

## SERVICE MANUAL –C22 CALIPER

V2024\_02

### CONTENT

1. GENERAL INFORMATION
2. SAFETY
3. TOOLS
4. SERVICE C22 CALIPER

#### 1. General information

1. Read the manual completely before using the products and follow the instructions contained in these instructions when installing, using and maintaining the product in order to avoid personal injury and damage to property.
2. The installation and maintenance of Trickstuff products require a basic knowledge of handling bicycle components and should only be performed by qualified bicycle mechanics. During installation or maintenance, clean working conditions must be ensured so that dirt entry into the brake systems is avoided.
3. If any of the instructions in this manual are unclear, do not proceed with installation or maintenance. Contact your local Trickstuff dealer or the Trickstuff support-team.

#### 2. Safety

The installation, use and maintenance of Trickstuff products requires that you have read and understood the following safety instructions.

##### 1. General safety instructions

- Always follow the instructions in the manual when working on Trickstuff products.
- We recommend for the use of Trickstuff brakes only Trickstuff products.
- When working on the system, pay attention to appropriate personal protective equipment such as gloves and safety goggles.
- Trickstuff products are to be used exclusively in accordance with their intended use. Otherwise the user assumes the responsibility.



##### Warning!

**Improper installation, use and maintenance of components pose a considerable risk and can lead to accidents with serious injuries including death.**

##### 2. Brake pads and brake discs

- Visually inspect the brake pads and rotors before each ride:
  - Worn brake pads and/or brake discs can lead to sudden brake failure.
  - Lubricants such as oil or grease on the brake pad or brake disc can limit the effectiveness of the brake.
  - Corrosion can cause the friction material to detach from the backing plate, resulting in brake failure. Replace brake pads that show signs of rust immediately.
    - Brake pads should not be under a minimum thickness of 0.5mm.

- Brake discs must not show any deformations or cracks and must be mounted in the correct direction of rotation.
- Brake discs must have a minimum thickness of 1.6mm.
- In case of damage to the brake pads and/or brake discs, stop using them immediately and replace them with new brake pads or brake discs.
- Brake pads may only be used with a compatible caliper.
- Before working on brake calipers or brake discs, make sure that they are no longer hot and that the brake discs are no longer spinning. Heat and rotation can cause burns, bruises, cuts and other injuries.
- When installing brake pads, only use the original pad spring, pad retaining bolt and safety clip.
- Check the functionality of the brake after mounting or replacement of brake pads and/or brake discs.

### 3. Brake



#### **Warning!**

**If the brake is used with deficiencies it can fail and lead to accidents with serious injuries including death.**

- Check the brake before and after each use of your bike and check for damages.
- If there is damage or signs of damage, the brakes must not be used. If in doubt, contact your local Trickstuff dealer or the Trickstuff support-team.
- If the brake leaks oil under high or low pressure, do not continue riding and contact the Trickstuff support-team immediately.
- The brake must be compatible with all parts of the bike. The maximum system weight of the brake must not be exceeded.
- Trickstuff brakes are only as good as the pilot who uses them. Proper braking technique is essential. Improper braking can lead to accidents with serious injuries.
  - Permanent braking should be avoided. When braking, do not drag the brake steadily, but brake in bursts if the ground will allow. Continuous heat input from a permanently dragging brake can cause the brake to overheat, preventing sudden braking and thus leading to serious accidents with risk of injury. Likewise, permanent braking on changing ground conditions such as rolling gravel, wet ground, loam, rocks, road markings, etc. can cause loss of control.
  - Excessive pulling of the front brake can lead to rollover.

### 3. Tools

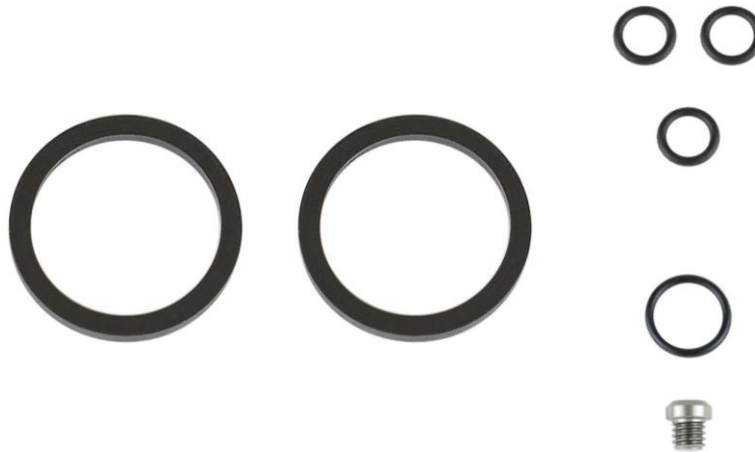
- TX10 key
- TX30 key
- HEX2.5mm key
- SW8 open-end-wrench
- 9mm socket
- Torque wrench (15Nm)
- Air compressor (optional)
- Old piece of inner tube (optional)
- Shop-towels
- Toothpick
- Medium strength thread locker (e.g. Loctite 243)
- Assembly grease (e.g. Interflon assembly grease)



## Service Kits:

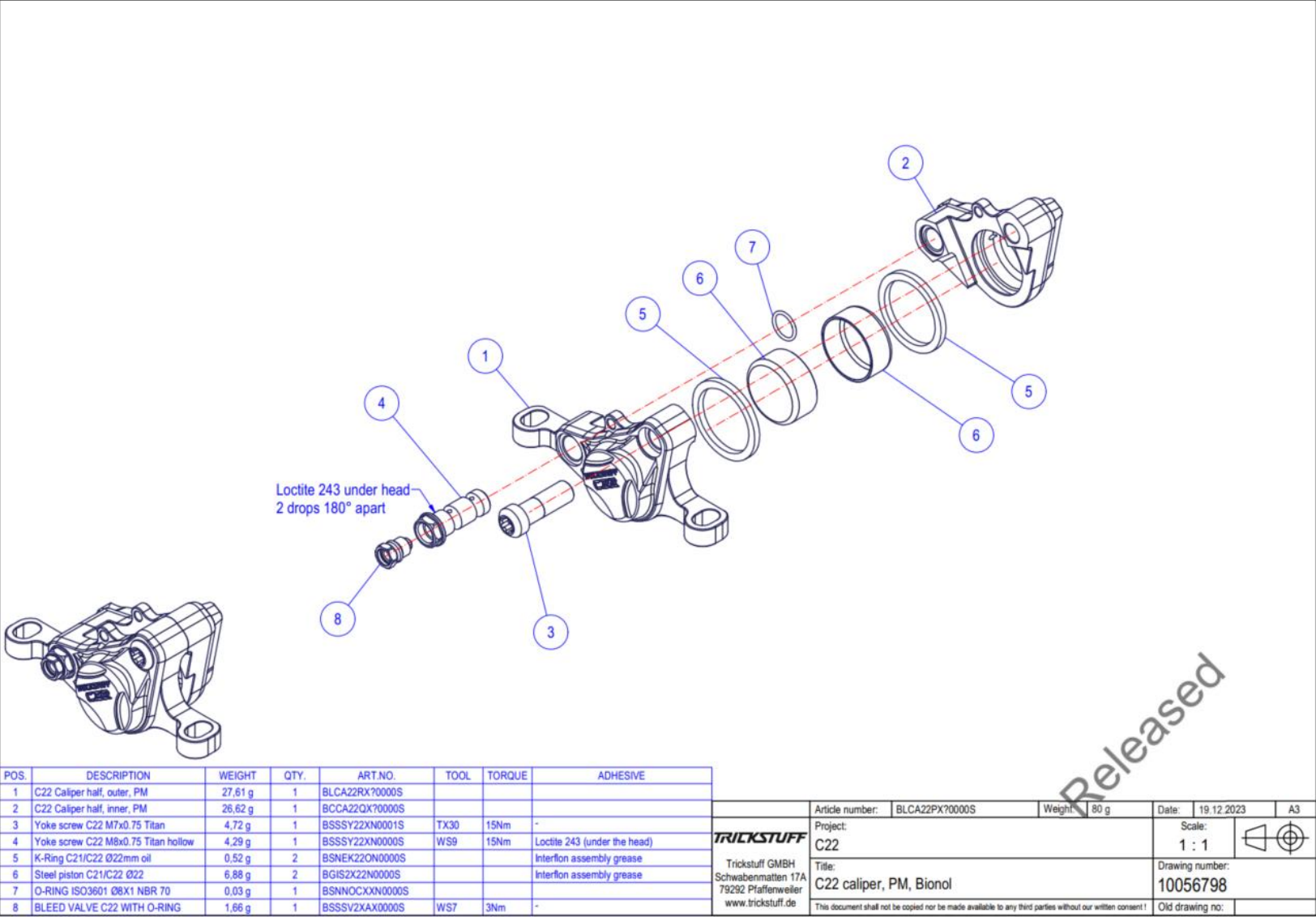
To service the brake caliper, one service kit is required for each brake caliper (i.e. two kits for one set of brakes).

- Regular service, without pistons: KIT SEALS C22 CALIPER OIL ASM



- Extended service including replacement of pistons (e.g. when damaged):  
KIT SEALS & PISTONS C22 CALIPER OIL ASM







Overview M4-/M5 connectors:

	Caliper					Pump	
Product	C21	C22	C41	C42	MXA	DIRETTISSIMA/ MAXIMA	PICCOLA
Connector	M5	M4	M5	M4	M5	M4	M5



You will also need the appropriate tools to remove the brake from the bike in accordance with the operating instructions.

Note: Trickstuff brakes are designed for use with organic, biodegradable Trickstuff "Bionol" oil. Never use DOT brake fluids (e.g. DOT4/5/5.1/etc.), otherwise the seals of the brake system will be damaged and the brake can no longer be used without an inspection.

Note: Only use new Bionol. Drained Bionol should not be reused.

## 4. Service brake caliper

The following service manual includes service for the whole brake caliper, its disassembly and exchange of all seals. Steps for Postmount and Flatmount configuration are identical.

### Preparation

1. Fix your bike in a bike stand and dismount the wheels.
2. Remove the brake caliper from your bike using adequate tools.
3. Remove the brake pads from your caliper using a HEX2.5mm key.



4. Put the Trickstuff Triple-B-Tool or an 8mm wrench in the disc groove and pump out the caliper pistons until they contact the tool. This makes removal of the caliper pistons easier later on.





5. Use a SW7mm open-end-wrench to separate the brake hose from the caliper. Soak up leaking oil with a shop towel. Replace the O-ring on the M6 fitting and discard the used one.

Note: Please dispose of the to-be-replaced parts according to your local recycling guidelines.



## Disassembly of the brake caliper

1. Remove the bleed valve with a SW7mm open-end-wrench and replace the O-ring.





2. Remove both caliper bolts using a TX30 key and a 9mm socket. To avoid slipping try as shown in the images below.



3. Discard the caliper half seal O-ring and remove residue of Loctite from the hollow M8-bolt.





4. Lay the now separated caliper halves with piston bores facing down on a flat surface, preferably wood. Press them down flat and use compressed air to push the caliper pistons out of the caliper halves. Use a plastic nozzle to avoid scratching the caliper halves. Alternatively you can use an old piece of rubber innertube with a hole to avoid contact between your steel nozzle and the aluminium brake calipers. Induce the compressed air from the M6-bore (brake hose connector, inner half), resp. M8-bore (caliper screw with bleed valve). In some cases the air pressure needs to be maintained for a few seconds.

Note: When working with compressed air, always use personal safety measures like ear-protection and safety goggles.

In case you don't have access to an air compressor, you can alternatively use pliers to carefully remove the pistons. This process damages the piston surface and all pistons need to be replaced after removal. In this case, purchase the "Seals and Pistons" kit.







5. Remove the caliper pistons and soak up leaking oil with a shop towel. Visually inspect your caliper pistons for surface damage (scratches/tool marks/deformation) and replace them if you find them damaged.
6. Next, remove and discard the K-rings from the calipers. Use a toothpick or a similar soft tool to avoid scratching sealing surfaces.



7. Clean the caliper halves with warm water and a liberal amount of washing-up liquid. Works best in combination with a soft brush and a lot of clean water for rinsing afterwards. Before assembly, make sure everything is properly dried and no water residue remains. You can dry the caliper halves with compressed air or by putting them on a household radiator for some time.

## Assembly of the brake caliper

1. First mount the K-rings. Apply assembly grease (e.g. Interflon Assembly Grease) to the K-rings before installation. The amount of grease should be similar to the amount shown in the image below.





2. Install the K-rings into the grooves. Check for correct seating and that they are not twisted.



3. Next mount the caliper pistons. Put them on top of the bore onto the K-ring and turn them  $\frac{1}{2}$  turn manually to hereby lube the circumference. Then push them in manually until they stop. If you encounter higher resistance, take the piston back out and confirm correct seating of the K-ring. Then start the piston installation over again.



4. Remove excess grease with a shop towel.
5. Install a new caliper half seal. Check the sealing surfaces for damages and cleanliness.





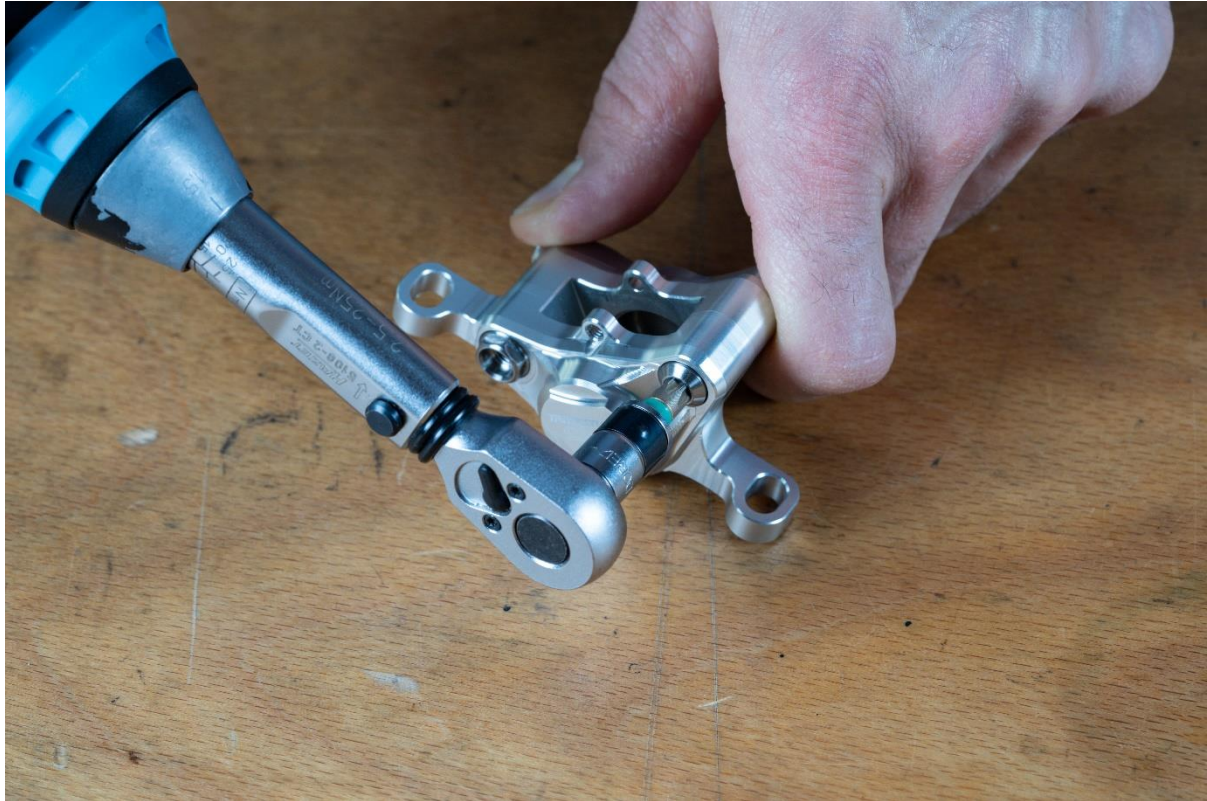
- Put two drops of medium strength threadlocker (e.g. Loctite 243, see image below for correct amount) on the transition between bolt head and shaft.





- Put both caliper halves together and install the caliper bolts with a TX30 key and a 9mm socket. When assembling the caliper halves, confirm the correct position of the caliper half seal.

Note: It helps to first snug the bolts up slightly to then properly align the caliper halves. You can use a soft face plastic hammer to align them and increase the torque step by step. Final torque-down happens in the next step.



8. Use a calibrated torque wrench with a TX30 key and 9mm socket, each with 15Nm to torque down the caliper bolts.



9. Use a SW7mm open-end-wrench to install the bleed valve with a new O-ring back into the hollow caliper bolt. Correct torquing happens during bleeding procedure later on.
10. Connect the brake caliper back to the brake hose using a SW7mm open-end-wrench and 3Nm.



11. Bleed the brake system according to the respective manual.
12. Install the brake pads and the pad retaining bolt with the safety clip. Mount the caliper back on the bike and properly align it to the disc.

Technical changes, errors or misprints excepted.