

Troubleshooting Front End Accessory Drives

To accurately check for noise symptoms the system must be loaded:

- Air conditioner on full
- Lights on
- Wheels turned 3/4 to the left or right

- Air conditioner fan on full
- Defroster on

Symptom	Probable Cause	Corrective Action
Appearance/Worn Pulley		
For steel idlers, paint has worn off the belt tracking area.	1. This is a normal condition.	No corrective action required.
Plastic idler pulley appears to be worn on belt tracking area.	1. Extreme environmental wear (i.e., heat, water, stones).	Replace idler.
On plastic idlers, pulley is chipped.	1. Stone damage. 2. Faulty installation practices.	Replace idler only if chip is in belt tracking area.
On steel idlers, pulley has been marred in belt tracking area.	1. Stone damage. 2. Faulty installation practices.	Replace idler only if deformation is in belt tracking area.
Pulley shows signs of corrosion.	1. Coating on pulley has worn off. NOTE: It is normal for coating to wear off belt tracking area.	Replace idler.
Idler has excessive wobble (free rock).	1. Bearing failure. 2. Excessive load on pulley. 3. Belt is not tracking properly over pulley.	Replace idler.
Tensioner Appearance		
Tensioner arm is cracked.	1. Excessive force is used in removal. 2. Long-term fatigue failure. 3. Tensioner is allowed to snap back into stop position.	Replace tensioner.
Tensioner vibration during engine idle is excessive.	1. Tensioner damper is worn. 2. Accessory is out of round.	Replace tensioner.
Grease appears to be leaking out of the bearing.	1. Grease purge. 2. Seal degradation. 3. Excessive radial internal clearance in bearing.	Replace idler.
Bearing seal is missing or damaged. Tensioner tilted or misaligned or gap exists between tensioner arm and base.	1. Worn pulley. 2. Environmental damage (i.e., heat, water, stones). 3. Poor tensioner mounting.	Replace idler. Replace tensioner.
Loose, Sticking or Seized Tensioner		
Tensioner does not operate smoothly.	1. Bearing surface damaged. 2. Damper damage. 3. Spring is broken.	Replace tensioner.
Pulley is seized and will not rotate freely.	1. Bearing is damaged.	Replace idler.
Pulley does not rotate smoothly or has a sticky feel to it when spun.	2. Radial internal clearance in bearing is too low. 3. Bearing fit in pulley is tight.	Replace idler.
Pulley and bearing have relative motion.	1. Bearing is not being constrained in idler pulley.	Replace idler.
Noise		
Belt squeal noise.	1. Belt worn or stretched to maximum take-up length of system. 2. Tension force not sufficient.	Check belt length window. If belt is correct length, replace tensioner.
Tensioner clatters or rattles during engine operation.	1. Damper is worn. 2. Bearing surfaces within tensioner are worn.	Replace tensioner.
Belt chirping due to system misalignment.	1. Pulley or tensioner are worn. 2. Cracks in tensioner base or arm. 3. Mounting bolts loose.	Replace worn or cracked tensioner. Tighten loose bolts to vehicle manufacturer's specifications. Check entire system for misalignment.
Pulley makes a high-pitched whine or hooting noise after the engine is started. Noise lasts up to three minutes.	1. Worn bearing. 2. Bearing fit to pulley is incorrect.	Replace idler.
Pulley exhibits noise during normal operation.	1. Bearing is not functioning properly.	An idler pulley is normally very quiet. Replace idler.
Pulley and bearing assembly rattle when shaken.	1. Bearing cage is broken. 2. Balls in bearing are loose. 3. Bearing is contains no lubricant.	Replace idler assembly.
Bearing Noises/Bearing Hoot		
Continuous hissing and grinding noise that gets louder as engine RPM increases.	1. No bearing lubricant.	Use an automotive stethoscope to locate the source of the noise. Turn engine off and hand spin pulley. If it's hard to turn, feels rough or rattles, replace pulley assembly.
Continuous growling noise that changes to a whine as engine RPM increases.	1. A bearing is about to fail. 2. Excessive idler pulley wobble. 3. Contamination of other fluids into pulley seal.	Visually inspect bearing in question for signs of heat "bluing" of metal or grease purge. Check for bracket movement due to loose or misaligned fasteners. Check for proper belt mounting.
Hoot noise that occurs at low temperature (below -20° F).	1. Insufficient or improper bearing grease.	If belt has glazing, cracks or other visible defects, replace belt.
Caution: Replace entire idler assembly or tensioner. Do not just replace the pulley.		
Belt Tracking		
Belt does not track properly on idler belt tracking surface.	1. Bearing is not fixed to the correct depth in pulley. 2. Belt tracking surface is not square to bearing mounting surface. 3. Pulley tracking surface is tapered. (Crowning or bowing of belt tracking surface is sometimes intentional.)	Replace idler.