- **SECTION 4 TROUBLE DIAGNOSIS**

- When operating, the propeller shaft will bear rather great torque and impact load at high rotating speed. At the same time, because the whole installation is at the bottom of vehicle, mud, sand and dust are likely to intrude. Therefore, severe wear may happen to the bearing and journal of universal joint cross shaft and as well as the bearing and journal of intermediate shaft bearing and journal, as a result, their mating clearances are increased; moreover, the bending and dents of propeller shaft will cause it out of balance and result in various troubles.
- The trouble of propeller shaft reduces not only the transmission efficiency, but also directly aggravate the wear and damage of internal parts of transmission and drive axle. Hence, during application and maitenance, it is necessary to do the earnest check for all parts of propeller shaft, and remove all troubles once they are found.

1. The spline teeth of telescopic joint are loose and make noise.

- After the wearing and loose of telescopic joint spline teeth, when the vehicle starts running, “chuckle” impact noise can be heard. It is more obvious when changing speed, such as shifting or sudden acceleration. The noise is lower at low speed running with stable throttle.
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Due to poor lubrication or wearing, the loose and noise of the universal joint cross sahft and roller bearings are similar to above-mentioned phenomena. If the noise is low, they can continue to be used and resume them to their normal technical conditions when servicing. If there is severe loose and noise, they should be eleminated timely

- **2. Intermediate bearing noise**
- When the vehicle running speed is above middle speed, the chasis will make a “buzz” noise. The higher the speed, the higher the noise will be. When raising the accelerator and sliding, the noise volume will be reduced gradually.
- When the noise of intermediate bearing is found, first replenish the grease. If the noise is reduced obviously or disappears, it means that lubrification is poor. If there is no effect after greasing, it is necessary to check the bearing support and bearing rubber gasket for deviation, and to check the fixing bolts for loose or different tightness which causes tilt of bearing. If tightness is adequate, then disassemble the bearing and check it for looseness, burning or damage, and check rubber gasket for intactness.

- **3. Noise due to the swing and vibration of unbalanced propeller shaft**
- If “rumble” is heard periodically during vehicle running, the noise becomes higher along with speed increase. In severe case, the vehicle body shakes and driver’s cabin vibrates, this phenomena is caused by unbalance of propeller shaft.
- When the above-mentioned phenomena occurs, raise the rear axle and shift to direct gear for accelerating rotation, observe the swing and vibration of propeller shaft, and check that the swing and vibration becomes more obvious expecially at high speed and sudden retarding.
- If the swing and vibration of propeller shaft is severe, first of all, check to see if the propeller shaft is assembled according to balance requirements, then check the position of the adjusting intermediate bearing support, observe the swing and vibration again, check whether the noise is weakened or disappears. If still not effective, it is essential to remove the propeller shaft and to carry out the inspection and alignment of its camber. If the condition permits, a dynamic balance inspection for propeller shaft is required.