


## TRICKSTUFF C21 Brake Calipers



# TRICKSTUFF C21 Brake Calipers Installation Guide

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# TRICKSTUFF

TRICKSTUFF C21 Brake Calipers



## Product Information

### Specifications

- **Model:** V2024\_02
- **Product:** Trickstuff Brake Pump
- **Connectors:** M4, M5
- **Compatible with:** C21, C22, C41, C42, MXA
- **Designed for use with** Trickstuff Bionol oil

## Product Usage Instructions

### Safety

The installation, use, and maintenance of Trickstuff products require careful attention to safety. Failure to follow safety instructions can lead to accidents with serious injuries or death.

- Brake pads should not be under a minimum thickness of 0.5mm.
- Brake discs must not show any deformations or cracks.
- Use only organic, biodegradable Trickstuff Bionol oil. Do not use DOT brake fluids.

### Service Brake Pump

1. Secure your bike in a bike stand and remove the wheels.
2. Push back the caliper pistons using the appropriate tool.
3. Remove the brake pump from the handlebar with clamps and interfaces.
4. Disconnect the brake hose using an 8mm open-end wrench.

### Disassembly of the Brake Pump

1. Remove the dial for tool-free reach adjustment.
2. Remove both pivot bolts (upper and lower).

3. Remove the lever blade from the piston rod.
4. Replace the circlip used and remove the pump piston carefully.

## **FAQ**

### **Q: Can I reuse drained Bionol oil?**

**A:** No, drained Bionol oil should not be reused. Always use new Bionol to maintain brake system integrity.

### **Q: What tools are needed for servicing the brake pump?**

**A:** Tools required include open-end wrenches (7mm, 8mm), HEX keys (2mm, 3mm), circlip pliers, and appropriate cleaning materials.

## **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 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.

## **Safety**

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

### **General safety instructions**

- Always follow the instructions in the manual when working on Trickstuff products.
- We recommend only Trickstuff products for use with Trickstuff brakes.
- 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 under 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.

### **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.

## 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 a 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.

## Tools

- TX10 key
- HEX1.5mm key
- HEX2mm key
- HEX3mm key
- 7mm open-end wrench
- 8mm open-end wrench
- Brush for cleaning

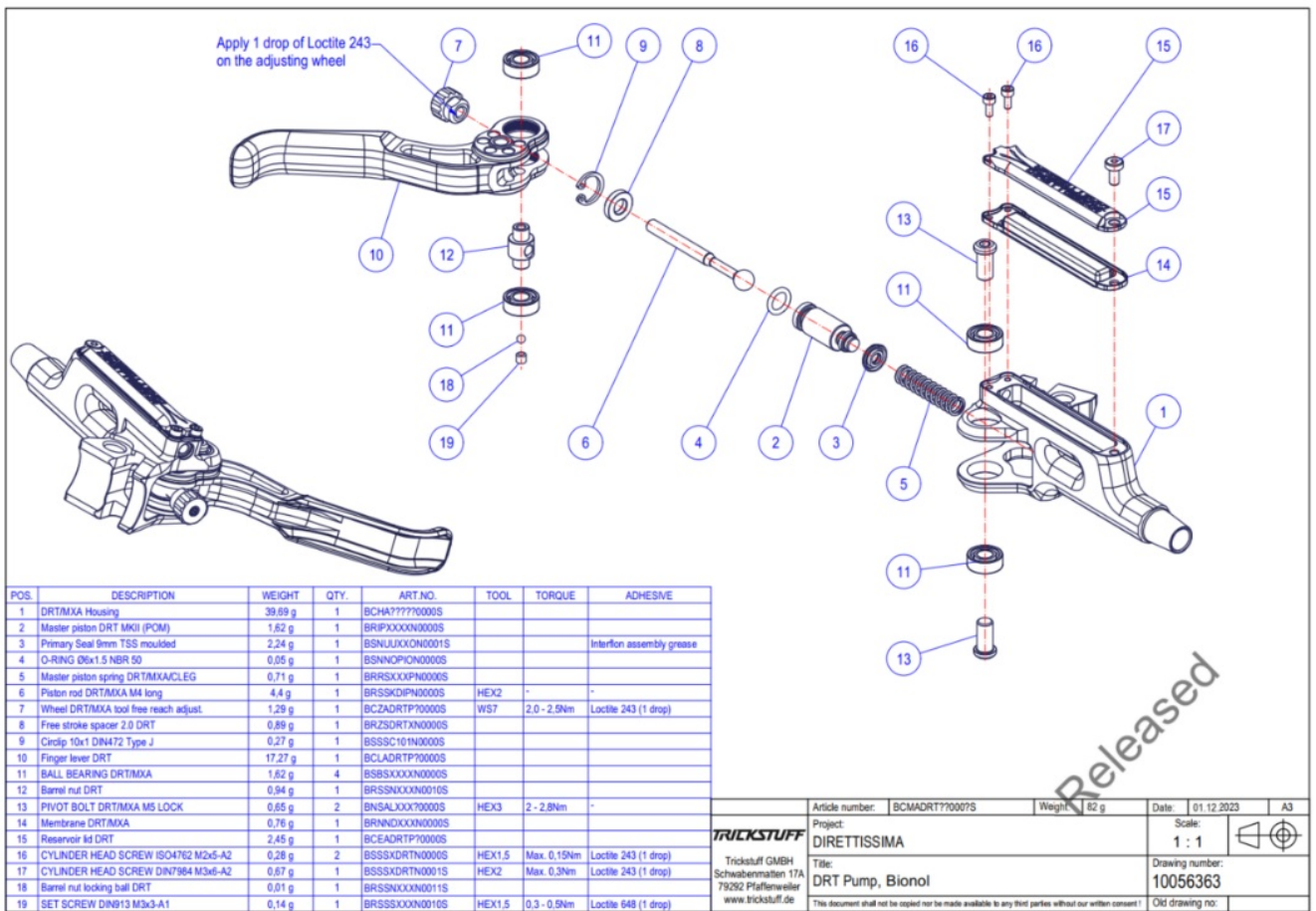
- Shop-towels
- Circlip pliers Knipex 44 11 J1
- Assembly grease (e.g. Interflon assembly grease)
- Medium-strength thread locker (e.g. Loctite 243)
- High-strength thread locker (e.g. Loctite 638)



## Service Kits

- To service the brake pump, one service kit is required for each brake pump (i.e. two kits for one set of brakes).
- Regular service: KIT SEALS & PISTON DRT+MXA PUMP OIL ASM





Overview M4-/M5 connectors:

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



- You will also need the appropriate tools to remove the brake from the bike under 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.

## Service brake pump

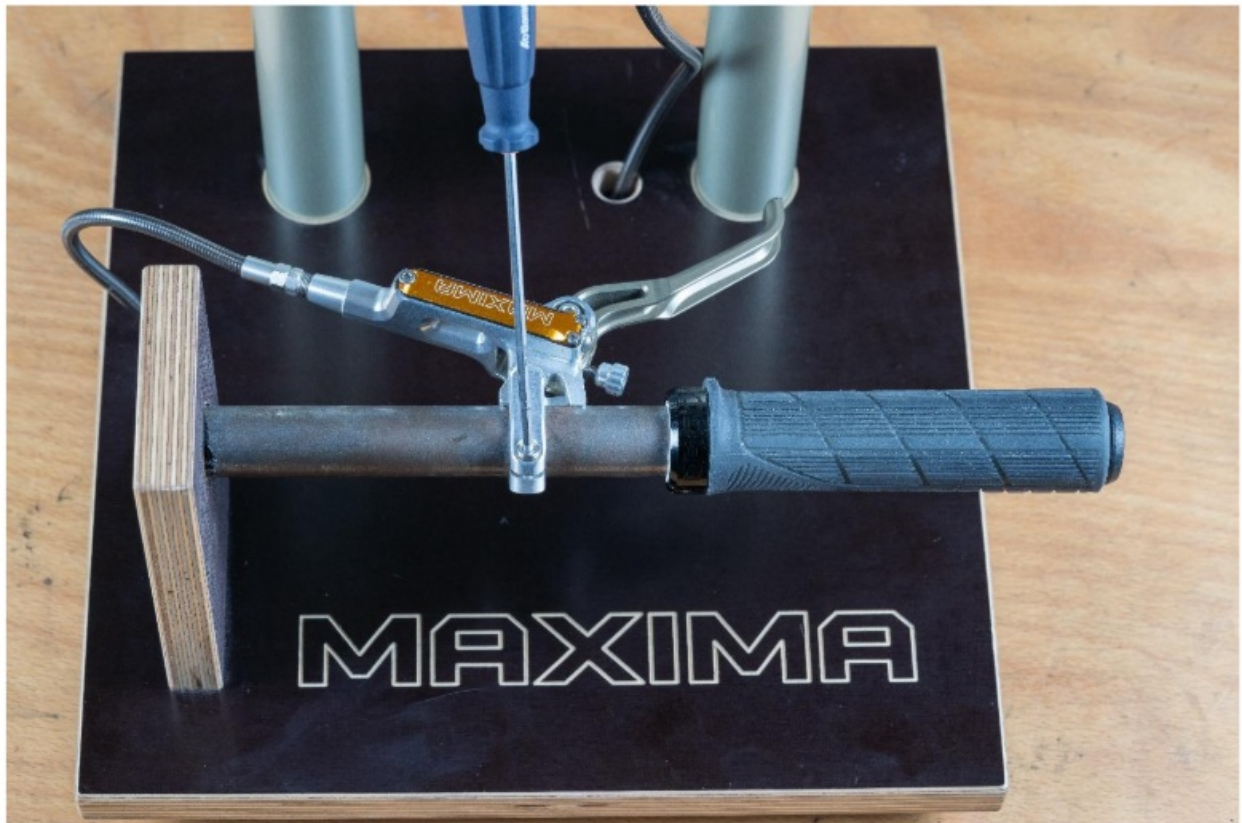
The following service manual includes service for the whole brake pump assembly, its disassembly, and the exchange of all seals. The process is identical for Direttissima and MAXIMA brake pumps. Preparation

1. Fix your bike in a bike stand and dismount the wheels.
2. Fully push back the caliper pistons. If you use the wooden Piston-Push-Back-Tool, first remove the brake pads and then push back the caliper pistons. If you use the Triple-B-Tool, first push back the caliper pistons and then remove the brake pads, to avoid damaging the pistons. Take care not to tilt the pistons in this process, if in doubt release the applied force and start over.





3. Remove the brake pump from your handlebar including clamps and interfaces. Use tools according to the respective manual. Note the lever distance to adjust it to the same setting after the service.



4. Use an 8mm open-end wrench to remove the brake hose from the brake pump.



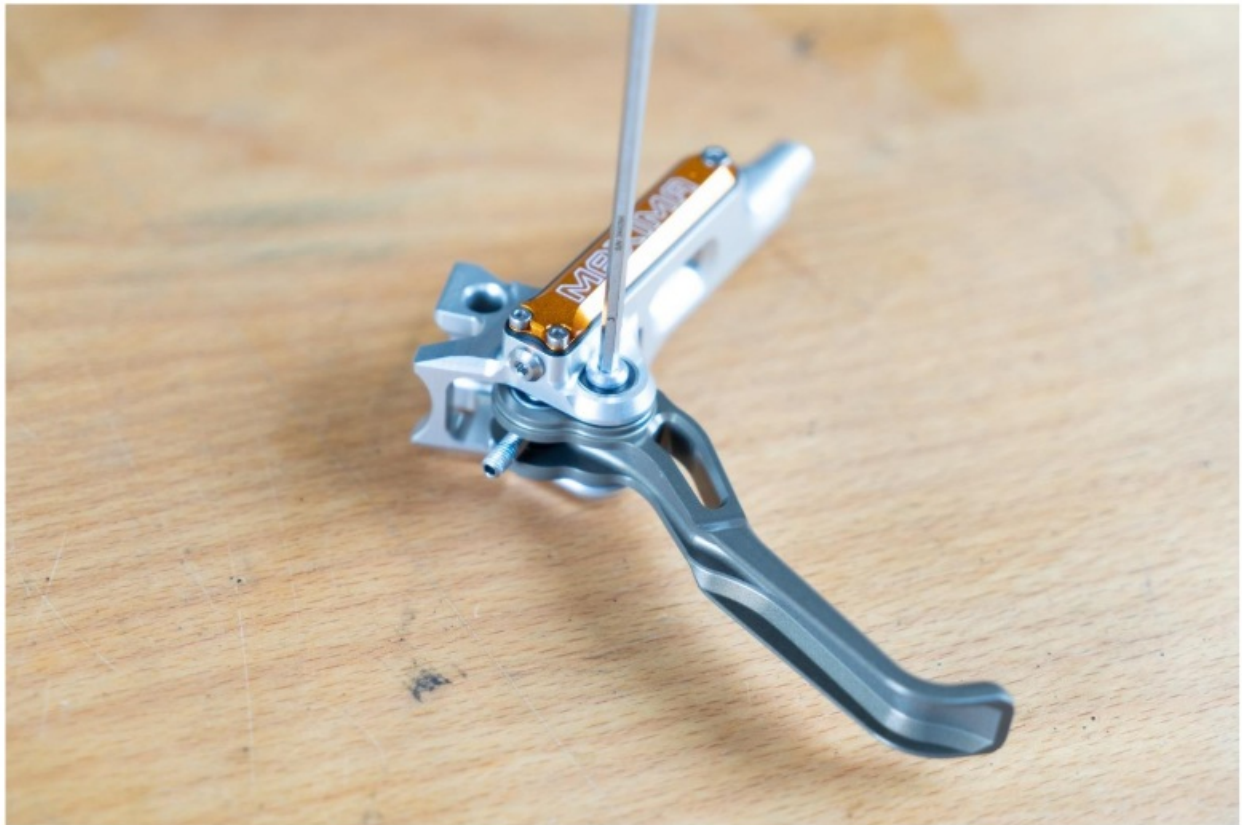


### **Disassembly of the brake pump**

1. Remove the dial for tool-free reach adjustment using a 7mm open and a HEX2 mm key.



2. Remove both pivot bolts (upper and lower) using a HEX3mm key.

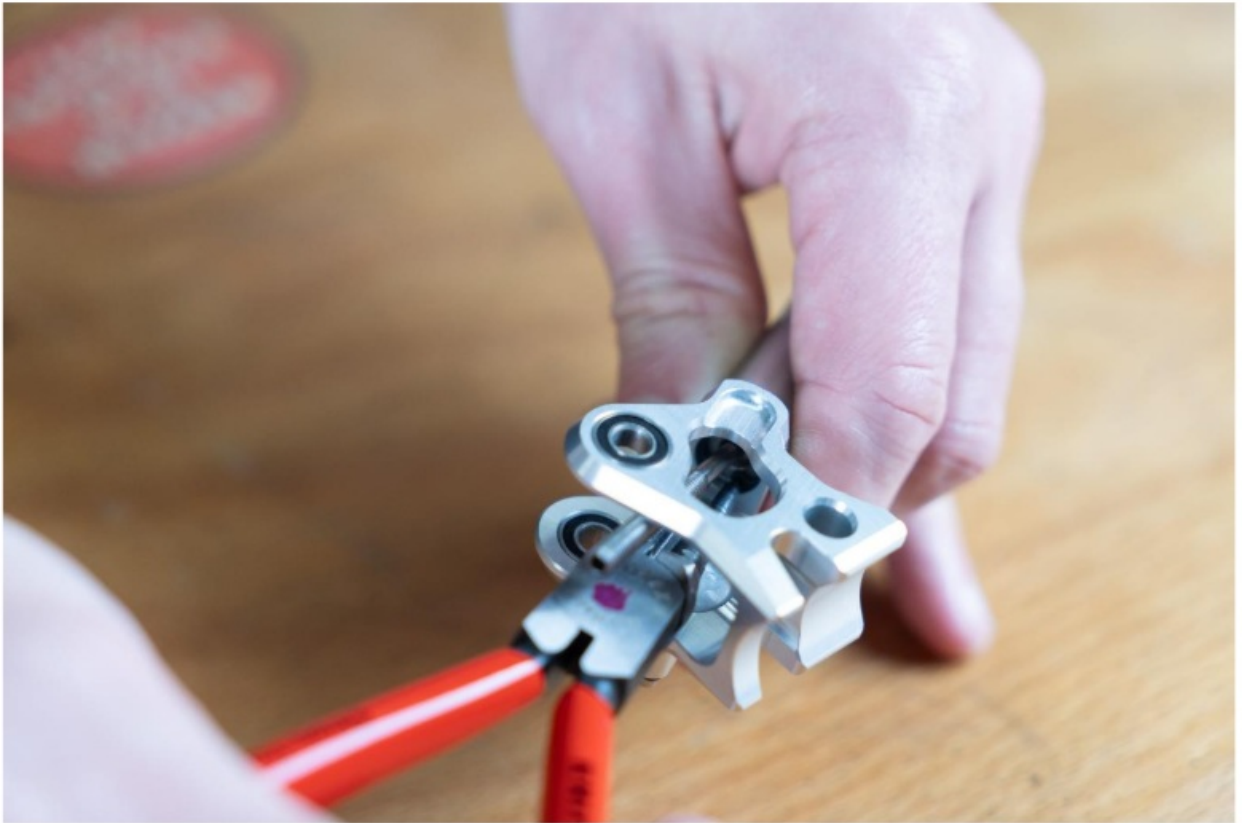


3. Use a HEX2mm key to remove the lever blade from the piston rod. Use a shop towel to clean the lever blade and put it aside, further service on the lever blade is not necessary.



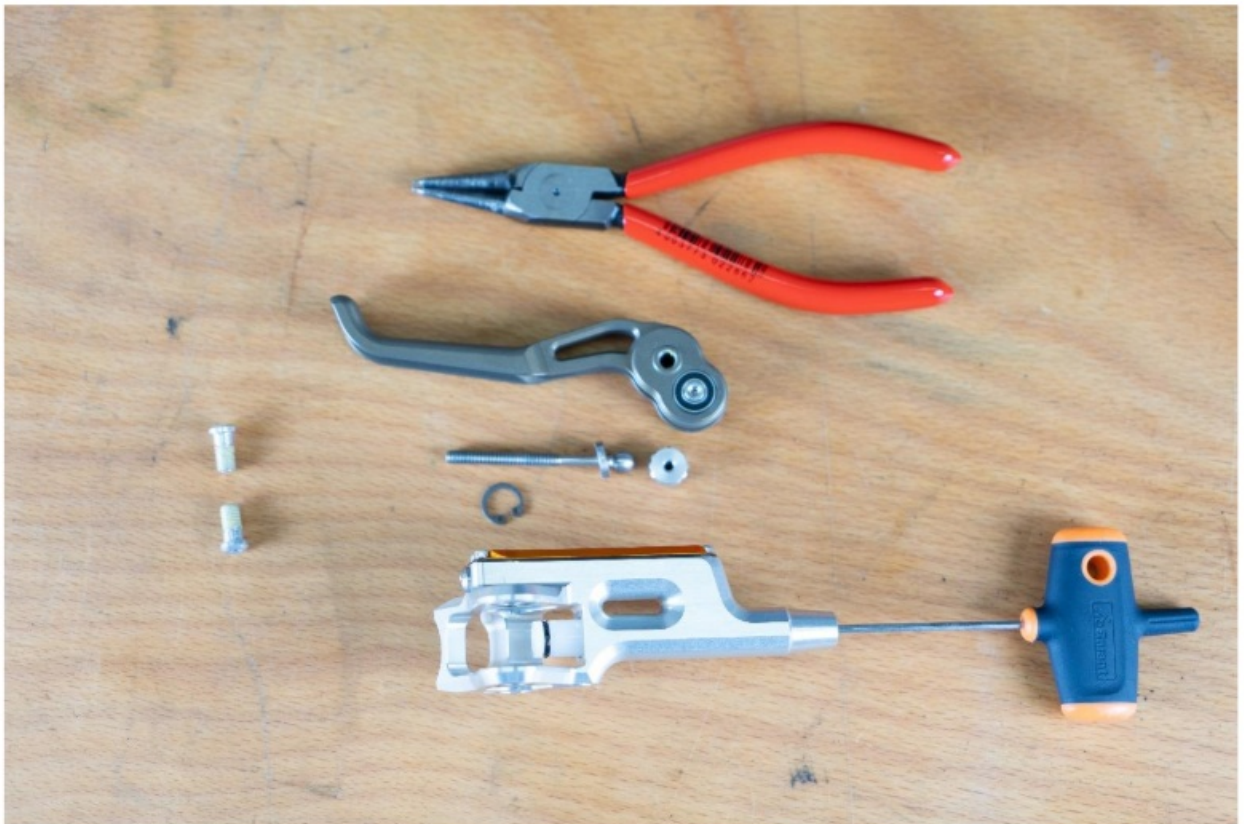
4. Remove the circlip with circlip pliers (e.g. Knipex 44 11 J1) from the pump housing. The used circlip should be replaced and not used again.
  - **Note:** Please dispose of the to-be-replaced parts according to your local recycling guidelines.





5. To remove the pump piston, use a HEX2mm key (or a similar long slim tool) and push the piston out from the front side in a straight line.

- **Note:** Take care not to scratch the cylinder surface during this step. Remove the pump piston from the spring and dispose of both of them.



6. Remove the three bolts from the reservoir cap (2x M2+1x M3) using HEX2 mm and HEX1.5mm keys. Take out the membrane and discard it. Soak up leaking oil with a shop towel.



7. Lastly, remove the bleed bolt using a TX10 key. Dispose of the old O-ring and put a new one on.



8. Clean pump housing and reservoir cap 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 pump with compressed air or by putting it on a household radiator for some time.

9. Use a flashlight to check the cylinder surface for cleanliness, scratches, and possible damage/debris. If you find your cylinder surface damaged, please contact the Trickstuff-Support.

### **Assembly of the brake pump**



**Note:** The reservoir cap is slightly bent for equal preload of the sealing reservoir membrane (see image below).

1. First, put the reservoir cap on a new membrane. The surrounding seal lip should show no damage and equal distance all around. Now put the reservoir cap on the pump housing, as shown in the image below.

- **Note (MAXIMA):** Now is the time to put the correct MAXIMA-Cap on the left/right pump housing, The left and right reservoir cap differ in logo orientation! Regularly, the logo faces away from the rider.



2. In the next step, the reservoir cap bolts will be mounted.

- **Warning:** If not carefully mounted according to this process, you can damage the membrane. Please follow these steps:
- Apply medium strength thread locker (e.g. Loctite 243) to the M3 bolt and apply 3-4 clockwise turns with a HEX2mm key. Torquing down happens a little later.
- Apply medium strength thread locker (e.g. Loctite 243) to the M2 bolt and apply 3-4 clockwise turns with a HEX1.5mm key. Torquing down happens a little later.
- Check the correct seating of the membrane-sealing lip around the cap. It should not show gaps or be folded under the cap.
- Apply torque to the M3 bolt, until you can feel that you are just starting to compress the rubber membrane. From this point, add ¼ turn more. Adding more torque to the screw can damage the seal.
- Apply torque to both M2 bolts in the same way, one after the other. Screw in until you feel an increase in torque resistance (=compression of the seal), then add ¼ turn to that. The membrane and its sealing lip should be equally compressed all around now.





- **Note:** To check whether the assembly of the membrane was successful, you can apply negative and positive pressure (alternating) to the syringe during bleeding after the service.
- If the seal is damaged, drawing a vacuum at the brake pump with the bleeding syringe will result in air intake, or positive pressure can result in an oil exit. In this case, take off the membrane again and check it for damage optically, then give the assembly another try.



3. Mount the new piston spring on a new pump piston. Apply a small amount of grease (e.g.
  - Interflon Assembly Grease) to the primary seal as shown in the picture.



4. Push the pump piston into the pump housing. This should show only minimal resistance.



5. Put the free-stroke spacer on the piston rod. Then mount the new circlip shown in the image below.
- **Note:** Circlips have a sharp and dull outer edge. When mounting the circlip, make sure the sharp edge is engaged, it has to face outwards (“sharp edge facing left in picture below”).

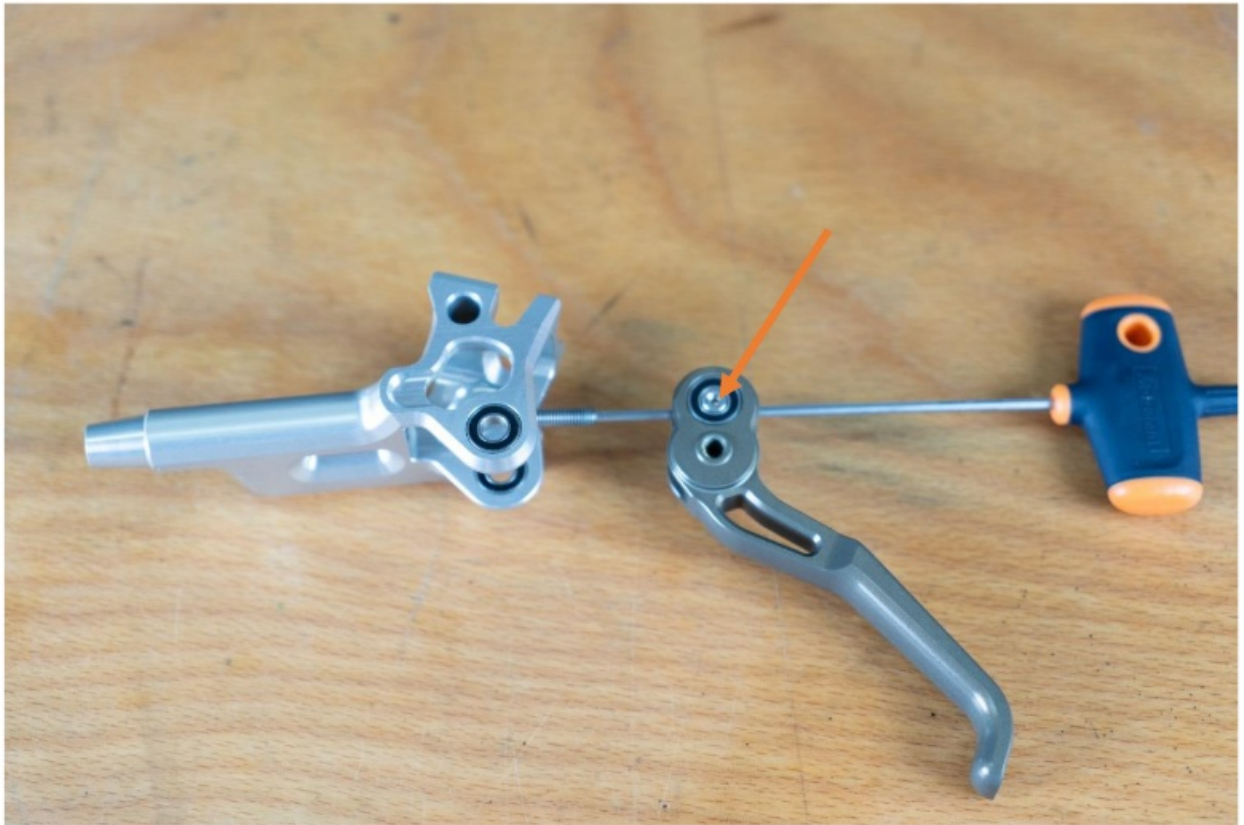


6. Mount the circlip together with the piston rod and the free stroke spacer into the pump housing. Use circlip-pliers (e.g. Knipex 44 11 J0) for the assembly of the circlip.
- This step can be a little fiddly, it can be necessary to start over. The best way is to do it as shown in the image below. Check the circlip for correct seating, it „clicks“ when it seats itself correctly.



7. Use a HEX2mm key to mount the lever blade to the piston rod.
- **Note:** Confirm that you reuse the right lever with the right pump housing again and vice versa. Otherwise, the bolt for play adjustment (see image below) can't be reached with the tool later on.





8. Mount the pivot bolts using a HEX3mm key. New bolts are precoated with a medium-strength thread locker. If you remount previously used bolts, apply a medium-strength thread locker (e.g. Loctite 243).

- **Note:** Apply thread locker to the inner threads, as shown in the picture below. This way you avoid fixing the bearings to the pivot bolts.



9. Before mounting the dial back onto the piston rod, make sure to apply a medium thread locker to this connection as well. Use a 7mm open-end wrench for tightening.



10. Check the lever blade movement for unwanted play. If detected, use the locking bolt on the backside of the brake pump for adjustment:
1. Before trying to move the bolt, use a heat gun to warm the bolt to release the thread locker.
    - **Note:** Be careful when inducing heat, to not damage the nearing bearings.
  2. After heating it, remove the locking bolt with a HEX1.5 key and apply high high-strength thread locker (e.g. Loctite 648) before mounting it again.
    - **Note:** In this bore, there is a small plastic ball, which gets deformed against the threads of the piston rod. This eliminates play in the lever movement. Apply torque to the locking bolt until the play is gone, but only so much that it doesn't prevent you from manually turning the dial.





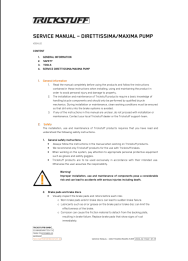
3. Install the brake hose with its fitting back to the freshly serviced brake pump. Use an 8mm open-end wrench and 4-6Nm of torque to finish the installation.



4. Bleed the brake system according to the respective manual and mount it back on your bike

- Technical changes, errors, and misprints excepted.
- TRICKSTUFF® GMBH
- SCHWABENMATTEN 17A
- 79292 PFAFFENWEILER
- GERMANY
- [TECH-SUPPORT@TRICKSTUFF.DE](mailto:TECH-SUPPORT@TRICKSTUFF.DE)

## Documents / Resources

	<a href="#">TRICKSTUFF C21 Brake Calipers</a> [pdf] Installation Guide C21, C22, C41, C42, MXA, C21 Brake Calipers, C21, Brake Calipers, Calipers
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## References

- [User Manual](#)

[Manuals+.](#) [Privacy Policy](#)

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