

TAMCO EBTRON

AIR-IQ AIR FLOW MEASUREMENT SOLUTION

INSTALLATION GUIDELINES



AIR-IQ Air Flow Measurement Damper (ADMD) Packaged Solution

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EBTRON AIRFLOW MEASUREMENT STATION WIRING AND SETUP
(Refer to EBTRON Technical Manual TM_GTx116 under separate cover)

LIMITED PRODUCT WARRANTY DESCRIPTION:

AIR-IQ products are warranted against defects in materials or workmanship for 36 months from the date of shipment. Should the product or component parts qualify as a warrantable failure within this time period, the product or component involved will be repaired or replaced at the factory of origin, in accordance with the TAMCO or EBTRON Standard Limited Warranty. Products or parts suspected of being defective shall be shipped freight pre-paid, as directed by your TAMCO or EBTRON customer service agent, for examination and warranty consideration. RETURNS WILL ONLY BE ACCEPTED WITH A VALID RMA NUMBER. All warranty obligations and limitations are contained in the Standard Terms and Conditions of Sale made available from TAMCO and EBTRON for the major component parts of the AIR-IQ product.

IMPORTANT! - READ THIS FIRST!

INTRODUCTION

The TAMCO/EBTRON AIR-IQ Airflow Measurement Damper Solution consists of a high-quality TAMCO damper and factory-installed, precision EBTRON Airflow Measurement Station (transmitter and flow measurement probes) designed for negative pressure OA (outside air) and unducted return air applications. Operation of the AIR-IQ in other applications may not be recommended. Please consult your TAMCO/EBTRON applications specialist for specific applications.

Observe the following precautions during installation to prevent damage and to ensure proper operation of the AIR-IQ product. Read and understand all of the information contained in this document and in the INSTALLATION GUIDELINES document, prior to installation of the AIR-IQ. Failure to observe the following precautions can result in damage to the TAMCO Damper and/or EBTRON equipment that is not covered under warranty.

CAUTION!



The AIR-IQ Damper is supplied with factory-installed EBTRON airflow measurement probes transmitter. Exercise caution when unpacking, handling and installing the AIR-IQ to prevent damage to the EBTRON instruments and the TAMCO damper assembly.



If damper frame damage is noted, contact TAMCO Customer Service for further instructions. **DO NOT HAMMER ANY PART OF THE FRAME, AS DAMAGE TO THE AIRFLOW MEASUREMENT STATION COMPONENTS THAT MAY RESULT IS NOT COVERED UNDER WARRANTY.**



Do not adjust damper linkage mechanism. Tampering with linkage will void damper warranty. If damper problems remain after completing the PRE-INSTALLATION VERIFICATION (in the INSTALLATION GUIDELINES document), please call TAMCO Customer Service.



Damper linkage, airflow sensor probes and transmitter must remain accessible after installation to permit setup and recommended periodic maintenance activities.



Refer to the EBTRON Technical Manual, provided under separate cover for airflow measurement station wiring, instrument setup and operation.

FOR ADDITIONAL AIR-IQ ASSISTANCE

TAMCO Damper Assembly:

For assistance with specific TAMCO AIR-IQ Damper questions or issues not covered in this document, contact TAMCO Customer Service at 1-800-561-3449.

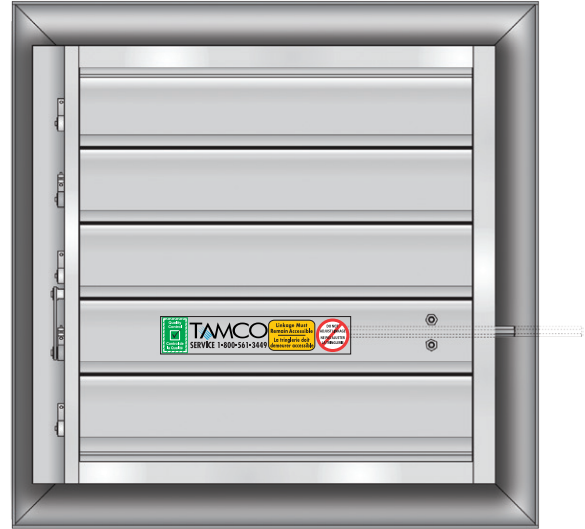
EBTRON Airflow Measurement Station:

Refer to the EBTRON Technical Manual TM_GTx116 under separate cover for airflow measurement station wiring, instrument setup and operation. For additional assistance with EBTRON Airflow Measurement Station questions or issues not covered in the Technical Manual, contact your local EBTRON Representative or EBTRON Customer Service at 1-800-232-8766.

INSTALLATION GUIDELINES



WARNING:
 DO NOT ADJUST DAMPER LINKAGE MECHANISM. TAMPERING WITH LINKAGE WILL VOID DAMPER WARRANTY. IF PROBLEM STILL EXISTS AFTER COMPLETING PRE-INSTALLATION VERIFICATION, CALL TAMCO CUSTOMER SERVICE.



FRONT / TOP END UP / RIGHT HAND
(viewed from damper side)

- When the AIR-IQ unit is viewed from damper side and labels on blades are right side up, unit orientation is **Front/Top end up**.
- When viewed as Front/Top end up, right hand (RH) has drive rod as shown. Left hand (LH) has drive rod on left.
- The complete AIR-IQ unit can be installed vertically with the damper orientation being right side up, or lying flat.
- Ensure that the AIR-IQ Unit is installed allowing for future access to the Ebtron transmitter, probes, damper side linkage, as well as the damper jumper bracket.
- Duct work construction and bracing must be sufficient to support the AIR-IQ unit. Do not use the AIR-IQ unit to square up the duct. The system must support the AIR-IQ unit. The AIR-IQ unit cannot support the system. For AIR-IQ units with two damper sections, ensure that each section is properly braced and supported.
- For single-section, vertical blade applications, the AIR-IQ unit must be installed so that the linkage and probe cables are located at the top.
- A 12" long, hexagonal steel drive rod is provided as standard. Units are shipped with the drive rod inserted in the drive blade. Drive rod may be extended up to 8" beyond the outside edge of the frame by loosening the U-bolt, drawing out the rod to the desired length and then retightening the U-bolt.
- If required, 24" and 36" long zinc-plated steel drive rods can be ordered.



TAMCO's all aluminum dampers are constructed with maintenance-free bearing and linkage components.

CAUTION: NEVER USE ANY LUBRICANTS, SUCH AS GREASE OR SILICONE ON TAMCO DAMPERS.

In applications where the humidity level is unusually elevated, or where there are extremely high levels of dust and dirt particles, TAMCO recommends that the damper linkage and bearing system should be cleaned once a year. This can be done easily with the use of a domestic strength steam cleaner. The loosened dirt and water droplets can then be blown out with compressed air.

CAUTION: TO PREVENT DAMAGE TO EBTRON SENSORS OR TRANSMITTER, NEVER APPLY STEAM, CLEANSER OR COMPRESSED AIR TO THEM.

CAUTION: DO NOT USE PROBES AS HANDLES TO LIFT AND/OR POSITION DAMPER. DAMAGE TO THE PROBES MAY OCCUR.

VERIFY BEFORE INSTALLATION!

- Before installing, inspect the AIR-IQ Unit for possible damage caused in shipping.
- If minor damage has occurred to frame corners or flanges, correct by bending them back into position gently, taking care not to disturb the EBTRON sensor probes and transmitter.
- Do not install the AIR-IQ Unit if damage is more than superficial, if uncertain as to extent of damage, or if the damper does not seal correctly. Call TAMCO customer service at 1-800-561-3449.
- Operate the damper section manually (on a flat section of floor) to verify correct blade action and sealing.
 1. To correctly verify sealing action, loosen the hex nuts of the U-bolt located on drive blade. Extend the steel drive rod to maximum of 8" beyond the outside edge of the frame. Re-tighten the hex nuts on U-bolt.
 2. Using the drive rod, slowly apply closing torque, while ensuring that the damper frame does not twist due to torque being applied. (Larger units may require an additional person to hold the damper frame square and true.)
 3. If possible, use daylight or an inside light source as a backdrop to the verification procedure. No light should be visible through the damper.

CAUTION SHOULD BE EXERCISED TO ENSURE FINGERS ARE NOT IN THE WAY OF MOVING LINKAGE PARTS OR BLADES.

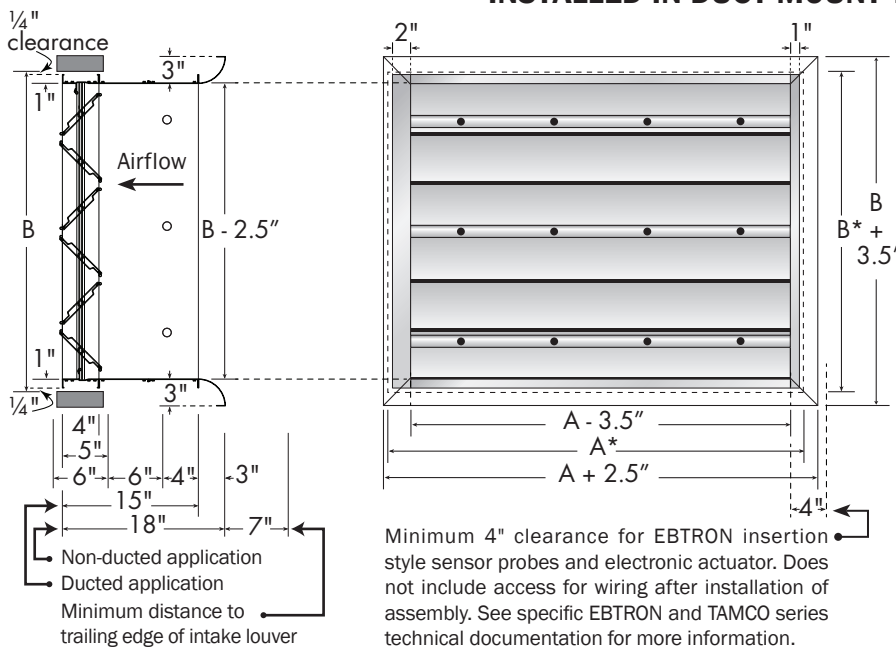
CALL TAMCO CUSTOMER SERVICE WITH ANY QUESTIONS CONCERNING TAMCO DAMPERS

1-800-561-3449

" INSTALLED IN DUCT" MOUNT TYPE:

- If AIR-IQ unit is manufactured with the 3" flare, the unit is intended to be located at end of duct work. The minimum distance from the outside edge of the flare to the trailing edge of the intake louver must be no less than 7".
- If AIR-IQ unit is manufactured as "Sleeve Only", without the 3" flare, the unit may be inserted within the duct or in the opening, so that the minimum distance from the outside edge of the sleeve to the trailing edge of the intake louver is a minimum of 10".
- Installation of AIR-IQ unit is carried out by affixing only the damper inside the duct work. Do not use sleeve or flare to secure unit in duct work.
- AIR-IQ unit must be installed square.
- An "Installed In Duct" Mount Type AIR-IQ unit damper's finished, outside frame dimensions are ½" smaller than the specified duct width and height dimensions, to allow for clearance to insert the damper frame into the duct work.
- Ensure that the duct is square and large enough to allow the AIR-IQ Unit to be installed square.
- If required, make a hole in the duct work to allow extension of the drive rod.
- Verify that the AIR-IQ unit is square and then secure the bottom damper frame to the floor of the duct using a 90° mounting angle.
- Operate the damper manually to confirm proper sealing.
- As each mounting angle is installed, verify operation to ensure the damper is sealing correctly.
- Caulk all joints.

AIR-IQ: TYPICAL, SINGLE-SECTION, HORIZONTAL-BLADE DAMPER PROBES MOUNTED PARALLEL TO BLADES INSTALLED IN DUCT MOUNT TYPE



***NOTES:**

- A x B:** = Always opening dimensions
- Width** = A: Always dimension parallel to blades
- Height** = B: Always dimension perpendicular to blades

Inside Sleeve dimensions:

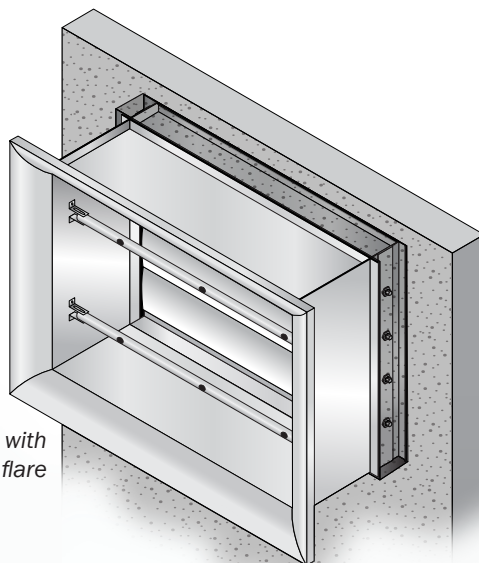
- Parallel to blade = A - 3.5"
- Perpendicular to blade = B - 2.5"

Outside Damper Frame dimensions:

- Parallel to blade = A - 0.5"
- Perpendicular to blade = B - 0.5"

Outside Flare dimensions:

- Parallel to blade = A + 2.5"
- Perpendicular to blade = B + 3.5"

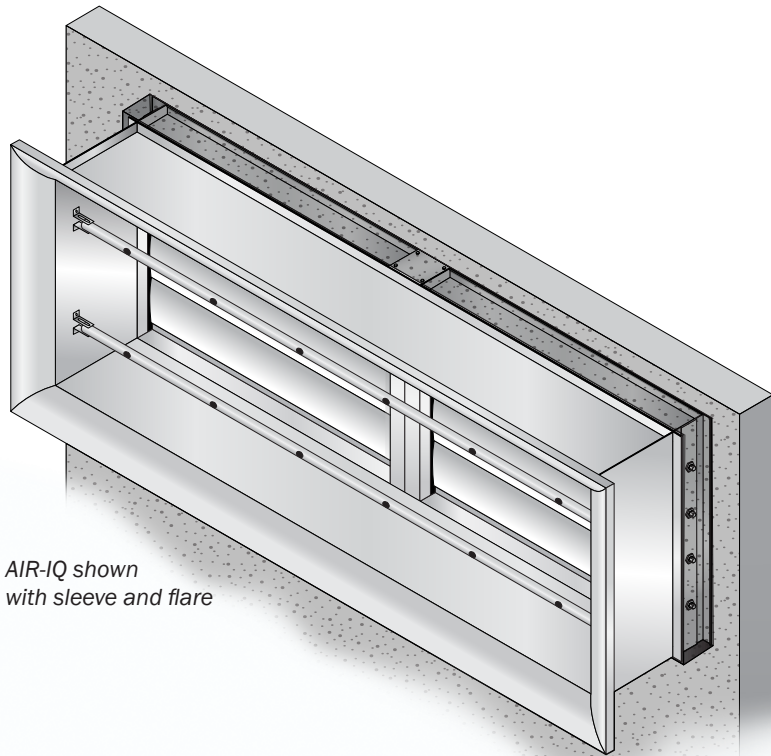
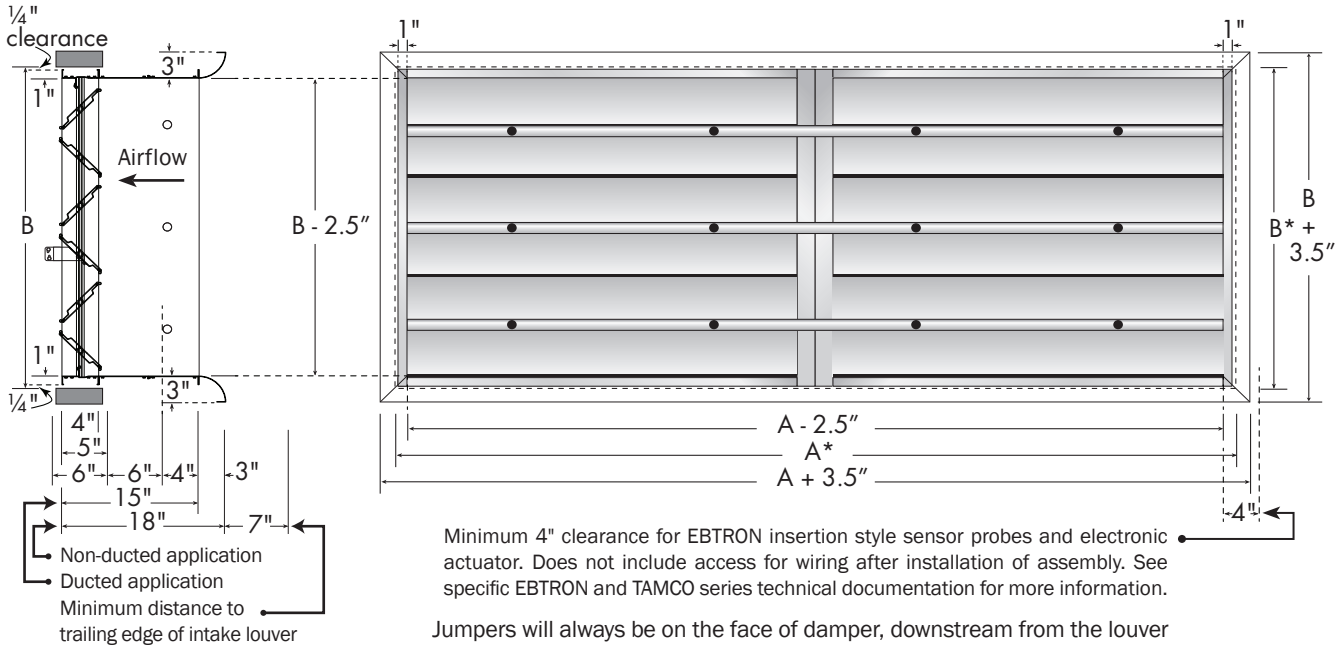


AIR-IQ shown with sleeve and flare

If unit is installed with damper inserted in a wall, actuator must be face-mounted and appropriate face-mounting accessories will be required.

For additional details, refer to TAMCO Motor Mounting Methods at http://www.tamcodampers.com/inGdeCD_motorMnt.php

**AIR-IQ: TYPICAL, TWO-SECTION, HORIZONTAL-BLADE DAMPER
 PROBES MOUNTED PARALLEL TO BLADES
 INSTALLED IN DUCT MOUNT TYPE**



***NOTES:**

- A x B:** = Always opening dimensions
- Width** = A: Always dimension parallel to blades
- Height** = B: Always dimension perpendicular to blades

Inside Sleeve dimensions:

- Parallel to blade = $A - 2.5"$
- Perpendicular to blade = $B - 2.5"$

Outside Damper Frame dimensions:

- Parallel to blade = $A - 0.5"$
- Perpendicular to blade = $B - 0.5"$

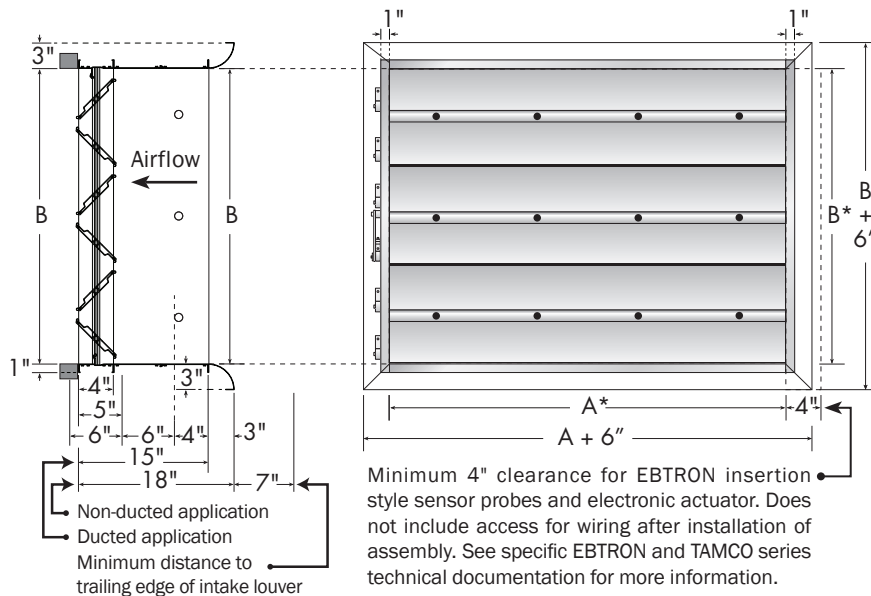
Outside Flare dimensions:

- Parallel to blade = $A + 3.5"$
- Perpendicular to blade = $B + 3.5"$

“FLANGED-TO-DUCT” MOUNT TYPE

- If AIR-IQ unit is manufactured with the 3" flare, the unit is intended to be flanged to the end of duct work or flanged to wall or opening. The minimum distance from the outside edge of the flare to the trailing edge of the intake louver must be no less than 7".
- If AIR-IQ unit is manufactured as "Sleeve Only", without the 3" flare, the unit may be flanged to the duct, so that the minimum distance from the outside edge of the sleeve to the trailing edge of the intake louver is a minimum of 10".
- AIR-IQ unit must be installed square.
- A "Flanged to Duct" Mount Type AIR-IQ unit damper's finished, inside frame dimensions are equal to the specified duct or opening size.
- If the AIR-IQ unit is manufactured with the 3" flare, the unit will be secured to the duct or opening using the damper flanges only, leaving the flare side free. The overall damper frame width and height dimensions are 2" larger than the duct or opening dimensions.
- If AIR-IQ unit is manufactured as "Sleeve Only", without the 3" flare, both sides of the unit can be secured to the duct work or openings. Both the damper's and the sleeve's overall, outside frame/flange dimensions are 2" larger than the duct or opening dimensions.
- Do not assume that the duct or opening is square. Verify that the duct flange or hole is square, flat and even.
- Verify that the unit AIR-IQ unit is square. Operate the damper to verify free movement of the blades and correct sealing.
- Secure the damper to the duct work or opening. Re-verify that the damper is square.
- If the AIR-IQ unit is manufactured as "Sleeve Only" and ducted on both sides, repeat the procedure for the other flange.
- Caulk all joints.

AIR-IQ: TYPICAL, SINGLE-SECTION, HORIZONTAL-BLADE DAMPER PROBES MOUNTED PARALLEL TO BLADES FLANGED TO DUCT MOUNT TYPE



*NOTES:

- A x B =** Always opening dimensions
- Width = A:** Always dimension parallel to blades
- Height = B:** Always dimension perpendicular to blades

Inside Sleeve dimensions:

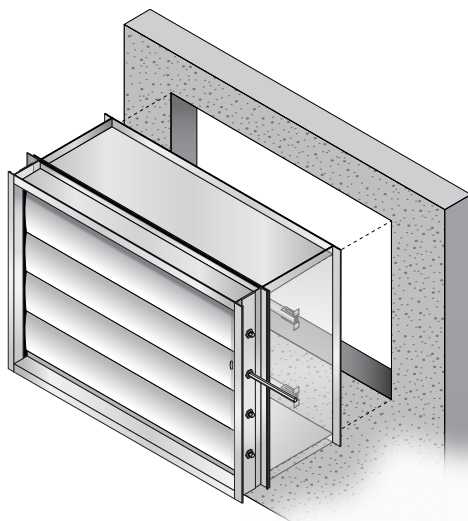
- Parallel to blade = A
- Perpendicular to blade = B

Outside Damper Frame dimensions:

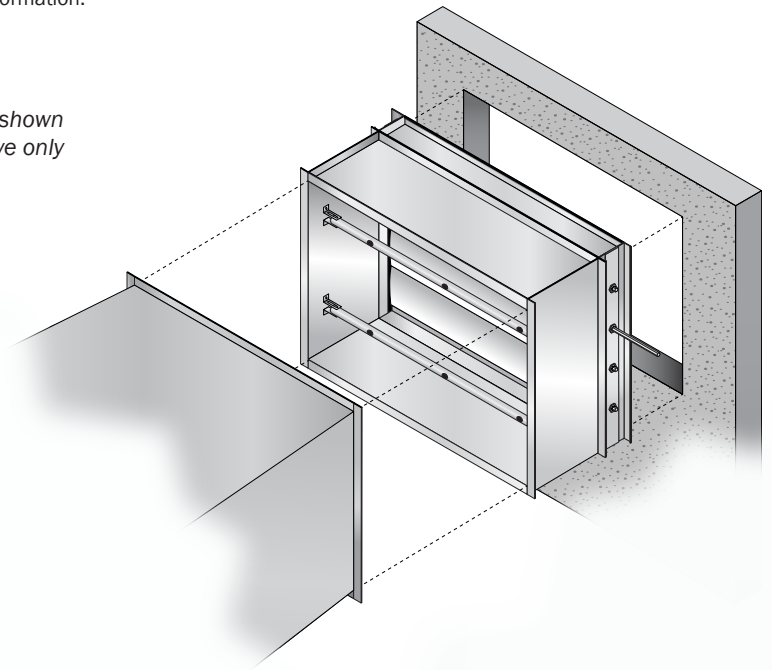
- Parallel to blade = A + 2"
- Perpendicular to blade = B + 2"

Outside Flare dimensions:

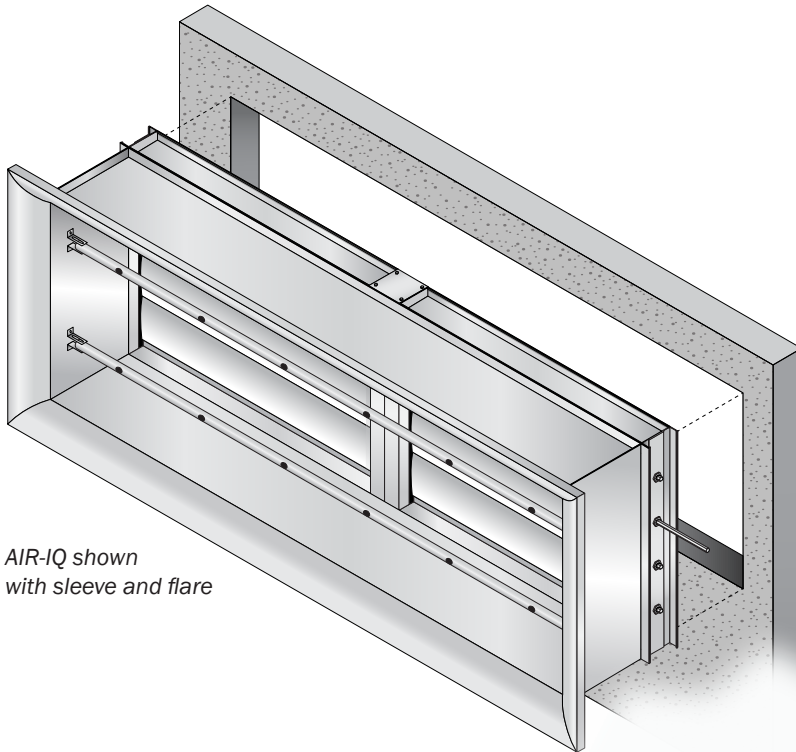
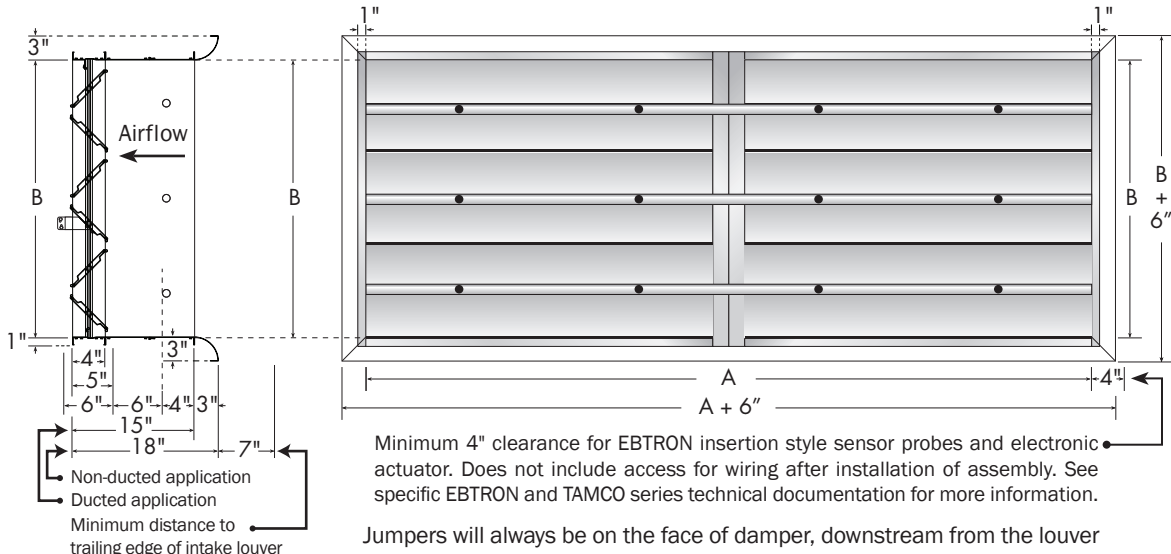
- Parallel to blade = A + 6"
- Perpendicular to blade = B + 6"



AIR-IQ shown with sleeve only



**AIR-IQ: TYPICAL TWO-SECTION HORIZONTAL BLADE DAMPER
 PROBES MOUNTED PARALLEL TO BLADES
 FLANGED TO DUCT MOUNT TYPE**



AIR-IQ shown with sleeve and flare

***NOTES:**

A x B: = Always opening dimensions

Width = A: Always dimension parallel to blades

Height = B: Always dimension perpendicular to blades

Inside Sleeve dimensions:

Parallel to blade = A

Perpendicular to blade = B

Outside Damper Frame dimensions:

Parallel to blade = A + 2"

Perpendicular to blade = B + 2"

Outside Flare dimensions:

Parallel to blade = A + 6"

Perpendicular to blade = B + 6"

**STRUCTURAL DESIGN REQUIREMENTS FOR
 AIR-IQ UNITS WITH TWO-SECTION DAMPERS**

REQUIREMENTS:

- Tubular or angled steel, structural support is required to resist applied pressure loads for AIR-IQ units with two-section dampers.

MAXIMUM DEFLECTION:

- The structure providing intermediate support must be designed to resist the highest pressure load, with deflection of less than L/230. This applies whether the pressure load is created by the mechanical system, or by wind load, or if the damper is mounted on the exterior of the building.