

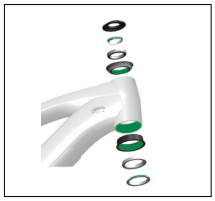
2024 ALLOY FUEL EXE

SERVICE MANUAL

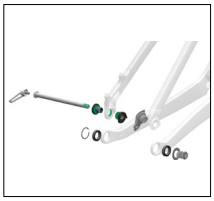
Rev 1 August 2023

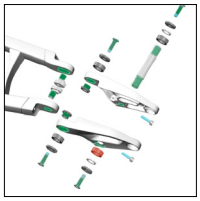
Contents

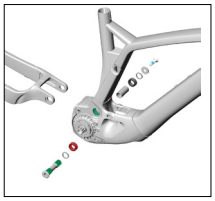

Safety

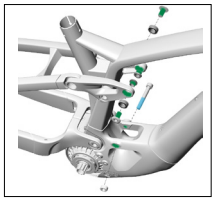

Adjustable headset

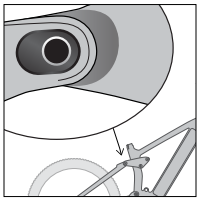

Adjust the geometry — headset angle

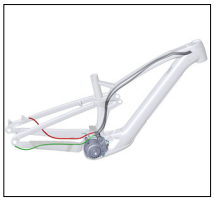

Active Braking Pivot (ABP)

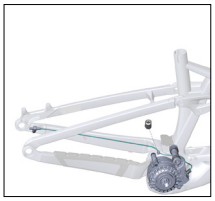

Rocker pivot and seatstay

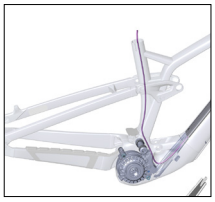

Main pivot and chainstay

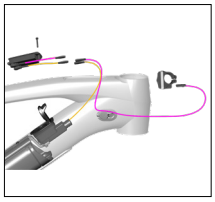

Rear shock hardware and dimensions

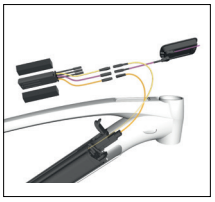

Adjust the geometry — Mino link

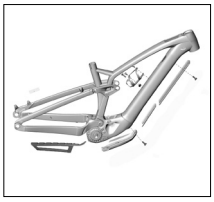

Brake and mechanical shift routing


Speed sensor routing

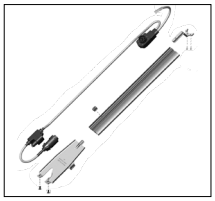

Dropper post routing

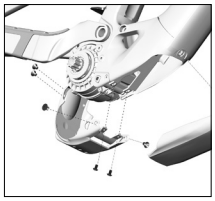

Remote and display

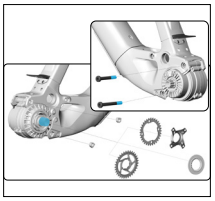

AXS shift routing


Guards and water bottle mounts

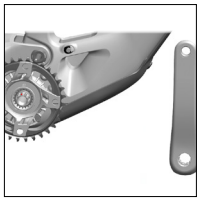

Charge port cover

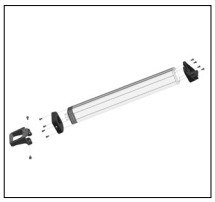

Wiring harness, cable tray organizer, and access panel

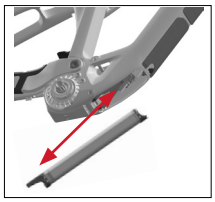

Motor cover

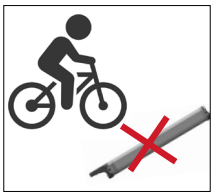

Drive unit

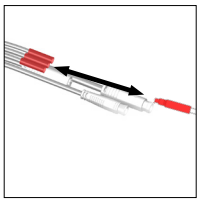

Adjust the compensation fasteners

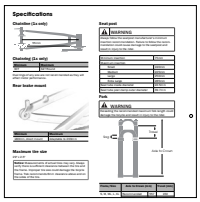

Re-install the cranks


Battery


Remove and install the battery


Ride the bike without the battery


Connect lights to the TQ Smart Box


Specifications

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Safety

WARNING

Properly tighten hardware

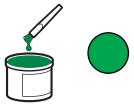
Always tighten hardware to the specified torque. Over-tightening hardware could deform or break the hardware or components. Under-tightening hardware could cause hardware or components to become loose. Either situation could damage the bicycle and result in injury to the rider.

WARNING

Reapply threadlocker

All reused-fasteners with pre-applied threadlocker must be cleaned with isopropyl alcohol and have new threadlocker applied before re-assembly. If threadlocker is not applied, the fasteners may loosen which could damage the bicycle and result in injury to the rider.

Legend


Apply grease


Do not apply grease


Apply threadlocker

Nm — Torque

Zip tie

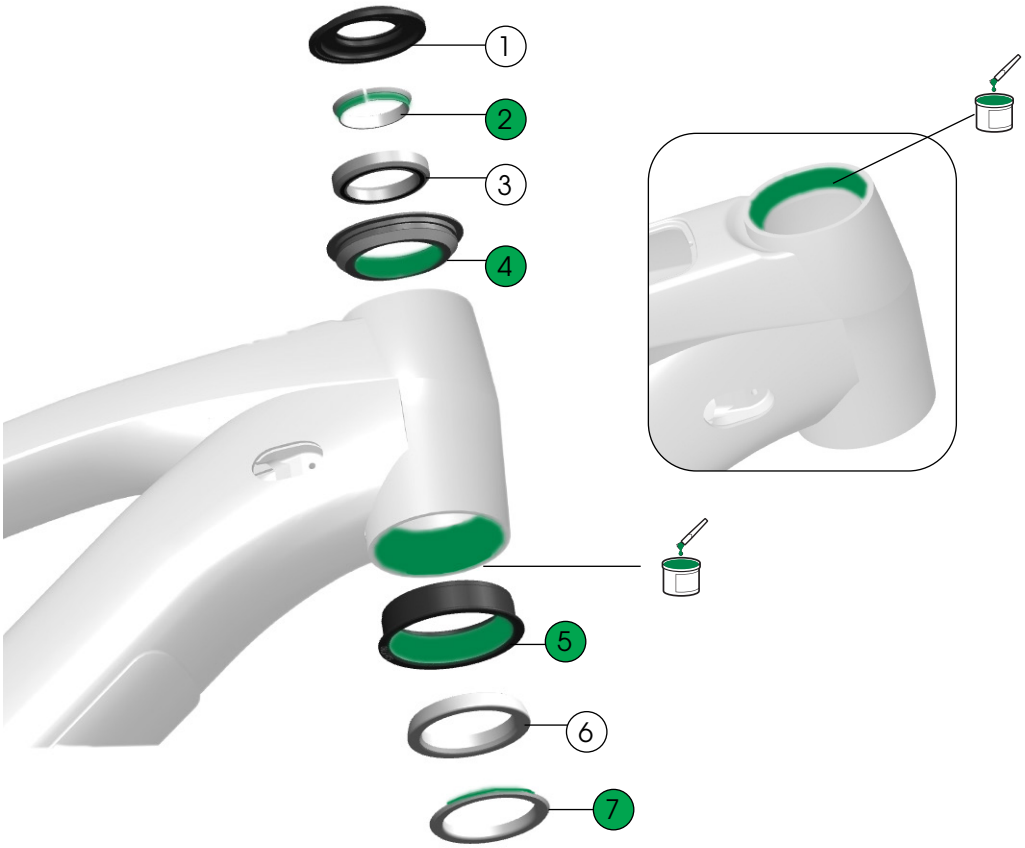
Scope

This manual contains parts diagrams, specifications (such as grease and torque values), instructions, and helpful tips. It does not contain instructions for all components (such as brake calipers). Refer to the original manufacturer for more information.

Additional resources

- TQ e-system quick start guide: trekbikes.com/manuals
- TQ service manuals: tq-ebike.com/en/support/manuals
- Trek's YouTube channel: youtube.com/trekbikes

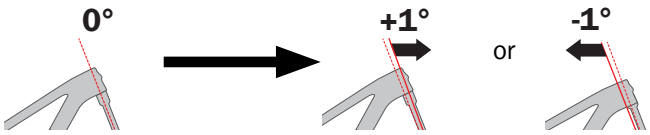
Adjustable headset



1. Upper bearing cover — W5275173
2. Compression ring — W532842
3. Upper bearing — W531676
4. Upper cup, 0° angle — 5304949
5. Press-fit lower cup, 0° angle — 5304949
6. Lower bearing — W532843
7. Crown race — W532844

— W5285212

Adjust the geometry — headset angle



Tools

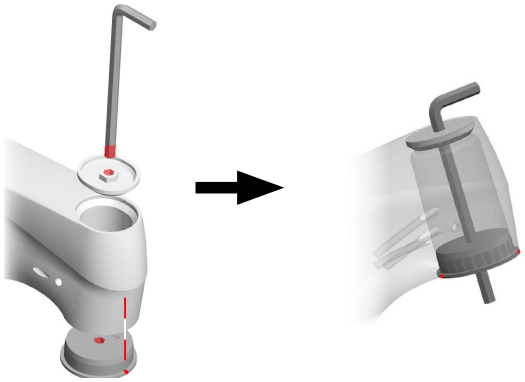
- Upper angled cup:
  XS - L frames — W5295319
  XL - XXL frames — W5295274
- Lower angled cup — W5294449
- Adjustable headset alignment tool — 5310000
- Headset cup removal tool
- 8mm hex tool (150mm minimum length for XL frame)
- Headset cup press
- Painter's tape
- Grease

Remove components

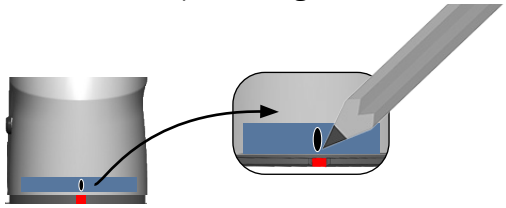
1. Remove the fork.
2. Remove the upper headset assembly.
3. Use the headset cup removal tool to remove the lower headset cup.

Install the alignment tool

1. Use the alignment tool to mark the centerline to which you will align the lower cup.



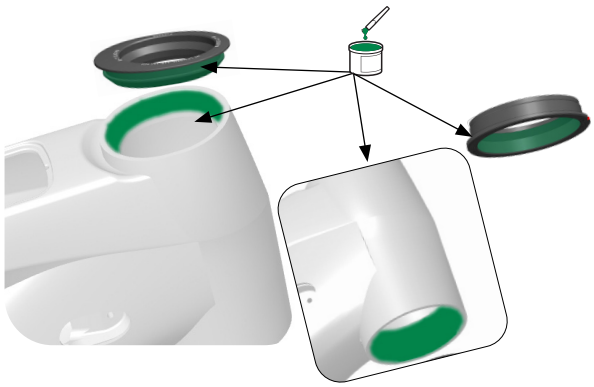
2. Thread the hex tool through the upper alignment tool. Insert the tools into the upper head tube.
3. Position the lower alignment tool with the notches to the front and back of the head tube.
4. Thread the lower alignment tool over the hex tool. The hex tool will keep the notches aligned as you insert the alignment tool.
5. Place a piece of painter's tape on the head tube, then draw a line on the tape that aligns with the notch.



6. Remove both pieces of the alignment tool.

Install the angled cups

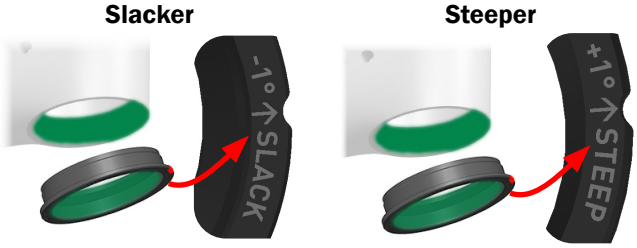
1. Grease the cups and head tube bores.



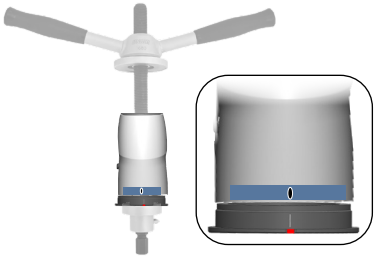
2. Position the upper cup and insert it into the head tube.



3. Position the lower cup to match the angle of the upper cup.



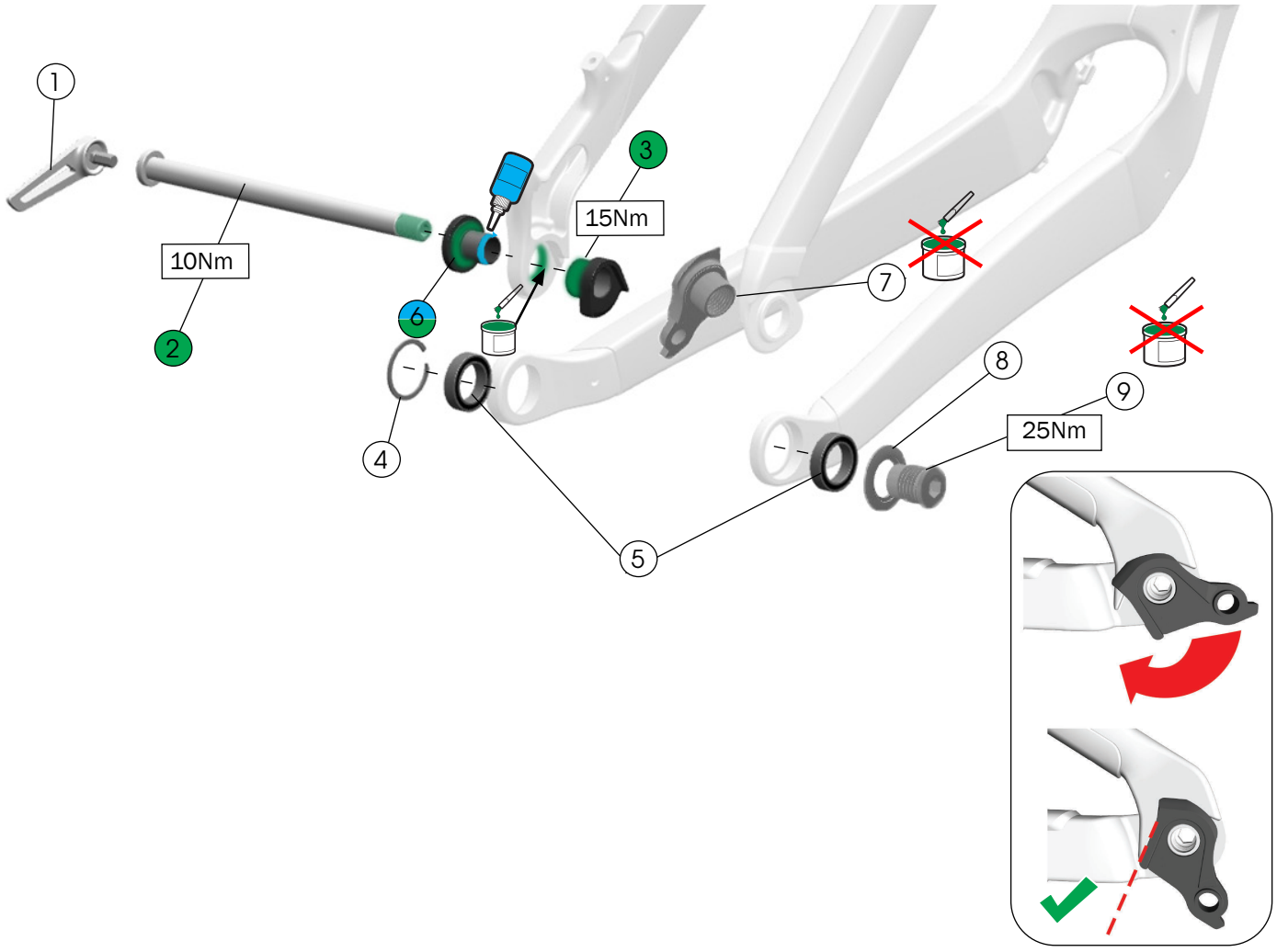
4. Align the notch on the cup with the line on the painter's tape.
5. Press in the lower cup. **Note:** position the press with the handle above the head tube.



6. Remove the press. Verify the notch on the lower cup is aligned with the line on the tape. If it is not, remove cup and reinstall in correct position.
7. Remove the painter's tape.

Active Braking Pivot (ABP)

This bicycle frame is designed to use a Universal Derailleur Hanger (UDH). For additional information about the UDH, refer to the SRAM user manual at sram.com.



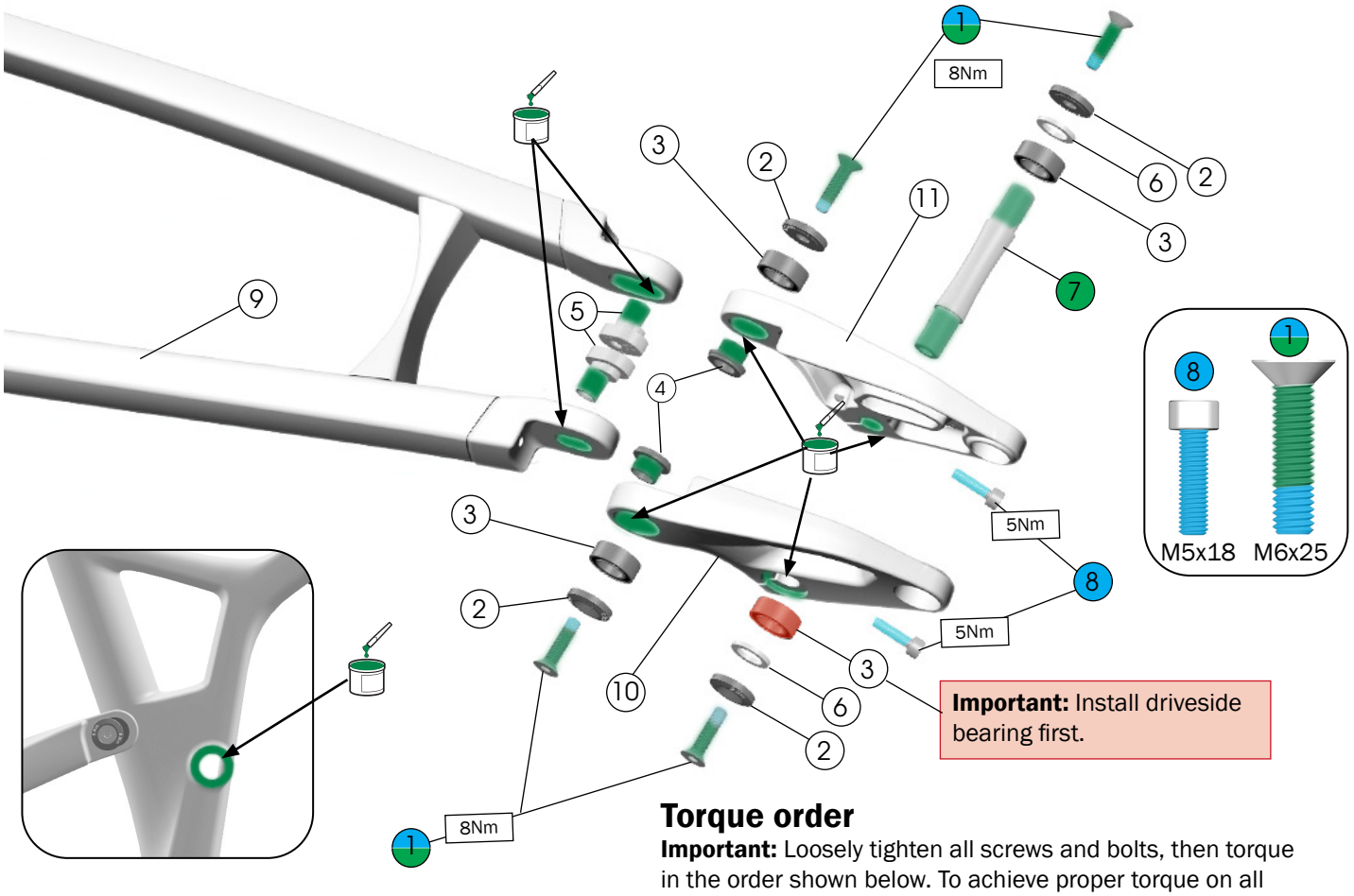
1. Switch lever — W573860
2. Thru axle, 12X184.5mm, — W583469
3. Non-driveside ABP dropout nut guide — W5269707
4. Retaining ring — W5251279
5. Bearings, 20x30x7 — W5256340
6. Non-driveside ABP bolt — W5251141

— W5272776

7. Derailleur hanger
   ⚠WARNING: Do not apply grease.
8. Washer, 30mm
   NOTICE: The washer is frame-specific. Install only the washer size specified.
9. Bolt
   ⚠WARNING: Do not apply grease. Do not over-tighten. Over-tightening the bolt could cause the hanger to break.

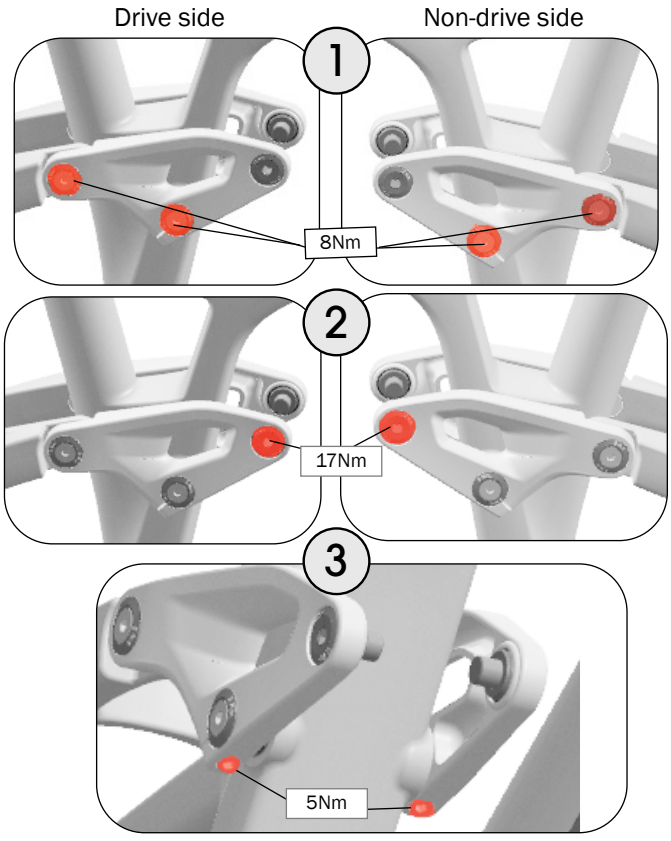
— W5271425

Rocker pivot and seatstay



Torque order

Important: Loosely tighten all screws and bolts, then torque in the order shown below. To achieve proper torque on all bolts, rocker link pinch bolts (8) must be torqued last.

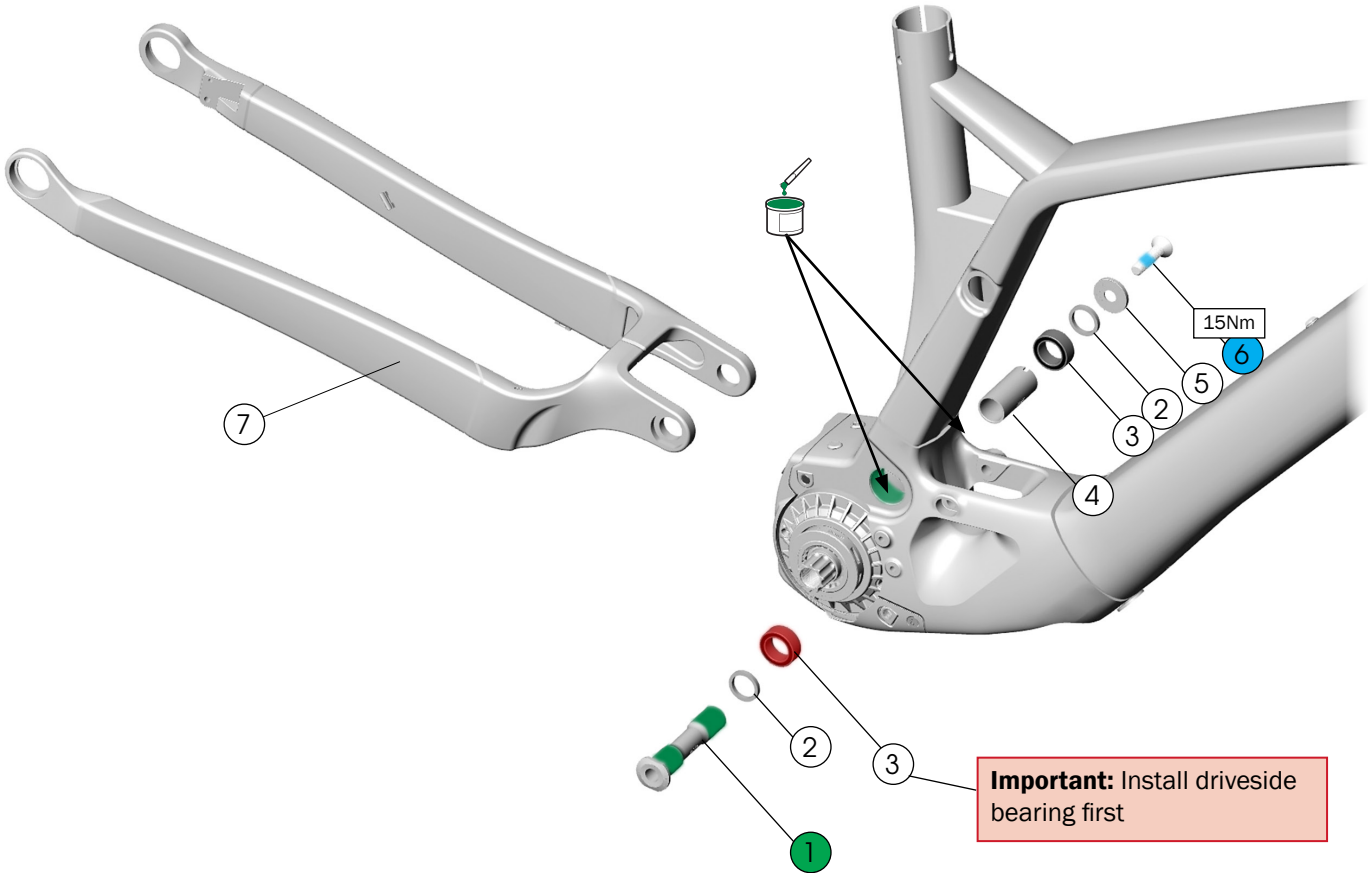


1. Fasteners, M6x25mm — W5270150
2. Concave washers — W5270027
3. Bearings, 12x21x8 — W5256341
4. Hat style washers — W5270030
5. Mino link nuts — W5270028
6. Frame spacers, 18x12x2 — W290057
7. Rocker pivot axle — W5307024
8. Rocker link pinch bolts, M5x18mm — W5256244
9. *Seatstay — 45460
10. *Driveside rocker link
11. *Non-driveside rocker link

— 45461

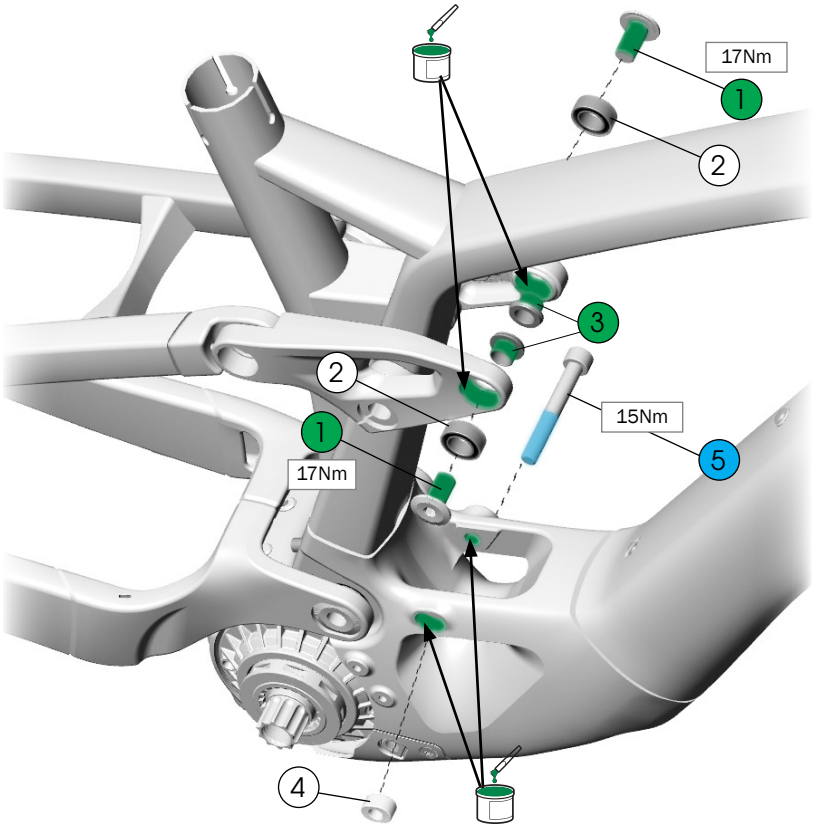
*Search trekbikes.com to find the color-matched part for your bike.

Main pivot and chainstay



1. Main pivot axle, M8x80.5mm — W5270022
2. Frame spacers — W440921
3. Bearings, 17x26x10 — W5256338
4. Main pivot sleeve — W600642
5. Concave washer — W5270024
6. Fastener, M8x35mm — W5270149
7. Chainstay — 45459
   Search trekbikes.com to find the color-matched part for your bike.

Rear shock hardware and dimensions





Shock Dimensions

Eye-to Eye-length: 205mm

Stroke length: 60mm

Upper width: 54mm x 10mm

Lower width: 40mm x 8mm

For a list of compatible shocks, refer to the FAQ on the MY24 Alloy Fuel EXe page on trekbikes.com.

1. Upper bolts, M10x19mm — W5270031
2. Bearings, 12x21x8 — W5256341
3. Hat-style washers — W5270030
4. Nut, 8mm
5. Lower bolt, M8x60mm

— W5274968

Setup

Recommended sag: 30%, 18mm

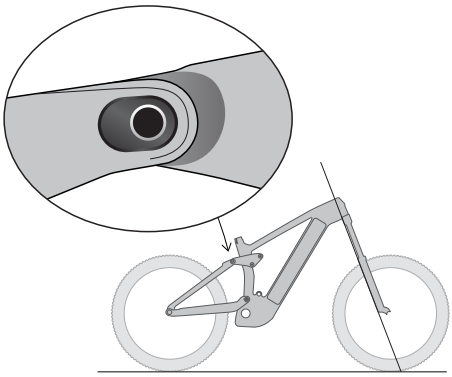
Refer to the suspension setup card included with your bike or the suspension calculator at trekbikes.com/suspension-calculator.

For recommended rebound settings refer to the suspension calculator at trekbikes.com/suspension-calculator.

Adjust the geometry — Mino link

Flip the Mino link to change the bike's geometry to fit your riding style or the terrain.

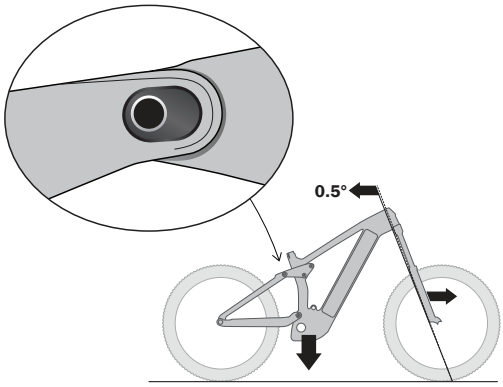
Steeper head tube angle



Mino link in the high position

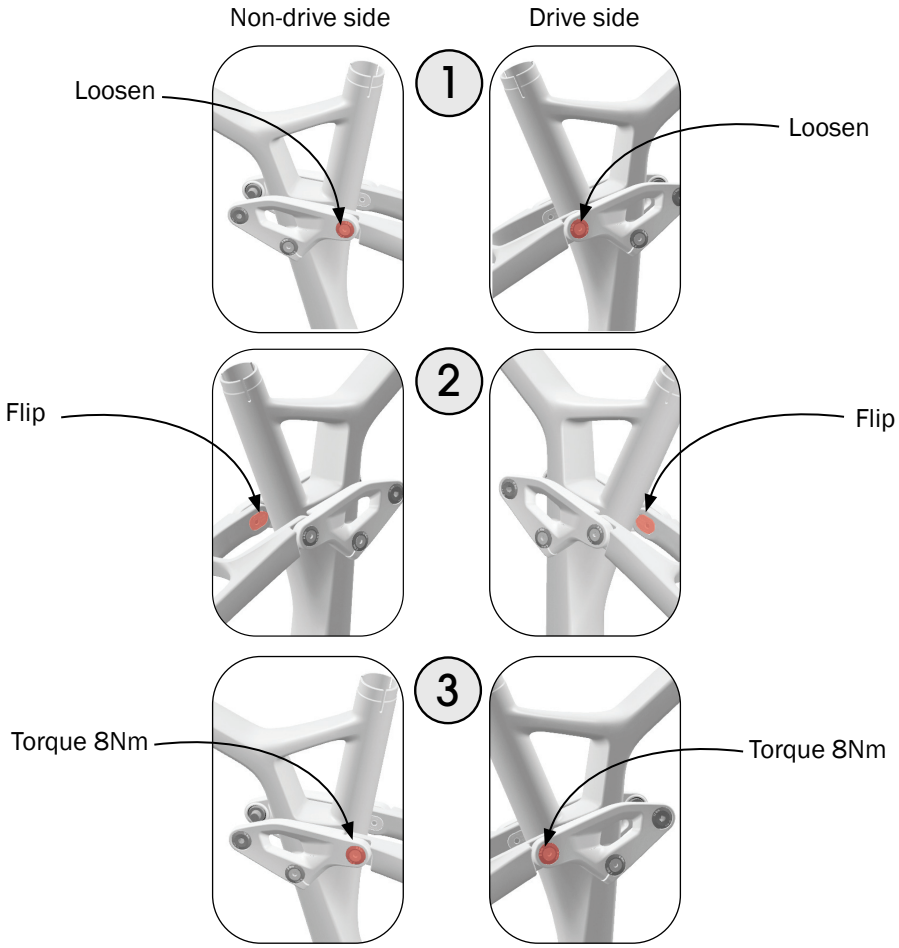
- Pulls in the front fork for quicker steering
- Raises the bottom bracket for improved climbing

Slacker head tube angle

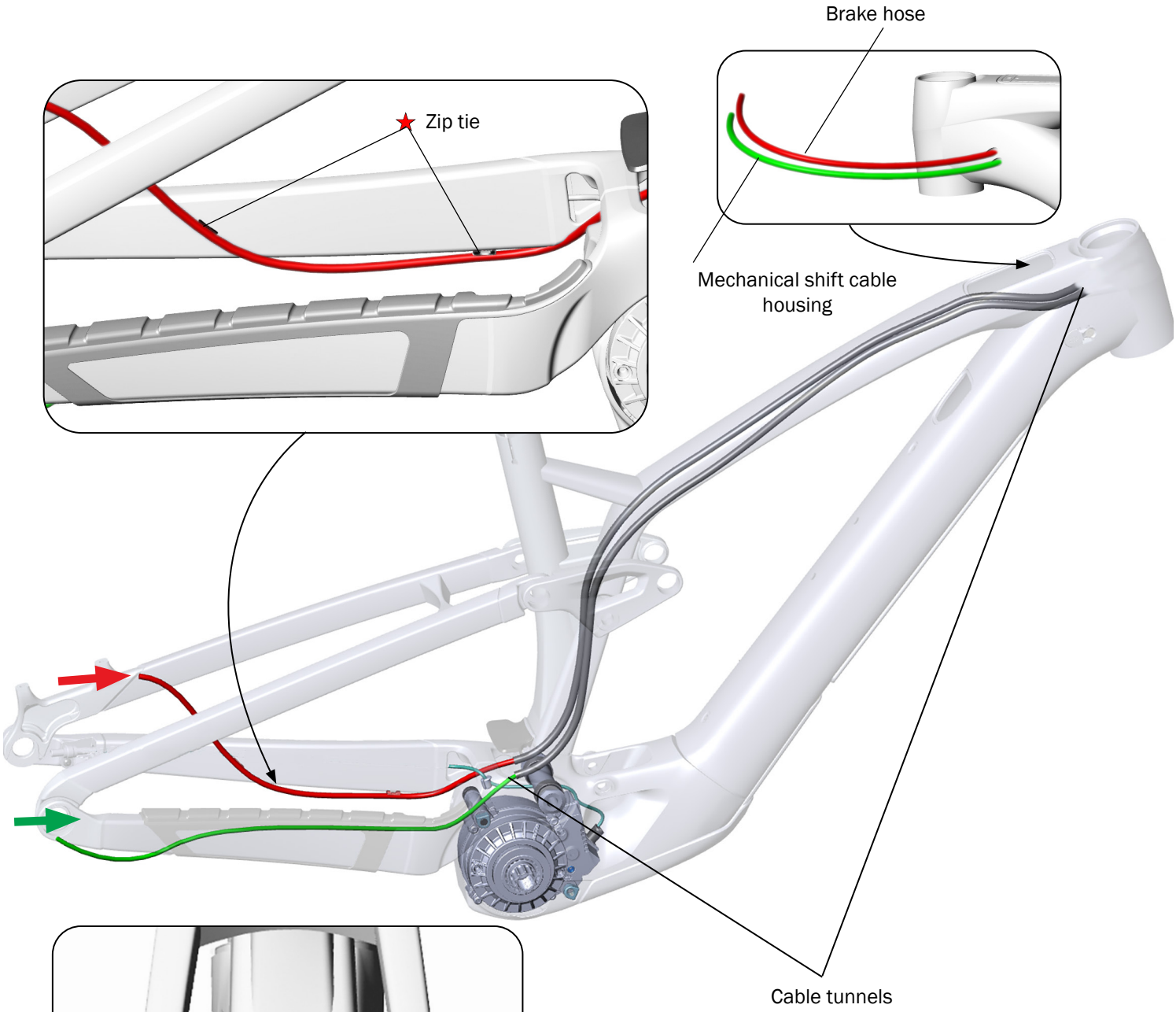


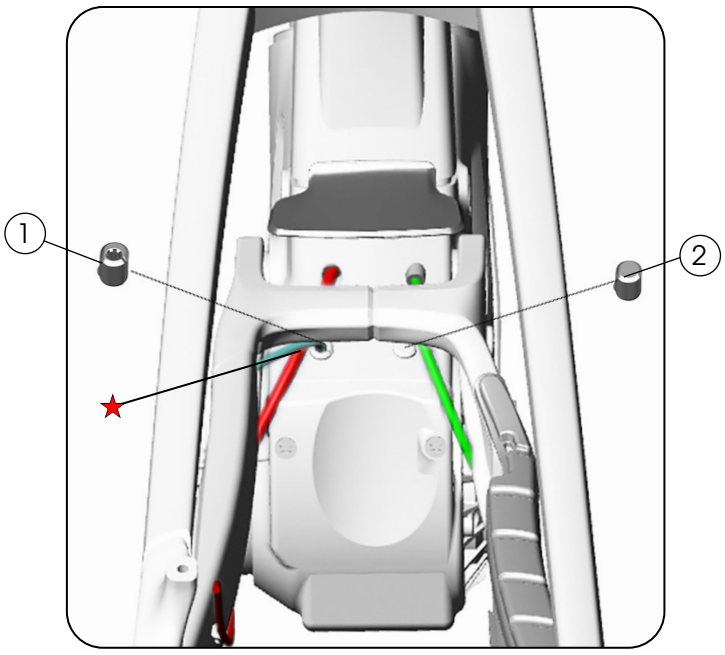
Mino link in the low position

- Pushes the head tube angle back 0.5° and pushes out the front fork for slower steering that is more stable at high speed
- Lowers the bottom bracket up to 9mm for more stability



Brake and mechanical shift routing





1. Remove the display from the top tube for easier access.
2. Route the brake hose and shift housing back to front.

① Cable housing grommet — W329119

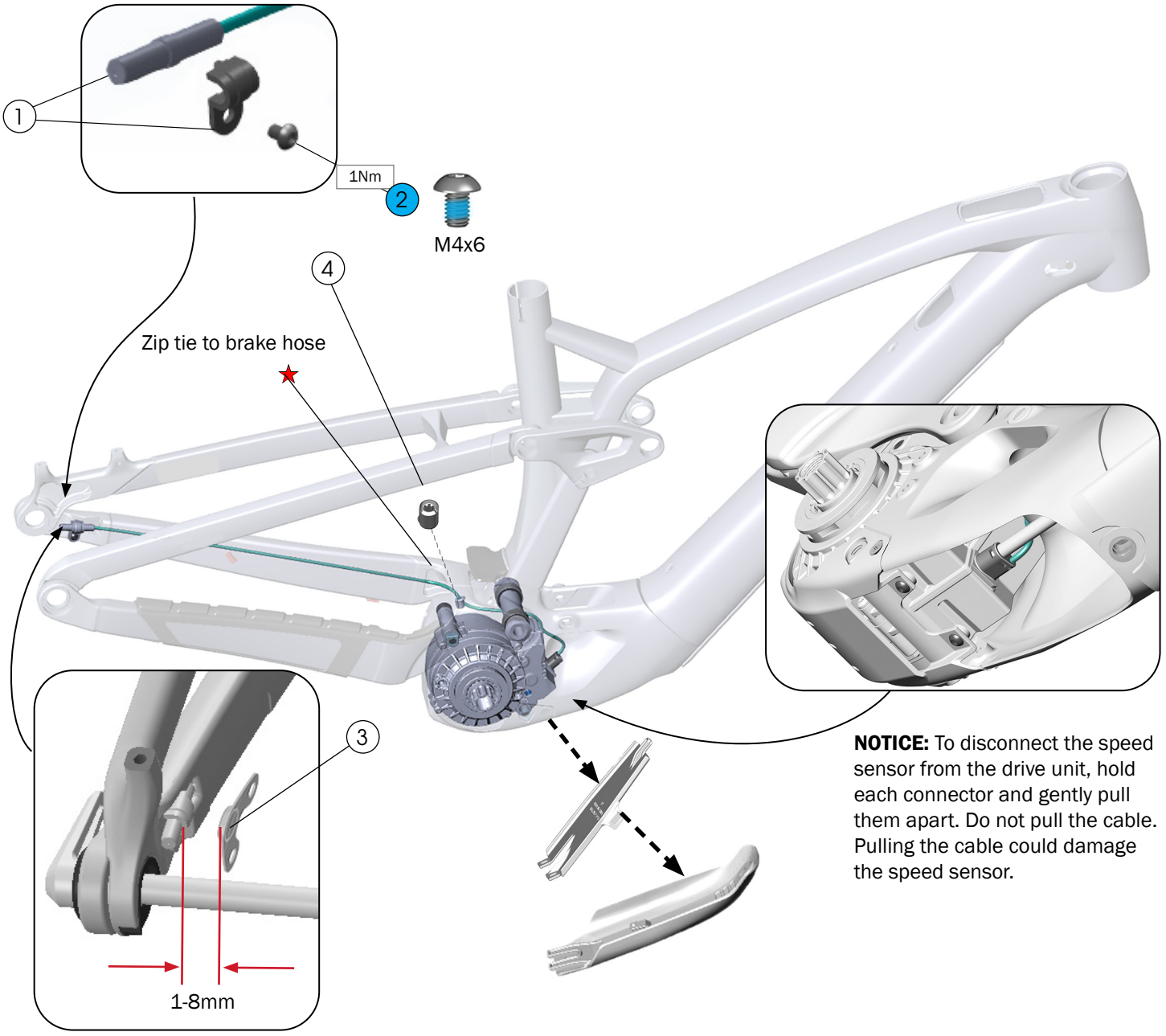
② E-shift hole plug — W547906
(Plugged with manual shift)

★ Zip tie

Speed sensor routing

For detailed service instructions:

Refer to the TQ service manuals found on tq-ebike.com/en/support/manuals.



NOTICE: To disconnect the speed sensor from the drive unit, hold each connector and gently pull them apart. Do not pull the cable. Pulling the cable could damage the speed sensor.

1. Speed sensor cable and clip — 5289567
2. Fastener, M4x6mm — W575056
3. Magnet — 5289568
4. Cable housing grommet — W329119

★ Zip tie

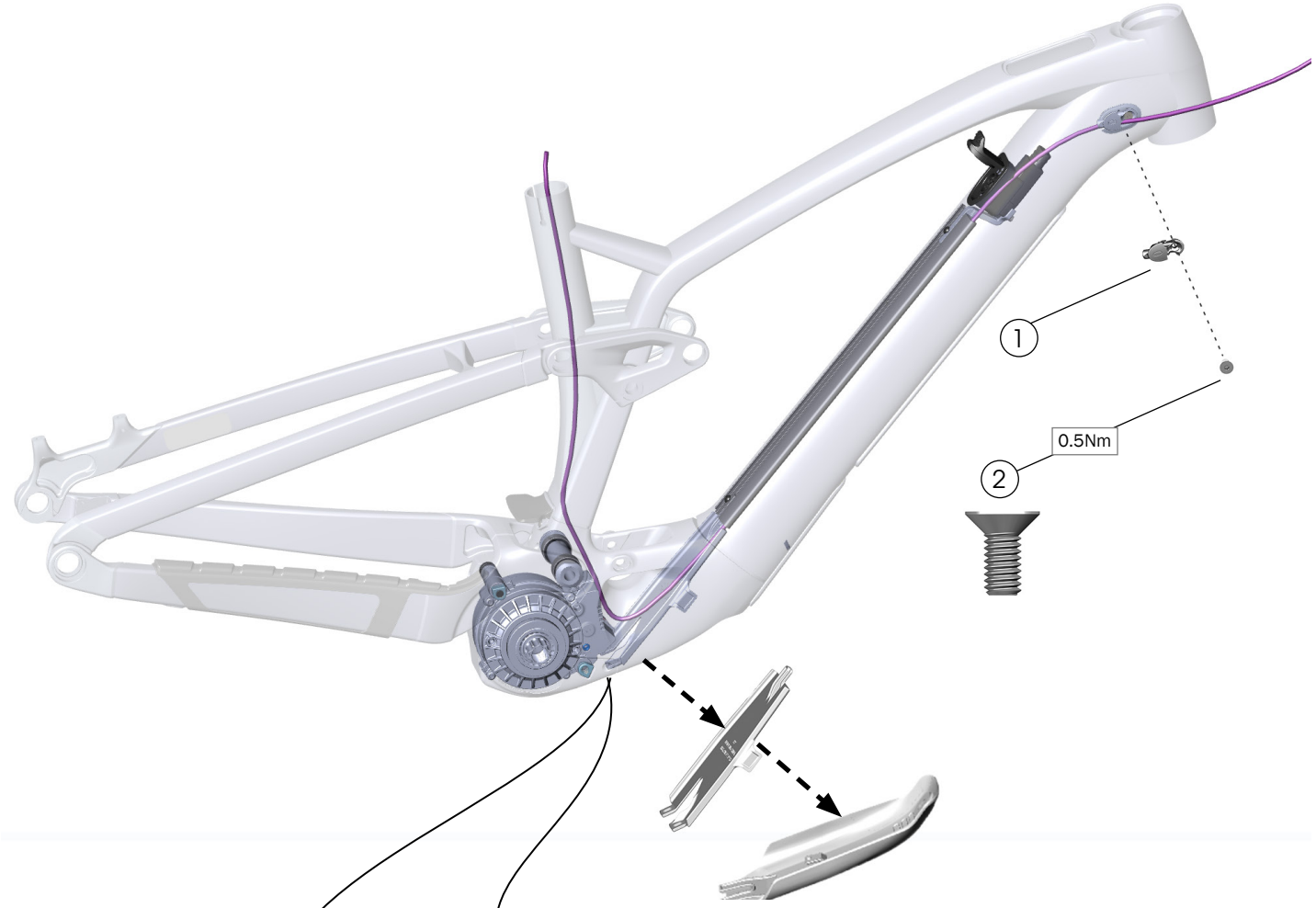
To connect the speed sensor to the motor, remove the:

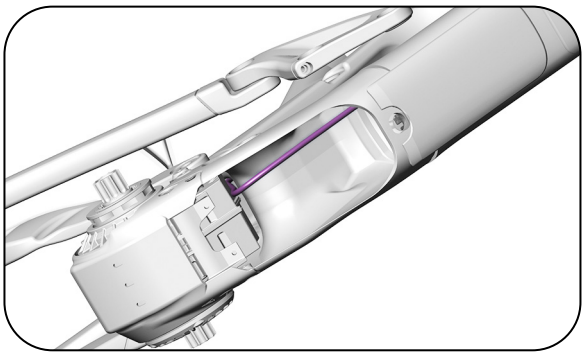
- Battery cover and battery (See Remove and install the battery on page 23.)
- Access cover

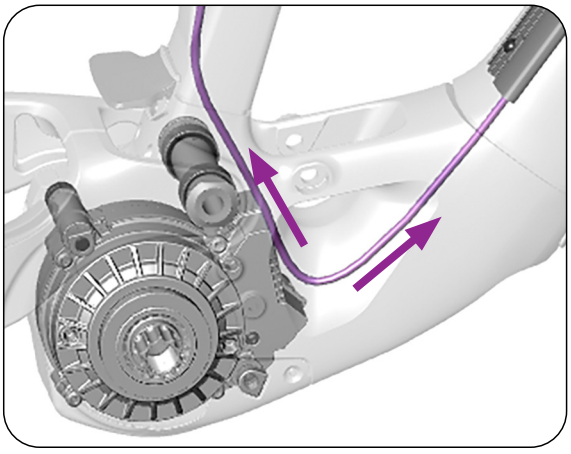
Replacement tip

1. To aid in removing the cable, use an internal routing tool to guide the cable as you remove it.
2. Attach a new wire and reverse the process.

Dropper post routing







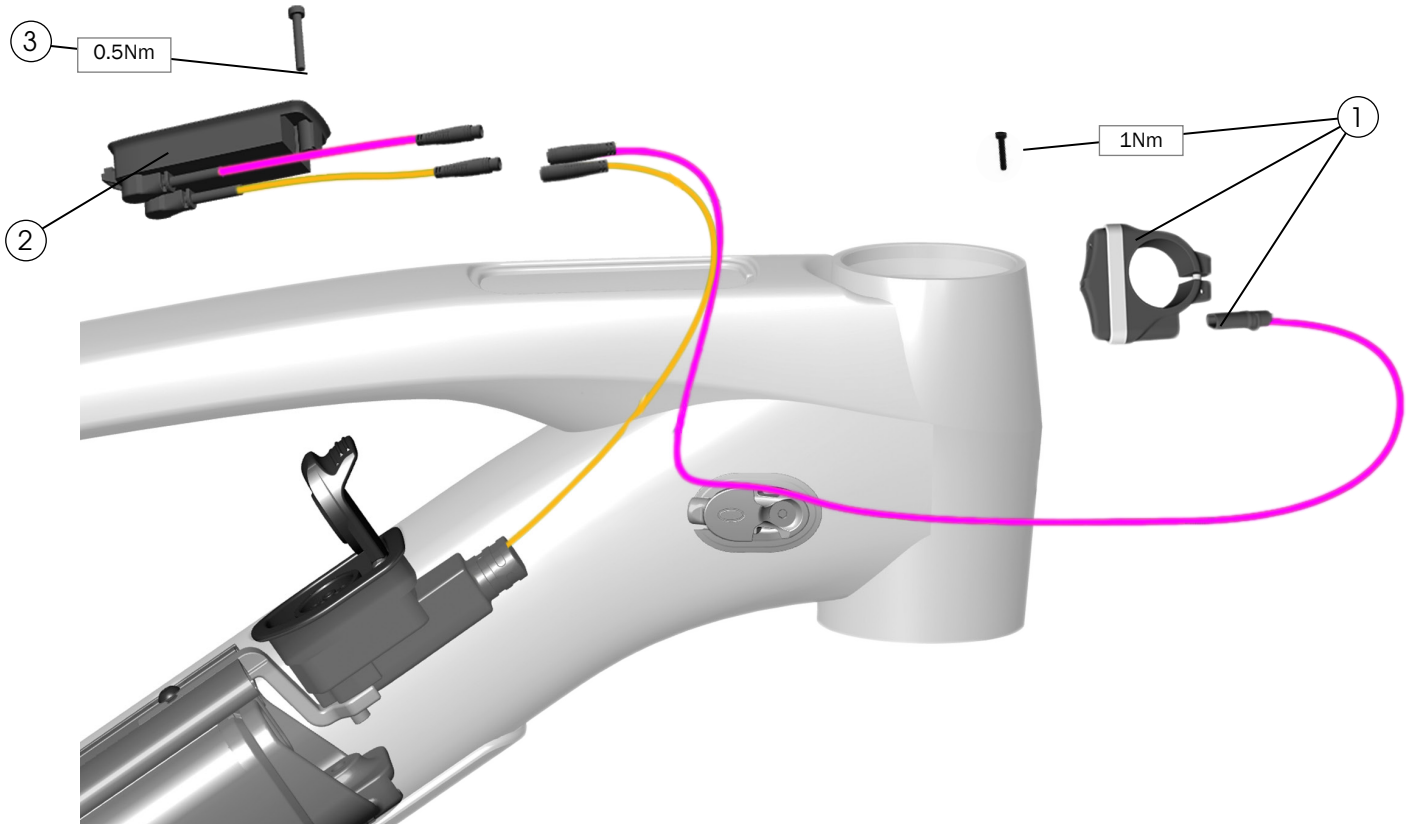
1. Exit guide — W519232
2. Fastener, M4x9mm — W532763

1. Remove the battery cover and the battery. (See page 23.)
2. Remove the access cover (See page 17.)
3. Route the dropper post housing from the bottom of the bike up through the seat tube and up through the cable tray in the down tube.

Remote and display

For detailed service instructions:

Refer to the TQ service manuals found on tq-ebike.com/en/support/manuals.

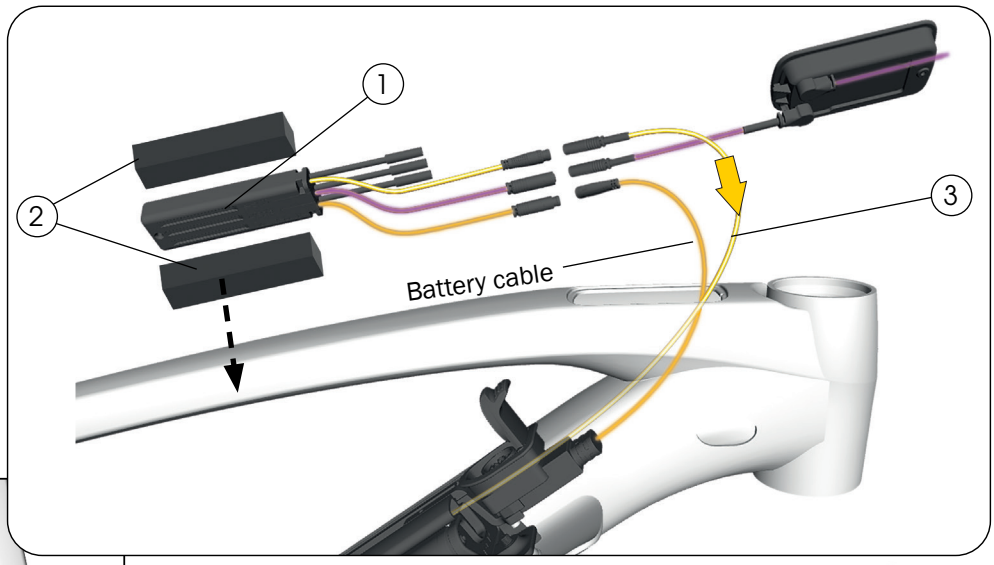


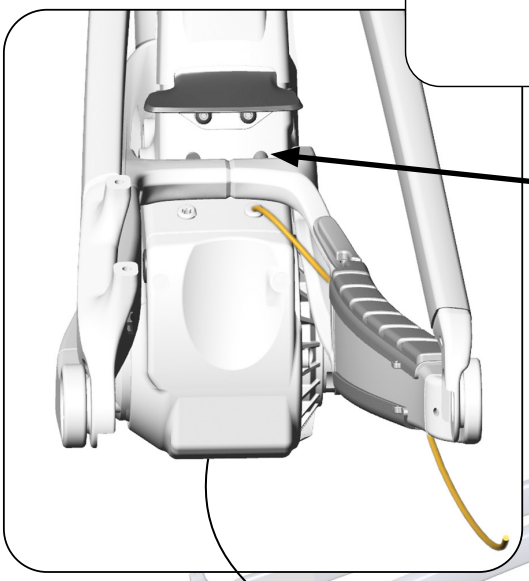
1. Remote, including fastener and cable — 5289561
2. Display — 5289562
3. Fastener, M3x20mm — W5280750

— 5289562

AXS shift routing

AXS-equipped bikes include the TQ Smart Box. It has connections for front light, rear light, aux 12, and electronic shifting.

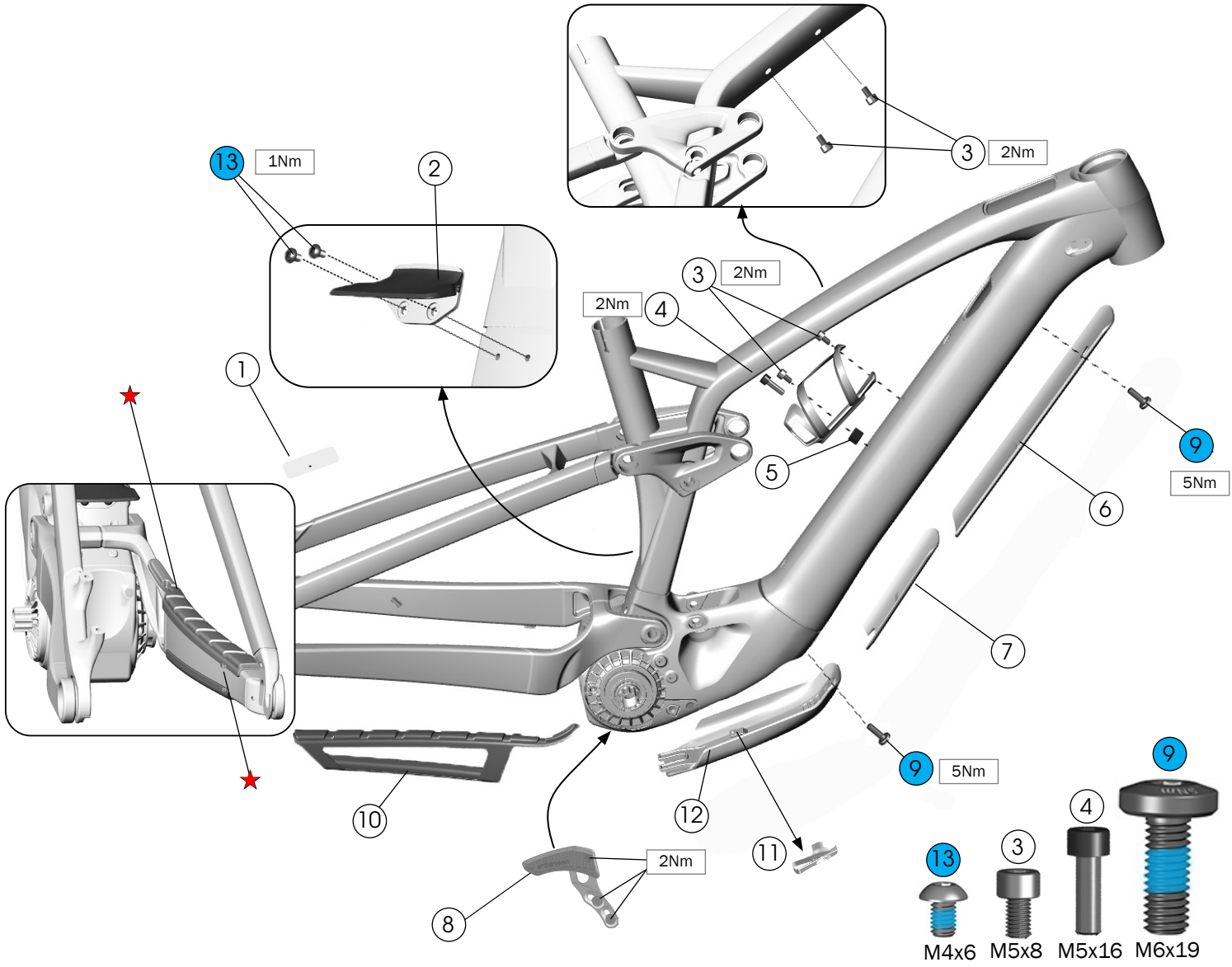




1. TQ Smart Box — 5289564
2. Foam blocks, set of two — 5305634
3. TQ Smart Box AXS adapter cable — 5289566
4. Battery cable (See page 17.)
5. SRAM AXS cable — W5312654

1. Remove the battery cover and the battery. (See page 23.)
2. Remove the access cover (See page 17.)
3. Connect the TQ Smart Box AXS adapter cable to the smart box as shown above.
4. Place the foam blocks above and below the Smart Box as shown above. Compress the blocks to the Smart Box and insert the assembly through the display opening in the top tube.
5. Re-install the display.

Guards and water bottle mounts



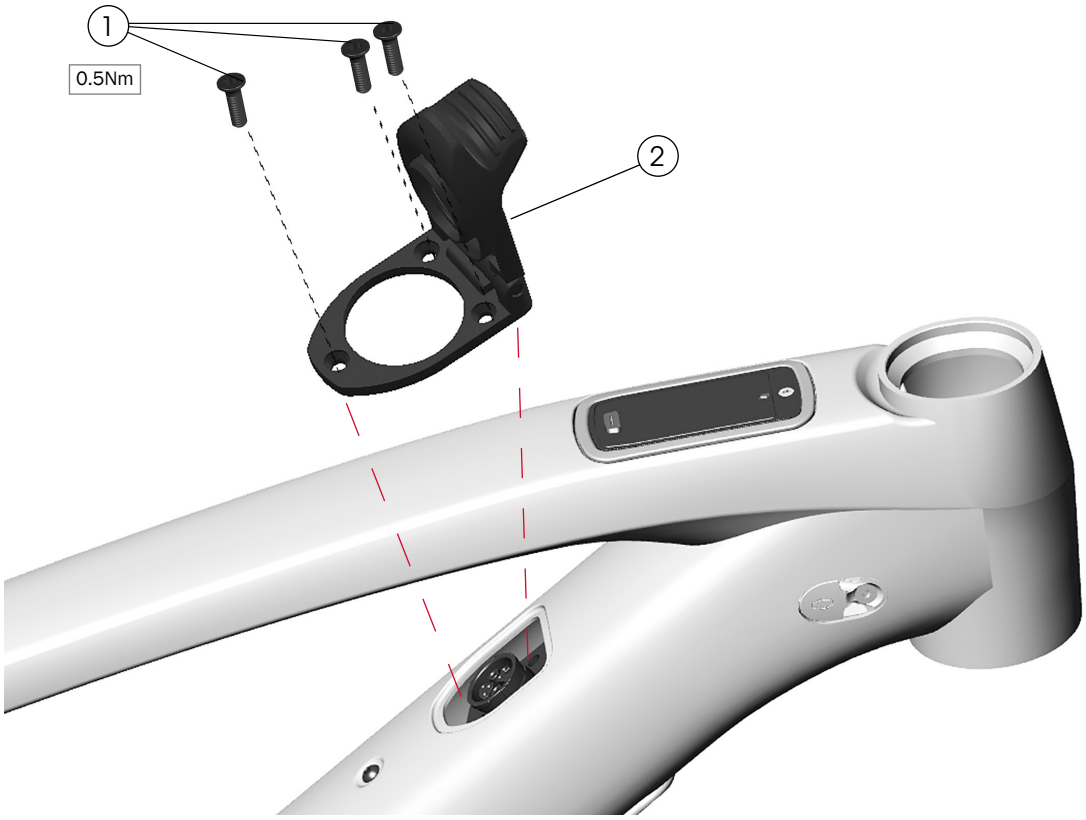
1. Brake hose adhesive guard — W326986
2. Main pivot mud flap — W5304910
3. Fasteners, M5x8mm — W549307
4. Fastener, M5x16mm, (Small frames only) — W596821
5. Cage spacer (Small frames only) — W5256157
6. Shuttle adhesive guard (optional) — W5280162
7. Down tube adhesive guard — W5273589
8. Chain guide with fasteners — W5276728
9. Battery mount fasteners, M6x19 — W5305015
10. Chainstay guard — W5306830
11. Clip nut (Use when battery is not installed) — W5284890
12. Battery cover — W5271937
13. Fasteners, M4x6mm — W575056

Adhesive Guards 1 6 7

Use isopropyl alcohol to clean the frame surface where the guard attaches. Wait for the alcohol to dry before applying the guard.

NOTICE: Do not clean the entire frame with isopropyl alcohol. Isopropyl alcohol could damage the paint.

Charge port cover

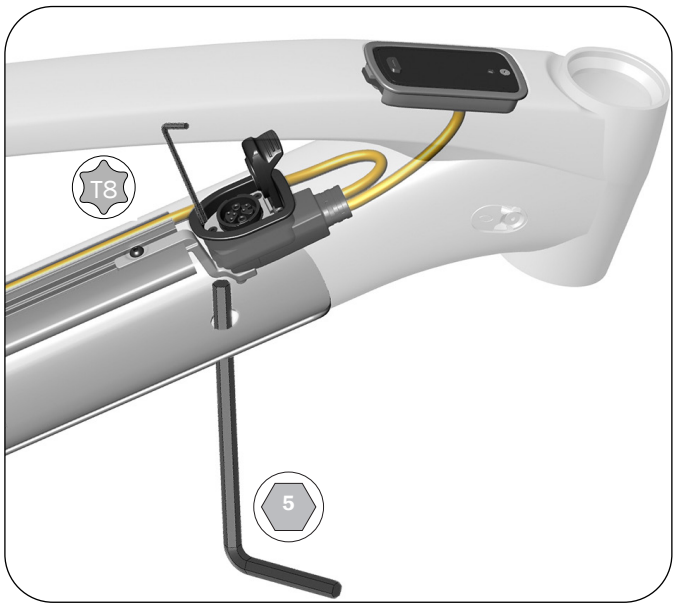


1. Fasteners, M2.5x8mm
2. Charge port cover

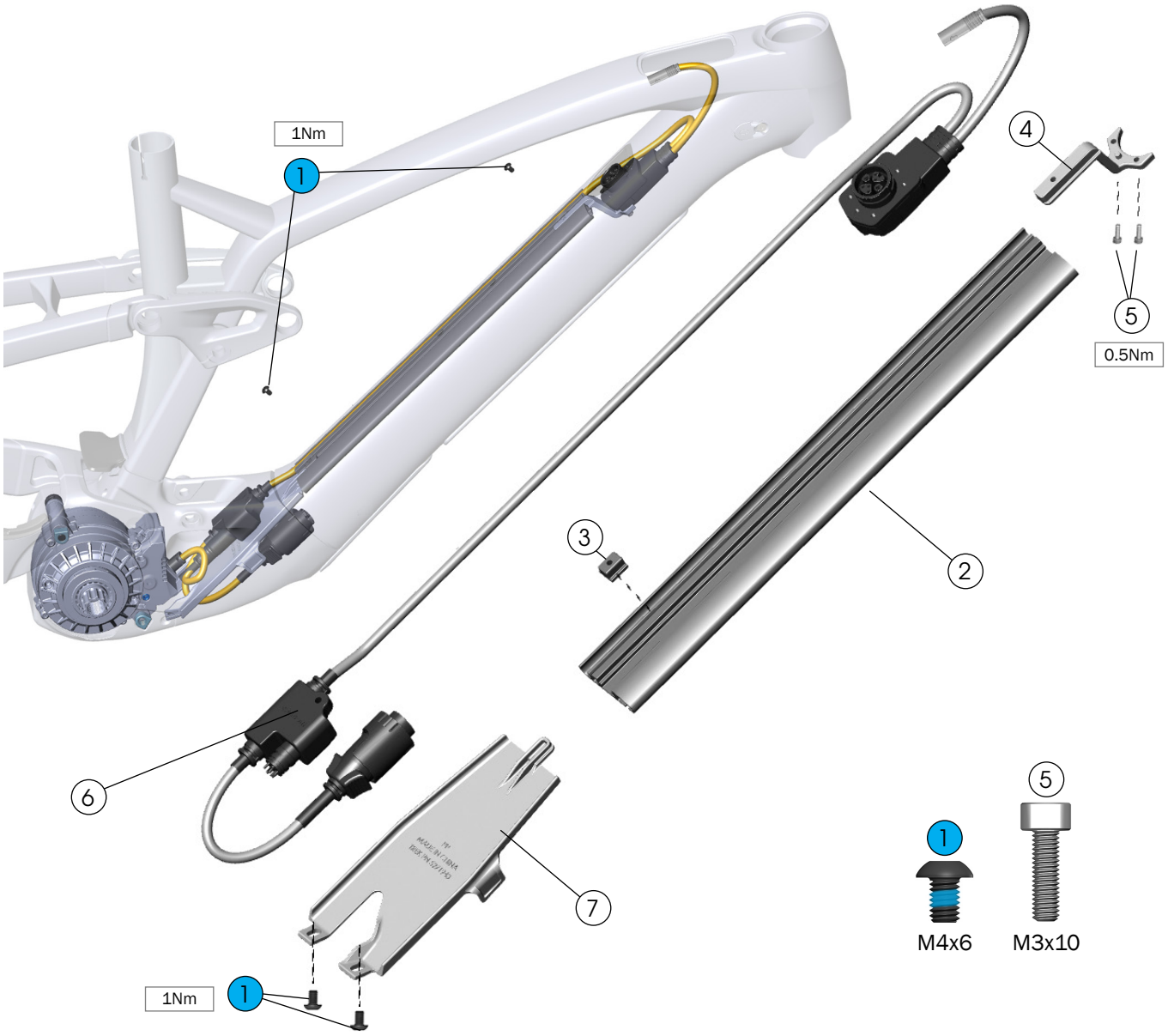
— 5289578

Tip: Not sure if you have a T8 Torx wrench? Before you buy a new one check your SRAM bleed kit to see if one is included with the kit.

Tip: Use a 5mm hex wrench inserted through the top battery mount hole to hold the charge port into place while tightening the fasteners.

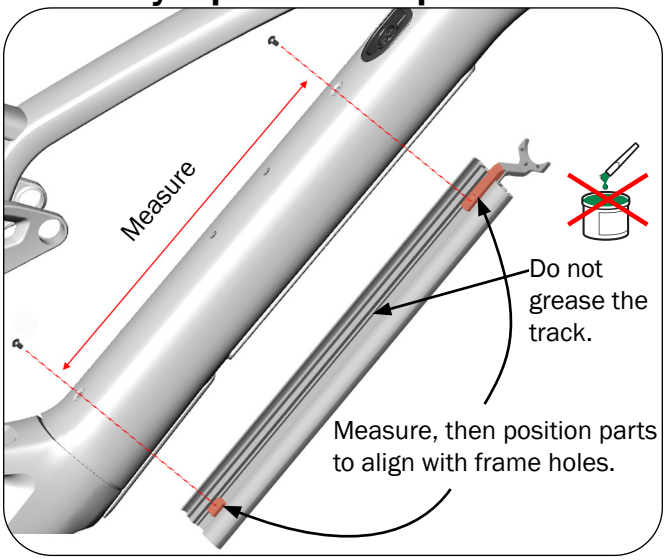


Battery cable, cable tray organizer, and access panel



1. Fasteners, M4x6mm — W575056
2. Cable tray — W5274993
3. M4 sliding nut — W5283261
4. Charge port holder — W5274996
5. Fasteners, M3x10mm — W545633
6. Wiring harness, includes charge port cover — 5289573
7. Access cover — W5271943

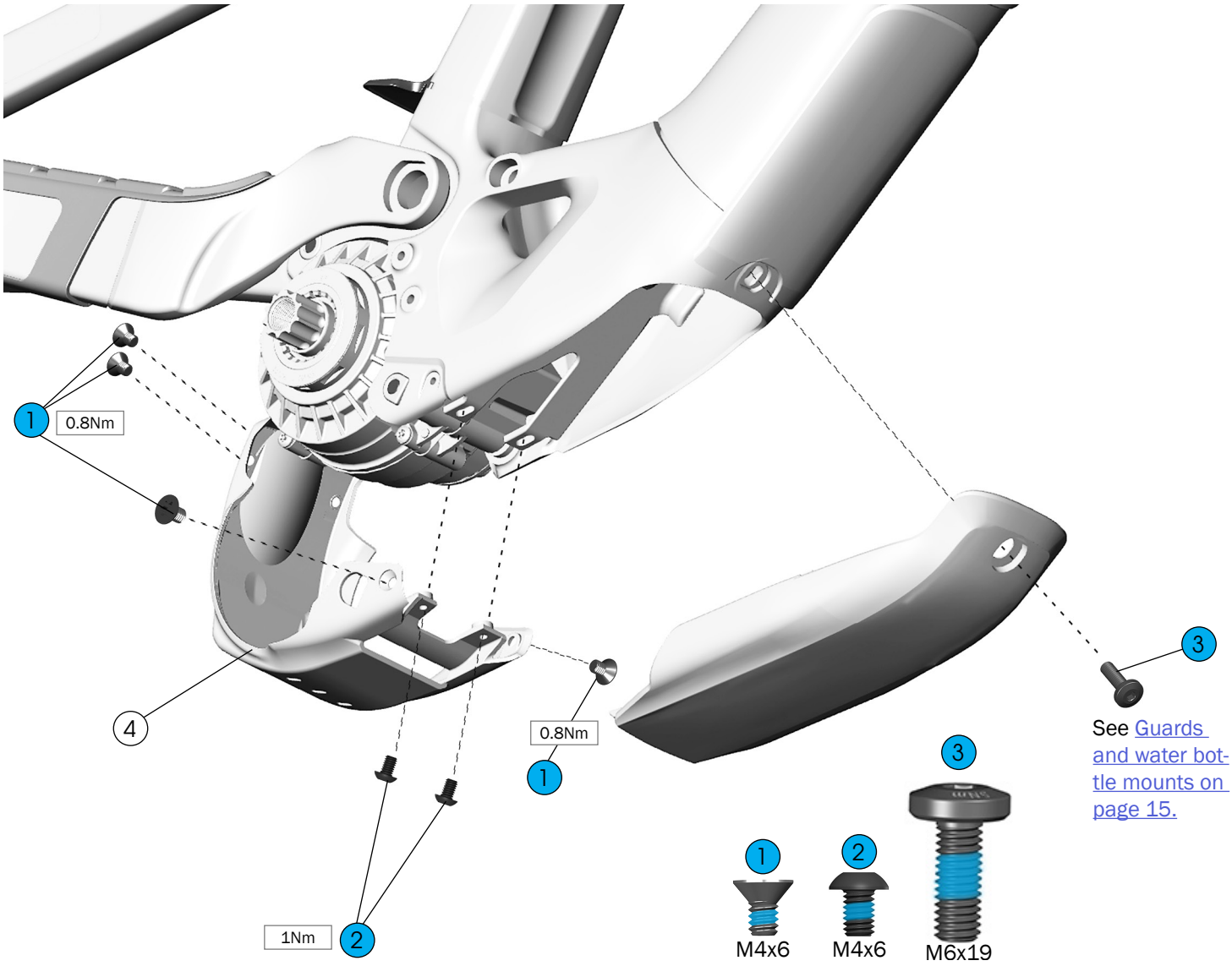
Cable tray replacement tip



Motor cover

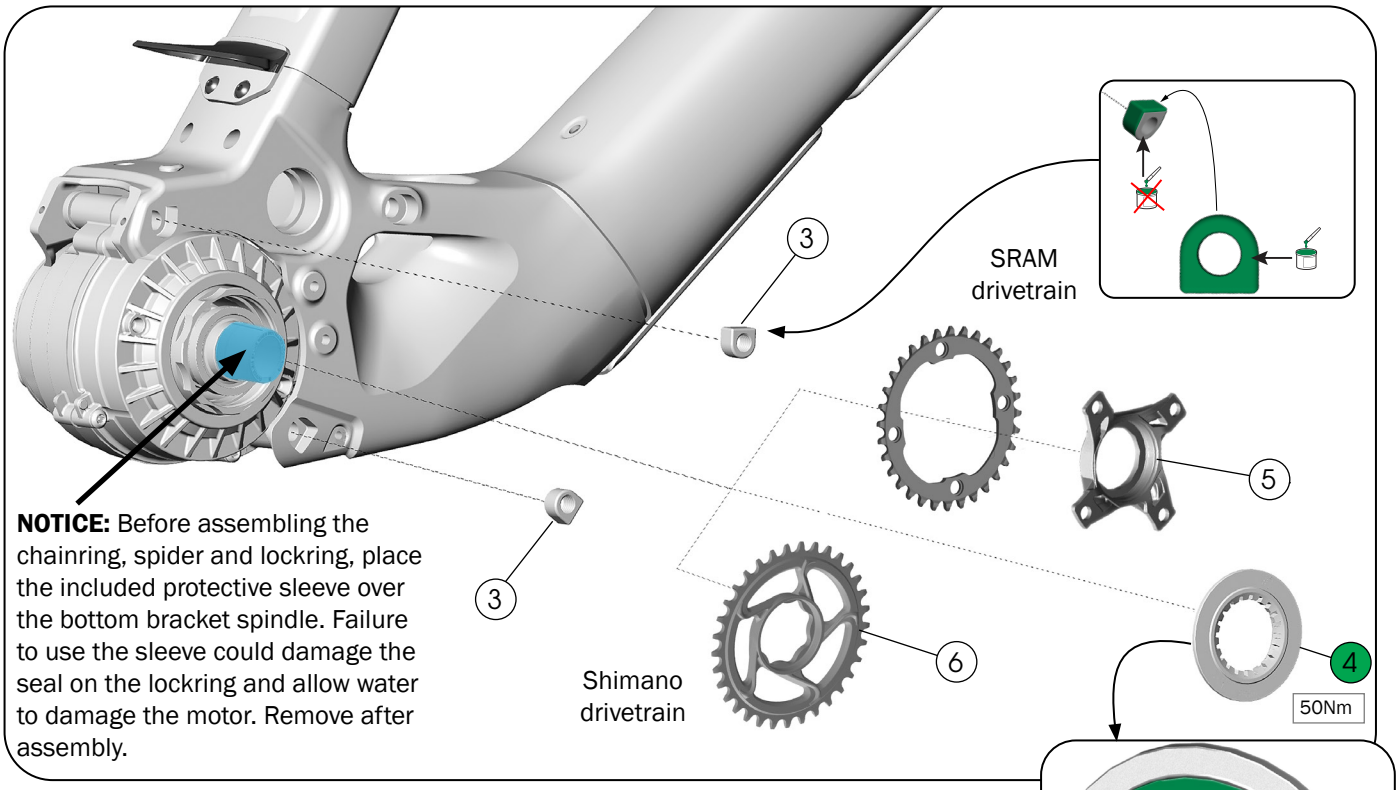
For detailed service instructions:

Refer to the TQ service manuals found on tq-ebike.com/en/support/manuals.

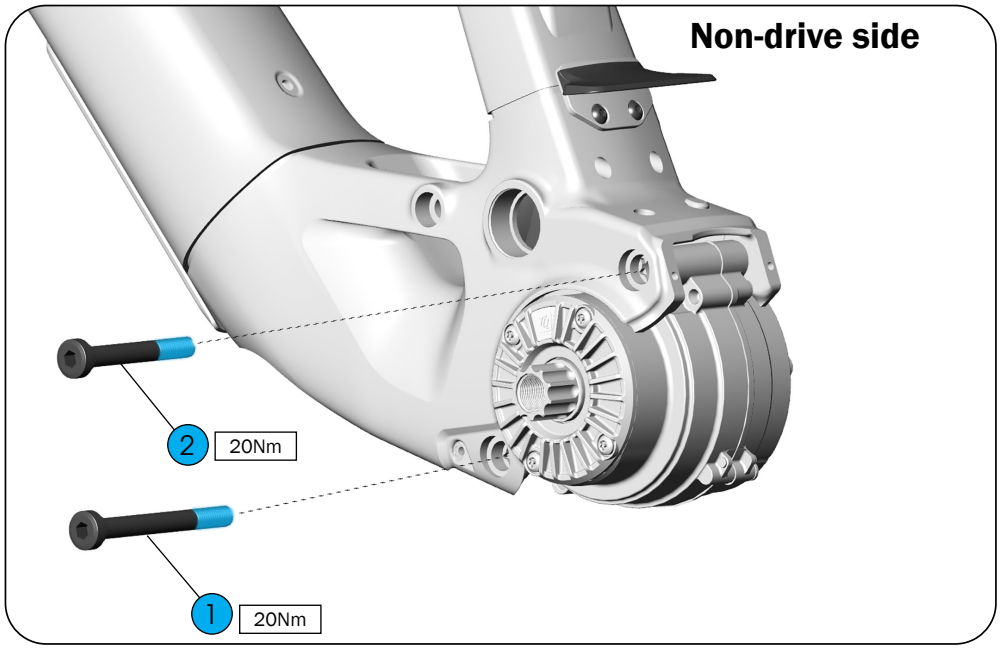


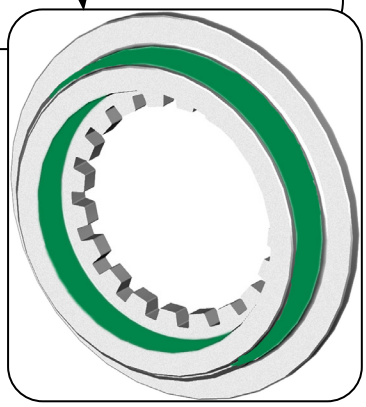
1. Fasteners, M4x6mm — 5269023
2. Fasteners, M4x6mm — W57056
3. Battery mount fastener, M6x19mm — W5305015
4. Motor cover — W5306829

Drive unit



NOTICE: Before assembling the chainring, spider and lockring, place the included protective sleeve over the bottom bracket spindle. Failure to use the sleeve could damage the seal on the lockring and allow water to damage the motor. Remove after assembly.





Apply grease to the shaft seal and o-ring of the lockring.

Tools

- BB-UN55 bottom bracket tool — part number 536183

1. Front motor fastener, 73mm
2. Rear motor fastener, 62mm

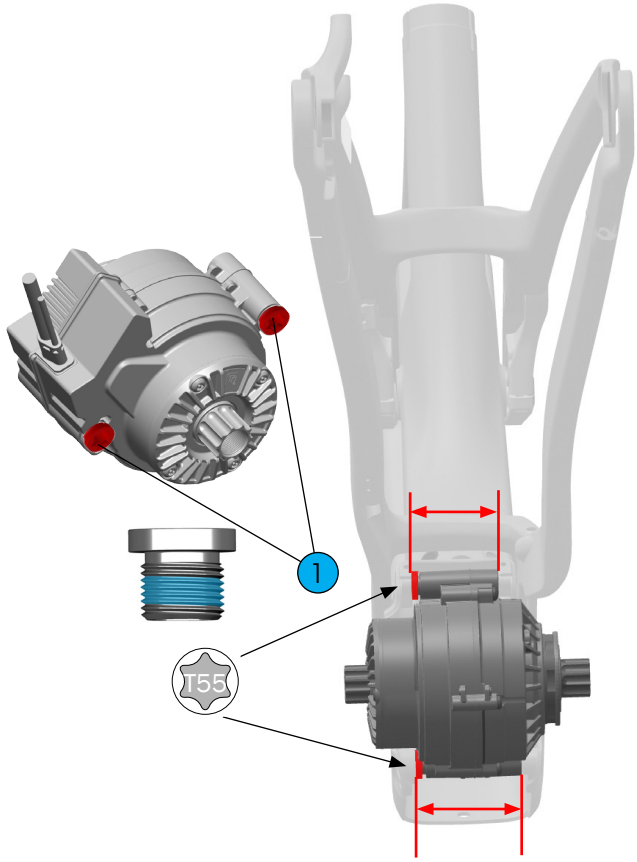
— 5289570

3. Nut insert — W5304866
4. Lockring — 5289572
5. FSA spider for SRAM spec models — W5275013
6. e*Thirteen chainring for Shimano Spec models — W5272388

NOTICE: Do not carry the drive unit by the cables because this could damage the drive unit.

Adjust the compensation fasteners

Before mounting a replacement drive unit, adjust the compensation fasteners (tighten or loosen) to match the bike frame as shown. The fasteners have a left-hand thread.



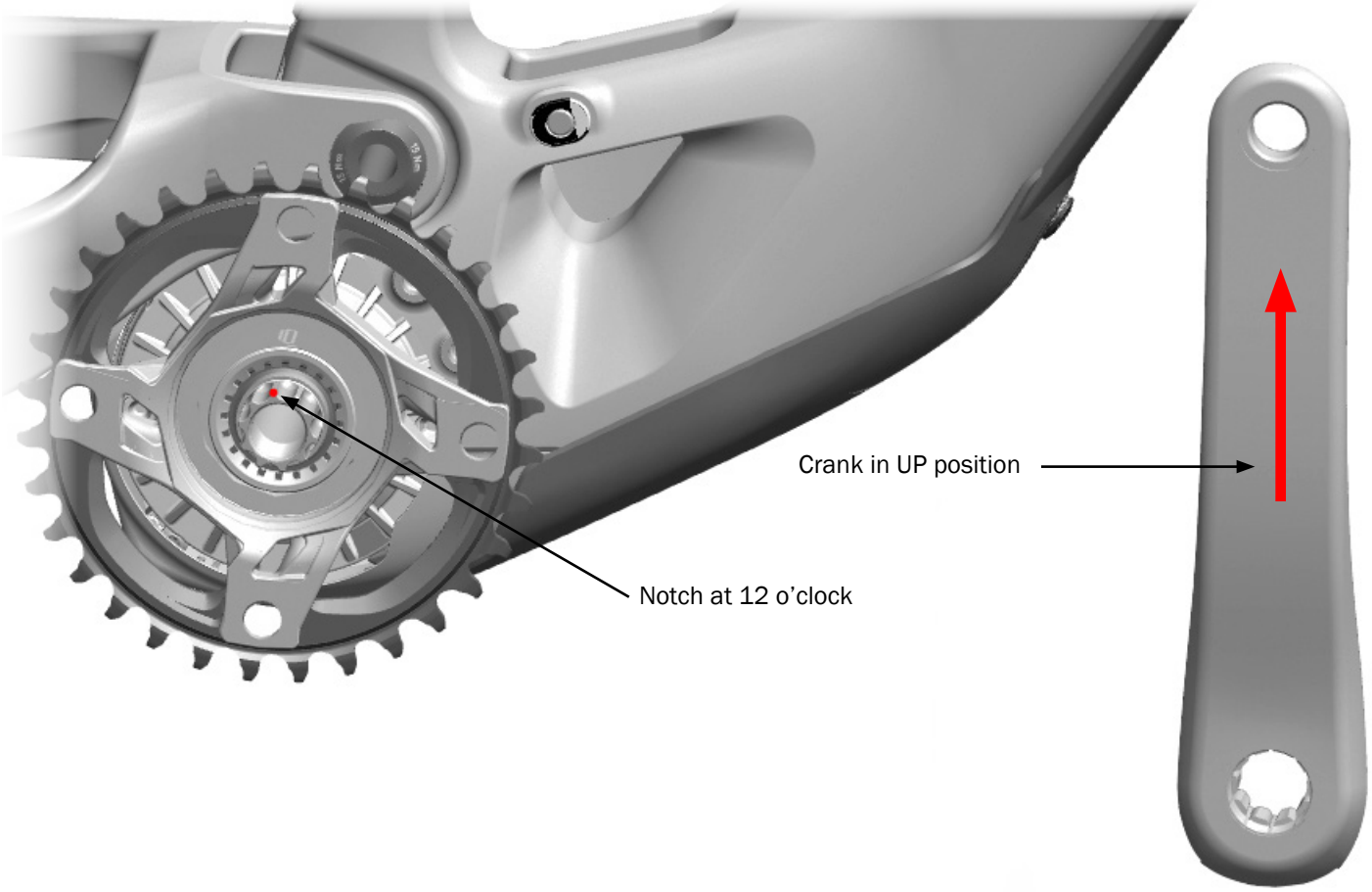
NOTE: Only adjust the compensation fasteners if you are replacing the drive unit.

1. Compensation fasteners — 5289570

Re-install the cranks

Note: A CWP-7 Crank Puller may be helpful to remove some types of crank arms.

The TQ system is designed for cranks to be installed in the UP position and in alignment with the notches on spindle. Installing the cranks in a different position will cause the drive unit to run rough for a few hundred meters until the system re-learns the position of the cranks.

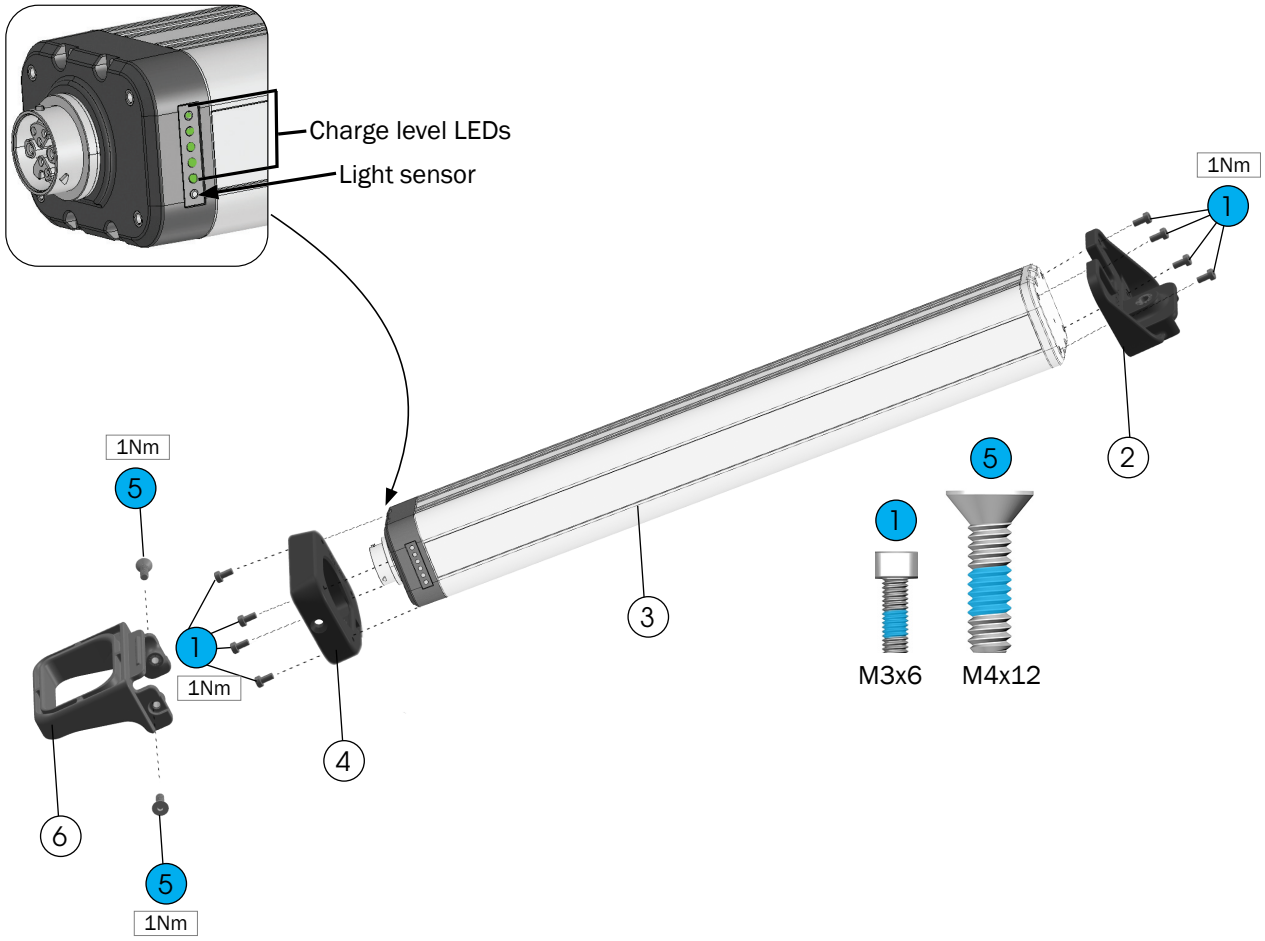


1. Locate the notch on the spindle. There are notches on the drive side and non-drive side.
2. Rotate the spindle until one notch is at the 12 o'clock position.
3. Install the crank in the up position.

Battery

For detailed service instructions:

Refer the TQ service manuals found on tq-ebike.com/en/support/manuals.



1. Fasteners, M3x6mm — W581747
2. Upper battery end cap — W5298492
3. Battery — 5289554
4. Lower battery end cap — W5273187
5. Fasteners, M4x12
6. Battery pull handle — W5273188

Assembly

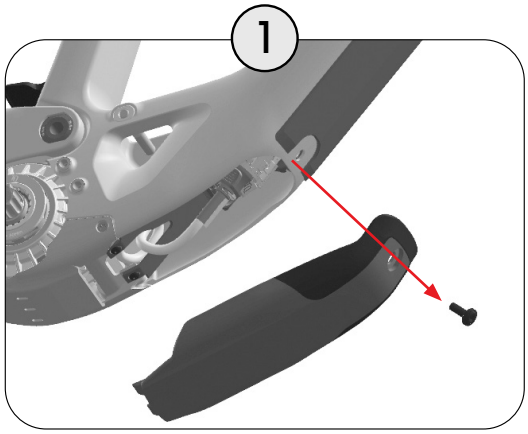
Assemble the handle in the orientation shown above, and with the battery positioned so the LEDs will be on the drive side. The battery will not install properly if it is assembled incorrectly.

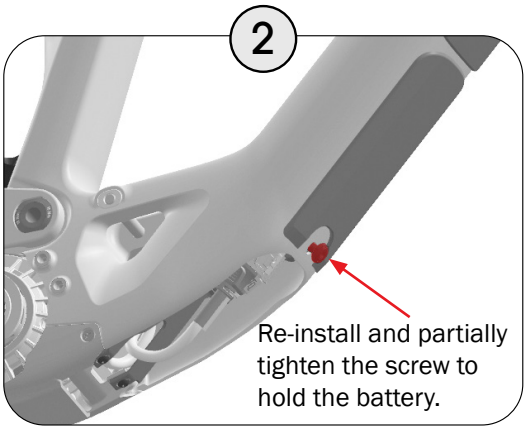
Charge level LEDs

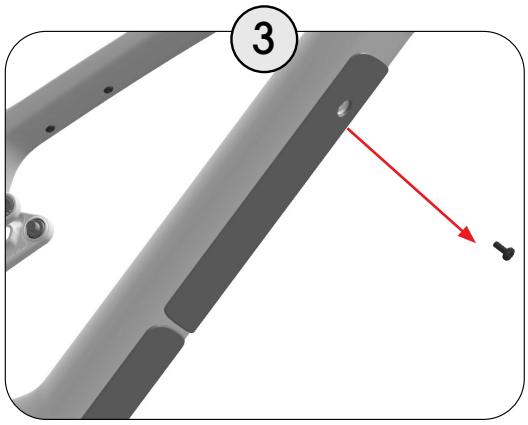
The LEDs on the battery indicate the charge level. Each LED represents 20% of the battery charge. To refresh the status, place a finger over the LEDs for a few seconds, then uncover.

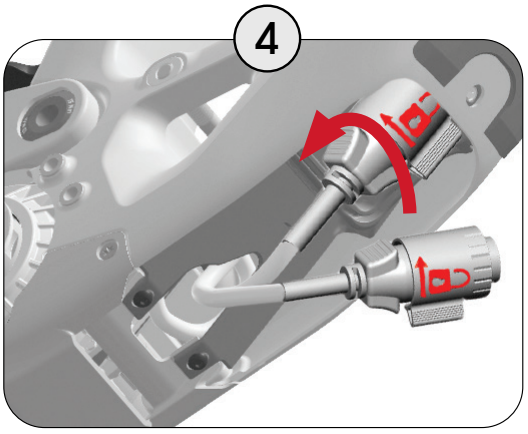
Remove and install the battery

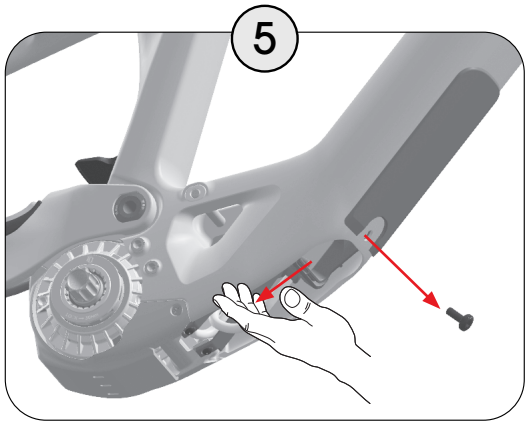
Remove the battery











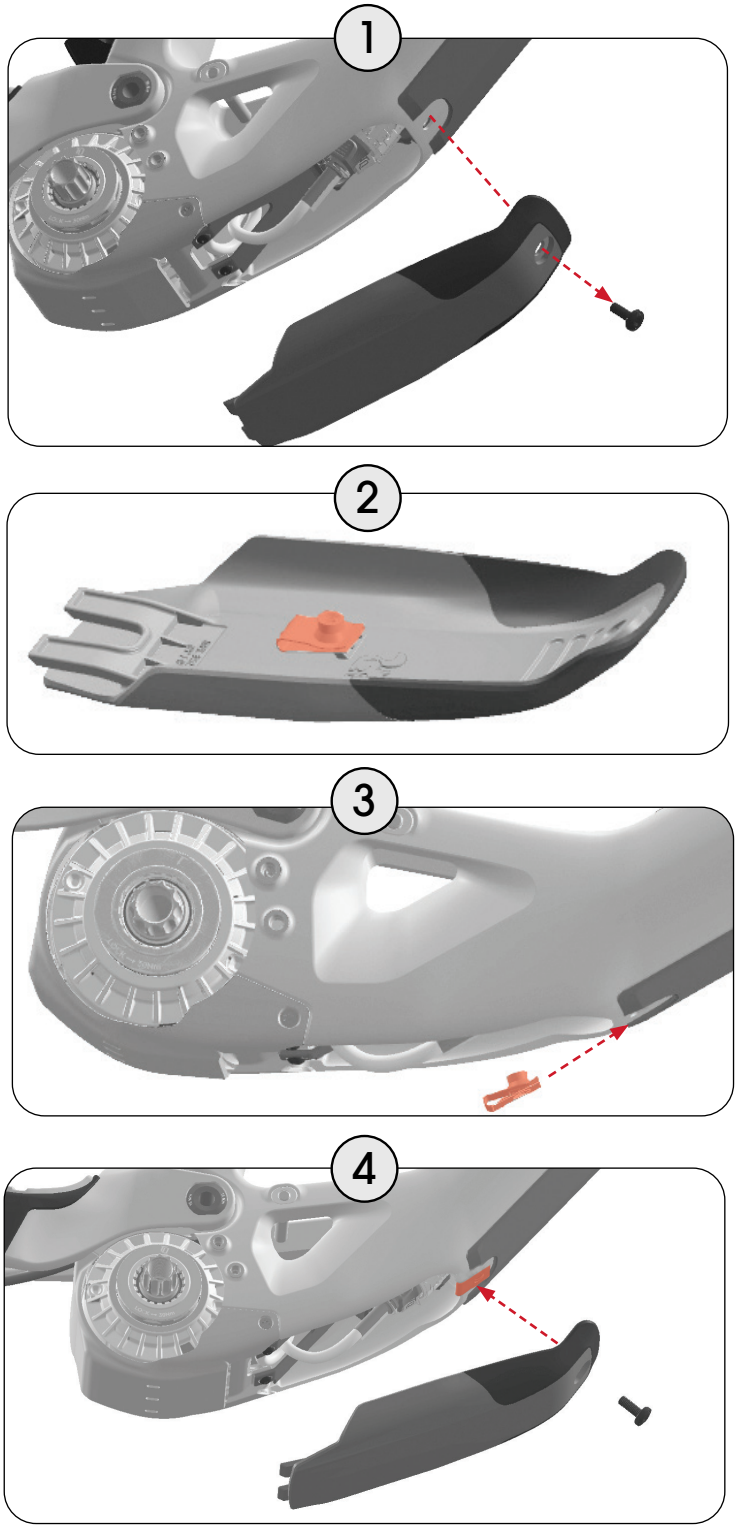
NOTICE: Guide the battery out of the frame. When the last battery mount screw is removed, the battery will slide out of the frame. To prevent the battery from falling, place one hand under the battery to support it while removing the last screw.

Install the battery

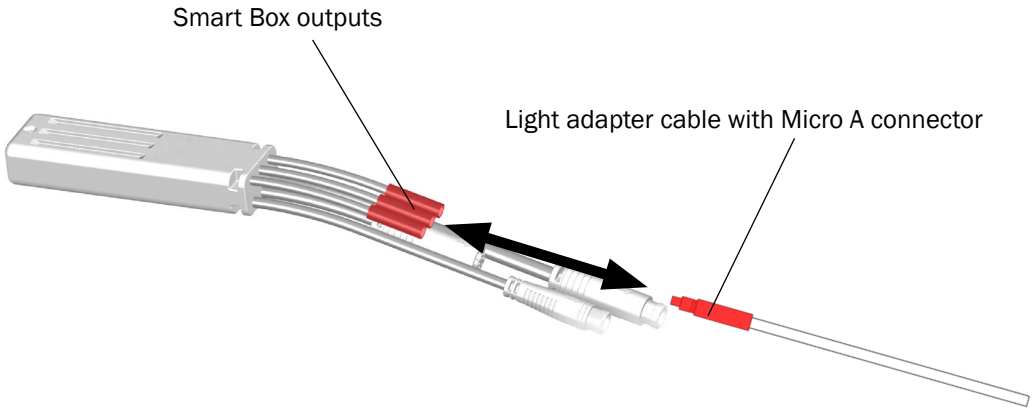
1. Insert the battery.
2. Install the top mounting screw to hold the battery in place.
3. Plug in the battery.
4. Rotate the battery lock to the closed position.
5. Gently tug the battery handle to verify the battery is locked into place.
6. Install the battery cover.
7. Torque the top and bottom mountings screws to 5Nm.

Ride the bike without the battery

The battery helps hold the motor cover in place. To ride the bike without the battery, you must install the clip nut to hold the motor cover in place. The clip nut is stored on the inside of the battery cover.



Connect lights to the TQ Smart Box



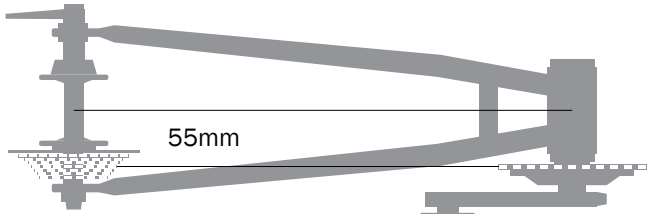
Lights can be connected to the TQ Smart Box and powered by the bike battery. The Smart Box power outputs must be activated via the Dealer Service Tool (bike shop use only).

For instructions on how to install the Smart Box, see AXS shift routing on page 14.

- **Maximum power (front and rear light combined):** 20W at 12V.
- **List of compatible lights:** refer to TQ's FAQ:
  - **English:** tq-ebike.com/en/support/faq
  - **German:** tq-ebike.com/de/support/faq
- **Required:**
  - A light adapter cable with a Micro A connector.
  - The Dealer Service Tool (shop use only) to activate the power output on the Smart Box.

Specifications

Chainline (1x only)



Chainring (1x only)

Minimum	Maximum
30T	34T Round

Oval rings of any size are not recommended as they will affect motor performance.

Rear brake mount

Minimum	Maximum
180mm, direct mount	Adaptable to 203mm

OLD

Rear Hub: 148mm

Maximum tire size

29" x 2.5"

NOTICE: Measurements of actual tires may vary. Always verify there is sufficient clearance between the tire and the frame. Improper tire size could damage the bicycle frame. Trek recommends 6mm clearance above and on the sides of the tire.

Seatpost

WARNING

Always follow the seatpost manufacturer's minimum insertion recommendation. Failure to follow the recommendation could cause damage to the seatpost and result in injury to the rider.

Minimum insertion 75mm

Maximum insertion

Small 190mm

Medium 225mm

Large 250mm

Extra Large 280mm

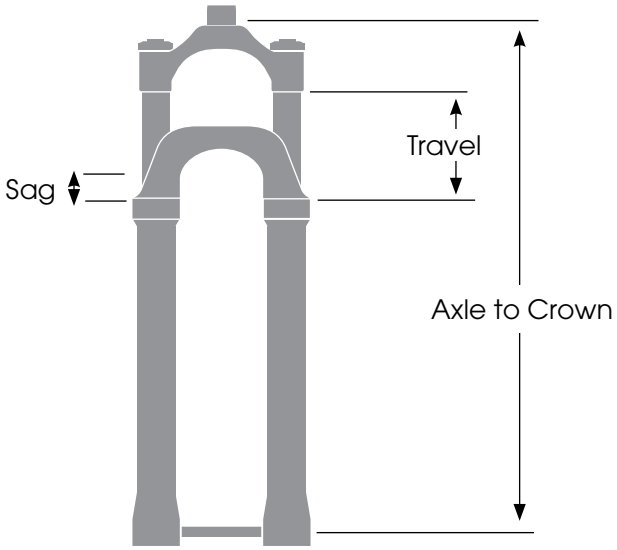
Seat tube inside diameter 34.9mm

Seat tube post clamp outer diameter 39.7mm

Fork

WARNING

Exceeding the recommended maximum fork length could damage the bicycle and result in injury to the rider.



Frame/Size	Axle to Crown (mm)		Travel (mm)
S, M, ML, L, XL	Recommended	565	150
	Maximum	575	160

Recommended sag: Refer to the suspension setup card included with your bike or the suspension calculator at Trekbikes.com/suspension-calculator.