

Troubleshooting Louver Dilemmas

Issues can be prevented with periodic maintenance

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After louvers are installed, startup of the air system may reveal louver issues that require attention to ensure proper operation. Some of the issues most frequently encountered with louvers after startup, as well as troubleshooting tips, will be reviewed in this article. Louver documentation and information on Air Movement and Control Association (AMCA) certified performance ratings also will be examined.

Stationary-blade louvers have no moving parts. Therefore, they generally present few problems during operation. Operable louvers have a few more potential problem areas. Following are common louver-operation obstacles and techniques for overcoming them.

Not enough airflow through the louvers. Assuming the louver is sized correctly, with the proper amount of free area, this is caused mainly by obstructions in the louver and/or bird and insect screens. Remove any debris that has accumulated on or between the louvers' blades and on the screens. Also, if applicable, check to see if blank-off panels are in the proper locations.

Excessive water penetration. Be sure sealant has been applied around the louver perimeter and other required locations. For drainable and vertical-blade louvers, make sure the downspouts and drain holes in the frames are open

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and are not obstructed. Also, check that the proper flashing and extended sills are in place.

Operable louver blades do not move. Check that all actuators are connected and energized. Be sure electric actuators are getting the proper voltage and pneumatics have adequate air pressure. Be sure all linkages are connected and secure. Examine the louvers to make sure that installation fasteners are not preventing linkage and/or blade movement.

Check the squareness of the louver. Measure diagonally from corner to corner. The dimensions should be within $\frac{1}{16}$ of an inch. If the difference is more than that, the added torque created by the out-of-square configuration may be more than the actuator can overcome. This problem is difficult to correct after installation. The best course of action is to loosen the installation fasteners, place shims at the appropriate locations until the louver is square, and re-secure the installation fasteners.

During installation, the jamb frames potentially could have been pulled inward (toward the blades) when secured to the wall. This creates added operating torque similar to that created by an out-of-square configuration. To fix the problem, loosen the installation fasteners, pull the jambs outward toward the wall until they are straight, and re-secure the installation fasteners.

While fairly uncommon, actuators occasionally become defective. If this occurs, contact the actuator supplier for a replacement.

Not enough movement of operable blades. Check for obstructions in the blades or linkages. Remove objects lodged in the blades, fasteners restricting blade movement or linkage, etc.

The problem may be that the linkage is not being adjusted properly. Unlike control dampers, most operable louver blades do not move a full 90 degrees. Therefore, adjustment of the linkage is critical. Factory-installed actuators usually are cycled on the louvers prior to shipment. However, if factory actuators are adjusted in the field or if the actuators are provided and installed in the field by another supplier, the linkage may require some fine-tuning to ensure full blade movement.

After louvers are installed and in operation, little maintenance is required during their lifespans. Following are some periodic maintenance tasks to ensure maximum performance from louvers:

- Check bird and insect screens occasionally, and remove trash and obstructions.
- Grime buildup on anodized and painted louvers accelerates deterioration of the finishes. Clean louvers thoroughly after construction is finished to wash off the initial layer of dust. Then wash them occasionally to remove normal grime accumulation.
- Cycle operable louvers periodically. Check that actuators are operating, and verify that louver blades open and close fully.

Keeping the proper documentation on file can verify that a louver meets project specifications. Also, it can be useful if system modifications are required or if additional matching louvers need to be ordered. Catalog submittal sheets often are enough for these requirements. If custom submittal drawings were provided for the project, be sure to get a complete set of as-built prints to keep on file.

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One of the most important uses of louver documentation is to provide performance data for the products supplied. The performance of many louver models is supported by AMCA testing and certification. AMCA has developed test standards and certified ratings programs for many air devices. AMCA Standard 500-L-99, *Laboratory Methods of Testing Louvers for Rating*, describes performance test procedures for louvers. Publication 511, *Certified Ratings Program for Air Control Devices*, defines the requirements for louver-performance certification.

Products and their literature may display performance seals only after they have met the requirements of their certified ratings programs. For louvers, these requirements include performance testing in the AMCA lab per Standard 500-L and submission of product-performance literature to AMCA for its review and approval per the certified ratings program. The certified ratings program not only ensures that the published performance ratings reflect actual test results, but requires periodic check testing to ensure that products continue to provide the same performance after their initial certification. There are a variety of ratings available, including air performance (pressure drop), water penetration ("still-air" test), and wind-driven-rain resistance. AMCA has established seals for each performance rating or combination of ratings.

Specifying and installing louvers that bear the AMCA seal is the most effective way to ensure that louvers will perform as specified.

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