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Coding Information

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Title: HX Belt Squealing or Fretting

Applies To: HX with X15

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

07/03/2024- Initial Article Release

DESCRIPTION

This document will guide the user through diagnosing and repairing X15 belt noise and fretting on the HX chassis only.

This document only applies to HX models with X15 engines.

SYMPTOM(s)

Customer Observations or Concerns:

- Complaint of belt noise (chirping or squealing)
- Premature belt failure
- Belt fretting

SPECIAL TOOL(s) / SOFTWARE

Not Applicable

SERVICE PARTS INFORMATION

Not Applicable

DIAGNOSTIC STEP(s)

WARNING! To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in either direction.

WARNING! To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

Step	Action	Decision
#1	<p>DIAGNOSTIC: Verify the engine has an idler pulley assembly mounted to the front cover. (See Figure 1)</p> <p>Does the engine have an idler pulley assembly mounted to the front cover?</p>	<p>Yes. Proceed to step 2</p>
		<p>No. This iKNow article does not apply. Proceed to Cummins diagnostics for checking pulley alignment.</p>

Step	Action	Decision
#2	<p>DIAGNOSTIC: Check for proper belt alignment: Place a 90-degree square on the idler pulley. The belt should have an equal distance along the entire distance of the square.</p> <p>See Figure 2 for an example of good alignment See Figure 3 for an example of bad alignment</p> <p>Is the belt running true with the pulley?</p>	<p>1. Yes. This iKNow article does not apply. Proceed to Cummins diagnostics for checking pulley alignment.</p>

2. No. Go to the next section "Repair Steps"

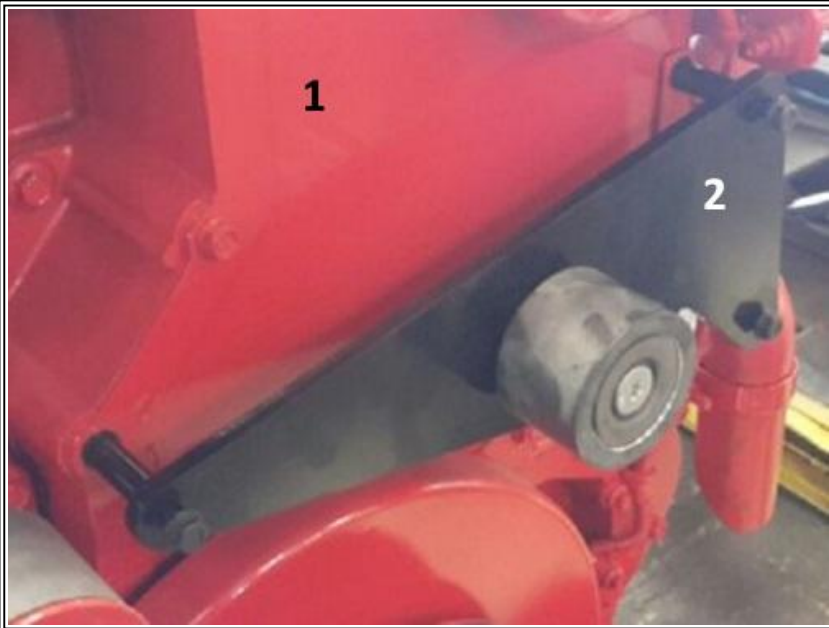


Figure 1: HX Idler Pulley Mounted to X15

- Item 1: X15 Front Cover
- Item 2: Idler Pulley Assembly

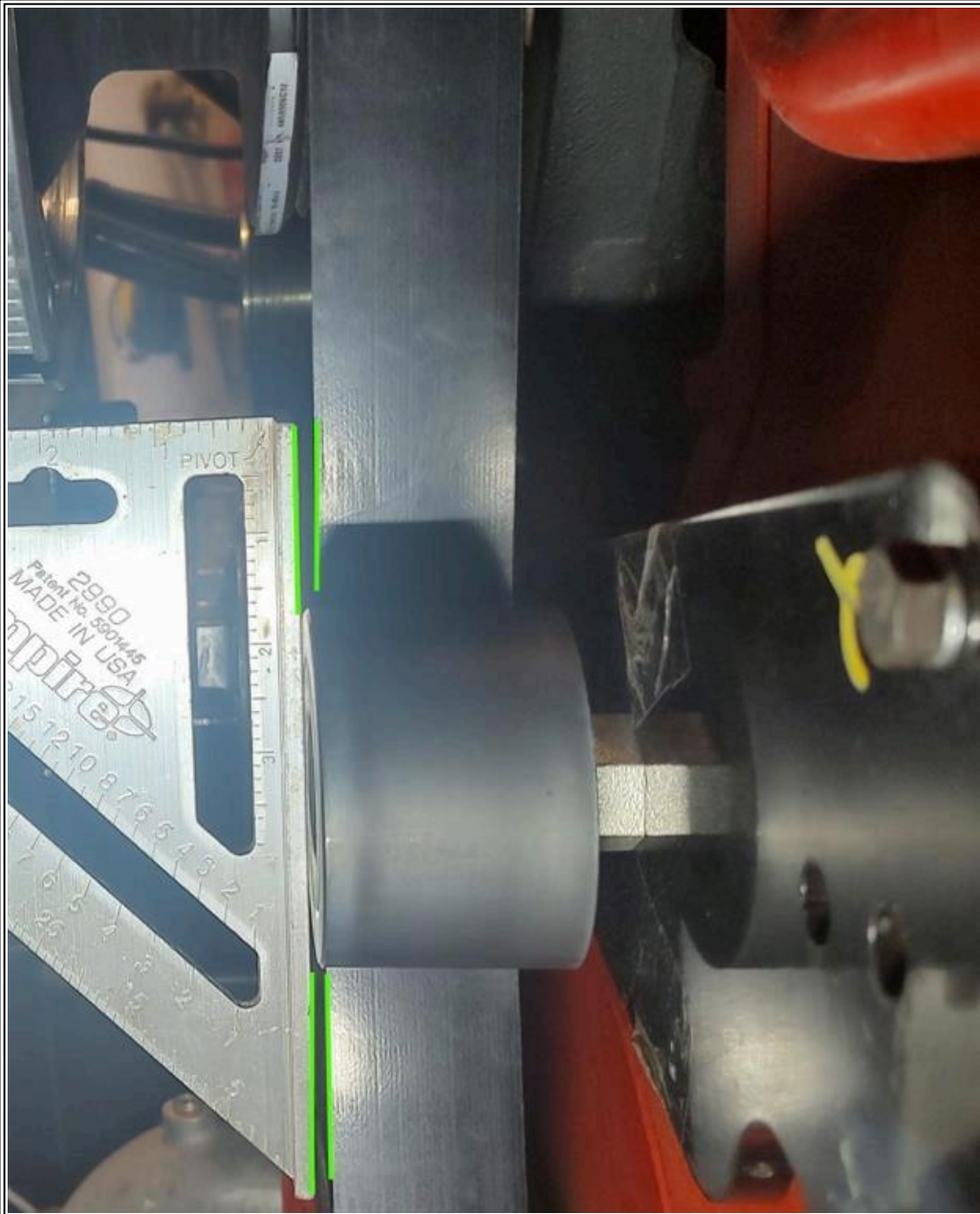


Figure #2: Belt Running true to pulley

NOTE: The distance between the belt and the square is equal distance

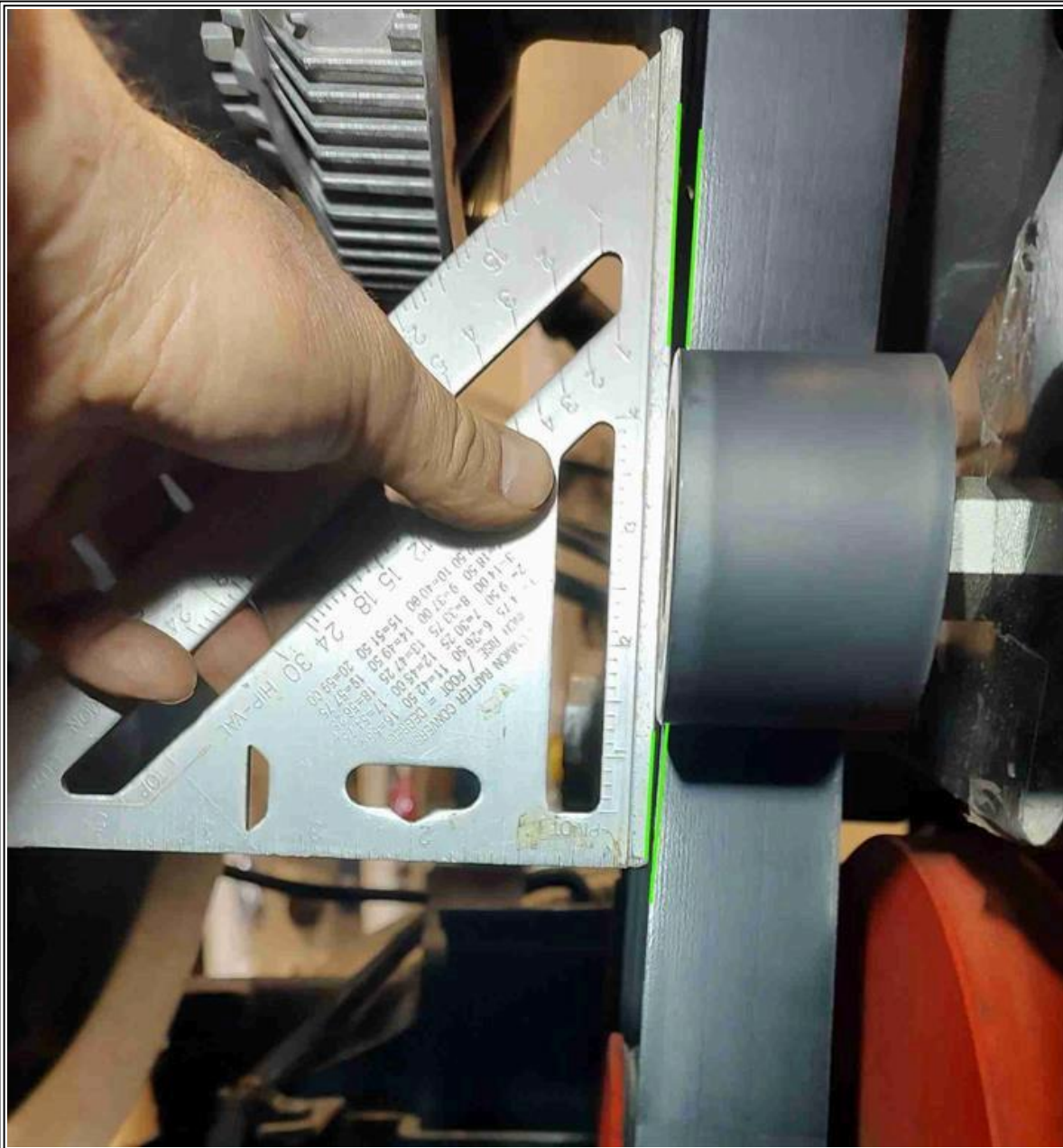


Figure #3: Example of idler pulley not running true to belt

NOTE: Notice the distance between the square and the belt. Looking at the square, the bottom is much closer to the belt as compared to the top of the square.

REPAIR STEP(s)

REMOVAL PROCEDURE:

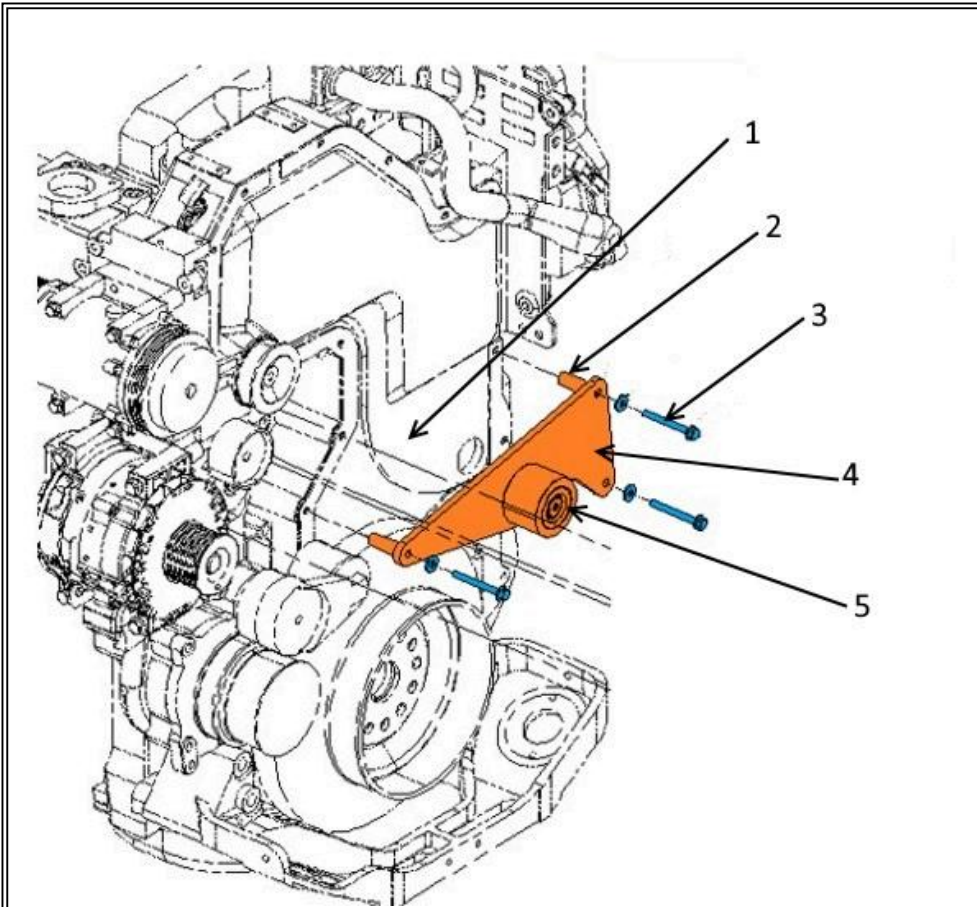


Figure #4: HX Idler Pulley and Bracket Assembly

- Item 1: X15 Front Cover
- Item 2: Idler bracket Standoff
- Item 3: Mounting Bolts 3 ea.
- Item 4: Idler Pully Bracket
- Item 5: Idler Pulley

Step 1:

Loosen all idler pulley mounting bolts (see Figure 4 Item 3)

Step 2:

To ensure the belt runs true with the pulley, add a washer or washers between the Idler pulley bracket (Figure 4, Item 2) and the engine front cover (Figure 4, Item 1).

Note: Typically, positioning a single washer behind one of the bracket standoffs is adequate to properly align the pulley (see Figure 5, Items 1 & 2).

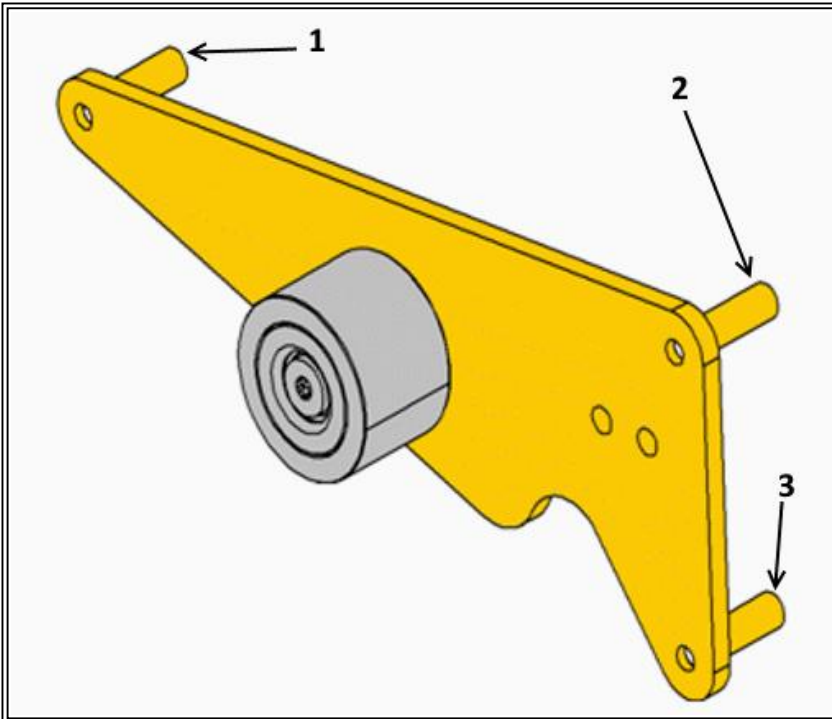


Figure #5: Idler Bracket Assembly

- Item 1: Bracket Stand Off 1
- Item 2: Bracket Stand Off 2
- Item 3: Bracket Stand Off 3

Step 3:

Verify pulley alignment.

Note: There should now be an equal distance between the square and the belt (See Figure 2)

INSTALLATION PROCEDURE:

Step 1:

Torque mounting bolts to 19 to 21 ft-lbs. (25.9 to 28.8 N-m)

Step 2:

Verify repair, start the engine verify there is no belt noise, and that the belt is not starting to fray.

WARRANTY INFORMATION

Warranty Claim Coding:

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

Standard Repair Time(s):

Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

[Master Service Information Site](#)

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