11/05/2024

Bike Testing:

Rider: [William Fawcett](mailto:William.Fawcett@student.nmt.edu)

Present: Joseph, Jayden, Will

MLO sensors made 10/30/2024

Test speed ranges: 5, 10 and 15 mph

5 seconds to change speed, 15 seconds at each speed, all the way up and back down. 5 seconds rest before stopping data collection.

Goal strain when knee is at top of cycle: 15% to 20%

Measurements:

Bottom of cycle: 32 cm

Bottom 45 forward: 32.5 cm

Top of cycle: 37 cm

Top 45 forward: 35.75

Rear middle: 36.5 cm

Top 45 rear: 37 cm

Front middle: 34 cm

Bottom 45 rear: 34 cm

Note: from top 45 rear to direct top no knee angle change visible, ankle rotates at that point.

Note: Athletic tape wrapped around ends of sensor so duck tape is not directly contacting.

**Test 1: MLO-Y Covered** 11/05/24

Positive wire partially broke when applying 2nd layer to cover sensor, should still work, may not.

Stretch 33.5 cm

Unstreched: 29.5 cm

Wire ripped out or broke either during removal or testing

**Test 2: MLO-W Covered** 11/05/25

Sensor attached without issue

Stretched: 31.5 cm

Unstretched: 28.5 cm

Re running at higher strain

T2

Stretched: 33.5 cm

Unstretched: 30.5 cm

Note: slipped back to previous strain on sensor. Could be due to new taping method or slippage of knee sleeve.

**Test 3: MLO-B Covered**

Note: wire is slightly pulled due to covering method, will have to look into a new method

Stretched: 31.5

Unstretched: 29.5

Lots of slipping

T2

Note: will remove black tape from PDMS and run with just duck tape.

Note: On DCI stopped at 10mph on the way down.

Stretched:23.5cm

Unstretched: 20cm