



51 Series

Door Closers



An ASSA ABLOY Group brand

ASSA ABLOY



Introduction

CONTENTS

Features & Benefits	3
Overview	4
Fasteners	4
Features	5
Finishes	6
How to Order	7
Applications.....	8
Technical Details.....	9-11
Accessories	12-16
Parts List	17-18
Sample Specification	19

51 SERIES DOOR CLOSERS

Yale® 51 Series Closers are designed to fit almost any application and are the choice of engineers worldwide. They are ideal for use with aluminum store front doors and frames, yet they also complement wood or metal door installations. Non-handed, the 51 series is available as multi-sized units and offers tri-packed packaging on standard non-hold open and hold open closers.

This UL listed, Grade 1 closer has a proven history of quality and tradition. With a variety of plates, brackets, precise valve adjustment and a complete range of arms, these closers can be used on retail stores, warehouses, restaurants, garages, or manufacturing and utility buildings. With a full feature set and stylish design, Yale Works for YouSM.



Features & Benefits



STANDARD FEATURES

- Exceeds 25 million cycles based on internal cycle testing
- Non-handed
- Tri-packed (regular arm, top jamb and parallel arm installations)
- Rack-and-pinion design
- Cast aluminum body
- 1-3/8" (35mm) diameter piston
- 5/8" (16mm) diameter pinion journals
- Standard, separate and independent, latch, sweep and backcheck intensity valves
- 2-7/8" (73mm) projection
- All standard arm applications allow doors to swing 180°, conditions permitting
- 15-year limited warranty
- Staked valves

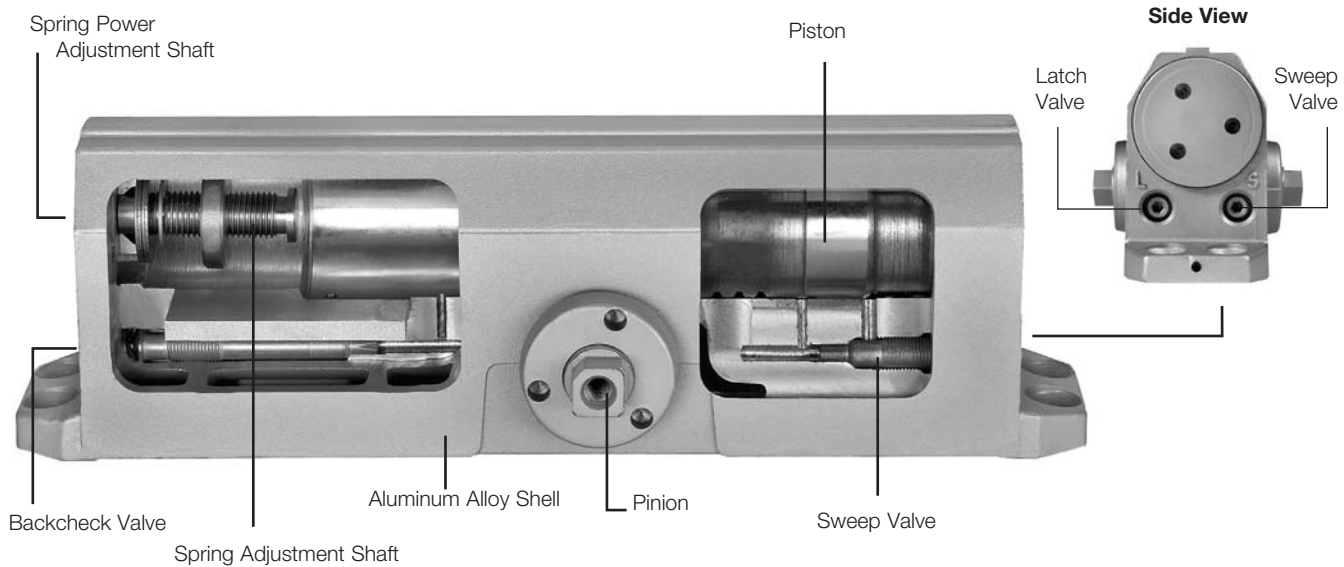
BENEFITS

- **Reliable:** High strength aluminum alloy closer body provides for long life; independent latch, sweep and backcheck intensity valves ensure positive control
- **Cost of Ownership:** Exceeds 25 million cycles (independently verified) for long life; 15-year limited warranty
- **Sustainable:** Longer life results in fewer replacements and less material used; covered by SARGENT End-of-Life Recycling Program; Environmental Product Declaration (EPD) available, based on life cycle assessment
- **Flexible:** Adjustable 1-6 spring makes installation selection easier and reduces inventory for customers; Non-handed for installation on right- or left-hand swing doors



Overview

CUTAWAY VIEW



Spring omitted for illustration purposes

COMPLIANCE STANDARDS

The series 51 door closers are designed to comply with requirements of the Americans with Disabilities Act (A.D.A.) and ANSI standard A117.1. All series 51 are ANSI/BHMA A156.4, Grade 1 certified. **BHMA** All Yale® series 51 closers with non-hold open arms are listed by Underwriters' Laboratories for labeled fire doors. This includes compliance to UL10C for 3-hour assemblies. These products are manufactured in a certified ISO 9001 facility.

CAUTION: Door Closers for Low Opening Force Applications:

Door closers installed in opening required to meet the requirements of The American with Disabilities Act or ANSI standard A117.1, when adjusted to meet those requirements, may not provide adequate closing power to dependably close and latch the door.

FASTENERS

Type	Description	Arm		
		RA	PA	TJ
DOOR				
SDST	Self Drilling Self Tapping	S	S	S
MS	Machine Screw	S	S	S
SN	Sleeve Nut	O	O	O
TBGN	Thru Bolts & Grommet Nuts	O	O	O
SMS	Sheet Metal Screws (Wood)	O	O	O
FRAME				
SDST	Self Drilling Self Tapping	S	S	S
MS	Machine Screw	S	S	S
SMS	Sheet Metal Screws (Wood)	O	O	O

S = standard; O = optional

SN are for use on unreinforced hollow metal doors or to prevent any hollow metal door from collapse/dimpling. They can also be used for thru bolting on wood doors. SN are supplied for 1-3/4" (44mm) thick doors unless specified for 2-1/4" (57mm) thick doors.

TBGN are an alternative to SN for wood doors. TBGN are supplied standard for 1-3/4" (44mm) thick doors. They can be specified for 1-3/8" (35mm) thick doors.

SMS - when specified, closer will be packed with sheet metal screws for the door **AND** sheet metal screws plus machine screws for the frame.



Features

STANDARD FEATURES

Aluminum Alloy Housing

Closer bodies are constructed of a special aluminum alloy, carefully selected to accommodate interaction with steel components and operating conditions.

Rack & Pinion Operation

Provides a smooth constant control of the door through its full opening and closing cycle. 180° door swing can be achieved when door, frame, hardware and arm function do not limit door swing.

Non-handed

With few exceptions all series 51 door closers are non-handed and can be installed on either right- or left-hand swing doors. Pinion shaft extends vertically through the closer body in both directions. Some options, (such as Parallel Rigid Hold Open Arms) will require that the hand of the closer be specified.

Tri-packed

51 comes with screws, brackets & soffit plate to allow for regular, top jamb, & parallel arm installations.

Sweep Speed Control Valve

Allows adjustment of door's speed from the door's full open position down to approximately 10° from the closed position.

Latch Speed Control Value

Allows adjustment of door speed from approximately 10° down to the door's fully closed position.

Adjustable Backcheck Cushion Valve

Provides control of the door in the opening cycle, beginning at approximately 75° of door opening. It slows/ cushions the door opening, when the door is forcibly opened beyond its pre-adjusted opening speed limits.

Closer Fluid

All door closers are supplied with a temperature stable, multi-viscosity fluid. This fluid will permit the door closer to perform within a wide temperature range: from very high to as low as -40°F.

Warranty

These closers carry a limited fifteen-year warranty against defects and a limited lifetime warranty on the aluminum housing.

Door Closer Power Options

Series 51 Multi-Sized Door Closer

Fully adjustable through the power range of sizes 1 through 6, as outlined in ANSI/BHMA specification A156.4. Also, complies with the opening force requirements as outlined in the Americans with Disabilities Act (A.D.A.) and ANSI A117.1 for interior doors.

OPTIONAL FEATURES

Optional Molded Cover

Molded of high impact U.L. listed material that covers the entire closer body assembly. This cover is non-handed for regular and parallel arm applications. Suffix "P" to catalog number. Not designed for top jamb applications.



OPTIONAL FEATURES - ARMS

Non-Hold Open

Self-closes door every time door is opened. Auxiliary stop (by others) required.

Hold Open

Achieved by means of friction or ball and detent/roller. Friction hold open has a range of 90° to 180° using template location and mechanical adjustment. Ball and detent or roller hold open is effective in a range of 85° to 110°.

Hold open arm door closers are not permitted to be used on fire door assemblies.



Finishes

ANSI/BHMA Code Finish Description				
600* Primed for Painting	605^ Bright Brass, Clear Coated	606^ Satin Brass, Clear Coated	611^ Bright Bronze, Clear Coated	612^ Satin Bronze, Clear Coated
613 Dark Oxidized Satin Bronze, Oil Rubbed	613E^ Dark Oxidized Satin Bronze - equivalent	625^ Bright Chrome Plated	626^ Satin Chrome Plated	689 Aluminum Painted
690 Dark Bronze Painted	691 Light Bronze Painted	693 Black Painted	694 Medium Bronze Painted	696 Satin Brass Painted
BSP Black Suede Powder Coat	WSP White Suede Powder Coat			

*600 is a special rust-inhibiting prime coat. Closers can be ordered prime coat only (specify closer x 600). An additional charge applies if finish coat is required over prime coat (ex: 51 x 600 x 689).

^ Available on arms only.



How To Order

ORDERING INFORMATION

Prefix	Function	5	Size	Suffix	X Finish
	Third Digits: Determines arm	5	Fourth Digit: Determines closer size	Suffix: Determines Miscellaneous Features	See page 6
None - Closer installs Regular Arm, Parallel Arm or Top Jamb (reveals) 0" to 2-7/8" (0 to 73mm) TJ - Closer installs Top Jamb only for reveals in excess of 2-3/4" (70mm) PA - Closer installs Parallel Arm only when ordered with the standard soffit bracket or for special installations	None - Standard Non-Hold Open 1 - Hold Open Arm	Description: Defines the 51 Series Door Closer	1 - Sizes 1 - 6	BC - Backcheck (standard) P - Cover	

Notes:

- Door closer warranty becomes void if it is installed on the exterior side of a door in the exterior wall of a building
- It is strongly recommended, and it is required on fire door assemblies, that doors having a door closer be hung on ball-bearing or anti-friction hinges or pivots.
- Failure to use the correct type and size fasteners may void factory warranty.
- Fasteners for fire/smoke door assemblies must conform to NFPA 80. In some applications additional fasteners may be mandated by NFPA 80 that are not shipped with Yale® standard product, such as sleeve-units/sex-nuts or through-bolts and grommet nuts.
- Sizing chart provided on pages 9-11 are based on 1-3/4" (44mm) x 7' (2.13m) standard weight door swinging to 110°. Other conditions (such as door height or weight, or wind (draft conditions), may require a larger size closer.
- Contact factory if door weight exceeds 250 lbs.

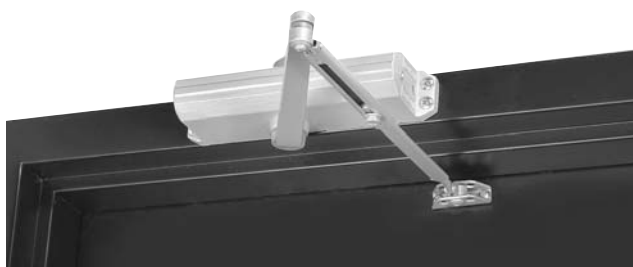


Applications



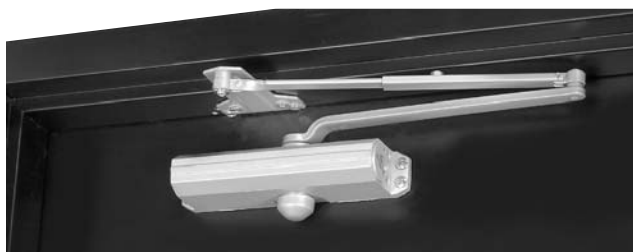
Regular Arm

This is the only pull-side application where a double lever arm is used. It is the most power-efficient application for a door closer. Sufficient frame, door and/or ceiling clearance must be considered. Since the arm assembly projects directly out from the frame, this application may present an aesthetics issue or be prone to vandalism.



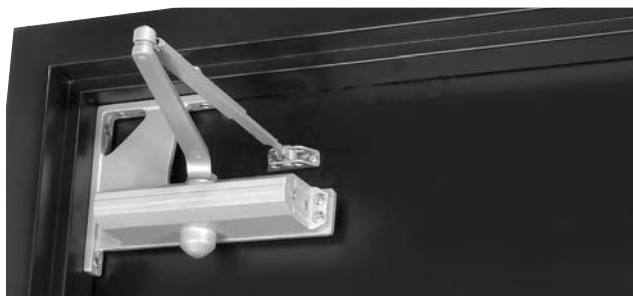
Top Jamb

For efficiency reasons this application provides the best alternative to the regular arm application. There must be sufficient frame face and/or ceiling clearance for this application. It requires a top rail on the door of just 2-1/8" (54mm). This application provides the best door control for doors in exterior walls that swing out of a building. The entire door closer and arm assembly project from the frame, similar to the regular arm application, where the matters of appearance and malicious abuse can be of concern. Consideration must be given to depth of the frame reveal.



Parallel Arm

This application provides the most appealing design appearance for a surface-mounted door closer having a double lever arm. This may also be beneficial in vandalism-prone areas. It is on the push side of the door and the arm assembly extends almost parallel to the door. In the closed position, there is very little or no hardware projecting beyond the frame face in most situations. Due to the geometry of the arm it is approximately 25% less power-efficient than a regular arm application. The entire closer and arm assembly are mounted below the frame stop, requiring a top rail clearance on the door of between 5-3/8" (137mm), when using a low-profile arm (250 series), to 6-3/8" (162mm), when using the hold open arm.



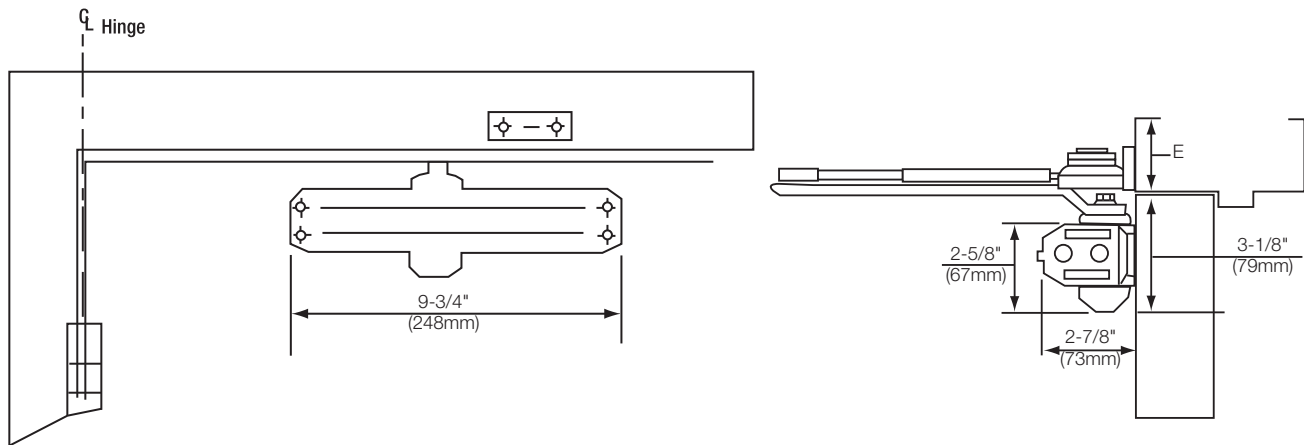
Corner Bracket

This application can be used where top jamb and parallel arm application will not accommodate the door and frame conditions. Requires minimal top rail on the door; however, vertical clearance to the floor within the door opening should be checked to ensure code compliance. The close proximity, for this application, of the door closer to the door's pivot point reduces the door closer's power efficiency by approximately 25% when compared to a regular arm. The projection of the arm from the door face might pose questions regarding design parameters or environment.



Technical Details

REGULAR ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 9-1/16" (230mm) horizontally.

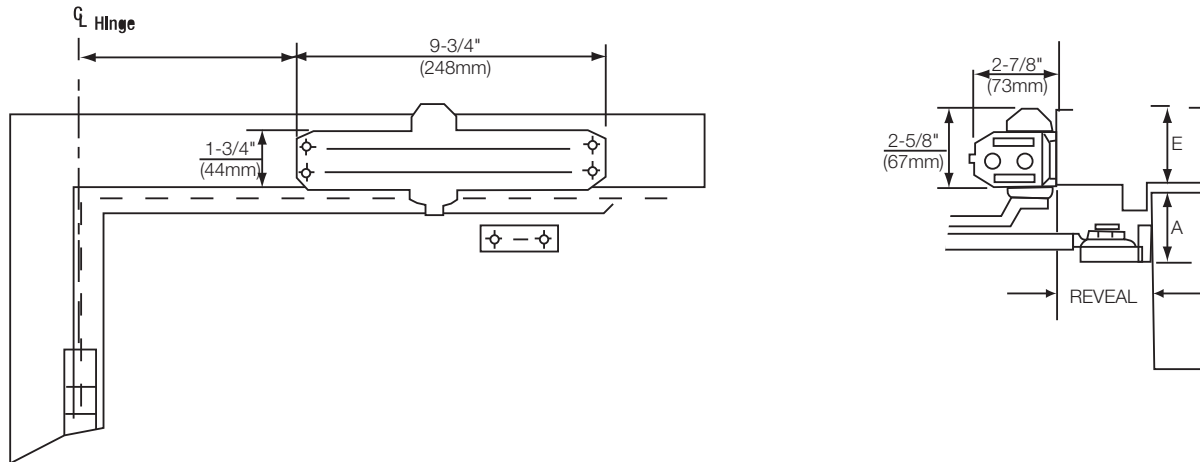
Maximum Door Size Inches (cm)		Model Number		E Minimum Ceiling Clearance Inches (mm)	
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open
32" (81)	—	51	151	1-1/2" (38)	1-5/8" (41)
38" (97)	30" (76)				
42" (107)	36" (91)				
48" (122)	42" (107)				
—	48" (122)				

Note:
51 Door Closers are adjustable for sizes 1 through 6 and can be adjusted to conform to ADA opening force requirements.



Technical Details

TOP JAMB



* For doors opening up to 100°
Mounting holes for closer body are spaced 3/4" (19mm) vertically x 9-1/16" (230mm) horizontally.

Maximum Door Size Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
32" (81)	—	51	151
38" (97)	30" (76)		
42" (107)	36" (91)		
48" (122)	42" (107)		
—	48" (122)		

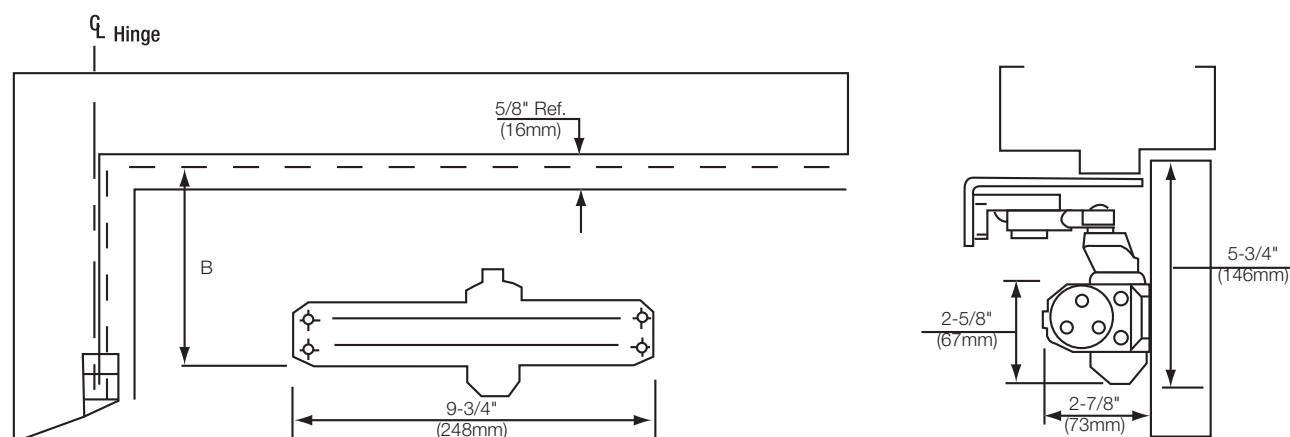
Note:
51 Door Closers are adjustable for sizes 1 through 6 and can be adjusted to conform to ADA opening force requirements.

E Minimum Ceiling Clearance		A Minimum Top Rail Clearance		
Without Drop Plate	With Drop Plate	Without Drop Plate	With 587 Drop Plate	With 214 Drop Plate
2-5/8" (67)	1-3/4" (44)	1-7/8" (48)	2-5/8" (67)	4" (102)

Closer Series	Reveal Inches (mm)
51	0 to 3" (0 to 76)
TJ51	2-7/8" to 7" (73 to 178)
151	0 to 2-3/4" (0 to 70)
TJ151	2-3/4" to 6-3/4" (70 to 171)

Technical Details

PARALLEL ARM



*** For doors opening up to 100°**
Mounting holes for closer body are spaced 3/4" (19mm) vertically x 9-1/16" (230mm) horizontally.

Maximum Door Size Inches (cm)		Model Number		B Minimum top rail of door with 5/8" (16mm) frame stop	
Interior	Exterior	Non-Hold Open	Hold Open	Without Drop Plate Inches (mm)	With Drop Plate Inches (mm)
30" (76)	—	51	151	5" (127)	3-1/8" (79)
36" (91)	30" (76)				
42" (107)	36" (91)				
48" (122)	42" (107)				
—	48" (122)				

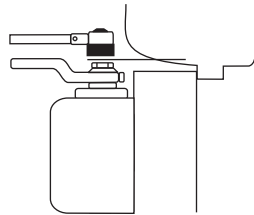
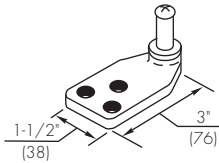
Note:

This door sizing information also applies to corner bracket mounted closers.
 51 Door Closers are adjustable for sizes 1 through 6 and can be adjusted to conform to ADA opening force requirements.

Accessories

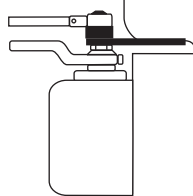
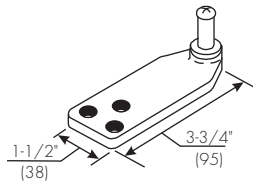
REGULAR ARM

Brackets for Non-Hold Open Arms



Molded/Bull Nose Trim - #291 Bracket

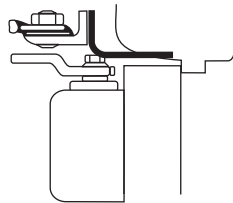
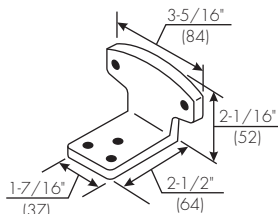
For use where the door frame has molded or bull nose trim which will not accept a standard non-hold open shoe. The bracket is mortised into the frame rabbet, and projects beyond the face of the frame. It will accommodate a frame rabbet up to 2" (51mm) deep.



Molded/Bull Nose Trim - #291A Bracket

This bracket is similar to - but longer than - the 291 bracket. It is designed to accommodate frame rabbets from 2" to 2-7/8" (51mm to 73mm) deep.

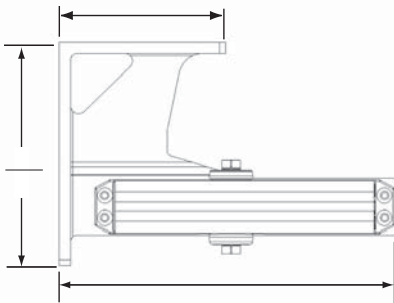
Brackets for Hold Open Arms



Molded/Bull Nose Trim - #292 Bracket

For use where the door frame has molded or bull nose trim which will not accept a standard hold open shoe. It is mortised into the frame rabbet, and projects beyond the face of the frame. It will accommodate a rabbet up to 2" (51mm) deep. This bracket is used in combination with the standard hold open mounting shoe.

Corner Brackets for Closer Mounting



For closer sizing information, use the Parallel Arm sizing chart on page 11.

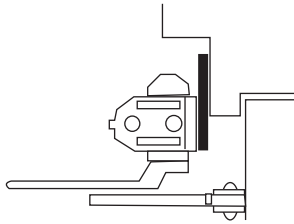
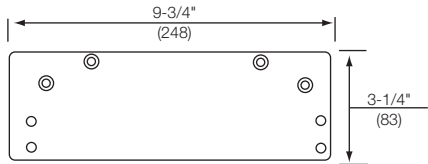
Mounting Opposite Hinge Side - #2350 Corner Bracket

For use where it is desired to mount the closer regular arm on the opposite to hinge side of the door. Can also be used to clear an overhead door holder.

Accessories

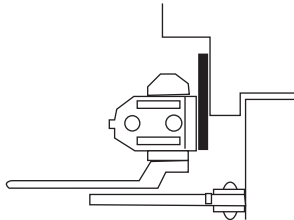
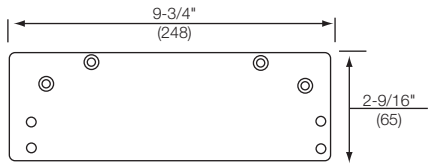
TOP JAMB

Closer Mounting Plates



Overhead Door Holder - #214 Drop Plate

For use where an overhead door holder prevents normal top jamb mounting. This places the center line of the arm mounting screws at 3-1/2" (89mm) from the top of the door.



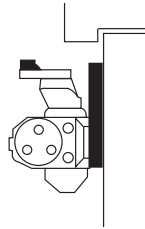
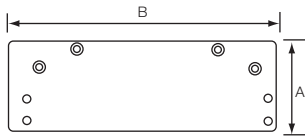
Low Ceiling Clearance - Overhead Door Holder - #587 Drop Plate

For use where the ceiling clearance is between 1-3/4" and 2-5/8" (44mm and 67mm). Or for use where an overhead door holder prevents normal top jamb mounting. This places the centerline of the arm mounting screws at 2-1/8" (54mm) from the top of door.

Accessories

PARALLEL ARM

Closer Mounting Plate



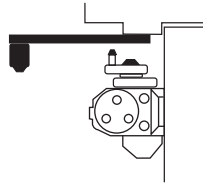
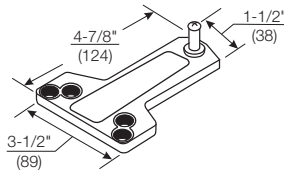
Narrow Top Rail - #214 Drop Plate

For use where a narrow top rail prevents the closer from being mounted directly to the door surface. This drop plate can be used to mount a closer on a top rail as narrow as 3-1/8" (79mm) in height for 50BC or 2-1/8" (54mm) for 50BCP.

Plate No.	Dimensions	
	A (width)	B (length)
214	3-1/4" (83mm)	9-3/4" (248mm)
214C	4-1/8" (105mm)	9-7/8" (251mm)

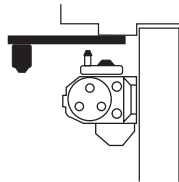
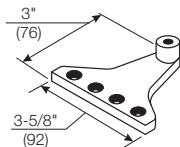
Note: #214C - To be used when optional cover is specified.

Brackets for Non-Hold Open Arms



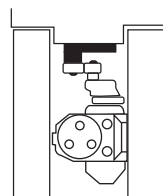
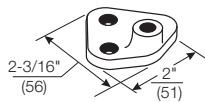
Standard Installation - #289A Soffit Plate

This soffit plate is supplied standard with parallel arm closers. It can be mounted where the frame soffit is as narrow as 1" (25 mm). Specify **289A-SS for stainless steel soffit plate**. With Series PA51S closers, a 289A-SS soffit plate fabricated of stainless steel is supplied standard.



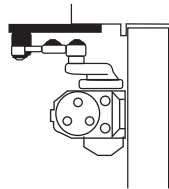
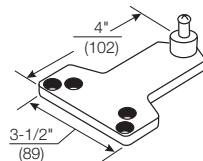
Narrow Frame/Removable Stop - #297 Soffit Plate

For use where a narrow frame or frame with removable stop does not permit use of the standard soffit plate. This soffit plate may be mounted on the frame soffit or the frame rabbet where the stop does not exceed 5/8" (16mm) in height. All of the screw holes are in a straight line, requiring as little as 1-1/4" (32mm) of frame reveal to mount bracket and maintain good closer arm geometry. Where the frame soffit is as wide as 2" (51mm), this soffit plate may be used to clear weather - stripping that is up to 1-3/8" (35mm) wide and 5/8" (16mm) in height.



Mounting Between Doors - #413A Soffit Bracket

For use where insufficient space between companion doors does not permit use of other soffit plates. This bracket permits mounting of the closer between doors with as little as 3" (76mm) of header space. Permits closer arm to clear up to 5/8" (16mm) high stop.



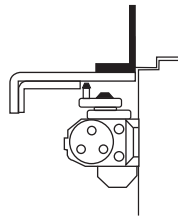
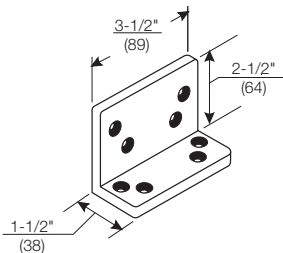
Blade/Applied Stop - #299 Soffit Plate

For use where a blade or applied stop does not permit installation of the standard soffit plate. Mounts to either the frame soffit or rabbet. Since this soffit plate projects 7/8" (22mm) less than a standard soffit plate, it requires a minimum frame reveal of 1-1/2" (38mm). Permits closer to clear up to a 5/8" (16mm) high frame stop.

Accessories

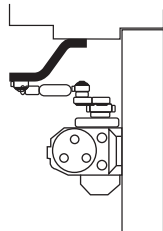
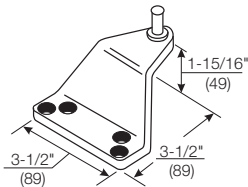
PARALLEL ARM

Brackets for Non-Hold Open Arms (Continued)



Flush Transom - #589L Angle Bracket

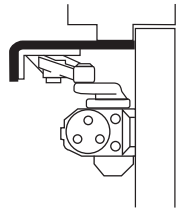
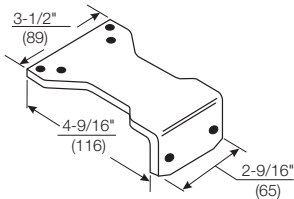
For use where rabbeted or flush transom conditions prevent installation of a soffit plate. Used in combination with the 289A soffit plate, or may be used in combination with the 290 soffit plate when it is necessary for the closer arm to clear a separate overhead door holder.



Extra-Clearance - #290 Offset Soffit Plate

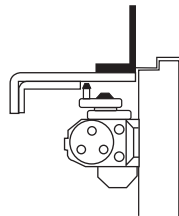
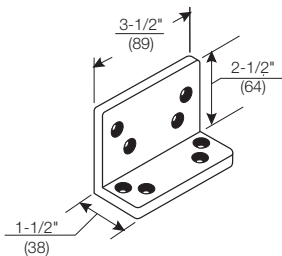
For use where the need for additional clearance prevents use of the standard soffit plate. This plate mounts to the frame soffit to provide up to 2" (51mm) of clearance when a separate overhead door holder is used. Standard mounting requires a 2-5/8" (67mm) wide frame soffit. It may also be used where unusually high frame stops or weather-stripping prevent the use of other soffit plates.

Brackets for Hold Open Arms



Parallel Hold Open - #588 Adapter Plate

This Adapter Plate is supplied standard with all parallel arm hold open closers. It can also be used to convert regular arm or top jamb hold open arms to parallel arm installation. It can be mounted where the frame soffit is as narrow as 1" (25mm).



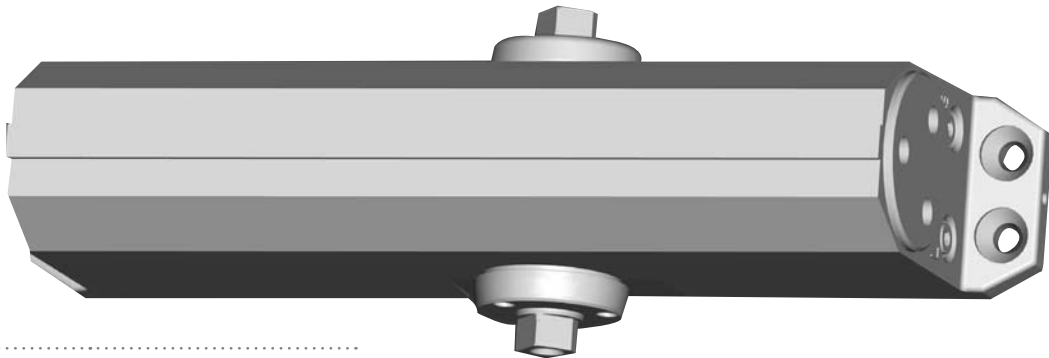
Flush Transom Hold Open - #589L Angle Bracket

For use where rabbeted or flush transom conditions prevent installation of the standard 588 hold open adapter plate. It is used in combination with the 588 adapter plate.



Accessories

DOOR CLOSER BODY ASSEMBLIES



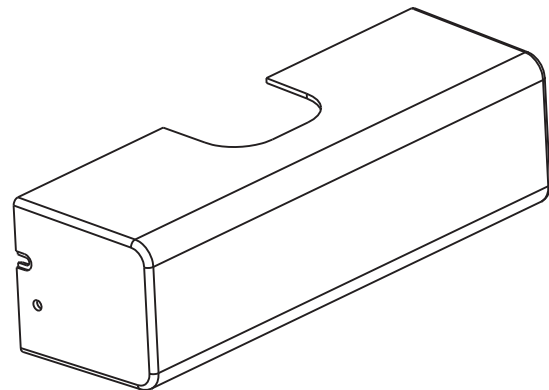
**Body Only
(Standard)**

51LAP

Multi-sized

LAP = Less All Parts

*** Specify closer size. Pinion cap and mounting screws supplied standard.**

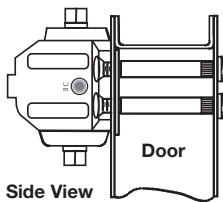


Cover (optional) - specify 50P

Dimensions (RA and PA applications):

2-7/8" (73mm) height x 3-1/16" (78mm) deep x
9-7/8" (251mm) long

To order with closer use "P" suffix; i.e. 54BCP.



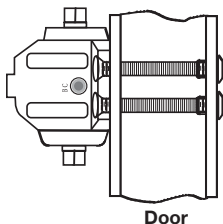
Side View

Door	SN's	SNB's
1-3/4"	SN-134	SNB134-38
2"	SN-200	SNB200-38
2-1/4"	SN-214	SNB214-38
S.S. SNB's 1-3/4"	SN-134SS	SNB134SS-38

Aluminum and Wood Door Application

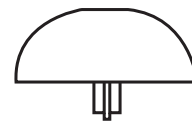
(Aluminum Door Shown)

Through-Bolt & Grommet Nut : "TBGN" (4 per pack)



Door

Door	TBGN's
1-3/8"	TBGN138-38
1-3/4"	TBGN134-38
2-1/4"	TBGN214-38

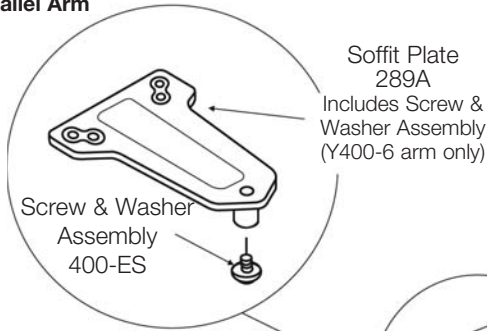


1639 Pinion Cap

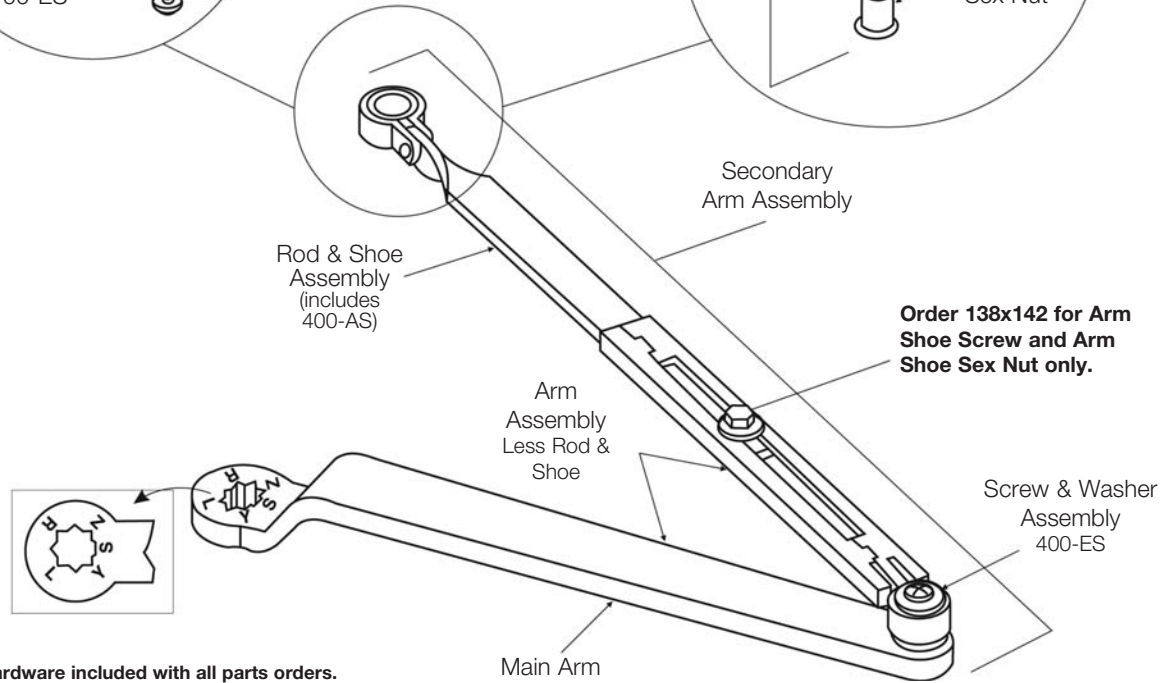
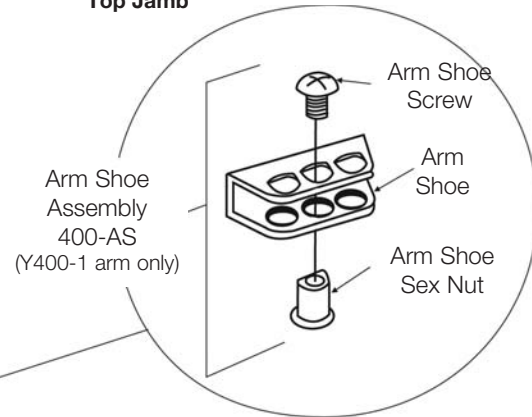
Parts List

NON-HOLD OPEN ARM ASSEMBLIES

Parallel Arm



Regular and Top Jamb



Note: Mounting hardware included with all parts orders.

Closer Series	Complete Arm Assembly	Main Arm Assembly ¹ (length)(mm) (includes 400-ES)	Secondary Arm Assembly (includes 400-ES)	Arm Assembly Less Rod and Shoe	Rod & Shoe Assembly ² (length)(mm)
51	Y400-1	400-1M (11") (279)	Y400-111	Y400-1W	Y400-11 (8-7/8") (225)
TJ51	Y400-1A		Y400-121		Y400-11A (12-1/2") (318)
PA51	Y400-6		Y400-116		Y400-16 (8-7/8") (225)
PA51C ³	Y400-6A		Y400-116A		Y400-16A (12-1/2") (318)
51	Y400-26 (Tri pack includes Y400-1 plus 289A plate)				

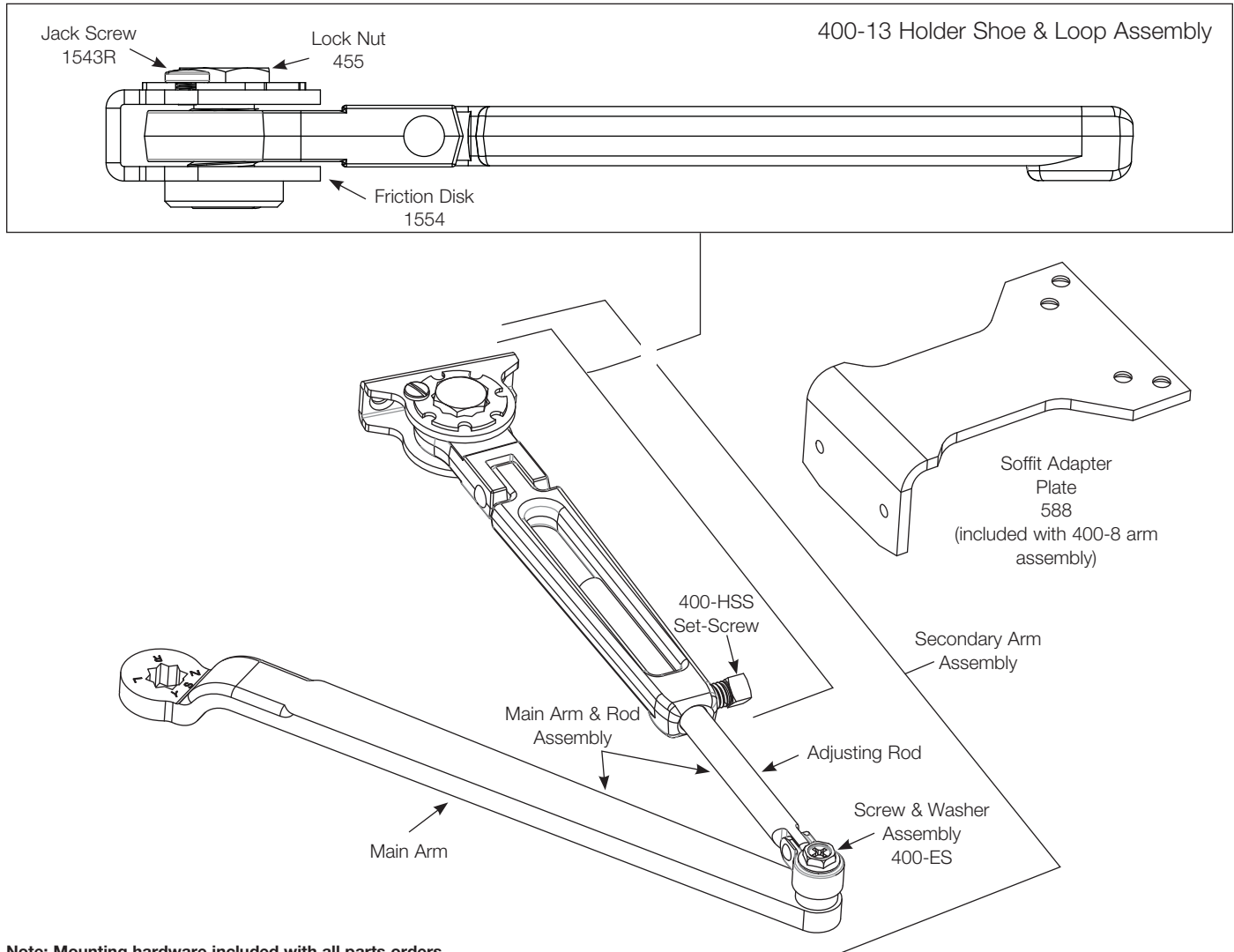
1. C/L to C/L length shown in parentheses.

2. C/L of connecting link to end of rod shown in parentheses.

3. For 180° door swing when using a special template for doors hung on 6" to 8" (162mm to 203mm) wide throw hinges.

Parts List

HOLD OPEN ARM ASSEMBLIES



Note: Mounting hardware included with all parts orders.

Closer Series Assembly	Complete Arm Assembly	Main Arm ¹ (Length)(mm) (Includes 400-ES)	Secondary Arm (Includes 400-ES)	Main Arm & Rod Assembly	Holder Shoe & Loop Assembly	Adjusting Rod ² (Length)(mm)
151	400-3/400-8 ³ (Reg)/(Par)	400-1M (11") (279)	400-113/400-118 (Reg)/(Par)	400-3W	400-13 / 400-18 ⁴ (Reg)/(Par)	400-31 (7-3/8") (187)
TJ151	400-3A		400-123	400-3WA		400-31A (10-13/16") (275)

400-18 = Holder Shoe & Loop Assembly (400-13) with soffit adapter plate (588)

1. C/L to C/L length shown in parentheses.
2. C/L of connecting link to end of rod shown in parentheses.
3. Same as 400-3 but includes #588 soffit adapter plate.
4. Same as 400-13 but includes #588 soffit adapter plate.



Sample Specification

51 SERIES

Closers for interior and exterior doors shall be full rack-and-pinion type with cast aluminum alloy shell. Closers shall be surface mounted and shall project no more than 2-7/8" from the surface of the door. Closers shall be non-handed to permit installation on doors of either hand. Closer fluid shall contain lubricity and anti-oxidation agents. Closer fluid shall maintain stable viscosity to allow the door closer to perform in temperatures ranging from extremely high to as low as - 40°F. Closers shall have multi-size spring power adjustment to permit setting of spring power for sizes (1 through 6). Closers shall have two non-critical valves, hex key adjusted, to independently regulate sweep and latch speed. (Closers shall have adjustable backcheck cushioning controlled by a hex key adjusted valve.) Closer power shall be adjustable using 1/8" hex key.

(Closers shall be provided with a full molded cover.)

Regular arm and top jamb closers shall have a non-hold open shoe permitting 15% (+/- 7-1/2%) power adjustment. [51]

Contact Us

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