

CKD ASSEMBLY MANUAL

Instructions for assembly of the Utility S2 from Complete Knock Down (CKD)



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REVISION HISTORY

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10	Bottom Bracket	B
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21-24	Wheel Lacing	B
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30	Front Axle	B
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41-42	Final Quality Check	B

Date	Author	Rev	Description
25/05/2023	Will King	A	Initial release for AK2 P1 bike builds.
03/08/2023	Will King	B	<u>Format</u> : all pages, update to WBR standards, adjust page numbers 21-40; <u>Tools, Supplies, Symbols</u> : add Park TM-1 and Park BDT-2; <u>Fasteners</u> : add bolt diameters, add axle nuts; <u>Other Parts</u> : add mudguard stays, brake levers; <u>Handlebar and Stem</u> : change front stem bolt torque 20Nm was 15Nm, update handlebar geometry to HB-8 (straight bar), add bell picture; <u>Bottom Bracket</u> : add L and R symbols, remove “drive-side”; <u>Crank and Pedals</u> : add red grease to crankset pedal hole, clarify pedal geometry; <u>Spoke Tension</u> : add stress relieving picture; <u>Freewheel</u> : remove 24mm and 26mm, update wording; <u>Tire and Tube</u> : add pre-inflation and steps 1,2,3; <u>Wheel Lacing</u> : separate steps for added clarity to 3-cross.
14/10/2023		C	Updating AK2 graphic with Utility S2 Graphic. <u>Page 27: Freewheel</u> Update freewheel and hub image to include the retaining ring and 2 nuts on the hub axle.

8MM

10MM

13MM

14MM

15MM

24MM

26MM

30MM

36MM



13G



3.6mm



Park TM-1



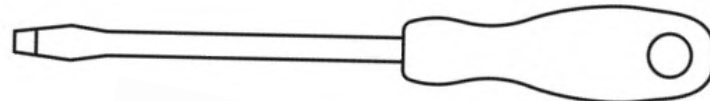
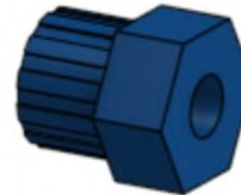
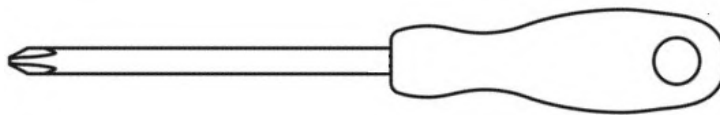
Left hand thread
parts shown **green**.



Correct



Incorrect



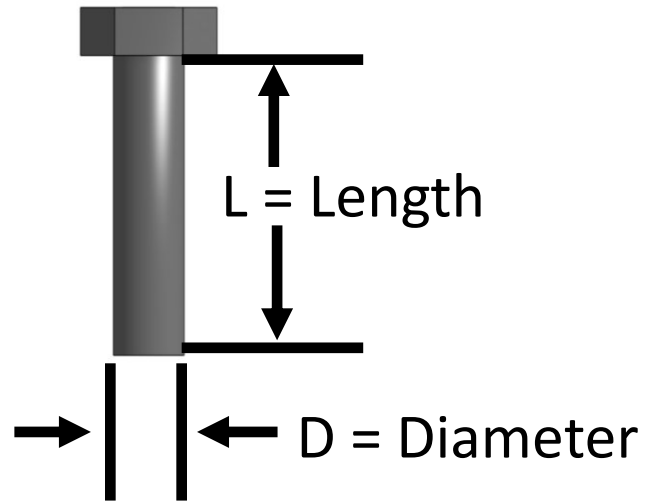
General Purpose



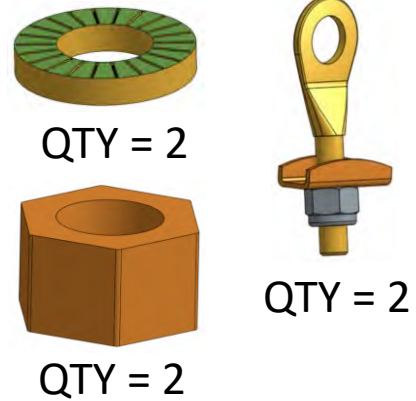
Park BDT-2



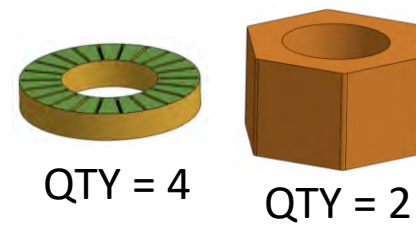
Light Duty



Rear Axle



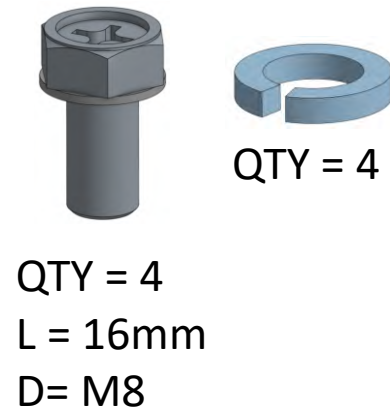
Front Axle



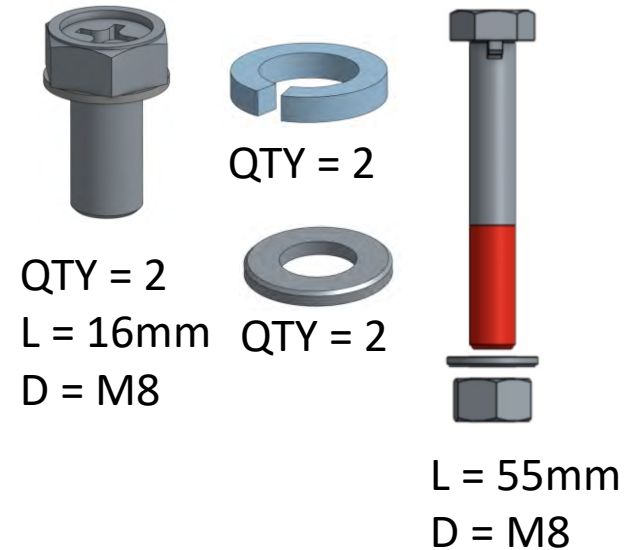
Wheels

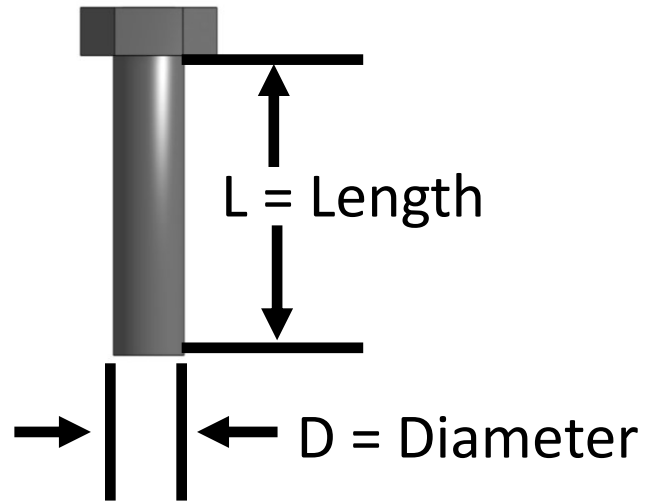


Stand

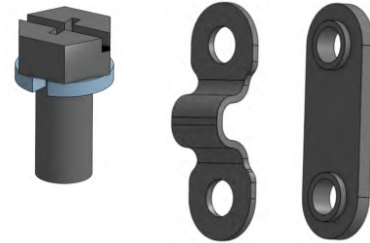


Carrier / Saddle



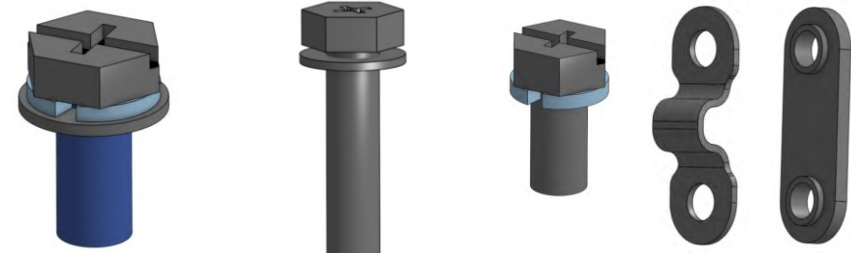


Front Mudguard



QTY = 2
L = 10mm
D = M5

Rear Mudguard

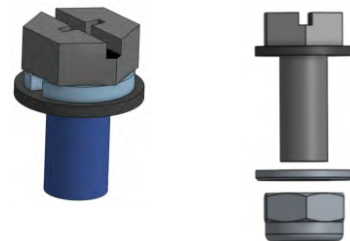


QTY = 2
L = 13mm
D = M6

QTY = 1
L = 25mm
D = M6

QTY = 2
L = 10mm
D = M5

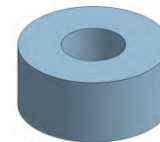
Chainguard



QTY = 1
L = 10mm
D = M5

QTY = 1
L = 12mm
D = M5

Crank



QTY = 2



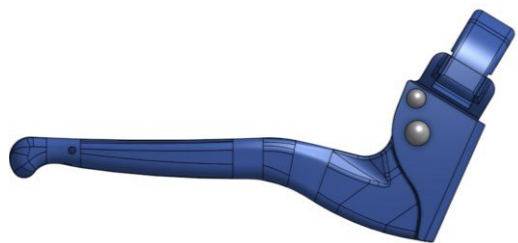
QTY = 2
L = 25mm
D = M8

Handle Bar

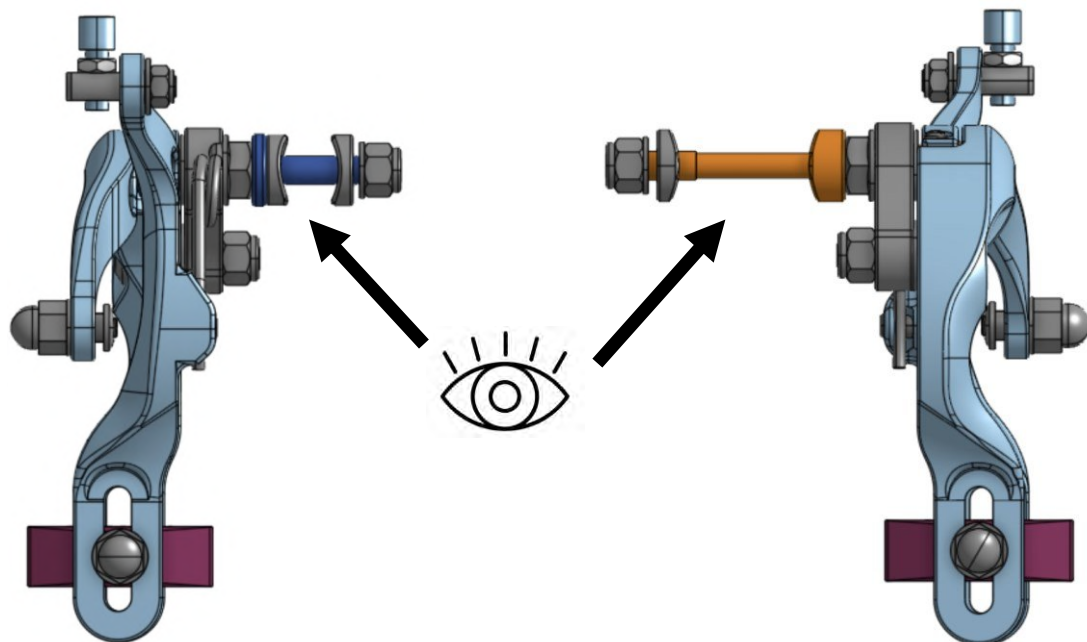
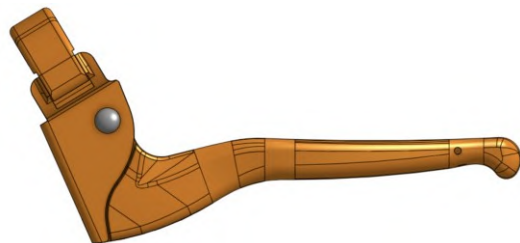


QTY = 2

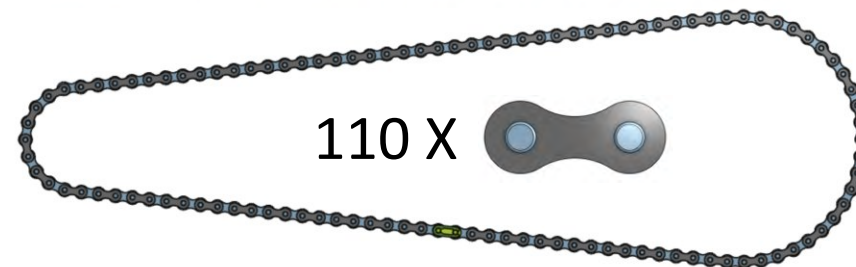
Rear Brake



Front Brake



Chains

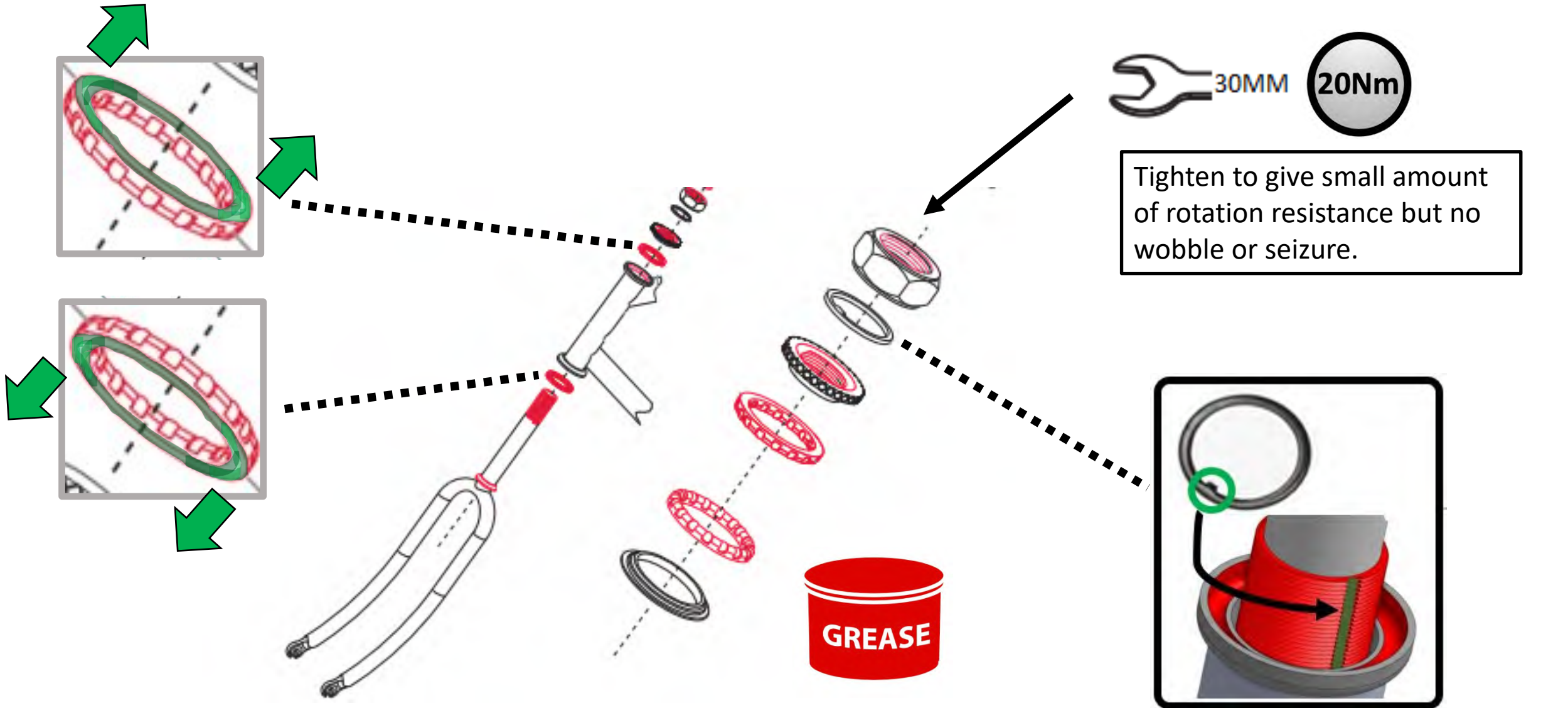


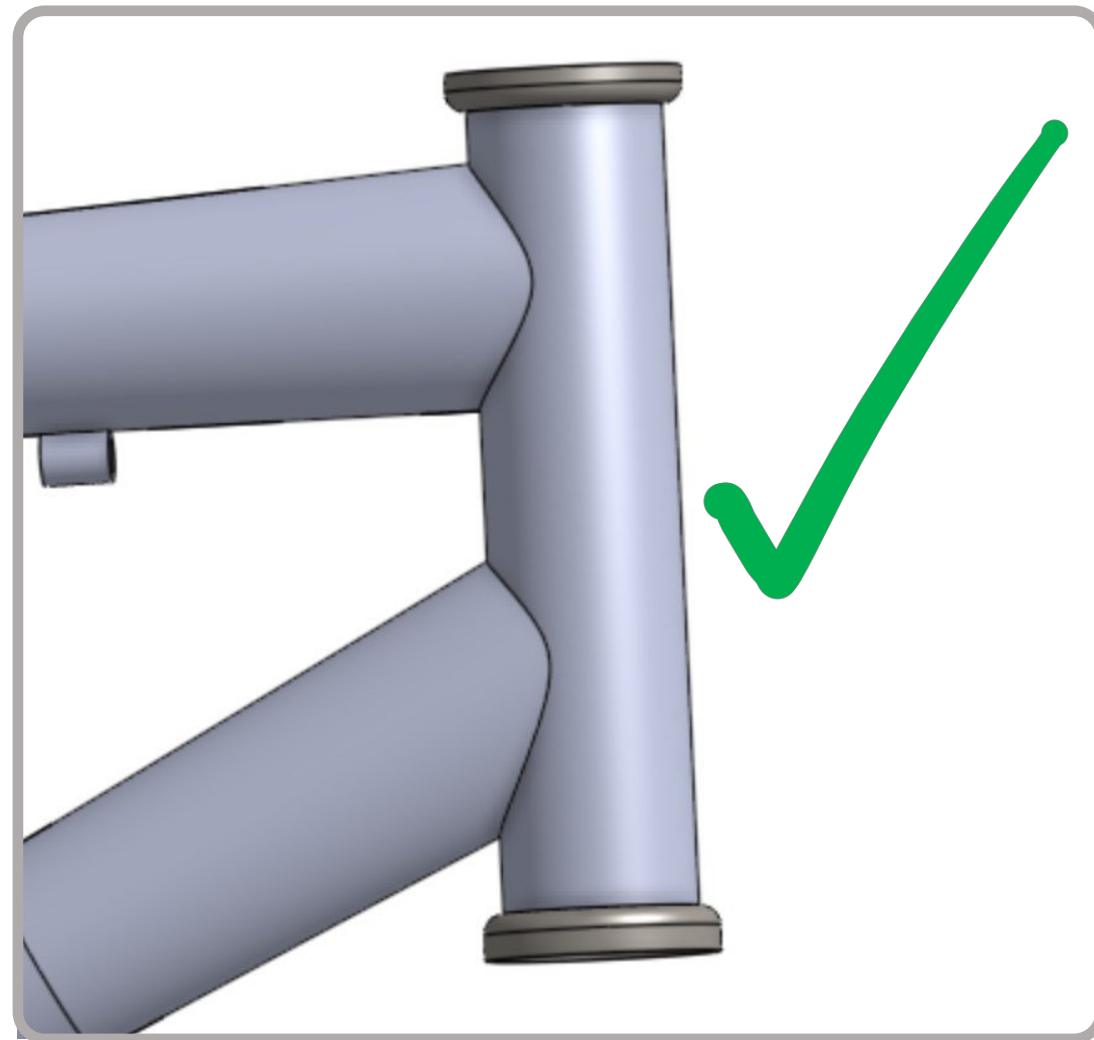
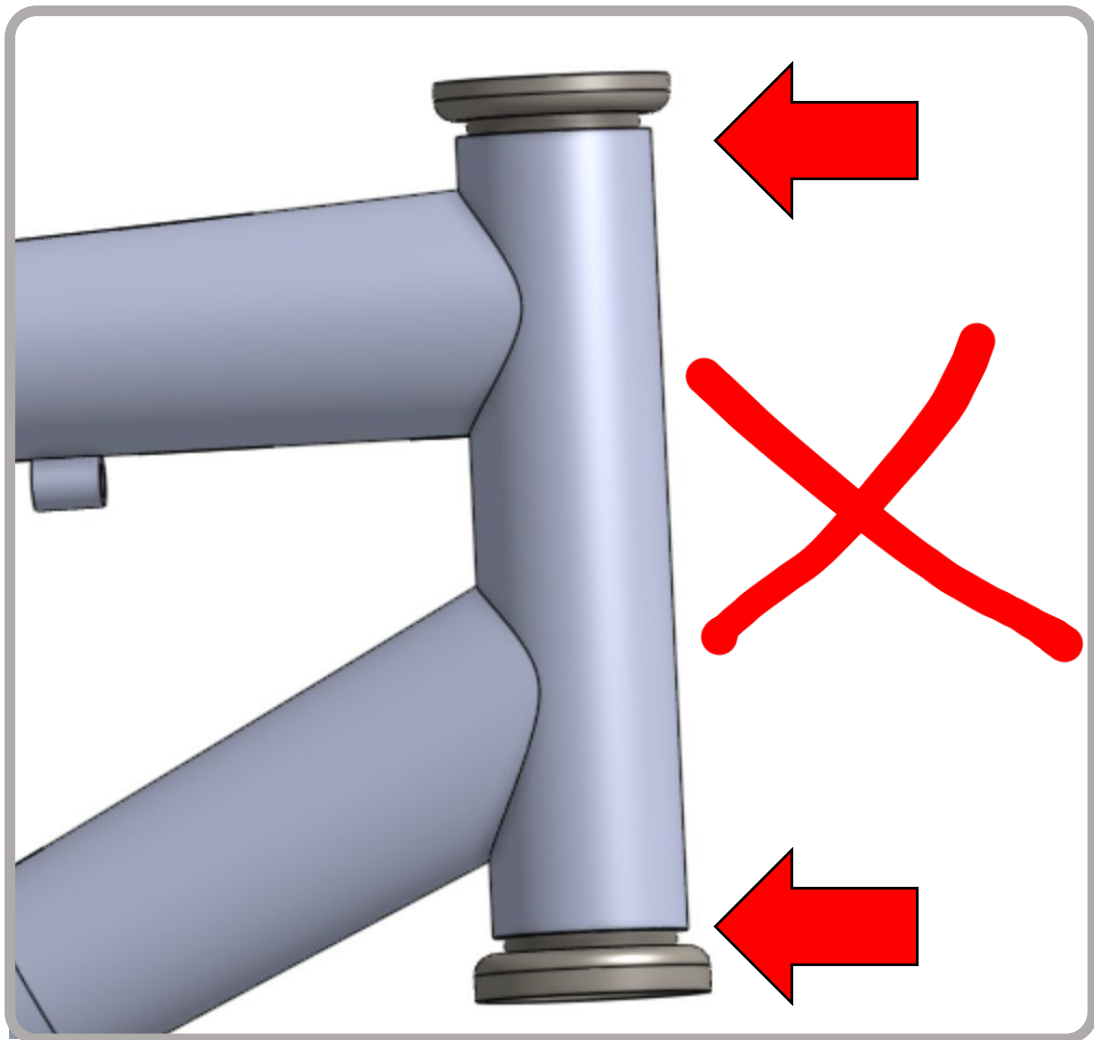
Rear Mudguard Stay L= 333mm D = ø6.5

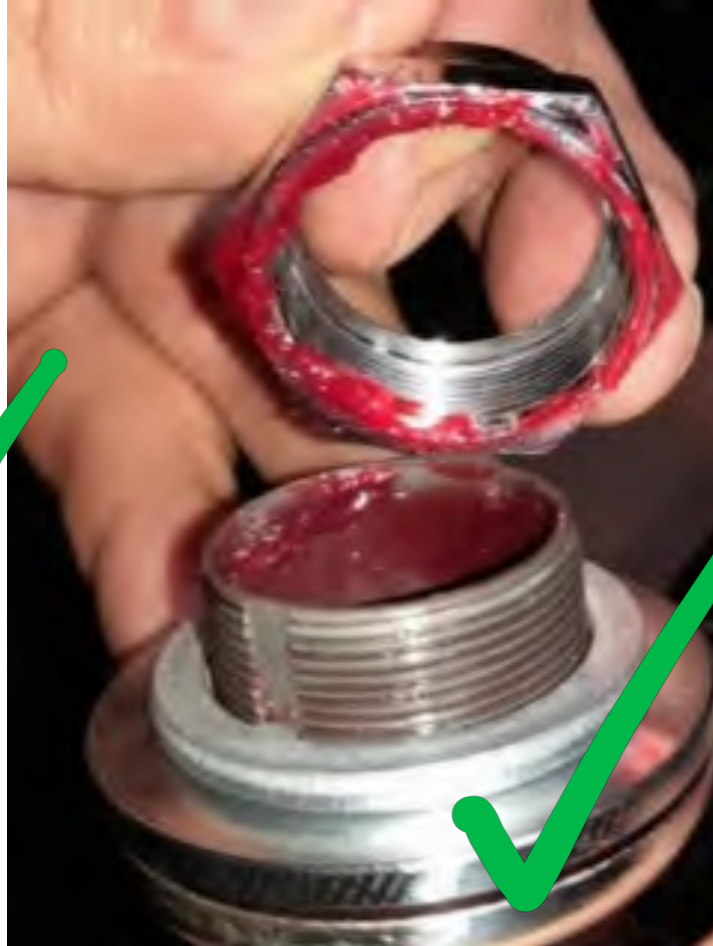


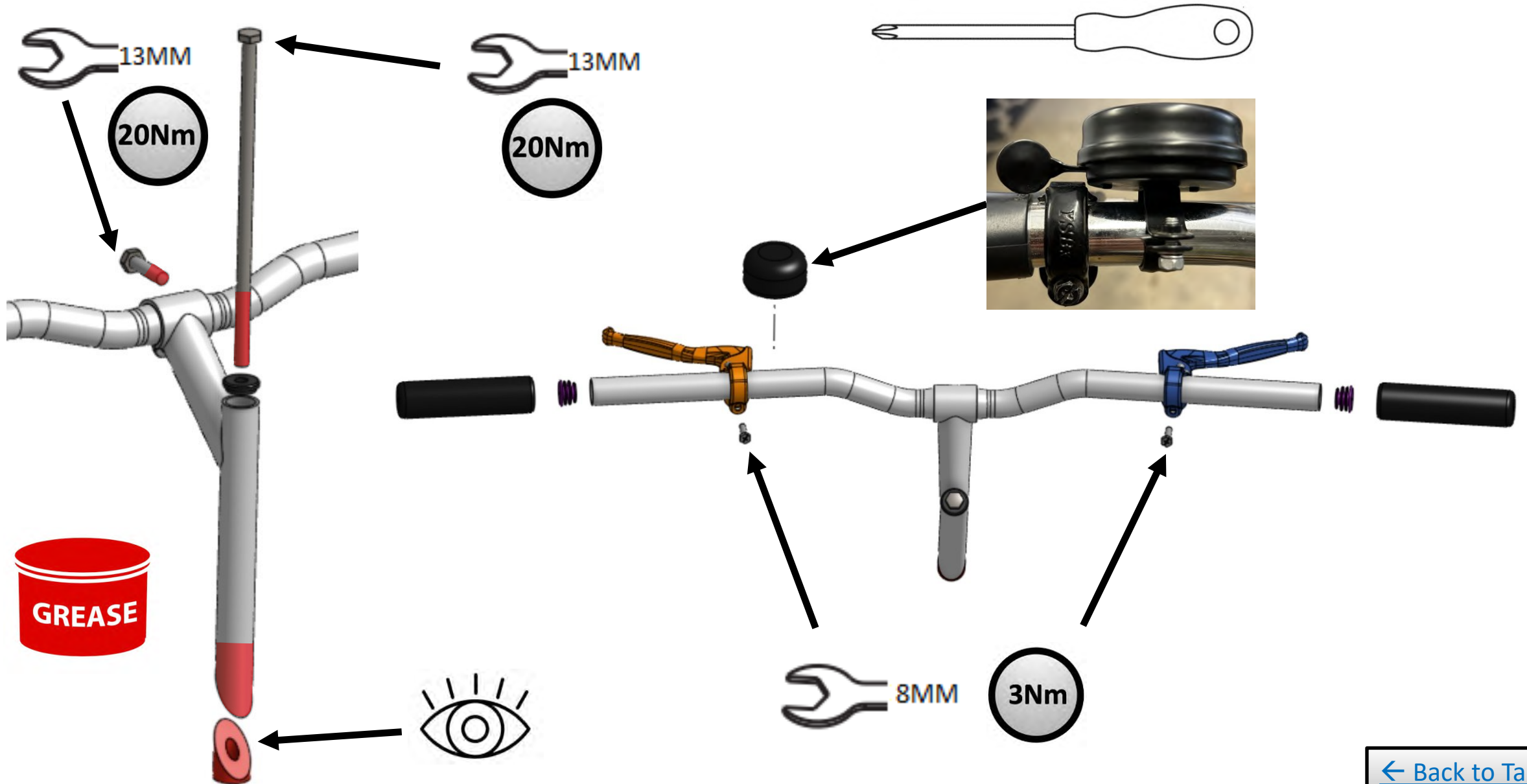
Front Mudguard Stay L= 360mm D = ø10.5



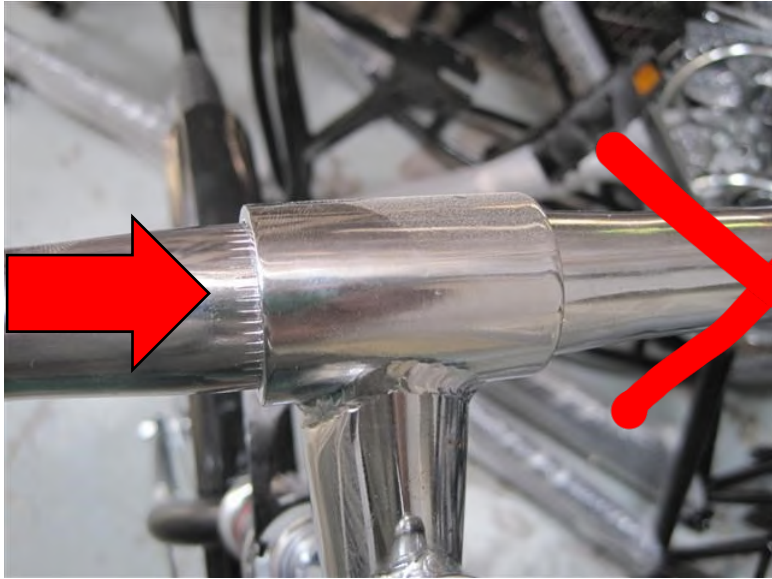


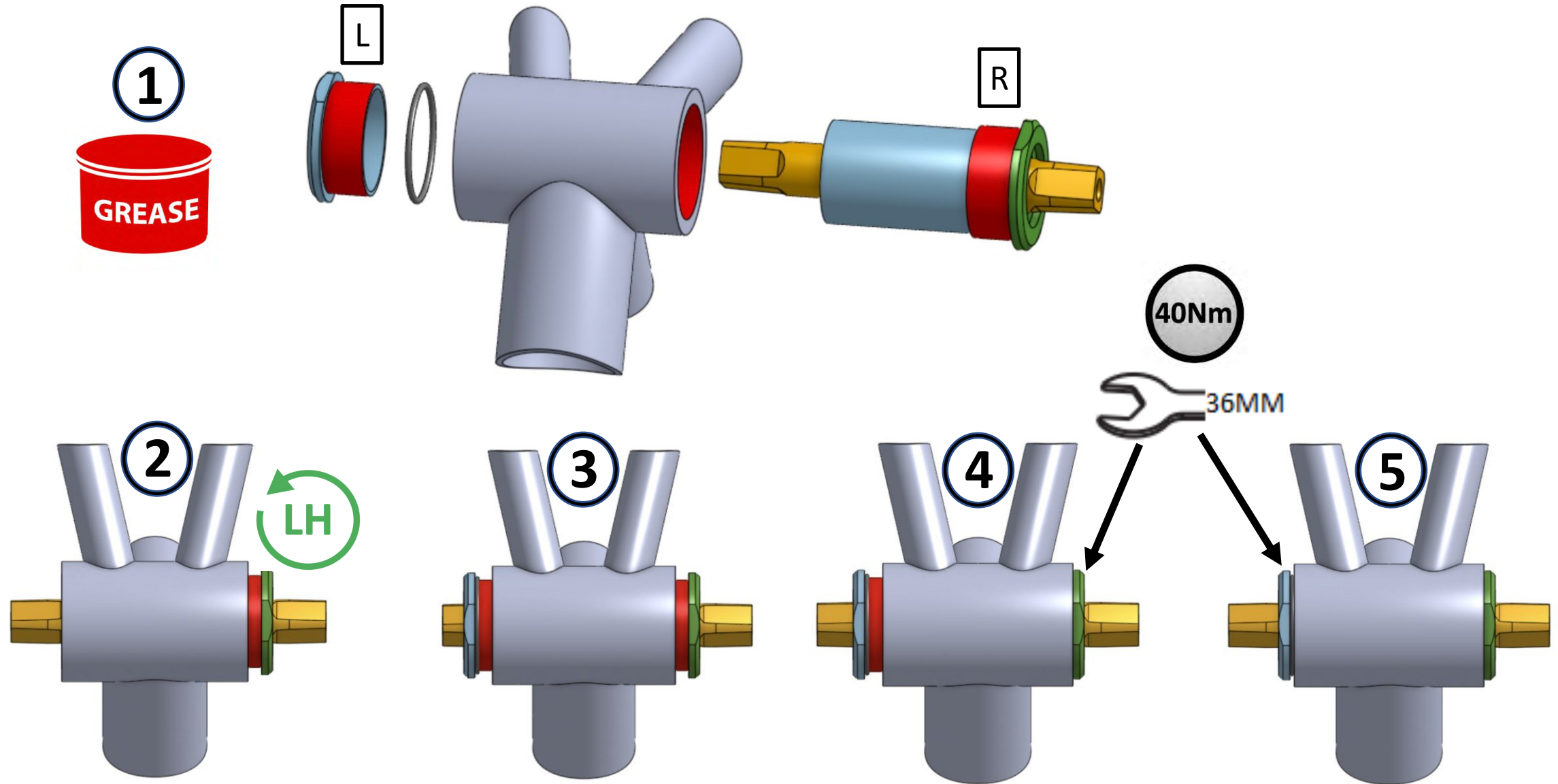


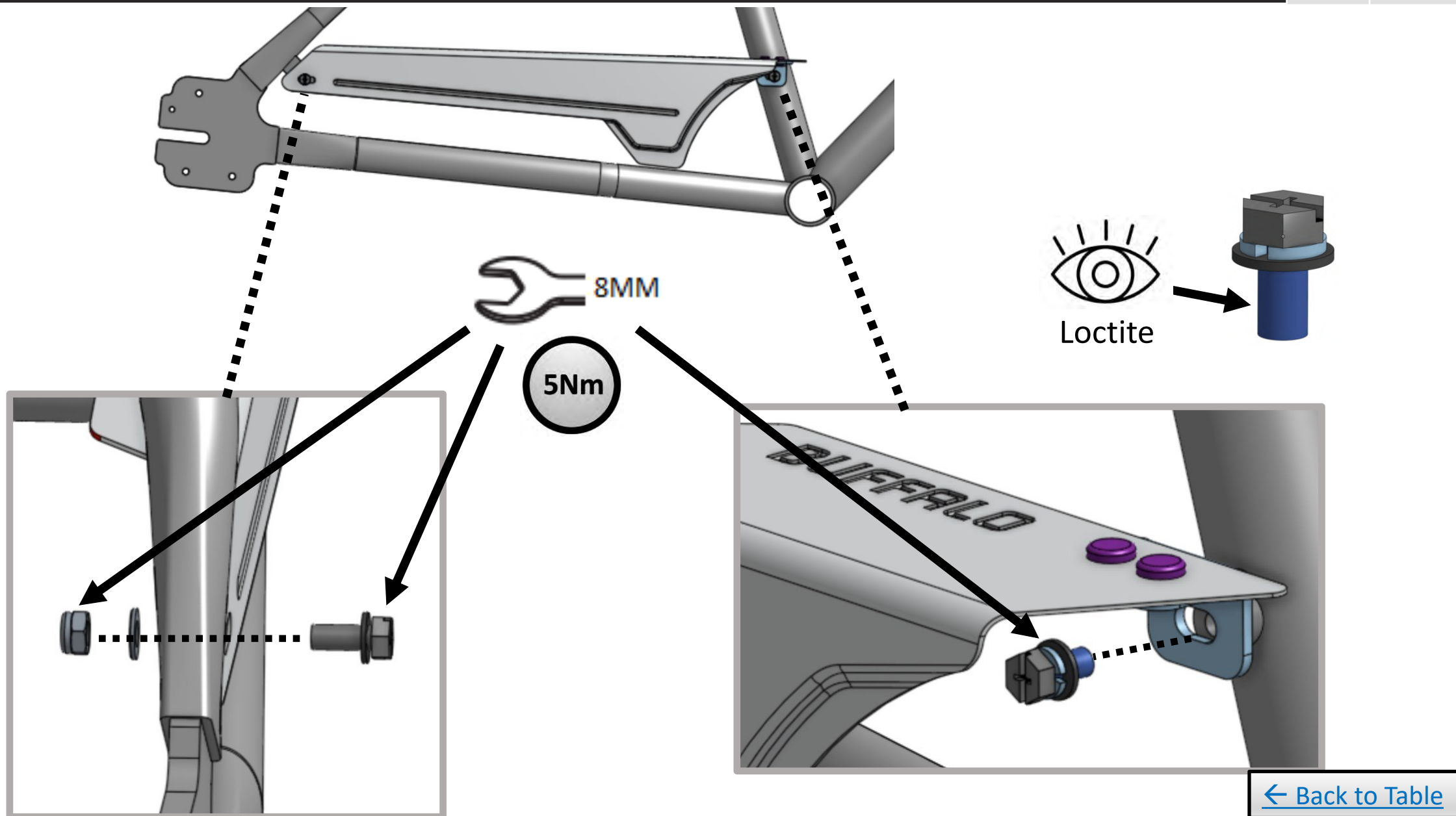


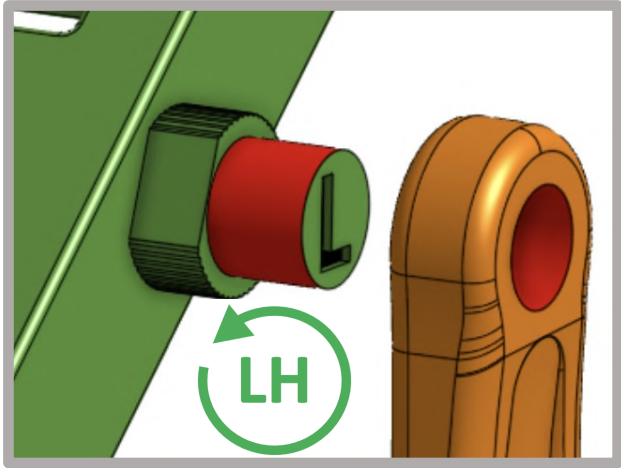


HANDLEBAR AND STEM - CHECK

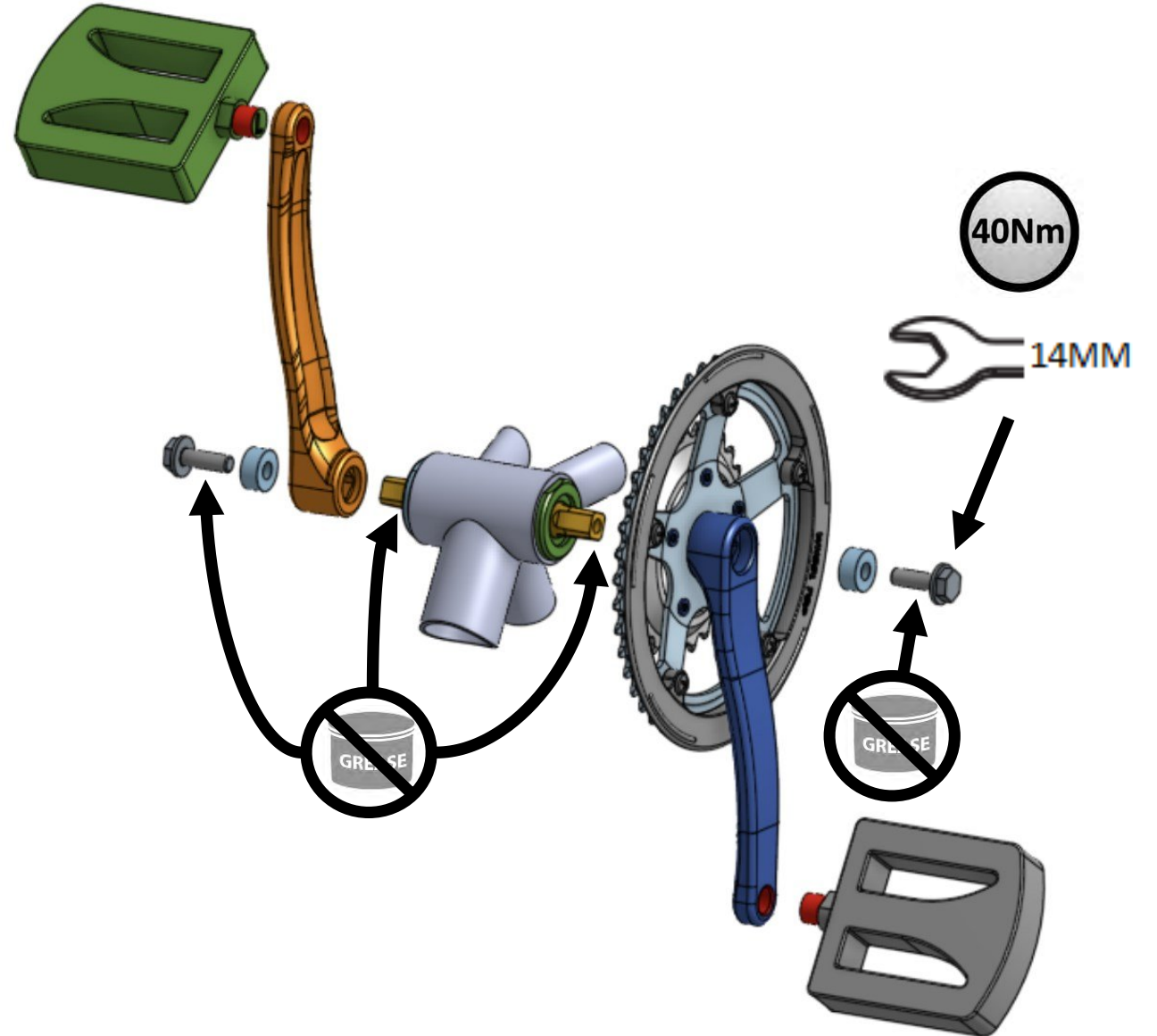
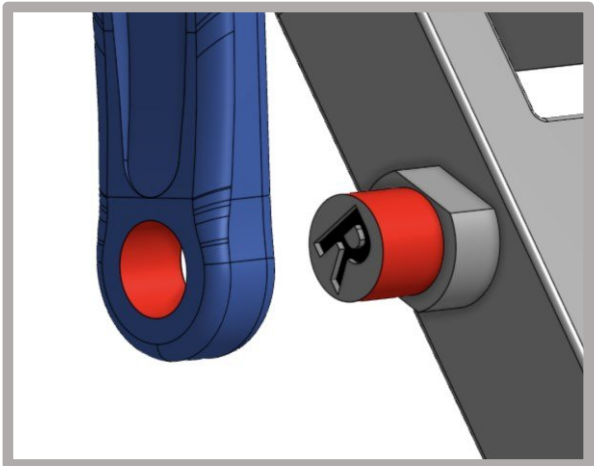


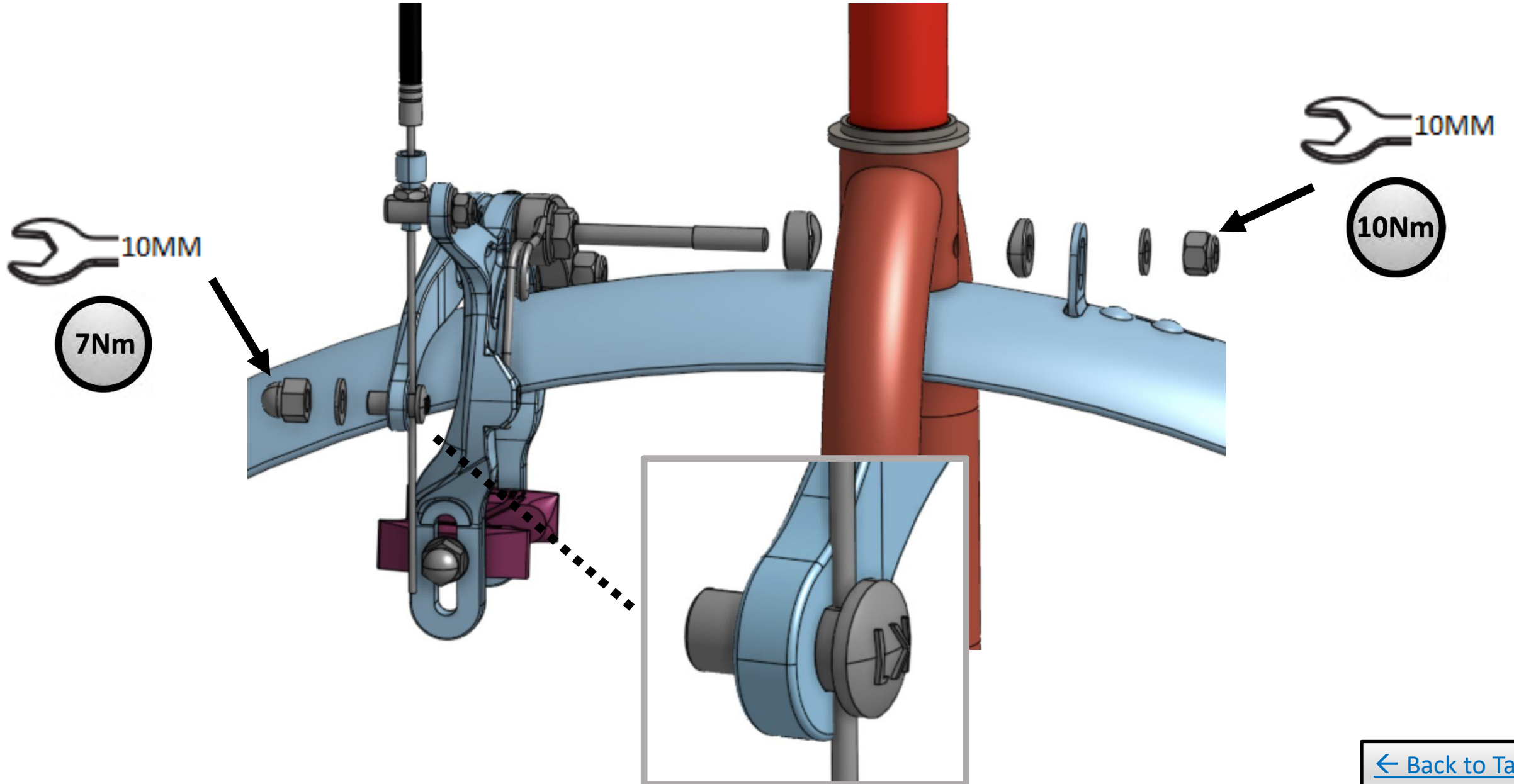


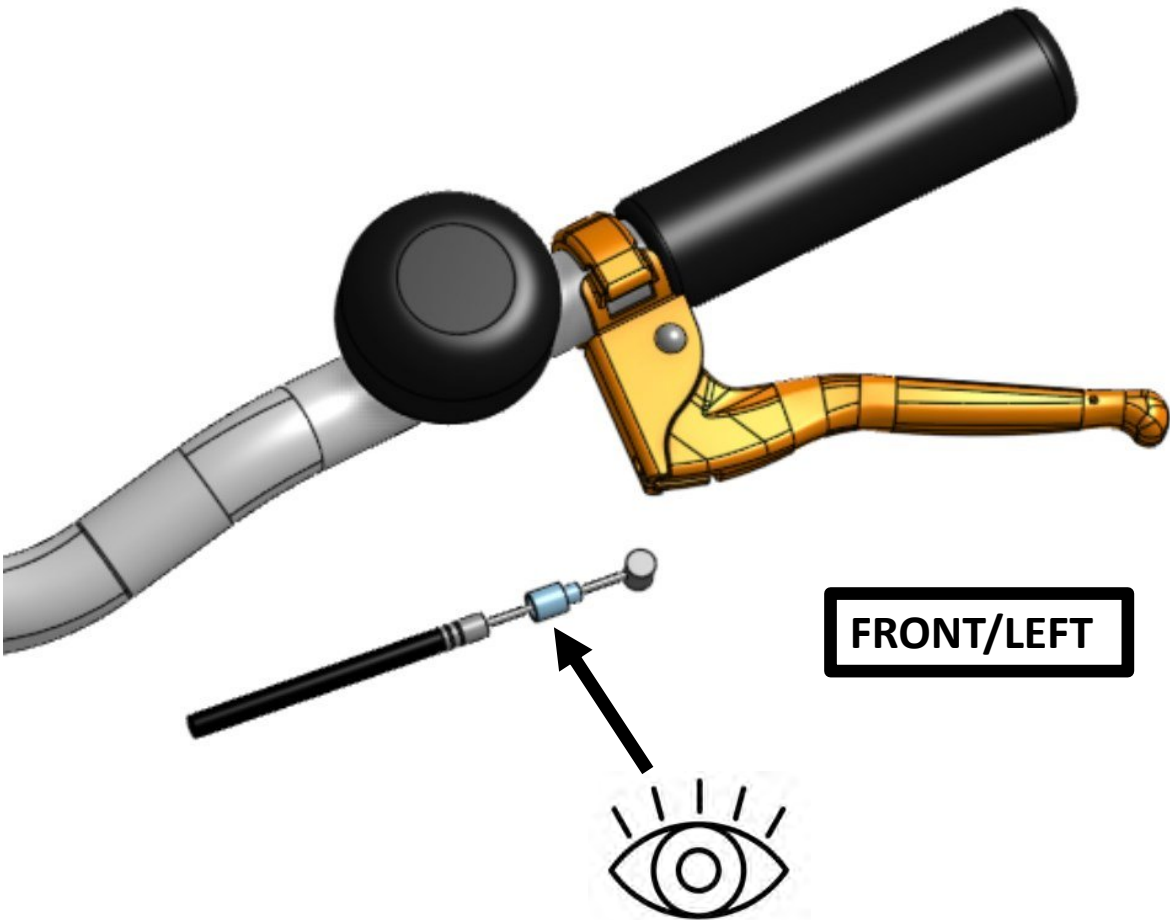


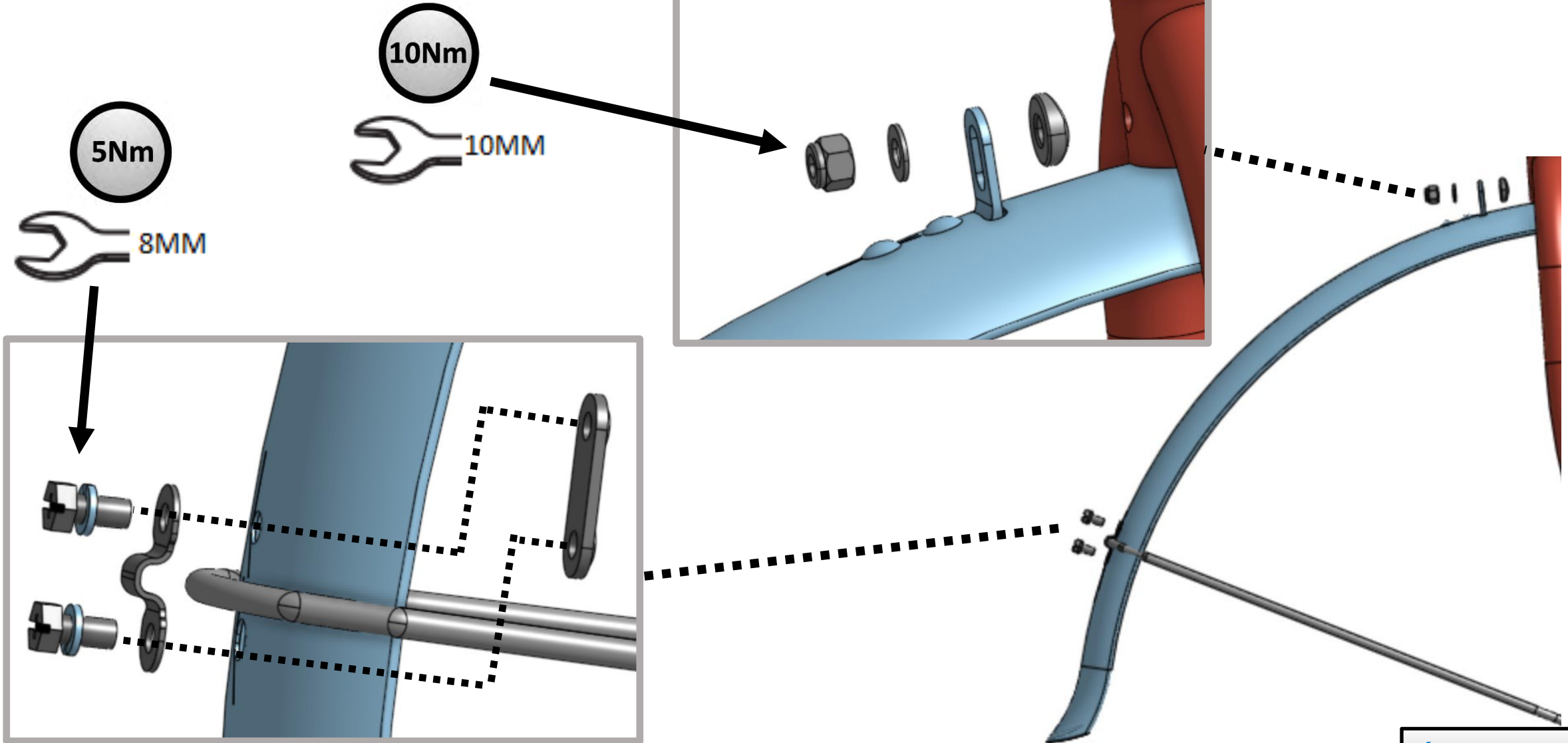


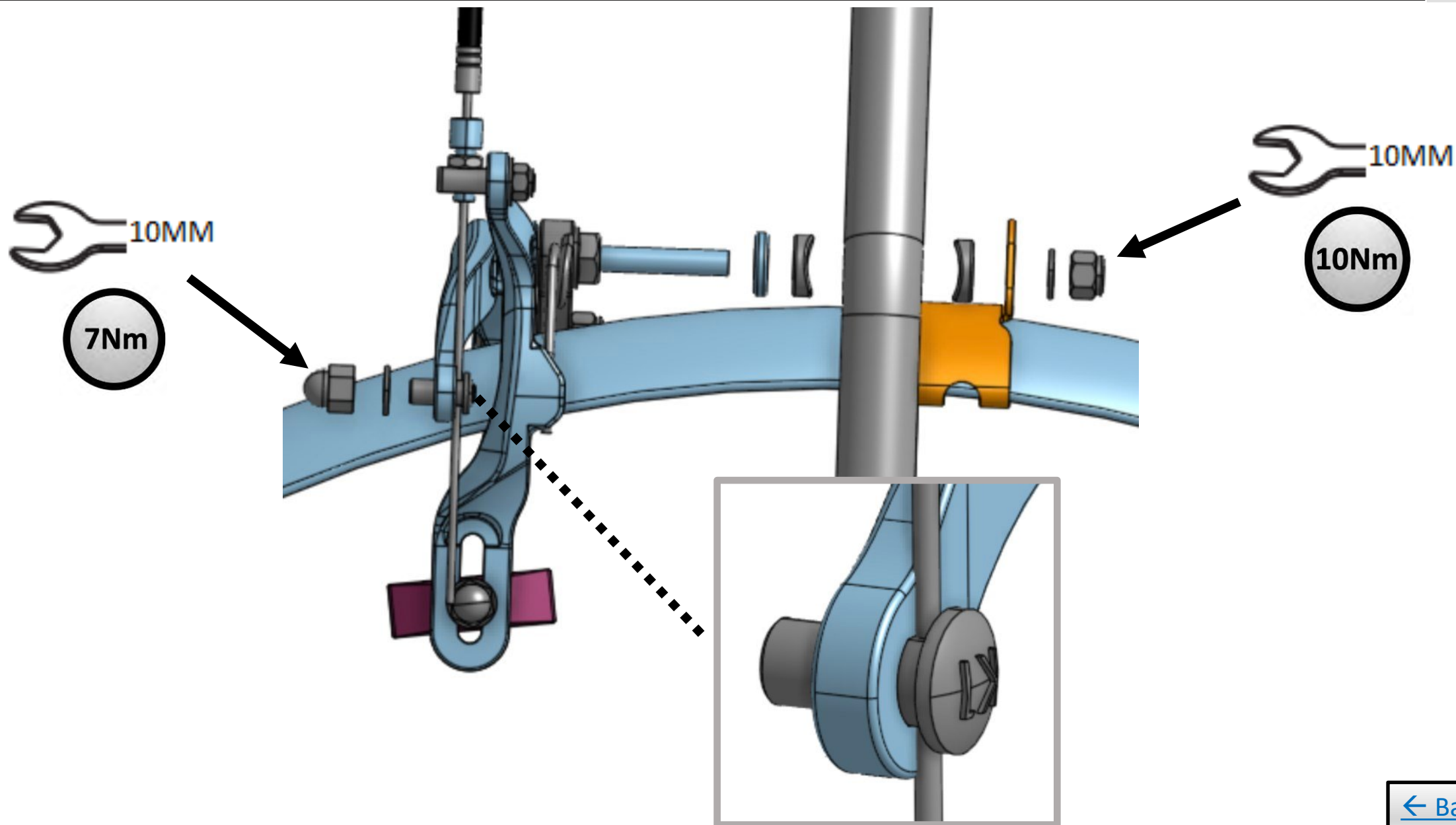
14Nm

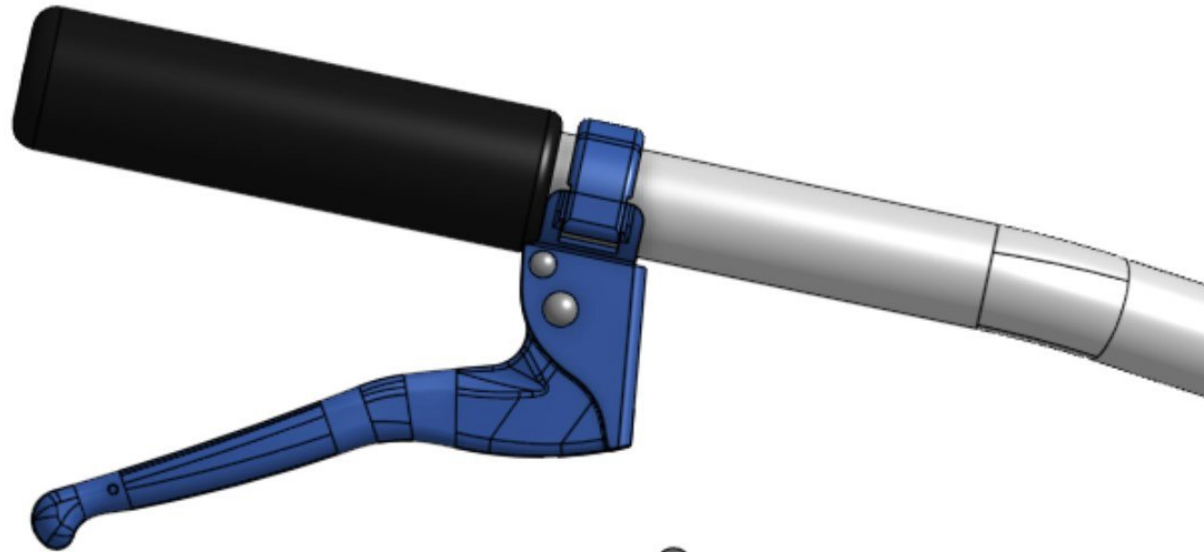








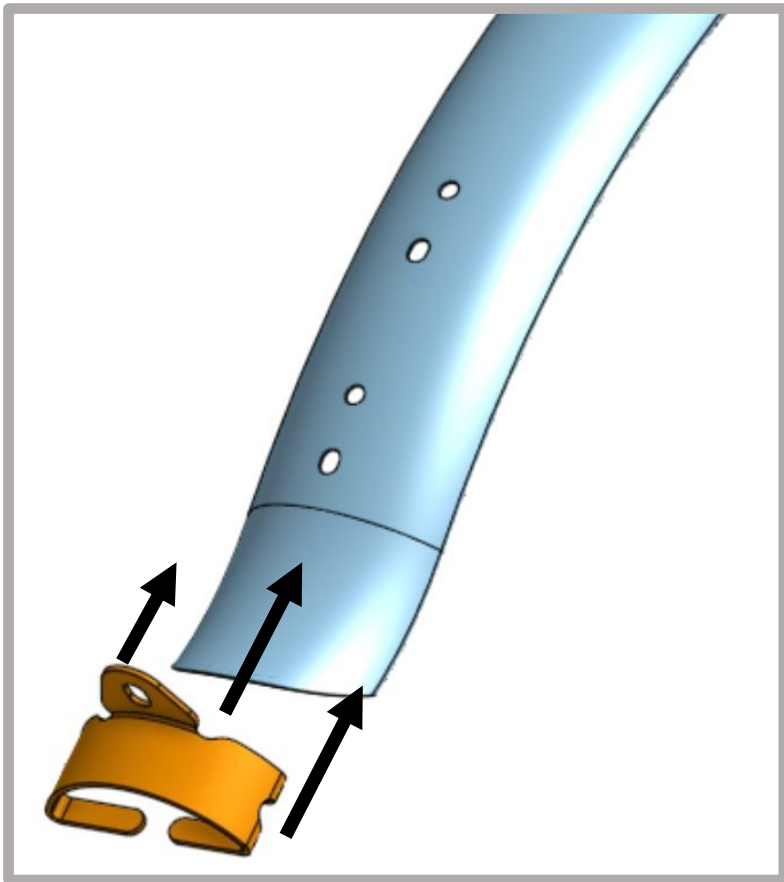




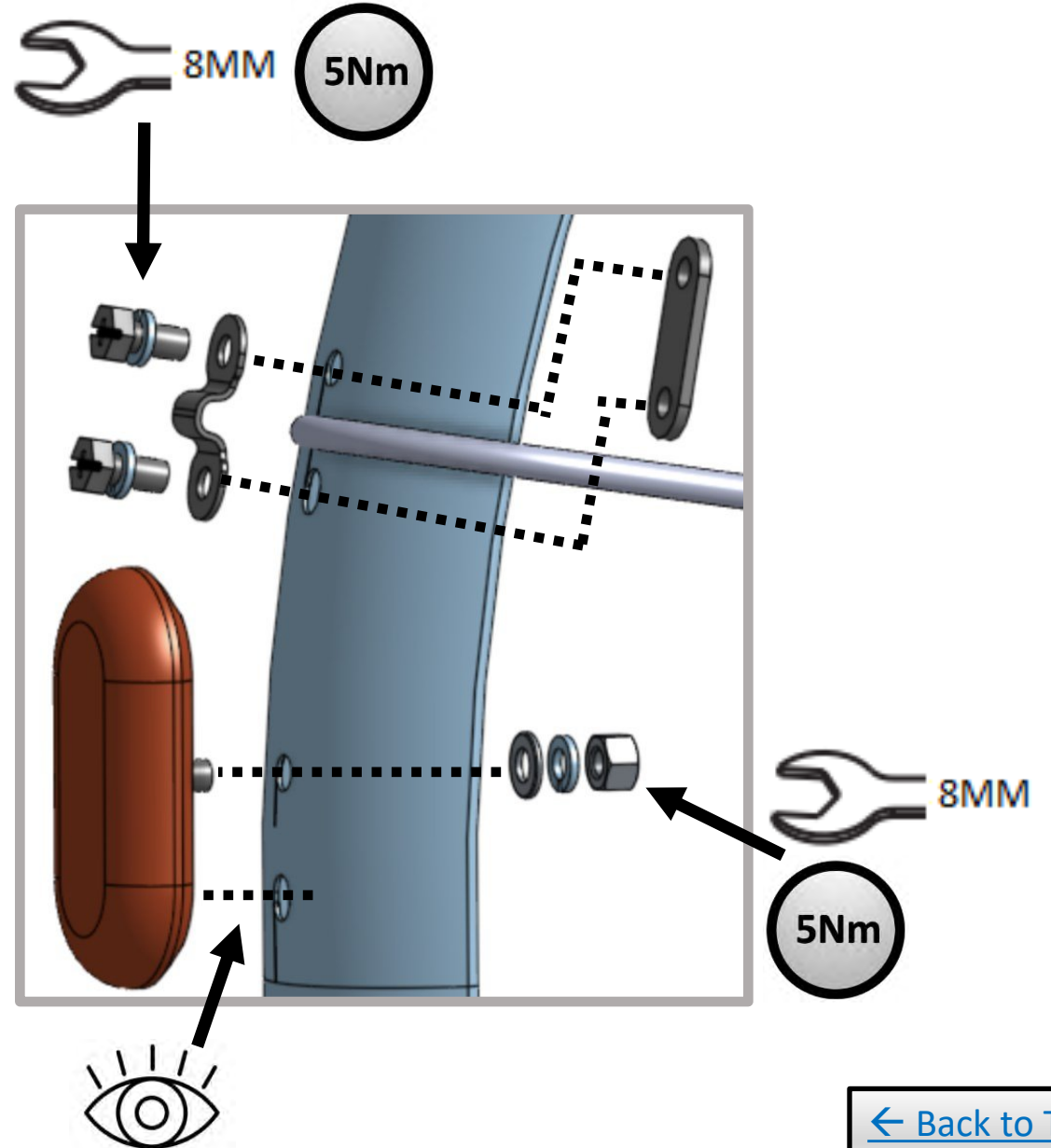
REAR/RIGHT



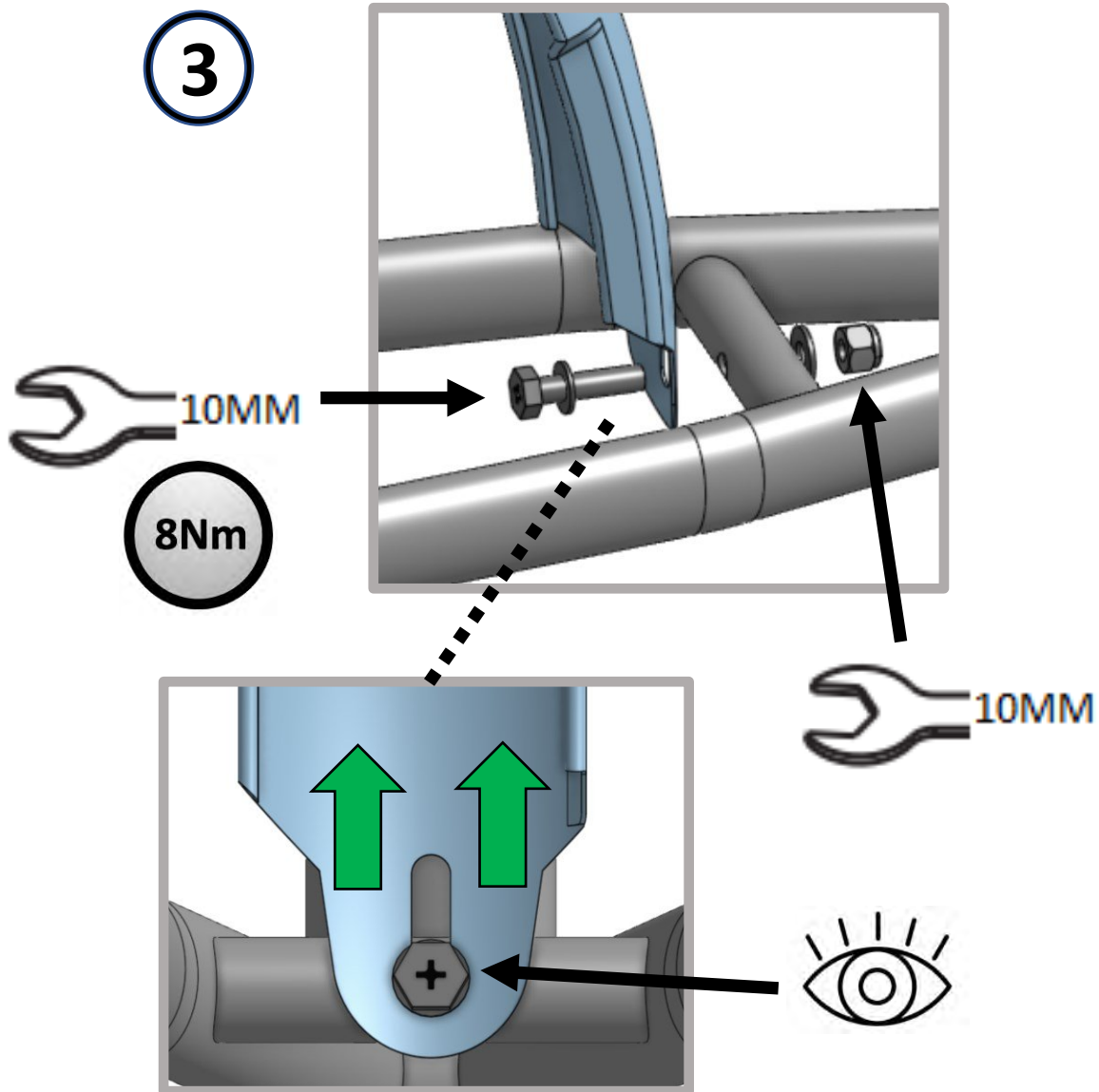
1



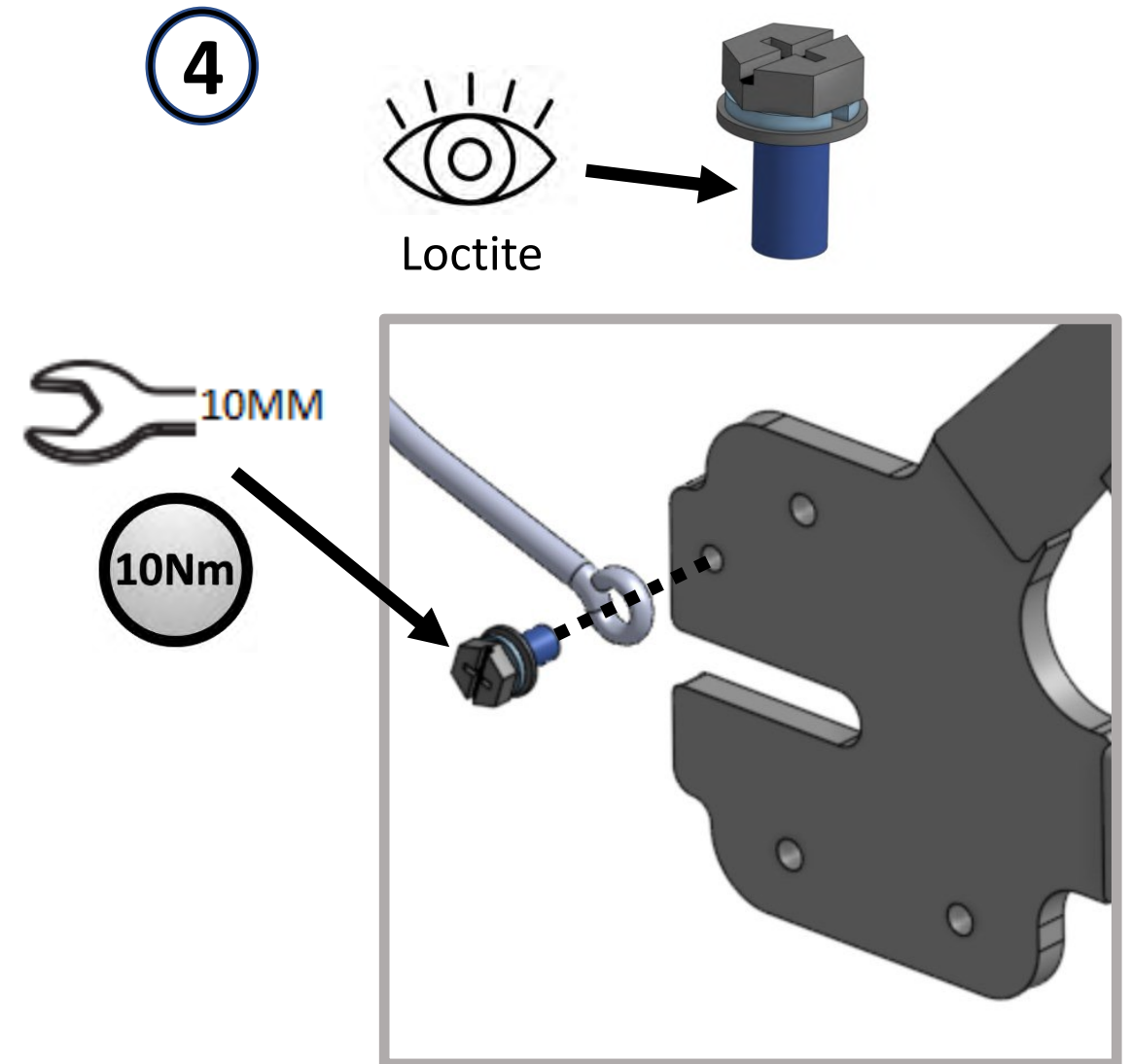
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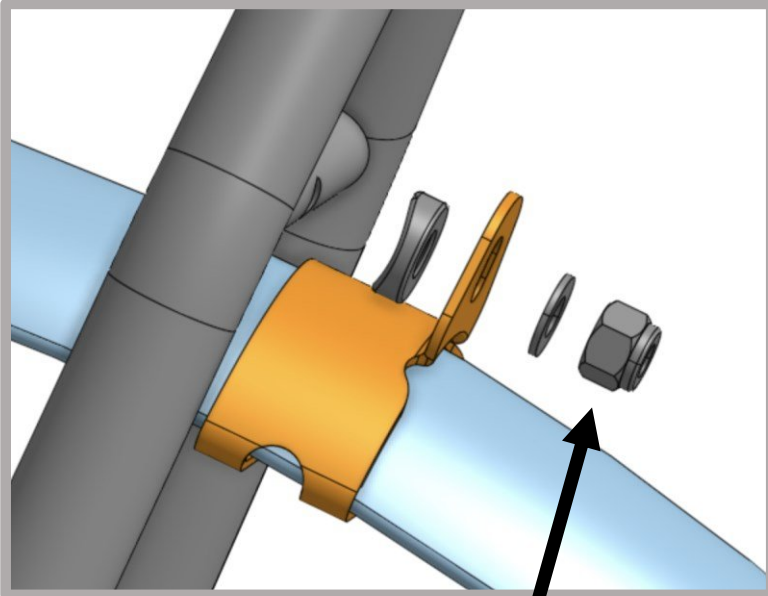
3



4



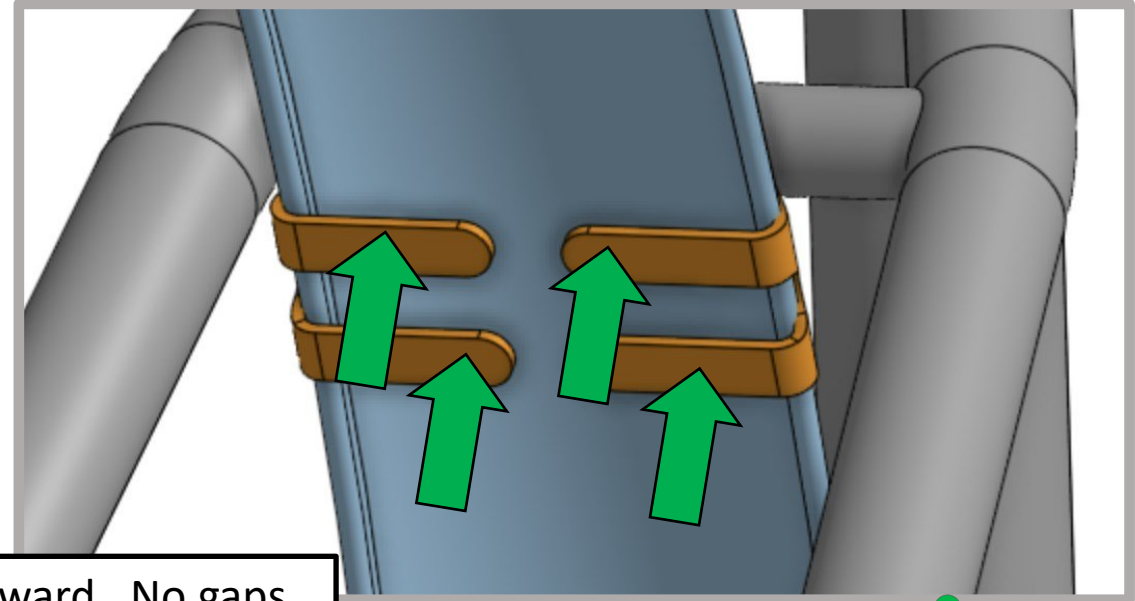
5



10MM

10Nm

6



Bend bracket inward. No gaps.
Mudguard does not vibrate
while riding.



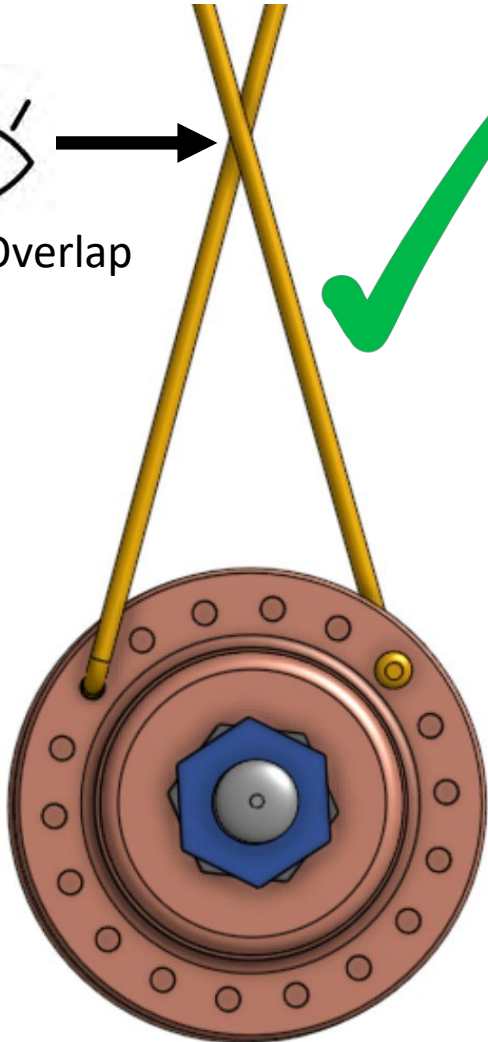
1

3 Cross Pattern

Hub Hole Spacing = 6

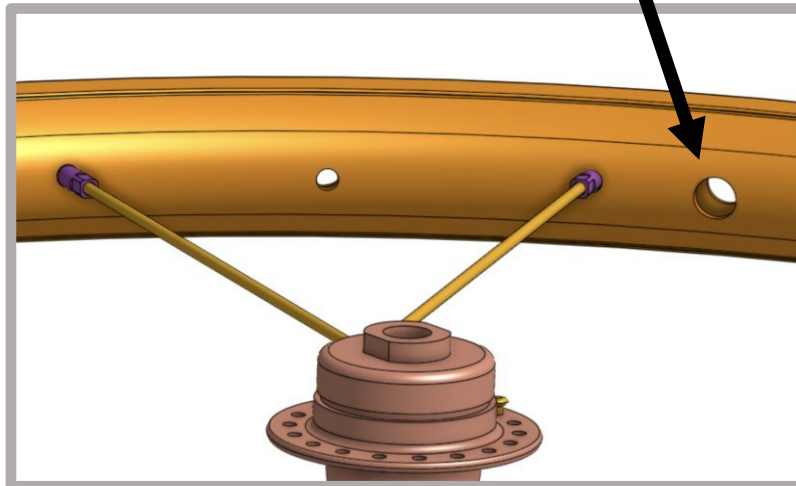
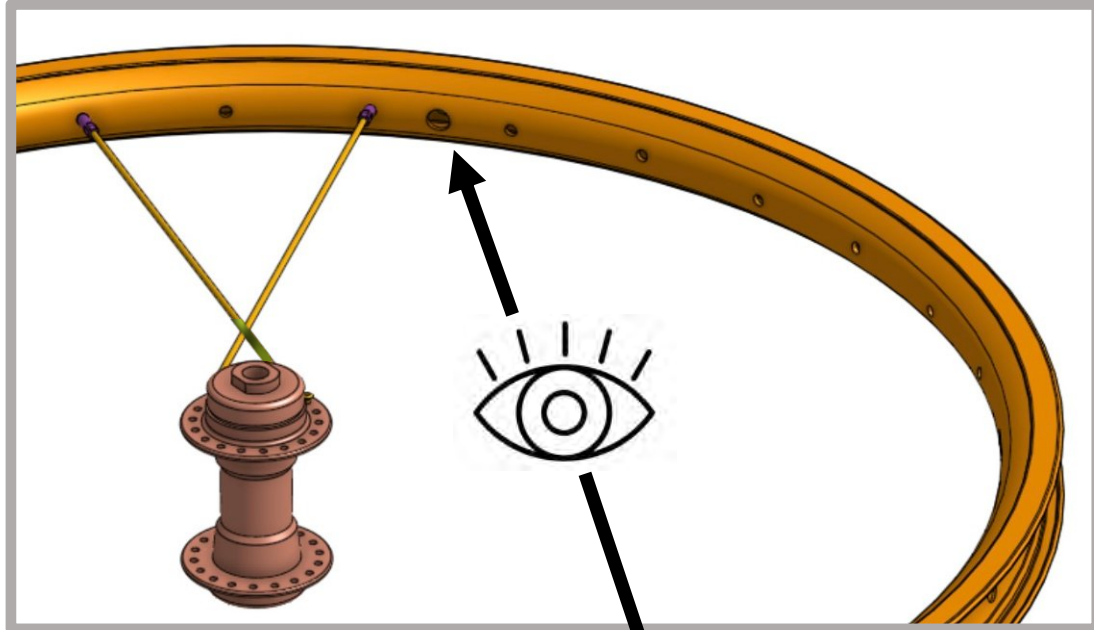


Spoke Overlap



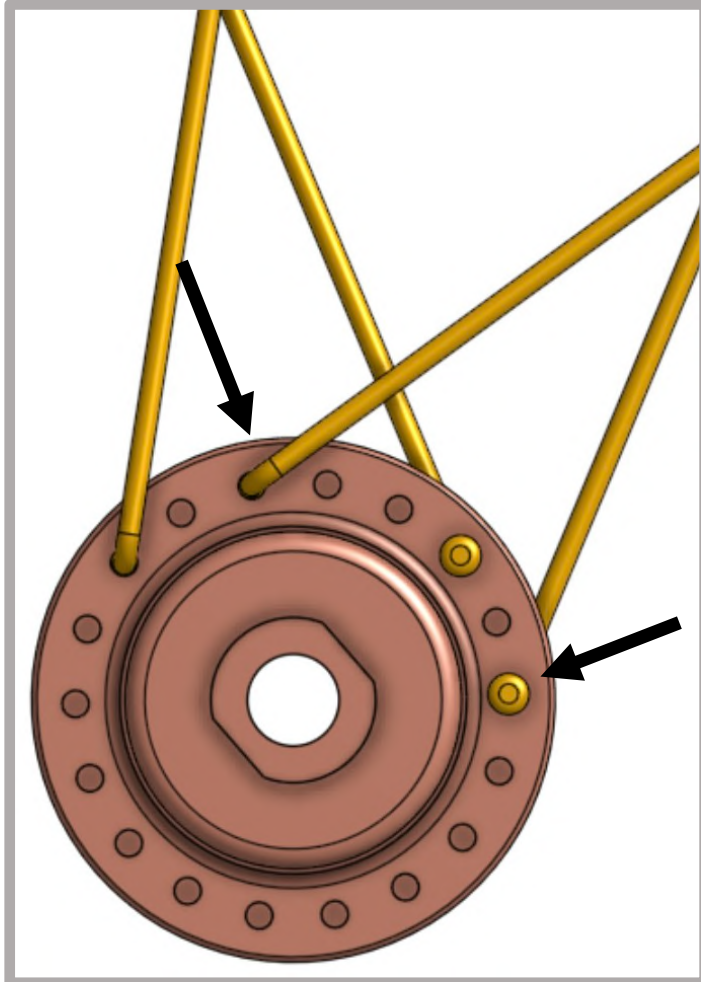
2

Start at valve hole.



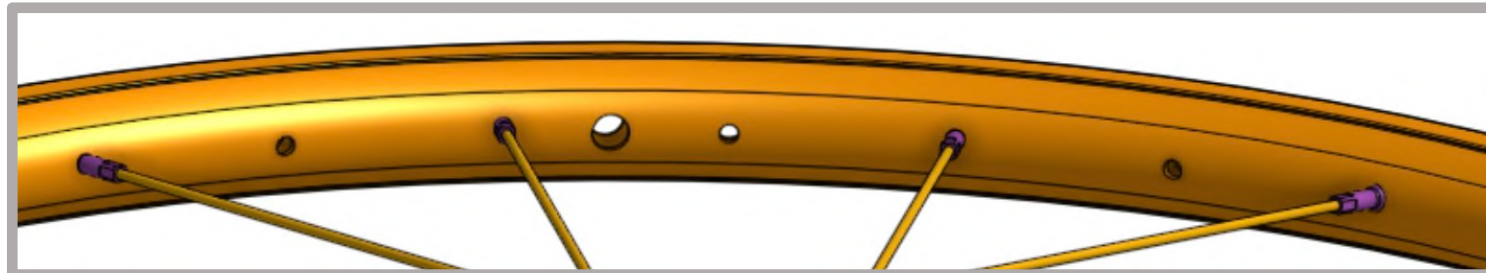
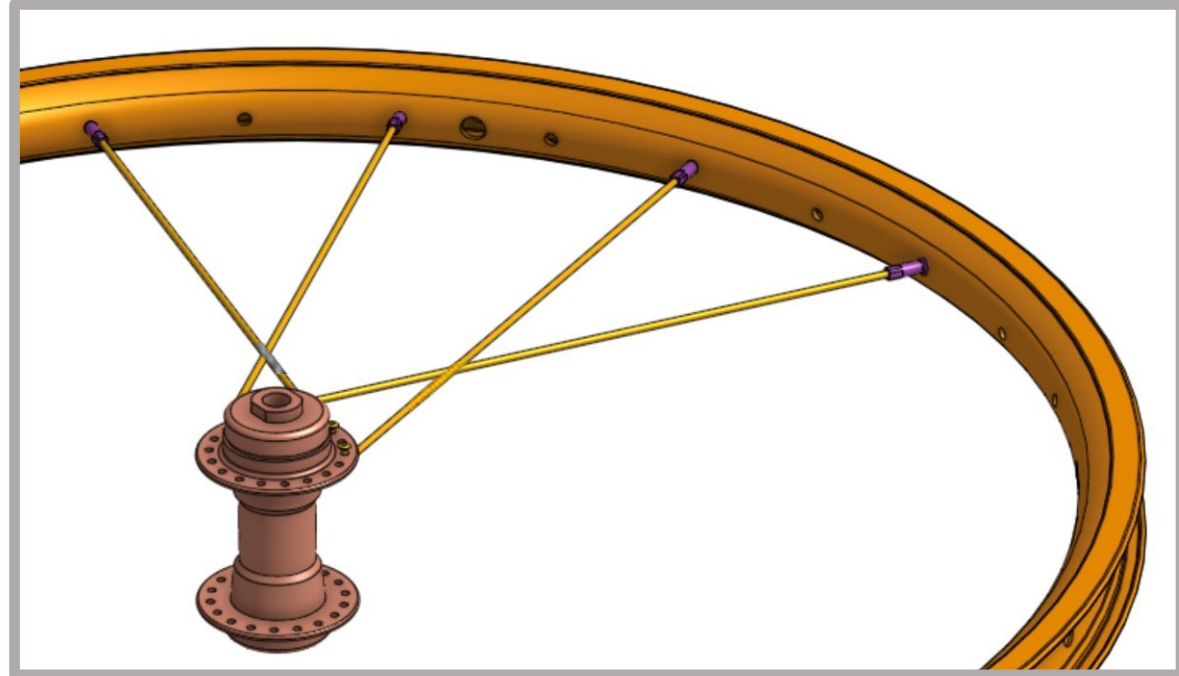
3

Advance skipping 1 hole.



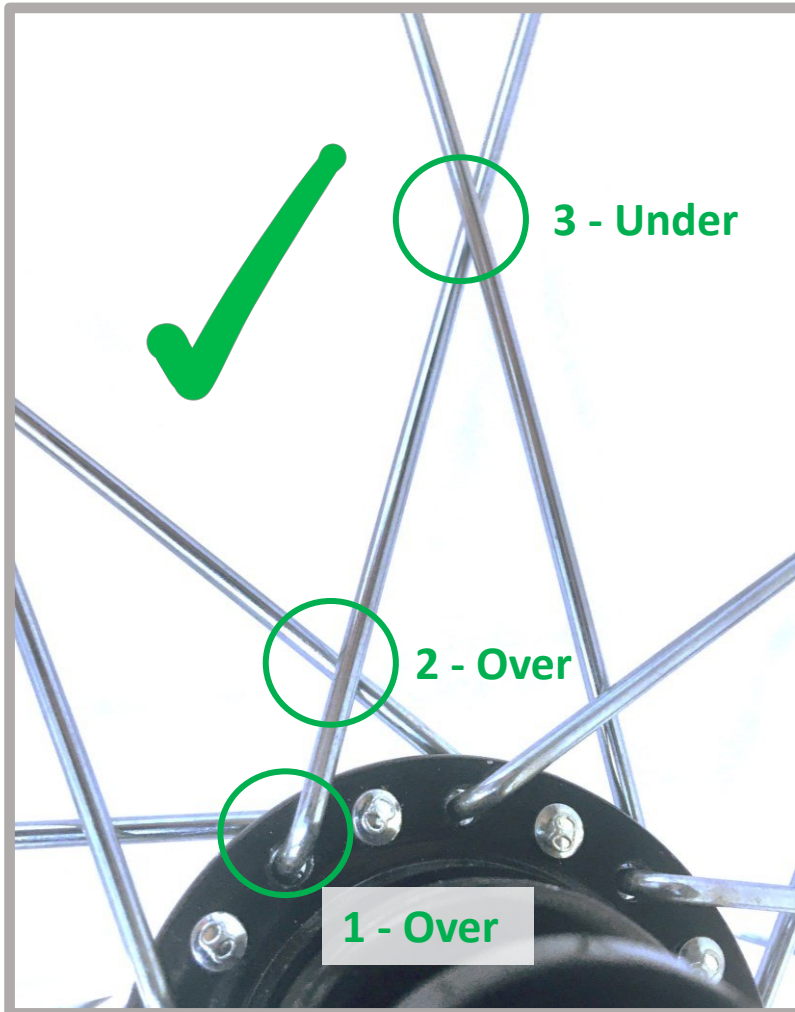
4

Install remaining spokes in pairs this side of the hub.



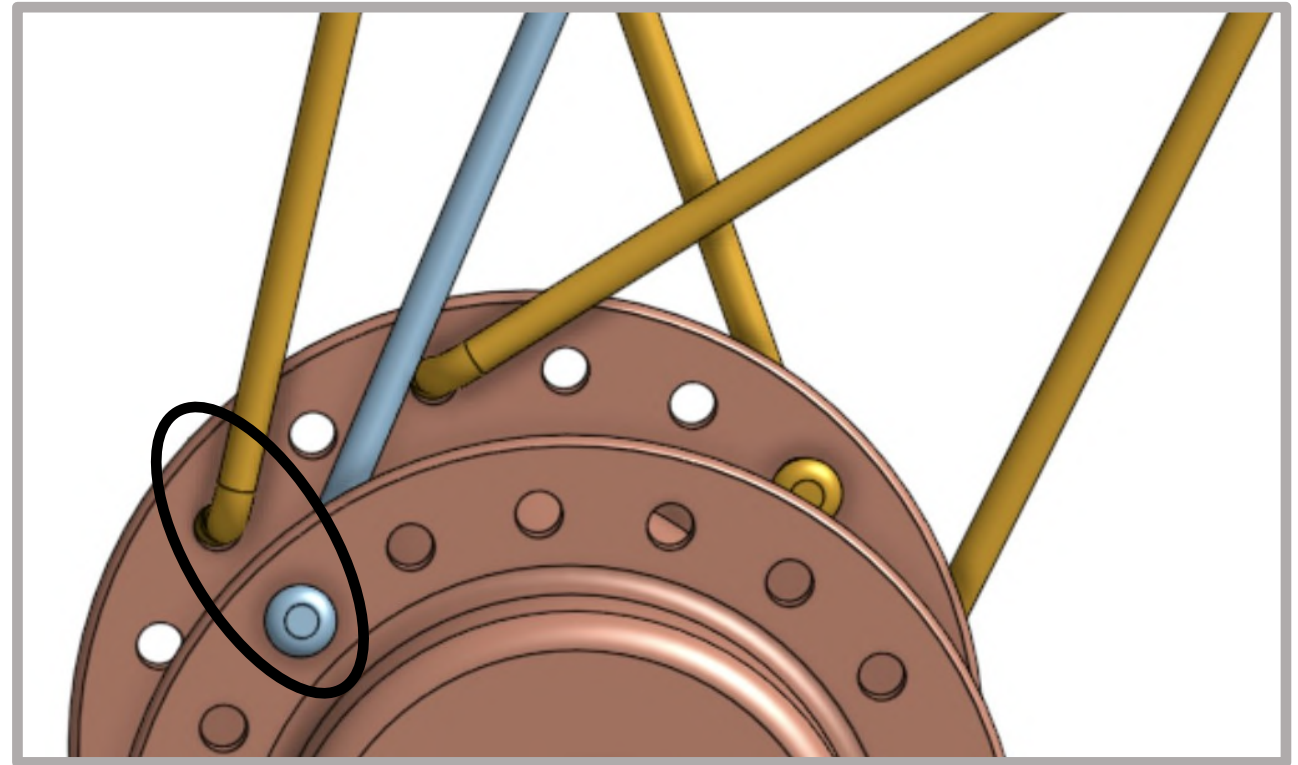
5

Lace spoke under at the 3rd cross.



6

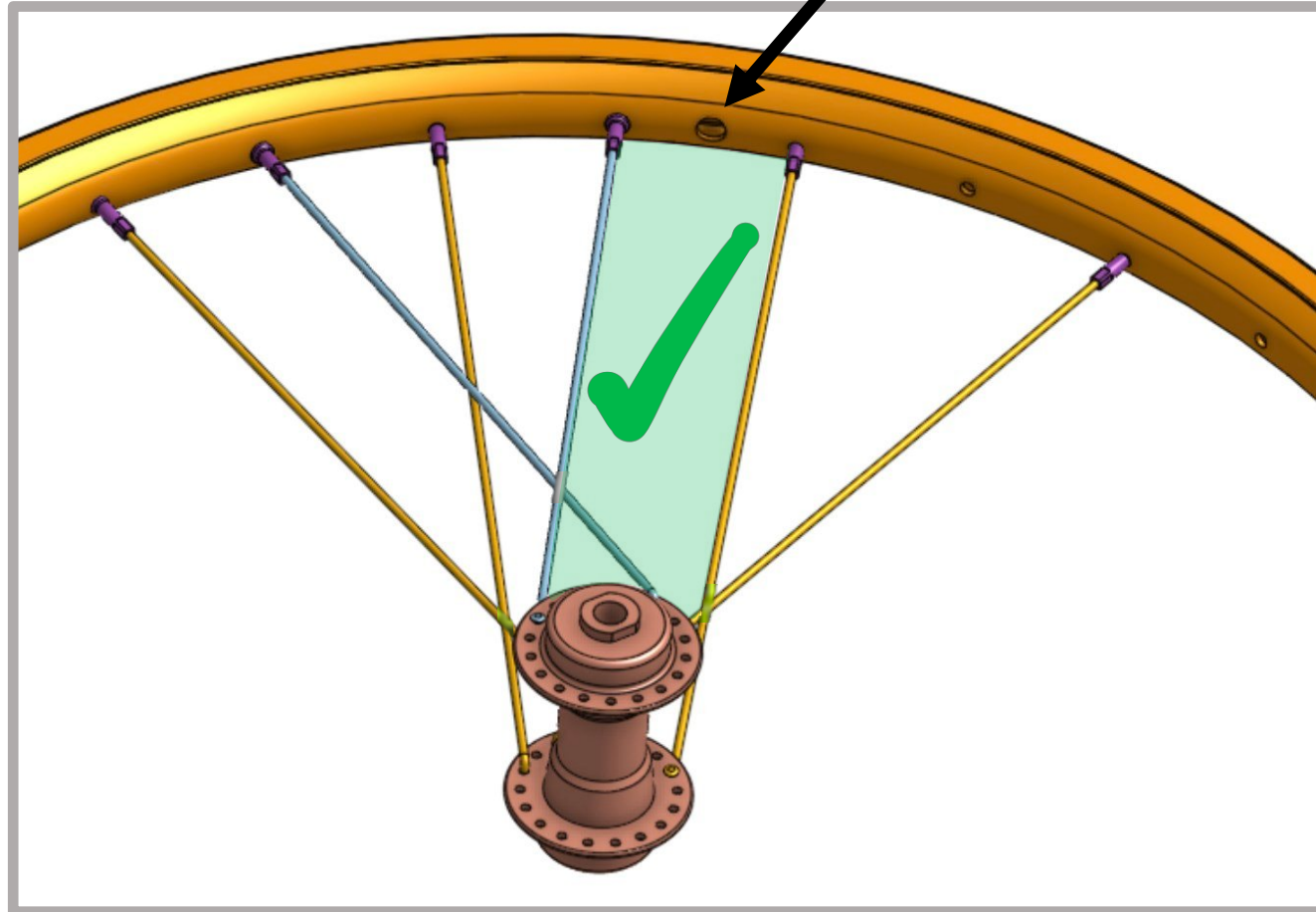
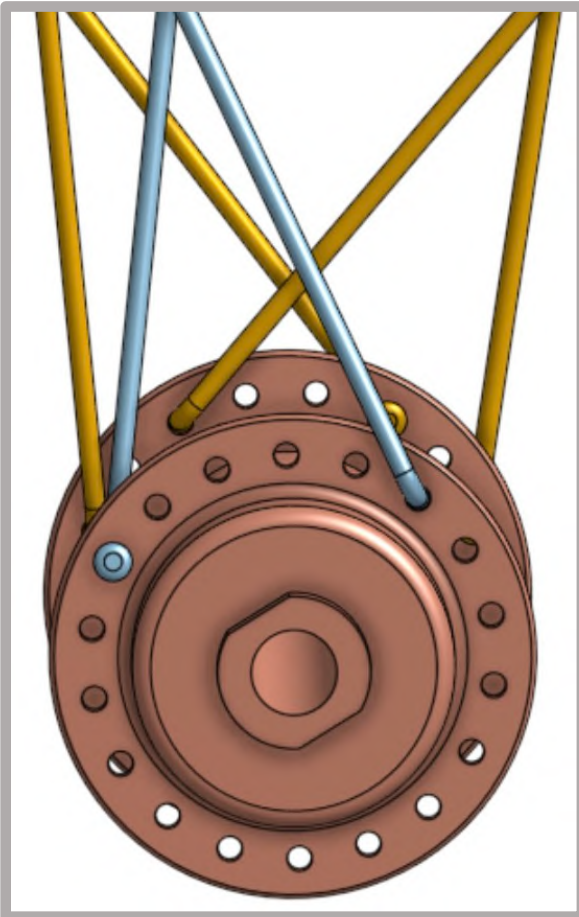
After lacing one side, start at the hole offset from adjacent side spoke.



7

Note gap for valve.

Install remaining spokes in pairs repeating steps 3-5.



Aluminum Rim Wheel	Drive Side (kgf)		Non-Drive Side (kgf)	
Rear - Threaded	29-30*	117-133	26-28*	82-104
Front	25-27*	73-92	29-31*	117-151

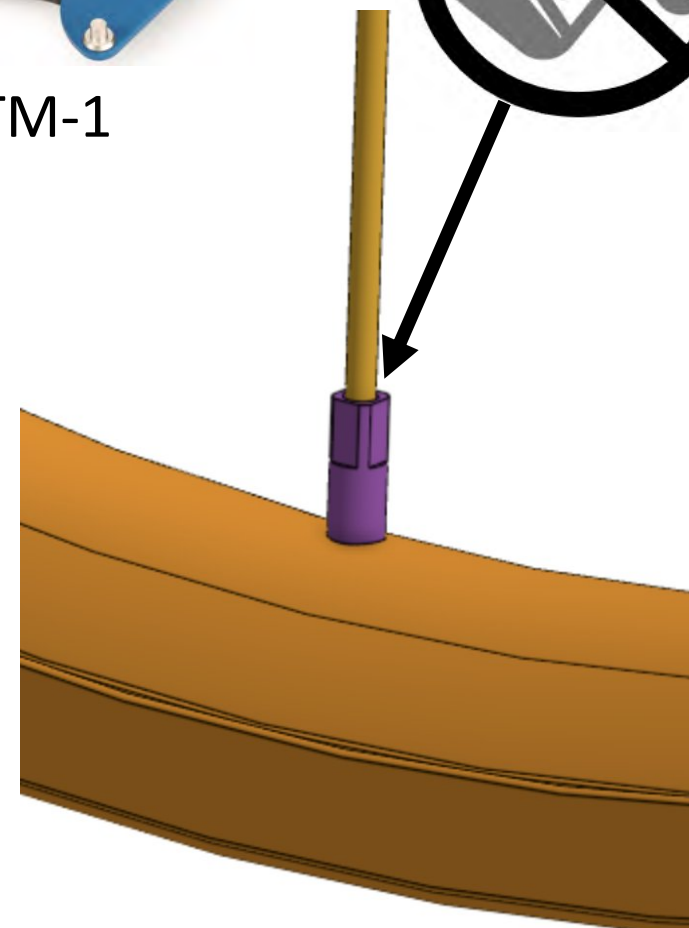
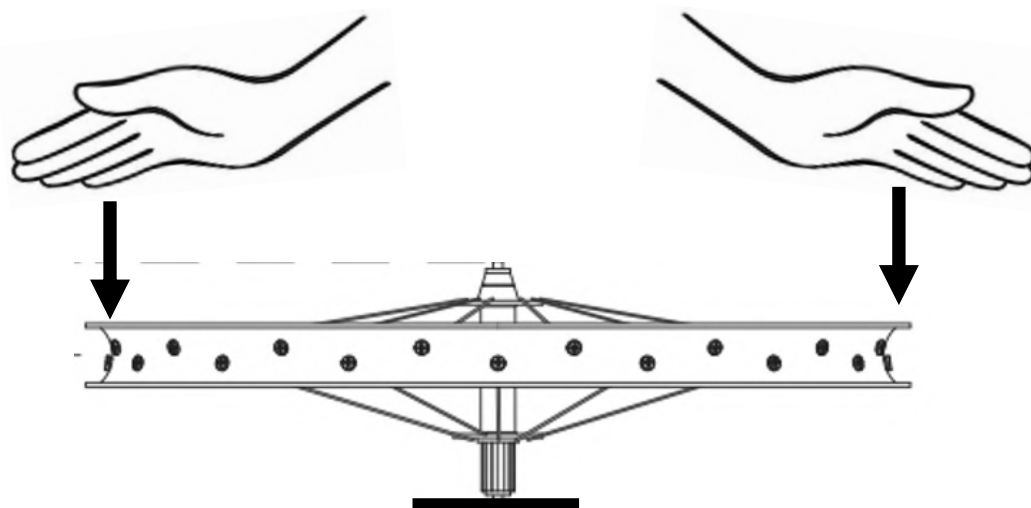
*Spoke tension when measured with Park TM-1 (2.3mm Steel Round)



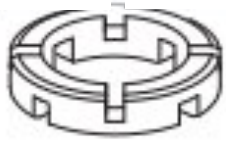
Park TM-1



Stress relieving recommended.



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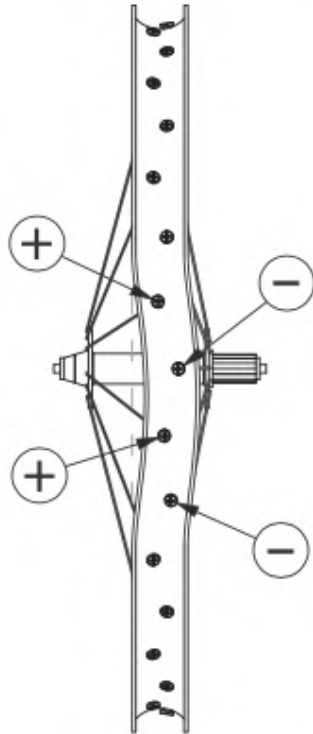


13G

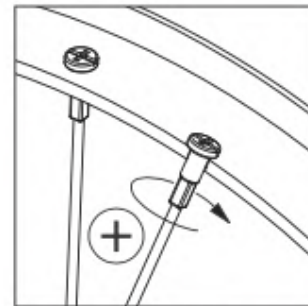
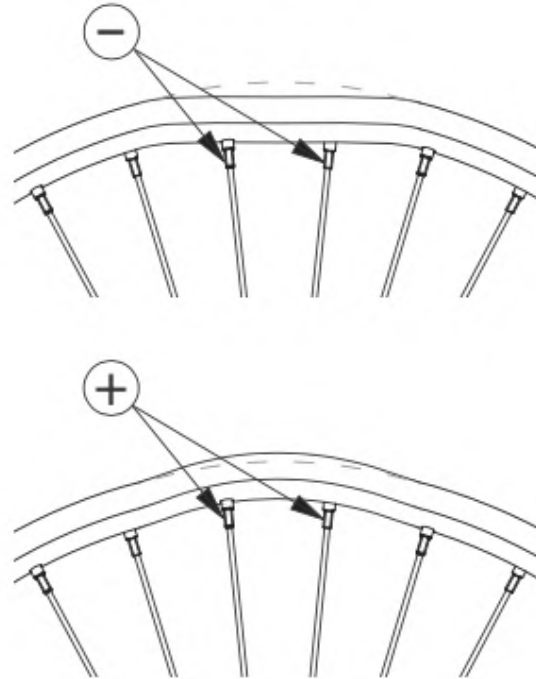


3.6mm

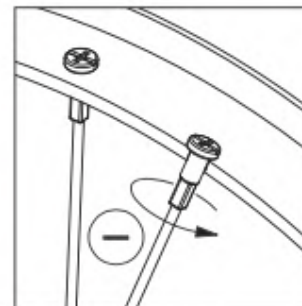
Truing



Rounding

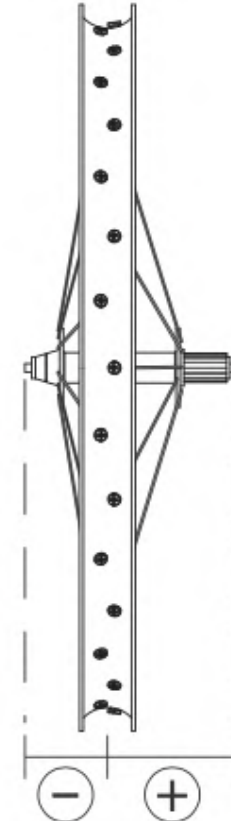


Tighten

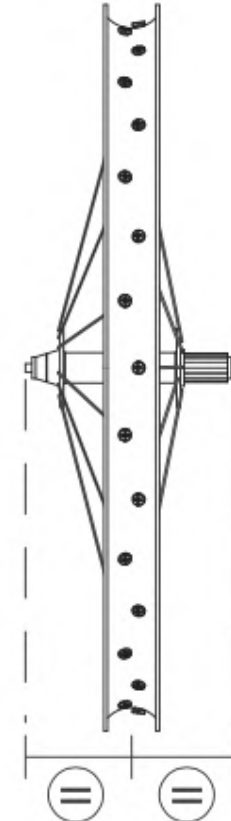


Loosen

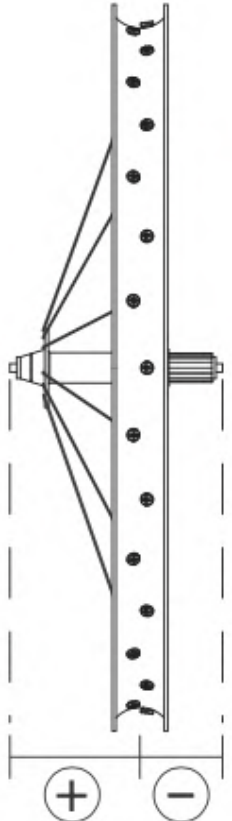
Dishing



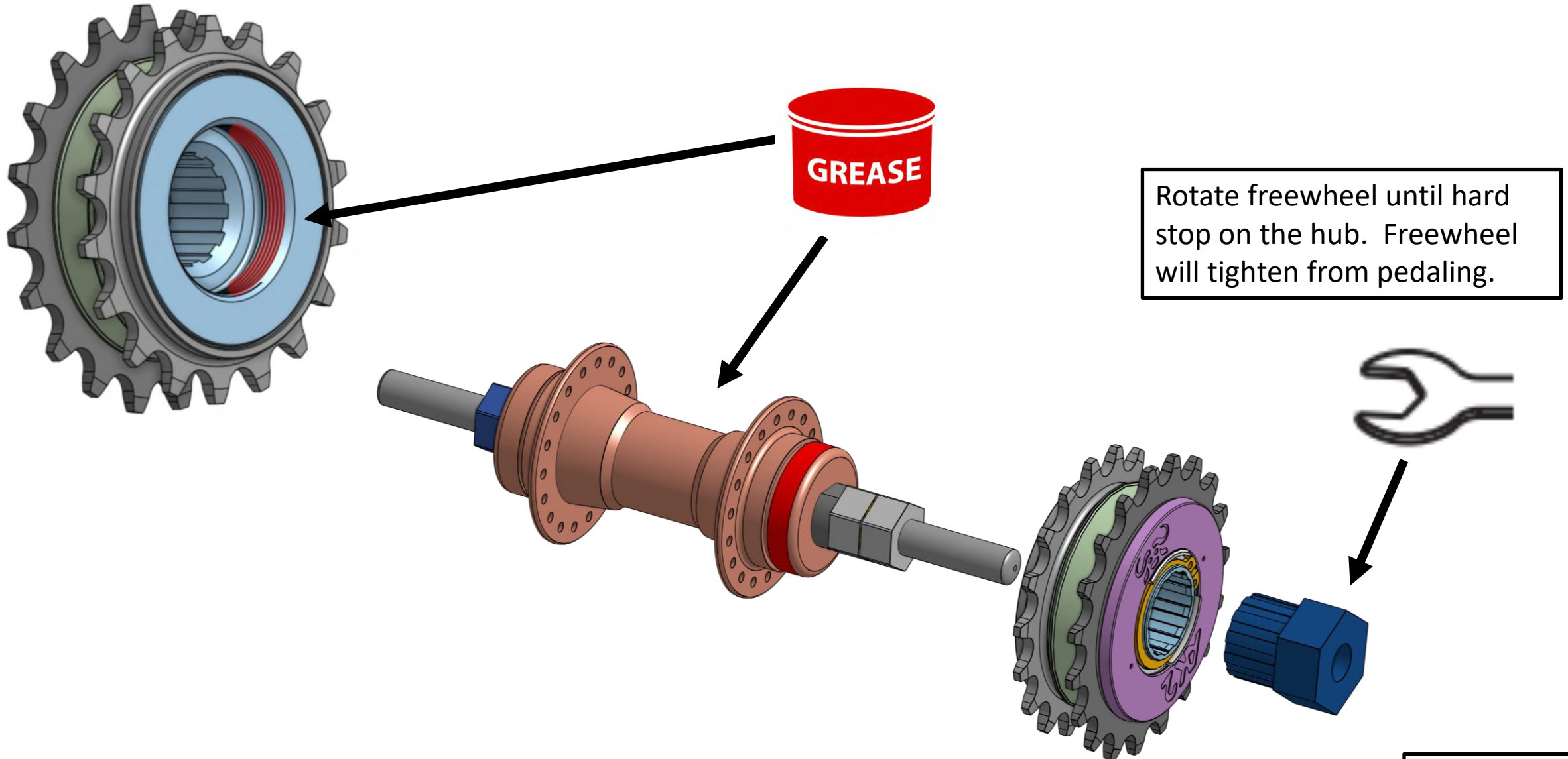
Rim Off Center



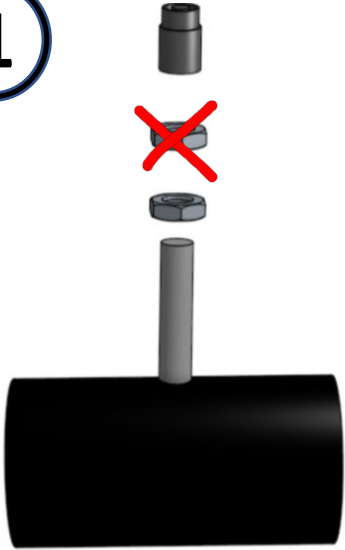
Correctly Dished



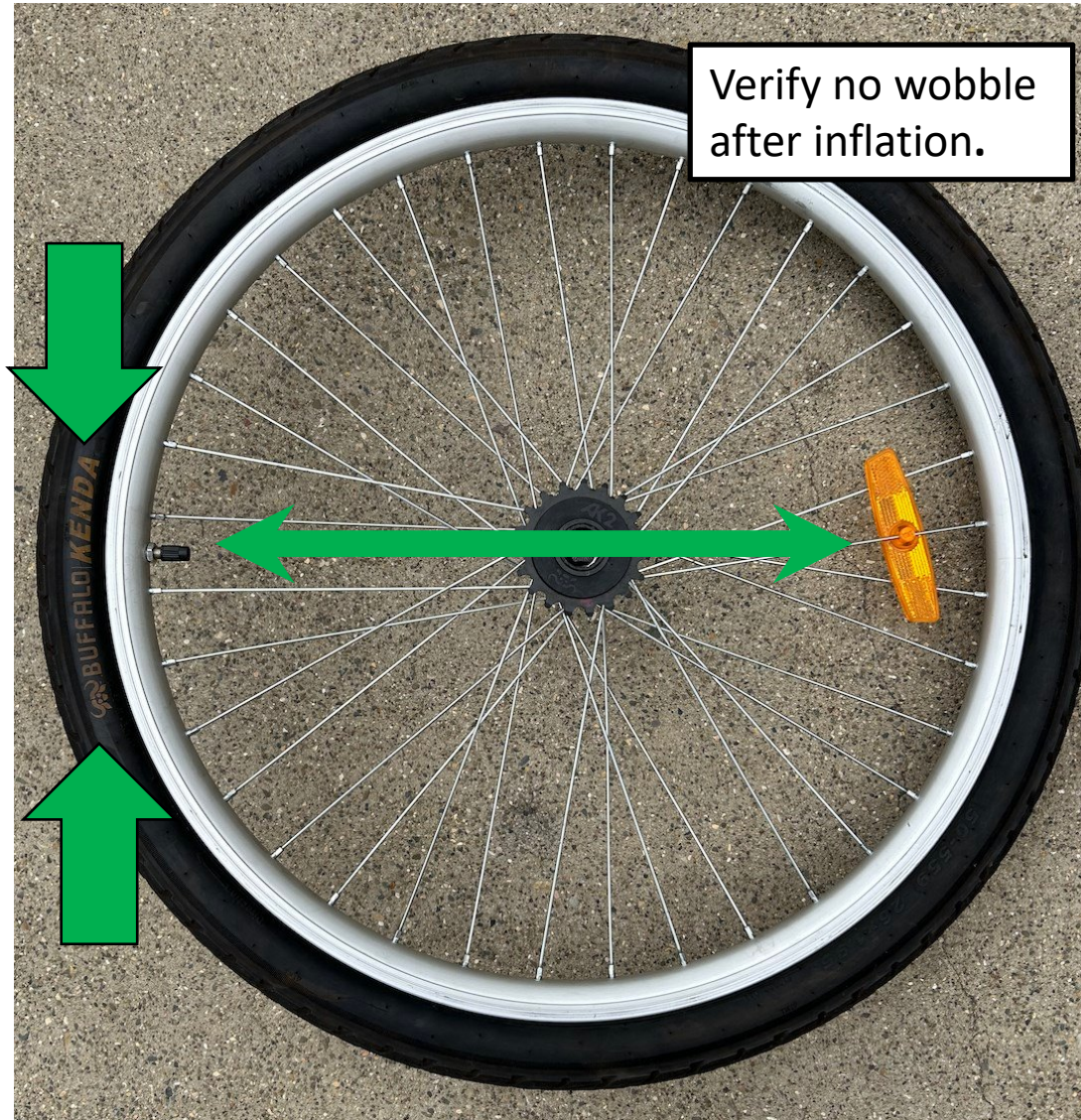
Rim Off Center



1

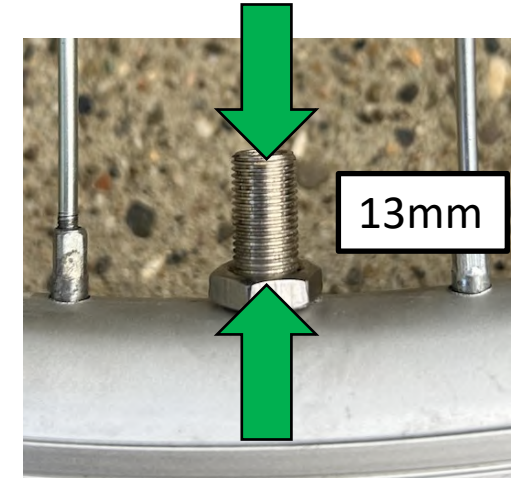


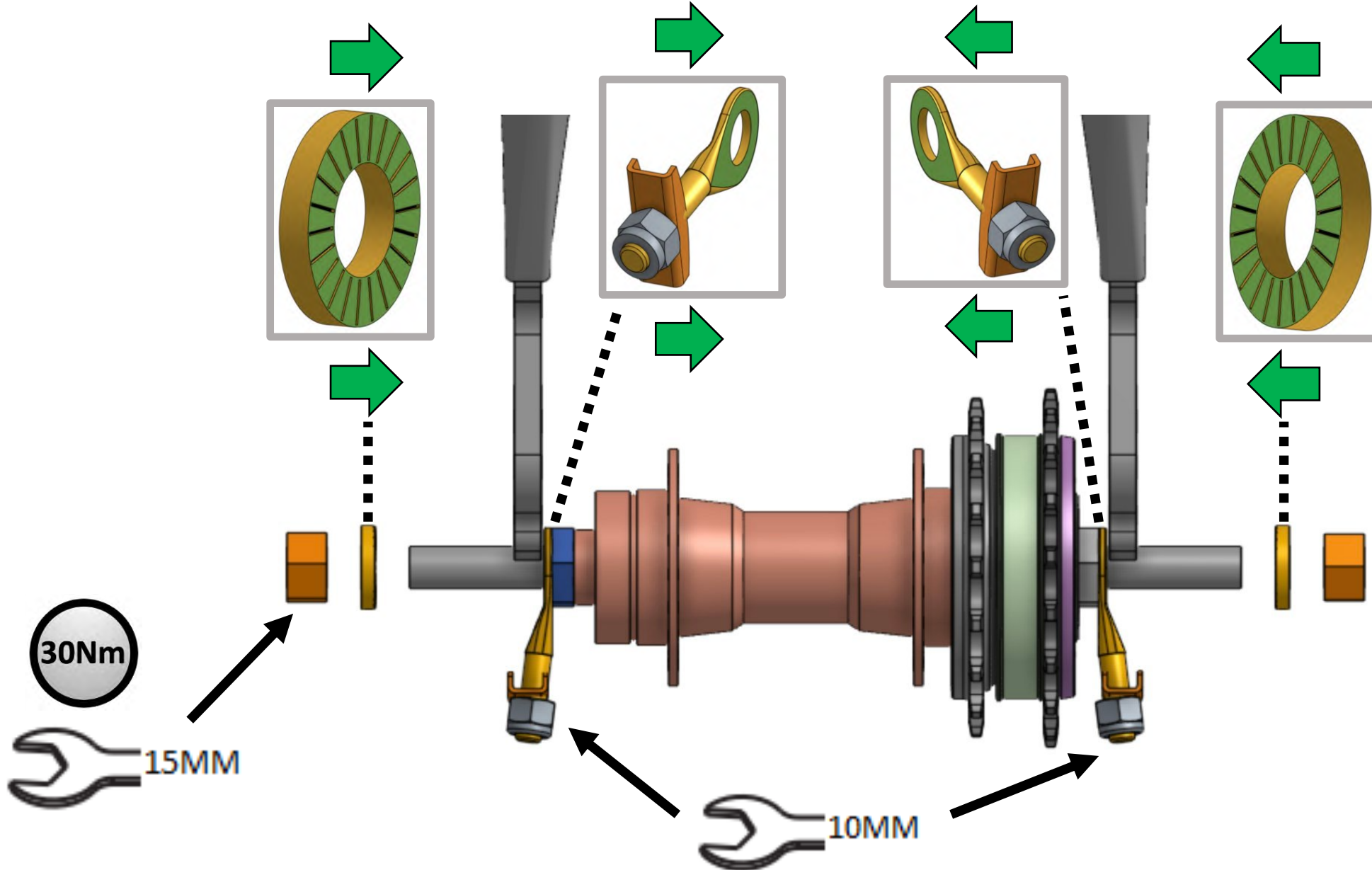
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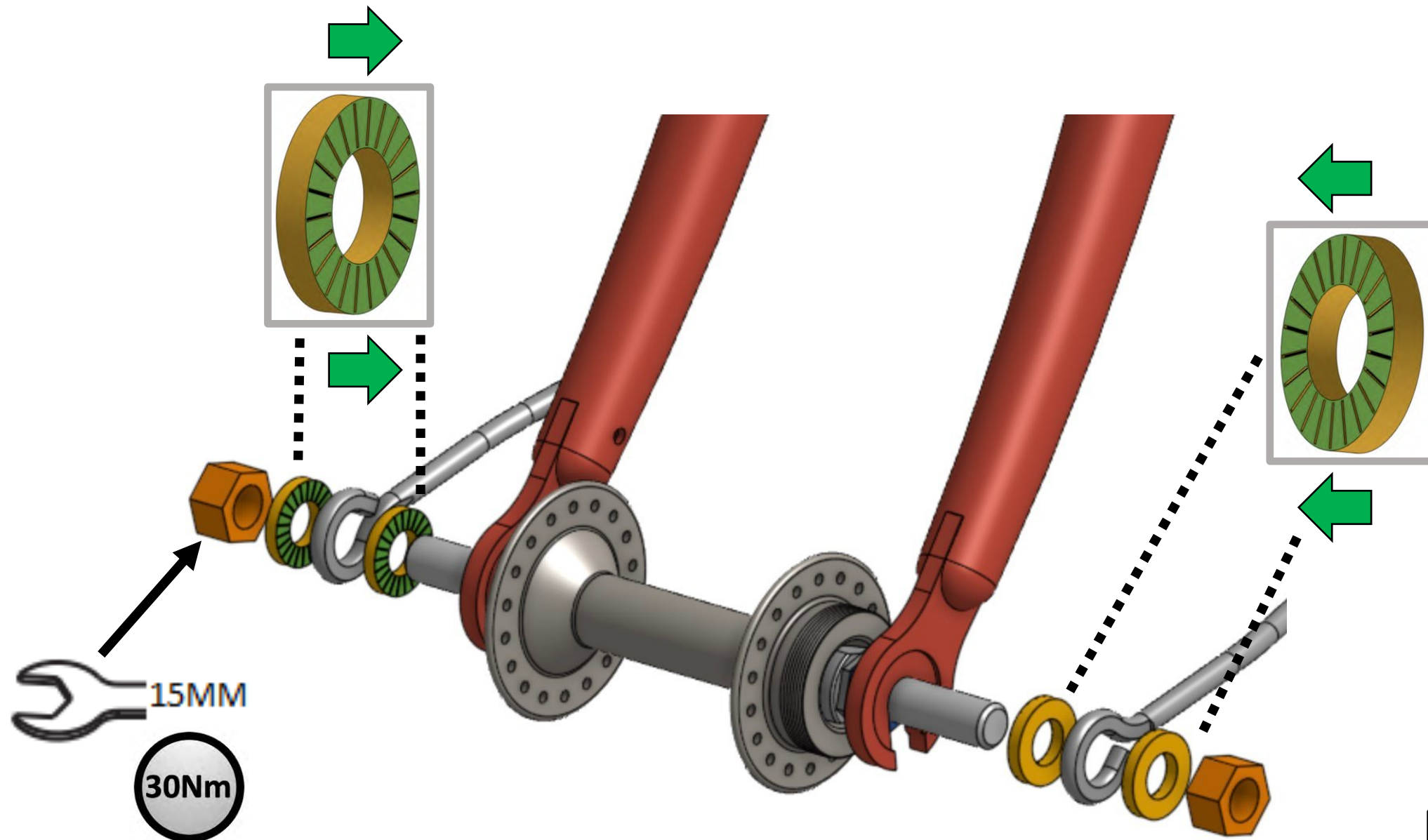


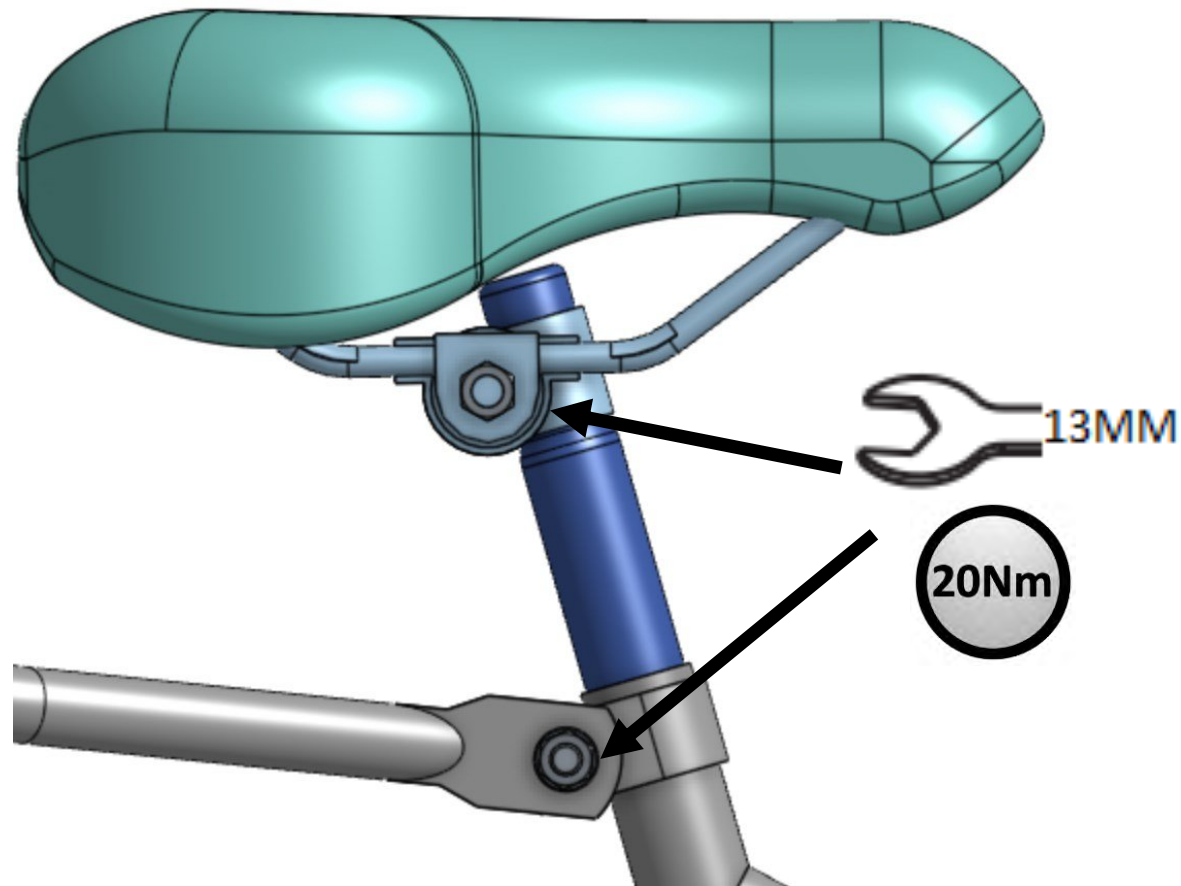
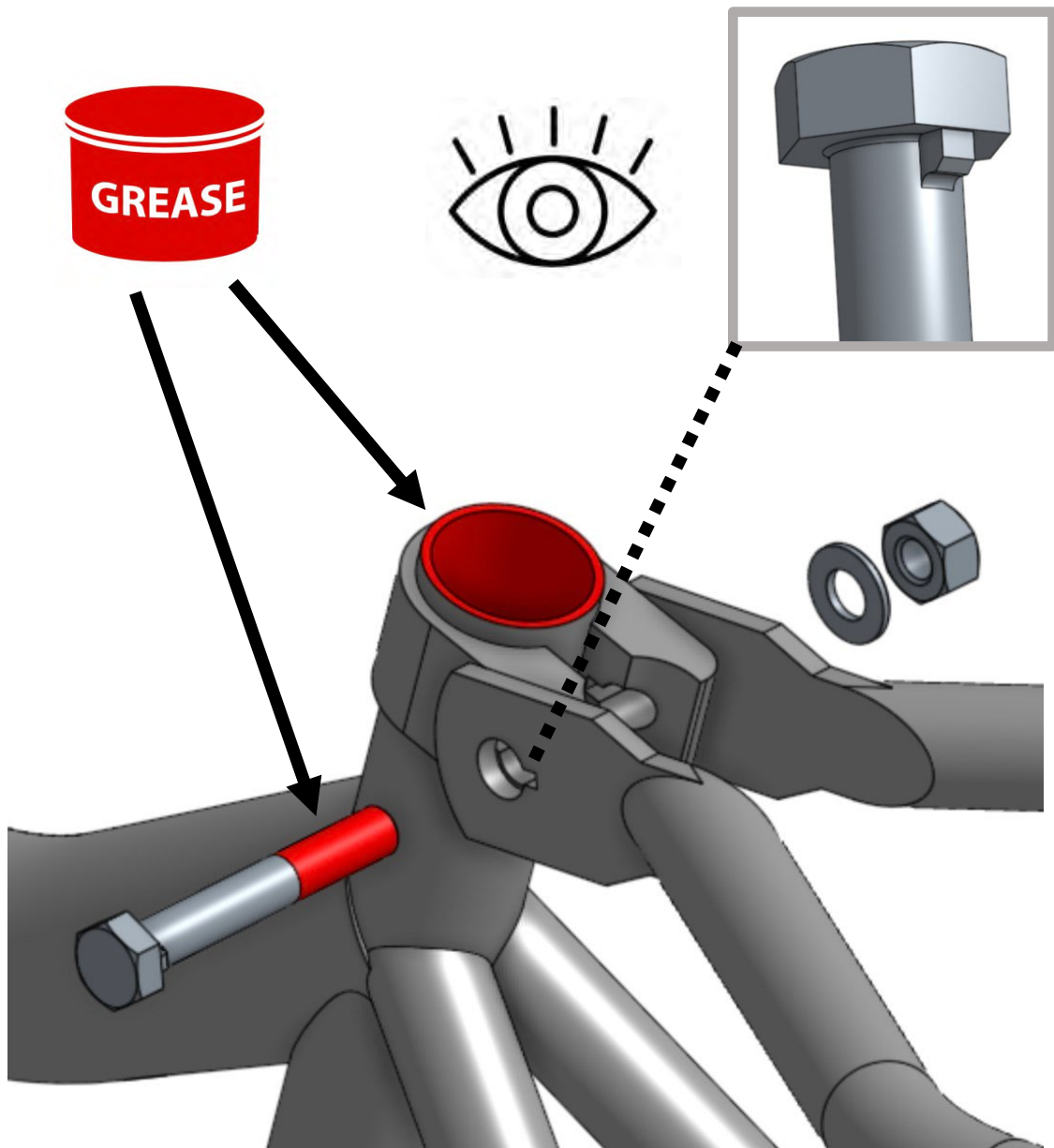
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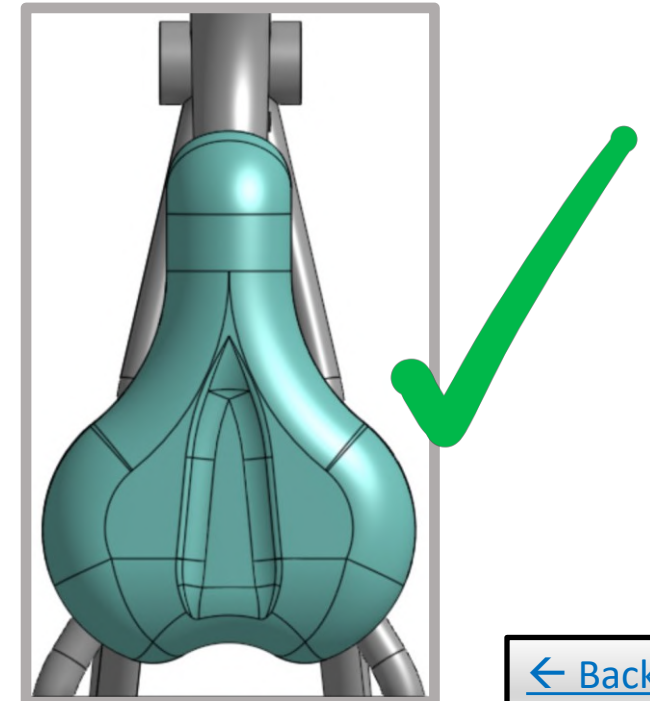
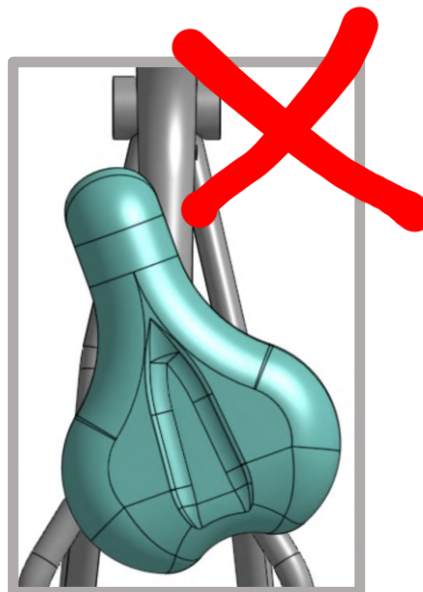
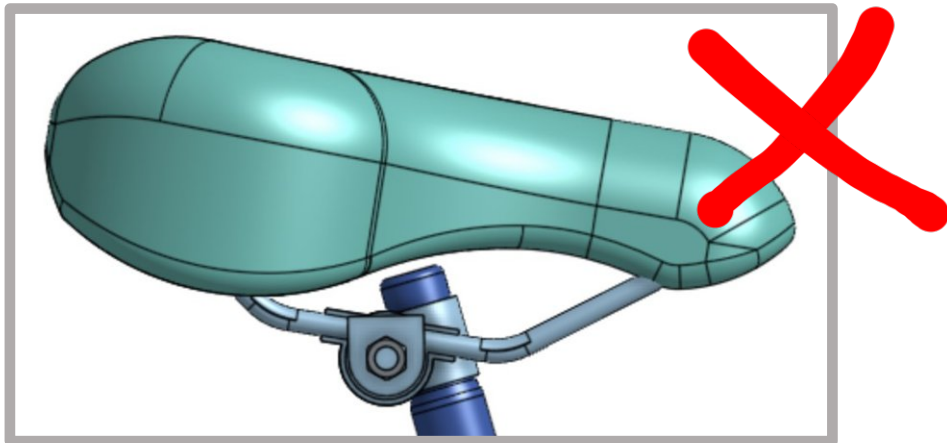
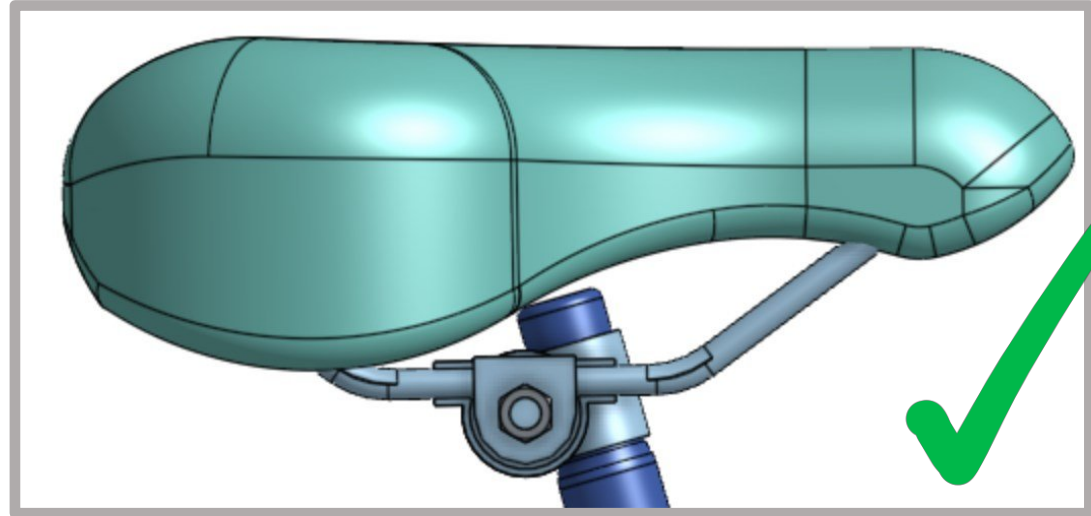
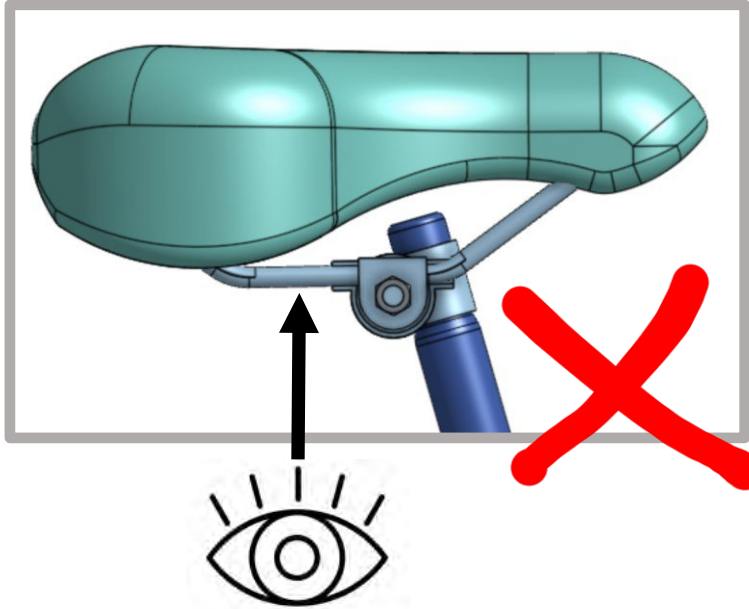
Pre-Inflation

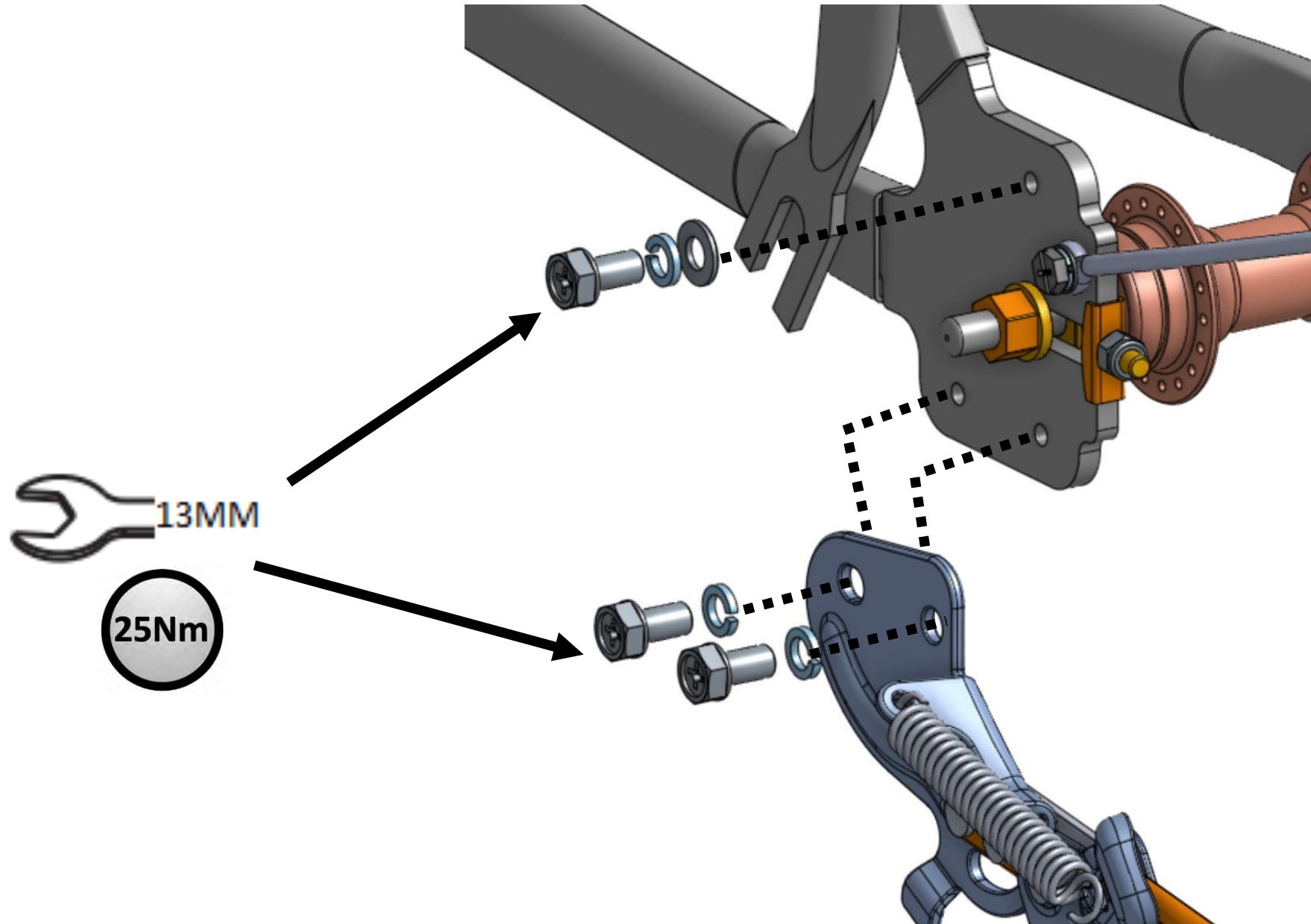


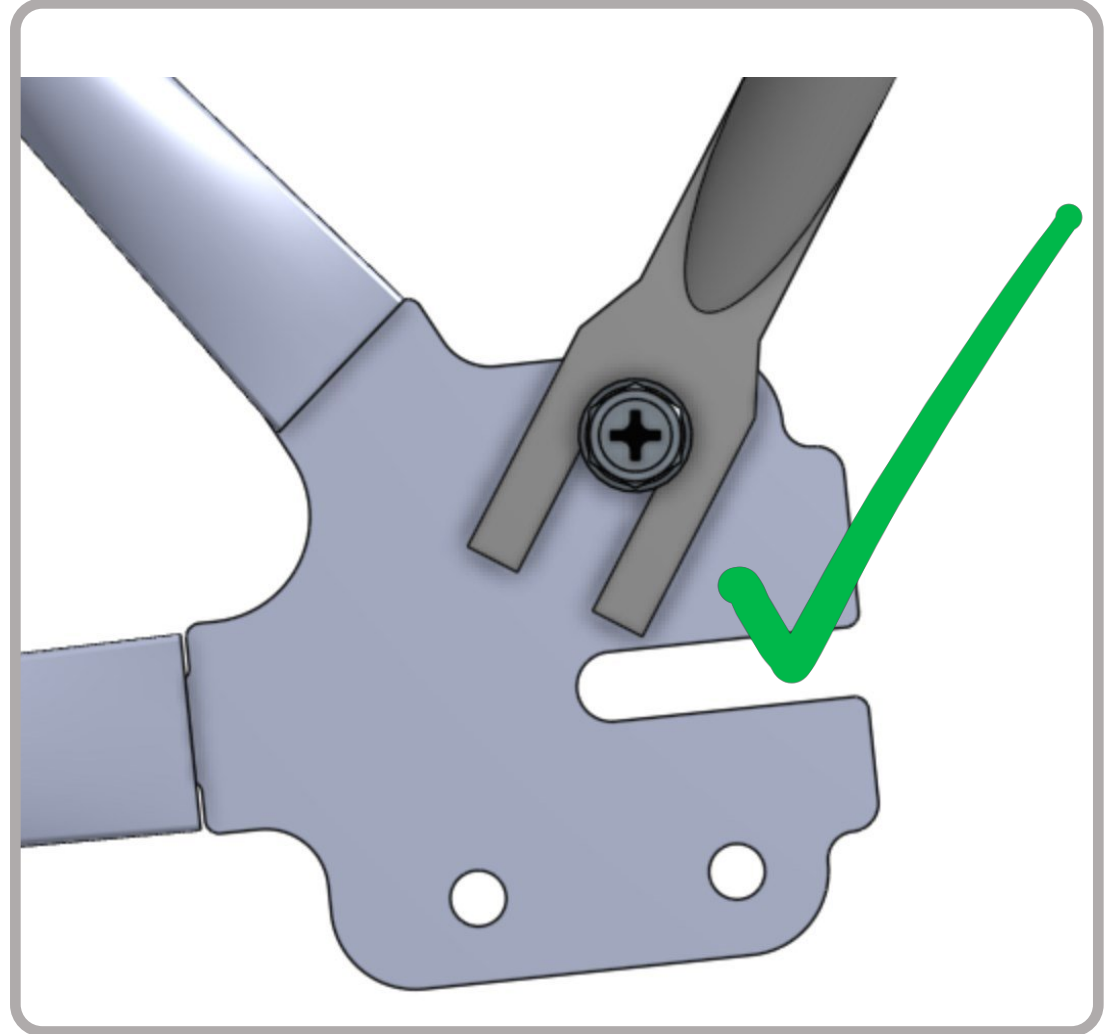
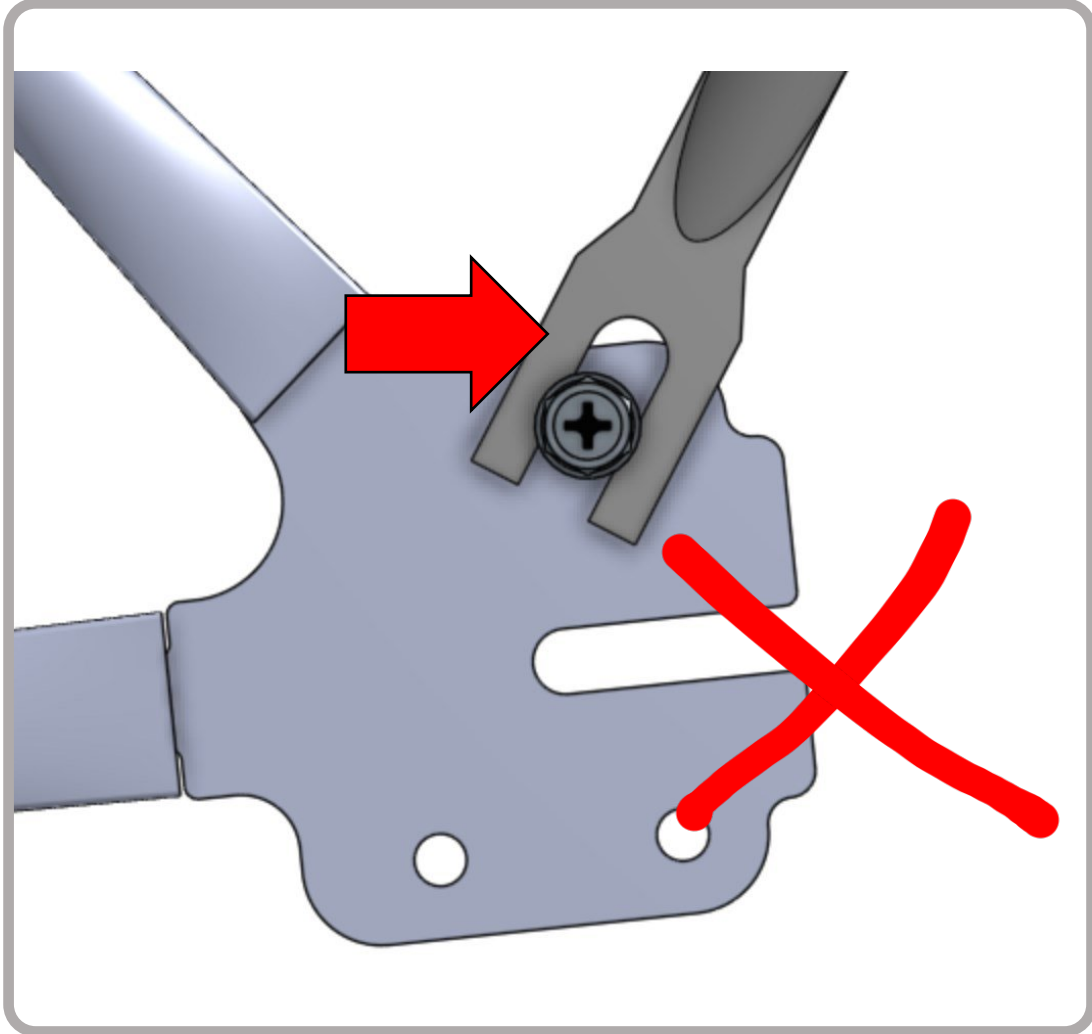


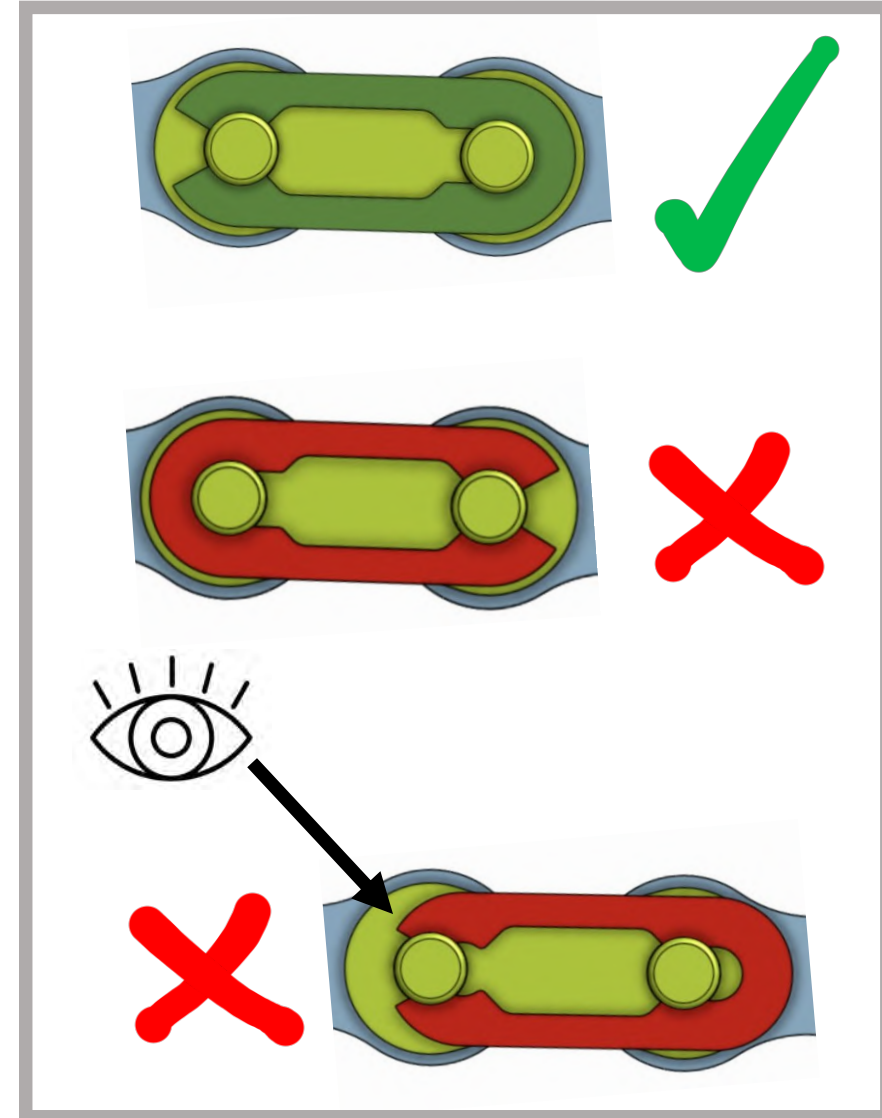
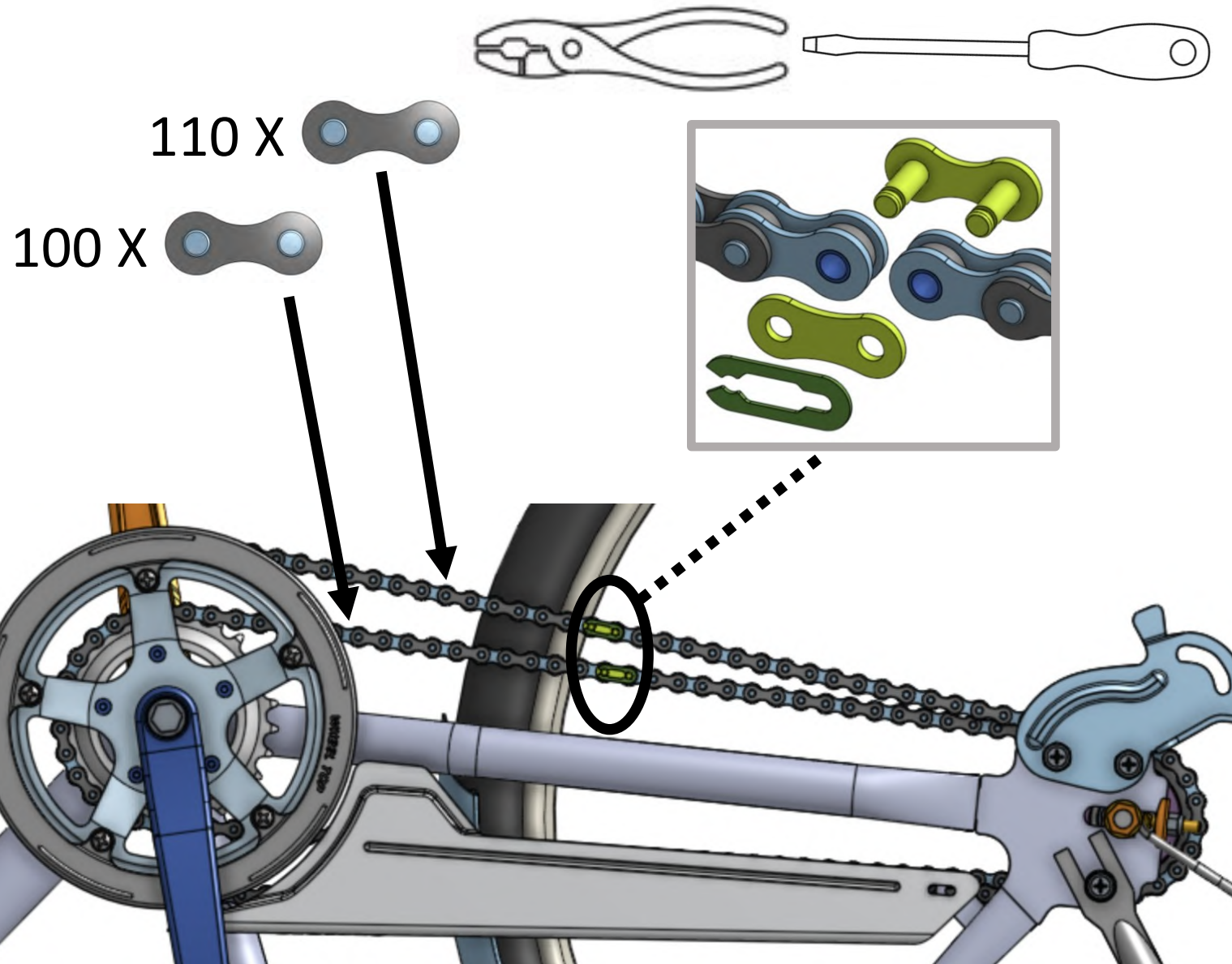














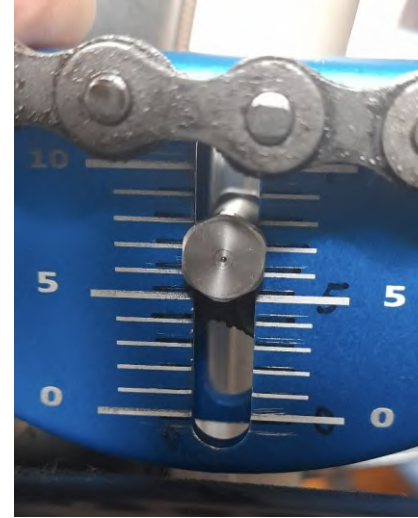
Park BDT-2





Park BDT-2
Value

6-9

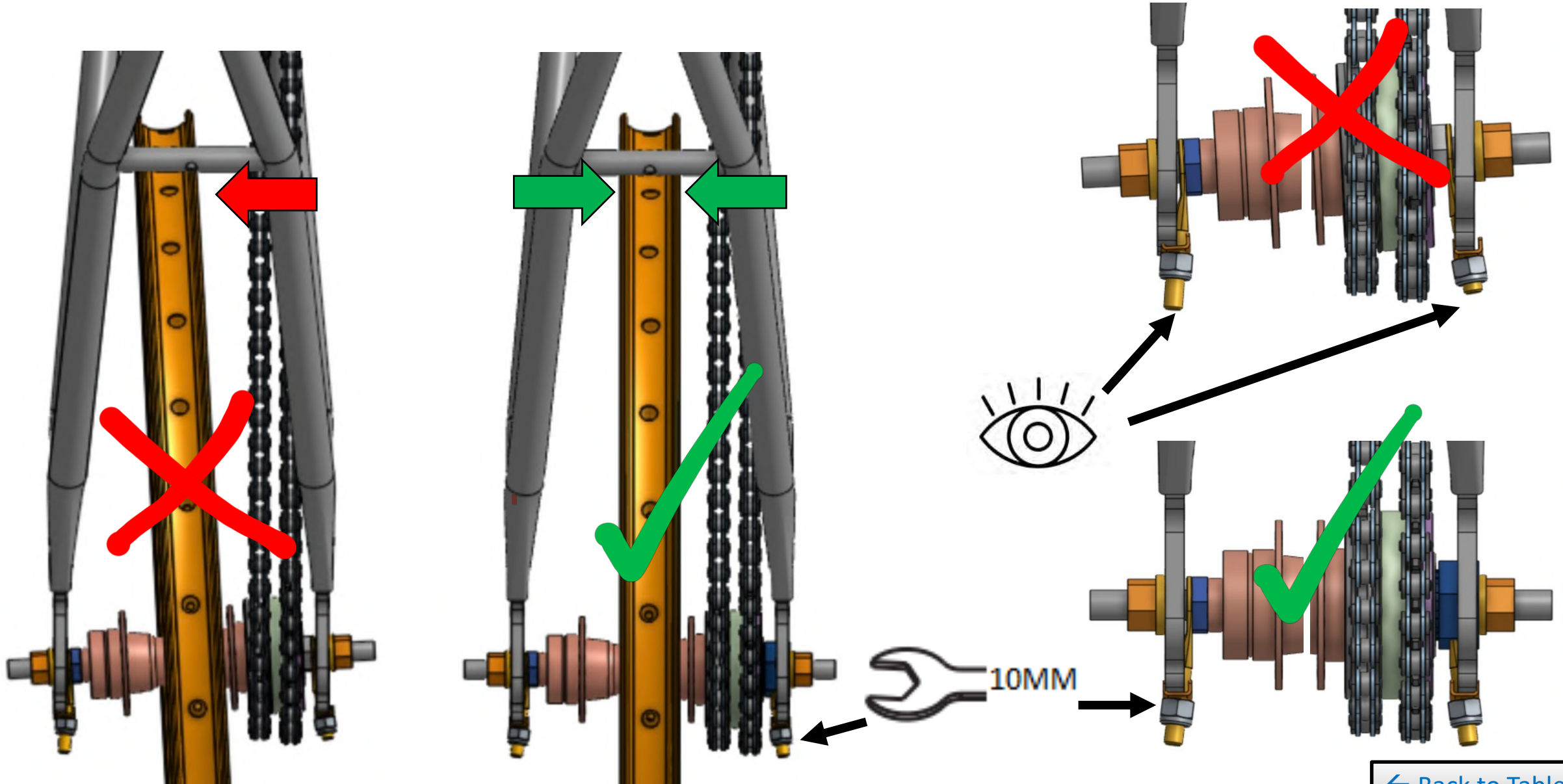


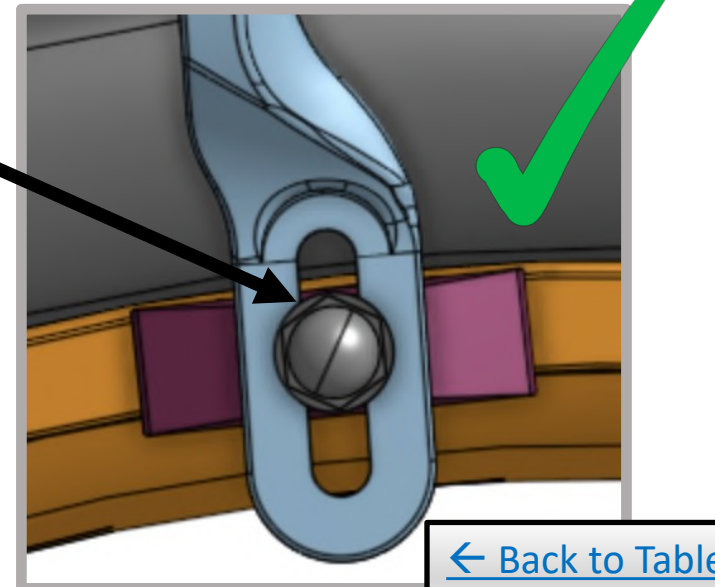
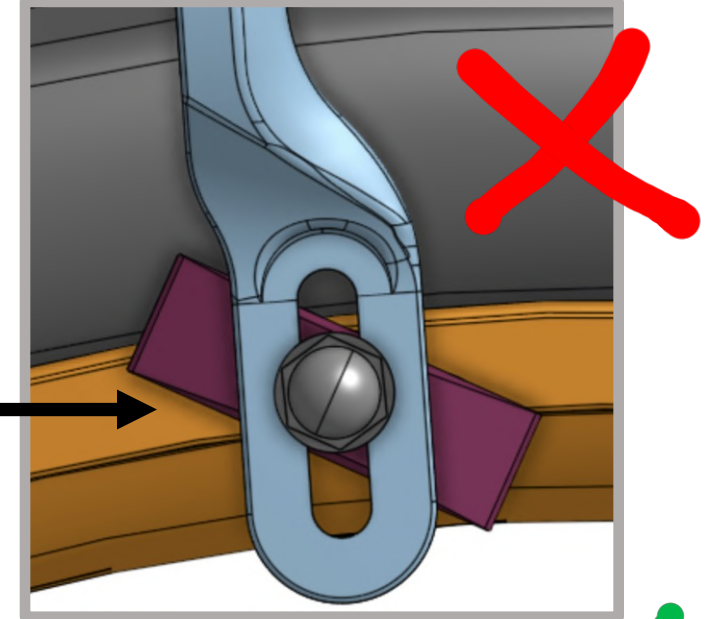
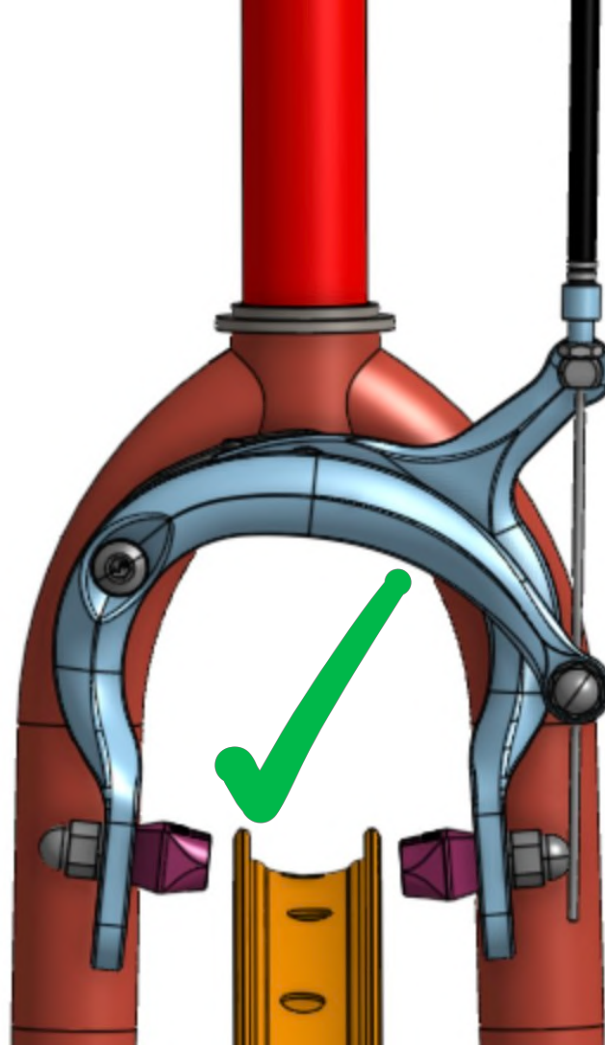
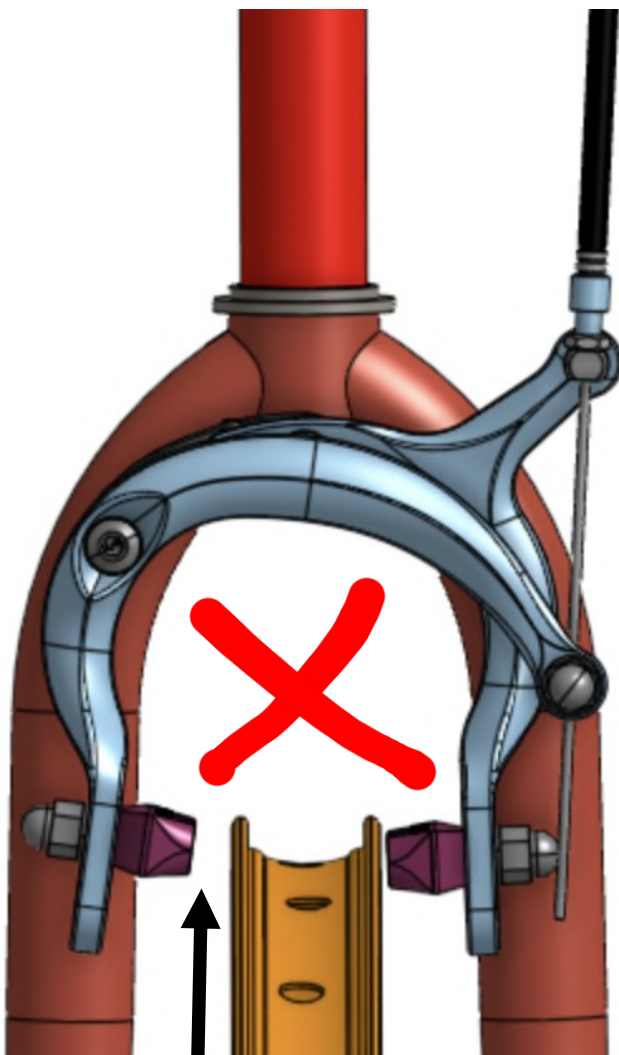


Park BDT-2
Value

3-7







Drivetrain:

- ☐ [BB properly tightened with gap between LH cup and frame](#)
- ☐ Pedals tight (check by hand)
- ☐ [Proper chain tension inboard and outboard](#)
- ☐ [Quick link clip in correct orientation and installed properly](#)
- ☐ Shifts to other gear with ¼ rotation back rotation on the crankset

Wheels:

- ☐ [Wheels true and properly dished](#)
- ☐ [Proper spoke tension](#) (approximate by squeezing spokes with hands)
- ☐ [Wheel laced for proper position of valve stem, 3 cross pattern](#)
- ☐ [Rear wheel centered in frame](#)
- ☐ [Tire seated on rim properly](#)
- ☐ [Tire label on RH side and over valve stem](#)
- ☐ [Valve stem straight](#)
- ☐ Rear hub does not have axle play

Cockpit:

- ☐ [Saddle straight, tight and at correct height and angle](#)
- ☐ [Handlebars level and centered](#)
- ☐ Stem bottomed in fork
- ☐ [Headset bearings adjusted properly and locknut tight](#)

Brakes:

- ☐ [Side-pull calipers centered and brake pads positioned](#)
- ☐ Proper cable tension on hand brakes
- ☐ Front and rear hand brakes engaging at the same point
- ☐ Brakes do not vibrate when applied while riding

Hardware:

- ☐ All hardware in correct position and tightened
- ☐ Mudguards centered on stays
- ☐ [Rear mudguard does not vibrate while riding, bracket is tight on mudguard](#)
- ☐ [Carrier rack bottomed on fastener](#)

Other:

- ☐ All appropriate packaging removed
- ☐ Bike wiped down and clean
- ☐ Stickers applied straight, in proper position, and without wrinkles

Transmisión:

- ☐ BB correctamente apretado con espacio entre la copa LH y el marco
- ☐ Pedales apretados (verificar a mano)
- ☐ Revisar la tensión de la cadena dentro y fuera de límite
- ☐ Verificar que el clip de cadena esté en la orientación adecuada e instalado correctamente
- ☐ Cambie de marcha con ¼ de rotación hacia atrás en el juego de bielas

Ruedas:

- ☐ Verificar que las ruedas estén correctamente alineadas
- ☐ Tensión adecuada de los radios (verificar con los dedos)
- ☐ Rueda armada correctamente con relación a la válvula, patrón de 3 cruces
- ☐ Rueda trasera centrada en el marco
- ☐ Neumático asentado en la llanta correctamente
- ☐ Etiqueta del neumático en el lado derecho que rueda y sobre el vástago la válvula
- ☐ Vástago de la válvula recto
- ☐ El buje trasero no tiene juego en el eje

Cabina:

- ☐ Sillín recto, apretado; con la altura y el ángulo correctos
- ☐ Manillar nivelado y centrado
- ☐ Vástago ajustado en el tenedor
- ☐ Rodamientos de la dirección ajustados correctamente y con la contratuerca apretada

Frenos:

- ☐ Herradura centrada y pastillas de freno colocadas
- ☐ Tensión adecuada del cable en los frenos de mano
- ☐ Frenos de mano delanteros y traseros acoplados en el mismo punto
- ☐ Los frenos no vibran cuando se tensionan mientras se conduce

Accesorios:

- ☐ Todo el hardware en la posición correcta y apretado
- ☐ Guardabarros centrados en tirantes
- ☐ El guardabarros trasero no vibra en movimiento, el soporte está apretado en el guardabarros
- ☐ Parrilla con base en el sujetador

Otro:

- ☐ Retirar todo el material de empaque
- ☐ Bicicleta limpia
- ☐ Stickers nivelados en la posición adecuada y sin