Gear Ratio Calculator

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 grimmjeeper@gmail.com and I will do my best to include it as quickly as possible.

Detailed Instructions Here

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

Save the entries in the form for when you come back later Save Form **Or clear them entirely** Clear Saved Data
Note that this will store the data locally on your computer. Nothing you do is tracked on the grimmjeeper 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.

ZF 8HP75

Number of forward gears	8
1st Gear	5.00
2nd Gear	3.20
3rd Gear	2.14
4th Gear	1.72
5th Gear	1.31
6th Gear	1.00
7th Gear	0.82
8th Gear	0.64
9th Gear	-
10th Gear	-
Reverse	3.46

◉ Manual or Auto with lockup torque converter
○ Automatic without lockup toque converter

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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.

NVG241OR

High Range	1.00
Low Range	4.00
Low 2 Range	-

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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.

NVG241OR

High Range	1.00
Low Range	4.00
Low 2 Range	-

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Step 3: Select underdrive.

None

High Range	-
Low Range	-

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Step 3: Select underdrive.

None

High Range	-
Low Range	-

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Step 4: Enter axle gear ratio.

3.73

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Step 4: Enter axle gear ratio.

4.10

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Step 5: Select tire size.

◉ Inch 33
○ mm 838
○ Revs per mile 611
○ P-Metric 315 / 75 R 16

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Step 5: Select tire size.

◉ Inch 35
○ mm 889
○ Revs per mile 576
○ P-Metric 315 / 75 R 16

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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

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	18.65	74.60	-	-	-	-
2	11.94	47.74	-	-	-	-
3	7.98	31.93	-	-	-	-
4	6.42	25.66	-	-	-	-
5	4.89	19.55	-	-	-	-
6	3.73	14.92	-	-	-	-
7	3.06	12.23	-	-	-	-
8	2.39	9.55	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
R	12.91	51.62	-	-	-	-

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	750 RPM		3000 RPM		6000 RPM	
	FPM	MPH	FPM	MPH	FPM	MPH
1	87	0.99	348	3.95	695	7.90
2	136	1.54	543	6.17	1086	12.34
3	203	2.31	812	9.23	1624	18.46
4	253	2.87	1010	11.48	2021	22.96
5	332	3.77	1327	15.07	2653	30.15
6	434	4.94	1738	19.75	3476	39.50
7	530	6.02	2119	24.08	4239	48.17
8	679	7.71	2715	30.86	5431	61.71
9	-	-	-	-	-	-
10	-	-	-	-	-	-
R	126	1.43	502	5.71	1005	11.42

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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	750 RPM	3000 RPM	6000 RPM
1	4	16	32
2	6	25	49
3	9	37	74
4	11	46	92
5	15	60	121
6	20	79	158
7	24	96	193
8	31	123	247
9	-	-	-
10	-	-	-
R	6	23	46

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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	10	35	70
1	1899	6646	13292
2	1215	4254	8507
3	813	2845	5689
4	653	2286	4573
5	498	1741	3483
6	380	1329	2658
7	311	1090	2180
8	243	851	1701
9	-	-	-
10	-	-	-
R	1314	4599	9198

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1	20.50	82.00	-	-	-	-
2	13.12	52.48	-	-	-	-
3	8.77	35.10	-	-	-	-
4	7.05	28.21	-	-	-	-
5	5.37	21.48	-	-	-	-
6	4.10	16.40	-	-	-	-
7	3.36	13.45	-	-	-	-
8	2.62	10.50	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
R	14.19	56.74	-	-	-	-

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	750 RPM		3000 RPM		6000 RPM	
	FPM	MPH	FPM	MPH	FPM	MPH
1	84	0.95	335	3.81	671	7.62
2	131	1.49	524	5.95	1048	11.91
3	196	2.23	784	8.90	1567	17.81
4	244	2.77	975	11.08	1950	22.16
5	320	3.64	1280	14.55	2560	29.09
6	419	4.76	1677	19.05	3354	38.11
7	511	5.81	2045	23.24	4090	46.48
8	655	7.44	2620	29.77	5240	59.55
9	-	-	-	-	-	-
10	-	-	-	-	-	-
R	121	1.38	485	5.51	969	11.01

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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	750 RPM	3000 RPM	6000 RPM
1	4	15	30
2	6	24	48
3	9	36	71
4	11	44	89
5	15	58	116
6	19	76	152
7	23	93	186
8	30	119	238
9	-	-	-
10	-	-	-
R	6	22	44

← Copy Form ← Copy RPM

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	10	35	70
1	1968	6888	13776
2	1260	4408	8817
3	842	2948	5896
4	677	2369	4739
5	516	1805	3609
6	394	1378	2755
7	323	1130	2259
8	252	882	1763
9	-	-	-
10	-	-	-
R	1362	4766	9533

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