

Brand	Ratios	Road	MTB	Limited to [1]	Shifter Cable Pull [2]	Derailleur Ratio [3]	Sprocket Width [4]	Sprocket Pitch, calculated [5]	Sprocket Pitch, measured	Cassette Width, calculated [6]	Cassette Width, measured [7]	Notes [8]
Shimano	6	X	X	-	3.2	1.7	1.85	5.44	5.5	29.1	29.5	Except DA 7400
Shimano	7	X	X	-	2.9	1.7	1.85	4.93	5	31.4	31.9	Except DA 7400
Shimano	8	X	X	-	2.8	1.7	1.85	4.76	4.8	35.2	35.4	Except DA 7400
Shimano	9	X	X	-	2.5	1.7	1.78	4.25	4.35	35.8	36.5	
Shimano	10	X		-	2.3	1.7	1.6	3.91	3.95	36.8	37.2	
Shimano	10	X		4700	2.8 [9]	1.4	1.6	3.91	3.95	36.8	37.2	
Shimano	10		X	-	3.4	1.2	1.6	4.08	3.95	38.3		
Shimano	10/11		X	LinkGlide								
Shimano	11	X		-	2.7	1.4	1.6	3.78	3.69	39.4		
Shimano	11		X	-	3.6	1.1 [10]	1.6	3.96	3.9	41.2		
Shimano	12		X	-	3.3	1.1	1.6	3.58	3.55	40.9		SRAM 12 shifters are apparently compatible with Shimano 12S RD using SRAM 12S cassette
Campagnolo	8	X		-	3.5	1.4	1.9	4.90	5	36.2	36.9	
Campagnolo	9	X		-	3.2	1.4	1.75	4.48	4.55	37.6	38.2	"Old" cassette
Campagnolo	9	X		-	3.0	1.5	1.75	4.50	4.55	37.8	38.2	"New" cassette
Campagnolo	10	X		-	2.8	1.5	1.7	4.20	4.15	39.5	38.8	Variable pitch
Campagnolo	11	X		-	2.6	1.5	1.6	3.90	3.76	40.6	40.1	Variable pitch
Campagnolo	12	X		-			1.45		3.48		40.9	Same 11S freehub, big sprocket overhangs toward spokes
Campagnolo	13	X										Same cable pull as Campagnolo 12
SRAM	7		X	-	4.5	1.1	1.85	4.95	5	31.6	32.4	
SRAM	8		X	-	4.3	1.1	1.85	4.73	4.8	35.0	35.4	
SRAM	9		X	-	4.0	1.1	1.78	4.40	4.35	37.0	36.5	
SRAM	10	X	X	-	3.1	1.3	1.6	4.03	3.95	37.9		
SRAM	11	X		-	3.1	1.3	1.6	4.03	3.72	41.9		
SRAM	11		X	-	3.5	1.12	1.6	3.92	3.9	40.8		
SRAM	12		X	-	3.3 [11]	1.12	1.6	3.65	3.65 [12]	41.8		
Rotor	13	X	X	-	-	-	1.6	3.65		45.4		12S width and pitch + 1 sprocket, hydraulic group
Box	8/9		X	-			1.78	4.25		35.8		Not compatible with Shimano 9 shifters/derailleurs
Box	11		X	-	3.6	1.1	1.6	3.96		36.8		Box claims Shimano 11 MTB-compatible
Microshift	8	X	X	-	2.8	1.7	1.85	4.76		35.2		Microshift claims Shimano-compatible
Microshift	9	X	X	-	2.5	1.7	1.78	4.25		35.8		Microshift claims Shimano-compatible
Microshift	9		X	Advent	4.0	1.1	1.78	4.35		35.8		Measured by an owner
Microshift	10		X	Advent X	3.6	1.1	1.7	3.91		36.8		RD is compatible with Advent 9. However, Microshift claims variable cable pull for the shifter.
Microshift	10		X	-	3.4	1.2	1.6	4.08		38.3		Microshift claims Shimano-compatible
Microshift	10	X		-	2.3	1.7	1.6	3.91		36.8		Microshift claims Shimano-compatible
Microshift	11		X	-	3.6	1.1	1.6	3.96		41.2		Microshift claims Shimano-compatible
Microshift	11	X		-	2.7	1.4	1.6	3.78		39.4		Microshift claims Shimano-compatible

[1] If the manufacturer has used a different cable pull / derailleur ratio for the same number of gears, this is the model it applies to

[2] Average length of cable (mm) moved per indexed click. Not necessarily the same for all clicks.

[3] Extent the derailleur moves for a given amount of cable pull

[4] Thickness of each sprocket (mm)

[5] Distance between the center of each sprocket (mm)

[6] (mm)

[7] (mm)

[8] <http://www.bike.bikegremlin.com/2015/07/15/speeds-rear-sprockets/>

<http://blog.artscyclery.com/science-behind-the-magic/science-behind-the-magic-drivetrain-compatibility/>

[https://en.wikibooks.org/wiki/Bicycles/Maintenance\\_and\\_Repair/Gear-changing\\_Dimensions](https://en.wikibooks.org/wiki/Bicycles/Maintenance_and_Repair/Gear-changing_Dimensions)

[9] Calculated

[10] Very little difference relative to Shimano MTB 10. Shimano compatibility charts show some derailleurs as 10/11 compatible.

[11] Calculated. SRAM claims cable pull is not the same between 11S and 12S.

[12] SRAM-sourced, unknown if value was measured or calculated