

DT SWISS

RATCHET LN CONVERSION
TECHNICAL MANUAL

V2021.05

1. GENERAL	3
1.1 Validity.....	3
1.2 Safety	3
1.3 Target group.....	3
1.4 Layout.....	3
1.5 DT Swiss manual concept	3
1.6 How to use the manual	4
1.7 General Maintenance Information.....	4
1.8 Environmental protection.....	4
1.9 Exclusion of liability.....	4
1.10 Warranty.....	4
2. CONVERSION FROM 3 PAWL TO RATCHET LN	5
2.1 Overview.....	5
2.2 Required wearing parts and materials.....	6
2.3 Required tools.....	8
2.4 Removing the end cap on the drive side.....	8
2.5 Dismounting the freewheel body and the freewheel system	9
2.6 Dismounting the pawl ring nut	9
2.7 Mounting the ratchet ring nut.....	10
2.8 Assembling the freewheel system and the freewheel body	13
2.9 Mounting the end cap.....	14
3. TROUBLE SHOOTING.....	15

1. GENERAL

1.1 VALIDITY

This manual describes the component specified on the front page and the footer. This manual is valid for the design of the product as of 03.05.21. Deviations are possible and all items are subject to technical changes.

1.2 SAFETY

The safety instructions are classified as follows:



DANGER

...indicates a hazardous situation that, if not avoided, will result in death or serious injury.



CAUTION

... indicates a hazard with a medium level of risk which, if not avoided, may result in minor or moderate injury.



NOTICE

... indicates a potentially hazardous situation that may result in damage to property.

1.3 TARGET GROUP

This manual is intended for the user of the component and dealers. This manual offers the experienced user the possibility to carry out minor service work himself. If you have any doubts about your own abilities, you should definitely contact a specialist or a DT Swiss Service Center.

Any warranty claims will lapse if work is not carried out properly.

1.4 LAYOUT

The cover page and the footing provide information about the type of product and manual as well as the version of the manual. The DT Swiss contact details can be found on the back. A list of all DT Swiss service centers can be found at www.dtswiss.com.

This manual is intended for being printed as an A5 booklet. Only print this manual if electronic usage is not possible.

1.5 DT SWISS MANUAL CONCEPT

The DT Swiss manuals are split into the following types of manuals:

- User Manual: Information for the end user on how to install and use the component.
- Technical Manual: Detailed information for the end user and the dealer on how to maintain the component, spare parts and technical data.

1.6 HOW TO USE THE MANUAL

The steps described in this manual must be carried out in the order they are shown. If steps are ignored or executed in a wrong order, the function of the component cannot be guaranteed.

1.7 GENERAL MAINTENANCE INFORMATION

Unless otherwise specified, moving parts, threads, O-rings and seals must be greased before assembly.

CLEANING

For an optimal result of the maintenance works, every component that will be disassembled must be cleaned. Only use cleaners which do not damage the components. Especially the cleaning of O-rings and seals requires mild cleaners. Observe the instructions for use of the respective cleaner.

DT Swiss recommends the following cleaners:

- Motorex Rex
- Motorex Swissclean
- Motorex OPAL 2400, 3000 OPAL, OPAL 5000

Use soap water or similar mild cleaners for external cleaning.

TOOLS

To ensure a damage-free mounting and dismantling of the components, only use the tools which are mentioned in this manual. Special tools are indicated at the beginning of a chapter in the table "Required material".

The use of different tools is at the discretion of the user. If components are damaged by the usage of differing tools, the user is liable.

DT Swiss special tools are precision tools. Damage-free mounting and dismantling of the components can only be ensured if the tools are working properly and if the condition of the tools are perfect. Always keep the tools in their original packaging or adequate devices to prevent damage.

1.8 ENVIRONMENTAL PROTECTION

The statutory regulations shall apply. Whenever possible, avoid creating waste. Waste, especially carbon, lubricants, cleaners and any other fluids must be disposed in an environmentally compatible manner. Only print this manual if electronic usage is not possible.

1.9 EXCLUSION OF LIABILITY

The activities listed in this manual may only be carried out by persons with sufficient specialist knowledge. The user is liable for any damage or consequential damage caused by wrongly maintained or installed components. If you have doubts, please contact your region's DT Swiss pro level service center.

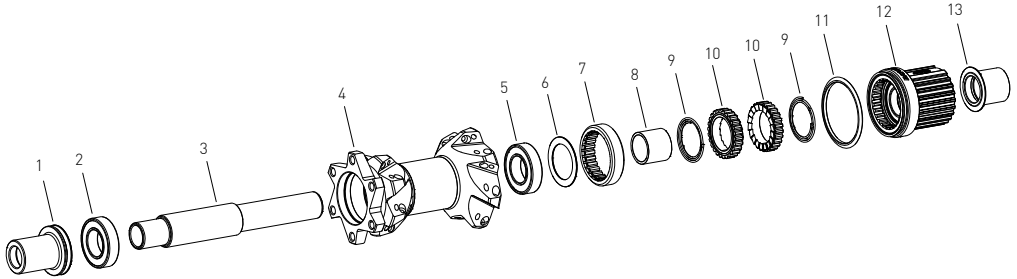
1.10 WARRANTY

Warranty conditions, see www.dtswiss.com

2. CONVERSION FROM 3 PAWL TO RATCHET LN






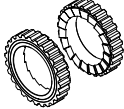



Preparatory Steps	Link
Dismount the brake rotor	
Dismount cassette	
Clean the hub	


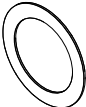
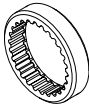
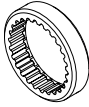
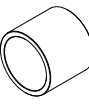



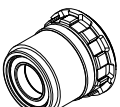

2.1 OVERVIEW




1	end cap non drive side	6	shim ring	11	hub seal
2	bearing non drive side	7	ring nut	12	freewheel body
3	axle	8	spacer	13	end cap drive side
4	hub shell	9	spring		
5	bearing drive side	10	ratchet		

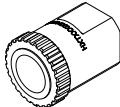
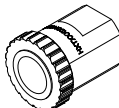
2.2 REQUIRED WEARING PARTS AND MATERIALS

Wearing parts / Materials	Specification	Quantity	Article number
Ratchet LN conversion kit consisting of:	HXYXXX00N3770S - with Microspline freewheel body HXYXXX00N3769S - with SRAM XD freewheel body HXYXXX00N3767S - with Shimano freewheel body		
<ul style="list-style-type: none"> DT Swiss special grease 		20 g	HXT10032508S
<ul style="list-style-type: none"> shim ring Ø28 x 20 x 0.5 mm 		1	HCDXXX00S1083S
<ul style="list-style-type: none"> ring nut steel M34 x 1 		1	HXDXXX00N1131S
<ul style="list-style-type: none"> spacer aluminum 15.4 mm 		1	HRDXXX00N4636S
<ul style="list-style-type: none"> spring 		2	HXDXXX00N1087S
<ul style="list-style-type: none"> star ratchets 18 T 		2	HCDXXX00N1167S
<ul style="list-style-type: none"> freewheel body Shimano Micro Spline or 		1	WRABM00S9702S
<ul style="list-style-type: none"> freewheel body SRAM XD or 			HWRAAM00S9720S
<ul style="list-style-type: none"> freewheel body Shimano 			HWRABM00S9706S

Wearing parts / Materials	Specification	Quantity	Article number
Ratchet LN Hybrid conversion kit consisting of:	HXYXXX00N5968S - with Microspline freewheel body HXYXXX00N5971S - with SRAM XD freewheel body HXYXXX00N5970S - with Shimano freewheel body		
<ul style="list-style-type: none"> DT Swiss special grease 		20 g	HXT10032508S
<ul style="list-style-type: none"> shim ring Ø28 x 20 x 0.5 mm 		1	HCDXXX00S1083S
<ul style="list-style-type: none"> ring nut steel M34 x 1 		1	HXDXXX00N1131S
<ul style="list-style-type: none"> ring nut steel M35 X 1 		1	HXDXXX00N4021S
<ul style="list-style-type: none"> spacer aluminum 15.4 mm 		1	HRDXXX00N4636S
<ul style="list-style-type: none"> spring 		2	HXDXXX00N1087S
<ul style="list-style-type: none"> star ratchets 18 T 		2	HCDXXX00N1167S
<ul style="list-style-type: none"> freewheel body Shimano Micro Spline or 			HWRABM00S1665S
<ul style="list-style-type: none"> freewheel body SRAM XD or 		1	HWRABM00S1667S
<ul style="list-style-type: none"> freewheel body Shimano 			HWRABM00S1649S

Wearing parts / Materials	Specification	Quantity	Article number
DT Swiss universal grease		20 g	HXTXXX00NMG20S

2.3 REQUIRED TOOLS

Tools	Specification	Quantity	Article number
tool for ring nut		1	HXTXXX00N5027S
tool for ring nut		1	HXTXXX00N5266S



NOTICE

RISK OF DAMAGING THE ADAPTERS!

To avoid damages, only use grind clamping jaws, aluminum clamping jaws or special tools to clamp the adapters.

2.4 REMOVING THE END CAP ON THE DRIVE SIDE

1. Pull off both end caps by hand.

If the end caps cannot be pulled off by hand, clamp the end caps carefully into a vise with ground clamping jaws and pull the hub / wheel upwards.



2.5 DISMOUNTING THE FREEWHEEL BODY AND THE FREEWHEEL SYSTEM

1. Pull the freewheel body off the hub.



2. Remove the installation cylinder from the hub.



2.6 DISMOUNTING THE PAWL RING NUT

1. Clamp the ring nut tool in the high position in the vise.

2. Push the hub onto the tool with the drive side first.



3. Loosen the ring nut by turning the hub counterclockwise.



4. Remove the hub from the tool.
5. Remove the ring nut.



2.7 MOUNTING THE RATCHET RING NUT

1. Grease the ball bearings on the drive side with universal grease.



2. Clamp the ring nut tool in the deep position in the vise.
3. Slide the ring nut onto the tool with the recess facing upwards.
4. Insert the shim ring in the recess of the ring nut.



5. Place the hub on the tool.



6. Screw on the ring nut approx. 2 turns clockwise.
7. Remove the hub from the tool.



8. Unclamp the ring nut tool, turn it 90° and clamp it back into the vise in the high position.
9. Put the hub back on the tool with the ring nut screwed in.



10. Tighten the ring nut as firmly as possible by hand.



2.8 ASSEMBLING THE FREEWHEEL SYSTEM AND THE FREEWHEEL BODY



DANGER

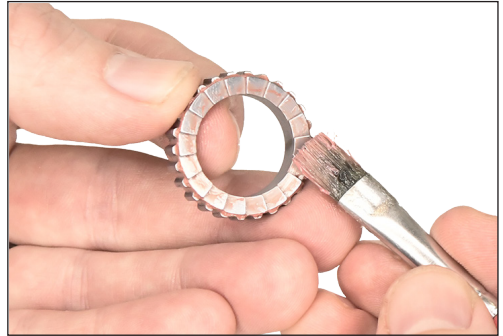
RISK OF INJURY DUE TO LIMITED FREEWHEEL FUNCTION DUE TO INCORRECT LUBRICATION!

If too much grease is applied on the ratchets, the actuation of the ratchets may not work. The ratchets may slip during pedaling.

- Only apply a thin, even layer of grease.
- Only use the red DT Swiss special grease.

1. Apply DT Swiss special grease evenly to the outer and the inner toothing of the ratchets using a fine brush.

→ For an optimal functionality of the freewheel system, a thin layer of grease is sufficient.



2. Grease the teeth of the freewheel body and the ring nut with DT Swiss special grease.



3. Put the spacer onto the axle.



4. Put on the first spring.
→ The spring must rest on the hub with its large diameter.
5. Attach both ratchets and the second spring.
→ The spring must rest with its small diameter on the ratchet.



6. Put the freewheel body onto the hub.
7. Check if the freewheel body can be turned and if the ratchets are engaging.



2.9 MOUNTING THE END CAP

1. Grease the ball bearing and the inside of the end cap with universal grease.
2. Put on the end cap by hand.



Closing Steps:

- Mount the brake rotor
- Assembling the cassette

Link

3. TROUBLE SHOOTING

Issue	Reason	Solution
Freewheel is blocked	Spacer was forgotten during assembly.	Check correct assembly, see "2.1 Overview", page 5.
	Spacer was compressed by overtightening the thru axle.	Measure the length of the spacer. If the spacer is shorter than 15.4 mm, it must be replaced.
Freewheel does not engage / slips	One or both ratchets are mounted upside down.	Check correct assembly, see "2.1 Overview", page 5.
	Too much or wrong grease on the ratchets.	Clean and grease ratchets, see "2.8 Assembling the freewheel system and the freewheel body", page 13.
	One or both springs were forgotten during assembly.	Check correct assembly, see "2.1 Overview", page 5.
Notches from the cassette on the freewheel body.	The steel cassette works itself into the alloy web of the freewheel body.	Remove bad notches from the rotor using a file.
Freewheel is too noisy / too quiet.	The perception of the freewheel sound is very subjective. While some riders prefer a loud freewheel sound, other riders want a quiet freewheel. In principle, the freewheeling sound can be influenced by the amount of grease between the ratchets. Less grease increases the freewheeling sound, but at the same time leads to higher wear.	

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