

Manual

# **psh'R 1.2 MTB**



hydraulic push shifting for Rohloff

inbus 5 gmbh

<b>Introduction</b>	<b>3</b>
<b>Reminder</b>	<b>4</b>
<b>Content of package</b>	<b>4</b>
<b>Function of the thumb-lever</b>	<b>5</b>
<b>Installation of psh'R 1.2</b>	<b>6</b>
<i>Filling/bleeding psh'R</i>	<i>8</i>
<i>Synchronisation of psh'R</i>	<i>11</i>
<b>Frequently asked questions (faq)</b>	<b>13</b>
<b>Liability</b>	<b>15</b>
<b>Productregistration</b>	<b>16</b>

psh'R

## Introduction

Congratulations! With psh'R 1.2 MTB you made an excellent choice to shift the gears in your Rohloff Speedhub 500/14 with external gear mech.

Together with proto.ch, **inbus 5 gmbh** developed the hydraulic-converter which together with the thumb-shifter of Acros Sports ltd gets assembled by inbus 5 ltd in Bern (CH), according to the highest quality standards. With psh'R shifting is smooth and easy under all conditions.

It's: "no more twist, just psh'R!"

Please!!! Before use, carefully read the manual!

psh'R

We wish you a lot of great miles and pleasure



Sven Jan Hiltbrand



Barbara Wyss

## Reminder

psh'R 1.2 is a great and sophisticated product, which is easy to use, but demands your full concentration to be installed properly. Choose a clean workplace, a calm moment and read the instructions carefully before and while you work or watch the video on: [www.inbus5.ch/pshR/service](http://www.inbus5.ch/pshR/service)

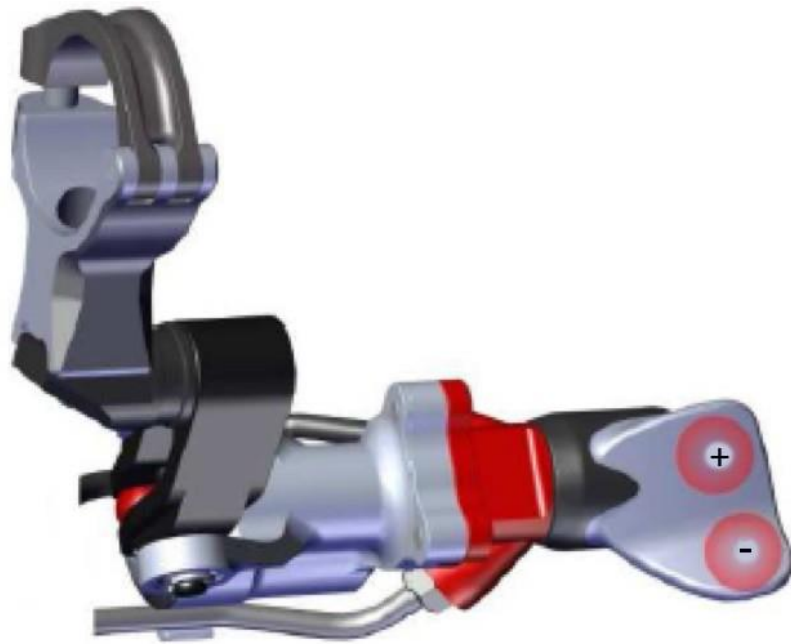
Be well organised, patient and careful throughout all steps described in the manual!

## Content of package

Your box contains:

1x thumb-shifter psh'R 1.2 attached to a hose-set, filled and bled with 1x hydraulic-converter psh'R black with attachment-screw in the colour of your choice, 1x short Torx-screw for the replacement on your external gear mech, and the fill & bleed-kit (2 syringes, 1 empty container, 1 speedcoupler, 2 olives, 1x hydraulic-oil (60ml))

## Function of the thumb-lever



In order to shift in a higher gear, push the thumb-shifter on the upper part (+). In order to shift in a lower gear, push the thumb-shifter on the lower part (-), then the handle (-) tilts downwards. The tilting activates the valve which lets the hydraulic oil flow in the opposite direction.

# Installation instructions

## Installation of psh'R 1.2

For the installation of your psh'R 1.2 MTB-set you need the following tools and material:

The psh'R 1.2 MTB- set consists of the converter, the thumb-shifter and a M4x12 Torx-countersunk screw that replaces the right screw at the external gear mech of your Rohloff Speedhub.

Torx-key T10 und T 15

Hex-Key 2, 3 und 8

Fork-key 6 und 8

Hosecutter

Fill & Bleed Set with one large pre-tension-screw, a little alloy fork-key, 2 syringes, 1 container with hose and a speed-coupler M3, psh'R hydraulic oil, 2 olives

scotch-tape

Let's go!

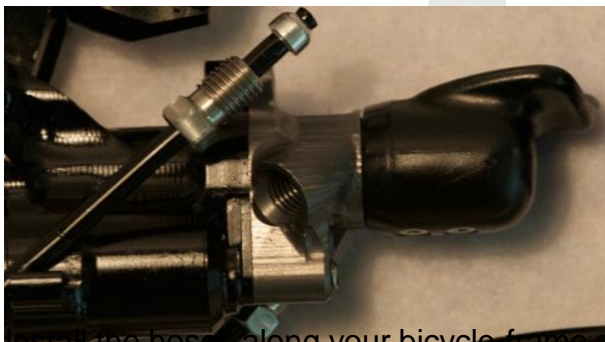
- 1 Mount the psh'R-thumb-shifter to the handlebar (shifter for left-hand-use is available as an option)
- 2 Replace the right screw at the external gear mech of your Rohloff Speedhub with the enclosed M4x12mm Torx-countersunk screw:



- 3 Put the converter carefully on the external gear mech of your Rohloff. Push slightly on the thumb-shifter in order to make the converter slide smoothly into its final position. Don't worry about the gear at this point!
- 4 Turn in the enclosed bleeding-screw as far as possible into the compensation reservoir. Then pull it out, so you can squeeze in the little fork-key.



- 5 Mark the upper Hose on the thumb shifter with scotch-tape and unscrew both hoses from the thumb-shifter.



- 6 Install the hoses along your bicycle frame and shorten them accordingly, if necessary. If you cut the hose, you have to use the enclosed olives.
- 7 Reinstall the hoses with the new olives in the thumbshifter and make shure, the marked upper hose is where it was before. Tighten the union nut with the fork key firmly, in order to squeeze the olive.
- 8 Now your system needs to be bled → [Filling/bleeding psh'R](#)

## Filling/bleeding psh'R

- 1 Take the converter off the external gear mech of your Rohloff and detach the lever from your handlebar.
- 2 Bring your bike in a position, where the converters position is above the thumb shifters position.
- 3 Turn in the enclosed pre-tension-screw as far as possible into the compensation reservoir. Then pull it out, so you can squeeze in the little fork-key.



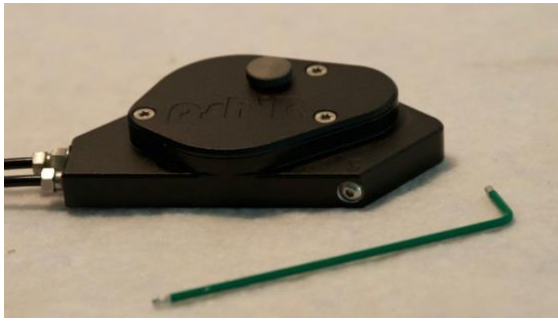
- 4 Fill the first Syringe bubble free with the enclosed hydraulic oil.
- 5 Unscrew the inner Allen-key-screw at the thumb-shifter.



- 6 ...e now open thumb-shifter.



- 7 Unscrew the lower bleed-screw on the converters bottom and screw in the speedcoupler with the attached empty oil-container.



- 8 Slowly press a maximum of two thirds of the oil in the Syringe through the system until it steadily flows in the empty oil-container.
- 9 Now unscrew the speedcoupler with the attached oil-container from the converter and close the bleeding-hole with the bleeding-screw carefully.
- 10 Bring the converter in a position, such as the upper bleeding-screw looks upward.
- 11 Unscrew the upper bleeding-screw on the converters upper side and screw in the speed-coupler with the attached empty oil-container.
- 12 Activate the thumb-shifter gently in order to tilt it, without pushing it, in order to open the opposite flowing direction and slowly press the oil in the Syringe through the system until it steadily flows in the empty oil-container.
- 13 Now unscrew the speed-coupler with the attached oil-container from the converter and close the bleeding-hole with the bleeding-screw carefully.
- 14 Fill the second Syringe bubble free with the enclosed hydraulic oil.
- 15 Unscrew the outer Allen-key-screw at the thumb-shifter.
- 16 Attach the second syringe to the now open thumb-shifter.
- 17 Slowly press oil from the second syringe into the first one, until there aren't any bubbles anymore!
- 18 Unscrew the first Syringe and close the hole with the Allen-key-screw carefully.
- 19 Unscrew the second Syringe and close the hole with the Allen-key-screw carefully.

- 20 Now pull out the little fork-key between the thumb-shifters compensation-reservoir and the large tension-screw. If you did well, a gap should remain.
- 21 Unscrew the large tension-screw from the compensation-reservoir
- 22 Mount the thumb-shifter to your handlebar.
- 23 proceed to the [Synchronisation of psh'R](#)

psh'R

## Synchronisation of psh'R

- 1 Shift your Rohloff with an 8mm fork-key into the hardest gear:



- 2 Take-off the cover of the converter



- 3 Remove the shifting-gear with the hexagon in its centre

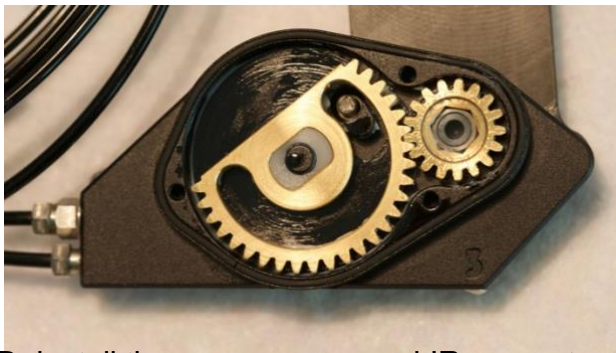


- 4 Push the converter as far as you can. Now the

- 5 Reattach the converter on the external gear mech of your Speedhub



- 6 Install the small gear on the hexagon of the Rohloffs external gear mech:



- 7 Reinstall the cover on your psh'R-converter and attach it with the attachment-screw to your Rohloff Speedhub.



8

## Frequently asked questions (faq)

### What does psh'r 1.2 stand for?

psh'r, pronounced "pusher", stands for **h**ydraulic **p**ush **s**hifting for **R**ohloff. 1.2 refers to the function of the trigger shifter. On the straight handlebar, the version psh'R 1.2 MTB with one trigger shifter and two ways of shifting (up and down). On the drop bar, the version psh'R 2.2 RR, which's under development, with 2 levers for the 2 ways of shifting.

### Is it difficult to change to psh'r 1.2?

With cables that aren't inside the frame you can mount the trigger shifter on the handlebar, install the hoses along your frame and then you must synchronise the psh'r converter with the Rohloff-Speedhub once. (see manual or visit [www.inbus5.ch/pshR/service](http://www.inbus5.ch/pshR/service)).

### How far can you shift at once with psh'r 1.2?

With psh'R 1.2, you can switch a maximum of 3 gears with a full stroke of the thumb. You are not as fast as you are with the twist shifter of Rohloff, but you can always switch, no matter how wet the lever or how old the cables are.

### Is psh'r 1.2 more difficult than the original twist shifter from Rohloff?

The completely filled and bled system psh'R 1.2 weighs approx. 240 grams and is thus about 140 grams lighter than the original lever of Rohloff.

### Do you have to fill or vent psh'r 1.2?

Depending on how you ordered! If you have ordered psh'R 1.2 with the indication of the cable length required for your bike filled and bled then not.

If you want to shorten the cables or lay them in the frame, then yes. Then you have to fill / bleed psh'R with the optionally available bleeding kit(see manual or visit [www.inbus5.ch/pshR/service](http://www.inbus5.ch/pshR/service)).

### Is psh'r maintenance-free?

Yes, each individual set of psh'R 1.2 gets leak tested in the Swiss factory with a pressure 6 times higher than the pressure that's necessary for the shifting . When correctly assembled, installed, filled and bled, almost eternal, maintenance-free shifting is ensured.

Does psh'r 1.2 show the active gear?

No, the active gear cannot be seen. Is

psh'R susceptible to cold or heat?

The oil used in psh'R 1.2 has the same properties as the hydraulic mineral oils used in common braking systems (Shimano, Magura...). In addition, there's a small built in expansion-container in the psh'R 1.2 thumb-shifter, that equals temperature related differences.

How often does the oil has to be changed?

The system is closed, but as in every hydraulic system tiny amounts of oil can get lost over time. So it's no mistake to check or bleed the system once a year or when necessary.

Can you shift under load with psh'R 1.2?

After the law of physics, it's not possible to shift under load. But yes, you can shift under pressure, just as you can with the twist shifter made by Rohloff, as long as the force applied to the gear is less than the one on the trigger shifter!

When will psh'R 2.2 hit the market?

We're working on it, but a lot of functions have to (reliably) fit into a tight space. And because we expect quality and reliability to equal Rohloff, psh'R 2.2 RR will only be introduced when we're at it.

## Liability

Inbus 5 ltd offers a **3-year warranty on your psh'R-converter, when you register your product with us**. For the shifter the 2-year liability of Acros Sports Ltd applies. Be aware of the therefore enclosed red- rimmed liability-information sheet in the middle of this manual!

**The warranty is not valid, when the system got damaged out of the following reasons:**

- ☐ inappropriate use/handling or damage after a crash/accident
  - ☐ use of the system with parts from other manufacturers
  - ☐ changes to the surfaces with paint or similar
  - ☐ all trials to disassemble the system, other than described in the manual
  - ☐ changes to the system
  - ☐ unqualified or inappropriate maintenance
  - ☐ defects or lost through transport
- (we recommend insuring shipments to the full value!)

**Be aware, that inbus 5 ltd only accepts warranty claims with the enclosed receipt**





# Productregistration

## Personal informations

Family-name: \_\_\_\_\_ Name: \_\_\_\_\_

Adress: \_\_\_\_\_ PLZ: \_\_\_\_\_ Place: \_\_\_\_\_

Country: \_\_\_\_\_ Mail: \_\_\_\_\_

Age: \_\_\_\_\_ miles with Rohloff/year: \_\_\_\_\_

## Product details

Date of purchase: \_\_\_\_\_ Product: psh'R 1.2 MTB

Invoice-number: \_\_\_\_\_

Length of hoses: \_\_\_\_\_ mm Colour of attachment-screw ☐ red ☐ titan

Thumblever: ☐ right (standard) ☐ left

Colour of thumb-lever ☐ black (standard) ☐ silver ☐ red

## Details about usage

Type of bicycle ☐ Urbanbike ☐ Touringbike ☐ Travelbike ☐ MTB ☐ Fully

☐ Fitness/Road Brand and type: \_\_\_\_\_

\_\_\_\_\_ Age: \_\_\_\_\_

Rohloff Serial-Nr: \_\_\_\_\_ Date of purchase: \_\_\_\_\_

In order to register your product for the 3-year warranty, send this sheet completely filled out to the following address:

**inbus 5 gmbh**  
Produktregistrierung psh'R  
Fährstrasse 34  
3004 Bern  
Schweiz