

Illuminated School Bus Sign (ISBS) TBB C2 Bus Model



FIRST LIGHT
SAFETY PRODUCTS

Open Cavity (Replace Sign) Installation Instructions

QUICK STEPS

1. Please read the instructions thoroughly.
2. Identify all parts and hardware.
3. Review the required tools.

1. Install sealing plates
2. Drill holes and install threaded inserts
3. Prepare electrical connections
4. Mount sign unit and fasten mounting hardware
5. Turn on sign unit(s) and test operation

NEED PRODUCT SUPPORT?

Our technical support team is available Monday to Friday, 8 a.m. to 5 p.m. CST

Please have the following information ready:

Serial Number | Date of Purchase | Dealer of Purchase

- Contact us:**
- www.firstlightsafety.com
 - techsupport@firstlightsafety.com
 - toll-free in North America 866.216.2605

Find additional support documents on our website:
<https://www.firstlightsafety.com/document-library/>



Scan the QR code to see the
Installation Instruction video

WARNING!

IMPORTANT: PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING. FAILURE TO DO SO MAY CAUSE PERSONAL INJURY OR DAMAGE TO PRODUCT AND/OR PROPERTY.

This manual has been created for basic informational purposes only. The activities described herein can be dangerous unless proper safety precautions are taken. If you are not comfortable or are inexperienced with the processes and tools described in this manual, you should not attempt to install the product. These instructions do not purport to cover all details or variations in the equipment and do not claim to provide for every possible contingency met in connection with the installation. Installation of this product should always be performed by a qualified technician and in accordance with safe work procedures. First Light Safety Products (a division of Smartrend Manufacturing Group (SMG), Inc., hereinafter "First Light Safety Products") shall not be held responsible for any errors or omissions respecting installation as they are the responsibility of the installing technician and/or the customer. First Light Safety Products does not make any representation, warranty, guarantee or condition respecting third-party installation or any other service provided by a third-party, and any such representations perceived by the reader/customer are hereby fully disclaimed. Any reliance on this manual is solely at the risk of the customer/reader. First Light Safety Products assumes no responsibility for other's use of this manual and hereby expressly disclaims any and all liability to any party for any direct, indirect, implied, punitive, special, incidental or other consequential damages arising directly or indirectly from any improper or incorrect use of this manual.

Have Questions?

866.216.2605 | techsupport@firstlightsafety.com

TBB C2 Bus Model Open Cavity (RS)

October 2023

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RECOMMENDED TOOLS

1. Ladder
2. Masking Tape
3. Marker
4. Center Punch
5. 1/8" Allen Key
(Mounting Screws)
6. Caulking Gun
7. Multimeter
8. Drill Bits and Drill
 - Stepper Bit recommended up to final size
 - Sign Power Cable (3/4" Pilot Hole)
 - Rivet Nuts (25/64" Pilot Hole)
 - Plus Nut (11/32" Pilot Hole)
 - Low Profile Rivet Nuts (A/C) (7/16" Pilot Hole)
9. Threaded Insert Tool (Manual)
 - 7/8" Wrench
 - 11/16" Wrench or Socket
 - 5-32 Allen Key

* Rivet Nut Installation Tool is available for purchase Part Number: **100521**

OPEN CAVITY - REPLACE SIGN (TBB C2 Bus Model)

PART NUMBER	DESCRIPTION	FITS MODEL YEAR	SIGN-FRONT	SIGN-REAR	SEALING PLATE FRAME	FRAME HARDWARE KIT	SIDE SEALING PLATE	MIDDLE SEALING PLATE	LARGE CLAMPING BRACKET	SMALL CLAMPING BRACKET	SIGN POWER HARNESS	SEALING PLATE HARDWARE	CLAMPING BRACKET HARDWARE	SILICONE
			REFERENCE	A1	A2	B1 / B2	C1 / C2	D1 / D2	E1 / E2	F	G1 / G2	H	I	J
100824	TBB C2	2006 - PRESENT	1	1	2	2	4	2	7	12	2	58	42	1

SETS INCLUDE 3 BOXES

Box 1

- Sign Unit Front (A1)
- Frame Hardware Kit (C1)
- Sign Power Harness (H1)
- Silicone (K)

Box 2

- Sign Unit Rear (A2)
- Frame Hardware Kit (C2)
- Sign Power Harness (H2)

Box 3

- Sealing Plate Frame (B1/B2)
- Side Sealing Plate (D1/D2)
- Middle Sealing Plate (E1/E2)
- Large Clamping Bracket (F)
- Small Clamping Bracket (G1/G2)
- Sealing Plate Hardware (I)
- Clamping Bracket Hardware (J)

STEP 1 - PREPARE SIGN LOCATION AND INSTALL SEALING PLATE(S)



- a. Remove existing open cavity sign components and any gasket or sealing material.
 - Ensure to disconnect vehicle power before removing existing lighting/wiring
 - Maintain existing power wires for later connection to sign power harness (H). If bulkhead support structures are in the way, it is recommended to remove flashing lights to allow for more access.
- b. Clean off any remaining adhesive or residue on the bulkhead left from the discarded components. Locate the supplied sealing plate frame components (B/C/D/E/F/G) and silicone (K). Ensure to differentiate between the front and rear components.
- c. Apply a continuous bead of silicone around the outside perimeter of the opening.
- d. Press the sealing plate into the silicone bead.
- e. Install washers (J) on the inside studs of the sealing plate frame.
- f. Secure the large clamping bracket (F) to the outer studs on the top and bottom of the front sealing plate frame and secure using nuts (J) (25-40 in-lbs). Hand tighten until all clamps are in place.
- g. Secure the small clamping bracket (G) to the outer studs on the sides of the front sealing plate frame or to all sides of the rear sealing plate frame and secure using nuts (25-40 in-lbs). Hand tighten until all clamps are in place.
- h. Ensure the sealing plate frame is level and all clamping brackets are properly positioned before tightening nuts to final torque values.
- i. With the main sealing plate frame installed, the three access panels can be closed and sealed. Apply a continuous bead of silicone around the outside of the access panels.
- j. Press the appropriate side or middle sealing plates into the silicone bead and secure using screws (J) (10-20 in-lbs).

Note: The sealing plate frames have integrated threaded nuts for mounting the sign unit. The power cable hole is also integrated into the sealing plate frames.

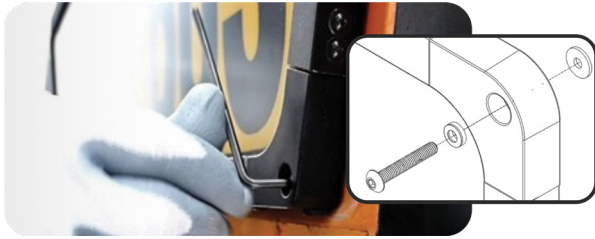
STEP 2 - PREPARE ELECTRICAL CONNECTIONS



- a. Locate the existing vehicle power wires remaining in the bulkhead from the previous step.
- b. Strip the wire insulation 11mm (7/16”).
- c. Connect the sign power harness (H) to the vehicle power wires using the supplied Wago quick connectors.
 - Ensure the polarity between the existing vehicle power wires and the sign power harness is the same. Verify with a multimeter, if required. Color schematic may be different between the vehicle and the sign unit.
- d. ISBS power requirements:
 - 12 Volts and 3.5 Amps (max)
 - White wire (Power) and Black wire (Ground)



STEP 3 - MOUNT SIGN UNIT AND FASTEN FRAME HARDWARE



- a. Assemble the frame hardware into the frame as shown on the packaging label (10-32 screw, bonded washer and sealing washer).
- b. Connect the Delphi MP150 connector between the sign unit (A) and sign power harness (H).
- c. Ensure the power cable grommet is seated into the 3/4" hole and the cable is pushed into the bulkhead as the sign is positioned for mounting.
- d. Start to thread each mounting screw before fully tightening to the recommended torque (25-40 in-lbs).

STEP 4 - TURN ON SIGN UNIT(S) AND TEST OPERATION



- a. Restore electrical power to the vehicle. Turn on the vehicle and verify the sign illuminates and operates properly.
- b. ISBS power requirements:
 - 12 Volts and 3.5 Amps (max)
 - White wire (Power) and Black wire (Ground)

TROUBLESHOOTING

1. Ensure the vehicle engine is running.
2. Use a multimeter to test circuit wiring.
3. Inspect fuse.
4. Check the polarity between the sign and the power harness.