



Junior Gearing Restrictions

In the interests of safety, the Bermuda Bicycle Association (BBA) imposes gearing restrictions for junior riders in all events organized by the BBA.

Maximum Roll-Out

Restrictions are established for the maximum roll-out – that is the distance traveled by the bicycle with one complete rotation of the pedals when the largest front chain ring and smallest rear cog are engaged.

While the maximum roll-out is a factor of wheel size and front to rear gear ratio, the restriction is defined by the roll-out distance and not by cog size.

Restrictions are as follows:

Juniors 17-18: MAXIMUM ROLL-OUT IS 7.93 METRES (26' 0")

Juniors 16 & younger MAXIMUM ROLL-OUT IS 7.40 METRES (24' 3")

Notes

1. Although it is strongly recommended that riders equip their bikes with appropriate sprockets and chain rings in order to comply with the Gearing Restrictions, as this makes for a significantly more efficient set-up, a permissible alternative is to “block-off” illegal sprockets and/or chain rings.
2. To encourage the use of appropriate gears in the younger age categories, notwithstanding the Gearing Regulations, individual parents or coaches may wish to implement even greater restrictions, by, for example, “blocking-off” the large chain ring.
3. Failure to comply with the Junior Gearing Roll-out Test will result in automatic disqualification. Race officials will be expected to “spot check” for compliance from time to time, either before or after races. It is the rider’s responsibility to ensure that his bike complies with the Junior Gearing Roll-out Test.

Junior Gearing Restrictions

4. "Roll-out" is the distance a bike travels each time the pedals make a complete turn.

Guidance on performing the roll-out test

1. It is a very simple process to determine if your bike meets the BBA's Junior Gearing maximum roll-out restriction. Absolutely no specialized knowledge is required. Follow the procedure below:
2. Make two marks on the ground that are same distance apart as the maximum roll-out you wish to test - 7.40 metres (24' 3") for riders 16 or younger and 7.93 metres (26' 0") apart for riders 17 to 18.
3. Ensure that the bike is in its highest gear ratio; that is the chain must be on the largest front chain ring and the smallest rear sprocket.
4. Place the bike over one of the marks on the ground, with the rear wheel closest to the other mark.
5. Make sure that the pedal cranks are in an absolutely vertical position and line up the lower pedal axle with the mark.
6. Roll the bike backwards in a straight line towards the other mark. The cranks will turn as you roll the bike. If the crank you lined up with the first mark makes one complete revolution and ends up back at its lowest position before you reach the other mark, then the bike passes the maximum roll-out test. If not, you or your bike mechanic will have to make some adjustments – either by replacing the front chain ring with a smaller chain ring, by replacing the rear cog set, or by limiting the derailleur movement to block off access to either the larger chain ring or smallest cog(s).

Examples of acceptable gear ratios

The following combinations of largest front chainring and smallest rear cog SHOULD enable your bike to pass the BBA's Junior Gearing Maximum Roll-out Test. Please note that you must take into account wheel size (examples for the two most popular sizes (650mm and 700mm are given).

Note also that tire dimensions and tire pressure can sometimes make enough of a difference to invalidate some of these combinations. The BBA rule specifically requires the bike to pass the Junior Gearing Maximum Roll-out Test described above, so always do the Roll-out Test after setting up the bike, just to make sure.

Junior Gearing Restrictions

17-18

650 wheel	
Number of teeth on smallest sprocket	Maximum number of teeth on chain ring
11	44
12	48
13	52

700 wheel	
Number of teeth on smallest sprocket	Maximum number of teeth on chain ring
11	41
12	45
13	48
14	52
15	53

16 & under

650 wheel	
Number of teeth on smallest sprocket	Maximum number of teeth on chain ring
11	41
12	45
13	49
14	53

700 wheel	
Number of teeth on smallest sprocket	Maximum number of teeth on chain ring
11	38
12	42
13	45
14	49
15	52