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DETROIT™

Service Information Bulletin

SUBJECT	DATE
Symptom Diagnostics - Noise	March 2015

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	Belt Drive Noise	The diagnostics have been updated, graphics have been added and links have been provided for instructional videos to aid the technician in the repair.

DETROIT™
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2 Belt Drive Noise

Excessive belt drive noise can be caused by a damaged belt, an excessively worn belt, misaligned pulleys, inadequate belt tension, a damaged accessory pulley or a damaged component.

Table 1.

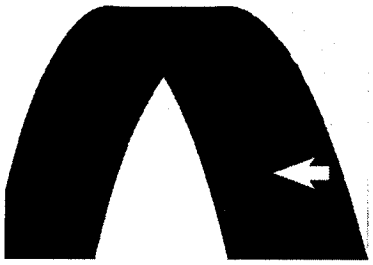
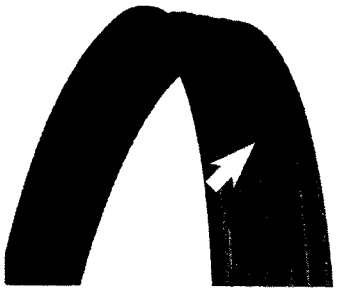
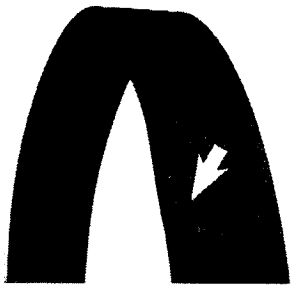
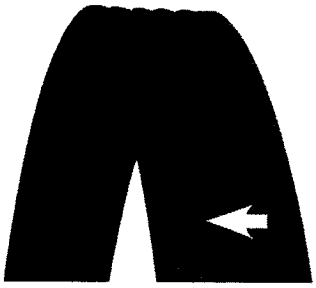
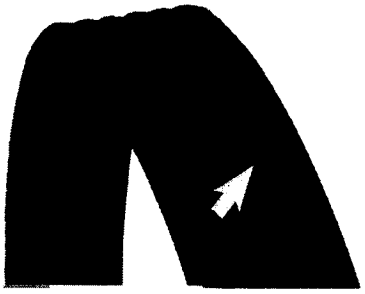
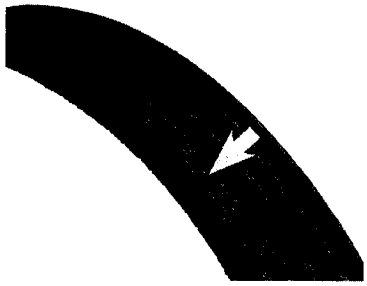
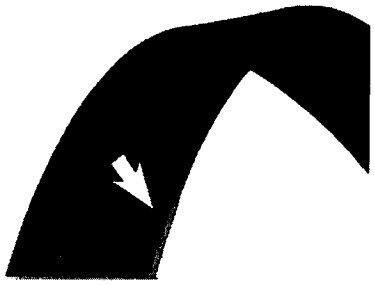
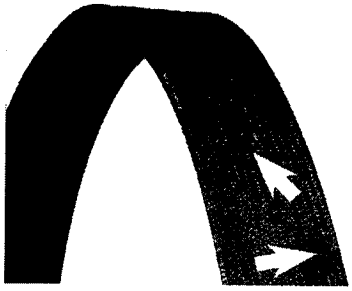
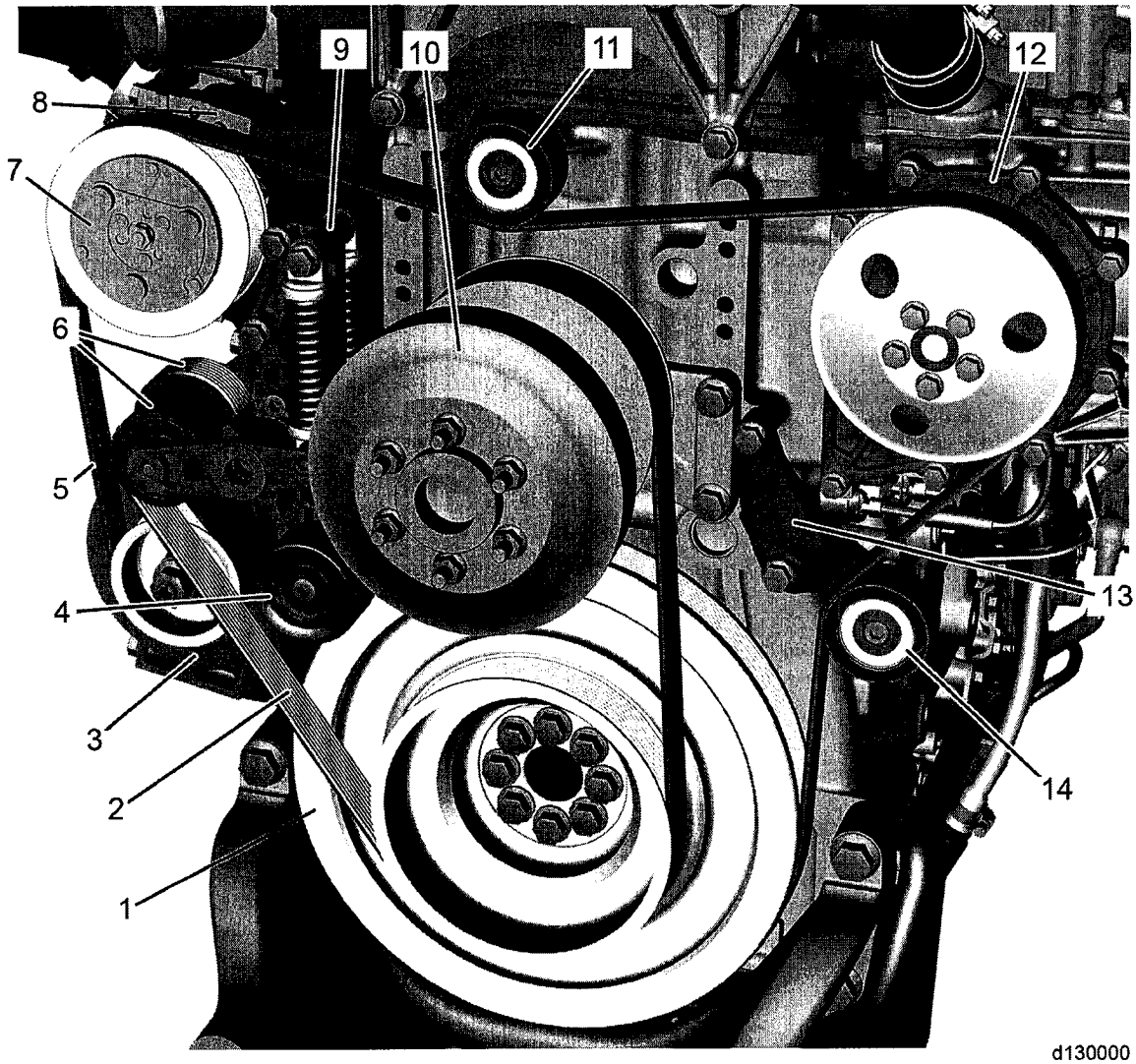
Poly-V-Belt Inspection Concerns	
ABRASION	CHUNK-OUT
 d130019	 d130020
IMPROPER INSTALL	CRACKING
 d130021	 d130022

Table 2.

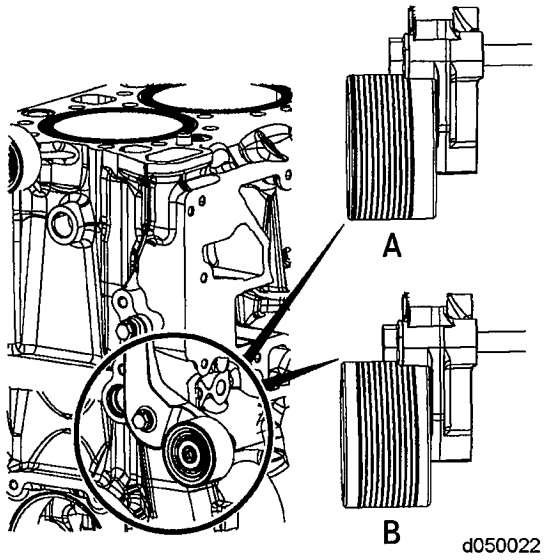
Poly-V-Belt Inspection Concerns	
PILLING	UNEVEN RIB WEAR
 d130023	 d130024
MISALIGNMENT	GRAVEL PENETRATION
 d130025	 d130026



Inspect as follows:

NOTE: The belt will naturally track slightly forward on the pulley.

1. Visually inspect the belts and pulleys for signs of misalignment. The wear pattern should never reach the outer edge of the idler pulley surface. Do the belts show signs of misalignment?



a. Yes; replace both belts and correct the misalignment concern. Refer to section "Removal of the Poly-V-Belts".
b. No; Go to step 2.

2. Visually inspect the condition of the belts. Are the belts damaged or show any of the conditions in the photos above?
   a. Yes; replace both belts and inspect the pulleys for damage. Refer to section "Removal of the Poly-V-Belts".
   b. No; Go to step 3.

WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

WARNING: PERSONAL INJURY

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.

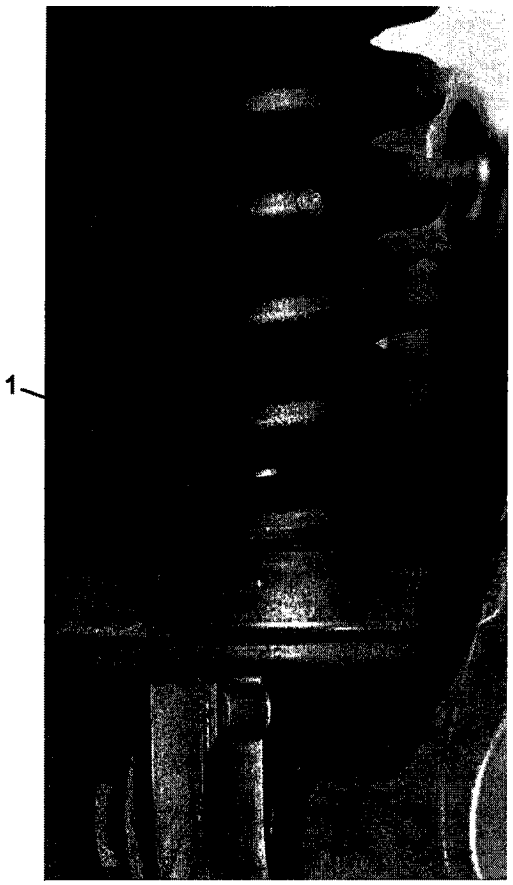
3. Start and run the engine at idle. Use a squirt bottle to apply water to both belts while listening for the noise to subside. Belt Drive Water Test (http://ddcsn-ddc.freightliner.com/media/BeltDriveWaterTest3.mp4)
   Does the noise subside when water is applied to the belts?
   a. Yes; replace both belts. Refer to section "Removal of the Poly-V-Belts".
   b. No; Go to step 4.

NOTE: It is normal for the tensioner to have some movement at idle.

4. Start and run the engine between 1200 and 1400 rpm while monitoring the belt tensioner movement. Belt Tensioner Movement (http://ddcsn-ddc.freightliner.com/media/TensionerMovement.mp4)
   Does the belt tensioner have excessive movement between 1200 and 1400 rpm?
   a. Yes; replace the belt tensioner. Refer to section "Removal of the Belt Tensioner".
   b. No; Go to step 5.
5. Remove the belts and visually inspect the belt tensioner (9) for damage. Is the belt tensioner damaged?
   a. Yes; replace the belt tensioner. Refer to section "Removal of the Belt Tensioner".
   b. No; Go to step 6.

NOTE: Oil leaks from the belt tensioner strut can normally be seen near the bottom of the strut.

6. Inspect the strut (1) on the belt tensioner for an oil leak. Is there oil leaking from the strut?



   a. Yes; replace the belt tensioner. Refer to section "Removal of the Belt Tensioner".
   b. No; Go to step 7.
7. Rotate the pulleys (4 and 6) on the belt tensioner by hand while checking for grinding, sticking, excessive lateral or radial play. Do the pulleys have any grinding, sticking, excessive lateral or radial play?
   a. Yes; replace the belt tensioner. Refer to section "Removal of the Belt Tensioner".
   b. No; Go to step 8.
8. Use the appropriate tool and check the travel of the belt tensioner from one end to the other. Does the belt tensioner move with smooth resistance without binding or sticking?
   a. Yes, Go to step 9.
   b. No; replace the belt tensioner. Refer to section "Removal of the Belt Tensioner".

NOTE: It is normal for the idler pulleys to have different resistance when rotated by hand.

9. Rotate the idler pulleys (9 and 11) by hand while checking for squealing, grinding, sticking, excessive lateral or radial play. Do either of the pulleys squeal, grind, stick, have excessive lateral or radial play?
   a. Yes; replace both idler pulleys and both belts.
      Refer to section "Removal of the Poly-V-Belts".
      Refer to section "Removal of the Idler Pulley and Idler Pulley Bracket".
   b. No; Go to step 10.
10. Visually inspect the water pump pulley (12) for damage. Is the water pump pulley damaged?
   a. Yes; replace the water pump pulley.
      Refer to section "Removal of the Water Pump".
      Refer to section "Removal of the Variable Speed Water Pump".
   b. No; Go to step 11.

11. Rotate the water pump pulley (12) by hand while checking for squealing, grinding, sticking, excessive lateral or radial play. Does the water pump squeal, grind, stick, have excessive lateral or radial play?
    a. Yes; replace the water pump.
       Refer to section "Removal of the Water Pump".
       Refer to section "Removal of the Variable Speed Water Pump".
    b. No; Go to step 12.
12. Rotate the A/C compressor pulley (7) by hand while checking for squealing, grinding, sticking, excessive lateral or radial play. Does the A/C compressor squeal, grind, stick, have excessive lateral or radial play?
    a. Yes; replace the A/C compressor. Refer to Original Equipment Manufacturer (OEM) literature for removal and installation procedures.
    b. No; Go to step 13.
13. Rotate the alternator pulley (3) by hand while checking for squealing, grinding, sticking, excessive lateral or radial play. Does the alternator squeal, grind, stick, have excessive lateral or radial play?
    a. Yes; replace the alternator. Refer to Original Equipment Manufacturer (OEM) literature for removal and installation procedures.
    b. No; Go to step 14.
14. Rotate the fan clutch (10) assembly by hand while checking for squealing, grinding, sticking, excessive lateral or radial play. Does the fan clutch assembly squeal, grind, stick,have excessive lateral or radial play?
    a. Yes; replace the fan clutch assembly. Refer to Original Equipment Manufacturer (OEM) literature for removal and installation procedures.
    b. No; replace both belts. Refer to section "Removal of the Poly-V-Belts".

