

Bicycles for Junior Racers

Gearing. According to the 2013 USA Cycling Road/Track/Cyclocross Rules:

114. Youth/Junior Gears. The maximum chaingear ratio for Junior riders is based on age and discipline. Blocked gears will be allowed, except in National Championships or selection events for international competition. All tests for compliance shall be done using the "roll-out method." There is no restriction for cyclo-cross or MTB races.

(a) For road and track the limits are:

Road

6-18: 7.93 meters (26')(52x14)*

Track

17-18: Unrestricted

15-16: 6.78 meters (22'3")(48x15)

13-14: 6.36 meters (20'10.5")(48x16)

10-12: 6.00 meters (19'8")(48x17)

(b) The gear limit for a rider is determined by the age of the rider and the discipline, and applies in all events in that discipline

This means that riders age 10-18 (considered Juniors by USAC) have a limit on the largest gear they can ride in a race (as of 2007, this includes juniors when they ride in senior races). The test for compliance with this rule is to place the bike (with the largest gear selected) with the crank arm pointed straight down at a line on the road. The bike is then rolled backward directly to another line placed 26 feet from the first line. If the gear is in compliance then the crank arm will have rotated at least one full revolution before the second line is reached. To obtain this maximum allowable gear, one or more of the smallest cogs on the rear wheel can be effectively blocked using the upper limit screw on the rear derailleur so that the bike is unable to shift into the cogs that would make the gear too high (blocking gears is NOT allowed in national championships). Note that there are no gear restrictions for cyclocross races.

A bike with 700C wheels (standard road bike wheels – marked on tire sidewall [e.g. 700x23C]) can have the following combinations for the high gear (if the chainring or cogs are not marked count the number of teeth):

700C Wheels	
Large Chainring (front)	Smallest Cog (rear) allowable
45	12
48	13
50	14
52	14
53	15

A bike with 650C wheels (small road bike wheels – marked on tire sidewall [e.g. 650x23C]) can have the following combinations for the high gear:

650C Wheels	
Large Chainring (front)	Smallest Cog (rear) allowable
48	12
50	13
52	13
53	13

The only sure test for compliance is the rollout – testing that the bicycle, when in the highest gear, will travel 7.93 meters (26 feet) or less with one revolution of the cranks. After the finish of a race, all junior riders must report directly to the location designated by the officials for the rollout test to be administered.

A permanent solution is to purchase and install a front chainring and/or rear cassette which gives the proper gear combination. It may also be a good idea to have a second rear wheel with the same gears, to be used for training and for a spare wheel during races, so that if serviced after a puncture, the rider still has junior gears and doesn't risk being penalized.

Equipment. 115. Young Junior/Youth Bicycles All riders aged 14 and under are restricted to massed-start bicycles as defined in 111(g). These bicycles must also have at least 16 spokes and no wheel covers may be used.

That means that no aero bars or extensions are allowed in any event, including time trials.