



[Gear Ratio Calculator](#) | [Introduction to differentials and lockers](#) | [The basics of gears and why you would want to change them](#) | [Information on donations](#) | [Home](#)

Gear Ratio Calculator

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This form allows you to calculate final drive ratios as well as see a comparison of speeds and RPMs within operating ranges of the vehicle. This calculator is useful for planning your rig, allowing you to see what kind of performance to expect from different combinations.

Disclaimer: This form is only to be used for estimation purposes. Exact results of combining equipment may vary from the estimates provided in this form. The data provided here is done so as-is with no warranty expressed or implied.

Note: This calculator is continually being updated. The lists of available equipment will probably never be complete. If you find that the parts you would like to use are not yet listed, please send the information to me at grimmjeper@gmail.com and I will do my best to include it as quickly as possible. You can also follow this site on [Facebook](#)

[Detailed Instructions Here](#)

Choose between SAE (feet/miles) and Metric (meters/kilometers)

Save the entries in the form for when you come back later Or clear them entirely

Note that this will store the data locally on your computer. Nothing you do is tracked on the grimmjeper server.

Step 1: Select transmission from the drop down list or, if it's not in the list and you know the gear ratios of your transmission, enter them below.

Number of forward gears	<input type="text" value="10"/>
1st Gear	4.70
2nd Gear	2.99
3rd Gear	2.15
4th Gear	1.80
5th Gear	1.52
6th Gear	1.28
7th Gear	1.00
8th Gear	0.85
9th Gear	0.69
10th Gear	0.64
Reverse	4.87

- ☒ Manual or Auto with lockup torque converter
☐ Automatic without lockup torque converter

Step 2: Select transfer case from the drop down list or, if it's not in the list and you know the gear ratios of your transfer case, enter them below.

High Range	<input type="text" value="1.00"/>
Low Range	<input type="text" value="3.06"/>
Low 2 Range	<input type="text"/>

Step 1: Select transmission from the drop down list or, if it's not in the list and you know the gear ratios of your transmission, enter them below.

Number of forward gears	<input type="text" value="1"/>
1st Gear	<input type="text"/>
2nd Gear	<input type="text"/>
3rd Gear	<input type="text"/>
4th Gear	<input type="text"/>
5th Gear	<input type="text"/>
6th Gear	<input type="text"/>
7th Gear	<input type="text"/>
8th Gear	<input type="text"/>
9th Gear	<input type="text"/>
10th Gear	<input type="text"/>
Reverse	<input type="text"/>

- ☒ Manual or Auto with lockup torque converter
☐ Automatic without lockup torque converter

Step 2: Select transfer case from the drop down list or, if it's not in the list and you know the gear ratios of your transfer case, enter them below.

High Range	-
Low Range	-
Low 2 Range	-

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Step 3: Select underdrive.

None

High Range -

Low Range -

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Step 4: Enter axle gear ratio.

4.70

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Step 5: Select tire size.

☐ Inch
☐ mm
☐ Revs per mile
☒ P-Metric / R

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The following chart lists the final drive ratio of all combined gears (transmission, transfer case, underdrive, axle) in all possible combinations

Final Drive Ratio						
Gear	Underdrive Hi			Underdrive Lo		
	TC HI	TC LO1	TC LO2	TC HI	TC LO1	TC LO2
1	22.09	67.60	-	-	-	-
2	14.05	43.00	-	-	-	-
3	10.11	30.92	-	-	-	-
4	8.46	25.89	-	-	-	-
5	7.14	21.86	-	-	-	-
6	6.02	18.41	-	-	-	-
7	4.70	14.38	-	-	-	-
8	4.00	12.22	-	-	-	-
9	3.24	9.92	-	-	-	-
10	3.01	9.20	-	-	-	-
R	22.89	70.04	-	-	-	-

The following chart lists the crawl speed you will be going while the engine is at a given RPM. Crawl speed is calculated based on the lowest low range (transfer case and underdrive in low range) available in your rig.

Crawl speed at given RPM in feet per minute and miles per hour						
Gear	<input type="text" value="750"/> RPM		<input type="text" value="3000"/> RPM		<input type="text" value="6000"/> RPM	
	FPM	MPH	FPM	MPH	FPM	MPH
1	100	1.13	399	4.54	799	9.08
2	157	1.78	628	7.13	1256	14.27
3	218	2.48	873	9.92	1746	19.84
4	261	2.96	1043	11.85	2086	23.70
5	309	3.51	1235	14.03	2470	28.07
6	367	4.17	1467	16.67	2933	33.33
7	469	5.33	1877	21.33	3754	42.66
8	552	6.27	2208	25.10	4417	50.19
9	680	7.73	2721	30.91	5441	61.83
10	733	8.33	2933	33.33	5866	66.66

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Step 3: Select underdrive.

None

High Range -

Low Range -

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Step 4: Enter axle gear ratio.

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Step 5: Select tire size.

☒ Inch
☐ mm
☐ Revs per mile
☐ P-Metric / R

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The following chart lists the final drive ratio of all combined gears (transmission, transfer case, underdrive, axle) in all possible combinations

Final Drive Ratio						
Gear	Underdrive Hi			Underdrive Lo		
	TC HI	TC LO	TC LO2	TC HI	TC LO	TC LO2
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
R	-	-	-	-	-	-

The following chart lists the crawl speed you will be going while the engine is at a given RPM. Crawl speed is calculated based on the lowest low range (transfer case and underdrive in low range) available in your rig.

Crawl speed at given RPM in feet per minute and miles per hour						
Gear	<input type="text" value="750"/> RPM		<input type="text" value="3000"/> RPM		<input type="text" value="6000"/> RPM	
	FPM	MPH	FPM	MPH	FPM	MPH
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

R	96	1.10	385	4.38	771	8.76
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The following chart lists the road speed you will be going while the engine is at a given RPM. Road speed is calculated based on the transfer case and underdrive being in high range.

Road speed at given RPM in miles per hour			
Gear	<input type="text" value="750"/> RPM	<input type="text" value="3000"/> RPM	<input type="text" value="6000"/> RPM
1	3	14	28
2	5	22	44
3	8	30	61
4	9	36	73
5	11	43	86
6	13	51	102
7	16	65	131
8	19	77	154
9	24	95	189
10	25	102	204
R	3	13	27

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The following chart lists the RPMs your engine will be turning while driving at a given speed.

Road RPMs at given speed in miles per hour			
Gear	<input type="text" value="45"/>	<input type="text" value="70"/>	<input type="text" value="80"/>
1	9721	15121	17281
2	6184	9620	10994
3	4447	6917	7905
4	3723	5791	6618
5	3144	4890	5589
6	2647	4118	4706
7	2068	3217	3677
8	1758	2735	3125
9	1427	2220	2537
10	1324	2059	2353
R	10072	15668	17906

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R	-	-	-	-	-	-
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The following chart lists the road speed you will be going while the engine is at a given RPM. Road speed is calculated based on the transfer case and underdrive being in high range.

Road speed at given RPM in miles per hour			
Gear	<input type="text" value="750"/> RPM	<input type="text" value="3000"/> RPM	<input type="text" value="6000"/> RPM
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-
R	-	-	-

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The following chart lists the RPMs your engine will be turning while driving at a given speed.

Road RPMs at given speed in miles per hour			
Gear	<input type="text" value="10"/>	<input type="text" value="35"/>	<input type="text" value="70"/>
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-
R	-	-	-

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