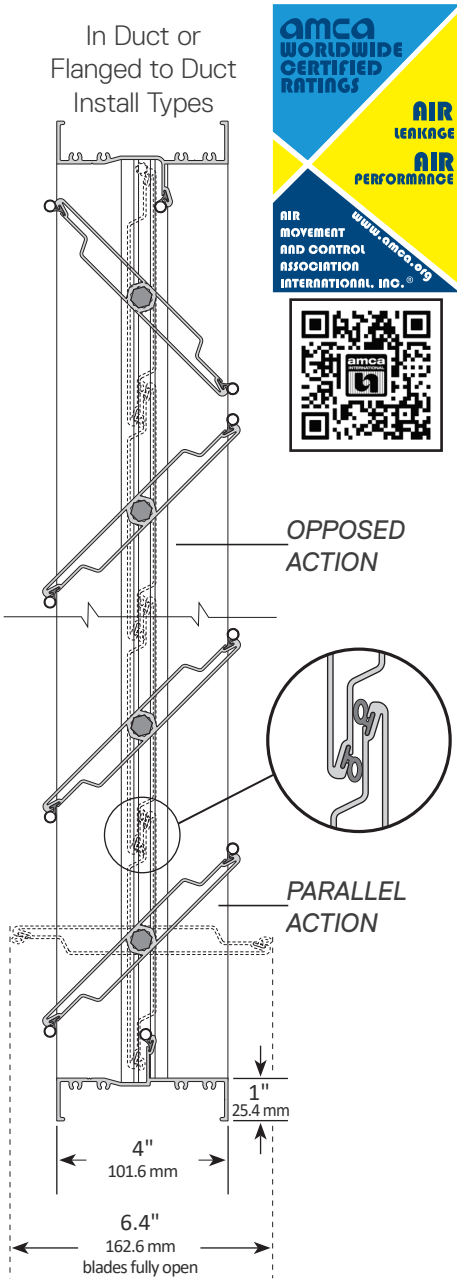


SERIES 2100

AIR-FOIL
CONTROL DAMPERS

engineering data
and specifications





1. Extruded aluminum (6063-T5) damper frame is not less than 0.080" (2.03 mm) in thickness. Damper frame is 4" (101.6 mm) deep x 1" (25.4 mm), with mounting flanges on both sides of frame. Damper frame has a 2" (50.8 mm) mounting flange on the rear of the damper, when ordered as Extended Rear Flange install type.
2. Blades are maximum 6" (152.4 mm) deep extruded aluminum (6063-T5) air-foil profiles. All blades are symmetrically pivoted.
3. Blade and frame seals are extruded silicone. Seals are secured in an integral slot within the aluminum extrusions. Blade and frame seals are mechanically fastened to prevent shrinkage and movement over the life of the damper.
4. Bearings are composed of a Celcon inner bearing - fixed around a 7/16" (11.11 mm) aluminum hexagon blade pivot pin - rotating within a polycarbonate outer bearing inserted in the frame. This eliminates action between metal-to-metal or metal-to-plastic riding surfaces.
5. Adjustable 7/16" (11.11 mm) hexagonal drive rod, U-bolt fastener, and hexagonal retaining nuts are zinc-plated steel. These provide a positive connection to blades and linkage.
6. Aluminum and corrosion-resistant zinc-plated steel linkage hardware is installed in the frame side, complete with stainless steel trunnions and cup-point trunnion screws for a slip-proof grip.
7. Dampers are designed for operation in temperatures ranging from -40°F (-40°C) to 212°F (100°C).
8. Leakage Class 1A at 1 in. w.g. (0.25 kPa) static pressure differential. Standard air leakage data is certified under the AMCA Certified Ratings Program.
9. Dampers are custom made to required size, without blanking off free area. The blade stop is set at a fixed height and is a continuous and integral part of the top and bottom frames.
10. Dampers are available with either opposed blade action or parallel blade action.
11. Dampers are available in three install types: i.e., Installed in Duct, Flanged to Duct, or Extended Rear Flange. (See Install Types pages for details.)
12. Installation of dampers must be in accordance with TAMCO's current on-line installation guidelines. (Printed installation guidelines are provided with each damper shipment, however all technical information available on TAMCO's web site at www.tamcodampers.com supersedes information contained within printed versions.)
13. Intermediate structural support is required to resist applied pressure loads for dampers that consist of two or more sections in both height and width. (See TAMCO Aluminum Damper Installation Guidelines.)

OPTION:

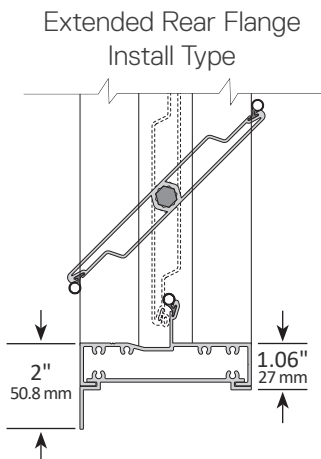
For the option listed, replace the lines above with their corresponding lines below.

SW - SALT WATER RESISTANCE OPTION:

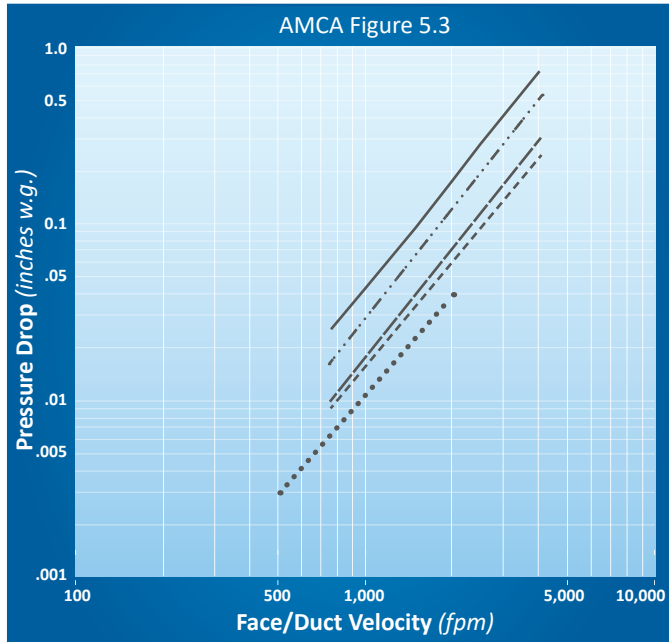
1. Extruded aluminum (6063-T5) damper frame is not less than 0.080" (2.03 mm) in thickness. Damper frame is 4" (101.6 mm) deep x 1" (25.4 mm), with mounting flanges on both sides of frame. Damper frame has a 2" (50.8 mm) mounting flange on the rear of the damper, when ordered as Extended Rear Flange install type. Aluminum frame is clear anodized to a minimum depth of 0.7 mil (18 microns). Frame is assembled using stainless steel screws.
2. Blades are maximum 6" (152.4 mm) deep extruded aluminum (6063-T5) air-foil profiles, clear anodized to a minimum depth of 0.7 mil (18 microns). All blades are symmetrically pivoted.
5. Adjustable 7/16" (11.11 mm) hexagonal drive rod, U-bolt fastener, and hexagonal retaining nuts are stainless steel. These provide a positive connection to blades and linkage.
6. Clear anodized aluminum and stainless steel linkage hardware is installed in the frame side, complete with stainless steel cup-point trunnion screws for a slip-proof grip.

TAMCO Series 2100 Control Dampers are sold exclusively by Ebtron, Inc.

This product is not available in Minnesota, Wisconsin, or in Canada.



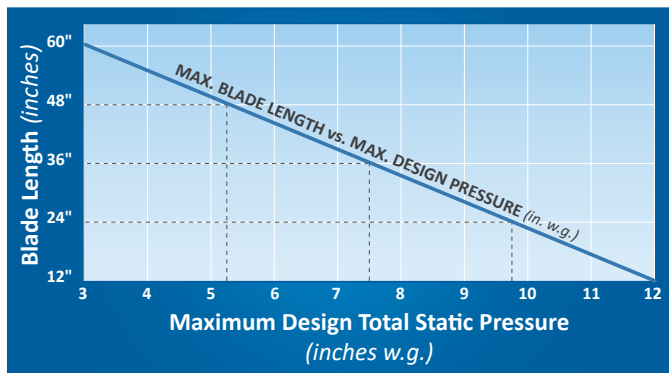
VELOCITY VS. PRESSURE DROP



LEGEND:

- 12" x 12" ——— (305 mm x 305 mm)
- 24" x 24" - - - - (610 mm x 610 mm)
- 48" x 12" - · - · - (1220 mm x 305 mm)
- 12" x 48" ——— (305 mm x 1220 mm)
- 36" x 36" · · · · · (915 mm x 915 mm)

BLADE DESIGN PRESSURE LIMITATIONS



Series 2100 dampers with SP – Standard Profile, whose blade length exceeds the maximum design pressure, may be reconfigured to maintain a blade length compatible with the required system pressure by increasing the number of sections per damper and thereby reducing each damper section's blade length. Appropriate intermediate structural support will be required for all multiple-section damper assemblies. (Refer to line 13 of the Submittal Data and to TAMCO's Aluminum Damper Installation Guidelines.)

Example:

A single-section damper of 60" w x 36" h (1524 mm x 915 mm) at 5 in. w.g. (1.24 kPa) would need to be built in two sections of 30" w x 36" h (762 mm x 915 mm).

T.A. Morrison & Co. Inc. certifies that the TAMCO Series 2100 Air-Foil Control Damper with SP – Standard Profile shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air leakage and air performance ratings.



FIG. 5.3 Test damper is fully ducted with a 5 diameter duct run upstream, and a 6 diameter duct run downstream. Pressure drop values are based on Flanged to Duct install type. Pressure drop will be greater for In Duct install type dampers.

TAMCO LEAKAGE RATING

Damper Width inches (mm)	1 in. w.g. 0.25 kPa	4 in. w.g. 1.0 kPa	6 in. w.g. 1.5 kPa	8 in. w.g. 2.0 kPa
0.0 to 12.0 (0 to 305)	1A	1	1	1
12.1 to 36.0 (306 to 915)	1A	1	1	1
36.1 to 48.0 (916 to 1220)	1A	1	n/a	n/a
48.1 to 60.0 (1221 to 1524)	1A	1	n/a	n/a

Leakage testing was conducted in accordance with ANSI/AMCA Standard 500-D. Data are based on a torque of 60 in-lbs (73.0 N-m/m²) for a 12" x 48" damper and 84 in-lbs (102.2 N-m/m²) for a 48" x 36" damper. ANSI/AMCA Standard 500-D states that air leakage is based on operation between 32°F (0°C) and 120°F (49°C).

The following sizes of TAMCO Series 2100 dampers with SP – Standard Profile were tested:
12" x 48" (305 mm x 1220 mm), 48" x 36" (1220 mm x 915 mm), 60" x 36" (1524 mm x 915 mm).

AMCA LEAKAGE CLASS DEFINITIONS

Pressure Class	MAXIMUM ALLOWABLE LEAKAGE CFM/ft ² (l/s/m ²)			
	1 in. w.g. 0.25 kPa	4 in. w.g. 1.0 kPa	6 in. w.g. 1.5 kPa	8 in. w.g. 2.0 kPa
1A	3 (15.2)	n/a	n/a	n/a
1	4 (20.3)	8 (40.6)	9.8 (49.8)	11.3 (57.4)
2	10 (50.8)	20 (102)	24.5 (125)	28.3 (144)
3	40 (203)	80 (406)	98 (498)	113 (574)

NOTE: TAMCO Leakage Class Rating is not provided for dampers measuring more than 36" (915 mm) wide at 6 in. w.g. (1.5 kPa) and at 8 in. w.g. (2.0 kPa), as the recommended blade length is exceeded at these static pressures. (Refer to the Blade Design Pressure Limitations Chart.)

- Always provide opening width and height dimensions, when ordering.
- Width dimension is always parallel to blades.
- Height dimension is always perpendicular to blades.

INSTALLED IN DUCT TYPE

- Finished damper O.D. is ½" (12.7 mm) less than opening width and height dimensions.

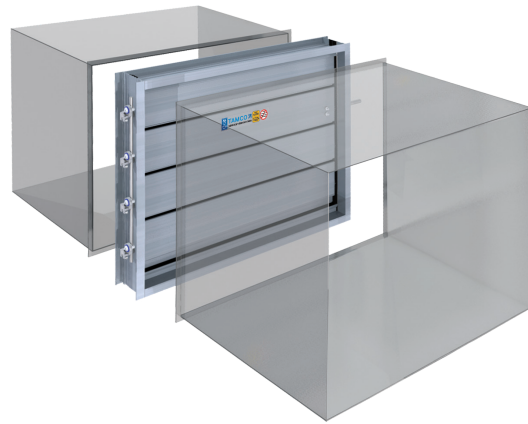
MINIMUM SECTION SIZE:		
SP	6½"w x 6¾"h	(166 mm x 172 mm)
MAXIMUM SECTION SIZE:		
	25 ft ²	(2.3 m ²)
	60"w x 60"h or	(1524 mm x 1524 mm) or
	48"w x 75"h	(1220 mm x 1905 mm)



FLANGED TO DUCT TYPE

- Finished damper O.D. is 2" (50.8 mm) greater than opening width and height dimensions.

MINIMUM SECTION SIZE:		
SP	4½"w x 4¾"h	(115 mm x 108 mm)
MAXIMUM SECTION SIZE:		
	25 ft ²	(2.3 m ²)
	60"w x 60"h or	(1524 mm x 1524 mm) or
	48"w x 75"h	(1220 mm x 1905 mm)



EXTENDED REAR FLANGE TYPE

- Finished damper O.D. is 4" (101.6 mm) greater than opening width and height dimensions.

MINIMUM SECTION SIZE:		
SP	4½"w x 4¾"h	(115 mm x 108 mm)
MAXIMUM SECTION SIZE:		
	25 ft ²	(2.3 m ²)
	60"w x 60"h or	(1524 mm x 1524 mm) or
	48"w x 75"h	(1220 mm x 1905 mm)

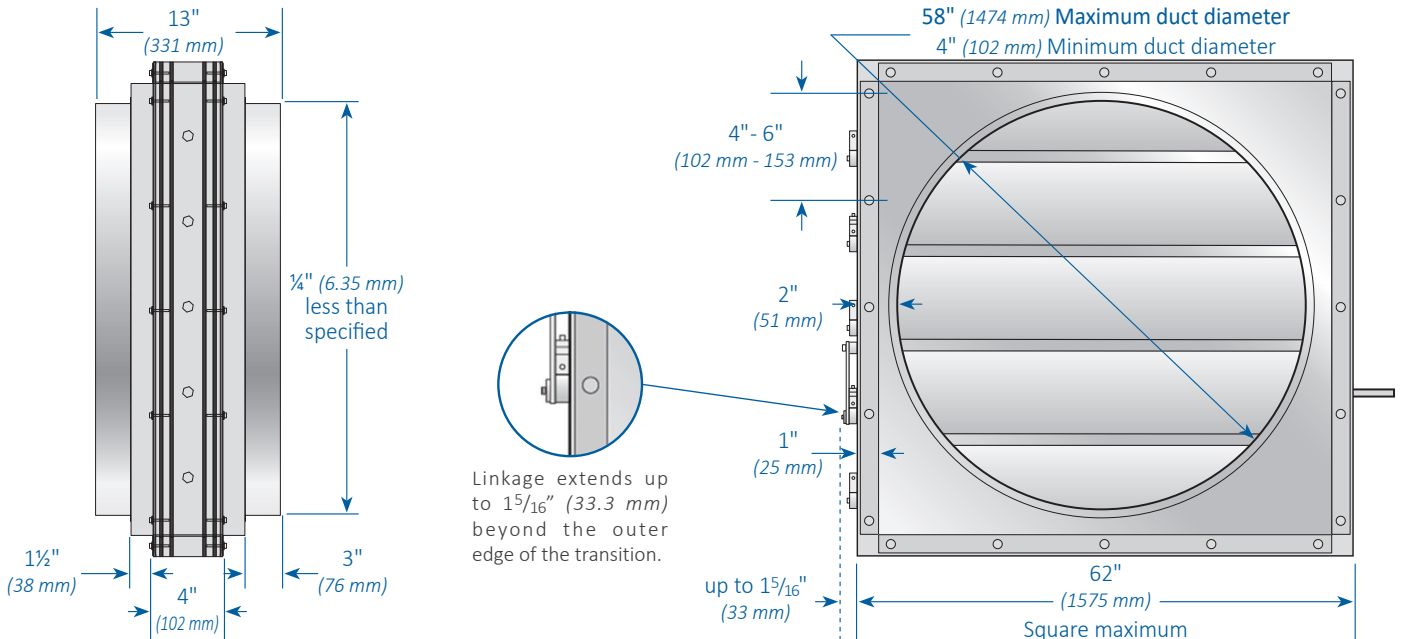
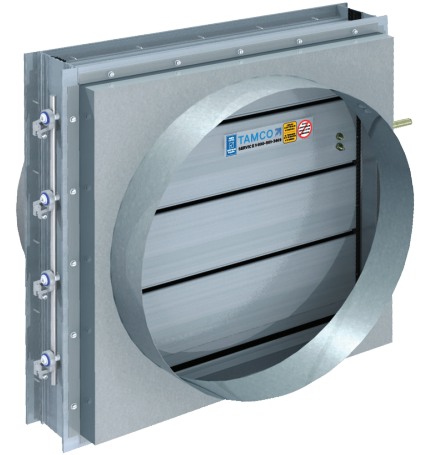
- Extended Rear Flange install type dampers are not designed so that the front of the damper may be inserted into an opening, as the side frame members extend to the full height of the rear flange.



SQUARE TO ROUND TRANSITION

- Always provide duct diameter dimension when ordering.
- If using TAMCO Connect software to submit orders, enter duct diameter dimension in both the width and height fields.
- Transition pieces are a minimum of 18 ga. galvanized steel when Series 2100 dampers are ordered with no option.
- Transition pieces are 304 stainless steel, when Series 2100 dampers are ordered with the SW Option.
- Transition pieces and damper are sealed together.
- Dampers are built 4" (102 mm) larger than specified duct diameter. (Dampers are fabricated square.)
- Finished transition diameter is ¼" (6.35 mm) less than specified duct diameter, providing clearance for mating duct which slides over round transition. This ensures free movement of damper blades.

MINIMUM DUCT DIAMETER:		
SP	4"	(102 mm)
MAXIMUM DUCT DIAMETER:		
	58"	(1474 mm)
MAXIMUM SECTION SIZE:		
	25 ft ²	(2.3 m ²)
MAXIMUM FINISHED OD:		
	62" w x 62" h	(1575 mm x 1575 mm)



NOTE:

- To reduce pressure drop, use Flanged to Duct or Extended Rear Flange install types for sizes under 9 ft² (.83 m²).
- Suitable for operation in breathable air environments within stated temperature range.
- Dampers sized for duct openings exceeding 37¼" (959 mm) in height are equipped with a brace at mid-height to strengthen and maintain air leakage tolerances.

FOR ADDITIONAL INFORMATION REFER TO:



INSTALLATION GUIDELINES UNDER THE DOCUMENTS TAB:

- TAMCO Aluminum Control Damper Installation Guidelines.
- Installing Vertical Blade Damper
- Damper Jumper Installation Guidelines
- Horizontal Jackshaft Installation Guidelines
- Vertical Jackshaft Installation Guidelines.



INSTALLATION GUIDELINE VIDEOS

SPX ENGINEERED AIR MOVEMENT

80 Lorne Street
Smiths Falls, ON K7A 5J7, Canada
800 561 3449
tamcodampers.com

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