



Service Bulletin No. 1086

Circulate to listed addressees

COACH MODEL	: C2045
BULLETIN TYPE	: Field Change Program: NHTSA campaign number 01V-176
MANUAL & SECTION	: Maintenance Manual : Chapter 11 - Body and accessories Spare Parts Manual : Section 753309 - Wiper
PARTS BOOK REVISION	: Yes
DATE	: June 27th, 2001
SUBJECT	: Windshield wiper linkage
TERMS & CONDITIONS	: Refer to the customer notification letter. Parts and labor allowance will be provided as per warranty information in this Bulletin.

APPLICATION :

The retrofit action subject of this Bulletin is applicable to the following units:

Model	Engine	VIN
C2045	Cummins	45001 → 45264 except 45261
	Detroit Diesel	45501 → 45726

DESCRIPTION :

Van Hool have determined that the windshield wiper actuating lever may become disengaged from the wiper motor shaft. If this occurs, the windshield wipers will cease functioning. The procedure in this Bulletin provides the necessary information to remedy this condition.

Service personnel : please read, initial and circulate

Service Manager	Parts Manager	Warranty Administrator	Workshop Foreman	Service Technician

PARTS :

Old parts

Part No.	Description	Qty.
VH 10653894	Clamp	1
VH 10653895	Bell crank	1
VH 10739392	Bolt, 6x1x30 mm	2
VH 10739394	Nut, self-locking, 6x1 mm	2

New parts

- Order one kit VH 10758039 for one coach to modify. The kit is suited for C2045 coaches only and contains the following parts :

Part No.	Description	Qty.
VH 10756841	Clamp, embossed "BRB"	1
VH 10756842	Bell crank, embossed "BRB"	1
VH 10739392	Bolt, 6x1x30 mm	2
VH 10739394	Nut, self-locking, 6x1 mm	2
VH 10757900	Dust cap, wiper motor	1

- Parts will be forwarded to customers, free of charge.
- Old and new parts are directly interchangeable.
- Only new parts will be offered as service replacements for this application.
- New bell crank and clamp can be identified by a "BRB" mark.
- Always use genuine maintenance products and parts. Do not accept imitations.

PROCEDURE :

1. General :

The time required to replace the linkage bell crank and clamp, and install the wiper motor dust cap is approximately 45 minutes.

2. Additional tools required :

A torque wrench with a 5 to 35 ft.lbf range is needed.

3. Preparations :

- Park the coach on a level surface, apply the parking brake and shut down the engine.
- Make sure the wiper switch is in the off position.
- Switch off all systems and turn off the battery master/ignition switch.
- Read the entire procedure before beginning to work.

CAUTION : Observe safe shop practices at all times.

4. To replace wiper linkage bell crank and clamp :

- 1) Undo and remove the two nuts securing the main and idler windshield wiper arm (see Figure 1) on the right-hand side of the coach. Separate the washer tube from its fitting. Remove both wiper arms.

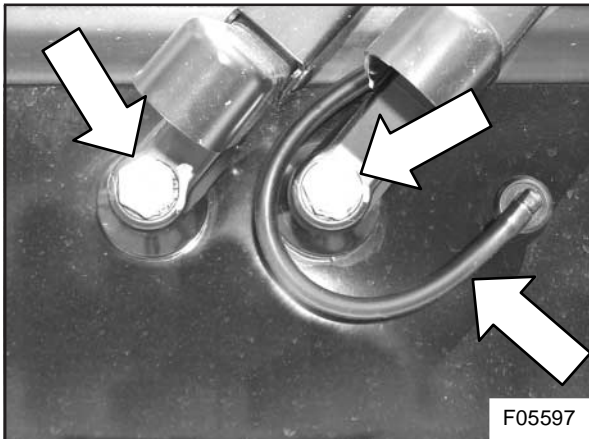


Figure 1: Wiper arm nuts and washer tube

- 2) Repeat step 1 for the left-hand wiper arm.
- 3) Undo and remove the four pan head bolts securing the lower left dash panel (see 1, Figure 2). Remove the panel by tilting it out. There is no need to remove the upper right panel (2, Figure 2).

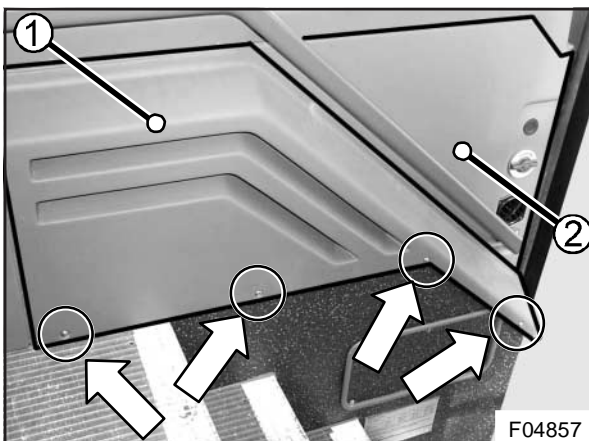


Figure 2 : Dash panels and mounting bolts

1. Lower left panel
2. Upper right panel

- 4) Locate the bell crank and clamp behind the wiper motor mounting bracket (see Figures 3 and 9). With the wipers in the parking position and the wiper motor switched off, the bell crank and bracket are in the horizontal position (refer also to Figure 6).

CAUTION : Do not attempt to rotate bell crank and clamp manually. Doing so will offset the automatic return to the parking position of the wiper motor. Use wiper switch only.

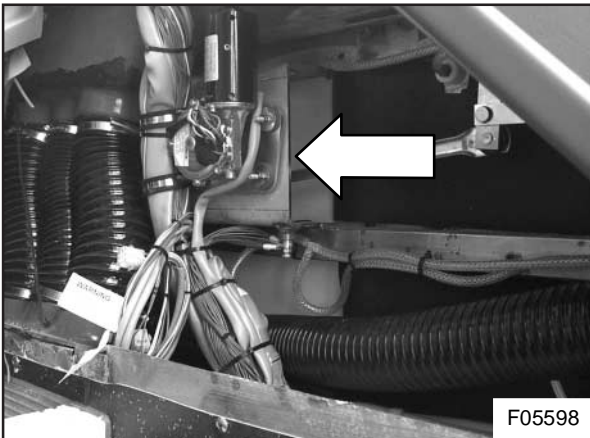


Figure 3 : Bell crank and clamp location

- 5) With a large screwdriver, separate the right-hand wiper tie bar from the outer knuckle joint (see Figure 4). Make sure to recover the dust cap. Take note of its installation.

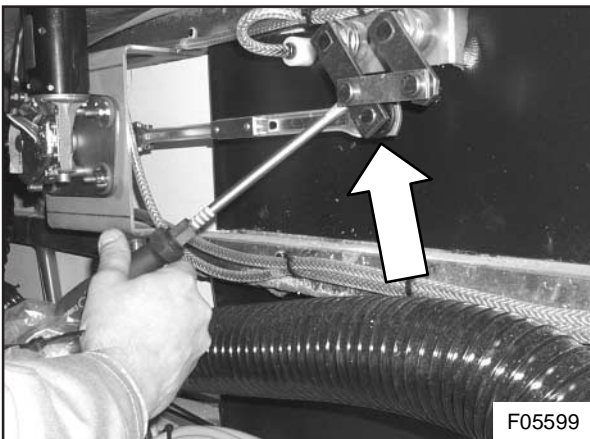


Figure 4 : RH wiper tie bar outer knuckle

- 6) With a large screwdriver, separate the left-hand wiper tie bar from the inner knuckle joint (see Figure 5). Make sure to recover the dust cap. Take note of its installation.

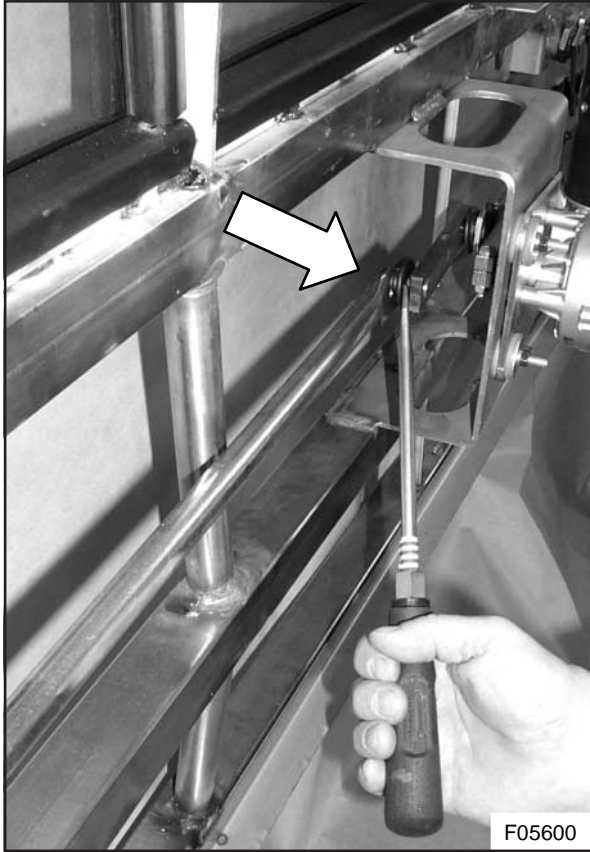


Figure 5 : LH wiper tie bar inner knuckle joint (step shown on test stand)

- 7) With a 10 mm box wrench and a socket and ratchet undo the bolt and nut securing the clamp to the wiper motor shaft (see Figure 6).

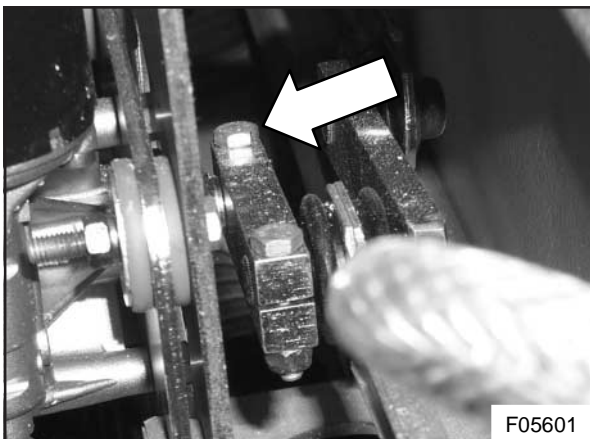


Figure 6 : Motor shaft clamp bolt

- 8) Remove the bell crank, clamp and wiper tie bar assembly from the motor shaft (see Figures 7 and 8).

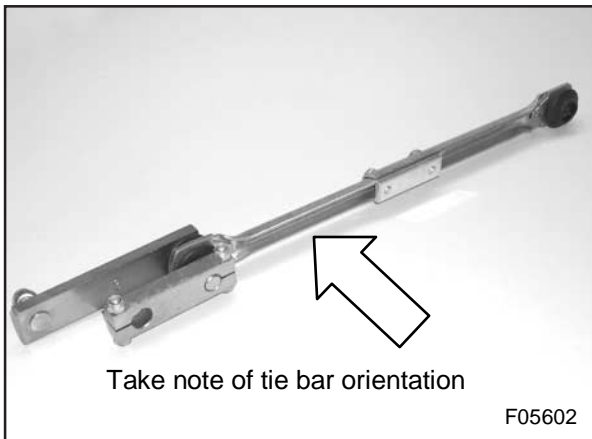


Figure 7 : Wiper motor linkage assembled

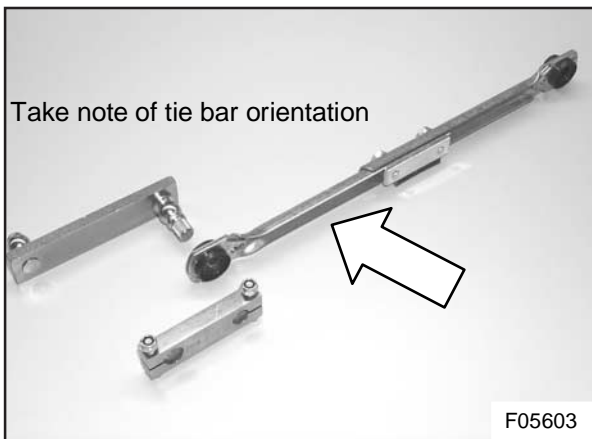


Figure 8 : Wiper motor linkage disassembled

9) Disassemble the bell crank and clamp (see Figure 8 and 9). With a large screwdriver, separate the wiper tie bar from the bell crank. Take note of the dust cap installation on the tie bar. Note tie bar orientation. Note relative position of bell crank and clamp.

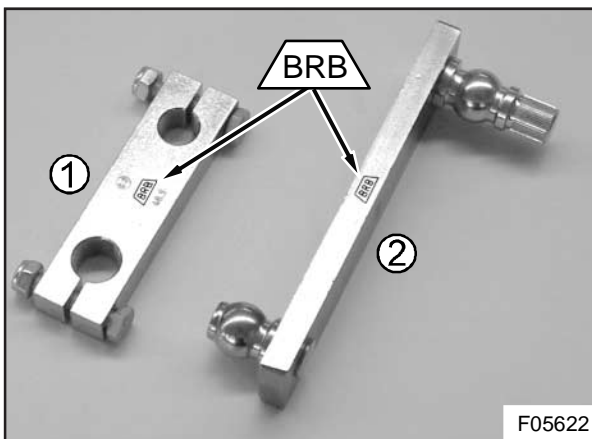


Figure 9 : Clamp (1) and bell crank (2) with "BRB" mark

- 10) Salvage the old bell crank and clamp for certification purposes (see Warranty Information). Reassemble the linkage with new parts. Reassembly is the reverse of disassembly. Lightly lubricate the bell crank knuckle before installing the tie bar. Mind the dust cap installation. Make sure the bell crank knuckle shaft does not protrude through the clamp. The shaft end should be *flush* with the clamp. Do not tighten the bolts yet.
- 11) Switch on the ignition. Switch the wiper motor to the slow wiping position using the wiper switch. Switch the wiper motor off again. Switch off the ignition.

CAUTION :The motor may rotate one turn to return to park position, if shaft was inadvertently rotated during the removal of the old parts.

- 12) Install the motor shaft dust cap VH 10757900 (see Figure 10) by simply pushing it on the shaft as shown in Figure 11. Proper dust cap installation is shown in Figure 12.

NOTE : There is no need to remove the motor from the coach in order to fit the dust cap. For the sake of clarity dust cap installation is shown with the motor out of the coach.



Figure 10 : Wiper motor dust cap VH 10757900



Figure 11 : Wiper motor dust cap installation (for the sake of clarity shown with the motor out of the coach)

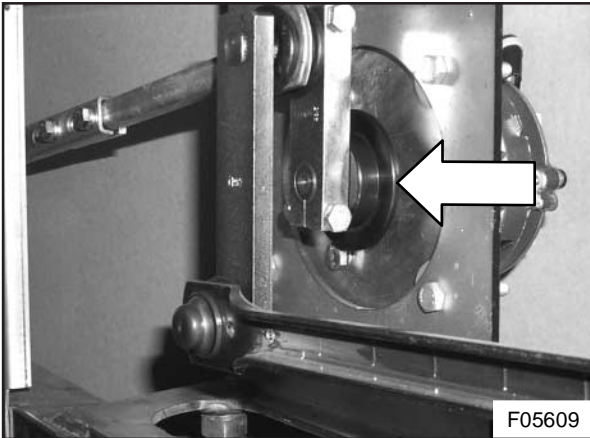


Figure 12 : Wiper motor dust cap installation (shown on the coach)

- 13) Reinstall the linkage horizontally on the wiper motor shaft as shown in Figure 13. Make sure the motor shaft end is *flush* with the clamp.

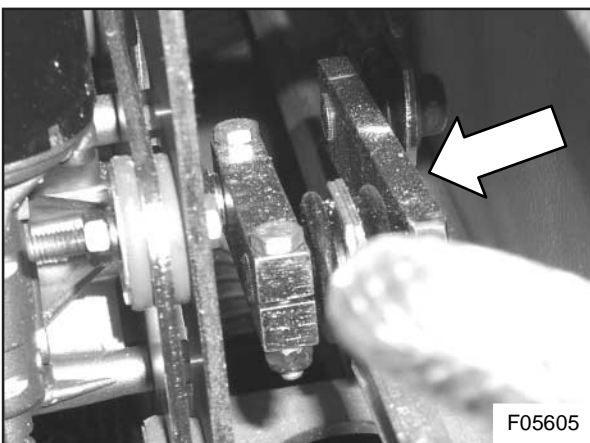


Figure 13 : Linkage installed horizontally

- 14) Lightly lubricate the outer knuckle joint before installing the right-hand tie bar. Reconnect the right-hand tie bar to the outer knuckle joint using rib joint pliers.
- 15) Lightly lubricate the bell crank knuckle joint before installing the left-hand tie bar. Reconnect the left-hand tie bar to the bell crank knuckle joint using rib joint pliers.
- 16) Switch the wiper switch to the slow wiping position.
- 17) Using the ignition switch, activate the wiper motor, until the bell crank and clamp are in a vertical position (see Figure 14 - for the sake of clarity picture has been taken from the front of the coach). Turn wiper switch off again.

CAUTION : Do not attempt to rotate bell crank and clamp manually. Doing so will offset the automatic return to the parking position of the wiper motor. Use wiper and ignition switch only.

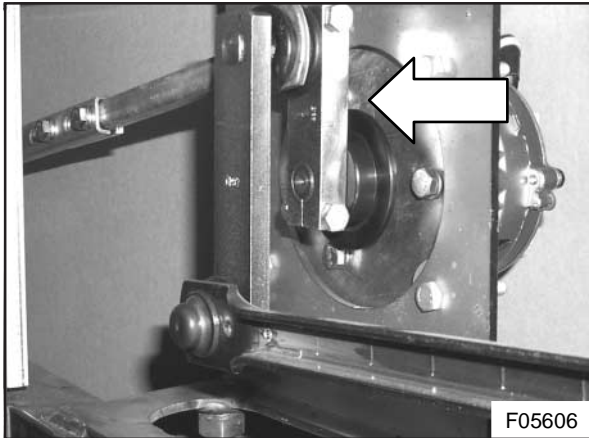


Figure 14 : Bell crank and clamp in a vertical position (left tie bar down)

- 18) Tighten both the motor shaft bolt and the bell crank knuckle bolt to a torque of 9 to 15 ft.lbf (13 to 15 Nm) as shown in Figure 15.

CAUTION : Never install used fasteners for this application. Always fit new bolts and nuts.

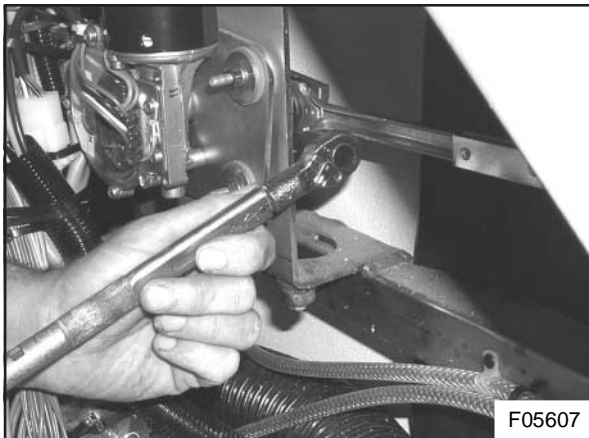


Figure 15 : Torqueing the clamp nuts

- 19) Put the wiper motor in the parking position by switching it to slow wiping and off again. Check that the bell crank and clamp are horizontal.
- 20) Reinstall the lower left dash panel (see Figure 2).
- 21) Reinstall the left- and right-hand wiper arm assemblies. Before tightening the nuts, position the wiper arm as shown in Figure 16. The wiper blades should be about $3 \frac{13}{64}$ inch (82 mm) from the windshield center post (on a dry windshield).

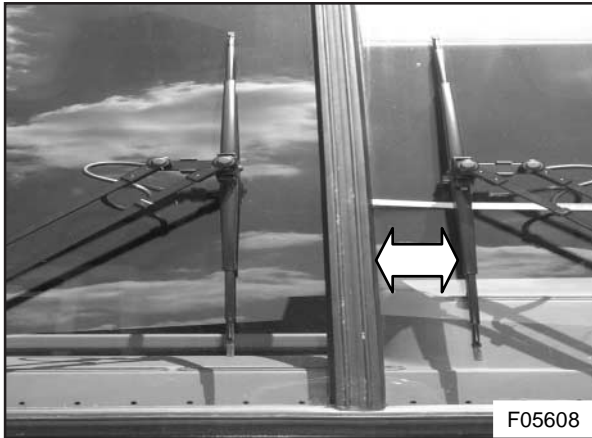


Figure 16 : Wiper to windscreen center post distance : 3 ¹³/₆₄ inch

- 22) Tighten the wiper arm nuts to a torque of 18 ft.lbf (25 Nm).
- 23) Reconnect the washer tubes to their respective fittings.
- 24) Check wiper arm and washer operation.

Procedure complete.

SERVICE INFORMATION :

Service Bulletins are issued to supplement or supersede information in the Van Hool manuals. Note Service Bulletin number, date and subject on the register at the end of the relevant chapter(s). File Service Bulletin separately for future reference.

WARRANTY INFORMATION :

- Causal part : VH 10653894 and VH 10653895.
- Job code : F50500H.
- Parts disposition : please return old parts without the BRB imprint to ABC Coach Inc, free of charge.
- Owners are required to certify on the standard notification document attached to this Bulletin that the recall remedy has been executed in accordance with the manufacturer's instructions.

Van Hool will accept warranty claims for this repair as follows :

- Parts will be forwarded to customers, free of charge.
- Labor allocation : 1 hour per coach.
- Expiration date : December 31st, 2001.

Contact ABC Coach Inc. for guidance on claim submission.