



2110(F), 2170(F)(LBR), 1810(F) Surface Vertical Rod Exit Devices Installation Instructions

Attention Installer

Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Yale Locks & Hardware makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

Packed for Reinforced Metal Doors, Unreinforced metal, Composite & Wood Doors.

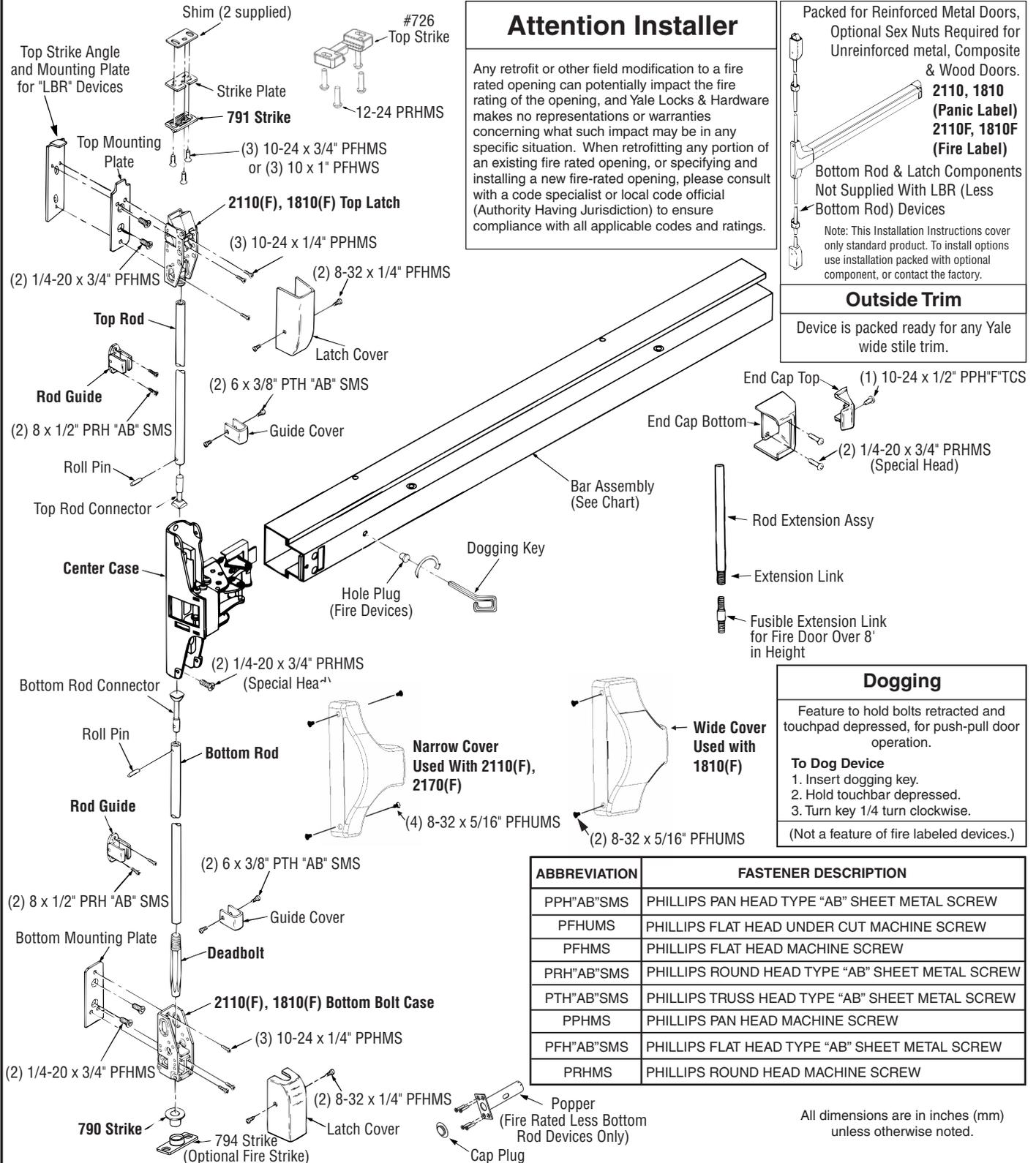
2110, 1810 (Panic Label) 2110F, 1810F (Fire Label)

Bottom Rod & Latch Components Not Supplied With LBR (Less Bottom Rod) Devices

Note: This Installation Instructions cover only standard product. To install options use installation packed with optional component, or contact the factory.

Outside Trim

Device is packed ready for any Yale wide stile trim.



Dogging

Feature to hold bolts retracted and touchpad depressed, for push-pull door operation.

To Dog Device

1. Insert dogging key.
2. Hold touchbar depressed.
3. Turn key 1/4 turn clockwise.

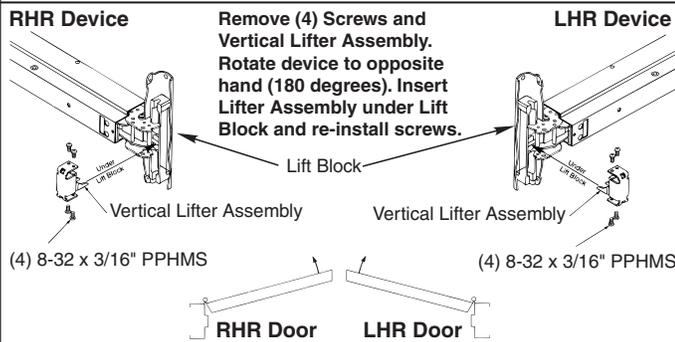
(Not a feature of fire labeled devices.)

ABBREVIATION	FASTENER DESCRIPTION
PPH"AB"SMS	PHILLIPS PAN HEAD TYPE "AB" SHEET METAL SCREW
PFHMS	PHILLIPS FLAT HEAD UNDER CUT MACHINE SCREW
PFHMS	PHILLIPS FLAT HEAD MACHINE SCREW
PRH"AB"SMS	PHILLIPS ROUND HEAD TYPE "AB" SHEET METAL SCREW
PTH"AB"SMS	PHILLIPS TRUSS HEAD TYPE "AB" SHEET METAL SCREW
PPHMS	PHILLIPS PAN HEAD MACHINE SCREW
PFH"AB"SMS	PHILLIPS FLAT HEAD TYPE "AB" SHEET METAL SCREW
PRHMS	PHILLIPS ROUND HEAD MACHINE SCREW

All dimensions are in inches (mm) unless otherwise noted.



To Change Hands



Maintenance

1. Periodically remove covers and coat mechanisms with a silicone base lubricant. This is particularly required in corrosive environments for proper product function.
2. Check mounting fasteners periodically. Retighten if found loose. Apply screw locking compound (available at automotive part stores) or change part fasteners if screws continue to back out.
3. Periodic checks (and adjustments) of strikes are required to compensate for changes in the opening (e.g. door sagging).

Check Before Starting

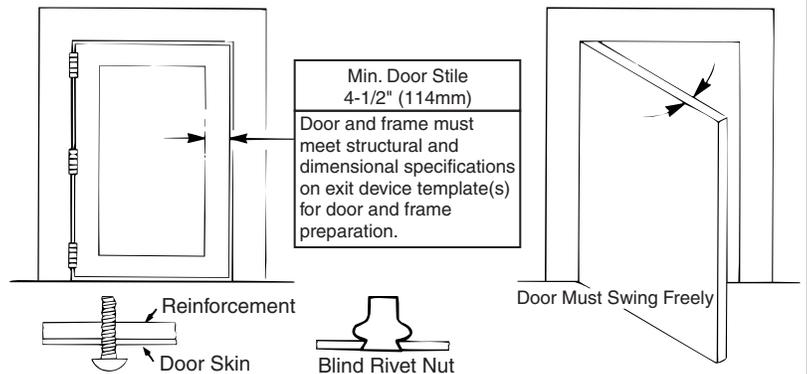
Unreinforced Doors or Frames

Doors and Frames with walls having a structural thickness (metal skin plus reinforcement or solid hardwood) to engage less than (3) full screw threads are considered unreinforced.

Unreinforced Doors: Use SNB (sex nuts and bolts).

Unreinforced Frames: Use Blind Rivet Nuts.

Recommended fasteners for unreinforced openings are not necessarily supplied by Yale Locks and Hardware.



1. Mark Door

Single Door or Pair without Mullion

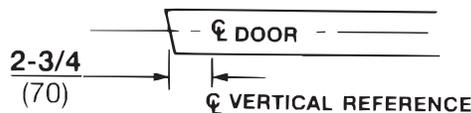
Locate and Mark Horizontal and Vertical Reference Centerlines as shown.

LHR door shown, preparation is typical for both door hands.

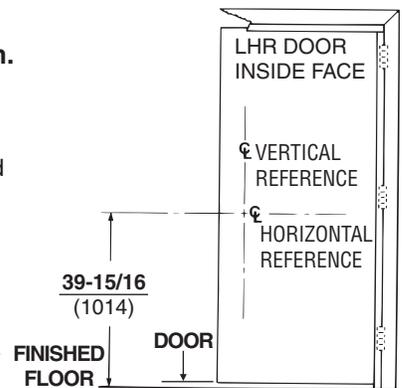
Caution: If device is mounted higher or lower than shown, rod length must change.

Lengthen or cut top and bottom rods as shown on Step 5.

LBR: For Less Bottom Rod Devices, omit bottom latch and strike installation steps and see separate instructions for top latch and strike.

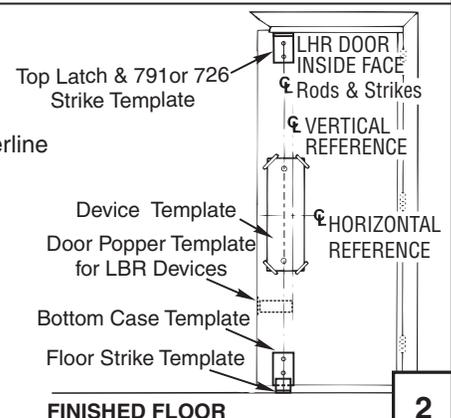


Note: Less Bottom Rod (LBR) Devices should not be used where security is a primary concern.

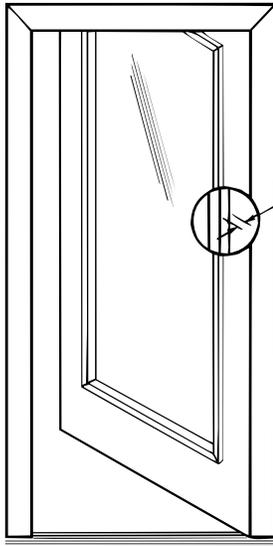


2. Prepare Door, Frame, & Sill

- A. Locate "Device Template" aligning VERTICAL REFERENCE and HORIZONTAL REFERENCE lines. Tape template to door face.
- B. Extend centerline of Rod and Strikes from "Device Template" to door top and bottom, on door face.
- C. Locate Top Latch/Strike, Bottom Case and Bottom Strike templates aligned on centerline of Rods and Strikes on door. Tape templates in place and mark holes. Note that the centerline of the rods and strikes used to install top and bottom bolts is not the Vertical Reference centerline.
- D. Locate and tape Trim Template to door (See instructions packed with Trim).
- E. Mark and prepare holes:
 Device & Bolt Case Plates: Each (2) 1/4-20 Machine Screws (Metal reinforced door only.) or (2) 3/8 (10mm) Dia. Sex Nuts & Bolts
 Top Strike: (2) 10-24 Machine Screws or (2) #10 Wood Screws
 Bottom Strike: 5/8 (16mm) dia x 3/4 (19mm) deep hole



3. Clear Raised Door Molding



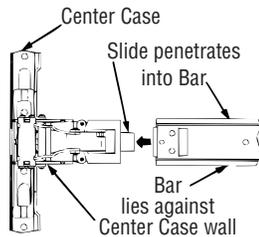
Device must seat flush on door surface or on shims that keep it parallel to door face.

(1) Shim Kit #224 per 1/8" (3mm) of raised molding

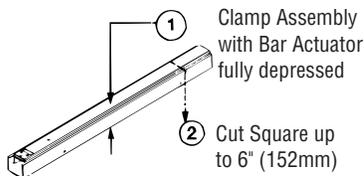
(1) Shim Kit #224 need to clear each 1/8" (3mm) of raised molding.

Longer mounting screws needed when more than (2) shim kits are used.

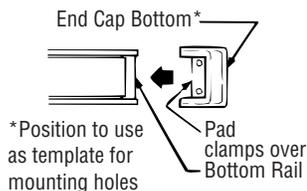
Detail 1: Fit Bar



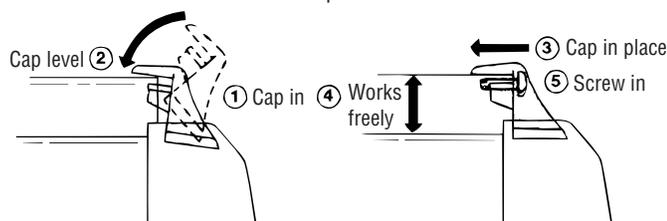
Detail 2: To Cut Bar



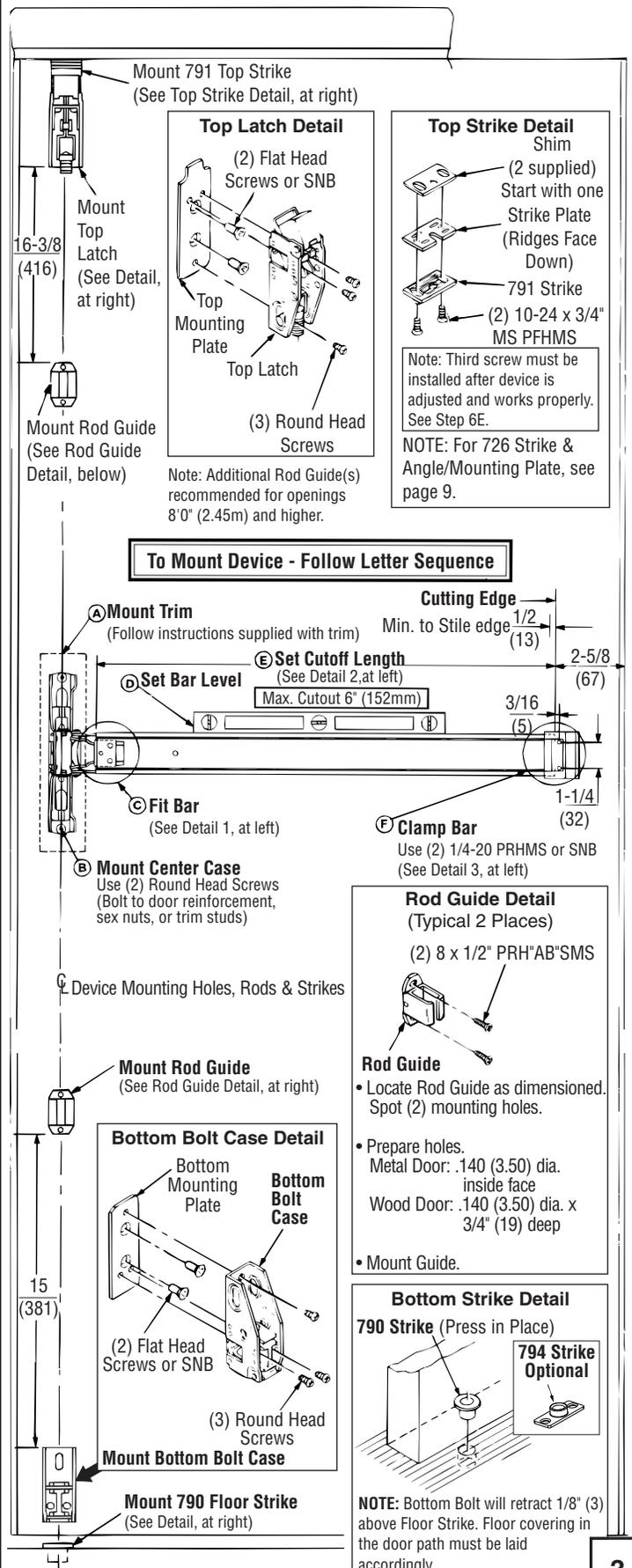
Detail 3: Clamp Bar



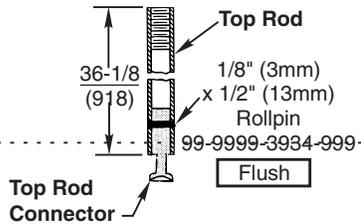
End Cap Detail



4. Mount Components



5. Prepare Rods



Top Rod

Ready for 84" (2134) Openings

Openings under 84" (2134mm): For Top Rod cutoff length, deduct OPENING HEIGHT from 84" (2134mm).

Example: 80" (2032mm) opening
 84" (2134mm) - 80" (2032mm)
 = 4" (102mm) cut off of Top Rod

Opening over 84" (2134mm), subtract 84" (2134mm) from the actual opening height.

Example: 99" (2515mm) - 84" (2134mm)
 = 15" (381mm) extension to Top Rod

To Lengthen Rods

Use rod extension(s) to extend rod to length needed or longer (36" for 10' doors).

Cut excess length from end of rod with pin hole.

Apply screw locking compound, available at automotive parts stores, to rod extension(s) male threads. Thread extension(s) until seated tight over rod.

Rod Extension Options

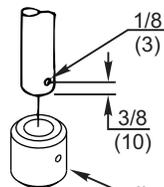
	60-1510-0280: 2" (51mm)
	60-1510-0277: 6" (152mm)
	60-1510-0278: 12" (305mm)
	(Specify Device Finish)

To Cut Rods

Cut from end with pin hole. NEVER CUT THREADED END.

Press Jig till it bottoms over Rod.

Drill 1/8" (3.2) Dia. hole thru, 3/8" (10) from end of Rod.



Bottom Rod

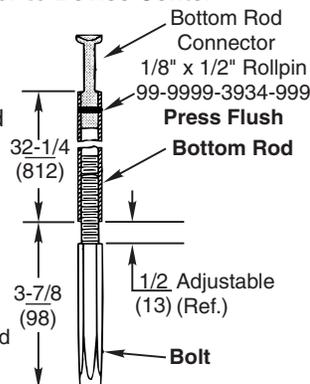
Ready for 39-15/16" (1014) Floor to Device Center

To Lower Device

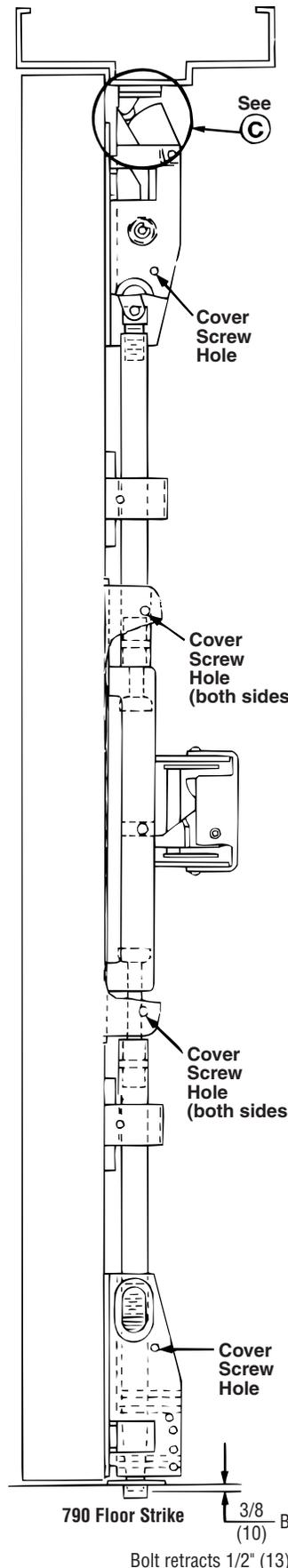
Bottom rod cutoff length is distance that device was lowered below 39-15/16" (1014).

Add to top rod a length equal to the bottom rod cut.

Example:
 Device at 36" (914) from floor.
 39-15/16" (1014) - 36" (914)
 = 3-15/16" (100) extension to top rod



6. Complete Installation



- A Check Device Slide Action**
 Slide should move up, at least 9/16" (14). Depress bar, activate trim, dog device. With any of these actions, the slide should move up. The slide must return to original position when bar, trim or dogging actions end.

Note: If action is faulty, check for visible binding or interference. If no reason for fault is seen, remove item from door and check operation before assuming that it is defective.

- B Install Rods, as shown**
 Top rod rests over device slide. Bottom rod connector hangs from device slide.

- C Set Top Strike Roller between Tripping Lever and Bolt.**
DO NOT PRELOAD BOLT.
 Adjust and shim strike as needed for zero door rattle.

- D Test Device action by Touchbar, by Trim, by Dogging.**
ADJUST AS NEEDED.
 See D1, Bottom Rod Adjustment, and D2, Top Rod Adjustment, below. Both bolts should retract, permitting free door swing. Upper bolt should retract flat. Bottom bolt should retract 1/2" (13). Bolts remain retracted until door shuts and top strike hits tripping lever.

- D1 Top Rod Adjustment**
- TILT ROD OUT & TURN**
- SHORTER
 TOP ROD
 LONGER

Note: When top bolt does not remain retracted, top rod is too short.

ROD GUIDES MUST BE DISENGAGED FROM DOOR WHILE RODS ARE ADJUSTED.

- D2 Bottom Rod Adjustment**
- TILT ROD OUT & TURN**
- SHORTER
 BOTTOM ROD
 LONGER

Note: When bottom rod drags on floor but top rod remains retracted, bottom rod is too long.

- E** After acceptable device function, **Install third screw in top strike** to lock strike in position: 10-24 x 3/4" FHMS.

- F Install Covers.**
 Center case cover (4 flat head screws). Bolt case covers (2 flat head screws each). End cap top (1 pan head screw). See End Cap Detail, page 3.

TOP LATCH & 791 STRIKE (2110 only)

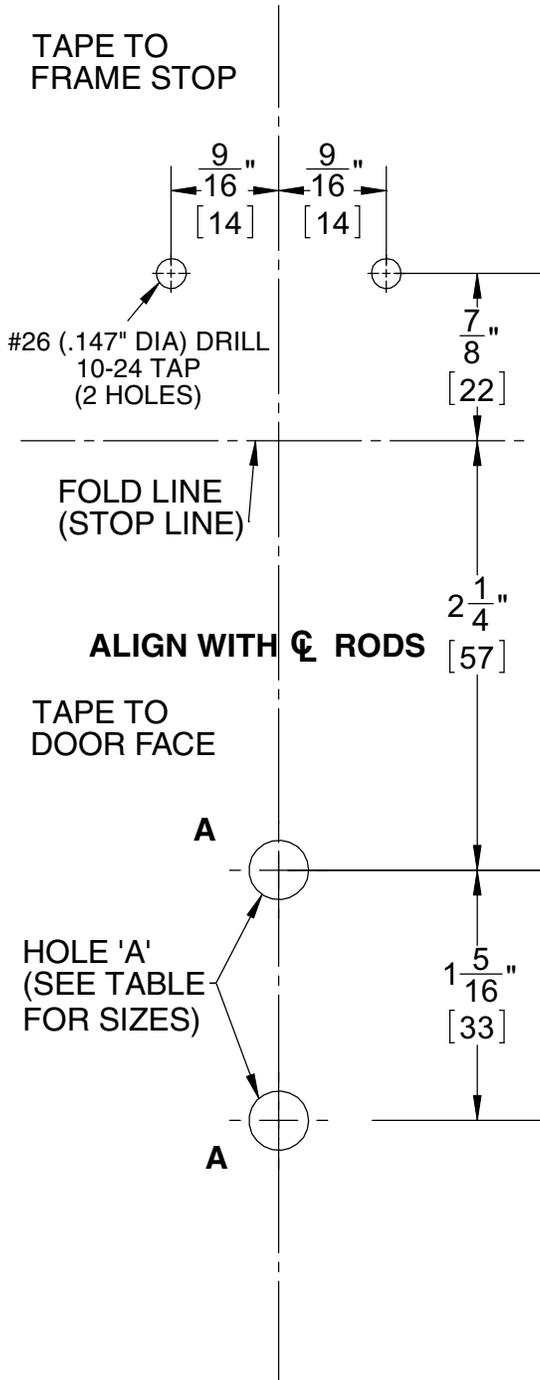
BOTTOM BOLT CASE

Notes:

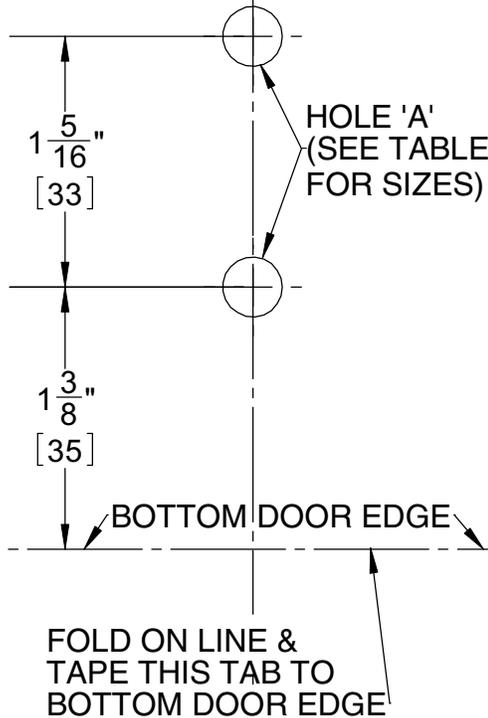
1. For 2170 series devices omit the 791 strike and use this template with the 726 strike template (page 9).
2. Mark \varnothing rods line on door face. Note that the centerline of the rods and strikes, used to install top and bottom bolts, is not the vertical reference centerline.
3. For LBR devices, omit bottom latch and strike installation steps and see separate instructions for top latch and strike.
4. Less Bottom Rod (LBR) Devices should not be used where security is a primary concern.
5. Unreinforced frames require that #10-24 blind rivet nuts (by others) be used to bolt strike. Frames are considered not reinforced when strike mounting screws cannot engage (3) full threads.
6. Dimensions are given in inches (mm).
7. **CAUTION:** Office copiers and facsimile machines may change the size of a drawing and make the template inaccurate to use as a door marker. If this is not the original template packed with the device, use only the dimensions written on the template to locate the holes on the door (do not use the template as a door marker).

TAPE TO FRAME STOP

TAPE TO DOOR FACE



ALIGN WITH \varnothing RODS



CUTLINE

DOOR/FRAME	FASTENER	HOLE "A" PREPARATION
Metal Reinforced	1/4-20 PPHMS	Drill: #7 (.201 dia.) Tap: 1/4-20
All Others	1/4-20 SNB	3/8" (9.5mm) dia. Thru door

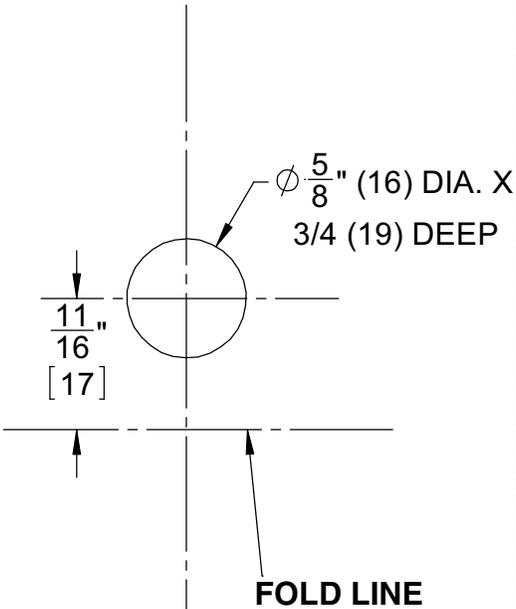
LHR Door

FLIP TO OTHER SIDE FOR RHR DOOR



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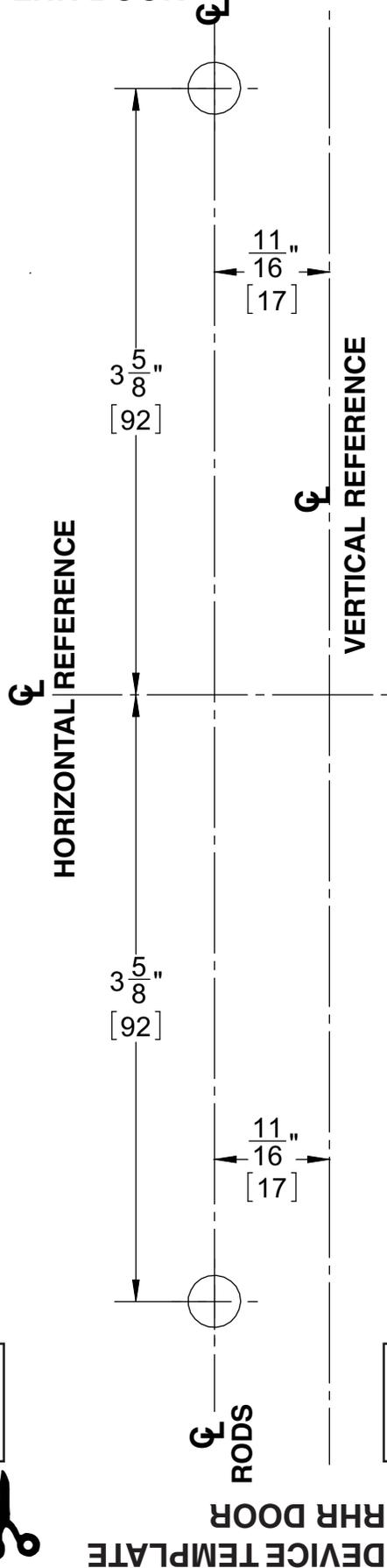
790 STRIKE



TAPE TO
DOOR FACE

ALIGN WITH CL OF RODS

DEVICE TEMPLATE LHR DOOR

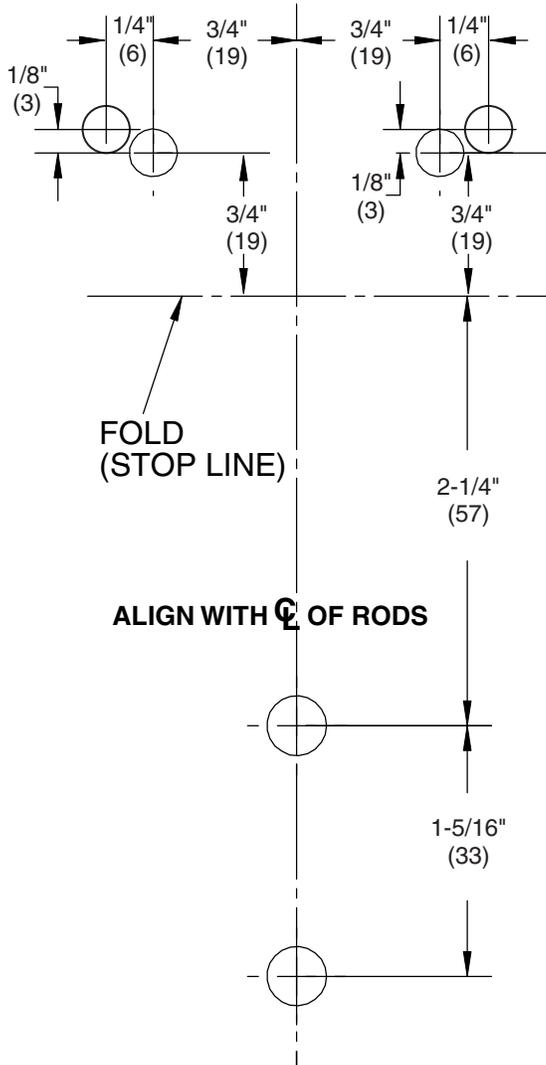


Notes:

1. For 2170 series devices omit the 791 strike and use this template with the 726 strike template (page 9).
2. Mark CL rods line on door face. Note that the centerline of the rods and strikes, used to install top and bottom bolts, is not the vertical reference centerline.
3. For LBR devices, omit bottom latch and strike installation steps and see separate instructions for top latch and strike.
4. Less Bottom Rod (LBR) Devices should not be used where security is a primary concern.
5. Unreinforced frames require that #10-24 blind rivet nuts (by others) be used to bolt strike. Frames are considered not reinforced when strike mounting screws cannot engage (3) full threads.
6. Dimensions are given in inches (mm).
7. **CAUTION:** Office copiers and facsimile machines may change the size of a drawing and make the template inaccurate to use as a door marker. If this is not the original template packed with the device, use only the dimensions written on the template to locate the holes on the door (do not use the template as a door marker).

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TAPE THIS TAB TO FRAME STOP
726 STRIKE
For Use With
2170 Series Devices

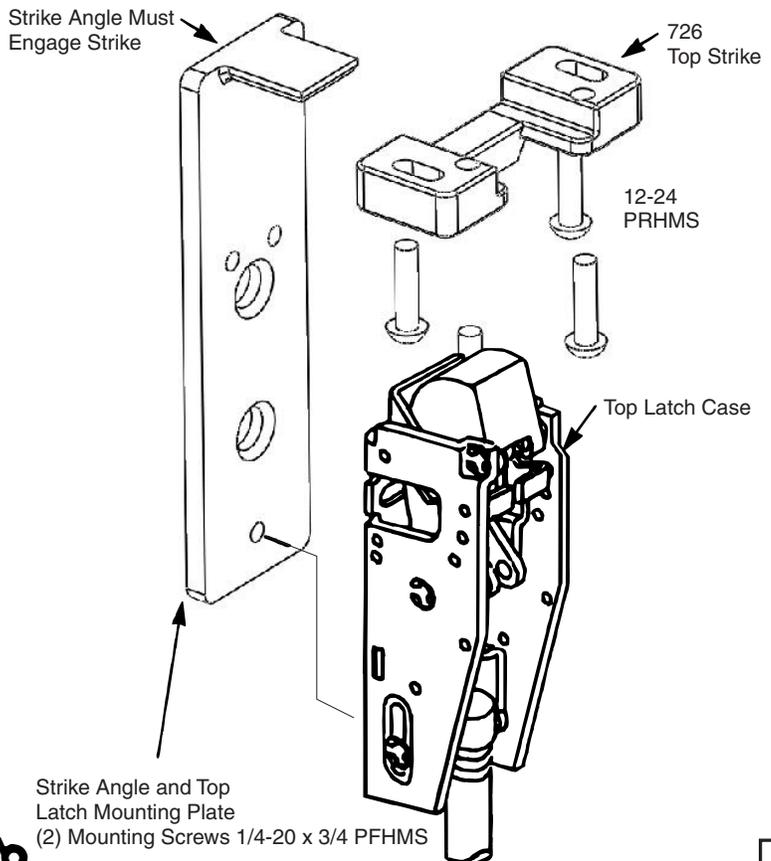


DOOR	FASTNER	HOLE 'A'
METAL REINFORCED	SCREW	1/4-20 TAP
HOLLOW METAL & ALUMINUM	OPTIONAL SNB	5/16 (8) DIA INSIDE DOOR FACE 3/8 (10) DIA OUTSIDE DOOR FACE
ALUMINUM	SNB	THRU DOOR

TAPE TO DOOR
TOP LATCH
& STRIKE

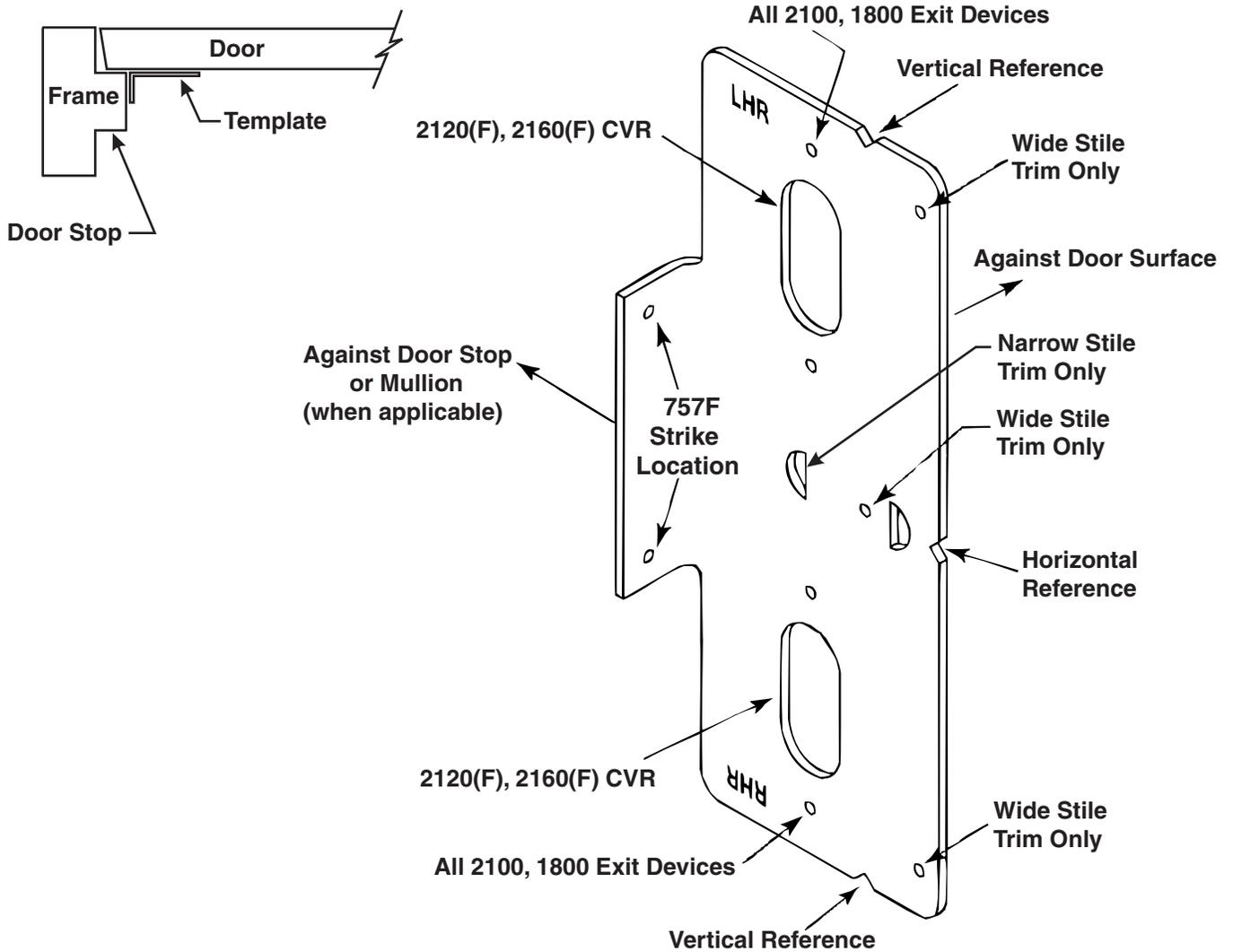
Notes:

1. 726 strike template for use with 2170 Series devices.
2. Mark Rods line on door face. Note that the centerline of the rods and strikes used to install top and bottom bolts, is not the Vertical Reference centerline.
3. For LBR (Less Bottom Rod) Devices, omit bottom latch and strike installation and install 726 Top Strike with Strike Angle and "Popper" assembly supplied with device.
Caution: LBR Devices should not be used where security is a primary concern.
4. **726 Top Strike Installation:** With door securely closed, tape template to door and frame stop. Spot and prepare holes for 726 top strike using (2) 12-24 Round Head Screws provided. With template still in-place, assemble upper mounting plate to door with the strike angle engaged into the 726 top strike, as shown below. Adjust hole locations for the mounting plate if required. Spot and prepare (2) outer holes then prepare (2) inner holes as designated on the template.
5. Unreinforced frames require that 12-24 blind rivet nuts (by others) be used to bolt strike. Frames are considered not reinforced when strike mounting screws cannot engage (3) full threads.
6. Dimensions are given in inches (mm).
7. **CAUTION:** Office copiers and facsimile machines may change the size of a drawing and make the template inaccurate to use as a door marker.



Plastic Installation Template 2100 Exit Devices

For use in conjunction with instruction sheets packed with exit device.
Holes and slots are identified below by exit device series and trim. Prep door and frame for only those features required for the exit device being installed.



Yale Locks & Hardware

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