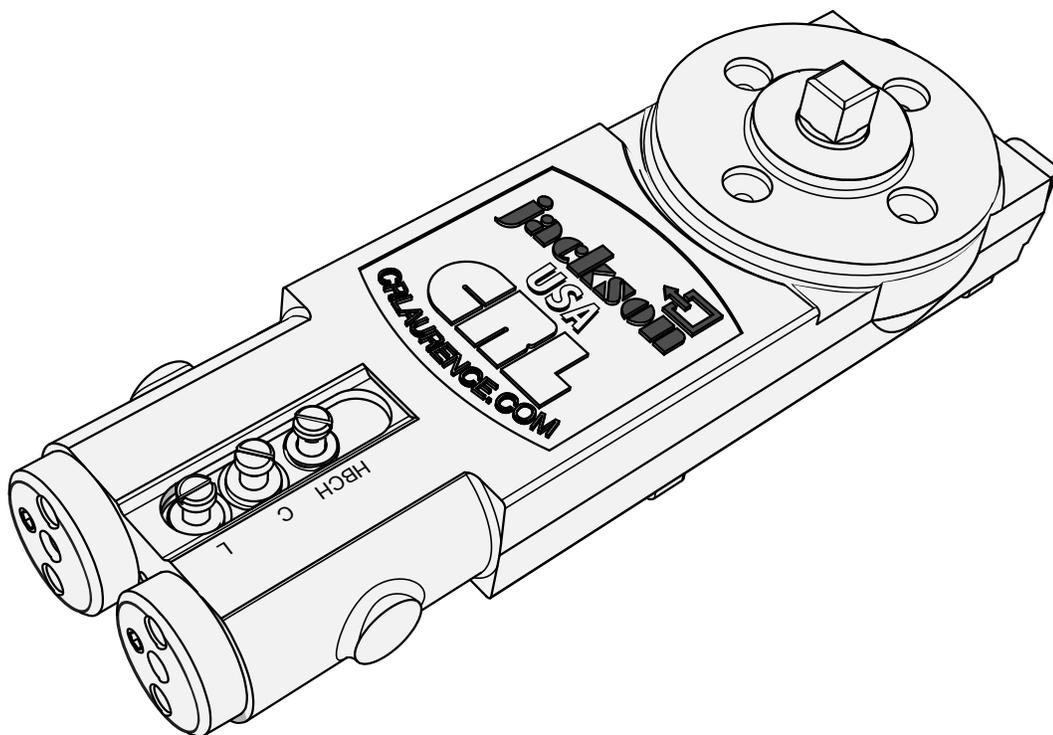


INSTALLATION INSTRUCTIONS

CRL JACKSON OVERHEAD CONCEALED DOOR CLOSER CENTER HUNG AND OFFSET



Phone: (800) 421-6144 • Fax: (800) 262-3299
crlaurence.com • usalum.com • crl-arch.com

PRODUCT DESCRIPTION

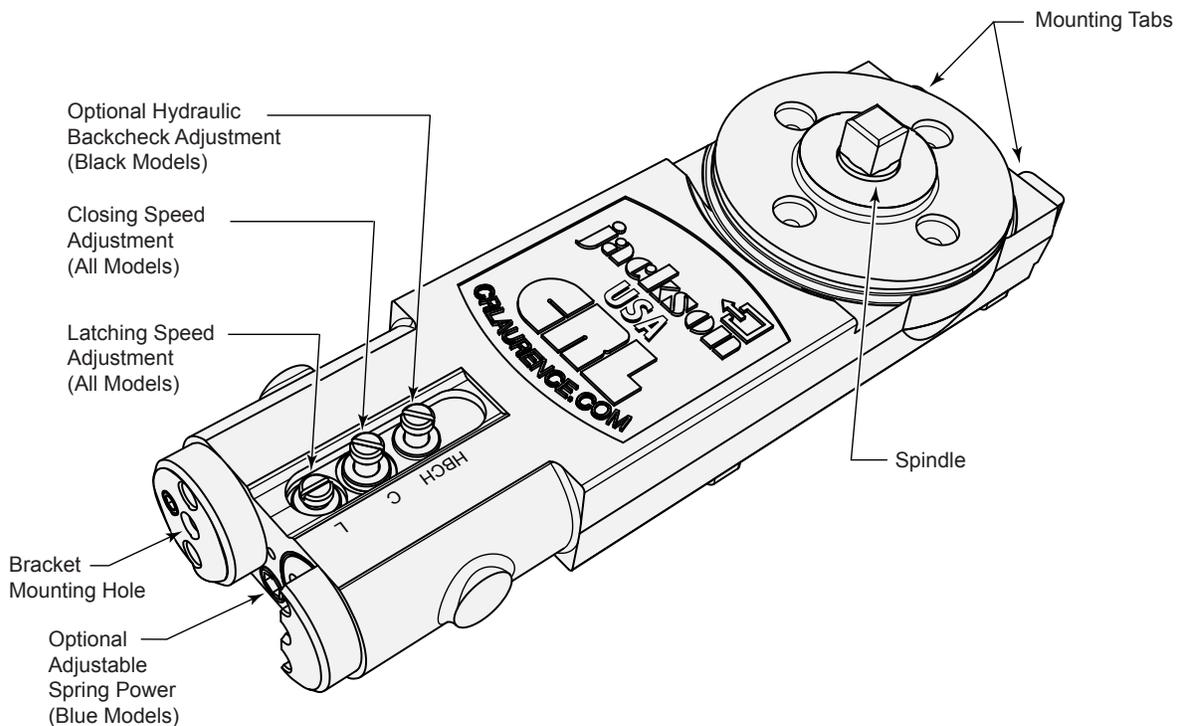
Jackson Overhead Concealed Door Closers (OHC) are available from C.R. Laurence as closer bodies only or as standard packages for center hung and offset door installations. The standard packages include the closer mechanism, mounting brackets, arms, and pivots. OHC's are divided into three groups:

Standard OHC's (Brown) are offered with four (4) fixed spring sizes for doors from 2'6" to 4'0" wide (see chart on page 14). Other options include 90 degree and 105 degree hold open and non-hold open versions.

Grade 1 OHC's (Black) have been tested to ANSI Grade 1 Standards (2 million cycles). They feature a valve adjustable hydraulic backcheck and are available in 90 degree and 105 degree hold open and non-hold open models.

Adjustable OHC's (Blue) allow the opening spring force to be adjusted from 4.5 lbs. to 15 lbs. Adjustability is especially useful when attempting to balance between stack pressure and ADA requirements. The standard factory adjusted spring pressure is set to the size "Light Duty" and is intended for a 7'0" x 3'0" door. To increase the spring force by one size, turn the adjustment screw four (4) turns clockwise. Adjustable OHC's are also available in 90 degree and 105 degree hold open and non-hold open models.

All Jackson OHC's are non-handed, double-acting, and work with center hung and offset applications. Additionally, the body size and mounting holes of standard and adjustable OHC's are identical and interchangeable with one another.

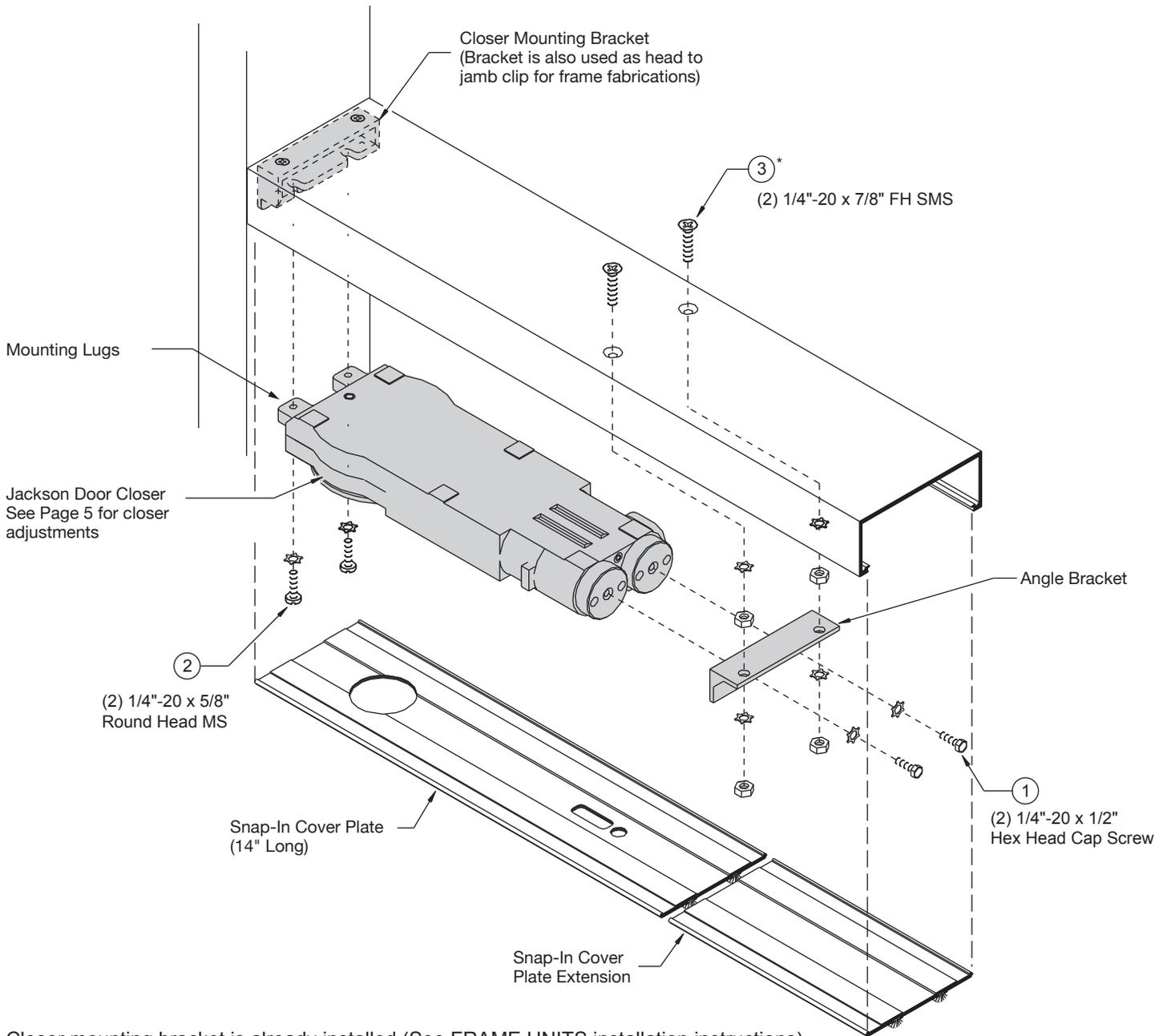


CONTENTS

Jackson Overhead Concealed Door Closer	04-06
Center Pivot Door Typical Installation Series 400, 450, and 451	04
Instructions and Adjustments	05
Closer Located in Header	06
Frame Unit for Center-Hung Door with Overhead Concealed Door Closer	07
Center Hung Installation, Door/Threshold Preparation	08
Jackson Overhead Concealed Door Closer, Side Load Center Pivot Door	09
Center-Hung Door Installation with a Side Load Top Arm.	10-11
Jackson Overhead Concealed Door Closer, End Load Center Pivot Door	12
Center-Hung Installation	13-15
Top Arm Assemblies	13
Overhead Concealed Door Closers	14
Pivots	15
Jackson Overhead Concealed Door Closer for Butt Hinge Door	16
Jackson Overhead Concealed Door Closer for Offset Pivot Door, 90° Swing	17
Jackson Overhead Concealed Door Closer for Offset Pivot Door, 105° Swing	18
Offset Pivot Installation	19-20
Header for Jackson Overhead Concealed Door Closer With Offset Arm	21
Jackson Overhead Concealed Door Closer for Offset Pivot Door	22
Offset Closer Arm Installation	23-24
Offset Arm/Channel Assemblies (Charts)	25
Center Pivot-Top Portion for Floor Mounted Closer	26
Frame Unit for Butt Hung Door with Surface Mounted Closer	27

JACKSON OVERHEAD CONCEALED DOOR CLOSER

CENTER PIVOT DOOR TYPICAL INSTALLATION SERIES 400, 450, AND 451 FABRICATED DOOR HEADER



Closer mounting bracket is already installed (See FRAME UNITS installation instructions).

1. Mount angle bracket to door closer with (2) 1/4"-20 Hex Head Cap screw and (2) lock washers.
2. Install (2) 1/4"-20 x 5/8" Round Head MS into lugs of closer. Do not tighten screws.
3. Install (2) 1/4"-20 x 7/8" FH SMS* with (2) 1/4"-20 nuts and washers in header.
4. Insert closer lugs into mounting bracket slot at an angle and raise closer opposite end to align mounting screws with angle bracket holes. Secure bracket to mounting screws using (2) nuts and washers.
5. Tighten Round Head Screws.
6. Snap-In Cover Plate.

*For 2" x 4-1/2" header, longer screws are provided.

JACKSON OVERHEAD CONCEALED DOOR CLOSER

INSTRUCTIONS AND ADJUSTMENTS

IMPORTANT: PLEASE READ BEFORE PROCEEDING. Observe all safety warnings. Always wear proper eye protection and appropriate safety equipment. Always place a safety block between the door and the jamb to prevent the door from closing while making adjustments. The closer contains springs compressed under high load and has no user serviceable internal components. Do not attempt to remove the covers or otherwise open the closer in any manner.

The closer has been fully tested and adjusted at the factory. The closing and latching speeds have been pre-set to achieve a 6 to 8 second closing cycle. The optional hydraulic backcheck has not been factory pre-set. After installation, cycle the door 10 or more times from the maximum open position to the full closed position prior to making final adjustments.

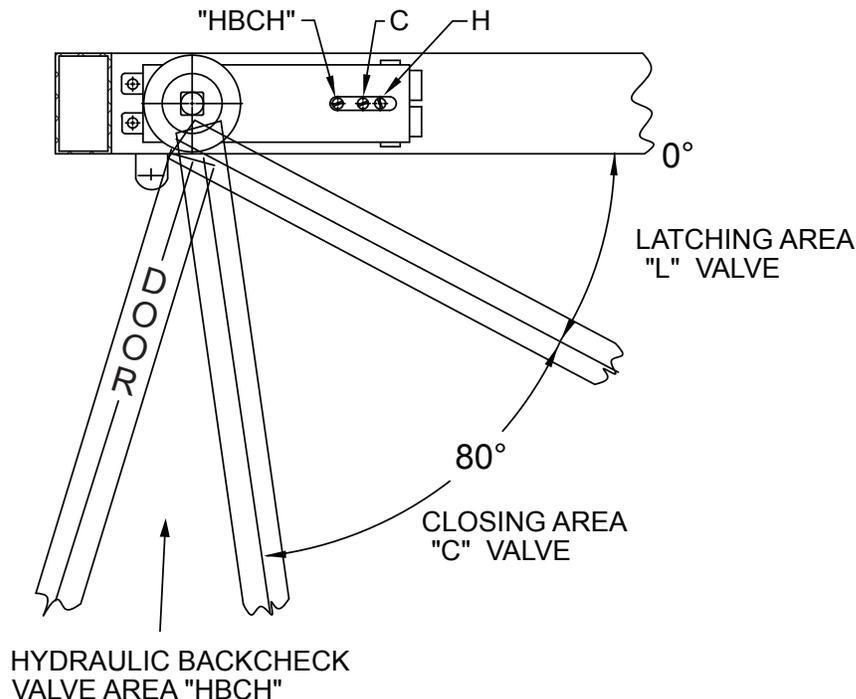
To increase either the closing or latching speeds, turn the appropriate adjustment valve counter-clockwise. To decrease either the closing or latching speeds, turn the appropriate adjustment valve clockwise. Set the latching speed (Valve "L") first, then set the closing speed (Valve "C"). Check and readjust if necessary.

Hydraulic Backcheck (if so equipped) turn the adjustment valve clockwise to increase backcheck resistance which dampens and slows the momentum of the door when opened with excessive force. Decrease resistance by turning the adjustment valve counter-clockwise. The adjustment valve must not be adjusted so that the backcheck function is used as a rigid backstop. Using the backcheck as a rigid backstop may cause damage to the closer or door.

Adjustable Spring Power (if so equipped) the adjustable spring power has been factory set to Size 2. To increase the spring power, turn the adjuster clockwise. To decrease, turn the adjuster counter-clockwise. Typical door opening force adjusts at the rate of approximately 1 pound of force (4.5 N) for each 3 to 4 revolutions of the adjuster.

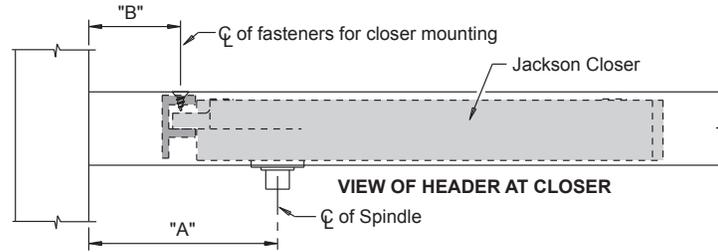
IMPORTANT: Do not attempt to adjust the spring power with the door open beyond 20 degrees from fully closed.

WARNING: Neither the standard internal back stop nor the optional backcheck are to be used as the primary door stop. An auxiliary floor or overhead door stop is always recommended to prevent structural interference and possible door and closer damage.



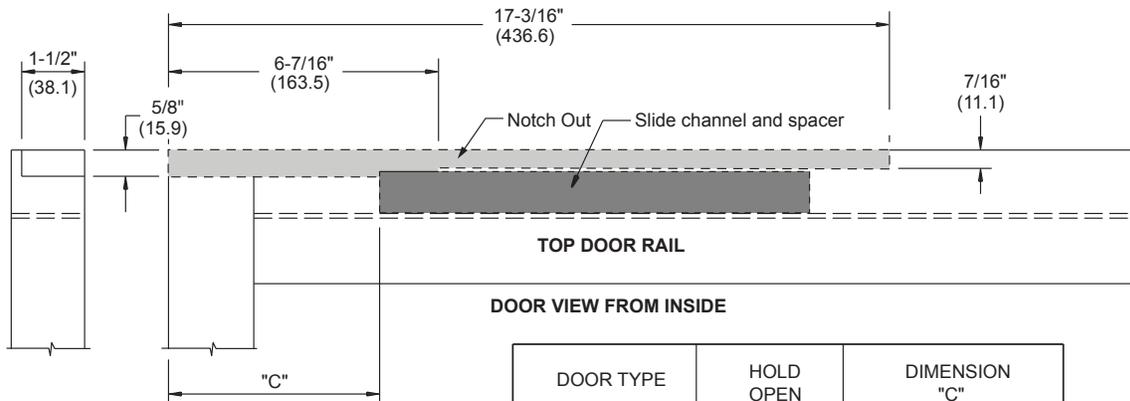
JACKSON OVERHEAD CONCEALED DOOR CLOSER

CLOSER LOCATED IN HEADER



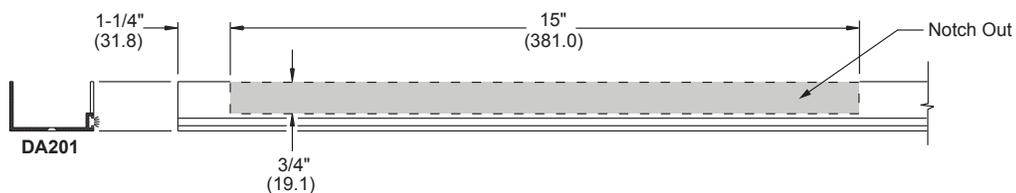
DOOR TYPE	HOLD OPEN	DIMENSION "A"	DIMENSION "B"
CENTER PIVOT	90° OR 105°	2-3/4" (69.9)	7/16" (11.1)
OFFSET PIVOT (OP400)	105°	4-1/2" (114.3)	2-3/16" (55.6)
	90°	3-3/4" (95.3)	1-7/16" (36.5)
BUTT HINGES	105°	3-3/4" (95.3)	1-7/16" (36.5)
	90°	2-7/8" (73.0)	9/16" (14.3)

SLIDE CHANNEL LOCATION IN TOP DOOR RAIL FOR OFFSET ARM



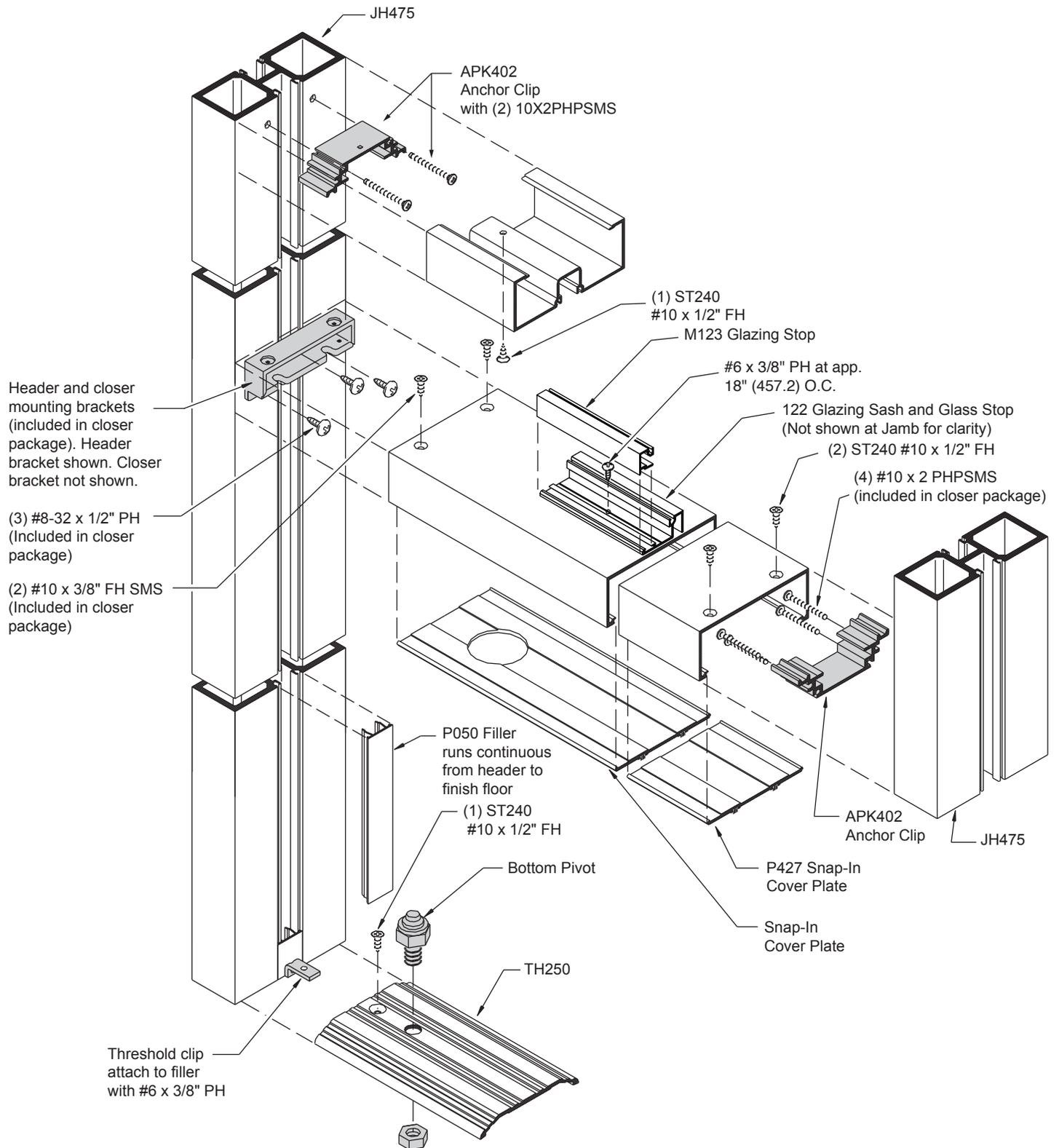
DOOR TYPE	HOLD OPEN	DIMENSION "C"
OFFSET PIVOT (OP400)	90°	4-15/16" (125.4)
	105°	4-11/16" (119.1)
BUTT HINGES	90°	4-1/16" (103.2)
	105°	3-7/8" (98.4)

OFFSET ARM COVER CHANNEL RIGHT HAND SHOWN; LEFT HAND OPPOSITE



NOT TO SCALE

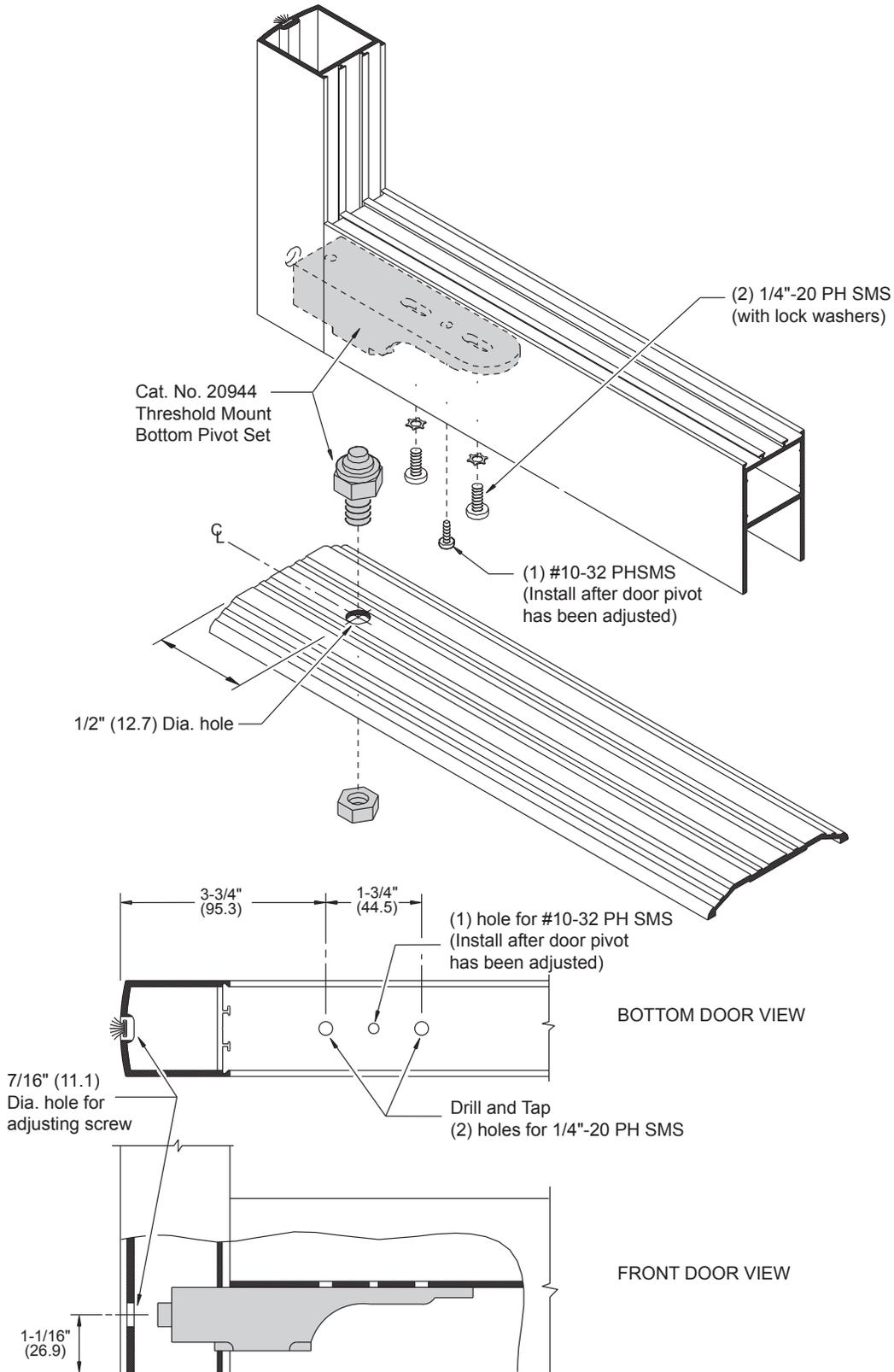
FRAME UNIT FOR CENTER-HUNG DOOR WITH OVERHEAD CONCEALED DOOR CLOSER



NOT TO SCALE

CENTER-HUNG INSTALLATION

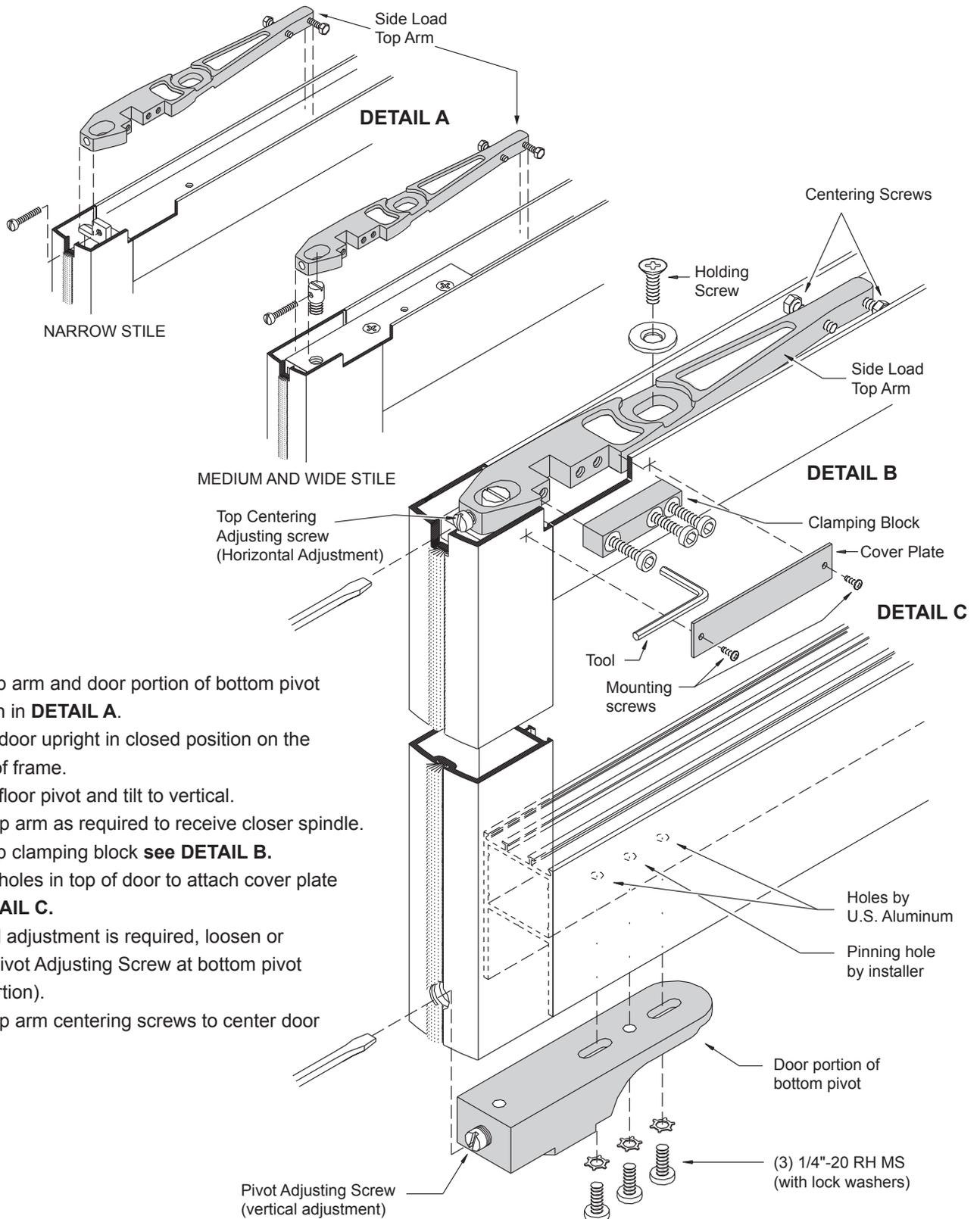
DOOR/THRESHOLD PREPARATION



NOT TO SCALE

JACKSON OVERHEAD CONCEALED DOOR CLOSER

SIDE LOAD CENTER PIVOT DOOR



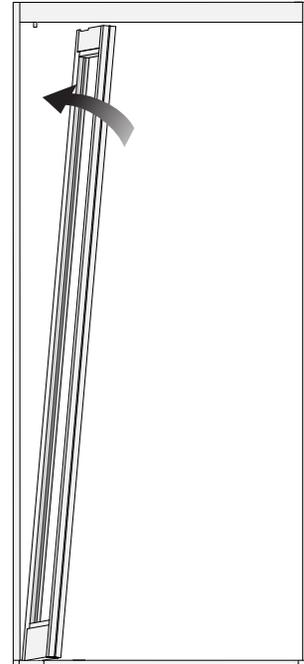
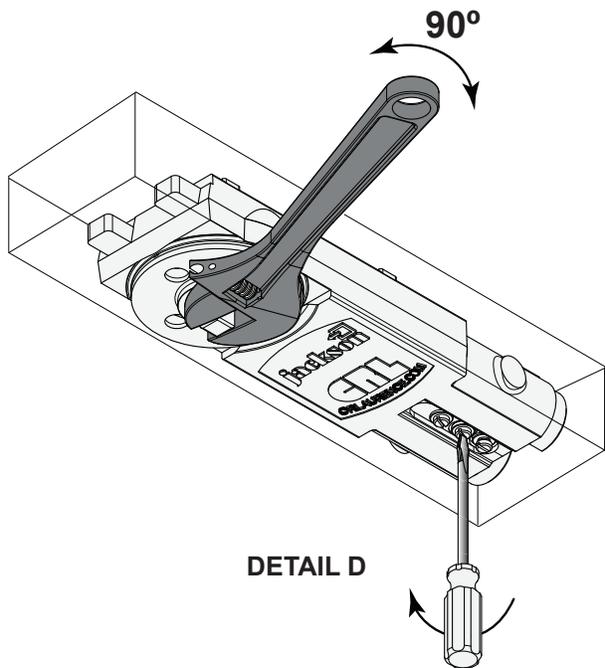
1. Install top arm and door portion of bottom pivot as shown in **DETAIL A**.
2. Position door upright in closed position on the outside of frame.
3. Lift onto floor pivot and tilt to vertical.
4. Adjust top arm as required to receive closer spindle.
5. Install top clamping block **see DETAIL B**.
6. Drill two holes in top of door to attach cover plate **see DETAIL C**.
If vertical adjustment is required, loosen or tighten Pivot Adjusting Screw at bottom pivot (door portion).
7. Adjust top arm centering screws to center door in frame.

NOT TO SCALE

CENTER-HUNG DOOR INSTALLATION WITH A SIDE LOAD TOP ARM

- Using an open end wrench, turn the spindle of the closer to the hold-open position. Make sure to turn it in the correct direction. If the closer has no hold open feature, turn the spindle with an open end wrench until you get to 90 degrees and then close the "closing-speed adjustment valve" to hold it in place. **See DETAIL D.**

NOTE: Be careful not to apply excessive torque to the brass "closing-speed adjustment valve" screw, this can cause damage to the seat.



- Tilting the door slightly, lift it into the door frame, perpendicular to the opening, and sit it onto the bottom pivot pin located in the threshold. Make sure that the pivot pin fully engages the pivot socket on the door's bottom rail. Stand the door upright engaging the closer spindle and side slot of the top pivot arm. Hold in place. **See DETAIL E.**

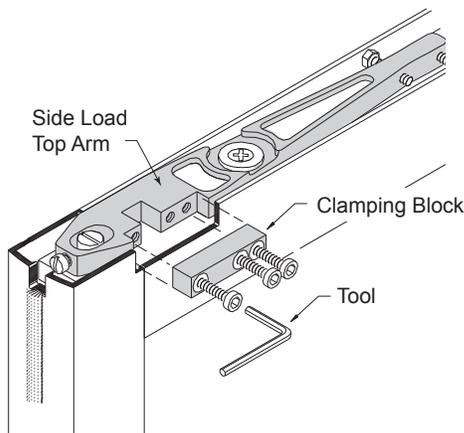
See DETAIL E.

- Attach the top clamping block with the three 1/4"-20 x 7/8" socket head arm clamping screws and lock washers. **DO NOT FULLY TIGHTEN THE CLAMPING SCREWS AT THIS TIME. See DETAIL F.**

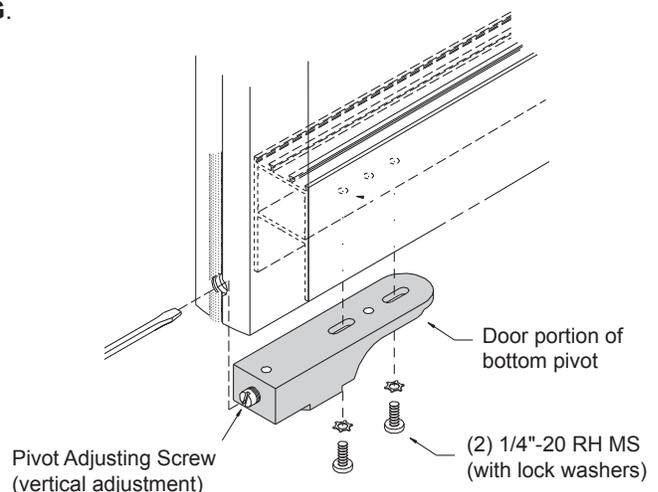
DO NOT FULLY TIGHTEN THE CLAMPING SCREWS AT THIS TIME. See DETAIL F.

- Check the top door clearance. If there is more or less than 1/8", you can adjust it by moving the bottom pivot socket up or down using the Pivot Adjusting Screw. **See DETAIL G.**

See DETAIL G.



DETAIL F

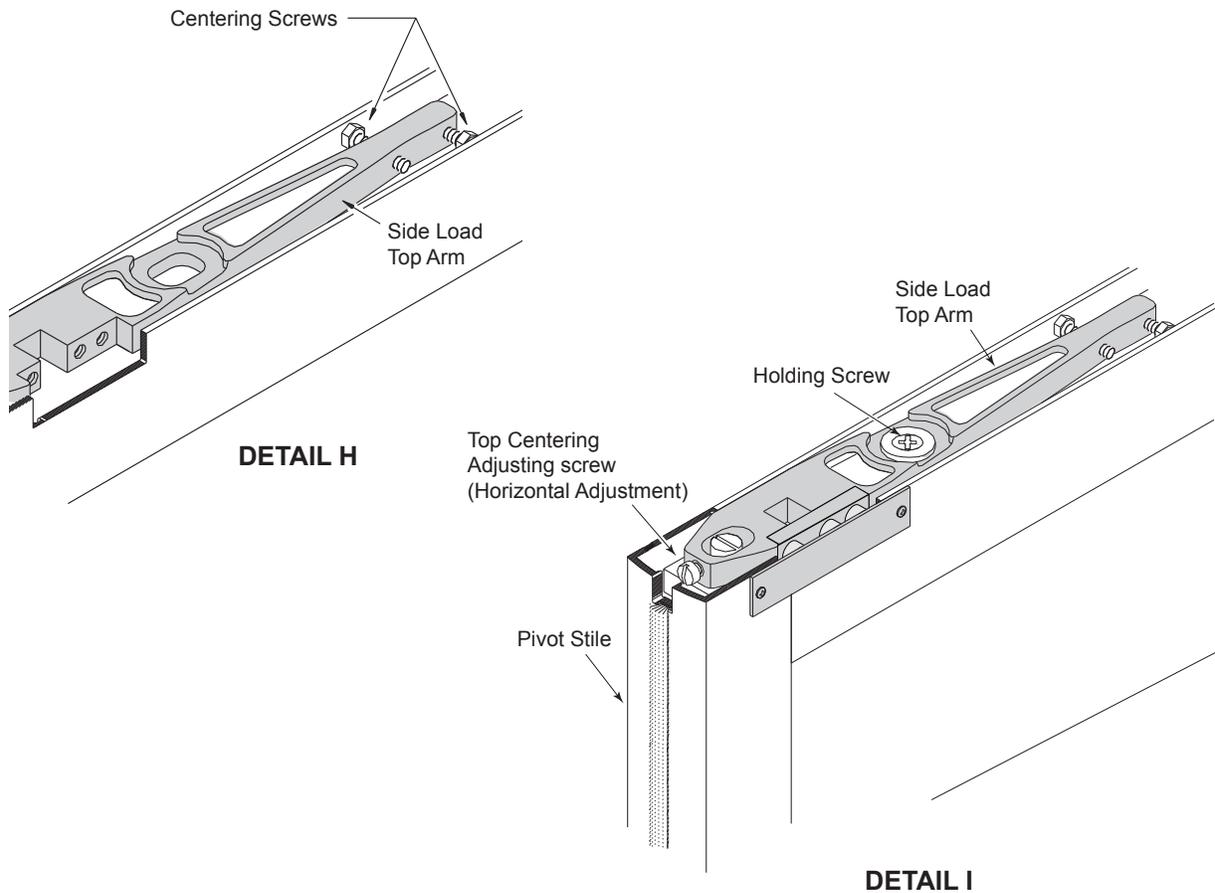


DETAIL G

NOT TO SCALE

CENTER-HUNG DOOR INSTALLATION WITH A SIDE LOAD TOP ARM (CONTINUED)

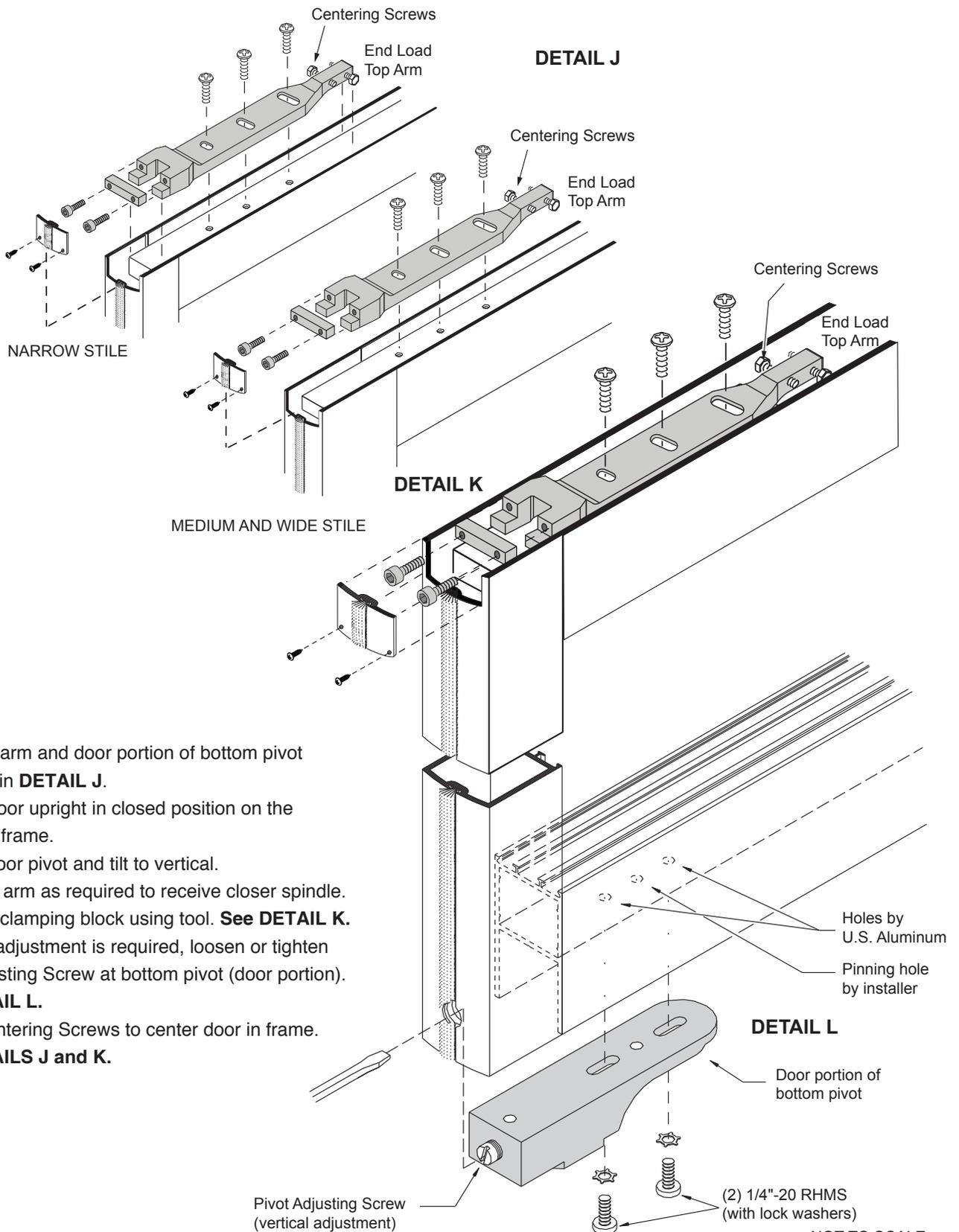
5. After the proper clearances are achieved, proceed to tighten the top pivot arm clamping block to the specifications indicated by the manufacturer.
6. Allow the door to close normally by turning the "closing-speed adjustment valve" screw counterclockwise.
7. Gently close the door and check alignment.
8. To center the door in the closed position, adjust the centering screws as shown. **See DETAIL H.** The door must be open again to 90 degrees to access the centering screws. Each centering screw head must be fully extended to the inside of the top door rail in order to prevent the top arm from spinning. Therefore, as one is tightened, the other must be loosened. **NOTE:** Over-expanding the centering screws can permanently bulge the top door rail.
9. Adjust the door's vertical alignment with the Top Horizontal Adjustment Screw. You must loosen the Holding Screw to do this. When door is correctly positioned, tighten the Holding Screw down firmly. **See DETAIL I.**



NOT TO SCALE

JACKSON OVERHEAD CONCEALED DOOR CLOSER

END LOAD CENTER PIVOT DOOR



1. Install top arm and door portion of bottom pivot as shown in **DETAIL J**.
2. Position door upright in closed position on the outside of frame.
3. Lift onto floor pivot and tilt to vertical.
4. Adjust top arm as required to receive closer spindle.
5. Install top clamping block using tool. **See DETAIL K.**
6. If vertical adjustment is required, loosen or tighten Pivot Adjusting Screw at bottom pivot (door portion). **See DETAIL L.**
7. Adjust Centering Screws to center door in frame. **See DETAILS J and K.**

NOT TO SCALE

CENTER-HUNG INSTALLATION

TOP ARM ASSEMBLIES

CENTER-HUNG DOOR CLOSER TOP ARM ASSEMBLIES		
CAT. NO.	DESCRIPTION	RAIL TYPE
20400B	CRL Jackson Type "S" Side Load Center-Hung	1/2" (13 mm) Deep Top Rail
202000	CRL Jackson Type "A" End Load Center-Hung	1" (25 mm) Deep Top Rail
202010	CRL Jackson Type "PT" End Load Center-Hung	7/8" (22 mm) Deep Top Rail
202085	CRL Jackson Type "K" End Load Center-Hung	5/8" (16 mm) Deep Top Rail
CRL8010AS	CRL Jackson Short End Load Center-Hung	For use with CRL Wedge Lock Door Rails
20510	CRL Jackson Wood Door Side Load Center-Hung	5/8" (16 mm) Depth Mortised Rail (Mortised Channel Included)
202090	CRL Jackson Wood Door End Load Center-Hung	3/4" (19 mm) Depth Mortised Rail (Mortised Channel Included)

CLOSER SELECTION CHART		
CLOSER	MAXIMUM INTERIOR DOOR	MAXIMUM EXTERIOR DOOR
Adjustable Spring	3'-6" (1067)	3'-0" (914)
Light Duty Spring	3'-6" (1067)	3'-0" (914)
Regular Duty Spring	3'-6" (1067)	3'-0" (914)
Heavy-Duty Spring	4'-0" (1219)	3'-6" (1067)

SPRING POWER ADJUSTMENT DATA
Closer leaves factory set at size LD for a 3'-0" (914 mm) door.
To change opening force 1 size takes approximately 4 turns
– Clockwise to increase
– Counter-Clockwise to decrease

APPROXIMATE OPENING FORCE IN POUNDS								
CLOSER	CENTER HUNG				OFFSET SLIDE-ARM *			
	2/6 x 7/0	3/0 x 7/0	3/6 x 7/0	4/0 x 7/0	2/6 x 7/0	3/0 x 7/0	3/6 x 7/0	4/0 x 7/0
Adjustable Spring 				N/A				N/A
Light Duty Spring	10	8	6	5	14	12	10	8
Regular Duty Spring	12	10	8	6	17	14.5	13	11
Heavy-Duty Spring	17	15	13	11	N/A	19	17	15

 = Adjustable opening force 5 lbs. to 8 lbs. for barrier-free applications for door width noted.*

N/A = Application not recommended.

NOTE: Readings are in pound force required to open door and are taken at the lock stile to full degree of opening.

* **IMPORTANT:** The use of an Offset Slide-Arm will add 2 to 4 pounds of opening force due to track friction and therefore may not allow A.D.A. required opening forces and still provide adequate spring power to control and close the door.

* **WARNING:** Although A.D.A. Series Closers comply with A.D.A. specified opening forces, they might not provide adequate spring power to control and close the door due to varying site conditions and door sizes.

CENTER-HUNG INSTALLATION

OVERHEAD CONCEALED DOOR CLOSERS

BLUE CRL JACKSON ADJUSTABLE SPRING POWER OVERHEAD CONCEALED DOOR CLOSERS			
1/2" STANDARD SPINDLE CAT. NO.	7/8" EXTENDED SPINDLE CAT. NO.	SPRING TYPE	DESCRIPTION
20101M17	20104M17	Adjustable	105° No Hold-Open
20101M18	20104M18	Adjustable	105° Hold-Open
20101M19	20104M19	Adjustable	90° No Hold-Open
20101M20	20104M20	Adjustable	90° Hold-Open

BROWN CRL JACKSON STANDARD OVERHEAD CONCEALED DOOR CLOSERS			
1/2" STANDARD SPINDLE CAT. NO.	7/8" EXTENDED SPINDLE CAT. NO.	SPRING TYPE	DESCRIPTION
20101M01	20104M01	Regular	105° No Hold-Open
20101M02	20104M02	Regular	105° Hold-Open
20101M03	20104M03	Regular	90° No Hold-Open
20101M04	20104M04	Regular	90° Hold-Open
20101M09	20104M09	Heavy	105° No Hold-Open
20101M10	20104M10	Heavy	105° Hold-Open
20101M11	20104M11	Heavy	90° No Hold-Open
20101M12	20104M12	Heavy	90° Hold-Open

BLACK CRL JACKSON GRADE 1 OVERHEAD CONCEALED DOOR CLOSERS			
1/2" STANDARD SPINDLE CAT. NO.	7/8" EXTENDED SPINDLE CAT. NO.	SPRING TYPE	DESCRIPTION
20111M01B	20114M01B	Regular	105° No Hold-Open
20111M02B	20114M02B	Regular	105° Hold-Open
20111M03B	20114M03B	Regular	90° No Hold-Open
20111M04B	20114M04B	Regular	90° Hold-Open
20111M09B	20114M09B	Heavy	105° No Hold-Open
20111M10B	20114M10B	Heavy	105° Hold-Open
20111M11B	20114M11B	Heavy	90° No Hold-Open
20111M12B	20114M12B	Heavy	90° Hold-Open

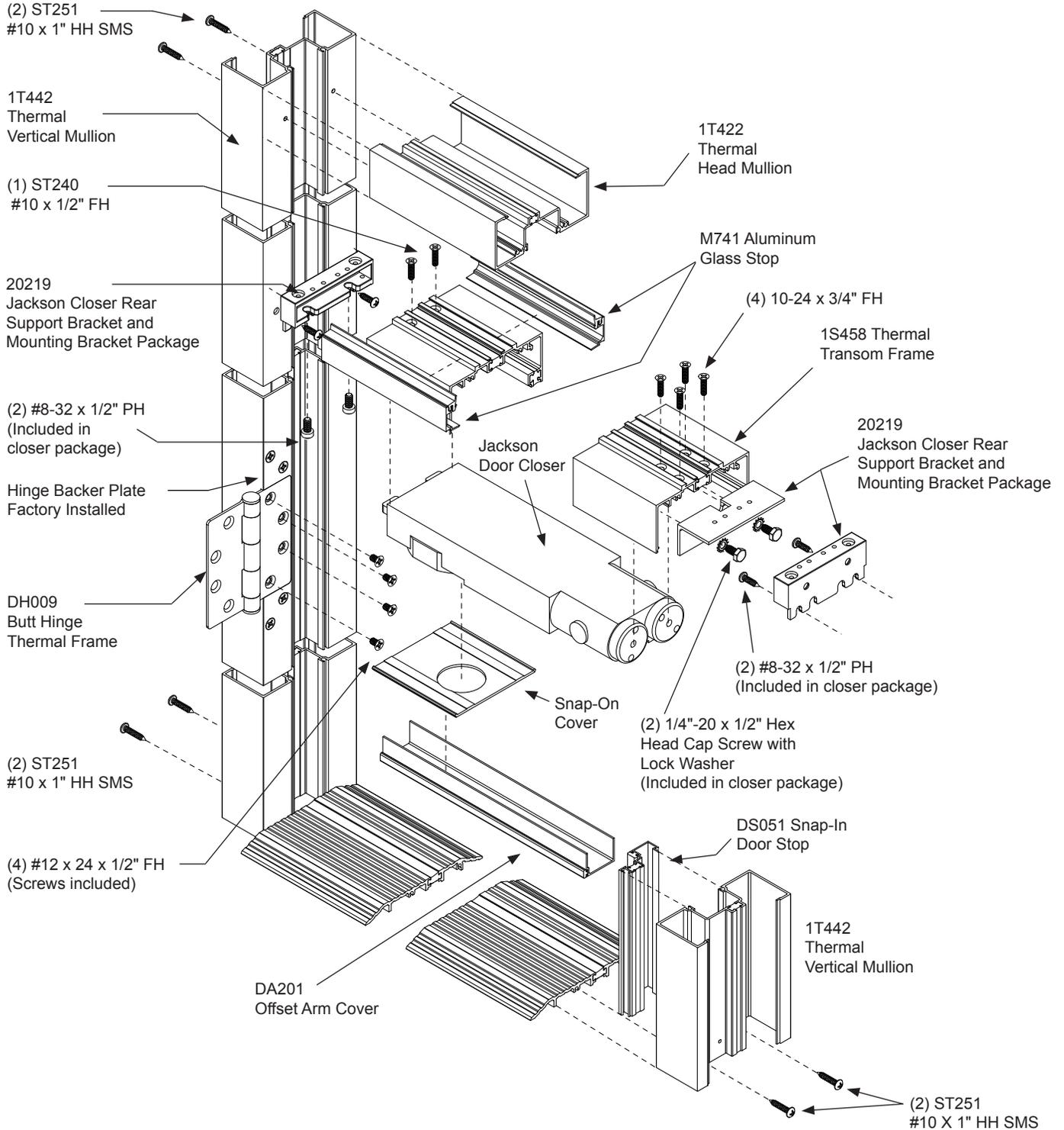
CENTER-HUNG INSTALLATION

PIVOTS

PIVOT MOUNTS				
CAT. NO.	DESCRIPTION	APPLICATION	RAIL TYPE	HEIGHT ADJUSTMENT
20902	CRL Jackson Type "G"	Floor Mount Pivot Set	1-1/2" (38 mm) Deep Bottom Rail	3/16" (5 mm)
20944	CRL Jackson Type "GE"	Threshold Mount Pivot Set	1-1/2" (38 mm) Deep Bottom Rail	3/16" (5 mm)
201155	CRL Jackson Type "BE"	Threshold Mount Pivot Set	1" (25 mm) Deep Bottom Rail	N/A
Recommended Maximum Weight Capacity for Above Pivots: 125 pounds (56.7 kg)				
201570	CRL Jackson Type "GW"	Floor Mount Pivot Set	1" (25 mm) Deep Bottom Rail	N/A
201060	CRL Jackson Type "P"	Floor Mount Pivot Set	1-9/16" (40 mm) Deep Bottom Rail	N/A
20728	CRL Jackson Type "AE"	Threshold Mount Pivot Set	1" (25 mm) Deep Bottom Rail	N/A
201410	CRL Jackson Type "EF"	Threshold Mount Pivot Set	1-9/16" (40 mm) Deep Bottom Rail	N/A
201680	CRL Jackson Type "BV"	Combination Mount Pivot Set	1" (25 mm) Deep Bottom Rail	N/A
201685	CRL Jackson Type "UP"	Combination Mount Pivot Set	1-9/16" (40 mm) Deep Bottom Rail	N/A
Recommended Maximum Weight Capacity for Above Pivots: 175 pounds (79.4 kg)				

JACKSON OVERHEAD CONCEALED DOOR CLOSER FOR BUTT HINGE DOOR

TYPICAL DOORWAY FRAME PREPARATION

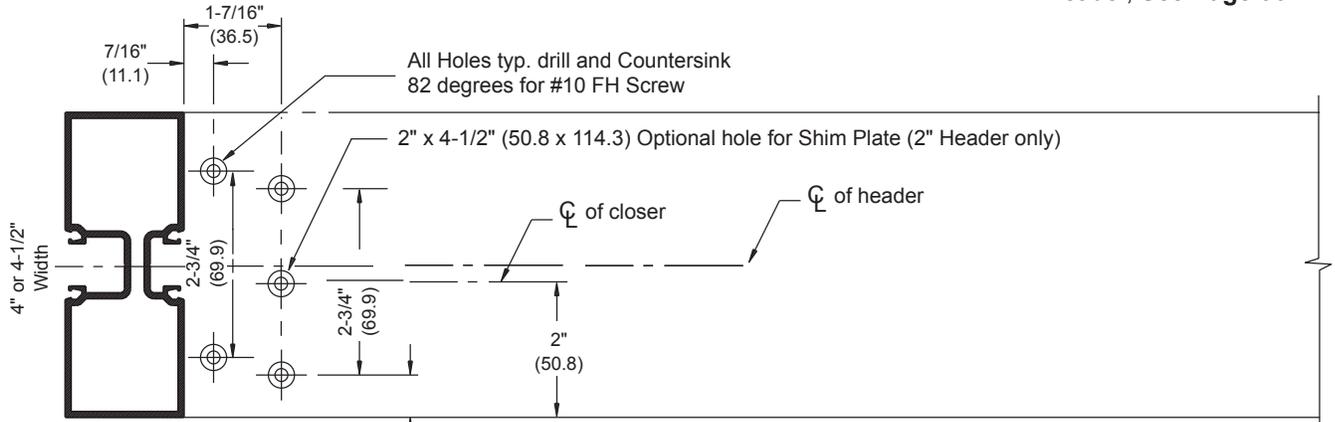


NOT TO SCALE

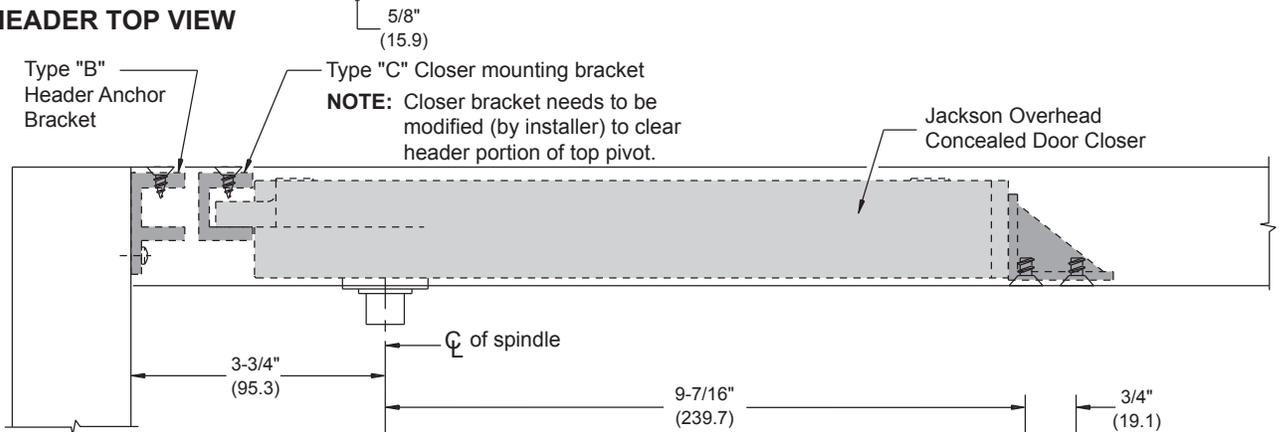
JACKSON OVERHEAD CONCEALED DOOR CLOSER FOR OFFSET PIVOT DOOR, 90 DEGREE SWING

HEADER PREPARATION

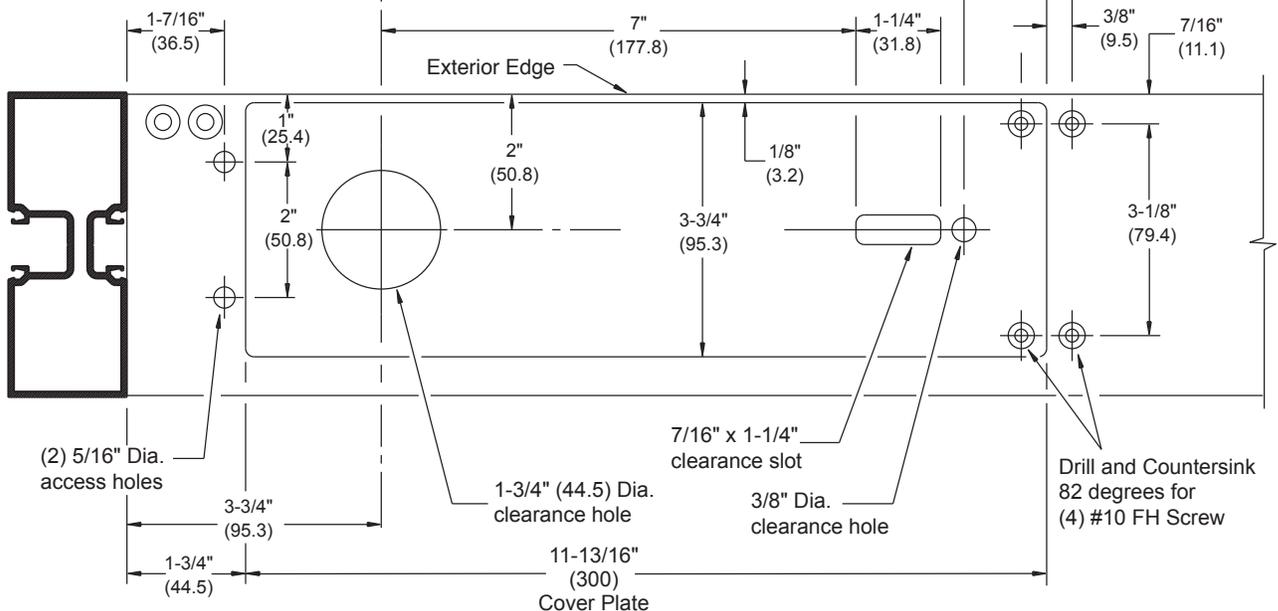
NOTE: For Closer Location in Header, See Page 06.



HEADER TOP VIEW



HEADER SIDE VIEW



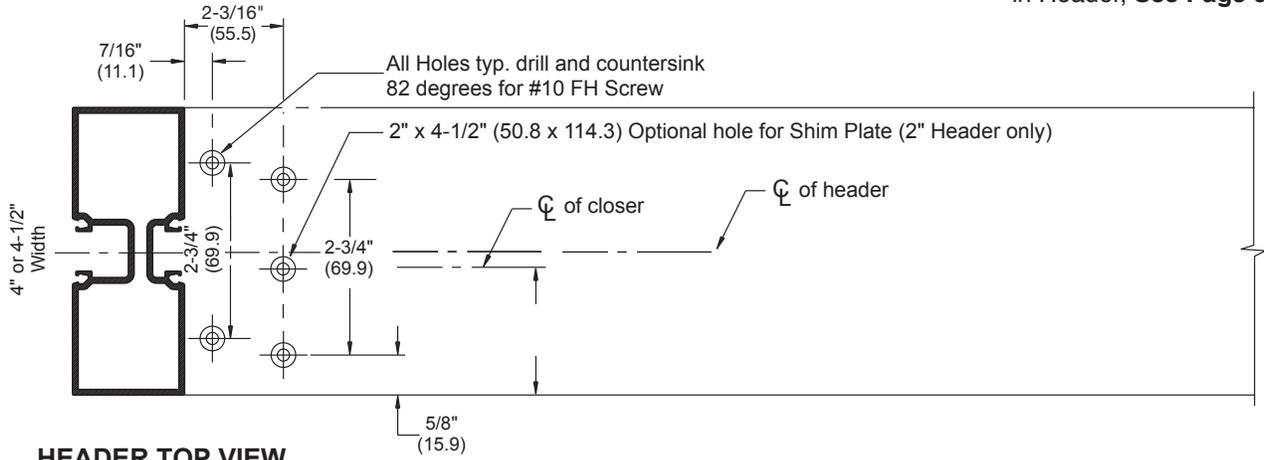
HEADER BOTTOM VIEW

NOT TO SCALE

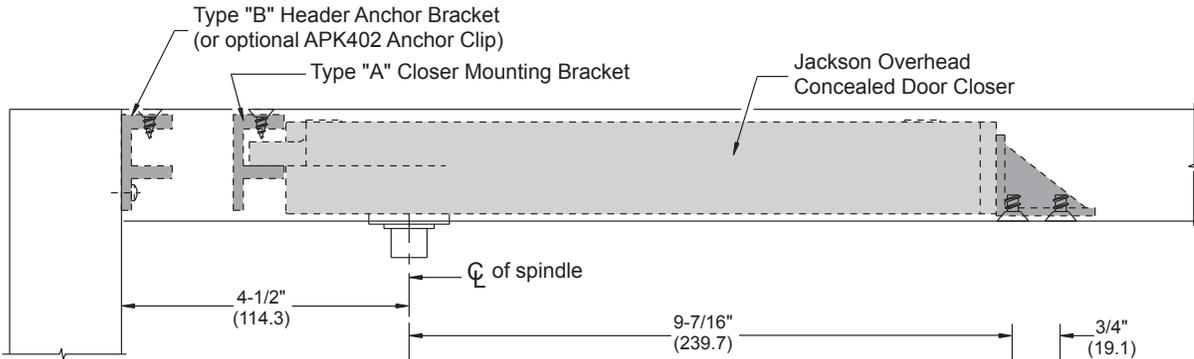
JACKSON OVERHEAD CONCEALED DOOR CLOSER FOR OFFSET PIVOT DOOR, 105 DEGREE SWING

HEADER PREPARATION

NOTE: For Closer Location in Header, See Page 06.

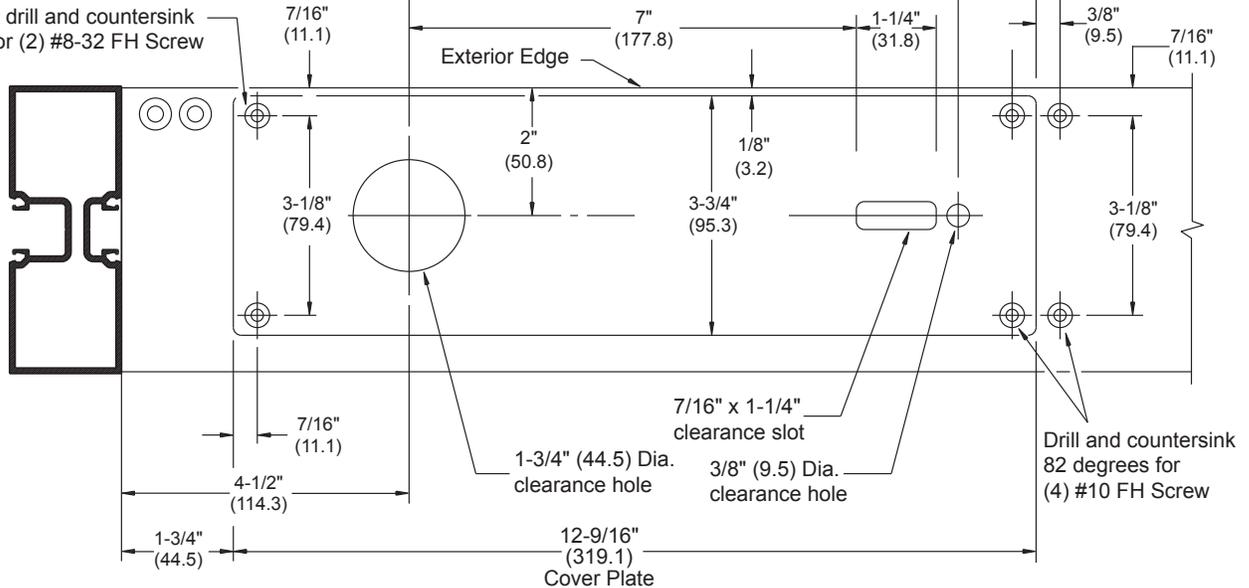


HEADER TOP VIEW



HEADER SIDE VIEW

All Holes typ. drill and countersink 82 degrees for (2) #8-32 FH Screw

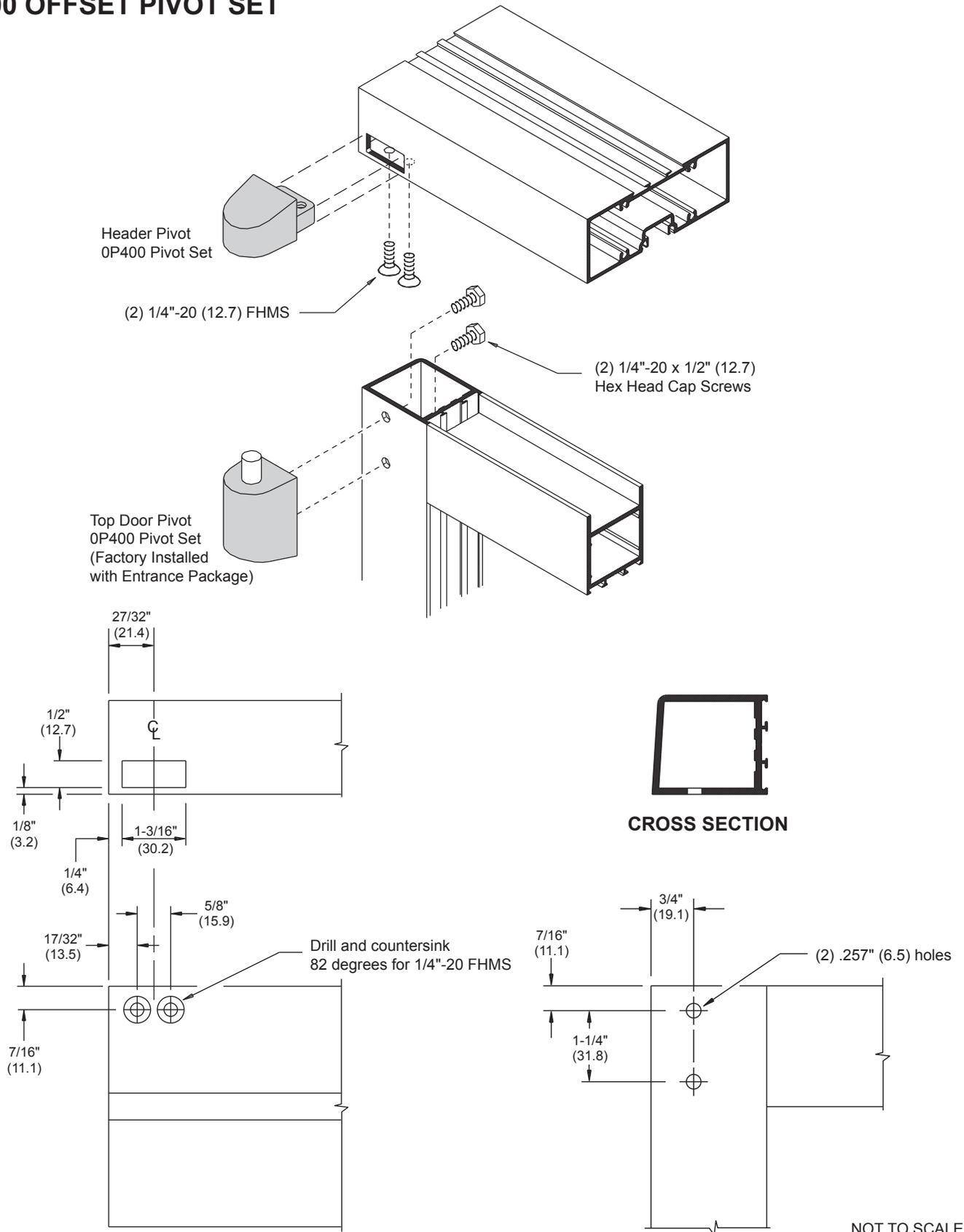


HEADER BOTTOM VIEW

NOT TO SCALE

OFFSET PIVOT INSTALLATION

0P400 OFFSET PIVOT SET



OFFSET PIVOT INSTALLATION

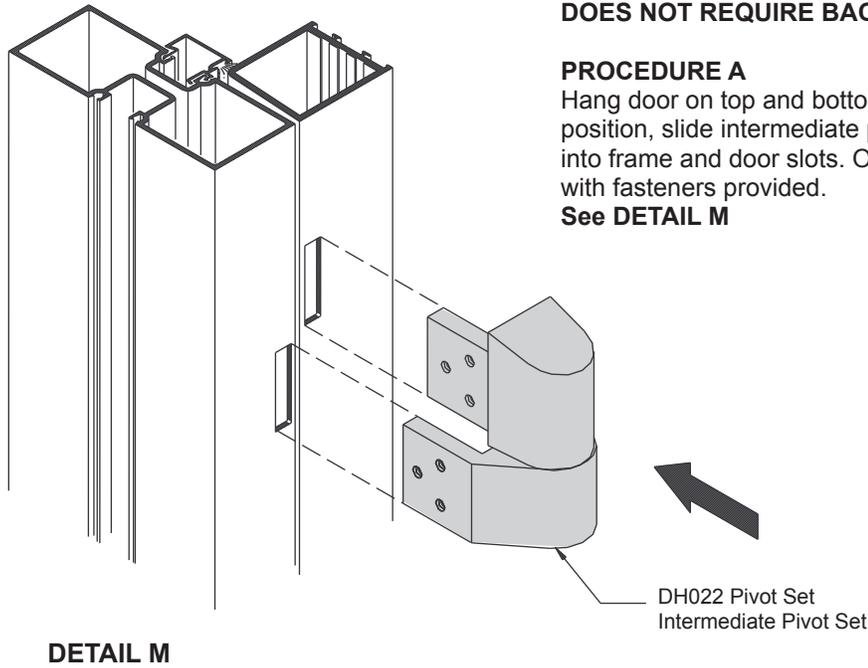
DH022 INTERMEDIATE PIVOTS

DOES NOT REQUIRE BACK-UP PLATE

PROCEDURE A

Hang door on top and bottom pivots. With door in closed position, slide intermediate pivot (assembled together) into frame and door slots. Open door to secure pivot with fasteners provided.

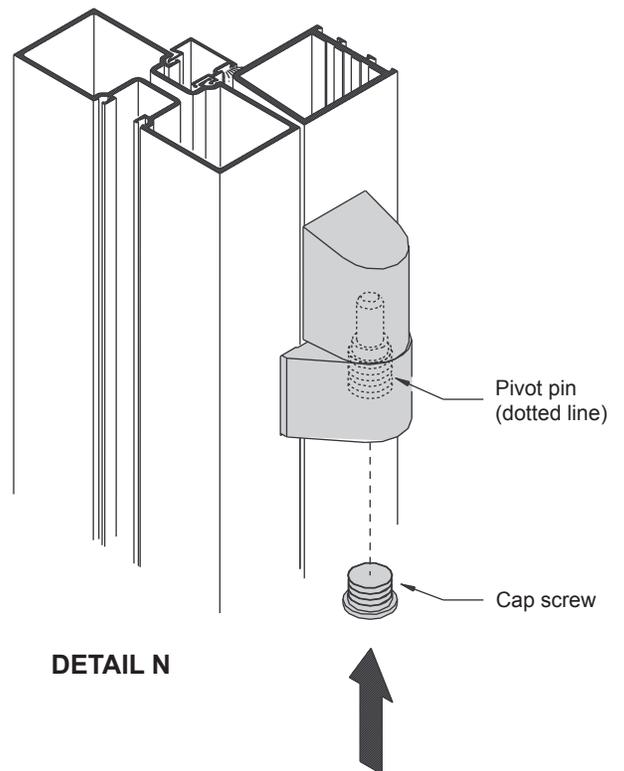
See **DETAIL M**



PROCEDURE B

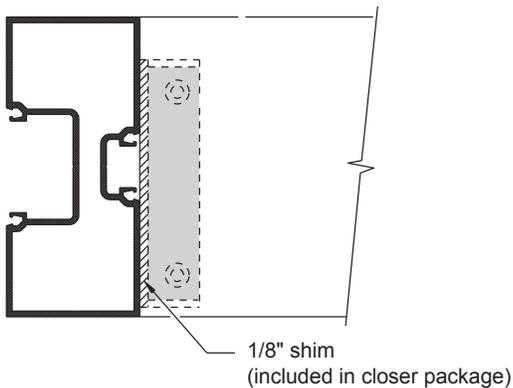
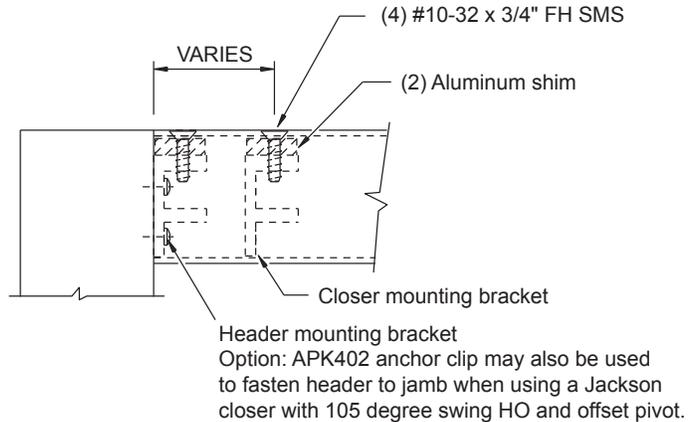
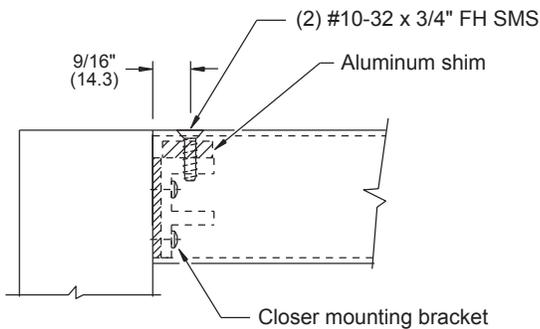
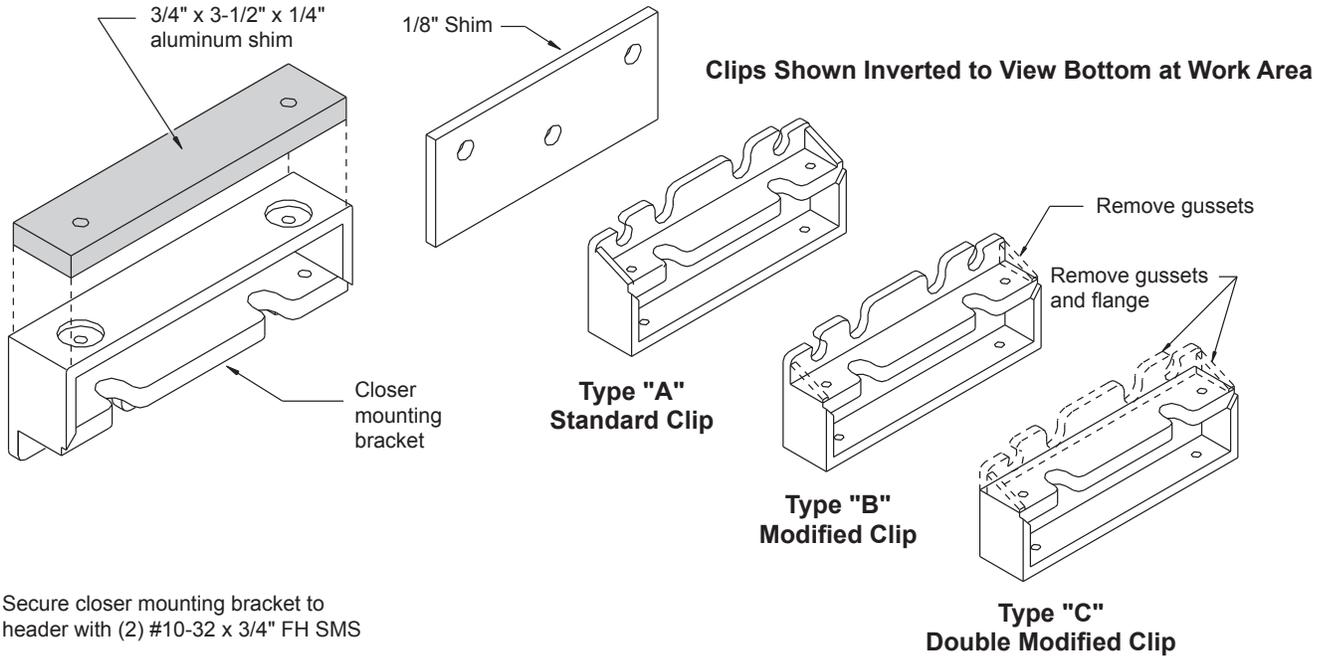
Install pivot leaves on frame and door. Remove cap screw from jamb portion of pivot and lower pin to clear. Hang door on top and bottom pivots. Raise pivot pin as required and replace cap screw.

See **DETAIL N**

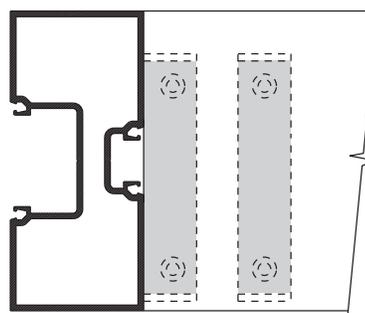


To remove existing doors with intermediate pivots, remove cap screw and lower pivot pin to clear.

HEADER FOR JACKSON OVERHEAD CONCEALED DOOR CLOSER WITH OFFSET ARM



JACKSON OHC with butt hung door 90 degree swing

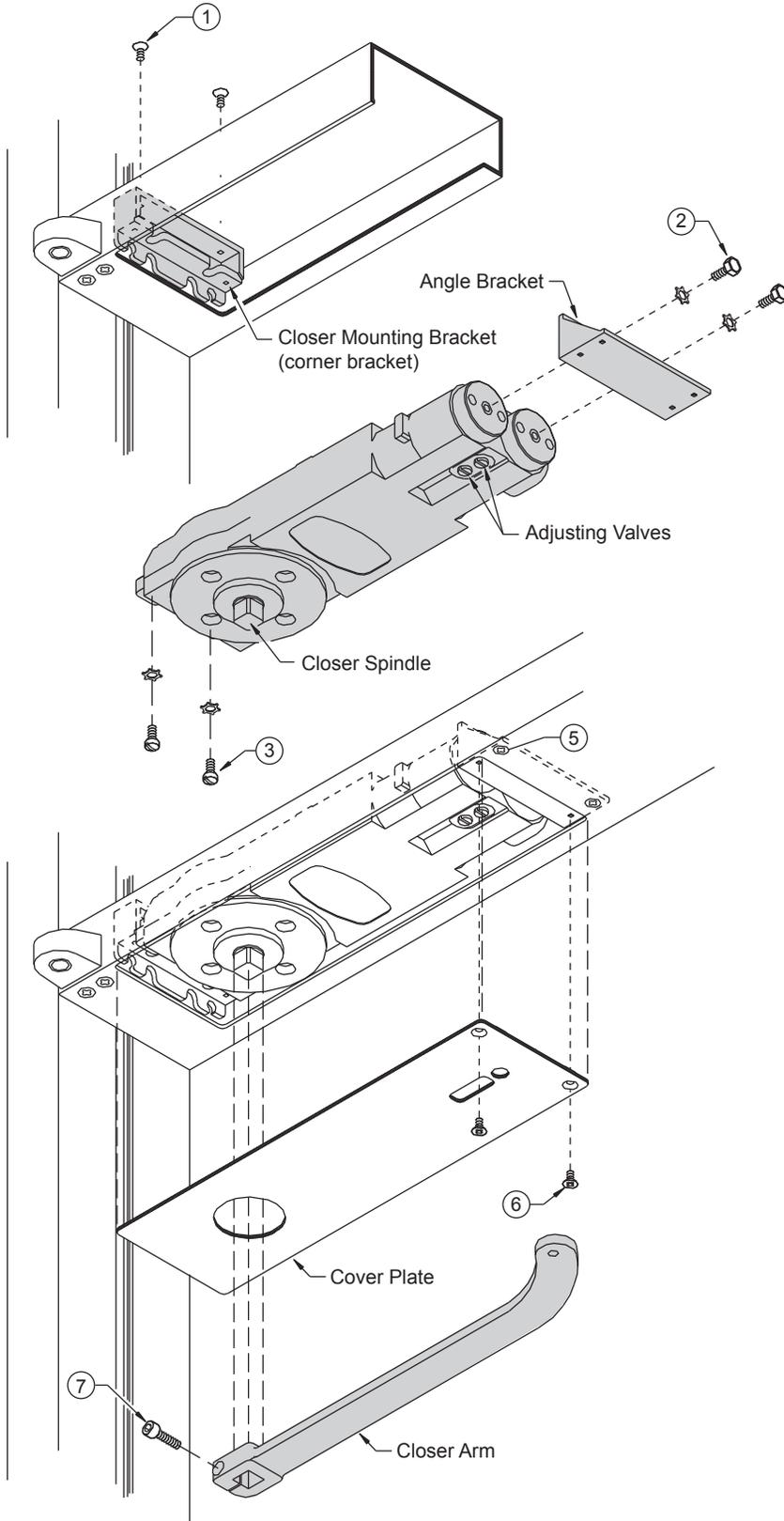


JACKSON OHC with offset pivot door

JACKSON OHC with butt hung door 105 degree swing

NOT TO SCALE

JACKSON OVERHEAD CONCEALED DOOR CLOSER FOR OFFSET PIVOT DOOR



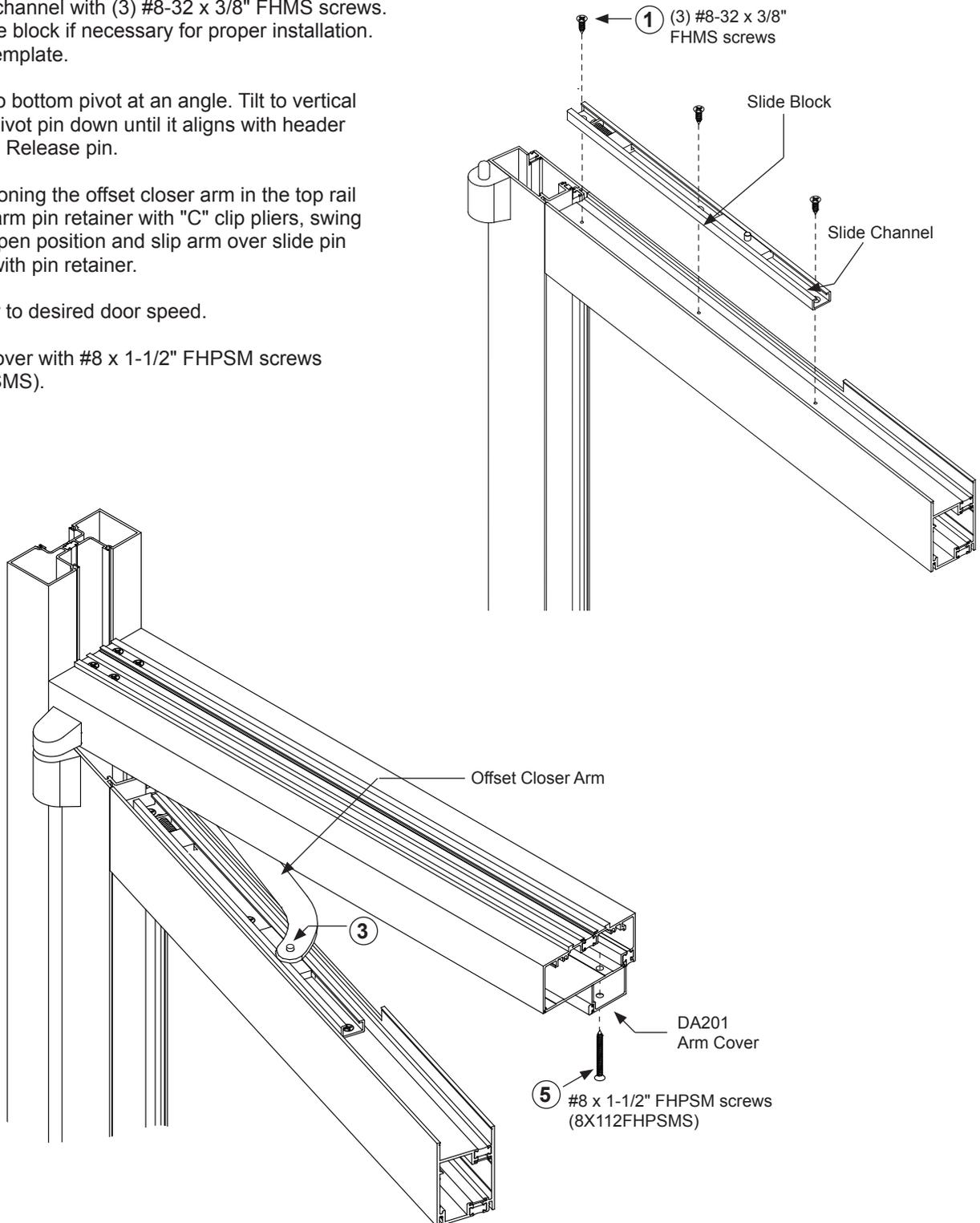
1. Mount corner bracket into header with (2) 10-32 x 3/8" FH SMS.
2. Mount angle bracket to closer with (2) 1/4"-20 x 1/2" Hex Head Cap Screw and lock washer.
3. Install (2) 1/4"-20 x 5/8" Round Head MS with lock washers into lugs of closer. Do not tighten screws.
4. Set closer onto header and align angle bracket holes with holes in header. Closer lugs shall rest on corner bracket.
5. Fasten angle bracket to header with (2) 10-24 x 3/8" FH SMS. Tighten Round Head Screws.
6. Install cover plate and secure to angle with (2) 10-24 x 3/8" FH SMS.
7. Mount arm on spindle and secure with 1/4"-20 x 7/8" Socket Head Cap Screw.

NOT TO SCALE

OFFSET CLOSER ARM INSTALLATION

JACKSON OVERHEAD DOOR CLOSER WITH TOP AND BOTTOM OFFSET PIVOTS

1. Mount slide channel with (3) #8-32 x 3/8" FHMS screws. Reverse slide block if necessary for proper installation. See closer template.
2. Set door onto bottom pivot at an angle. Tilt to vertical holding top pivot pin down until it aligns with header pivot portion. Release pin.
3. Before positioning the offset closer arm in the top rail remove the arm pin retainer with "C" clip pliers, swing door in the open position and slip arm over slide pin and secure with pin retainer.
4. Adjust closer to desired door speed.
5. Install arm cover with #8 x 1-1/2" FHPSM screws (8X112FHPSMS).
6. Glaze door.

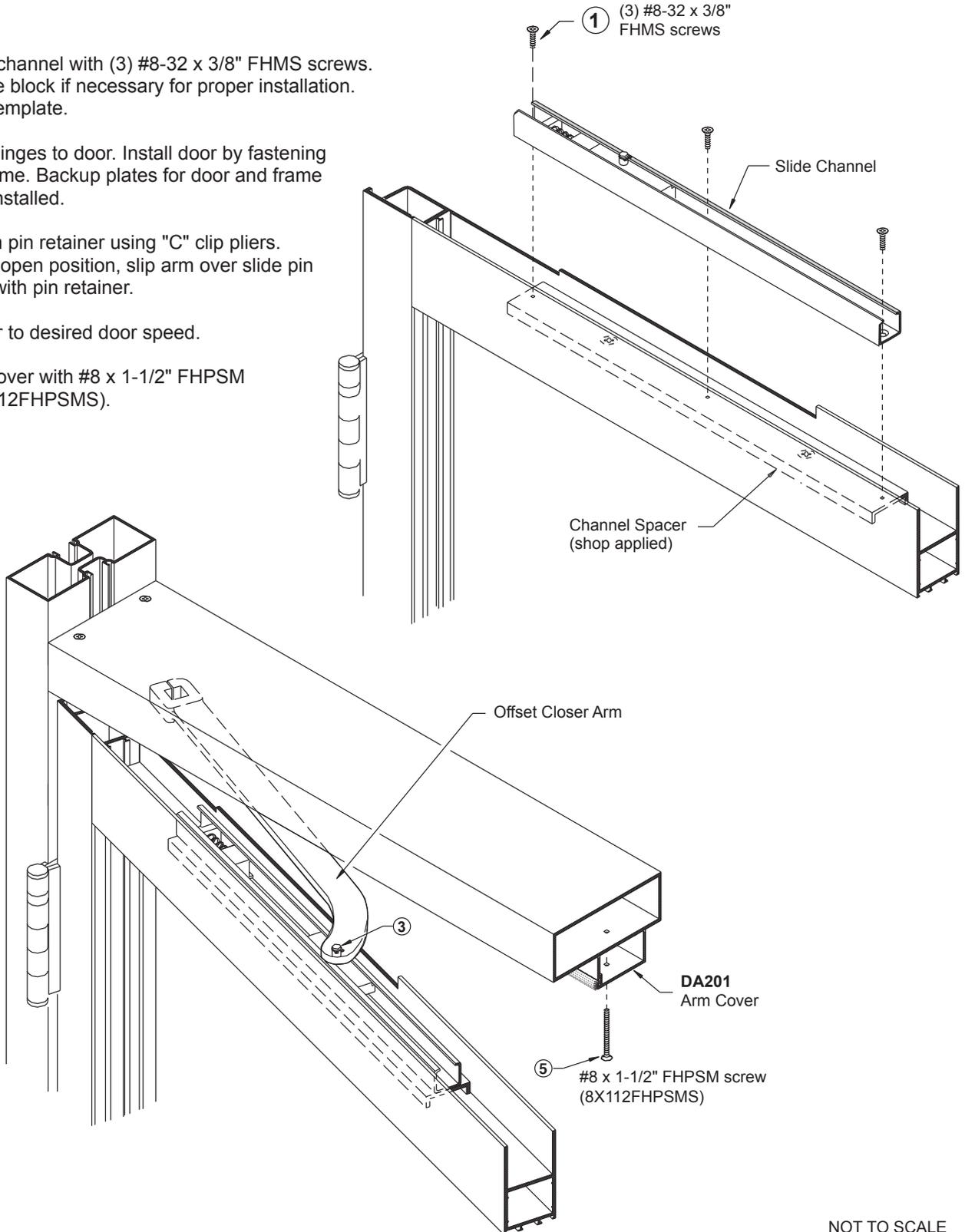


NOT TO SCALE

OFFSET CLOSER ARM INSTALLATION

INSTALL JACKSON OVERHEAD DOOR CLOSER BUTT HINGE DOOR WITH 90 DEGREE

1. Mount slide channel with (3) #8-32 x 3/8" FHMS screws. Reverse side block if necessary for proper installation. See closer template.
2. Attach butt hinges to door. Install door by fastening hinges to frame. Backup plates for door and frame are factory installed.
3. Remove arm pin retainer using "C" clip pliers. With door in open position, slip arm over slide pin and secure with pin retainer.
4. Adjust closer to desired door speed.
5. Install arm cover with #8 x 1-1/2" FHPSM screws (8X112FHPSMS).



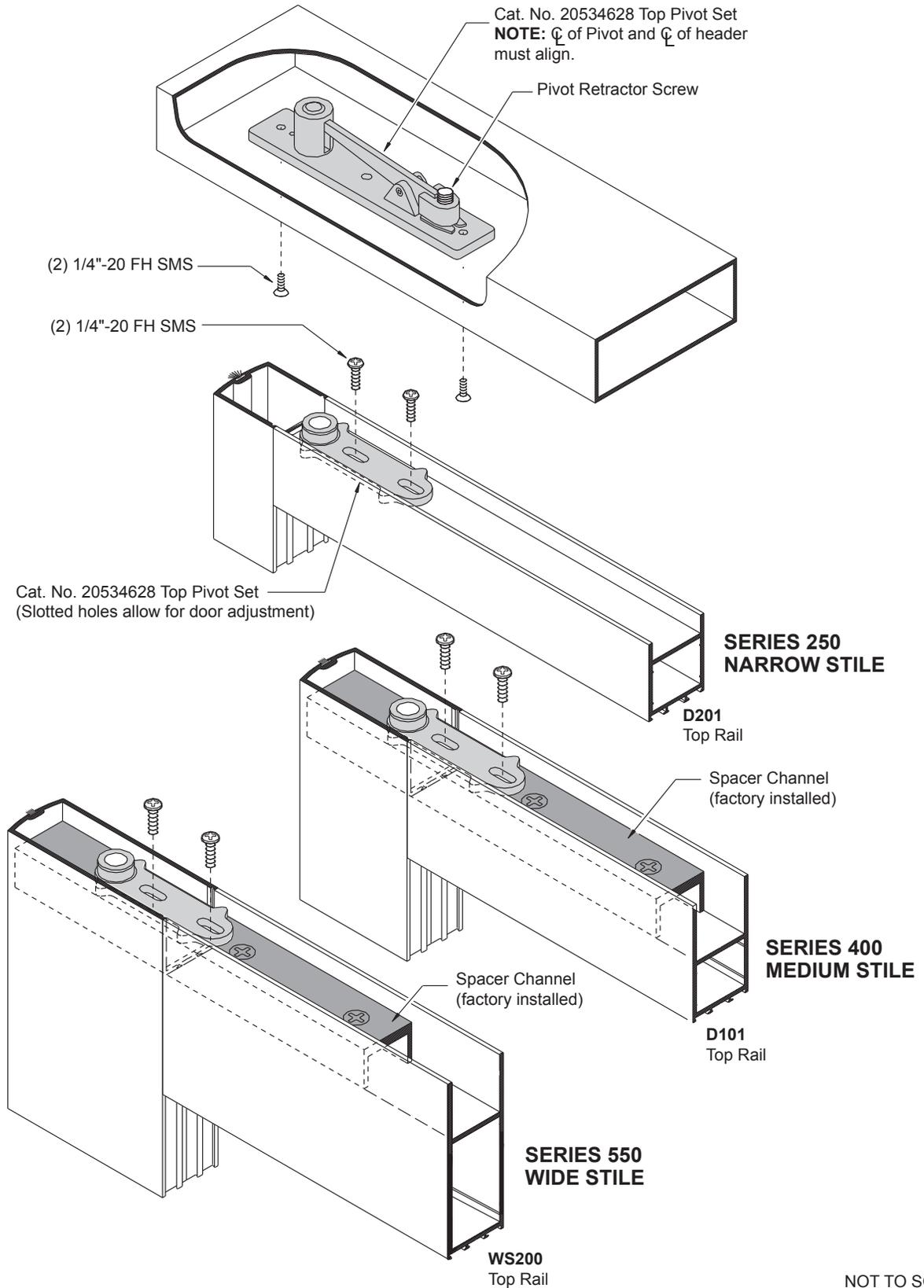
NOT TO SCALE

OFFSET ARM/CHANNEL ASSEMBLIES

OFFSET ARM AND SLIDE CHANNEL ASSEMBLIES			
CAT. NO.	DESCRIPTION	OVERALL LENGTH	ARM FINISH
20900LC628	CRL Jackson Deep Mortised Type	14" (356 mm)	Aluminum
20900LC313	CRL Jackson Deep Mortised Type	14" (356 mm)	Dark Bronze
201134LC628	CRL Jackson Shallow Depth Mortised Type	12-7/8" (327 mm)	Aluminum
201134LC313	CRL Jackson Shallow Depth Mortised Type	12-7/8" (327 mm)	Dark Bronze
201312LC628	CRL Jackson Shallow Depth Mortised Type With Enhanced Pre-Load	12-7/8" (327 mm)	Aluminum
201312LC313	CRL Jackson Shallow Depth Mortised Type With Enhanced Pre-Load	12-7/8" (327 mm)	Dark Bronze

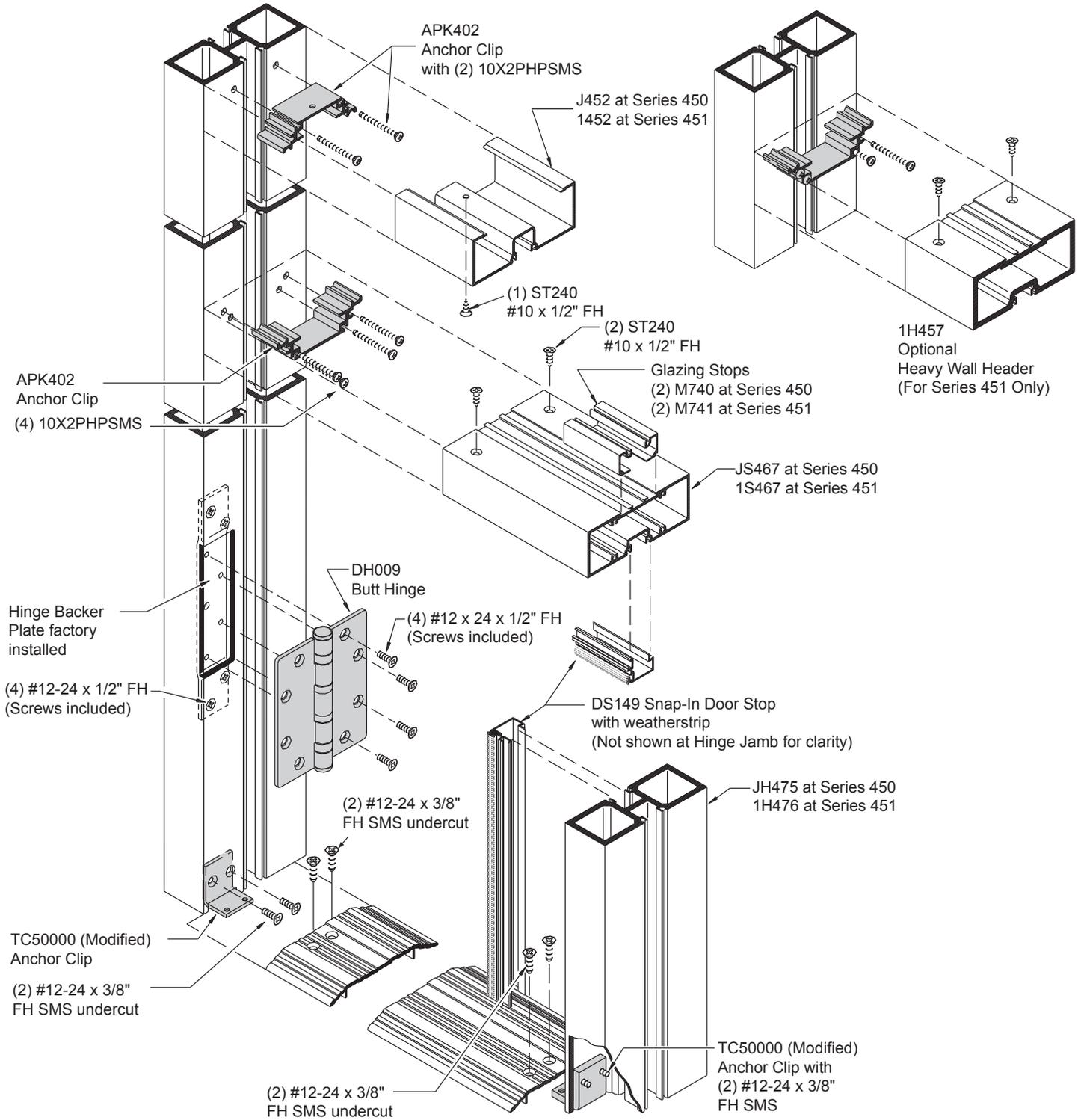
OFFSET ARM ASSEMBLY COVERS		
CAT. NO.	HANDING	FINISH
20106628	Left Hand	Aluminum
20106313	Left Hand	Dark Bronze
20117628	Right Hand	Aluminum
20117313	Right Hand	Dark Bronze

CENTER PIVOT - TOP PORTION FOR FLOOR MOUNTED CLOSER



NOT TO SCALE

FRAME UNIT FOR BUTT HUNG DOOR WITH SURFACE MOUNTED CLOSER



NOT TO SCALE