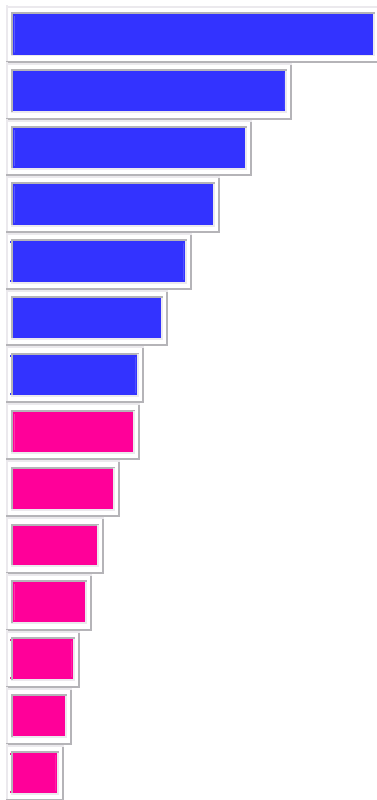


Function and effect

1. Function



high-speed-drive doubles the number of gears. You get higher gears at the touch of a button.

In direct drive (1:1) **high-speed-drive** offers very low gears to climb the steepest hills (purple bars).

In high gear, most gears are doubled without any overlap. You get a very wide gear range, all the gears, that make sense on a bike!

Compared with a 21-, 24- or even 27-speed derailleur system, the gear range is much wider (see the diagram of a 27-speed bikes at the bottom of this page with its many doubled gears).

With **high-speed-drive**, eliminate those hard-shifting large chainwheels and get more speed or slower cranking speeds at the touch of a button - with your heel or ankle! No cables, no derailleurs.

2. How to shift?

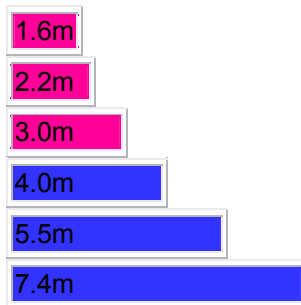


It's so easy: push with the heel of your shoe either on the right or on the left side of the axle on the push button to change from high to low gear or vice versa! That's all!



The easy-shift levers make shifting a real pleasure - even with clic-in-pedals or small shoes.

3. Effect



Gear range: 466%

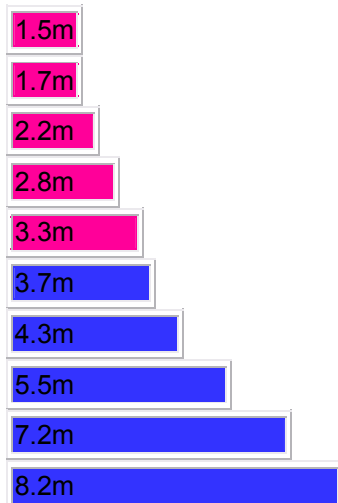
3-speed internal hub + *high-speed-drive*

The purple bars show the development in meters and inch gears of a 3-speed bike in direct drive (1:1).

The blue bars show the additional 3 speeds, if *high-speed-drive* is engaged (1:2.5).

A gear range of **466%**!

(Example: 27 tooth chainring, 27 tooth rear cog, 700C rear wheel)



Gear range: 560%

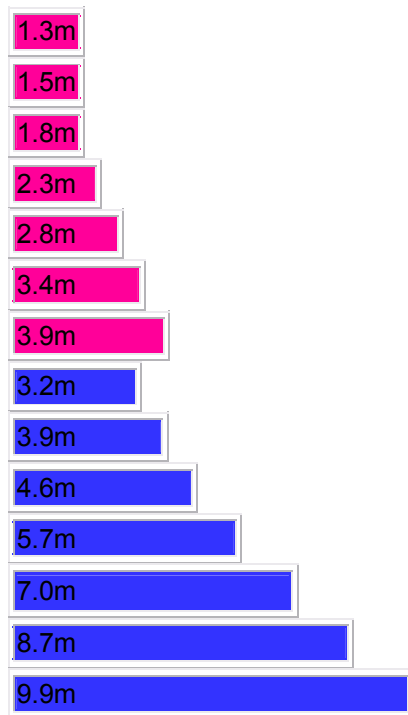
5-speed internal hub + *high-speed-drive*

The purple bars show the development in meters and inch gears in direct drive (1:1).

The blue bars show the additional 5 speeds, that you get with *high-speed-drive* engaged (1:2.5).

A gear range of **560%**!

(Example: 27tooth chainring, 27 tooth rear cog, 700C rear wheel)



7-speed internal hub SRAM Spectro 7 + *high-speed-drive*

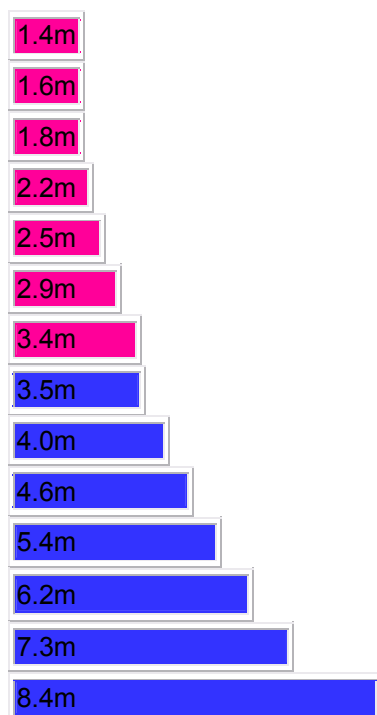
The purple bars show the development in meters and inch gears in direct drive (1:1).

The blue bars show the additional 7 speeds, that you get with *high-speed-drive* engaged (1:2.5).

A gear range of **761%**!

(Example: 27tooth chainring, 18 tooth rear cog, 20" rear wheel)

Gear range: 761%



7-speed internal hub Shimano Nexus 7 + *high-speed-drive*

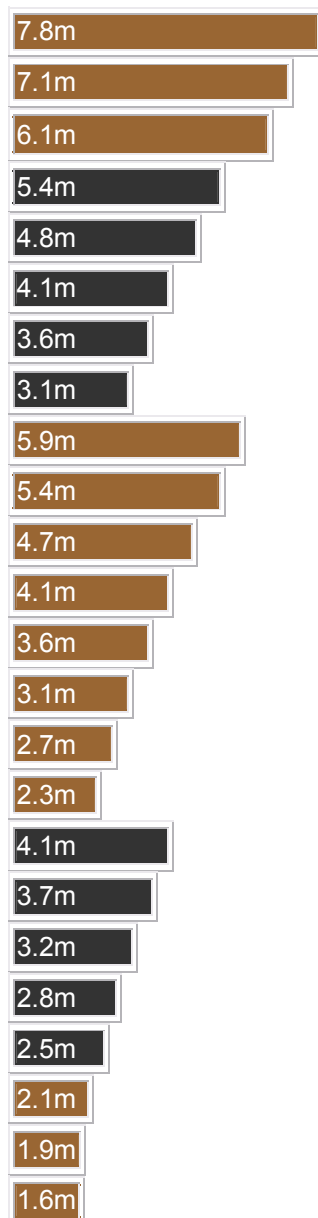
The purple bars show the development in meters and inch gears in direct drive (1:1).

The blue bars show the additional 7 speeds, that you get with *high-speed-drive* engaged (1:2.5).

A gear range of **611%**!

(Example: 27tooth chainring, 27 tooth rear cog, 700C rear wheel)

Gear range: 611%



Comparison: 24 speed derailleurs system.

(Example: triple chainrings 42/32/22, cassette 28/24/21/18/16/14/12/11, 700C rear wheel)

Several gears (see black columns) are provided in two- or threefold.

Gear range: 486%

4. calculate "development " and "inch gears"

Introduction: What are gear inches?

Gear inch is an archaic measurement that dates back to the days of the high wheel bicycle. It was designed to measure the high wheel diameter needed in order to travel a given distance with one revolution of the cranks.

In Europe, it is common to give the development (=distance in meters) which is traveled by one revolution of the crank.

For the calculation, you need the following details:

- Tooth number of the chainring
- Tooth number of the rear cog
- Circumference of the rear wheel (= diameter * 3.14)

You get the "development" by the following formula:

Tooth number of the chainring / tooth number of the cog x circumference of the rear wheel (in meters)

You get the "inch gears" by the following formula:

Tooth number of the chainring / tooth number of the cog x circumference of the rear wheel (in inches)/ 3.14

For a derailleur system, calculate all gears according to the formula above.

For a rear hub, multiply all results with the following factors (please find many more internal hubs on the site → products → Schlumpf Drive).

3-speed-hub:

1. speed: 0.75
2. speed: 1
3. speed: 1.33

5-speed-hub SRAM

Spectro 5:

1. speed: 0.67
2. speed: 0.78
3. speed: 1
4. speed: 1.28
5. speed: 1.5

7-speed-hub SRAM

Spectro 7:

1. speed: 0.57
2. speed: 0.68
3. speed: 0.81
4. speed: 1
5. speed: 1.24
6. speed: 1.48
7. speed: 1.74

7-speed-hub Shimano

Nexus 7:

1. speed: 0.632
2. speed: 0.741
3. speed: 0.8431
4. speed: 0.989
5. speed: 1.145
6. speed: 1.335
7. speed: 1.545

For calculating the *high-speed-drive* effect, multiply all results with 2.5.

For calculating the *speed-drive* effect, multiply all results with 1.65.

For calculating the *mountain-drive* effect, divide all results by 2.5.