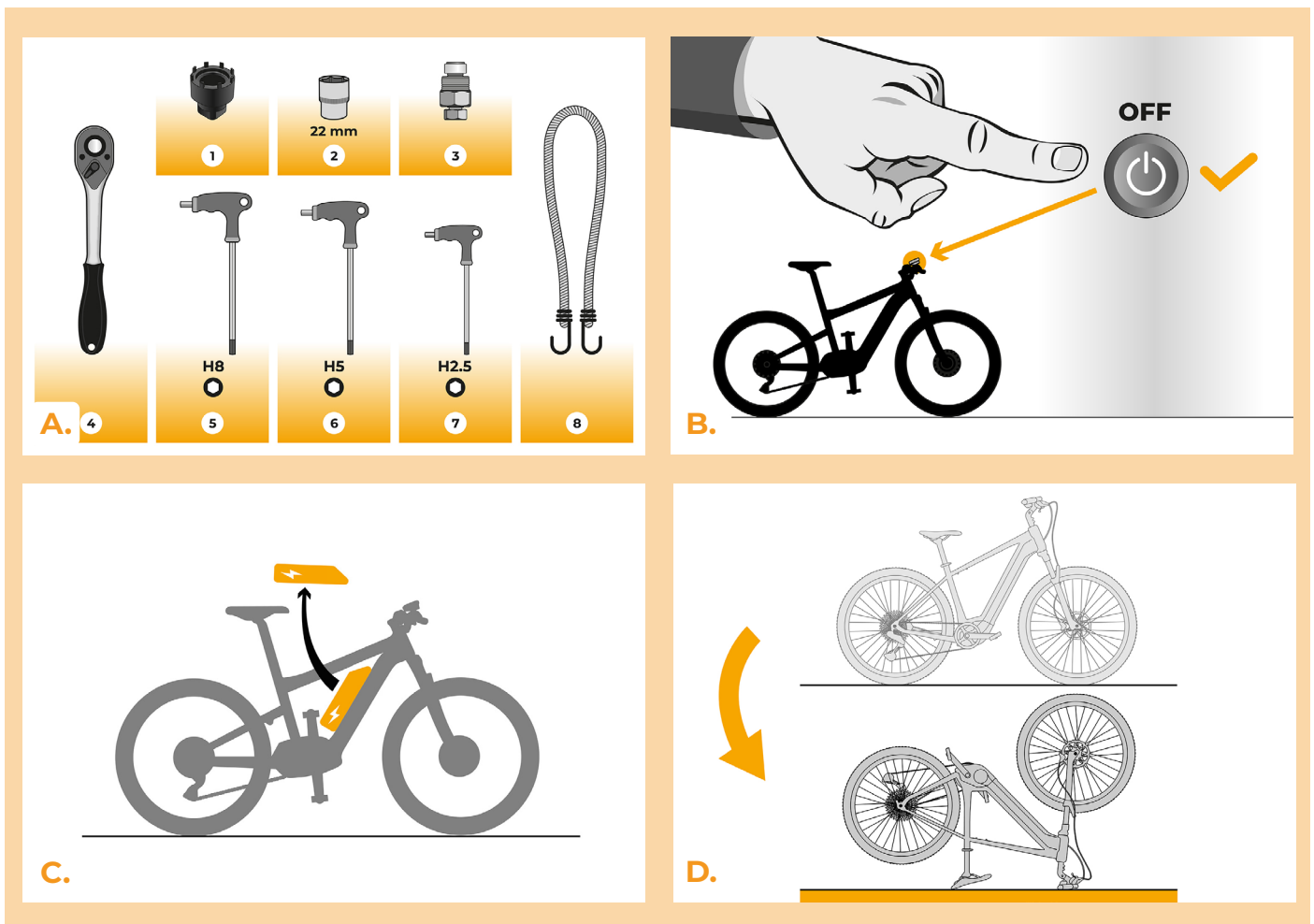


SpeedBox 3.0 for Panasonic

STEP 1: Preparation for installation

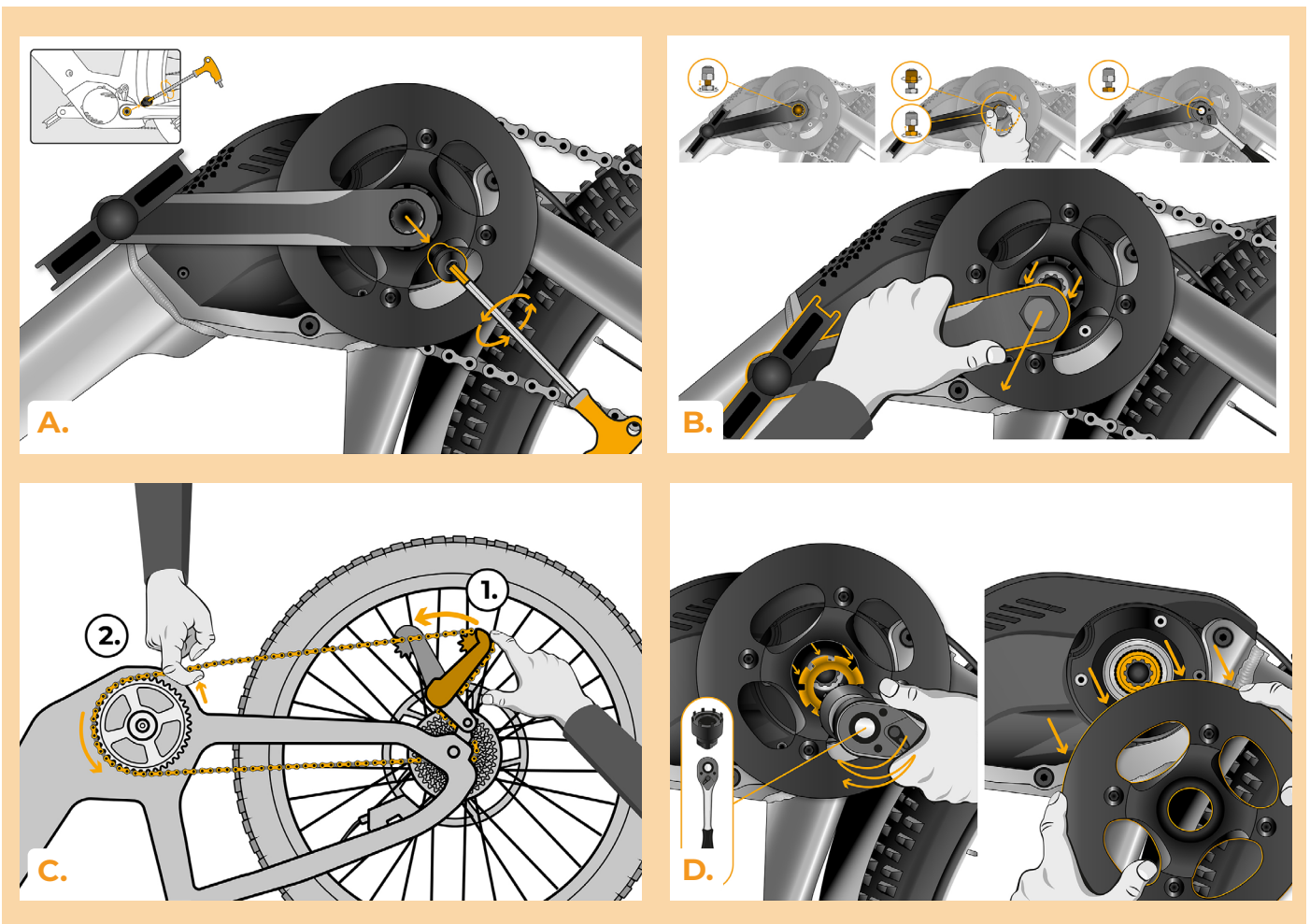
- A.** Prepare the following tools (tools may vary depending on the type of e-bike):
1. Crown wrench
 2. Socket wrench 22 mm
 3. Crank puller
 4. Ratchet 1/2"
 5. Hex key H8
 6. Hex key H5
 7. Hex key H2.5
 8. Bungee cord with hook
- B.** Turn off the e-bike.
- C.** Remove the battery from the e-bike according to the manufacturer's manual.
- D.** Turn the e-bike upside down so the motor faces upward.

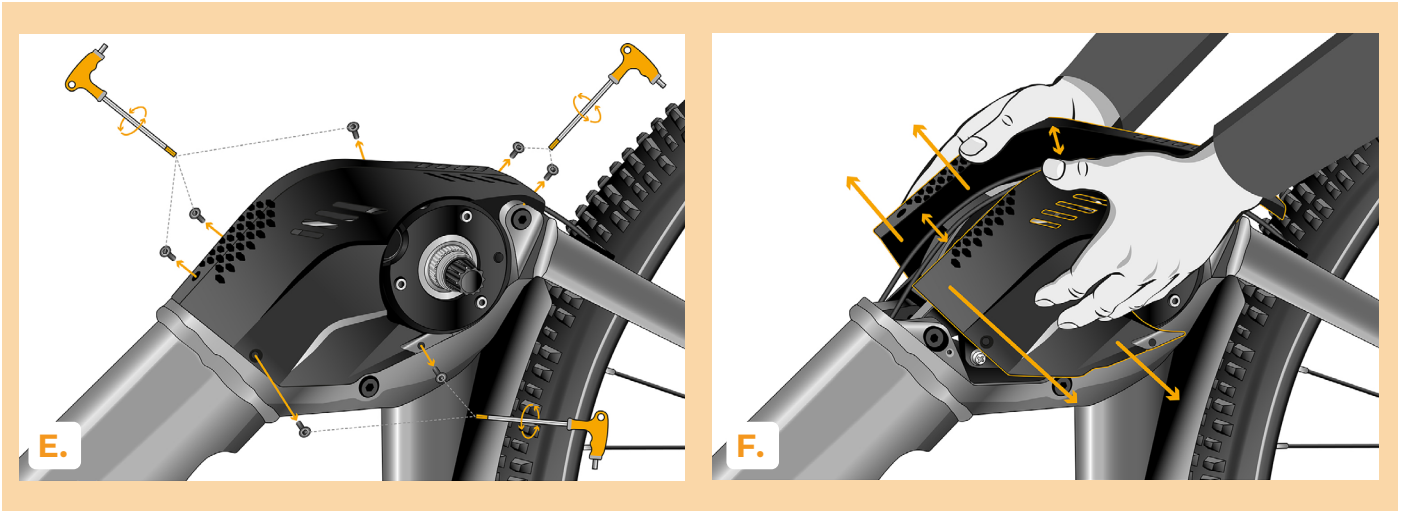


STEP 2: Removal of the e-bike motor cover

Motor cover disassembly may vary depending on the e-bike's design.

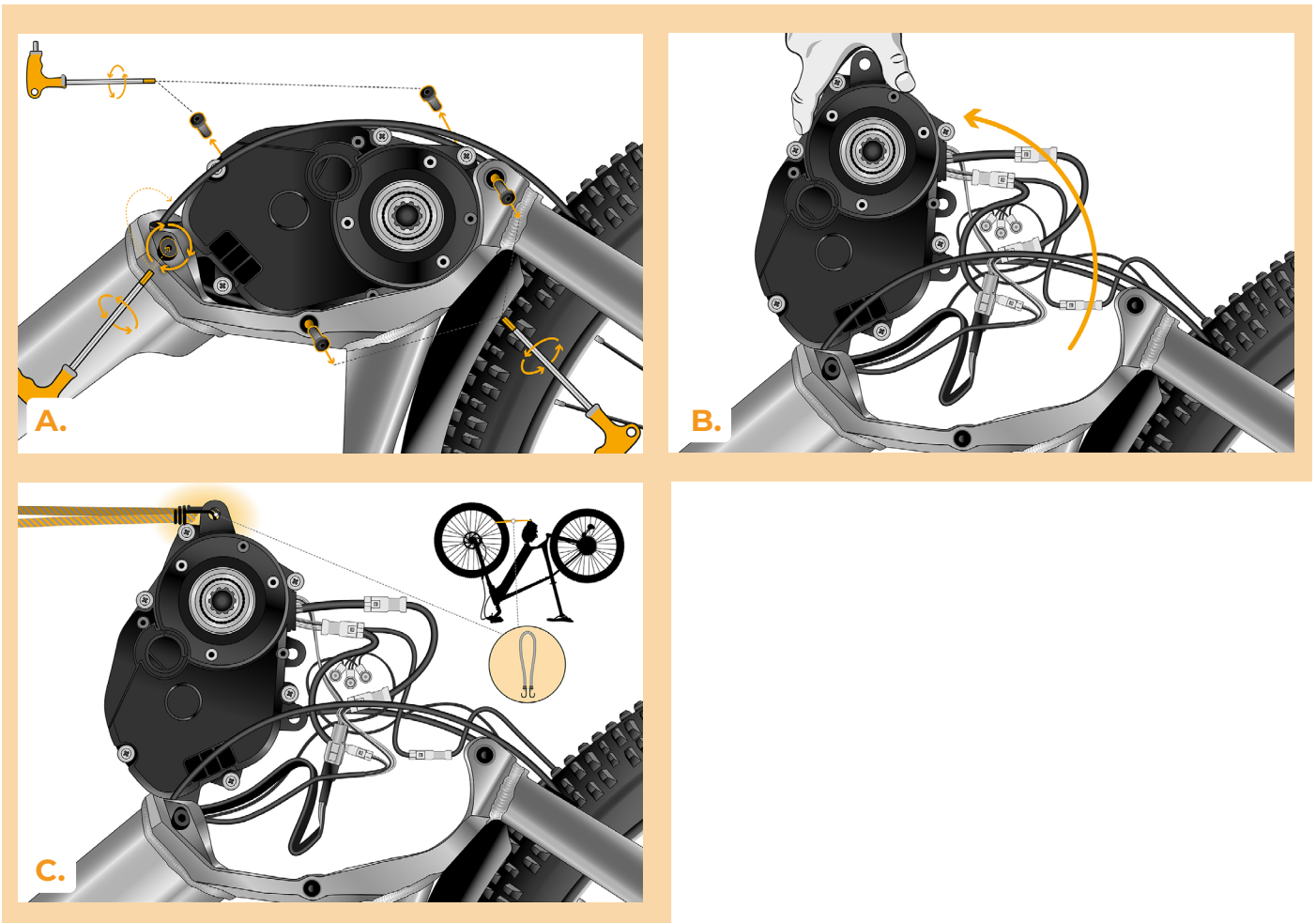
- A.** Remove both cranks from the motor. The procedure is the same for both cranks. Using a Hex key H8, unscrew the retaining bolt in the crank.
- B.** Using a Crank puller and a Ratchet 1/2", loosen the cranks from the motor and remove them.
- C.** Remove the chain.
- D.** Using a Crown wrench and a Ratchet 1/2", unscrew the nut holding the chainring and remove the chainring.
- E.** Using a Hex key H2.5, unscrew all bolts securing the motor cover to the e-bike frame.
- F.** Remove both motor covers.





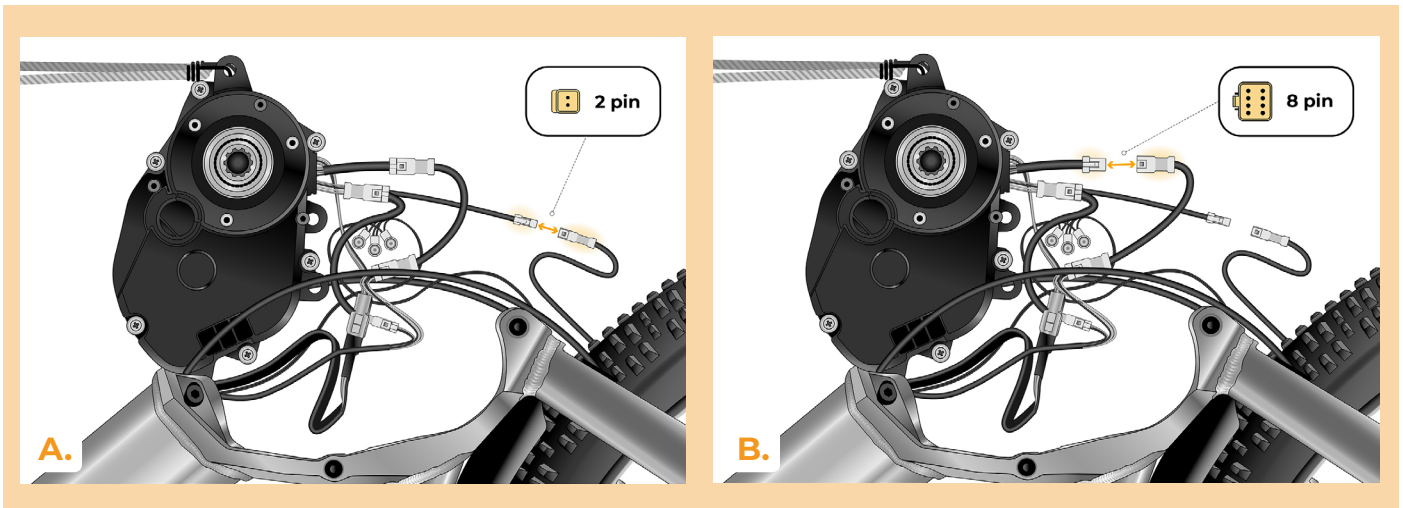
STEP 3: Removal of the motor from the e-bike frame

- A.** Using a Hex key H5, unscrew the four bolts securing the motor to the e-bike frame on the side closer to the rear wheel. Only loosen the two bolts closer to the front wheel.
- B.** Tilt the motor towards the front wheel.
- C.** Attach the tilted motor to a Bungee cord with hook so that you have access to the motor connectors and can safely disconnect them.



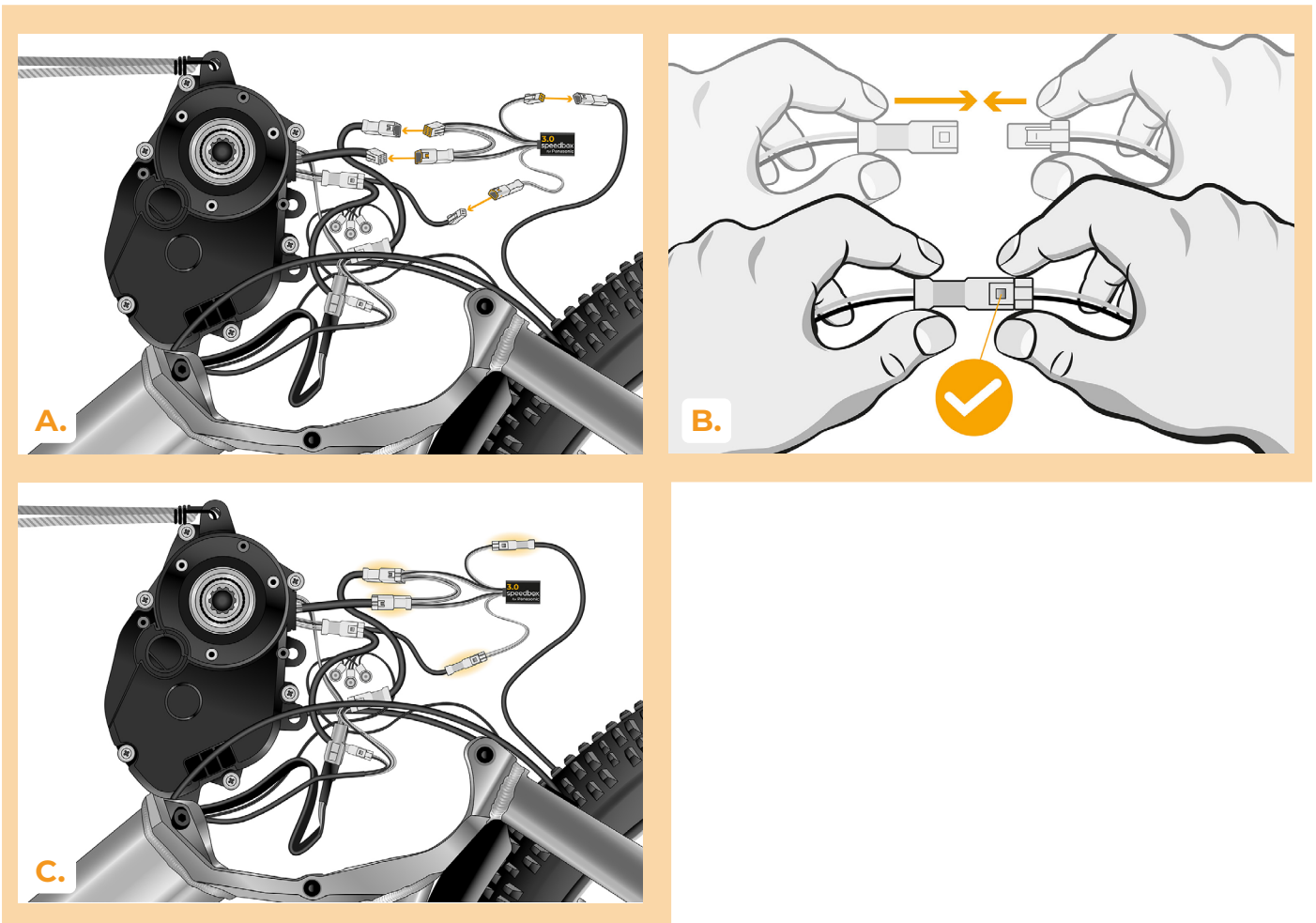
STEP 4: Disconnecting the connectors from the motor

- A. Disconnect the speed sensor connector (2 pins).
- B. Disconnect the motor-to-display connector (8 pins).



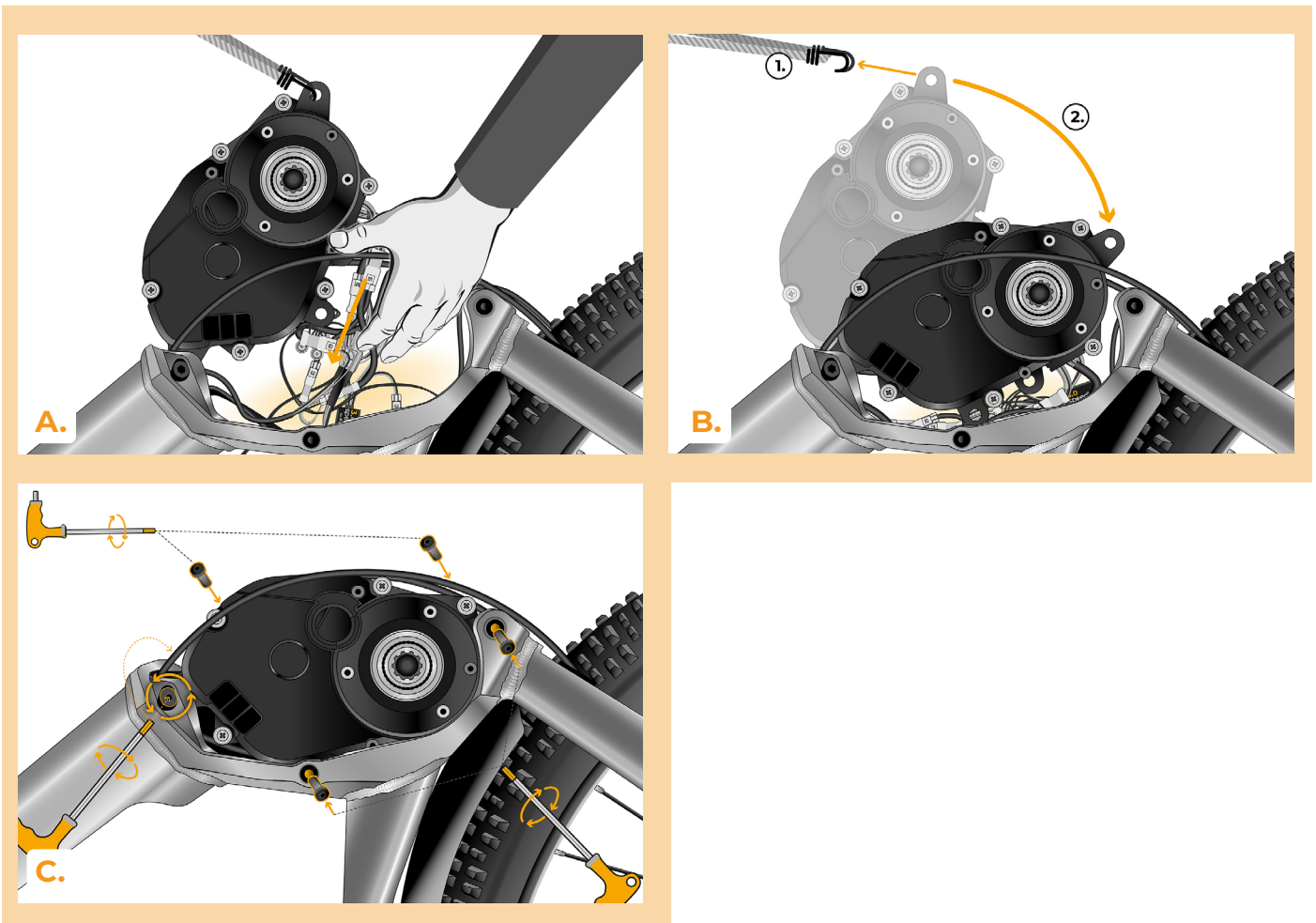
STEP 5: SpeedBox tuning installation

- A.** Plug SpeedBox into the disconnected connectors (step 4).
- B.** Ensure that the connector locks are fully seated and click into place audibly.
- C.** Before reassembling the motor, check the correct connections according to the diagram.



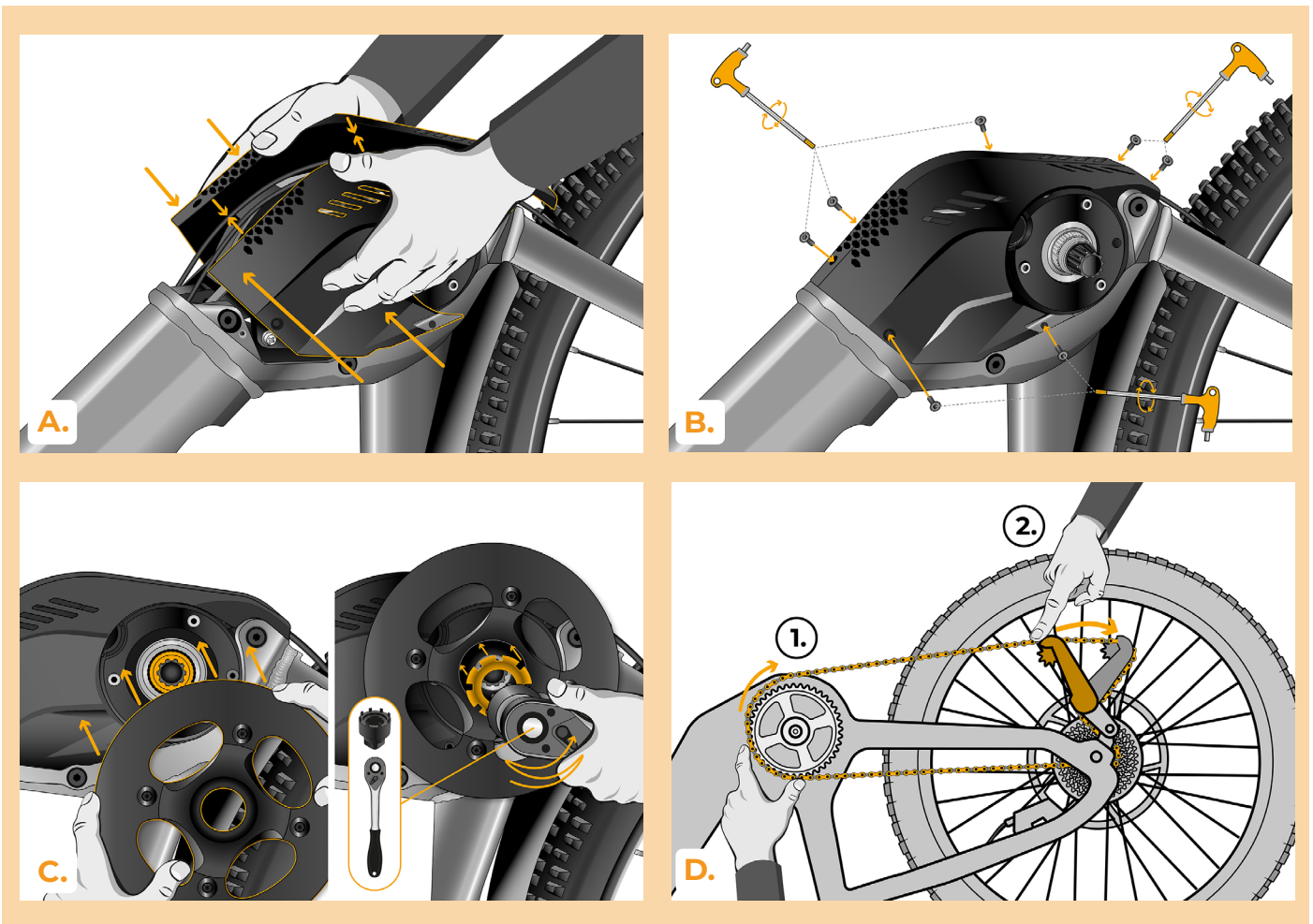
STEP 6: Reinstalling the motor into the e-bike frame

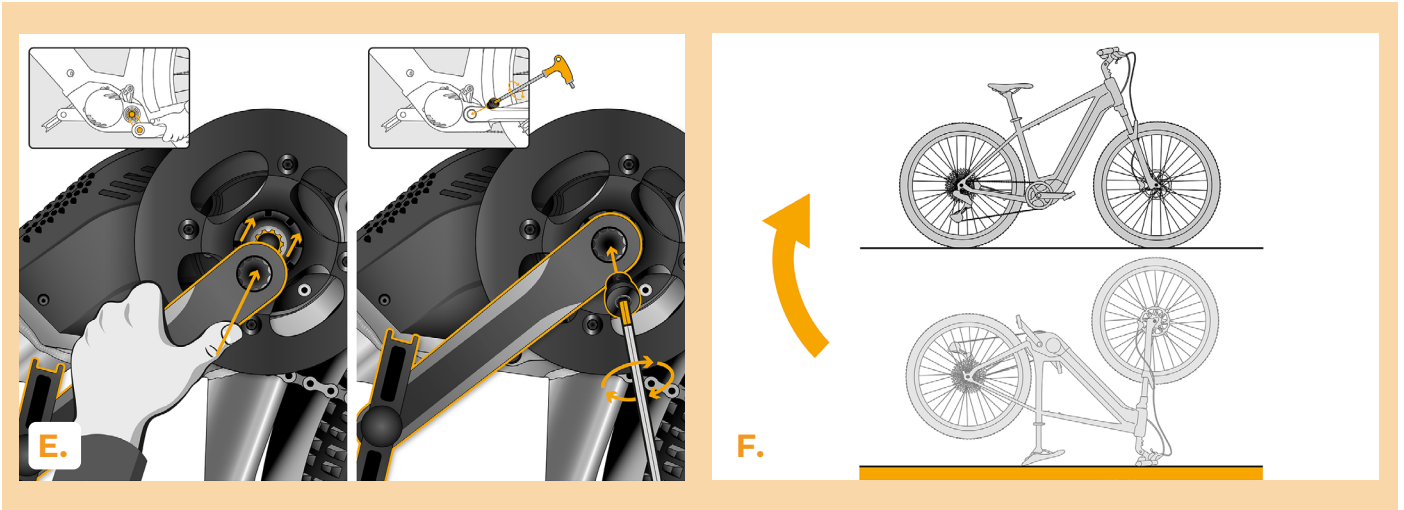
- A.** Place the connected SpeedBox, including the cables coming from the motor, back into the free space in the e-bike frame.
- B.** Return the motor to the e-bike frame.
- C.** Reinstall the four bolts and tighten them using a Hex key H5. Also tighten the two bolts that were only loosened.



STEP 7: Reinstalling the cranks and motor cover of the e-bike

- A.** Reinstall the motor covers.
- B.** Fasten all bolts using a Hex key H2.5.
- C.** Reinstall the chainring and secure it to the motor axle using a Crown wrench and a Ratchet 1/2".
- D.** Reinstall the chain onto the chainring.
- E.** Reinstall both cranks and secure them with the retaining bolts using a Hex key H8.
- F.** Turn the e-bike back onto its tires.



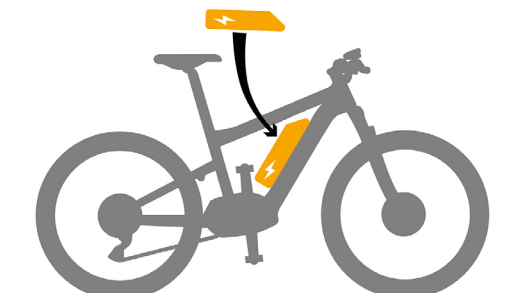


STEP 8: Tuning function check

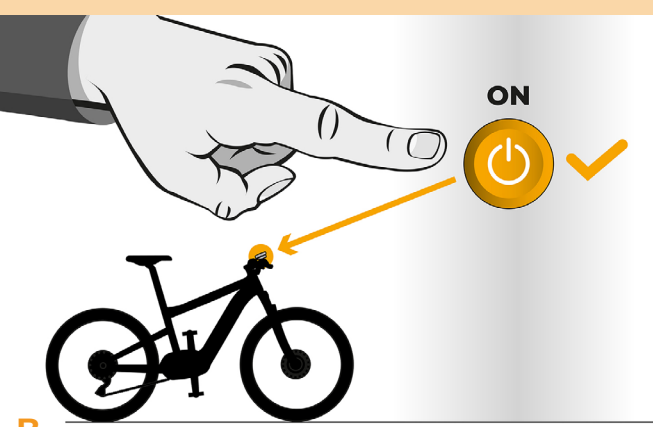
- A.** Place the battery back into the e-bike.
- B.** Turn the e-bike on.
- C.** You can activate or deactivate the SpeedBox device by double-clicking the LIGHT button or by switching between two assist modes (+ – + –).
- D.** Spin the rear wheel and check whether the speed is displayed on the display.

Warning: If the Panasonic central LCD display does not show correct speed values, enter the corresponding wheel circumference in the display settings.

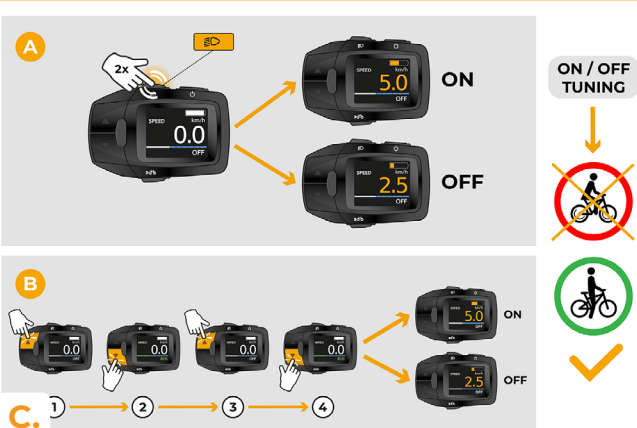
A.



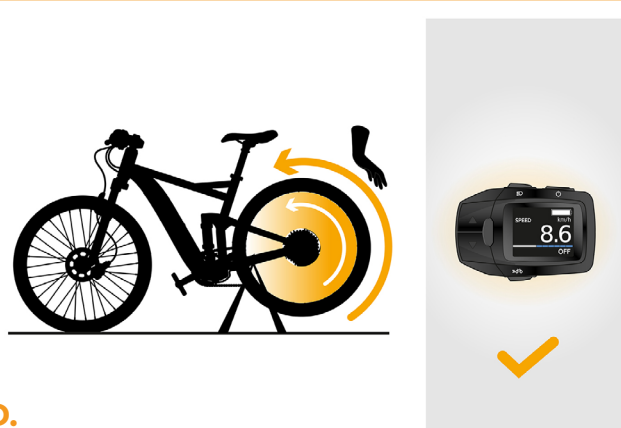
B.



C.

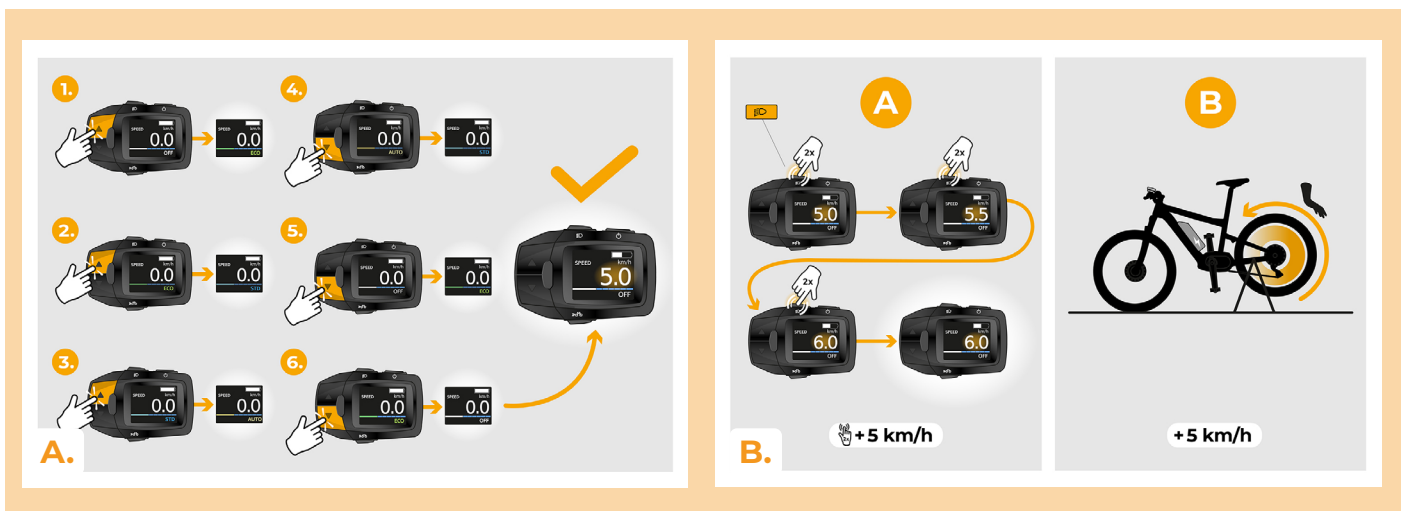


D.



STEP 9: Setting the speed limit

- A.** The maximum assist speed is set by changing the modes in the following sequence: --- + + + (OFF → ECO → STD → AUTO → STD → ECO → OFF).
- B.** Each double-click of the LIGHT button or each 360° rotation of the rear wheel increases the maximum assist speed by 5 km/h. A display value of 3.0 km/h corresponds to a limit of 30 km/h, 5.0 km/h corresponds to a limit of 50 km/h, 9.9 km/h corresponds to 99 km/h, etc. The last displayed limit is saved automatically after five seconds of inactivity. Do not adjust the maximum speed while riding.



www.speedbox-tuning.com

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