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| Technical Service<br>Bulletin Number | Revision Level | Date | Group Number |
| TSB120300                            |                |      |              |



## Technical Service Bulletin

### Subject

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Chirping Noise Heard From Primary Belt Drive on ISX12/11.9 and QSX11.9 CM2250 Engines

### Issue

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Primary belt noise, described as a chirping noise, is being heard at the water pump. The water pump and crankshaft pulleys are aligned with each other, but the belt tensioner between the two pulleys is tilted due to the way the refrigerant compressor/alternator bracket is mounted. This tilting causes a belt entry angle into the water pump that is susceptible to causing noise on the front end drive.

### Verification

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To determine if the noise is coming from the primary belt drive, remove the secondary belt and operate the engine. If the belt noise is present, spray water on the groove side of the belt at the water pump. If the noise goes away, perform the revised bracket assembly procedure in the resolution section. If the noise does not go away, reference the Engine Noise Excessive - Drive Belt Noise troubleshooting symptom tree in Section TS of the ISX12/ISX11.9 CM2250 Service Manual, Bulletin 2883445.

### Resolution

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Reference Procedure 009-056 in Section 9 of the appropriate service manual for the engine being serviced, to remove all components from the bracket and inspect the bracket for reuse.

**NOTE:** The refrigerant compressor idler pulley and cooling fan do not need to be removed as written in the above procedure.

Perform the below measurements on Spacer 1 and Spacer 2, as shown in Figure 1, using a pair of dial calipers. These spacers are located at Capscrew 1 and Capscrew 2, as shown in

Figure 2.

1. Measure the spacer installed in the bracket.
2. Measure from the front of the spacer to the underside of the bracket.

The difference between measurements 1 and 2 must be 3.0 mm [0.118 in]. If either spacer is not in the correct position, use a plastic hammer, or equivalent, to move the spacer. The differences between measurements 1 and 2 for both spacers need to be within 0.1 mm [0.0039 in] of each other to avoid tilt in the bracket. Reference Figure 1.

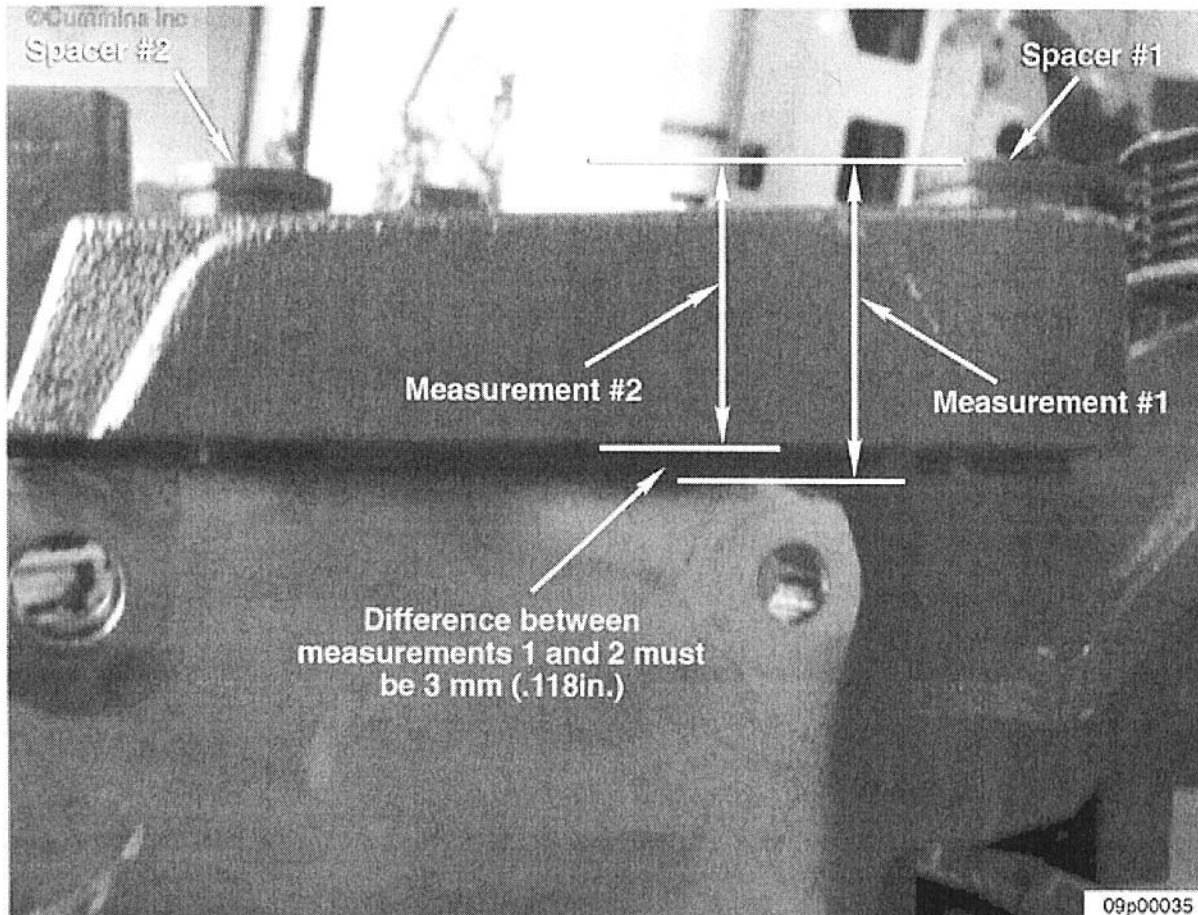
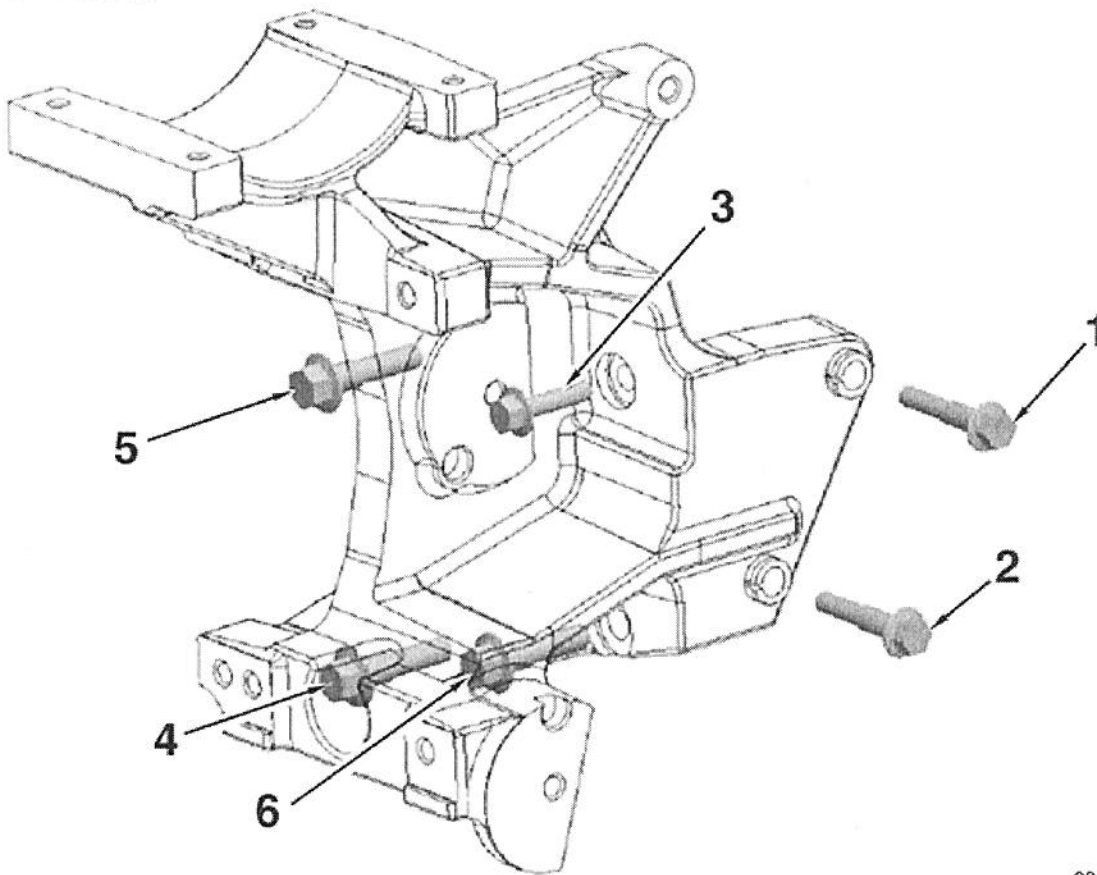


Figure 1: Front Mounting Capscrew Spacer Measurements

Install the bracket using the procedure below.

Install all six bolts hand-tight in the order shown in Figure 2. Capscrews 1 and 2 are M10x1.5 50-mm, Part Number 3900634, capscrew 3 is M10x1.5 35-mm, Part Number 3089016, and Capscrews 4, 5, and 6 are M12x1.75 45-mm, Part Number 3093940.



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Figure 2: Capscrew Installation Order for Refrigerant Compressor/Alternator Mounting Bracket

Install and tighten capscrews 1 thru 3 in numerical order.

| Torque Specifications |       |
|-----------------------|-------|
| N•m                   | ft-lb |
| 47                    | 35    |

Install and tighten capscrews 4 thru 6 in numerical order.

| Torque Specifications |       |
|-----------------------|-------|
| N•m                   | ft-lb |
| 113                   | 83    |

Install all components to the bracket, except the refrigerant compressor drive belt. Use the following procedure in the ISX12/ISX11.9 CM2250 Service Manual, Bulletin 2883445. Refer to Procedure 009-056 in Section 9.

Operate the engine to verify that the noise is gone from the fan drive. If the noise is gone, install the refrigerant compressor drive belt. If the noise is not gone, verify the drive system pulley alignment with the belt alignment laser tool, Part Number 3163524, or equivalent. Use the following procedure in the ISX12/ISX11.9 CM2250 Service Manual, Bulletin 2883445.

Refer to Procedure 008-002 in Section 8.

If all pulleys are aligned, replace the fan drive belt before continuing on to Engine Noise Excessive - Drive Belt Noise troubleshooting symptom tree in Section TS of the ISX12/ISX11.9 CM2250 Service Manual, Bulletin 2883445.

## Warranty Statement

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The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

## Document History

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| Date       | Details        |
|------------|----------------|
| 2012-11-28 | Module Created |

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