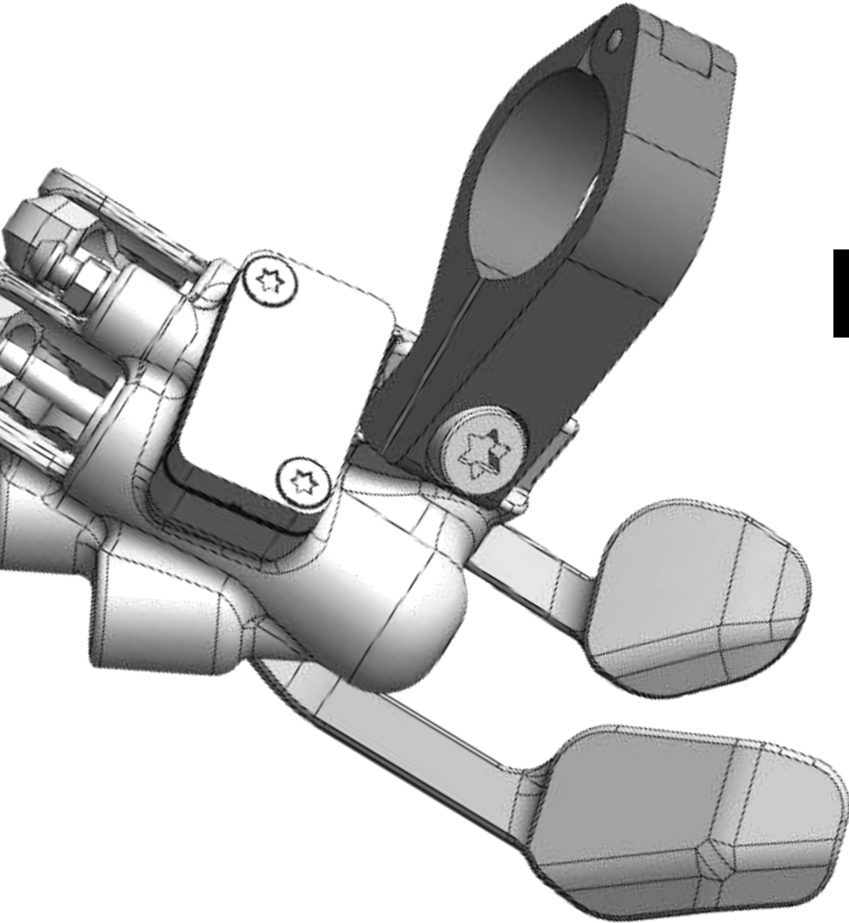


kindernay



KINDERNAY HYSEQ

HOSE CUTTING & BLEEDING PROCEDURE

Ver 1.0.7

DISCLAIMER

- ! The bleeding procedure should only be performed by experienced mechanics.
- ! Wear eye protection and rubber gloves
- ! USE ONLY MINERAL OIL WHEN BLEEDING THE SYSTEM
 - ! DOT fluid will destroy the seals inside the shifters
- ! Remove or protect any brake components before performing the bleeding procedure. Any oil spill on braking components may affect braking performance afterwards that can lead to serious injury or death

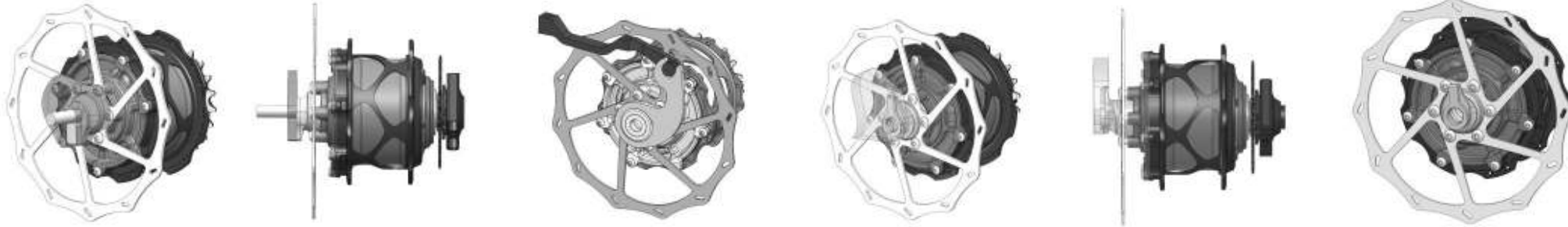
SCOPE

This instruction is intended for professional and home mechanics to:

- Perform the hose cutting and bleeding procedure for the Kindernay HYSEQ shifters
- Find solutions to common problems with HYSEQ shifters



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INTRODUCTION

- The Kindernay HYSEQ shifters are HYdraulic and SEQual, meaning that the shift levers will reset to the original position after each shift.
- The shifters operate the gearhub by rotating the shift cam clockwise (heavier gear) or counter-clockwise (easier gear).
- The indexation of the system is in the gearhub, meaning the shift cam has 7 (VII) or 14 (XIV) positions.
- The shifters themselves have no indexation, hence they will not give a tactile feedback when not connected to a gearhub.
 - Hence, if the gearhub is removed from the bike while being in 6th gear, it will still be in 6th gear when it is re-installed on the bike.



Gearhub shift cam (shown here on XIV)

- The HYSEQ shifters has many similarities to an hydraulic brake system:
 - The levers have master cylinder(s) and reservoir(s).
 - The actuator has slave cylinders (similar to brake pistons).

COMPONENT TERMINOLOGY

The HYSEQ shifters have three main components:



Actuator: The component that connects to the gearhub that rotates the shift cam on the gearhub.

- The actuator has two slave pistons, each rotating the shift cam in opposite directions. The slave pistons each have a separate hydraulic circuit in the actuator, with separate bleed ports.

Operator(s): The component that controls the actuator based on rider input.

- The HYSEQ Twosie operators have one master piston each, with one reservoir each.
- The HYSEQ Onesie operator has two master pistons connected to a common reservoir.

Hose: Connects the operator and actuator.

- The HYSEQ has one hydraulic hose for each hydraulic circuit.

HYSEQ TWOSIE VS. ONESIE



The **HYSEQ Twosie** shifter has two separate hydraulic circuits at the actuator, each with a separate shifter/reservoir. The shifters can therefore be bled separately.

Both levers can shift 2-3 gears with one push, depending on current gear selection and the position of the HYSEQ actuator.



The **HYSEQ Onesie** combines the hydraulic circuits from the actuator into a common reservoir at the shift lever. The bleeding procedure is therefore slightly different, as the next pages will illustrate.

The lower lever can shift 2-3 gears with one push, the upper lever can shift 1-2 gears.

HOSE CUTTING PROCEDURE

- The hose cutting process is similar for HYSEQ Onesie and HYSEQ Twosie.
- Please refer to the following instructional video for the hose cutting process:
 - https://youtu.be/VMaOec_olH8





HYSEQ ONESIE

BLEEDING PROCEDURE

REQUIRED TOOLS & SUPPLIES

- Protection gloves and eye-protection
- Two syringes with hoses
- T25 Torx key
- 5 mm combination spanner
- Mineral oil
 - Kindernay HYSEQ mineral oil, Shimano Mineral oil or Magura Royal blood are all compatible



BEFORE YOU BEGIN..

A properly bled HYSEQ should have only 2-5 mm of lever travel before the system builds pressure. Both levers should have a similar contact point, although the upper level has less maximum travel.

The shifter should be able to shift through all gears in both directions. If a shift lever has too much travel before it builds pressure, or isn't able to shift properly, the associated circuit likely has air in it.



If only the **upper lever circuit** has air in it, you can skip to [Step 2.1](#) on page 12.

If the **lower lever circuit** has air in it, it is advisable to follow the complete procedure and bleed both circuits from [Step 1.1](#) on page 11.

STEP 1 – BLEED THE LOWER CIRCUIT

For the lower circuit, you want to bleed using the rear-facing nipple on the actuator.



1.1: Remove the wheel and attach the actuator to the thru-axle or thru-bolt as shown.



1.2: Attach a syringe with 30ml of mineral oil to the **rear-facing** nipple and open it using a 5 mm spanner



1.3: Loosen the Onesie operator from the handlebar clamp.



1.4: Open the shift lever nipple and attach an empty syringe, or a hose with a drain cup.



1.5: Push fluid from the actuator to the shifter. This will force any air bubbles into the reservoir, and then into the syringe.



1.6: Observe the oil flow through the operator syringe.



1.7: When no more air bubbles emerge in the operator syringe, close both nipples.

QUICK TIP: If you run out of fluid in the actuator syringe, simply close the nipple and refill the syringe (make sure to remove any air in the syringe before re-attaching).

STEP 2 – BLEED THE UPPER CIRCUIT

For the upper circuit, you want to bleed using the forward-facing nipple on the actuator.



2.1: If not performed already, remove the wheel and attach the actuator to the thru-axle or thru-bolt as shown.



2.2: Attach a syringe with 30ml of mineral oil to the **forward-facing** nipple and open it using a 5 mm spanner



2.3: If not performed already, loosen the Onesie operator from the handlebar clamp.



2.4: Open the shift lever nipple and attach an empty syringe, or a hose with a drain cup.



2.5: Push fluid from the actuator to the shifter. This will force any air bubbles into the reservoir, and then into the syringe.



2.6: Observe the oil flow through the operator syringe.



2.7: When no more air bubbles emerge in the operator syringe, close both nipples. **Leave both syringes attached for step 3.**

QUICK TIP: If you run out of fluid in the actuator syringe, simply close the nipple and refill the syringe (make sure to remove any air in the syringe before re-attaching).

STEP 3 – BLEED THE OPERATOR

For the operator, you want to bleed using the forward-facing nipple on the actuator as in Step 2.



3.1: Open the actuator and operator bleed port. Push fluid from the actuator to the shifter.



3.2: While pushing fluid through, rotate the shifter back and forth as shown. This will force any leftover air bubbles into the reservoir, and then into the syringe.



3.3: We also want to get rid of any air bubbles in the master piston. While pushing fluid from the actuator syringe, separately actuate the shifter levers slightly back and forth (you will feel the syringe firming up while pushing the lever, this is normal).



3.4: Lastly, perform the rotation motion in (step 3.2) 3-4 times while pushing fluid from the actuator.



3.5: When no more air bubbles emerge in the operator syringe, close both nipples and remove the syringes.



3.6: Wipe of excess oil and clean with rubbing alcohol. Attach the operator to the handlebar in the desired position.

DONE. If completed successfully, the upper HYSEQ lever should have only 2-5 mm of travel before the system builds pressure. The shifter should be able to shift through all gears in both directions.



HYSEQ TWOSIE

BLEEDING PROCEDURE

REQUIRED TOOLS & SUPPLIES

- Protection gloves and eye-protection
- Two syringes with hoses
- T25 Torx key
- 5 mm combination spanner
- Mineral oil
 - Kindernay HYSEQ mineral oil, Shimano Mineral oil or Magura Royal blood are all compatible



INSTRUCTIONAL VIDEO

- Please refer to the following instructional video for bleeding the Kindernay HYSEQ Twosie shifters:
 - https://youtu.be/VMaOec_olH8



HYSEQ FAQ

Problem / Question	Solution / Answer
What is the outside/inside diameter of the hydraulic lines?	<ul style="list-style-type: none"> • Outside dia. 5.0 mm, inside dia 2.1 mm.
Which olives are compatible with the HYSEQ hydraulic lines?	<ul style="list-style-type: none"> • Use Kindernay HYSEQ specific olives. If these are not available, olives/insert pin for Shimano BH90 can be used (MPN KSMBHD1030).
Can I use other types of hydraulic lines?	<ul style="list-style-type: none"> • Yes, but make sure to use insert pins that fit the hose inner diameter and olives that are Shimano compatible. Brake hoses such as Shimano BH90, BH59 and BBB HydroLine BCB-200, BCB-201 are compatible.
What type of oil should I use for bleeding?	<ul style="list-style-type: none"> • The HYSEQ uses mineral hydraulic oil. Kindernay HYSEQ mineral oil, Shimano Mineral oil or Magura Royal blood are all compatible. DO NOT use DOT fluid, this will destroy the seals in the shifter!
The HYSEQ actuator rotates during shifting or riding.	<ul style="list-style-type: none"> • Check that the torque arm is installed. • Check that the thru axle / thru bolt is tightened properly.
The HYSEQ actuator has an oily film on the inside when removing.	<ul style="list-style-type: none"> • In most cases this is normal. Over time, the gearhub will sweat a tiny bit of oil that can accumulate on the inside of the actuator.
The shifting feels imprecise, it is hard to shift accurately.	<ul style="list-style-type: none"> • In most cases this is caused by air in the system or improper bleeding.
After bleeding, one of the shifter levers sporadically locks up and won't shift (ie. feels like the shifter reached the end stop).	<ul style="list-style-type: none"> • The system might be overpressurized, causing one of the shifter racks to contact the shift cam. • Using a 5 mm spanner, open the bleed port on the actuator ½-¾ turn, leave it open for 2 seconds and then close. If any fluid comes out it means the shifter is overpressurized.
My shifter levers are reversed after performing bleeding/hose cutting.	<ul style="list-style-type: none"> • The shift hoses have been swapped around. Simply swap the hoses around, either on the shifter or actuator (easiest). Remember to bleed the system afterwards.
HYSEQ has air in it, even after bleeding.	<ul style="list-style-type: none"> • Make sure that all the steps in the bleeding procedure are followed. It is especially important to remove the shifter from the handlebar and follow the rotating procedure to get all the air out.
"Mushy" feeling in shifter levers when shifting.	<ul style="list-style-type: none"> • Check that the torque arm is installed. • Check that the thru axle / thru bolt is tightened properly.
The shift lever "skips" when shifting under load.	<ul style="list-style-type: none"> • One of the teeth on the shifter rack might be broken. Contact us for replacements.
The shifter clamp is loose on the handlebar.	<ul style="list-style-type: none"> • This can be the case for some undersized handlebars. Simply add a piece of electrical tape between the clamp and handlebar.

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Need support?

Contact our support team directly at

support@kindernay.com



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