Installation Instructions

8381/8581 Series
8180/8380/8580 Series

Non Hold Open Door Closers

Models 8381 8581	Models 8180 8380 8580
Adjustable Power Size 1-6	Half Size Adjustable Power at Sizes: 2, 3, 4, 5, or 6

Note: For Special Applications a separate door and frame preparation template is packed with these instructions. Use this instruction sheet for installation sequence and closer adjustments only.

"DA" Suffix - Delayed Action closing is an optional feature.

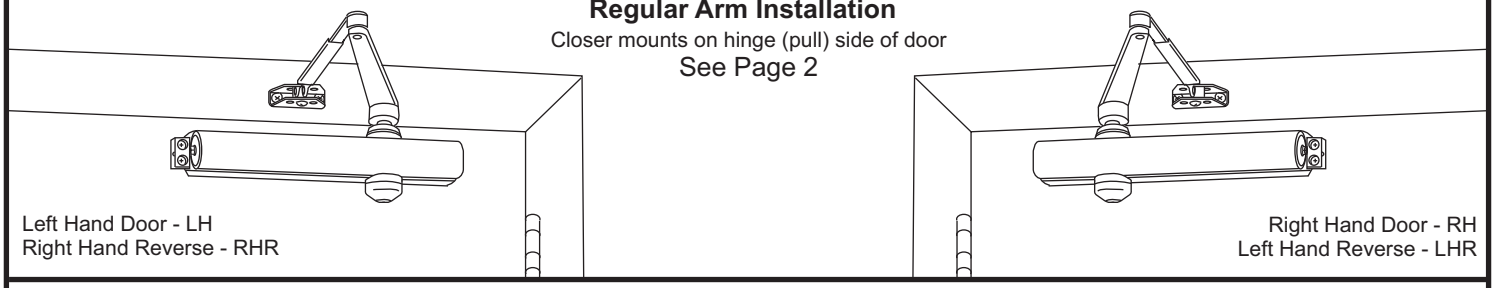
The closing force for series 8381 & 8581 door closers is adjustable from a size 1 to a size 6, as outlined in ANSI Standard A156.4. When these series of door closers are installed and adjusted to conform to ADA reduced opening force requirements (5 lbs max.) for interior doors, they may not have adequate closing force to reliably close and latch the door. Power adjustments charted on page 4 are recommended where possible, to ensure proper door control.

CAUTION AN INCORRECTLY INSTALLED OR IMPROPERLY ADJUSTED DOOR CLOSER CAN CAUSE PROPERTY DAMAGE OR PERSONAL INJURY. THESE INSTALLATION INSTRUCTIONS SHOULD BE FOLLOWED TO AVOID THE POSSIBILITY OF MISAPPLICATION OR MISADJUSTMENT. **CAUTION**

Regular Arm Installation

Closer mounts on hinge (pull) side of door

See Page 2



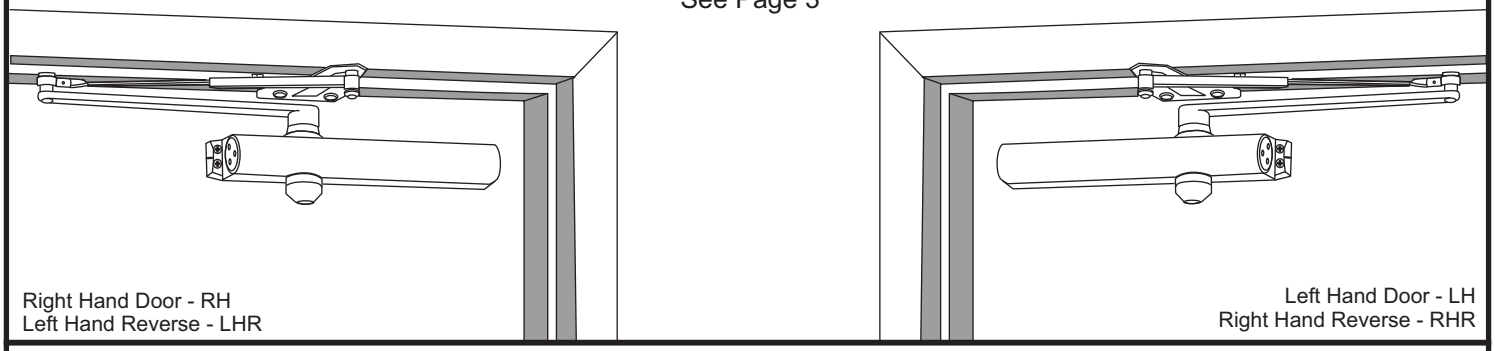
Left Hand Door - LH
Right Hand Reverse - RHR

Right Hand Door - RH
Left Hand Reverse - LHR

Parallel Arm Installation

Closer mounts on opposite to hinge (push) side of door

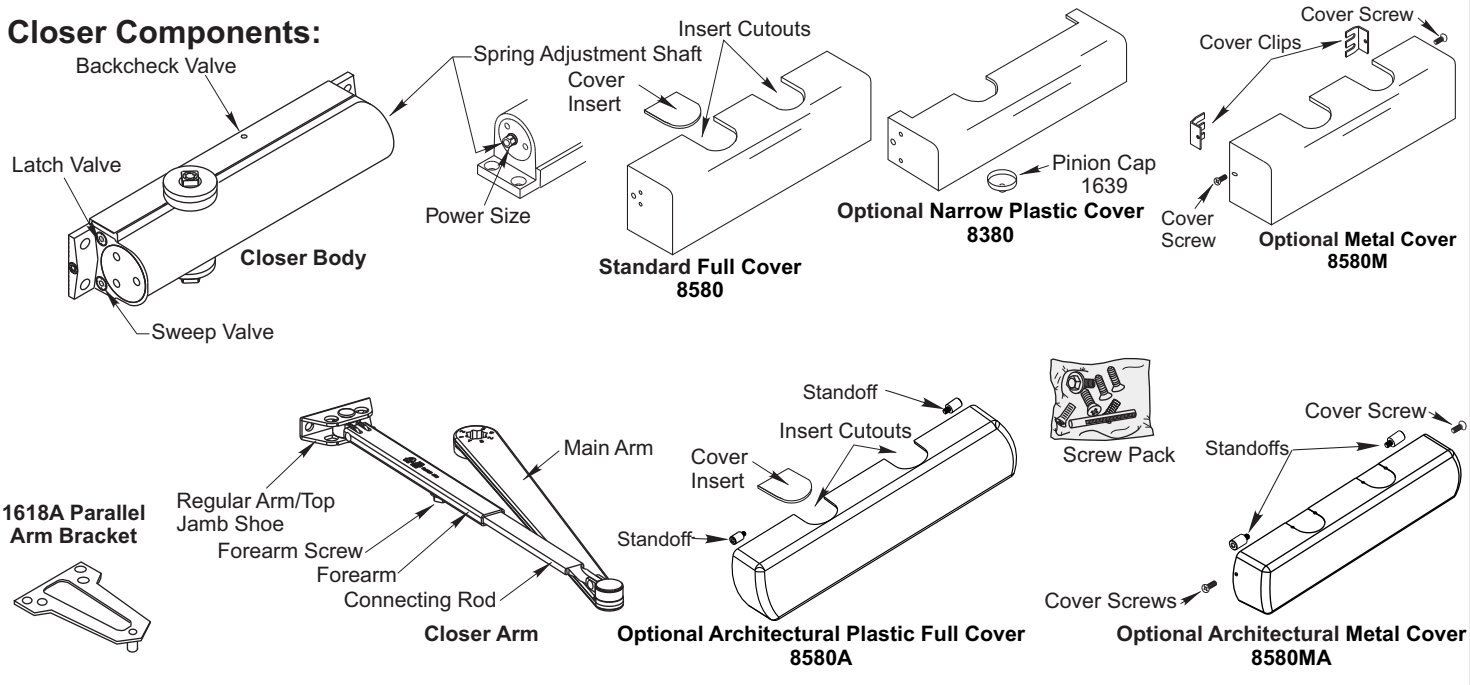
See Page 3



Right Hand Door - RH
Left Hand Reverse - LHR

Left Hand Door - LH
Right Hand Reverse - RHR

Closer Components:



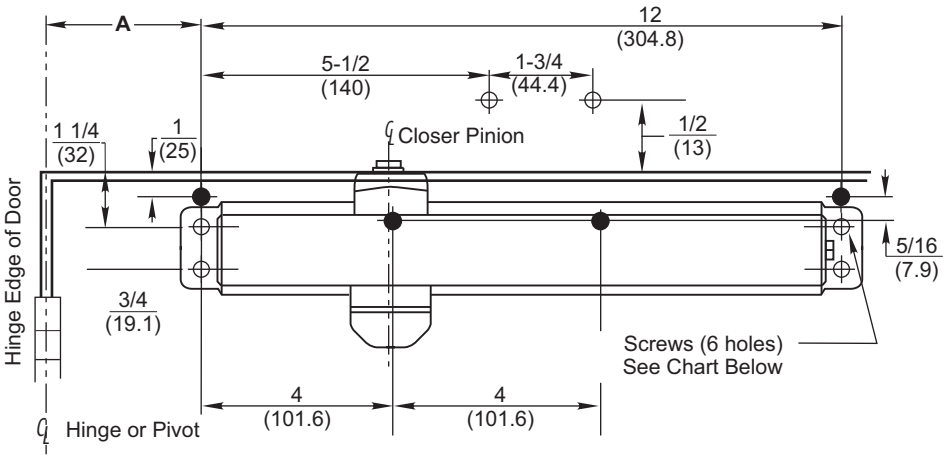
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Installation Instructions

Regular Arm

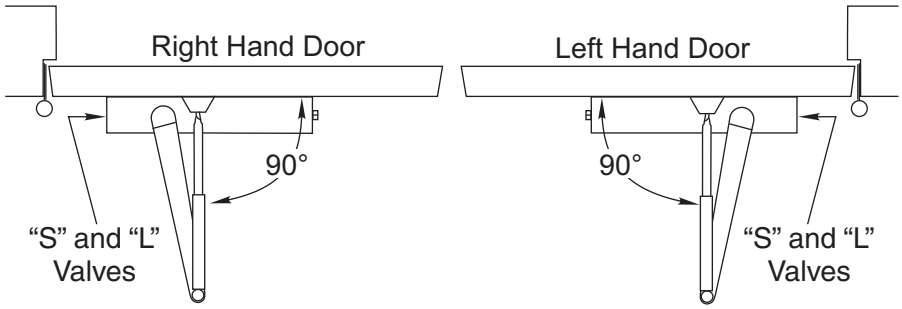


Opening	A	
	inches	mm.
To 100°	7-1/2	191
100° to 130°	6	152
Over 130°	4-1/2	114

Prepare these holes when 8146 Drop Plate is used

Installation Sequence

- Select door opening angle. Using template dimensions mark **4 holes on door** for closer or 4 holes (✦) for 8146 Drop Plate and 2 **holes on frame** for arm shoe.
- Prepare for fasteners – See "Fasteners Chart", this page.
- Remove forearm screw from arm assembly and fasten the arm shoe assembly to the frame face. (Slot facing down.)
- Mount closer body to door. Place end with **2 regulating valves toward hinge edge** of door. NOTE: If using full metal cover, cover mounting clips must be slipped under ends of closer when closer is being mounted.
- Install main arm on top of pinion shaft. Align the **pinion flat** with the letter **"S"** (See Figure 1). Fasten with arm screw.
- Reassemble Arm. Adjust forearm perpendicular to door (90° angle). Install and tighten set screw. See illustration below template.
- Adjust closer. See page 4.
- Install Pinion Cap and/or Cover. See page 4.



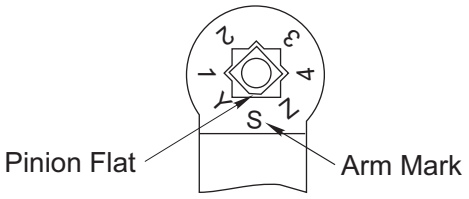
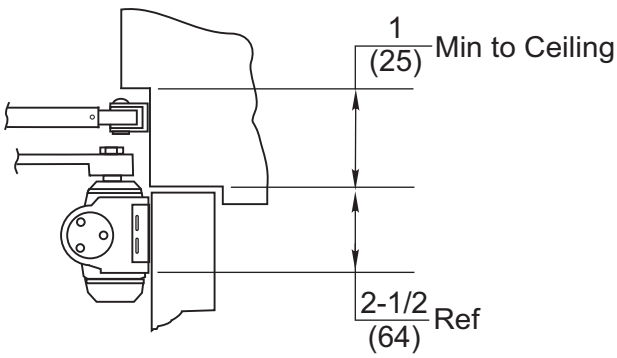


Figure 1



Preparation for Fasteners			
	Fasteners	Door or Frame	Drill-Sizes
Standard	Self-Drilling Screw	Aluminum or Metal	No drill required
		Wood	3/16" (4.30 mm) Pilot hole required
	1/4" - 20 machine screw	Metal	Drill: #7 (0.201" dia.) Tap: 1/4" - 20
Optional	Sleeve nuts and bolts	Hollow Metal	9/32" (7 mm) through; 3/8" (9.5 mm) door face opposite to closer
		Aluminum or Wood	3/8" (9.5 mm) through
	Through-bolts and grommet-nuts	All	9/32" (7 mm); 3/8" (9.5 mm) dia. x 3/8" (9.5 mm) deep on door opposite to closer

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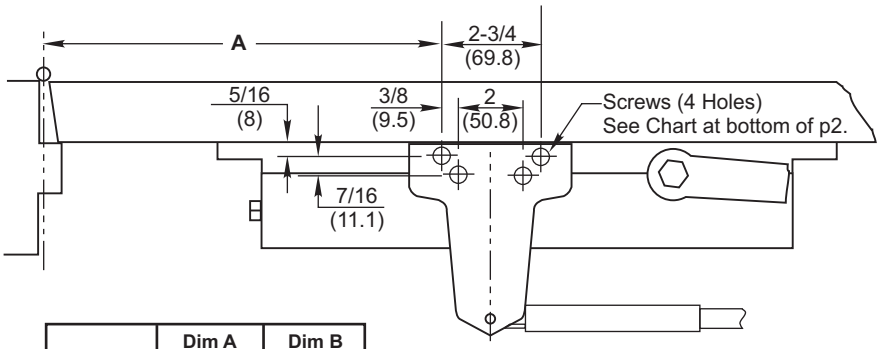
Installation Instructions

Parallel Arm

Installation Sequence

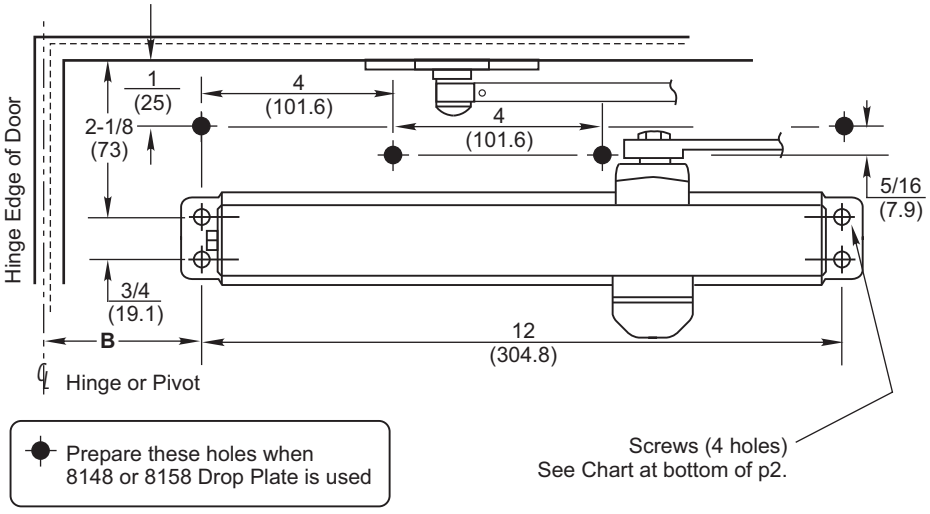
- Select door opening angle. Using template dimensions mark **4 holes on door** for closer body or 4 holes (⊕) For 8148/8158 Drop Plate and **4 holes on frame soffit** for soffit plate.
- Prepare for fasteners – See "Fasteners Chart" at bottom of page 2.
- Mount soffit plate to frame.
- Mount closer body to door (or mount drop plate to door and then the closer body to the plate). Place end with **2 regulating valves toward lock edge** of door.
  NOTE: If using full metal cover, cover mounting clips must be slipped under ends of closer when closer is being mounted.
- Install main arm on top of pinion shaft. Rotate pinion 45° toward hinge edge of door and align the **pinion flat** with arm mark:
  "2" for left hand door
  "3" for right hand door
  (See figure 2 below) Fasten with arm screw.
- Fasten arm tube to soffit plate with soffit plate screw.
- Assemble arm. Open door slightly and insert rod into arm tube. Close door and adjust forearm length so that the **arm elbow is 1-1/2" (38mm) from door surface**. Install and tighten forearm screw.
- Adjust Closer – See Page 4.
- Install Pinion Cap and/or Cover. See Page 4

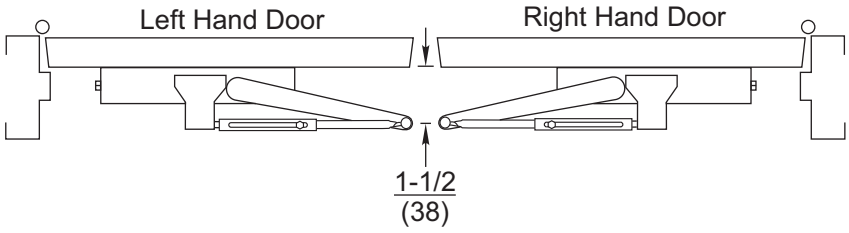
NOTE: Architectural Covers CAN NOT be used for doors swinging over 120° using parallel mount.

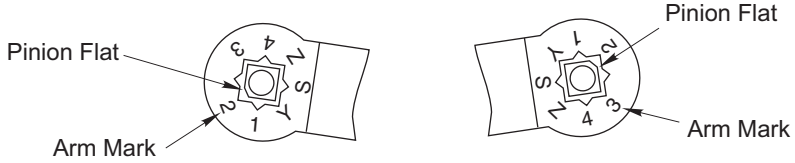


Opening	Dim A		Dim B	
	inches	mm	inches	mm
To 120°	9-1/2	241	3-3/4	95
Over 120°*	7	178	1-1/4	32

*3400A and 3400MA Covers cannot be used when door swings beyond 120°.







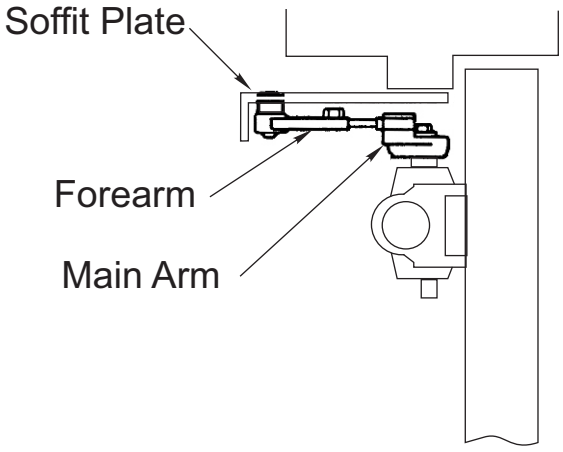


Figure 2

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Unit Adjustment

Control Valve Adjustments
(see Figure 3.)

Closing Speed Controls (Figure 4.)
- Valve "S" Controls Sweep Range.
- Valve "L" Controls Latch Range.
- Valve "D" (Optional for all models) Controls Delay Range.

Opening Cycle
• "Backcheck" valve controls the strength of cushioning in Backcheck Range. NEVER close this valve completely – it is not to provide a positive stop. (see Figure 5 and Figure 6).

Cover
Full cover: Slide cover insert into the un-used cutout in cover. Install cover using screws provided.

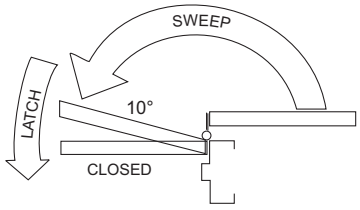
Narrow cover: Install cover using screws provided. Install pinion cap onto pinion shaft by hand or with a Phillips screw driver - DO NOT OVER TIGHTEN.

Full metal cover: Fasten cover to mounting clips with screws provided.

Metal Architectural Cover: Remove cover insert where pinion is located. Install standoffs in ends of closer. Install cover using screws provided.

Plastic Architectural Cover: Slide cover insert into the un-used cutout in cover. Install standoffs in ends of closer. Snap cover over standoffs.

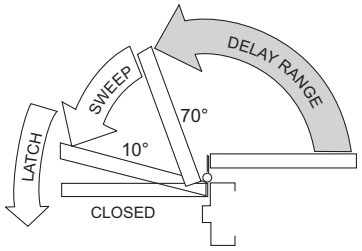
Closing Speed Controls — Figure 3.



Standard Closing Cycle 3A

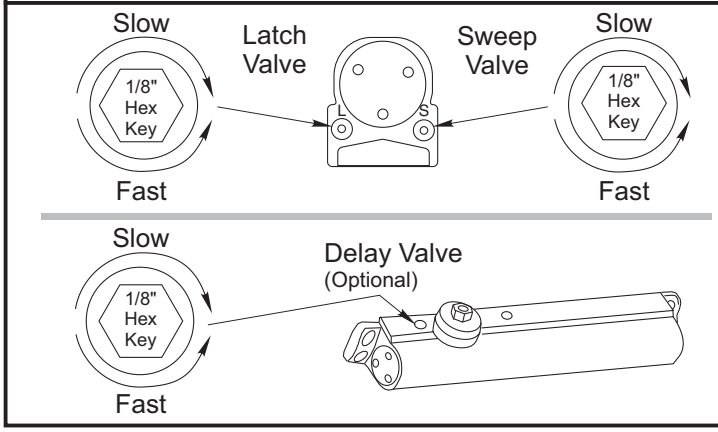
Note: Set door closing time from 90° to between 3 and 7 seconds. Doors used by the elderly or small children may require longer closing time.

CAUTION:
DO NOT BACK VALVES OUT OF CLOSER OR A LEAK WILL RESULT.



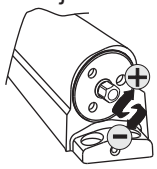
Delayed Action Closing Cycle 3B

Closing Speed Controls — Figure 4.

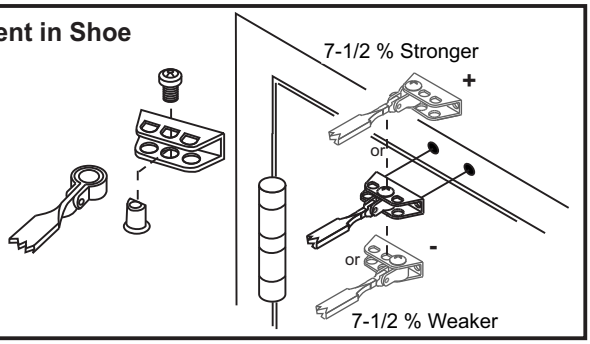


Closing Power Control — 5/16" Socket or Adjustable Wrench

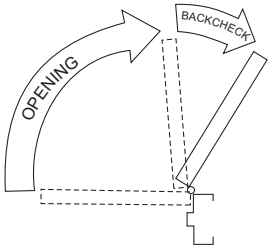
To increase power turn Spring Adjustment Shaft clockwise. A total of 20 360° turns of the nut will provide maximum power. Factory set at 10 turns.



Arm Placement in Shoe



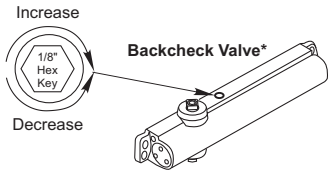
Opening Door Control — Figure 5.



CAUTION:
DO NOT BACK VALVES OUT OF CLOSER OR A LEAK WILL RESULT.

Opening Cycle

Backcheck Control — Figure 6.



*** NEVER close this valve completely.**

Adjustment Chart (8381 & 8581 Only)

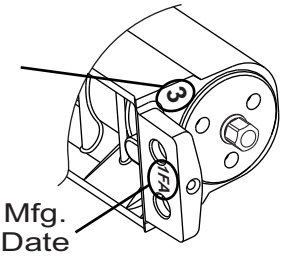
DOOR	TYPE OF INST.	*	Number of Turns Required MAXIMUM DOOR SIZE 32" (0.85M)	36" (0.90M)	42" (1.00M)	48" (1.20M)
INTERIOR	Regular Arm Top Jamb	FULL 360° TURNS OF 5/16 POWER ADJUSTMENT WRENCH	5	8	11	13
INTERIOR	Parallel Arm		7	10	13	16
EXTERIOR	Regular Arm Top Jamb		7	10	13	16
EXTERIOR	Parallel Arm		9	12	15	18

*20 FULL (360°) TURNS MAXIMUM AVAILABLE
Closer is shipped set at mid range setting = 10 turns

To identify your model:

Closer Size

Blank = 8381/8581
2 = 8382/8582
3 = 8383/8583
4 = 8384/8584
5 = 8385/8585
6 = 8386/8586



Norton
ASSA ABLOY
3000 Highway 74 East • Monroe, NC 28112
Tel: (877)-974-2255 • Fax: (800)-338-0965
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