

Mounting and safety instruction of **CX-Carbon**

The use of CX Carbon spokes requires solid wheel building experience. Please make sure that the hub and rim as well as the spoke alignment and the assembly is according to the definition below.

Hub

The hubs need to have at least a spoke hole size of 4.2mm. The direction of the drilling should point in angle $\pm 2^\circ$ to the hole in the rim. Any angle between the Spoke and the spoke nipple at the hub will guide to an early breakage in the transition zone. The contact zone of nipple and hub should have a flat area. The spoke hole in the hub can either be round or formed like the shape of the hammerhead. To use a hub with similar shape than the hammerhead would prevent the spoke from turning.

Rim

The nipple holes in the rim should be 4.5-4.8mm. The direction of the drilling should point in angle $\pm 2^\circ$ to the hole in the hub. Any angle between the Spoke and threaded part will guide to an early breakage in the transition zone. The nut should be placed with full surface on the nipple bed inside the rim. The hole in the tire bed should follow to line of the spoke. The diameter must be min.8.5mm. Bigger holes in the nipple bed until 10mm help to attach the 5.5mm Hexagonal key.

Spoke

The threaded section of the spoke should be 7 mm above nipple bed. The square part of the threaded part should be visible in full length below the nipple bed. Spokes with visible failures or cracks should not be mounted.

Spoke length

The length of the spoke is measured from hub seat to the treat end. The calculation of the spoke length requires a special calculator for straight pull spokes. In case you want to have it calculated in 3D, you can also send to products@sapim.eu a dwg. or stp. file of the hub and let us know the ERD of the rim.

Alignment

The spoke should be cold laced. The spoke should not touch each other when assembled. The spokes have an aerodynamic wing shape. The thicker part should point to the drive direction.

Spoke tension

The spoke tension should be equal on each side ± 20 kg. The minimum tension is 90kg per spoke the max is 170kg per spoke. In case you need a tensiometer calibrated on the CX-Carbon, Sapim can calibrate the Sapim spoke tensiometer on this spoke or you need to buy a new Sapim tensiometer. In that case please mention that it is for the CX-carbon.

Mounting

Use appropriate tools for mounting, maintaining and repairing. Watch out that you do not bend the spokes during the lacing process. Any mounting and lacing with additional force on the spoke under an angle can cause breakage. The spoke can only take pull forces in direction of the spoke. The nut must be mounted with the hexagonal 5.5mm key. To avoid any torsion the threaded metal part needs to be clamped with a nipple key of 3.3-3.45mm. If you do not hold the threaded part, the spoke will rotate, twist and can break. The spoke does not have a lot of elasticity and using any kind of locking fluid on the threaded section or the nut is advised. Sapim offers special locking nipples. Extra dishing on the spokes is strictly forbidden.

Safety

Store the spokes and nipples away from small children.

Maintaining

The wheel, spokes and nipples should be checked regularly for tension and damage. Please do not clean the wheel with aggressive cleaning products. Spokes and nipples are made of composite and metal belong in the residual waste when disposed of.

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