TURNSTILES.us
SECURING THE U.S. and the GLOBE since 1989

Project Submittal

V 1.0

Turnstile Security Entrance
ABB - Phoenix, Arizona

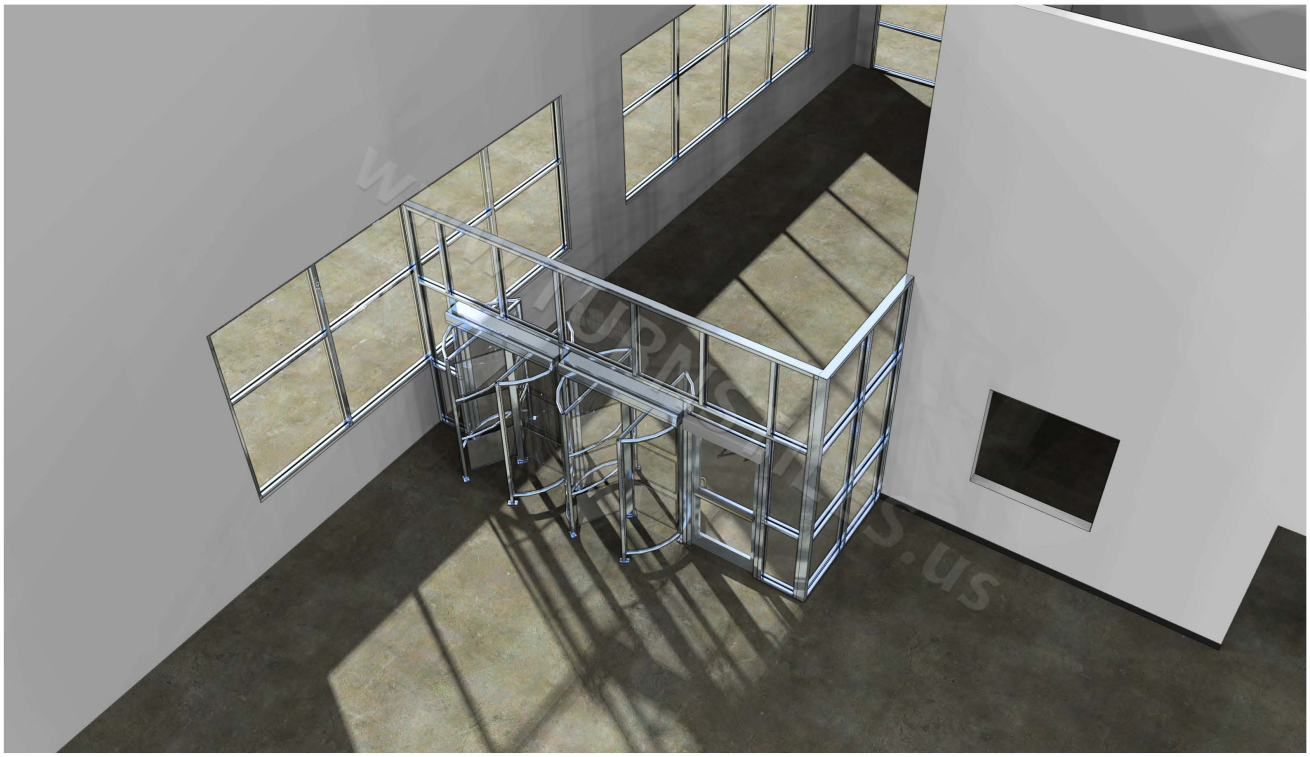
www.TURNSTILES.us is an organization dealing with the physical and electronic securing of building entrances with Turnstiles, Mantraps, EntraPASS Access Control Hardware, and Software since 1989.

The team at TURNSTILES.us is delighted to provide our Turnstile Entrance Solutions to our clients. Selected equipment information is listed below. We appreciate the opportunity to secure your facility.

ABB TURNSTILES.us

www.TURNSTILES.us | patrick.mcallister@TURNSTILES.us | 303-670-1099

Custom Glass Turnstile Security Entrance
3D Concepts

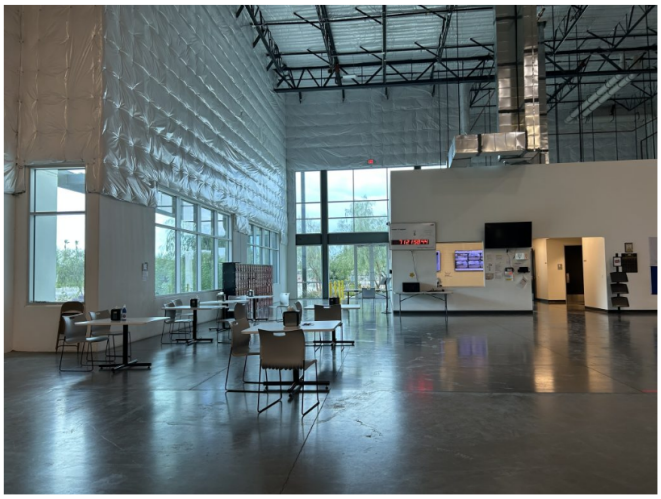


Custom Glass Turnstile Security Entrance
3D Concepts

Front View - Secured Side

Back View - Unsecured Side

Installation Location Photos



Address of Installation:

4050 E Cotton Center Blvd,
Phoenix, AZ 85040

Equipment Data

EQUIPMENT

Turnstile and Gate Equipment
(2) AG30-T-SS-2E Lexan Turnstiles
(4) Card Reader Mounting Plates
(2) Key Override Sets
(1) 36" x 84" Aluminum ADA Door, Electric Strike, Panic Bar
(1) Automatic Door Operator
(2) Company Logo Frosted Vinyl Stickers
(1) Wall-to-Wall Store Front Extrusion
– 20' of 12' Tall Anodized Aluminum
– 1/4" Clear Glass Store Front
– Wall to Wall Over Turnstiles
– ABB logo on top Center Glass and Door

SERVICES

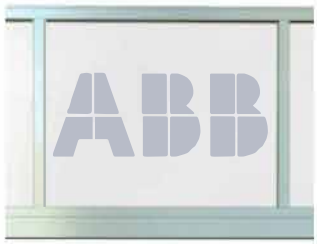
Field Labor & Travel
(2) Installers
(TBD) Days Field Labor
(2) Days of Travel
Uncrating and Removal of Debris
Installation Service
Test Operation of All Units
Owner Training

Engineering Drafting Programming
Provide 2D PDF AutoCAD Equipment Location Detail
Provide Concept Illustrations Design-Build
Initial Factory Programming
Remote Desktop Assistance
Shipping and Crating

AG30-T-LX Turnstile

Glass ADA Door

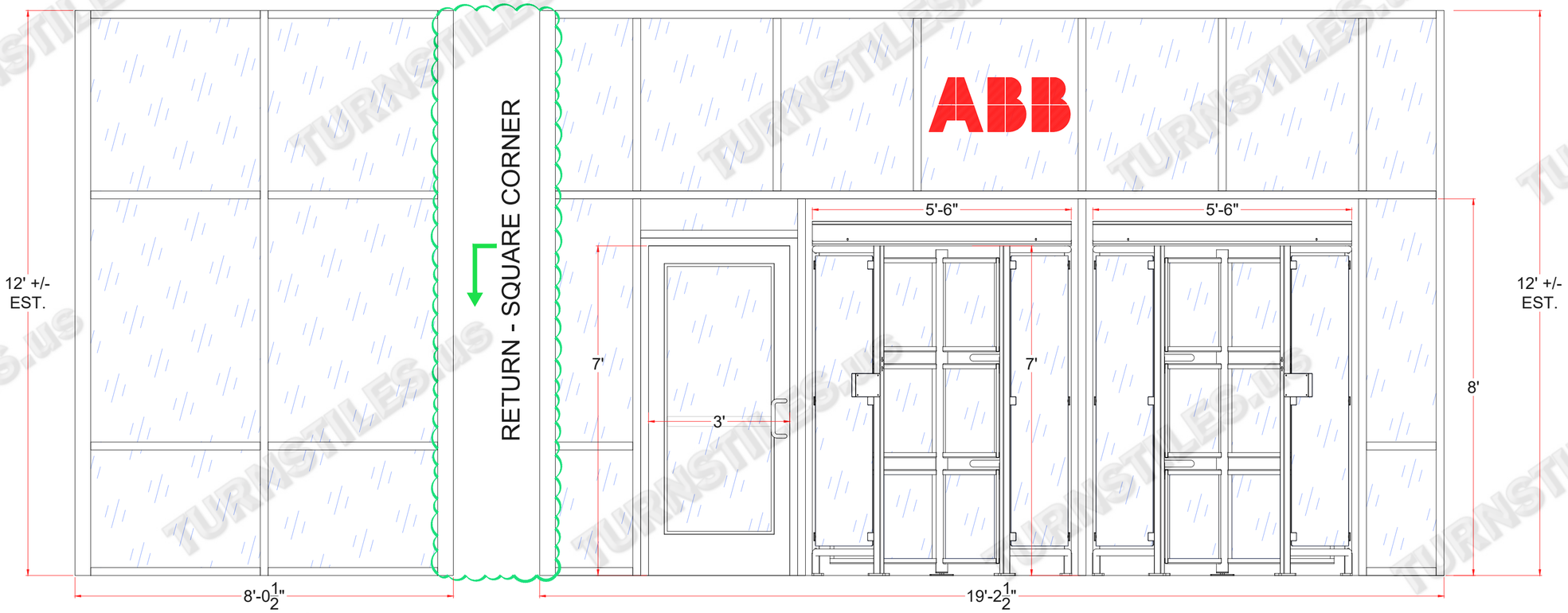
Customized Glass Partition



Frosted Logo

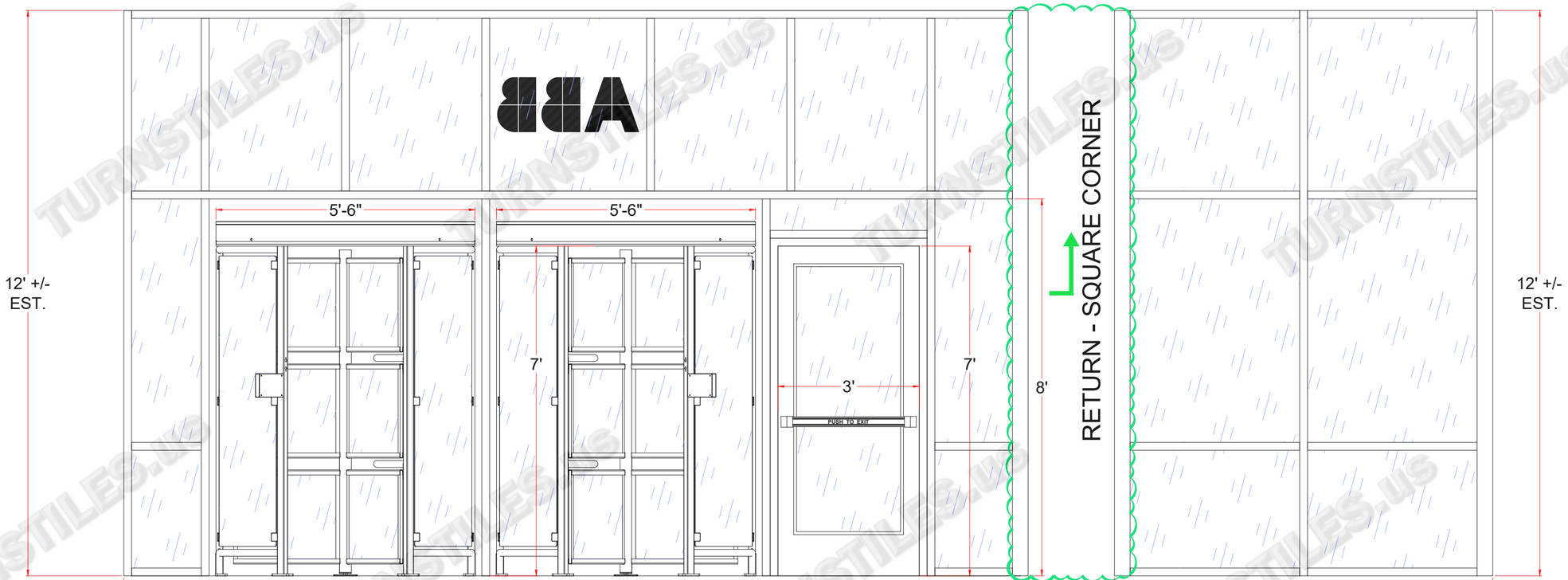
Automatic Door Operator

AutoCAD Documentation



ELEVATION
STOREFRONT RETURN
(external)

ELEVATION
NON SECURE SIDE



ELEVATION
SECURE SIDE

ELEVATION
STOREFRONT RETURN
(from within)

FIRST DRAWN	BY
12-27-22	CJC
REVISED	BY
03-13-24	CJC

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EQUIPMENT LOCATION DETAIL
ABB Inc. Phoenix, AZ AG-LX-SS Series Turnstiles Standard ADA Man-door in Storefront Partition Wall with Return
DRAWING:
ABB Inc. Phoenix, AZ AG-LX-SS Series ADA Door - Storefront ELD
DATE: 03-13-24
PAGE: 1 OF 2

FIRST DRAWN	BY
12-27-22	CJC
REVISED	BY
03-13-24	CJC

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EXISTING WALL

SECURITY OFFICE
118

EXISTING WALL

ENTRANCE
NON SECURE SIDE

19'-2 1/2"

STOREFRONT RETURN

8'-0 1/2"

EXISTING WINDOWS

AG-30-T-LX TURNSTILE

STOREFRONT MAN DOOR

EXISTING WALL

RETURN - SQUARE CORNER (see elevations)

℄

℄

℄

3'

EQUIPMENT CENTER LINE

EQUIPMENT CENTER LINE

2'-5 1/2"

2'-5 1/2"

STOREFRONT PARTITION

STOREFRONT PARTITION

STOREFRONT RETURN CENTER LINE

EXISTING WINDOWS

*NOTE:
Equipment Center line based on halfway point between two of four columns of windows and may be moved if needed.

FLOOR PLAN
SECURE SIDE

EQUIPMENT LOCATION DETAIL
ABB Inc. Phoenix, AZ AG-LX-SS Series Turnstiles Standard ADA Man-door in Storefront Partition Wall with Return
DRAWING:
ABB Inc. Phoenix, AZ AG-LX-SS Series ADA Door - Storefront ELD
DATE: 03-13-24
PAGE: 2 OF 2

EQUIPMENT INSTALLED INTO
STOREFRONT EXTRUSION
AND GLASS PARTITION

Distribution Panel
220V - 100A

20A — Turnstiles / Doors → LX-30-T-SS-2E TURNSTILE (2A) → LX-30-T-SS-2E TURNSTILE (2A) → ADA MAN DOOR: DOOR OPENER (1.5A or < @ 24VDC); ELEC. STRIKE (.25A or < @ 24VDC)

20A — SPARE (typical)

20A — Access Control (by owner/other) → DOOR CTRL (1.5A-3A or < TYP)

* Based on our standard line of door controllers offered

20A — CCTV (by owner / others)

20A — LIGHTING - TBD

20A — CONV. OUTLETS - TBD

20A — FUTURE TECHNOLOGY

*NOTE:
Access Control by owner/others.
High Voltage to be installed by licensed and bonded Electrician.
Actual number of lights required and Convenience outlets by owner/others.
What is shown is typical and may vary when installation is completed or based on owner/other selection.

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03-13-24	CJC
REVISED	BY

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ELECTRICAL RISER DETAIL
ABB Inc. Phoenix, AZ AG-LX-SS Series Turnstiles Standard ADA Man-door in Storefront Partition Wall
DWG ABB Inc. Phoenix, AZ AG-LX-SS Series ADA Door - Storefront Electrical Riser
03-13-24
SHEET - 1 OF 1

Product Documentation

AG-LX SERIES

FULL HEIGHT TURNSTILES WITH LEXAN

AG-LX Series Turnstiles have a steel frame and a clear shield, providing high-security pedestrian access control with a more open appearance. Turnstiles may be controlled mechanically or electrically in one or both directions. Choose from several sizes and weather-resistant finishes. Various configurations and access control accessories are available to accomodate your security requirements.

MODELS

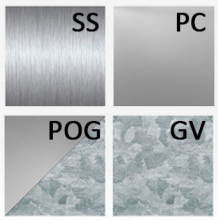
AG30-T-LX	30" Passage Single 66" W * 60" D * 90" H
AG30-TT-LX	30" Passage Tandem 102" W * 60" D * 90" H
AG36-ADA-LX	36" Passage ADA Gate 43" W * 4" D * 91" H

CONTROLS

MECHANICAL
ELECTRIC 1-WAY
ELECTRIC 2-WAY

FINISH

(GV) GALVANIZED
(PC) POWDER COATED
(POG) PC OVER GV
(SS) STAINLESS STEEL



Powder Coated Colors

STANDARD FEATURES

- Full-Height Turnstiles
- Single or Tandem Passage
- Clear Lexan Shield
- Three-Vane Cylindrical Arms
- 304 or 316 Stainless Steel
- Reader Mounting Plates
- Bidirectional Key Override Set
- Modular Locking Mechanism (variable custom configurations)
- Corrosion-Resistant Finish and Hardware
- Steel Spline Shaft, Collar, Bearing, Flange
- Extra Thick Mounting Brackets
- Made in America
- Electrical Specifications:
  Input voltage: 100-220 VAC
  Frequency: 50/60 Hz
  Operating Voltage: 30 VDC
  Operating Current: 0,2A

OPTIONS

- Battery Backup
- Cold Weather Package
- Programmable Keypad
- LED Indicator Lights
- Directional Lights
- Heel Guards
- Hinged Header Lid
- Lockout Bar
- Matching ADA Gate
- Matching Filler Barrier
- Portable Base Plate
- Turnstile Canopy
- Entrance Enclosures
- Access Control System
- Reader Integration

AG30-T-LX
Single Full Height Turnstile

DESCRIPTION

The AG-30-TLX is a stainless-steel full height turnstile with a 30" passage, and dual cages with polycarbonate infill. This turnstile has 2 rotor options. The standard option is the stainless steel rotor with polycarbonate wings, the upgraded option is an aluminum rotor with tempered glass wings. The function of the AG-30-TLX is to provide controlled access when entering or exiting a facility where pedestrian traffic is present, and elegance is desired. It can achieve this both mechanically (no access control system/software) such as a pool gate where the passage would be used for only exiting and no entry. Or electronically (with an access control system, card readers, fingerprint readers etc.) for keeping track of who is on and off site. It is manufactured with American Pride right here in the USA.

AG30-T-LX
Single Full Height Turnstile

Standard Features:

-Modular locking mechanism, can be configured fail safe or fail secure as well as clockwise or counterclockwise. With a Hydraulic Dampener, slows the rotor down, keeping maintenance down

-Key override, the turnstile can be unlocked manually by key, in either direction for service or temporary events where locking isn't required.

-Durable galvanized finish

-All stainless-steel hardware

-Card reader mounting boxes included

-internal wiring chase for access control wiring

-30" Passage

Additional Options:

-A counter for the locking mechanism

-Cold weather package

-Hinged lid

-Portable base

-Electronically controlled both directions

-Can be configured for 110v

AG30-T-LX
Single Full Height Turnstile

Locking Mechanism

- 100% modular system: Easy to maintain, service, upgrade, even after installation.
- Available for 3-arm (120°) and 4-arm (90°) turnstile
- interchangeable left/right mechanical or electromechanical modules (Fail Open or Fail Close)
- Automatic return to starting position (by means of industrial pressure springs) after every passage.
- Anti-pass back security (locking after a 60° or 45° rotation): prevents the simultaneous passing of 2 persons.
- Very robust implementation and strong connection with the turnstile by a 1-3/8" diameter spline axle (length 8 ½")
- Manufactured completely in stainless parts (stainless steel and aluminum)
- damping system guarantees smooth and gradual movements. Damping is continuous and unaffected by temperature changes (patented system)
- Possible to set signal duration.

Electrical Specifications:

-Input voltage: 110 VAC
-Frequency: 60 HZ

-Operating Voltage: 24 VDC
-Operating Current: 0.2A (16 amps @ 110v w/ cold weather package)

Materials used:

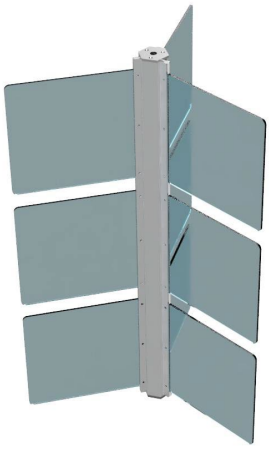
-1 ¾" 16 gauge Round Tube
-2" 14 gauge Square Tube
-3" 11 gauge Round Tube
-2"x1 ½" 14 gauge rectangular tube
-3/16" formed sheet metal
-1/2" plate
-1/4" polycarbonate
-1/2" polycarbonate
-1/2" tempered glass (if upgraded al rotor is used)
- extruded aluminum (if upgraded al rotor is used)

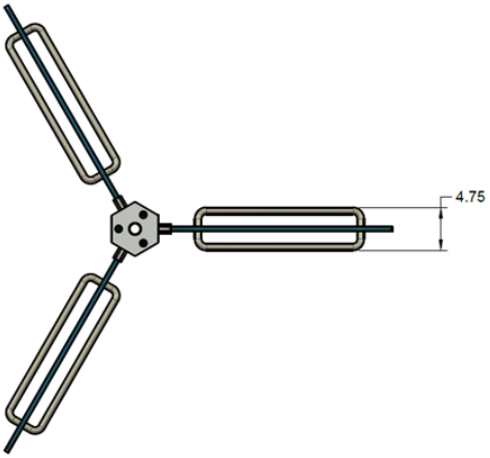
Construction:

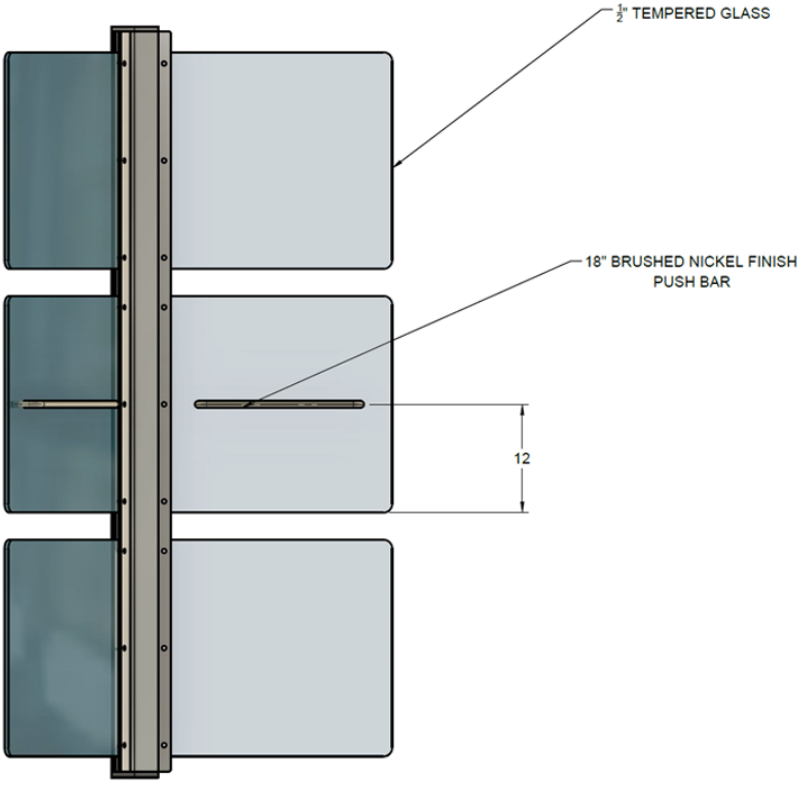
- Manufactured in America
- fully welded construction (upgraded al rotor is not welded)
- The cage, and header are welded into one solid piece, adding rigidity and security
-polycarbonate wings on the rotor (tempered glass if upgraded al rotor is used)
-polycarbonate panels mounted to cages with stainless steel glass clamps
-1/2" thick mounting points for added security.
-Spline shaft, collar, bearing, and bottom bearing plate are corrosion resistant stainless steel
-All fastening hardware stainless-steel

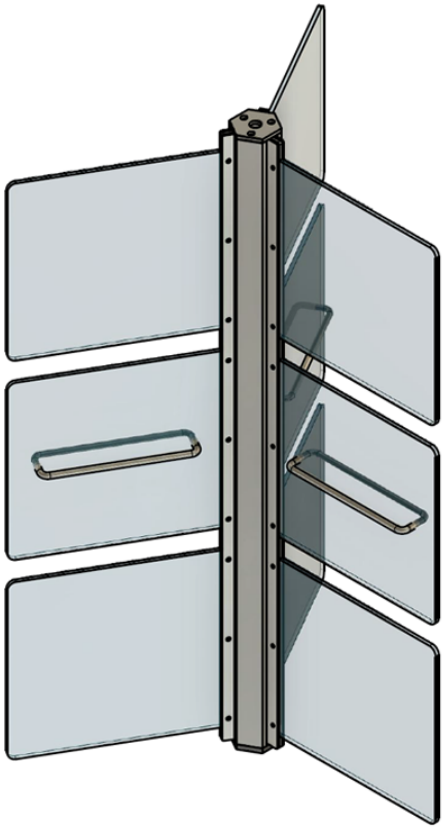
AG30-T-LX
Single Full Height Turnstile

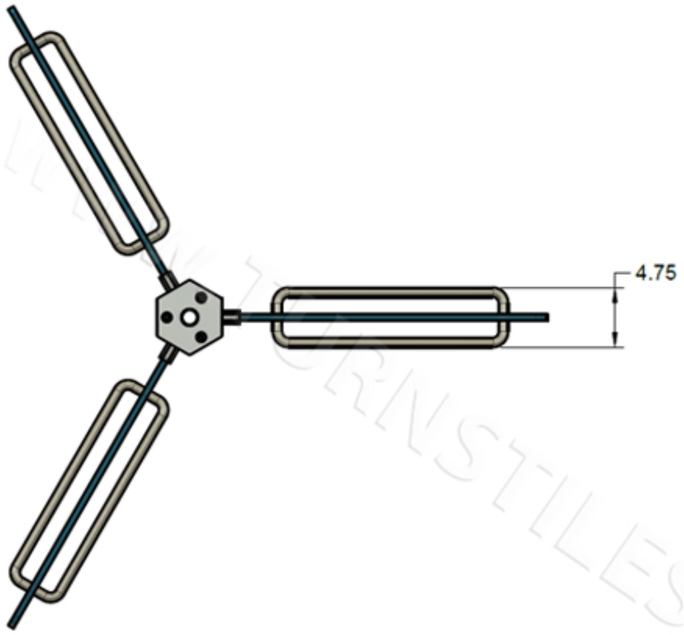
Upgraded rotor
and push bar handle option

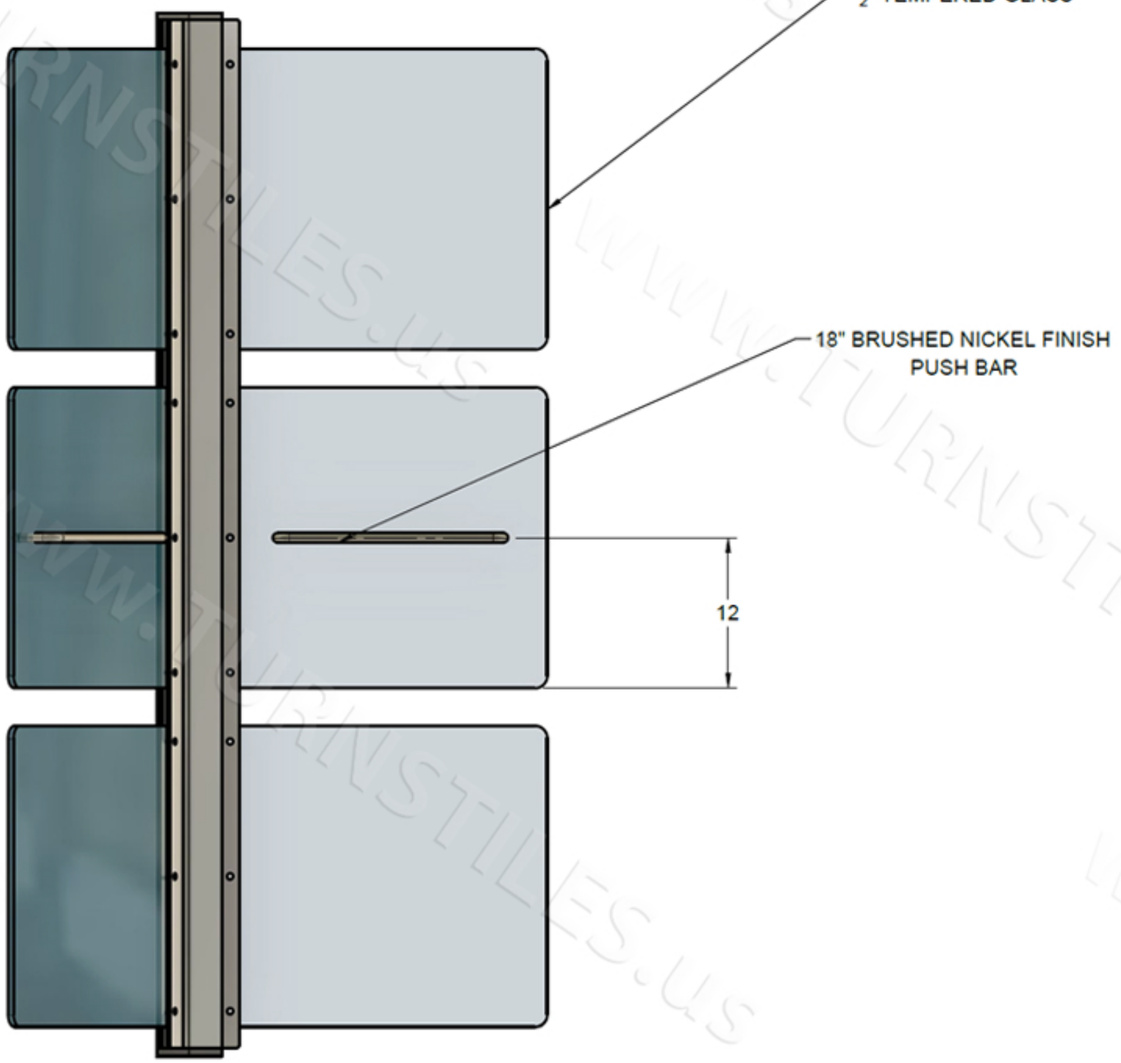


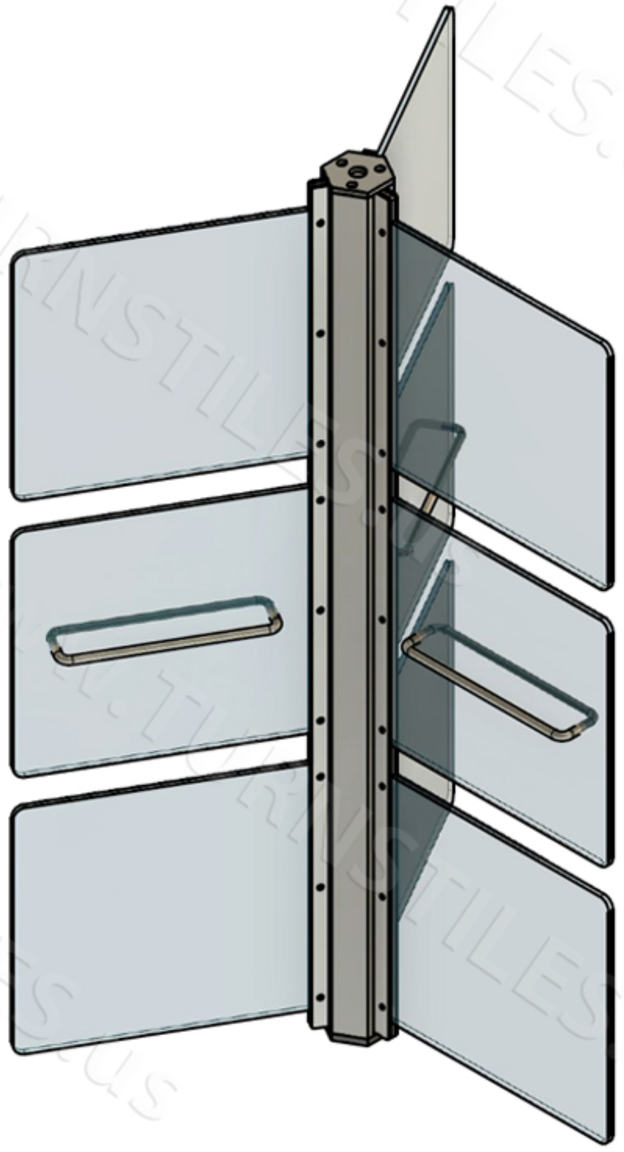












FIRST DRAWN	BY
01/08/2024	JM
REVISED	BY

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patrick.mcallister@turnstiles.us

AUTHORIZED SIGNATURE: _____ DATE: ___ / ___ / ___

www.TURNSTILES.us
AG30-TLX Rotor and Push Bar
Equipmment Dimension Detail

DWG
AG30-TLX Rotor and Push Bar
Equipmment Dimension Detail

DATE 01/08/2024

SHEET 1 OF 1

AG-Series Single Turnstile

Installation Manual

Unpackaging

Verify you have all parts and hardware listed below

1. Turnstile header and locking mechanism with lid
2. Turnstile Rotor and bottom bearing assembly
3. Turnstile Cage (Two for LX)
4. Turnstile Comb (N/A for LX)
5. Included installation hardware box (see hardware checklist in box)
6. Touch up paint (powder coated only)

General Dimensions

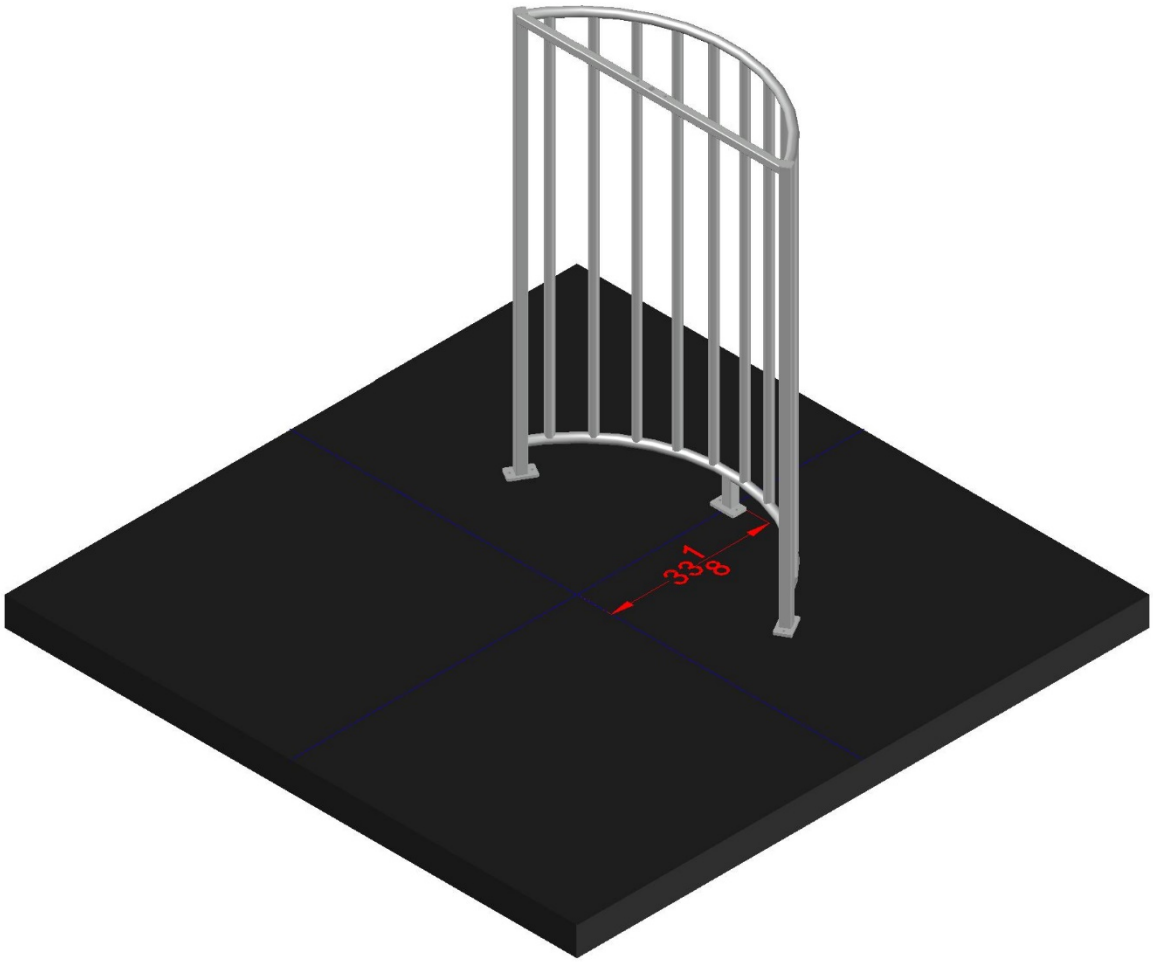
Model	Overall Width	Middle Cage to Center	Comb to Center	Outer Cage to Center
AG-27-T	60 1/8”	30 1/8”	30”	27 5/8”
AG-30-T	66 1/8”	33 1/8”	33”	30 5/8”
AG-39-T	85 1/8”	42 5/8”	42 ½”	40 1/8”
AG-48-T	102 5/8”	51 3/8”	51 ¼”	40 7/8”

Single Turnstile Nomenclature

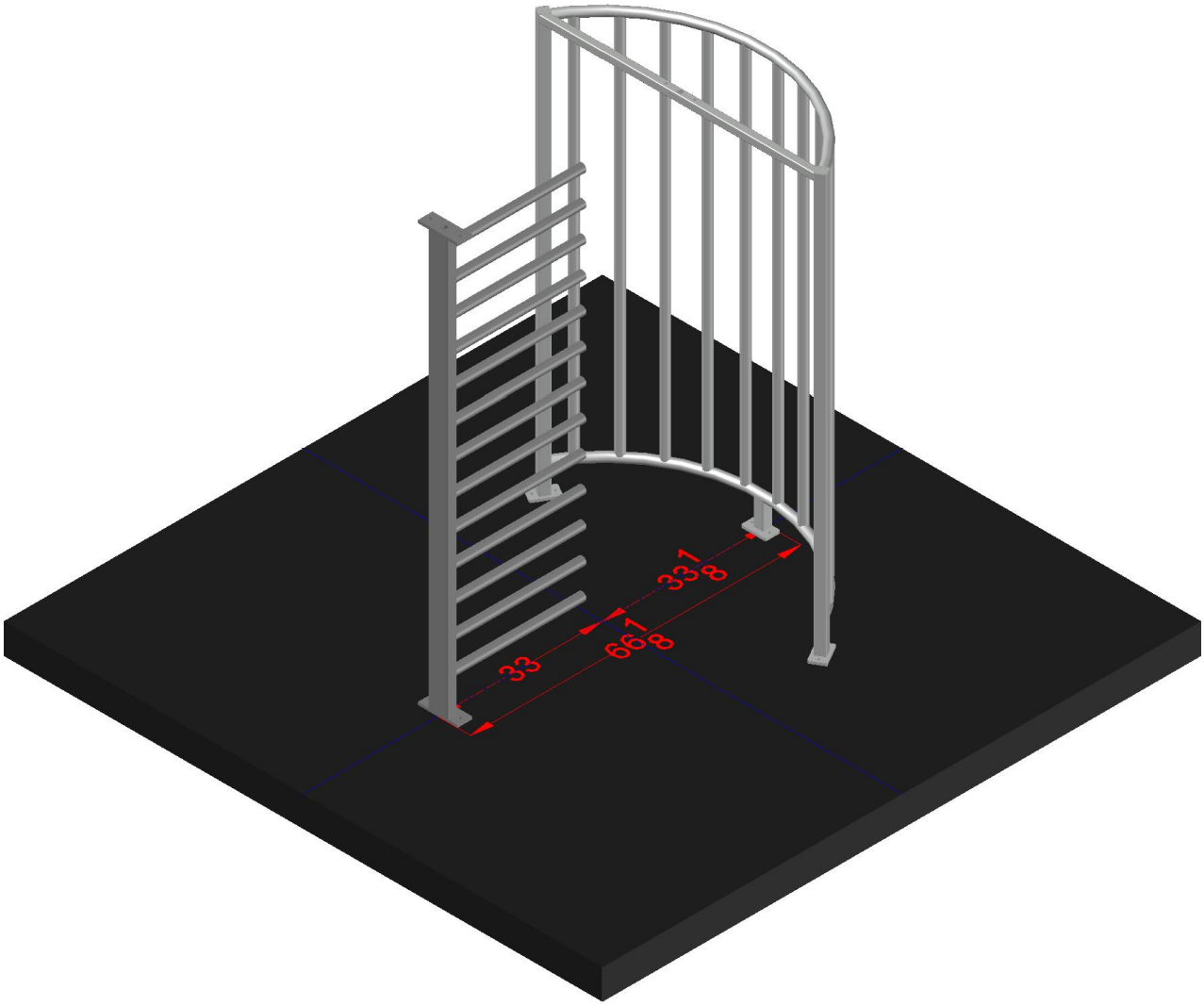
AG	30	T	GV	2E
Series	Passage width in inches 27 30 39 48	**T-** For single turnstile **TT-** For tandem turnstile **HHT-** Half height turnstile **TQH-** Three quarter height turnstile	**GV-** Galvanized **PC-** Powder Coated **POG-** Powder coated over galvanized SS-Stainless steel **LX** - Lexan Fill	**2E-** 2 way electronic passage control **1E-** 1 way electronic passage control **M-** Mechanically locked one direction, free exit the other direction

Installation:

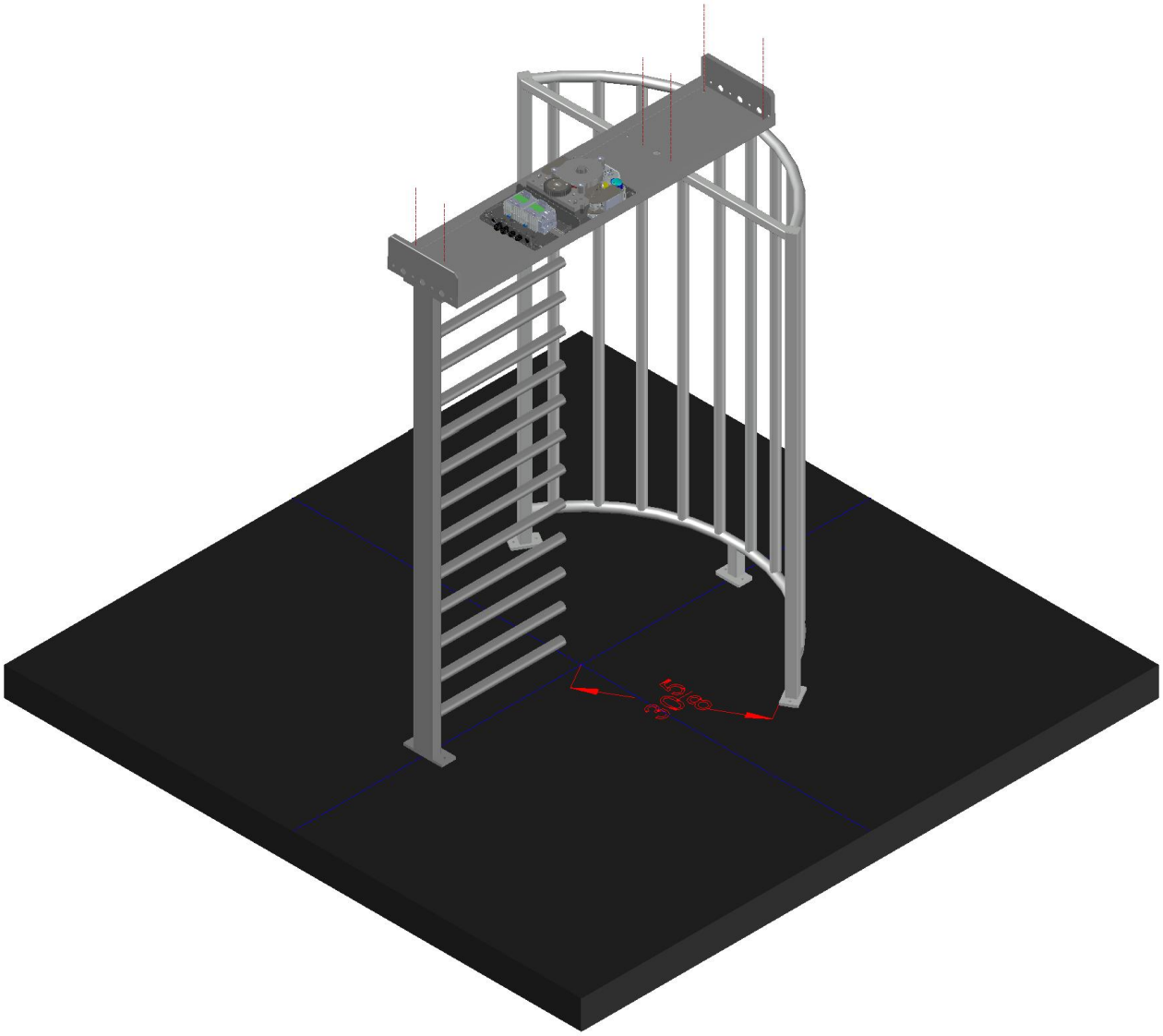
1. Starting with a level concrete slab or equivalent, begin the layout process by snapping a center line and a cross line for the turnstile entrance. Stand up the cage on the center line and measure the appropriate distance for the model of turnstile. (see general dimensions chart for measurements)



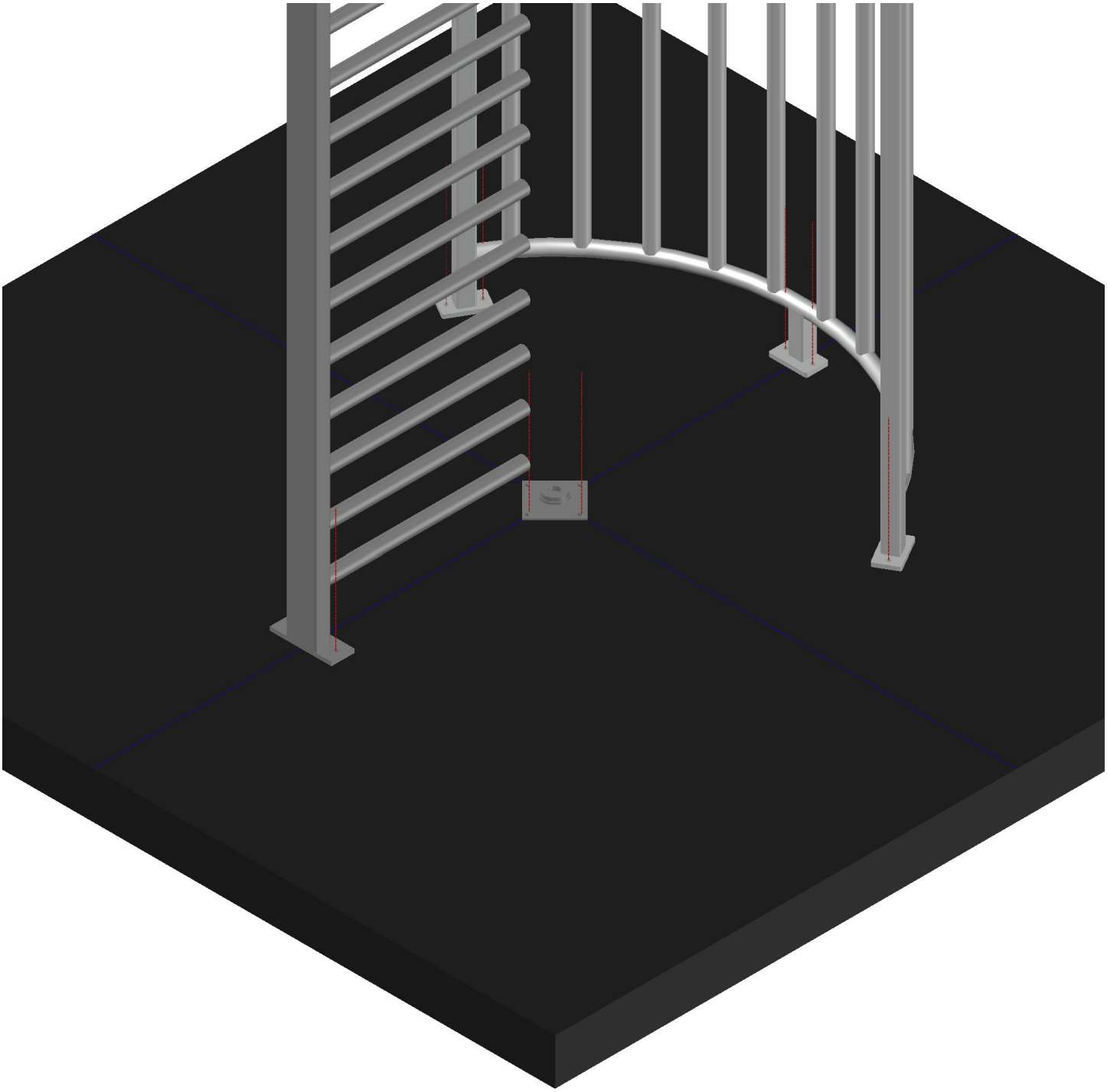
2. Position Comb the proper distance from the cage according to the model of turnstile you have purchased (see chart). Find something approximately 6” to block up comb.



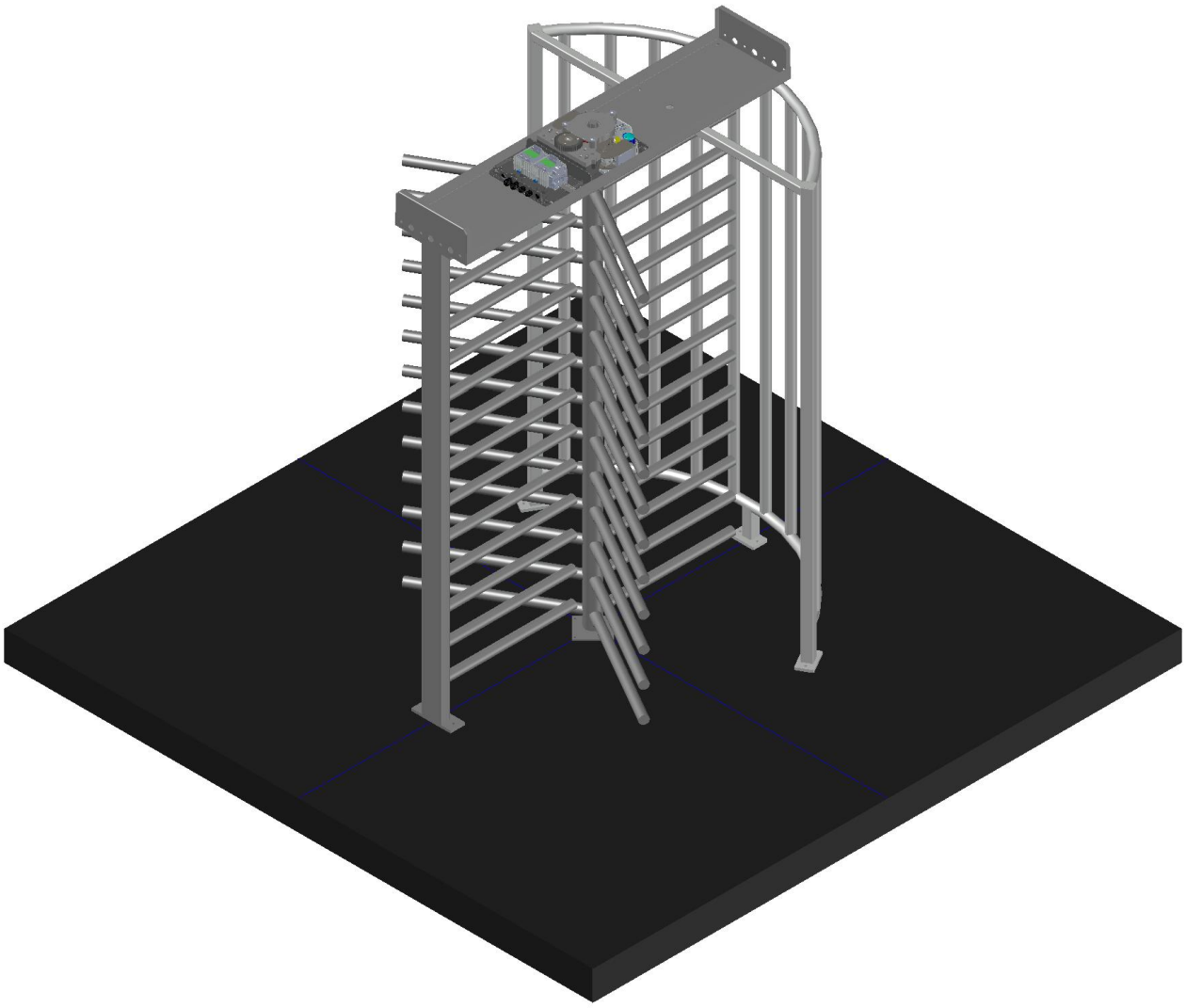
3. Attach header with provided bolts but do not tighten. Put together lose so it is easy to move and adjust.



4. Check all measurements according to model layout chart. Once aligned mark the cage, comb, and bottom bearing anchoring holes.

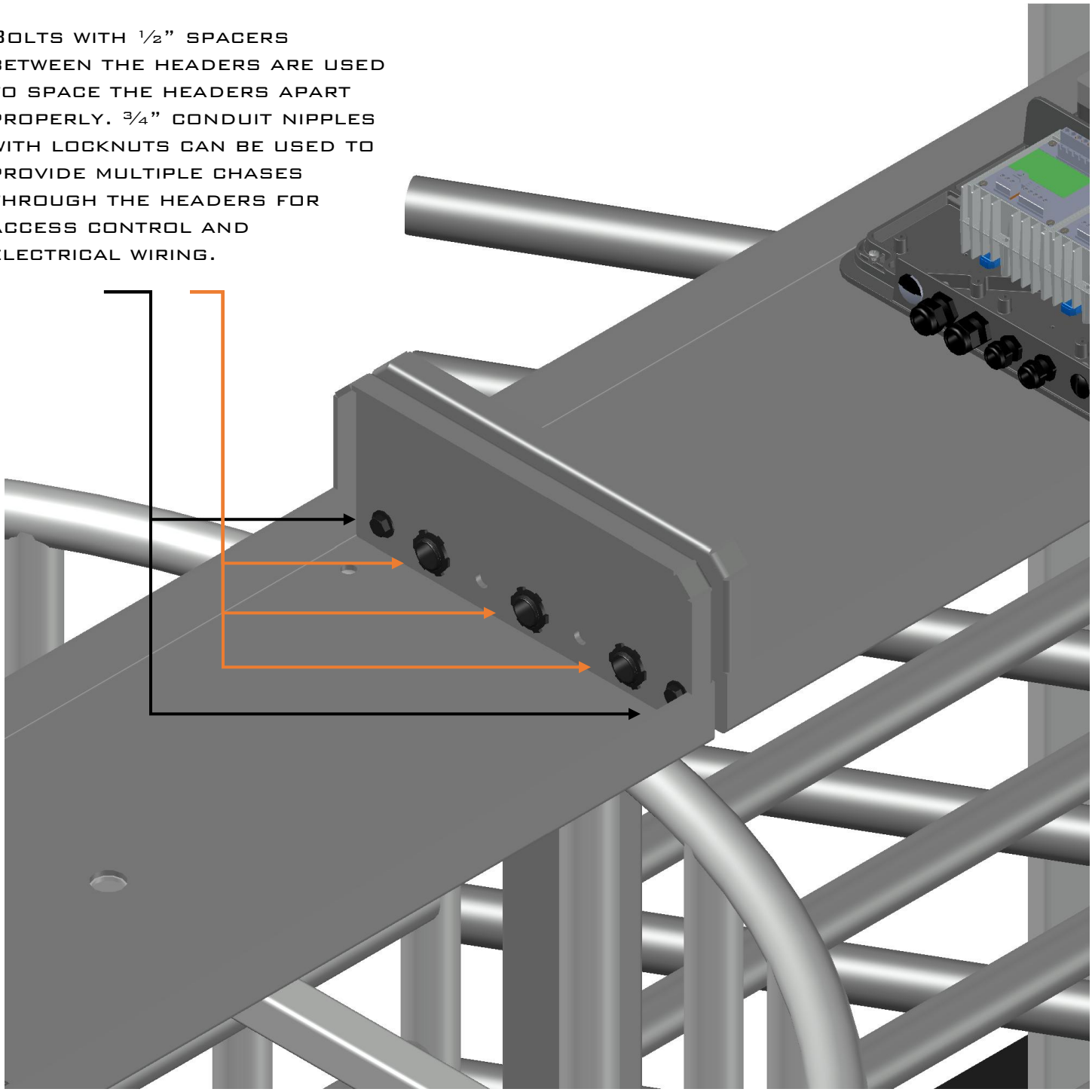


5. Move the turnstile so you can access marks and hammer drill holes for anchors. Install anchors and place the turnstile on the anchors. Make sure turnstile is level and plumb, tighten anchors and mounting bolts.

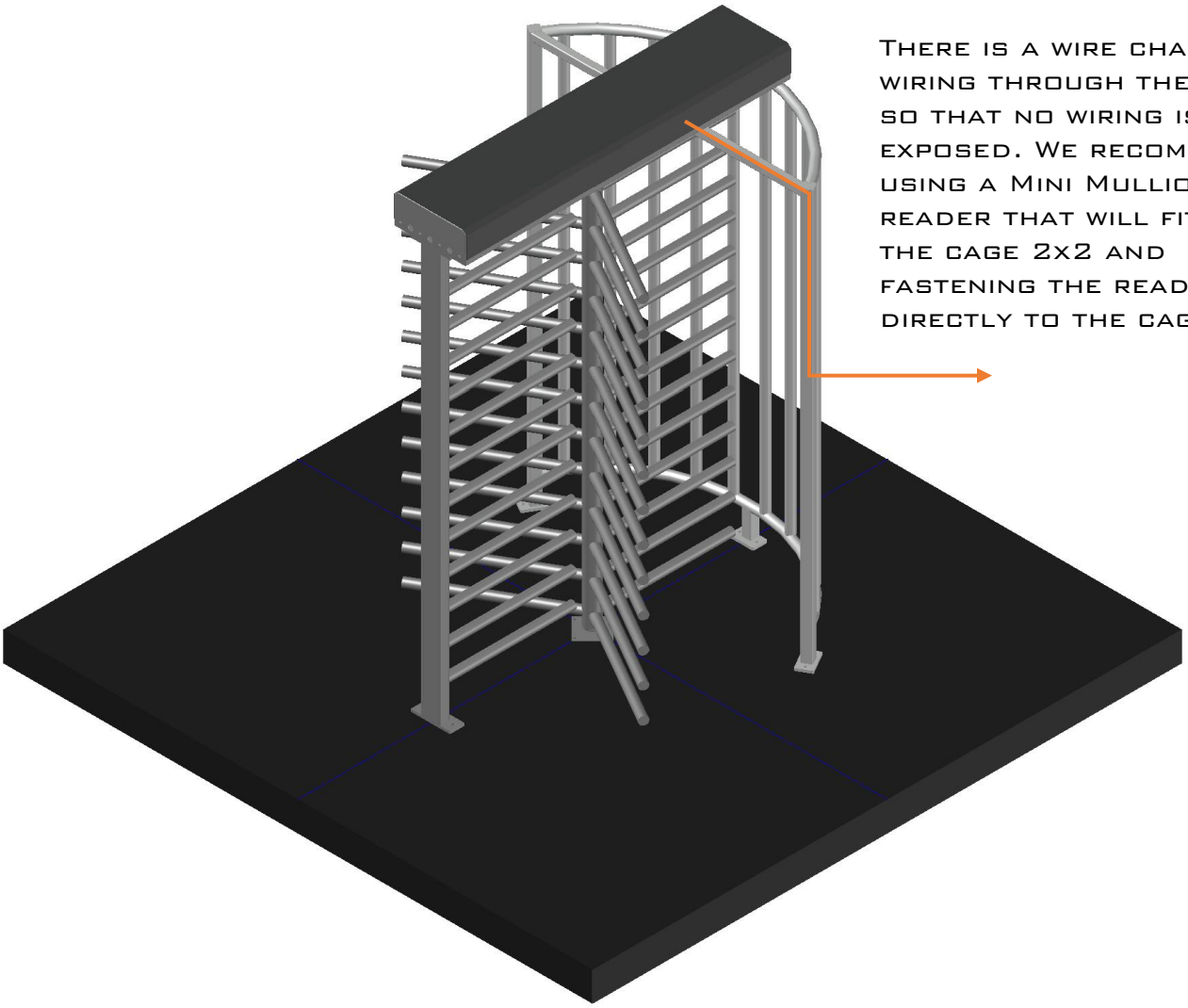


6. If you have additional turnstiles or ADA gates that go in the entrance array, use the bolts in the hardware box to bolt them together with the ½" spacers between the headers.

Bolts with ½" spacers between the headers are used to space the headers apart properly. ¾" conduit nipples with locknuts can be used to provide multiple chases through the headers for access control and electrical wiring.



7. Install the Lid. Consult with electricians and access control contractors to apply power and control the turnstile with access control system.



There is a wire chase for wiring through the cage so that no wiring is exposed. We recommend using a Mini Mullion reader that will fit on the cage 2x2 and fastening the reader directly to the cage.

Electrical Requirements

Input Voltage	120V (240v Special Order)
Frequency	50/60 hz
Amperage Draw	.5 – 1 amps (unless enclosure heater is added = +5 amps)
Operating Temperature	-40 °F – 120 °F

Access Control Requirements

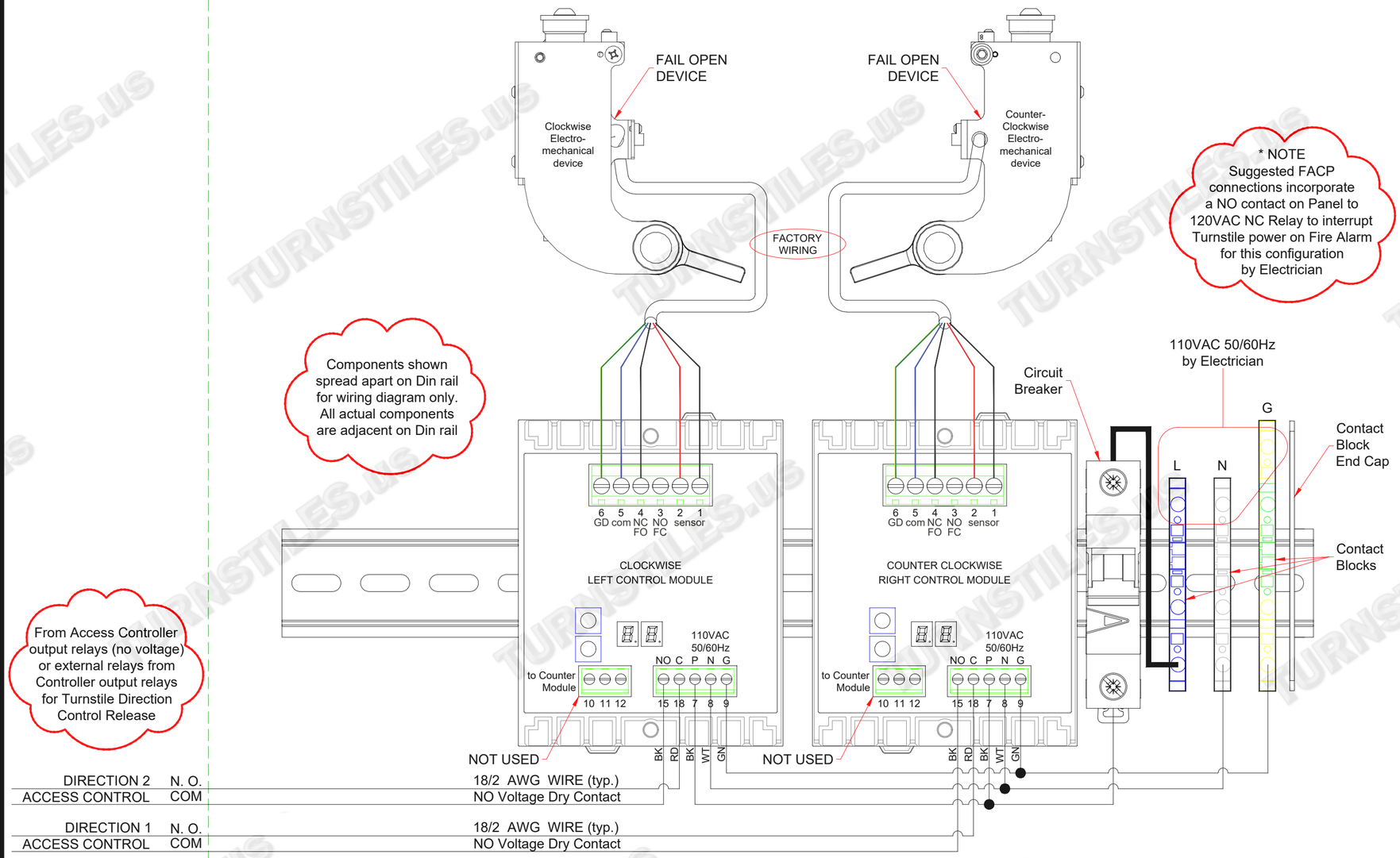
Input trigger	Normally open dry contact / no voltage
Minimum Trigger Pulse	1 second
Recommended Wire Size	18G 18/4
Fire Release	Fire relay removes power from turnstile in case of emergency (turnstile must be configured with fail open solenoids to achieve this)

AG-Series Single Turnstile

WIRING SCHEMATIC

* NON USER SERVICEABLE PARTS INSIDE - COLOR CODES & WIRE TYPE MAY VARY, CHANGES RESERVED - FACTORY WIRING TAMPERING COULD VOID WARRANTY *

TURNSTILE CONTROLLERS



AUTHORIZED SIGNATURE: _____ DATE: ___ / ___ / ___

FIRST DRAWN	BY
07-17-20	CJC
REVISED	BY

WIRING DIAGRAM

AG SERIES
FULL HEIGHT TURNSTILES
TWO-WAY ELECTRIC CONTROL
TYPICAL WIRING

DWG

07-17-20
AG SERIES TWO-WAY ELECTRIC
SCH

DATE 07-17-20

SHEET - 1 OF 1

DIRECTION 1 INDICATOR LIGHT

FACTORY SUPPLIED 18-4 WIRING

NO DRY CONTACTS PROVIDED BY OTHERS

DIRECTION 1 AND 2 HOLD OPEN OR FIRE ALARM

DIRECTION 2 INPUT

DIRECTION 1 INPUT

RED
BLACK

RED

BLACK
RED

GREEN

+UC 0V 0V I1 I2 I3 I4 I5 I6 I7 I8

NC
C
NO

L N G G 24+ 24+ 24+ 0V 0V

+
-

L
N
G

110V
2A
16A WITH COLD WEATHER PACKAGE

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TURNSTILES.us

PROJECT
LOGIC CONTROLLER WIRING

TITLE
LOGIC CONTROLLER FOR FULL HEIGHT TURNSTILES
RELAY VERSION

APPROVED		SIZE	CODE	DWG NO	REV
CHECKED		C			
DRAWN	Jesse Moses 5/25/2021	SCALE 1:1	WEIGHT	SHEET 1/1	

AG-Series Single Turnstile

PARTS LIST

Fail Open Module

Part# AG-FO1

Fail Close Module

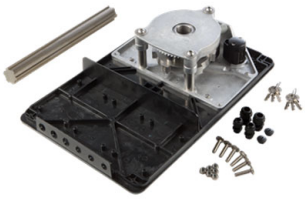
Part# AGFC-2

Hydraulic Damper

Part#AG-DM3

Base Mechanism

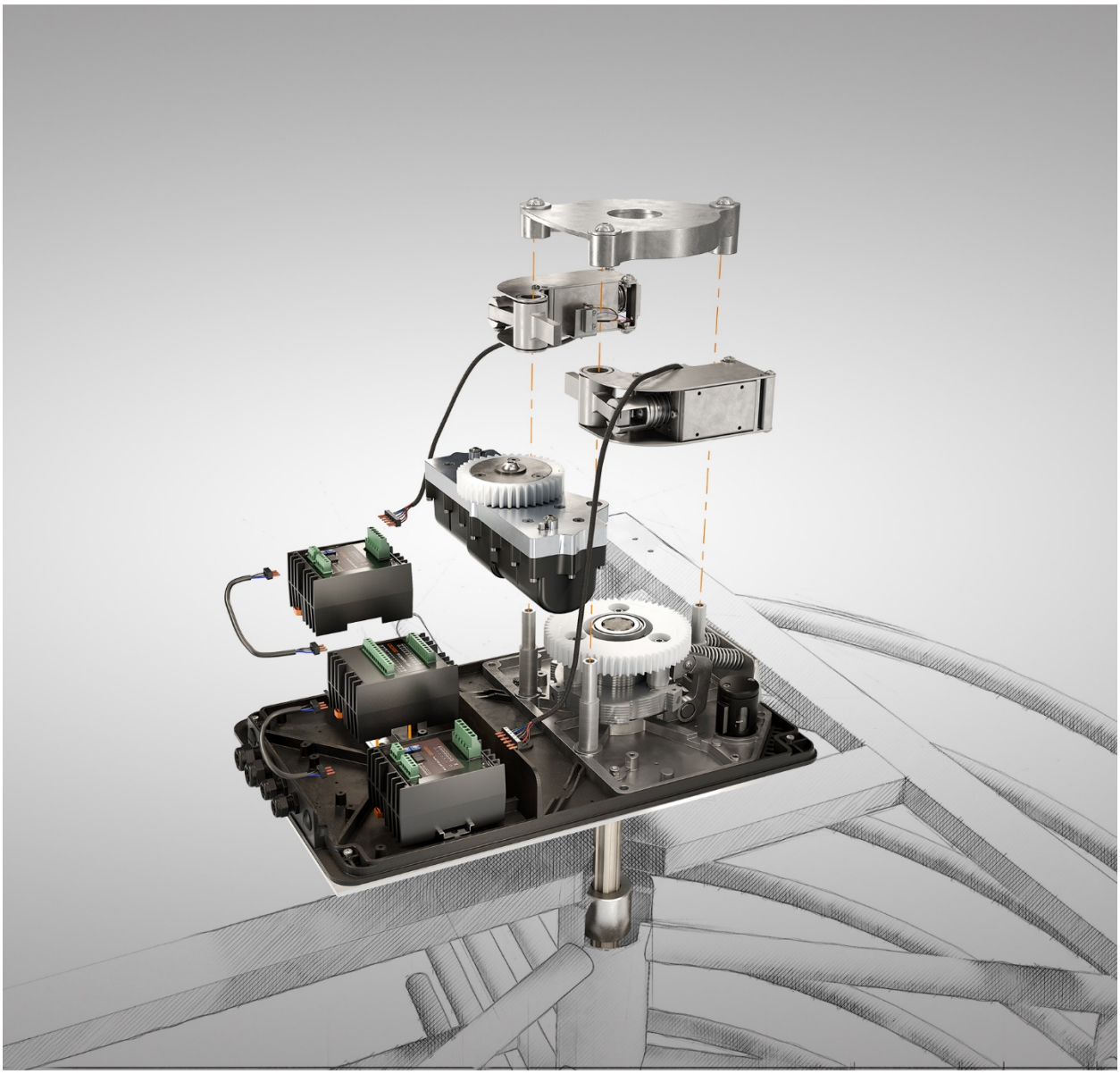
Part# AG-BM3

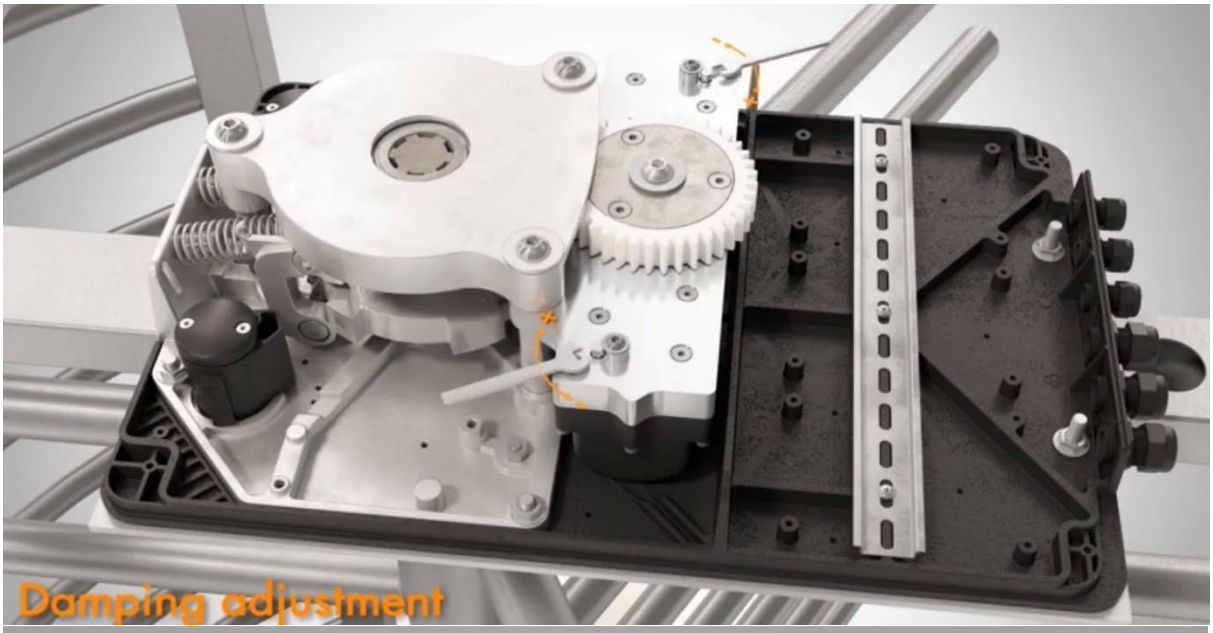


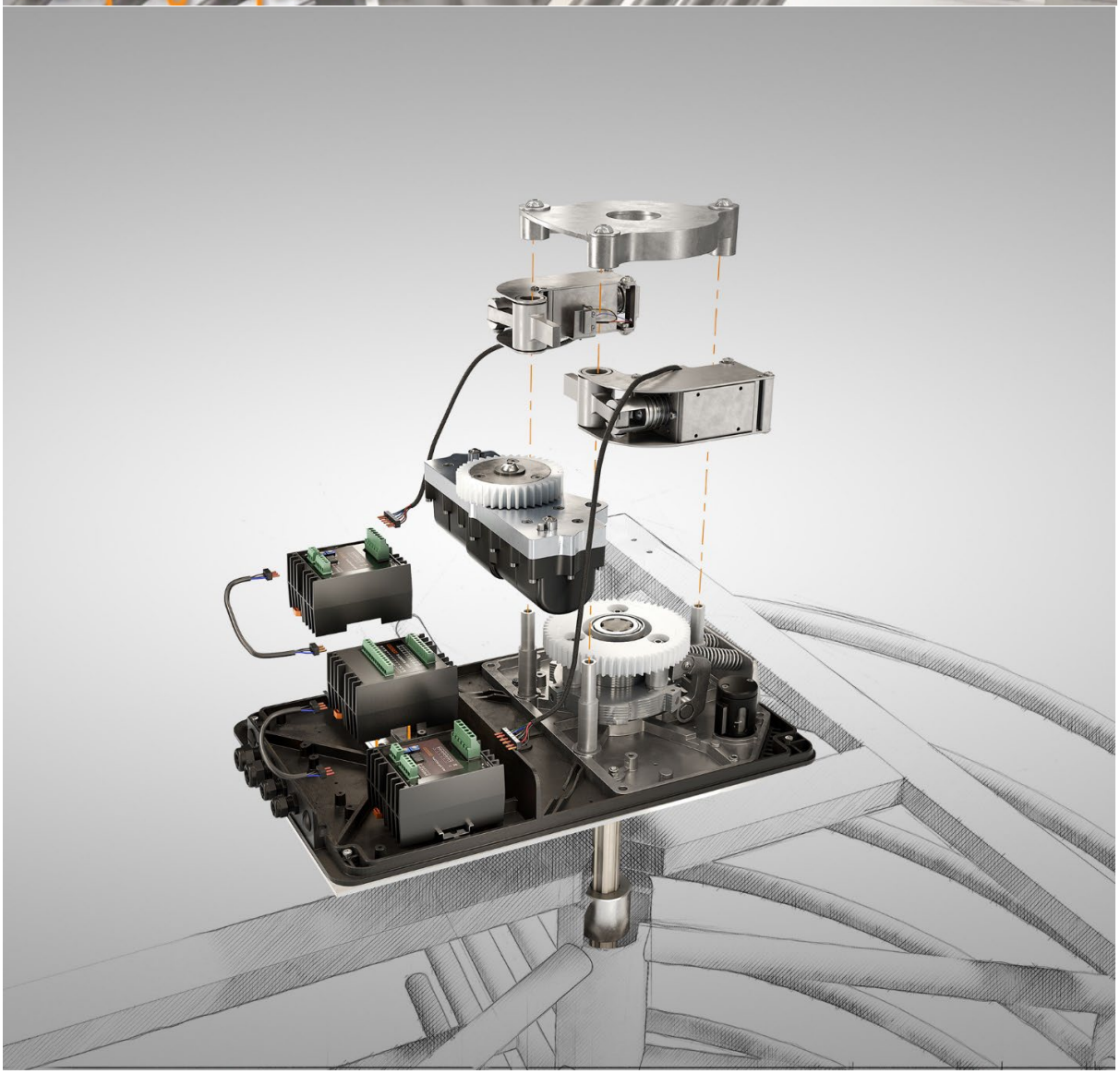
Bottom Bearing

Part# AG-BCC

Exploded View




Damping adjustment



AG-Series Single Turnstile

MAINTENANCE

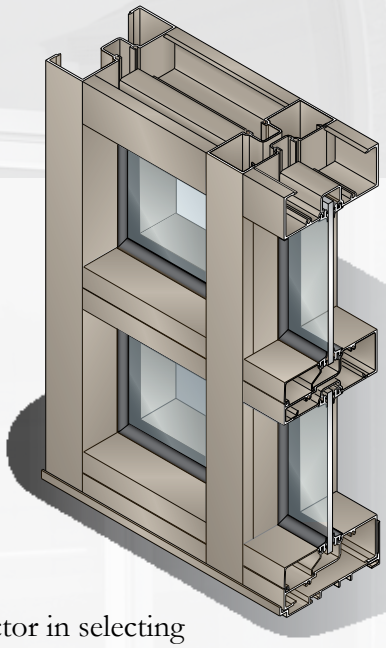
Annual Recommended Inspection and Maintenance for AG Series Turnstiles

- Remove the lid from the header.
- Clean out the header of any dust and debris.
- Take out center shaft by lifting it out of the top of the locking mechanism (you may need a pair of channel locks to grip the shaft).
- Add grease when reinserting the shaft, for ease of future maintenance.
- Lift the center rotor off of the bearing, inspect bearing, re-grease with red grease or replace if necessary. Make sure that the rotor is oriented properly with the arms facing the middle / center of the cage. If replacement is necessary the bottom bearing part number is AGRB10.
- Test electrical function by triggering turnstile to unlock in each direction.
- Shut off the equipment breaker in the header of the turnstile, make sure that fail-open and fail-close are functioning properly.
- If your turnstile is equipped with lights, verify that all directional lights are working properly, replace bulbs or module as necessary.

STOREFRONT SYSTEMS

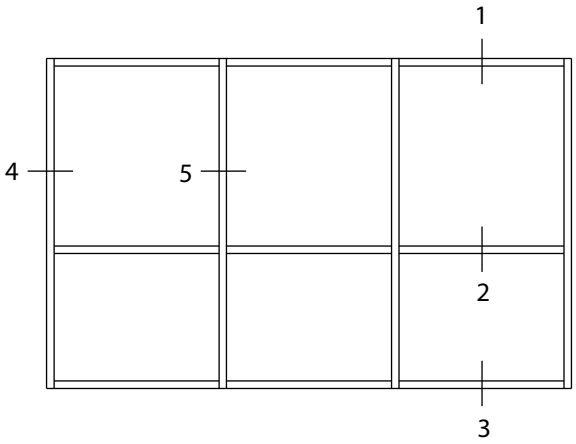
SERIES 400 & 450 CENTER GLAZE

- Series 400 - 1-3/4" x 4" (44.5 x 101.6 mm)
- Series 450 - 1-3/4" x 4-1/2" (44.5 x 114.3 mm)
- 1/4" or 3/8" (6 or 10 mm) Glazing Infills
- Injection Molded Water Deflectors
- Screw Spline Assembly
- Shear Block Assembly
- Stacking Installation Option
- Full Range of Accessory Components
- Available in Anodized or Painted Finishes
- Interior or Exterior Glazed



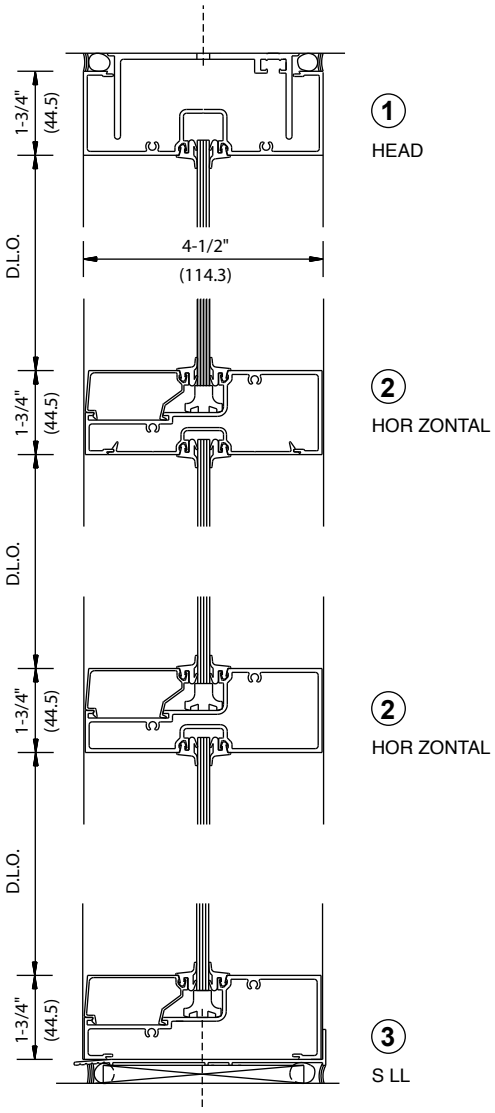
Fabrication and installation labor costs have always been a decisive factor in selecting framing systems for storefront projects. We offer cost efficient versatile Center Glazed Systems with clean lines and superb performance. All series may be interior or exterior glazed. A top load E.P.D.M. gasket is used to position and weatherseal the glass in the aluminum pocket. Center Glazed Systems are compatible with most Storefront Entrance Doors.

SERIES 400 & 450 STOREFRONTS
TYPICAL DETAILS



TYPICAL ELEVATION

Series 450 details shown; Series 400 are similar.
Our Center Glazed Systems can be interior or exterior glazed, with Screw Spline or Shear Block Assembly.

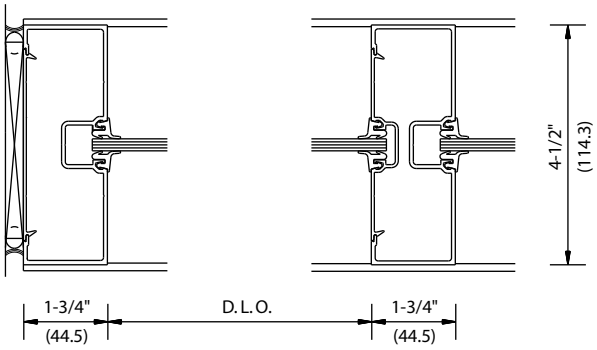


1 HEAD

2 HOR ZONTAL

2 HOR ZONTAL

3 S LL



4 JAMB

5 VERT CAL

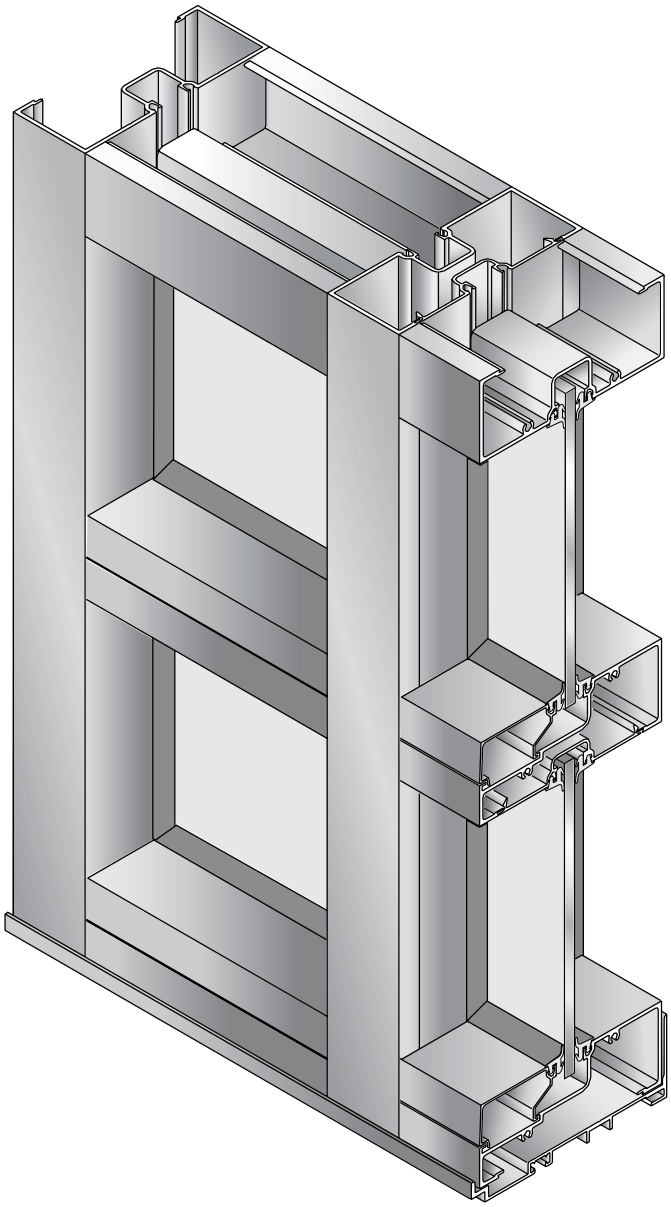
NOT TO SCALE

TURNSTILES.us

INSTALLATION INSTRUCTIONS

SERIES 400, 450, 451, AND IT451

CENTER GLAZED SYSTEMS



HANDLING, STORAGE, AND PROTECTION OF ALUMINUM

The following precautions are recommended to protect the material against damage. Following these precautions will help ensure early acceptance of your products and workmanship.

A. HANDLE CAREFULLY.
All aluminum materials at job site must be stored in a safe place, well removed from possible damage by other trades. Cardboard wrapped or paper interleaved materials must be kept dry.

B. CHECK ARRIVING MATERIALS.
Check for quantity counts and keep records of where various materials are stored.

C. KEEP MATERIALS AWAY FROM WATER, MUD, AND SPRAY.
Prevent cement, plaster or other materials from damaging the finish.

D. PROTECT THE MATERIALS AFTER ERECTION.
Protect erected frame with polyethylene or canvas splatter screen. Cement, plaster, terrazzo, other alkaline solutions, and acid based materials used to clean masonry are harmful to the finish. ***If any of these materials come in contact with the aluminum, IMMEDIATELY remove with water and mild soap***.

The rapidly changing technology within the architectural aluminum products industry demands that the manufacturer reserve the right to revise, discontinue, or change any product line, speci ication, or electronic media without prior written notice.

NOTE: Dimensions in parentheses ( ) are millimeters unless otherwise noted.

GENERAL INSTALLATION NOTES

Recommended guidelines for all installations:

1. **REVIEW CONTRACT DOCUMENTS.** Check shop drawings, installation instructions, architectural drawings, and shipping lists to become thoroughly familiar with the project. The shop drawings take precedence and include specific details for the project. Note any ***field verified*** notes on the shop drawings prior to installing. The installation instructions are of a general nature and cover most conditions.

2. **INSTALLATION.** All materials are to be installed plumb, level, and true.

3. **BENCH MARKS.** All work should start from bench marks and/or column lines as established by the architectural drawings and the general contractor with guaranteed accuracy. Working from these datum points and lines determine:
   a) The plane of the wall in reference to offset lines provided on each floor.
   b) The finish floor lines in reference to bench marks on the outer building columns.
   c) Mullion spacing from both ends of masonry opening to prevent dimensional build-up of daylight opening.

4. **FIELD WELDING.** All field welding must be adequately shielded to avoid any splatter on glass or aluminum. Results will be unsightly and/or structurally unsound. Advise general contractor and other trades accordingly. All field welds of steel anchors must receive touch-up paint (zinc chromate) to avoid rust.

5. **SURROUNDING CONDITIONS.** Make certain that construction which will receive your materials is in accordance with the contract documents. If not, notify the general contractor in writing and resolve differences before proceeding with work.

6. **ISOLATION OF ALUMINUM.** Aluminum to be placed in direct contact with uncured masonry or incompatible materials should be isolated with a heavy coat of zinc chromate or bituminous paint.

7. **SEALANTS.** Sealants must be compatible with all materials with which they have contact, including other sealant surfaces. Consult with sealant manufacturer for recommendations relative to joint size, shelf life, compatibility, cleaning, priming, tooling, adhesion, etc. It is the responsibility of the ***Glazing Contractor*** to submit a statement from the sealant manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealants, and interpreting test results relative to material performance, including recommendations for primers and substrate preparation required to obtain adhesion. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication must be established. ***This is required on every project***.

8. **FASTENING.** Within the body of these instructions "fastening" means any method of securing one part to another or to adjacent materials. Only those fasteners used within the system are specified in these instructions. Due to the varying perimeter conditions and performance requirements, perimeter and anchor fasteners are not specified in these instructions. For perimeter and anchor fasteners refer to the shop drawings or consult the fastener supplier.

9. **BUILDING CODES.** Due to the diversity in state/provincial, local, and federal laws and codes that govern the design and application of architectural products, it is the responsibility of the individual, architect, owner, and installer to assure that products selected for use on projects comply with all the applicable building codes and laws. U.S. Aluminum exercises no control over the use or application of its products, glazing materials, and operating hardware, and assumes no responsibility thereof.

10. **EXPANSION JOINTS.** Expansion joints and perimeter seals shown in these instructions and in the shop drawings are shown at normal size. Actual dimensions may vary due to perimeter conditions and/or difference in metal temperature between the time of fabrication and the time of installation. Gaps between expansion members should be based on temperature at time of installation.

11. **WATER HOSE TEST.** As soon as a representative amount of the wall has been glazed (500 square feet or 46.5 m^2) a water hose test should be conducted in accordance with AAMA 501.2 specifications to check the installation. On all jobs the hose test should be repeated every 500 square feet (46.5 m^2) during the glazing operation.

12. **COORDINATION WITH OTHER TRADES.** Coordinate with the general contractor any sequence with other trades which offset curtain wall installation (i.e. fire proofing, back-up walls, partitions, ceilings, mechanical ducts, converters, etc.).

13. **CARE AND MAINTENANCE.** Final cleaning of exposed aluminum surfaces should be done in accordance with AAMA 609.1 for anodized aluminum and 610.1 for painted aluminum.

14. **SEALANTS.** Check shop drawings, installation instructions, architectural drawings and shipping lists to become thoroughly familiar with all sealants referenced in these instructions, which must be a one part elastomeric neutral cure silicone and must be applied according to the silicone manufacturer's recommendations.

15. **APPLICATION.** Structural silicone must be applied from the interior and weatherseal from the exterior after the interior structural silicone has fully cured.

16. **MAXIMUM ALLOWABLE STRESS ON SILICONE.** The maximum allowable size of the glass lite is controlled by the width and depth of the silicone joint combined with the specified design windload (PSF or Pa). The stress on the structural silicone must not exceed 20 PSI (137 KPa) for a 6:1 safety factor. Check Structural Silicone Chart in the Architectural Design Manual for this product series.

17. **ARCHITECT.** It is the responsibility of the architect to secure approval of the system and request from the Glazing Contractor the compatibility and adhesion test reports described below.

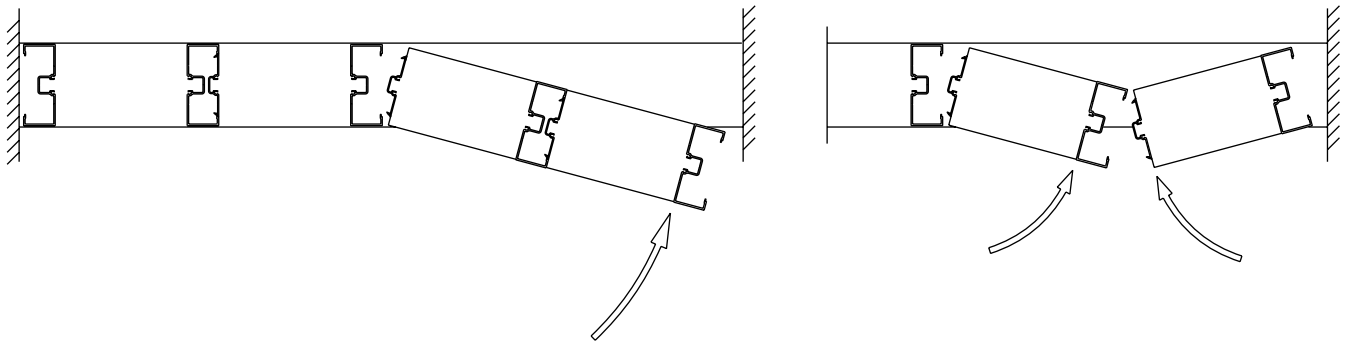
18. **GLAZING CONTRACTOR.** It is the responsibility of the glazing contractor to submit a statement from the sealant manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealants and interpreting test results relative to material performance, including recommendations for primers and substrate preparation required to obtain adhesion. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication must be established. This is required on every project.

19. **U.S. ALUMINUM.** It is the responsibility of U.S. Aluminum to supply a system to meet the architect's specifications.

INSTALLATION INSTRUCTIONS

Frames may be shop fabricated and shipped to job site partially or totally assembled. Systems feature screw race or anchor clip joinery for interior or exterior glazing. Screw race frames are fabricated in units and snapped together. Each unit must have at least one vertical deep pocket to allow for glazing.

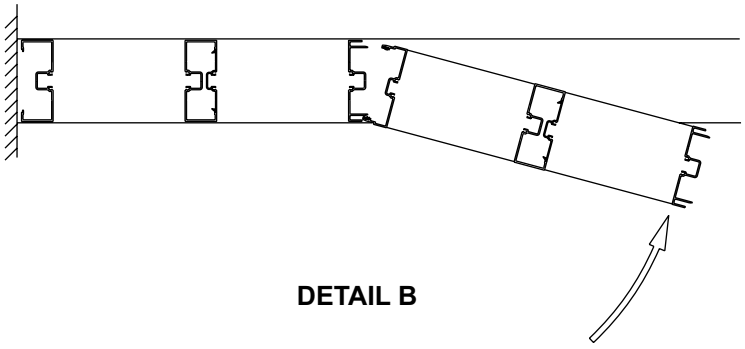
Never allow two shallow pockets to face each other. Plan units accordingly. **See DETAILS A and B**.



DETAIL A

Expansion mullions must be used in long run elevations to accommodate thermal movement. **See page 31**.
Units sit into a continuous subsill. Shimming of subsill is required for leveling.

NOTE: SERIES 450 for 1/4" (6) glass is shown in these instructions.
SERIES 400 for 1/4" (6) glass, 451 for 1" (25) glass and IT451 for 1" (25) glass are similar.



DETAIL B

FABRICATION AND ASSEMBLY

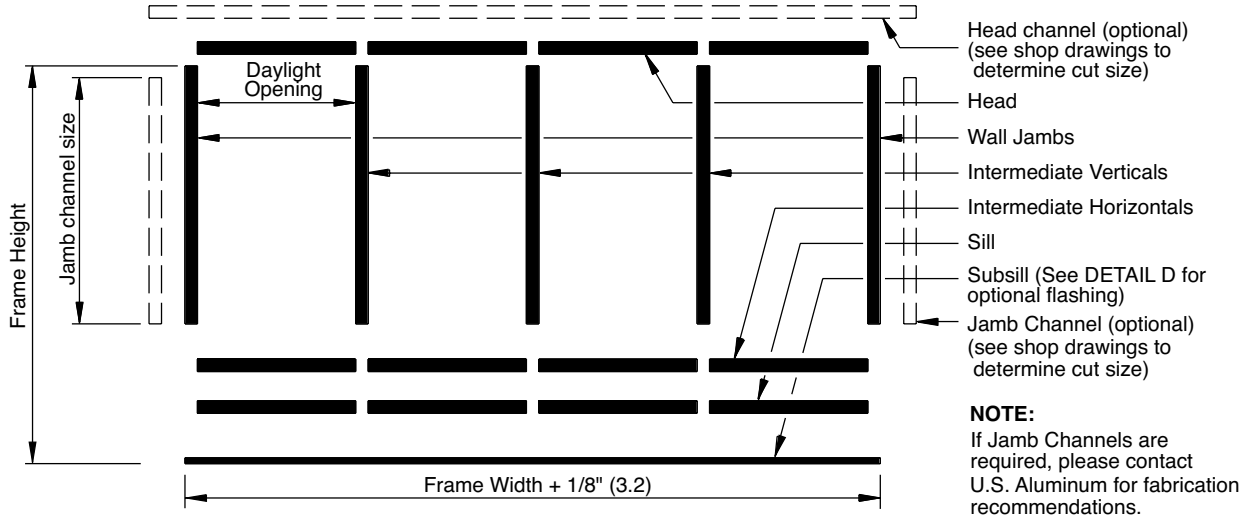
1. Measure Rough Opening to determine cut length of frame components. Allow a minimum clearance of 1/2" (13) at header and 3/8" (10) at wall jambs and subsill. Extra clearances may be necessary to accommodate building tolerances. When using optional AF100 Sill Flashing, allow 1/4" (6) minimum at head.

2. Cut subsill to size: Overall Frame Width plus 1/8" (3). Subsill must extend 1/8" (3) exterior of last wall jamb to allow last panel installation. Subsill runs through. **This applies to screw race assembly only**.

3. Cut verticals to size: Overall Frame Height minus 5/16" (8). Verticals run through. **See DETAIL C**. For cut lengths when using optional AF100 Sill Flashing cut vertical to frame height. **See DETAIL D**.

4. Cut horizontals to size: Daylight Opening. Horizontals run between verticals. Cut horizontal glazing beads 1/32" (0.8) undersize for easier installation.

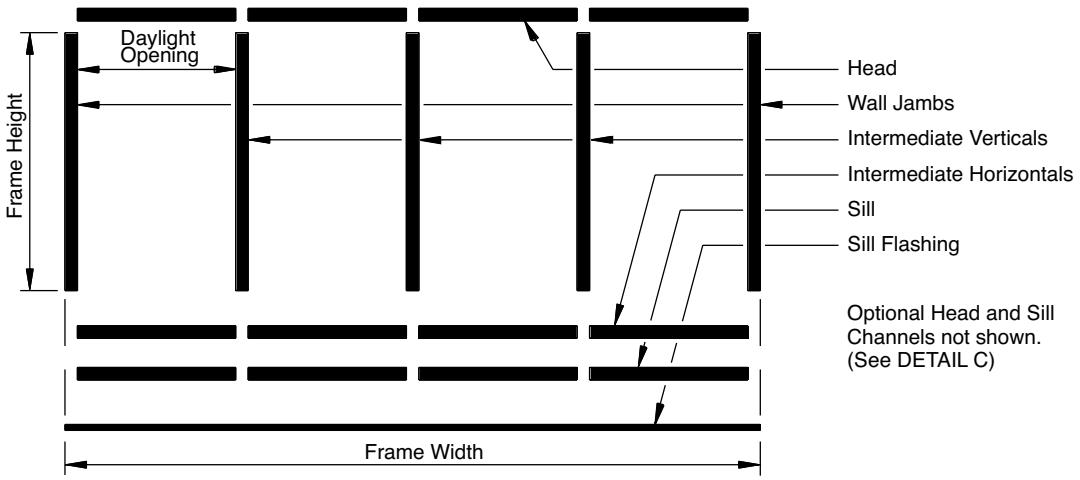
FRAME WITH SUBSILL



DETAIL C

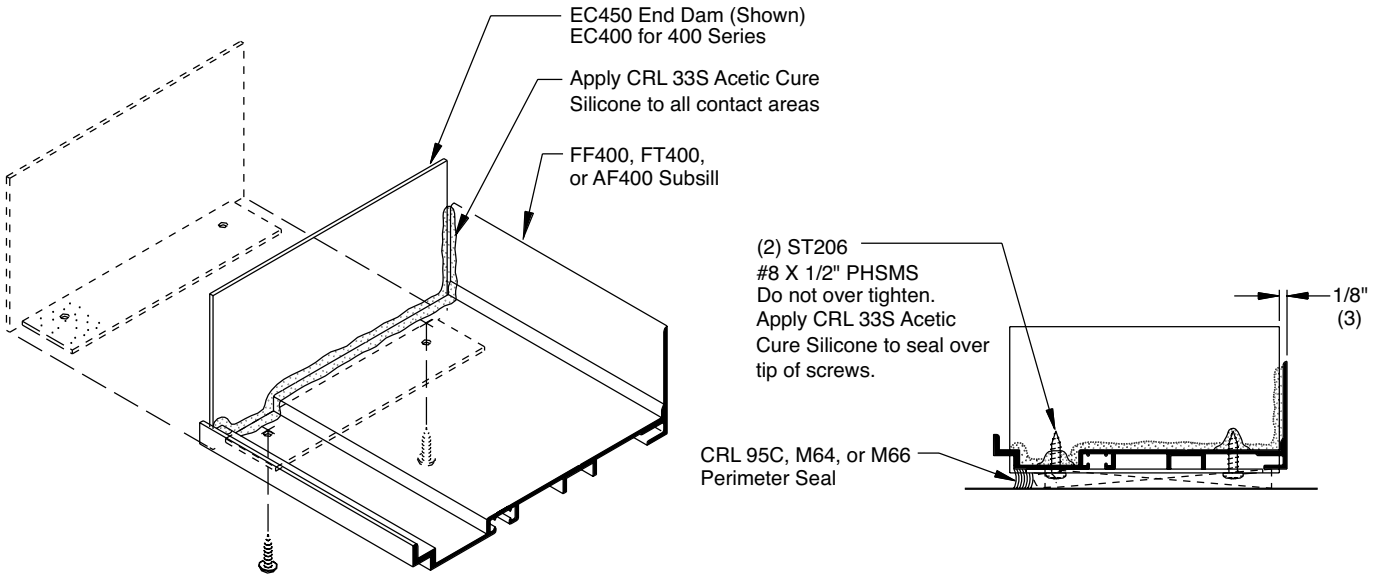
Vertical cutting lengths when using optional AF100 Sill Flashing: Cut verticals to overall frame height. **AF100 Sill Flashing thickness is not included as overall frame height**.

FRAME WITH OPTIONAL SILL FLASHING

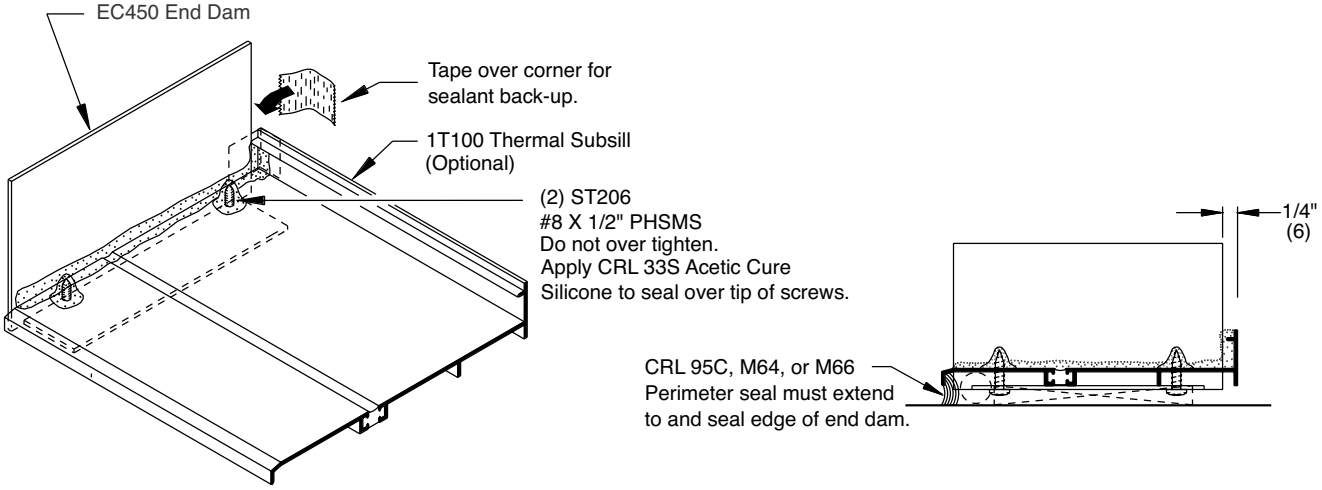


DETAIL D

5. Apply end dams to ends of subsills. **See DETAILS E through G**. Do not apply end dams to ends that butt against door jambs. **See DETAIL Z on PAGE 21**.



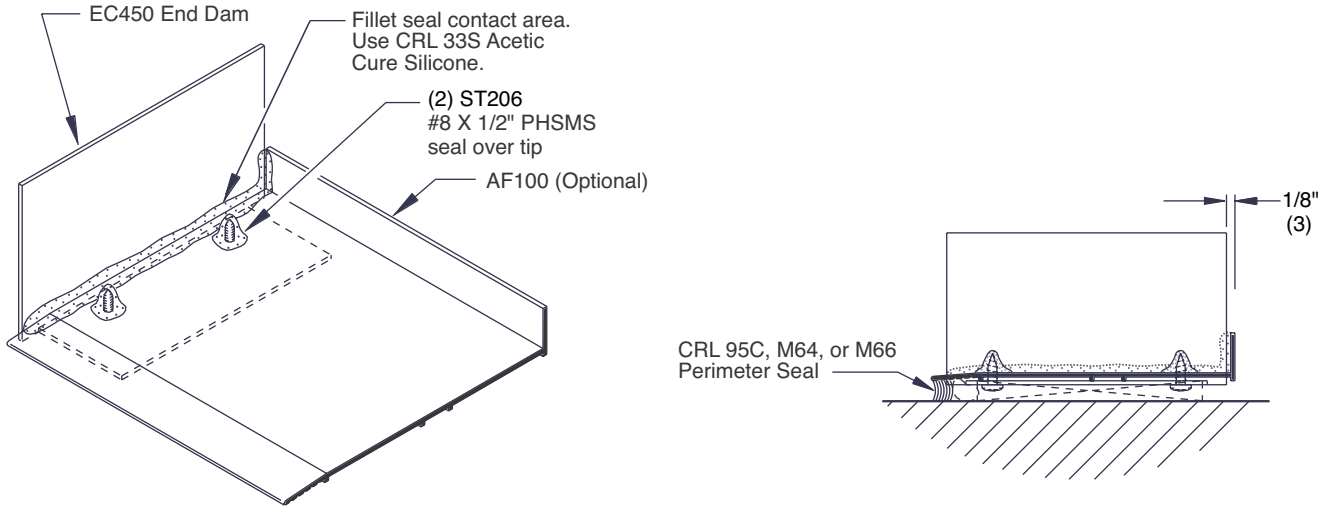
DETAIL E



DETAIL F

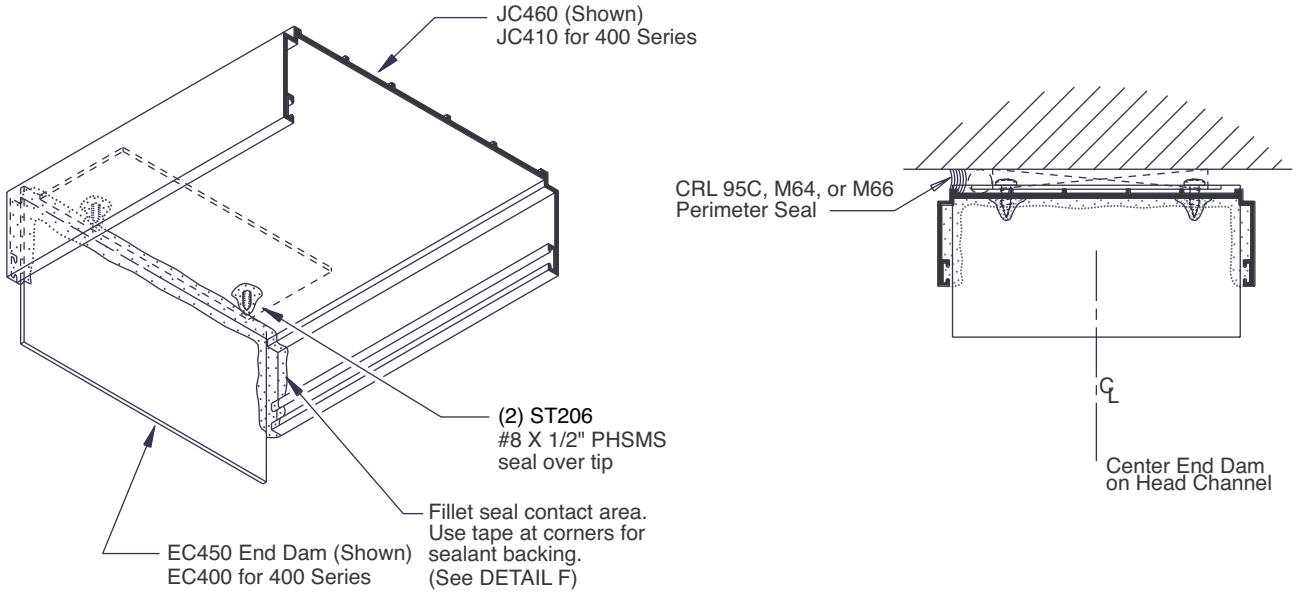
NOTE: Consult Sealant Manufacturer for Proper Cleaning and Priming Recommendations

NOTE: Application and tooling of CRL 33S Acetic Cure Silicone at end dams is CRITICAL to prevent water penetration.



DETAIL G

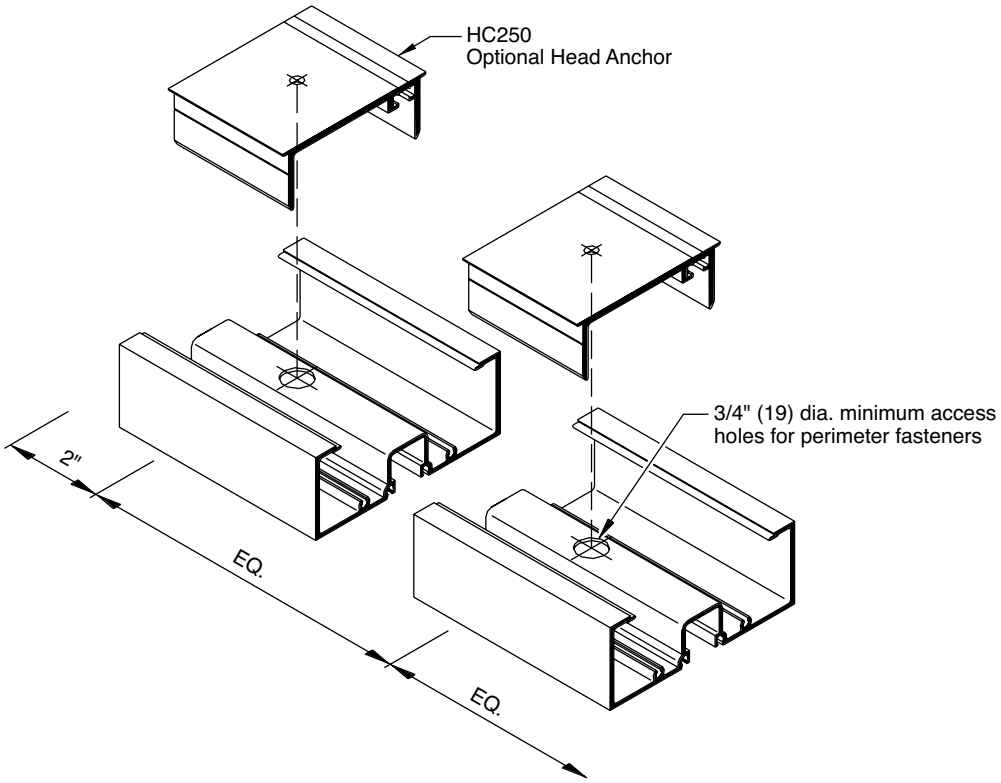
6. Apply end dams to ends of head channels. **See DETAIL H**.



DETAIL H

NOTE: Consult Sealant Manufacturer for Proper Cleaning and Priming Recommendations

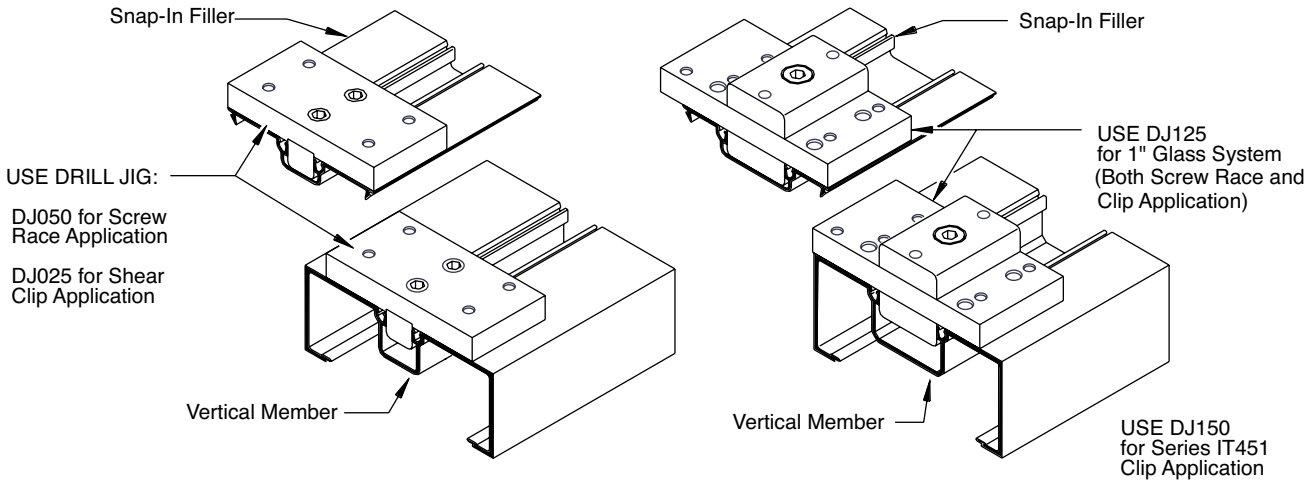
7. If optional head anchors are used drill 3/4" (19) dia. access holes from underside of head member 2" (51) from ends and at midpoint. **See DETAIL I**.



DETAIL I

DRILL JIG FABRICATION:

1. Mark the location of horizontals on vertical members and drill holes for assembly screws. The use of drill jigs is recommended. **See DETAILS K through O** for hole lay-out for screw race and anchor clip applications. Place drill jig into glazing pocket as **shown on DETAIL J**. See NOTE on page 10 for helpful information.



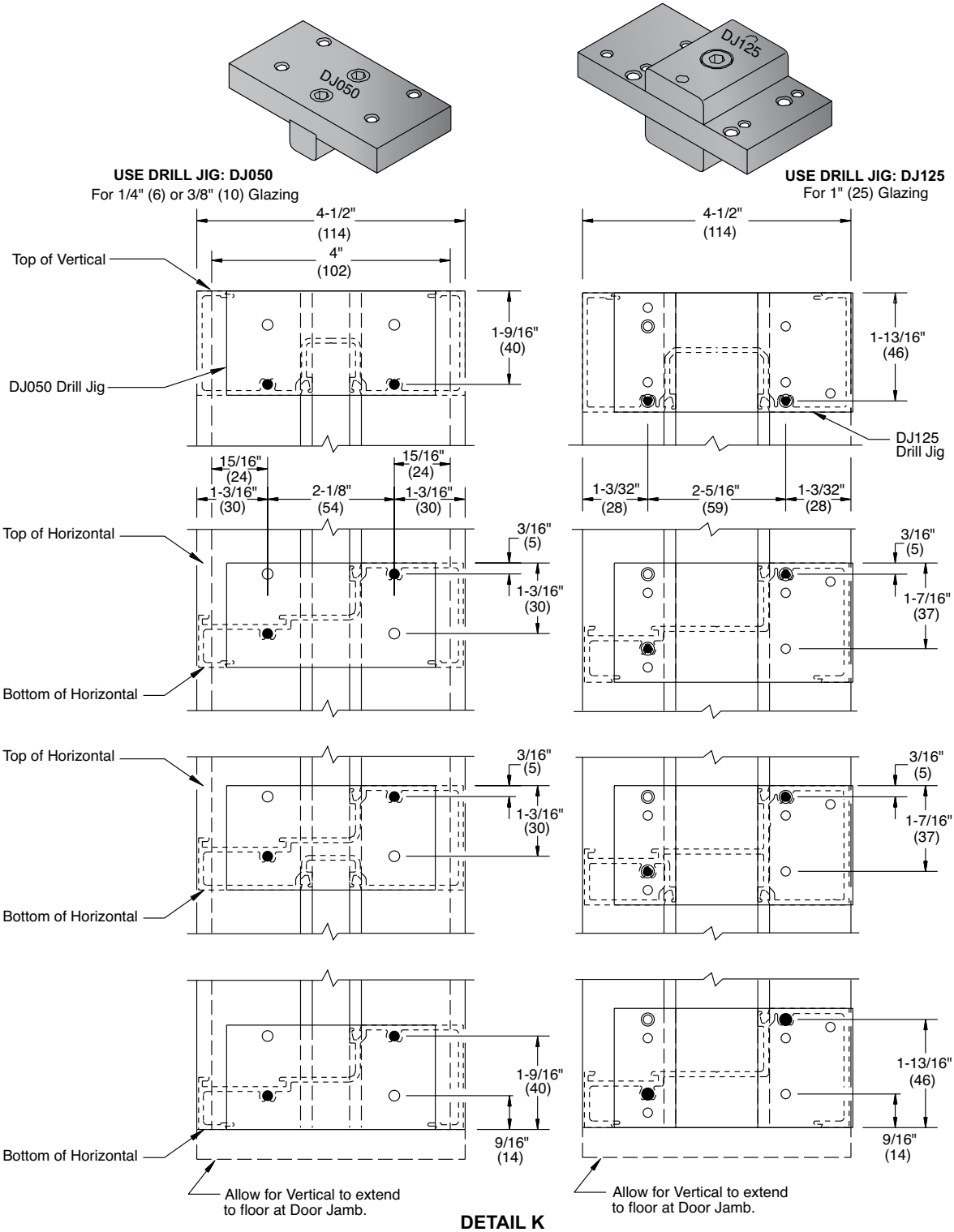
NOTE: For larger projects we offer the CRL Accufab Pro Tool visit: **usalum.com** for more information

DETAIL J

SCREW RACE JOINERY
EXTERIOR GLAZING

NOTE: Spot drill then remove Drill Jig to complete hole pattern. This will help keep bits sharp longer and reduce possibility of Drill Jig moving during drilling.

NOTE: Use **Drill Jig DJ050** for Series 400 and 450 and **Drill Jig DJ125** for Series 451.
Drill two .201" (5.1) dia. holes (#7 drill) per joint.



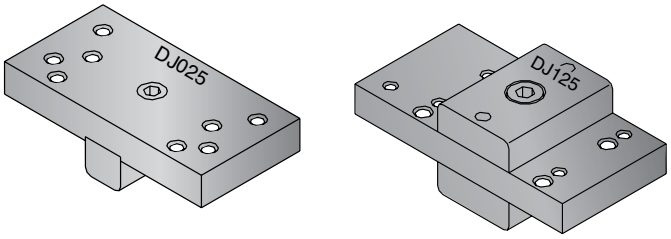
DETAIL K

NOT TO SCALE

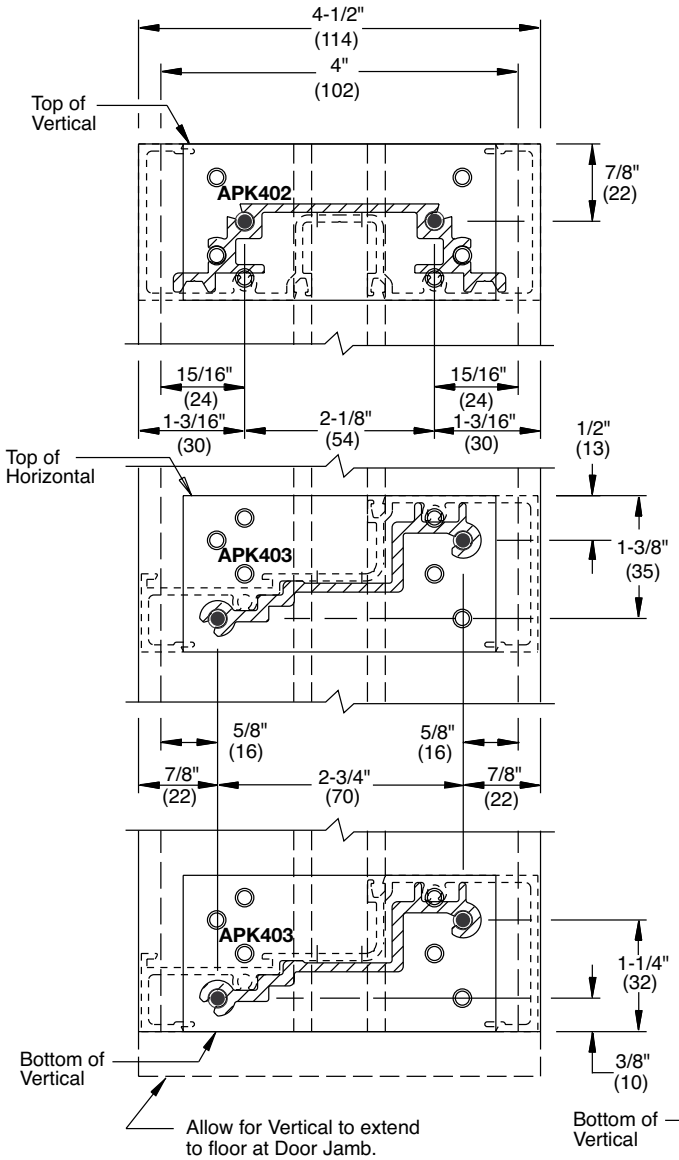
ANCHOR CLIP JOINERY
EXTERIOR GLAZING

The last three digits of the anchor clip's part number are stamped near the corresponding guide holes on the **DJ025** and **DJ125** jigs. Drill Jig will need to be rotated to achieve proper hole pattern.

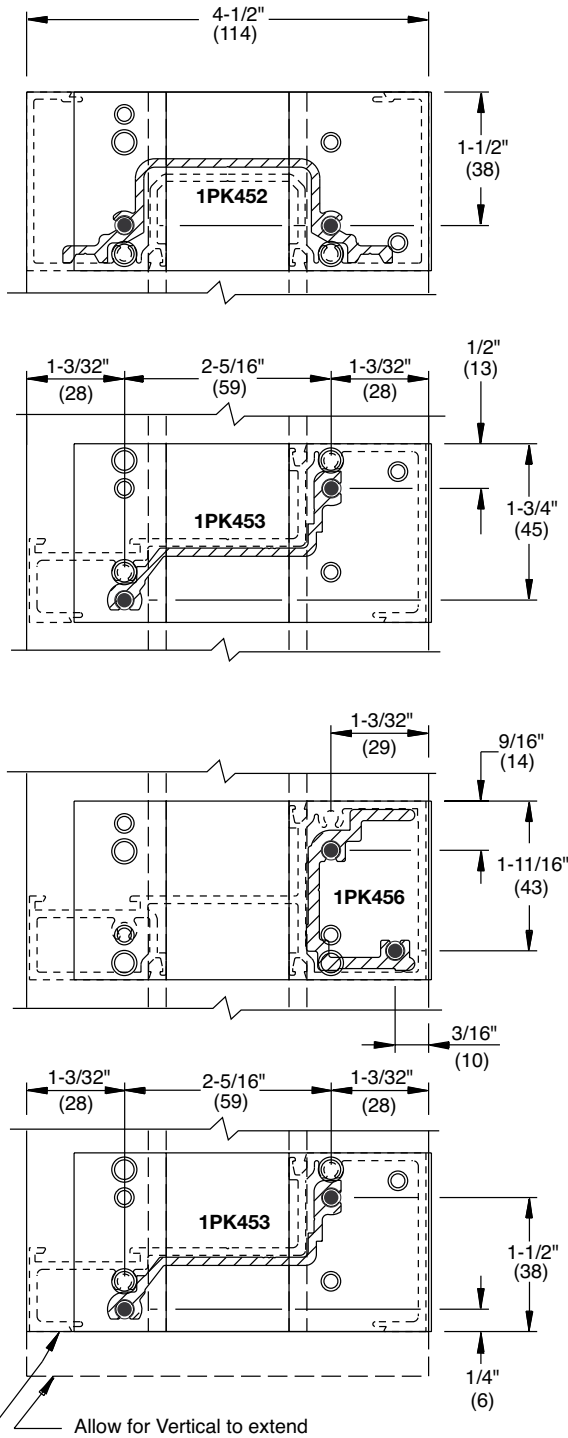
NOTE: Use **Drill Jig DJ025** for Series 400-S and 450-S and **Drill Jig DJ125** for Series 451-S.
Drill two .154" (3.9) dia. holes (#23 drill) per joint.



USE DRILL JIG: DJ025
For 1/4" (6) or 3/8" (10) Glazing



USE DRILL JIG: DJ125
For 1" (25) Glazing



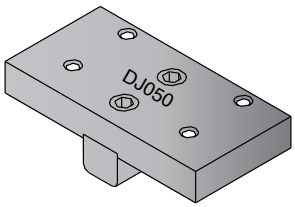
NOT TO SCALE

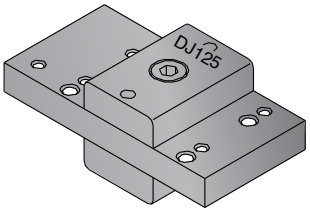
DETAIL L

SCREW RACE JOINERY
INTERIOR GLAZING

NOTE: Use **Drill Jig DJ050** for Series 400 and 450 and **Drill Jig DJ125** for Series 451.
Drill two .201" (5.1) dia. holes (#7 drill) per joint.

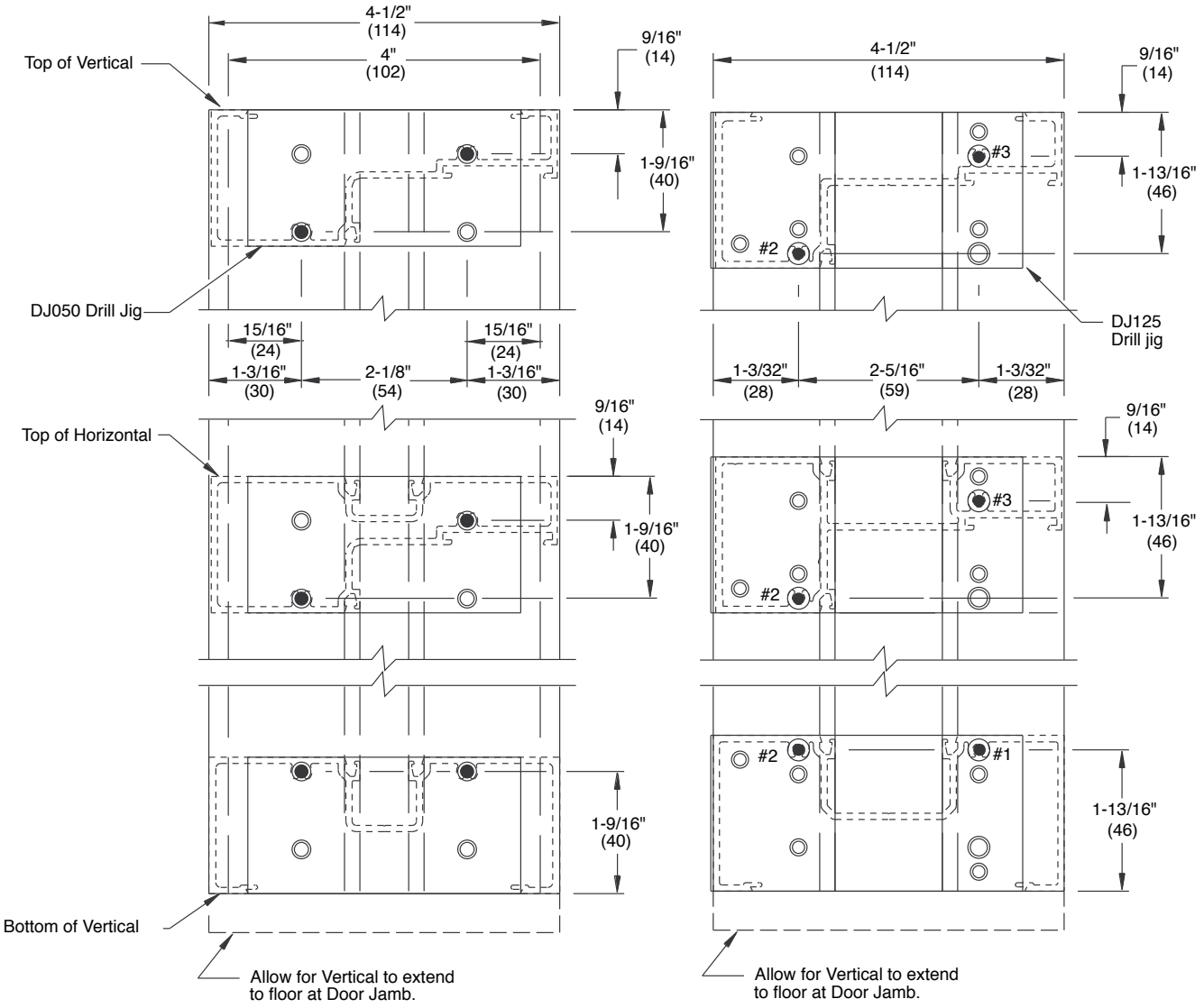
DJ125 NOTE: Guide Holes are marked with stamped numbers 1 through 8. See detail below for the appropriate guide marks. Drill Jig will need to be flipped to achieve proper hole pattern.





USE DRILL JIG: DJ050
For 1/4" (6) or 3/8" (10) Glazing

USE DRILL JIG: DJ125
For 1" (25) Glazing



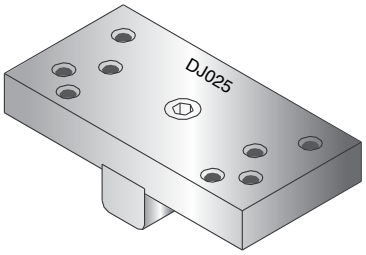
DETAIL M

NOT TO SCALE

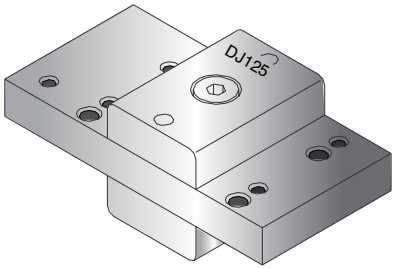
ANCHOR CLIP JOINERY
INTERIOR GLAZING

NOTE: Use **Drill Jig DJ025** for Series 400-S and 450-S and **Drill Jig DJ125** for Series 451-S. Drill two .154" (3.9) dia. holes (#23 drill) per joint.

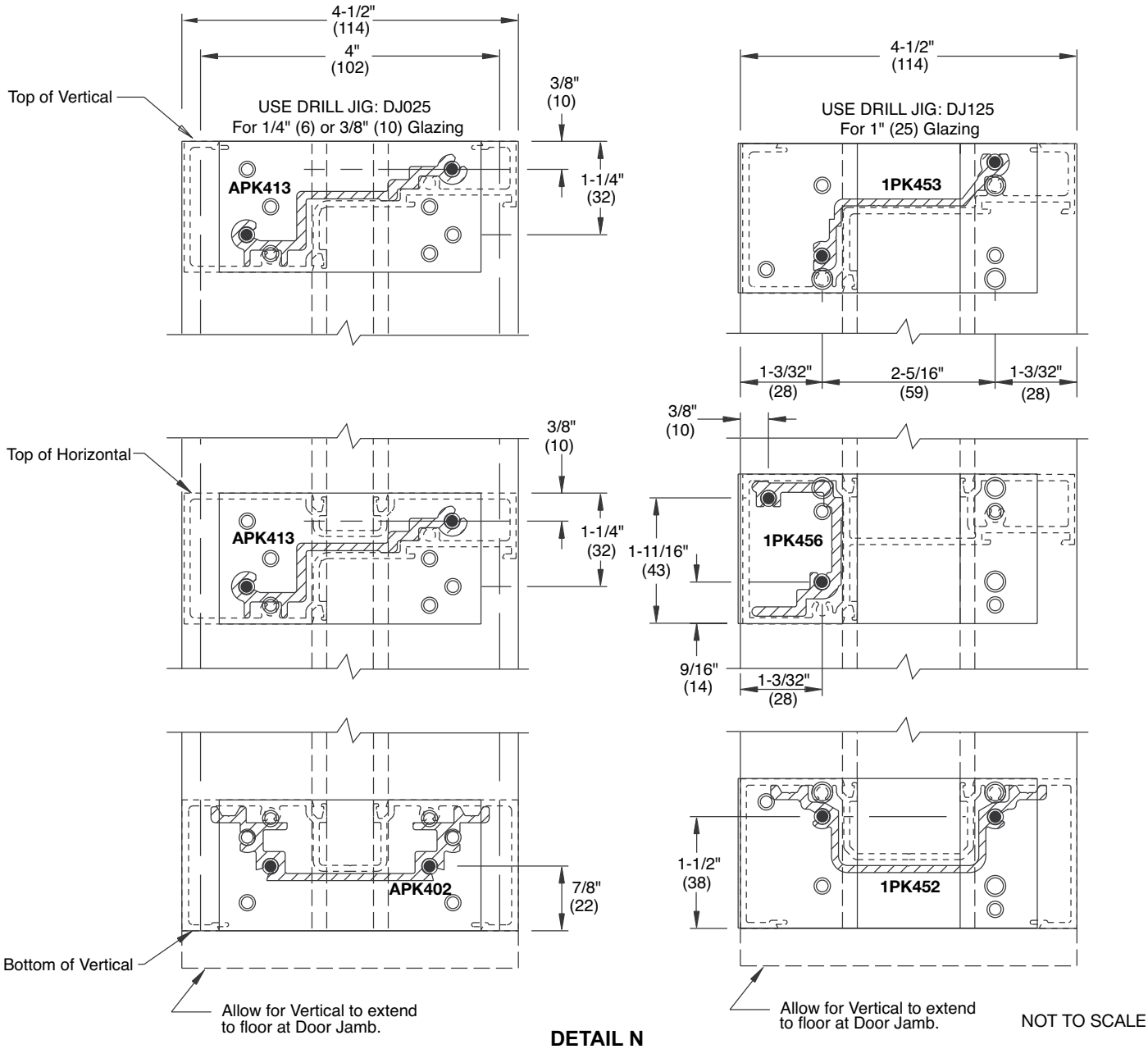
DJ025 and DJ125 NOTE: The last three digits of the anchor clip part number are stamped near the corresponding guide holes. Drill Jig will need to be rotated to achieve proper hole pattern.



INTERIOR GLAZING



EXTERIOR GLAZING

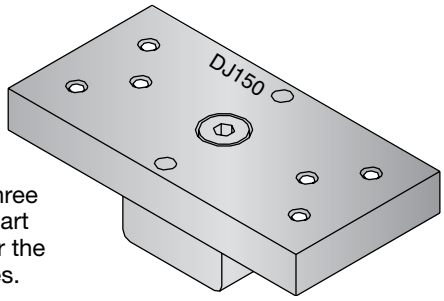


DETAIL N

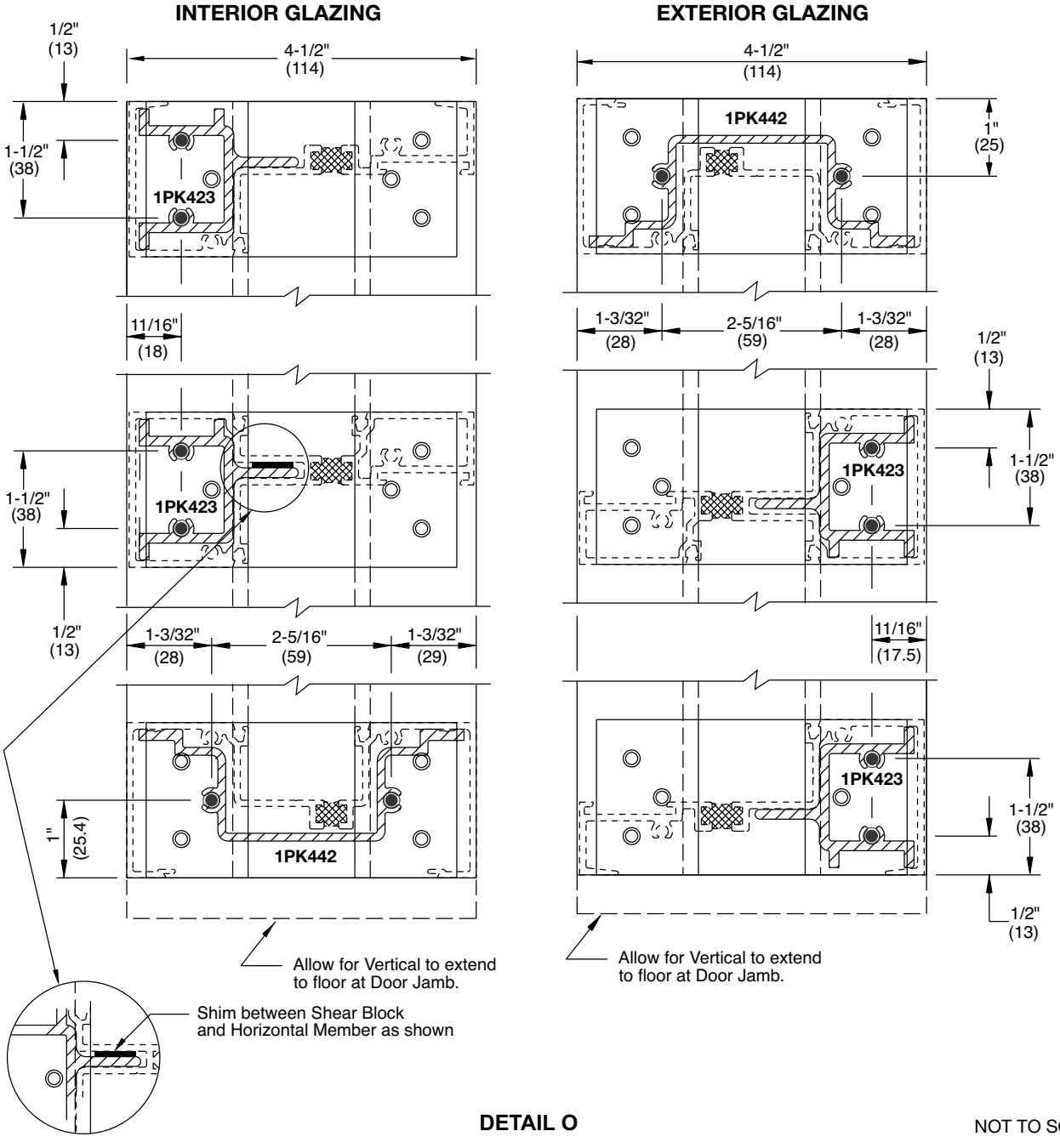
NOT TO SCALE

IT451 ANCHOR CLIP JOINERY
INTERIOR / EXTERIOR GLAZING

NOTE: Use **Drill Jig DJ150** for Series IT451.
Drill two .154" (3.9) dia. holes (#23 drill) per joint.



DJ150 NOTE: The last three digits of the anchor clip part number are stamped near the corresponding guide holes.



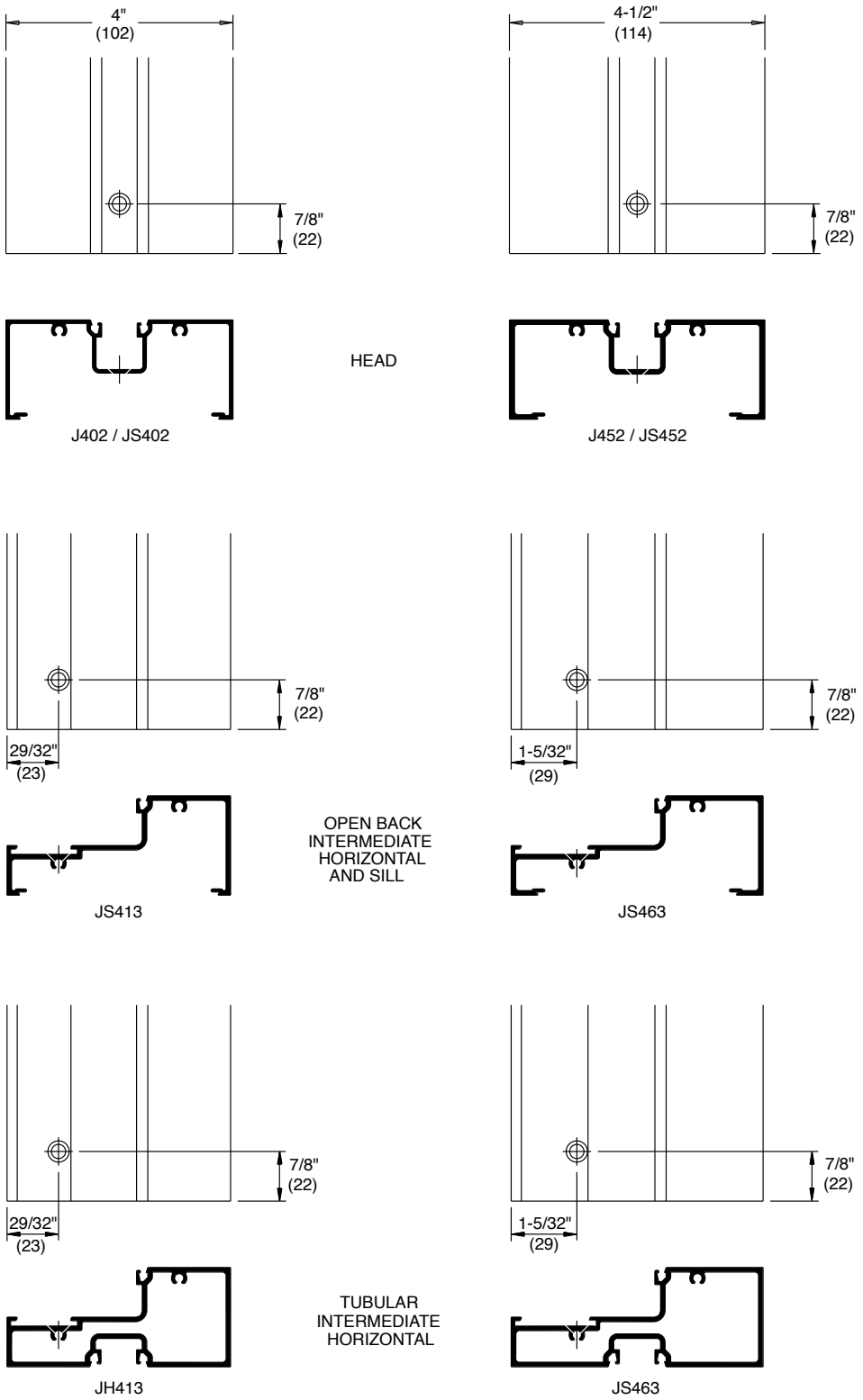
DETAIL O

NOT TO SCALE

PICK-UP SCREWS for SERIES 400 and 450 1/4" (6) Glazing

If using horizontal anchor clips, prepare ends of intermediate horizontal members for anchor pick-up screws. Drill and Countersink for #10 X 1/2" F.H. Pick-Up Screws. **See DETAIL P**.

NOTE: Drill one .201" (5.1) dia. hole (#7 drill) and countersink.



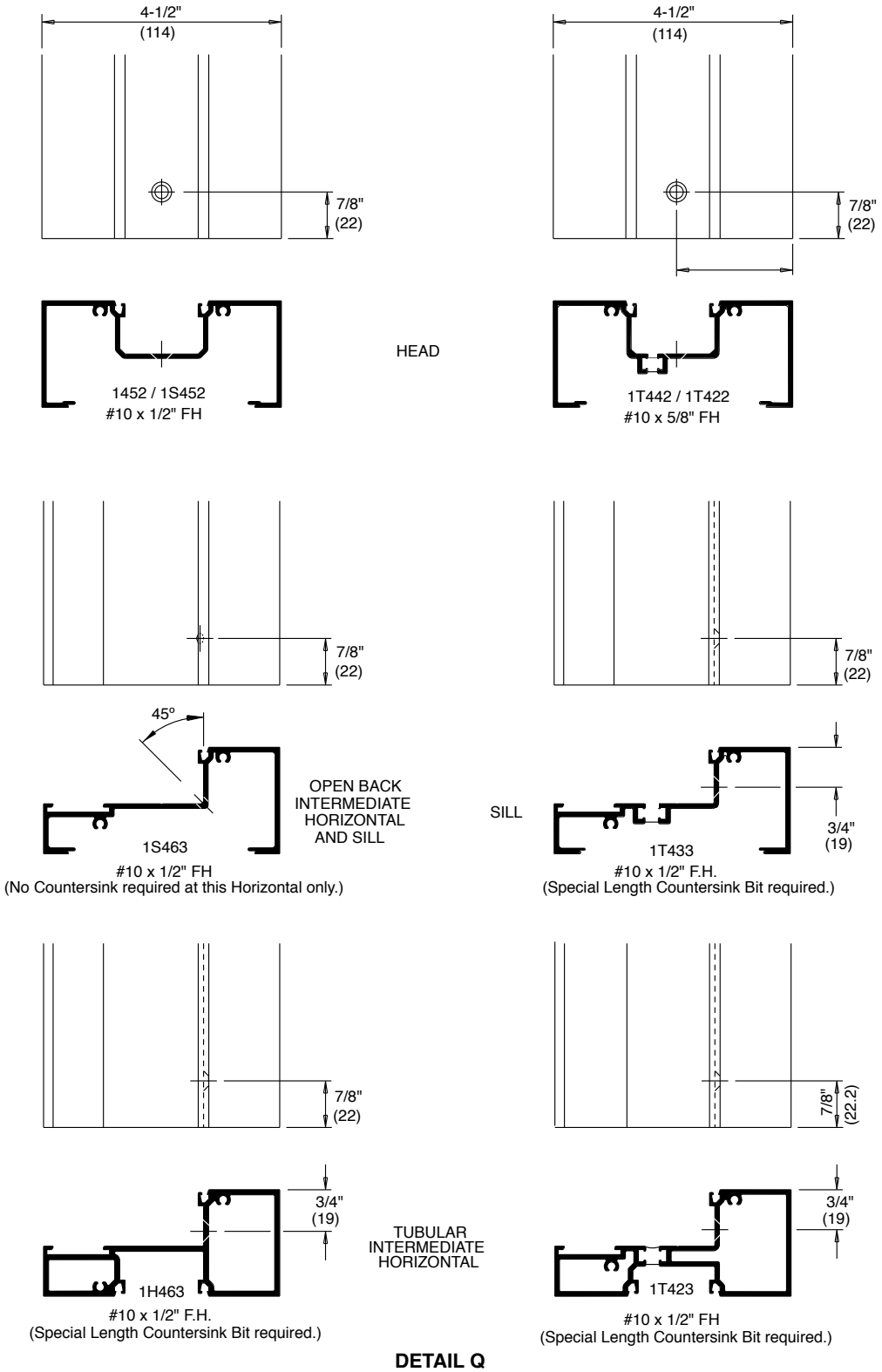
DETAIL P

NOT TO SCALE

PICK-UP SCREWS for SERIES 451 and IT451 1" (25) Glazing

If using horizontal anchor clips, prepare ends of intermediate horizontal members for anchor pick-up screws. **See DETAIL Q** for screw type and length for each member.

NOTE: Drill one .201" (5.1) dia. hole (#7 drill) and countersink. (No countersink required at **IS463**)

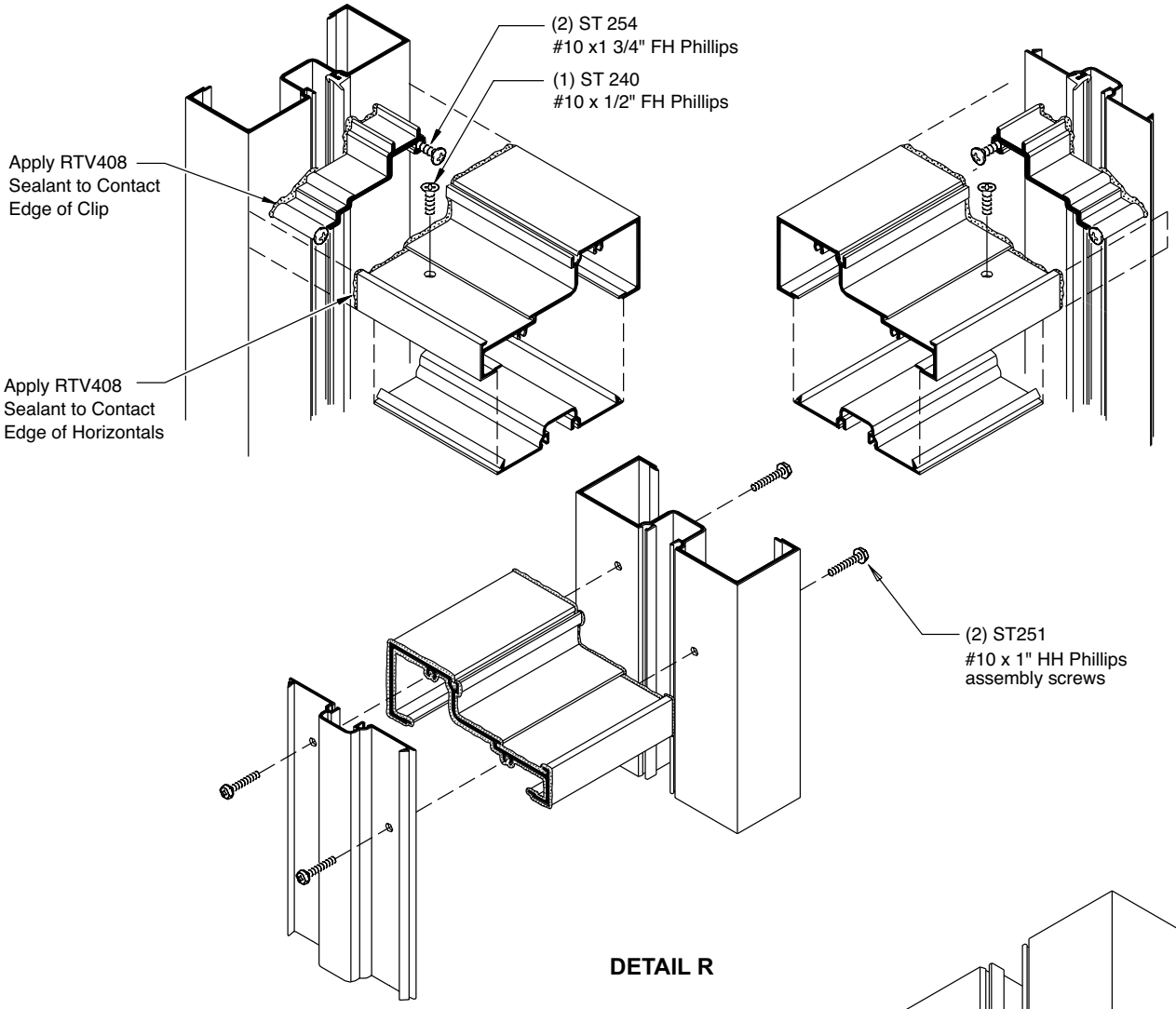


DETAIL Q

NOT TO SCALE

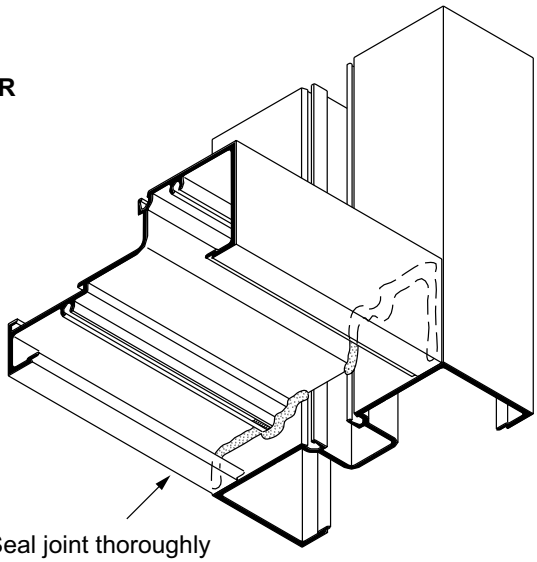
9. If transition adaptors for 1/4" (6.4) spandrel are being used (Series 451 and IT451) **see DETAIL MM on page 27**.

10. Apply CRL RTV408 silicone to edge of all horizontal members and assemble panels using screws provided. **See DETAIL R**. Never allow two shallow pockets to face each other. Tool excess silicone. Refer to pages 16 and 17 for pick up screw prep locations.



DETAIL R

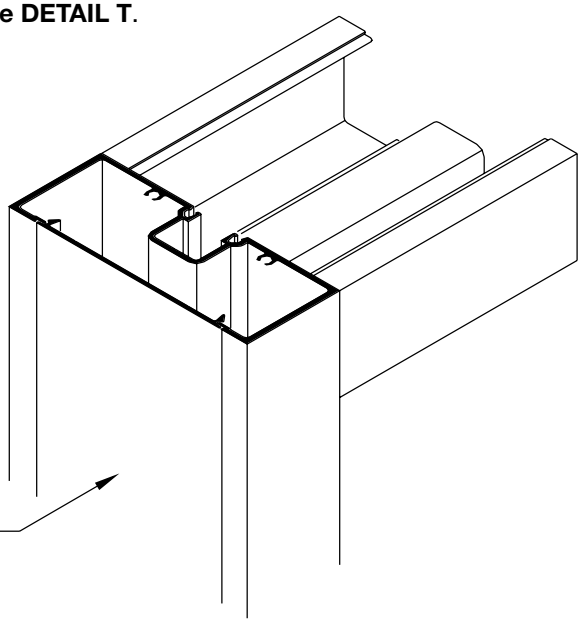
After Panels are assembled, apply and tool a bead of silicone to joint between verticals and sill members from underside, to ensure a water tight installation. **See DETAIL S**.



NOTE: Seal joint thoroughly from underside. This is a Critcal Seal Area.

DETAIL S

11. Apply jamb filler to back of wall jamb. **See DETAIL T**.

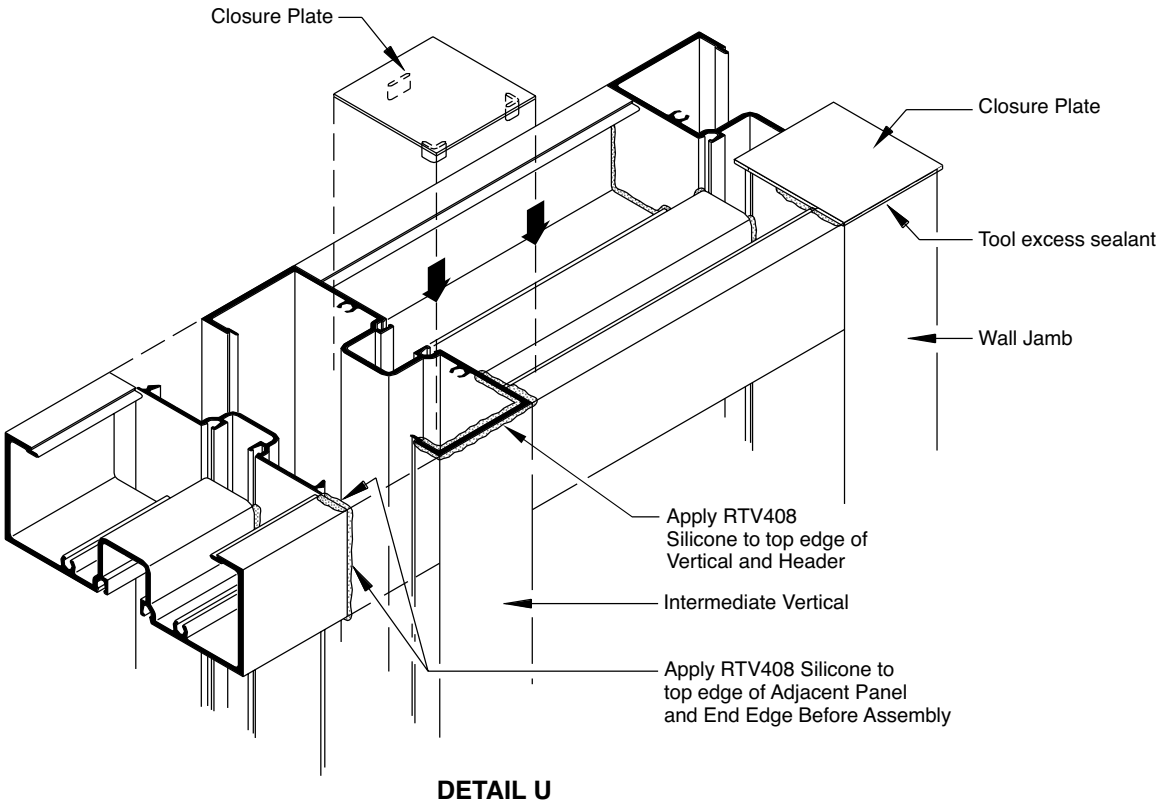


Flat Filler required for Series 400 System optional for Series 450, 451, and IT451

NOTE: Flat Filler to be full length of Jambs at Series 400. If used at 4-1/2" (114) Depth Systems, Cut 6" (152) long. Place at centers of Jamb Anchors.

DETAIL T

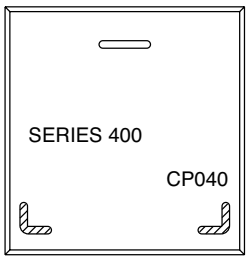
12. Apply CRL RTV408 silicone to top edge of vertical and header member. **See DETAIL U**. Insert closure plates. Closure plates will need to be modified to fit with some vertical members. **See page 19, DETAIL W**. Closure plates are required to ensure continuous perimeter sealing.



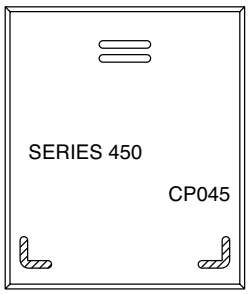
DETAIL U

With some applications end dams require tab removal. **See DETAIL V and W** below to determine which tabs to remove. (Tabs shown hatched are the tabs to remove)

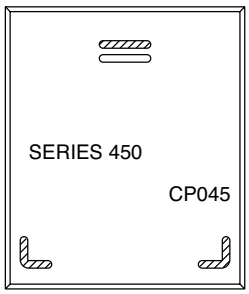
NOTE: Tabs should be cut-off flush with flat surface to assure proper fit at ends of vertical mullions.



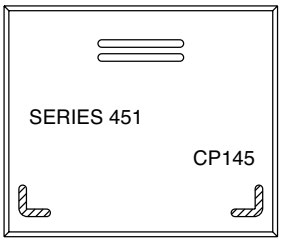
Use at: JS410 and JS419
Expansion Mullion
See DETAIL W below.



Use at: JS460 and JS469
Expansion Mullion
See DETAIL W below.

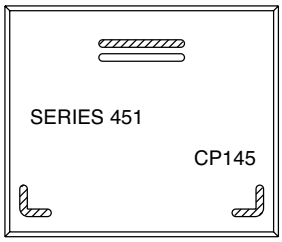


Use at: JH475
DURAFRONT Mullion



Use at: 1S470, 1S479, 1T470 and 1T479
Expansion Mullion
See DETAIL W Below.

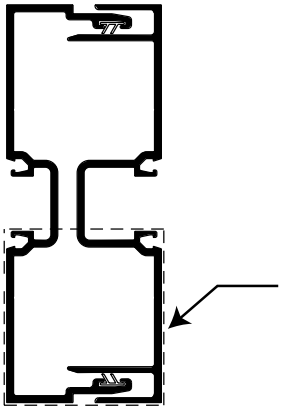
1S431 and 1S531
Heavy Wall Mullions



Use at: 1S471
Door Jamb Mullion

1H475
DURAFRONT Mullion

DETAIL V

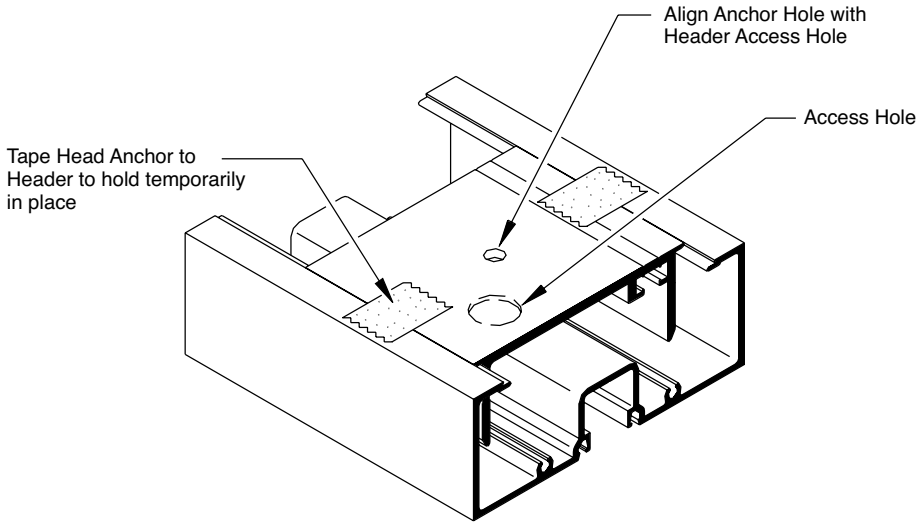


NOTE: Consult factory for sealing at Expansion Mullions.

END CAP INSTALLATION
AT EXPANSION MULLIONS
SERIES 400, 450, 451 & IT451

DETAIL W

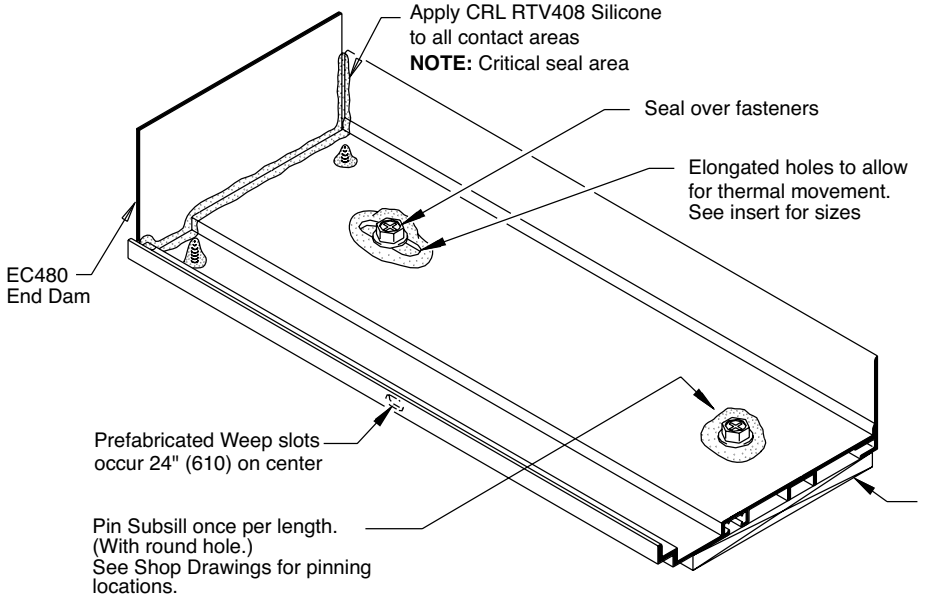
13. If head anchors are used tape them to header members at clearance hole locations. **See DETAIL X**.

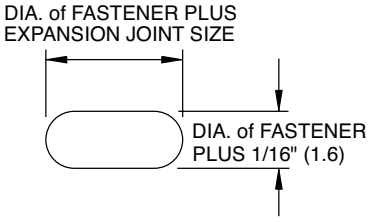


DETAIL X

When Entrances occur install Entrance Frames first. See Entrance Doors and Frame Installation Instructions.

14. Set subsill into place, shimmed as required for leveling, and anchor to structure. Locate fasteners 6" (152) each side of vertical and 24" (610) on center or as required. Holes for fasteners should be elongated laterally to allow for thermal movement. Pin subsill to structure at one point only per cut length. **NOTE:** See shop drawings for proper location of pinned connections. For corners **See DETAIL NN on PAGE 28**. Subsill should be shimmed at fastener locations, underneath verticals and at setting block locations. Seal all joints and over heads of fasteners. **See DETAIL Y**.





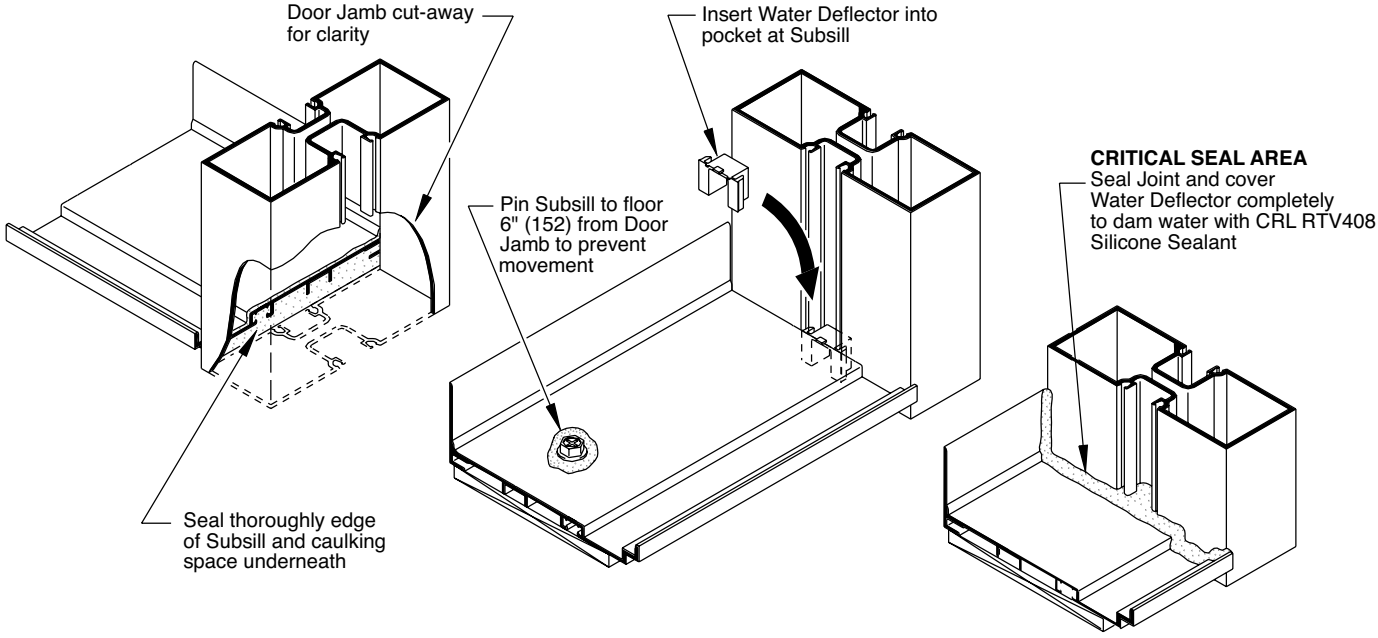
ELONGATED HOLE SIZE FORMULA

DETAIL Y

NOTE: Consult Sealant Manufacturer for Proper Cleaning and Priming Recommendations

NOT TO SCALE

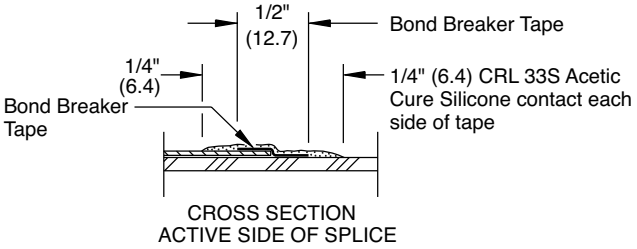
Subsill butts against door jambs, where they occur.
NOTE: End of subsill that butts against door jamb cannot be dammed. Special care should be taken to control water infiltration at this point. **See DETAIL Z**. Infiltrated water from upper lights must be kept out of jambs.
See NOTE on page 23, step 19.

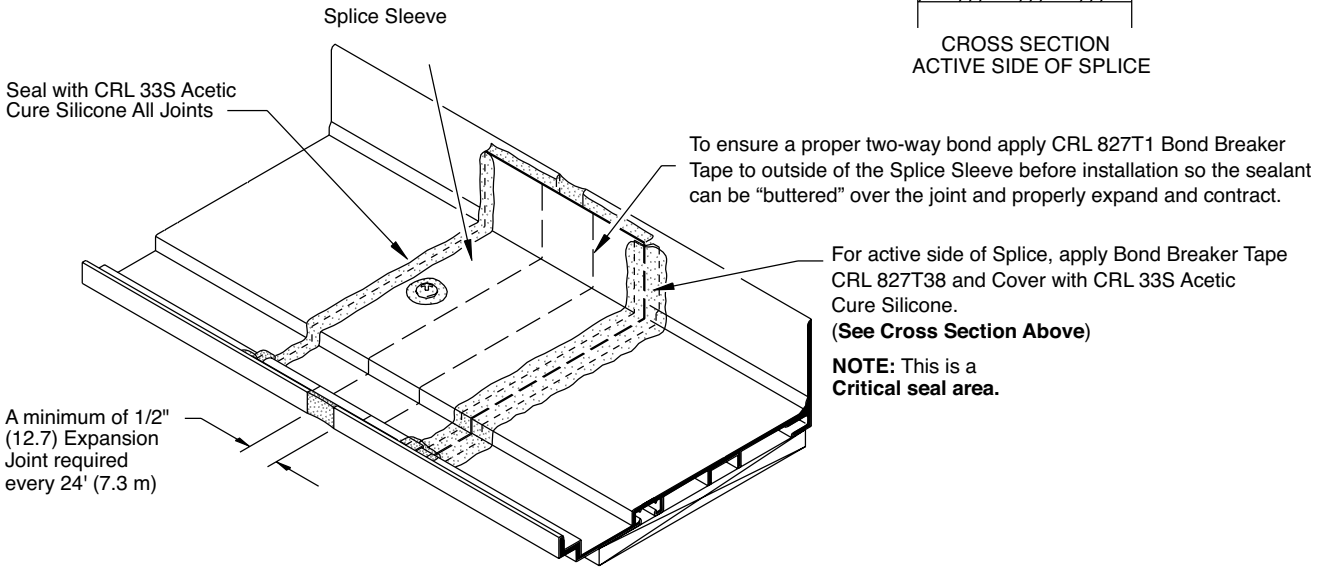


DETAIL Z

15. Splice as required. Splice sleeves are required at splice joints. **See DETAIL AA**.
Follow similar method when using 1T100 and AF100 subsills.

NOTE: Consult Sealant Manufacturer for Proper Cleaning and Priming Recommendations

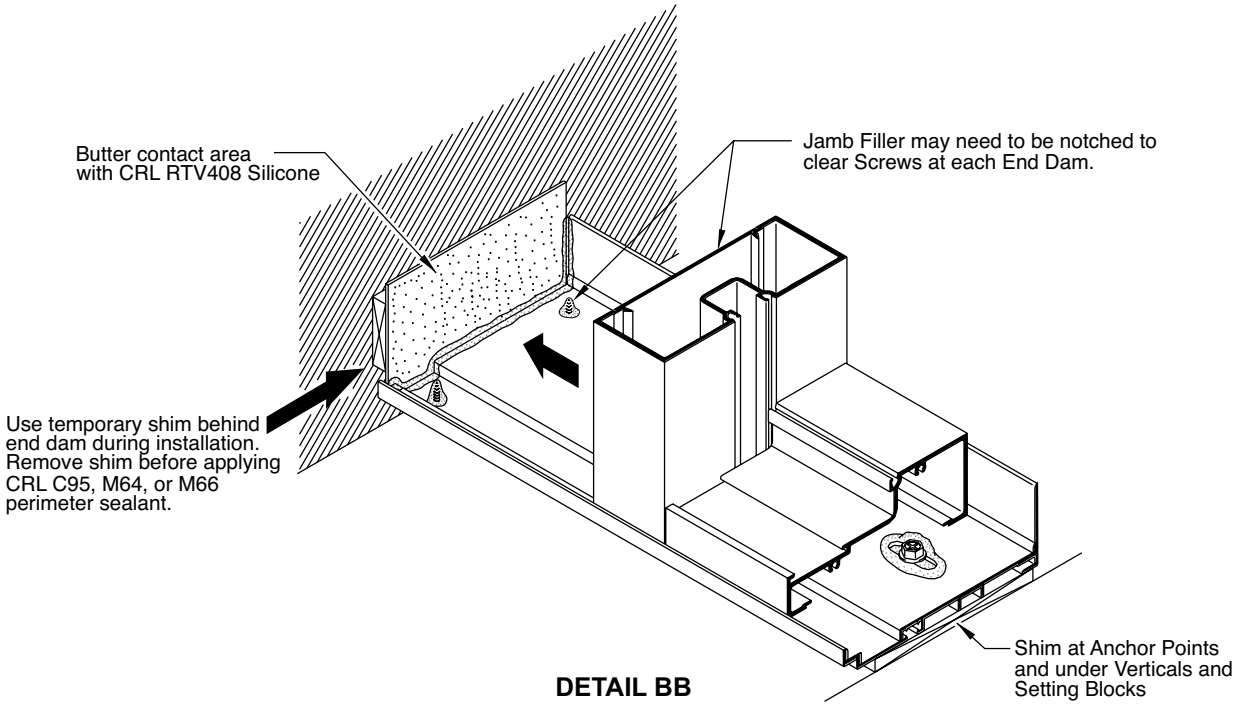




DETAIL AA

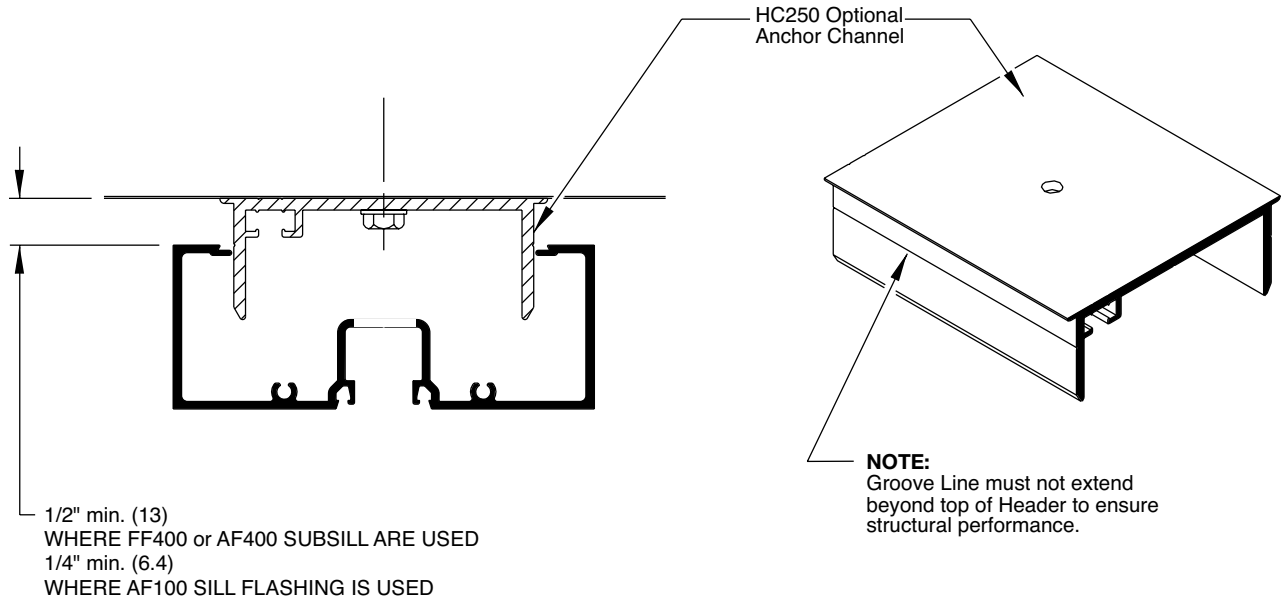
NOT TO SCALE

16. If there are no entrances, start frame installation at wall jamb unit. Apply CRL RTV408 silicone to end dam contact areas. **See DETAIL BB**.
    Set first panel interior subsill into place.
    NOTE: Temporarily shim behind end dam to push it tight against wall jamb. **See DETAIL BB**. Panel must be pushed against subsill upturned back wall. **See DETAIL GG, page 24**. Plumb and shim unit and fasten it to structure. Locate header fasteners 6" (152) each side of verticals and no more than 24" (610) on center. (**See DETAIL CC** for optional head anchor). Secure wall jamb through glass pocket as required to limit deflection. Always shim at anchor points.



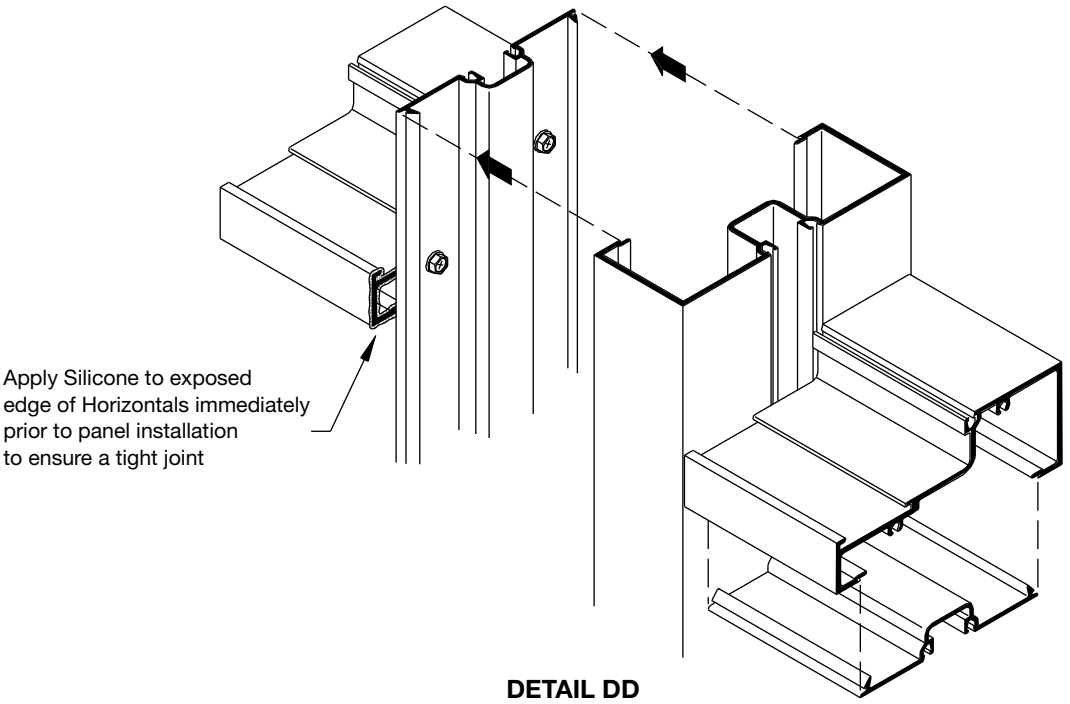
DETAIL BB

17. If optional head anchors are used, fasten them to structure through head member access holes.
    NOTE: Top of header must align with line mark in head anchors for optimum performance.
    Anchors may be shimmed if required. **See DETAIL CC**.



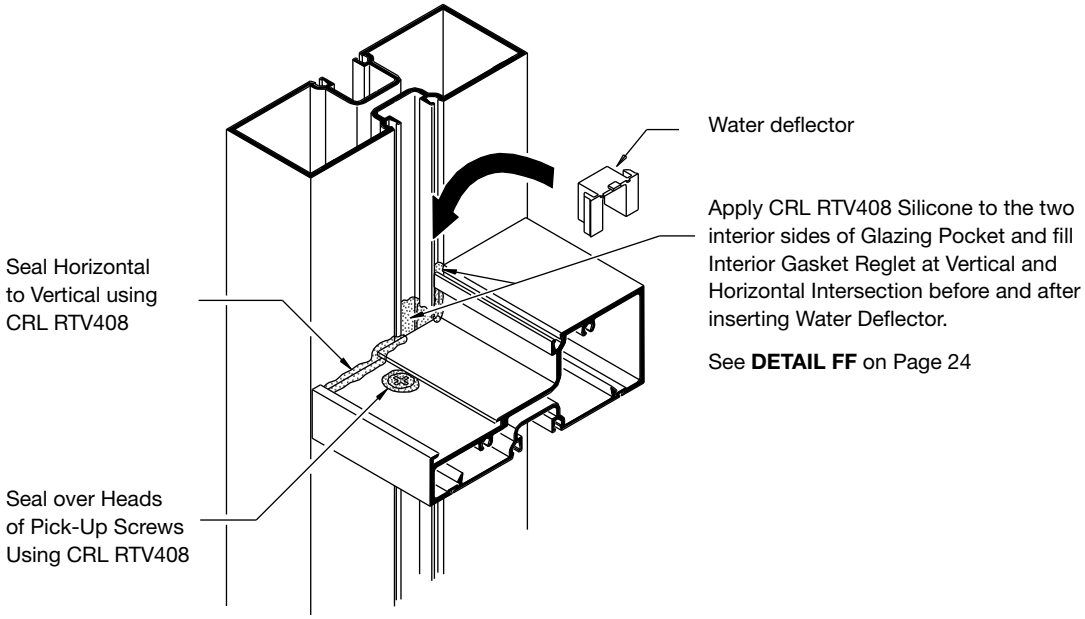
DETAIL CC

18. Install remainder of panels, one by one, snapping them together. **See DETAIL DD**.
NOTE: The last two panels may require to be installed together as a unit to fit into opening. **See Detail A, page 5**.

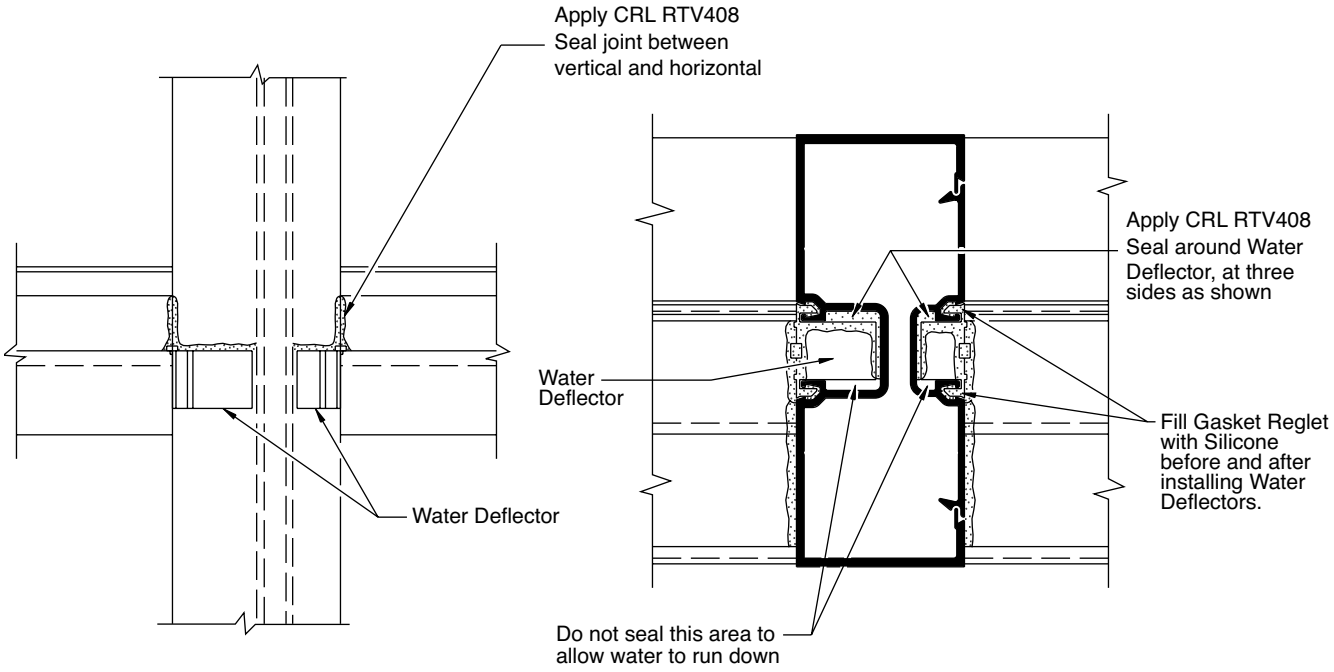


DETAIL DD

19. Apply CRL RTV408 Silicone to vertical glazing pocket and gasket reglet at vertical/horizontal intersection. Silicone must be applied to two sides of pocket, only clearance at exterior will allow infiltrated water to run down to subsill. **See DETAIL EE** below and **DETAIL FF on page 24**.
Insert water deflector into glazing pocket and slide it down to position. **See DETAIL EE**. Top of deflector must be flush with horizontal glazing pocket.
NOTE: Water deflectors at door jamb must be sealed all around to prevent water from running to floor (water will drain to other end).
NOTE: THERMAL CENTER GLAZE (IT451)
Apply Bond Breaker Tape and seal over slots of 1X200 filler to allow for sealing at water deflector locations.

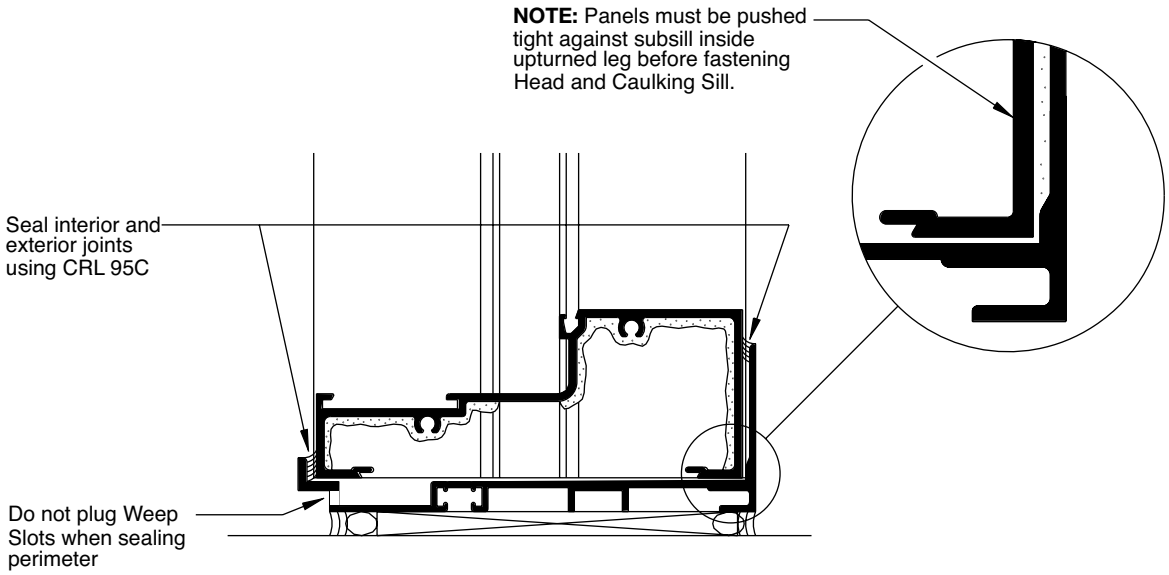


DETAIL EE



DETAIL FF

20. Apply CRL RTV408 to seal joints between panels and subsill at both interior and exterior. **See DETAIL GG**.



DETAIL GG

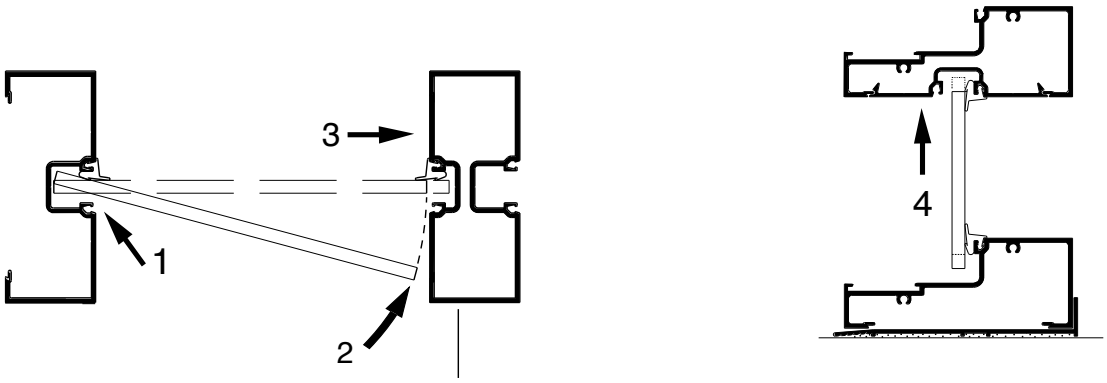
21. When interior glazing a multistory building, exterior perimeter sealing must be done before glazing unless perimeter seal is to be applied from the exterior as a secondary operation.

GLAZING

Glass Sizes*:

Series 400 and 450 for 1/4" (6.4) Glass: **Daylight Opening + 5/8" (15.9)**
Series 451 and 451 for 1" (25) Glass: **Daylight Opening + 7/8" (22.2)**

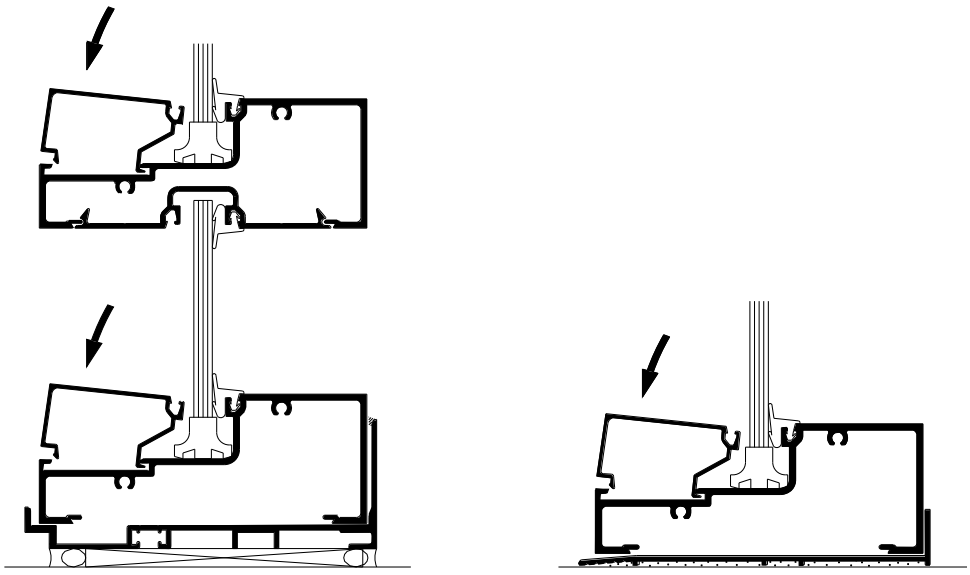
*These formulae do not account for glass tolerances. Consult glass manufacturer before ordering glass.
See Door Frame instructions for glass size at transom.



DETAIL HH

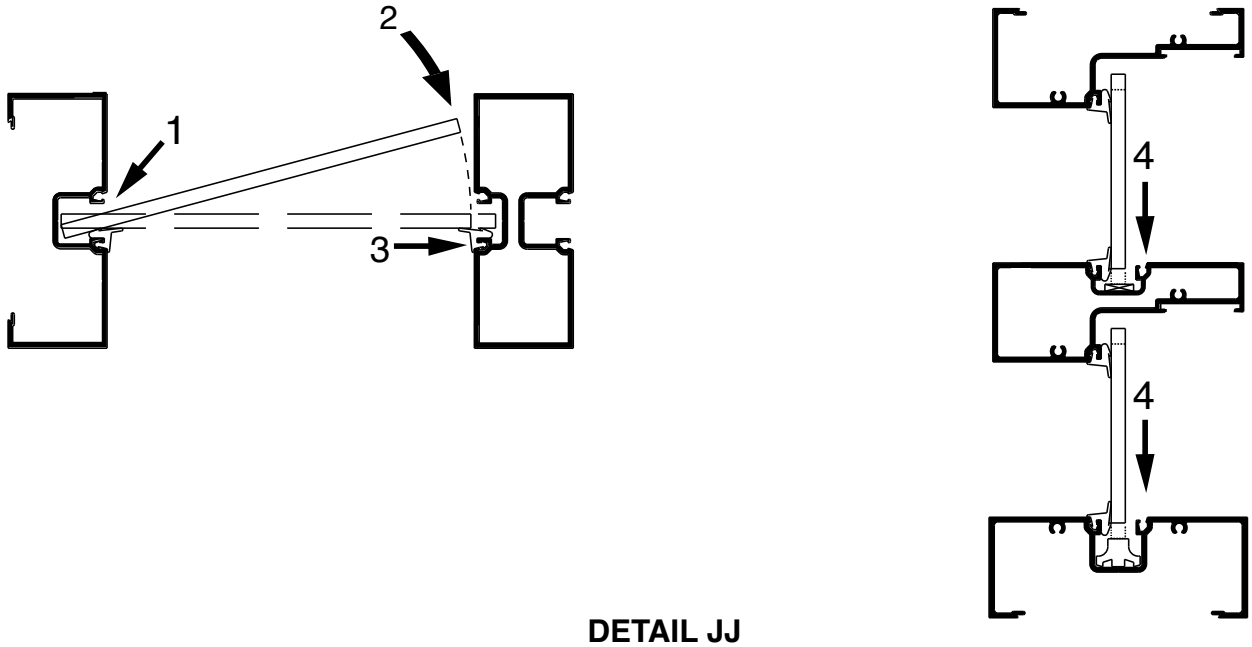
EXTERIOR GLAZING

1. Cut glazing gaskets to size. Gaskets should be 1/8" (3.2) longer per foot of aluminum member to allow for shrinkage. Same gaskets are used at interior and exterior.
2. Install interior gasket. Vertical gasket runs through. Start at corners and work towards center. Tight-butt joined corners are critical to avoid leakage. Seal ends of horizontal gaskets prior to abutting to vertical gaskets.
3. Set glass in place following the four step procedure. **See DETAIL HH**. Be careful not to disturb interior gasket while installing glass. Center glass in the opening.
4. Locate setting blocks in horizontal/sill member. Check deadload charts and shop drawings for correct setting block locations. Rest glass on setting blocks pressed against installed gaskets.
5. Snap-in glazing beads. **See DETAIL II**.
6. To prevent glass from shifting in the opening, one "W" side block should be installed into deep glass pocket of the vertical at center point or as recommended by glass manufacturer. **See DETAIL LL on page 27**.



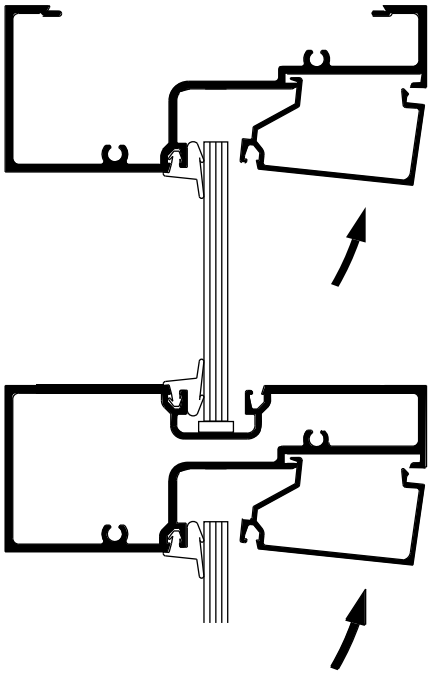
DETAIL II

INTERIOR GLAZING



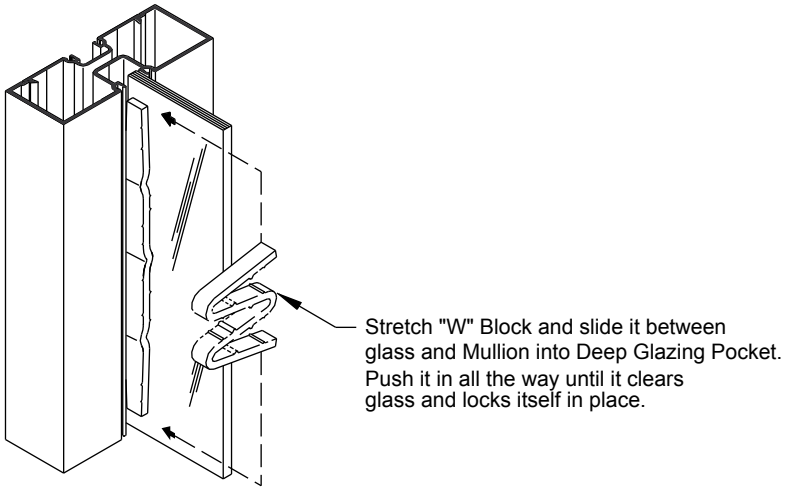
DETAIL JJ

1. Cut glazing gaskets to size. Gaskets should be 1/8" (3.2) longer per foot of aluminum member to allow for shrinkage. Same gaskets are used at interior and exterior.
2. Insert setting blocks, two per glass light, into horizontal and sill members. Check deadload charts and shop drawings for correct setting block locations.
3. Install exterior gaskets. Vertical gaskets run through. Start at corners and work towards center. Tight butt joined corners are critical to avoid leakage. Seal ends of horizontal gaskets prior to butting to vertical gaskets.
4. Set glass in place following the four step procedure. **See DETAIL JJ**. Be careful not to disturb exterior gasket while installing glass. Center glass into opening and rest on setting blocks pressed against exterior gasket.
5. Snap-in glazing beads. **See DETAIL KK**.



DETAIL KK

6. To prevent glass from shifting in the opening one "W" side block should be installed into deep glass pocket of the vertical at center point or as recommended by glass manufacturer. Side blocking is recommended to prevent glass from shifting in pocket. **See DETAIL LL**.



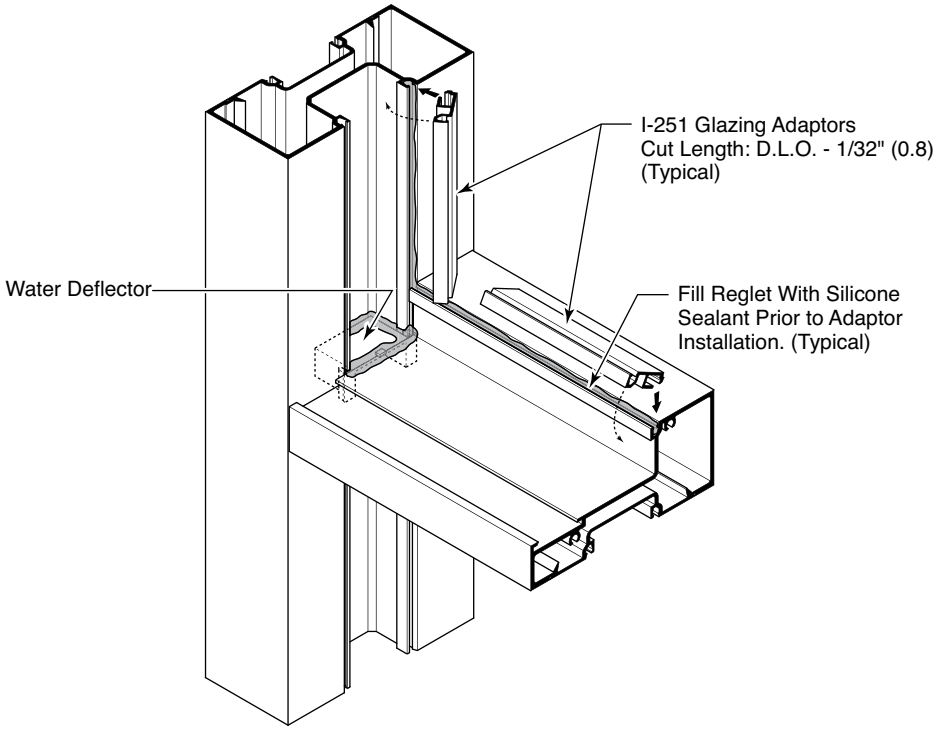
DETAIL LL

7. Install remaining gaskets. Vertical gaskets run through. Start at corners and work toward center. Tight butt joined corners are critical to avoid leakage. Seal ends of horizontal gaskets prior to abutting to vertical gaskets.

TRANSITION GLAZING

Transition adaptors for 1/4" (6.4) spandrel are supplied as required. Adaptors are cut Daylight Opening (DLO) minus 1/32" (0.8). Run continuous bead of silicone sealant into reglet and install adaptors. **See DETAIL MM**.

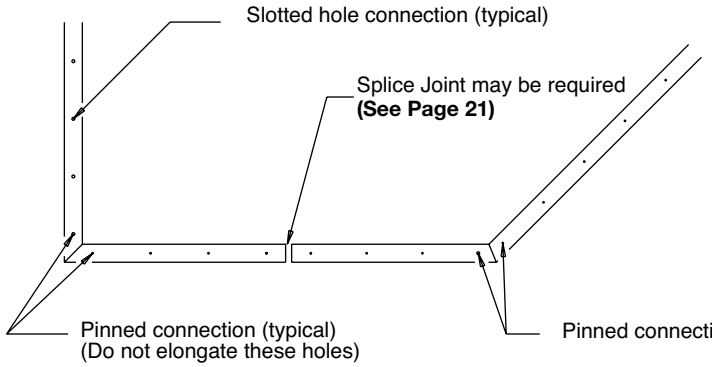
NOTE: Always install water deflector before rolling in adaptors. Use deflectors for 1" (25) glazing.



DETAIL MM

CORNER CONDITIONS

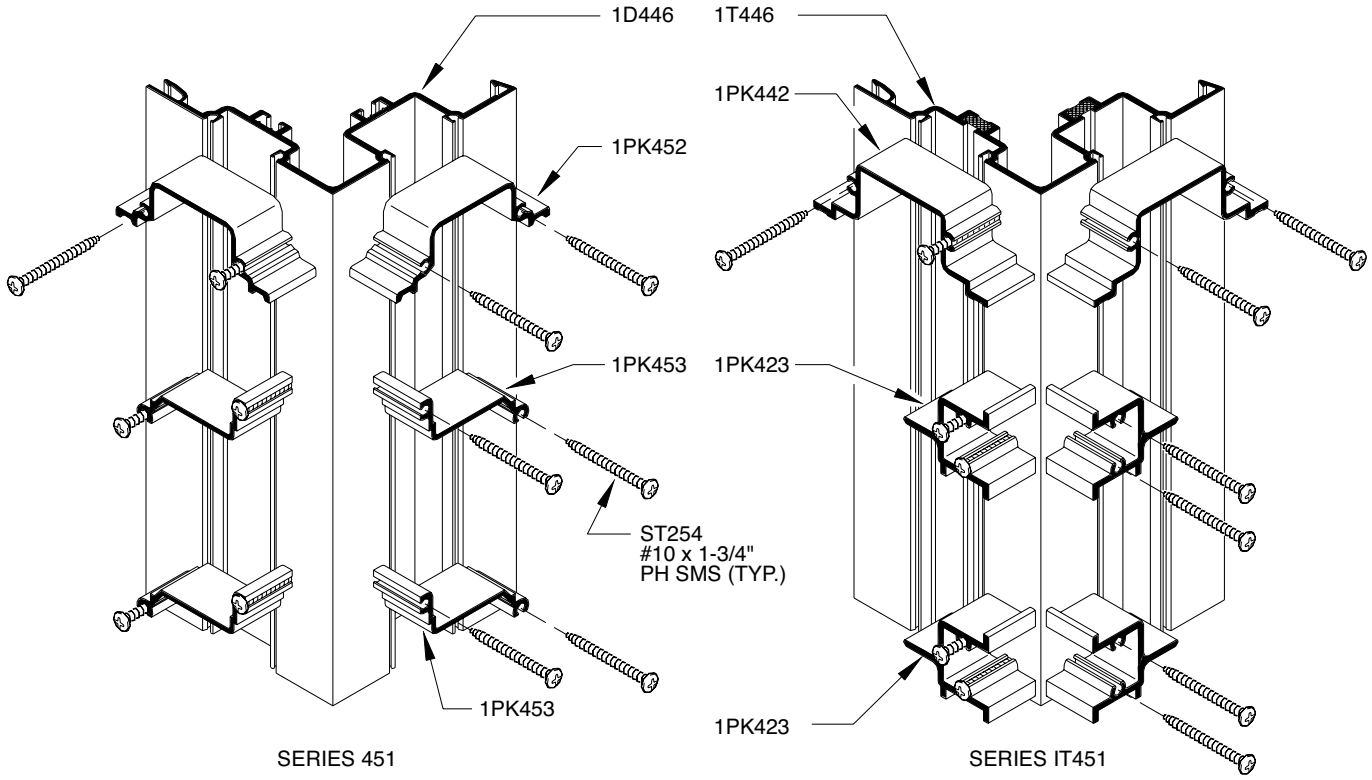
NOTE: Due to varying field conditions at corner elevations, please consult factory for proper anchoring and splicing.



DETAIL NN

The Series 400 and 450 two-piece 90° corner posts for 1/4" (6) glass may be assembled to horizontals using either screw race or anchor clip attachment. **See DETAIL PP on page 29**.

The Series 451 and IT451 two-piece 90° corner posts for 1" (25) glass requires anchor clip assembly. **See DETAIL OO**.

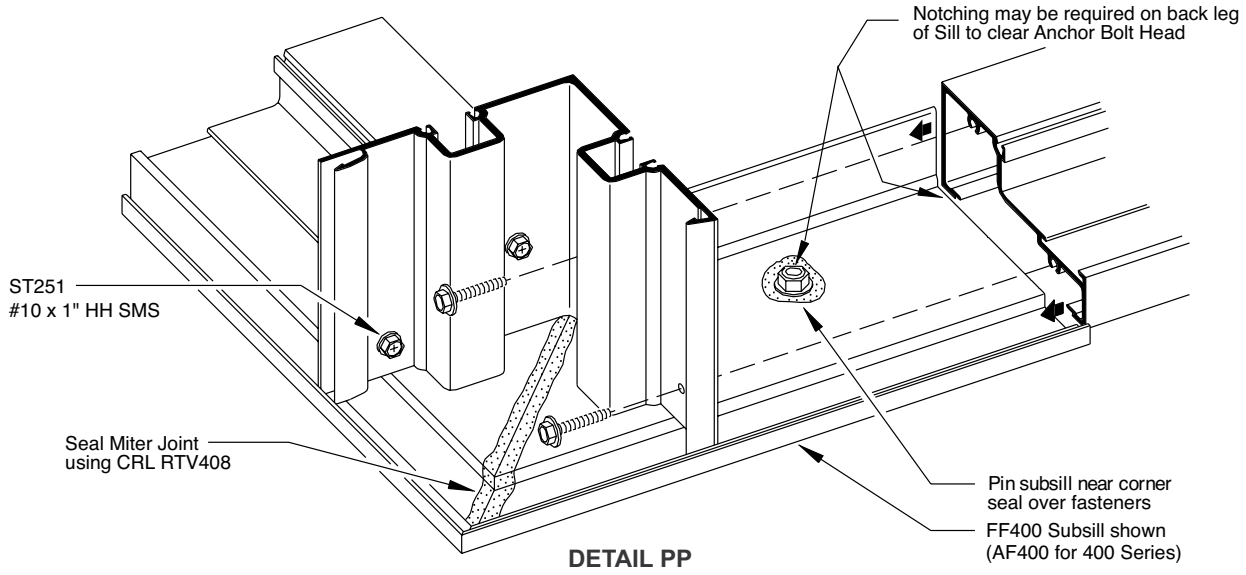


DETAIL OO

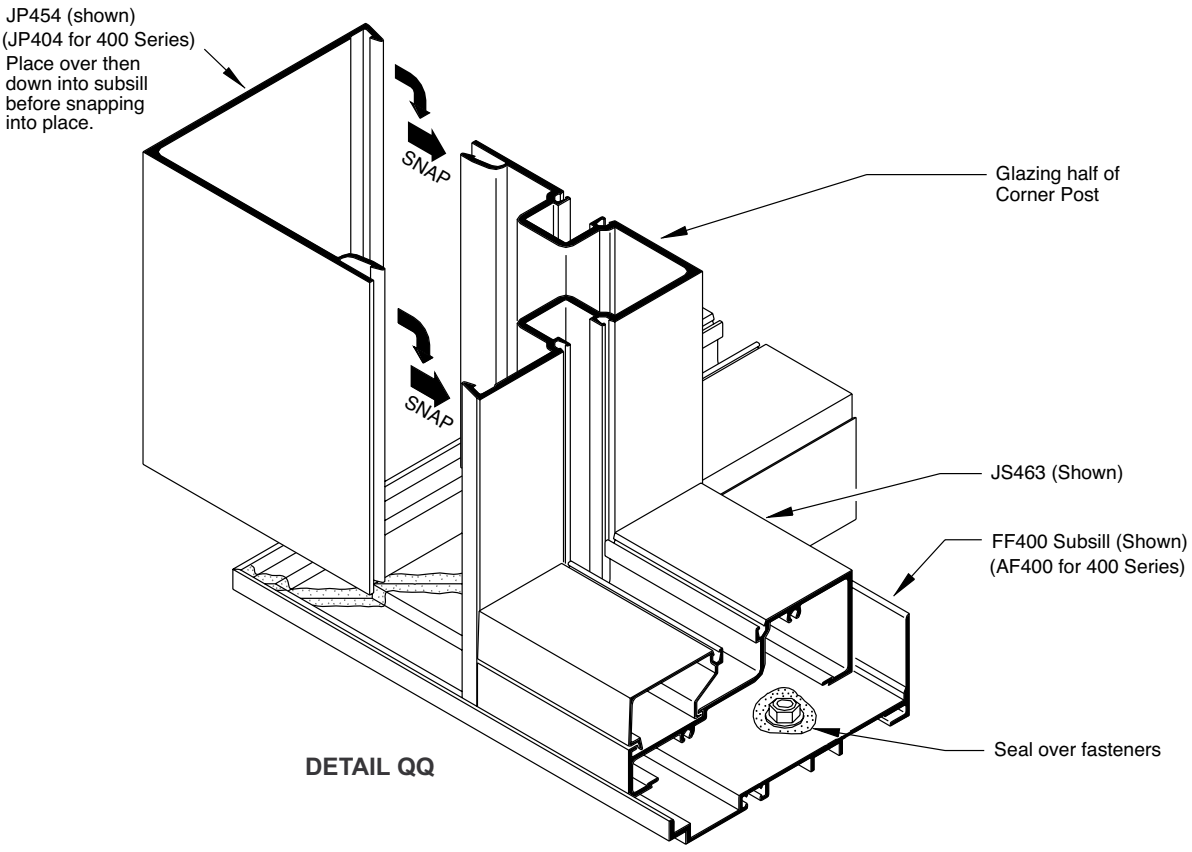
NOTE: 1D446 and 1T446 have one Shallow Pocket. Plan frame accordingly.
NEVER allow two Shallow Pockets to face each other.

90° CORNER

1. Install mitered subsill on one side of corner first. Secure it to structure. Install adjoining subsill to form corner as required. Secure it to structure, and seal over all fasteners. Apply bond breaker tape along full depth of miter joint and seal joint with silicone.
2. Set corner left panel ending with JD454 (JD404/1D446/1T446) first. Attach horizontals of right panel to right side of corner. **See DETAIL PP**. Re-seal any damaged sealant at mitered joint of subsill.
3. The corner trim can be installed anytime after right panel is completed. Corner trim should be lifted over exterior lip of subsill base before snapping into place. **See DETAIL QQ**.
   Refer to **DETAIL OO on page 28** for 1" (25) insulated glass clip application.

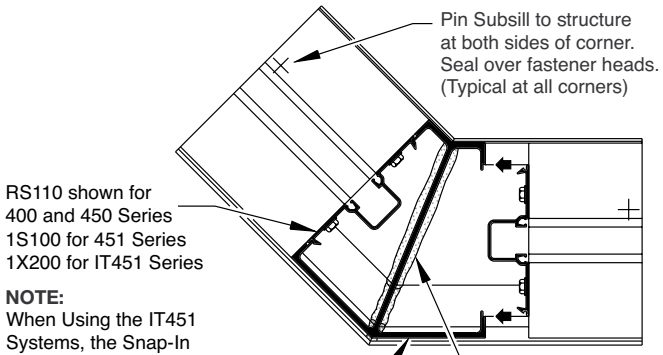


DETAIL PP



DETAIL QQ

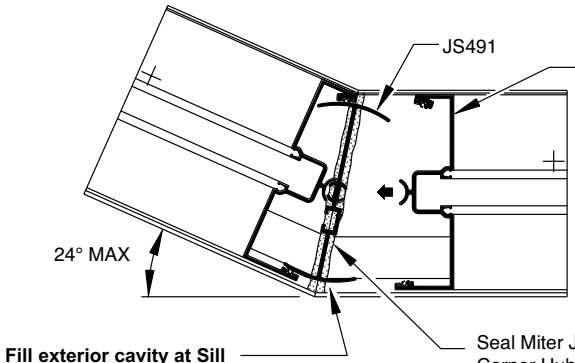
135° INSIDE/OUTSIDE CORNERS



NOTE: For IT451 Series: consult manufacturer for conditions where two corners are adjacent to each other without an intermediate vertical between.

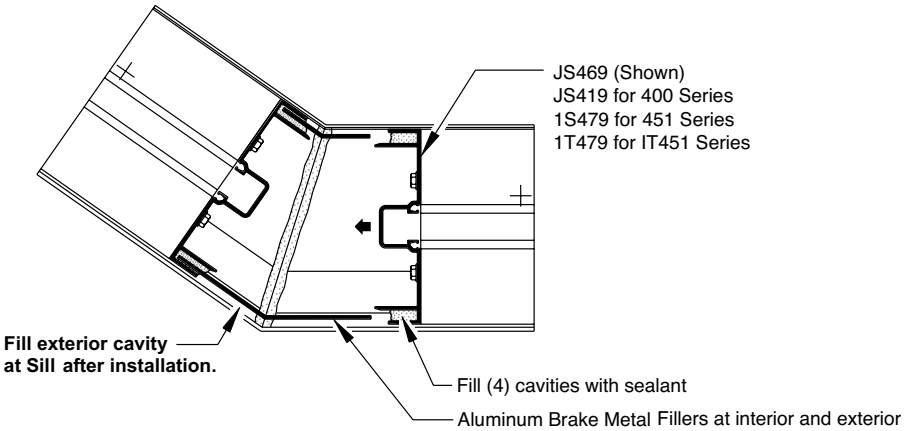
DETAIL RR

0°- 24° INSIDE/OUTSIDE CORNERS



DETAIL SS

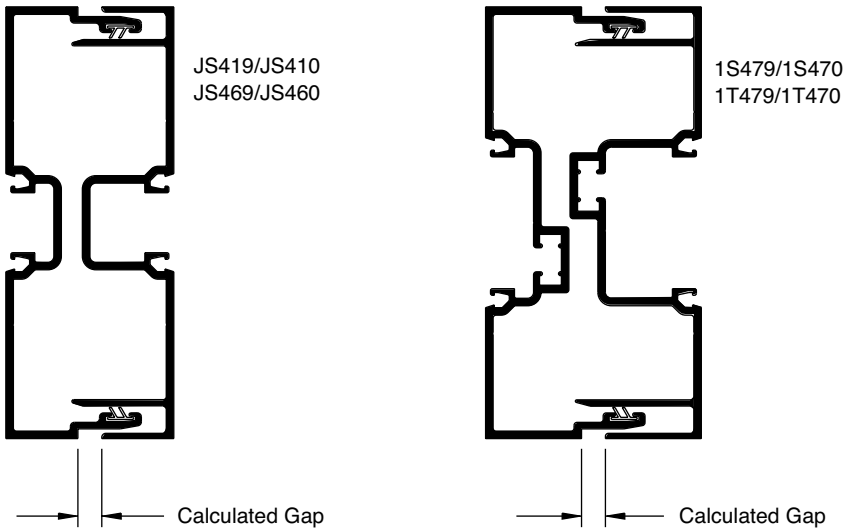
VARIOUS ODD ANGLE CORNERS



DETAIL TT

EXPANSION MULLIONS

Expansion Mullions must be used to accommodate thermal movement in long run elevations.



DETAIL UU

Expansion Mullions must be used to accommodate thermal movement in long run elevations.
They should be spaced as required by job conditions and project specifications.
Two-piece Mullions allow for a 3/8" (10) maximum movement.
Gap between Half Members should be based on temperature at the time of installation.

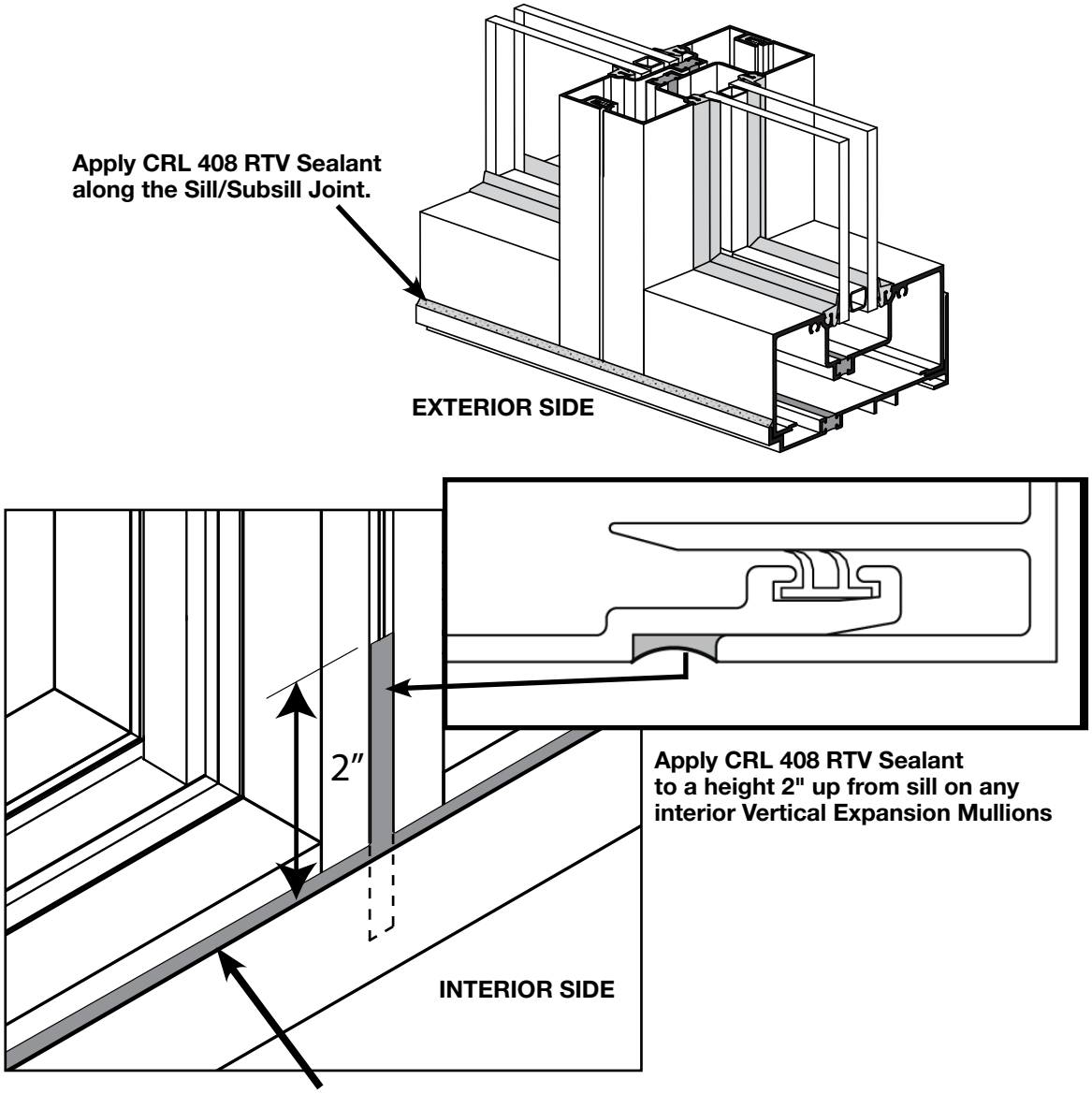
EXPANSION JOINT SIZE FORMULA		
Linear Expansion for Aluminum, in Inches	=	Length (") X F° Difference X .0000129
Linear Expansion for Aluminum, in Millimeters	=	Length (m) X C° Difference X .02322

NOTE: Linear expansion from formula above equals Calculated Gap. **See DETAIL UU**

For Door Frames, See Door Frame Installation Instructions

FINAL SEALING

Based on Air and Water Infiltration Tests



Both the Exterior and Interior Sealing Methods as illustrated above are critical in order to meet testing specifications. The CRL 408 sealant must be a tooled-continuous bead applied to a clean dry surface.

THIS CONCLUDES THE INSTALLATION INSTRUCTIONS FOR THE SERIES 400, 450, 451, AND IT451 STOREFRONT SYSTEM.

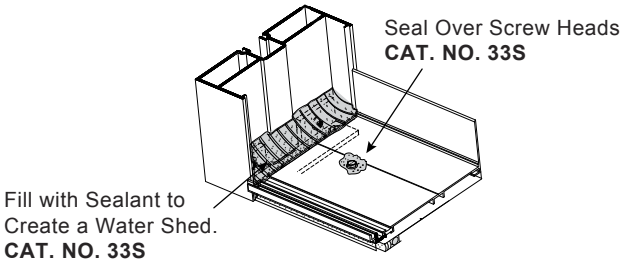
GUIDE TO SEALANTS

NOTE: All sealants must be tooled to ensure proper adhesion.

WATERPROOFING

- **33S ACETIC CURE SILICONE**

Sill to Subsill, End Dams, Screw Heads, and Threshold to Door Frame Sealing.

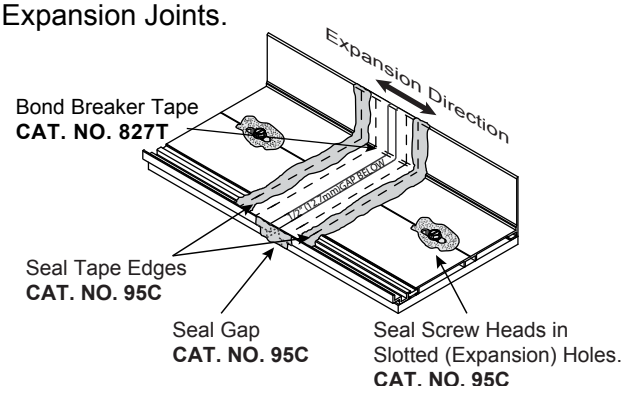


NOTE: Not for use near insulating glass units with butyl sealant.

EXPANSION

- **95C SILICONE BUILDING SEALANT**

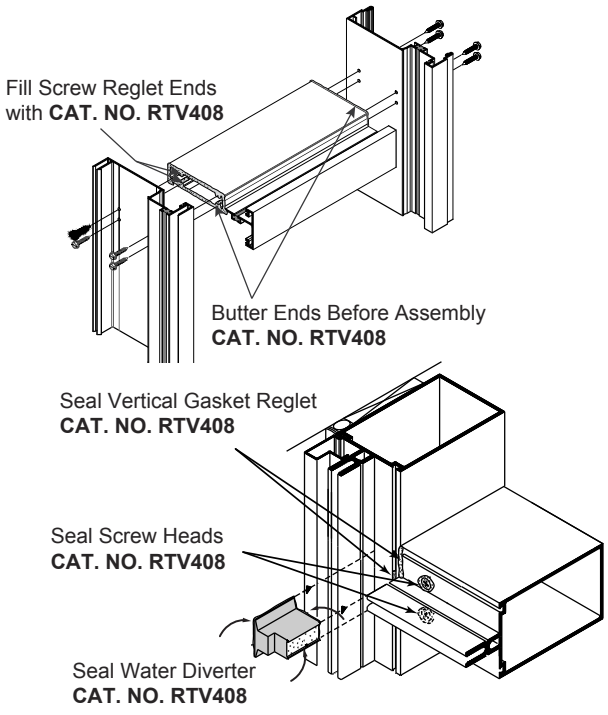
Expansion Joints.



JOINT ADHESIVE

- **RTV408 NEUTRAL CURE SILICONE**

Small Joints, End Joints and Buttered Surfaces, Water Diverters, End Dams, and Reglet Fills.

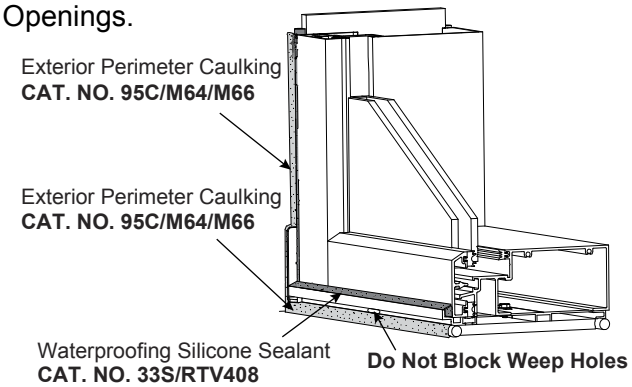


NOTE: I.G. butyl contact OK.

PERIMETER

- **95C SILICONE BUILDING SEALANT (Preferred)**
- **M64 (SMOOTH) MODIFIED POLYURETHANE**
- **M66 (TEXTURED) MODIFIED POLYURETHANE**

Perimeter Seals, Expansion Joints, Sill and Threshold Beds, Concrete, Wood, and Steel Openings.



STRUCTURAL

- **ALL STRUCTURAL SEALANTS REQUIRE TESTING AND APPROVAL.**

Glass-to-Glass or Glass-to-Metal

TURNSTILES.us
SECURING THE U.S. and the GLOBE since 1989

SERIES 400

MEDIUM STILE ALUMINUM DOORS

For Moderate to Heavy Traffic

ENTRANCES

DOORS IN STOCK
READY TO GO!

- For 1/4 " or 1" (6 or 25 mm) Glazing
- Adjustable Weatherstrip Astragal at Meeting Stiles
- Accommodates Most Custom Hardware
- Standard 1" (25 mm) Diameter Solid Push/Pulls
- Exterior and Interior Applications
- Available for Center Hung, Offset Pivot, or Butt Hinge Applications
- Choice of Standard or A.D.A. Access Bottom Rails
- Clear Anodized and Bronze Anodized in Single or Pairs of Doors
- Custom Sizes, Finishes, and Options Available

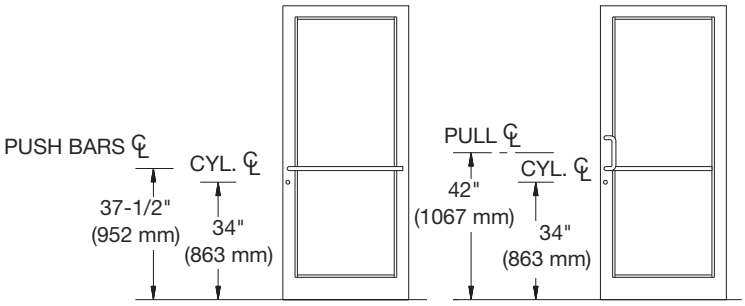
When you need a quality door in a hurry, for exterior and interior applications, both Clear Anodized and Bronze Anodized finishes are offered as single doors or in pairs in two versions: Offset Pivot and Butt Hinged. Continuous Geared Hinges are also available on special order.

These Doors include standard 3-1/2" (89 mm) Stiles, 3-3/16" (81 mm) Top Rails, and your choice of Standard 6-1/2" (165 mm) Bottom Rails or 9-1/2" (241 mm) A.D.A. Access Bottom Rails. Other standard features include a Push Bar, Offset Pull Handle, Panic Exit Devices (Select Models), Lock Cylinder, Glass Stops, and Glazing Gaskets. You supply the 1/4" (6 mm) tempered glass. Optional glass stops are available for 1" (25 mm) infills.

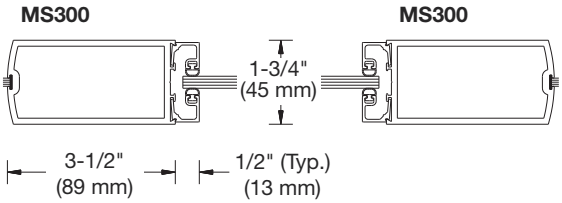
www.TURNSTILES.us | patrick.mcallister@TURNSTILES.us | 303-670-1099

SERIES 400 MEDIUM STILE
TYPICAL DETAILS

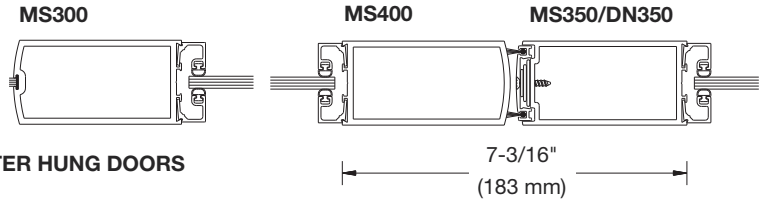
For 1/4" (6 mm) or 1" (25 mm) Glazing



CENTER HUNG DOOR | **OFFSET PIVOT DOOR**

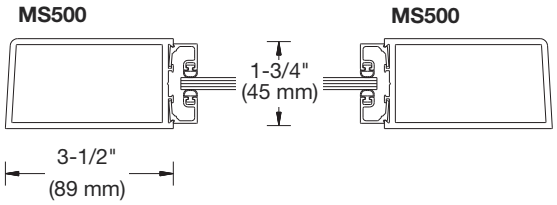


Single Door

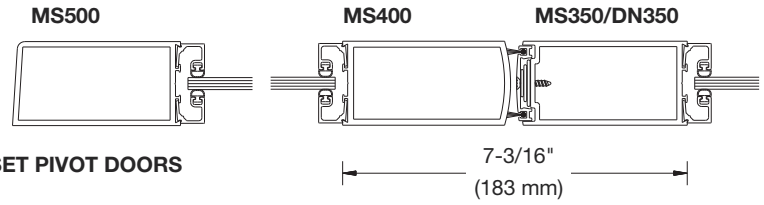


CENTER HUNG DOORS

Meeting Stiles for Pairs of Doors

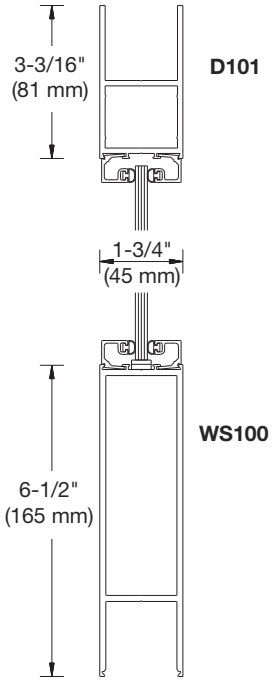


Single Door

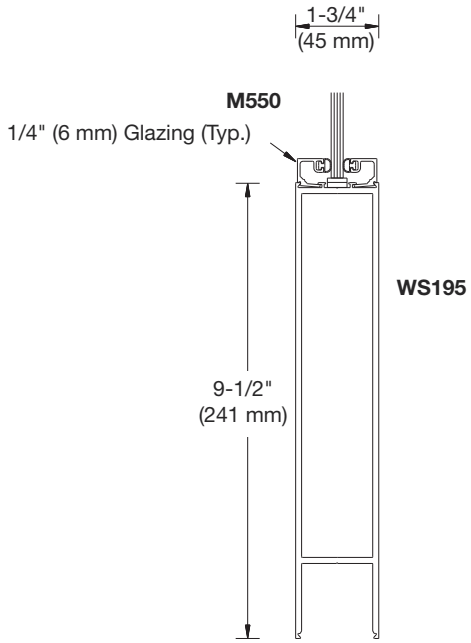


OFFSET PIVOT DOORS

Meeting Stiles for Pairs of Doors



Standard
Top and Bottom Rails



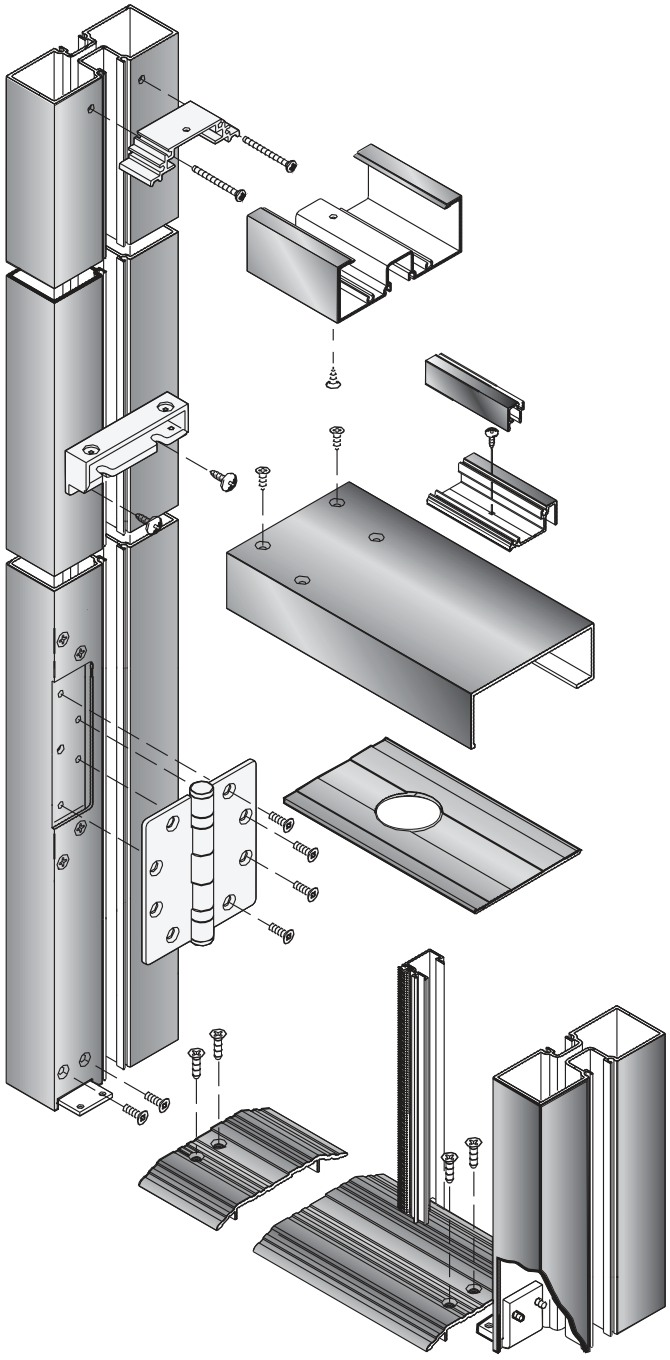
Special Bottom Rail
to Comply With A.D.A.

NOT TO SCALE

TURNSTILES.us

INSTALLATION INSTRUCTIONS

SERIES 250, 400, 550, AND FLUSH PANEL ENTRANCE DOORS



HANDLING, STORAGE, AND PROTECTION OF ALUMINUM

The following precautions are recommended to protect the material against damage. Following these precautions will help ensure early acceptance of your products and workmanship.

A. HANDLE CAREFULLY.
AII aluminum materials at job site must be stored in a safe place, well removed from possible damage by other trades. Cardboard wrapped or paper interleaved materials must be kept dry.

B. CHECK ARRIVING MATERIALS.
Check for quantity counts and keep records of where various materials are stored.

C. KEEP MATERIALS AWAY FROM WATER, MUD, AND SPRAY.
Prevent cement, plaster, or other materials from damaging the finish.

D. PROTECT THE MATERIALS AFTER ERECTION.
Protect erected frame with polyethylene or canvas splatter screen. Cement, plaster, terrazzo, other alkaline solutions, and acid based materials used to clean masonry are harmful to the finish. ***If any of these materials come in contact with the aluminum, immediately remove with water and mild soap.***

The rapidly changing technology within the architectural aluminum products industry demands that manufacturer reserve the right to revise, discontinue, or change any product line, specification, or electronic media without prior written notice.

NOTE: Dimensions in parentheses ( ) are millimeters unless otherwise noted.

GENERAL INSTALLATION NOTES

RECOMMENDED GUIDELINES FOR ALL INSTALLATIONS:

1. **REVIEW CONTRACT DOCUMENTS.** Check shop drawings, installation instructions, architectural drawings and shipping lists to become thoroughly familiar with the project. The shop drawings take precedence and include specific details for the project. Note any field verified notes on the shop drawings prior to installing. The installation instructions are of a general nature and cover most conditions.

2. **INSTALLATION.** All materials are to be installed plumb, level, and true.

3. **BENCH MARKS.** All work should start from bench marks and/or column lines as established by the architectural drawings and the general contractor with guaranteed accuracy. Working from these datum points and lines determine:
   a) The plane of the wall in reference to offset lines provided on each floor.
   b) The finish floor lines in reference to bench marks on the outer building columns.
   c) Mullion spacing from both ends of masonry opening to prevent dimensional build-up of daylight opening.

4. **FIELD WELDING.** All field welding must be adequately shielded to avoid any splatter on glass or aluminum. Results will be unsightly and/or structurally unsound. Advise general contractor and other trades accordingly. All field welds of steel anchors must receive touch-up paint (zinc chromate) to avoid rust.

5. **SURROUNDING CONDITIONS.** Make certain that construction which will receive your materials is in accordance with the contract documents. If not, notify the general contractor in writing and resolve differences before proceeding with work.

6. **ISOLATION OF ALUMINUM.** Aluminum to be placed in direct contact with uncured masonry or incompatible materials should be isolated with a heavy coat of zinc chromate or bituminous paint.

7. **SEALANTS.** Sealants must be compatible with all materials with which they have contact with (full or incidental), including other sealant surfaces. It is the sole responsibility of the glass company to consult the sealant manufacturer for recommendations regarding joint size, shelf life, compatibility, cleaning, priming, tooling, adhesion, etc. It is the responsibility of the ***Glazing Contractor*** to submit a statement from the sealant manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealants, and interpreting test results relative to material performance, including recommendations for primers and substrate preparation required to obtain adhesion. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication must be established. ***This is required on every project***.

8. **FASTENING.** Within the body of these instructions "fastening" means any method of securing one part to another or to adjacent materials. Only those fasteners used within the system are specified in these instructions. Due to the varying perimeter conditions and performance requirements, perimeter and anchor fasteners are not specified in these instructions. For perimeter and anchor fasteners refer to the shop drawings or consult the fastener supplier.

9. **BUILDING CODES.** Due to the diversity in state/provincial, local, and federal laws and codes that govern the design and application of architectural products, it is the responsibility of the individual architect, owner, and installer to assure that products selected for use on projects comply with all the applicable building codes and laws. U.S. Aluminum exercises no control over the use or application of its products, glazing materials, and operating hardware, and assumes no responsibility thereof.

10. **EXPANSION JOINTS.** Expansion joints and perimeter seals shown in these instructions and in the shop drawings are shown at normal size. Actual dimensions may vary due to perimeter conditions and/or difference in metal temperature between the time of fabrication and the time of installation. Gaps between expansion members should be based on temperature at time of installation.

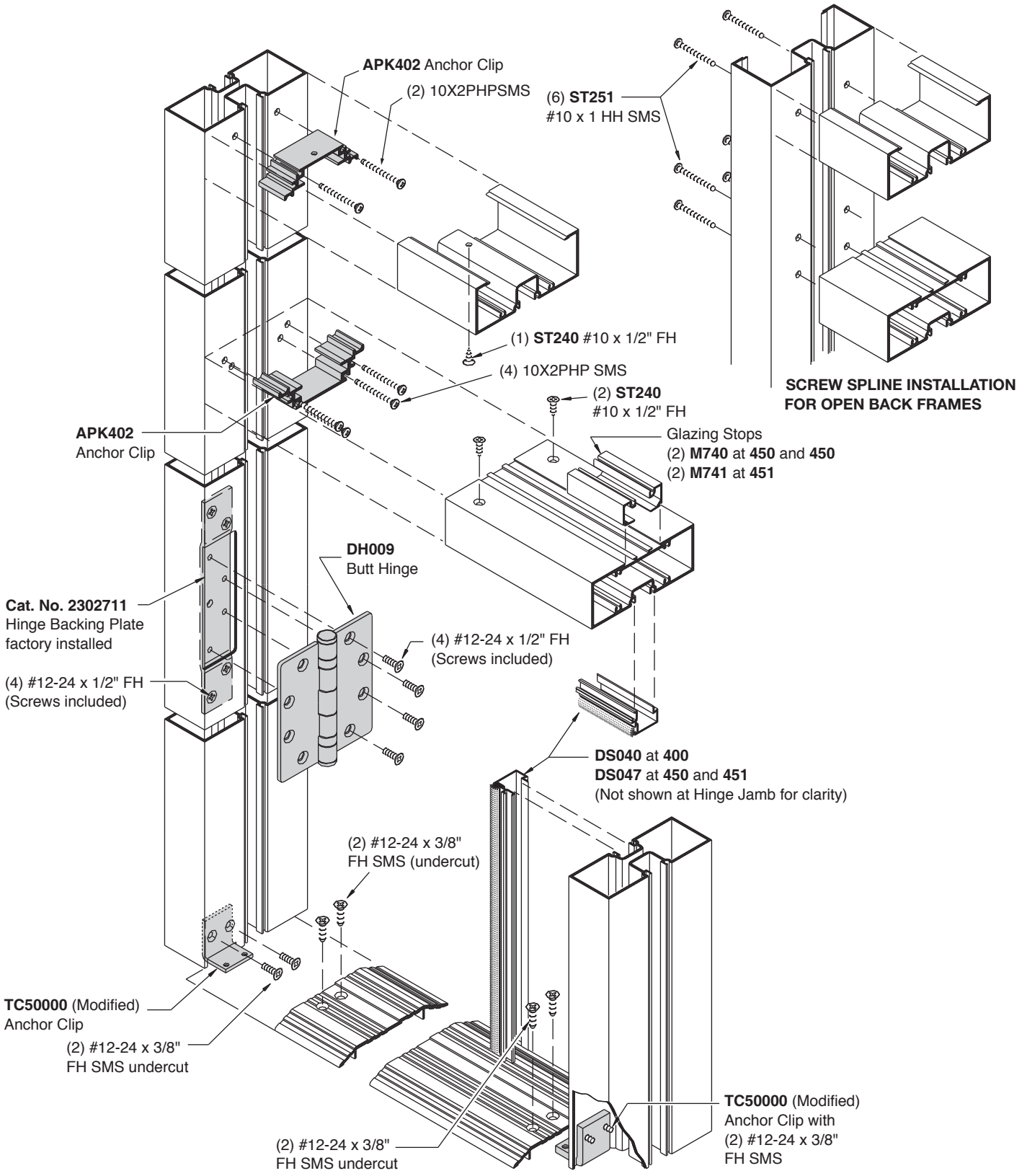
11. **RACK TEST.** As soon as a representative amount of the wall has been glazed (500 square feet or 46.5 m^2) a rack test should be conducted in accordance with AAMA 502-08 specifications to check the installation. On all jobs the rack test should be repeated every 500 square feet (46.5 m^2) during the glazing operation.

12. **COORDINATION WITH OTHER TRADES.** Coordinate with the general contractor any sequence with other trades which offset curtain wall installation (i.e. fire proofing, back-up walls, partitions, ceilings, mechanical ducts, converters, etc.).

13. **CARE AND MAINTENANCE.** Final cleaning of exposed aluminum surfaces should be done in accordance with AAMA 609.1 for anodized aluminum and 610.1 for painted aluminum..

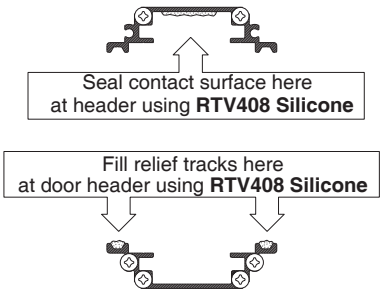
FRAME UNIT FOR BUTT HUNG DOOR WITH SURFACE CLOSER

450 FRAME SHOWN 400 AND 451 SIMILAR



ASSEMBLY INSTRUCTIONS:

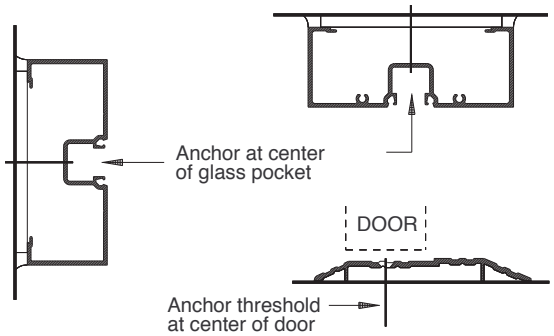
1. Verify opening size. Allow for 1/4" (6.4) shim and caulk space at sides, and 1/2" (12.7) space at top of frame. (When using optional **AF100** sill flashing, allow 1/4" (6.4) shim space at top of frame).
2. If required, cut off top of vertical jambs to adjust frame to desired height.
3. Cut templates from instructions. Align edge of template with top of vertical and drill holes for head clips.
4. Attach anchor clips for head, door header, and threshold to jambs with provided screws.
5. Butter contact surface of anchor clips with **RTV408 Silicone Sealant**. **See DETAIL A**
6. Assemble head and door header to jambs as shown.
7. Install hinges to door jamb(s).



DETAIL A

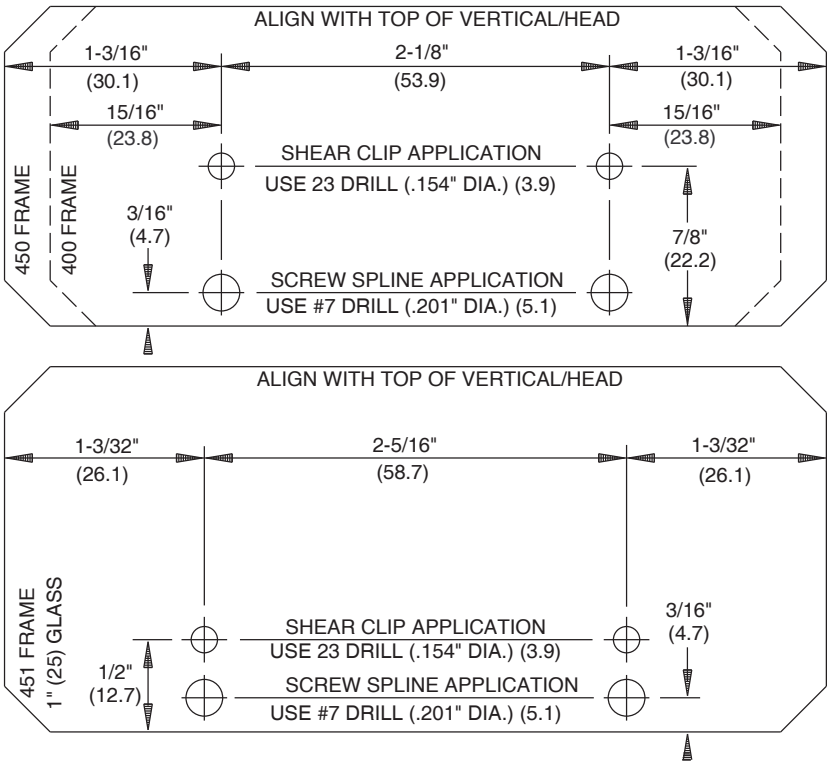
INSTALLATION INSTRUCTIONS:

1. Set frame into opening plumb and square.
2. Drill holes for #12 installation screws starting 6" (152.4) from corners and not more than 36" (914.4) O.C.
3. Secure jambs and head to opening and threshold to floor with #12 screws. **See DETAIL B**
4. Snap door stop with weatherstrip into jambs and door header. Jamb stops run through.
5. Place setting blocks in door header at quarter or eighth points as required, and glaze transom. Glazing sash is required vertically at Series 451 transom.
6. Install glass stops with glazing gaskets on both sides of glass.
7. Roll-in glazing gaskets for jambs and header.



DETAIL B

TEMPLATES ARE FOR EXTREME HEAD ONLY

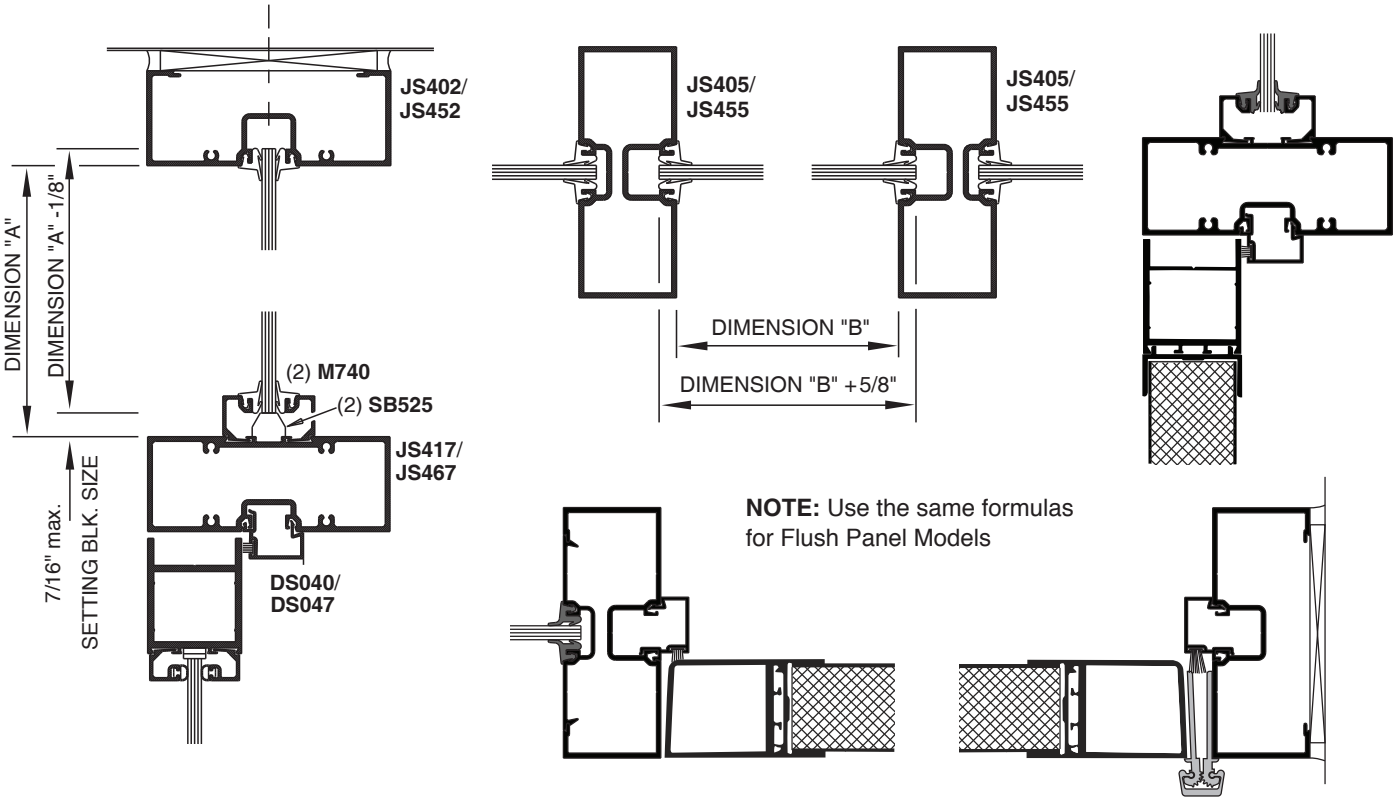


NOTE: Do not cut templates from this manual, templates are supplied inside frame boxes.

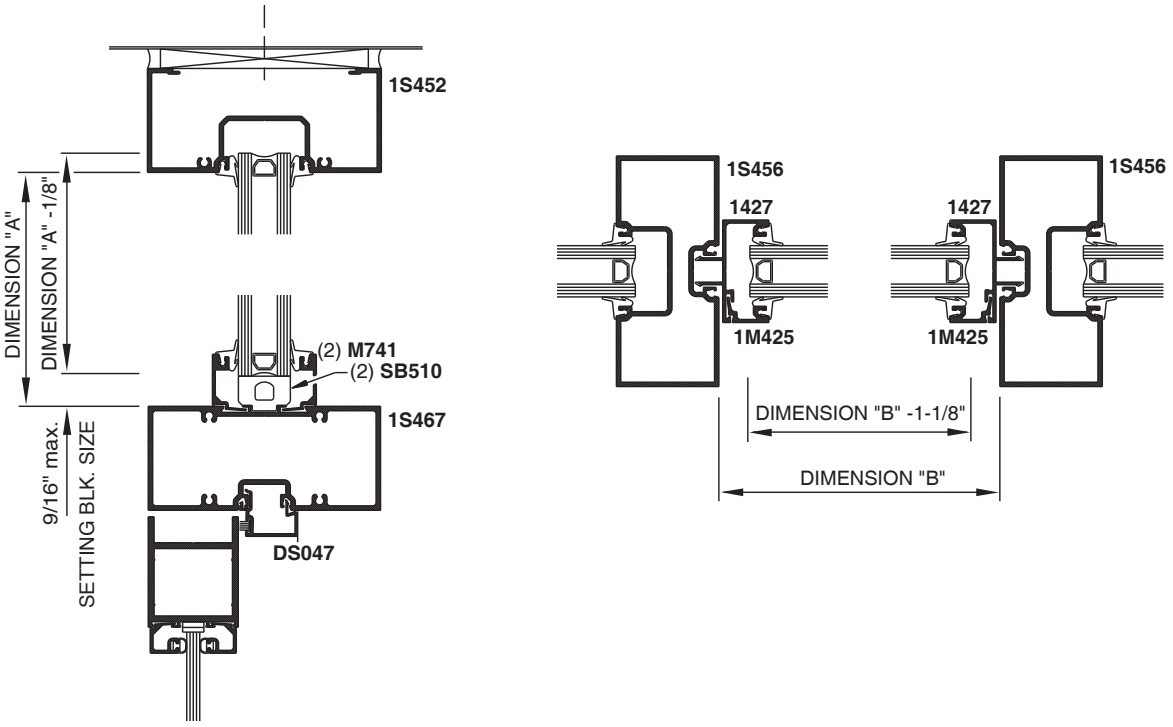
GLASS SIZE FORMULA AT TRANSOM

DOOR AND FRAME PREPARATION

SERIES 400 AND 450

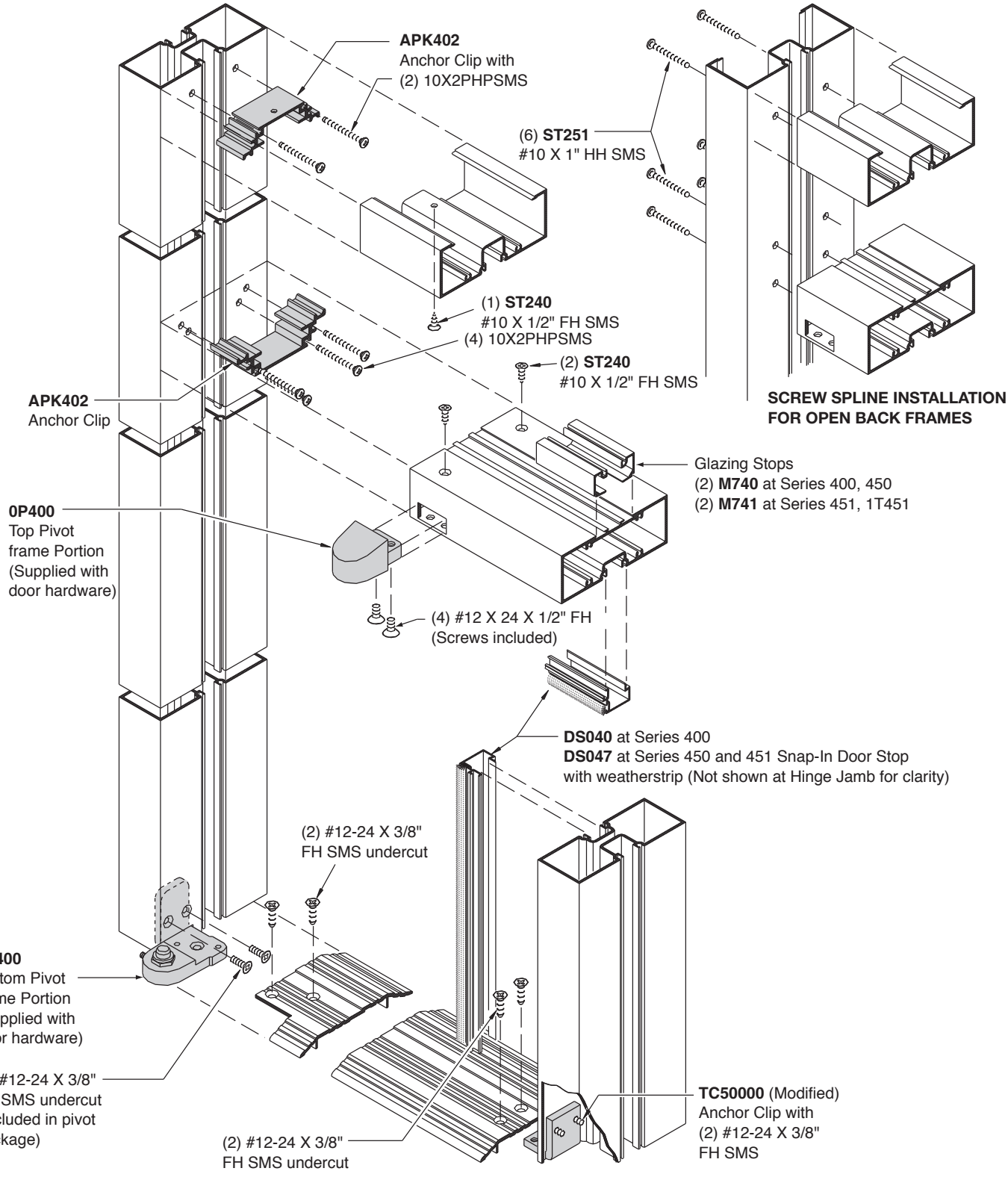


SERIES 451



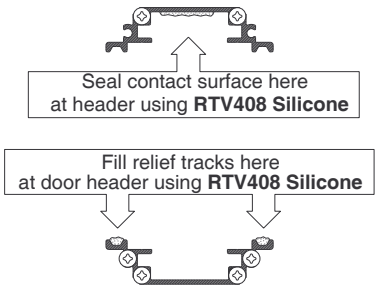
FRAME UNIT FOR OFFSET PIVOT DOOR WITH SURFACE CLOSER

450 TUBULAR FRAME SHOWN
400 AND 451 SIMILAR



ASSEMBLY INSTRUCTIONS:

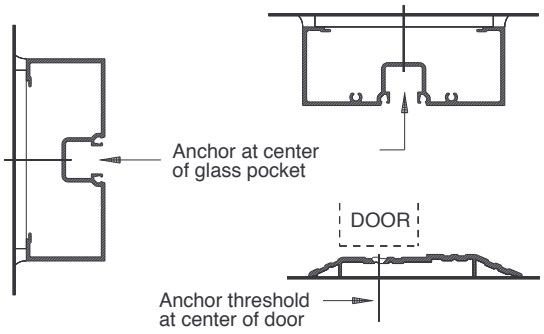
1. Verify opening size. Allow for 1/4" (6.4) shim and caulk space at sides, and 1/2" (12.7) space at top of frame. (When using optional **AF100** sill flashing, allow 1/4" (6.4) shim space at top of frame).
2. If required, cut off top of vertical jambs to adjust frame to desired height.
3. Cut templates from instructions. Align edge of template with top of vertical and drill holes for head clips.
4. Attach anchor clips for head, door header, and threshold to jambs with provided screws.
5. Butter contact surface of anchor clips with **RTV408 Silicone Sealant**. **See DETAIL A**
6. Assemble head and door header to jambs as shown.
7. Attach bottom pivot(s) to jamb(s), then attach threshold to assembly.
8. Install top pivot to door header.



DETAIL A

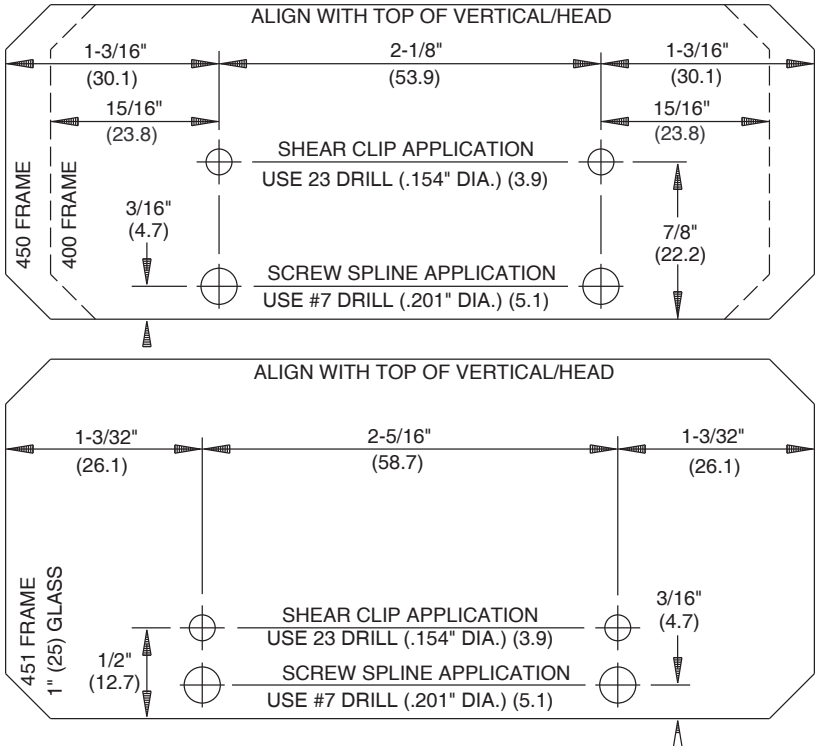
INSTALLATION INSTRUCTIONS:

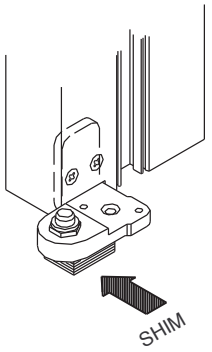
1. Set frame into opening plumb and square.
2. Drill holes for #12 installation screws starting 6" (152.4) from corners and not more than 24" (609.6) O.C.
3. Secure jambs and head to opening and threshold to floor with #12 screws. **See DETAIL B**
4. If pivot is not supported by finished floor, block as required. **See DETAIL C**.
5. Snap door stops with weatherstrip into jambs and door header. Jamb stops run through.
6. For 1" (25) glazing, snap jamb sash into jambs. Jamb sash runs through.
7. Place glass setting blocks in door header at quarter or eighth points as required and glaze transom.
8. Install sash glazing bead.
9. Roll-in glazing gaskets for jambs and header.



DETAIL B

TEMPLATES ARE FOR EXTREME HEAD ONLY



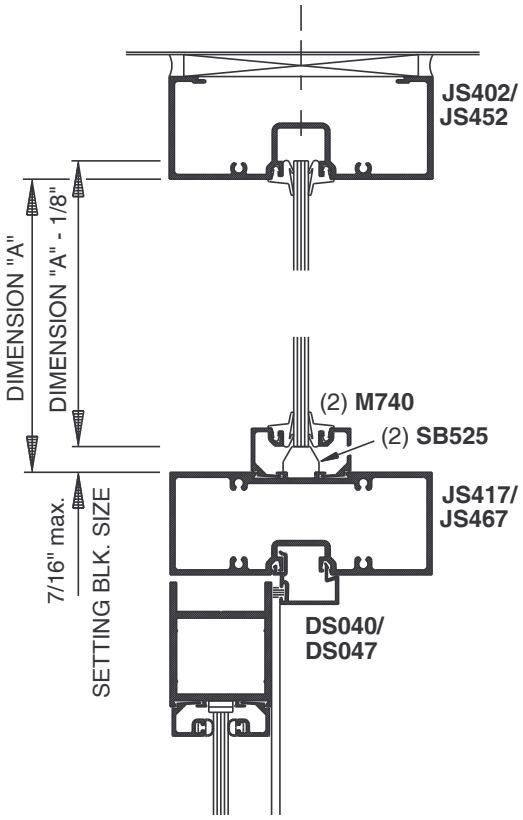


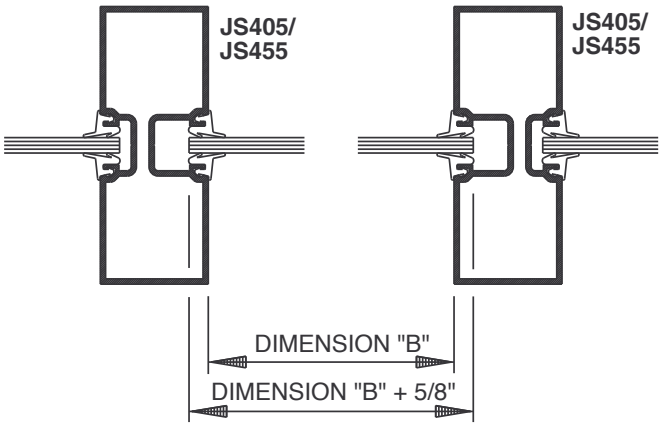
DETAIL C

NOTE: Do not cut templates from this manual, templates are supplied inside frame boxes.

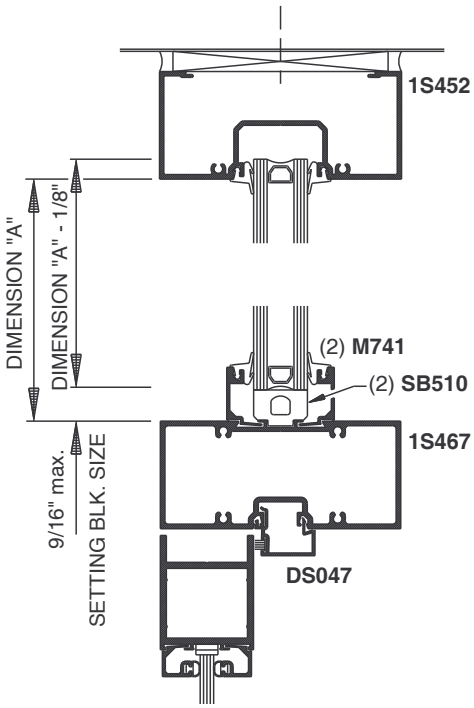
GLASS SIZE FORMULA AT TRANSOM
(TUBULAR FRAME SHOWN, OPEN BACK SIMILAR)

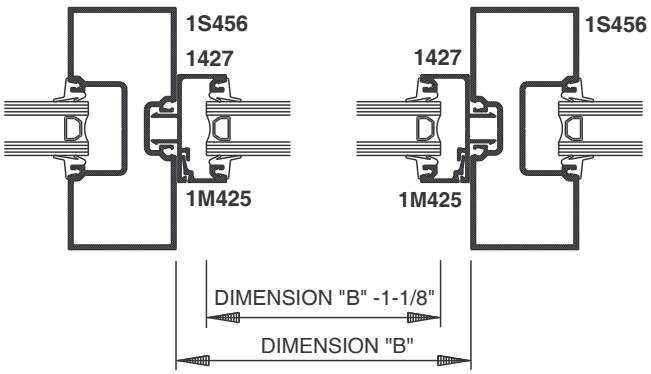
SERIES 400 AND 450





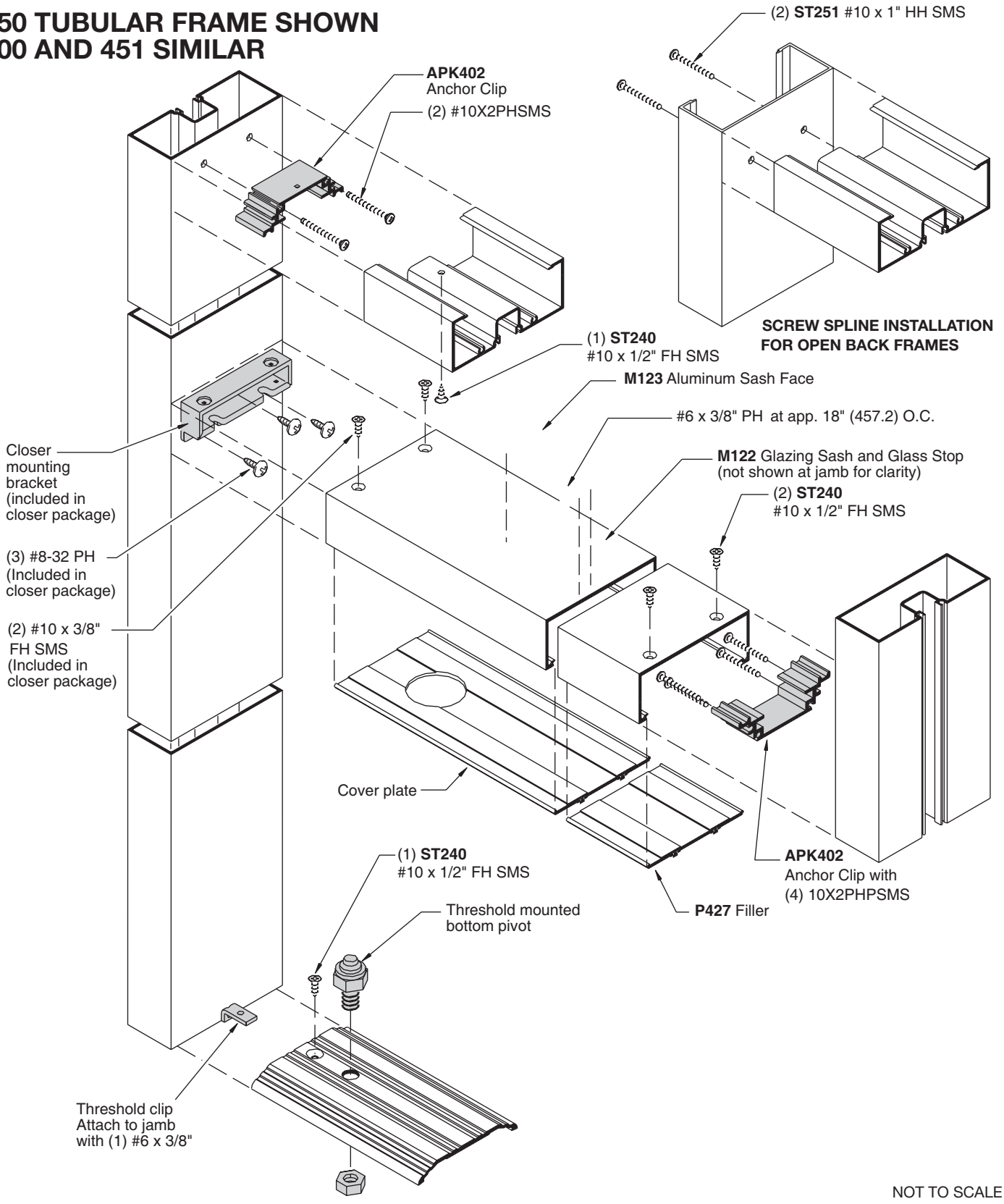
SERIES 451





FRAME UNIT FOR CENTER HUNG DOOR WITH OVERHEAD CONCEALED CLOSER

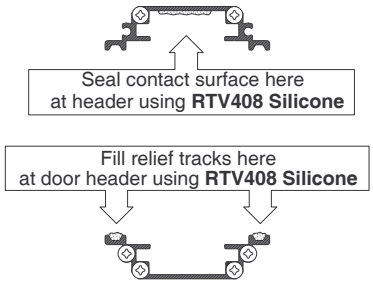
450 TUBULAR FRAME SHOWN
400 AND 451 SIMILAR



NOT TO SCALE

ASSEMBLY INSTRUCTIONS:

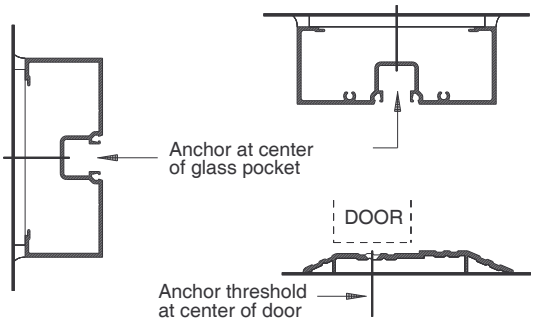
1. Verify opening size. Allow for 1/4" (6.4) shim and caulk space at sides, and 1/2" (12.7) space at top of frame. (When using optional **AF100** sill flashing, allow 1/4" (6.4) shim space at top of frame).
2. If required, cut off top of vertical jambs to adjust frame to desired height.
3. Cut templates from instructions. Align edge of template with top of vertical and drill holes for head clips.
4. Attach anchor clips for head, door header, and threshold to jambs with provided screws.
5. Butter contact surface of anchor clips with **RTV408 Silicone Sealant**. **See DETAIL A**
6. Assemble head and door header to jambs as shown.
7. Install bottom pivot in threshold.



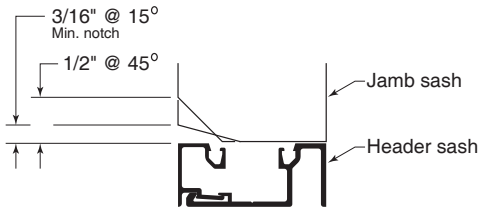
DETAIL A

INSTALLATION INSTRUCTIONS:

1. Set frame into opening plumb and square.
2. Drill holes for #12 installation screws starting 6" (152.4) from corners and not more than 24" (609.6) O.C.
3. Secure jambs and head to opening and threshold to floor with #12 screws. **See DETAIL B**
4. Install transom sash. Horizontal sash runs through at door door header. Vertical sash abutts over horizontal sash and is mitered at outside to allow for horizontal glazing bead installation. **See DETAIL C**
5. Attach sash to door header with #6 x 3/8" PH at 18" (457.2) O.C.
6. Place glass setting blocks in door header at quarter or eighth points as required and glaze transom.
7. Install sash glazing bead.
8. Roll-in glazing gaskets for jambs and header.

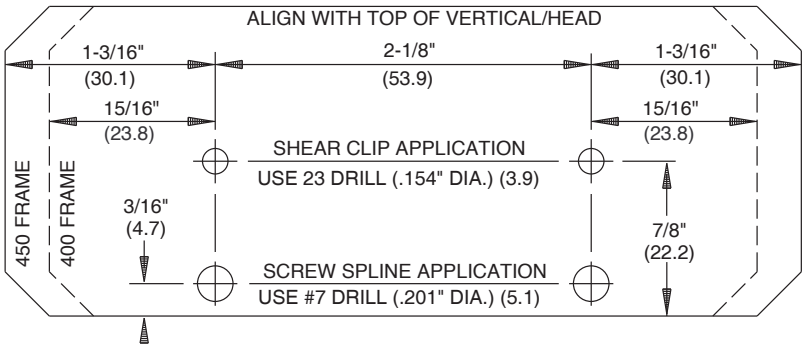


DETAIL B



DETAIL C

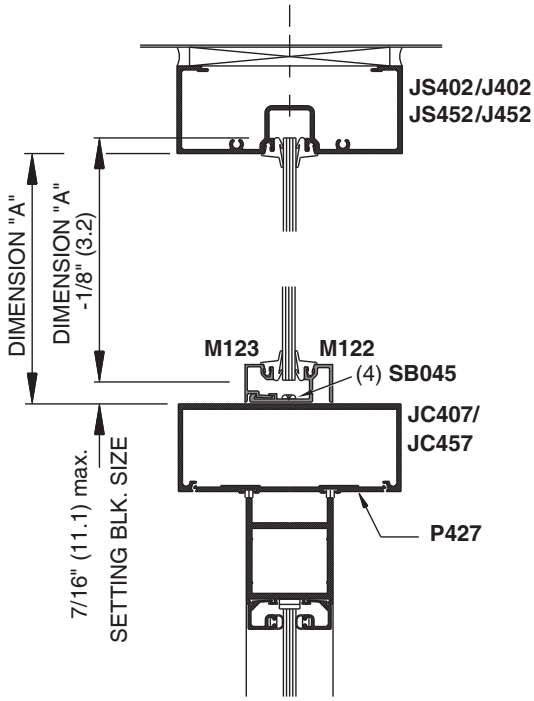
TEMPLATES ARE FOR EXTREME HEAD ONLY

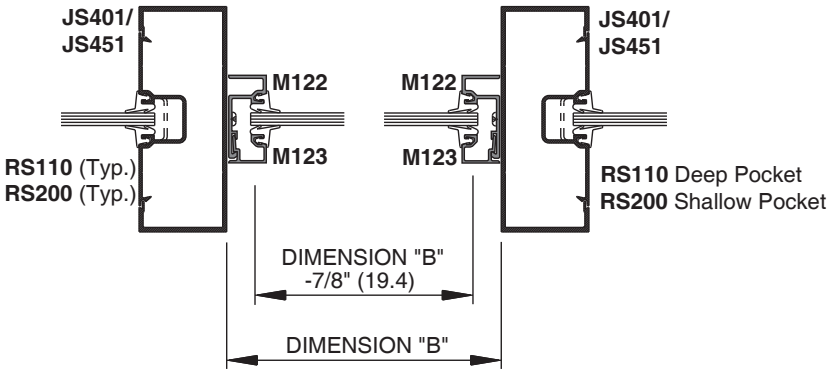


NOTE: Do not cut templates from this manual, templates are supplied inside frame boxes.

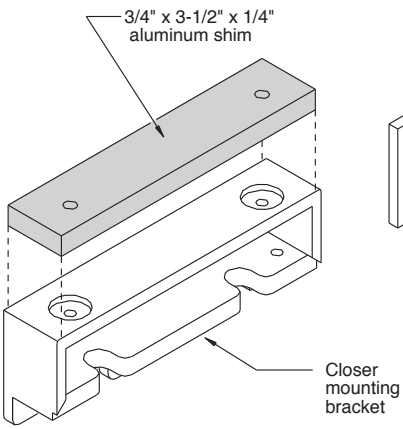
GLASS SIZE FORMULA AT TRANSOM

(OPEN BACK FRAME SHOWN, TUBULAR SIMILAR)

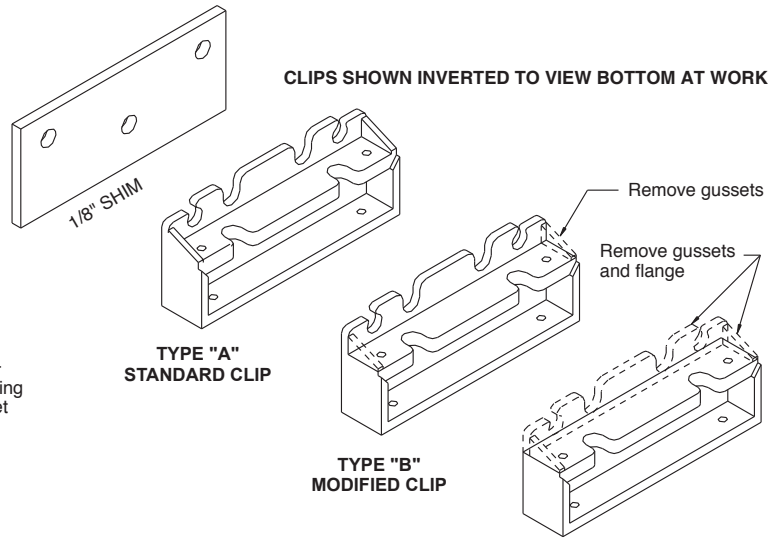


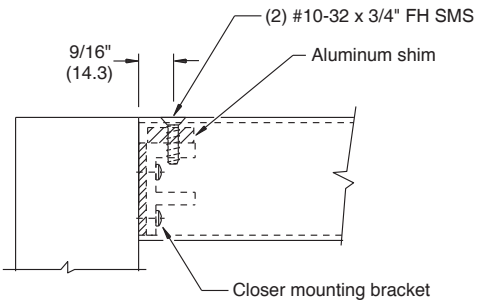


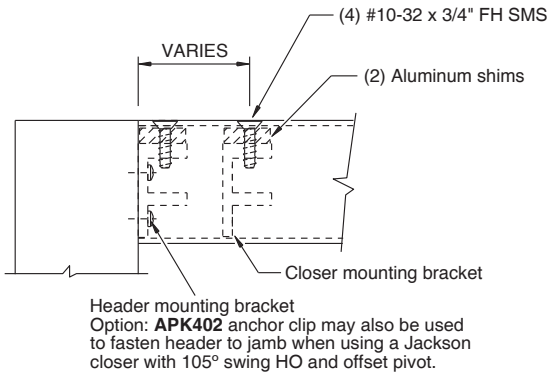
HEADER FOR JACKSON OVERHEAD CONCEALED CLOSER WITH OFFSET ARM

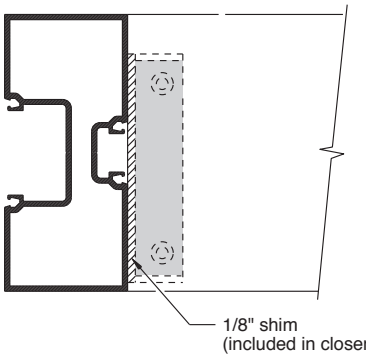


Secure closer mounting bracket to header with (2) #10-32 x 3/4" F.H.

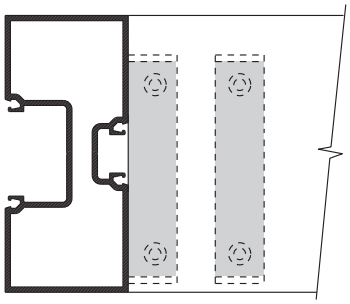








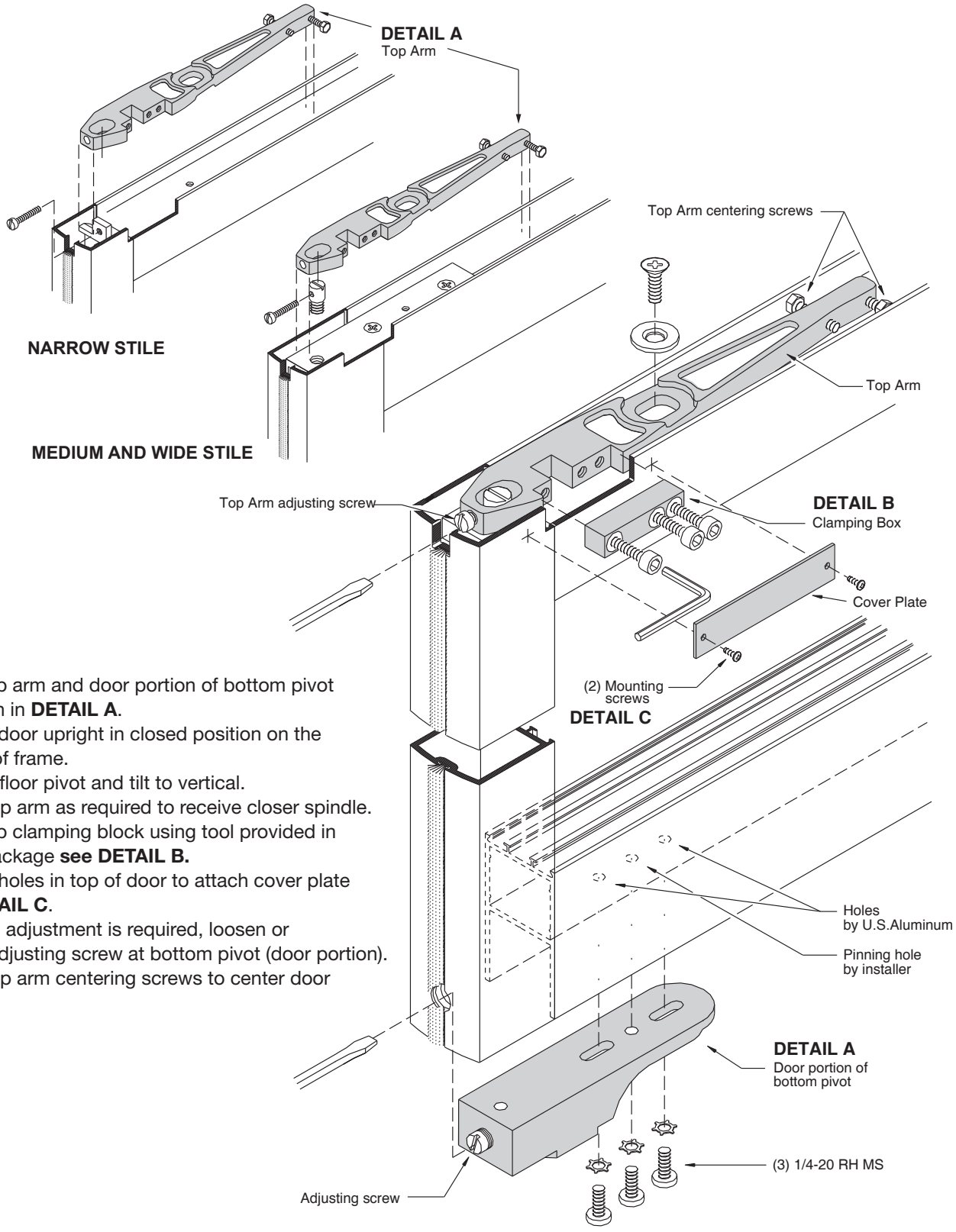
JACKSON OHCC with butt hung door 90º swing



JACKSON OHCC with offset pivoted door

JACKSON OHCC with butt hung door 105º swing

SIDE LOAD CENTER PIVOT DOOR WITH JACKSON OVERHEAD CONCEALED CLOSER

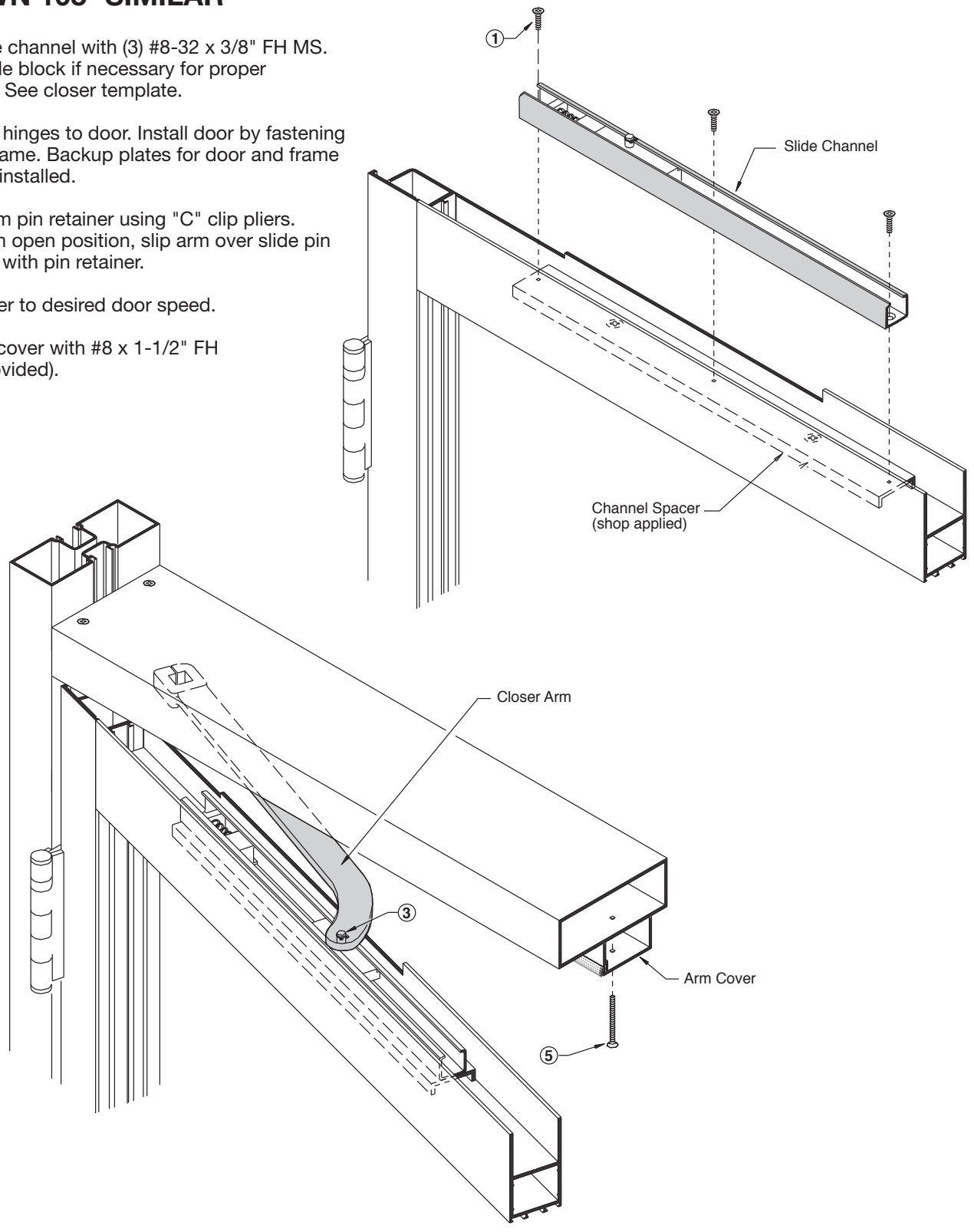


1. Install top arm and door portion of bottom pivot as shown in **DETAIL A**.
2. Position door upright in closed position on the outside of frame.
3. Lift onto floor pivot and tilt to vertical.
4. Adjust top arm as required to receive closer spindle.
5. Install top clamping block using tool provided in closer package **see DETAIL B.**
6. Drill two holes in top of door to attach cover plate **see DETAIL C**.
   If vertical adjustment is required, loosen or tighten adjusting screw at bottom pivot (door portion).
7. Adjust top arm centering screws to center door in frame.

BUTT HINGE DOOR WITH JACKSON OVERHEAD CONCEALED CLOSER

90º SHOWN 105º SIMILAR

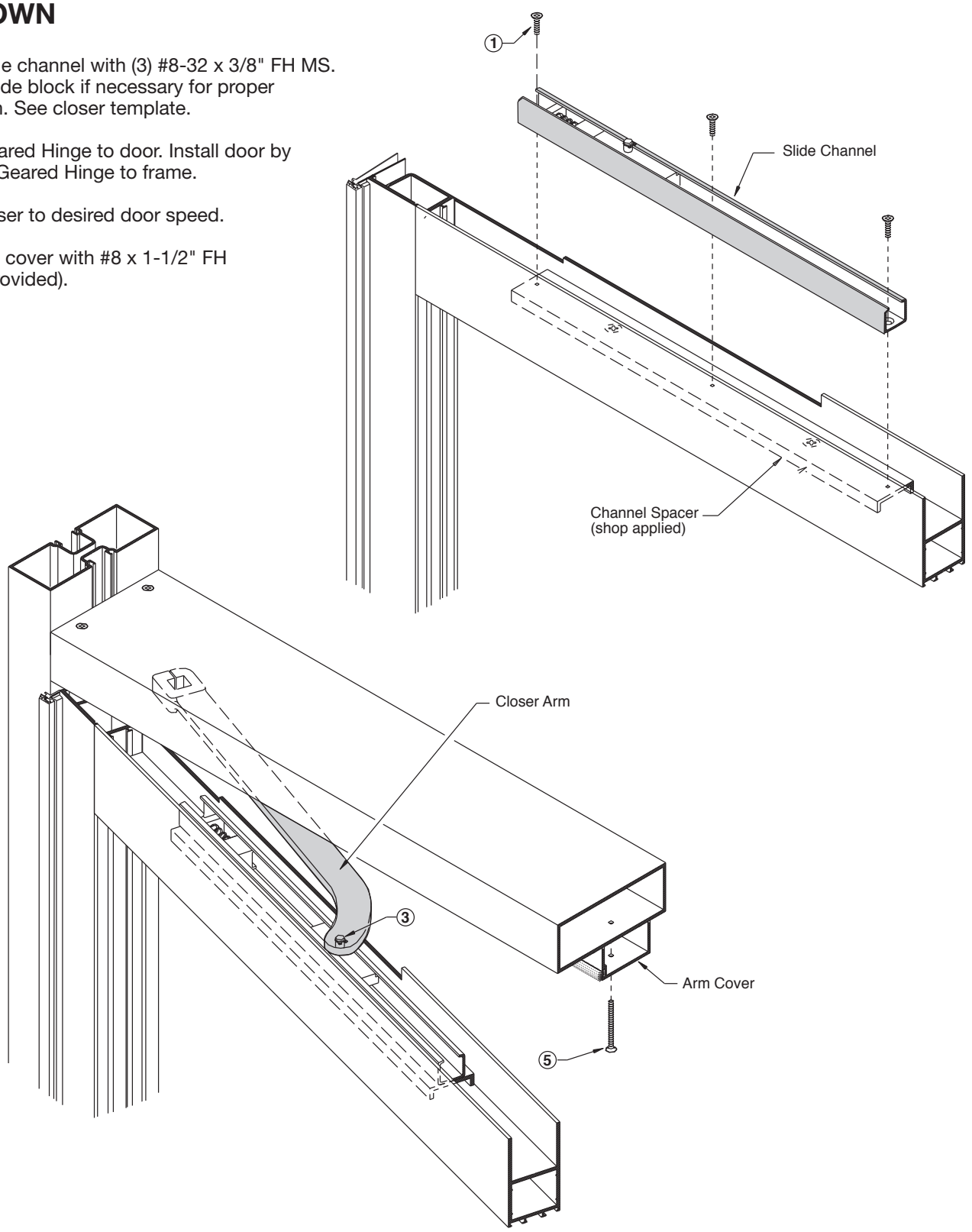
1. Mount slide channel with (3) #8-32 x 3/8" FH MS. Reverse side block if necessary for proper installation. See closer template.
2. Attach butt hinges to door. Install door by fastening hinges to frame. Backup plates for door and frame are factory installed.
3. Remove arm pin retainer using "C" clip pliers. With door in open position, slip arm over slide pin and secure with pin retainer.
4. Adjust closer to desired door speed.
5. Install arm cover with #8 x 1-1/2" FH screws (provided).



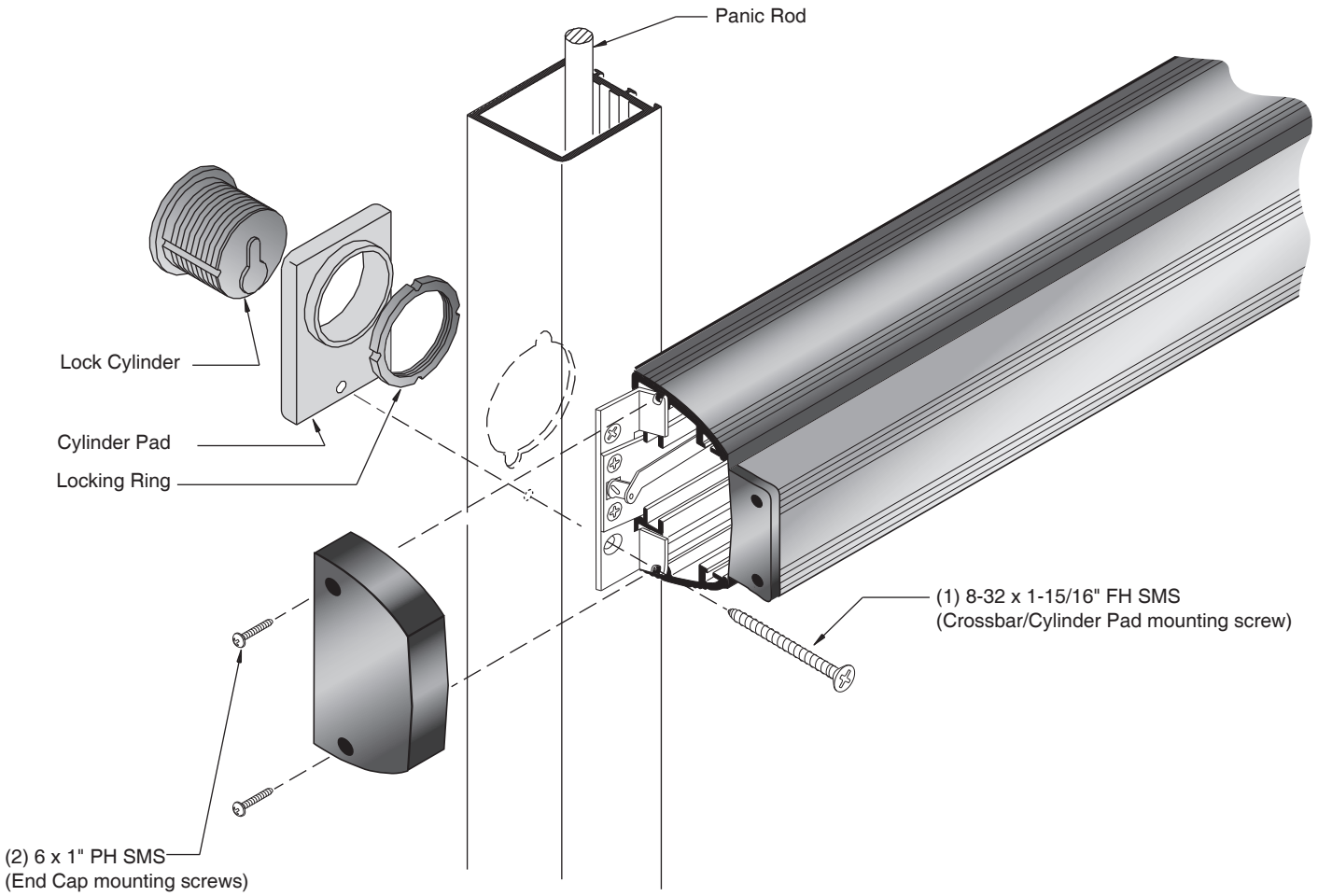
GEARED HINGED DOOR WITH JACKSON OVERHEAD CONCEALED CLOSER

105º SHOWN

1. Mount slide channel with (3) #8-32 x 3/8" FH MS. Reverse side block if necessary for proper installation. See closer template.
2. Attach Geared Hinge to door. Install door by fastening Geared Hinge to frame.
3. Adjust closer to desired door speed.
4. Install arm cover with #8 x 1-1/2" FH screws (provided).



PANIC DOORS CYLINDER REPLACEMENT BY OTHERS



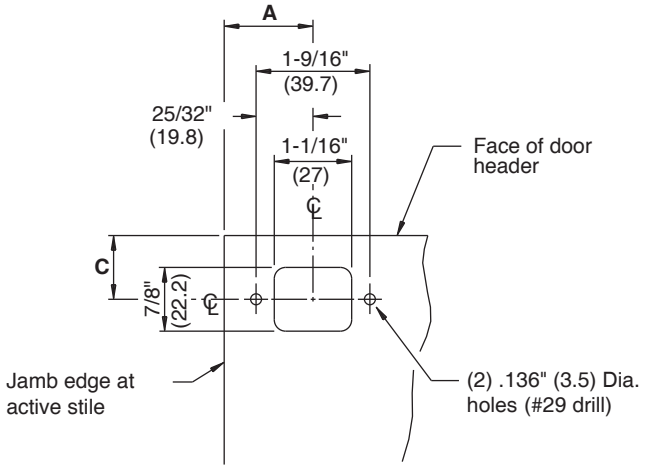
Cylinder removal

1. Remove (2) screws from end of panic device and remove end cap.
2. Remove bottom crossbar/cylinder pad attachment screw as shown.
3. Turn cylinder and pad clockwise approximately 1/4 turn until cylinder releases.
4. Remove locking ring from cylinder and remove cylinder.

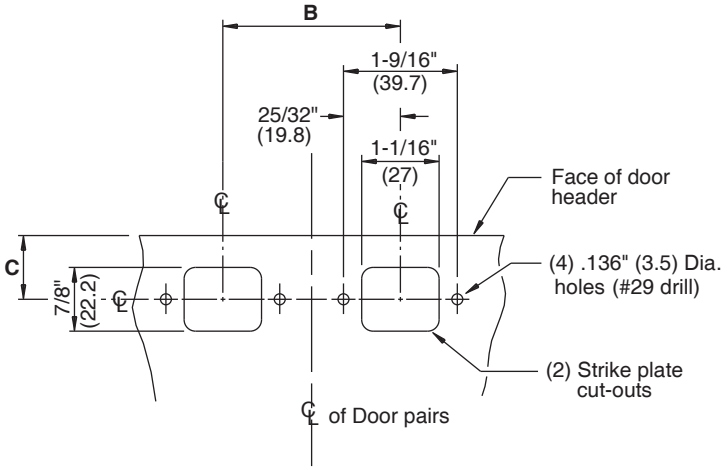
Cylinder installation

1. Place cylinder through cylinder pad and install locking ring.
2. Place cylinder into hole in stile and turn counterclockwise approximately 1/4 turn.
3. Check cylinder and panic device for proper operation.
4. Replace end cap onto panic device with (2) screws as shown.

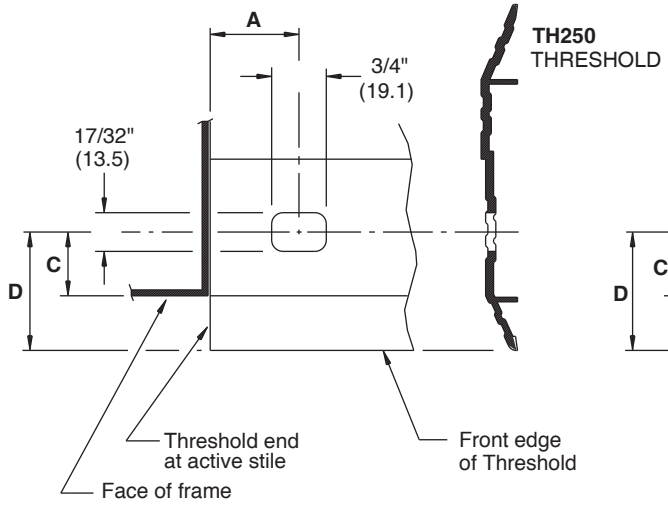
DH308 MID-PANEL PANIC
STRIKE LOCATION FOR DOOR HEADER AND THRESHOLD



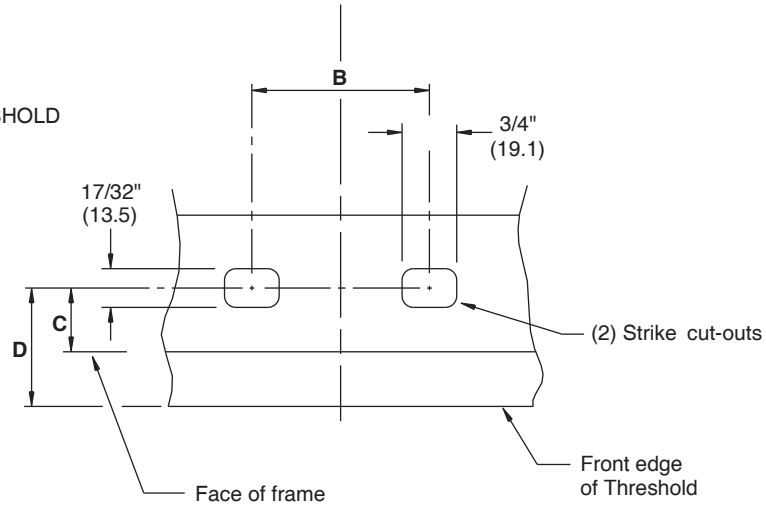
HEADER AT SINGLE DOOR



HEADER AT DOOR PAIRS



THRESHOLD AT SINGLE DOOR

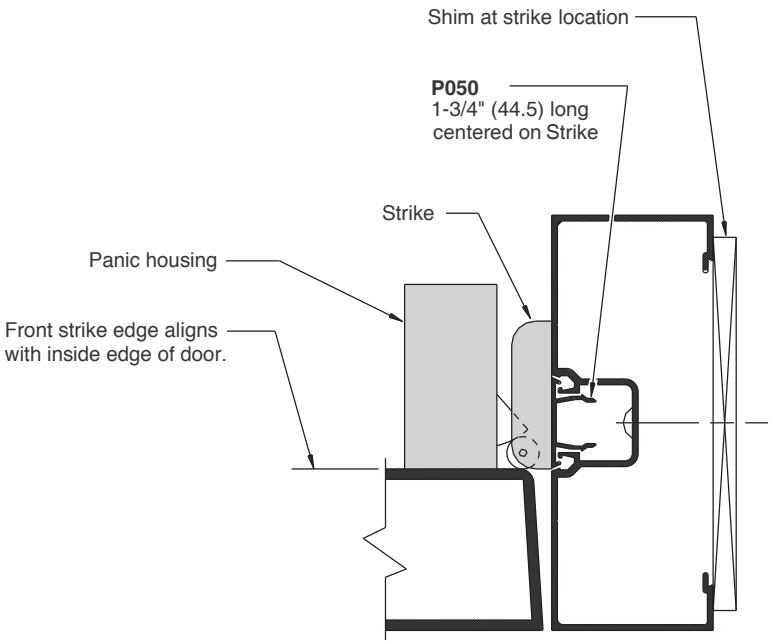


THRESHOLD AT DOOR PAIRS

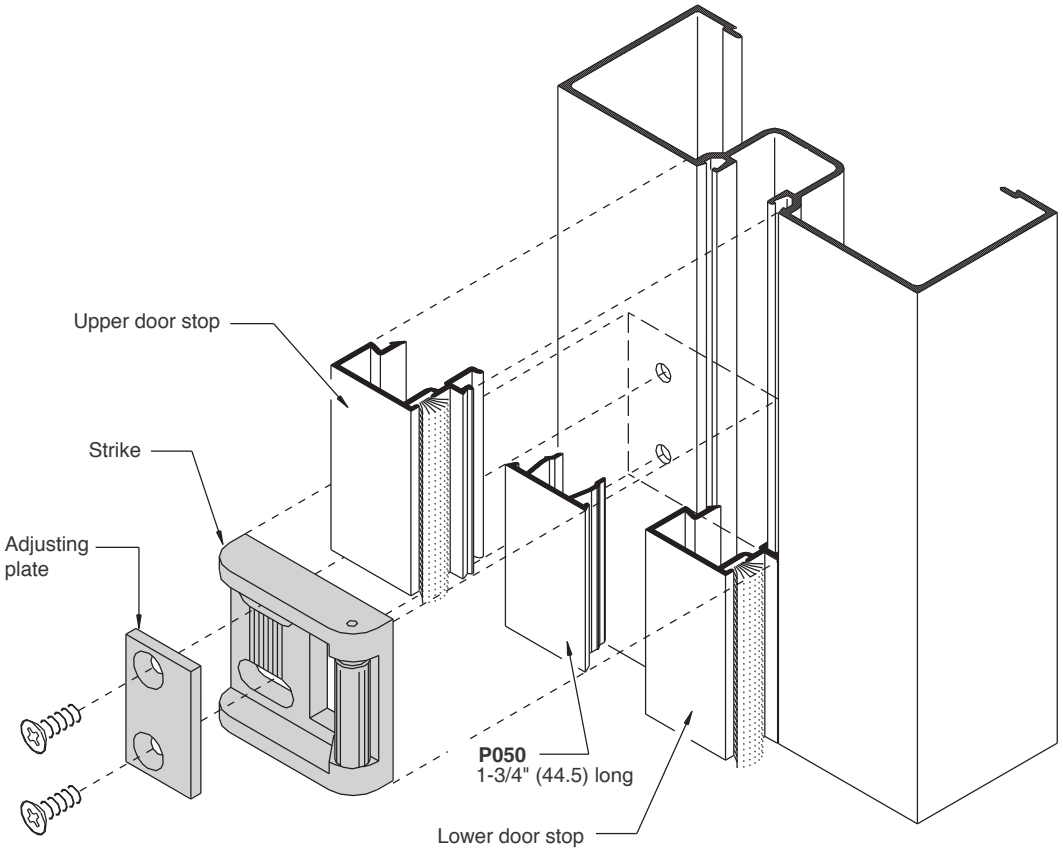
1. Select detail for required condition.
2. Find door type on chart for needed dimensions.

DOOR STILE TYPE	DIMENSION A		DIMENSION B		DIMENSION C		DIMENSION D	
NARROW	1-7/32"	(31)	2-3/8"	(60.3)	7/8"	(22.2)	1-5/8"	(41.3)
MEDIUM	2-11/16"	(68.3)	5-3/8"	(135.5)	7/8"	(22.2)	1-5/8"	(41.3)
WIDE	4-3/16"	(106.4)	8-3/8"	(212.7)	7/8"	(22.2)	1-5/8"	(41.3)
VANGARD MEDIUM	N/A	N/A	5-1/4"	(133.4)	7/8"	(22.2)	1-5/8"	(41.3)
VANGARD WIDE	N/A	N/A	8-3/4"	(222.3)	7/8"	(22.2)	1-5/8"	(41.3)

"PANIC DOORS" with DH300 RIM PANIC

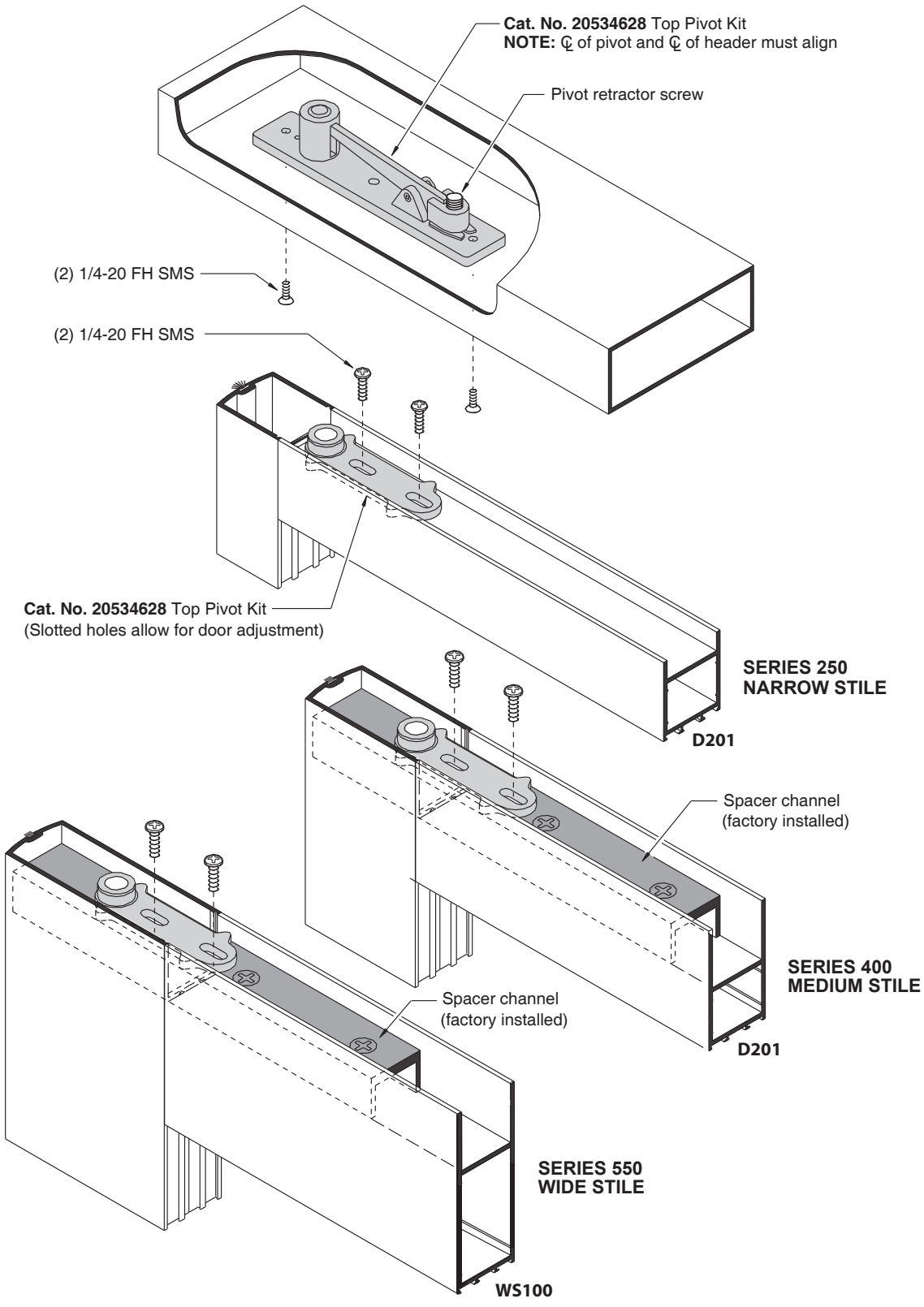


TOP VIEW

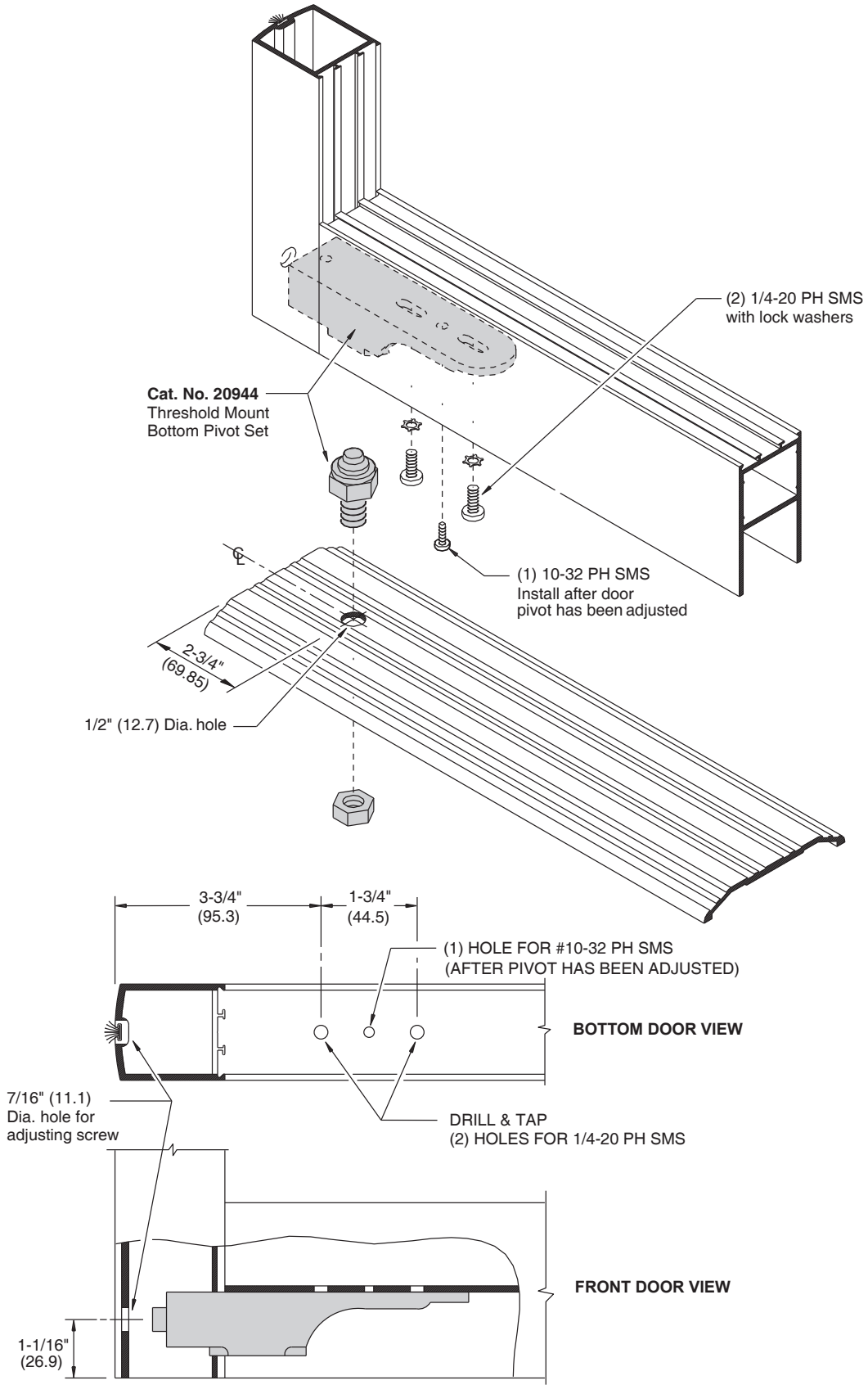


ISOMETRIC VIEW OF ASSEMBLY

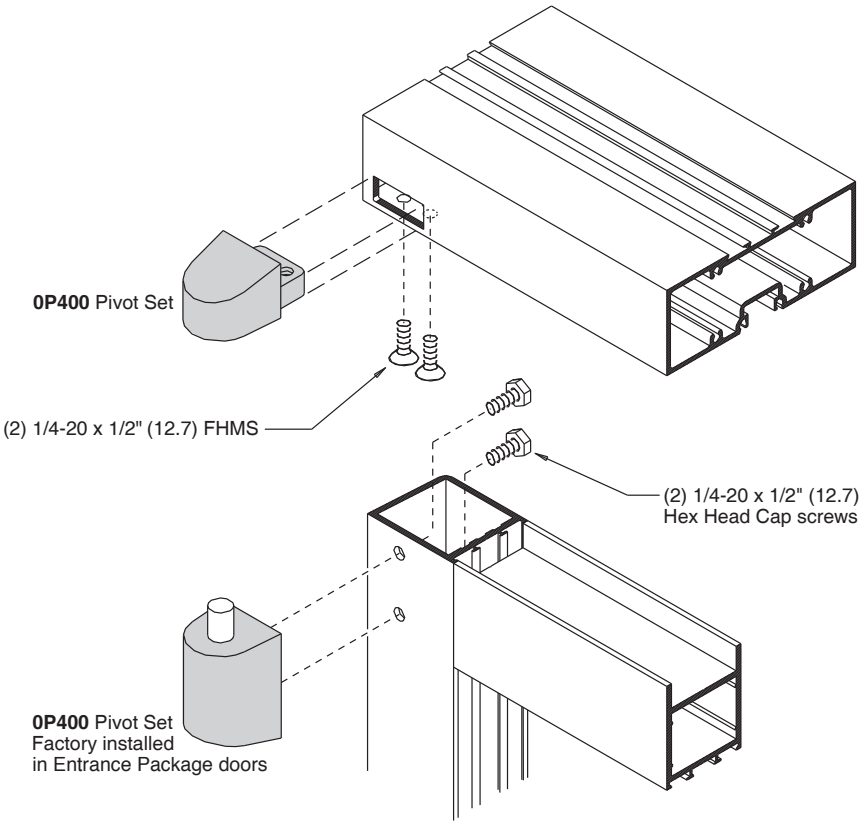
CENTER PIVOT - TOP PORTION FOR SURFACE CLOSER OR FLOOR CLOSER

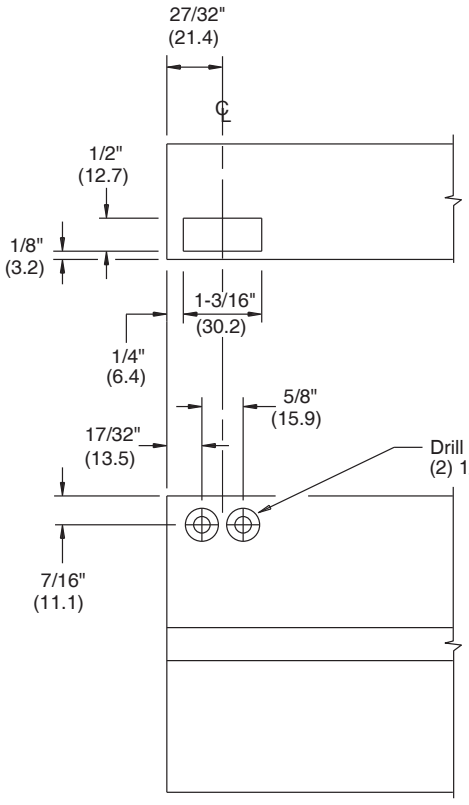


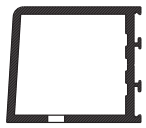
CENTER PIVOT - BOTTOM PORTION



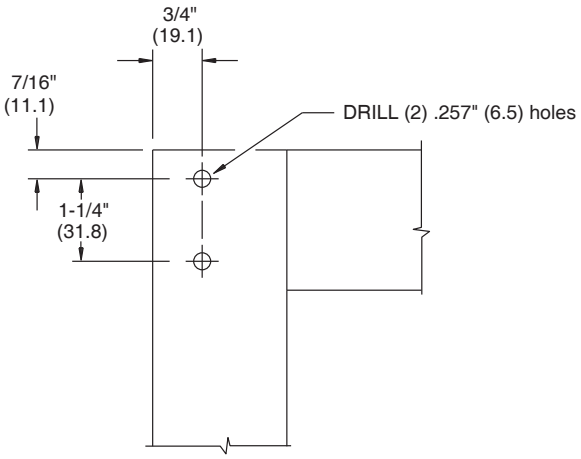
OFFSET PIVOT - TOP PORTION



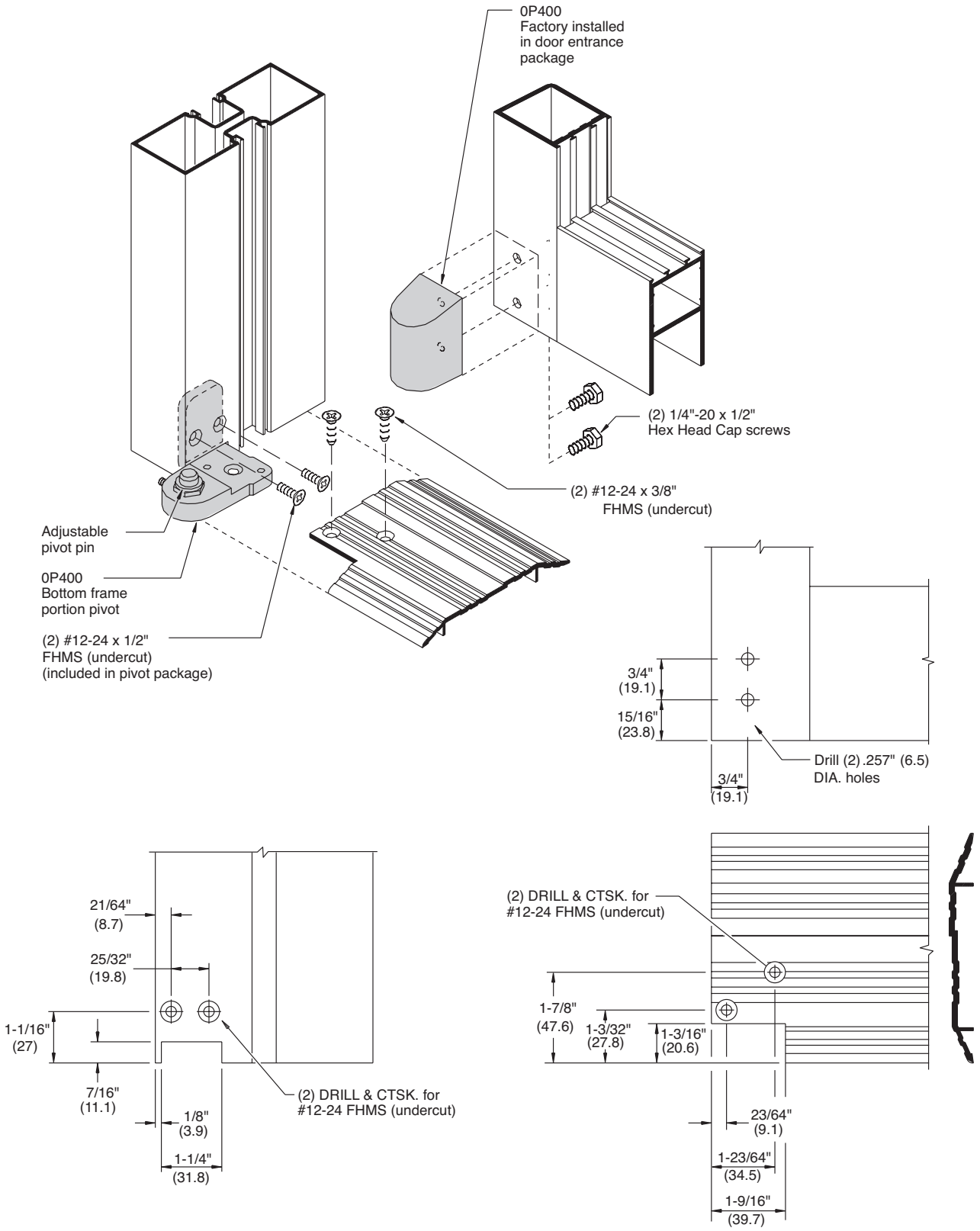




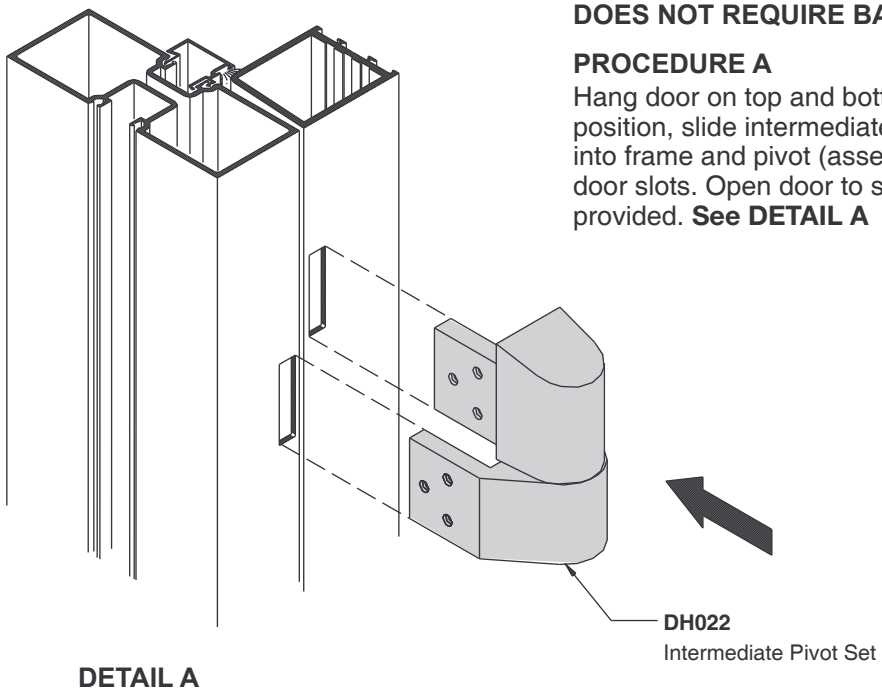
CROSS SECTION



OFFSET PIVOT - BOTTOM PORTION



DH022 INTERMEDIATE PIVOT



DETAIL A

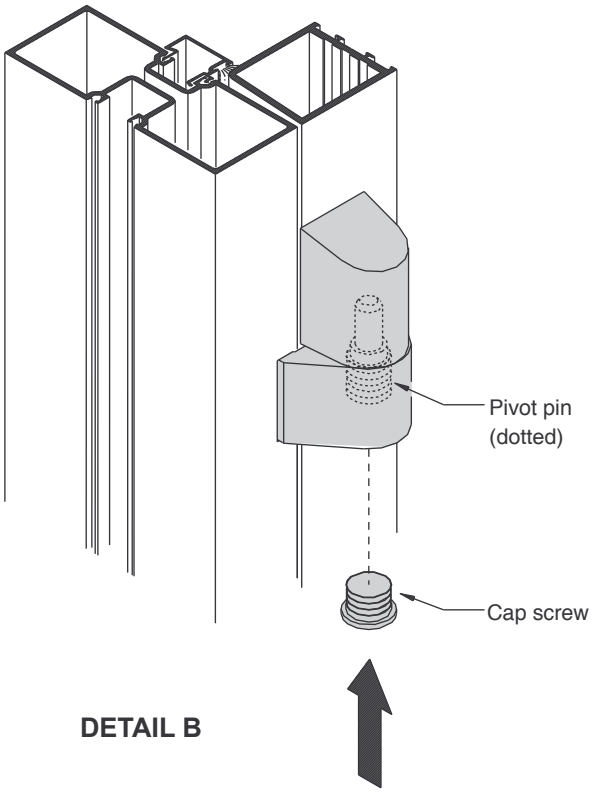
DOES NOT REQUIRE BACK-UP PLATE

PROCEDURE A

Hang door on top and bottom pivots. With door in closed position, slide intermediate pivot (assembled together) into frame and pivot (assembled together) into frame and door slots. Open door to secure pivot with fasteners provided. **See DETAIL A**

PROCEDURE B

Install pivot leaves on frame and door. Remove cap screw from jamb portion of pivot and lower pin to clear. Hang door on top and bottom pivots. Raise pivot pin, as required and replace cap screw.
See DETAIL B

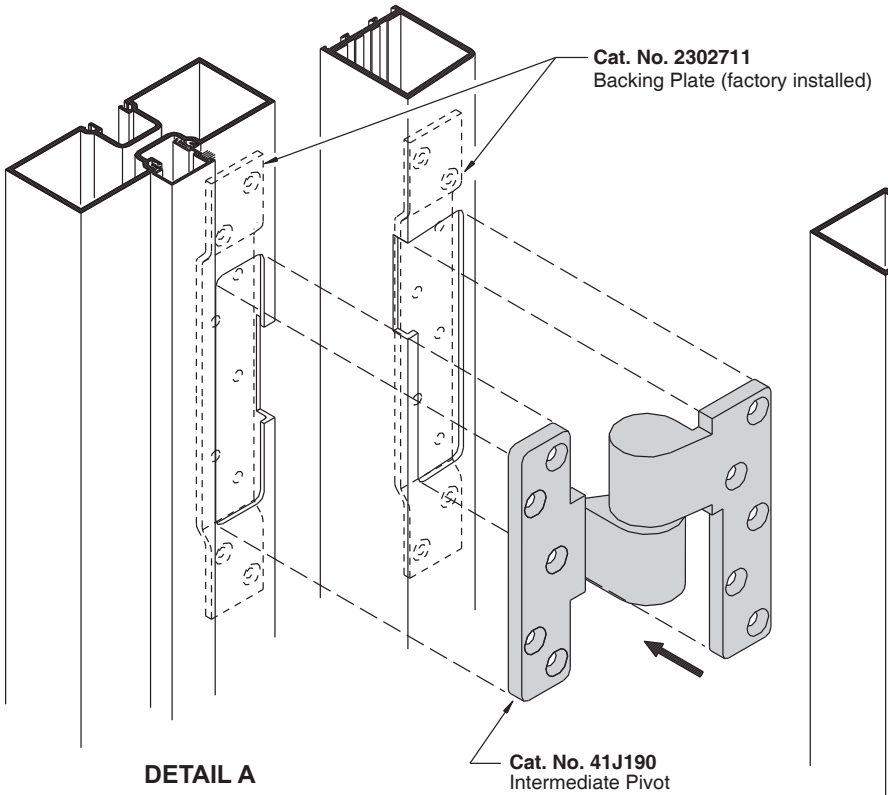


DETAIL B

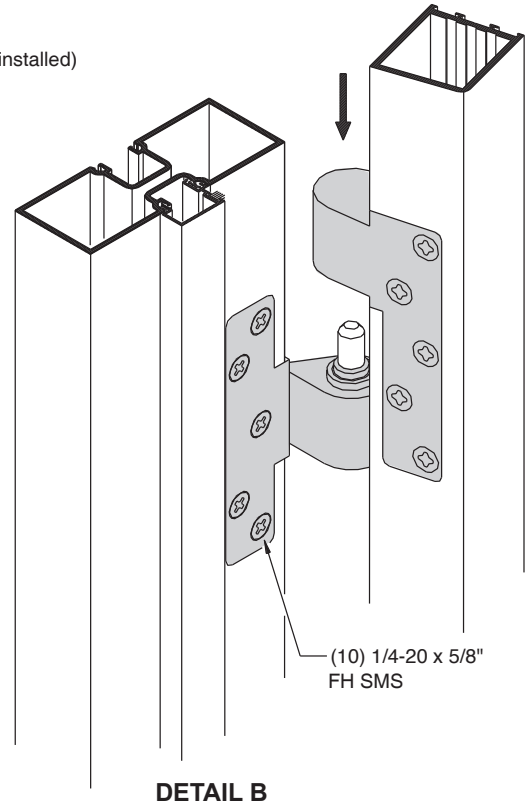
To remove existing doors with intermediate pivots, Remove cap screw and lower pivot pin to clear.

DH010 INTERMEDIATE PIVOT (RIXON OR DOR-O-MATIC M-19 SIMILAR)

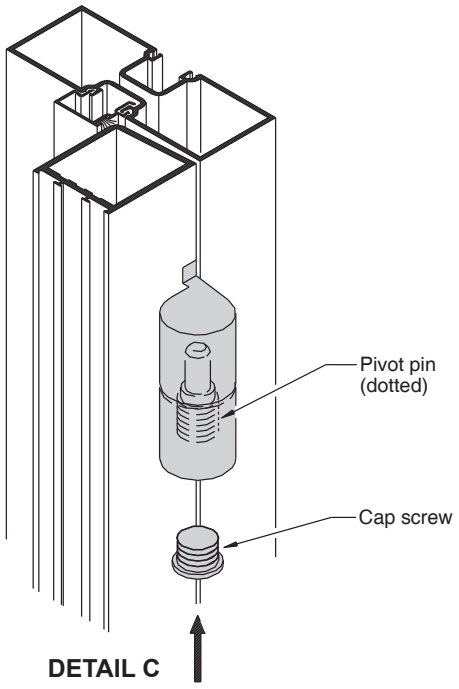
Condition 1: Door can open to 180º.....USE PROCEDURE A, B, or C
Condition 2: Door can open more than 95º but less than 180º .....USE PROCEDURE A, B, or C
Condition 3: Door can open less than 95º .....USE PROCEDURE A, B, or C



DETAIL A



DETAIL B



DETAIL C

PROCEDURE A
Hang door on top and bottom pivots.
Swing door open to 180º and install **DH010** (assembled together) with (10) 1/4-20 FH SMS provided. **See DETAIL A**

PROCEDURE B
Do not install top pivot frame portion.
Install pivot leaves on frame and door with screws provided. Place door upright in the 95º, or more, open position (to clear header). Lift door onto intermediate pivot pin and floor pivot. Hold down top pivot pin to install top pivot frame portion. **See DETAIL B**

PROCEDURE C
Install pivot leaves on frame and door with screws provided. Remove cap screw from jamb portion of pivot and lower pin to clear. Hang door on top and bottom pivots. Raise pivot pin, as required, and replace cap screw. **See DETAIL C**

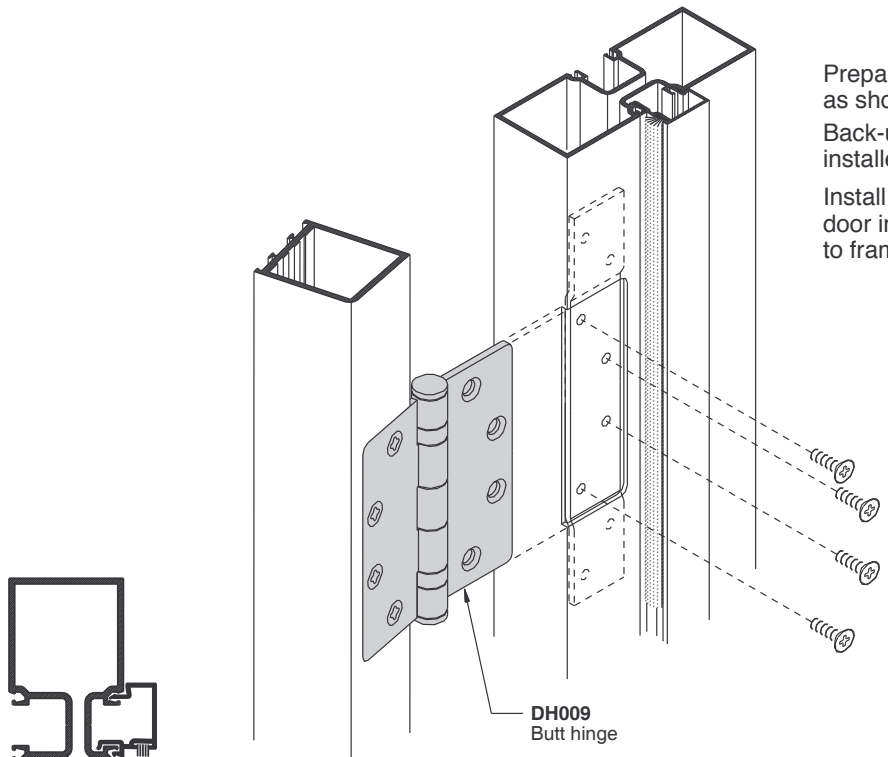
To remove existing doors with intermediate pivots, remove cap screw and lower pivot pin to clear.

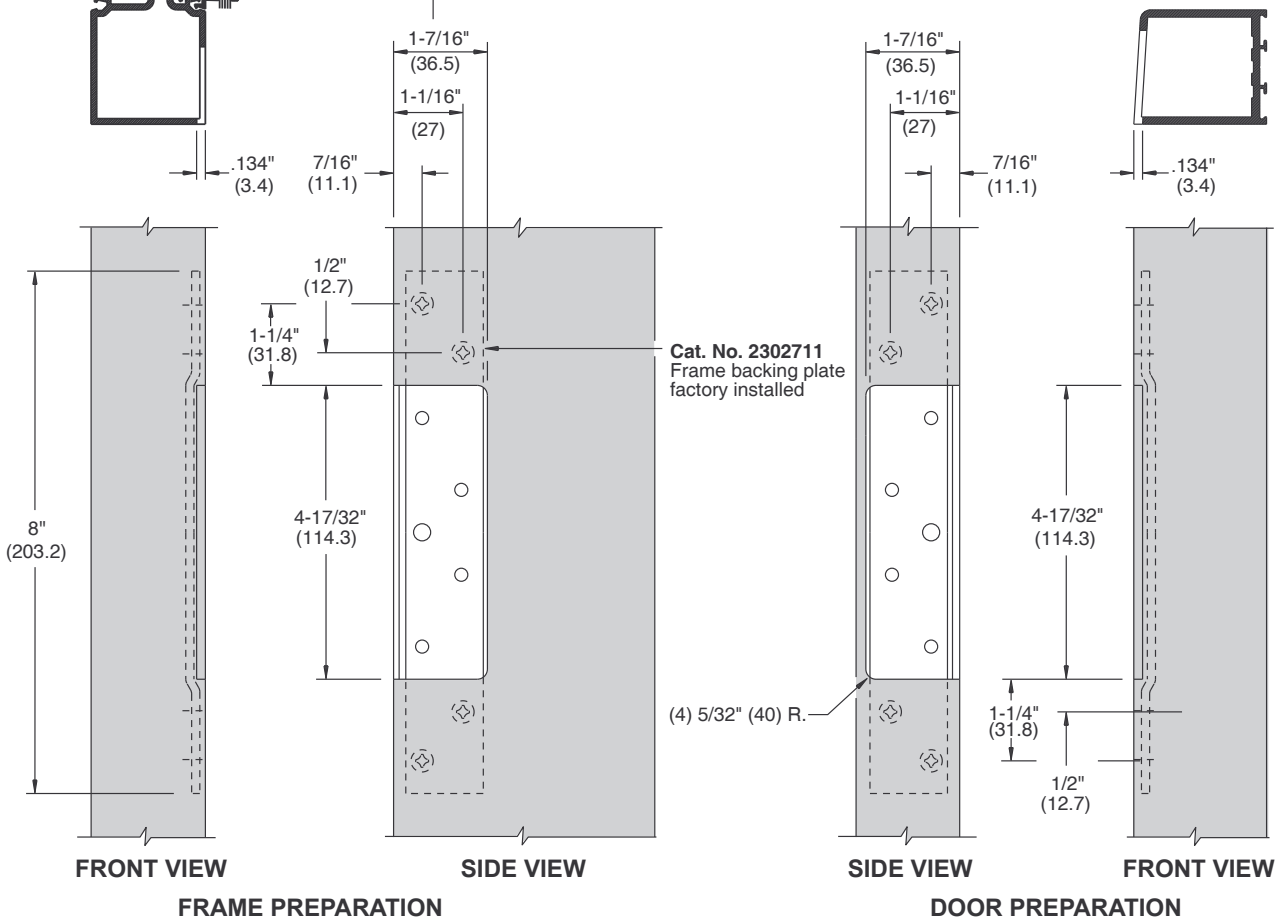
DH009 BUTT HINGE 4-1/2" x 4"

Prepare frame and door for hinges, as shown.

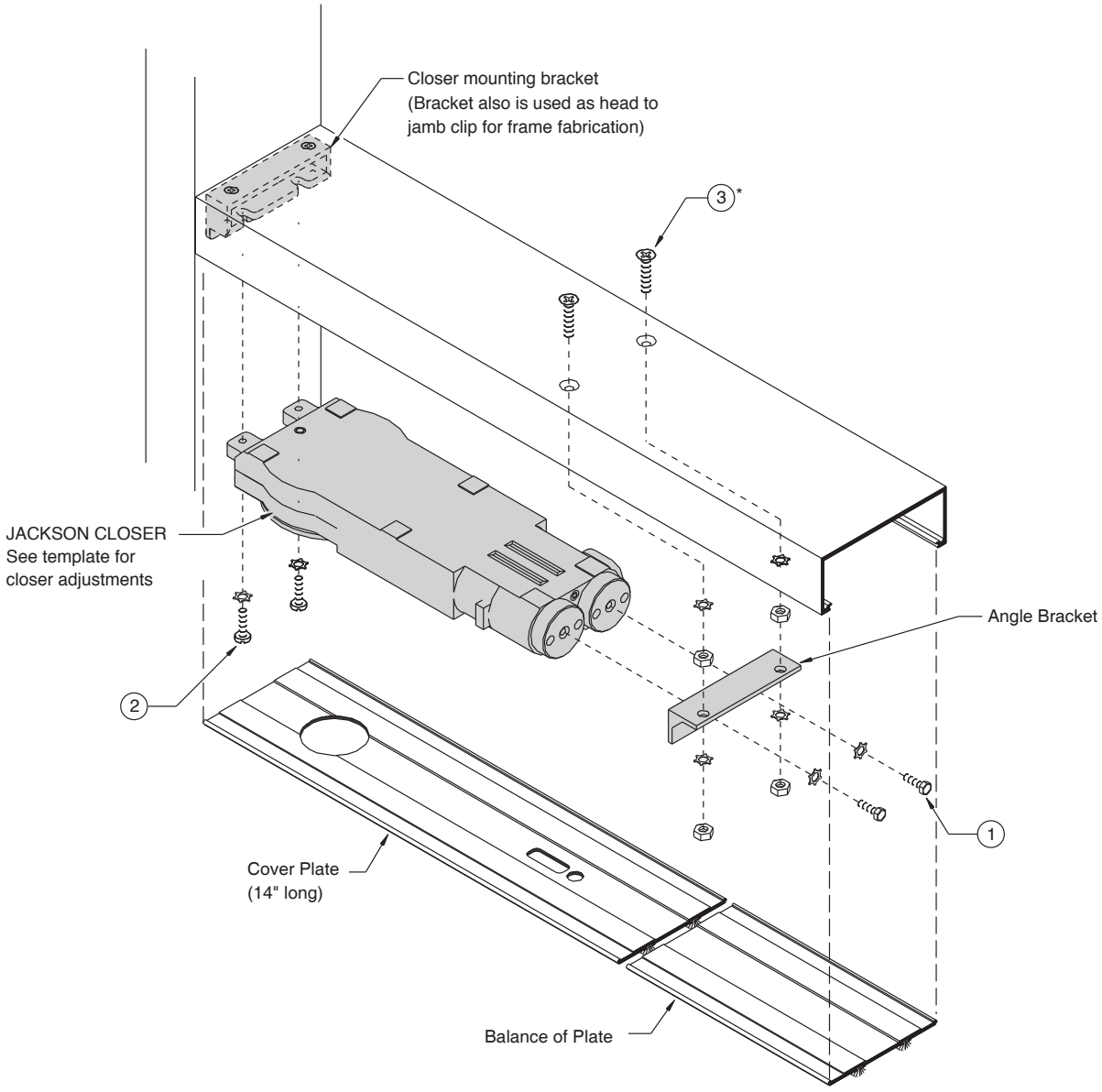
Back-up plates are factory installed in prepared doors and frames.

Install butt hinges in door. Set door in place and fasten hinges to frame.





JACKSON OVERHEAD CONCEALED CLOSER FOR CENTER PIVOTED DOOR

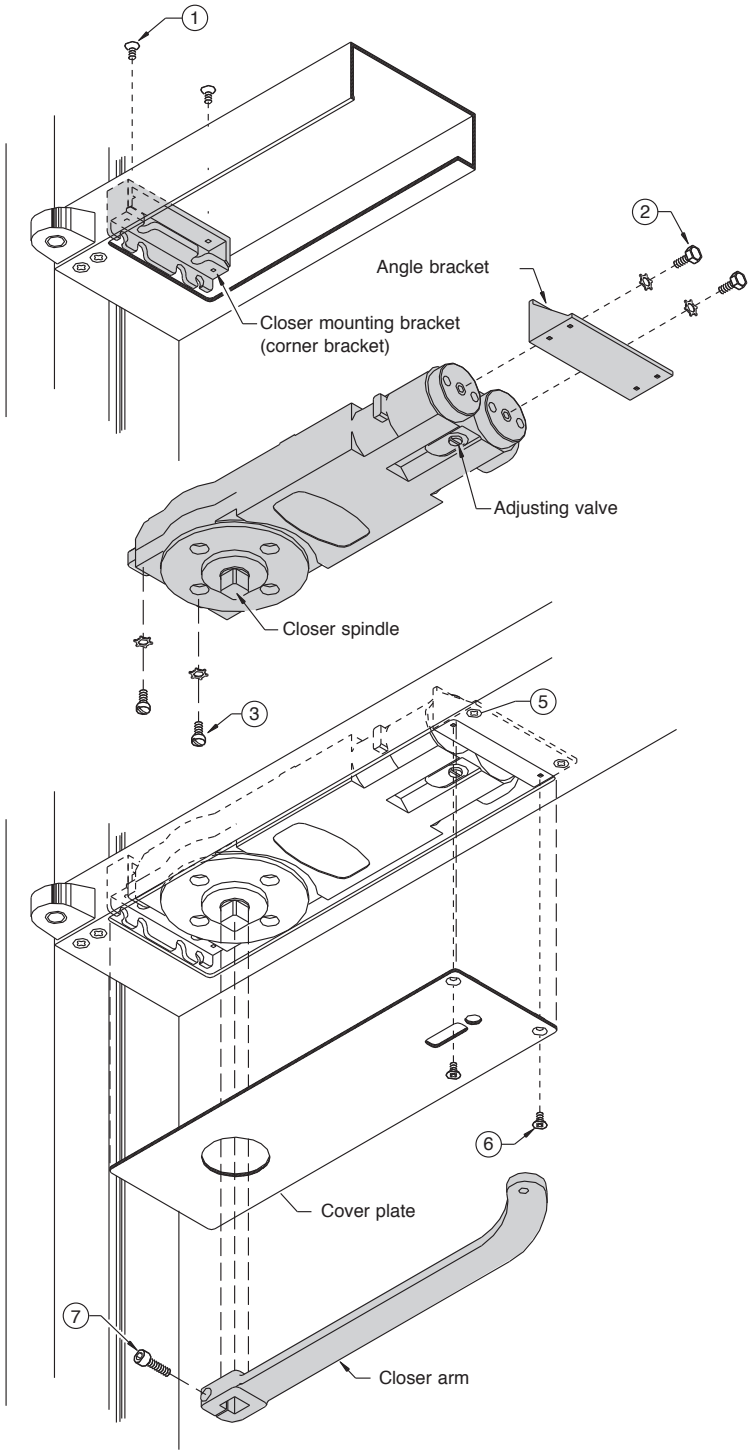


Closer mounting bracket is already installed (See FRAME UNITS installation instructions).

1. Mount angle bracket to closer with (2) 1/4-20 hex head SMS and (2) washers.
2. Install (2) 1/4-20 x 5/8" Fillister Head MS into lugs of closer. Do not tighten screws.
3. Install (2) 1/4-20 x 7/8" FH SMS* with (2) 1/4-20 nuts and washers in header.
4. Insert closer lugs into mounting bracket at an angle and raise closer opposite end to align mounting screws with angle bracket holes. Secure bracket to mounting screws using (2) nuts and washers.
5. Tighten Fillister Head screws.
6. Snap in filler plate.

*For 2" x 4-1/2" header, longer screws are provided.

JACKSON OVERHEAD CONCEALED CLOSER FOR OFFSET PIVOTED DOOR



1. Mount corner bracket into header with (2) 10-32 x 3/8" FH SMS. See pages 27 and 29 for bracket location.

2. Mount angle bracket to closer with (2) 1/4-20 x 1/2" Hex Head SMS and washers.

3. Install (2) 1/4-20 x 1/2" Fillister Head SMS with washers into lugs of closer. Do not tighten screws.

4. Set closer onto header and align angle bracket holes with holes in header. Closer lugs shall rest on corner bracket.

5. Fasten angle bracket to header with (2) 10-24 x 3/8" FH SMS Tighten Fillister Head screws.

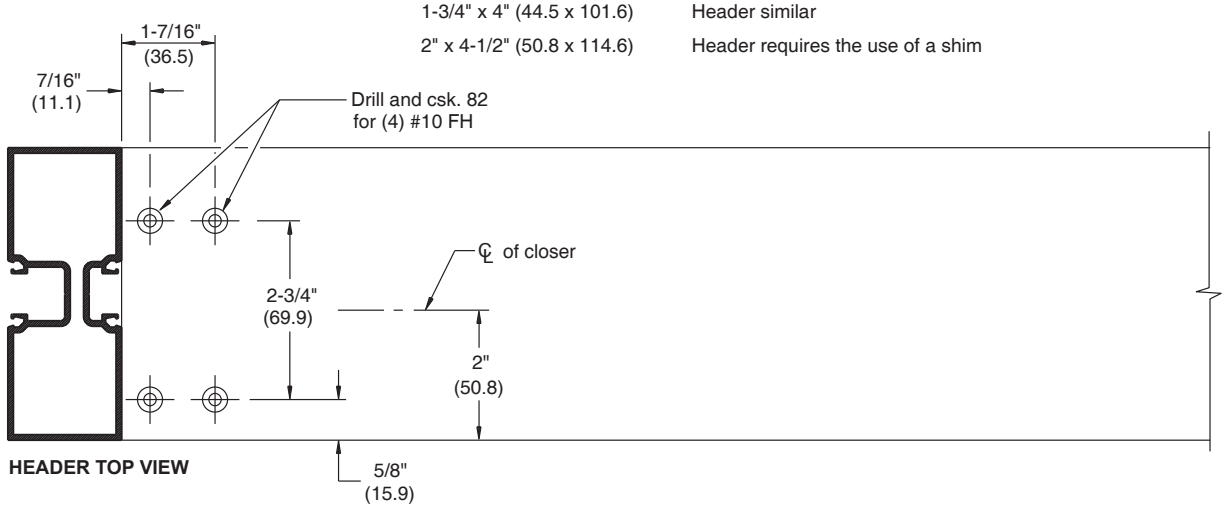
6. Install cover plate and secure to angle with (2) 10-24 x 3/8" FH SMS

7. Mount arm on spindle and secure with 1/4-20 x 7/8" Socket Head Cap Screw.

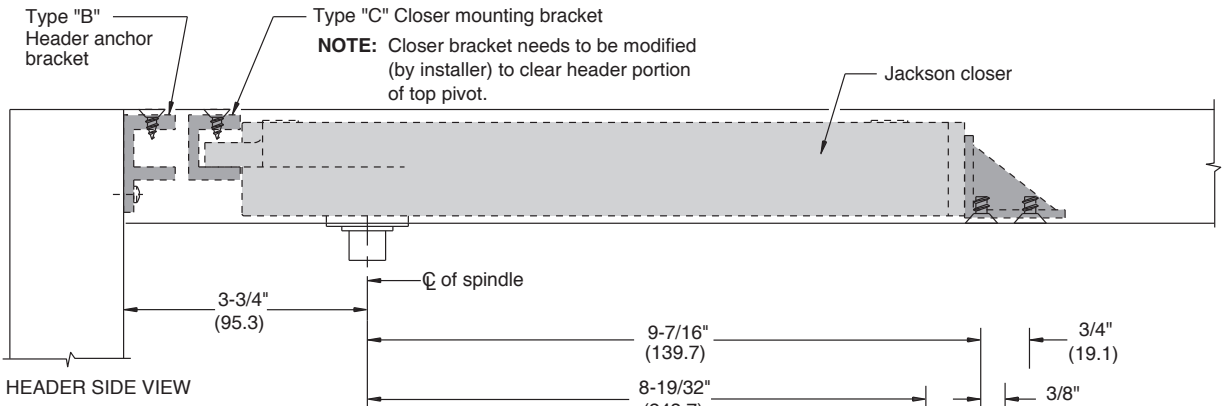
JACKSON OVERHEAD CONCEALED CLOSER FOR OFFSET PIVOTED DOOR WITH 90º SWING

HEADER PREPARATION

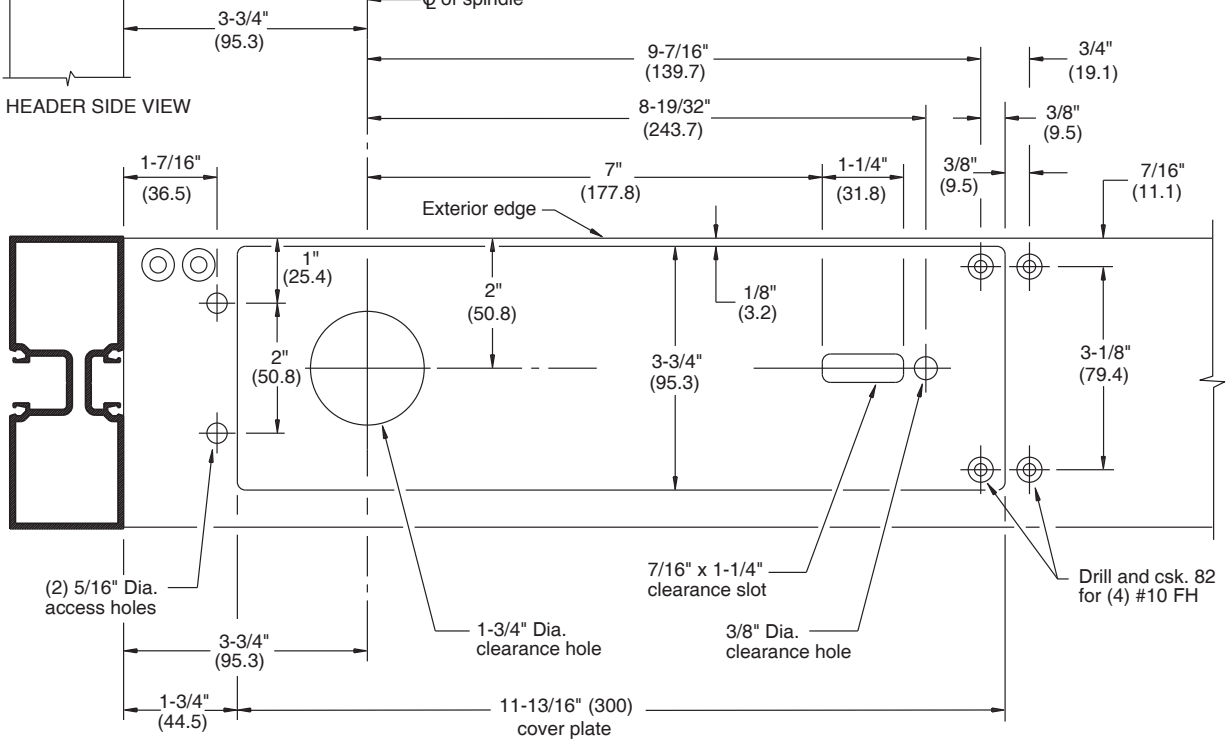
1-3/4" x 4-1/2" (44.5 x 114.3)	Header shown
1-3/4" x 4" (44.5 x 101.6)	Header similar
2" x 4-1/2" (50.8 x 114.6)	Header requires the use of a shim



HEADER TOP VIEW



HEADER SIDE VIEW

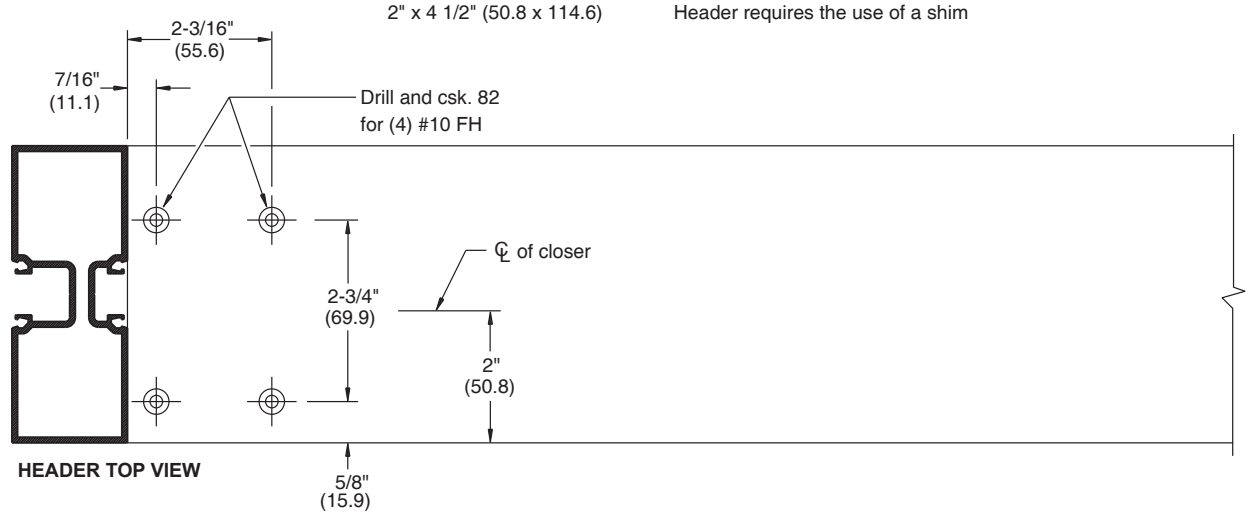


HEADER BOTTOM VIEW

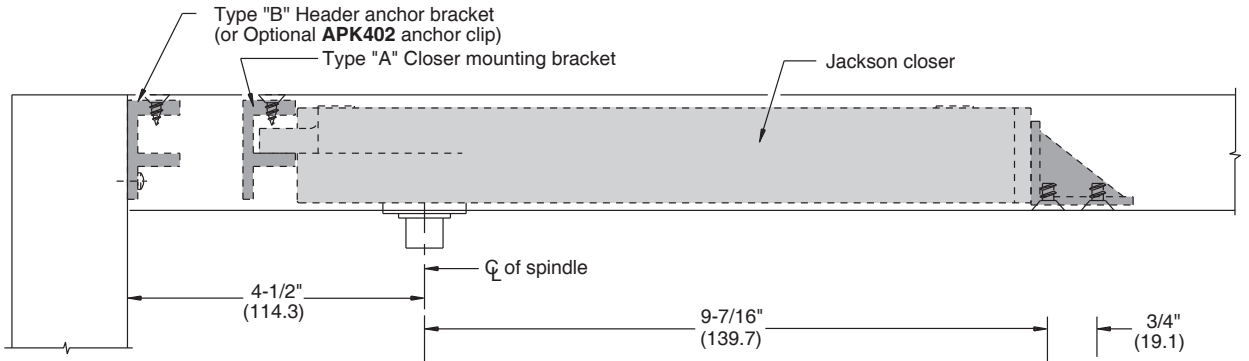
JACKSON OVERHEAD CONCEALED CLOSER FOR OFFSET PIVOTED DOOR WITH 105º SWING

HEADER PREPARATION

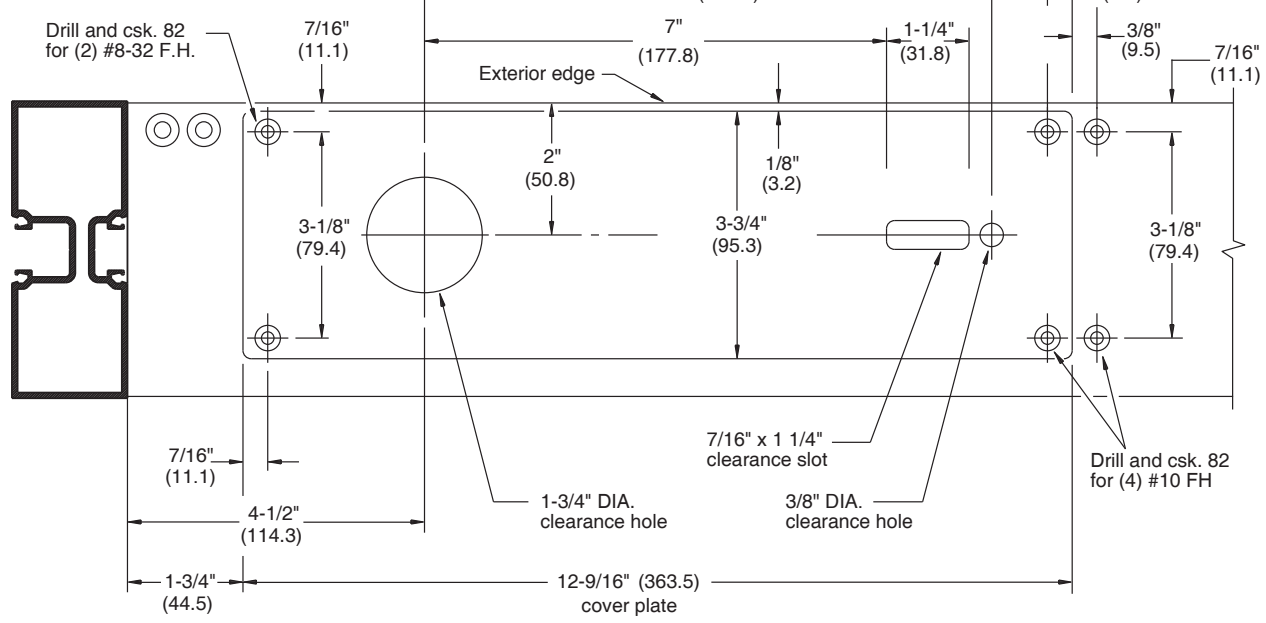
1-3/4" X 4-1/2" (44.5 x 114.3)	Header shown
1-3/4" x 4" (44.5 x 101.6)	Header similar
2" x 4 1/2" (50.8 x 114.6)	Header requires the use of a shim



HEADER TOP VIEW



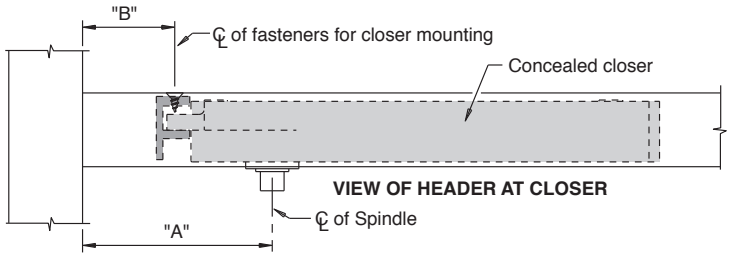
HEADER SIDE VIEW



HEADER BOTTOM VIEW

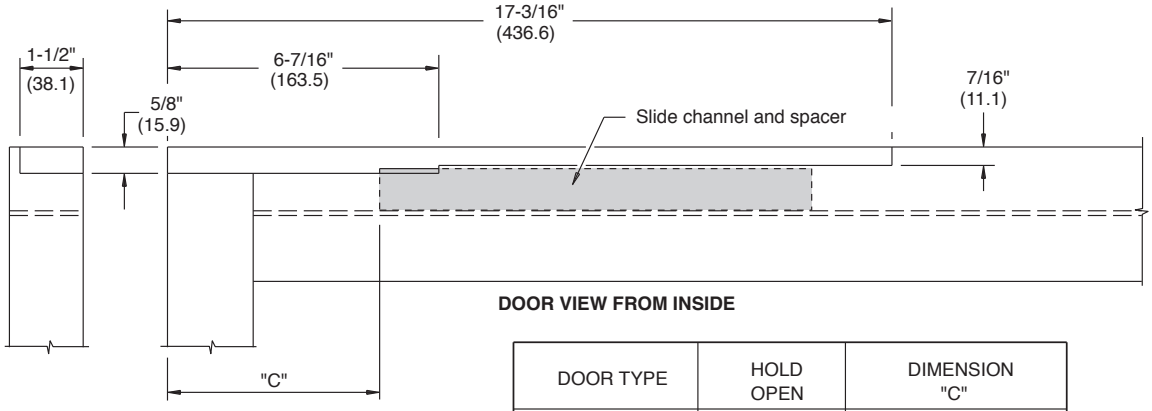
JACKSON OVERHEAD CONCEALED CLOSER

CLOSER LOCATION IN HEADER



DOOR TYPE	HOLD OPEN	DIMENSION "A"	DIMENSION "B"	REFERENCE PAGE
CENTER PIVOT	90° OR 105°	2-3/4" (69.9)	7/16" (11.1)	20
OFFSET PIVOT (OP400)	105°	4-1/2" (114.3)	2-3/16" (55.6)	29
	90°	3-3/4" (95.3)	1-7/16" (36.5)	28
BUTT HINGES	105°	3-3/4" (95.3)	1-7/16" (36.5)	15
	90°	2-7/8" (73.0)	9/16" (14.3)	15
GEARED HINGE	105°	3-3/4" (95.2)	1-7/16" (36.5)	16

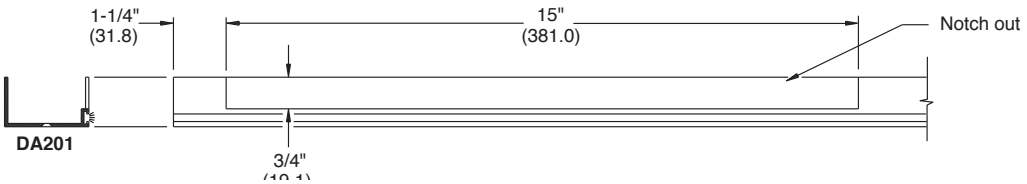
SLIDE CHANNEL LOCATION IN TOP RAIL FOR OFFSET ARM



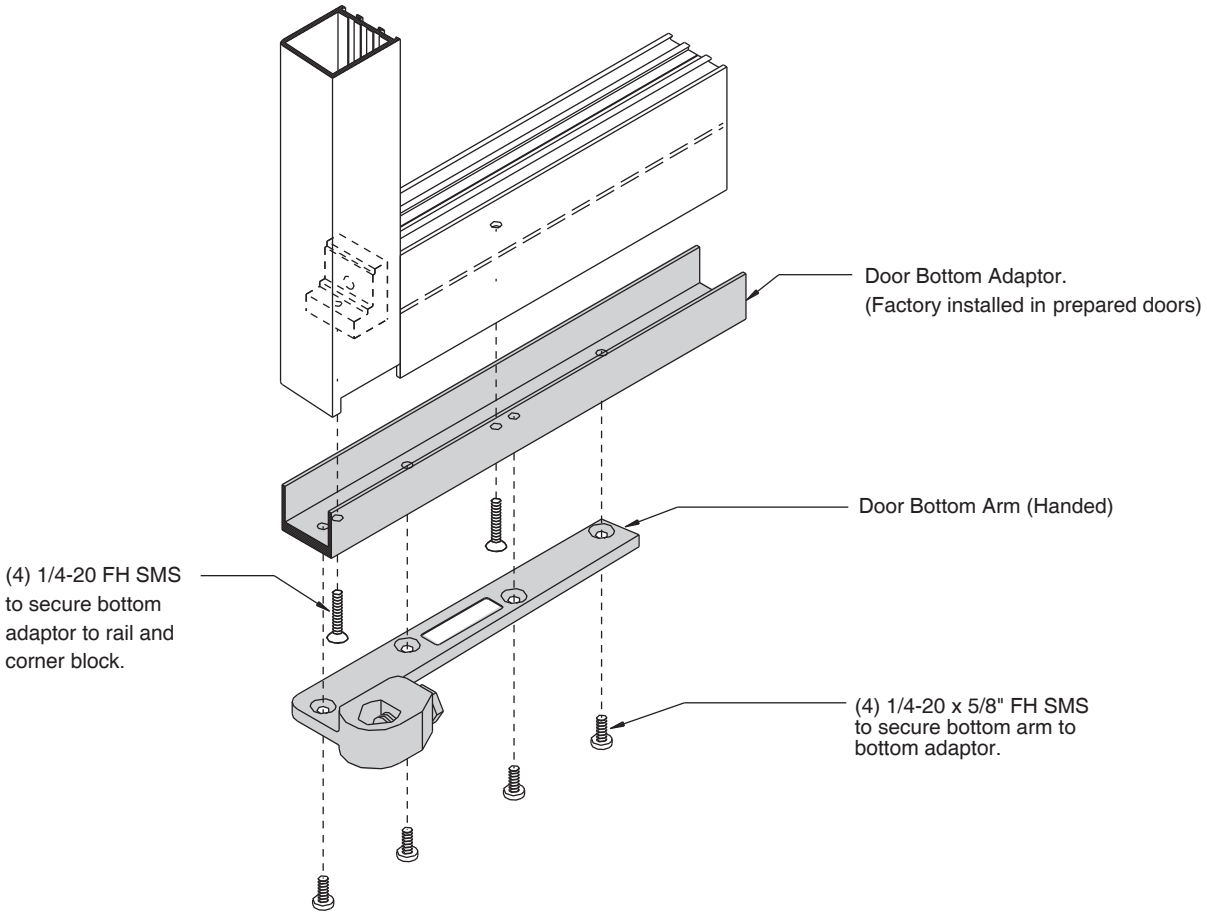
DOOR VIEW FROM INSIDE

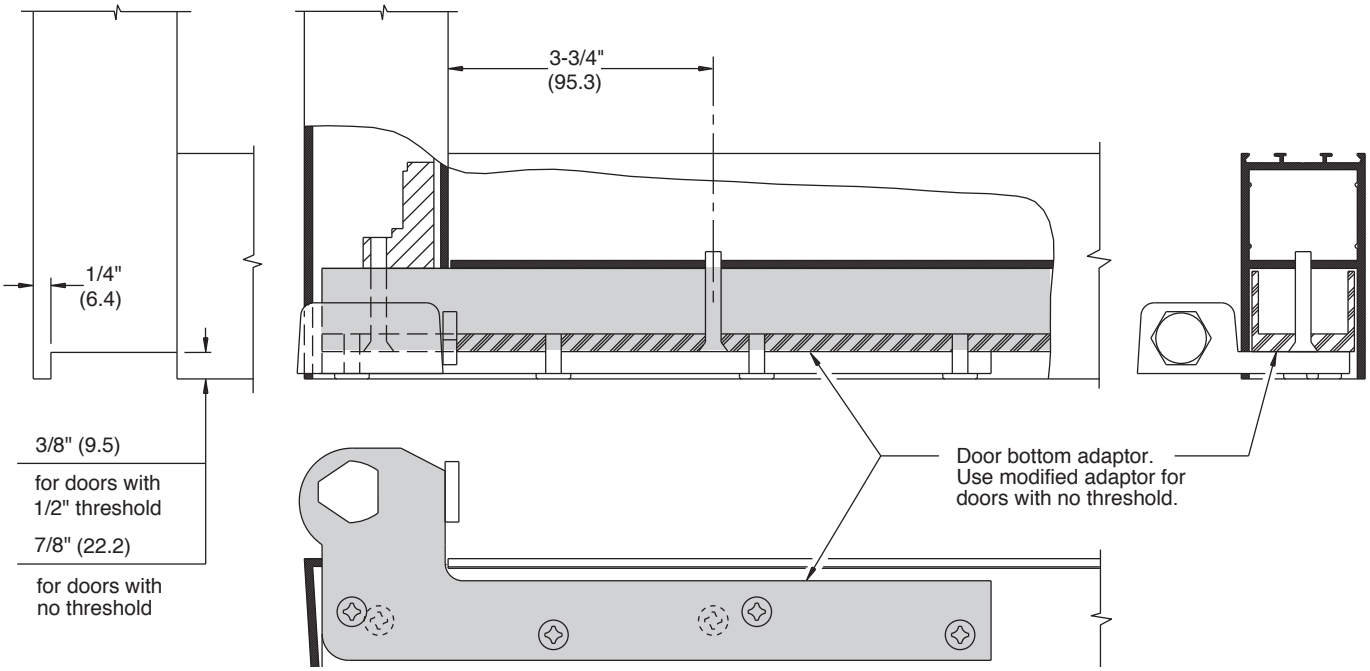
DOOR TYPE	HOLD OPEN	DIMENSION "C"
OFFSET PIVOT (**0P400**)	90°	4-15/16" (125.4)
	105°	4-11/16" (119.1)
BUTT HINGES	90°	4-1/16" (103.2)
	105°	3-7/8" (98.4)

OFF-SET ARM COVER CHANNEL
RIGHT HAND SHOWN LEFT HAND OPPOSITE



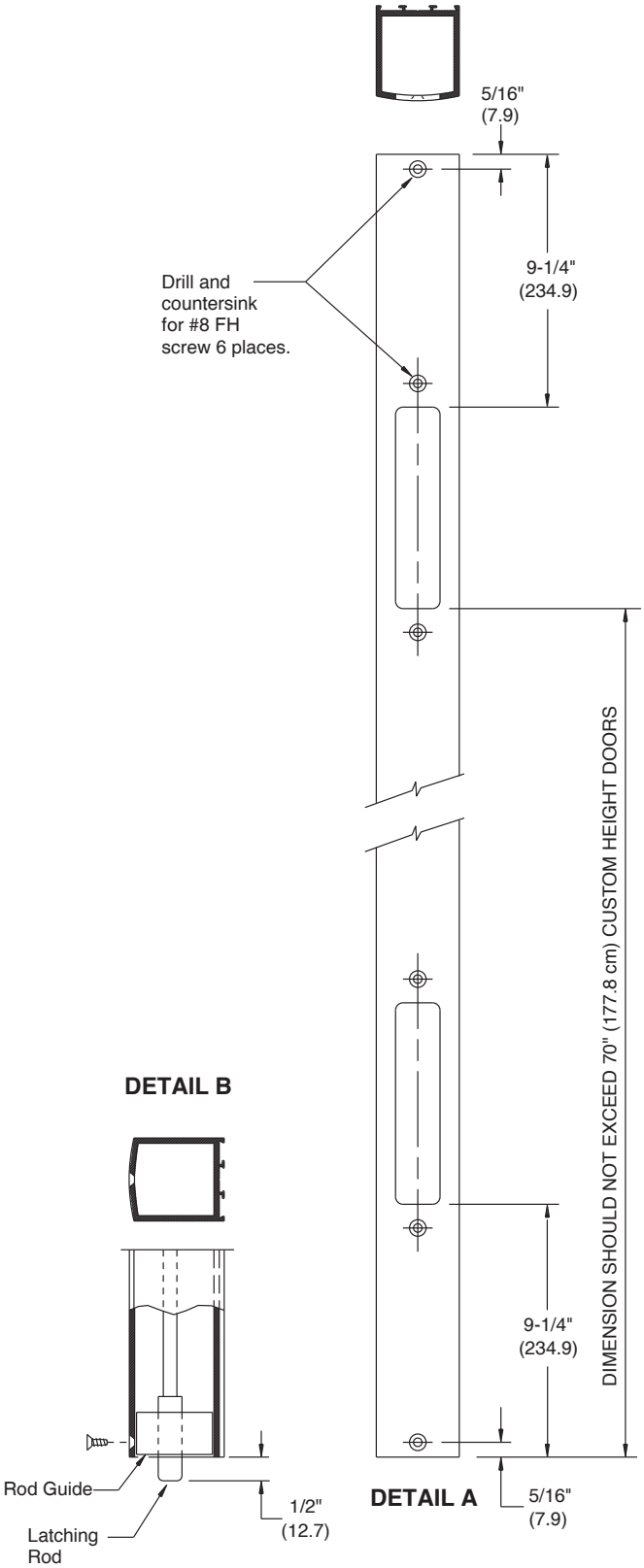
OFFSET PIVOT DOOR - FLOOR CLOSER BOTTOM ARM FOR RIXON FLOOR CLOSURE (DOR-O-MATIC SIMILAR)

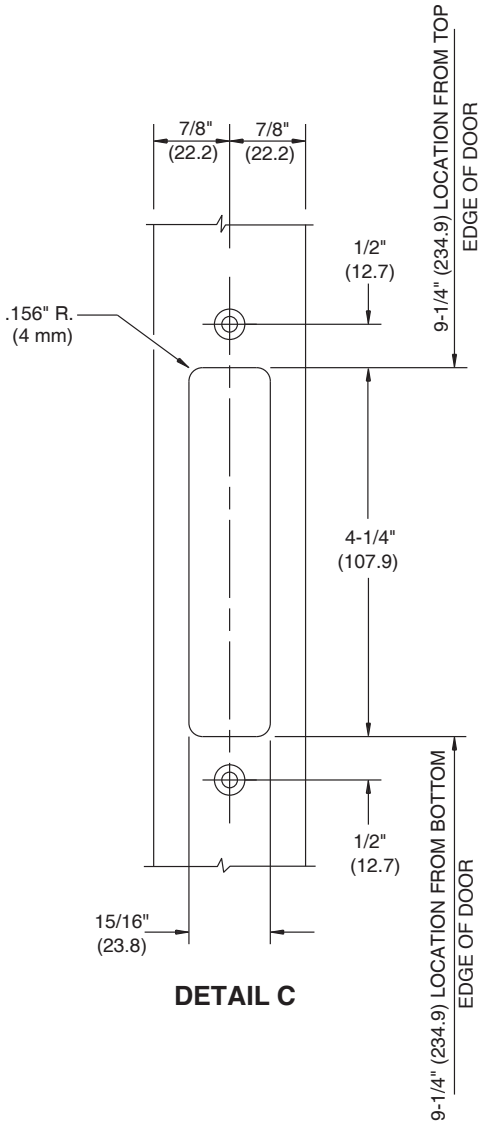




DH008 FLUSH BOLT

NARROW STILE SHOWN, MEDIUM AND WIDE STILES SIMILAR



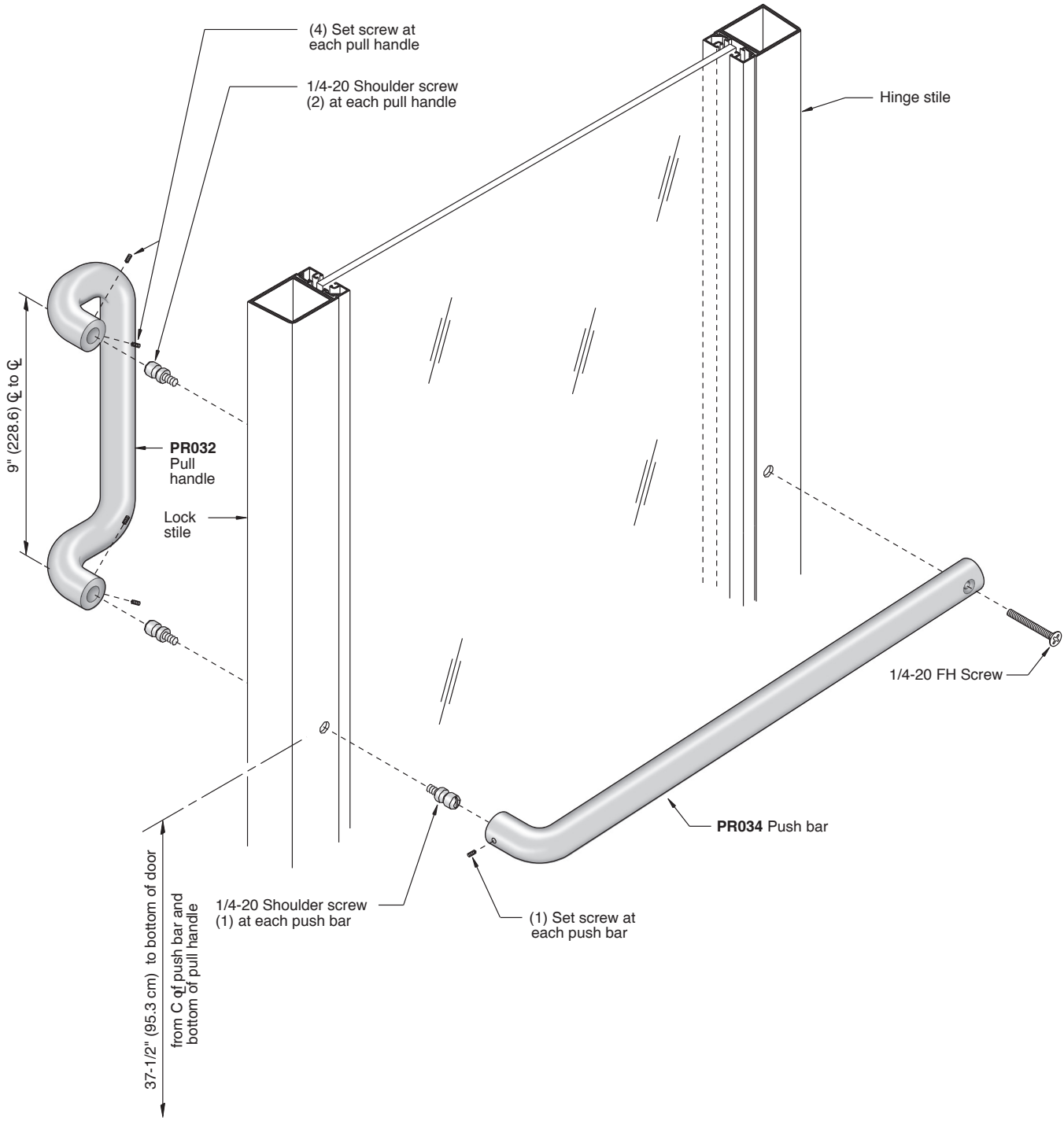


NOTE: Topflush bolt cut-out location for door opening height of 84" (213.4 cm) or less should be 9-1/4" (234.9) from top edge of door. **See DETAIL A**

1. Install top and bottom flush bolts with (2) #8 FH screws each.
2. Place each lever in the lock position.
3. Adjust flush bolt rods to extend 1/2" (12.7) beyond ends of door stile. **See DETAIL B**
4. Insert rod guides over rods and into stile at top and bottom. Secure guides with (1) #8 FH screw each.
5. Flip levers to retract both flush bolts.

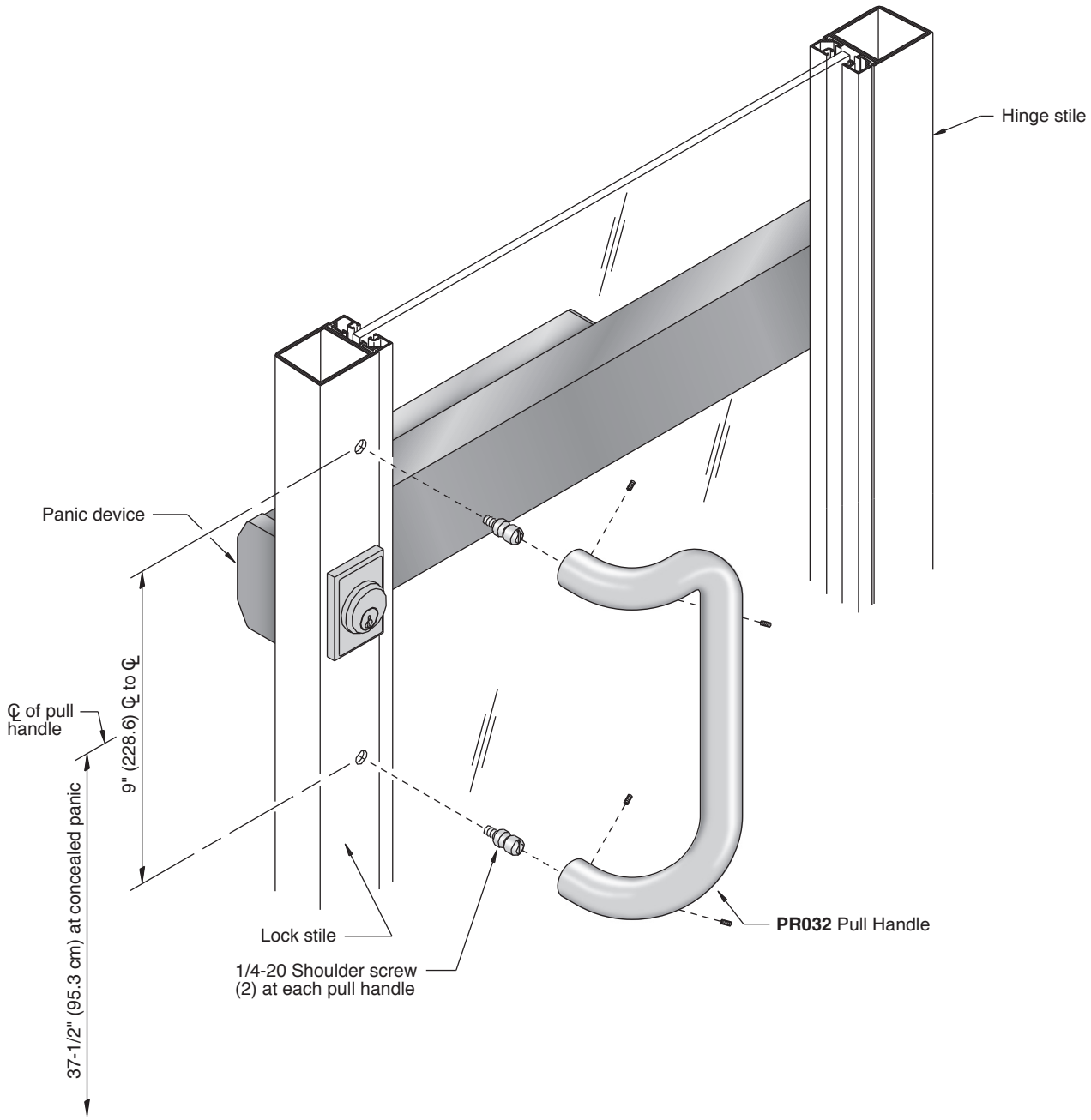
Astral II

PUSH BAR HARDWARE - OFFSET HUNG DOOR
TYPE "B" STANDARD PUSH/PULL FOR OFFSET DOORS



Astral II

PUSH/PULL HARDWARE - PANIC DOOR



DOOR GLAZING INSTRUCTIONS

Door may be glazed either Installed or Laid horizontal.
NOTE: Doors are more easily glazed in horizontal position. If glazing horizontally, leveling screw adjustments occur after hanging door.

Raise adjustable leveling screw to maximum retracted position.
See DETAIL A.

Install glass stops, with glazing gaskets on one side of door only.
If using square stops, install vertical stops first.
If using beveled stops, install horizontal stops first.

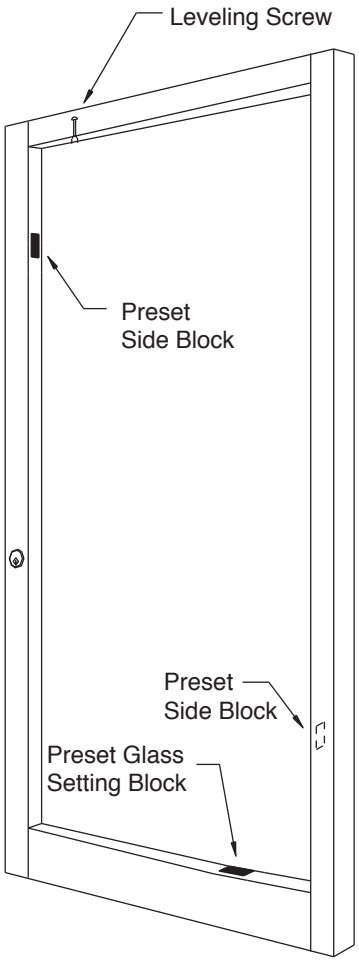
Center glass in opening resting on setting blocks.

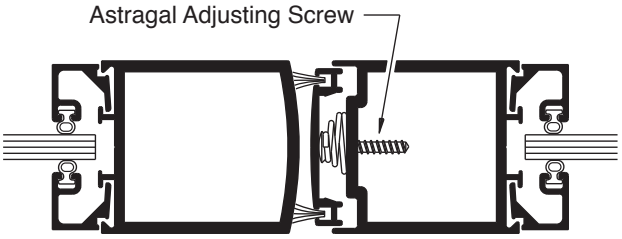
Snap-in remaining glass stops.

Turn leveling screw as required to maintain a uniform clearance between door top rail and header.

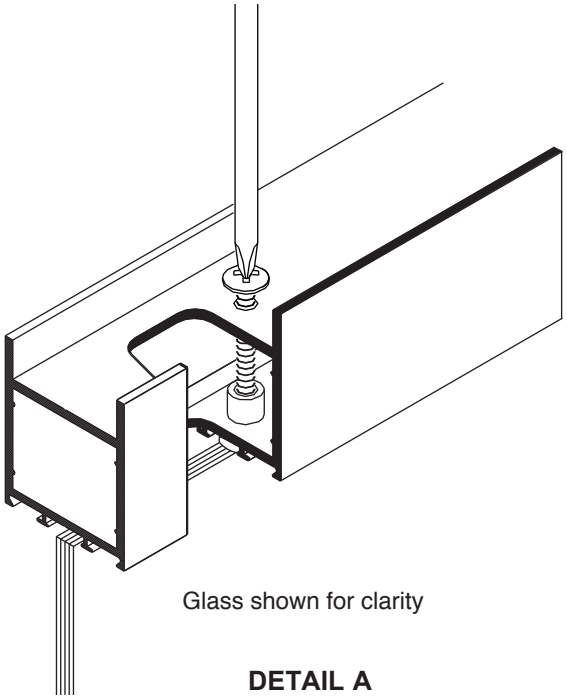
On pair of doors with Astragal adjust screws to keep proper meeting stiles clearance. **See DETAIL B.**

On all weather stripped door stiles pull the string to release weatherstrip pile after doors are installed. **See DETAIL C.**



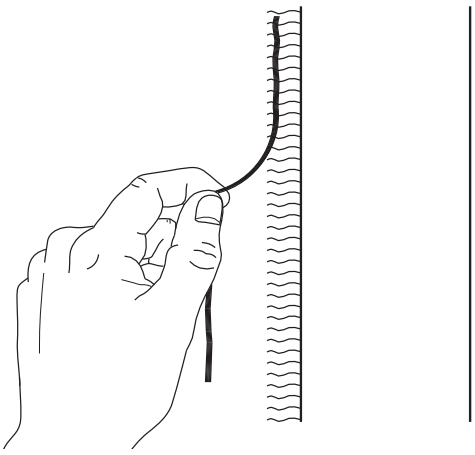


DETAIL B



Glass shown for clarity

DETAIL A



DETAIL C

Low Energy Automatic Door Motorized Operator for Single Doors

The Automatic Operator for single doors is an easy to install, heavy duty product for high use and high abuse low energy applications. This series of devices meets requirements for ANSI/BHMA A156.19 (American National Standard for Power Assist and Low Energy Power Operated Doors) and provides standard features that meet the requirements of the American Disabilities Act.

Shown with 21 Series Electric Latch Retraction (ER)

Benefits

- Economical operator provides safe and easy access in medium to high-traffic and security areas
- Provides ADA compliant access to handicap applications
- Quiet operation
- 115VAC power plug-in mounted in header
- Hanger plate allows quick installation
- Self-contained unit in an extruded case allows easy access for maintenance and adjustments
- Works with existing access control, locking and computer signal devices
- Easy manual use
- Reduced service calls due to heavy-duty construction
- 3-way low-voltage ON/OFF/HOLD switch for ease of service and setup
- Can be installed and adjustments can be made prior to electrician connecting building power

Features

- Available in single, pair (twin) for independent, simultaneous and dual egress openings
- Power close applies a reverse power to aid in latch check position. Must be selected to activate.
- Single voltage source required to operate
- Adjustable delayed activation for sequenced vestibule doors
- Reverse on obstruction stalls a door during closing cycle and re-activates to open if an obstruction is sensed anytime before the latch position. Must be selected to activate.
- Adjustable closing speed
- Push & Go (Use for Handicap) activates when door is manually pushed to open. Must be selected to activate.
- Electric lock relay provides an adjustable delay before door opens to unlock an electric strike, maglock or other types of electric locks - prevents binding

Mechanical Options

- LH Push - Left Hand Push
- RH Push - Right Hand Push
- LH Pull - Left Hand Pull
- RH Pull - Right Hand Pull
- 39.5” - Fits above most 36” doors
- 45.5” - Fits above most 42” doors
- 52” - Fits above most 48” doors

Accessories

- 104792 - Wireless Button Package (includes 2 push plates, 2 mounting boxes and 1 receiver)

  Call for available activation options
- NG-IR-A - Hardwired Touchless Activation Switch
- NXG-SW - Wireless Touchless Activation Switch
- DS-3681-630 - Electric Strike, cylindrical
- PB-2048-3 - Mushroom switch, hard-wired

Technical Information

Power Requirements
- 115VAC 60 HZ 3 amps

Motor
- 115VDC rectified
- 1/8 hp
- 60:1 gearbox

- For use on doors 300 lbs or less

Module -
- Activation input terminals
- Form C lock switch terminals
- Safety lock-out built in
- 17 additional features standard on board

Enclosure -
- 7” h x 4 1/2” d
- Approximately 50 lbs
- Aluminum extrusion

- Push reveal depth up to 11” with standard arm. Extended arm available.
- Pull reveal depth 2-1/2”

Listings and Approvals

Certified to ANSI/UL 325
Tested - ANSI 156.19

Meets ADA requirements

3-Hour Fire Listed

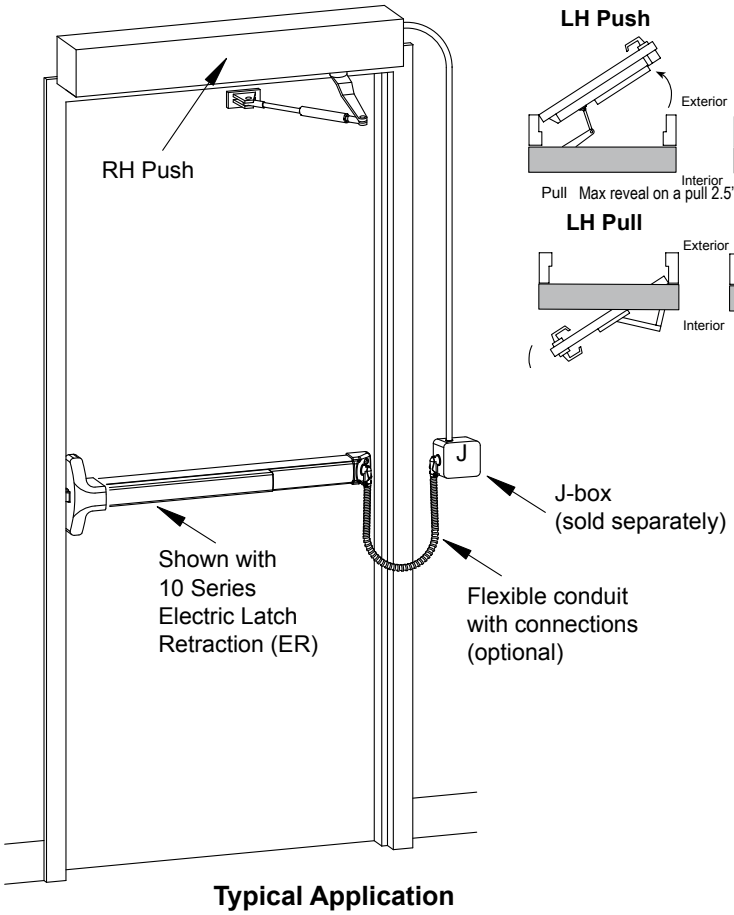
Finishes

- AL - 204-Ri Clear: Arch. Class II anodized coating, AA-M12C22A31
- BZ - 313-Ri Dark Bronze: Arch. Class II Anodized coating, AA-M12C22A32

Limited Warranty

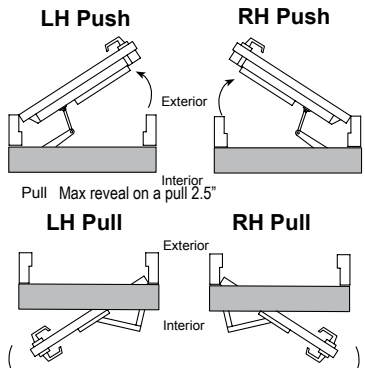
3 Year Mechanical / 1 year Electrical Limited Manufacturer’s Warranty

Riser Diagram



Typical Application

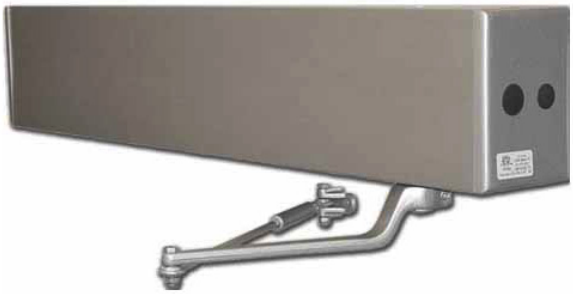
Handing Diagram



UDC1000 Controller Instruction Manual

for Automatic Swing Door Control

UDC1000

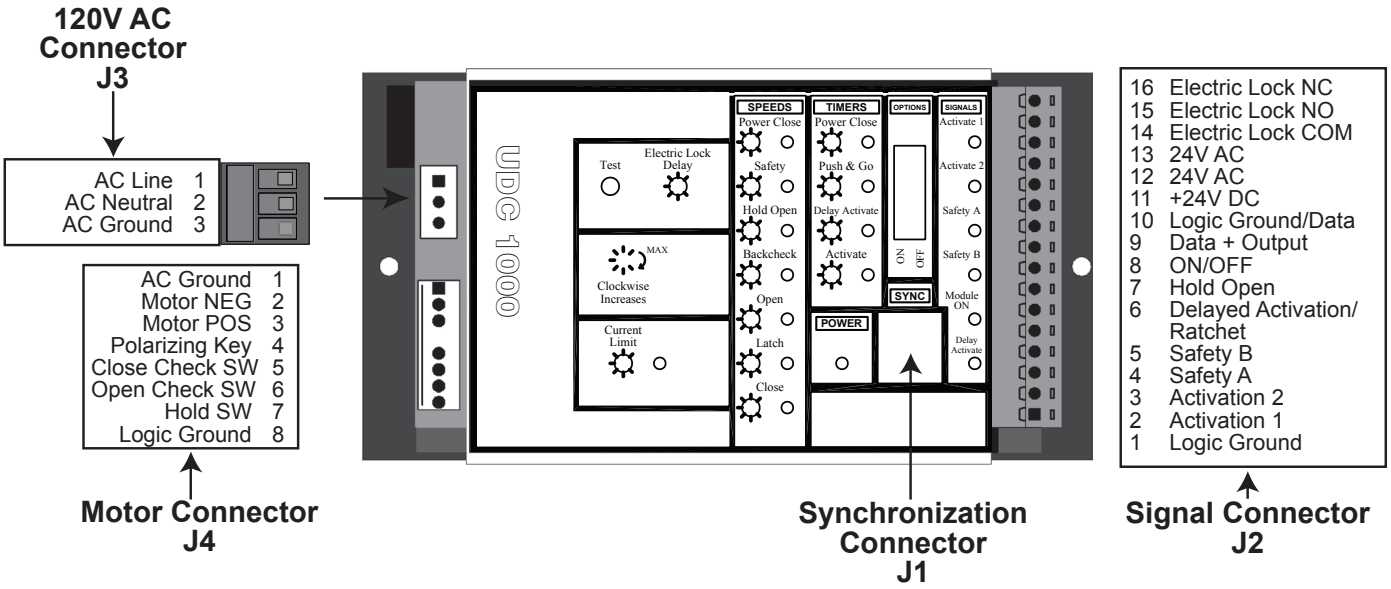


CONTENTS

NOTE: The UDC1000 should be installed/serviced by an AAADM certified service technician. The service technician should be familiar with the latest ANSI A156.19 standards and all applicable local codes.

WARNING: NEVER sacrifice the safe operation of the automatic door for an incomplete installation or solution. Call the factory for technical support.

MODULE DESCRIPTION - CONNECTOR PINOUTS



SYNCHRONIZATION/UDC1000-Sync

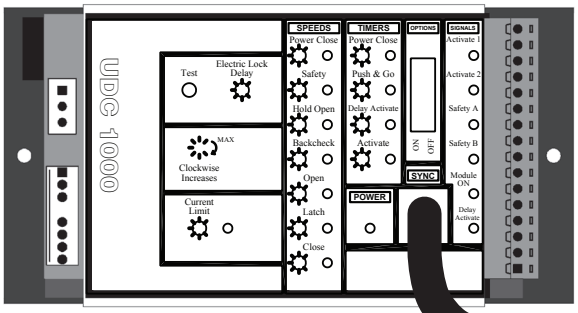
NOTE: This section is for use with simultaneous pair operators only. For single operator installation, refer to page 4, “SIGNAL AND SENSOR CONNECTOR—J2”.

SYNCHRONIZATION / 104707 SYNC CABLE

This connector and cable assembly is used to synchronize two controls together for simultaneous pair door operators.

NOTE: When using the sync cable (P/N 104707) for simultaneous pair controls, the adjustment to the speed potentiometers must be adjusted separately on each control.

For simultaneous pair door operators, plug in the synchronization cable as shown below. When using the SYNC cable, sensors and control switches can be wired to either control. All inputs are shared between the two controls using the sync cable, with the exception of the Delayed Activation inputs. When the “Delayed Activation Timer” expires, an activation signal is sent to the secondary control.



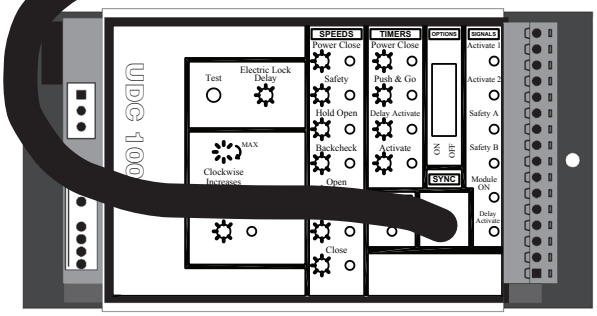
16 Electric Lock NC
15 Electric Lock NO
14 Electric Lock COM
13 24V AC
12 24V AC
11 +24V DC
10 Logic Ground/Data
9 Data + Output
8 ON/OFF
7 Hold Open
6 Delayed Activation/Ratchet
5 Safety B
4 Safety A
3 Activation 2
2 Activation 1
1 Logic Ground

PRIMARY CONTROLLER

Set the “Activate Timer” and “Push & Go Timer” pots to the value needed.

SECONDARY CONTROLLER

Important: Set the “Activate Timer” and “Push & Go Timer” pots to the maximum value (Fully clockwise) for the secondary controller.



16 Electric Lock NC
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11 +24V DC
10 Logic Ground/Data
9 Data + Output
8 ON/OFF
7 Hold Open
6 Delayed Activation/Ratchet
5 Safety B
4 Safety A
3 Activation 2
2 Activation 1
1 Logic Ground

Control Function Descriptions

TEST: button to cycle test operator

Caution: To avoid damage, do not over rotate or use excessive force to turn potentiometers!

CURRENT LIMIT Potentiometer: adjusts the amount of current allowed for the motor to draw before shutting off for 10 seconds.

ELECTRIC LOCK DELAY Potentiometer: adjusts the time delay from activation input to the start of opening cycle

SPEED POTENTIOMETERS

CLOSE Potentiometer: adjusts close speed from full open to last 10%. (Latch)

LATCH Potentiometer: adjusts the speed of the last 10% of closing

OPEN Potentiometer: adjusts the speed of opening from start to 80% open. (Backcheck)

BACKCHECK Potentiometer: adjusts the speed from 80% open to full open

HOLD OPEN Potentiometer: adjusts the amount of power required to hold door open

SAFETY Potentiometer: adjusts the open speed after a safety B signal to ground has occurred

POWER CLOSE Potentiometer: adjusts the force required to close the door from Latch-check to full close

TIMER POTENTIOMETERS

ACTIVATE Potentiometer: adjusts the time of the opening cycle from release of an Activation 1 or 2 signal to ground, release of the Test Button or time out of a delayed activation signal to ground

DELAY ACTIVATE Potentiometer: adjusts the time of delay from a Delayed Activation signal to ground to start opening cycle

PUSH & GO Potentiometer: adjusts cycle time of an activation created from manually pushing the door open

POWER CLOSE Potentiometer: adjusts the time required to power close a door from Latch-check to full close

LEDs

POWER LED: indicates that the 115 VAC connections have been connected to the control

DELAY ACTIVATE LED: indicates a delayed activation to ground (#6 to #1 or #2) is occurring

MODULE ON LED: indicates a signal from on/off to ground (#8 to #10 or #1) is occurring. (Toggle switch in ON position)

SAFETY B LED: indicates a signal from safety B to ground (#5 to #1 or #10) is occurring

SAFETY A LED: indicates a signal from safety A to ground (#4 to #1 or #10) is occurring

ACTIVATION 2 LED: indicates a signal from Activation 2 to ground (#3 to #1 or #10) is occurring

ACTIVATION 1 LED: indicates a signal from Activation 1 (#2 to #1 or #10) is occurring

CURRENT LIMIT LED: indicates the motor exceeded the allowed current limit defined by the current limit pot

ELECTRIC LOCK FOR SINGLE DOORS

Wire the electric lock to the controller (refer to wiring diagram, page 6) and set Option Switch #3 to ON.

ELECTRIC LOCK(S) FOR SIMULTANEOUS PAIR DOORS

For one control to activate the electric lock(s), wire the electric lock(s) to one control. Set option #3 to ON and adjust electric lock delay for that control only. Wire the activation signal(s) to the control that is wired to the electric lock.

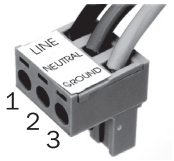
For two controls to activate two electric locks (to keep the electric locks independent), wire the first electric lock to the first control, the second electric lock to the second control. Set option #3 to ON and adjust electric lock delay time on both controls.

SIGNAL AND SENSOR CONNECTOR—J2

PIN	SIGNAL	DESCRIPTION
J2.16	Electric Lock Switch (Normally Closed)	This connection is the normally closed (NC) to drive an electric lock (active when electric lock option is set to ON).
J2.15	Electric Lock Switch (Normally Open)	This connection is the normally open (NO) to drive an electric lock (active when electric lock option is set to ON).
J2.14	Electric Lock Switch (Common)	This connection is the common to drive an electric lock (active when electric lock option is set to ON).
J2.13	(24V AC)	AC power (300mA Max.)
J2.12	(24V AC)	AC power (300mA Max.)
J2.11	(+24V DC)	DC power (300mA Max.)
J2.10	Logic Ground/Data-	Ground reference for signals and power.
J2.9	Data+	This is a signal output for sensor which requires door status information. •When door is closed, data output is 0V. •When door is in the opening cycle, data output is 12V. •When door is closing (in motion), data output is 8V.
J2.8	ON/OFF	Connecting this signal to ground (moving the 3-Position switch to ON) will enable the control. Moving the 3-Position switch to OFF will disable the control.
J2.7	Hold Open	Connecting this signal to ground (moving the 3-Position switch to the Hold Open position) will cause the door to open and hold open, if no current fault due to an obstruction is present.
J2.6	Delayed Activation/ Ratchet	This function is controlled by Option Switch 8 which is discussed on Page 5 of this manual. If the option switch is set to OFF (Delayed Activation), connecting this terminal to ground will start the delayed activation timer. When the timer expires the activation is generated. This function is used for door sequencing. If the option switch is set to ON (Ratchet Relay), connecting this signal to ground will initiate an activation signal. The activation signal will remain constant until another signal to ground occurs.
J2.5	Safety B	When the door is fully closed, this signal to ground will prevent an activation. During the opening cycle, the door will go to safety speed when this signal is to ground. During the closing cycle, the door will go to a very slow speed when this signal is to ground. When the door is fully open (with lockout option OFF), this signal to ground will prevent the door from entering the closing cycle.
J2.4	Safety A	When the door is fully closed, this signal to ground will prevent an activation. When the door is fully open, this signal to ground will prevent the door from entering the closing cycle.
J2.3	Activation 2	This signal is active when the door is in the closing cycle before latch, if the control is in ON mode (ON/OFF must be to ground) and no current fault is present. This signal to ground will cause the door to re-open. This signal is deactivated at latch and until a signal to ground at pin #1 has occured. Manual use of the door will not enable this input.

J2.2 ..... Activation 1 ..... This signal to ground will activate the operator. If the control is in ON mode (ON/OFF must be to ground) and no current fault is present.
J2.1 ..... Logic Ground ..... Ground reference for signals and power.

INPUT POWER CONNECTION (120V AC INPUT CONNECTOR)—J3

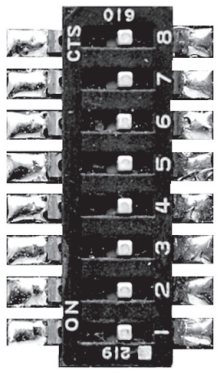


PIN ..... SIGNAL DEFINITION
J3.1 ..... AC Line (120V AC, 3A Max.)
J3.2 ..... AC Neutral (120V AC, 3A Max.)
J3.3 ..... AC Ground

MOTOR CONNECTOR—J4

PIN ..... SIGNAL..... DEFINITION
J4.1 ..... Motor AC Ground ..... Used to ground motor body, when applicable.
J4.2 ..... Motor NEG (-) ..... Goes to negative of the motor.
J4.3 ..... Motor POS (+)..... Goes to positive of the motor.
J4.4 ..... Polarizing Key (NC) ... Used to polarize the connector.
J4.5 ..... Latch Check Switch ... During the closing cycle, the operator goes to latch speed when this signal is to ground.
J4.6 ..... Back Check Switch .... During the opening cycle, the operator goes to backcheck speed when this signal is to ground.
J4.7 ..... Hold Switch ..... During the opening cycle, the operator is forced to hold speed when this signal is to ground.
J4.8 ..... Logic Ground ..... Ground reference for signals.

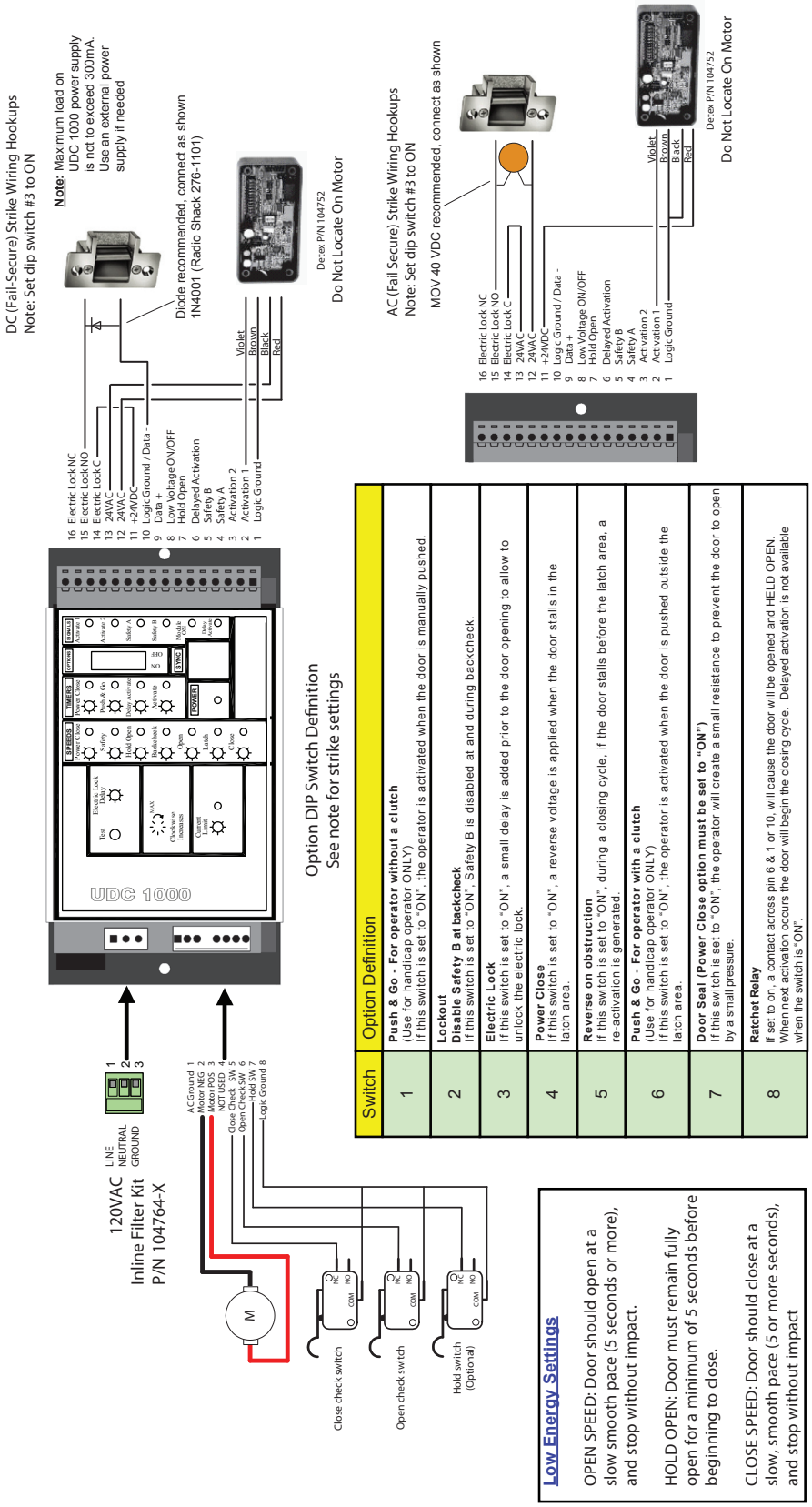
OPTION SWITCHES



SWITCH ..... DEFINITION
8 ..... **Ratchet Relay:** If set to ON, an activation across pin #6 to 1 or 10, will cause the door to be opened and held open. When next activation occurs, the door will begin the closing cycle. Delayed activation is not available when this switch is ON.
7 ..... **Door Seal:** If set to ON the operator will create a small resistance to prevent the door from opening 2 1/2 seconds after the door reaches the latch position.
6 ..... **Push & Go:** ***For operator with a clutch. Use for low energy operator ONLY.*** If set to ON, the operator is activated when the door is manually pushed outside the latch zone.
5 ..... **Reverse on Obstruction:** If set to ON, during a closing cycle, if the door stalls before the latch position, a reactivation is generated.
4 ..... **Power Close:** If set to ON, a reverse power is applied 2 1/2 seconds after the door reaches the latch position.
3 ..... **Electric Lock:** If set to ON, an adjustable delay (0-1 1/2 sec.) is added prior to door activation, allowing the electric lock to unlock. ***Adjust the delay via the Electric Lock Delay Pot.** NOTE: The electric lock circuit should shunt back EMF. If it does not, a diode should be added to a DC electric lock circuit or a MOV should be added to an AC electric lock circuit to shunt the EMF.
2 ..... **Lockout (Safety B):** If this switch is ON, Safety B is ignored at and during back check.
1 ..... **Push & Go:** ***For operator without a clutch. Use for low energy operator ONLY.*** If set to ON, the operator is activated when the door is manually pushed.

NOTE: When the option switches are changed, the controller may not register the changes until the device is cycled.

UDC1000—WIRING DIAGRAM EXAMPLE



Switch	Option Definition
1	**Push & Go - For operator without a clutch** (Use for handicap operator ONLY) If this switch is set to "ON", the operator is activated when the door is manually pushed.
2	**Lockout** **Disable Safety B at backcheck** If this switch is set to "ON", Safety B is disabled at and during backcheck.
3	**Electric Lock** If this switch is set to "ON", a small delay is added prior to the door opening to allow to unlock the electric lock.
4	**Power Close** If this switch is set to "ON", a reverse voltage is applied when the door stalls in the latch area.
5	**Reverse on obstruction** If this switch is set to "ON", during a closing cycle, if the door stalls before the latch area, a re-activation is generated.
6	**Push & Go - For operator with a clutch** (Use for handicap operator ONLY) If this switch is set to "ON", the operator is activated when the door is pushed outside the latch area.
7	**Door Seal (Power Close option must be set to "ON")** If this switch is set to "ON", the operator will create a small resistance to prevent the door to open by a small pressure.
8	**Ratchet Relay** If set to on, a contact across pin 6 & 1 or 10, will cause the door will be opened and HELD OPEN. When next activation occurs the door will begin the closing cycle. Delayed activation is not available when the switch is "ON".

Low Energy Settings

OPEN SPEED: Door should open at a slow smooth pace (5 seconds or more), and stop without impact.

HOLD OPEN: Door must remain fully open for a minimum of 5 seconds before beginning to close.

CLOSE SPEED: Door should close at a slow, smooth pace (5 or more seconds), and stop without impact

UDC1000 SET UP — ADJUSTMENT PROCEDURE

Before applying power to the operator, make all necessary connections (Refer to the wiring diagrams on page 5 of this manual).

1. INSTALLATION CHECK

Before any adjustment can be made the following check must be performed:

1- First the arm must be properly connected to the door leaf
2- The power must be connected and the Toggle switch in the ON position
3- The door leaf must be fully closed

Examine the Door Control. The control board must have three lights illuminated; POWER, MODULE ON and LATCH.
If the POWER light is not on, review 110 connection and source of power supply.

If the MODULE ON light is not on, inspect the toggle switch to be sure it is in the ON position. Inspect wiring and connections. Be sure the green 16 pin terminal block is securely in place.

If the LATCH light is out and the CLOSE light is on, manually open the door leaf until it is stopped by internal stop. If the door over opens and the arm rotates well beyond 80 degrees refer back to arm installation directions and be sure that the operator motor has fully turned before assembling arm to shaft. If the door stops at desired opening and arm stops at approximately 80 degrees, an adjustment to the cam will need to be made.

The LATCH and BACKCHECK are controlled via the cam on top of the gearbox.
Access is thru the top of the operator case directly above the gearbox. Using a 1/8th inch Allen wrench, loosen the screw that holds the cam in place. Rotate cam in the closing rotation direction until the CLOSE light goes out and the LATCH light comes on. Holding the cam in place, gently retighten the holding screw.

CAUTION: DO NOT OVER TIGHTEN, AS THAT WILL DAMAGE THE CAM.

Test the LATCH position by manually opening the door leaf until you see LATCH light go out and the CLOSE light comes on. This should be approximately 4 inches from Jamb. Fine tune adjustment as necessary.
If the light fails to work, call for factory assistance.

2. ADJUSTMENTS

All potentiometers (pots) are at minimum values when turned fully counter-clockwise and are at maximum values when turned fully clockwise. A speed or timer pot is active when the corresponding light (LED) is lit.

Before beginning adjustments, set the following:

1. Activation timer pot to 1/4 turn clockwise from the minimum.
2. Current limit pot to the maximum - fully clockwise.
3. Close the latch speed pot to minimum - fully counter-clockwise.
4. Set all option switches to the “OFF” position. If an electric lock is used, set option #3 to the “ON” position.

UDC1000 SET UP — ADJUSTMENT PROCEDURE (continued)

2.1 BASIC ADJUSTMENTS

All adjustments to the control are designed to meet ANSI/BHMA requirements. For further information on ANSI/BHMA specifications, please refer to Appendix A at the end of this manual.

NOTE: When using the sync cable (104707) for simultaneous controls, the adjustments to force and speed potentiometers must be adjusted separately on each control.

Activate the operator by pushing the test button.

1. Adjust “OPEN SPEED” pot so that the door arrives at back-check in no greater than 3 seconds for Handicap applications.
2. Adjust “BACK-CHECK SPEED” pot so that door creeps to final open in no less than 2 seconds for Handicap applications.
3. Adjust “HOLD OPEN SPEED” pot so that the power is just enough to hold door at full open without drifting closed.
4. Adjust “ACTIVATE TIMER” pot so that the door remains in the full open position for no less than 5 seconds for Handicap applications.
5. Adjust “CURRENT LIMIT” pot so that the door stops when it meets an obstruction during the opening cycle. Cycle test several times.
6. Adjust “CLOSE SPEED” pot so that the door closes no faster than 4 seconds to latch-check.
7. Adjust “LATCH SPEED” pot so that door closes the final 10 degrees without slamming.

2.2 OTHER ADJUSTMENTS AND OPTIONS

SAFETY SPEED

If a door mounted safety sensor is used, follow these steps to adjust the safety speed:

1. Ensure that the sensor is connected to Safety B input. **NOTE:** If Option Switch #2 is ON, Safety B input will be ignored at and during back check.
2. Push the test button to generate an Open Cycle.
3. During the open cycle (before backcheck), generate a safety signal.
4. With the safety signal present, adjust the safety speed trimmer to achieve a creep or a stall motion of the door.

NOTE: If the safety sensor is a header mount type (Sensor will detect the door when the door swings within its’ pattern), “SAFETY A” input must be used for that sensor.

PUSH & GO

If Push & Go is needed, set the option to the “ON” position. The UDC1000 has two types of Push & Go:

1. Option #1: For operators without a clutch (Activated when the door is manually pushed).
2. Option #6: For operators with a clutch. Operator must have a close check (latch) switch to use this option (Activated when the door is manually pushed outside the latch zone).

After the proper Push & Go option has been selected, manually push the door open. The controller will detect the door movement and will generate an open cycle. Adjust the Push & Go timer pot for the desired opening time for a Push & Go activity.

UDC1000 SET UP — ADJUSTMENT PROCEDURE (continued)

POWER CLOSE TIMER & SPEED POT

If power close is needed, set option #4 to the “ON” position. Follow these steps to adjust the length and strength of the power close:

1. Push the test button to generate an opening cycle.
2. The door enters the closing cycle and 2.5 seconds after it reaches Latch, Power Close activates. Adjust the power close speed pot for the desired strength.
3. Generate another opening cycle. When power close activates, set the length of the power close by adjusting the power close timer pot (1 to 10 seconds).

DOOR SEAL

If a positive pressure causes the door to slightly open, the door seal option #7 can be used. Setting this option to the “ON” position will cause a small resistance to aid in keeping the door closed.

REVERSE ON OBSTRUCTION

Set option #5 to the “ON” position to activate the reverse on obstruction option. When the door stalls between backcheck and the latch position, the controller will generate an activation cycle.

DELAYED ACTIVATION TIMER

The activation signal of another operator can be connected to the delayed activation input to create door sequence operation. When used, adjust the delayed activation timer pot to create the proper delay.

APPENDIX A:
ANSI/BHMA specifications for Low Energy Operators
(from ANSI/BHMA A156.19)

3. REQUIREMENTS FOR POWER ASSIST DOORS

3.1 **Activation** Power assist doors shall operate only by pushing or pulling the door. An activating means is permitted to be used to put the door in the power assist mode.

3.2 **Opening** If the opening force on the door is released, the door shall come to a stop and either immediately begin to close or begin to close after a predetermined time.

3.3 **Time Delay** Not required.

3.4 **Closing** Door shall close from 90 degrees to 10 degrees from closed, in 3 seconds or longer as required in Table 1. Doors shall close from 10 degrees to fully closed in not less than 1.5 seconds.

3.5 **Force and Kinetic Energy** The force required to prevent a door from fully closing shall not exceed 15 lbf (67 N) measured 1 inch (25 mm) from the latch edge of the door at any point in the closing cycle. Doors shall open with a manual force not to exceed 15 lbf (67 N) to release a latch if equipped with a latch, 30 lbf (133 N) to set the door in motion, and 15 lbf (67 N) to fully open the door. The forces shall be applied at 1 inch (25 mm) from the latch edge of the door.

3.6 **Signage** See Section 6 for signage.

4. REQUIREMENTS FOR LOW ENERGY POWER OPERATED DOORS

4.1 **Activation** The operator shall be activated by a knowing act.

4.2 **Opening** Doors shall open from closed to back check, or 80 degrees which ever occurs first, in 3 seconds or longer as required in Table 1. Backcheck shall not occur before 60 degrees opening. Total opening time to 90 degrees shall be as in Table 2. If the door opens more than 90 degrees, it shall continue at the same rate as backcheck speed.

4.3 **Time Delay** When powered open, the door shall remain at the fully open position for not less than 5 seconds. Exception: When push-pull activation is used, the door shall remain at the fully open position for not less than 3 seconds.

4.4 **Closing** Doors shall close from 90 degrees to 10 degrees in 3 seconds or longer as required in Table 1. Doors shall close from 10 degrees to fully closed in not less than 1.5 seconds.

4.5 **Force and Kinetic Energy** The force required to prevent a stopped door from opening or closing shall not exceed 15 lbf (67 N) measured 1 inch (25 mm) from the latch edge of the door at any point during opening or closing. The kinetic energy of a door in motion shall not exceed 1.25 lbf-ft (1.69 Nm). Table 1 provides minimum times for various widths and weights of doors for obtaining results complying with this kinetic energy. Doors shall open with a manual force not to exceed 15 lbf (67 N) to release a latch, if equipped with a latch, 30 lbf (133 N) to set the door in motion, and 15 lbf (67 N) to fully open the door. The forces shall be applied at 1 inch (25 mm) from the latch edge of the door.

4.6 **Signage** See Section 6 for signage.

5. CYCLE TESTS

5.1 Low Energy Power Operated, and Power Assist doors shall be cycle tested for 300,000 cycles.

5.2 Use the widest and heaviest test specimen recommended for use by the manufacturer. Narrower or lighter doors of the same configurations shall then be considered to meet the cycle test requirements.

5.3 Use the requirements in Table 1 to determine opening and closing times. Open the door to a 90 ± 5 degree open position and close the door to the 0 + 2 degree closed position using appropriate equipment. One opening and closing constitutes one cycle. In the case of Power Assist doors, use

APPENDIX A (continued): ANSI/BHMA specifications for Low Energy Operators (from ANSI/BHMA A156.19)

5. CYCLE TESTS (continued)

an actuator exerting an equivalent force equal to a 15 lbf (67 N) measured at 1 inch (25 mm) from the latch edge of the door applied in the opening direction and allow the closing device furnished to close the door.

5.4 At the conclusion of the cycle test, the doors shall operate in accordance with requirements of Table 1, and the actual opening and closing time shall be within -10% to +20% of their respective values at the commencement of the test.

TABLE 1
Minimum Opening Time to Back Check or 80 degrees (whichever occurs first) and Minimum Closing Time from 90 degrees to Latch Check or 10 degrees (whichever occurs first)

"D" Door Leaf Width - Inches (mm)	"W" Door Weight in Pounds (kg)				
	100 (45.4)	125 (56.7)	150 (68.0)	175 (79.4)	200 (90.7)
*30 (762)	3.0	3.0	3.0	3.0	3.5
36 (914)	3.0	3.5	3.5	4.0	4.0
42 (1067)	3.5	4.0	4.0	4.5	4.5
48 (1219)	4.0	4.5	4.5	5.0	5.5
	Matrix values are in seconds				

* Check applicable Building Codes for clear width requirements in Means of Egress

Doors of other weights and widths can be calculated using the formula:

T = D /133 in US Units T = D /2260 in SI (metric) units

Where: T = Time, seconds
D = Door width, inches (mm)
W = Door weight, lbs. (kg)

The values for "T" time have been rounded up to the nearest half second. These values are based on a kinetic energy of 1.25 lbf-ft.

TABLE 2
Total Opening Time to 90 Degrees

Backcheck at 60 degrees	Backcheck at 70 degrees	Backcheck at 80 degrees
Table 1 plus 2 seconds	Table 1 plus 1.5 seconds	Table 1 plus 1 second
If the door opens more than 90 degrees, it shall continue at the same rate as backcheck speed.		

NOTE: To determine maximum times from close to full open, the operator shall be adjusted as shown in the chart. Back check occurring at a point between positions in Table 2 shall use the lowest setting. For example, if the backcheck occurs at 75 degrees, the full open shall be the time shown in Table 1 plus 1.5 seconds.

APPENDIX A (continued): ANSI/BHMA specifications for Low Energy Operators (from ANSI/BHMA A156.19)

6. SIGNAGE

6.1 Doors shall be equipped with signage visible from either side of the door, instructing the user as to the operation and function of the door. The signs shall be mounted 50" ± 12" (1270 mm ± 305 mm) from the floor to the center line of the sign. The letters shall be 5/8 inch (16 mm) high minimum.

6.2 Consistent with section 2.2.1 of ANSI Z535.4 - 2002 the "signage and warnings" guidelines of A156.19 are recognized, industry-specific standards that predate the adoption of Z535.4 and are not replaced by the standards set forth therein.

6.3 Power Assist Doors

6.3.1 When a separate wall switch is used to initiate power assist, the doors shall be provided with signs on both sides of the door with the message "EASY OPEN DOOR - ACTIVATE SWITCH THEN OPEN DOOR". The lettering shall be white and the background shall be blue.

6.3.2 When remote devices, and/or pushing or pulling the door are used to initiate power assist, the doors shall be provided with the messages "EASY OPEN DOOR - PUSH TO OPERATE" on the push side of the door and "EASY OPEN DOOR - PULL TO OPERATE" on the pull side of the door. The lettering shall be white and the background shall be blue.

6.4 Low Energy Doors

6.4.1 All low energy doors shall be marked with signage visible from both sides of the door, with the words "AUTOMATIC CAUTION DOOR" (See Figure 1). The sign shall be a minimum of 6 inches (152 mm) in diameter with black lettering on a yellow background. Additional information may be included. Additionally one or both of the following knowing act signs shall be applied:

6.4.2 When a Knowing Act Switch is used to initiate the operation of the door operator, the doors shall be provided with signs on each side of the door where the switch is located, with the message "ACTIVATE SWITCH TO OPERATE". The lettering shall be white and the background shall be blue.

6.4.3 When push/pull is used to initiate the operation of the door operator, the doors shall be provided with the message "PUSH TO OPERATE" on the push side of the door and "PULL TO OPERATE" on the pull side of the door. The lettering shall be white and the background shall be blue.

Figure 1

Knowing Act Switch Mounting Guideline

Preferably located from one to five feet from the door, but no more than twelve feet away, the switch on the swing side should not be blocked by the door when in the open position. Switches should not be located where use puts the person in the swing path of the door. The switch should be mounted in a location where the person has full sight of the door. Mounting height of 34" to 48" off the floor (or per specific codes requirements).

Low Energy Automatic Door Operator, Single Door-Push

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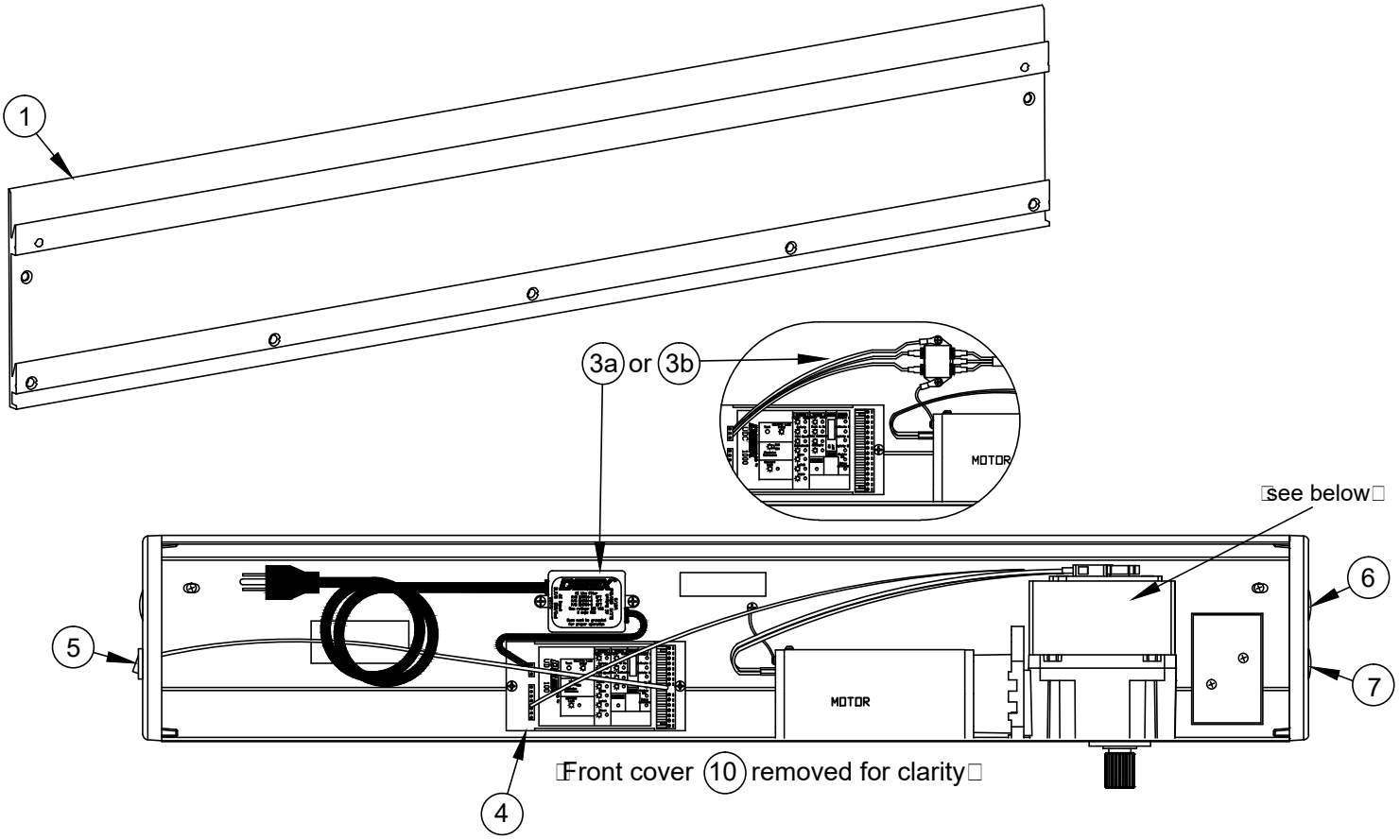
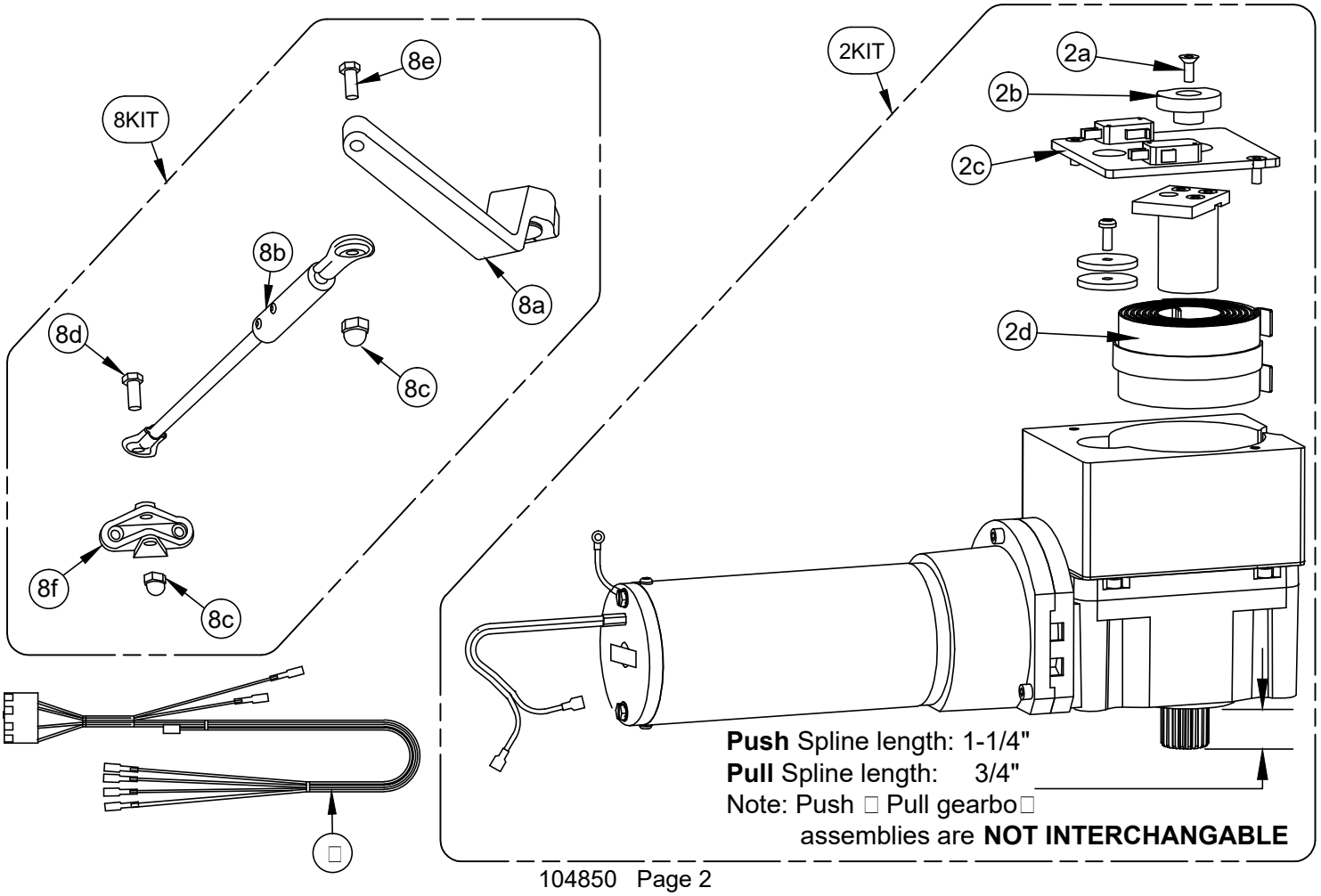
Owner□s Copy

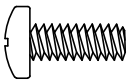
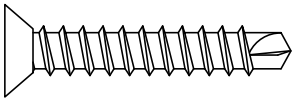
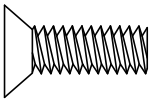
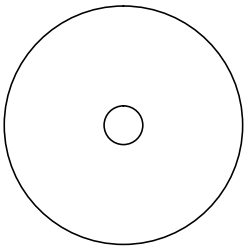


Right Hand Push device shown above and throughout this instruction.



PARTS BREAKDOWN		
Item	Order Part #	Description
1	12515-1	Hanger plate□AO1□□Aluminum finish□38" long
	12515-2	Hanger plate□AO1□□Bron□e finish□38" long
	12515-3	Hanger plate□AO1□□Aluminum finish□44" long
	12515-4	Hanger plate□AO1□□Bron□e finish□44" long
	12515-13	Hanger plate□AO1□□Aluminum finish□50.50" long
	12515-14	Hanger plate□AO1□□Bron□e finish□50.50" long
2KIT	1047□6-3	S □ R Motor-gearbo□assembly□AO1□□RH Push □includes 2a-2d□
	1047□6-1	S □ R Motor-gearbo□assembly□AO1□□LH Push □includes 2a-2d□
2a	12407-2	Screw□mach□10-32 □1/2" □flat soc□et head
2b	12607	Cam□AO1□
2c	104705	Switch plate subassembly
2d	105433	S □ R AO1□Cloc□spring replacement □it
3a	105416-2	S □ R Kit□120VAC Line filter□4 ft
3b	105416-5	S □ R Kit□120VAC Line filter□4 ft □alternate build□
4	105421	S □ R Controller□operator□UDC1000
5	105422	S □ R Switch□3 way toggle□with cable □ connector □for UDC Controller□
6	12□05	Plug□hole□.875 dia.
7	12□06	Plug□hole□1.0□3 dia.
8KIT	1047□8-1	Push Arm subassembly□Aluminum finish □includes 8a-8f□
	1047□8-2	Push Arm subassembly□Bron□e finish □includes 8a-8f□
8a	12731-1	Bent Arm□AO1□□Aluminum finish
	12731-2	Bent Arm□AO1□□Bron□e finish
8b	104728-1	Push arm rod assembly□Aluminum finish□20"
	104728-2	Push arm rod assembly□Bron□e finish□20"
8c	12741-1	Nut□acorn□3/8-24 Aluminum finish
	12741-2	Nut□acorn□3/8-24 Bron□e finish
8d	1273□-1	Screw□he□cap□3/8-24 □1-3/4" long□Aluminum finish
	1273□-2	Screw□he□cap□3/8-24 □1-3/4" long□Bron□e finish
8e	12743-1	Screw□he□cap□3/8-24 □1-1/4" long□Aluminum finish
	12743-2	Screw□he□cap□3/8-24 □1-1/4" long□Bron□e finish
8f	12735-1	Door foot□AO1□□Aluminum finish
	12735-2	Door foot□AO1□□Bron□e finish
□	104706	Micro harness□AO1□
10	12516-1	Cover□AO1□□Aluminum finish□38.25" long □not shown□
	12516-2	Cover□AO1□□Bron□e finish□38.25" long □not shown□
	12516-3	Cover□AO1□□Aluminum finish□44.25" long □not shown□
	12516-4	Cover□AO1□□Bron□e finish□44.25" long □not shown□
	12516-13	Cover□AO1□□Aluminum finish□50.75" long □not shown□
	12516-14	Cover□AO1□□Bron□e finish□50.75" long □not shown□

Device hardware □it: p/n 106121-1 for Aluminum finish
Device hardware □it: p/n 106121-2 for Bron□e finish

	Fastener Part No	Drill Bit
	P/N: 12405-1 □stainless□or 12405-2 □blac□□ 8-32 □3/8" PPH	
	P/N: 12403-1 □stainless□or 12403-2 □blac□□ 10-32 □1/2" PPH	
	P/N: 103277-324 □14 □1-1/2" PFH	1/8 pilot hole recommended for self-drilling screws
	P/N: 102271-112 □stainless□or 102271-312 □blac□□ 1/4-20 □3/4" PFH	
	P/N: 12783-1 □stainless□or 12783-2 □blac□□ 1-1/4" dia□.203 dia center hole	

Tools Required:
Safety Glasses
Power Drill
Tape Measure
Level
Pencil
Wire Stripper/Crimper
Hacksaw
Bar clamps or large C clamps
Allen wrench set
Thin brush
Knife
Level
3/16", 3/8" & 1/2" drill bits
#2 & #3 Phillips bits
3/16" x 1-1/4" Tapcon screws
1/4-20 or #14 flathead screws

CAUTION
Read this notice before installing or servicing

The Low Energy Automatic Door Operator must be installed to comply with the latest revision of ANSI /BHMA A156.1□ □American National Standard for Power Assist and Low Energy Power Operated Doors□and upon completion of installation□the owner should have an inspection performed by an AAADM certified inspector. In special applications where safety sensors are used on low energy doors□ the sensors and the related adjustments should comply with the criteria set forth in ANSI/BHMA A156.10 □American National Standard for Power Operated Pedestrian Doors□.

Failure to conform to these requirements may cause operating failures which can result in serious injury or property damage. It is the owner's responsibility to assure the reliable and safe operation of this device□routine service and inspection should be performed at least annually by an AAADM certified inspector. More fre□uent service may be re□uired when the operating environment or other conditions dictate or if re□uired by the local authority having jurisdiction. Proper operation should be chec□ed everyday by the owner. We accept no liability for property damage□warranty claims or personal injury□if this product is not properly installed for compliance to these re□uirements by a □ualified automatic door operator installer and also properly maintained and inspected by the owner to operate as re□uired by ANSI/BHMA A156.1□ □or ANSI/BHMA A156.10 where re□uired□.

General Conditions

The Low Energy Automatic Door Operator is designed for Residential□Commercial and Industrial use. If it is to be retrofitted on to an e□isting door and frame□it is important that the door is in good condition and swings freely□without restriction. It is also important that the header is sturdy and the operator must be fastened securely using the appropriate fasteners.

WARNING: To reduce the risk of injuries to persons – Use this operator on doors **less than 300lbs** □refer to ANSI open and closing speeds□.

All electrical wiring must comply with the National Electrical Code.

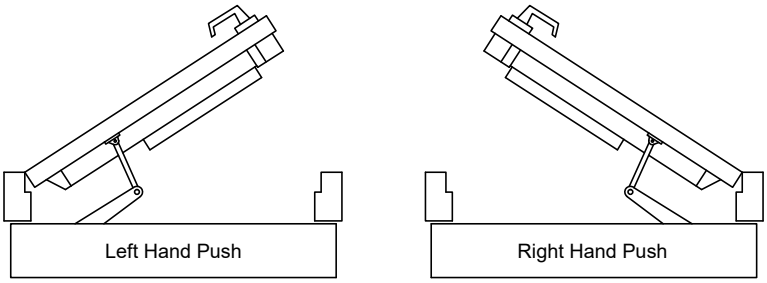
Not compatible with GFI □Ground Fault Interrupt□Brea□er.

The Low Energy Automatic Door Operator must be installed to comply with ANSI/BHMA A156.1□ standards.
It is not a solution to wind or stack air conditions.

Beware that the door should: 1) open to at least 32" of clear opening; 2) have 5' x 5' of flat floor on both sides; 3) be protected at bottom rail, 7 1/2" up□4□threshold must meet ADA Guidelines□and 5□a commercial or residential swinging pedestrian door shall not close with a force greater than 15 lb. at the latch side of the closing stile and shall not close through the final 10 degrees in less than 1.5 seconds.

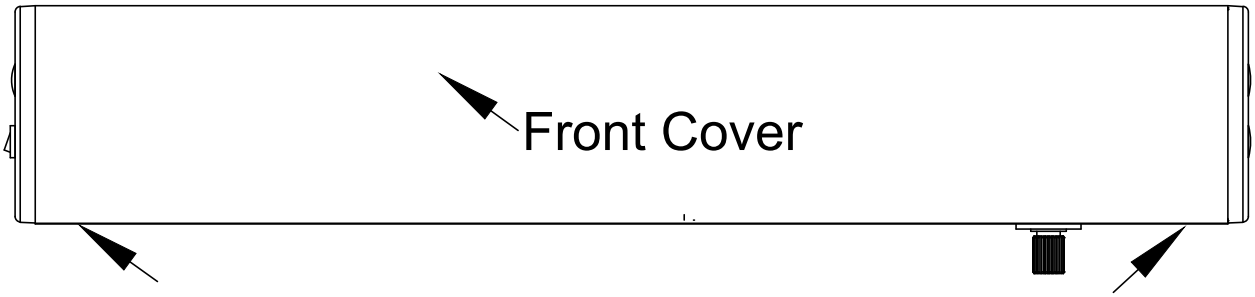
Receiving Inspection

Verify that the device ordered is the correct model for the door application. **Check for correct handing and size.**
Inspect pac□age for possible shipping damages. Carefully cut tape and open cardboard shipping bo□. Pac□ed into this bo□you will typically find arm assembly□door decal□s□□complete low energy operator and instruction documents. Remove items and place them carefully aside so they will not be damaged or lost. Using a □2 Phillips□remove the cover screws and lift bottom edge of cover □ pull out. Remove pac□ing and inspect all items before continuing.



□Interior□

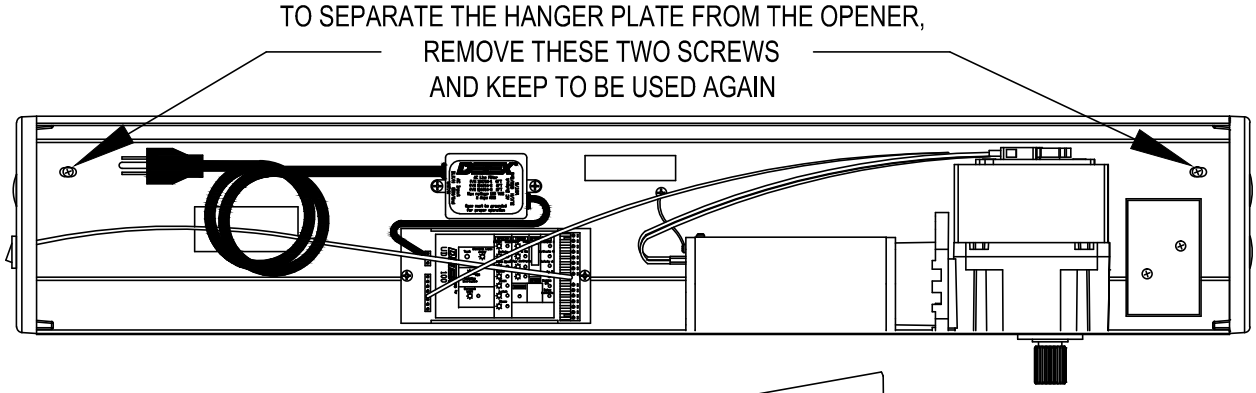
Contact Factory on damages and missing equipment

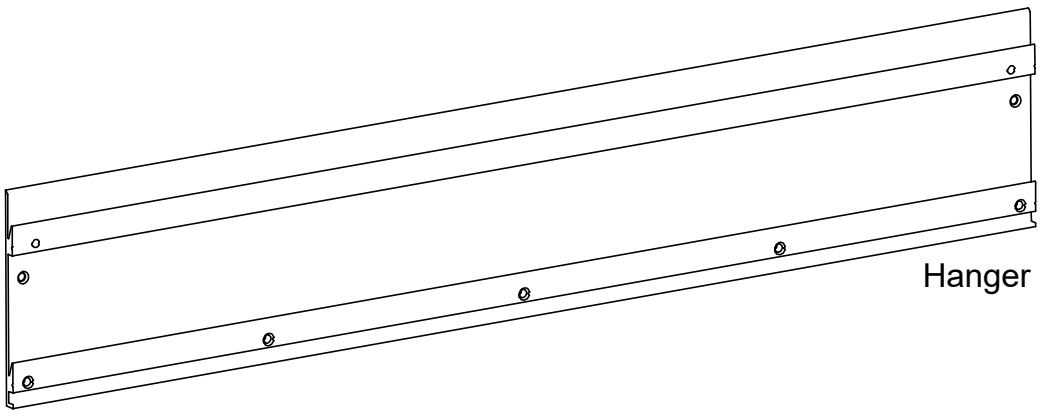


Remove the countersun□screws to remove front cover. Screws will be re-used when re-installing cover.
Unit is shipped with screws in the 2 outside hole locations only.
E□tra screws are provided in the hardware □it for the remaining screw holes when re-installing the cover.

Installation Preparation

The hanger plate is uni□ue to the Low Energy Automatic Door Operator. It allows the installation to be performed by one person□□uic□ly and efficiently.





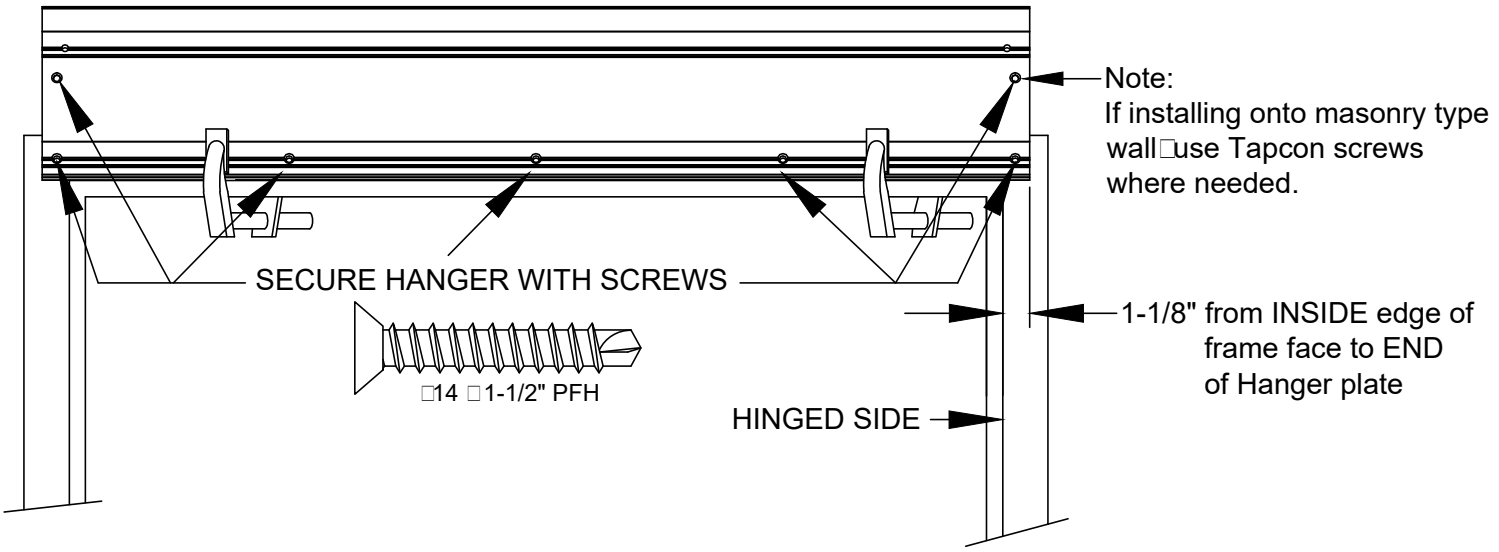
Hanger Plate

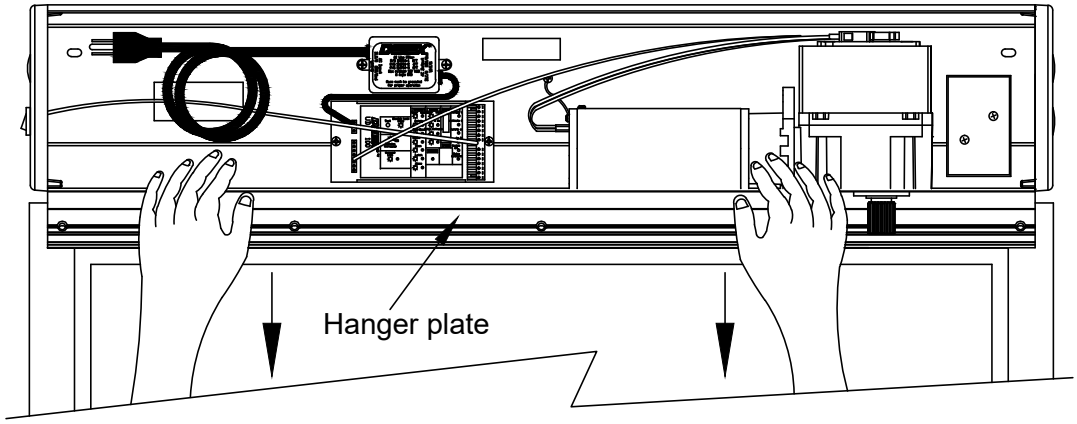
Hanger Plate Installation

The edge of the hanger plate should be located 1-1/8" past the inside edge of the frame face on the hinged side of the frame□level and flush with the bottom of the header of the door frame. Bar clamp the hanger plate. Using hanger plate□mar□and drill holes into header frame□solid wall or wall stud.

Fasten using appropriate type and si□e screws □we recommend using flat head type□

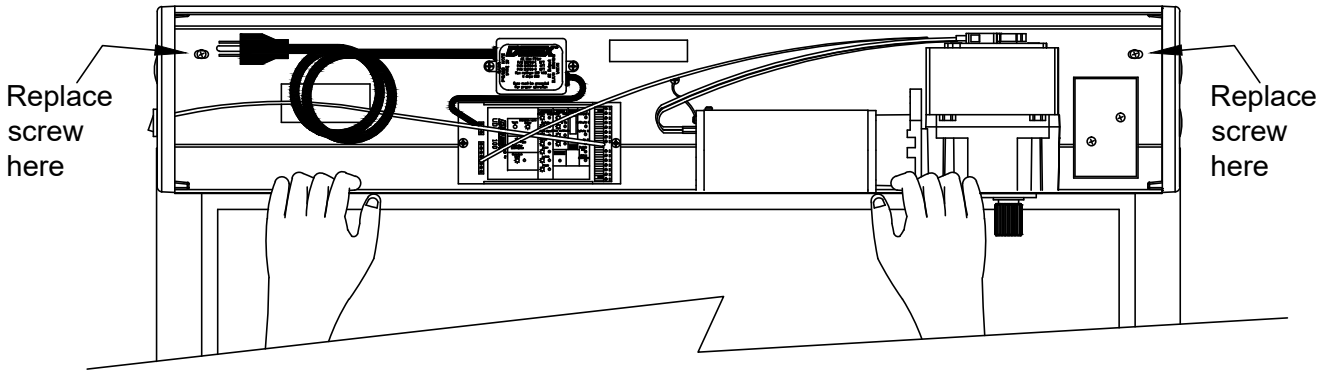
Note: Drilling debris accumulated in hanger groove trac□s can prevent the operator from seating uniformly when mounting. Remove debris with thin brush. Mas□ing tape can also be used to prevent debris from collecting in groove.



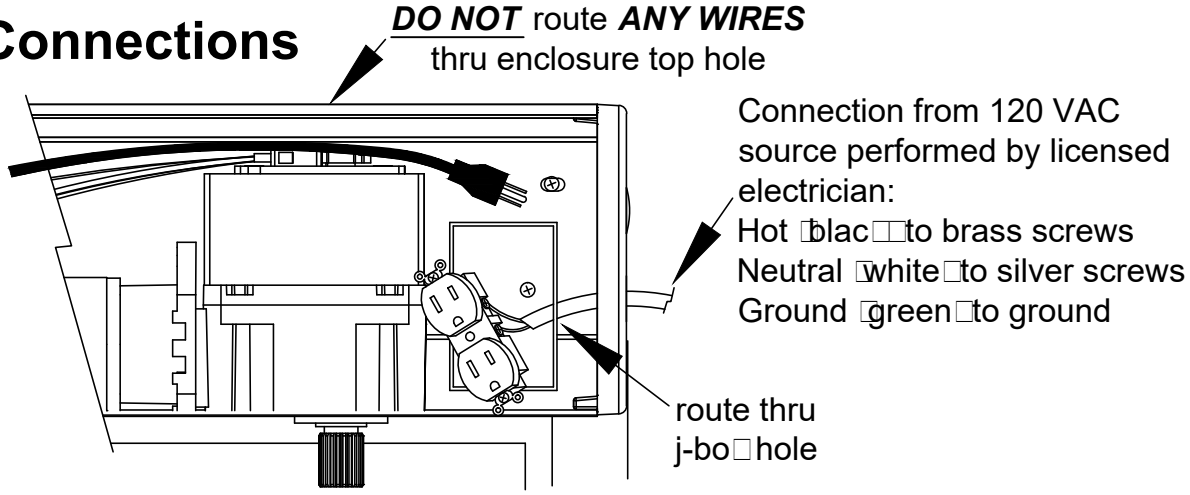


Lift the operator and lower onto the webs of the hanger plate brac□et.
Be sure both top and bottom are engaged.

Once they are seated□pull down until unit is completely flush and screws can be replaced in top corners.



120 VAC Connections

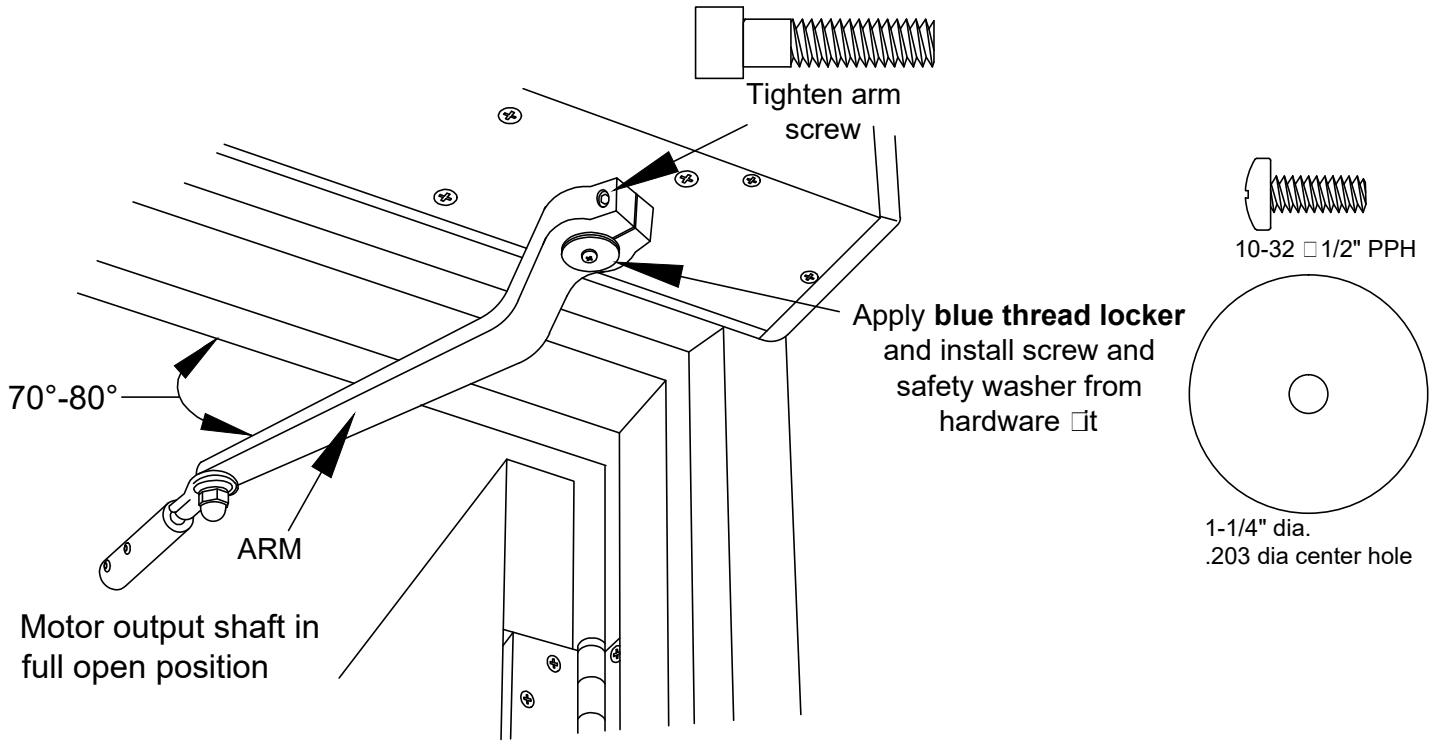


Have a licensed electrician bring 120 VAC to the Low Energy Automatic Door Operator in accordance with all local and state electrical codes.
Be sure the 120 VAC power source is turned off before proceeding.
The 120 VAC power line can be run thru the □noc□out hole at the end of the operator case and into the outlet bo□provided.
You should inspect all wiring at this time before turning on power and connecting electrical cord to outlet connector .

Push Arm Installation

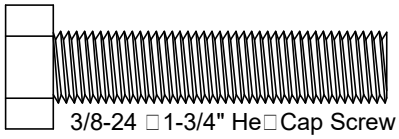
The UDC 1000 controller must be plugged in and powered up. The controls are preset to approximate settings. Refer to instruction 104827.

Set the toggle switch located at the end of the enclosure to the HOLD position.
The operator will activate and the motor output shaft will rotate 240° (degrees). While in the full open position, attach the arm onto the shaft so that it is pointed at a 70°-80° (degrees) angle through the door opening.
Tighten the screw on the arm to secure it to the shaft.
Be sure the motor gear shaft is full open position by forcing arm to rotate to it's stop position.
If you can rotate gear shaft beyond it's position, increase the "BACK-CHECK" and HOLD speeds.
Switch toggle to OFF then back to "HOLD".
Realign arm in proper position.
Tighten the arm screw on the arm to secure it to the shaft and install the 10-32 □1/2" screw with **blue thread locker** and the safety washer to the bottom of shaft.



Push Arm hardware:

□some of the hardware is shipped pre-assembled□



3/8-24 □1-3/4" He□Cap Screw
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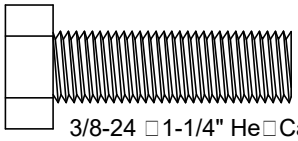
1273□-2 □Bl□□



3/8-24 □1-1/4" He□Cap Screw
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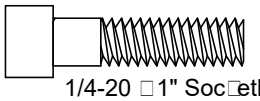
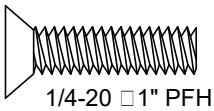
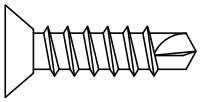
12743-2 □Bl□□



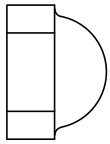
1/4-20 □1" Soc□ethead Cap Screw
P/N: 12742-1 □Al□
12742-2 □Bl□□



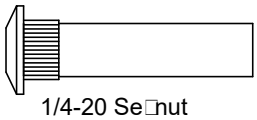
1/4-20 □1" PFH Machine Screw
P/N: 102271-116 □stainless□or
102271-316 □blac□□



□14 □1 PFH Self-drilling screw
P/N: 103277-316

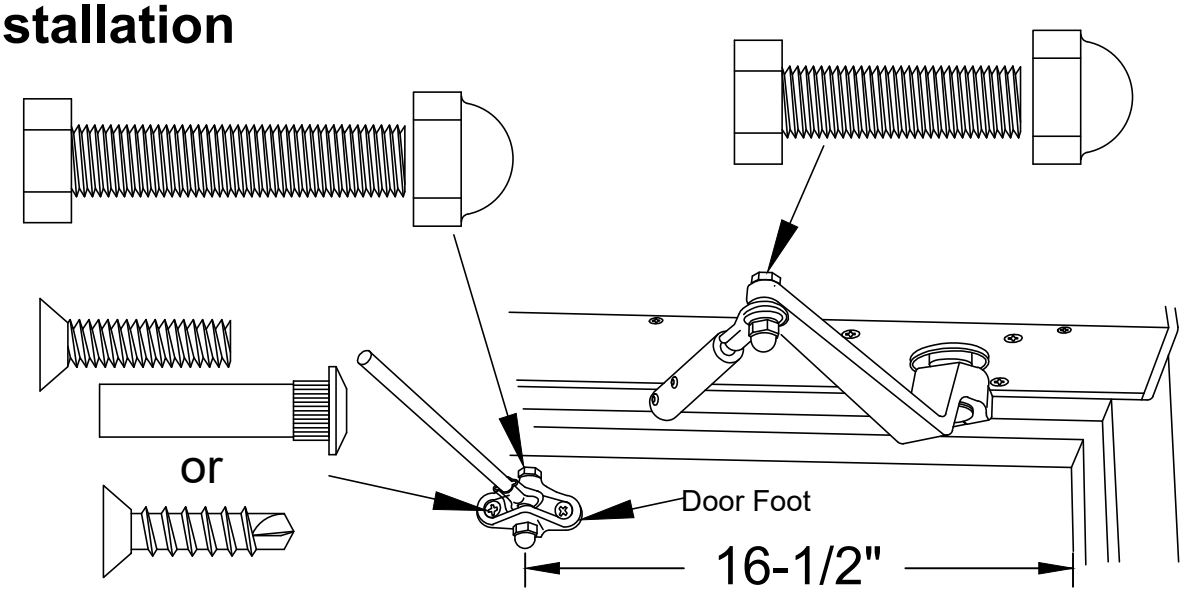


3/8-24 Acorn Nut
P/N: 12741-1 □Al□
12741-2 □Bl□□



1/4-20 Se□nut
P/N: 101616-□ □630 finish□or
101616-25 □613 finish□

Door Foot Installation



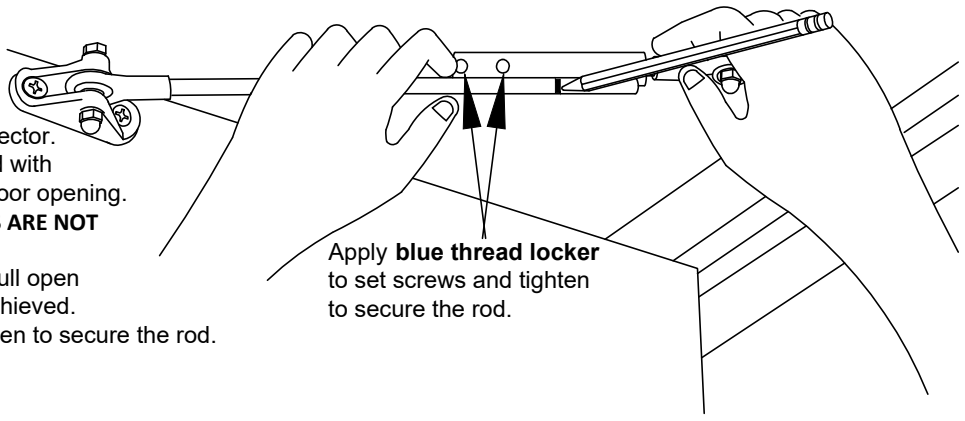
Turn the 3-way toggle switch to the OFF position and close the door.
The center of the door foot should be located 16-1/2" from the hinge side of the door frame stop and should be level when the rod is inserted in the sleeve attached to the arm.

Mar□the door for the door foot holes and secure the foot to the door with the supplied screws □se□nut use is optional□

Rod Adjustment

Open the door and turn the 3-way toggle switch to the “HOLD” position.
The arm will rotate to the full open position.

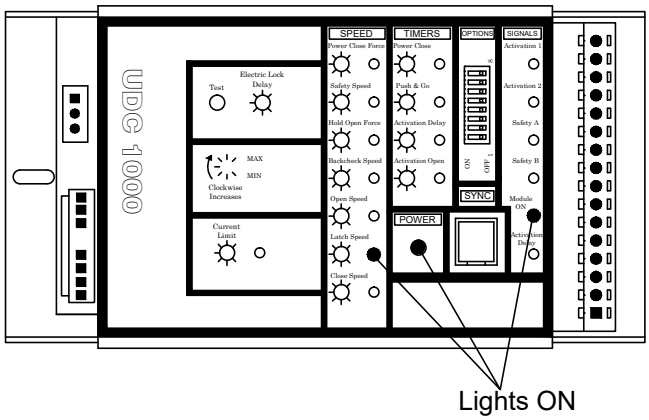
With the door opened to approximately 90°, hold the steel rod ne□t to the rod connector at the end of the arm.
Mar□and cut the rod so it will fit into the rod connector.
The rod length should allow the rod to be secured with both set screws and allow for adjustment of the door opening.
NOTE: ROTATE CONNECTOR SO THAT SETSCREWS ARE NOT FACING TOWARDS THE FLOOR.
Insert the rod into the connector with the door in full open position and adjust until the desired opening is achieved.
Apply **blue thread locker** to set screws and tighten to secure the rod.



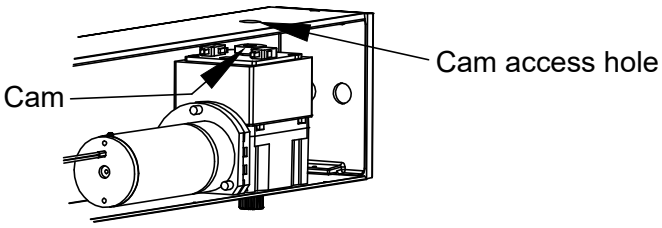
Low Voltage Activation Connections

Before any adjustments can be made the following chec□must be performed. First the arm must be properly connected to the door leaf. The power must be connected and the switch in the ON position. The door leaf must be fully closed.

E□amine the UDC 1000 controller. The **Latch Speed** □**POWER** and **Module ON** lights must be on □see detail below□
If the **Close Speed** light is on□review the arm assembly location by manually opening door leaf until it is stopped by internal stop.
If the door arm rotates well beyond 80 degrees refer bac□to arm installation directions.
If arm stops at appro□imately 80 degrees□allow the leaf to close.



The LATCH-CHECK AND BACK-CHECK are controlled via the cam on top of the gearbo□ Access is thru the top of the operator case directly above the gearbo□



With door closed: Using a 1/8th inch Allen wrench□gently loosen the screw that holds the cam in place.
Rotate cam in the closing rotation direction until the **Close Speed** light turns off and the **Latch Speed** light turns on. Hold the cam in place while gently retightening the holding screw.

DO NOT OVER TIGHTEN AS THAT WILL DAMAGE THE CAM.

Test the LATCH-CHECK position by manually opening the door leaf until you see **Latch Speed** light turn off and the **Close Speed** light turn on. This should be appro□imately 4 inches from Jamb. Fine tune adjustment as necessary. If the lights fail to wor□call for factory assistance.

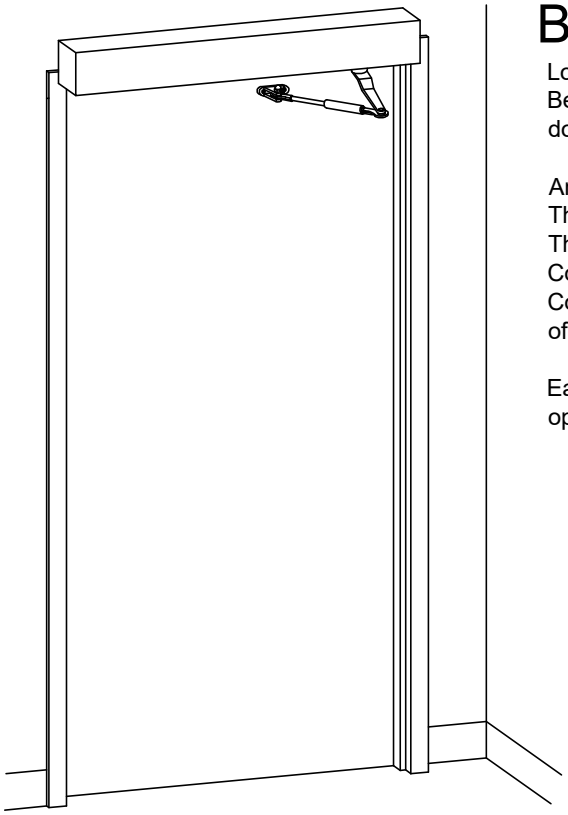
When satisfactory operation is achieved□reinstall front cover and screws.

THE LOW ENERGY AUTOMATIC DOOR OPERATOR IS TO BE USED WITH APPROVED SWITCHES.

You must disconnect all voltage sources before attempting to install an accessory.

Typically you will use a wall mounted□hard wired push button for activation. You must provide wire from the push button switch to the Control Module inputs. Knoc□outs are available on the enclosure for wire runs. The connections are terminated on **terminals #1 and #2 of the Control Module**. Refer to the diagram included with the Control Module.

ALL WIRING MUST MEET ALL STATE AND LOCAL CODES.



Button Location

Locate the buttons securely to a wall or post.
Be sure the button is not bloc□ed by opened door or cause the user to be in the path of the door leaf when opening. Chec□local codes for variations in location re□uirements.

Another popular type of button has battery-operated transmitters.
They wor□with a receiver mounted in operator case.
The receiver may be connected to the Control Module for a source of power.
Connect power wires to □12 and □13 for A.C.□or □1 and □11 for D.C.
Connect the “COM” and “N.O. outputs from the receiver to terminals #1 and #2 of the Control Module.

Each transmitter setting must be programmed to same setting of the receiver to operate correctly.

Per ANSI/BHMA A156.1□□switch is to be installed within view of door at a maximum distance of 144” (3658 mm) from the center of the door and mounted a minimum of 36” (914 mm) and a maximum 48” (1219 mm) from the finished floor.

Decal Application

You’ve been provided with a double-side decal that meets ANSI/BHMA A156.19, as follows:
A door shall be mar□ed with a decal□visible from the swing side□with the words “AUTOMATIC CAUTION DOOR”

The sign shall be mounted on door at a height 58 in. +/- 5 in. from the floor to center line of the sign. The sign shall be a minimum of 6 in. in diameter with blac□lettering on a yellow bac□ground.

Decal
□104787□

Final Inspection

Before leaving site□test all activation devices and time your door. To reduce call-bac□s□instruct owner on the legal operation of door□how to turn on and off□function and warranty considerations.

This operator must be installed/serviced by a qualified person.
The service technician must be familiar with the latest ANSI/BHMA A156.10/19 standards.

INSTALLATION INSTRUCTIONS

JACKSON 1295

RIM PANIC EXIT DEVICE

ORDER OF ASSEMBLY AND INSTALLATION

Tools Required

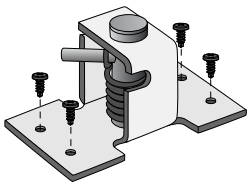
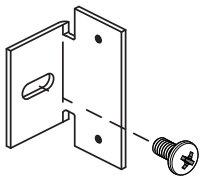
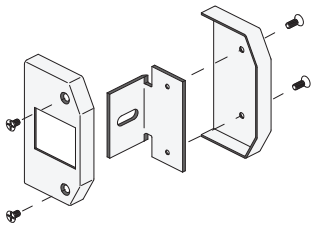
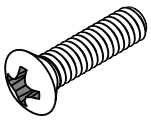
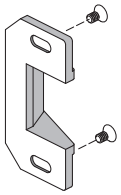
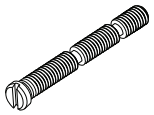
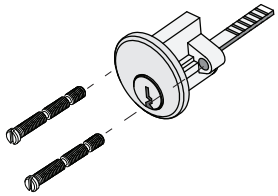
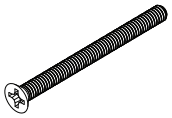
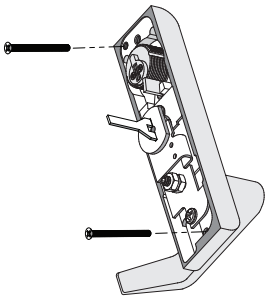
Drill bits: 5/8", 11/64", 13/64", 1-13/32"
Tap: 1/4" x 20
Tape measure
Saw horses
Drill
Phillips #2 screwdriver
Standard screwdriver
Framing square/straight edge
1/2" Masking tape
Center punch
Flat File
Round File
Jigsaw with metal cutting blade

NOTE: Any modifications, other than those specified in this document, could result in this product's failure to meet UL safety ratings and void the manufacturer's warranties.

The rapidly changing technology within the architectural aluminum products industry demands that the manufacturer reserve the right to revise, discontinue or change any product line, specification or electronic media without prior written notice.

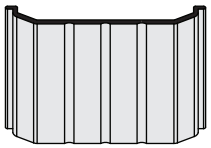
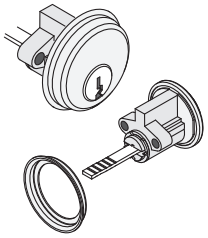
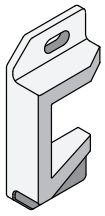
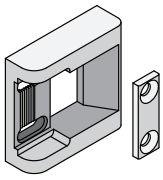
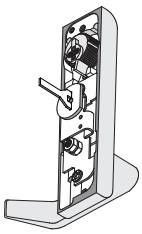
NOTE: Dimensions in parentheses ( ) are millimeters unless otherwise noted.

PARTS IDENTIFICATION

FASTENERS PROVIDED					
CALL OUT	**QTY.**	**FASTENER**	**FASTENER DESCRIPTION**	**PART**	**USED WITH PART NUMBER**
Ⓐ	**4**		3/16" Pan Head Screw		302670 Dogging Assembly
Ⓑ	**1**		1/4"-20 x 1/2" Pan Head SMS		Base End Plate (Included in 302654 Base Cover Plate Pkg.)
Ⓒ	**4**		8-32 x 1/4" FHMS		302654 Base Cover Plate Pkg.
Ⓓ	**2**		10-24 x 5/8" Oval Head Screw		302436 "C" Type Surface Mounted Strike
Ⓔ	**2**		1-7/8" (47.6 mm)		DL911 Rim Key Cylinder
Ⓕ	**2**		10-32 x 2-1/8" FHMS		9500LV02 Flat Handle Lever Trim 9500LV01 Round Handle Lever Trim

NOTE: Any modifications to this product, other than those specified in this document may void the warranty as this product will no longer meet the UL safety rating requirements this product was tested and intended for.

PARTS IDENTIFICATION

PARTS LIST				
CALL OUT	**QTY.**	**PART**	**PART NO.**	**DESCRIPTION**
Ⓖ	**1**		302674 and 30267448	Cover Plate
Ⓗ	**1**		DL911	Optional Rim Key Cylinder
Ⓘ	**1**		302436	"C" Type Surface Mounted Strike
Ⓙ	**1**		302501	"S" Type Surface Mounted Strike
Ⓚ	**1**		9500LV02/ 9500LV01	9500LV02 Flat Handle Lever Trim (Shown) 9500LV01 Round Handle Lever Trim (Similar)

DOOR PREPARATION

REMOVE DOOR

1. Place door horizontally on stands, interior side up.
2. Mark stile centerlines Y-lines, 1-1/8" (28.6) from outside edge for all stile widths. (Fig. 1)
3. Mark stile X-lines per template instructions. (Fig. 2)
4. Attach corresponding templates. (Fig. 2)

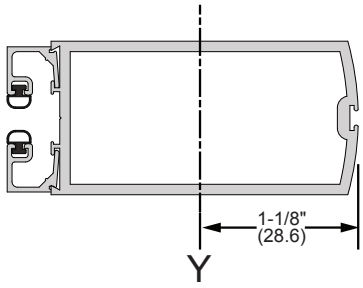


FIG. 1

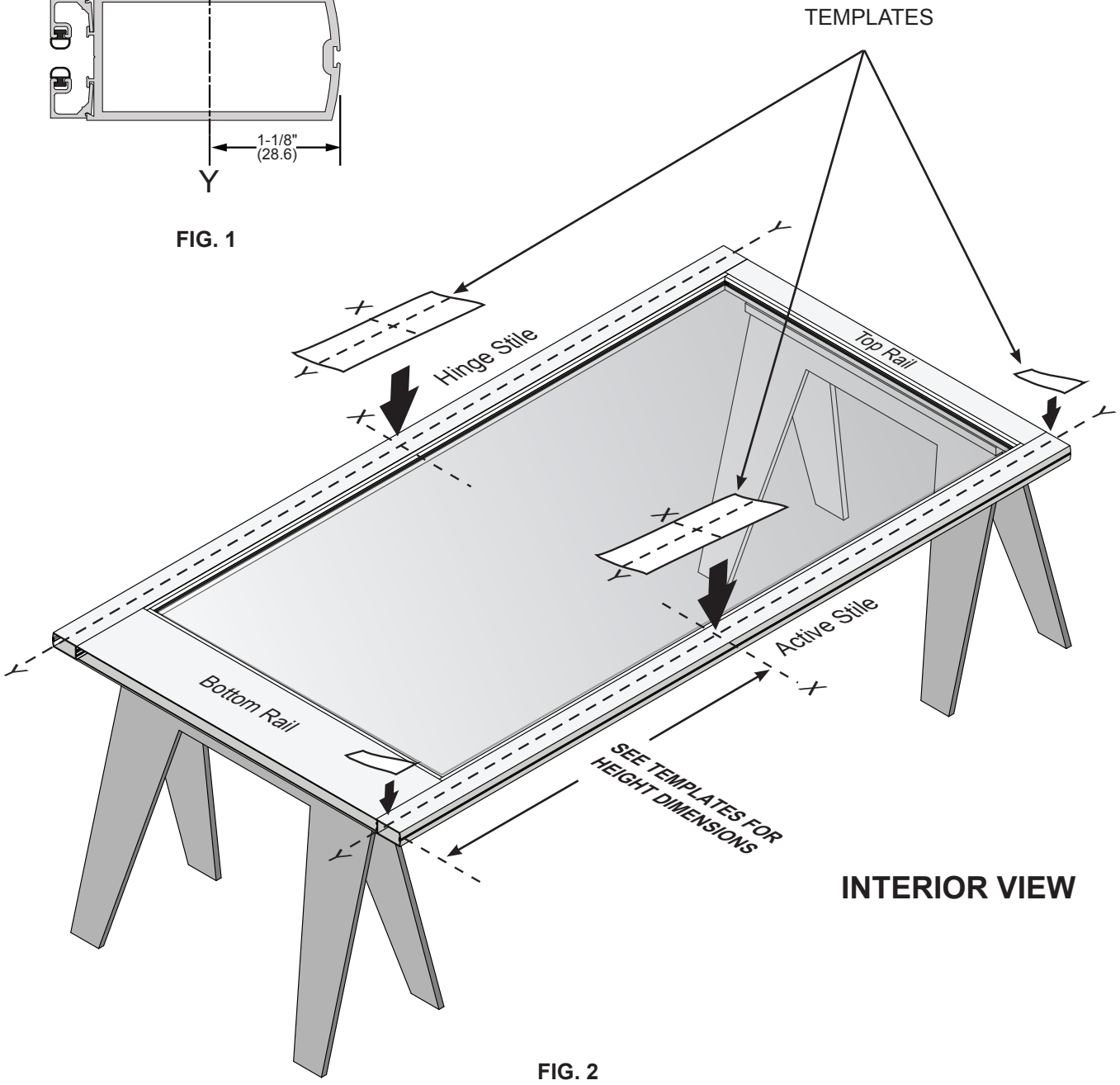
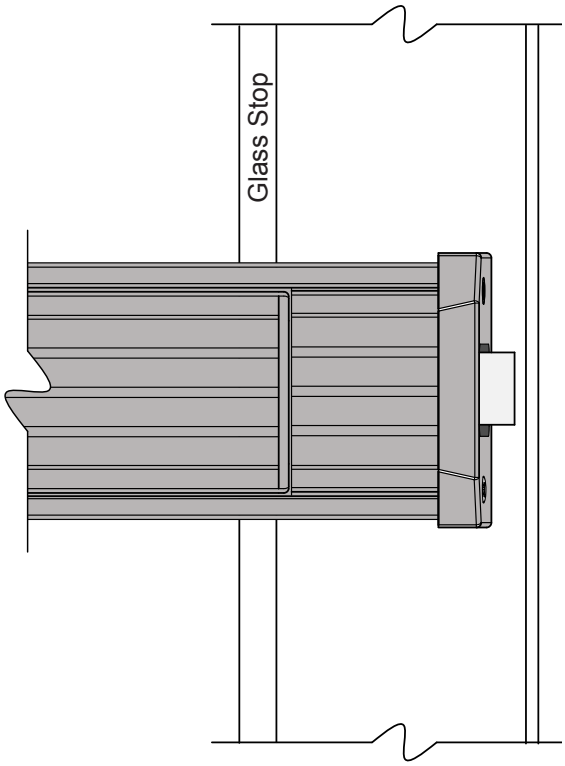


FIG. 2

NOT TO SCALE

DOOR PREPARATION – LAYOUT SELECTION

1295 RIM PANIC EXIT DEVICE INSTALLATION



INTERIOR VIEW

ACTIVE STILE

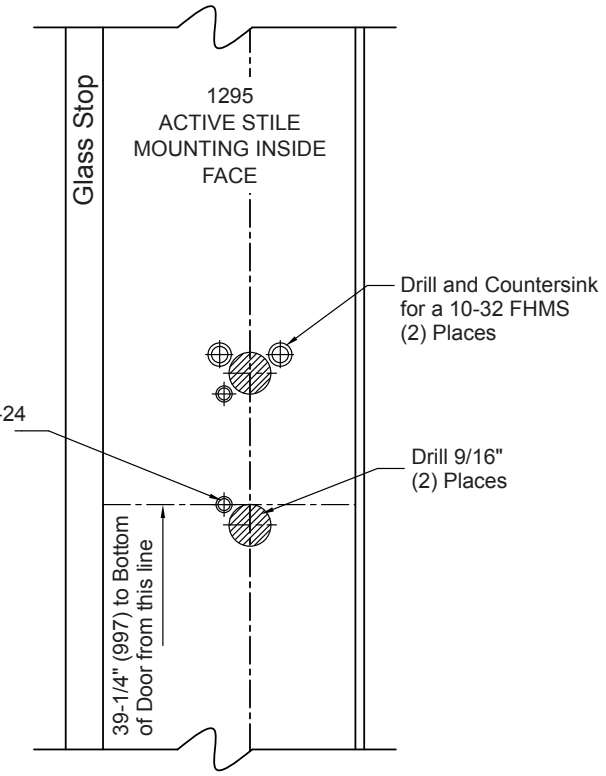
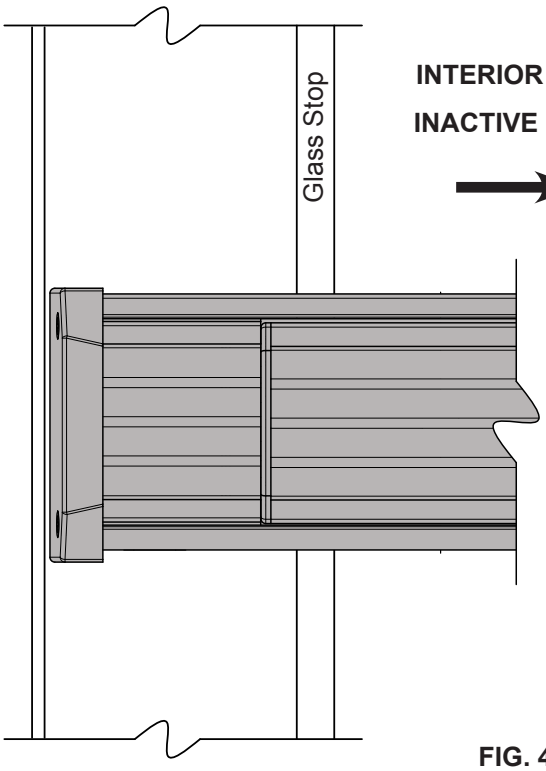


FIG. 3



INTERIOR VIEW

INACTIVE STILE

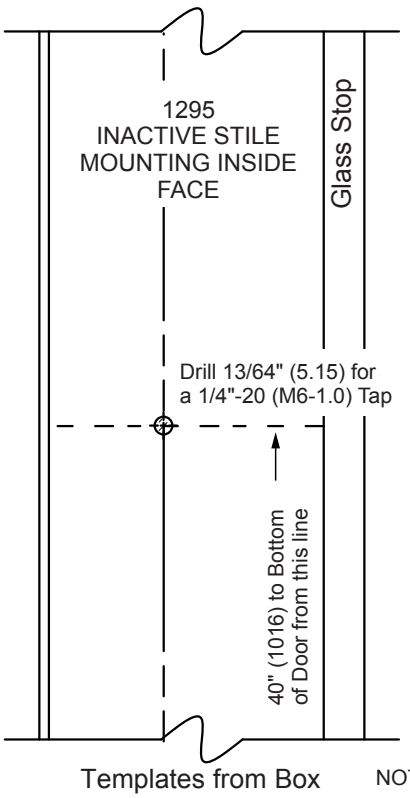
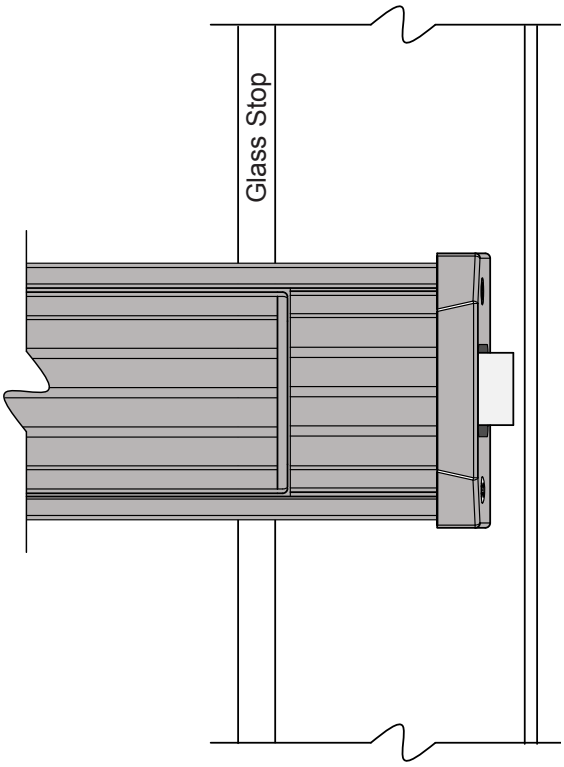


FIG. 4

NOT TO SCALE

DOOR PREPARATION – LAYOUT SELECTION

1295 RIM PANIC EXIT DEVICE INSTALLATION WITH OPTIONAL RIM LOCK CYLINDER



INTERIOR VIEW

ACTIVE STILE

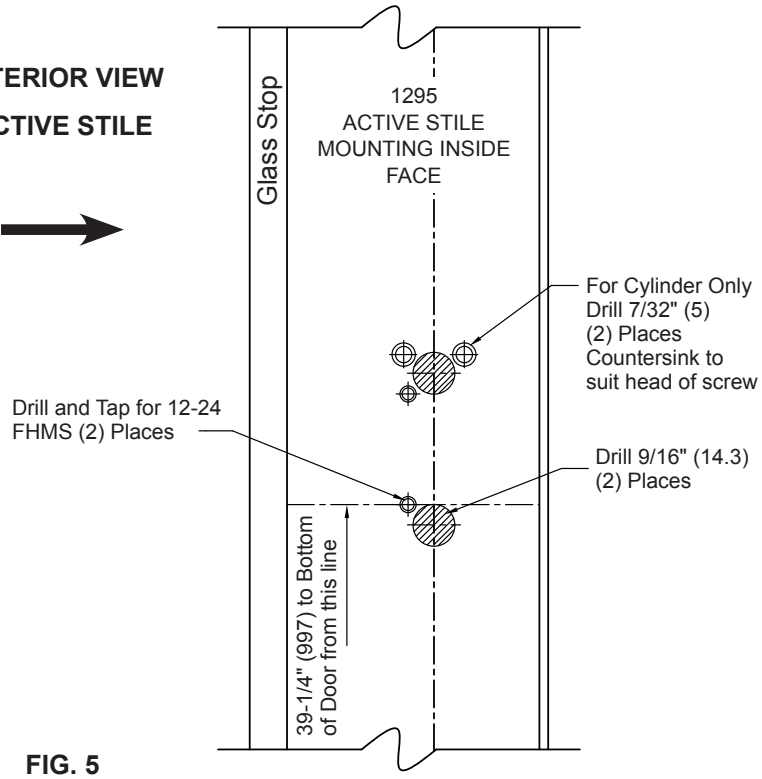
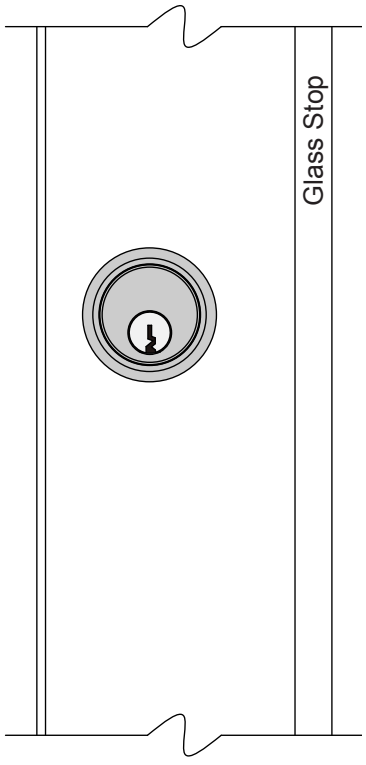


FIG. 5

Templates from Box



EXTERIOR VIEW

ACTIVE STILE

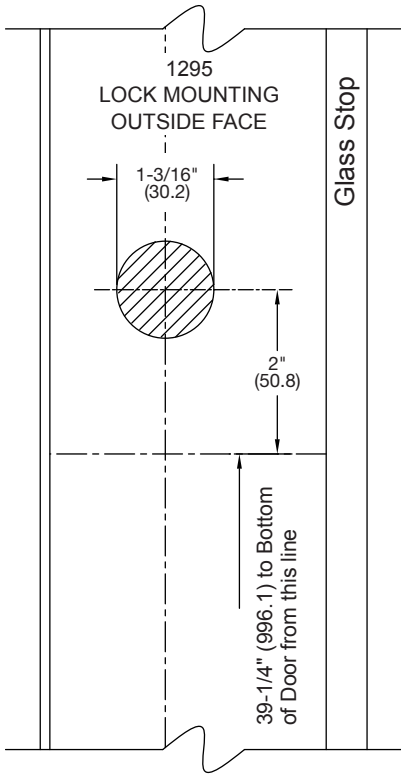


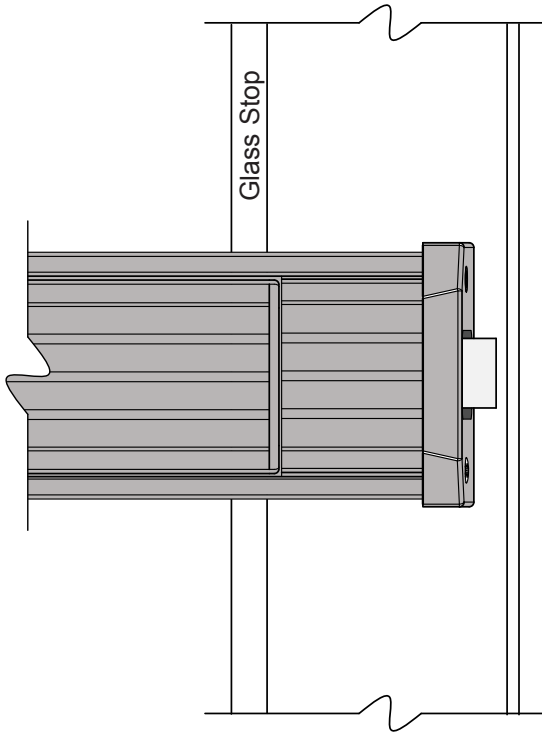
FIG. 6

Templates from Box

NOT TO SCALE

DOOR PREPARATION – LAYOUT SELECTION

1295 RIM PANIC EXIT DEVICE INSTALLATION WITH OPTIONAL EXTERIOR TRIM AND RIM CYLINDER



INTERIOR VIEW

ACTIVE STILE

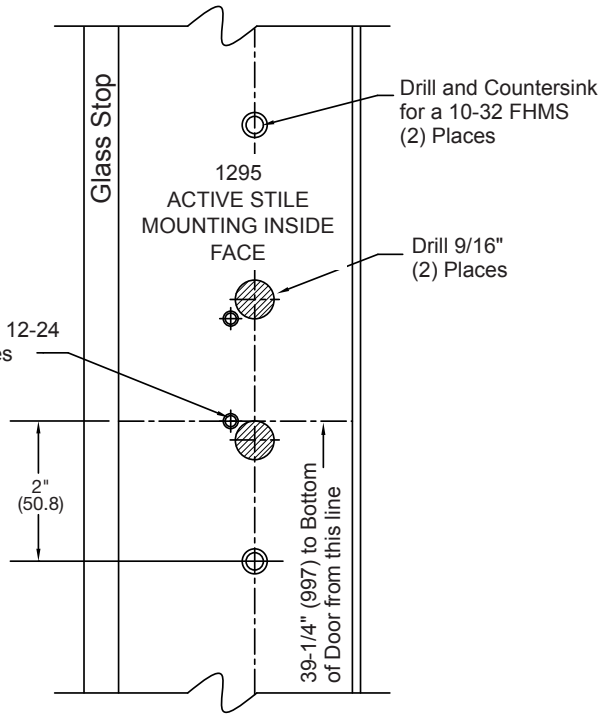
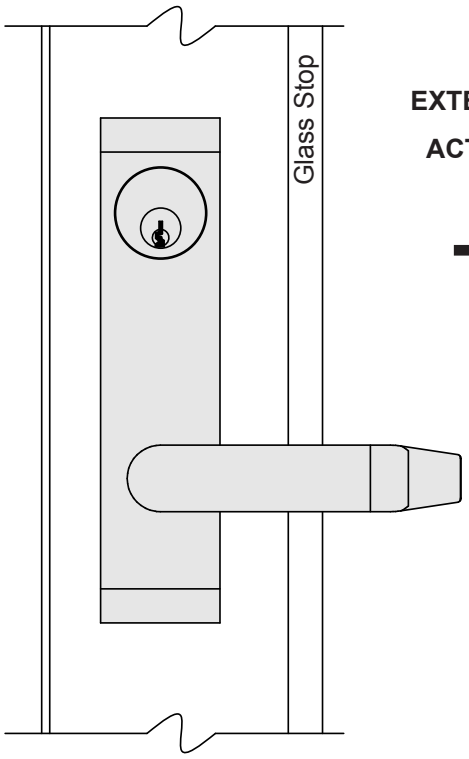


FIG. 7

Templates from Box

9500LV02 Outside Trim with Flat Lever Shown. 9500LV01 Outside Trim with Round lever Similar.



EXTERIOR VIEW

ACTIVE STILE

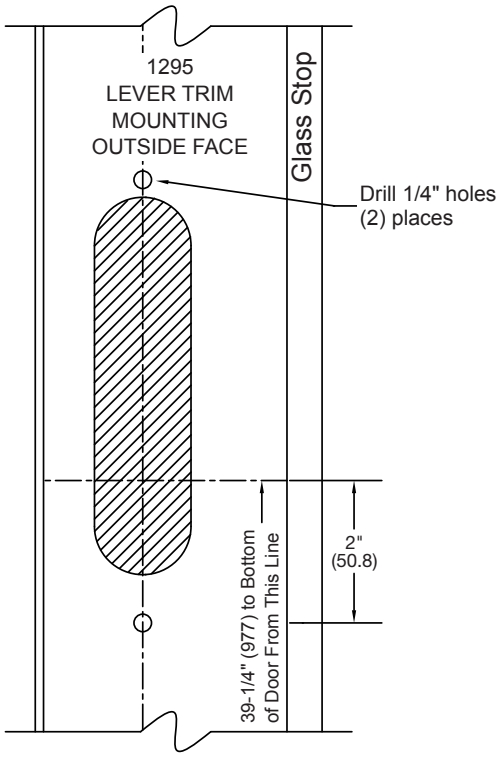


FIG. 8

Templates from Box

NOT TO SCALE

DOOR HARDWARE INSTALLATION
INSTALLATION OF OPTIONAL RIM CYLINDER

NOTE: Optional Rim Cylinder must be installed before attaching exit device.

1. Attach the Rim Cylinder on door stile with (2) 1-7/8" (47.6 mm) Breakaway Screws provided. Fig. 9

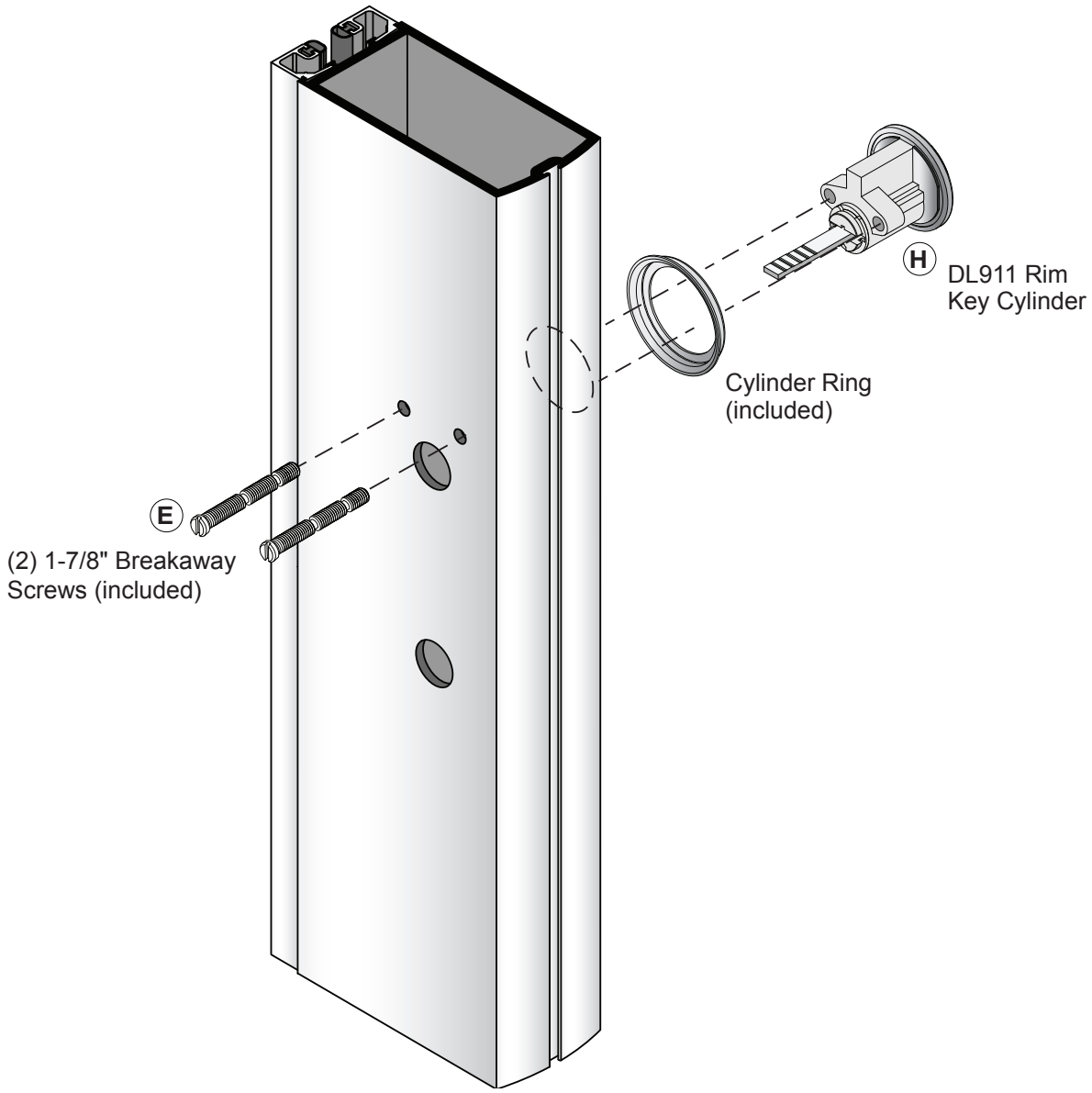


FIG. 9

DOOR HARDWARE INSTALLATION (CONTINUED)

INSTALLATION OF EXTERNAL TRIM (OPTIONAL)

NOTE: Exterior trim must be installed before attaching exit device.

1. Attach the exterior trim with (F) (2) #10 x 2-1/8" Flat head screws provided shown in Fig. 10.

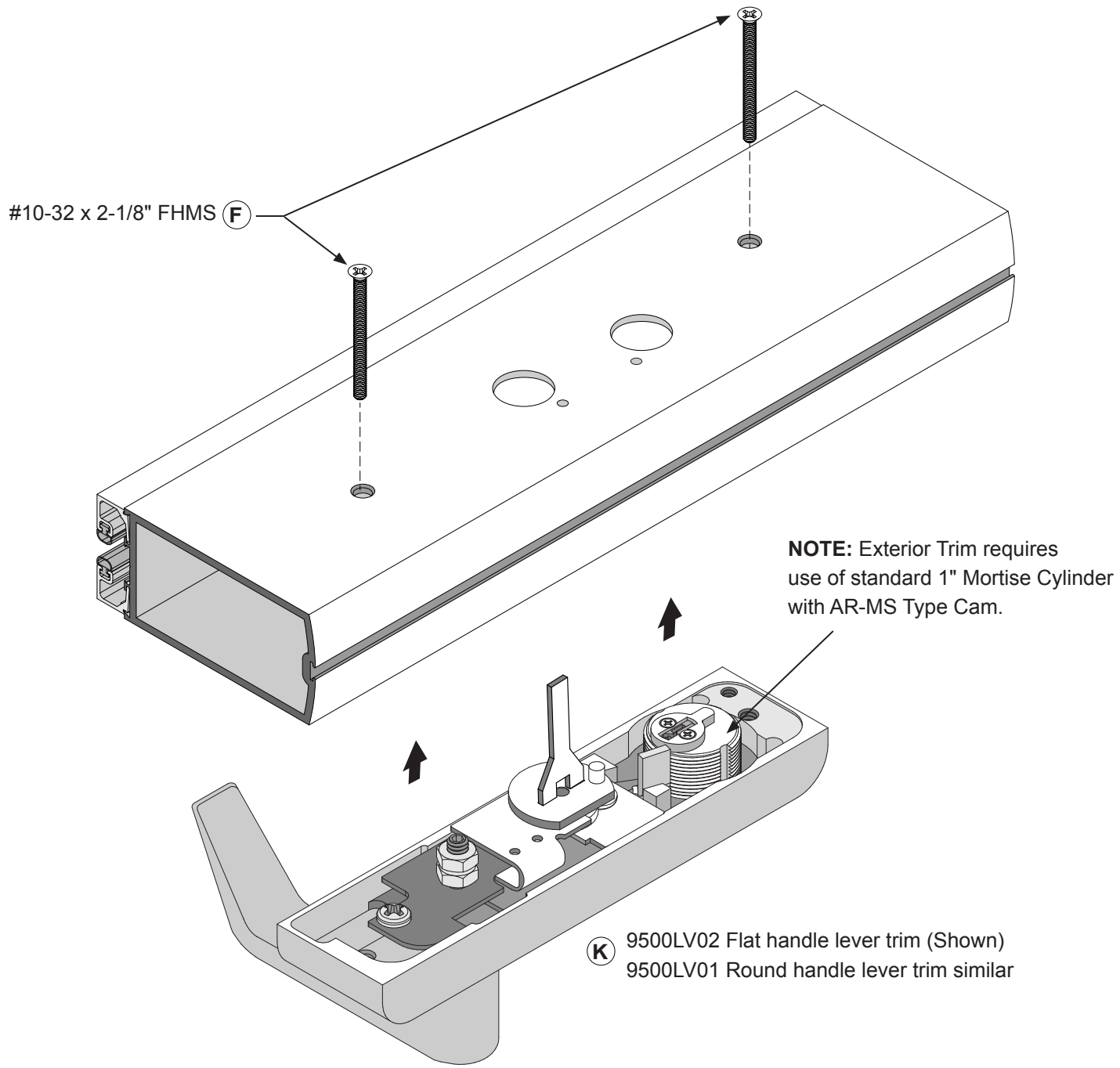


FIG. 10

NOT TO SCALE

DOOR HARDWARE INSTALLATION (CONTINUED)

INSTALLATION OF 1295 RIM PANIC EXIT DEVICE

1. Attach exit panic device to door with (C) (2) 12-24 x 3/4" FHMS on active stile and (B) (1) 1/4"-20 x 1/2" PHSMS at end cap bracket on inactive stile as shown in Fig. 11.

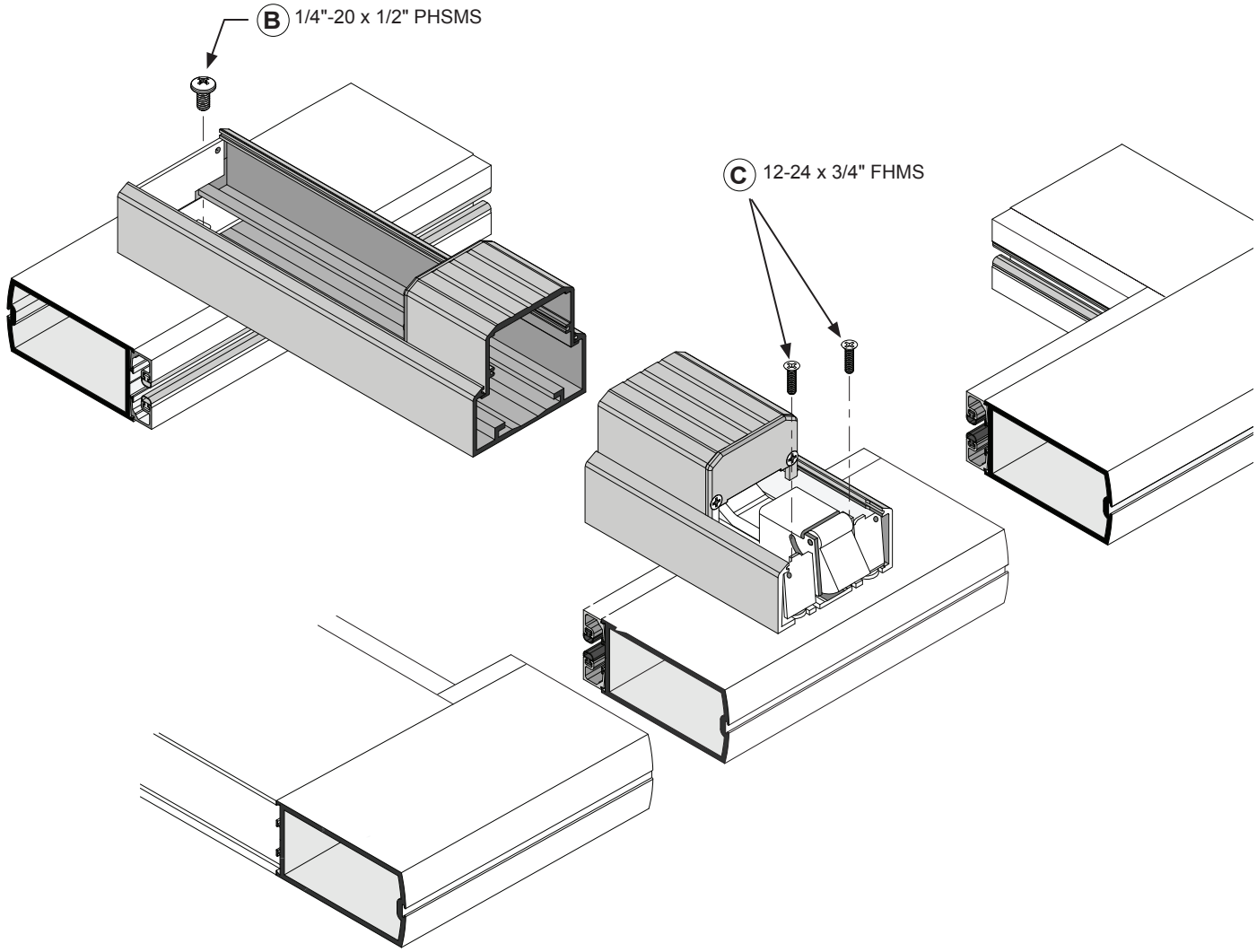


FIG. 11

NOT TO SCALE

DOOR HARDWARE INSTALLATION (CONTINUED)

INSTALLATION OF END CAPS AND COVER PLATES

1. Slide the (2) base cover plates (G) 302674 and 30267448 in place.
2. Attach both end caps to the previously attached end cap brackets with (C) (4) 8-32 x 1/4" FHMS Refer to (Fig.12).

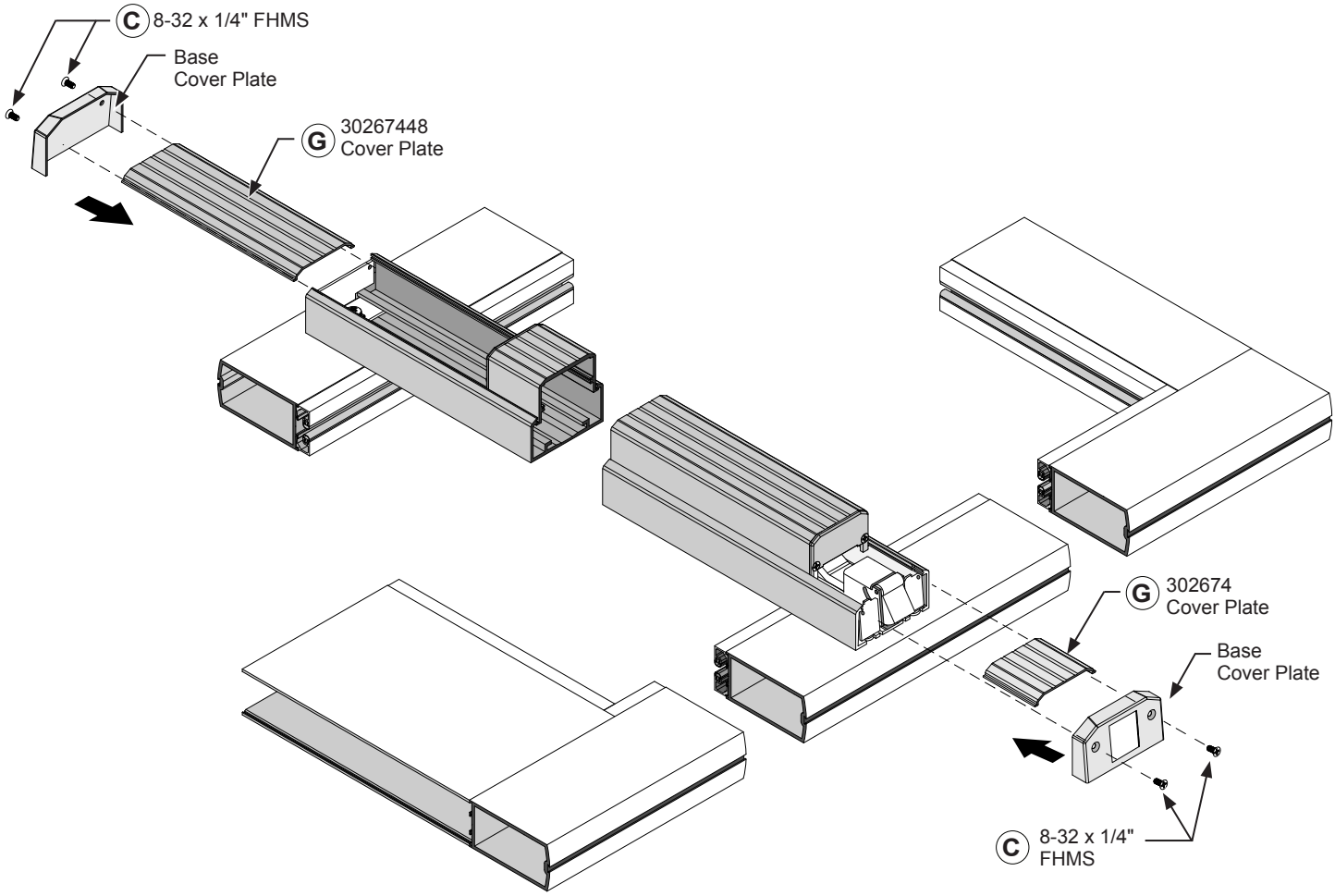


FIG. 12

NOT TO SCALE

DOOR HARDWARE INSTALLATION (CONTINUED)

FRAME PREPARATION

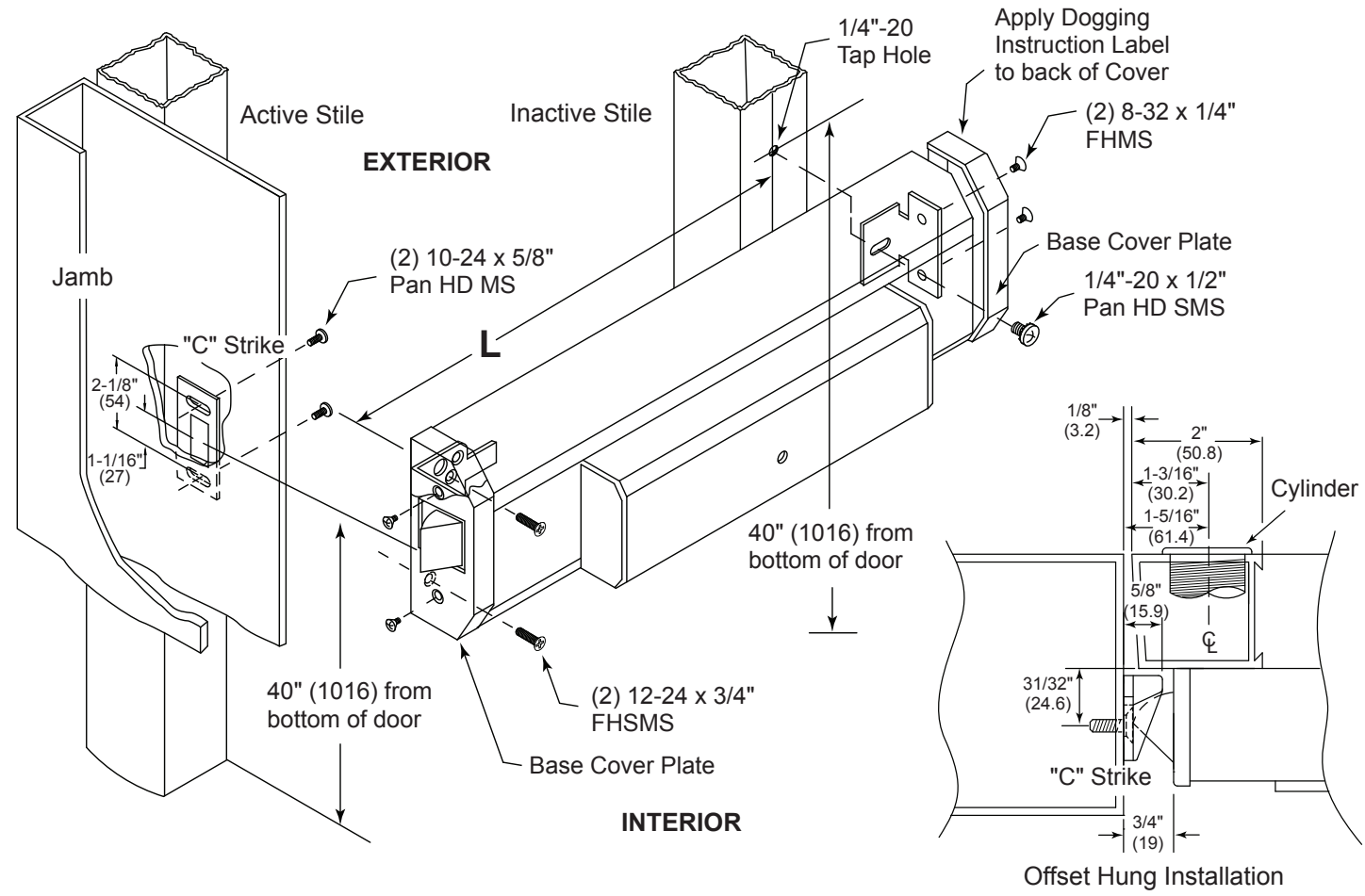


FIG. 13

Mounting Instructions

1. Prepare Lock Stile per Template, drill Cylinder mounting holes if required.

2. Locate Centerline of Cylinder on exterior of Door and drill if required.

3. Trim Tail Piece to fit into Panic Drive Bushing Assembly.

4. Mount Cylinder and secure with mounting screws. (Supplied by lock mfg.) If trim is required prepare per Template.

5. Locate mounting hole on Inactive Stile. Drill and tap 1/4"-20 Thds. 40" (1016) from the bottom of the Door.

Panic Attachment

1. Remove front and rear Base Cover Plates by removing (4) 8-32 x 1/4" Flat HD Screws. Secure active end of panic by installing (2) 12-24 x 3/4" Flat HD MS. Secure inactive end with single 1/4"-20 x 1/2" Pan HD SMS through Base Cover Plate Bracket. Re-install Base Cover Plates on each end of Panic Base.

2. To install "C" Strike, locate 10-24 tap holes on Active Stile (2 places).

3. Mount and secure "C" Strike.

4. Check operation of all parts including Cylinder (if applicable) to assure proper operation.

NOT TO SCALE

DOGGING INSTRUCTIONS

TO DOG — Insert Hex Dogging Key (Cat. No. 302796). Turn Key clockwise until it stops. Depress and hold the Push Bar then release the Key. Push Bar will remain depressed. Remove Key. **(Fig. 14)**

TO UNDOG — Insert Hex Dogging Key and turn clockwise until it stops. While depressing Push Bar turn and remove Key. Push Bar will become operable again. **(Fig.15)**

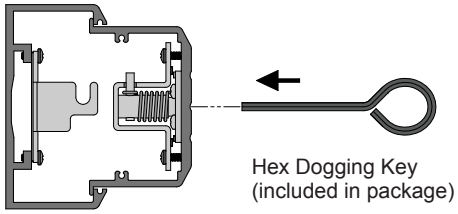


FIG. 14

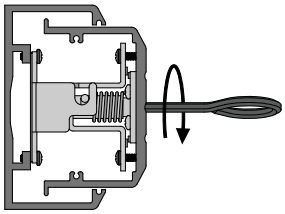


FIG. 15

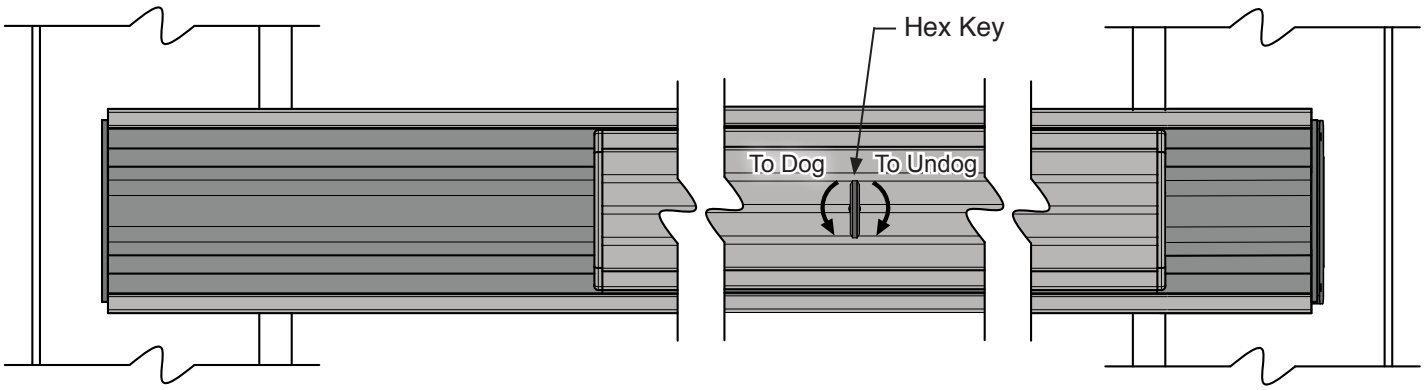
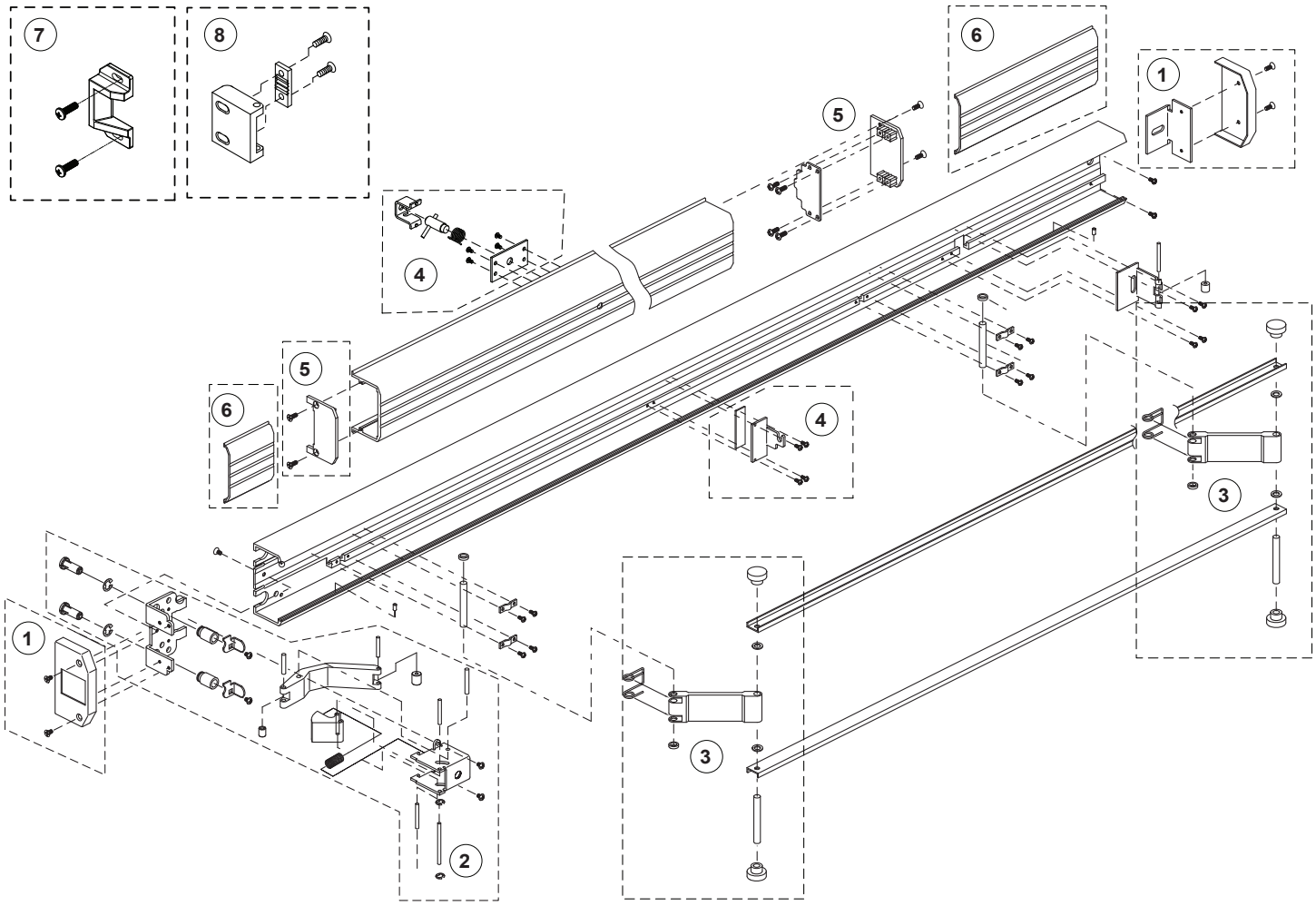


FIG. 16

NOT TO SCALE

PACKAGED PARTS AVAILABLE



Assembly No.	Part No.	Description
1	302654	Base End Cap Package
2	302679	Latch Assembly Package
3	302664	Control Arm Hardware Package
4	302670	Dogging Assembly
5	302650	Push Pad End Cap Package
6	302674	Cover Plate Package - Ribbed - 3/0 Panic
6	30267448	Cover Plate Package - Ribbed - 4/0 Panic
6	302674S	Cover Plate Package - Smooth - 3/0 Panic
7	302436	"C" Type - Surface Mounted Strike
8	302501	"S" Type - Surface Mounted Strike
Not Shown	302796	Dogging Hex Key (2 Pkg.)

Thank You!

TURNSTILES.us

COMPANY BRIEF

wwww.TURNSTILES.us, Inc.
Small Business

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GSA: GS 07F 9239S
DUNS: 181428611
NAICS: 238990
SIC: 1799

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TURNSTILES.us is a professional organization specializing in the physical and electronic securing of building entrances with Turnstiles, Mantraps, EntraPASS Access Control Hardware, and Software since 1989. We are a U.S. Federal Government Contract Holder and are registered with the U.S. Federal Government System for Award Management.

TURNSTILES.us headquarters is located in the Rocky Mountain Region of Colorado. Our team of engineers and sales professionals are strategically located across the United States to enable us to address our clientele. Our expert project team offers turnkey solutions for commercial public sector and private markets including access control system analysis, design, installation, and implementation, and raises the bar for the highest standards in the turnstile security industry.