Stop Arms and Crossing Guards

Table of Contents

Sub-Headings

List of Figures

Stop Arms and Cross Gaurds

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

Stop arm kits are sold as assemblies. There are various kits available to meet all state and federal specifications. The stop arms on your All American meet the specifications for your state.

Description and Operation

The following information will provide the necessary procedures to keep stop arms properly maintained.

Air Stop Arms

The manual switch activates an electric solenoid valve controlling the flow of air. As an option, the solenoid valve can be activated by the warning lamp system. This system works in conjunction with the air system on the chassis.

No preventive maintenance procedures are required with these systems. However, an occasional adjustment may be required. See the Air Stop Arm Adjustment section below for this procedure.

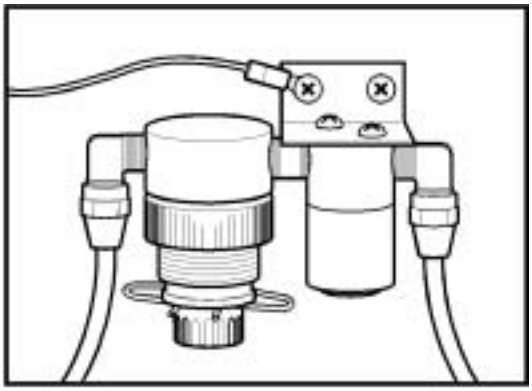

Figure 1—Air Regulator

Air Stop Arm Adjustment

Buses equipped with air stop arms may require air pressure adjustment to ensure proper opening and closing of the stop arm.

The air regulator is accessible by opening the electrical panel door under the driver's window on the outside of the bus. **Figure 1—Air Regulator.**

To Regulate Air Pressure

1. Remove wire-retaining clip below the regulator knob
2. Pull the red lock ring out
3. Turn the knob counterclockwise to decrease pressure.
4. Slowly increase pressure by turning the knob clockwise, until the stop arm hinge is approximately 90 degrees.
5. Re-lock the knob by pushing in the red lock ring.
6. Re-install the wire-retaining clip.

Caution

The stop sign must extend if equipped with lights. The lights must be operating any time the red lights of the warning light system are flashing.

For Unique State-Designed Warning Light/Stop Arm Systems

These systems permit the stop arm to be withdrawn while warning lights are in operation. In such situations, an audible alarm sounds to alert the driver of the condition.

Air Stop Sign and Crossing Arm Troubleshooting

Caution

Pressure should not exceed 12 pounds. Excessive pressure may cause damage to both the solenoid and the diaphragm.

If the signs won't open to 90 degrees, check the following areas.

Note

Check solenoid valves under pressure while activation of the electric solenoid is taking place.

1. Faulty diaphragm.
2. Faulty solenoid valve.
3. Air pressure regulator. Air pressure regulator must precede the solenoid to prevent damage to the solenoid or to the diaphragm.
4. System leak. Check to ensure air pressure supplied to the solenoid valve or the diaphragm is equal to 10 to 12 lbs.
5. Loose fasteners.

Electric Stop Arms

The manual switch activates the control relay of the stop arm. Optionally, the stop arm may be activated by the warning lamp system.

For **monthly** preventive maintenance procedures, perform the following.

1. Apply oil to the dual-action breakaway hinge at four (4) pivot points with a high performance, penetrating lubricant. Tri-Flow™ (DuPont) with Teflon is recommended.
2. Verify that breakaway portion of hinge is free and movable.
3. Check all fasteners for tightness.

For **quarterly** preventive maintenance procedures, perform the following.

1. Remove front and rear covers of base.
2. Check internal fasteners for tightness. Tighten if needed.
3. Replace front and rear covers of base.

Electric Stop Sign and Crossing Arms Wiring Installation

Example 1

Note

*The **Blue** wire activates and de-activates the stop sign.*

1. **Dark Blue** to a switched 12V terminal.
2. **Red** to a constant 12V terminal.
3. **Green** to a proper Ground.

Example 2

Note

*The **Green** wire or the **Ground** activates and de-activates the stop sign or crossing arm.*

1. **Dark Blue** and **Red** to a constant 12V terminal.
2. **Green** to a grounded switched terminal.

Electric Stop Sign and Crossing Arms Troubleshooting

A major feature of the electric stop signs and crossing arms is all of the assemblies are in the base. The electric stop sign troubleshooting can be done first.

Determine that the proper wiring installation has been performed.

Note

Ensure that 12V and Ground are available where required.

1. Remove the rear cover of base.
2. Remove the **Red** wire from the relay (wires wired to terminal on motor).
3. Remove **Red** wire from the limit switch.
4. Replace the **Red** wire on the limit switch with the **Red** wire from the motor.
5. Ground the motor terminal **Black** wire with a battery charger or any other 12V source.
6. Attach the positive 12V wire to the **Red** wire terminal on the motor. The motor should begin to activate and run continuously until you remove the **Red** wire.
7. Attach a voltmeter to the 12V positive post of a battery charger.
8. Identify the **Black** and **Light Blue** wires on the limit switch at the motor base.
9. Identify the 12V positive post. Select either the **Black** or the **Light Blue** terminal.
10. Attach the voltmeter to the wire of the limit switch.

Note

If the motor runs, proceed until the CAM circles and de-activates the limit switch, causing the motor to stop.

11. Switch terminals with the limit switch to either the **Black** or the **Light Blue**, depending on where you started.
12. The motor should begin to run until the CAM positions itself to de-activate the limit switch.

Note

If both points operate the motor, then the limit switch, CAM and motor assembly are functioning.

Verify proper wiring installation, as identified in Steps 1 through 12 above. If problem exists after verifying proper wiring installation, then the problem is the relay. In such case, replace the relay.

Stop Sign Failure

If the lights do not function, perform the following checks.

1. Check to ensure that the light bulb is working.

2. Check to ensure that the ground strap is secure.
3. Check to ensure if 12V is being supplied to the light bulb.

Back to Top