



TECHNICAL SERVICE BULLETIN #156.2

e*spec Shimano™ alloy crank tech update

TSB Intended for: e*thirteen OEM's, assembly factories, Distributors & Dealers

Product(s) included: e*thirteen e*spec Shimano EP8 alloy cranks.

Abstract

e*spec Shimano EP8/EP800 alloy cranks were developed specifically for Shimano™ ebike motors and sold via OEM and aftermarket channels in 2020 & 2021. This TSB highlights install torque updates and additional measures we have taken to address the issue highlighted below.

Issue

We have had reports of crank arm preload caps from affected cranks loosening up and falling off. If crank pinch bolts, which fix the arm to the axle, are not tightened to spec or properly tightened, it is possible that lack of cap and incorrect installation torque and/or install technique could lead to the arm loosening.

This situation has been misinterpreted by some to mean there is a failure of one or more system components. That is not the case, but all cranks should be checked for proper tightness before riding, and initial installations procedures should be updated.

Solution

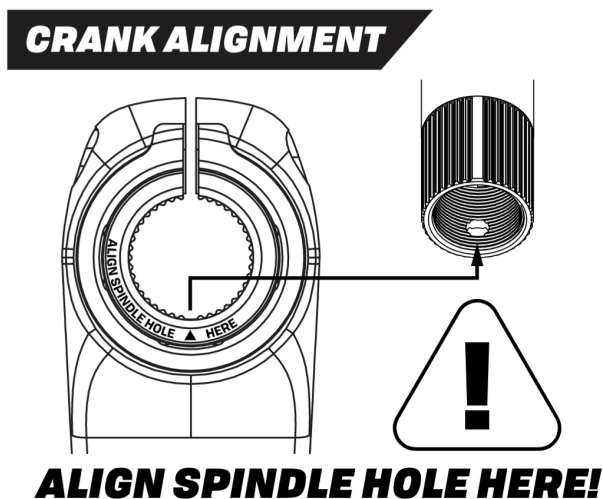
- Threadlocker patch:
 - Early production preload caps did not incorporate a threadlocker patch to prevent loosening in the case that the cap was not properly tightened upon install. A threadlocker patch is now being used on all preload caps. Customers with caps lacking threadlocker patch can use light/medium strength threadlocker such as Loctite 222 or Loctite 242; or contact e*thirteen support for a replacement cap.

- Torque specification updates:
 - Original torque specification: Preload cap: 1Nm / Pinch bolts: 12-14Nm.*
 - Updated torque spec: Preload cap 2Nm / Pinch bolts: 14Nm.***Correct tightening procedure is critical. Please reference directions below*
- Inner seal removal:
 - The seal found at the inner face of the crank should be removed from the assembly. This avoids potential false torque readings and provides an additional 1mm of interface between the crank and spindle.



Arm Install Orientation

Verify crank arms are installed on the spindle with pinch clamp at 180 degrees from the hole in the spindle as shown in image below.



Arm Tightening Procedure

Note: Procedure is the same for left and right arms and should be performed on both.

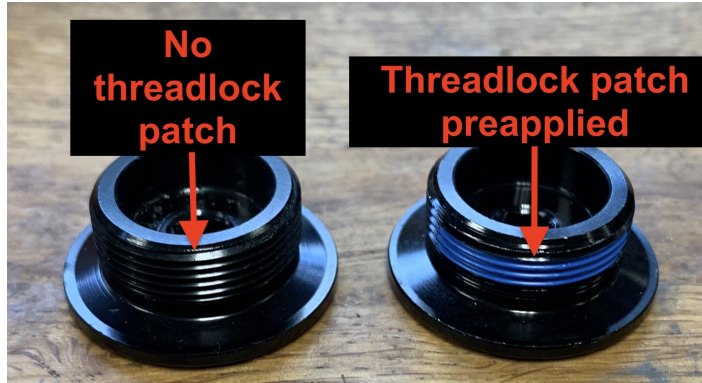
*Important

- **Step 1 - Verify if preload cap needs loctite applied, and apply if necessary.**
 - Loosen counterclockwise both 5mm pinch bolts which attach the crank arm to the spindle. Ensure they are fully loose by alternating bolts until a gap between the head of the bolt and crank arm is visible.



- **Step 2 - Identify if preload caps have a pre-applied threadlocker patch and apply if necessary.**
 - 2a - Using a 5mm hex key, loosen counterclockwise and remove the preload cap.

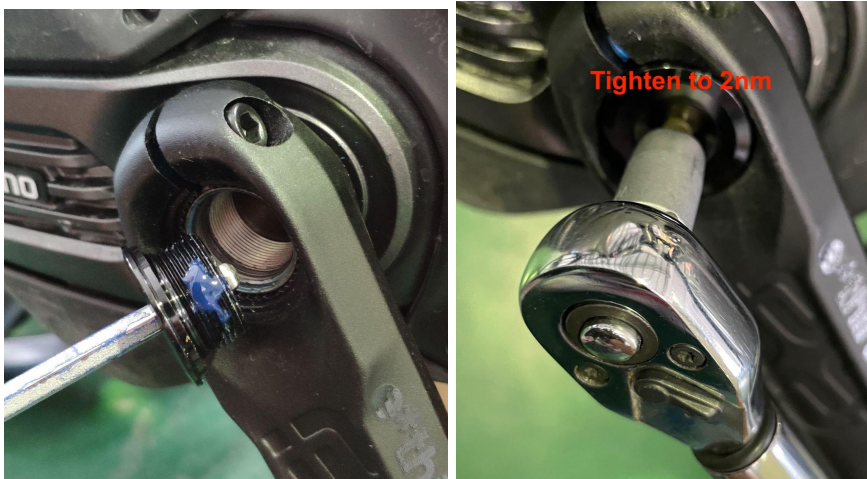




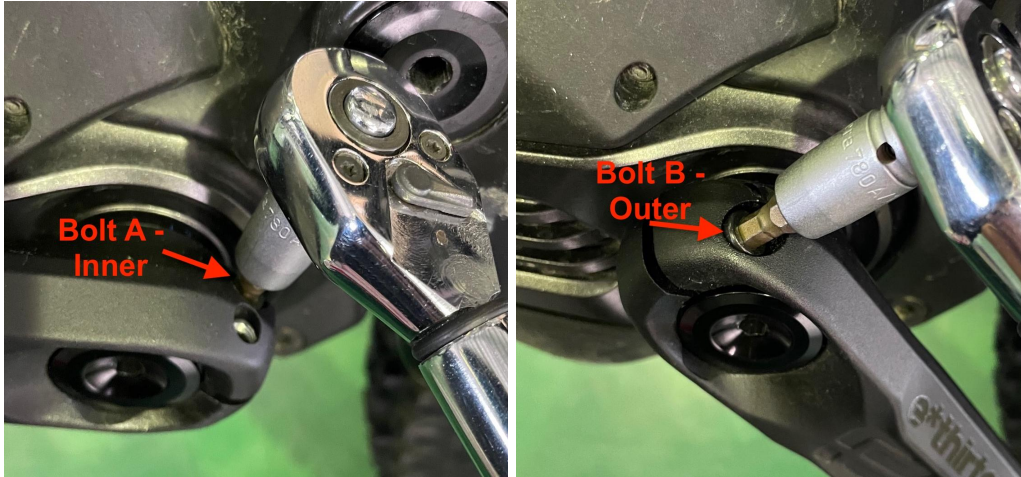
- 2b - If threadlock patch is present, move on to step 3. If there is no threadlocker patch, move onto point 2c.
- 2c - If preload cap has no threadlock patch pre applied:
 - Clean inner and outer threads and apply 1 drop of Loctite 242 or similar light/medium threadlocker compound to the threads on the preload cap.
- or
 - Contact e*thirteen to be supplied with a preload caps with pre applied threadlocker

- **Step 3 - Reinstall preload cap and torque fasteners to spec.**

- 3a - Install and tighten preload cap to 2nm



- 3b - Using a torque wrench, tighten crankarm pinch bolts using an alternating sequence until **both bolts reach 14nm**. You will do this (2) times starting with the inside bolt (a) then the outside bolt (b), then repeat. Sequence = (a)(b)(a)(b)



- **Step 4 - Repeat procedure on other arm.**
- **Step 5 - Recheck pinch bolt tightness after 1-2 rides to ensure 14nm torque on pinch bolts.**