MANUAL – BLEEDING THE BRAKE SYSTEMS

V2023_11

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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 requires 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 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.

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    - 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 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.

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3. Tools

- TX10 key
- SW7 open-end wrench
- Cleaning Rag
- Trickstuff Bleed kit, contains a.o.:
  - Wooden piston-push-back-tool
  - Bleedblock (Le Block)
  - Brake fluid (Bionol)
  - 2x Luer-Lock syringes
  - 2x Luer-Lock connector
  - 2x M5 connector
  - 2x M5-M4 connector
  - 2x hoses

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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. When to bleed the brake system?

If air enters the hydraulic brake system, this leads to a spongy pressure point and an undefined brake feel. In this case, the brake system must be bled. However, an undefined pressure point can also have other causes.

Before you start bleeding, we recommend that you check whether bleeding is necessary at all:

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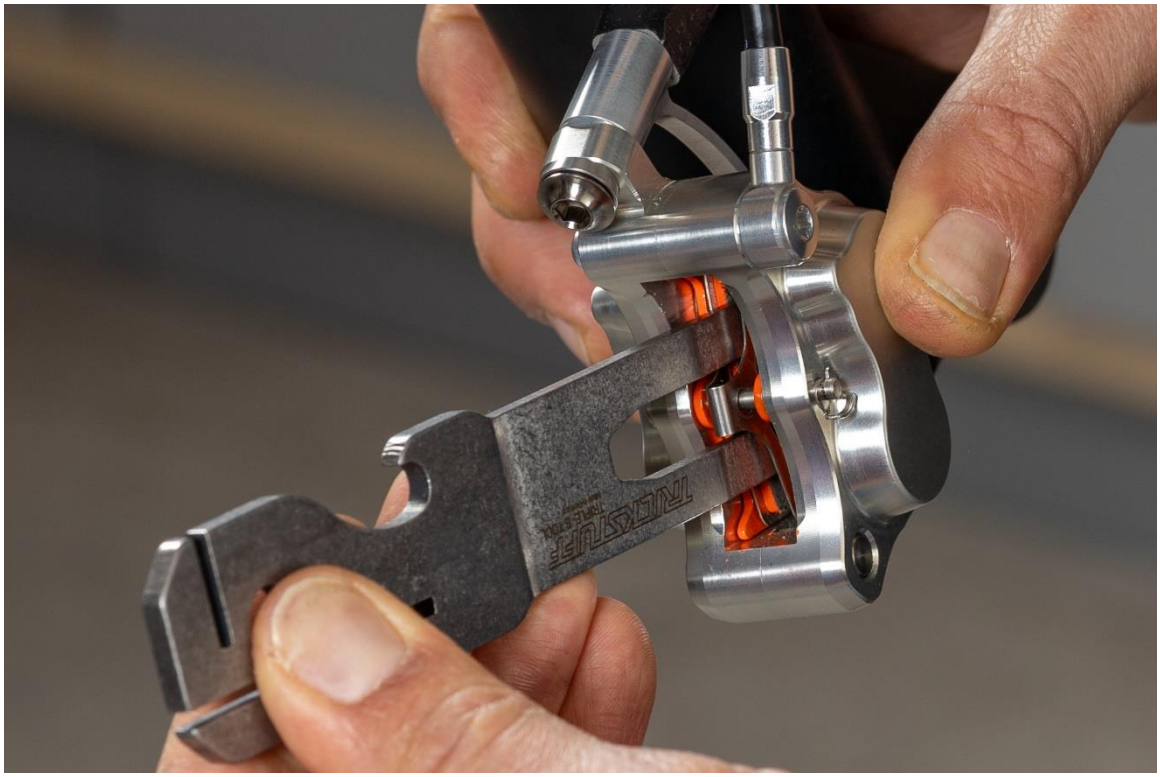
1. Push the caliper pistons completely back into the brake caliper. If you use the wooden piston-push-back-tool, first remove the pads. If you use the Triple-B-Tool, remove the brake pads afterwards.



2. Insert the bleed block (LeBlock).
3. Turn the pump upside down and check the pressure point by pulling the brake lever approx. 10 times.

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4. If the pressure point is OK under these conditions, no bleeding is necessary. The problems have a different cause.
5. If the pressure point is undefined, bleeding is necessary.

5. Bleeding the brake system

The bleeding includes the entire brake system with caliper piston chamber, brake hose, pump piston chamber, chamber between primary and secondary seal and reservoir.

Preparation

1. Fix your bike in an assembly stand and remove the wheel.
2. Remove the brake pads from the brake caliper.
3. Carefully push the caliper pistons back into the brake caliper using a wooden piston-push-back-tool. Take care not to tilt the caliper piston. If there is increased resistance, it is better to reapply.

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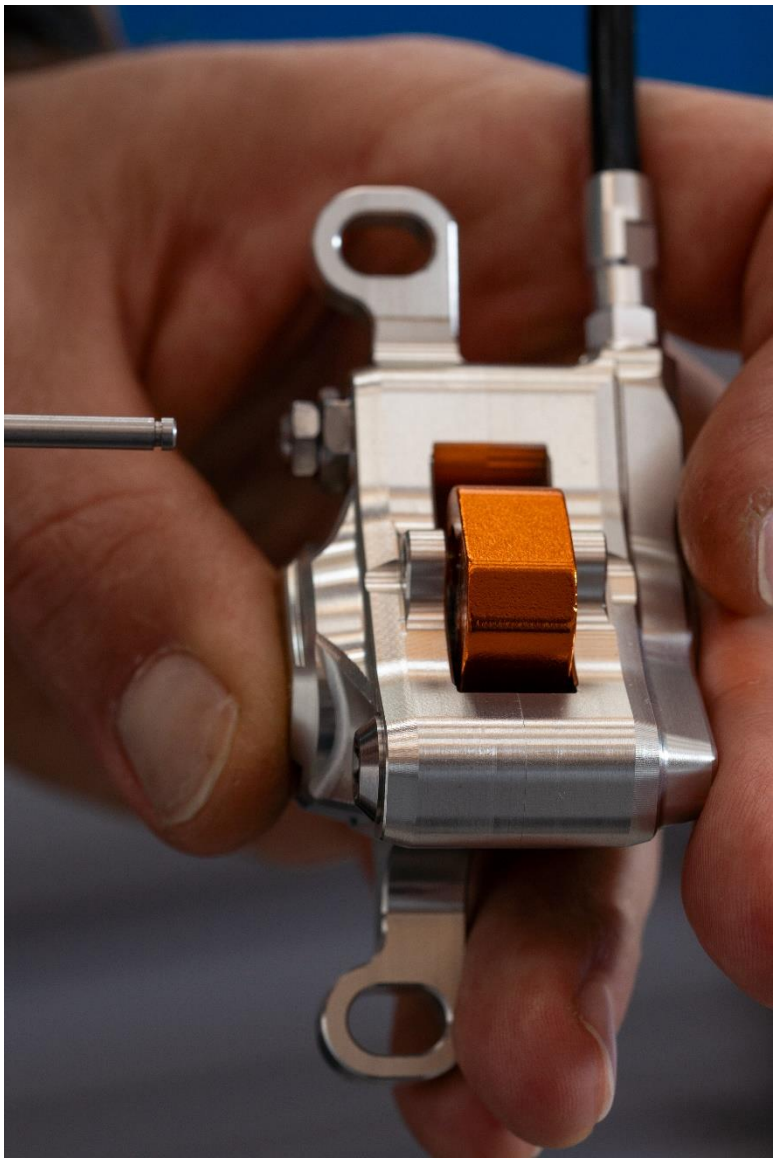
4. Insert the bleed block (LeBlock) into the brake caliper and secure it with the pad retaining bolt.



Note: The positioning resp. routing of the hose is of minor importance and can be disregarded for bleeding.

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5. Position the brake pump with the bleed port facing upwards.

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6. Fill both syringes halfway with brake oil and connect the appropriate fittings for your brake system (see table "Overview M4-/M5 connectors", chapter 3).

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Connecting the brake pump

7. Remove the bleed bolt on the brake pump.
   Warning: Never remove the reservoir cap.

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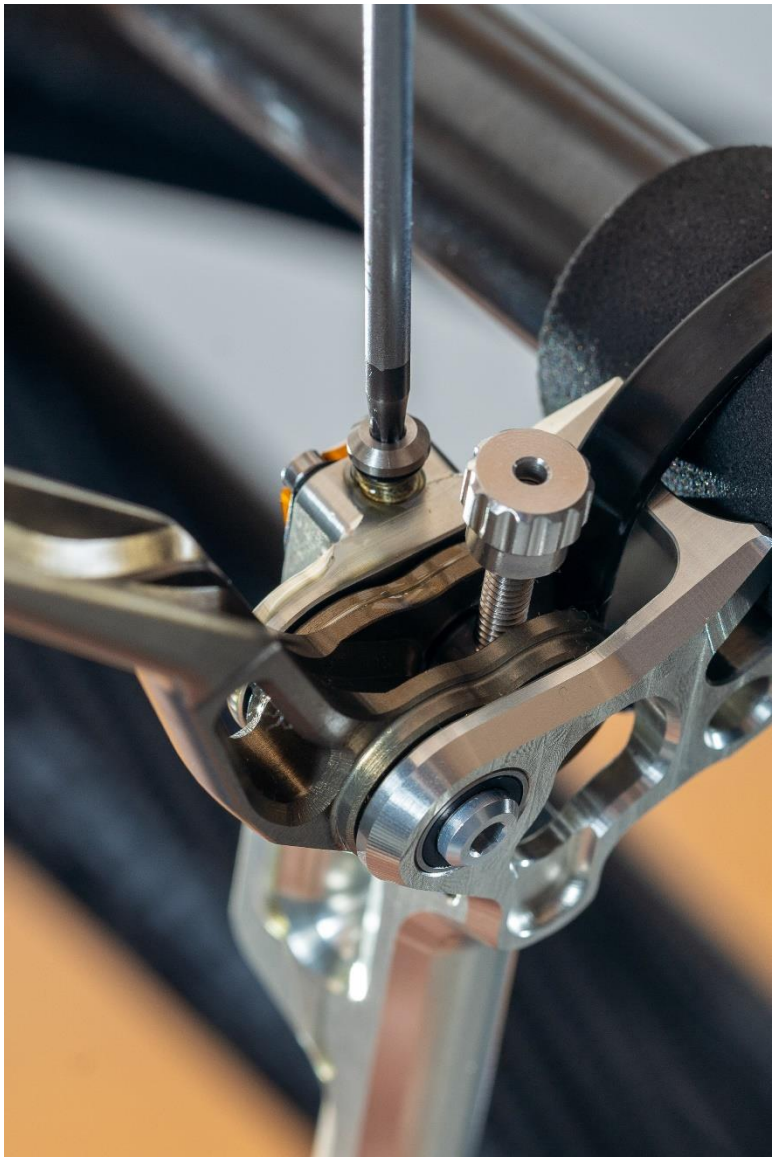

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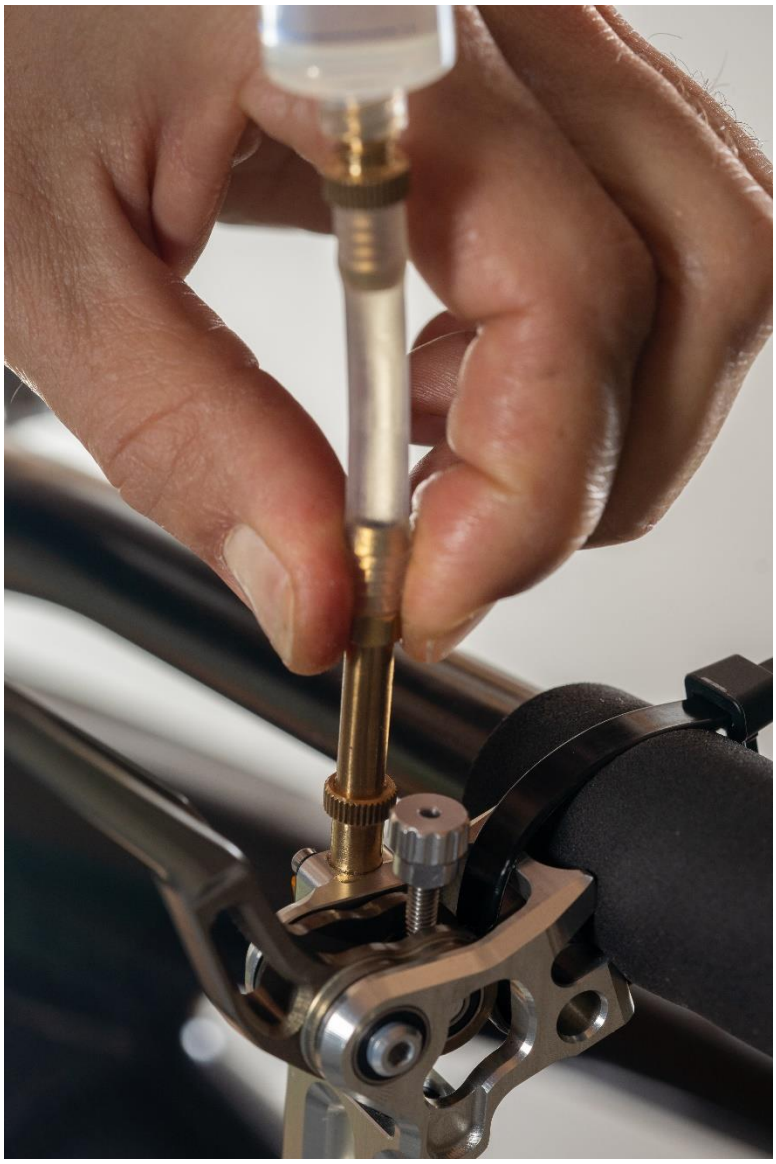
8. Connect a syringe to the bleed port of the brake pump using the appropriate connection.



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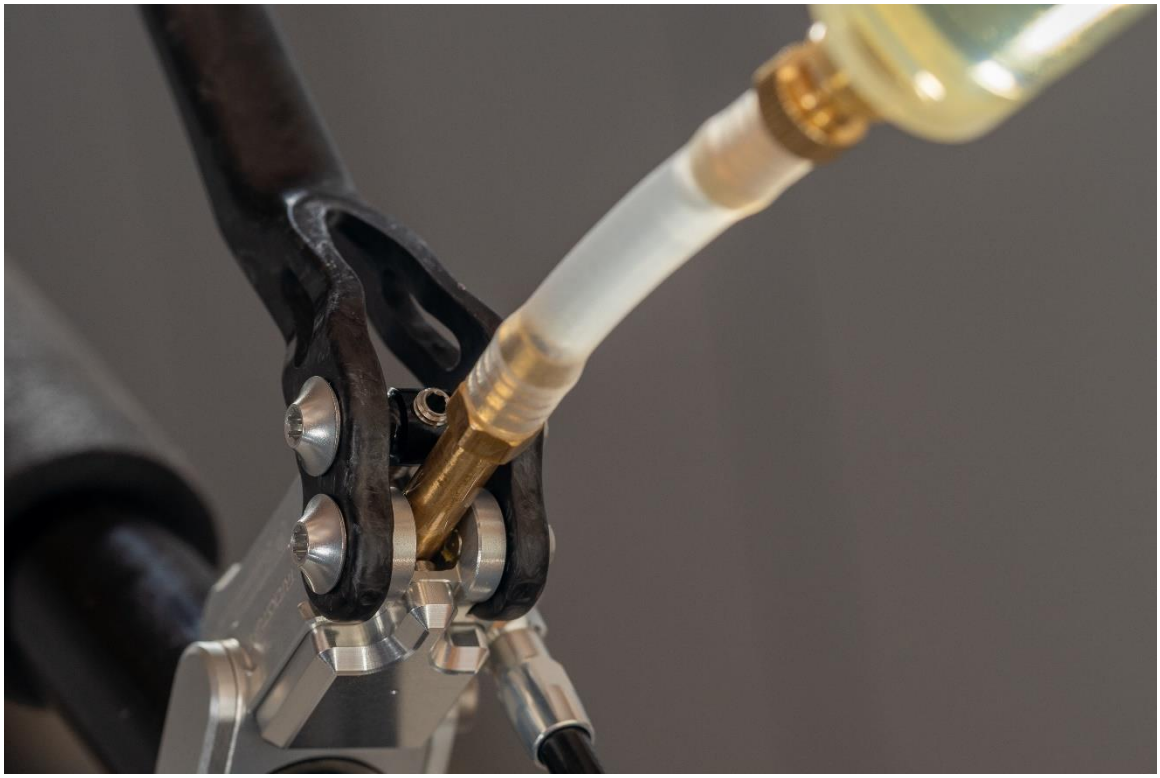
9. Pull and push the syringe two to three times to remove any nearby air in the pump housing.



Note: Piccola Carbon / Piccola Carbon HD
Keep the finger lever of the brake pulled, pull and press the syringe two to three times, then release. In this way, any air bubbles stuck in the chamber between primary and secondary seal will enter the reservoir. Leave the syringe connected to the brake pump for the next steps.

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Connecting the brake caliper

10.

A. Brake caliper C22/C42

1. Remove the dust cap from the bleed valve on the brake caliper.

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2. Connect the syringe with the appropriate connection to the bleed port (see table “Overview M4-/M5 connectors”, chapter 3) and open the bleed valve with the SW7 by ¼ turn.

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B. Brake caliper C21/C41/MAXIMA

Note: Make sure that the brake caliper is pointing upwards with the bleed port.

1. Remove the bleed bolt on the brake caliper.

2. Connect the syringe with the appropriate connection to the bleed port (see table "Overview M4-/M5 connectors", chapter 3).

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Bleeding the brake system

11. Hold both syringes with the syringe end pointing upwards so that escaping air bubbles can be trapped in the syringes and are not pressed back into the system.

12. Press the entire volume of brake oil from the syringe on the brake caliper through the system into the syringe on the brake pump. Make sure that you do not press any air in the syringe into the system.
13. Now pump the fluid again from the top (brake pump) to the bottom (brake caliper) until the upper syringe is almost empty.
    Note: You can increase the flow rate by simultaneously pushing on one syringe and pulling on the other. This increases the effect, but is not absolutely necessary and requires a little skill and practice.
14. Repeat the process until no more air bubbles appear in the syringe (approx. four to five times).
    Note: In the last step, the full oil volume must be pressed from the caliper syringe on the brake caliper to the pump syringe, without the air obviously. After this, do not create any more vacuum on the syringes.

Closing the brake caliper

15.
    A. Brake caliper C22/C42
        1. Close the bleed valve (3Nm).
        2. Loosen the syringe by two turns and pull the vacuum on the syringe once more to remove the last traces of brake oil from the bleed valve.
        3. Remove the syringe and put the dust cap back on (tightening torque: 0.5-1Nm). The dust cap does not require an O-ring.

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B. Brake caliper C21/C41/MAXIMA
   1. Remove the syringe and the M4/M5 connection from the brake caliper.
   2. The bleed hole should be filled to the brim with oil, rather overflowing. Never underfill the system.
   3. Screw in the screw plug. If damaged, replace the O-ring beforehand. Make sure that no air gets under the screw (tightening torque: 1.5Nm).

Closing the brake pump

16. Pull and press the syringe two to three more times. The last step is to press the syringe.
17. Check whether a defined pressure point can be felt.
18. Check the pressure point:
    1. If the pressure point still feels spongy, proceed to point 6 ("Bleeding the caliper piston chamber").
    2. If the pressure point feels good, remove the bleed block from the brake caliper and push the caliper pistons back completely.
19. Remove the syringe and the M4/M5 connection from the brake pump.
20. The bleed hole should be filled to the brim with oil, rather overflowing. Never underfill the system.
21. Screw in the screw plug. If damaged, replace the O-ring beforehand. Make sure that no air gets under the screw (tightening torque: 1.5Nm).

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Finalization of the bleeding:

22. Clean the brake system with warm water and plenty of washing-liquid.
23. Mount the pump housing and brake caliper back in their original position.
24. Check that there are no leaks from which brake oil is escaping. Important: Also check this under high pressure: Insert the bleed block into the brake caliper again. Pull hard on the brake lever of the brake and hold the pressure for 30 seconds. If the lever force drops or oil leaks from the brake, please contact Trickstuff support.

25. Remove the bleed block, put the brake pads back into the brake caliper and mount the wheel on the bike.

6. Add-on: Bleeding of the caliper piston chamber

If the pressure point is still spongy after the bleeding described above, it may be necessary to bleed the brake caliper in particular.

1. Reconnect the syringe to the brake pump (see points 5.7 - 5.9).
2. Place a Trickstuff Triple-B-Tool, alternatively a 3mm Allen key or an open-end wrench between the caliper pistons. This should prevent them from falling out.
3. Gently pump the caliper pistons onto the Triple-B-Tool or the 3mm Allen key/open-end wrench.
4. Only now connect the second syringe to the brake caliper (see points 5.10).

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5. Position the brake caliper as shown in the picture with the oil canals facing upwards.

6. Press the syringe volume 2-3 times from top to bottom and back. Important: Be careful not to push the pistons completely out of the brake caliper by keeping the tool in the disc shaft!
7. The main volume of brake oil (75%) should be in the caliper syringe.
8. Pull the syringe on the brake caliper briefly and forcefully to build up a vacuum.
9. Remove the Triple-B-Tool or the Allen key/open-end wrench from the brake caliper.
10. Push back the caliper pistons with a wooden piston push-back-tool, starting with the small pistons that are far away from the caliper syringe. The pistons must not fall out of the brake caliper.
11. Insert the bleed block (Le Block) into the brake caliper.
12. Build up a vacuum in the brake caliper again by pulling the brake caliper syringe once more.
13. Subsequently press the entire volume from the syringe on the brake caliper through the system to the syringe on the brake pump.
14. Remove the syringe from the brake caliper (see points 5.15).
15. Then remove the syringe from the brake pump, slightly putting pressure onto the system beforehand so that it overflows rather than being underfilled (see points 5.16- 5.21).
16. Subsequently continue with points 5.22ff.

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