



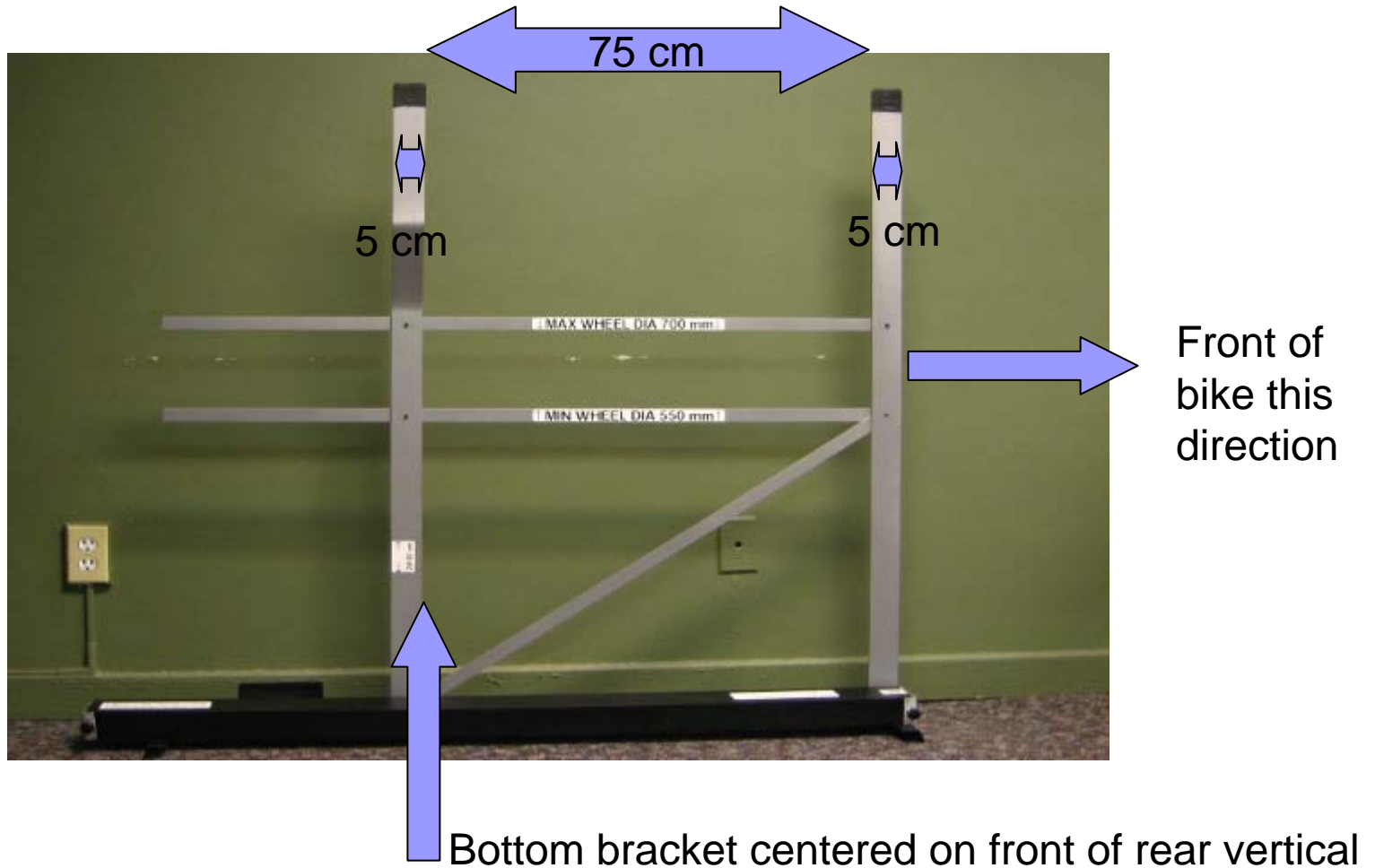
Bike Measurements for Commissaires

A guide to using the jig and testing for morphological exceptions.

UCI Bicycle Measurements

- Knowing the bike measurement regulations is still necessary. The jig is only a tool to speed the process.
- The UCI regulations are available at www.uci.ch and are found in Part 1, General Regulations under Section 1.3.
- The jig's main purpose is to quickly show the distances relative to the center of the bottom bracket of the bicycle.

Overview of a Jig



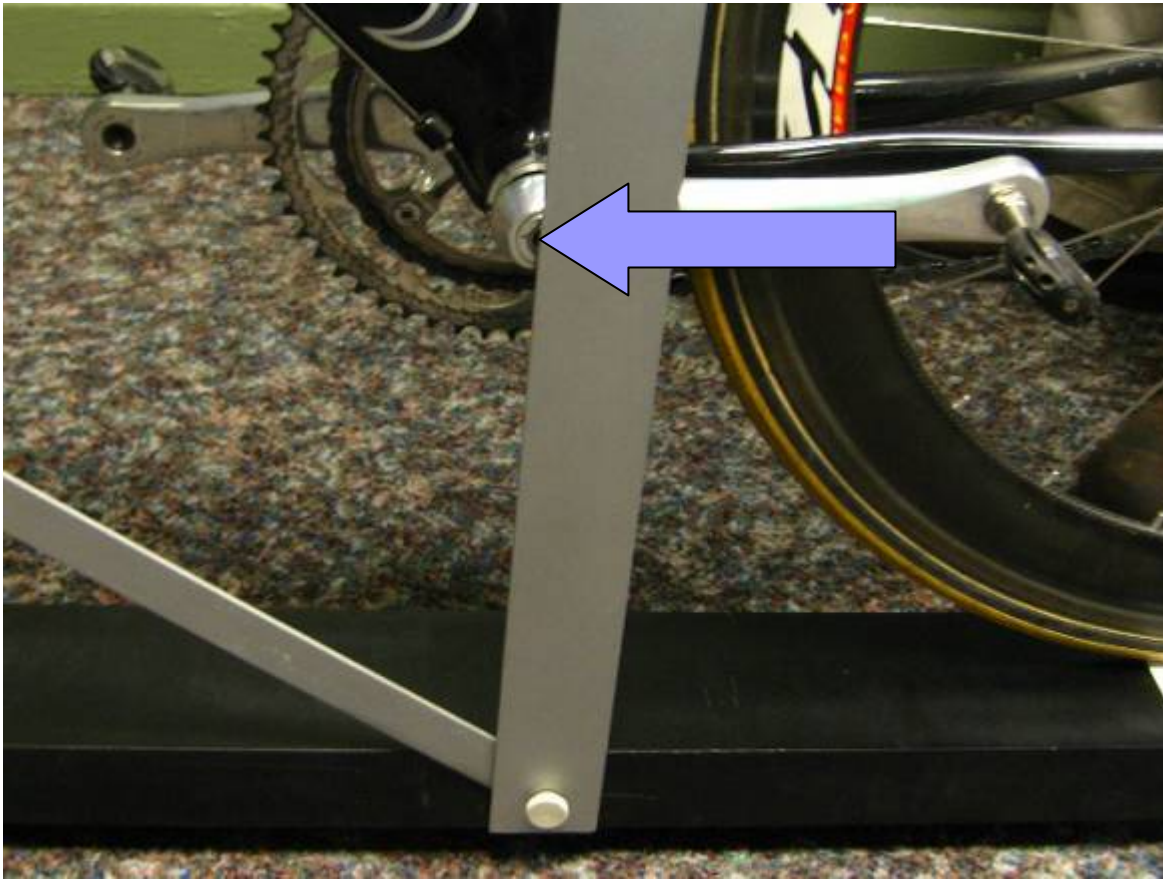
Bike Placed on the Jig



Center bottom bracket here



Detail: Bike placed on the Jig



Rotate the crank out of the way. The spindle should be centered on the front edge of the vertical bar. In this reverse angle photo, the front of the jig and bike are to the left.

Vertical Seat Measurement Bar

This jig has a bent measuring bar for checking the seat position. (Note this during jig assembly; some jigs have a straight bar.)



Saddle Position



This saddle is 5 cm behind the bottom bracket. This position passes and does not require the morphological test for any event.

Saddle Position: Forward Limit

This saddle is at the limit of the bottom bracket line. It would need to be moved back if it were any farther forward.



The knee morphological check needs to be done unless this is for a track sprint, keirin, 500 meter or 1 kilometer time trial.

Time Trial Extensions

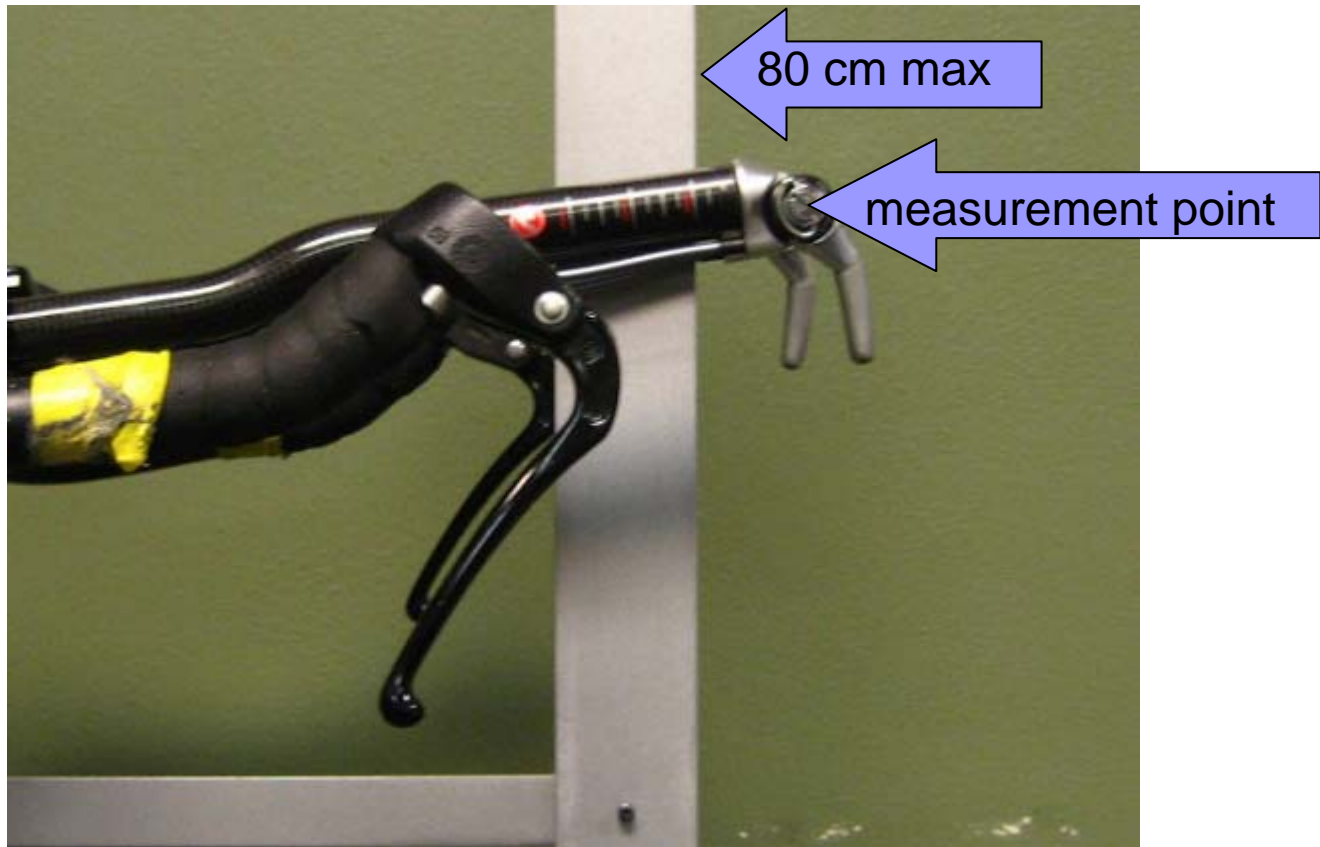
This bar measures inside the 75 cm limit.



The **permanently fixed** (not moveable) extension must put the arms in a horizontal position (a parallel plane to the ground). There are many different shapes of bars. Often, checking the position of the arms on the bars is the only way to ensure a correct horizontal position.

Time Trial Extension Too Long

This bar measures past the 80 cm maximum limit. The pivot of the shifter is the measurement point used.



Time Trial Extension at the Limit



The bar is right at the 80 cm limit. The pivot of the shifter is the measurement point used.

This bike is legal if the rider passes the morphological exception tests.

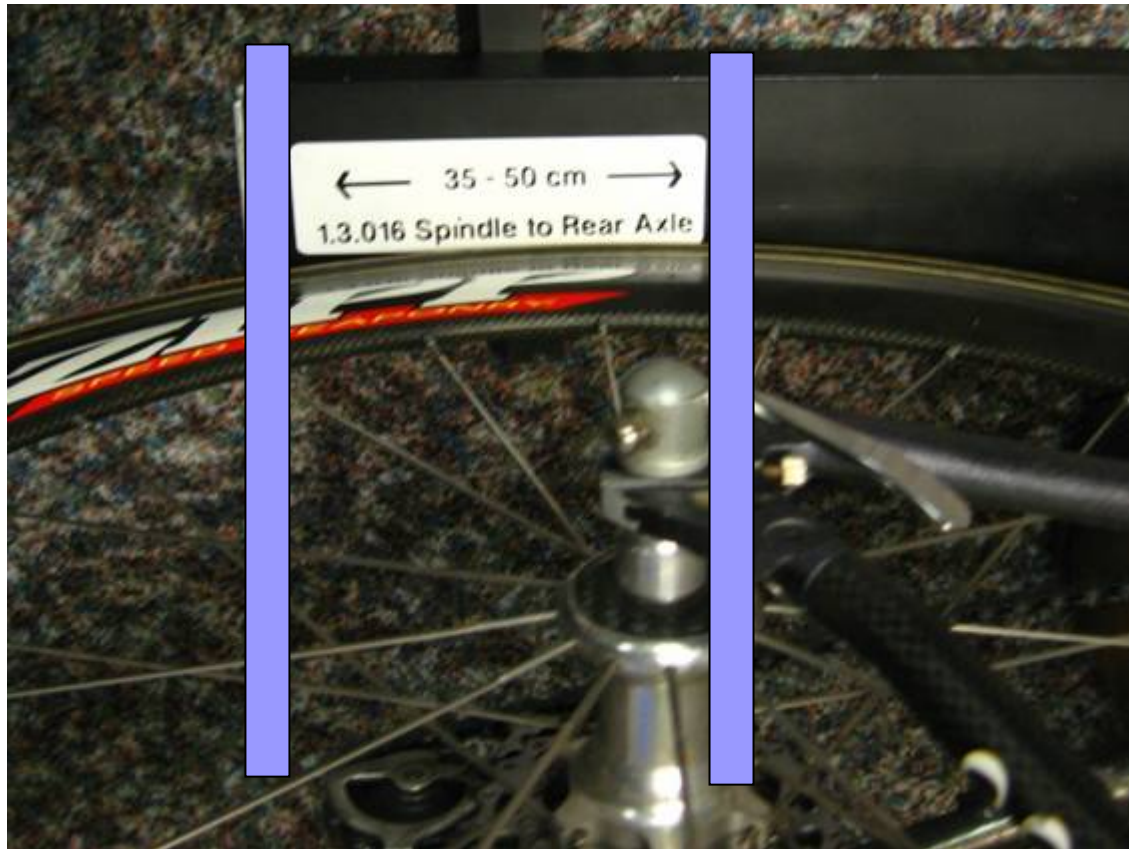
Handlebar Height

Check that the portion of the handlebars where the hands rest lies above the plane of the top of the tire and below the level of the top of the seat.



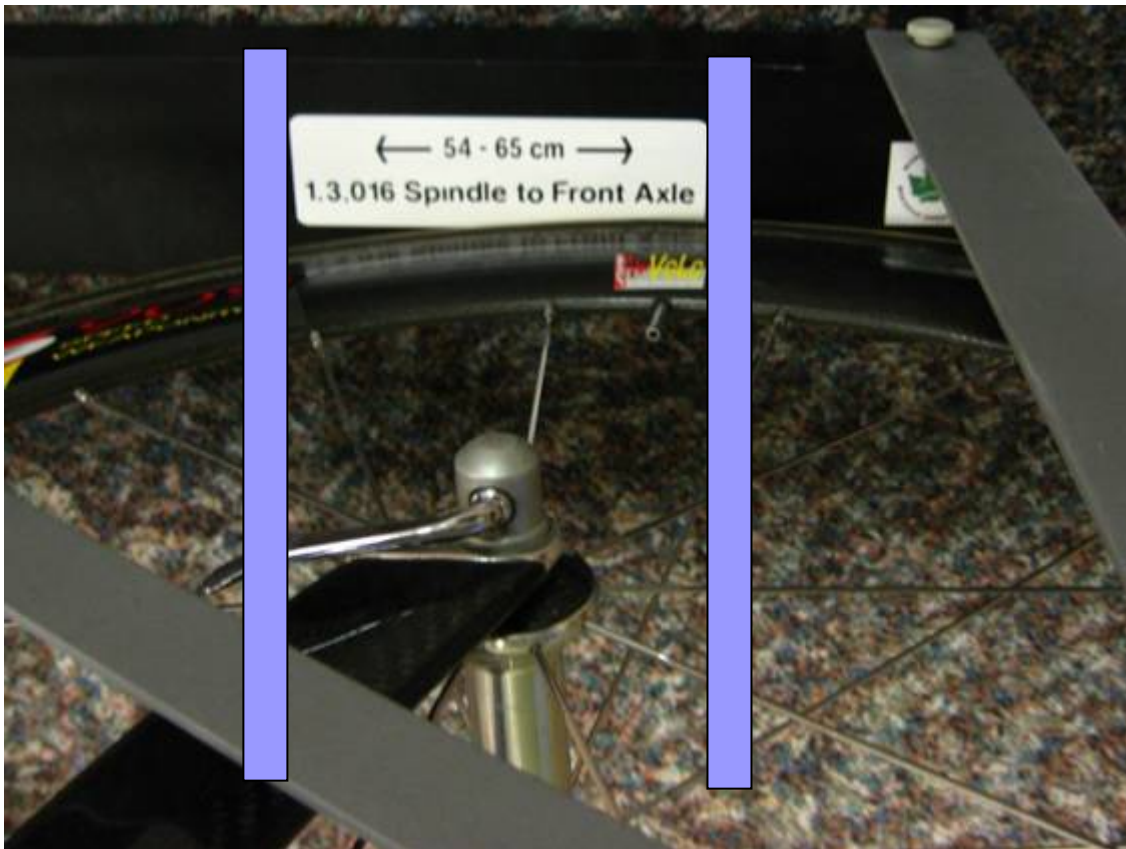
Rear Axle Distance

The rear axle must fall 35 to 50 cm back from the bottom bracket.



Front Axle Distance

The front axle should fall 54 to 65 cm in front of the bottom bracket.



If the axle falls short of the 54 cm mark, the rider must pass the knee morphological exception test.

Wheel Height

Minimum and maximum wheel diameters fall between the guides. The height includes the tire.



Wheel Height

The two horizontal maximum and minimum guides also aid in checking that the wheels are of equal size.

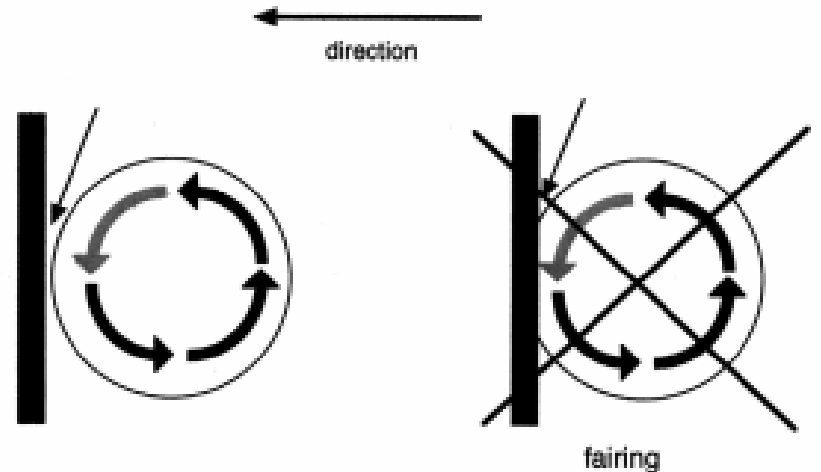
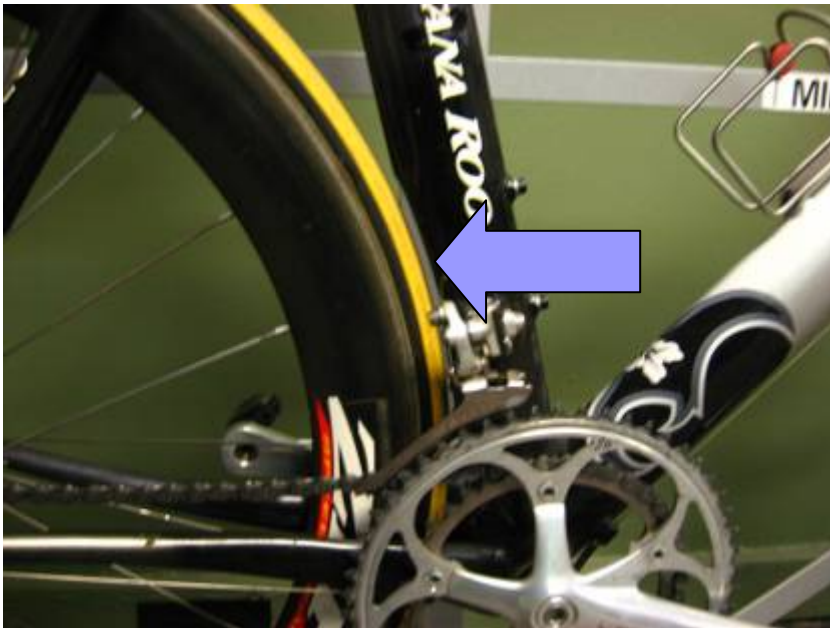


Maximum 70 cm

Minimum 55 cm

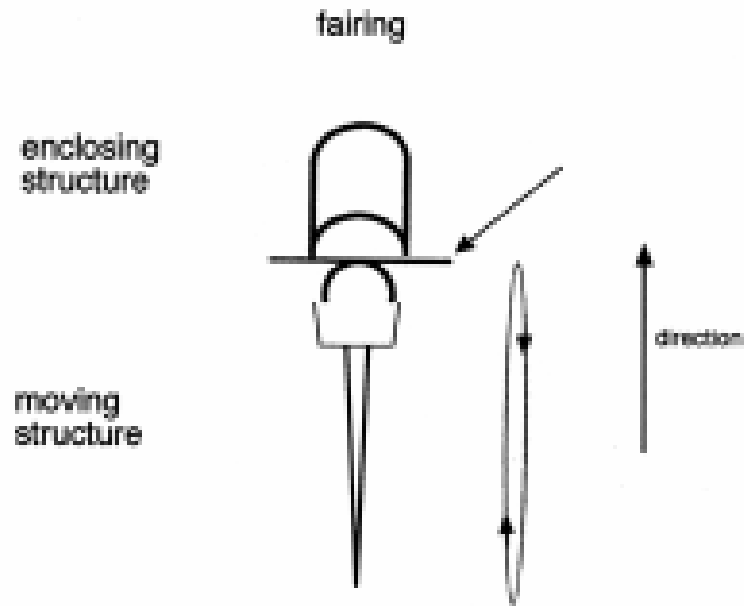
Wheel Fairings

Some bike tubes curve around the rear wheel providing a protective “screen”. Fairings are not permitted.



Wheel Fairings

If a credit card can be slipped between the wheel and the tube, the wheel is set in an acceptable position.



Bottom Bracket Height



The bottom bracket must fall within the 24-30 cm range from the ground.

Note 24-30 cm is also the minimum and maximum length for the saddle.

Morphological Exception: Knee Test



This rider's saddle position requires the morphological test. A collapsing T-square is used to check that the front of the knee is behind the pedal spindle. A plumb bob can also be used, but the rider **must** be on completely level ground.

Morphological Exception: Knee Test

Locate the center of the spindle with the edge of the square.



The square can fit to the inside of the pedal for greater accuracy if it is not too tall.

The rider must have his cycling shoes on. Let the rider drop his heel to level.

Morphological Exception: Knee Test



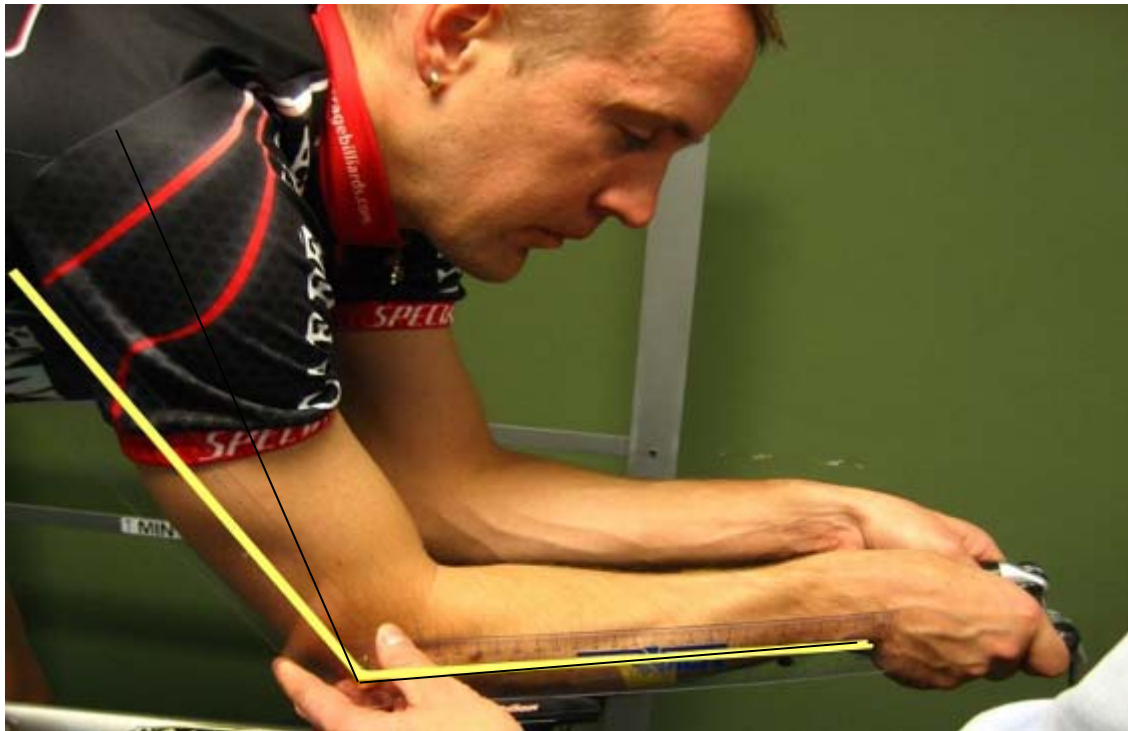
The rider must be sitting in a normal riding position; not excessively far back on the saddle.

This rider passes the test.

Note that his arms are also at an acceptable angle.

Morphological Exception: Arm Test

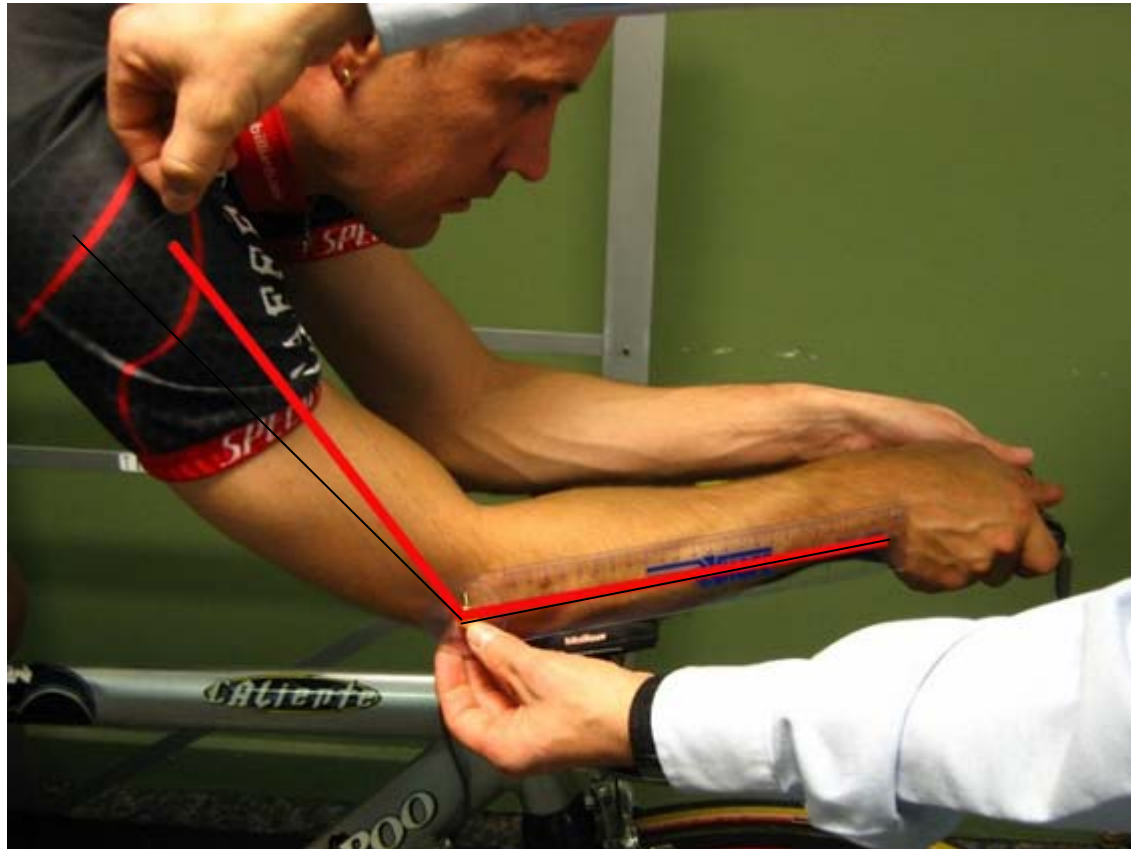
This rider passes the 120 degree test.



Measure from the protruding wrist bone to the elbow bone to the notch in the shoulder. Note that the forearm is also in the horizontal plane.

Morphological Exception: Arm Test

This rider fails the 120 degree test. His bars must be moved back to a shorter position. (Superman does not ride a bike.)



Watch for Invalid Tests



- The rider must use the farthest reach position for the test.
- The arms must be horizontal when using the extension.
- The rider must be in a normal riding position on the seat – not too far forward.