

## 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.**

### 1.1.1. QRM+ HUB

QRM+ designates Mavic hubs that can be adjusted using the hub wrench M40123. For the 2005 range, this concept is used on the following wheels:

- iO
- Comete road and track
- Cosmic Carbone SL
- Ksyrium SL
- Ksyrium Elite
- Crossmax SL and SL Disc
- Crossmax XL and XL Disc
- Deemax UST

This hub has an adjustment nut on the left hand side of the wheel compatible with the hub wrench M40123.

This very simple system allows very accurate and quick adjustment of bearing play.

### PROCEDURE

#### Tools needed

- 1 hub wrench M40123

1. Fit the wheel in the frame or fork and tighten the quick release skewer using a reasonable force;
2. Delicately move the top of the wheel to the right and then the left of the bike to feel the play;
  - If there is some play, lightly tighten the adjustment nut using the hub wrench M40123 and check for play: repeat the operation as many times as required until there is no play;
  - If there is no play, to be sure the bearings are not over-stressed, untighten the adjustment nut until some play can be felt and then carry out the above operation.

**The 4 lugs of the hub wrench M40123 must be fully inserted into the holes of the adjustment nut, making sure to correctly position the wrench against the nut (on Crossmax XL Disc and Deemax UST front wheels, only the 2 lugs at the extremities of the wrench are used).**

To avoid damaging the bearings due to over tightening of the adjustment nut, the wrench M40123 is made from resin: a sort of safety valve; the lugs will break before the bearings are damaged.

