

<b>ADDRESSEES</b>	: Owners and operators of coaches listed under “Application” ABC Customer Care and Parts Source
<b>VEHICLE MODEL</b>	: TX45 MY2020 vehicles
<b>MANUAL SECTION</b>	: 11.04 Control systems – Vehicle safety systems
<b>BULLETIN TYPE</b>	: <b>Product improvement</b>
<b>DATE</b>	: March 21 <sup>st</sup> , 2022
<b>SUBJECT</b>	: <b>To retrofit with Adaptive Cruise Control (ACC) and Collision Mitigation System (CMS)</b>
<b>TERMS &amp; CONDITIONS</b>	: This document does not entitle to any reimbursement

### APPLICATION

This product improvement bulletin is applicable to TX45 MY2020 vehicles.


Model	VIN
TX45 Detroit Diesel	41743 → 41748
TX45 Cummins	41718 → 41721, 41749, 41750

### DESCRIPTION

Van Hool has released Adaptive Cruise Control (ACC) in combination with Collision Mitigation System (CMS) as an option for above mentioned vehicles.



This work procedure gives step-by-step instructions how to retrofit TDX25US MY2020 vehicles with Collision Mitigation System (CMS) and Adaptive Cruise Control (ACC).

### NEW DASHBOARD SWITCHES

Switch	Function
	To switch collision mitigation system (CMS) off/back on

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## MESSAGES ON DASHBOARD DISPLAY

Symbol	Message
	<ul style="list-style-type: none"><li>• Appears in case of a ACC/CMS failure</li><li>• Appears if the radar is hindered by e.g. fog, heavy rain, mud or ice</li><li>• Flashes each time the ACC/CMS system intervenes</li></ul> <p><i>NOTE: Also appears a couple of seconds when vehicle ignition is switched on, thus indicating that the system is carrying out a self-test.</i></p>
	Collision mitigation system (CMS) switched off

## WHAT IS ADAPTIVE CRUISE CONTROL ?



### **WARNING!**

ACC is not designed to drive the vehicle independently. For that reason, ACC does not relieve the driver from his/her responsibility to safely operate the vehicle at any time. Driver training should be given so they can adapt his/her driving behavior, driving capabilities, while using ACC to meet legal requirements and the overall traffic and road conditions. Even with an active system, the driver is responsible to follow road speed limitations, ensure a safe following distance, comply to driving time regulations and obey passing restrictions. ACC should be used on major highways and not on secondary roads or in traffic jams or in any other unsafe conditions.

**ACC does not detect stationary objects/vehicles/people and does not reacts to vehicles coming from the opposite direction.**

ACC is a **cruise control** system with enhanced **functionality**. It ensures that the vehicle speed is adjusted to the speed of the forward vehicle. It assists with the following distance between both vehicles. When the distance to the forward vehicle drops below the set value, ACC will reduce engine power and – if necessary – activate the braking system.

With ACC, you have to set the desired speed with cruise control and you can change the following distance by the “Set following distance” dashboard switch.

**NOTE: Adaptive cruise control only works if the cruise control is switched on.**

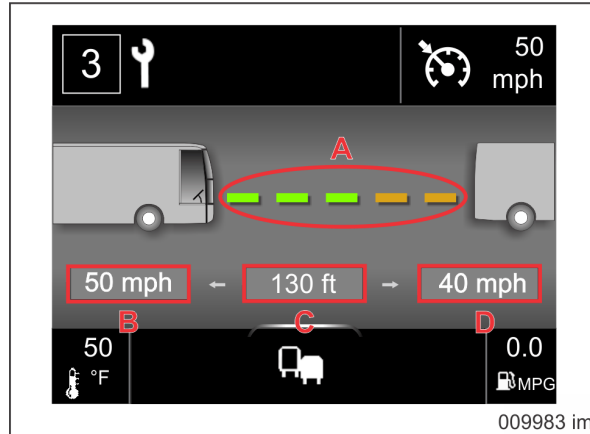
## HOW TO SWITCH ON ADAPTIVE CRUISE CONTROL ?

*NOTE: If vehicle speed drops below the cruise control off speed (25 mph) while driving, the system is automatically switched off. A short acoustic signal will inform you of this.*

Switch on cruise control. Adaptive cruise control is automatically switched on. On the dashboard display appears the screen of adaptive cruise control.

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## ADAPTIVE CRUISE CONTROL SCREEN ON DASHBOARD DISPLAY



A Set following distance  
B Set cruising speed  
C Following distance  
D Speed of forward vehicle

### HOW TO SET FOLLOWING DISTANCE?

You can choose between five following distances:

- **Longest following distance:** five green blocks
- **Long following distance:** four green blocks
- **Short following distance:** three green blocks
- **Shorter following distance:** two red blocks. This following distance is shorter than the legally allowed minimum distance.
- **Shortest following distance:** one red block. This following distance is shorter than the legally allowed minimum distance.

*NOTE: The following distance is speed-related and increases as vehicle speed increases.*

With the adaptive cruise control switched on, turn the joystick of the multifunctional control until the desired following distance appears.

### DISTANCE WARNING:

If the forward vehicle brakes harder than the adaptive cruise control is able to, and an intervention of the driver is required to maintain the following distance, you will be warned by a continuous acoustic signal and a message on the dashboard display.

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## **FORWARD COLLISION WARNING:**

*NOTE: "Forward collision warning" also works when the cruise control system is not switched on.*

Vehicles equipped with ACC also have "Forward collision warning". This system warns you if you have to intervene in order to avoid an accident. You hear an interrupted acoustic signal and the message below appears on the dashboard display.



## **WHAT DOES COLLISION MITIGATION SYSTEM (CMS) DO?**

*NOTE: CMS not only detects forward vehicles that are slower but also immobile objects over a maximum distance of 490 ft.*

The CMS system is switched on automatically when vehicle speed exceeds 9 miles/h.

The control unit of the system calculates the difference in speed between your vehicle and the forward vehicle. If you approach the forward vehicle too quickly and do not intervene timely, a message appears on the dashboard display and an acoustic signal is heard. Later on the brake system will brake suddenly. If you still do not take action and the risk of an accident becomes too big, the CMS will carry out an emergency stop to try to avoid the accident or to limit the damage.



### **WARNING!**

**CMS has its limitations. Having CMS on your vehicle should not tempt you to reckless driving. Above all, do not brake later.**




### **WARNING!**

**CMS does not reckon with traffic coming from the opposite direction.**

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## OPERATION OF CMS

From the moment the radar detects an object until the moment the collision mitigation system carries out an emergency braking, the system goes through four phases.

Stage	Description
1	The ACC/CMS radar detects an object.
2	<p>Your vehicle speed is higher than the speed of the object and the mutual distance decreases. As soon as the distance becomes too small, the “Collision Warning” message appears on the dashboard display together with the illumination of the yellow “Collision Mitigation System (CMS) intervention” message. At the same time you hear a warning signal.</p> <div style="text-align: center;">  </div>
3	You do not intervene and the speed of your vehicle remains higher than that of the object. The brake system brakes suddenly to warn you.
4	You still do not intervene. The collision mitigation system carries out an emergency braking to try to avoid an accident or to limit the damage.

## WHEN IS CMS SWITCHED OFF?



### **WARNING!**

**CMS is a safety system. Switching off the system by means of the dashboard switch can lead to dangerous situations.**

CMS is switched off if:

- the dashboard switch is pressed or ...
- you switch on the turn signals or ...
- you press the accelerator pedal fully down or ...
- you very quickly press the accelerator pedal nearly fully down or ...
- the radar is hindered by e.g. fog, heavy rain, mud or ice or ...
- the system has carried out more than three emergency brakings in a short while.

*NOTE: The CMS system is also switched off during 20 seconds after the system has carried out an emergency brake and has avoided an accident with an immobile object.*

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## **LIMITATIONS OF CMS**

System operation is limited:

- in case of bad weather (e.g. fog);
- in case of a slippery road surface (e.g. snow, rain or ice);
- when driving in a tunnel;
- when driving in sharp curves;
- when driving in curves at excessive vehicle speed;
- when vehicle speed exceeds 70 miles/h;
- the first 6 miles after you have started the vehicle.

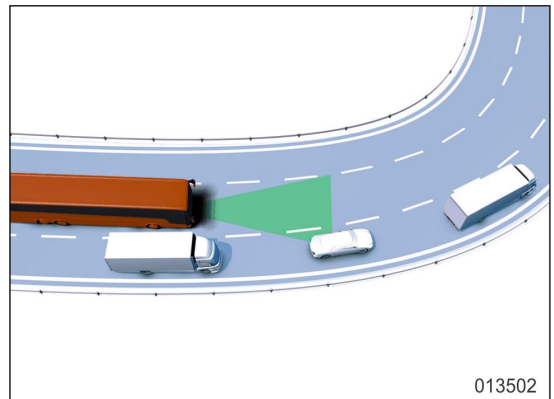
## **SPECIAL TRAFFIC SITUATIONS**

As the radar is unable to assess each traffic situation 100% correctly, it is possible that wrong/unforeseen warnings are given. The frequency of these wrong/unforeseen warnings is determined by driving style, road characteristics and traffic intensity. Roads with less objects at the side or less traffic may cause the system to react in a more sensitive way.

### **Situation 1: Cornering, entering and exiting bends**

The ability of ACC/CMS to detect vehicles on bends is limited. While cornering, entering or exiting the bends, the system may interpret traffic ahead in a wrong way. ACC/CMS may unexpectedly issue warnings or brake your vehicle.

**Driver must exert extra caution while cornering the vehicle on bends.**

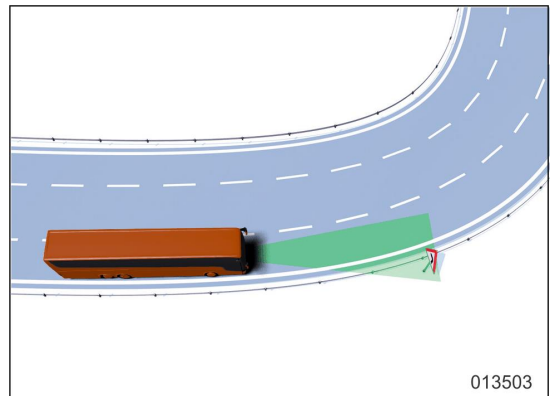


### **Situation 2: Immobile objects**

ACC/CMS may unexpectedly issue warnings or brake your vehicle when it detects immobile objects.

- Lampposts;
- Road signs;
- Bridges;
- Traffic circles;
- Traffic islands.

**Drivers must take extra care in case of immobile objects at the roadside in order to react to unexpected vehicle behavior.**

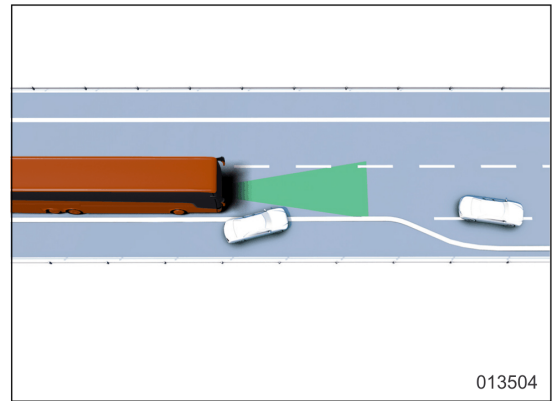


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**Situation 3: Different lanes and stationary vehicles**

ACC/CMS can experience difficulties at exits, particularly when other vehicles are driving on the hard shoulder or are pulling out. ACC/CMS may unexpectedly issue warnings or brake your vehicle.

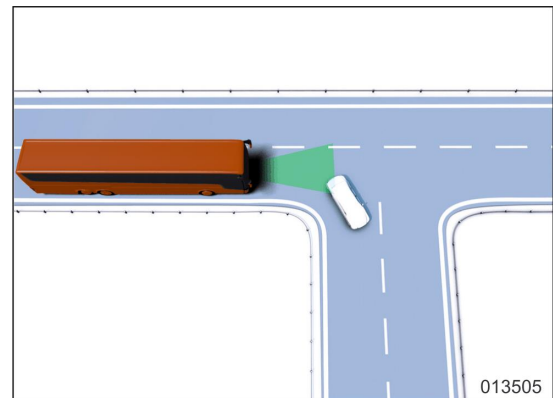
**Drivers must take extra care at exits and take full control of the vehicle to avoid unexpected braking.**



**Situation 4: Turning-off vehicles**

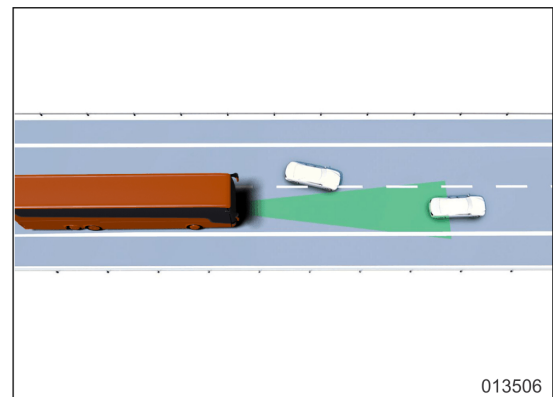
On junctions or intersections, ACC/CMS may unexpectedly issue warnings on vehicles that are turning-off in front of your vehicle. It may as well apply brakes in a manner which is different to driver's expectations.

**Driver must pay full attention hence on vehicles that turn-off on junctions and intersections.**



**Situation 5: Other vehicles change lanes**

ACC/CMS may detect vehicles (truck, car, motorcycle) pulling into your lane a bit later. The distance to the vehicle entering in front of your lane may then be too short. In this situation the driver should make use of the service brake to maintain the required safe distance to the vehicle pulling in the front.

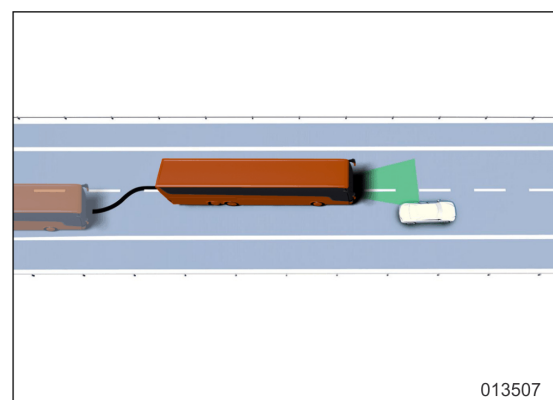


**Situation 6: Overtaking**

While overtaking, ACC/CMS may issue unexpected warnings or slow down the vehicle if the driver:

- is driving too close to the vehicle in front and...
- is in the same lane as the vehicle in front.

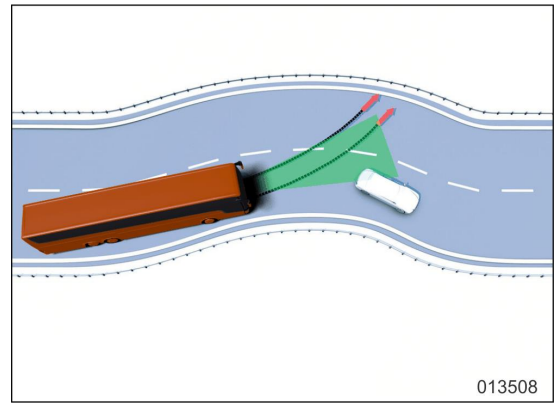
Therefore driver should complete the lane change maneuver without reducing the safety distance to the front vehicle.



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**Situation 7: Curved vehicles**

On winding stretches of road, ACC/CMS may not detect which lane the vehicle in front is driving in. ACC/CMS hence may unexpectedly issue warnings or slow down your vehicle. ACC/CMS may also accelerate the vehicle unexpectedly if a vehicle in front is not detected by the distance sensor properly. Driver must pay extra attention on winding stretches and take full control of the vehicle by applying the service brakes.

**WHAT DO YOU HAVE TO DO WHEN YOU WANT TO PURCHASE ACC/CMS ON YOUR VEHICLE?**

Contact ABC Companies, installation must be done by ABC Companies.

**WHAT WILL ABC COMPANIES DO?**

ABC Companies will quote you the price to retrofit your vehicle with ACC/CMS.

**ABC Companies will perform the retrofit according to the step-by-step instructions indicated in Van Hool work procedure WP1251 which is available on the customer portal under the heading "Work procedures for dealers and service points".**

**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.

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### **INFORMATION HANDLING:**

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

### **VAN HOOL CUSTOMER PORTAL:**

Consult the customer portal regularly for the latest service documentation. In addition to 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](http://www.vanhool.be) under the "service" menu item, 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.