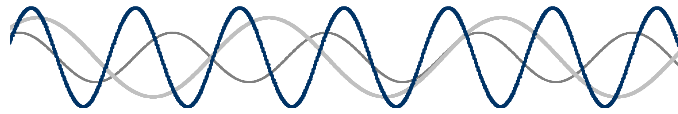


TRUCK VIBRATION TECHNOLOGY



Getting the Most Out of Your System December 17, 2008

Here are some things that we have learned about the use of the tool that will help you get more out of your system.

1. Single channel acquisition – If, for some reason, you cannot gain access to a flywheel signal or a transmission output signal, or you want to run the truck stationary, there is a way to run the analyzer on a single speed signal. Open the test in the Advanced Mode. Go to the Speed Sensor Setup tab. Select One Speed Channel (above the diagram) and the location of the sensor (below the diagram). Type the number of teeth on the wheel. (Selection of the flywheel sensor will still allow the Find Teeth function to work.) Make sure that the gray cable single sensor is plugged into Tach Channel 1 on the signal conditioning box. You can now Start Analyzer on the Test screen as soon as your sensor is generating an active signal. You will have to manually toggle the to the correct gear (lower left of screen) before you run your test.
2. Using the level column on the Basic test screen – If you are running a test in the Basic Mode and feel some vibration but it is not high enough to turn a source red on the Test screen, there is a way to understand how close to the limit the various sources are. Roughly speaking, the wheel end limit is 70 mg. The prop shaft limit is around 120 mg. The engine limit is about 250 mg. The torsional limits are 1000 radians per second squared. Watch the level column (right on the table) and see what the vibration levels are doing during the test. If one is near the limit, you might want to work on that issue to make sure that your customer is fully satisfied.
3. Extra accelerometers – You have no doubt noticed that there are two extra accelerometer inputs on the signal conditioning box. These are for single axis accelerometers to be used for diagnosing engine problems and other purposes. If you want to utilize this capability, call TVT.
4. Doing more sophisticated vibration analysis with your Basic Kit – If you open a test in the Advanced Mode, open the test screen, and Start Analyzer, you will see a sophisticated looking display. If you wish, you can go back to the Basic test screen by toggling the Display Type button (F5) on the middle left hand part of the screen. If you wish to look at the data's spectral content real time during the test and learn what it means, call TVT.
5. Transmission output speed sensing problems – On the rare truck, tapping off the transmission speed signal can interfere with the truck's speed control system and/or cause erroneous operation of the vibration tool. If this happens, use the push in sensor supplied with the kit. There are double leads in this sensor that can be independently wired to the vibration kit and the truck. There is also a special bracket available from TVT that will

bolt to the rear bearing cover (on a Fuller transmission) and support a $\frac{3}{4}$ inch sensor that measures the speedo teeth. Call TVT if that bracket would be useful.

6. Flywheel speed sensing issues – The most common problem with the flywheel sensor is not cleaning up the threads in the flywheel and thereby not getting close enough to the flywheel teeth. In this case, you will get a message when you try and Find Teeth that the signal is insufficient. Usually, $\frac{1}{2}$ turn from bottoming is a good practice. In the odd case, you will have to use only $\frac{1}{4}$ turn. If you do not have a way to measure the flywheel speed, that is, no obvious port or bracket, call TVT.

7. Accelerometer calibration. Unfortunately, there have been a few incidents where the plastic casing on the accelerometer connector has slid forward preventing good contact and valid calibration. If you cannot get all of your accelerometer channels to calibrate and it looks like the casing is butting against the signal conditioning box, you can take immediate action by trimming back the outside plastic with a razor blade or exacto knife about $\frac{1}{16}$ of an inch. This should get you through the test. Later call TVT for an accelerometer replacement.

8. TVT has extra vibration sensors, cables, speed sensors, special brackets and all the support equipment you need for every engine and transmission. Call for help.

9. Please feel free to call TVT when you have any issues or questions. We are committed to help you get the best payback from your system. It is from your success that we hope to grow the use of the tool. If you have an unusual problem that you are wrestling with, we would like to hear about it. By attacking it and solving it, we all learn and get more effective, which is what investing in the tool is all about.

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