104887





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# INSTALLATION INSTRUCTIONS FOR 80/F80/81/F81 SERIES CVR METAL DOOR CONCEALED

# DVANTEX

Concealed Vertical Rod Exit Device 80 / F80 / 81 / F81 Series for Hollow Metal door applications Drawing No. 105280

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

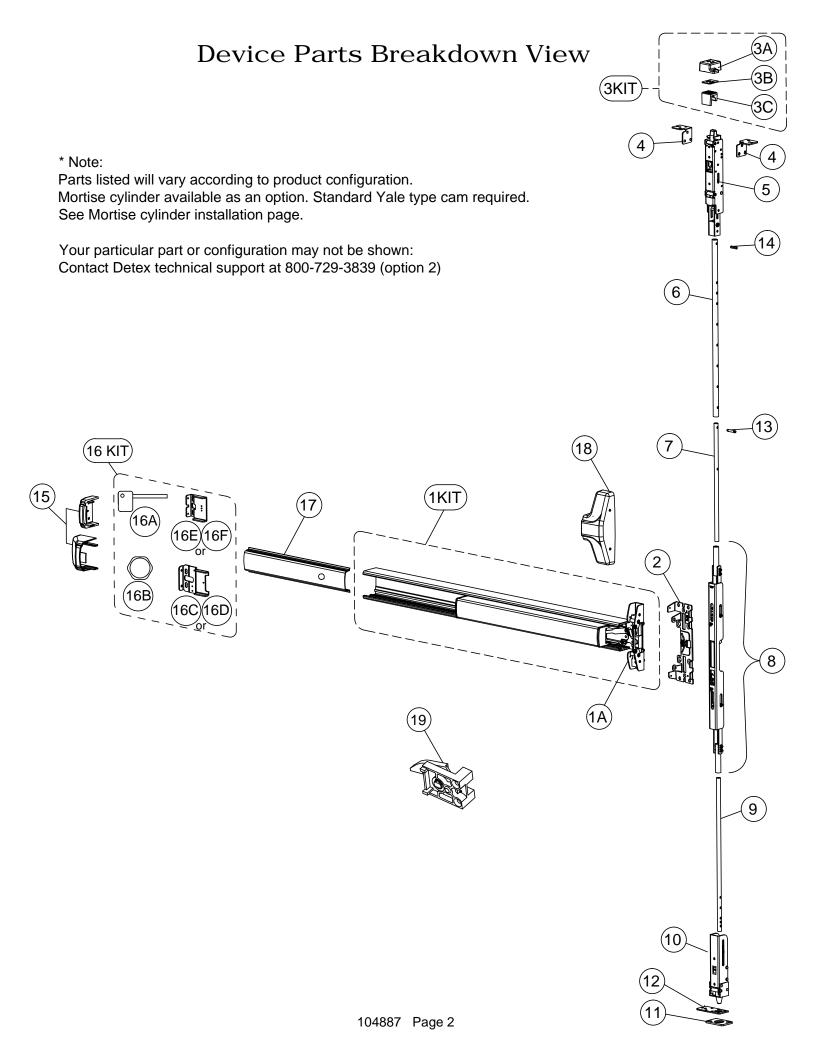
Owner's Copy

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.





	Dev	vice Parts Breakdown Part Numbers	
ITEM	PART #	DESCRIPTION	
105500-160		S&R 80 x STD1 x RHR Centercase/Pushpad Assy	
1KIT	105500-161	S&R 80 x STD1 x LHR Centercase/Pushpad Assy	
	104111-3	Centercase, CVR, Wide, RHR	
1A 104111-4		Centercase, CVR, Wide, LHR	
_	104171-1	Mounting plate, Wide, CVR, BP11 (Use with 08/09 lever trim)	
2	104171-2	Mounting plate, Wide, CVR, BP13 (Use with 03 trim)	
3KIT	105257-2	Top strike kit	
ЗА	105235-1	CVR top strike pocket	
3B	105246	CVR strike shim	
3C	105236-1	CVR top strike insert	
4	104123-1	Top latch mounting bracket RHR	
4	104123-2	Top latch mounting bracket LHR	
5	104121-1	Top latch (Panic)	
5	104121-2	Top latch (Fire)	
6	104187	Outer top rod, 7' thru 8'	
O	105097	Outer top rod, 8'-1" thru 10'	
7	104172-1	Inner top rod, 7' thru 8'	
7 104172-2 Inner top rod, 8'-1" thru 10'		Inner top rod, 8'-1" thru 10'	
8 105990-1 Center lift mechanism asse		Center lift mechanism assembly, Top & Bottom	
0	105990-2	Center lift mechanism assembly, Top Rod Only	
9	105098	CVR bottom rod	
10	104190-2	Bottom latch, HM application	
11	105257-3	Bottom strike kit, 95B	
12	104166	Bottom latch mounting bracket	
13	103423	Spring pin 3/16 x 1/2	
14	105296	Spring pin 3/16 x 13/16	
15	101642-9	Endcap, EC1 (ramped) Stainless Steel 630	
.0	104304-9	Endcap, EC2 (flush) Stainless Steel 630	
	106431-1	Device Hardware Kit, HD, EC1 (not all components shown, includes Items 16A & 16C)	
	106431-2	Device Hardware Kit, CD, EC1 (not all components shown, includes Items 16B & 16C)	
16KIT	106431-3	Device Hardware Kit, EA, EC1 (not all components shown, includes Items 16B & 16D)	
	106431-21	Device Hardware Kit, HD, EC2 (not all components shown, includes Items 16A & 16E)	
	106431-22	Device Hardware Kit, CD, EC2 (not all components shown, includes Items 16B & 16E)	
	106431-23	Device Hardware Kit, EA, EC2 (not all components shown, includes Items 16B & 16F)	
16A	100450	Hex Key (for Hex Dogging)	
16B	100783	Cylinder Nut (for Cylinder Dogging)	
16C	100147	Endcap bracket for EC1 (ramped) endcap w/o battery holder	
16D	101093	Endcap bracket for EC1 (ramped) endcap w/ battery holder	
16E	104303	Endcap bracket for EC2 (flush) endcap w/o battery holder	
16F	104636	Endcap bracket for EC2 (flush) endcap w/ battery holder	
17	100860-165	Fillerplate Subassembly, S&R, Hex Dogging, HD, 630	
18	102353-9	Centercase Cover, Stainless Steel, Wide 630	
19	102216-2	Hex Dogging Assembly	
19	102216	Cylinder Dogging Assembly	

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 door.  Drill Bit - 3/16 pilot hole x 1" deep	
	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)	
50	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.
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Strike Mounting Hardware			
Jununun >	#10 x 1" PFHU P/N: 100109	Used to install bottom strike to floor. (Used with anchors, two styles of anchors included)	
mmmm	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		
mm	10-24 x 5/16" PFH P/N: 100112-105	Used to install bracket to bottom assembly and top latch	
<b>Summ</b>	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)	

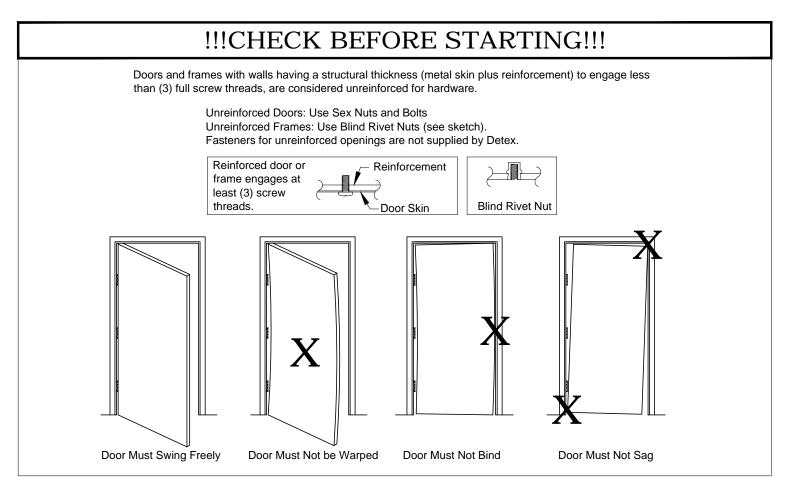
Power Drill Level Screw Drivers Hammer Pencil Center Punch

# **Tools Required**

Drill Bit Set Safety Glasses
Pliers Tape Measure

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Hack Saw (Chopsaw preferred) Tap Wrench/ Hex Wrench - 5/64 Masonary Bits - 3/16", 5/16" & 1"

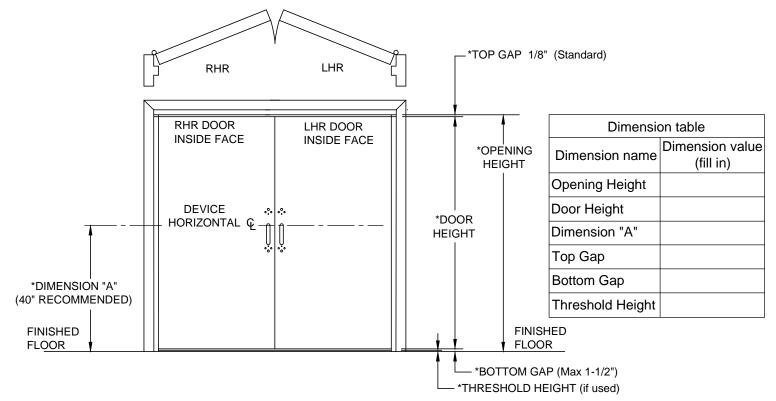


NOTE: LOCAL CODES MAY REQUIRE THROUGH BOLTING. SEX NUTS ARE NOT INCLUDED WITH THIS DEVICE. SEX NUTS CAN BE PURCHASED SEPARATELY.

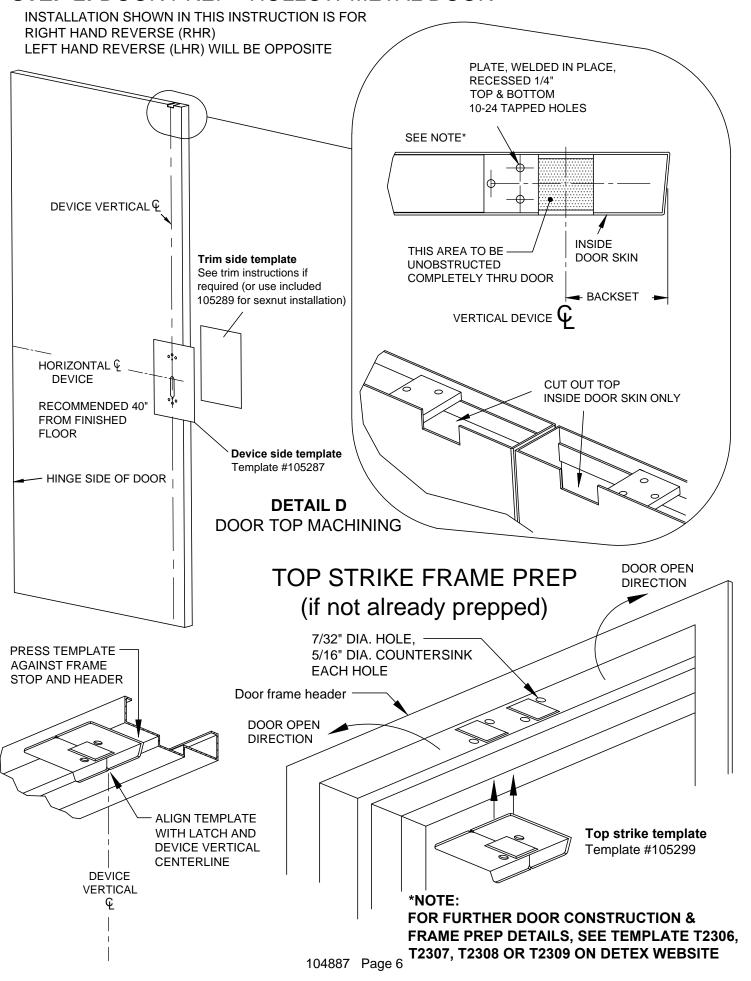
# **STEP 1:** DOOR / OPENING MEASUREMENTS

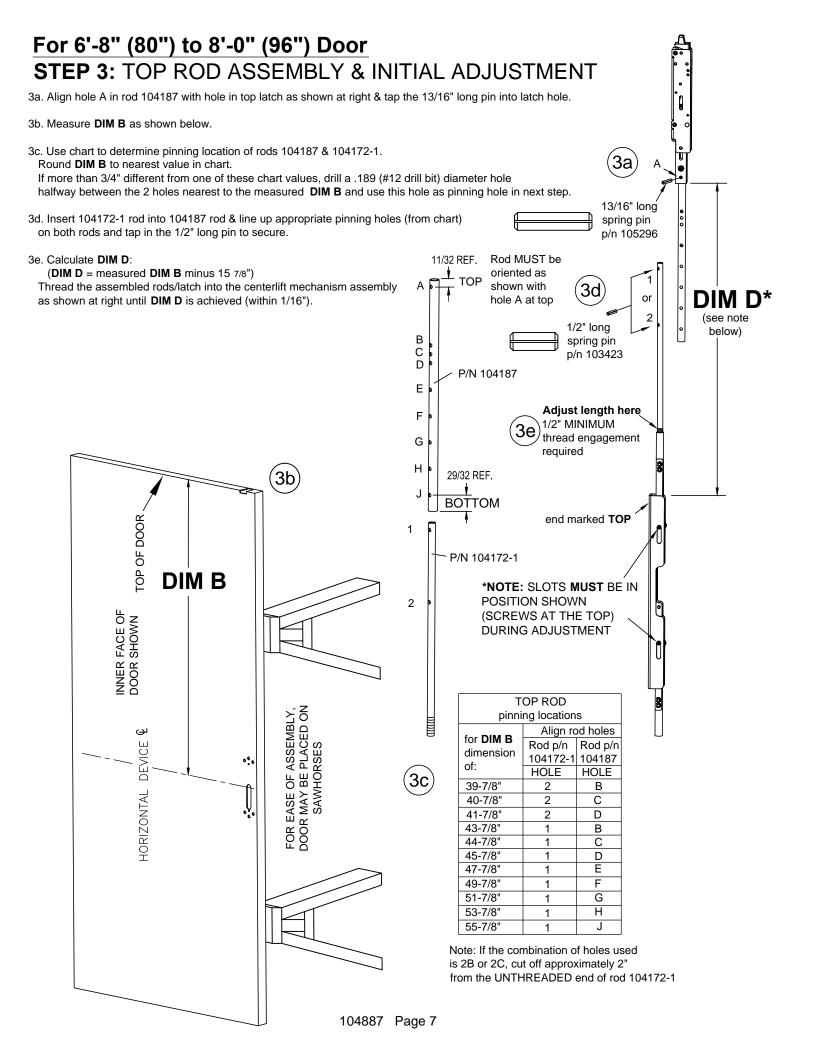
Measure per figure below:

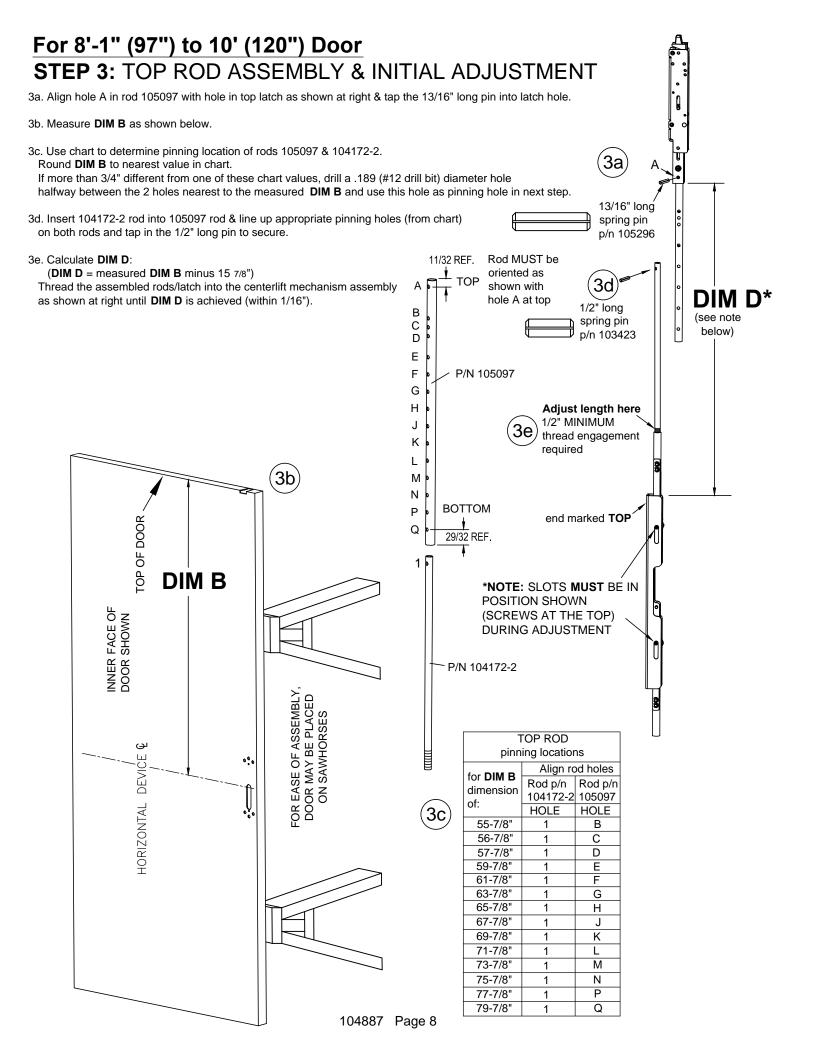
\*These dimensions will be needed during rod length adjustment. Measure door before removing.



# **STEP 2: DOOR PREP - HOLLOW METAL DOOR**







# 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).

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

NOTE: SLOTS MUST BE IN

(SCREWS AT THE TOP) **DURING ADJUSTMENT** 

POSITION SHOWN

ROD P/N 105098

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.

- 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:

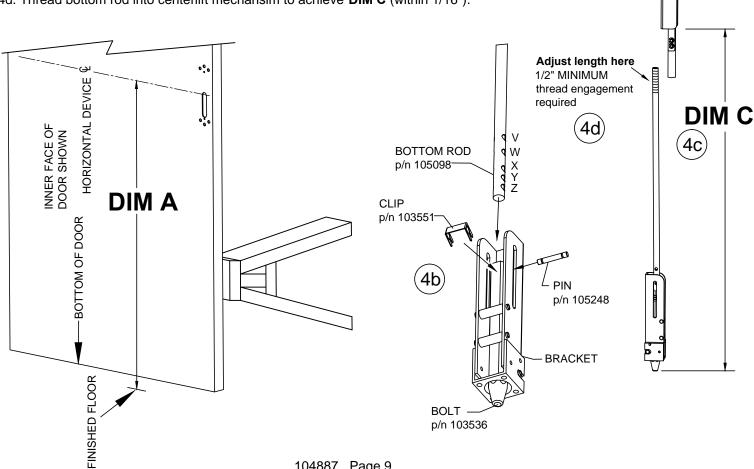
**DIM C** = measured **DIM A** minus 8".

For threshold greater than 1/2":

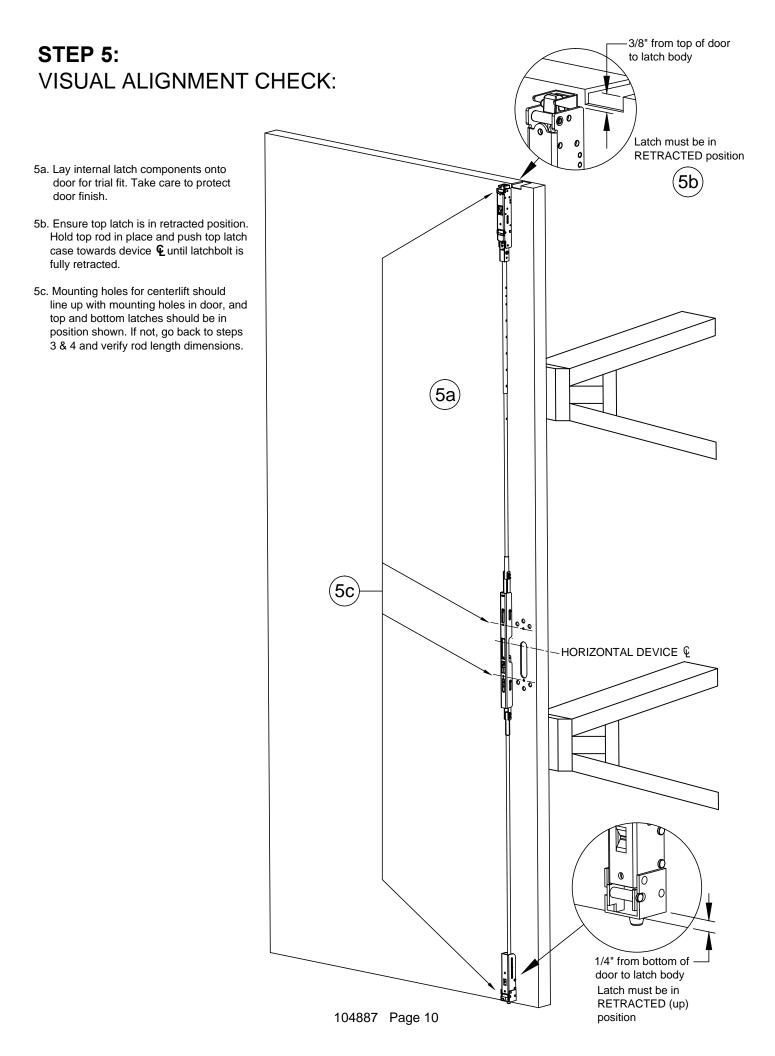
**DIM C** = measured **DIM A** minus 8" minus threshold height

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").



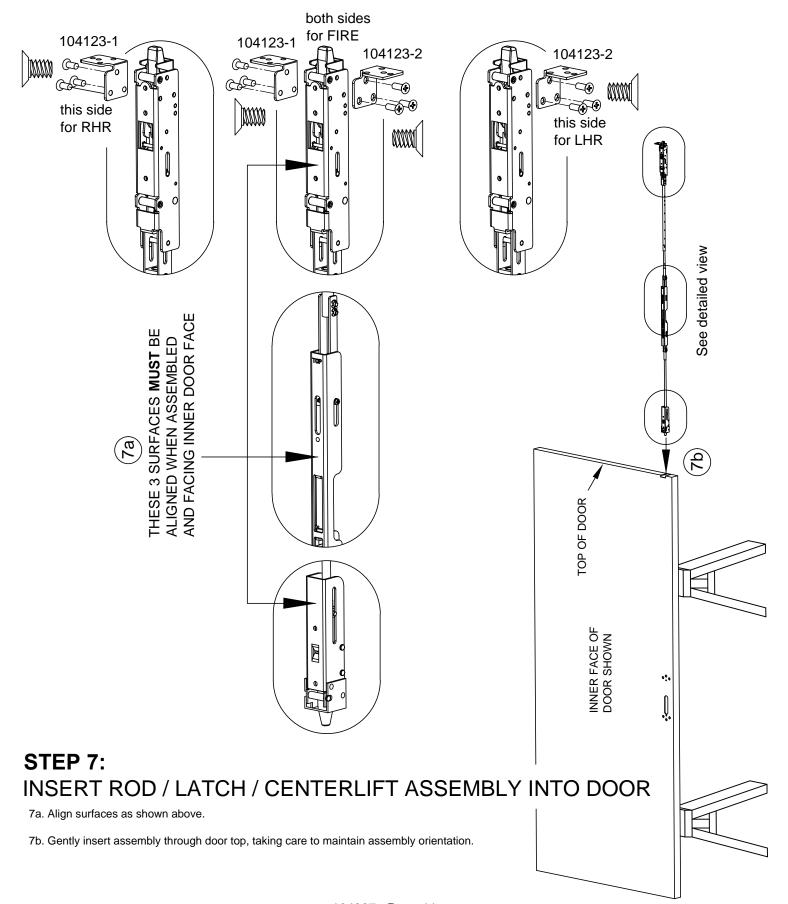
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# STEP 6:

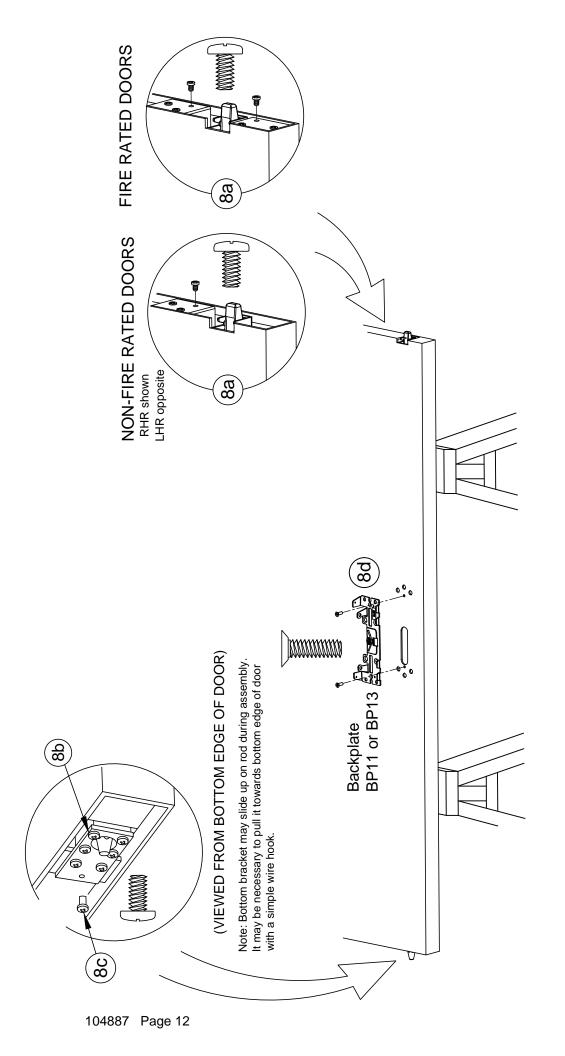
# ATTACH TOP LATCH MOUNTING BRACKETS

Attach top latch brackets as shown below. Three screws (10-24 x 5 /16" PFHUMS) required for each bracket.



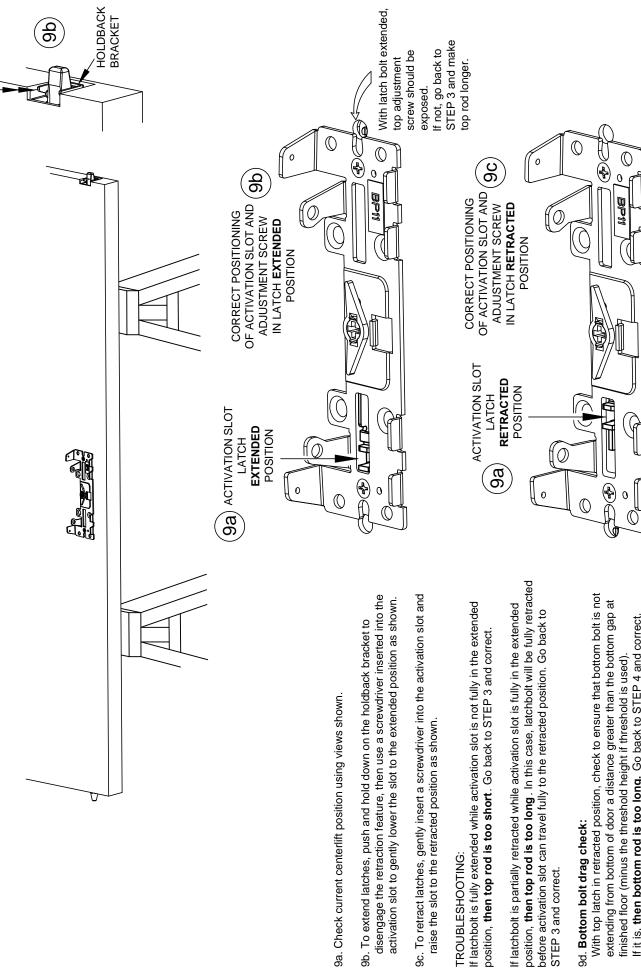
# STEP 8: SECURE ROD / LATCH / CENTERLIFT ASSEMBLY TO DOOR

- 8a. Attach top latch to door with three screws (six for fire rated doors).
- (Disregard steps 8b & 8c if TRO device is being installed) 8b. Attach bottom mounting bracket to bottom latch with four screws.
- 8c. Attach bottom mounting bracket to door with three screws.
- 8d. Attach back plate to centerlift mechanism with two screws DO NOT OVERTIGHTEN. then add second screw through backplate. Remove first screw, Assembly hint: Assemble one screw loosely without backplate, align backplate and then re-install first screw.



# **STEP 9: VERIFY CENTERLIFT MECHANISM OPERATION**

PUSH



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

TROUBLESHOOTING:

# 9d. Bottom bolt drag check:

STEP 3 and correct.

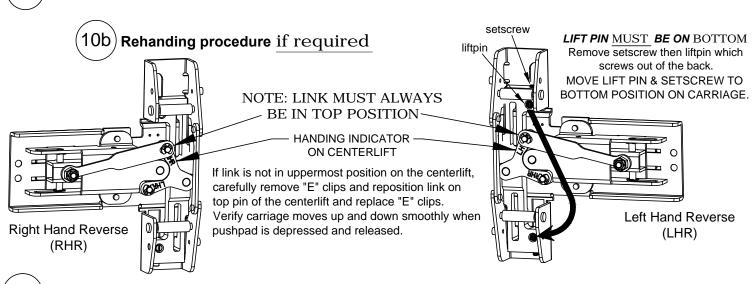
With top latch in retracted position, check to ensure that bottom bolt is not extending from bottom of door a distance greater than the bottom gap at If it is, then bottom rod is too long. Go back to STEP 4 and correct. finished floor (minus the threshold height if threshold is used).

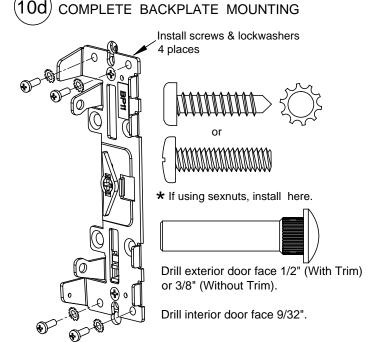
9e. Upon completion, retract latches before proceeding to Step 10.

# STEP 10: HANG DOOR / ASSEMBLE DEVICE TO DOOR

10a) install door onto frame per manufacturer's specifications

REFER TO TRIM INSTRUCTIONS AT THIS TIME, IF APPLICABLE

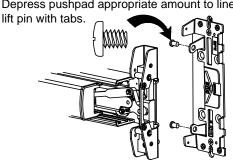




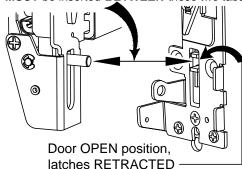
10e

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

INSTALL DEVICE TO BACKPLATE

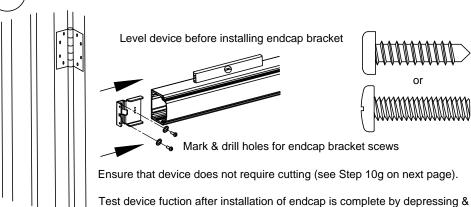


Lift pin protruding from back of centercase MUST be inserted BETWEEN these two tabs.



10f INSTALL ENDCAP BRACKET

latch travel.



releasing pushpad. Action should be smooth with full return of pushpad and

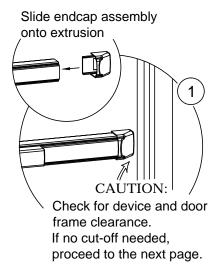
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Drill exterior door face 1/2" (With Trim) or 3/8" (Without Trim).

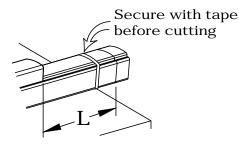
Drill interior door face 9/32".

★If using sexnuts, install here.

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



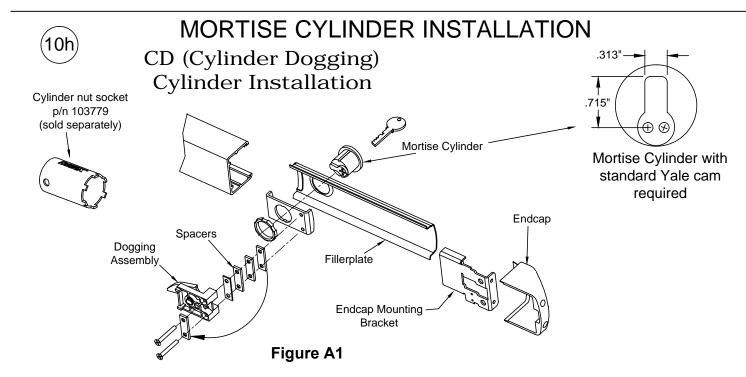
Cut fillerplate and extrusion STRAIGHT & SQUARE to desired length and deburr



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.



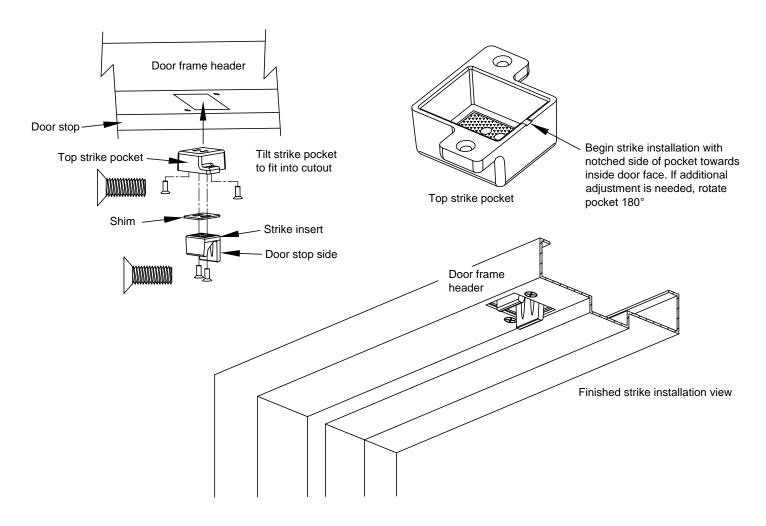
# Follow steps "a" through "g" for CD installations

- 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.

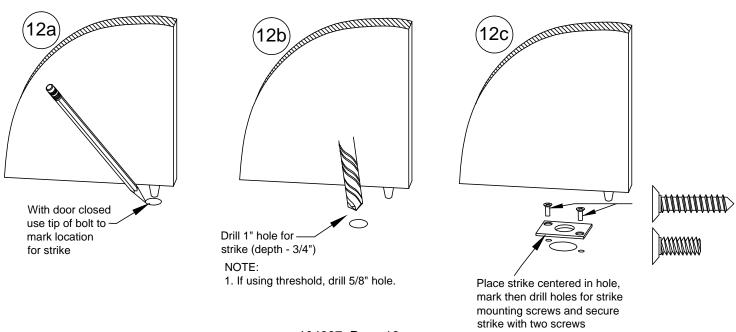
- f. Rotate key counterclockwise
- g. Assembly complete. Continue with Panic Hardware instruction.

# **STEP 11: TOP STRIKE INSTALLATION**



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

# **BOTTOM STRIKE HOLE LOCATION & DRILLING**



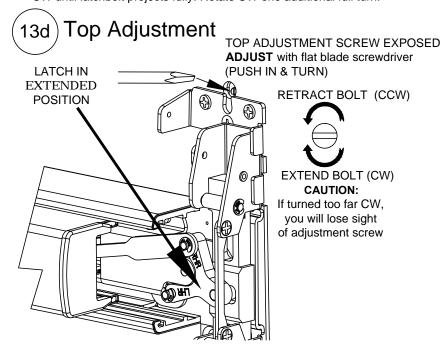
# **STEP 13:** FINE LATCH ADJUSTMENT

- 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.



Bottom Adjustment
LATCH IN
RETRACTED
POSITION

EXTEND BOLT (CCW)

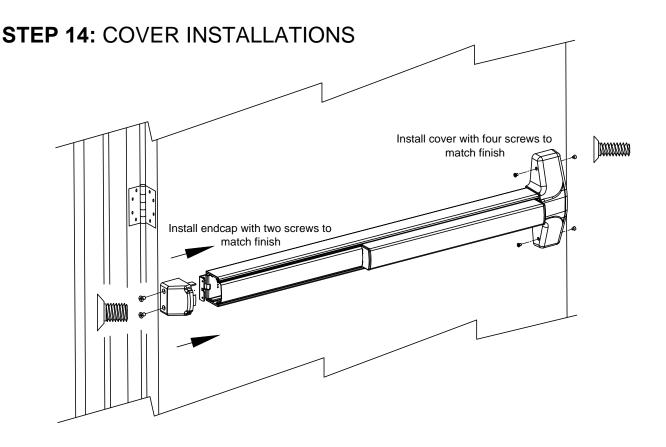
RETRACT BOLT (CW)

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

BOTTOM ADJUSTMENT SCREW EXPOSED **ADJUST** with flat blade screwdriver (PUSH IN AND TURN)

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

DEVICE OPERATION TROUBLESHOOTING			
POSSIBLE CAUSE	SOLUTION		
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.		
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.		
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.		
	POSSIBLE CAUSE  Bottom bolt is not properly aligned with bottom strike hole.  Top strike insert is not installed or not correctly aligned with the holdback.  Through fasteners for trim (if applicable) are interfering with internal centerlift assembly.  Rods improperly adjusted  Device centercase lift finger not inserted properly into centerlift assembly.  Top adjustment screw is adjusted too far in the retracted direction (CCW).  Device centercase lift finger not inserted properly into centerlift assembly.  Top adjustment screw is adjusted too far in the extended direction (CW).		

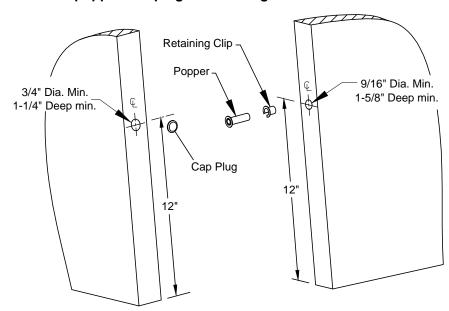


# **STEP 15: DOOR POPPER INSTALLATION**

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.



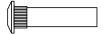
**NOTE:** Door/Frame reinforcement is required where popper and cap plug are to be installed.

# Optional Accessories

# Sex Nut Kits:

Catalog No. SN3

The #1/4-20 kits are available in 3 finishes: Brushed Brass BHMA 606: p/n 105274-2 Stainless Steel BHMA 630: p/n 105274-9 Oil Rubbed Bronze BHMA 613: p/n 105274-25 SN3 uses screws in hardware kit



**Tamper Kit** 

(Security Kit)

Catalog # & Part #: **SSK1** 





Cylinder nut socket p/n: 103779

