

## 1.1 FREE PLAY ADJUSTMENT

Hub play must always be gauged with the wheel fitted and tightened in the frame or fork. Tightening the quick release skewer significantly increases the lateral pressure exerted on the bearings. Therefore:

- if there is play in a wheel not fitted into the frame or fork, it may disappear once the wheel has been fitted;
- if there is no play in a wheel not fitted into the frame or fork, it is possible that tightening the quick release skewer will over-stress the bearings, thus damaging them.

Adjust the adjustment nut by fully tightening it and then untightening it by a 1/4 turn, so as to close the quick release lever (CLOSE position) with a suitably large force. However, a too large tightening force may damage the bearings.

This tightening force is a subjective parameter that is directly dependent on the end user, and as such it is difficult to accurately determine the optimum bearing adjustment at the factory.

In order to avoid any problems for your customers, we factory set bearing play by simulating an extreme quick release tightening force.

There is therefore likely to be some play in the hub of a new wheel fitted to a bike with a lower quick release tightening force than that used in the factory.

Apply the following procedures to set the amount of play.

**WARNING: Adjusting the play is a delicate operation which consists of identifying the balance point between play and no play. Having no play does not necessarily mean that the hub is correctly adjusted as the bearings may be over-stressed.**

### 1.1.2. QRM HUBS

Since 2004, a new technology has enabled Mavic to use its top of the range FTS-L free wheel concept on its entire wheel range.

On the 2005 range, this new type of hub is used on the following front and rear wheels:

- Cosmos
- Cosmic Elite
- Ksyrium Equipe
- Speedcity 05 (International Standard and Center-Lock)
- Crossland (International Standard and Center-Lock)
- Crossmax Enduro
- Crossmax Enduro Disc (International Standard and Center-Lock)

Hubs for these wheels therefore use the same assembly and removal procedures.

The specific feature of these hubs is the “bearing support ring”, which provides the interface between the bearing and the axle. When tightening the axle, this support allows hub play to be adjusted.

**These bearing support rings are SINGLE use and must be replaced each time the axle is removed, whether the bearings are changed or not.**

A specific tool, called the «Multi-function tool» (see page 44), will help you correctly refit and adjust the axles for these hubs.

To adjust the free play of these hubs, please follow the following procedure.

#### PROCEDURE

##### Tools needed

- 1 thin 13 mm flat wrench
- 1 x 17 mm flat wrench

This procedure can be applied to either side of the hub for a front wheel. It can only be applied to the non drive side of a rear wheel.

1. Block one of the 2 fork support nuts (disc side for wheels with a disc) in a vice;
2. Insert the thin 13 mm flat wrench on the grey part of the axle and keep the wrench positioned opposite a spoke;
3. Place the 17 mm flat wrench on the axle end nut, positioning it opposite another spoke;
4. Simultaneously turn the 2 wrenches clockwise the equivalent of the space between two spokes (see photo);
5. Put the wheel back into the frame, re-tighten the quick release (see page 18), and then delicately move the top of the wheel to the right and then the left of the bike to check that play has been eliminated.

**You can carry out this procedure a maximum of 2 times consecutively. If there is still play, the bearing should be replaced, as should the bearing support ring.**

**For the full fitting and removal procedures for QRM hubs, refer to pages 19 to 22 in the 2004 technical manual.**

