



## How to Use the Road Speed vs. Engine Speed Excel File

After uploading the above named file multiple times to various forums it came to me, very few people know how to use this file. They see a completed spreadsheet and say that is neat or that does not relate to my coach, tire size, tire load range, rear axle ratio or transmission series. But this file does, there are over 220 possible variations using the three drop down buttons to select, tires, load range, rear axle ratio and transmission series.

This Excel spreadsheet covers most of the diesel powered motorhomes built by Tiffin and other RV builders. Selecting the three criteria from the drop down button list allows you to know the road speed your transmission will shift up and shift down based on your coach's chassis components.

Below is a picture of the spreadsheet. Space was left near the bottom to label the spreadsheet with your coach's year and model data. After selecting from the three coach build data lists, SAVE the file then PRINT a copy for reference.

RPM's	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Reverse	-6.5	-7.0	-7.5	-8.0	-8.5	-9.0	-9.5	-10.0	-10.5	-11.0	-11.5	-12.0	-12.5
First Gear	9.3	10.1	10.8	11.5	12.2	12.9	13.6	14.4	15.1	15.8	16.5	17.2	18.0
Second Gear	17.5	18.9	20.2	21.6	22.9	24.3	25.6	27.0	28.3	29.6	31.0	32.3	33.7
Third Gear	23.1	24.9	26.7	28.4	30.2	32.0	33.8	35.6	37.3	39.1	40.9	42.7	44.4
Fourth Gear	32.6	35.1	37.6	40.1	42.6	45.1	47.6	50.1	52.6	55.1	57.7	60.2	62.7
Fifth Gear	43.4	46.8	50.1	53.5	56.8	60.2	63.5	66.8	70.2	73.5	76.9	80.2	83.6
Sixth Gear	50.1	54.0	57.8	61.7	65.6	69.4	73.3	77.1	81.0	84.8	88.7	92.6	96.4

GRAY COLOR CELLS ARE CHANGEABLE  
SELECT THE CELL, CLICK ON THE BUTTON  
SELECT FROM THE DROP DOWN LIST IN CELL

Tire Selection List: Michelin XZE 275/80R22.5 LRG  
Rear Axle Gear Ratio: 4.63  
Year & Model: 2007 Tiffin Phaeton 40QSH  
Transmission Series: MH 3000 6 Speed

ENTER YEAR AND CO: Enter Year and Model of Your Coach ABOVE

Click on the "Year & Model" green space enter your coach infomation

After entering the model and year of your coach move to the next field, the Tire Selection List. The tire selection list contains seven of the most commonly used tires in the construction of RV's. If your tire's load range is not listed but the tire size is, select that tire. The difference in engine RPM's or road speed will not vary by much.

## ROAD SPEED (MPH) vs ENGINE SPEED (RPMs)

RPM's	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Reverse	-6.5	-7.0	-7.5	-8.0	-8.5	-9.0	-9.5	-10.0	-10.5	-11.0	-11.5	-12.0	-12.5
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SELECT FROM THE DROP DOWN LIST IN CELL

**Tire Selection List** Michelin XZE 275/80R22.5 LRG

**Year & Model** 2007 Tiffin Phaeton 400SH

ENTER

**Rear Axle Gear Ratio** 4.63

**Transmission Series** MH 3000 6 Speed

*Click in the the gray area to the right of the "Tire Selection List"*

*Click on the "Drop down Button, Select Tire and load range"*

Following the above instructions a list of seven tire sizes and load ranges will drop down, select the tire used on your coach.

## ROAD SPEED (MPH) vs ENGINE SPEED (RPMs)

RPM's	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Reverse	-6.5	-7.0	-7.5	-8.0	-8.5	-9.0	-9.5	-10.0	-10.5	-11.0	-11.5	-12.0	-12.5
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**Tire Selection List** Michelin XZE 275/80R22.5 LRG

**Year & Model** 2007 Tiffin Phaeton 400SH

ENTER YEAR AND COACH MODEL ABOVE

**Rear Axle Gear Ratio** 4.63

**Transmission Series** MH 3000

*Click in the gray area to the right of "Rear Axle Gear Ratio"*

*Click on "Drop down Button" Select Gear Ratio*



The picture in the previous page shows the Rear Axle Gear Ratio selection list. Follow the instructions to select the proper rear axle ratio for your coach.

**ROAD SPEED (MPH) vs ENGINE SPEED (RPMs)**

RPM's	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Reverse	-6.5	-7.0	-7.5	-8.0	-8.5	-9.0	-9.5	-10.0	-10.5	-11.0	-11.5	-12.0	-12.5
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Year & Model: 2007 Tiffin Phaeton 40QSH

ENTER YEAR AND COACH MODEL ABOVE

Rear Axle Gear Ratio: 4.63

Transmission Series: MH 3000 6 Speed

Click in the gray area to the right of "Transmission Series"

Click on "Drop down Button" select transmission series

The last selection is the transmission and its number of forward gears. Follow the above instructions to select the transmission installed in your coach.

At this point four criteria have been selected and used to compute the engine RPM's and road speed data displayed in this spreadsheet. Now click on SAVE then PRINT your coach Road Speed vs. Engine Speed information. With this information you will know what engine speed (RPM's) and transmission gear the coach is running at different road speeds.

The chassis components used to build my 2007 40QSH Phaeton are displayed in the four pictures of this file. On this coach when driving in "Economy Mode" when the engine RPM's reach 1700 the transmission will shift from 5th to 6th gear, the road speed will be 58 MPH. My coach will maintain 6th gear down to almost 1400 RPM's on a level road. IF the transmission downshifts to 5th gear the transmission WILL NOT up-shift to 6th gear until the engine RPM's again reach 1700. Most often I drive 60 MPH and more than once achieved 9.8 MPG when driving on the interstate without any wind.

It is my hope, that this "How to Use" file, will aid you in understanding and how to use this spreadsheet.