The higher the air pressure, the harder the spring. Adjustment is possible by changing the air pressure. Adjusting the air pressure to the weight of the rider can slightly change the total length of the shock.

1. Set the shock to “OPEN” mode.
2. Remove the valve cap from the valve housing.

3. Screw on the shock pump and pump the shock up to the required pressure. Note the instructions issued by the shock pump’s manufacturer! When using the DT Swiss shock pump, see "Using the DT Swiss High Pressure Shock Pump", page 19.
4. Slowly compress the shock with the shock pump screwed on ten times by around 25% of its stroke. This allows an equalization of the positive and negative air chambers.
   Only once the pressure displayed on the shock pump stops changing after compression are both air chambers equal.
5. Repeat the process until the desired pressure is displayed on the shock pump after compression.
6. Unscrew the shock pump and screw the valve cap onto the valve.

Reducing the Air Pressure

1. Set the shock to “OPEN” mode.
2. Unscrew the valve cap on the shock.
3. SLOWLY press the valve insert with the back of the valve cap.
   or
   Screw on the shock pump and SLOWLY reduce the air pressure by pressing the release valve on the shock pump.

The shock can compress up to the point at which the equalization of the positive and negative air chambers occurs.
4.3 Setting the Damping

4.3.1 Setting the Rebound

The rebound controls the speed of the decompression movement of the shock.

To adjust the rebound damping, turn the red wheel.

- Turn clockwise to increase the rebound damping.
- Turn anti-clockwise to decrease the rebound damping.

If the rebound damping is too low, the rear wheel decompresses too fast which leads to an unstable rear suspension.

If the rebound damping is too high, the rear wheel can't follow fast impacts and the suspension hardens.

The aim of setting the rebound damping is to achieve the best setting possible, which meets the requirements of the terrain best. Rough, fast downhills require a low rebound damping, while flowy downhills without big hits require a higher damping.
4.3.2 Compression

- **OPEN:**
  When the «open mode» is active, the compression of the damping is in the most sensible setting. The shock reacts very sensible to small bumps.

- **DRIVE:**
  When the lever is in the middle position, the compression is closed partially. This leads to a firm suspension and supports effective pedaling in situations where no full performance of the shock is needed (for example riding uphill on tarmac or firm trails).

- **LOCK:**
  All DT Swiss shocks provide a lock out function. When the lever is in the position «LOCK», the oil flow through the damping piston is closed. A blow-off valve opens the oil circuit when hitting big bumps to avoid damages to the shock.

The rebound controls the speed of the decompression movement of the shock.
5 Service and Care

5.1 Safety

⚠️ DANGER

Danger to life due to wrong maintenance!
Incorrect maintenance or assembly can lead to unpredictable errors!
- Maintenance and assembly may only be done by a skilled professional.
- In case of any doubt, contact a DT Swiss service center.
- The component must be compatible with all parts of the bicycle. Only use original spare parts.

5.2 Care

To ensure a long product life, follow the instructions below:
- Clean the shock with a damp cloth after each ride.
- Never use aggressive cleaners that damage the wiper seals!
- Never use high pressure cleaners. Water and dirt can get into the system and damage it!
- Remove all visible, dried dirt from the area of the wiper seals. This will prevent dirt from getting into the shock.
- It is not necessary to grease the wiper seals.
- After cleaning, lubricate the sliding surface of the remote lever on the handlebar.
## 5.3 Service Intervals

> If service intervals are not respected, any warranty claims can be denied.

<table>
<thead>
<tr>
<th>Action</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Service (see chap. 5.5, page 26)</td>
<td>• intensive use: 40 operating hours</td>
</tr>
<tr>
<td></td>
<td>• normal use: 100 operating hours</td>
</tr>
<tr>
<td></td>
<td>or as required</td>
</tr>
<tr>
<td>Full service carried out by a DT Swiss service center</td>
<td>annual or after 200 operating hours</td>
</tr>
<tr>
<td>Check the shock for damages</td>
<td>before and after each ride</td>
</tr>
<tr>
<td>Check for proper fixation</td>
<td>before each ride</td>
</tr>
<tr>
<td>Check the function</td>
<td>before each ride</td>
</tr>
<tr>
<td>Clean with a soft cloth and a suitable cleaner, especially in the area of the wiper seals. Do not use high pressure cleaners and aggressive cleaners!</td>
<td>after each ride</td>
</tr>
</tbody>
</table>
5.4 Seal Kits

The seal kit includes all parts needed for a small service. All of these parts can be changed without using special tools. Changing these parts is described in chap. 5.5, page 26.

Figure 5-1: Seal Kit

1 O-ring air chamber
2 support ring
3 quadring

4 quadring
5 support ring
6 wiper
5.5 Small Service

This chapter describes a small service. Further service works will be executed by a DT Swiss service center.

A small service should be carried out in the following cases:

- The interval for a small service is expired (see table at the beginning of this chapter).
- The shock loses air and must be inflated regularly.
- Unusual sounds (squeaking).
- Other defects or malfunctions.

**Preparatory Steps**

<table>
<thead>
<tr>
<th>Preparatory Steps</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dismount the shock from the bike.</td>
<td></td>
</tr>
<tr>
<td>Dismount the bushings.</td>
<td></td>
</tr>
<tr>
<td>Clean the surface of the shock.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTICE**

**Risk of damaging the shock!**

To avoid damages, always clamp the shock or parts of the shock into ground clamping jaws, aluminum clamping jaws or plastic clamping jaws.
5.5.1 Releasing the Air

⚠️ DANGER

Risk of injury due to high air pressure!
Air with high pressure can escape suddenly while dismounting the shock!
• Always release the air before starting any works.

⚠️ DANGER

Shock oil may be fatal if swallowed and enters airways!
Oil mist might escape through the valve while releasing the air.
• Always put a cloth onto the valve while releasing the air.
• The valve must face down, away from your body while releasing the air.
• Immediately call a doctor if shock oil was swallowed or entered airways.

1. Set the shock to “OPEN” mode (see chap. 4.3, page 21).
2. Unscrew the valve cap on the shock.
3. SLOWLY press the valve insert with the back of the valve cap.
   or
   Screw on the shock pump and SLOWLY reduce the air pressure by pressing the release valve on the shock pump.
4. The shock can compress up to the point at which the equalization of the positive and negative air chambers occurs.
5.5.2 Removing the Air Chamber

1. Clamp the shock into a vice vertically.
2. Unscrew the air chamber by hand.
3. If the air chamber can’t be loosened by hand, unscrew the air chamber using a strap wrench.

4. Slide off the air chamber.
5.5.3 Replacing the O-Ring between of the Air Chamber, Quadring and Support Ring

<table>
<thead>
<tr>
<th>Required Material</th>
<th>Specification</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x O-Ring air chamber</td>
<td>included in the air chamber seal kit</td>
<td>1</td>
</tr>
<tr>
<td>1x Quadring support ring</td>
<td>CWXXXXXXXX10095S</td>
<td></td>
</tr>
<tr>
<td>grease</td>
<td>Buzzy's Slick Honey</td>
<td>as required</td>
</tr>
<tr>
<td></td>
<td>4.7 dl: 40341000AD02000001 OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 ml: TZXHHXXNSLICKS</td>
<td></td>
</tr>
</tbody>
</table>

1. Remove the O-ring from the end cap.
2. Clean the end cap.
3. Check if there are any damages.
4. Grease the new O-ring and put it on the end cap.
   Required grease: see table on page 29

5. Remove both support rings from the oil chamber tab.
6. Remove the quadring from the oil chamber tab.
7. Clean the seat of quadring and support ring.
8. Slightly grease the new quadring and put the quadring onto the oil chamber tab. 
   → Ensure, the quadring is not twisted. 
   Required grease, see table on page 29.

9. Put the support rings on both sides of the quadring onto the oil chamber tab.
5.5.4 Changing the Wiper

### Required Material

<table>
<thead>
<tr>
<th>Required Material</th>
<th>Specification</th>
<th>Amount</th>
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<tbody>
<tr>
<td>wiper seal</td>
<td>included in the air chamber seal kit CWXXXXXX10095S</td>
<td>1</td>
</tr>
<tr>
<td>quadring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>support ring</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| grease            | Buzzy’s Slick Honey 4.7 dl: 40341000AD02000001 OR 20 ml: TZXxxxxxNSLICKS | as required |

1. Carefully remove the wiper seal from the air chamber using plastic forceps.  
The air chamber must not be damaged!  
Do not re-use the wiper seal!

2. Remove the support ring from the air chamber by hand.  
Do not re-use the support ring!
3. Remove the quadring from the air chamber by hand. 
⇒ Do not re-use the quadring!

**NOTICE**

Risk of damage due to wrong cleaners!
Aggressive cleaners are causing damages to the wiper. Damaged wipers are the reason for air leakages of the shock.

- Only use cleaners mentioned in section „Cleaning“, page 5.

4. Clean the air chamber housing with a clean, lint-free and dry cloth. 
There must be no lint and no residuals of grease after cleaning!

5. Slightly grease the new quadring and put it into the inner groove of the air chamber (see figure). 
⇒ Ensure, the quadring is not twisted.

6. Put a new support-ring onto the web between both grooves of the air chamber (see figure).
7. Slightly grease the new wiper seal and put it into the outer groove of the air chamber (see figure). Ensure, the wiper seal lays evenly all around the groove.

8. Grease the inner surface, the thread and the bushing of the air chamber housing slightly. Grease the wiper generously. Required grease, see table on page 29.

9. Clamp the shock into the vice.
10. Slide on the air chamber and tighten it by hand. Ensure, that the O-ring (figure 5-1 on page 25) does not get jammed.
11. Take the shock out of the vice.
12. Put the SAG O-ring onto the oil chamber.

<table>
<thead>
<tr>
<th>Closing Steps</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mount the bushings.</td>
<td></td>
</tr>
<tr>
<td>Mount the shock.</td>
<td></td>
</tr>
</tbody>
</table>
### 6 Trouble Shooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air loss after long term storage or riding.</td>
<td>Normal effect. The shock loses about 1-2 bar per month.</td>
<td></td>
</tr>
<tr>
<td>Air loss after short time.</td>
<td>Damaged sealing or damaged air chamber.</td>
<td>Perform a small service (see chap. 5.5, page 26) or contact your dealer or a DT Swiss service center to solve this problem.</td>
</tr>
<tr>
<td>Tiny amounts of oil or grease on the outside.</td>
<td>Normal residue from installation or operation.</td>
<td></td>
</tr>
<tr>
<td>Tiny amounts of oil on the rebound wheel or on the end cap.</td>
<td>Normal residue from installation.</td>
<td>Clean the area around the rebound wheel and check again after a while. If this area is oily again, a full service is necessary.</td>
</tr>
<tr>
<td>Shock looses oil instantly.</td>
<td>Sealing of the piston rod is damaged.</td>
<td>Contact your local dealer or a DT Swiss service center to solve this problem.</td>
</tr>
<tr>
<td>Shock looses oil instantly around the rebound wheel.</td>
<td>O-ring inside the end cap is damaged.</td>
<td>Contact your dealer or a DT Swiss service center to solve this problem.</td>
</tr>
<tr>
<td>Shock makes slight flowing sound (effect gets worse when rebound is closed).</td>
<td>Normal damping effect of oil and bores.</td>
<td></td>
</tr>
<tr>
<td>The pressure indicated on the pressure gauge rises rapidly while pumping.</td>
<td>The pump is not screwed on properly or the pump is damaged.</td>
<td>Check the positioning of the pump on the shock or change the pump (the valve doesn’t open).</td>
</tr>
<tr>
<td>The shock can’t be inflated (the air instantly leaks out the shock again).</td>
<td>Incorrect handling of the pump or the pump is defect.</td>
<td>The valve inserts should be changed or retightened by your dealer or a DT Swiss service center.</td>
</tr>
<tr>
<td>Shock has noticeable play at the spherical bearings.</td>
<td>Check whether the correct mounting hardware was used or the screws are tightened correctly.  If necessary, the spherical bearings should be changed by your dealer or a DT Swiss service center.</td>
<td></td>
</tr>
<tr>
<td>Shock makes loud «smacking» sound.</td>
<td>Air inside the oil chamber.</td>
<td>Contact your dealer or a DT Swiss service center to solve this problem.</td>
</tr>
<tr>
<td>The lockout is not working properly.</td>
<td>The remote is not adjusted correctly.</td>
<td>Adjust the remote.</td>
</tr>
</tbody>
</table>

**Tiny amounts of oil on the rebound wheel or on the end cap.**
Normal residue from installation.

**Shock looses oil instantly.**
Sealing of the piston rod is damaged.

**Shock looses oil instantly around the rebound wheel.**
O-ring inside the end cap is damaged.

**Shock makes slight flowing sound (effect gets worse when rebound is closed).**
Normal damping effect of oil and bores.

**The pressure indicated on the pressure gauge rises rapidly while pumping.**
The pump is not screwed on properly or the pump is damaged.

**The shock can’t be inflated (the air instantly leaks out the shock again).**
Incorrect handling of the pump or the pump is defect.

**Shock has noticeable play at the spherical bearings.**
Check whether the correct mounting hardware was used or the screws are tightened correctly. If necessary, the spherical bearings should be changed by your dealer or a DT Swiss service center.

**Shock makes loud «smacking» sound.**
Air inside the oil chamber.

**The lockout is not working properly.**
The remote is not adjusted correctly.

**The sealing of the damping piston is worn or damaged.**
Contact your dealer or a DT Swiss service center to solve this problem.
<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Remote Lockout function works correctly, but the lever does not stay in the desired position.</td>
<td>The tension of the remote lockout cable is too high.</td>
<td>Turn the knurled cable adjusting screw clockwise, so that the cable tension is reduced. At the same time, check whether the lever now stays in the desired position.</td>
</tr>
<tr>
<td></td>
<td>The lever-index is worn out.</td>
<td>Change the remote lever or contact your dealer or a DT Swiss service center to solve this problem.</td>
</tr>
<tr>
<td>The Remote Lockout cable is defective.</td>
<td>This can have several causes for example: crashes, dirt, wear, etc.</td>
<td>Contact your dealer or a DT Swiss service center, to have the remote lockout cable replaced.</td>
</tr>
<tr>
<td>Noise while compressing the shock after about 10 mm of the stroke.</td>
<td>Normal sound of the air balance between the positive and the negative air chamber.</td>
<td></td>
</tr>
<tr>
<td>Shock squeaks while riding.</td>
<td>Wiper is dry</td>
<td>Air chamber service. A replacement of the wiper and the sealings is not not absolutely necessary</td>
</tr>
<tr>
<td>Shock gets hot while riding.</td>
<td>The shock can get very hot on long downhills. This does not affect the performance of the shock.</td>
<td></td>
</tr>
</tbody>
</table>

If you have further questions or your problem is not solved by this list, please contact your dealer or a DT Swiss service center.