

ADDRESSEES	: ABC-Companies
VEHICLE MODEL	: C2045, T2100 Series, TD925US
SYSTEM/SUBSYSTEM	: Body and body accessories – Exterior parts
BULLETIN TYPE	: Product Improvement
DATE	: April 2, 2012
SUBJECT	: Energy absorbing bumpers – new fasteners
TERMS & CONDITIONS	: Note that no reimbursement will be awarded for carrying out this product improvement.

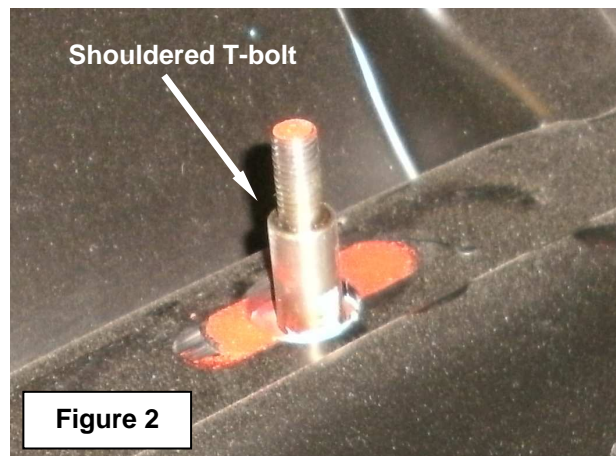
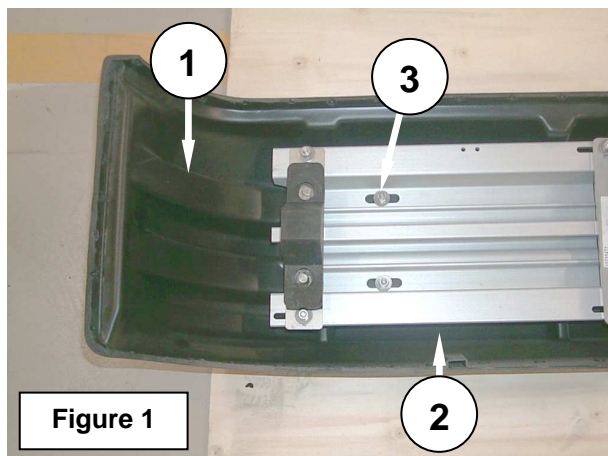
This Service Bulletin supersedes Van Hool Service Bulletin SB1090 in its entirety.

APPLICATION:

This Service Bulletin is applicable to C2045, T2100 and TD925US model coaches equipped with energy absorbing front and/or rear bumpers.

DESCRIPTION:

1. The above-mentioned energy absorbing bumpers comprise among others a thermoplastic bumper shell (1, Figure 1) and an aluminum back-up beam (2, Figure 1).



2. The bumper shell attaches to the back-up beam by means of six shouldered-type T-bolts that have been molded into the shell (Figure 2) and that pass through slots that have been machined into the beam (3, Figure 1).

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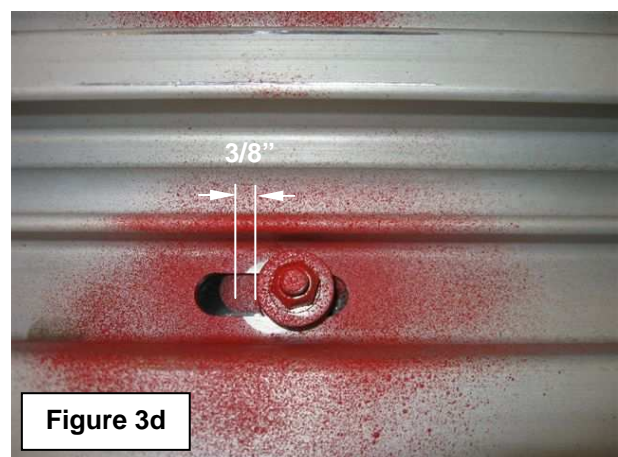
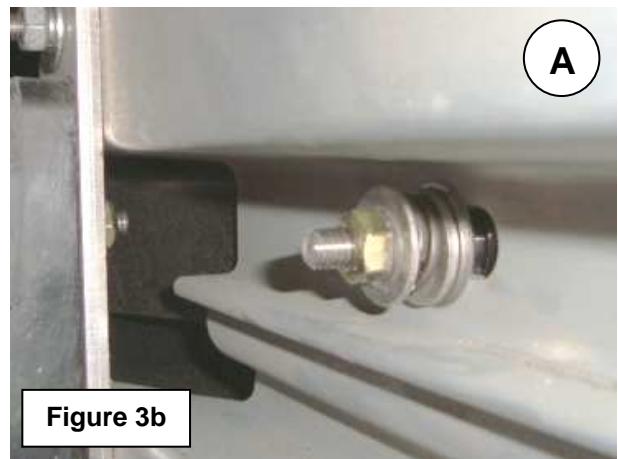
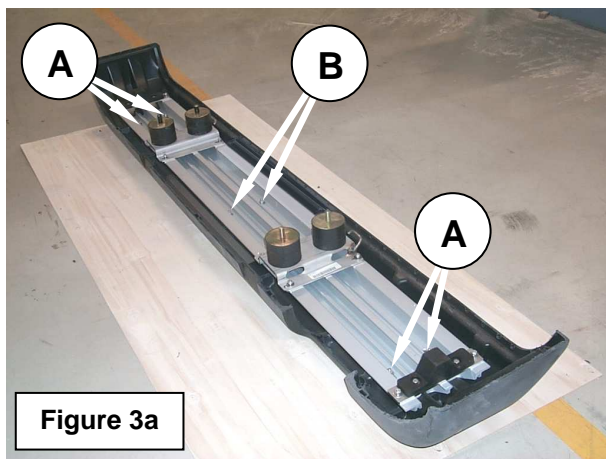
NOTE: The shell and the back-up beam are sensitive to temperature changes and expand/shrink at a different rate. Field experience has shown that when the fixings are too tight, the shell may wrinkle. However, when they are too loose, the shell may generate noise.

The fixings that screw onto the T-bolts in order to secure the shell have to accomplish two goals:

- Make sure the shell is bolted to the beam tightly enough so as to avoid unwanted noise.
- At the same time allow sufficient slack for the shell and the beam to expand/shrink relative to one another as the ambient temperature changes.

3. With the introduction of energy absorbing bumpers, this issue was addressed as described in Service Bulletin SB1090 by fitment of special washers between the beam and the T-bolt nut. However, further developments have led to the fitment of springs at the extremities of the back-up beam instead of conical washers, and the use of plain washers in the center (Figures 3a, 3b, and 3c).

Tests performed with the assembly heated up to 230°F have shown a shift of 3/8" without deformation of the shell (Figure 3d).



4. As a result of these product developments the T-bolts have been changed, and the old fasteners can no longer be used in the new application. When replacing an old bumper shell by a new one it is necessary to not only purchase a new shell but also new fixings.
5. The Product Improvement subject of this service document has been cut into production as from following units #47732 (C2045 DD13), #46293 (C2045 Cummins ISX), #44771 (T2145 DD13), 42484 (TD925-US Cummins ISM).

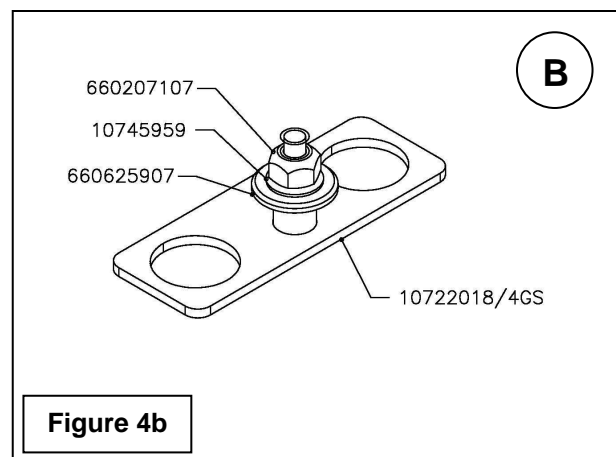
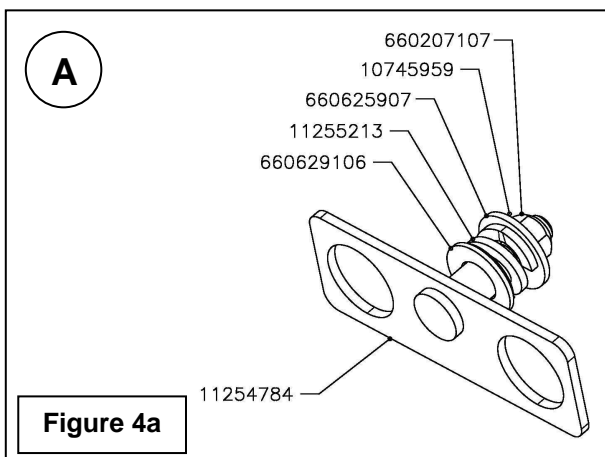
MATERIAL:

New bumper shells

***NOTE:** Although being fitted with different length shouldered T-bolts, the new bumper shells retain the same part numbers as the old ones.*

VH reference	Description	Application
11230975	Bumper, front	C2045
11230064	Bumper, front	C2045
10688471	Bumper, front	C2045
10688477	Bumper, front	T2100
10688470	Bumper, rear	C2045
11093019	Bumper, rear	T2100
10688475	Bumper, rear	T2100
10688475	Bumper, rear	TD925

New fixings



VH reference	Description	Qty.*	Refer to Fig.
660207107	Nut, self-locking, M8, DIN 980	6	4a and 4b
10745959	Washer, disc spring, 16 x 8.2 x 0.9 mm, DIN 2093	6	4a and 4b
660625907	Washer, flat, 8.4 x 25 x 2 mm, DIN 9021	6	4a and 4b
11255213	Washer, double spring, M12	4	4a
660629106	Washer, flat, M12, 13 x 24 x 2.5 mm, DIN 125A	4	4a
11254784	T-bolt shouldered, not available as service replacement	4	4a
10722018	T-bolt shouldered, not available as service replacement	2	4b

* Per bumper shell

- All bumpers come unpainted.
- Old bumpers remain available as service replacements until stock has depleted.
- Material may be purchased through regular channels.
- Parts/Waste disposal: discard old material according to applicable environmental regulations.

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PROCEDURE: To replace an energy absorbing bumper shell

If you do not have the expertise to carry out present procedure, do not hesitate to go to your nearest ABC Customer Care & Parts Source service center.

1. General:

- This job has to be carried out by a technician who is proficient in body and trim repair.
- To remove/reinstall the bumper shell the aid of an assistant is required.
- For more information refer to the service literature that comes with the vehicle.

2. Special tools, equipment or services:

- This job does not require special tools, equipment nor services.

3. Preparations:

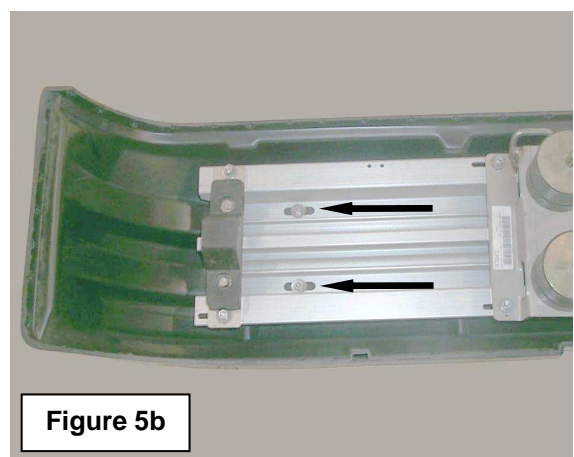
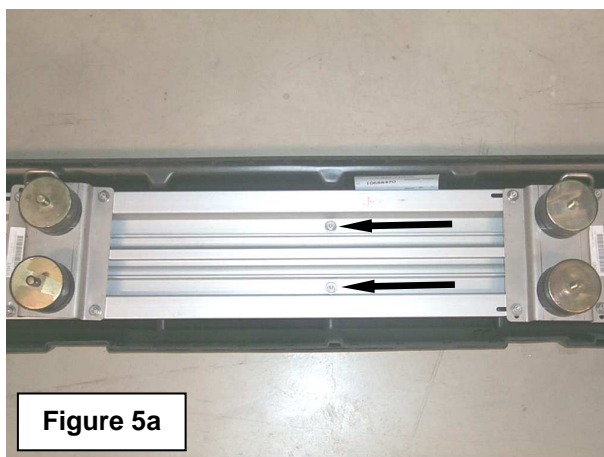
- Park the coach safely, apply the parking brake, stop the engine, switch off all systems and turn off the battery master switch.
- Install a “DO NOT OPERATE” warning message on the dashboard.
- Read the entire procedure before beginning to work.
- Observe safe shop practices at all times.

CAUTION: When working in the engine compartment, turn the starter motor inhibitor switch to “starter motor disabled”.

4. To remove a rear bumper shell:

***NOTE:** For the sake of clarity the figures below show the shell and back-up beam removed from the coach. When actually carrying out shell replacement, it is not necessary to remove the entire assembly from the vehicle.*

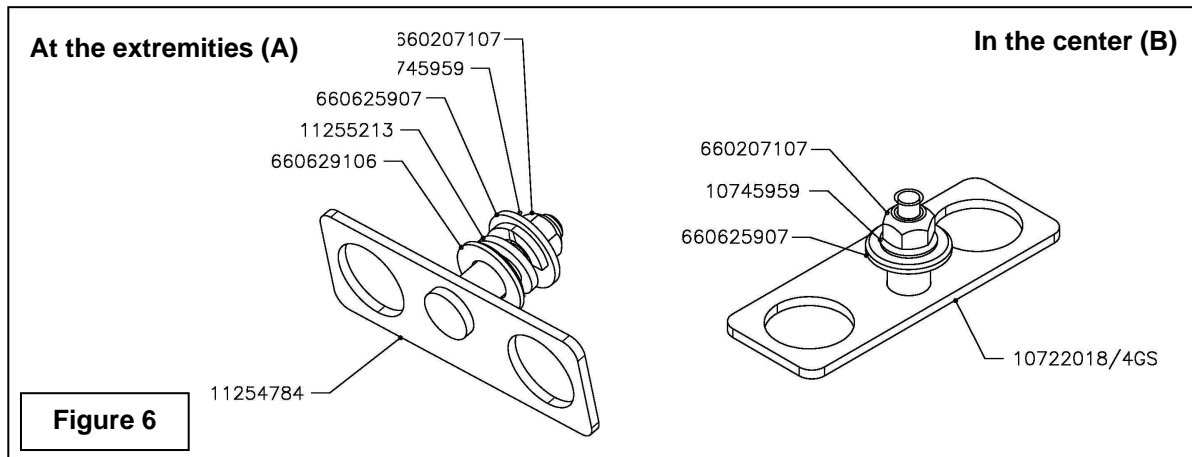
- 1) Open the rear engine compartment door.
Support the bumper on axle stands, or use a hoist and slings to support the assembly.
- 2) In the engine compartment, locate the fixings securing the shell to the back-up beam in the center (Figure 5a) and at the extremities (Figures 5b).
Undo, remove and discard the fixings.



- 3) With the aid of an assistant, lift the bumper shell off the coach and place it upside down on a suitable work surface covered with cardboard, so as not to damage the paintwork.

5. To reinstall a rear bumper shell:

- 1) With the aid of an assistant place the shell onto the back-up beam. Make sure the shouldered bolts of the shell protrude through approximately the center of the slots that have been machined in the beam.
- 2) Install the new fixings for a loose fit on the shouldered bolts in the right order as shown in Figures 3a, 3b and 3c, and Figure 6.



- 3) Adjust the bumper shell position to be flush with the coach side walls and the bumper closing panels.
- 4) Tighten the nuts in the center (Figure 5a) as follows:
 - Run-up the nuts and compress the washers until they can no longer be shifted by hand.
 - Tighten each nut further through 180° (three hex flats).
The disc spring washers are now properly tightened.
- 5) Tighten the nuts at the extremities (Figure 5b) in the same manner.
- 6) Coat all fixings with Loctite 8156 anti-seize lubricant from Henkel.
- 7) Close the engine compartment door.

Procedure complete.

INFORMATION HANDLING:

Important supplements to and modifications of the technical information not yet included in the Van Hool manuals are communicated by means of Service Bulletins.

File the Service Bulletins at the back of your manual, in numerical order.

To make sure that you will be reminded of the Bulletins that have appeared in the meantime while paging the manual, mark the pages concerned by hand with the Service Bulletin number.

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