# SERVICE BULLETIN
1234

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|---|---|
| **ADDRESSEES** | **:** Owners and operators of coaches listed under 'Application' |
| **COACH/BUS MODEL** | **:** T2140, T2145, C2045, TD925US |
| **BULLETIN TYPE** | **:** Product Improvement |
| **SECTION/CHAPTER** | **:** Electrical system – Starter circuit |
| **DATE** | **:** February 11, 2010 |
| **SUBJECT** | **: Starter solenoid flyback diode** |
| **TERMS & CONDITIONS** | **:** - |

## APPLICATION:

Coaches featuring multiplex technology.

## DESCRIPTION:

1. In the main junction box of the above-mentioned units, multi-connector pin E11 (Figure 1a) of multiplex node 4 (part #10690971) has been connected to the starter motor solenoid ground (Figure 1b).

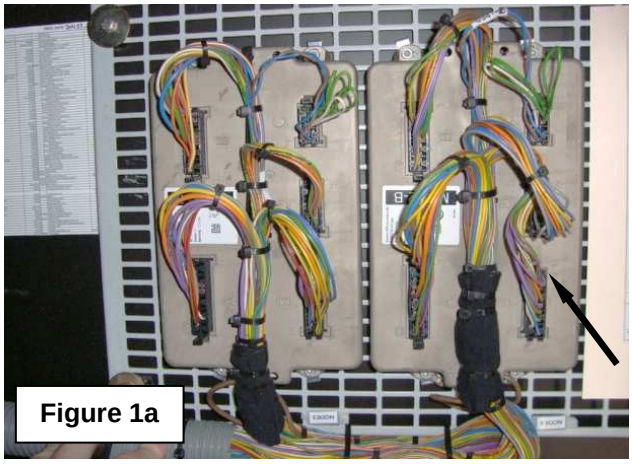
Figure 1a

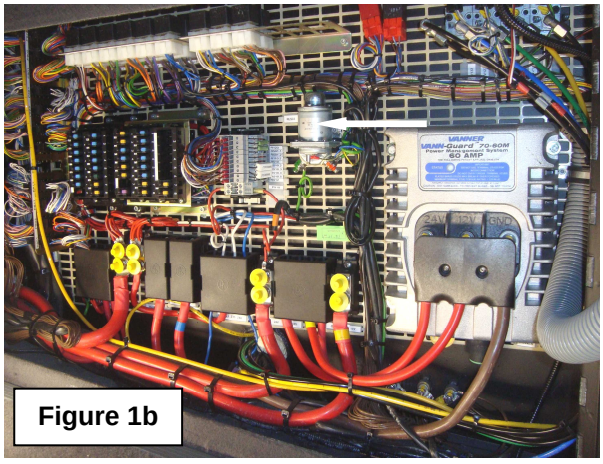
Figure 1b

2. Over time this node may experience issues from an EMF spike from the starter motor solenoid.

3. As a preventative measure, Van Hool have begun installing a flyback diode across the starter motor solenoid coil, improving the durability of the circuit.

*Description continued on next page.*

4. VIN cut-in for this Product Improvement is:

| Model | Cummins | Detroit Diesel | Caterpillar |
|---|---|---|---|
| T2140 | 40172 → | N/A | N/A |
| T2145 | 44385 → | N/A | N/A |
| C2045 | 46179 → | 46921 → | 47605 → |
| TD925US | 42380 → 42395, 42400 → 42403, 42404* → 42413*, 42446 → 42449, 42465* → | N/A | N/A |

* Under construction

5. Customers who want to retrofit this Product Improvement on their coaches may purchase the parts and install them at their own expense as described below.

## MATERIAL:

**Retrofit**

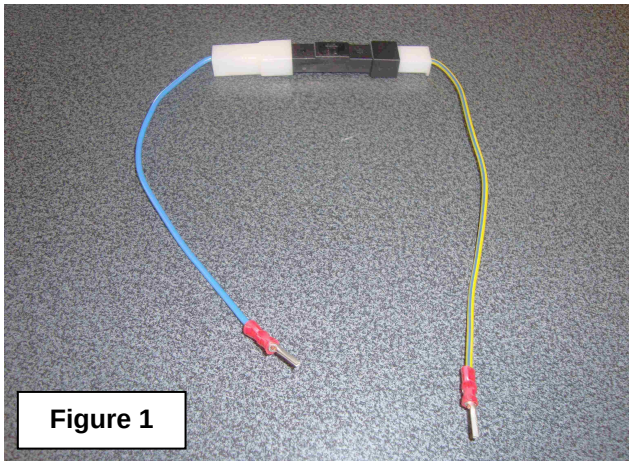

Figure 1

| VH reference | Description | Qty. | Refer to |
|---|---|---|---|
| 11176660 | Diode, starter motor solenoid flyback, 3A | 1 | Figure 1 |

- Material may be purchased from your nearest ABC Customer Care & Parts Source center.
- Parts/Waste disposal: discard old material according to applicable environmental regulations.

## PROCEDURE:

### To install a starter motor solenoid flyback diode

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

**1. General:**

- This job should be executed by an automotive electrician.
- For more information refer to the service literature that comes with the coach, and starter circuit diagram #11030598 05A3 (TD925US - typical) that has been attached to this Bulletin.

## 2. Special tools, equipment or services:

- This job does not require special tools, equipment or services.

## 3. 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 instrument panel.
- Read the entire procedure before beginning to work.

**CAUTION: Before working on the starter motor solenoid turn off the battery disconnect switch in the battery compartment (Figure 2, C2045 shown).**

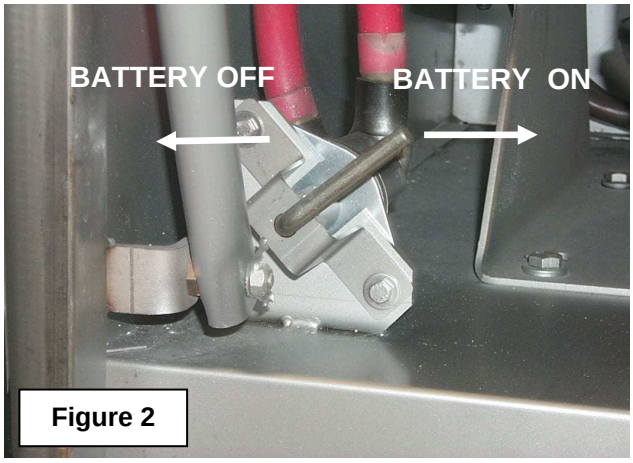

Figure 2

**CAUTION: Observe safe shop practices at all times.**

## 4. To install starter motor solenoid flyback diode #11176660:

*NOTE: This procedure shows the installation of starter motor solenoid flyback diode #11176660 on doubledeck unit with VIN 42381.*
*The installation on T and C coaches is similar.*

1) In the luggage compartment, open the junction box door and locate starter motor solenoid RL503 (Figure 3).

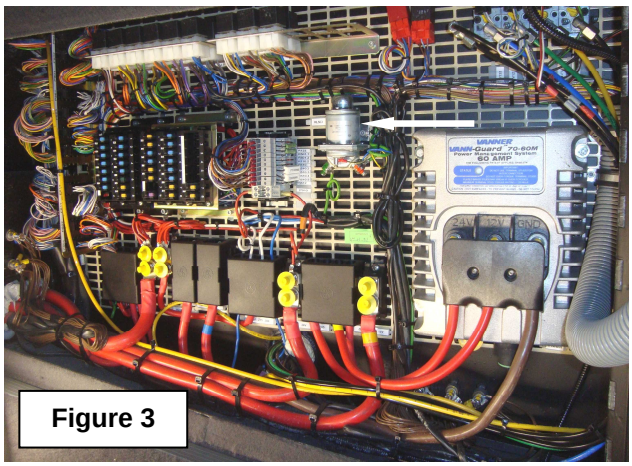
Figure 3

2) Slacken the screws securing the solenoid primary plus (blue) and ground (yellow-blue) cables (Figure 4).

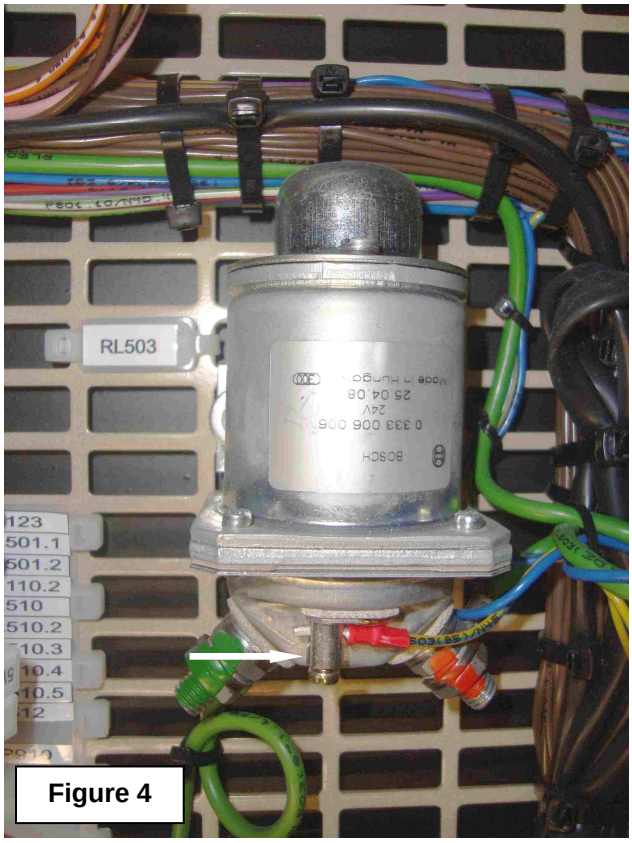

Figure 4

3) Install the flyback diode blue and yellow-blue cables into the primary cable posts, matching the primary plus and ground cable colors (Figure 5).
Secure the mounting screws handtight.

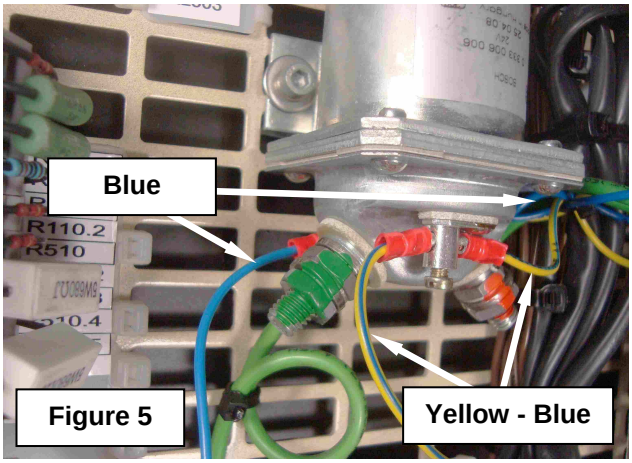

Figure 5

4) Attach the diode to the junction box grid with a cable tie as shown in Figure 6, overleaf.
Close the junction box.
Turn on the battery disconnect switch in the battery compartment.

*Continued on next page.*

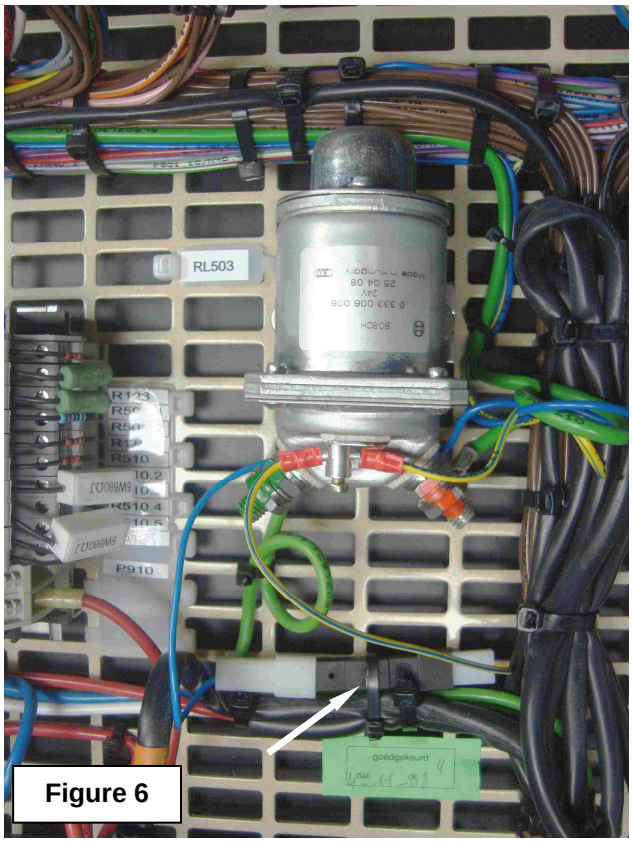

**Figure 6**

5) For future reference, note the particular conversion on the appropriate schematics in the Electrical Wiring Diagram Booklet that has been supplied with the vehicle.

*Procedure complete.*

## ATTACHMENTS:

Diagram VH 11030598: TD925US starting circuit – Cummins ISM07 engine (VIN 42381)

## 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.

## INFORMATION HANDLING:

Important supplements to and modifications of the technical information not yet included in the manual, 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.

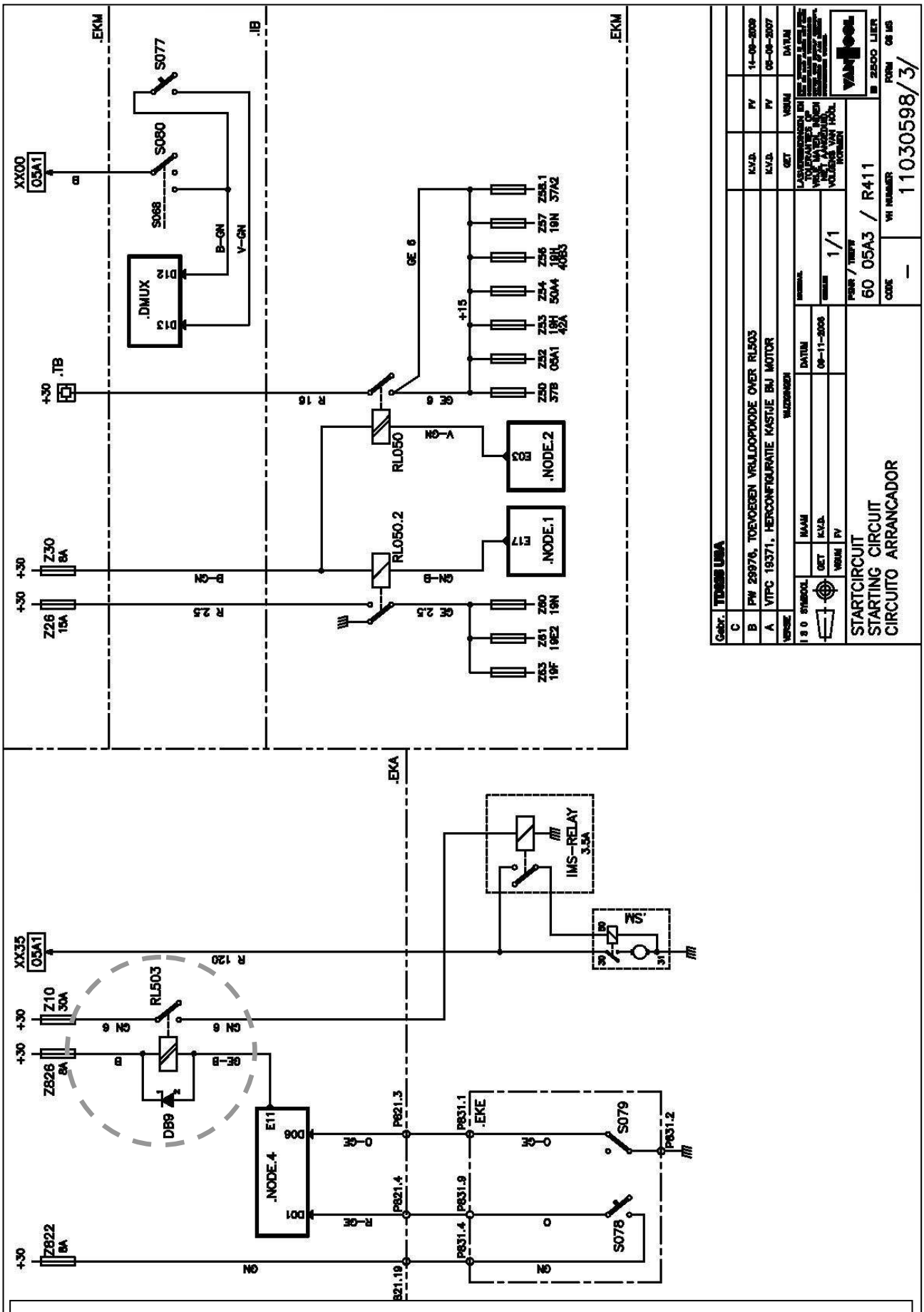


**Diagram VH 11030598: TD925US starting circuit – Cummins ISM07 engine (VIN 42381)**