Detex Corporation, 302 Detex Drive, New Braunfels, Texas 78130-3045
830-629-2900 / 800-729-3839 / Fax 800-653-3839 / Text photos only: 830-481-6433 / INTERNET: www.detex.com

INSTALLATION INSTRUCTIONS FOR CONCEALED VERTICAL ROD

ADVANTEX®

Concealed Vertical Rod Exit Device
82 / F82 / 83 / F83 Series
for Medium to Wide Stile
Aluminum or FRP door applications
Drawing No. 105280

Table of Contents Page

For WARRANTY information, scan code below or go to www.detex.com/warranty

Owner's Copy

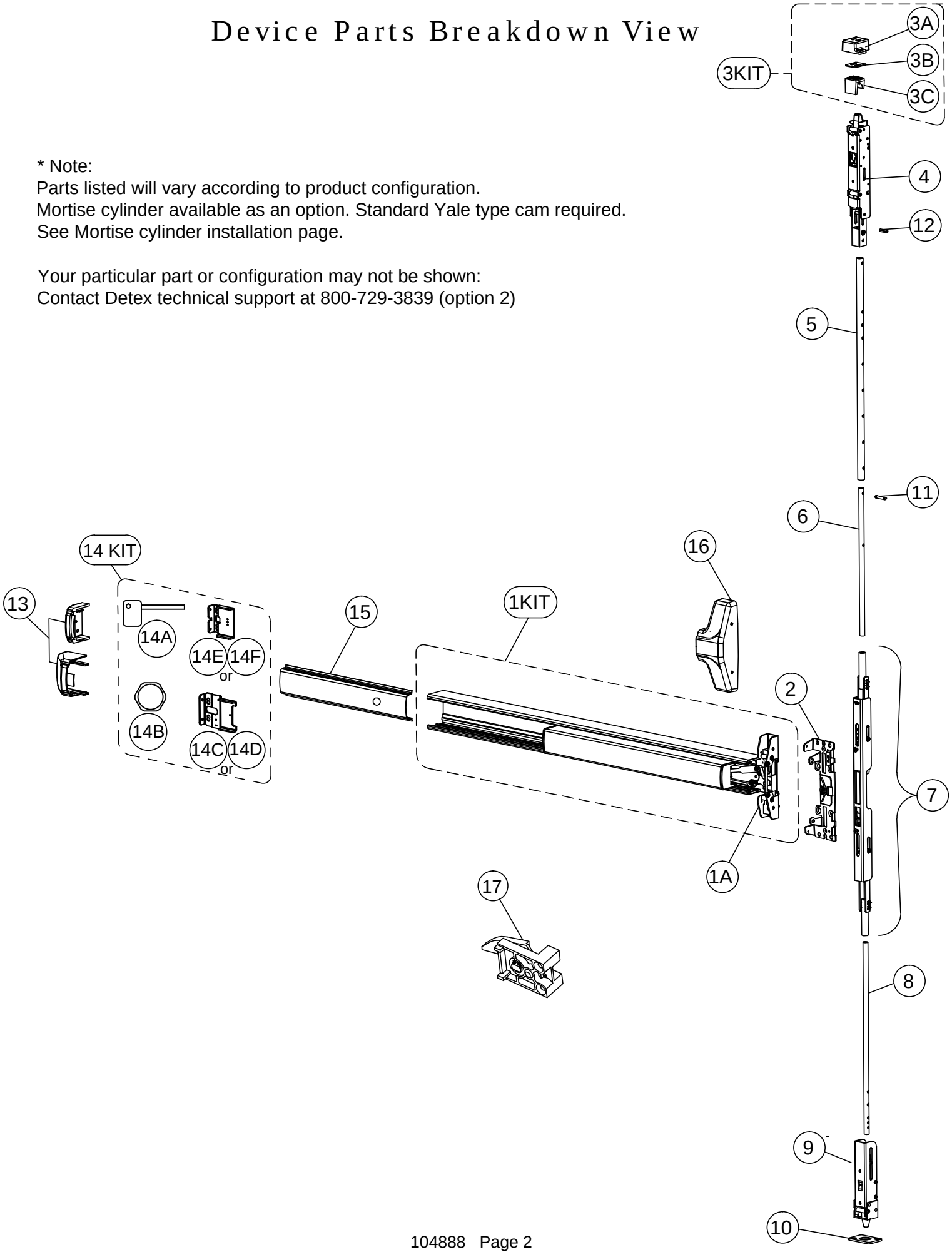
For device installation videos, scan code below or go to www.detex.com/videos

Should you have a Question/Problem with your Detex device please call Detex Technical Support from the job site at 1-800-729-3839 and choose option 2 on our menu. Please do not return the product to the distributor.

Device Parts Breakdown View

* Note:
Parts listed will vary according to product configuration.
Mortise cylinder available as an option. Standard Yale type cam required.
See Mortise cylinder installation page.

Your particular part or configuration may not be shown:
Contact Detex technical support at 800-729-3839 (option 2)

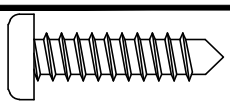
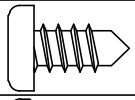
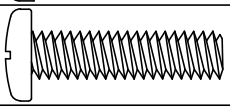
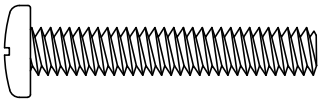


Device Parts Breakdown Part Numbers

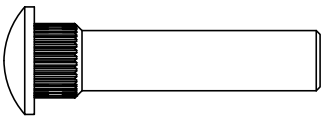
ITEM	PART #	DESCRIPTION
1KIT	105500-169	S&R 82 x STD1 x RHR Centercase/Pushpad Assy
	105500-170	S&R 82 x STD1 x LHR Centercase/Pushpad Assy
1A	104111-3	Centercase, CVR, Wide, RHR
	104111-4	Centercase, CVR, Wide, LHR
2	104171-1	Mounting plate, Wide, CVR, BP11 (Use with 08/09 lever trim)
	104171-2	Mounting plate, Wide, CVR, BP13 (Use with 03 trim)
3KIT	105257-2	Top strike kit
3B	105246	CVR strike shim
3A	105235-1	CVR top strike pocket
3C	105236-1	CVR top strike insert
4	104121-1	Top latch (Panic)
	104121-2	Top latch (Fire)
5	104187	Outer top rod, 7' thru 8'
	105097	Outer top rod, 8'-1" thru 10'
6	104172-1	Inner top rod, 7' thru 8'
	104172-2	Inner top rod, 8'-1" thru 10'
7	105990-1	Center lift mechanism assembly, Top & Bottom
	105990-2	Center lift mechanism assembly, Top Rod Only
8	105098	CVR bottom rod
9	104190-1	Bottom latch, Aluminum
10	105257-3	Bottom strike kit, 95B
11	103423	Spring pin 3/16 x 1/2
12	105296	Spring pin 3/16 x 13/16
13	101642-9	Endcap, EC1 (ramped) Stainless Steel 630
	104304-9	Endcap, EC2 (flush) Stainless Steel 630
14KIT	106431-1	Device Hardware Kit, HD, EC1 (not all components shown, includes Items 14A & 14C)
	106431-2	Device Hardware Kit, CD, EC1 (not all components shown, includes Items 14B & 14C)
	106431-3	Device Hardware Kit, EA, EC1 (not all components shown, includes Items 14B & 14D)
	106431-21	Device Hardware Kit, HD, EC2 (not all components shown, includes Items 14A & 14E)
	106431-22	Device Hardware Kit, CD, EC2 (not all components shown, includes Items 14B & 14E)
	106431-23	Device Hardware Kit, EA, EC2 (not all components shown, includes Items 14B & 14F)
14A	100450	Hex Key (for Hex Dogging)
14B	100783	Cylinder Nut (for Cylinder Dogging)
14C	100147	Endcap bracket for EC1 (ramped) endcap w/o battery holder
14D	101093	Endcap bracket for EC1 (ramped) endcap w/ battery holder
14E	104303	Endcap bracket for EC2 (flush) endcap w/o battery holder
14F	104636	Endcap bracket for EC2 (flush) endcap w/ battery holder
15	100860-165	Fillerplate Subassembly, S&R, Hex Dogging, HD, 630
16	102353-9	Centercase Cover, Stainless Steel, Wide 630
17	102216-2	Hex Dogging Assembly
	102216	Cylinder Dogging Assembly

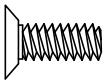
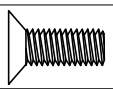
Your particular part or configuration may not be shown: Contact Detex technical support at 800-729-3839 (option 2)

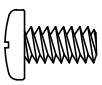
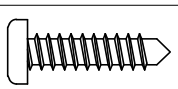
Hardware Table for BASIC device mounting. Additional hardware is provided per the device configuration in kit form and is addressed on the appropriate pages as required.

Device Mounting Hardware		
	#14 x 1" PPHS P/N: PP-5183-108	Used to install backplate & endcap bracket to hollow metal/aluminum doors. Drill Bit - 3/16 pilot hole
	#14 x 1/2" PPHS P/N: PP-5183-104	Used to install backplate & endcap bracket to wood doors.
	1/4-20 x 1" PPH P/N: 100980	Used with sex bolts or lever trim (1-3/4 door). Drill Bit - #7 or 13/64"
	1/4-20 x 1-1/2" PPH P/N: 100954	ALTERNATE SCREW Used with sex bolts or lever trim (2" plus door) Drill Bit - #7 or 13/64"
	10-24 x 1/4" PPH P/N: PP-5304-104	Used to install device centercase to backplate
	10-24 x 5/8" PFHU P/N: 100112	Used to install centerlift mechansim to backplate
	10-32 x 5/16" PFHU P/N: 101632-2	Used to install endcap to endcap bracket. (Multiple finishes included)
	6-32 x 3/8" PFHU P/N: 100162-106	Used to install centercase cover to backplate (Multiple finishes included)
	1/4" Lockwasher P/N: PP-5067-25	Lockwashers

Sex nuts, if ordered. Sex nuts are used with screws in device hardware kit.

	1/4-20 x 1.60 Sex nut P/Ns: 105274-9 (Stainless Steel) 105274-2 (Brushed Brass) 105274-25 (Oil Rub Bronze)	Used to install backplate and endcap bracket to door If using sex nuts with TRIM: Drill 9/32 hole through interior door face. Drill 1/2 hole through exterior door face. If using sex nuts without TRIM: Drill 3/8 hole through exterior door face.

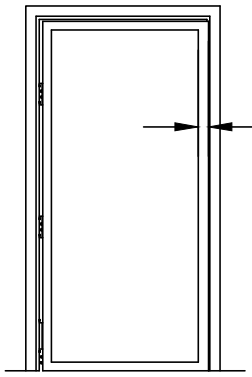
Strike Mounting Hardware		
	#10 x 1" PFHU P/N: 100109	Used to install bottom strike to floor. (Used with anchors, two styles of anchors included)
	10-24 x 1/2" PFHU P/N: 100112-108	Used to install bottom strike to floor (alternate)
	10-32 x 1/2" PFH P/N: PP-5802-308	Used to install top strike pocket to header and strike insert to top strike pocket

Latch Mounting Hardware		
	10-24 x 5/16" PFH P/N: 100112-105	Used to install bracket to bottom assembly and top latch
	10-24 x 3/8" PPH P/N: PP-5304-306	Hollow Metal / Wood doors: bottom bracket to latch Hollow Metal doors: Top & bottom latch brackets to door
	#10 x 3/4" PPHS P/N: PP-5183-66	Used to install bottom assembly to bottom of door & top latch to top of door (For NON-FIRE RATED)

Tools Required

Power Drill
Level
Screw Drivers
Hammer
Pencil
Center Punch
Drill Bit Set
Pliers
Safety Glasses
Tape Measure
Hack Saw (Chopsaw preferred)
Tap Wrench/ Hex Wrench - 5/64
Masonary Bits - 3/16", 5/16" & 1"

!!!CHECK BEFORE STARTING!!!

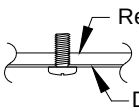


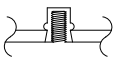
Minimum Stile Width: 4-1/2"

Doors and frames with walls having a structural thickness (metal skin plus reinforcement) to engage less than (3) full screw threads, are considered unreinforced for hardware.

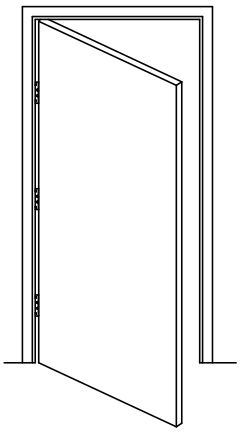
Unreinforced Doors: Use Sex Nuts and Bolts
Unreinforced Frames: Use Blind Rivet Nuts (see sketch).
Fasteners for unreinforced openings are not supplied by Detex.

Reinforced door or frame engages at least (3) screw threads.

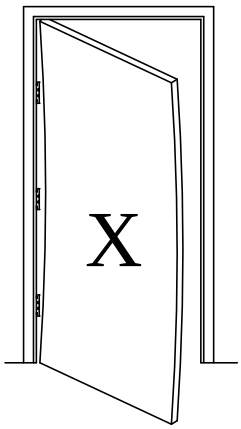




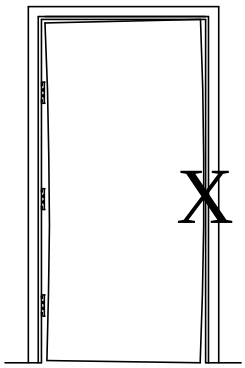
Blind Rivet Nut



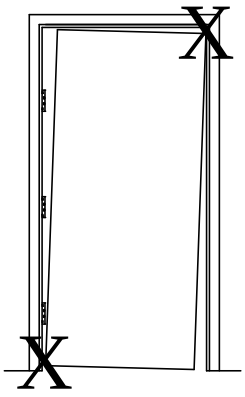
Door Must Swing Freely



Door Must Not be Warped



Door Must Not Bind

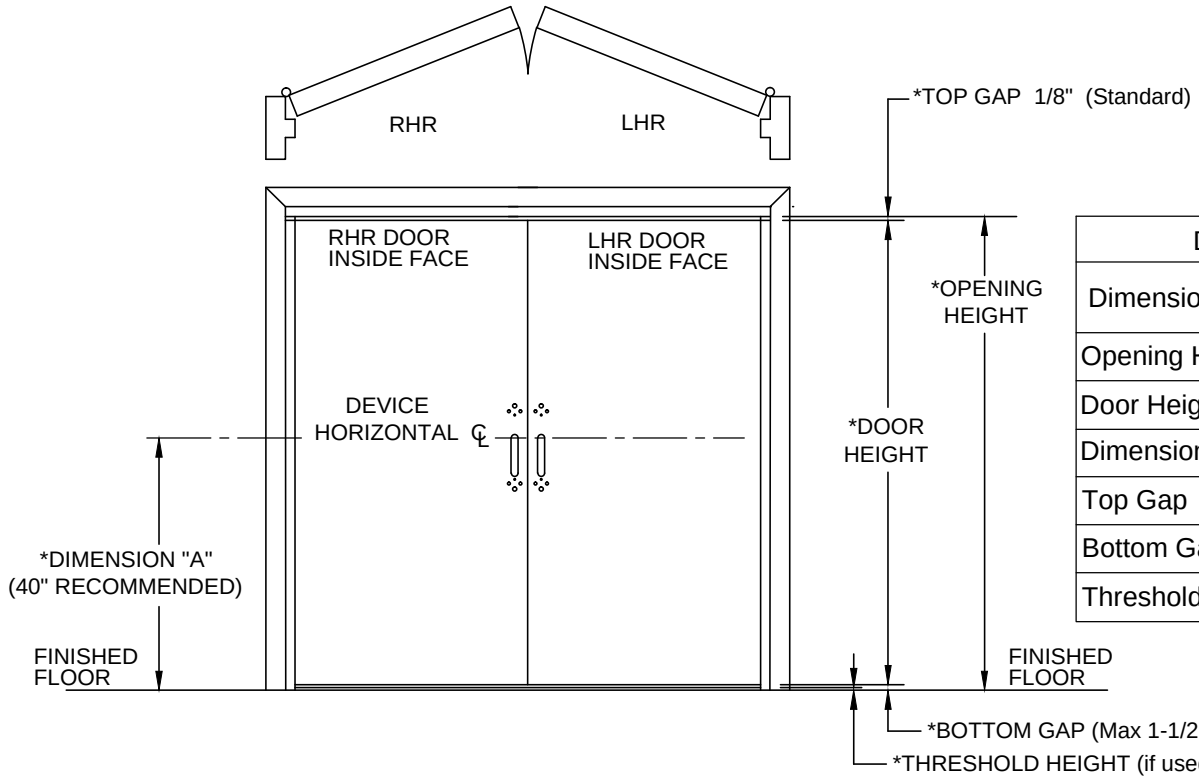


Door Must Not Sag

NOTE: LOCAL CODES MAY REQUIRE THROUGH BOLTING. SEX NUTS ARE **NOT** INCLUDED WITH THIS DEVICE. SEX NUTS CAN BE PURCHASED SEPARATELY.

STEP 1: DOOR / OPENING MEASUREMENTS

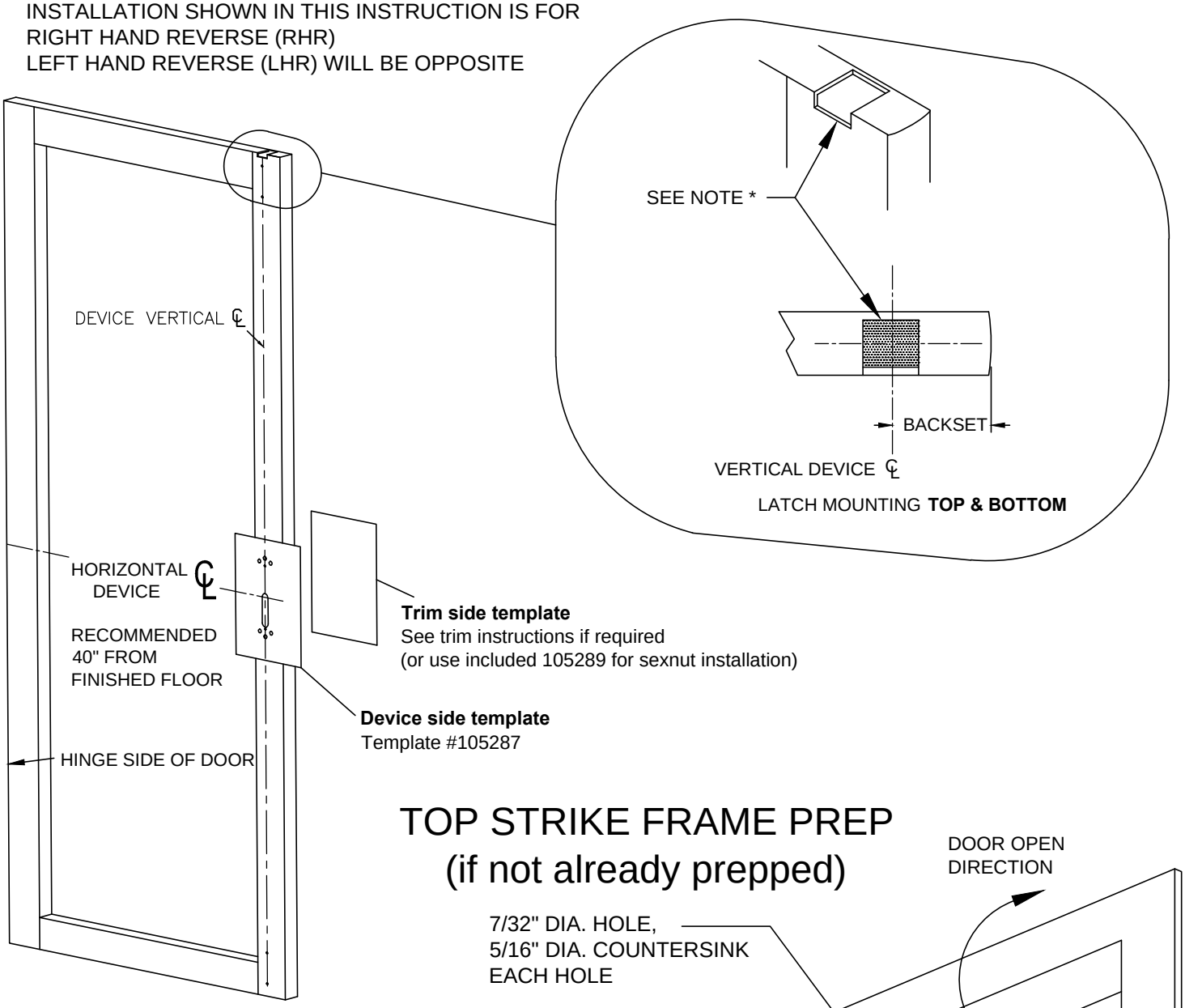
Measure per figure below:
*****These dimensions will be needed during rod length adjustment. Measure door before removing.



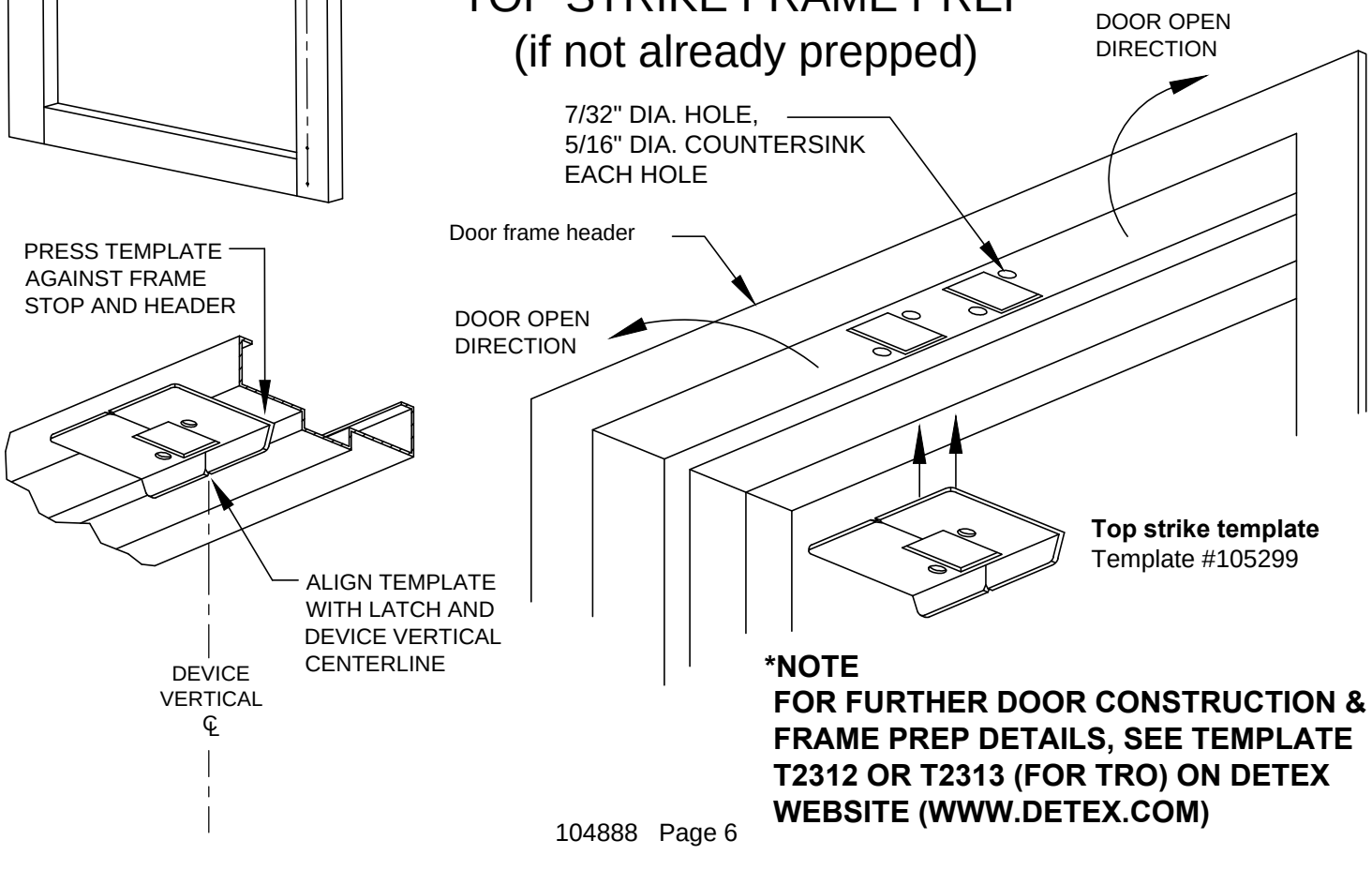
Dimension table	
Dimension name	Dimension value (fill in)
Opening Height	
Door Height	
Dimension "A"	
Top Gap	
Bottom Gap	
Threshold Height	

STEP 2: DOOR PREP - ALUMINUM & FRP DOOR

INSTALLATION SHOWN IN THIS INSTRUCTION IS FOR
RIGHT HAND REVERSE (RHR)
LEFT HAND REVERSE (LHR) WILL BE OPPOSITE



TOP STRIKE FRAME PREP
(if not already prepped)



***NOTE**
FOR FURTHER DOOR CONSTRUCTION & FRAME PREP DETAILS, SEE TEMPLATE T2312 OR T2313 (FOR TRO) ON DETEX WEBSITE (WWW.DETEX.COM)

For 6'-8" (80") to 8'-0" (96") Door

STEP 3: TOP ROD ASSEMBLY & INITIAL ADJUSTMENT

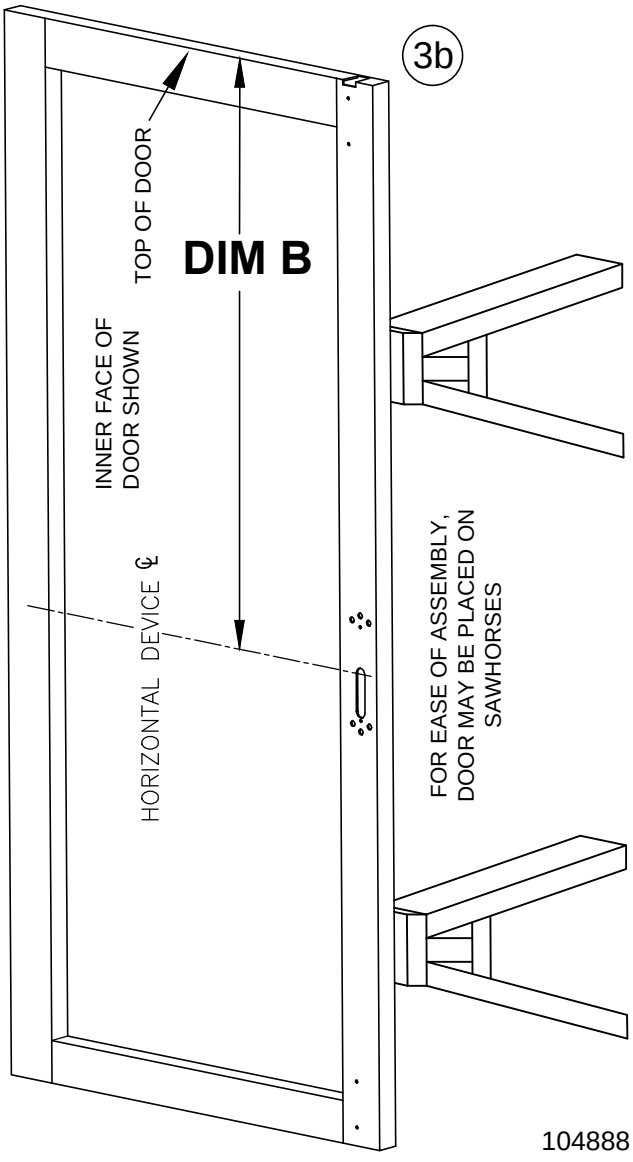
3a. Align hole A in rod 104187 with hole in top latch as shown at right & tap the 13/16" long pin into latch hole.

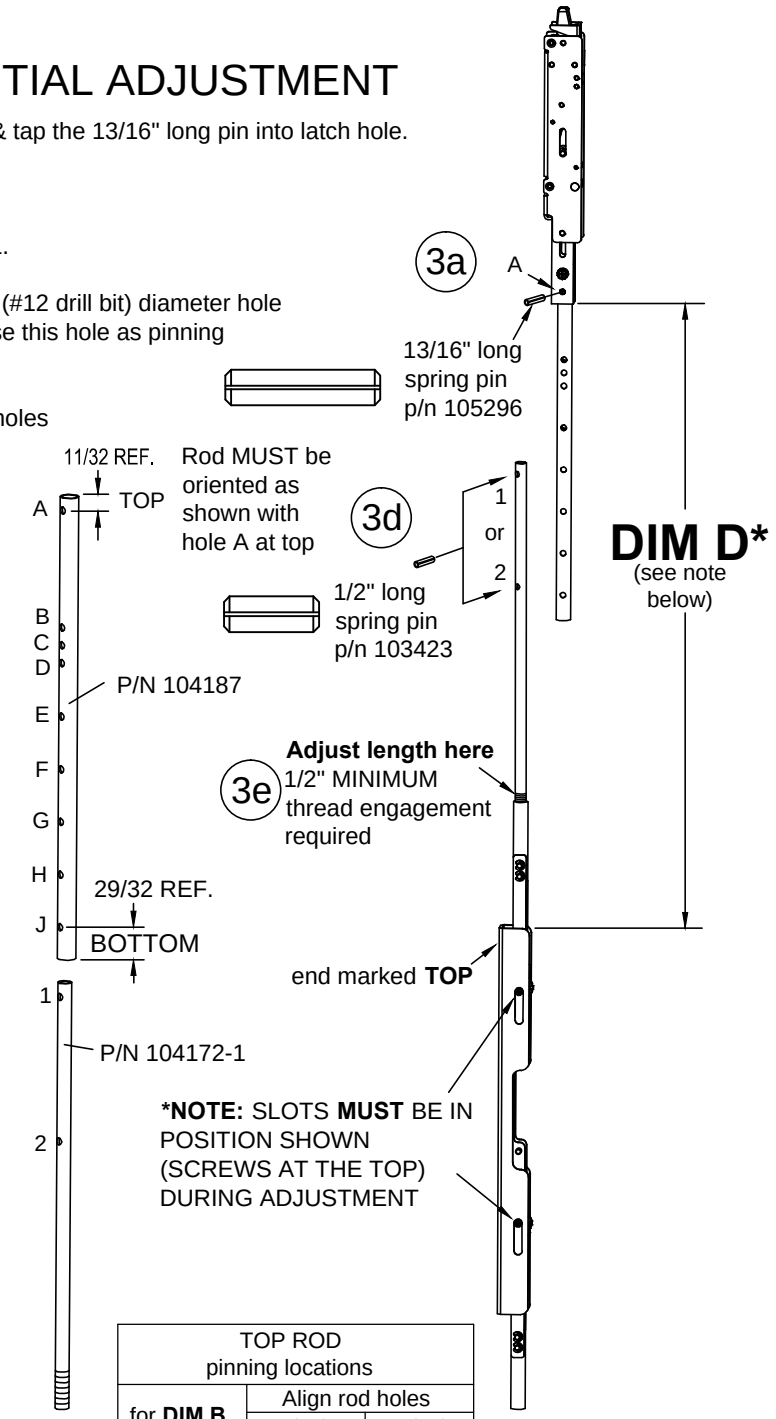
3b. Measure **DIM B** as shown below.

3c. Use chart to determine pinning location of rods 104187 & 104172-1.
Round **DIM B** to nearest value in chart.
If more than 3/4" different from one of these chart values, drill a .189 (#12 drill bit) diameter hole halfway between the 2 holes nearest to the measured **DIM B** and use this hole as pinning hole in next step.

3d. Insert 104172-1 rod into 104187 rod & line up appropriate pinning holes (from chart) on both rods and tap in the 1/2" long pin to secure.

3e. Calculate **DIM D**:
(**DIM D** = measured **DIM B** minus 15 7/8")
Thread the assembled rods/latch into the centerlift mechanism assembly as shown at right until dimension **DIM D** is achieved (within 1/16").





3c

TOP ROD pinning locations		
for **DIM B** dimension of:	Align rod holes	
	Rod p/n 104172-1	Rod p/n 104187
	HOLE	HOLE
39-7/8"	2	B
40-7/8"	2	C
41-7/8"	2	D
43-7/8"	1	B
44-7/8"	1	C
45-7/8"	1	D
47-7/8"	1	E
49-7/8"	1	F
51-7/8"	1	G
53-7/8"	1	H
55-7/8"	1	J

Note: If the combination of holes used is 2B or 2C, cut off approximately 2" from the UNTHREADED end of rod 104172-1

For 8'-1" (97") to 10' (120") Door

STEP 3: TOP ROD ASSEMBLY & INITIAL ADJUSTMENT

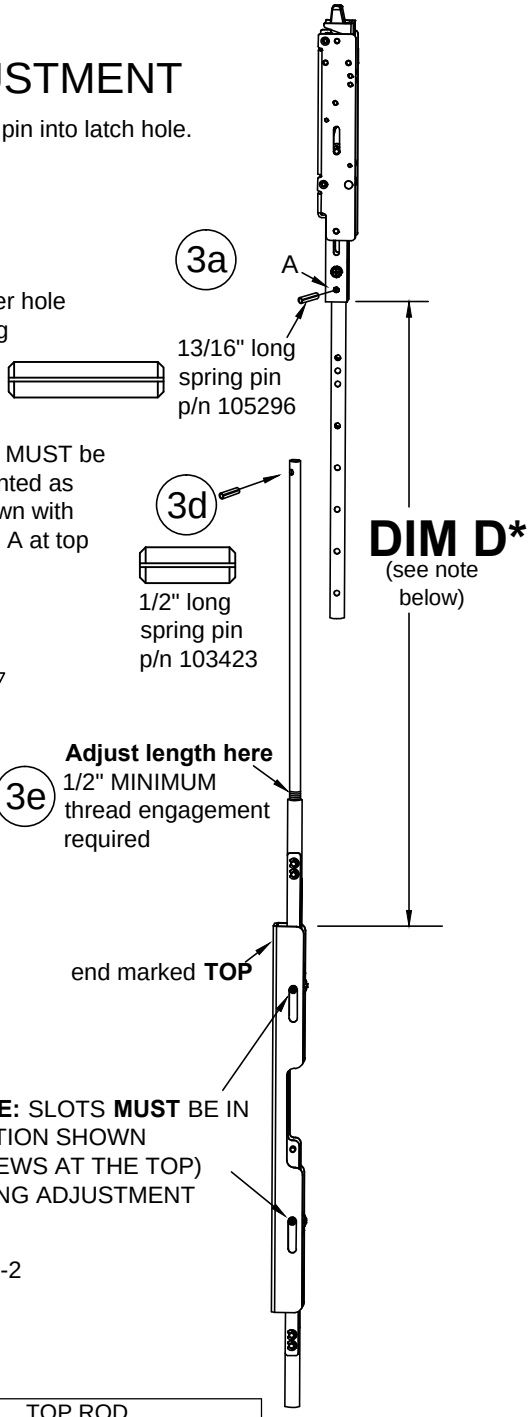
3a. Align hole A in rod 105097 with hole in top latch as shown at right & tap the 13/16" long pin into latch hole.

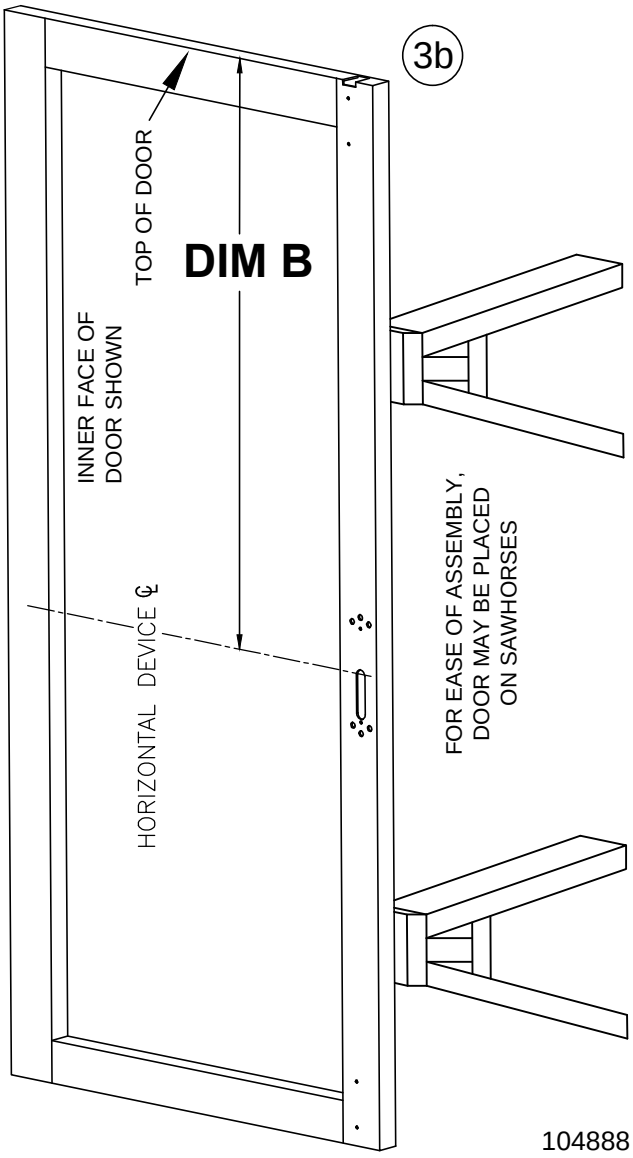
3b. Measure **DIM B** as shown below.

3c. Use chart to determine pinning location of rods 105097 & 104172-2.
Round **DIM B** to nearest value in chart.
If more than 3/4" different from one of these chart values, drill a .189 (#12 drill bit) diameter hole halfway between the 2 holes nearest to the measured **DIM B** and use this hole as pinning hole in next step.

3d. Insert 104172-2 rod into 105097 rod & line up appropriate pinning holes (from chart) on both rods and tap in the 1/2" long pin to secure.

3e. Calculate **DIM D**:
(**DIM D** = measured **DIM B** minus 15 7/8")
Thread the assembled rods/latch into the centerlift mechanism assembly as shown at right until **DIM D** is achieved (within 1/16").





3c

TOP ROD pinning locations		
for **DIM B** dimension of:	Align rod holes	
	Rod p/n 104172-2	Rod p/n 105097
	HOLE	HOLE
55-7/8"	1	B
56-7/8"	1	C
57-7/8"	1	D
59-7/8"	1	E
61-7/8"	1	F
63-7/8"	1	G
65-7/8"	1	H
67-7/8"	1	J
69-7/8"	1	K
71-7/8"	1	L
73-7/8"	1	M
75-7/8"	1	N
77-7/8"	1	P
79-7/8"	1	Q

STEP 4:

BOTTOM ROD / LATCH ASSEMBLY & ADJUSTMENT
(Disregard if TRO device is being installed)

4a. Using **DIM A** as measured in step 1,
use chart to determine pinning location.

If **DIM A** is **less** than 37-1/4" from finished floor, a new pin hole must be drilled through 105098 rod. Subtract the centerline dimension from 38" and measure up this distance from hole V. Mark and drill .189 diameter hole (#12 drill).

Note: If hole V or W is used (or if new hole is drilled closer to threaded end), trim off UNTHREADED end of rod as needed to allow rod to slide into bottom bolt far enough to pin.

4a

Align rod holes with bottom latch (round **DIM A** to nearest value shown)	
DIM A (device ℄ at distance from floor)	Bottom Rod p/n: 105098 use HOLE
38"	V
39"	W
40"	X
40-3/8"	Y
40-3/4"	Z

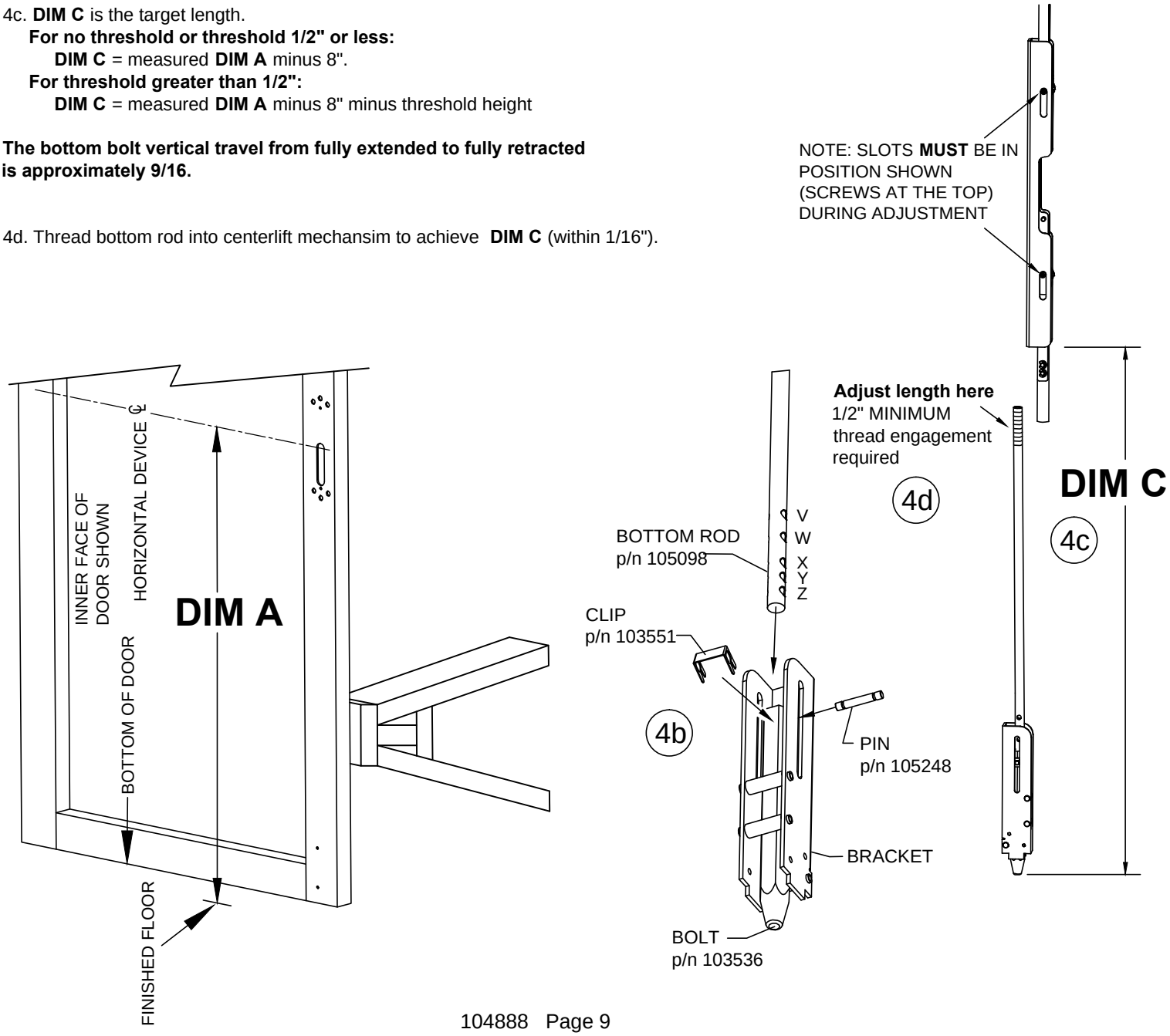
ROD
P/N 105098

4b. Remove clip 103551 and slide pin out. Place bottom rod 105098 into bolt, line up holes and replace pin and place clips into pin grooves.

4c. **DIM C** is the target length.
For no threshold or threshold 1/2" or less:
DIM C = measured **DIM A** minus 8".
For threshold greater than 1/2":
DIM C = measured **DIM A** minus 8" minus threshold height

The bottom bolt vertical travel from fully extended to fully retracted is approximately 9/16.

4d. Thread bottom rod into centerlift mechansim to achieve **DIM C** (within 1/16").

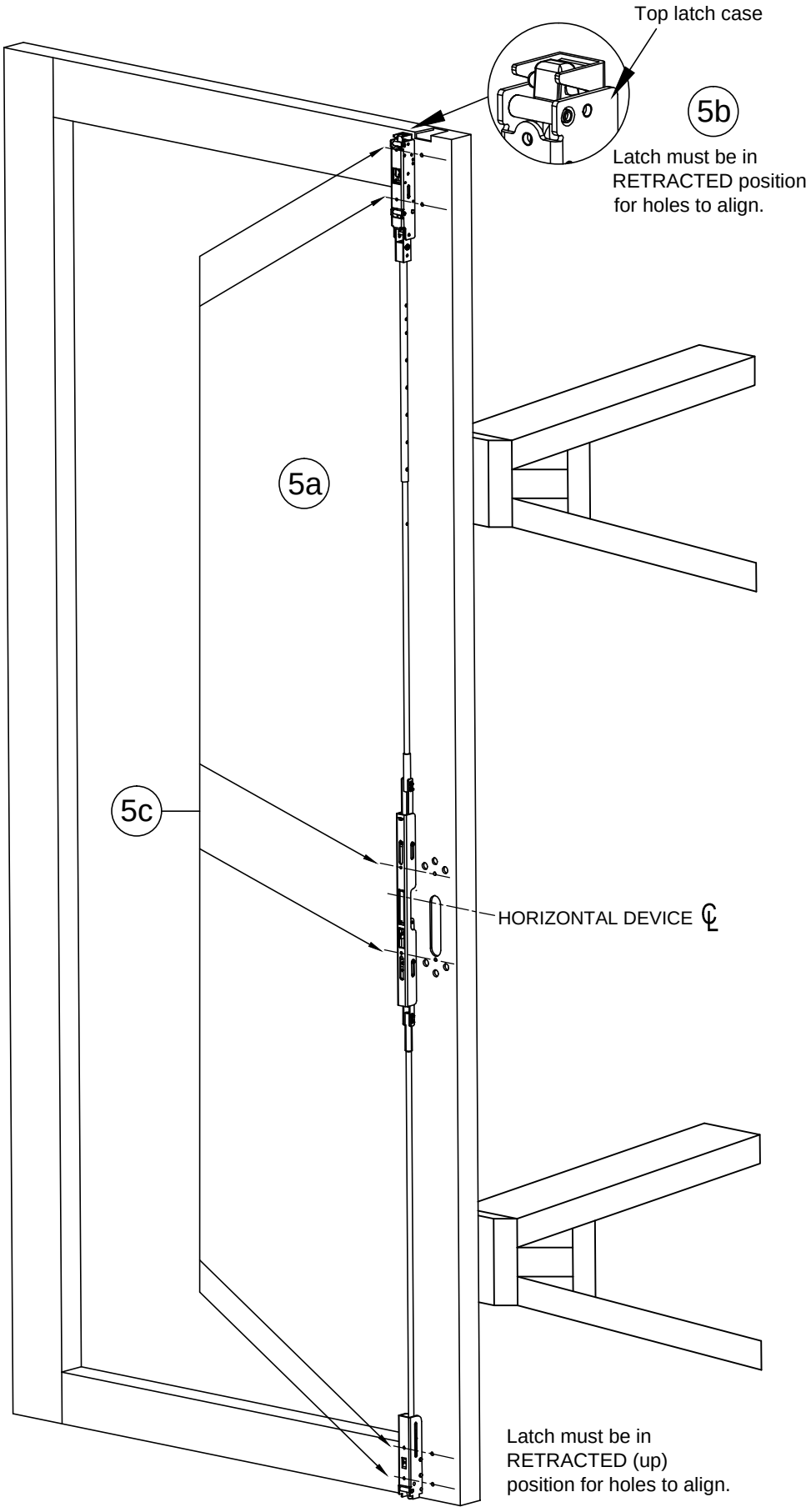


STEP 5:
VISUAL ALIGNMENT CHECK:

5a. Lay internal latch components onto door for trial fit. Take care to protect door finish.

5b. Ensure top latch is in retracted position. Hold top rod in place and push top latch case towards device ℄ until latchbolt is fully retracted.

5c. Mounting holes for top latch, centerlift and bottom latch should line up with mounting holes in door. If not, go back to steps 3 & 4 and verify rod length dimensions.



STEP 6:

ATTACH TOP LATCH MOUNTING BRACKETS

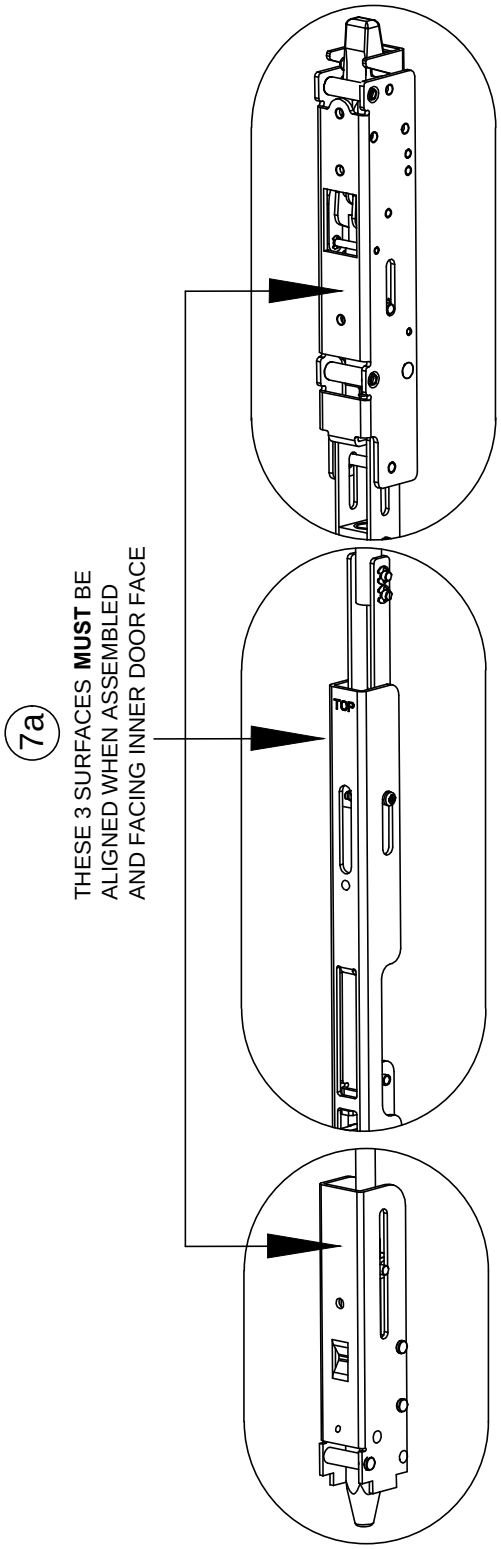
No brackets necessary for aluminum door applications - continue to step 7

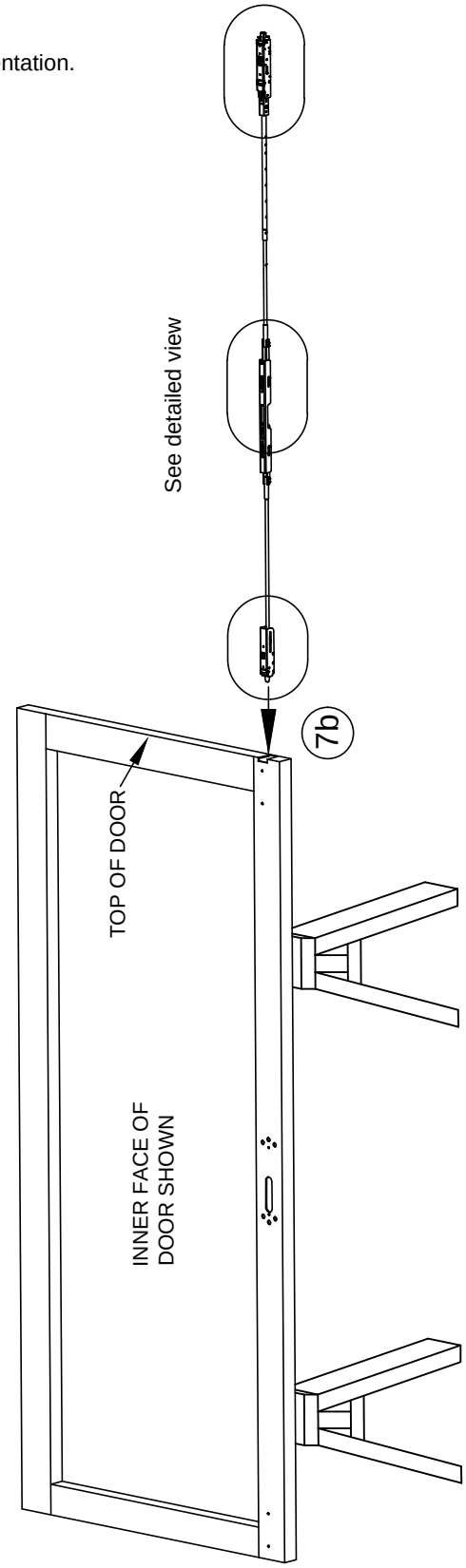
STEP 7:

INSERT ROD / LATCH / CENTERLIFT ASSEMBLY INTO DOOR

7a. Align surfaces as shown below.

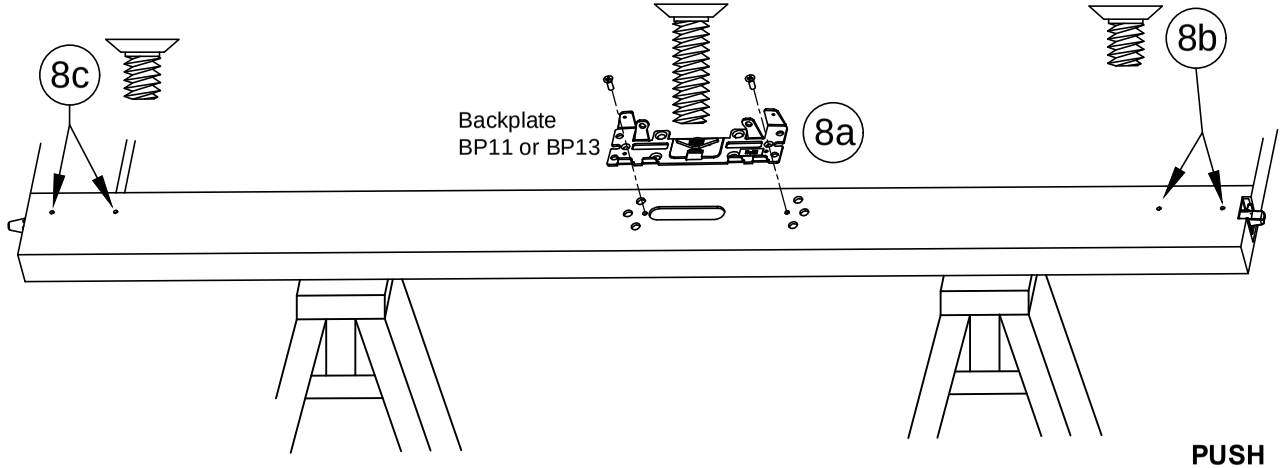
7b. Gently insert assembly through door top, taking care to maintain assembly orientation.





STEP 8: SECURE ROD / LATCH / CENTERLIFT ASSEMBLY TO DOOR

8a. Attach back plate with two screws - DO NOT OVERTIGHTEN.
Assembly hint: Assemble one screw loosely without backplate, then add second screw through backplate. Remove first screw, align backplate and then re-install first screw.
8b. Attach top latch with two screws.
8c. Attach bottom latch with two screws.



STEP 9: VERIFY CENTERLIFT MECHANISM OPERATION

9a. Check current centerlift position using views shown.

9b. To extend latches, push and hold down on the holdback bracket to disengage the retraction feature, then use a screwdriver inserted into the activation slot to gently lower the slot to the extended position as shown.

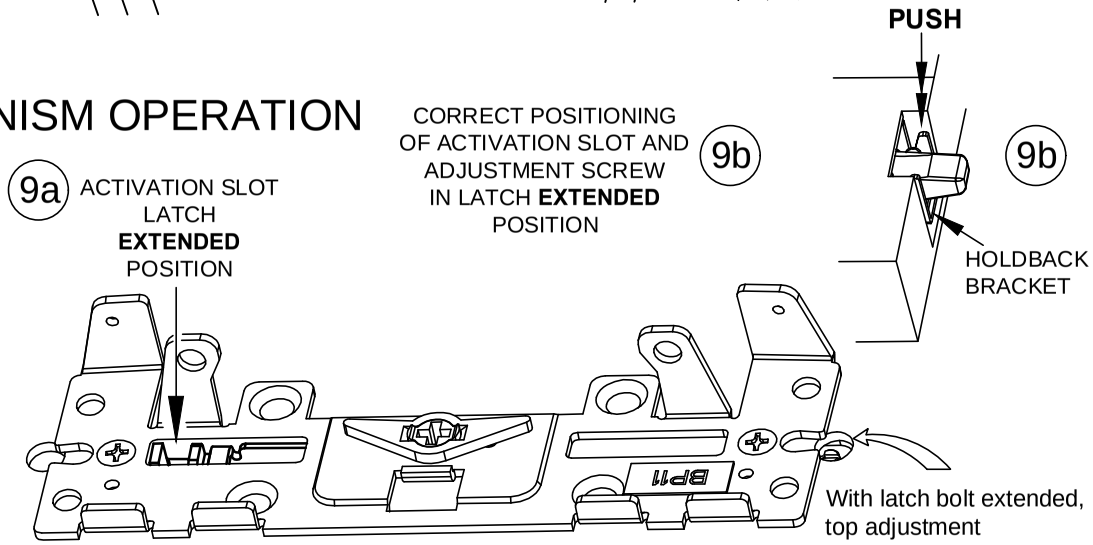
9c. To retract latches, gently insert a screwdriver into the activation slot and raise the slot to the retracted position as shown.

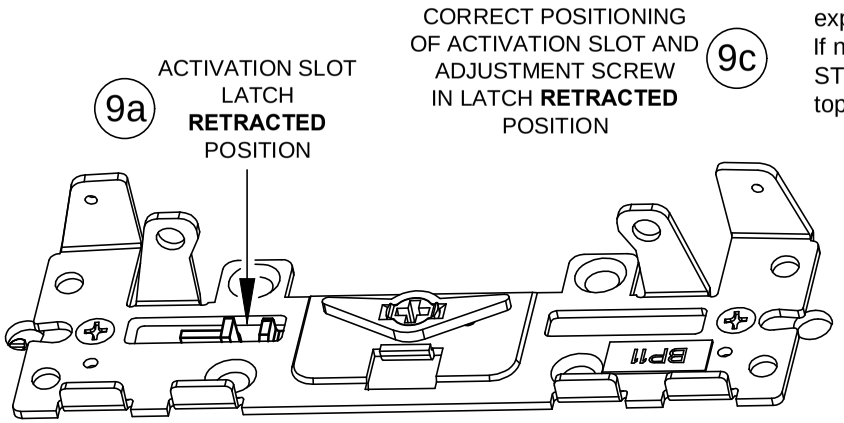
TROUBLESHOOTING:
If latchbolt is fully extended while activation slot is not fully in the extended position, **then top rod is too short**. Go back to STEP 3 and correct.

If latchbolt is partially retracted while activation slot is fully in the extended position, **then top rod is too long**. In this case, latchbolt will be fully retracted before activation slot can travel fully to the retracted position. Go back to STEP 3 and correct.

9d. **Bottom bolt drag check:**
With top latch in retracted position, check to ensure that bottom bolt is not extending from bottom of door a distance greater than the bottom gap at finished floor (minus the threshold height if threshold is used).
If it is, **then bottom rod is too long**. Go back to STEP 4 and correct.

9e. Upon completion, retract latches before proceeding to Step 10.

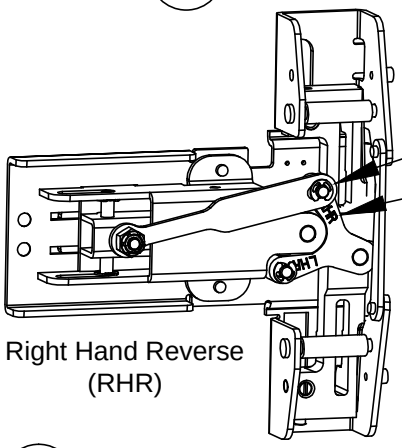




STEP 10: HANG DOOR / ASSEMBLE DEVICE TO DOOR

10a INSTALL DOOR ONTO FRAME PER MANUFACTURER'S SPECIFICATIONS

10b **Rehanding procedure** if required

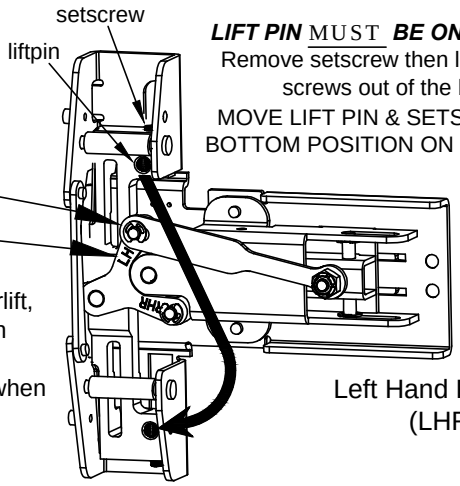


Right Hand Reverse (RHR)

NOTE: LINK MUST ALWAYS BE IN TOP POSITION

HANDING INDICATOR ON CENTERLIFT

If link is not in uppermost position on the centerlift, carefully remove "E" clips and reposition link on top pin of the centerlift and replace "E" clips. Verify carriage moves up and down smoothly when pushpad is depressed and released.

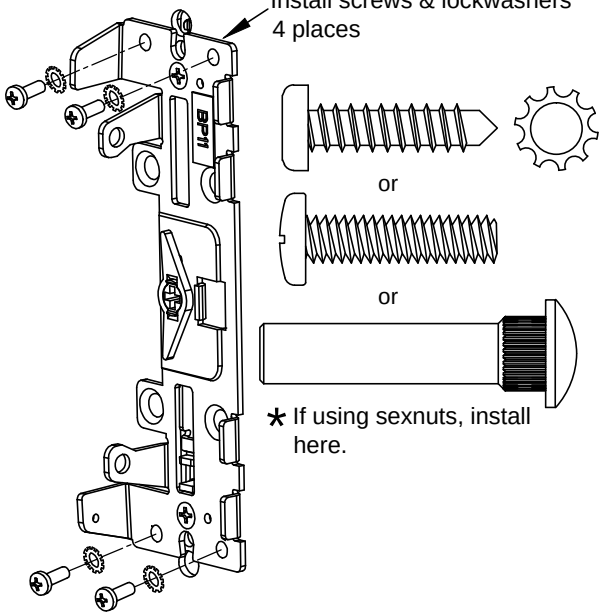


LIFT PIN MUST ***BE ON*** BOTTOM
Remove setscrew then liftpin which screws out of the back.
MOVE LIFT PIN & SETSCREW TO BOTTOM POSITION ON CARRIAGE.

Left Hand Reverse (LHR)

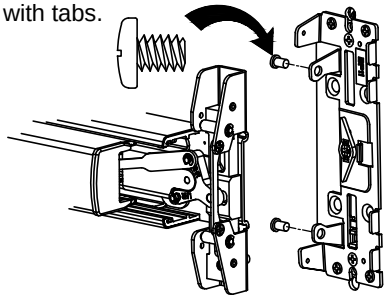
10c REFER TO TRIM INSTRUCTIONS AT THIS TIME, IF APPLICABLE

10d COMPLETE BACKPLATE MOUNTING

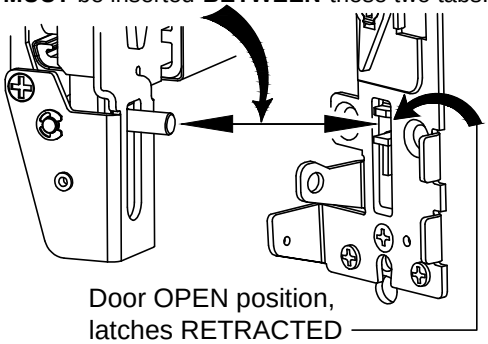


10e INSTALL DEVICE TO BACKPLATE

Install device to backplate & fasten with 2 screws. Depress pushpad appropriate amount to line up lift pin with tabs.

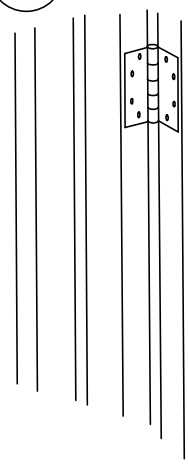


Lift pin protruding from back of centercase **MUST** be inserted **BETWEEN** these two tabs.

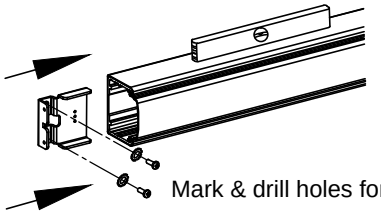


Door OPEN position, latches RETRACTED

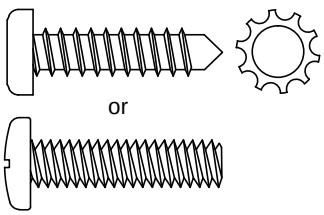
10f INSTALL ENDCAP BRACKET



Level device before installing endcap bracket

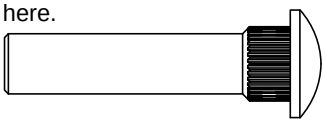


Mark & drill holes for endcap bracket scews



or

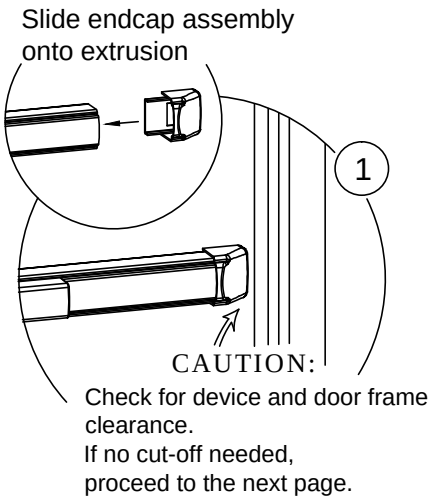
*If using sexnuts, install here.

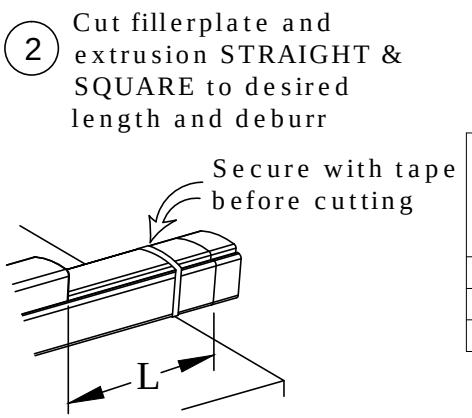


Ensure that device does not require cutting (see Step 10g on next page).

Test device fuction after installation of endcap is complete by depressing & releasing pushpad. Action should be smooth with full return of pushpad and latch travel.

10g CHECKING FOR DEVICE CLEARANCE (Cut-Off procedure if required)





Minimum Fillerplate Length	
Type	Length (L)
LD	2-1/2"
HD/CD	3"

For aluminum Advantex finish cutdown applications:
After cutting, the baseplate extrusion can be reversed to place the cut end inside the head cover. To do so, loosen the setscrew inside the aluminum baseplate extrusion and slide extrusion out, reverse, & slide back in. Tighten setscrew.

10h MORTISE CYLINDER INSTALLATION

CD (Cylinder Dogging) Cylinder Installation

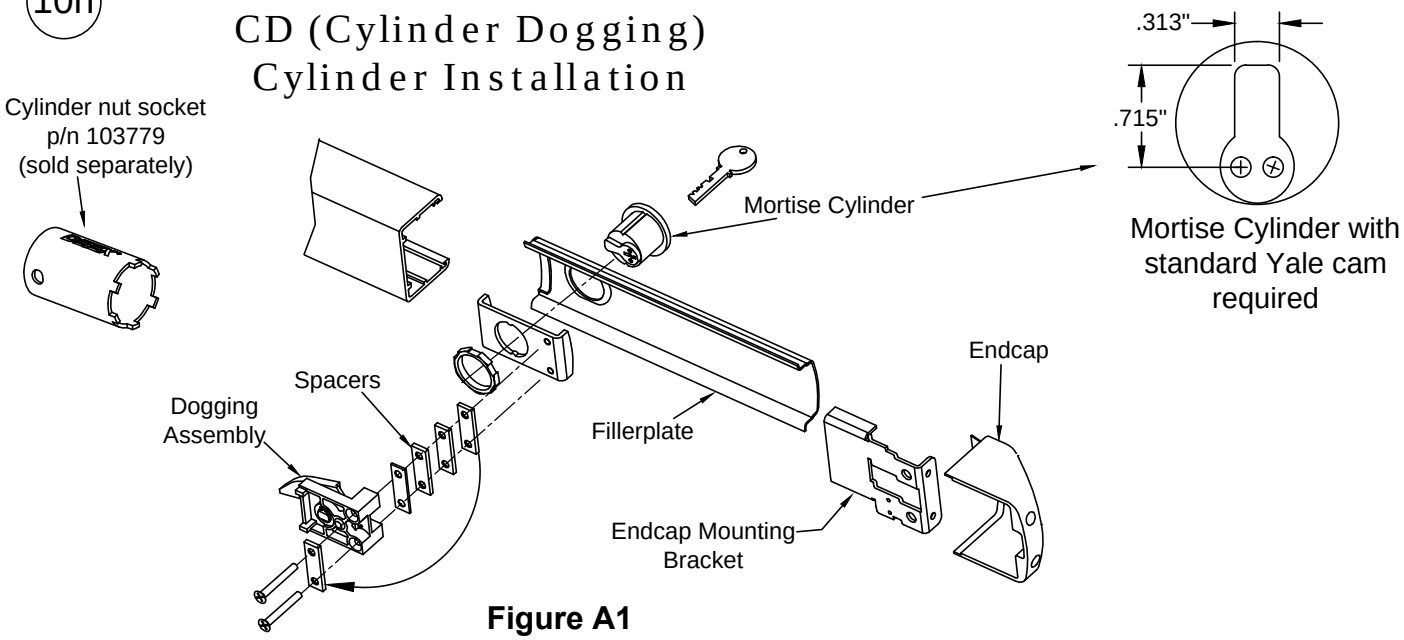


Figure A1

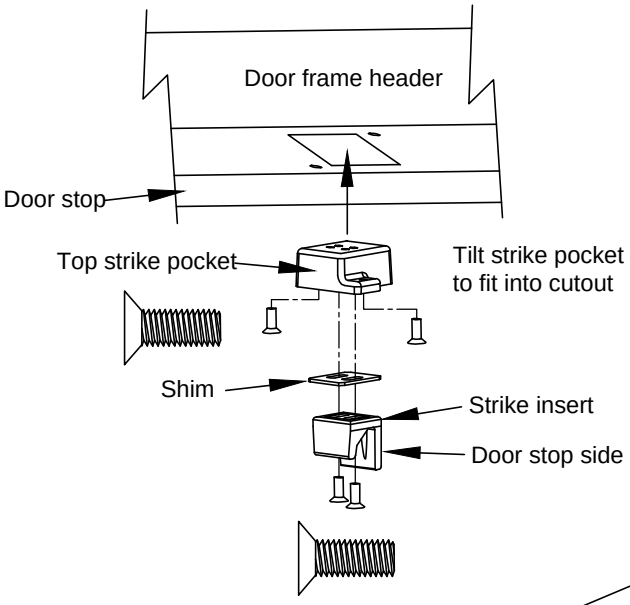
Follow steps "a" through "g" for CD installations

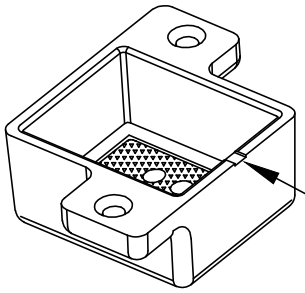
a. Remove endcap and endcap mounting bracket.
b. Remove fillerplate.
c. Remove and discard shipping insert and nut. Loosen (2) screws from dogging assembly.
d. Install mortise cylinder (sold separately) with large hex nut provided.
e. Trial fit dogging assembly. If cylinder is too short, remove spacers as necessary and reattach them under the (2) screw heads. Fasten the (2) screws to the rest of the assembly.

NOTE: The key should easily turn in both directions.

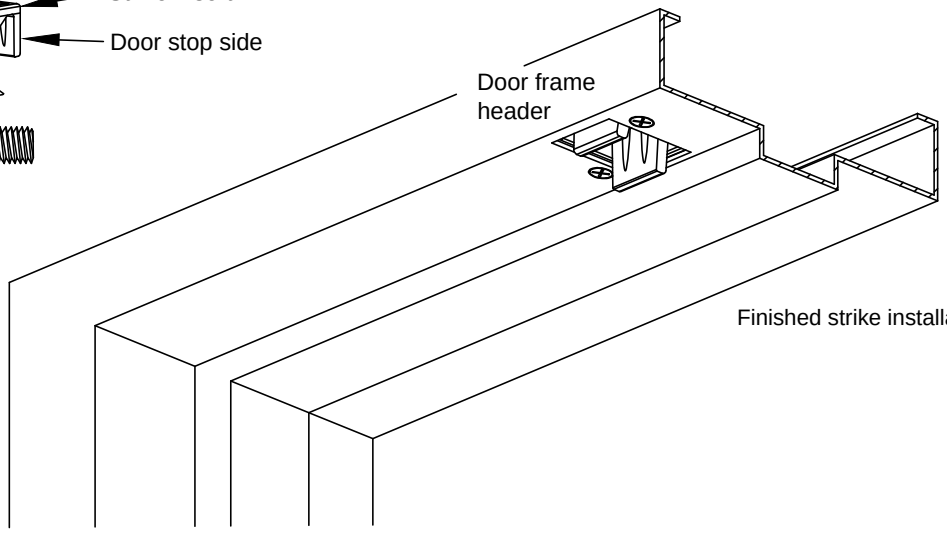
f. Rotate key counterclockwise
g. Assembly complete. Continue with Panic Hardware instruction.

STEP 11: TOP STRIKE INSTALLATION





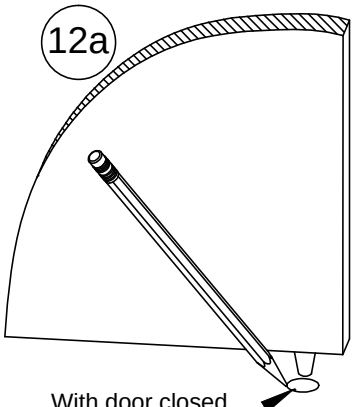
Begin strike installation with notched side of pocket towards inside door face. If additional adjustment is needed, rotate pocket 180°



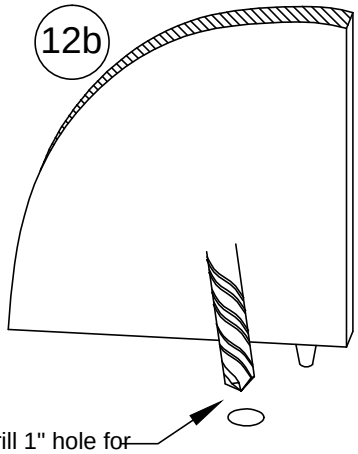
Finished strike installation view

STEP 12: BOTTOM STRIKE INSTALLATION
(Disregard if TRO device is being installed)

BOTTOM STRIKE HOLE LOCATION & DRILLING

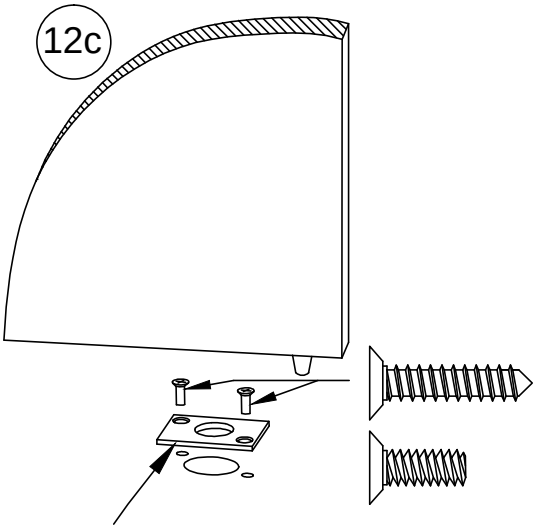


With door closed use tip of bolt to mark location for strike.



Drill 1" hole for strike (depth - 3/4")

NOTE:
1. If using threshold, drill 5/8" hole.



Place strike centered in hole, mark then drill holes for strike mounting screws and secure strike with two screws.

STEP 13: FINE LATCH ADJUSTMENT

13a. Ensure that latches are fully retracted. Gently close door. Latches should extend when door is closed.

13b. Depress pushpad and open door. Top latch should clear top strike & bottom bolt should not drag. Latches should remain in retracted position with pushpad released.

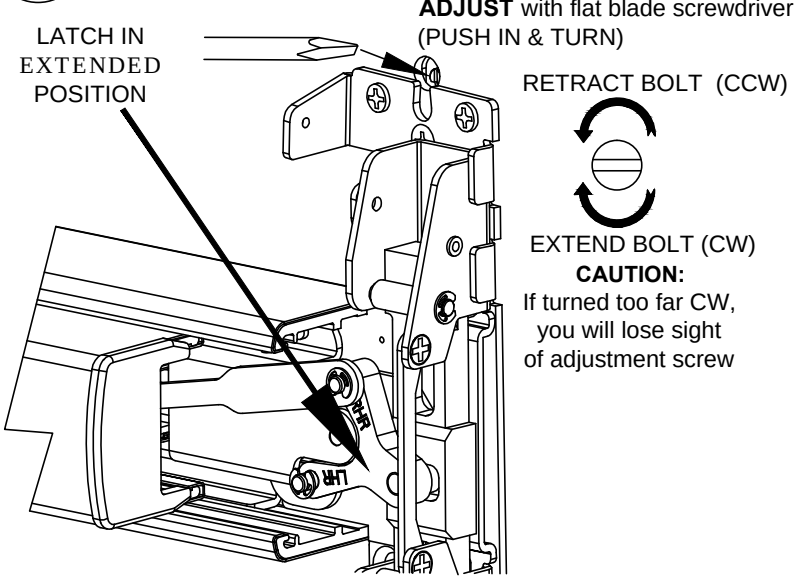
FINE LATCH ADJUSTMENT (if needed)

(± 3/8" adjustment possible on both top & bottom rods independently. See diagram below.)

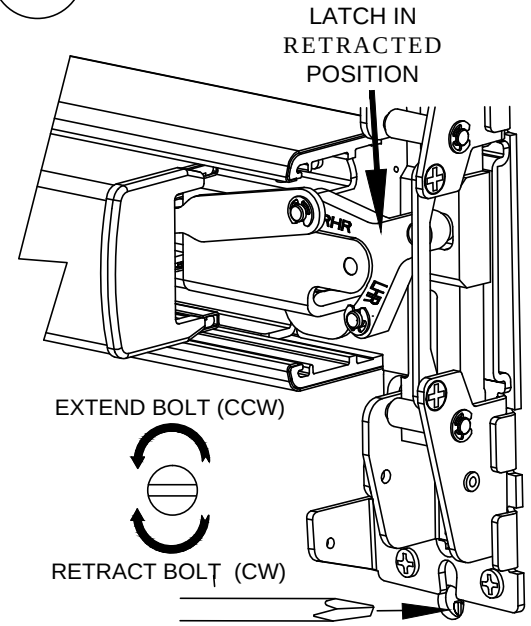
13c. Top strike fine adjustment: Adjust strike engagement by either retaining or removing shim. Adjust door tightness by moving insert to desired position. Note that strike pocket can be flipped around to achieve additional adjustment (see step 11).

13d: **TOP LATCH ADJUSTMENT:** With latches extended, turn CCW until the top latchbolt projection begins to visually decrease, then turn CW until latchbolt projects fully. Rotate CW one additional full turn.

13d Top Adjustment



13e Bottom Adjustment



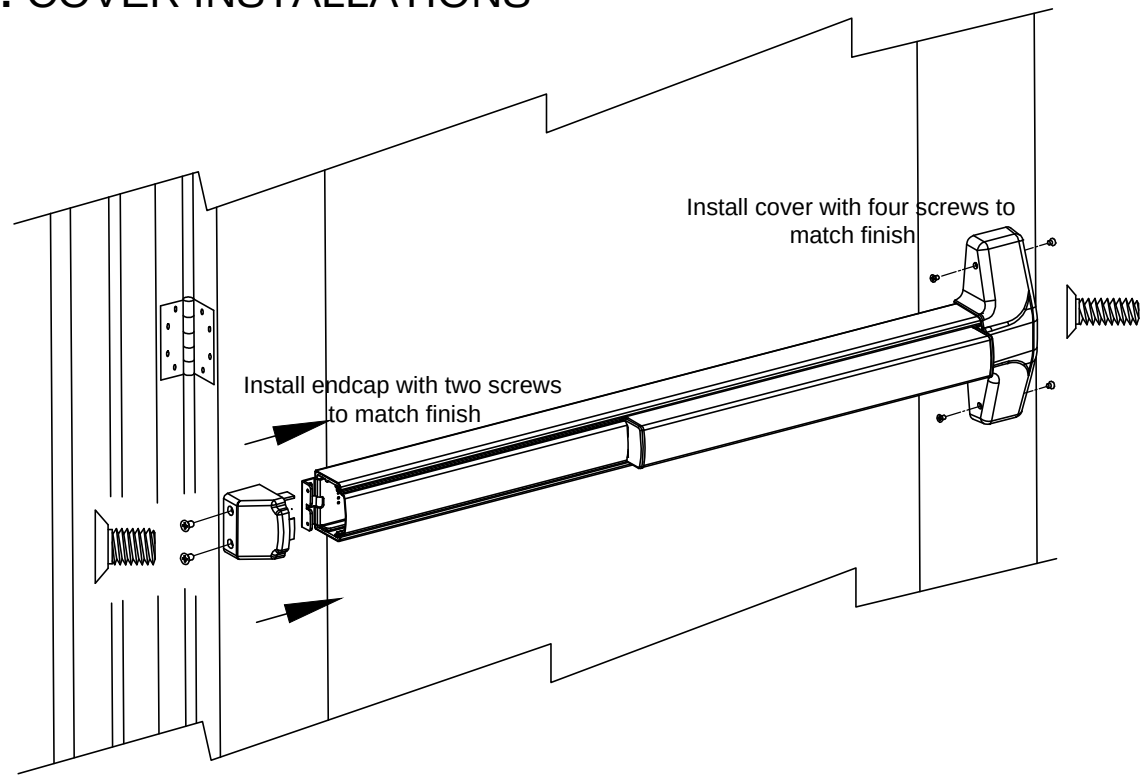
13e: **BOTTOM LATCH ADJUSTMENT:** With pushpad depressed (retracted position), extend or retract bottom bolt to desired engagement and clearance.

13f. Check device operation. Reference STEP 13a & 13b.

DEVICE OPERATION TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Device not latching when door closes	Bottom bolt is not properly aligned with bottom strike hole.	Modify bottom strike hole for fit.
	Top strike insert is not installed or not correctly aligned with the holdback.	Install and/or position strike insert per instructions.
	Through fasteners for trim (if applicable) are interfering with internal centerlift assembly.	Loosen and re-position through screws to clear.
	Rods improperly adjusted	Adjust rods per instructions. Remove device and re-install per instructions.
Latches release, but pushpad will not fully depress	Device centercase lift finger not inserted properly into centerlift assembly.	Remove device from backplate and re-install with lift finger correctly inserted.
	Top adjustment screw is adjusted too far in the retracted direction (CCW).	Rotate top adjustment screw in the extended direction (CW) per FINE LATCH ADJUSTMENT procedure.
Latches are not releasing when pushpad is fully depressed	Device centercase lift finger not inserted properly into centerlift assembly.	Remove device from backplate and re-install with lift finger correctly inserted.
	Top adjustment screw is adjusted too far in the extended direction (CW).	Rotate top adjustment screw in the retracted direction (CCW) per FINE LATCH ADJUSTMENT procedure.
	Bottom adjustment screw is adjusted too far in the extended direction (CCW).	Rotate bottom adjustment screw in the retracted direction (CW) per FINE LATCH ADJUSTMENT procedure.

STEP 14: COVER INSTALLATIONS

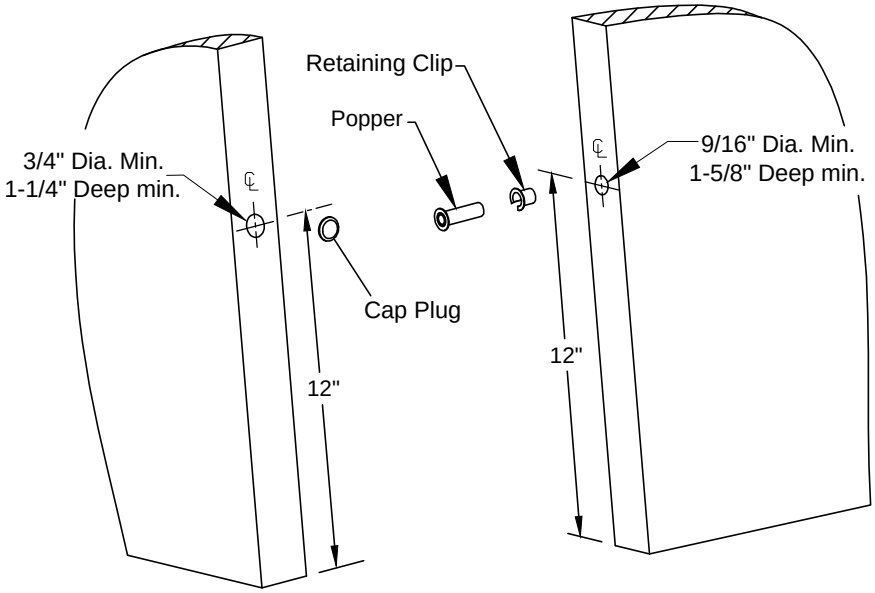


STEP 15: DOOR POPPER INSTALLATION

FIRE RATED TOP ROD ONLY (TRO) DOORS

A door locking popper is required when a fire door utilizes a top latching mechanism only (TRO). The popper is designed to project a spring loaded bolt into the adjacent frame or door in the event of fire. Detex recommends installing the popper in the edge of the door 12" above the threshold or finished floor.

Holes for the popper and plug must be aligned with each other.

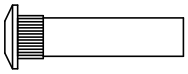


NOTE: Door/Frame reinforcement is required where popper and cap plug are to be installed.

Optional Accessories

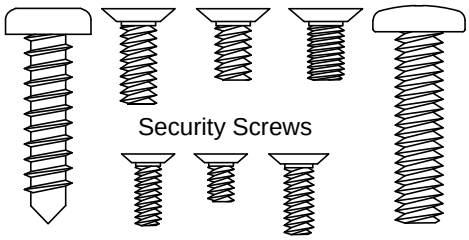
Sex Nut Kits
The #1/4-20 kits are available in 3 finishes:
Brushed Brass BHMA 606: p/n 105274-2
Oil Rubbed Bronze BHMA 613: p/n 105274-25
Stainless Steel BHMA 630: p/n 105274-9

Catalog No: **SN3** uses screws in hardware kit

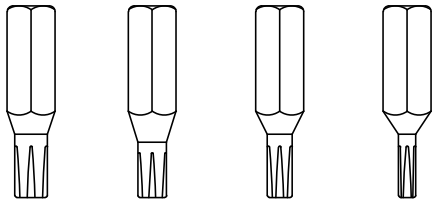


Tamper Kit
(Security Kit)

Catalog # & Part #:
SSK5



Security Screws



Security Pin TORX® Bits provided

Cylinder nut socket
p/n: 103779