OBSYS
42 FCV

Ref : 151916-E-001/2

SERVICE MANUAL

WWW.BOS-SUSPENSION.COM

DRIVEN BY PERFORMANCE

You have just purchased a product from BOS Suspension.
Welcome to our big family!

We have a common passion, MTB and it has led us to design neat and high-end products designed for your discipline: DH, Enduro & All Mountain.

With 20 years of experience in the research, development and production of innovative and efficient products, BOS products are the result of meticulous work and unique know-how. Our entire Toulouse team is proud to accompany you on this great adventure by providing you with the best of our technology, titled in multiple disciplines.

In order to get the most out of your suspensions, we invite you to carefully read the user manual, the assembly instructions and the advice for use in order to make the most of the potential of your new material.

Thank you for choosing BOS Suspension,
Have a good ride,

SUMMARY

WARRANTY

BOS SUSPENSION grants a contractual guarantee under the following conditions:

BOS guarantees its products against all defects in form and manufacturing faults for a period of one year from the date of original purchase. Proof of purchase will be required for any application of the guarantee. The warranty is granted to the original owner and is non-transferable. Wearing parts such as wiper seals, O-rings, guide rings, pins, bushings, screws and bolts are not covered by the warranty.

Application

The application of the warranty is subject to the laws in force in the country or state in which the original owner resides. If the local legislation differs from the warranty as described here, the warranty is deemed to be amendable to comply with it.

Limits

BOS SUSPENSION is not liable for direct, indirect, special, incidental or unforeseen damage resulting from the use of its products, subject to compliance with local legislation.

Exclusion

The guarantee does not apply in the following cases :

- Failure to comply with the installation instructions as described in the installation and adjustment manual.
- Failure to follow the disassembly/assembly instructions as described in the service manual.
- Modifications made to the product by the owner or a third party.
- Inappropriate use.
- Damage resulting from an accident, violent shock, fall, under any circumstances.
- Failure to comply with the instructions and maintenance intervals.
- Replacement of original parts with parts from manufacturers other than BOS SUSPENSION.
- Alteration of the serial numbers with the obvious aim of making it illegible.

Procedure

Regardless of where the product was purchased, the owner must contact an authorised BOS centre to apply for the guarantee. It is compulsory to produce the purchase invoice. Otherwise, the warranty will not apply. Sending the product is subject to the prior agreement of the BOS SUSPENSION after-sales service department. Outward carriage, dismantling and packaging costs are the responsibility of the customer. In the event of refusal to apply the guarantee, the packaging and return shipping costs are the responsibility of the customer.

SAFETY INSTRUCTIONS

GENERAL WARNINGS

The fork is an important element which has a direct influence on the behaviour of your bike.

This manual must be consulted before using the BOS shock absorber and during its entire service life. It is an integral part of the shock absorber.

If necessary, or for any service operation, please contact an authorized BOS Suspension centre or consult this manual.

After installation, test your vehicle at low speed to make sure that it works properly.

USE IN SAFETY

- When using BOS products, make sure you are in good physical shape and not under the influence of products that affect your lucidity and decision-making capacity (alcohol, drugs, etc.). If you are not able to ride, do not endanger yourself or any other person.

- The shock absorber has the effect of absorbing shocks, which can generate strong heat. Do not touch the shock absorber after use. Allow it to cool before attempting any work on it.

YOUR SAFETY FIRST

When working on a BOS suspension, please wear appropriate safety equipment such as apron, safety gloves and goggles.
When handling the suspension oil, please wear nitrile gloves and goggles.

CAUTION
The operations may impair your safety or cause damage to your suspension. Be sure to take note of these warnings

IMPORTANT INFORMATION
These indications are provided to enable you to perform the operations described in this manual and to optimize the performance of your suspension.

OPERATING RULES ON YOUR FORK

Before carrying out any operation, check that you have the necessary tools to perform it. Some tools will be specific to BOS fork, they will be indicated in this manual when using them and can be ordered directly on our website *www.bos-suspension.com*.

The disassembly of your shock implies the replacement of certain parts which cannot be reassembled worn without risk of malfunction of your product (O-rings, seals, wiper seals, rings...).

Before reassembly, clean the parts thoroughly of any impurities and check their state of wear. If this seems correct, you can reassemble your shock absorber, otherwise, change the worn parts.

ENVIRONNEMENT

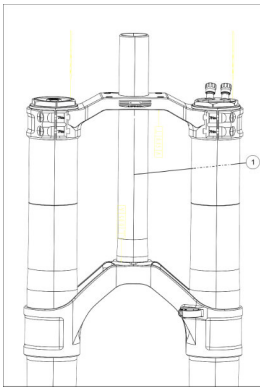
Mountain Bike is a wonderful sport that brings you a lot of happiness. However, it is potentially a source of environmental conflict with other people.

Responsible behaviour when using your bike automatically defuses problems and conflicts. Make sure that you comply with the legislation in force in your country regarding the disposal of used shock absorber oils and components.

To ensure the continued existence of mountain bike, make sure that you stay within the legal framework, are environmentally friendly and recognise the rights of others.

SERIAL NUMBER

The reference of your fork is engraved on the pivot of your fork (1). It is a sequence of 7 digits (0000000).



CLEANLINESS

When servicing your BOS suspension, make sure that you are working in conditions that will not affect performance:

- Work in a dust-free environment
- Work at a clean and organised workstation
- Use soft aluminium jaws to protect the equipment when using a vice.
- Do not scratch any surfaces when using tools.
- Clean the components when disassembling them
- Remove the sub-assemblies in the order of disassembly so that you can easily find out how to reassemble them together.
- Long sleeves are recommended or shaved arms.

If you carry out maintenance on your BOS suspension outside a workshop, you should at least :

- Avoid dust and air circulation around your work area
- A clean tarpaulin to be placed under the suspension on the floor
- A repair bracket to maintain the suspension
- An oil pan
- All the necessary tools listed below

TOOLS

Cleaning and safety :

- Safety goggles
- Clean cloths (lint-free)
- Soap (+ hot water)
- Nitrile gloves
- High pressure cleaner
- Apron
- Oil pan
- Oil fountain (optional)

Standard tools

- Dosing device
- Flat wrench 13 / 14 / 19/ 21mm
- Socket 10 / 13 / 21 mm
- Allen key 3/ 4 / 5mm
- Schrader valve removing tool
- Strap spanner

Specific tools

- 151916-O-015 : Top cap spanner
- 151916-O-016 : Compression block fork spanner
- 151916-O-044 : Half shell hydraulic cartridge tube
- GS-05/1 : BOS digital pump
- 151916-O-001 : Vise axis
- 150707-O-061 : Half shell air cartridge
- 43618-O-006 : Scraper seal insert
- 151916-O-045 : Seal cone

Service kit

- 151916-KREV-001 : Scraper seal maintenance kit
- 151916-KREV-002 : O-ring kit hydraulic side
- 151916-KREV-003 : Air side O-ring kit

Oils / Greases / Glues

- Oil : BIOIL/AMX1
- Loctite 243
- Degreaser
- White grease
- Copper Grease
- Universal grease

EXPLODED VIEW

CLEANING

Clean your fork with a washing machine if you have one available.

Otherwise, use the high pressure cleaner and finish cleaning with hot water and soap.

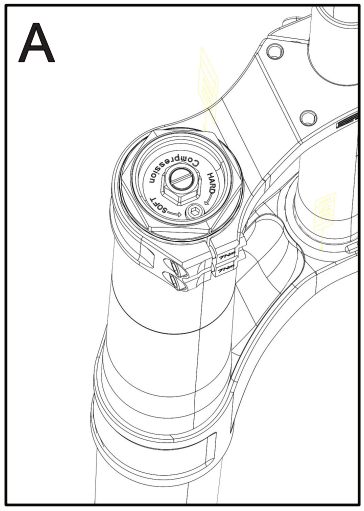
Required tools :
- Washing machine
- Soap

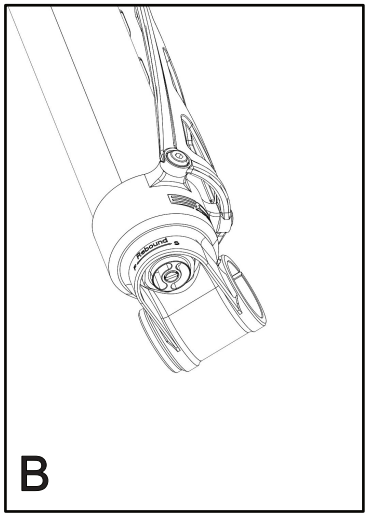
Absolutely prohibited: any aggressive product such as degreaser on joints and spherical bearing. If you use a high-pressure washer, never direct the jet directly onto the joints.

DISASSEMBLY

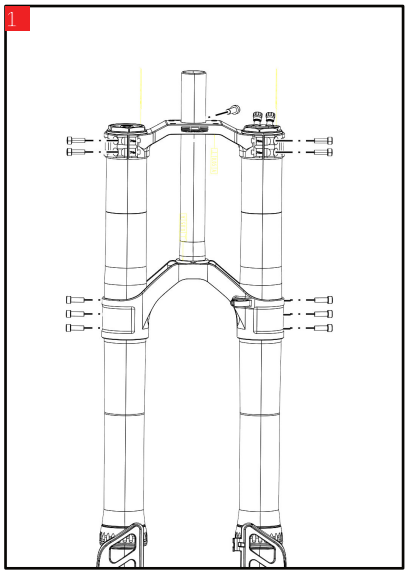
Before disassembly, be sure to record your low speed compression 2, high speed compression 4 (Figure A) /Rebound 1 (Figure B) settings in a notebook.

To do this, count the number of clicks to the fully closed position. Once you have noted the setting, unscrew your settings all the way down for operations on your fork. Also set the lever to the soft position.



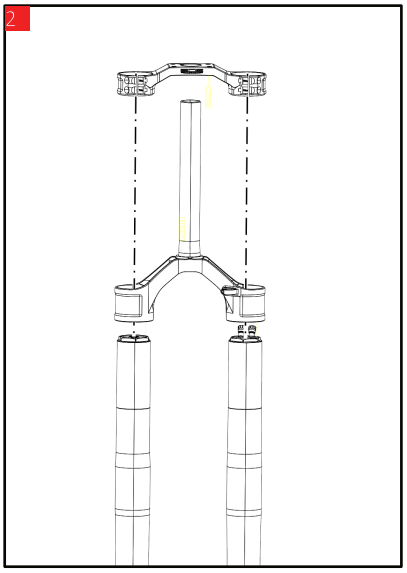


CROWN DISASSEMBLY



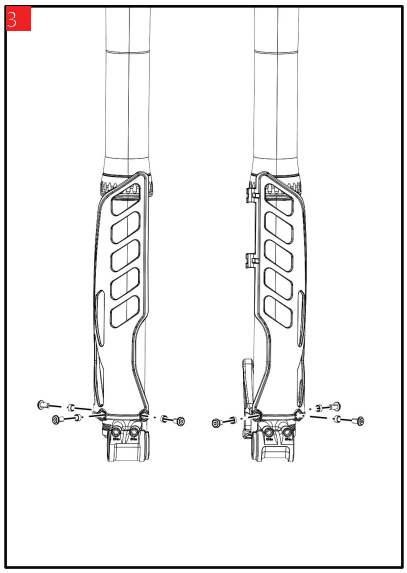
- Unscrew the fork crown bolts

5mm allen key

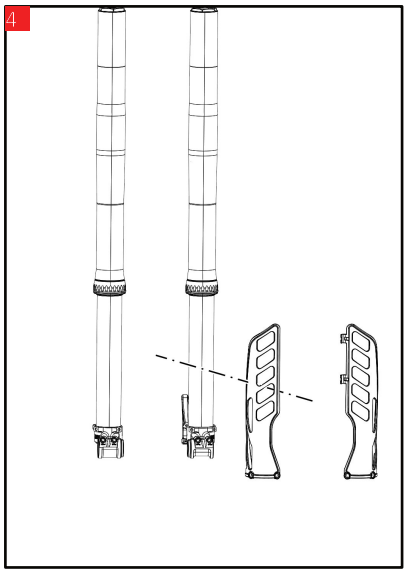


- Remove the upper and lower crown from the fork

DISASSEMBLY



- Remove the screws from the fork tube covers and the centring sleeves

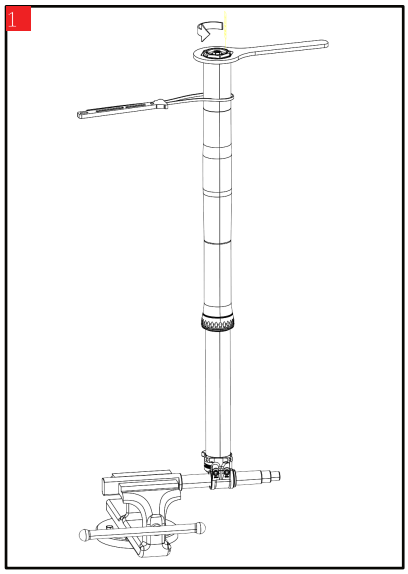


- Remove the plastic covers from the fork

Be careful not to lose the centring sleeves during disassembly

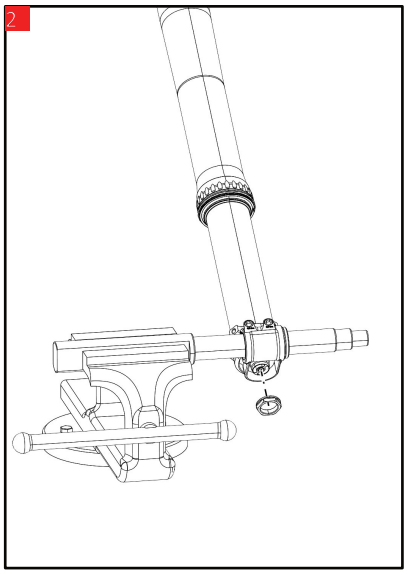
3mm allen key

SCRAPER SEALS / BUSHINGS DISASSEMBLY



- Place the fork arm on the vice pin
- Hold the sleeve with a strap key then unscrew the top cap with the cap spanner

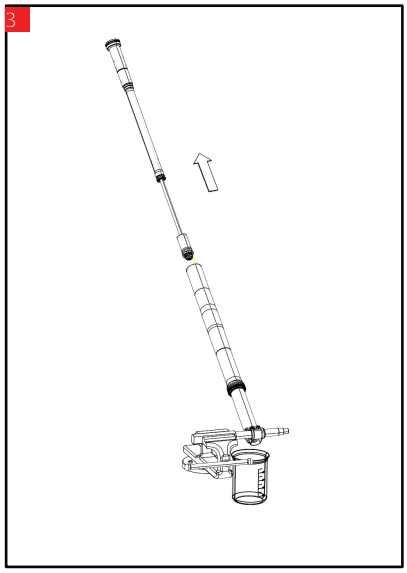
- 151916-O-015 : Top cap spanner
- Strap key
- 151916-O-001 : Axle vice



- Unscrew the lower cartridge nut

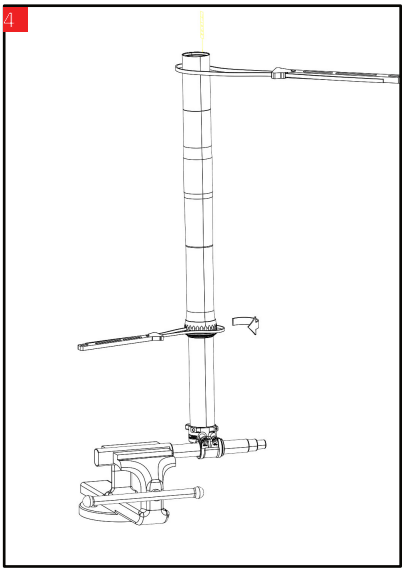
21mm Socket

DISASSEMBLY



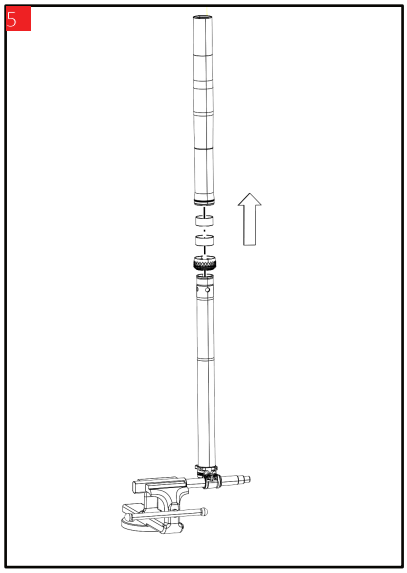
- Place a container under the fork arm
- Gently remove the cartridge from the fork tube

Container

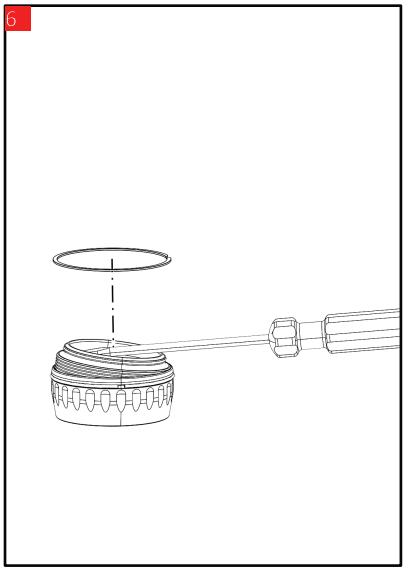


- Maintenir le fourreau avec une clé sangle
- A l'aide d'une deuxième clé sangle dévisser le porte joint du fourreau

Strap key



- Remove the outertube from the stanchion
- Slightly spread the mobile ring and remove it
- Then remove the fixed ring and the seal holder

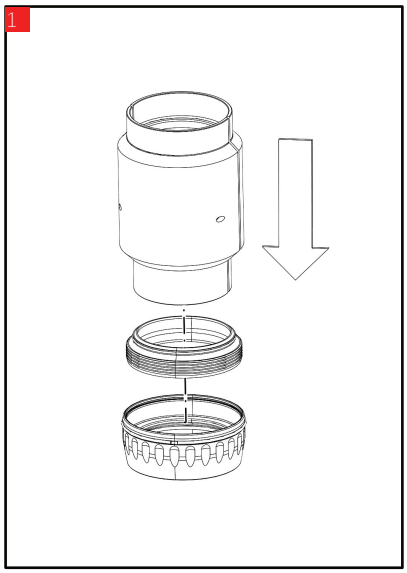


- Remove the locking ring from the seal
- Remove the seal by tilting with a flat screwdriver

Flat screwdriver

SEALS / BUSHINGS ASSEMBLY

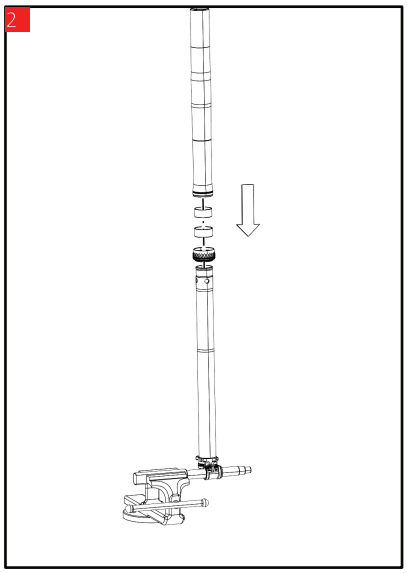
1



- Position the seal in the seal holder
- Press with the tool until it stops
- Place the retaining ring

43618-O-006 : Seal press-fit tool

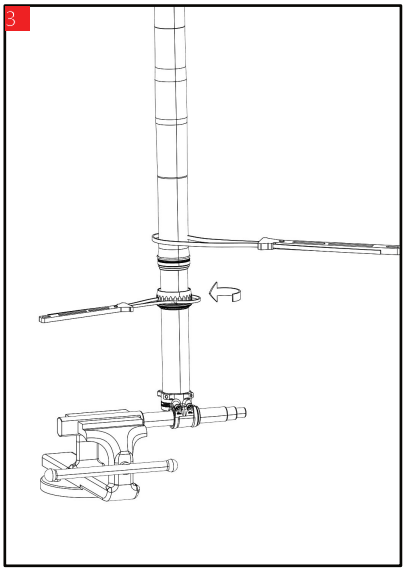
2



- Place the cone on the stanchion
- Lubricate the cone with Bi'oil
- Insert the seal holder (make sure that the seal lip is not turned over)
- Insert the new fixed ring (lubricate)
- Insert the new mobile ring (lubricate)
- Insert the outertube

151916-O-045 : Seal cone

3

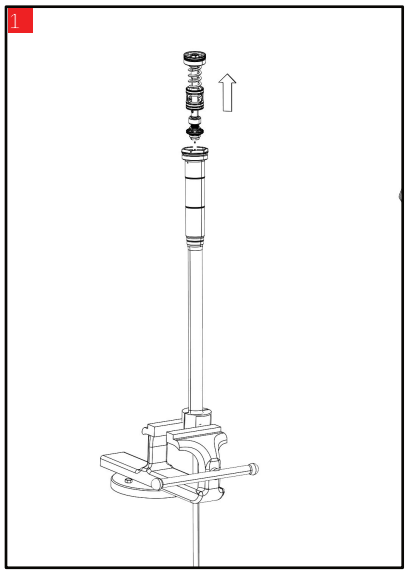


- Apply a small amount of Loctite 243 to the thread of the outertube
- Screw the seal holder
- Lock it in place

Strap key

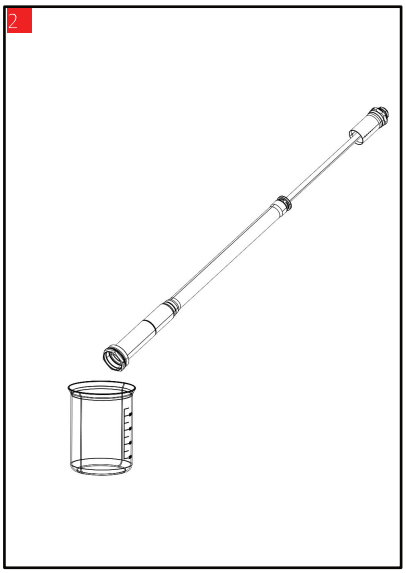
DISASSEMBLY

HYDRAULIC CARTRIDGE DISASSEMBLY

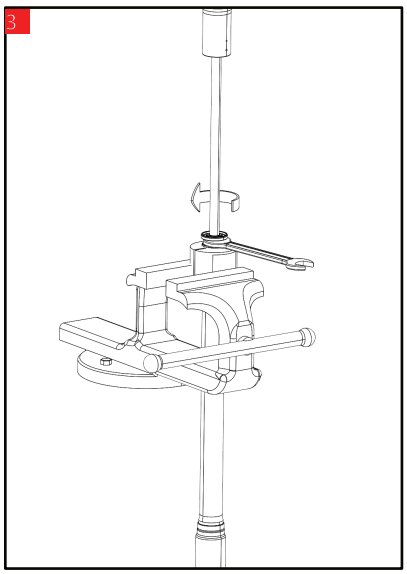


- Hold the cartridge in the vice with half-shells
- Unscrew the compression block
- Carefully remove it

- 13mm Socket
- 151916-O-044 : Cartridge half shells

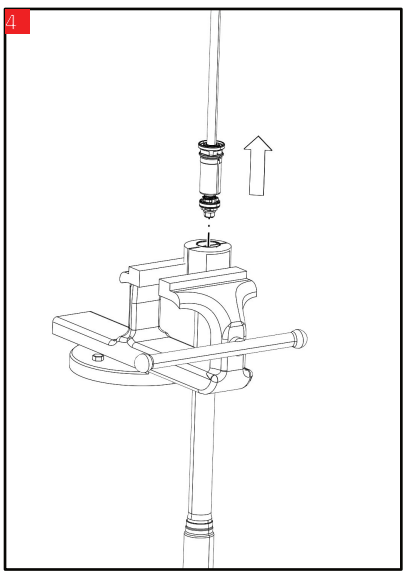


- Empty the cartridge contents into a container



- Unscrew the rod guide with an open-end spanner (do not hesitate to warm up before loosening)

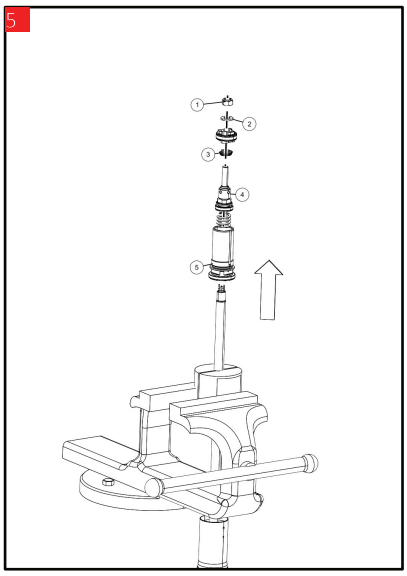
19mm flat spanner



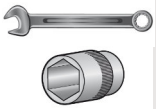
- Remove the hydraulic rod from the cartridge

DISASSEMBLY

5



- Unscrew the setting nut
- Use a thin screwdriver, position it at the end of the rod and then slide the piston setting assembly onto it (so as not to change the order of the parts)
- Unscrew the piston holder
- Remove the rebound spring and the rod guide

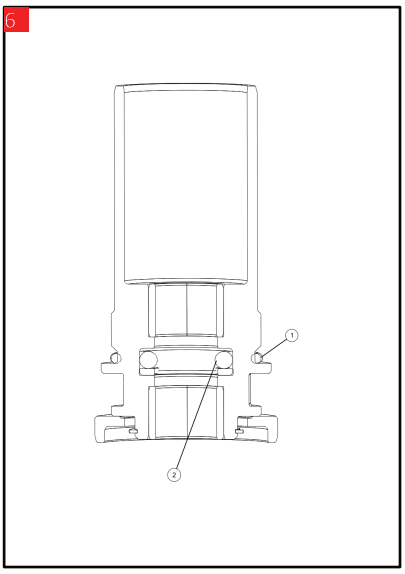


13mm Flat spanner

10mm Socket

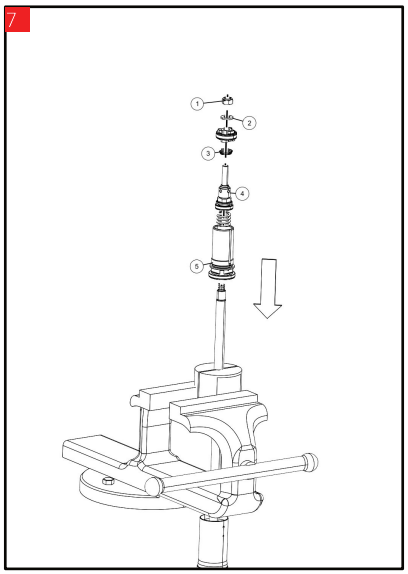
150707-O-058 : D10 half shells

6

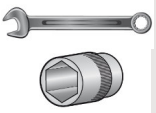


- Change rod guide seals 1 and 2
- Apply white grease to each of them

7



- Gently insert the rod guide
- Insert the rebound spring
- Apply Loctite 2701 to the thread of the piston holder and screw it into the rod at 8Nm
- Insert spring 3 and then the piston setting assembly in the correct order
- Tighten the rod nut to 3Nm



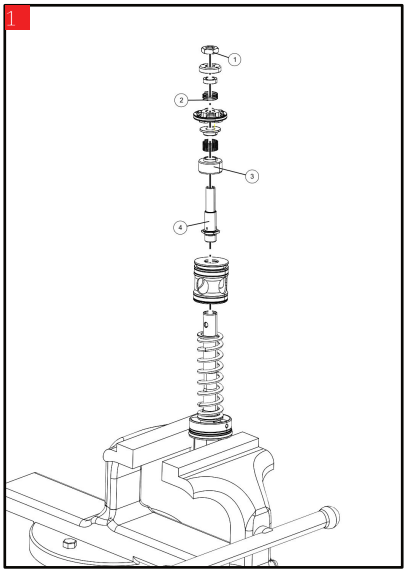
13mm Flat spanner

10mm Socket

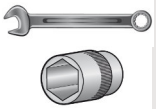
DISASSEMBLY

COMPRESSION BLOCK DISASSEMBLY

1



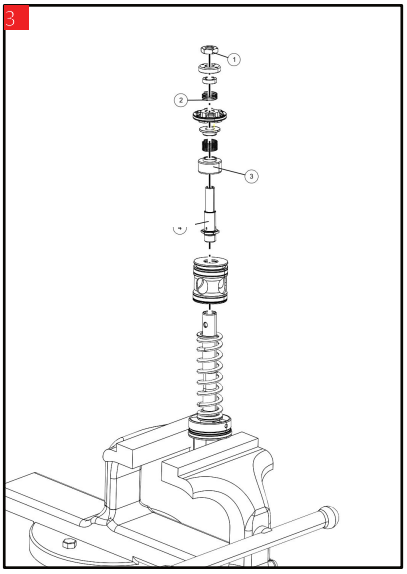
- Hold the compression block on a 13mm socket in a vice
- Unscrew the setting nut
- Use a fine screwdriver, position it at the end of the rod and then slide the piston setting assembly onto it (so as not to change the order of the parts)
- Heat and then unscrew the piston holder using a 14 mm open-end spanner
- Remove the floating piston



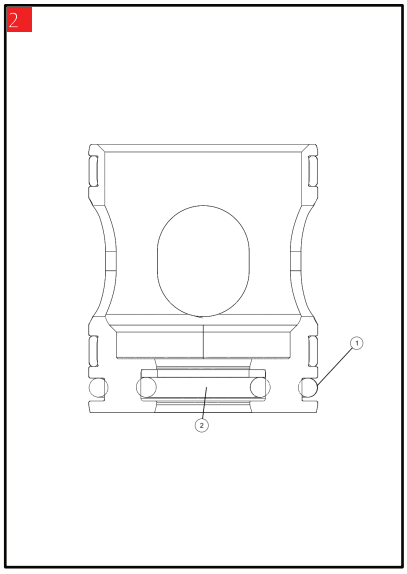
14mm Flat spanner

13mm Socket

3

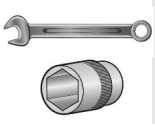


2



- Change rod guide seals 1 and 2
- Apply white grease to each of them

- Insert the floating piston onto the rod
- Apply Loctite 243 to the piston holder threads and tighten to 10Nm
- Insert the piston setting assembly onto the rod
- Before screwing on the rod nut, check the movement of the refill valve and spring 2 on the centring sleeve
- Apply Loctite 243 to the thread and tighten the stem nut to 3Nm

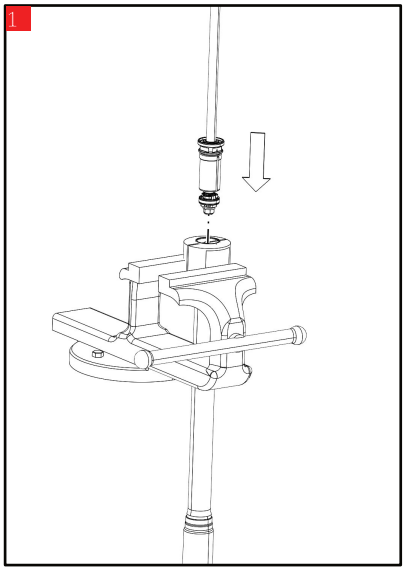


14mm Flat spanner

13mm Socket

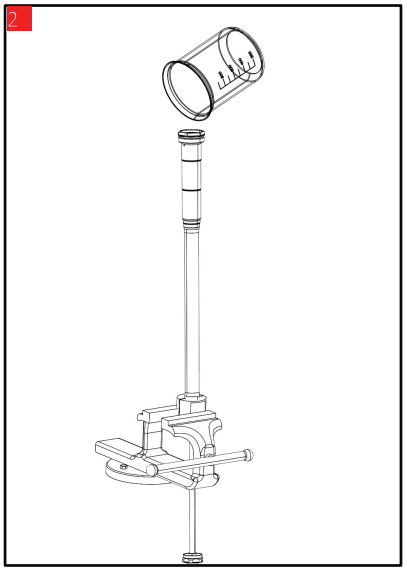
DISASSEMBLY

HYDRAULIC CARTRIDGE BLEEDING

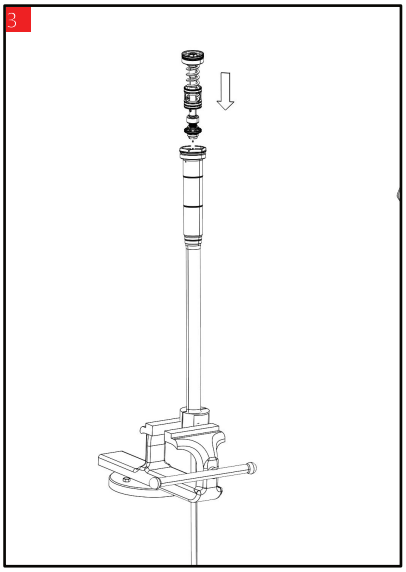


- Insert the rebound rod into the cartridge tube
- Apply white grease to the outer seal of the rod guide
- Apply Loctite 243 to the threads of the rod guide
- Tighten to 10Nm

- 19mm Flat spanner
- 151916-O-044 : Cartridge hall-shells

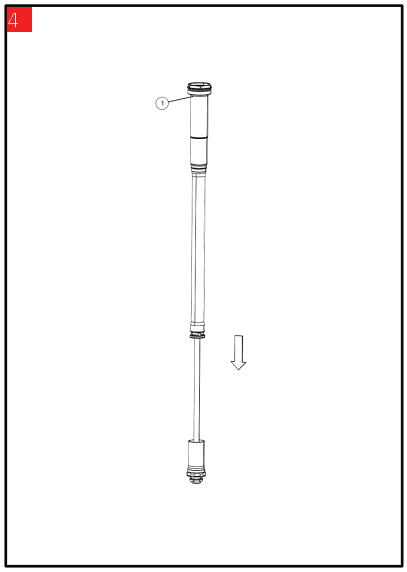


- Insert AMX1 oil into the cartridge
- Actuate the cartridge so that the air is expelled (bleed)
- Check the height of the air in the cartridge, with the rod extended, it should be 85mm



- Gently insert the compression block into the cartridge
- Screw it in at 10Nm

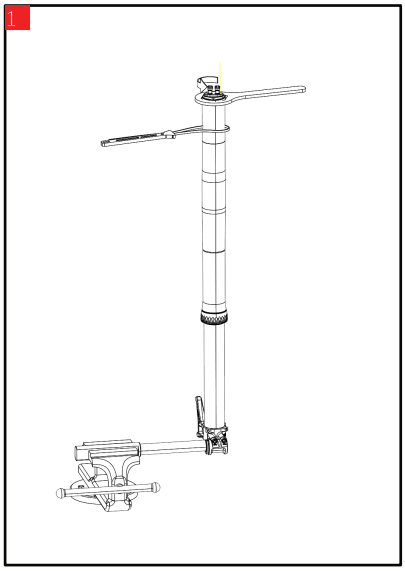
Be careful not to cut the compression block cap O-ring (apply white grease)



- Gently push the rod all the way in
- Empty the excess oil from hole 1 of the tank

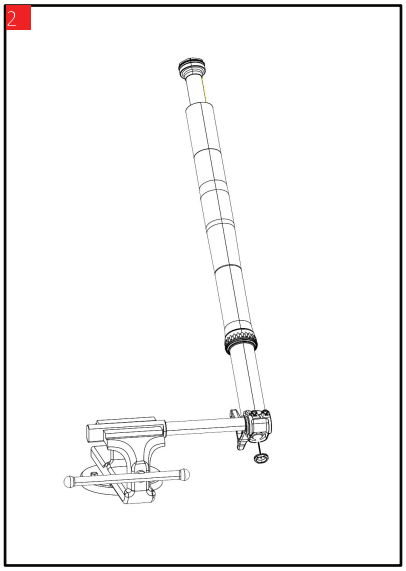
DISASSEMBLY

AIR CARTRIDGE DISASSEMBLY



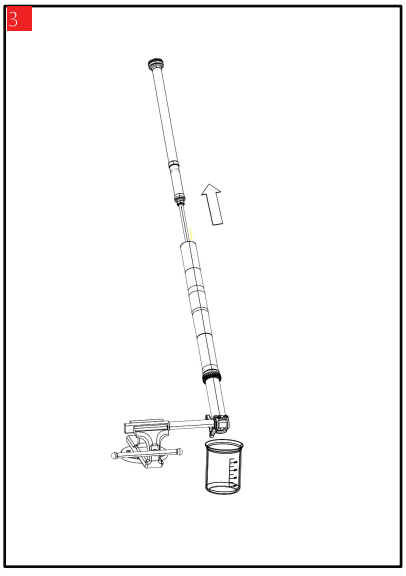
- Place the fork arm on the vice pin
- Hold the fork with a strap spanner and unscrew the top cap with the cap spanner

- 151916-O-015 : Top cap spanner
- Strap spanner
- 151916-O-001 : Axle vice



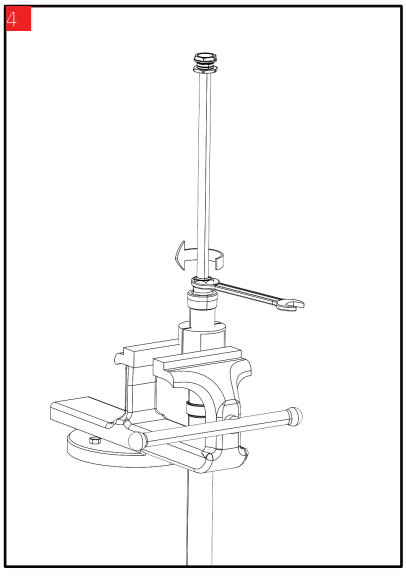
- Unscrew the lower cartridge nut

21mm Socket



- Place a container under the fork arm
- Gently remove the cartridge from the fork tube

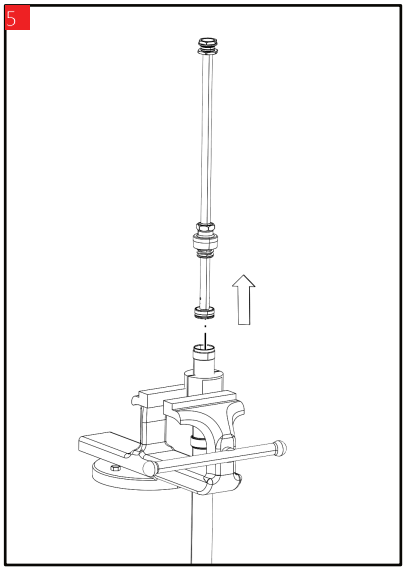
Container



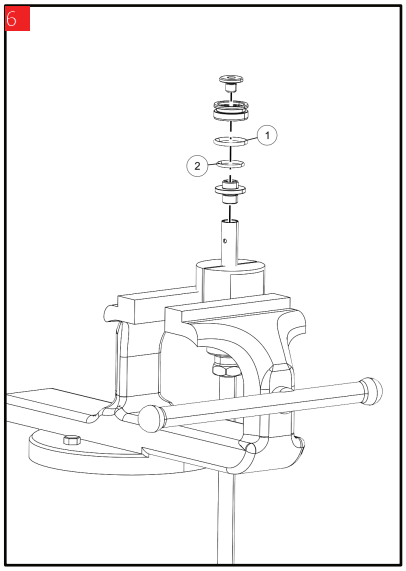
- Unscrew the rod guide with an open-end spanner (do not hesitate to warm up before loosening)

- 22mm Flat spanner
- 150707-O-061 : Cartridge half-shells

DISASSEMBLY

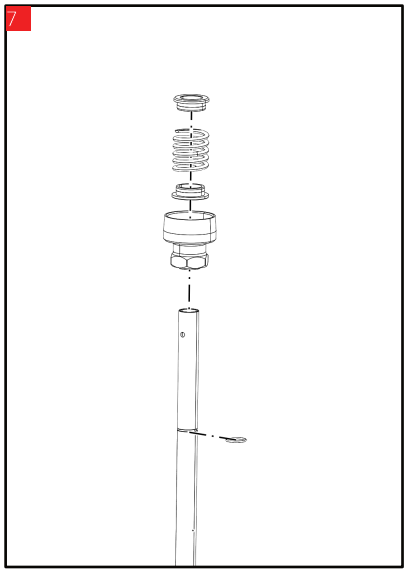


- Remove the air rod from the cartridge

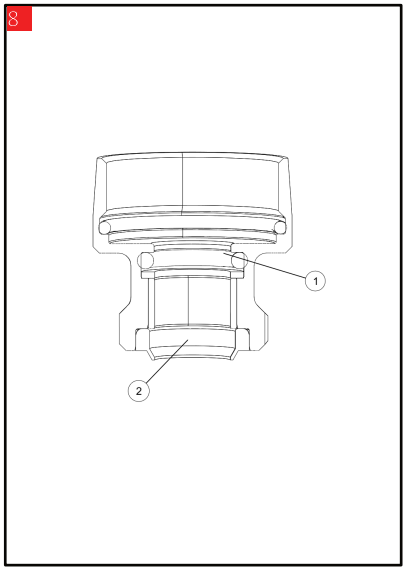


- Unscrew the air piston screw
- Remove the air piston
- Unscrew the piston holder (heat)

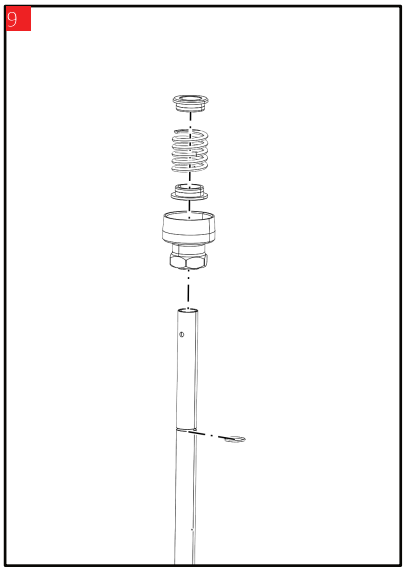
- 4 / 6mm allen key
- 150707-O-059 : D12 half-shells



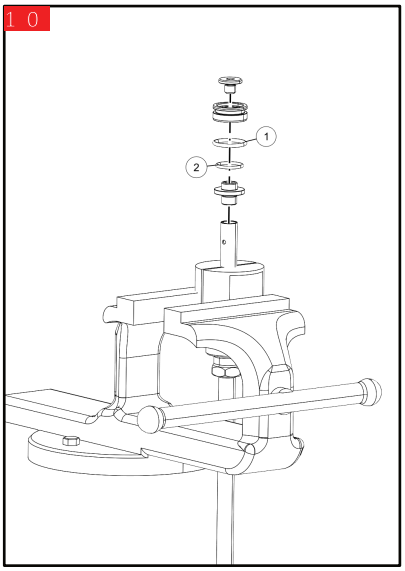
- Lower the rod guide and rebound spring assembly to release the snap ring
- Remove the snap ring
- Remove the rebound spring and rod guide



- Change the seals 1 and 2 of the rod guide
- Apply universal grease to them



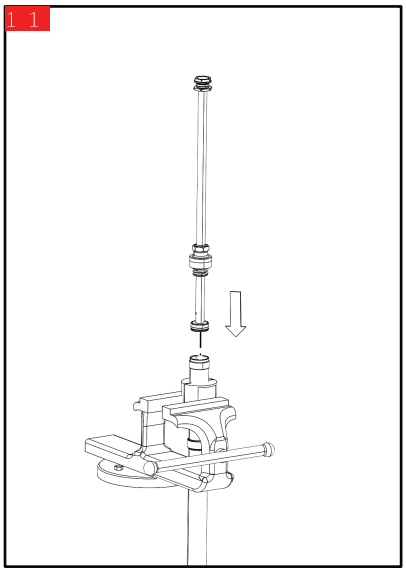
- Gently insert the rod guide and then the rebound spring assembly
- Clip the snap ring onto the rod



- Apply Loctite 2701 to the thread of the piston holder, tighten to 10Nm
- Place new seal 2, piston
- Apply Loctite 243 to piston screw, tighten to 7Nm
- Apply universal grease to the seals

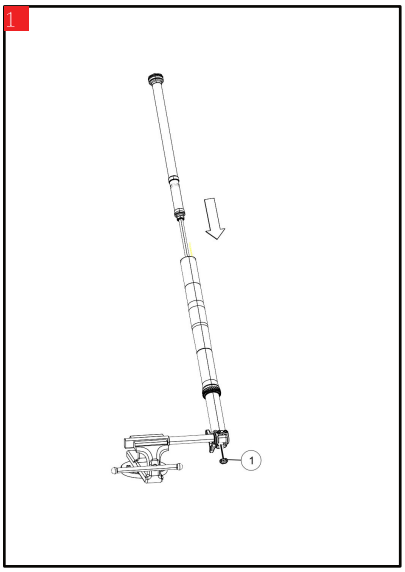
- 4 / 6mm allen key
- 150707-O-059 : D12 half-shells

AIR CARTRIDGE REASSEMBLY



- Insert the air rod into the cartridge
- Apply Loctite 243 to the rod guide threads, torque 15Nm

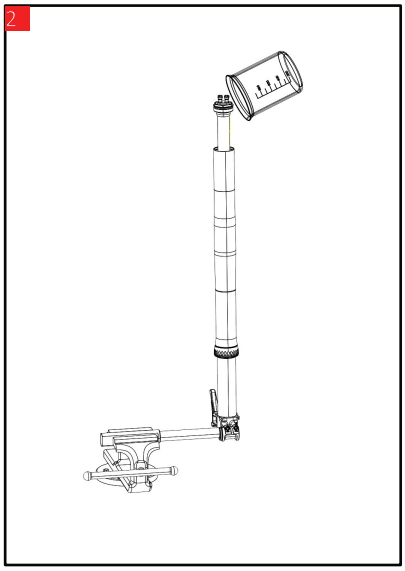
21mm Flat spanner



- Insert the air cartridge into the fork tube
- Apply copper grease to the lower nut thread and tighten to 10Nm

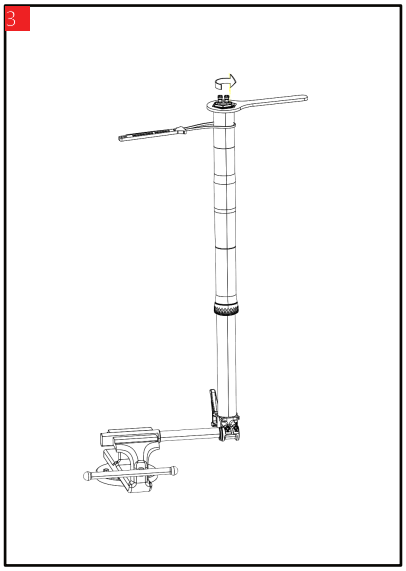
21mm Socket

ASSEMBLY



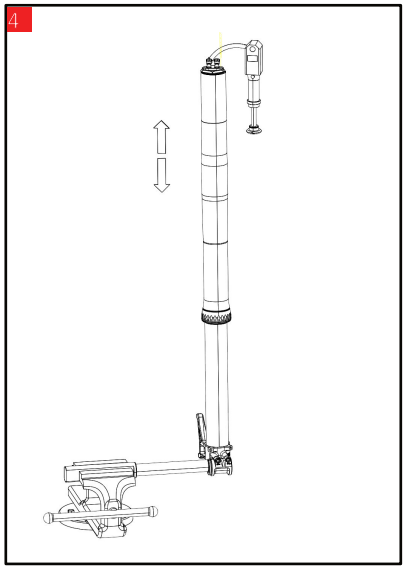
- Insert 50ml of Bi'oil in the fork tube

Bi'oil oil



- Hold the outertube with a strap spanner and screw on the cap
- Tighten to 10Nm

- 151916-O-015 : Top cap key
- Strap key
- 151916-O-001 : Axle vice

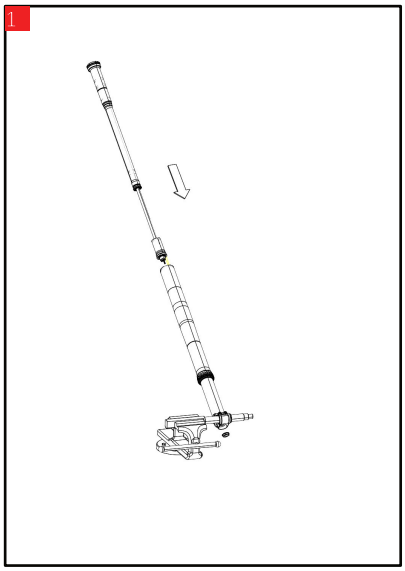


- Inflate the fork to the initial pressure by balancing the chambers

It is important to systematically balance the pressure of the air chambers during each pressure adjustment to ensure optimal performance. To do this, slowly compress and release your fork over the first 10 mm of travel about ten times.

HYDRAULIC CARTRIDGE REASSEMBLY

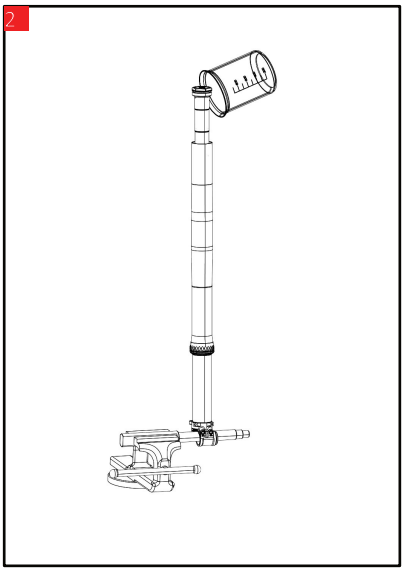
1



- Insert the air cartridge into the fork tube
- Apply copper grease to the lower nut thread and tighten to 10Nm

21mm Socket

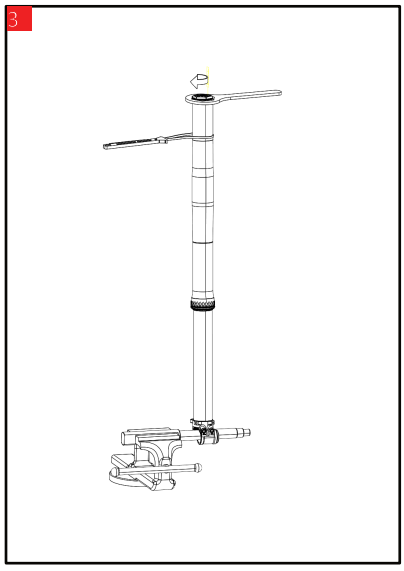
2



- Insert 150ml of Bi'oil in the fork tube

Bi'oil Oil

3

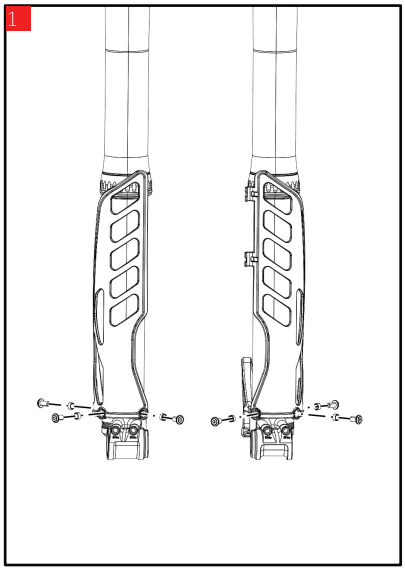


- Hold the outertube with a strap spanner and screw on the cap
- Tighten to 10Nm

- 151916-O-015 : Top cap key
- Strap key
- 151916-O-001 : Axle vice

ACCESSORIES REASSEMBLY

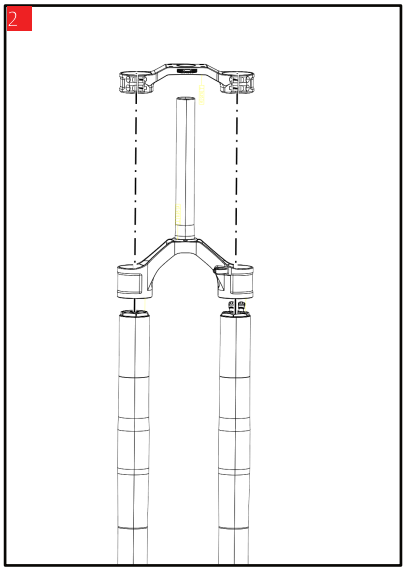
1



- Place the fork guards
- Position the centring sleeves
- Apply Loctite 243 to the bolts and screw them in by hand

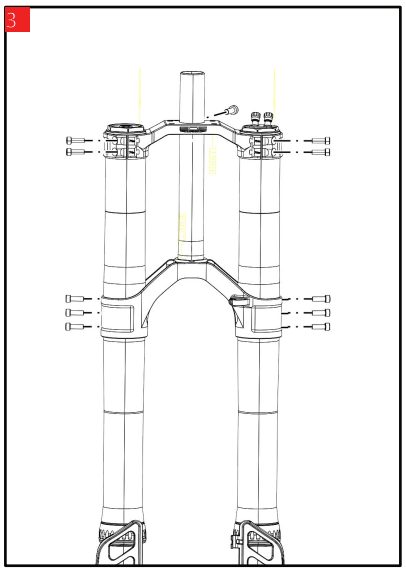
4mm Allen key

2



- Insert the lower crown and then the upper one at the desired height

3

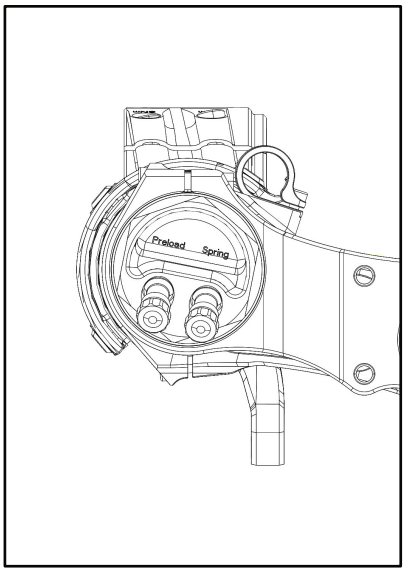


- Screw in the lower crown screws at 6Nm
- Tighten upper crown screws to 7Nm
- Tighten steertube screw to 8Nm

PRESSURE TABLE

Rider weight (Kg/lbs)	60/132	65/143	70/154	75/165	80/176	85/187	95/209	105/231
Pressure (PSI) OBSYS	160	169	179	187	195	202	216	226

Minimum operating pressure: 135 PSI
Maximum operating pressure: 250 PSI



Spring Preload

The preload can be set via the "Preload" valve and can be adjusted independently of the "Spring" pressure.

Adjustment range: 0 to 500 gr.

Do not exceed 500gr as oil may leak from the wiper seal

Congratulations, you have just completed the general maintenance of your BOS fork.

Ride slowly at first to ensure that your bike and your BOS fork are working properly.

Thank you again for choosing BOS Suspension products.

SETTING TABLE

Land type	COMPRESSION (clicks)	REBOUND (clicks)	AIR PRESSURE (PSI)

SERVICE ROUTINE

Land type	DATE (DD/MM/YY)	HOURS/KM	REMARKS

4 Impasse Léonce Couture F 31200 Toulouse, FRANCE
+33 (0)5 34 25 33 66
sales@bos-suspension.com
www.bos-suspension.com