

51 Series





An ASSA ABLOY Group brand



Introduction



CONTENTS

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 Endof-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

OPTIONAL FEATURES

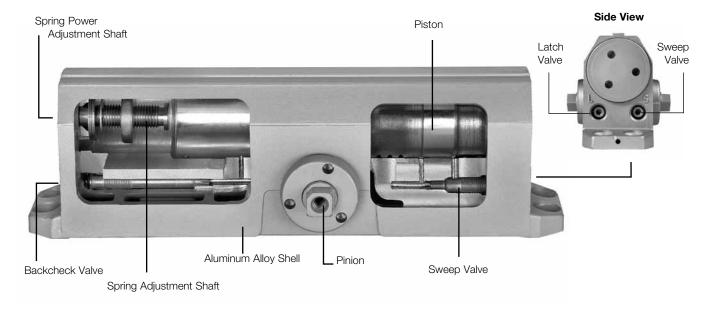
• Molded plastic covers (suffix P)

•••••••••••••••••••••••••••••••	•••••
	51
Adjustable spring sizes 1 through 6 (ADA compliant)	Х
• • • • • • • • • • • • • • • • • • • •	



Overview

CUTAWAY VIEW



Spring omitted for illustration purposes

COMPLIANCE STANDARDS

Let 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. 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

4

•••••		Arm			
Туре	Description	RA	ΡΑ	тJ	
•••••	DOOR				
SDST	Self Drilling Self Tapping	S	S	S	
MS	Machine Screw	S	S	S	
SN	Sleeve Nut	0	0	0	
TBGN	Thru Bolts & Grommet Nuts	0	0	0	
SMS	Sheet Metal Screws (Wood)	0	0	0	
	FRAME				
SDST	Self Drilling Self Tapping	S	S	S	
	Machine Screw	S	S	S	
SMS	Sheet Metal Screws (Wood)	0	0	0	

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.

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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 nonhanded 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.

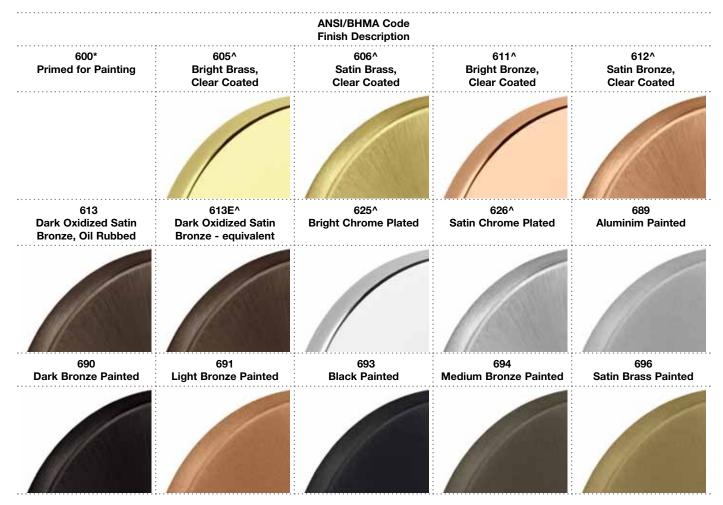
Hold Open

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



*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
			4		•
	Third Digits: Determines arm	5	Fourth Digit: Determines closer size	Suffix: Determines Miscellaneous Features	See page 2
↓		↓ · · · ·	¥	4	•••••
 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 n excess of 2-3/4" (70mm) PA - Closer installs Parallel Arm only when ordered with the standard soffit bracket or for special nstallations 	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	

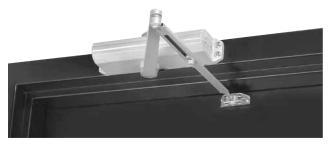
Notes:

- 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 antifriction 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 7-9 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

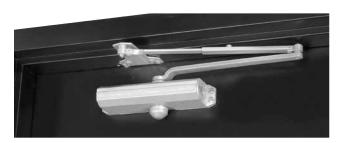
For efficiency reasons this application provides the best alternative to the regular arm application. There must be sufficient frame face and/or ceiling clearance for this application. It requires a top rail on the door of just 2-1/8" (54mm). This application provides the best door control for doors 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.

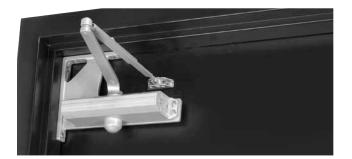
Parallel Arm

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 vandalismprone 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.

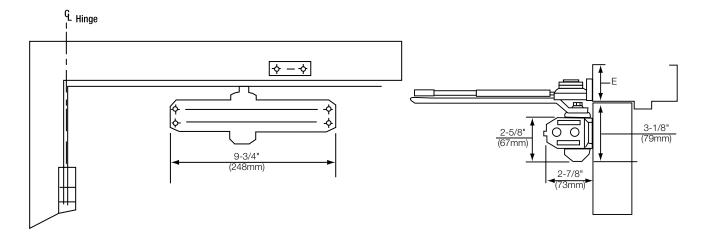






Technical Details

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	(mm) Hold Open	
32" (81)	-			1-1/2" (38)	1-5/8" (41)	
38" (97)	30" (76)	• • • •	9 9 9 9 9 9 9 9	······		
42" (107)	36" (91)	51	151			
48" (122)	42" (107)	• • • •				
—	48" (122)	0 0 0 0 0 0				

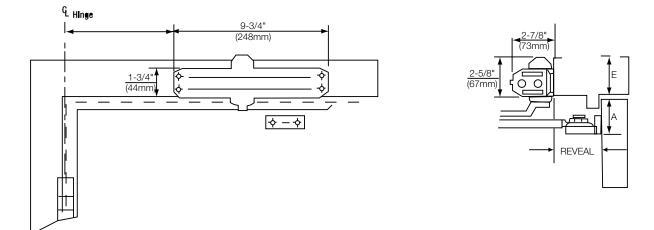
Note:

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 N	umber	E Minimum Ceiling Clearance		Minin	A Minimum Top Rail Clearance		
Interior	Exterior	Non-Hold Open	Hold Open	•••••••••••••••••••••••••••••••••••••••	• • • • • • • • • •	••••••			
32" (81)	—		151	Without Drop Plate	Wit Dro Plat	p Drop	With 587 Drop Plate	With 214 Drop Plate	
38" (97)	30" (76)			2-5/8" (67)	1-3/4 (44		2-5/8" (67)	4" (102)	
42" (107)	36" (91)	51		••••••			•		
48" (122)	42" (107)			Closer Se	ries	Reveal Inches (mm)			
	48"			51		0 to 3" (0 to 76)			
	(122)			TJ51		2-7/8" to 7" (73 to 178)			

Note:

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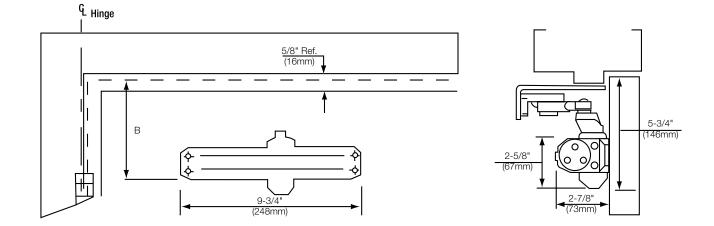
51 Door Closers are adjustable for sizes 1 through 6 and can be adjusted to conform to ADA opening force requirements.

51	(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	
nterior	Exterior	Non-Hold Open	Hold Open Without Drop Plate		With Drop Plate
30" (76)	—	- - - - - - - - - - - - - - - - - - -		Inches (mm)	Inches (mm) 3-1/8"
36" (91)	30" (76)	• • • • •		(127)	(79)
42" (107)	36" (91)	51 151	151		
48" (122)	42" (107)		• • • • • •		
—	48" (122)	•	•		

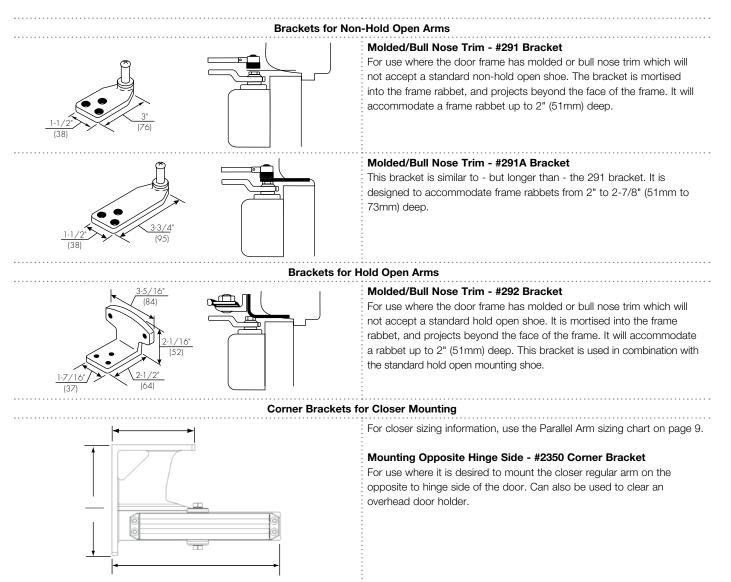
Note:

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.

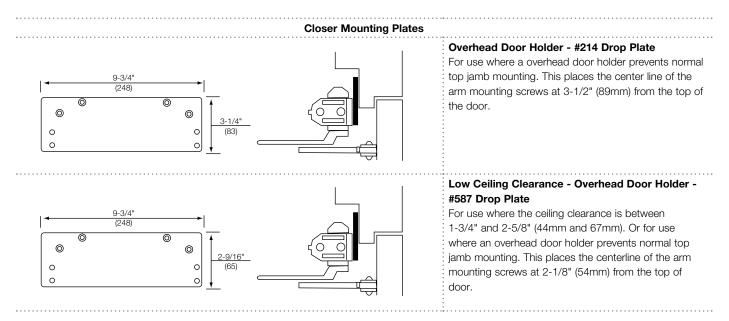


REGULAR ARM



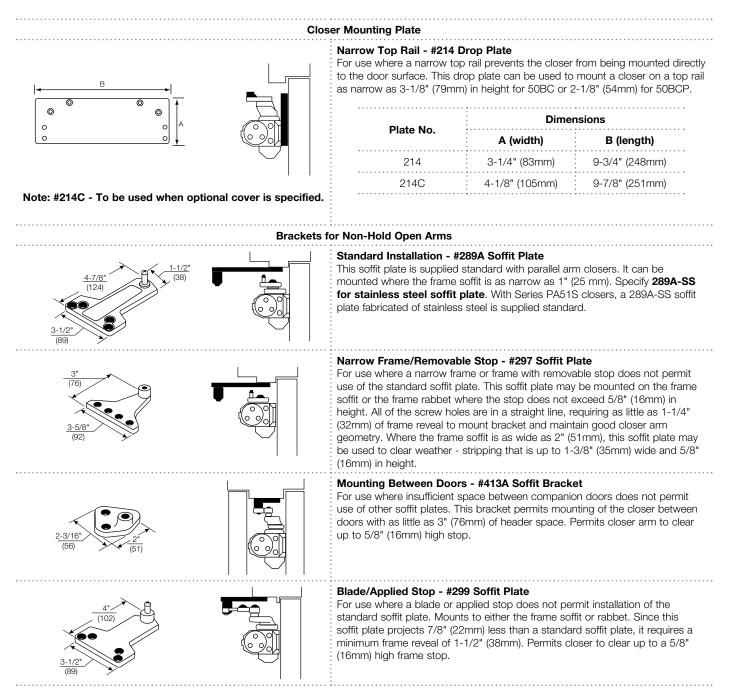


TOP JAMB



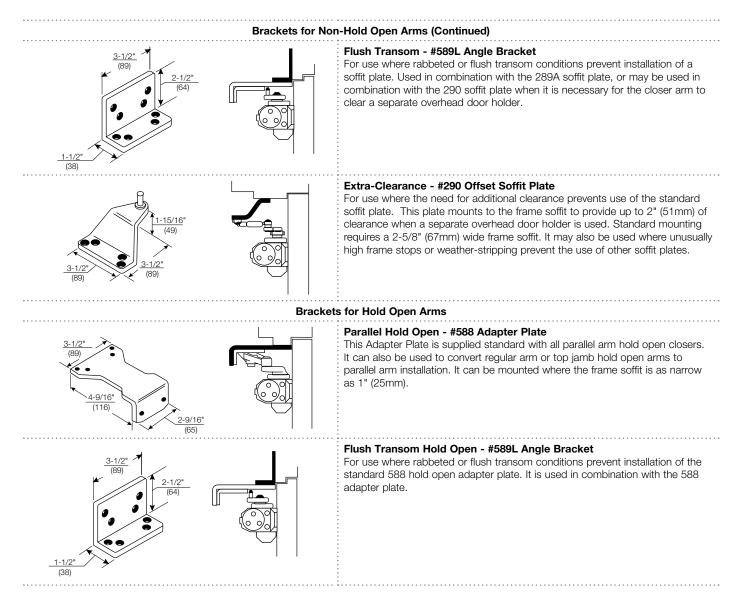


PARALLEL ARM



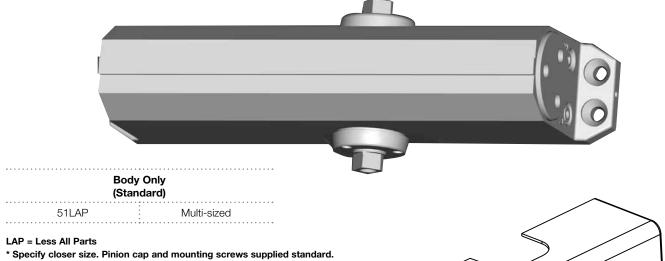


PARALLEL ARM





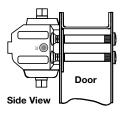
DOOR CLOSER BODY ASSEMBLIES



FASTENERS

Steel Door Application

Sex Nut / Sleeve-Nut : "SN" (4 per pack) or Sex Nut / Sleeve-Nut & Screw: "SNB" (4 per pack)



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)



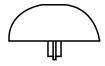
16

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

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.

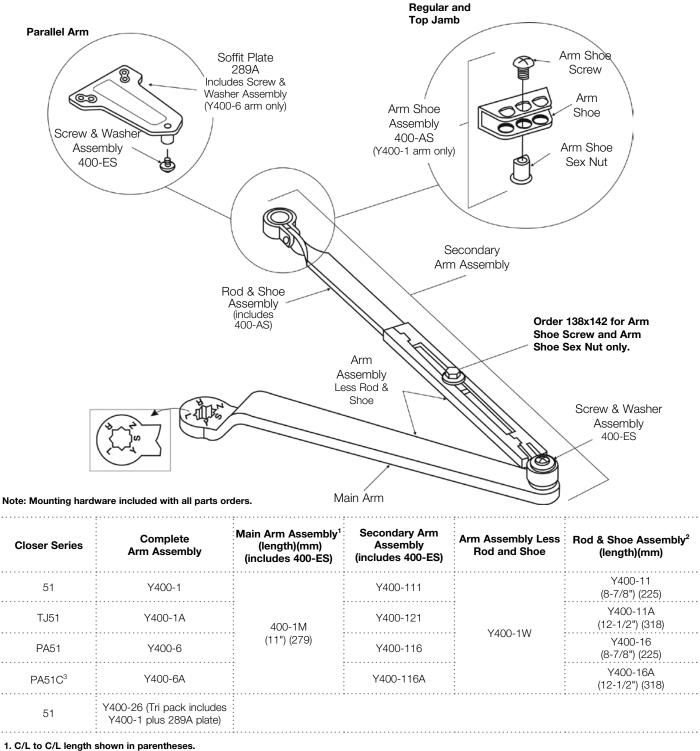


1639 Pinion Cap



Parts List

NON-HOLD OPEN ARM ASSEMBLIES



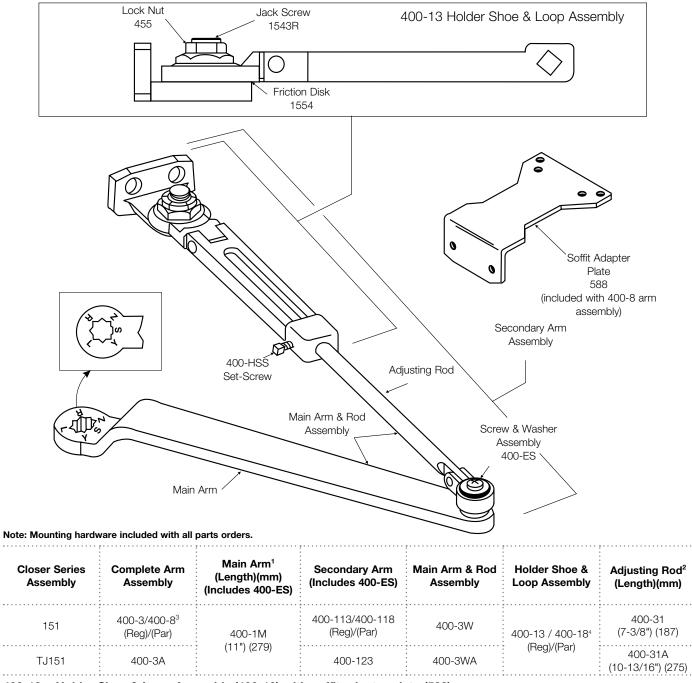
C/L to C/L tength shown in parentheses.
 C/L of connecting link to end of rod shown in parentheses.

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



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

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

18

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.

Suggested Specifications



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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YALE, with its unique global reach and range of products, is the world's favorite lock.

ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience.

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