prime

SR1, SR1D, SR2, SR2D REAR HUBS

BEARING REPLACEMENT TECHNICAL MANUAL

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This manual contains the instructions for the correct methods required to replace the bearings used on the Prime SR1, SR1D, SR2 and SR2D hubs, as well as safety warnings and caution indicators to avoid any hazardous situation.

Please, read first before attempting any form of repairs on your Prime hubs. Failure to follow the warnings and instructions may result in serious injury if not followed correctly.

It is always recommended that a trained bicycle mechanic perform any maintance required on the Prime hubs to avoid incorrect installation and prevent injury.

The use of the correct tools is required to perform any tasks on the Prime hubs, the use of incorrect tools may damage the hubs if not correct which can lead to premature failure of the product which may void warranty.

WARNING

When assembling or working on the any component from the Prime take care. Please, always wear protective, gloves and goggles, regardless of whether the component is connected to the battery.

WARNING

The Prime bearing replacement manual is intended for professional mechanics.
Persons without proffestional training in the assembly of bicycles or components must not handle or install any components on their own.

WARNING

Next guides show in detail what is required with specifications and associated information to replace the bearings in Prime hubs. Assembly and replacement guides are also included along with the tools required for each procedure. Please note that the guide shows reccommendations and procedures and is intended to avoid possible errors in the process that could damage the system.

REQUIRED BEARINGS

The below chart shows the bearings required for each of the different models of Prime Star Ratchet rear hubs along with the dimensions for each bearing type.

		Bearings					
		Hub Shell		***Freehub***			
Orientation	***Model***	***Drive Side (Right)***	***Non-Drive Side (Left)***	***HG (Shimano®)***	***XDR (SRAM®)***	***NEW (Campagnolo®)***	***Campy (Campaganolo®)***
Rear	SR1 (Straight Pull - Rim Brake)	1 x 17287 (17.0mm ID x 28.0mm OD x 7.0mm W)	1 x 6802 (15.0mm ID x 24.0mm OD x 5.0mm W)	2 x 6802 (15.0mm ID x 24.0mm OD x 5.0mm W)	2 x 15267 (15.0mm ID x 26.0mm OD x 7.0mm W)	2 x 6802 (15.0mm ID x 24.0mm OD x 5.0mm W)	2 x 15267 (15.0mm ID x 26.0mm OD x 7.0mm W)
	SR1D (Straight Pull - Disc Brake)	1 x 17287 (17.0mm ID x 28.0mm OD x 7.0mm W)	1 x 6902 (15.0mm ID x 28.0mm OD x 7.0mm W)				
	SR2 (J-Bend - Rim Brake)	1 x 17287 (17.0mm ID x 28.0mm OD x 7.0mm W)	1 x 6802 (15.0mm ID x 24.0mm OD x 5.0mm W)				
	SR2D (J-Bend - Disc Brake)	1 x 17287 (17.0mm ID x 28.0mm OD x 7.0mm W)	1 x 6902 (15.0mm ID x 28.0mm OD x 7.0mm W)				

INFORMATION

ID = Internal Diameter
OD = Outer Diameter
W = Width
Please note that all measurements are in millimetres (mm)

TOOLS

The following section goes through the tools required to perform the correct proceedure to disassemble and re-assemble the Prime hubs for bearing replacement

TOOLS AND CONSUMABLES REQUIRED FOR ASSEMBLY

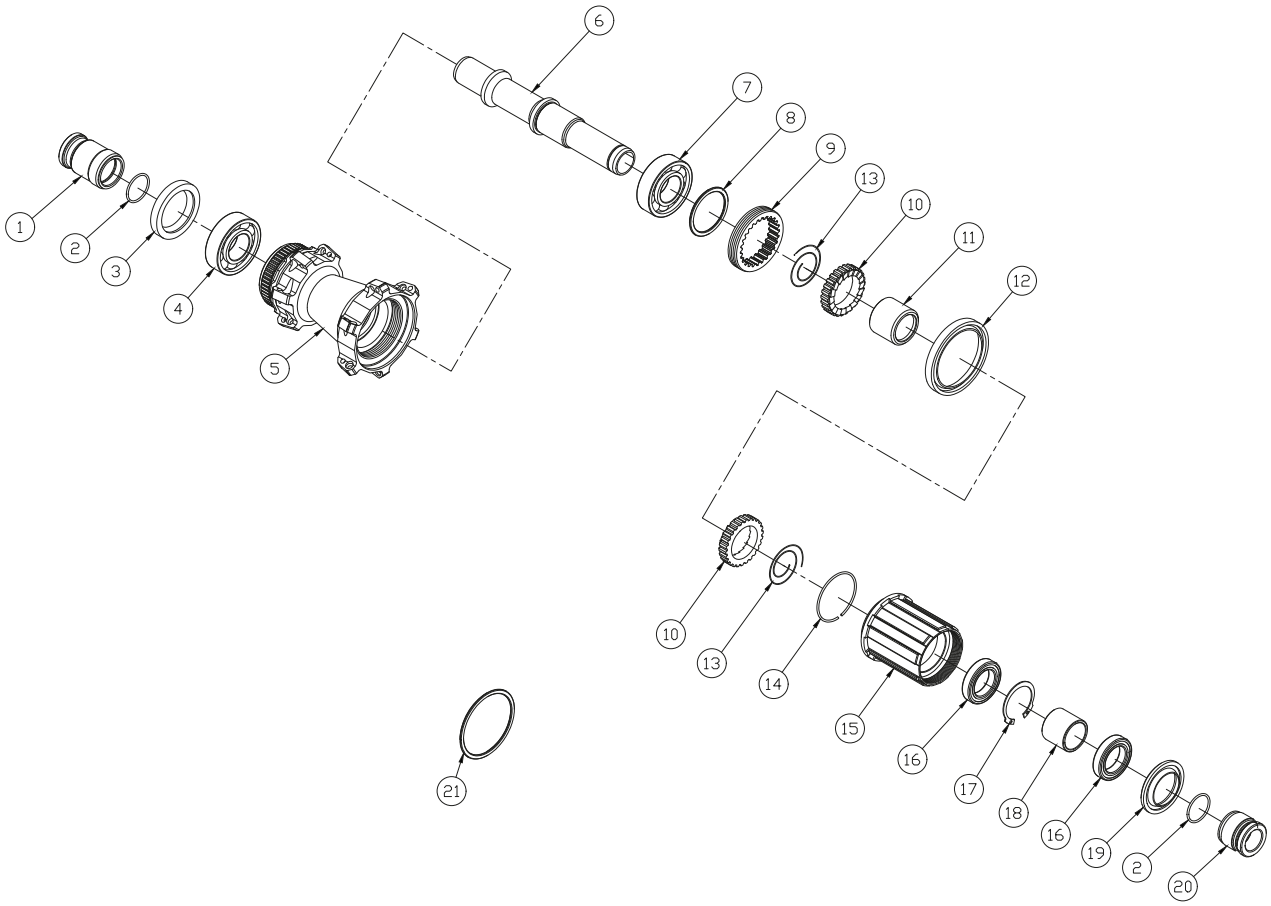
- **Isopropyl Alcohol**
- **Cleaning Cloth**
- **Anti-Seize Grease (Teflon based)**
- **Star Ratchet Grease**
- **Star Ratchet Ring Removal Tool**
- **Bearing Removal Tool - Compatible with with all necessary bearings**
- **Dead Blow Mallet or Rubber Mallet**
- **Drift**
- **Bearing Press Fit Tool - Compatible with with all necessary bearings**
- **Circlip Pliers**
- **Vice**
- **Workshop or Latex Gloves**
- **Protective Eye Wear**
- **Small Flat Head Screw Driver**
- **Torque Wrench with 24mm Socket or Crow Foot Spanner**
- **Hub Support Tool**

Tool	*Brand*	*Model*	*Link*
Star Ratchet Ring Removal Tool	Lifeline	Pro Inner Ratchet Nut Removal Tool	https://www.wiggle.com/p/lifeline-pro-inner-ratchet-hub-nut-removal-tool
	Bearing Pro	Ring Nut Lockring Tool (Star Ratchet)	https://www.bearingprotools.com/products/ring-nut-lockring-tool-star-ratchet-for-dt-swiss-180-240-240s-350-rear-hubs?variant=39677295067241
Bearing Press Fit Tool	Lifeline	Pro Bearing Press Set	https://www.wiggle.com/p/lifeline-pro-bearing-press-set
	Wheels Manufacturing	Bearing Press Pro Kit	https://wheelsmfg.com/presses-tools/presses-extractors/bearing-press-pro-kit.html
Bearing Removal Tool	Bearing Pro	Bearing Puller for Bikes (Expanding Type)	https://www.bearingprotools.com/products/bearing-puller?variant=6945738915898

	WARNING
	Please note that the use of incorrect tools may cause damage to the hub and will void all warranty. The above tools are recommend by Prime and are proven the correct tools to carry out the bearing replacement.

EXPLODED DIAGRAM

	WARNING
	Please note that the below diagram is for illustration purposes only, The hubshell, endcaps and freehub design may differ between models or spec. Diagram is used purely for aiding with showing part names and descriptions that may be used throughout the guide.



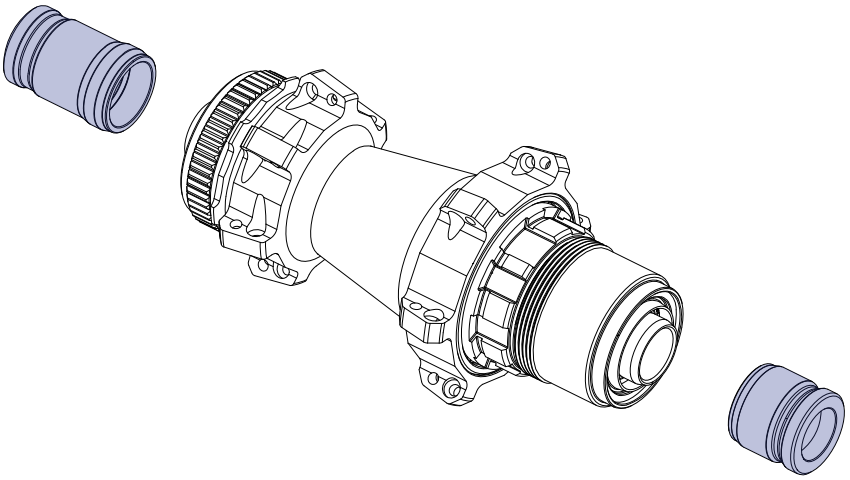
Part #	*Description*	*Quantity*
1	Non Drive Side End Cap (Right)	1
2	O-Ring (Pre Fitted in End Caps)	1
3	Bearing Dust Cover	1
4	Non Drive Side Bearing	1
5	Hub Shell	1
6	Axle	1
7	Drive Side Bearing	1
8	Ratchet Washer	1
9	Ratchet Ring	1
10	Star Ratchet	2
11	Star Ratchet Bushing	1
12	Hubshell Seal	1
13	Star Ratchet Spring	2
14	C-Ring (Pre Fitted to Freehub)	1
15	Freehub	1
16	Freehub Bearing	2
17	Bearing Retaining Circlip	1
18	Freehub Bearing Spacer	1
19	Freehub Bearing Dust Cover	1
20	Drive Side End Cap (Left)	1
21	Freehub Spacer (Only Required on HG Freehubs for use with 10 Speed)	1

DISASSEMBLY

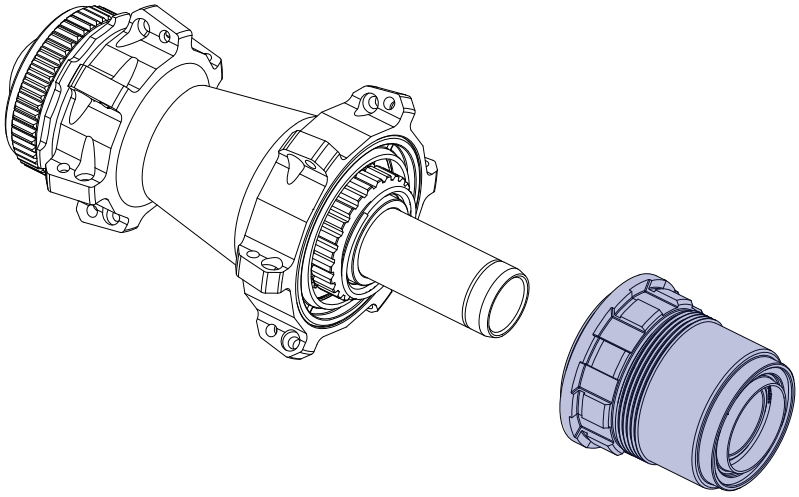
The following steps goe through the disassembly of the Prime rear hubs, each step should be followed precisely to avoid any error.

The disc rotor and cassette should be removed prior to any work being carried out.

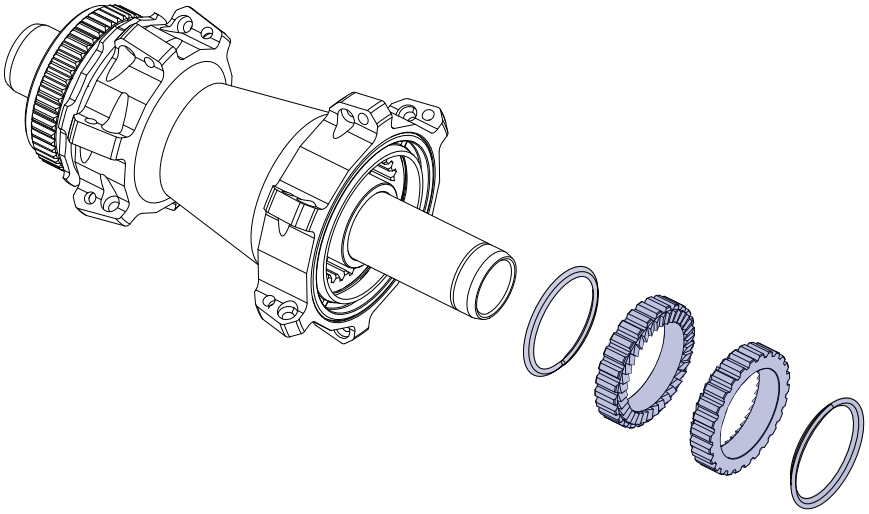
it is advised that through all the steps in the disassembly that parts should be cleaned and laid out in an orderly format to help with re-assembly and to prevent any lose of parts.



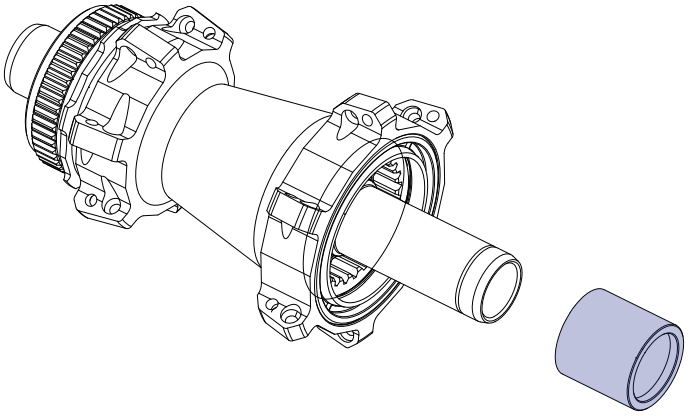
1. Remove both non-drive side and drive side end caps.



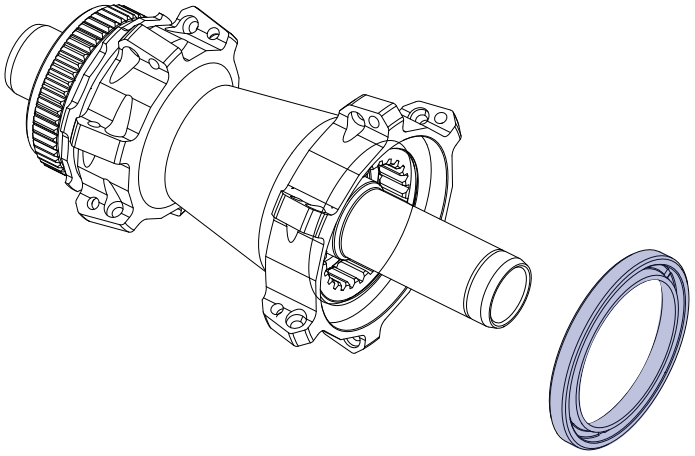
2. Slide the freehub off the axle and place to one side ready to remove the bearings later in the guide. Ensure that the ratchet spring is not seated in the freehub



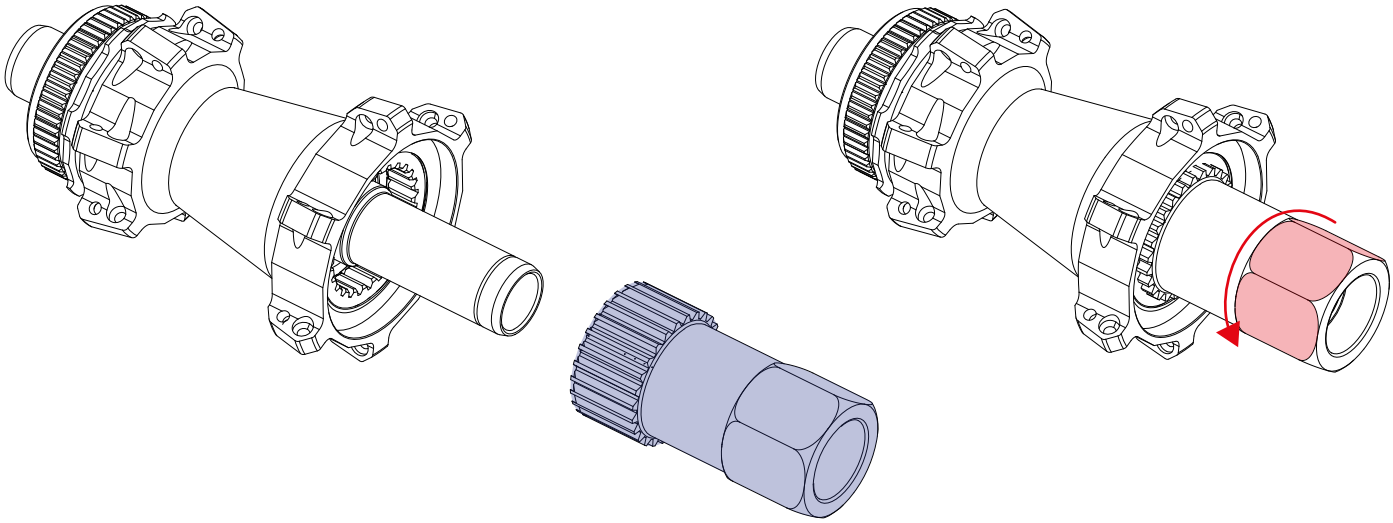
3. Slide off both ratchet springs and star ratchets.



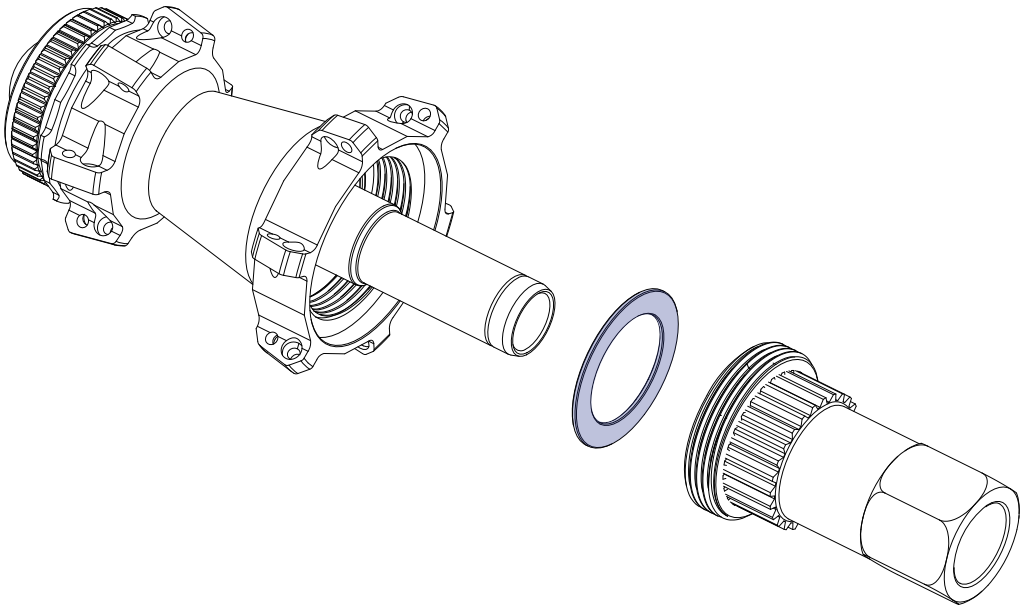
4. Pull off the star ratchet bushing that seats over the axle on the drive side.



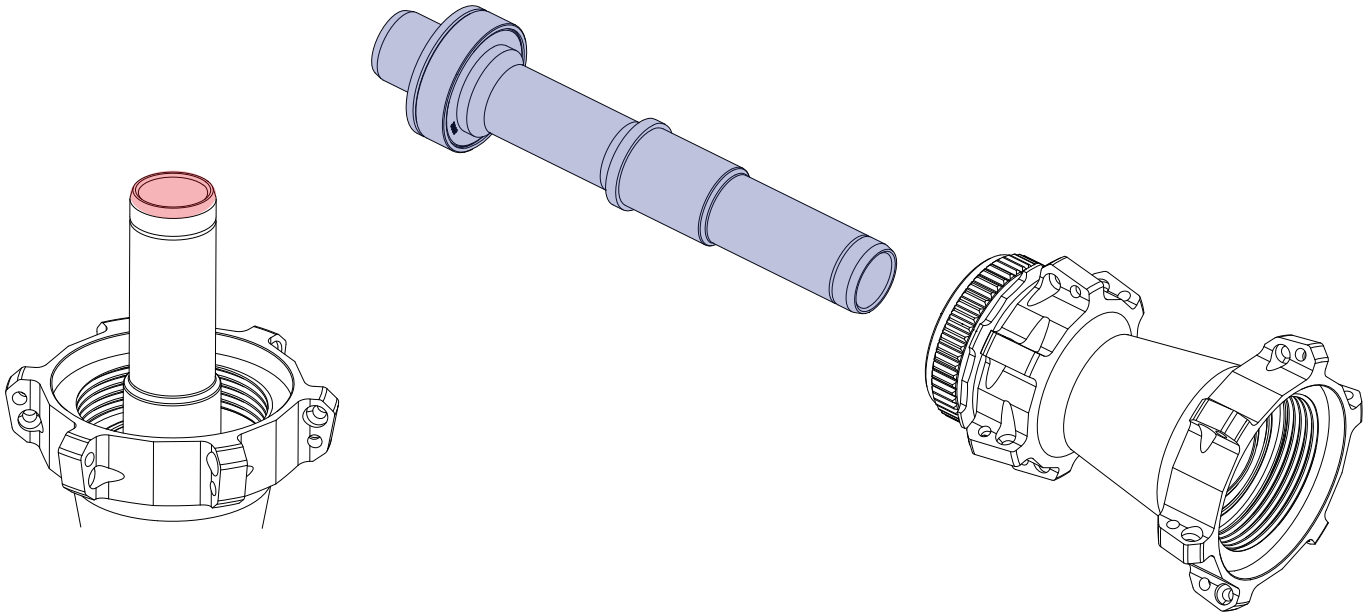
5. Using the small flat head screw driver remove the hubshell seal. Make sure that the seal is removed evenly and undamaged. If the seal is damaged it could cause drag on the freehub when refitted.



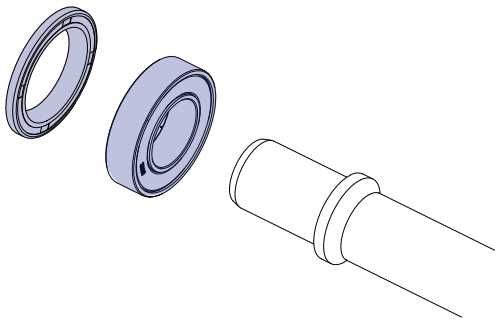
6. Using the Ratchet ring removal tool, slide this onto the hub and position within the ratchet ring. Clamp the area of the tool highlighted in red in a vice. Gripping the rim firmly and using it as leverage turn the wheel counter-clockwise until the ratchet ring is fully unwound. Please note that this will be tight due to being self tightening and may take force to loosen.



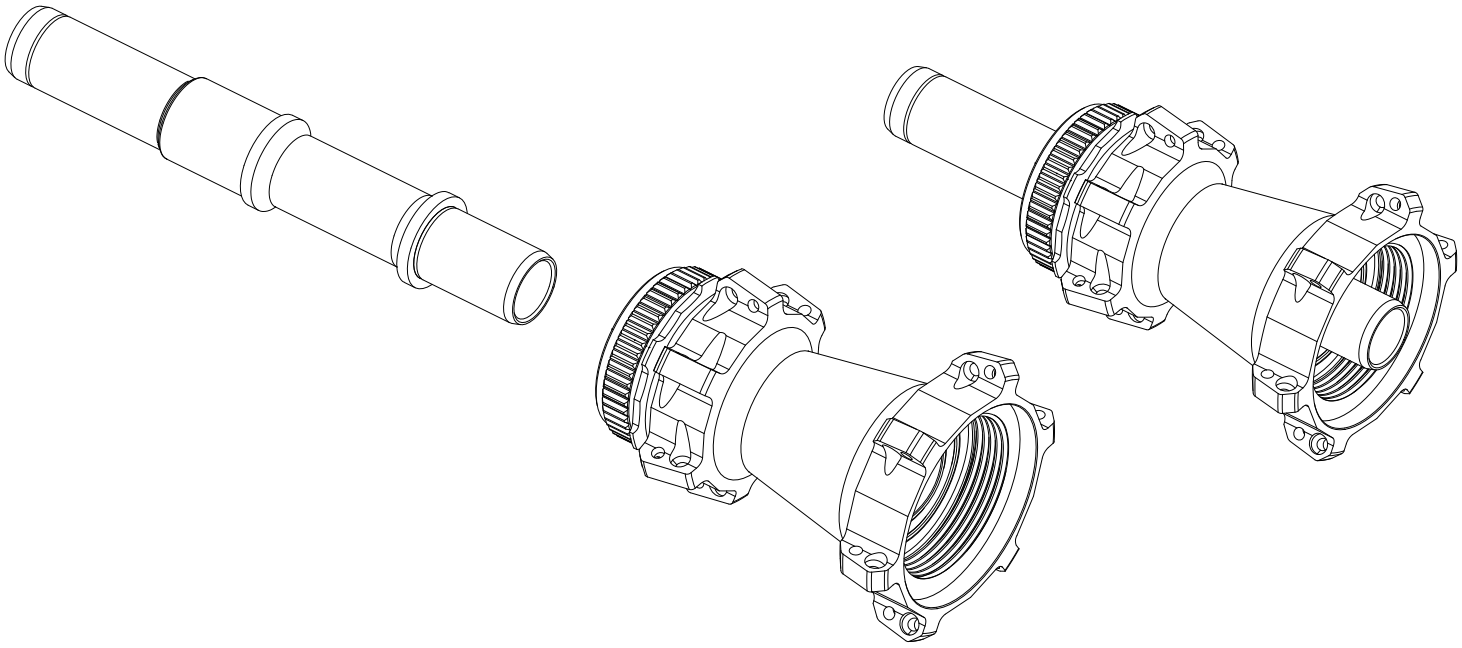
7. Once the ratchet ring is removed, slide off the ratchet washer.



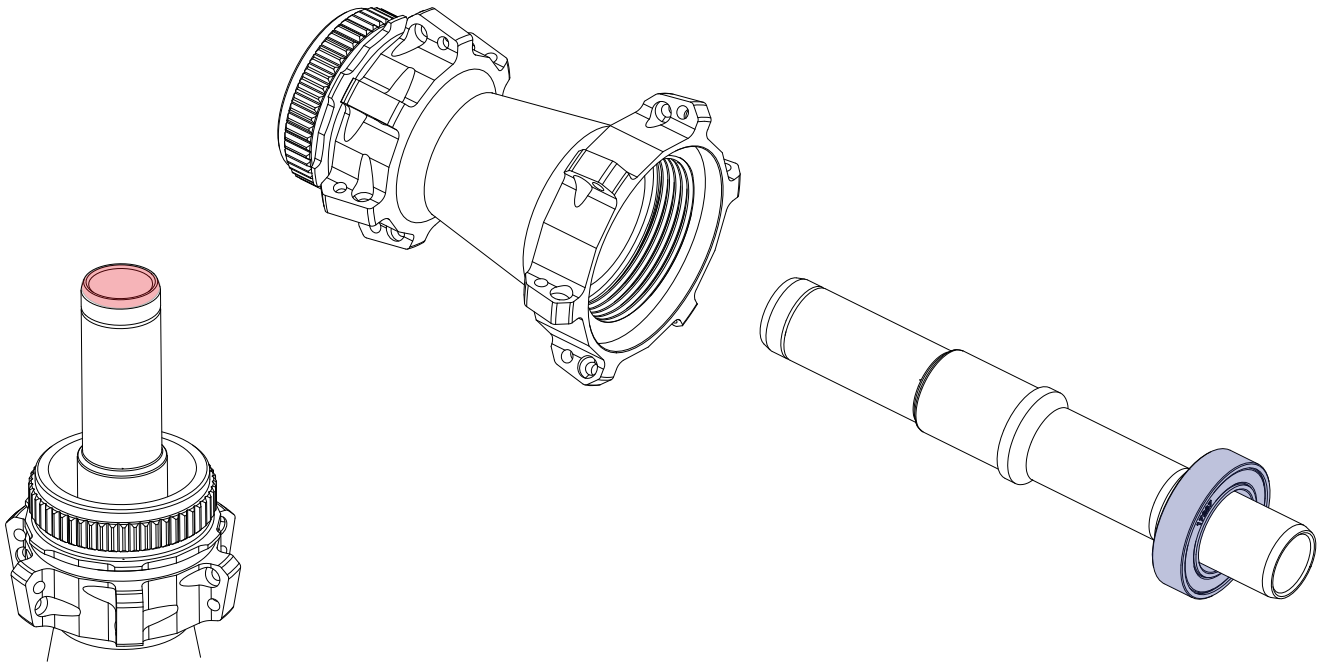
8. Place the hub/wheel on the hub support tool. Taking the dead blow or rubber mallet, knock out the axle, non drive side bearing and bearing dust cover. Do this by hitting the end of the axle on the drive side highlighted in red.



9. Remove the dust seal and bearing off the axle.



10. Flip the axle 180 degrees and reinsert this into the hubshell from the non-drive side.

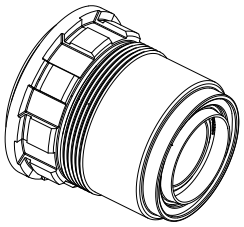


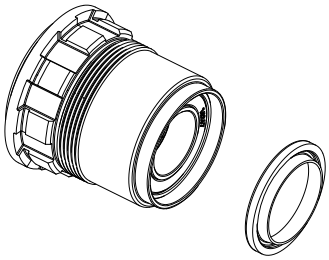
10. Place the hub/wheel on the hub suport tool again. Taking the dead blow or rubber mallet knock our the drive side bearing using the axle as a drift. Do this by hitting the end of the axle on the non-drive side highlighted in red.

This concludes the main dismantle of the hubshell, ensure all parts are laid out in an ordlet fashion ready for reassembly later in the guide.

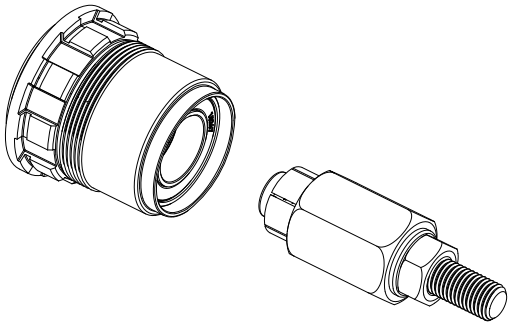
The next steps go through the disassembly of the freehub ready for bearing replacement. As each part is disassembled ensure that all parts are laid out in a orderly format to avoid any lose or parts and to aid with ease of re-assembly.

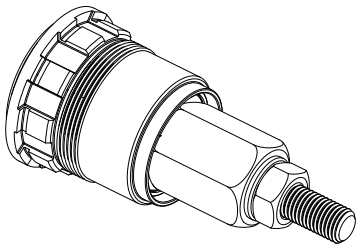
	INFORMATION
	The following steps illustrate removal of bearings and hardware on a Prime XDR (SRAM) freehub. This is purely for illustration purposes and the steps required to complete the process are the same across all types of Prime freehubs. Different bearing specifications will be required depending on the freehub that is being worked on so please use page 2 for guidance.

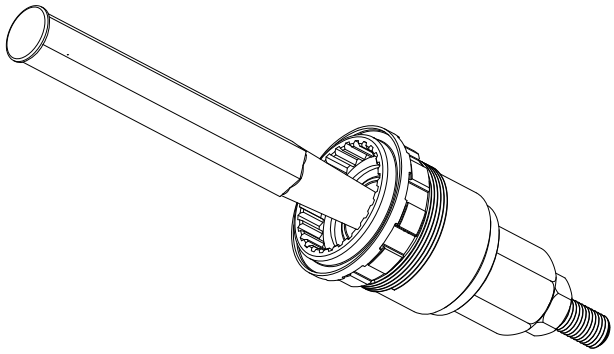


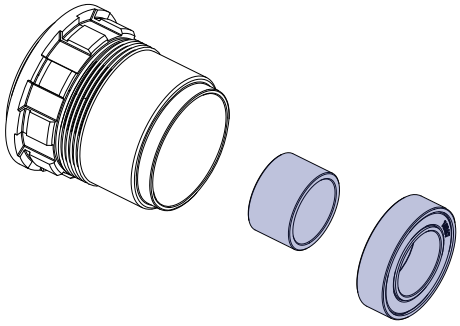


11. Using the small flat head screw driver remove the freehub seal. Make sure that the seal is removed evenly and undamaged. If the seal is damaged it could cause drag on the freehub when refitted.

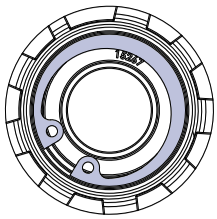


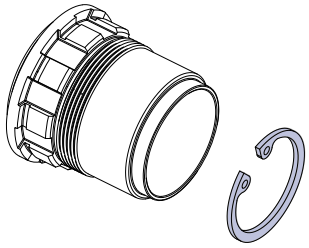




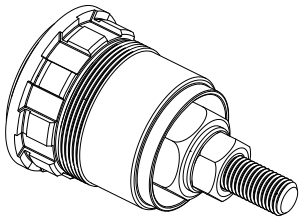


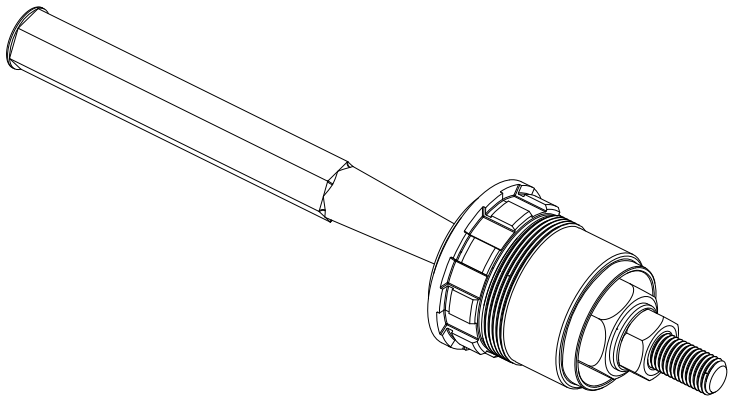
12. Take the correct bearing extractor tool required for the freehub bearings and fit it to the outer bearing of the freehub. Take the drift and insert this into the back of the freehub, using the dead blow or rubber mallet remove the outer bearing. The Freehub may need to be rested on the hub support tool oran open vice to the allow the bearing to rest on enough for the bearing to pass through.

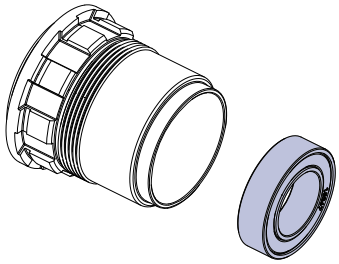




13. With the circlip pliers remove the bearing retaining circlip within the freehub.



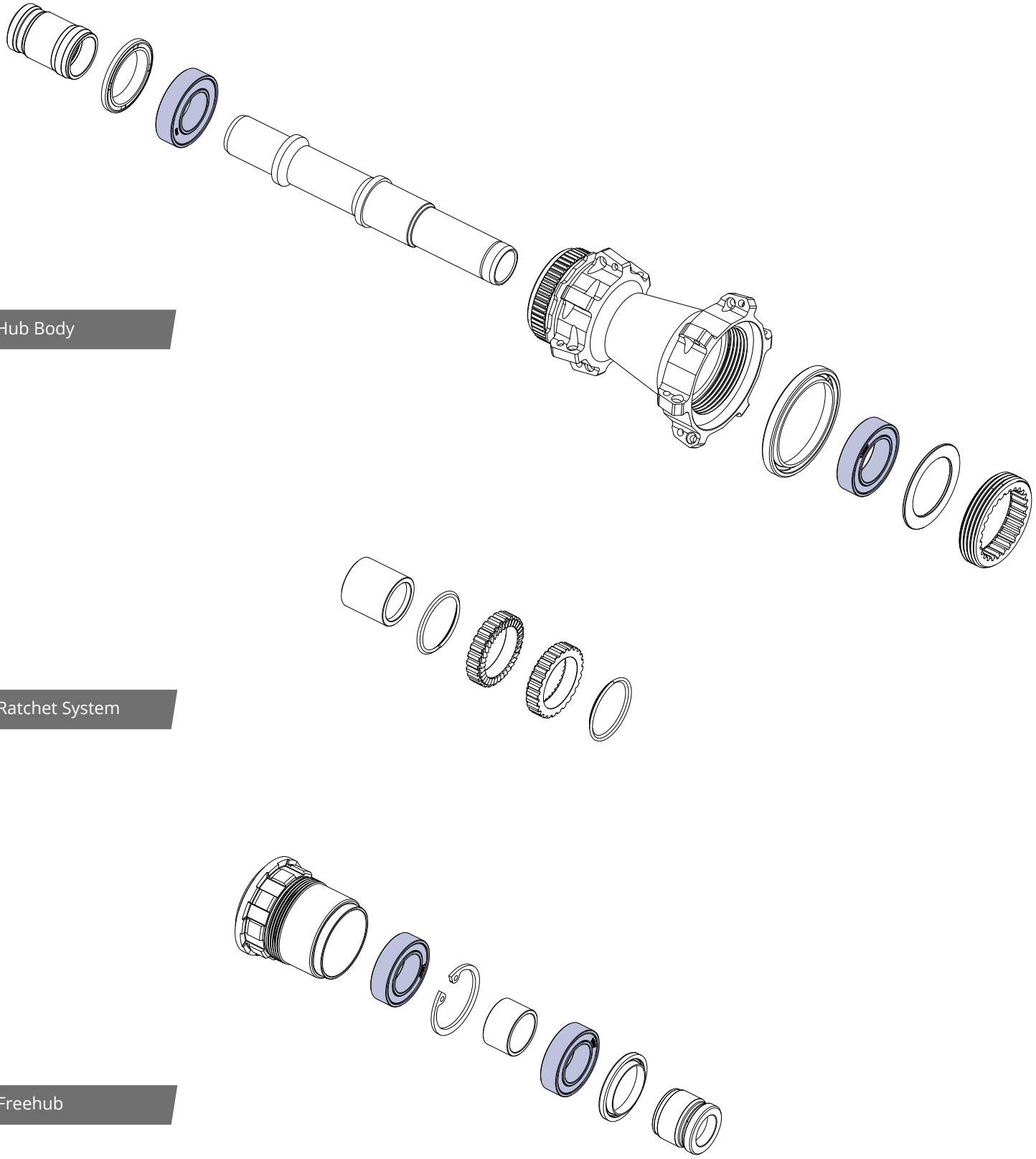




14. Take the correct bearing extractor tool required for the freehub bearings and fit it to the inner bearing of the freehub. Take the drift and insert this into the back of the freehub, using the dead blow or rubber mallet remove the inner bearing. The Freehub may need to be rested on the hub support tool oran open vice to the allow the bearing to rest on enough for the bearing to pass through.

The hub should now be fully disassembled. The below illustration shows the break down of the hub in 3 sections, hub body, ratchet system and freehub.

The parts highlighted will be being replaced, using page 2 ensure that you have the correct replacement bearing ready before re-assembly.



Hub Body

Ratchet System

Freehub

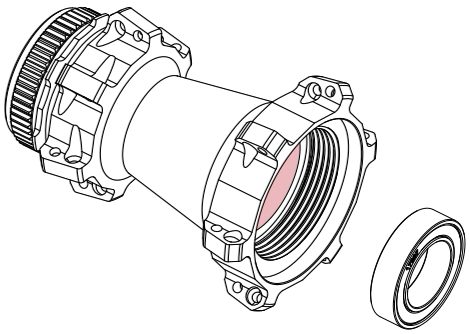
ASSEMBLY

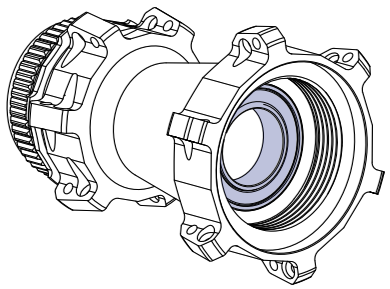
The following steps goe through the assembly and bearing replacement of the Prime rear hubs, each step should be followed precisely to avoid any error.

It is advised that through all the steps in the assembly that parts should be cleaned before re-fitment and that the correct grease should be applied where stated

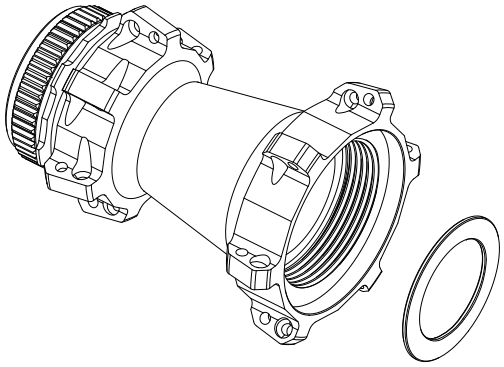
	INFORMATION
	The following steps illustrate the process to replace bearings on a Prime XDR (SRAM) freehub. This is purely for illustration purposes and the steps required to complete the process are the same across all types of Prime freehubs. Different bearing specifications will be required depending on the freehub that is being worked on so please use below chart for guidance.

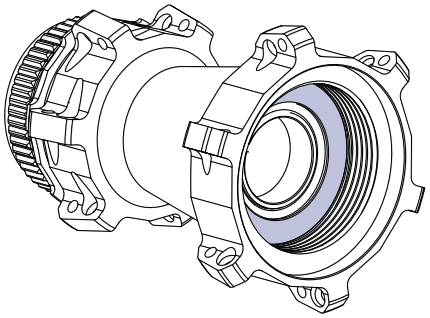
		Bearings					
		Hub Shell		***Freehub***			
Orientation	***Model***	***Drive Side (Right)***	***Non-Drive Side (Left)***	***HG (Shimano®)***	***XDR (SRAM®)***	***NEW (Campagnolo®)***	***Campy (Campaganolo®)***
Rear	SR1 (Straight Pull - Rim Brake)	1 x 17287 (17.0mm ID x 28.0mm OD x 7.0mm W)	1 x 6802 (15.0mm ID x 24.0mm OD x 5.0mm W)	2 x 6802 (15.0mm ID x 24.0mm OD x 5.0mm W)	2 x 15267 (15.0mm ID x 26.0mm OD x 7.0mm W)	2 x 6802 (15.0mm ID x 24.0mm OD x 5.0mm W)	2 x 15267 (15.0mm ID x 26.0mm OD x 7.0mm W)
	SR1D (Straight Pull - Disc Brake)	1 x 17287 (17.0mm ID x 28.0mm OD x 7.0mm W)	1 x 6902 (15.0mm ID x 28.0mm OD x 7.0mm W)				
	SR2 (J-Bend - Rim Brake)	1 x 17287 (17.0mm ID x 28.0mm OD x 7.0mm W)	1 x 6802 (15.0mm ID x 24.0mm OD x 5.0mm W)				
	SR2D (J-Bend - Disc Brake)	1 x 17287 (17.0mm ID x 28.0mm OD x 7.0mm W)	1 x 6902 (15.0mm ID x 28.0mm OD x 7.0mm W)				



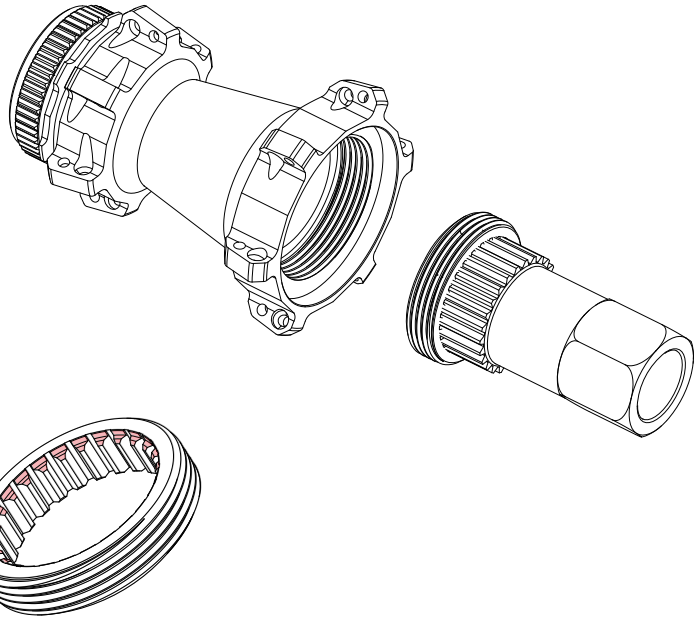


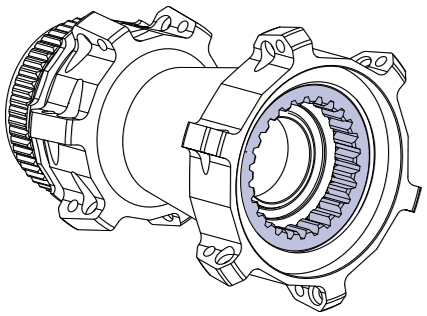
1. Apply Teflon anti-sieze grease to highlighted area in red. Then using the bearing press with the correct press for the drive side hubshell bearing press in the bearing into the hubshell



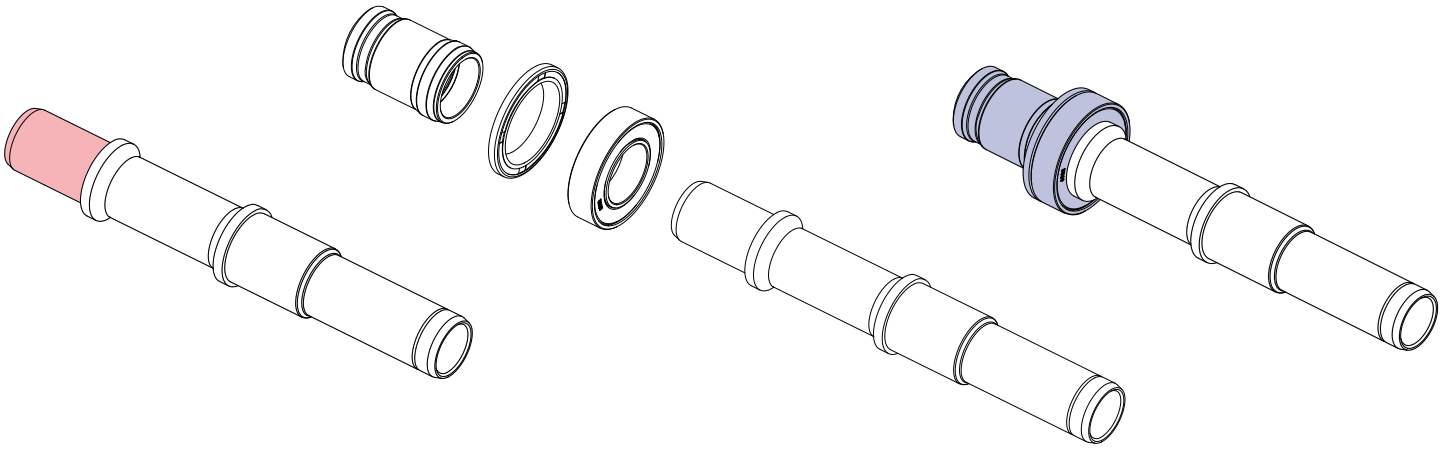


2. Place ratchet washer over the drive side bearing.

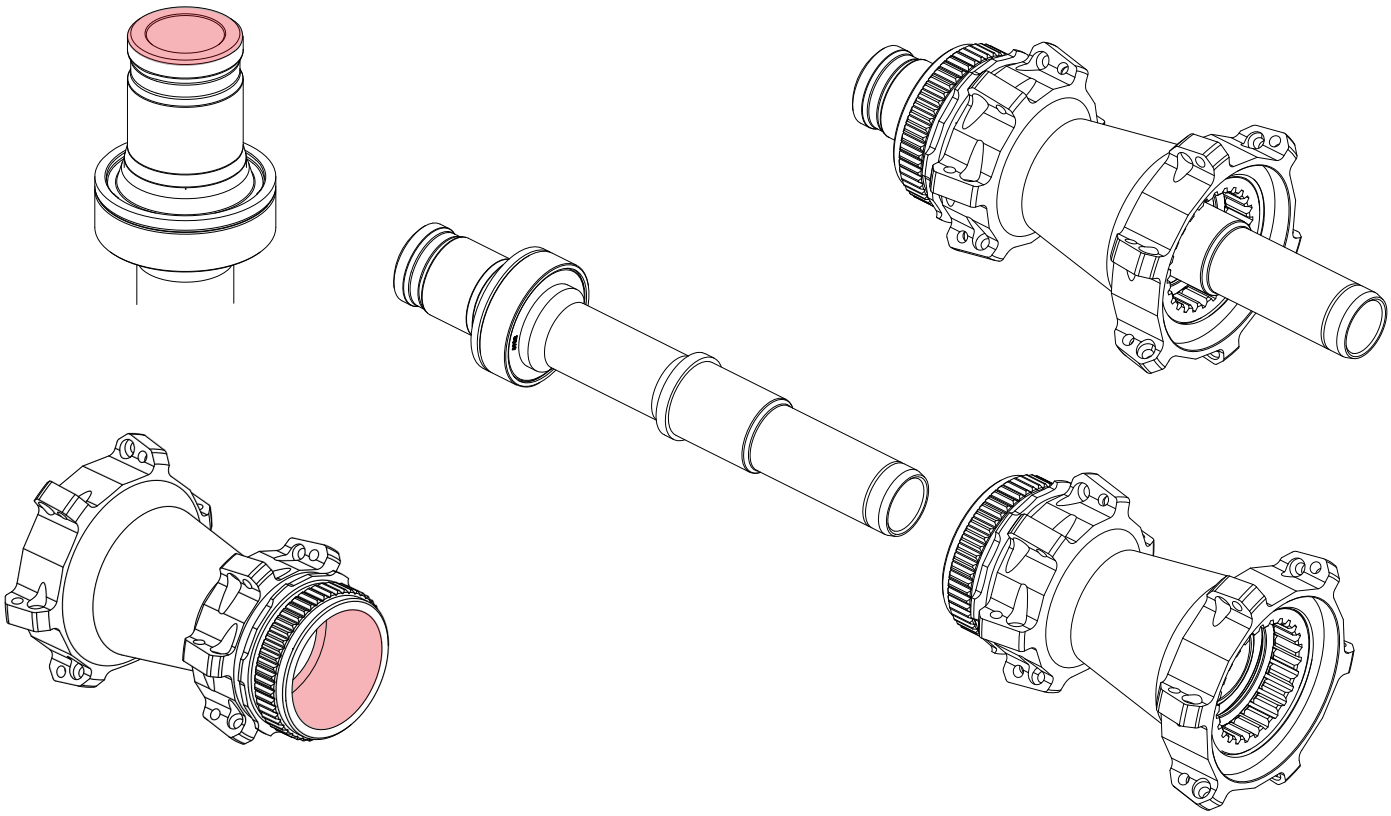




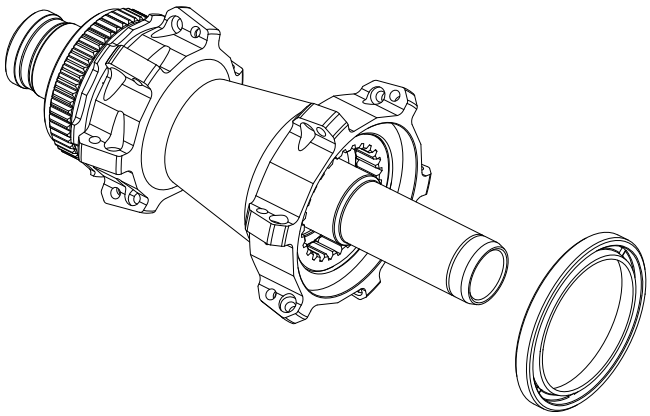
3. Screw in the ratchet ring into the hubshell by turning it clockwise and using the ratchet ring removal tool. Ensure the ratchet ring is threaded in in the correct orientation with the recessed side (highlighted in red) against the ratchet washer. Once hand tight use the torque wrench to tighten to 20nm. This is a self tightening part so through use of the wheel will tighten further.

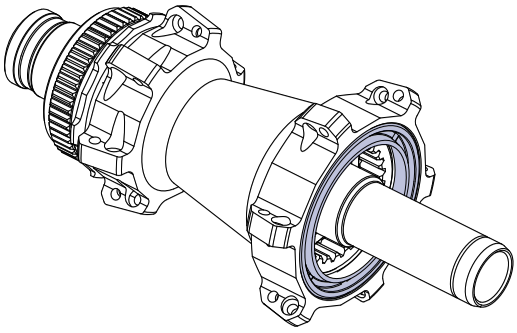


4. Apply Teflon anti-sieze grease to the non-drive side bearing surface on the axle highligted in red. Fit the replacement non-drive side bearing, bearing dust seal and non-drive side end cap on to the axle



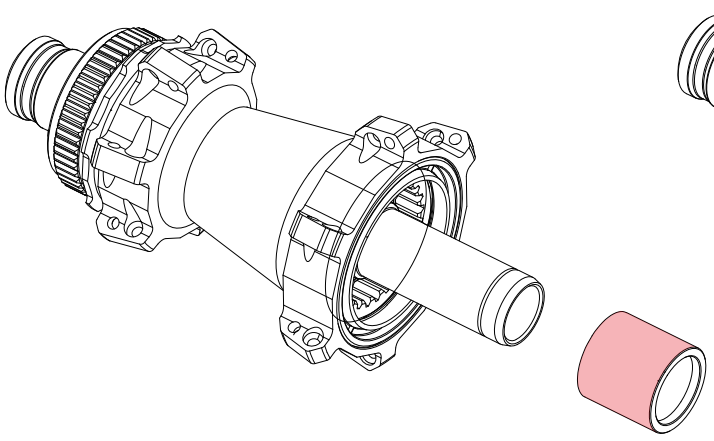
5. Apply Teflon anti-sieze grease onto area highlighted in red on the hubshell. Place the hub/wheel on the hub support tool, then taking the dead blow or rubber mallet knock the axle and hardware on the axle into the hubshell . Do this by hitting the end of the axle end cap on the non-drive side highlighted in red.

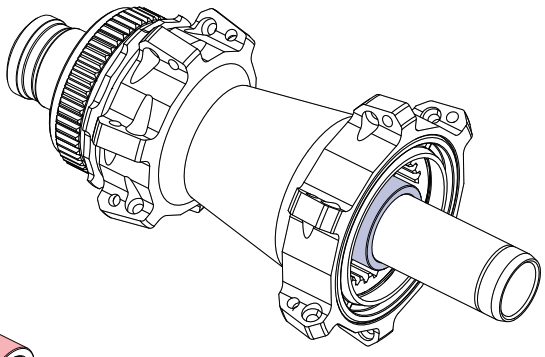




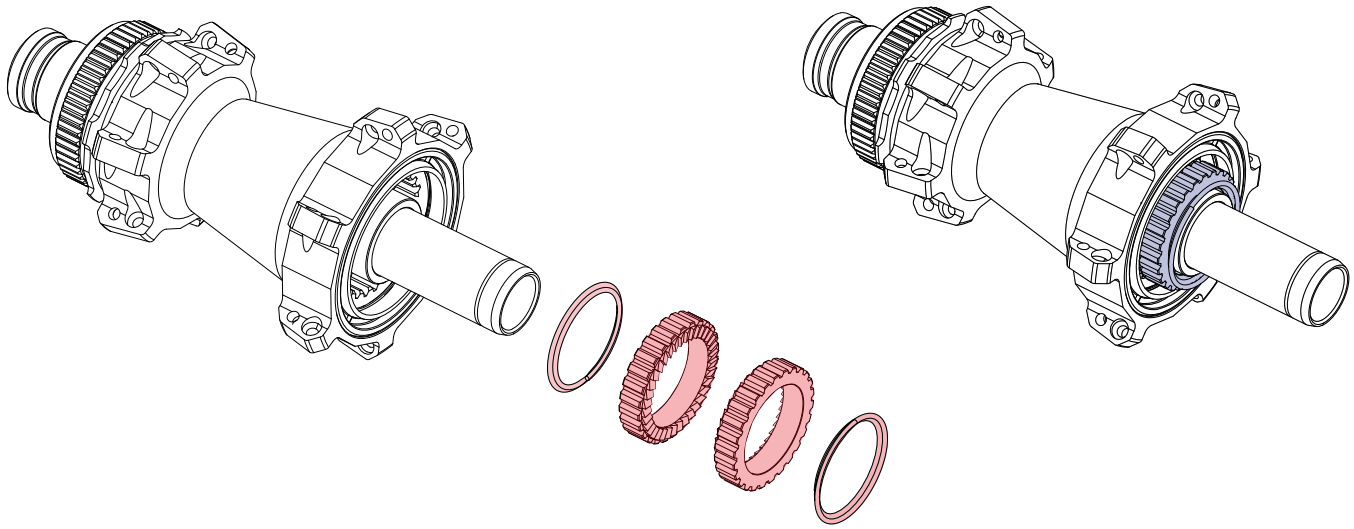
	WARNING
	If the hubshell seal is fitted either with the incorrect orientation, unevenly or not fully inserted this can cause friction between the freehub and seal. This then will lead to poor rotation of the wheel and drag on the freehub.

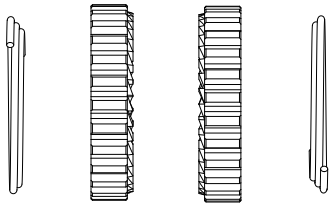
6. Press in the hubshell seal, make sure that this is pressed in evenly and flat side of the seal is against the hubshell. Once pressed in apply a thin layer of star ratchet grease around the seal.





7. Apply a thin layer of ratchet grease over the surface of the star ratchet bushing highlighted in red. Then slide the bushing over the axle until it seats against the drive side hubshell bearing.



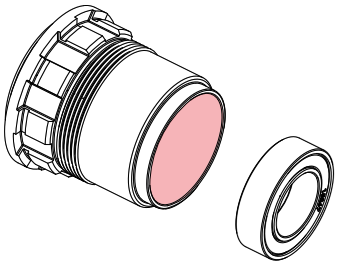
	WARNING
	It is vital that the star ratchets and springs are fitted with the correct orientation. If these are fitted incorrect it may effect the performance of the hub and possible premature failure. The springs must be orientated with the tapered end (smaller diameter) towards the star ratchets. The star ratchets must be orientated with the engagement points facing one another. Image below illustrates the correct order and orientation. 

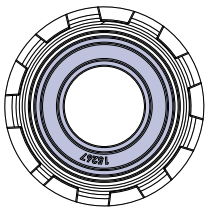
8. Taking both ratchet springs and star ratchets apply a thin layer of ratchet grease across any contacting surfaces. Once the ratchets and springs are lubricated up slide them of the axle in the correct order.

This concludes the main assembly and bearing replacement of the hubshell. Place this to one side ready for the freehub to be assembled to the hubshell later in the manual.

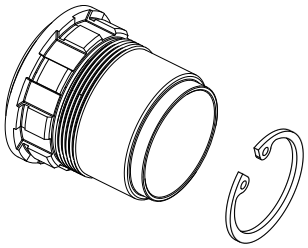
The next steps go through the assembly and bearing replacement of the freehub. Ensure all parts are clean before re-fitment and that the correct bearings are used that require replacing.

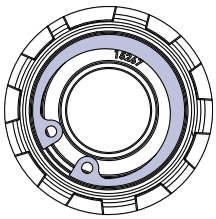
	INFORMATION
	The following steps illustrate installation of bearings and hardware on a Prime XDR (SRAM) freehub. This is purely for illustration purposes and the steps required to complete the process are the same across all types of Prime freehubs. Different bearing specifications will be required depending on the freehub that is being worked on so please use page 2 for guidance.



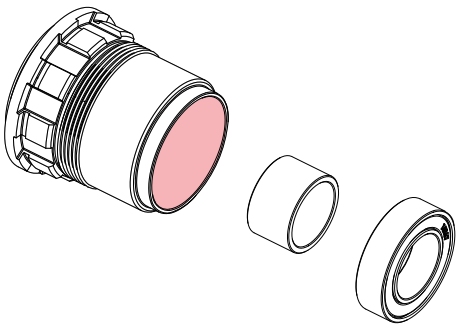


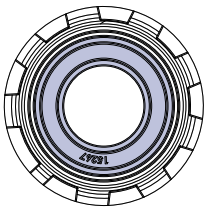
9. Apply Teflon anti-sieze grease the surface highlighted in red on the freehub body. Then using the bearing press with the correct press for the freehub body bearing, insert the inner freehub bearing until it is fully seated within the freehub.



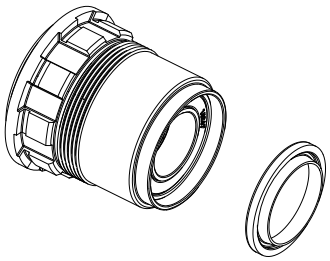


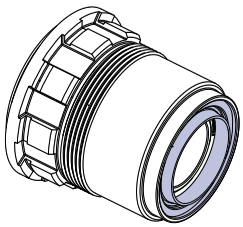
10. Using the circlip pliers re-fit the bearing retaining circlip into the freehub.





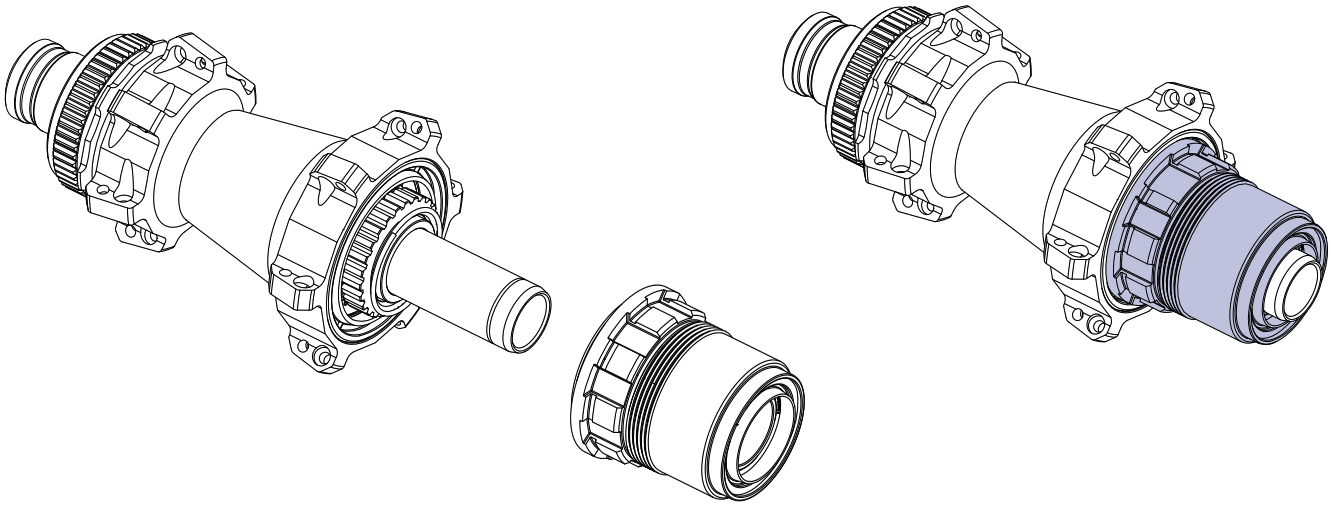
11. Apply Teflon anti-sieze grease the surface highlighted in red on the freehub body. Then using the bearing press with the correct press for the freehub body bearing, insert the bearing spacer and outer freehub bearing until it is fully seated within the freehub. The bearing spacer should sit firmly between the inner and outer freehub bearing.



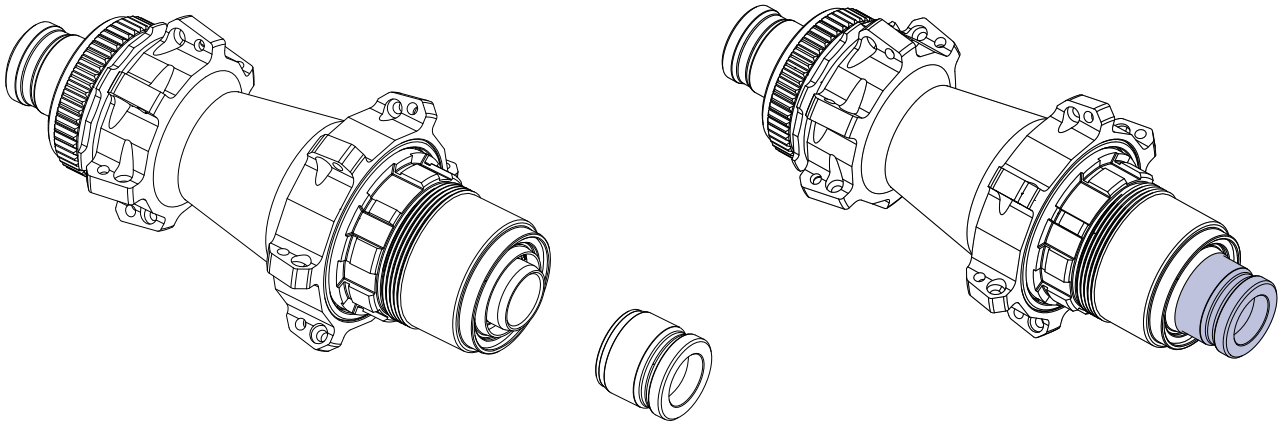


	WARNING
	If the freehub dust seal is fitted either with the incorrect orientation, unevenly or not fully inserted this can cause friction between the freehub and seal. This then will lead to poor rotation of the wheel and drag on the freehub.

12. Press in the bearing dust seal into the freehub. Ensure that it is pressed in evenly and seated against the outer bearing on the freehub.



13. Slide the freehub onto the axle of the main hub. Ensure that the ratchets seat correctly within the hubshell and freehub, with the freehub pushed as far as it will sit on the axle.



14. Press on the drive side endcap and ensure that it is firmly positioned on the axle.

This concludes the assembly and bearing replacement of the Prime rear SR hubs. The cassette and disc rotor can now be re-attached and the wheel inserted into the bike.

	WARNING
	It is advised that a test ride is performed once the the hub re-assembly is complete to ensure that everything has been fitted correctly. If performing a test ride it is advised that all necessary safety gear is used to prevent any form of injury.