

DT12 Transmission Control Harness Chafing the Transmission Control Module

26-054

FLA COE
FLB COE
FLD Conventional
Business Class
FLC 112 Conventional

Century Class Conventional
Argosy
Cargo
Columbia
122SD and Coronado

Business Class M2
> Cascadia
108SD/114SD
> New Cascadia

Freightliner
Service Bulletin

Description of Revisions: *This bulletin replaces the version dated 12/08/2021. An additional part number (23-13477-000) was added to Fig. 3 and Table 1. Steps 4 and 5 have been added.*

General Information

Cascadia and New Cascadia vehicles equipped with DT12 transmissions, built from approximately January 2017 to mid-March 2021, may experience rubbing/chafing on the chassis harness near the transmission. The damage caused by this can result in intermittent symptoms and multiple powertrain controller area network (PT-CAN) fault codes including, but not limited to:

- TCM 521002
- TCM 521221
- TCM 521221
- TCM 521224

The routing and clipping design has changed to prevent this issue. This new design can be applied to vehicles in the field to prevent future problems.

Follow the procedure below to install the improved transmission control harness routing, as shown in [Fig. 1](#).

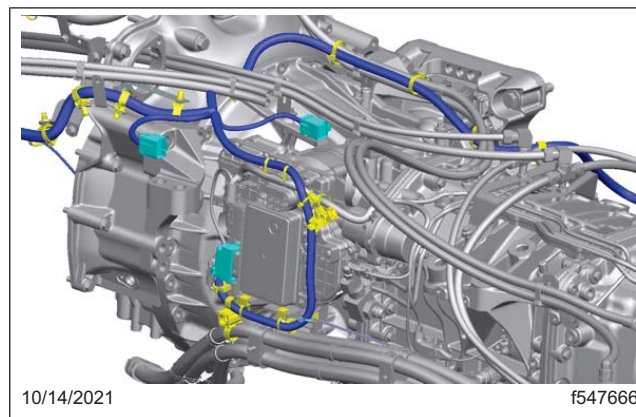


Fig. 1, Improved Transmission Control Harness Routing

Procedure

1. Park the vehicle on a level surface, turn the steer tires all the way to the right, shut down the engine, and set the parking brake. Chock the tires.
2. Open the hood.
3. Disconnect the negative battery cable.
4. Remove the splash shield. See **Group 31** of the applicable vehicle workshop manual.
5. Remove the splash shield bracket and separate it from the air and electrical harness.
6. Remove the six clipping points that attach the transmission leg of the chassis harness, from the Y near the bell housing to the TCM connector, as shown in [Fig. 2](#). If harness repair is needed, refer to **SB 54-290** for detailed instructions.

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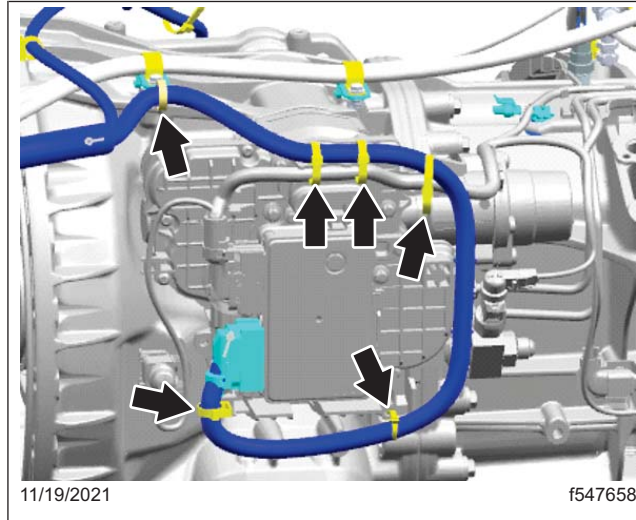
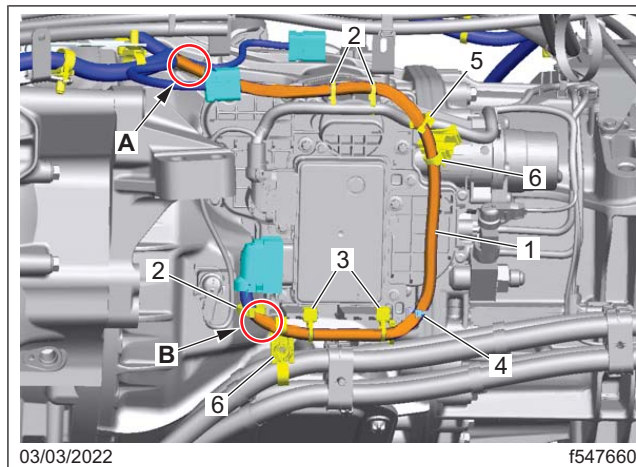


Fig. 2, Tie Straps in Original DT12 Transmission Harness Routing

7. Install the twist-tube heavy duty wrap from start point A to end point B, as shown in **Fig. 3**, and secure it with electrical tape to the transmission control harness. Clip and route the transmission control harness using the dual strap ties at each location, shown in **Fig. 3**.



- A Start Point B End Point
1. Twist-Tube Harness Wrap (BEN 2421002503SCM)
 2. Cable Tie Clamps (23-09796-629)
 3. Edge Clip Ties (23-13477-010)
 4. Edge Clip Tie (23-13477-000)
 5. Cable Mount Tie (23-12886-001)
 6. Dual Strap Ties (23-13322-008)

Fig. 3, Installing Twist-Tube Heavy Duty Wrap and Tie Straps

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- 7.1 Route the harness along the path, and install the harness connector on the transmission control unit (TCU).
- 7.2 Secure the harness clipping point next to the TCU connector using a cable tie clamp, as shown in [Fig. 4](#).

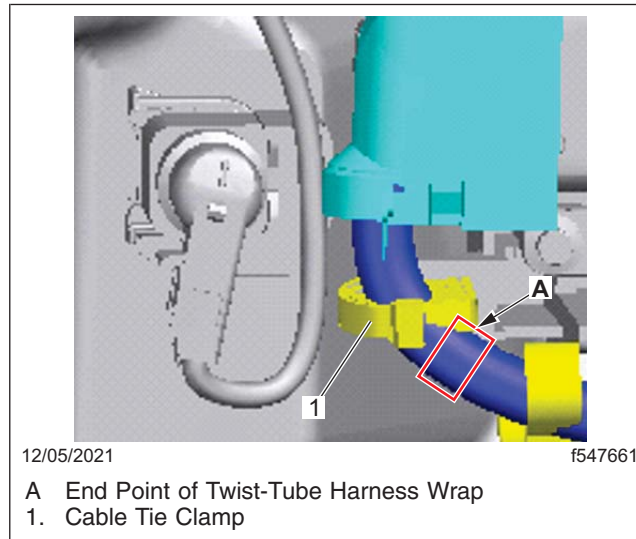


Fig. 4, Securing the Harness Clipping Point at the TCU Connector

- 7.3 Secure the harness to the shift controller under the TCU, using the edge clip ties, as shown in [Fig. 5](#).

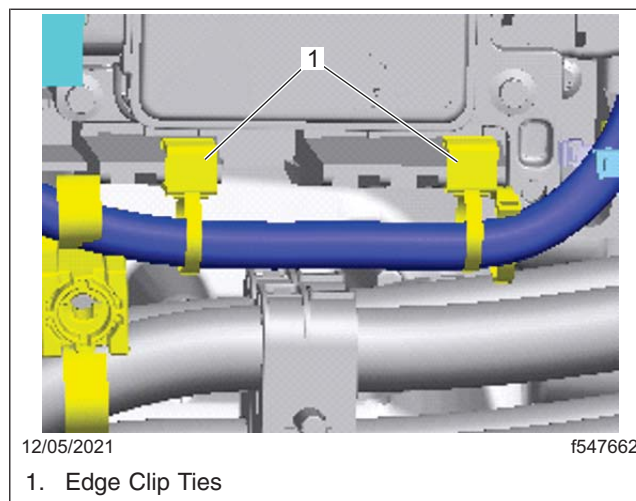


Fig. 5, Attaching the Harness to the Shift Controller with Edge Clip Ties

- 7.4 Using an edge clip tie and clamp, secure the harness on the lower tab at the rear of the TCU. See [Fig. 6](#).

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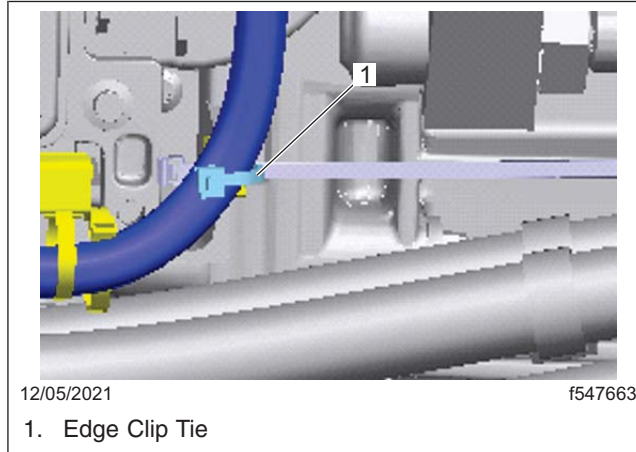


Fig. 6, Attaching the Harness at the Rear of the TCU with an Edge Clip Tie

7.5 Install all the ties at the top of the shift controller, as shown in [Fig. 7](#).

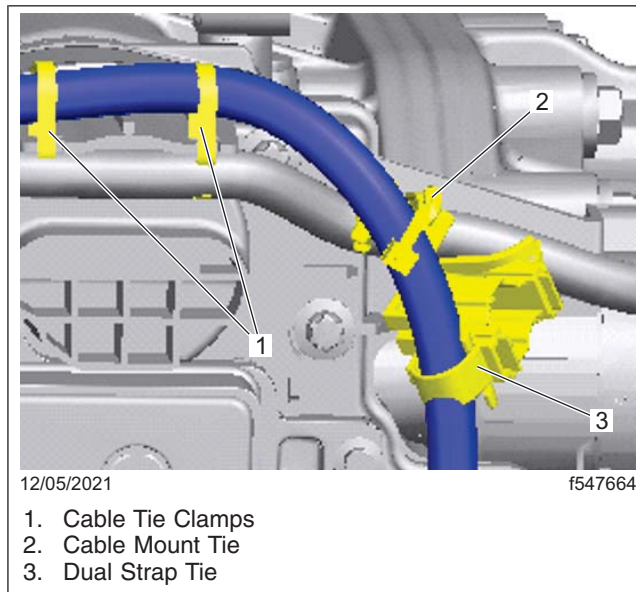


Fig. 7, Installing Cable

- 7.6 Install a dual tie (item 3) to separate the transmission and chassis harness, and prevent the chassis harness from touching the shift controller.
- 7.7 Install a single tie (item 2) to secure the chassis harness to the outside of the transmission harness clipping point.
- 7.8 Install two cable tie clamps (item 1) at the top of the shift controller to secure the transmission harness.

DT12 Transmission Control Harness Chafing the Transmission Control Module

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- 7.9 Install a dual tie (item 3) to separate the transmission and chassis harness, and prevent the chassis harness from touching the shift controller.
 - 7.10 Install a single tie (item 2) to secure the chassis harness to the outside of the transmission harness clipping point.
 - 7.11 Install two cable tie clamps (item 1) at the top of the shift controller to secure the transmission harness.
 - 7.12 If the original installation had clipping points between the shift controller and the harness junction, install those once again.
8. If removed for access, install the battery cable support brackets.
 9. For C- or D-box transmissions with battery cables that route over the power take off (PTO) port and have a cable in the top outboard routing track, install the second dual strap tie on the added harness wrap zone, between the TCU connector support tie and the forward C-clip tie. See **Fig. 8**.

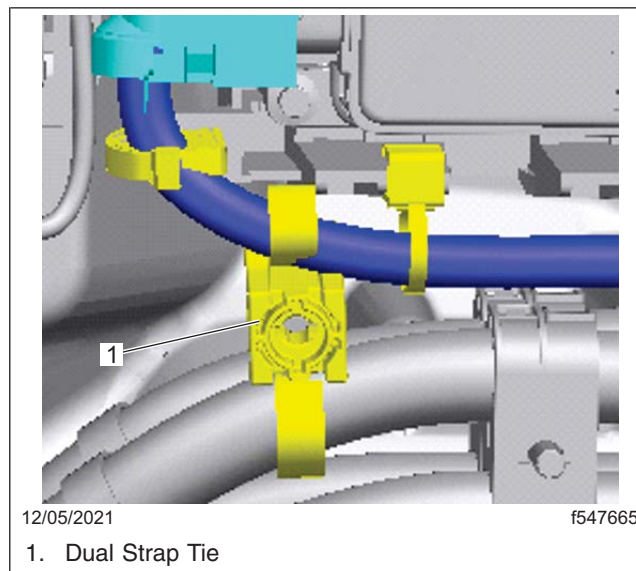


Fig. 8, Installing a Second (Optional) Dual Strap Tie

10. Install the splash shield bracket and secure the air and electrical harness.
11. Install the splash shield. For specific installation steps, see **Group 88** of the vehicle workshop manual.
12. Connect the negative battery cable.

Parts

Twist-Tube and Harness Ties		
Part Number	Part Description	Quantity
BEN 2421002503SCM	TUBE-TWIST, BLK, DIA 25 3 FEET (optional)	1
23-09796-629	CLAMP-CABLE TIE, 1	4
23-13477-010	CLIP-EDGE, 1-3MM, C	2
23-13477-000	CLIP-EDGE, 1-3MM, CA TIE PRL-END	1

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Twist-Tube and Harness Ties		
23-12886-001	MOUNT-TIE, CABLE, D	1
23-13322-008	STRAP-TIE, DUAL, ST	2

Table 1, Twist-Tube and Harness Ties

Warranty

This is an informational bulletin only. Warranty does not apply.