

Eagle Transmission



USER MANUAL

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SAFETY INSTRUCTIONS

You must read and understand the Safety Instructions document included with your product before proceeding with installation. Improperly installed batteries and components are extremely dangerous and could result in severe and/or fatal injuries. If you have any questions about the installation of these components, consult a qualified bicycle mechanic. This document is also available on www.sram.com.

NOTICE

This manual is a complete system installation guide, from unboxing each component to heading out for a ride. Eagle Transmission installation is unlike any system before, in which we prepare each component off the bike using details of your bike, loosely hang the components in place, then tighten the components in a specific sequence. Installation is easier than ever, but totally new, so please complete the installation and setup in the order described in the manual.

Do not begin a new section before completing the previous sections.

Consult www.sram.com/service whenever a separate manual is referenced in this document.

Read the full warranty policy for your components at www.sram.com/warranty.

For information about trademarks used in this manual, visit www.sram.com/website-terms-of-use.

Compatibility

NOTICE

This system is only compatible with bicycles that are designed with the Universal Derailleur Hanger (UDH) specification and comply with all the clearances. Visit www.sram.com to find more information on compatible frames.

e-MTB/Pedelec Shifting and Multi-shift

NOTICE

SRAM components are designed for use only on bicycles that are pedal powered or pedal assisted (e-MTB/Pedelec).

SRAM Eagle Transmission systems have multi-shift functionality disabled by default. To protect the components from damage and preserve the warranty, a T-Type Chain, Cassette, and Derailleur must be used with the SRAM AXS Controller's Multi-shift disabled when used on e-MTB/Pedelec style bicycles.

To enable the Multi-shift function, navigate to the system's Drivetrain Settings within the SRAM AXS app.

NOTICE

To protect the components and preserve the warranty, the CN-TTYP-XXSL chain and CS-XS-1299 cassette, are not designed for use with e-MTB/Pedelec systems. The XXSL derailleur is e-MTB/Pedelec approved.

The complete SRAM Warranty is available at www.sram.com.

SRAM AXS App

Download the SRAM AXS app, available for free in the app stores, to create your SRAM account, add your components, and customize your SRAM AXS experience.

Through the app, you will also be able to:

- Connect your components via Bluetooth to the SRAM AXS Mobile App.
- Build and personalize multiple bicycle profiles.
- Monitor bicycle performance and readiness.
- Customize component behavior to match your riding style.
- Assign custom actions to your controls.

For component customization within the SRAM AXS app, all AXS components must be paired into a single system. Procedures for pairing multiple systems, such as an AXS seatpost and AXS drivetrain, can be found in the [System Pairing](#) section.

For optimal system performance and compatibility make sure you have installed the latest version of the SRAM AXS app and component firmware. Firmware updates are performed through the app.



Tools and Supplies

Highly specialized tools and supplies are required for the installation of your SRAM components. We recommend that you have a qualified bicycle mechanic install your SRAM components.

Safety and Protection Supplies

- Apron
- Clean, lint-free shop towels
- Nitrile gloves
- Safety glasses

Lubricants and Fluids

- Friction paste
- Bicycle grease
- Isopropyl alcohol

Bicycle Tools

- Bicycle work stand
- Cassette tool
- Chain breaker and Chain Link Pliers (see [SRAM Chain Compatible Tools](#))

Common Tools

- Flat head screwdriver, small
- Hex bit sockets: 2, 2.5, and 8 mm
- Hex wrenches: 2, 2.5, and 8 mm
- Socket wrench
- Torque wrench
- TORX bit sockets: T20, T25
- TORX wrench: T20, T25

SRAM Battery and Charger



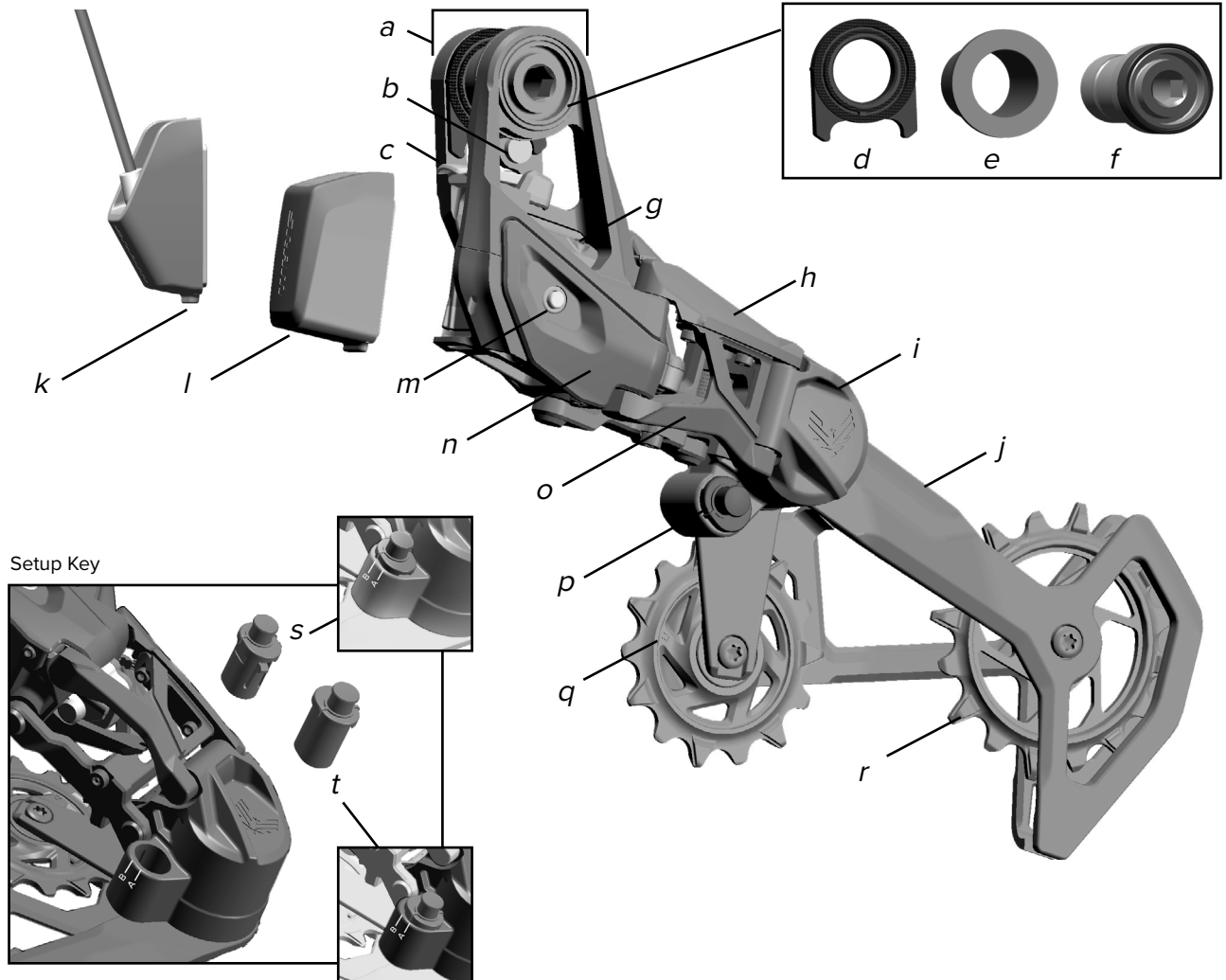
a. SRAM Battery
b. SRAM Battery Charger

c. Battery Cover
d. LED Charge Level Indicator

e. Micro USB Cable

Consult the *SRAM Battery and Charger User Manual* at www.sram.com/service for additional information.

Eagle AXS Transmission Derailleur



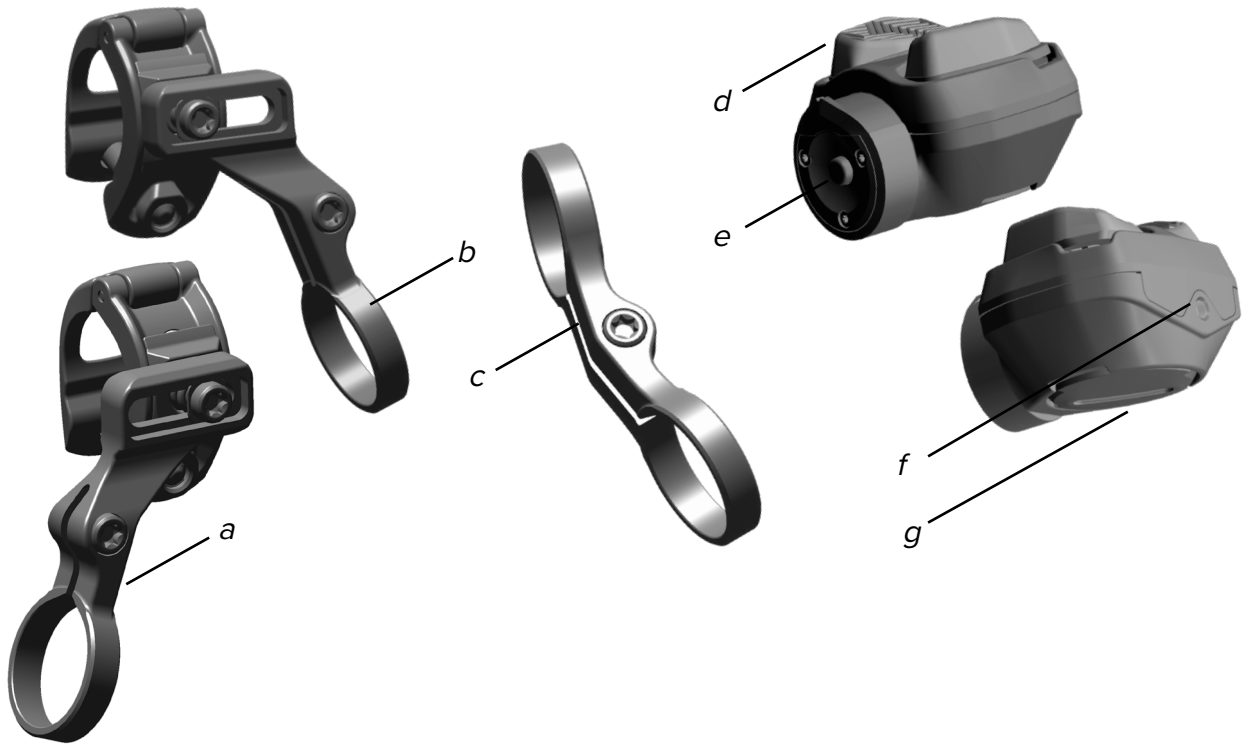
- a. Full Mount
- b. Knurled Ring Stop
- c. Battery Latch
- d. Knurled Ring
- e. Bushing Frame Insert
- f. Mount Bolt
- g. LED Indicator

- h. Upper Parallelogram*
- i. P-Knuckle
- j. Cage and Damper Assembly
- k. SRAM Extension Cord
- l. SRAM Battery
- m. AXS Button (Pairing, Battery Status)
- n. Skid Plate*

- o. Lower Parallelogram*
- p. Cage Mode Button/Setup Key (see insert)
- q. Upper Pulley
- r. Lower Pulley
- s. Setup Key Position B
- t. Setup Key Position A

XXSL Eagle AXS Transmission derailleur shown; product appearance may vary.

*Replaceable part, see spare part catalog.



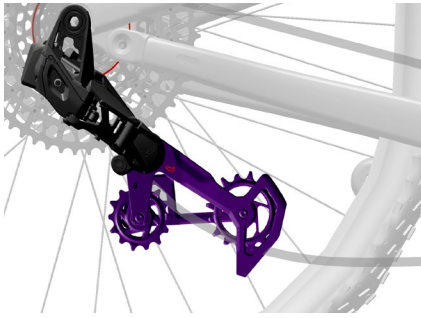
- a. Left MatchMaker X (MMX) Bridge
- b. Right MatchMaker X (MMX) Bridge
- c. Left and Right Discrete/Infinity Clamp

- d. Controller Buttons
- e. AXS Button (Pairing)

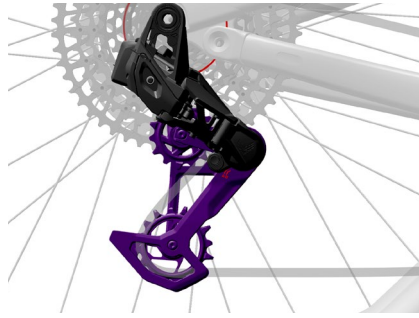
- f. LED Indicator
- g. Battery Cover

Transmission Derailleur Cage Modes

The Cage Mode button is used to position the derailleur cage to the various Cage Modes.



Open Mode: The derailleur cage is fully extended for rear wheel removal and installation.



Setup Mode: The derailleur cage is slightly extended to align the cage with either of the two key lines.



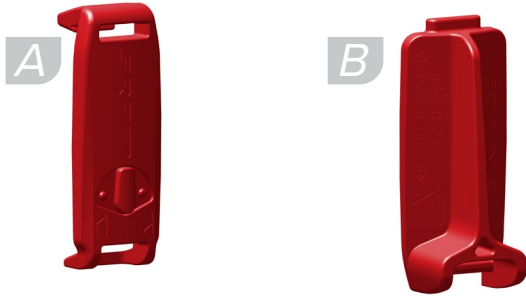
Ride Mode: The Cage Mode button is not depressed, and the derailleur cage is unlocked and not extended.

Batteries and Extension Cord

Consult the *SRAM Battery and Charger User Manual* at www.sram.com/service for charging instructions, battery maintenance, and travel guidelines.

NOTICE

Hands and gloves must be clean before handling the SRAM battery. Contact with sunscreen or hydrocarbon cleaners may cause the battery to crack.



NOTICE

Do not discard the battery cover (A). To protect the battery terminals, install the battery cover on the battery when it is not on the charger or component.

Do not discard the derailleur battery block (B). To prevent battery depletion during transportation, remove the battery and install the derailleur battery block and battery cover.

Failure to cover the battery and derailleur terminals could result in damage to the terminals.

SRAM Battery Charging



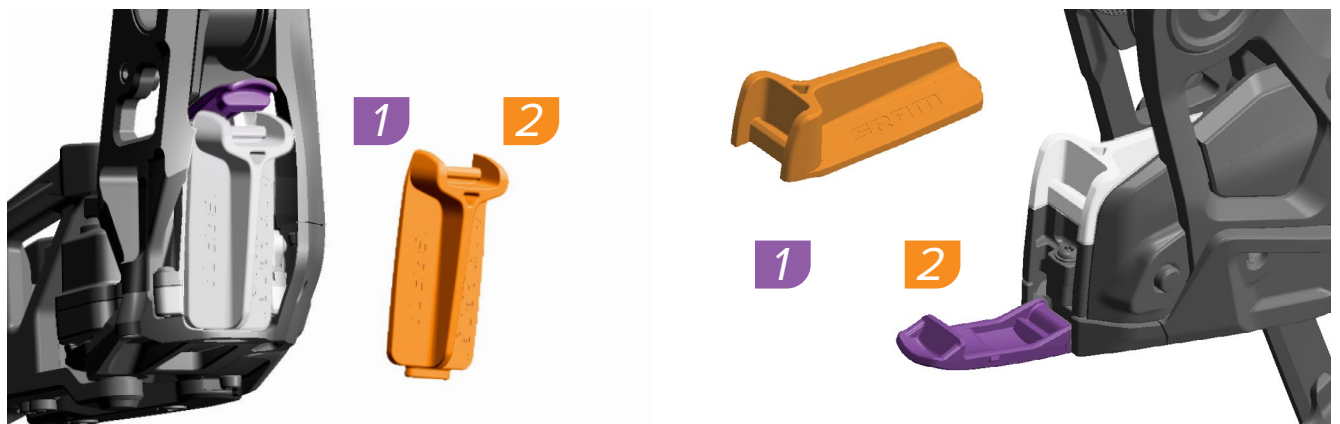
1. Remove the battery cover from the SRAM battery.

2. Charge the battery.

3. Charging is complete when the LED is green. Press the button on the charger to release the battery.

4. Remove the battery.

Transmission Battery Installation

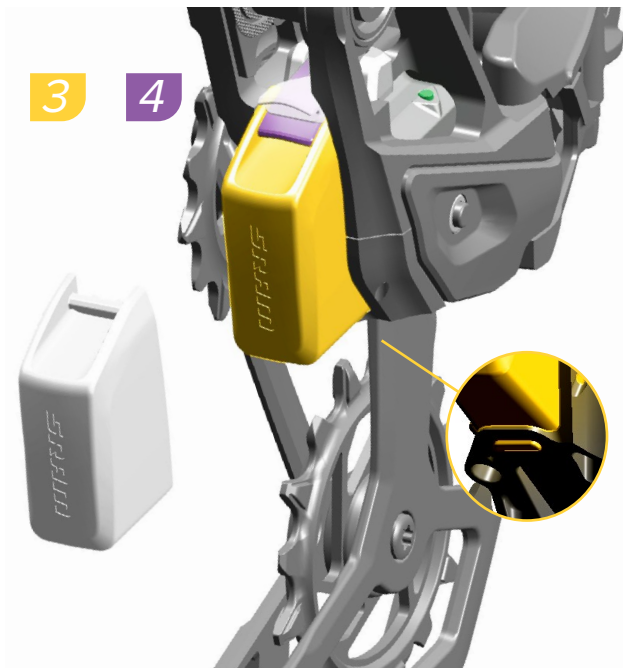


1. Open the battery latch.

2. Remove the battery block.

NOTICE

The battery block is installed to protect the electronic terminals.



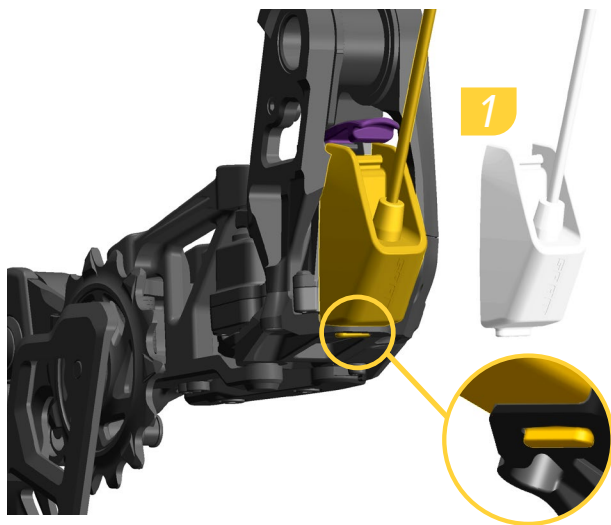
3. Insert the fully charged SRAM battery into the derailleur.
 4. Close the battery latch.
- When installed correctly, the latch will snap into place and the LED will flash green once.

Extension Cord Installation

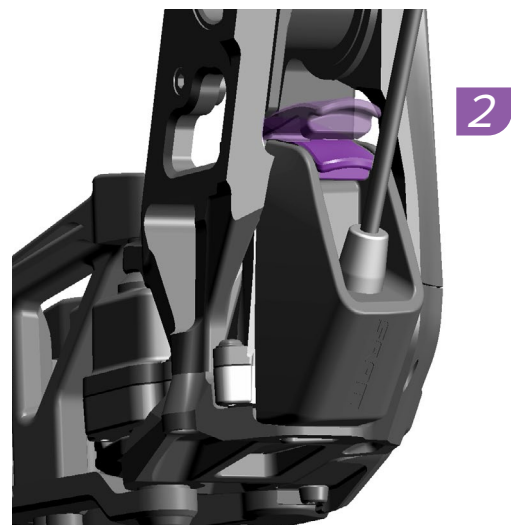
The GX derailleur is only compatible with extension cord model EP-EAC-ECD-A1.

⚠ WARNING

The extension cord is **not** a battery. Never install the extension cord into the battery charger. Consult your motor manufacturer for safety instructions and for plug installation.



1. Insert the extension cord into the derailleur.



2. Close the battery latch. When installed correctly, the latch will snap into place.

Battery Charge LED Indicator

The AXS component LED indicators illuminate when the component AXS button is pressed and when a shift is performed. The color of the LED indicates the battery charge level.

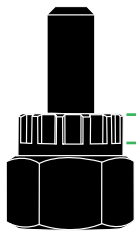
During use, if an AXS component has a blinking red LED, the battery must be recharged or replaced.

The LED on the Transmission will blink red and green when a shift has been rejected. Shifts can be rejected when the temperature is below -15 °C (5 °F).

Battery levels can also be checked in the SRAM AXS app.



Cassette Installation



7 - 8 mm

SRAM XD

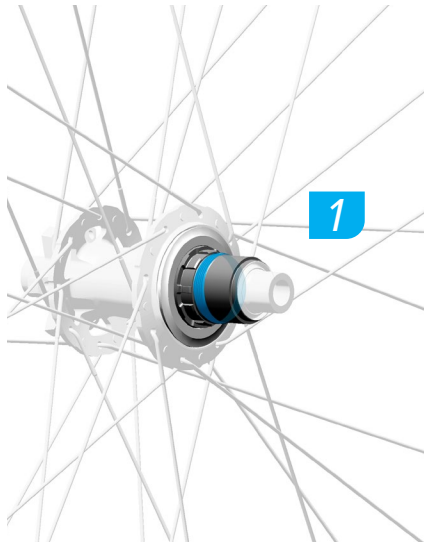
NOTICE

Use a tool with a guide pin to prevent damage to the components.

Cassette locking tool splines must fully engage the cassette locking or locktube (XD). Splines must be between 7 and 8 mm in length for XD cassettes.

If there is lateral play or movement in the cassette after tightening it, contact your SRAM dealer.

SRAM XD cassettes are compatible with the SRAM XD driver body and with the XDR driver body using a 1.85 mm spacer.

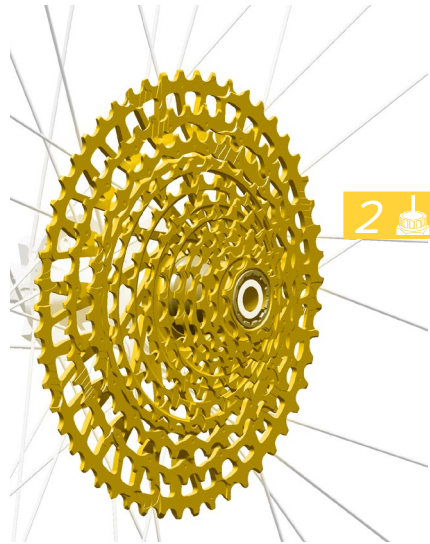


1

1. Apply grease to the driver body.

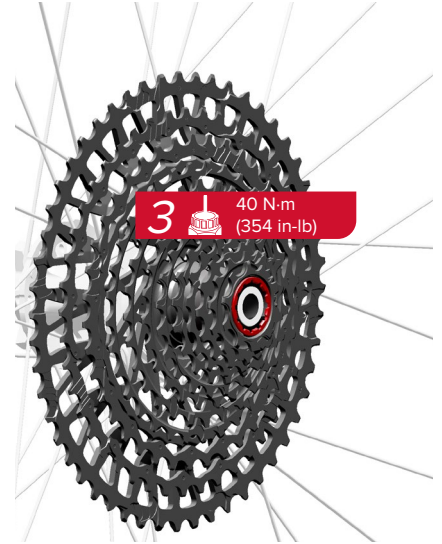
NOTICE

Grease is critical to prevent the cassette from seizing onto the driver body. Make sure the hub driver body and cassette interface are free of dirt and debris.



2

2. Install the cassette onto the driver body until it is fully seated with the splines engaged. Use a tool with a guide pin to tighten the cassette while applying inward pressure to the cassette.



3

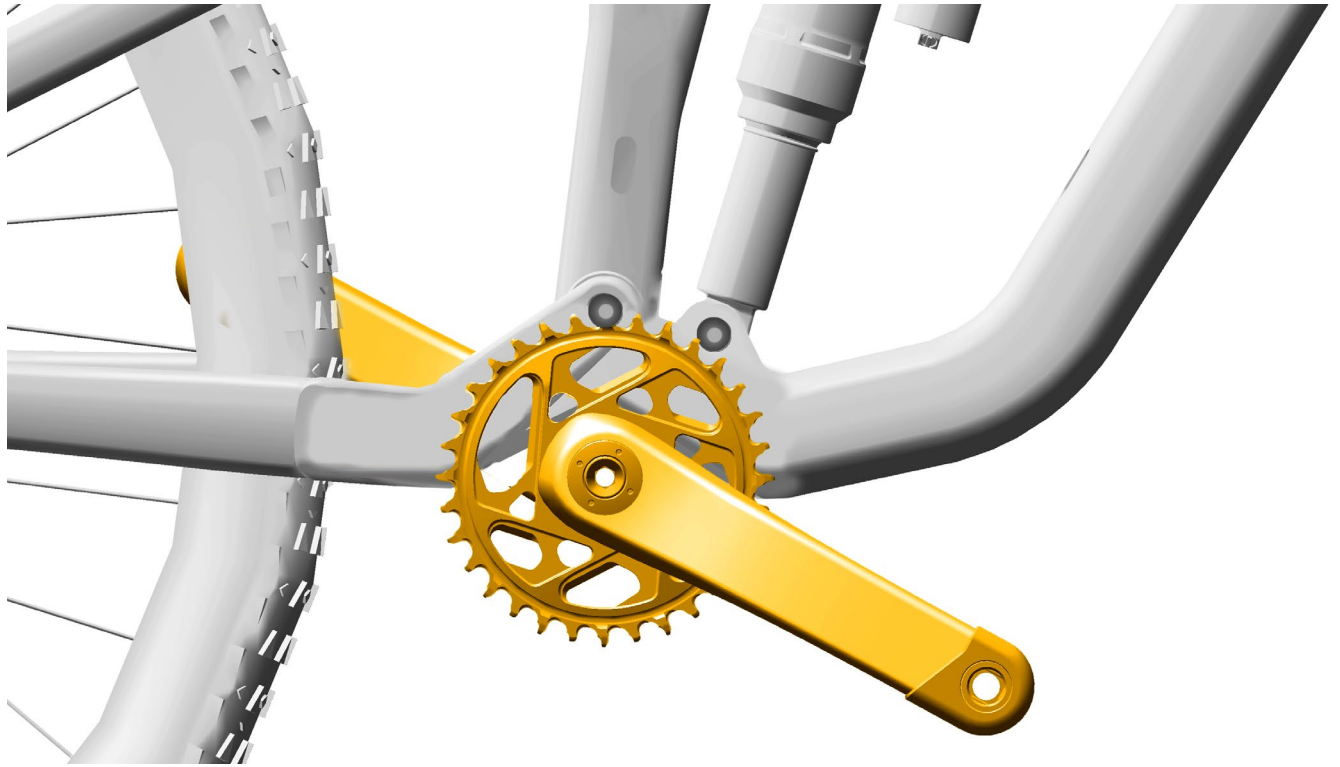
40 N-m
(354 in-lb)

3. Use a torque wrench to tighten the cassette.

Crankset Installation

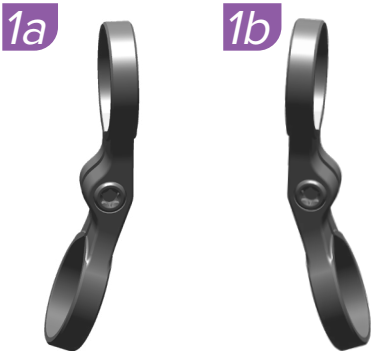
Consult the *SRAM DUB MTB and Road Cranksets and Bottom Brackets* user manual at www.sram.com/service for crankset and bottom bracket installation before proceeding.

For e-MTB/Pedelec bicycles, consult the [ISIS Crankset installation](#) section.



Pod Controller Installation

Discrete / Infinity Clamp



1. Position the clamp in the left handlebar position (1a) or the right handlebar position (1b) before proceeding.



2. Loosen the clamp bolt.



3. Install the pod controller with the pointed tip aligned with the open slot in the clamp.



4. Loosely install the clamp bolt.



5. Loosely install the clamp on the handlebar.



6. Rotate the controller to the desired angle.



7. Rotate the clamp to the desired height.



8. Move the clamp horizontally to the desired position on the handlebar.



9. Tighten the clamp bolt.

⚠ WARNING - CRASH HAZARD

Make sure the controller does not obstruct the brake lever throw.

MMX Bridge

1a



1b



1. Install the left bridge (1a) for the left handlebar position or the right bridge (1b) for the right handlebar position.

2 



2. Loosen the clamp bolt.

3



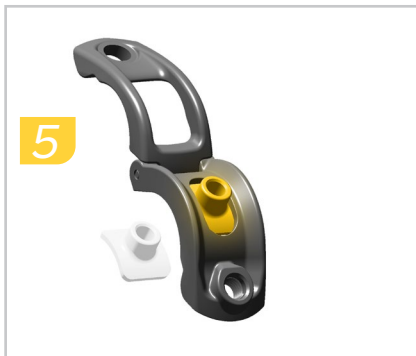
3. Install the pod controller with the pointed tip aligned with the open slot in the clamp.

4 



4. Loosely install the clamp bolt.

5



5. Install the T-nut into the clamp.
6. Apply friction paste to the clamp surfaces.
7. Loosely install the clamp and brake lever on the handlebar.
8. Tighten the bolt.

6




7



8 

5.5 N·m
(49 in·lb)

 Adjust

 Friction Paste

 Remove/Loosen

 Torque

 Install



9. Install the slotted washer onto the clamp.



10. Install the bridge.



11. Rotate the controller to the desired angle.



12. Move the bridge vertically to the desired position.



13. Move the bridge horizontally to the desired position.



14. Tighten the bridge bolt.



15. Tighten the clamp bolt.

⚠ WARNING - CRASH HAZARD

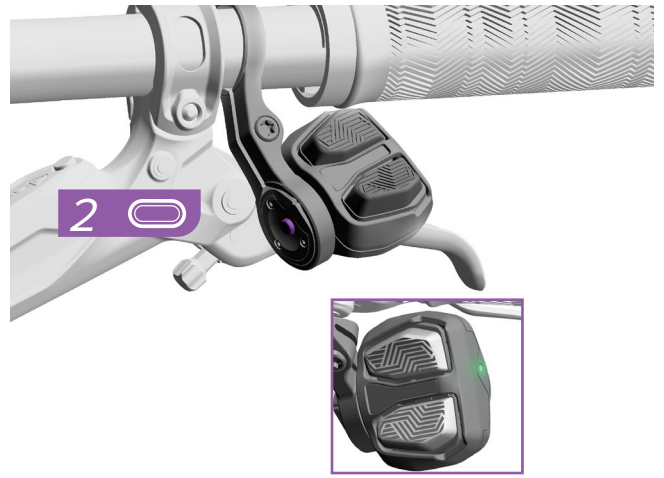
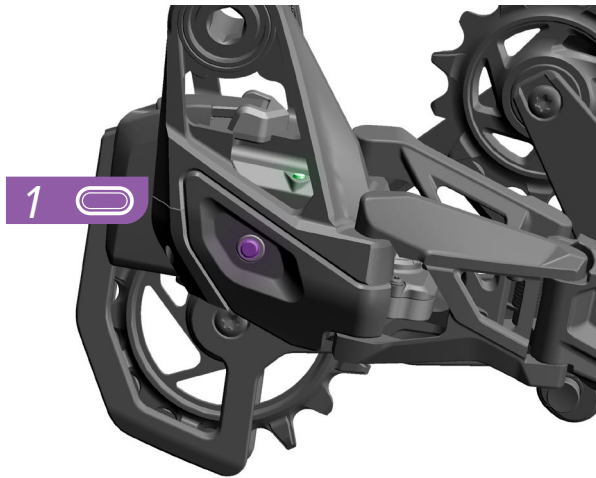
Make sure the controller does not obstruct the brake lever throw.

System Pairing

The derailleur begins and ends the pairing session.

The AXS Controller(s) must be paired with the derailleur before use.

Additional AXS components can be paired with the derailleur to create one AXS system. After multiple AXS components have been paired into one system, functions and preferences can be configured in the SRAM AXS app.



Begin the pairing session with the derailleur.

1. Press and hold the AXS button on the derailleur until the AXS LED blinks **slowly**, then release.

For setups using two AXS controllers, pair the right controller first.

2. Press and hold the AXS button on the controller until the green LED blinks **quickly**, then release.

*If more than one controller (e.g. Reverb AXS or Left Flight Attendant) is paired into the system, the one paired first into the system will work as the default right one and shown as **right** in the app.*



3. Press and release the AXS button on the derailleur to end the pairing session, or wait 30 seconds for the session to time out. The AXS LED will stop blinking.

Successful pairing can be verified with the SRAM AXS app. All paired components will be listed below the Transmission.

If any component does not respond, repeat the pairing process. The pairing process does **not** need to be repeated when any battery is removed and/or replaced. The pairing process **must** be repeated if any components are replaced, added, or removed.

Prepare the Components

This section covers preparing the chain and derailleur for installation. Do **not** install the components onto the frame until the next section, *Hang the Components*.

Chain Length

Consult the [SRAM Chain Calculator](#) or use the SRAM AXS app to determine the chain length calculated for your bicycle in the *Chain Length and Setup Key Guide*.

If your bicycle is not listed in the calculator or app, you must consult the [Frame Not Listed in Setup Database](#) section to determine the T-Type chain link length for your bicycle chainring and chainstay combination, Setup Key, and Setup Cog for your frame.

For bikes with an idler pulley, you must consult the [Idler Pulley Frame Setup Information](#) section to determine the T-Type chain link length.

1. Count down from 126 to the number of chain links determined by the calculator or app.

Use an approved chain breaker tool to break the chain at the inner link (figure 2). Set the chain aside.

1

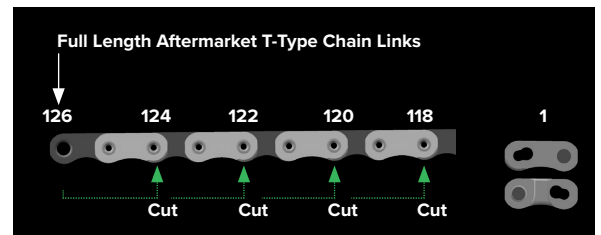


Figure 2

NOTICE

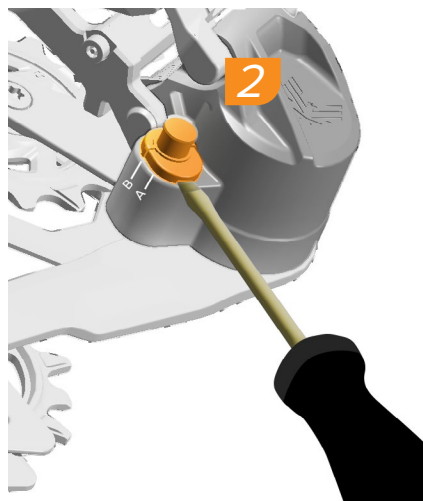
For a list of approved chain tools, consult the [11 speed, Eagle, and Flattop Chain Compatible Tools](#) document.

Setup Key Position

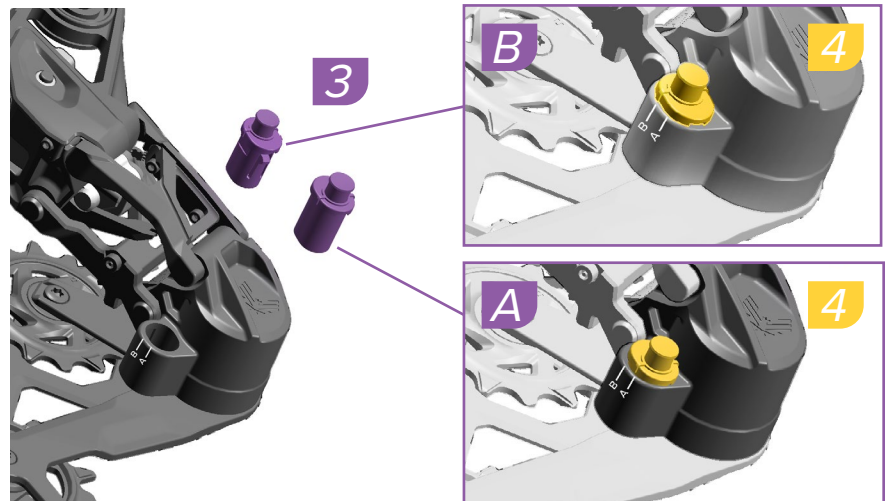
Consult AXS web at www.sram.com or use the SRAM AXS app to determine the **Setup Key**, output as an A or B, for your bicycle.

NOTICE

Failure to position the Setup Key correctly will result in an inaccurate chain gap and may damage your derailleur and/or bicycle frame.



2. Use a small flat head screwdriver to remove the Setup Key from the derailleur.

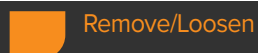


3. Adjust the Setup Key to the position called out for your bicycle frame, A or B.

4. Install the Setup Key into the derailleur so the notch on the key is aligned with the key line for A or B.



Measure



Remove/Loosen

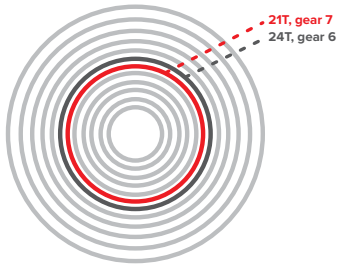


Adjust



Install

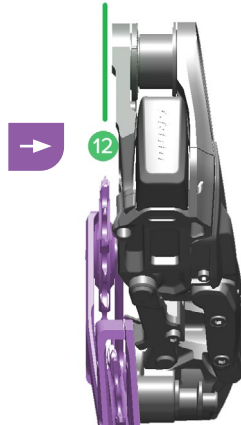
Setup Cog



Consult AXS web at www.sram.com or use the SRAM AXS app to determine the **Setup Cog**, output as 21T or 24T. The 21T cog is gear 7 and indicated on the cassette with a red circle. The 24T cog is gear 6, the next larger cog.



5. Press the top button on the controller to shift the derailleur into the fully outboard position.



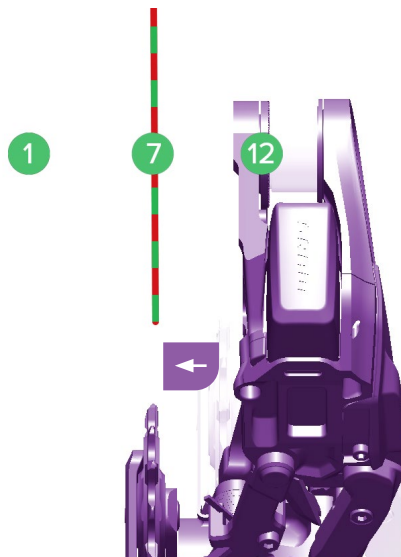
Alternatively, press and release the AXS button on the derailleur to move the derailleur outboard one position at a time until it is fully outboard.



6. Shift the unmounted derailleur into the setup cog position, 21T or 24T, as determined in AXS Web.

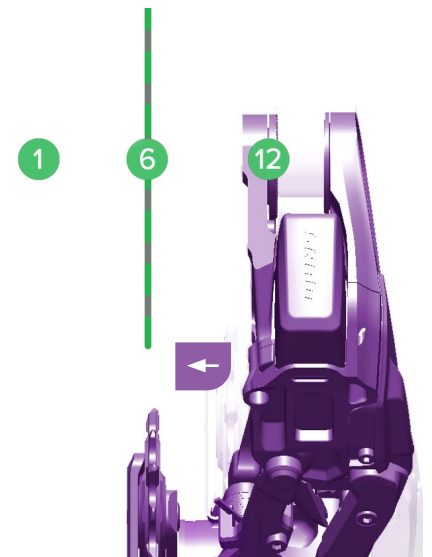
Setup Cog 21T, Gear 7

21T Setup Cog: Press the bottom button on the controller five clicks from full outboard position to shift the derailleur into position for the 21T cog, or gear 7.



Setup Cog 24T, Gear 6

24T Setup Cog: Press the bottom button on the controller six clicks from full outboard position to shift the derailleur into position for the 24T cog, or gear 6.



Alternatively, press the AXS button on the derailleur twice quickly to move the derailleur inboard one position at a time until it is in the Setup Cog position.

Remove the UDH (Universal Derailleur Hanger)



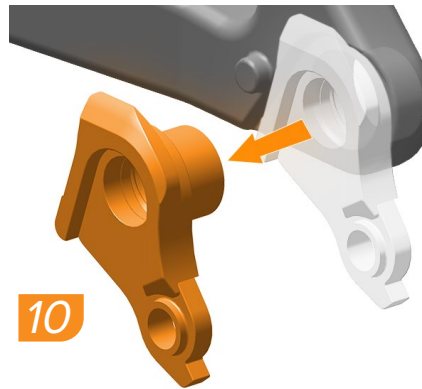
The UDH must be removed from the frame before derailleur installation.

7. Turn the UDH bolt clockwise.

8. Remove the bolt and washer from the hanger threads.

NOTICE

The UDH bolt is left-hand threaded. To loosen the bolt, turn clockwise.



9. Rotate the UDH hanger backward to unseat the hanger from the pocket.

10. Remove the UDH hanger from the frame.

Install the Bushing Frame Insert

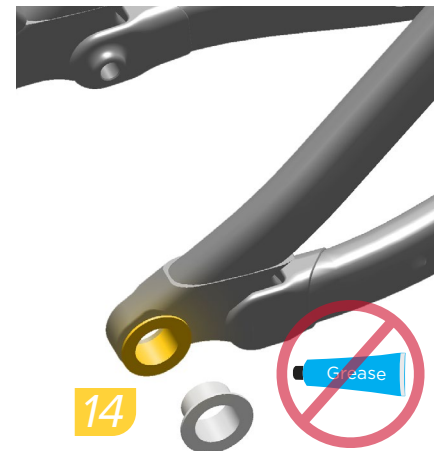


11. Tighten the cage assembly onto the derailleur body.



12. Remove the mount bolt.

13. Remove the bushing frame insert.



Clean the frame to remove any grease or debris.

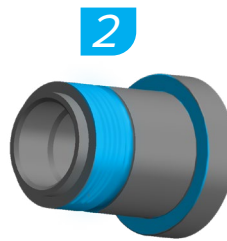
14. Install the bushing frame insert from the outside with the black side facing outwards into the hangerless interface of the frame.

Split Pivot Frames: Install the washer between the pivot bearings of bicycles with split pivots.

Hang the Components



1. Rotate the knurled ring clockwise until it is touching the knurled ring stop. Make sure the ring stop is between the knurled ring horns.



2. Apply grease to the mount bolt threads and underside of the bolt flange.



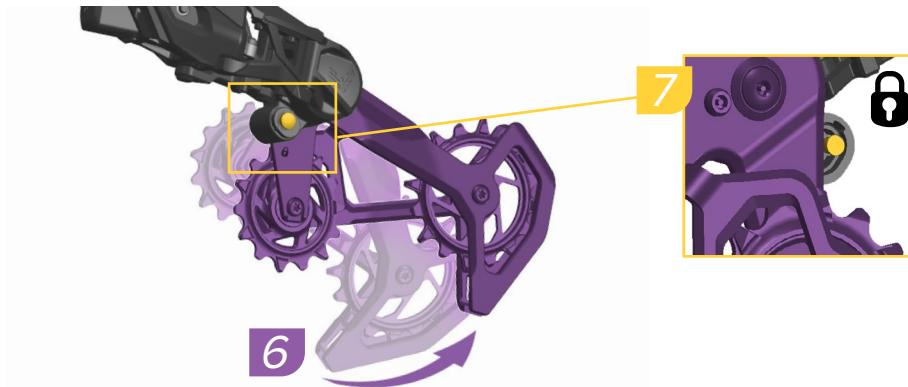
3. Install the Transmission derailleur with the full mount sliding over the hangerless interface and bushing frame insert.



4. Install and tighten the mount bolt clockwise to snug.



5. Loosen the mount bolt counter-clockwise one full turn.



6. Rotate the derailleur cage forward until the lock icon on the cage clears the Setup Key.

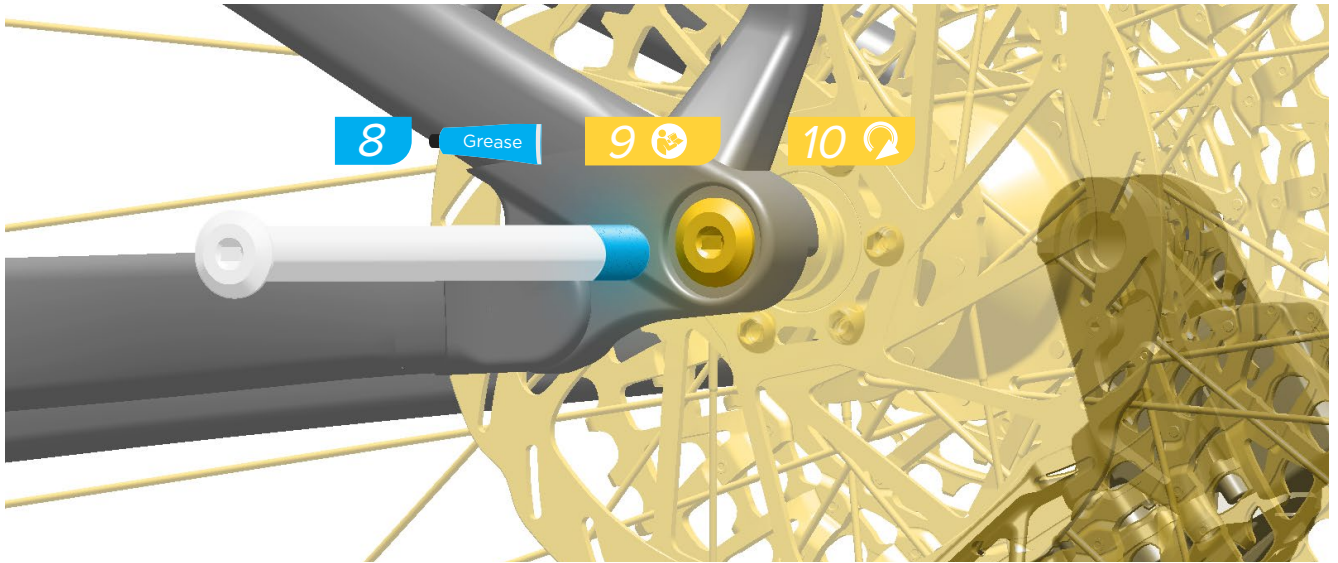
7. Press the Cage Mode button to lock the Transmission cage in Open Mode.

⚠ WARNING - PINCH HAZARD

The derailleur is spring loaded and will return from the cage open position rapidly. Keep fingers clear of pinch points.



Mount the Wheel



8. Apply grease to the thru axle threads before axle installation.
9. Install the thru axle and wheel according to the manufacturer's instructions.
10. Tighten the axle to snug.



11. Loosen the thru axle bolt counter-clockwise one full turn.

NOTICE

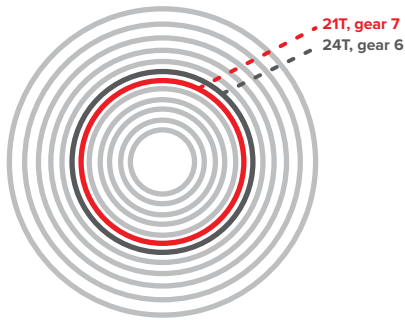
Failure to loosen the axle bolt one turn will result in improper system installation. The axle will be tightened at the end of installation.

Mount the Chain



Verify the chain has been cut to the proper size, the Transmission derailleur is shifted into the **Setup Cog**, and the derailleur **Setup Key** is in the position as determined in AXS web or AXS app and the [Prepare the Components](#) section.

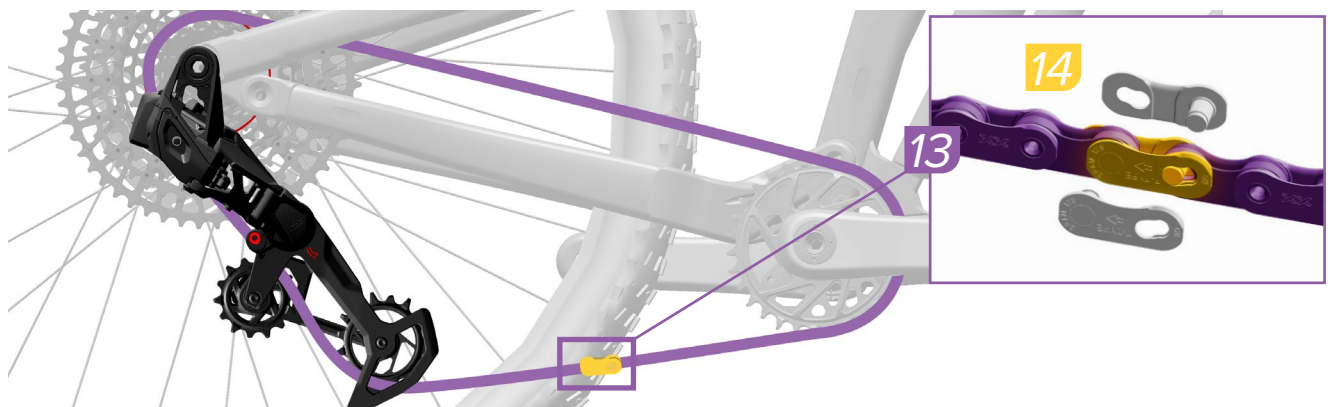
E-bikes must be powered off before proceeding.



12. Place the properly sized Eagle T-Type chain on the setup cog, 21T or 24T, and route through the derailleur pulleys with the flat edge of the chain facing away from the cassette. Make sure to route the chain below the tab in the cage.

NOTICE

The chain must be seated and engaged on the cassette cog teeth for proper setup.



13. Pull each end of the chain together.

14. Install the PowerLock. Press the PowerLock connector links together.

NOTICE

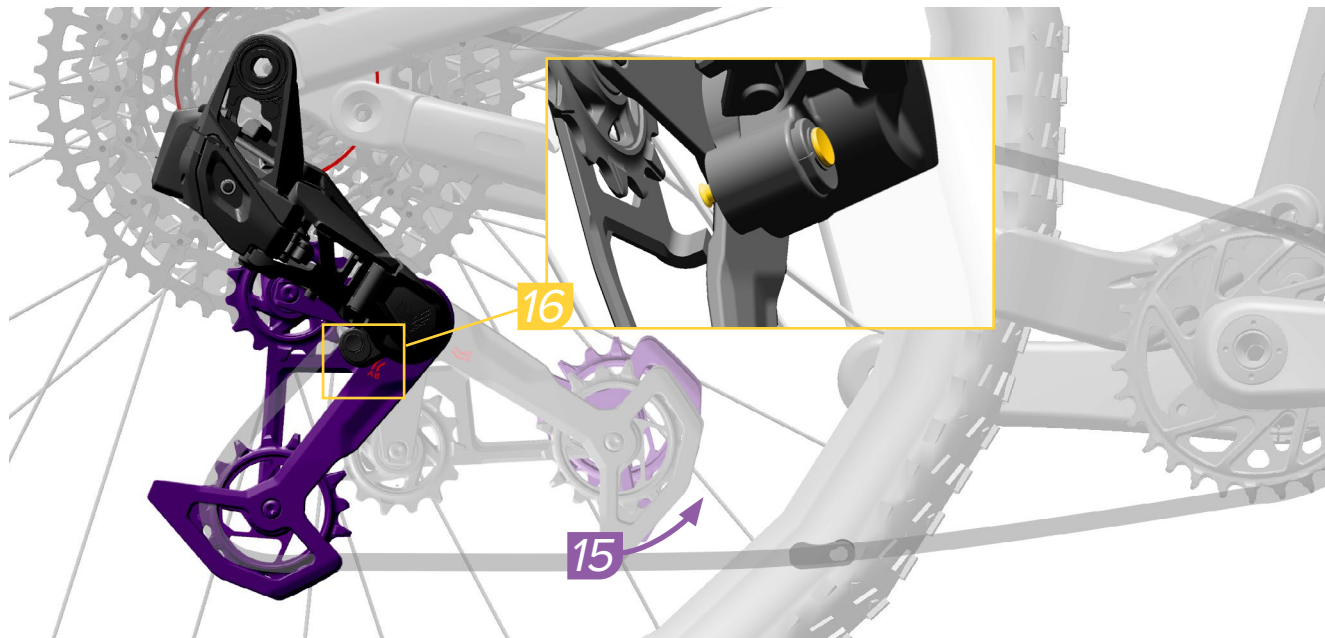
The arrow must point in the direction of chain travel before locking the PowerLock into place. Once locked, the PowerLock cannot be reused.

Move the Cage to Setup Mode

15. Rotate the derailleur cage forward to release the Cage Mode button from the fully extended position.
16. Reposition the cage so the Cage Mode button locks on the derailleur cage where the two Key Lines meet in the Setup Mode.

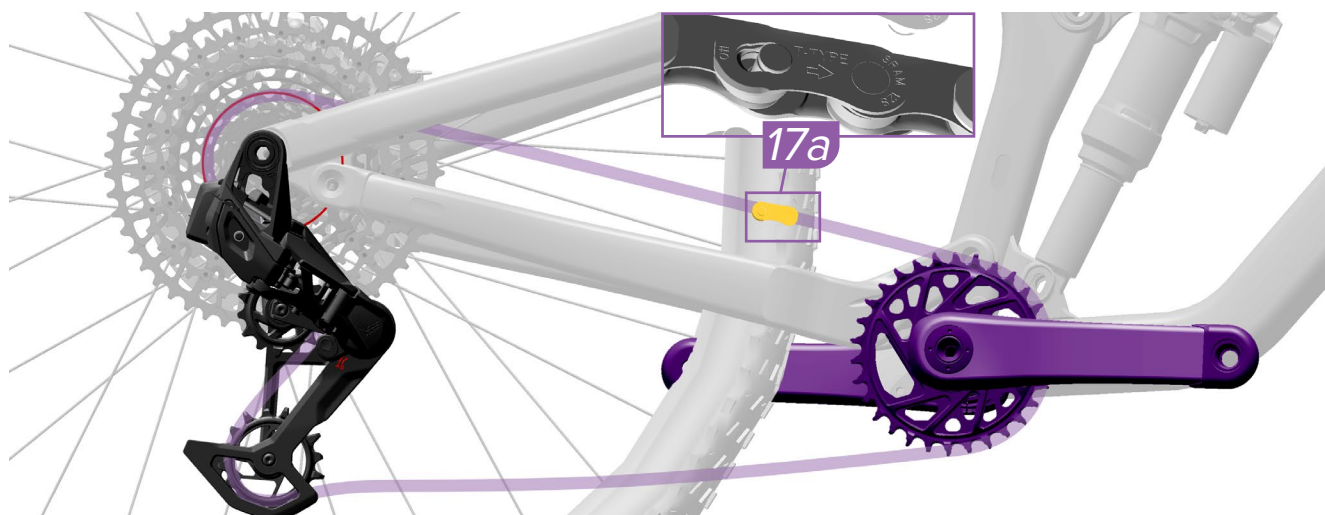
⚠ WARNING - PINCH HAZARD

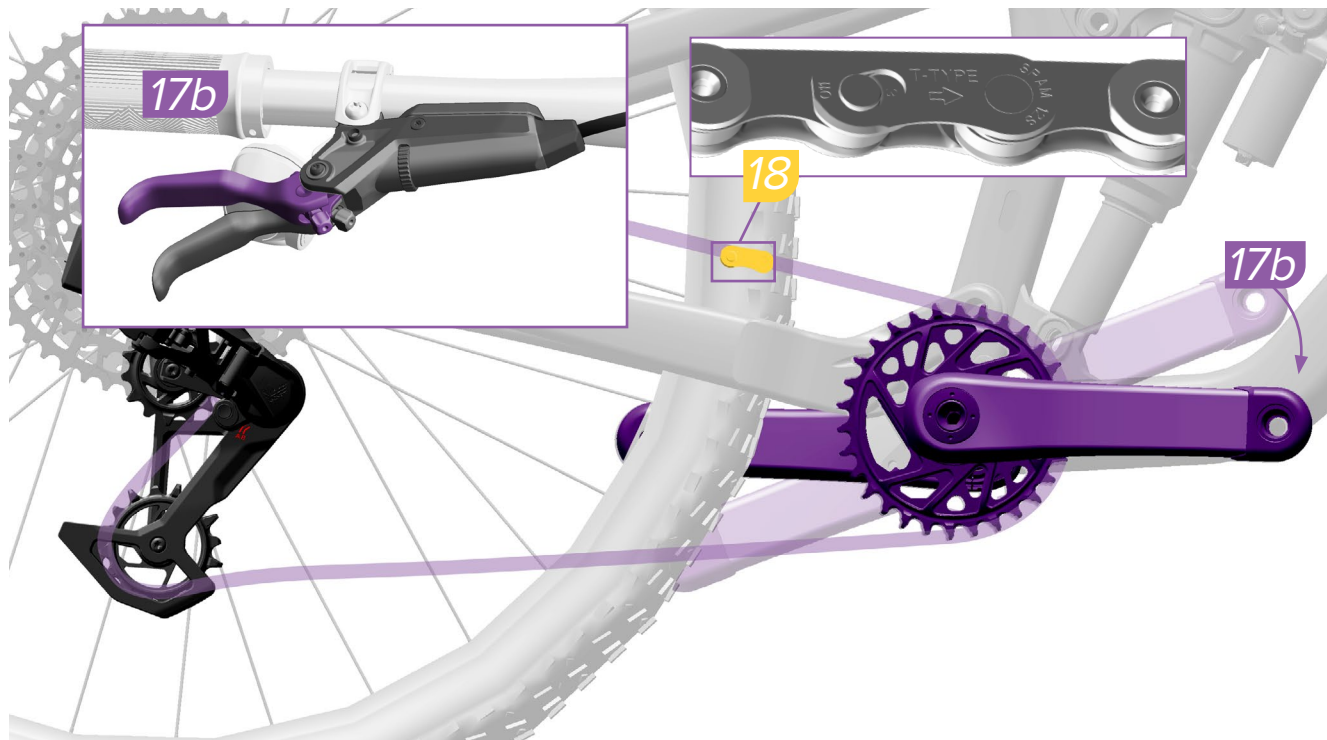
The derailleur is spring loaded and will return rapidly. Keep fingers clear of pinch points.



Lock the PowerLock

- 17a. Rotate the crank until the PowerLock is above the chainstay.





17b. Check that the two halves of the PowerLock are aligned and engaged.

18. Use chain link pliers to lock the PowerLock.

Alternatively, apply the rear brake (17b) and firmly push the crank arm down (17b) to lock the PowerLock. You should hear and feel the PowerLock click into place.

Check the PowerLock by hand to make sure it moves freely.

⚠ CAUTION

The PowerLock is designed for one-time use only. The PowerLock can only be removed with chain link pliers and must not be reused. Install a new PowerLock each time a new chain is installed. Reusing a PowerLock may result in a broken chain that could result in a crash.

Read This First



Before proceeding you must verify the following were completed in the previous sections:

- The rear axle and mount bolt is loosened one full turn.
- The derailleur is in the **Setup Key and Setup Mode** for your bicycle as determined in [Prepare the Components](#) section.
- The chain is placed on the **Setup Cog** for your bicycle and is properly engaged on all the cogs in the system.
- The PowerLock is closed.
- The bicycle suspension is uncompressed, at 0 percent sag, unless otherwise instructed.

Tighten the Components



1a. Pull back on the lower cage of the Transmission derailleur to remove slack from the chain.

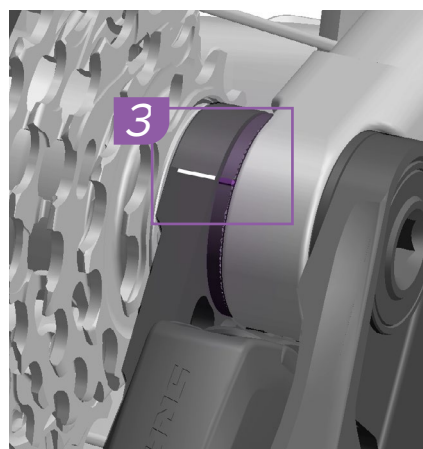
1b. Continue to pull back while you rotate the crank forward two rotations while confirming the chain stays on the setup cog.

NOTICE

For bicycles using Setup Cog 24T, or gear 6, you must make sure the chain is fully seated on the X-sync cassette cog profile with two full crank rotations. Adjust the chain as needed.

2. Tighten the mount bolt while continuing to pull back (1a) on the lower cage of the derailleur, then release.

If there is still slack in the chain after tightening the mount bolt, loosen the mount bolt, then repeat step 1 and 2.

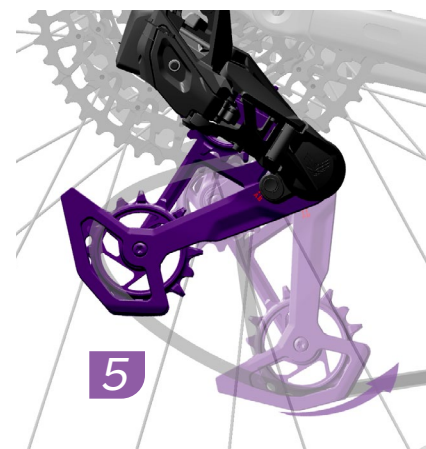


3. Verify the knurled ring mark is aligned with the mark on the full mount of the derailleur.

If it is not aligned, loosen the axle then mount bolt one turn, rotate the knurled ring so that it is touching the knurled ring stop, then repeat steps 1-3.



4. Tighten the rear axle to torque according to the frame or axle manufacturer's instructions.



5. Release the cage from the Setup Mode to Ride Mode by rotating the cage forward then carefully letting it return to the unlocked position.

This completes the system installation. There are no adjustment screws in this system. You must repeat the complete installation procedure if you change any of the following on your bicycle: chainring size, geometry adjustment to chainstay length, or position of a lower idler pulley.

NOTICE

Failure to repeat the complete installation when changing chainring size or geometry, may result in damage to your system or poor drivetrain performance.



Pull & hold

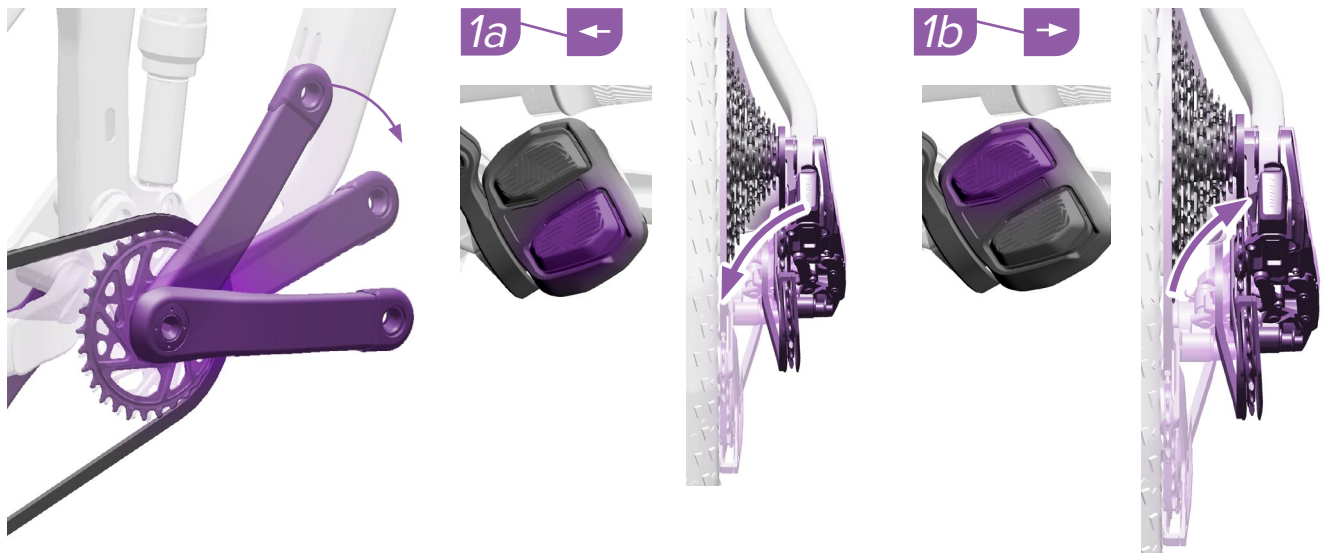


Adjust



Torque

Final Check



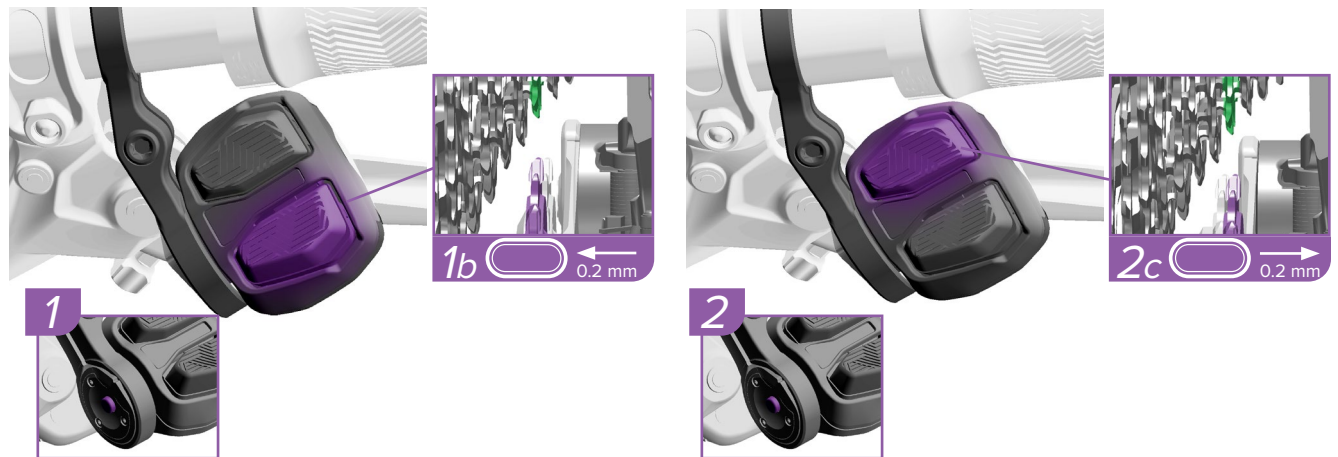
1a. Rotate the cranks slowly and press the bottom button on the AXS Pod Controller to shift the derailleur all the way inboard.

1b. Rotate the cranks slowly and press the top button on the AXS Pod Controller to shift the derailleur all the way outboard.

If the derailleur cage was not released during setup, it will automatically release during the inboard shifting to Ride Mode.

The pulleys may appear to be unaligned, they are intentionally offset to improve chain travel and direction.

Fine Tuning



Optimize derailleur shift performance and eliminate unwanted rasping sounds by fine-tuning the derailleur position with MicroAdjust. MicroAdjust affects position across all of the cogs. There is no independent adjustment for each cog.

1. Press and hold the controller AXS button while pressing the lower controller button (1b). This will adjust the derailleur 0.2 mm inboard and improve shifting to an inboard cog.

2. Press and hold the controller AXS button while pressing the upper controller button (2c) to adjust the derailleur outboard. This will adjust the derailleur 0.2 mm outboard and improve shifting to an outboard cog.

The derailleur may not appear to move. Watch for the LED to blink to confirm the derailleur executed the command.

NOTICE

Use the SRAM AXS app as an alternative method to perform MicroAdjust when the bicycle setup does not include or allow access to the shifter AXS buttons.

Frame Not Listed in SRAM Setup Database

This section covers preparing the chain and derailleur for installation on bicycle frames **not** listed in the chain calculator database or AXS App.

- 1 Measure the direct distance from the bottom bracket axis to the hub axis with the frame fully extended at 0% travel to determine the chainstay length (mm) (figure 1).

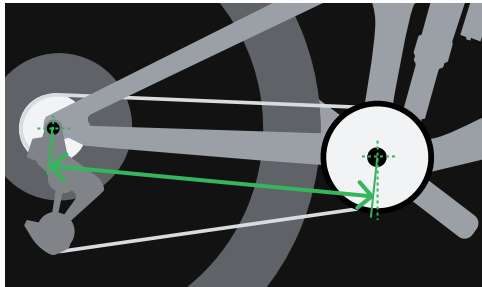


Figure 1

- 3 Count down from 126 to the number of chain links determined by the chart.
Use an approved chain breaker tool to break the chain at the inner link (figure 2).

NOTICE

For a list of approved chain tools, consult the [11 speed, Eagle, and Flattop Chain Compatible Tools](#) document.

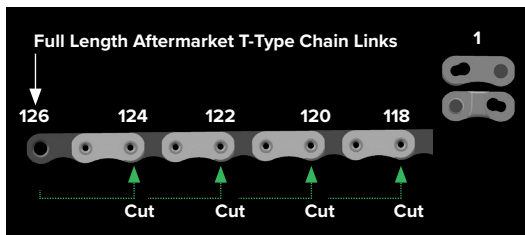


Figure 2

- 4 Record and use the following setup data for frames not listed in the SRAM database:

- Setup Key Position A.
- Setup Cog 21T, gear 7.
- SAG position for *Tighten your Components* section.

Proceed to the [Setup Key Position](#) section to continue system installation.

- 2 Consult the chart below to determine the length of chain links needed for your T-Type chain according to the chainring and chainstay combination on your bicycle.

Chainring Size

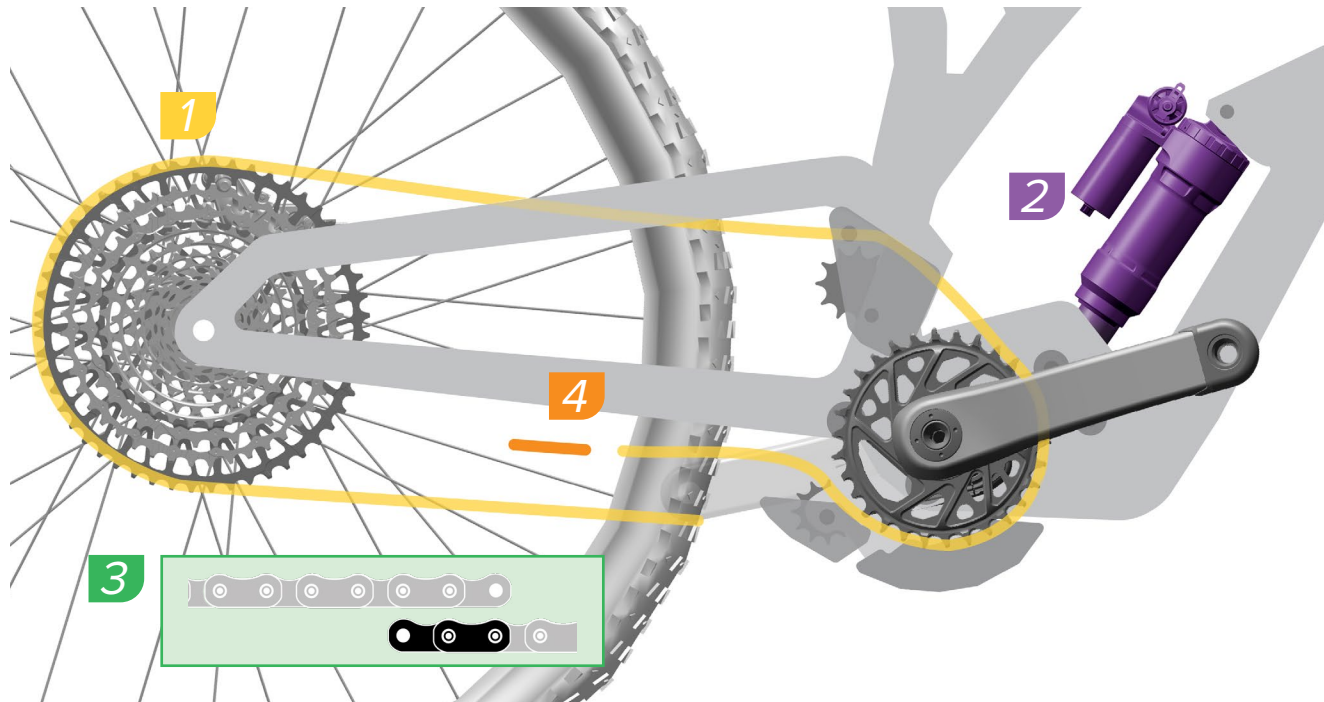
	30T	32T	34T	36T	38T	40T	42T
Chainstay Length (mm)							
425							
426		114		116		118	
427							
428							
429	114		116		118		120
430							
431							
432							
433							
434		116		118		120	
435							
436							
437							
438							
439							
440	116		118		120		122
441							
442							
443							
444							
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447		118		120		122	
448							
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452							
453	118		120		122		124
454							
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456							
457							
458							
459		120		122		124	
460							
461							
462							
463							
464							
465	120		122		124		126
466							
467							
468		122		124		126	
469							
470							

Idler Pulley Frame Setup Information

This section covers preparing the chain, setup cog, and setup position for Transmission installation on bicycle frames with an upper and lower idler pulley.

NOTICE

Frames that use an upper idler pulley require a lower idler pulley for sufficient chain wrap and drivetrain performance. SRAM recommends placing the lower idler pulley as high as possible. Failure to use a lower idler pulley may result in improper chain tension, noise, and performance.



1. Wrap the chain around the large chainring, through the idler pulley, and the largest cassette cog.
2. Compress the bicycle until the rear shock is fully compressed. Deflate or remove the rear shock if necessary.
3. With the bicycle compressed, pull the two ends of the chain together and add one inner link and one outer link where the chain starts to overlap.
4. Use an approved chain breaker tool to break the chain at the inner link.

NOTICE

For a list of approved chain tools, consult the [11 speed, Eagle, and Flattop Chain Compatible Tools](#) document.

Some idler pulley bicycles may require a longer than aftermarket chain. In some cases adding an extra PowerLock into the system will provide the correct amount of links. Make sure to place the extra PowerLock as far from the connecting PowerLock as possible.

5 Record and use the following setup data for idler pulley frames:

- Setup Key Position A.
- Setup Cog 21T, gear 7.
- SAG position for *Tighten your Components* section.

Proceed to the [Setup Key Position](#) section to continue system installation.



Install



Adjust



Measure



Remove/Loosen

Electronic Component Cleaning

It is recommended that you periodically clean your electronic components.

Use a damp cloth to wipe off any dirt and debris. Clean the components with soap and water only. Rinse thoroughly with water and allow the components to dry.

NOTICE

Remove the SRAM batteries and install the battery blocks into the Transmission before cleaning.

Do not clean the components with a power washer or ultrasonic cleaner.

Do not use acidic or grease-dissolving agents. Do not soak or store components in any cleaning product or liquid. Chemical cleaners and solvents can damage plastic components.

Pod Controller Component Cleaning

It is recommended that you periodically clean your electronic controllers.

Make sure the outside of the controller is clean before removing the button assembly. Use a damp cloth to wipe off any dirt and debris from the control and the underside of the button assembly. Clean the components with soap and water only. Rinse thoroughly with water and allow the components to dry completely before installing the button assembly.

NOTICE

You must periodically clean the controller by removing the button assembly. Riding with dirt and debris in the pod controller may result in the controller not working.



1. Use the seam above the AXS button to pry the button assembly off.

2. Remove the button interface.

3. Use a damp cloth to wipe off any dirt and debris from the control. Clean the components with soap and water only. Rinse thoroughly with water and allow the components to dry completely.

4. Align the button assembly with the controller. Seat the button onto the LED side of the controller.

5. Press the clamp side of the button until you hear and feel it click in place.

Cage Assembly Cleaning

It is recommended that you periodically clean the pulley wheels and clean and grease the cage spring.

Shift the derailleur into the [Setup Cog position](#).

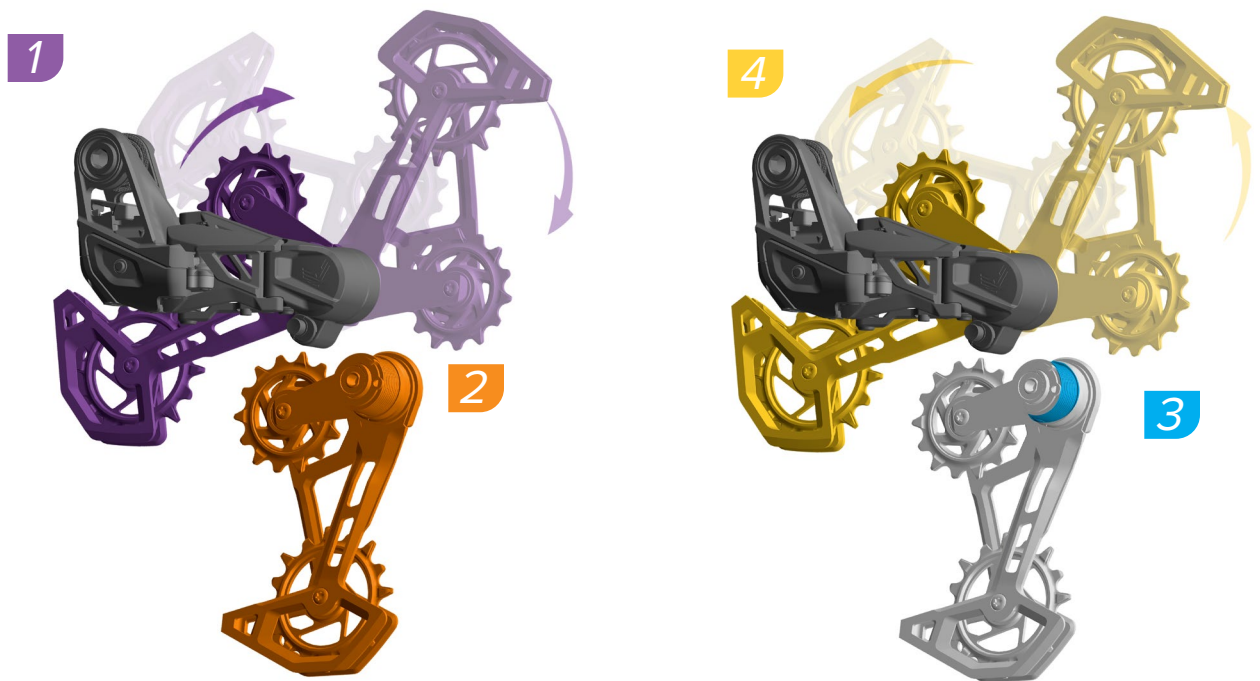
NOTICE

Do not clean the components with a power washer or ultrasonic cleaner.

Do not use acidic or grease-dissolving agents. Do not soak or store components in any cleaning product or liquid. Chemical cleaners and solvents can damage plastic components or affect cage damper performance.

⚠ WARNING - PINCH HAZARD

Hold the cage from the outside to avoid pinching your fingers between the cage and derailleur body when the cage loosens.

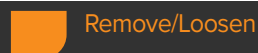


1. Hold the derailleur body and rotate the cage clockwise until it releases from the p-knuckle.

2. Remove the cage.

3. Use a damp cloth to wipe off any dirt and debris. Clean the components with soap and water only. Rinse thoroughly with water and allow the components to dry. Apply a small amount of grease to the spring before re-installing.

4. Install the cage into the p-knuckle.



Chain, Cassette, and Chaining Cleaning

It is recommended that you clean your chain, cassette, and chaining after frequent use, and after riding in muddy, dusty, or other adverse conditions. Maintaining a clean and lubricated system will help extend your drivetrain performance and product component service life.

Use only biodegradable cleaners to clean the cassette, chaining, and chain. Rinse thoroughly with water and allow the parts to dry, then lubricate the chain with chain lubricant. Wipe off excess lube.

⚠ WARNING - CRASH HAZARD

Do not use alkaline or acidic solvents to clean the chain and cassette cogs. Do not soak or store the chain or cassette in any cleaning product. They will become brittle and can break under load, which can cause the rider to crash resulting in serious injury and/or death.

Chain, Cassette, and Chaining Replacement

The chain, cassette, and chaining wear together over time as a result of normal use. Parts will last longer with regular cleaning. To determine if the parts need to be replaced, consult the [Transmission Service Matrix](#) section. Depending on use case, it may be best to change the parts together to restore optimal drivetrain performance.

Extension Cord Maintenance

Keep the extension cord installed in the Transmission. It is not necessary to remove the extension cord when cleaning, storing, or transporting your bicycle.

Every 50 hours: Check the extension cord for damage such as cuts and breaks in the insulation.

⚠ WARNING

Consult the motor manufacturer for safe handling instructions.

Do **NOT** use if there is damage to the extension cord.

Do **NOT** repair the extension cord yourself. Consult your motor manufacturer's authorized dealers for repair.

Storage and Transportation

Storage conditions: Temperature from -40°C to 70°C (-40°F to 158°F), humidity from 10% to 85%

Operating conditions: Temperature from -10°C to 40°C (14°F to 104°F), humidity from 0% to 100%

Component Service life: 5 years

Remove the SRAM batteries to preserve battery life during long term storage and when the bicycle is transported. Store the battery at least at 50% charge.

NOTICE

Remove the SRAM batteries and install the battery blocks and battery covers when the bicycle is being transported or not in use for long periods of time. Failure to remove the SRAM batteries could result in battery depletion.

Failure to cover the battery and AXS component terminals could result in damage to the terminals.

Controller Battery Replacement

Make sure the controller is clean before opening the battery latch. Use a damp cloth to wipe off any dirt and debris from the control. Clean the components with soap and water only. Rinse thoroughly with water and allow the components to dry completely before opening.

⚠ WARNING

Consult the battery manufacturer for safe handling instructions.

Keep the battery out of reach of children. Do not put the battery in your mouth. If ingested, seek medical attention immediately.

Do not use sharp objects to remove batteries.



1. Use your finger or a coin to turn the battery cover counter-clockwise to open the battery cover.



2. Remove the cover. Remove the battery.

NOTICE

To prevent moisture damage do not remove the battery cover o-ring seal.



3. Insert a new CR2032 battery with the positive + sign facing into the cover.



4. Reinstall the battery cover.



5. Use your finger or a coin to turn the cover clockwise to lock it into place.

Pod Ultimate Button Cap Replacement

Make sure the controller is clean before removing the button caps. Use a damp cloth to wipe off any dirt and debris from the control. Clean the components with soap and water only. Rinse thoroughly with water and allow the components to dry completely before opening.

Use your fingers to remove the button cap at the notch on the controller.

Choose your desired button cap.



1. Use your fingers to remove the button cap at the notch on the controller.



2. Choose your desired button cap configuration.

3. Turn the button cap over and remove the liner from the adhesive.



4. Orient the new button cap so the tab is aligned at the notch. Press the cap onto the controller button until you hear and feel it snap in place.

5. Press and hold each button cap for 30 seconds for adhesion.



Remove/Loosen



Adjust



Install



Press & hold

Pod Controller Upgrade to Ultimate Pod Controller

Make sure the controller is clean before removing the button assembly. Use a damp cloth to wipe off any dirt and debris from the control. Clean the components with soap and water only. Rinse thoroughly with water and allow the components to dry completely before opening.



1. Loosen the clamp bolt.



2. Rotate the the pod controller with the pointed tip aligned with the open slot in the clamp.



3. Remove the pod from the clamp.



4. Use the seam above the AXS button to pry the button assembly off.

5. Remove the button interface.



Align a new button assembly with the controller.

6. Seat the button onto the LED side of the controller.



7. Press the clamp side of the button until you hear and feel it click in place.

Rear Wheel Change

After installation and setup you may remove and reinstall the rear wheel as needed. To remove and install the wheel put the derailleur in Open Mode. Before tightening the rear axle bolt, you must release the Cage Mode button and put the derailleur in Ride Mode.

NOTICE

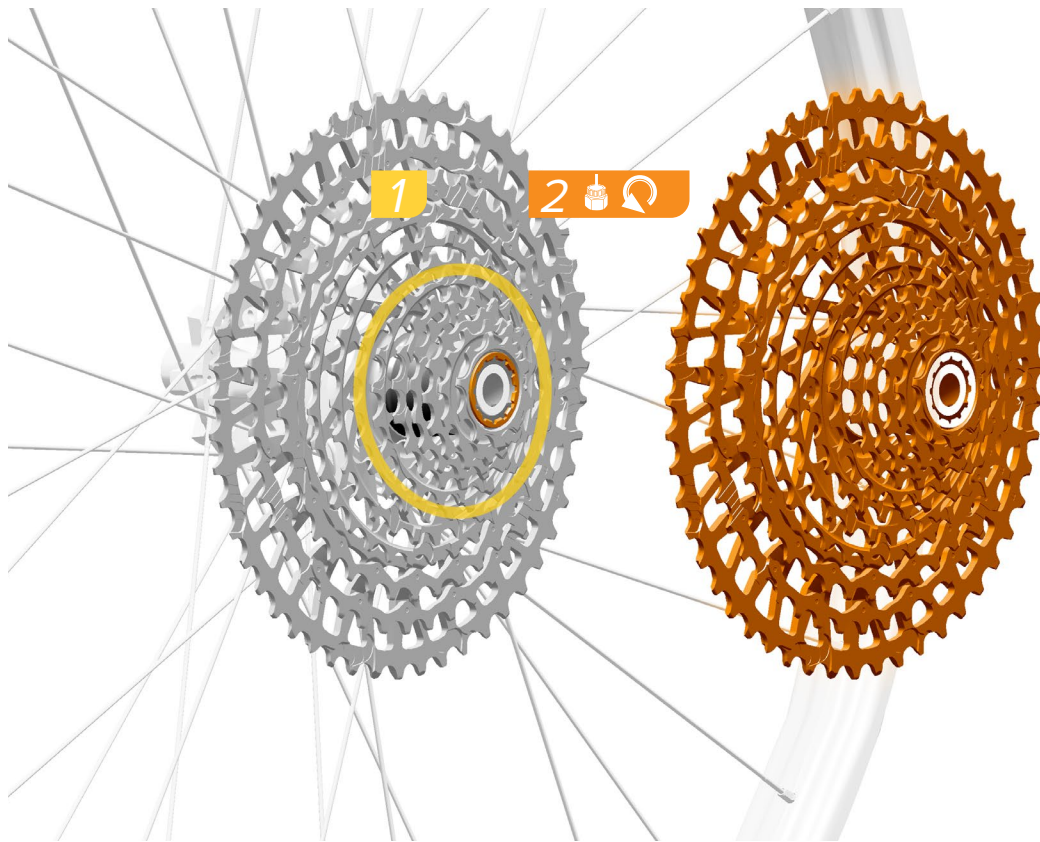
Failure to put the derailleur in Ride Mode before tightening the rear axle bolt could result in the derailleur fixed in the wrong position.

Cassette Removal

1. Place an 11 or 12 speed cassette chain whip on the cassette setup cog. Wrap the chain whip all the way around the cassette.
2. Use a cassette locking tool with a guide pin to remove the cassette.

NOTICE

Do not use cassette pliers to remove the cassette. Failure to use the correct tool may result in damage to the cassette.



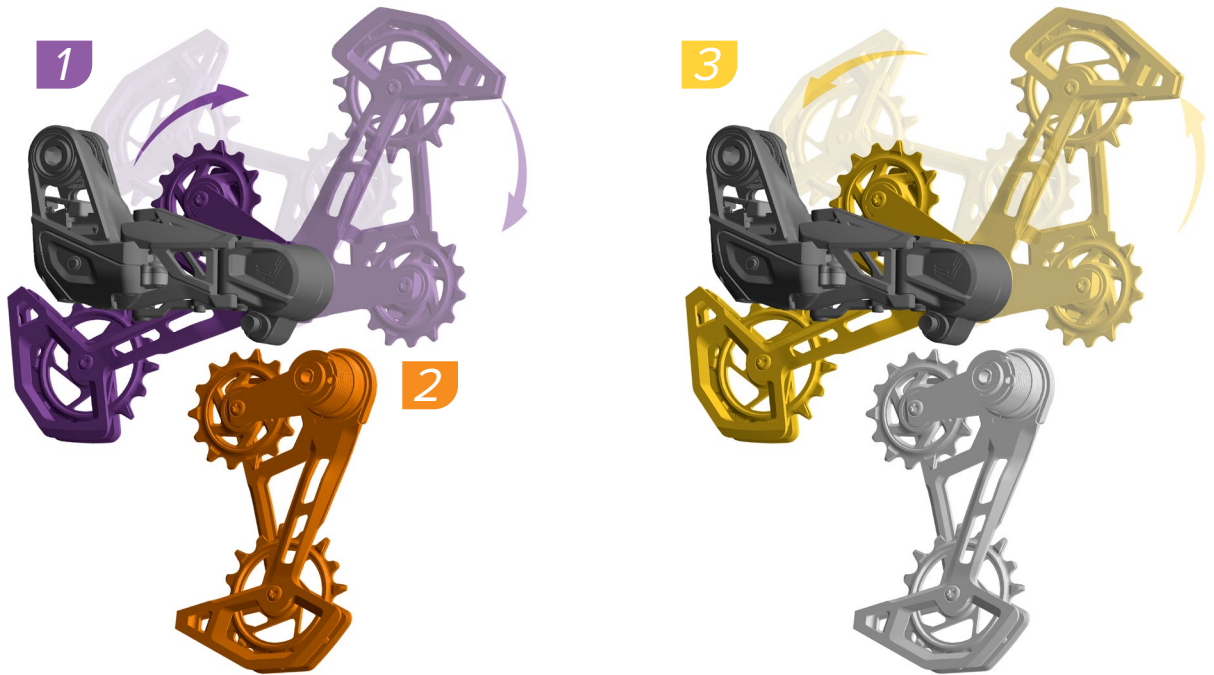
Cage Replacement

The cage replacement is interchangeable between XXSL, XX, X0, and GX.

Shift the derailleur into the [Setup Cog position](#).

⚠ WARNING - PINCH HAZARD

Hold the cage from the outside to avoid pinching your fingers between the cage and derailleur body when the cage loosens.



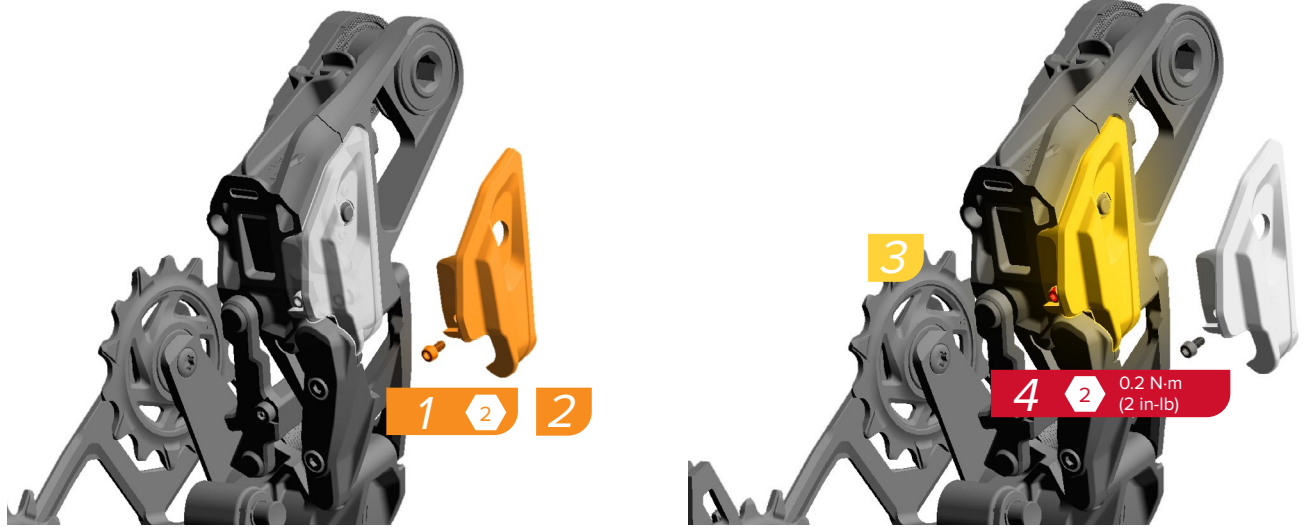
1. Hold the derailleur body and rotate the cage clockwise until it releases from the p-knuckle.

2. Remove the cage.

3. Install the new cage into the p-knuckle.

Skid Plate Replacement - XXSL / XX / X0

Skid plate replacement parts are interchangeable between XXSL, XX, and X0 derailleurs. The GX skid plate is **not** compatible with XXSL, XX, and X0 derailleurs.

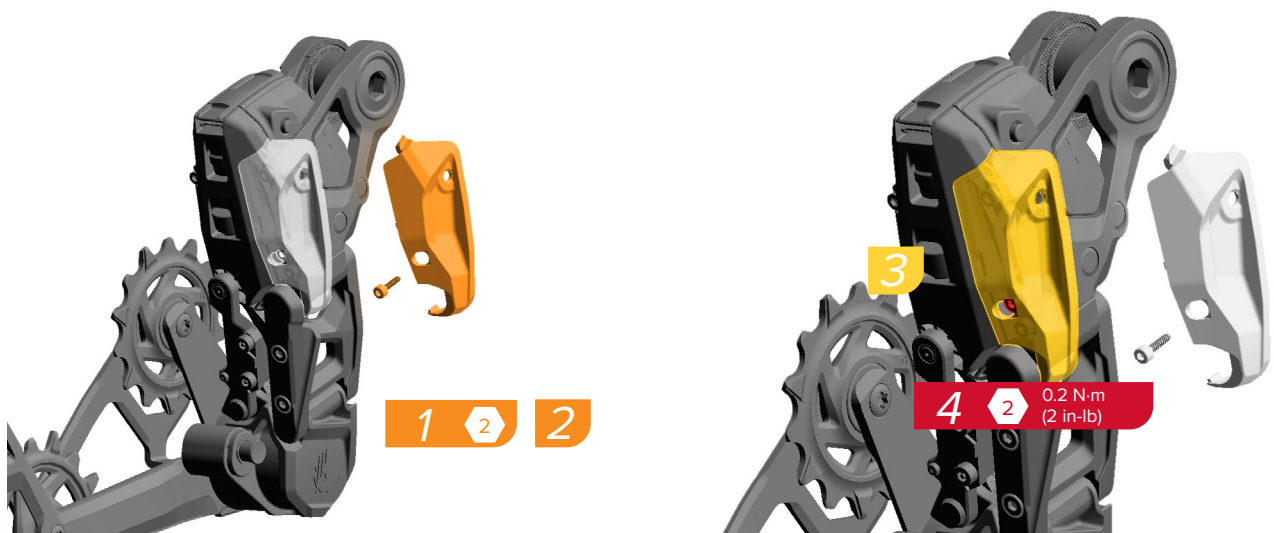


1. Remove the skid plate screw.
2. Pull the skid plate off near the parallelogram part.

3. Install the new skid plate until it clicks into place.
4. Install and tighten the screw.

Skid Plate Replacement - GX

The GX skid plate is **not** compatible with XXSL, XX, and X0 derailleurs.



1. Remove the skid plate screw.
2. Pull the skid plate off near the parallelogram part.

3. Install the new skid plate until it clicks into place.
4. Install and tighten the screw.

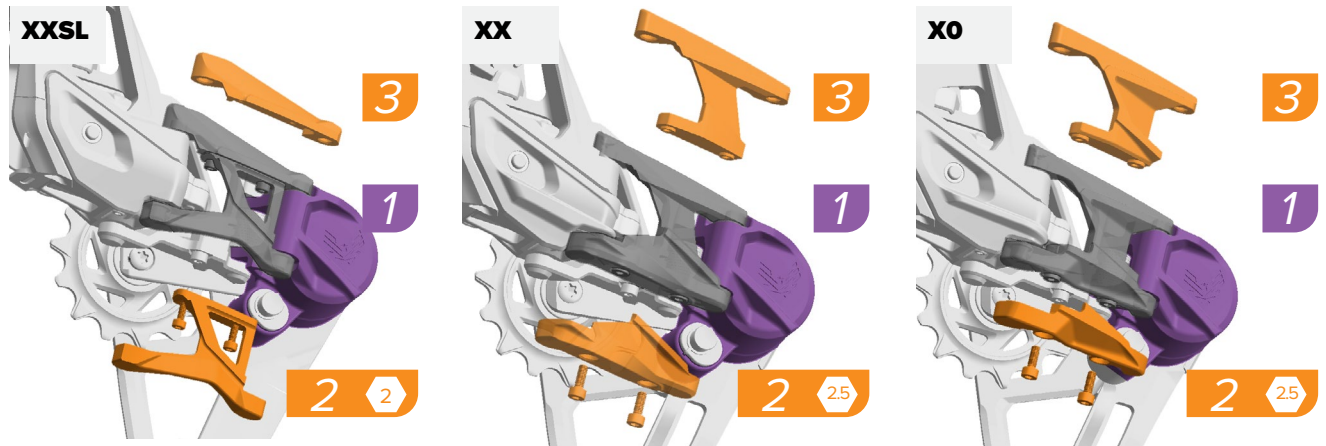
Outer Parallelogram Link Replacement - XXSL / XX / X0

Parallelogram replacement parts are interchangeable between XXSL, XX, and X0 derailleurs. GX parallelogram parts are **not** compatible with XXSL, XX, and X0 derailleurs.

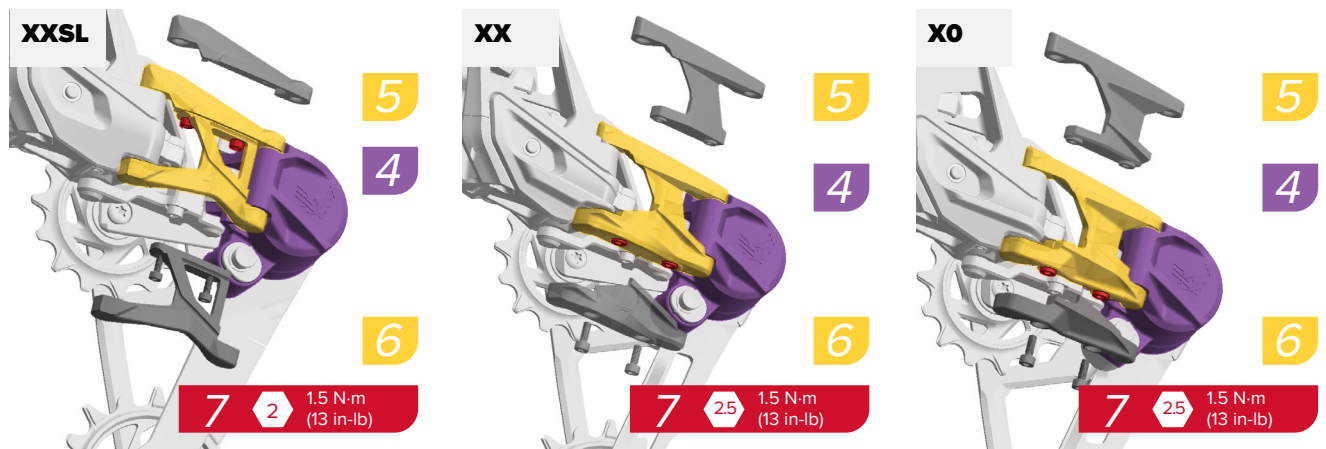
Shift the derailleur to the fully outboard position. Remove the battery.

⚠ WARNING - PINCH HAZARD

The p-knuckle is spring loaded and will return rapidly. Keep fingers clear of pinch points.



1. Hold the p-knuckle back.
2. Remove the bolts on the lower parallelogram.
3. Remove the upper and lower parallelogram.



4. Hold the p-knuckle back.
5. Install the upper parallelogram.
6. Install the lower parallelogram.
7. Install and tighten the new, threadlock prepped screws.



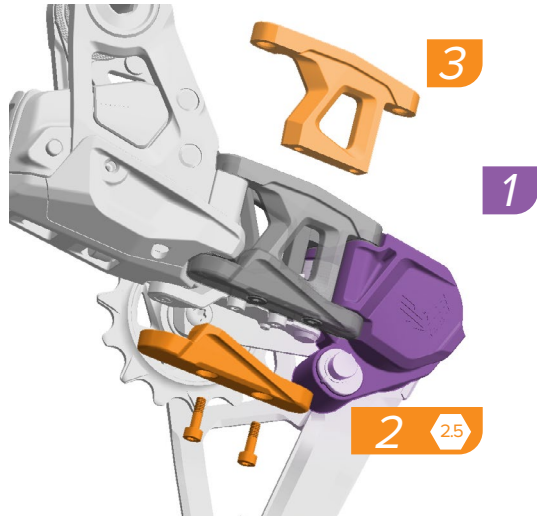
Outer Parallelogram Link Replacement - GX

GX parallelogram parts are **not** compatible with XXSL, XX, and X0 derailleurs.

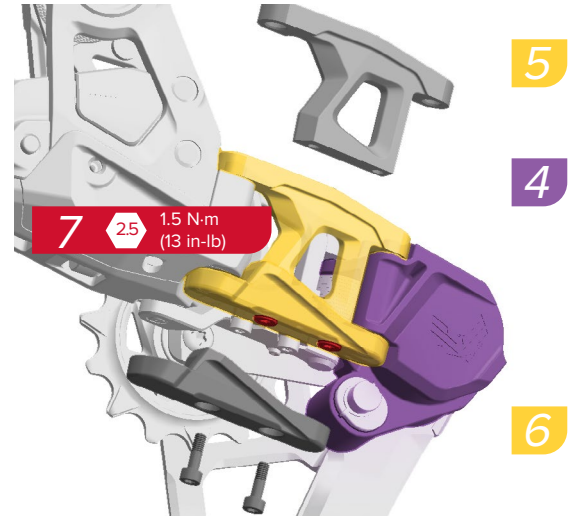
Shift the derailleur to the fully outboard position. Remove the battery.

⚠ WARNING - PINCH HAZARD

The p-knuckle is spring loaded and will return rapidly. Keep fingers clear of pinch points.



1. Hold the p-knuckle back.
2. Remove the bolts on the lower parallelogram.
3. Remove the upper and lower parallelogram.



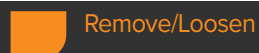
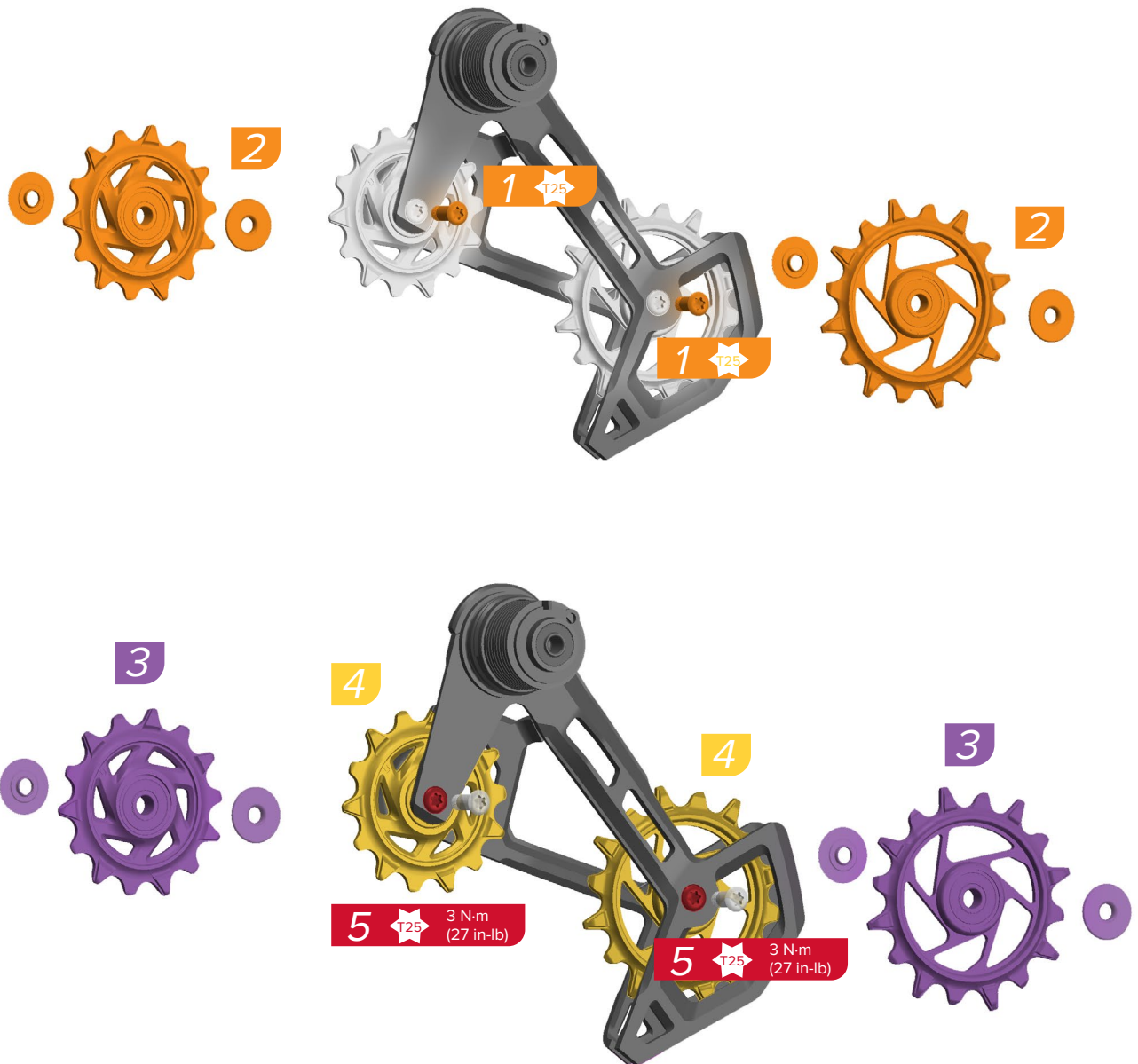
4. Hold the p-knuckle back.
5. Install the upper parallelogram.
6. Install the lower parallelogram.
7. Install and tighten the new, threadlock prepped screws.



Cage Pulley Wheel Replacement

Remove the cage from the derailleur body.

1. Remove the pulley bolts.
2. Remove the pulley and spacers.
3. Orient a new pulley as shown. Reinstall the spacers with the flat side facing outward.
4. Install the new pulley.
5. Tighten the pulley bolts.



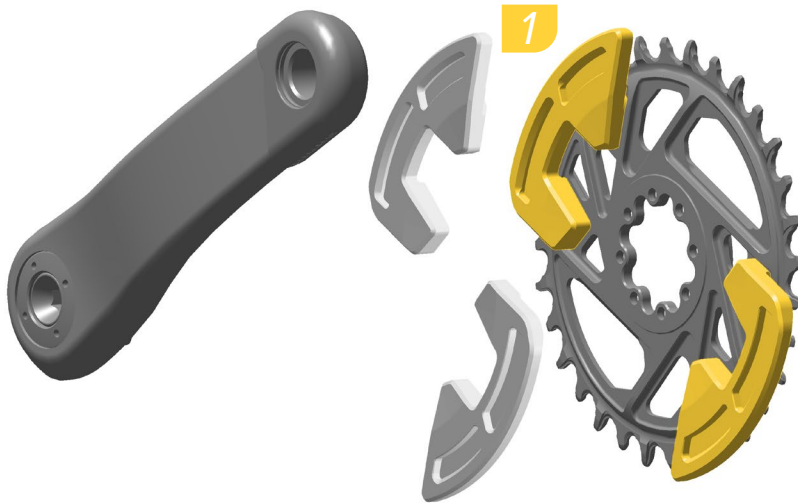
Chainring and Guard Replacement - XX

You must use the SRAM XX bash guards that match the tooth count of your chainring; they are not interchangeable with X0/GX chainrings or between chain ring sizes. Two bash guards can be mounted for full coverage, or as a single bash guard. Guards can be installed without removing the chainring from the crank. Guard installation is optional.

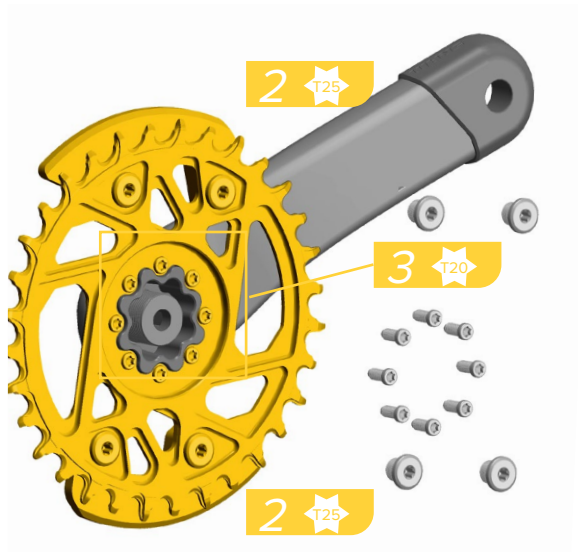
Routinely check the chainring bolts for the correct torque values; never ride with loose bolts. Changing chainring size may result in a new chain length for your bicycle. You must repeat the installation procedure in the [Prepare the Components](#) section.

NOTICE

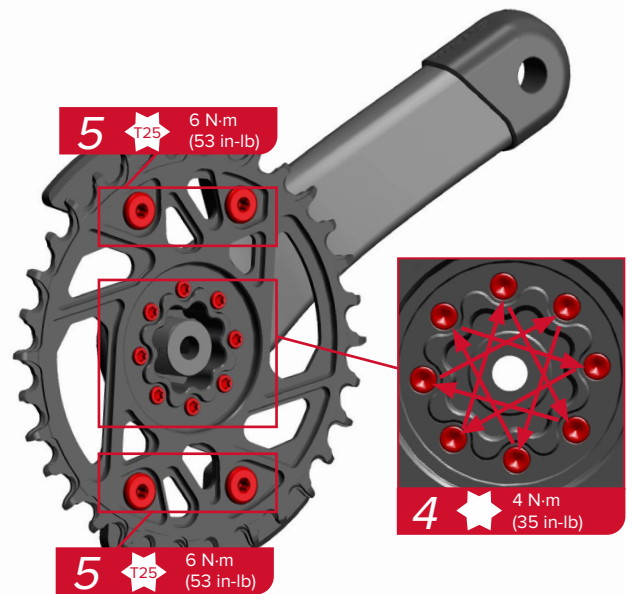
Ensure the TORX driver is seated squarely in the bolt head when loosening or tightening bolts to avoid stripping the bolt heads. Failure to check your chainring bolts could lead to the chainring bolts backing out of the chainring.



1. Install the guard into the front of the ring, between the crankarm and chainring, through the chainring opening.



2. Install the bolts into the guard.
3. Install the chainring with guard onto the drive side crankarm with the new mounting hardware.



4. Tighten the mounting bolts 1 turn in an alternating sequence until a torque of 4 N-m (35 in-lb) is achieved for each bolt.
5. Tighten the bolts on the guard.

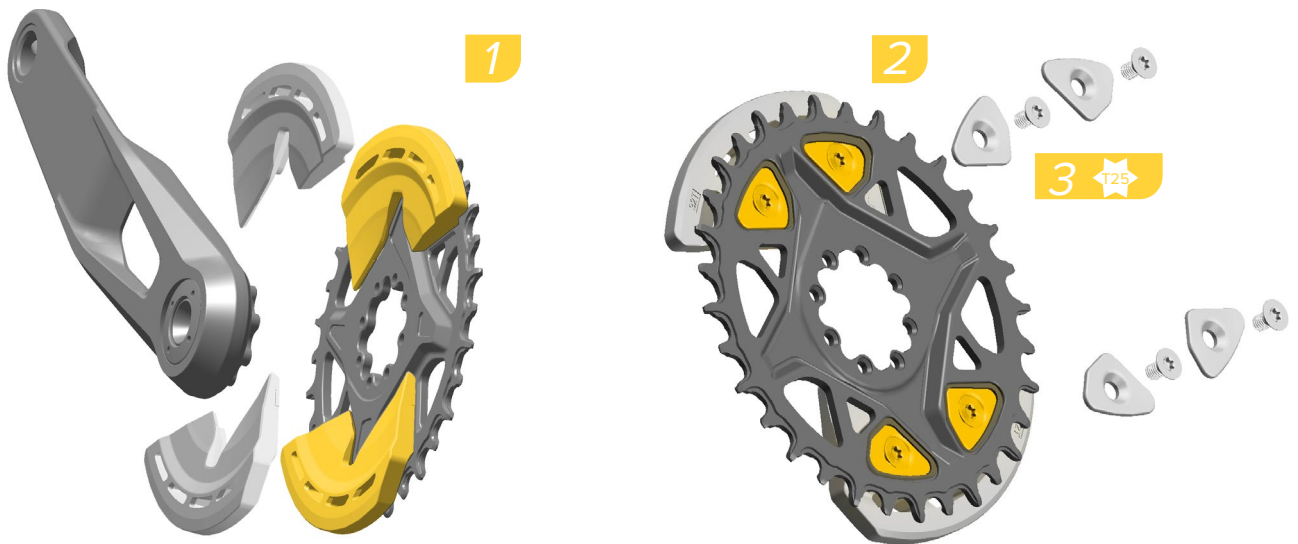
Chaining and Guard Replacement - X0 / GX

You must use the SRAM X0 / GX bash guards that match the tooth count of your chainring; they are not interchangeable with XX chainrings or between chainring sizes. Two bash guards can be mounted for full coverage, or as a single bash guard. Guards can be installed without removing the chainring from the crank. Guard installation is optional.

Routinely check the chainring bolts for the correct torque values; never ride with loose bolts. Changing chainring size may result in a new chain length for your bicycle. You must repeat the installation procedure in the [Prepare the Components](#) section.

NOTICE

Ensure the TORX driver is seated squarely in the bolt head when loosening or tightening bolts to avoid stripping the bolt heads. Failure to check your chainring bolts could lead to the chainring bolts backing out of the chainring.



1. Install the guard into the front of the ring, between the crankarm and chainring.

2. Install the guard backplate washers through the openings on the backside of the chainring.

3. Install the bolts through the backplate and chainring into the guards.



4. Install the chainring with guard onto the drive side crank arm.

5. Install the new mounting hardware.

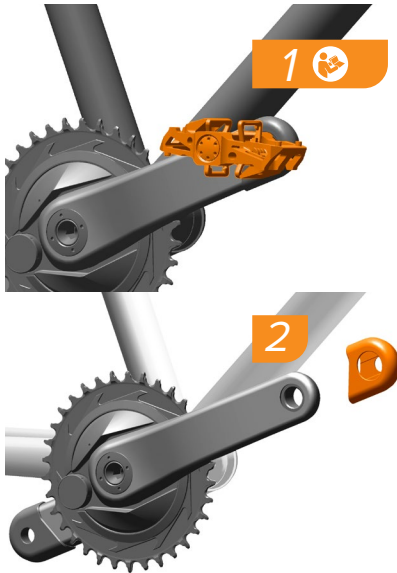
6. Tighten the mounting bolts 1 turn in an alternating sequence until a torque of 4 N-m (35 in-lb) is achieved for each bolt.

7. Tighten the bolts on the guard backplate washers.

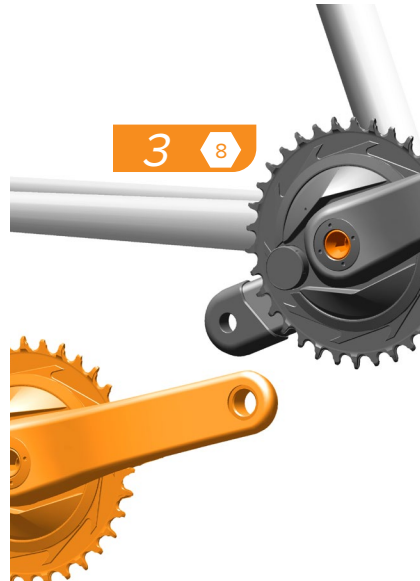
Power Meter Threaded Chainring Removal

NOTICE

Threaded chainrings must **not** be used on bikes with a fixed gear. Consult your frame manufacturer for compatibility.



1. Remove the driveside pedal while the crankset is installed on the bicycle.
2. Remove the crank boot, if installed.



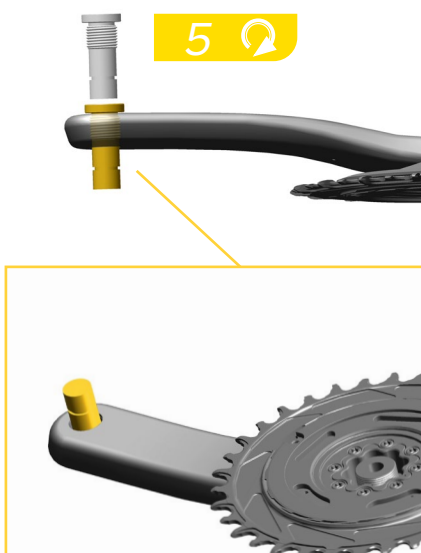
3. Remove the driveside of the crankset from the bicycle. *The non-drive side spindle can remain installed, if desired.*



4. Remove the back-up pin from the inner side of the chainring.

NOTICE

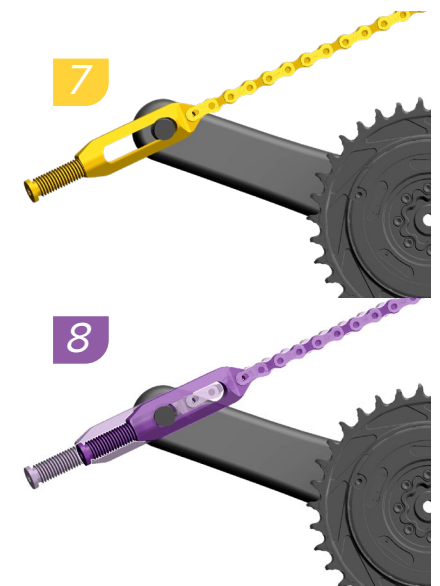
You must remove the driveside crankset from the frame before you remove the threaded chainring. Failure to do so may cause damage to the frame and/or crankset.



5. Thread the stud into the crankarm pedal by hand.



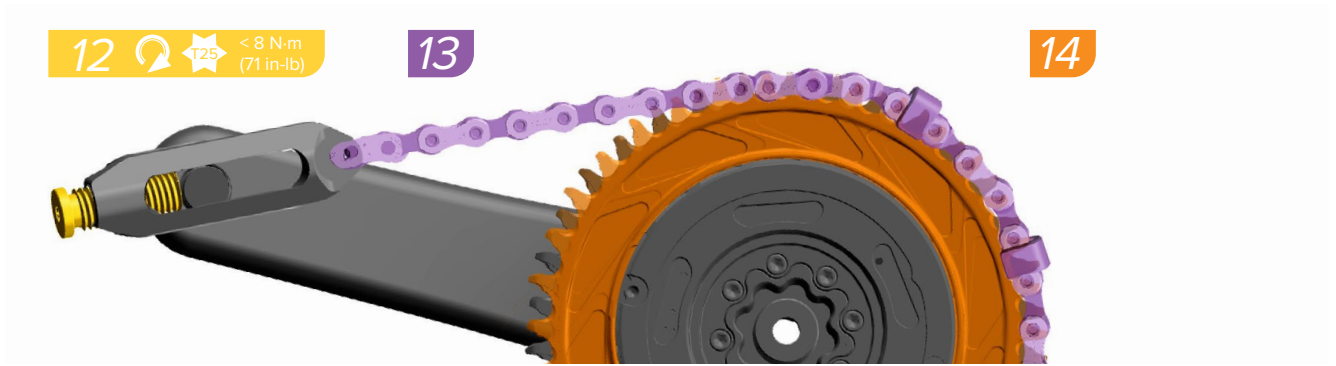
6. Loosen the tool body screw until it is no longer visible in the slot. Do not remove the screw completely.



7. Install the tool body onto the stud tool at the front of the tool.
8. Slide the tool body forward to make sure it can slide along the stud.



9. Wrap the tool chain with the plastic clips installed, around the chainring so that the chain is engaged on the teeth.
10. If the chain does not align with the correct tooth on the chainring, slide the tool until an outer link of the chain aligns with a wide tooth and the chain can engage the teeth. Check to ensure the stud remains within the tool body slot.
11. Hand tighten the tool screw until the chain is pulled taut.



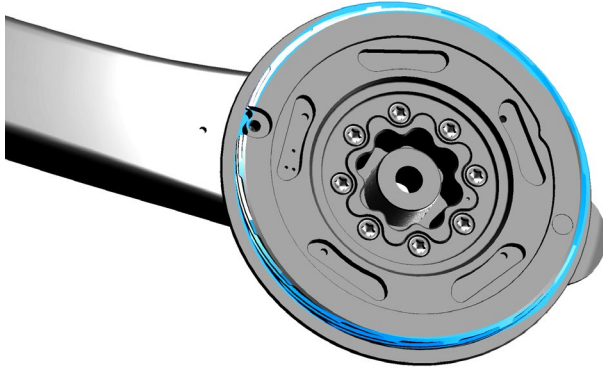
Place the crankset on a flat surface. Tighten the tool screw until the chainring breaks free. You may hear a 'pop'; this is normal. If you reach the end of the screw and the chainring is not loosened, release the tension, reinstall the chain, and repeat the previous step.

NOTICE

Do not exceed 8 N·m (71 in-lb) when tightening the tool screw as this could cause damage to the chainring. If the chainring does not loosen, remove the tool and repeat step 6-11.

- Remove the chain. Rotate the loosened chainring counter-clockwise until it is removed.
- Remove the tool body from the stud. Remove the stud from the crankarm.

Threaded Power Meter Chaining Installation

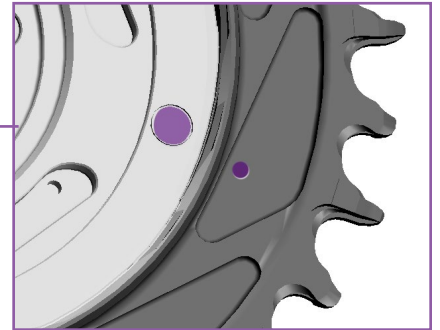


1

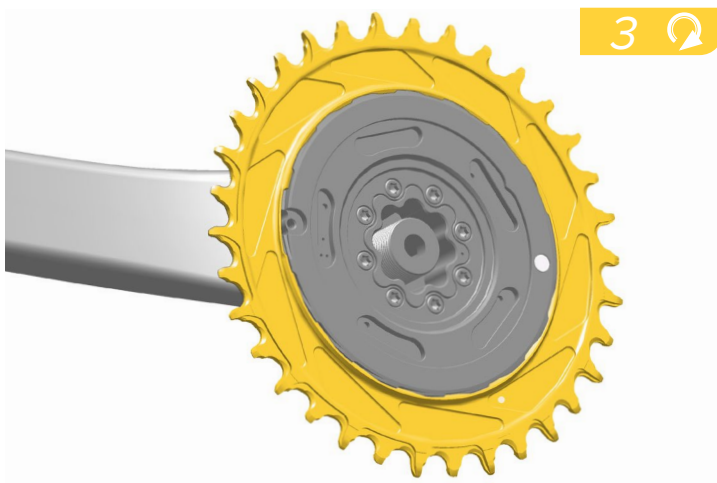
Clean the powermeter threads. Apply grease to the threads.



2



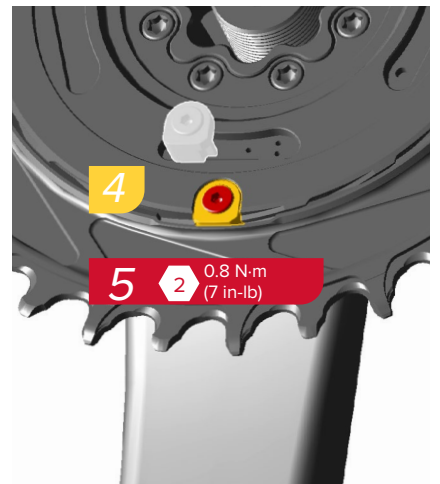
2. Place the new chainring onto the inboard side of the power meter spider so that the white dots on the spider and chainring align.



3



3. Apply inward pressure on the chainring while you rotate the chainring clockwise approximately 45 degrees until the chainring is fully seated. The chainring will tighten fully when you ride.



4

5

0.8 N·m
(7 in·lb)

4. Install the back-up pin into the slot.

5. Tighten the pin.

NOTICE

Do not use any tool to tighten the chainring; this may cause damage to the crankset.

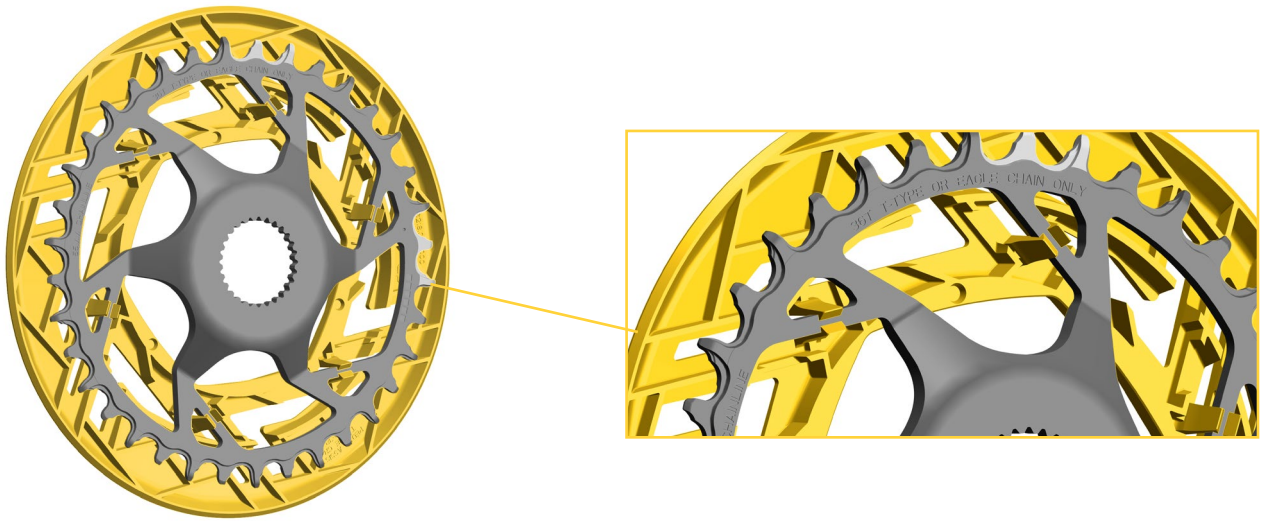
Aeroguard Installation

1



1. Align the six recessed beams of the chainring with the six cutouts on the aeroguard.

2



2. Press the aeroguard onto the beams of the chainring. You should hear and feel it snap in place.

Bosch T-TYPE Chainring Replacement



1  

1. Use the Bosch locking tool to remove the locking from the Bosch motor spindle. The Bosch locking is reverse threaded.

NOTICE

Consult the manufacturer instructions for chainring and spider assembly that are not Bosch.



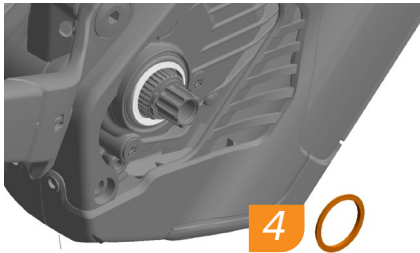
2

2. Remove the o-ring from the spindle, if applicable.



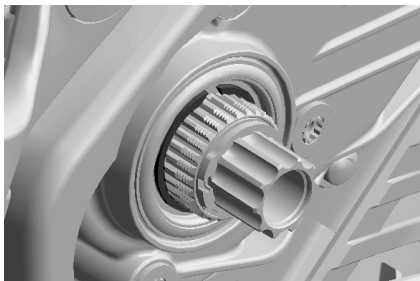
3

3. Remove the chainring from the spindle.



4 

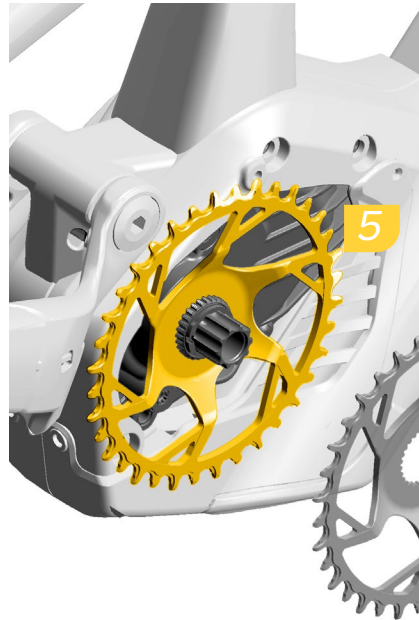
4. Remove the spacer, if applicable.



Check that the circlip is visible before you install the new chainring.

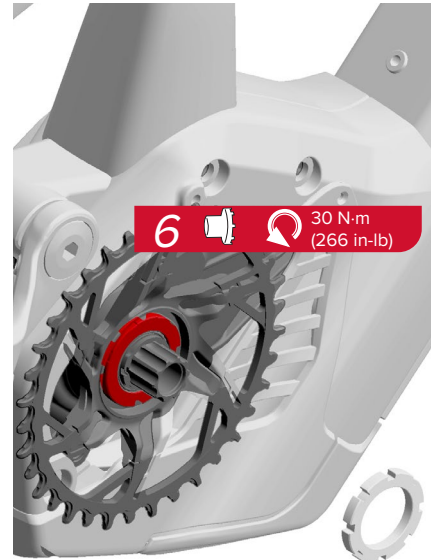
NOTICE

If circlip is not visible, make sure the spacer is removed from the spindle. SRAM chainrings come with the spacer assembled to the new chainring.



5

5. Install the new T-Type chainring.



6  30 N-m
(266 in-lb)

6. Use the Bosch locking tool to tighten the locking to 30 N-m (266 in-lb).

WARNING

Do not install an o-ring between the chainring and locking as this may result in an improper locking torque.

NOTICE

Routinely check the locking to verify torque.

ISIS Crankarm Installation



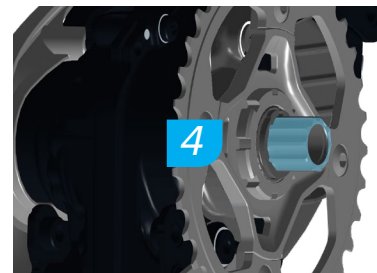
1. Align the integration cap with the bolt holes on the right side crankarm.



2. Install the integration cap.
3. Tighten the bolts.

NOTICE

Do not overtighten the bolts.



4. Apply grease to the left side and right side ISIS spindle.



5. Install the right side crankarm onto the spindle.
6. Tighten the crankarm bolt.



7. Install the left side crankarm onto the spindle.
8. Tighten the crankarm bolt.


Transmission Service Matrix

Make sure you have the latest firmware installed on your AXS Components. Use the chart below for Transmission System symptoms and possible causes, then complete the actions, in order, according to the instructions in the manual. If the symptom persists after you have addressed the causes and completed all actions, then contact Rider Support or your STS Representative.

SYMPTOMS	CAUSES	ACTIONS
The derailleur does not shift, and LED does not turn on.	The derailleur battery is empty.	1. Charge or replace the battery in the derailleur.
	The controller battery is empty.	2. Replace the battery in the controller.
	The system is not paired.	3. Pair the system.
	The firmware is stalled.	4. Take out the battery and put it in again.
The derailleur does not shift inboard or has slow inboard shifting.	The trim adjustment is wrong.	1. Check for proper MicroAdjust. Adjust the trim/MicroAdjust.
The derailleur does not shift outboard or has slow outboard shifting.	The trim adjustment is wrong.	1. Check for proper MicroAdjust. Adjust the trim/MicroAdjust.
It is not possible to adjust the derailleur to eliminate either slow inboard or outboard shifting.	The axle is not tightened to torque.	1. Check and tighten the axle.
	The Mount Bolt is not tightened.	2. Check the Mount Bolt with a torque wrench and tighten to 35 N-m.
	The system is dry or contaminated.	3. Clean the cassette, pulley wheels, and chain. Apply lube to the chain and wipe off excess
	The cassette is not tightened to torque.	4. Check the cassette torque with a torque wrench and tighten to 40 N-m.
	The chain gap is too large.	5. Check the chain gap. Shift into Setup Cog, check that the knurled ring is installed against the stop, and repeat setup instructions.
	The chain is worn or damaged.	6. Check for obvious signs of damage or wear on the chain and replace if needed.
	The cassette is worn or damaged.	7. Check for obvious signs of damage or wear on the cassette and replace if needed.*
	The upper pulley has worn bearings or damage to the teeth.	8. Check the pulley and replace if needed.
It is not possible to adjust the derailleur to eliminate rasping.	The axle is not tightened.	1. Check and tighten the axle.
	The chain gap is too small.	2. Check the chain gap. Shift into Setup Cog, check that the Knurled Ring is installed against the stop, and repeat setup instructions.
	The chain length is wrong.	3. Check the chain length. Consult the <i>Chain Length Calculator</i> to verify you have the correct chain length for your frame and frame size.
	System is dry or contaminated.	4. Clean the cassette, pulley wheels, and chain. Apply lube to the chain and wipe off excess
	The cassette is worn or damaged.	5. Check for obvious signs of damage or wear on the cassette and replace if needed.*

It is not possible to adjust the derailleur to eliminate rough shifts and skipping.	The axle is not tightened to torque.	1. Check and tighten the axle.
	The Mount Bolt is not tightened to torque.	2. Check the Mount Bolt with a torque wrench and tighten to 35 N-m.
	The chain gap is too large or too small.	3. Check the chain gap. Shift into Setup Cog, check that the Knurled Ring is installed against the stop, and repeat setup instructions.
	The chain length is wrong.	4. Check the chain length. Consult the <i>Chain Length Calculator</i> to verify you have the correct chain length for your frame and frame size.
	The system is dry or contaminated	5. Clean the cassette, pulley wheels, and chain. Apply lube to the chain and wipe off excess.
	The upper pulley has worn bearing or damage to the teeth.	6. Check the pulley and replace if needed.
	The cassette is not tightened to torque.	7. Check the cassette torque with a torque wrench and tighten to 40 N-m.
	The chain has stiff links or is bent.	8. Check the chain for damage or wear. Engage the Cage Lock and check for stiff or bent links. Replace the chain if needed.
	The chain is worn or damaged.	9. Check for obvious signs of damage or wear on the chain and replace if needed.
	The cassette is worn or damaged.	10. Check for obvious signs of damage or wear on the cassette and replace if needed.*
The derailleur has occasional random shift errors.	The trim adjustment is wrong.	1. Check for proper MicroAdjust. Adjust the trim/MicroAdjust.
	The chain has stiff links or is bent.	2. Check the chain for damage or wear. Engage the Cage Lock and check for stiff or bent links. Replace chain if needed.
	The cassette is damaged or worn.	3. Check for obvious signs of damage or wear on the cassette and replace if needed.*
The chain is bouncing, especially in the small gear.	The chain length is too long.	1. Check the chain length. Consult the <i>Chain Length Calculator</i> to verify you have the correct chain length for your frame and frame size.
	The cage/damper has too low of a torque.	2. Replace the cage/damper assembly.
The drivetrain is not running smoothly.	The system is dry or contaminated	1. Clean the cassette, pulley wheels, and chain. Apply lube to the chain and wipe off excess.
	The upper pulley has worn bearing or damage to the teeth.	2. Check the pulley and replace if needed.
	The chain is worn or damaged.	3. Check for obvious signs of damage or wear on the chain and replace if needed.
	The cassette is worn or damaged.	4. Check for obvious signs of damage or wear on the cassette and replace if needed.*
The drivetrain has high resistance.	The system is dry or contaminated	1. Clean the cassette, pulley wheels, and chain. Apply lube to the chain and wipe off excess.
	The pulley has worn bearing or is seized.	2. Check the pulley and replace if needed.
	Bottom bracket is worn or seized.	3. Check the bottom bracket and replace if needed.
The chain has too much slack in the smallest cog.	The chain length is too long.	1. Check the chain length. Consult the <i>Chain Length Calculator</i> to verify you have the correct chain length for your frame and frame size.
	The chain gap is too small.	2. Check the chain gap. Shift into Setup Cog, check that the Knurled Ring is installed against the stop, and repeat setup instructions.
The cassette is picking on a single cog causing a hesitant engagement of the roller on the chain.	The system is dry or contaminated.	1. Clean the cassette, pulley wheels, and chain. Apply lube to the chain and wipe off excess.
	The trim adjustment is wrong.	2. Check for proper MicroAdjust. Adjust the trim/MicroAdjust.
	The chain is worn or damaged.	3. Check for obvious signs of damage or wear on the chain and replace if needed.
	The cassette is worn or damaged.	4. Check for obvious signs of damage or wear on the cassette and replace if needed.*
	The cage/damper has too high of a torque.	5. Replace the cage/damper assembly.
The derailleur collides with the frame.	The chain length is too short.	1. Check the chain length. Consult the <i>Chain Length Calculator</i> to verify you have the correct chain length for your frame and frame size.

The chain is too tight on the largest cog.	The chain length is too short.	1. Check the chain length. Consult the <i>Chain Length Calculator</i> to verify you have the correct chain length for your frame and frame size.
	The cage/damper has too high of a torque.	2. Replace the cage/damper assembly.
The chain skips under load.	The system is dry or contaminated.	1. Clean the cassette, pulley wheels, and chain. Apply lube to the chain and wipe off excess.
	The chain gap is too large.	2. Check the chain gap. Shift into Setup Cog, check that the Knurled Ring is installed against the stop, and repeat setup instructions.
	The chain length is too long.	3. Check the chain length. Consult the <i>Chain Length Calculator</i> to verify you have the correct chain length for your frame and frame size.
	The cage/damper has too low of a torque	4. Replace the cage/damper assembly.
	The chain is worn or damaged.	5. Check for obvious signs of damage or wear on the chain and replace if needed.
	The cassette is worn or damaged.	6. Check for obvious signs of damage or wear on the cassette and replace if needed.*

 For recycling and environmental compliance, please visit www.sram.com/en/company/about/environmental-policy-and-recycling.
Replace the SRAM battery with an authentic SRAM battery only. Replace the AXS Controller battery with a CR2032 coin cell battery only.
Consult the *SRAM Battery and Charger Manual* for battery maintenance and specifications.

WARNING

Never dispose of batteries in a fire.

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