Bicycle Wheel Threading Manual

Bike threading is a skill that requires patience and precision. Proper threading ensures stability and safety while riding. This manual will guide you through the entire process.

Tools and Materials

Rims (front and rear)

Hubs (front and rear)

Wires (specific to the wheel type)

Tension nuts or nipples

Nipple wrench

Wheel stand or mount

Wire tension gauge (optional)

Strings or wire to measure the correct tension (optional)

Step 1: Prepare the hubs, rims and wires

Select the appropriate components - check the compatibility of the rim, hub and wires. It is important to select the correct type of wires (for the rear wheel, the drive wires tend to be thicker, due to the higher load).

Prepare the rim – before you start lacing, make sure the rim is clean, free of cracks and damage.

Check the hub – make sure the hub is in good condition, the bearings are smooth and the hub spins properly.

Step 2: Thread the wires into the hub

Start at the back of the hub – most bikes use a “cross” lacing pattern where the wires cross.

Wire spacing – there are various holes for the wires on the hub. You usually start by attaching the wires to the side where the wires overlap (the wheel is lashed from the center outwards).

Push the wires into the holes of the hub – make sure each wire is securely positioned in the holes and pointing outwards from the hub.

Step 3: Before you start lacing

Start lacing from one point – first make a simple "cross" for the front wheel. The rear wheel tends to be more complex to wire, with multiple crossings.

Using nipples – when attaching the spokes to the rim, use nipples that you insert into the thread on the spoke. The nipples have small holes that allow them to be attached to the rim.

Step 4: Crossing the spokes

Stepwise crossing – make one cross at each point of the spokes between the spokes. When cross-stitching, the spokes cross at each point.

Direction of the spokes – on the front wheel, the spokes typically cross 3 times, on the rear wheel, the pattern is more complex with 3 or 4 crosses.

Place the spokes in the correct holes in the rim – each spoke must be well seated in the rim, without catching and with the correct tension.

Step 5: Tensioning the spokes

Rotate all the spokes – just give them a little hand tension for now, but do not tighten them completely.

Alternating tensioning – start tensioning the wires one at a time. Start by tensioning two opposing wires to evenly load them. Then continue with the rest.

Slowly increase the tension – each wire should be tensioned evenly to keep the wheel straight. After the initial tensioning, check that the wheel is not warped and that it is centered.

Step 6: Check and adjust

Check the wheel balance – place the wheel on a flat surface and check that it is not curved to the sides (both horizontally and vertically).

Adjust the tension – if any wire is too loose or too tight, adjust its tension using the nipple wrench.

Check the evenness – regularly check the tension of each wire and the balance of the wheel. After about 5-10 minutes of riding, everything should settle, so I recommend checking the tension and balance again.

Step 7: Finalize

Fix the final spokes – Once you have the wheel straight and evenly tensioned, tighten all spokes firmly.

Check all nuts – make sure the nipples are tight and no spokes are loose.

Regular maintenance – recheck the spoke tension and wheel balance after a few rides. Spokes can loosen a bit over time, so it's important to check them regularly.

Tips:

Practice on an old rim if you're tying a wheel for the first time.

Marking spokes: If you find that some spokes seem to be getting lost in the tangle, mark them by location.

Using a tension gauge – For more accurate tensioning, you can use a spoke tension gauge. This tool will help you achieve even pressure across all spokes.

Lacing a bicycle wheel takes time and skill, but with this guide and practice, it will gradually become second nature.