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## Building a front disc wheel.

by admin

Building your own wheels is not as difficult as you may think. Whilst there is a lot of skill involved in building a super strong lightweight pair of wheels, if your ambitions are not quite as high and you have a bit of time and patience you can build strong wheels which will last for years.

This articles takes you step by step through lacing up a front disc specific mountain bike wheel.

### Materials

Hub - Hope XC Disc 32hole  
 Rim - Mavic XC717 anodised black  
 Rim tape - I prefer cloth rim tape  
 DT Competition spokes - 262(disc side) 264(non disc side)  
 DT Brass Spokes



The hub I bought on ebay, a bit of an impulse buy to be honest but still a hub I would have considered at the recommended retail price. The rest of the parts I bought from chainreaction (<http://www.chainreactioncycles.com>). Chainreaction make buying the parts easy as all you need to do is tell them which hub and rim combination you are planning to build and they will send you the correct length spokes.

### Tools

Screwdriver - medium flat head  
 Spoke Key  
 Grease - something light weight  
 Another 3 cross wheels to copy is always useful

### Preperation

Before you start it is worth putting a little bit of grease on the thread of each spoke. Some builders also put some grease on the outside of the nipples, where the nipple will sit up against the rim.

### Step 1

Take a close look at the rim. Each of the eyelets (spoke holes) are offset alternating from one side to the other. The spokes need to be laced so that they go from the flange of the hub to eyelets which are on the same side of the rim. The first spoke to go in is the key spoke. This is normally the spoke next to the valve hole. Just to confuse matters I have started things off slightly incorrectly by putting the key spoke in after placing the fist 8 non-disc spokes.

The positioning of the spokes is important, in a 3 cross pattern every 4th spoke runs almost parallel to every 5th spoke. This helps to allow easy access to the valve when pumping up tyres. The pictures below shows 9 spokes in place, along with a close up to show how the spokes need to be inserted around the valve hole in the rim.



Insert the first eight spokes (non-disc side). Starting with the spoke 2 to the right of the valve hole. There is no need to put the nipples any more than 2 or 3 turn onto the end of the spokes at this stage. We are only trying to get the wheel laced correctly tensioning the spokes comes later.

Before putting the 9th spoke in (disc side), hold the hub and twist it so that the spoke nipples are pulled up against the rim. Looking directly down on the hub the spoke hole for the 9th spoke it the one on the opposite flange offset anticlockwise from the 1st spoke you put in.

### Step 2

Insert the rest of the first 8 disc side spokes (spokes 10 to 16).

### Step 3

The next 8 non-disc spokes will create your 3 cross pattern and give the wheel some structure. The spokes will need to be threaded from the inside of the flange. Each spoke needs to cross over the first two spokes in the pattern and then go under the 3rd creating the 3 crosses. The spoke needs to go to the eyelet 2 to the right of the spoke it has just been threaded under. Now is a good stage to compare the wheel against another 3 cross wheel, just to make sure everything is correct.



### Step 4

Now the wheel ha a bit of structure it is worth taking up a bit of slack out of the spokes. You will have to do it at some point and it will help you to see the lacing pattern more clearly as you add the final 8 spokes.



The final 8 spokes are the trickiest to put in, mainly because you have to thread them through all the existing spokes. Threading them through from the non-disc side these spokes again need to cross the 3 spokes on the same side before going to the eyelet 2 to the left of the last spoke crossed. The spokes must go over the 1st two spoke it crosses and needs to be threaded under the 3rd spoke.

You may have to bend the spokes quite a bit to get them to thread under the spokes in the pattern.



### Lacing complete!

You should now have a 3 cross laced wheel (with pretty loose spokes) ready for tensioning and truing.

25-04-2005 Dave Faulkner

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