

Primary & Secondary Drive Ratio changes

If you are working with a Harley-Davidson motorcycle that has had a Primary Drive Gear (compensator sprocket / clutch basket) change, the gear ratios in the ECM will need to be changed so that the cruise control works as intended and the gear indicator shows correctly. Changes to this side of the drivetrain require a gear ratio change, NOT a speedometer calibration.

To assist you with the process of changing these gear ratio values in the tune, we have created the Primary Drive Gear Change tool attached to this email. In order to get the correct gear ratio values, there are 3 things you will need. You will need to get the EXACT tooth count for the new and old compensator gear, and the EXACT tooth count of the clutch.

Once you have these values, follow the steps below to get your values:

- Open the Primary Drive Gear Change tool provided
- Enter the EXACT tooth count for the new and old compensator gears into the appropriate fields
- Enter the EXACT tooth count for the clutch in the appropriate fields
- Once you have entered the required information, the tool will give you the "MULTIPLIER" for the ratios
- Write down or copy and paste that MULTIPLIER value you were given

	A	B	C	D	E	F	G	H	I
1									
2	Primary Drive Gear Ratio Change								
3									
4	1. Enter the number of teeth from the old or stock primary sprockets, and the new sprockets.								
5	2. This will give you a multiplier. Highlight all gear ratios in the table of the tune.								
6	3. Enter this multiplier into the math tool bar of the software, and click the multiply button.								
7	4. The resulting values will correct for the gear change.								
8									
9		Compenstor	Clutch	Ratio					
10	Old	34	46	1.352941176					
11									
12	New	30	46	1.533333333					
13									
14									
15									

Multiplier
0.882353

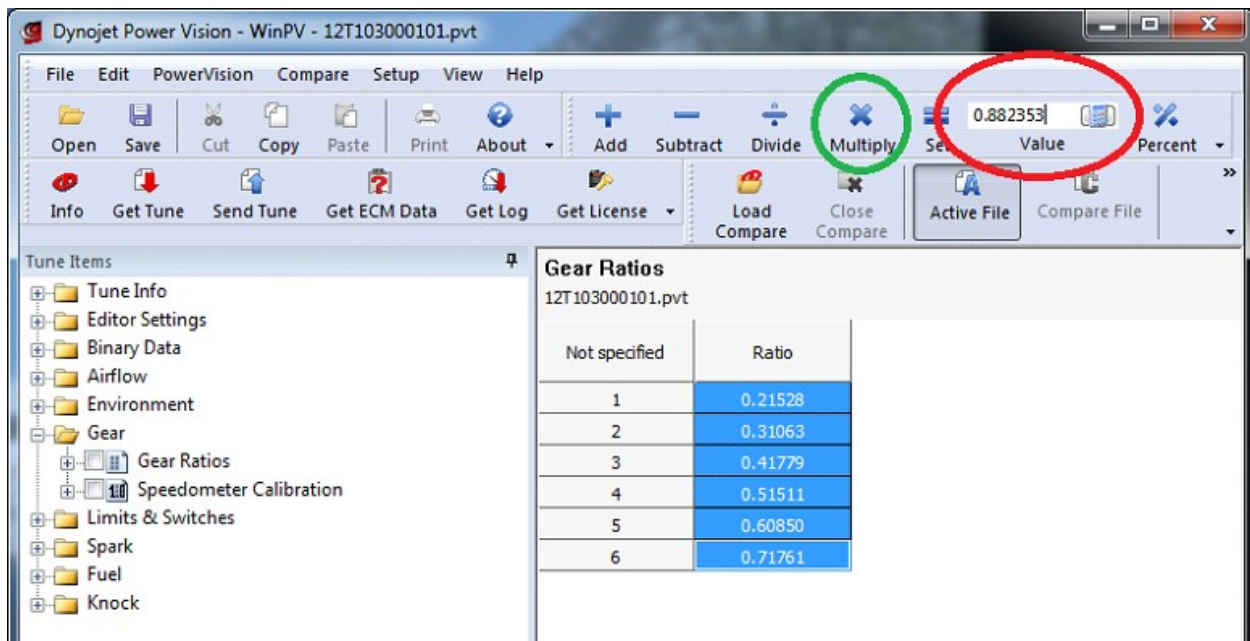
Once you have your MULTIPLIER, follow the next steps to change the ratios in the tune:

- Open the tune you wish to change into the software
- Go to the GEAR RATIO table of the tune
- Highlight ALL of the gear ratio values in that table

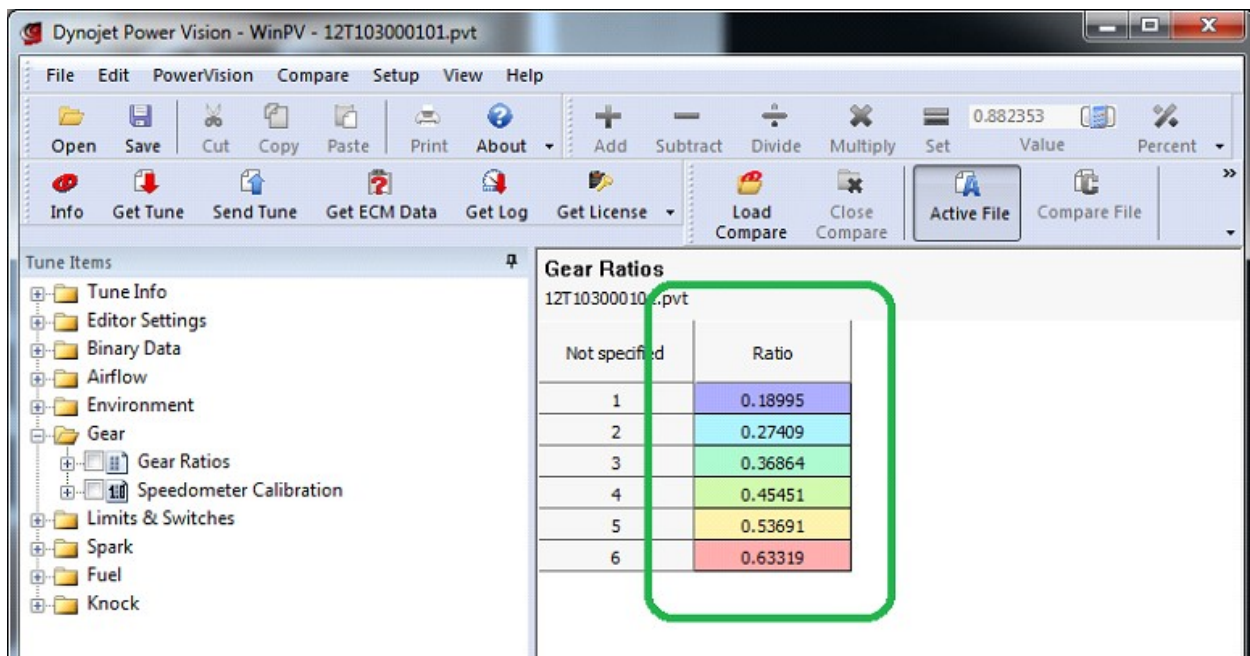
The screenshot shows the Dynojet Power Vision software interface. The 'Gear Ratios' table is visible, showing the following data:

Not specified	Ratio
1	0.21528
2	0.31063
3	0.41779
4	0.51511
5	0.60850
6	0.71761

- Go to the math toolbar of the software and enter the MULTIPLIER value you received from the other tool



- The resulting values will be correct for the gear change



If nothing else needs to be changed within the tune, send it to the PV and flash the ECM.

For Secondary drive ratio changes, use the spreadsheet and enter the original and new sprocket tooth counts, which will calculate the multiplier for the pulses per Km. Multiply the current value by the multiplier and you're all set!