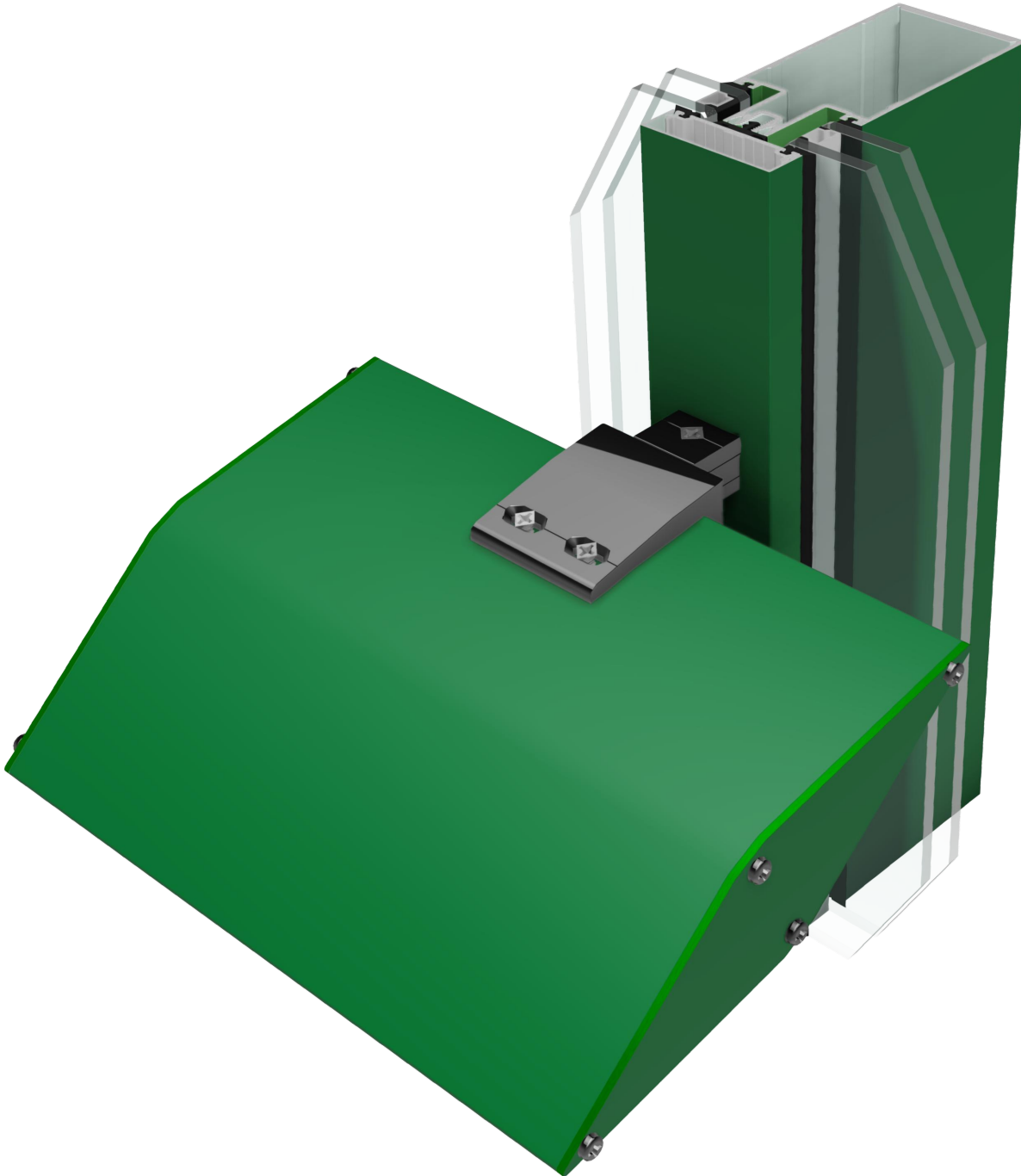


TUBELITE®

DEPENDABLE

**LEADERS IN ECO-EFFICIENT STOREFRONT,
CURTAINWALL AND ENTRANCE SYSTEMS**



SINGLE BLADE SUNSHADE

14000 | 24000 | 24650 | 400CW | 400T | 400SS | 400TU

INSTALLATION INSTRUCTIONS

3056 Walker Ridge Dr. NW, Suite G • Walker, MI 49544 • 800-866-2227

BLANK

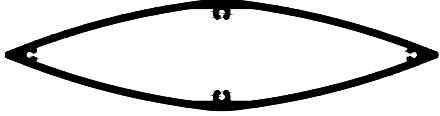

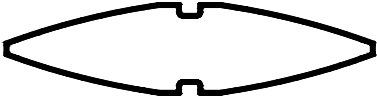


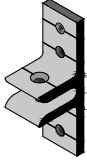
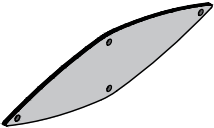
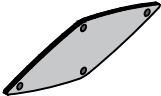
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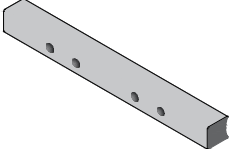
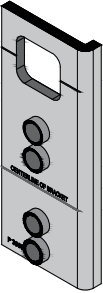
GENERAL CONSTRUCTION NOTES

1. These instructions cover typical product application, fabrication, installation and standard conditions and are general in nature. They provide useful guidelines, but the final shop drawings may include additional details specific to the project. Any conflict or discrepancies must be clarified prior to execution.
2. Materials stored at the job site must be kept in a safe place protected from possible damage by other trades. Stack with adequate separation so materials will not rub together and store off the ground. Cardboard or paper wrapped materials must be kept dry. Check arriving materials for quantity and keep a record of where various materials are stored.
3. All field welding must be done in accordance with AISC guidelines. All aluminum and glass should be shielded from field welding to avoid damage from weld splatter. Results will be unsightly and may be structurally unsound. Advise general contractor and other trades accordingly.
4. Coordinate protection of installed work with general contractor and/or other trades.
5. Coordinate sequence of other trades which affect framing installation with the general contractor (e.g. fire proofing, back up walls, partitions, ceilings, mechanical ducts, HVAC, etc.).
6. General contractor should furnish and guarantee bench marks, offset lines and opening dimensions. These items should be checked for accuracy before proceeding with erection. Make certain that all adjacent substrate construction is in accordance with the contract documents and/or approved shop drawings. If not, notify the general contractor in writing before proceeding with installation because this could constitute acceptance of adjacent substrate construction by others.
7. Isolate all aluminum to be placed directly in contact with masonry or other incompatible materials with a heavy coat of zinc chromate or bituminous paint. Fasteners attaching framing to building structure are typically not provided by Tubelite.
8. Sealant selection is the responsibility of the erector, installer and/or glazing contractor and must be approved by the sealant manufacturer with regard to application and compatibility for its intended use. All sealants must be used in strict accordance with the manufacturer's instructions and applied only by trained personnel to surfaces that have been properly prepared.
9. Sealant must be compatible with all materials with which they have contact, including other sealant surfaces. Consult the sealant manufacturer for recommendations relative to shelf life, compatibility, cleaning of substrate, priming, tooling adhesion, etc. Recommend sealant manufacturer perform adhesion "pull test" at "wet" glazing for quality assurance.
10. Drainage gutters and weep holes must be kept clean at all times. Tubelite will not accept responsibility for improper drainage as a result of clogged gutters and weep holes.
11. This product requires clearances at the head, sill and jambs to allow for thermal expansion and contraction as well as construction tolerances. Refer to final distribution drawings for joint sizes. Joints smaller than 1/2" may be subject to failure. Consult the sealant manufacturer for proper sizing of joints.
12. All framing members, entrances and other materials are to be installed plumb, level and true with regard to established bench marks, column center lines or other working points established by the general contractor and checked by the erector, installer and/or glazing contractor.
13. After sealant is set and a representative amount of the wall has been glazed (500 square feet or more), Tubelite recommends a water hose test to check installation. On large projects, a hose test should be repeated during glazing operation. This testing should be conducted in accordance with AAMA 501.2 specifications.
14. Cleaning of exposed aluminum surfaces should be done per AAMA recommendations.
15. Care must be taken when assembling aluminum framing components. Over tightening any fastener may cause stripping or fastener failure. Tubelite recommends the use of drill motors with clutches engaged to provide satisfactory tightening of the screw while preventing over torque. The use of impact drill motors is not recommended due to the absence of a clutch device.
16. Check www.tubeliteinc.com for any installation instruction updates.

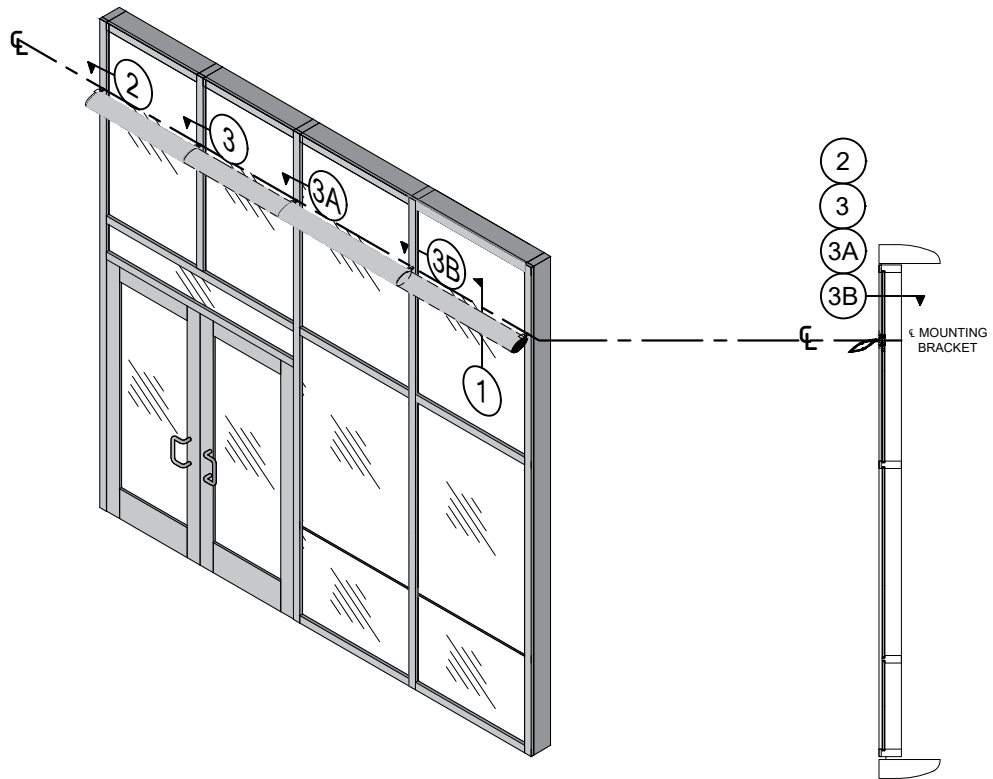
PARTS LIST

SHAPE	DESCRIPTION	PART No.
	9" Airfoil Sunshade	E3925
	6" Airfoil Sunshade	E3940
	Splice Sleeve for 9" Airfoil - 8" Long	P3968
	Splice Sleeve for 6" Airfoil - 8" Long	P6989
	25 Degree Airfoil Mounting Bracket Use with P3955	P3954
	Mounting Bracket	P3955
	9" Airfoil End Cap	P3998
	6" Airfoil End Cap	P3990

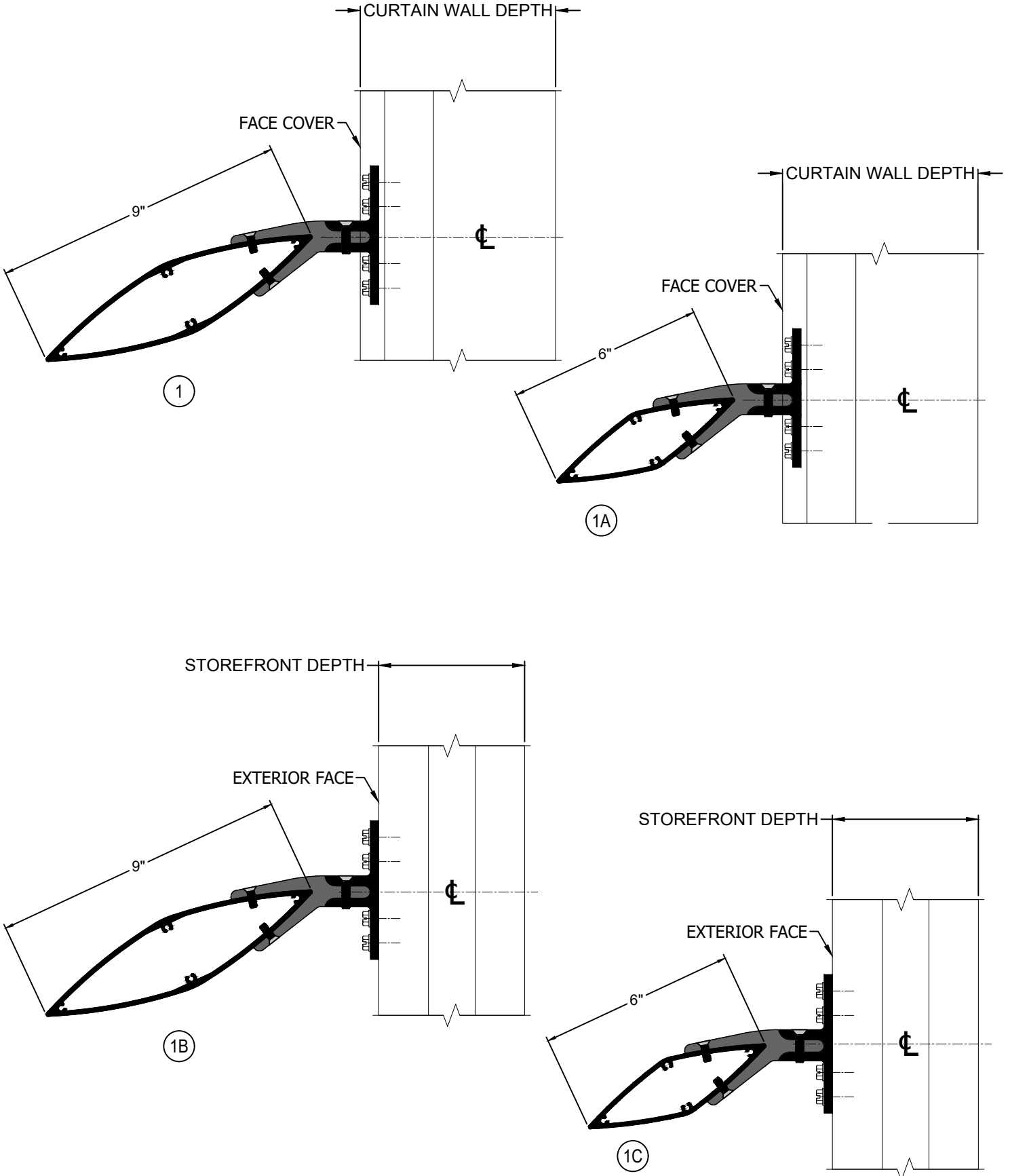
ACCESSORIES

SHAPE	DESCRIPTION	PART No.
	#10-24 X 1/2" PH Pan Head Type F	S128
	1/4-20 X 1" PH Flat Head	S166
	#12-24 x 5/8" PH Flat Undercut Type 23	S286
	1/4-20 x 1 1/2" Hex Washer Type F	S359
	1/4-20 x 1" Washer Head Type CA 18-8 SS	S455
	Reinforcement Bar for Storefront	P6917
	Drill Fixture for Pressure Plate and Face Cover - Compatible with 2-1/2" Profiles	P3999

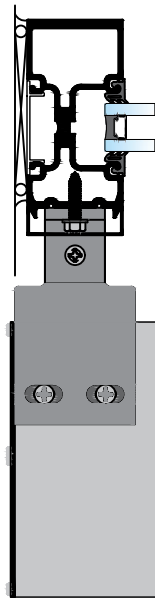
ELEVATION AND WALL SECTION



HORIZONTAL DETAILS

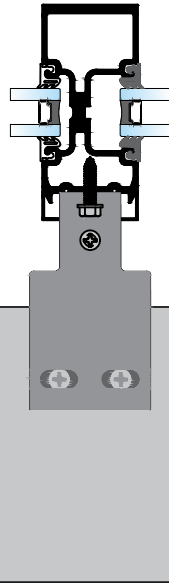


VERTICAL DETAILS



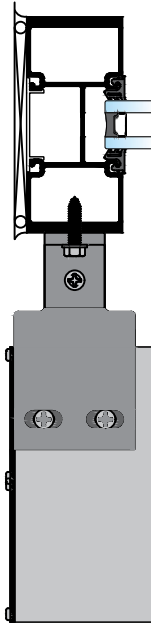
2

STOREFRONT
SINGLE BLADE
SUNSHADE AT JAMB



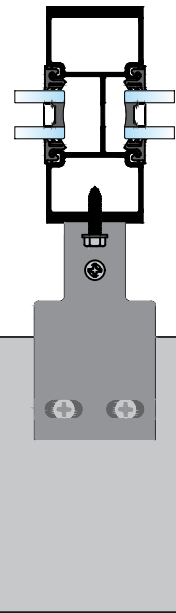
3

STOREFRONT
SINGLE BLADE
SUNSHADE AT MULLION



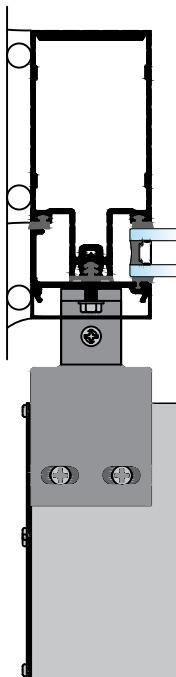
2A

STOREFRONT
SINGLE BLADE
SUNSHADE AT JAMB



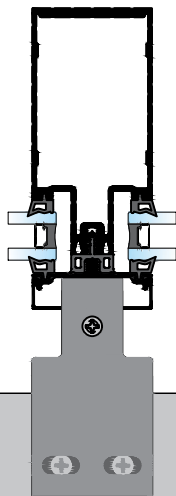
3A

STOREFRONT
SINGLE BLADE
SUNSHADE AT MULLION



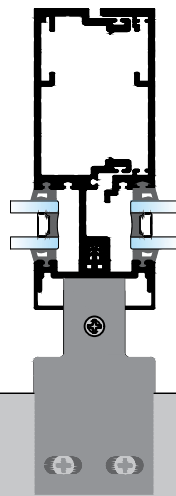
2

400CW
SINGLE BLADE
SUNSHADE AT
JAMB



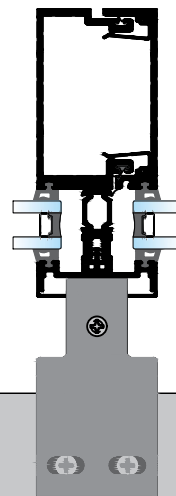
3

400T
SINGLE BLADE
SUNSHADE AT
MULLION



3A

400SS
SINGLE BLADE
SUNSHADE AT
MULLION



3B

400TU
SINGLE BLADE
SUNSHADE
(WORKING SPLICE SHOWN)

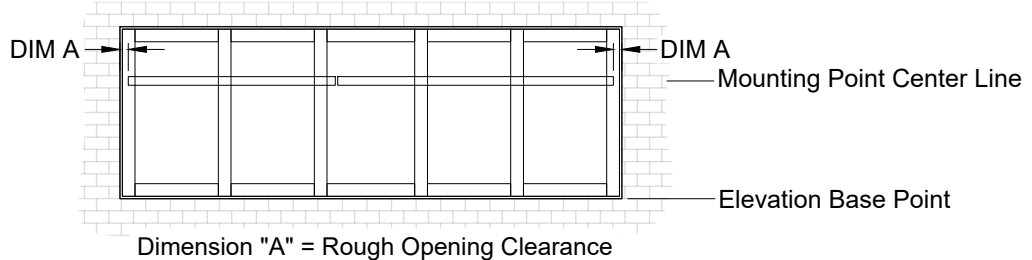
Use of M4TB63 heavy duty pressure plate may be used on 400CW and 400T applications for higher loads. Consult Tubelite Engineering for specific applications.

FABRICATION

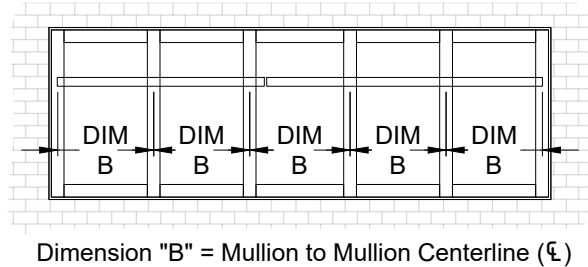
Step 1: Determine Frame Size

Determine Frame Width

- A. Check that the frame is square, plumb, and free of obstructions where sunshade will be mounted at both ends(DIM A).

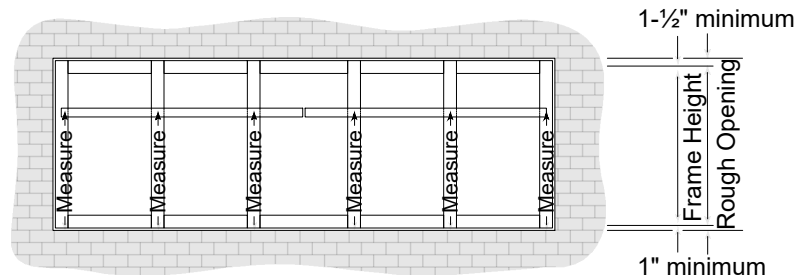


- B. Measure the mullions from centerline to centerline(DIM B) to determine mounting bracket locations.
- C. Select the dimensions with the maximum allowable span for mounting brackets. To determine the maximum allowable width to be used refer to the approved shop drawings. Allow a larger clearance if necessary to accommodate building tolerances, and out-of-square openings, and/or anticipated thermal expansion within the unit.

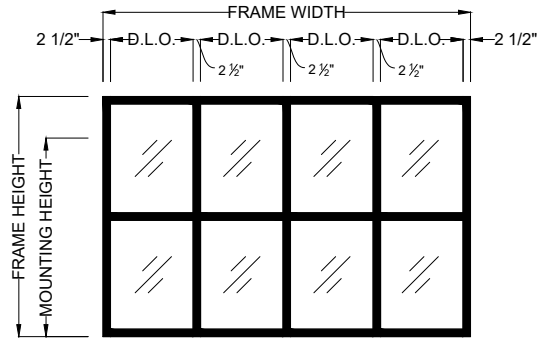


Determine Mounting Height

- A. Measure for the height of the mounting bracket based on a predetermined elevation point.



FABRICATION



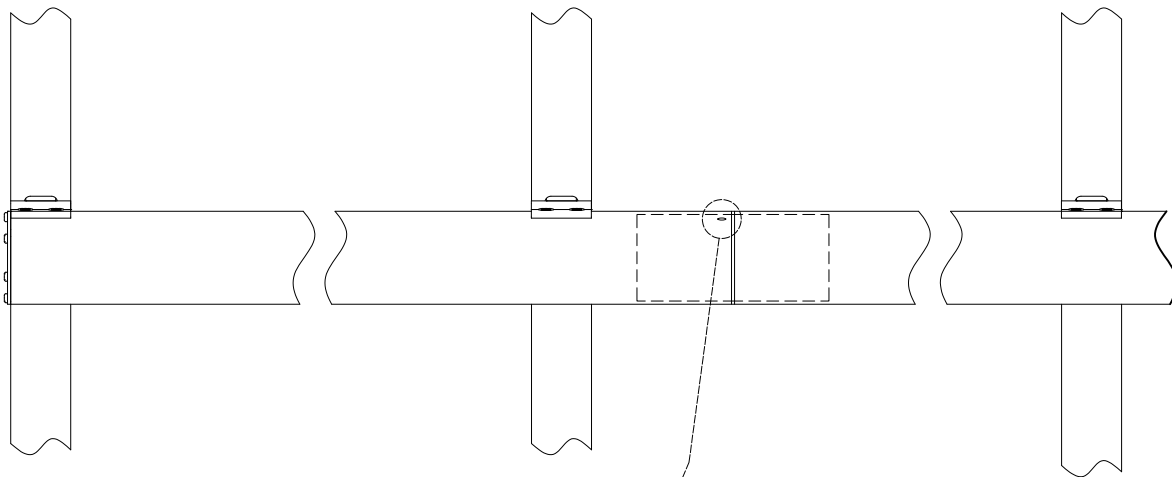
CAPTURED FRAMING
Fig. 2.1

NOTE:
 Sightline of 2-1/2" shown for reference.
 Use the appropriate system sightline
 for the framing being used on the
 project.

Sunshade Blade Cut Lengths:
96" maximum without a splice joint
149" maximum with a splice joint

FABRICATION**Step 3: Determine Mounting Location****Mounting for 9" Airfoil:**

- A. The mounting bracket location should be laid out based on a fixed predetermined elevation point prior to erecting the glazing system.
- B. The maximum recommended D.L.O. with a spliced sunshade blade is 96". Consult Tubelite Engineering if splices are present in D.L.O.'s wider than 96".
- C. Storefront sunshades must be spliced at expansion verticals to accommodate thermal expansion.
- D. The splice joint, or joints, should be kept to within 1/5th of the distance from the mounting point to accommodate shear loads.
- E. Working splice joints must be 1/4" wide to allow for expansion.



Maximum sunshade length before a splice is required on curtain wall applications is 149".
Storefront sunshades must be spliced at expansion verticals, if present.

For splice joints between mullions, use splice P3923 and install (1) screw S286 in airfoil and splice to allow for expansion and contraction

DO NOT install a working splice at centerline of verticals, and,
DO NOT install a bracket at a hard splice.

Fig. 1.2

FABRICATION

Step 3: Determine Mounting Location (continued)

Mounting for 6" Airfoils:

- H. Small elevations may not require a splice joint. Consult with Tubelite Engineering for the maximum length of airfoil based on snowload and windload.
- I. Large elevations with a continuous run of sunshades may require a hard splice. The recommended splice location is approximately twenty percent (1/5) of the D.L.O.. The engineer on record should review and approve of the location. A 1/2" gap should be left between the sunshade airfoils to allow for the installation of the end caps and fasteners.

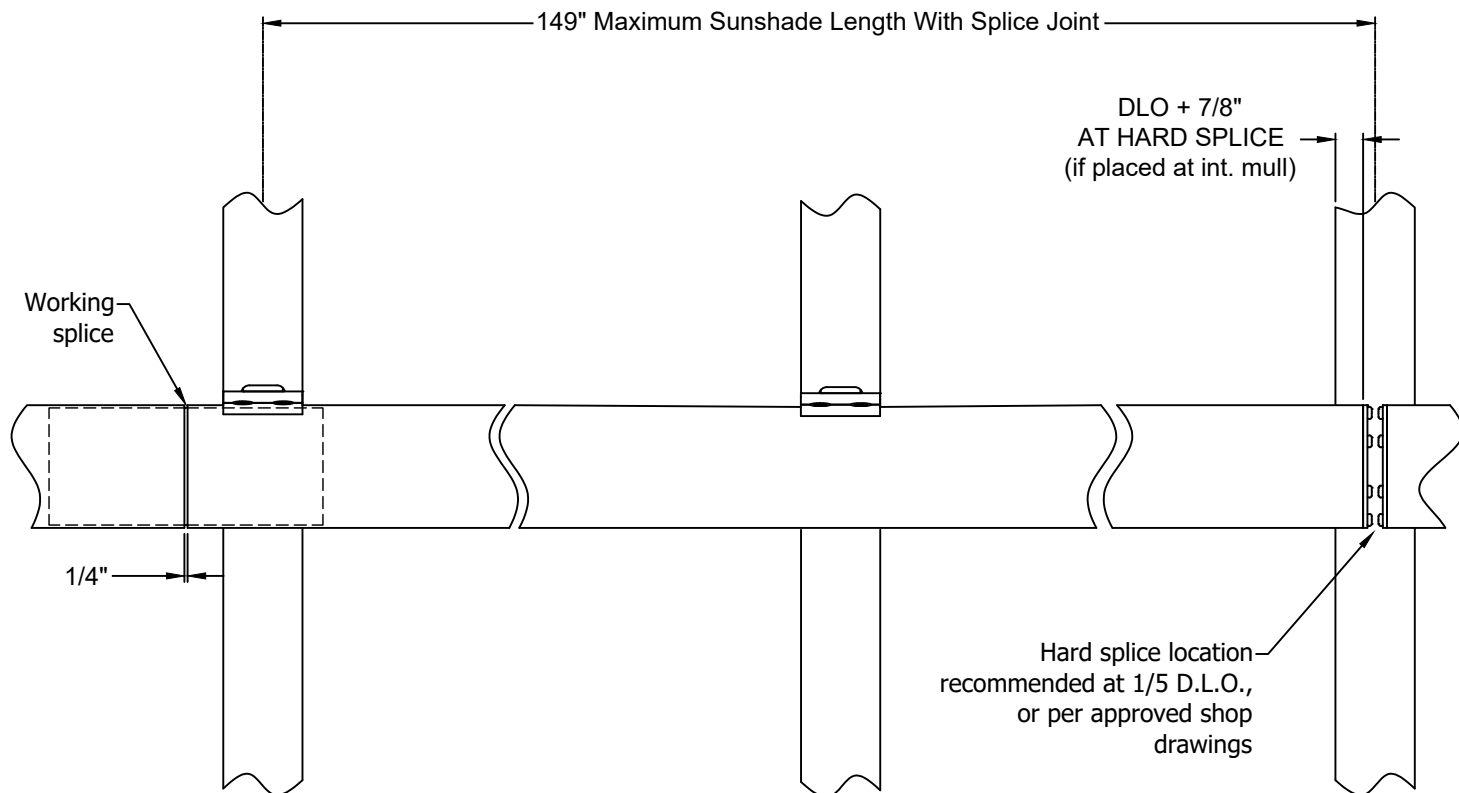


Fig. 1.3

DO NOT install a working splice at centerline of verticals, and,
DO NOT install a bracket at a hard splice.

FABRICATION

Step 4: Pressure Plate Fabrication for Curtain Wall Systems

- A. Determine the vertical location for the mounting bracket (P3955) on the pressure plate. Line up the scribe lines to the center of the vertical location of the mounting bracket. Location of the sunshade is determined by design or approved shop drawings.

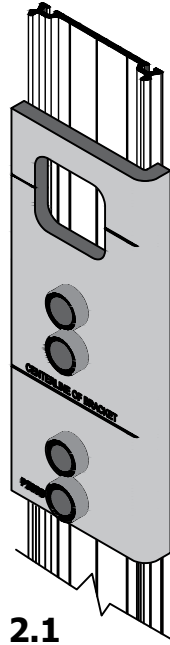


Fig. 2.1

Step 5: Pressure Plate Fabrication for Curtain Wall Systems

- A. Using the drill fixture (P3999), locate leg against the snap cover retainer feature of the pressure plate. Drill through pressure plate using a .257, or, an "F" size drill bit. The M4TB63 heavy duty pressure plate may be used on 400CW and 400T applications for higher loads. Consult Tubelite Engineering for specific applications.

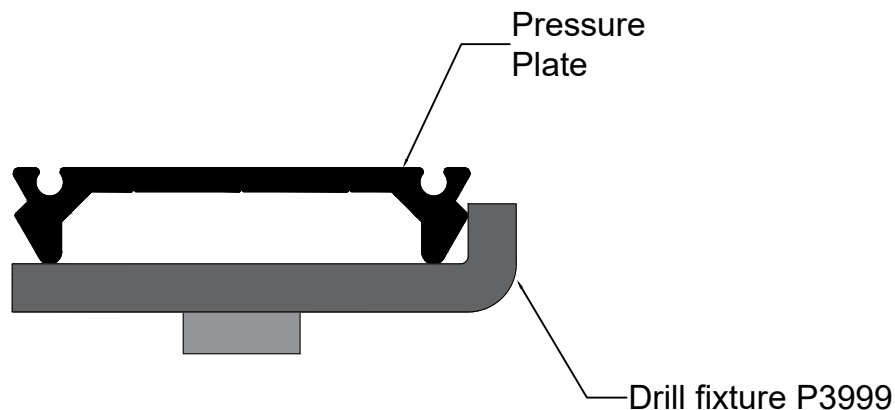


Fig. 3.1

FABRICATION

Step 6: Face Cover Fabrication

- A. Determine the location of the square cutout on the snap cover in relation to the mounted bracket on the pressure plate. Use the square cutout on fixture (P3999) to scribe the cutout outline on snap cover. Cut through snap cover along scribe lines. Remove any burrs.

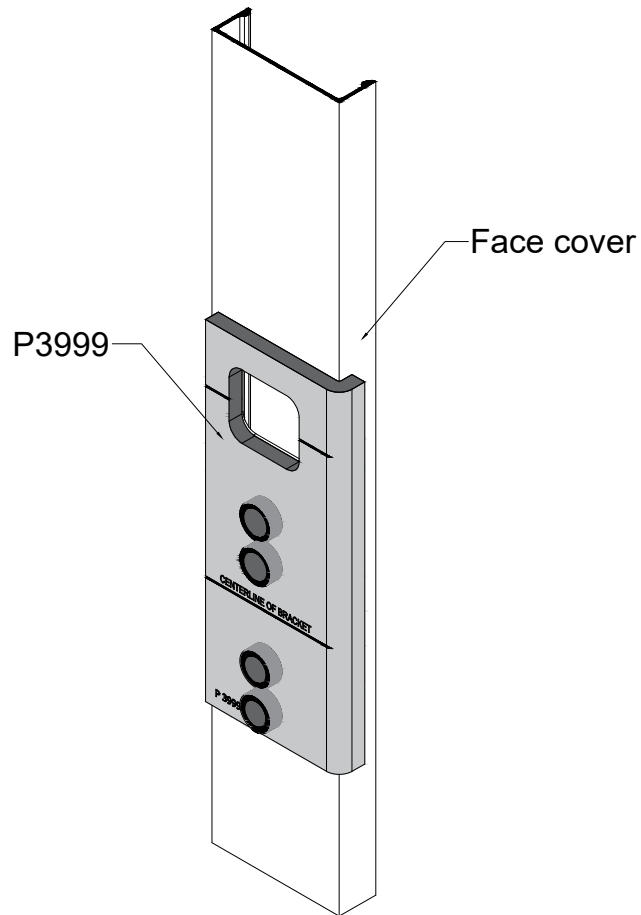


Fig. 4.1

INSTALLATION

Step 7: Bracket Installation

- A. Apply sealant to back of bracket (P3955) when installing onto the curtain wall pressure plate or storefront mullion. Mount the bracket (P3955) using the drilled holes and secure with (4) screws and tighten.

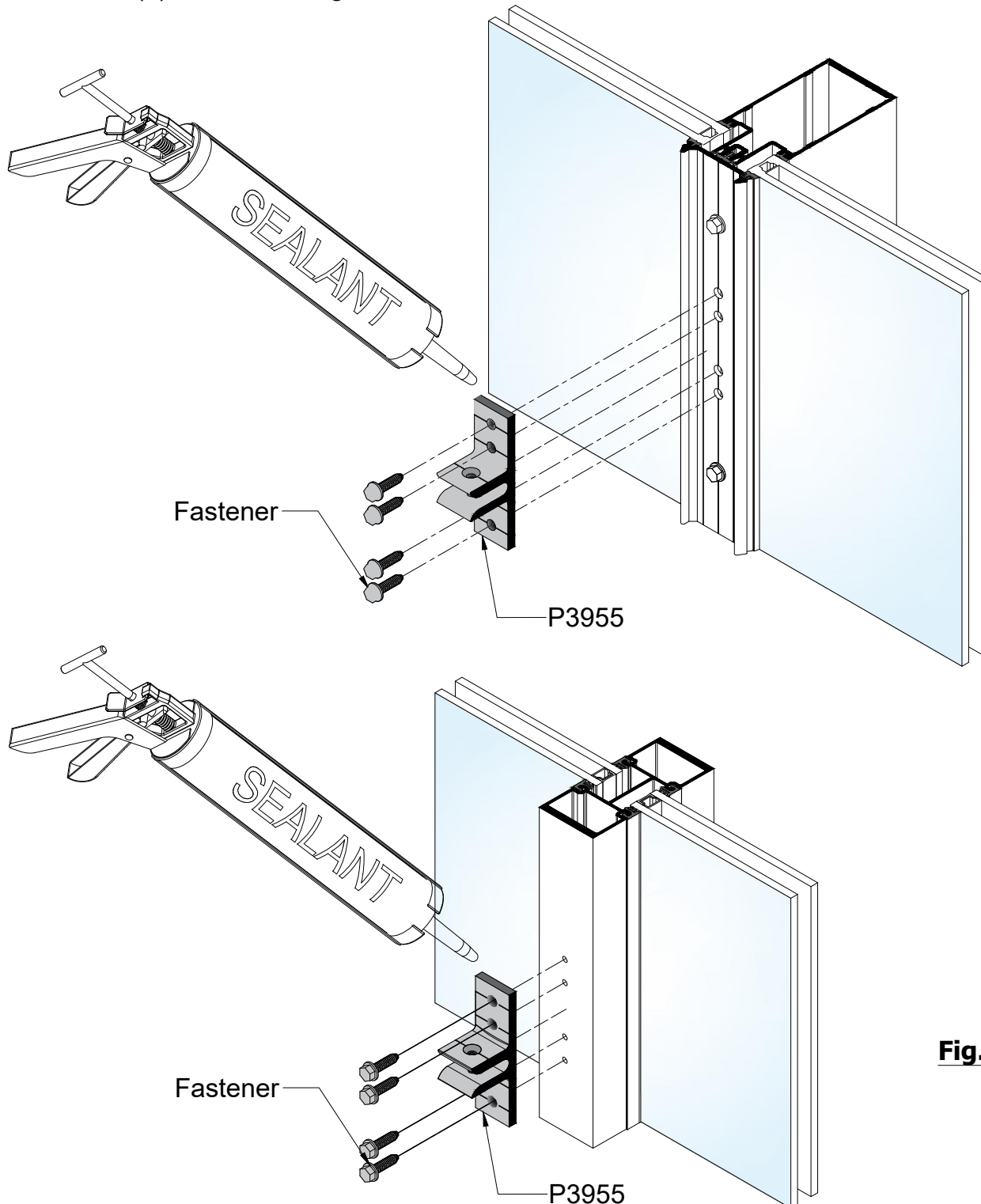


Fig. 5.1

INSTALLATION

Step 8: Face Cover Installation

- A. Align snap cover over bracket and snap into place using a wood block and mallet. Apply sealant around opening at bracket location. See **Fig. 6.1**

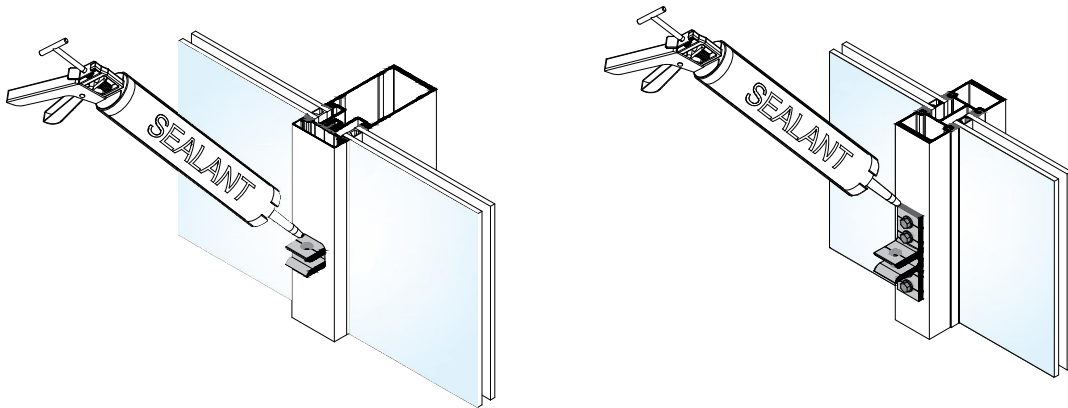


Fig. 6.1

Step 9: Airfoil Blade Bracket Installation

- B. After the snap cover has been installed onto the curtain wall pressure plate or storefront mullion, locate and mark on the airfoil the location for the 25° mounting bracket (P3954), and the "T" bracket (P3955) per the shop drawings. Airfoils should not exceed 9 foot in length. Using a .169 diameter drill bit, drill through the top and bottom walls of the airfoil using the marked locations from the bracket. Remove any burrs. Tighten screws (S286) securely. Do not over tighten.

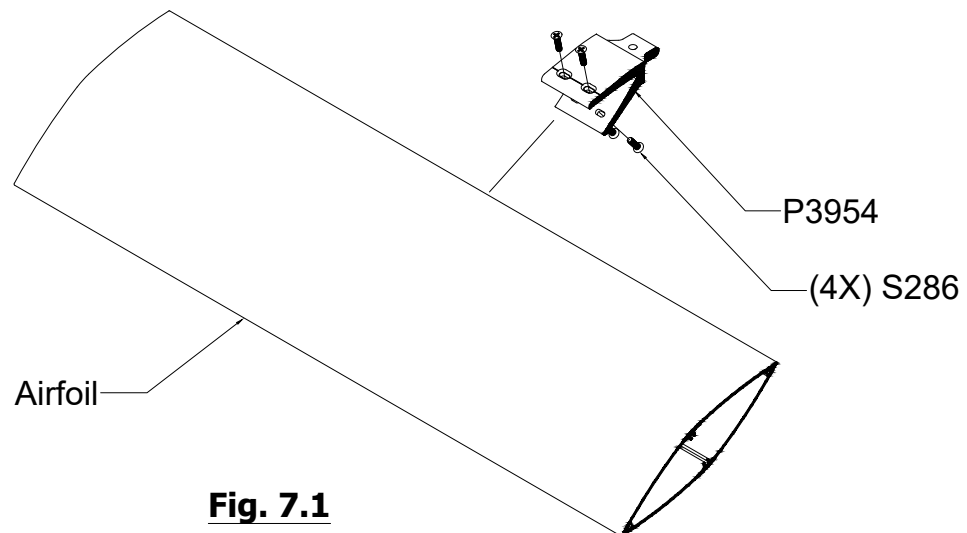


Fig. 7.1

INSTALLATION

Step 10: Airfoil End Cap Installation

- A. Place end caps onto open ends of the airfoils and secure with (4) screws (S128)
Use end cap P3998 for the 9" airfoil.
Use end cap P3990 for the 6" airfoil.

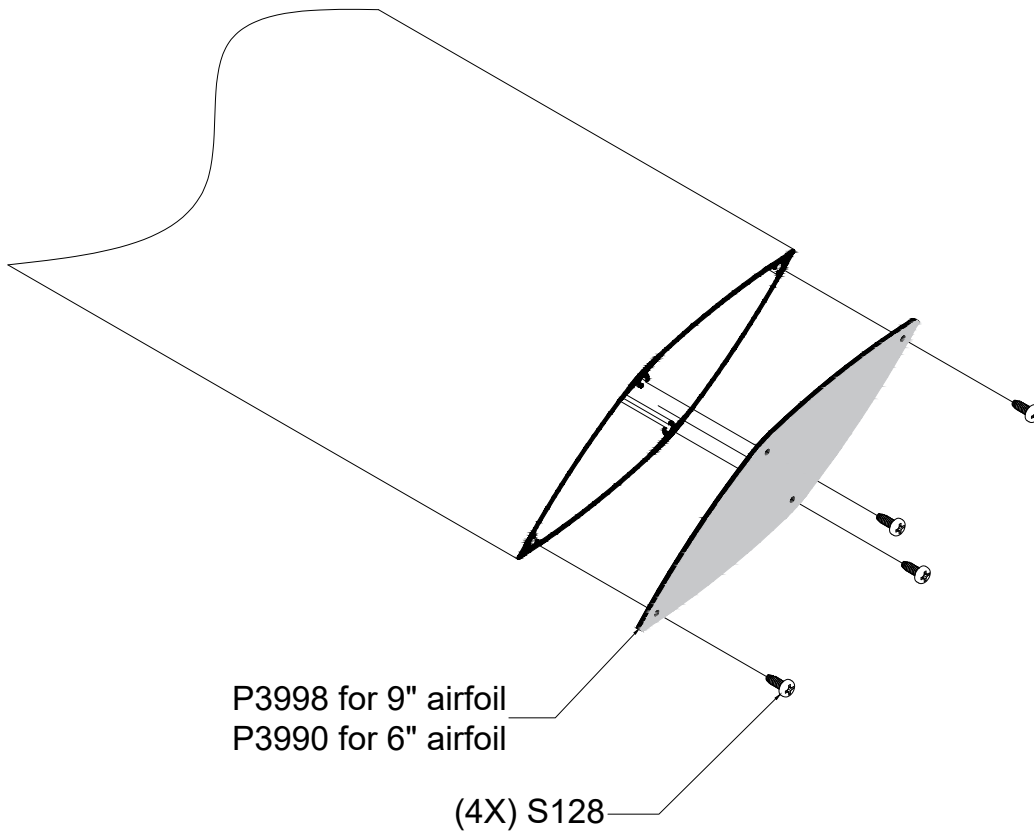


Fig. 8.1

INSTALLATION

Step 11: Installing Airfoil Blade

- A. Locate the single blade airfoil and angled bracket into the "T" bracket (P3955) and ensure that it is seated into the bracket mouth. Secure airfoil and angled bracket in "T" bracket (P3955) with S166 screw. Do not over tighten the screw when installing.
- B. Airfoil lengths are per approved shop drawing and should generally not exceed 108" unsupported length. Addition of snow loads may require shorter spans or reinforcement per PE recommendation.

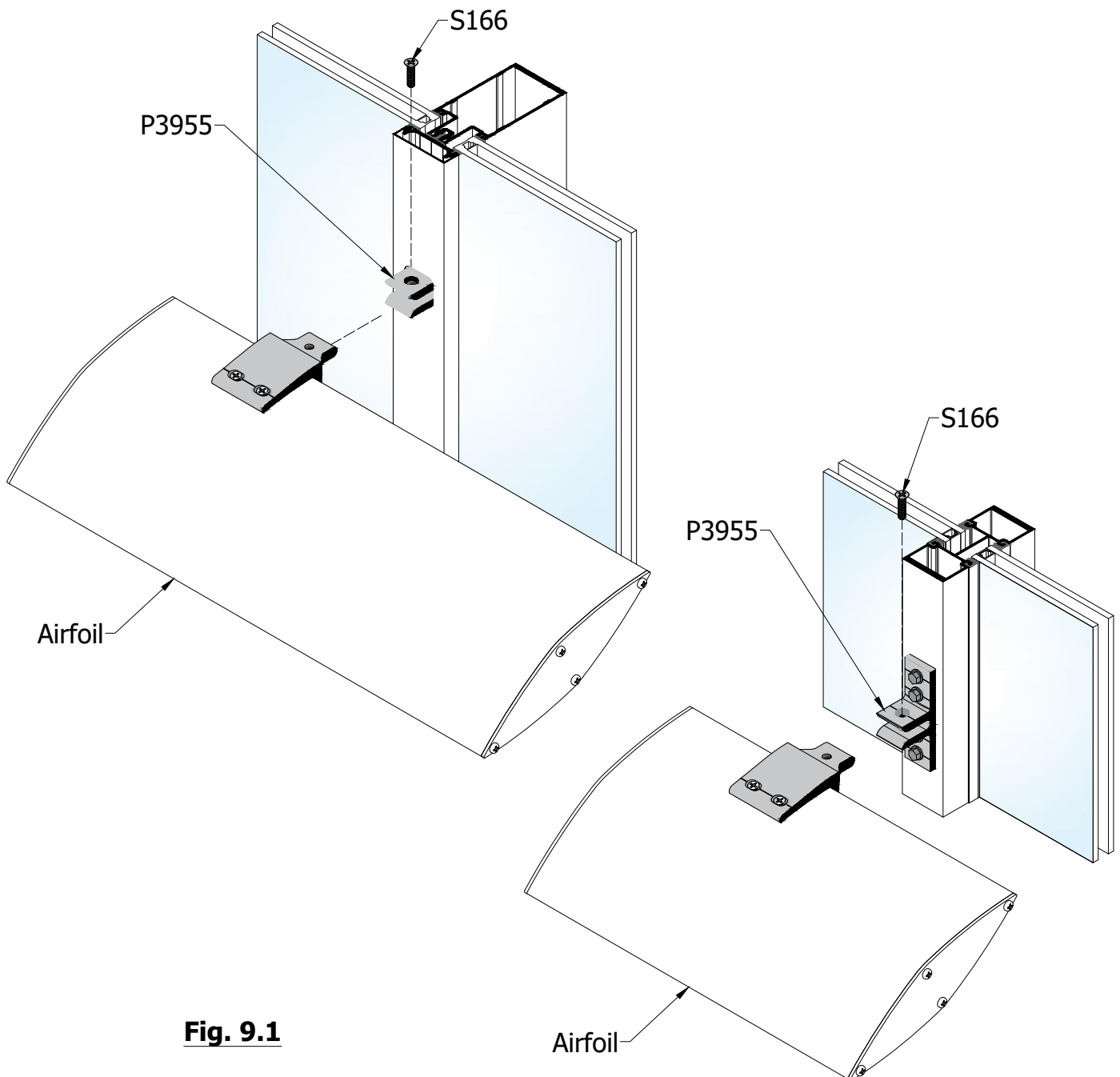


Fig. 9.1

END OF MANUAL