

### 2.2.2.3. Replacing the rear rim of the Ksyrium Elite wheel

The 2 basic principles for building the Ksyrium Elite rear wheel are the following:

- The **non-traction spokes** are placed **in the inside slots** of the hub, free wheel side as well as non-drive side;
- The **traction spokes** are placed **in the outside slots** of the hub, free wheel side as well as non-drive side;

#### Tools needed

- 1 alu spoke wrench M40494 or M40652
- 1 spoke wrench for aerodynamic spokes M40567
- 1 tensiometer + tension-reading conversion chart adapted to the tensiometer used

**The references and lengths of spokes to be used are given in the product pages (page 10).**

1. Start with 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 for building the **1st half of the free wheel side (non-traction spokes)**:
  - 2.1. Put a spoke in the 1st hole to the right of the valve hole (hole near raised indicator bumps) and screw the nipple into the rim until the red brake ring disappears;
  - 2.2. Do the same for all the spokes, 1 hole in 4;
  - 2.3. Insert these spokes in the **inside slots** on the free wheel side of the hub. The spoke heads must locate into the oblong holes of the slots;
3. Prepare for building the **2nd half of the free wheel side (traction spokes)**:
  - 3.1. Put a spoke in the 3rd hole to the right of the valve hole and screw the nipple into the rim until the red brake ring disappears;
  - 3.2. Do the same for all the spokes, 1 hole in 4;
  - 3.3. Insert these spokes in the **outside slots** on the free wheel side of the hub. The spoke heads must locate into the oblong holes of the slots;
4. Turn the wheel over to prepare for building the **1st half of the non-drive side (non-traction spokes)**:
  - 4.1. Put a spoke in the 3rd hole to the right of the valve hole and screw the nipple into the rim until the red brake ring disappears;
  - 4.2. Do the same for all the spokes, 1 hole in 4;
  - 4.3. Insert these spokes in the **inside slots** on the non-drive side of the hub.
5. Prepare for building the **2nd half of the non-drive side (traction spokes)**:
  - 5.1. Put a spoke in the 1st hole to the right of the valve hole and screw the nipple into the rim until the red brake ring disappears;
  - 5.2. Do the same for all the spokes, 1 hole in 4;
  - 5.3. Insert these spokes in the **outside slots** on the non-drive side of the hub.
6. Tighten each spoke 2 turns;
7. Starting with the 2 spokes at either side of the valve, and then the 2 spokes at either side of the weld, tighten each spoke evenly in the rim to tension the wheel;
8. Set the final tension and center the wheel (refer to page 10, for the tension adapted to the wheel).

**A brake ring is integrated in the nipples, it is therefore not necessary to use thread lock.**

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

