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|-------------------------------|---|
| ADDRESSEES | : Owners and operators of vehicles listed under “Application” ABC Customer Care and Parts Source |
| VEHICLE MODEL | : CX45, TX45, TD925US, TDX25US |
| MANUAL SECTION | : 6.10 Transmission |
| BULLETIN TYPE | : Product Improvement |
| DATE | : January 16 th , 2018 |
| SUBJECT | : Introduction of new transmission oil filler pipe assembly |
| TERMS & CONDITIONS | : This service bulletin does not entitle to any reimbursement. |

APPLICATION:

As from following units with Allison WTB500 transmission, Van Hool has introduced a new transmission oil filler pipe assembly.

| Model | VIN |
|---------------|----------------|
| CX45 Cummins | 49190 → |
| TX45 Cummins | 41391, 41502 → |
| TDX25 Cummins | 42919 → |

DESCRIPTION:

- The new oil filler pipe removes possible stress on the grommet (part #11147825) that seals the oil filler pipe assembly to the transmission housing due to vibrations of the oil filler pipe assembly. The grommet prevents moisture and foreign material from entering the transmission housing and, in this way contaminating the transmission fluid.
- New parts are supplied as a kit. This service bulletin gives step-by-step instructions to install the improved oil filler pipe assembly.
- This product improvement bulletin is applicable to previous units with Cummins ISX engine and Allison WTB500(R) transmission:

| Model | VIN |
|---------|--|
| TX45 | 41180 → 41481 |
| CX45 | 48250 → 49138 |
| TD925US | 42672 → 42673, 42740 → 42766, 42781 → 42799, 42821 → 42845, 42890 → 42891 |
| TDX25US | 42800 → 42820, 42892 → 42918 |

JOB QUALIFICATION:

This task has to be carried out by an experienced automotive technician, trained in the operations at hand.

SPECIAL TOOLS, EQUIPEMENT OR SERVICES:

No special tools are needed.

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MATERIAL:

| | |
|----------------------------|------------------|
| Retrofit kit for... | VH number |
| CX45 and TX45 | 11569641 |
| TD925 and TDX25 | 11569639 |

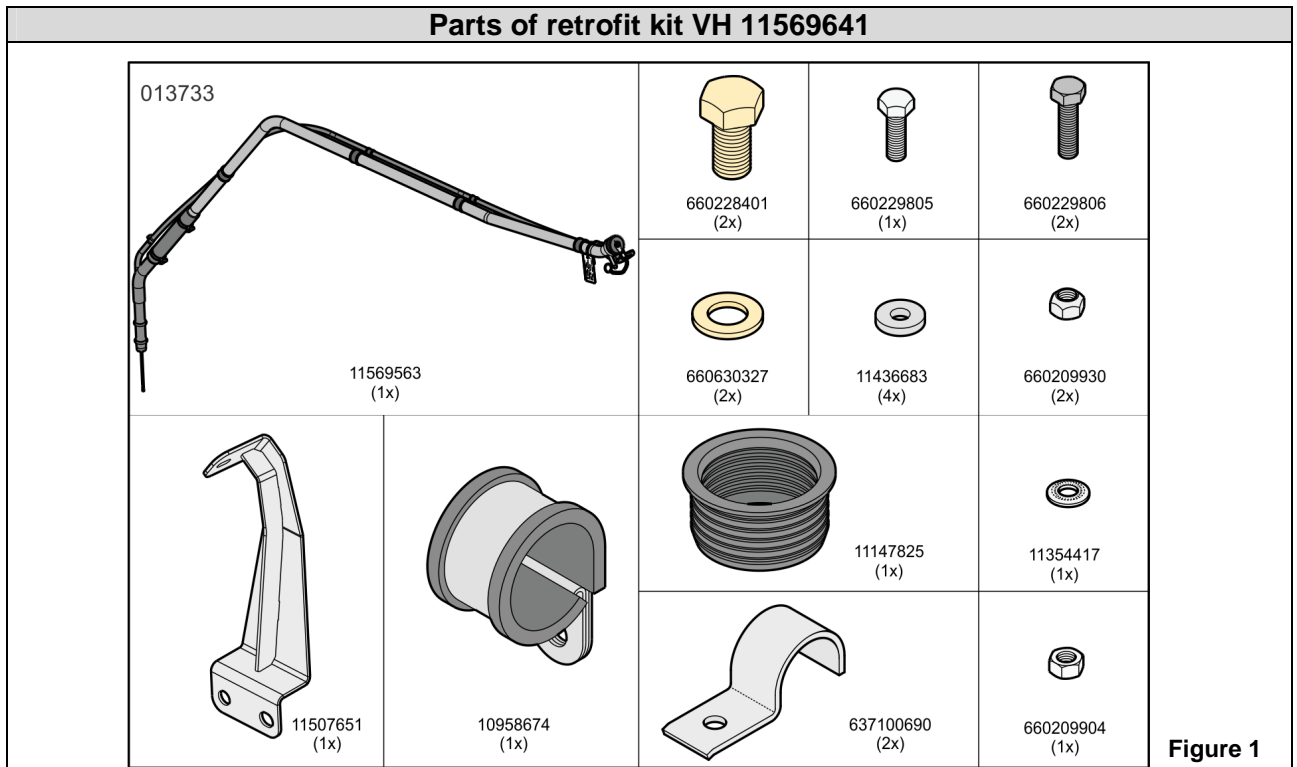


Figure 1

| VH reference | Description | Qty |
|--------------|--------------------------|-----|
| 11569563 | Oil filler pipe assembly | 1 |
| 11147825 | Grommet | 1 |
| 11507651 | Bracket | 1 |
| 660228401 | Screw M16x30mm | 2 |
| 660630327 | Washer M16 | 2 |
| 11436683 | Washer M8 | 4 |
| 660229806 | Screw M8x30mm | 2 |
| 660209930 | Self-locking nut M8 | 2 |
| 637100690 | Pipe clamp dia. 33mm | 2 |
| 10958674 | Pipe clamp dia. 30mm | 1 |
| 660229805 | Screw M8x25mm | 1 |
| 11354417 | Spring washer M8 | 1 |
| 660209904 | Nut M8 | 1 |

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Parts of retrofit kit for VH 11569639

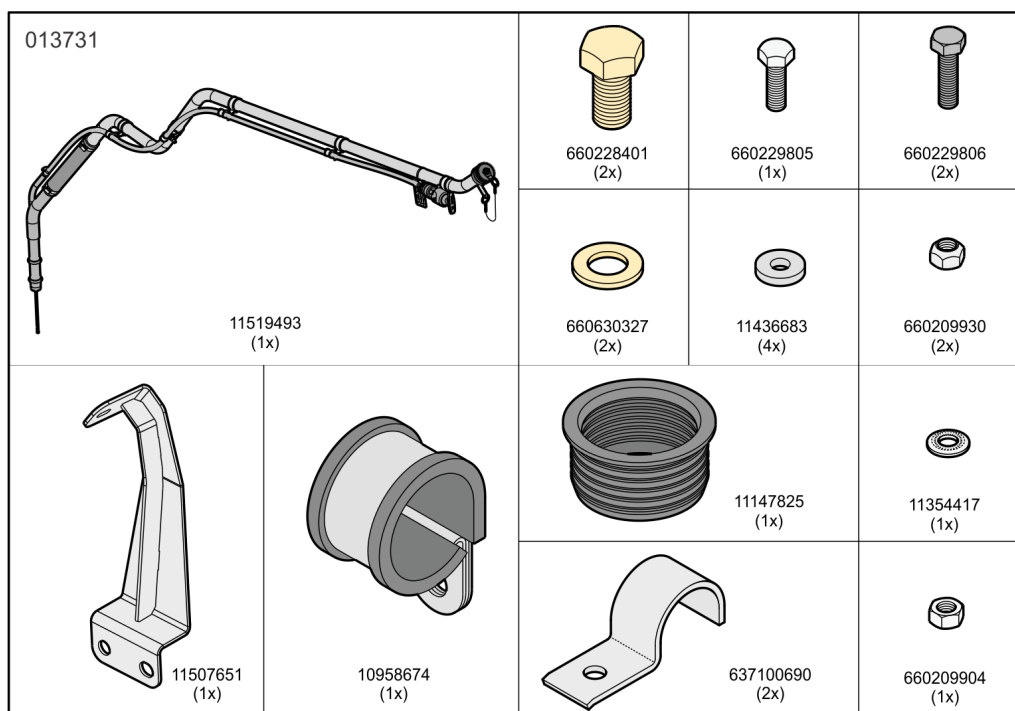


Figure 2

| VH reference | Description | Qty |
|--------------|--------------------------|-----|
| 11519493 | Oil filler pipe assembly | 1 |
| 11147825 | Grommet | 1 |
| 11507651 | Bracket | 1 |
| 660228401 | Screw M16x30mm | 2 |
| 660630327 | Washer M16 | 2 |
| 11436683 | Washer M8 | 4 |
| 660229806 | Screw M8x30mm | 2 |
| 660209930 | Self-locking nut M8 | 2 |
| 637100690 | Pipe clamp dia. 33 mm | 2 |
| 10958674 | Pipe clamp dia. 30 mm | 1 |
| 660229805 | Screw M8x25mm | 1 |
| 11354417 | Spring washer M8 | 1 |
| 660209904 | Nut M8 | 1 |

PREPARATIONS:

- Park the coach on a level surface with the front wheels straight.
- Apply the parking brake and shut down the engine.
- Switch off all systems and turn off the battery master switch.
- Put a “DO NOT OPERATE” tag on the steering wheel.
- Cold engine.
- **Read the entire procedure before beginning to work.**



WARNING!

Observe safe shop practices at all times.

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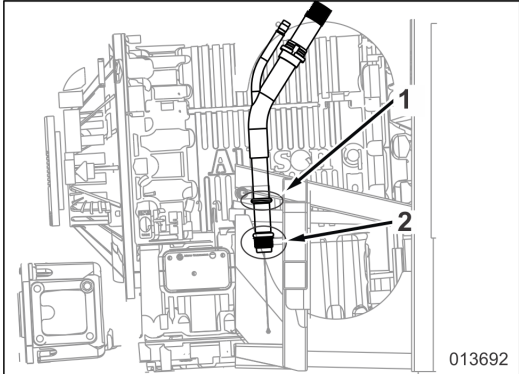
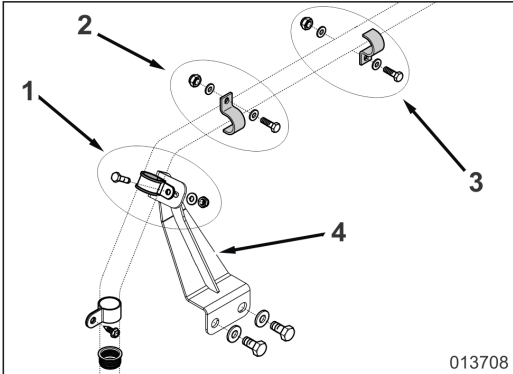
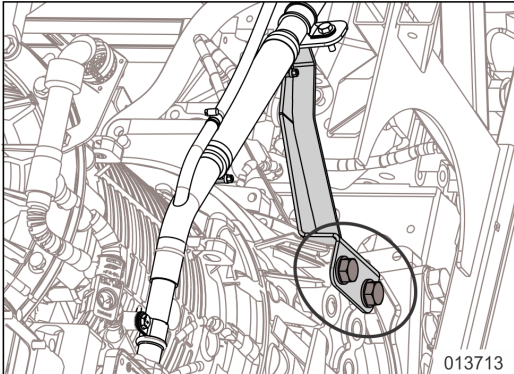
PROCEDURE:

| Step | Action |
|-----------------|---|
| <p>1</p> | <p>Open the engine compartment door and both interior floor traps above the engine.</p> <p><i>NOTE: Pay attention to the location of the floor trap fixation screws. Do not mix them up at reinstallation!</i></p> <div data-bbox="564 421 1083 792" style="text-align: center;"> <p>Figure 2</p> </div> |
| <p>2</p> | <p>Place a drip pan under the transmission at the pipe location. Clean any debris from area that may enter transmission when the pipe assembly is removed.</p> |
| <p>3</p> | <p>Remove the pipe assembly installed as follows:</p> <ol style="list-style-type: none"> a. Remove the pipe clamps (1, 2 and 3). b. Take away the oil pipe assembly by twisting and lifting it from the rear of the coach. <p><i>NOTE: Make sure that the grommet in the transmission housing is removed. It is possible that it stays behind when removing the oil pipe assembly.</i></p> <div data-bbox="327 1149 844 1525" style="display: inline-block; vertical-align: top; width: 48%;"> <p>013702</p> <p>Figure 3: Installation on single decker</p> </div> <div data-bbox="900 1149 1417 1525" style="display: inline-block; vertical-align: top; width: 48%;"> <p>013703</p> <p>Figure 4: Installation on double decker</p> </div> |
| <p>4</p> | <p>Install the new pipe assembly as explained under “STEP 4 IN DETAIL”.</p> |
| <p>5</p> | <p>Check the new pipe assembly installation for interference with coolant pipes.</p> |
| <p>6</p> | <p>Check the transmission oil level and adjust if necessary.</p> |

End of procedure

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STEP 4 IN DETAIL: To install new pipe assembly

| Step | Action |
|------|---|
| 4.1 | Install grommet 1147825 from the kit in the transmission housing. |
| 4.2 | Remove the tape from the new oil filler pipe assembly. |
| 4.3 | <p>a. From the rear of the vehicle: carefully install the oil pipe assembly in the transmission housing ensuring the grommet (2) installed in step 4.1 stays in place during installation.</p> <p>b. Install pipe clamp (1) removed in step 3 and tighten the screw with a torque of 25 Nm (18 ft.lbf).</p> <p><i>NOTE: Pay attention to the routing of the pipe. Correct any interference issues that may be present during installation.</i></p>  |
| 4.4 | <p>Secure the new pipe assembly as follows:</p> <p>a. On the transmission: clean the threads of the bolt holes indicated in figure 7. These holes will receive the screws to secure bracket 11507651 from the kit.</p> <p>b. Secure bracket 11507651 (4) by using screws 660228401 and washers 660630327 from the kit. Tighten the screws with a torque of 180 ± 25 Nm (130 ± 18 ft.lbf).</p> <p>c. Secure the frontmost pipe clamp 10958674 (1) with screw 660229805, lock washer 11354417 and nut 660209904 to the previously installed bracket 11507651.</p> <p>d. Secure the two rearmost pipe clamps 637100690 (2 and 3) with screw 660229806, washer 11436683 and nut 660209930 to the brackets.</p> <p><i>NOTE: Pay attention to the routing of the pipe. Correct any interference issues that may be present during installation.</i></p>   |

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HELP DESK:

If there are any questions, please call ABC Customer Care & Parts Source toll-free for guidance on 1-877-427-7278. Listen for the prompts for warranty and select that option.

DISCLAIMER:

The procedures contained herein are not exclusive. Van Hool cannot possibly know, evaluate, or advise the transportation industry of all conceivable ways in which a procedure may be undertaken or of the possible consequences of each such procedure. Other procedures may be as good, or better, depending upon the particular circumstances involved. Each carrier who uses the procedures herein must first satisfy itself thoroughly that neither the safety of its employees or agents, nor the safety or usefulness of any products, will be jeopardized by any procedure selected.

VAN HOOL CUSTOMER PORTAL:

Consult the customer portal regularly for the latest service documentation. Beside the maintenance manual, you will also find the operating manual and the spare parts catalogue of your vehicle on the customer portal. The customer portal is accessible through www.vanhool.be, and only with a code (password) from Van Hool. If you do not have a password yet, request it by using the link on the Van Hool website.

INFORMATION HANDLING:

Important additions and modifications regarding technical information not yet included in the manual will be communicated through Service Bulletins.