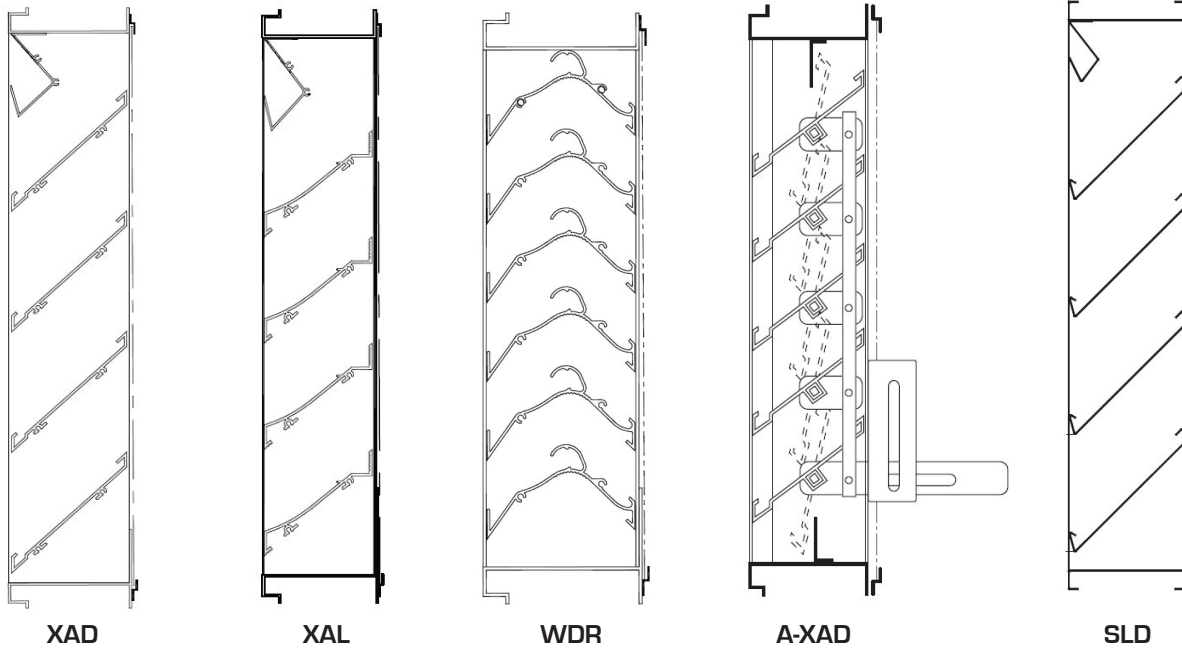




BASIC LOUVER INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

The following installation instructions apply to all regular stationary and operable louvers fabricated out of extruded aluminum or steel. Some NCA louver models may require special installation instructions.



Application & General Notes:

These installation instructions apply to Louvers of the drainable, non-drainable, wind-driven-rain, stationary and operable blade types made from extruded aluminum or steel. All louvers (unless otherwise noted) are meant to be installed with blades running horizontally. **This IOM is meant to give a general idea of how to install a louver - it is not all encompassing. Some louver models may have their own specialized installation instructions that supersede this IOM.**

Safety Warning:

Read all installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.

Receiving & Handling:

Check for damage when this product is received. If damage is found, record all necessary information on the bill of lading and file a claim with the final carrier. Check to be sure that all parts of the shipment are accounted for.

Electrical Guidelines:

Electrical input may be needed for products discussed within this IOM. All wiring shall be done in accordance with the latest edition of the National Electrical Code ANSI/NFPA-70, any local codes that may apply and wiring diagrams developed in compliance with the job or project design and specifications.

Electrical input work should be performed by a qualified electrician. Verify power before wiring actuator. NCA is not responsible for damage to or failure of the unit caused by incorrect field wiring. Follow all instructions carefully.

Storage:

Store in a safe location away from construction traffic, material etc. to prevent damage. Cover with some sort of plastic cover in order to protect against excessive moisture, dirt and debris. Store in an area protected by the elements.

This IOM manual is the property of the owners, and is required for future maintenance. Please leave it with the owner when the job is complete.

TABLE OF CONTENTS

Pre-Installation Guidelines	2
Installation Instructions	2
Sill Flashing	2
Single Section Louver Installation	3
Multiple Section Louver Installation	4
Operable Louver Considerations	4
Actuator Connections (Operable Louvers)	5
Louver Operation, Testing & Maintenance	5

Pre-Installation Notes and Guidelines:

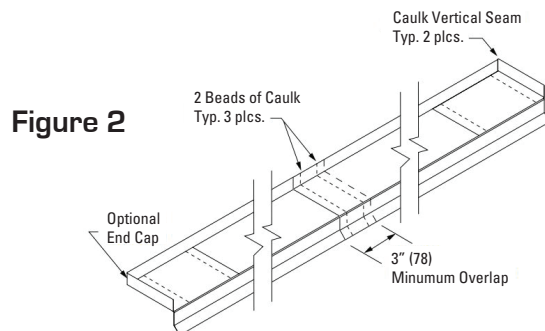
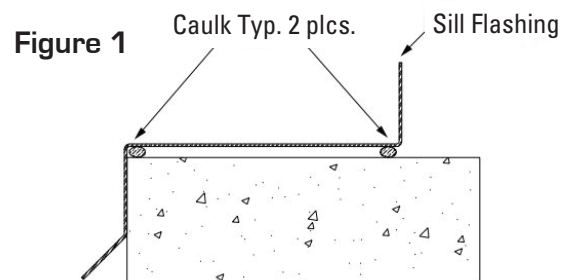
These notes and guidelines are formulated in order to aid in completing the damper installation in a timely and efficient manner.

- A. Inspect louver for damage before installing.
- B. Louvers must be installed free from twisting or racking.
- C. DO NOT compress or stretch the louver into the opening.
- D. DO NOT lift the louver by the blades or actuator (handle louver using frame).
- E. DO NOT install screws or fasteners in the louver that could potentially interfere with the unexposed blade linkage (operable louvers) and prevent proper louver operation.
- F. The louver actuator (if applicable) should be protected from dirt, dust and foreign materials before and after installation.
- G. Consult with the Engineer of record for the size, type and quantity of anchors required to secure the louver in the opening.
- H. Always refer to job specific submittal drawings if available.
- I. Only handle louver sections by their frames or support members. Use multiple lift points if necessary to avoid distortion, racking or damage to the frame. **NEVER lift the louver section(s) by the blades.** Always take precautions to avoid damaging the louver finish if applicable.
- J. Caulk, anchors and fasteners are by others. Proper isolation (by others) is recommended between louver components and steel building conditions to prevent corrosion.

Installation Instructions

Sill Flashing: (If applicable)

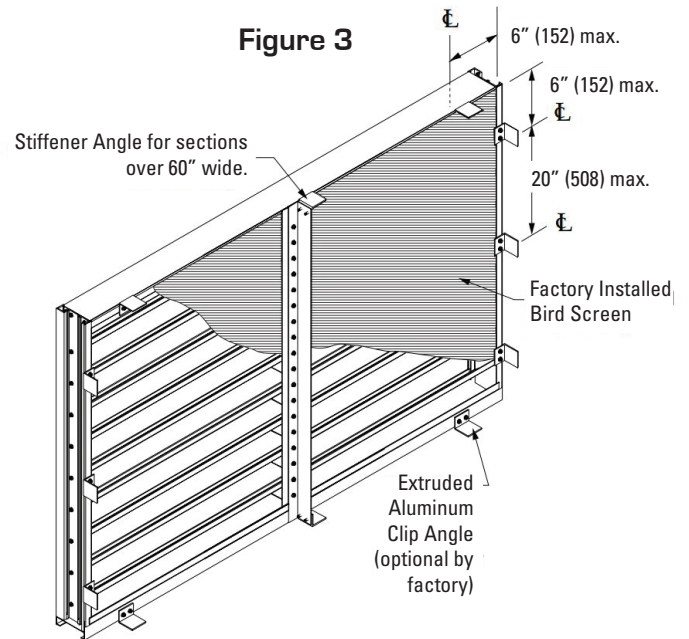
1. Locate all sill flashing (by others). Sill flashing is recommended for all multiple section wide louvers.
2. Make sure that the sill of the opening and the underside of the sill flashing are clean and free of debris.
3. Apply caulk to the sill of the opening and firmly set the sill flashing in the caulk (see Figure 1).
 - a. Caulk multiple section sill flashing at the overlapping joint(s) and firmly set (see Figure 2).
 - b. When sill flashing end caps are required, caulk the underside of the cap and firmly set over the top of the sill flashing taking care to butt the edge of the vertical leg snugly against the edge of the vertical leg of the sill flashing and adequately caulk the joining vertical seam (see Figure 2).



Installation Instructions (contd.)

Single Section Louver Installation:

1. Locate all anchor clip angles (Minimum of 1-1/2" x 2" x 1/8" thick x 2" long (38x51x3x51)) as required to establish proper louver depth and position. See Figure 3 for required spacing (clip angles are by others or optional by NCA).
2. Place the louver in the opening (see Figures 4 through 7 for Channel Frame and Flush Mount and Figures 8 through 10 for Flange Frame and Angle Mount details).
3. Shim around the perimeter of the louver to maintain the proper sealant joint clearance and to level the louver. (Shims are by others).
4. When the louver is level and in the proper position, fasten louver frame to clip angles with minimum #12 screws (by others).
5. Install backer rod and caulk around the entire perimeter of the louver, as required. **Do not caulk between the louver and sill flashing (if applicable) to allow for draining.**



Figures 4-7: Channel Frame & Flush Mount Installation Details

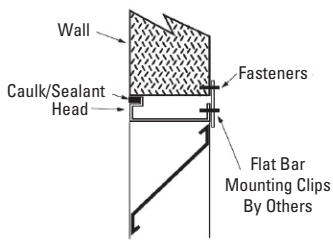


Figure 4

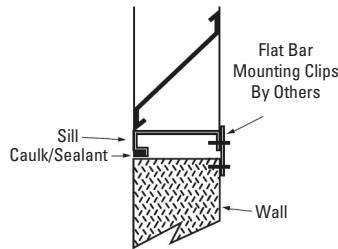


Figure 5

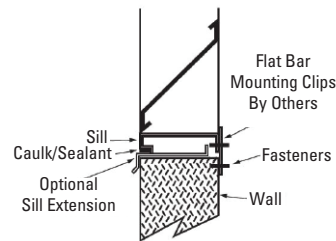


Figure 6

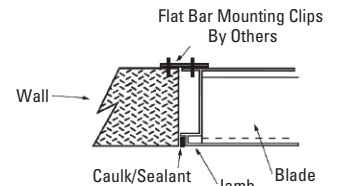


Figure 7

Figures 8-10: Flange Frame & Angle Mount Installation Details

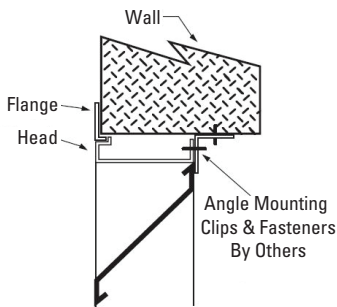


Figure 8

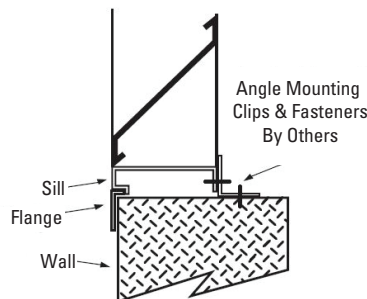


Figure 9

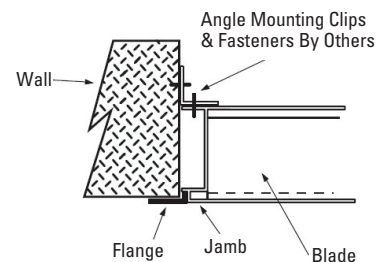


Figure 10

Multiple Section Louver Installation:

1. Locate all anchor clip angles (Minimum of 1-1/2" x 2" x 1/8" thick x 2" long (38x51x3x51)) as required to establish proper louver depth and position. See Figure 11 for required spacing (clip angles are by others or optional by NCA).
2. Install the lower left section (as viewed from the exterior) following steps 2-4 in "Single Section Louver Installation" section on page 3. If multiple sections high, install the upper left section(s) following the same steps 2-4. Install Jamb Splice and Stiffener Splice when required (see Figures 12 and 13).
3. For visible mullions, install I-mullion on right hand jamb (as viewed from exterior) (see Figure 14)
4. For hidden mullions, install gasket or sealant (by others) between mating stiffener angles (see Figure 15).
5. Install backer rod and caulk around the entire perimeter of the louver, as required. Do not caulk between louver and sill flashing to allow for drainage.

Figure 11

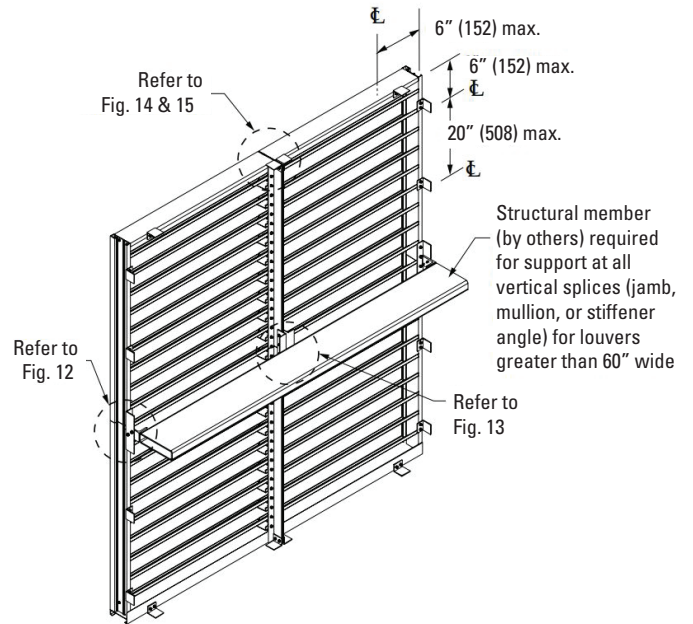


Figure 12 - Jamb Splice

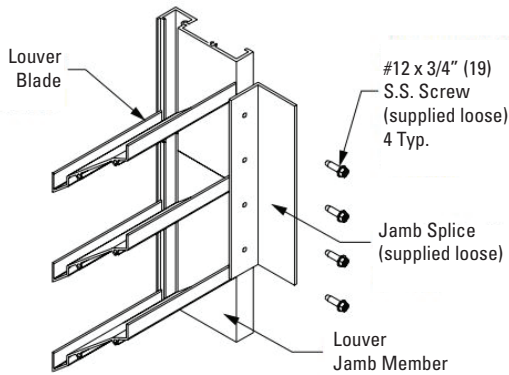


Figure 13 - Stiffener Splice

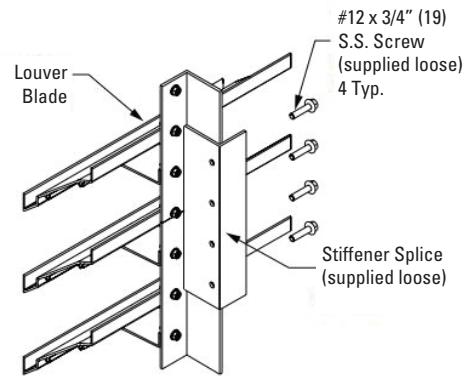


Figure 14 - Visible Mullion

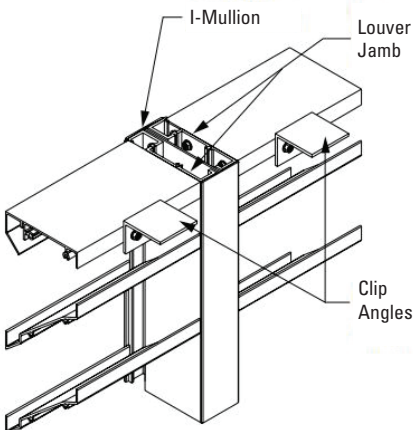
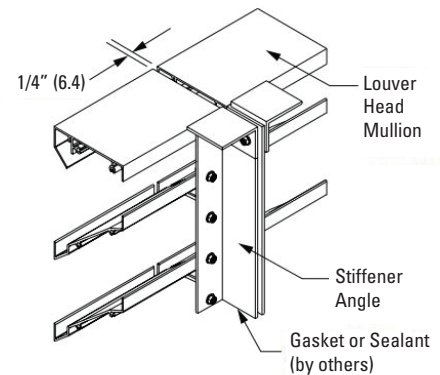


Figure 15 - Hidden Mullion





BASIC LOUVER INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Actuator Connections (Operable Louvers)

Electrical or pneumatic connections to operable louver actuators should be made in accordance with wiring and piping diagrams developed in compliance with applicable codes, ordinances and regulations. Be sure to check actuator for proper voltage and current draw. Tampering with the actuator's installation or connecting the actuator to an improper voltage and current may void the warranty.

Louver Operation, Testing and Maintenance

The procedures discussed here are intended to insure that nothing interferes with a Louver's purpose and operation (if operable) and to identify and eliminate a number of potential situations that could occur and interfere with said purpose/operation.

Louver Operation (applicable operable louver models):

All NCA operable louvers are operated at the factory, however pre-installation testing of its operation should be conducted. If louver(s) are supplied with actuators, wire the actuator(s) per correct wiring diagrams.

WARNING: During any operating, inspection or testing of louvers with electric actuators, NCA recommends the following:

1. Caution is advised when removing power from the damper's actuator. Actuators may have very strong internal springs that may slam closed causing an abrupt interruption of airflow. As this could cause damage to ductwork, consideration should be given to conducting these tests without system airflow.
2. When powering the actuator to check louver operation, be sure to keep fingers, hands and any other body parts out of the blade travel path to prevent injury.
3. Check proper actuator and louver operation. If defective, contact louver manufacturer for replacement procedures.

Operable Louver Testing:

Testing of the operable louver and actuators prior to installation is imperative to ensure proper wiring and function of the louver. There are not periodic testing requirements for louvers, however, consult the actuator's manufacturer recommendations regarding periodic testing and maintenance.

Louver Maintenance:

Louvers that are properly applied, appropriately installed, and demonstrated to function as intended (operable louvers) should require no specific preventive maintenance. However, NCA recommends that obstructions, dirt build up, and any rust or corrosion be removed using mild solvents or detergents. No lubrication is required, however if it is desired, louver tracks and blade hinges may be lubricated using a dry lubricant. **Never use a petroleum based lubricant as it will attract dust and eventually impede a louver's operation.**

Message from NCA:

This installation, operation and maintenance instruction document is intended to provide general instructions for multiple different NCA models of louvers. Each specific application of louvers may vary and may require other considerations when it comes to the installation, operation and maintenance of the louver.

As a part of NCA's continuous improvement program, NCA reserves the right to make further improvements or changes without notice.