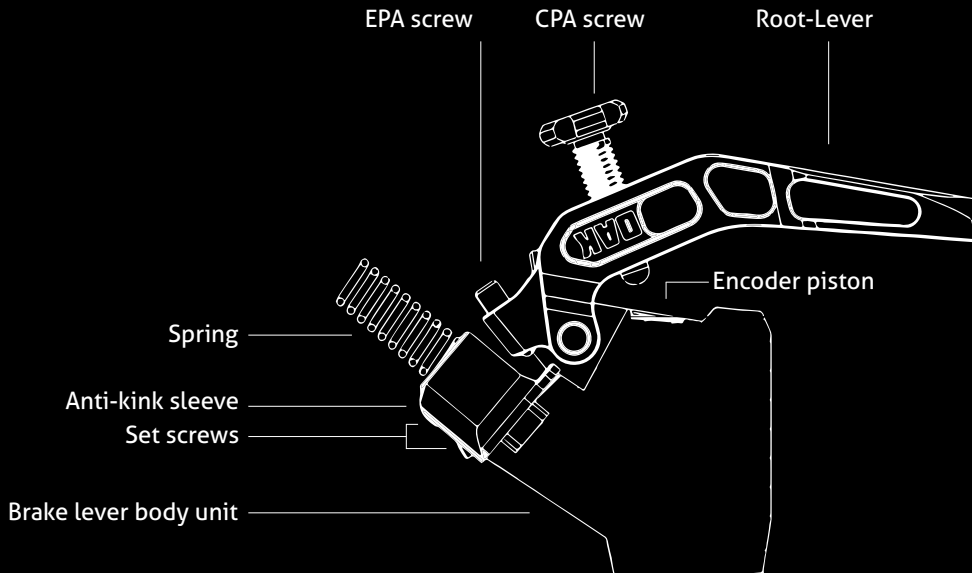
OAK COMPONENTS

User manual
Assembly instructions

Root-Lever

English



OAK Components Root-Lever for Magura Brake Systems

User manual

Thank you for purchasing the Root-Lever[1] from OAK Components, suitable for MAGURA brake systems. You have chosen a user-friendly and ergonomic high-end product. You will immediately notice the advantages of the Root-Lever.

IMPORTANT: Please carefully read this user manual completely before using the product. If you do not understand these instructions, warnings and/or notes in part or in full, if anything is unclear or if you have any questions, please contact a qualified bicycle repair shop. This is the only way to ensure proper and safe use of the Root-Lever and therefore protect both you and third parties.

⚠ CAUTION: Improper use of the Root-Lever can cause property damage, bodily injury or death.

⚠ CAUTION: Risk of accident due to locking of brakes.

⚠ CAUTION: Risk of injury from contact with sharp-edged brake disc.

⚠ CAUTION: Risk of burns from contact with hot brake discs.

IMPORTANT: The Root-Lever is an accessory product for Magura MT brake systems and may only be used in accordance with these instructions, (warning and safety) notes and exclusively in conjunction with the following compatible Magura brake systems:

1. MT8 (Raceline, Pro, SL, SL FM).
2. MT7 (Pro & Raceline)
3. MT5
4. MT4
5. MT Trail (Sport & Carbon)

ⓘ Note: OAK has no rights to the brand names Magura and the product names of Magura MT brakes. These are third-party trademarks of Gustav Magenwirth GmbH & Co. KG, which identify the brake system with which the Root-Lever is compatible.

ⓘ Note: Also, please take into account all information, instructions and hazard and safety notices provided to you by Magura in the corresponding user manual.

ⓘ Note: Keep this user manual and the Magura user manual for other or succeeding users of the Root-Lever. Pass the user manual on to third parties if you make the product available to these persons on a short-term or permanent basis.

ⓘ Note: Information on the technical functions of the Root-Lever can be found at https://www.oakcomponents.de/Technologien. You can also obtain this information by contacting us in text form at the following address:

OAK Components

z.H. Schneider

Wingershoferstraße 32

92224 Amberg

[1]The term Root-Lever is generally used as a synonym for brake lever, but also includes all of the supplied components of the overall Root-Lever system.

ⓘ Note: When selecting brake discs from other manufacturers, always ensure the corresponding compatibility, in particular a compatible brake disc diameter and thickness.

ⓘ Note: Make sure that the individual components of the Root-Lever are recycled properly. Lever, kink protector and CPA screw are made of aluminum.

General Instructions for Use, Safety and Warnings

IMPORTANT: Riding a bicycle involves dangers for you and other road users. Therefore, ride only with appropriate protective equipment and only if you are in a healthy physical and mental condition.

IMPORTANT: Braking distance, braking and riding behavior can change considerably on wet, curvy, uneven or dirty roads. Therefore, always adapt your driving style and speed to the conditions of the area and the weather.

IMPORTANT: Before each ride, check all safety-relevant components on your bicycle to ensure that they are fully functional. If you notice material fatigue or wear, do not start the ride if you have any safety concerns. This applies in particular to damage such as cracks, twists or oil leaks.

IMPORTANT: If you do not feel any or no clearly defined resistance when applying the brakes or if you notice a reduced braking effect, stop riding immediately and consult an expert bicycle workshop.

⚠ CAUTION: Risk of falling, accident, injury and death if the above instructions are not followed.

IMPORTANT: The brake lever must never be tightened when the wheel or brake pads are removed, unless the placeholder supplied with the brake system has been installed beforehand.

IMPORTANT: If the Loctite (threadlocker) is worn, apply some light-weight Loctite paint to it and then check the Loctite function.

IMPORTANT: In particular, also check before each ride that the EPA and the CPA screw cannot turn on their own.

ⓘ Note: There should be minimal play when turning the head of the CPA screw. If there is more play, the pinch bolt, which presses on the CPA screw, tighten it further. If, on the other hand, the CPA screw turns sluggishly, this should be loosened a little and cleaned if necessary.

Root-Lever Instructions for Use, Safety and Warnings

IMPORTANT: The Root-Lever is designed exclusively as a 1-finger brake lever. This means that it should be operated with the index finger alone. If you cannot ensure that you can operate the brake lever properly, consult a professional bicycle workshop and, if necessary, have the arrangement of the controls on your bicycle cockpit adjusted.

IMPORTANT: Upon receipt of the Root-Lever, check it for risk of injury, especially due to possible sharp edges.

IMPORTANT: The Root-Lever may only be mounted with the original assembly accessories from OAK Components. All installed components must be firmly mounted at all times and must not come loose, even in the event of vibration.

IMPORTANT: We recommend that the Root-Lever be assembled by qualified personnel of a bicycle repair shop to ensure proper assembly according to the instructions and notes in this user manual. After assembly, a functionality test must always be carried out - also by the professional workshop staff.

IMPORTANT: Mounting the Root-Lever changes the braking behavior of your bike. Test this new braking behavior at a low speed on a level road and away from traffic. Repeat these test rides until you are fully familiar with the new braking behavior of your bike. Always wear a bicycle helmet when using a bicycle.

IMPORTANT: Do not store the Root-Lever in ambient temperatures below -15°C or above +55°C. If possible, store all components of the Root-Lever in UV-protected, dry and not otherwise corrosive locations. Otherwise, the material of the Root-Lever could be significantly damaged.

IMPORTANT: The brake lever must be serviced regularly. The maintenance intervals vary depending on the frequency of use and the (weather-related) environmental influences to which the brake lever is exposed.

IMPORTANT: Check the brake lever and all attachments regularly, especially before each ride for damage, wear and proper adjustment. Tighten bolts regularly, if necessary to the required torque.

IMPORTANT: Before each ride, check by pulling and holding the root leveler, that the bite point is clearly defined, does not change and that the brake system can provide sufficient braking power.

⚠ CAUTION: Risk of falling, accident, injury and death if the above instructions are disregarded.

Root-Lever assembly instructions

We recommend that you also use our video instructions for assembly. These can be seen at www.oakcomponents.com under the heading SERVICE. There, all work steps are explained in pictures and voice for easier comprehension.

IMPORTANT: For your own safety, we recommend that you have the brake lever installed and adjusted in a bicycle workshop by a qualified technician in accordance with these instructions.

IMPORTANT: For assembly steps that require a specific torque, always use a torque wrench that can indicate the required torque with sufficient accuracy.

⚠ CAUTION: Risk of falls, accidents, injury or death if the above recommendation is not followed.

ⓘ Note: OAK Components is not liable for any personal injury or property damage resulting from improper installation or adjustment of the Root-Lever or brake system, or failure to follow instructions in this User Manual.

Step 1: Prepare the required tools and utensils

Lay out the tools and utensils on a flat, stable work surface. Hook the bike into an assembly stand or otherwise secure it to prevent it from rolling away. The tools and utensils listed below are required to install the Root-Lever:

1. torx T25 / wrench
2. hex socket wrench, 1.5mm and 2mm
3. hammer / rubber hammer
4. punch, Ø < 4 mm
5. bleeding kit for Magura brakes
6. wrench with 8mm opening width
7. line cutter / wire cutter
8. torque wrench, adjustment range 3 Nm to 4 Nm
9. isopropanol or other cleaning alcohol
10. electric screwdriver
11. wood drill, Ø 5 mm
12. wooden board, at least 18 mm thick
13. clean rags
14. bearing grease

ⓘ Note: The bleeding kit for Magura brakes (item 5.) also contains several Magura olives and the Magura hose barp.

Step 2: Manufacture of a knockout device

Start by making a knock-out device, if you do not already have one. First, draw a line on a wooden board with a distance of 20mm from the outer edge of the board. Now drill a 5mm diameter hole in the board at the 20mm distance from the edge. The knockout device is ready for use.

Step 3: Disassembly of the existing lever

Now disassemble the existing brake lever. Slightly tighten the brake lever and remove the BAT cover or screw by compressing it axially and turning the bayonet catch 90°. Remove the spring and the bayonet catch and set both aside. Using a screwdriver or a knife, detach the brake cover from the brake lever body unit and set it aside with the adhesive surface facing upwards.

ⓘ Note: The previous steps do not apply to brake models without a cover, i.e. Carbotecture models such as the MT5.

Now place the brake lever body unit on the knock-out jig in such a way that the brake lever replicates the left-hand brake side of a brake system mounted on the handlebar.

ⓘ Note: The pin should only be knocked out in this direction.

Now knock out the pin completely with the punch and set the pin aside.

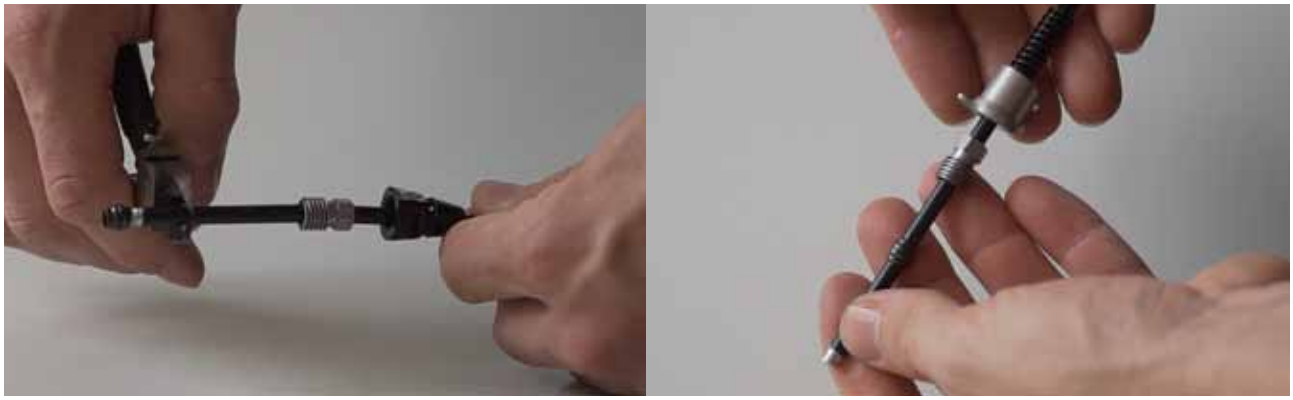
Step 4: The installation of the Root-Lever

Slide the plastic bend protection from the compression nut and loosen it with the 8mm wrench. Place the brake lever body unit on the working surface in such a way that no mineral oil can leak out and screw the set screws into the aluminum anti-kink sleeve supplied.

ⓘ Note: The lower threaded hole is angled 20° and is not parallel to the other threaded hole.

Now shorten the brake line to the desired length and remove the plastic bend protection and the compression nut from the line. First mount the anti-kink spring, then the aluminum anti-kink sleeve, then the compression nut and then the Magura olive onto the brake line. Then press the Magura hose barp into the end of the line until it is flush.

ⓘ Note: The brake line must never kink in the process.



Now insert the brake line (with the Magura olive) into the brake lever body unit. When doing so, apply the necessary pressure to the brake line to ensure a good fit.

Screw the compression nut into the brake lever body housing and tighten it. Place the anti-kink sleeve on the brake lever body unit housing and secure it with the lower set screw.


Now place the already mounted spiral spring on the compression nut and fasten it by screwing the upper set screw into the anti-kink sleeve.

ⓘ Note: Slight pressure on the visible end of the spring ensures a good fit of the spring.


Apply some grease to the CPA screw and insert it into the Root-Lever.


Now press the previously knocked out pin back into the brake lever body unit.

ⓘ Note: The pin must be pressed in from the direction in which the pin was previously knocked out. With the pin pointing downward, the Root-Lever must once again replicate the left brake side.

Insert the root lever into the brake lever body unit with the CPA screw as completely unscrewed as possible.

ⓘ Note: The holes in the brake lever body unit and the brake lever must be located coaxially one behind the other. This is the case if you can see through both holes after inserting the brake lever and the holes are aligned one behind the other.

Now insert the pin into the brake lever body unit until it is flush with the brake lever body unit housing.

ⓘ Note: The chamfer (bevel on the hole) on the brake lever helps to hit the hole. If necessary, you can only achieve a flush fit by tapping the pin in with a hammer and an appropriate punch.

ⓘ Note: On models without a cover, the distances between the reinserted pin and the outer sides of the brake lever body unit housing should be the same. The pin should therefore be centered in the brake lever body unit housing and firmly seated.

Then reattach the cover to the brake lever body unit housing and reinsert the BAT cover or screw into it. Close the bayonet lock by turning the lock 90° with slight pressure on the spring.


Mount the brake lever body unit on the handlebar and align it horizontally. Dismantle the wheel and brake pads from the brake cylinder or, alternatively, cover the brake cylinder and brake disc completely with a clean cloth.

ⓘ Note: Should you remove the wheel and brake pads from the brake, this must be done in accordance with the relevant manufacturer's instructions and guidance.

IMPORTANT: Do not allow the brake disc and pads to come into contact with mineral oil as this can significantly affect braking performance.

⚠ CAUTION: Risk of falling, accident, injury and death if braking performance is impaired.


Now fill a bleed syringe with approx. 20ml mineral oil and an air cushion of approx. 4ml. Bleed the brake system by unscrewing the bleed screw and now insert the bleed syringe into the brake lever body unit via the opening that has become free. The bleed syringe must be inserted into the brake lever body unit in such a way that the opening released by unscrewing the bleed screw is completely sealed.

Now create a vacuum in the venting system by slowly pulling the piston of the bleed syringe and operate the brake several times. Repeat this process until no more air bubbles rise into the syringe. The system should then be free of air.

Now pull the plunger over the pressure compensation hole of the syringe to relieve the vacuum and close the pressure compensation hole with your finger. Carefully pull the bleed syringe out of the brake lever body unit and catch any excess mineral oil with a rag. Now press the syringe piston back past the pressure compensation hole so that the mineral oil cannot leak out of the bleed syringe.

Reinsert the bleed screw and tighten it only slightly (approx. 0.5 Nm).

ⓘ Note: The bleed screw is a plastic screw, so do not use excessive force when tightening.

Clean the brake lever body unit with isopropanol or another cleaning alcohol.

Check whether the brake system has a clearly defined bite point. If this is not the case, repeat the bleeding process. If the brake system does not have a clearly defined bite point after several bleeding processes as described above, the entire brake system must be bled.

ⓘ Note: Information on bleeding the entire brake system can be found in the user manual for the Magura brake.

IMPORTANT: If the entire brake system does not have a clearly defined bite point or if the braking performance is reduced, do not ride the bike under any circumstances.

Align the brake lever body unit on the handlebars according to your preference and tighten the securing bolts with the torque wrench and a torque between 3 Nm and 4 Nm.

ⓘ Note: Magura recommends a torque of 4 Nm. We recommend a torque of approx. 3 Nm. Since the torque can vary depending on the handlebar surface, we recommend that you have the required torque determined by a qualified technician at a bicycle workshop.

IMPORTANT: The brake lever body unit must be firmly attached to the handlebar. Otherwise, it may move on its own while riding. Note, however, that the brake lever body unit can still rotate away in the event of a strong impact in order to protect the brake in the event of a fall.

⚠ CAUTION: Risk of falling, accident, injury and death if the brake lever body unit is twisted while riding.

Step 5: Adjusting the Root-Lever

Due to the combination of EPA and CPA system, the brake lever can be adjusted to almost any rider preference, which allows versatile brake adjustment possibilities. For your own safety, however, we recommend that you have the brake lever adjusted by a qualified technician at a bicycle workshop in accordance with these instructions. It is essential to ensure that the brake is fully functional.

IMPORTANT: If there is air in the brake system, if the Root-Lever is incorrectly adjusted or if the brake is continuously applied during long descents, the brake system may block unexpectedly, as the hole to the compensation reservoir may become permanently closed.

Installing the CPA screw (Fig. 1).

First, the bite point of the brake / Root-Lever must be set. The braking force begins at the bite point of the Root-Lever. To do this, screw in the CPA screw so far that the bite point is positioned according to your preferences, but at most so far that the screw is in contact with the encoder piston when the brake lever is not tightened (Fig. 1). The CPA screw should therefore only be screwed in so far that the encoder piston is not activated. When adjusting the CPA screw, always ensure that it does not activate the brake lever body unit piston even when the end stop is reached (marked in Fig. 3).

Fig. 1

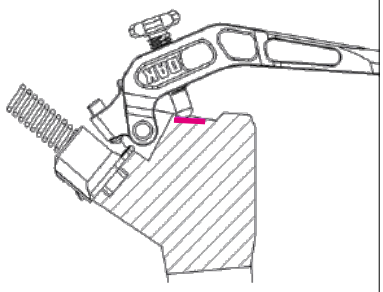


Fig. 2

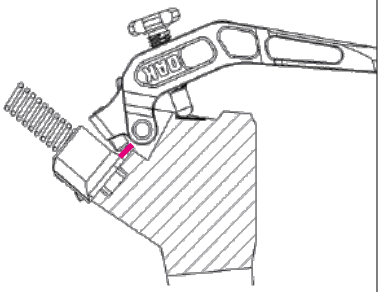
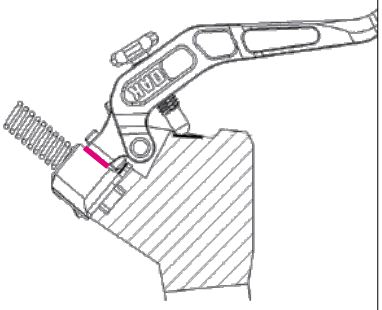


Fig. 3



Screw in the EPA screw (Fig. 2) to reduce the idle travel range.

The EPA screw must then be adjusted (Fig. 2). The further it is backed out, the closer the brake lever is to the stop (Fig. 3). The further it is screwed in, the further away the brake lever is from the stop marked in Fig. 3. The EPA screw must be adjusted so that the brake lever can only be pushed away from the handlebar with resistance (opposite to the direction in which the brake lever is operated). Then, by adjusting the EPA screw, reduce the idle travel range, that is, the travel distance between the starting position of the non-activated brake lever and the bite point position of the activated brake lever. Under no circumstances may the EPA screw be screwed in so far that the CPA screw begins to activate the encoder piston in the initial position of the brake lever. If the EPA screw is screwed in beyond this activation point, the hole to the reservoir may be continuously closed and the brake may suddenly lock, causing the rider to suffer a bad fall.

IMPORTANT: A locking of the brake can only be prevented if there is sufficient idle travel range and / or the brake lever is not continuously activated.

Functional test after each change of setting

After each change of the idle travel range by means of the EPA screw and / or each change of the bite point setting by means of the CPA screw, the brake system must be checked and tested for proper function.

⚠ ATTENTION: Danger due to sudden blocking of the brake | It is essential to follow these instructions!

If the brake lever is continuously activated, the brake lever's idle travel is reduced too much or the brake is insufficiently vented, the brake may suddenly lock due to heat-induced expansion of the mineral oil, air in the brake system or other reasons. For this reason, there must always be a free travel range for the brake lever and it must not be continuously activated. To reduce the free travel range properly and to the permitted extent, please follow the above instructions for setting the Root-Lever. Otherwise, volume compensation to the brake reservoir can no longer be guaranteed. Especially if there is air in the brake system or if it is heated excessively, the brake may lock and the rider may suffer a severe fall.

OAK encourages all Root-Lever users to scrupulously follow these instructions.

OAK wishes you a lot of fun!

Did you encounter any problems during assembly, did you discover a technical irregularity? Do you have any suggestions or ideas for improvement? Feel free to contact us using the contact form on our website, at support@oakcomponents.com or, in the event of a technical irregularity, through your dealer.

The warranty is subject to the legal regulations. Please note that we can only process requests in this regard if the corresponding proof of purchase is provided.