

**4.2.1.2. Replacing the rear rim on the Cosmos, Ksyrium Equipe and Crossmax Enduro wheels**

The 2 main principles of building the rear Cosmos, Ksyrium Equipe and Crossmax Enduro wheels are the following :

- The **non pulling spokes** are placed **in the inside slots** on the hub, free wheel side as well as side opposite the free wheel.
- The **pulling spokes** are placed **in the outside slots** on the hub, free wheel side as well as side opposite the free wheel.

**Tools needed**

- 1 alu spoke wrench M40494 or M40652 (for the Crossmax Enduro wheel)
- 1 classic spoke wrench (for the Cosmos and Ksyrium Equipe wheels)
- 1 tensiometer + tension-reading conversion chart adapted to the tensiometer used

1. Start on the free wheel side;
2. Turn the rim in front of you so the 2 raised indicator bumps are to the right of the valve hole (valve hole near you) and prepare building the **1st half of the free wheel side** :
  - 2.1. Put a spoke in the first hole to the right of the valve hole (hole near the raised indicator bumps). Then put a spoke in 1 out of every 4 holes :
    - For the Cosmos and Ksyrium Equipe wheels : Tighten the nipples on the spokes until they start breaking.
    - For the Crossmax Enduro wheel : Tighten the nipples on the rim until the red brake rim disappears.
  - 2.2. Insert these spokes in the inside slots on the free wheel side of the hub. These are **non-pulling** spokes.
3. Then prepare building the **2nd half of the free wheel side** :
  - 3.1. Put a spoke in the 3rd hole to the right of the valve hole. Then put a spoke in 1 out of every 4 holes, following the nipple adjustment instructions above.
  - 3.2. Insert these spokes in the outside slots on the free wheel side of the hub. These are **pulling** spokes. The free wheel side is ready.
4. Turn the wheel over to prepare building the **1st half of the side opposite the free wheel**.
  - 4.1. Put a spoke in the 3rd hole to the right of the valve hole. Then put a spoke in 1 out of every 4 holes, following the nipple adjustment instructions above.
  - 4.2. Insert these spokes in the inside slots on the hub on the side opposite the free wheel. These are **non-pulling** spokes.
5. Then prepare building the **2nd half of the side opposite the free wheel** :
  - 5.1. Put a spoke in the 1st hole to the right of the valve hole. Then put a spoke in 1 out of every 4 holes, following the nipple adjustment instructions above.
  - 5.2. Insert these spokes in the **outside** slots on the hub on the side opposite the free wheel. These are **pulling** spokes. The side opposite the free wheel is ready.
6. Tighten each spoke in the rim evenly to adjust the tension of the wheel.
7. Set the final tension and center the wheel (refer to product pages to know which tension is adapted to each wheel).

The spokes have an anti-rotation system, which prevents them from turning in the hub. When setting the tension of the spokes, they will automatically lock in the hub.

Since they are an ABS type of nipple (Cosmos and Ksyrium Equipe) or integrate a brake ring (Crossmax Enduro), it is not necessary to use thread lock.

**CAUTION** : Manipulating the spoke nipples on the Crossmax Enduro wheel greatly affects the spoke tension and consequently the wheel adjustment. In the final phase of adjusting the tension, 1/4 turn of the nipple corresponds to about 0.3 mm of lateral rim movement.



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