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Major System: COOLING **Created:** 9/23/2019
Current Language: English **Last Modified:** 11/12/2019
Other Languages: NONE **Author:** Bobby Christopher
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Coding Information

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Title: WorkStar Hybrid Mount to Pad Mount A/C Compressor Retrofit

Applies To: WorkStar

CHANGE LOG

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

11/12/2019 - Changed AC suction line part Number
 10/01/2019 - Initial Article Release.

DESCRIPTION

A/C compressor update from hybrid mount to direct mount to engine.

This will affect all WorkStar variations with Cummins ISB 6.7 engine only.

In order to obtain proper clearance to address engine roll and rub issues, A/C suction line is redesigned.

Fan drive belt will need to be changed on High-Vis/Slope Hood (09WBM) models (going from 2125 mm to 2108 mm).

With direct mount compressor, support brackets for the hybrid mounted A/C compressor are removed.

On low visibility / sloped hood units a 50 mm extended frame modification is required for compressor clearance during engine torque roll. Use included template (Figure 2).

Original Design	New Design High Visibility / Sloped Hood (09WBM) Requires Shorter Belt (2108 mm)	New Design Low Visibi Uses Original Belt (2125 mm)

SYMPTOMS

Diagnostic Trouble Codes & Dashboard Indicator Lights:

DTC/Light	Description
N/A	N/A

Customer Observations or Concerns:

- Fan Belt shreds
- Fan Belt comes off
- A/C not cooling
- Noise under hood / engine compartment
- A/C Compressor loose

SPECIAL TOOLS / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Refrigerant Handling System	RTI RHS980C-NAV	Refrigerant recover and charging Station	

SERVICE PARTS INFORMATION

High Visibility / Low Hood Model (09WBM Sloped Front)	Part Number	Quantity Required	Notes
Wiring bracket part number	6137791C1	1	
Wiring bracket part number	4145863C1	1	
4 compressor Bolts	1817962C1	4	
Fan Drive Belt	3866104C1	1	
A/C Compressor Direct Mount	4034409C4	1	Replaces Hybrid Mount Compressor
AC suction Line	4049904C91	1	
Receiver Dryer	6102498C90	1	
Template / Frame notch	Figure 2	1	Cut out attached IKNOW

Low Visibility / High Hood Model	Part Number	Quantity Required	Notes
Wiring bracket part number	6137791C1	1	
Wiring bracket part number	4145863C1	1	
4 Compressor Bolts	1817962C1	4	
A/C Compressor Direct Mount	4034409C4	1	Replaces Hybrid Mount Compressor
AC Suction Line	4049904C91	1	
Receiver Dryer	6102498C92	1	

DIAGNOSTIC STEPS

Step	Action	Decision
1	<p>DIAGNOSTIC:</p> <p>Inspect A/C compressor mounting and engine serpentine belt.</p> <p>Is A/C compressor belt off, broken, or shredded?</p> <p>Is the A/C compressor loose (broken mounts)?</p> <p>Refer to Figure 1 for example of broken compressor mounts.</p>	<p>Yes: Refer to Service Parts Information listed above:</p> <ul style="list-style-type: none"> • Order all needed parts listed for application • Refer to Figure 2 High Visibility/Sloped Hood only (09WBM) • Cut out template per directions • Follow removal procedure • Follow installation procedure <p>No: Reference HVAC System Diagnostics in service portal</p>

Figure 1 - Broken Hybrid Compressor Mount

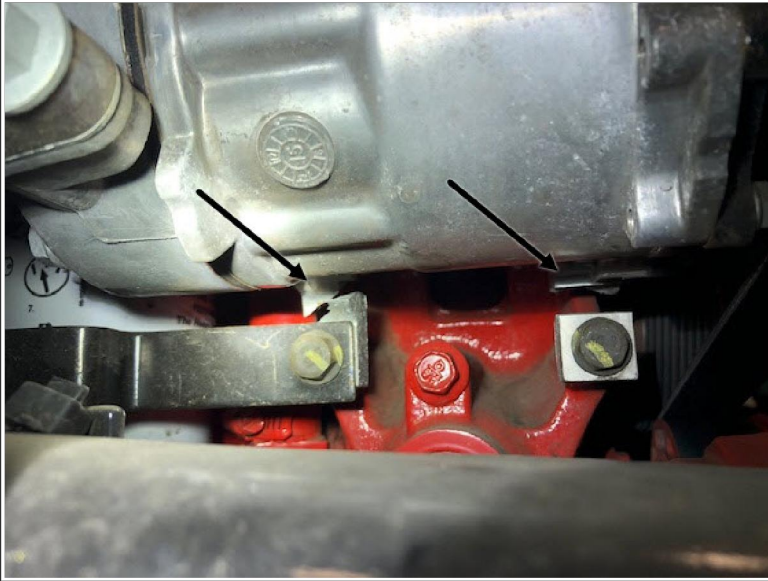
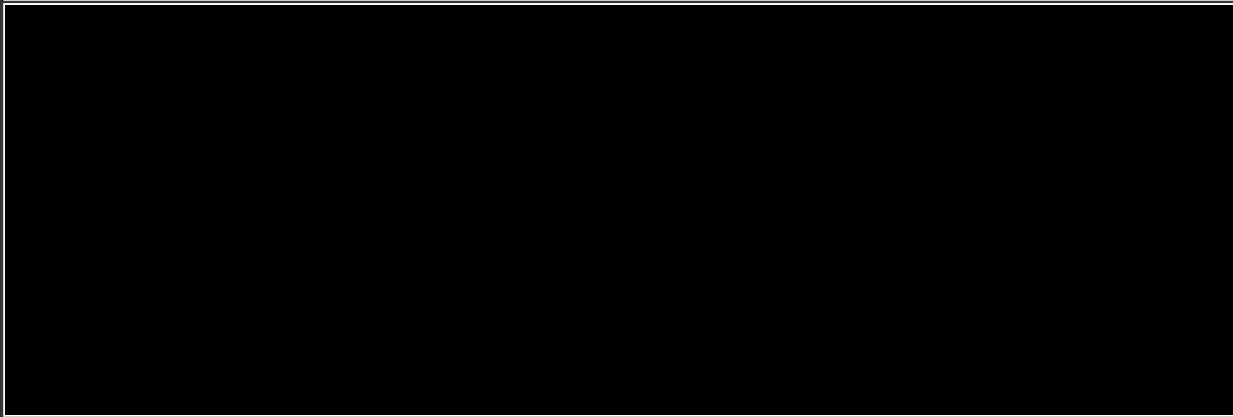


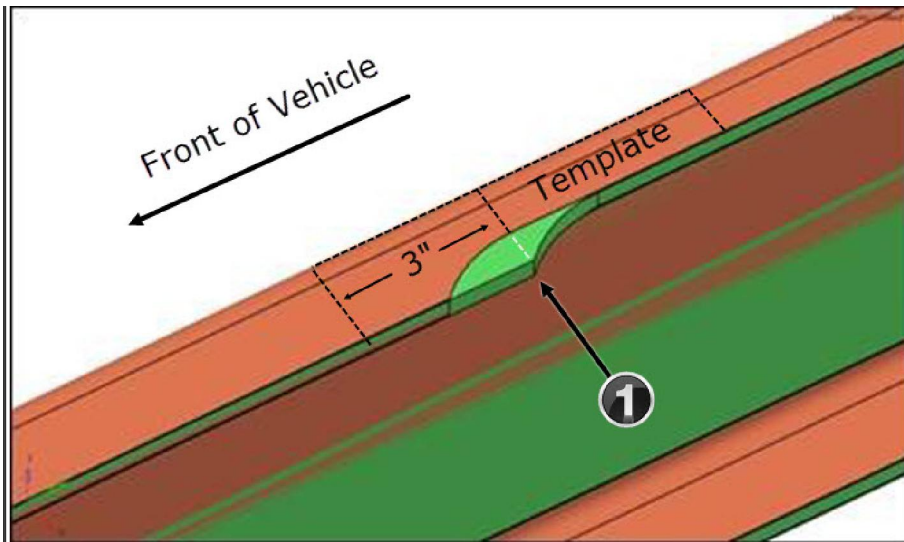
Figure 2 - Frame Template

**Printing instructions:**

1. Print the iKNow article
 - Must be printed at 100% on 8 1/2" x 11" Paper
 - Measure 3 inches on front of template to verify the template has printed at the correct size
2. Cut out and place on right side frame rail (Passenger side)
3. Align dotted line up with point on old bevel (Figure 3, Item 1)
 - The white dashed line is showing alignment to the old bevel
4. Mark the frame. Then grind / cut area that is shown in **light green** (Figure 3, Item 1) (**Do not use a torch**)
 - This is for compressor clearance during engine torque roll on vehicles with High Visibility / Sloped hood only (09WBM)
 - It is critical to follow template, must have beveled edge, do not square cut or notch the frame - "Could cause frame to crack"
 - You are only removing a small sliver of frame rail flange (Shown in light green)
 - You are NOT removing material the size of the template

Figure 3 - Frame Modification - Passenger Side Only





If you have any questions with placing the template on the frame rail, open a tech service case file before making any frame modifications

REPAIR STEPS

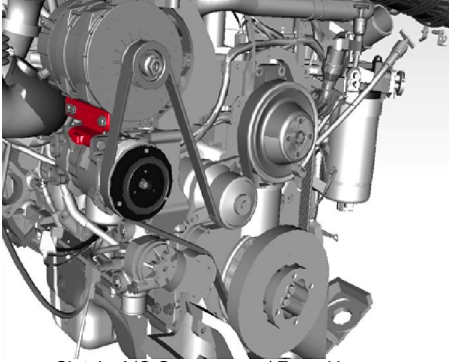
1. Install Wheel Chocks
2. Obtain Service Information
3. Obtain Service Part(s)
4. Obtain Service Tool(s)
5. Use / Template To Mark Frame Where Cut Is Needed And Mark

Special Tools

- A/C Machine

REMOVAL PROCEDURE:

1. Open Hood
2. Remove Fender, Front / Right
3. NOTE: Use Appropriate SRT for AIR CONDITIONING SYSTEM RECOVER, EVACUATION AND RECHARGE
4. Evacuate Air Conditioning System /of Refrigerant
5. Remove Belt, Serpentine / A/C Compressor
6. Remove Air Conditioning System / Belt from Engine
7. Disconnect Hose, Compressor To A/C Dryer / Accumulator /Install Red Cap
8. Disconnect Hose, Compressor To Condenser / At Compressor Install Red Cap
9. Remove Bracket, A/C Compressor / Cutting Two Zip Ties and Removing One Nut
10. Remove Bracket, A/C Compressor / From A/C Compressor Mounting Bracket Four Bolts
 - The upper bracket is not re-used and can be discarded (Identified in RED below)
 - The alternator mounting bolts will be re-used with a new bracket during installation

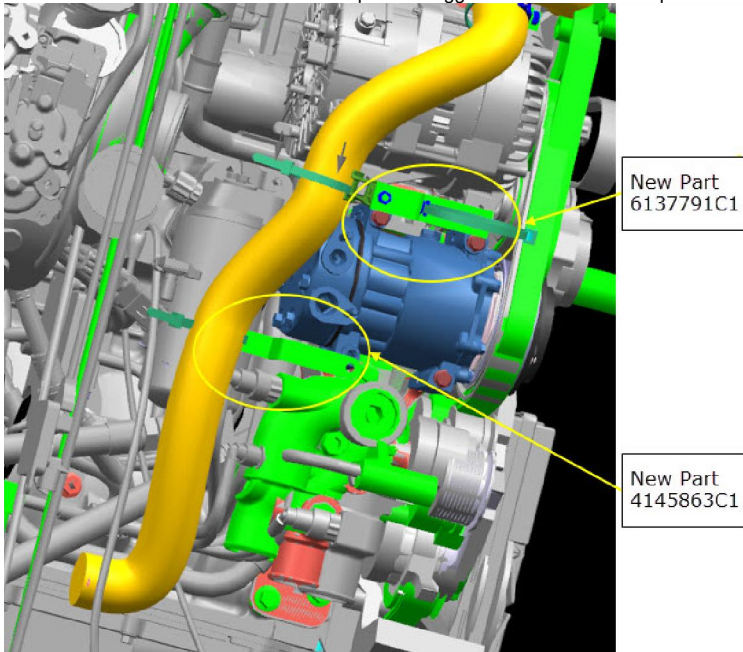


11. Disconnect Clutch, A/C Compressor / From Harness
12. Remove Compressor, A/C / From Engine Two Bolts One Nut
13. NOTE: Block Off Wiring Harness with Thin Metal Plate. As Some Cutting Tools Will Throw Sparks At Harness.
14. **(High Vis/Slope hood only)** Cut Frame Following Mark Made with Template. Clean / Any Burrs Or Sharp Edges **(Do not use a torch)**
15. Clean Frame Area with Cleaner To Remove Oils
16. **(High Vis/Slope hood only)** Apply / Paint To Frame Area

INSTALLATION PROCEDURE:

1. Drain / Oil From Old Compressor Into Measuring Cup
2. Drain / Oil From New Compressor Into Measuring Cup

3. Fill Compressor, A/C / With The Correct Amount Of Oil
4. Turn Compressor, A/C /Clutch By Hand To Circulate Oil Install Red Cap
5. Install New Compressor, A/C / Installing Four New Bolts, Install Bracket
6. Smaller One Goes On Bottom Bolt Of A/C Compressor Bigger Bracket Goes To Top A/C



7. Compressor Bolt
8. Torque Bolts / Four
9. Install Tie Strap, Wiring / To Bracket On Wiring Harness Two Top And Bottom Bracket
10. Install New Seal / A/C Line Compressor To Condenser
11. Connect Hose, Compressor To Condenser /Lube O-ring Seal Remove Red Cap
12. Torque Nut
13. Connect Hose, Compressor To A/C Dryer / Accumulator /Install Red Cap
14. Torque Nut
15. Connect Compressor, A/C /Electrical connector
16. Install New Tie Strap, Wiring / A/C Clutch Connector To Bracket
17. Install Belt, Serpentine
18. Perform / A/C Vacuum And Fill
19. Install Fender, Front
20. Torque Fender, Front
21. Close Hood

FOLLOW-ON PROCEDURE:

1. Tag And Return Service Part(s)
2. Return Service Tool(s)
3. Remove Wheel Chocks

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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