

The integrated air-crossing arm is powered by the bus pneumatic system. This unit contains an air chamber in lieu of a diaphragm. This unit requires a minimum of 90psi to operate properly, but no more than 120psi. The system is driven by air but requires and electric signal from the flasher system to open.

***Note:** components that are determined to be 'at fault' are not necessarily defective. The fault may be due to loose connections, dirty contacts, physical obstructions, etc. as well as worn parts. The situations listed below are those that are most often encountered in the field. If further help is needed, contact the Engineering department at Specialty Manufacturing.

A. Unit will not open- or will not open to 90 degrees:

1. Loss of air pressure- air pressure should be @90psi but should not exceed 120 psi. Excessive pressure may cause damage to the air chamber. Air pressure regulator- Abide by Air pressure requirements to prevent damage to the solenoid. This unit will need a separate regulator & solenoid or can use straight air providing it does not exceed 120psi. **Note:** Solenoid valves must be checked under pressure during activation of the electric solenoid.
2. Faulty solenoid valve- we recommend replacing with a new solenoid valve to troubleshoot the problem.
3. Faulty regulator valve- [will not allow at least 90psi through even though line (system) pressure is > 90psi] we recommend replacing regulator.
4. We recommend that a separate solenoid & regulator be used for each Air unit to ensure there is enough air pressure to open both units simultaneously. (ie, one for the Air crossing arm and another one for the Air stop arm)
5. System air leakage in lines- this can be determined by pressure checks at various points in the system.
6. Verify fasteners are not loose at hinge points or at other areas-
7. **Note:** Fasteners should be checked for looseness, once per year, particularly at the hinge point areas. Also check ¼-28 set screw in pivot arm collar that locks it to the drive shaft.
8. Check that magnetic latch is releasing the arm. It should be energized while the bus is running and release when 8-way flashers are energized. If not releasing the relay inside the control box may be bad. Remove plastic cover, remove rod from tube on front of bumper, remove control box by unbolting 4 mounting bolts, remove cover from control box- relay is standard 12V automotive relay.
9. Excessive dirt, debris or lack of lubricant at the arm pivot point. Clear any debris and lubricate pivot bushing at yoke contact points.

B. Unit does not fully close or will not fully open to 90 degrees:

1. Verify the crossing arm base has been mounted properly and that the mounting fasteners are properly torqued. (When these fasteners are over torque or installed unevenly the yoke will twist & bind the shaft & collar for the arm).
 - a. Remove rear plastic cover by removing the 4 locknuts.

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- b. Loosen (2) mounting bolts visible on top of unit and (2) on front of bumper.
- c. Retighten (4) mounting bolts to 10 ft·lbs of torque-EVENLY by alternating.
2. Excessive dirt, debris or lack of lubricant at the arm pivot point. Clear any debris and lubricate pivot bushing at yoke contact points.

C. Unit is opening and/or closing too quickly (~1 to 2 seconds):

1. Installation of the 01643 Regulation harness will allow regulation of the opening and closing speed of this unit if unit does not have . See Technical bulletin #A403.
**note: if the bus was mfg prior to 10/04 and it does not have a regulator mounted on the fire wall by the steering column or mounted on the unit (under the plastic cover) then it will need the 1643 Regulator Harness.*
2. Adjust regulator if arm opening too quickly by unlocking regulator (pull up) and turn CCW to slow down or CW to speed up until desired opening speed obtained. Lock when done by pushing down on knob. *Caution arm should not 'slam' open – this could jam arm & unit.*
3. Adjust bleeder valve on top of solenoid, small light-gray knob. Unlock lock nut and turn small gray knob CW to slow down closing speed and turn CCW to increase closing speed. Tighten locknut.

D. Unit opens normally but goes in prematurely:

1. Listen for air bleeding. If so, check regulator.
2. Check for condensation in airlines. In cold weather, the condensation could freeze. This needs to be blown out. Check dryer/filter if bus is equipped.

E. Cannot get unit to close. It will open normally, but will only close when the key is shut off:

1. Check 'bleeder valve' on top of the solenoid valve. This is a white/gray knob with a locking nut. This valve should be open a minimum of 50% to allow air to release when solenoid is deactivated. It may be fully opened but might allow arm to close 'hard' against the bumper.
2. Air pressure may be too high causing the arm to bind in the open position-lower air pressure but not below 90psi.
3. Check solenoid valve, make sure it's not sticking. Tapping lightly may release it. This could be caused by moisture or debris in the airline. Remove airline from regulator side and check for this - blow out system, also check dryer/filter if bus has it.

F. Unit will not open when the bus is on an incline:

1. Low air pressure –unlock cap on regulator (pull up) and turn CW until arm opens while in a similar inclined position. Lock when done by pushing down on knob.
2. Check items **A & B** relative to debris & obstructions around arm pivot and if mounting bolts are over or unevenly tightened .

G. Unit will not close when bus is on a downhill or in a side-wind:

1. Check that bleeder valve is open on top of solenoid. This is a white/gray knob with a locking nut. This valve should be open a minimum of 50% to allow air to release when solenoid is deactivated. It may be fully opened but might allow arm to close 'hard' against the bumper.
2. Check for dirt or debris around arm pivot point. This is the area where the drive shaft comes through the top of the control box and the mounting yoke.
3. Check for other obstructions around the arm & bumper cutout for arm tube.
4. Check solenoid valve, make sure it's not sticking or 'hanging-up'. Tapping lightly may release it. This conditions could be due to moisture or debris in airline regulator/solenoid assembly

TECHNICAL BULLETIN - #A411

SUBJECT: TROUBLESHOOTING INTEGRATED AIR X/A UNITS

Effective Date: 11-03-04

Revised 8-31-2004

