Body General

Table of Contents

Sub-Headings

List of Figures

Body General

Safety
The purpose of this safety summary is twofold. First, it is to help ensure the safety and health of persons performing service and maintenance on, or operation of, this Blue Bird product. Before performing any service, maintenance or operating procedure on this product, individuals should read and adhere to the applicable warnings, cautions and notes located throughout this Blue Bird manual.

Warnings
Warnings apply to a procedure or practice that, if not correctly adhered to, could result in injury or death. Particular attention should be paid to sections of this manual where warnings appear.

Cautions
Cautions apply to a procedure or practice that, if not correctly adhered to, could result in damage to or destruction of equipment.

Notes
Notes are used to explain, clarify, or otherwise give additional insight for a given subject, product or procedure. Please note that on occasion, notes too may advise of potential safety issues.

Introduction
These procedures are for the All American Front and Rear Engine models. The method for repairing and replacing damaged school bus body (epoxy bonded) panels is intended for authorized dealer, repair and service organizations.

There are special techniques required for the rivet-bonded joint using a combination of fasteners and epoxy adhesive.

Joint Strength FMVSS-221
Requirement S5. When tested in accordance with procedure of S6, each body panel joint shall be capable of holding the body panel to the member to which the panel is jointed. A force of 60% of the tensile strength of the weakest jointed body panel determined pursuant to S6 procedure.

The special techniques are required to meet FMVSS-221 joint strength. Special application and curing are necessary to meet FMVSS-221.

The adhesive used in rivet-bonded joints is strong and difficult to remove.

The Blue Bird Body Company requires that any damage be reported so that a trained service organization can assist in the repair.

Description of Operation

Warning
Epoxy resin and catalyst is flammable and toxic to the skin, eyes and respiratory tract. Therefore, skin, eye and respiratory protection is required.

Avoid repeated or prolonged contact. Use in a well-ventilated area.

Caution
Ensure that the area to be repaired is on a solid surface. Do not flex or move the joint during the entire curing cycle.

Tools Requirement for Removing Old Epoxy

1. Heat gun, capable of 250° Fahrenheit
2. Flat screwdriver
3. Putty knife

Panel Removal

1. Remove mechanical fasteners.
2. Heat a small section of joint, approximately eight feet long.

Caution

Avoid overheating of the repair area. Neither paint nor epoxy should smoke or be scorched.

3. When epoxy is soft, insert a screwdriver into the joint.
4. Move the heat gun and screwdriver along the joint until the joint is open.
5. Remove all cured epoxy from any panels with a heat gun and putty knife before new panel is installed.

Caution

Do not prime or paint panel surfaces.

Note

Ensure fit and hole alignment of new panel before panel is installed.

Note

*Mix components of the epoxy by volume. Part A is **yellow** and Part B is **blue**. Mix until the epoxy is a consistent green color with no separation streaks. Epoxy Kit Number 2154425 – 1.7 pounds.*

Curing Adhesive

There are two curing times for the adhesive: 30 minutes at 200° Fahrenheit and 6 days at 70° Fahrenheit.

Note

These adhesive begins to cure four hours after mixing at 77° Fahrenheit or below; within two hours above 77° Fahrenheit.

Caution

Ensure that the area to be repaired is on a solid surface. Do not flex or move the joint during the entire curing cycle.

1. Apply all adhesives.
2. Cover the entire overlap of the joint thick enough to completely fill the joint.
3. Install all fasteners in joints.

Stepwell Removal

Warning

Use the parking brake. Use wheel chocks at the rear wheel. Make sure the vehicle is stable before moving under the vehicle.

1. Jack the front of the bus up, so that the removed stepwell will clear. **Figure 1—Stepwell and Steptread**.
2. Support the stepwell for removal.
3. Cut all sealant at edge of steptread to wall of stepwell.
4. Remove steptreaad. **Figure 1—Stepwell and Steptread.**
5. Remove three screws from lower flange of doorframe assembly. **Figure 2—Lower Flange of Door Frame Assembly.**
6. Remove lower screws from handrail assembly at stepwell and barrier. **Figure 3—Handrail Assembly.**
7. Remove three screws to light lens retainer.
8. Remove light lens retainer, gasket and lens.

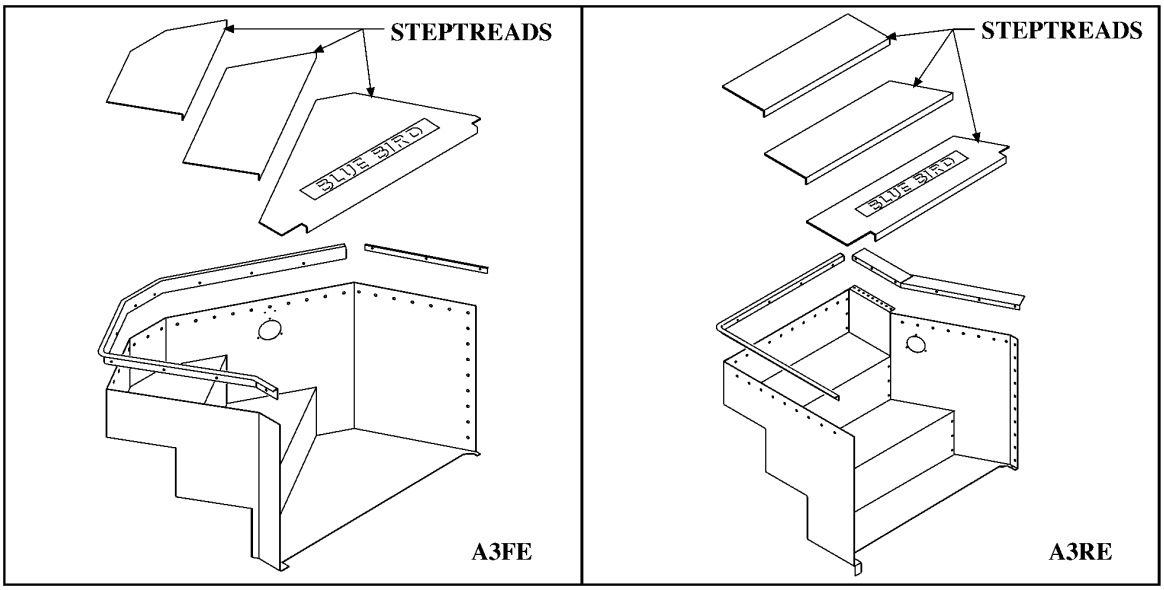

Figure 1—Stepwell and Steptread

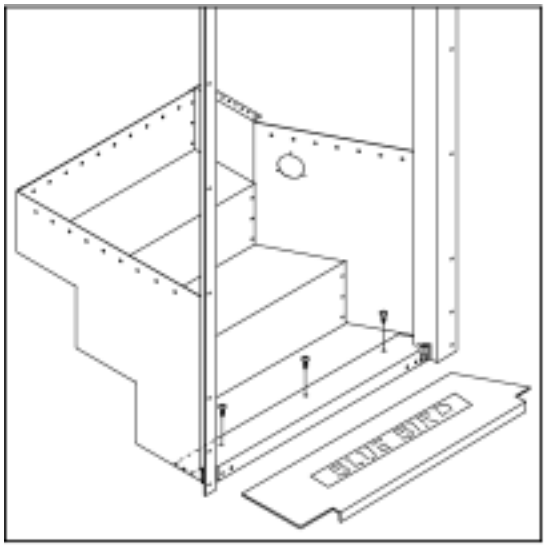

Figure 2—Lower Flange of Door Frame Assembly

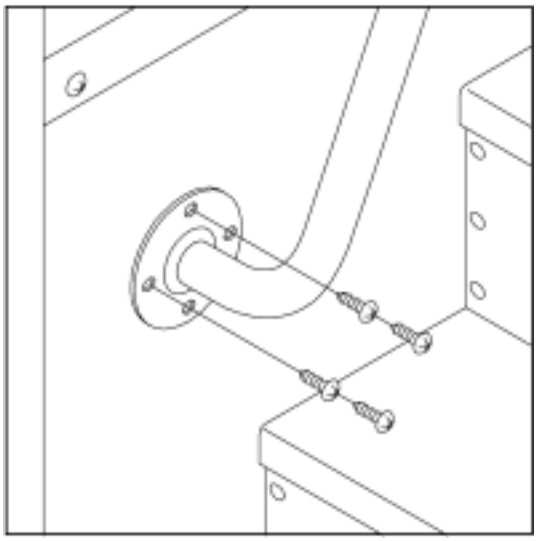

Figure 3—Handrail Assembly

9. Remove three mounting screws. **Figure 4—Stepwell Light.**
10. Disconnect gray wire in light assembly.
11. Remove all screws from the stepwell.
12. Lower stepwell and remove.

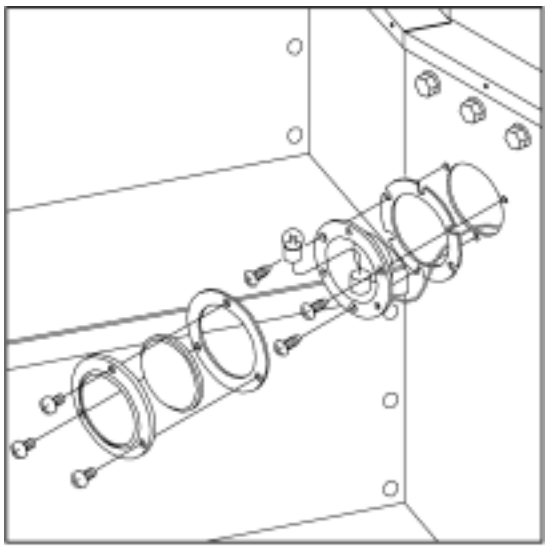

Figure 4—Stepwell Light

Caution
Do not deform steptread. Floor level steptread should not be removed.

Stepwell Installation

1. Position stepwell in proper position.
2. Install all screws.
3. Lower bus and remove jack.
4. Install three screws to lower flange of doorframe assembly.
5. Install steptread.
6. Reseal edges to prevent moisture seepage underneath steptread.
7. Install screws to trim around top edge of stepwell.
8. Install screws to handrail assembly at stepwell.
9. Connect gray wire in light assembly.
10. Mount light housing and gasket with three mounting screws.
11. Install light lens retainer, gasket and lens.
12. Install three screws to light lens retainer.

Roof Cap Removal

Caution

Under the rear roof sheet, there is a rivet attaching the roof cap to the body bow. The rivet must be cut out before removal. Removal of the front or rear upper inner panel will be necessary to gain access to rivets. Use of D.O.T.-approved repair rivets and removal is not necessary.

1. Remove three screws from marker lights. **Figure 5—Marker and Warning Lights.**
2. Pull light from surface.
3. Cut wire at connector.
4. Remove warning lights.
5. Disconnect wires from bulb assembly.
6. Drill out or cut the rivets.
7. Heat seams to allow the sealing material to soften. Use a screwdriver to break seal if necessary.
8. Scrape old epoxy off area to be worked.

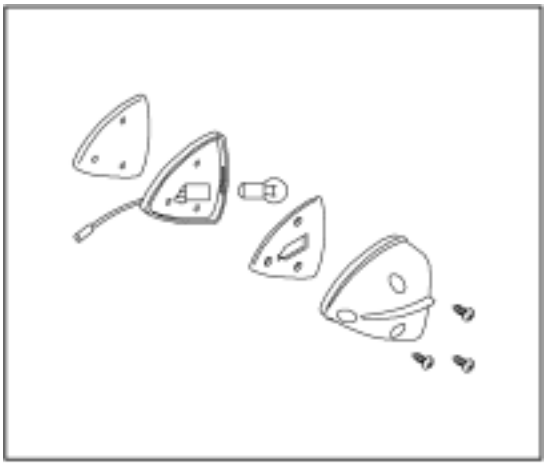

Figure 5—Marker and Clearance Lights

Roof Cap Installation

Note

Ensure all options and configuration is correct roof cap.

1. Test fit the roof cap.
2. Adjust and/or trim as needed.
3. Apply sealant to roof cap.
4. Install roof cap.
5. Clamp roof cap in place, if possible.

Driven Rivets

1. Install rivets.
2. Back drill using the old holes.

D.O.T.-Approved Pull-Type Rivets

1. Drill ¼-inch hole from the outside.
2. Install rivets.
3. Clean all seams of excessive sealant.
4. Paint as required by local and state laws.
5. Install correct decals.
6. Install all removed gaskets and lights.
7. Install marker lights. **Figure 5—Marker and Warning Lights.**

Roof Sheet Removal

Note

Depending on the style of rivet to be used, the inside heading panel may or may not be removed. Driven type rivets will require removal. Approved D.O.T repair rivets will not require removal.

Make sure configuration is the correct roof sheet.

1. Drill out or cut the rivets.
2. Heat seams to allow the sealing material to soften. Use a screwdriver to break seal, if necessary.
3. Scrape old epoxy off area to be worked.

Roof Sheet Installation

Caution

When attaching driven rivets, holes in bows can be used as a template for location. Back drill these holes. When using the D.O.T.-approve, repair rivet, use the same pattern and number similar to other roof sheets.

1. Apply sealant to roof sheet.
2. Attach end of roof sheet to body.
3. Pull other end to fit panel to curve of body.
4. Install rivets between the two ends.
5. Install decals removed.
6. Install all gaskets, hardware and lights removed.
7. Install roof hatch, if there is that option.

Back to Top