Besam UniSlide™

Installation Manual

Complies with ANSI/BHMA A156.10 standard for Power Operated Pedestrian Doors. UL 325 Listed.

US23-0920-02 Rev H

Issue 9-21-2011

Revisions

The following pages have been revised:

Page	Revision
Title	New release date and updated revision level to Rev H
39	Added PSA adjustment
------	Updated title page, all footers to Rev H, and end page

CAUTION

Improperly adjusted doors can cause injury and equipment damage.

Inspect door operation daily using safety checklist in Owner's Manual.

Have door adjusted as described in Owner's Manual.

Safety devices must be in place and operational.

Have door inspected at least once a year by an AAADM inspector, and always after any adjustment or repair.

In this manual, the word:

CAUTION - means that injury or property damage can result from failure to follow instructions;

NOTE! - indicates important steps to be followed or important differences in equipment.

Table of Contents

Important Information

Important Notice!

To reduce the risk of personal injury, all instruction and installation of safety equipment must be performed in accordance to ANSI A156.10 for pedestrian usage.

Radio and Television Reception

Electronic Equipment Reception Interference

This equipment may generate and use radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, it may cause interference to radio, television reception or other radio frequency type systems. It has been designed to comply with the emission limits in accordance with

EN 61000-6-3 (US market FCC Part 15), which are designed to provide reasonable protection against such interference in a residential installation.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Relocate the receiver with respect to the equipment.
- Move the receiver away from the equipment.
- Plug the receiver into a different outlet so that equipment and receiver are on different branch circuits.
- Check that protective earth (PE) is connected.
- If necessary, the user should consult the dealer or an experienced electronic technician for additional suggestions.

Environmental Requirements

Please act according to your local regulations and dispose of your old product(s) and packaging properly. The correct disposal will help prevent potential negative consequences for the environment and human health.

Besam products are equipped with electronics and may also be equipped with batteries containing materials, which are hazardous to the environment. Remove this material from the operator before it is scrapped and make sure that it is disposed of safely along with the packaging.

According to European Directives and equivalent national legislation outside of the European Union, the following are the responsibility of the owner or caretaker of the equipment - that the equipment operates correctly, that regular inspection and maintenance and service is made, so that it gives sufficient protection in regard to safety and health.

Introduction

This manual contains the necessary details and instructions for the installation, maintenance and service of the sliding door operator, Besam UniSlide.

The Besam UniSlide is designed for an overhead-concealed installation between two vertical jambs or surface applied. The header holds the drive and control units and supports the sliding doors, sidelites and transom above the operator, if required.

A Besam UniSlide operator ensures all-around safety. It can be combined with the full range of Besam safety units, such as presence and motion detector. It is easy to install for both new construction and retrofit application and can be adapted to a wide range of overhead concealed or surface applied installations.

Technical Specifications

Mains Power Supply	100 V AC -15% to 240 V AC +10% 50/60 Hz, 3 Amp **Note!** Switch with clearly marked off position, having a contact separation of at least 3 mm (1/8") in all poles, must be incorporated in the mains wiring.
Power Consumption	max. 250 W
Auxiliary Voltage	24 V DC, 0.64 Amp (640 mA)
Control Unit Fuse	6.3 Amp (6,3 AT)
Recommended Max. Door Weight	Bi-parting UniSlide-2 110 kg/leaf (220 lb /leaf) Single Slide UniSlide=R/L 200 kg (440 lb.)
Clear Opening	Bi-parting UniSlide-2: 900 – 2400 mm (35.5” – 94.5”) Single Slide UniSlide R/L: 900 – 2,400 mm (35.5” – 78.5”) [Optional up to 2800mm (110”)] Bi-parting
*Opening and Closing Speed	Bi-parting (UniSlide -2) variable up to approx. 1.4 m/s (4.5 ft/sec.)
*Hold Open Time	0-60 seconds
Ambient Temperature	-4°F to 122°F (-20°C to +50°C) -31°F to 122°F (-35°C to +50°C with silicone belt)
Relative Humidity (Non-condensing)	5%-85%

To be installed internally or with suitable weather protection externally.

* To be adjusted to comply with ANSI/BHMA A156.10.

Note that local codes may vary.

Note!
The glazing material of all doors shall comply with the requirements in the American National Standard Performance Specification and Methods of Test for Safety Glazing Material Used in Buildings, Z97.1-1975.

Design & Function Description

Design

The sliding door operator Besam UniSlide works electro-mechanically. The motor, control unit, transmission – and optional emergency unit and electromechanical locking device – are all assembled in a support beam with integrated cover. The motor and gearbox transmit movement to the door leaves by means of a tooth belt. The door leaf is attached to a door adapter/carriage wheel fitting and hangs on a sliding track. The guiding at the bottom is carried out by means of floor guides. (Full Break Out) or Side Panel Guides (Fixed Sidelights)

Function

Opening

When an opening impulse is received by the control unit, the motor starts and transmits movement to the door leaves, which move to open position.

Closing

The closing starts when the “opening impulse” and the “hold open time” has timed out.

Safety Functions Integrated in the Operator

To permit safe passage between closing doors, the doors immediately reverse to the open position if an obstruction is detected, then resume their interrupted movement at low speed to check whether the obstruction has disappeared or not. If an obstruction is detected between opening doors and surrounding walls or interior fittings, the doors immediately stop and then close after a time delay.

Microprocessor for Precise Control

The microprocessor has an integral self-monitoring device that detects most interference or faulty signals in door operation. If an input signal does not correspond to the preprogramming, the microprocessor automatically takes necessary measures to ensure a safe operation.

Emergency Escape

The Besam Unislide can be combined with an emergency unit that automatically opens or closes[1] the doors in the event of a power failure and can also be interfaced with the fire alarm or smoke detector.

Safety is further reinforced by incorporating a panic fitting. This enables the doors and/or sidelites to be swung outwards in an emergency by applying light pressure.

[1] Electronic emergency unit only.

Safety sensors

Safety sensors such as Besam UniScan must be installed per ANSI on Pedestrian Applications.

Models

Besam provides several layouts for the UniSlide sliding door system. Operators can be bi-parting or single slide (left or right handed), and sidelites may be installed fixed to the interior or hinged to break out in emergencies.

All UniSlide systems are ready for installation when delivered. The sidelites and active leaves are fully prepared and all hardware is installed. Operators are supplied with all mounting hardware, and rivnuts have been installed in the side jambs.

Before installing the UniSlide system, check to see that you have been supplied the correct equipment and that, all necessary tools and hardware are at hand. Also, check the installation site for any factors that might interfere with proper installation. (See Installation Examples section)

Before attempting to install the active door leaves, the lower edge must be removed from the header. The lower edge is connected to the telescopic track by five support plates on a Bi-part or three support plates on a Single Slide, each plate having two screws. The center plate for a Bi-part connects the left and right hand side lower edge together. Remove these screws to drop the lower edge.

Unislide OC S-R FSL	length height finish	overhead concealed,	standard,	single slide right hand, fixed sidelight
Unislide OC S-R FBO	length height finish	overhead concealed,	standard,	single slide right hand, full break out
Unislide OC S-L FSL	length height finish	overhead concealed,	standard,	single slide left hand, fixed sidelight
Unislide OC S-L FBO	length height finish	overhead concealed,	standard,	single slide left hand, full break out
Unislide OC S-B FSL	length height finish	overhead concealed,	standard,	bi-part, fixed sidelight
Unislide OC S-B FBO	length height finish	overhead concealed,	standard,	bi-part, full break out

Notes!

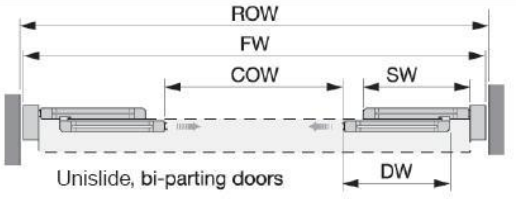
Length and height is specified in inches and fractions of an inch after the dash - based on the following list.
0/8" = – 00; 1/8" = – 18; 1/4" = – 14; 3/8" = – 38; 1/2" = – 12; 5/8" = – 58; 3/4" = – 75; 7/8" = – 78;

Finish is specified by the following list
CL = Clear Anodize; DB = Dark Bronze Anodize SP = Special (May consist of Wet Process, Powder Coat or Cladding)

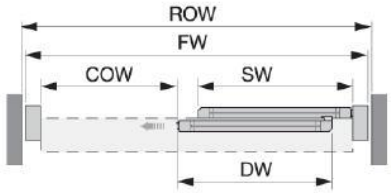
Bi-Part FBO Model No.	COW	FW	DW
Unislide OC S-B FBO 96.0	36"	96"	24-3/8"
Unislide OC S-B FBO 120.0	48"	120"	30-3/8"
Unislide OC S-B FBO 144.0	60"	144"	36-3/8"
Unislide OC S-B FBO 168.0	72"	168"	42-3/8"
Key:	(FW/2) - 12"	ROW - 1/2"	(FW/4)+3/8"

Single Slide FBO Model No.	COW	FW	DW
Unislide OC S-R FBO 84.0 Unislide OC S-L FBO 84.0	35-1/4"	84"	41-1/2"
Unislide OC S-R FBO 96.0 Unislide OC S-L FBO 96.0	41-1/4"	96"	47-1/2"
Unislide OC S-R FBO 102.0 Unislide OC S-L FBO 102.0	44-1/4"	102"	50-1/2"
Key:	(FW/2)-6-3/4"	ROW - 1/2"	(FW/2)-1/2"

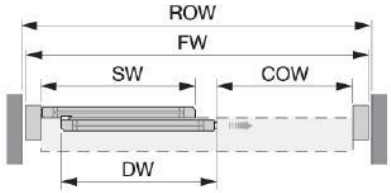
Note: Charts are for narrow stile doors with 1/4" glazing. Wider stiles or thicker glazing will reduce the COW dimension accordingly.



Unislide, bi-parting doors



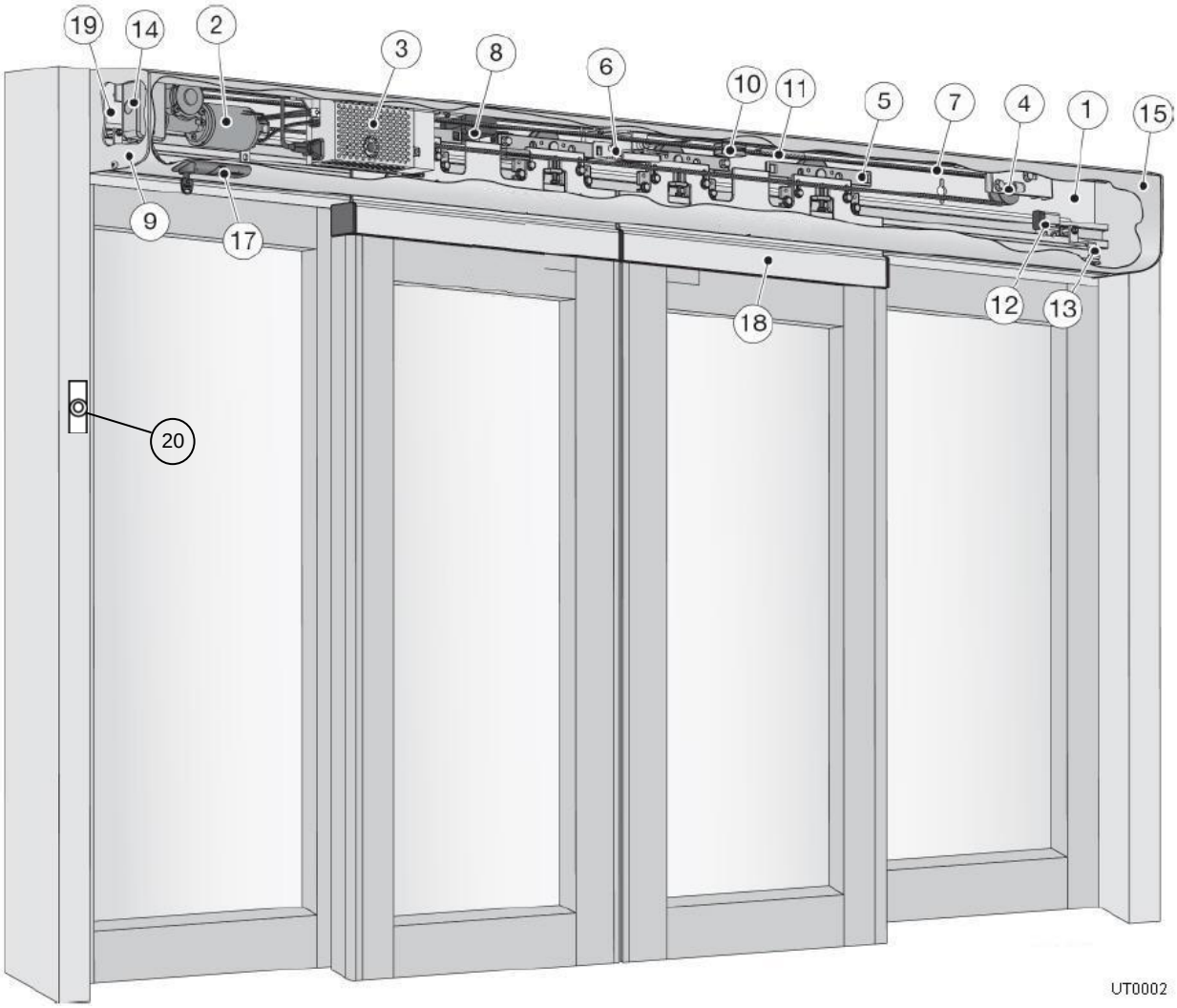
Unislide R, single-sliding door, right-opening



Unislide L, single-sliding door, left-opening

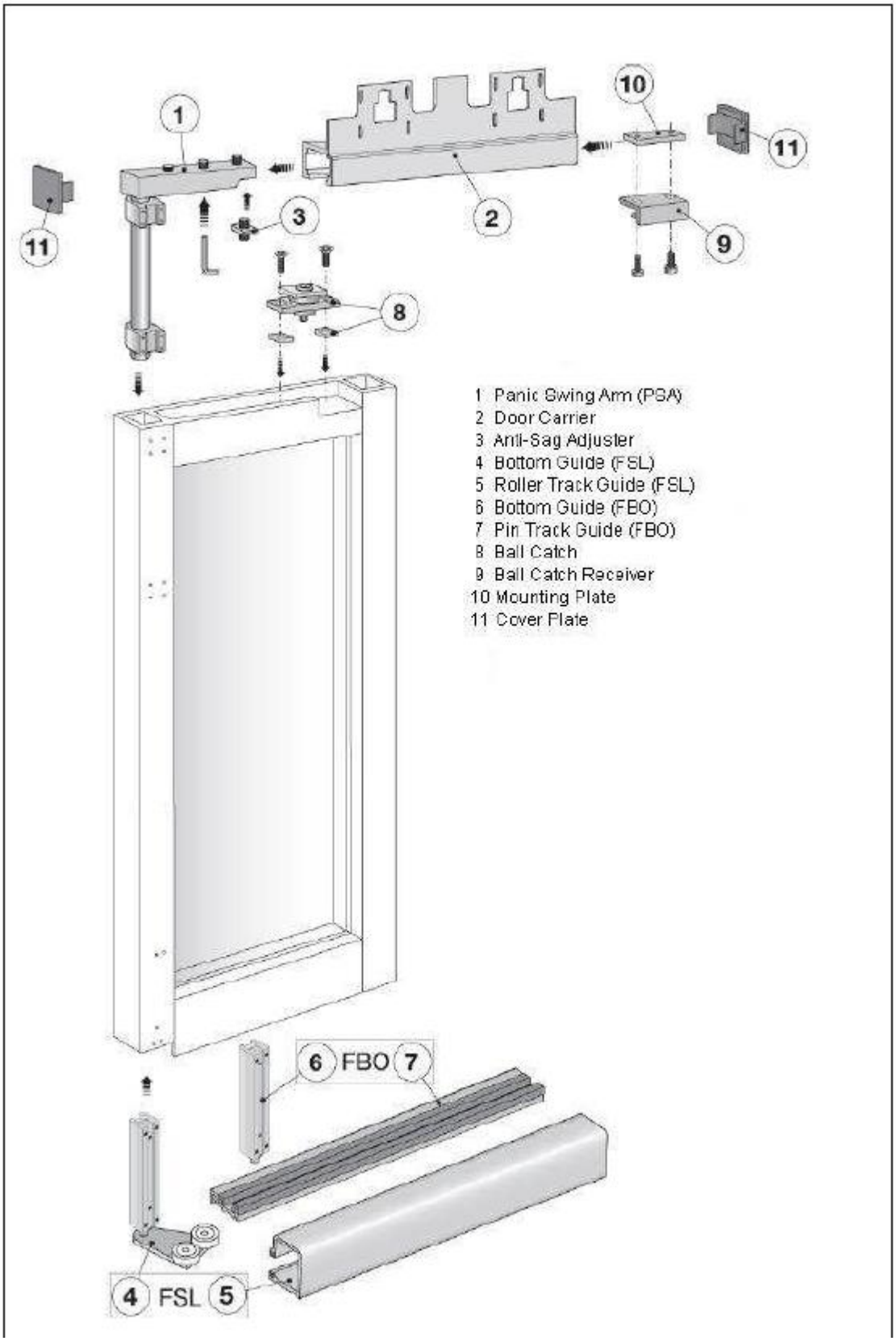
FW = Frame width
SW = Sidelite width
DW = Door leaf width
COW = Clear opening width/Net opening
ROW = Rough opening width

Part Identification & Options

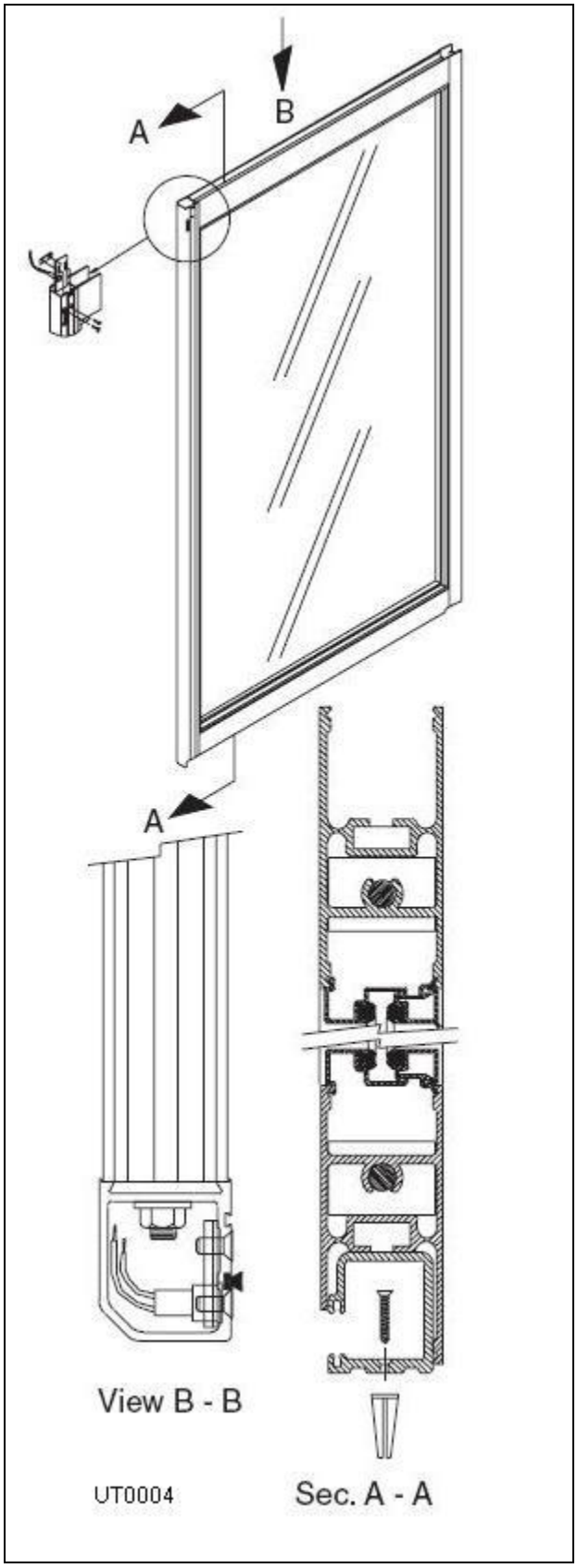


Part Id	Assembly Name	Part Id	Assembly Name
1	Support Beam	11	Belt Joining Clamp
2	Drive Unit	12	Door Stop
3	Control Unit	13	Cover Lock
4	Tension Wheel	14	Connection Box
5	Carriage Wheel Bracket	15	Cover
6	Locking Device (Option)	18	Door Carrier
7	Tooth Belt	19	Cable Inlet
8	Electronic Emergency Unit (Option)	20	Program Selector
9	End Plate		
10	Tooth Belt Fitting		

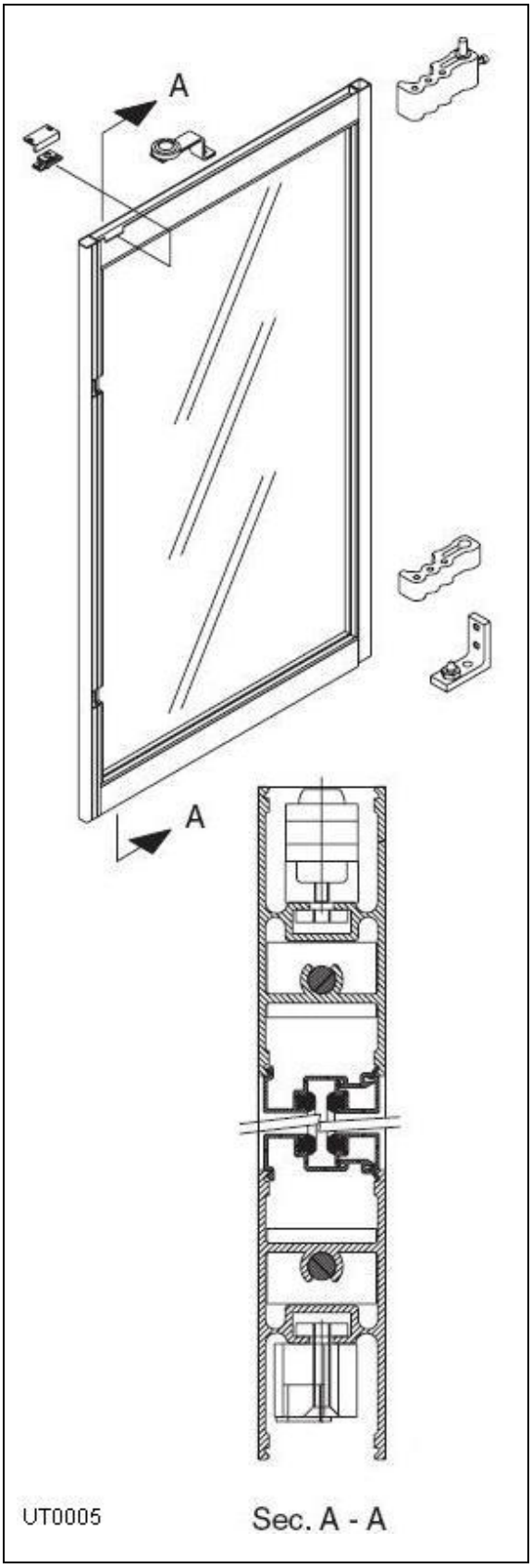
Active Leaf Panic Break Out System



Sidelight, Fixed



Sidelitet, Break Out



Bottom Guide Systems

Three basic guide systems are available:

- The standard pin guide
- (FBO, or Full Break
- Out) with guide track
- The roller guide (FSL, or
- Fixed sidelite) with fixed sidelite track
- The non-panic floor guide

The FBO pin guide has several options for guide tracks, including:

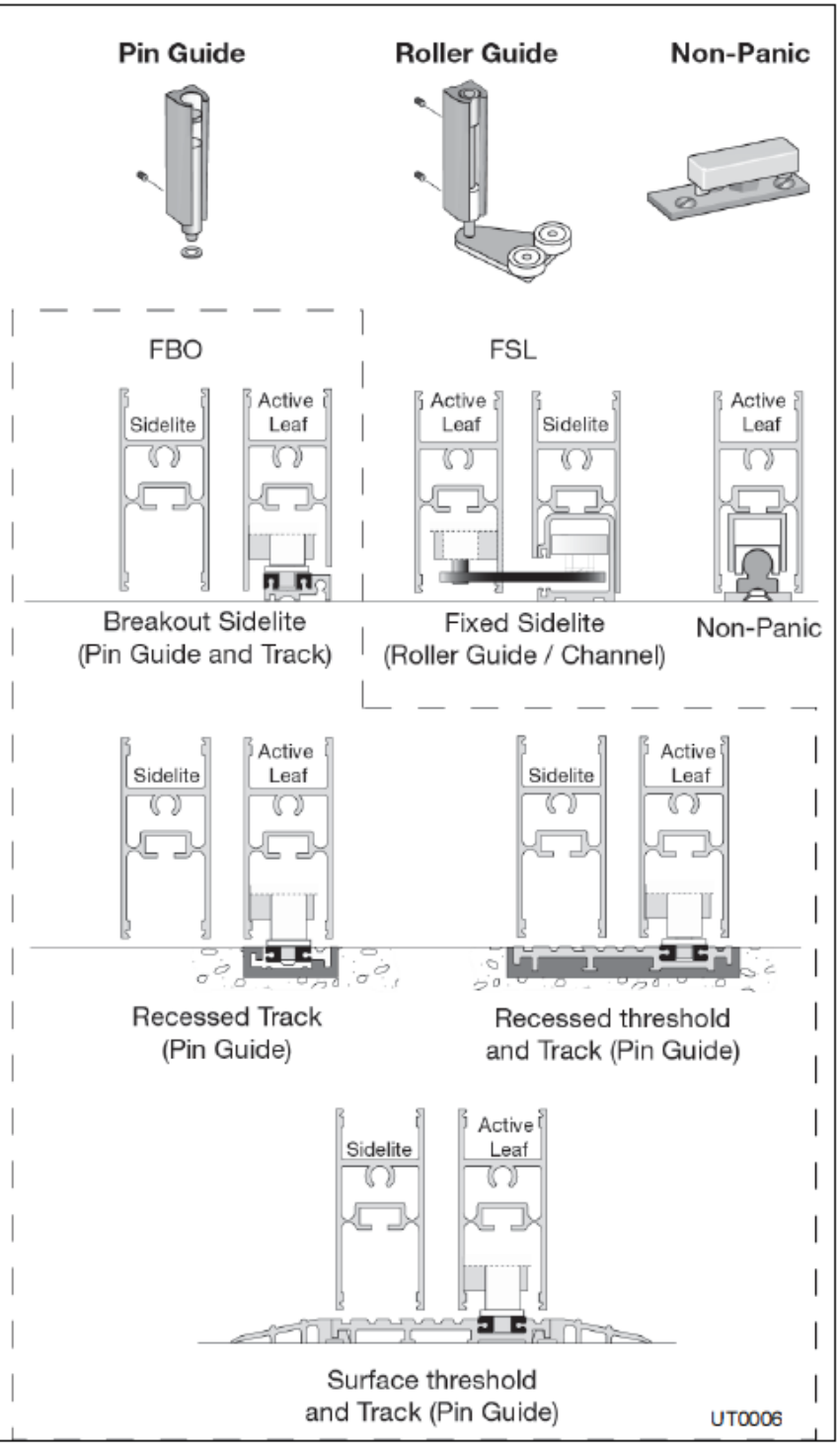
- Recessed track (flush with floor level)
- Recessed threshold and surface threshold

See pages 24-25, 28 and 30 for guide installation.

Pin Guide
P/N: 50-15-390

Roller Guide
P/N: 50-15-147

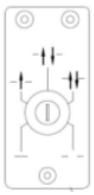
Non-Panic Floor Guide
P/N: 50-15-015



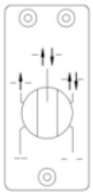
Various Options

Push button PB
Art. No. 600134
See installation drawing 656005

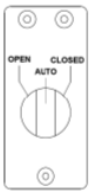
Program Selectors



5 Pos Switch (Key)
US15-1500-06

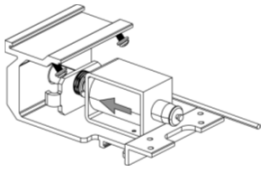


5 Pos Switch (Knob)
US15-1500-04

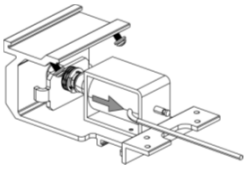


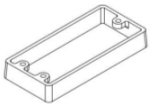
3 Pos Switch (Knob)
US15-1500-05

Electromechanical Lock LDP
Fail Safe (Locked with power)
Art. No. 550516

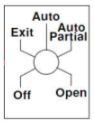


Electromechanical Lock LD
Fail Secure (Locked without power)
Art. No. 550494

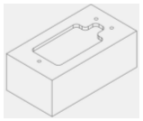




Spacer
US15-1500-03 Spacer Kit, Switch also part of Kit US15-1500-06 5 Pos Key Sw Kit



Vinyl Decal
US24-1500-51 Vinyl Decal, obtained with kits US15-1500-04 (5 Pos Knob Sw Kit) and US15-1500-06 (5 Pos Key Sw Kit)



Optional Remote Box
US15-1500-07 Remote Switch Box Kit, also contains US15-1500-02 PS Extension Kit (8ft Cable RJ45 & Cable Coupler)

PS Extension Kit
US15-1500-02 PS Extension Kit (8ft Cable RJ45 & Cable Coupler)

PS Accessory Board
US15-1500-01 PS Accessory Board Kit

Extension Unit EXU-3
Art. No. 655953

Pre-Installation Questions

This section will help you to determine the right configuration and preparation for your doors.

- Is this a Surface Applied or Concealed Package?
- Is this installation a bi-parting or single-slide?
- If a single slide, what is the handing, left or right?
- Does this installation include a transom? (Consult Factor).
- Where will power and signal wires enter the operator housing? (Left jamb on cover side.)
- Is this a Full Breakout (FBO), Fixed Sidelite (FSL).

General Tips / Safety Concerns

Caution!
Make sure that the power is off before installing, including battery backup if so equipped.

Caution!
Make sure that the wall is properly reinforced at the installation points.

Installation Overview

This is only a summary of the installation process. See the rest of this manual for detailed information.

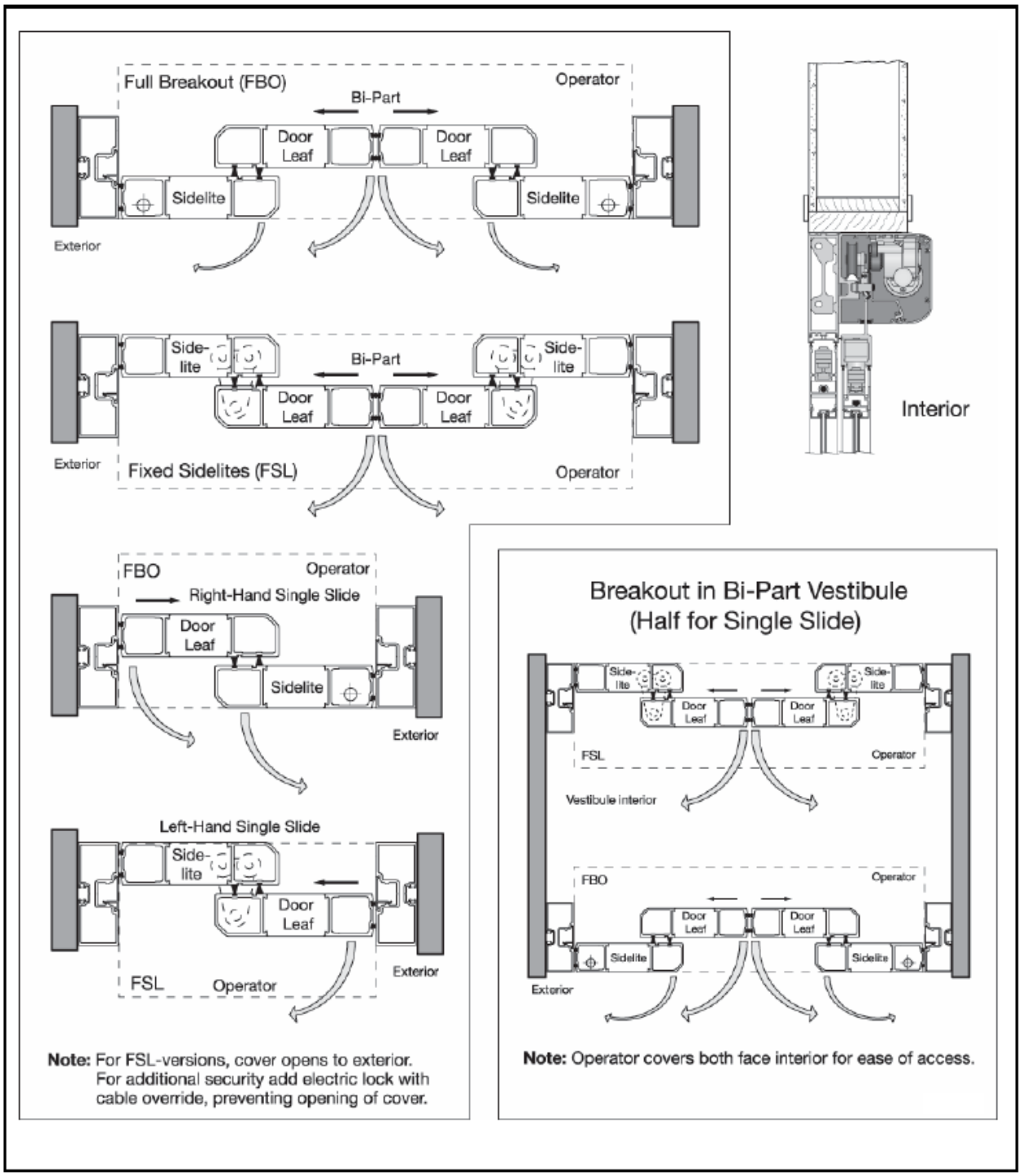
1. Start by determining the answers to the pre-installation questions.
2. First install header to jamb tubes if concealed, tilt into place, level and plumb, then secure to rough opening with shims and appropriate fasteners. See Surface Applied Section, for fastener recommendations. If surface applied mount operator to rough opening header and level.
3. Full Breakout: mount the pin or threshold guide track.

   Fixed Sidelite: mount the roller guide track.

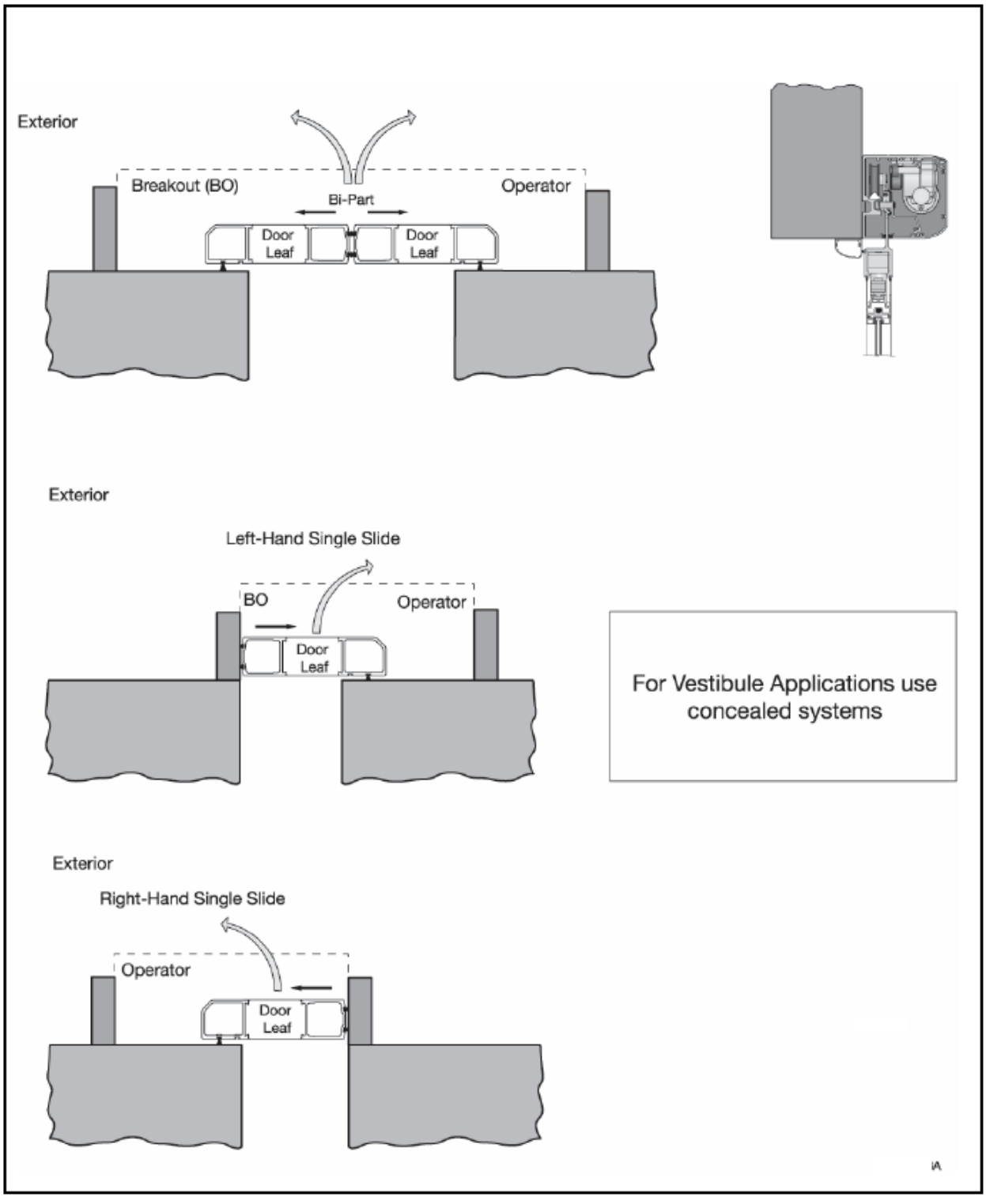
   Non-Panic: mount the non-panic floor guide(s).
4. Mount the sidelites.
5. Mount the moving door panels.
6. Adjust all door panels for alignment and smooth manual movement. Adjust all breakouts to comply with applicable building codes.
7. Connect tooth belt from drive unit to active door panels.
8. Complete all electrical connections to other operators or optional equipment.
9. Adjust the control unit for optimal and safe performance, in accordance with current ANSI/BHMA A156.10 specifications.
10. Adjust sensor systems for optimal and safe performance in accordance with current ANSI/BHMA A156.10 specifications.
11. Apply safety signage to the door(s).
12. Train facility manager in operation.
13. Explain to the facility manager the daily safety check described in the owner’s manual, and leave a copy of the owner’s manual with the facility manager.

Installation Examples

Concealed



Surface Applied



Installation Requirements

Fastening Requirements

Base door / wall material	Minimum anchor / bolt requirement*
Steel	5 mm (3/16")*
Aluminium	6 mm (1/4")*
Reinforced concrete	min. 50 mm (2") from the underside
Wood	50 mm (2")
Brick wall	Expansion-shell bolt, min. (1/4" x 3 1/2"), min. 50 mm (2") from the underside

* Besam minimum recommended requirements. Building Codes may give different specifications

* Thinner wall profiles must be reinforced with rivnuts

Test Equipment

- Stopwatch
- Force gauge (50 lb. force range)
- Multimeter

Tools required

- Set of metric box and wrenches
- Spirit level
- Tape rule
- Power drill and set of drill bits, Unibit, Hammer drill
- Metric hex key set 6, 5, 4 mm and 2.5 mm
- Screw driver Torx T10, T20
- Flat blade screw driver (small/medium/large)
- Screw driver for adjustment of potentiometers
- #2 Phillips screw driver
- Center punch
- Wire stripper
- Plumb bob
- Silicone sealant
- Pencil
- 10mm Nut Driver and wrench

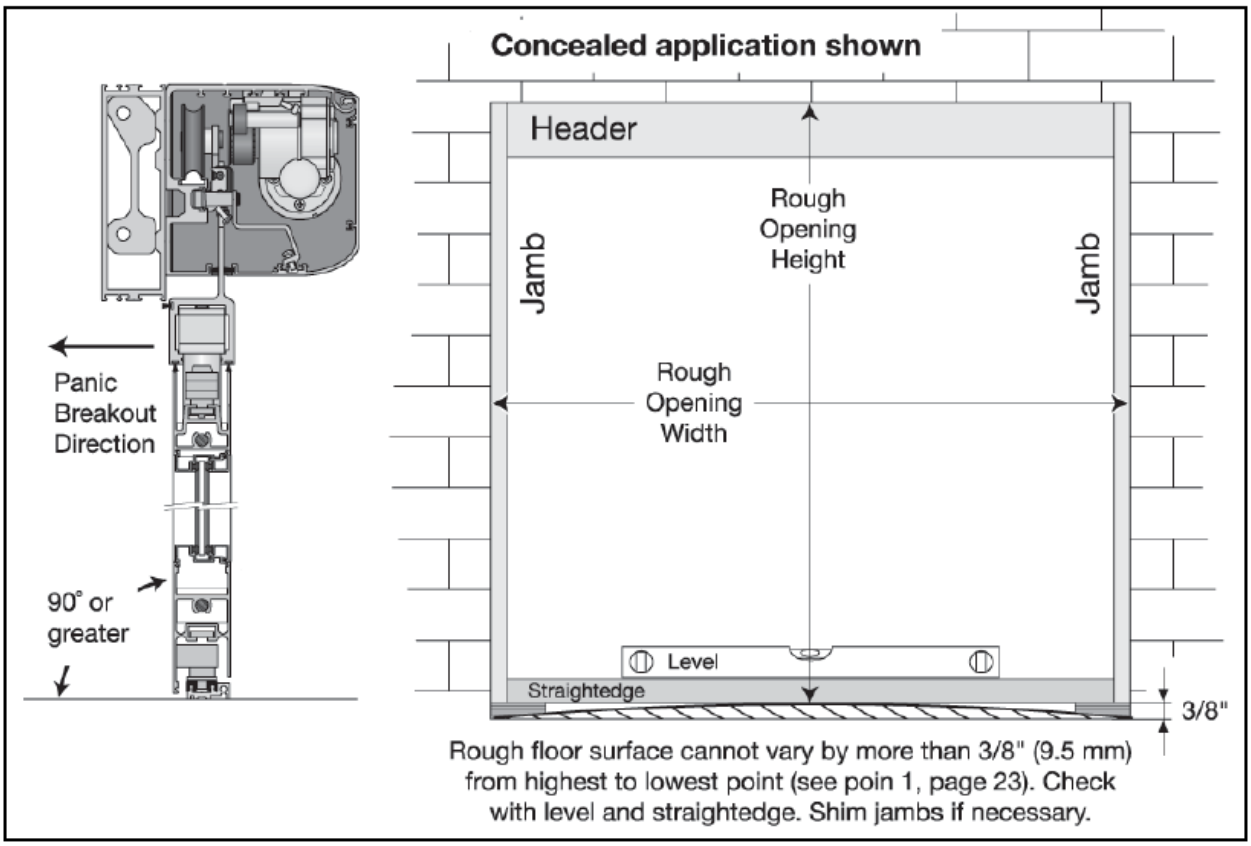
Additional mounting hardware (not supplied - see fastening requirements above)

Site Inspection

The rough opening must be plumb and square and the finished floor must not vary by more than 3/8" from the highest to the lowest point. If necessary, have the floor leveled before attempting to install the sliding door system.

It is important to check the floor level within the path of the doors in break out mode. The doors must not encounter any obstruction when broken out. The grade of the floor in the direction of break out should ideally be 90° or greater, measuring from the highest point of the floor (see below).

For concealed the rough opening width should be 1/2" wider than the overall frame width of the sliding door system, and the rough opening height should be 1/4" higher than the overall frame height. For standard installations, the overall frame height will be 89-3/4", higher with transoms.



For Surface Applied Standard Applications all narrow frame with 1/4” glass, both Single Slide and Bi-parts, the overall frame height is 89 3/4”.

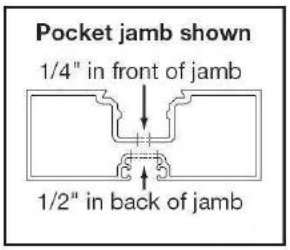
For Bi-parts the overall frame width is equal to twice the rough opening plus 9 1/2”. [FW= 2(ROW) + 9 1/2”].

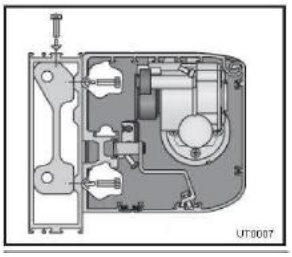
For Single Slides the overall frame width is equal to twice the rough opening plus 6 1/4”. [FW= 2(ROW) + 6 1/4”]

Concealed Mechanical Installation

Note!
Surface applied similar process, however fasten through operator header to building header. Fasten jambs.

Checking – Marking Out – Fastening



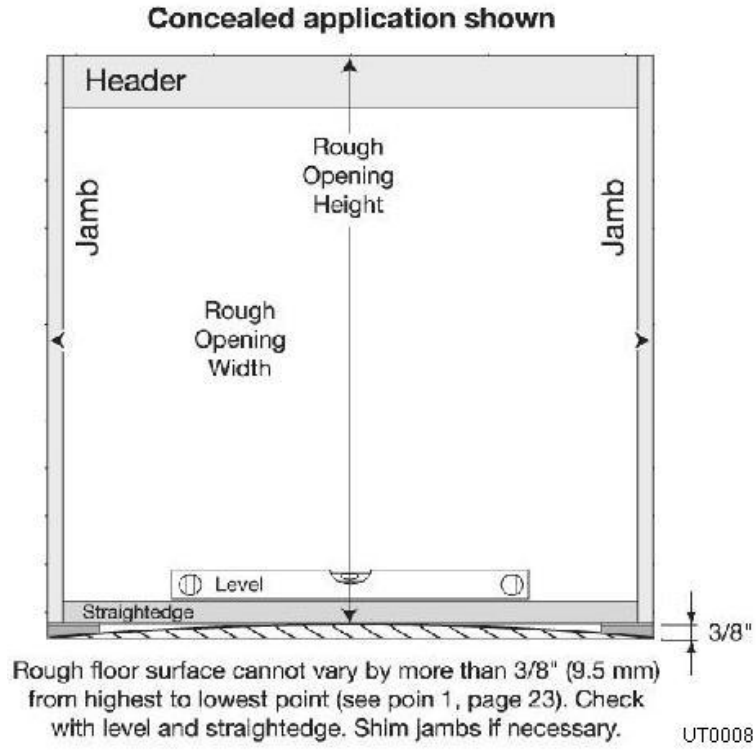


1. Mark the center of the rough opening width and the center of the header. (The center marks will be aligned during installation.)
2. Drill holes at the top, middle and bottom of the jambs for securing to the door opening. (Adjust for site conditions that may require the holes to be at a certain height.)
3. Drill 1/4" holes through the face or pocket of the jamb and out the back. Then drill the back holes to a minimum of 1/2" to allow for later adjustment – see illustration.
4. Mount jambs to header using three screws per jamb. (Besam jambs are factory prepared for header installation.)

Leveling Header and Jambs

Note!
The header and jambs must be square and level to ensure a proper installation!

1. Inspect the rough door opening, measuring from side to side and using a level, to find areas where shims may be needed. Look for high spots in the floor, if there is a slight rise in the floor at any point then the bottom of the jambs should be set level with the highest point of the floor, with the header leveled across the opening.
2. Tilt header/jamb assembly up into rough opening in wall, being careful to pull power through access hole in jamb
3. Start with one jamb. Loosely install the middle fastener, using a level on the outside of the frame to plumb the jamb. Confirm that the header is level across the opening. Repeat for the opposing jamb, loosely installing first the middle fastener, then the top and bottom. Return to the first jamb and install the remaining top and bottom fasteners loosely. See next page graphic



4. .Starting with the top screws on both jambs, equally shim behind both jambs, leaving equal gaps and centering the package in the door opening. Tighten the top fasteners. Use your level on the inside of one jamb to determine shim requirements for the middle fastener, then shim and tighten. Repeat for the bottom fastener. Shim and tighten the middle and bottom fasteners on the other jamb in the same way. Check for jamb bowing with a straightedge and correct if present.
5. Recheck the jambs, using a level on the outside and inside of each jamb, and the header. If the header and jambs are truly square, the top jamb-to-jamb and bottom jamb-to-jamb measurement should be identical. (If necessary, strings can be taped from corner to corner on the outside of the jambs. The strings should cross in the center of the door opening, slightly touching each other. If there is a gap between the strings or the strings are pushing against each other, than the package is twisted and needs adjustment before proceeding.)

Fitting the Floor Guide Track

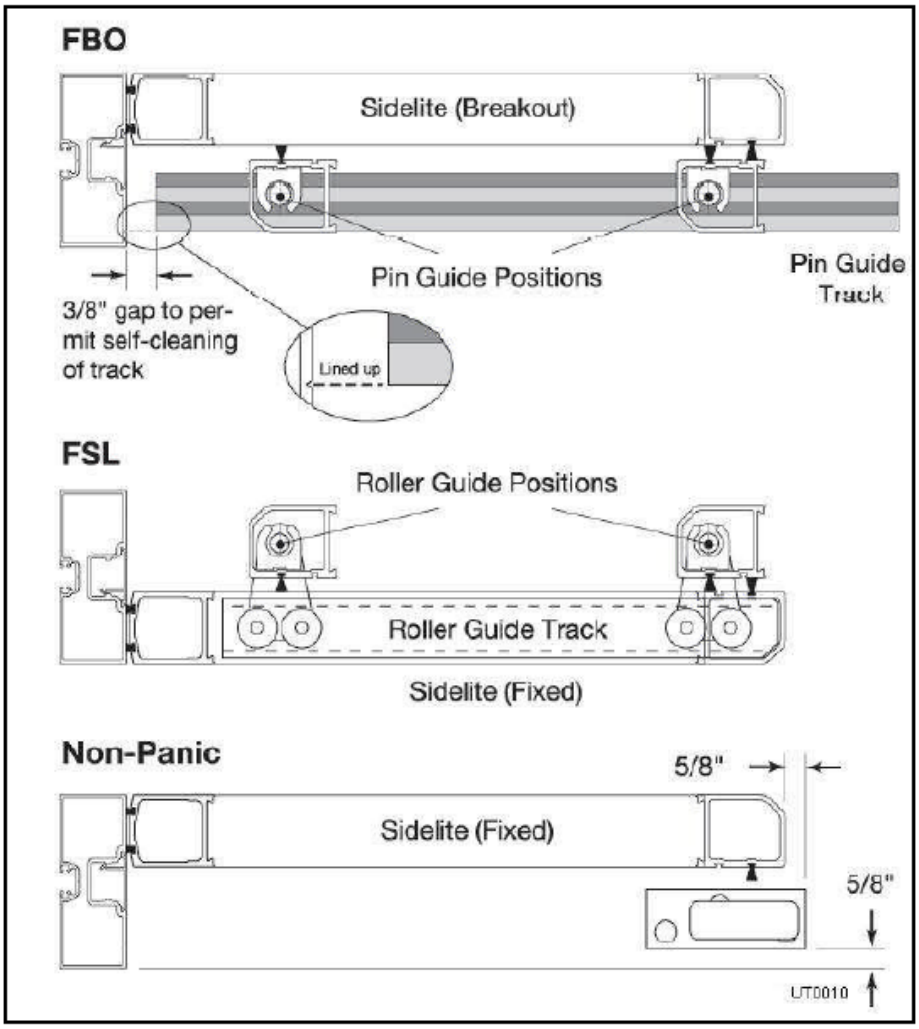
Note!
It is important that the floor guide track is fixed absolutely level to prevent derailment of the floor guide foot when the door is swung out. Installation steps for floor mounted guide tracks, recess and surfaced mounted pin guide tracks and G channel tracks for fixed sidelite applications.

For the following steps, reference the graphic on the next page.

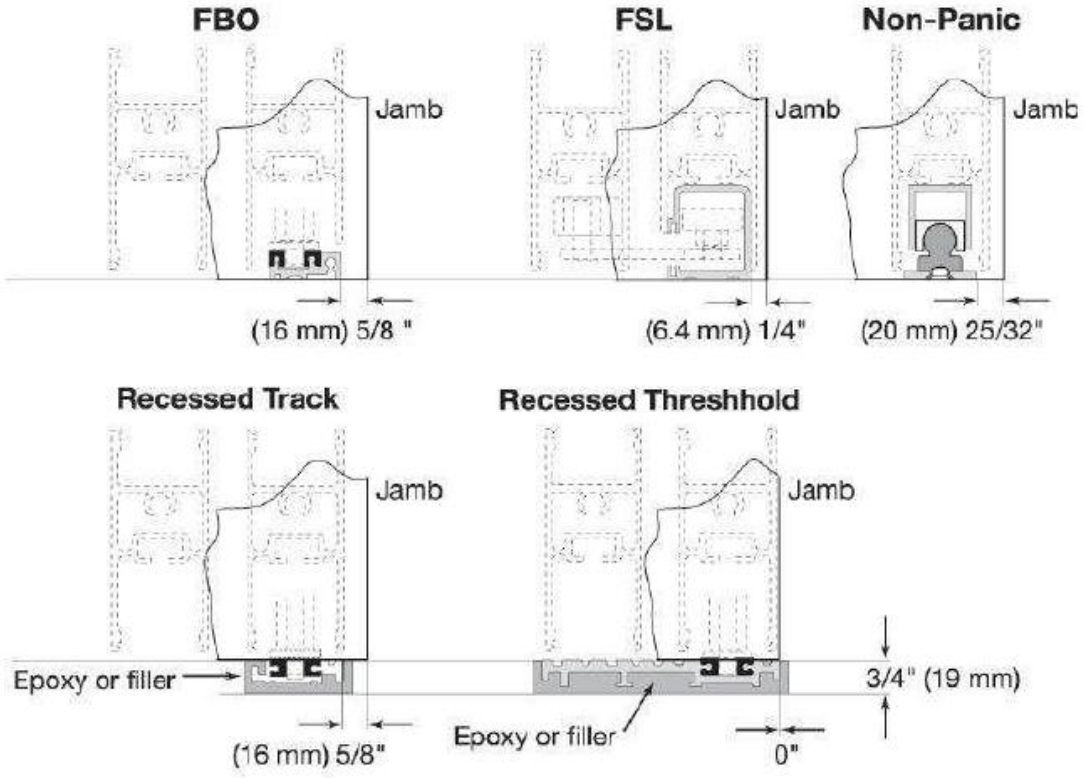
1. Inspect the floor for conditions such as high and low spots that can cause the track to twist and rock. High spots (such as small rocks) should be removed; shim the track assembly at the low spots.
2. Using a chalk line, snap a reference line from jamb to jamb on the side where the track is being installed.
3. Using the measurements provided lay the track in place. While standing on the track and keeping it in line with the chalk line, mark the holes to be drilled.
4. Secure the track to the floor with concrete anchors and screws, leveling it with shims from end to end. If possible, a sealant should be used under the track assembly. To check for proper leveling, measure from the top of the track to the bottom of the header, checking for the same result at each fastener.

Note!
All screws must be countersunk and fully tightened to avoid interference with pivot travel.

(See graphics on next 2 pages)

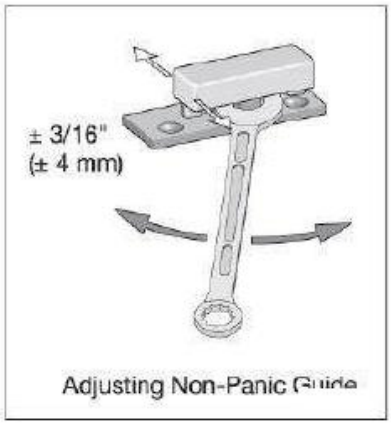


Fitting the Floor Guide Track Cont.

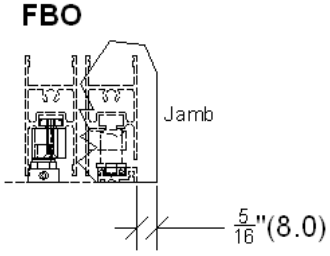


Measurements are based on Besam 4.5" (114 mm) width jambs.
All but recessed guides are level with jamb bottoms.

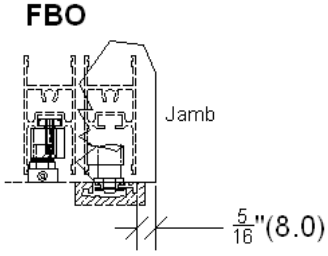
UT0011



Adjusting Non-Panic Guide



Surface Track (Pin Guide)

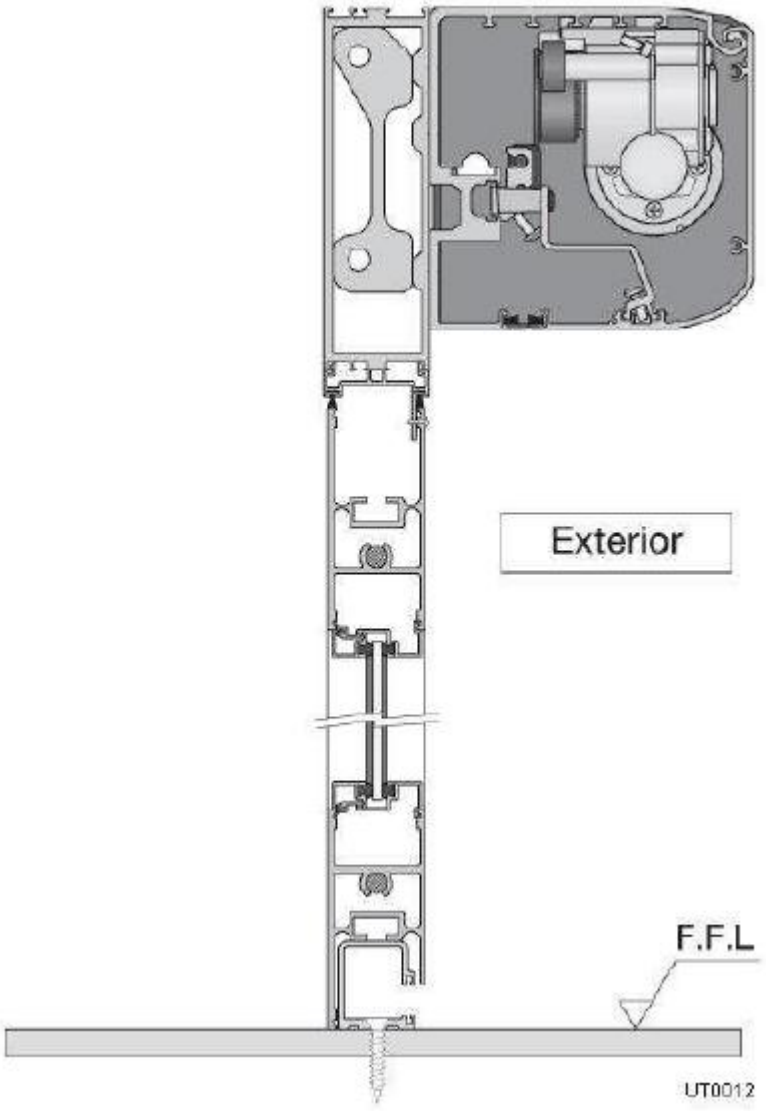


Recessed Track

Fixed Sidelite Installation Procedure

Note:
Remove any glass stop or packing material from the sidelight before installation.

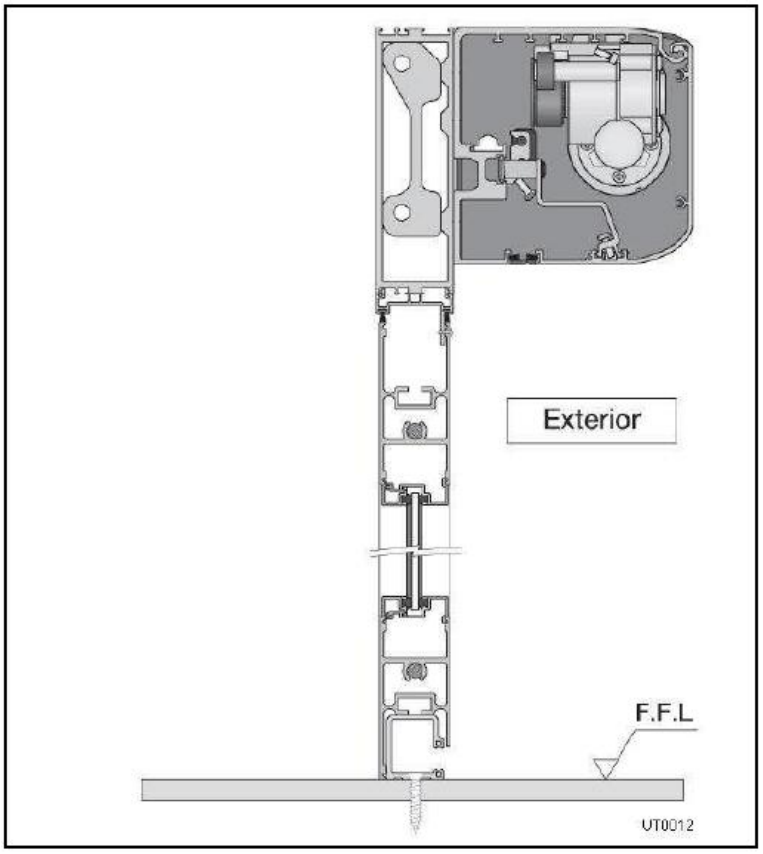
1. End load the sidelite panel on the roller track guide, and top lower edge extrusion. Slide the panel fully to jamb and fasten with screw through door panel to top lower edge extrusion where active panel hides screw. Run break out pigtails up through hole in plank to header.
2. For bi-part, install 2nd sidelite as above.



Full Breakout Sidelite Installation Procedure

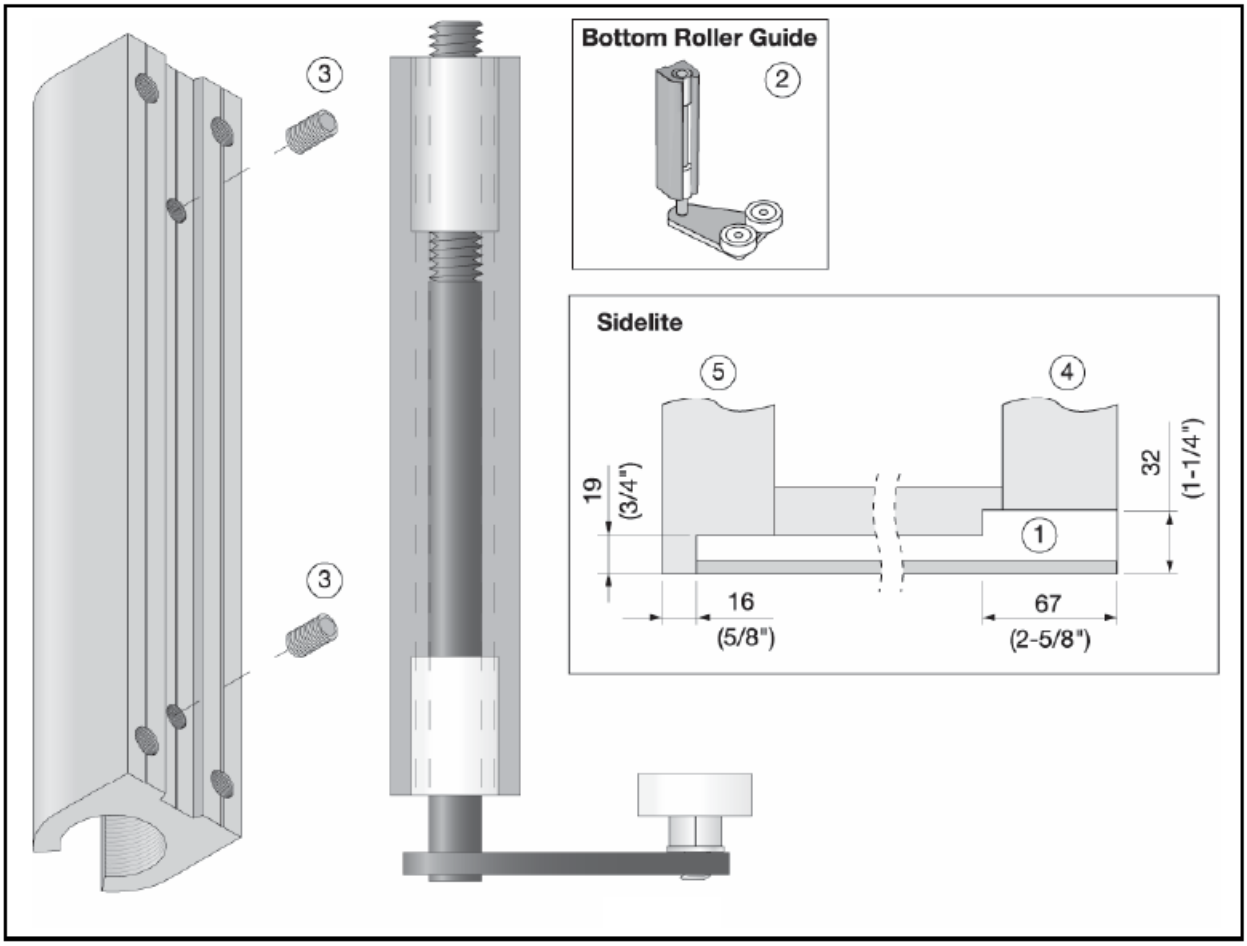
Note!
Remove any glass stop or packing material from the sidelight before installation.

1. Install and level any thresholds (surface or recessed) before installing any of the door panels.
2. Check that jamb mounted bottom pivot is installed and tight.
3. If the pivot base does not rest fully on the floor, support the pivot base with shims.
4. Place the bearing washer on the pivot base. Set the sidelite on the pivot and tilt it into place. There should be no more than 1/8" between the bottom of the header and the top of the sidelite. To adjust, raise or lower the bottom pivot by loosening the set screw at the side of the floor portion of the pivot and turn the shaft clockwise to lower the sidelite and counter clockwise to raise the sidelite; then retighten the set screw. With the sidelite on the bottom pivot, carefully push down the top spring-loaded pivot pin and line it up with its receiving hole in the header portion of the pivot until the shaft pops into place.
5. Check all clearances and adjust the break out latch.
6. When all sidelite panels are installed, tighten top pivot security set screw to prevent depressing pivot pin.



Setting the Active Leaf Roller Guide Pivot (Fixed Sidelite)

1. Temporarily loosen and remove the door stops. With the door positioned so that the carriage wheels are riding on the plastic track in the header beam, adjust the carriage wheels to a height that will raise the door slightly off the finished floor.
2. Slide the door to the open position until the roller guide lines up with the cut out in the roller track, and insert the bottom guide. (If the roller guide does not line up properly with the cut out, loosen the top set screw, which is accessible when the panel is broken out. Adjust the roller guide until it will slide into the cut out.) Slide the door closed.
3. Proceed to adjust the door as instructed on page 31. With the door(s) adjusted properly, position the roller guide so that it has clearance to slide open and closed without any drag on the top or bottom of the track assembly. Retighten top setscrew. Reposition the doorstops and adjust accordingly to avoid finger traps at trailing edge (see page 33).
4. The bottom set screw on the roller guide can be adjusted to create drag on the door pivot when the door is broken out.

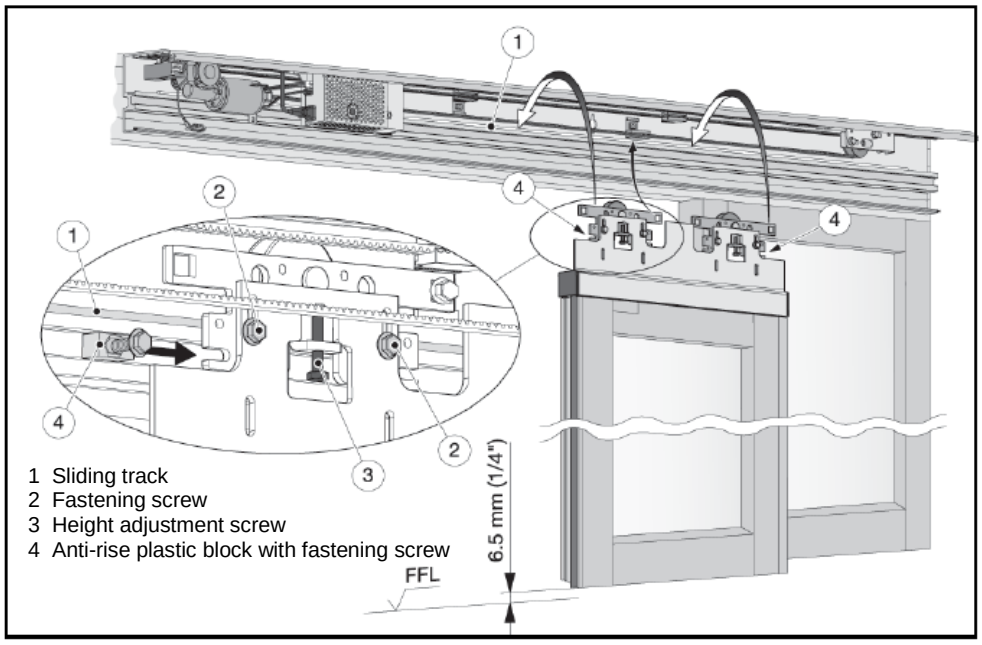


Hanging the Active Door Leaves (Full Break Out)

1. Ensure that the sliding track in the support beam is clean.
2. Raise the door leaf and place it carefully over the floor guide, ensuring the pin washer is in place.
3. Lean the door leaves against the frame and lift the wheel fittings over the sliding track, lifting the drive belt over the carrier.
4. Loosen the fastening screws and let door settle to desired position.
5. 5Adjust screw until the door leaf is about 6.5 mm (1/4") above the floor.
6. Adjustment range ±8 mm (± 5/16").
7. Tighten the fastening screws and thereafter the adjustment screw to secure the assembly.
8. Remove the screws from the anti-rise plastic blocks and apply them from the other (ridge) side of the blocks. Place the blocks with screws in the groove in the support beam and slide them in the slotted fastening holes in the carriage wheel brackets (one in each bracket) and screw the blocks tight.

Note!

- Anti-rise blocks have a ridge side which when facing the fastening bolt ensure the proper clearance.
- Belt drive brackets are factory installed to door.
- Both carriage wheel brackets should be adjusted in the same way.

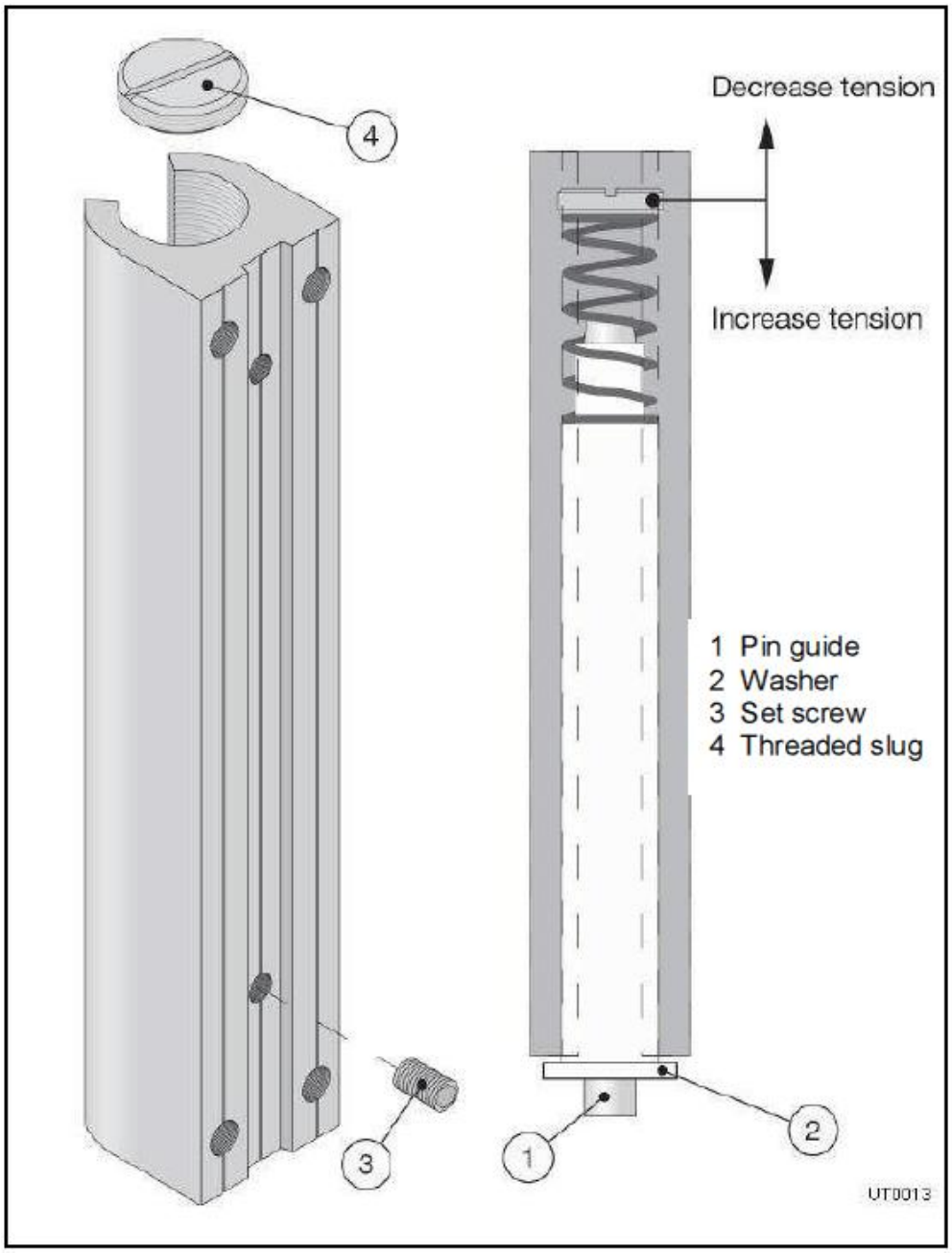


1 Sliding track
2 Fastening screw
3 Height adjustment screw
4 Anti-rise plastic block with fastening screw

Setting the Active Leaf Pin Guide Pivot (Full Break Out)

Spring tension has been factory adjusted; It may be changed to ensure that pin stays engaged in track. Readjustment requires removing the pivot from the door and adjusting the threaded slug.

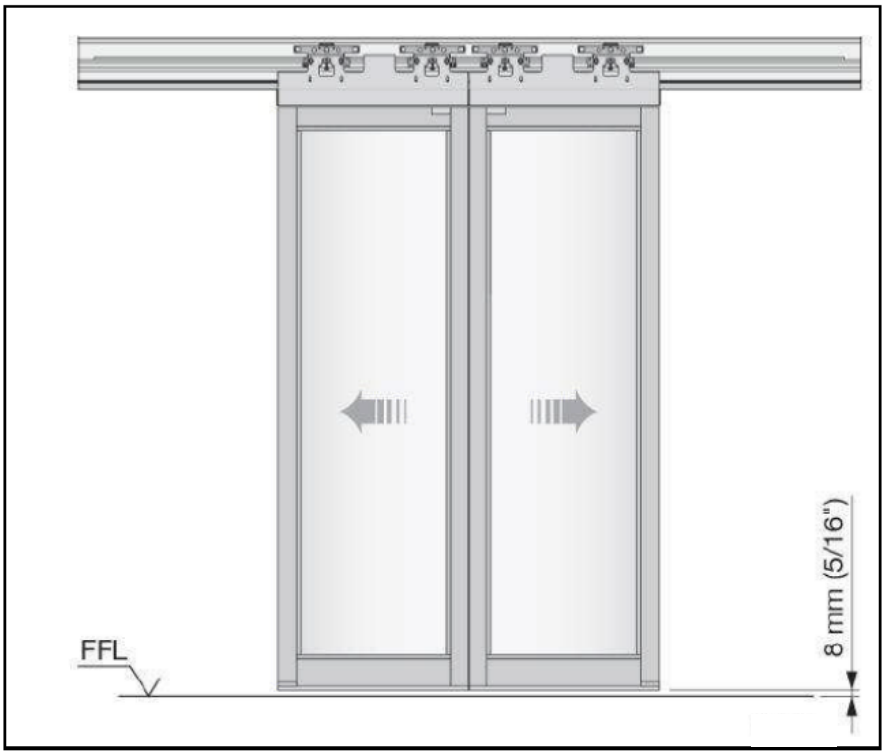
For additional security: the pin guide may be locked at its highest point of travel along the floor track, using the setscrew.



Height Adjustment

The height adjustment is to be carried out with the vertical adjustment screw. (Reference PSA Adjustment)

- It is very important that the door leaf hangs vertically after the adjustment and that bi-parting doors are parallel in the closed position (no gap at the top or bottom).
- The guide pin roller (frame doors) should not touch the upper edge of the door guide track or become easily disengaged.
- If a weather brush is used on the lower edge of the door leaf, it should only lightly touch the floor.
- Check that the slow moving door leaf is parallel with the fixed panel, and that the fast moving leaf is parallel with the slow moving leaf.



FFL = Finished Floor Level

Note!
Once the door height is adjusted, verify that doors do not exceed a force of 30 pounds applied in either direction to prevent the door from closing.

Attachment of Tooth Belt Fittings

Please note that Unislides are viewed from the cover side.

Bi-parting Operators

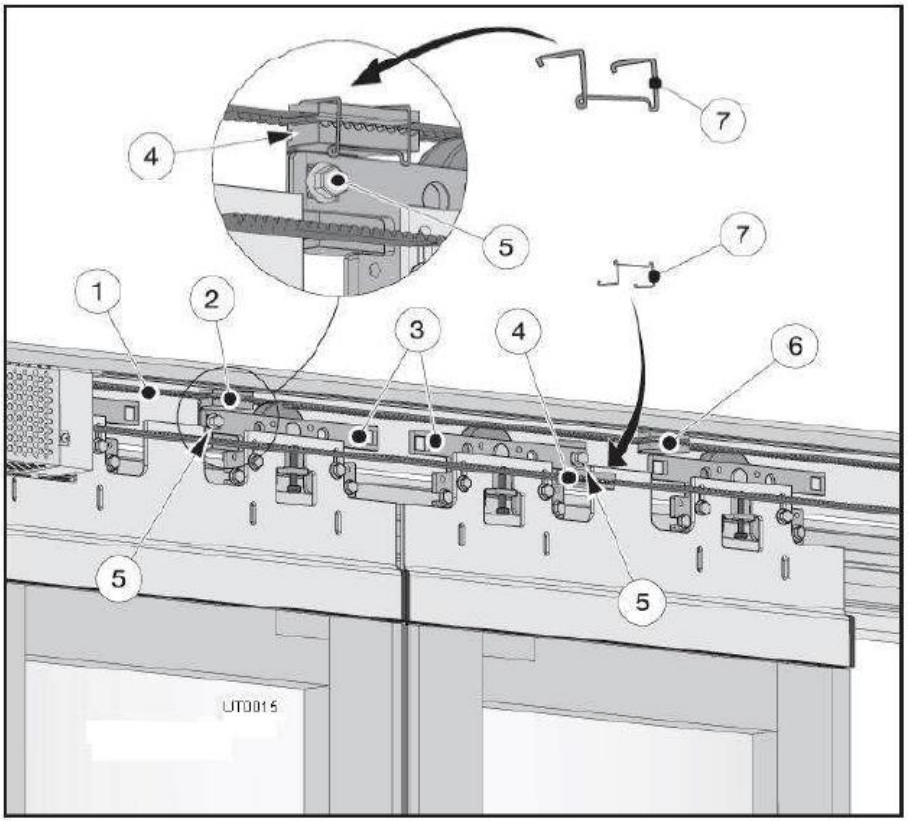
1. Put doors in fully closed position.
2. Pull belt joining clamp to left door panel and center it over the (nose) carriage wheel bracket.
3. Insert tooth belt into left door carrier (upper) belt fitting.
4. Insert tooth belt into right door carrier (lower) belt fitting.
5. Check door panels for proper centering.

Single-sliding operators

1. Put door in fully open position.
2. Pull belt joining clamp next to carrier belt fitting (away from nose of door)
3. Insert tooth belt into belt fitting (L.H. upper, R.H. lower)
4. Check door panel for fully closed position.

Note!
Control function selector setting #1—ON—(clockwise). Actual belt movement is counter clockwise.

1 Tooth belt
2 Tooth belt fitting, left door leaf
3 Carriage wheel bracket
4 Tooth belt fitting, right door leaf
5 Flanged screw
6 Belt joining clamp
7 Belt securing clip (optional)



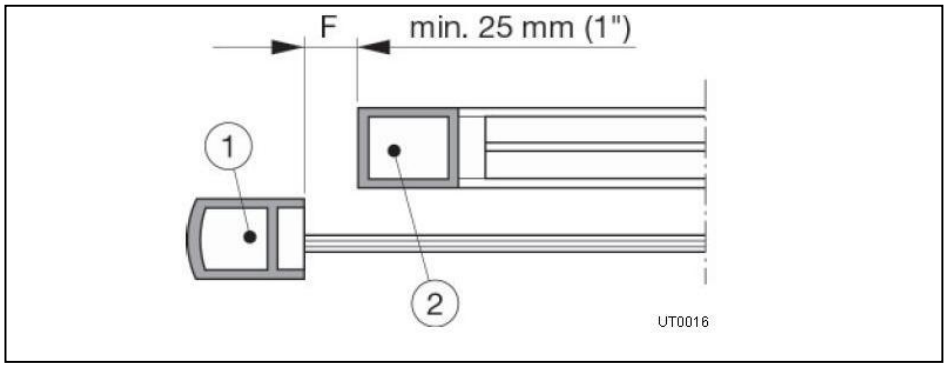
Adjustment of the Leading Edge (to Avoid Finger Traps)

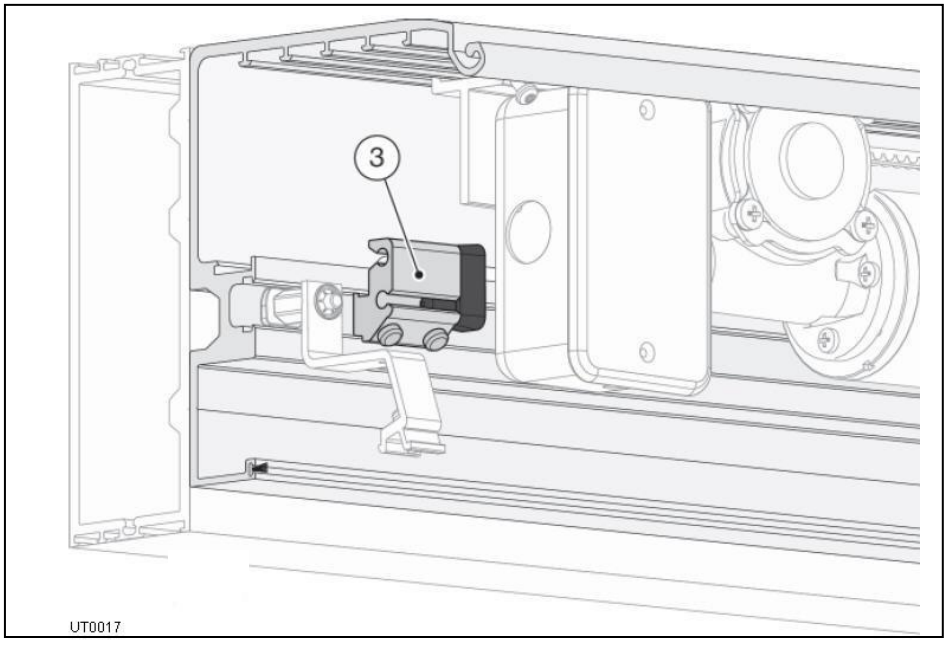
1. Push the doors by hand to the desired opening.

Note!
For frame doors made by others, the lead edge of the door leaf must not pass the vertical rail of the sidelite leaf, but must stop at least 25 mm (1") before to avoid finger traps.

2. Loosen the doorstops, move them in against the carriage wheel brackets and tighten firmly.
3. Check that the required opening and finger protection (if any) are achieved.

Frame doors by others





F = Safety distance (finger protection)

1 Door leaf

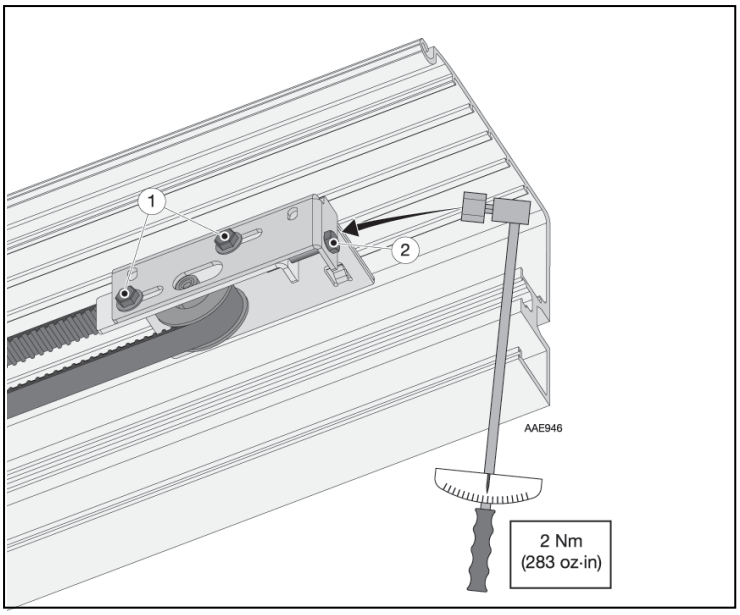
2 Vertical rail of the sidelite leaf

3 Door stop

Checking and Adjusting the Belt Tension

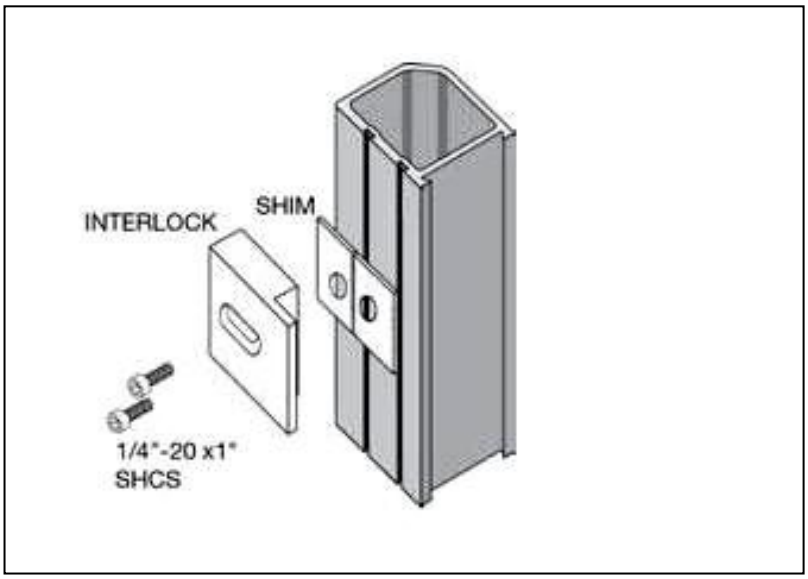
The belt tension is factory-adjusted and readjustment is normally not needed. If despite this the belt tension has to be corrected, proceed in the following way:

1. Loosen the two fixing screws (1).
2. Tighten the belt adjustment screw (2) to a torque of 2 Nm ± 0,25 Nm (283 oz·in ± 35 oz in)
3. Tighten the two fixing screws (1).



Interlocks for FBO Units

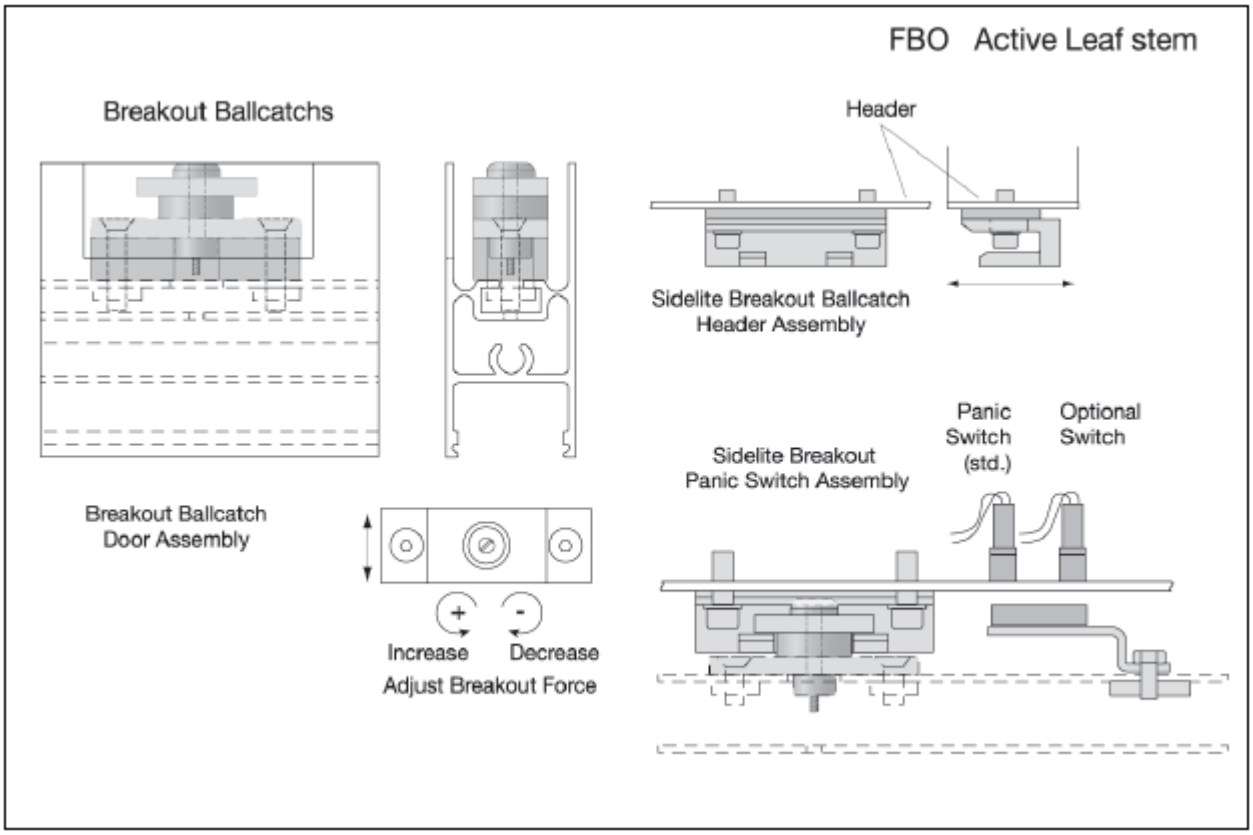
Slide the active leaf(s) into the closed position and check to see that the interlock hardware engages the sidelite cutouts. Adjust (shim if necessary) for proper alignment.



Adjusting Ball Catch

1. Check that the sidelite door assembly engages properly with the sidelite header assembly. Both can be repositioned slightly if necessary.
2. Adjust the tension on the ball catch by turning the adjustment screw, as required by local egress codes. Tension is not to exceed 50 lbs. break out force; see ANSI/BHMA standards at back of manual. Installer must verify that without power, break-out force does not exceed 50 lbs.

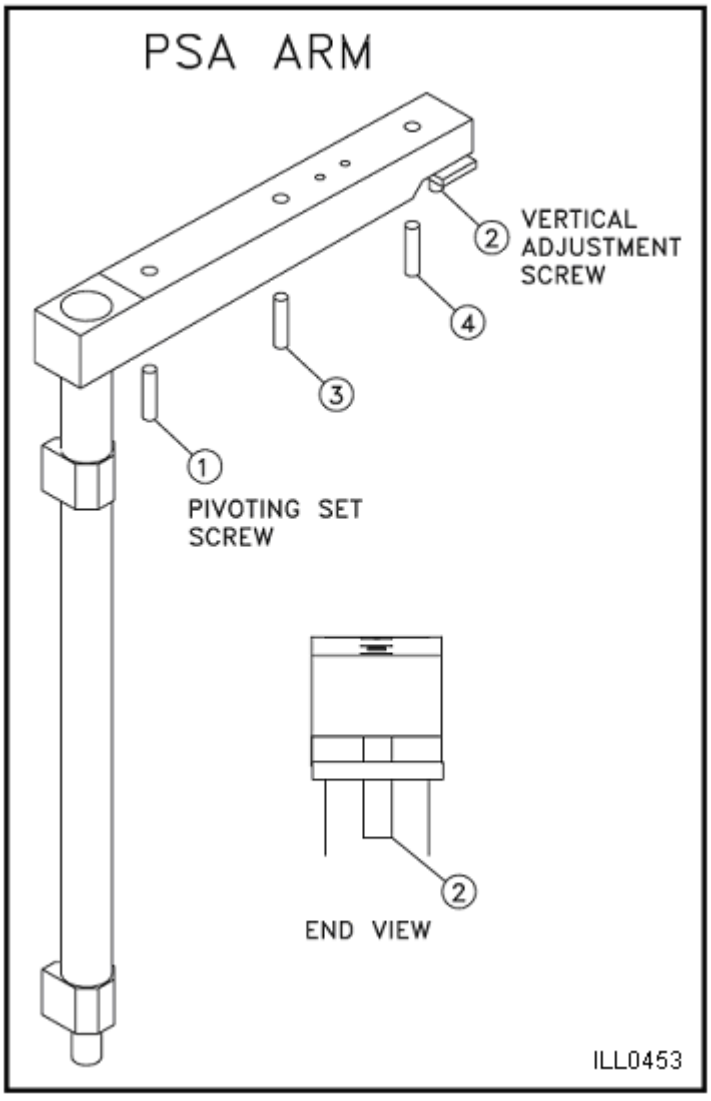
A magnetic panic break out switch (bi-parting units have two) shuts the operator off when the sidelite is opened. A ceramic magnet is located in the upper horizontal sidelite rail. The switch(s) are located over the magnet in the lower edge of the support plank. The magnet location can be field adjusted by loosening the bracket mounting screw. See Electrical section to wire the break out switches (terminals 10 and 13).



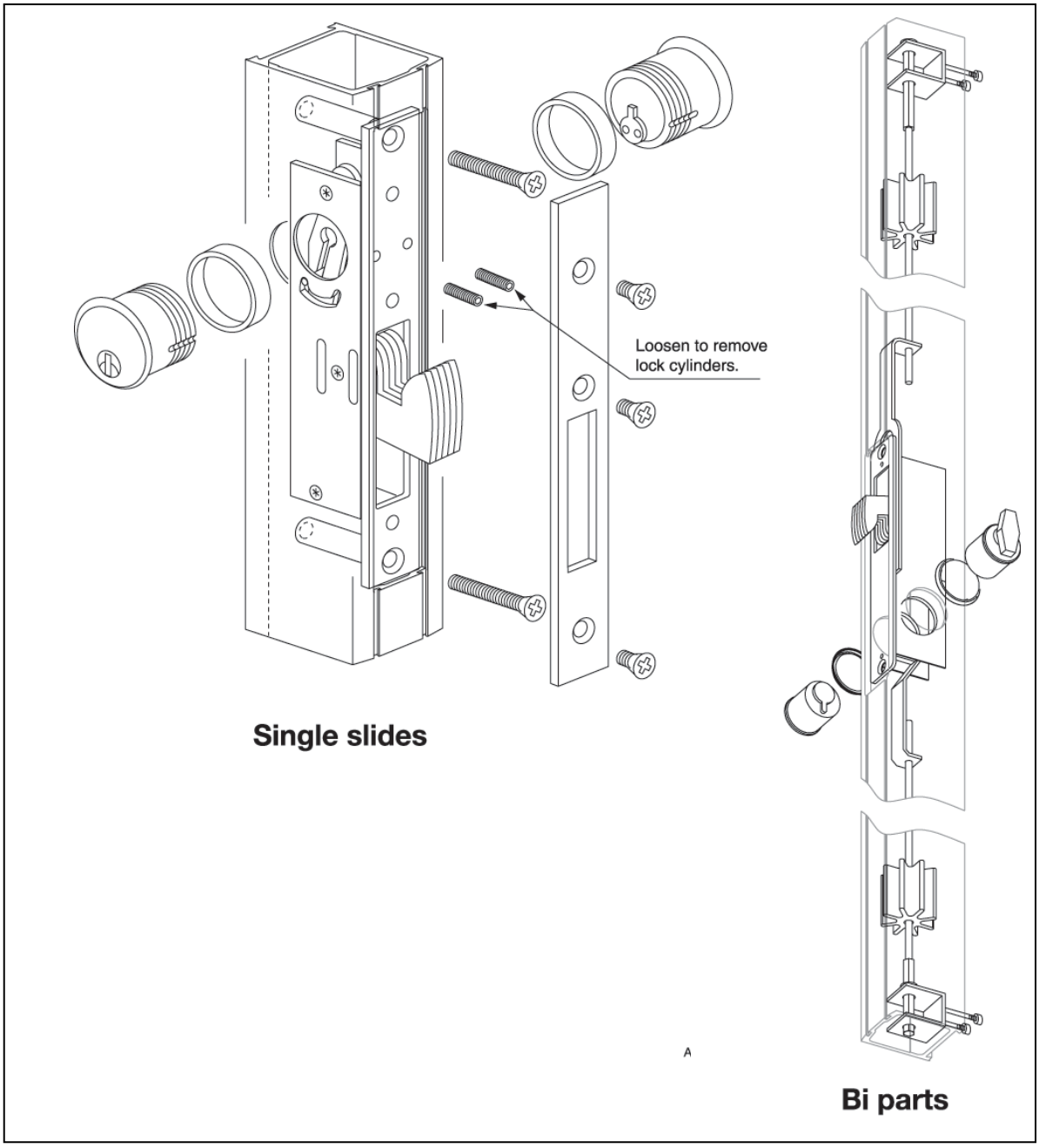
Note!
FSL fixed Sidelites utilize a strip magnet on top rail of the active panel and a reed switch in the sidelite.

PSA Arm Adjustment

1. Open door and lock down #1 screw (pivoting set screw) of PSA arm, and loosen setscrews #3 and #4.
2. Adjust #2 screw (PSA vertical adjustment screw) on PSA arm to lift the door and ball catch lead edge into alignment with ball catch receiver. (Note, if the glass has not previously been installed, you will need to recheck alignment once the glass is in place and readjust as necessary.)
3. Once the adjustment is complete, tighten remaining setscrews #3 and #4 on PSA arm and close the door engaging the ball catch.
4. Confirm that the lead edge of the door and lead edge of the carriers are still flush.



Manual Lock System Adjustment and Re-Keying



Installing/Removing the Cover

For single-sliding operators two pre-mounted rotary locks are hooked into a groove in each end of the cover and tightened. Bi-parting operators may have a third lock in the center. When the cover is closed the rotary locks fit into a groove in the support beam. By turning the locks clockwise the cover is secured.

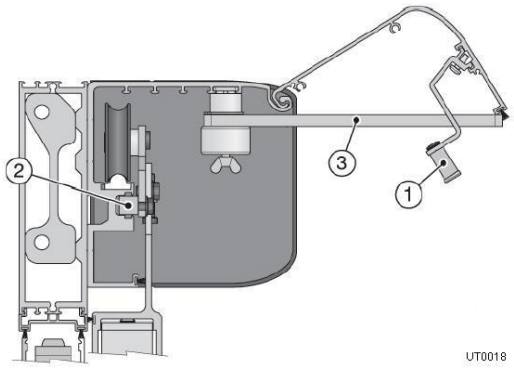
Installing

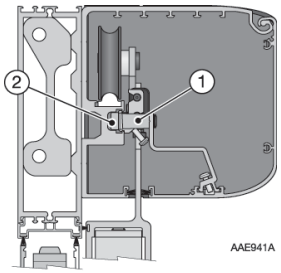
1. The rotary locks are made rectangular with guide grooves to secure the horizontal position. Make sure they are turned “horizontally”.
2. Fit the upper part of the cover into the hinge and place the support tool to keep the cover open.

   a) Connect the cable coming from the program selector (if installed in the cover) to the modular socket in the control unit.

   b) If UniScan is installed, do not connect it to the control unit CU until “Start-Up” has been carried out (see also separate installation manual for UniScan IAA015).
3. Remove the support tool and push the lower part of the cover in against the support beam.
4. Make sure the rotary locks fit into the groove. Fasten the cover by inserting a 10 mm standard wrench from the underside and turn the rotary locks clockwise (approx. 90°). Test to ensure engaged and locked.

Removing is made in Reversed Order





Note!
On exterior covers using electrical locks, use manual unlocking device MOLD

1 Rotary lock
2 Groove in the support beam
3 Support tool

Transom

For Transom Installation, reference Transom Installation Manual US23-0961-01 shipped with this package.

Electrical Connections

Note!
During any work with the electrical connections the

- **main power** and the

- electronic emergency unit must be disconnected.

A suitable Lockout is required for OSHA regulation compliance and highly recommended for personal safety.

Note!
Permanent wiring shall be employed as required by local codes.

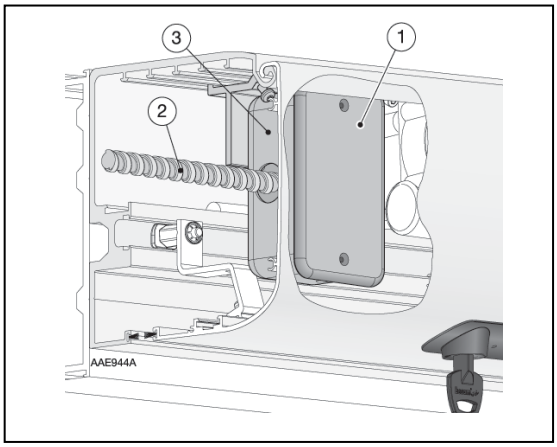
Installation

1. Open the cover
2. Install extension unit EXU-1 or EXU-3 if required
3. Install and connect the main cables (see below).
4. Install, but do not connect activation units, presence sensors and accessories.
5. Carry out “Start-Up”

Note!
Basic adjustments and function selections can be carried out with the potentiometers and the function selector on the control unit

Main Connection

1. Remove the cover plate from the workbox.
2. Connect the incoming main power through the strain relief
   - White wire to white wire
   - Black wire to black wire
   - Green wire to green wire* (see footnote)
3. Replace the cover plate

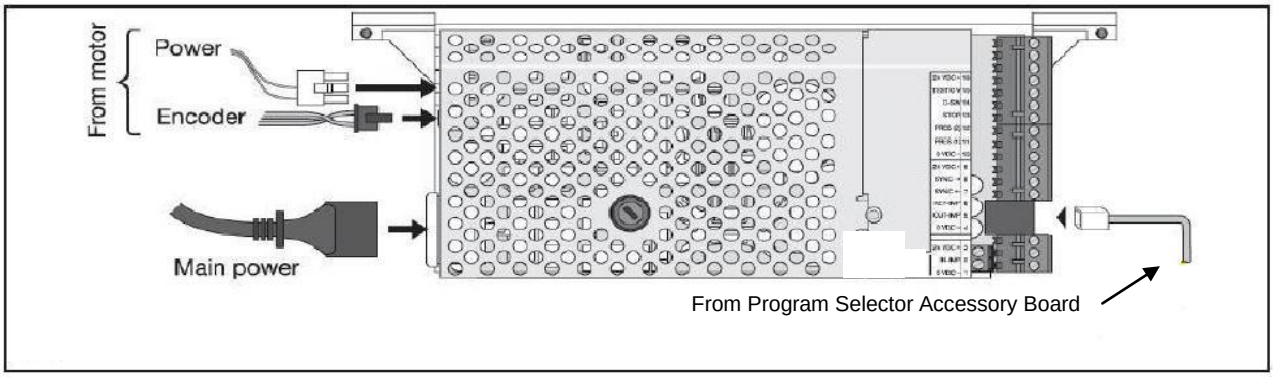


1 Cover plate
2 Mains power
3 Work box

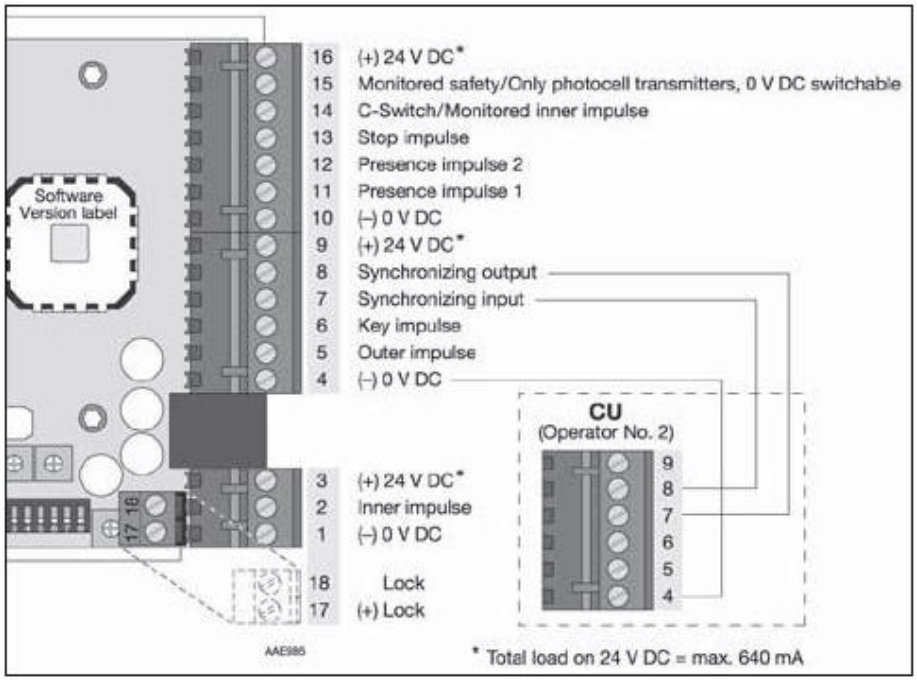
*** Installer must properly ground door package! Improper grounding can lead to risk of personal injury.**

Control Unit Assemblies

Standard Units Connection Contacts

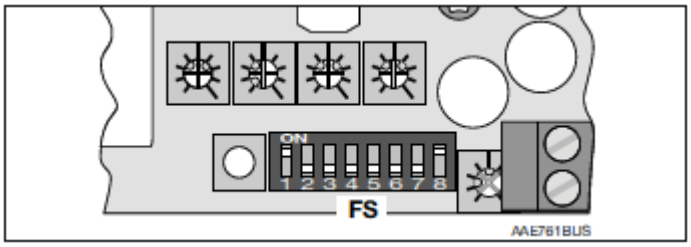


Terminal Block for Connection Accessories



Note! To adjust the functions below the lid must be removed

FS Function Selector, FS, Used to Select Special Operating Functions



Function Selector FS	OFF	ON
1 Belt travel direction on opening facing cover side	CW	CCW
2 Lock configuration (locked with/without power)	With	Without
3 Lock release 1	No	Yes
4 Presence detection type (normally open/closed) [2]	NO	NC
5 Emergency unit type 3	Electric.	Mech.
6 Emergency unit monitoring	No	Yes
7 Inner imp. monitoring & No. of monit. pres. imp.	No & 0	Yes & 1
8 Hold force on closed door 4 (0 N / 45 N)	No	Yes

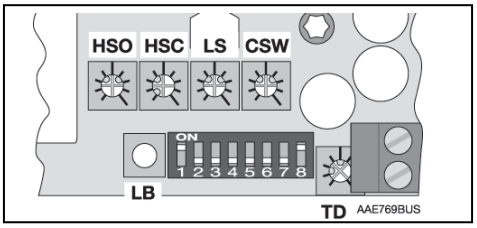
[1] If "Lock release" is active, the door will apply force in the closing direction when the lock is unlocked. This is made to prevent a lock from being stuck in locked position when opening.

[2] Applies in common for the terminals 11, 12 and 13 on the control unit CU.

[3] Choose between "Electrical" (Battery) or "Mechanical" (Rubber band). If no emergency unit is installed the parameter should be set to "Electrical" (default setting). When convenience battery is used in the function selector FS-5 must be set to ON (Mechanical).

[4] Used to keep the door in closed position.

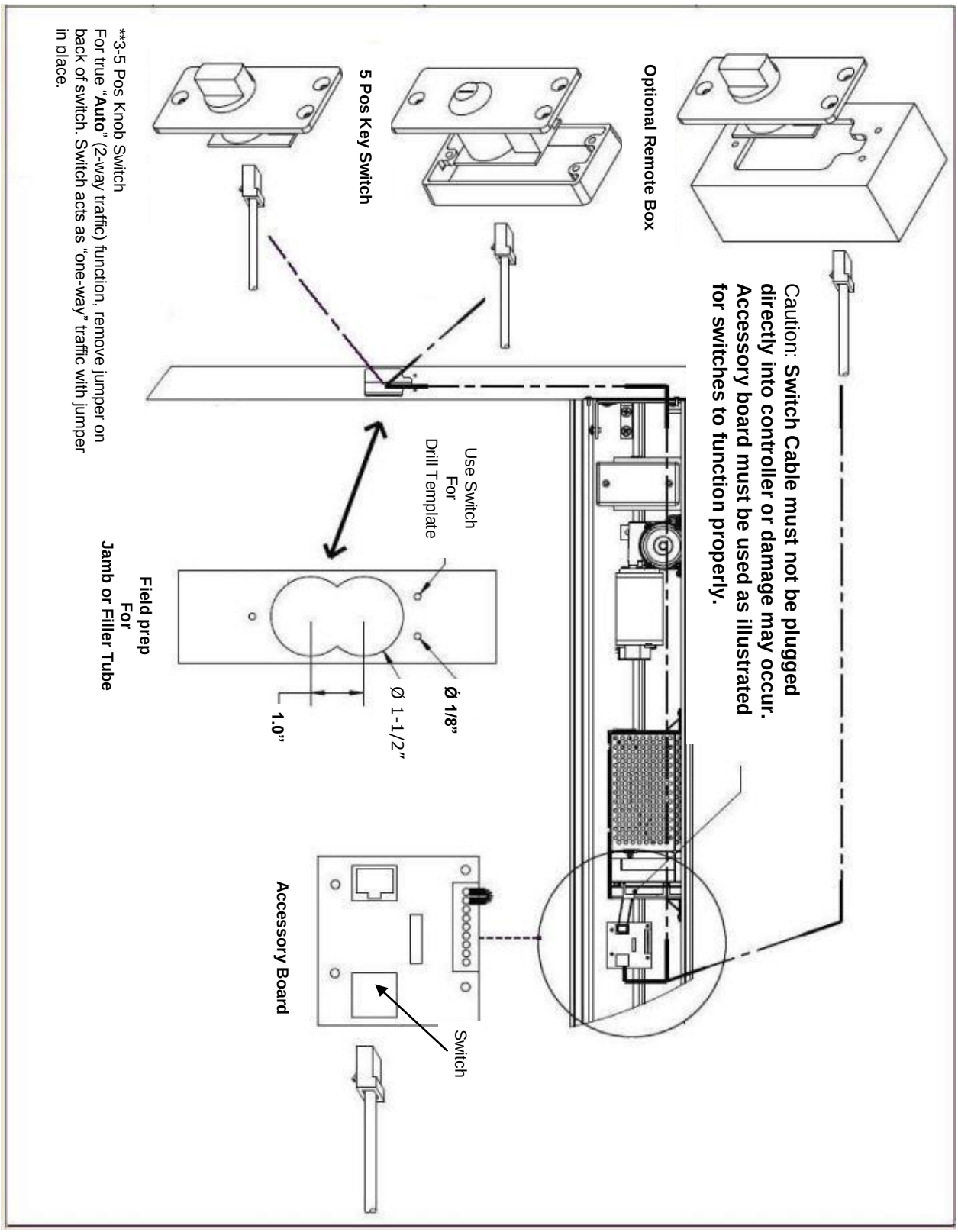
Potentiometers and Learn Button



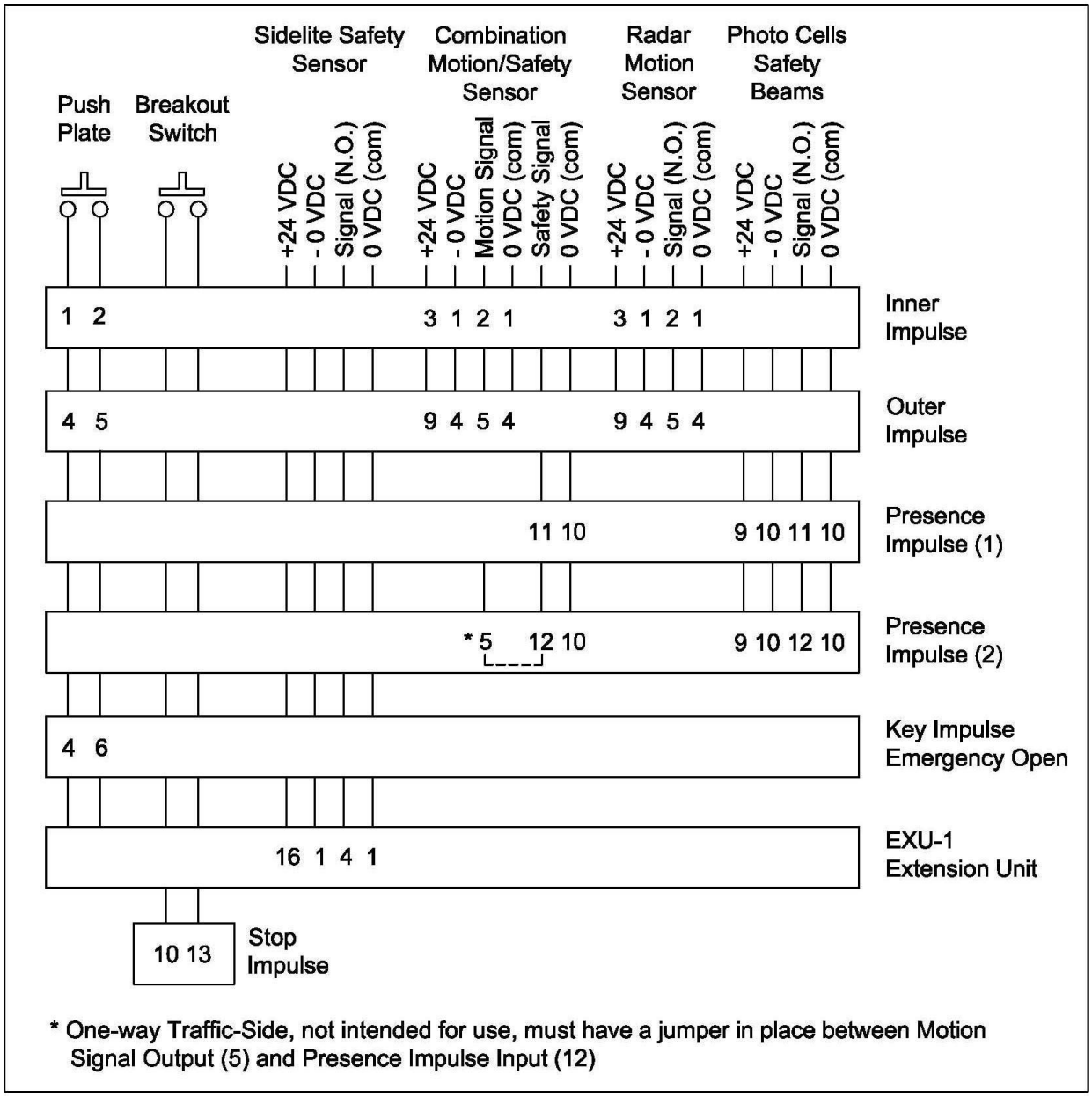
Note!
Potentiometers factory settings see arrows on potentiometers

Parameter (speed applies to single panel)		
HSO: High speed opening	0.10 – 0.70 m/s	(0.33– 2.30 ft/s)
HSC: High speed closing	0.10 – 0.70 m/s	(0.33– 2.30 ft/s)
LS:	Low speed	0.05 – 0.70 m/s (0.17 – 2.30 ft/s)
CSW: C-switch distance	Min. = 0 mm / Middle = 700 mm (2.3 ft) / Max. = 1400 mm (4.6 ft)	
TD: Hold open time	0 – 60 s (setting applies also to "Partial Hold Open Time")	
LB: Learn button		

Connection of Program Selectors



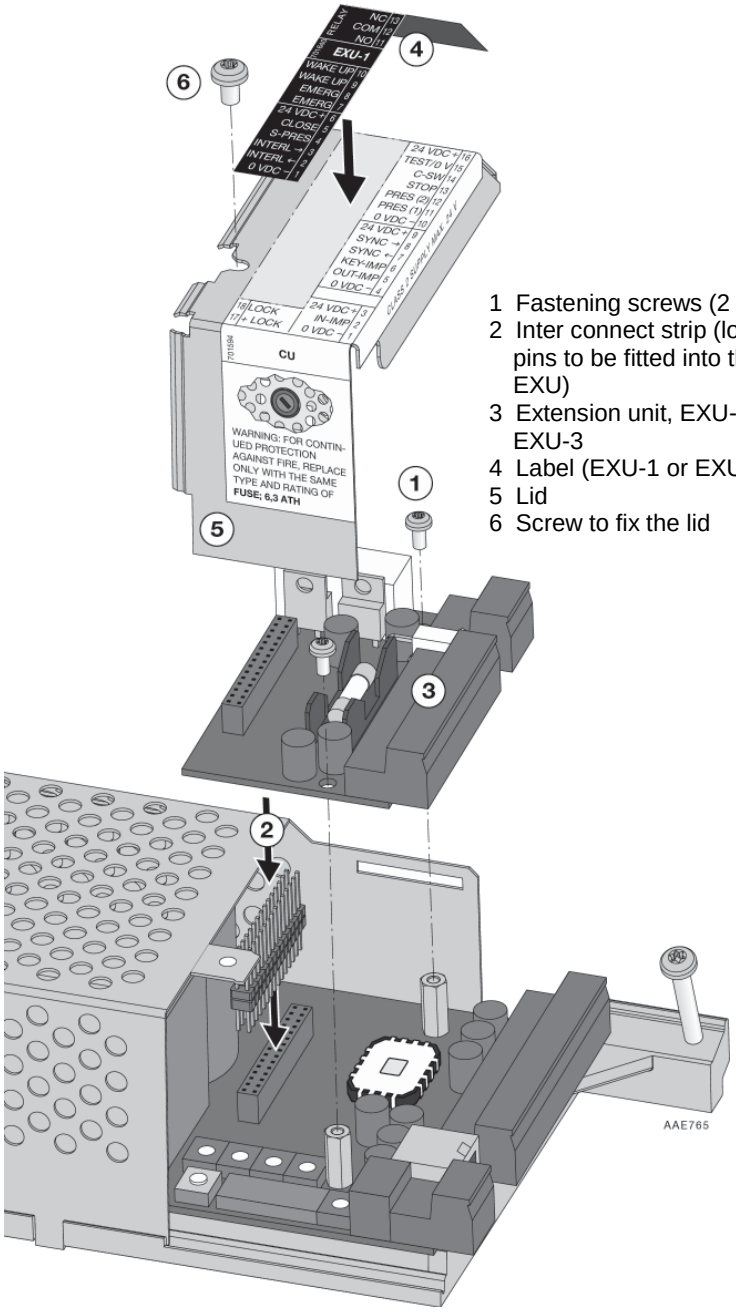
Connection of Activation Units



Extension Units

When functions beyond those implemented on the main control unit are required, two extension units are available, EXU-1 and EXU-3. These units are to be applied on top of the control unit.

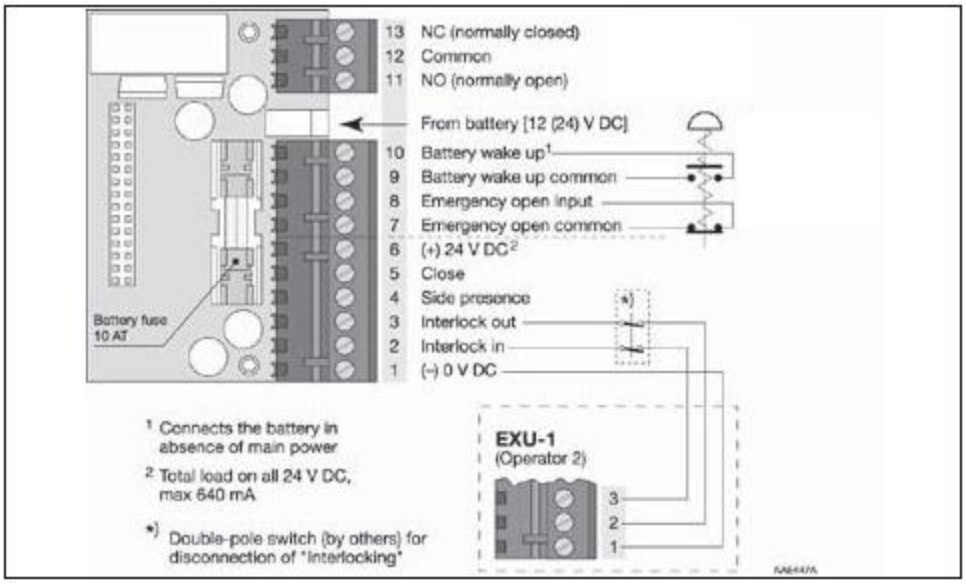
Fitting the Extension Units EXU-1 or EXU-3 to the Control Unit CU



Extension Unit, EXU-1

Following functions can be obtained with this unit:

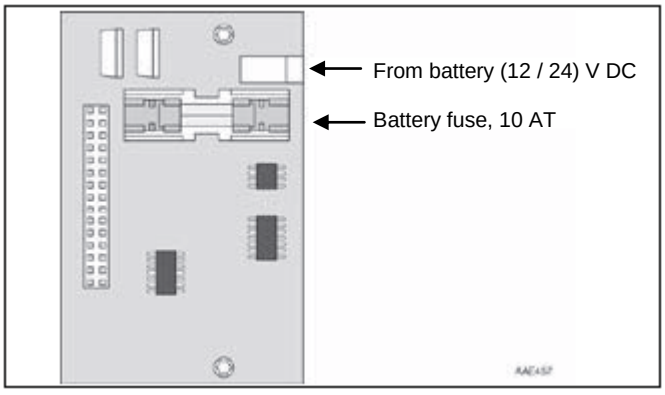
1. Connection of interlocking
2. Connection of “emergency opening push button” (fireman's opening). The cable from the emergency unit (battery) is to be connected to the EXU-1.
3. Connection of interlocking



Extension Unit, EXU-3

This extension unit has the functions Electrical Emergency Unit and Convenience Battery.

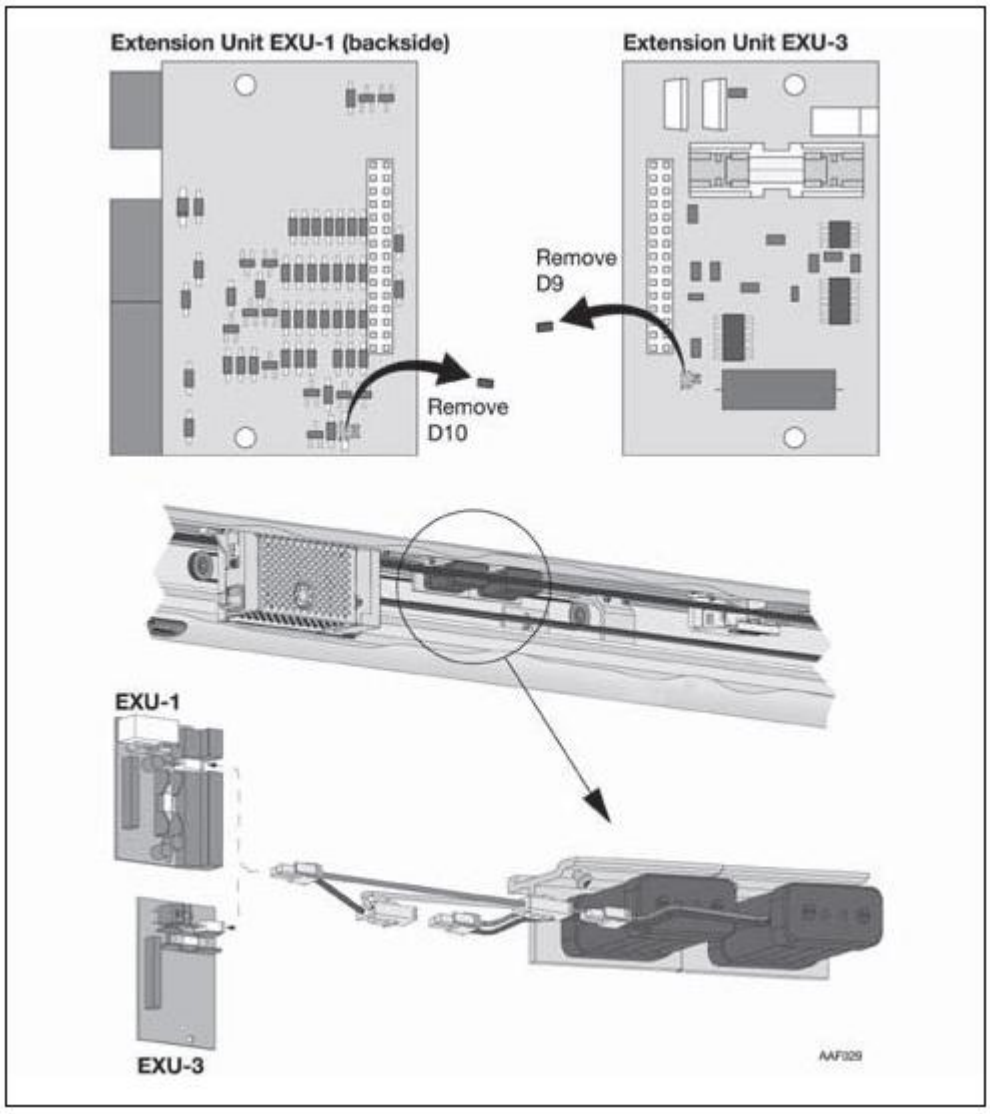
The cable from the Emergency Unit (battery) is to be connected to the EXU-3.



Convenience Battery UPS (Stand-By Supply)

The convenience battery UPS makes the door operate normally in short absence of main power.

1. Remove the diode D10 (EXU-1) or D9 (EXU-3).
2. Set the function selector FS-5 to OFF (Electrical).



Start –Up

After installing the operator, the Start-up and adjustment must be carried out in the following order (see also electrical connections).

1. If a lock is installed, make sure the “Lock configuration” is correctly set (locked with or without power) and that lock release is correctly set to Yes (ON)
2. Make sure that correct belt direction of rotation is selected, CCW or CW.
3. Disconnect sensor and breakout switch .
4. Set the program selector PS-5 to “Auto”. Apply the main power plug to the control unit. If the door is open and no opening impulse is active, it will move too closed position with low speed.
5. Push the learn button, LB. The operator will carry out a complete open/close cycle at low speed to learn the opening width and the closed position.
6. To check the door movement, give opening impulse by shorting the terminals No. 1 and 2 on the control unit.
7. If necessary adjust the door speeds with the potentiometers to the required values.
8. Select correct functions with the function selector FS, for the accessories to be connected.
9. **Disconnect the main power**, install activation units and accessories and reconnect sensor.
10. Connect the mains power and check that the installation complies with valid regulations and requirements from the authorities.

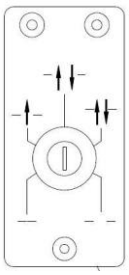
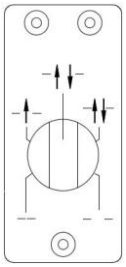
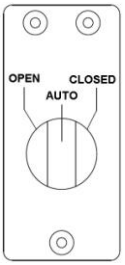
Note!
The door must stand still when adjustments are carried out.

Program Selectors

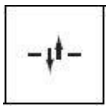
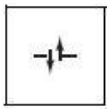
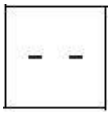
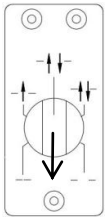
Program Selectors and Functions

The functions of the door are selected with mechanical or key Program Selectors:

- 5 Position with Key uses 1/2" spacer or can be surface mounted
- 5 Position Mechanical Switch, flush or surface mounted.
- 3 Position Mechanical Switch, flush or surface mounted.

5 Pos Switch (Key)	5 Pos Knob Switch	3 Pos Knob Switch
		

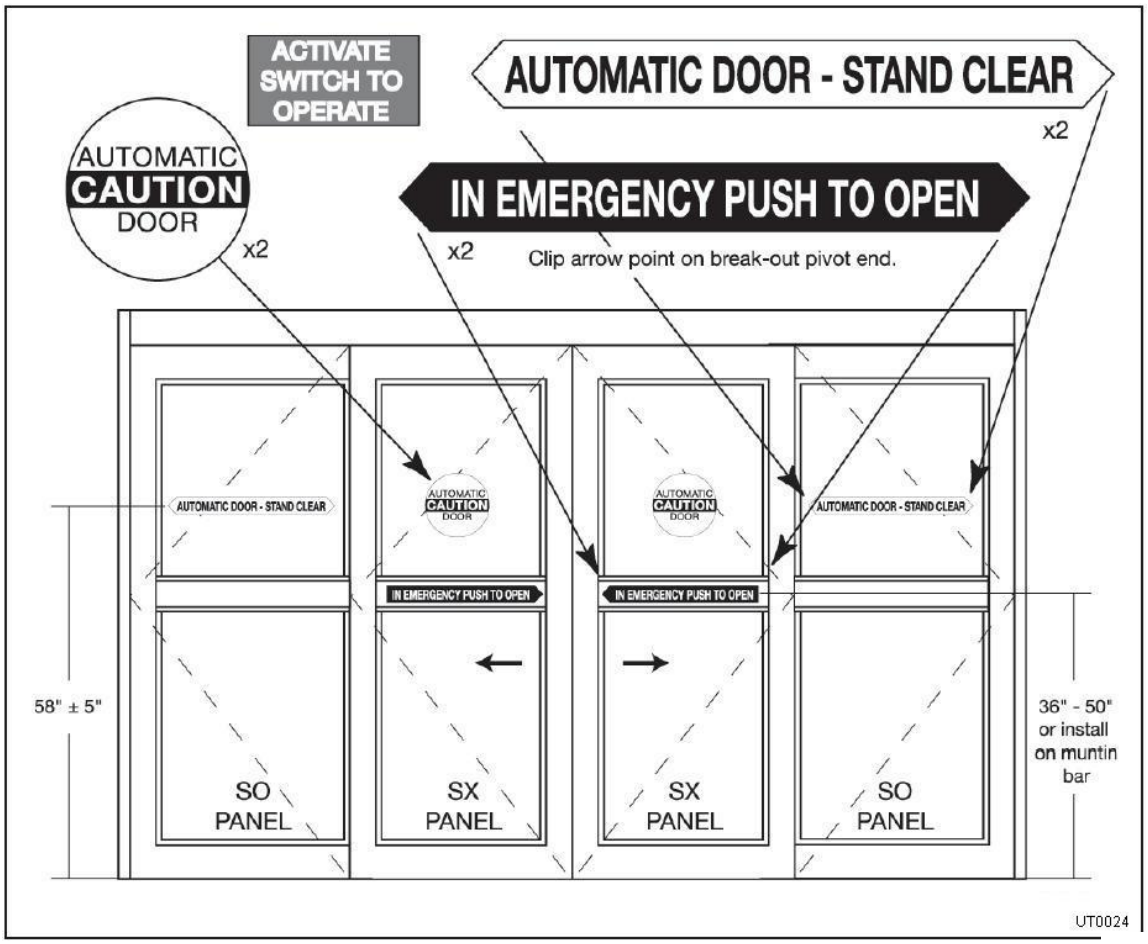
Program Selector Functions

	**OFF (Closed)**	The inner and outer activation units are disconnected. The door is locked if an electro-mechanical locking device has been installed. The door can be opened with an emergency push-button/key switch (if installed).
	**EXIT (One Way Traffic)**	Passage through doorway from one side only. The door is locked if an electro-mechanical locking device has been attached. The door can be opened with an activation to INNER IMPULSE 2 or KEY IMPULSE 6.
	***AUTO**	Two-way traffic, normal operation of the door. The door can be opened with the inner and outer activation units and with an emergency push-button/key switch (if installed).
	**AUTO partial**	Two-way traffic. The door can be opened partially with the inner and outer activation units and with an emergency push-button/key switch (if installed).
	**OPEN**	The door is permanently held open.
	**RESET**	Momentarily (5 seconds), set the Program Selector as shown and then place at "AUTO" or "OFF" position. The operator makes a system test of the battery, electro-mechanical lock, watchdog relay and closed position. It also reads FS switch settings, CSW distance and Time Delay. After closing, the operator is reset and ready for normal operation again.

* 3-pos switch is selectable between AUTO and EXIT functionality at the AUTO position by removing the jumper on the back side of the switch.

Signage

ANSI/BHMA standard 156.10-2005 and Besam standards specify that caution signs must be affixed to both sides of any power operated pedestrian door. With double doors, signs should be applied to each door. Sliding doors with swinging (break out leaves) shall be provided with signs reading “IN EMERGENCY PUSH TO OPEN”. The signs shall have red backgrounds with contrasting letters one-inch high minimum. The signs shall read horizontally and be located adjacent to the lockstile on a centerline 36 inches minimum and 60 inches maximum from the floor, applied to the side appropriate for egress. ANSI/BHMA A156.10 . In addition, the sign “AUTOMATIC DOOR” with letters 1/2” high minimum will be applied to the door, visible from both sides. If switch activated, use “AUTOMATIC DOOR - ACTIVATE SWITCH TO OPERATE” Note – the kit decals are double-sided and normally will only need to be applied to one side of a clear glass door. If the decals are not clearly visible on the other side due to the condition of the glass (e.g., tinted or textured glass), the decals should be placed on both sides.



Troubleshooting

Always start any troubleshooting by checking the mechanical and electrical parts of the operator in the following order.

The control unit and electromechanical lock are fixed with brackets in the support beam. To replace, the complete unit is to be loosened and replaced.

Mechanical checking and remedies

Disconnect the mains power. Remove the tooth belt from the tooth belt fitting. Pull the door leaf manually and check that the door can be easily moved over the complete sliding track/floor guide. If the door leaf stops or is hard to move, the reason may be sand, stones, rubbish etc. in the floor guide. The door leaf may also be jamming on the floor or on the draught excluders. Clean the floor guide, adjust the door leaf height/depth or take other necessary measures for example, replacement of wear parts until the door leaf is running smoothly when manually operated. Repeat for the other door if bi-parting.

Error Indication

During normal operation the LED indicator on the control unit is illuminated.

The flashing light on the LED or an extinguished LED indicates that the operator is out of function or waiting for monitoring acknowledgement.

LED Flash Frequency	Reason	Remedy
4 fast flashes, pause; repeats	Motor temperature high	Waiting one minute for the operator to recover. If necessary replace the control unit.
2 fast flashes, pause; repeats	EEProm access error	Reset the operator. Replace the control unit if necessary.
Continues; no pause	Battery System	Check battery connection
		Check battery fuse
		Check that battery is charged
	Motor /Encoder	Check motor connection
		Check encoder connection
		Check door moves with low friction
		Check that EXU-1 or EXU-3 is seated properly
		Replace the motor/encoder unit
		Replace the control unit
	Processor error	Press reset

No Error Indication, No Control LED Illumination

- Check Fuse
- Check Mains Power
- Check Main Wiring

After Remedy or Replacement the Operator Has to Be Checked as Follows:

- Study the door movement and adjust the functions to the values required for a smooth door operation.
- Check that correct functions and values have been selected for the installed accessories and that the installation complies with valid regulations and requirements from the authorities.
- Clean the cover and the doors.

From American National Standard for power-operated pedestrian doors. Please refer to full standard if necessary, obtainable through BHMA at (212) 661-4261. All figures referred to below can be found in the full standard. Excerpts reprinted with BHMA permission.

Sliding Doors

Automatic Sliding Doors are flat panels that slide horizontally or linearly. These systems have a variety of configurations. No matter what the configuration or system, automatic sliding doors shall include sensors, or control mats and signage for the safety and convenience of the user.

For control mats, joining of control mats and performance requirements of control mats, refer to the full ANSI/BHMA standard.

Motion sensors shall detect a 28 inch (710 mm) minimum high person or equivalent and moving at a rate of 6 inches (150 mm) per second towards the center of the door within the detection areas described.

Presence sensors shall detect a 28-inch (710 mm) minimum high person or equivalent within the detection areas described for a minimum of 30 seconds.

8.3 Sliding Doors

8.3.1 Activating zones for swinging, **sliding** and folding doors shall have a minimum **width** equal to the width of the clear opening measured at 8 in. and 30 in. perpendicular from the face of the closed door(s). The length from the face of the door shall be 43 in. minimum measured at the center of he clear opening. Detection shall be effective to within 5 in. from the face of the door measured at the center of the clear opening. Exception: If the 43” activation zone length is not practical due to physical or environmental conditions, it shall be permissible to be reduced to 30 inches, along with an additional sign, visible from the side the zone has been reduced on, stating “AUTOMATIC CAUTION DOOR” as describe in 11.2.3.

8.3.2 A presence sensor shall be used to detect a person fully in the space between two non overlapping activating zones for the width of the clear opening as follows:

8.3.2.1 If photo electric beams are used (See Figure A-18A):

(1) A minimum of four photo electric beams shall be installed, two minimum **on each side of the sliding door**. The beams’ location shall alternate from side to side. The lowest beam shall be installed 6 to 28 in. from the floor and the other three at a spacing between 6 and 12 in. apart with the top beam at 45-55in. from the floor. The photo electric beam area of detection shall extend across the clear door opening. (See Figure A-18A); and

(2) The beams shall be installed within 3 in. from the centerline of the slide door; and

(3) The beams shall remain active from fully open to within 6 in. of closed; and

(4) The door shall remain fully open for 2.5 seconds minimum after loss of detection.

8.3.2.3 If overhead presence sensors are installed on each side of the sliding door opening (See Figure A-18C.):

(1) They shall not have an inactive area more than 5 in. extending out from the face of the door. If the inactive area exceeds 3 in. from the face of the door, it shall have a minimum of two photo electric beams on one side of the door, with the lower beam installed 6-28 in., and top beam 45-55 in. from the floor; and

(2) The detection zone shall remain active from open to within 6 in. of closed.

(3) If beams are required they shall be installed within 3 in. from the centerline of the slide door and remain active from fully open to within 6 in. of closed.

(4) The door shall remain fully open for 1.5 seconds minimum after loss of detection.

10. Entrapment Protection

10.1.1 A sliding door shall be adjusted so that the closing speed is one foot per second maximum per leaf for doors weighing up to and including 160 lbs (71 kg) per leaf. For doors weighing more than 160 lbs (71kg):

V = □(161 / W)

V = Velocity in ft/sec

W = weight of door in pounds

10.1.3 A stopped sliding or folding door shall not require more than a

30 lbf (133 N), measured at the leading edge, to prevent it from closing at any point in the closing cycle.

10.1.4 Sliding doors provided with a break away device shall require no more than a 50 lbf (222 N) applied 1 inch (25 mm) from the leading edge of the lock stile for the break out panel to open. Break away devices (swinging panels) for doors that slide on the egress side of an opening shall be equipped with a self closing device or interrupt automatic operation when used in the break out mode. Break away devices incorporating swing out sidelites shall interrupt automatic operation when used in the break out mode.

10.1.5 Sliding doors utilizing sensors or control mats shall remain fully open a minimum of 1.5 seconds after loss of detection, unless otherwise specified within this standard

11. Signage

For Signage, see full standard.

12.4 Break Away Device for Sliding Doors. Sliding doors provided with a break away device shall require no more than a 50 lbf (222 N)

applied 1 inch (25 mm) from the leading edge of the lock stile for the Break-out panel to open. Break away devices (swinging panels) for doors that slide on the egress side of an opening shall be equipped with a self-closing device or interrupt action of the operator when used in the Break-Out mode. Breakaway devices incorporating swing out sidelites shall interrupt actuation of the operator when used in the Break-Out mode.

Maintenance/Service

Automatic door installations must be subjected to regular maintenance, the frequency of which is governed by the environmental conditions and density of traffic.

1. Remove dust and dirt from the operator. Dirt on the sliding track should be removed with mentholated spirits. If necessary, replace the sliding track.
2. None of the parts need lubrication. The tooth belt must be kept dry and clean. Check the belt tension.
3. Check that all nuts and bolts are tightened well.
4. Adjust, if necessary, the door leaf speed, the hold open time and the door leaf position to comply with valid regulations and requirements from the authorities.

Planned Maintenance Checklist

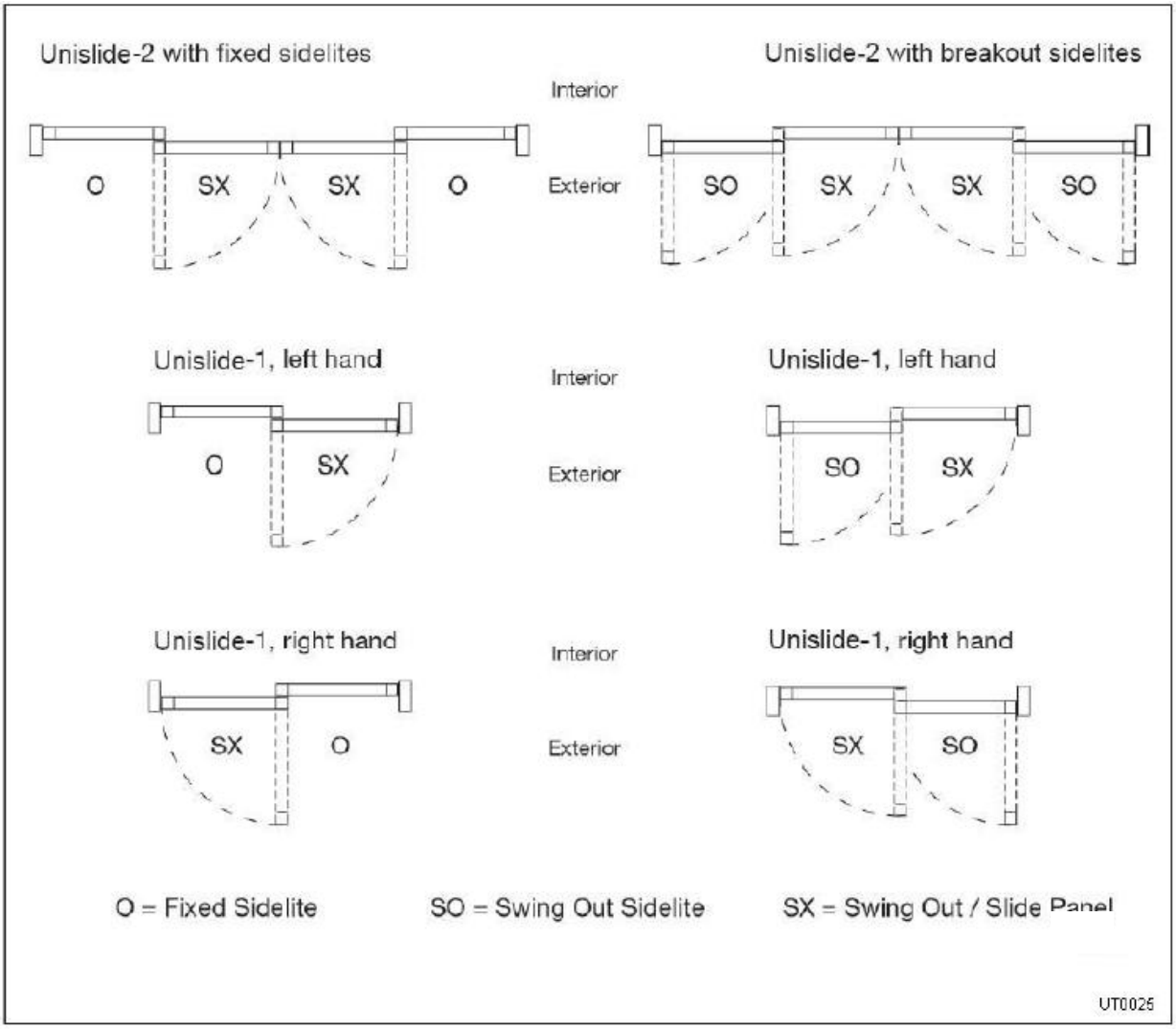
To perform a proper planned maintenance inspection, you must follow the checklist below. Please use your service tickets to note that this was done and record any problems discovered and the action(s) taken.

- ❑ Visually inspect door operation.
- ❑ Check activation and threshold detection devices.
- ❑ Check for tripping hazards.
- ❑ Check door function switch.
- ❑ Check for proper operation of lock assembly.
- ❑ Check for required signage.
- ❑ Check for loose glass stops or damaged glass.
- ❑ Check all panels for damage and missing or damaged weather stripping.
- ❑ Check panic latches for proper release force.
- ❑ Clean and inspect bottom guide tracks.
- ❑ Check bottom guide assembly for proper adjustment and excessive wear.
- ❑ Check door closing speed and closing force.
- ❑ Check closing latch location.
- ❑ Check that door hold open time is 1.5 seconds or longer.
- ❑ Remove access cover and check motor and gearbox for leakage and noise.
- ❑ Inspect drive pulleys and belt for proper alignment.
- ❑ Inspect drive belt for proper tension and excessive wear.
- ❑ Clean hanger rollers and repair or replace if damaged. (Adjust roller height if necessary.)
- ❑ Clean roller track and remove any debris. (Do not lubricate track.)
- ❑ Inspect anti-riser block or rollers for damage and/or binding.
- ❑ Ensure that all wiring in the header is properly routed and protected from any moving components.
- ❑ Reinstall and secure access cover and recheck the complete door operation.
- ❑ Clean door, glass and header thoroughly
- ❑ Note on the Planning Maintenance review any recommendations to improve door performance and reliability, and review with customer.

Door Handing & Layout

Door Handing (Automatic Door Industry)

Sliding door handing is referenced from the exterior side of the door opening. Bi-parting sliders are not handed.



NOTES

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