



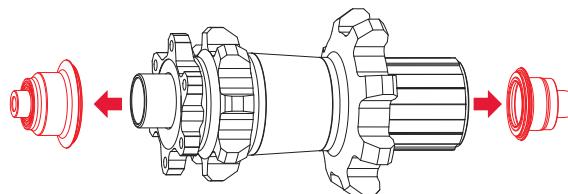
v1.2

# TORCH HUB SERVICE GUIDE

The Industry Nine Torch generation hubs are designed to be simple to service. They can be serviced with basic tools readily available to the home or shop mechanic – no proprietary tools are required for regular maintenance. The hubs can be easily serviced by an experienced bike mechanic or home mechanic with basic technical knowledge and the required tools. In order to properly service Industry Nine Torch Series hubs, we suggest you follow the steps in this guide.

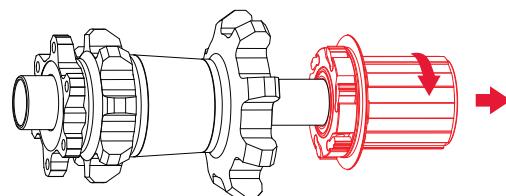
## 1.1 REAR HUB DISASSEMBLY

To disassemble your torch hubs you need to first remove the end caps from the axle. The end caps are held in place with a rubber O-ring seated in the endcap. Utilizing an axle vice to remove the endcaps is preferred. If an axle vise isn't available, end caps can be removed in some cases with a firm pull, or a pushed out from the opposite side with a punch, skewer, or through-axle. If you don't have access to an axle vice and more force is needed, you can protect the end cap with a shop rag and remove them with a bench vise or pliers utilizing light clamping force, so that you don't damage the endcaps.



## 1.2 FREEHUB REMOVAL

Once the end caps are removed, the freehub can be pulled off by hand. Holding the wheel with the freehub facing down, and freewheeling it as it disengages from the drivering, helps keep the pawls and their springs in place. It is a good idea to hold the wheel over a rag placed on a shop bench or countertop, during this process, in case the pawls and/or springs are displaced from the freehub (the springs are small and can be easily lost if dropped on the floor.)

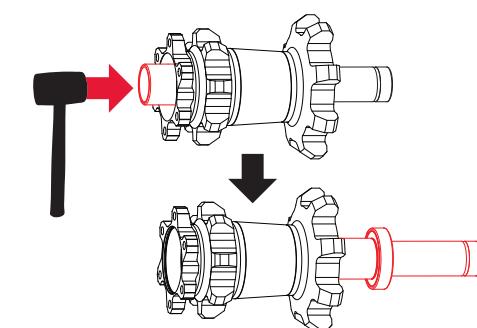
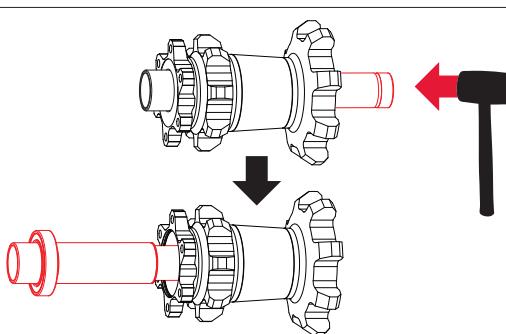


## 1.3 REAR HUB AXLE AND BEARING REMOVAL

Once both end caps and the freehub are removed you will be left with an axle that is exposed on both sides. A tap with a mallet or soft surface from either side will dislodge the bearing and axle from the opposite side. The axle has shoulders that contact the inner race of the bearing, and will drive the bearing out of the hubshell. The order in which you remove the bearings does not matter.

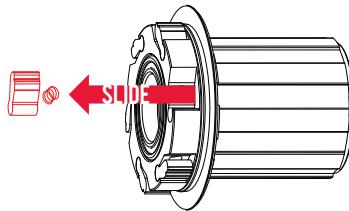
The remaining bearing can be removed with a blind bearing puller or carefully with a drift/punch and a mallet. You can also reinsert the axle and use it to drive out the remaining bearing in the same manner you removed the first.

\*Any service requiring removal of the 120 point drive ring should be done by Industry Nine or one of our approved distributors.



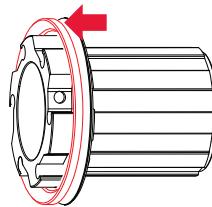
## 2.1 FREEHUB DISASSEMBLY AND SERVICE.

Freehub drive components are easily removed by hand. The pawls slide out of the pawl pockets. The pawl springs should be paid special attention to when removing the pawls as to not lose them. The spring will typically slide out with the pawl. If removing the drive components for cleaning, set the pawls and springs in a dish or magnetic parts bowl to make them easy to find.



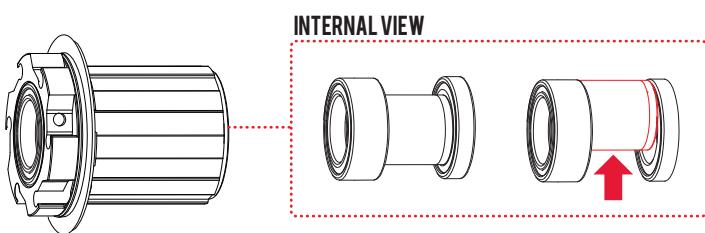
## 2.2 FREEHUB SEAL ACCESS

This step is typically unnecessary in most service situations. Once the pawls are removed you can then access and service the freehub seal if needed. The freehub seal can be lifted from its seat with a little help from a small flat head screwdriver or the edge of a blade. Take extra care to not tear the outer most edge of this seal. This protects your drive ring and pawls from damaging grit and extra moisture.



## 2.3 INNER FREEHUB BEARING REMOVAL

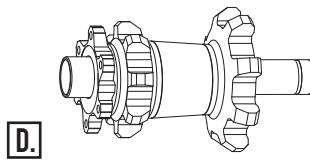
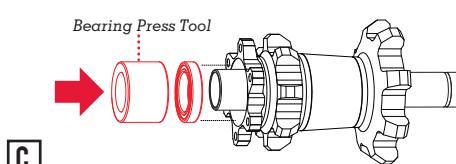
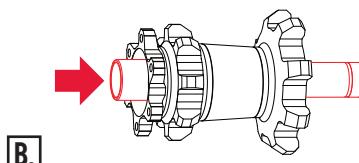
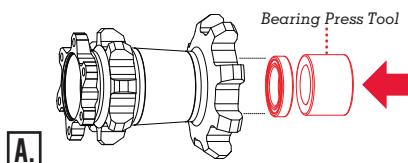
Once the drive components are removed from the freehub shell there will either be one 3803 double row bearing or one 6803 bearing (depending on the freehub type) on the inboard side of the freehub, and one 6803 bearing on the outboard side with a cylindrical spacer between them. The cylindrical spacer can be shifted out of the way to access the inner race. Careful removal of one of these bearings (the order doesn't matter) with a blind bearing puller or tapped out with a drift or a punch will remove the bearing, allowing the spacer to be withdrawn. The remaining bearing should be removed in the same manner.



## 3.1 REAR HUB RE-ASSEMBLY

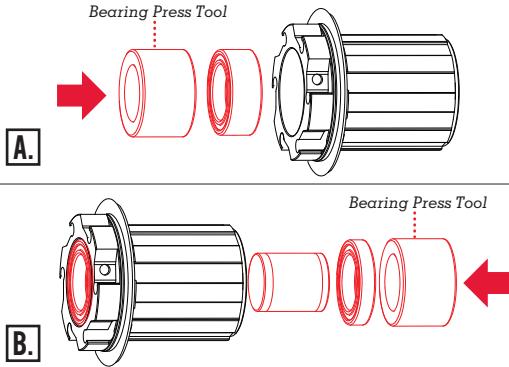
Rear Hub reassembly happens in reverse order from its disassembly. Take care to all bearings in as straight as possible. Start by pressing the 6903 bearing into the DRIVE side of the hub first (A). After the 6903 has been pressed in, insert the hub's axle through from the NON-DRIVE side of the hub (B) followed by pressing 6804 bearing over the end of the axle, and into the NON-DRIVE side of the hub shell (C). This will leave you with a hubshell that has an axle held captive by the two bearings (D).

Note that a bearing press tool that fits over the axle may be necessary to not damage the bearing, axle or hub shell.  
Sometimes a deep socket that contacts the outer race can be substituted for the proper press tool.



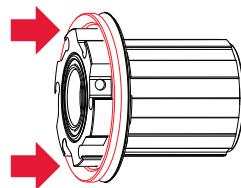
## 4.1 FREEHUB ASSEMBLY

The order in which the bearings are installed doesn't matter. Just note that on hubs with the double row 3803 bearing it should be pressed into the inboard side of the freehub (A), and the 6803 is pressed into the outboard side (B). Be sure to put the cylindrical spacer in between the two bearings. You can install the bearings with a threaded rod bearing press, an arbor press, or a vice may be used to press the bearings in evenly and without impact.



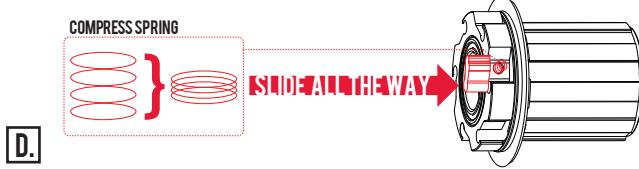
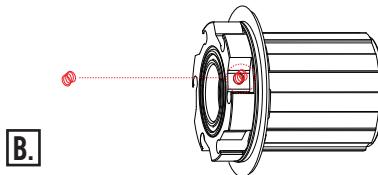
## 4.2 FREEHUB SEAL

Before installing the freehub's pawls you will need to have the freehub's seal in place. This rubber seal can be pressed on by hand, taking care and attention to make sure that there is no gap between it and the flange on the freehub. If there is additional drag found after re-assembly, it might be a result of an improper seal installation.



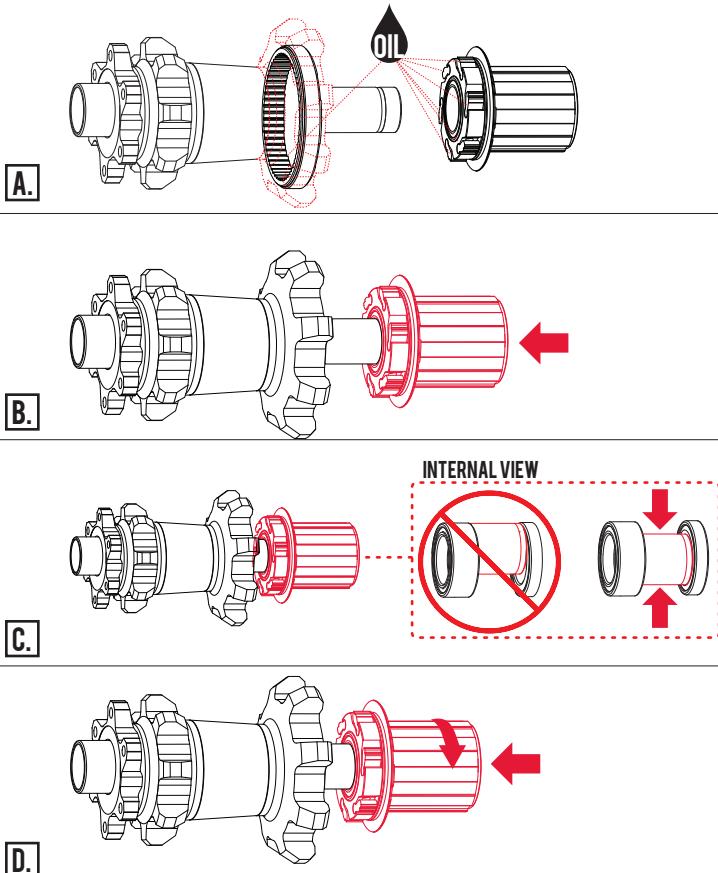
## 4.2 FREEHUB PAWL INSTALLATION

Lubricate the pawl-pockets with Dumonde Tech "Freehub Oil"(A). Take a pawl spring and push it into the spring-hole in the freehub body (B). A small Allen wrench will help locate the spring into the bore. Next, slide a pawl halfway down into the pawl pocket (C). Then compress the spring with anything small enough to depress the spring and still fit between the pawl and the back of the pocket (D). A small Allen wrench, small screwdriver, tweezers, etc. can be used. Make sure that the spring is securely seated on the freehub side and depress the pawl to make sure it has smooth action and its' full range of motion.



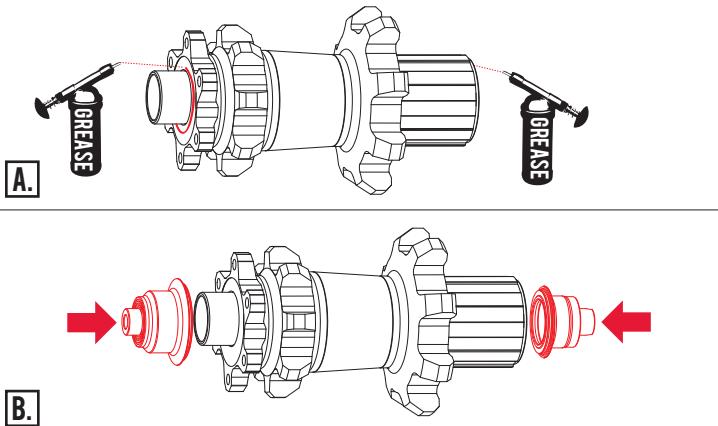
#### 4.3 INSTALLING THE FREEHUB INTO THE HUB SHELL

Apply a few drops of Dumonde Tech Freehub Oil to the drive ring, pawls, and freehub seal (A). Push the freehub onto the axle (B). Be sure that the freehub's inner spacer is centered and then slide the freehub over the axle onto the rear hub's drive-side (C). You will need to center the cylindrical spacer with your finger to in order for it to slide onto the axle. Once the freehub makes contact with the drive ring gently press the freehub onto the hub while twisting it counter-clockwise to engage the pawls into the drive ring (D).



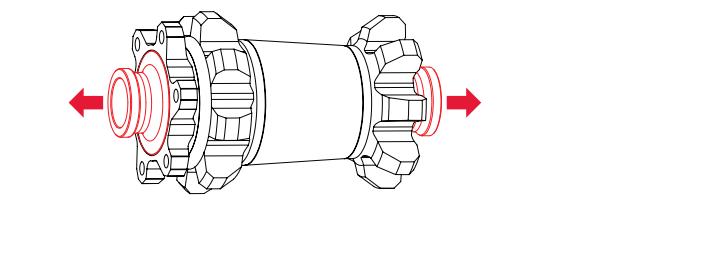
#### 5.1 ENDCAPS AND FINAL REAR HUB ASSEMBLY

With the bearings, axle, and freehub installed you can now install the end caps onto the axle to have a fully functional hub. Put a film of Marine grade (preferably) or other waterproof grease onto the front face of the bearing seal before installing. When you push the endcap on, grease may get pushed out of the edges. The marine grease, along with the Teflon contact seal, create a membrane that will help keep your bearings from contamination that could reduce bearing life.



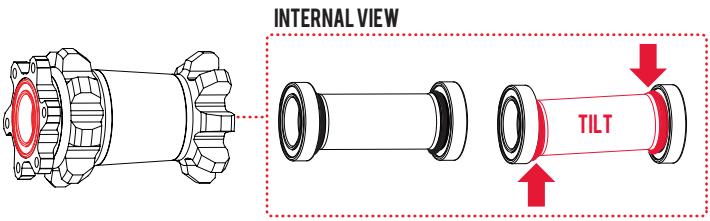
#### 6.1 FRONT HUB DISASSEMBLY

The front hub consists of a cylindrical axle spacer held in place by two (x2) 6804 bearings and two end caps pressed onto each side. The cylindrical axle spacer has two o-rings, one per side. These O-rings keep the axle centered in the hub, but allows the spacer to tilt out of the way when removing bearings. The front hub's end caps are held in place with an O-ring seated in the endcap and saddled into an indent in the hubshell. The end caps can be removed with a light tug, or a poke through from your skewer or through axle. If more force is needed, protect the end cap with an axle vice or shop rag and pull off with a vice or pliers. Be careful not to damage the face that makes contact with your fork!



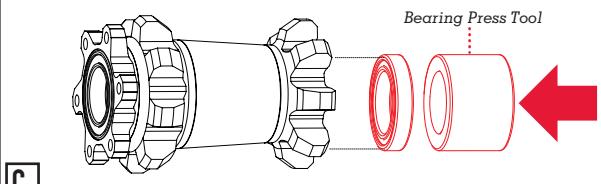
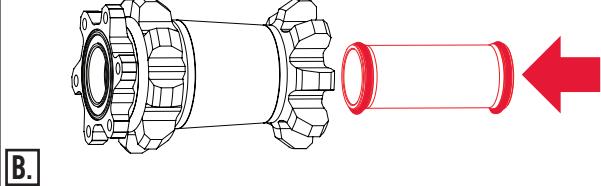
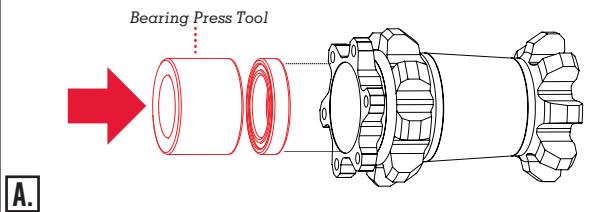
## 6.2 FRONT HUB BEARING REMOVAL

With the hub's end caps removed, there will be two (x2) 6804 bearings on each side with a spacer held captive in between them. In order to remove a bearing you will need to cock the inner spacer to one side or another to expose the inner race of the bearing. This allows you to remove the bearings with a blind bearing puller or tapped out with a drift/punch. If using a drift or a punch to knock the bearings out, be sure to alternate sides so that it is removed as evenly as possible. Once one bearing is removed (the order of removal does not matter) the spacer will fall out. The remaining bearing should be removed in the same way.



## 7.1 FRONT HUB ASSEMBLY

Press one 6804 bearing into the front hubshell. The side you choose first does not matter. Insert the inner spacer into the hubshell next. Make sure that the inner spacer's O-rings are seated properly. Then press the second 6804 bearing into the other side. A threaded rod bearing press, an arbor press or a vice may be used to press the bearings in evenly and with out impact.



## 7.2 FRONT ENDCAP INSTALLATION

Coat the seal of the bearing with a film of marine grease before pressing the endcaps into the hub. Coat the O-rings in the endcaps with grease as well. The marine grease along with the Teflon contact seal create a membrane that will help keep your bearings free from contamination.

