

GENERAL INFORMATION GUIDE



Norton®

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

GENERAL INFORMATION

About Norton Door Controls...

Today's modern Norton® door control began with Lewis C. Norton, the inventor of the first American door closer. In 1880, he organized the Norton Door Check Company to manufacture and market his product: the first practical, commercial door closer. Though cumbersome, his first door closers were effective devices which permitted the adjustment of the door's sweep speed.

In later years, Norton Door Controls refined the rack and pinion closer and the concept of a valve-controlled backcheck for hydraulic closers. Along the way there have been a variety of other innovations, including the aluminum alloy body, narrow style, non-handed closers, adjustable backcheck, speed adjustments and special application arms. As Fire/Life Safety Standards were updated, Norton introduced the 7200 Series Electromechanicals and later the Power Track®. In 1990, the American with Disabilities Act (ADA) was passed, requiring buildings to have handicapped accessible doors for the physically challenged. This law brought about the creation of the original PowerMatic® Low Energy Operator.

Today, Norton Door Controls offers traditional surface, industrial economy, overhead concealed, security, commercial, architectural, electromechanical and electrified closers. To complement the closers, Norton also offers a unique range of arms to help provide maximum door and frame protection. The Norton philosophy has been – and continues to be – one of constant improvement...of quality products.

Since 1957 Norton Door Controls have been manufactured in Monroe, North Carolina.

The ASSA ABLOY Door Security Solutions Sales Force... Specialists in Door Control

Each ASSA ABLOY Sales Representative is selected for his knowledge of hardware and his ability to provide assistance to both specifier and user. His technical background and intimate understanding of *Norton* door closers and their applications are available to the specifier when a project is in the planning stages. When the project is complete he inspects the installation and instructs the maintenance staff on how to adjust each door control.

The ASSA ABLOY Door Security Solutions Representatives are supported by a Technical Product Support Department to help solve field problems. Together, these specialists can overcome most installation difficulties.

Special Templates

All *Norton* door closers and door controls are supplied with instructions that show the correct mounting position for the closer and arm in relation to the door, frame and hinges or offset pivots for a variety of door openings. Templates are available upon request for special conditions, such as center pivoted doors. Whenever you need assistance with a door control application or specification, contact your ASSA ABLOY Door Security Solutions Sales Representative.

TABLE OF CONTENTS

General Information	2
Listings and Approvals/Specifications	3
Glossary of Terms	5
How a Door Closer Works	9
Door Closer Sizes	13
Meeting A.D.A Requirements	14

GENERAL INFORMATION

Listings/Approvals

Norton® door closers have been designed and manufactured to conform with government and industry standards. For particulars not covered in this section, please contact your Sales Representative.


Underwriters' Laboratories, Inc.

All Norton door controls are listed by Underwriters' Laboratories, Inc.

State and Local Listings

Norton Series 7200, Series 7700PTO/7700PTDO, Series 7900 and Series 7706STP are listed with the California State Fire Marshal for use on fire doors.

There has been increased emphasis by all parties associated with the construction and operation of buildings to make facilities accessible to and usable by handicapped people. Certain Norton door controls have features or modifications that help achieve these requirements.

To assist you in recognizing these controls, they are called to your attention throughout this catalog by the handicapped symbol. 

Federal and Industry Specifications

The following information is provided as a cross-reference. Use it as a guide to door closer design and function only. For additional questions, please contact your Sales Representative.

Norton Series Number	ANSI/BHMA A156.4
78-B/F	C01000 W/O PT 4A-4C-4D-4F-4H
1600BC 1601	C03000 W/O PT 4A-4D C03000 W/O PT 4A-4C-4D-4F-4H
1700 (discontinued 2/2015) 1700BC	C03000 W/O PT 4A C03000 W/O PT 4A-4D
7500	C02000 W/O PT 4A-4C-4D-4F-4H-4J
7700 (discontinued 1/2015) 7900	C02000 W/O PT 4A-4C-4D-4F-4J C05030, C05040, C05050, W/O PT 4B-4C-4D-4F-4H
8100 (discontinued 3/2015)	C03000 W/O PT 4A-4C-4D-4F
8300 (discontinued 3/2015)	C02000 W/O PT 4A-4C-4D-4F
8301	C02000 W/O PT 4A-4C-4D-4F-4H
8500 (discontinued 3/2015) 8501	C02000 W/O PT 4A-4C-4D-4F C02000 W/O PT 4A-4C-4D-4F-4H
9300BC	C03000 W/O PT 4A-4D
9500	C02000 W/O PT 4A-4C-4D-4F-4H

Accessibility Code Closers

Norton Series 1601BF, Series 7500, Series 8000 and Series 9500 have been designed to conform to the requirements outlined in ANSI/BHMA A117.1

For Buildings and Facilities — Providing Accessibility For Physically Handicapped People.

- | | |
|----------------------------|--|
| 4A - +15% Power Adjustment | 4F - Delayed Action Closing |
| 4B - +35% Power Adjustment | 4G - Factory Set Dead Stop |
| 4C - +50% Power Adjustment | 4H - Adjustable Range of Closing Force |
| 4D - Adjustable Backcheck | 4J - Backcheck Shall Be Advanced 15° |

GENERAL INFORMATION

Federal and Industry Specifications (continued)

The following information is provided as a cross reference. Use it as a guide to door closer design and function only. For additional questions, please contact your Sales Representative.

Norton® Series Number	ANSI/BHMA A156.15
7700PTO 7700PTDO	CO0191 CO0201
P7700PTO P7700PTDO	CO0231 CO0241

Norton Series Number	ANSI/BHMA A156.15	
	Type Number	Type of Installation
7210MPDO 7210MPSO	C00361 C00351	Rigid Slide Arm Track
7220/7230MPDO 7220/7230MPSO	C00321 C00311	Double Lever Arm
7240MPDO 7240MPSO	C00381 C00371	Connected Free Swing Arm
7250MPDO 7250MPSO	C00401 C00391	Double Egress Arm
7290MPO	C00651	Overhead Concealed

GLOSSARY OF TERMS

Glossary of Door and Frame Terms

A number of basic terms are used in the description of doors, frames and the application of door closers to them. Knowledge of these basic terms will provide a better understanding of this catalog.

Door Top Rail: The horizontal rail at the top of the door.

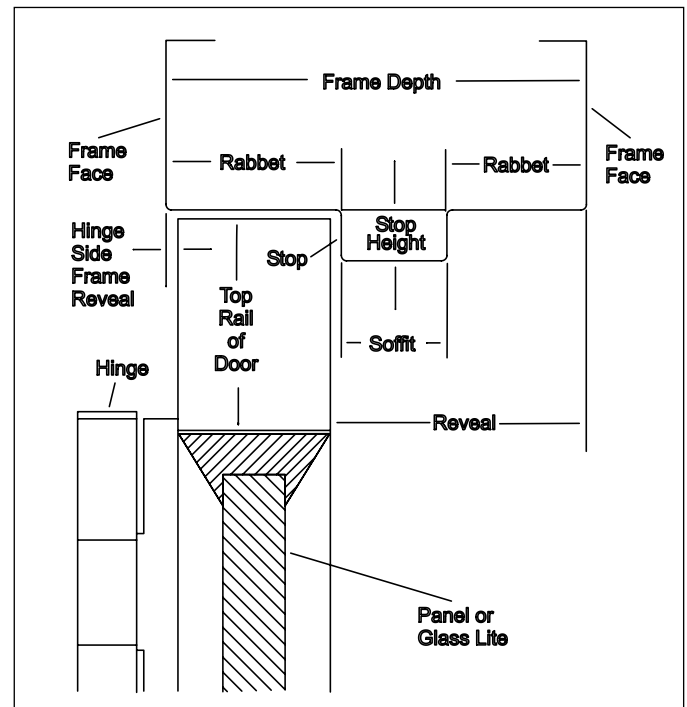
Rabbet: The section of the door frame recessed to receive the door.

Soffit: The flat surface on the underside of the frame between the vertical frame stops.

Stop: The part of the frame against which the door closes.

Frame Face: The exposed part of the frame which is generally parallel to the wall on metal frames. On wood frames this would be the frame molding.

Reveal: The distance from the frame face to the surface of the door.



Applications

Regular Arm: A type of door closer installation. The closer is mounted on the hinge side top rail of the door. The arm is attached to the frame face at a right angle to the door.

Parallel Arm: A type of door closer installation. The closer is mounted on the opposite to hinge side top rail of the door. The arm is attached to the frame soffit parallel to the door.

Top Jamb: A type of door closer installation. The closer is mounted on the opposite to hinge side frame face, above the door. The arm is attached to the top rail of the door at a right angle to the door.

Slide Track Closers: A type of door closer installation. The closer is mounted on either the hinge side or opposite hinge side. The slide track is mounted to frame face on the hinge side, and the frame soffit on the opposite to hinge side.

Corner Bracket Closers: A type of installation when the closer cannot be mounted to either the door or the frame. The bracket is mounted on the upper corner of the push side hinge jamb of the frame. The closer is mounted to the bracket and the arm is attached to the top rail of the door at a right angle to the door.

GLOSSARY OF TERMS

General Terms

Adjustable Backcheck Cushioning: A term used to indicate that the strength of "backcheck cushioning" in the door's opening cycle can be regulated by means of a valve in the closer body.

Adjustable Backcheck Position: A term used to indicate that the location where "backcheck cushioning" occurs in the door's opening cycle can be adjusted by means of a valve in the closer body. This valve provides a range of 20° of door opening where the backcheck can be set.

Adjustable Latch Speed: A term used to indicate that a door's speed can be regulated in the "latch" range of the closing cycle (approximately the last 5° of closing) by means of a valve in the closer body.

Adjustable Sweep Speed: A term used to indicate that a door's speed can be regulated in the "sweep" range of the closing cycle (fully open to 5° from closed) by means of a valve in the closer body.

Adjustable Delayed Action Closing: This special door control feature adds a third speed range to the closing control cycle. It becomes effective when the door is opened and released at any point beyond 70°. This delayed closing enables traffic to clear the opening before the normal closing cycle starts.

Hand (of a door): A term used to describe the direction of a door's swing. When looking at a door – if the hinges are on the right and the door swings away from you, the door is a right hand. If the hinges are on the left and the door swings away from you, the door is a left hand.

Handed: A term used to describe a product that can only be used with either a right hand door or a left hand door, not both.

Non-Handed: Products are said to be non-handed when they can be installed, without modification, on either a right or left hand door.

Field Reversible: Handed products are said to be field reversible when the arrangement of their component parts can be changed to permit their operation on a door of the opposite hand. Often, the labor cost necessary to reverse the hand of a closer makes it desirable to order a closer of the correct hand.

Hold Open: Any means which is employed to maintain a door in an open position.

Friction Hold Open: This type of hold-open consists of two friction surfaces connected by a threaded stud. As the closer arm rotates, the two friction surfaces bind against each other. The amount of friction can be adjusted by means of a nut at the friction point.

Fusible-Link Friction Hold Open: This is a form of friction hold open that employs a fusible link and spring-loaded clamp assembly at the hold open friction joint. The heat from a fire will melt the fusible link, which releases the spring-loaded clamp assembly, relieving pressure on the friction joint and permitting the door closer to close the door. *(Fusible link is not recognized by NFPA therefore Norton does not offer this type arm).*

Mechanical Hold Open: Norton uses two types of mechanical hold open. One is a plunger type, whereby a spring-loaded plunger assembly engages either a ball rivet or a detent in a mating part. The other is a spring-loaded roller catch within a slide track.

GLOSSARY OF TERMS

Hydraulic Hold Open: This is the type of hold open employed in Norton® electromechanical closer-holders. An electrically controlled plunger assembly seals a chamber within the door closer to permit hydraulic fluid to flow in only one direction. Since the fluid is trapped in this chamber, the closer spring is prevented from closing the door. When power to the unit is interrupted, the plunger valve opens and releases the door from hold open. The door can also be released from hold open by pushing the door toward the closed position with enough force (approximately 15 to 20 lbs.) to overcome the holding force on the plunger valve.

Telephone Booth Door Closer: This special-feature door control holds the door open approximately 5° when the booth is not in use. When the booth is being used, the door can be closed by the user.

Coupon Booth Hold Open: This special-feature door control will hold a door open at approximately 15°. When the door is opened more than 80° the closer will then close and latch the door. This special-feature closer is generally used on safe deposit box inspection cubicles in banks.

Hospital Hold Open: This special-feature door control can hold a door open at any one of three points; approximately 15°, 45° and 90° or beyond. This special-feature closer is generally used where ventilation and privacy are required without having the door fully closed.

Individually Sized Closers: These closers are sized 2, 3, 4, 5 or 6 with each size having a different spring assembly. Each spring assembly provides a minimum closing force that determines its size.

Multi-Size Power Adjustment Closers: These closers have a spring assembly that can be adjusted through a wide power range. Closers with this feature are not individually sized but must be field adjusted through a range of sizes to meet the power needs of the door.

50% Power Adjustment: The closer has an external adjustment that allows preloading of the spring. Depending on the needs of the specific installation, closer power can be increased 50% over the minimum closing force for any size closer.

Adjusta-Power Shoe: This standard non-hold open regular arm or top jamb shoe has three mounting holes. By relocating the closer arm, the closer's power can – in effect – be adjusted 15% (7-1/2% increase or decrease). It provides a simple method of adjusting closer power to meet the need of the specific installation.

Low Profile Arm: A term used to describe an arm which has a minimum space requirement in the vertical distance between the closer pinion and the arm bracket. It requires less mounting space than closers with standard arms.

Non-Critical Valves: These are control valves used to regulate the flow of fluid – in contrast to valves that are either fully open or fully closed. Norton closer control valves have been designed to provide fine tuned hydraulic control.

Parallel Rigid Arm: This is a heavy-duty, non-telescoping forearm used in conjunction with a heavy-duty soffit plate.

Reveal: The distance measured from the surface of the frame face to the surface of the door.

Tri-Style® Packaging: The closer is packed with all necessary hardware for mounting in any of the three traditional mounting styles: Regular Arm, Parallel Arm or Top Jamb. Non-hold open closers have an Adjusta-Power shoe for regular arm and top jamb mounting and a soffit plate for parallel arm mounting. Hold open closers have the hold open arm for regular arm and top jamb mounting and a soffit adapter plate for parallel arm mounting.

GLOSSARY OF TERMS

General Terms...(continued)

Unitrol® Door Control: This is a proprietary Norton® door closer, door holder and shock absorbing door stop combination.

CloserPlus®: This is a combination of a door closer and an arm having a built-in positive stop. A hold open feature which may be engaged or disengaged as necessary is available as an option.

Electromechanical Closer-Holder: This is a door closer equipped with an electromechanical device which permits the door to be held open. When the door is manually pushed toward "closed," the holding mechanism releases and the door closes normally. The holding mechanism can also be released by means of fire/smoke detectors. *Norton Closer-Holders* are available with or without a built-in/integral fire/smoke detector.

Power Track® Closer-Holders: This is a slide track equipped with an electrically operated hold open mechanism. When the door is pushed toward "closed" the hold open mechanism will disengage and allow the door to close. The holding mechanism can be released by either a self-contained fire/smoke detector or by any compatible remote fire/smoke detection system.

Executive™ Door Holder/Releaser: Garage door operator radio frequency technology is applied to the hold open of executive office doors. During normal office business the door is held open. When the executive requires security or privacy he pushes the button on the remote hand-held transmitter. The switch in the receiver operates and interrupts the hold open circuit to allow the door to close.

Positive Stop: A physical limit to the opening of a door. It may be provided by means of floor or wall – mounted stops – usually with resilient bumpers — or by means of a limit imposed by the arm of the door closer. Norton's CloserPlus is an example of the latter.

HOW A DOOR CLOSER WORKS

How a Door Closer Works

The basic function of a door closer is to provide a smooth, controlled closing action to the door after the door has been opened and released. A modern rack and pinion door closer provides this function in the following manner:

As the door is opened, the closer arm transmits motion to the piston in the closer housing smoothly and precisely. This action compresses the spring which provides the energy necessary to close the door.

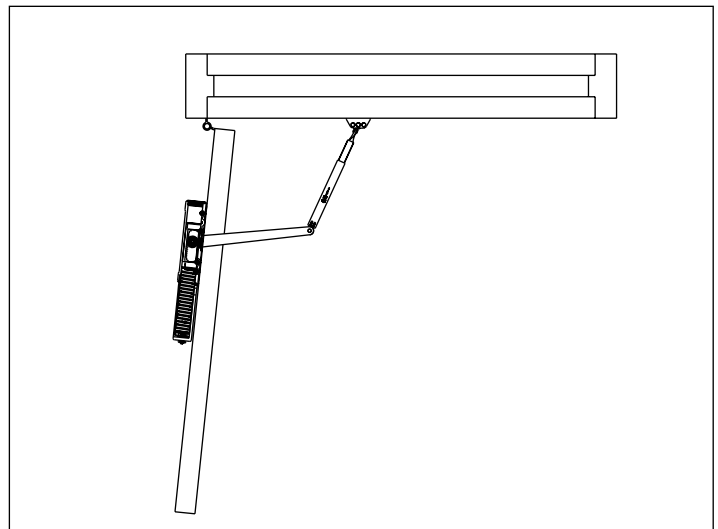
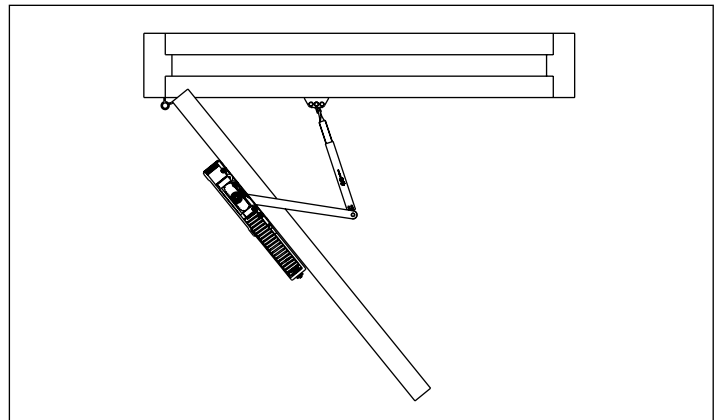
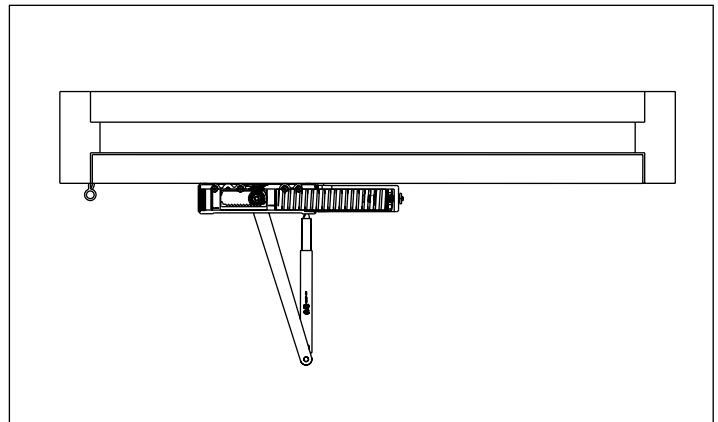
The force generated by the compressed spring is governed by a regulated hydraulic circuit within the closer. This hydraulic circuit provides precise control in the door's closing cycle.

These illustrations simulate generic door closer function. The closer components will vary; however, the principle is the same.

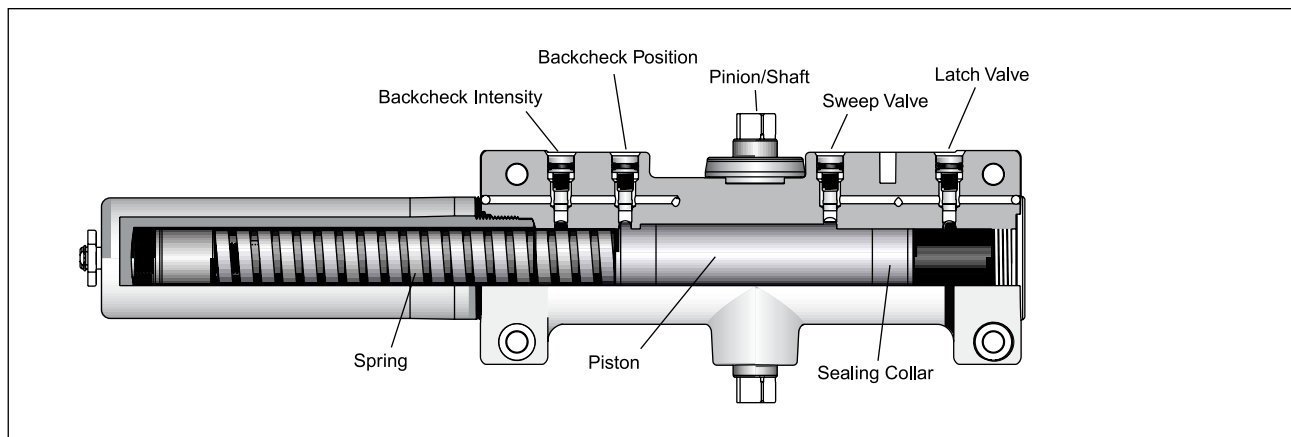
In the door opening cycle, the gear teeth of the pinion/shaft engage with the gear teeth of a rack milled into the piston. As the pinion/shaft rotates, it drives the piston, compressing the spring.

The movement of the piston forces the hydraulic fluid to flow from the reservoir side of the closer, to the area vacated by the piston. The fluid flows back to the reservoir side through a bored passage. Regulating this flow is the basis of controlling the door's closing speed.

During the closing cycle the compressed spring moves the piston toward its original position. This reverses the flow of the hydraulic fluid.



DOOR CONTROLS



In all Norton® door closers, there are two points of control in the hydraulic fluid passage during the closing cycle. One point controls sweep speed; the speed of closing short of the last 5°. The other point controls latch speed; the last 5° of closing. Desirable sweep speed is generally a medium-to-low speed (4 to 6 seconds) closing of the door. Desirable latch speed will vary; a fast speed is desirable for doors with latching hardware; a slower speed is used for doors without latching hardware.

A control valve permits the closing speed to be individually controlled at each passage point. As the piston travels through most of the door's closing, the hydraulic fluid flows through the sweep speed passage.

At a point in the door's closing, the piston's "sealing collar" closes the passage controlling the sweep speed. At this point, the fluid begins to flow through the latch speed passage only.

DOOR CONTROLS

Surface Mounted Door Closers/Concealed Door Closers

Norton® closers can be surface-mounted or concealed in the frame. Each type has its advantages and disadvantages.

Surface-Mounted Closers

This type of door control is easiest to install, with four drilled and/or tapped holes for the body, and two, four or five holes for the arm bracket. They require a minimum amount of preparation of the door and frame. The surface-mounted closer is also more accessible to the occasional adjustment that may be necessary with changes in usage or environmental conditions. Although surface-mounted closers, by definition, are never truly concealed, most Norton closers can be ordered with covers in a variety of painted or plated finishes to soften the closer's effect on the building design.

Concealed Closers

On the occasions where the architect's design calls for a door closer that is not visually obvious, a concealed closer is recommended. This installation requires considerably more door and frame preparation than a similar surface-mounted closer.

Overhead Concealed Closers

This type of door control is normally mortised into the transom of the frame above the door. A slide track is mortised into the top rail of the door. All elements – closer, arm and slide track – are totally concealed when the door is closed. Norton overhead concealed closers provide sweep and latch speed adjustments, backcheck cushioning and shock absorption. The Series 7900 closers also provide a 50% power adjustment feature. They are available with or without the hold open feature.

Regular Arm, Top Jamb and Parallel Arm

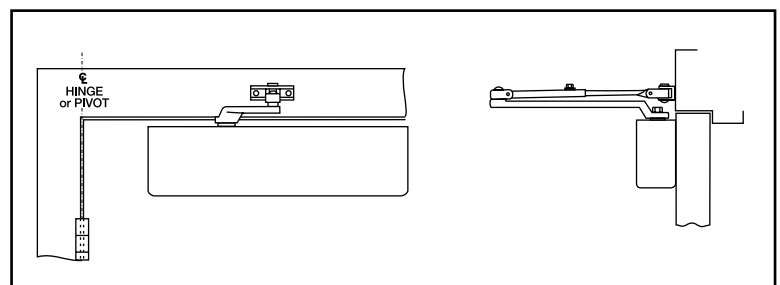
There are three basic methods of mounting surface door closers to the door and frame. The method the architect chooses is influenced by some combination of these five factors:

- Closer position, relative to the locations of door, frame and hinges
- Space limitations on the top rail of the door
- Space limitations on the frame face above the door
- Appearance
- Accessibility of the closer arm (especially in schools)

The three basic mounting methods which follow are illustrated with a double lever arm.

Regular Arm

The closer body is mounted on the top rail, hinge side of the door. The forearm is mounted to the frame face by means of a mounting shoe. The closer body requires less space on the door's top rail than a parallel arm installation. The arm projects from the door at approximately a right angle. Finally, the geometry of the assembly makes a regular arm closer somewhat more power-efficient than a parallel arm closer.

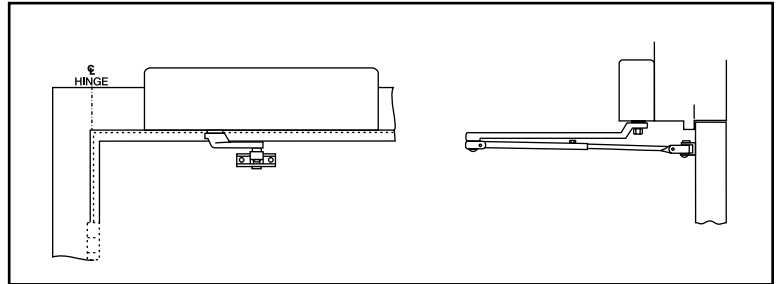


DOOR CONTROLS

Regular Arm, Top Jamb and Parallel Arm (continued...)

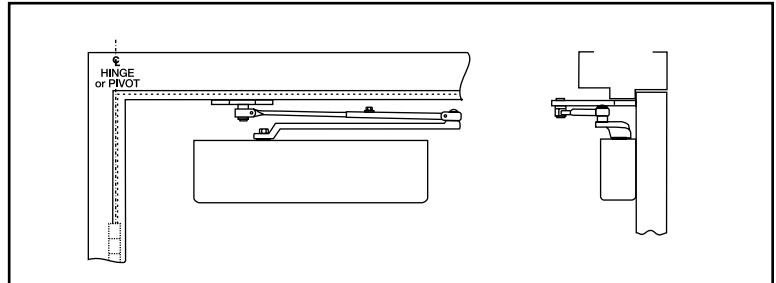
Top Jamb

The closer body is mounted on the frame face above the door, opposite the door's hinge side. The forearm is mounted on the top rail of the door by means of a mounting shoe. The top jamb closer is particularly suitable for doors with a narrow top rail, such as an aluminum-and-glass "storefront" door. Finally, the geometry of the assembly makes a top jamb closer somewhat more power-efficient than a parallel arm closer.



Parallel Arm

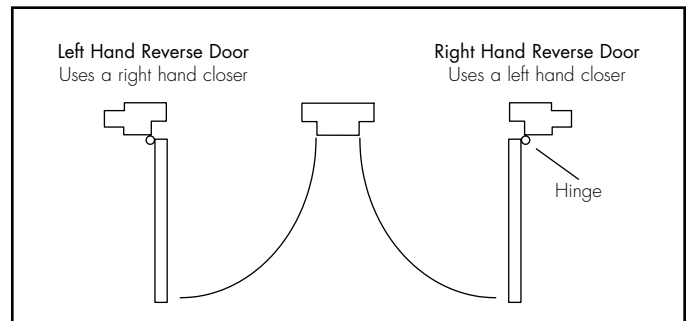
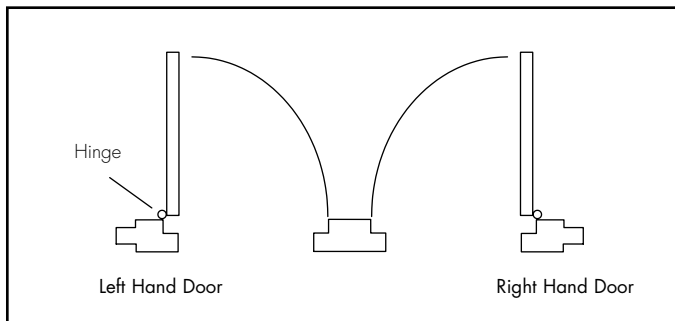
The closer body is mounted on the top rail of the door opposite the hinge side of the door. The forearm is mounted to the underside of the frame (the soffit) by means of a soffit plate, and requires no space on the frame face. The arm is parallel to the door, and therefore less accessible to mischief. The depth of the door's top rail is an important consideration when using this method of mounting. This method of mounting reduces the power-efficiency.



Hand of Door

Many door closers are non-handed. This means they can be placed on a door in such a way that they will operate a left-opening or a right-opening door. Even so, some covers, arms or holding devices are handed. In such a case, the hand of the door should be specified.

The illustrations below show how to determine the hand for door closers and other hardware.



Hardware	Hand of Door Opening Inward	
	Left Hand	Right Hand
Door Closers	LH	RH
RA, PA & TJ	RH	LH
Corner Brackets	LH	RH
Locks		
Panic Exit Devices	—	—

Hardware	Hand of Door Opening Inward	
	Left Hand	Right Hand
Door Closers	RH	LH
RA, PA & TJ	LH	RH
Corner Brackets	LHR	RHR
Locks		
Panic Exit Devices	LHR	RHR

DOOR CONTROLS

Door Closer Sizes

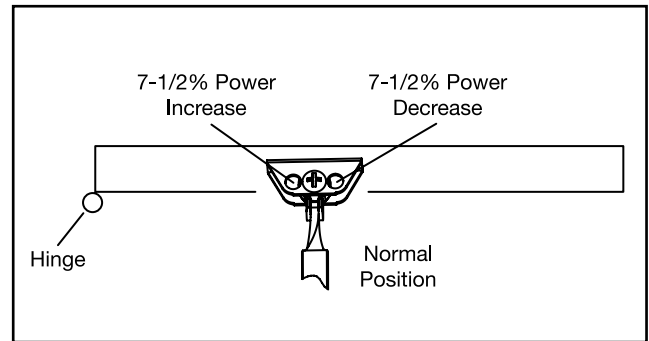
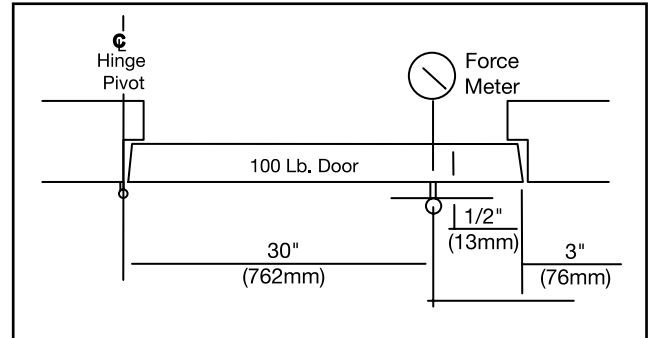
It is important that every manufacturer's door closer is sized and tested on the same basis. An industry standard has been adopted by the American National Standards Institute (A.N.S.I.) for this purpose.

The test is based upon controlling a 100 lb. door which has a center of gravity 18" (457mm) from the centerline of the door's pivot point (hinges). A force meter is located on the door 30" (762mm) from the centerline of the pivot point.

With the door closer installed, the door is opened to a minimum of 3" (76mm) and allowed to close from the power of the door closer. The greatest force exerted by the door closer, as the door closes between 3" (76mm) and 1/2" (13mm), determines the closing force of the door closer.

The following table shows the minimum closing force permitted for each closer size. All Norton® closers meet or exceed these minimum closing force standards.

ANSI/BHMA Door Closer Size	ANSI/BHMA Minimum Closing Force (Pounds)
2	3
3	5
4	8
5	11
6	14



Some series of *Norton* door closers are available with "50% power adjustment." These closers have an easily accessible adjustment that allows the installer to adjust the closing force. These closers allow a 50% increase in the minimum closing force for any given size.

In the case of a size 4 closer with an 8 pound minimum closing force, the closer's minimum closing force could be increased by 50% (1/2) or 4 pounds. The closer would then have a closing force of 12 pounds (8 pounds + 4 pounds)

Other series of *Norton* door closers are available with a "multi-size power adjustment" feature. These closers are equipped with an easily accessible adjustment that allows the installer to adjust closing force through a range of sizes. Traditional style closers are adjustable for sizes 2 through 4 or for sizes 5 and 6. Modern style closers have power ranges that vary, depending upon the door closer series.

Series	Sizes	Power
1601	3 thru 6	A156.4
1601BF	1 thru 4	A117.1 (ADA)
7500	1 thru 6	A117.1 (ADA) & A156.4
8301/8501	1 thru 6	A117.1 (ADA) & A156.4
9500	1 thru 6	A117.1 (ADA) & A156.4

A third power adjustment available with *Norton* non-hold open regular arm and top jamb mounted closers is the "Adjusta-Power Shoe." Merely by relocation of the closer forearm at the power shoe you can increase or decrease the force at the door's closed position by 7-1/2%.

MEETING A.D.A. REQUIREMENTS

Meeting A.D.A. Requirements

Note: The following information concerning the Americans With Disabilities Act (A.D.A.) has been extracted from ANSI/BHMA A117.1 and the Federal Register, Part III, published by the Department of Justice, office of the Attorney General, 28CFR, part 36 and NFPA 101. The information provided here is an interpretation of the requirements which must be met for door opening accessibility by the handicapped or disabled. Please refer to ANSI/BHMA A117.1 and NFPA 101 for specific details.

Door Opening Width Double-Leaf Doorways

If doorways have two independently operated door leaves, then at least one leaf shall meet the minimum clear opening width criteria. That leaf shall be the active leaf.

Single-Leaf Doorways

Doorways shall have a minimum clear opening of 32" (815mm) with the door open 90 degrees, measured between the face of the door and the opposite stop.

Door Opening Force

The maximum force for pushing or pulling open a door shall be as follows:

1. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority.
2. Other doors: Interior hinged doors: 5lbf (22.2N).

These forces do not apply to the force required to retract latch bolts or disengage other devices that may hold the door in a closed position.

Fire Doors (NFPA 101)

The forces required to fully open any door manually in a means of egress shall not exceed 15lbf (67N) to release the latch, 30lbf (133N) to set the door in motion, and 15lbf (67N) to open the door to the minimum required width. These forces shall be applied at the latch stile.

*Note: The pound forces stated above should be reduced **where possible** to comply with exterior hinged door and interior hinged door requirements. However, door closing capability must not be compromised.*

Door Closing Speed

ADA: If a door has a closer, then the sweep period of the closer shall be adjusted so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3" (75mm) from the latch, measured to the leading edge of the door.

A117.1: Door closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to an open position of 12 degrees shall be 5 seconds minimum.

Delayed Action

Although the optional delayed action feature is extremely beneficial to the severely handicapped, it is not a requirement of A.D.A.

Door Opening Force

Opening forces may be measured with a spring scale as follows:

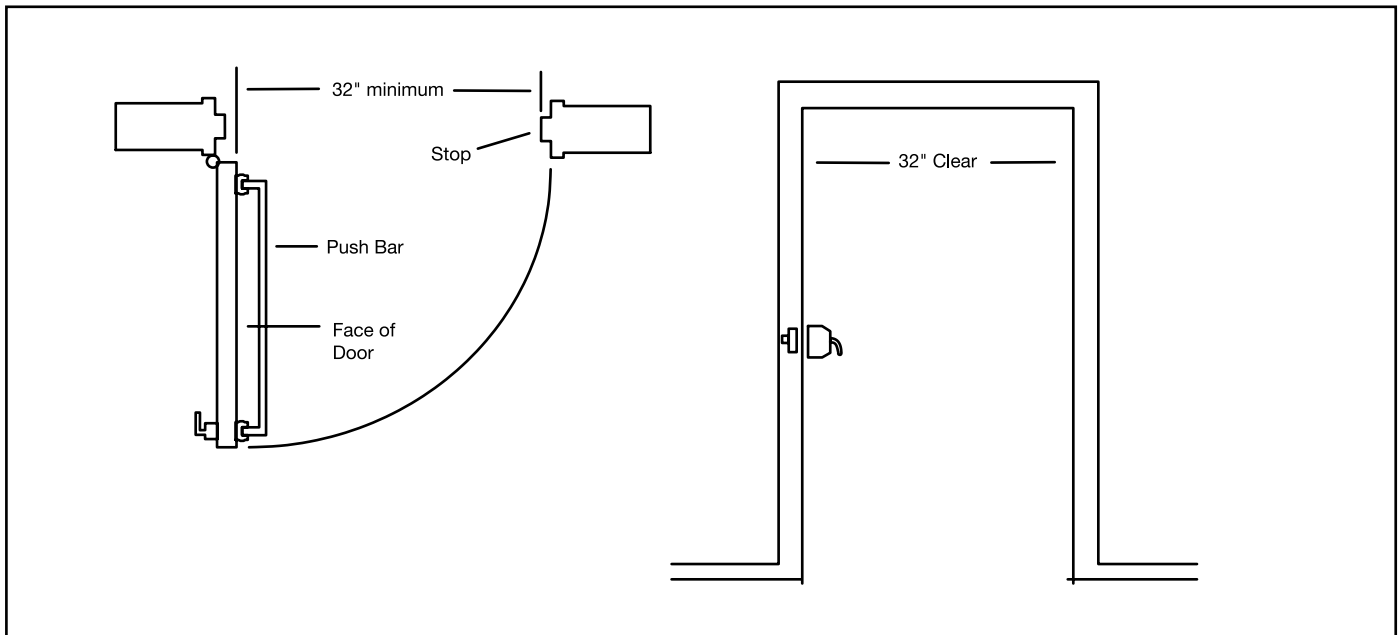
1. **Hinged Doors.** Apply force perpendicular to the door at the actuating device (lockset/pull) or 30" (760mm) from the hinged side, whichever is farthest from the hinge.
2. **Application of the Force.** Apply force gradually so that the applied force does not exceed the resistance of the door. Air-pressure differential, especially in high-rise buildings, can have an adverse effect on door-opening force. Accessible openings located in these areas will sometimes require the use of automatic or power-assisted doors to comply with allowable forces given.

Additional force to overcome the inertia of a door will exceed that required to maintain movement of the door. In general, only a momentary auxiliary force should be permitted to exceed the force indicated above.

MEETING A.D.A. REQUIREMENTS

Hinged Doors

The 32-inch opening is measured from the stop on the door jamb on the latch side and the face of the door when standing open in the 90° position. Push bars and panic type hardware may protrude into this space if they are mounted high enough to allow the wide part of the wheelchair to pass below.



CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton®, Unicontrol®, Tri-Style®, PowerTrack® and CloserPlus® are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. Executive™ is a trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2004-2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

ARCHITECTURAL

Product Guide



Norton[®]

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

INTRODUCTION

Norton Door Controls offers a comprehensive line of door controls designed and manufactured to ensure superior performance, reliability and application breadth.

Founded in 1880, Lewis C. Norton began Norton Door Check Company to manufacture and market the first practical commercial door closer. In later years, Norton refined the rack and pinion closer and the concept of valve-controlled backcheck for hydraulic closers. Along the way there have been a variety of other innovations, including the aluminum alloy body, narrow style, non-handed closers, adjustable backcheck, speed adjustments and special application arms.

Today Norton® offers traditional surface, industrial economy, overhead concealed, commercial and architectural grade closers. To complement the closers, Norton also offers a unique range of arms to help provide maximum door and frame protection.

For a complete copy of all Norton catalogs and additional technical information, contact your local sales representative or visit us at www.nortondoорcontrols.com

FINISHES

ANSI/BHMA	Description
600	Prime Coat
605	Bright Brass
606	Satin Brass
611	Bright Bronze
612	Satin Bronze
613E	Dark Oxidized Satin Bronze - Equivalent
619	Satin Nickel
625	Bright Chrome
626	Satin Chrome

ANSI/BHMA	Description
689	Aluminum
690	Statuary Bronze
691	Dull Bronze
693	Black
694	Medium Amber
696	Gold
N/A	556 White*

* White finish only available on 9500, 7500, 8000, 1600 and 1700BC Series closers.

Norton offers waterborne acrylic, polyester powder coat and plated finishes. Custom finishes are available on special order.

Waterborne acrylic and polyester powder coat will withstand 100 hours of salt spray (ANSI requires 25 hours).

Norton closer bodies and plastic covers are available in waterborne acrylic finishes. Arms and metal covers are available in powder coat or plated finishes.

TABLE OF CONTENTS

Suggested Applications	3	Specialty Closers	
Cam Action Closers		78-B/F	9
2800ST	3	Overhead Concealed	
Cast Iron Closers		7900	9
9500 Series	4	Electrified Closers	
Institutional Closers		7100SZ SafeZone®	10
7500	5	7200 Electromechanical	11
7570	5	7500 Power Track®	11
Architectural Closers		Low Energy Operators	
8000	6	6000	12
Utility/Storefront Closers		5900	13
1600	6	5700	14
Light Commercial Closers		5600	15
1700BC	7		
9300BC	7		
210	8		
160	8		

SUGGESTED APPLICATIONS

	Cam Action	Cast Iron	Institutional	Architectural	Aluminum Storefront	Light Duty Commercial	Specialty
Sized Surface Closers					1600BC	1700BC 9300BC	78-B/F
Multi-Sized Surface Closers	2800ST	9500	7500	8301/8501	1601	210 160	
Security			7570				
Overhead Concealed Closers			7900				

2800ST SERIES

The 2800ST Series is a cam action door closer for slide arm and track applications. The door closer's wide range of adjustable closing power permits use in the most demanding situations and its unobtrusive design is a good choice for architects and designers.



Features

- Cam action design for smooth operation: efficient, powerful, heavy-duty
- Slide track application with regular arm operating efficiency
- Adjustable spring size 1 through 6
- Non-handed
- Push or pull side mounting
- Suitable for exterior and interior doors
- Recommended maximum interior door width 54" (137cm)
- Recommended maximum door weight 250 lbs.
- Standard opening range:
 - Push Side = 110°
 - Pull Side = 110°
- Hold open; specify "H" suffix

Functions

- Adjustable closing force
- Adjustable closing and latching speed
- Backcheck

Certifications

- Meets requirements for Americans with Disabilities Act (ADA) 
- UL / cUL listed for use on fire rated doors 
- 10-year limited warranty



9500 SERIES

Ideal for high use openings, the 9500 Series Cast Iron door closer offers the durability, flexibility and strength required to meet the needs of your facility. For interior or exterior doors, this ANSI/BHMA Grade 1 closer features a clean, modern cover aesthetic and durable cast iron body that can be used in a variety of institutional and educational environments requiring ADA compliance.

Features

- Cast iron closer body
- Clean, modern cover design featuring Norton branding
- Non-handed
- Rack and pinion design
- Staked valves
- 2-1/4" (57mm) projection
- Closer mounting plate for easy installation
- Tri-style® packaging: packed for regular, top jamb or parallel arm mounting
- Adjustable spring sizes 1-6
- Molded ABS plastic cover
- Metal cover (optional)
- All standard arm applications allow doors to swing 180°, conditions permitting
- Heavy-duty arms available: Regular Rigid, Parallel Rigid, CloserPlus®, Parallel Rigid Offset and Unitrol®
- Slide Track: push or pull side mounting

Functions

- Standard, separate and independent, latch, sweep and backcheck intensity valves
- Pressure relief valves for both opening and closing cycles protect the door and frame from damage and reduces maintenance costs
- Delayed action; specify "DA" suffix

Certifications

- Exceeds 25 million cycles (witnessed and verified by U.L.)
- ANSI/BHMA A156.4 Grade 1 certified. 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- Complies with requirements for the Americans with Disabilities Act (ADA) and ANSI standard A117.1 
- 25-year limited warranty



7500 SERIES

The 7500 Series Door Closer offers customers the ideal combination of superior performance, strength and quality. Ideal for interior or exterior doors in facilities that demand reliability.

Features

- Tri-Style® packaging; tri-packed for regular, top jamb or parallel arm mounting
- Non-handed
- Rack and pinon design
- Cast aluminum body
- Adjustable spring sizes 1-6
- 2-3/16" (56mm) projection
- Staked valves
- Corrosion resistant model (non-hold open only). Specify 7500SS
- Retrofit plates
- Molded plastic cover
- All standard arm applications allow doors to swing 180°, conditions permitting
- Self drilling screws
- Full size template
- Application specific mounting: Regular (S), Top Jamb (JS) or Parallel (P) mount
- Heavy-duty arms: Regular Rigid, Parallel Rigid, CloserPlus®, CloserPlus Spring™ and Unitrol®
- Slide Tracks: push or pull side mounting



Functions

- Standard, separate and independent, latch, sweep and backcheck intensity valves
- Backcheck positioning
- Enhanced backcheck. Specify EBC suffix
- Delayed action with pressure "EBC" valve

Compliance Standards

- Exceeds 25 million cycles (witnessed and verified by UL)
- ANSI/BHMA A156.4, Grade 1 certified **BHMA CERTIFIED**
- UL / cUL listed for use on fire rated doors **UL**
- UL10C listed for positive pressure fire test
- 7500 door closers are designed to comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 **ADA**
- 25-year limited warranty

7570 SECURITY

The Security Closer Line uses Norton's 7500 series door closers with a variety of regular rigid and parallel arms and track options. Designed for use in institutions where vandalism, abuse, escape, personal injury, or damage to doors, walls, and hardware are major concerns, the 7570 Series provides superior performance and reliability.

Features

- Security arms - joints feature permanent, orbital riveted elbow and arm shoe/soffit plate joints which prevent disassembly
- Heavy-duty arms available - Parallel Rigid, CloserPlus® and CloserPlus Spring™
- Slide track - push or pull side mounting

Functions

- Adjustable backcheck cushioning and positioning
- Delayed action; specify "DA" suffix
- Enhanced backcheck; specify "EBC" suffix

Certifications

- ANSI/BHMA A156.4, Grade 1 certified **BHMA CERTIFIED**
- UL / cUL listed for use on fire rated doors **UL**
- UL10C listed for positive pressure fire test
- Comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 **ADA**
- 25-year limited warranty



8000 SERIES

The 8000 Series Door Closers offer the ideal combination of appearance, reliability and durability in today's market. With features such as staked valves, precise valve adjustment and a complete range of arm and cover options, this closer can meet virtually any application challenge.




Features

- Non-handed
- Staked valves
- 2-1/8" (54mm) projection (standard covers)
- All standard arm applications (with slim, full or metal covers) allow doors to swing 180°, conditions permitting
- Optional metal, architectural plastic or architectural metal covers (8501)
- Heavy-duty arms available: Parallel Rigid, CloserPlus®, CloserPlus Spring™ and Unitrol®

Functions

- Standard, separate and independent, latch, sweep and backcheck intensity valves
- Delayed action; specify "DA" suffix

Certifications

- Exceeds 15 million cycles (witnessed and verified by UL)
- ANSI/BHMA A156.4, Grade 1 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- 8301 and 8501 door closers are designed to comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 
- 25-year limited warranty



	8301	8501
Tri-Style® standard (regular arm, top jamb and parallel arm mounting)	X	X
Slim line cover	X	
Full cover		X

1600 SERIES

The 1600 Series Door Closers are designed to fit almost any application and are the choice of engineers worldwide. Ideal for use with aluminum storefront doors and frames, these closers have a history of proven quality and tradition.

Features

- Non-handed
- Staked valves
- 2-7/8" (73mm) projection
- Corrosion-resistant model (specify 1601SS)
- Optional molded plastic cover
- All standard arm applications allow doors to swing 180°, conditions permitting
- Heavy-duty arms available: Parallel Rigid, CloserPlus®, CloserPlus Spring™ and Unitrol®

Functions

- Standard, separate and independent, latch, sweep and backcheck cushioning valves
- Delayed action (in lieu of backcheck)

Certifications

- Exceeds 12 million cycles (witnessed and verified by UL)
- ANSI/BHMA A156.4, Grade 1 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- 1601BF door closers are designed to comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 
- 15-year limited warranty



	1600BC	1601	1601BF
Sized springs 2, 3, 4, 5, 6 with no power adjustment	X		
Adjustable spring sizes 3 through 6		X	
Adjustable spring sizes 1 through 4			X
Tri-Style® standard (regular arm, top jamb and parallel arm mounting)		X	X
Bi-packed standard (regular arm and top jamb mounting)	X		

1700BC SERIES

The 1700BC Series Door Closers are multi-feature closers whose compact design is ideal for application on interior doors. This narrow-stile closer has distinctive lines that harmonize with most decors. Ideal for use on interior apartment doors, hotels and other light duty commercial buildings.



Features

- Spring size 1, 2, 3, or 4
- Installs regular arm, parallel arm or top jamb
- Non-handed
- Optional full cover
- Hold open; specify "H" suffix

Functions

- Independent adjustable sweep and latch speeds
- Backcheck

Certifications

- ANSI/BHMA A156.4, Grade 2 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- 5-year limited warranty



9300BC SERIES

The 9300BC is a durable, economically priced door closer designed for commercial exterior and interior doors such as storefront and industrial applications.


Features

- Spring size 2, 3, 4 or 5
- Non-handed
- Regular and top jamb mount standard - no prefix
- Parallel mount; specify "P" prefix
- Friction hold open arm; specify "H" suffix

Functions

- Separate and independent valve for sweep speed and latch speed
- Adjustable backcheck standard

Certifications

- ANSI/BHMA A156.4, Grade 3
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- 5-year limited warranty



The 210 and 160 Series door closer, are ideal for stocking distributors serving high volume aftermarket and storefront segments.

210 SERIES

Features

- Adjustable spring size 1 through 6
- Non-handed
- Cast aluminum body
- Rack and pinion design
- Full plastic cover
- Non-hold open, hold open and heavy-duty arms
- Closer footprint: 3/4" x 12"
- Cover dimensions: 2-15/16" high x 2-1/8" deep x 13-1/16" long
- Available in 689 (aluminum) or 690 (dark bronze) finishes



Functions

- Independent latch sweep and backcheck intensity valves

Certifications

- ANSI/BHMA A156.4, Grade 1 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- Meets requirements for Americans with Disabilities Act (ADA) and ANSI/BHMA A117.1 
- 10-year limited warranty

160 SERIES

Features

- Two models:
 - 161BF: adjustable spring size 1 through 4
 - 164: size 4 spring
- Non-handed
- Cast aluminum body
- Rack and pinion design
- Non-hold open arms: 161BF, 164
- Hold open arms: 161BF only
- Closer footprint: 3/4" x 9-1/16"
- Closer projection: 2-5/8"
- Available in 689 (aluminum) or 690 (dark bronze) finishes



Functions

- Independent latch sweep and backcheck intensity valves

Certifications

- ANSI/BHMA A156.4, Grade 1 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- Meets requirements for Americans with Disabilities Act (ADA) and ANSI/BHMA A117.1 
- 5-year limited warranty

78-B/F SERIES

The 78-B/F "Potbelly" Surface Closers represent a combination of traditional styling and modern closer features. In addition only two springs are needed to accommodate the complete range of door sizes.


Features

- Choice of adjustable spring power
B/D - Spring size 2, 3, or 4
E/F - Spring size 5 and 6
- Handed (closer spring can be reversed in the field)
- Heavy-duty arms available: Parallel Rigid and Unitrol®

Functions

- Delayed action (DA units are handed; not field reversible)
- Adjustable sweep/latch speed
- Adjustable backcheck cushioning

Certifications

- ANSI/BHMA A156.4, Grade 3
- UL / cUL listed for use on fire rated doors 
- UL / cUL listed for use on fire rated doors
- 10-year limited warranty



7900 SERIES

Overhead concealed closers provide an aesthetically appealing way to close a door. In situations where a closer is needed but concealment in the frame header is required or desired, the 7900 closer is the ideal solution for door control.



Features

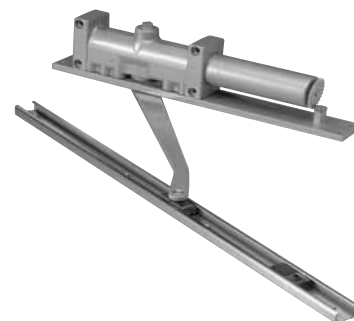
- Steel track and slider
- Fully adjustable, multi-point hold open (7900)
- Shock-absorbing door stop
- Handed
- Available as sized or multi-sized units
Sized closer - (4, 5 or 6); specify 7904, 7905 or 7906
Multi-sized - (1-6); specify 7900
- Installs with butt hinges, offset or center hung pivots
- Installs in hollow metal, aluminum or wood doors and frames
- Torx® screws furnished standard (Order 7970DPS)
- 790 Fire Block
- Door Position Switch (7970DPS)

Functions

- Adjustable sweep and latch speeds
- Adjustable backcheck cushioning and positioning

Certifications

- ANSI/BHMA A156.4, Grade 1 certified 
- UL listed 
- 10-year limited warranty



SAFEZONE®

Designed with safety in mind, SafeZone® takes door closers to a higher level. *SafeZone* uses a multi-point, electromechanical closer and a programmable motion sensor. When the door is opened manually, *SafeZone* senses movement in the door opening and stops the door from closing. A physically disabled person in a wheelchair; an elderly person moving slowly; a child who stops to pick up a toy are all protected. When movement is no longer detected, the adjustable setting times out and the door closes.

SafeZone detects movement in both directions, allowing one person or a stream of people to travel through an opening, making it ideal for theaters, hospitals, doctor's offices and elementary schools.



Features

- Multi-point, electromechanical closer/holder
- Sensor detects movement in both directions
- Selectable hold open time and sensitivity
- Push or pull side mounting
- Handed units
- Spring sizes 3, 4 or 5 (models 7110SZ and 7150SZ); spring sizes 2, 3, 4 or 5 (models 7120SZ and 7130SZ)
- Fail safe operation

Benefits

- Energy savings realized by power engaging only when motion is detected
- Extends door life and minimizes wear and tear on hardware by limiting unnecessary cycles

Patents

- Patent Pending

Certifications

- Certified to meet ANSI/BHMA A156.15 Release Devices 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- The following models comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1
Push Side: 7122SZ, 7132SZ Pull Side: 7113SZ, 7153SZ 
- 2-year limited warranty

7200 SERIES

The 7200 Series is a multi-point electromechanical closer/holder that provides flexibility to installers and facility managers. Shipped standard with selective hold open, the 7200 Series is designed to hold the door open at any point up to 180°. Available for push or pull side mounting, these units can be ordered with integral smoke detectors or remote wireless door releases.

Features

- Multi-point hold open
- Push or pull side mounting
- Handed
- Closer size 3, 4 or 5
- Selective Hold Open (standard) - door will hold open at any degree of opening beyond a pre-set hold open point, up to 175°.
- Infinite Hold Open (optional) - door will hold open at any degree of opening up to 175°. Infinite Hold Open can be set in the field by turning the cam.
- Voltage - 24VAC/DC or 120VAC
- Detected or non-detected units available



Optional Features

- Radio Frequency - RFS (selective) - RF units are not UL listed for fire doors
- Free Swing arm (7240 pull side only)

Functions

- Master Unit: Suffix MPDO
- Slave/Support Unit: Suffix MPSO
- Executive™ Unit: Suffix RFS

Certifications

- ANSI/BHMA A156.15 certified 
- UL / cUL listed for use on fire rated door 
- UL10C listed for positive pressure fire test
- 2-year limited warranty



POWER TRACK®

The Power Track® Series combines the function of a single-point electromechanical door holder with the proven reliability of a 7500 Series door closer. The track assembly contains an arm slide and solenoid operated hold open mechanism and is available with or without an integral smoke detector.

Features

- Selective single-point hold open
- Spring cushioned dead stop
- Spring size 5; order 7705
- 24 VAC/DC or 120VAC, 60Hz
- Push or pull side mounting. Prefix "P" for push side installation.
- Fail-safe operation
- Available with or without smoke detector

Functions

- Master Unit – Suffix PTDO
- Support Unit – Suffix PTO



7705PTDO Shown

Certifications

- ANSI/BHMA A156.15 certified 
- UL listed (All Support units are UL listed for application with any compatible UL listed fire/smoke detection equipment) 
- 2-year limited warranty

6000 SERIES

The 6000 Series, the newest addition to the PowerMatic® Family of Operators combines intelligence, reliability and superior control in one package. Designed with the user in mind, this operator features simple to use electronics, an onboard power supply and easy integration into access control systems.

Features and Functions



- Ease of installation and setup
 - Simple instructions
 - LCD screen and joystick controller
- Application versatility and ease of adjustment
 - Non-handed units
 - Push or pull side mounting
- Push and Go selector
 - As the door is manually opened, the operator "senses" movement and opens door to the full-open position
- Obstruction Detection
 - Open - Door closes if it hits an obstruction while opening
 - Close - Door re-opens (once) if it hits an obstruction while closing. If the door hits the obstruction again, the door will rest against the obstruction until it is removed.
- Motor startup delay adjustment
 - Delays operator opening
- Vestibule delay adjustment
- Selector mode switch
 - Off - Disables signal inputs except blow open
 - On - Activates signal inputs
 - Infinite Hold Open - Door will hold open at set position until power is turned off
- Operates as mechanical surface closer during close cycles or if power is turned off



Electrical Data

- Power input 120 VAC, 60 Hz (+10%, -15%)
- Current draw 0.9A
- Auxiliary output 24 VDC @ 1.3A
- SPDT relay output for controlling electric strikes or electric locks not to exceed 1 amp @ 30 VDC

Certifications

- ANSI/BHMA A156.19 certified 
- ETL tested to UL/ULc standards for automatic doors used on fire and smoke barrier doors and CSA C22.2 No. 247 for operators and systems of doors
- UL10C listed for positive pressure fire test
- Comply with requirements for the Americans with Disabilities Act (A.D.A) 
- 2-year limited warranty

5900 SERIES

The 5900 Series is a full-featured, extremely quiet, low energy door operator designed for moderate to high traffic doors. This cost-effective operator is available for either push or pull side mounting and is ideal for any application designed to meet the Americans with Disabilities Act (A.D.A). "One touch" programming combined with the operators' built-in ability to calibrate door mass, offers Norton customers a smart, dependable solution.



Features and Functions

- Ease of installation and setup
 - Simple instructions
 - "One touch" programming
- Application versatility and ease of adjustment
 - Non-handed units
 - Push or pull side mounting
- Power Assist
 - When unit is activated, it allows the door to be opened manually with a force less than 5 lbs.
- Push and Go (selectable)
 - As the door is manually opened, the operator "senses" movement and opens door to the full-open position.
- Motor Startup Delay
 - Delays operator opening
- Obstruction Detection
 - Open
 - Door closes if it hits an obstruction while opening
 - Close (Stop on Stall)
 - Door will stop once it hits an obstruction and rest against the obstruction until obstruction is removed
- Infinite Hold Open
 - Door will hold open at set position until power is turned off
- Power Latch (selectable)
 - Increases latch power
- Selector mode switch (3 position)
 - Off - Disables signal inputs
 - On - Activates signal inputs
 - Hold Open - Activates the unit to the hold open position

Electrical Data

- Power input 120 VAC, 60 Hz (+10%, -15%)
- Current draw .75A
- 12VDC @ .5A output, 24VDC @ .25A output or 24VDC @ .4A output

Certifications

- ANSI/BHMA A156.19 certified 
- UL325 certified
- UL10C listed for positive pressure fire test
- Complies with requirements for the Americans with Disabilities Act (A.D.A) 
- 2-year limited warranty

5700 SERIES

The 5700 Series design is based on ease and simplicity. This unit installs in minutes rather than hours and consists of three basic components: inverter, motor and Norton's 1601 closer body. Quiet and dependable, the 5700 meets the requirements of the Americans with Disability Act (A.D.A.) and ANSI/BHMA 156.4. Available push or pull side mounting, this unit is perfect for applications that don't require special features but demands reliability.






Features and Functions

- Ease of installation and setup
 - Simple instructions
- Application versatility and ease of adjustment
 - Push or pull side mounting available
- Operates as mechanical surface closer during close cycles or when door is opened manually or if power is turned off
 - Quiet operation
 - Acceptable for fire rated doors
 - Spring force provides the feel of a normal manual door closer
 - Door can be opened manually if desired
- Non-handed
- End-User On/Off Switch
- Norton® 1600 series door closer
- Unit Activation Options
 - Wall switches
 - Motion sensor
 - Radio frequency device
- Hold Open options
 - 0-30 seconds (5 seconds minimum required for ADA and ANSI/BHMA A156.19)
- Obstruction Detection
 - Motor stops if door is obstructed during an opening
 - Door closes under manual spring force
- "Push and Close"
 - Allows the operator to skip the hold open time when it is not necessary or required
 - Adjustable door sensitivity
- Overload Safety Shut-Off
 - After two minutes of receiving a door activation signal, the inverter will time out and close the door
 - Prevents motor/inverter damage
- Motor Start Delay for Locking Hardware
 - 0-5 second delay to allow locking hardware to release first

Electrical Data

- Power Input: 120 VAC, 60Hz
- Current Draw: .6A or .3A
- Relay Output: DPDT
 - Normally Open/Normally Closed (jumper)

Certifications

- ANSI/BHMA A156.19 (Low Energy Operators) certified 
- Meets ANSI/BHMA A156.4 requirements
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- Complies with requirements for the Americans with Disabilities Act (A.D.A.) 
- 2-year limited warranty

5600 SERIES

The 5600 Series offers functionality and control at an affordable price. Ideal for retrofit applications, the 5600 Series converts interior, non-fire rated doors for ADA compliance easily and affordably and provides a simple way to achieve touchless environments in public restrooms.

Features

- Push or pull side mounting
- Non-handed
- Quiet operation
- Electrically controlled backcheck, sweep and latch
- Activation options: wall switches, radio frequency devices
- Ease of installation and set-up
- On/Off Switch
- Hold open options: 0-30 seconds (5 seconds minimum required for ADA and ANSI/BHMA A156.19)
- Onboard 24VDC (1.1A) power supply for accessories
- Door closer mode for manual usage
- Electronic motor dampening - provides feel of normal, manual door closer
- Electric hardware and access control interface
- Optional AC power cord




Functions

- Push & Go
 - As the door is manually opened, the operator "senses" movement and opens door to the full-open position.
- Obstruction Detection
 - Motor stops if door is obstructed during opening
- Motor Start Delay
 - 0-5 second delay to allowing locking hardware to release first
- Overload Safety Shut-Off
 - After two minutes of receiving a door activation signal, the inverter will time out
 - Prevents motor/inverter damage

Electrical Data

- Power Input; 120 VAC, 60Hz
- Current Draw: .6A
- Relay Output: SPDT
 - Normally Open/Normally Closed (jumper)
 - For electric strike function

Certifications

- ETL certified; conforms to ANSI/UL standard 325 for automatic closing doors.
- Complies with requirements for the Americans with Disabilities Act (A.D.A) 
- 1-year limited warranty

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton®, Unicontrol®, Tri-Style®, CloserPlus® and SafeZone® are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. CloserPlus Spring™ is a trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 1999, 2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

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

43021-11/15R

#2

Overhead Door Holders



Norton[®]

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

OVERVIEW

The Norton® #2 Overhead Door Holder is for application on the inactive leaf of a pair of doors where the function and cost of a door closer is not warranted. It permits the inactive leaf to be held open when the full opening of the pair is required. It can also be installed on doors with a closer when it is desired to have the hold open function separate from the door closer.

These handed door holders are for application on the push (stop) side of the door, and require a 1-1/2" (38mm) minimum frame soffit width. The bracket with friction hold open mechanism is mounted to the frame soffit. The forearm shoe is mounted to the top rail of the door, requiring a 1-3/4" (44mm) minimum top rail. An auxiliary stop is recommended when this door holder is used.

This door holder is also available with a soffit plate (1618D) which extends the center line of the hold open mechanism 5" (127mm) from the surface of the door. This application provides arm geometry for the door holder installation that is similar to the door closer installation on the opposite door leaf. This door holder with soffit plate is also available with an angle bracket (2022) for installation on doors with a flush transom condition.

FEATURES

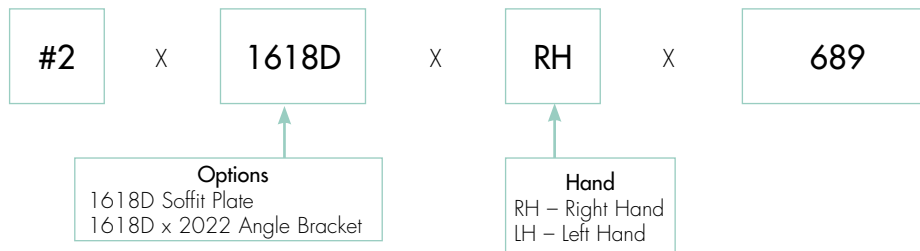
Reliable Hold Open Mechanism: Holder incorporates the same friction type hold open mechanism used in other Norton door closers with hold open arms.

Adjustable 90° -180° Hold Open: Degree of door hold open can be selected between 90° and 180° by template location and adjustment of the holder nut.

Rugged Construction: The forearm arm is heavy-gauge steel; the shoe, the main arm and soffit plate with mating friction surfaces are heavy cast iron.

Handed: Norton #2 Door Holder is handed.

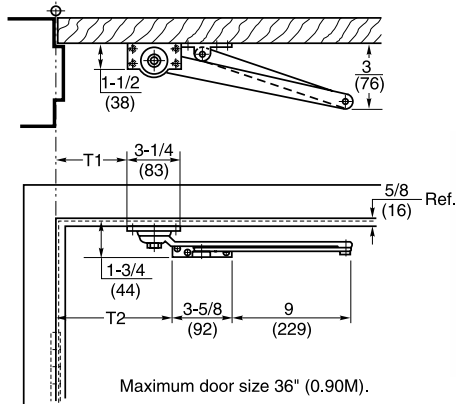
HOW TO ORDER



#2 OVERHEAD DOOR HOLDERS

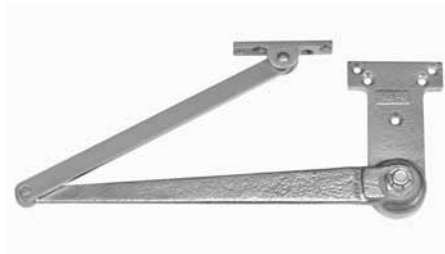
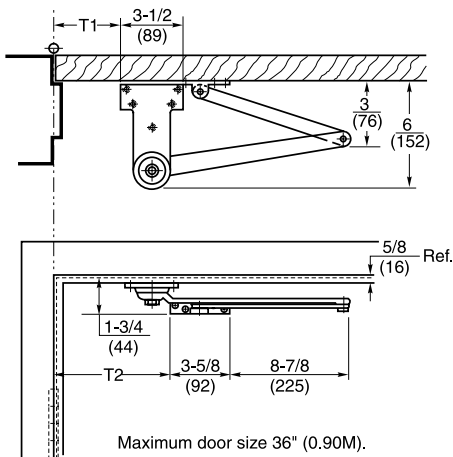
PUSH SIDE INSTALLATION

No. 2 Door Holder



Hold Open	Template Position	
	T1	T2
90°	7-1/4 (184)	10-1/8 (257)
180°	4-1/4 (108)	7-1/8 (181)

No. 2 Door Holder x 1618D Soffit Plate



Hold Open	Template Position	
	T1	T2
90°	7-3/8 (187)	10-1/8 (257)
180°	4-3/8 (111)	7-1/8 (181)

SPRAYED FINISHES

Description	Specify Norton® (BHMA) Designation	Complements the following finishes	Old Norton Designation
Aluminum	689	628, 625, 629, 630, 651, 652	AL
Statuary Bronze	690	640, 613	STAT
Dull Bronze	691	612, 637, 639	DB
Black	693	315	315
Medium Amber	694	312	312
Gold	696	605, 606, 632, 633	GB
Prime Coat	600*		SRI

Norton #2 Overhead Door Holders are available in the following sprayed finishes. Order sprayed finishes by the Norton symbol.

*600 is a special rust-inhibiting prime coat. Holders can be ordered prime coat only (specify holder x 600). An additional charge applies if finish coat is required over prime coat.

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton® is a registered trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 1999, 2012, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

7570 SERIES

Security Door Closer



Norton[®]
ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

INTRODUCTION

Norton High Security Closers are designed for use in prisons, government buildings, schools, financial institutions, or any installation where vandalism, abuse, escape, personal injury, or damage to doors, walls, and hardware are major concerns.

The Security Closer Line uses Norton 7500 series institutional door closers with a variety of regular rigid and parallel arms and track options. Hold open arms are also available. Fixed link arm assemblies, permanent joints, orbital riveted elbows, arm shoe, soffit joints and Torx® screws with tread lock prevent disassembly. Norton 7500 and 8000 series door closers are also offered with some of the same arm options as the 7570 but without the security cover. Torx screws are available standard for tamper resistance. These closers are utilized in schools and industrial environments where heavy abuse and vandalism may occur.

OVERVIEW

Features

- Adjustable spring sizes 1 through 6
- Security arms – joints feature permanent, orbital riveted elbow and arm shoe/soffit plate joints which prevent disassembly
- Adjustable backcheck cushioning and positioning
- Torx drive machine screws with security pin
- Heavy-duty arms: Regular Rigid, Parallel Rigid, CloserPlus® and CloserPlus Spring™
- 25-year limited warranty

Optional Features

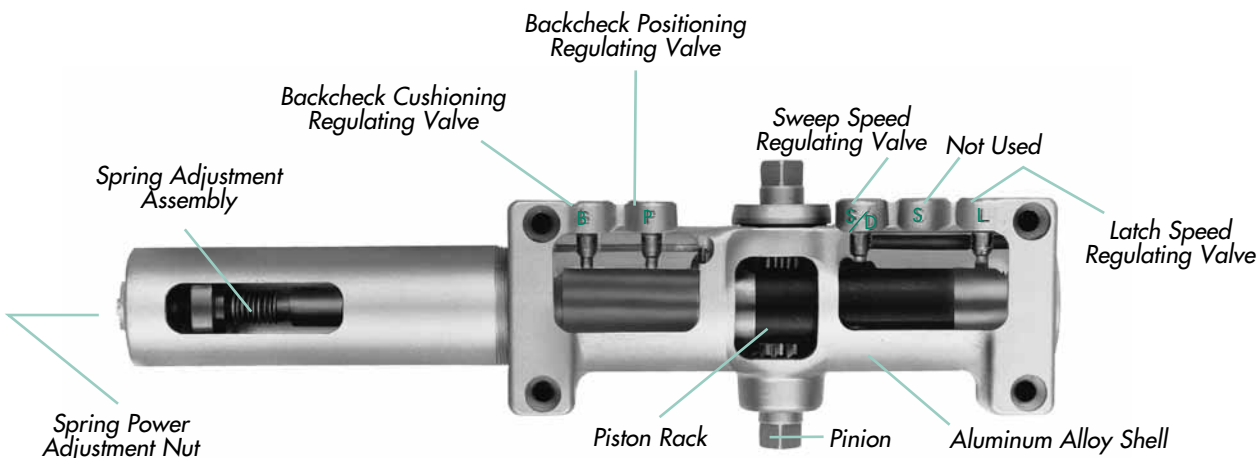
- Slide track – push or pull mounting
- Delayed action
- Enhanced backcheck

TABLE OF CONTENTS

Overview & Compliance Standards	3
How to Order	4
Fasteners/Finishes	5
Features	6-7
Suggested Specifications	8
Applications	9-10
Technical Details	11-17
Accessories	18-22
Parts List	23-29

INTRODUCTION

Exploded View of Closer Body (without delayed action)



COMPLIANCE STANDARDS

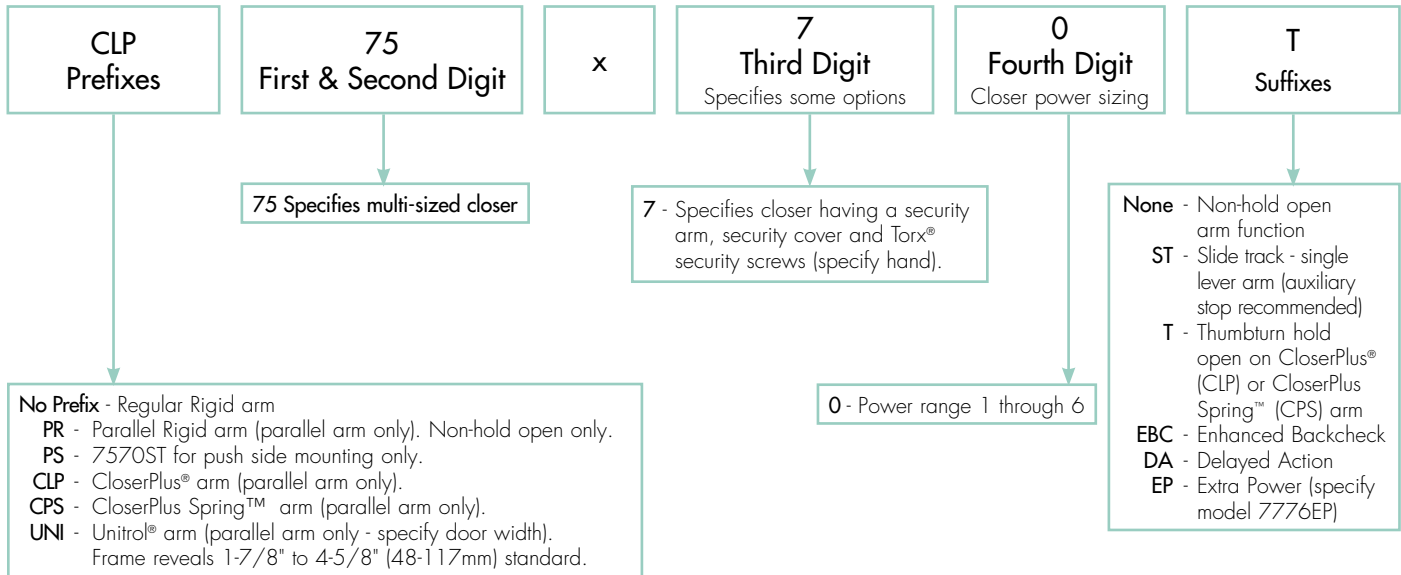
- ANSI/BHMA A156.4, Grade 1 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- Comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 
- This product is manufactured in an ISO 9001 facility
- Closers are listed by the New York City Materials and Equipment Acceptance Division

CAUTION: Door Closers for Low Opening Force Applications:

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

HOW TO ORDER

For optimum protection of door and frame assemblies, always use auxiliary wall, floor, or overhead door stop.



Note:

- 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 most 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 standard product, such as sleeve-nuts/sex-nuts or through-bolts and grommet nuts.
- The Torx® drive screws (with security pin), provided with the 7570 door closers are only available with machine screw threads.

FASTENERS

Type	Description	Arm					
		RA	PR	CLP	CPS	UNI	ST
Torx®	Lobular Torx drive screws	S	S	S	S	S	S
SN	Sleeve Nut	O	O	O	O	S	S
SDST	Self Drilling Self Tapping	O	O	O	O	S	O

S = standard; O = Optional

Torx drive screws, for tamper resistance are standard with 7570 closers. These screws are only offered with machine threads for fastening to metal doors and frames. #14-10 wood or sheet metal fasteners if required, must be supplied by others.

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 through bolting on wood doors. SN are supplied for 1-3/4" (44mm) thick doors unless specified for 2-1/4" (57mm) thick doors.

FINISHES

Norton offers waterborne acrylic, polyester powder coat and plated finishes. Custom finishes are available on special order. A sample and approval is required.

Waterborne acrylic and polyester powder coat will withstand 100 hours of salt spray (ANSI requires 25 hours).

ANSI/BHMA	US	Description
600*	SRI	Prime Coat
605	US3	Bright Brass
606	US4	Satin Brass
611	US9	Bright Bronze
612	US10	Satin Bronze
613E	US10BE	Dark Oxidized Satin Bronze - Equivalent
625	US26	Bright Chrome
626	US26D	Satin Chrome
689	AL	Aluminum
690	STAT	Statuary Bronze
691	DB	Dull Bronze
693	315	Black
694	312	Medium Amber
696	GB	Gold

* 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.

- Norton closer bodies are available in waterborne acrylic finishes. Arms and metal covers are available in powder coat or plated finishes.
- When a plated finish is ordered, arm and cover will be plated unless "cover only" is specified.

FEATURES

Aluminum Alloy Housing

Closer bodies are constructed of a special aluminum alloy, carefully selected to accommodate interactive 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 interfere.

Handed

All series 7570 closer covers are handed (closer cover must match hand of door).

Sweep Speed Control Valve

Allows adjustment of door speed from the door's full open position down to approximately 5° from the closed position.

Latch Speed Control Valve

Allows adjustment of door speed from approximately 5° down to the door's fully closed position.

Non-Critical Control Valves

All control valves for sweep speed, latch speed and backcheck cushioning are non-critical and are adjusted by a standard 1/8" (3mm) hex wrench.

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 limits.

Adjustable Backcheck Position Valve

Allows the door opening position, where backcheck cushioning begins, to be adjusted to a greater door angle, up to a maximum of 20° farther (approximately 95°).

Security Cover

Supplied standard with all series 7570 door closers. This deep drawn steel cover is handed for all applications. The cover is fastened to the closer body at two points on top and to the door closer body stand-offs at two points on the bottom.

Warranty

These closers carry a limited 25-year warranty against defect, and life of the building on the aluminum housing.

Closer Fluid

NorGlide® closer fluid is a specially formulated multi-viscosity hydraulic fluid that contains lubricity and anti-oxidation agents that provide optimum performance and efficiency. This fluid complements the interaction of the door closer's aluminum housing with its steel and brass components, while maintaining stable viscosity to allow the door closer to perform in temperatures ranging from extremely high to as low as -40° F.

Door Closer Power Options

Series 7570 Multi-Sized Door Closer

Adjustable through the entire power range of door closer sizes 1 through 6, as outlined in ANSI/BHMA standard A156.4. Option PT-4H.

The series 7570 also conforms to the minimum opening force requirements of the Americans with Disabilities Act (A.D.A.) and ANSI/BHMA standard A117.1 for interior doors.

OPTIONAL FEATURES - DA

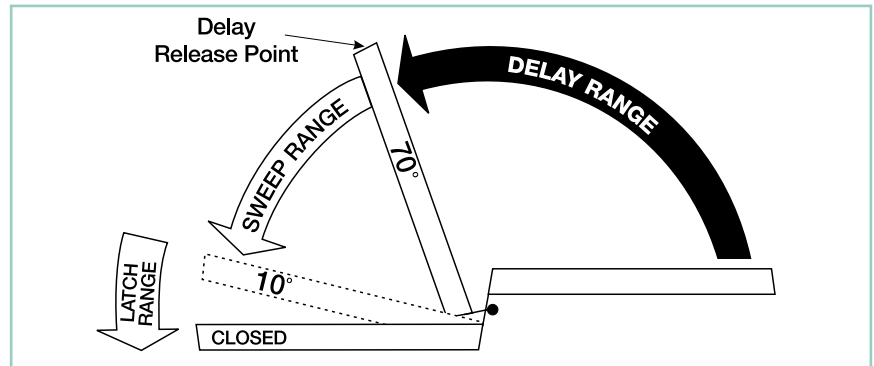
Adjustable Delayed Action Closing

An optional hydraulic feature that adds a third speed range to the closing cycle. This feature becomes effective when the door is opened and released at any point beyond 70°. The amount of time delay depends upon the combination of the angle of door release and valve adjustment. The valve can be adjusted with a 1/8" (3mm) hex key from no delay time up to maximum delay times of:

Door Opened and Released at	Approximate Time of Delay Cycle
180°	4-5 minutes
120°	2-3 minutes
90°	25-30 seconds

Pressure Relief Safety Valve

The delayed action hydraulic system contains a pressure relief valve. Any time the door is forced toward the closed direction while it is in the closing cycle, the valve will open and permit the door to close. This prevents damage to door, frame and closer.



Suggested Applications

Delayed Action closing allows slow-moving traffic to clear the opening before the door closer's normal closing cycle begins. This feature can be helpful in health care facilities such as hospitals and nursing homes. It provides sufficient time for persons on crutches or in wheelchairs to pass through a door without concern of it closing. At the same time, it can accommodate the facility's staff with movement of food service carts, beds, and other wheeled traffic.

Use of delayed action closers on many doors throughout industrial and commercial buildings can also assist the flow of traffic. Locations where additional time to clear the opening is advantageous are doors between office and factory/warehouse facilities, doors to workshops or laboratories, to kitchen and food processing areas.

OPTIONAL FEATURES - ARMS

Non-Hold Open

Self-closes door every time door is opened. Auxiliary stop (by others) required except when using the CloserPlus[®], CloserPlus Spring[™] or Unitrol[®] arms.

Hold Open

Achieved by means of ball and detent/roller. 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.

Door Opening Degrees

Arm Function	Regular Rigid Arm	Parallel Rigid Arm	CloserPlus [®] Parallel Arm	CloserPlus Spring [™] Parallel Arm	Unitrol [®] Parallel Arm	Slide Track
Non-Hold Open	✓	✓	85° to 110°	85° to 110°	85° to 110°	85° to 110°/180°
Hold Open	—	—	85° to 110°	85° to 110°	—	—

✓=180° trim and template permitting

SUGGESTED SPECIFICATIONS

7570 Series

Closers for interior and exterior doors shall be full rack-and-pinion type with cast aluminum alloy body. Closers shall be surface mounted and shall project no more than 2-3/16" from the surface of the door. Closers shall be reversible but supplied with a handed metal cover. Closer fluid shall contain lubricity and anti-oxidation agents. Closer fluid shall maintain stable viscosity to allow 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 from 1 through 6. Closers shall have two non-critical valves, hex key adjusted, to independently regulate sweep and latch speed. Closers shall have backcheck cushioning controlled by a hex key adjustable valve. Closers shall have backcheck position controlled by a hex key adjustable valve.

[Closers shall have adjustable delayed-action closing controlled by a hex key adjustable valve.]

*Closers shall be enclosed in a [plated] [sprayed] metal cover. Closers to be Norton® [7570]. Covers shall be fastened to the body at four points, two at the top and two at the bottom to prevent prying.

**For special arms insert the appropriate specification from column three on this page.

****Unitrol® Arm**

Door closers shall have built-in door stop effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop shall be cushioned by a shock-absorbing heavy-duty spring action effective at the soffit plate pivot. Closers shall be provided for parallel arm installation using rigid steel main arm and secondary arm lengths proportional to the door width.

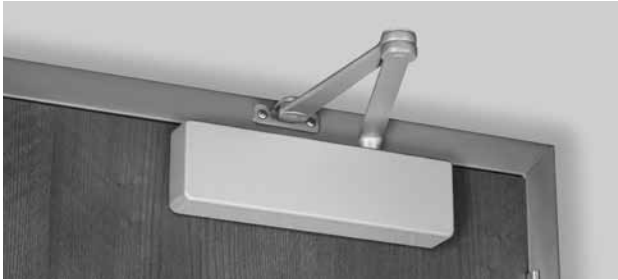
****CloserPlus® Arm**

Door closers shall have built-in door stop [and holder] effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop mechanism shall be reversible and attached to soffit plate. [Hold open mechanism shall have engage/disengage selection actuated by thumbturn]. Closers shall be provided for parallel arm installation using rigid steel main and secondary arms.

****CloserPlus Spring™ Arm**

Door closers shall have built in door stop [and holder] effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop mechanism shall have a buffer spring that engages prior to the dead stop feature, reducing shock loads to the door and frame assembly. Door stop mechanism shall be reversible and attached to soffit plate. [Hold open mechanism shall have engage/disengage selection actuated by thumbturn]. Closers shall be provided for parallel installation using rigid steel main and secondary arms.

APPLICATIONS



Regular Rigid Arm

This double lever arm features a non-adjustable secondary arm. Orbitally riveted joints prevent tampering or disassembly. The rigid heavy-duty arm is standard with the security closers featuring a regular arm application.

Auxiliary door stop required. Available non-hold open only.



Parallel Rigid Arm

An enhanced variation of the standard parallel arm assembly that is intended for use in heavy traffic areas where auxiliary door stops are installed.

Auxiliary door stop required. Available non-hold open only.



CloserPlus[®] Arm

Similar to the Parallel Rigid arm, this arm incorporates a stop at the arm's soffit plate to dead stop the door at a predetermined degree of door swing between 85° and 110°, in 5° increments. Prior to dead stop the door closer's backcheck feature slows the door speed to reduce the impact of the stop action.

CloserPlus arm is intended for use where an auxiliary door stop cannot be utilized and no more than moderate abuse is anticipated. Where more extreme conditions are expected, use of a Unitrol[®] arm is recommended.

Thumbturn hold open available. (Hold open strength is adjustable.)

APPLICATIONS



CloserPlus Spring™ Arm

This heavy-duty stop arm includes all of the features of the *CloserPlus* Arm, plus an added buffer spring that is compressed prior to the arm hitting the dead stop point. This greatly reduces the shock of the stopping action that occurs with the *CloserPlus* arm.

CloserPlus Spring Arm is intended for use where an auxiliary door stop cannot be utilized and no more than moderate abuse is anticipated. Where more extreme conditions are expected, use of a *Unitrol* arm is recommended.

Thumbturn hold open available. (Hold open strength is adjustable.)



Unitrol® Arm (Parallel Arm)

Unitrol arms combine the features of a double lever arm overhead door stop/holder with the backcheck feature of the door closer to reduce door stopping shock loads to a minimum. This arm uses a compression spring buffer at the soffit plate/arm shoe that will absorb 30 lbs. of force, 5° prior to the door's dead stop. Coupled with the door closer's backcheck feature, the *Unitrol* Arm offers the most controlled stop available with a surface door closer.

There are three different length arm assemblies. Each length is designed for a specific range of door widths to provide precise door control. This further lessens the dead stop impact on the door's hinges/pivots.



Pull Side



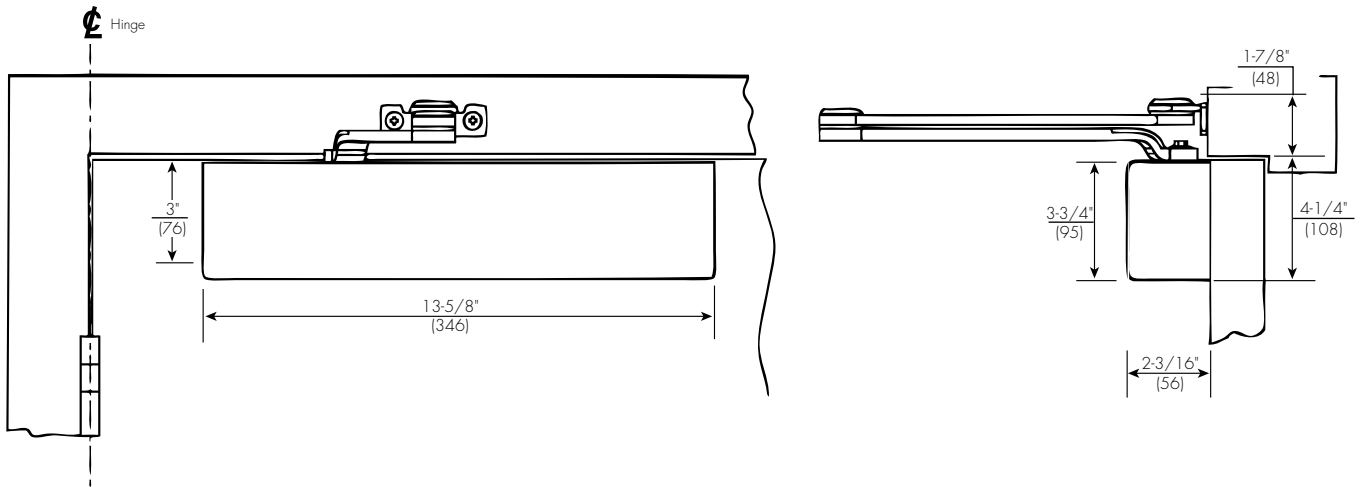
Push Side

Slide Track Mounting

Whether pull or push side mounted, this application provides the designer with the smoothest lines available in a surface-mounted door closer. The single lever arm allows components to be located in a stack configuration to minimize projection and eliminate obtrusive arm angles.

Auxiliary door stop is recommended for this application.

REGULAR RIGID ARM



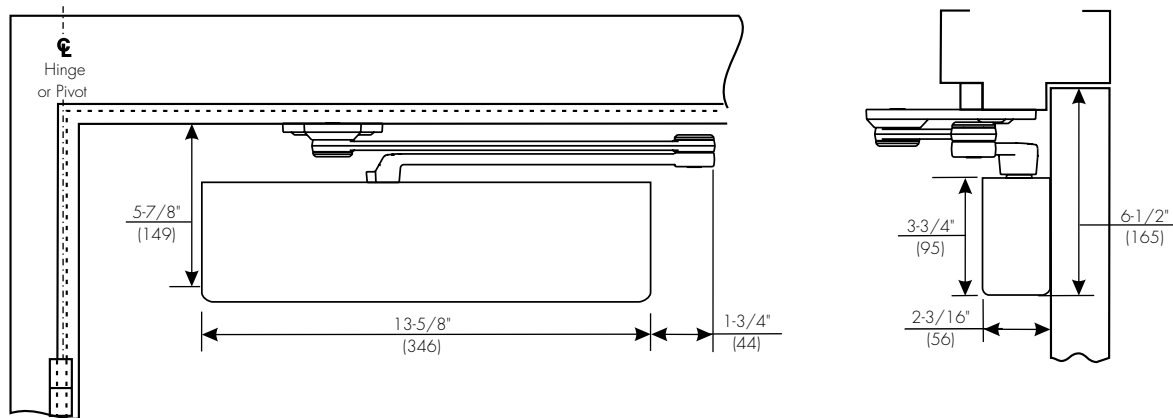
Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171 mm) horizontally.

Maximum Door Width Inches (cm)		Model Number
Interior	Exterior	Non-Hold Open
36" (91)	30" (76)	7570
42" (107)	36" (91)	
46" (117)	42" (107)	
54" (137)	48" (122)	
—	52" (132)	

Notes:

- 7570 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.
- Sizing charts are based on 1-3/4" (44mm) x 7'0" (2.13m) standard weight doors swinging to 110 degrees. 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.

PARALLEL RIGID ARM

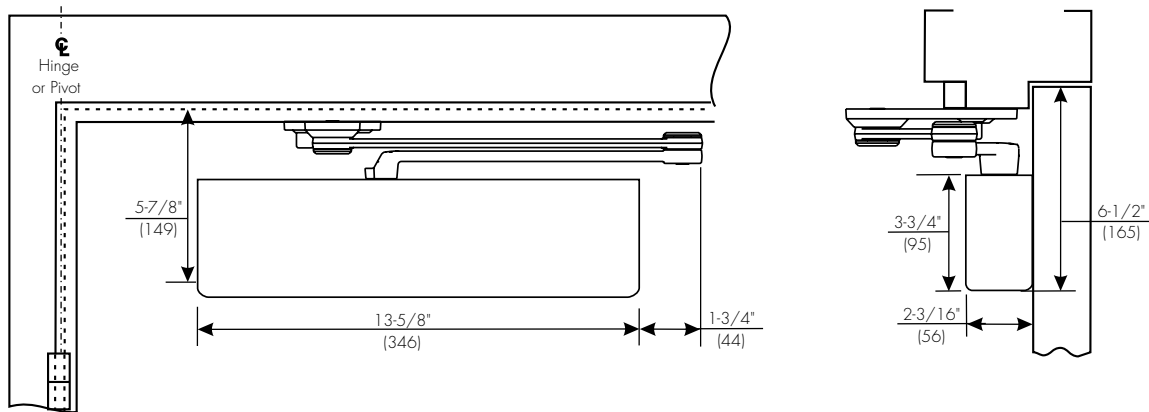


Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171 mm) horizontally.

Maximum Door Width Inches (cm)		Model Number
Interior	Exterior	Non-Hold Open
30" (76)	—	PR7570
36" (91)	32" (81)	
42" (107)	36" (91)	
48" (122)	42" (107)	
—	48" (122)	

- Notes:**
- 7570 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.
 - Sizing charts are based on 1-3/4" (44mm) x 7'0" (2.13m) standard weight doors swinging to 110 degrees. 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.

CLOSERPLUS[®] ARM



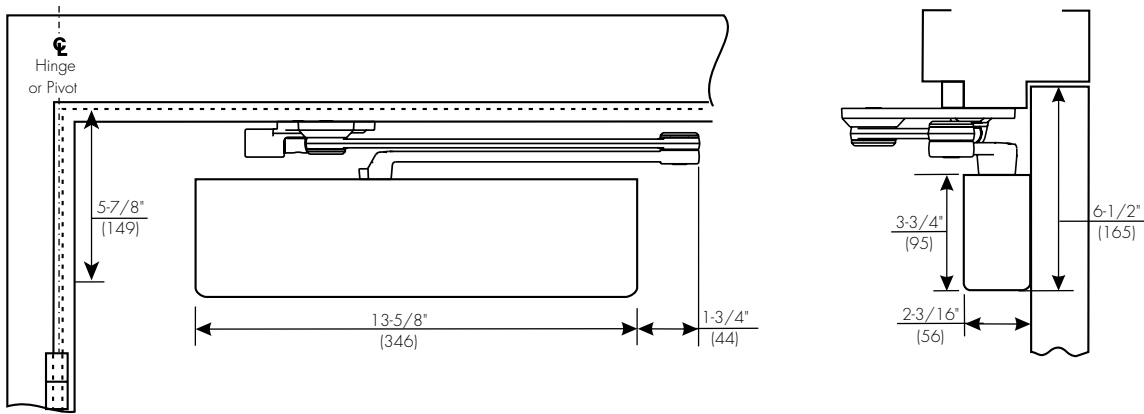
Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

Maximum Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
30" (76)	—	CLP7570	CLP7570T
36" (91)	32" (81)		
42" (107)	36" (91)		
48" (122)	42" (107)		
—	48" (122)		

Notes:

- 7570 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.
- Sizing charts are based on 1-3/4" (44mm) x 7'0" (2.13m) standard weight doors swinging to 110 degrees. 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.

CLOSERPLUS SPRING™ ARM



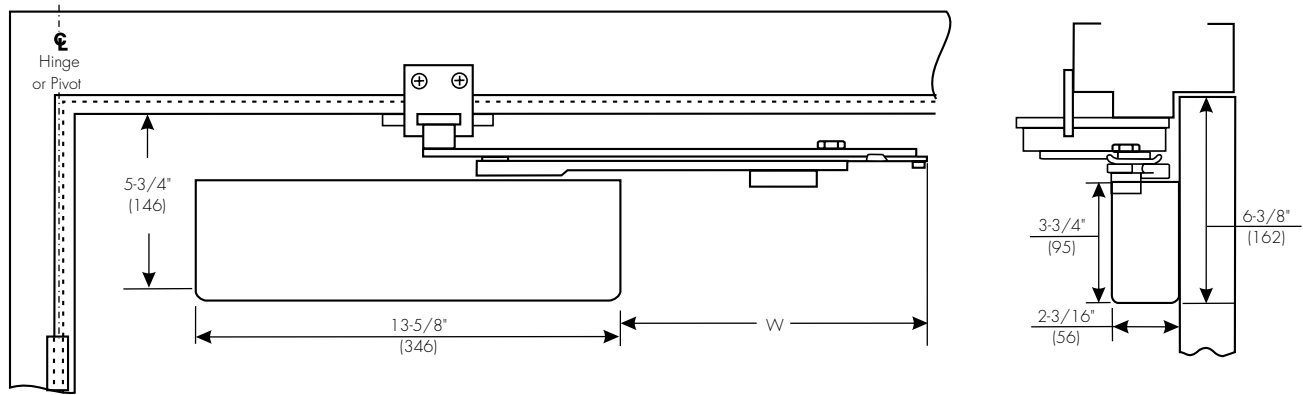
Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

Maximum Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Thumbturn Hold Open
30" (76)	—	CPS7570	CPS7570T
36" (91)	32" (81)		
42" (107)	36" (91)		
48" (122)	42" (107)		
—	48" (122)		

Notes:

- 7570 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.
- Sizing charts are based on 1-3/4" (44mm) x 7'0" (2.13m) standard weight doors swinging to 110 degrees. 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.

UNITROL[®] PARALLEL ARM



Door width must be specified when ordering.

Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

Use 6190* bracket for reveals 1-7/8" - 4-5/8" (48 to 117mm). Reveals in excess of 4-5/8" (117mm) requires use of 6191** reinforcing kit. Reveals to 1/8" (3mm) require use of a 2022** angle bracket.

* 6190 bracket is supplied standard with *Unitrol* arms.

** 6191 and 2022 must be specified in lieu of 6190 when required.

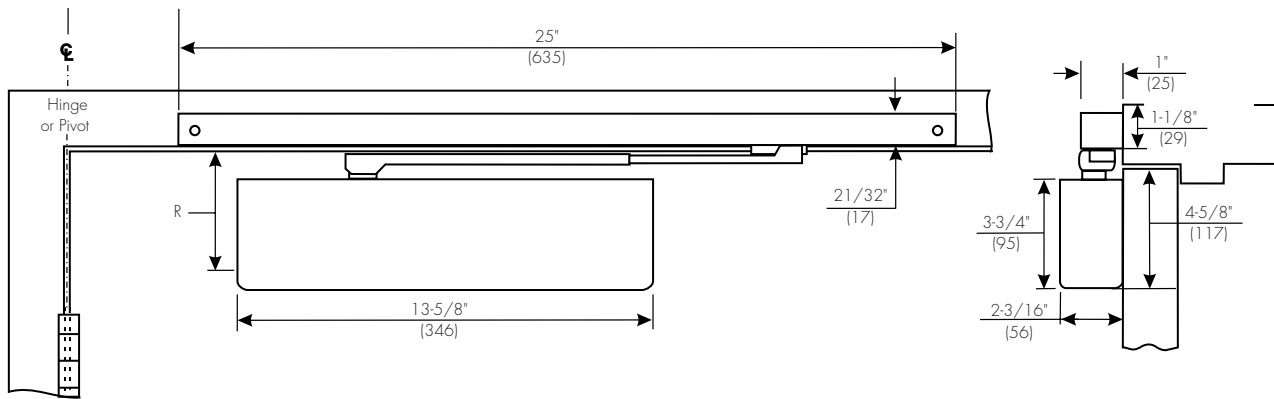
Door Width Inches (cm)	W Arm Extension Beyond Closer
28-32" (71-81)	8-5/8" (219)
33-41" (84-104)	10-1/8" (257)
42-48" (107-122)	11-1/2" (292)

Maximum Door Width Inches (cm)		Model Number
Interior	Exterior	Non-Hold Open
30" (76)	—	UNI7570
36" (91)	30" (76)	
42" (107)	36" (91)	
48" (122)	42" (107)	
—	48" (122)	

Notes:

- 7570 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.
- Sizing charts are based on 1-3/4" (44mm) x 7'0" (2.13m) standard weight doors swinging to 110 degrees. 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.

PULL SIDE SLIDE TRACK



Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

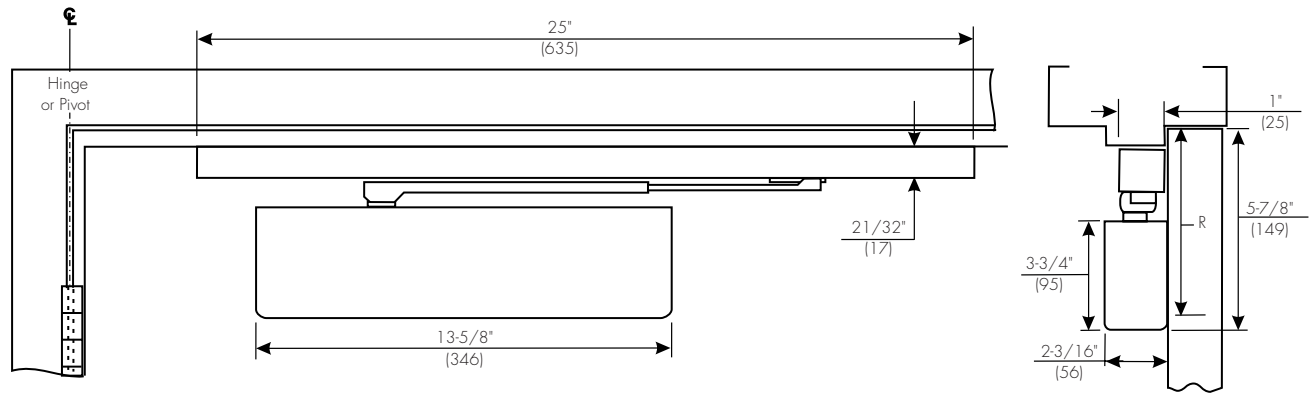
R Minimum Top Rail of Door with Frame Stop	
Without Drop Plate	With 7786 Drop Plate
3-1/2" (89mm)	2" (51mm)

Maximum Door Width Inches (cm)	Model Number
Interior	Non-Hold Open
32" (81)	7570ST
38" (97)	
48" (122)	

Notes:

- 7570 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.
- Sizing charts are based on 1-3/4" (44mm) x 7'0" (2.13m) standard weight doors swinging to 110 degrees. Other conditions (such as door height or weight, or wind/draft conditions) may require a larger size closer.
- Door will swing up to 110° with buffer. Without buffer, door will swing to 180°. Auxiliary stop required for all applications.
- Contact factory if door weight exceeds 250 lbs.

PUSH SIDE SLIDE TRACK



Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

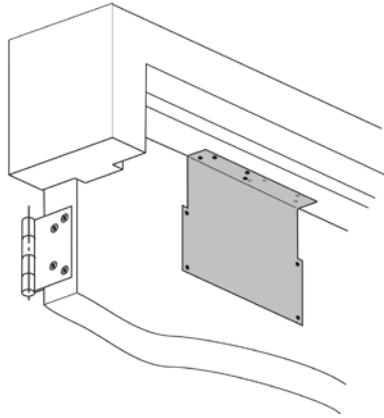
R Minimum Top Rail of Door with Frame Stop 5/8" (16mm)	
Without Drop Plate	With 7788 Drop Plate
5-1/4" (133mm)	3-5/8" (92mm)

Maximum Door Width Inches (cm)	Model Number
Interior	Non-Hold Open
32" (81)	PS7570ST
38" (97)	
48" (122)	

Notes:

- 7570 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.
- Sizing charts are based on 1-3/4" (44mm) x 7'0" (2.13m) standard weight doors swinging to 110 degrees. Other conditions (such as door height or weight, or wind/draft conditions) may require a larger size closer.
- Maximum degree of door swing is 125°. Auxiliary stop required for all applications.
- Contact factory if door weight exceeds 250 lbs.

METAL TEMPLATE

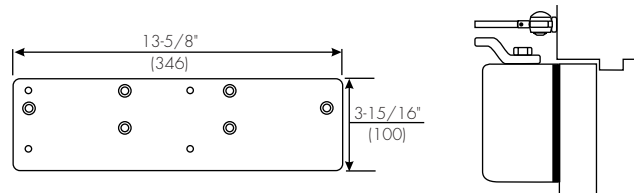


Metal template helps the installer locate the correct mounting holes for several parallel arm applications.

Model Number	Arm Applications
P77MT	Parallel Rigid, CloserPlus®, CloserPlus Spring™

REGULAR RIGID ARM

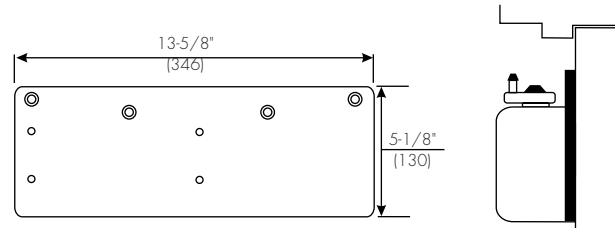
Closer Mounting Plate



Narrow Top Rail - #7786 Drop Plate: For use where the narrow top rail of the door prevents the closer from being mounted directly to the door surface. This drop plate must be used for a closer mounted on a top rail between 1-7/8" and 3-3/8" (48 and 86mm) in height.

PARALLEL RIGID ARM

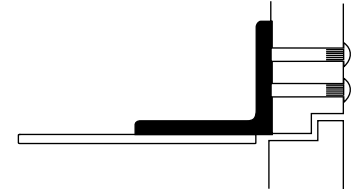
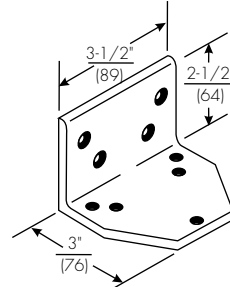
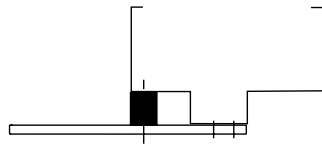
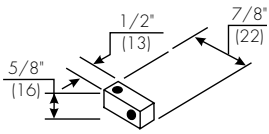
Closer Mounting Plate



Narrow Top Rail - #7788 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 2-1/2" (64mm) in height.

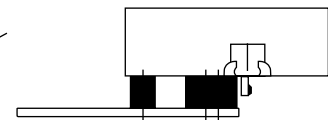
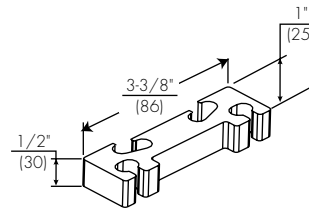
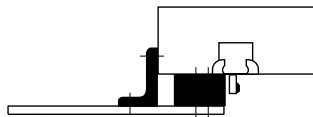
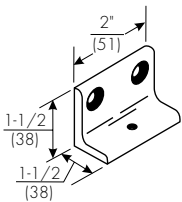
PARALLEL RIGID ARM

Brackets for Non-Hold Open Arms



Standard - #2019S Spacer Block: For use where a narrow frame soffit does not provide adequate support for the soffit plate. Supplied as standard with all parallel rigid arm closers.

Flush Rabbeted Transom - #2019L Angle Bracket: For use where flush transom conditions prevent mounting of the standard soffit plate. This bracket is used in combination with the standard soffit plate.

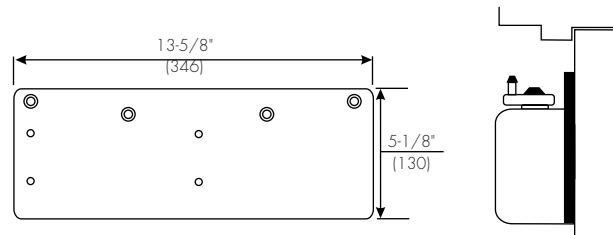


Narrow Frame - #6890 Support Bracket: For use where the frame is narrow, and the soffit plate cannot be mounted directly to the frame soffit or rabbet. Used in combination with the #6891 Spacer Block on blade stop frames to provide extra support and needed clearance of the blade stop.

Clearance/Support Blade Stop - #6891 Spacer Block: For use where the door frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard spacer block to provide clearance of the blade stop.

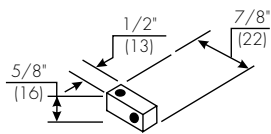
CLOSERPLUS[®] AND CLOSERPLUS SPRING[™] ARMS

Closer Mounting Plate

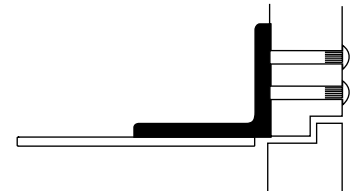
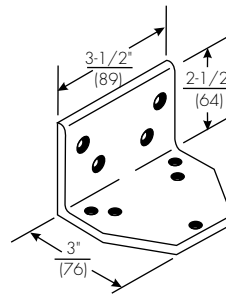


Narrow Top Rail - #7788 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface. This drop plate can be used to mount a closer on a top rail as narrow as 2-1/2" (64mm) in height.

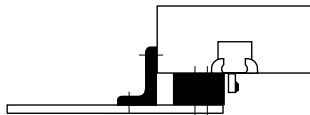
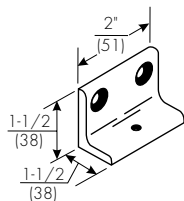
Brackets for Non-Hold Open Arms & Hold Open Arms



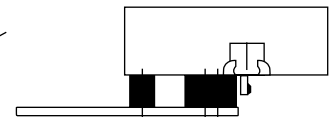
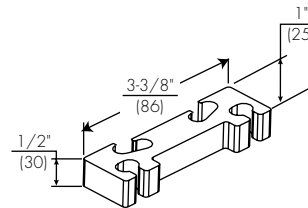
Standard - #2019S Spacer Block: For use where a narrow frame soffit does not provide adequate support for the soffit plate. Supplied standard with all parallel rigid arm closers.



Flush Rabbeted Transom - #2019L Angle Bracket: For use where flush transom conditions prevent mounting of the standard soffit plate. This bracket is used in combination with the standard soffit plate.



Narrow Frame - #6890 Support Bracket: For use where the frame is narrow, and the soffit plate cannot be mounted directly to the frame soffit or rabbet. Used in combination with the #6891 Spacer Block on blade stop frames to provide extra support and needed clearance of the blade stop.

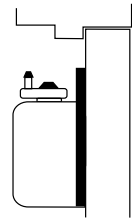
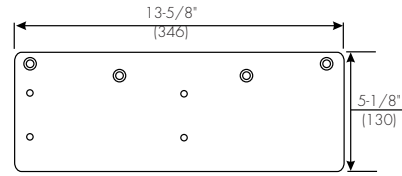


Clearance/Support Blade Stop - #6891 Spacer Block: For use where the door frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard spacer block to provide clearance of the blade stop.

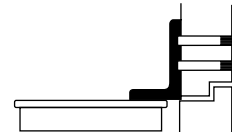
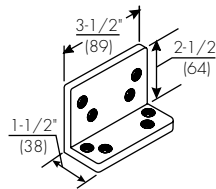
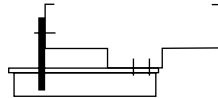
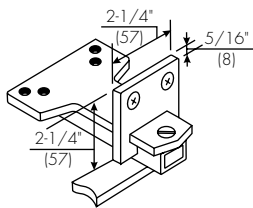
UNITROL® ARM

Closer Mounting Plate

Narrow Top Rail - #7788 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 2-3/8" (60mm) in height.

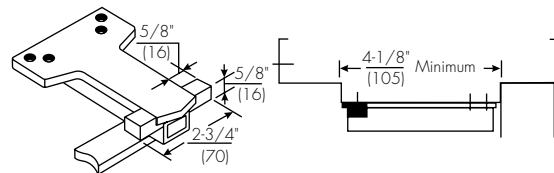
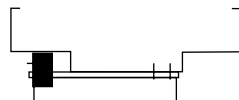
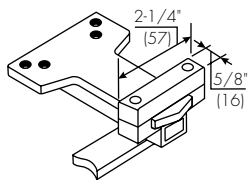


Soffit Plate Reinforcing Brackets



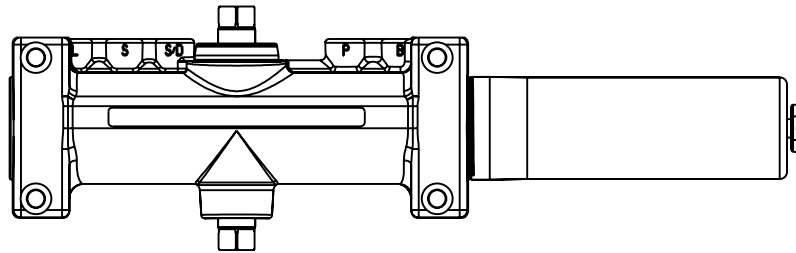
Additional Support - #6190 Reinforcing Bracket: Standard for use with all Parallel Arm *Unitrol* Door Controls. Provides additional support to the soffit plate on installations with door frame reveals from 1-7/8" to 4-5/8" (48 to 117mm).

Flush Rabbeted Transom - #2022 Angle Bracket: Optional for use with all Parallel Arm *Unitrol* Door Controls. For use where rabbeted or flush transom conditions prevent installation of the soffit plate assembly. This bracket fastens to the overhead transom to provide a mounting surface for the soffit plate assembly.



Wide Frame - #6191 Reinforcing Kit: Optional for use with all Parallel Arm *Unitrol* Door Controls. Used to support the soffit plate on installations with wide frames. Clamps may be used with or without the spacer block, depending on frame conditions.

DOOR CLOSER BODY ASSEMBLIES



Torx [®] Screw Pack [^]	
Arm Type	Part Number
Regular Rigid Heavy-Duty	RTX47
Parallel Rigid, CloserPlus [®] CloserPlus Spring [™]	PRTX47
Unitrol [®] Arm	UNITX47

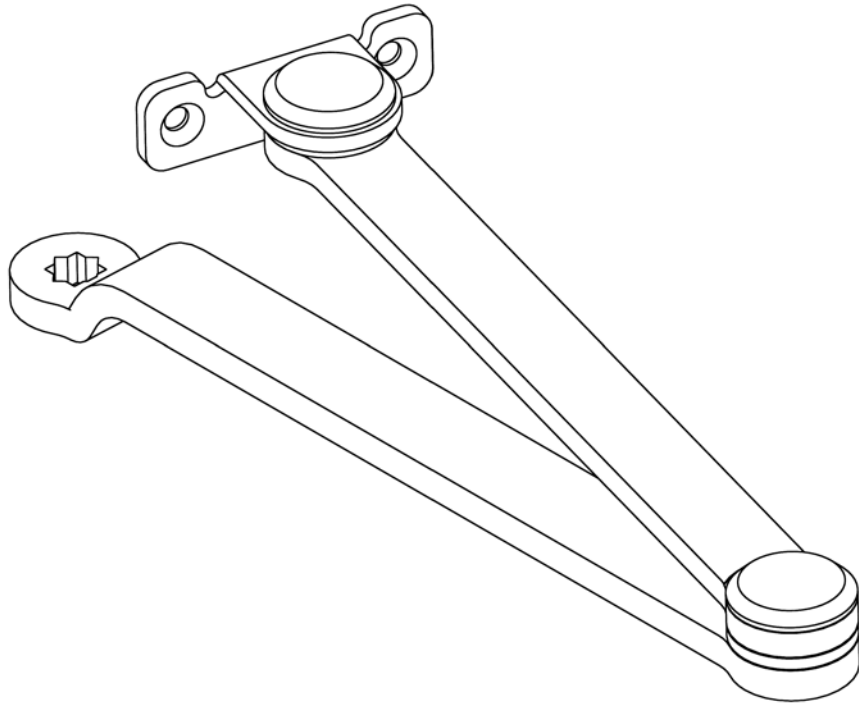
Closer Bodies	
Part Number	Description
7500LAP	Multi-Size Closer Body
7500DALAP	With Delayed Action

LAP = Less All Parts

[^]Torx screws with machine screw threads are supplied with security closers.

Covers				
Part Number	Mounting	Handing	Dimensions	Material
7770MRR	Regular Arm	Right Hand	Length: 13-5/8" (346mm) Width: 3-3/4" (95mm) Projection: 2-3/16" (56mm)	Metal
7770MRL		Left Hand		
7770MPR	Parallel Arm	Right Hand		
7770MPL		Left Hand		

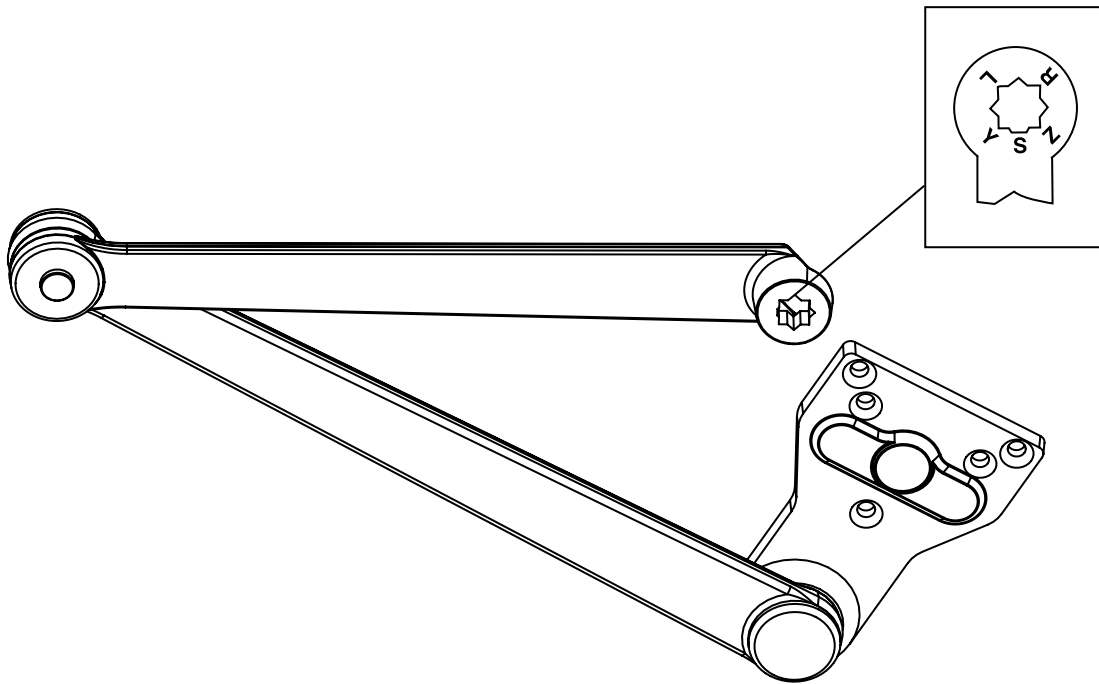
REGULAR RIGID ARM



Note: Mounting hardware included with all parts orders.

Closer Series	Arm Function	Complete Arm Assembly
R7570	Non-Hold Open	7771-1

PARALLEL RIGID ARM

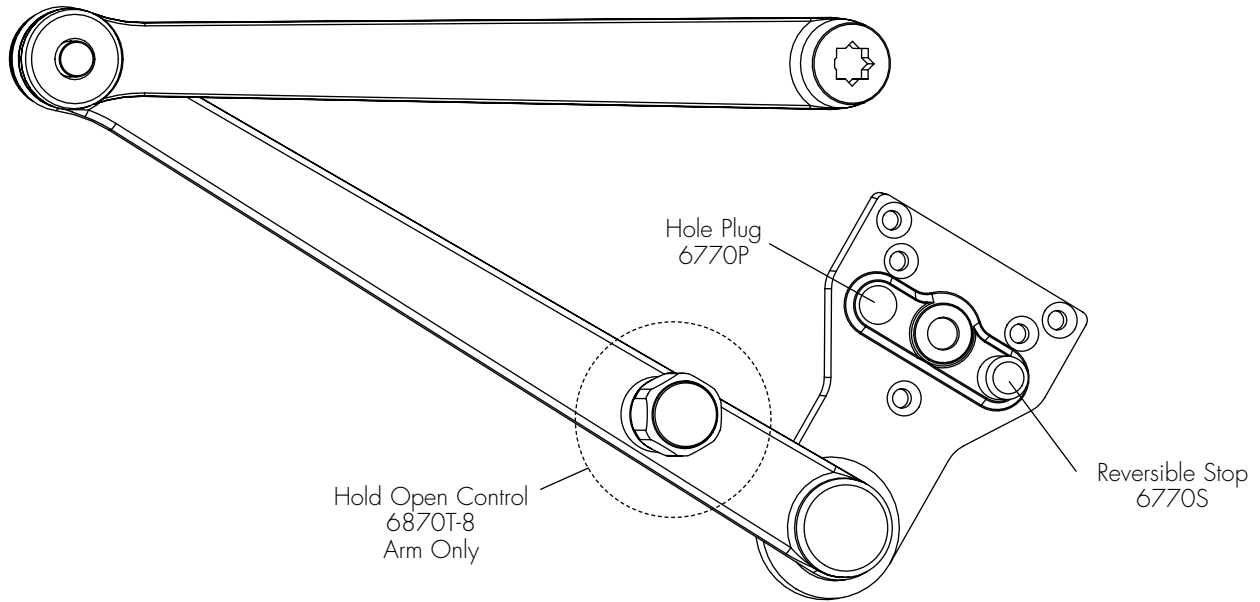


Note: Mounting hardware included with all parts orders.

Closer Series	Arm Function	Complete Arm Assembly
PR7570	Non-Hold Open	7771-5

CLOSERPLUS® ARM

Hold Open Arm Shown (CLP-T)

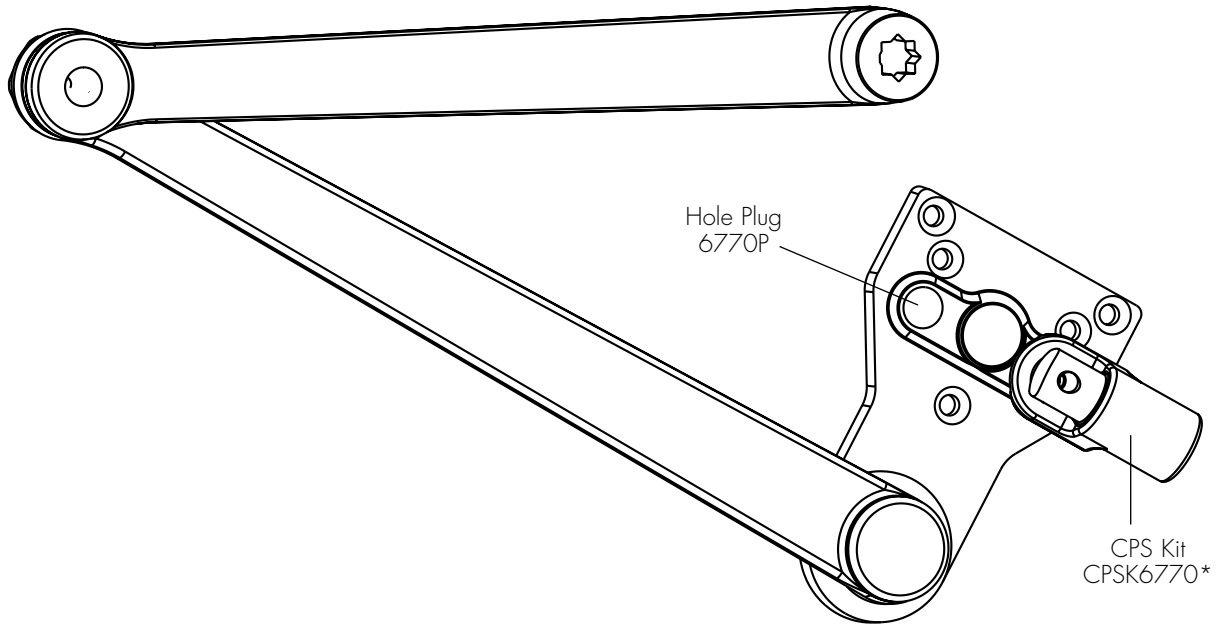


Note: Mounting hardware included with all parts orders.

Closer Series	Arm Function	Complete Arm Assembly
CLP7570	Non-Hold Open	CLP7771-5
CLP7570T	Thumbturn Hold Open	CLP7771-8T

CLOSERPLUS SPRING™ ARM

Non-Hold Open Arm Shown

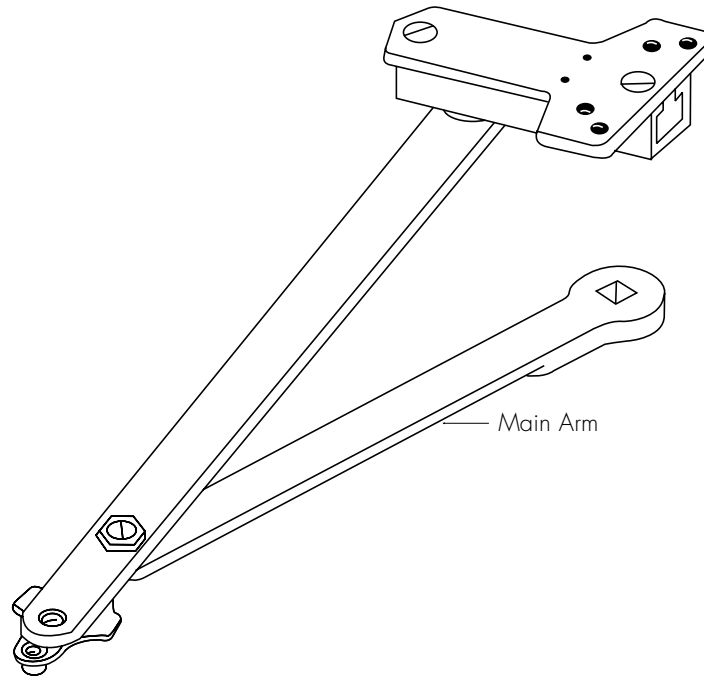


Note: Mounting hardware included with all parts orders.

Closer Series	Arm Function	Complete Arm Assembly
CPS7570	Non-Hold Open	CPS7771-5
CPS7570T	Thumbturn Hold Open	CPS7771-8T

* CPSK6770 Kit can be used to upgrade CLP7771-5 or CLP7771-8T arms.

UNITROL® ARM



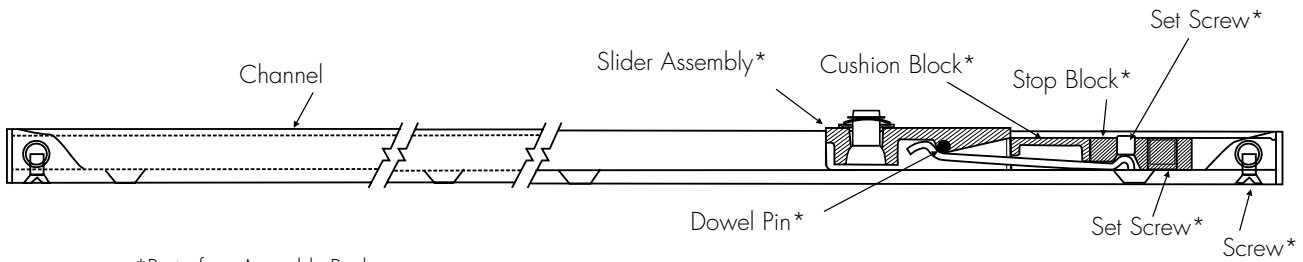
Note: Mounting hardware included with all parts orders.

Door Width (cm)	Main Arm Length* (mm)	Complete Arm Assembly
		Non-Hold Open
28" - 32" (71 - 81)	9-1/2" (241)	6100-11
33" - 41" (84 - 104)	11" (279)	6100-13
42" - 48" (107 - 122)	12-1/2" (318)	6100-14

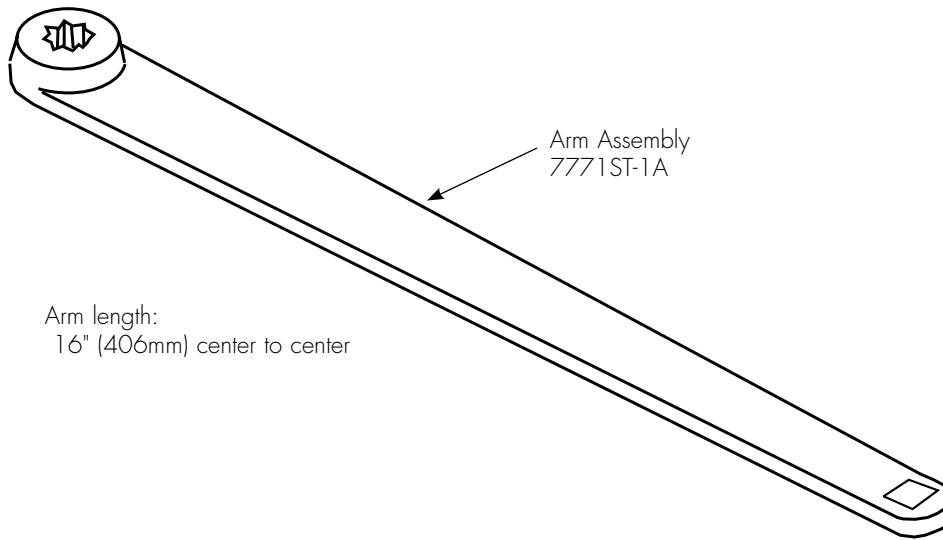
* Center to center length.

TRACK ASSEMBLIES

Non-Hold Open	
Model	Slide Track Assembly
Pull-side mounted	7771ST-1T
Push-side mounted	7771ST-5T



*Part of an Assembly Pack
Non-Hold Open = 7740SLD



Arm length:
16" (406mm) center to center

Note: Mounting hardware included with all parts orders.

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton®, Unitor® and CloserPlus® are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. CloserPlus Spring™ is a trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2002, 2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

1600 SERIES

Aluminum Storefront Door Closers



Norton[®]
ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

INTRODUCTION

The 1600 Series Door Closers are designed to fit almost any application and are the choice of engineers worldwide. Ideal for use with aluminum storefront doors and frames, these closers have a history of proven quality and tradition.

Features

- Exceeds 12 million cycles (witnessed and verified by UL)
- Non-handed
- Rack-and-pinion design
- Cast aluminum body
- 2-7/8" (73mm) projection
- 1-3/8" (35mm) diameter piston
- 5/8" (16mm) diameter pinion journals
- Tri-Style® packaging (regular arm, top jamb and parallel arm mounting)
- All standard arm applications allow doors to swing 180°, conditions permitting
- Staked valves
- 15-year limited warranty
- Corrosion-resistant model (non-hold open only). Specify 1601SS or 1601BFSS. (Not tri-packed)
- Molded plastic cover. Specify suffix P
- Heavy-duty arms: Parallel Rigid, CloserPlus®, CloserPlus Spring™, and Unitrol®

Features	1600BC	1601	1601BF
Sized springs 2, 3, 4, 5 or 6 with no power adjustment	X		
Adjustable spring sizes 3 through 6		X	
Adjustable spring sizes 1 through 4			X

Functions

- Standard, separate and independent, latch, sweep and backcheck intensity valves
- Delayed action (in lieu of backcheck). Specify 1601DA or 1601BFDA

TABLE OF CONTENTS

Overview 2-3

How to Order 4

Fasteners/Finishes..... 5

Features 6

Optional Features 6-7

Suggested Specifications 8

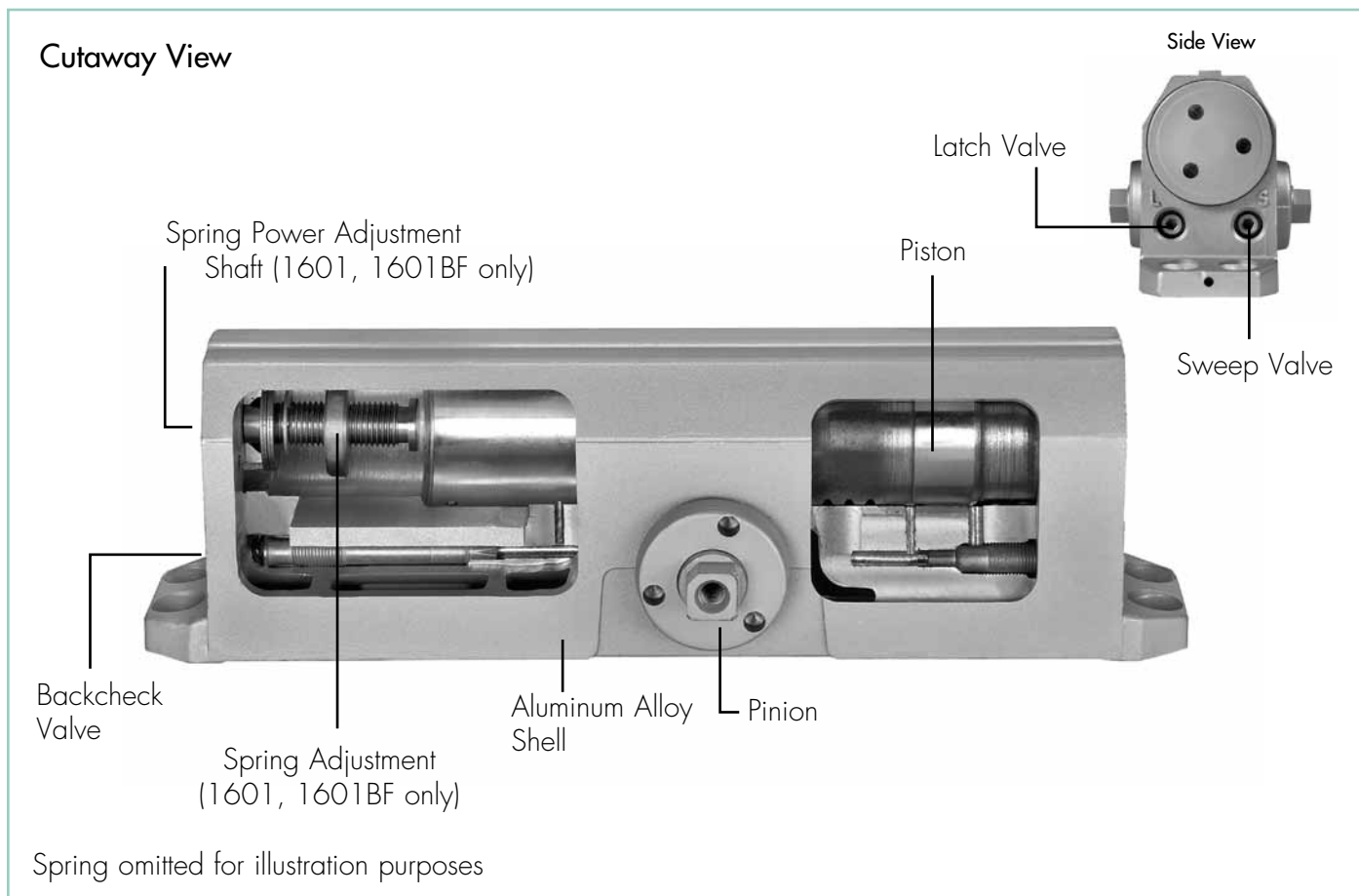
Applications..... 9-11

Technical Details 12-19




Accessories..... 20-26

Parts List..... 27-36

OVERVIEW



COMPLIANCE STANDARDS

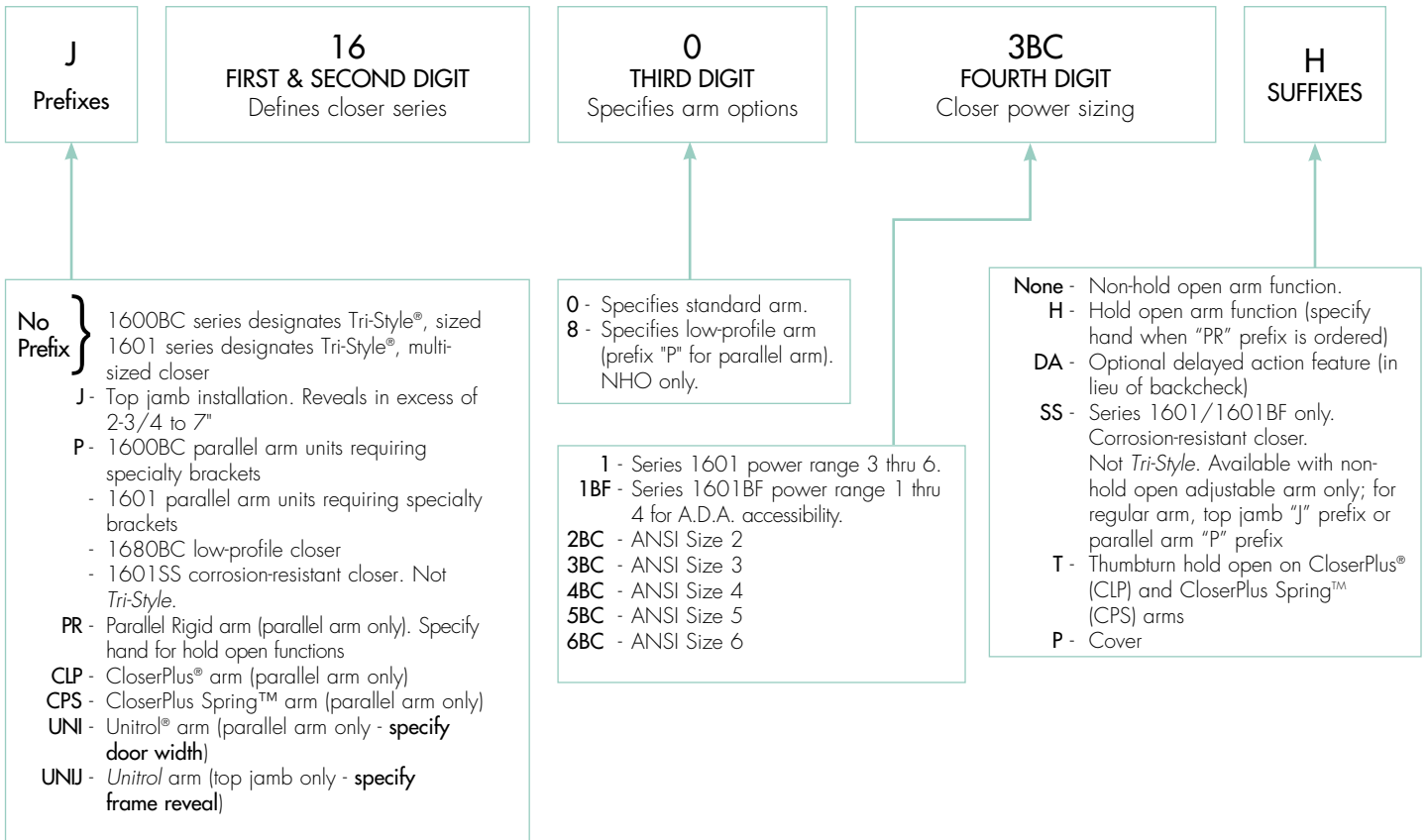
- ANSI/BHMA A156.4, Grade 1 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- 1601BF door closers are designed to comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 

CAUTION: Door Closers for Low Opening Force Applications:

Door closers installed in openings required to meet the requirements of the Americans 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.

HOW TO ORDER

For optimum protection of door and frame assemblies, always use auxiliary wall, floor, or overhead door stop.



- 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 standard *Norton* product, such as sleeve-nuts/sex-nuts or thru bolts and grommet nuts.
 - Optional Torx® drive screws (with security pin) are only available with machine screw threads.
 - Sizing charts provided on pages 12-19 are based on 1-3/4" (44mm) x 7" (2.13m) standard weight doors swinging to 110 degrees. Other conditions (such as door height or weight; or wind/draft conditions) may require a larger size closer.

1600 SERIES

ALUMINUM STOREFRONT DOOR CLOSERS

FASTENERS

Type	Description	Arm							
		RA	PA	TJ	Low Profile	PR	CLP/CPS	UNI	UNI-J
DOOR									
SDST	Self-Drilling Self-Tapping	S	S	S	S	S	S	S	S
MS	Machine Screw	S	S	S	S	S	S	S	S
SN	Sleeve Nut/Sex Nut	O	O	O	O	S	S	S	S
TBGN	Thru Bolts & Grommet Nuts	O	O	O	O	O	O	O	O
SMS	Sheet Metal Screws	O	O	O	O	O	O	O	O
FRAME									
SDST	Self-Drilling Self-Tapping	S	S	S	S	S	S	S	S
MS	Machine Screw	S	S	S	S	S	S	S	S
SMS	Sheet Metal Screws	O	O	O	O	O	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. SMS are supplied as a substitute for wood doors and frames.

FINISHES

Norton offers waterborne acrylic, polyester powder coat and plated finishes. Custom finishes are available on special order. A sample and approval is required.

Waterborne acrylic and polyester powder coat will withstand 100 hours of salt spray (ANSI requires 25 hours).

ANSI/BHMA	Description
600*	Prime Coat
605^	Bright Brass
606^	Satin Brass
611^	Bright Bronze
612^	Satin Bronze
613E	Dark Oxidized Satin Bronze - Equivalent
619^	Satin Nickel
625^	Bright Chrome

ANSI/BHMA	Description
626^	Satin Chrome
689	Aluminum
690	Statuary Bronze
691	Dull Bronze
693	Black
694	Medium Bronze Painted
696	Satin Brass Painted
N/A	556 White

*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.

^ Available on arms only.

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 1600BC and series 1601 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-Style®

1600BC/1601(BF) closers come with screws, brackets & soffit plate to allow for regular, top jamb, & parallel arm installations.

Sweep Speed Control Valve

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

Latch Speed Control Valve

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.

Warranty

These closers carry a limited 15-year warranty against defects and a limited lifetime warranty on the aluminum housing.

Closer Fluid

NorGlide® door closer fluid is a specially formulated hydraulic fluid that contains lubricity and anti oxidation agents that provide optimum performance and efficiency. This fluid complements the interaction of the door closer's aluminum housing with its steel and zinc components, while maintaining stable viscosity to allow the door closer to perform in temperatures ranging from extremely high to as low as -40° F.

Door Closer Power Options

Sized Door Closer: 1600BC

Available in 5 power sizes (2, 3, 4, 5 or 6). Outlined in ANSI specification A156.4. Spring power is not adjustable.

Multi-Sized Door Closer: 1601

Adjustable through the power range of sizes 3 through 6. Outlined in ANSI specification A156.4.

Multi-Sized Door Closer: 1601BF

Adjustable through the power range of sizes 1 through 4 to comply 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

Corrosion Resistant Door Closer

The series 1601SS and 1601BFSS door closers are available for use where corrosive conditions exist. This series is provided with zinc diecast adjustment valves, a 440 grade stainless steel pinion shaft, an all-aluminum body and bronze closer arm bushings; all other components and fasteners are of 302/303 grade stainless steel. This product is available for standard regular arm, top jamb and parallel arm, non-hold open, applications only. Not *Tri-Style* packed. "P" or "J" prefix required for parallel arm and top jamb applications.

Optional Molded Cover - 1600P

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.

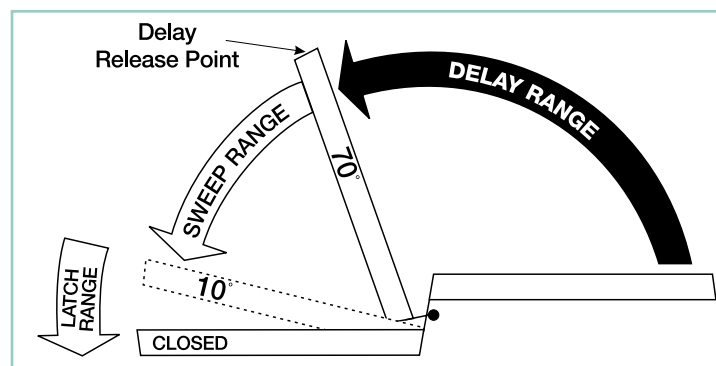


OPTIONAL FEATURES

Adjustable Delayed Action Closing

An optional hydraulic feature, available in lieu of backcheck, adds a third speed range to the closing cycle. This feature becomes effective when the door is opened and released at any point beyond 70°. The amount of time delay depends upon the combination of the angle of door release and valve adjustment. The valve can be adjusted with a 1/8" (3mm) hex key from no delay time up to maximum delay times of:

Door Opened and Released at	Approximate Time of Delay Cycle
180°	4-5 minutes
120°	2-3 minutes
90°	25-30 seconds



Pressure Relief Safety Valve

The delayed action hydraulic system contains a pressure relief valve. Any time the door is forced toward the closed direction while it is in the closing cycle, the valve will open and permit the door to close. This prevents damage to door, frame and closer.

Suggested Applications

Delayed action closing allows slow-moving traffic to clear the opening before the door closer's normal closing cycle begins. This feature can be helpful in health care facilities such as hospitals and nursing homes. It provides sufficient time for persons on crutches or in wheelchairs to pass through a door without concern of it closing. At the same time, it can accommodate the facility's staff with movement of food service carts, beds, and other wheeled traffic.

Use of delayed action closers on many doors throughout industrial and commercial buildings can also assist the flow of traffic. Locations where additional time to clear the opening is advantageous are doors between office and factory/warehouse facilities, doors to workshops or laboratories, doors to kitchen and food processing areas, etc.

Non-Hold Open

Self-closes door every time door is opened. Auxiliary stop (by others) required except when using the CloserPlus®, CloserPlus Spring™ or Unitrol® Arms.

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.

Door Opening Degrees

Arm Function	Regular Arm, Top Jamb Parallel Arm	Parallel Rigid Arm	CloserPlus Parallel Arm	CloserPlus Spring Parallel Arm	Unitrol Parallel Arm	Unitrol Top Jamb	Low Profile Regular, Parallel
Non-Hold Open	✓	✓	85° to 110°	85° to 110°	85° to 110°	85° to 110°	✓
Hold Open	90° to 180°	85° to 180°	85° to 110°	85° to 110°	85° to 110°	85° to 110°	N/A

✓ = 180° trim and template permitting

SUGGESTED SPECIFICATIONS

1601 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 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 from (1 through 4) or (3 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.

[Closers shall have adjustable delayed-action closing controlled by a hex key adjustable valve.]

[Closer body shall be enclosed in/concealed with a full molded cover.]

[Closers shall be highly corrosion resistant and shall have all external body components of aluminum, zinc alloy or stainless steel material and all stainless steel fasteners.]

Regular arm and top jamb closers shall have a non-hold open shoe permitting 15% (+/- 7-1/2%) power adjustment. ** [1601] [1601BF] [1601SS].

**For special arms insert the appropriate specification from column two or three on this page.

1600BC 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 of 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 be sized for each door. 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.]

[Closers shall have adjustable delayed action closing controlled by a hex key adjusted valve.]

Regular arm and top jamb closers shall have a non-hold open shoe permitting 15% (+/- 7-1/2%) power adjustment. ** [1600BC].

**For special arms insert that specification here (see column three on this page).

****Unitrol® Arm**

Door closers shall have built in-door stop [and holder] effective at one point selected at installation, from 85° - 115° in five-degree increments. Door stop shall be cushioned by a shock-absorbing heavy-duty spring action effective at the [soffit plate] [arm shoe] pivot. [Closers shall be provided for parallel arm installation using rigid steel main arm and secondary arm lengths proportional to the door width to reduce racking at the hinge/pivot.] [Closers shall be provided for top

jamb installation using steel, rigid main arm and telescoping secondary arm adequate for the frame reveal of the openings.] (Closer arm shall have ball and detent hold open feature that can be engaged or disengaged by 1/4 turn of mechanism; and hold open strength shall be adjustable.)

****CloserPlus® Arm**

Door closers shall have built-in door stop [and holder] effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop mechanism shall be reversible and attached to soffit plate. [Hold open mechanism shall have engage/disengage and strength selection actuated by thumbturn.] Closers shall be provided for parallel arm installation using rigid steel main and secondary arm.

****CloserPlus Spring™ Arm**

Door closers shall have built in door stop [and holder] effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop mechanism shall have a buffer spring that engages prior to the dead stop feature, reducing shock loads to the door and frame assembly. Door stop mechanism shall be reversible and attached to soffit plate. [Hold open mechanism shall have engage/disengage and strength selection actuated by thumbturn.] Closers shall be provided for parallel installation using rigid steel main and secondary arm.

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.

Non-hold open arm shown

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.

Non-hold open arm shown

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.

Non-hold open arm shown

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 (1680 series), to 6-3/8" (162mm), when using the hold open arm.

Due to the geometry of the arm it is approximately 25% less

APPLICATIONS



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.



Parallel Rigid Arm

Non-hold open arm shown

An enhanced variation of the standard parallel arm assembly that is intended for use in heavy traffic areas where auxiliary door stops are installed.

Hold open arm available - specify hand when ordering.



Non-hold open arm shown

CloserPlus® Arm

Similar to the Parallel Rigid arm, this arm incorporates a stop at the arm's soffit plate to dead stop the door at a predetermined degree of door swing between 85° and 110°, in 5° increments. Prior to dead stop the door closer's backcheck feature slows the door speed to reduce the impact of the stop action.

The *CloserPlus* Arm is intended for use where an auxiliary door stop cannot be utilized and no more than moderate abuse is anticipated. Where more extreme conditions are expected, use of a Unitrol® arm is recommended.

Available with or without hold open. (Hold open tension is adjustable.)



Non-hold open arm shown

CloserPlus Spring™ Arm

This heavy-duty stop arm includes all the features of the *CloserPlus* arm, plus an added buffer spring that is compressed prior to the arm hitting the dead stop point. This greatly reduces the shock of the stopping action that occurs with the *CloserPlus* arm.

Thumbturn hold open is available.

APPLICATIONS



Parallel

Unitrol® Arm

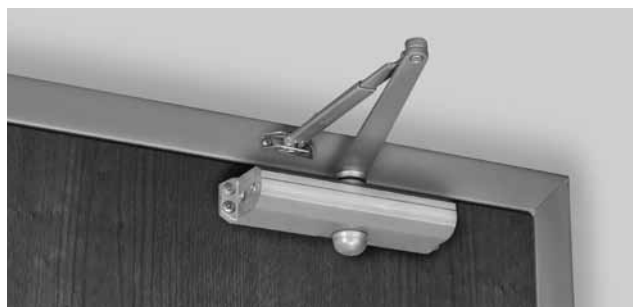
Can be used for either parallel arm or top jamb applications. *Unitrol* arms combine the features of a double lever arm overhead door stop/holder with the backcheck feature of the door closer to reduce door stopping shock loads to a minimum. The *Unitrol* uses a compression spring buffer at the soffit plate/arm shoe that will absorb 30 lbf. of force, 5° prior to the door's dead stop. Coupled with the door closer's backcheck feature, this arm provides the most controlled stop available with a surface door closer.



Top Jamb

For parallel arm applications there are three different length arm assemblies. Each length is designed for a specific range of door widths, to provide precise door control. This further lessens the dead stop impact on the door's hinges/pivots.

Specify depth of reveal when using top jamb mounting.



Regular

Regular Arm: Allows closer to be installed where there is as little as 1" (25mm) of frame face or ceiling clearance.



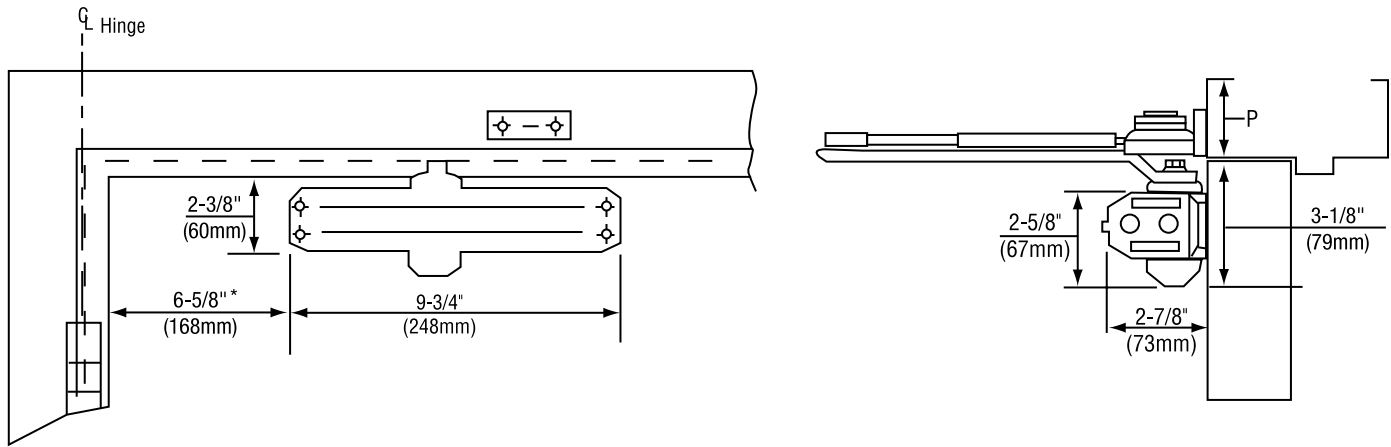
Parallel

Parallel Arm: Allows closer to be installed 1/2" (13mm) higher up on door than standard parallel arm application. Suffix "P" to the catalog number; i.e., P1680BC, P1681(BF).

Low-Profile Arms

Supplied with 1680BC, 1681(BF) series door closers for non-hold open installations only. Low-profile arms have a reduced height elbow joint and a straight main arm. This enables the door closer to be installed in less vertical space. Non-hold open function only.

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			
		Sized Closers		Multi-Sized Closers	
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open
32" (81)	—	1602BC	1602BCH	1601, 1601BF	1601H, 1601BFH
38" (97)	30" (76)	1603BC	1603BCH		
42" (107)	36" (91)	1604BC	1604BCH		
48" (122)	42" (107)	1605BC	1605BCH		
—	48" (122)	1606BC	1606BCH		

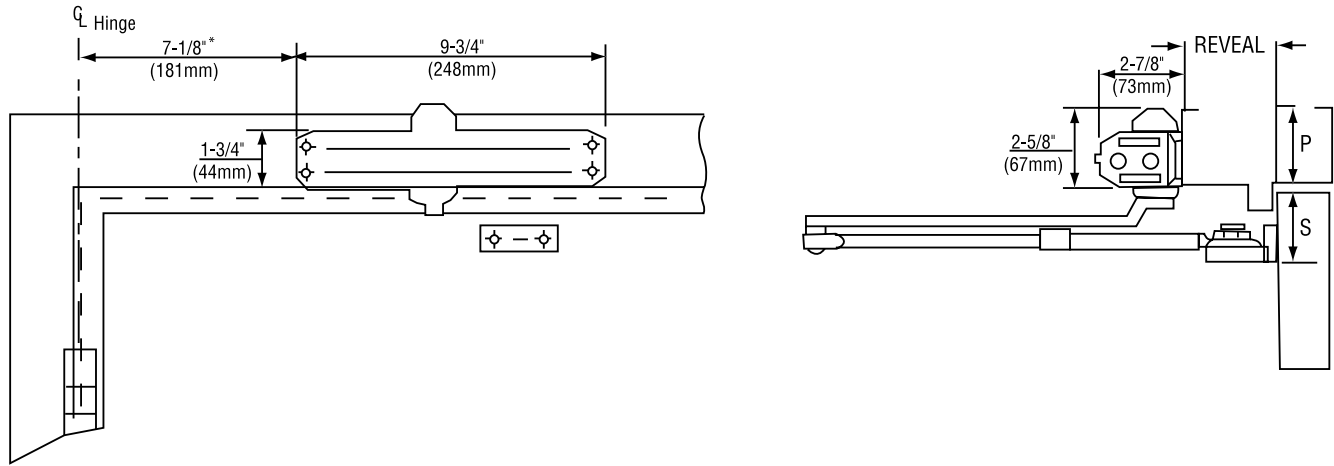
P Minimum Ceiling Clearance Inches/mm		
Non-Hold Open		Hold Open
1600BC/1601	1680BC/1681	1-5/8" (41)
1-1/2" (38)	1" (25)	

Notes:
1601 door closers are adjustable for sizes 3 through 6 and are shipped set at size 3. 1601BF door closers are adjustable for sizes 1 through 4, shipped set at size 2 and can be adjusted to conform to ADA opening force requirements.

Contact factory if door weight exceeds 250 lbs.

1600 SERIES ALUMINUM STOREFRONT DOOR CLOSERS

TOP JAMB



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

Maximum Door Size Inches (cm)		Model Number			
		Sized Closers		Multi-Sized Closers	
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open
32" (81)	—	1602BC J1602BC J1682BC [^]	1602BCH J1602BCH	1601, 1601BF	1601H, 1601BFH
38" (97)	30" (76)	1603BC J1603BC J1683BC [^]	1603BCH J1603BCH		
42" (107)	36" (91)	1604BC J1604BC J1684BC [^]	1604BCH J1604BCH		
48" (122)	42" (107)	1605BC J1605BC J1685BC [^]	1605BCH J1605BCH		
—	48" (122)	1606BC J1606BC J1686BC [^]	1606BCH J1606BCH		

Notes:

1601 door closers are adjustable for sizes 3 through 6 and are shipped set at size 3. 1601BF door closers are adjustable for sizes 1 through 4, shipped set at size 2 and can be adjusted to conform to ADA opening force requirements.

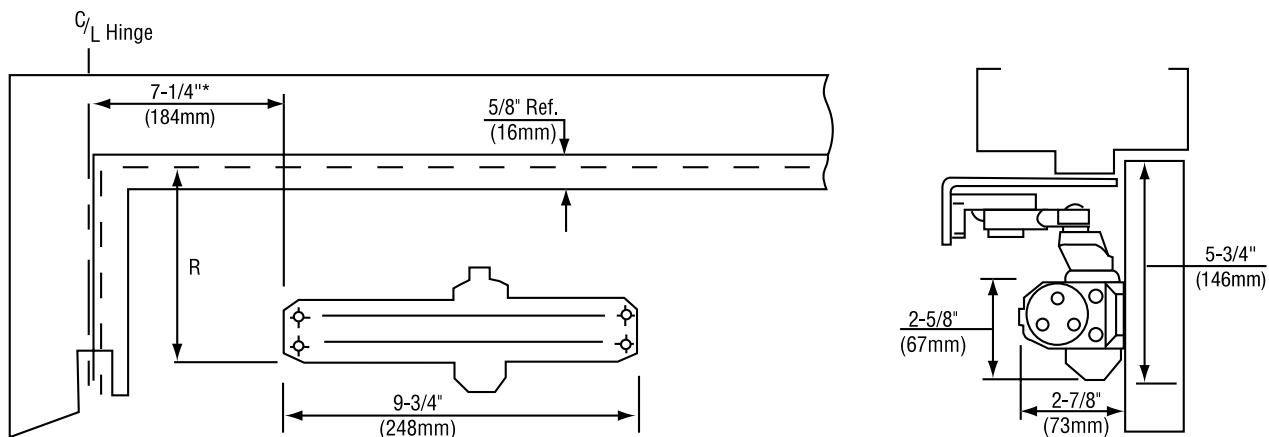
[^]Narrow-Profile Arm Closers can only be installed with 1687/1688 drop plate.

Non-Hold Open- Use standard 1600 closer for frame reveals between 0" to 3" (0-76mm). Use top jamb J1600 closer for frame reveals from 3" to 7" (76 to 178mm). **Hold Open Use** standard 1600H closer for frame reveals between 0" to 2-3/4" (0-70mm). Use top jamb J1600H closer for frame reveals from 2-3/4" to 6-3/4" (70 to 171mm).

Contact factory if door weight exceeds 250 lbs.

P Minimum Ceiling Clearance		S Minimum Top Rail Clearance		
Without Drop Plate	With Drop Plate	Without Drop Plate	With 1687 Drop Plate	With 1688 Drop Plate
1600BC/1601	1600BC/1601 1680BC/1681	1600BC/1601	1600BC/1601	1600BC/1601 1680BC/1681
2-5/8" (67)	1-3/4" (44)	1-7/8" (48)	2-5/8" (67)	4" (102)

PARALLEL 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			
		Sized Closers		Multi-Sized Closers	
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open
30" (76)	—	P1602BC	P1602BCH	1601, 1601BF	1601H, 1601BFH
36" (91)	30" (76)	P1603BC	P1603BCH		
42" (107)	36" (91)	P1604BC	P1604BCH		
48" (122)	42" (107)	P1605BC	P1605BCH		
—	48" (122)	P1606BC	P1606BCH		

R Minimum Top Rail of Door with 5/8" (16mm) frame stop Inches/mm			
Without Drop Plate		With Drop Plate	
1600BC 1601	1680BC 1681	1600BC 1601	1680BC 1681
5" (127)	4" (102)	3-1/8" (79)	2-1/8" (54)

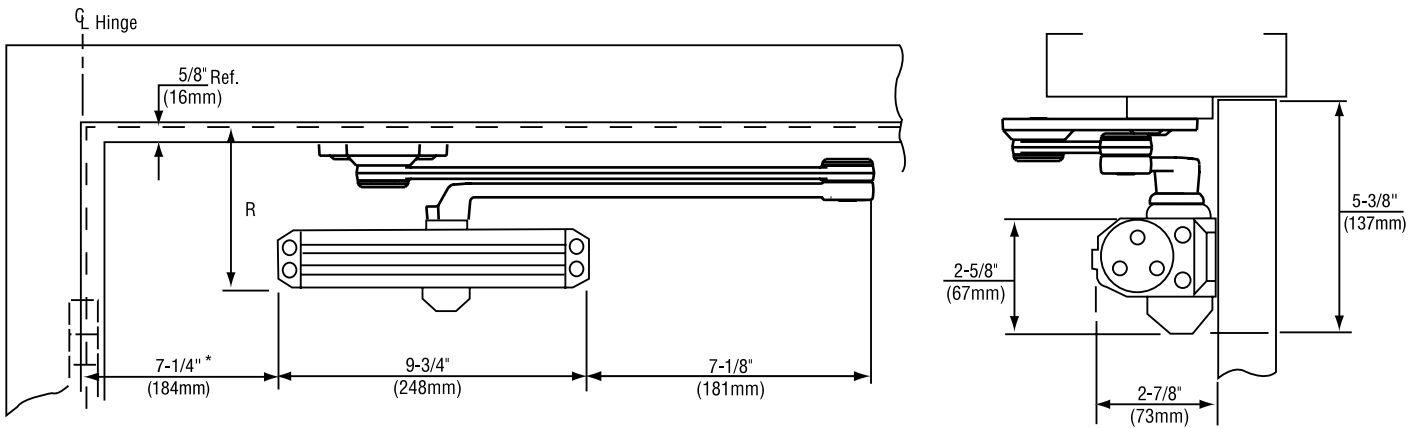
Notes:
This door sizing information also applies to corner bracket mounted closers.

1601 door closers are adjustable for sizes 3 through 6 and are shipped set at size 3. 1601BF door closers are adjustable for sizes 1 through 4, shipped set at size 2 and can be adjusted to conform to ADA opening force requirements.

Contact factory if door weight exceeds 250 lbs.

1600 SERIES ALUMINUM STOREFRONT DOOR CLOSERS

PARALLEL RIGID ARM



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

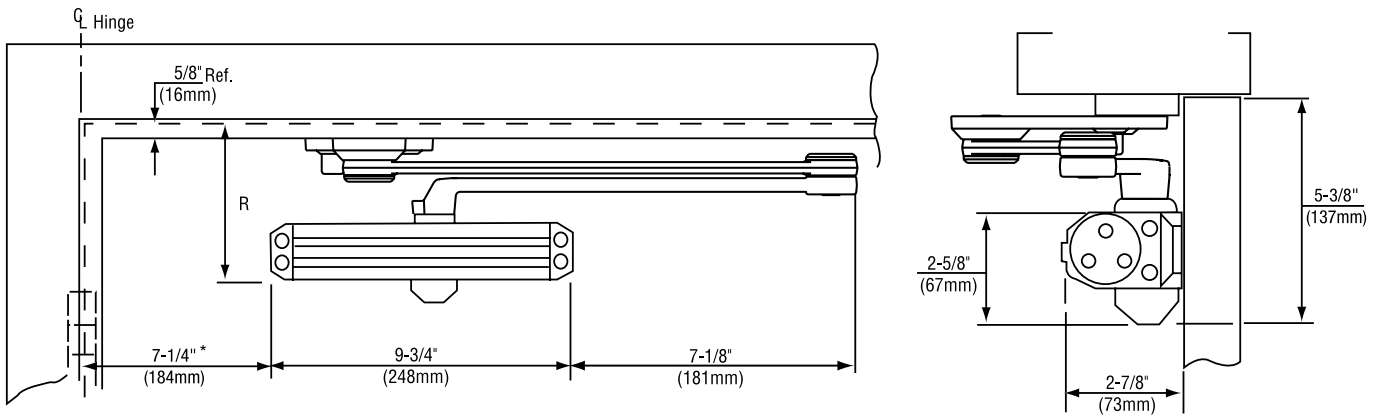
Door Size Wood or Metal Inches (cm)		Model Number			
		Sized Closers		Multi-Sized Closers	
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open
28"-32" (71-81)	—	PR1602BC	PR1602BCH	PR1601, PR1601BF	PR1601H, PR1601BFH
33"-36" (84-91)	28"-32" (71-81)	PR1603BC	PR1603BCH		
37"-42" (94-107)	33"-36" (84-91)	PR1604BC	PR1604BCH		
43"-48" (109-122)	37"-42" (94-107)	PR1605BC	PR1605BCH		
—	43"-48" (109-122)	PR1606BC	PR1606BCH		

Notes:
1601 door closers are adjustable for sizes 3 through 6 and are shipped set at size 3. 1601BF door closers are adjustable for sizes 1 through 4, shipped set at size 2 and can be adjusted to conform to ADA opening force requirements.

Contact factory if door weight exceeds 250 lbs.

R Minimum Top Rail of Door with 5/8" (16mm) frame stop	
Without Drop Plate	With Drop Plate
4-1/2" (114)	2-5/8" (67)

CLOSERPLUS® ARM



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

Door Size Wood or Metal Inches (cm)		Model Number			
		Sized Closers		Multi-Sized Closers	
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open
28"-32" (71-81)	—	CLP1602BC	CLP1602BCT	CLP1601, CLP1601BF	CLP1601T, CLP1601BFT
33"-36" (84-91)	28"-32" (71-81)	CLP1603BC	CLP1603BCT		
37"-42" (94-107)	33"-36" (84-91)	CLP1604BC	CLP1604BCT		
43"-48" (109-122)	37"-42" (94-107)	CLP1605BC	CLP1605BCT		
—	43"-48" (109-122)	CLP1606BC	CLP1606BCT		

Notes:

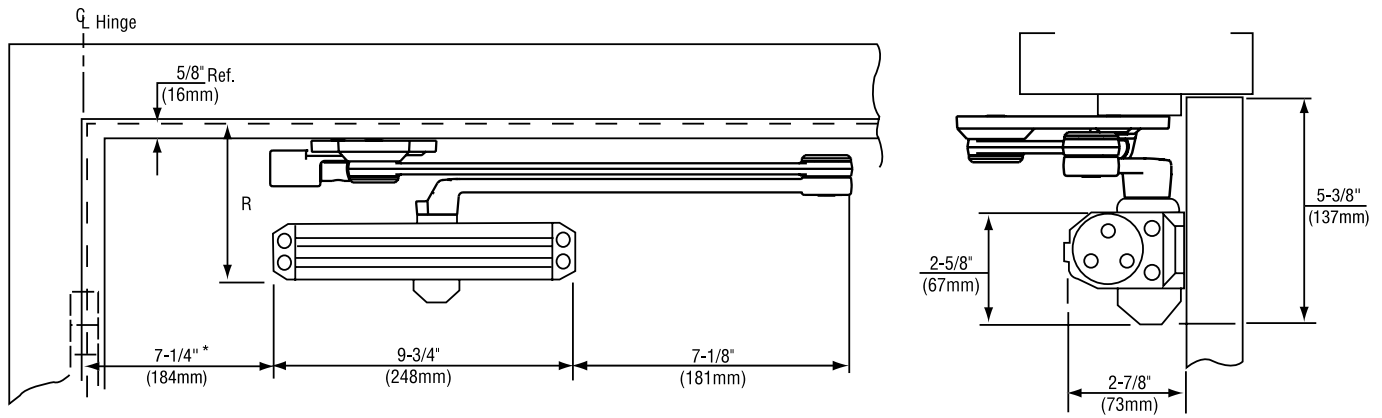
1601 door closers are adjustable for sizes 3 through 6 and are shipped set at size 3. 1601BF door closers are adjustable for sizes 1 through 4, shipped set at size 2 and can be adjusted to conform to ADA opening force requirements.

Contact factory if door weight exceeds 250 lbs.

R Minimum Top Rail of Door with 5/8" (16mm) frame stop	
Without Drop Plate	With Drop Plate
4-1/2" (114)	2-5/8" (67)

1600 SERIES ALUMINUM STOREFRONT DOOR CLOSERS

CLOSERPLUS SPRING™ ARM



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

Door Size Wood or Metal Inches (cm)		Model Number			
		Sized Closers		Multi-Sized Closers	
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open
28"-32" (71-81)	—	CPS1602BC	CPS1602BCT	CPS1601, CPS1601BF	CPS1601T, CPS1601BFT
33"-36" (84-91)	28"-32" (71-81)	CPS1603BC	CPS1603BCT		
37"-42" (94-107)	33"-36" (84-91)	CPS1604BC	CPS1604BCT		
43"-48" (109-122)	37"-42" (94-107)	CPS1605BC	CPS1605BCT		
—	43"-48" (109-122)	CPS1606BC	CPS1606BCT		

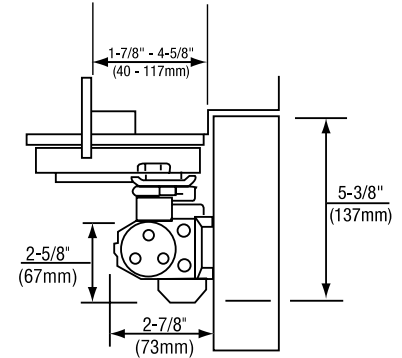
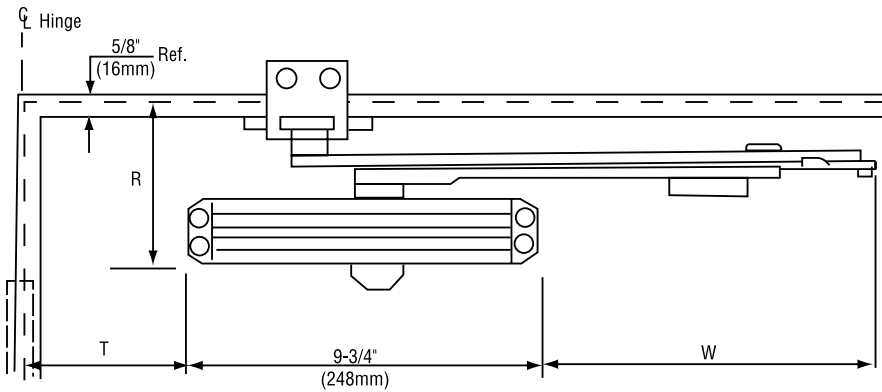
Notes:

1601 door closers are adjustable for sizes 3 through 6 and are shipped set at size 3. 1601BF door closers are adjustable for sizes 1 through 4, shipped set at size 2 and can be adjusted to conform to ADA opening force requirements.

Contact factory if door weight exceeds 250 lbs.

R Minimum Top Rail of Door with 5/8" (16mm) frame stop	
Without Drop Plate	With Drop Plate
4-1/2" (114)	2-5/8" (67)

PARALLEL UNITROL® ARM



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

Door Width	R Minimum Top Rail		W Arm Extension
	Without Drop Plate	With Drop Plate	
28"-32" (71- 81)	4-1/2" (114)	2-5/8" (67)	7" (178)
33"-41" (84- 104)			8-1/2" (216)
42"-48" (107- 122)			10" (254)

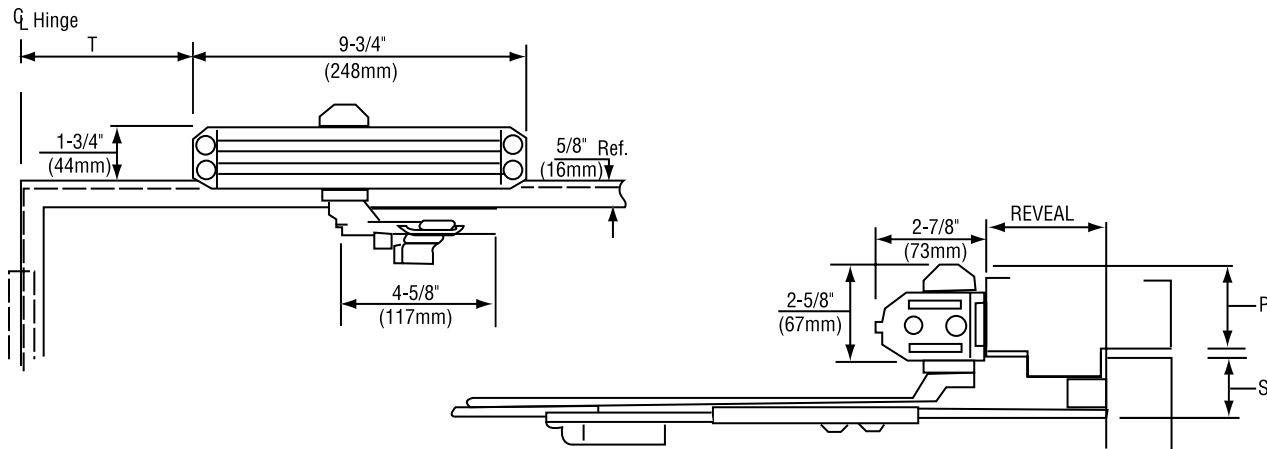
Door Size Wood or Metal Inches (cm)		Model Number				x Specify Door Width
		Sized Closers		Multi-Sized Closers		
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open	
28"-32" (71-81)	—	UNI1602BC	UNI1602BCH	UNI1601, UNI1601BF	UNI1601H, UNI1601BFH	
33"-36" (84-91)	28"-32" (71-81)	UNI1603BC	UNI1603BCH			
37"-41" (94- 104)	33"-36" (84-91)	UNI1604BC	UNI1604BCH			
42"-48" (107-122)	37"-41" (94-104)	UNI1605BC	UNI1605BCH			
—	42"-48" (107-122)	UNI1606BC	UNI1606BCH			

Notes:
1601 door closers are adjustable for sizes 3 through 6 and are shipped set at size 3. 1601BF door closers are adjustable for sizes 1 through 4, shipped set at size 2 and can be adjusted to conform to ADA opening force requirements.

Contact factory if door weight exceeds 250 lbs.

1600 SERIES ALUMINUM STOREFRONT DOOR CLOSERS

TOP JAMB UNITROL® ARM



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

P Minimum Ceiling Clearance		S Minimum Top Rail Clearance	
Without Drop Plate	With Drop Plate	Without Drop Plate	With Drop Plate
2-5/8" (67)	1-3/4" (44)	2-3/8" (60)	3-1/8" (79)

Door Size Wood or Metal Inches (cm)		Model Number				x Specify Frame Reveal
		Sized Closers		Multi-Sized Closers		
Interior	Exterior	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open	
28*34* (71-86)	—	UNIJ1602BC	UNIJ1602BCH	UNIJ1601, UNIJ1601BF	UNIJ1601H, UNIJ1601BFH	
35*42* (89-107)	28-34 (71-86)	UNIJ1603BC	UNIJ1603BCH			
43*48* (109-122)	35-42 (89-107)	UNIJ1604BC	UNIJ1604BCH			
49*54* (124-137)	43-48 (109-122)	UNIJ1605BC	UNIJ1605BCH			
—	49-54 (124-137)	UNIJ1606BC	UNIJ1606BCH			

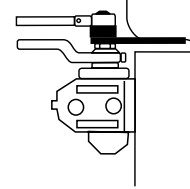
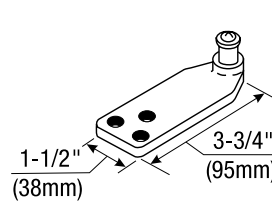
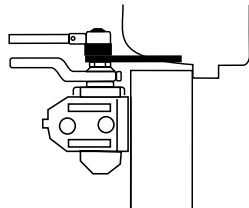
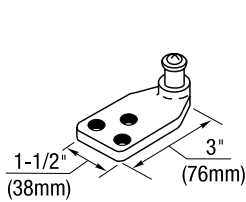
Notes:

1601 door closers are adjustable for sizes 3 through 6 and are shipped set at size 3. 1601BF door closers are adjustable for sizes 1 through 4, shipped set at size 2 and can be adjusted to conform to ADA opening force requirements.

Contact factory if door weight exceeds 250 lbs.

REGULAR ARM

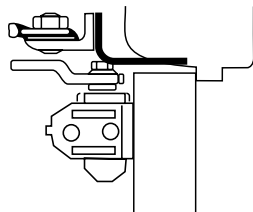
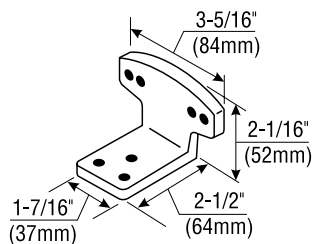
Brackets for Non-Hold Open Arms



Molded/Bull Nose Trim - #2403B 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.

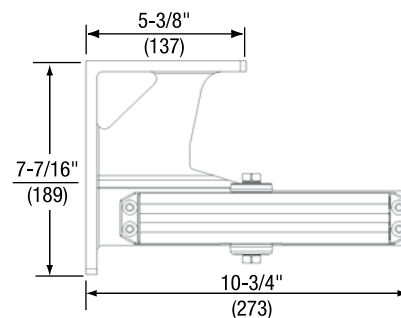
Molded/Bull Nose Trim - #2403-3/4 Bracket: This bracket is similar to-but longer than the 2403B bracket. It is designed to accommodate frame rabbets from 2" to 2-7/8" (51 to 73mm) deep.

Brackets for Hold Open Arms



Molded/Bull Nose Trim - #80 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

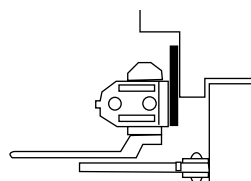
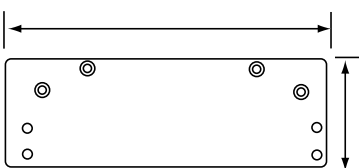


For Closer sizing information, use the Parallel Arm sizing chart on page 14.

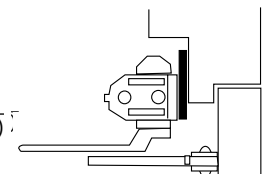
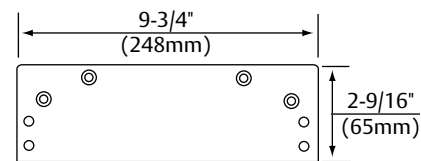
Mounting Opposite Hinge Side - #1647 Corner Bracket: For use where it is desired to mount the closer regular arm on the opposite to hinge side of the door. Can also be used to clear an overhead door holder.

TOP JAMB

Closer Mounting Plates



Overhead Door Holder - #1688 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 - #1687 Drop Plate: For use where the ceiling clearance is between 1-3/4" and 2-5/8" (44 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.

PARALLEL ARM

Closer Mounting Plate

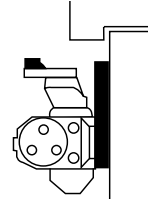
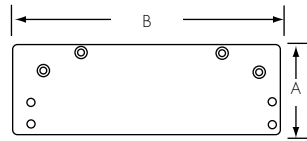
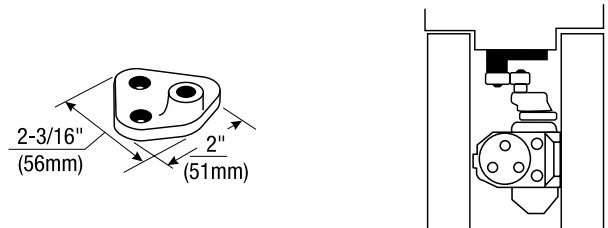
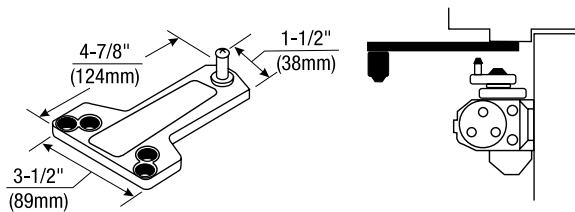


Plate No.	Dimensions	
	A (width)	B (length)
1688	3-1/4" (83)	9-3/4" (248)
1688C	4-1/8" (105)	9-7/8" (251)

Note: #1688C - To be used when optional cover is specified.

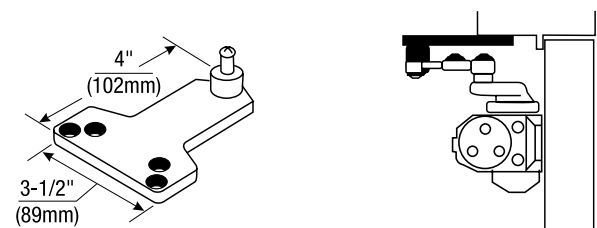
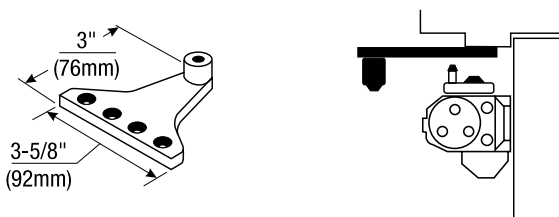
Narrow Top Rail - #1688 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface. This drop plate can be used to mount a closer on a top rail as narrow as 3-1/8" (79mm) in height for 1600BC or 2-1/8" (54mm) for 1680BC.

Brackets for Non-Hold Open Arms



Standard Installation - #1618A 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 1618A-SS for stainless steel soffit plate.** With Series P1600SS closers, a 1618A-SS soffit plate fabricated of stainless steel is supplied standard.

Mounting Between Doors - #2018 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.

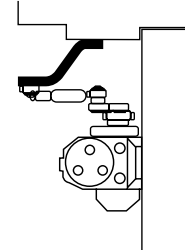
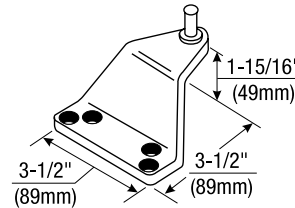
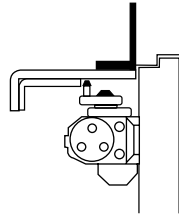
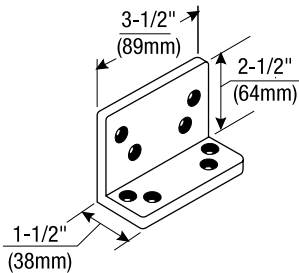


Narrow Frame/Removable Stop - #2018B Soffit Plate: For use where a narrow frame or frame with removable stop does not permit use of the standard soffit plate. This soffit plate may be mounted on the frame soffit or the frame rabbet where the stop does not exceed 5/8" (16mm) in height. All of the screw 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.

Blade/Applied Stop - #2018D 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.

PARALLEL ARM

Brackets for Non-Hold Open Arms (continued)

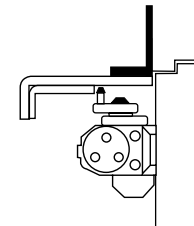
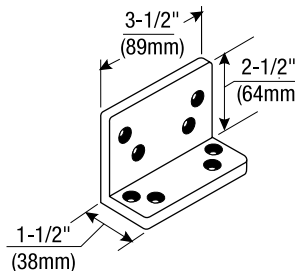
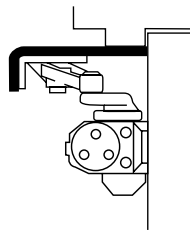
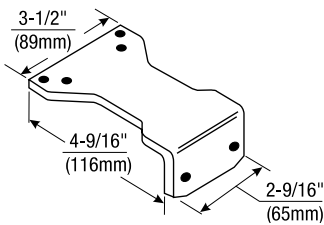


Flush Transom - #2022 Angle Bracket: For use where rabbeted or flush transom conditions prevent installation of a soffit plate. Used in combination with the 1618A soffit plate, or may be used in combination with the 2018S soffit plate when it is necessary for the closer arm to clear a separate overhead door holder.

Extra-Clearance - #2018S 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 weatherstripping prevents the use of other soffit plates.

Brackets for Hold Open Arms



Parallel Hold Open - #1628H 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 - #2022 Angle Bracket: For use where rabbeted or flush transom conditions prevent installation of the standard 1628H hold open adapter plate. It is used in combination with the 1628H adapter plate.

PARALLEL RIGID ARM

Closer Mounting Plate

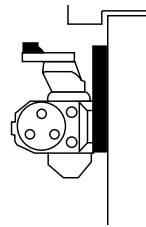
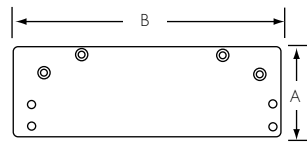
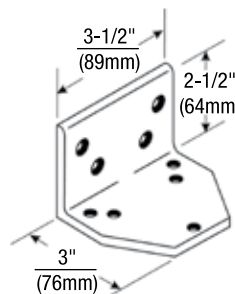
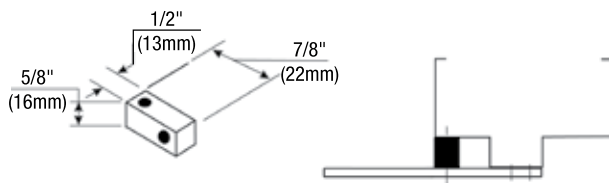


Plate No.	Dimensions	
	A (width)	B (length)
1688	3-1/4" (83)	9-3/4" (248)
1688C	4-1/8" (105)	9-7/8" (251)

Narrow Top Rail - #1688 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 2-5/8" (67mm) in height.

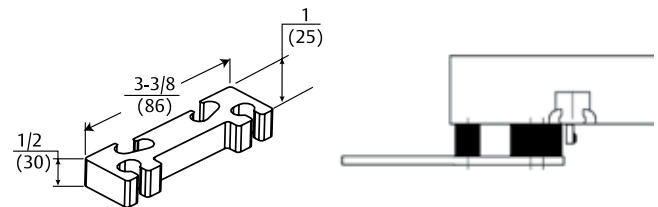
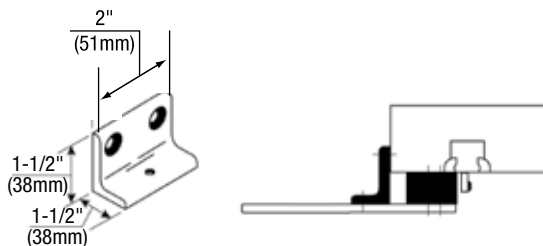
Note: #1688C - To be used when optional cover is specified.

Brackets for Non-Hold Open Arms & Hold Open Arms



Standard - #2019S Spacer Block: For use where a narrow frame soffit does not provide adequate support for the soffit plate. Supplied as standard with all parallel rigid arm closers. For use on frame with either 1/2" (13mm) or 5/8" (16mm) high frame stop.

Flush Rabbeted Transom - #2019L Angle Bracket: For use where flush transom conditions prevent mounting of the standard soffit plate. This bracket is used in combination with the arm's soffit plate.



Narrow Frame - #6890 Support Bracket: For use where the frame is narrow and the soffit plate cannot be mounted directly to the frame soffit or rabbet. Used in combination with the #6891 Spacer Block on blade stop frames to provide extra support and needed clearance of the blade stop. Used on frame where frame stop does not exceed 5/8" (16mm) in height.

Clearance/Support Blade Stop - #6891 Spacer Block: For use where the door frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard 2019S Spacer Block to provide clearance of the blade stop. For clearance of 5/8" (16mm) high-frame stop.

CLOSERPLUS® AND CLOSERPLUS SPRING™ ARMS

Closer Mounting Plate

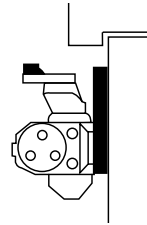
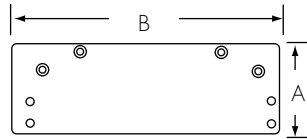
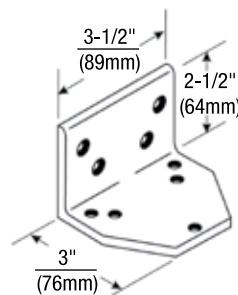
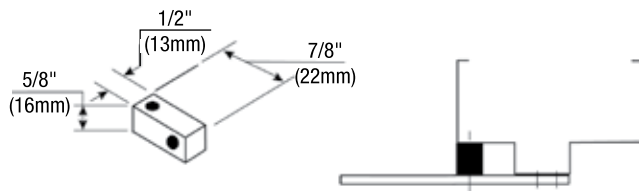


Plate No.	Dimensions	
	A (width)	B (length)
1688	3-1/4" (83)	9-3/4" (248)
1688C	4-1/8" (105)	9-7/8" (251)

Narrow Top Rail - #1688 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 2-5/8" (67mm) in height.

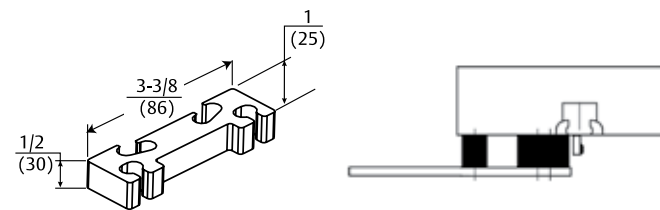
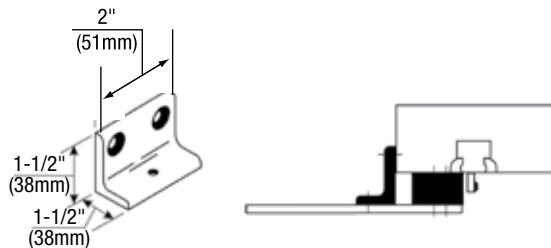
Note: #1688C - To be used when optional cover is specified.

Brackets for Non-Hold Open Arms & Hold Open Arms



Standard - #2019S Spacer Block: For use where a narrow frame soffit does not provide adequate support for the soffit plate. Supplied as standard with all CloserPlus® arm closers. For use on frame with either 1/2" (13mm) or 5/8" (16mm) high frame stop.

Flush Rabbeted Transom - #2019L Angle Bracket: For use where flush rabbeted transom conditions prevent mounting of the standard soffit plate. This bracket is used in combination with the arm's soffit plate.



Narrow Frame - #6890 Support Bracket: For use where the frame is narrow and the soffit plate cannot be mounted directly to the frame soffit or rabbet. Used in combination with the #6891 Spacer Block on blade stop frames to provide extra support and needed clearance of the blade stop. Used on frame where frame stop does not exceed 5/8" (16mm) in height.

Clearance/Support Blade Stop - #6891 Spacer Block: For use where the door frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard 2019S Spacer Block to provide clearance of the blade stop. For clearance of 5/8" (16mm) high-frame stop.

UNITROL[®] ARM

Closer Mounting Plate (for Parallel Arm)

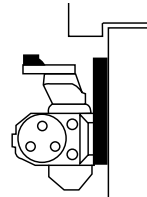
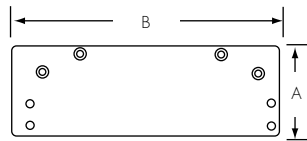
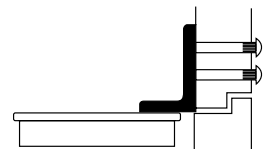
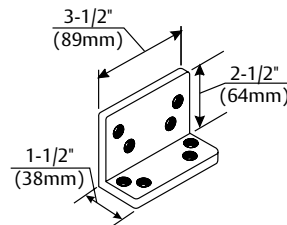
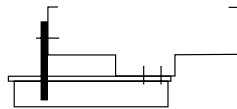
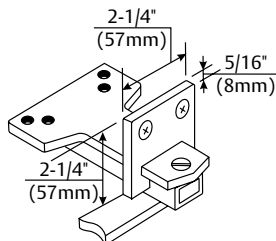


Plate No.	Dimensions	
	A (width)	B (length)
1688	3-1/4" (83)	9-3/4" (248)
1688C	4-1/8" (105)	9-7/8" (251)

Narrow Top Rail - #1688 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 2-5/8" (67mm) in height.

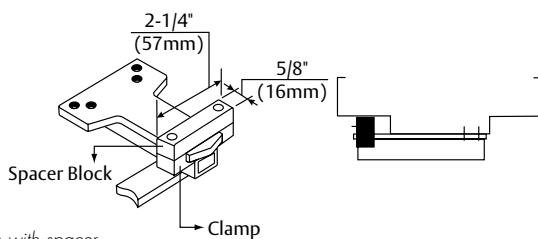
Note: #1688C - To be used when optional cover is specified.

Soffit Plate Reinforcing Brackets (for Parallel Arm)

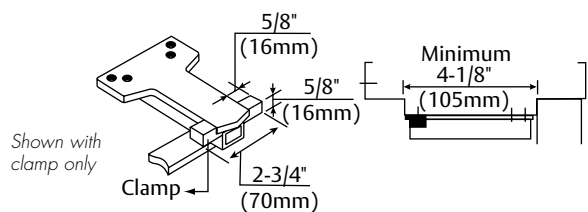


Additional Support - #6190 Reinforcing Bracket: Standard for use with all parallel arm *Unitrol* Door Controls. Provides additional support to the soffit plate on installations with door frame reveals from 1-7/8" to 4-5/8" (48 to 117mm).

Flush Rabbeted Transom - #2022 Angle Bracket: Optional for use with all parallel arm *Unitrol* Door Controls. For use where rabbeted or flush transom conditions prevent installation of the soffit plate assembly. This bracket fastens to the overhead transom to provide a mounting surface for the soffit plate assembly.

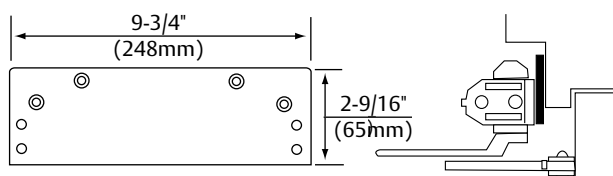


Shown with spacer block and clamps



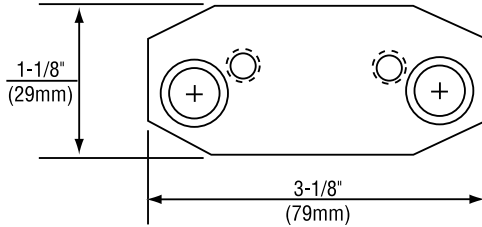
Wide Frame - #6191 Reinforcing Kit: Optional for use with all parallel arm *Unitrol* Door Controls. Used to support the soffit plate on installations with deep frames. Clamps may be used with or without the spacer block, depending on frame conditions.

Closer Mounting Plate (for Top Jamb)

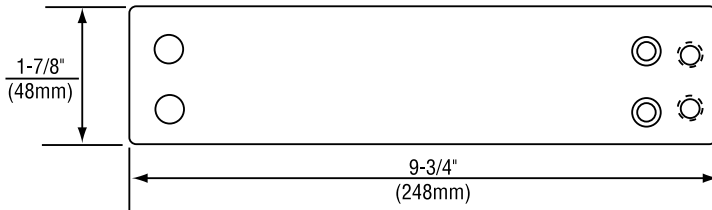
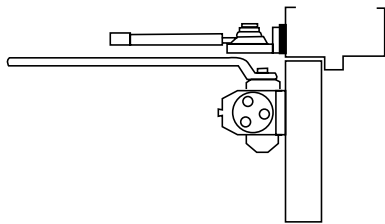


Low Ceiling Clearance - #1687 Drop Plate: For use where the ceiling clearance is between 1-3/4" and 2-5/8" (44 and 67mm). This places the centerline of the arm mounting screws at 2-5/8" (67mm) from the top of door.

SPECIAL ACCESSORIES



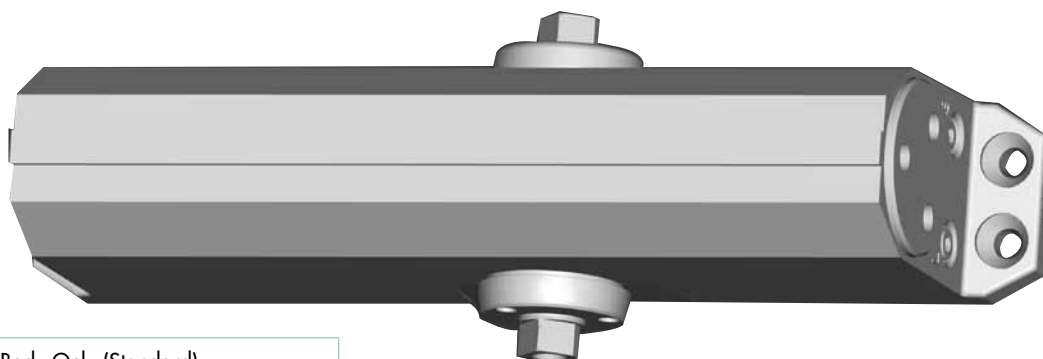
Converting Old Hold Open Installations - #2017 Adapter Plate: For use on old hold open installations with 2-1/2" (64mm) hole spacing on the holder bracket. Plate uses existing holes in either door or frame and accepts the new hold open bracket with 1-3/4" (44mm) hole spacing. For regular arm or top jamb installations.



699 Adapter Plate: Converts old 1602/1603 closer installations with 3/4" (19mm) x 8-3/16" (208mm) - spacing to new 1602, 1603 or 1601BF using existing mounting holes in door or frame.

1600 SERIES ALUMINUM STOREFRONT DOOR CLOSERS

PARTS

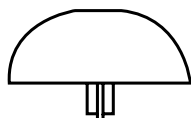


Body Only (Standard)	
160*BCLAP	Sized Closer
1601LAP	Multi-sized
1601BFLAP	Barrier Free
1601SSLAP	Stainless Steel

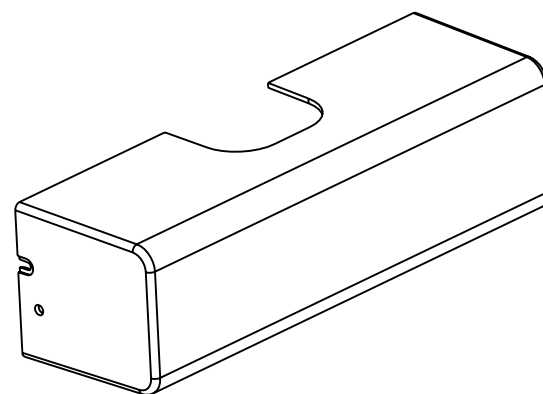
Note: Mounting hardware included with all parts orders.

LAP = Less All Parts

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



1639 Pinion Cap

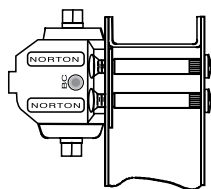


Optional Cover - 1600P

For regular arm and parallel arm applications. 2-7/8" (73mm) height x 3-1/8" (78mm) deep x 9-7/8" (251mm) long. To order with closer use "P" suffix; i.e. 1604BCP.

Steel Door Application

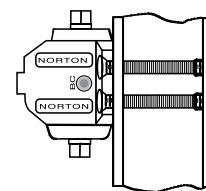
Sex-nut / Sleeve-nut : "SN" (4 per pack) or
Sex-nut / Sleeve-nut & Screw: "SNB" (4 per pack)



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

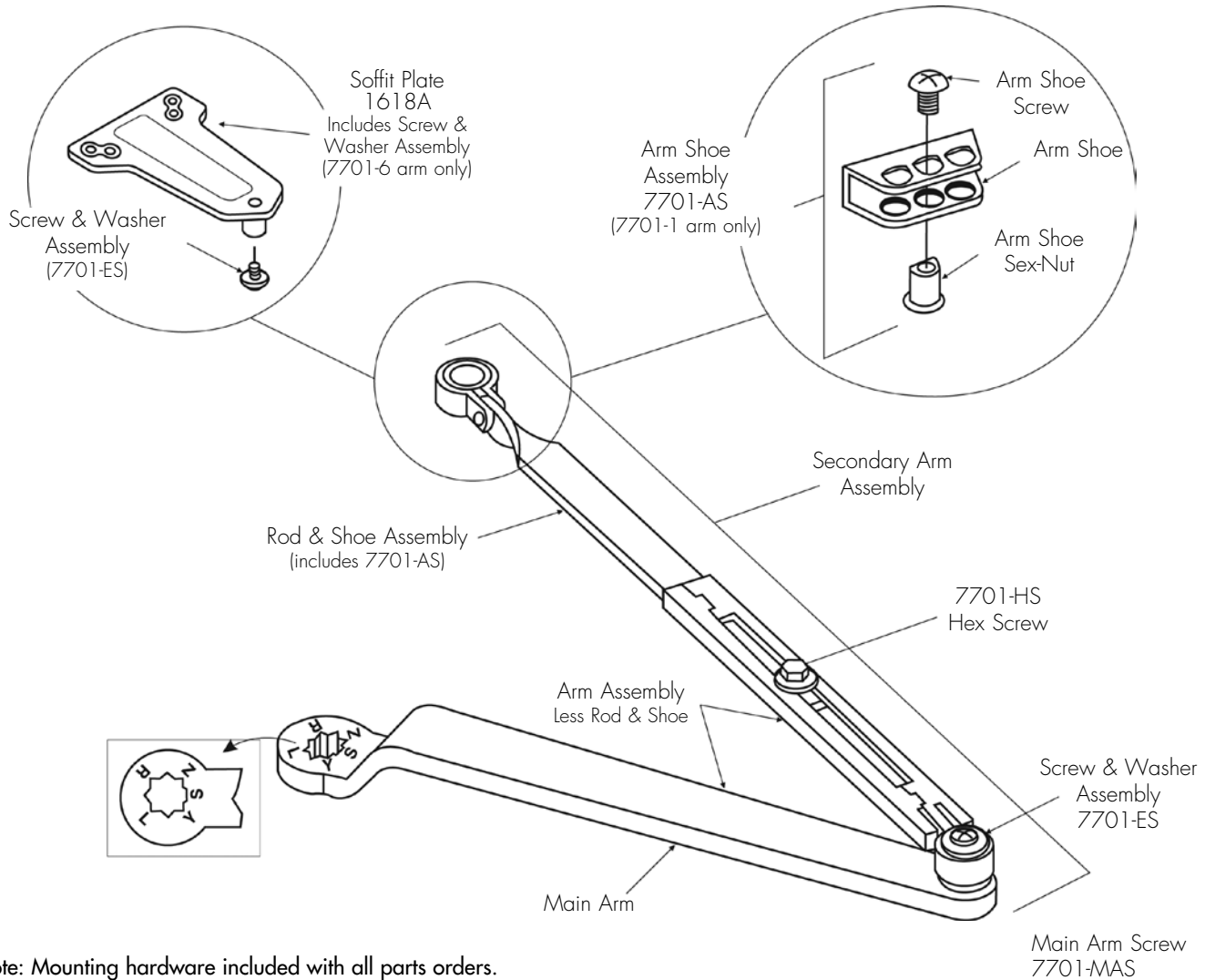
Aluminum and Wood Door Application (Aluminum Door Shown)

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



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

NON-HOLD OPEN ARM ASSEMBLY



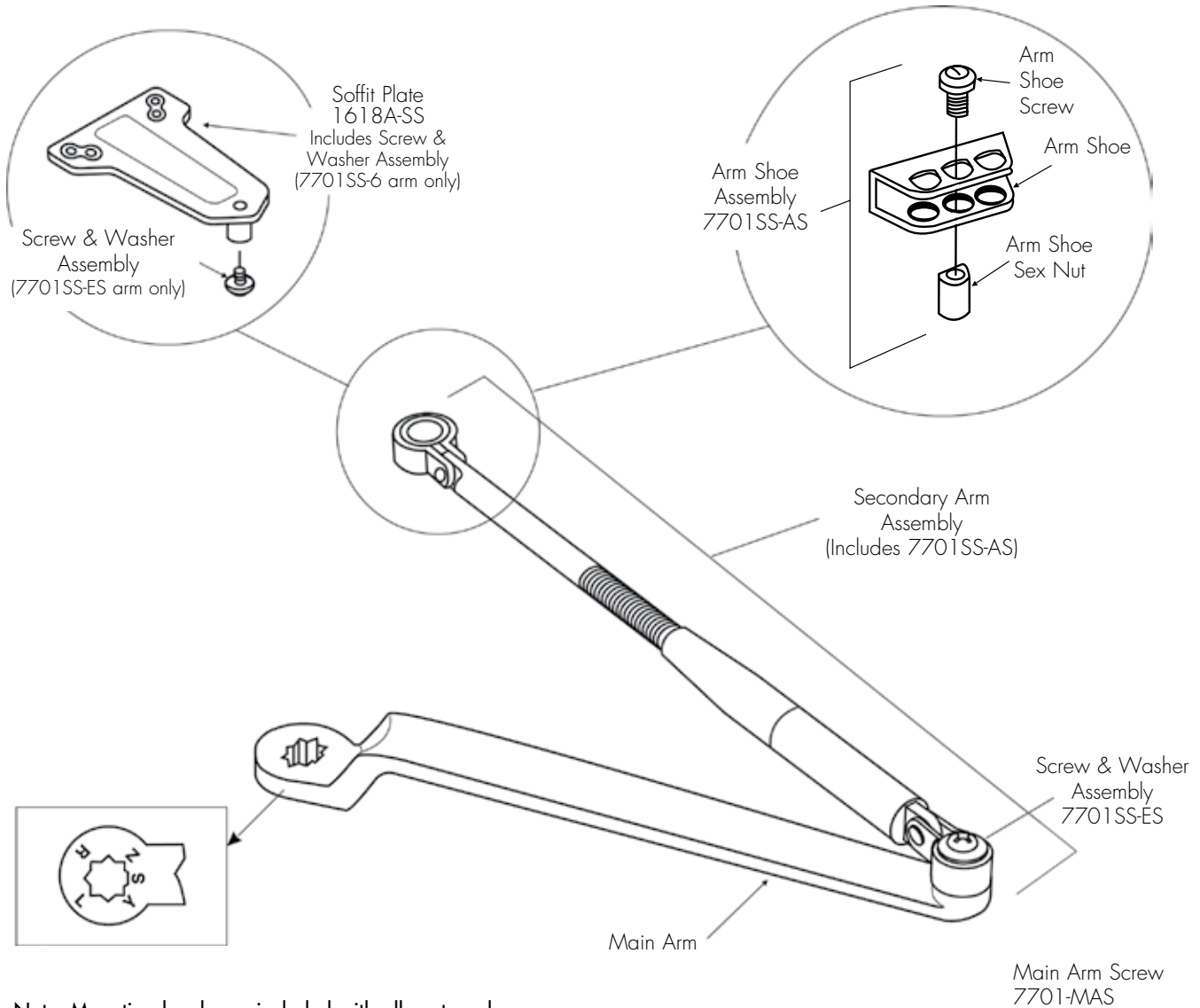
Note: Mounting hardware included with all parts orders.

Closer Series	Complete Arm Assembly	Main Arm Assembly¹ (length)(mm) (includes 7701-ES)	Secondary Arm Assembly (includes 7701-ES)	Arm Assembly Less Rod and Shoe	Rod & Shoe² Assembly (length)(mm)
1600BC/1601	7701-1	7701-1M (11)(279)	7701-111	7701-1W	7701-11 (8-7/8)(225)
J1600BC/J1601	7701-1A		7701-121		7701-11A (12-1/2)(318)
P1600BC/P1601	7701-6		7701-116		7701-16 (8-7/8)(225)
P1600BC/P1601³	7701-6A		7701-116A		7701-16A (12-1/2)(318)

1. C to C length shown in parentheses.
2. C 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" (162 to 203mm) wide throw hinges.

1600 SERIES ALUMINUM STOREFRONT DOOR CLOSERS

STAINLESS STEEL ARM ASSEMBLIES

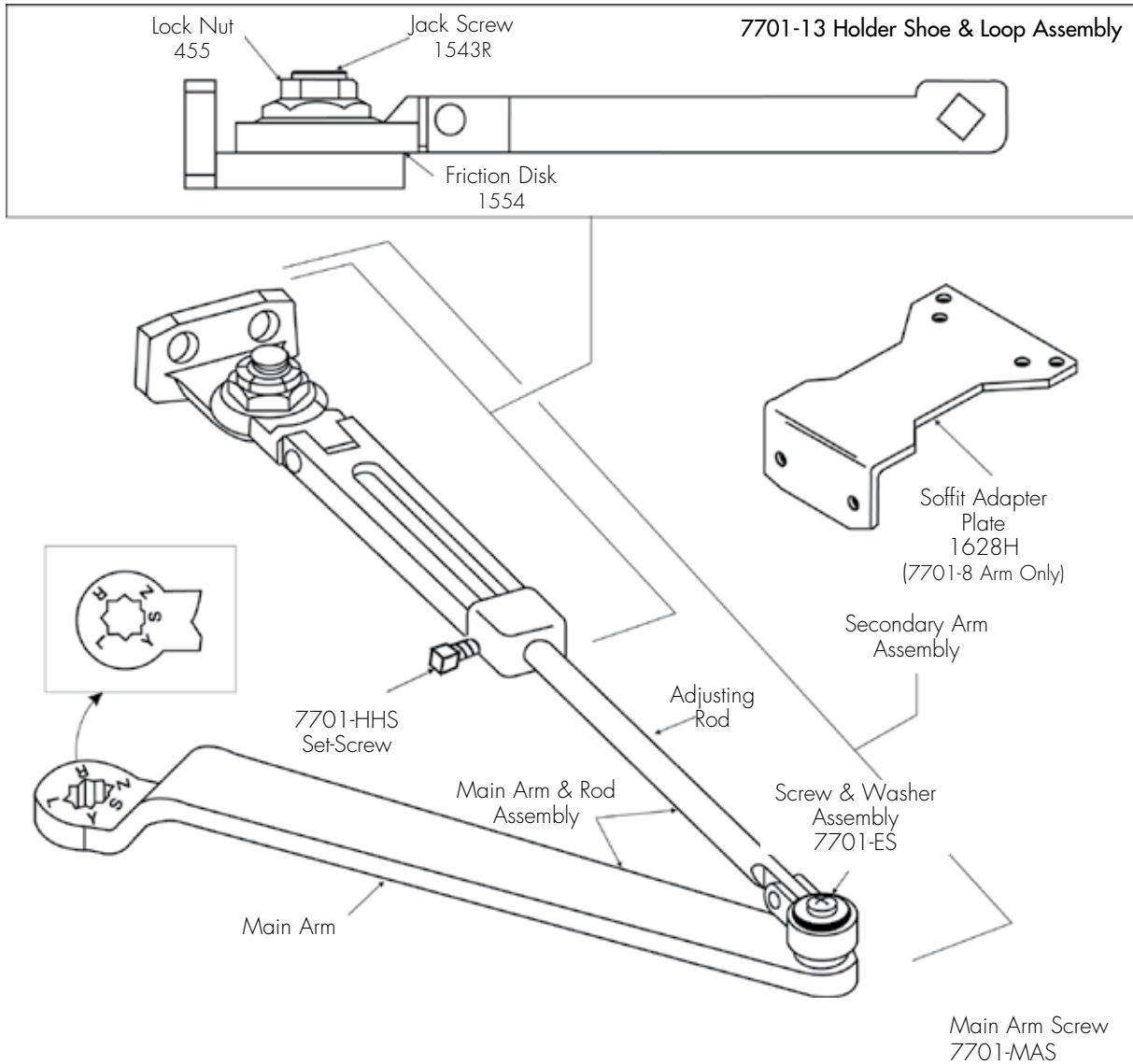


Note: Mounting hardware included with all parts orders.

Closer Series	Complete Arm Assembly	Main Arm Assembly ¹ (length)(mm) (includes 7701SS-ES)	Secondary Arm Assembly (includes 7701SS-ES)
1601SS	7701SS-1	7701SS-1M (11) (279)	7701SS-111 (8-7/8)(225)
J1601SS	7701SS-1A		7701SS-121 (12-1/2)(318)
P1601SS	7701SS-6		7701SS-116 (8-7/8)(225)

1. C to C length shown in parentheses.

HOLD OPEN ARM ASSEMBLIES



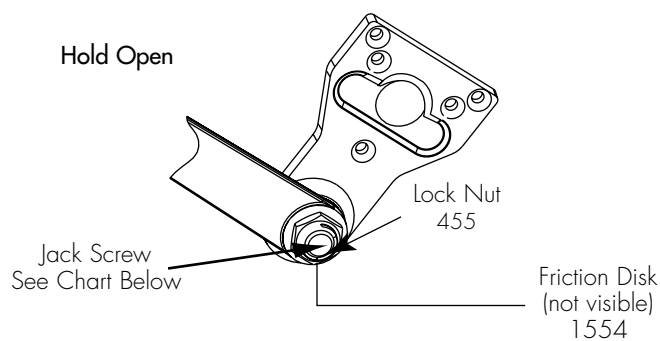
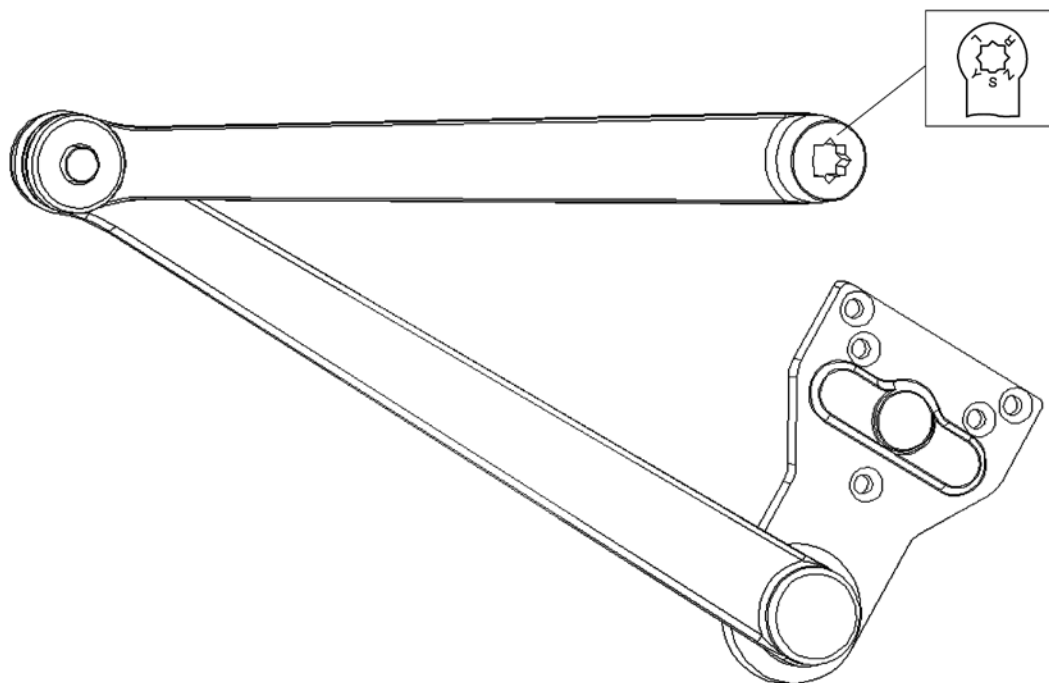
Note: Mounting hardware included with all parts orders.

Closer Series Assembly	Complete Arm Assembly	Main Arm ¹ (Length)(mm) (includes 7701-ES)	Secondary Arm (includes 7701-ES)	Main Arm & Rod Assembly	Holder Shoe & Loop Assembly	Adjusting Arm ² (Length)(mm)
1600BCH/1601H	7701-3/7701-8 ³ Reg./Par.	7701-1M (11) (279)	7701-113/7700-118 Reg./Par.	7701-3W	7701-13/7701-18 ⁴ Reg./Par.	7701-31 (7-3/8) (187)
J1600BCH/J1601H	7701-3A		7701-123	7701-3WA		7701-31A (10-13/16) (275)

1. C to C length shown in parentheses.
2. C of connecting link to end of rod shown in parentheses.
3. Same as 7701-3 but includes #1628H soffit adapter plate.
4. Same as 7701-13 but includes #1628H soffit adapter plate.

PARALLEL RIGID ARM ASSEMBLIES

Non-Hold Open Arm

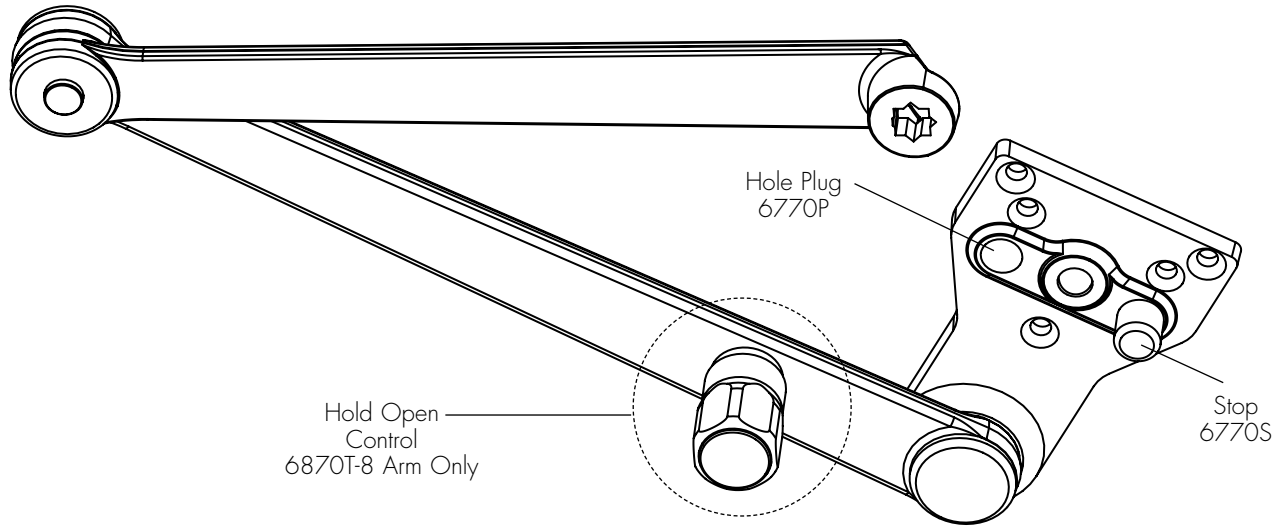


Note: Mounting hardware included with all parts orders.

Complete Arm Assembly	Arm Function	Jack Screw
PR7701-5	Non-Hold Open	N/A
PR7701-8R (right hand)	Hold Open	1543R
PR7701-8L (left hand)		1543L

CLOSERPLUS® ARM ASSEMBLIES

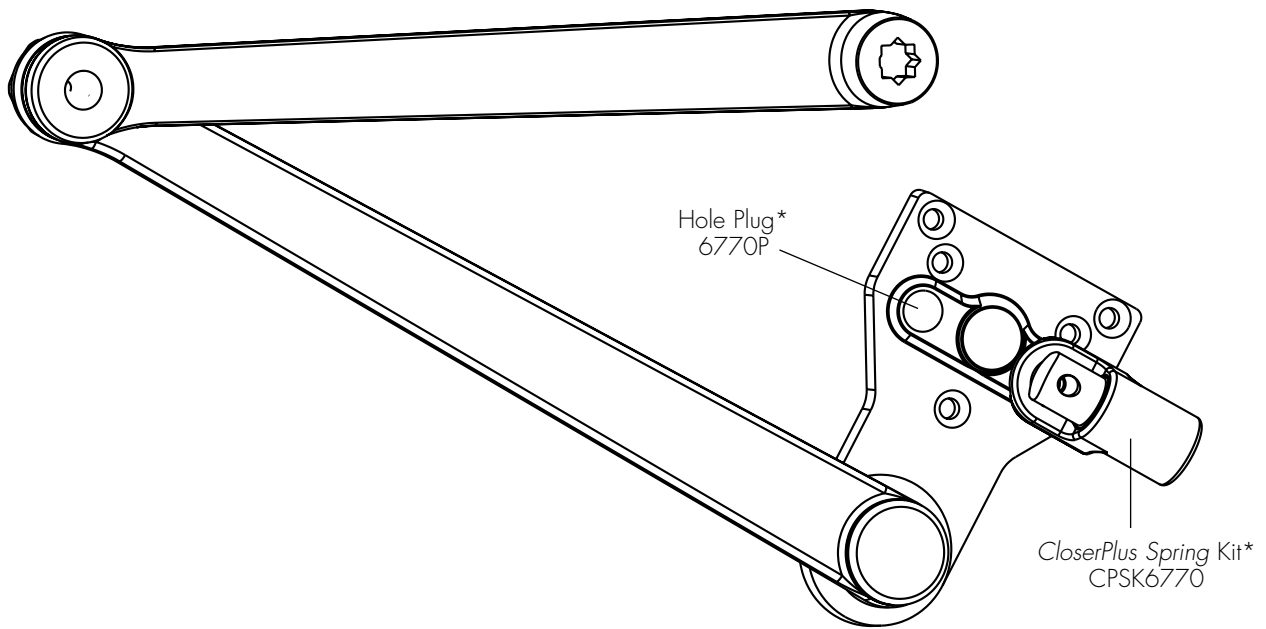
Hold Open Arm shown (CLP-T)



Note: Mounting hardware included with all parts orders.

Complete Arm Assembly	Arm Function
6770-5	Non-Hold Open
6870T-8	Thumbturn Hold Open

CLOSERPLUS SPRING™ ARM ASSEMBLIES



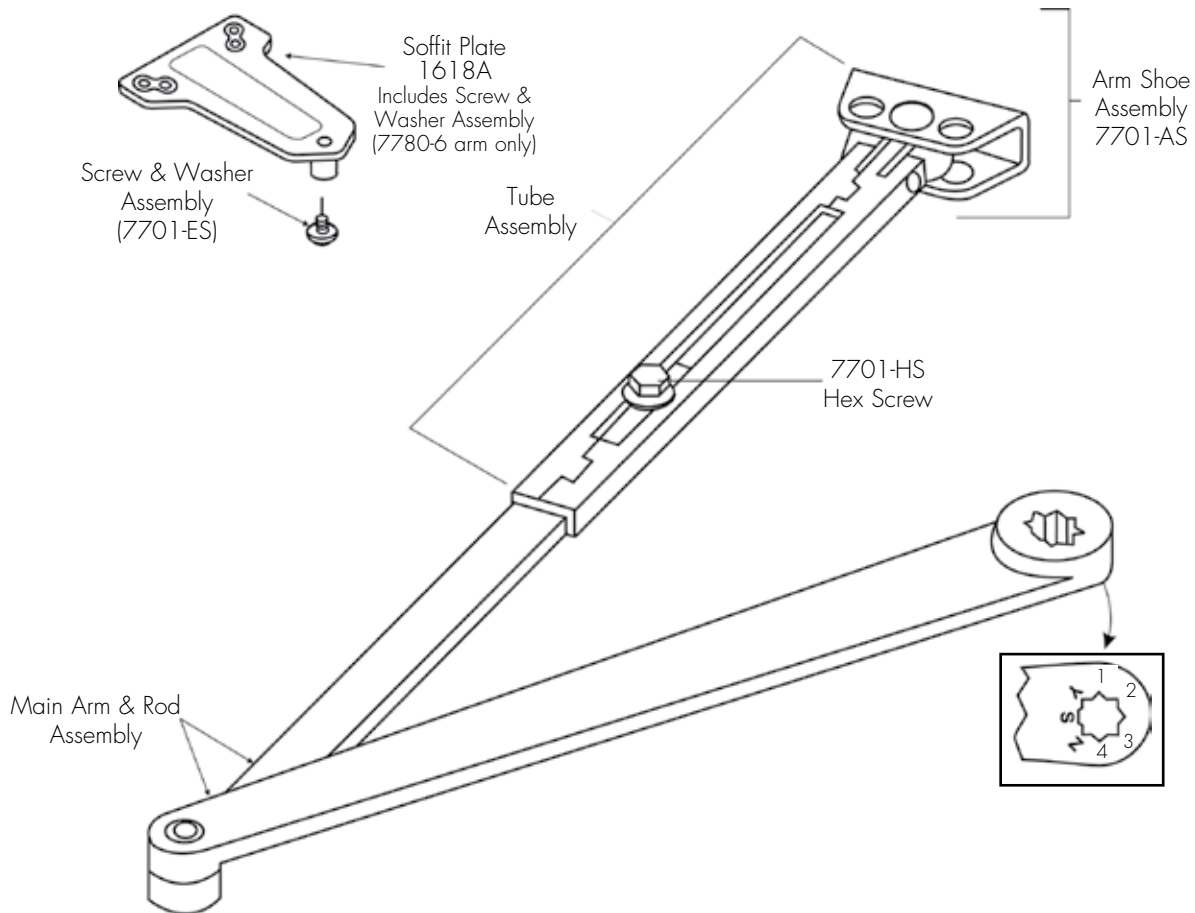
Complete Arm Assembly	Arm Function
CPS6770-5	Non-Hold Open
CPS6870T-8	Thumbturn Hold Open

* These parts and screw pack are included with complete arm assemblies.

Note: Mounting hardware included with all parts orders.

LOW PROFILE ARM ASSEMBLIES

Non-Hold Open Arm shown

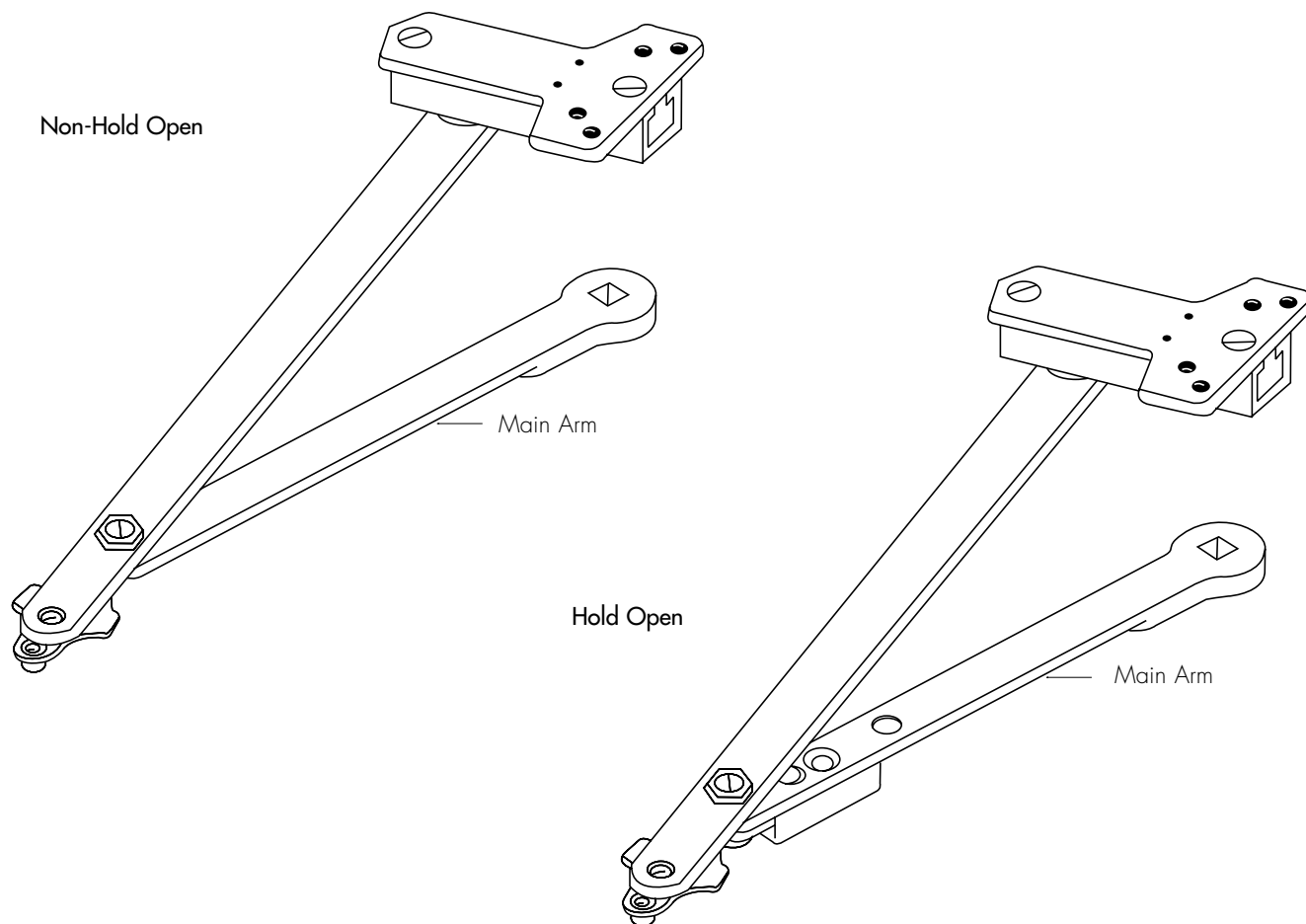


Note: Mounting hardware included with all parts orders.

Arm Application	Complete Arm Assembly	Main Arm & Adjusting Rod Assembly	Tube & Shoe/Soffit Rod Assembly
Regular Arm	7780-1	7780-1MR	7780-1TS (with 7701-AS)
Parallel Arm	7780-6		7780-6TS (with 1618A)
Tri-Style®	7780-26		

UNITROL[®] ARM ASSEMBLIES

Parallel Arm



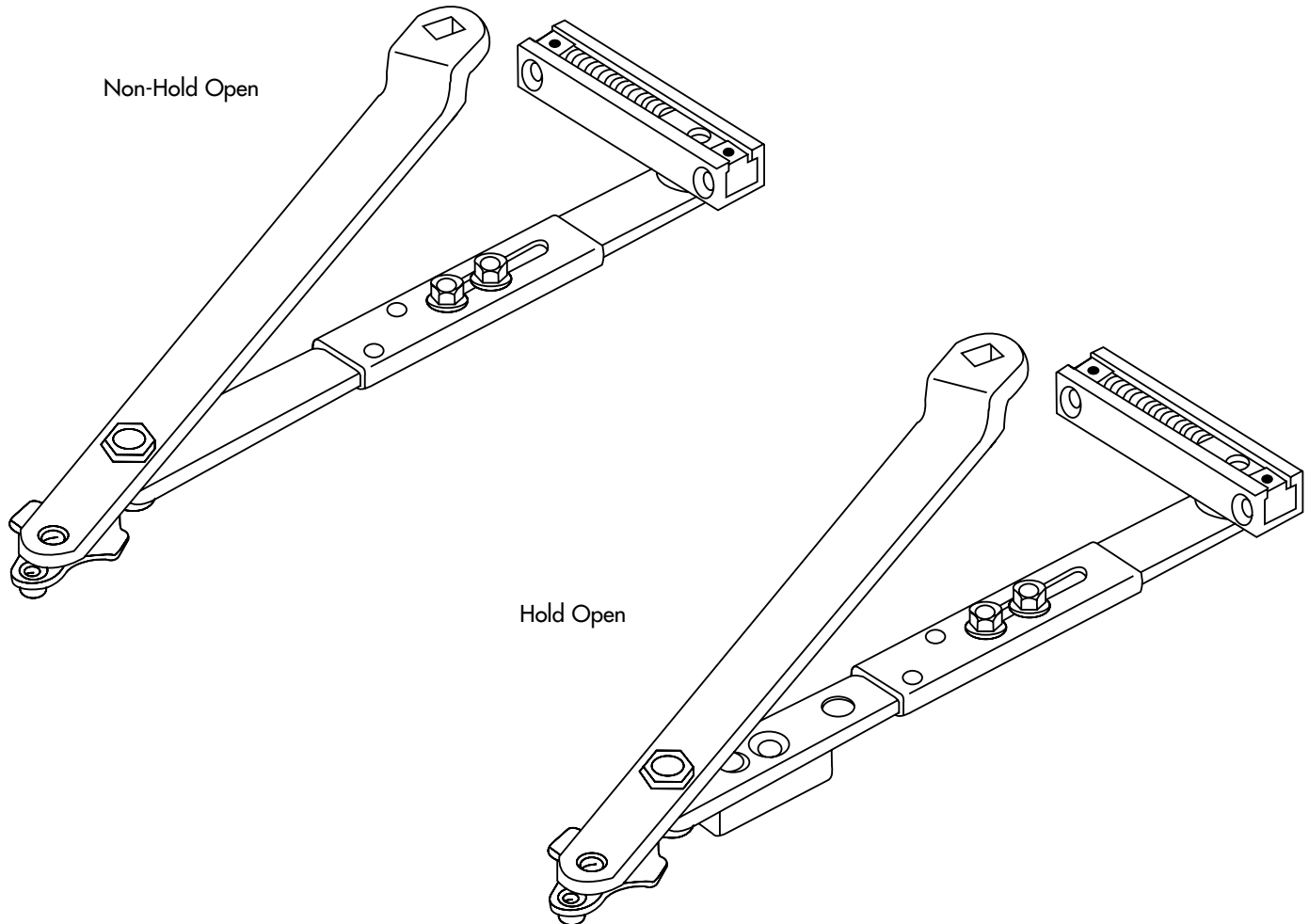
Note: Mounting hardware included with all parts orders.

Complete Arm Assembly			
Non-Hold Open	Hold Open	Door Width (cm)	Main Arm Length* (mm)
6100-11	6100-1	28" - 32" (71 - 81)	9-1/2" (241)
6100-13	6100-3	33" - 41" (84 - 104)	11" (279)
6100-14	6100-4	42" - 48" (107 - 122)	12-1/2" (318)

* Center to center length.

UNITROL® ARM ASSEMBLIES

Top Jamb



Note: Mounting hardware included with all parts orders.

Complete Arm Assembly		
Non-Hold Open	Hold Open	For Frame Reveals (mm)
J6100-4	J6100-7	2-1/8" - 3-1/4" (54 - 83)
J6200-4	J6200-7	1/2" - 2" (13 - 51)
J6400-4	J6400-7	3-3/8" - 4-1/4" (86 - 108)
J6500-41	J6500-71	4-3/8" - 5-3/8" (111 - 137)
J6500-42	J6500-72	5-1/2" - 6-3/8" (140 - 162)
J6500-43	J6500-73	6-1/2" - 7-3/8" (165 - 187)
J6600-4	J6600-7	0 - 3/8" (0 - 10)

1600 SERIES
ALUMINUM STOREFRONT DOOR CLOSERS

NOTES

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton®, Unicontrol®, CloserPlus®, NorGlide® and Tri-Style® are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. CloserPlus Spring™ is a trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2002-2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

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

43048-11/15R

1700BC SERIES

Light Commercial
Door Closer



Norton[®]

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

OVERVIEW

Norton[®] 1700BC Series Door Closers are multi-feature closers whose compact design is ideal for application on interior doors. This narrow-stile closer has distinctive lines that harmonize with most decors. It is available with a full cover to provide an installation with compatible appearance to other door closers with covers. The Norton 1700BC Series Door Closer offers an economical alternative for those installations where a more heavy-duty closer is not necessary.

Standard Features

- Tri-Style[®] packaging: closer tri-packed for regular arm, top jamb or parallel arm installation.
- Non-handed
- Aluminum alloy shell
- Rack & pinion operation
- Adjustable closing speed
- Adjustable latch speed
- Adjustable backcheck cushioning: independent regulating valve
- Non-hold open

Optional Features

- Full molded cover
- Hold open

SPRAYED FINISHES

Description	Specify Norton (BHMA) Designation	Complements the following finishes
Aluminum	689	628, 625, 629, 630, 651, 652
Statuary Bronze	690	640, 613
Dull Bronze	691	612, 637, 639
Black	693	315
Medium Amber	694	312
Gold	696	605, 606, 632, 633
556 White	N/A	
Prime Coat*	600	

*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: 1704BC x 600 x 689).

TABLE OF CONTENTS

How To Order 3

Suggested Specifications 3

Compliance Standards 3

Sizing Chart 3

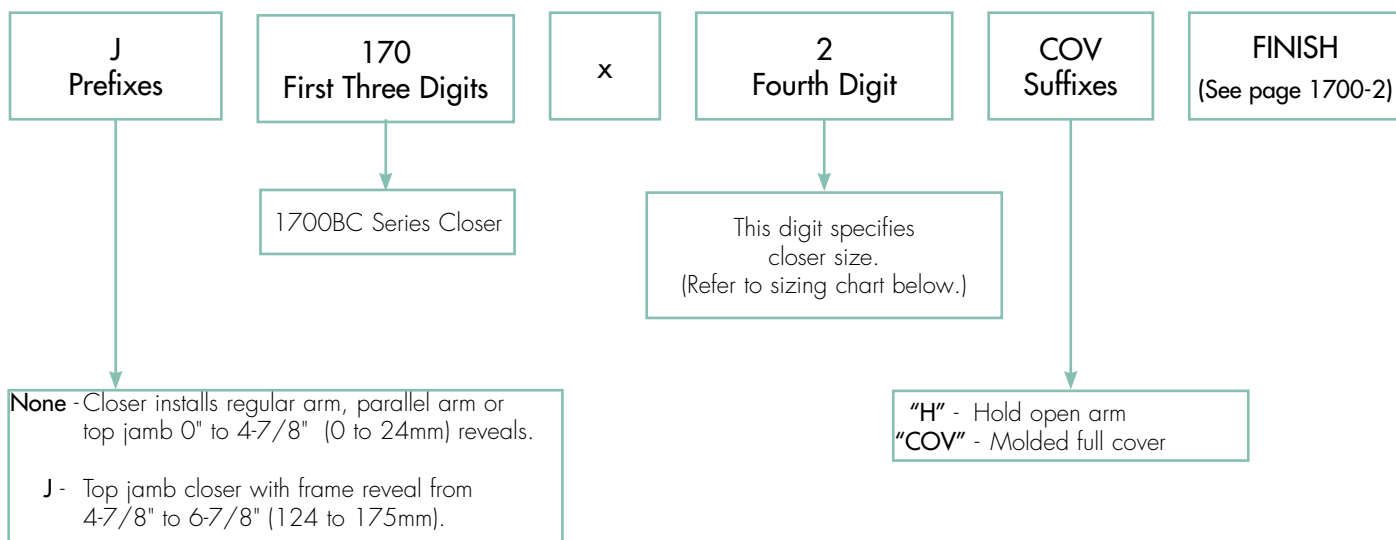
Accessories 4

Regular Arm Installation 5

Top Jamb Installation 6

Parallel Arm Installation 7

GLOSSARY OF TERMS





Fasteners

Through-bolts, grommet nuts and sex nuts are available to special order.

Suggested Specifications

Closers for interior doors shall be full rack-and-pinion type with cast aluminum alloy shell. Closer shall be non-handed to permit installation on either hand of door. Closer to be supplied with brackets to allow regular arm, parallel arm or top jamb mounting. Closer to have non-critical valves to independently regulate sweep speed (and) latch speed (and backcheck cushioning.) The forearm bracket shall permit a 15% power adjustment by rotating the forearm and bracket 180° at the door or frame. (Closer shall be enclosed in a molded full cover.) Closer to be Norton 1700BC Series, 1700BCCOV Series.

Compliance Standards

- ANSI/BHMA A156.4, Grade 2 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- This product is manufactured in an ISO 9001 facility

SIZING CHART

Model Number		Interior Doors: Maximum Size Wood or Metal (cm)		
		Type of Installation		
Non-Hold Open	Hold Open	Regular Arm	Parallel Arm	Top Jamb
1701BC	1701BCH	The 1701BC closer (size 1) is intended for use on doors with a maximum clear opening width of 2'8" (81cm) to provide less than 5.0 lbs. (22.2N) of door opening resistance.		
1702BC	1702BCH	30" (76)	30" (76)	30" (76)
1703BC	1703BCH	36" (91)	32" (81)	36" (91)
1704BC	1704BCH	42" (107)	36" (91)	42" (107)

Door width information is based on 1-3/4" (44mm) x 7" (2.13m) standard weight doors swinging 110°. Other conditions (such as door height, weight, or draft conditions) may require a larger size closer.

Note: Contact factory if door weight exceeds 250 lbs.

ACCESSORIES

Part Number	Description
1700-1	Arm Assembly - Non-Hold Open
1700-3	Arm Assembly - Hold Open
17P	Cover
1739	Pinion Cap
1788	Parallel Arm Adapter Plate (Hold Open)
1789	Parallel Arm Bracket
170XBCLAP	Closer Body*

* X = specify closer size

Door Plates

For narrow top rails, narrow frame faces, and top jamb hold open installations. Plates vary in size when the closer is ordered with or without a full molded cover. Order drop plates from the chart. Specify finish when ordering separately.

Type Of Installation	Drop Plate Model Number	
	Without Cover	With Cover
Regular Arm	1746	1756
Top Jamb	1746	1757
Parallel Arm	1748	1758

For drop plate requirements, see Dimensional Information pages 5-7.

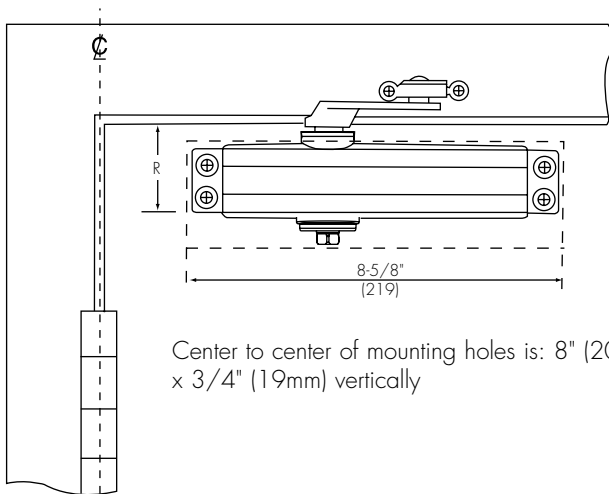
Molded Full Cover

Molded of high-impact U.L. listed material for completely enclosing the closer body, mounting screws and the unused pinion shaft. This cover is non-handed. It has two notches; one for clearance of the pinion shaft. An insert is included for insertion into the unused notch. Four molded catches engage the closer body for easy yet secure installation. To order this cover separately, specify 17P x finish.

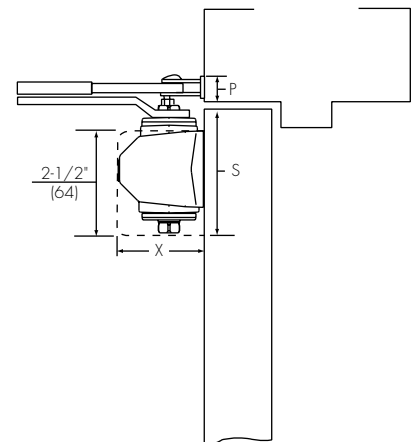
1700BC SERIES LIGHT COMMERCIAL DOOR CLOSER

REGULAR ARM INSTALLATION

Closer mounts on door;
Arm bracket on frame face.



Center to center of mounting holes is: 8" (203mm) horizontally
x 3/4" (19mm) vertically

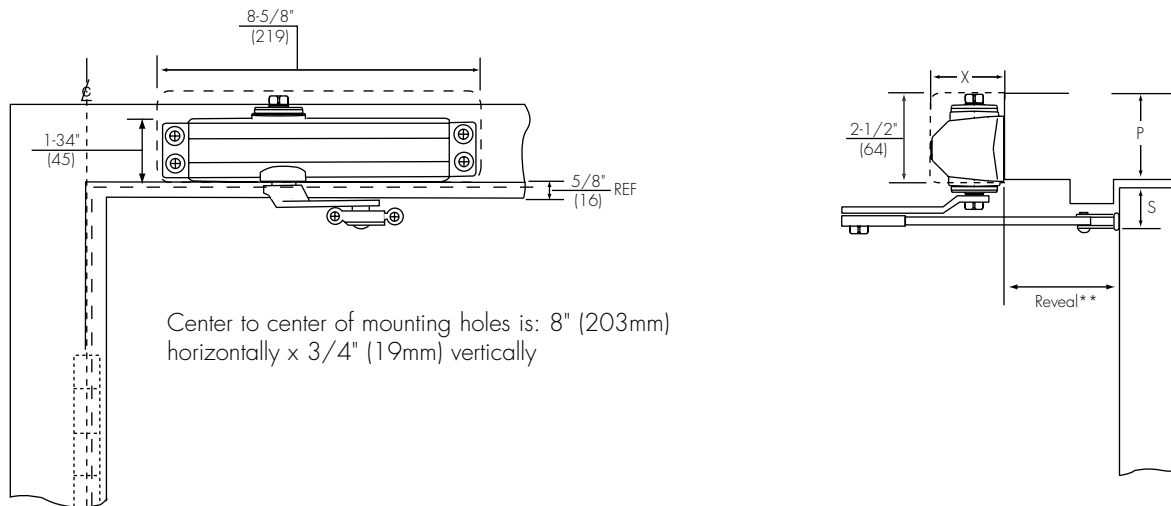


R Minimum Top Rail				S Minimum Top Rail Clearance		P Minimum Ceiling Clearance Without Drop Plate		X Closer Projection	
Without Drop Plate		With 1746/1756 Drop Plate							
Non-Hold Open	Hold Open	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open	Without Cover	With Cover
2" (51)		1-1/4" (32)		3" (76)	2-7/8" (73)	1" (25)	1-3/8" (35)	1-15/16" (49)	2-1/16" (52)

Sizes based upon door 7'0" (2.13m) x 1-3/4" (44mm)

TOP JAMB INSTALLATION

Closer mounts on push side of frame; arm shoe mounts to door.



S Minimum Top Rail Clearance			P Minimum Ceiling Clearance				X Closer Projection	
Without Drop Plate	With 1746/1757 Drop Plate		Without Drop Plate	With 1746/1757 Drop Plate				
Non-Hold Open	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open	Non-Hold Open	Hold Open	Without Cover	With Cover
1-1/4" (32)	2-1/4" (57)	2-5/8" (67)	2-1/2" (64)	N/A***	1-3/4" (44)		1-15/16" (49)	2-1/16" (52)

Sizes based upon door 7'0" (2.13m) x 1-3/4" (44mm)

****Reveal Information**

The standard 1700BC Series non-hold open closers and 1700BCH Series hold open closers (Top Jamb mount) accommodate frame reveals for 0" to 4-7/8" (0 to 124mm).

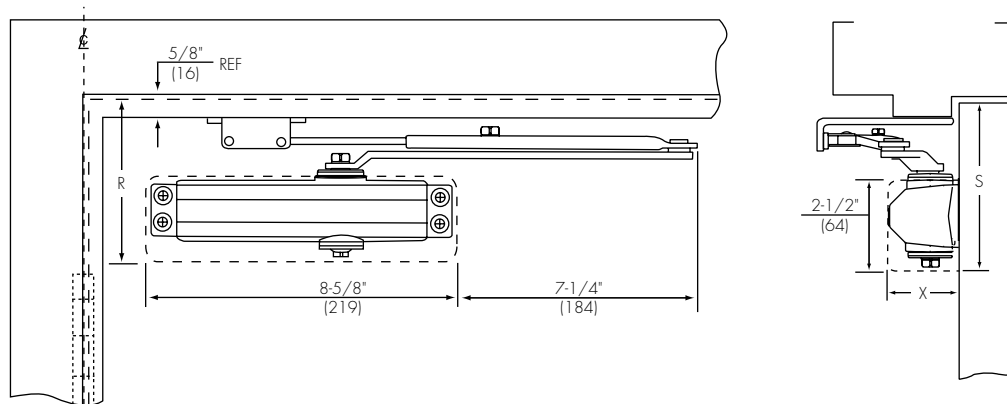
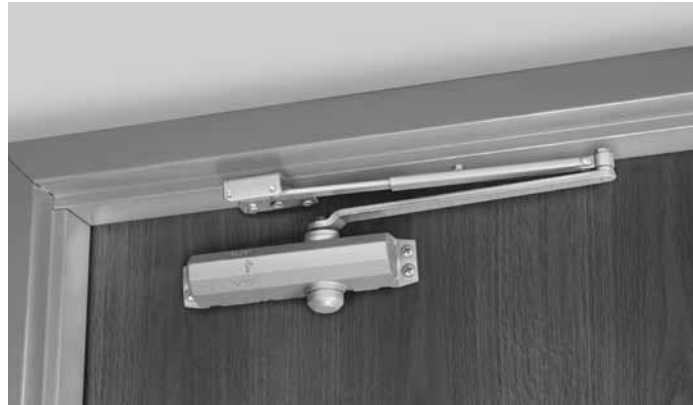
J1700BC Series non-hold open closers and J1700BCH Series hold open closers accommodate frame reveals from 4-7/8" to 6-7/8" (124 to 175mm). These closers are not supplied with "Tri-Style® installation" hardware.

***Use of hold open arm requires use of a drop plate.

1700BC SERIES LIGHT COMMERCIAL DOOR CLOSER

PARALLEL ARM INSTALLATION

Closer Mounts on Door;
Bracket on frame soffit.



Center to center of mounting holes is: 8" (203mm)
horizontally x 3/4" (19mm) vertically

R Minimum Top Rail				S Minimum Top Rail Clearance		X Closer Projection	
Without Drop Plate		With 1748/1758 Drop Plate		Non-Hold Open	Hold Open	Without Cover	With Cover
Non-Hold Open	Hold Open	Non-Hold Open	Hold Open				
4" (102)	4-1/4" (108)	2-1/4" (57)		4-3/4" (121)	5" (127)	1-15/16" (49)	2-1/16" (52)

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton® and Tri-Style® are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 1999-2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

78-B/F SERIES

Traditional Door Closers



Norton[®]
ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

INTRODUCTION

The Norton® Series 78-B/F Traditional Surface Closers represent a combination of traditional styling and modern closer features. All closer sizes are contained within a single size aluminum alloy shell. Templates for installing this closer are the same for all closer sizes.

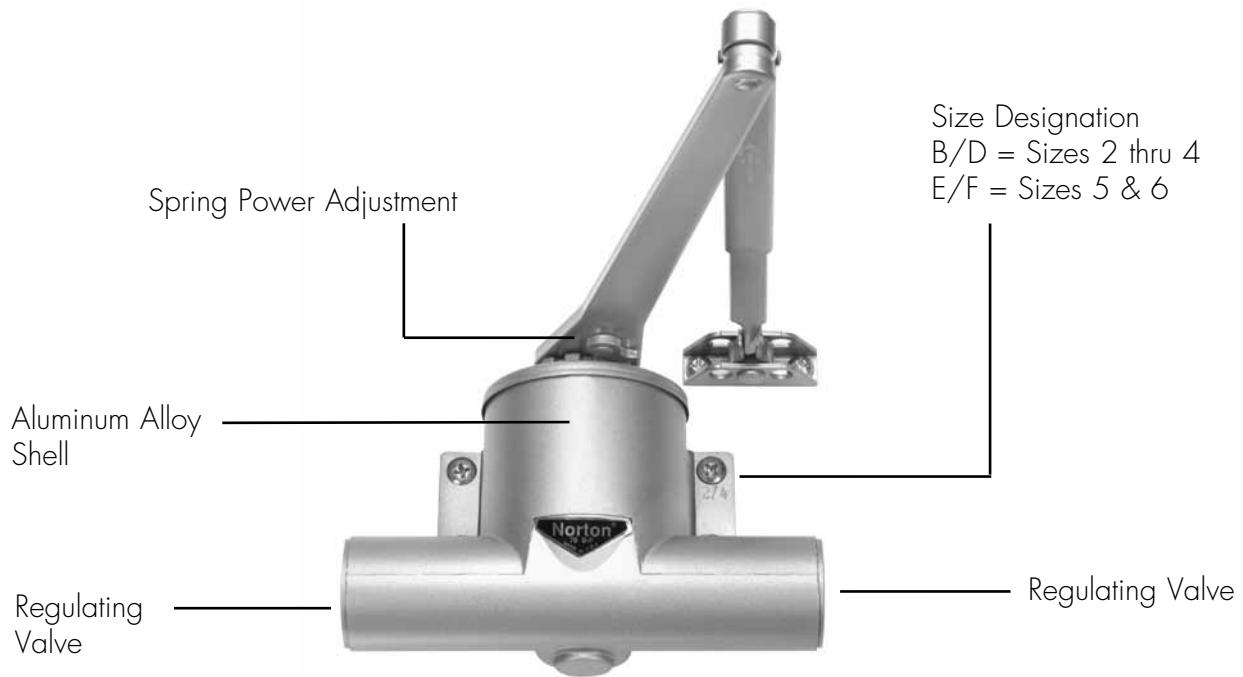
In addition only two springs are needed to accommodate the complete range of door sizes. One clock spring is adjustable to meet the closing force requirements for closer sizes 2, 3, and 4. One other larger spring can be adjusted to meet the closing force for closer sizes 5 and 6. Both springs are powerful enough to provide an additional 50% power increase over the minimum closing force for the largest size in their range; i.e. 50% over size 4 and 50% over size 6.

These Norton Traditional Surface Closers have an unusual ability to accommodate power adjustment to their environment. The adjustable clock coil spring provides a small incremental increase or decrease through a wide range of closer power. They can be adjusted to meet the exact power requirements of the installation. Sweep speed, latch speed and backcheck cushioning can also be adjusted to door, frame and variable conditions.


TABLE OF CONTENTS

Overview	3
Compliance Standards and Specifications.....	3
How to Order	4
Fasteners and Finishes	4
Features	5
Applications.....	6-7
Technical Details.....	8-11
Accessories.....	12-17
Parts List	18-22

OVERVIEW



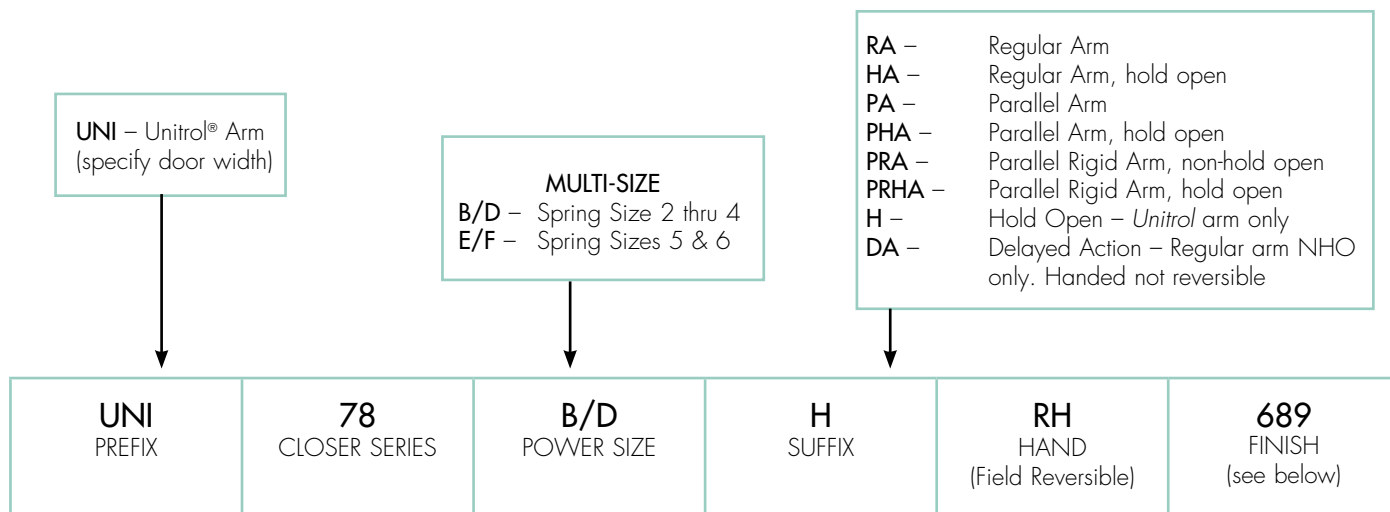
COMPLIANCE STANDARDS

- ANSI/BHMA A156.4, Grade 3
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- This product is manufactured in an ISO 9001 facility
- Listed by the New York City Materials and Equipment Acceptance Division

SPECIFICATIONS

Closer for interior (and) exterior doors shall be rack-and-pinion type enclosed in a cast aluminum alloy shell. Closer spring shall be clock-type coil spring and shall be adjustable through a wide range of closing power. Closer shall be equipped with a single hex-key operated regulating valve for control of both closing and latch speeds. Closer shall have a hex-key operated regulating valve to control the adjustable backcheck feature. Closer shall be Norton® Series 78-B/F Traditional Surface Closer or equivalent.

HOW TO ORDER



Note: Contact factory if door weight exceeds 250 lbs.

FASTENERS

Type	Description	Arm			
		RA	PA	PR	UNI
DOOR					
SDST	Self-Drilling Self-Tapping	S	S	S	S
MS	Machine Screw	S	S	S	S
SN	Sleeve Nut	O	O	S	S
TBGN	Thru Bolts & Grommet Nuts	O	O	O	O
FRAME					
SDST	Self-Drilling Self-Tapping	S	S	S	S
MS	Machine Screw	S	S	S	S

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).

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.

FINISHES

Available Finishes

All door closers are painted in water-borne acrylics. All steel parts, arms, bracket and mounting plates are powder coated. The closers will withstand 100 hours of salt spray. ANSI requires 25 hours.

*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: 78-B/D x 600 x 689).

Sprayed Finishes

Description	Specify (BHMA) Designation	Complements the following finishes	Old Designation
Aluminum	689	628, 625, 629, 630, 651, 652	AL
Statuary Bronze	690	640, 613	STAT
Dull Bronze	691	612, 637, 639	DB
Black	693	315	315
Medium Amber	694	313	312
Gold	696	605, 606, 632, 633	GB
Prime Coat	600*	—	SRI

FEATURES

Aluminum Alloy Shell: Norton® closer shells are constructed of a special aluminum alloy, carefully selected to accommodate individual closer characteristics and operating conditions.

Adjustable Spring Power: Clock-type coil spring affords a wide range of closer power. Permits a fine adjustment of the closer to the environment.

Rack & Pinion Operation: Provides a smooth transmission of power for control of the door through its full opening and closing cycle.

Adjustable Sweep/Latch Speed: A dual purpose regulating valve, hex-key operated, permits independent adjustment of both sweep and latch speed.

Adjustable Backcheck Cushioning: An independent regulating valve, hex-key operated, provides an adjustable hydraulic cushion to the door opening speed toward the end of the opening cycle. This feature is standard with all but delayed action closers. Backcheck is not available with delayed action closers.

Non-Hold Open Arm: Standard closer will be supplied with a non-hold open arm. This arm is non-handed.

Hold Open Arm: Closer arm has adjustable hold open feature (90° to 180°). This arm is non-handed for regular arm application only. It is handed for all friction hold open parallel arm installations. Order by suffixing "HA" to the Model number.

Warranty: Limited ten-year warranty for defects and life of the building on the aluminum housing.

Field Reversible: Closer spring can be field-reversed to accommodate the hand of the door. It is recommended that wherever possible the closer be ordered handed. Parallel hold open arms and delayed action closers are not reversible.

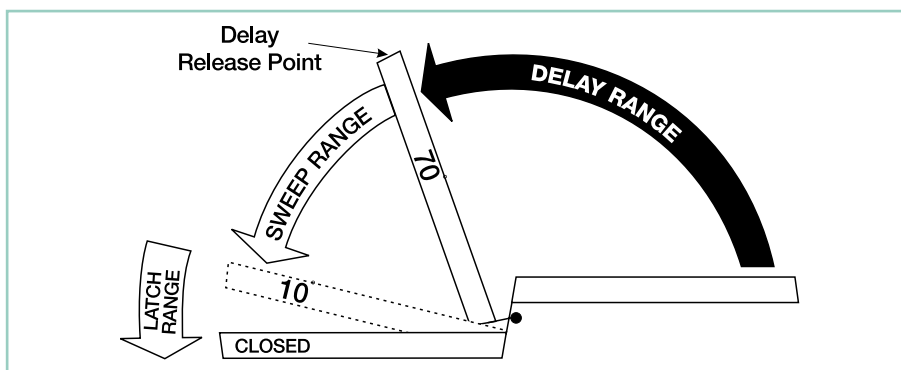
*Note: Regular arm (NHO units only) are handed - not reversible

OPTIONAL FEATURES

Adjustable Delayed Action Closing* (Supplied in lieu of backcheck feature)

An optional hydraulic feature that adds a third speed range to the closing cycle. This feature becomes effective when the door is opened and released at any point beyond 70°. The amount of time delay depends upon the combination of the angle of door release and valve adjustment. The valve can be adjusted with a 1/8" (3mm) hex key from no delay time up to maximum delay times of:

Door Opened and Released at	Approximate Time of Delay Cycle
180°	4-5 minutes
120°	2-3 minutes
90°	25-30 seconds



Suggested Applications

Delayed action closing allows slow-moving traffic to clear the opening before the door closer's normal closing cycle begins. This feature can be helpful in health care facilities such as hospitals and nursing homes. It provides sufficient time for persons on crutches or in wheelchairs to pass through a door without concern of it closing. At the same time, it can accommodate the facility's staff with

movement of food service carts, beds, and other wheeled traffic. Use of delayed action closers on many doors throughout industrial and commercial buildings can also assist the flow of traffic. Locations where additional time to clear the opening is advantageous are doors between office and factory/warehouse facilities, doors to workshops or laboratories, to kitchen and food processing areas, etc.

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.



Parallel Arm

This application provides the most appealing design appearance for a surface-mounted door closer having a double lever arm. This also makes it 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 of 5-3/8" (137mm) to mount the body. Clearance to the bottom of the closer body from the top of the door is 7-3/8" (187mm). (Based on 5/8" (16mm) high frame stop.)



Parallel Rigid Arm

An enhanced variation of the standard parallel arm assembly that is intended for use in heavy traffic areas where auxiliary door stops are installed. Hold open available - specify hand when ordering.



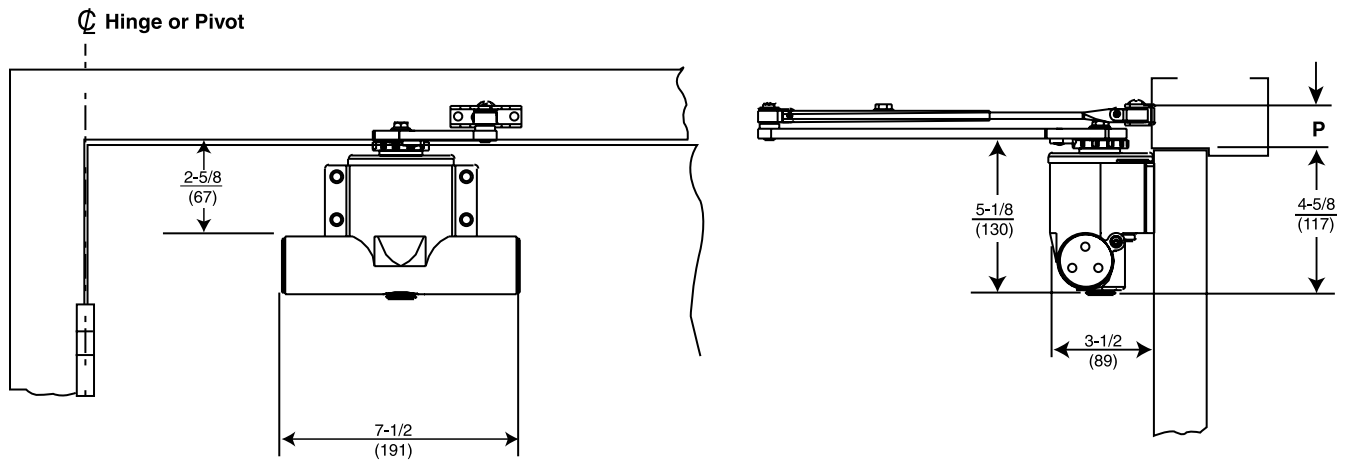
Unitrol® Arm (Parallel Arm applications only)

Unitrol arms combine the features of a double lever arm overhead door stop/holder with the backcheck feature of the door closer to reduce door stopping shock loads to a minimum. The Unitrol uses a compression spring buffer at the soffit plate/arm shoe that will absorb 30 lbf. of force, 5° prior to the door's dead stop. Coupled with the door closer's backcheck feature, this arm provides the most controlled stop available with a surface door closer.

For parallel arm applications there are three different length arm assemblies. Each length is designed for a specific range of door widths, to provide precise door control. This further lessens the dead stop impact on the door's hinges/pivots.

78-B/F SERIES TRADITIONAL DOOR CLOSERS

REGULAR ARM



Body mounting holes are spaced 4-1/8" (105mm) horizontally and 1-3/8" (76mm) vertically.

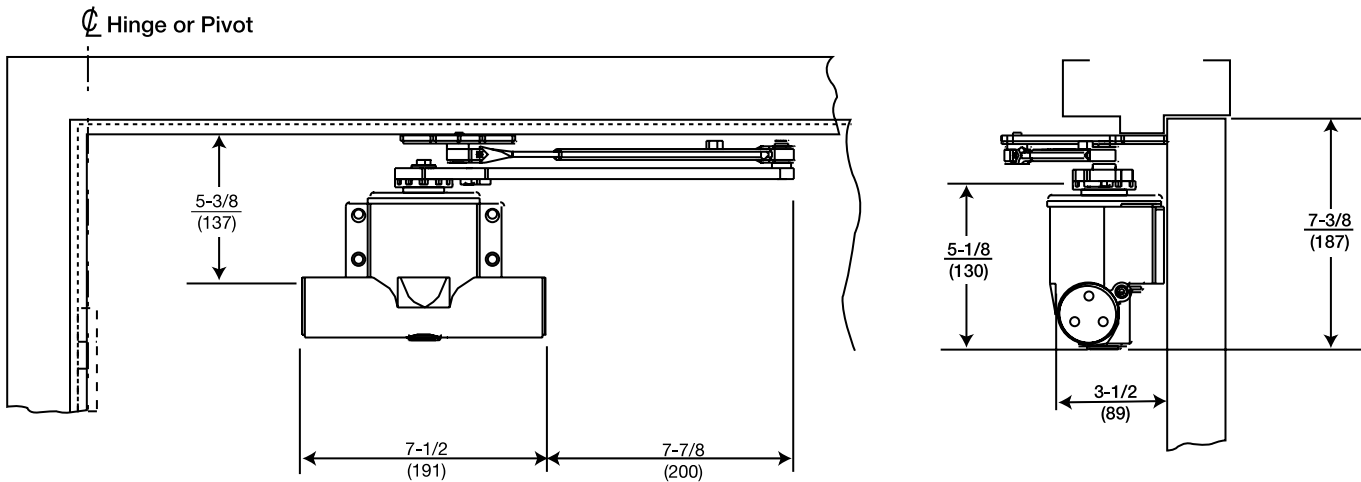
Maximum Door Size Wood or Metal Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
48" (122)	36" (91)	78B/D-RA	78B/D-HA
—	44" (112)	78E/F-RA	78E/F-HA

P Minimum Ceiling Clearance	
Non-Hold Open	Hold Open
1-1/2" (38)	2-1/8" (54)

All dimensions are for reference only. Door sizing information is based on installation on standard weight doors, 7'0" (213 cm) high 1-3/4" (44 mm) thick, hung on anti-friction hinges and operating under normal conditions.

Note: Contact factory if door weight exceeds 250 lbs.

PARALLEL ARM



Body mounting holes are spaced 4-1/8" (105mm) horizontally and 1-3/8" (76mm) vertically.

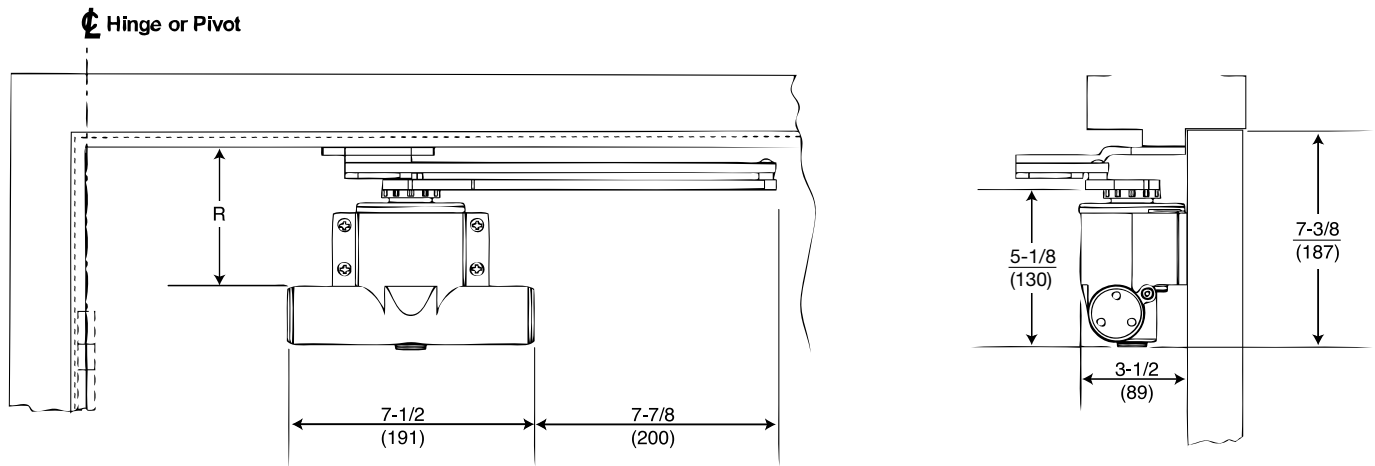
Maximum Door Size Wood or Metal Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
42" (107)	36" (91)	78B/D-PA	78B/D-PHA
—	44" (112)	78E/F-PA	78E/F-PHA

All dimensions are for reference only. Door sizing information is based on installation on standard weight doors, 7'0" (213 cm) high 1-3/4" (44 mm) thick, hung on anti-friction hinges and operating under normal conditions.

Note: Contact factory if door weight exceeds 250 lbs.

78-B/F SERIES TRADITIONAL DOOR CLOSERS

PARALLEL RIGID ARM



Body mounting holes are spaced 4-1/8" (105mm) horizontally and 1-3/8" (76mm) vertically.

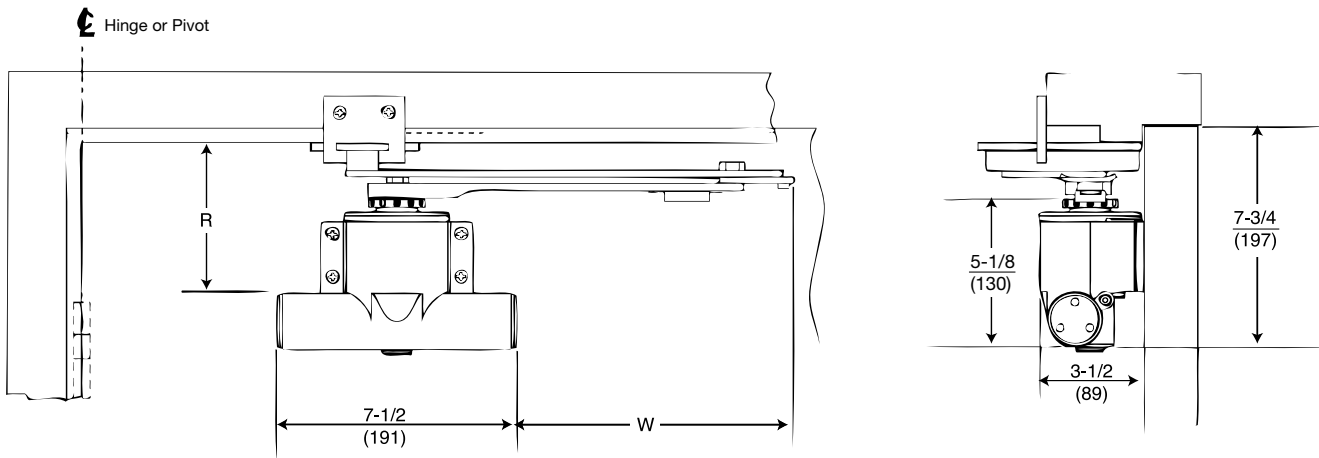
Maximum Door Size Wood or Metal Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
48" (122)	36" (91)	78B/D-PA	78B/D-PHA
—	44" (112)	78E/F-PA	78E/F-PHA

R Minimum Top Rail 5/8" (16mm) frame stop	
Without Drop Plate	With 88 Drop Plate
5-3/8" (137)	2-1/2" (64)

Door sizing information is based on installation on standard weight doors, 7'0" (213cm) high, 1-3/4" (44mm) thick, hung on anti-friction hinges and operating under normal conditions.

Note: Contact factory if door weight exceeds 250 lbs.

UNITROL® ARM



Body mounting holes are spaced 4-1/8" (105mm) horizontally and 1-3/8" (76mm) vertically.

Door Width Inches (cm)	R - Minimum Top Rail 5/8" (16mm) Frame Stop		W - Arm Extension Beyond Closer
	Without Drop Plate	With 88 Drop Plate	
28-32" (71-81)	5-5/8" (143)	2-3/4" (70)	8-7/8" (225)
33-41" (84-104)			10-3/8" (264)
42-48" (107-122)			11-7/8" (302)

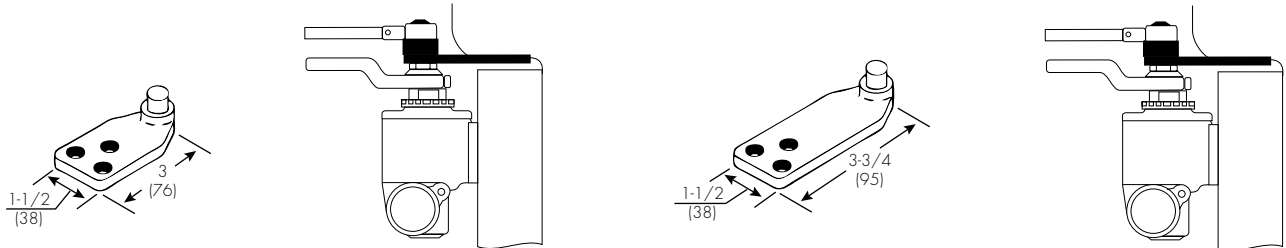
Maximum Door Size Inches (cm)		Model Number		
Interior	Exterior	Non-Hold Open	Hold Open	x Specify Door Width
28-41" (71-104)	28-36" (71-91)	UNI78-B/D	UNI78-B/D-H	
42-48" (107-122)	37-48" (94-122)	UNI78-E/F	UNI78-E/F-H	

Door sizing information is based on installation on standard weight doors, 7'0" (213cm) high, 1-3/4" (44mm) thick, hung on anti-friction hinges and operating under normal conditions.

Note: Contact factory if door weight exceeds 250 lbs.

REGULAR ARM

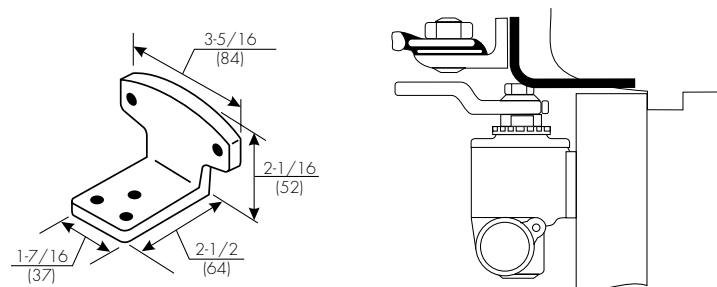
Brackets for Non-Hold Open Arms



Molded/Bull Nose Trim - #2403B 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" (51 mm) deep.

Molded/Bull Nose Trim - #2403 3/4 Bracket: This bracket is similar to - but longer than - the 2403B bracket. It is designed to accommodate frame rabbets from 2" to 2-7/8" (51 to 73mm) deep.

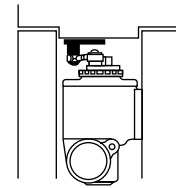
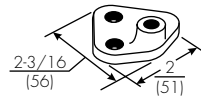
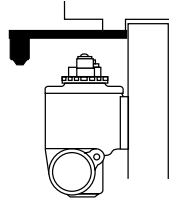
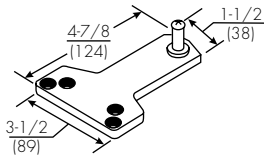
Brackets for Hold Open Arms



Molded/Bull Nose Trim - #80 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" (51 mm) deep. This bracket is used in combination with the standard hold-open mounting shoe.

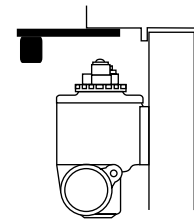
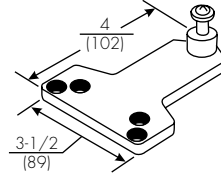
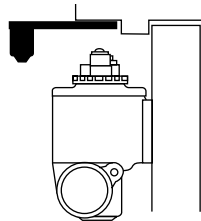
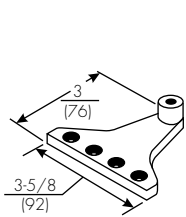
PARALLEL ARM

Brackets for Hold Open Arms



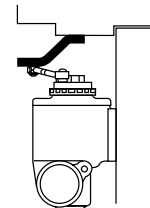
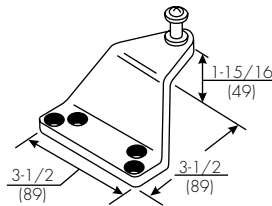
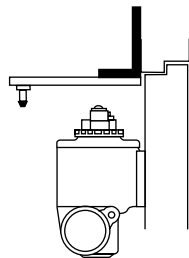
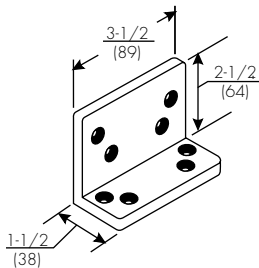
Standard Installation - #1618 Soffit Plate: This soffit plate is supplied standard with parallel arm closers. It can be mounted where the frame soffit is as narrow as 1" (25mm).

Mounting Between Doors - #2018 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 4-1/8" (105mm) of header space. Permits closer arm to clear up to a 5/8" (16mm) high stop.



Narrow Frame/Removable Stop - #2018B Soffit Plate: For use where a narrow frame or frame with removable stop does not permit use of the standard soffit plate. This 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 weatherstripping that is up to 1-3/8" (35mm) wide and 5/8" (16mm) in height.

Blade/Applied Stop - #2018D 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 arm to clear up to a 5/8" (16mm) high stop.

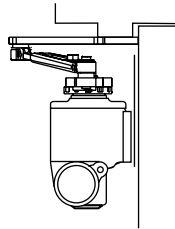
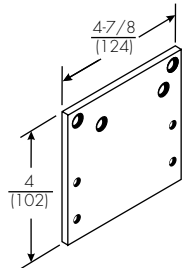


Flush Transom - 2022 Angle Bracket: For use where rabbeted or flush transom conditions prevent installation of a soffit plate. Used in combination with the 1618 soffit plate, or it may be used in combination with the 2018S soffit plate when it is necessary for the closer arm to clear a separate overhead door holder.

Extra-Clearance - #2018S 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 1-1/2" (38mm) 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 weatherstripping prevent the use of other soffit plates.

PARALLEL ARM

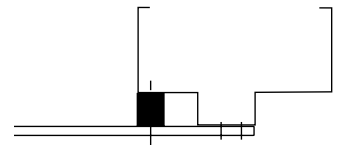
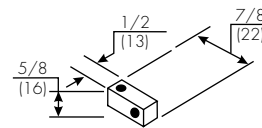
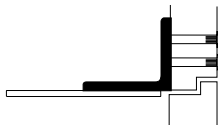
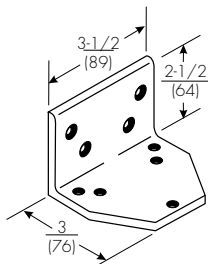
Closer Mounting Plates



Narrow Top Rail - #88 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface.

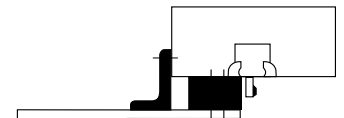
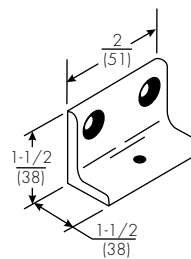
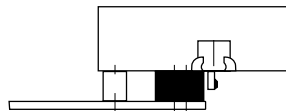
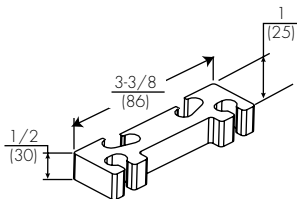
PARALLEL RIGID

Brackets for Non-Hold Open Arms



Flush Rabbed Transom - #2019L Angle Bracket: For use where flush transom conditions prevent mounting of the standard soffit plate. This bracket is used in combination with the standard soffit plate.

Standard - #2019S Spacer Block: For use where a narrow frame soffit does not provide adequate support for the soffit plate. Supplied as standard with all parallel rigid arm closers.

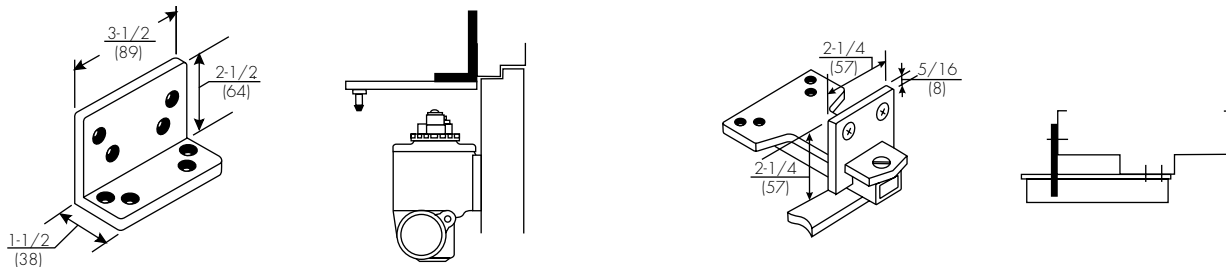


Clearance/Support Blade Stop - #6891 Spacer Block: For use where the frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard Spacer Block to provide clearance of the blade stop.

Narrow Frame - #6890 Support Bracket: For use where the frame is narrow, and the soffit plate cannot be mounted directly to the frame soffit or rabbet. Used in combination with the #6891 Spacer Block on blade stop frames to provide extra support and needed clearance of the blade stop.

UNITROL® ARM

Brackets for Non-Hold Open Arms



Flush Transom - #2022 Angle Bracket: For use where rabbeted or flush transom conditions prevent installation of a soffit plate. Used in combination with the 1618 soffit plate, or it may be used in combination with the 2018S soffit plate when it is necessary for the closer arm to clear a separate overhead door holder.

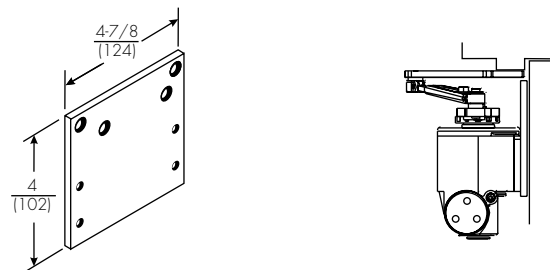
Additional Support - #6190 Reinforcing Bracket: Standard for use with all parallel arm *Unitrol* door controls. Provides additional support to the soffit plate on installations with door frame reveals from 1-7/8" to 4-5/8" (48 to 117mm).

Reinforcing Kit



Wide Frame - #6191 Reinforcing Kit: Optional for use with all parallel arm *Unitrol* door controls. Used to support the soffit plate on installations with wide frames. Clamps may be used with or without the spacer block, depending on frame conditions.

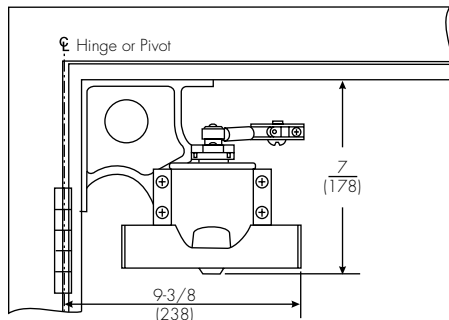
Closer Mounting Plates



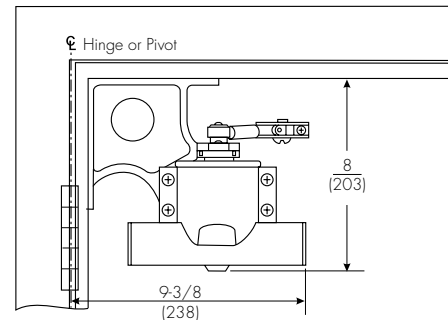
Narrow Top Rail - #88 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface.

CORNER BRACKETS

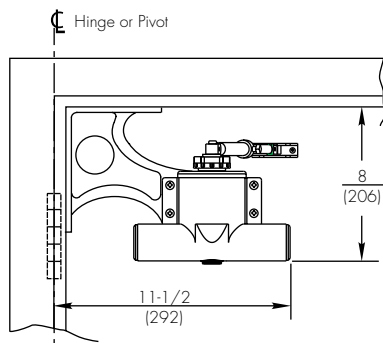
All of the following frame-mounted brackets require the use of a regular arm door closer of the opposite hand from the hand of the door. Use the Parallel Arm Sizing Chart to select the correct size of closer to use when the closer is to be mounted on a corner bracket.



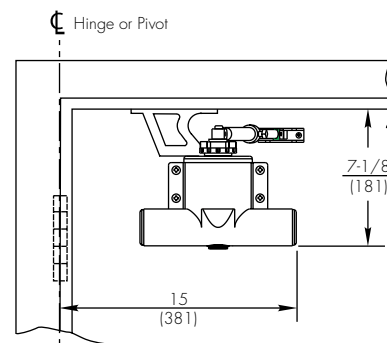
Corner Mounting, Standard Drop - #2-B/F Corner Bracket: For use where door is required to open to 180°. Minimum soffit width 1-3/8" (35mm).



Corner Mounting, Extra Drop - #5-B/F Corner Bracket: For use with a separate overhead door holder. Drops closer 1" (25mm) lower than #2-B/F Standard Drop Corner Bracket to permit mounting of an overhead holder. Permits door openings to 180°. Minimum soffit width 1-3/8" (35mm).

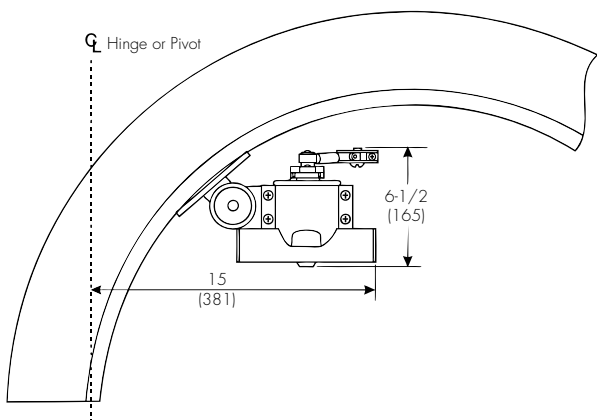


Corner Mounting, Extra Drop and Extension - #8-B/F Combination Bracket: Recommended for use instead of #2-B/F or #5-B/F Corner Brackets, whenever possible. Provides 1/2" (13mm) more clearance than #5-B/F Corner Bracket for an overhead door holder, and positions closer farther from hinge edge of door for best power advantage. Permits door openings to 140°.

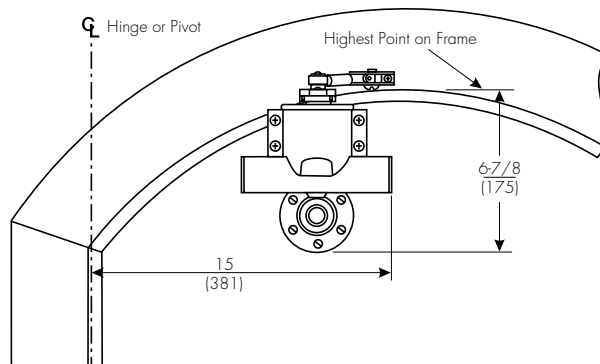


Soffit Mounting - #1-B/F Soffit Bracket: For use where frame conditions prevent mounting of a corner bracket. This bracket mounts to the overhead frame soffit. Permits door openings to 180°.

CORNER BRACKETS



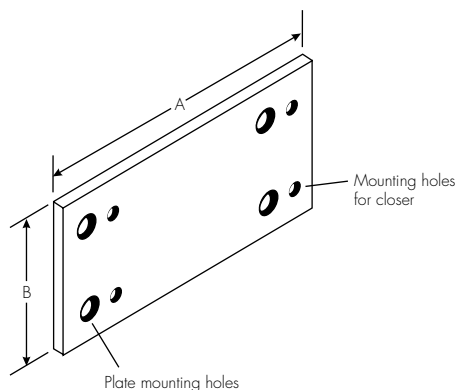
Arched or Circular Top Door - #6-B/F Adjustable Bracket: For opposite hinge side application on arched or circular top doors. This frame-mounted bracket can be adjusted to accommodate virtually any radius of frame. Minimum soffit width 2-1/2" (64mm). This bracket requires the use of a regular arm door closer of the opposite hand from that of the door. Intended for 90° door swing.



Arched or Circular Top Door - #7-B/F Offset Adjustable Bracket: For hinge side application on arched or circular top doors. This door-mounted bracket is adjustable to accommodate virtually any radius of frame. Base diameter 3-5/8" (92mm). Use in conjunction with a regular arm door closer. Intended for 90° door swing.

ADAPTER PLATES

Size Closer Being Replaced	Adapter Plate Catalog Number	Dimensions	
		A	B
B	9-B	4-7/8" (124)	2-1/4" (57)
B/C	9-B/C	5-1/2" (140)	2-5/8" (67)
D	None Required	—	—
E/F	9-E/F	5-1/2" (140)	2-5/8" (67)

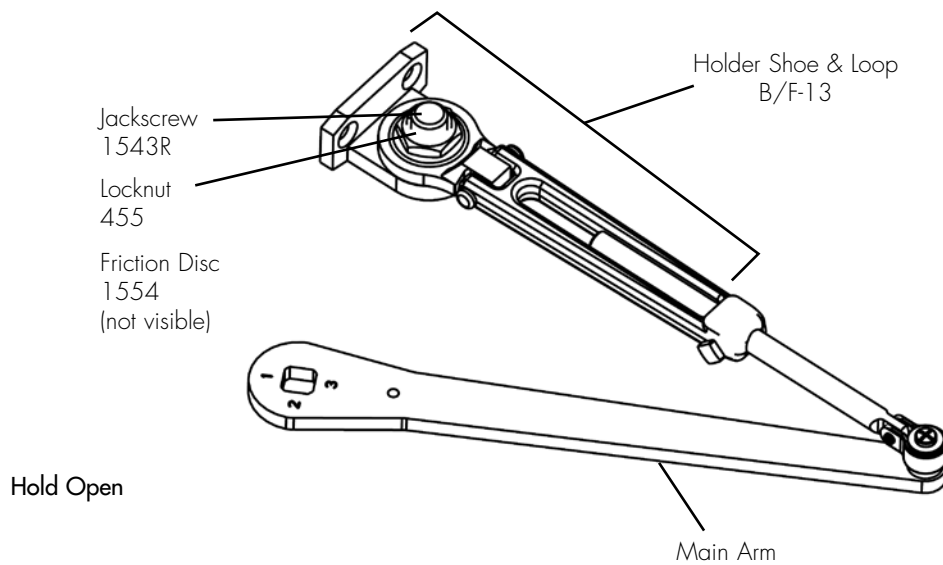
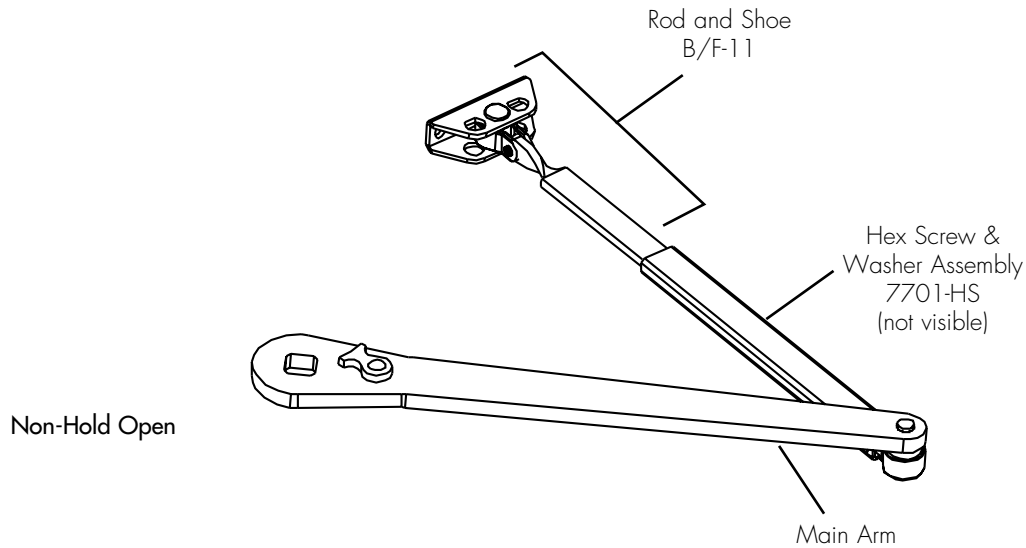


#9 Adapter Plate

For use when replacing a discontinued old style traditional surface closer with a series 78-B/F Traditional Surface Closer. The plate selected will employ the existing holes in either door, corner bracket or soffit bracket. The Series 78-B/F will mount to the plate. These plates can be used to convert regular arm, parallel arm or bracket mount installations. Order by model number.

78-B/F SERIES TRADITIONAL DOOR CLOSERS

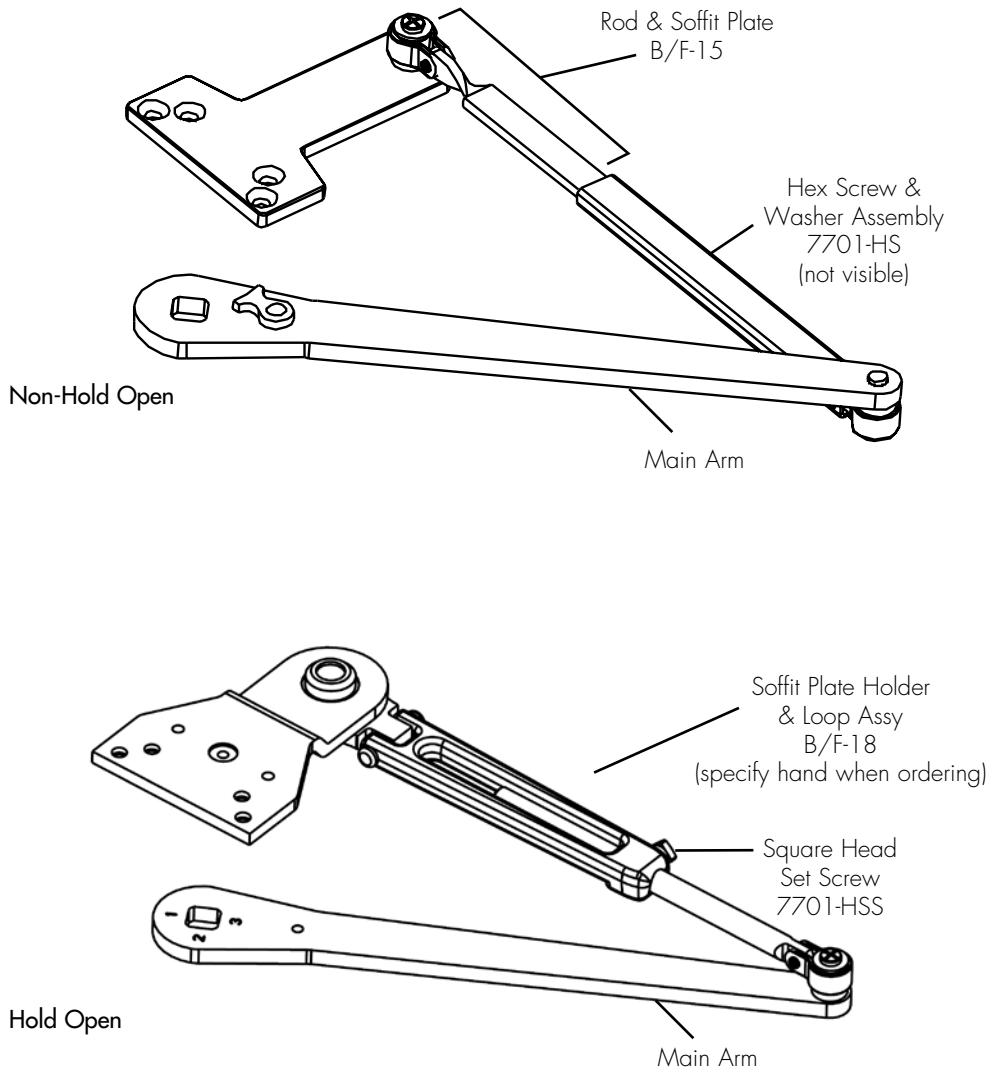
REGULAR ARM



Note: Mounting hardware included with all parts ordered

Arm Function	Complete Arm Assembly	Main Arm	Main Arm Less Rod & Shoe	Main Arm Less Holder Shoe & Loop Assembly
Non-Hold Open	B/F-1	B/F-1M	B/F-1W	N/A
Hold Open	B/F-3		N/A	B/F-3W

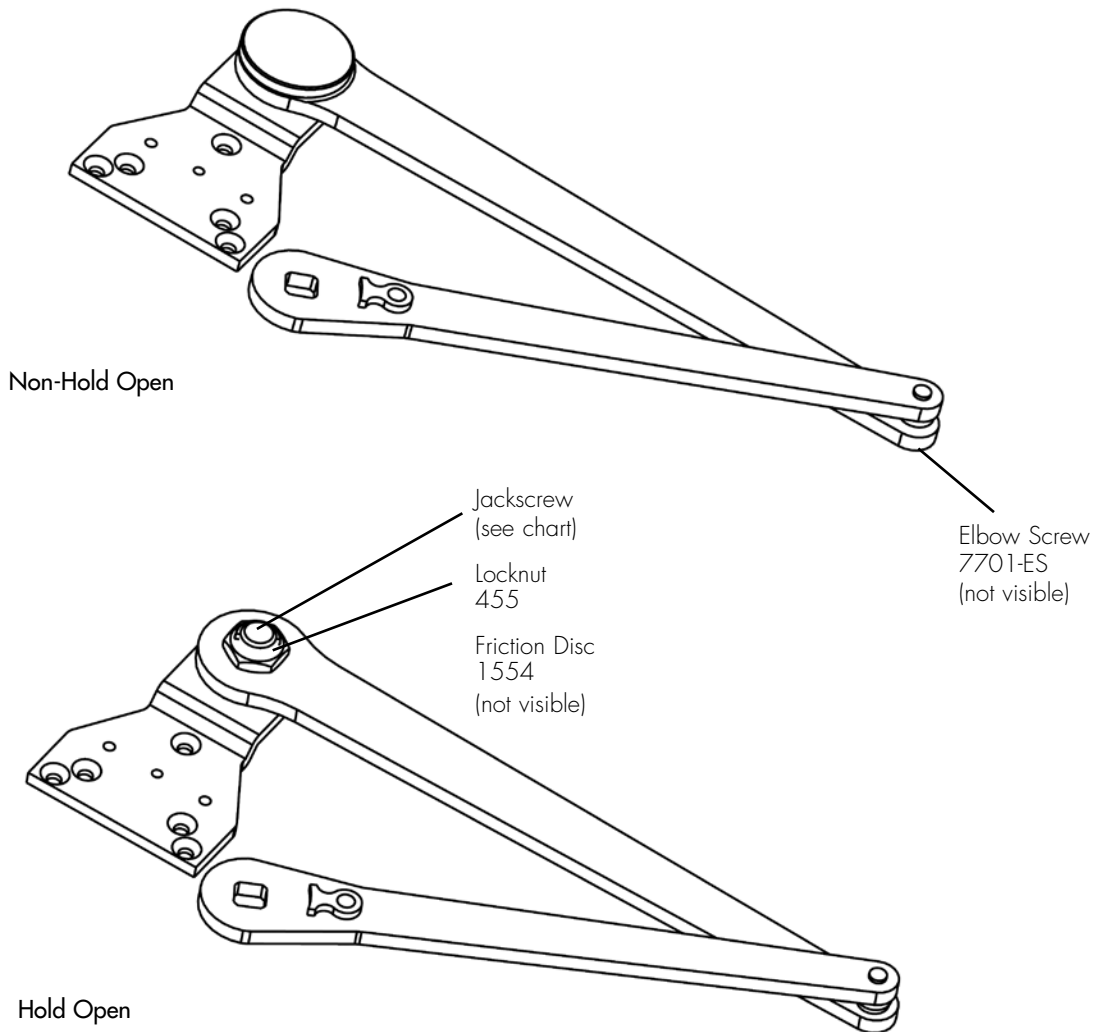
PARALLEL ARM



Note: Mounting hardware included with all parts ordered

Arm Function	Complete Arm Assembly	Main Arm	Main Arm Less Rod & Soffit Plate	Main Arm & Rod Less Soffit Plate & Holder Loop Assembly
Non-Hold Open	B/F-5	B/F-1M	B/F-5W	N/A
Hold Open	B/F-8		N/A	B/F-8W

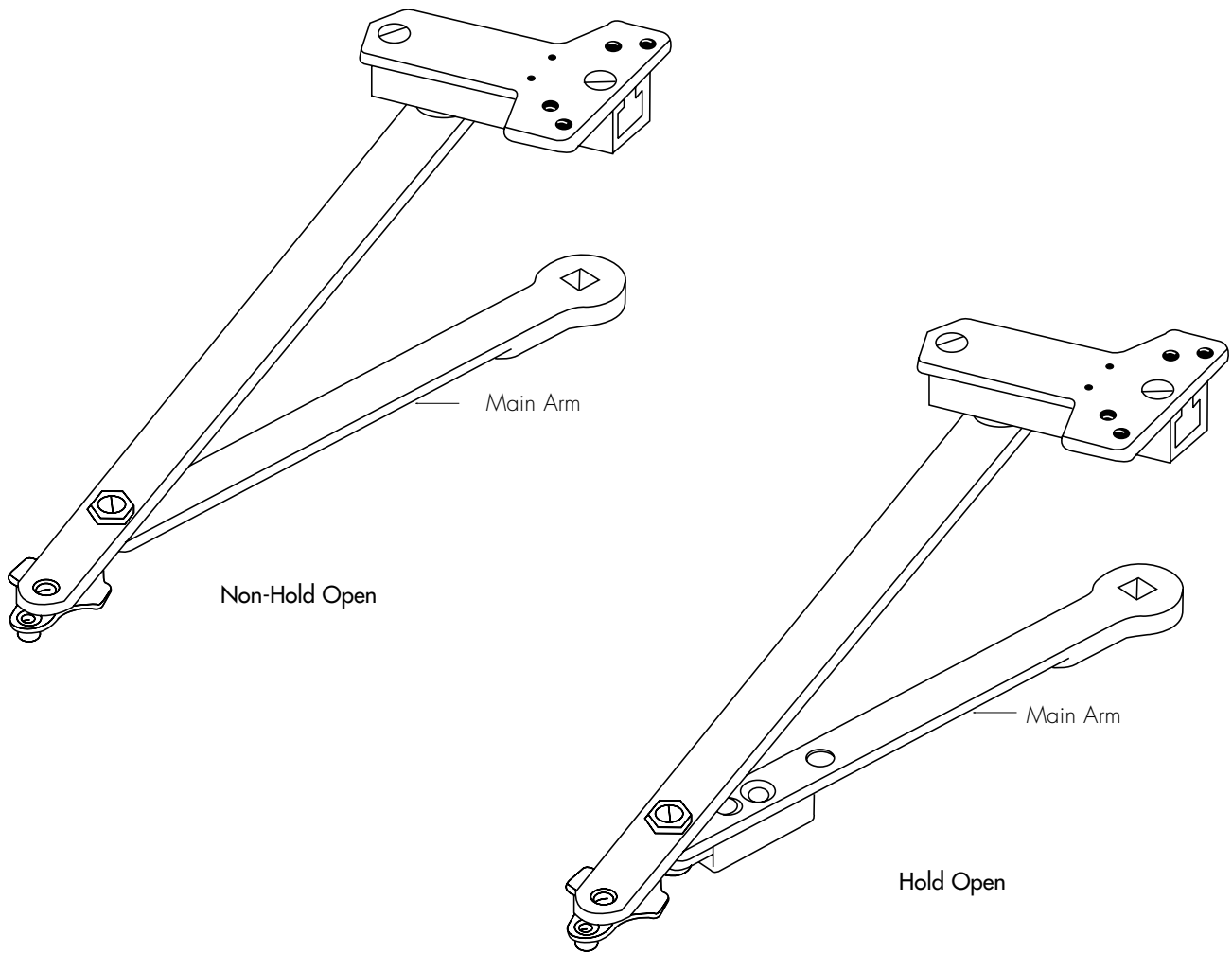
PARALLEL ARM



Note: Mounting hardware included with all parts ordered

Arm Function	Complete Arm Assembly	Jackscrew
Non-Hold Open	78PRA-5	N/A
Hold Open	78PRA-8R (Right Hand)	1543R
	78PRA-8L (Left Hand)	1543L

UNITROL® ARM ASSEMBLIES



Note: Mounting hardware included with all parts ordered

Door Width (cm)	Main Arm Length (mm)	Complete Arm Assembly	
		Non-Hold Open	Hold Open
28"- 32" (71 - 81)	9-1/2" (241)	6130-17	6130-7
33"- 41" (84 - 104)	11" (279)	6130-18	6130-8
42"- 48" (107 - 122)	12-1/2" (318)	6130-19	6130-9

78-B/F SERIES TRADITIONAL DOOR CLOSERS

MISCELLANEOUS PARTS

Springs	
Part Number	Description
24BD	B/D Spring
56EF	E/F Spring
230BC	Spring (prior to 1978 model)
230D	Spring (prior to 1978 model)
230EF	Spring (prior to 1978 model)

Wrenches	
Part Number	Description
78-SW	Spanner Wrench

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton® and Unicontrol® are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2001, 2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

7900 SERIES

Overhead Concealed
Door Closers



Norton[®]

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

OVERVIEW

Introduction

Overhead concealed closers provide an aesthetically appealing way to close a door. In situations where a closer is needed but concealment in the frame header is required or desired, the Norton® 7900 closer is the ideal solution for door control. Once installed, only the solid one-piece arm is visible when the door is open; therefore, this unit provides a high degree of vandal resistance. When the door is closed, the closer, arm and slide track are fully concealed. For applications where concealment is required and security is the main concern, the 7970 should be used.

This heavy-duty, durable closer package includes a steel track, steel slider, polymer slider pads and dress plates. The steel track and slider offer additional strength to the unit, while the polymer pads provide quiet operation and easy assembly. Standard features include rack and pinion operation, adjustable sweep and latch, and adjustable backcheck cushioning and positioning.

The 7900 overhead closers are best suited for high-profile applications such as office buildings or conference centers. The 7970 security closers offer the necessary concealment and tamper resistance required in detention and psychiatric facilities. Used in conjunction with the door position switch (DPS) they provide the ability to monitor door status remotely.

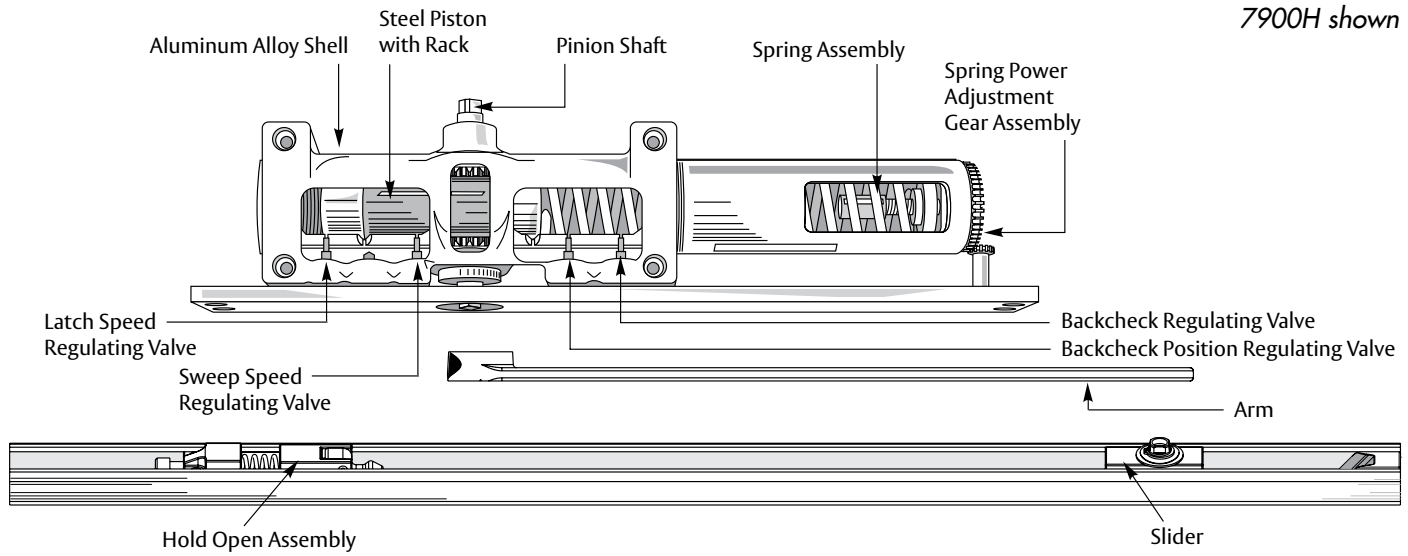
TABLE OF CONTENTS

Overview & Features	2-3
How to Order	4
Door Size and Finishes	5
Features	6
Optional Features	7
Suggested Specifications and Standards	8
Technical Details	9-11
Parts List	12-13

7900 SERIES OVERHEAD CONCEALED DOOR CLOSERS

OVERVIEW

7900H shown



FEATURES

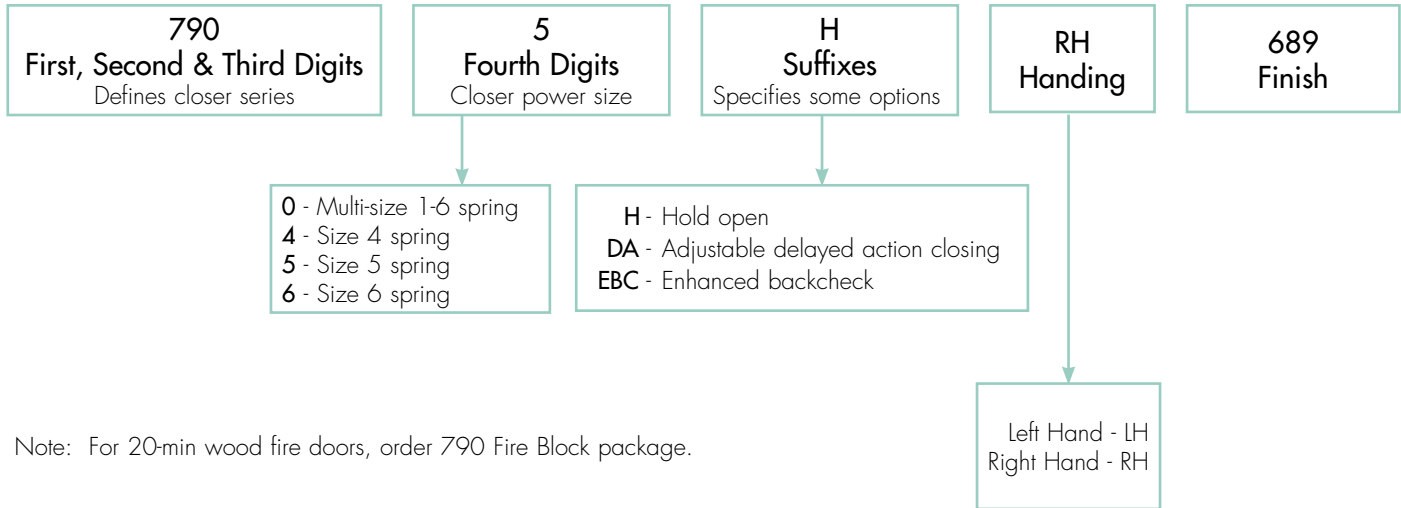
- Steel track
- Steel slider
- Polymer slider pads
- Fully adjustable, multi-point hold open (7900)
- Dress plates furnished standard
- Shock absorbing door stop
- Aluminum alloy shell
- Rack & pinion operation
- Non-critical valves
- Adjustable sweep speed
- Adjustable latch speed
- Adjustable backcheck cushioning
- Adjustable backcheck positioning

- Delayed action option
- Enhanced backcheck option
- Power choices
 - Sized closer (4, 5, 6)
 - Multi-size closer (0)
- ANSI A156.4, Grade 1
- Models available to meet ADA/A117.1
- UL listed
- Torx® screws furnished standard (7970 only)
- Door Position Switch (DPS) option (7970 only)
- 10-year limited warranty

HOW TO ORDER

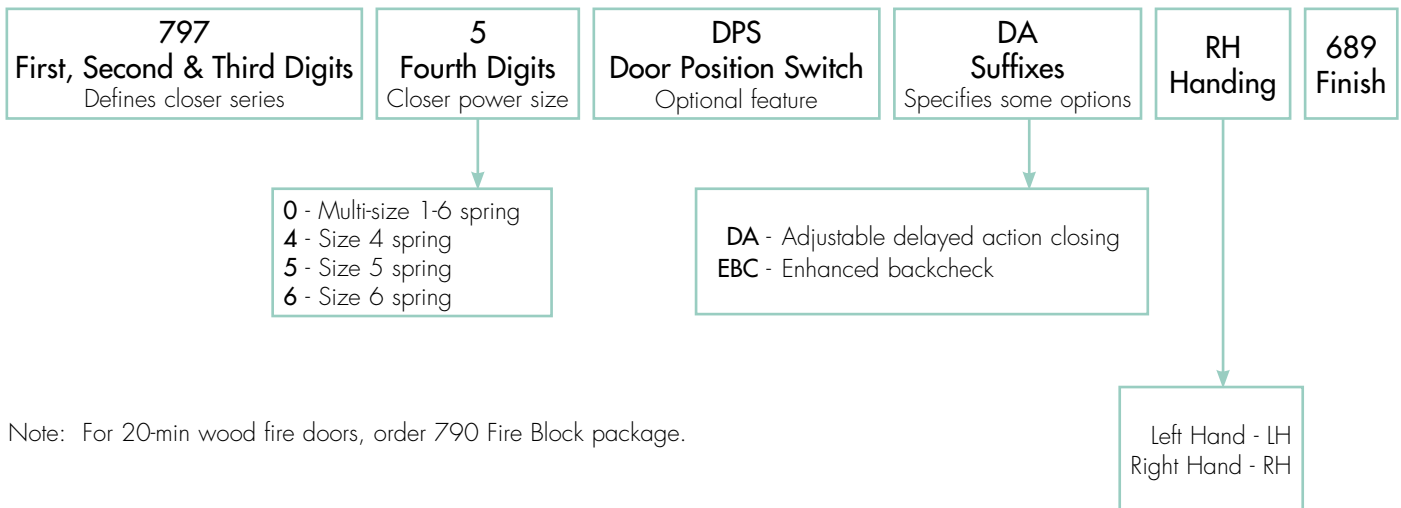
7900 Door Closers

Use the following outline to select the correct catalog number for the closer you require.



Note: For 20-min wood fire doors, order 790 Fire Block package.

7970/7970DPS
 Security Door Closers




Note: For 20-min wood fire doors, order 790 Fire Block package.

Packaging information:

All Norton® Series 7900 closers are packed one to a box, with an arm and a slide track, one hex key for control valve adjustment (and hold open tension adjustment), one hex key for arm to track attachment, one hex key for anchoring cushion stop in track. Installation instructions and both wood screws and metal screws for mounting are included.

7900 SERIES OVERHEAD CONCEALED DOOR CLOSERS

DOOR SIZE

Maximum Door Size Wood or Metal Inches (Centimeters)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
32 (81)	–	7904/7974	7904H
38 (97)	32 (81)	7905/7975	7905H
48 (122)	38 (97)	7906/7976	7906H
 Accessibility Code Compliance			
48 (122)	36 (91)	7900	7900H

Door sizing information is based on installation on standard weight doors hung on anti-friction hinges or pivots and operating under normal conditions. For doors in excess of 7'6" or on extra-heavy doors, where draft conditions exist or where door swings beyond 150°, use next larger size closer.

Ball-bearing or anti-friction hinges or pivots are always recommended for use with doors having door closers. They are required for fire door applications, except where a door manufacturer has a specifically listed fire door assembly.

When requesting templates, specify door hanging hardware (i.e. B= butt hinges, CP= center hung pivots, OP= offset pivots).

FINISHES

Sprayed Finishes

Description	BHMA Designation	Complements the following finishes	Old Norton® Designation
Aluminum	689	628, 625, 629, 630, 651, 652	AL
Statuary Bronze	690	640, 613	STAT
Dull Bronze	691	612, 637, 639	DB
Black	693	315	315
Medium Amber	694	312	312
Gold	696	605, 606, 632, 633	GB

Plated Finishes

Description	BHMA Designation	Old Norton Designation
Bright Brass	605E	US3
Satin Brass	606E	US4
Bright Chrome	625E	US26
Satin Chrome	626E	US26D

Order sprayed and plated finishes by BHMA designations.

FEATURES**Concealed Transom Mounting:**

Closer is concealed in the header of hollow metal, aluminum or wood frames. Installation requires a minimum 4" (102mm) high frame header. A removable frame stop furnished by the frame supplier is required where doors are less than 2" (51mm) thick. A dust/grout box 2" x 4" (51 x 102mm) x required length furnished by the frame supplier where conditions warrant the need for one. Consult factory for wood header installations.

Door Thickness: 1-3/4" - 2-1/4" (44-57mm) thick doors

Top Rail Mounted Slide Track:

Slide track is mounted into a recess prepared in the top rail of wood, aluminum or hollow metal doors. Depth of cutout at top of door 1-3/16" (30mm).

Fire Block Door Liner:

Available for use in 20-minute fire door assemblies where recognized by the local authority having jurisdiction.

Standard Door Hanging Hardware:

Closer and slide track can be installed on doors hung with butt hinges, offset pivots or center pivots. Hinges or pivots furnished by others.

Concealed Arm:

Closer arm is concealed when the door is closed. Requires a 3/8" (9.5mm) deep stop side door cutout for arm clearance.

Shock-Absorbing Door Stop:

Non-hold open and hold open units have a shock-absorbing adjustable position stop in the slide track. Use of auxiliary door stop is always recommended, not supplied.

Hold Open:

Sliding mechanism in channel changes position of hold open. The range of hold open points is dependent upon how the door is hung:

- 85° to 110° for doors hung on butt hinges
- 85° to 95° for doors hung on offset pivots
- 85° to 100° for doors hung on center pivots

Adjustable Hold Open Tension:

Hold Open tension can be increased or decreased by adjusting the tension on the slide track spring with a hex-key drive adjusting screw; or the hold open function can be totally eliminated by this same means.

Aluminum Alloy Shell:

Series 7900 closer bodies are constructed of a special aluminum alloy carefully selected to accommodate individual closer characteristics and operating conditions.

Rack & Pinion Operation:

A smooth power transmission through entire opening and closing cycle is provided by a long addendum gear form.

Spring Power Adjustment:

- 50% power adjustment for closer sizes 4, 5 and 6. Each closer can be adjusted by 50% over the minimum closing force for each size.
- Multi-sized power adjustment for closer sizes "0".

Adjustable Sweep Speed:

An independent, hex-key operated regulating valve permits adjustment of the general closing speed.

Adjustable Latch Speed:

An independent, hex-key operated regulating valve permits adjustment of the door's speed for approximately the last 5 degrees of the closing cycle.

Adjustable Backcheck Cushioning:

An independent, hex-key operated regulating valve provides an adjustable hydraulic cushion to the door opening speed toward the end of the opening cycle.

Adjustable Backcheck Positioning:

An independent hex-key operated regulating valve allows adjustment of the point in the door's opening cycle at which backcheck cushioning takes effect. It provides a range of 20° within which backcheck can be set.

Non-Critical Valves:

All control valves for sweep/latch speed, backcheck control and delayed action closing are non-critical and are adjusted by a standard 1/8" hex-key.

Non-Hold Open and Hold Open Arms:

Arm is 13" (330mm) long with an offset bend to permit door openings to 180°. Arm is handed. A special arm is furnished when hold open is required and the door is hung on center hung pivots. This straight arm is 16" long and non-handed.

Separate Hinges/Pivots:

Door is hung with butt hinges, 3/4" offset pivots or center pivots (by others). There is no need to open the door closer packaging to supply the hinges/pivots to the job or the door supplier. This eliminates problems with coordination of the hardware with other trades and reduces the probability of lost hardware.

OPTIONAL FEATURES

Enhanced Backcheck:

Adjustable backcheck intensity beginning at approximately 15° of the door opening cycle. It is intended for use in situations where the standard backcheck beginning at approximately 75° of opening allows too much unrestricted door travel to obtain control of the door without the fear of peripheral damage to the door closer, door, frame, hinges or pivots; or adjacent walls or structures. Specify EBC when ordering. **Offered in lieu of standard backcheck and backcheck positioning.**

Door Position Switch (7970 only):

This switch is Single Pole Double Throw (SPDT) momentary contact, with one normally open and one normally closed set of contacts. The three switch terminals are wired to the integral conduit box for connection to incoming wiring. The switch and wiring are for operation with 6 to 24 VAC/DC systems.

- **Door Position Switch Adjustment:** Can be made at the opening without removing the closer from the frame. The door position adjustment test socket is accessible during installation for easy adjustment of the switch cam. Test probes from a volt meter are inserted into the test socket while using 1/8" hex wrench to adjust the position switch adjustment.
- **Test Socket:** Volt meter or test light may be connected to test socket to test normally open circuit or normally closed circuit at the door opening. The door position switch may be adjusted at the same time without removal of closer from door.
- **Adjustable Delayed Action Closing:** An optional hydraulic feature that adds a third speed range to the closing control cycle. This feature becomes effective when the door is opened and released at any point beyond 70°. This delayed closing enables traffic to clear the opening before the normal closing cycle starts. This feature is advantageous to the handicapped, elderly or wheeled traffic. **Order by suffixing "DA" to the model number.**

Accessibility Code Closer:

These closers provide reduced opening forces to conform with barrier code requirements (as specified in ANSI A117.1) for the handicapped while still providing acceptable door control. **Specify 7900 or 7970.**

SUGGESTED SPECIFICATIONS

Closers for exterior (and) interior doors shall be full rack and pinion type with cast aluminum alloy shell. Closers shall be concealed in a 4" (102 mm) high frame header. The slide track shall be concealed in the top rail of the door. Hydraulic fluid shall be non-gumming and non-freezing. (Closer shall be provided with a fire-blocking door liner to permit installation in 20-minute wood fire door assemblies.) Closer shall have (four) (five) noncritical valves, hex-key operated, to independently regulate sweep speed, latch speed, backcheck cushioning (and backcheck positioning) (and delayed action closing). [Closers shall be sized units (4, 5 or 6)].

[Closers shall have power adjustment to permit a 50% increase in power over the minimum closing force for any size.] [Closers shall have multi-sized adjustment for (interior doors)(exterior doors)]. Closer shall conform to Accessibility Code specifications. Degree of stop shall be field adjustable.

Slide track shall have a built-in cushioning shock absorber mechanism. (Hold open mechanism shall be capable of release when holding function is not required. Hold open mechanism shall have an adjustable range 85°-110° of door opening and shall release with a manual

pressure on the edge of the door in the direction of closer). Closer to be Norton® [Series 7900] [Series 7970] (with Norton® #790 Fire Block). 7970/7970DPS shall be supplied with Torx® lobular drive fasteners having a center security pin.

7970 DPS

Closer to have a door position switch to indicate "Door Open/Door Closed" condition.

STANDARDS

ADA

The 7900 and 7970 door closers are designed to comply with requirements of the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1.

ANSI/BHMA/Federal Specs

All series 7900/7970 closers comply with ANSI A156.4 Grade 1 Specifications, Federal FF-H-121D Specifications (CO5030,CO5040, CO5050 w/o PT4B-4C-4D) and FF-H-121c Specifications (3210-3215-3220).

NYC Listing

These closers are also listed with New York City Materials and Equipment Acceptance Division (41-60-SM).

U.L. Listing

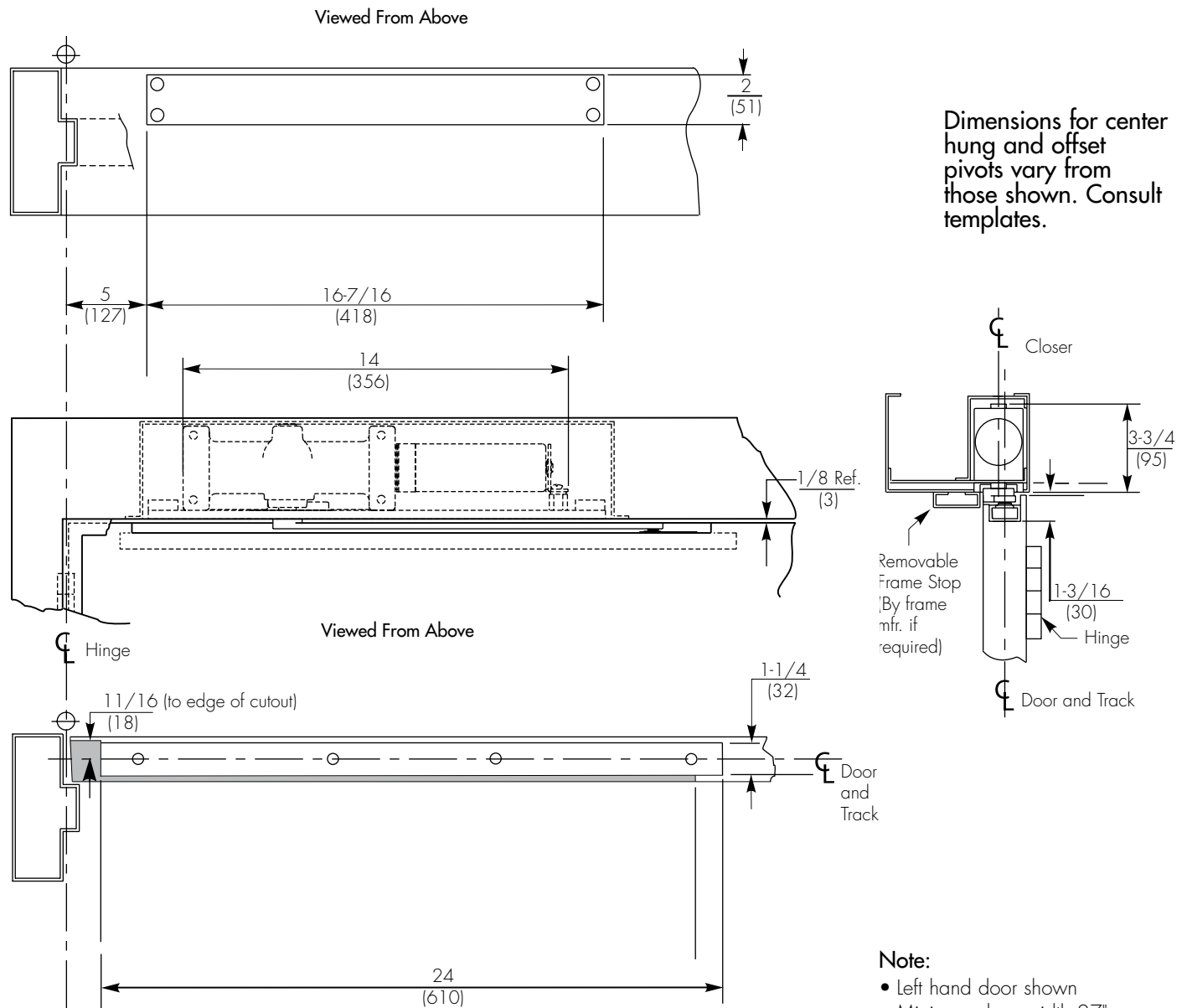
All Norton series 7900/7970 closers with non-hold open arms are listed by Underwriters' Laboratories Inc. and Underwriters' Laboratories of Canada for use on labeled fire doors.

WHI

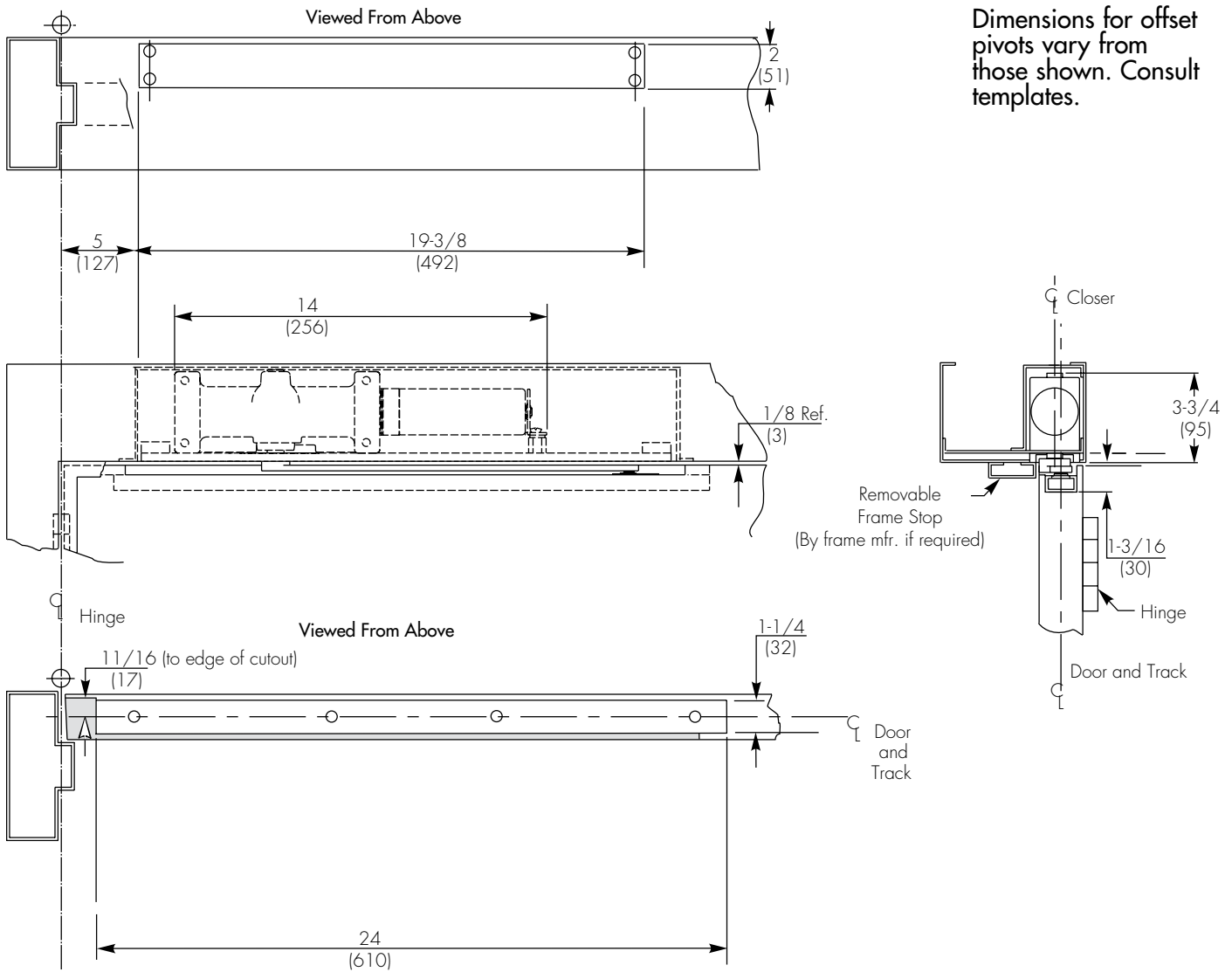
The Norton Fire Block door liner is listed with Warnock Hersey International for use in 20-minute (wood) fire doors that are listed with WHI, when used with the Series 7900 door closer. Specify model number 790. The combination of a 7900 door closer installed in a UL labeled hollow metal door frame and a Norton Fire Block installed in a WHI labeled 20-minute (wood) fire door, which has the tested preparation, may qualify as a 20-minute fire door assembly. Always consult local authorities to determine the acceptance and proper application of fire door and hardware applications.

7900 SERIES OVERHEAD CONCEALED DOOR CLOSERS

7900 BUTT HINGE INSTALLATION



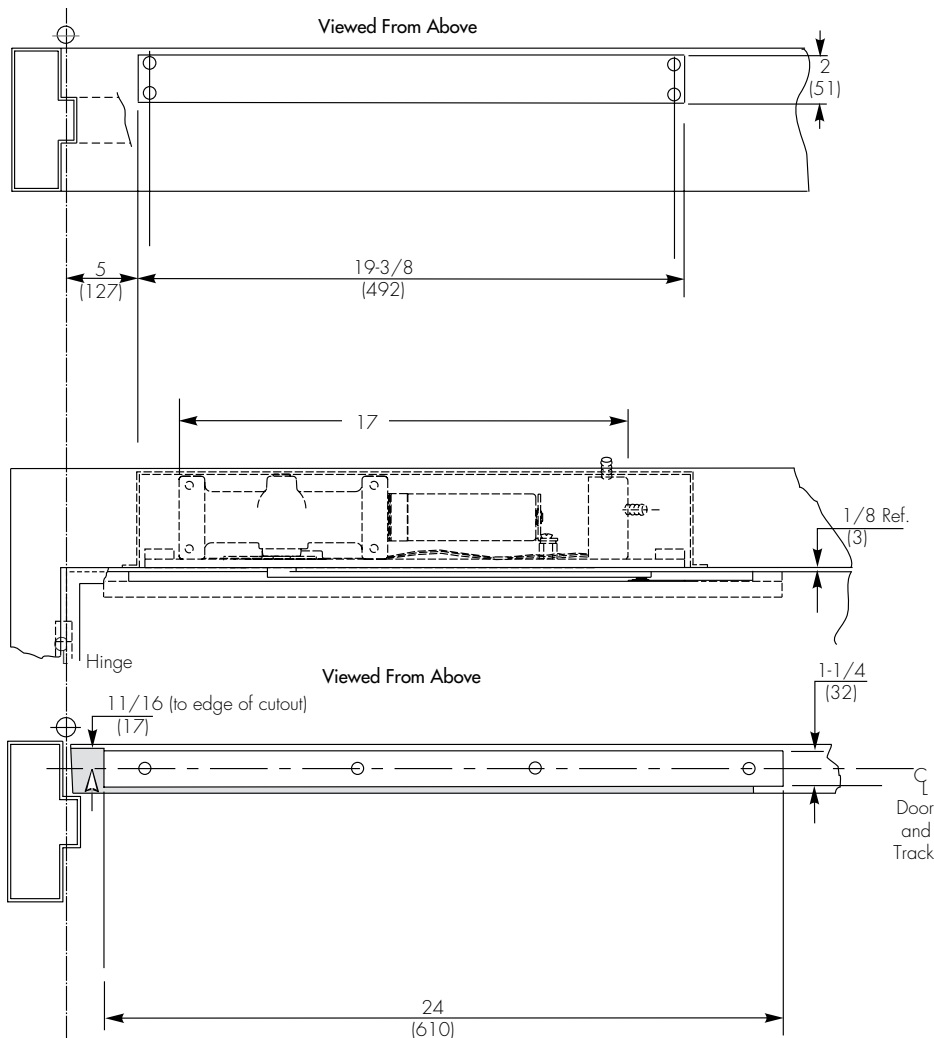
7970 BUTT HINGE INSTALLATION



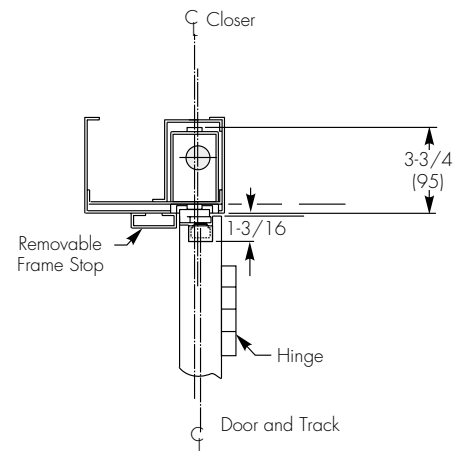
- Note:**
- Left hand door shown
 - Minimum door width 27"
 - 1-3/4" to 2-1/4" thick doors
 - Maximum width hinge is 5"
 - Contact factory if door weight exceeds 250 lbs.

7900 SERIES OVERHEAD CONCEALED DOOR CLOSERS

7970DPS BUTT HINGE INSTALLATION



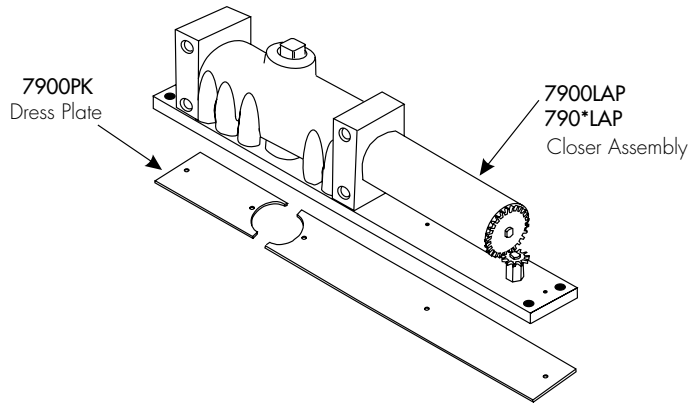
Dimensions for offset pivots vary from those shown. Consult templates.



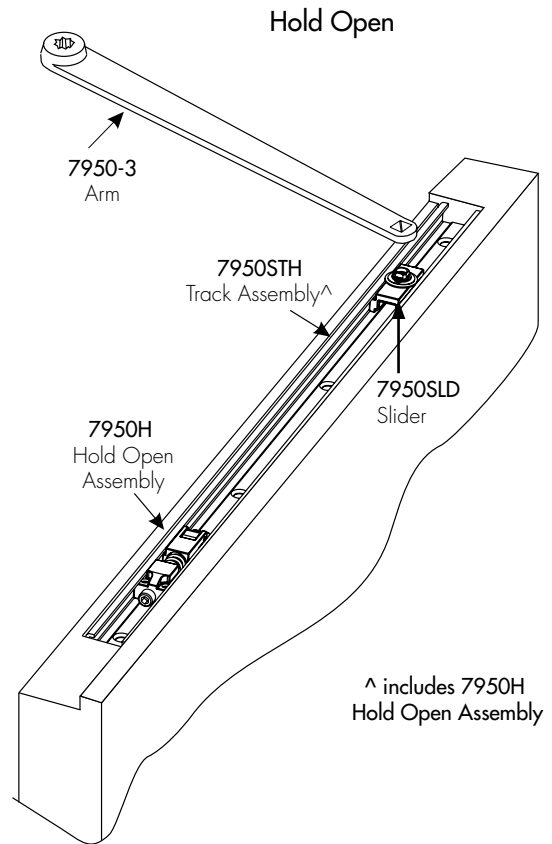
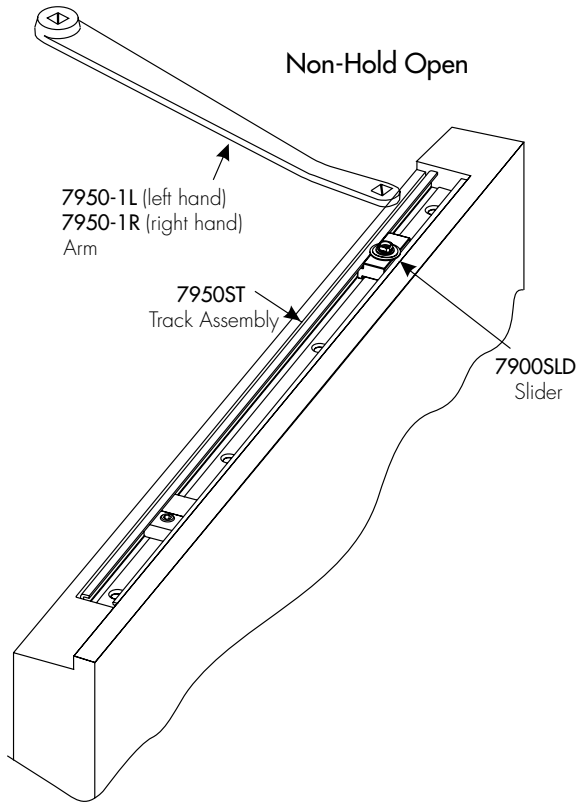
Note:

- Left hand door shown
- Minimum door width 27"
- 1-3/4" to 2-1/4" thick doors
- Maximum width hinge is 5"
- Contact factory if door weight exceeds 250 lbs.

PARTS



* = specify size 4, 5 or 6

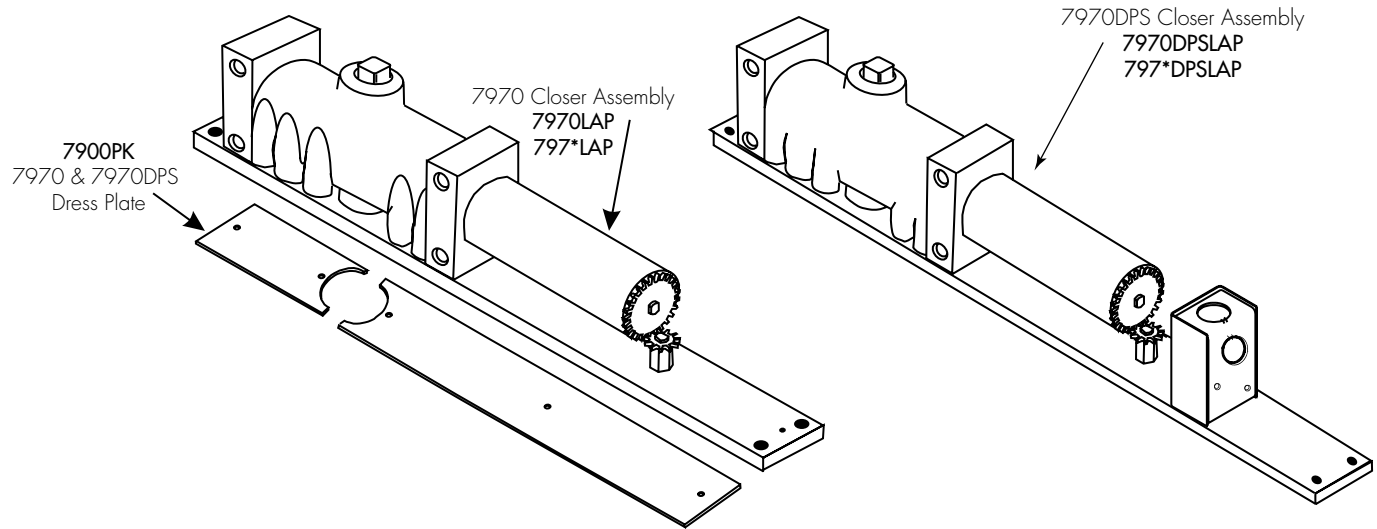


7900SP
Screw Pack

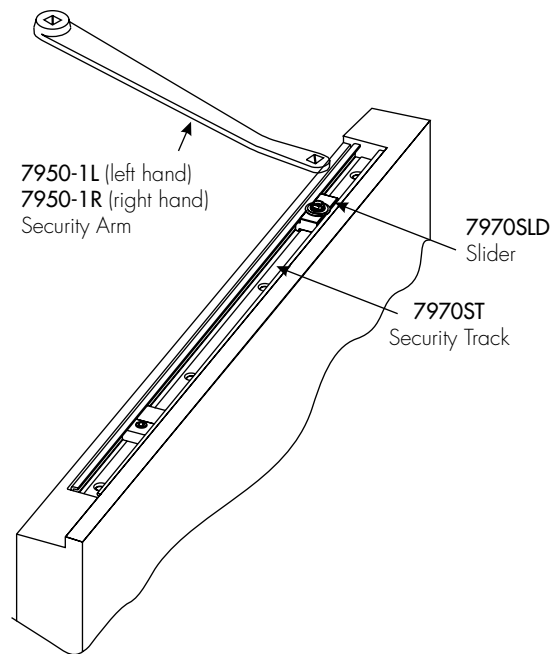
Specify finish when ordering parts.

7900 SERIES OVERHEAD CONCEALED DOOR CLOSERS

PARTS



* = specify size 4, 5 or 6



7970SP
Screw Pack

70TK
Torx Tool Kit

Specify finish on parts.

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton® is a registered trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2001-2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

8000 SERIES

Architectural Door Closer



Norton[®]
ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

OVERVIEW

The 8000 Series Door Closers offer the ideal combination of appearance, reliability and durability in today's market. With features such as staked valves, precise valve adjustment and a complete range of arm and cover options, this closer can meet virtually any application challenge.

Features

- Exceeds 15 million cycles (witnessed and verified by UL)
- Adjustable spring sizes 1 through 6
- Tri-Style® packaging standard (regular arm, top jamb and parallel arm mounting)
- Non-handed
- Staked valves
- Cast aluminum body
- Rack and pinion design
- 1-1/4" (32mm) diameter piston
- 5/8" (16mm) diameter pinion journals
- 2-1/8" (54mm) projection (standard covers)
- All standard arm applications (with slim, full or metal covers) allow doors to swing 180 degrees, conditions permitting
- Full size template
- Metal, architectural plastic or architectural metal covers (8501 only)
- Lead lined metal cover - suffix MLL
- Application specific arms: Regular (S), Top Jamb (J) and Parallel (P)
- Heavy-duty arms; Regular Rigid, Parallel Rigid, CloserPlus®, CloserPlus Spring™, Unitrol®
- Slide Tracks: push or pull side mounting
- 25-year limited warranty

Functions

- Standard, separate and independent, latch, sweep and backcheck intensity valves
- Delayed action

Features	8301	8501
Adjustable spring sizes 1 through 6	X	X
Tri-Style® packaging standard (regular arm, top jamb and parallel arm mounting)	X	X
Slim Line Cover	X	
Full cover		X

TABLE OF CONTENTS

Overview 2-3

How to Order 4

Fasteners/Finishes 5

Features 6

Optional Features 6-7

Suggested Specifications 8

Applications 9-12

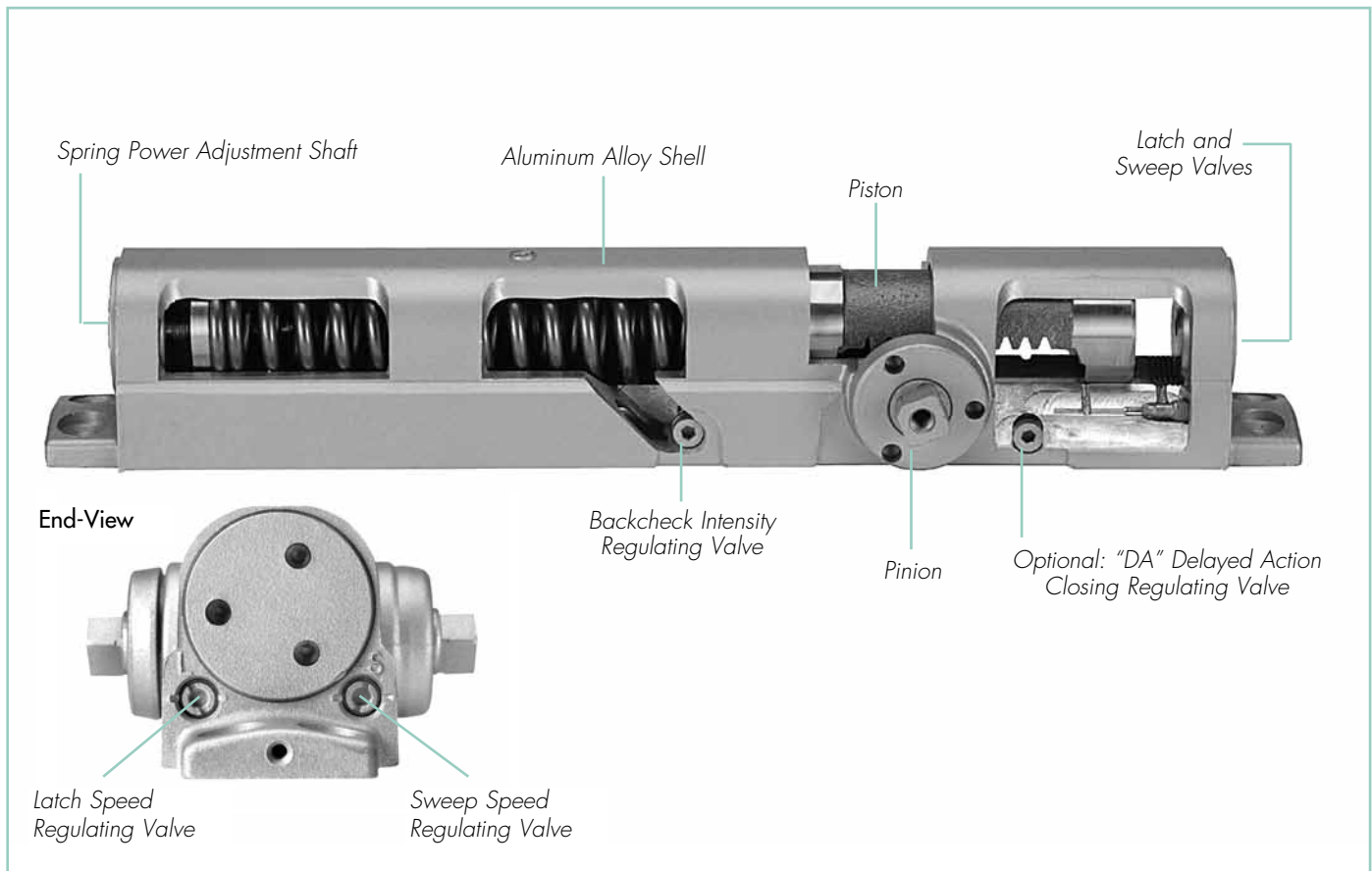
Technical Details 13-25

Accessories 26-38




Parts List 38-50

OVERVIEW

Cutaway View



COMPLIANCE STANDARDS

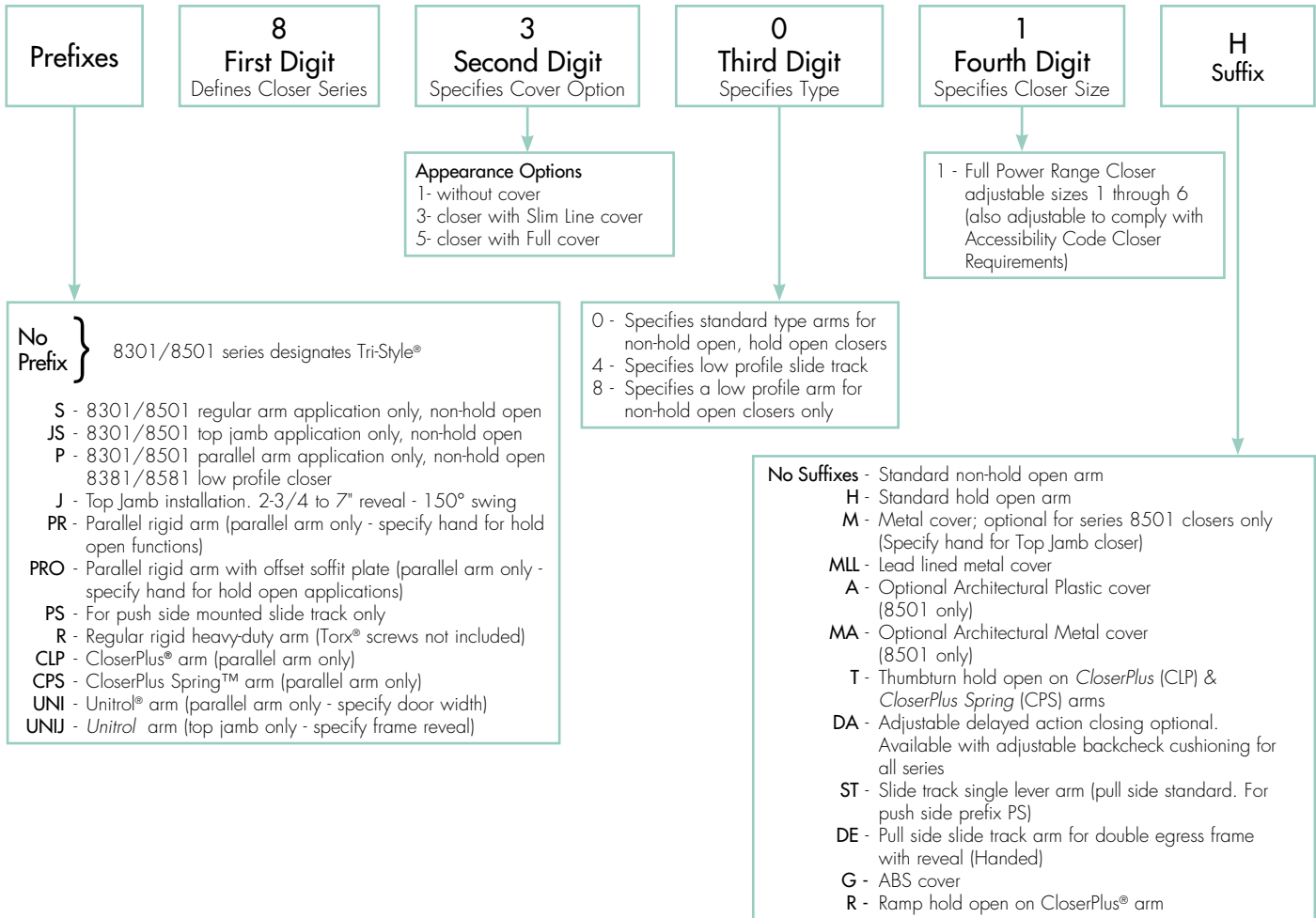
- ANSI/BHMA A156.4, Grade 1 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- 8301 and 8501 door closers are designed to comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 
- This product is manufactured in an ISO 9001 facility

CAUTION: Door Closers for Low Opening Force Applications:

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

HOW TO ORDER

For optimum protection of door and frame assemblies, always use auxiliary wall, floor, or overhead door stop.



Notes:

- Warranty becomes void if door closer is installed on the exterior side of a door in the exterior wall of a building.
- It is strongly recommended, and required on fire door assemblies, that doors having a door closer be hung on ball bearing or anti-friction hinges or pivots; unless an alternate method is identified in the door manufacturer's listing.
- 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 standard Norton product, such as sleeve-nuts/sex nuts or through-bolts and grommet nuts.
- Sizing charts provided on pages 13-25 are based on 1-3/4" (44mm) x 7" (2.13m) standard weight doors swinging to 110°. Other conditions (such as door height or weight; or wind/draft conditions) may require a larger size closer.

FASTENERS

Type	Description	Arm								
		RA	PA	TJ	Low Profile	PR	CLP / CPS	UNI	UNI-J	Slide Track
DOOR										
SDST	Self Drilling Self Tapping	S	S	S	S	S	S	S	O	O
MS	Machine Screw	S	S	S	S	S	S	S	S	S
SN	Sleeve Nut/Sex Nut	O	O	O	O	S	S	S	S	S
TBGN	Through-Bolts & Grommet Nuts	O	O	O	O	O	O	O	O	O
SMS	Sheet Metal Screws	O	O	O	O	O	O	O	O	O
Torx®	Torx Drive Security Screw	O	O	O	O	O	O	O	O	O
FRAME										
SDST	Self Drilling Self Tapping	S	S	S	S	S	S	S	S	S
MS	Machine Screw	S	S	S	S	S	S	S	S	S
SMS	Sheet Metal Screws	O	O	O	O	O	O	O	O	O
Torx	Torx Drive Security Screw	O	O	O	O	O	O	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.

TORX screws with security pin are standard with Security Door Closers. Torx may be specified for all other series applications. Torx are only available with machine screw threads. Sheet metal screw threads or wood screw threads are not available.

Note: To order special fasteners with closers, specify model number x fastener (Ex: 8501 x 689 x TBGN)

FINISHES

Norton offers waterborne acrylic, polyester powder coat and plated finishes. Custom finishes are available on special order. A sample and approval is required.

Waterborne acrylic and polyester powder coat will withstand 100 hours of salt spray (ANSI requires 25 hours).

ANSI/BHMA	Description
600*	Prime Coat
605	Bright Brass
606	Satin Brass
611	Bright Bronze
612	Satin Bronze
613E	Dark Oxidized Satin Bronze - Equivalent
619	Satin Nickel
625	Bright Chrome
626	Satin Chrome

ANSI/BHMA	Description
689	Aluminum
690	Statuary Bronze
691	Dull Bronze
693	Black
694	Medium Amber
696	Gold
N/A	556 White

* 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.

- Norton closer bodies and plastic covers are available in waterborne acrylic finishes. Arms and metal covers are available in powder coat or plated finishes.
- When a plated finish is ordered, arm and cover will be plated unless "cover only" is specified.

FEATURES

Aluminum Alloy Housing

Closer bodies are constructed of a special aluminum alloy, carefully selected to accommodate interactive 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 interfere.

Non-handed

With few exceptions all series 8301/8501 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, as noted on pages 6-7, will require that the hand of the closer be specified.

Sweep Speed Control Valve

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

Latch Speed Control Valve

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

Tri-Style®

8301/8501 comes with screws, brackets and soffit plates to allow for regular, top jamb, and parallel arm installations.

Adjustable Backcheck Valve

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

Standard Molded Covers

Molded of high-impact U.L. listed material. These covers are non-handed for all applications.

Warranty

Limited 25-year warranty for defects and life of the building on the aluminum housing.

Closer Fluid

NorGlide® closer fluid is a specially formulated multi-viscosity hydraulic fluid that contains lubricity and anti-oxidation agents that provide optimum performance and efficiency. This fluid complements the interaction of the door closer's aluminum housing with its steel and brass components, while maintaining stable viscosity to allow the door closer to perform in temperatures ranging from extremely high to as low as -40° F.

Door Closer Power Options

Series 8301/8501 Multi-Sized Door Closer

Adjustable through the power range of sizes 1 through 6; as outlined in ANSI/BHMA specification A156.4 option PT 4H.

Closers will also comply with the opening force requirements as outlined in the Americans with Disabilities Act (ADA) and ANSI/BHMA standard A117.1 for interior doors.

OPTIONAL FEATURES COVERS

Optional Metal Cover

This steel cover is non-handed for regular and parallel arm applications, but is handed for top jamb applications. Cover is available in sprayed or plated finishes.



Optional Architectural Covers *

Plastic

Architectural plastic covers are molded of high-impact U.L. listed material. They are non-handed and available in sprayed finishes.

Metal

The architectural metal covers are steel and non-handed for all applications. These covers are available in sprayed or plated finishes.



Optional ABS Cover

Consult factory for details

OPTIONAL FEATURES

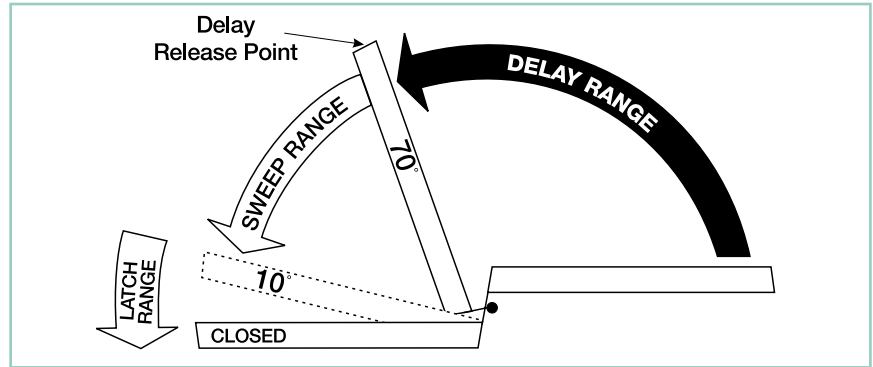
Adjustable Delayed Action Closing

An optional hydraulic feature that adds a third speed range to the closing cycle. This feature becomes effective when the door is opened and released at any point beyond 70°. The amount of time delay depends upon the combination of the angle of door release and valve adjustment. The valve can be adjusted with a 1/8" (3mm) hex key from no delay time up to maximum delay times of:

Door Opened	Approximate Time of Delay Cycle
180°	4-5 minutes
120°	2-3 minutes
90°	25-30 seconds

Pressure Relief Safety Valve

The delayed action hydraulic system contains a pressure relief valve. Any time the door is forced toward the closed direction while it is in the closing cycle, the valve will open and permit the door to close. This prevents damage to door, frame and closer.



Suggested Applications

Delayed Action closing allows slow-moving traffic to clear the opening before the door closer's normal closing cycle begins. This feature can be helpful in health care facilities such as hospitals and nursing homes. It provides sufficient time for persons on crutches or in wheelchairs to pass through a door without concern of it closing. At the same time, it can accommodate the facility's staff with movement of food service carts, beds, and other wheeled traffic.

Use of delayed action closers on many doors throughout industrial and commercial buildings can also assist the flow of traffic. Locations where additional time to clear the opening is advantageous are doors between office and factory/warehouse facilities, doors to workshops or laboratories, to kitchen and food processing areas, etc.

OPTIONAL FEATURES ARMS

Non-Hold Open

Self-closes door every time door is opened. Auxiliary stop (by others) required except when using the CloserPlus[®], CloserPlus Spring[™] or Unitrol[®] arms.

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.

Door Opening Degrees

Arm Function	Regular Arm, Top Jamb Parallel Arm	Parallel Rigid Arm	CloserPlus [®] Parallel Arm	CloserPlus Spring [™] Parallel Arm	Unitrol [®] Parallel Arm	Unitrol Top Jamb	Low Profile Regular, Parallel	Slide Track
Non-Hold Open	✓	✓	85° to 110°	85° to 110°	85° to 110°	85° to 110°	✓	85° to 110°/180°
Hold Open	90° to 180°	85° to 180°	85° to 110°	85° to 110°	85° to 110°	85° to 110°	N/A	85° to 110°

✓=180° trim and template permitting

SUGGESTED SPECIFICATIONS

8301/8501 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 2-1/8" from the surface of the door with standard cover. 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 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 from size 1 through size 6. Closers shall have two non-critical valves, hex key adjusted, to independently regulate sweep speed and latch speed. Closers shall have adjustable backcheck intensity controlled by a hex key adjusted valve.

[Closers shall have adjustable delayed action closing controlled by a hex key adjustable valve.]

Regular arm and top jamb closers shall have a non-hold open shoe permitting 15% (+ or – 7-1/2%) power adjustment. **Closers shall be enclosed in a [molded resin cover] [plated or sprayed metal cover], Closers to be Norton® [8301/8501] [8501M] [8501MA] [8501A].

**For special arms insert that specification here (see column three on this page).

****Unitrol® Arm**

Door closers shall have a fixed door stop feature effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop shall be cushioned by a shock-absorbing heavy-duty spring action effective at the [soffit plate] [arm shoe] pivot. [Closers shall be provided for parallel arm installation using a rigid steel main arm and secondary arm lengths proportional to the door width.] [Closers shall be provided for top jamb installation using a forged steel, rigid main arm and telescoping secondary arm adequate for the frame reveal of the openings.]

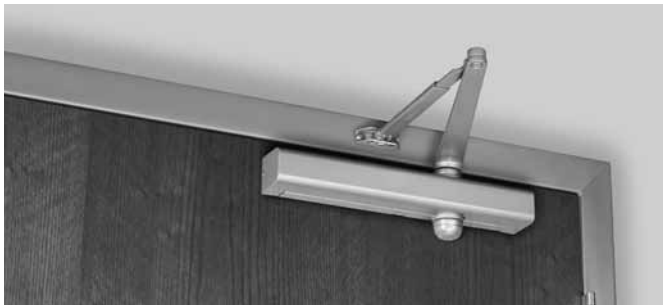
****CloserPlus® Arm**

Door closers shall have a field reversible door stop. Door closer shall have a feature with selectable on and off ball and detent hold open. Hold open tension shall be adjustable effective at one point selected at installation, from 85° - 110° in five degree increments. [Hold open mechanism shall have engage/disengage selection actuated by thumbturn]. Closers shall be provided for parallel arm installation using a forged rigid steel main arm and secondary arm.

****CloserPlus Spring™ Arm**

Door closers shall have built-in door stop [and holder] effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop mechanism shall be reversible and have a buffer spring that engages prior to the dead stop feature, reducing shock loads to the door and frame assembly. Door stop mechanism shall be non-handed and attached to soffit plate. [Hold open mechanism shall have engage/disengage selection actuated by thumbturn]. Closers shall be provided for parallel installation using a forged rigid steel main arm and secondary arm.

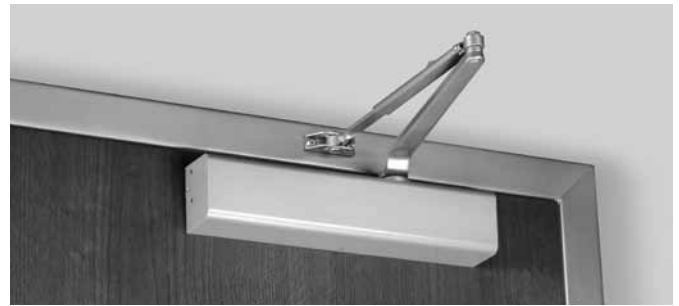
APPLICATIONS



Regular Arm

8301 - slim cover

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.



8501 - full cover

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 2-1/4" (57mm). 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 matters of appearance and malicious abuse can be of concern. Consideration must be given to depth of frame reveal.



Parallel Arm

This application provides the most appealing design appearance for a surface-mounted door closer having a double lever arm. This also makes it 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. Top rail clearance dimensions will vary based on the type of cover used. (See pg. 15)

APPLICATIONS



Non-hold open arm shown

Parallel Rigid Arm

An enhanced variation of the standard parallel arm assembly that is intended for use in heavy traffic areas where auxiliary door stops are installed.

Hold open available - specify hand when ordering.



Non-hold open arm shown

CloserPlus® Arm

Similar to the Parallel Rigid arm, this arm incorporates a stop at the arm's soffit plate to dead stop the door at a predetermined degree of door swing between 85° and 110°, in 5° increments. Prior to dead stop the door closer's backcheck feature slows the door speed to reduce the impact of the stop action.

The *CloserPlus* Arm is intended for use where an auxiliary door stop cannot be utilized and no more than moderate abuse is anticipated. Where more extreme conditions are expected, use of a *Unitrol* arm is recommended.

Available with or without hold open. (Hold open strength is adjustable.)



Non-hold open arm shown

CloserPlus Spring™ Arm

This arm has all the characteristics of the *CloserPlus* arm with an additional steel buffer spring that provides greater protection at the end of the door opening cycle.

For extreme conditions, use of a *Unitrol* arm is recommended. Available with or without hold open.



CloserPlus Ramp™

The CLPR uses a patent pending ramp and plunger design that easily slides into place reducing wear often seen on traditional hold open arms. Ideal for applications where the door will constantly be pulled out of hold open.

APPLICATIONS



Regular Rigid Arm

This double lever arm features a non-adjustable secondary arm. Orbitally riveted joints prevent tampering or disassembly. Prefix "R" to model number. Available non-hold open only.



Parallel Rigid Offset Arm

This heavy-duty parallel rigid arm provides additional vertical clearance. It is well suited for applications where weatherstripping or other hardware prevents the use of the standard Parallel Rigid (PR) soffit plate. The non-hold open and hold arms allow 1-1/4" clearance. When used in conjunction with a #6891 spacer block, the PRO arm provides 1-7/8" clearance to accommodate the use of a surface overhead stop/holder.



Parallel

Unitrol® Arm

Can be used for either parallel arm or top jamb applications. *Unitrol* arms combine the features of a double lever arm overhead door stop/holder with the backcheck feature of the door closer to reduce door stopping shock loads to a minimum. The *Unitrol* uses a compression spring buffer at the soffit plate/arm shoe that will absorb 30 lbf. of force, 5° prior to the door's dead stop. Coupled



Top Jamb

with the door closer's backcheck feature, this arm provides the most controlled stop available with a surface door closer. For parallel arm applications there are three different length arm assemblies. Each length is designed for a specific range of door widths, to provide precise door control. This further lessens the dead stop impact on the door's hinges/pivots.

APPLICATIONS



Pull Side



Low Profile Pull Side



Push Side



Low Profile Push Side

Slide Track

Whether pull- or push-side mounted, slide track provides the designer with the smoothest lines available in a surface-mounted door closer. The single lever arm allows components to be located in a stack configuration to minimize projection and eliminate obtrusive arm angles. The arm geometry reduces door closer power efficiency by approximately 25% from that of a regular arm.

Standard unit:

- Adjustable 85°- 110° (hold open and non-hold open). Track is supplied with a spring buffered stop. An auxiliary stop, by others, is recommended.
- Specify if hold open unit is required.
- 180° swing (non-hold open, pull side only) is also available. This track assembly requires that a door stop, by others, be supplied to stop the door.



Regular Arm



Parallel Arm

Regular Arm: Allows closer to be installed where there is as little as 1" (25mm) of frame face or ceiling clearance.

Parallel Arm: Allows closer to be installed 1/2" (13mm) higher up on door than standard parallel arm application.

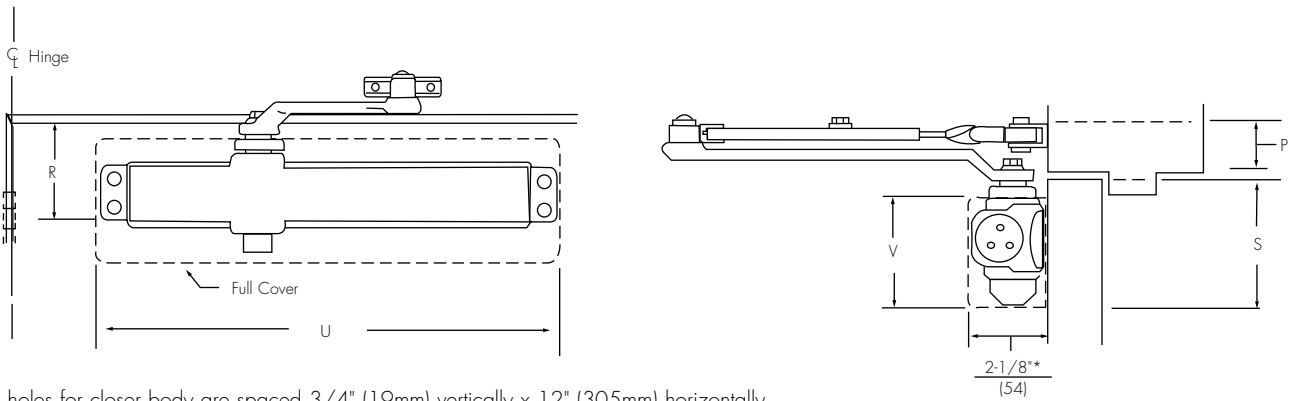
Low Profile Arm

Supplied with 8381/8581 series door closers for non-hold open installations only. Low profile arms have a reduced height elbow joint and a straight main arm. This enables the door closer to be installed in less vertical space.

Note: Low profile arm door closers are not supplied with Tri-Style® packaging.

8000 SERIES ARCHITECTURAL DOOR CLOSER

REGULAR ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.

Note: All measurements are inches/mm.

Maximum 180° door swing, conditions permitting.

Closer Series	Covers	P Minimum Ceiling Clearance			R Minimum Top Rail				S Minimum Top Rail Clearance		U Closer Length	V Closer Height				
					W/O Drop Plate		W/8146 Drop Plate									
		NHO	Low Profile	HO	NHO	Low Profile	NHO	Low Profile	NHO	Low Profile						
8101	No Cover	1-1/2" (38)	1" (25)	1-5/8" (41)	2-1/2" (64)	2-3/8" (60)	1-5/8" (41)	1-1/2" (38)	3-1/2" (89)	3-3/8" (86)	12-3/4" (324)	2-7/8" (73)				
8301	Slim Line Plastic										13" (330)					
8501	Full Plastic								4-1/4" (108)	4-1/8" (105)	13-5/8" (346)	3-3/4" (95)				
8501M	Metal															
8501A	Arch. Plastic												3-5/8" (92)	3-1/2" (89)	14" (356)	3-1/8" (79)
8501MA	Arch. Metal												3-1/2" (89)	3-3/8" (86)		3" (76)

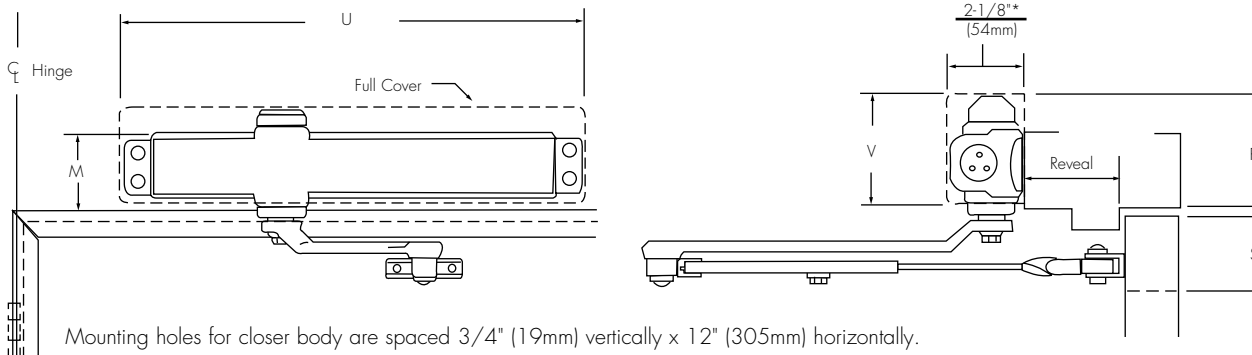
Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
30" (76)	—	8301 8501	8301H 8501H
36" (91)	30" (76)		
48" (122)	36" (91)		
—	48" (122)		
Unusual			

Note: 8301/8501 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

Note: Please contact factory if door weight exceeds 250 lbs.

TOP JAMB



Note: All measurements are inches/mm.

Closer Series	Covers	M Minimum Frame Face		P Minimum Ceiling Clearance			S Minimum Top Rail Clearance 5/8" (16mm) Frame Stop									U Closer Length	V Closer Height	
		W/O Drop Plate	With 8146 Drop Plate	With 8148, 8158, 8547, 8547A Drop Plate	W/O Drop Plate	With 8146 Drop Plate	With 8148, 8158, 8547, 8547A Drop Plate	W/O Drop Plate			W/8146 Drop Plate			With 8148/8547 Drop Plate				
								NHO	Low Profile	HO	NHO	Low Profile	HO	NHO	Low Profile			HO
8101	No Cover																12-3/4" (324)	
8301	Slim Line Plastic		1-1/8" (29)	1-1/2" (38)	2-3/4" (70)	1-5/8" (41)	1-1/2" (38)										13" (330)	2-7/8" (73)
8501	Full Plastic	1-3/4" (40)						2-1/4" (57)	N/A	2-1/2" (64)	3-3/8" (86)	2-3/4" (70)	3-5/8" (92)	4-3/8" (111)	3-3/4" (95)	4-5/8" (117)		
8501M	Metal			1-5/8" (41)	3-3/4" (95)		1-5/8" (41)										13-5/8" (346)	3-3/4" (95)
8501A	Arch. Plastic		N/A	1-1/2" (38)	3" (76)	N/A	1-1/2" (38)										14" (356)	3-1/8" (79)
8501MA	Arch. Metal				2-7/8" (73)													3" (76)

Reveal Information

Door Width Inches (cm)		Model Number
Interior	Exterior	
30" (76)	—	8301, 8501
36" (91)	30" (76)	
48" (122)	36" (91)	
—	48" (122)	
Unusual		

Model Number	Reveal Range Inches (mm)	Maximum Door Opening	
		NHO	HO
J8301, J8501	2-3/4" (70) to 4-1/4" (108)	180°	
J8301, J8501	4-1/4" (108) to 7" (178)	150°	
J8301H, J8501H	2-1/8" (54) to 4-1/4" (108)		180°
J8301H, J8501H	4-1/4" (108) to 6-3/4" (171)		150°

Reveal Information (regular arm installed top jamb)

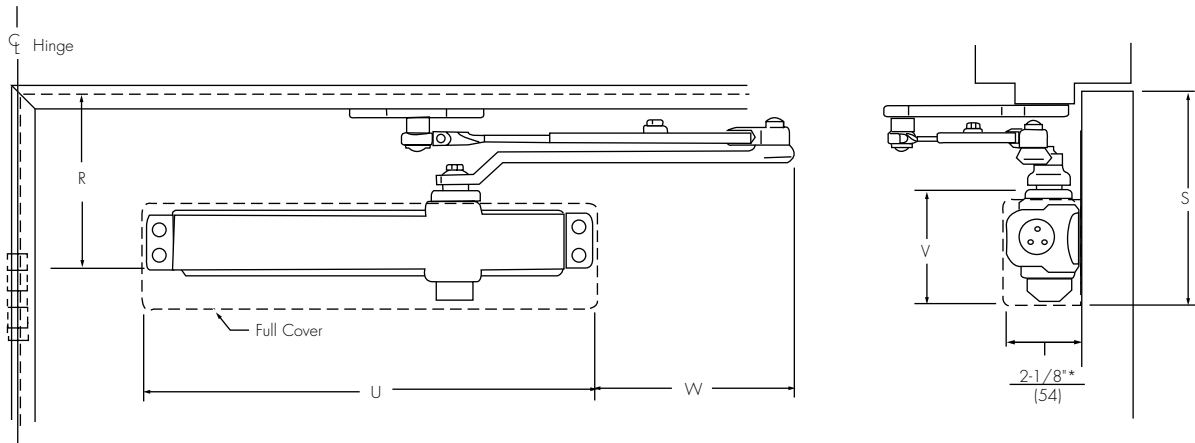
Model Number	Reveal Range Inches (mm)	Maximum Door Opening	
		NHO	HO
8301, 8501	0 to 2-7/8" (73)	180°	
8301, 8501 w/Drop Plate	0 to 2-3/4" (70)	180°	
8301H, 8501H	0 to 2-3/4" (70)		180°

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).
Note: Please contact factory if door weight exceeds 250 lbs.

Note: Reveal range information is based upon 1-3/4" (44mm) doors hung on 4-1/2" wide hinges.
** Drop Plate 8146, 8148, 8158, 8547 or 8547A

8000 SERIES ARCHITECTURAL DOOR CLOSER

PARALLEL ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.

Note: All measurements are inches/mm.

Maximum 180° door swing, conditions permitting.

Closer Series	Covers	R Minimum Top Rail Minimum Top Rail 5/8" (16mm) Frame Stop						S Minimum Top Rail Clearance			U Closer Length	V Closer Height	W Arm Extension
		W/O Drop Plate			With 8148, 8158, 8548, 8548A Drop Plate			NHO	Low Profile	HO			
		NHO	Low Profile	HO	NHO	Low Profile	HO						
8101	No Cover										12-3/4" (324)		8-1/8" (206)
8301	Slim Line Plastic							6-1/4" (159)	5-5/8" (143)	6-1/4" (159)	13" (330)	2-7/8" (73)	8" (203)
8501	Full Plastic	5-1/4" (133)	4-5/8" (117)	5-1/4" (133)	3" (76)	2-3/8" (60)	3" (76)						
8501M	Metal							6-7/8" (175)	6-1/4" (159)	6-7/8" (175)	13-5/8" (346)	3-3/4" (95)	7-5/8" (194)
8501A	Arch. Plastic							6" (152)	5-3/8" (137)	6" (152)	14" (356)	3-1/8" (79)	
8501MA	Arch. Metal							5-7/8" (149)	5-1/4" (133)	5-7/8" (149)			

^Not available for doors that swing 180°

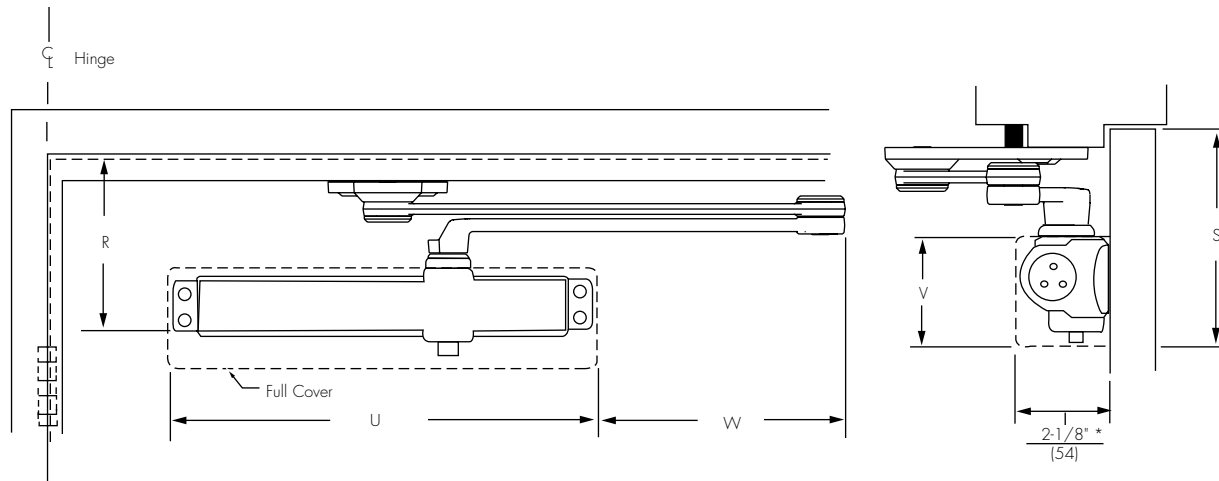
Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
30" (76)	—	8301 8501	8301H 8501H
36" (91)	30" (76)		
42" (107)	36" (91)		
48" (122)	42" (107)		
—	48" (122)		

Note: 8301/8501 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

Note: Please contact factory if door weight exceeds 250 lbs.

PARALLEL RIGID ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.
Note: All measurements are inches/mm.
Maximum 180° door swing, conditions permitting.

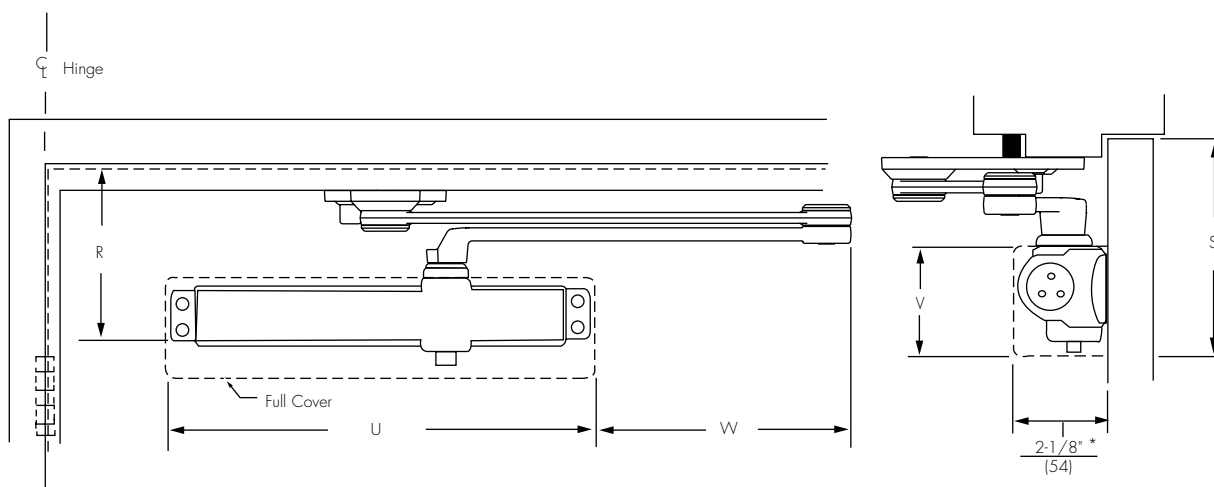
Closer Series	Covers	R Minimum Top Rail		S Minimum Top Rail Clearance	U Closer Length	V Closer Height	W Arm Extension
		W/O Drop Plate	With Drop Plate				
8101	No Cover	4-5/8" (117)	2-3/8" (60)	5-7/8" (149)	12-3/4" (324)	2-7/8" (73)	8" (203)
8301	Slim Line Plastic				13" (330)		
8501	Full Plastic						
8501M	Metal			6-1/2" (165)	13-5/8" (346)	3-7/8" (98)	7-5/8" (194)
8501A	Arch. Plastic			6" (152)	14" (356)	3-1/8" (79)	7-1/2" (191)
8501MA	Arch. Metal			5-7/8" (149)		3" (76)	

Door Width (Wood or Metal) Inches (cm)		Model Number	
Interior	Exterior	Stop Only	Hold Open
28" (71) - 32" (81)	—	PR8301 PR8501	PR8301H PR8501H
33" (84) - 36" (91)	28" (71) - 32" (81)		
37" (94) - 41" (104)	33" (84) - 36" (91)		
42" (107) - 48" (122)	37" (94) - 41" (104)		
—	42" (107) - 48" (122)		

Note: 8301/8501 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.
* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).
Note: Please contact factory if door weight exceeds 250 lbs.

8000 SERIES ARCHITECTURAL DOOR CLOSER

CLOSERPLUS® ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.
Note: All measurements are inches/mm.

Closer Series	Covers	R Minimum Top Rail		S Minimum Top Rail Clearance	U Closer Length	V Closer Height	W Arm Extension	
		W/O Drop Plate	With Drop Plate					
8101	No Cover	4-5/8" (117)	2-3/8" (60)	5-7/8" (149)	12-3/4" (324)	2-7/8" (73)	8" (203)	
8301	Slim Line Plastic				13" (330)			
8501	Full Plastic			6-1/2" (165)	13-5/8" (346)	3-7/8" (98)	7-5/8" (194)	
8501M	Metal				6" (152)	14" (356)	3-1/8" (79)	7-1/2" (191)
8501A	Arch. Plastic						3" (76)	
8501MA	Arch. Metal				5-7/8" (149)			

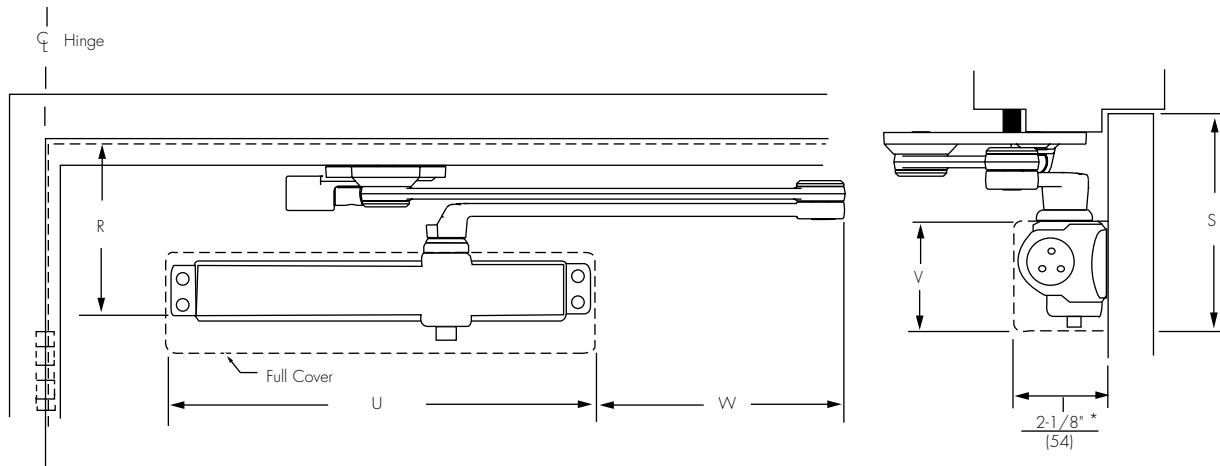
Door Width (Wood or Metal) Inches (cm)		Model Number		
Interior	Exterior	Stop Only	Thumbturn Hold Open	Ramp Hold Open
28" (71) - 32" (81)	—	CLP8301 CLP8501	CLP8301T CLP8501T	CLP8301R CLP8501R
33" (84) - 36" (91)	28" (71) - 32" (81)			
37" (94) - 41" (104)	33" (84) - 36" (91)			
42" (107) - 48" (122)	37" (94) - 41" (104)			
—	42" (107) - 48" (122)			

Note: 8301/8501 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

Note: Please contact factory if door weight exceeds 250 lbs.

CLOSERPLUS SPRING™ ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.
Note: All measurements are inches/mm.

Closer Series	Covers	R Minimum Top Rail		S Minimum Top Rail Clearance	U Closer Length	V Closer Height	W Arm Extension
		W/O Drop Plate	With Drop Plate				
8101	No Cover	4-5/8" (117)	2-3/8" (60)	5-7/8" (149)	12-3/4" (324)	2-7/8" (73)	8" (203)
8301	Slim Line Plastic				13" (330)		
8501	Full Plastic				6-1/2" (165)		
8501M	Metal			6" (152)	13-5/8" (346)	3-7/8" (98)	7-5/8" (194)
8501A	Arch. Plastic			5-7/8" (149)	14" (356)	3-1/8" (79)	7-1/2" (191)
8501MA	Arch. Metal					3" (76)	

Door Width (Wood or Metal) Inches (cm)		Model Number	
Interior	Exterior	Stop Only	Hold Open
28" (71) - 32" (81)	—	CPS8301 CPS8501	CPS8301T CPS8501T
33" (84) - 36" (91)	28" (71) - 32" (81)		
37" (94) - 41" (104)	33" (84) - 36" (91)		
42" (107) - 48" (122)	37" (94) - 41" (104)		
—	42" (107) - 48" (122)		

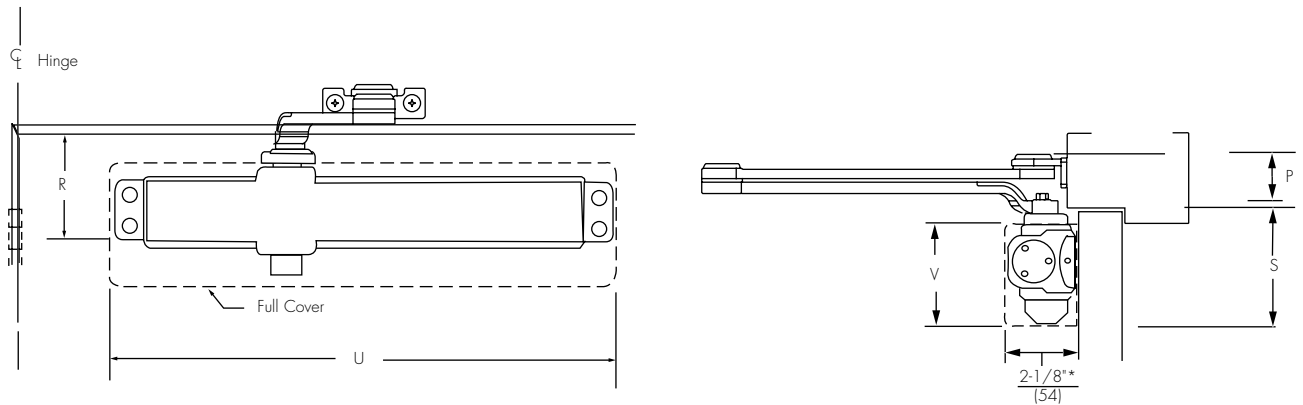
Note: 8301/8501 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

Note: Please contact factory if door weight exceeds 250 lbs.

8000 SERIES ARCHITECTURAL DOOR CLOSER

REGULAR RIGID HEAVY-DUTY ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.
Note: All measurements are inches/mm.

Maximum 180° door swing, conditions permitting.

Closer Series	Covers	P Minimum Ceiling Clearance	R Minimum Top Rail		S Minimum Top Rail Clearance	U Closer Length	V Closer Height
			W/O Drop Plate	W/8146 Drop Plate			
		NHO	NHO	NHO	NHO		
8101	No Cover	1-3/4" (44)	2-1/2" (64)	1-5/8" (41)	3-1/2" (89)"	12-3/4" (324)	2-7/8" (73)
8301	Slim Line Plastic					13" (330)	
8501	Full Plastic				14" (356)	4-1/4" (108)	3-3/4" (95)
8501M	Metal					3-5/8 (92)	3-1/8" (79)
8501A	Arch. Plastic					3-1/2" (89)	3" (76)
8501MA	Arch. Metal						

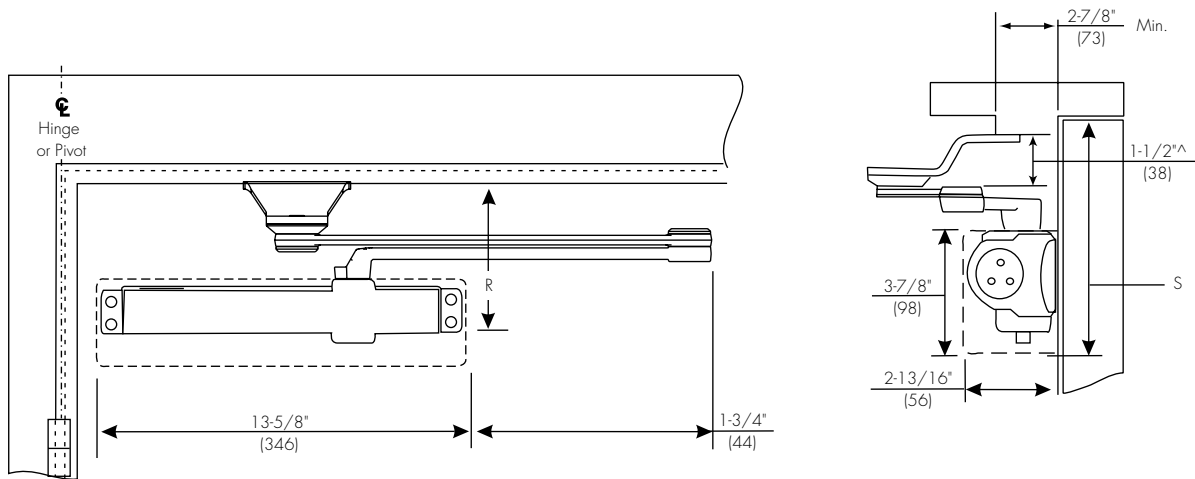
Door Width (Wood or Metal) Inches (cm)		Model Number
Interior	Exterior	Non-Hold Open Only R8301 R8501
36" (91)	30" (76)	
42" (107)	36" (91)	
46" (117)	42" (107)	
54" (137)	48" (122)	
—	52" (132)	

Note: 8301/8501 series door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

Note: Please contact factory if door weight exceeds 250 lbs.

PARALLEL RIGID OFFSET ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.
 ^ If clearance greater than 1-1/2" is needed, 6891 spacer block is required.

R (inches/mm) Minimum Top Rail of Door with 5/8" (16mm) Frame Stop		S Minimum Top Rail of Door	
Without 6891 Spacer	With 6891 Spacer	Without 6891 Spacer	With 6891 Spacer
7-1/8" (181)	7-5/8" (194)	7-5/8" (194)	8-1/8" (206)

Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open*
30" (76)	—	PRO8301 PRO8501	PRO8301H PRO8501H
36" (91)	32" (81)		
42" (107)	36" (91)		
48" (122)	42" (107)		
—	48" (122)		

Note: 8301/8501 series door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

+ Specify hand when ordering.

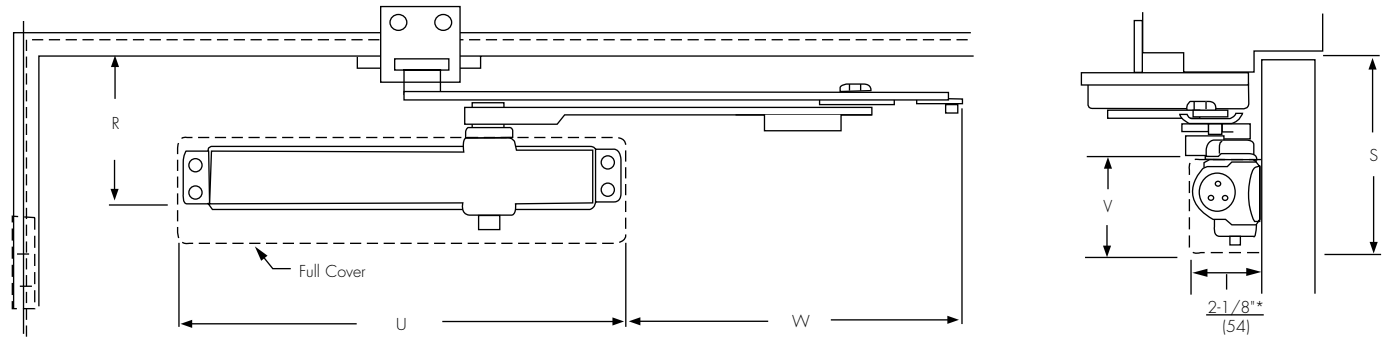
Note: Please contact factory if door weight exceeds 250 lbs.

8000 SERIES ARCHITECTURAL DOOR CLOSER

PARALLEL UNITROL® ARM

Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.

⌋ Hinge



Closer Series	Door Width	Covers	R Minimum Top Rail		S Minimum	U Closer Length	V Closer Height	W Arm Extension
			W/O Drop Plate	With Drop Plate				
8301	28-32	Slim Line	4-3/4" (121)	2-1/2" (64)	5-3/4" (146)	13" (330)	2-7/8" (73)	8-3/8" (213)
	33-41							9-7/8" (251)
	42-48							11-1/4" (286)
8501	33-41 [^]	Full Plastic	4-3/4" (121)	2-1/2" (64)	5-3/4" (146)	13" (330)	2-7/8" (73)	9-7/8" (251)
8501M		Metal			6-3/8" (162)	13-5/8" (346)	3-7/8" (98)	9-1/2" (241)
8501A		Arch. Plastic			5-1/2" (140)	14" (356)	3-1/8" (79)	9-3/8" (238)
8501MA		Arch. Metal			5-3/8" (137)		3" (76)	9" (229)

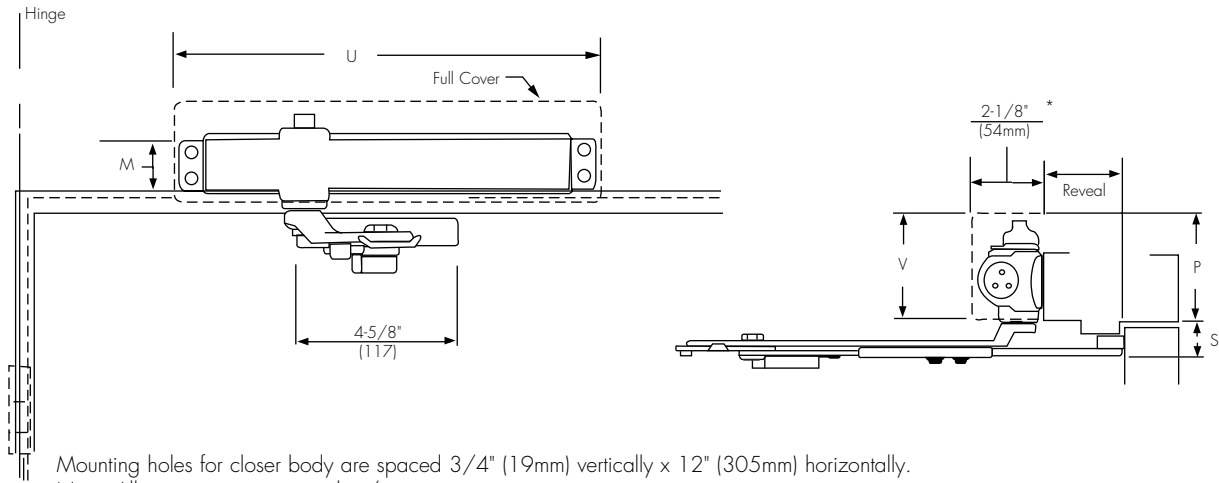
[^] Consult installation instructions for additional door width dimensions.

Door Width (Wood or Metal) Inches (cm)		Model Number		
Interior	Exterior	Sized Closers		x Specify Door Width
		Stop Only	Hold Open	
28" (71) - 32" (81)	—	UNI8301 UNI8501	UNI8301H UNI8501H	
33" (83) - 36" (91)	28" (71) - 32" (81)			
37" (94) - 41" (104)	33" (83) - 36" (91)			
42" (107) - 48" (122)	37" (94) - 41" (104)			
—	42" (107) - 48" (122)			

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

Note: Please contact factory if door weight exceeds 250 lbs.

TOP JAMB UNITROL® ARM



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.
Note: All measurements are inches/mm

Series	Closer	M Covers Frame Face		P Minimum Ceiling Clearance		S Minimum Top Rail Clearance		U Closer Length	V Closer Height
		W/O Drop Plate	With 8148, 8158, 8547, 8547A Drop Plate	W/O Drop Plate	With Drop Plate	W/O Drop Plate	With 8148, 8158, 8547, 8547A Drop Plate		
8301	Slim Line	1-3/4" (44)	1-1/2" (38)	2-3/4" (70)	1-1/2" (38)	1-7/8" (48)	3-3/4" (95)	13" (330)	2-7/8" (73)
8501	Full		1-5/8" (41)	3-3/4" (95)	1-5/8" (41)			13-5/8" (346)	3-7/8" (98)
8501M	Metal		1-1/2" (38)	3" (76)	1-1/2" (38)			14" (356)	3-1/8" (79)
8501A	Arch. Plastic		2-7/8" (73)						
8501MA	Arch. Metal								

Door Width (Wood or Metal) Inches (cm)		Model Number		
Interior	Exterior	Non-Hold Open	Hold Open	x Specify Frame Reveal
28" (71) - 30" (76)	—	UNIJ8301 UNIJ8501	UNIJ8301H UNIJ8501H	
31" (79) - 36" (91)	28" (71) - 30" (76)			
37" (94) - 42" (107)	31" (79) - 36" (91)			
43" (109) - 48" (122)	37" (94) - 42" (107)			
—	43" (109) - 48" (122)			

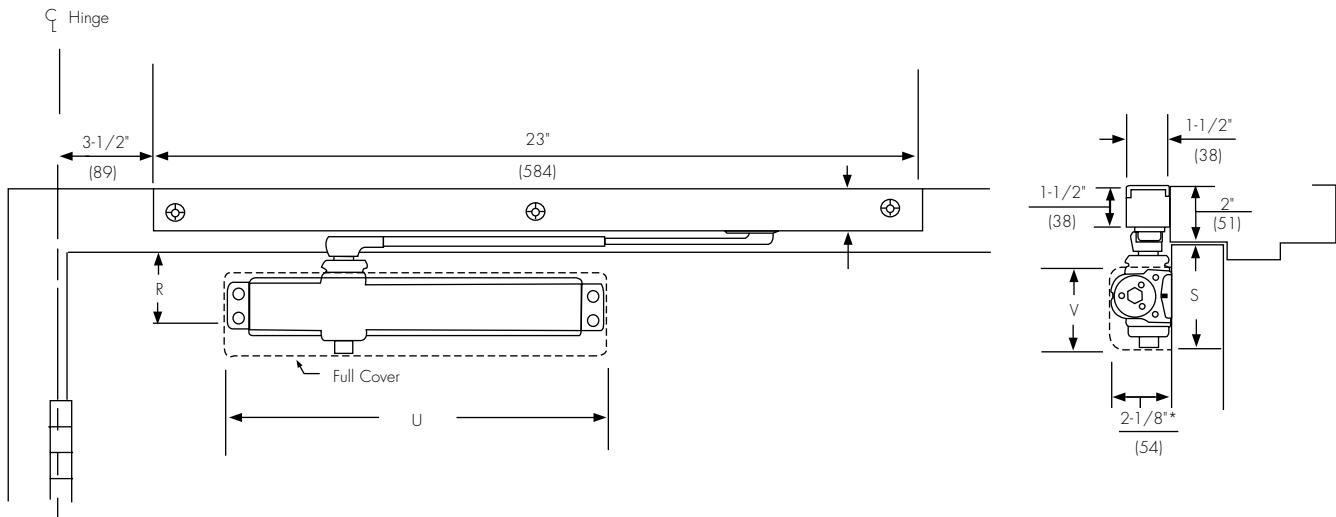
Note: 8301/8501 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

Note: Please contact factory if door weight exceeds 250 lbs.

8000 SERIES ARCHITECTURAL DOOR CLOSER

PULL SIDE SLIDE TRACK



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.
Note: All measurements are inches/mm

Closer Series	R Minimum Top Rail		S Minimum Top Rail Clearance				U Closer Length				V Closer Height			
	W/O Drop Plate	With 8146 Drop Plate	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal
8301ST	2-1/2" (64)	1-5/8" (41)	3-1/2" (89)	4-1/8" (105)	3-5/8" (92)	3-1/2" (89)	13" (330)	13-5/8" (346)	14" (356)		2-7/8" (73)	3-3/4" (95)	3-1/8" (79)	3" (76)
8501ST														

Door Width (Wood or Metal) Inches (cm)		Model Number		
		Non-Hold Open		Hold Open
Interior	Exterior	85°-110°	85°-180°	85°-110°
32" (81)	—	8301ST 8501ST	8301ST-180 8501ST-180	8301STH 8501STH
38" (97)	32" (81)			
48" (122)	38" (97)			

Note: 8301/8501 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

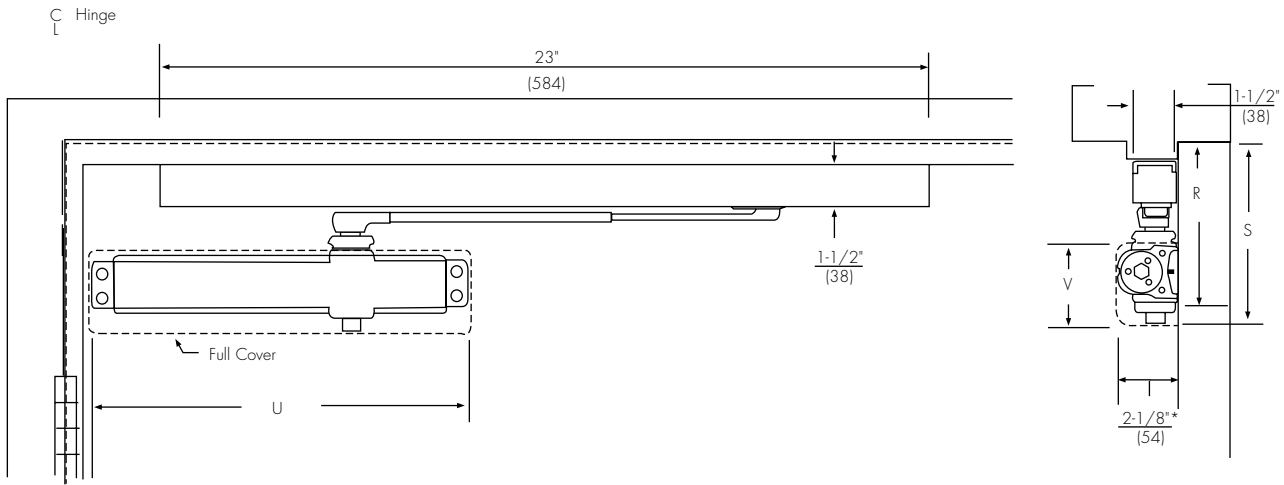
* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

◆Track is furnished with a spring buffered stop. Additional stop, by others, is recommended where abusive conditions are anticipated.

^Track is supplied without the spring buffered assembly. An auxiliary door stop, by others, is required.

Note: Please contact factory if door weight exceeds 250 lbs.

PUSH SIDE SLIDE TRACK



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.
Note: All measurements are inches/mm

Closer Series	R Minimum Top Rail		S Minimum Top Rail Clearance				U Closer Length				V Closer Height			
	W/O Drop Plate	With 8146, 8158, 8548, 8548A Drop Plate	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal
PS8301ST	5"	2-3/4"	6"	6-5/8"	6-1/8"	6"	13"	13-5/8"	14"	2-7/8"	3-3/4"	3-1/8"	3"	
PS8501ST	(127)	(70)	(152)	(168)	(156)	(152)	(330)	(346)	(356)	(73)	(95)	(79)	(76)	

Door Width (Wood or Metal) Inches (cm)		Non-Hold Open	Hold Open
Interior	Exterior	85°- 100°	
32" (81)	—	PS8301ST PS8501ST	PS8301STH PS8501STH
38" (97)	32" (81)		
48" (122)	38" (97)		

All track assemblies are supplied with a spring buffered stop**

Note: 8301/8501 door closers are set at midpower range from the factory and can be adjusted for door sizes noted above.

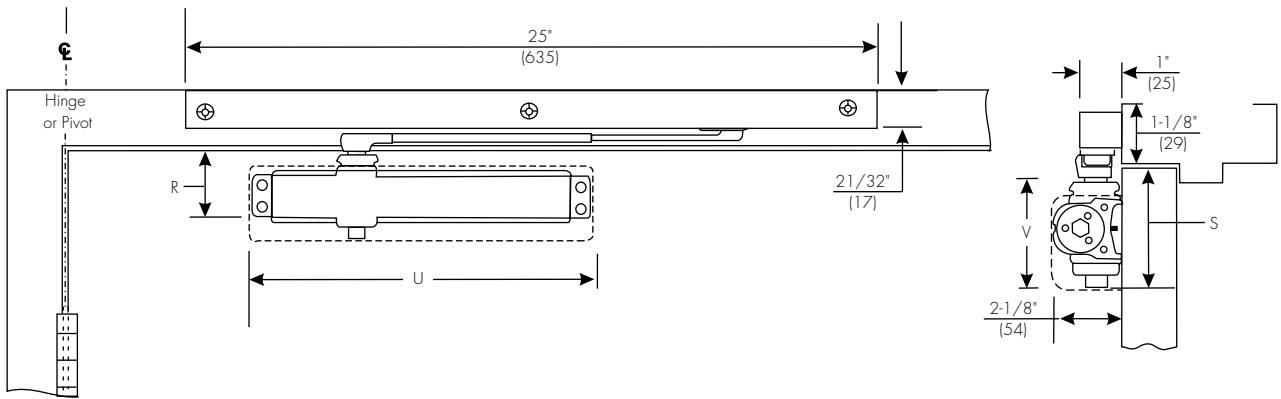
* Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).

** A separate door stop, by others, is recommended where abusive conditions are anticipated.

Note: Please contact factory if door weight exceeds 250 lbs.

8000 SERIES ARCHITECTURAL DOOR CLOSER

LOW PROFILE PULL SIDE SLIDE TRACK



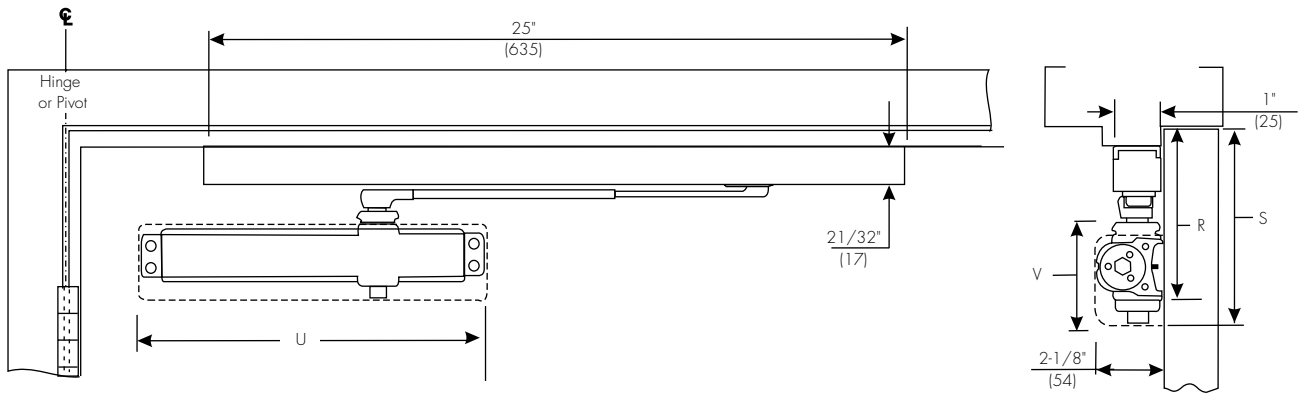
Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.

Closer Series	R Minimum Top Rail		S Minimum Top Rail Clearance				U Closer Length				V Closer Height			
	W/O Drop Plate	With 8146 Drop Plate	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal
8301ST	2-1/2" (64)	5/8" (16)	3" (76)	4-5/8" (117)	3-1/8" (79)	3" (76)	13" (330)	13-5/8" (346)	14" (356)		3" (76)	3-7/8" (98)	3-1/4" (83)	3-1/8" (79)
8501ST														

Door Width Inches (cm)	Model Number	
	Non-Hold Open	Hold Open
32" (81)	8341ST 8541ST	8341STH 8541STH
38" (97)		
48" (122)		

Note: 8301/8501 door closers can be adjusted for door sizes noted. Multi-size closers are set at mid power range from the factory.
*Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).
Note: Please contact factory if door weight exceeds 250 lbs.

LOW PROFILE PUSH SIDE SLIDE TRACK



Mounting holes for closer body are spaced 3/4" (19mm) vertically x 12" (305mm) horizontally.

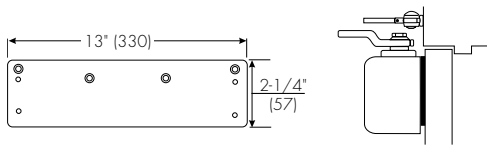
Closer Series	R Minimum Top Rail		S Minimum Top Rail Clearance				U Closer Length				V Closer Height			
	W/O Drop Plate	With 8146, 8158, 8548, 8548A Drop Plate	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal	Slim or Full Cover	Metal Cover	Arch Plastic	Arch Metal
PS8301ST	4" (102)	1-3/4" (44)	5" (127)	5-5/8" (143)	5-1/8" (130)	5" (127)	13" (330)	13-5/8" (346)	14" (356)		3" (76)	3-7/8" (98)	3-1/4" (83)	3-1/8" (79)
PS8501ST														

Door Width Inches (cm)	Model Number	
	Non-Hold Open	Hold Open
32" (81)	PS8341ST PS8541ST	PS8341STH PS8541STH
38" (97)		
48" (122)		

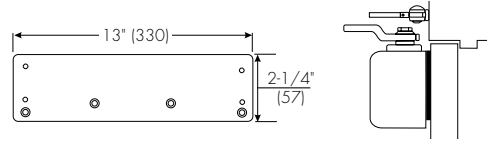
Note: 8301/8501 door closers can be adjusted for door sizes noted. Multi-size closers are set at mid power range from the factory.
*Projection is for Slim Line or Full Covers. Projection for Metal Covers = 2-3/16" (56mm). Projection for Architectural Plastic & Architectural Metal Covers = 2-1/4" (57mm).
Note: Please contact factory if door weight exceeds 250 lbs.

REGULAR ARM

Closer Mounting Plates
Slim Line Installations

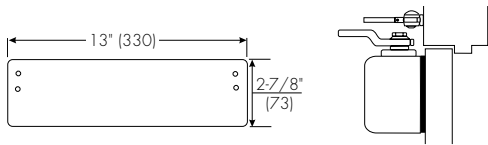


Narrow Top Rail - #8146 Drop Plate: For use where the narrow top rail of the door prevents the closer from being mounted directly on to the door surface. This drop plate must be used for any Series 8000 closer mounted on a top rail between 1-9/16" and 2-7/16" (40 and 62mm) in height, or any Series 8080 closer mounted on a top rail between 1-7/16" and 2-5/16" (36 and 59mm) in height.

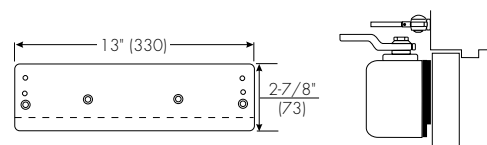


Concealed Door Holder - #8146 Drop Plate: For use where a concealed door holder prevents normal mounting of the closer to the door. This is the same plate used for narrow rail mounting, but is inverted for this application to permit the mounting screws to clear the bottom of the door-holder preparation in the top rail of the door. This places the centerline of the plate's upper mounting screws at 2-3/16" (56mm) from the top of the door.

Full Cover Installations

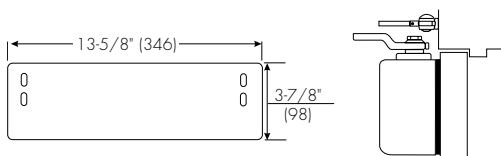


Exposed Back - #8445 Molded Full Cover Decorative Back Plate: For use on doors with glass lights where a closer with a molded full cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

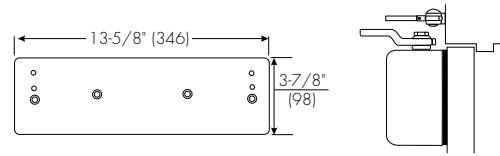


Exposed Back/Narrow Top Rail - Exposed Back Concealed Door Holder - #8446 Molded Full Cover Drop Plate Kit: For use with molded full cover installation when an 8146 Plate is needed as a drop plate on a narrow top rail, or as a clearance plate for a concealed door holder, and the closer back is exposed. Kit contains an 8146 Drop Plate and an 8445 Decorative Plate.

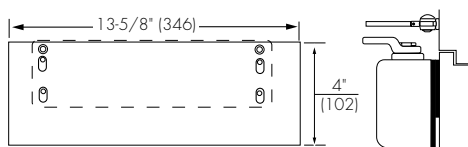
Metal Cover Installations



Exposed Back - #8545 Metal Cover Decorative Back Plate: For use on doors with glass lights where a closer with a metal full cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.



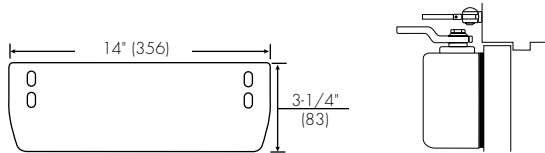
Concealed Door Holder - #8546 Metal Cover Drop Plate: For use where a concealed door holder prevents the normal mounting of the closer to the door. This plate permits the mounting screws to clear the bottom of the door-holder preparation in the top rail of the door. This places the centerline of the plate's upper mounting screws at 2-3/16" (56mm) from the top of the door.



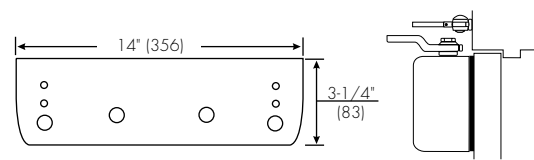
Exposed Back/Narrow Top Rail - #8549 Metal Cover Drop Plate Kit: For use with metal full cover installations, when an 8146 Plate is needed as a drop plate on a narrow top rail and the closer back is exposed. Kit contains an 8146 Drop Plate and an 8545 Decorative Plate.

REGULAR ARM

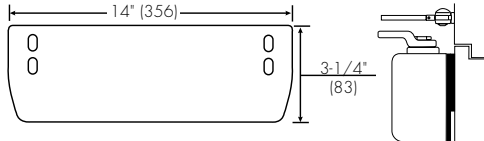
Closer Mounting Plates
 Architectural Plastic or Metal Cover Installations



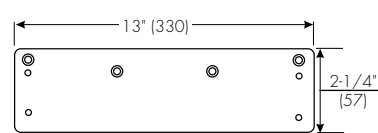
Exposed Back - #8545A Architectural Plastic or Architectural Metal Cover Decorative Back Plate: For use on doors with glass lights where a closer with an architectural plastic or metal cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.



Concealed Door Holder - #8546A Architectural Plastic or Architectural Metal Cover Drop Plate: For use where a concealed door holder prevents the normal mounting of the closer to the door. This plate permits the mounting screws to clear the bottom of door-holder preparation in the top rail of the door. This places the centerline of the plate's upper mounting screws at 2-3/16" (56mm) from the top of the door.

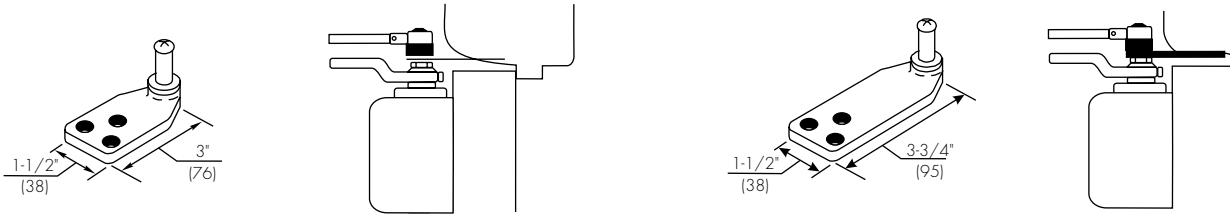


Exposed Back/Narrow Top Rail - #8549A Architectural Plastic or Architectural Metal Cover Drop Plate Kit: For use with architectural plastic or metal cover installations when an 8146 plate is needed as a drop plate on a narrow top rail and the closer back is exposed. Kit contains an 8146 Drop Plate and an 8545A Decorative Plate.



REGULAR ARM

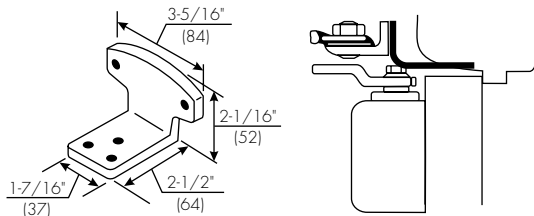
Brackets for Non-Hold Open Arms



Molded/Bull Nose Trim - #2403B 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 - #2403-3/4 Bracket: This bracket is similar to, but longer than, the 2403B bracket. It is designed to accommodate frame rabbets from 2" to 2-7/8" (51 to 73mm) deep.

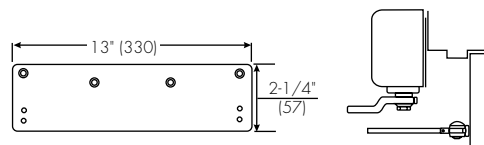
Brackets for Hold Open Arms



Molded / Bull Nose Trim - #80 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.

TOP JAMB ARM

Closer Mounting Plates
Slim Line Installations

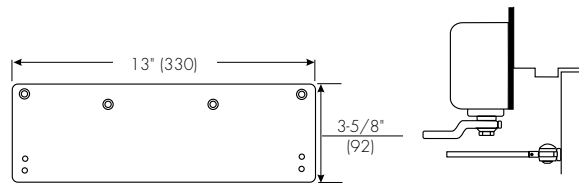


Low Ceiling Clearance - #8146 Drop Plate: For use where low ceiling clearance prevents normal top jamb mounting. This plate is used when clearance is from 1-7/8" to 2-7/8" (48 to 73mm). Where ceiling clearance is less than 1-7/8" (48mm) see #8148 Drop Plate on page 30.

Overhead Door Holder - #8146 Drop Plate: For use where a surface or concealed overhead door holder prevents normal top jamb mounting. This plate drops the closer and allows arm mounting screws to clear the bottom of the door holder. This places the centerline of the arm mounting screws at 2-7/8" (73mm) from the top of the door.

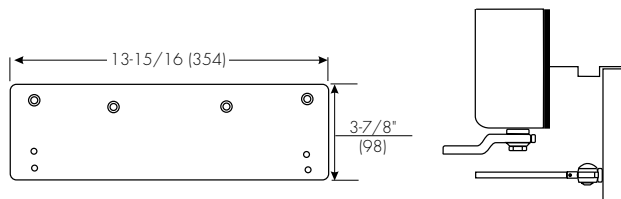
TOP JAMB ARM

Closer Mounting Plates
Slim Line Installations



Low Ceiling Clearance - #8148 Drop Plate: For use where the ceiling clearance is between 1-1/2" and 1-3/4" (38 and 44mm).

Metal Cover Installations

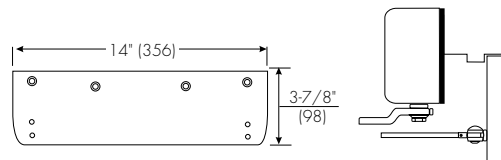


Low Ceiling Clearance -
Overhead Door Holder -

#8547 Metal Full Cover Drop Plate: For use where a low ceiling clearance prevents normal top jamb mounting. This plate is used when the clearance is between 1-5/8" and 3-7/8" (41 and 98mm). Or for use where a surface or concealed overhead door holder prevents normal top jamb mounting of a

closer with a metal full cover. This plate drops the closer and allows arm mounting screws to clear the bottom of the door holder. This places the centerline of the arm mounting screws at 3-7/8" (98mm) from the top of the door.

Architectural Plastic or Metal Cover Installations



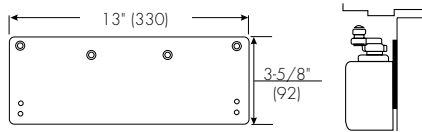
Low Ceiling Clearance -
Overhead Door Holder -

#8547A Architectural Plastic or Architectural Metal Cover Drop Plate: For use where low ceiling clearance prevents normal top jamb mounting. This plate is used when the clearance is between 1-5/8" and 3-7/8" (41 and 98mm). Also for use where a surface or concealed overhead door holder prevents normal top jamb mounting of a closer with an

architectural plastic or metal full cover. This plate drops the closer and allows arm mounting screws to clear the bottom of the door holder. This places the centerline of the arm mounting screws at 3-7/8" (98mm) from the top of the door.

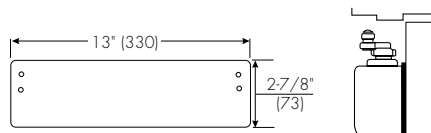
PARALLEL ARM

Closer Mounting Plates Slim Line Installations

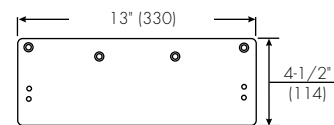


Narrow Top Rail - #8148 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface. This drop plate can be used to mount a closer on a top rail as narrow as 2-7/8" (73mm) in height.

Full Cover Installations

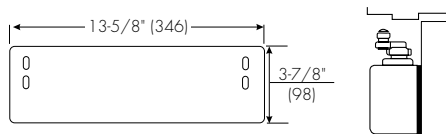


Exposed Back - #8445 Molded Full Cover Decorative Back Plate: For use on doors with glass lights where a closer with molded full cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

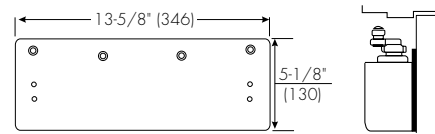


Exposed Back/Narrow Top Rail - #8158 Molded Full Cover Drop Plate: For use on doors with glass lights where a closer with molded full cover is installed and the back of the closer is exposed. This covers the back of the installation and gives a pleasing appearance from the reverse side.

Metal Cover Installations

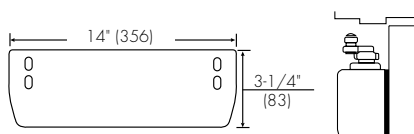


Exposed Back - #8545 Metal Full Cover Decorative Back Plate: For use on doors with glass lights where a closer with full metal cover is installed and the back of the closer is exposed. This plate covers the back of the installation and gives a pleasing appearance from the reverse side.

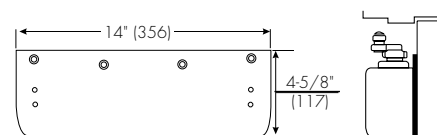


Exposed Back/Narrow Top Rail - #8548 Metal Full Cover Drop Plate: For use on doors with glass lights where a closer with metal full cover is installed on a narrow top rail, and the back of the cover is exposed. This drop plate can be used to mount a closer on a top rail as narrow as 2-7/8" (73mm) in height. This plate covers the back of the installation and gives a pleasing appearance from the reverse side.

Architectural Plastic or Metal Cover Installations



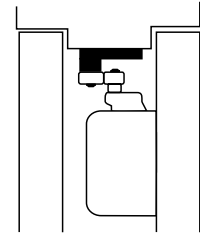
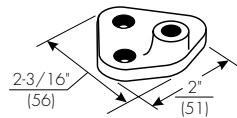
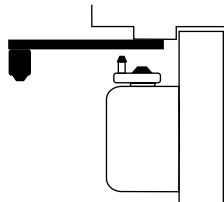
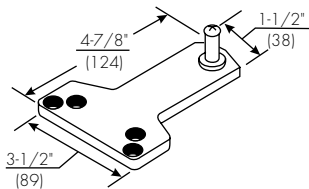
Exposed Back - #8545A Architectural Plastic or Architectural Metal Cover Decorative Back Plate: For use on doors with glass lights where a closer with an architectural plastic or metal cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.



Exposed Back/Narrow Top Rail - #8548A Architectural Plastic or Architectural Metal Cover Drop Plate: For use on doors with glass lights where a closer with an architectural plastic or metal cover is installed on a narrow top rail, and the back of the cover is exposed. This drop plate can be used to mount a closer on a top rail as narrow as 2-7/8" (73mm) in height. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

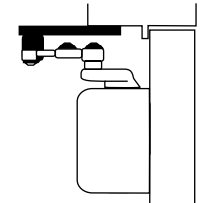
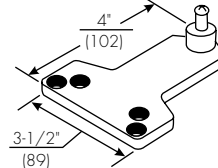
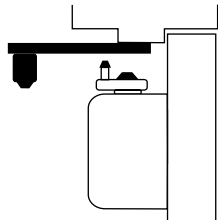
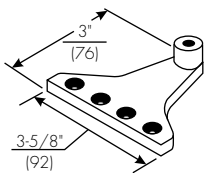
PARALLEL ARM

Brackets for Non-Hold Open Arms



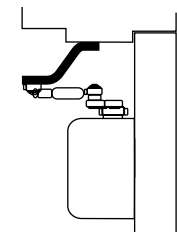
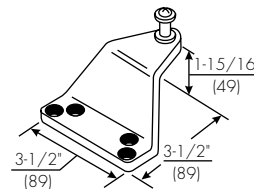
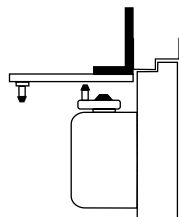
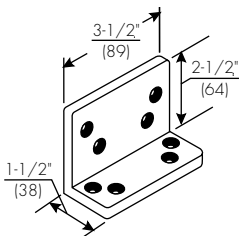
Standard Installation - #1618A Soffit Plate: This soffit plate is supplied standard with parallel arm closers. It can be mounted where the frame soffit is as narrow as 1" (25 mm).

Mounting between Doors - #2018 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.



Narrow Frame/Removable Stop - #2018B 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.

Blade/Applied Stop - #2018D 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) stop.

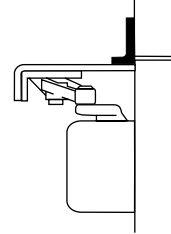
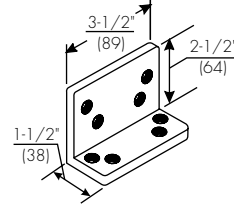
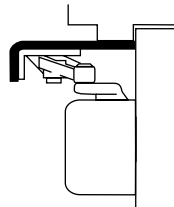
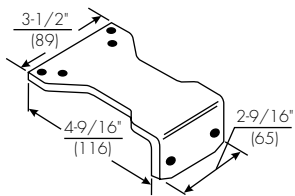


Flush Transom - #2022 Angle Bracket: For use where rabbeted or flush transom conditions prevent installation of a soffit plate. Used in combination with the 1618 soffit plate, or may be used in combination with the 2018S soffit plate when it is necessary for the closer arm to clear a separate overhead door holder.

Extra-Clearance - #2018S 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.

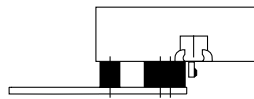
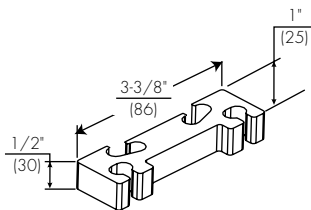
PARALLEL ARM

Brackets for Non-Hold Open & Hold Open Arms



Parallel Hold-Open - #1628H Adapter Plate: 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).

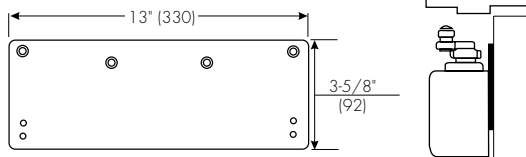
Flush Transom - #2022 Angle Bracket: For use where rabbeted or flush transom conditions prevent installation of a soffit plate. Used in combination with the 1628H adapter plate, this bracket fastens to the overhead transom to provide a mounting surface for the soffit plate assembly.



Clearance/Support Blade Stop - #6891 Spacer Block: For use where the door frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard spacer block to provide clearance of the blade stop. Also used with non-hold open arms.

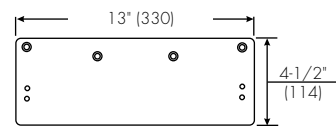
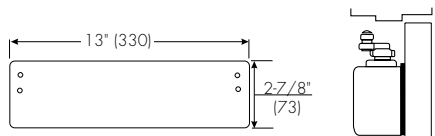
PR, CLP & CPS ARMS

Closer Mounting Plates
Slim Line Installations



Narrow Top Rail - #8148 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 2-9/16" (65mm) in height.

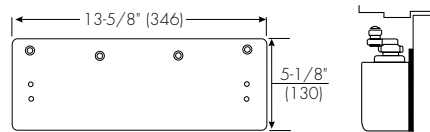
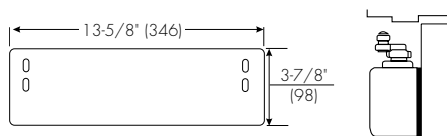
Full Cover Installations



Exposed Back - #8445 Molded Full Cover Decorative Back Plate: For use on doors with glass lights where a closer with molded full cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

Exposed Back/Narrow Top Rail - #8158 Molded Full Cover Drop Plate: For use on doors with glass lights where a closer with molded full cover is installed and the back of the closer is exposed. This covers the back of the installation and gives a pleasing appearance from the reverse side.

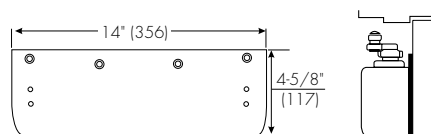
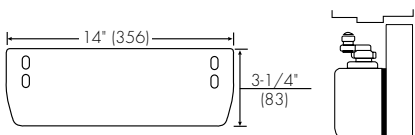
Metal Cover Installations



Exposed Back - #8545 Metal Full Cover Decorative Back Plate: For use on doors with glass lights where a closer with full metal cover is installed and the back of the closer is exposed. This plate covers the back of the installation and gives a pleasing appearance from the reverse side.

Exposed Back/Narrow Top Rail - #8548 Metal Full Cover Drop Plate: For use on doors with glass lights where a closer with metal full cover is installed on a narrow top rail, and the back of the cover is exposed. This drop plate can be used to mount a closer on a top rail as narrow as 2-9/16" (65mm) in height. This plate covers the back of the installation and gives a pleasing appearance from the reverse side.

Architectural Plastic or Metal Cover Installations

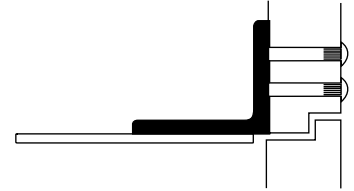
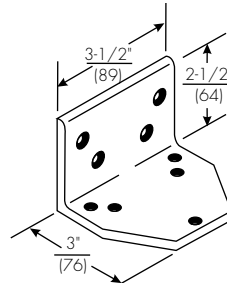
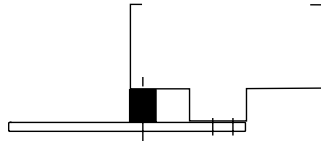
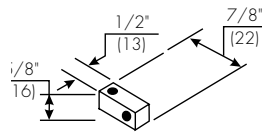


Exposed Back - #8545A Architectural Plastic or Architectural Metal Cover Decorative Back Plate: For use on doors with glass lights where a closer with an architectural plastic or metal cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

Exposed Back/Narrow Top Rail - #8548A Architectural Plastic or Architectural Plastic or Architectural Metal Cover Drop Plate: For use on doors with glass lights where a closer with an architectural plastic or metal cover is installed on a narrow top rail, and the back of the cover is exposed. This drop plate can be used to mount a closer on a top rail as narrow as 2-9/16" (65mm) in height. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

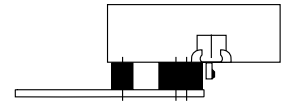
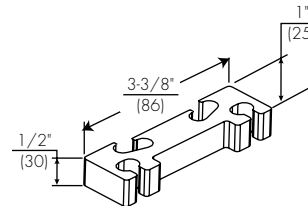
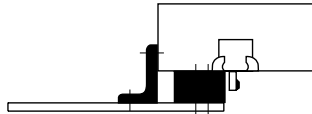
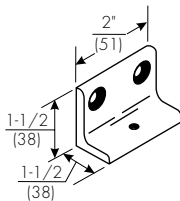
PR, CLP & CPS ARMS

Brackets for Non-Hold Open Arms & Hold Open Arms



Standard - #2019S Spacer Block: For use where a narrow frame soffit does not provide adequate support for the soffit plate. Supplied as standard with all parallel rigid arm closers.

Flush Rabbeted Transom - #2019L Angle Bracket: For use where flush transom conditions prevent mounting of the standard soffit plate. This bracket is used in combination with the standard soffit plate.

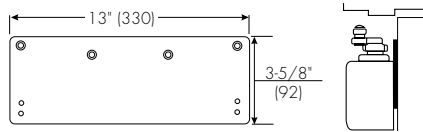


Narrow Frame - #6890 Support Bracket: For use where the frame is narrow and the soffit plate cannot be mounted directly to the frame soffit or rabbet. Used in combination with the #6891 Spacer Block on blade stop frames to provide extra support and needed clearance of the blade stop. Used on frames where the frame stop does not exceed 5/8" (16mm) in height.

Clearance/Support Blade Stop - #6891 Spacer Block: For use where the door frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard spacer block to provide clearance of the blade stop.

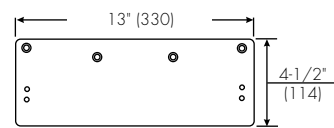
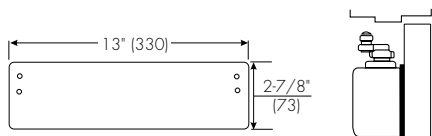
UNITROL® ARM

Closer Mounting Plates
Parallel Arm



Narrow Top Rail - #8148 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 2-7/16" (62mm) in height.

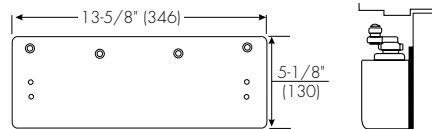
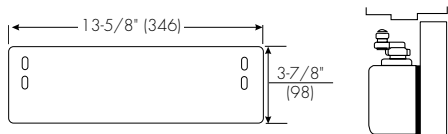
Full Cover Installations



Exposed Back - #8445 Molded Full Cover Decorative Back Plate: For use on doors with glass lights where a closer with molded full cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

Exposed Back/Narrow Top Rail - #8158 Molded Full Cover Drop Plate: For use on doors with glass lights where a closer with molded full cover is installed and the back of the closer is exposed. This covers the back of the installation and gives a pleasing appearance from the reverse side.

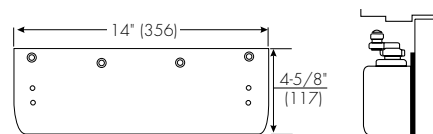
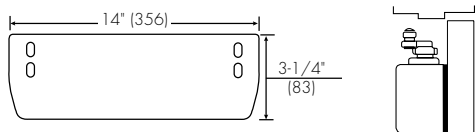
Metal Cover Installations



Exposed Back - #8545 Metal Full Cover Decorative Back Plate: For use on doors with glass lights where a closer with full metal cover is installed and the back of the closer is exposed. This plate covers the back of the installation and gives a pleasing appearance from the reverse side.

Exposed Back/Narrow Top Rail - #8548 Metal Full Cover Drop Plate: For use on doors with glass lights where a closer with metal full cover is installed on a narrow top rail, and the back of the cover is exposed. This drop plate can be used to mount a closer on a top rail as narrow as 2-9/16" (65mm) in height. This plate covers the back of the installation and gives a pleasing appearance from the reverse side.

Architectural Plastic or Metal Cover Installations



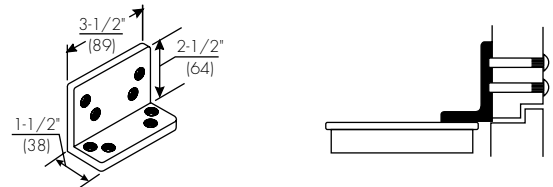
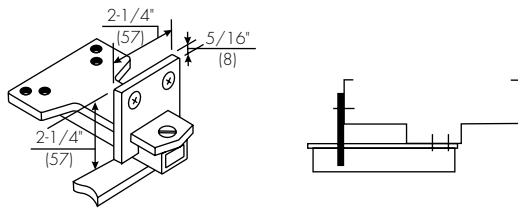
Exposed Back - #8545A Architectural Plastic or Architectural Metal Cover Decorative Back Plate: For use on doors with glass lights where a closer with an architectural plastic or metal cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

Exposed Back/Narrow Top Rail - #8548A Architectural Plastic or Architectural Plastic or Architectural Metal Cover Drop Plate: For use on doors with glass lights where a closer with an architectural plastic or metal cover is installed on a narrow top rail, and the back of the cover is exposed. This drop plate can be used to mount a closer on a top rail as narrow as 2-7/16" (62mm) in height. This plate covers the back of the installation to give a pleasing appearance from the reverse side.

UNITROL® ARM

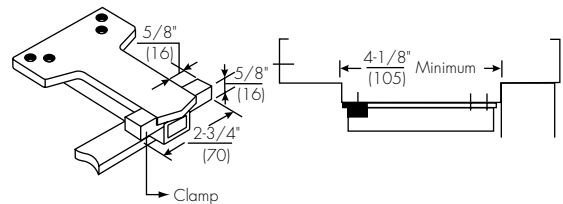
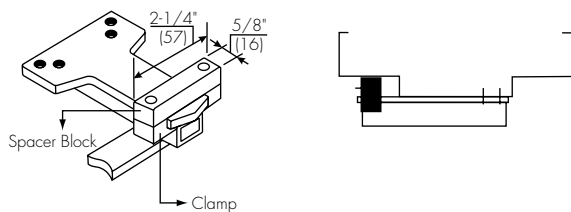
Closer Mounting Plate

Soffit Plate Reinforcing Brackets (for Parallel Arm)



Additional Support - #6190 Reinforcing Bracket: Standard for use with all parallel arm *Unitrol* door controls. Provides additional support to the soffit plate on installations with door frame reveals from 1-7/8" to 4-5/8" (48 to 117mm).

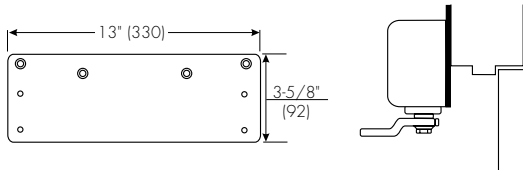
Flush Rabbeted Transom - #2022 Angle Bracket: Optional for use with all parallel arm *Unitrol* door controls. For use where rabbeted or flush transom conditions prevent installation of the soffit plate assembly. This bracket fastens to the overhead transom to provide a mounting surface for the soffit plate assembly.



Wide Frame - #6191 Reinforcing Kit: Optional for use with all parallel arm *Unitrol* door controls. Used to support the soffit plate on installations with wide frames. Clamps may be used with or without the spacer block, depending on frame conditions.

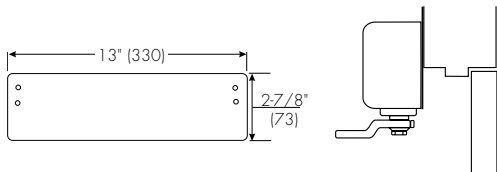
UNITROL® ARM

Closer Mounting Plates
Top Jamb

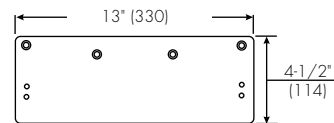


Narrow Top Rail - #8148 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface. This drop plate can be used to mount a closer on a top rail as narrow as 2-7/16" (62mm) in height.

Full Cover Installations

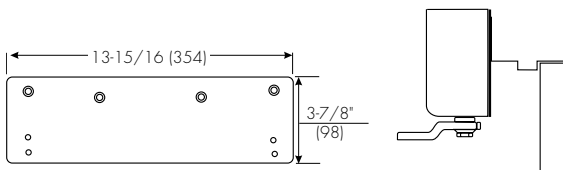


Exposed Back - #8445 Molded Full Cover Decorative Back Plate: For use on doors with glass lights where a closer with molded full cover is installed and the closer back is exposed. This plate covers the back of the installation to give a pleasing appearance from the reverse side.



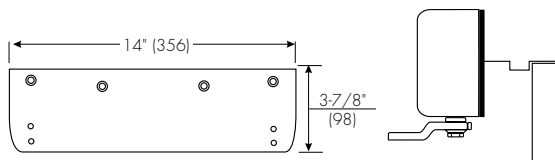
Exposed Back/Narrow Top Rail - #8158 Molded Full Cover Drop Plate: For use on doors with glass lights where a closer with molded full cover is installed and the back of the closer is exposed. This covers the back of the installation and gives a pleasing appearance from the reverse side.

Metal Cover Installations



Low Ceiling Clearance - Overhead Door Holder - #8547 Metal Full Cover Drop Plate: For use where a low ceiling clearance prevents normal top jamb mounting. This plate is used when the clearance is between 1-5/8" and 3-3/4" (41 and 95mm). Or for use where a surface or concealed overhead door holder prevents normal top jamb mounting of a closer with a metal full cover. This plate drops the closer and allows arm mounting screws to clear the bottom of the door holder. This places the centerline of the arm mounting screws at 3-7/8" (98mm) from the top of the door.

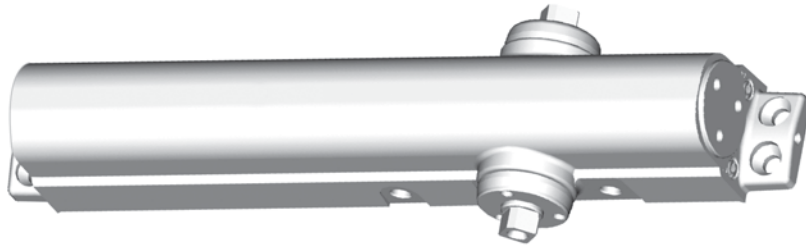
Architectural Plastic or Metal Cover Installations



Low Ceiling Clearance - Overhead Door Holder - #8547A Architectural Plastic or Architectural Metal Cover Drop Plate: For use where low ceiling clearance prevents normal top jamb mounting. This plate is used when the clearance is between 1-5/8" and 3-3/4" (41 and 95mm). Or for use where a surface or concealed overhead door holder prevents normal top jamb mounting of a closer with an architectural plastic or metal full cover. This plate drops the closer and allows arm mounting screws to clear the bottom of the door holder. This places the centerline of the arm mounting screws at 3-7/8" (98mm) from the top of the door.

8000 SERIES ARCHITECTURAL DOOR CLOSER

DOOR CLOSER BODY ASSEMBLIES



Model Number	Description
8101LAP	Multi-sized closer bodies (8101, 8301 or 8501)

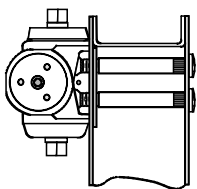
LAP = Less All Parts

Covers (Material)

Closer Series	Plastic	Metal	Arch. Plastic	Arch. Metal
8301	8200P	N/A	N/A	N/A
8501	8400P	8400M	8400A	8400MA

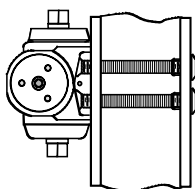
Cover Model	Cover Drawing
Slim Line* 8200P or 8200PG 1-3/4" high x 2-1/8" deep x 13" long (44 x 54 x 330)	
Full Plastic 8400P or 8400PG 2-7/8" high x 2-1/8" deep x 13" long (73 x 54 x 330)	
Full Metal 8400M 3-7/8" high x 2-3/16" deep x 13-5/8" long (98 x 54 x 346)	
Architectural Plastic 8400A or 8400AG 3-3/32" high x 2-1/4" deep x 13-7/8" long (79 x 56 x 352)	
Architectural Metal 8400MA 3" high x 2-3/16" deep x 13-15/16" long (76 x 56 x 354)	

Steel Door Application
Sleeve-nut : "SN" (4 per pack) or
Sleeve-nut & Screw: "SNB" (4 per pack)



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

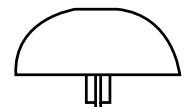
Aluminum and Wooden Door Application
(Aluminum Door Shown)
Thru Bolt & Grommet Nut : "TBGN" (4 per pack)



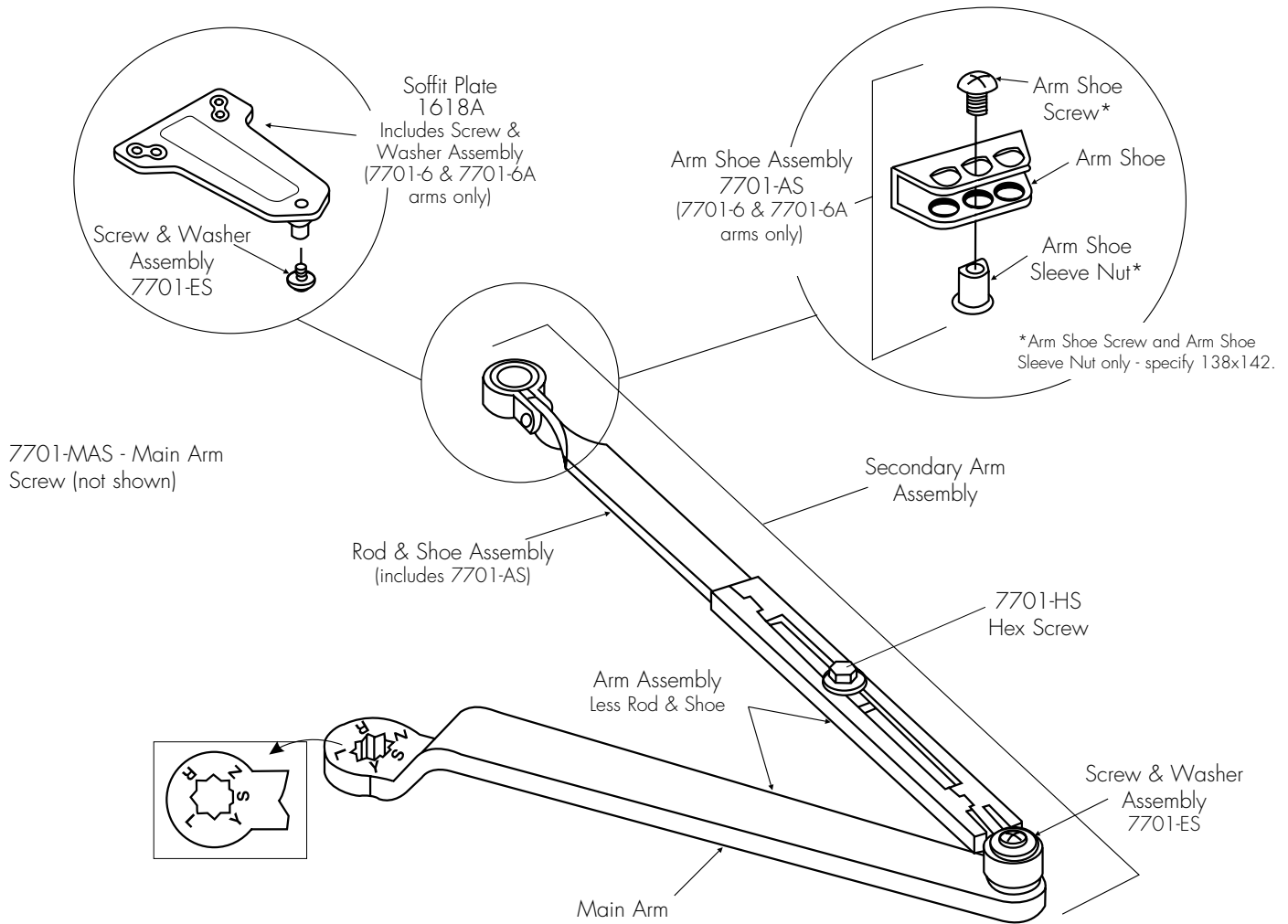
Door	TBGN's
1-3/8"	TBGN138-38
1-3/4"	TBGN134-38
2-1/4"	TBGN214-38

Arm Type	Torx® Screw Packs
Regular, Parallel & Top Jamb	TX38
Parallel Rigid, CloserPlus® & CloserPlus Spring™	PRTX38
Regular Rigid Heavy-Duty	RTX38
Unitrol®	UNITX38
Slide Track	STTX38

*Pinion cap not included
with Slim Line cover.
Part #1639



NON-HOLD OPEN ARM ASSEMBLIES

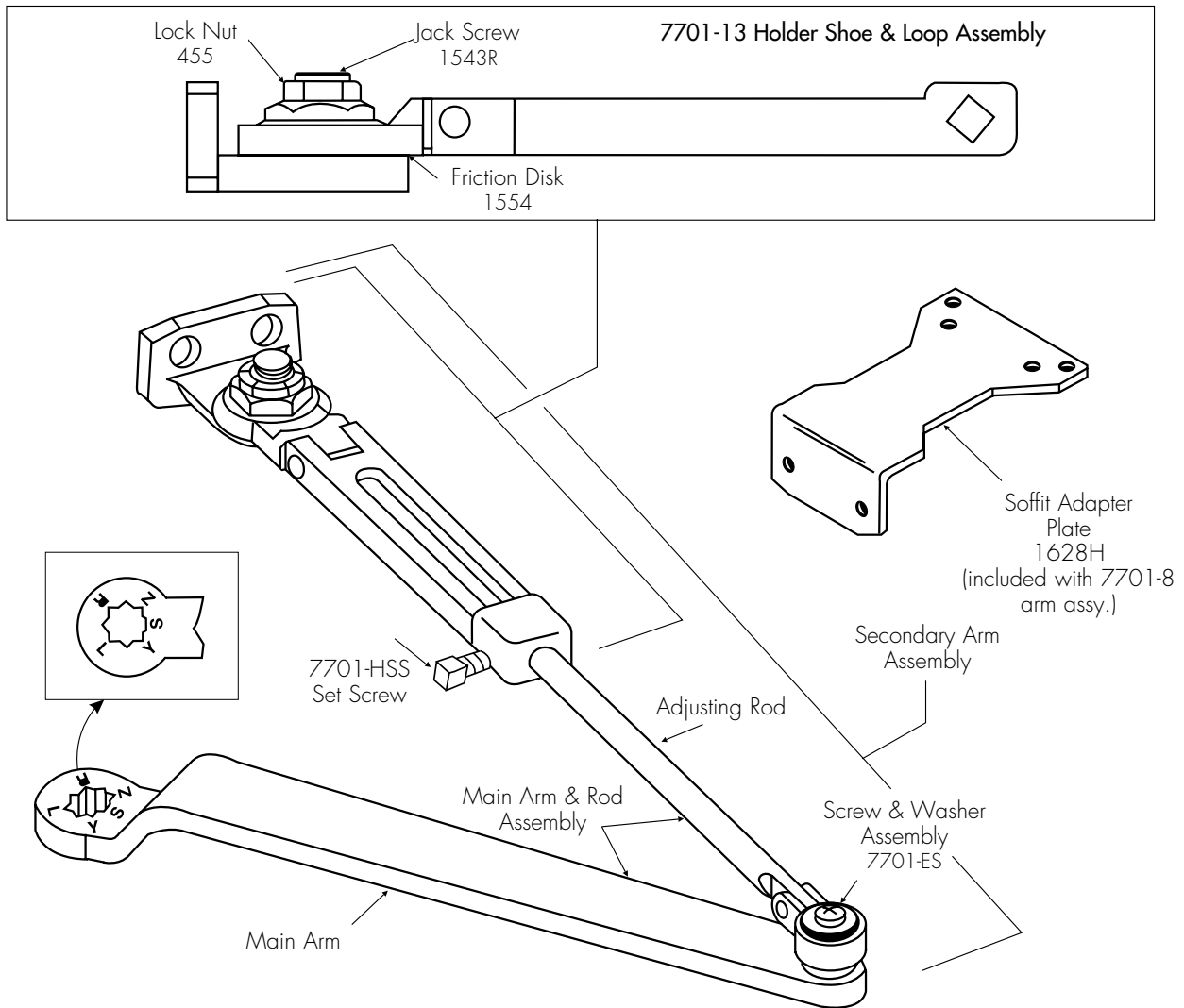


Closer Series	Complete Arm Assembly	Main [Ⓐ] Arm Assembly (length)(mm) (includes 7701-ES)	Secondary Arm Assembly (includes 7701-ES)	Arm Assembly Less Rod and Shoe	Rod & Shoe Assembly [Ⓒ] (length)(mm)
8000	7701-1	7701-1M (11)(279)	7701-111	7701-1W	7701-11 (8-7/8)(225)
J8000	7701-1A		7701-121		7701-11A (12-9/16)(319)
P8000	7701-6		7701-116		7701-16 (8-7/8)(225)
P8000 [Ⓒ]	7701-6A		7701-116A		7701-16A (12-9/16)(319)
8000	7701-26 (tri pack includes 7701-1 plus 1618A plate)				

- Ⓐ C to C length shown in parentheses.
- Ⓑ C of connecting link to end of rod shown in parentheses.
- Ⓒ For 180° door swing when using a special template for doors hung on 6" to 8" (162 to 203mm) wide throw hinges.

Note: Mounting hardware included with all parts orders.

HOLD OPEN ARM ASSEMBLIES



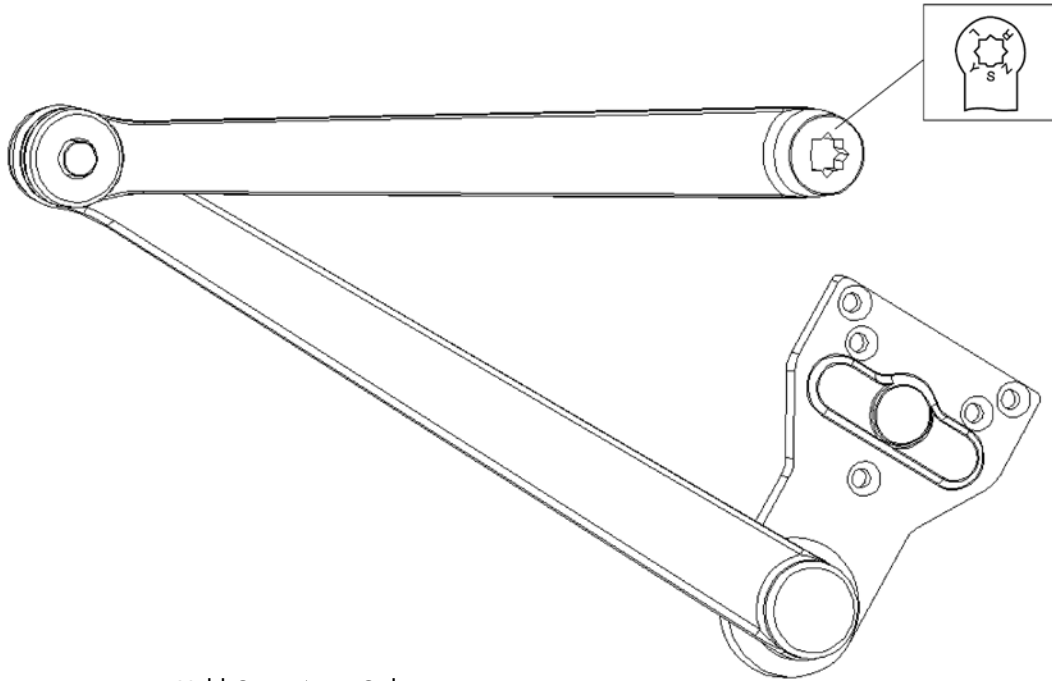
Closer Series	Complete Arm	Main Arm [Ⓐ] (Length) (mm) (includes 7701-ES)	Secondary Arm (includes 7701-ES)	Main Arm & Rod Assembly	Holder Shoe & Loop Assembly	Adjusting Rod [Ⓓ] (Length)(mm)
8000H	7701-3/7701-8 [Ⓒ]	7701-1M (11)(279)	7701-113/7700-118 (Reg.) / (Par.)	7701-3W	7701-13/7701-18 [Ⓒ]	7701-31 (7-3/8)(187)
J8000H	7701-3A		7701-123	7701-3WA	7701-13	7701-31A (10-13/16)(275)

- Ⓐ C to C length shown in parentheses.
- Ⓑ C of connecting link to end of rod shown in parentheses.
- Ⓒ Same as 7701-3 but includes #1628H soffit adapter plate.
- Ⓓ Same as 7701-13 but includes #1628H soffit adapter plate.

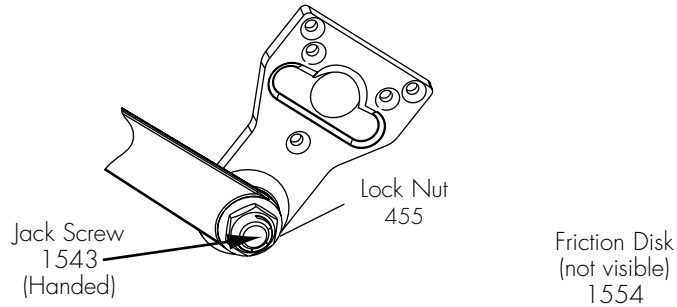
Note: Mounting hardware included with all parts orders.

PARALLEL RIGID ARM ASSEMBLIES

Non-Hold Open Arm Shown



Hold Open Arms Only

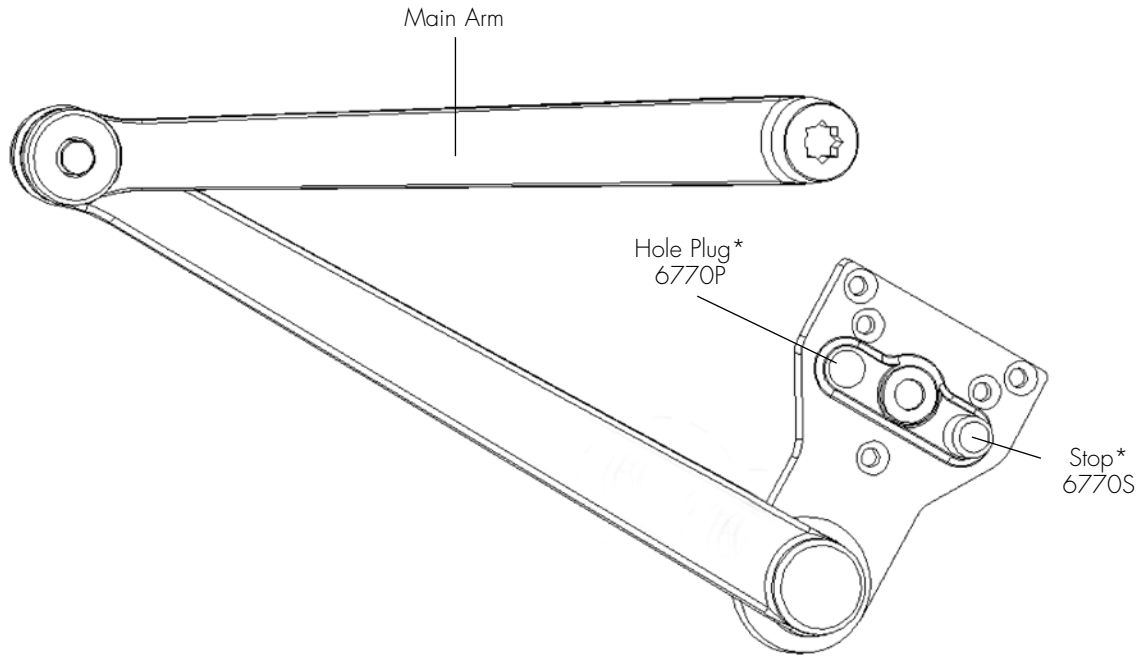


Arm Function	Complete Arm Assembly
Non-Hold Open	PR7701-5
Hold Open	PR7701-8R (Right Hand)
	PR7701-8L (Left Hand)

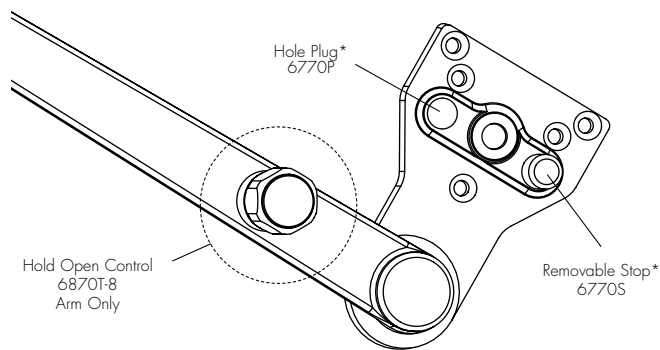
Note: Mounting hardware included with all parts orders.

CLOSERPLUS[®] ARM ASSEMBLIES

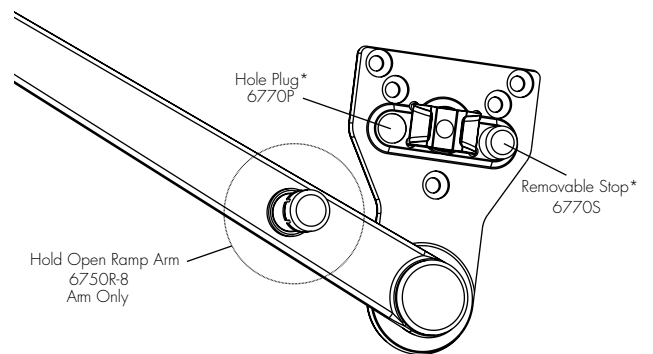
CLP
Non-Hold Open



CLP-T
Thumbturn Hold Open



CLP-R
Ramp Hold Open

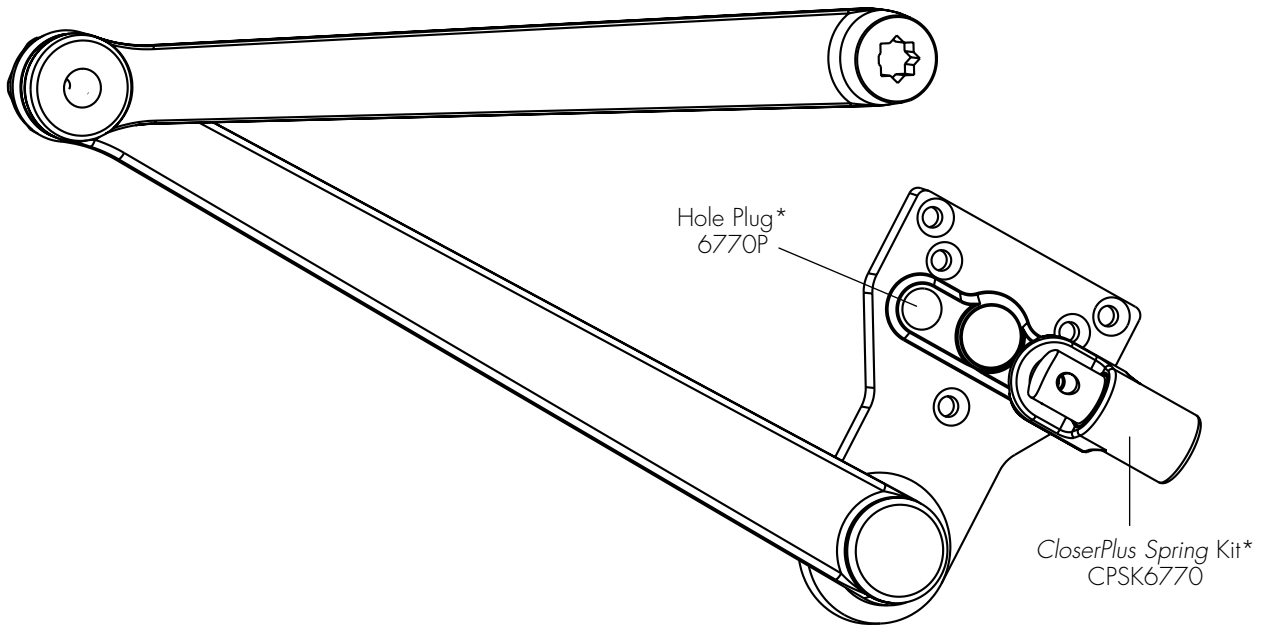


Arm Function	Complete Arm Assembly
Non-Hold Open	6770-5
Thumbturn Hold Open	6870T-8
Ramp Hold Open	6750R-8

* These parts and screw pack are included with complete arm assemblies.

Note: Mounting hardware included with all parts orders.

CLOSERPLUS SPRING™ ARM ASSEMBLIES



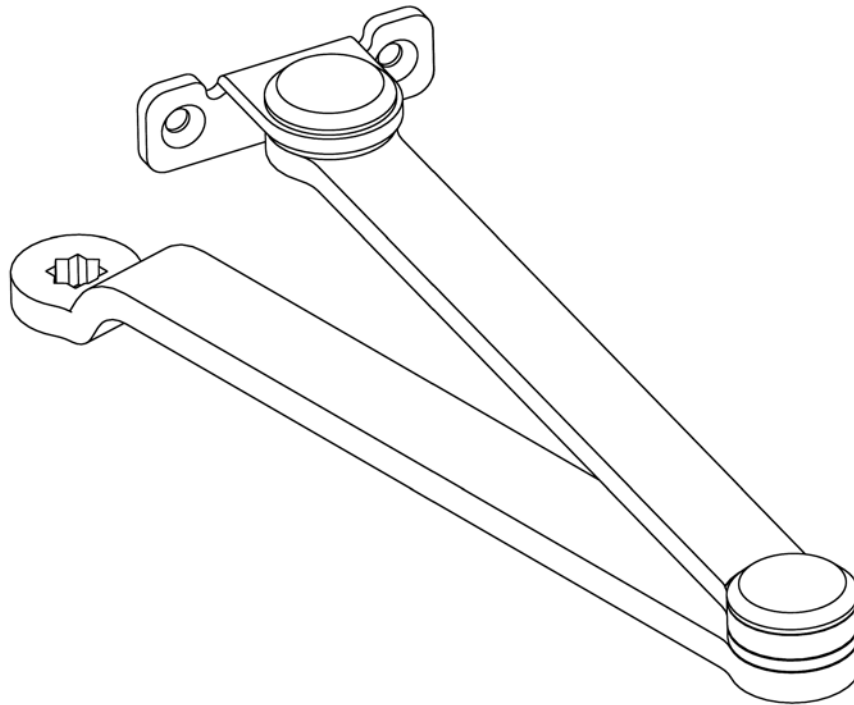
Arm Function	Complete Arm Assembly
Non-Hold Open	CPS6770-5
Thumbturn Hold Open	CPS6870T-8

* These parts and screw pack are included with complete arm assemblies.

Note: Mounting hardware included with all parts orders.

8000 SERIES ARCHITECTURAL DOOR CLOSER

REGULAR RIGID HEAVY-DUTY ARMS

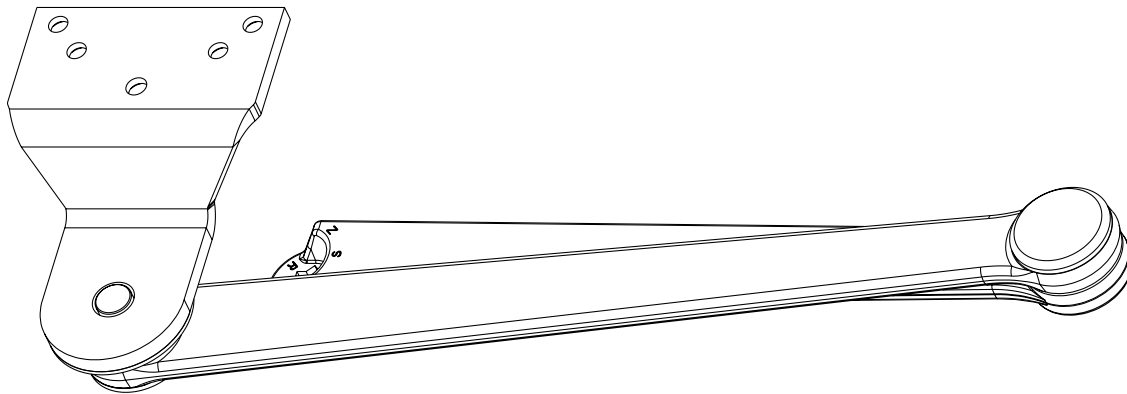


Arm Function	Complete Arm Assembly
Non-Hold Open	R7701-1

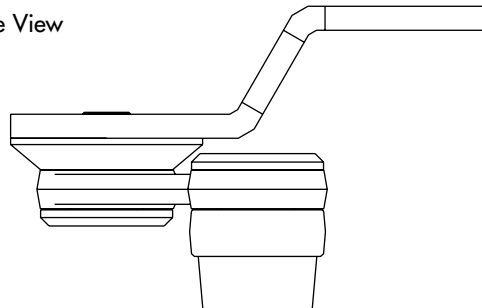
Note: Mounting hardware included with all parts orders.

PARALLEL RIGID OFFSET ARM ASSEMBLIES

Non-Hold Open



Side View

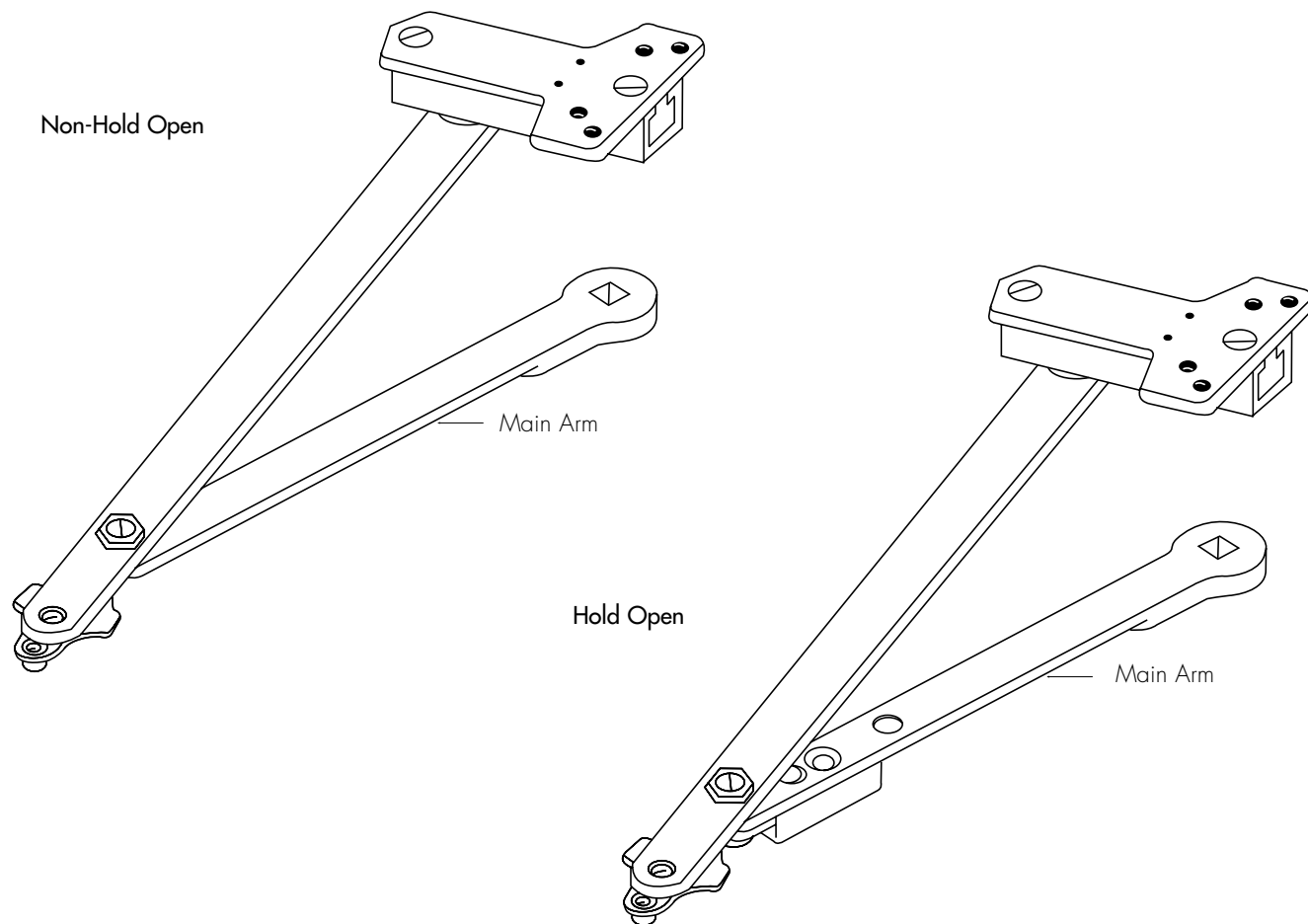


Arm Function	Complete Arm Assembly
Non-Hold Open	PRO7701-5
Hold Open, Right Hand	PRO7701-8R
Hold Open, Left Hand	PRO7701-8L

Note: Mounting hardware included with all parts orders.

UNITROL[®] ARM ASSEMBLIES

Parallel Arm



Door Width (cm)	Main Arm Length* (mm)	Complete Arm Assembly	
		Non-Hold Open	Hold Open
28" - 32" (71 - 81)	9-1/2" (241)	6100-11	6100-1
33" - 41" (84 - 104)	11" (279)	6100-13	6100-3
42" - 48" (107 - 122)	12-1/2" (318)	6100-14	6100-4

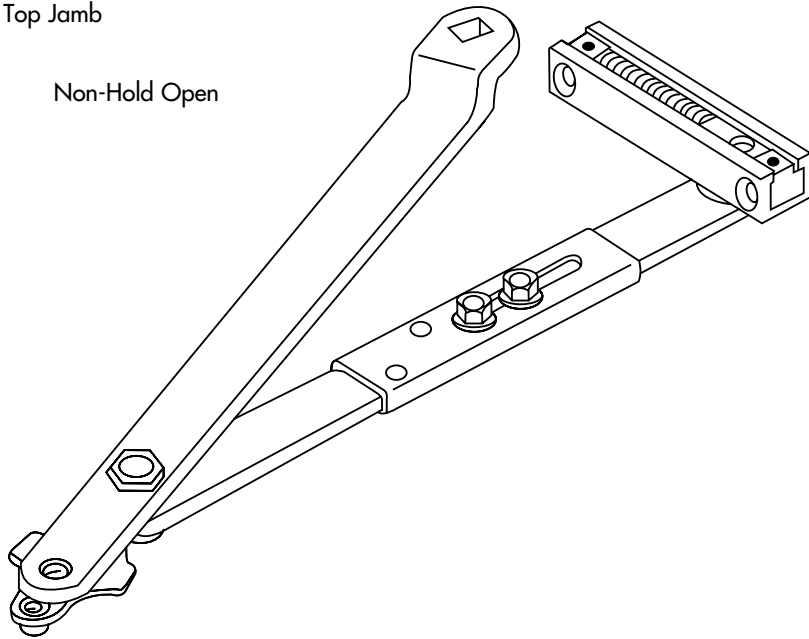
* Center to center length.

Note: Mounting hardware included with all parts orders.

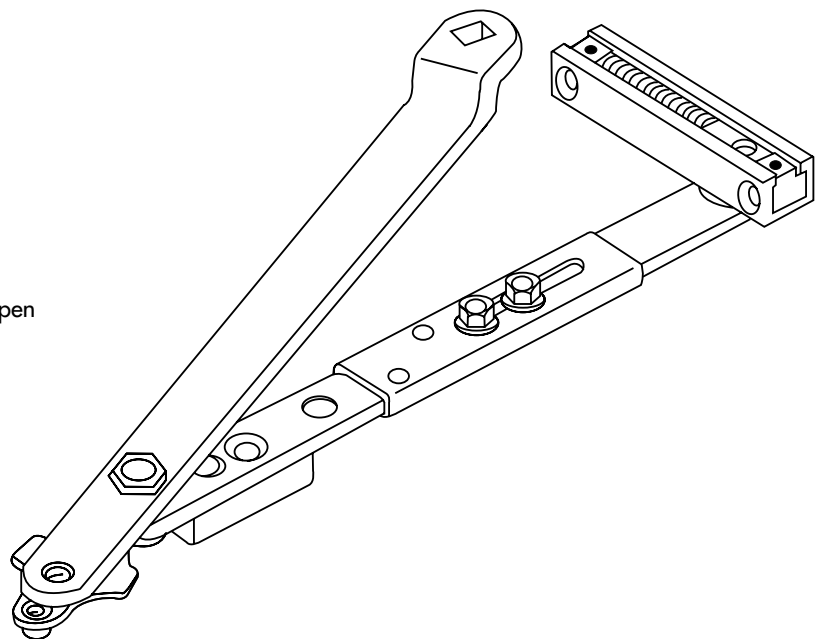
UNITROL® ARM ASSEMBLIES

Top Jamb

Non-Hold Open



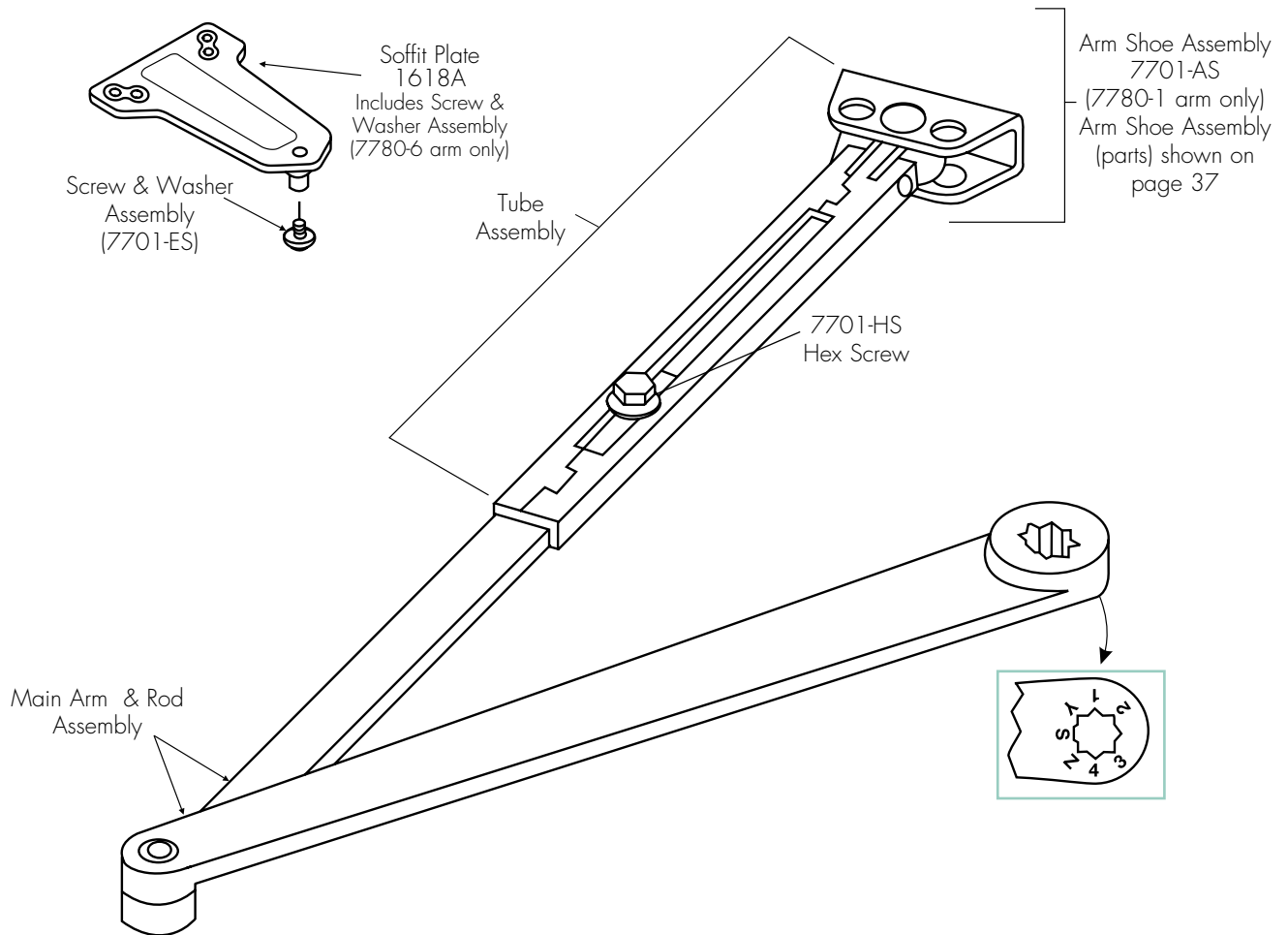
Hold Open



Complete Arm Assembly		For Frame Reveals (mm)
Non-Hold Open	Hold Open	
J6100-4	J6100-7	2-1/8" - 3-1/4" (54 - 83)
J6200-4	J6200-7	1/2" - 2" (13 - 51)
J6400-4	J6400-7	3-3/8" - 4-1/4" (86 - 108)
J6500-41	J6500-71	4-3/8" - 5-3/8" (111 - 137)
J6500-42	J6500-72	5-1/2" - 6-3/8" (140 - 162)
J6500-43	J6500-73	6-1/2" - 7-3/8" (165 - 187)
J6600-4	J6600-7	0 - 3/8" (0 - 10)

Note: Mounting hardware included with all parts orders.

LOW PROFILE ARM ASSEMBLIES

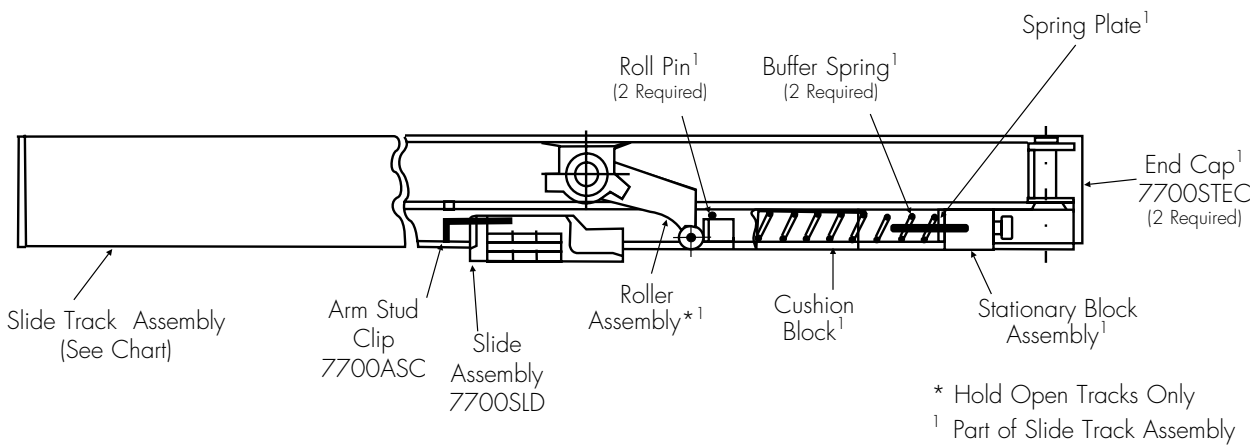


Arm Application	Complete Arm Assembly	Main Arm & Adjusting Rod Assembly	Tube & Shoe/Soffit Soffit Assembly
Regular Arm	7780-1	7780-1MR	7780-1TS (With 7701-AS)
Parallel Arm	7780-6		7780-6TS (With 1618A)
Tri-pack	7780-26		

Note: Mounting hardware included with all parts orders.

TRACK & ARM ASSEMBLIES

Slide Track Assembly	Part Number	
	Non-Hold Open	Hold Open
Pull Side	7701ST-1T	7701ST-3T
Pull Side (180°)	7701ST-1T180	N/A
Push Side	7701ST-5T	7701ST-8T



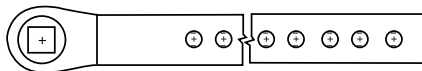
Note: Mounting hardware included with all parts orders.

TRACK & ARM ASSEMBLIES

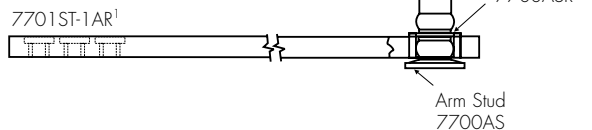
Standard Arm Assembly

7701ST-1A*¹

Arm Tube Assembly
7701ST-1AT¹



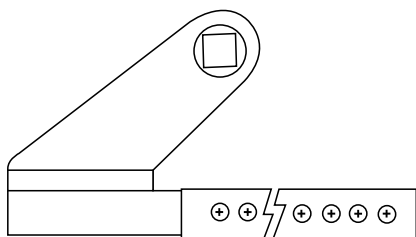
Adjusting Rod Assembly
7701ST-1AR¹



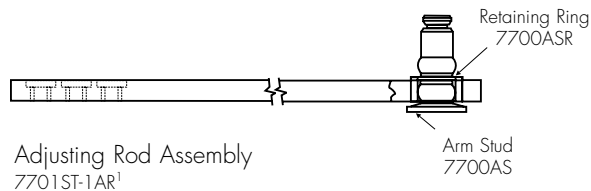
Double Egress Arm Assembly

7701PT-DE-1R (Right Hand)*¹

7701PT-DE-1L (Left Hand)*¹



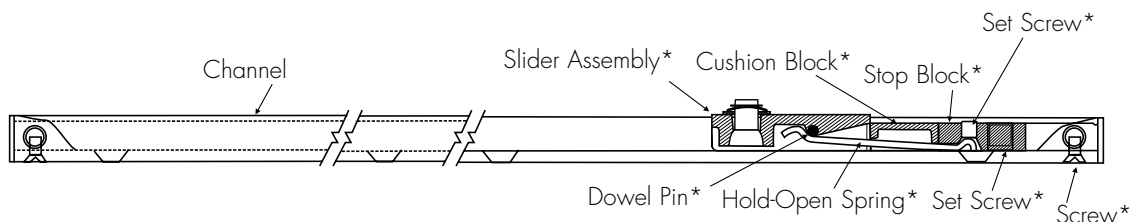
Arm Tube Assembly
7701ST-1ATR¹ (right hand)
7701ST-1ATL¹ (left hand)



Adjusting Rod Assembly
7701ST-1AR¹

LOW PROFILE TRACK & ARM ASSEMBLIES

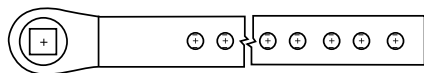
Track Assemblies	Part Number	
	Non-Hold Open	Hold Open
Pull-side mounted	7740ST-1T	7740ST-3T
Push-side mounted	7740ST-5T	7740ST-8T



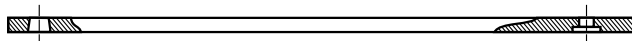
*Part of an Assembly Pack
NHO= 7740SLD
HO= 7740HSLD

ARM ASSEMBLY

7740ST-1A^{1,2}



Arm Tube Assembly
7701ST-1AT²



Adjusting Rod Assembly
7740ST-1AR²

- 1 Includes arm length adjusting screw.
- 2 Includes arm tube & adjusting rod assembly.

Note: Mounting hardware included with all parts orders.

NOTES

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton®, Unifrol®, Tri-Style®, NarGlide® and CloserPlus® are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. CloserPlus Spring™ and CloserPlus Ramp™ are trademarks of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2002, 2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

9300BC SERIES

Light Commercial
Door Closer



Norton[®]

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

GENERAL INFORMATION

The 9300BC is a durable, economically priced door closer designed for commercial exterior and interior doors such as storefront and industrial applications.


FEATURES

- Spring size 2, 3, 4, 5
- Separate and independent valve for sweep speed and latch speed
- Adjustable backcheck standard
- Regular and top jamb mounting

Optional Features

- Parallel mount (prefix P to model number)
- Friction hold open arm

Certifications

- ANSI/BHMA A156.4, Grade 3
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- This product is manufactured in an ISO 9001 facility

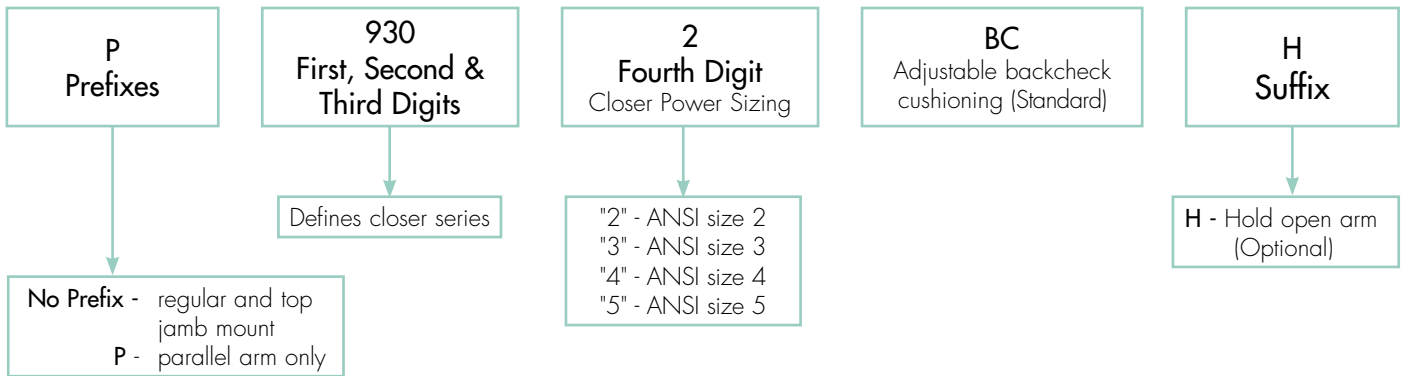
Note: See the Norton® Series 1600 catalog for ADA compliance of heavy-duty applications.

TABLE OF CONTENTS

General Information	2
How to Order	3
Applications	4
Features / Finishes	5
Technical Details	6-7
Door Closer Sizes	7
Accessories	8
Parts List	9-11

9300BC SERIES LIGHT COMMERCIAL DOOR CLOSER

HOW TO ORDER



Note: Contact factory if door weight exceeds 250 lbs.

COMPLIANCE STANDARDS

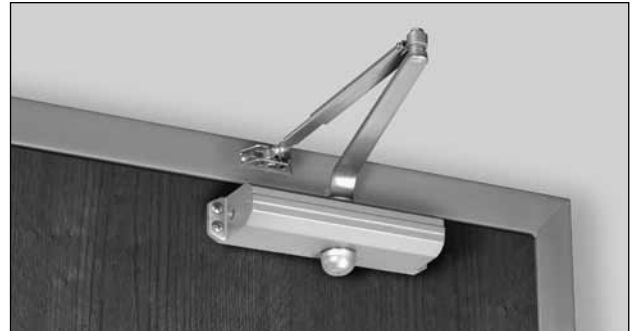
All series 9300BC closers comply with ANSI/BHMA A156.4 Grade 3 Specifications. All Norton® series 9300BC closers with non-hold open arms are listed by Underwriters' Laboratories (UL) for labeled fire doors. This includes compliance to UL10C for 3-hour assemblies. The product is manufactured in an ISO 9001 facility.

APPLICATIONS

Regular Arm

This is the only pull-side application for the 9300BC series door closer. 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.



Parallel Arm

This application provides the most appealing design appearance for the 9300BC series door closer. 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 5" (127mm), without using a drop plate. A 9388 drop plate requires a top rail clearance of just 2-5/8" (67mm).



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 1-7/8" (48mm). This application provides the best door control for doors in exterior walls that swing out of a building. It will accommodate frame reveals to a maximum of 2-7/8" (73mm). The entire door closer and arm assembly project from the frame, similar to the regular arm application, where matters of appearance can be of concern.



FEATURES & FINISHES

Aluminum Alloy Housing

Closer bodies are constructed of a special aluminum alloy, carefully selected to accommodate interactive 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 interfere.

Non-Handed

Pinion shaft extends vertically through the closer body in both directions. This permits the closer to be positioned on either right or left-hand doors for most applications.

Non-Critical Control Valves

All control valves for sweep speed, latch speed and backcheck cushioning are non-critical and are adjusted by a standard 1/8" (3mm) hex wrench.

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 speed limitation.

Finishes

All door closers are painted in waterborne acrylics. All steel parts, mounting plates and brackets are powder coated. The closers will withstand 120 hours of salt spray. ANSI requires 25 hours.

Sprayed Finishes

Description	BHMA Designation	Complements the Following Finishes	Old Designation
Aluminum	689	628, 625, 629, 630, 651, 652	AL
Statuary Bronze	690	640, 613	STAT
Dull Bronze	691	612, 637, 639	DB
Black	693	315	315
Medium Amber	694	312	312
Gold	696	605, 606, 632, 633	GB
Prime Coat	600*	—	SRI

*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: 9303BC x 600 x 690).

OPTIONAL FEATURES

Hold Open Arm

Closer arm has adjustable hold open feature (90° to 180°). This arm is non-handed. Order by suffixing "H" to the catalog number.

Fasteners

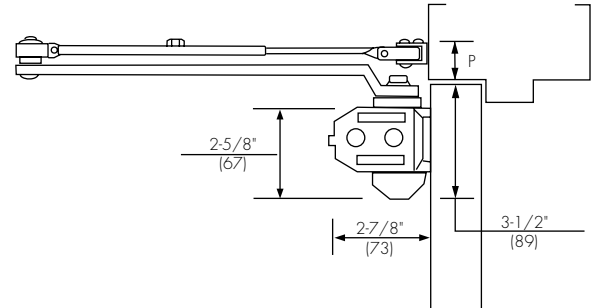
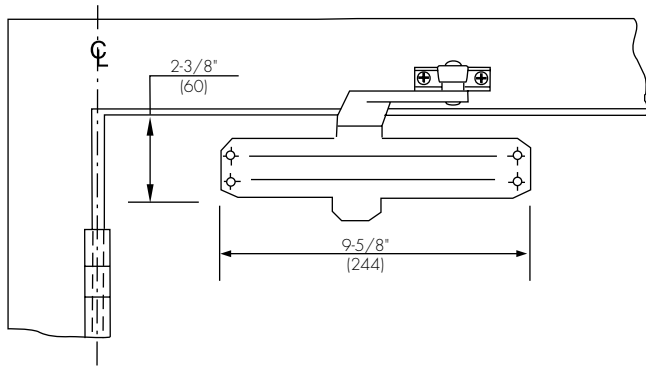
Type	Description	Applications		
		RA	PA	TJ
DOOR				
SDST	Self-Drilling Self-Tapping Screws	S	S	S
MS	Machine Screws	S	S	S
SN	Sleeve Nuts	O	O	O
TBGN	Through-Bolts & Grommet Nuts	O	O	O
FRAME				
SDST	Self-Drilling Self-Tapping Screws	S	S	S
MS	Machine Screws	S	S	S

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.

REGULAR ARM

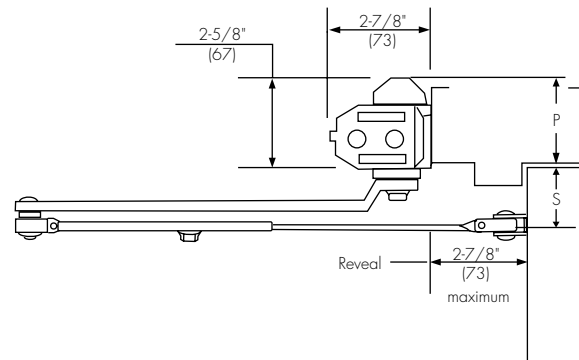
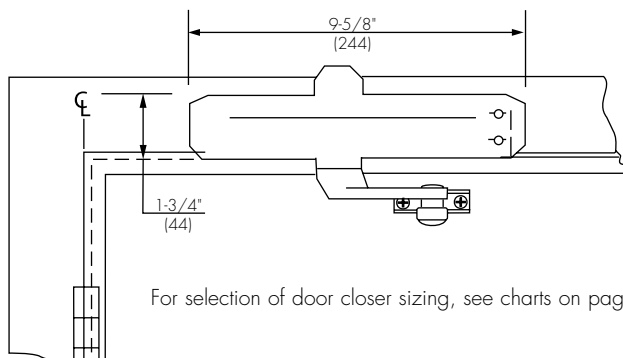


Door openings to 180° can be obtained if conditions permit.
For selection of door closer sizing, see charts on page 8.

P Minimum Ceiling Clearance Inches (mm)	
Non-Hold Open	Hold Open
1-1/2" (38)	1-5/8" (41)

Mounting holes on body are spaced centerline to centerline: 9-1/16" (230mm) horizontally x 3/4" (19mm) vertically.

TOP JAMB



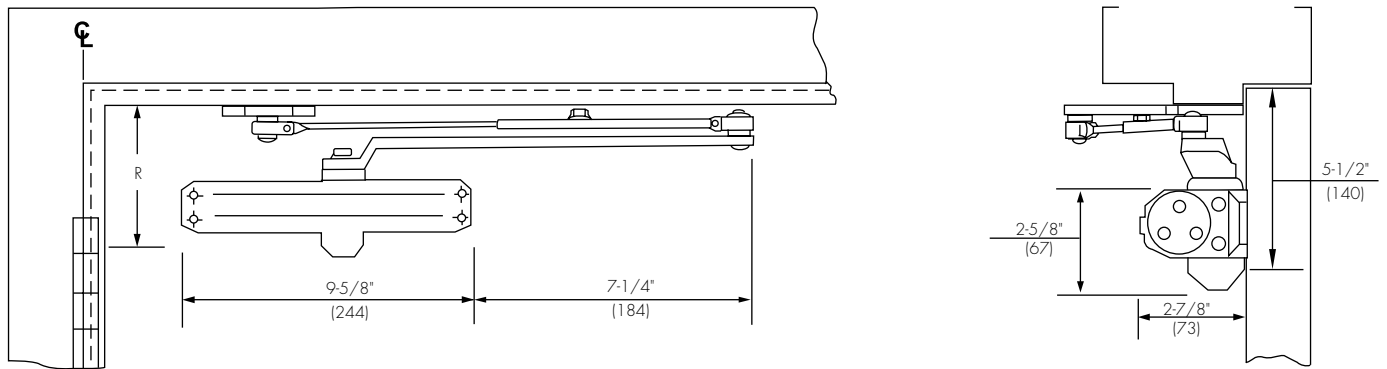
For selection of door closer sizing, see charts on page 8.

P Minimum Ceiling Clearance Inches (mm)		S Minimum Top Rail Clearance Inches (mm)	
Without Drop Plate	With 9388 Drop Plate	Without Drop Plate	With 9388 Drop Plate
2-5/8" (67)	1-3/4" (44)	1-7/8" (48)	3-3/8" (86)

Mounting holes on body are spaced centerline to centerline: 9-1/16" (230mm) horizontally x 3/4" (19mm) vertically.

9300BC SERIES LIGHT COMMERCIAL DOOR CLOSER

PARALLEL ARM



R Minimum Top Rail 5/8" (16mm) Frame Stop Inches (mm)	
Without Drop Plate	With 9388 Drop Plate
5" (127)	2-5/8" (67)

Mounting holes on body are spaced centerline to centerline: 9-1/16" (230mm) horizontally x 3/4" (19mm) vertically.

DOOR CLOSER SIZE

Note: Door closing force is not adjustable. Correct size must be selected.

Interior Doors

Door Closer Size	Recommended Max. Door Width Inches (cm)		
	Regular Arm	Top Jamb	Parallel Arm
9302BC	34" (86)	34" (86)	32" (81)
9303BC	40" (102)	40" (117)	38" (97)
9304BC	48" (122)	48" (122)	46" (117)
9305BC	—	—	52 (132)

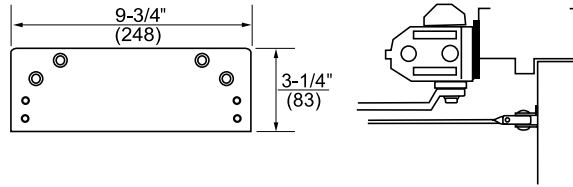
Exterior Doors

Door Closer Size	Recommended Max. Door Width Inches (cm)		
	Regular Arm	Top Jamb	Parallel Arm
9302BC	30" (76)	30" (76)	28" (71)
9303BC	34" (86)	34" (86)	32" (81)
9304BC	40" (102)	40" (102)	36" (91)
9305BC	48" (122)	48" (122)	42" (107)

All dimensions are for reference only and are in inches (mm) unless otherwise noted. Door sizing information is based on installation on standard weight doors, 7'0" (213cm) high x 1-3/4" (44mm) thick; hung on anti-friction hinges and operating under normal conditions. Doors in excess of 7'8" (234cm) high or 1-3/4" (44mm) thick, templated openings beyond 150° or doors subject to wind or draft conditions will generally require the next larger size closer.

TOP JAMB

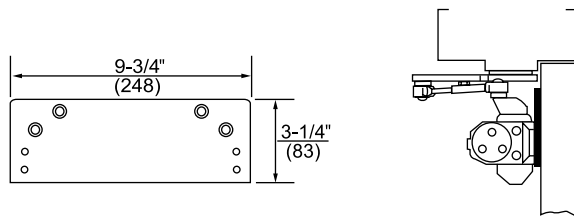
Closer Mounting Plate



Top Jamb - #9388 Drop Plate: For use when the door closer interferes with the ceiling or the frame face is too narrow to mount a closer body. This drop plate can be used to mount a closer on a frame face as narrow as 1-1/2" (38mm).

PARALLEL ARM

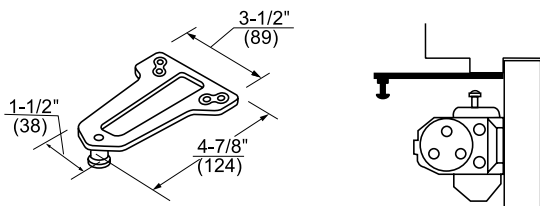
Closer Mounting Plate



Parallel Arm - #9388 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 2-5/8" (57mm).

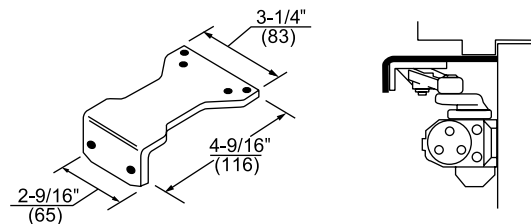
BRACKETS

Non-Hold Open Arms



#9318A Soffit Plate: This soffit plate is supplied to permit parallel arm mounting. It can be mounted where the frame soffit is as narrow as 1" (25mm).

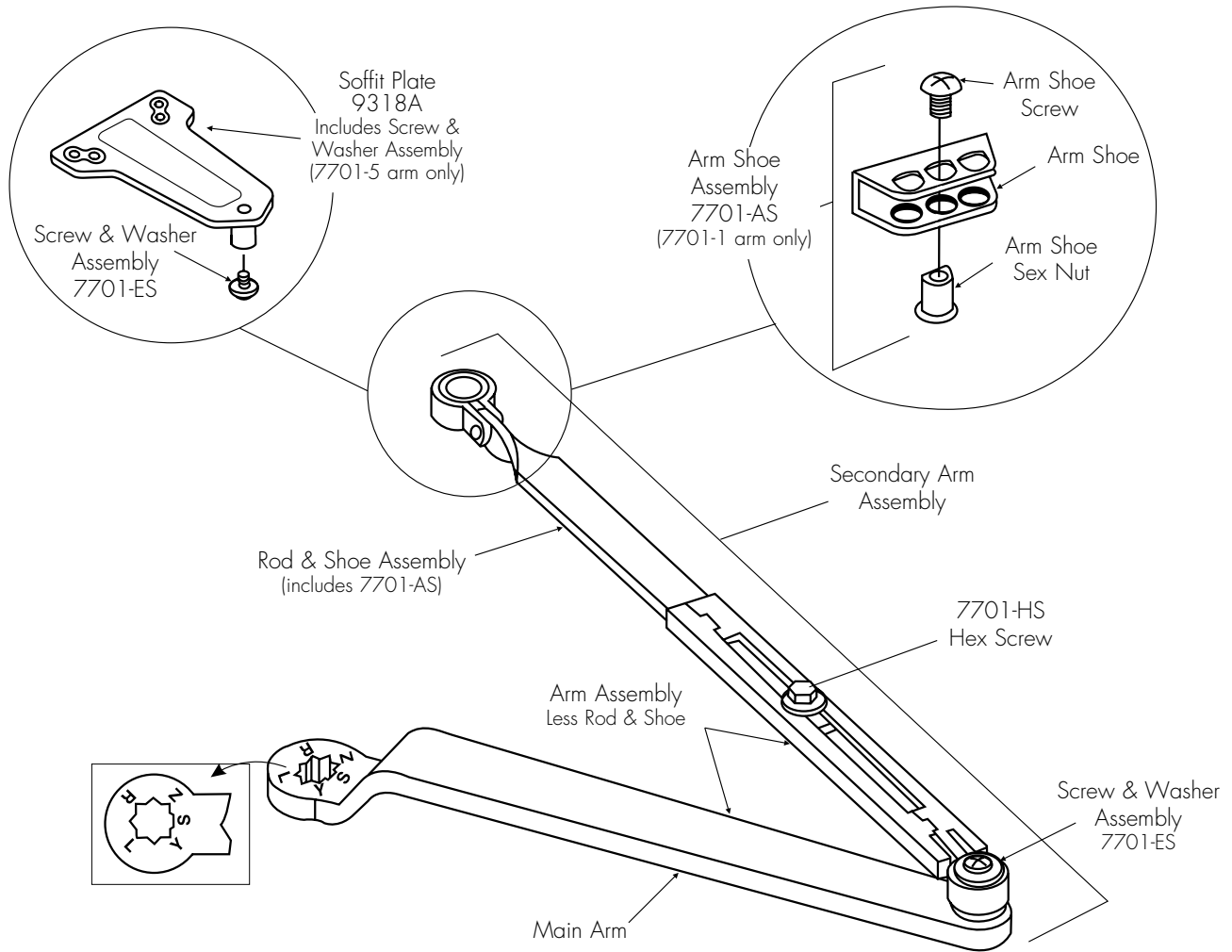
Hold Open Arms



#9328H Adapter Plate: This adapter plate is supplied standard with parallel arm hold open closer. It can also be used to convert hold open arms for parallel arm installation. It can be mounted where the frame soffit is as narrow as 1" (25mm).

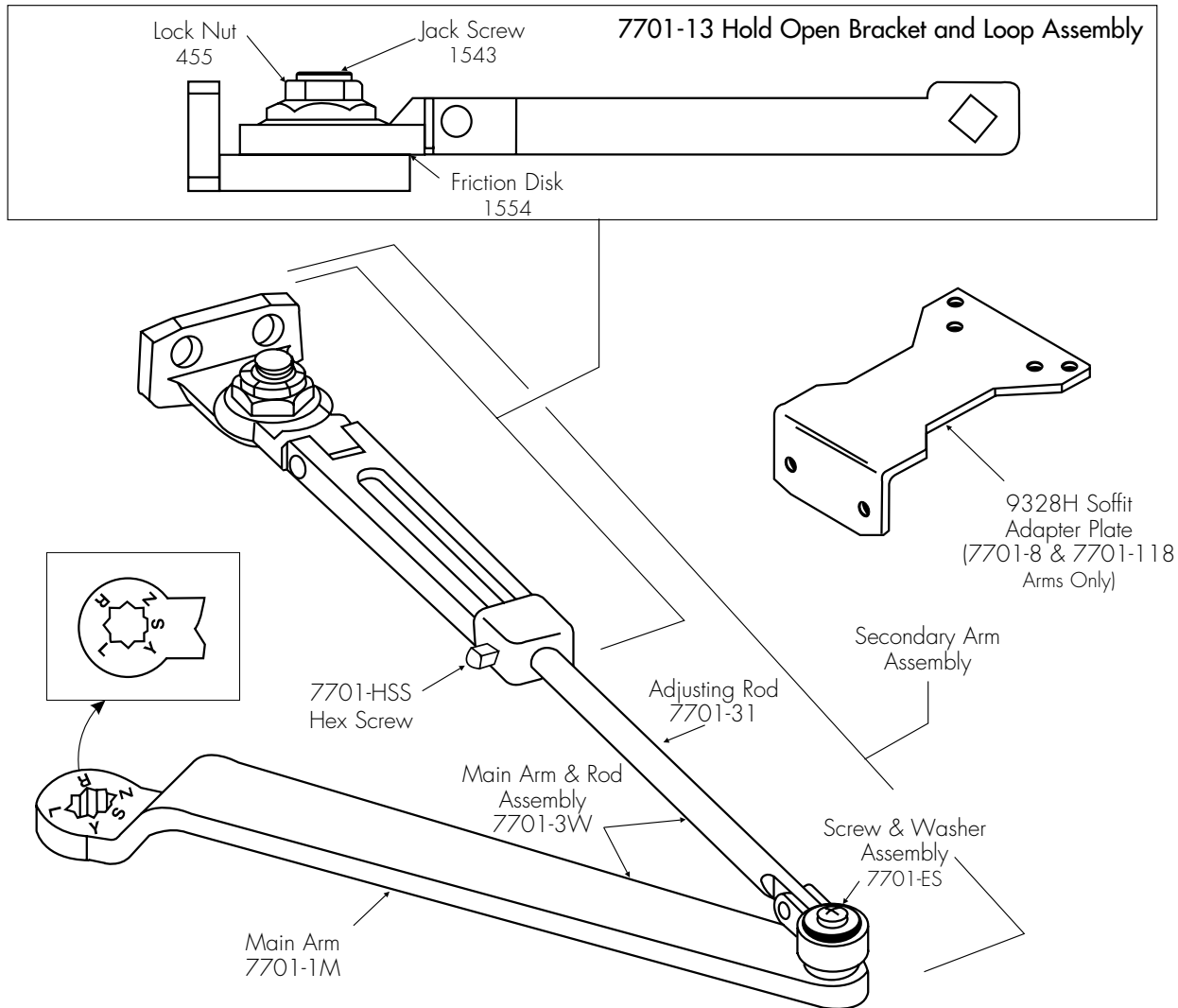
9300BC SERIES LIGHT COMMERCIAL DOOR CLOSER

NON-HOLD OPEN ARM ASSEMBLIES



Closer Series	Complete Arm	Main Arm	Arm Assembly Less Rod and Shoe	Secondary Arm Assembly	Rod & Shoe Assembly
9300BC	7701-1	7701-1M	7701-1W	7701-111	7701-11
P9300BC	7701-5			7701-115	7701-15

HOLD OPEN ARM ASSEMBLIES



Closer Series	Complete Arm	Secondary Arm Assembly
9300BCH	7701-3	7701-113
P9300BCH	7701-8	7701-118

9300BC SERIES LIGHT COMMERCIAL DOOR CLOSER

CLOSER BODY

Model Number
9302BCLAP
9303BCLAP
9304BCLAP
9305BCLAP

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton® is a registered trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2001, 2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

7500 SERIES

Institutional Door Closer



Norton®

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

OVERVIEW

The 7500 Series Door Closer offers customers the ideal combination of superior performance, strength and quality. Ideal for interior or exterior doors in facilities that demand reliability.

Features

- Tri-Style® packaging; tri-packed for regular, top jamb or parallel arm mounting
- Non-handed
- Rack-and-pinion design
- Cast aluminum body
- Adjustable spring sizes 1-6
- 2-3/16" (56mm) projection
- 1-1/2" (38mm) diameter piston
- 5/8" (16mm) diameter pinion journals
- Staked valves
- Corrosion resistant model (non-hold open only). Specify 7500SS
- Metal cover. Specify M suffix
- Lead lined metal cover. Specify MLL suffix
- Retrofit plates
- NorGlide® fluid
- Molded plastic cover
- All standard arm applications allow doors to swing 180°, conditions permitting
- Self-drilling screws
- Full-size template
- Application specific mounting: Regular (S), Top Jamb (JS) or Parallel (P) mount
- Heavy-duty arms: Regular Rigid, Parallel Rigid, CloserPlus®, CloserPlus Spring™ and Unitrol®
- Slide Tracks: push or pull side mounting
- Exceeds 25 million cycles (witnessed and verified by UL)
- 25-year limited warranty

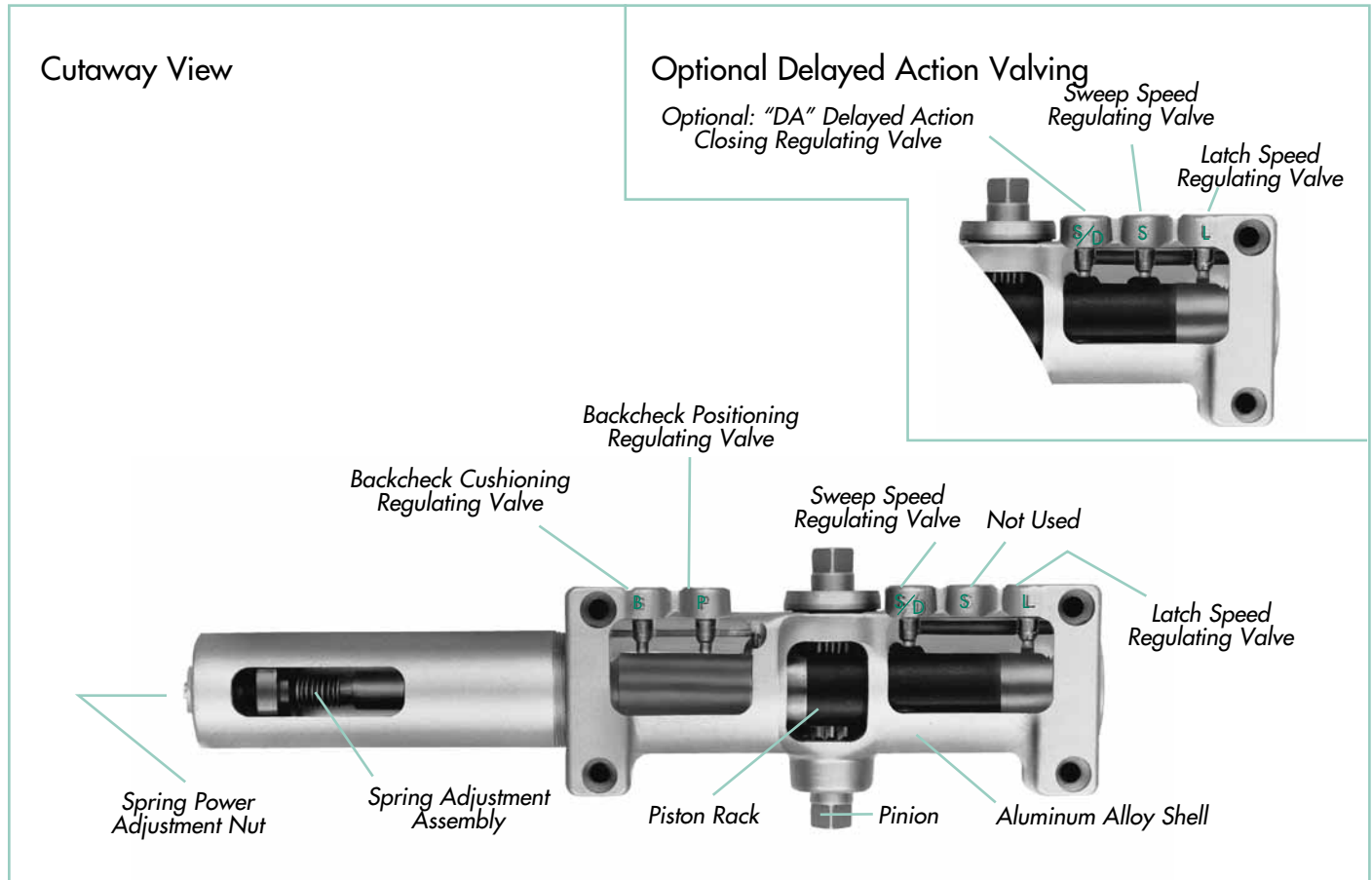
Functions

- Standard, separate and independent, latch, sweep and backcheck intensity valves
- Backcheck positioning
- Enhanced backcheck. Specify EBC suffix
- Delayed action with pressure relief valve




TABLE OF CONTENTS

Overview	2-3
How to Order	4
Fasteners/Finishes.....	5
Features	6
Optional Features	6-7
Special Function Door Closers	8
Suggested Specifications	8
Applications.....	9-12
Technical Details.....	13-26
Accessories.....	27-35
Parts List.....	36-49

OVERVIEW



COMPLIANCE STANDARDS

- ANSI/BHMA A156.4, Grade 1 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- 7500 door closers are designed to comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 
- This product is manufactured in an ISO 9001 facility



An Environmental Product Declaration (EPD) documents the cradle-to-grave life cycle of a product and how it affects the environment. An important aspect of EPD[®] is to provide the basis of a fair comparison of products and services by its environmental performance. EPDs can reflect the continuous environmental improvement of products and services over time and are able to communicate and add up relevant environmental information along a product's supply chain.

Windstorm

Norton 7500 door closers are UL certified for inswing and outswing single and pair (up to 8'0" x 8'0") door assemblies to ICC 500 for Storm Shelters. Additionally, the 7500 meets FEMA 361 guidelines.

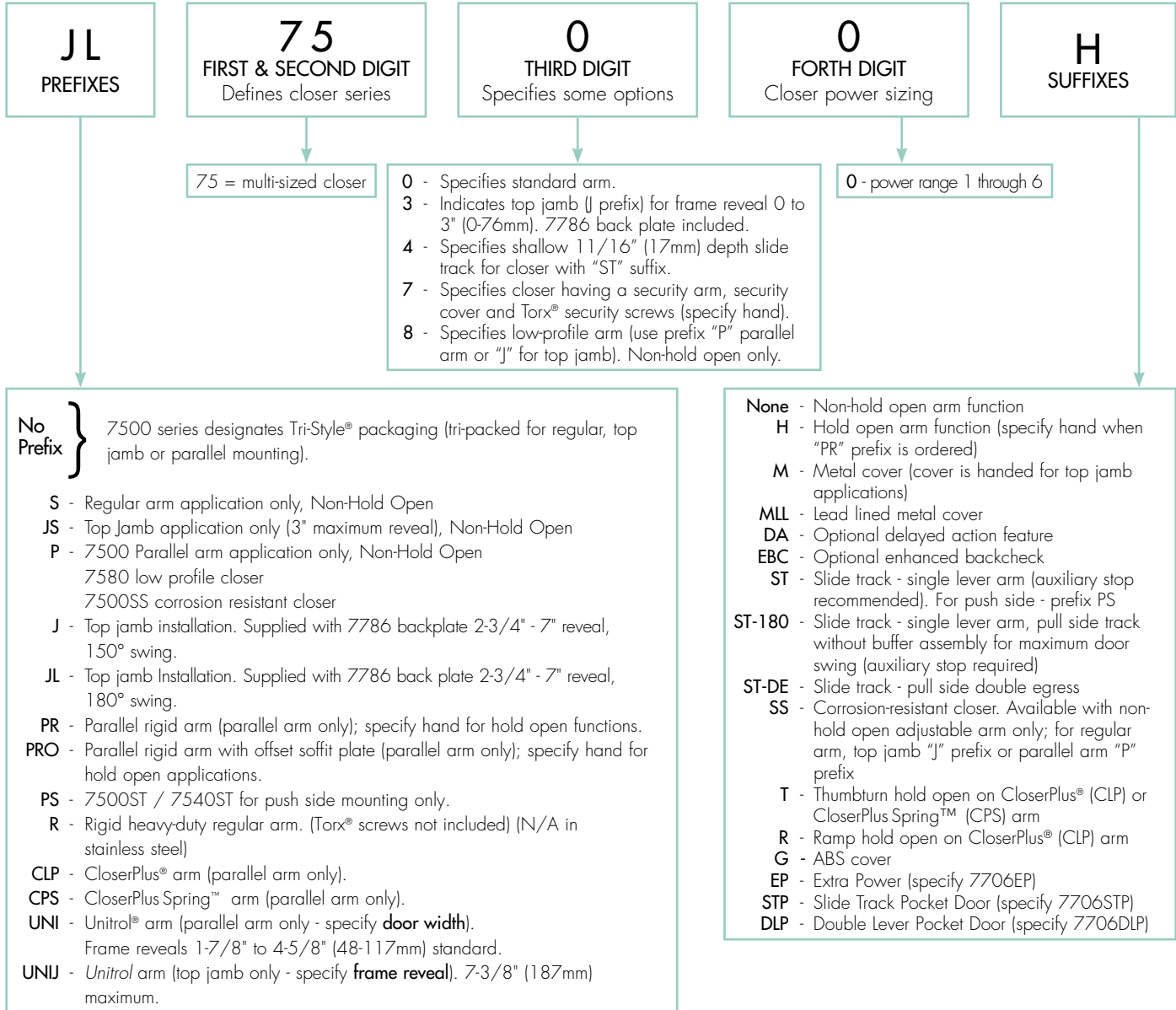
7500 is part of a complete ASSA ABLOY tornado and hurricane shelter solutions utilizing Ceco StormPro 361, Curries StormPro 361, Fleming F5 doors and frames and McKinney SP hinges.

CAUTION: Door Closers for Low Opening Force Applications:

Door closers installed in openings required to meet the requirements of the Americans With Disabilities Act or ANSI/BHMA Standard A117.1, when adjusted to meet those requirements, may not provide adequate closing power to dependably close and latch the door.

HOW TO ORDER

NOTE: For optimum protection of door and frame assemblies, always use auxiliary wall, floor, or overhead door stop.



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 Norton's standard product, such as sleeve nuts/sex nuts or through-bolts and grommet nuts
- Sizing charts provided on pages 13-25 are based on 1-3/4" (44mm) x 7' (2.13m) standard weight doors swinging to 110 degrees. Other conditions (such as door height or weight; or wind/draft conditions) may require a larger size closer.

FASTENERS

Type	Description	Arm								
		RA	PA	TJ	Low Profile	PR	CLP/CPS	UNI	UNI-J	Slide Track
DOOR										
SDST	Self Drilling Self Tapping	S	S	S	S	S	S	S	○	○
MS	Machine Screw	S	S	S	S	S	S	S	S	S
SN	Sleeve Nut/Sex Nut	○	○	○	○	S	S	S	S	S
TBGN	Thru Bolts & Grommet Nuts	○	○	○	○	○	○	○	○	○
SMS	Sheet Metal Screws	○	○	○	○	○	○	○	○	○
TORX®	Torx Drive Security Screw	○	○	○	○	○	○	○	○	○
FRAME										
SDST	Self Drilling Self Tapping	S	S	S	S	S	S	S	S	S
MS	Machine Screw	S	S	S	S	S	S	S	S	S
SMS	Sheet Metal Screws	○	○	○	○	○	○	○	○	○
TORX	Torx Drive Security Screw	○	○	○	○	○	○	○	○	○

S = standard; ○ = 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.

TORX screws with security pin are standard with 7570 Security Door Closers. Torx may be specified for all other series applications. Torx are only available with machine screw threads. Sheet metal screw threads are not available.

FINISHES

Norton offers waterborne acrylic, polyester powder coat and plated finishes. Custom finishes are available on special order. A sample and approval is required.

Waterborne acrylic and polyester powder coat will withstand 100 hours of salt spray (ANSI requires 25 hours).

ANSI/BHMA	Description
600*	Prime Coat
605	Bright Brass
606	Satin Brass
611	Bright Bronze
612	Satin Bronze
613E	Dark Oxidized Satin Bronze - Equivalent
619	Satin Nickel
625	Bright Chrome
626	Satin Chrome

ANSI/BHMA	Description
689	Aluminum
690	Statuary Bronze
691	Dull Bronze
693	Black
694	Medium Amber
N/A	556 White
696	Gold

* 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.

- Norton closer bodies and plastic covers are available in waterborne acrylic finishes. Arms and metal covers are available in powder coat or plated finishes.
- When a plated finish is ordered, arm and cover will be plated unless "cover only" is specified.

FEATURES

Aluminum Alloy Housing

Closer bodies are constructed of a special aluminum alloy, carefully selected to accommodate interactive 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 interfere.

Non-handed

With few exceptions all series 7500 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, as noted on pages 6-8, will require that the hand of the closer be specified.

Sweep Speed Control Valve

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

Latch Speed Control Valve

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

Tri-Style® Packing

7500 comes with screws, brackets and soffit plates to allow for regular, top jamb, and parallel arm installations.

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 limits.

Adjustable Backcheck Position Valve

Allows the door opening position, where backcheck cushioning begins, to be adjusted to a greater door angle, up to a maximum of 20° farther (approximately 95°).

Standard Molded Cover

Molded of high-impact U.L. listed material and covers the entire closer body assembly. This cover is non-handed for all applications.

Warranty

These closers carry a limited 25-year warranty against defect, and life of the building on the aluminum housing.

Closer Fluid

NorGlide® closer fluid is a specially formulated multi-viscosity hydraulic fluid that contains lubricity and anti-oxidation agents that provide optimum performance and efficiency. This fluid complements the interaction of the door closer's aluminum housing with its steel and brass components, while maintaining stable viscosity to allow the door closer to perform in temperatures ranging from extremely high to as low as -40° F.

Door Closer Power Options

Series 7500 Multi-Sized Door Closer

Adjustable through the entire power range of door closer sizes 1 through 6, as outlined in ANSI/BHMA standard A156.4.

The series 7500 also conforms to the minimum opening force requirements of the Americans with Disabilities Act (A.D.A.) and ANSI/BHMA standard A117.1 for interior doors.

OPTIONAL FEATURES

Corrosion-Resistant Door Closer

The series 7500SS door closers with molded plastic cover are available for use where corrosive conditions exist. This series is provided with brass adjustment valves, a 440 grade stainless steel pinion shaft, an all-aluminum body and bronze closer arm bushings; all other components are of 302/303 grade stainless steel. Fasteners are 8-18 stainless steel. This product is available for standard regular arm, top jamb and parallel arm, non-hold open, applications only.

Optional Metal Cover

This steel cover is non-handed for regular and parallel arm applications, but is handed for top jamb applications. Cover is available in sprayed or architectural plated finishes.



Security Cover

Supplied standard with all series 7570 door closers. This deep drawn steel cover is handed for all applications. The cover is fastened to the closer body at two points on top and to the door closer body stand-offs at two points on the bottom.

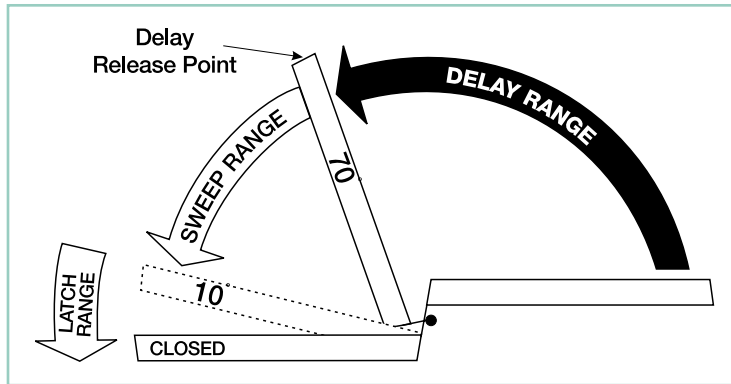
Optional ABS Cover

Consult factory for details

OPTIONAL FEATURES

Enhanced Backcheck

This feature provides adjustable backcheck intensity beginning at approximately 15 degrees of the door opening cycle. It is intended for use in situations where the standard backcheck beginning at approximately 75° of door opening allows too much unrestricted door travel to obtain control of the door without the fear of peripheral damage to the door closer, door, frame, hinges or pivots; or adjacent walls or structures. This feature is most frequently used in schools and detention facilities. Specify suffix EBC.



Adjustable Delayed Action Closing

An optional hydraulic feature that adds a third speed range to the closing cycle. This feature becomes effective when the door is opened and released at any point beyond 70°. The amount of time delay depends upon the combination of the angle of door release and valve adjustment. The valve can be adjusted with a 1/8" (3mm) hex key from no delay time up to maximum delay times of:

Door Opened and Released at	Approximate Time of Delay Cycle
180°	4-5 minutes
120°	2-3 minutes
90°	25-30 seconds

Pressure Relief Safety Valve

The delayed action hydraulic system contains a pressure relief valve. Any time the door is forced toward the closed direction while it is in the closing cycle, the valve will open and permit the door to close. This prevents damage to door, frame and closer.

Use of delayed action closers on many doors throughout industrial and commercial buildings can also assist the flow of traffic. Locations where additional time to clear the opening is advantageous are doors between office and factory/warehouse facilities, doors to workshops or laboratories, to kitchen and food processing areas, etc.

Suggested Applications

Delayed Action closing allows slow-moving traffic to clear the opening before the door closer's normal closing cycle begins. This feature can be helpful in health care facilities such as hospitals and nursing homes. It provides sufficient time for persons on crutches or in wheelchairs to pass through a door without concern of it closing. At the same time, it can accommodate the facility's staff with movement of food service carts, beds, and other wheeled traffic.

OPTIONAL FEATURES ARMS

Non-Hold Open

Self-closes door every time door is opened. Auxiliary stop (by others) required except when using the CloserPlus[®], CloserPlus Spring[™] or Unitrol[®] arms.

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.

Door Opening Degrees

Arm Function	Regular Arm, Top Jamb Parallel Arm	Parallel Rigid Arm	CloserPlus [®] Parallel Arm	CloserPlus Spring [™] Parallel Arm	Unitrol [®] Parallel Arm	Unitrol Top Jamb	Low Profile Regular, Parallel	Slide Track
Non-Hold Open	✓	✓	85° to 110°	85° to 110°	85° to 110°	85° to 110°	✓	85° to 110°/180°
Hold Open	90° to 180°	85° to 180°	85° to 110°	85° to 110°	85° to 110°	85° to 110°	N/A	85° to 110°

✓=180° trim and template permitting

SUGGESTED SPECIFICATIONS

7500 Series

Closers for interior and exterior doors shall be full rack-and-pinion type with cast aluminum alloy body. Closers shall be surface mounted and shall project no more than 2-3/16" (5.5mm) 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 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 from size 1 through size 6. Closers shall have two non-critical valves, hex key adjusted, to independently regulate sweep speed and latch speed. Closers shall have backcheck cushioning controlled by a hex key adjusted valve. Closers shall have backcheck position controlled by a hex key adjusted valve.

[Closers shall have adjustable delayed-action closing controlled by a hex key adjustable valve.]

[Closers shall be highly corrosion resistant and shall have all external body components of aluminum, brass or stainless steel material and all fasteners of stainless steel.]

Regular arm and top jamb closers shall have a non-hold open shoe permitting 15% (+/- 7-1/2%) power adjustment. **Closers shall be enclosed in a [molded resin cover] [plated or sprayed metal cover]. Closers to be Norton [7500] [7500M] [7500SS].

**For special arms insert the appropriate specification from column three on this page.

****Unitrol® Arm**

Door closers shall have a fixed door stop feature effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop shall be cushioned by a shock-absorbing heavy-duty spring action effective at the [soffit plate] [arm shoe] pivot. [Closers shall be provided for parallel arm installation using rigid steel main arm and secondary arm lengths proportional to the door width.] [Closers shall be provided for top jamb installation using steel, rigid main arm and telescoping secondary arm adequate for the frame reveal of the openings.]

****CloserPlus® Arm**

Door closers shall have a field reversible door stop. Hold open tension shall be adjustable effective at one point selected at installation, from 85° - 110° in five degree increments. Closers shall be provided for parallel arm installation using a forged rigid steel main arm and secondary arm.

****CloserPlus Spring™ Arm**

Door closers shall have built-in door stop [and holder] effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop mechanism shall be reversible and have a buffer spring that engages prior to the dead stop feature, reducing shock loads to the door and frame assembly. Door stop mechanism shall be attached to soffit plate. [Hold open mechanism shall have engage/disengage selection actuated by thumbturn]. Closers shall be provided for parallel installation using a forged rigid steel main arm and secondary arm.

APPLICATIONS



Non-hold open arm shown

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.



Non-hold open arm shown

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 matters of appearance and malicious abuse can be of concern. Consideration must be given to depth of frame reveal.



Non-hold open arm shown

Parallel Arm

This application provides the most appealing design appearance for a surface-mounted door closer having a double lever arm. This also makes it 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 6-5/8" (168mm), when using a low profile arm, to 7-1/4" (184mm), when using the hold open arm.

APPLICATIONS



Non-hold open arm shown

Parallel Rigid Arm

An enhanced variation of the standard parallel arm assembly that is intended for use in heavy traffic areas where auxiliary door stops are installed.

Hold open available - specify hand when ordering.



Non-hold open arm shown

CloserPlus® Arm

Similar to the Parallel Rigid arm, this arm incorporates a stop at the arm's soffit plate to dead stop the door at a predetermined degree of door swing between 85° and 110°, in 5° increments. Prior to dead stop the door closer's backcheck feature slows the door speed to reduce the impact of the stop action.

The *CloserPlus* arm is intended for use where an auxiliary door stop cannot be utilized and no more than moderate abuse is anticipated. Where more extreme conditions are expected, use of a *Unitrol*® arm is recommended.

Hold open strength is adjustable.



Non-hold open arm shown

CloserPlus Spring™

This arm has all of the characteristics of the *CloserPlus* arm with an additional steel buffer spring that provides greater protection at the end of the door opening cycle.

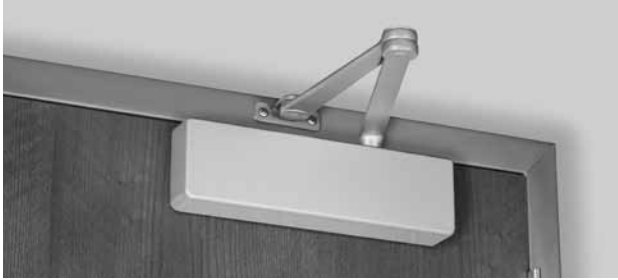
For extreme conditions, use of a *Unitrol* arm is recommended. Available with or without hold open.



CloserPlus Ramp™

The CLPR uses a patent pending ramp and plunger design that easily slides into place reducing wear often seen on traditional hold open arms. Ideal for applications where the door will constantly be pulled out of hold open.

APPLICATIONS



Regular Rigid Heavy-Duty Arm

This double lever arm features a non-adjustable secondary arm. Orbitally riveted joints prevent tampering or disassembly. Prefix "R" to model number. Available non-hold open only.



Non-hold open arm shown

Parallel Rigid Offset Arm

This heavy-duty parallel rigid arm provides additional vertical clearance. It is well suited for applications where weather-stripping or other hardware prevents the use of the standard Parallel Rigid (PR) soffit plate. The non-hold open and hold arms allow 1-1/4" clearance. When used in conjunction with a #6891 spacer block, the PRO arm provides 1-7/8" clearance to accommodate the use of a surface overhead stop/holder.



Unitrol[®] Parallel Arm



Unitrol[®] Top Jamb

Unitrol[®] Arm

Can be used for either parallel arm or top jamb applications. *Unitrol* arms combine the features of a double lever arm overhead door stop/holder with the backcheck feature of the door closer to reduce door stopping shock loads to a minimum. The *Unitrol* uses a compression spring buffer at the soffit plate/arm shoe that will absorb 30 lbf. of force, 5° prior to the door's dead stop. Coupled with the door closer's backcheck feature, this arm provides the most controlled stop available with a surface door closer.

For parallel arm applications there are three different length arm assemblies. Each length is designed for a specific range of door widths to provide precise door control. This further lessens the dead stop impact on the door's hinges/pivots.

APPLICATIONS



Pull Side



Low Profile Pull Side



Push Side



Low Profile Push Side

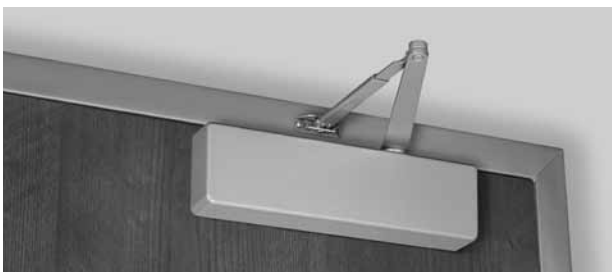
Slide Track

Whether pull or push side mounted, slide track applications provide the designer with the smoothest lines available in a surface mounted door closer. The single lever arm allows components to be located in a stack configuration to minimize projection and eliminate obtrusive arm angles. The arm geometry reduces door closer power efficiency by approximately 25% from that of a regular arm.

A variation of the standard slide track application is available for pocket doors, where it is desirable to have the door closer completely concealed when the door is in the 90° open position. See page 26 for details.

Standard Unit:

- Adjustable 85° to 110° (hold open and non-hold open). Track is supplied with a spring buffered stop. An auxiliary stop, by others, is recommended.
- Specify if hold open unit is required.
- 180° swing (non-hold open, pull side only) is also available. This track assembly requires that a door stop, by others, be supplied to stop the door.



Regular Arm - Regular Arm allows closer to be installed where there is as little as 1" (25mm) of frame face or ceiling clearance.



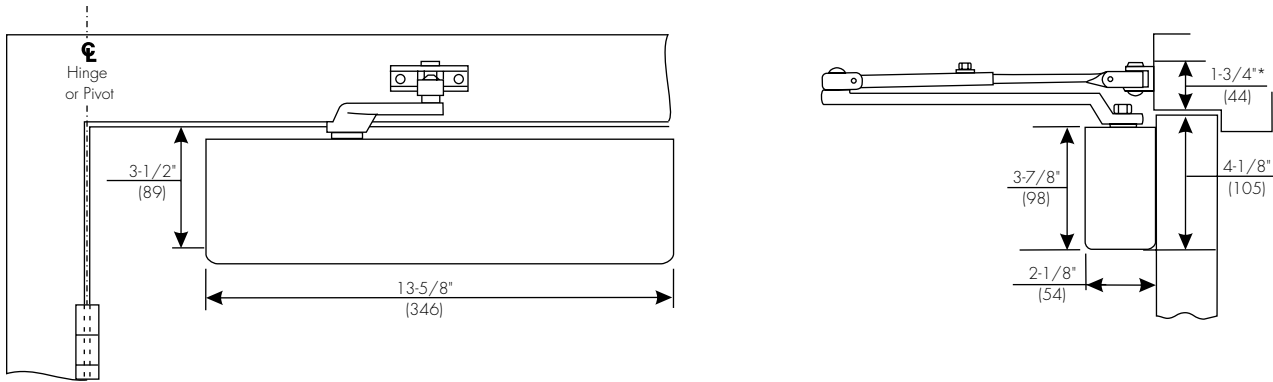
Parallel Arm - Parallel Arm allows closer to be installed 1/2" (13mm) higher up on door than standard parallel arm application.

Low Profile Arm

Supplied with 7580 series door closers for non-hold open installations only. Low profile arms have a reduced height elbow joint and a straight main arm. This enables the door closer to be installed in less vertical space.

7500 SERIES INSTITUTIONAL DOOR CLOSER

REGULAR ARM

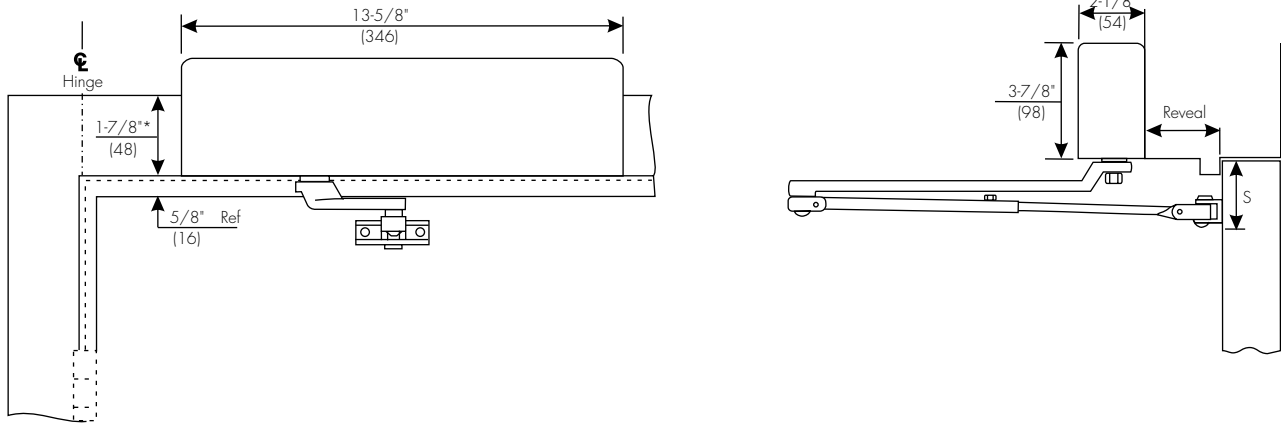


Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.
* This dimension will vary. Standard non-hold open arm illustrated.

Maximum Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
32" (81)	30" (76)	7500	7500H
38" (97)	34" (86)		
48" (122)	42" (107)		
54" (137)	48" (122)		
Unusual Conditions			

Note: Contact factory if door weight exceeds 250 lbs.

TOP JAMB ARM



Mounting holes for closer body are spaced 2-3/8" (86mm) vertically x 6-3/4" (171mm) horizontally.
 * Minimum frame face with 7786 drop plate. 3-1/4" (83mm) required when drop plate is not used.

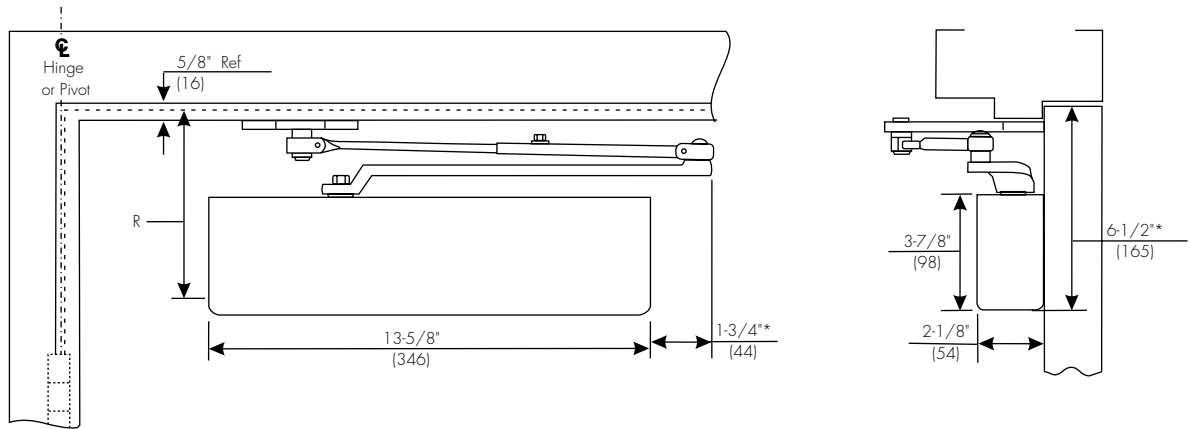
Model Number	Reveal Range Inches	Maximum Door Opening
Multi-Sized Non-Hold Open Arm		
(JS)7500/7500M	0" to 3" (0 to 76mm)	180°
J7500	2-3/4" to 7" (70 to 178mm)	150°
JL7500	2-3/4" to 7" (70 to 178mm)	180°
J7580 x 7787	0" to 2-3/4" (0 to 70mm)	180°
Multi-Sized Hold Open Arm		
J7500/J7530MH	0" to 3" (0 to 76mm)	180°
J7500H	2-3/4" to 6-3/4" (70 to 171mm)	150°
JL7500H	2-3/4" to 6-3/4" (70 to 171mm)	180°

Maximum Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open
32" (81)	30" (76)	7500 J7500 JL7500	7500H J7500H JL7500H
38" (97)	34" (86)		
48" (122)	42" (107)		
54" (137)	48" (122)		
Unusual Conditions			

S Minimum Top Rail of Door					
Without Drop Plate or with 7786 Back Plate (mm)			With 7787 Drop Plate (mm)		
J7500/ J7530M J7500	J7500H/ J7530MH J7500H	J7580	J7500/ J7530M J7500	J7500H/ J7530MH J7500H	J7580
2" (51mm)	2-1/2" (64mm)	N/A	4-1/8" (105mm)	4-5/8" (117mm)	3-5/8" (92mm)

7500 SERIES INSTITUTIONAL DOOR CLOSER

PARALLEL ARM



Mounting holes for closer body are spaced 2-3/8" (86mm) vertically x 6-3/4" (171mm) horizontally.

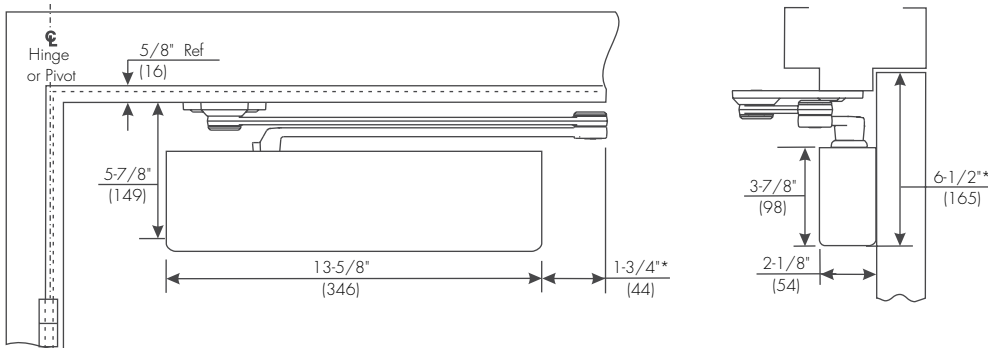
* This dimension will vary. Standard non-hold open arm illustrated.

Maximum Door Width Inches (cm)		Model Number	
		Non-Hold Open	Hold Open
Interior	Exterior		
30" (76)	—	7500	7500H
36" (91)	30" (76)		
42" (107)	36" (91)		
48" (122)	42" (107)		
54" (137)	48" (122)		

R (inches/mm) Minimum Top Rail of Door with 5/8" (16mm) Frame Stop				
Without Drop Plate			With 7788 Drop Plate	
P7500	P7500H	P7580	P7500H	P7580
5-7/8" (149)	6-1/4" (159)	5-3/8" (137)	2-3/4" (70)	1-7/8" (48)

Note: Contact factory if door weight exceeds 250 lbs.

PARALLEL RIGID ARM



Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

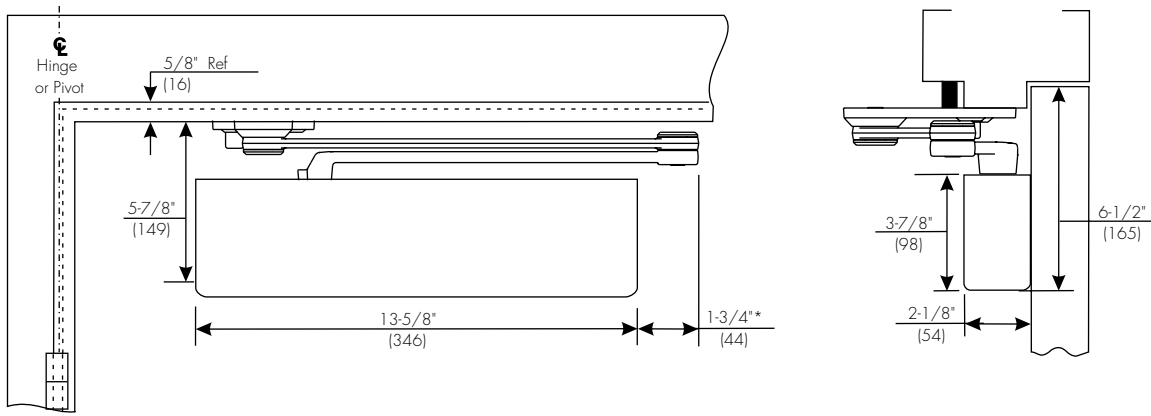
Maximum Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open*
30" (76)	—	PR7500	PR7500H
36" (91)	32" (81)		
42" (107)	36" (91)		
48" (122)	42" (107)		
—	48" (122)		

*Specify hand when ordering.

Note: Contact factory if door weight exceeds 250 lbs.

7500 SERIES INSTITUTIONAL DOOR CLOSER

CLOSERPLUS® ARM

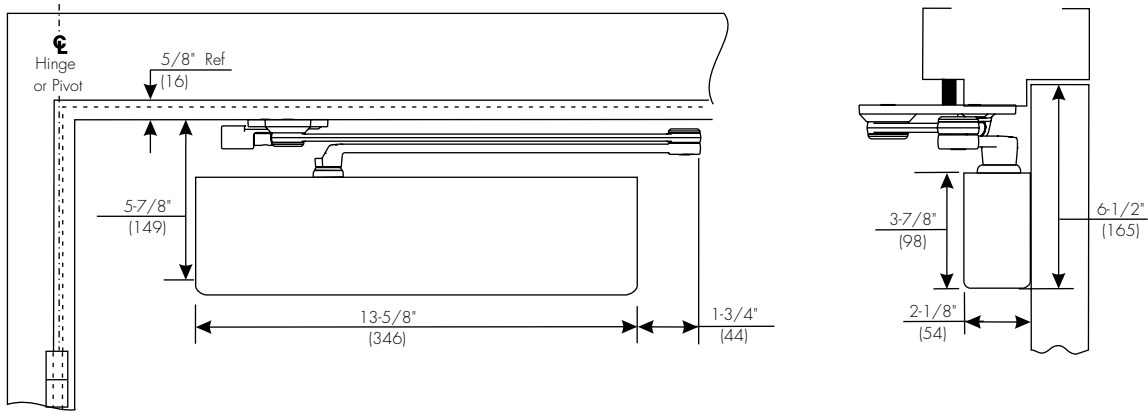


Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

Maximum Door Width Inches (cm)		Model Number		
Interior	Exterior	Non-Hold Open	Thumbturn Hold Open	Ramp Hold Open
30" (76)	—	CLP7500	CLP7500T	CLP7500R
36" (91)	32" (81)			
42" (107)	36" (91)			
48" (122)	42" (107)			
—	48" (122)			

Note: Contact factory if door weight exceeds 250 lbs.

CLOSERPLUS SPRING™ ARM



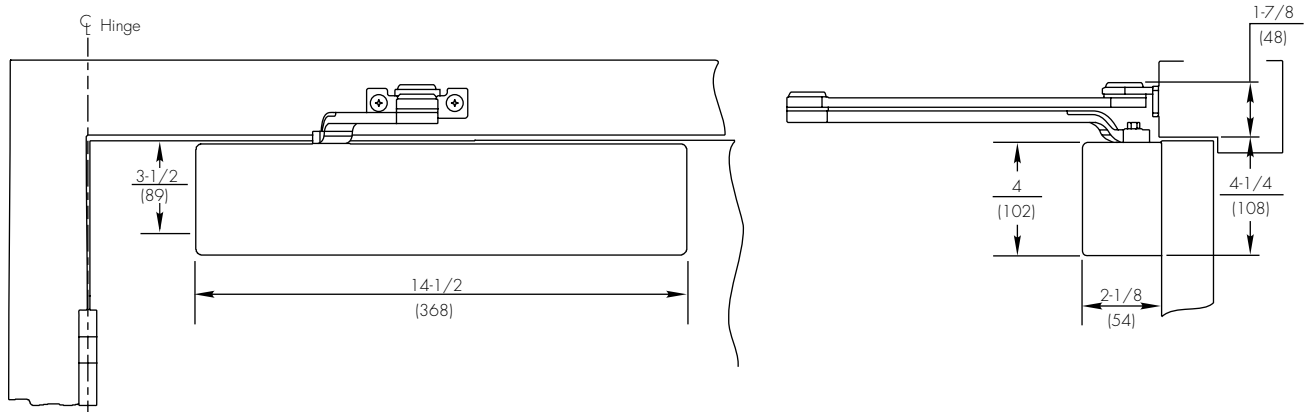
Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

Maximum Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Thumbturn Hold Open
30" (76)	—	CPS7500	CPS7500T
36" (91)	32" (81)		
42" (107)	36" (91)		
48" (122)	42" (107)		
—	48" (122)		

Note: Contact factory if door weight exceeds 250 lbs.

7500 SERIES INSTITUTIONAL DOOR CLOSER

REGULAR RIGID HEAVY-DUTY ARM

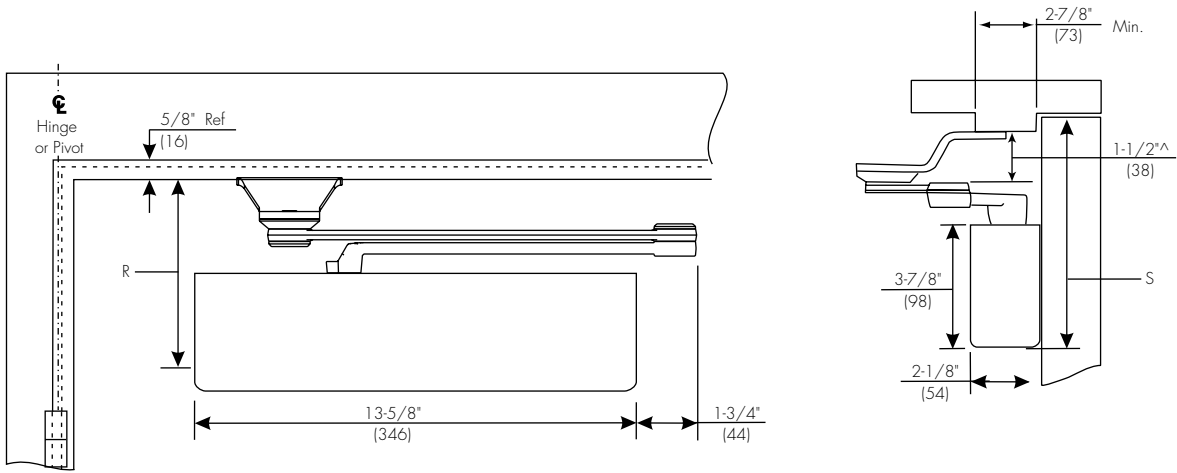


Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

Maximum Door Width Inches (cm)		Model Number
Interior	Exterior	Non-Hold Open Only
36" (91)	30" (76)	R7500
42" (107)	36" (91)	
46" (122)	42" (107)	
54" (137)	48" (122)	
—	52" (132)	

Note: Contact factory if door weight exceeds 250 lbs.

PARALLEL RIGID OFFSET ARM



Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.
 ^ If clearance greater than 1-1/2" is needed, 6891 spacer block is required.

R (inches/mm) Minimum Top Rail of Door with 5/8" (16mm) Frame Stop		S Minimum Top Rail of Door	
Without 6891 Spacer	With 6891 Spacer	Without 6891 Spacer	With 6891 Spacer
7-1/8" (181)	7-5/8" (194)	7-5/8" (194)	8-1/8" (206)

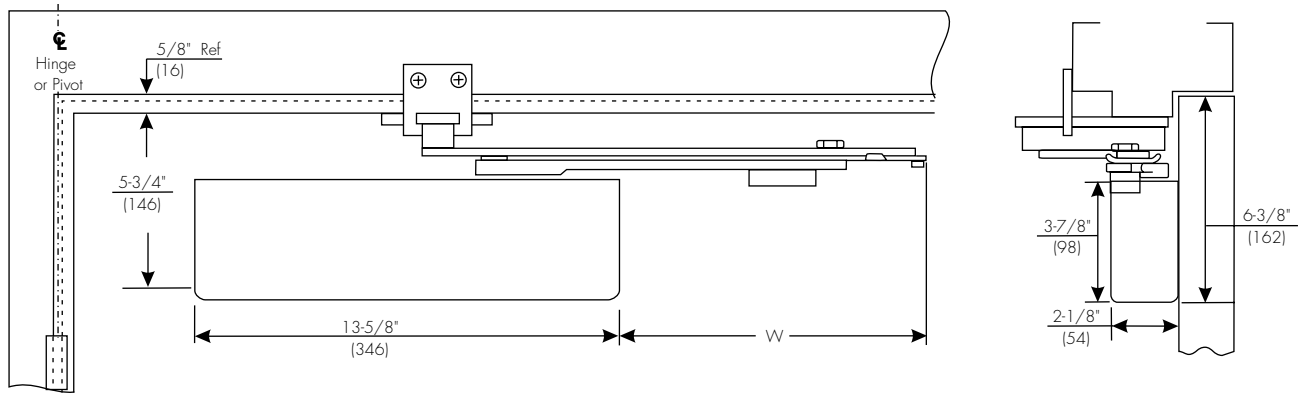
Maximum Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open	Hold Open*
30" (76)	—	PRO7500	PRO7500H
36" (91)	32" (81)		
42" (107)	36" (91)		
48" (122)	42" (107)		
—	48" (122)		

*Specify hand when ordering.

Note: Contact factory if door weight exceeds 250 lbs.

7500 SERIES INSTITUTIONAL DOOR CLOSER

PARALLEL UNITROL® ARM



Mounting holes for closer body are spaced 2-3/8" (86mm) vertically x 6-3/4" (171mm) horizontally.
Door width must be specified when ordering.

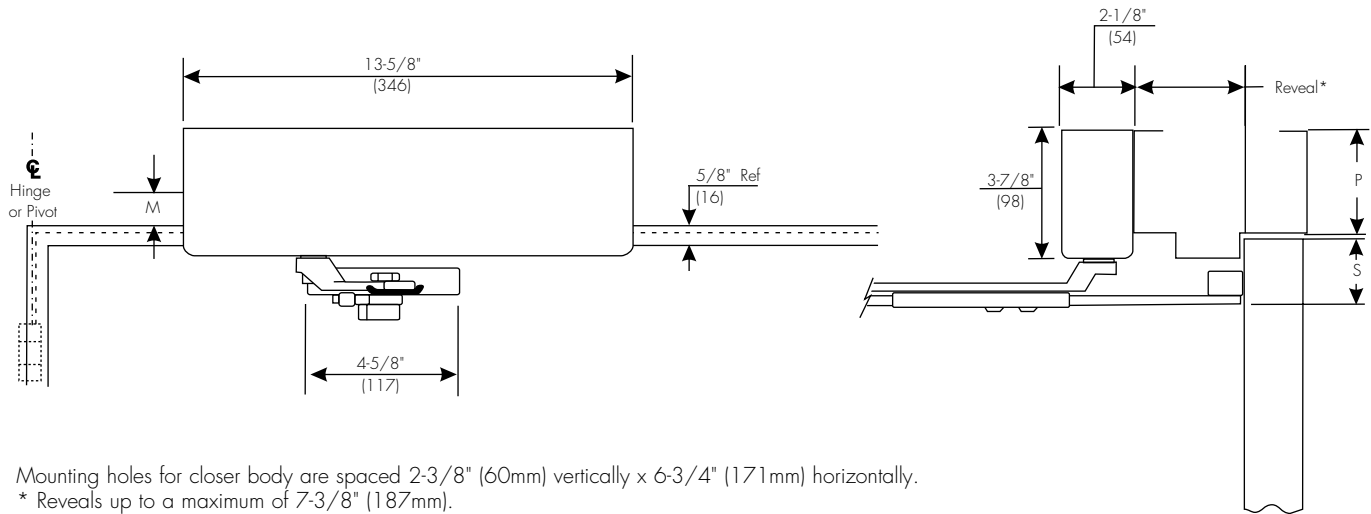
Use 6190 bracket for reveals 1-7/8" - 4-5/8" (48 to 117mm). Reveals in excess of 4-5/8" (117mm) require use of a 6191 reinforcing kit. Reveals to 1/8" (3mm) require use of a 2019L angle bracket.

Door Width inches/cm	W Arm Extension Beyond Closer
28-32" (71-81)	8-5/8" (219)
33-41" (84-104)	10-1/8" (257)
42-48" (107-122)	11-1/2" (292)

Maximum Door Width Inches (cm)		Model Number		× Specify Door Width
Interior	Exterior	Non-Hold Open	Hold Open	
30" (76)	—	UNI7500	UNI7500H	
36" (91)	30" (76)			
42" (107)	36" (91)			
48" (122)	42" (107)			
—	48" (122)			

Note: Contact factory if door weight exceeds 250 lbs.

TOP JAMB UNITROL® ARM



Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

* Reveals up to a maximum of 7-3/8" (187mm).

Reveal must be specified when ordering.

Backplates	M Minimum Frame Face	P Minimum Ceiling Clearance	S Minimum Top Rail Clearance
7786 [^]	1-5/8" (41)	3-1/8" (79)	2-1/4" (57)
7787		1-7/8" (48)	3-1/2" (89)

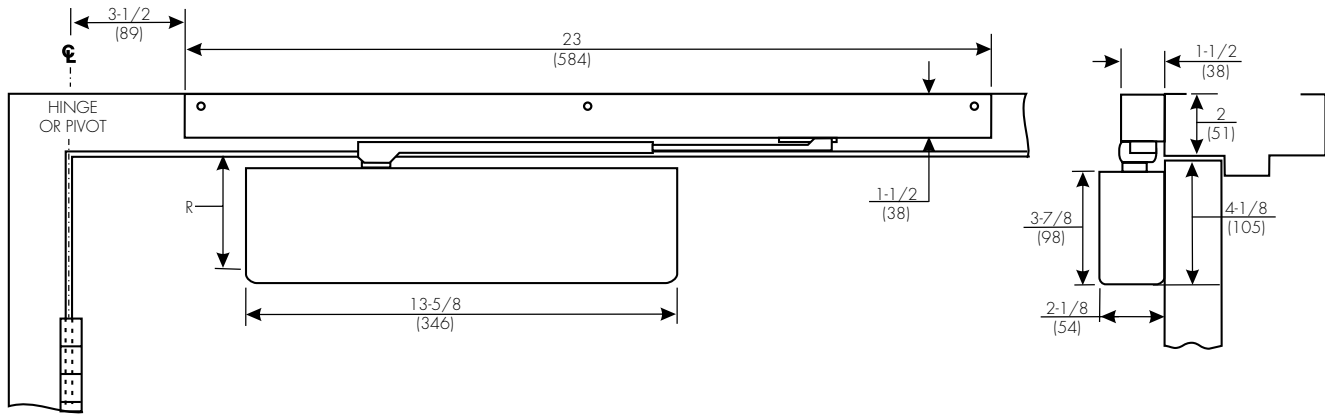
[^] supplied standard with closer

Maximum Door Width Inches (cm)		Model Number		× Specify Frame Reveal
Interior	Exterior	Non-Hold Open	Hold Open	
34" (86)	—	UNIJ7500	UNIJ7500H	× Specify Frame Reveal
42" (107)	34" (86)			
48" (122)	42" (107)			
54" (137)	48" (122)			
—	54" (137)			

Note: Contact factory if door weight exceeds 250 lbs.

7500 SERIES INSTITUTIONAL DOOR CLOSER

PULL SIDE SLIDE TRACK



Mounting holes for closer body are spaced 2-3/8" (86mm) vertically x 6-3/4" (171mm) horizontally.

R (inches/mm) Minimum Top Rail of Door with Frame Stop	
Without Drop Plate	With 7786 Drop Plate
3-1/2" (111)	2-5/8" (67)

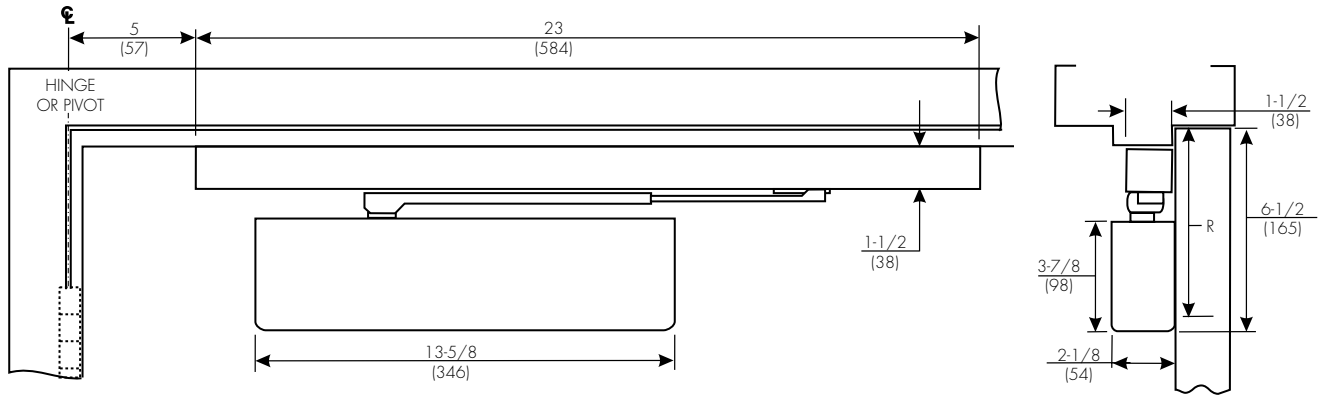
Maximum Door Width Inches (cm)		Model Number ^{1,2}		
		Non-Hold Open		Hold Open
Interior	Exterior	85°-100°	85°-180°	85°-100°
32" (81)	—	7500ST	7500ST-180	7500STH
38" (97)	32" (81)			
48" (122)	38" (97)			

1- Units can also be mounted with the closer body on the jamb. Prefix the model number with a "J". Where the frame face is less than 3-3/8" (86mm) a number 7786JP backplate will be required.

2- Units can also be installed on double egress doors using a handed arm that will accommodate the frame profile. Suffix the model number with "DE". For reveal ranges 1/4" to 3" (6 to 76mm).

Note: Contact factory if door weight exceeds 250 lbs.

PUSH SIDE SLIDE TRACK



Mounting holes for closer body are spaced 2-3/8" (86mm) vertically x 6-3/4" (171 mm) horizontally.

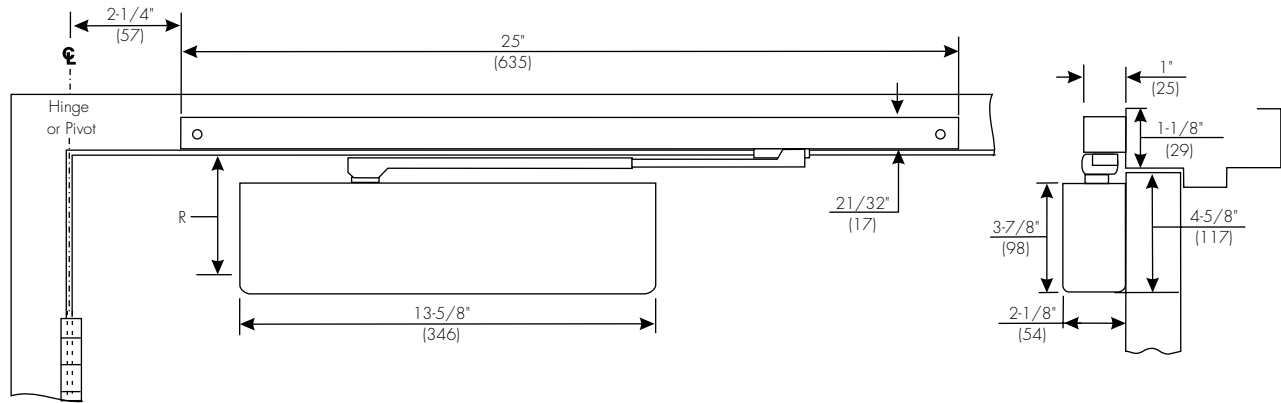
R (inches/mm) Minimum Top Rail of Door with Frame Stop	
Without Drop Plate	With 7788 Drop Plate
6" (152)	2-5/8" (67)

Maximum Door Width Inches (cm)		Model Number	
Interior	Exterior	Non-Hold Open 85°-100°	Hold Open 85°-100°
32" (81)	—	PS7500ST	PS7500STH
38" (97)	32" (81)		
48" (122)	38" (97)		

Note: Contact factory if door weight exceeds 250 lbs.

7500 SERIES INSTITUTIONAL DOOR CLOSER

LOW PROFILE PULL SIDE SLIDE TRACK



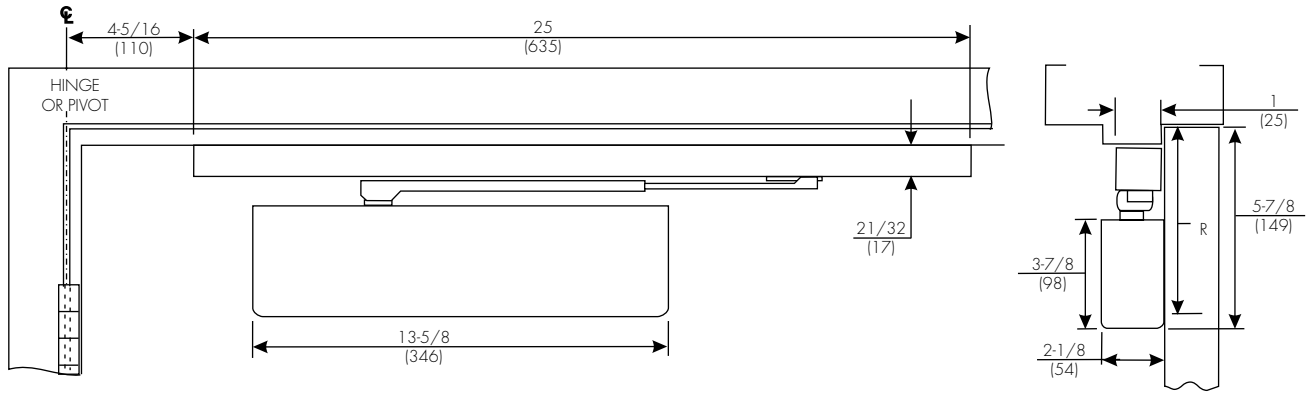
Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

R (inches/mm) Minimum Top Rail of Door with Frame Stop	
Without Drop Plate	With 7786 Drop Plate
3-1/2" (89)	2" (51)

Maximum Door Width Inches (cm)	Model Number	
	Non-Hold Open	Hold Open
32" (81)	7540ST	7540STH
38" (97)		
48" (122)		

Note: Contact factory if door weight exceeds 250 lbs.

LOW PROFILE PUSH SIDE SLIDE TRACK



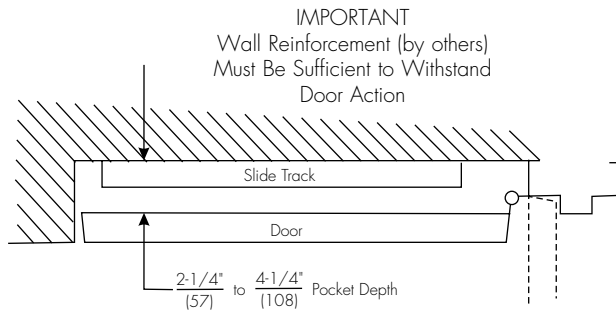
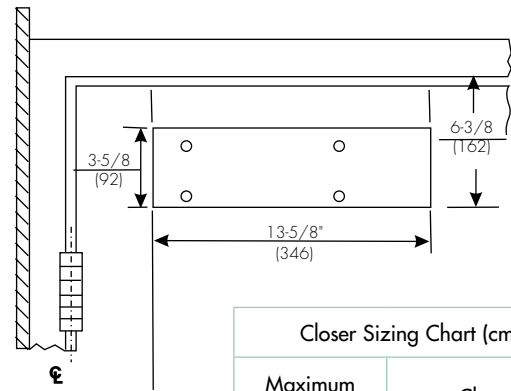
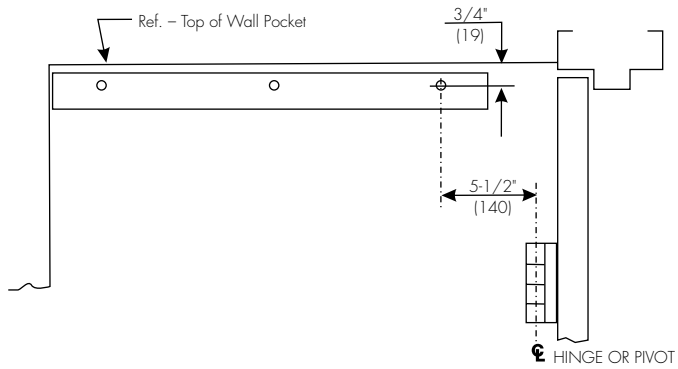
Mounting holes for closer body are spaced 2-3/8" (60mm) vertically x 6-3/4" (171mm) horizontally.

R (inches/mm) Minimum Top Rail of Door with Frame Stop	
Without Drop Plate	With 7788 Drop Plate
5-1/4" (133)	3-5/8" (92)

Maximum Door Width Inches (cm)	Model Number	
	Non-Hold Open	Hold Open
32" (81)	PS7540ST	PS7540STH
38" (97)		
48" (122)		

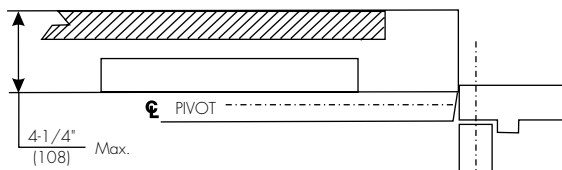
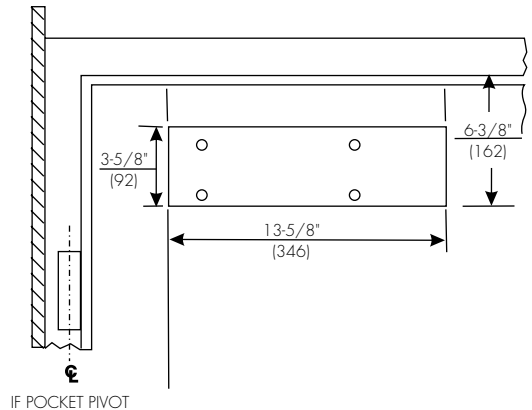
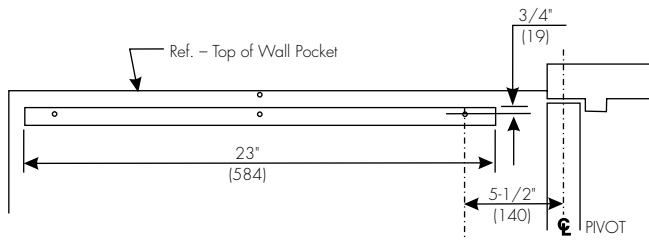
Note: Contact factory if door weight exceeds 250 lbs.

POCKET DOOR 7706STP

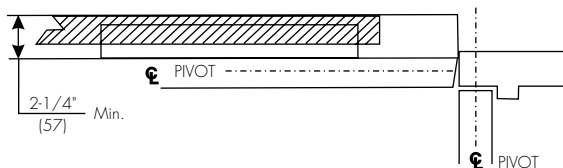


Closer Sizing Chart (cm)	
Maximum Door Width	Closer
42" (107)	7706STP
48" (122)	7706EP-STP

7706STP or 7706ED-STP Closers
Slide Track for 90° Wall Pocket Installation
For Pocket Depths 2-1/4" to 4-1/4" (57mm to 108mm)
(See Chart for Closer Sizing)



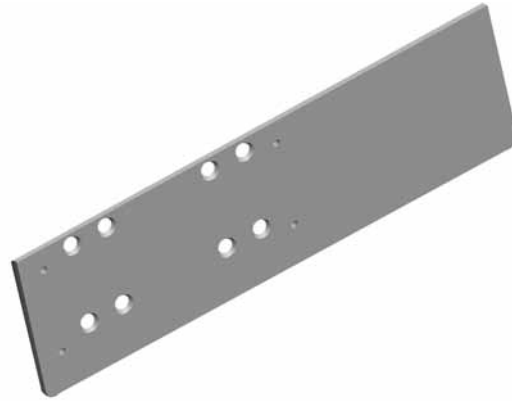
IMPORTANT
Wall Reinforcement (by others)
Must Be Sufficient to Withstand Door
Action



IF POCKET PIVOT
See chart (above) for closer sizing.

Note: Contact factory if door weight exceeds 250 lbs.

RETROFIT PLATE



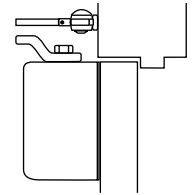
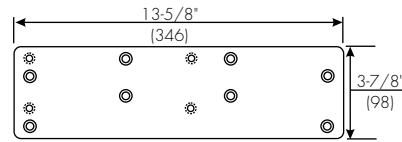
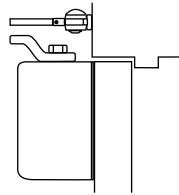
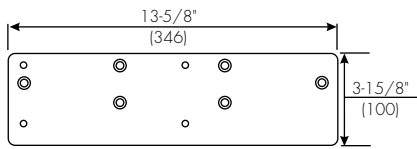
The retrofit plates allow the 7500 door closers to replace the 4040 or 4010 closers without modifying the existing hole pattern in the door. The plates will work with regular and parallel arm applications.

Note: The location of the arm shoe on the frame will change, therefore the frame must be patched.

Model Number	Replaces
RP75-4040	LCN-4040
RP75-4010	LCN-4010
RP75-M2020	Rixson® M2020

REGULAR ARM

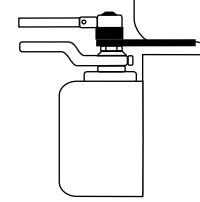
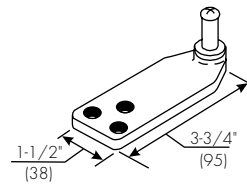
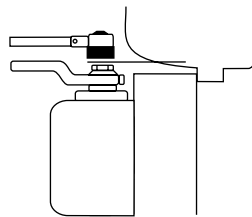
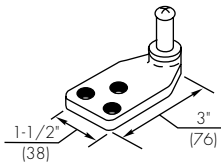
Closer Mounting Plate



Narrow Top Rail - #7786 Drop Plate: For use where the narrow top rail of the door prevents the closer from being mounted directly to the door surface. This drop plate must be used for closer mounted on a top rail between 1-7/8" and 3-3/8" (48 and 86mm) in height.

Overhead Door Holder - #7786OH Drop Plate: for use when the presence of a surface or concealed overhead door holder prevents normal mounting of closed body due to interference between closer's mounting screws and door holder track. This drop plate's mounting screws are located on the door surface 2-3/8" down from the frame rabbet allowing room for placement of the surface mounted or overhead concealed door stop/holder.

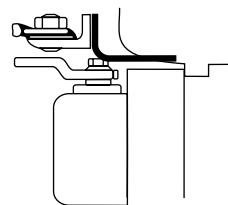
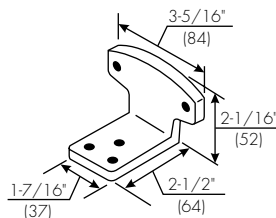
Brackets for Non-Hold Open Arms



Molded/Bull Nose Trim - #2403B 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 - #2403-3/4 Bracket: This bracket is similar to - but longer than - the 2403B bracket. It is designed to accommodate frame rabbets from 2" to 2-7/8" (51 to 73mm) deep.

Brackets for Hold Open Arms

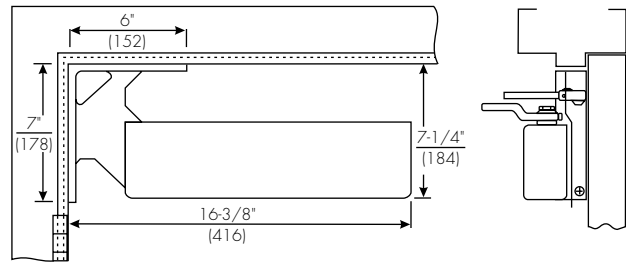
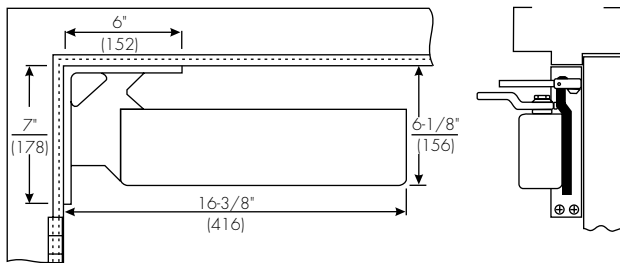


Molded/Bull Nose Trim - #80 Bracket: For use where the door frame has molded or bull nose trim which will not accept a standard hold open shoe. It is mortised into the frame rabbet, and projects beyond the face of the frame. It will accommodate a rabbet up to 2" (51mm) deep. This bracket is used in combination with the standard hold open mounting shoe.

REGULAR ARM

Corner Brackets for Closer Mounting

For closer sizing information use the Parallel Arm Sizing Chart on page 15. The use of a corner bracket requires a door closer of the opposite hand from that of the door when ordering handed closers.

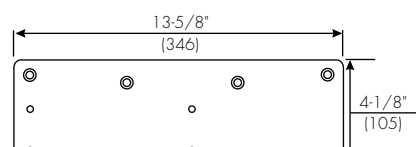
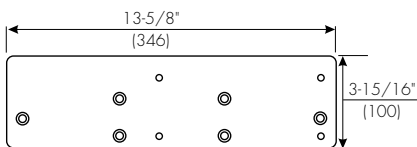


Mounting Opposite Hinge Side - #7798 Standard Drop Corner Bracket: For use where it is desired to mount a regular arm non-hold open closer.

Extra-Drop Mounting Opposite Hinge Side - #7797 Corner Bracket: For use where it is desired to mount a regular arm hold open closer, or where it is necessary for a regular arm non-hold open closer to clear a separate overhead door holder. This bracket drops the closer 1-1/8" (29mm) lower than the #7798 Corner Bracket.

TOP JAMB

Closer Mounting Plates

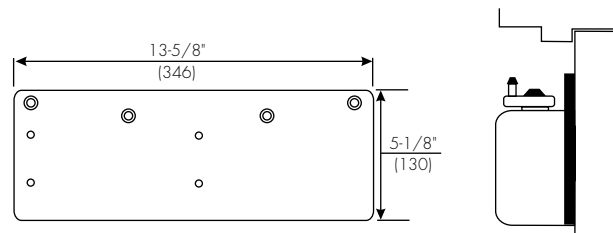


Narrow Frame - #7786 Back Plate: For use where a narrow frame face prevents the closer from being mounted directly to the frame. This back plate must be used for closer mounted on a frame between 1-7/8" and 3-1/8" (48 and 79mm) in height.

Low Ceiling Clearance - Overhead Door Holder - #7787 Drop Plate: For use where the ceiling clearance is between 1-7/8" and 3-7/8" (48 and 98mm) or where a surface or concealed overhead door holder prevents normal top jamb mounting. This plate drops the closer and allows the arm mounting screws to clear the bottom of the door holder. This places the centerline of the arm mounting screws at 3-1/8" (79mm) from the top of the door.

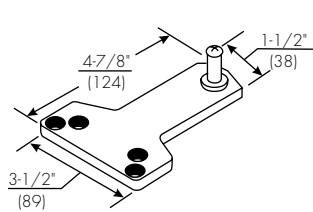
PARALLEL ARM

Closer Mounting Plate

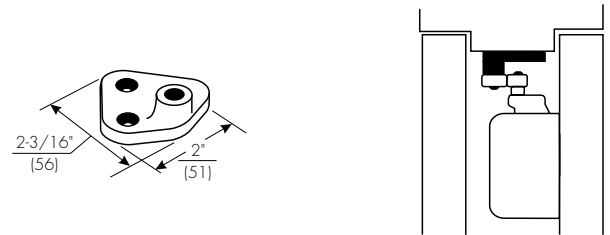


Narrow Top Rail - #7788 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface. This drop plate can be used to mount a closer on a top rail as narrow as 2-1/2" (64mm) in height.

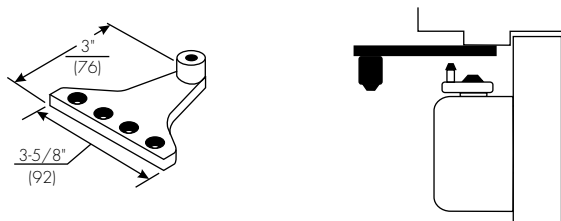
Brackets for Non Hold Open Arms



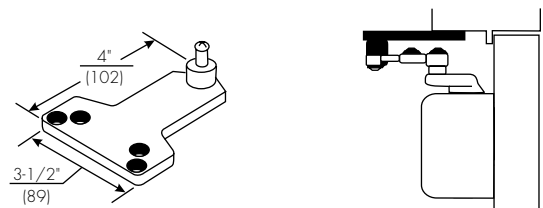
Standard Installation - #1618 Soffit Plate: Supplied standard with parallel arm closers. It can be mounted where the frame soffit is as narrow as 1" (25mm). Specify **1618A-SS** for stainless steel soffit plate.



Mounting between Doors - #2018 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.



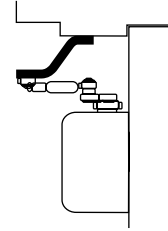
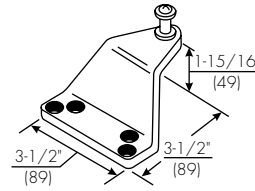
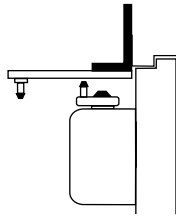
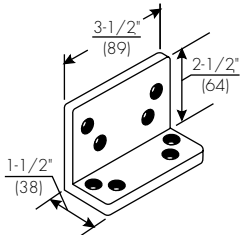
Narrow Frame/Removable Stop - #2018B Soffit Plate: For use where a narrow frame or frame with removable stop does not permit use of the standard soffit plate. This soffit plate may be mounted on the frame soffit or the frame rabbet where the stop does not exceed 5/8" (16mm) in height. All of the screw 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" (51 mm), 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.



Blade/Applied Stop - #2018D 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) stop.

PARALLEL ARM

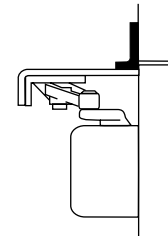
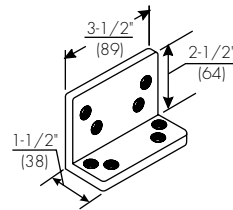
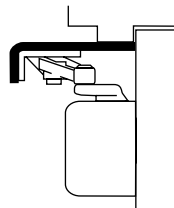
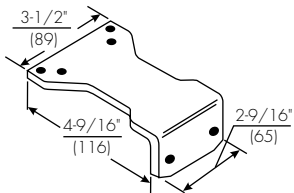
Brackets for Non Hold Open Arms (continued)



Flush Transom - #2022 Angle Bracket: For use where rabbeted or flush transom conditions prevent installation of a soffit plate. Used in combination with the 1618 soffit plate, or may be used in combination with the 2018S soffit plate when it is necessary for the closer arm to clear a separate overhead door holder.

Extra-Clearance - #2018S 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

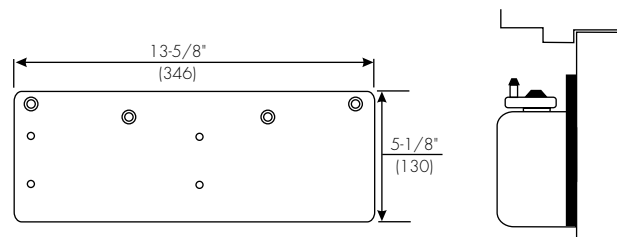


Parallel Hold-Open - #1628H Adapter Plate: Supplied standard with all parallel arm hold-open closers. It can also be used to convert regular arm or top jamb hold-open arms to parallel arm installation. It can be mounted where the frame soffit is as narrow as 1" (25mm).

Flush Transom Hold-Open - #2022 Angle Bracket: For use where rabbeted or flush transom conditions prevent installation of the standard 1628H hold-open adapter plate. It is used in combination with the 1628H adapter plate.

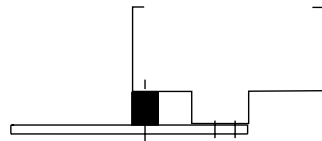
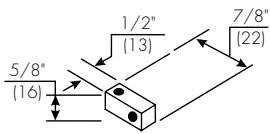
PARALLEL RIGID ARM

Closer Mounting Plate

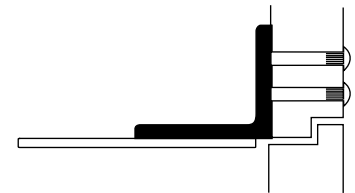
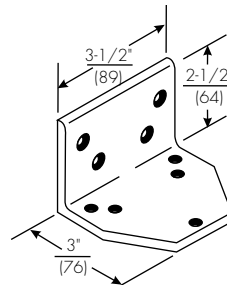


Narrow Top Rail - #7788 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface. This drop plate can be used to mount a closer on a top rail as narrow as 2-1/2" (64mm) in height.

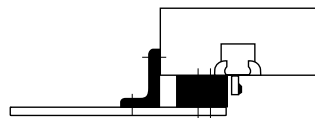
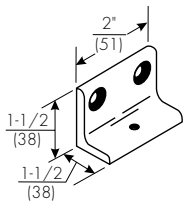
Brackets for Non-Hold Open Arms & Hold Open Arms



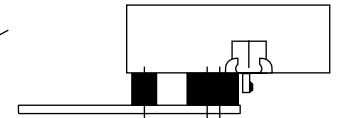
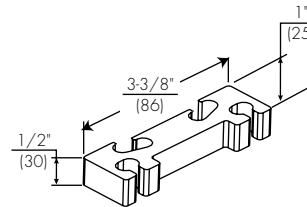
Standard - #2019S Spacer Block: For use where a narrow frame soffit does not provide adequate support for the soffit plate. Supplied as standard with all parallel rigid arm closers.



Flush Rabbeted Transom - #2019L Angle Bracket: For use where flush transom conditions prevent mounting of the standard soffit plate. This bracket is used in combination with the standard soffit plate.



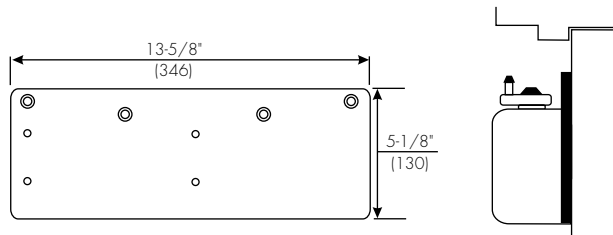
Narrow Frame - #6890 Support Bracket: For use where the frame is narrow, and the soffit plate cannot be mounted directly to the frame soffit or rabbet. Used in combination with the #6891 Spacer Block on blade stop frames to provide extra support and needed clearance of the blade stop. Used on frames where the frame stop does not exceed 5/8" (11 mm) in height.



Clearance/Support Blade Stop - #6891 Spacer Block: For use where the door frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard spacer block to provide clearance of the blade stop.

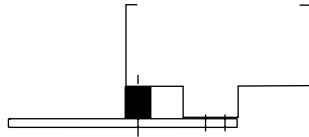
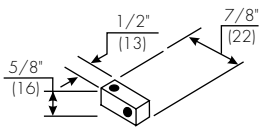
CLOSERPLUS® ARMS

Closer Mounting Plate

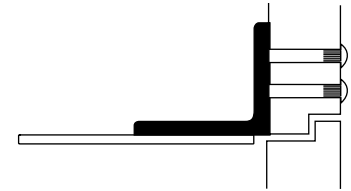
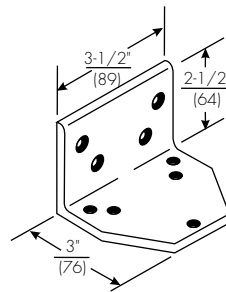


Narrow Top Rail - #7788 Drop Plate: For use where a narrow top rail prevents the closer from being mounted directly to the door surface. This drop plate can be used to mount a closer on a top rail as narrow as 2-1/2" (64mm) in height.

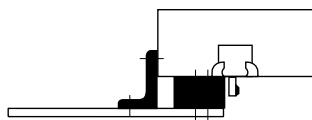
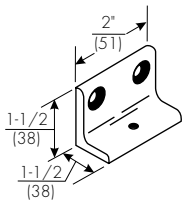
Brackets for Non-Hold Open Arms & Hold Open Arms



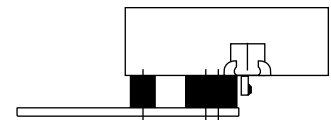
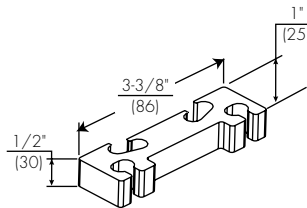
Standard - #2019S Spacer Block: For use where a narrow frame soffit does not provide adequate support for the soffit plate. Supplied as standard with all parallel rigid arm closers.



Flush Rabbeted Transom - #2019L Angle Bracket: For use where flush transom conditions prevent mounting of the standard soffit plate. This bracket is used in combination with the standard soffit plate.



Narrow Frame - #6890 Support Bracket: For use where the frame is narrow, and the soffit plate cannot be mounted directly to the frame soffit or rabbet. Used in combination with the #6891 Spacer Block on blade stop frames to provide extra support and needed clearance of the blade stop. Used on frames where the frame stop does not exceed 5/8" (11 mm) in height.

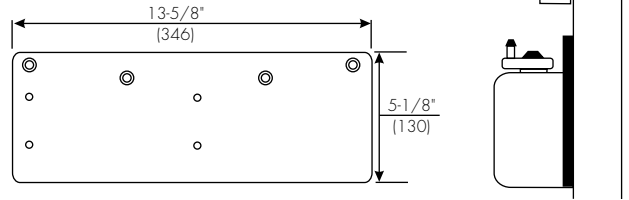


Clearance/Support Blade Stop - #6891 Spacer Block: For use where the door frame has a blade stop and the soffit plate must be mounted on the frame rabbet. This accessory is used in combination with the standard spacer block to provide clearance of the blade stop.

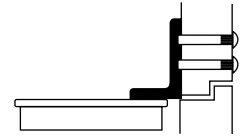
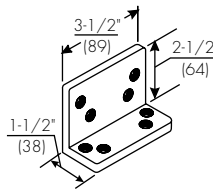
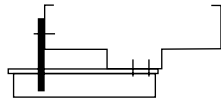
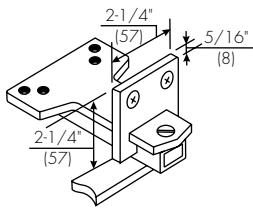
UNITROL® ARM

Closer Mounting Plate (for Parallel Arm)

Narrow Top Rail - #7788 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 2-3/8" (60mm) in height.

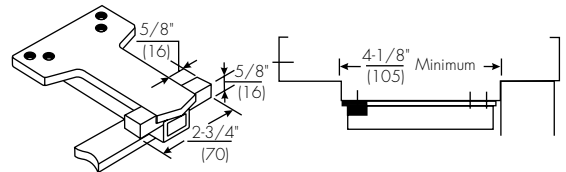
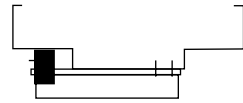
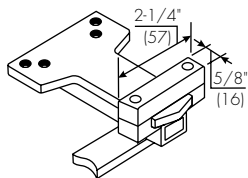


Soffit Plate Reinforcing Brackets (for Parallel Arm)



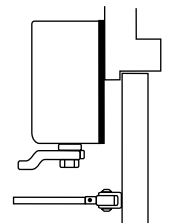
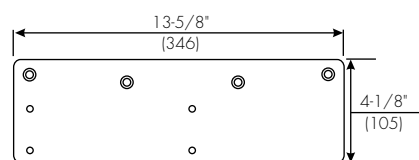
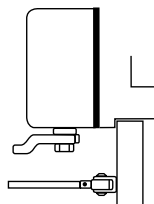
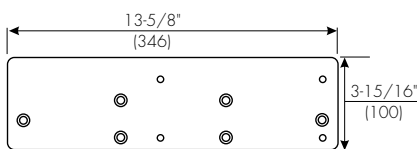
Additional Support - #6190 Reinforcing Bracket: Standard for use with all Parallel Arm *Unitrol* Door Controls. Provides additional support to the soffit plate on installations with door frame reveals from 1-7/8" to 4-5/8" (48 to 117mm).

Flush Rabbeted Transom - #2022 Angle Bracket: Optional for use with all Parallel Arm *Unitrol* Door Controls. For use where rabbeted or flush transom conditions prevent installation of the soffit plate assembly. This bracket fastens to the overhead transom to provide a mounting surface for the soffit plate assembly.



Wide Frame - #6191 Reinforcing Kit: Optional for use with all Parallel Arm *Unitrol* Door Controls. Used to support the soffit plate on installations with wide frames. Clamps may be used with or without the spacer block, depending on frame conditions.

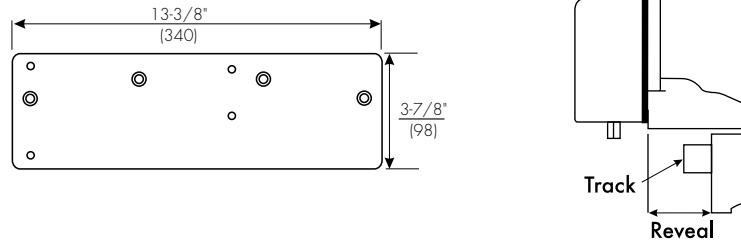
Closer Mounting Plate (for Top Jamb)



Standard Installation - #7786 Back Plate: Can be mounted where a frame face is as narrow as 1-5/8" (41mm) in height.

Minimum Ceiling Clearance - #7787 Drop Plate: For use where the ceiling clearance is as little as 1-7/8" (48mm).

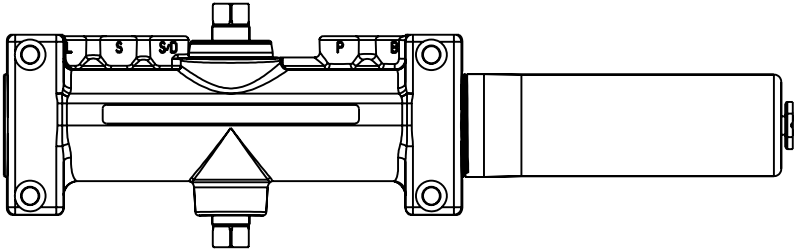
SLIDE TRACK



Slide Track - #7786JP Back Plate: Required for frames with standard 2" (51 mm) profile face. Without plate, minimum 4" (102 mm) face frame required.

7500 SERIES INSTITUTIONAL DOOR CLOSER

DOOR CLOSER BODY ASSEMBLIES



Model Number	Description
7500LAP	Multi-Size Closer Body
7500SSLAP	Corrosion Resistant Closer Body

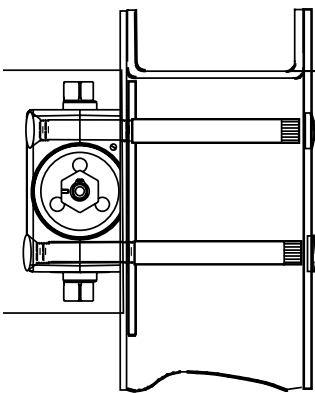
LAP = Less All Parts

Torx® Screw Pack	
Arm Type	Model Number
Regular, Top Jamb & Parallel	TX47
Parallel Rigid, CloserPlus® CloserPlus Spring™	PRTX47
Regular Rigid Heavy-Duty	RTX47
Unitrol® Arm	UNITX47
Slide Track	STTX47

Closer Series	Cover Material	Model No.	Dimensions (Inches/mm)
7500	Plastic	7700P & 7700PG	13-3/4 (349) x 4" (102) x 2-1/8" (54)
	Metal	7700M	13-5/8" (346) x 3-7/8" (98) x 2-3/16" (56)

Steel Door Application

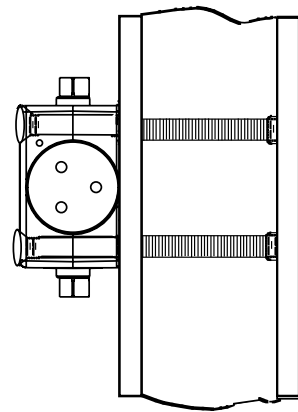
Sleeve Nut: "SN" (4 per pack)
or
Sleeve Nut & Screw: "SNB" (4 per pack)



Door Thickness	SN's	SNB's
1-3/4"	SN-134	SNB134-47
2"	NA	SNB200-47
2-1/4"	SN-214	SNB214-47
S.S. SNB'S 1-3/4" (Stainless Steel)	SN-134SS	SNB134SS-47

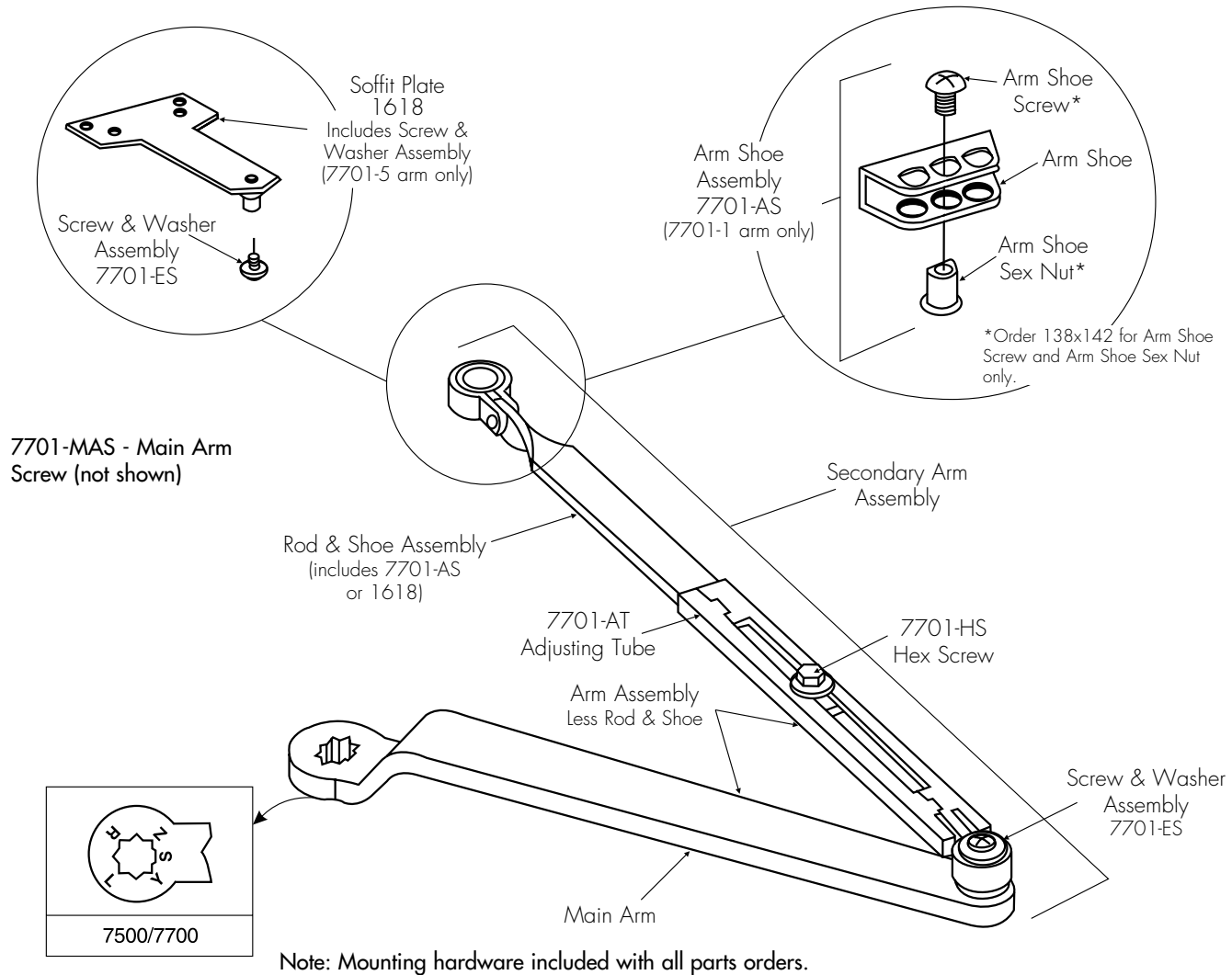
Aluminum and Wood Door Application (Aluminum Door Shown)

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



Door Thickness	TBGN's
1-3/8"	TBGN138-47
1-3/4"	TBGN134-47

NON-HOLD OPEN ARM ASSEMBLIES

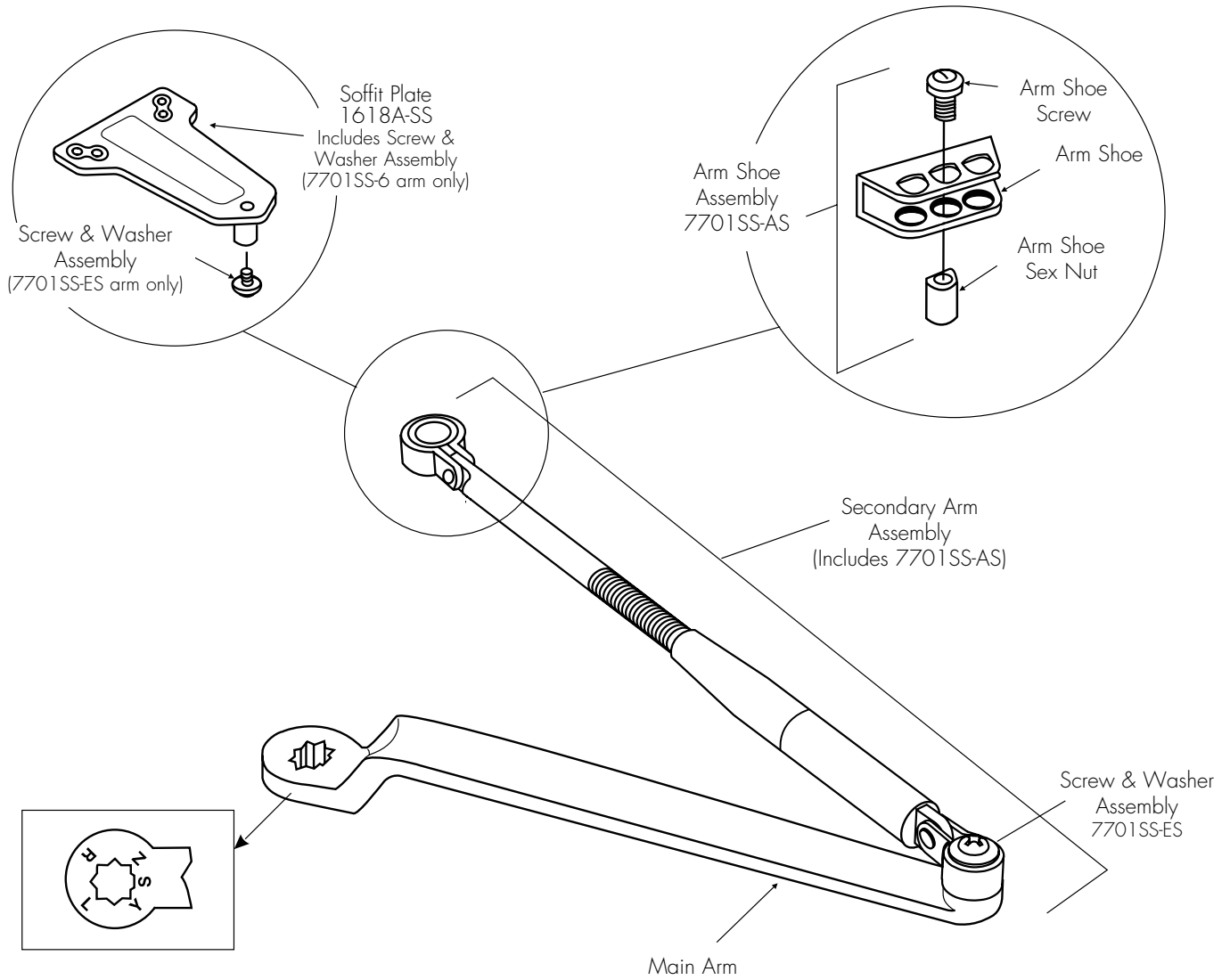


Note: Mounting hardware included with all parts orders.

Closer Series	Complete Arm Assembly	Main Arm Assembly ¹ (length)(mm) (includes 7701-ES)	Secondary Arm Assembly (includes 7701-ES)	Arm Assembly Less Rod and Shoe	Rod & Shoe Assembly ² (length) (mm)
7500	7701-1	7701-1M (11)(279)	7701-111	7701-1W	7701-11 (8-7/8)(225)
J7500	7701-1A		7701-121		7701-11A (12-9/16)(319)
JL7500	7701-1B	7701-2M (13-1/2)(343)	7701-131	7701-2W	7701-11B (15-3/16)(386)
P7500	7701-5	7701-1M (11)(279)	7701-115	7701-1W	7701-15 (8-7/8)(225)
P7500 ³	7701-5A		7701-115A		7701-15A (12-9/16)(319)
7500	7701-25 (tri-packed includes 7701-1 plus 1618 plate)	¹ C to C length shown in parentheses. ² C 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" (152 to 203mm) wide throw hinges.			

7500 SERIES INSTITUTIONAL DOOR CLOSER

STAINLESS STEEL ARM ASSEMBLIES

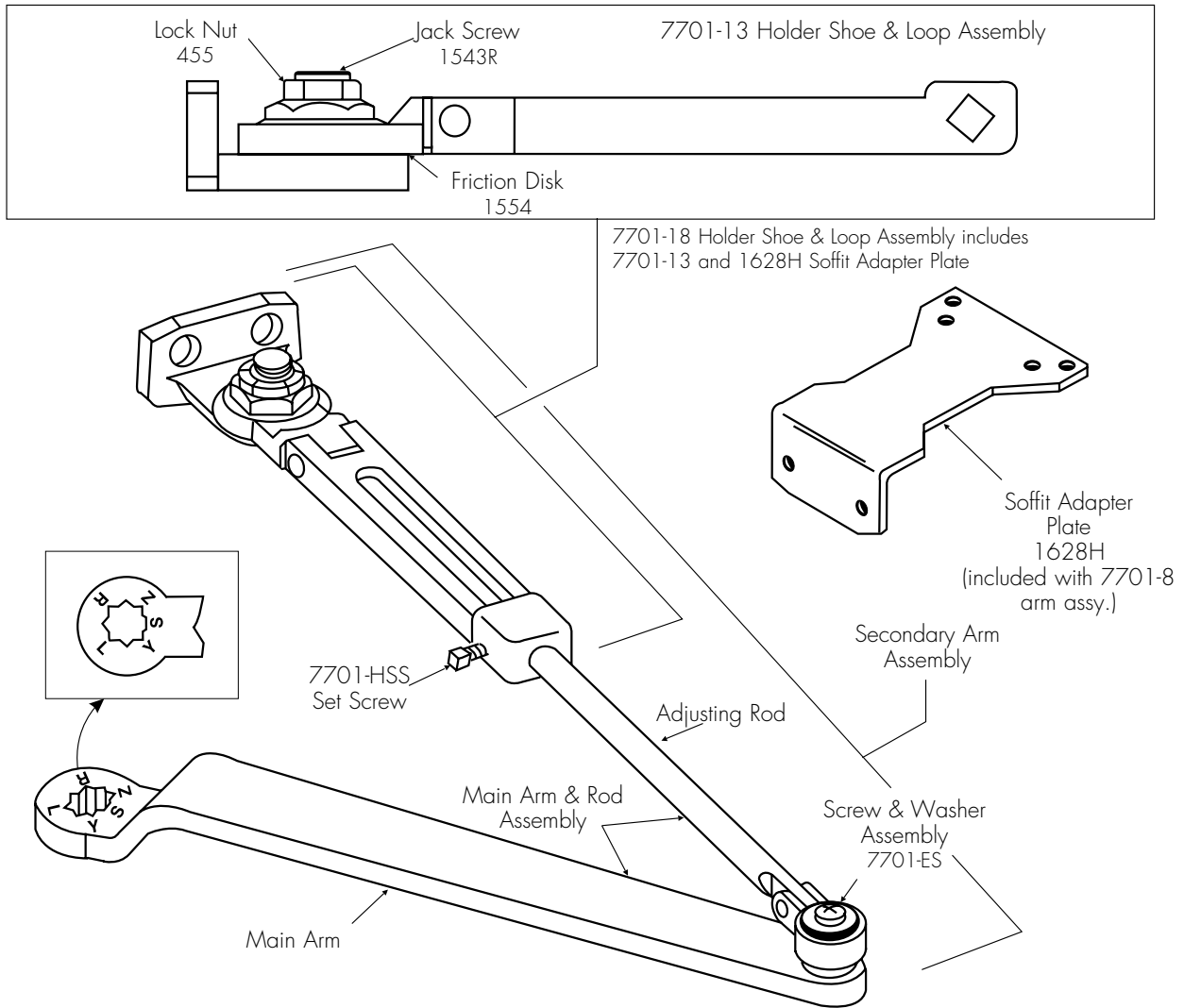


Closer Series	Complete Arm Assembly	Main Arm Assembly ¹ (length)(mm) (includes 7701SS-ES)	Secondary Arm Assembly (includes 7701SS-ES)
7500SS	7701SS-1	7701SS-1M (11)(279)	7701SS-111
J7500SS	7701SS-1A		7701SS-121
P7500SS	7701SS-6		7701SS-116

Note: Mounting hardware included with all parts orders.

1. C to C length shown in parentheses

HOLD OPEN ARM ASSEMBLIES



Note: Mounting hardware included with all parts orders.

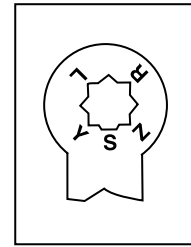
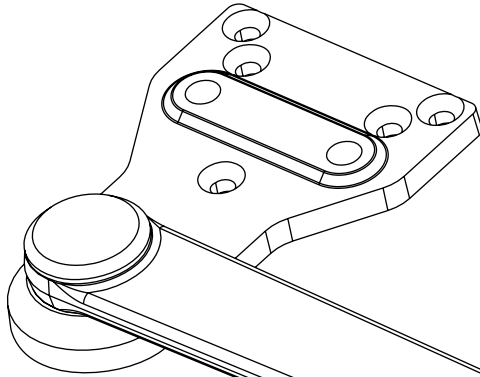
Closer Series Assembly	Complete Arm Assembly	Main Arm ¹ (Length)(mm) (includes 7701-ES)	Secondary Arm (includes 7701-ES)	Main Arm & Rod Assembly	Holder Shoe & Loop Assembly	Adjusting Rod ² (Length)(mm)
7500H	7701-3/7701-8 ³	7701-1M (11)(279)	7701-113/7700-118 (Reg.) / (Par.)	7701-3W	7701-13	7701-31 (7-3/8)(187)
J7500H	7701-3A		7701-123	7701-3WA		7701-31A (10-13/16)(275)
JL7500H	7701-3B	7701-2M (13 -1/2)(343)	7701-133	7701-3WB		7701-31B (12-7/8)(327)

1. C to C length shown in parentheses.
2. C of connecting link to end of rod shown in parentheses.
3. Same as 7701-3 but includes #1628H soffit adapter plate.

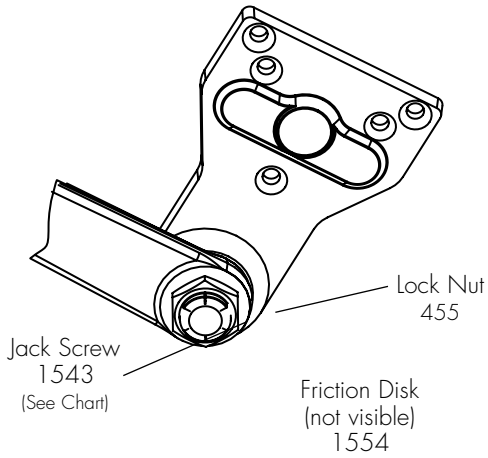
7500 SERIES INSTITUTIONAL DOOR CLOSER

PARALLEL RIGID ARM ASSEMBLIES

Non-Hold Open Arm Shown



Hold Open Arms Only

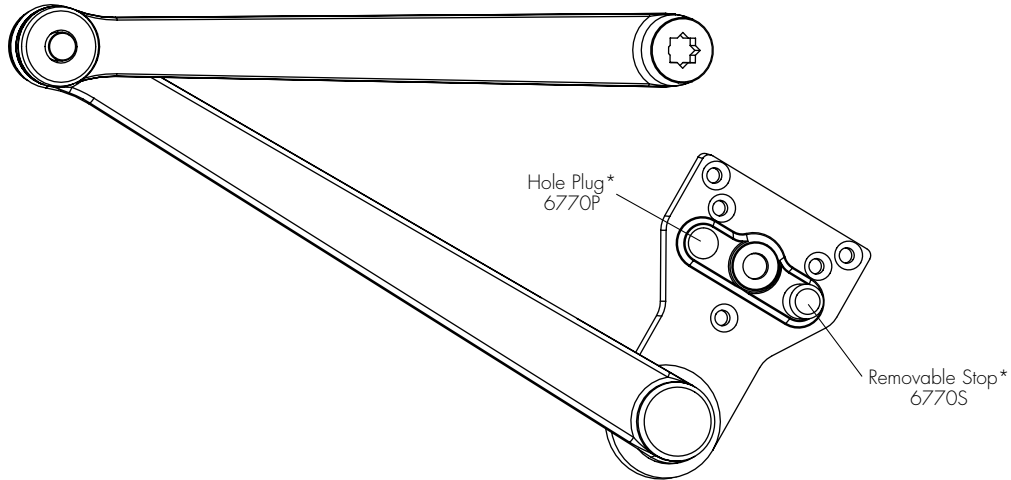


Arm Function	Complete Arm Assembly	Jack Screw
Non-Hold Open	PR7701-5	N/A
Hold Open	PR7701-8R (Right Hand)	1543R
	PR7701-8L (Left Hand)	1543L

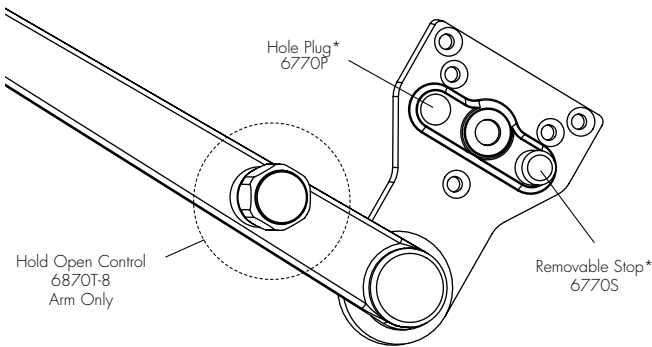
Note: Mounting hardware included with all parts orders.

CLOSERPLUS® ARM ASSEMBLIES

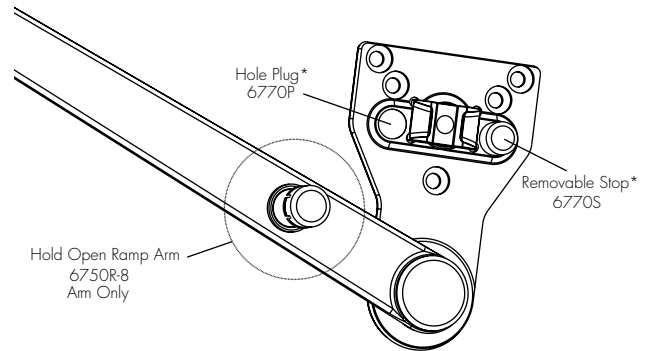
CLP
 Non-Hold Open



CLP-T
 Thumbturn Hold Open



CLP-R
 Ramp Hold Open



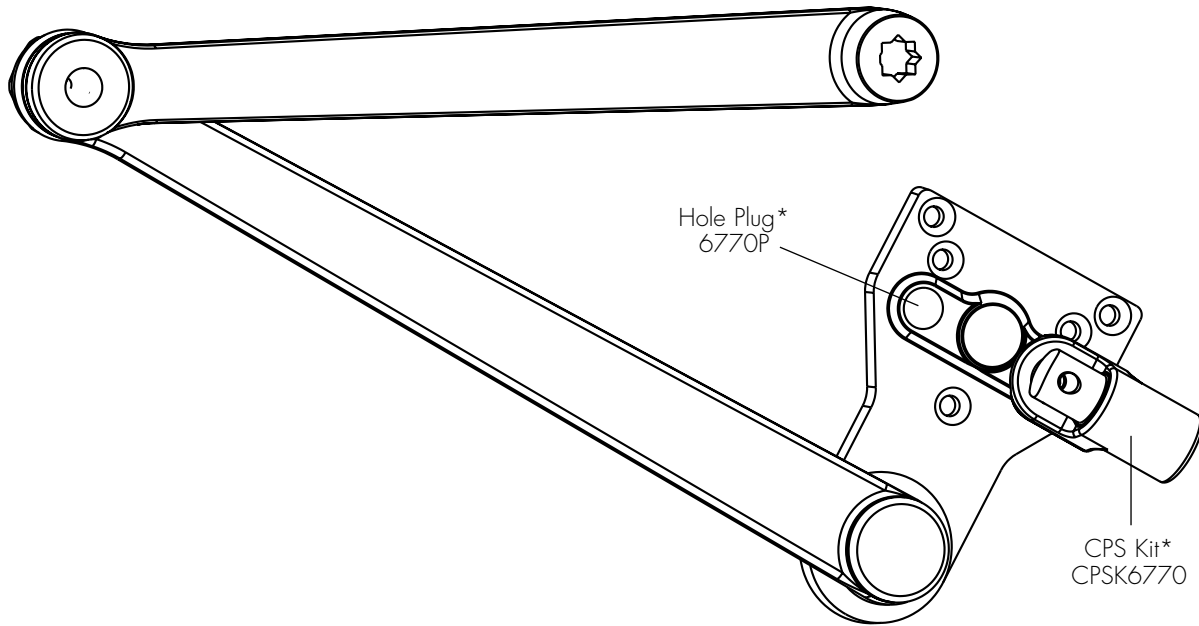
Note: Mounting hardware included with all parts orders.

Arm Function	Complete Arm Assembly
Non-Hold Open	6770-5
Thumbturn Hold Open	6870T-8
Ramp Hold Open	6750R-8

* These parts and screw pack are included with complete arm assemblies.

CLOSERPLUS SPRING™ ARM ASSEMBLIES

Non-Hold Open Arm Shown

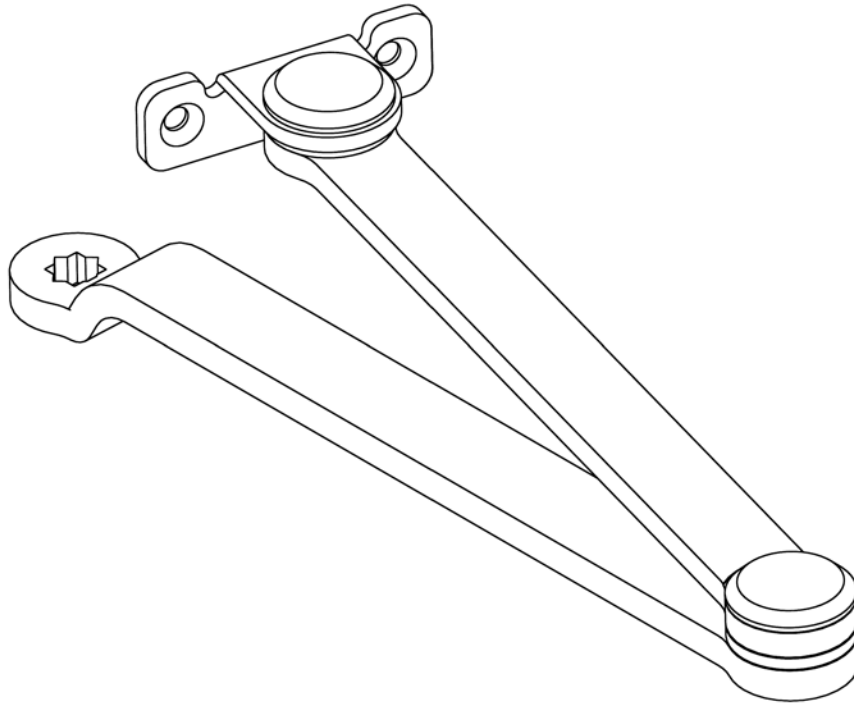


Note: Mounting hardware included with all parts orders.

Arm Function	Complete Arm Assembly
Non-Hold Open	CPS6770-5
Thumbturn Hold Open	CPS6870T-8

*These parts and screw pack are included with complete arm assemblies.

REGULAR RIGID HEAVY-DUTY ARM



Note: Mounting hardware included with all parts orders.

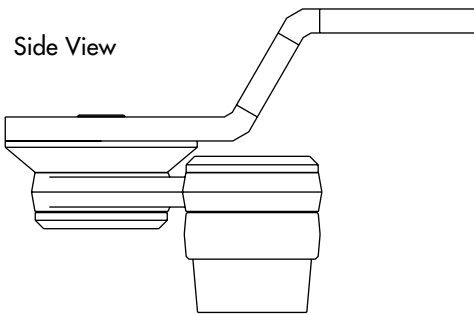
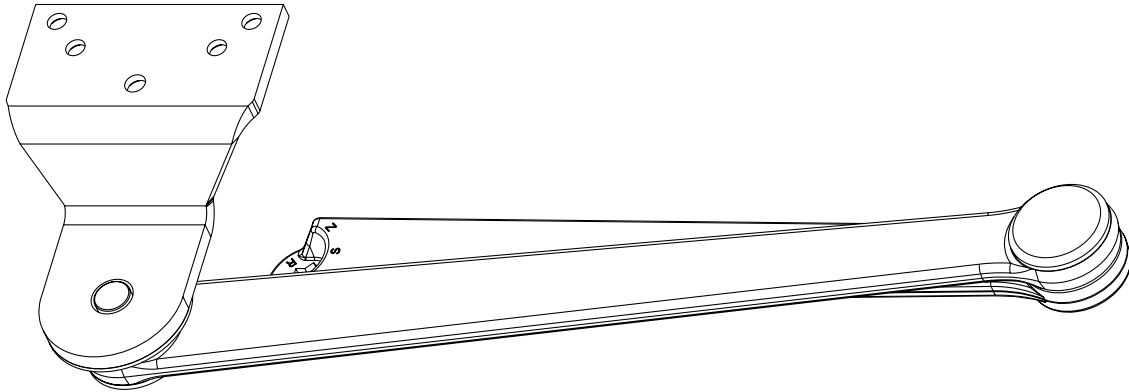
Closer Series	Arm Function	Complete Arm Assembly
R7500	Non-Hold Open	R7701-1 Furnished with standard fasteners
7570*		7771-1 Furnished with Torx fasteners

* Refer to Norton's Security Closer Catalog.

7500 SERIES INSTITUTIONAL DOOR CLOSER

PARALLEL RIGID OFFSET ARM ASSEMBLIES

Non-Hold Open

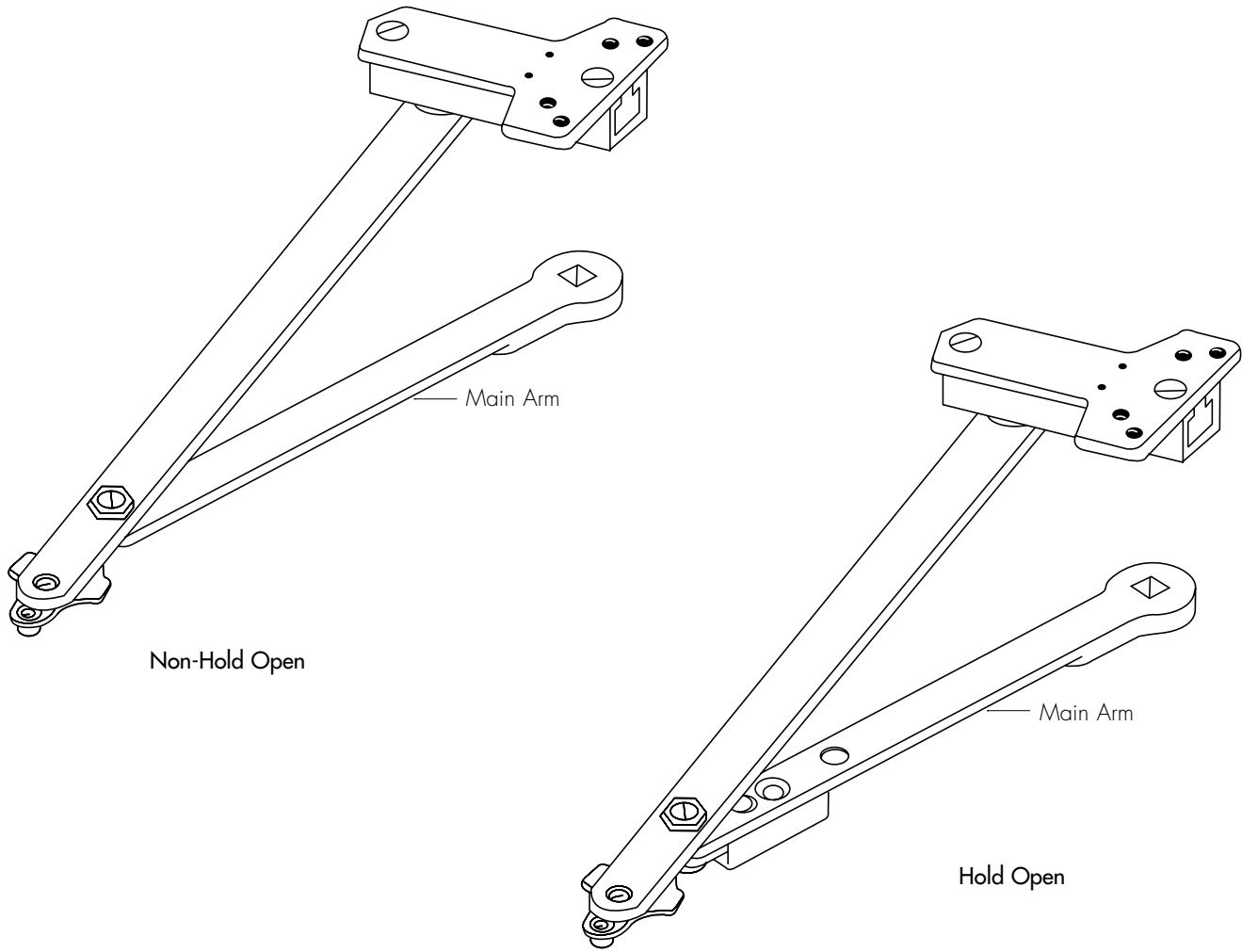


Complete Arm Assembly	Arm Function
PRO7701-5	Non-Hold Open
PRO7701-8R	Hold Open, Right Hand
PRO7701-8L	Hold Open, Left Hand

Note: Mounting hardware included with all parts orders.

UNITROL® ARM ASSEMBLIES

Parallel Arm



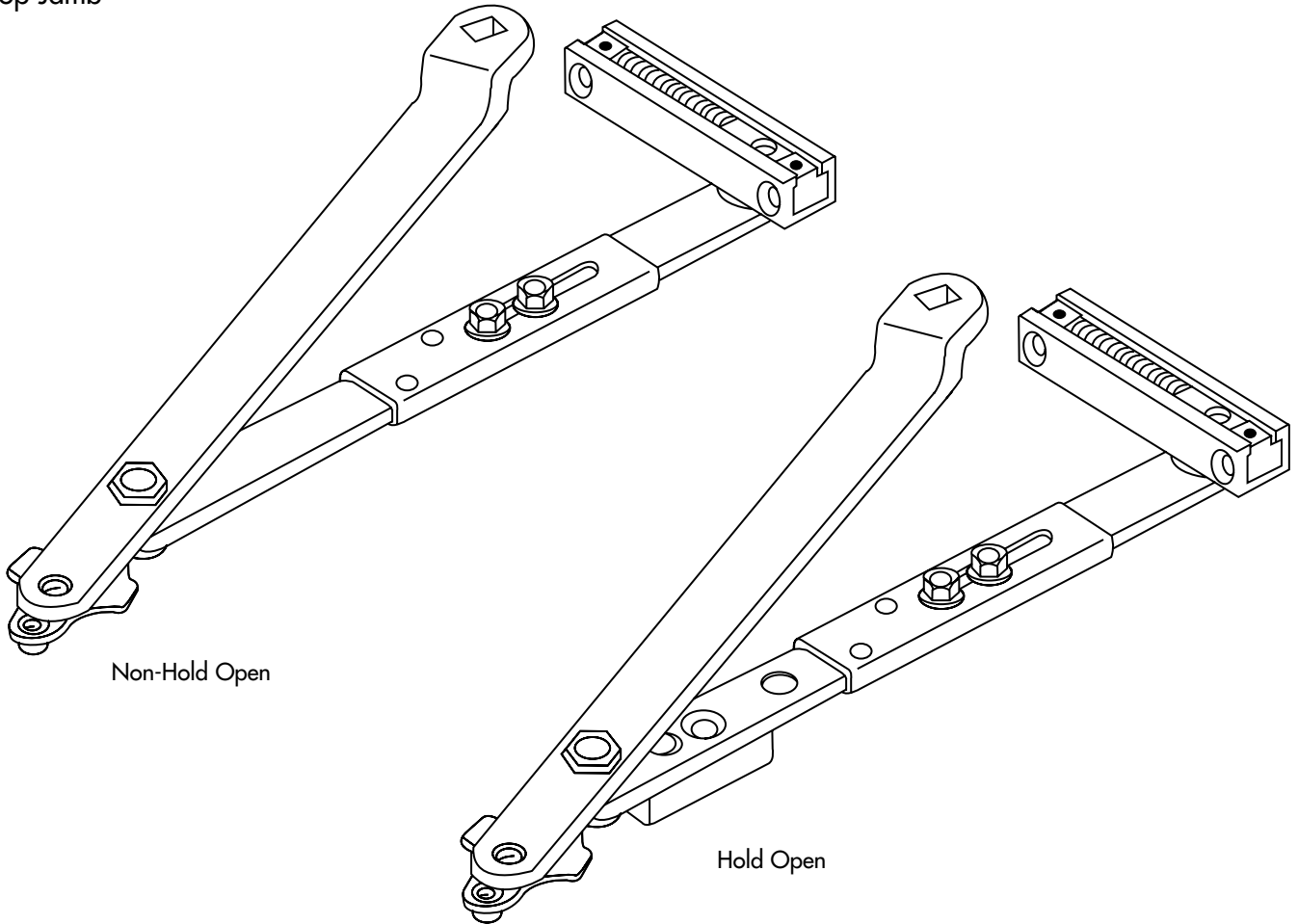
Door Width (cm)	Main Arm Length* (mm)	Complete Arm Assembly	
		Non-Hold Open	Hold Open
28" - 32" (71 - 81)	9-1/2" (241)	6100-11	6100-1
33" - 41" (84 - 104)	11" (279)	6100-13	6100-3
42" - 48" (107 - 122)	12-1/2" (318)	6100-14	6100-4

* Center to center length.

Note: Mounting hardware included with all parts orders.

UNITROL[®] ARM ASSEMBLIES

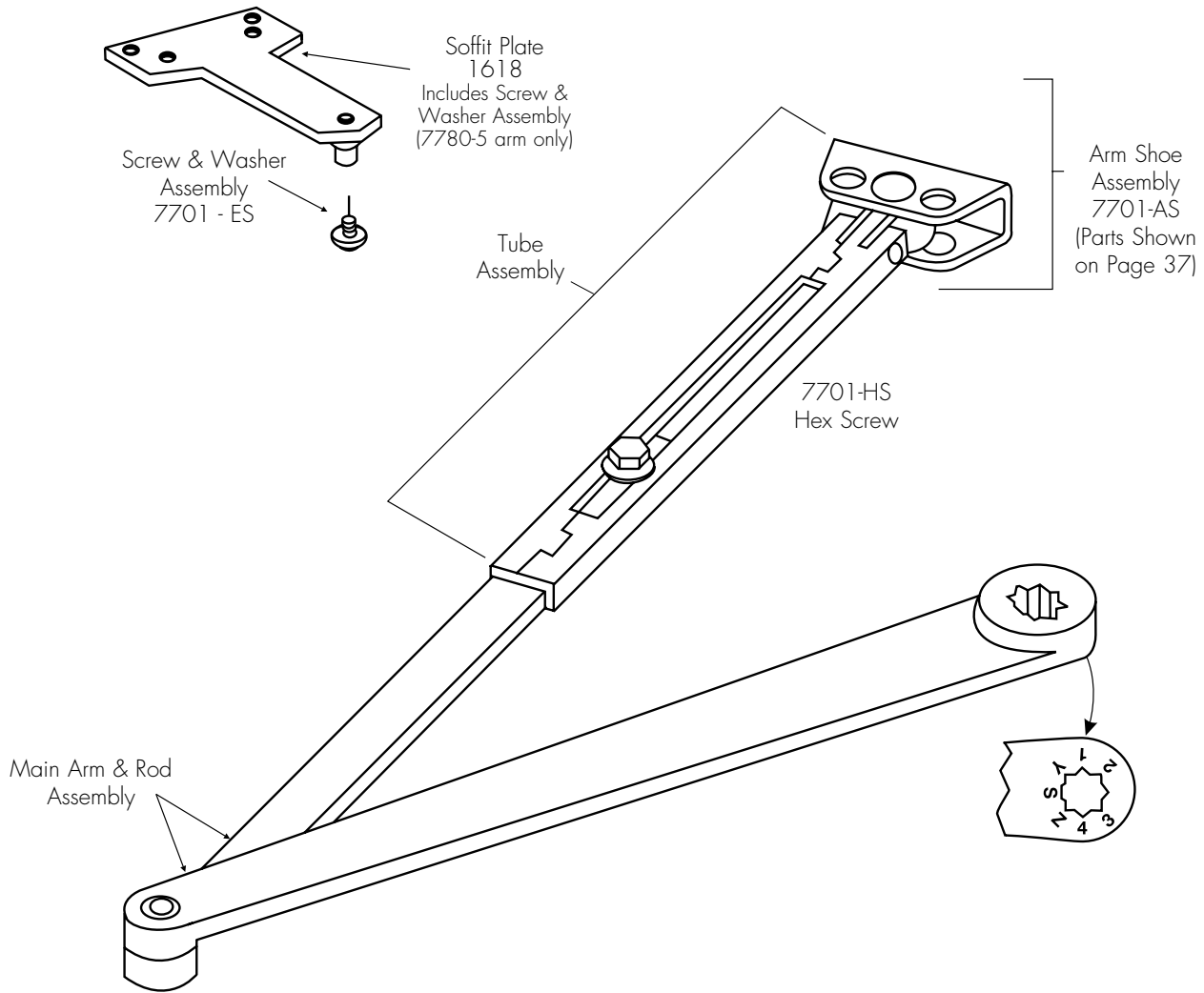
Top Jamb



Complete Arm Assembly		For Frame Reveals (mm)
Non-Hold Open	Hold Open	
J6100-4	J6100-7	2-1/8" - 3-1/4" (54 - 83)
J6200-4	J6200-7	1/2" - 2" (13 - 51)
J6400-4	J6400-7	3-3/8" - 4-1/4" (86 - 108)
J6500-41	J6500-71	4-3/8" - 5-3/8" (111 - 137)
J6500-42	J6500-72	5-1/2" - 6-3/8" (140 - 162)
J6500-43	J6500-73	6-1/2" - 7-3/8" (165 - 187)
J6600-4	J6600-7	0" - 3/8" (0 - 10)

Note: Mounting hardware included with all parts orders.

LOW PROFILE ARM ASSEMBLIES

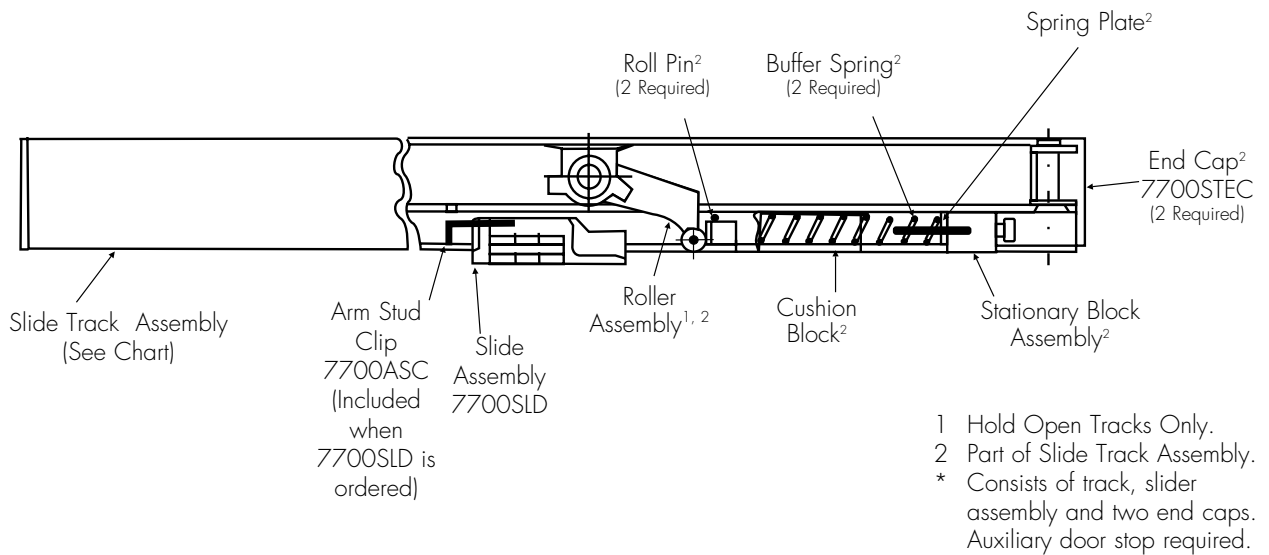


Arm Application	Complete Arm Assembly	Main Arm & Adjusting Rod Assembly	Tube & Shoe/Soffit Assembly
Regular Arm	7780-1	7780-1MR	7780-1TS (With 7701-AS)
Parallel Arm	7780-5		7780-5TS (With 1618)
Tri-pack	7780-25		

Note: Mounting hardware included with all parts orders.

TRACK ASSEMBLIES

Track Assemblies	Part Number	
	Non-Hold Open	Hold Open
Pull-side mounted	7701ST-1T	7701ST-3T
Push-side mounted	7701ST-5T	7701ST-8T
Pull-side mounted (180°)	7701ST-1T180°*	N/A

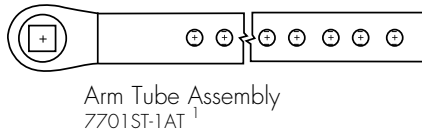


Note: Mounting hardware included with all parts orders

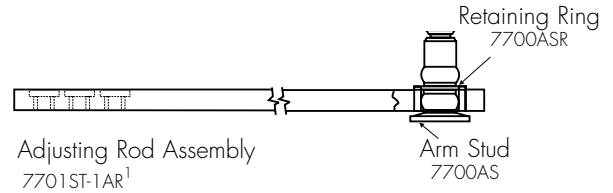
TRACK ASSEMBLIES

STANDARD ARM ASSEMBLY

7701ST-1A^{1,2}



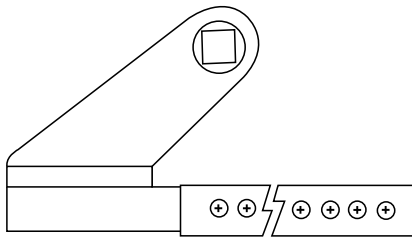
Arm Tube Assembly
7701ST-1AT¹



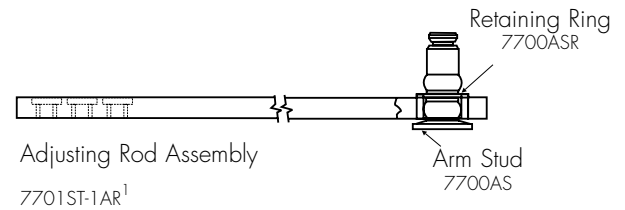
Adjusting Rod Assembly
7701ST-1AR¹

DOUBLE EGRESS ARM ASSEMBLY

7701PT-DE-1R (Right Hand)^{1,2}
7701PT-DE-1L (Left Hand)^{1,2}



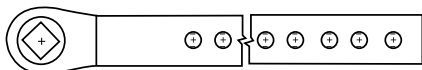
Arm Tube Assembly
7701ST-1ATR¹ (right hand)
7701ST-1ATL¹ (left hand)



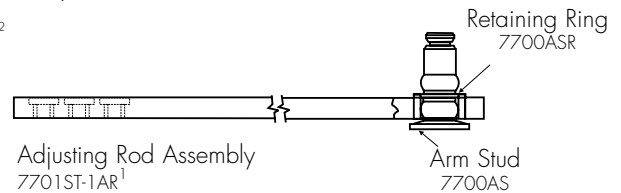
Adjusting Rod Assembly
7701ST-1AR¹

STP ARM ASSEMBLY
(POCKET DOORS ONLY)

7701STP-1A^{1,2}



Arm Tube Assembly
7701STP-1AT¹



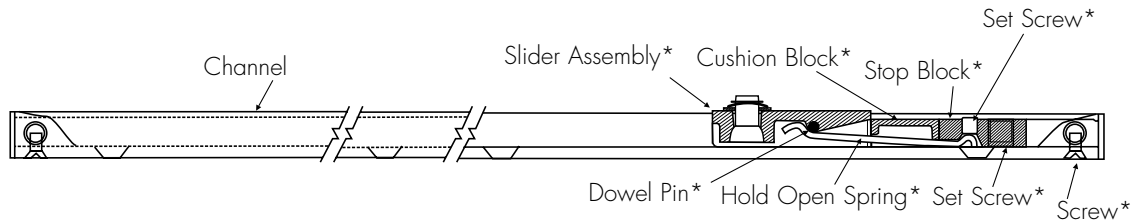
Adjusting Rod Assembly
7701ST-1AR¹

1 Includes arm length adjusting screw #7700ALAS
2 Includes arm tube & adjusting rod assembly

Note: Mounting hardware included with all parts orders.

TRACK ASSEMBLIES - SHALLOW DEPTH

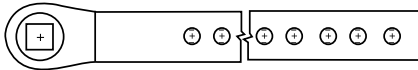
Track Assemblies	Part Number	
	Non-Hold Open	Hold Open
Pull-side mounted	7740ST-1T	7740ST-3T
Push-side mounted	7740ST-5T	7740ST-8T



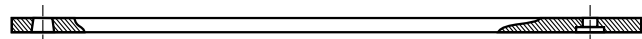
*Part of an Assembly Pack
NHO= 7740SLD
HO= 7740HSLD

ARM ASSEMBLY

7740ST-1A^{1, 2}



Arm Tube Assembly
7701ST-1AT²



Adjusting Rod Assembly
7740ST-1AR²

- 1 Includes arm length adjusting screw.
- 2 Includes arm tube & adjusting rod assembly.

Note: Mounting hardware included with all parts orders.

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton®, Unital®, Tri-Style®, NorGlide® and CloserPlus® are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. CloserPlus Spring™ and CloserPlus Ramp™ are trademarks of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2001-2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

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

43095-11/15R

2800ST SERIES

Cam Action Door Closer



Norton[®]
ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

INTRODUCTION

The 2800ST Series is a cam action door closer for slide arm and track applications. The cam action design is ideal, as it provides much greater efficiency than a rack and pinion door closer for slide track applications. The cam action provides much lower opening resistance while delivering optimum closing force and control. The door closer's wide range of adjustable closing power permits use in the most demanding situations. The efficiency and flat power curve comply with the opening force requirements of the Americans with Disabilities Act (ADA).

These door closers come standard with adjustable sweep speed and latch speed, closing control and adjustable backcheck cushioning in the opening cycle. The unobtrusive design is a good choice for architects and designers.

Applications:

- Hospitals
- Universities
- Office Buildings



TABLE OF CONTENTS

Introduction	2
Overview	3
Door Sizes	3
Certifications	3
Standard Applications	4
How to Order	5
Parts List	6
Accessories	7
Specifications	7

2800ST SERIES

CAM ACTION DOOR CLOSER

OVERVIEW

Features

- Smooth operation; efficient, powerful, heavy-duty
- Easier to open than rack-and-pinion door closers with track arms
- Slide track application with regular arm operating efficiency
- Slide track standard
- Adjustable spring size 1 through 6
- Non-handed
- Push or pull side installation
- Cast aluminum body
- Hold Open; specify H suffix
- Sleeve Nuts (optional)
- 10-year limited warranty

Functions



- Adjustable closing force
- Adjustable closing and latching speed
- Backcheck standard

DOOR SIZES

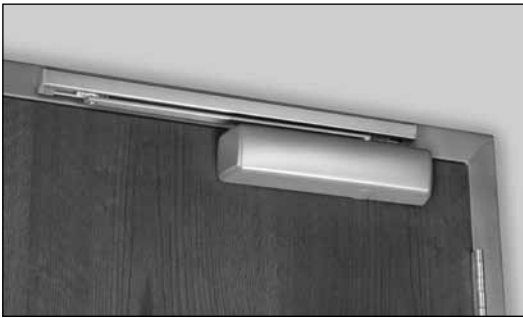
- Suitable for exterior and interior doors
- Recommended maximum interior door width 54" (137cm)
- Recommended maximum door weight 250 lbs.
- Standard opening range:
 - Push Side = 140°
 - Pull Side = 110°

Note: Door openings greater than 140° for push side and 110° for pull side can be achieved when an auxiliary door stop (by others) is used. Consult factory for details and templates.

CERTIFICATIONS

- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- Comply with requirements for the Americans with Disabilities Act (A.D.A) 

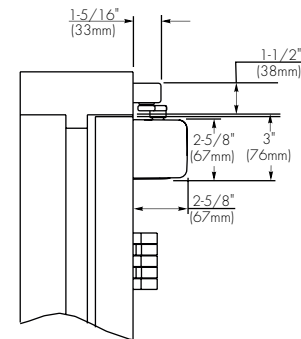
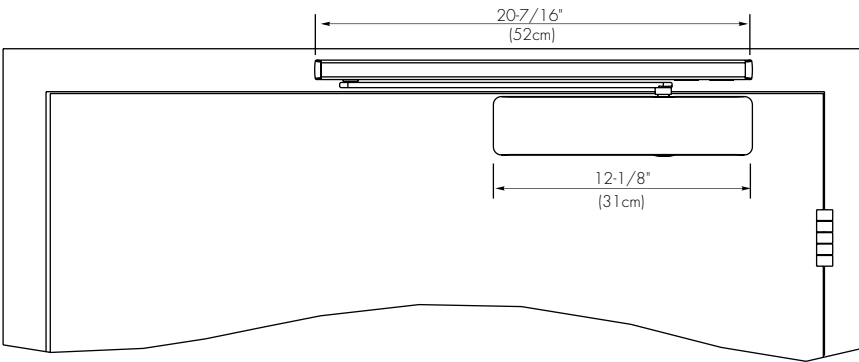
STANDARD APPLICATIONS



2800ST
HINGE (PULL) SIDE OF DOOR

- Maximum interior door width 54" (137cm).
- An auxiliary stop (by others) is suggested where severe conditions exist.
- 140° swing (trim permitting)

Note: Door openings to 160° can be achieved if an auxiliary door stop (by others) is installed to dead stop the door. Consult factory for details.



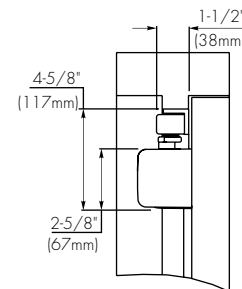
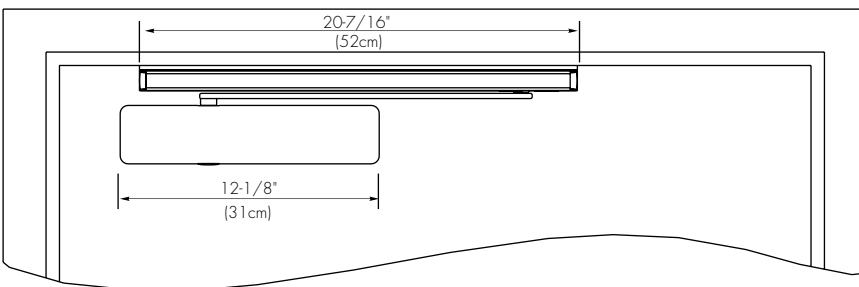
NOTE: Contact factory for use on doors exceeding 250 lbs.



PS2800ST
STOP (PUSH) SIDE OF DOOR

- Minimum frame reveal is 1-1/2" (13mm).
- An auxiliary door stop is suggested when severe conditions exist.
- 110° swing (trim permitting)

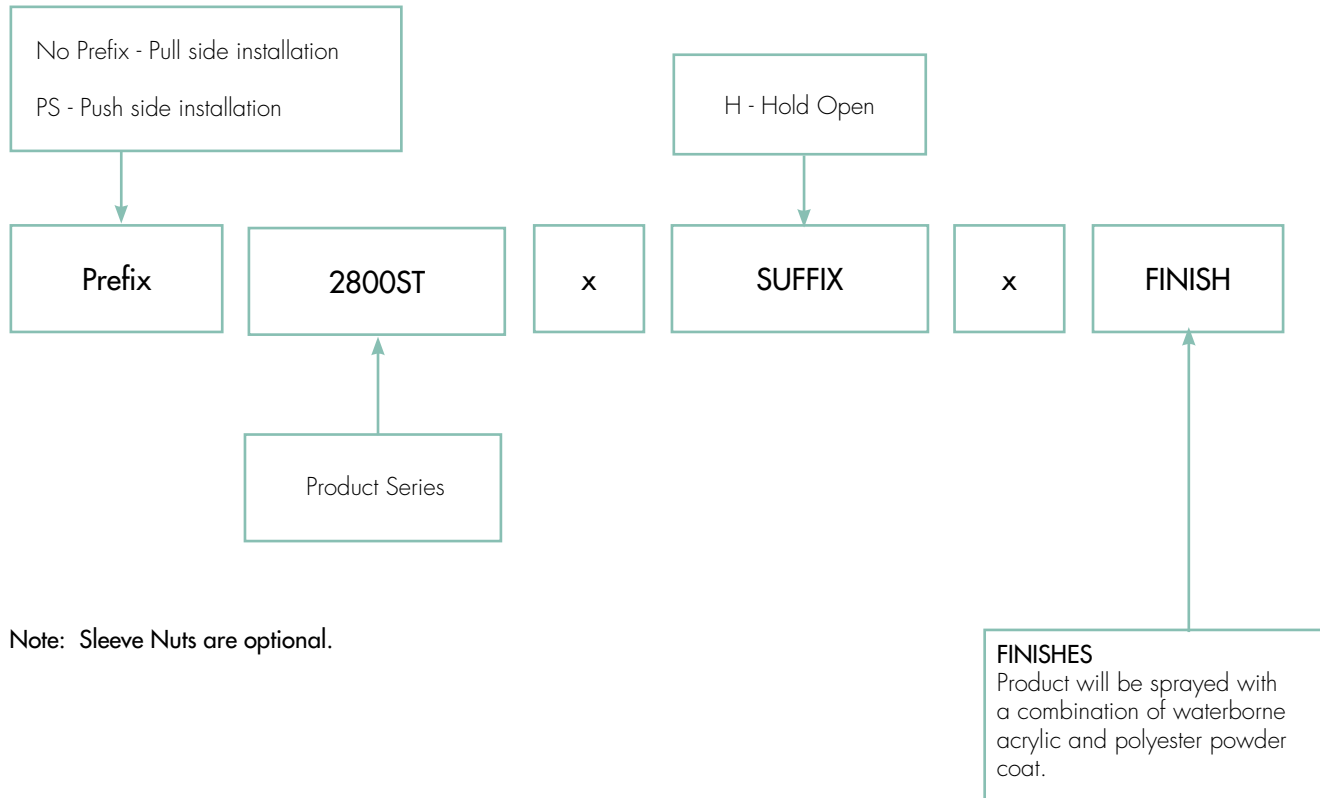
Note: Door openings up to 130° can be achieved if an auxiliary door stop (by others) is installed to dead stop the door. Consult factory for details.



NOTE: Contact factory for use on doors exceeding 250 lbs.

2800ST SERIES CAM ACTION DOOR CLOSER

HOW TO ORDER



Note: Sleeve Nuts are optional.

FINISHES
Product will be sprayed with a combination of waterborne acrylic and polyester powder coat.

Description	Specify Designation (BHMA)	Complements the following finishes	Old Designation
Aluminum	689	628, 625, 629, 630, 651, 652	AL
Statuary Bronze	690	640, 613	STAT
Dull Bronze	691	612, 637, 639	DB
Black	693	315	315
Medium Amber	694	312	312
Gold	696	605, 606, 632, 633	GB
Prime Coat	600*		SRI

*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: 2800ST x 600 x 689).

PARTS LIST

Part #	Description
2800LAP	Closer Body Only
28ST-1T	Pull Side Track and Arm Assembly, Non-Hold Open
28ST-3T	Pull Side Track and Arm Assembly, Hold Open
28ST-5T	Push Side Track and Arm Assembly, Non-Hold Open
28ST-8T	Push Side Track and Arm Assembly, Hold Open
2800P	Plastic Cover
28STPB	Stop Mount Track Angle Bracket
2888	Push Side Drop Plate
SP2800B	Closer Screw Pack
SP2800S	Spline Screw Pack
SP28T	Track Screw Pack
SN-134	Sleeve Nut Package: 1-3/4" Door Thickness
SN-214	Sleeve Nut Package: 2-1/4" Door Thickness



2800ST SERIES

CAM ACTION DOOR CLOSER

ACCESSORIES

Narrow Top Rail - #2888 Drop Plate: For use where the narrow top rail of the door prevents the closer from being mounted directly to the door surface. This drop plate must be used for closer mounted on a top rail between 1-7/8" and 3-3/8" (48 and 86mm) in height.



ARCHITECTURAL SPECIFICATIONS

General Specifications

Door Controls____ (interior) (exterior) swinging door(s) shall be cam and roller design contained within a precision cast aluminum housing. Door closing force shall be adjustable to ensure adequate closing control. Door closing speed shall be controlled by independent hydraulic adjustment valves in the sweep and latch range of the closing cycle. Door closer shall have an adjustable hydraulic backcheck valve to cushion the door speed if door is opened violently. Maximum door open shall be templated to (85°), (90°), (100°), (110°), conditions permitting. Door closer shall have hold open capability with an on/off selector and tension adjustment. Non-hold open units shall be U.L. Listed for self-closing door. Unit shall be in compliance with the requirements of the Americans With Disabilities Act (ADA). ANSI standards A117.1. Units shall meet C-UL US.

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton® is a registered trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2012, 2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

210 SERIES

Door Closer



Norton[®]
ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

INTRODUCTION

The 210 Series door closer, is ideal for stocking distributors serving high volume after-market and storefront segments. The 210 features an adjustable spring, tri-packed, non-hold open arms and independent and separate latch, sweep and backcheck intensity valves. Featuring easy installation and maintenance and dependable control, the 210 is perfect for office doors, utility doors and strip mall applications.



FEATURES

- Adjustable spring size 1 through 6
- Non-handed
- Cast aluminum body
- Rack-and-pinion design
- Independent latch sweep and backcheck intensity valves
- Full plastic cover
- Non-hold open, hold open and heavy-duty arms
- Closer footprint: 3/4" x 12"
- Cover dimensions: 2-15/16" high x 2-1/8" deep x 13-1/16" long
- Available in 689 (aluminum) or 690 (dark bronze) finishes
- Sex nuts (SN-134) included
- 10 year limited warranty

COMPLIANCE STANDARDS

- ANSI/BHMA A156.4, Grade 1
- UL / cUL listed for use on fire rated doors
- UL10C listed for positive pressure fire test
- Meets requirements for Americans with Disabilities Act (ADA) and ANSI/BHMA A117.1

HOW TO ORDER

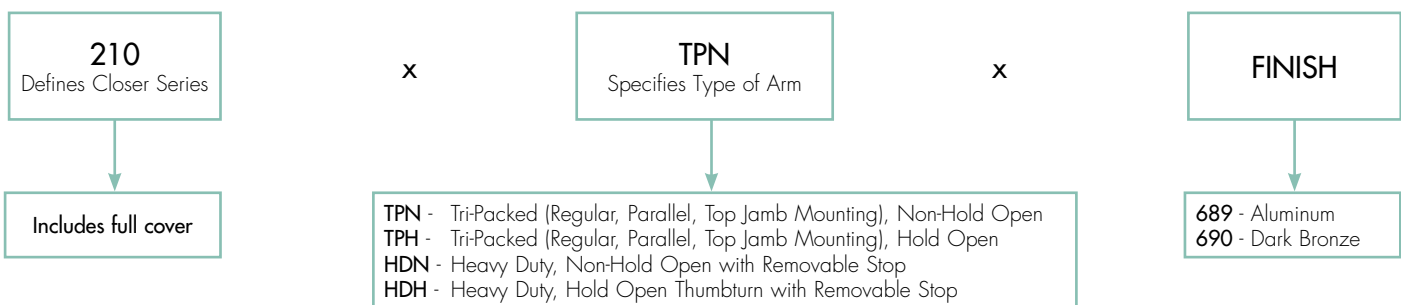
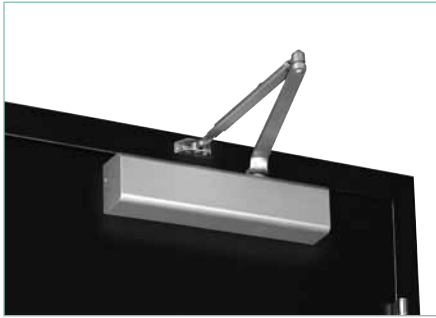


TABLE OF CONTENTS

Features, Compliance Standards, How To Order 2

Applications 3

APPLICATIONS



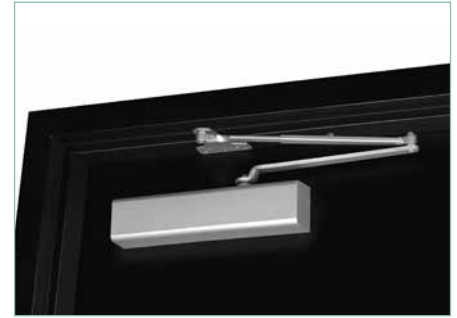
TPN arm shown (regular mounting)

- Pull-side application
- Closer mounted on the door



TPN arm shown (top jamb mounting)

- Push-side application
- Closer mounted on the frame
- Minimum top rail = 2-1/4" (57mm)
- Maximum frame reveal = 2-3/4" (70mm)

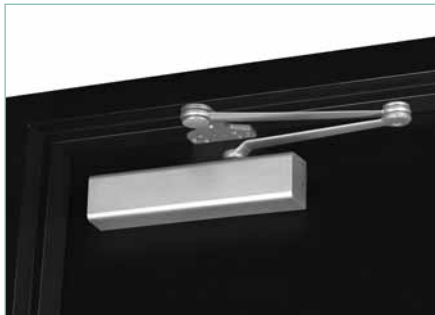


TPN arm shown (parallel mounting)

- Push-side application
- Closer mounted on the door



HDH arm (with stop) shown



HDN arm (without stop) shown

Heavy-Duty Arms

- Push-side application
- Stop is removable

NOTE: Arms are not interchangeable with Norton's premium line of closers

ACCESSORIES

Part Number	Description
210P	Full Plastic Cover
SP210	Screw Pack for TPN Arm

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoortcontrols.com
www.assaabloy.ca

Norton[®] is a registered trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2012-2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

160 SERIES

Door Closer



Norton[®]

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

INTRODUCTION

The 160 Series door closer, is ideal for stocking distributors serving high volume after-market and storefront segments. The 160 features an adjustable spring, tri-packed, non-hold open arms and independent and separate latch, sweep and backcheck intensity valves. Featuring easy installation and maintenance and dependable control, the 160 is perfect for office doors, utility doors and strip mall applications.



FEATURES

- Two models:
 161BF: adjustable spring size 1 through 4
 164: size 4 spring
- Non-handed
- Cast aluminum body
- Rack-and-pinion design
- Independent latch sweep and backcheck intensity valves
- Non-hold open arms: 161BF, 164
- Hold open arms: 161BF only
- Closer footprint: 3/4" x 9-1/16"
- Closer projection: 2-5/8"
- Available in 689 (aluminum) or 690 (dark bronze) finishes
- Sex nuts (SN-134) included
- Optional cover

COMPLIANCE STANDARDS

- ANSI/BHMA A156.4, Grade 1
- UL / cUL listed for use on fire rated doors
- UL10C listed for positive pressure fire test
- Meets requirements for for Americans with Disabilities Act (ADA) and ANSI/BHMA A117.1
- 5-year limited warranty

HOW TO ORDER

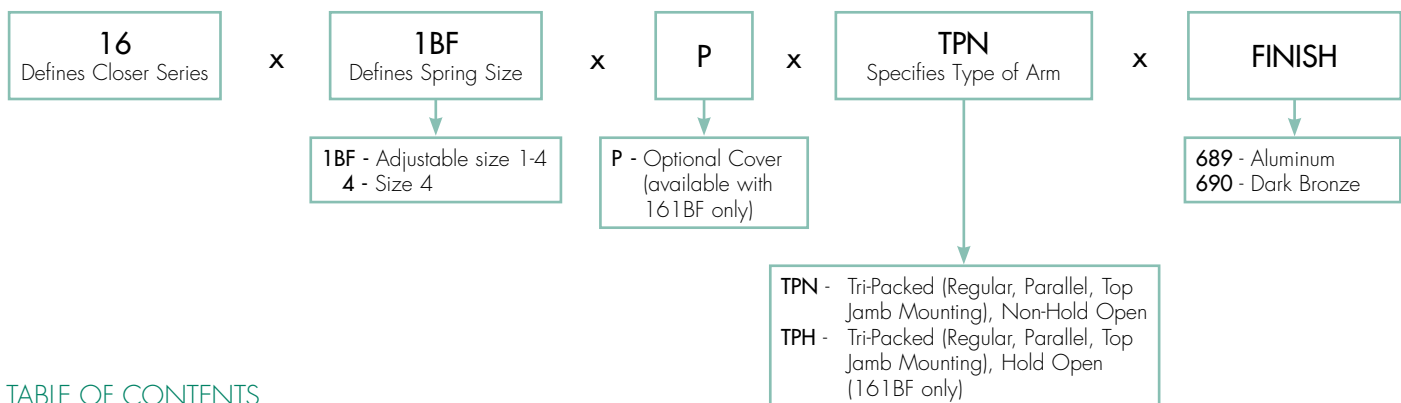
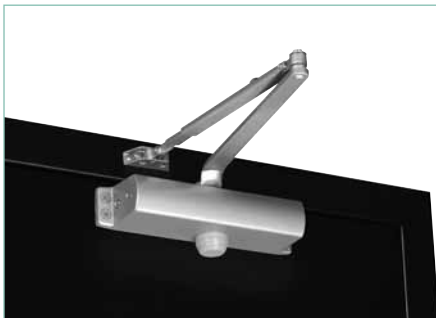


TABLE OF CONTENTS

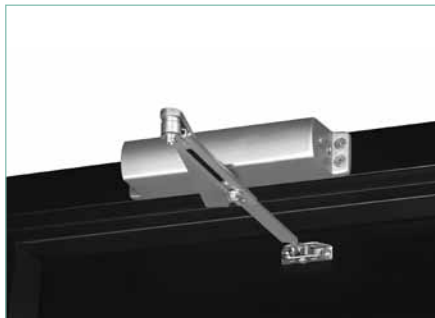
Features, Compliance Standards, How To Order 2
 Applications 3

APPLICATIONS



TPN arm shown (regular mounting)

- Pull-side application
- Closer mounted on the door



TPN arm shown (top jamb mounting)

- Push-side application
- Closer mounted on the frame
- Minimum top rail = 2-1/4" (57mm)
- Maximum frame reveal = 2-3/4" (70mm)



TPN arm shown (parallel mounting)

- Push-side application
- Closer mounted on the door

Parts List

Part #	Description
160P	Cover*

* Specify finish when ordering. Only available with Model 161BF Closer



161BFP shown with cover.

NOTE: Arms are not interchangeable with Norton's premium line of closers

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and
applications please visit our web site.
www.nortondoortcontrols.com
www.assaabloy.ca

Norton[®] is a registered trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2012-2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.

9500 SERIES

Cast Iron Door Closer



Norton[®]

ASSA ABLOY

ASSA ABLOY, the global leader
in door opening solutions

INTRODUCTION

Ideal for high use openings, the Norton 9500 Series Cast Iron door closer offers the durability, flexibility and strength required to meet the needs of your facility. For interior or exterior doors, this ANSI/BHMA Grade 1 closer features a clean, modern cover aesthetic and durable cast iron body that can be used in a variety of institutional environments requiring ADA compliance.



FEATURES

- Cast iron closer body
- Clean, modern cover design featuring Norton branding
- Non-handed
- Rack-and-pinion design
- Staked valves
- 2-1/4" (57mm) projection
- 1-1/2" (38mm) diameter piston
- 5/8" (16mm) diameter pinion journals
- Closer mounting plate for easy installation
- Tri-style® packaging: packed for regular, top jamb or parallel arm mounting
- Adjustable spring sizes 1-6
- Molded ABS plastic cover
- All standard arm applications allow doors to swing 180°, conditions permitting
- Heavy-duty arms: Regular Rigid, Parallel Rigid, CloserPlus®, Parallel Rigid Offset and Unitrol®
- Slide Tracks: push or pull side mounting
- Metal covers (optional)
- 25 year limited warranty
- Exceeds 25 million cycles (witnessed and verified by U.L.)

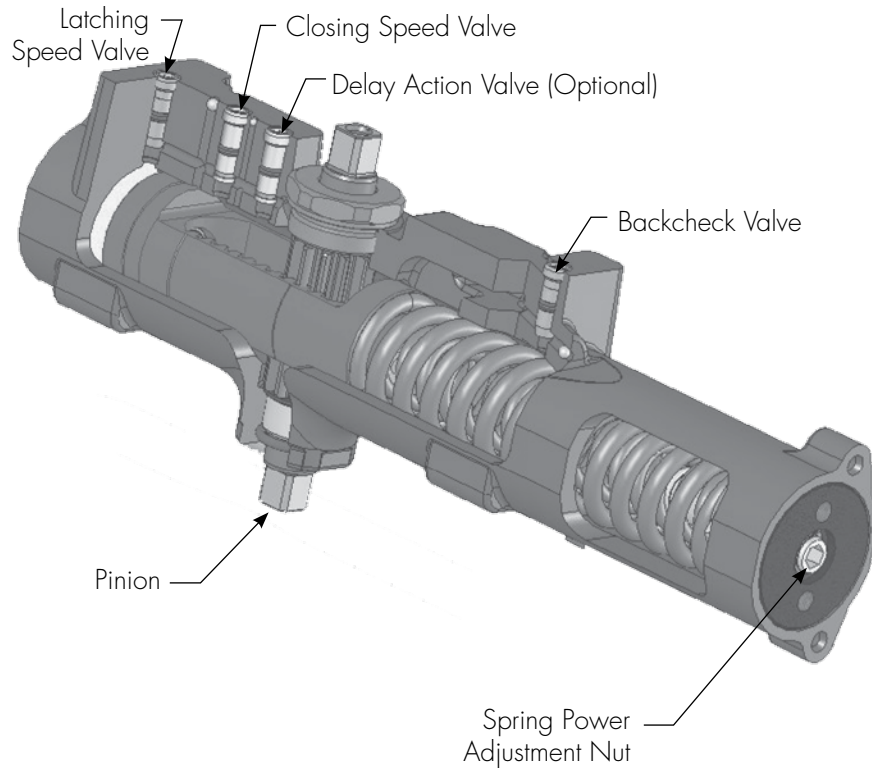
FUNCTIONS

- Standard, separate and independent, latch, sweep and backcheck intensity valves
- Pressure relief valves for both opening and closing cycles protect the door and frame from damage and reduces maintenance costs
- Delayed Action (optional)

TABLE OF CONTENTS

Overview	3
Certifications	3
How to Order	4
Fasteners	5
Finishes	5
Suggested Specifications	6
Technical Details	7-13
Arm & Track Options	14-17
Accessories	18-20
Parts List	21

OVERVIEW



CERTIFICATIONS

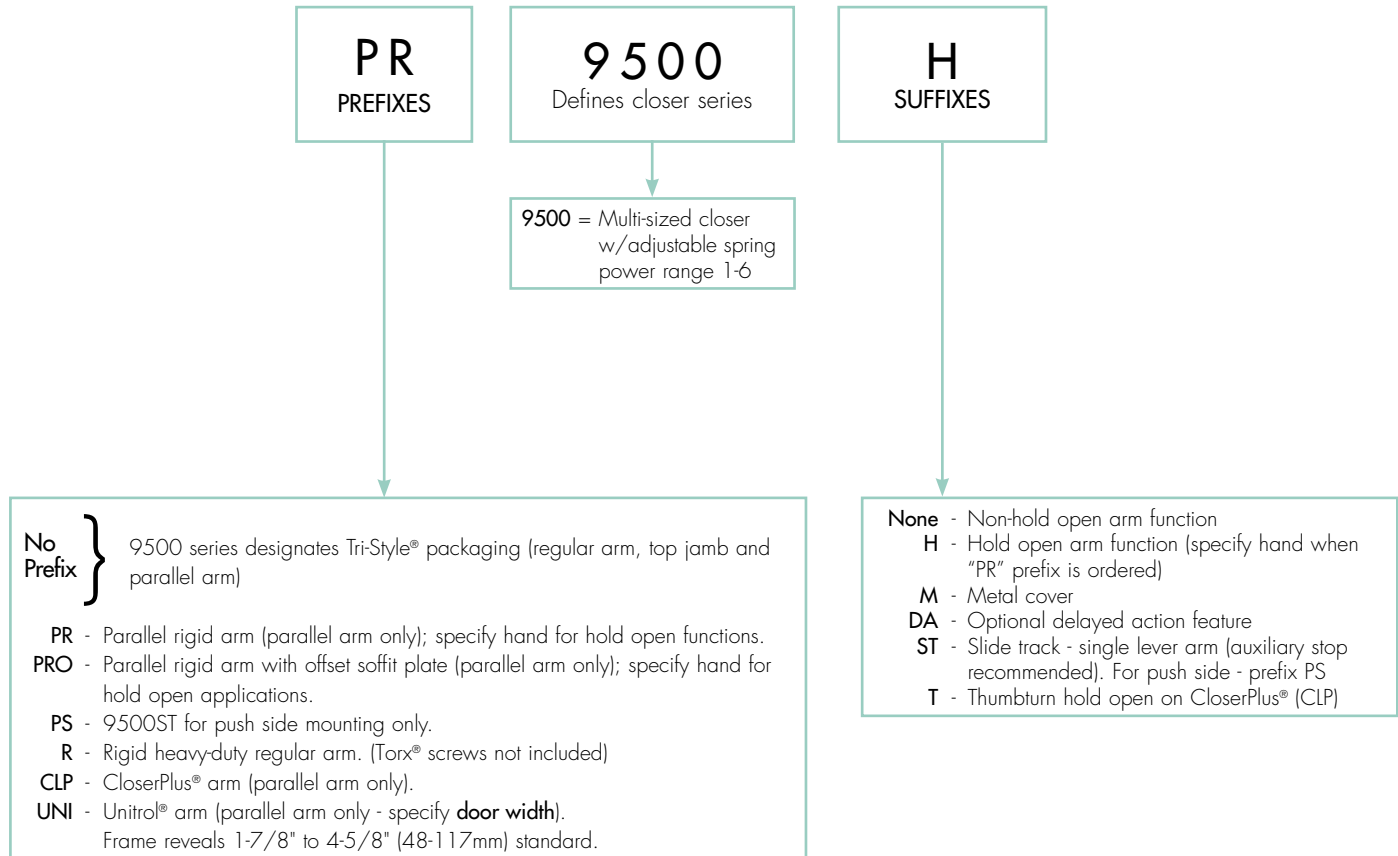
- ANSI/BHMA A156.4, Grade 1 certified 
- UL / cUL listed for use on fire rated doors 
- UL10C listed for positive pressure fire test
- Comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 
- This product is manufactured in an ISO 9001 facility

CAUTION: Door Closers for Low Opening Force Applications:

Door closers installed in openings required to meet the requirements of the Americans with Disabilities Act or ANSI/BHMA Standard A117.1, when adjusted to meet those requirements, may not provide adequate closing power to dependably close and latch the door.

HOW TO ORDER

NOTE: For optimum protection of door and frame assemblies, always use auxiliary wall, floor, or overhead door stop.



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 provided 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 Norton's standard product.

9500 SERIES

CAST IRON DOOR CLOSER

FASTENERS

Self drilling screws (for properly reinforced wood and metal doors) are supplied standard.

Sleeve nuts and bolts (SNB) are supplied standard with Parallel Rigid, CloserPlus® and Unitrol® arms and Slide Track (push and pull) closers. SNB's are optional for Tri-Style® packed closers (Regular, Top Jamb and Parallel arms).

Torx® machine screws are optional for all 9500 series.

FINISHES

Norton offers waterborne acrylic, polyester powder coat and plated finishes. Custom finishes are available on special order. A sample and approval is required.

Waterborne acrylic and polyester powder coat will withstand 100 hours of salt spray (ANSI requires 25 hours).

ANSI/BHMA	Description
600*	Prime Coat
605	Bright Brass
606	Satin Brass
611	Bright Bronze
612	Satin Bronze
613E	Dark Oxidized Satin Bronze - Equivalent
619	Satin Nickel
625	Bright Chrome
626	Satin Chrome
689	Aluminum
690	Statuary Bronze
691	Dull Bronze
693	Black
694	Medium Amber
696	Gold
N/A	556 White

- * 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.
- Norton closer bodies and plastic covers are available in waterborne acrylic finishes. Arms and metal covers are available in powder coat or plated finishes.
- When a plated finish is ordered, arm and cover will be plated unless "cover only" is specified.

SUGGESTED SPECIFICATIONS

Door closers shall be of full rack and pinion construction with a cold headed heat-treated steel spindle and a forged steel piston precision machined and heat treated. The case shall be of cast iron. All closers for both interior and exterior doors shall be the product of one manufacturer.

Surface closers shall be adjustable to provide sizes 1 through 6 and comply with ADA. All sizes shall be accommodated in one closer body.

Closing shall be controlled by two valves — one to control closing speed and one to control latching speed. Valves shall be concealed against unauthorized adjustment and be non-critical with "O" ring seals. Delayed action shall be available and shall be accomplished with a separate valve.

All arms shall be finely finished with heavy duty forged steel main arm. All closers shall be suitable for regular arm, top jamb, and parallel arm mounting and track type applications when provided with proper brackets and arms. Hold open and heavy duty arms are available. Closers mounted regular arm, top jamb and parallel arm shall allow for full 180° door opening, trim permitting.

Closers shall be available with an adjustable backcheck intensity valve with a safety feature that automatically relieves internal pressure when backcheck has reached the desired adjustment level. Valves shall be accessible without removing the closer from the door.

Closers shall be available with a backcheck intensity valve. Backcheck begins at approximately 70° of door opening for all applications. This valve shall be operative on regular, top jamb, parallel arm, and track type mountings.

Closer covers shall be non-handed to meet a variety of door conditions and design requirements. Closer covers shall be of high impact plastic material of flame retardant grade, secured by machine screws. Projection of the closer body from the door shall not exceed 2-1/4". Closers shall be capable of mounting on 1-3/4" top rail or inverted mounting on 1-3/4" top jamb. Metal covers shall be available. All closers with metal covers shall be available in architectural finishes to match corresponding door hardware

Closers without hold open shall be regularly furnished with power adjustment arm bracket capable of providing a 15% power adjustment.

A mounting bracket to attach the closer shall be regularly furnished.

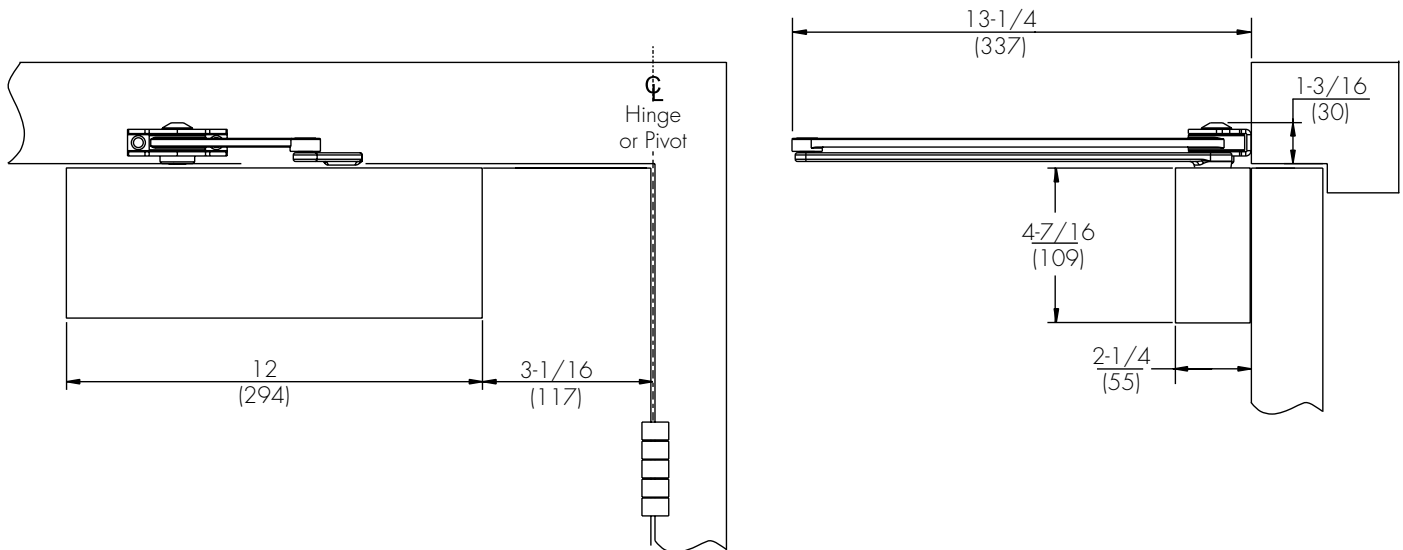
Hydraulic fluid shall be of a type requiring no seasonal valve readjustment due to extreme temperature variations.

Closer shall have a 25-year limited warranty.

Closers with non-hold open arms shall be listed by Underwriters Laboratories.

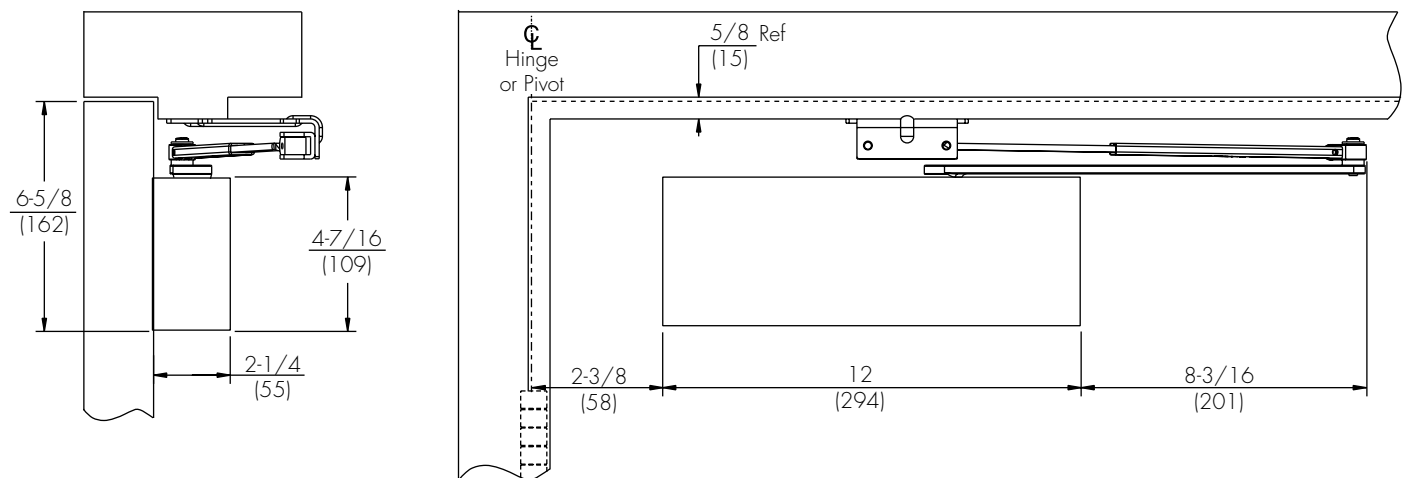
9500 SERIES CAST IRON DOOR CLOSER

TECHNICAL DETAILS - REGULAR ARM



Arm Function	Minimum Header	Minimum Top Rail	Maximum Door Swing
Non-Hold Open	1-1/2" (38)	3" (76)	180° (trim permitting)
Hold Open	1-11-16" (43)		90°-180°

TECHNICAL DETAILS - PARALLEL ARM

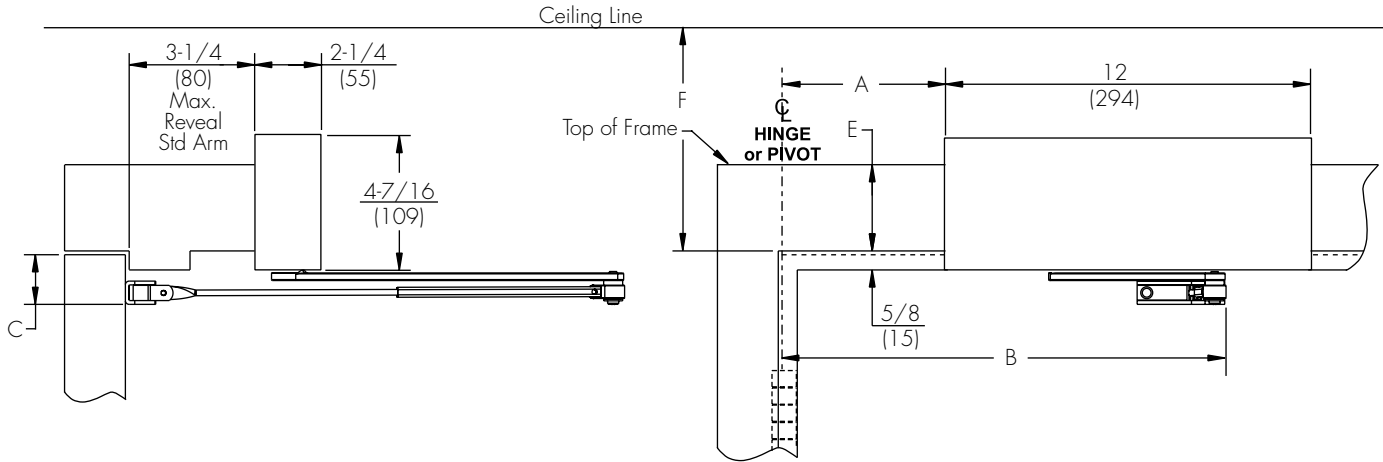


Arm Function	Minimum Top Rail
Non-Hold Open	5-1/4" (133)
Hold Open	

Notes:

- Mounting holes for mounting bracket are spaced 1" (25mm) x 10" (254mm).
- Closers are tri-packed for regular arm, parallel arm and top jamb mounting. Parallel arm bracket is included.
- Consult factory if door weight exceeds 250lbs.

TECHNICAL DETAILS - TOP JAMB



Maximum Opening	A	B	Hinge Condition
110°	7" (172)	16-1/16" (394)	Butts, Offset Pivots, and Swing Clear Hinges
140°	5-1/2" (135)	14-5/16" (351)	
180°	4" (98)	13-1/16" (320)	
140°	5-1/2" (135)	14-7/16" (354)	^Center Hung

Header Width	C Minimum Top Rail	E Header	F Ceiling Clearance
Standard	1-7/8" (48)	2-1/8" (54)	4" (102)
Narrow	2-1/4" (57)	2" (49)	3-5/8" (92)

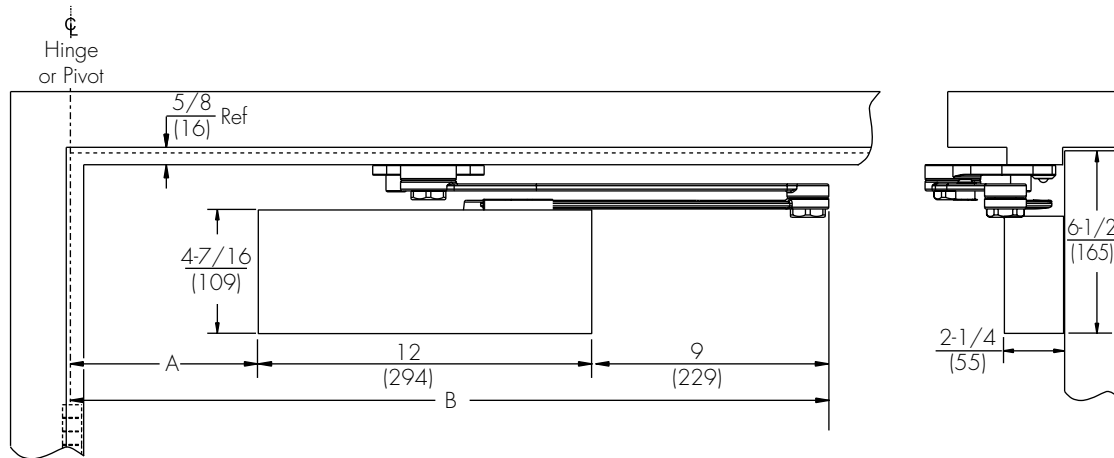
Dimensions "A" and "B" are taken from centerline of hinge as shown and apply to pivot point of swing clear hinges. Offset and center hung pivots.
^Must be singleacting door.

Notes:

- Mounting holes for mounting bracket are spaced 1" (25mm) x 10" (254mm).
- Closers are tri-packed for regular arm, parallel arm and top jamb mounting. Parallel arm bracket is included.
- Consult factory if door weight exceeds 250lbs.

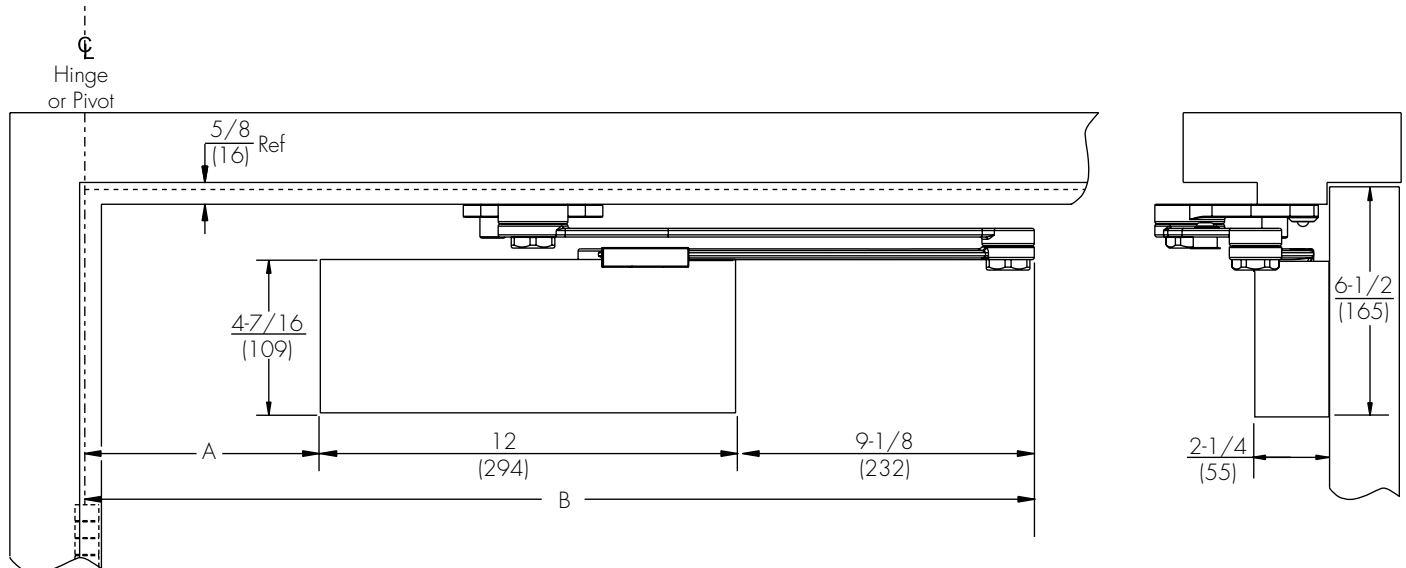
9500 SERIES CAST IRON DOOR CLOSER

TECHNICAL DETAILS - PARALLEL RIGID ARM



Maximum Opening	A	B	Minimum Top Rail
90°	6-7/8" (175)	27-7/8" (708)	5" (127)
180°	2-7/8" (73)	23-7/8" (606)	

TECHNICAL DETAILS - PARALLEL RIGID, FRICTION HOLD OPEN ARM

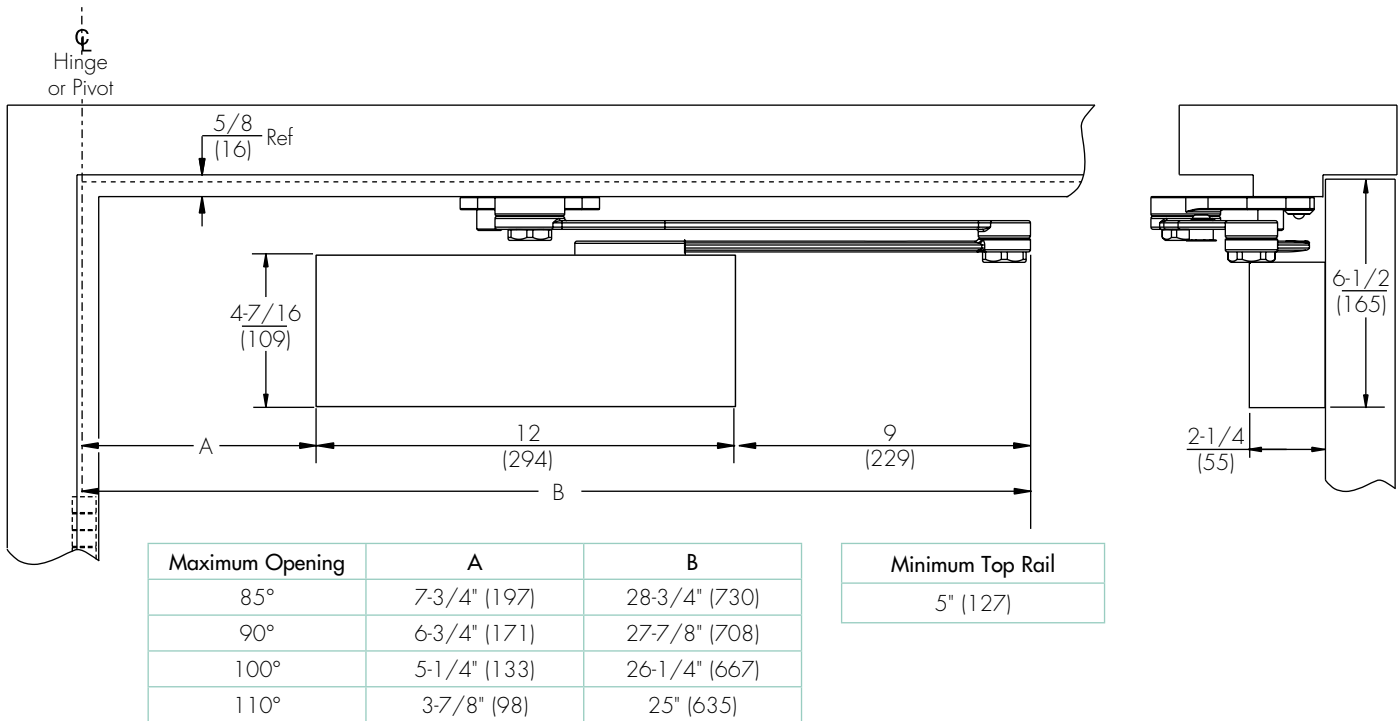


Maximum Opening	A	B	Minimum Top Rail
90°	6-1/2" (165)	27-5/8" (702)	5" (127)
180°	2-1/2" (64)	23-5/8" (600)	

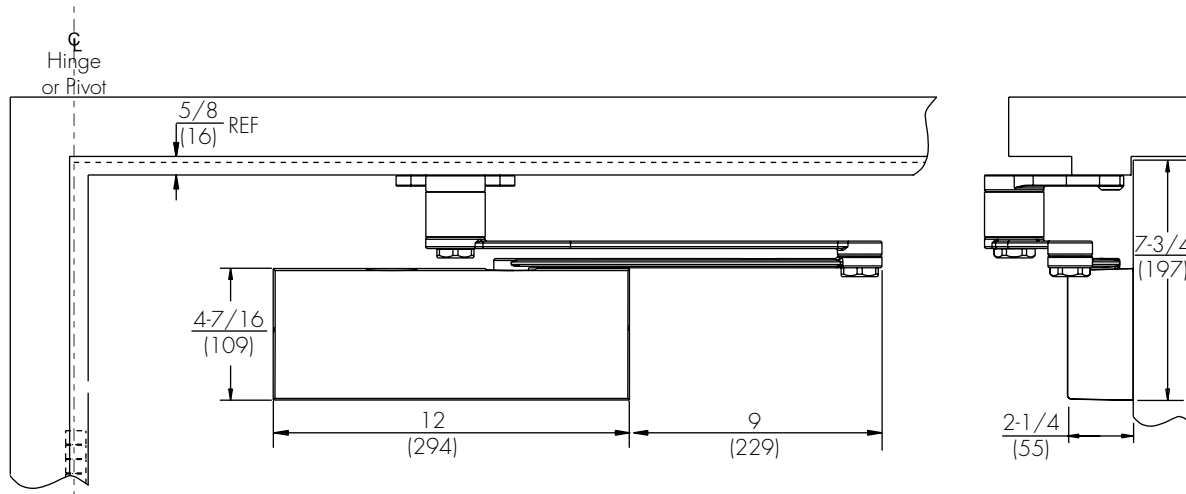
Notes:

- Mounting holes for mounting bracket are spaced 1" (25mm) x 10" (254mm).
- Consult factory if door weight exceeds 250lbs.

TECHNICAL DETAILS - CLOSERPLUS® ARM



TECHNICAL DETAILS - PARALLEL RIGID OFFSET ARM

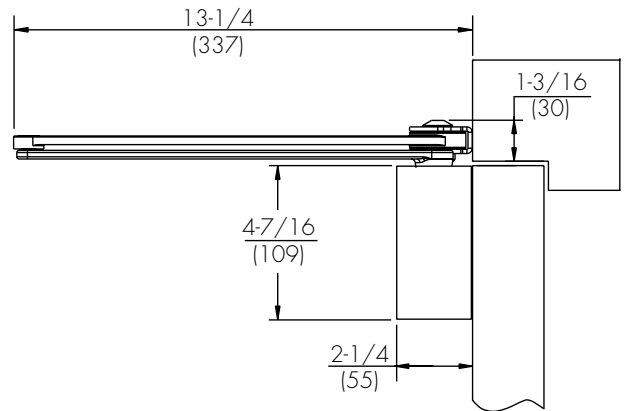
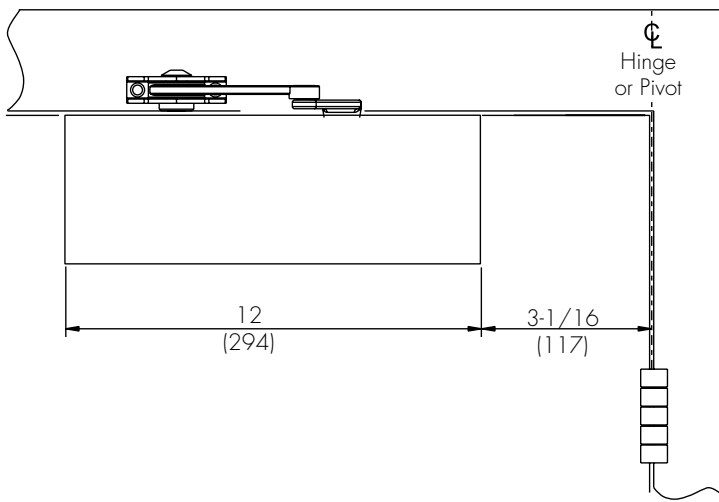


Minimum Top Rail of Door with 5/8" (16mm) Frame Stop	
Without 9500-1/2SP Spacer	With 9500-1/2SP Spacer
6-7/8" (175)	7-3/8" (187)

- Notes:**
- Mounting holes for mounting bracket are spaced 1" (25mm) x 10" (254mm).
 - Consult factory if door weight exceeds 250lbs.

9500 SERIES CAST IRON DOOR CLOSER

TECHNICAL DETAILS - REGULAR RIGID ARM

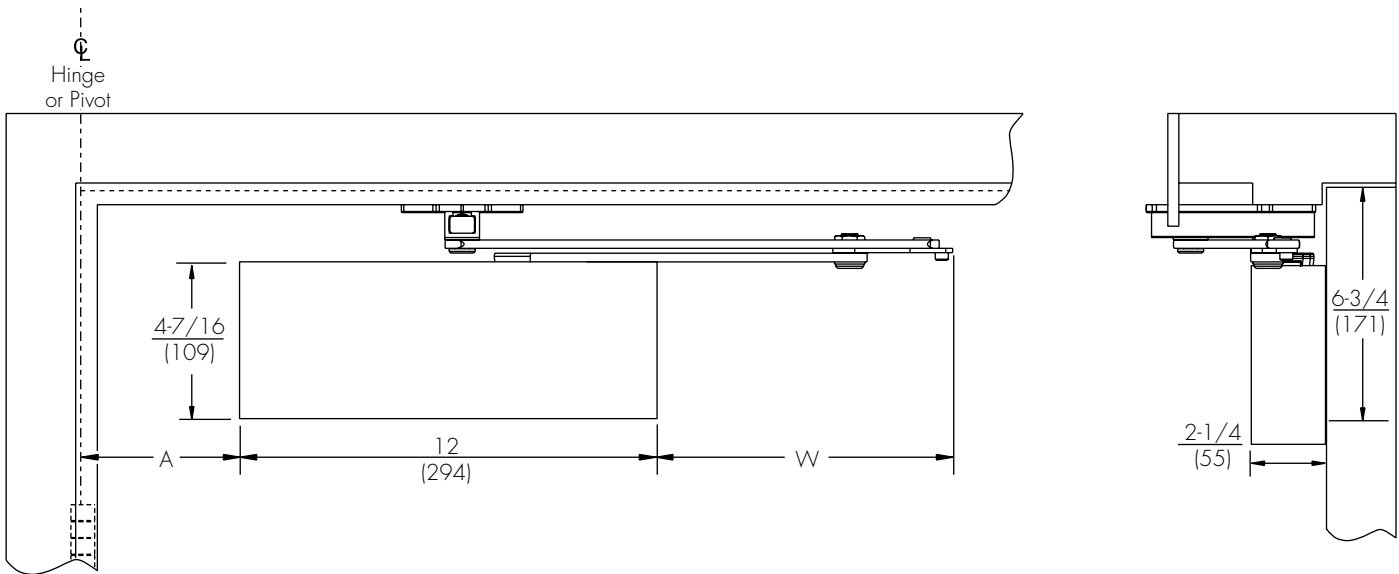


Minimum Header	Minimum Top Rail
1-5/8" (41)	3" (76)

Notes:

- Mounting holes for mounting bracket are spaced 1" (25mm) x 10" (254mm).
- Consult factory if door weight exceeds 250lbs.

TECHNICAL DETAILS - UNITROL® PARALLEL ARM



Opening		Doors 28" - 32"		Doors 33" - 41"		Doors 42" - 48"	
Hold Open	Dead Stop	A	W	A	W	A	W
85°	90°	4-3/4" (121)	8-1/2" (216)	5-3/8" (137)	10" (254)	5-7/8" (149)	11-3/8" (289)
90°	95°	4-1/4" (108)		4-7/8" (124)		5-3/8" (137)	
95°	100°	3-3/4" (95)		4-3/8" (111)		4-7/8" (124)	
100°	105°	3-3/8" (86)		3-7/8" (98)		4-3/8" (111)	
105°	110°	3" (76)		3-1/2" (89)		4" (102)	
110°	115°	2-3/4" (70)		3-1/4" (82)		3-5/8" (92)	

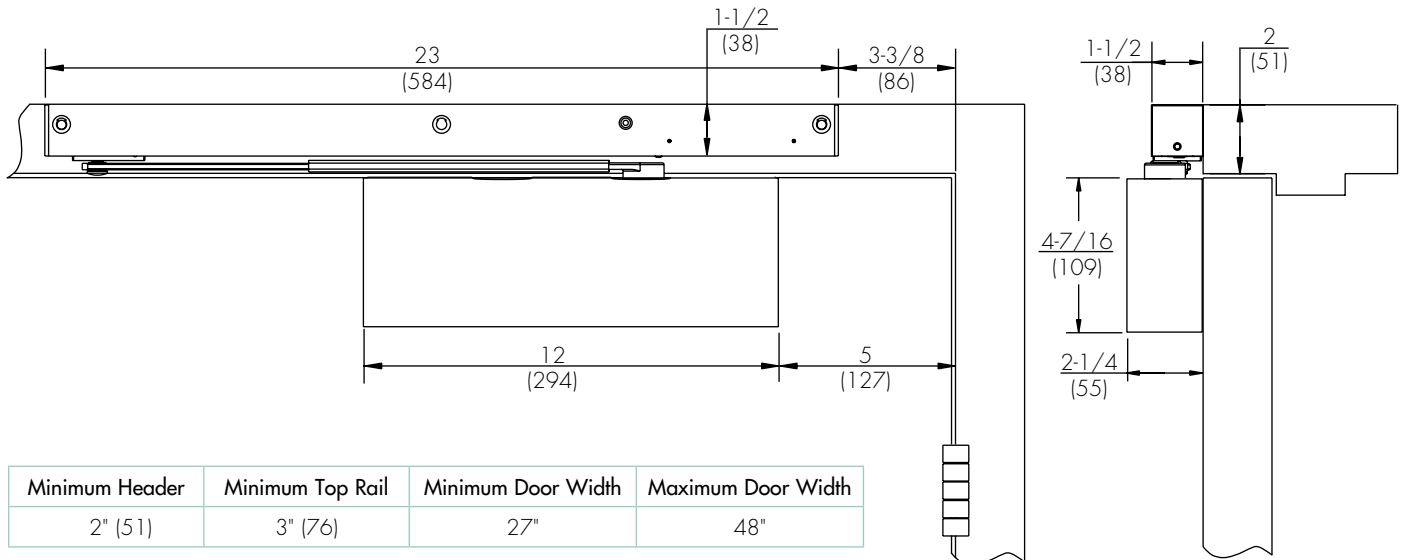
Minimum Top Rail
5" (127)

Notes:

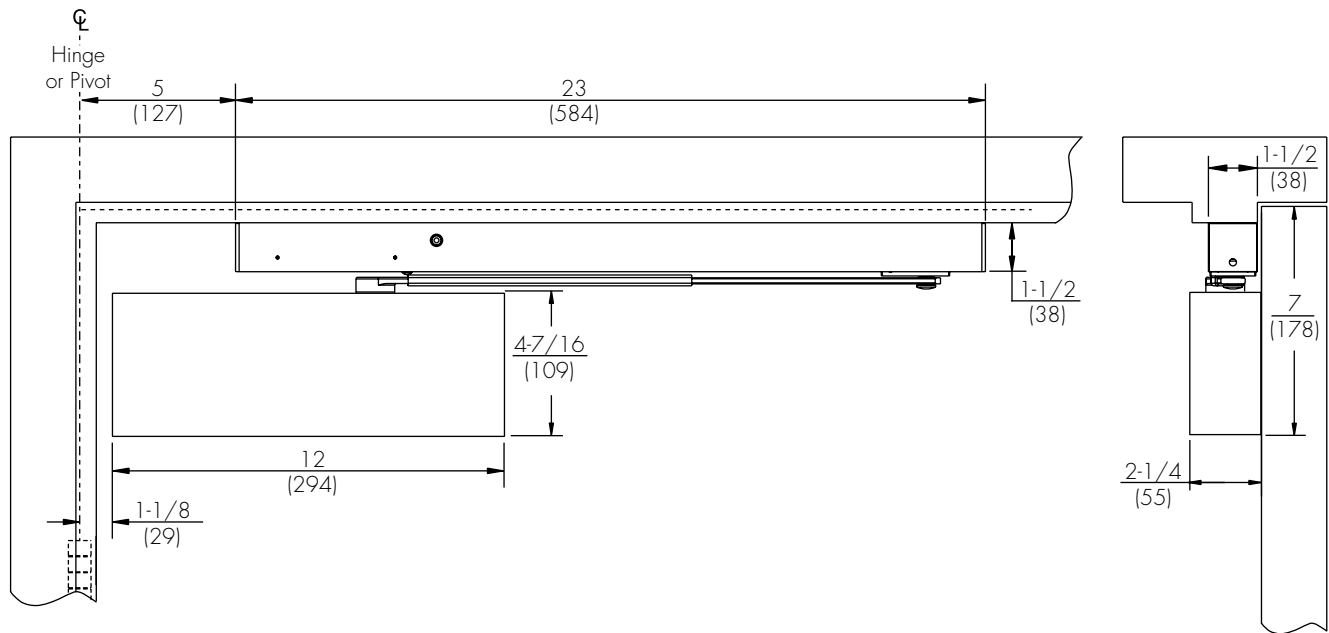
- Mounting holes for mounting bracket are spaced 1" (25mm) x 10" (254mm).
- Consult factory if door weight exceeds 250lbs.

9500 SERIES CAST IRON DOOR CLOSER

TECHNICAL DETAILS - PULL SIDE MOUNTING



TECHNICAL DETAILS - PUSH SIDE MOUNTING



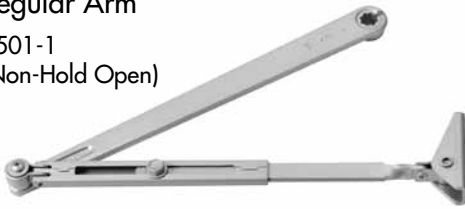
Notes:

- Mounting holes for mounting bracket are spaced 1" (25mm) x 10" (254mm).
- Consult factory if door weight exceeds 250lbs.

ARM OPTIONS

Regular Arm

9501-1
 (Non-Hold Open)



9501-3
 (Hold Open*)

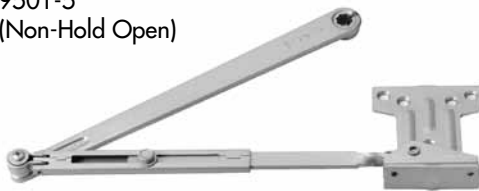


- Used with Regular Arm mounting (pull side) and Top Jamb mounting (push side)
- Available in painted or plated finishes

	Part Number	Description
Non-Hold Open	9501-1W	Main arm & tube assembly
	9501-11	Rod & shoe assembly
	9500-HS	Hex screw package
Hold Open	9501-3W	Main arm & rod assembly
	9501-13	Hold open bracket assembly

Parallel Arm

9501-5
 (Non-Hold Open)



9501-8
 (Hold Open*)



- Mounted on push side
- Non-hold open arm – combines regular arm with parallel arm mounting bracket
- Hold open arm – combines regular hold open arm with parallel arm mounting bracket
- Available in painted or plated finishes

Top Jamb (Deep Reveal)



- Accommodates top jamb mounting for reveals from 3-3/8" (86mm) up to 7-1/4" (184mm), depending on door and frame conditions
- Mounted on push side
- Available in painted or plated finishes

	Part Number	Description
Non-Hold Open	9501-1B	Arm Assembly
	9501-2W	Main arm & arm tube assy
	9501-11B	Rod & shoe assembly
Hold Open	9501-3B	Arm Assembly
	9501-3WB	Main arm & rod assy
	9501-13	Hold open bracket assy

Specify finish when ordering arms. *Not allowed by code on fire doors.

ARM OPTIONS

Parallel Rigid Arm

PR9501-5
(Non-Hold Open)



- Recommended for high-use, high-abuse environments
- Tamper-resistant, solid forged steel riveted arm
- Mounted on push side
- Not available in plated finishes

Parallel Rigid - Friction Hold Open Arm*



- Recommended for high-use, high-abuse environment
- Requires auxiliary stop
- Allows door to swing 180°, conditions permitting
- Handed
- Mounted on push side
- Not available in plated finishes

Arm Assemblies	Handing
PR9501-8R	Right Hand
PR9501-8L	Left Hand

CloserPlus[®] Arm

9770-5
(Non-Hold Open)



9870T-8
(Hold Open)*



- Recommended for high-use, high-abuse environments
- Tamper-resistant, solid forged steel riveted arm (mounted on push side)
- Field-reversible steel lug restricts degree of opening to protect door, wall and hardware
- Requires both backcheck valves on closer
- Shipped standard as left hand. Handing can be reversed in the field
- Not available in plated finishes

Specify finish when ordering arms. *Not allowed by code on fire doors.

ARM OPTIONS

Parallel Rigid Offset Arm



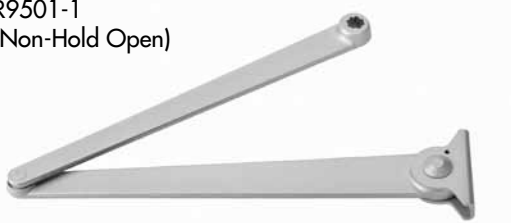
Arm Assemblies	Arm Function
PRO9501-5	Non-Hold Open
PRO9501-8R	Hold Open, Right Hand
PRO9501-8L	Hold Open, Left Hand

- Recommended for high-use, high-abuse environments
- Provides additional vertical clearance
- Mounted on push side
- Not available in plated finishes

Standard Clearance	Blade Spacer Part Number	Total Clearance
1-3/4"	9500-1/2SP	2-1/4"
	9500-5/8SP	2-3/8"

Regular Rigid Arm

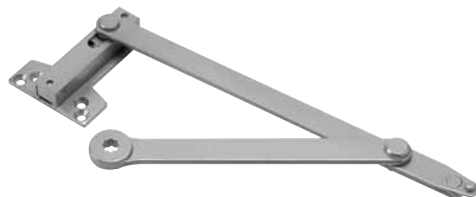
R9501-1
 (Non-Hold Open)



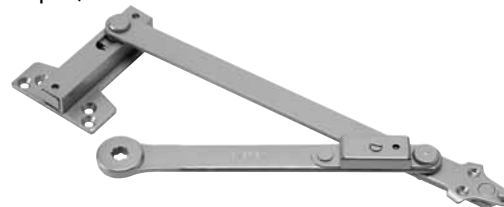
- Recommended for high-use, high-abuse environments
- Tamper-resistant, solid forged steel riveted arm
- Mounted on pull side
- Not available in plated finishes

Unitrol® Parallel Arm

(Non-Hold Open)



(Hold Open)



- Recommended for high-use, high-abuse environments
- Integrates a door closer, shock absorber and auxiliary heavy-duty overhead stop
- Requires both backcheck valves on the closer
- Hold open*
 - Holder mechanism tension adjustable
 - Hold open can be engaged/disengaged with a 1/4 turn of the mechanism with a standard blade type screwdriver
- Not available in plated finishes

Door Width	Arm Assemblies	
	Non-Hold Open	Hold Open*
28" - 32" (71cm - 81cm)	9100-11	9100-1
33" - 41" (84cm - 104cm)	9100-13	9100-3
42" - 48" (107cm - 122cm)	9100-14	9100-4

Specify finish when ordering arms. *Not allowed by code on fire doors.

TRACK OPTIONS

Pull Side Track



- Provides a clean aesthetic look with maximum 100° door swing and a minimum door width of 28" (71cm)
- Mounted on pull side
- Hold open can be set for 85°, 90°, 95°, or 100°
- Not available in plated finishes

Arm/Track Function	Part Numbers	
	Track Only	Arm Only
Non-Hold Open	9501ST-1T	9501ST-1A
Hold Open*	9501ST-3T	

Push Side Track



- Clean aesthetic look for doors opening a maximum of 100° and a minimum door width of 32" (81cm)
- Backcheck option recommended
- Mounted on push side
- Hold open*
 - From 85° to 100°
 - Turn knob offers the use the option of turning hold open on or off
- Not available in plated finishes

Arm/Track Function	Part Numbers	
	Track Only	Arm Only
Non-Hold Open	9501ST-5T	9501ST-1A
Hold Open*	9501ST-8T	

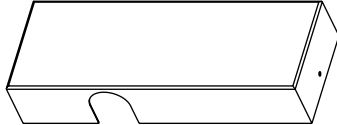
Specify finish when ordering arms or tracks. *Not allowed by code on fire doors.

COVERS AND PLATES

Full Plastic Cover

9500P

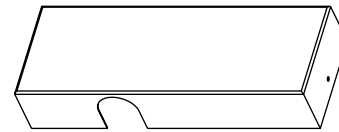
- Completely covers closer body
- Non-handed
- Dimensions: 12" (294) x 4-7/16" (109) x 2-1/4" (55)
- Available in painted finishes only



Full Metal Cover

- For use in high-abuse applications
- Specify hand; not field reversible
- Dimensions: 12" (294) x 4-7/16" (109) x 2-1/4" (55)
- Available in painted and plated finishes

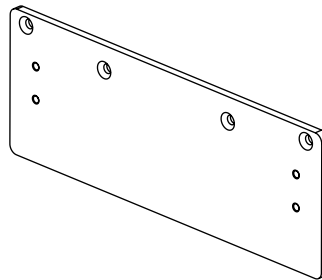
Part Numbers	Handing
9500M-R	Right Hand
9500M-L	Left Hand



Drop Plate

- Permits parallel arm or top jamb mounting on door when top rail is too narrow to install closer in the regular manner
- Minimum 2" (51mm) top rail required
- To order separately, specify Part No. x Finish

Drop Plate	Used with:
9586	Regular Arm or Pull Side Track
9587	Top Jamb
9588	Parallel Arm or Push Side Track



MOUNTING BRACKETS

Mounting Bracket

9500-CMB

- Standard on all closers
- Reduces installation time
- Ensures correct mounting
- Bracket is first mounted to door or frame, then closer is attached
- Bracket size: 3-5/8" (92mm) x 11-1/2" (292mm)
- Hole spacing: 1" (25mm) x 10" (254mm)



Parallel Arm Hold Open Bracket

9528H

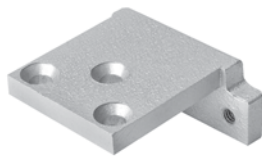
- Converts regular arm hold open to parallel arm hold open closer
- Standard with parallel arm hold open mounting



Mortise Arm Bracket for Regular Arm Mounting

9500-MAB

- For regular arm mounting where frame requires reinforcement, i.e., on frames with bull nose trim
- Not available in plated finishes



Parallel Arm Offset Bracket

9500-OB

- Required when parallel arm is used in conjunction with an overhead door holder



Parallel Arm Non-Hold Open Bracket

9518

- Converts regular arm to parallel arm closer
- Standard with parallel arm mounting



Parallel Arm Flush Transom Bracket

9500-PFTB

- Required when parallel arm mounting is used on a flush transom application
- Not available in plated finishes



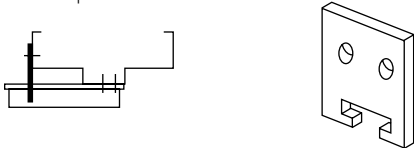
Specify finish when ordering parts.

BRACKETS

Reinforcing Bracket

9500-RB

- Supplied as standard for use with Unitrol® arms
- Provides additional support to the soffit plate on installations with door frame reveals from 1-7/8" to 4-5/8" (48 to 117mm)
- Not available in plated finishes



Flush Transom Bracket

9500-FTB

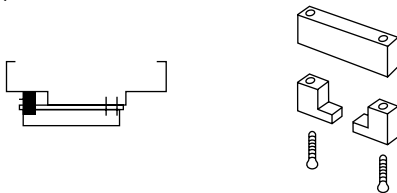
- Available separately for mounting Parallel Rigid and CloserPlus® arms rabbeted or flush transom conditions
- Not available in plated finishes



Deep Reveal Reinforcement Kit

9500-DRK

- For use with Unitrol® arms
- Used to support the soffit plate on installations with wide frames. Clamps may be used with or without the spacer block, depending on frame conditions
- Not available in plated finishes
- For frames deeper than 4-5/8" (117mm), specify closer x 9500-DRK



Blade Stop Spacer*

Spacer Size	Part Number
1/2"	9500-1/2SP
5/8"	9500-5/8SP

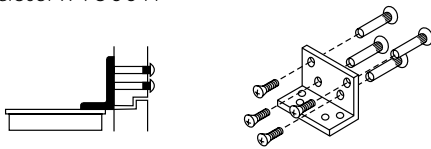
*Not for use with Unitrol arms



Flush Partition Bracket

9500-FPB

- For use with Unitrol® arms where rabbeted or flush transom conditions prevent installation of the soffit plate assembly
- Bracket fastens to the overhead transom to provide a mounting surface for the soffit plate assembly
- Specify closer x 9500-FPB



Power Adjustment Arm Bracket

- Standard on all closers without hold open, except heavy-duty and track type
- In regular arm or top jamb mounting, bracket may be reversed to increase closing power 15%

Maximum Power



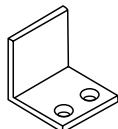
Normal Power



Angle Support Bracket

9500-AB

- Available separately for mounting Parallel Rigid and CloserPlus® arms heavy-duty arms on narrow frame or soffit conditions
- Specify closer x 9500-AB



Specify finish when ordering parts.

9500 SERIES CAST IRON DOOR CLOSER

PARTS LIST

DOOR CLOSER BODY ASSEMBLIES

Part Number	Description
9500LAP	Multi-Size Closer Body

LAP = Less All Parts

SCREW PACKS

SP9500	Standard screw package
SP9500SN	Standard screw pack (includes sex nuts)
SP9500SNB	Sex Nuts and Bolts (SNB) for 1-3/4" door
95ASW	Main arm screw & washer
SP9500COV	Cover screw pack

TORX[®] SCREW PACKS

Arm Type	Part Number
Regular, Top Jamb & Parallel	TX95
Parallel Rigid, CloserPlus [®]	PRTX95
Regular Rigid Heavy-Duty	RTX95
Unitrol [®] Arm	UNITX95
Slide Track	TXTK95
70TK	Torx [®] tool kit

CONTACT US AT:

Norton Door Controls
3000 Highway 74 East
Monroe, NC 28112
Tel: 877-974-2255
Fax: 800-338-0965

ABLOY Door Security Solutions Canada
160 Four Valley Drive
Vaughan, Ontario, L4K 4T9 Canada
Tel: 800-461-3007
Fax: 905-738-2478

For a complete listing of products and applications please visit our web site.
www.nortondoорcontrols.com
www.assaabloy.ca

Norton[®], Unicontrol[®], Tri-Style[®] and CloserPlus[®] are registered trademarks of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication. Copyright © 2013-2015, Yale Security Inc., an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.