



# **CAN Y Cable Ties: Inspection and Repair**

February 13, 2020

Internal Use Only

# CAN Y Inspection & Repair

LOTO Required: LOTO 12V

## ■ Overview

- Cable ties are used on all 3-pin Deutsch CAN connectors to secure connector locks and prevent accidental disconnection
- Some harnesses are missing these cable ties

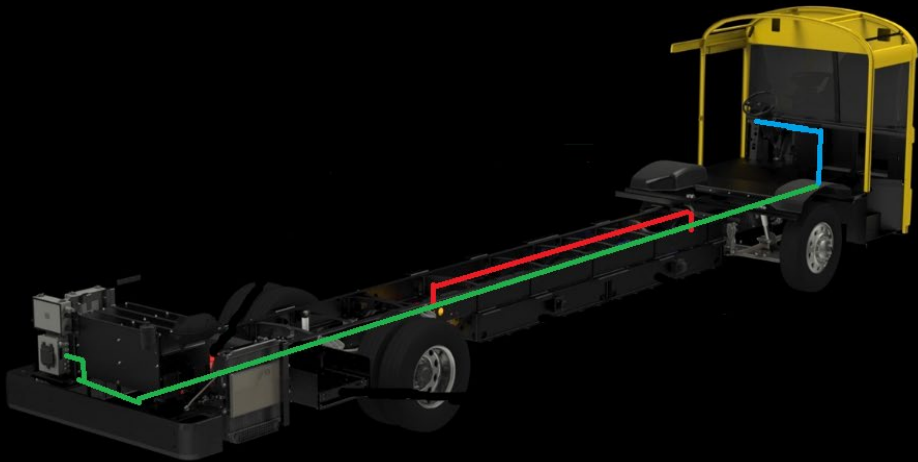
## ■ Equipment Needed

- Flashlight
- Cross-point screwdriver
- Narrow 4" cable ties (MS3367-4-9)
- Cabin, BDU MCU and Frame Harness Wiring Diagrams

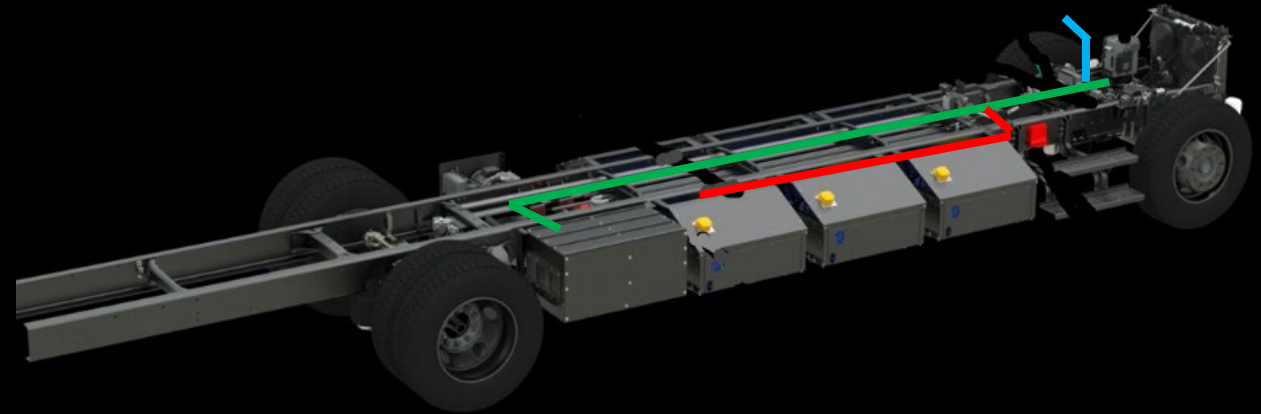


# CAN Y Inspection & Repair

- On PowerDrive systems, 3 harness assemblies contain these connectors:
  - BDU and MCU LV Harness
  - Frame Assembly Harness
  - Cabin Assembly Harness



Blue Bird EV Bus



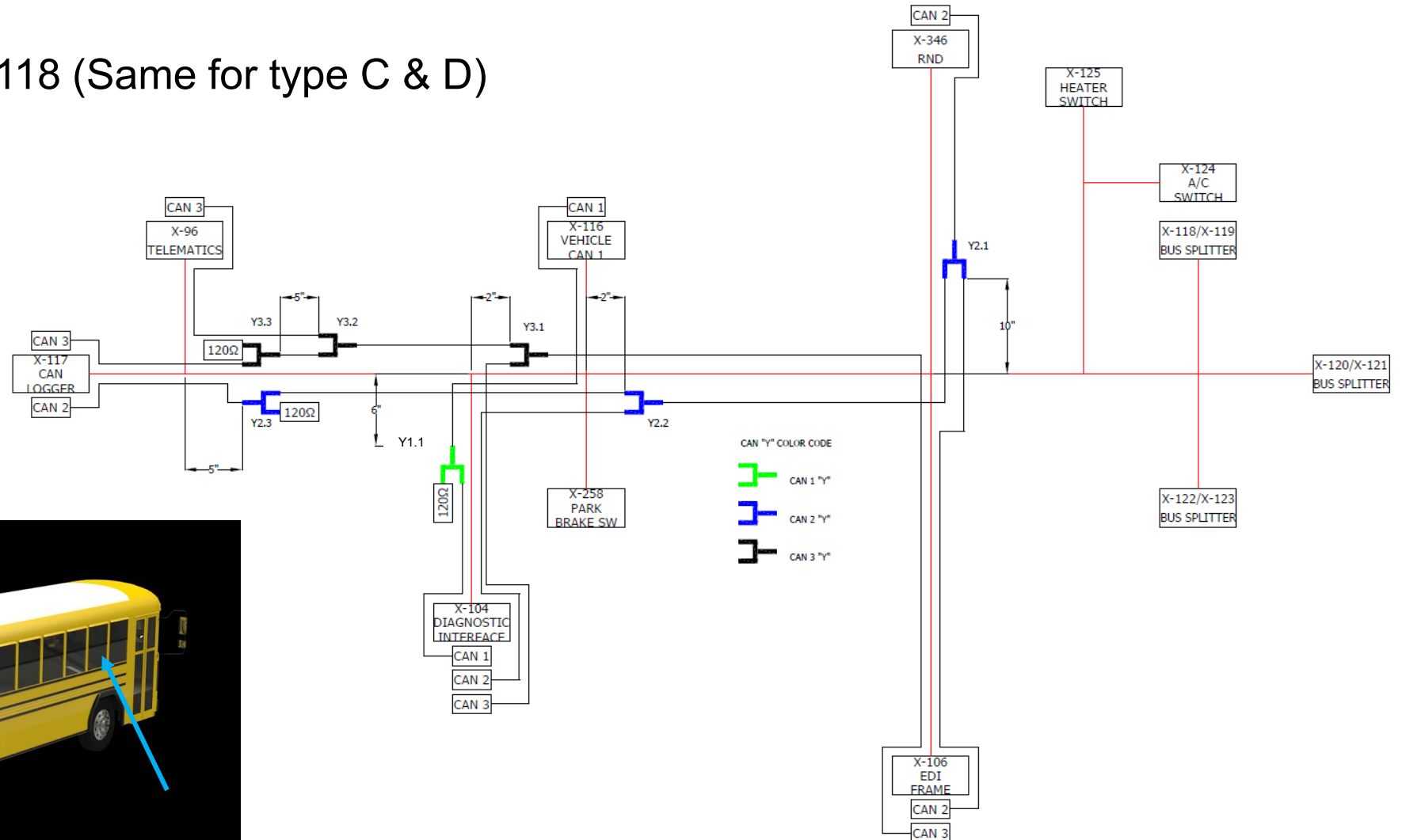
Freightliner eM2

# CAN Y Inspection & Repair

- Vehicle specific wiring diagram can be found here:
  - <https://technical.cummins.com/sites/CC31138/Service%20Information/PowerDrive%20Service%20Information/3%20-%20Wiring%20Harnesses>
  - Or on **QuickServe Online** using  
Engine Model Search > Automotive > BES > CM0904 EV104B (Blue Bird only)
- Printed copies are recommended for this repair

# Cabin Harness (Blue Bird)

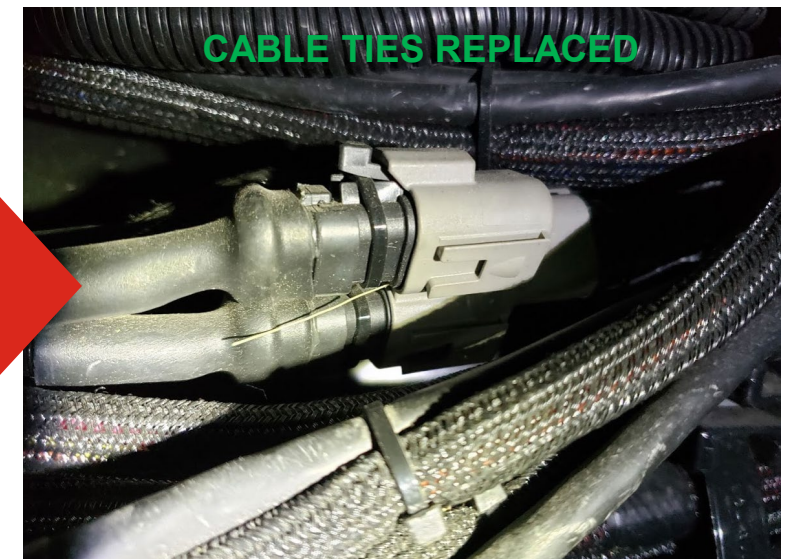
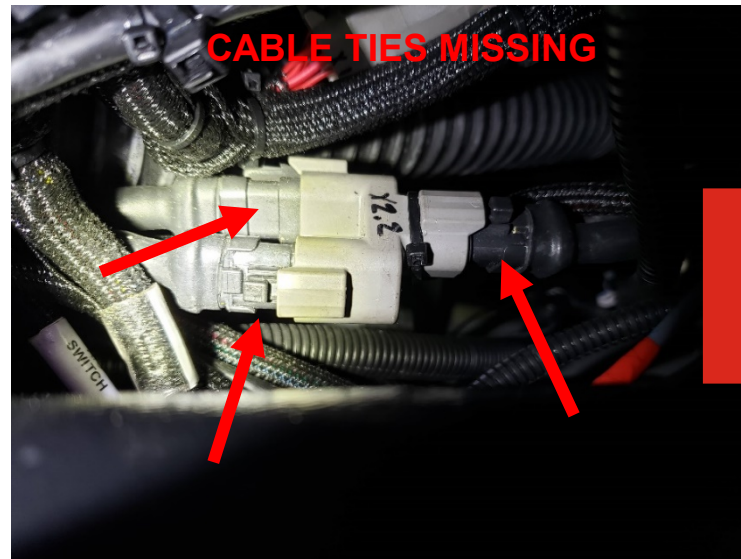
- Cabin Harness P/N 300118 (Same for type C & D)
- 7 Y's, 21 Cable Ties
- Physical location:
  - Cabin of bus
  - Behind dashboard



# Cabin Harness (Blue Bird)

## Procedure

1. Remove Dashboard Instrument Cluster
2. Remove center Switch Panel (above radio)
3. Inspect the Y's listed for missing cable ties on the locks and replace where missing.
4. Using the printed schematic check of each connector to ensure that ALL Y's were inspected
5. Replace removed panels

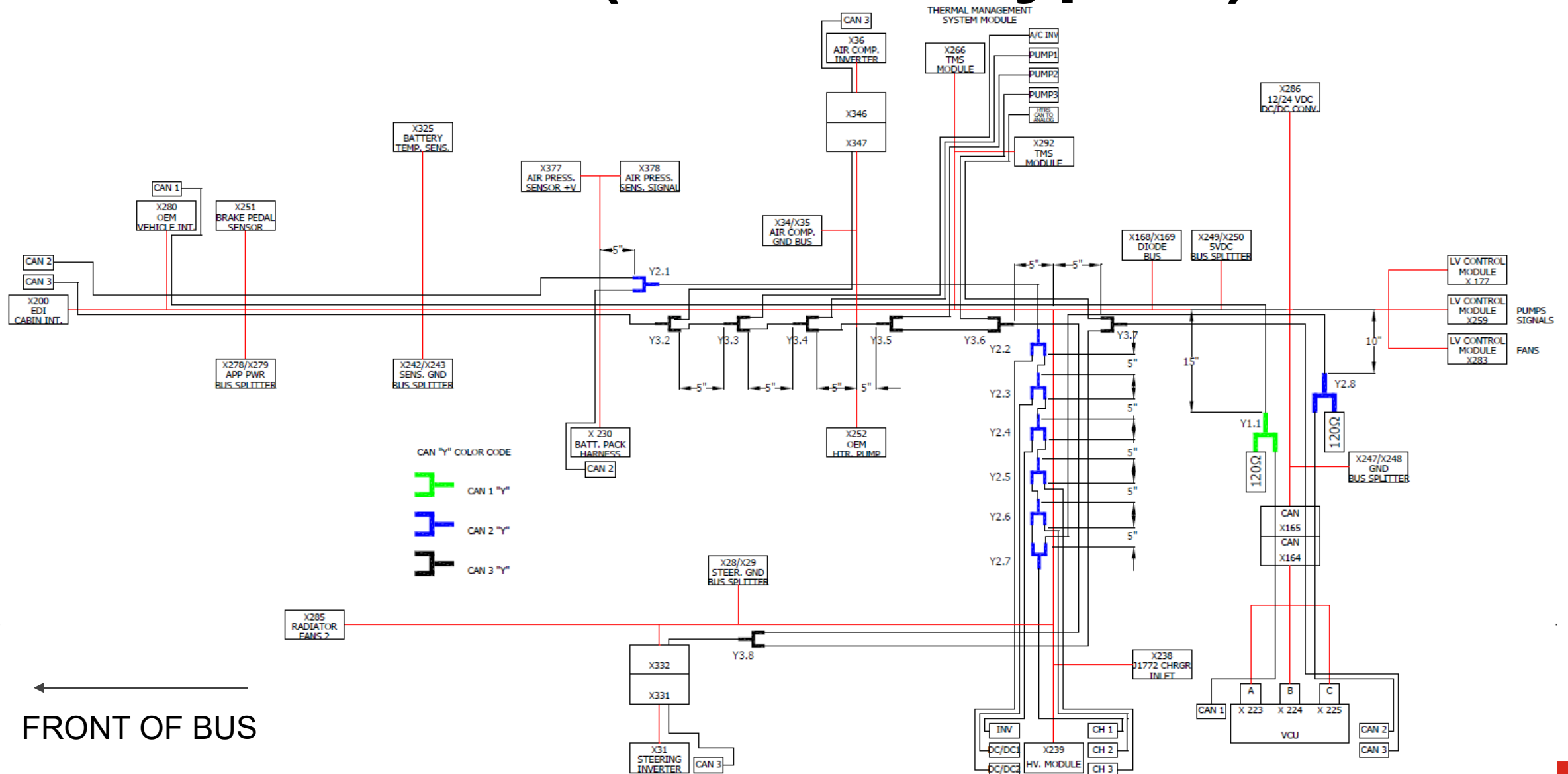


# Frame Harness (Blue Bird)

- Type C Frame Harness P/N 300131
- Type D Frame Harness P/N 300034 (shown)
- 16 Ys, 48 Cable Ties
- Physical location:
  - from Cabin bulkhead
  - to rear of bus
  - Routes underneath the vehicle between the frame rails

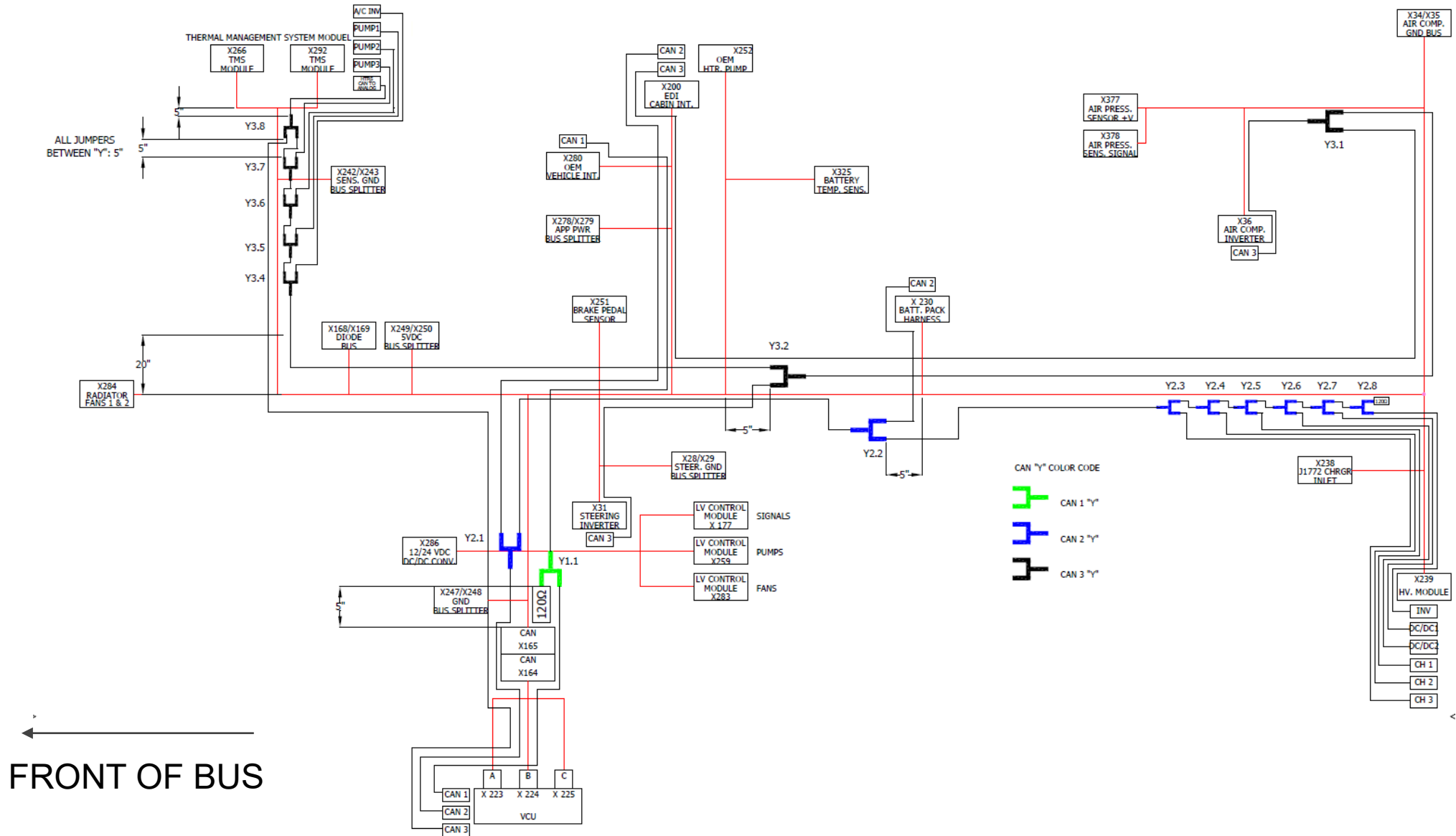


# Frame Harness (Blue Bird type D)





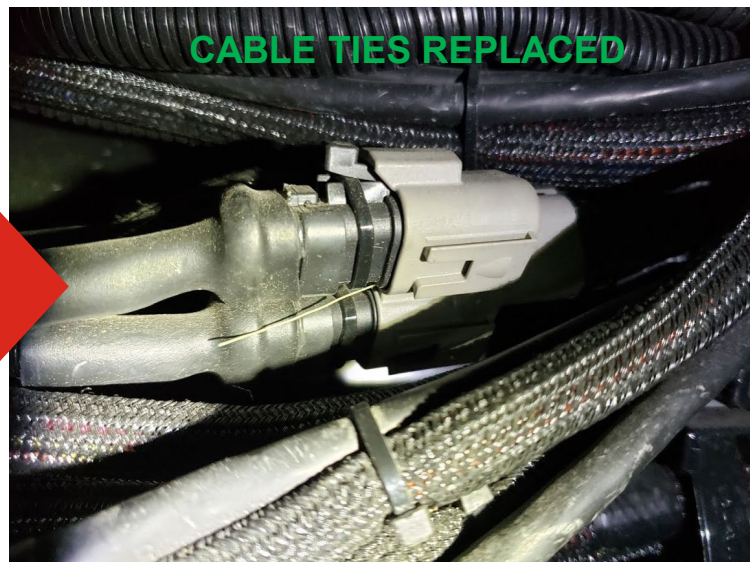
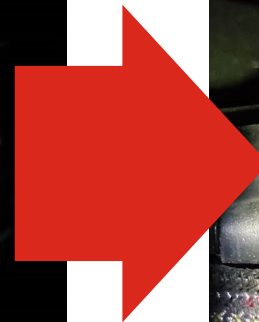
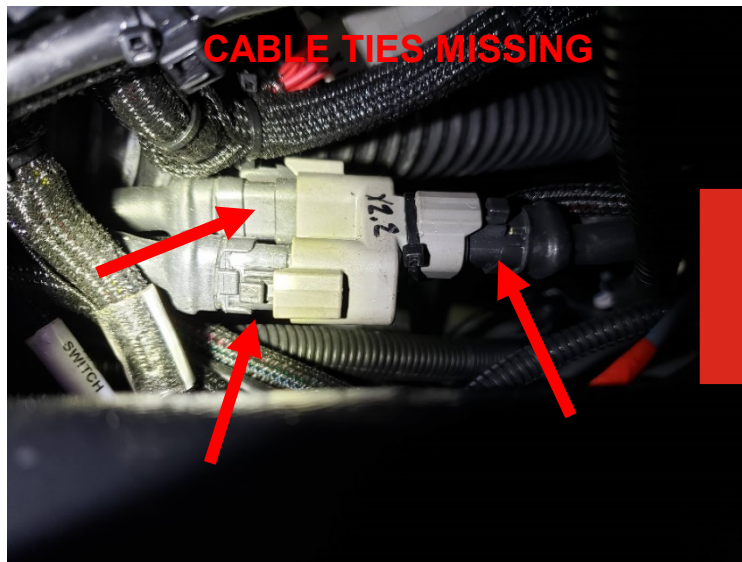
# Frame Harness (Blue Bird type C)



# Frame Harness (Blue Bird)

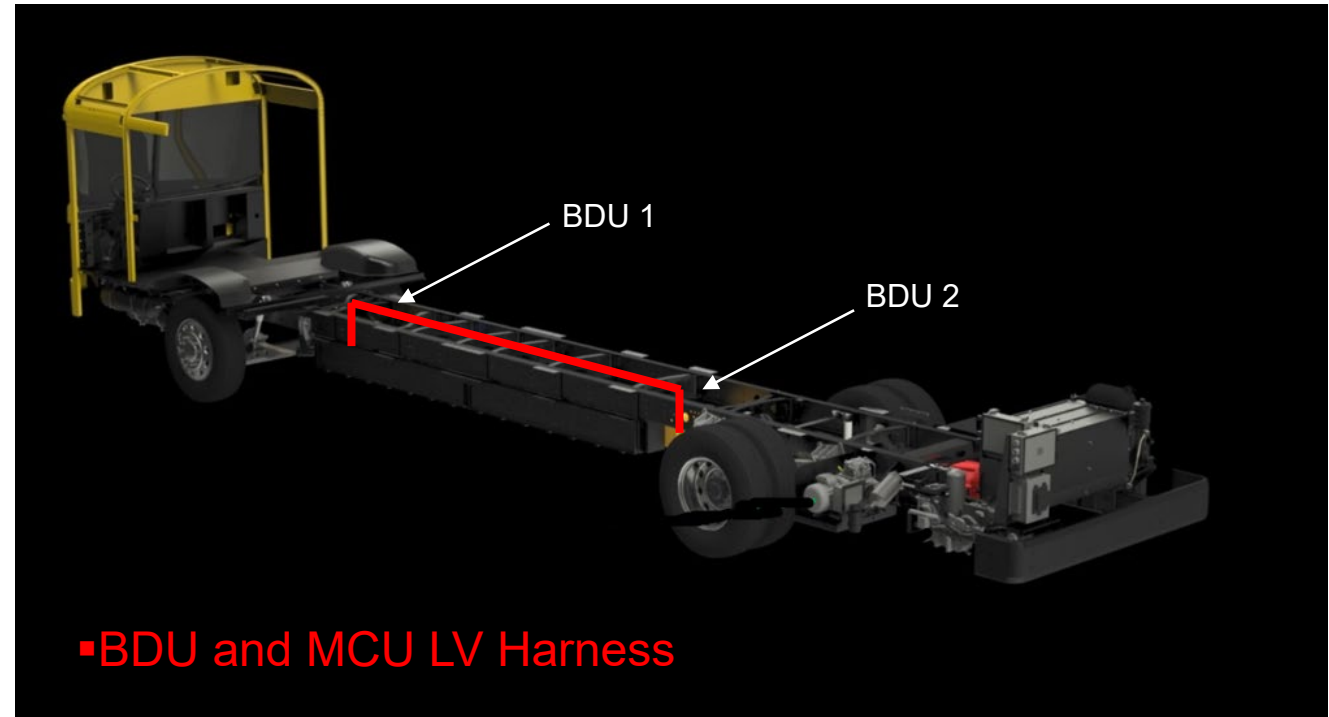
## Procedure

1. Lift vehicle (optional)
2. Work from X200 (bulkhead connector) backward
3. Inspect the Y's listed above for missing cable ties on the locks and replace where missing.
4. Using the printed schematic check of each connector to ensure that ALL Y's were inspected
5. Place any removed components or harness supports removed for access



# BDU MCU Harness (Blue Bird)

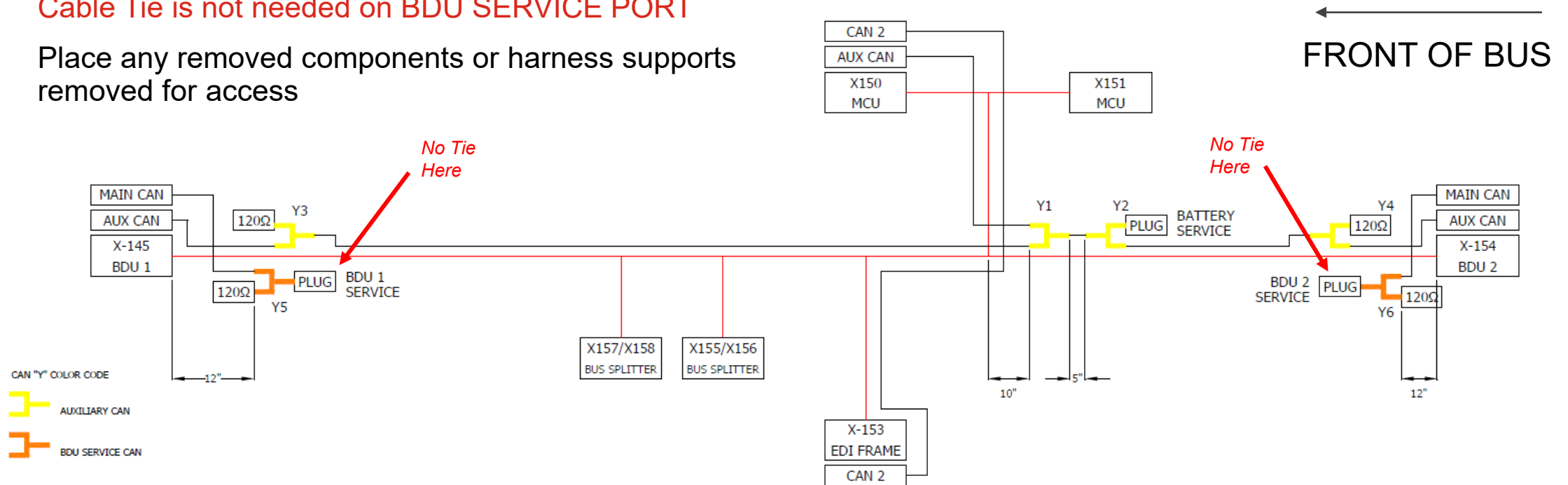
- BDU MCU Harness P/N 300076 (same for type C & D)
- 6 Y's, 16 Cable Ties
- Cable tie not needed on "Service Port"
- Physical location:
  - Above HV battery strings
  - Between frame rails
  - 2 Y's above BDU 1
  - 4 Y's above BDU 2



# BDU MCU Harness (Blue Bird)

## Procedure

1. Lift vehicle (optional)
2. Inspect the Y's listed above for missing cable ties on the locks and replace where missing.
3. Using the printed schematic check of each connector to ensure that ALL Y's were inspected
4. Cable Tie is not needed on BDU SERVICE PORT
5. Place any removed components or harness supports removed for access



# Other PowerDrive Vehicles

## Procedure

Find applicable wiring diagrams here:

<https://technical.cummins.com/sites/CC31138/Service%20Information/PowerDrive%20Service%20Information/3%20-%20Wiring%20Harnesses>

1. Inspect the Y's for missing cable ties on the locks and replace where missing.
2. Work through all 3 harnesses:
  1. Frame Assembly Harness
  2. Cabin Assembly Harness
  3. BDU MCU Harness
3. **Cable Ties are not needed on BDU SERVICE PORTS**
4. Place any removed components, panels or harness supports removed for access

