



Surface Applied  
Door Closers

# DORMA 8600

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ISO 9001:2000



The quality management system at the Reamstown, PA facility is certified to ISO-9001.\*

\*DORMA Door Controls Inc., dba: DORMA Architectural Hardware


## The 8600 Series closers represent the latest in door control technology, designed to exceed the demands of today's buildings.

With features like the full range spring power adjustment, the 8600 Series closer provides the flexibility needed to meet the many demands of commercial and institutional applications, including ADA barrier-free accessibility requirements.

This door control also features a **backcheck positioning** adjustment for parallel arm applications, to maintain an ANSI backcheck range similar to regular and top jamb applications. The modern slim cover, flat form arm, and architectural finishes provide the aesthetic qualities required of architectural grade closers.

In addition to all of these superior features, the 8600 Series is backed by DORMA's unprecedented 25-year warranty.

### Technical Details:

-  Available as 8616 closers for interior and exterior doors. Meets barrier-free requirements (adjustable size 1 thru 6).
- Non-handed for regular, top jamb and parallel arm applications.
- Adjustable backcheck standard. Controls opening motion during abusive or abrupt opening.
- Backcheck positioning valve standard. Maintains effective backcheck range on parallel arm applications. Valve is accessible with the closer installed.
- Optional delayed action adjustable with a separate independent valve. Delays door closing to allow unobstructed passage through the opening.
- Slim plastic cover standard. Full plastic or metal cover optional.
- Designed to minimize change in closing speed during severe temperature changes.
- Aesthetically pleasing and easy to adjust steel flat form arm assembly.
- A full complement of optional arms, plates, and brackets available for special applications.
- SNB1 sex nuts and machine screws for 1-3/4" thick doors included standard.
- Available with optional self-drilling screws for steel door and frame applications (DPK86)
- Available with optional self-tapping screws for aluminum door and frame applications (TPK86).

### Certification:

The DORMA 8600 Series is listed by U.L. and C.U.L. under their continuing reinspection programs. The 8600 Series is certified to the requirements of ANSI A156.4 Grade 1. Meets the requirements for UL10C and UBC 7.2 (1997) for positive pressure. Meets ANSI A117.1 and ADA for barrier-free accessibility. California State Fire Marshall (CSFM) approved.

### Specification:

The architectural grade 8600 Series is a non-handed surface applied door closer with adjustable spring power and backcheck positioning adjustment. Adjustable hydraulic backcheck will take effect at approximately 70°.

| Features  | 8616               |
|---|--------------------|
| Adjustable spring size                                    | 1– 6               |
| Non-handed  | •                  |
| Parallel arm bracket                                      | •                  |
| Full line of specialty function arms and plates           | •                  |
| Backcheck positioning adjustment                          | •                  |
| Controlled closing with two independent adjustable valves | 180°–10°<br>10°–0° |
| Backcheck   | •                  |
| Delayed action  | ◦                  |
| Hold open   | ◦                  |
| SNB1 sex nuts for 1-3/4" thick doors included             | •                  |
| Self-drilling screws                                      | ◦                  |
| Self-tapping screws                                       | ◦                  |
| Tamper-resistant TORX screws                              | ◦                  |
| Slim plastic cover  | •                  |
| Full cover (metal or plastic)                             | ◦                  |

• yes    - no    ◦ optional

The 8600 has two independent, noncritical adjustment valves to control sweep and latch closing speeds. The backcheck positioning valve assures an effective ANSI backcheck range on parallel arm applications. All closers to have field adjustable spring power from size 1 to 6 and meet barrier-free requirements. Closers to have a slim plastic cover and a wide range of arm options.

### Optional Specifications:

The 8600 Series closer will have optional delayed action (DA). Delayed action range will be effective from maximum opening to approximately 65°. All 8600 closers to have full metal (FMC) or full plastic (FC) cover. All 8600 closers to have sex nuts with machine screws for 1-3/8" door (SNB2). Closers to have self-drilling screws for steel doors and frames (DPK86). Closers to have self-tapping screws for aluminum doors and frames (TPK86). Closers to have TORX security for all exposed fasteners (TX86).

**Warranty:** 25 years.

### Finishes:

#### Standard Sprayed Finishes:

Aluminum: 689.  
Bronze: 691 (Dull), 690 (Statuary), or 695 (Dark Duranodic).  
Gold: 696.  
Black: 693.

**Optional Special Color Sprayed Finishes:** Specify code number or submit 3 color chip samples.

#### Optional Plated Finishes:

Brass: 605 (Bright) or 606 (Satin).  
Bronze: 611 (Bright), 612 (Satin), or  
613 (Oxidized Satin Oil Rubbed).  
Nickel: 618 (Bright) or 619 (Satin).  
Chrome: 625 (Bright) or 626 (Satin).

**Technical Drawing (Symbols and Notes)****REDUCED OPENING FORCE INSTALLATIONS CAUTION:**

Manual door closers, including those certified to meet BHMA/ANSI A156.4, when installed and adjusted to conform to ADA or other reduced opening force requirements, may not provide sufficient power to reliably close and latch a door.

Refer to catalog for ED800 Low Energy Operator to meet reduced opening force requirements without affecting closing power.

- – Recommended application

**N/A** – Not applicable / application not recommended

**NOTE:** The **backcheck positioning** adjustment is specifically designed for parallel arm applications. It advances the backcheck to an approximate ANSI range similar to regular and top jamb applications. The backcheck range(s) within each parallel arm technical drawing reflect an **on** status. Regular, top jamb, and track ranges reflect an **off** status. The 8600 Series closer is shipped with the backcheck positioning valve on.

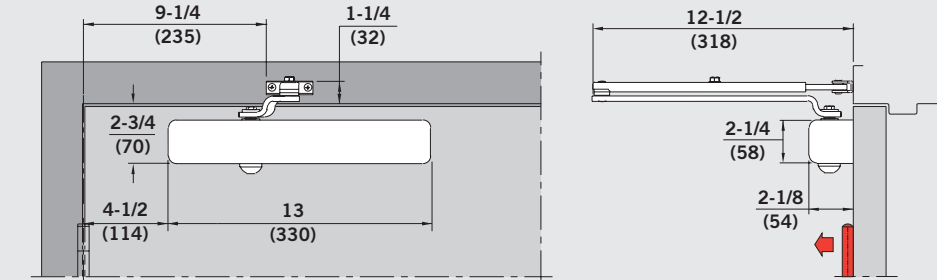
- ♿ – Opening force 5 lb or less on interior doors; 8.5 lb or less on exterior doors where door without closer attached requires 1 lb opening force or less.

**How to Order 8600 Series****Example:**

| Size           | Adjustable 1–6  | 8616  |
|----------------|---|---|
| Application    | No Designation - Regular mount<br>P - Regular, top jamb and parallel mount<br>J - Top jamb mount  | 8616 AF86<br>8616 AF86P<br>8616 AF86J   |
| Body Option    | DA - Adjustable delayed action<br>COV - Slim plastic cover<br>FC - Full plastic cover<br>FMC - Full metal cover (specify hand for TJ, T, and FT applications)   | 8616DA<br>8616 COV<br>8616 FC<br>8616 FMC   |
| Arm            | AF86 - Flat form non-hold open (regular mount)<br>AF86J - Flat form non-hold open (top jamb mount)<br>AF86P - Flat form non-hold open (parallel arm mount)<br>AR - Round form non-hold open (regular mount)<br>ARJ - Round form non-hold open (top jamb mount)<br>ARP - Round form non-hold open (parallel arm mount)<br>AO8 - Round form secured elbow non-hold open (regular mount)<br>AO8P - Round form secured elbow non-hold open (parallel arm mount)<br>FH - Friction hold open (regular mount)<br>FHJ - Friction hold open (top jamb 4" to 8" reveal)<br>FHP - Friction hold open (parallel arm)<br>PH - Plunger hold open (regular or [top jamb 0" to 1-1/2" reveal])<br>PHP - Plunger hold open (parallel arm or [top jamb 1-1/2" to 3-1/2" reveal])<br>IS - Integra stop arm (regular mount)<br>S-IS - Spring assist integra stop arm (regular mount)<br>S-ISH - Spring assist integra stop arm hold open<br>ISJ - Integra stop arm (top jamb 4" to 6" reveal)<br>S-ISJ - Spring assist integra stop arm (top jamb)<br>S-ISJH - Spring assist integra stop arm hold open (top jamb)<br>SPA - Super parallel arm<br>SPAT - Super parallel arm, thumb turn hold open<br>SPAK - Super parallel arm, hex key turn hold open<br>DS - Door saver parallel arm<br>S-DS - Spring assist door saver parallel arm<br>DST - Door saver parallel arm, thumb turn hold open<br>S-DST - Spring assist door saver parallel arm, thumb turn hold open<br>DSK - Door saver parallel arm, hex key turn hold open<br>T - Slide track arm T, JT, and FT applications<br>TH - Slide track arm T, JT, and FT applications with hold open<br>PT86 - Stop mounted slide track arm<br>PT86H - Stop mounted slide track arm with hold open<br>TDE - Jamb mounted slide track arm, double egress (specify hand)<br>TDEH - Jamb mounted slide track arm, double egress with hold open (specify hand) | 8616 AF86<br>8616 AF86J<br>8616 AF86P<br>8616 AR<br>8616 ARJ<br>8616 ARP<br>8616 AO8<br>8616 AO8P<br>8616 FH<br>8616 FHJ<br>8616 FHP<br>8616 PH<br>8616 PHP<br>8616 IS<br>8616 S-IS<br>8616 S-ISH<br>8616 ISJ<br>8616 S-ISJ<br>8616 S-ISJH<br>8616 SPA<br>8616 SPAT<br>8616 SPAK<br>8616 DS<br>8616 S-DS<br>8616 DST<br>8616 S-DST<br>8616 DSK<br>8616 T<br>8616 TH<br>8616 PT86<br>8616 PT86H<br>8616 TDE L<br>8616 TDEH L |
| Accessories    | Specify the number of the accessory.  | 8616 DP86   |
| Fastener Packs | SNB1 - Sex nuts (see information on page 28)<br>DPK86 - Self-drilling screw pack for steel doors and frames<br>TPK86 - Self-tapping screw pack for aluminum doors and frames<br>TX86 - Tamper-resistant TORX screws   | 8616 SNB1<br>8616 DPK86<br>8616 TPK86<br>8616 TX86  |
| Finish         | See DORMA finish information in this brochure. Example: 689 = Aluminum  | 8616 689  |

## Regular x Flat Form Arm (or Round Form Arm)

8616 AF86 (Flat Form Arm – Shown)  
 8616 AR (Round Form Arm)  
 8616 A08 (Round Form Arm)



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 2-1/2".  
 Minimum door rail to bottom of slim plastic cover 2-5/8".  
 Minimum door rail to bottom of optional full cover 3-5/8".  
 Backcheck positioning valve in "OFF" position.



### Size Selection Chart

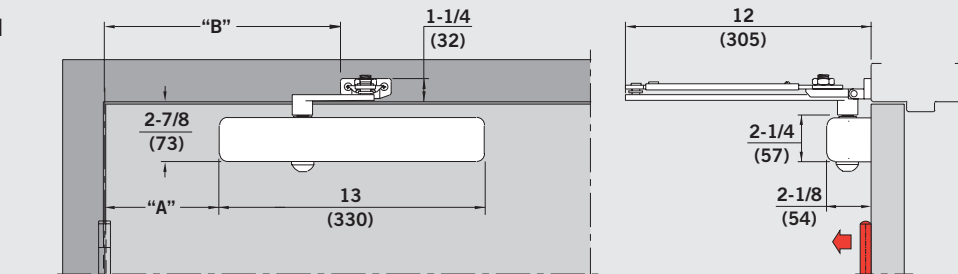
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ⊘             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ⊘             | •             | •             | N/A           |

| MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION |
|--------------------|-----------------------|------------------------------|
| 180°               | 65°-180°              | 180°-65°                     |

\* Backcheck is advanced approximately 15° with positioning valve on.

## Regular x Friction Hold Open

8616 FH



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 2-5/8".  
 Minimum door rail to bottom of slim plastic cover 2-3/4".  
 Minimum door rail to bottom of optional full cover 3-3/4".  
 Backcheck positioning valve in "OFF" position.



### Size Selection Chart

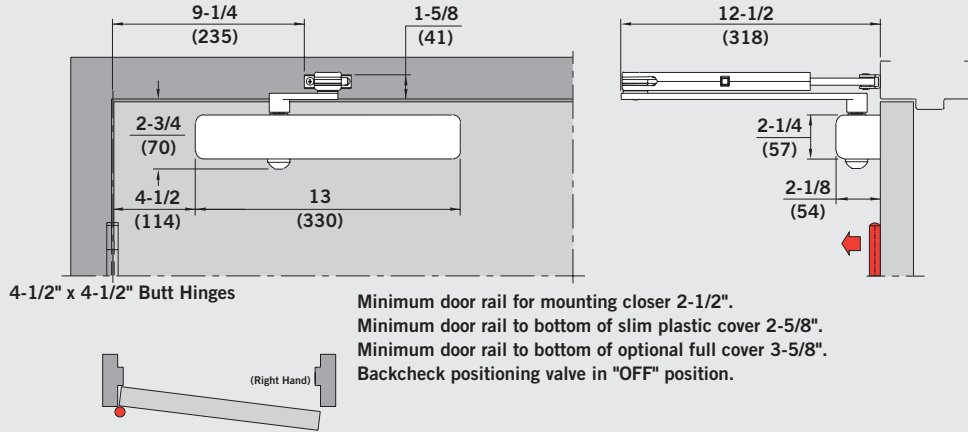
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ⊘             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ⊘             | •             | •             | N/A           |

| TEMPLATE<br>REFERENCE | DIM "A"        | DIM "B"          | APPROX.<br>MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>HOLD OPEN | MAXIMUM<br>HOLD OPEN |
|-----------------------|----------------|------------------|-------------------------------|-----------------------|------------------------------|----------------------|----------------------|
| TO 100°               | 7"<br>(178)    | 12-5/8"<br>(321) | 110°                          | 65°-110°              | 110°-65°                     | 80°                  | 110°                 |
| 100°-120°             | 6"<br>(152)    | 11-5/8"<br>(295) | 125°                          | 70°-125°              | 125°-70°                     | 90°                  | 125°                 |
| OVER 120°             | 3-1/2"<br>(89) | 9-1/8"<br>(232)  | 180°                          | 85°-180°              | 180°-85°                     | 100°                 | 165°                 |

\* Backcheck is advanced approximately 15° with positioning valve on.

## Regular x Plunger Hold Open

8616 PH



Minimum door rail for mounting closer 2-1/2".  
 Minimum door rail to bottom of slim plastic cover 2-5/8".  
 Minimum door rail to bottom of optional full cover 3-5/8".  
 Backcheck positioning valve in "OFF" position.

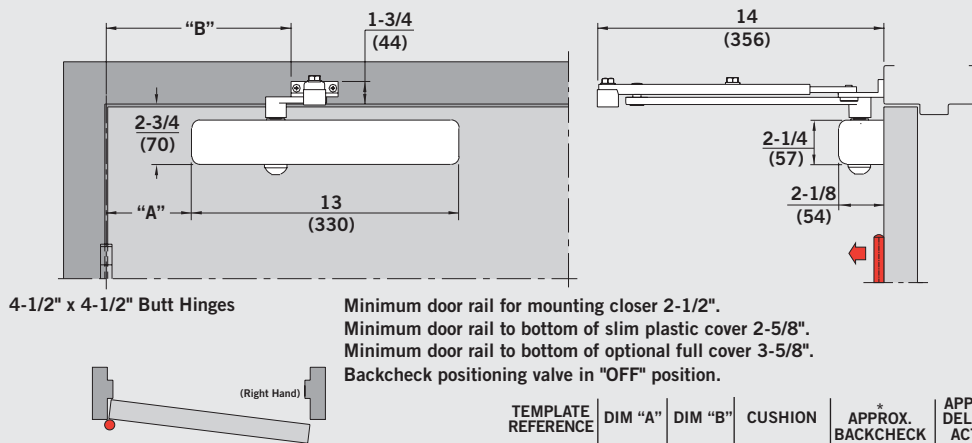
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               | MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>HOLD OPEN | MAXIMUM<br>HOLD OPEN |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|-----------------------|------------------------------|----------------------|----------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |                    |                       |                              |                      |                      |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | •             | 180°               | 65°-180°              | 180°-65°                     | 30°                  | 140°                 |
|        | EXTERIOR              | •             | •             | ♿             | •             | •             | N/A           |                    |                       |                              |                      |                      |

\* Backcheck is advanced approximately 15° with positioning valve on.

## Regular x Integra Stop Arm

8616 IS



Minimum door rail for mounting closer 2-1/2".  
 Minimum door rail to bottom of slim plastic cover 2-5/8".  
 Minimum door rail to bottom of optional full cover 3-5/8".  
 Backcheck positioning valve in "OFF" position.

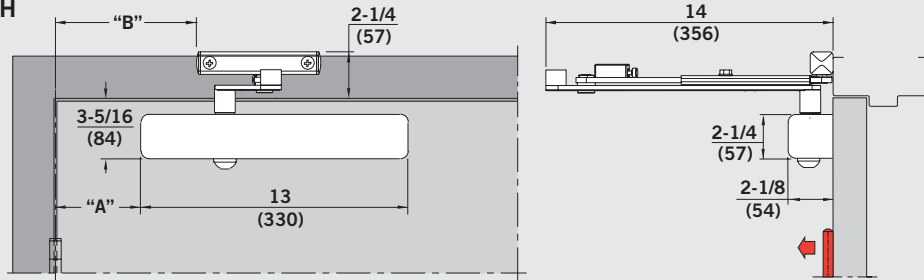
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               | TEMPLATE<br>REFERENCE | DIM "A"          | DIM "B" | CUSHION | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------------|------------------|---------|---------|----------------------|------------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |                       |                  |         |         |                      |                              |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | •             | 9-1/8"<br>(232)       | 15-1/2"<br>(394) | 85°     | 55°-85° | 85°-55°              |                              |
|        | EXTERIOR              | •             | •             | ♿             | •             | •             | N/A           |                       |                  |         |         |                      |                              |
|        | INTERIOR              | •             | •             | ♿             | •             | •             | •             | 8-1/2"<br>(216)       | 14-3/4"<br>(375) | 90°     | 60°-90° | 90°-60°              |                              |
|        | EXTERIOR              | •             | •             | ♿             | •             | •             | N/A           |                       |                  |         |         |                      |                              |
|        | INTERIOR              | •             | •             | ♿             | •             | •             | •             | 7-1/2"<br>(190)       | 14-1/8"<br>(359) | 95°     | 65°-95° | 95°-65°              |                              |
|        | EXTERIOR              | •             | •             | ♿             | •             | •             | N/A           |                       |                  |         |         |                      |                              |

\* Backcheck is advanced approximately 15° with positioning valve on.

## Regular x Spring Integra Stop Arm

8616 S-IS/S-ISH



4-1/2" x 4-1/2" Butt Hinges



Minimum door rail for mounting closer 2-1/2".  
 Minimum door rail to bottom of slim plastic cover 2-5/8".  
 Minimum door rail to bottom of optional full cover 3-5/8".  
 Backcheck positioning valve in "OFF" position.

### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | •             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | •             | •             | •             | N/A           |

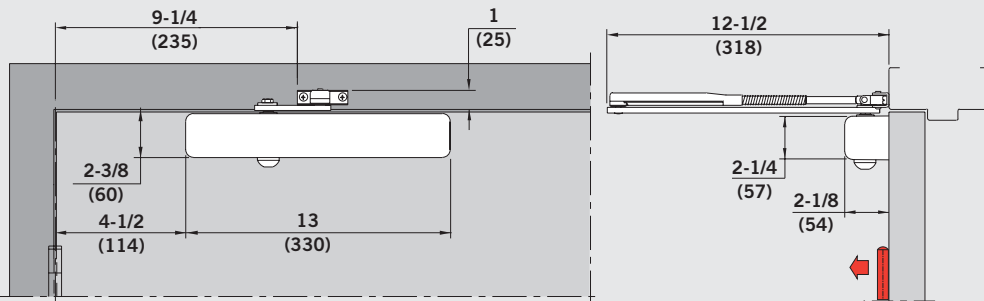
| TEMPLATE REFERENCE | DIM "A"         | DIM "B"           | ** DEAD STOP HOLD OPEN | * APPROX. BACKCHECK | APPROX. DELAYED ACTION |
|--------------------|-----------------|-------------------|------------------------|---------------------|------------------------|
| 85°                | 9-1/4"<br>(235) | 11-9/16"<br>(294) | 85°                    | 55°-85°             | 85°-55°                |
| 90°                | 8-3/8"<br>(212) | 11-1/16"<br>(281) | 90°                    | 60°-90°             | 90°-60°                |
| 100°               | 7-3/8"<br>(188) | 10-1/16"<br>(256) | 100°                   | 70°-100°            | 100°-70°               |
| 110°               | 6-5/8"<br>(169) | 9-5/16"<br>(237)  | 110°                   | 75°-110°            | 110°-75°               |

\* Backcheck is advanced approximately 15° with positioning valve on.

\*\* Hold Open is approximately 5°-7° less than the dead stop angle listed in the chart.

## Regular x Round Form Arm, Narrow Profile

8616 ARNP



4-1/2" x 4-1/2" Butt Hinges



Minimum door rail for mounting closer 2-1/8".  
 Minimum door rail to bottom of slim plastic cover 2-1/4".  
 Minimum door rail to bottom of optional full cover 3-1/4".  
 Backcheck positioning valve in "OFF" position.

### Size Selection Chart

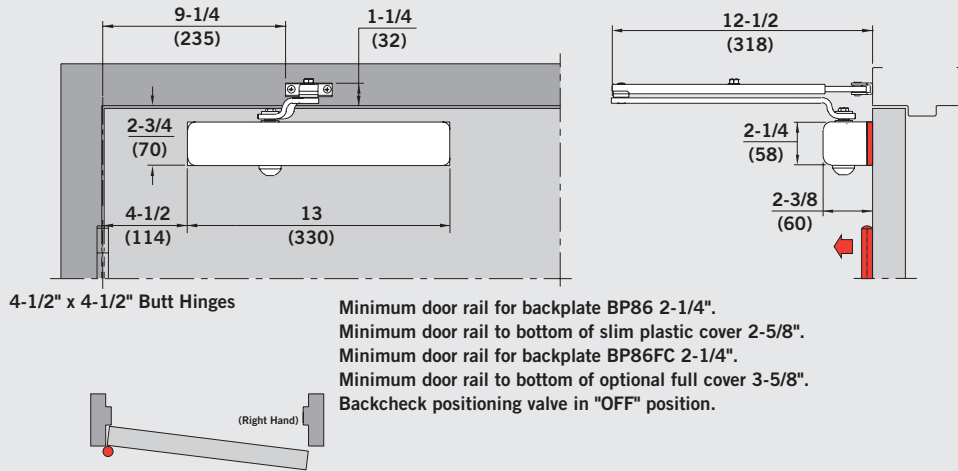
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | •             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | •             | •             | •             | N/A           |

| MAXIMUM OPENING | APPROX. BACKCHECK* | APPROX. DELAYED ACTION | MINIMUM HOLD OPEN | MAXIMUM HOLD OPEN |
|-----------------|--------------------|------------------------|-------------------|-------------------|
| 180°            | 65°-80°            | 180°-65°               | 30°               | 140°              |

\* Backcheck is advanced approximately 15° with positioning valve on.

## Regular x Flat Form Arm (or Round Form Arm) x Backplate

8616 AF86 BP86 (Flat Form Arm – Shown)  
 8616 AR BP86 (Round Form Arm)  
 8616 A08 BP86 (Round Form Arm)



### Size Selection Chart

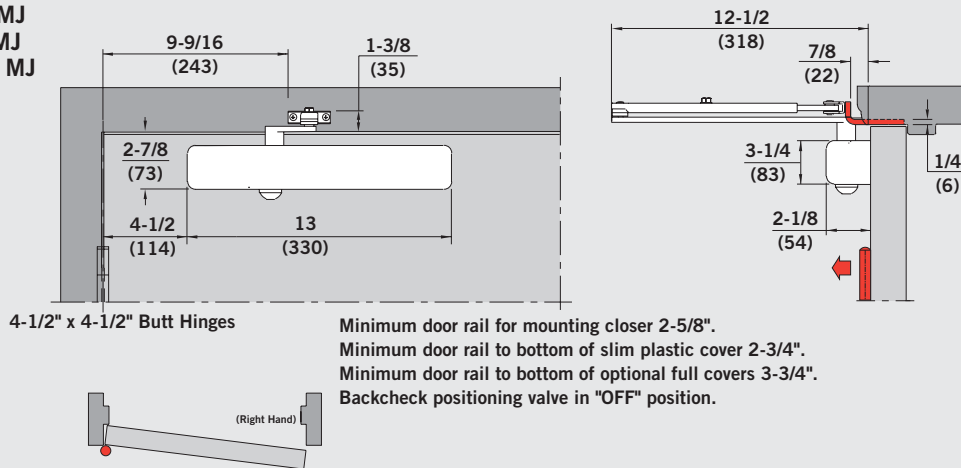
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ⊕             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ⊕             | •             | •             | N/A           |

| MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION |
|--------------------|-----------------------|------------------------------|
| 180°               | 65°-180°              | 180°-65°                     |

\* Backcheck is advanced approximately 15° with positioning valve on.

## Regular x Mortised Jamb Bracket

8616 AF8MJ  
 8616 AR MJ  
 8616 A08 MJ



### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ⊕             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ⊕             | •             | •             | N/A           |

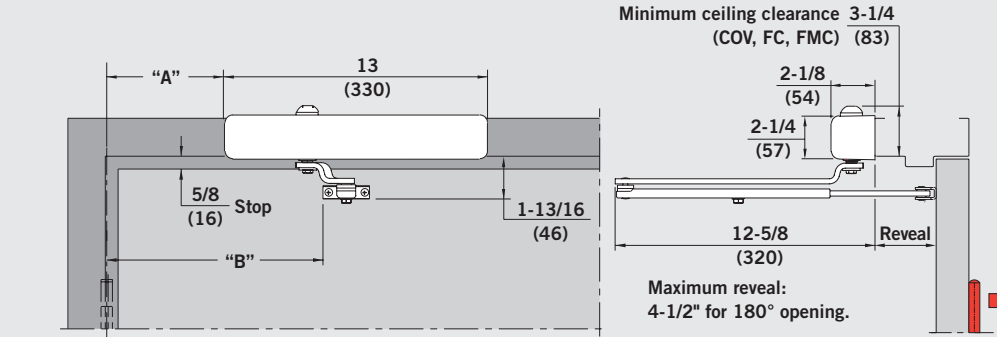
| MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION |
|--------------------|-----------------------|------------------------------|
| 180°               | 65°-180°              | 180°-65°                     |

\* Backcheck is advanced approximately 15° with positioning valve on.



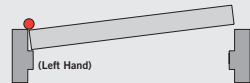
## Top Jamb x Flat Form Arm (or Round Form Arm)

8616 AF86J (Flat Form Arm – Shown) (4" to 8" reveal)  
8616 ARJ (Round Form Arm) (4" to 8" reveal)



4-1/2" x 4-1/2" Butt Hinges

Minimum frame face for mounting closer 1-3/4".  
Specify hand for optional full metal cover.  
Backcheck positioning valve in "OFF" position.



### Size Selection Chart

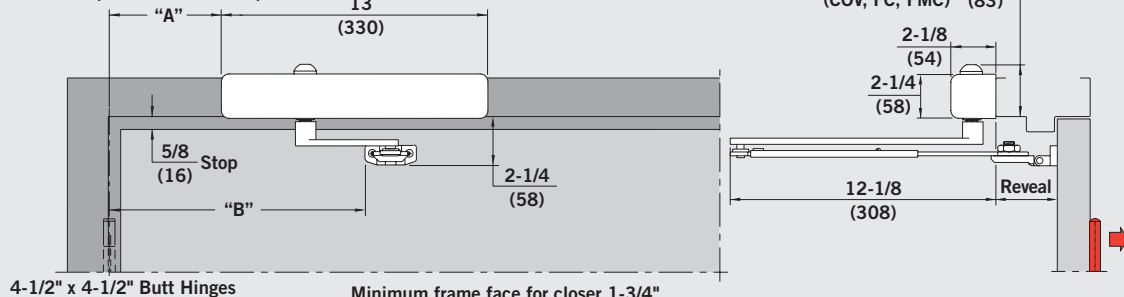
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ⊗             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ⊗             | •             | •             | N/A           |

| TEMPLATE REFERENCE | DIM "A"         | DIM "B"         | REVEAL | ARM              | APPROX. MAXIMUM OPENING | APPROX. BACKCHECK* | APPROX. DELAYED ACTION |
|--------------------|-----------------|-----------------|--------|------------------|-------------------------|--------------------|------------------------|
| TO 180°            | 4-1/2"<br>(114) | 9-1/4"<br>(235) | 0"     | AF86 AR          | 180°                    | 70°-180°           | 180°-70°               |
|                    |                 |                 | 4"     | AF86 AR          | 180°                    | 75°-180°           | 180°-75°               |
| TO 180°            | 4-1/2"<br>(114) | 9-1/4"<br>(235) | 4"     | <b>AF86J ARJ</b> | 180°                    | 75°-180°           | 180°-75°               |
|                    |                 |                 | 8"     | <b>AF86J ARJ</b> | 165°                    | 80°-165°           | 165°-80°               |

\* Backcheck is advanced approximately 15° with positioning valve on.  
Note: Bold type shows supplied arm.

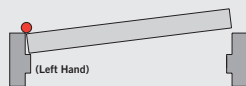
## Top Jamb x Friction Hold Open

8616 FHJ - (4" to 8" reveal)



4-1/2" x 4-1/2" Butt Hinges

Minimum frame face for closer 1-3/4".  
Specify hand for optional full metal cover.  
Backcheck positioning valve in "OFF" position.



### Size Selection Chart

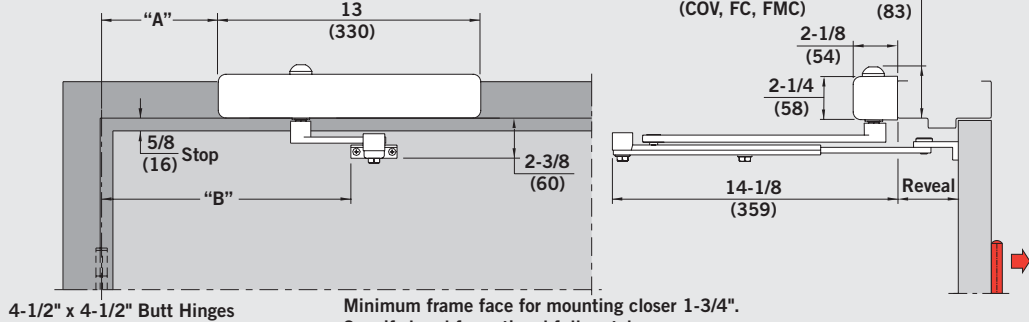
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ⊗             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ⊗             | •             | •             | N/A           |

| TEMPLATE REFERENCE | DIM "A"         | DIM "B"          | REVEAL | ARM        | APPROX. MAXIMUM OPENING | APPROX. BACKCHECK* | APPROX. DELAYED ACTION | MIN. HOLD OPEN | MAX. HOLD OPEN |
|--------------------|-----------------|------------------|--------|------------|-------------------------|--------------------|------------------------|----------------|----------------|
| TO 100°            | 7-1/2"<br>(190) | 13-1/8"<br>(333) | 0"     | FH         | 110°                    | 70°-110°           | 110°-70°               | 70°            | 105°           |
|                    |                 |                  | 4"     | FH         | 105°                    | 75°-105°           | 105°-75°               | 70°            | 100°           |
|                    |                 |                  | 4"     | <b>FHJ</b> | 105°                    | 75°-105°           | 105°-75°               | 70°            | 100°           |
| TO 120°            | 6"<br>(152)     | 11-5/8"<br>(295) | 0"     | FH         | 125°                    | 75°-125°           | 125°-75°               | 75°            | 120°           |
|                    |                 |                  | 4"     | FH         | 120°                    | 80°-120°           | 120°-80°               | 75°            | 115°           |
|                    |                 |                  | 4"     | <b>FHJ</b> | 120°                    | 80°-120°           | 120°-80°               | 75°            | 115°           |
| OVER 120°          | 3-1/2"<br>(89)  | 9-1/8"<br>(232)  | 0"     | FH         | 180°                    | 85°-180°           | 180°-85°               | 80°            | 170°           |
|                    |                 |                  | 4"     | FH         | 180°                    | 90°-180°           | 180°-90°               | 80°            | 170°           |
|                    |                 |                  | 4"     | <b>FHJ</b> | 180°                    | 90°-180°           | 180°-90°               | 80°            | 170°           |
|                    |                 |                  | 8"     | <b>FHJ</b> | 165°                    | 100°-165°          | 165°-100°              | 85°            | 155°           |

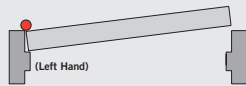
\* Backcheck is advanced approximately 15° with positioning valve on.  
Note: Bold type shows supplied arm.

## Top Jamb x Integra Stop Arm

8616 ISJ - (4" to 6" reveal)



4-1/2" x 4-1/2" Butt Hinges



Minimum frame face for mounting closer 1-3/4".  
Specify hand for optional full metal cover.  
Backcheck positioning valve in "OFF" position.

### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ♿             | •             | •             | N/A           |

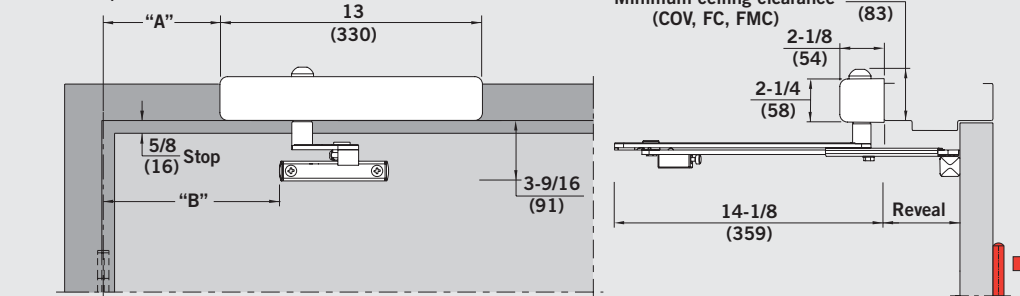
| TEMPLATE REFERENCE | DIM "A"  | DIM "B"       | REVEAL                | ARM                   | CUSHION           | APPROX. BACKCHECK*        | APPROX. DELAYED ACTION      |
|--------------------|----------|---------------|-----------------------|-----------------------|-------------------|---------------------------|-----------------------------|
| 85°                | 8" (203) | 14-3/8" (365) | 0"-4"<br><b>4"-6"</b> | IS<br><b>ISJ</b>      | 85°<br><b>85°</b> | 55°-85°<br><b>55°-85°</b> | 85°-55°<br><b>85°-55°</b>   |
|                    | 90°      | 7-3/8" (187)  | 13-3/4" (349)         | 0"-4"<br><b>4"-6"</b> | IS<br><b>ISJ</b>  | 90°<br><b>90°</b>         | 60°-90°<br><b>60°-90°</b>   |
| 95°                |          | 6-7/8" (175)  | 13-1/4" (337)         | 0"-4"<br><b>4"-6"</b> | IS<br><b>ISJ</b>  | 95°<br><b>95°</b>         | 65°-95°<br><b>65°-95°</b>   |
|                    | 100°     | 6-3/8" (152)  | 12-3/4" (324)         | 0"-4"<br><b>4"-6"</b> | IS<br><b>ISJ</b>  | 100°<br><b>100°</b>       | 70°-100°<br><b>70°-100°</b> |
| 105°               |          | 6-1/8" (156)  | 12-1/2" (318)         | 0"-4"<br><b>4"-6"</b> | IS<br><b>ISJ</b>  | 105°<br><b>105°</b>       | 70°-105°<br><b>70°-105°</b> |
|                    | 110°     | 5-7/8" (149)  | 12-1/4" (311)         | 0"-4"<br><b>4"-6"</b> | IS<br><b>ISJ</b>  | 110°<br><b>110°</b>       | 75°-110°<br><b>75°-110°</b> |

\* Backcheck is advanced approximately 15° with positioning valve on.

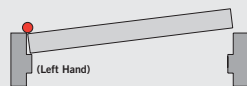
Note: Bold type shows supplied arm.

## Top Jamb x Spring Integra Stop Arm

8616 S-ISJ/S-ISJH -  
(3-1/2" to 6-1/2" reveal)



4-1/2" x 4-1/2" Butt Hinges



Minimum frame face for mounting closer 1-3/4".  
Specify hand for optional full metal cover.  
Backcheck positioning valve in "OFF" position.

### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ♿             | •             | •             | N/A           |

| TEMPLATE REFERENCE | DIM "A"      | DIM "B"        | REVEAL                            | ARM                               | DEAD STOP/<br>HOLD OPEN | APPROX. BACKCHECK*        | APPROX. DELAYED ACTION      |
|--------------------|--------------|----------------|-----------------------------------|-----------------------------------|-------------------------|---------------------------|-----------------------------|
| 85°                | 8-3/8" (213) | 11-1/16" (281) | 0"-3-1/2"<br><b>3-1/2"-6-1/2"</b> | S-IS<br><b>S-ISJ</b>              | 85°<br><b>85°</b>       | 55°-85°<br><b>55°-85°</b> | 85°-55°<br><b>85°-55°</b>   |
|                    | 90°          | 7-3/4" (197)   | 10-7/16" (266)                    | 0"-3-1/2"<br><b>3-1/2"-6-1/2"</b> | S-IS<br><b>S-ISJ</b>    | 90°<br><b>90°</b>         | 60°-90°<br><b>60°-90°</b>   |
| 100°               |              | 6-7/8" (175)   | 9-9/16" (243)                     | 0"-3-1/2"<br><b>3-1/2"-6-1/2"</b> | S-IS<br><b>S-ISJ</b>    | 100°<br><b>100°</b>       | 70°-100°<br><b>70°-100°</b> |
|                    | 110°         | 6-1/4" (159)   | 8-15/16" (227)                    | 0"-3-1/2"<br><b>3-1/2"-6-1/2"</b> | S-IS<br><b>S-ISJ</b>    | 110°<br><b>110°</b>       | 75°-110°<br><b>75°-110°</b> |

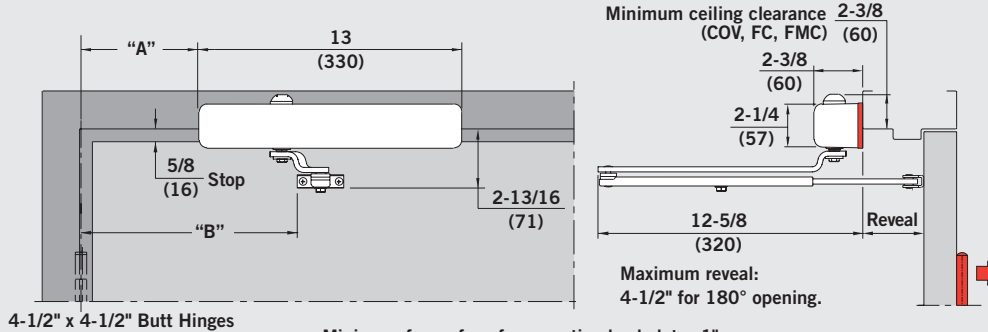
\* Backcheck is advanced approximately 15° with positioning valve on.

\*\*Hold Open is approximately 5°-7° less than the dead stop angle listed in the chart.

Note: Bold type shows supplied arm.

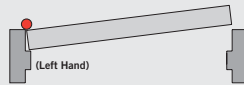
## Top Jamb x Flat Form Arm (or Round Form Arm) x Backplate

8616 AF86J BP86 (Flat Form Arm – Shown) (4" to 8" reveal)  
8616 ARJ BP86 (Round Form Arm) (4" to 8" reveal)



4-1/2" x 4-1/2" Butt Hinges

Minimum frame face for mounting backplates 1".  
Specify hand for optional full metal cover.  
Backcheck positioning valve in "OFF" position.



### Size Selection Chart

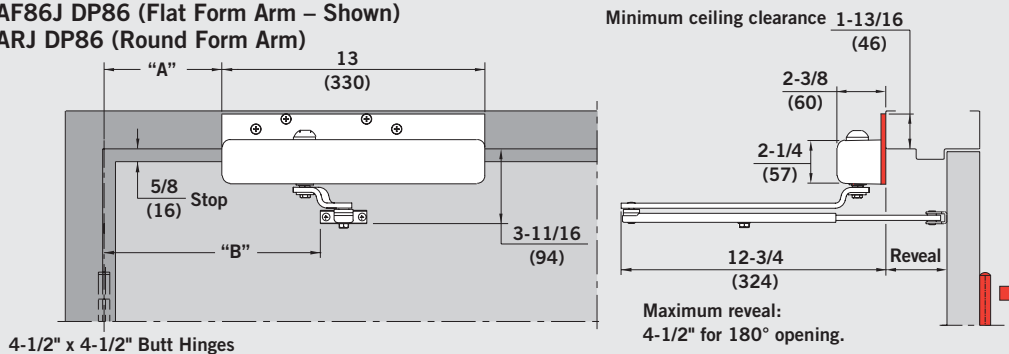
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | •             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | •             | •             | •             | N/A           |

| TEMPLATE REFERENCE | DIM "A"         | DIM "B"         | REVEAL | ARM       | APPROX. MAXIMUM OPENING | APPROX. BACKCHECK* | APPROX. DELAYED ACTION |
|--------------------|-----------------|-----------------|--------|-----------|-------------------------|--------------------|------------------------|
| TO 180°            | 4-1/2"<br>(114) | 9-1/4"<br>(235) | 0"     | AF   AR   | 180°                    | 70°-180°           | 180°-60°               |
|                    |                 |                 | 4"     | AF   AR   | 180°                    | 75°-180°           | 180°-70°               |
| TO 180°            | 4-1/2"<br>(114) | 9-1/4"<br>(235) | 4"     | AFJ   ARJ | 180°                    | 75°-180°           | 180°-70°               |
|                    |                 |                 | 8"     | AFJ   ARJ | 165°                    | 80°-165°           | 165°-70°               |

\* Backcheck is advanced approximately 15° with positioning valve on.  
Note: Bold type shows supplied arm.

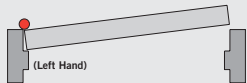
## Top Jamb x Flat Form Arm (or Round Form Arm) x Drop Plate

8616 AF86J DP86 (Flat Form Arm – Shown)  
8616 ARJ DP86 (Round Form Arm)



4-1/2" x 4-1/2" Butt Hinges

Minimum frame face for mounting drop plates 1-3/4".  
Specify hand for optional full metal cover.  
Backcheck positioning valve in "OFF" position.



### Size Selection Chart

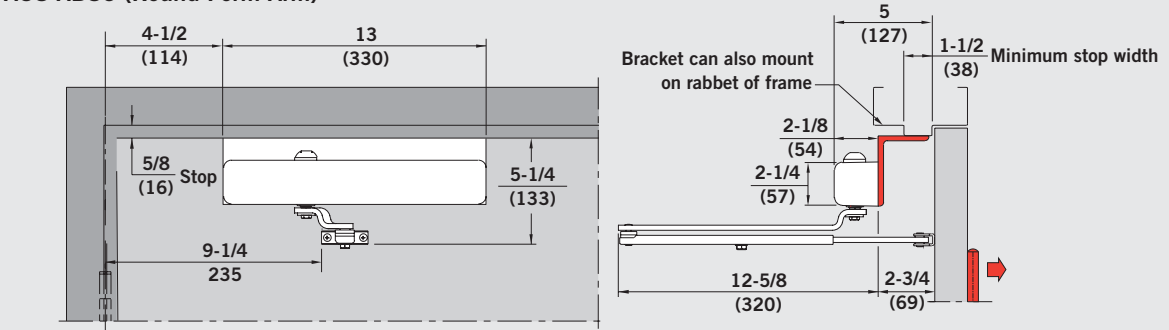
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | •             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | •             | •             | •             | N/A           |

| TEMPLATE REFERENCE | DIM "A"         | DIM "B"         | REVEAL | ARM       | APPROX. MAXIMUM OPENING | APPROX. BACKCHECK* | APPROX. DELAYED ACTION |
|--------------------|-----------------|-----------------|--------|-----------|-------------------------|--------------------|------------------------|
| TO 180°            | 4-1/2"<br>(114) | 9-1/4"<br>(235) | 0"     | AF   AR   | 180°                    | 70°-180°           | 180°-60°               |
|                    |                 |                 | 4"     | AF   AR   | 180°                    | 75°-180°           | 180°-70°               |
| TO 180°            | 4-1/2"<br>(114) | 9-1/4"<br>(235) | 4"     | AFJ   ARJ | 180°                    | 75°-180°           | 180°-70°               |
|                    |                 |                 | 8"     | AFJ   ARJ | 165°                    | 80°-165°           | 165°-70°               |

\* Backcheck is advanced approximately 15° with positioning valve on.  
Note: Bold type shows supplied arm.

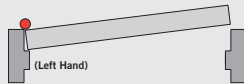
## Top Jamb x Flat Form Arm (or Round Form Arm) x Angle Bracket

8616 AF86 AB86 (Flat Form Arm – Shown)  
 8616 AR AB86 (Round Form Arm) 8616 AR  
 8616 A08 AB86 (Round Form Arm)



4-1/2" X 4-1/2" Butt Hinges

Minimum frame face for mounting arm 5-3/4".  
 Specify hand for optional full metal cover.  
 Backcheck positioning valve in "OFF" position.



### Size Selection Chart

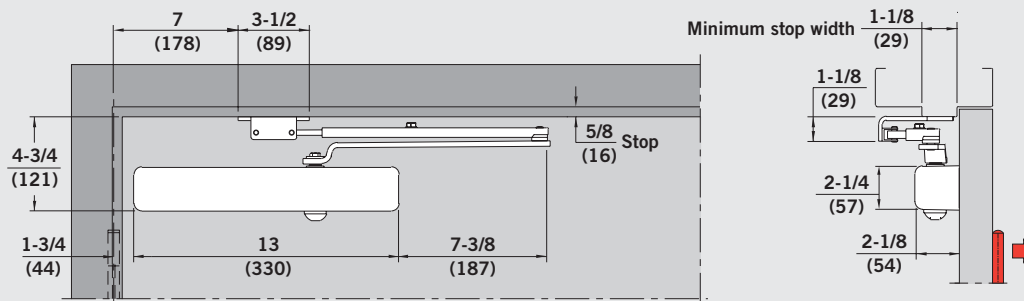
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. | 4'-6"<br>max. |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | •             |
|        | EXTERIOR              | •             | •             | ♿             | •             | •             | N/A           |

| MAXIMUM OPENING | APPROX. BACKCHECK* | APPROX. DELAYED ACTION |
|-----------------|--------------------|------------------------|
| 180°            | 70°-180°           | 180°-70°               |

\* Backcheck is advanced approximately 15° with positioning valve on.

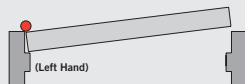
## Parallel Arm x Flat Form Arm (or Round Form Arm)

8616 AF86P (Flat Form Arm – Shown)  
 8616 ARP (Round Form Arm)  
 8616 A08P (Round Form Arm)  
 (P86 bracket furnished standard)



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 5-1/8" (5/8" stop shown).  
 Minimum door rail to bottom of optional full cover 6-1/4" (5/8" stop shown).  
 Backcheck positioning valve in "ON" position.



### Size Selection Chart

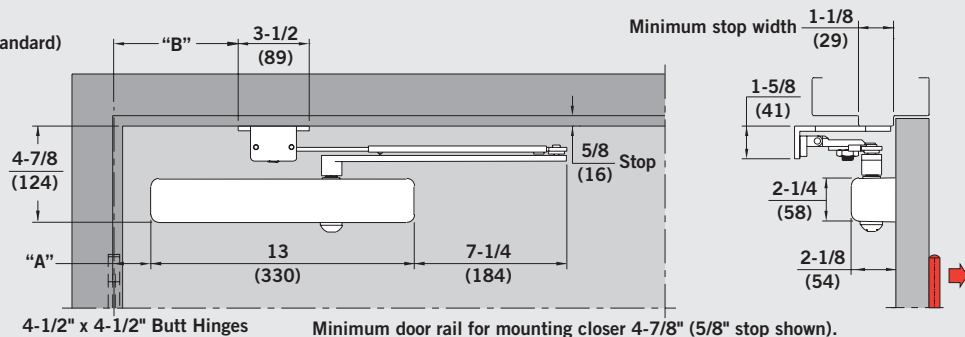
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           |

| MAXIMUM OPENING | APPROX. BACKCHECK | APPROX. DELAYED ACTION | MINIMUM DOOR WIDTH |
|-----------------|-------------------|------------------------|--------------------|
| 180°            | 60°-180°          | 180°-75°               | 24"                |

## Parallel Arm x Friction Hold Open

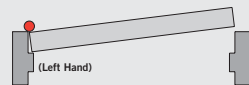
### 8616 FHP

(PHB bracket furnished standard)



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 4-7/8" (5/8" stop shown).  
 Minimum door rail to bottom of slim plastic cover 5-3/8" (5/8" stop shown).  
 Minimum door rail to bottom of optional full cover 6-3/8" (5/8" stop shown).  
 Backcheck positioning valve in "ON" position.



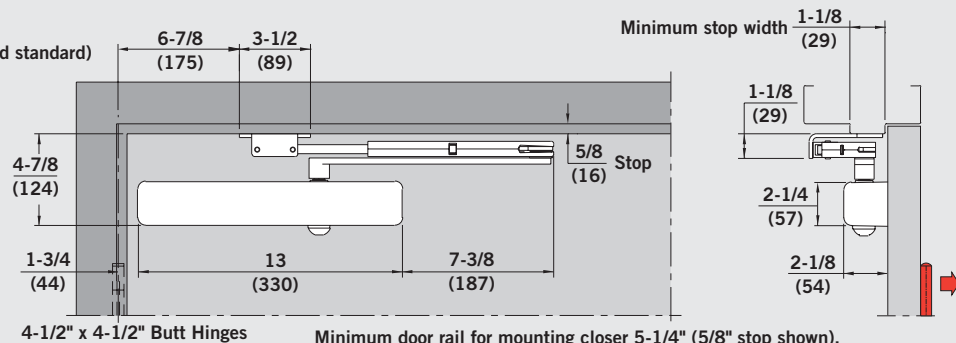
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | TEMPLATE<br>REFERENCE | DIM "A"        | DIM "B"         | APPROX.<br>MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MIN.<br>HOLD<br>OPEN | MAX.<br>HOLD<br>OPEN | MIN.<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------|----------------|-----------------|-------------------------------|----------------------|------------------------------|----------------------|----------------------|-----------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                       |                |                 |                               |                      |                              |                      |                      |                       |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | TO 100°               | 3-5/8"<br>(92) | 9"<br>(228)     | 110°                          | 65°-110°             | 110°-80°                     | 45°                  | 105°                 | 29"                   |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           | OVER 100°             | 1-1/8"<br>(29) | 6-1/2"<br>(165) | 180°                          | 80°-180°             | 180°-95°                     | 45°                  | 175°                 | 24"                   |

## Parallel Arm x Plunger Hold Open

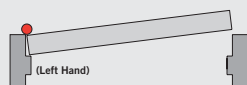
### 8616 PHP

(P86 bracket furnished standard)



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 5-1/4" (5/8" stop shown).  
 Minimum door rail to bottom of slim plastic cover 5-3/8" (5/8" stop shown).  
 Minimum door rail to bottom of optional full cover 6-3/8" (5/8" stop shown).  
 Backcheck positioning valve in "ON" position.

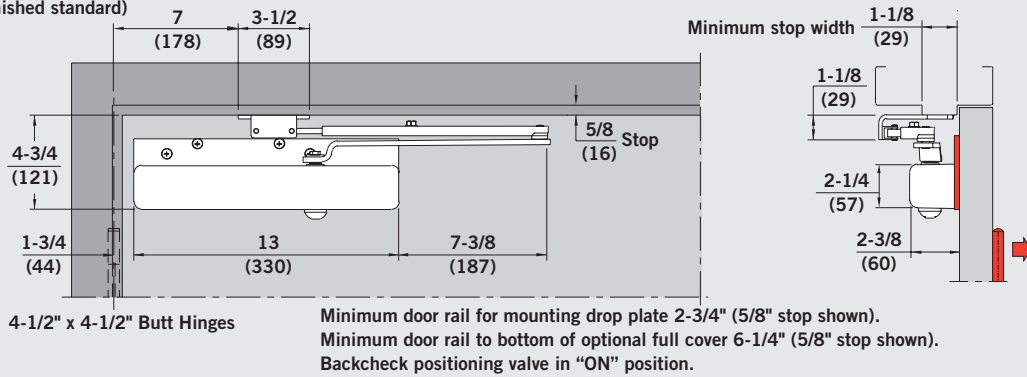


### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>HOLD OPEN | MAXIMUM<br>HOLD OPEN | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|--------------------|----------------------|------------------------------|----------------------|----------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                    |                      |                              |                      |                      |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | 180°               | 60°-180°             | 180°-75°                     | 30°                  | 130°                 | 24"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           |                    |                      |                              |                      |                      |                          |

## Parallel Arm x Flat Form Arm (or Round Form Arm) x DP86 Drop Plate

8616 AF86P DP86 (Flat Form Arm – Shown)  
 8616 ARP DP86 (Round Form Arm)  
 8616 AO8P DP86 (Round Form Arm)  
 (P86 bracket furnished standard)

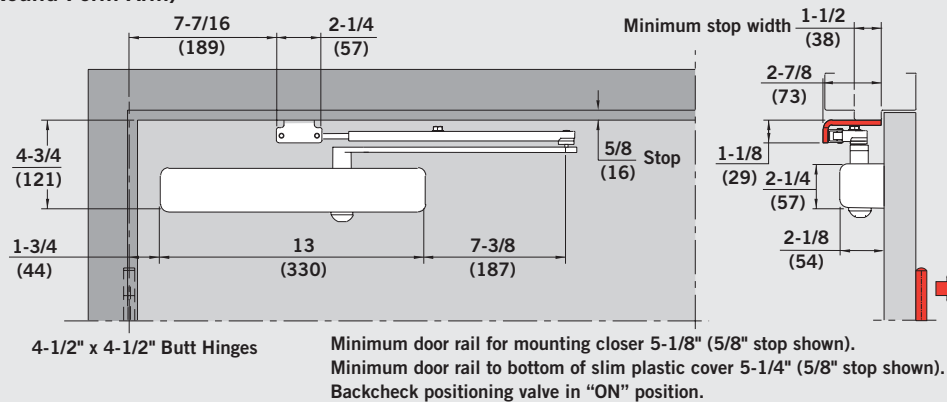


### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|--------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                    |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | 180°               | 60°-180°             | 180°-75°                     | 24"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           |                    |                      |                              |                          |

## Parallel Arm x Flat Form Arm (or Round Form Arm) x Mortised Jamb Bracket

8616 AF8MJ (Flat Form Arm – Shown)  
 8616 AR MJ (Round Form Arm)  
 8616 AO8 MJ (Round Form Arm)

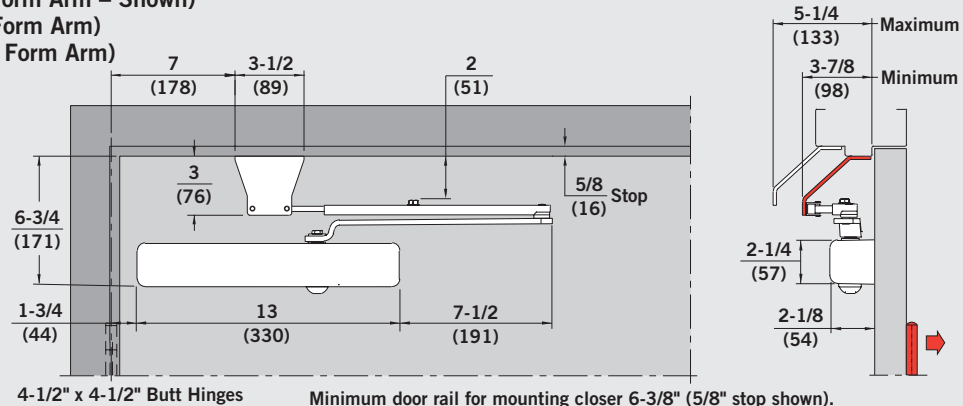


### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|--------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                    |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | 180°               | 60°-180°             | 180°-75°                     | 24"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           |                    |                      |                              |                          |

## Parallel Arm x Flat Form Arm (or Round Form Arm) x Parallel Drop Bracket

8616 AF86 PD (Flat Form Arm – Shown)  
8616 AR PD (Round Form Arm)  
8616 A08 PD (Round Form Arm)

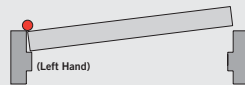


4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 6-3/8" (5/8" stop shown).  
Minimum door rail to bottom of slim plastic cover 6-1/2" (5/8" stop shown).  
Backcheck positioning valve in "ON" position.

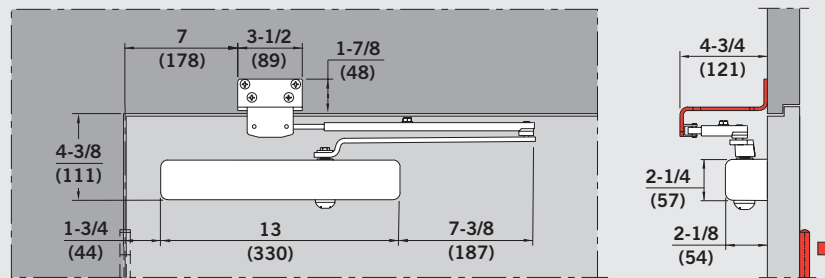
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|--------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                    |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | 180°               | 60°-180°             | 180°-75°                     | 24"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           |                    |                      |                              |                          |



## Parallel Arm x Flat Form Arm (or Round Form Arm) x Parallel Flush Transom Bracket

8616 AF86 PFT (Flat Form Arm – Shown)  
8616 AR PFT (Round Form Arm)  
8616 A08 PFT (Round Form Arm)

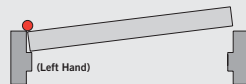


4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 4-1/8".  
Minimum door rail to bottom of slim plastic cover 4-1/4".  
Minimum door rail to bottom of optional full cover 5-1/4".  
Backcheck positioning valve in "ON" position.

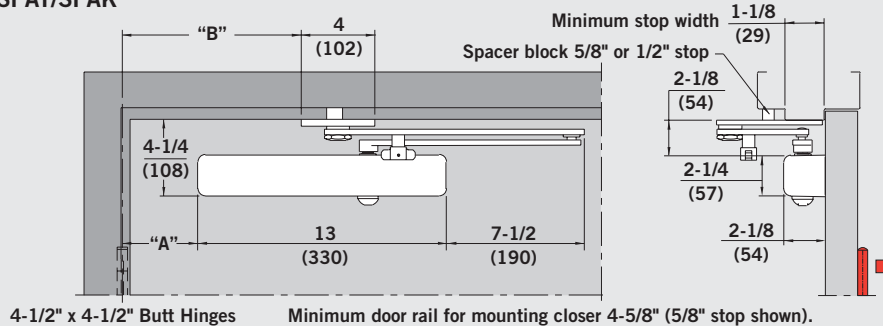
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|--------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                    |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | 180°               | 60°-180°             | 180°-75°                     | 24"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           |                    |                      |                              |                          |



## Heavy-Duty Super Parallel Arm

### 8616 SPA/SPAT/SPAK



4-1/2" x 4-1/2" Butt Hinges

Minimum stop width 1-1/8" (29)  
 Spacer block 5/8" or 1/2" stop  
 Minimum door rail for mounting closer 4-5/8" (5/8" stop shown).  
 Minimum door rail to bottom of slim plastic cover 4-3/4" (5/8" stop shown).  
 Minimum door rail to bottom of optional full cover 5-3/4" (5/8" stop shown).  
 Backcheck positioning valve in "ON" position.

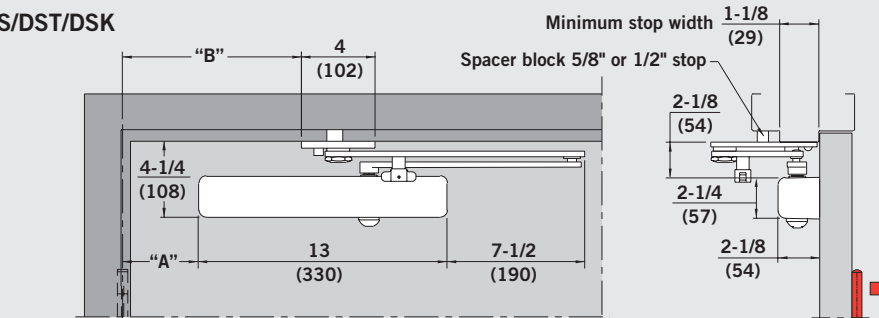


#### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | ANGLE OF<br>OPENING/<br>HOLD OPEN | DIM "A"<br>CLOSER | DIM "B"<br>SOFFIT<br>PLATE | APPROX.<br>MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------------------|-------------------|----------------------------|-------------------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                                   |                   |                            |                               |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | •             | •             | •             | TO 100°<br>H.O. 90°               | 4-3/8"<br>(111)   | 9-3/4"<br>(248)            | 100°                          | 60°-100°             | 100°-75°                     | 26"                      |
|        | EXTERIOR              | •             | •             | •             | •             | N/A           | TO 180°<br>H.O. 123°              | 3/4"<br>(19)      | 6-1/4"<br>(159)            | 180°                          | 80°-180°             | 180°-95°                     | 23"                      |

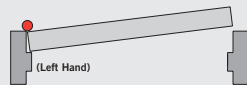
## Heavy-Duty Parallel Arm Door Saver x Cushion

### 8616 DS/DST/DSK



4-1/2" x 4-1/2" Butt Hinges

Minimum stop width 1-1/8" (29)  
 Spacer block 5/8" or 1/2" stop  
 Minimum door rail for mounting closer 4-5/8" (5/8" stop shown).  
 Minimum door rail to bottom of slim plastic cover 4-3/4" (5/8" stop shown).  
 Minimum door rail to bottom of optional full cover 5-3/4" (5/8" stop shown).  
 Backcheck positioning valve in "ON" position.



#### Size Selection Chart

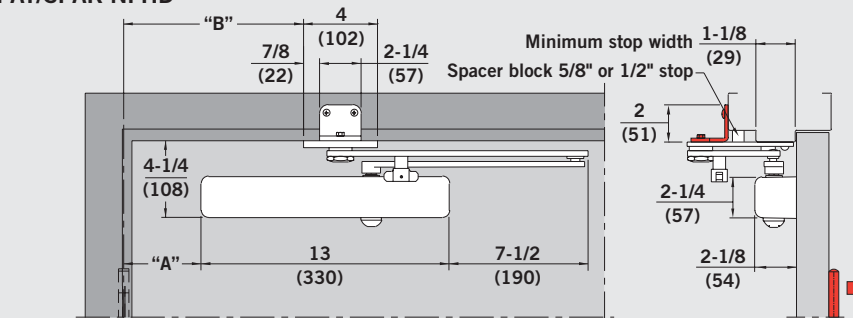
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | TEMPLATE<br>REFERENCE | DIM "A"<br>CLOSER | DIM "B"<br>SOFFIT<br>PLATE | *<br>CUSHION/<br>HOLD OPEN | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------|-------------------|----------------------------|----------------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                       |                   |                            |                            |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | •             | •             | •             | 85°                   | 4-5/8"<br>(117)   | 10-5/8"<br>(270)           | 85°                        | 50°-85°              | 85°-65°                      | 26"                      |
|        |                       |               |               |               |               |               | 90°                   | 3-7/8"<br>(98)    | 9-7/8"<br>(251)            | 90°                        | 55°-90°              | 90°-70°                      | 25"                      |
|        |                       |               |               |               |               |               | 100°                  | 2-5/8"<br>(57)    | 8-5/8"<br>(219)            | 100°                       | 60°-100°             | 100°-75°                     | 24"                      |
|        |                       |               |               |               |               |               | 110°                  | 1-1/2"<br>(38)    | 7-1/2"<br>(191)            | 110°                       | 65°-110°             | 110°-80°                     | 23"                      |
| 8616   | EXTERIOR              | •             | •             | •             | •             | N/A           | TO 100°<br>H.O. 90°   | 4-3/8"<br>(111)   | 9-3/4"<br>(248)            | 100°                       | 60°-100°             | 100°-75°                     | 26"                      |
|        |                       |               |               |               |               |               | TO 180°<br>H.O. 123°  | 3/4"<br>(19)      | 6-1/4"<br>(159)            | 180°                       | 80°-180°             | 180°-95°                     | 23"                      |

\* Hold Open is approximately 1°- 2° less than the cushion angle listed in the chart.

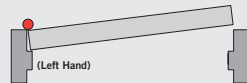


## Heavy-Duty Super Parallel Arm x Narrow Frame Bracket

8616 SPA/SPAT/SPAK NFHD



4-1/2" x 4-1/2" Butt Hinges  
 Minimum door rail for mounting closer 4-5/8" (5/8" stop shown).  
 Minimum door rail to bottom of slim plastic cover 4-3/4" (5/8" stop shown).  
 Minimum door rail to bottom of optional full cover 5-3/4" (5/8" stop shown).  
 Backcheck positioning valve in "ON" position.

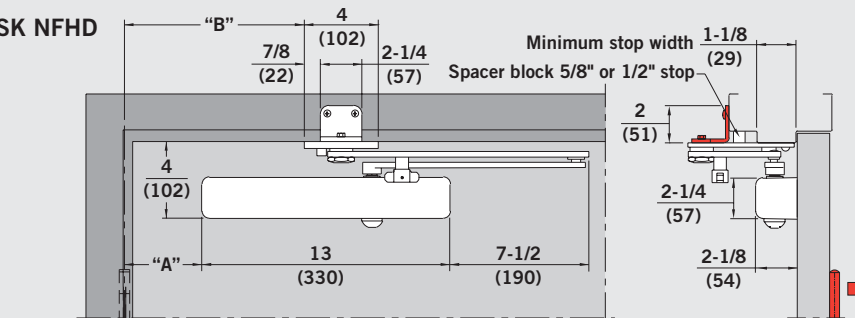


### Size Selection Chart

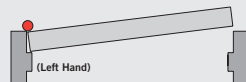
| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | ANGLE OF<br>OPENING/<br>HOLD OPEN | DIM "A"<br>CLOSER | DIM "B"<br>SOFFIT<br>PLATE | APPROX.<br>MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------------------|-------------------|----------------------------|-------------------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                                   |                   |                            |                               |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ⊗             | •             | •             | TO 100°<br>H.O. 90°               | 4-3/8"<br>(111)   | 9-3/4"<br>(248)            | 100°                          | 60°-100°             | 100°-75°                     | 26"                      |
|        | EXTERIOR              | •             | •             | ⊗             | •             | N/A           | TO 180°<br>H.O. 123°              | 3/4"<br>(19)      | 6-1/4"<br>(159)            | 180°                          | 80°-180°             | 180°-95°                     | 23"                      |

## Heavy-Duty Parallel Arm Door Saver x Cushion x Narrow Frame Bracket

8616 DS/DST/DSK NFHD



4-1/2" x 4-1/2" Butt Hinges  
 Minimum door rail for mounting closer 4-5/8" (5/8" stop shown).  
 Minimum door rail to bottom of slim plastic cover 4-3/4" (5/8" stop shown).  
 Minimum door rail to bottom of optional full cover 5-3/4" (5/8" stop shown).  
 Backcheck positioning valve in "ON" position.



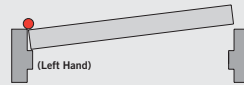
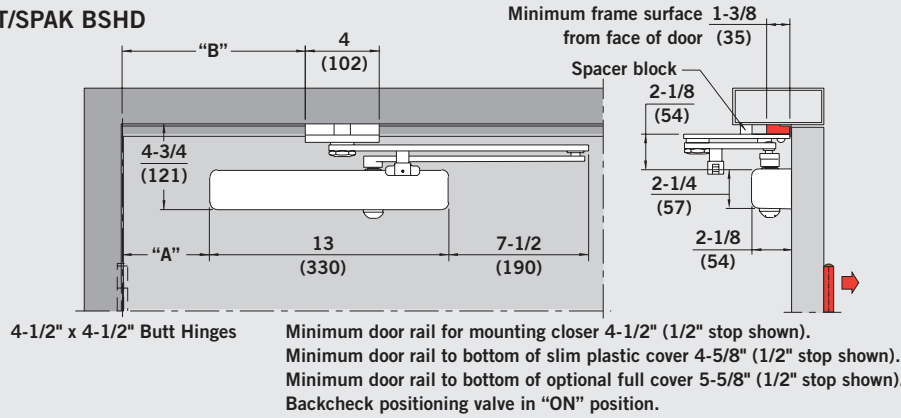
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | TEMPLATE<br>REFERENCE | DIM "A"<br>CLOSER | DIM "B"<br>SOFFIT<br>PLATE | *<br>CUSHION/<br>HOLD OPEN | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------|-------------------|----------------------------|----------------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                       |                   |                            |                            |                      |                              |                          |
| 8616   | INTERIOR/<br>EXTERIOR | •             | •             | ⊗             | •             | •             | 85°                   | 4-5/8"<br>(117)   | 10-5/8"<br>(270)           | 85°                        | 50°-85°              | 85°-65°                      | 26"                      |
|        |                       |               |               |               |               |               | 90°                   | 3-7/8"<br>(98)    | 9-7/8"<br>(251)            | 90°                        | 55°-90°              | 90°-70°                      | 25"                      |
|        |                       |               |               |               |               |               | 100°                  | 2-5/8"<br>(67)    | 8-5/8"<br>(219)            | 100°                       | 60°-100°             | 100°-75°                     | 24"                      |
|        |                       |               |               |               |               |               | 110°                  | 1-1/2"<br>(38)    | 7-1/2"<br>(191)            | 110°                       | 65°-110°             | 110°-80°                     | 23"                      |

\* Hold open is approximately 1°-2° less than the cushion angle listed in the chart.

## Heavy-Duty Super Parallel Arm x Blade Stop Spacer

8616 SPA/SPAT/SPAK BSHD

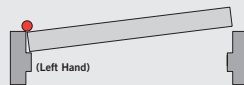
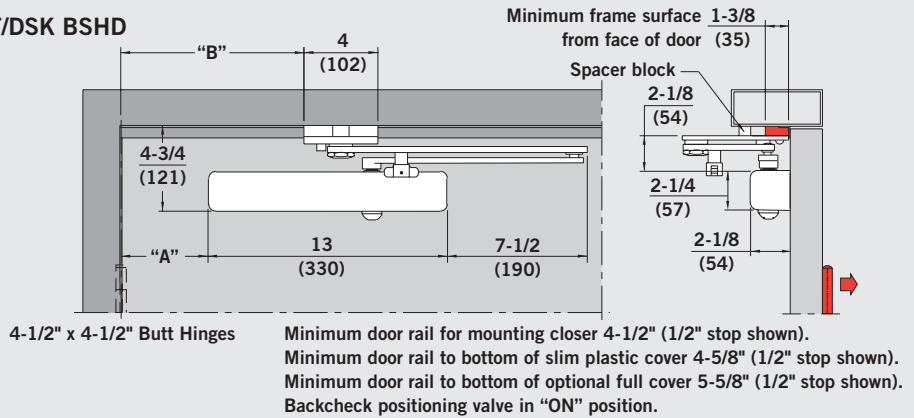


### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | ANGLE OF<br>OPENING/<br>HOLD OPEN | DIM "A"<br>CLOSER | DIM "B"<br>SOFFIT<br>PLATE | APPROX.<br>MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------------------|-------------------|----------------------------|-------------------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                                   |                   |                            |                               |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | TO 100°<br>H.O. 90°               | 4-3/8"<br>(111)   | 9-3/4"<br>(248)            | 100°                          | 60°-100°             | 100°-75°                     | 26"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           | TO 180°<br>H.O. 123°              | 3/4"<br>(19)      | 6-1/4"<br>(159)            | 180°                          | 80°-180°             | 180°-95°                     | 23"                      |
|        |                       |               |               |               |               |               |                                   |                   |                            |                               |                      |                              |                          |

## Heavy-Duty Parallel Arm Door Saver x Cushion x Blade Stop Spacer

8616 DS/DST/DSK BSHD



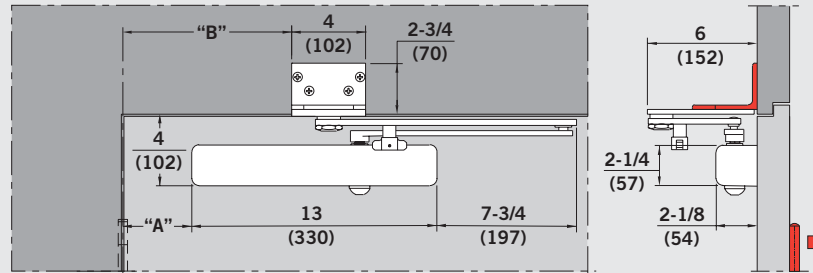
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | TEMPLATE<br>REFERENCE | DIM "A"<br>CLOSER | DIM "B"<br>SOFFIT<br>PLATE | *<br>CUSHION/<br>HOLD OPEN | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------|-------------------|----------------------------|----------------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                       |                   |                            |                            |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | 85°                   | 4-5/8"<br>(117)   | 10-5/8"<br>(270)           | 85°                        | 50°-85°              | 85°-65°                      | 26"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           | 90°                   | 3-7/8"<br>(98)    | 9-7/8"<br>(251)            | 90°                        | 55°-90°              | 90°-70°                      | 25"                      |
|        | INTERIOR              | •             | •             | ♿             | •             | •             | 100°                  | 2-5/8"<br>(67)    | 8-5/8"<br>(219)            | 100°                       | 60°-100°             | 100°-75°                     | 24"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           | 110°                  | 1-1/2"<br>(38)    | 7-1/2"<br>(191)            | 110°                       | 65°-110°             | 110°-80°                     | 23"                      |

\* Hold Open is approximately 1°-2° less than the cushion angle listed in the chart.

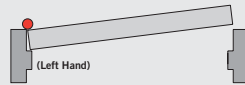
## Heavy-Duty Super Parallel Arm x Flush Transom Bracket

8616 SPA/SPAT/SPAK FTHD



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 3-3/4" (5/8" stop shown).  
Minimum door rail to bottom of slim plastic cover 3-7/8" (5/8" stop shown).  
Backcheck positioning valve in "ON" position.

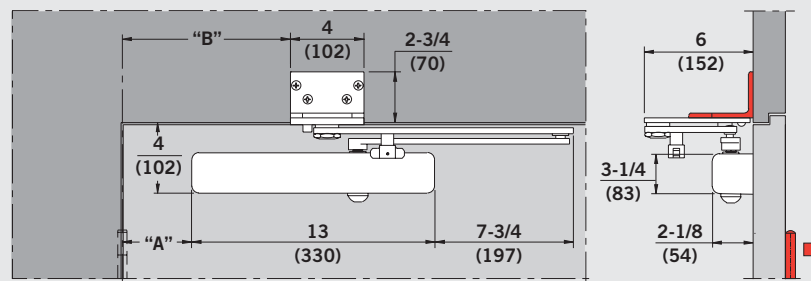


### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | ANGLE OF<br>OPENING/<br>HOLD OPEN | DIM "A"<br>CLOSER | DIM "B"<br>(F102)<br>BRACKET | APPROX.<br>MAXIMUM<br>OPENING | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------------------|-------------------|------------------------------|-------------------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                                   |                   |                              |                               |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | TO 100°<br>H.O. 90°               | 4-3/8"<br>(111)   | 9-3/4"<br>(248)              | 100°                          | 60°-100°             | 100°-75°                     | 26"                      |
|        | EXTERIOR              | •             | •             | ♿             | •             | N/A           | TO 180°<br>H.O. 123°              | 3/4"<br>(19)      | 6-1/4"<br>(159)              | 180°                          | 80°-180°             | 180°-95°                     | 23"                      |

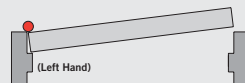
## Heavy-Duty Parallel Arm Door Saver x Cushion x Flush Transom Bracket

8616 DS/DST/DSK FTHD



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 3-3/4" (5/8" stop shown).  
Minimum door rail to bottom of slim plastic cover 3-7/8" (5/8" stop shown).  
Backcheck positioning valve in "ON" position.



### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               |               | TEMPLATE<br>REFERENCE | DIM "A"<br>CLOSER | DIM "B"<br>(FT102)<br>BRACKET | *<br>CUSHION/<br>HOLD OPEN | APPROX.<br>BACKCHECK | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|---------------|-----------------------|-------------------|-------------------------------|----------------------------|----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. | 4'-0"<br>max. |                       |                   |                               |                            |                      |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | •             | 85°                   | 4-5/8"<br>(117)   | 10-5/8"<br>(270)              | 85°                        | 50°-85°              | 85°-65°                      | 26"                      |
|        |                       |               |               |               |               |               | 90°                   | 3-7/8"<br>(98)    | 9-7/8"<br>(251)               | 90°                        | 55°-90°              | 90°-70°                      | 25"                      |
|        |                       |               |               |               |               |               | 100°                  | 2-5/8"<br>(67)    | 8-5/8"<br>(219)               | 100°                       | 60°-100°             | 100°-75°                     | 24"                      |
|        |                       |               |               |               |               |               | 110°                  | 1-1/2"<br>(38)    | 7-1/2"<br>(191)               | 110°                       | 65°-110°             | 110°-80°                     | 23"                      |
| 8616   | EXTERIOR              | •             | •             | ♿             | •             | N/A           |                       |                   |                               |                            |                      |                              |                          |

\* Hold Open is approximately 1°-2° less than the cushion angle listed in the chart.

## Heavy-Duty Parallel Arm x Spring Door Saver

**8616 S-DS/S-DST**

4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 4-5/8" (5/8" stop shown).  
 Minimum door rail to bottom of slim plastic cover 4-3/4" (5/8" stop shown).  
 Minimum door rail to bottom of optional full cover 5-3/4" (5/8" stop shown).  
 Backcheck positioning valve in "ON" position.

Spacer block 5/8" or 1/2" stop

Minimum stop width 1-1/8 (29)

2-1/8 (54)

2-1/4 (57)

2-1/8 (54)

(Left Hand)

| TEMPLATE REFERENCE | DIM "A" CLOSER | DIM "B" SOFFIT PLATE | * DEAD STOP/HOLD OPEN | APPROX. BACKCHECK | APPROX. DELAYED ACTION | MINIMUM DOOR WIDTH |
|--------------------|----------------|----------------------|-----------------------|-------------------|------------------------|--------------------|
| 85°                | 4-5/8" (117)   | 10-5/8" (270)        | 85°                   | 50°-85°           | 85°-65°                | 26"                |
| 90°                | 3-7/8" (98)    | 9-7/8" (251)         | 90°                   | 55°-90°           | 90°-70°                | 25"                |
| 100°               | 2-5/8" (57)    | 8-5/8" (219)         | 100°                  | 60°-100°          | 100°-75°               | 24"                |
| 110°               | 1-1/2" (38)    | 7-1/2" (191)         | 110°                  | 65°-110°          | 110°-80°               | 23"                |

\* Hold Open is approximately 5° - 7° less than the dead stop angle listed in the chart.

**Size Selection Chart**

| CLOSER | INTERIOR/EXTERIOR | DOOR WIDTH |            |            |            |
|--------|-------------------|------------|------------|------------|------------|
|        |                   | 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. |
| 8616   | INTERIOR          | •          | •          | •          | •          |
|        | EXTERIOR          | •          | •          | •          | N/A        |

## Track - Pull Side Door Mounted

**8616 T**  
**8616 TH**

4-1/2" x 4-1/2" Butt Hinges

Minimum frame face for closer 4".  
 Optional BP86TFC plate required for full cover.  
 Specify hand.  
 Backcheck positioning valve in "OFF" position.

Minimum ceiling clearance 4-1/4 (108) (slim plastic cover and full cover)

2-1/8 (54)

2-1/4 (57)

13/16 (21)

1-1/4 (32)

(Right Hand)

| TEMPLATE REFERENCE | DIM "A"     | DIM "B"      | CUSHION | MAXIMUM HOLD OPEN | APPROX. BACKCHECK* | APPROX. DELAYED ACTION | MINIMUM DOOR WIDTH |
|--------------------|-------------|--------------|---------|-------------------|--------------------|------------------------|--------------------|
| 85°                | 7/8" (22)   | 9-7/8" (251) | 85°     | 83°               | 65°-85°            | 85°-65°                | 31"                |
| 90°                | 7/8" (22)   | 8-7/8" (225) | 90°     | 88°               | 65°-90°            | 90°-65°                | 30"                |
| 110°               | -3/8" (-10) | 7" (178)     | 110°    | 108°              | 70°-110°           | 110°-70°               | 27"                |
| 180°               | -7/8" (-22) | 4-3/8" (111) | 180°    | 160°              | 80°-180°           | 180°-80°               | 25"                |

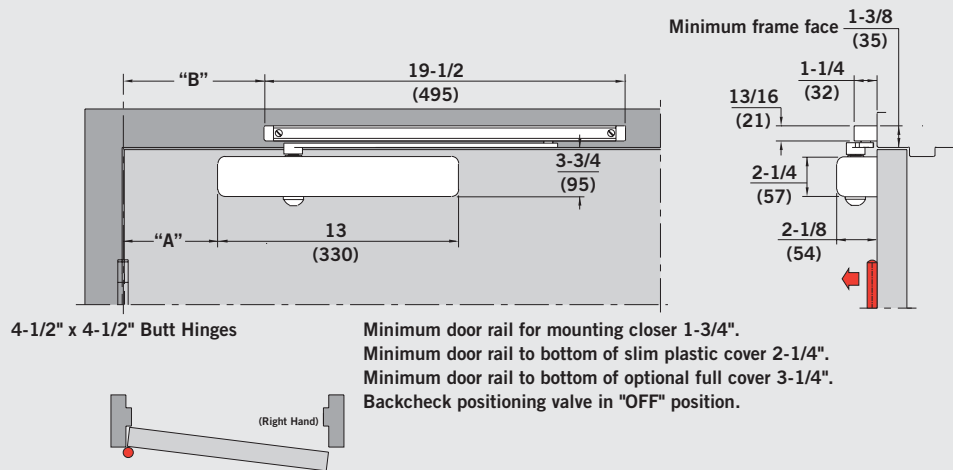
\* Backcheck is advanced approximately 15° with positioning valve on.

**Size Selection Chart**

| CLOSER | INTERIOR/EXTERIOR | DOOR WIDTH |            |            |            |
|--------|-------------------|------------|------------|------------|------------|
|        |                   | 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. |
| 8616   | INTERIOR          | •          | •          | •          | •          |
|        | EXTERIOR          | •          | •          | •          | N/A        |

## Jamb Track - Pull Side Frame Mounted

8616 JT  
8616 JTH



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 1-3/4".  
Minimum door rail to bottom of slim plastic cover 2-1/4".  
Minimum door rail to bottom of optional full cover 3-1/4".  
Backcheck positioning valve in "OFF" position.

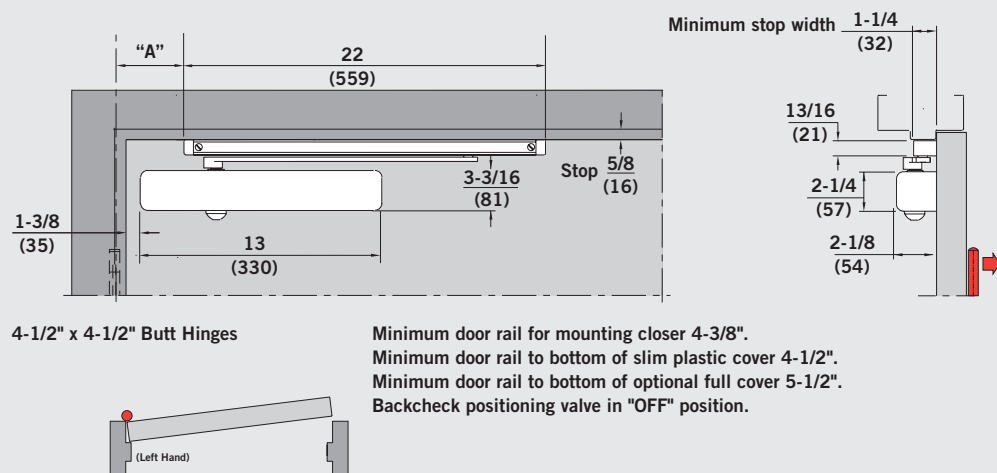
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               | TEMPLATE<br>REFERENCE | DIM "A"         | DIM "B"         | CUSHION | MAXIMUM<br>HOLD OPEN | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|-----------------------|-----------------|-----------------|---------|----------------------|-----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. |                       |                 |                 |         |                      |                       |                              |                          |
| 8616   | INTERIOR              | •             | •             | ⊗             | •             | 85°                   | 6"<br>(152)     | 8"<br>(203)     | 85°     | 80°                  | 60°-85°               | 85°-60°                      | 31"                      |
|        | EXTERIOR              | •             | •             | ⊗             | N/A           | 90°                   | 5-1/2"<br>(140) | 7-1/2"<br>(191) | 90°     | 85°                  | 65°-90°               | 90°-65°                      | 30"                      |
|        |                       |               |               |               |               | 110°                  | 4-1/4"<br>(108) | 5-3/4"<br>(146) | 110°    | 100°                 | 80°-110°              | 110°-80°                     | 28"                      |
|        |                       |               |               |               |               | 175°                  | 3-3/4"<br>(95)  | 3-3/4"<br>(95)  | 175°    | 145°                 | 95°-180°              | 175°-95°                     | 25"                      |

\* Backcheck is advanced approximately 15° with positioning valve on.

## Push Track - Push Side Soffit Mounted

8616 PT86  
8616 PT86H



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 4-3/8".  
Minimum door rail to bottom of slim plastic cover 4-1/2".  
Minimum door rail to bottom of optional full cover 5-1/2".  
Backcheck positioning valve in "OFF" position.

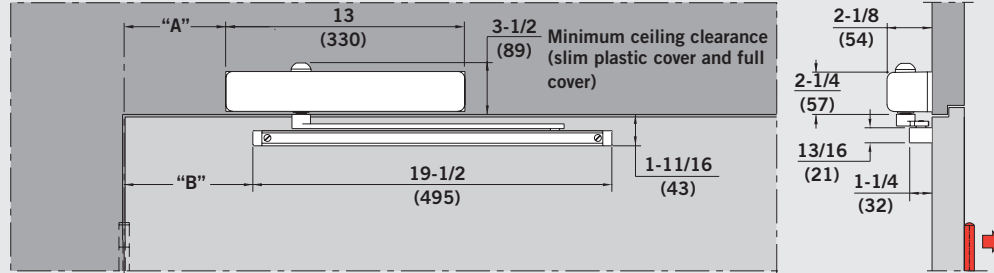
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               | TEMPLATE<br>REFERENCE | DIM "A"         | CUSHION | MAXIMUM<br>HOLD OPEN | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|-----------------------|-----------------|---------|----------------------|-----------------------|------------------------------|--------------------------|
|        |                       | 2'-6"<br>min. | 3'-0"<br>max. | 3'-6"<br>max. |                       |                 |         |                      |                       |                              |                          |
| 8616   | INTERIOR              | •             | ⊗             | •             | 85°                   | 9"<br>(228)     | 85°     | 82°                  | 65°-85°               | 85°-65°                      | 32"                      |
|        | EXTERIOR              | •             | ⊗             | N/A           | 90°                   | 7-3/8"<br>(187) | 90°     | 87°                  | 65°-90°               | 90°-65°                      | 30"                      |
|        |                       |               |               |               | 100°                  | 5-3/8"<br>(136) | 100°    | 97°                  | 65°-100°              | 100°-65°                     | 28"                      |

\* Backcheck is advanced approximately 15° with positioning valve on.

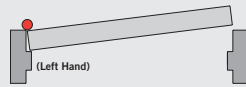
## Flush Track - Push Side Door Mounted x Backplate

8616 FT BP86T  
8616 FTH BP86T



4-1/2" x 4-1/2" Butt Hinges

Minimum transom surface for BP86T or optional plates 1-15/16".  
Optional BP86FTFC plate required for full cover.  
Specify hand for optional full cover.  
Backcheck positioning valve in "OFF" position.



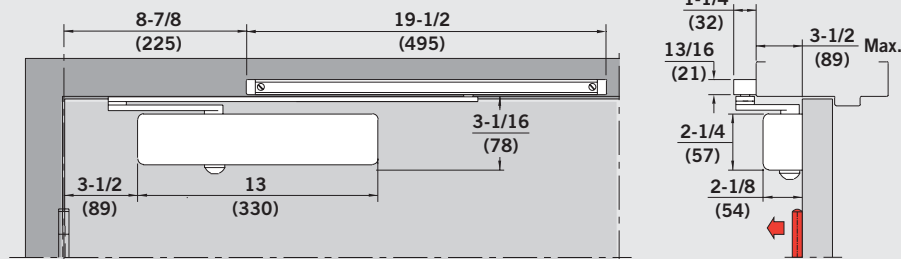
### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |               | TEMPLATE<br>REFERENCE | DIM "A"         | DIM "B"         | CUSHION | MAXIMUM<br>HOLD OPEN | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|---------------|-----------------------|-----------------|-----------------|---------|----------------------|-----------------------|------------------------------|--------------------------|
|        |                       | 2'-0"<br>min. | 2'-6"<br>max. | 3'-0"<br>max. | 3'-6"<br>max. |                       |                 |                 |         |                      |                       |                              |                          |
| 8616   | INTERIOR              | •             | •             | ♿             | •             | 85°                   | 4-7/8"<br>(124) | 6-7/8"<br>(175) | 85°     | 82°                  | 60°-85°               | 85°-60°                      | 29"                      |
|        | EXTERIOR              | •             | •             | ♿             | N/A           | 90°                   | 4-3/8"<br>(111) | 6-5/8"<br>(168) | 90°     | 87°                  | 65°-90°               | 90°-65°                      | 28"                      |
|        |                       |               |               |               |               | 110°                  | 3-3/8"<br>(86)  | 5-1/4"<br>(133) | 110°    | 105°                 | 75°-110°              | 110°-75°                     | 26"                      |
|        |                       |               |               |               |               | 140°                  | 2-3/8"<br>(60)  | 4-1/2"<br>(114) | 135°    | 125°                 | 85°-135°              | 135°-85°                     | 25"                      |

\* Backcheck is advanced approximately 15° with positioning valve on.

## Track Double Egress - Pull Side Frame Mounted

8616 TDE  
8616 TDEH



4-1/2" x 4-1/2" Butt Hinges

Minimum door rail for mounting closer 2-1/2".  
Minimum door rail to bottom of slim plastic cover 3".  
Arm requires a minimum 3-3/4" clearance between door face  
and wall when opening 90° and greater.  
Backcheck positioning valve in "OFF" position.

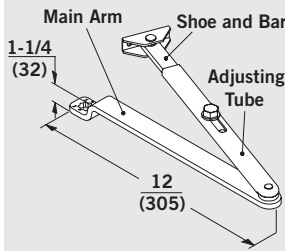


### Size Selection Chart

| CLOSER | INTERIOR/<br>EXTERIOR | DOOR WIDTH    |               |               |      | TEMPLATE<br>REFERENCE | CUSHION | MAXIMUM<br>HOLD OPEN | APPROX.<br>BACKCHECK* | APPROX.<br>DELAYED<br>ACTION | MINIMUM<br>DOOR<br>WIDTH |
|--------|-----------------------|---------------|---------------|---------------|------|-----------------------|---------|----------------------|-----------------------|------------------------------|--------------------------|
|        |                       | 2'-6"<br>min. | 3'-0"<br>max. | 3'-6"<br>max. |      |                       |         |                      |                       |                              |                          |
| 8616   | INTERIOR              | •             | ♿             | •             | 125° | 125°                  | 110°    | 70°-125°             | 125°-70°              | 30"                          |                          |
|        | EXTERIOR              | •             | ♿             | N/A           |      |                       |         |                      |                       |                              |                          |

\* Backcheck is advanced approximately 15° with positioning valve on.

**Flat Form Arm**



Standard flat-arm for 8600 Series closers. Arm is non-handed.

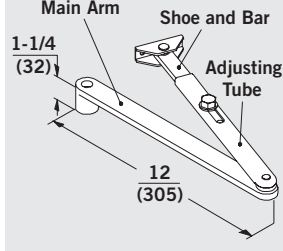
**AF86** — Flat form complete arm for regular, top jamb (0"–4" [0 mm–102 mm] reveal) and parallel arm.

**AF86J** — Flat form arm complete for top jamb (4"–8" [102 mm–203 mm] reveal).

**AF86P** — Parallel flat form complete (Tri-Pack) (0"–4" [0 mm–102 mm] reveal). P86 included.

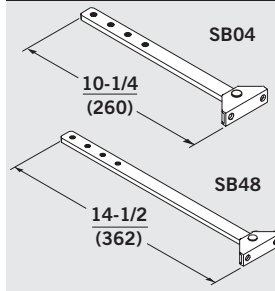
**AMF86** — Regular flat form main arm and adjusting tube.

**Flat Form Arm for MJ**



**AF8MJ** — Regular flat form arm complete for use with MJ (mortise jamb) bracket. MJ bracket ordered separately.

**Flat Form Arm Shoe and Bar**

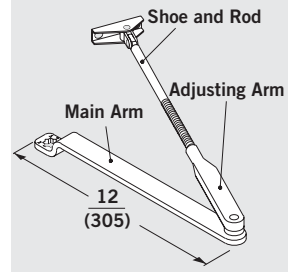


**SB04** — 0"–4" (0 mm–102 mm) reveal. Shoe and bar only.

**SB48** — 4"–8" (102 mm–203 mm) reveal. Shoe and bar only.

SB04 and SB48 must be used in conjunction with AMF86. Non-handed.

**Round Form Arm (8 mm rod)**

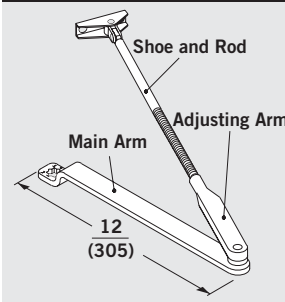


**AR** — Complete arm assembly (0"–4" [0 mm–102 mm] reveal) with 8 mm rod. Optional arm with 8600 Series closers. Arm is non-handed.

**ARP** — Parallel round form arm complete (Tri-Pack) (0"–4" [0 mm–102 mm] reveal). P86 included.

**AMR04** — Regular non-hold open main arm and adjusting arm. Accepts 8 mm rod.

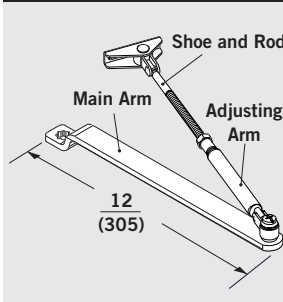
**Round Form Arm (10 mm rod)**



**ARJ** — Complete arm assembly (4"–8" [102 mm–203 mm] reveal) with (10 mm) rod. Designed specifically for top jamb applications with deeper reveals. Arm is non-handed.

**AMR48** — Regular non-hold open main arm and adjusting arm. Accepts 10 mm rod.

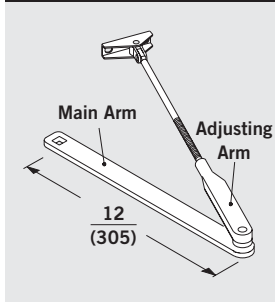
**Round Form Arm (8 mm rod)**



**AO8** — Complete secured elbow arm non-hold open assembly (0"–4" [0 mm–102 mm] reveal) with 8 mm rod. Optional arm with 8600 Series closers. Arm is non-handed.

**AO8P** — Parallel round form arm secured elbow non-hold open complete (Tri-Pack) (0"–4" [0 mm–102 mm] reveal). P86 included.

**Narrow Profile Arm (8 mm)**

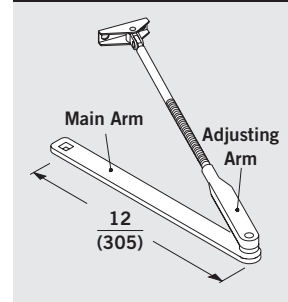


**ARNP** — Complete arm assembly. Regular or top jamb mount. Permits installation on 1" (25 mm) frame face for regular mount with maximum pull-side reveal of 1/8" (3 mm). Can also be used top jamb (0"–4" [0 mm–102 mm] reveal) for narrow top door rails. Arm is non-handed.

**ARNPP** — Complete arm assembly for parallel arm mount (Tri-Pack). (0"–4" [0 mm–102 mm] reveal). P86 included.

**AMR04NP** — Narrow profile main arm and adjusting arm. Used in conjunction with SR04 shoe and rod. Uses 8 mm rod.

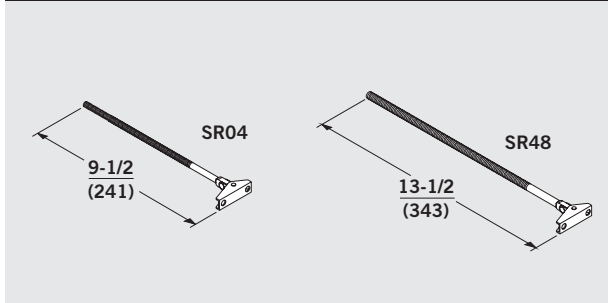
**Narrow Profile Arm (10 mm)**



**ARNPJ** — Complete arm assembly for top jamb installations (4"–8" [102 mm–203 mm] reveal) for narrow top door rails. Arm is non-handed.

**AMR48NP** — Narrow profile main arm and adjusting arm. Used in conjunction with SR48 shoe and rod. Uses 10 mm rod.

**Regular Arm Shoe and Rod**

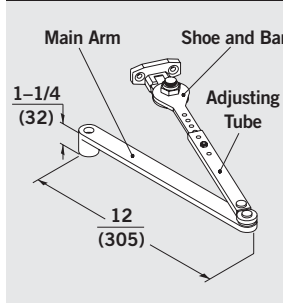


**SR04 (8 mm Rod Diameter)**  
(0"-4" [0 mm-102 mm] reveal). Shoe and rod only.

**SR48 (10mm Rod Diameter)**  
(4"-8" [102 mm-203 mm] reveal). Shoe and rod only.

SR04 has an 8 mm rod and must be used in conjunction with main arm and adjusting arm AMR04. The SR48 has a 10 mm rod and must be used with main arm and adjusting arm AMR48. Non-handed.

**Friction Hold Open Arm**



Provides a hold open function between approximately 90° and 180° of door opening (conditions permitting). Arm is non-handed.

**FH** — Friction hold open arm complete (0"-4" [0 mm-102 mm] reveal).

**FHJ** — Top jamb friction hold open arm complete (4"-8" [102 mm-203 mm] reveal).

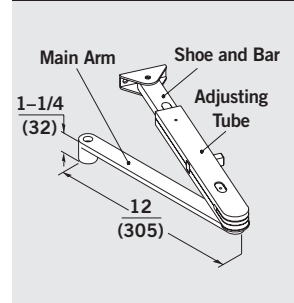
**FHP** — Friction hold open arm complete (Tri-Pack) (0"-4" [0 mm-102 mm] reveal). PHB included.

**FHM04** — Friction hold open main arm and adjusting tube (0"-4" [0 mm-102 mm] reveal).

**FHM48** — Friction hold open main arm and adjusting tube (4"-8" [102 mm-203 mm] reveal).

**FHSB** — Friction hold open shoe and bar.

**Plunger Hold Open Arm**



Provides a hold open function at a selected point within a range from approximately 30°-150° (conditions and installation applications permitting). Ideal for doors frequently placed in and out of hold open. Arm is non-handed.

**PH** — Plunger hold open arm complete regular or top jamb mount (0"-1-1/2" [0 mm-38 mm] reveal).

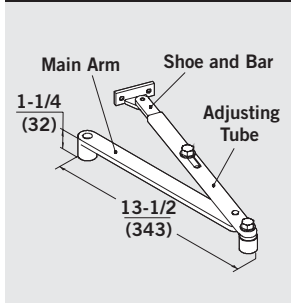
**PHP** — Plunger hold open arm complete parallel arm or top jamb mount (1-1/2"-3-1/2" [38 mm-89 mm] reveal).

**PHM** — Plunger hold open main arm and adjusting tube.

**PHSB** — Plunger hold open shoe and bar regular and top jamb mount (0"-1-1/2" [0 mm-38 mm] reveal).

**PHSBP** — Plunger hold open shoe and bar parallel arm or top jamb mount (1-1/2"-3-1/2" [38 mm to 89 mm] reveal).

**Integra Stop Arm**



Provides a cushioned opening function for regular and top jamb applications at 85°, 90°, 95°, 100°, 105°, and 110°. Arm is non-handed.

**IS** — Integra stop arm complete (0"-4" [0 mm-102 mm] reveal).

**ISJ** — Top jamb integra stop arm complete (4"-6" [102 mm-152 mm] reveal).

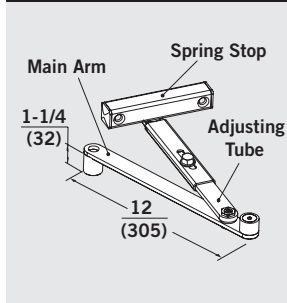
**ISM** — Integra stop main arm and adjusting tube.

**ISSB04** — Integra stop shoe and bar (0"-4" [0 mm-102 mm]).

**ISSB46** — Integra stop shoe and bar (4"-6" [102 mm-152 mm]).

**BUMPERIS** — Integra stop bumper only.

**Spring Integra Stop Arm**



Provides a spring assisted dead stop function for regular and top jamb applications at 85°, 90°, 100°, and 110°. Arm is non-handed.

**S-IS** — Spring assist integra stop arm complete (0"-3-1/2" [0 mm-89 mm] reveal).

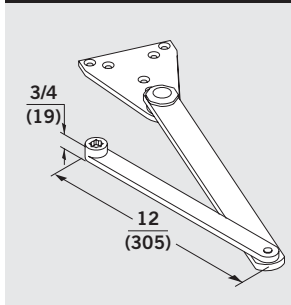
**S-ISH** — Spring assist integra stop hold open complete (0"-3-1/2" [0 mm-89 mm] reveal).

**S-ISJ** — Spring assist top jamb integra stop arm complete (3-1/2"-6-1/2" [89 mm-165 mm] reveal).

**S-ISJH** — Spring assist top jamb integra stop hold open arm complete (3-1/2"-6-1/2" [89 mm-165 mm] reveal).



### Super Parallel Arm



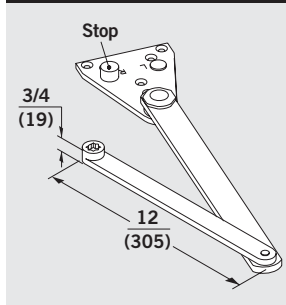
Heavy-duty parallel arm. Available in non-hold open, thumb turn hold open, and hex key turn hold open. Units can be installed for maximum opening of 100° or 180°. Hold open units will hold open at 90° or 125°. Maximum opening is 180° (conditions permitting). Arm is non-handed. Non-hold open arm illustrated.

**SPA** — Super parallel arm non-hold open.

**SPAT** — Super parallel arm thumb turn hold open.

**SPAK** — Super parallel arm hex key turn hold open.

### Door Saver Arm



Heavy-duty parallel arm with integral cushioned opening function. Available in non-hold open, thumb turn hold open, and hex key turn hold open. Units can be installed to achieve either stop or stop and hold open at 85°, 90°, 100°, and 110°. Maximum opening is 110° (conditions permitting). Arm is non-handed. Non-hold open arm illustrated.

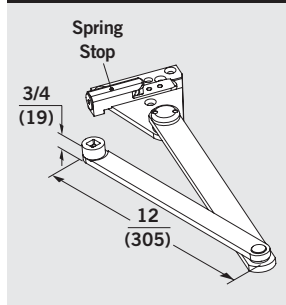
**DS** — Door saver arm non-hold open.

**DST** — Door saver arm thumb turn hold open.

**DSK** — Door saver arm hex key turn hold open.

**BUMPERDS** — Door saver bumper only.

### Spring Door Saver Arm

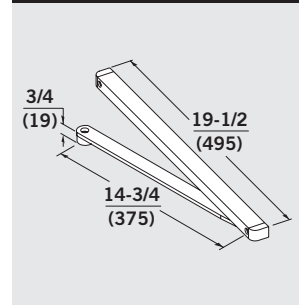


Heavy-duty parallel arm with spring assisted dead stop function. Available in non-hold open and thumb turn hold open. Units can be installed to achieve either stop or stop and hold open at 85°, 90°, 100°, and 110°. Maximum opening is 110° (conditions permitting). Arm is non-handed. Non-hold open arm illustrated.

**S-DS** — Spring assist door saver arm.

**S-DST** — Spring assist door saver arm thumb turn hold open.

### Track Arm

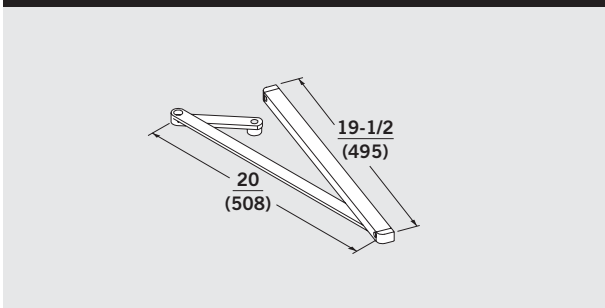


Provides slide track function for improved aesthetics and vandal resistance. Units can be installed to provide 85°, 90°, 110°, or 180° of door opening (conditions and application permitting). Arm is non-handed.

**T** — Track arm complete. Can be used on pull-side T applications (closer on door, track on frame) and JT applications (track on frame, closer on door). Can also be used with FT flush transom applications (closer on transom, track on door).

**TH** — Track hold open arm complete. Can be used in same applications as T arm. Range of hold open and maximum opening varies with mounting application.

### TDE Track Arm



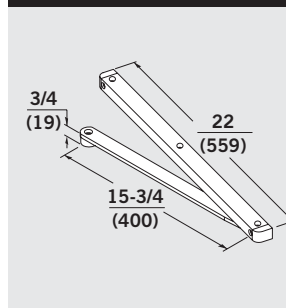
Provides slide track function for pull-side reveal conditions up to 3-1/2". Provides 125° of door opening (conditions permitting). Arm is handed. Also available with hold open option to provide selective single point hold open between 30° and 110°.

Arm requires a minimum 3-3/4" clearance between door face and wall when opened 90° and greater.

**TDE** — Double egress track arm complete.

**TDEH** — Double egress hold open track arm complete.

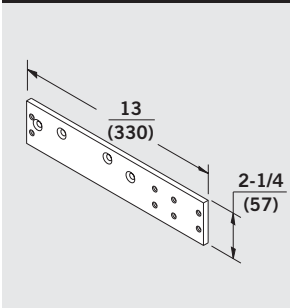
### Push Side Track Arm



**PT86** — Push-side track arm complete. Used with PT track applications (closer on door, track on soffit).

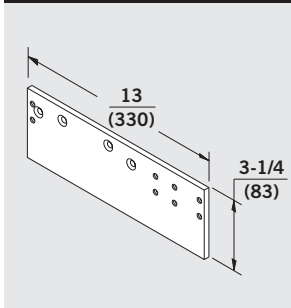
**PT86H** — Push-side track hold open arm complete. Used with PT track applications (closer on door, track on soffit).

Backplate



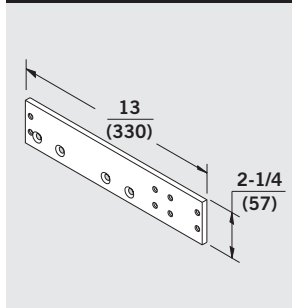
**BP86** — For top jamb mount of 8600 Series closers when overhead ceiling clearance is less than 2-1/4" (57 mm) or for regular mount to clear a mortised stop/holder.

Backplate



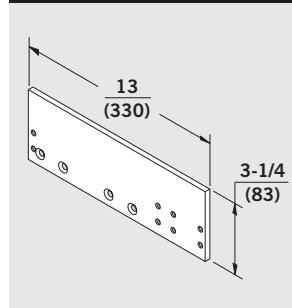
**BP86FC** — For top jamb mount with a full cover when overhead ceiling clearance is less than 2-1/4" (57 mm) or for regular mount to clear a mortised stop/holder.

Backplate



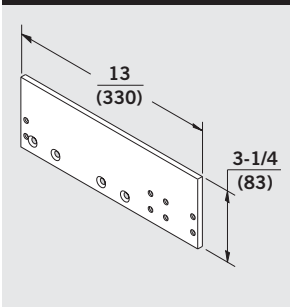
**BP86T** — For use with pull-side track applications (closer on frame face, track on door) to permit installation on a standard 2" (51 mm) frame face.

Backplate



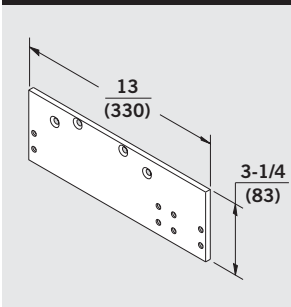
**BP86TFC** — For use with pull-side track applications with full cover (closer on frame face, track on door) to permit installation on a standard 2" (51 mm) frame face.

Backplate



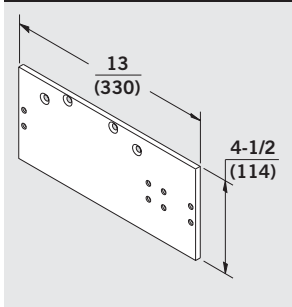
**BP86FTFC** — Required for track mount with full cover when being used on a flush transom (closer on transom, track on door). Mounting holes in the plate avoid rabbet on door.

Drop Plate



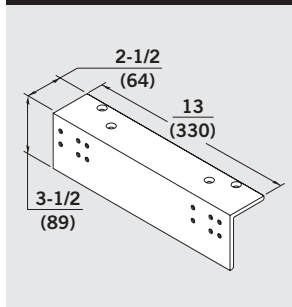
**DP86** — For top jamb mount of 8600 Series closers with COV, FC, FCSL, or FMC when overhead ceiling clearance is less than 1-7/8" (48 mm) or to provide clearance for a surface-applied stop/holder. Permits parallel arm installation with a minimum top door rail of 2-1/2" (64 mm) for non-hold open, 2-5/8" (67 mm) for friction, fusible link and plunger hold open applications (assuming 5/8" [16 mm] stop dimension).

Drop Plate



**DP86FC** — Permits parallel arm installation with minimum top door rail of 2-1/2" (64 mm) for non-hold open, 2-5/8" (67 mm) for friction, fusible link, and plunger hold open applications (assuming 5/8" [16 mm] stop dimension).

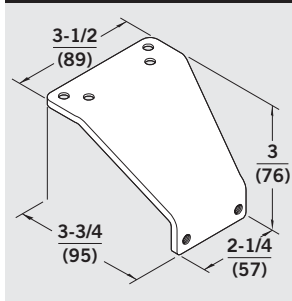
Angle Bracket



**AB86** — For installation of 8600 Series closers where parallel arm and top jamb applications are not practical due to low overhead ceiling clearance, narrow frame face, or unusual trim conditions. This bracket can also be used to provide clearance for a surface-applied stop/holder.

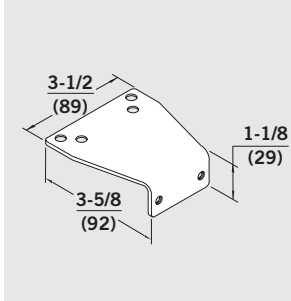
\*Overhead ceiling clearance is measured from bottom of frame face to ceiling.

### Parallel Drop Bracket



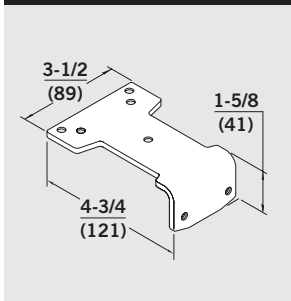
**PD** — For 8600 Series closer non-hold open parallel arm applications to clear a surface-applied stop/holder.

### Parallel Arm Bracket



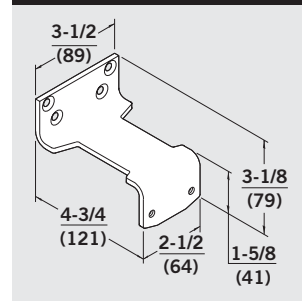
**P86** — Furnished standard with 8600 Series closer non-hold open and plunger hold open parallel arm applications.

### Parallel Hold Open Bracket



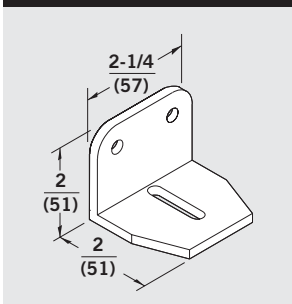
**PHB** — Furnished standard with 8600 FHP closer friction hold open parallel arm applications. Spacer block furnished standard for use with narrow stop applications.

### Parallel Flush Transom Bracket



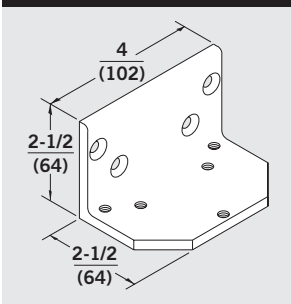
**PFT** — For all hold open and non-hold open parallel arm installations where flush transom conditions prohibit use of P86 or PHB bracket.

### Narrow Frame Bracket



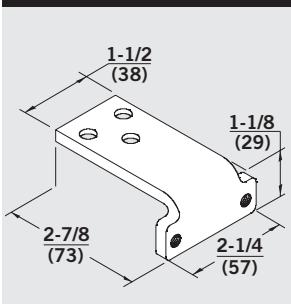
**NFHD** — For use with all DS and SPA applications where total frame depth is less than 4-1/2" (114 mm), prohibiting use of standard spacer block. NFHD bracket is used in lieu of block supplied with arm.

### Flush Transom Bracket



**FTHD** — For use with all DS and SPA applications where flush transom conditions prohibit normal installation of soffit bracket.

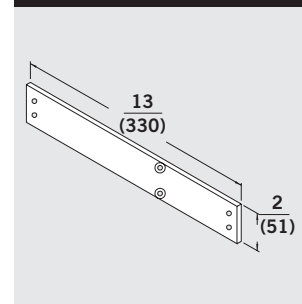
### Mortised Jamb Bracket



**MJ** — For 8600 Series closers with regular mount non-hold open assemblies where frame conditions will not permit use of the standard foot, e.g. molded or ornate trim. Permits use of parallel arm application between twin communicating doors where limited space prohibits use of the wider P86 bracket.

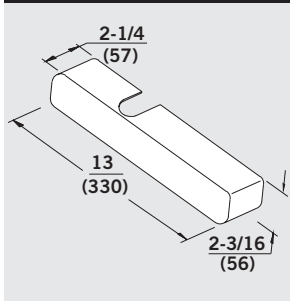
Flat form arm applications must use MJ in combination with AF8MJ arm.

### Conversion Plate



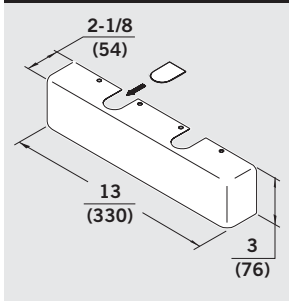
**BP86C** — For regular, top jamb, or parallel arm mounts. Permits replacement of existing 7600 Series closers with 8600 closers. Eliminates the need to remachine the door and frame.

### Slim Plastic Cover



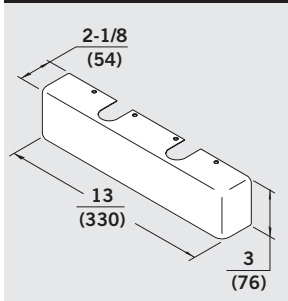
**COV** — Slim plastic cover furnished standard with 8600 Series closers.

### Full Plastic Cover



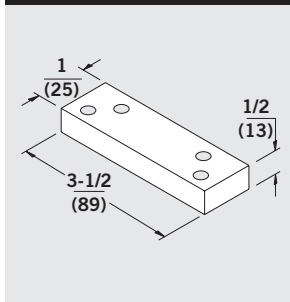
**FC** — Full plastic cover with interchangeable tab.  
**FCSL** — Full plastic slotted cover with interchangeable tab. Mounting holes slotted for low ceiling conditions.

### Full Metal Cover



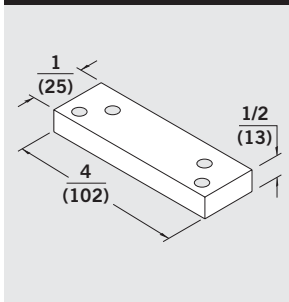
**FMC** — Full metal cover. Specify hand for top jamb, T track, and FT track applications.

### Blade Stop Spacer



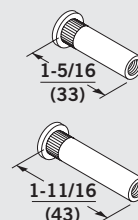
**BS** — For use with all 8600 Series P86, PD, and PHB applications installed on cased frames with applied blade stops. This block is used to provide adequate clearance for the blade stop.

### Heavy-Duty Blade Stop Spacer



**BSHD** — For use with all 8600 Series DS and SPA applications installed on cased frames with applied blade stops. This block is used in conjunction with the spacer furnished with the arm to provide adequate clearance for the blade stop.

### Sex Nuts



**SNB1** — Sex nuts with machine screws for 1-3/4" (44 mm) door.  
**SNB2** — Sex nuts with machine screws for 1-3/8" (35 mm) door.

Required for use on unreinforced doors and wood or composite labeled fire doors for securely attaching hardware to the door.

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