

DIRETTISSIMA

C41

**Disc brake DIRETTISSIMA with
four-piston caliper C41**

Manual

Initial installation, maintenance and service

Warranty Statement

This warranty is valid for the period of 24 months (from date of purchase). If defects that affect the materials or workmanship of any part of the brake system is present within this period, the damaged part is by presentation of the original purchase documents repaired at the discretion of the Trickstuff GmbH or replaced. We strive to handle warranty claims within a period of 30 days from the receipt of the damaged component (either from an authorized dealer or directly from Trickstuff GmbH).

1. The warranty excludes: This warranty does not cover damages caused by accidents, Amendment and negligence are due. The warranty also does not apply to misuse and abuse in lack of execution of a mounted Repairs in incorrect installation, at incorrectly executed or unauthorized Repairs or not installed correctly of parts in use of parts or accessories that are not expressly approved by Trickstuff. Normal wear and tear by the use of the bicycle are also not covered by this warranty. Furthermore, the warranty does not include any expenses that may arise from transporting or from an authorized dealer, or by the length of working to dismantle the brake system. Compensation for loss of use during the repair period is excluded.

Second Buyer: This warranty extends only to the original purchaser of the brake system granted and not third parties. The purchaser rights under this warranty may not be sold.

Third duration: This warranty is valid for the period of 24 months from the date of purchase and ends the end of this period.

4th Completion: If a covered by this warranty damage to your brake system is determined immediately consult an authorized dealer or directly to Trickstuff GmbH. The warranty is void if the buyer continues to use the brakes despite a clearly recognizable damage.

5th damage: Unless specifically required by this guarantee, which can Trickstuff GmbH under this warranty consequential be held responsible if the complaint is justified by other contracts, wrongful acts or other remedies for any indirect or. The warranty statements above are only valid and replace all other remedies.

6th Note: Keep up during installation, maintenance and repair always adhere to the Information in the manual for your DIRETTISSIMA brake system.

Danger

If you suspect that a covered by the warranty damage is present in your brake system, you immediately contact an authorized dealer or directly to the Trickstuff GmbH. We ask for a detailed description of the problem or the detected damage. When a suspected or identified damage the brake system must not be used!

About This Manual

We are pleased that you have chosen a DIRETTISSIMA brake, and hope you enjoy on your favorite trails. but before you go to the site, please read this manual thoroughly.

This manual will give you all the information necessary to perform the initial installation and routine maintenance and some repairs. Installation and maintenance of DIRETTISSIMA disc brakes are feasible for the most part without special tools.

If you are not in a single step to be sure you need the right tools or other equipment, enter the brake in the hands of a skilled trader.

Regular check for your safety

The hydraulic brake system of DIRETTISSIMA works maintenance free with proper initial installation over long periods. For frequent use in difficult conditions (high mountains, traveling with luggage, racing, cycling Park) should the brake system but are reviewed regularly. Check this with a torque wrench all screwed (the correct torques are given in the installation manual), check the hydraulic system for leaks and check the wear on the brake pads and discs. **Caution after a fall: Check the brake system carefully before proceeding. Are after falls damage to the brake system to recognize (eg leaking brake oil *), may be driven in any case!**

annotation The Direttissima brake is operated with vegetable, biodegradable Trickstuff- "Bionol" oil or with Shimano mineral oil. Below for the short term "brake oil" is used.

Without restriction?

The disc brake DIRETTISSIMA is basically just for bikes, especially for mountain bikes of all categories, admitted. The approval also applies to racing.

The use of the tandem is permitted only if suitable brake discs!

Basically, the wheel diameter used must be adapted to the application and the total weight of rider and bike. Lightweight and small slices, for example, 160 mm front / 140 mm rear should only be used by light riders and only in cross-country racing. With a total weight of rider and bike about 100 kg are advised to brake disks of at least 180 mm front and rear, to avoid overheating the brakes on steep terrain.

Attention!

During braking, the kinetic energy of the driver and bike over the friction of the brake pads on the disc in heat energy is converted. Caliper and brake disc heat with him

each stop. can on the window while

Temperatures up to 300 • Celsius are reached. Touch something during the

Ride or immediately thereafter neither caliper brake disc yet, because you can get burned. Check carefully before working on the braking system, whether the parts have cooled down sufficiently.

DIRETTISSIMA brakes are fitted with "organic" pads with steel support plate. Other pads (so-called. "Sintered" or "ceramic" coatings or coatings with aluminum carrier plate) conduct more heat in the brake caliper. When using such coverings Trickstuff may refuse liability.

DIRETTISSIMA brakes are designed for use with vegetable, biodegradable **Trickstuff- "Bionol" oil or with mineral oil (z. B. Shimano oil) designed. Never use DOT 4 or DOT 5 or DOT 5.1,** otherwise the seals of the brake system will be destroyed and the brake can no longer be used.

Use only new brake fluid. Drained brake oil should not be used again. Old brake oil can contain large amounts of water, whereby the risk that the formation of vapor bubbles in the brake system, which impair the function of the brake.

Do not allow water or air bubbles get into the system, so that no vapor bubbles can occur in the brake. Be especially careful when bleeding the brake system.

Through continuous constant braking under extreme conditions, the brakes may heat up to the point where the braking effect wears off. Therefore, open on long runs again briefly the brake so that it can cool down. The risk of overheating can be reduced by the use of brake discs, which are adapted to the body weight, the driving style and intended use.

Put - if permitted by the surface - always front and rear brakes simultaneously to distribute the load evenly on both brakes.

Disc brakes develop very high deceleration values even at low train at the lever. Make sure that, first carefully familiar with the operation of the brake, so as not to take from misapplication of the risk of falls. Practice proper brakes before you go with your bike in the area.

To achieve an optimum braking effect of the new coverings, they must be carefully slowed down to 10 km / h 20 brake applications from 30 kph km / h.

not bring coverings with grease or oil in contact. the piston with a flat tool to push back into the housing before the exchange of the pads. moving to the mounting of the new pads to the brake lever several times, until a point of pressure is established. The disc should be deducted when changing pads with 240 sandpaper

Read before installation of parts carefully the installation instructions. Loose, worn or damaged parts may pose a risk of injury to the driver. Use for repairs and replacement of parts exclusively DIRETTISSIMA-original parts.

installation instructions

Note

When removed wheel or remote brake pads, the brake may not be actuated, otherwise the brake piston to closely make the brake disc and can not be mounted. In the extreme case, the slave piston can come out of the caliper housing so far that the oil outlet and inlet air. In this case, the brake should be returned to service Trickstuff.

Too far extended piston with a flat hardwood (if necessary with flat Screwdriver) to push back. Make sure that the force is applied evenly on the pistons so that they do not tilt. A piston pushed back diagonally, the piston seal can be damaged, resulting in the brake result in failure. The pistons must be reset without much effort. Is high, the resistance when pushing back the piston, do not force it but check if a piston is jammed and possibly start again.

eighth with mounted brake pads that the pads do not come into contact with the pushing back with oil or fat. If the level in the expansion tank too high, it can happen that can not be completely the pistons push back. In this case, the bleed screw loose on the brake lever (Not remove entirely! Drain) and excess brake oil. Close locking screw air free!

To clean the brake plenty of warm tap water with detergent and a dry cloth. Do not use brake cleaner, such as is used in motor vehicles - this would damage the seals of the braking system. Disc and pads clean generally during braking itself from normal dirt such as mud.

Be careful when handling brake fluid. Are disc or pads stained with oil, it interferes with the action of the brake. In general, the brake pads are unusable due to contact with oil and must be replaced. An oil film on the wafer can be washed off with plenty of water and detergent or with acetone.

Handling of brake oil

- When handling liquid protective goggles and gloves. Contact with the eyes can cause eye irritation. In contact with eyes, rinse several minutes with running water and seek medical attention.
- Use protective gloves. Skin irritation and discomfort may be caused. In contact with skin, wash the fluid with soap and running water. Join irritation on, consult a doctor.
- Do not drink! Poisoning! vomit swallowed brake oil immediately and consult a doctor.
- Keep brake fluid out of reach of children.

- Take care when using oil containers. Keep them in a suitable place.

Disposal of old and second-hand brake oil

Keep yourself in the disposal of brake oil to the local and state laws and regulations. Brake oil may not re-enter into the sewage system or into natural waters!

Be careful when turning the bicycle

In the expansion tank of the brake handle can in rare cases with incomplete venting of the brake system or prolonged use

Air bubbles. Turning over of the bicycle (for example, for disassembly of the wheels), these air bubbles from the surge tank in the get high-pressure area of the hydraulic system and affect the function of the brake. Therefore, check after the bike was reversed by repeatedly pressing the brake lever, the function of the brakes. If not appeal the brakes normally, they must be set as follows:

If the response to actuation of the lever is bad (soft pressure point):

Position the bike on the back wheel and hit the handlebars (so that the master piston obliquely upwards has) and press the brake lever a few times slowly so the bubbles return to the reservoir. It is recommended then to bleed the brake to remove the air bubbles out of the container

If the response does not improve, the brake must be vented in any case. (See "Adding brake fluid and bleeding")

installation

Note: Install disc brakes only with the appropriate components! Be careful with lightweight forks. Not every fork can withstand the high loads by a disc brake in the long run. We recommend the use of spoke wheels with 32 steel spokes spoked 3-cross, and special disc rims. Radially spoked wheels are not permitted! Make sure to use only as good as new, suitable tools!

Installation of window

Tools: Torx TX 25, screw locking "low strength"

Make sure that the brake ring of the disc is not contaminated during assembly. Wear gloves.

1. Align the disc to the hub flange and insert the supplied M5x12 TX25 screws. The disc must be mounted so that the webs are loaded in compression.
2. Use new bolts with thread lock for assembly. If the screws are mounted without security, there is a risk that they dissolve in operation.
3. Tighten the Scheibenbefestigungsschrauben crosswise. Use the correct mounting an adjustable torque wrench.
Torque:
6 Nm. On brake discs size 180 and 203/204 mm: 6 to 8 Nm
4. Note on using the **Trickstuff aluminum brake disc screw**: These screws may only 140-, 160- and 180-are MillimeterBremscheiben used. In 180 discs at most three aluminum screws should be used together with three steel or titanium screws. The Trickstuff aluminum screws have TX20 drive (not TX25). Place the aluminum screws dry (without glue screws, no fat) and tighten them carefully with a maximum of 4 Nm.

Installation of the brake pump

Tools: Allen wrench 2.5 (using shift lever interfaces may hexagon 3 mm)

The DIRETTISSIMA brake pumps with band clamps are provided for mounting on handlebars with 22.2 mm diameter in the clamping area. Soft, the dimensions of the handlebar heavily on these measurements, this can lead to problems with the clamping of the brake levers. The installation of DIRETTISSIMABremspumpen is permitted only on handlebars with 22.2 mm +/- 0.07 mm in diameter in the clamping area!

If your handlebars should have undersized, the optional genuine Yamaha Frässchellen help.

1. Remove handlebar end plugs and grips.
2. Open that the lever can be pushed over the handlebars clamping the brake lever just enough light. to loosen the clamping screw at the top of the brake handle. Set the brake lever so from that you can easily reach the brake lever with the index and middle fingers of your normal grip position. Make sure that the brake lever does not interfere with the operation of the shift lever. DIRETTISSIMA brake handles are compatible with most of the major manufacturers shifters (Shimano, SRAM).
3. Pull the lever aligned only to the extent that the brake handles do not move the clamping screw at normal operating out of position. but the handles should not sit absolutely "fixed" so that they can escape in the event of a fall and will not be irreparably damaged (the same applies

the way, for the gear lever). The clamping of the DIRETTISSIMA brake handles are designed so that the clamping screw only needs to be applied lightly to clamp the grip on the handlebars. The clamping screw is not "anknallen" so as not to damage the clamp.

Attention! Enter a small drop of medium strength screw adhesive

the thread of the clip screw, so that this does not become loose during driving. This is especially when using a shift lever interfaces (for direct mounting of the shift lever on the brake pump) useful because the introduced from below the clamp bolt then can be reached only after disassembly of the interface.

4. Make the reach of the levers so that you can easily reach the levers of your normal grip position with your / s brake finger / s. to turn the 2-millimeter Allen set screw on the brake lever until the lever is in the correct position.

Attention! Adjust the handlebars, you can perform a full brake levers still without the lever on the handlebar trigger.

Mounting the Caliper

Tools: "low strength" Allen wrench 5 / screw lock

The DIRETTISSIMA brake is only available as post mount version.

Use for installation only with the brake included stainless steel screws and steel screws similar quality.

1. Insert the wheels with the brake discs installed in the frame and fork. Make sure that the wheels sit firmly in the dropouts so that later no longer change their position.
2. Place the brake caliper with brake pads mounted externally on the disc and align it with the mounting points on the frame, fork or adapter you.

Third Select the installation of suitable screws. are supplied contain screws 16 and 20 millimeters in length. **Always place a washer under the screw head!**

4. Tighten the screws firmly. When mounting
Screw locking "low strength" (for example, Loctite 222)

Tightening torque 6 Nm

Mounting the brake line

Tools: 2 mm spanner 8

DIRETTISSIMA brakes are supplied on request with cut to length according to customer specifications brake lines.

If you shorten the lines or want inside embarrassed Note "embarrassed brake lines under" instructions "brake line installation ..." and under

www.trickstuff.de/de/manuals/index.php be available..

The Trickstuff lines are provided on both sides with screwed reusable fittings.

Danger: The ring connections used in the Direttissima brake are asymmetric - the hollow screw may only be inserted from the two-stage recessed side.

Tighten the fittings emotional and just as strongly that they are tight and not verdrehen. Nach shortening the brake line or after the new assembly, the hydraulic system must be re-vented.

Replenishing brake fluid and bleeding

Tools: Allen wrench 2.5 / Torx TX10 / Bleed (Art FR / EL-K-001.)

1. Use only Trickstuff- "**Bionol**" or mineral oil (for example Shimano), never DOT 4, DOT 5.1 or Trickstuff Ferodo "Super Formula"!
2. Fix the bike in a bike racks. Making sure that the bicycle like that the brake levers sit on the highest point of the bicycle.
3. Dismantle the impeller.
4. with a flat Press, absolutely lean screwdriver at mounted brake linings, the pistons all the way back into the caliper. then disassemble the brake pads to prevent that they are contaminated with brake oil. Important: Insert a Bleedblock!
5. Loosen the brake lever clamp and adjust the brake lever in a slightly upward-facing position.
6. Preparation of two syringes: Assemble the syringe and a hose nipple M5, on the other syringe tube and **M4 nipple. Pull both syringes approximately halfway air-free with on brake oil.**
7. Dismantle the caliper and swing it 90 degrees so that the vent hole facing up. Remove the vent screw on the back of the caliper. Then fill the vent hole with a small drop brake oil to the brim and screw the half-filled syringe with the M5 Bleeder.
8. Remove the vent screw on the brake lever and screw the half-filled syringe with the M4 nipple. **Never remove the coolant reservoir cap!**
9. Repeatedly press the brake lever slightly. In the brake lever reach possibly the master piston adherent air bubbles in the reservoir. From then do not press the brake lever!
10. Carefully press the brake oil to the lower syringe until the bottom syringe is almost empty (at the caliper) up (brake lever). Holding down both syringes possible upward to emerging air bubbles can be trapped in the syringes and will not be pushed back into the system. Now inflate the liquid from the top down again until the upper syringe is almost empty.
11. Once leak no more air bubbles, remove the syringe from the brake handle and refit the bleed screw. Do not forget the sealing ring and ensure that creeps under the screw no air bubbles (if necessary, you can press again from the bottom up to ensure that no air is below the vent screw a little liquid). Tighten the bleed screw prudently (*Tightening torque: 2 Nm*). Take poured forth brake oil with a paper towel.
12. Remove the syringe with nipple from caliper (vent hole should be back up!), Again put a drop of liquid into the

open hole and then screw in the screw plug. Important: This must be no air get under the screw! *Torque:*
3 Nm

13. Check whether a defined pressure point is established. If not, repeat the procedure.

Wipe 14. The system temporarily.

15. Install the caliper, the brake pads and the wheel.

16. Take the bike from the bike racks and check brake system, the normal function. Check that no leaks are present, in which brake oil leakage.

17. The bicycle, especially the brake system, again with plenty of warm water and detergent, rinse.

18. Setting the caliper drag free.

Replacement of brake oil

We recommend a regular exchange of the liquid. Use only Trickstuff- "Bionol" or mineral oil (eg from Shimano), never DOT 4, DOT 5.1 or Trickstuff Ferodo "Super Formula".

Proceed here as described during venting of the brake. Keep yourself in the disposal of brake oil to the local and state laws and regulations. Brake oil may not re-enter into the sewage system or into natural waters!

Replacing the brake pads

Tools: Allen key 2,5

Attention: Never drive down to the backing plate from your brake pads. The friction material of the pads should always have a minimum thickness of 0.5 mm for safety reasons. Regularly check the condition of your brake pads! **Once the pads below the minimum thickness, have to they are replaced.**

Note: All DIRETTISSIMA disc brakes with the brake pads wear progresses are automatically adjusted. The brake pistons move it out of the caliper housing. For this reason, the pistons must be pushed back into the housing before replacing the brake pads.

1. Leave the old pads initially in the caliper and push the brake pistons careful with Trickstuff BBB tool (alternatively, when removed wheel, using a flat screwdriver) all the way back. Make sure that the force is applied evenly on the plunger so that it does not jam. A piston pushed back diagonally, the piston seal can be damaged, resulting in the brake result in failure. The pistons must be reset without much effort. Is high, the resistance when pushing back the piston, do not force it but check if a piston is jammed, and possibly start again. If the level in

Reservoirs too high, it can happen that can not be completely the pistons push back. In this case, the bleeder valve on the brake pump Loosen (do not open!) Drain and brake oil. absorb oil with a kitchen towel.

2. Now remove the pad retaining screw and pull the worn pads and the sheet spring up out of the lining shaft.
3. Insert the new pads with the plate spring into the base compartment and secure it to the lining locking screw. not bring coverings with grease or oil in contact. Deck retainer screw with 1.5 Nm tightening (a drop of thread locker to the thread can not hurt).
4. Pull After Replace the pads the brake lever several times until a solid pressure point is established. Setting the caliper again, if necessary grinding free.
5. Check the normal function of the brake system.
6. In order to achieve an optimum braking effect of the new coverings, they must cautiously with 20 brake applications from 30 km / h slowed to 10 km / h!

service

The service part is intended to help you in service and repair of DIRETTISSIMAScheibenbremsen. Read the instructions carefully and keep in repair the procedures described processes. Repairs to the hydraulic system should be carried out by qualified bicycle mechanics with appropriate equipment so as not to endanger the safety of the driver.

Troubleshooting

The following overview should help you in finding the cause and remedy possible faults in the braking system.

| problem | Possible Cause | Troubleshooting |
|---|-----------------------------------|---|
| Wheel grinds on the brake lining | Caliper not aligned in the center | Align the caliper such that the disk passes centrally through the coverings |
| disc bent | | Removal of the windshield |
| Soft pressure point | Air bubbles in the system | pressure release |
| | Leak in the hydraulic system | Check hydraulic system for leaks and optionally the component (Refer to "fluid loss" below) |
| | disc bent | 'Directed removal of the windshield or Trickstuff, BBB Tool |
| | Unevenly worn brake pads | Replacing the brake pads |
| | Coverings too strong | Pistons push back, coverings |

| | | |
|--|---|---|
| | worn and thereby far adjusted brake piston | renew |
| | Brake disk is radially inclined between the brake pads | Brake disc is "shielded". Possible cause: warped Bremscheibenaufnahme to the hub => new boss! |
| | Brake disc is inclined in the longitudinal direction between the brake pads | adjust caliper correctly |
| dehydration | Bleed screw on Caliper leaking | Bleed screw tighten. Possibly. Insert new seal |
| | Ring connection leaks on the brake caliper | Replace the O-rings on the ring connection. Note: <i>The Ring ports used in the DIRETTISSIMA brake are asymmetrical - the hollow screw may only be inserted from the recessed side!</i> |
| | Fitting leak at the brake lever | Replace the seal on the brake lever |
| | leaking vent screw on the brake lever | Tighten the screw after careful. Possibly. Insert new seal |
| | Master piston leak | Send brake and let Replace seals in the master piston (<u>Note - this work can only be carried out at the factory!</u>) |
| | Slave piston leak | Change the / the square ring / e in the caliper |
| No or insufficient braking effect | coverings worn | Replacing the pads |
| | coverings glazed | Replacing the pads |
| | soiled pads / disc | Replacement of the coverings, cleaning of the wafer with isopropyl alcohol or acetone |
| Loud noises | Coverings lie obliquely on the disk | Align the caliper centered over the disk of |

| | | |
|-----------------------------------|---|--|
| | Caliper or disc or wheel is not fixed firmly enough | Tighten screws or quick release |
| Brake Levers "rattles" | Storage has game | Replacing the ball bearings M3 grub screw and / or 2.5 mm nylon ball is missing (rotation of the lever length setting). Reassembly: grub screw with Loctite drizzle, hand tighten with 1.5 mm Innensechskantschlüssel. |

| | | |
|--|--|--|
| High operating forces, piston does not recover, | Swollen seals because of improper liquid | Replacement of all seals in the hydraulic system. <u>(Danger - this work can be carried out at the factory are running!)</u> |
|--|--|--|

Repair of the caliper / replacement of the seals

Tools: Allen wrench 2.5 / Torx T10 / T25 Torx / Torx T30 / wooden sticks / compressed air

Danger: This work will be carried out at the factory. No guarantee on full functionality when executed by other!

Be careful when handling brake fluid. Wear safety goggles and gloves. Work in a well ventilated workplace.

1. Dismantle brake caliper and brake handle of frame / fork or handlebars.
2. Remove the brake pads.
3. Slide about 4 mm thick, flat tool (eg wrench) as a stop for the piston longitudinally in the brake lining shaft. Press the brake piston by carefully "pumping" the brake lever to the outside. Make sure that all brake pistons are evenly pressed outward.
4. Remove the brake line on the brake caliper. Be careful when doing with any outflowing brake oil. Pay attention to the two O-rings on the 90-degree connection.
5. Open the Torx-30 Jochverbindungsschrauben the caliper. You now have a front (outer) and a rear (inner) caliper half.
6. Remove the O-ring in the rear caliper half. Use even if the old seals have to mount the caliper later a new O-ring are not damaged.
7. Screw the bleed screw (Torx T10) out of the caliper half. Press the brake piston with compressed air from the two case halves.
8. Remove the wooden stick (eg. As a toothpick) the rectangular rings from the grooves in the caliper half and discard. Already built rectangular rings must not be used again! However, use to expand the rectangular rings not a metal tool, so as not to damage the coating of the caliper.
9. Clean all parts with isopropyl alcohol and blow the cleaned parts carefully with compressed air. Make sure that no residue, dirt, hair, etc. remain in the caliper or on the piston surfaces, otherwise the pistons may leak.
10. Begin the installation of the caliper so that you can easily wet the new rectangular rings with (new) brake oil before inserting it into the groove in the caliper. Spread a little oil to the groove in the caliper around.
11. Gently press the rectangular rings into the grooves in the caliper. Make sure that the rectangular rings in the groove do not twist and that it around well and deep enough to sit.
12. Insert the brake caliper halves so prior to the work surface with the openings facing the piston upwards. Fill the piston chambers with a small syringe brimming with brake oil.

13. Press the piston carefully into the piston bore. The flasks should be easy to push. Make sure that the force is applied evenly on the pistons so that they do not tilt and damage the seal. Is high, the resistance when pushing the piston, do not force it, but make sure that the piston is jammed and possibly start again. Press the plunger all the way into the cylinder bores. absorb overflowing brake oil with a dry cloth.
14. Repeat the installation procedure for the second caliper half.
15. Place a new O-ring into the groove provided in the inner caliper half.
16. Screw the two caliper halves with the Jochverbindungsschrauben.
Tightening torque 16 Nm
17. Install the brake line. To do this, use new seals. ***Danger: The Ring connections are asymmetrical - the hollow screw may be imported only by the two-stage recessed side.***
18. Clean now the caliper and the line completely of brake oil. Use this warm water and detergent and wipe the cleaned parts with a dry cloth to carefully. You should never use conventional brake cleaner because this may damage parts of the brake system!
19. Bleed the hydraulic system and check the function of the brake system.

Repair of the brake handle / replacement of the seals

Tools: Allen wrench 1.5 / 2 SW / SW 2,5 Torx key T10

External hexagon 8 mm / Circlip Pliers for snap ring $\varnothing 11$ / compressed air

Danger: This work will be carried out at the factory. No guarantee on full functionality when executed by other!

Be careful when handling brake fluid. Wear safety goggles and gloves. Work in a well ventilated workplace.

1. Dismantle brake caliper and brake handle of frame / fork or handlebars.
2. Open the expansion tank by removing the three screws at the top of the container and take down the reservoir cap. then remove the now visible membrane in reservoir. Be careful when doing so you will not damage the delicate rubber membrane. Use for removing any sharp-edged tools.
3. Vacuum with a small syringe, the brake oil from the reservoir. Collect the old brake oil in a suitable container and dispose of it later with environmental regulations.
4. Remove the brake line from the brake handle. Suck effluent brake oil with a dry cloth.
5. Remove the brake lever from the handle by first solving the bearing bolt and then turning the screw to the handle width inward from the brass barrel nut in the lever.
6. Make straight up the brake lever.

7. Remove with a pliers to snap ring on the head side of the brake handle and then remove the ball bar with the attached Totwegscheibe.
8. Now the master piston by itself should come from the piston bore. Check the surface of the piston bore and the master piston. Are on the surface scratches or marks to see which parts need to be replaced. The piston seals should be replaced regularly!
9. Clean the Handle carefully and blow him with compressed air from you. Make sure that no residue, dirt, hair, etc. remain, otherwise the master piston could be leaking.
10. Place the return spring on the intended spike on master piston. Wet the new master piston with the seals around with some brake oil and press him with the return spring must first be carefully into the piston bore. Make sure that the master piston does not tilt so as not to damage the seals. Apply not force it - the master piston can be used in the piston bore normally with little force.
11. Put the ball hitch with the lightly greased ball head into the semi-spherical recess in the master piston. Thread the Totwegscheibe via the piston rod and secure the master piston with the Seeger ring - **important sharp edge of the snap ring outwardly!**
11. To assemble the brake lever screw the ball bar again from the bottom of the barrel nut and screw the handle **width adjustment lever then with the bearing bolts. *Tightening torque 2 Nm.*** Then pivot the pump in a horizontal position.
12. Insert the diaphragm fit into the surge tank. Put the reservoir cap on, without jamming the diaphragm, and **secure it with the three screws. Screws previously drizzle with screw adhesive! Tighten the screws carefully.** If the membrane is visible bulge over the edge of the cap, the pressure of the lid is too large and the screws must be loosened slightly so that the membrane around the entire circumference of the lid abuts evenly.
13. Install the brake line and bleed the hydraulic system. Then check the brake function.

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Stand October 2016

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