



PROTERRA



TECHNICAL SERVICE BULLETIN

ISSUE DATE:	12-1-2020
SERVICE BULLETIN SUBJECT:	Bus Body Drain Retrofit
VINs or MODELS AFFECTED:	Service Specified Buses
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	SC-20-165
LABOR OPERATION CODE:	WD42Z

NOTICE! It is expected that this process will require 5 hours per bus. Please schedule appropriately to minimize vehicle downtime.

BUS BODY DRAIN RETROFIT

Description

This procedure adds additional drains to the to the bus body.

Tools/Parts Required

Tools and Supplies Required:

- Power drill
- Ballpeen hammer
- Pencil grinder
- Torx head bits – various sizes
- C-Clamps
- Orbital sander 36-grit sandpaper discs
- Tongue depressor or putty knife
- Air pump
- Shop vacuum
- Acetone wipes
- Calibrated Torque wrench
- T-25 Torx Socket
- Gloves appropriate for Resin mixing
- Syringe or plastic bag with corner cut off for application of potting solution
- Masking Tape
- Hacksaw
- Wheel Lifts 4 EA
- Jack Stands 4 EA
- Plexus Gun

Parts Required:

- | | | |
|--------------|---|--------|
| • 044639 | VALVE, DUCKBILL, 32MM | 4 EA |
| • 122-8546 | GAROLITE SLEEVE | 4 EA |
| • 025127-006 | SCREW: BUTTON FLANGE: TORX: M5-0.8X16X16 | 12 EA |
| • 019660 | INSERT, 150 SERIES, 35-0.8X10.5 | 12 EA |
| • 122-8459 | BODY, PLATE, DUCKBILL, WELDED MOUNT | 4 EA |
| • 122-0901 | REAR CURBSIDE AND STREETSIDE DRILL FIXTURE | 1 EA |
| • 122-0900 | FRONT CURBSIDE AND STREETSIDE DRILL FIXTURE | 1 EA |
| • 017043 | SIKAFLEX, SEALANT | 300 ml |
| • 018362 | PLEXUS, MA-530 | 1 EA |
| • 009479 | RESIN, EPOXY, WEST SYSTEMS | 1 EA |
| • 009499 | HARDENER, EPOXY, FAST, WEST SYSTEMS | 1 EA |
| • 027017 | FILLER, HIGH DENSITY, WEST SYSTEMS | 1 EA |

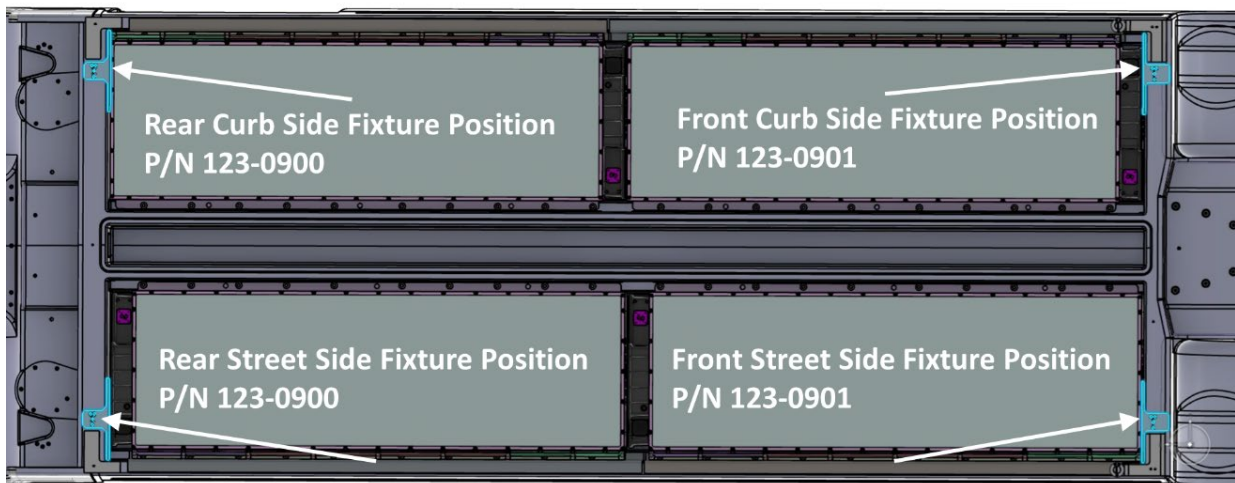
Procedure:

1. Complete the Proterra approved Lockout/Tagout procedure to make the bus safe for work.
2. Using Wheel Lifts raise the bus. Use four Jack Stands to support the bus after it is lifted.

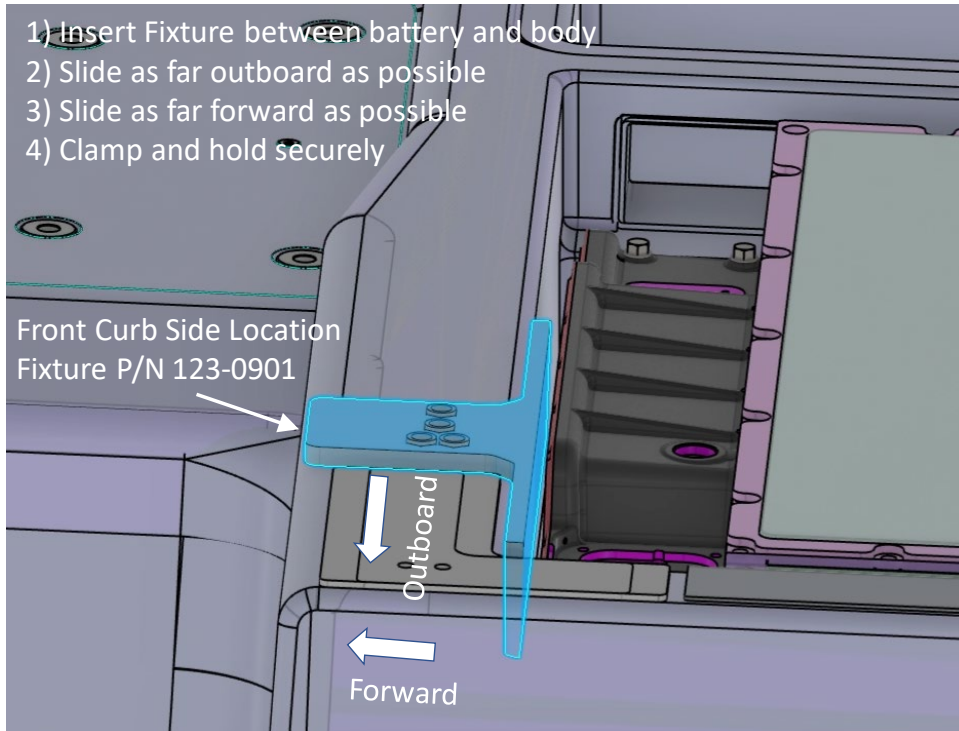


Safely Raise
and Secure
the Bus

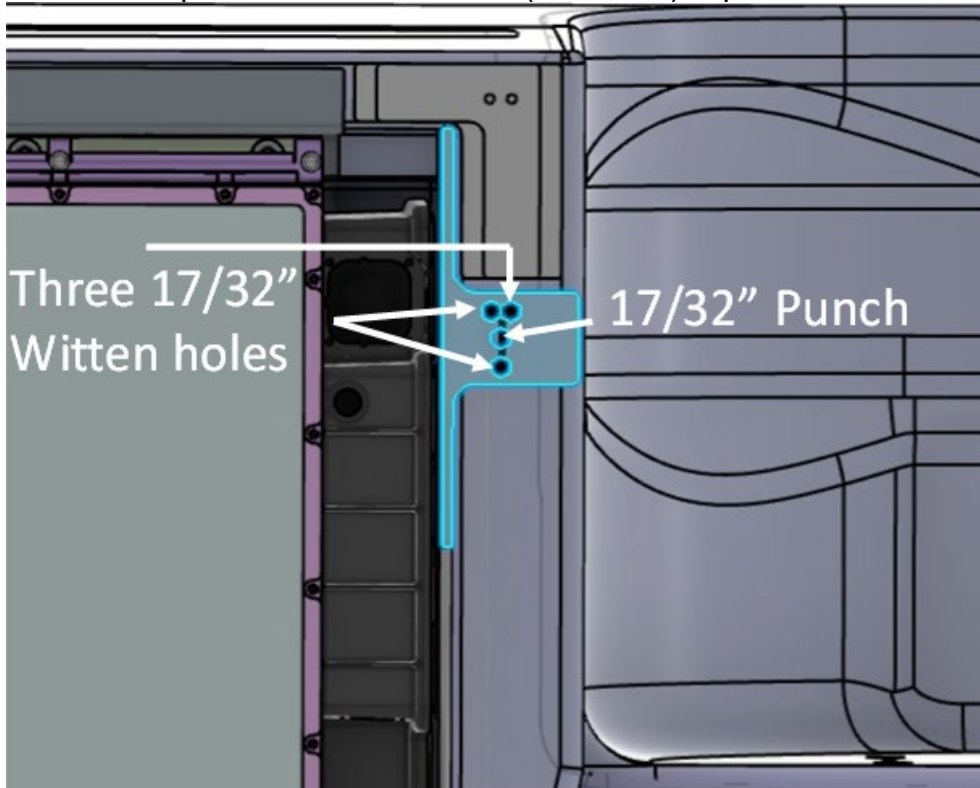
3. This procedure will add Duckbill drains to the underside of the bus body. The following illustration shows the drain locations and the fixture locations for installing the drains. This is a bottom view of the bus.



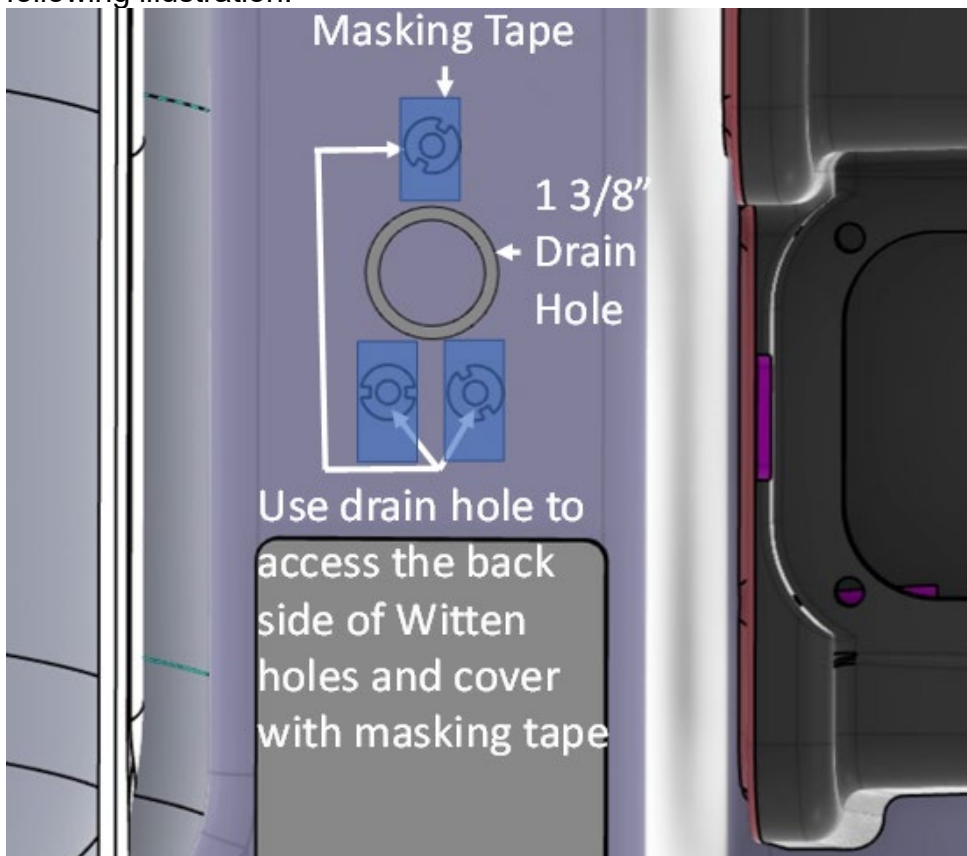
- Using Acetone Wipes, clean the area underneath the bus in the areas shown for fixture mounting in the previous illustration.
- Using the following illustration as a guide, place the Fixture (123-0901) as shown underneath the Front Curbside of the bus.



- Use C-Clamps to secure the Fixture (123-0901) in place.

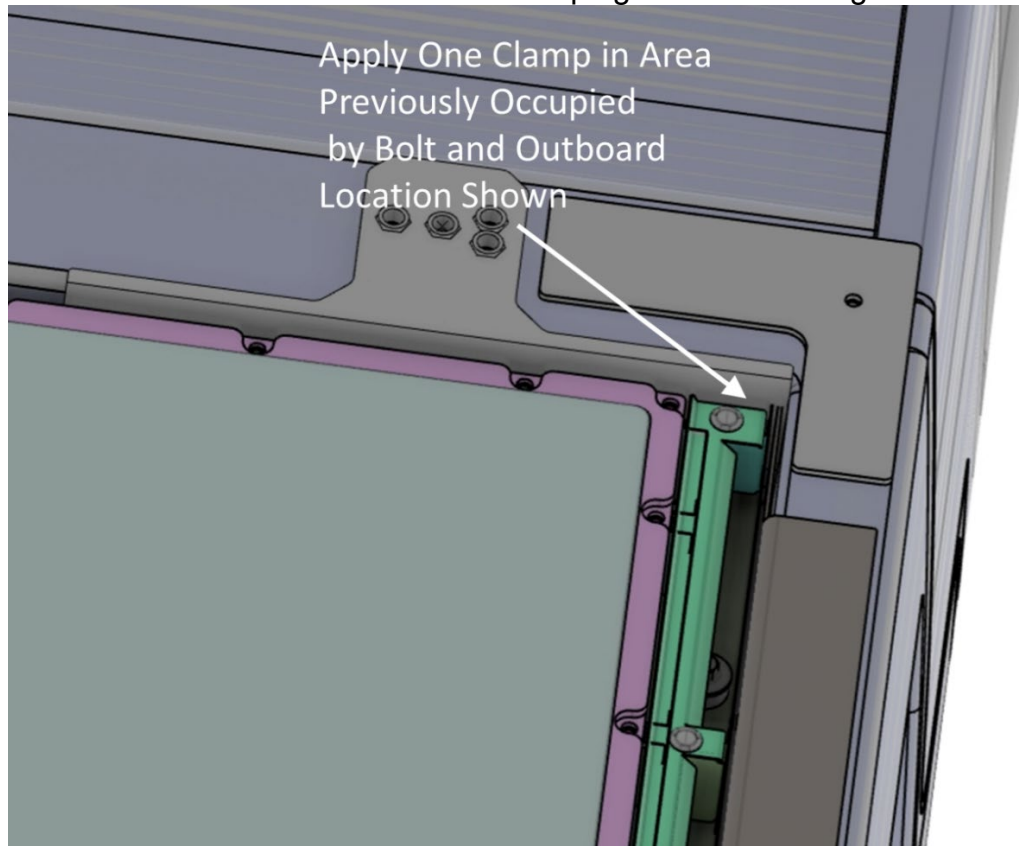


7. Using a Power Drill with a 17/32-Inch Drill Bit, drill holes in each of the marked locations shown in the previous illustration. These holes should be drilled all the way through the body.
8. Using a 17/32-Inch Center Punch, dimple the bus body in the location shown in the previous illustration. This location will be drilled for a drain hole.
9. Remove the C-Clamps and the Fixture (123-0901).
10. Using a Power Drill with a 1-3/8 Inch Hole Saw, cut a hole through the body in the dimpled location. Ensure that the drill is aligned 90 degrees to the body.
11. Using compressed air, blow out any dust and debris from the holes.
12. Using Acetone Wipes, clean the inside of all the holes.
13. Working through the Drain Hole, apply masking tape to the top of each hole as shown in the following illustration.



14. Using Fixture (123-0901), repeat the process to drill the holes on the front Streetside Front of the bus.

Note: The remaining mounting positions have limited access for clamping. The following illustration shows the best area for clamping in the remaining areas.



15. Clean the holes and apply masking tape to the tops of the holes.

16. Using Fixture (123-0900), drill the holes in both rear locations.

17. Clean the holes and apply masking tape to the tops of the holes.

18. Using a Hacksaw, cut each piece of Garolite Sleeve (122-8546) to match the depth of each drain hole. Variations in body thickness require that each Sleeve be custom fit to each drain hole.

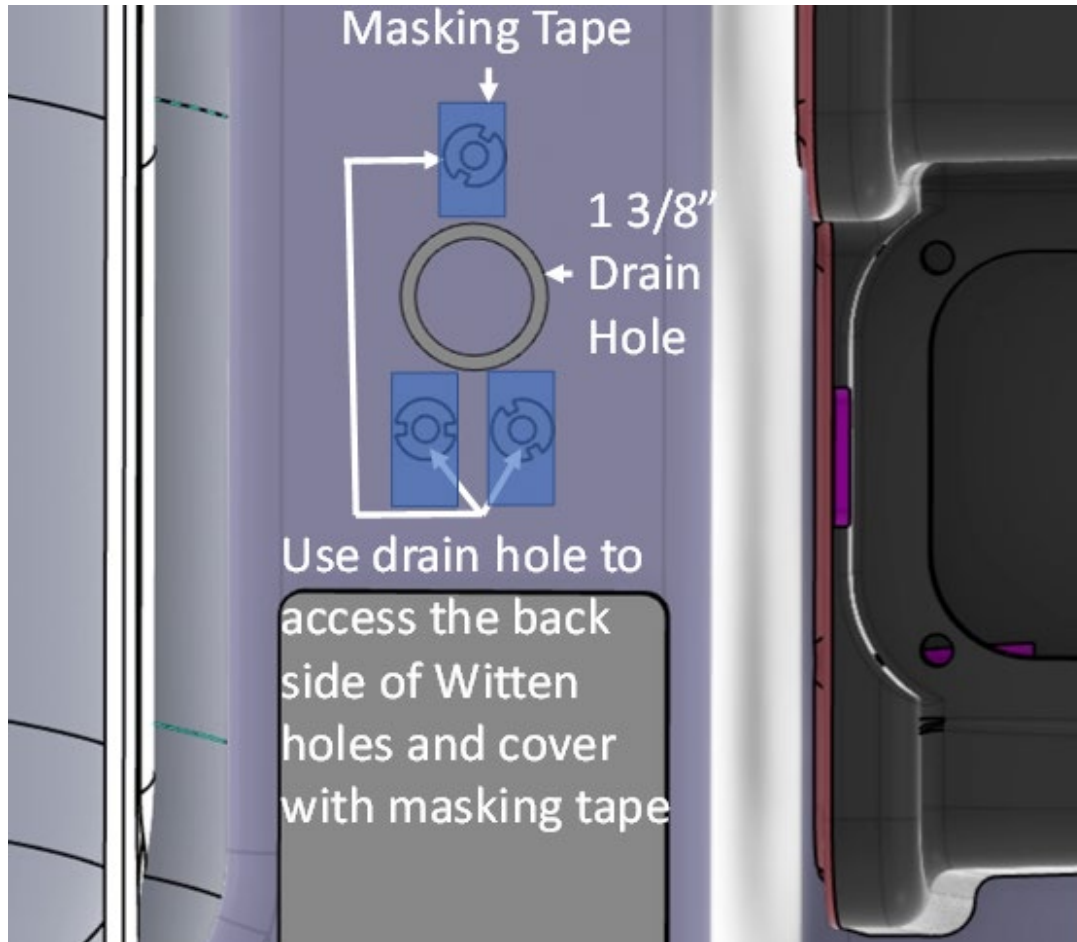
19. Mix West Systems 105 Epoxy Resin with West Systems 205 Hardener to get the amount required to install the Inserts (019660).

20. Mix in West Systems 404 High Density Filler until the mixture has the consistency of mayonnaise.

21. Partially fill each 17/32-Inch Hole in the Curbside Front Drain mounting location. Each hole should be 2/3 full. Do not completely fill the holes.

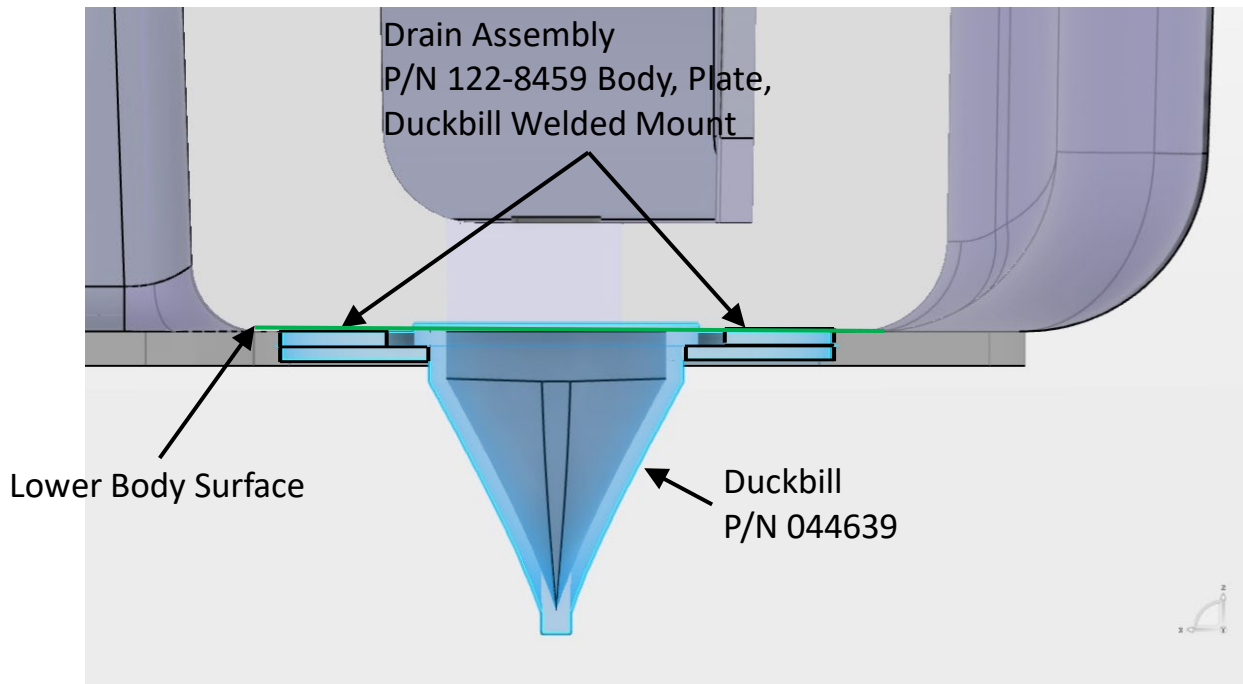
22. Using a plastic bag with a corner cut off or a tongue depressor, apply the Epoxy to the outer surfaces of the three Inserts (019660).

23. Place an Epoxy covered Insert (019660) into the three mounting holes. Make sure that the Inserts are square with the body and flush with the lower surface. Use the small Plastic Keepers that are supplied with the Inserts to keep them square to the floor. Make sure that the small potting holes on the installation tab are aligned with the Insert slots going down the sides.



24. Working through the Drain Hole, remove the Masking Tape from the top of the holes.
25. Apply a layer of Epoxy to the top of the Inserts (019660).
26. Clean up any excess Epoxy.
27. Repeat the process to install Inserts (019660) into the remaining Drain locations.
28. Allow ninety minutes for the Epoxy to cure before continuing this procedure.
29. Using a Plexus Gun, apply Plexus (018362) to the outside of the Garolite Sleeve (122-8546) that was custom cut to fit the Curbside Front Drain Hole. Do not allow the Plexus to get inside the Sleeve.
30. Carefully install the Garolite Sleeve (122-8546) into the Curbside Front Drain Hole.
31. Clean up any Plexus (018362) from the bus body and the inside of the Garolite Sleeve (122-8546).

32. Using Masking Tape, support the Garolite Sleeve (122-8546) so that it does not shift during the curing process.
33. Repeat the process to install each custom cut Garolite Sleeve (122-8546) into its corresponding Drain Hole.
34. Allow thirty minutes for the Plexus to cure before continuing this procedure.
35. Assemble one of the Duckbills (044639) and Body Plates (122-8459) as shown in the following illustration.



36. Using a T-25 Torx Driver, install the assembled Duckbills (044639) and Body Plate (122-8459) onto the Inserts (019660) that were installed at the Curbside Front Drain location using three M5 Screws (025127-006).
37. Using a Calibrated Torque Wrench with a T-25 Torx Socket, **torque the screws to 53 inch pounds.**
38. Repeat the process to install drains into the three remaining locations.
39. Lower the bus.
40. Remove the Lockout/Tagout devices and return the bus to service.