



Installation Instructions

80-9350-2527-010 (06-09)

Non Hold Open Models

Narrow Profile Series

250 Series Sized Closers

251(BF) Series Multi-Sized Closers



CAUTION
An incorrectly installed or improperly adjusted door closer can cause property damage or personal injury. These instructions should be followed to avoid the possibility of misapplication or misadjustment.
CAUTION

Sized
(Sizes 4,5,& 6)

254(BC)
255(BC)
256(BC)

Multi-Sized
(Sizes 3 thru 6)

251
(Sizes 1 thru 4)
251BF

“BC” suffix (Backcheck) is an optional feature for sized closers but is standard with Multi-Sized closers.

See Page 3 for an explanation of the Backcheck feature.

“DL” suffix (Delayed Action) is an optional feature.

A separate instruction showing valve locations and adjustment procedures will be packed with these instructions.

<p>Regular Arm Installation Closer on door on hinge (pull) side of door See Page 2</p>	<p>Left Hand Door - LH Right Hand Reverse - RHR</p>	<p>Right Hand Door - RH Left Hand Reverse - LHR</p>
<p>Top Jamb Installation Closer on frame on opposite to hinge (push) side of door See Page 3</p>	<p>Right Hand Door - RH Left Hand Reverse - LHR</p>	<p>Left Hand Door - LH Right Hand Reverse - RHR</p>
<p>Parallel Arm Installation Closer on door on opposite to hinge (push) side of door See Page 4</p>	<p>Right Hand Door - RH Left Hand Reverse - LHR</p>	<p>Left Hand Door - LH Right Hand Reverse - RHR</p>

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

- It is recommended that the door on which the door closer will be installed be hung on ball bearing hinges. Door must swing freely
- A separate door stop, supplied by others, is recommended to prevent damage to the door closer, closer arm, or to the door, frame or adjacent walls.
- Door and Frame must be properly reinforced, or use of special fasteners employed, to prevent the mounting screw from pulling out.
- All dimensions are given in inches with corresponding metric dimensions (mm) in parenthesis.

Components:

NON HOLD OPEN

Spring Power Adjustment Screw (1/8 Hex Drive)

"BC" Valve

Pinion Cap

Closer Size Stamp

Closer Body

"L" Valve

"S" Valve

289 Soffit Plate Used with Parallel Arm Closers Only

Arm Assembly

Main Arm Screw

Main Arm

Connecting Rod

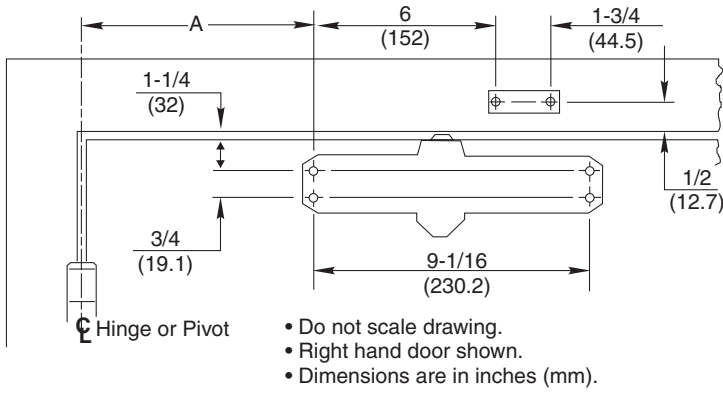
Arm Slide

Forearm Screw

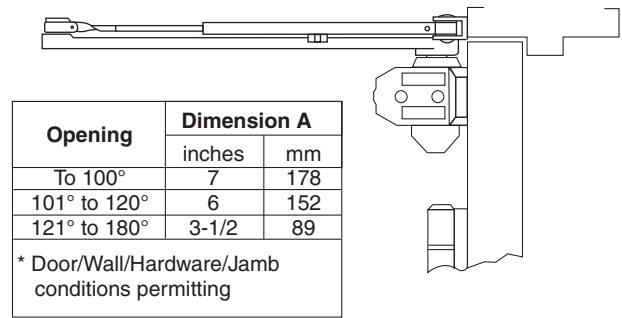
Regular Arm/Top Jamb Shoe

Regular Arm Installation

Template



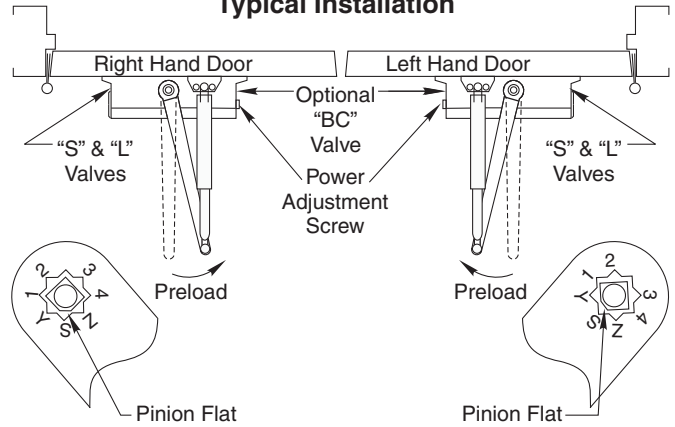
Side Elevation



Installation Sequence

- Select door opening angle using template above. Mark 4 holes on door for closer and 2 holes on frame for arm shoe.
- Prepare door and frame for fasteners See "Preparation for Fasteners" below.
- ! **251 or 251BF Models Only. Set closing power using "Power Adjustment Chart" below right.**
- Install closer with "S" and "L" adjustment valves toward hinge edge of door.
- Mount arm shoe to frame face.
- Install main arm onto closer pinion shaft, indexing main arm mark "S" with pinion flat as shown at right. Fasten with arm screw.

Typical Installation



- Open door to allow connecting rod to be inserted into arm slide. Insert rod and close door. Preload main arm by rotating away from hinge until forearm is perpendicular (at 90° angle) to door. Secure with forearm screw.
- Screw pinion cap onto pinion shaft by hand or with a Phillips screw driver - DO NOT OVER TIGHTEN.
- Adjust closer.

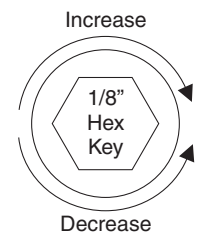
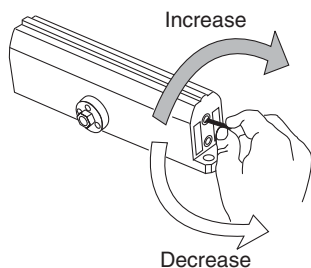
Preparation for Fasteners

	Fasteners	Door or Frame	Drill-Sizes
Standard	Self-Drilling Screw	Aluminum or Metal	No drill required
		Wood	3/16" (4.30 mm)
	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

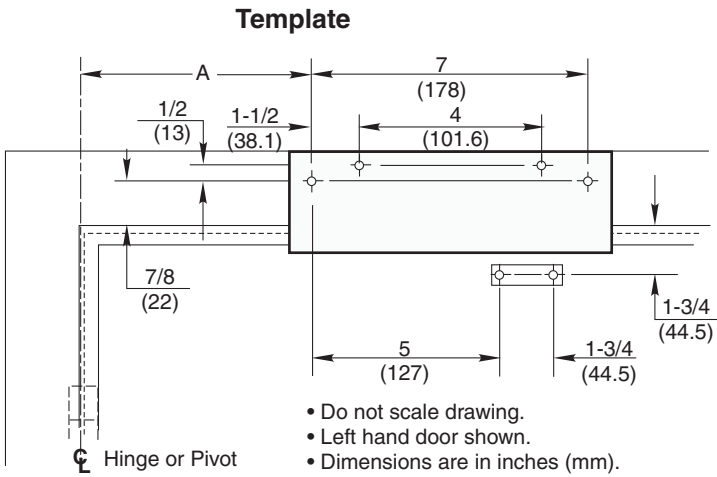
Door Closer Adjustment

		Power Adjustment Chart					
DOOR	TYPE OF INSTALLATION	*	MAXIMUM DOOR SIZE				
			34" (0.85 m)	36" (0.9 m)	40" (1 m)	44" (1.1 m)	48" (1.2 m)
251BF	INTERIOR	REGULAR ARM TOP JAMB	1	1	2	3	3
	INTERIOR	PARALLEL ARM	2	2	3	4	5
	EXTERIOR	REGULAR ARM TOP JAMB	5	6	8	NOT RECOMMENDED USE 251	
		PARALLEL ARM	8	9	12		
251	INTERIOR	REGULAR ARM TOP JAMB	2	4	6	9	11
	INTERIOR	PARALLEL ARM	3	5	7	10	13
	EXTERIOR	REGULAR ARM TOP JAMB	3	5	7	10	13
		PARALLEL ARM	5	7	10	14	16

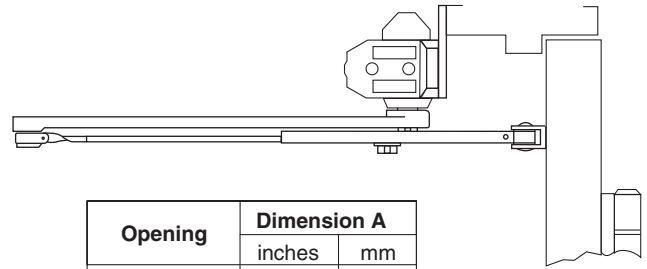
*18 -360° TURNS MAXIMUM AVAILABLE



Top Jamb Installation Using 587 Dropplate



Side Elevation



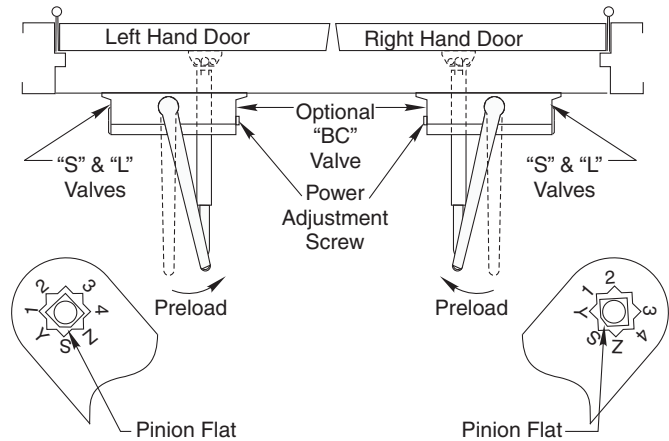
Opening	Dimension A	
	inches	mm
To 100°	8-1/2	216
101° to 120°	7	177.8
121° to 180°	4-1/2	114

* Door/Wall/Hardware/Jamb conditions permitting

Installation Sequence

- Select door opening angle using template above. Mark 4 holes on frame face for Dropplate and 2 holes on door for arm shoe.
- Prepare door and frame for fasteners. See "Preparation for Fasteners" at bottom of Page 2.
- ! **251 or 251BF Models Only. Set closing power using "Power Adjustment Chart" at bottom of Page 2.**
- Mount drop plate to frame.
- Install closer to drop plate with "S" and "L" adjustment valves toward hinge edge of door.
- Mount arm shoe to door.
- Install main arm onto closer pinion shaft, indexing main arm mark "S" with pinion flat as shown at right. Fasten with arm screw.
- Open door to allow connecting rod to be inserted into arm slide. Insert rod and close door. Preload main arm by rotating away from hinge until forearm is perpendicular (at 90° angle) to door. Secure with forearm screw.
- Screw pinion cap onto pinion shaft by hand or with a Phillips screw driver - DO NOT OVER TIGHTEN.
- Adjust closer.

Typical Installation



Door Closer Adjustment (Continued)

"DA" suffix (Delayed Action) is an optional feature.

A separate instruction will be packed with these instructions showing valve locations and adjustment procedures.

Closing Speed Control Figure 1

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

Attention: Adjust Closing Speed Time to between 4 to 7 seconds from 90°. Use of the door by handicapped, elderly or small children may require greater closing time.

Standard Closing Cycle

Opening Door Control Figure 2

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

Opening Cycle

Unit Adjustment

Closing Speed Controls (Figure 1)

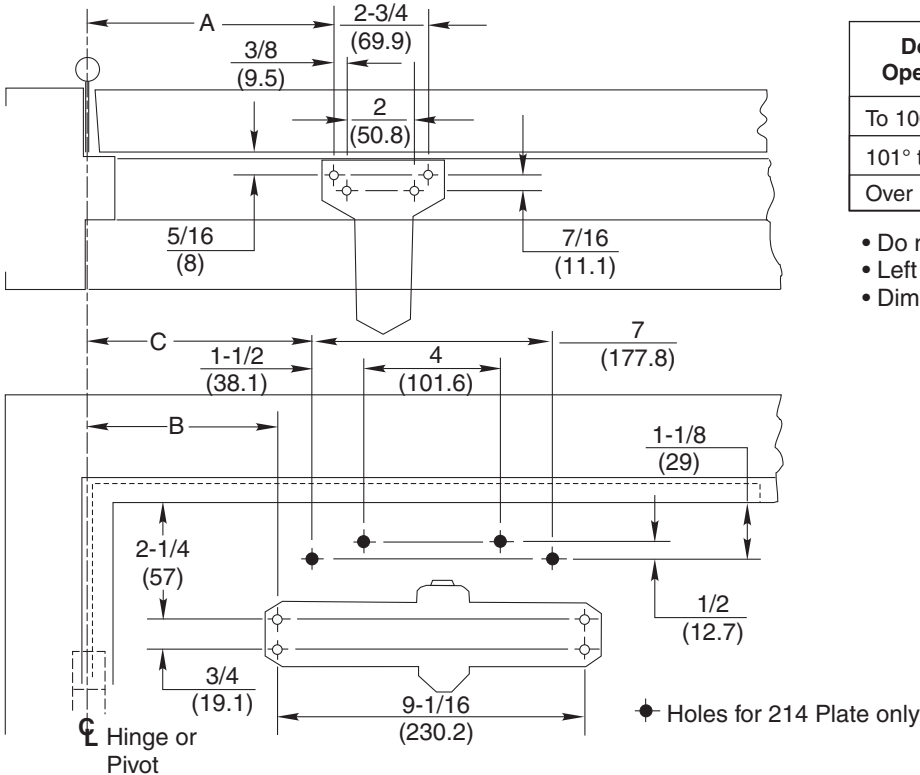
- Valve "S" controls sweep range.
- Valve "L" controls latch range.

Opening Door Control

- Backcheck ("BC") valve controls the hydraulic resistance to door opening in backcheck range. NEVER close this valve completely – it is not to provide a positive stop.

Parallel Arm Installation

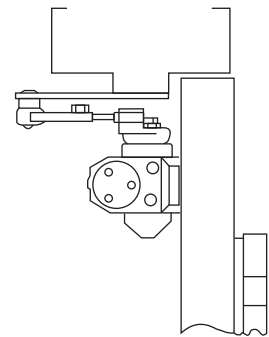
Template



Door Opening	Dimension A		Dimension B		Dimension C	
	Inches	mm	Inches	mm	Inches	mm
To 100°	9-1/4	235	7-5/8	194	8-5/8	219
101° to 130°	7-3/4	197	6-1/8	156	7-1/8	181
Over 131°	5-3/4	146	4-1/8	105	5-1/8	130

- Do not scale drawing
- Left Hand shown
- Dimensions are in inches (mm)

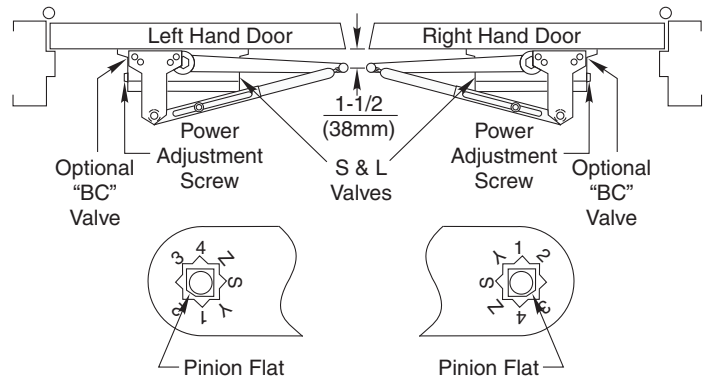
Side Elevation



Installation Sequence

- Select door opening angle using template above. Mark 4 holes on door for closer or 214 droplate and 4 holes on frame for soffit plate.
- Prepare door and frame for fasteners. See "Preparation for Fasteners" bottom of Page 2.
- **251 or 251BF Models Only. Set closing power using "Power Adjustment Chart" at bottom of Page 2.**
- Mount 214 droplate ... only if required.
- Install closer with "S" and "L" adjustment valves toward lock edge of door.
- Mount soffit plate to frame.
- Install main arm onto closer pinion shaft. Rotate pinion 45° toward hinge edge of door to align main arm letter "3" (right hand) or "2" (left hand) with pinion flat. Fasten with arm screw.
- Fasten forearm to soffit plate. Adjust forearm length to set arm elbow about 1-1/2" (38mm) from door when connected to main arm. Tighten forearm screw.
- Screw pinion cap onto pinion shaft by hand or with a Phillips screw driver - DO NOT OVER TIGHTEN.
- Adjust closer. See Closer Adjustments on Pages 2 and 3.

Typical Installation



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