

# Model 93 Overhead Concealed Closer

## Non-Hold Open and Hold Open

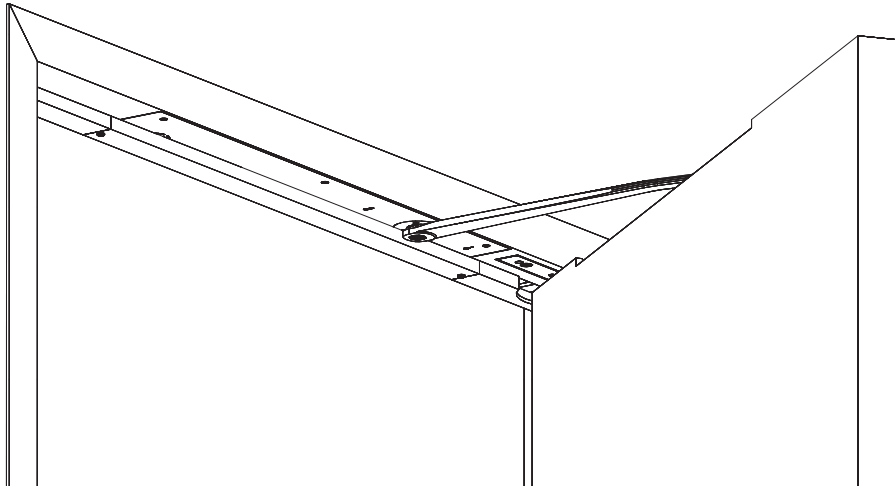
### Metal Frame Installation Instructions

**⚠ WARNING**

This product can expose you to lead which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to: [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).

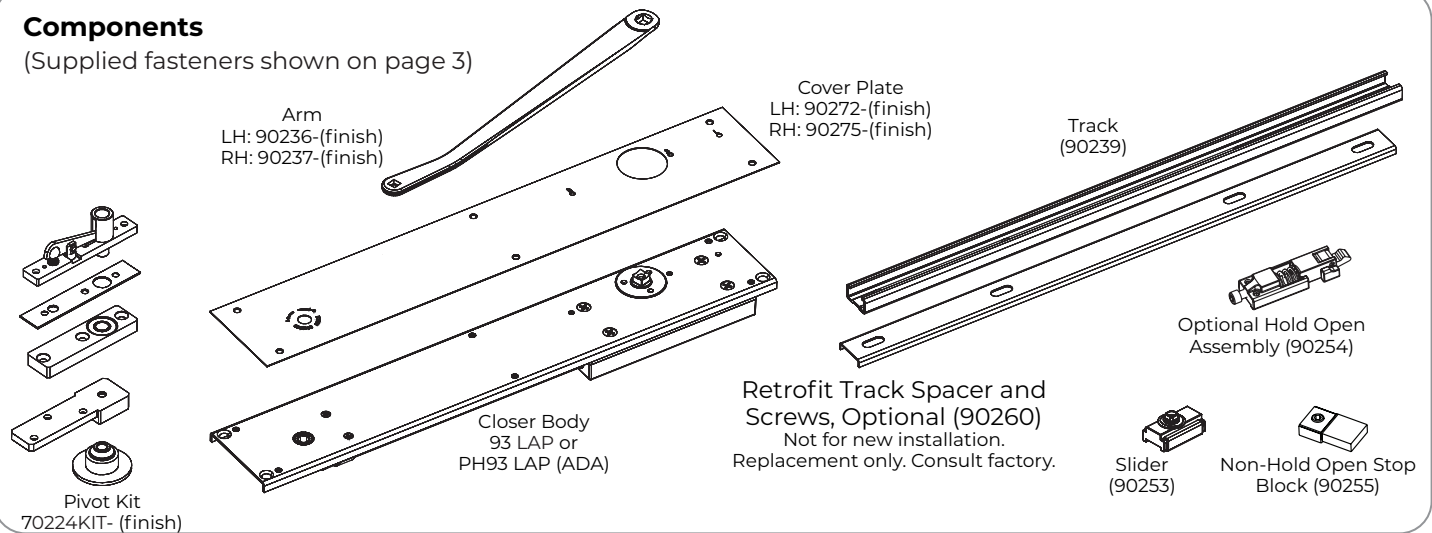
READ AND FOLLOW ALL INSTRUCTIONS.  
SAVE THESE INSTRUCTIONS.

**Model 93, (Left Hand Shown)**  
Center Pivot Hung

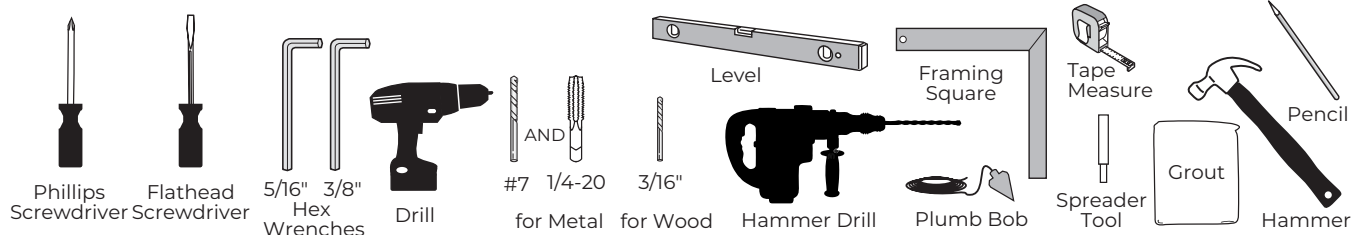


**Components**

(Supplied fasteners shown on page 3)



**Tools Needed**



**Contents**

Mounting Hardware ..... 2  
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**IMPORTANT:**





- An improperly installed or incorrectly adjusted door closer may cause property damage or personal injury and will void product warranty.
- To avoid personal injury, DO NOT DISASSEMBLE THIS DOOR CLOSER BODY.
- Door closers must be securely fastened to a prepared door and frame with fasteners provided.
- HOLD OPEN option not permitted to be installed in fire door assemblies.

**Before You Begin:**



- The Americans with Disabilities Act (ADA) requires that doors having door closers have an opening force not to exceed 5 lbf.
- Door closer’s power size adjustment feature may require adjustment to its lowest setting to comply with ADA opening force guidelines.
- ADA compliant closers may not latch doors, manufacturer does not guarantee latching on lower opening force settings.
- A separate auxiliary door stop, supplied by others, is strongly recommended to avoid damage to door closer and adjacent property.
- Doors should be hung on ball bearing or anti-friction hinges/pivots. Door must swing freely. For other hanging means a special layout may be required, consult factory.
- Door and frame must be reinforced for attaching screws.
- All dimensions are given in inches (millimeters).

**Mounting Hardware**

	<b>Mounting Hardware</b>	<b>Door / Frame</b>	<b>Drill</b>
	<b>Closer, Top Pivot and Bottom Pivot:</b> #14 x 1-1/2"	Wood	3/16" (4.76mm)
	<b>Closer, Top Pivot and Bottom Pivot:</b> 1/4-20 x 5/8"	Metal	Drill #7 (.201 dia. or 5.10mm) Tap 1/4-20
	<b>Track:</b> #14 x 1-1/4"	Aluminum or Wood	3/16" (4.76mm)
	<b>Track:</b> 1/4-20 x 7/16"	Hollow Metal	Drill #7 (.201 dia. or 5.10mm) Tap 1/4-20

## Supplied Fasteners

**Top Pivot Screw Pack  
(70242-finish)**

**5x**  
1/4-20 x 5/8"  
PFHMS  
Pivot

**5x**  
#14 x 1-1/2"  
PFHWS  
Pivot

**2x**  
8-32 x 1/4"  
PFHUCMS  
Finish Plate

**Bottom Pivot Screw Pack  
(70243)**

**4x**  
1/4-20 x 5/8"  
PFHMS  
Pivot

**4x**  
#14 x 1-1/2"  
PFHWS  
Pivot

**1x**  
3/8-16 Female  
Threaded  
Drop-in Anchor

**1x**  
3/8-16 x 2-1/4"  
SHCS  
Base Plate

**Cover Plate Screw Pack  
(90278-finish)**

**6x**  
6-32 x 1/4"  
PFHMS  
Cover

**Closer Screw Pack  
(90241)**

**4x**  
1/4-20 x 5/8"  
PFHMS  
Closer Body

**4x**  
#14 x 1-1/2"  
PFHWS  
Closer Body

**3/16"**  
Hex  
Wrench

**5/32"**  
Hex  
Wrench

**1/8"**  
Hex  
Wrench

**Closer Track Screw Kit  
(90242)**

**4x**  
1/4-20 x 7/16"  
PFHUCMS  
Track

**4x**  
#14 x 1-1/4"  
PFHWS  
Track

**Arm Screw Pack  
(90283-finish)**

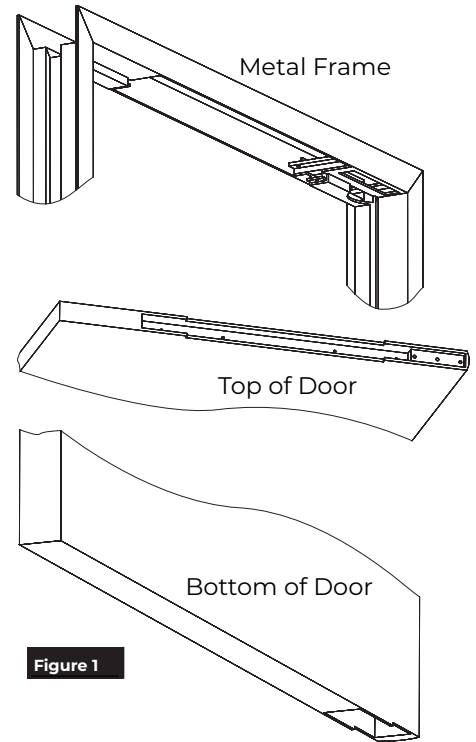
**2x**  
1/4-20 x 1/2"  
PFHMS  
Arm Attach

**1x**  
Conical  
Washer  
Arm Attach

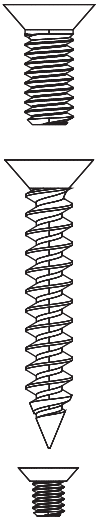
## Installation

### A. Prepare frame and door.

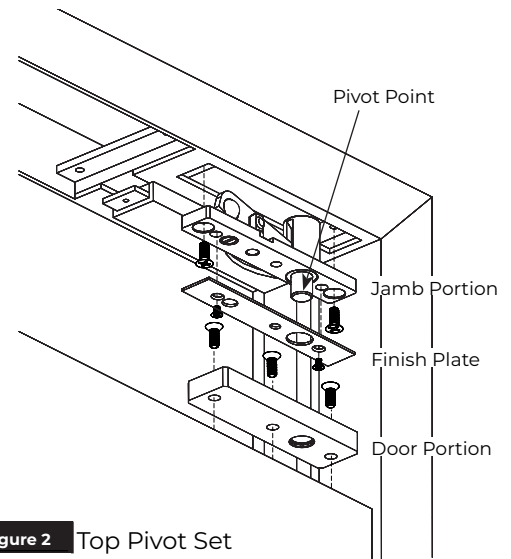
1. Using supplied templates, prepare and mortise door and head jamb for pivot set. (Figure 1)
2. Confirm all cutout dimensions for closer.



### B. Install top pivot set.



1. Install jamb portion in prepared frame with two (2) 1/4-20 x 5/8" machine screws. (Figure 2)
2. Install door portion in prepared door with three (3) 1/4-20 x 5/8" machine screws or #14 x 1-1/2" wood screws. (Figure 2)
3. Attach finish plate to jamb portion with two (2) 8-32 x 1/4" machine screws. (Figure 2)



**Figure 2** Top Pivot Set

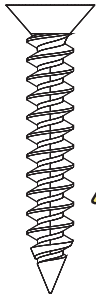
## Installation (cont.)

### C. Install bottom pivot set.

**!** **IMPORTANT: Pivot point of bottom pivot must be plumb with top pivot point. Be sure to properly locate and mark pivot center point of bottom base plate.**



OR



1. Install door portion into prepared door with four (4) 1/4-20 x 5/8" machine screws or #14 x 1-1/2" wood screws. (Figure 3)

**NOTE:** Depth of mortise in door bottom will determine clearance.

2. Using a plumb bob attached to top pivot, locate and mark position of base plate on floor.
3. Drill 3/4" dia. x 1-3/4" (19 x 44mm) deep hole in floor on center of pivot point for base plate mounting.

**!** **IMPORTANT: It is critical to door alignment and proper frame clearance that this anchor hole is positioned within 1/32" of true plumb alignment with the top jamb portion pivot point.**

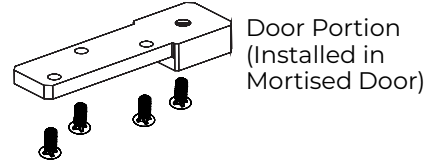
4. With open side up, place drop-in anchor into floor hole. If necessary, tap lightly with hammer until anchor is at bottom of hole.

**NOTE:** Clean all concrete dust from hole before installing drop-in anchor.

5. Set anchor by striking spreader tool with hammer until the sleeve of the anchor is fully expanded. (Figure 4)
6. Insert provided base plate screw into anchor to plug opening.

**NOTE:** Apply grease to base plate screw to prevent grout from sticking to screw and to facilitate removal.

7. Grout anchor into place. After grout has set, remove base plate screw.
8. Place base plate over anchor and securely fasten to floor with base plate screw.
9. If using a threshold, install it at this time.



Door Portion  
(Installed in  
Mortised Door)

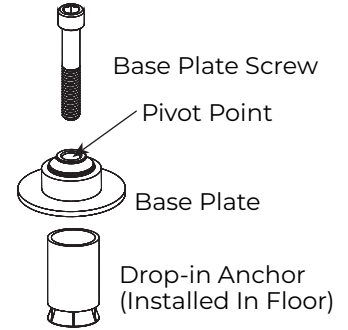


Figure 3 Bottom Pivot

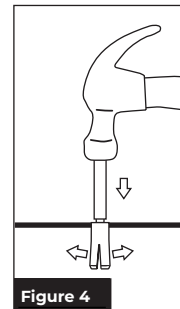
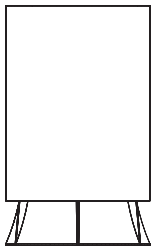
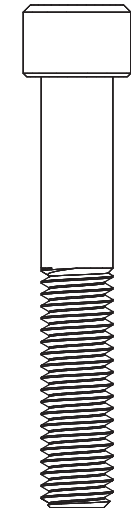


Figure 4



**Installation (cont.)**

**D. Hang door.**

1. Ensure pivot stud is fully retracted into pivot by turning pivot adjustment screw counter clockwise with a flathead screwdriver. (Figure 5)
2. With door in open position about 90° to jamb, carefully fit door onto bottom pivot at a slight angle. (Figure 6)
3. Tip door into vertical position aligning frame portion pivot stud to door portion hole. (Figure 7)
4. With top pivot stud aligned with door portion hole, use a flathead screwdriver to turn pivot adjustment screw clockwise to extend pivot stud into door pivot portion. (Figure 8)

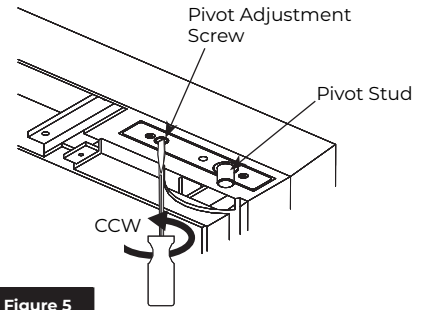


**IMPORTANT: Fully tighten adjustment screw to ensure pivot stud is fully extended into door portion. There is a door tipping hazard until door is held vertical by pivot stud.**

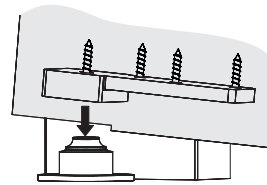
5. Verify frame is square by using a framing square. Gaps between door and frame should be consistent. Gap should be 1/8" (3mm) at jamb and header. (Figure 9)

**NOTES:** Door should swing freely.

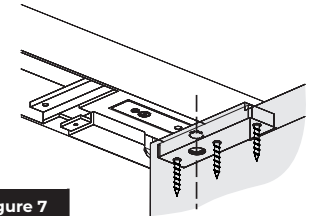
- If vertical height adjustment is necessary, use shims between door bottom and bottom pivot portion to increase clearance.
- To decrease clearance, increase mortise depth in bottom of door.
- To remove door, retract pivot stud and tip door out of vertical position, then lift door from bottom pivot.



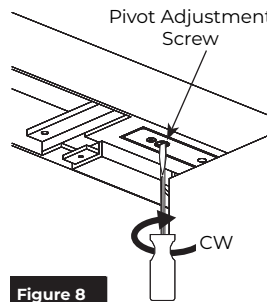
**Figure 5**



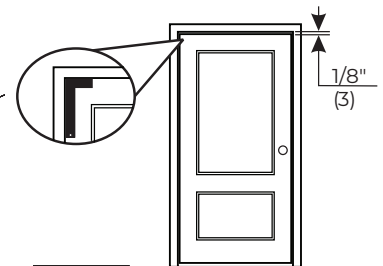
**Figure 6**



**Figure 7**



**Figure 8**



**Figure 9**

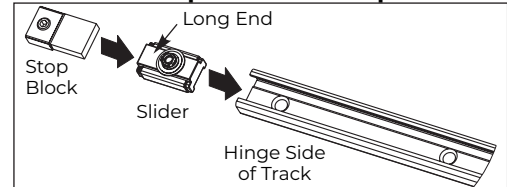
**E. Assemble track.**

1. Slide track components into track. (Figure 10)

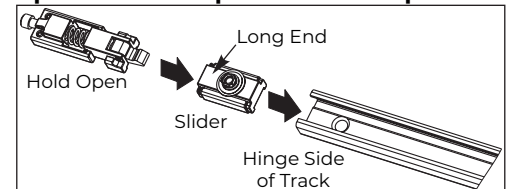
**NOTES:**

- All track components must be placed in track before installing track into door.
- Insert slider into track first.
- Stop block (or optional hold open) should be last component at hinge side of door.
- The longer end of slider should be pointed towards hinge side of door.

**Non-Hold Open Track Components**



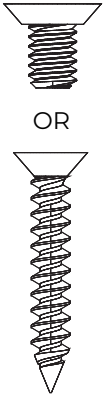
**Optional Hold Open Track Components**



**Figure 10**

## Installation (cont.)

### F. Install track to door.



1. Make sure slider and track components are installed prior to installing track to door. See Step E.
2. Install track and, if necessary, optional retrofit spacer (replacement application only, consult factory) using either four (4) provided 1/4-20 x 7/16" FHPMS screws for metal door or four (4) provided #14 x 1-1/4" FHPWS screws for wood door (Figure 11).

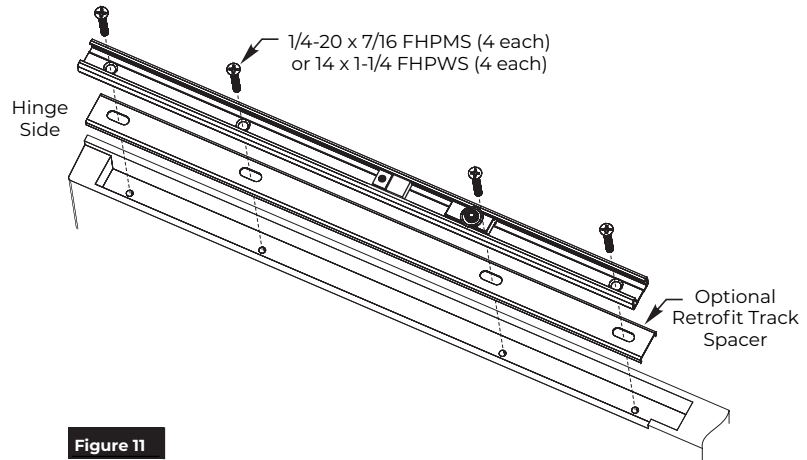


Figure 11

### G. Install closer.



1. Install closer in prepped frame with four (4) 1/4-20 x 5/8" FHPMS mounting screws provided. (Figure 12)
- NOTE:** Mounting plate should be flush with frame rabbet.

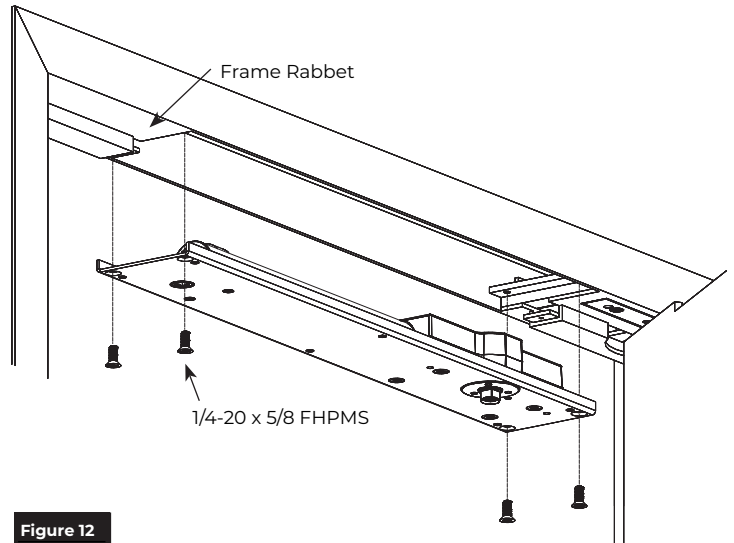


Figure 12

### H. Install cover plate.



1. Install cover plate to closer mounting plate with six (6) 6-32 x FHPMS mounting screws provided. (Figure 13)

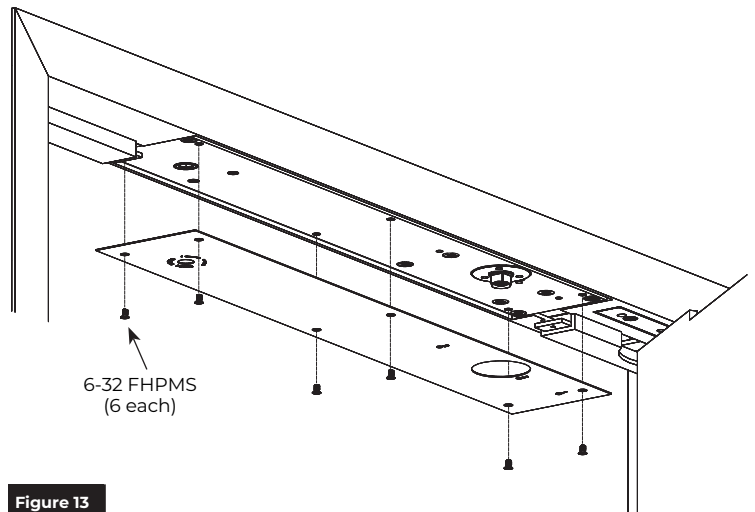
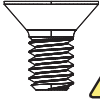


Figure 13

## Installation (cont.)

### I. Attach arm to closer.

1. Attach arm to closer shaft with 1/4-20 x 1/2" machine screw and washer. Tighten securely. (Figure 14)



**IMPORTANT:** Arm should rest at 15° away from door side of closer mounting plate. Arm always rotates in direction of door.

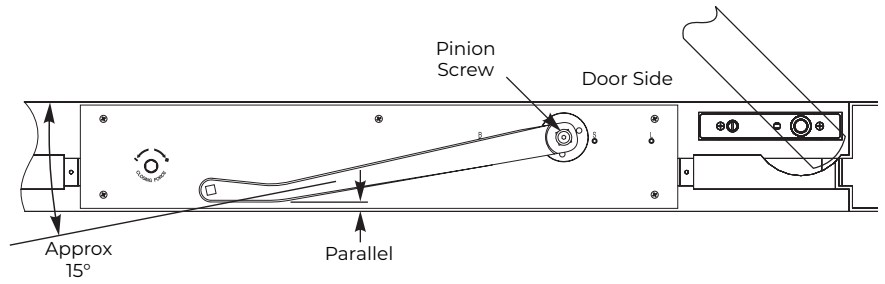
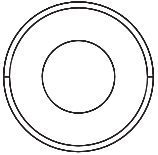


Figure 14

### J. Attach arm to track.

1. With provided 1/8" hex wrench, completely tighten latch and sweep valves by turning screws clockwise. This will allow for an easier closer-to-door connection. (Figure 15)



2. Open door to about 45° then rotate arm over to door.

**NOTE:** Arm should maintain position because latch and sweep valves have been tightened.

3. Align slider square with arm square and connect using 1/4-20 x 1/2" machine screw. (Figure 16)

**NOTE:** If you choose to open door beyond 45°, backcheck may need to be adjusted counter clockwise to easily rotate arm to door position.

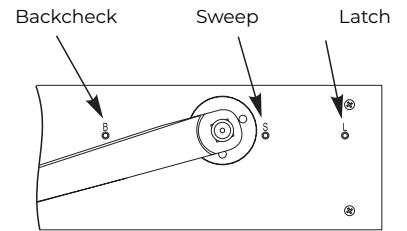


Figure 15

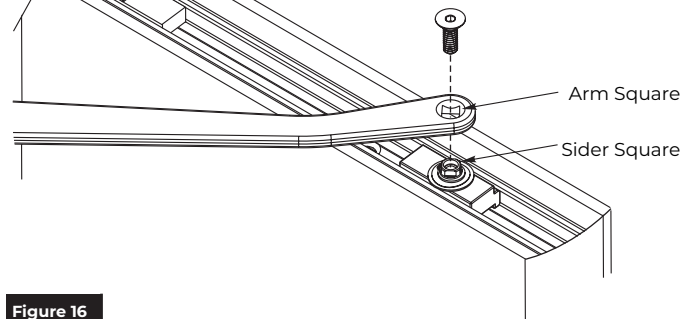


Figure 16



## Adjustments

### Speed Adjustment

Use provided 1/8" hex wrench to adjust sweep, latch and backcheck valves to control speed of door. (Figure 17)



**NEVER** completely close backcheck valve.  
**NEVER** use backcheck as a dead stop.  
**NEVER** fully open valves. Valves will leak.  
**Do not use a power drill.**  
**Warranty will be void.**

### Closing Force Adjustment

If additional force is needed, use 3/8" hex wrench to adjust closing force. (Figure 18)



**Do not use a power drill.**  
**Warranty will be void.**



All 93 Series closers are factory set to minimum force. Adjust closer as necessary for more force taking into consideration door size, weight, positive room pressure, etc.

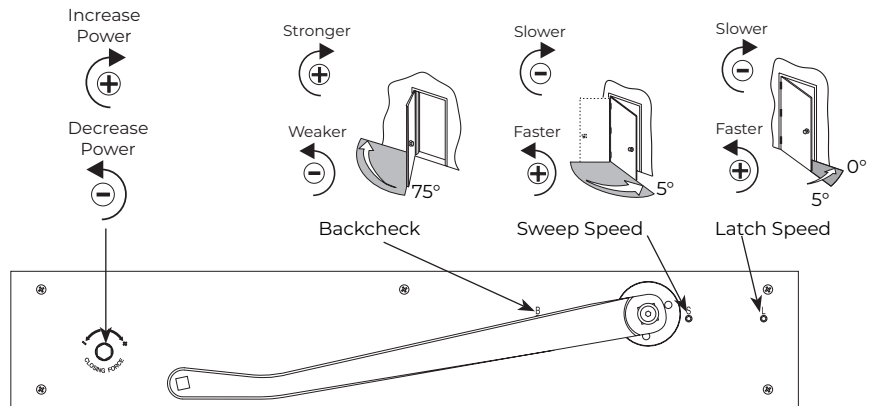


Figure 17

Spring Power Adjustment for Closing Force (Closer shipped at lowest setting)			
Model PH93		Model 93	
Closer Size	Approx # of 360° Turns	Closer Size	Approx # of 360° Turns
ADA	0	3	0
1	15	4	17
2	30	5	25
3	55	6	32

Figure 18

### Optional Hold Open Adjustment



**IMPORTANT: This feature cannot be used on fire rated doors.**

1. Insert locking tab of hold open assembly into track slider. (Figure 19)  
**NOTE:** Hold open assembly should be on hinge side of track slider.
2. Open door to desired hold open position.
3. Tighten hold open set screws to lock down hold open assembly.
4. Pull door in closing direction to disengage hold open assembly and track slider.
5. Adjust hold open by turning adjustment screw with provided 3/16" hex wrench.

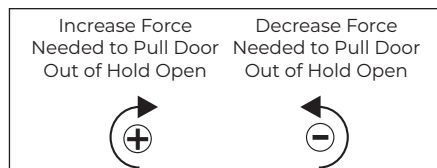
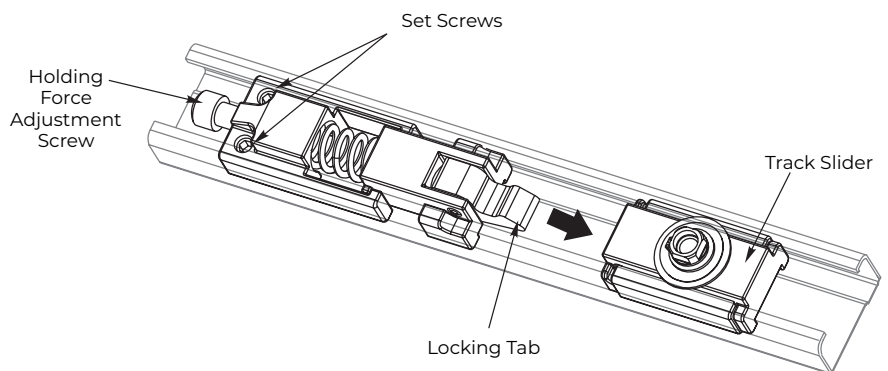


Figure 19

The ASSA ABLOY Group is the global leader in access solutions. Every day we help people feel safe, secure and experience a more open world.

### K. Install removable stop.

After closer is installed and all adjustments are complete, install removable stop. (Figure 20)



**IMPORTANT: DO NOT drill holes into closer cover plate.**

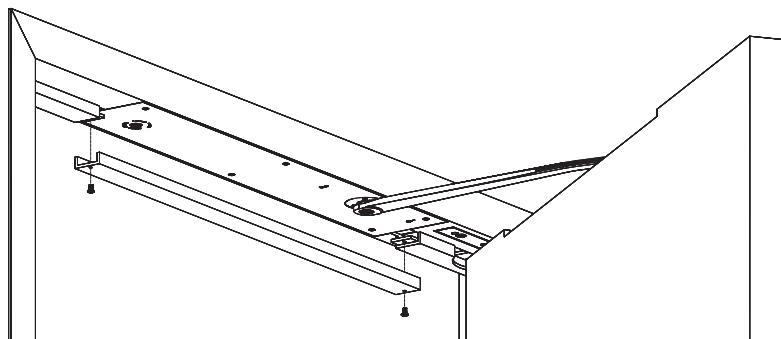


Figure 20

The **Model 93 Overhead Concealed Closer** has now been installed.

## Troubleshooting

Symptom	Cause	Remedy
Door won't latch	Spring tension not strong enough	Increase opening force. See "Adjustments" on page 9.
	Latch speed control not fast enough	Adjust latch speed valve. See "Adjustments" on page 9.
	Door hung on products other than center pivots	Send template for hanging means to factory. A new installation sheet is required. Closer will need to be relocated.
	Arm is not preloaded	See Step J. Attach Arm to Track
Door is too difficult to open	Spring tension is set too strong	Decrease opening force. See "Adjustments" on page 9.

Technical Product Support:  
 Monroe, NC 28112 USA  
 Phone: 877.974.2255 ext: 2  
 Techsupport.NortonRixson@assaabloy.com  
 NortonRixson.com

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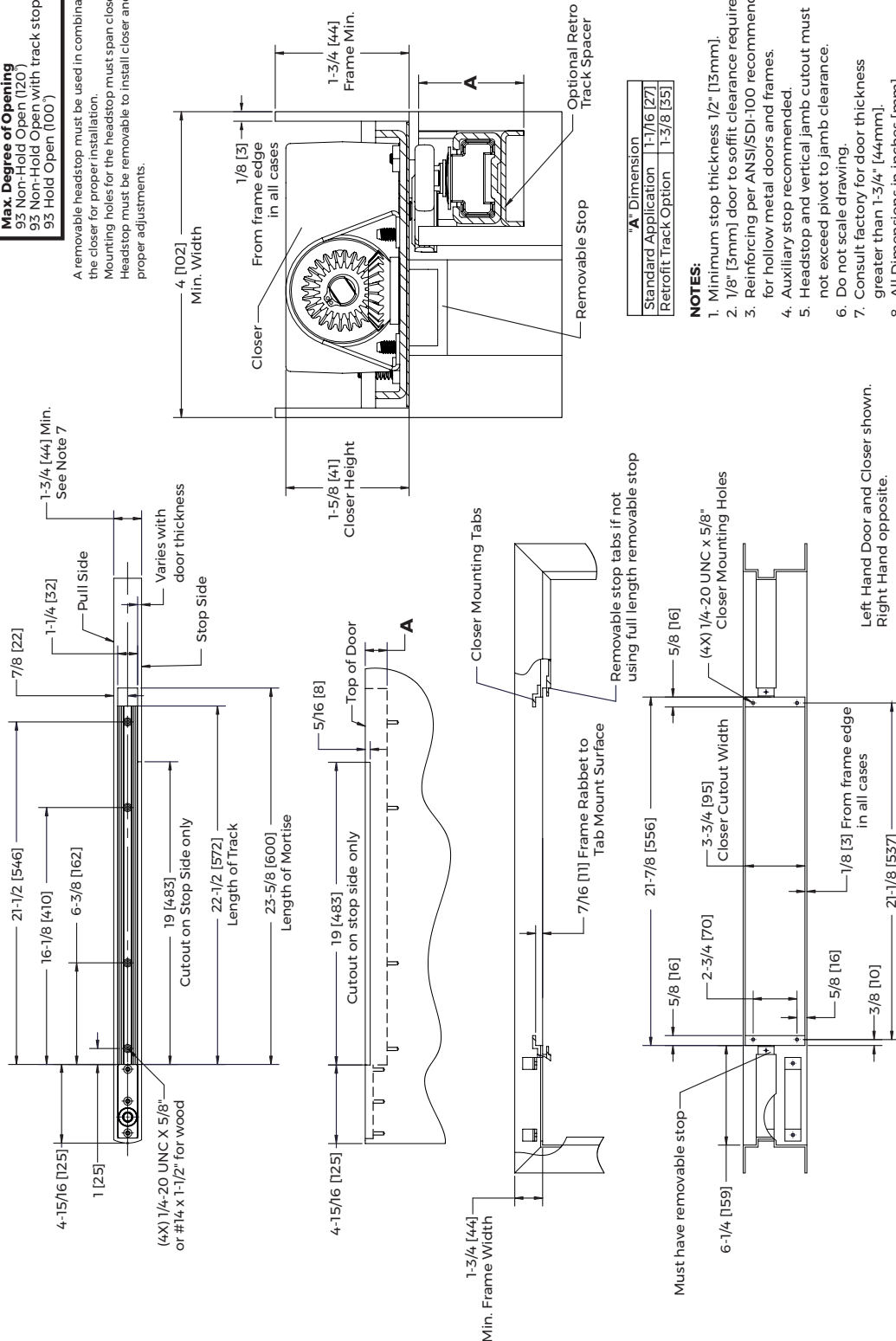
# Model 93 Overhead Concealed Closer Template

## Center Pivot Set

### Metal Frame

**Max. Degree of Opening**  
93 Non-Hold Open (120°)  
93 Non-Hold Open with track stop (120°)  
93 Hold Open (100°)

A removable headstop must be used in combination with the closer for proper installation.  
Mounting holes for the headstop must span closer length.  
Headstop must be removable to install closer and make proper adjustments.



"A" Dimension	
Standard Application	1-1/16 [27]
Retrofit Track Option	1-3/8 [35]

**NOTES:**

1. Minimum stop thickness 1/2" [13mm].
2. 1/8" [3mm] door to soffit clearance required.
3. Reinforcing per ANSI/SDI-100 recommended for hollow metal doors and frames.
4. Auxiliary stop recommended.
5. Headstop and vertical jamb cutout must not exceed pivot to jamb clearance.
6. Do not scale drawing.
7. Consult factory for door thickness greater than 1-3/4" [44mm].
8. All Dimensions in inches [mm].

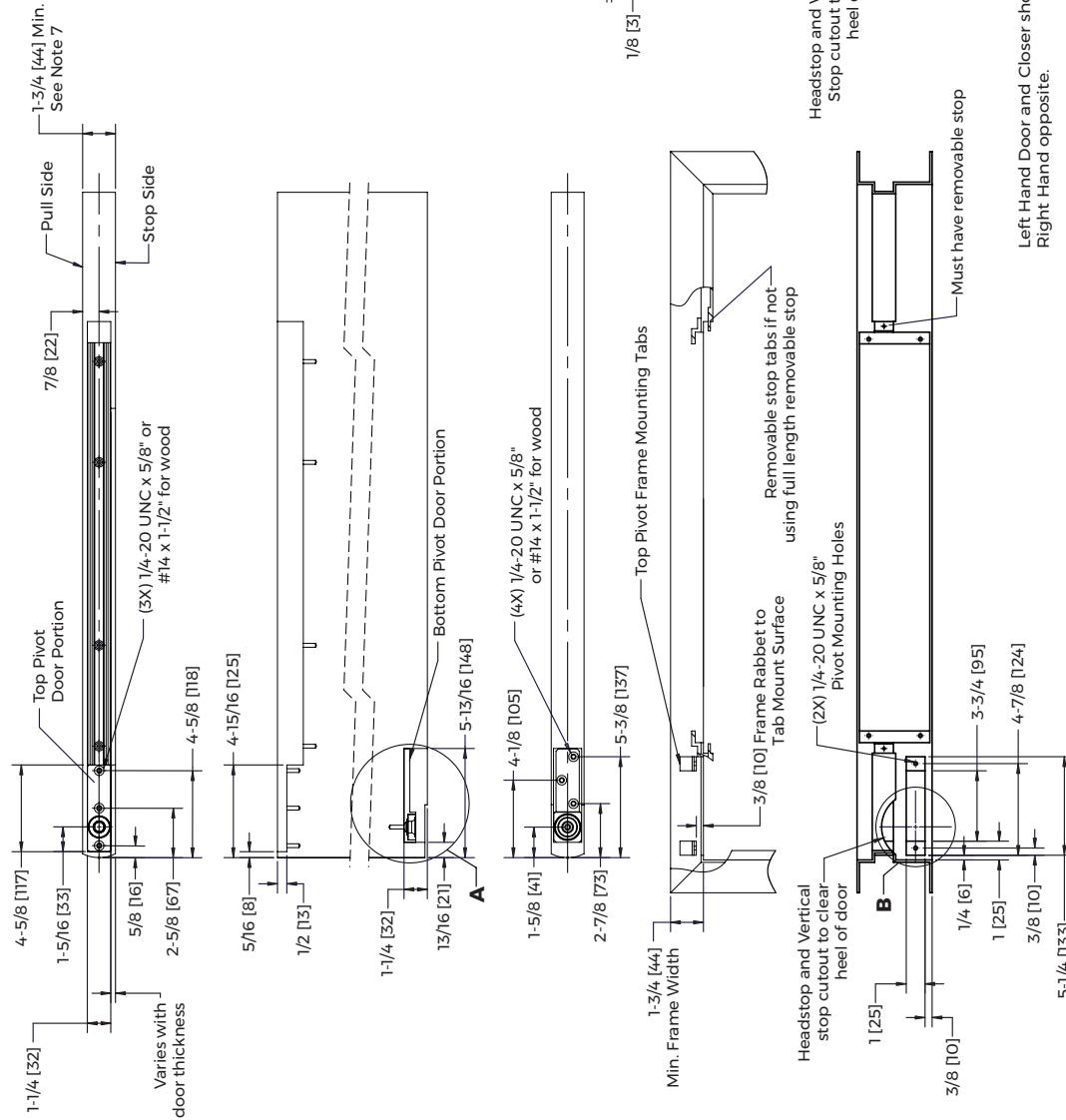
# Model 93 Overhead Concealed Closer Template Center Pivot Set Metal Frame

**Max. Degree of Opening**  
95 Non-Hold Open (120°)  
95 Non-Hold Open with track stop (120°)  
95 Hold Open (100°)

A removable headstop must be used in combination with the closer for proper installation. Mounting holes for the headstop must span closer length. Headstop must be removable to install closer and make proper adjustments.

**NOTES:**

1. Minimum stop thickness 1/2" [13mm].
2. 1/8" [3mm] door to soffit clearance required.
3. Reinforcing per ANSI/SDI-100 recommended for hollow metal doors and frames.
4. Auxiliary stop recommended.
5. Headstop and vertical jamb cutout must not exceed pivot to jamb clearance.
6. Do not scale drawing.
7. Consult factory for door thickness greater than 1-3/4".
8. All Dimensions in inches [mm].



Left Hand Door and Closer shown.  
Right Hand Door opposite.