

Cassette Hub Body Maintenance Instructions

To ensure maximum life and performance from your Phil Wood cassette body, periodic maintenance is required. If you are not comfortable with performing any of the following instructions, contact our sales or service department and we will do our best to find a bicycle shop in your area that will be able to assist you. (See Service Information at the end of these instructions)

On the backside of this page you will find a diagram showing the assembly order and part names we will be using in these instructions.

In general, you should perform these basic maintenance tasks a minimum of every three months. Actual frequency may vary depending on riding conditions and the amount of use. Failure to maintain your hub could result in premature failure and will void the hub warranty. Please visit www.philwood.com for up to date product care instructions, warranty, service and return policy information. Thank you for your support.

TOOLS NEEDED:

.89 mm Hex Wrench
Small needle nose pliers
Mild Degreaser (cleaning/rubbing alcohol)
Small, soft brush
Clean, dry towel
Phil Wood pawl lubricant (included) OR Phil Wood Waterproof Grease and Tenacious Oil

Prelude: Inspect to see what level of service your cassette body needs

1. Follow **Step 1** in the instructions found in our **Cassette Hub Maintenance Instructions** to properly disassemble and remove your cassette body.
2. Follow **Step 2** in the instructions found in our **Cassette Hub Maintenance Instructions** to properly clean your cassette body before either continuing to disassemble and service your cassette body **OR** re-lubricate your pawls, ratchet ring and reinstall your cassette body.
3. After properly cleaning your cassette body, inspect your cassette body for any wear or damage that might have occurred before continuing. The most common wearing part(s) are the double-row pawls (D). The pawls are made to be not as hard as the ratchet ring in your cassette hub. This is done in order to make the easily serviceable pawls the part that wears first so you can service your hub without having to send it back to us. This is very important especially if you are touring, as replacing the ratchet ring is not possible with basic hand tools.
4. If your cassette body and all its components are in good working order follow **Step 3** in our **Cassette Hub Maintenance Instructions**. If you find that you need to replace a pawl, spring or spring set screw please continue with **Step 1** found below.

Step 1: Disassembly

1. Carefully insert the .89 mm hex wrench into spring set screw (E) making sure the hex wrench is fully inserted into the set screw before turning counter-clockwise to loosen. Make sure your .89 mm hex wrench is new and not worn as you can easily strip the spring set screws because of their small size.
2. Once you have removed all of the spring set screws set them aside so you do not lose them.
3. Next carefully remove the (5) pawl springs (C). To make this easier use a fine set of needle nose pliers. Make sure to pull the spring straight up and out of the hole it is in. Avoid bending the spring as this can cause the spring to be deformed and work improperly if when reused. See diagram on the back side of this page for where to best grip the pawl spring.
4. If the double-row pawls have not already separated from the cassette hub body, remove them all now. Their installation order is not important as all pawls and pawl pockets are identical.

Step 2: Cleaning

1. Use a mild degreaser and a small, soft brush to clean grease, oil, and dirt from the ratchet ring, pawls, pawl pockets, springs, spring set screws and the rest of the cassette body. (Avoid flushing degreaser into bearings)
2. After cleaning, let the parts fully dry before continuing.

Step 3: Cassette body part(s) replacement

The springs (C) can be reused and do not have to be replaced unless there is a loss of tension. The double row pawls (D) can be reused, however if you see a rounding or compacting of the pawl where it comes into contact with the ratchet ring then it should be replaced. The spring set screws should only be loosened and retightened a maximum of 3 times to make sure you do not strip them from repetitive torqueing. With every new cassette hub (as of October, 2016) we include a tube of pawl lubricant, (5) spring set screws and (1) .89 mm hex wrenches. If you did not receive these with your cassette hub, please contact the shop you purchased the hub from as they might have forgotten to give it to you.

Step 4: Re-Assembly

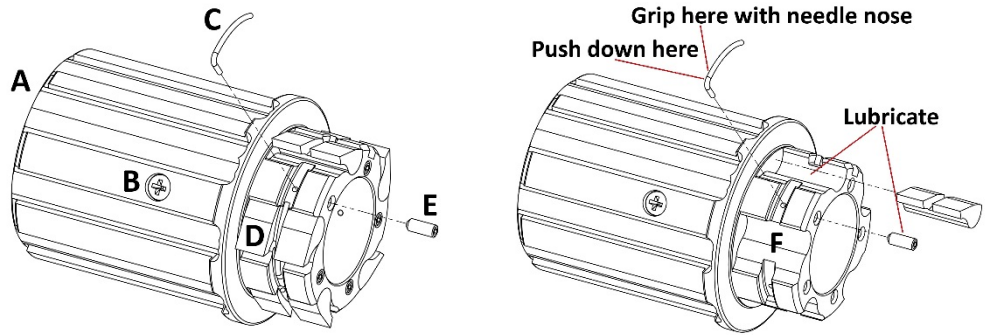
1. Use the Phil Wood pawl lubricant to re-lubricate the (5) pawl pockets in the cassette body before installing the pawls and lubricate the threads on the (5) spring set screws.

PLEASE NOTE: If you do not have a tube of our pawl lubricant you can make your own by mixing Phil Wood Waterproof Grease (~50%) with Phil Wood Tenacious Oil (~50%).

2. Screw the (5) spring set screws half way into the cassette body and be careful to not cross-thread them.
3. Place (1) pawl into an open pawl pocket in the cassette body and then carefully reinstall its spring. You should be able to push the spring all the way down into its hole before tightening the set screw. See diagram on the back side of this page for where to push down on the spring. To make this step easier you can use the tip of the needle nose plier to push down the spring. Make sure to not over tighten the set screw, which can cause the head to strip.
4. Push down on the tip of the pawl to make sure it is operating properly. The pawl should move up and down smoothly without hesitation.
5. Repeat this process for the (4) remaining pawls.
6. Follow **Step 3** in the instructions found in our **Cassette Hub Maintenance Instructions** to properly re-assemble your cassette hub with your serviced cassette body.

10/11-Speed Cassette Body Overview

- A. Cassette body
- B. Retaining ring set screw (do not remove)
- C. Spring
- D. Double-row pawl
- E. Spring set screw
- F. Pawl Pocket



Torque Specifications

- E. Spring set screw (torque to 1 N-m)

Limited Warranty

Phil Wood & Co. provides a limited lifetime warranty against manufacturing defects. This means that we offer a guarantee on material and production thereof for the life of the product to the original owner. In order to be considered for warranty, original proof of purchase from an Authorized Phil Wood & Co. Retailer/Dealer showing date of purchase must be provided. We also offer a one-year guarantee on all our bearings from the date of purchase. Bearings that fail due to contamination, misuse, improper tampering, or improper maintenance are not covered under warranty even if failure occurs within one year from date of purchase. **Please Note:** Our *Classic*, stainless steel cassette bodies have a one-year guarantee and our *Pro*, aluminum cassette bodies and all other *Pro*, aluminum parts have a one-year guarantee.

All Phil Wood & Co. products have an intended purpose. Products used outside of that purpose will not be warranted and Phil Wood cannot be held responsible for any damage that may occur due to misuse. It is the end user's responsibility to examine the product on a regular basis to determine if it requires service and or replacement. (See included maintenance instructions for further information.)

NOT COVERED UNDER THIS LIMITED WARRANTY ARE THE FOLLOWING:

1. Normal wear of parts that are subject to wear (e.g. bearings and ratchet mechanisms)
2. Incorrect re-assembly
3. Use in combination with other products that are not compatible (e.g. threading a FW onto the fixed side of a track hub)
4. Insufficient maintenance, tampering, misuse, and neglect.

*Phil Wood & Co. does not cover the cost of shipping on repair or warranty items back to us beyond 90 days from the original purchase date.

Return Policy

All returns, regardless of reason or cause, must have a return authorization number (RA#). We will not accept or process any item(s) without an RA#. Please contact us for RA# information via email at sales@philwood.com or call us at (408) 298-1540.

- RA#s are good for up 60 days from the day they are issued.
- Items returned for credit are subject to a 15% restocking fee unless the item is returned due to our mis-shipment.
- Product and parts can be returned for credit (less restocking fee) if the product was never installed, used, altered, or damaged in any way. The return must be within 90 days of the original date of purchase.
- Items returned for exchange due to an ordering error are subject to a 15% restocking fee and all shipping fees for up to 30 days from the date of purchase.
- Product and parts returned more than 30 days after date of purchase can be returned for credit (less a 30% restocking fee) for up to 90 days from the day of purchase.
- After 90 days, item(s) may not be returned for credit or exchange.
- Customer is responsible for properly packaging the returning item(s).
- Customer is responsible for any damages incurred due to improper packaging. Customer is also responsible for shipping fees.
- Partial credit may be given for returned item(s) that suffered cosmetic damages resulting from installation or shipping. Eligibility for credit will be determined by Phil Wood & Co.'s warranty and technical personnel. Any damage to a product that may compromise the integrity of the part will void any applicable credit.

Service Information

All services must have a return authorization number (RA#). We will not accept or process any item(s) without an RA#. Your issued RA# should be clearly written on the outside of your package so our service department can match your item(s) to the service information on file. Items sent to Phil Wood & Co. for service without a valid and legible RA# on the outside of the package will be REFUSED and returned to sender at their cost. (Depending on how busy our service department is, standard services can take 1-2 days to complete. Standard services can take longer to complete depending on service department workload and part availability.) Once issued, an RA# is valid for 60 days.

PLEASE NOTE: Items sent to Phil Wood & Co. for service without a valid and legible RA# placed on the outside of the package will be REFUSED and returned to sender at their cost. Phil Wood & Co. does not cover the cost of shipping on repair or warranty items sent back to us beyond 90 days from the original purchase date.