

INLAND EMPIRE DRIVELINE®

"FOR DRIVESHAFTS THAT MAKE A DIFFERENCE"

TROUBLE SHOOTING GUIDE

FAST - EASY - CORRECT - RELIABLE

- ★ 30 YEARS EXPERIENCE
- ★ 3 MEASUREMENTS NEEDED
- ★ 1 PHONE CALL
- ★ SHIPPED IN 48 HOURS
- ★ GUARANTEED TO FIT
- ★ AFFORDABLE PRICING
- ★ MADE IN THE USA



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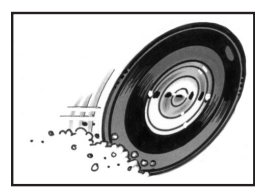
PHONE: 909-390-3030 FAX: 909-390-3036
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4035 E. GUASTI ROAD, SUITE 301
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INLAND EMPIRE DRIVELINE

SYMPTOM

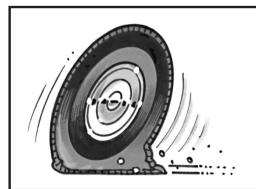
The vibration occurs only upon hard acceleration.



ACTION
Adjust the pinion angle downward to compensate for axle wrap-up. Usually 1/2 to 1 degree is enough.

SYMPTOM

The vibration occurs only upon deceleration.

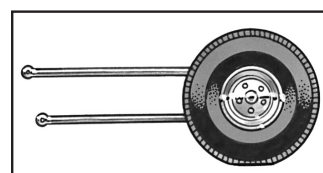


ACTION

Adjust the pinion angle up to compensate for pinion plunge.

SYMPTOM

The car has a ladder-bar or a four link type suspension and the vibration is always there and goes throughout the whole car.

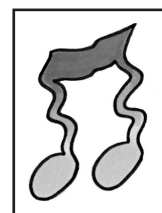


ACTION

Correct the preload on the suspension bushings. According to *Fatman Fabrications*, tightening the through bolts 'till the washers stop turning, and adding half a turn of the wrench, can approximate this.

SYMPTOM

The driveshaft rings when changing gears and/or sings when driving down the road.

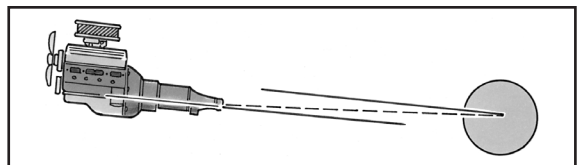


ACTION

Have a cardboard "silencer" installed inside the shaft, a standard OEM practice. Never add a two-part foam generator through a hole in the yoke or tube. This stuff sets up with various densities inside the tube and throws the shaft out of balance. This cannot generally be corrected by rebalancing.

SYMPTOM

With the vehicle on a hoist at ride height (*with all the vehicle weight on the tires*), check the layout of the shaft angles. You can check the engine and



transmission from any machined surface, but the starter motor housing works just fine. You can get the pinion angle from the machined surface where the U-Bolt holes are drilled. The two angles should be equal and opposite. Subtract the angle of the installed driveshaft from these two angles. The result should be less than 5 degrees.

ACTION

Shim the engine/transmission and the axle housing to achieve equal, opposite, less than 5 degree angles through the U-Joints.

SYMPTOM

Everything to this point seems correct, yet there is a vibration at high speeds in direct drive.



ACTION

Change the tube diameter of the driveshaft. If the problem persists, change to a driveshaft of different material, such as aluminum.



SYMPTOM

This is a very sophisticated problem that may require major changes in final drive ratios to solve.

ACTION

Same action for prior problem but, if the problem persists (and it probably will, but at a different speed), change to a carbon fiber shaft. An alternative would be to change the rear end ratio and/or tire diameter to chase the problem to some speed you don't drive, but this usually defeats the purpose of having overdrive in the car.



DRIVESHAFT DILEMMAS

GETTING RID OF THOSE BAD VIBRATIONS
By Greg Frick *Street Rodder Magazine*

The following steps are a guide to finding the source of a drivetrain vibration. They are based on many years of experience, but not intended

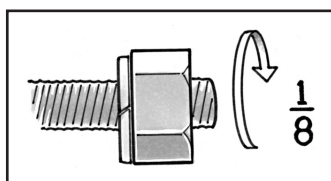
to be the last word on the subject. These steps apply to two-joint shafts as used in front engined, rear wheel drive cars and light trucks. Multiple piece, multiple joint and heavy truck shaft troubleshooting is a different process. These steps are listed from the most likely to the least likely corrective step.

Our *How to Measure for Driveshafts, Powertrain Setup and Product Catalog* are free for the asking. Please feel free to call us with your comments and questions. You can also visit our website for more detailed information and troubleshooting:

www.iedls.com 800.800.0109

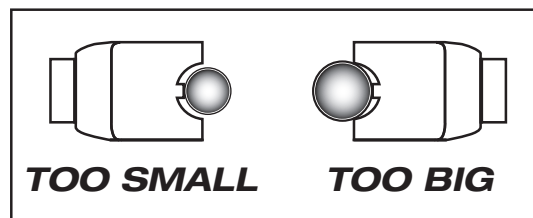
SYMPTOM

Make sure the U-Bolts holding the shaft to the pinion yoke are not too tight. Snug is different for each of us and overtightening clamps the bearing, causing drag which, in turn, causes vibration and heat.



ACTION

Proper torque is 14-17 foot-pounds for 1-1/16 and 1-1/8 inch diameter caps, and 20 foot-pounds for 1-3/16 inch diameter caps. Since you can't get a torque wrench onto the U-Bolts, an approximation of these torque values is flattening the new lock washer and adding about an eighth of a turn of the nut.



SYMPTOM

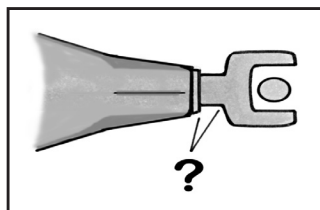
Make sure the U-joint caps are firmly seated in the pinion yoke. If there is any gap between the caps and the sides the caps are too small. If there is a gap beneath the caps the caps are too big. Caps vary by 1/16" which can be hard to see - use a bright light and feeler gauge if in doubt.

ACTION

Replace U-Joint with one having correct caps.

SYMPTOM

Make sure the shaft you have is the right length. With your car at ride height, (all the car's weight on the tires), remove the U-bolts or cap screws that hold the shaft to the pinion yoke.

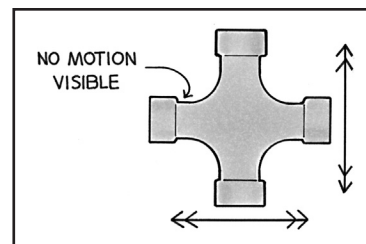


Push the shaft forward until it bottoms into the transmission. There should be enough clearance between the U-Joint and pinion yoke to drop the shaft past the yoke. As much as 3/8" is acceptable clearance. If there is more clearance, the shaft is too short. If you need a tool to force the joint out of the yoke, the shaft is too long. Either condition will cause vibrations.

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ACTION

Have the shaft shortened or lengthened as necessary and rebalance it. See our *How to Measure for Driveshafts* guide for easy instructions.



SYMPTOM

With the vehicle on a hoist, check the U-Joints for endplay. Try to move the shaft from side to side across the joint body. No motion is good, and .0005-.0015 inch is correct for *greasable* joints. It's not uncommon for *greasable* joints to have a lot more end play, which allows the shaft to run off-center. This is the answer to the puzzle about vibrations increasing on a trip but going away after a relube and a sit in the garage.

ACTION

Replace U-Joints with lubed-for-life joints which have much less endplay.



SYMPTOM

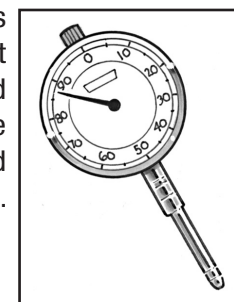
Is there a dent in the shaft bigger than a dime?

ACTION

Replace the tubing and rebalance the shaft.

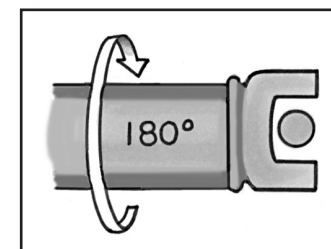
SYMPTOM

With the vehicle on a chassis hoist, check the shaft for runout within 2 inches of the welds and in the center. Spicer's service manual says .010 at the ends and .015 in the middle is acceptable. Less is better.



ACTION

Straighten or replace the tube and rebalance the shaft. Also, see next step.



SYMPTOM

If run out is found at the pinion end remove the shaft from the yoke and rotate it 180 degrees. Reinstall the shaft and recheck the run out. It will get better or it'll get worse as splined yokes can be off center as much as .005 and be considered acceptable when new. The retaining tabs of the yoke also wear and become loose.

ACTION

Replace the worn or off-center pinion yoke or pinion flange.

SYMPTOM

With the vehicle on a hoist, remove the shaft from the vehicle and run the engine and transmission. If the vibration persists with the driveshaft on the bench, the problem is not the driveshaft.



ACTION

Make sure the correct engine vibration dampener and transmission flexplate combination are installed.