dormakaba

# 8600 Series
## Surface applied door closers

We make access in life smart and secure

Brochure

# 8600 Series surface closers

Representing 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 is housed in corrosion-resistant aluminum, and 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.

## Contents

**Accessories**



Intertek Intertek

dormakaba USA quality and environmental management systems in Reamstown, PA and Steeleville, IL are certified to ISO 9001:2008 and ISO 14001:2004.

# 8600 Series surface closers

### Technical details

- Available as 8616 closers for interior and exterior doors. Meets barrier-free requirements (adjustable size 1–6).
- Non-handed for regular, top jamb and parallel arm applications.
- Adjustable backcheck standard. Controls opening motion during abusive or abrupt opening.
- POS backcheck positioning valve (standard) maintains effective backcheck range on parallel arm applications. Valve accessible with 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.
- 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.
- No slip, octagonal bore spring adjustment 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).

### Certifications

- ANSI/BHMA A156.4 Grade 1 certified.
- UL and CUL listed.
- Meets UL10C for positive pressure.
- Meets ANSI/BHMA A117.1 and ADA for barrier-free accessibility.
- CSFM approved.

BHMA CERTIFIED c UL us LISTED

### 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°. 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 1–6 and meet barrier-free requirements. Closers to have a slim plastic cover and a wide range of arm options. All 8600 fully adjustable spring force door closers to include an integral design to positively stop adjustment of the spring at the minimum and maximum spring force settings.

### Optional specifications

The 8600 Series closer will have 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).

## Finishes

### Standard sprayed finishes

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

### Optional dormakaba custom color or designer color finishes

Contact Customer Service.

### Optional Plated/Architectural 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)
- Stainless: 630 (Satin)

### Warranty

For details, refer to DORMA Limited Warranty on our website at go.dorma.com/terms.

**REDUCED OPENING FORCE INSTALLATIONS**

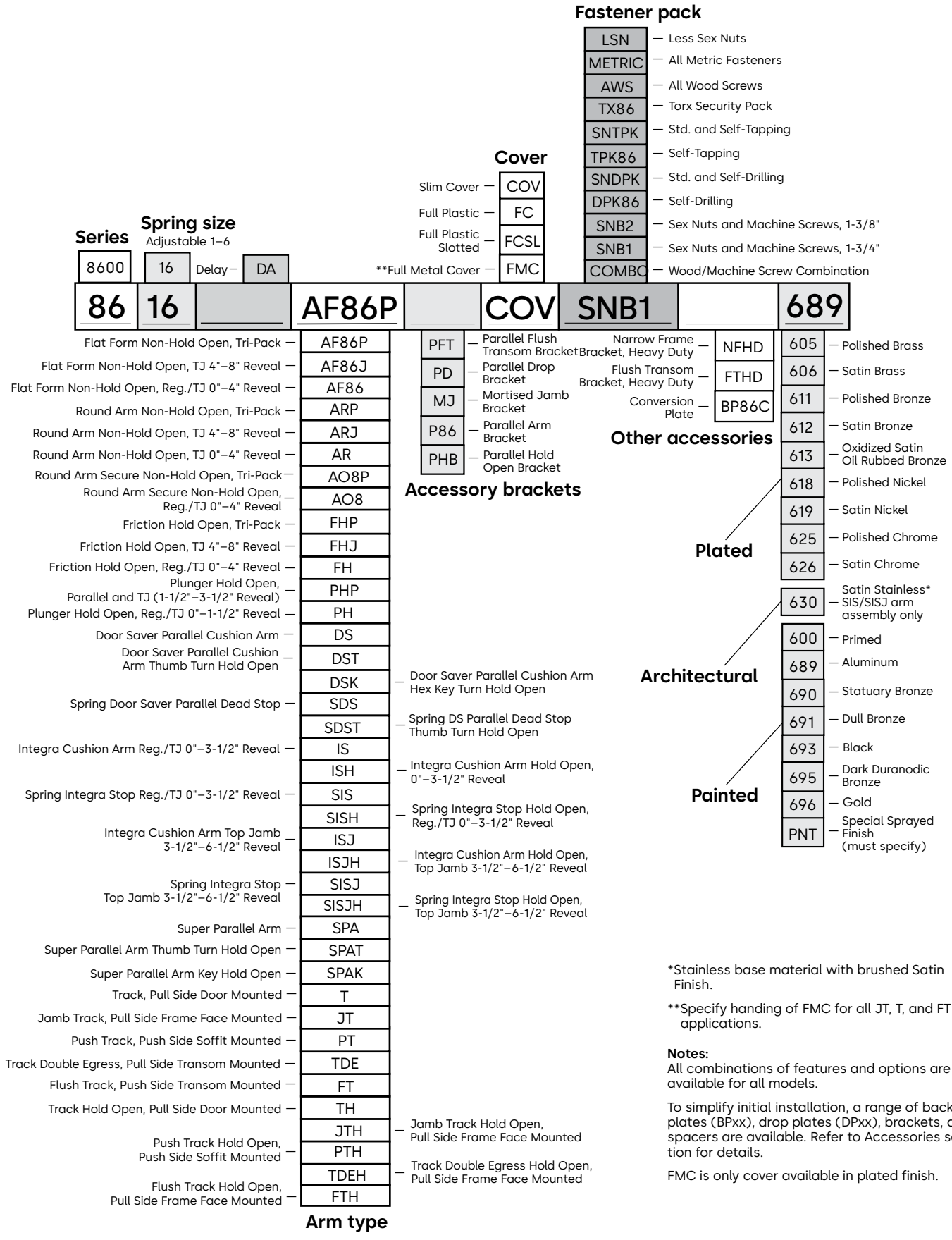
**CAUTION** Manual door closers, including those certified to meet ANSI/BHMA A156.4, when installed and adjusted to conform to ADA or other reduced opening force requirements, may not provide sufficient power to reliably close and latch a door.

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

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

● standard ○ optional

# How to order 8600 Series




*Stainless base material with brushed Satin Finish.

**Specify handing of FMC for all JT, T, and FT applications.

**Notes:**
All combinations of features and options are not available for all models.

To simplify initial installation, a range of back plates (BPxx), drop plates (DPxx), brackets, and spacers are available. Refer to Accessories section for details.

FMC is only cover available in plated finish.

# Technical drawings

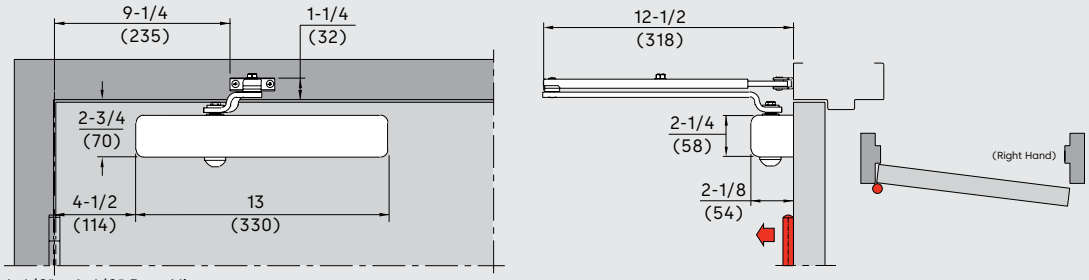
**Technical drawing symbols & notes**

- • – Recommended application
- N/A – Not applicable/application not recommended
- ♿ – Opening force 5 lb or less on interior doors

**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.

## Regular × Flat form arm (or round form arm)

8616 AF86 (Flat Form Arm – Shown)
8616 AR (Round Form Arm)
8616 AO8 (Round Form Arm)




4-1/2" × 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**

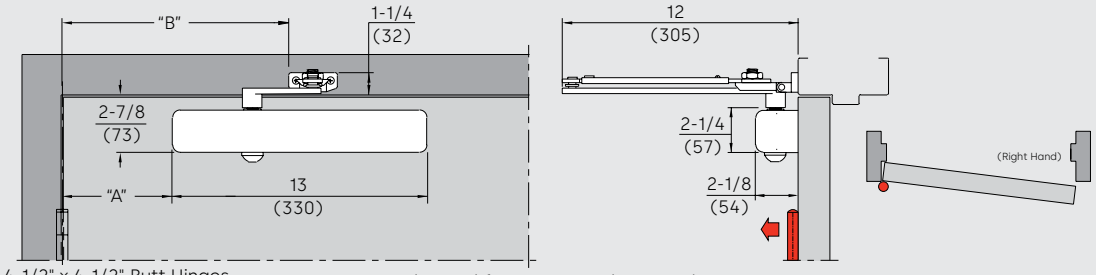
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| **Max. opening** | ***Approx. backcheck** | **Approx. delayed action** |
|---|---|---|
| To 180° | 65°–180° | 180°–65° |

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

## Regular × Friction hold open

8616 FH




4-1/2" × 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**

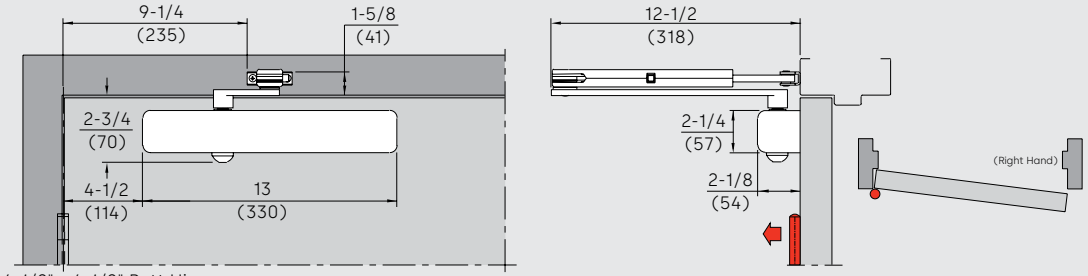
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| **Template ref.** | **Dim "A"** | **Dim "B"** | **Approx max. opening** | ***Approx. backcheck** | **Approx. delayed action** | **Min. hold open** | **Max hold open** |
|---|---|---|---|---|---|---|---|
| To 100° | 7" (178) | 12-5/8" (321) | 110° | 65°–110° | 110°–65° | 80° | 110° |
| 100°–120° | 6" (152) | 11-5/8" (295) | 125° | 70°–125° | 125°–70° | 90° | 125° |
| Over 120° | 3-1/2" (89) | 9-1/8" (232) | 180° | 85°–180° | 180°–85° | 100° | 165° |

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

## Regular × Plunger hold open

8616 PH




4-1/2" × 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**

| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

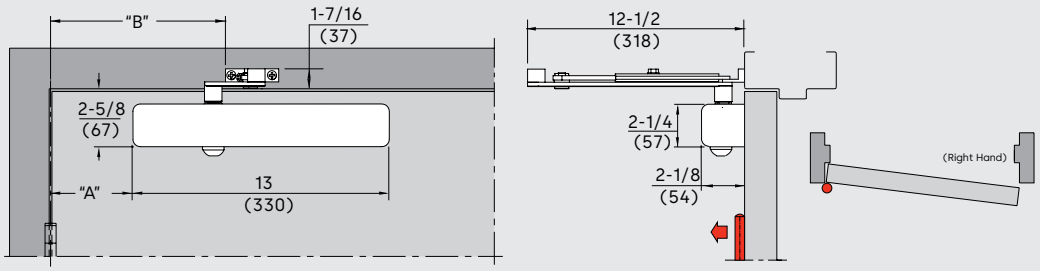
| **Max. opening** | ***Approx. backcheck** | **Approx. delayed action** | **Min. hold open** | **Max hold open** |
|---|---|---|---|---|
| 180° | 65°–180° | 180°–65° | 30° | 140° |

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

# Technical drawings

## Regular × Cushion IS Arm

8616 IS/ISH




4-1/2" × 4-1/2" Butt Hinges

Minimum door rail for mounting closer 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**

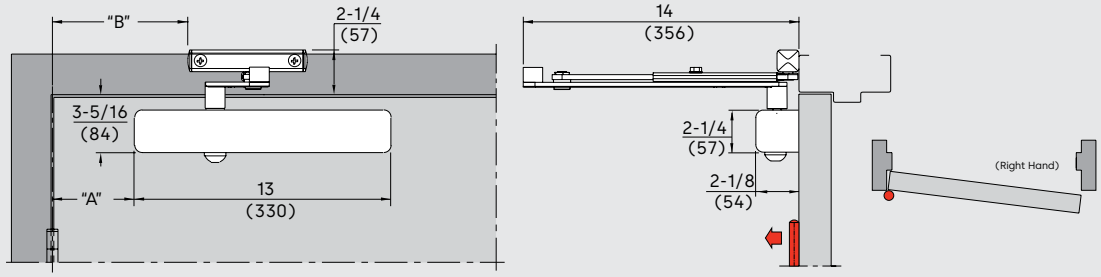
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| **Template ref.** | **Dim "A"** | **Dim "B"** | ****Cushion/ Hold open** | ***Approx. backcheck** | **Approx. delayed action** |
|---|---|---|---|---|---|
| 85° | 7-11/16" (195) | 13-7/8" (352) | 85° | 55°–85° | 85°–55° |
| 90° | 7" (178) | 13-1/2" (343) | 90° | 60°–90° | 90°–60° |
| 95° | 6-3/16" (157) | 13-1/4" (337) | 95° | 65°–95° | 95°–65° |
| 100° | 6-1/8" (156) | 12-5/8" (321) | 100° | 70°–100° | 100°–70° |
| 105° | 5-11/16" (144) | 12-1/4" (311) | 105° | 75°–105° | 105°–75° |
| 110° | 5-1/4" (133) | 11-7/8" (302) | 110° | 75°–110° | 110°–75° |

*Backcheck is advanced approximately 15° with positioning valve on.
**Hold open is approximately 5°–7° less than the cushion angle listed in the chart.

## Regular × Spring stop IS Arm

8616 SIS / SISH




4-1/2" × 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**

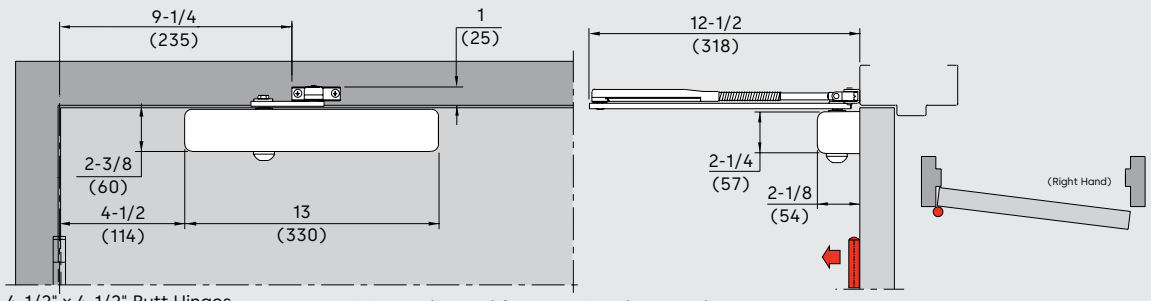
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| **Template ref.** | **Dim "A"** | **Dim "B"** | ****Dead stop/ Hold open** | ***Approx. backcheck** | **Approx. delayed Action** |
|---|---|---|---|---|---|
| 85° | 9-1/4" (235) | 11-9/16" (294) | 85° | 55°–85° | 85°–55° |
| 90° | 8-3/8" (212) | 11-1/16" (281) | 90° | 60°–90° | 90°–60° |
| 100° | 7-3/8" (188) | 10-1/16" (256) | 100° | 70°–100° | 100°–70° |
| 110° | 6-5/8" (169) | 9-5/16" (237) | 110° | 75°–110° | 110°–75° |

*Backcheck is advanced approximately 15° with positioning valve on.
**Hold open is approximately 5°–7° less than the cushion angle listed in the chart.

## Regular × Round form arm, Narrow profile

8616 ARNP




4-1/2" × 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**

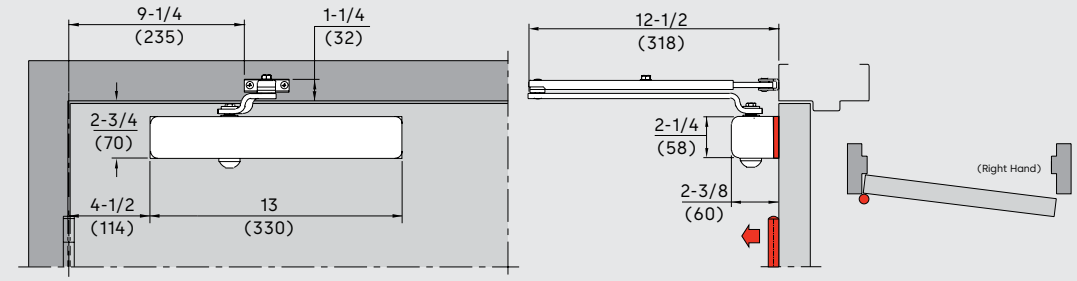
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| **Min. opening** | ***Approx. backcheck** | **Approx. delayed action** | **Min. hold open** | **Max. hold open** |
|---|---|---|---|---|
| 180° | 65°–180° | 180°–65° | 30° | 140° |

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

## Regular × Flat form arm (or Round form arm) × Backplate

8616 AF86 BP86
(Flat Form Arm – Shown
8616 AR BP86
(Round Form Arm)
8616 AO8 BP86
(Round Form Arm)




4-1/2" × 4-1/2" Butt Hinges

Minimum door rail for backplate BP86 2-1/4".
Minimum door rail to bottom of slim plastic cover 2-5/8".
Minimum door rail for backplate BP86FC 2-1/4".
Minimum door rail to bottom of optional full cover 3-5/8".
Backcheck positioning valve in "OFF" position.

**Size selection chart**

| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

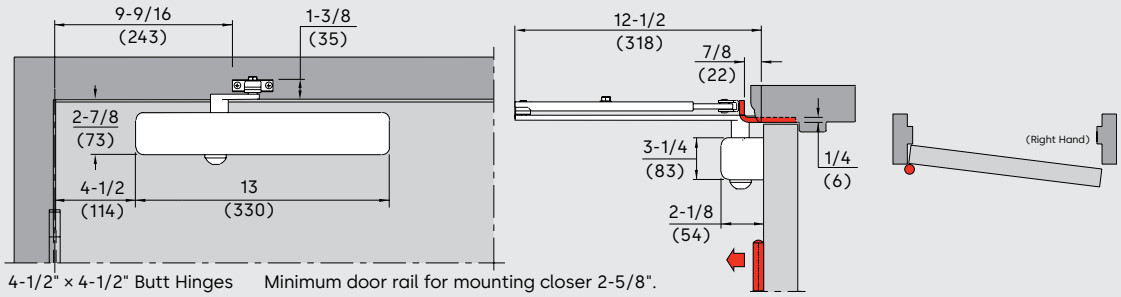
| **Max. opening** | ***Approx. backcheck** | **Approx.delayed action** |
|---|---|---|
| 180° | 65°–180° | 180°–65° |

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

# Technical drawings

## Regular × Mortised jamb bracket

8616 AF8MJ
8616 AR MJ
8616 AO8 MJ




4-1/2" × 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 covers 3-3/4".
Backcheck positioning valve in "OFF" position.

**Size selection chart**

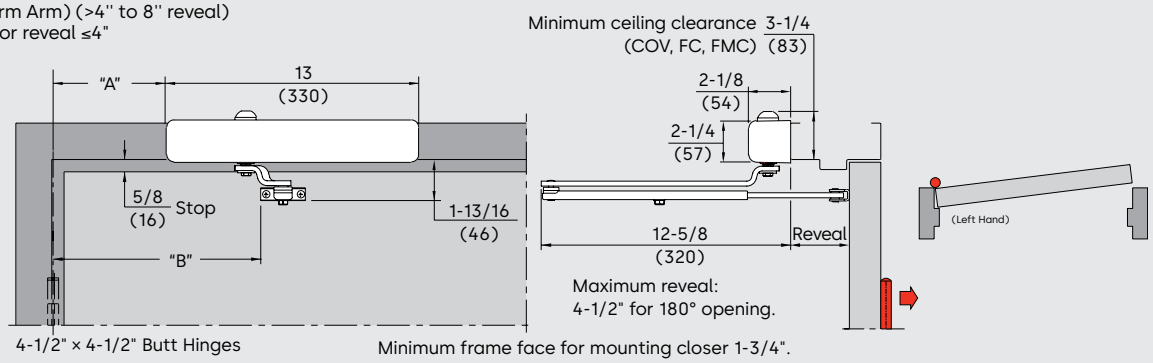
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | ♿ | • | • | N/A |

| **Max. opening** | ***Approx. backcheck** | **Approx.delayed action** |
|---|---|---|
| 180° | 65°–180° | 180°–65° |

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

## Top jamb × 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)
**Note:** Use AF or AR for reveal ≤4"




4-1/2" × 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**

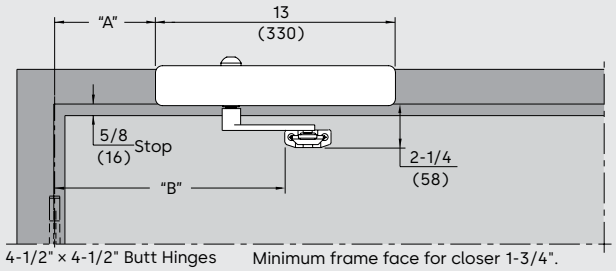
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| **Template ref.** | **Dim "A"** | **Dim "B"** | **Reveal** | **Arm** | | **Approx. max. opening** | ***Approx. backcheck** | **Approx. delayed action** |
|---|---|---|---|---|---|---|---|---|
| To 180° | 4-1/2" (114) | 9-1/4" (235) | 0" | AF86 | AR | 180° | 70°–180° | 180°–70° |
| | | | 4" | AF86 | AR | 180° | 75°–180° | 180°–75° |
| To 180° | 4-1/2" (114) | 9-1/4" (235) | >4" | AF86J | ARJ | 180° | 75°–180° | 180°–75° |
| | | | 8" | AF86J | ARJ | 165° | 80°–165° | 165°–80° |

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

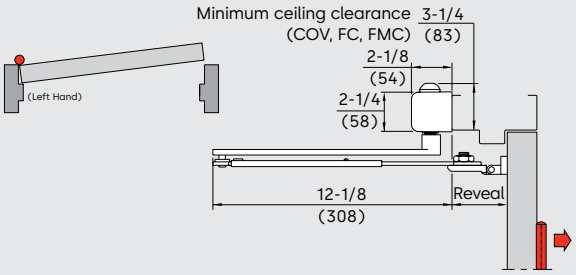
## Top jamb × Friction hold open

8616 FHJ (>4'' to 8'' reveal)
**Note:** Use FH for reveal ≤4"




4-1/2" × 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**

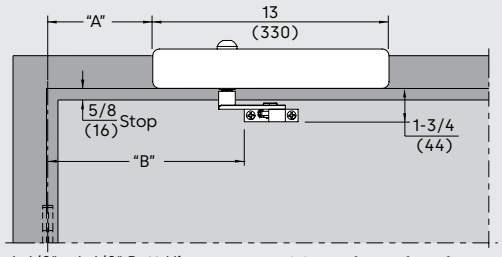
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| **Template ref.** | **Dim "A"** | **Dim "B"** | **Reveal** | **Arm** | **Approx. max. opening** | ***Approx. backcheck** | **Approx. delayed action** | **Min. hold open** | **Max. hold open** |
|---|---|---|---|---|---|---|---|---|---|
| To 100° | 7-1/2" (190) | 13-1/8" (333) | 0" | FH | 110° | 70°–110° | 110°–70° | 70° | 105° |
| | | | 4" | FH | 105° | 75°–105° | 105°–75° | 70° | 100° |
| | | | >4" | FHJ | 105° | 75°–105° | 105°–75° | 70° | 100° |
| | | | 8" | FHJ | 100° | 80°–100° | 110°–80° | 70° | 95° |
| To 120° | 6" (152) | 11-5/8" (295) | 0" | FH | 125° | 75°–125° | 125°–75° | 75° | 120° |
| | | | 4" | FH | 120° | 80°–120° | 120°–80° | 75° | 115° |
| | | | >4" | FHJ | 120° | 80°–120° | 120°–80° | 75° | 115° |
| | | | 8" | FHJ | 115° | 85°–115° | 115°–85° | 75° | 110° |
| Over 120° | 3-1/2" (89) | 9-1/8" (232) | 0" | FH | 180° | 85°–180° | 180°–85° | 80° | 170° |
| | | | 4" | FH | 180° | 90°–180° | 180°–90° | 80° | 170° |
| | | | >4" | FHJ | 180° | 90°–180° | 180°–90° | 80° | 170° |
| | | | 8" | FHJ | 165° | 100°–165° | 165°–100° | 85° | 155° |

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

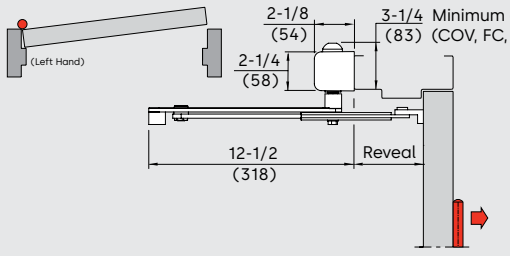
## Top jamb × Cushion IS Arm

8616 ISJ/ISJH (>3-1/2'' to 6-1/2'' reveal)
**Note:** Use IS for reveal ≤ 3-1/2"




4-1/2" × 4-1/2" Butt Hinges

Minimum frame face for mounting closer 1-5/8".
Specify hand for optional full metal cover.
Backcheck positioning valve in "OFF" position.




**Size selection chart**

| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

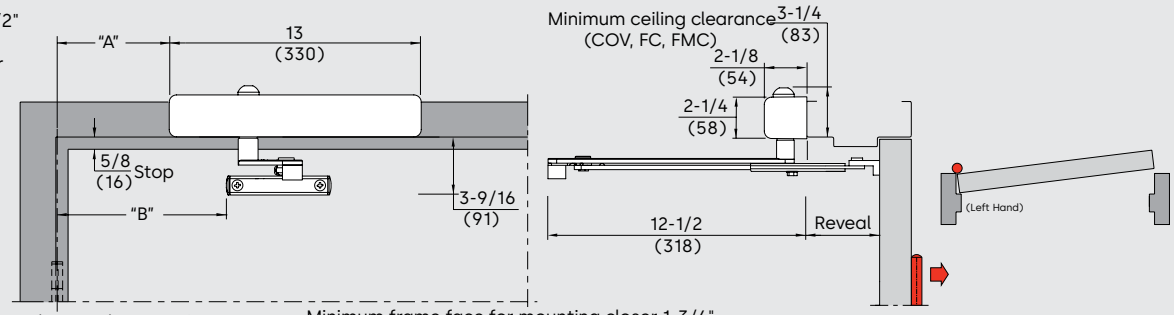
| **Template Ref.** | **Dim "A"** | **Dim "B"** | **Reveal** | **Arm** | ****Cushion/ Hold open** | ***Approx backcheck** | **Approx. delayed action** |
|---|---|---|---|---|---|---|---|
| 85° | 6-1/2" (165) | 12-5/8" (321) | 0"–3-1/2" | IS | 85° | 55°–85° | 85°–55° |
| | | | >3-1/2"–6-1/2" | ISJ | 85° | 55°–85° | 85°–55° |
| 90° | 5-3/4" (146) | 12-1/8" (308) | 0"–3-1/2" | IS | 90° | 60°–90° | 90°–60° |
| | | | >3-1/2"–6-1/2" | ISJ | 90° | 60°–90° | 90°–60° |
| 95° | 5-1/2" (140) | 11-3/4" (298) | 0"–3-1/2" | IS | 95° | 65°–95° | 95°–65° |
| | | | >3-1/2"–6-1/2" | ISJ | 95° | 65°–95° | 95°–65° |
| 100° | 5-1/4" (133) | 11-1/4" (286) | 0"–3-1/2" | IS | 100° | 70°–100° | 100°–70° |
| | | | >3-1/2"–6-1/2" | ISJ | 100° | 70°–100° | 100°–70° |
| 105° | 5" (127) | 11" (279) | 0"–3-1/2" | IS | 105° | 75°–105° | 105°–75° |
| | | | >3-1/2"–6-1/2" | ISJ | 105° | 75°–105° | 105°–75° |
| 110° | 4-3/4" (121) | 10-3/4" (273) | 0"–3-1/2" | IS | 110° | 75°–110° | 110°–75° |
| | | | >3-1/2"–6-1/2" | ISJ | 110° | 75°–110° | 110°–75° |

*Backcheck is advanced approximately 15° with positioning valve on.
**Hold open is approximately 5°–7° less than the cushion angle listed in the chart.
**Note:** Bold type shows supplied arm.

# Technical drawings

## Top jamb × Spring stop IS arm

8616 SISJ/SISJH (>3-1/2" to 6-1/2" reveal)
**Note:** Use SIS/ S-ISH for reveal ≤3-1/2"




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**

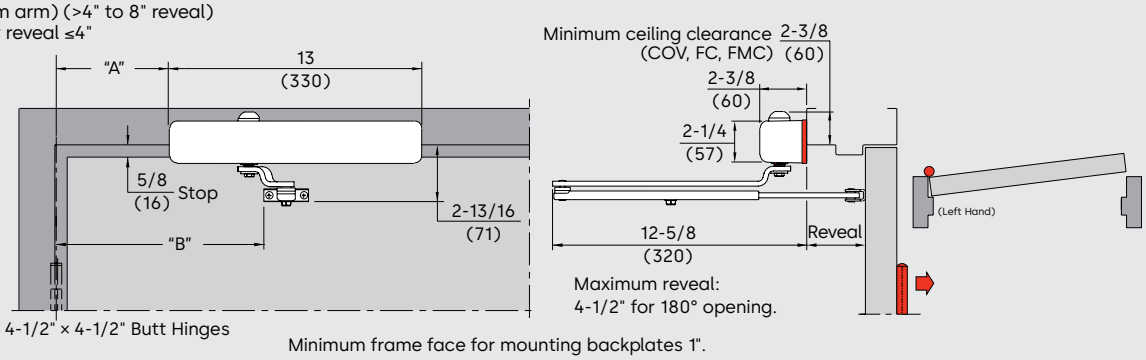
| Closer | Interior/ Exterior | Door width 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. | 4'-0" max. | 4'-6" max. |
|---|---|---|---|---|---|---|---|
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| Template ref. | Dim "A" | Dim "B" | Reveal | Arm | **Cushion/ hold open | *Approx. backcheck | Approx. delayed action |
|---|---|---|---|---|---|---|---|
| 85° | 8-3/8" (213) | 11-1/16" (281) | 0"–3-1/2" | SIS | 85° | 55°–85° | 85°–55° |
| | | | >3-1/2"–6-1/2" | SISJ | 85° | 55°–85° | 85°–55° |
| 90° | 7-3/4" (197) | 10-7/16" (266) | 0"–3-1/2" | SIS | 90° | 60°–90° | 90°–60° |
| | | | >3-1/2"–6-1/2" | SISJ | 90° | 60°–90° | 90°–60° |
| 100° | 6-7/8" (175) | 9-9/16" (243) | 0"–3-1/2" | SIS | 100° | 70°–100° | 100°–70° |
| | | | >3-1/2"–6-1/2" | SISJ | 100° | 70°–100° | 100°–70° |
| 110° | 6-1/4" (159) | 8-15/16" (227) | 0"–3-1/2" | SIS | 110° | 75°–110° | 110°–75° |
| | | | >3-1/2"–6-1/2" | SISJ | 110° | 75°–110° | 110°–75° |

*Backcheck is advanced approximately 15° with positioning valve on.
**Hold open is approximately 5°–7° less than the cushion angle listed in the chart.
**Note:** Bold type shows supplied arm.

## Top jamb × Flat form arm (or round form arm) × Backplate

8616 AF86J BP86 (flat form arm – shown) (>4" to 8" reveal)
8616 ARJ BP86 (round form arm) (>4" to 8" reveal)
**Note:** Use AF86/ARP86 for reveal ≤4"




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

**Size selection chart**

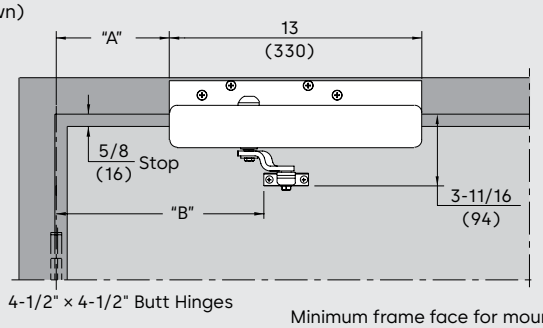
| Closer | Interior/ Exterior | Door width 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. | 4'-0" max. | 4'-6" max. |
|---|---|---|---|---|---|---|---|
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| Template ref. | Dim "A" | Dim "B" | Reveal | | Arm | | Approx. max. opening | *Approx. backcheck | Approx. delayed action |
|---|---|---|---|---|---|---|---|---|---|
| To 180° | 4-1/2" (114) | 9-1/4" (235) | 0" | AF | AR | | 180° | 70°–180° | 180°–60° |
| | | | 4" | AF | AR | | 180° | 75°–180° | 180°–70° |
| To 180° | 4-1/2" (114) | 9-1/4" (235) | >4" | AFJ | ARJ | | 180° | 75°–180° | 180°–70° |
| | | | 8" | AFJ | ARJ | | 165° | 80°–165° | 165°–70° |

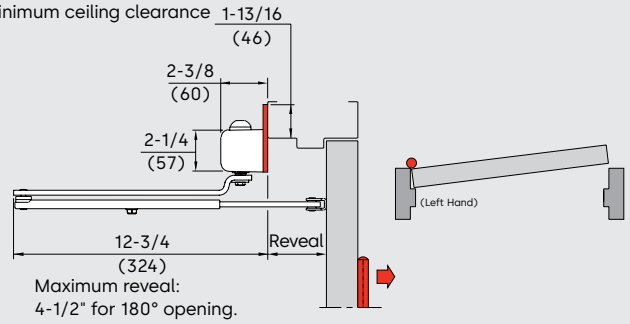
*Backcheck is advanced approximately 15° with positioning valve on.
**Note:** Bold type shows supplied arm.

## Top jamb × Flat form arm (or round form arm) × Drop plate

8616 AF86J DP86
(Flat form arm – shown)
8616 ARJ DP86
(Round form arm)




4-1/2" × 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**

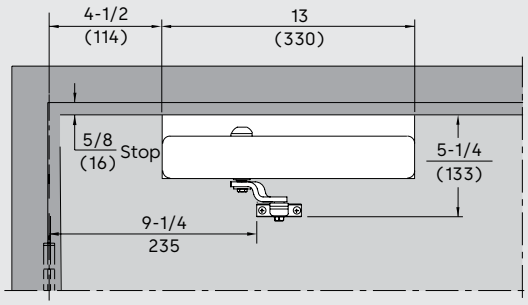
| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

| **Template ref.** | **Dim "A"** | **Dim "B"** | **Reveal** | **Arm** | | **Approx. max. opening** | ***Approx. backcheck** | **Approx. delayed action** |
|---|---|---|---|---|---|---|---|---|
| To 180° | 4-1/2" (114) | 9-1/4" (235) | 0" | AF | AR | 180° | 70°–180° | 180°–60° |
| | | | 4" | AF | AR | 180° | 75°–180° | 180°–70° |
| To 180° | 4-1/2" (114) | 9-1/4" (235) | 4" | AFJ | ARJ | 180° | 75°–180° | 180°–70° |
| | | | 8" | AFJ | ARJ | 165° | 80°–165° | 165°–70° |

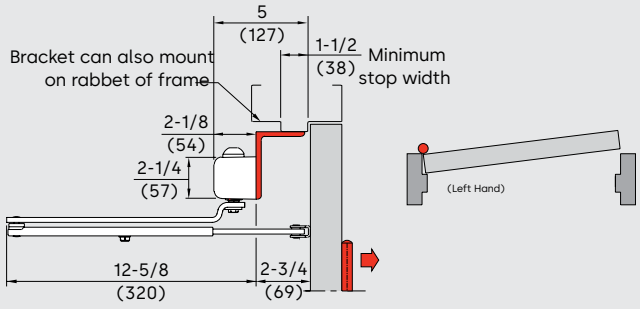
*Backcheck is advanced approximately 15° with positioning valve on.
**Note:** Bold type shows supplied arm.

## Top jamb × Flat form arm (or round form arm) × Angle bracket

8616 AF86 AB86 (Flat form arm – Shown) 8616 AR AB86 (round form arm)
8616 AR 8616 AO8 AB86 (round form arm)




4-1/2" × 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**

| | | Door width | | | | | |
|---|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** | **4'-6" max.** |
| 8616 | Interior | • | • | ♿ | • | • | • |
| | Exterior | • | • | • | • | • | N/A |

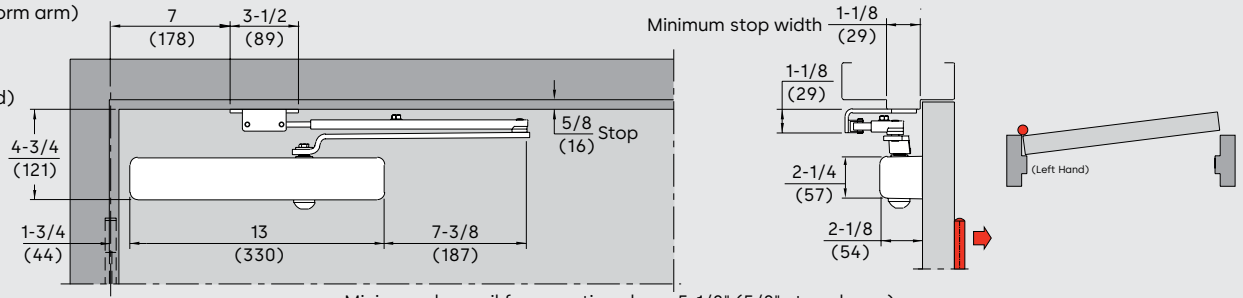
| **Max. opening** | ***Approx. backcheck** | **Approx.delayed action** |
|---|---|---|
| 180° | 70°–180° | 180°–70° |

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

# Technical drawings

## Parallel arm × Flat form arm (or round form arm)

8616 AF86P (flat form arm – shown)
8616 ARP (round form arm)
8616 AO8P
(round form arm)
(P86 bracket
furnished standard)




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**

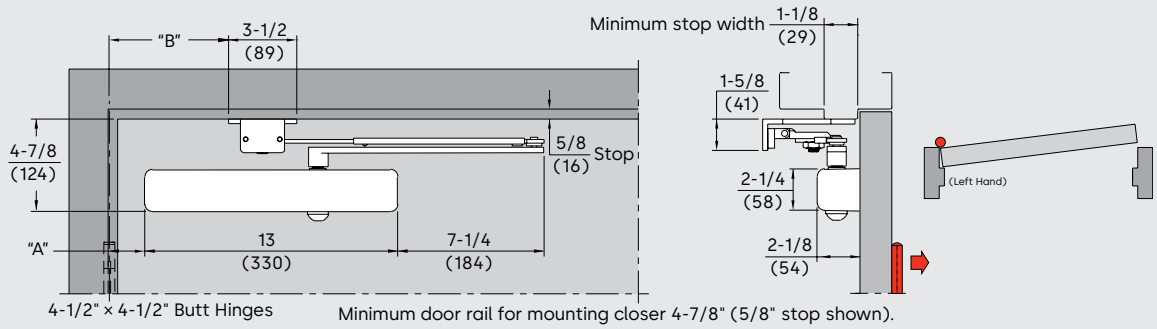
| Closer | Interior/ Exterior | Door width 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. | 4'-0" max. |
|---|---|---|---|---|---|---|
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| Max. opening | Approx. backcheck | Approx.delayed action | Min. door width |
|---|---|---|---|
| 180° | 60°–180° | 180°–75° | 24" |

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

## Parallel arm × Friction hold open

8616 FHP (PHB bracket furnished standard)




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.

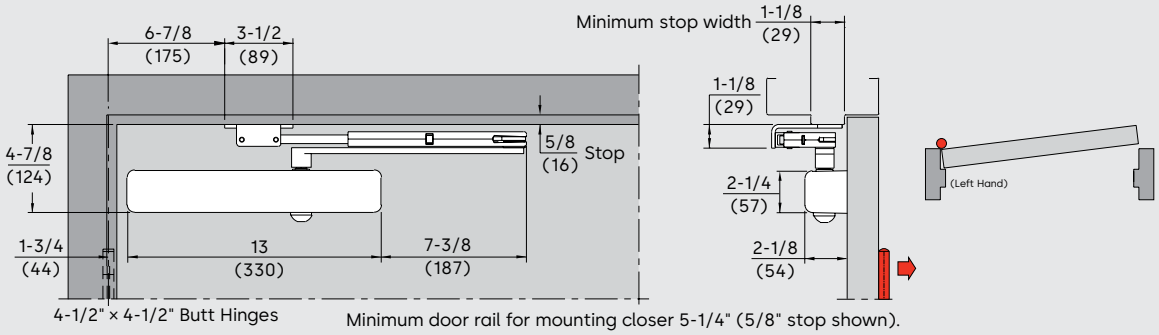
**Size selection chart**

| Closer | Interior/ Exterior | Door width 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. | 4'-0" max. |
|---|---|---|---|---|---|---|
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| Template Ref. | Dim "A" | Dim "B" | Approx. max. opening | Approx. backcheck | Approx. delayed Action | Min. hold open | Max. hold open | Min. door width |
|---|---|---|---|---|---|---|---|---|
| To 100° | 3-5/8" (92) | 9" (228) | 110° | 65°–110° | 110°–80° | 45° | 105° | 29" |
| Over 100° | 1-1/8" (29) | 6-1/2" (165) | 180° | 80°–180° | 180°–95° | 45° | 175° | 24" |

## Parallel arm × Plunger hold open

8616 PHP
(P86 bracket
furnished standard)




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.

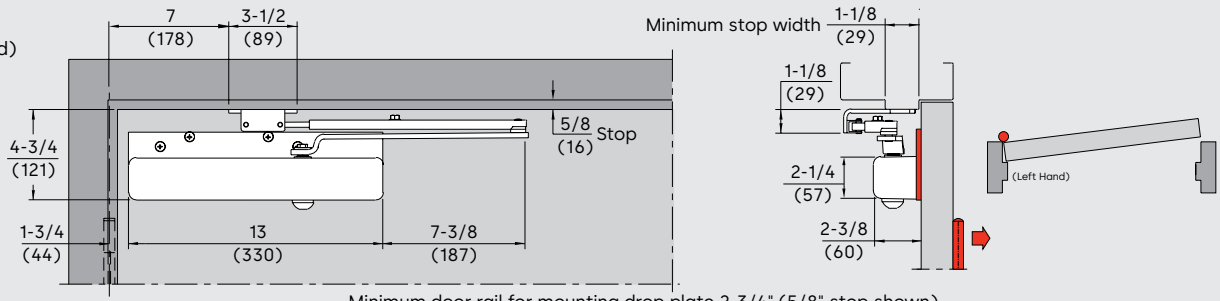
**Size selection chart**

| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Max. opening** | ***Approx. backcheck** | **Approx. delayed action** | **Min. hold open** | **Max. hold open** | **Min. door width** |
|---|---|---|---|---|---|
| 180° | 60°–180° | 180°–75° | 30° | 130° | 24" |

## Parallel arm × Flat form arm (or round form arm) × 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)




Minimum door rail for mounting drop plate 2-3/4" (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**

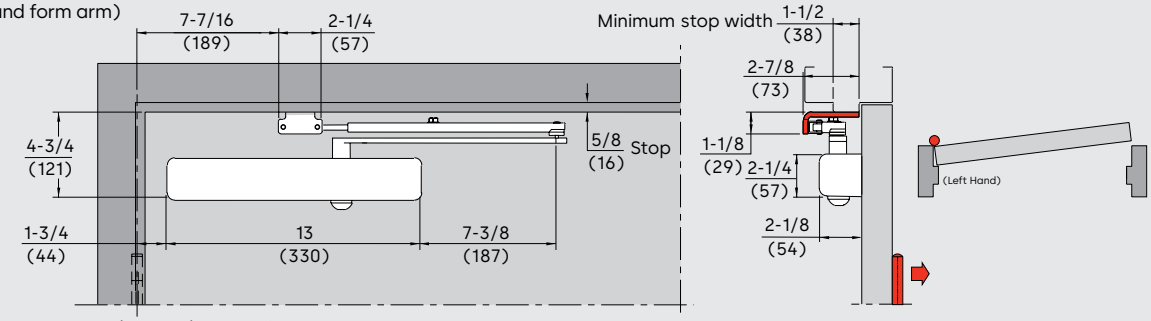
| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Max. opening** | ***Approx. backcheck** | **Approx.delayed action** | **Min. door width** |
|---|---|---|---|
| 180° | 60°–180° | 180°–75° | 24" |

# Technical drawings

## Parallel arm × Flat form arm (or round form arm) × Mortised jamb bracket

8616 AF8MJ (flat form arm – shown)
8616 AR MJ (round form arm)
8616 AO8 MJ (round form arm)




4-1/2" × 4-1/2" Butt Hinges

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

**Size selection chart**

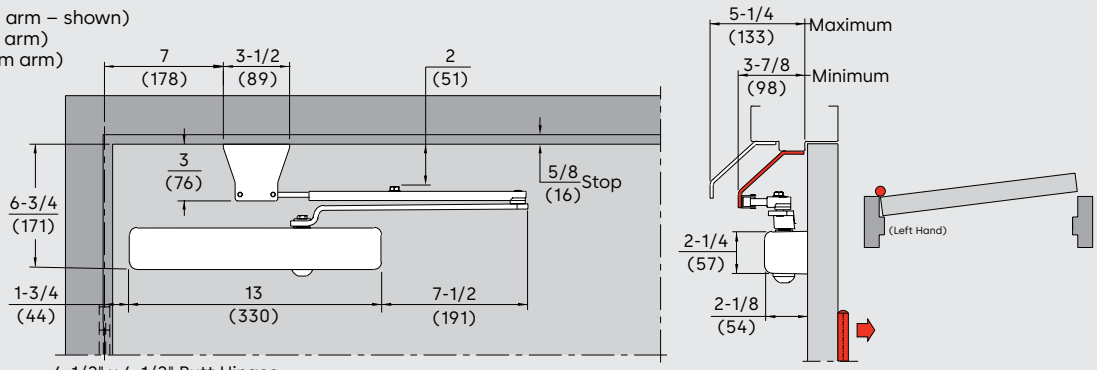
| Closer | Interior/ Exterior | Door width 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. | 4'-0" max. |
|---|---|---|---|---|---|---|
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| Max. opening | Approx. backcheck | Approx.delayed action | Min. door width |
|---|---|---|---|
| 180° | 60°–180° | 180°–75° | 24" |

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

## Parallel arm × Flat form arm (or round form arm) × Parallel drop bracket

8616 AF86 PD (flat form arm – shown)
8616 AR PD (round form arm)
8616 AO8 PD (round form arm)




4-1/2" × 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**

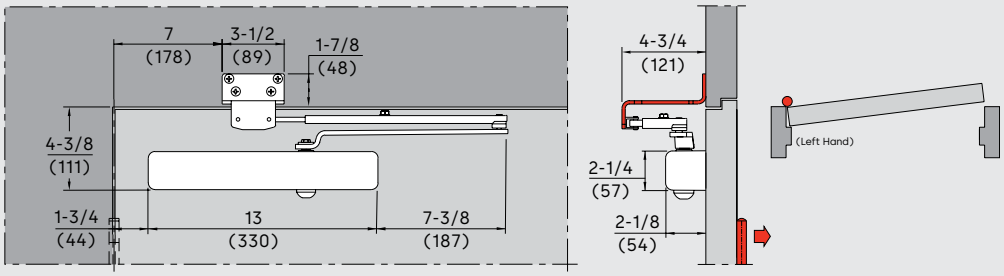
| Closer | Interior/ Exterior | Door width 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. | 4'-0" max. |
|---|---|---|---|---|---|---|
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| Max. opening | Approx. backcheck | Approx.delayed action | Min. door width |
|---|---|---|---|
| 180° | 60°–180° | 180°–75° | 24" |

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

## Parallel arm × Flat form arm (or round form arm) × Parallel flush transom bracket

8616 AF86 PFT (flat form arm – shown)
8616 AR PFT (round form arm)
8616 AO8 PFT (round form arm)




4-1/2" × 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**

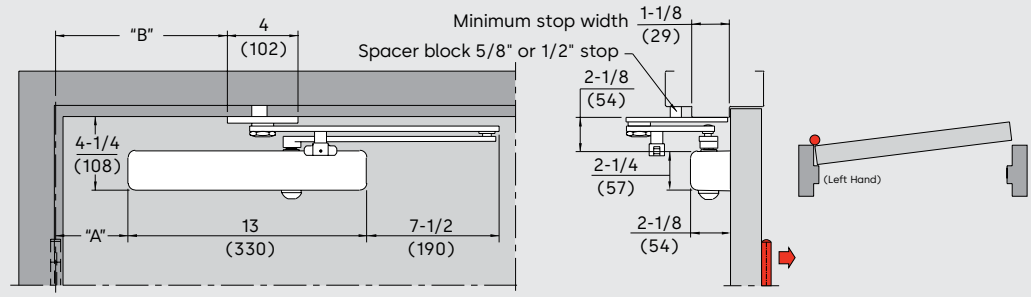
| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Max. opening** | **Approx. backcheck** | **Approx.delayed action** | **Min. door width** |
|---|---|---|---|
| 180° | 60°–180° | 180°–75° | 24" |

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

## Heavy-duty super parallel arm

8616 SPA/SPAT/SPAK




4-1/2" × 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**

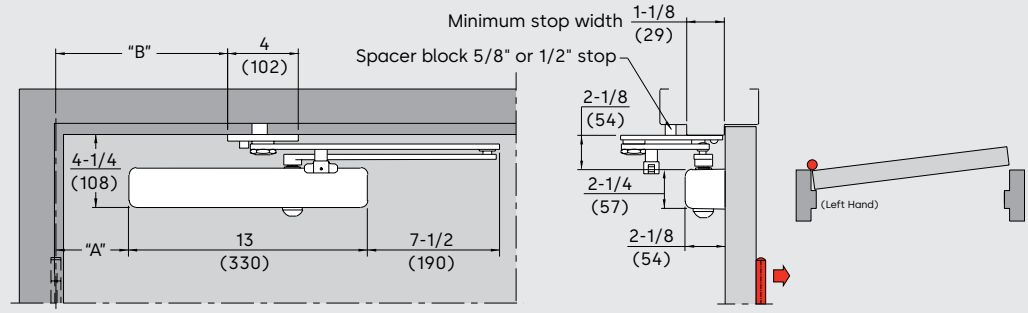
| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Angle of opening/ hold open** | **Dim "A" Closer** | **Dim "B" S offit Plate** | **Approx. max. opening** | **Approx. backcheck** | **Approx. delayed action** | **Min. door width** |
|---|---|---|---|---|---|---|
| To 100° H.O. 90° | 4-3/8" (111) | 9-3/4" (248) | 100° | 60°–100° | 100°–75° | 26" |
| To 180° H.O. 123° | 3/4" (19) | 6-1/4" (159) | 180° | 80°–180° | 180°–95° | 23" |

# Technical drawings

## Heavy-duty parallel arm door saver × Cushion

8616 DS/DST/DSK




4-1/2" × 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**

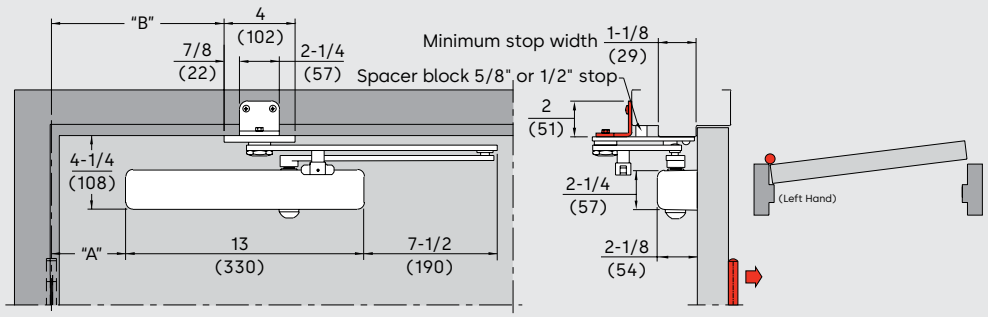
| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Template ref.** | **Dim "A" closer** | **Dim "B" soffit plate** | ***Cushion/ Hold open** | **Approx. backcheck** | **Approx. delayed action** | **Min. 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" (67) | 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 1°–2° less than the cushion angle listed in the chart

## Heavy-duty super parallel arm × Narrow frame bracket

8616 SPA/SPAT/SPAK NFHD




4-1/2" × 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.

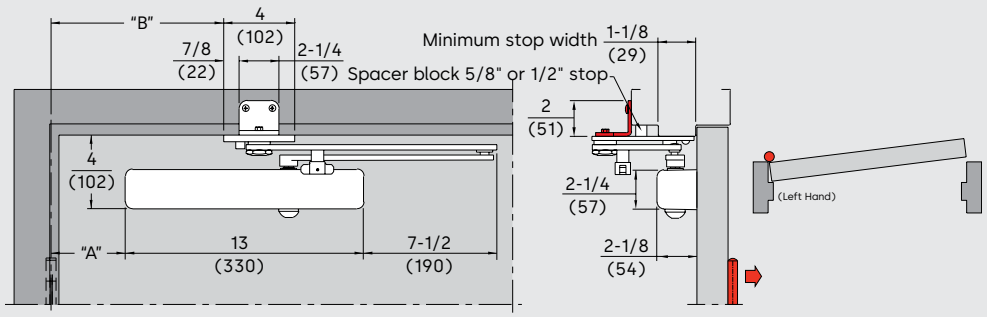
**Size selection chart**

| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Angle of opening/ hold open** | **Dim "A" Closer** | **Dim "B" S offit Plate** | **Approx. max. opening** | **Approx. backcheck** | **Approx. delayed action** | **Min. door width** |
|---|---|---|---|---|---|---|
| To 100° H.O. 90° | 4-3/8" (111) | 9-3/4" (248) | 100° | 60°–100° | 100°–75° | 26" |
| To 180° H.O. 123° | 3/4" (19) | 6-1/4" (159) | 180° | 80°–180° | 180°–95° | 23" |

## Heavy-duty parallel arm door saver × Cushion × Narrow frame bracket

8616 DS/DST/DSK NFHD




4-1/2" × 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**

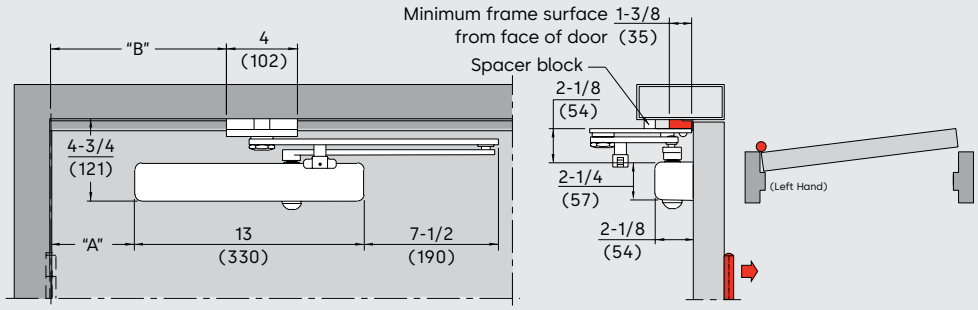
| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Template ref.** | **Dim "A" closer** | **Dim "B" soffit plate** | ***Cushion/ Hold open** | **Approx. backcheck** | **Approx. delayed action** | **Min. 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" (67) | 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 1°–2° less than the cushion angle listed in the chart

## Heavy-duty super parallel arm × Blade stop spacer

8616 SPA/SPAT/SPAK BSHD




4-1/2" × 4-1/2" Butt Hinges

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

**Size selection chart**

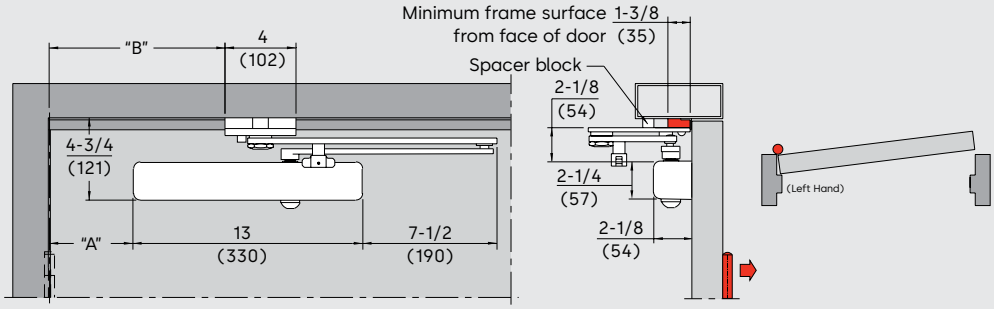
| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Angle of opening/ hold open** | **Dim "A" Closer** | **Dim "B" S offit Plate** | **Approx. max. opening** | **Approx. backcheck** | **Approx. delayed action** | **Min. door width** |
|---|---|---|---|---|---|---|
| To 100° H.O. 90° | 4-3/8" (111) | 9-3/4" (248) | 100° | 60°–100° | 100°–75° | 26" |
| To 180° H.O. 123° | 3/4" (19) | 6-1/4" (159) | 180° | 80°–180° | 180°–95° | 23" |

# Technical drawings

## Heavy-duty parallel arm door saver × Cushion × Blade stop spacer

8616 DS/DST/DSK BSHD




4-1/2" × 4-1/2" Butt Hinges

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

**Size selection chart**

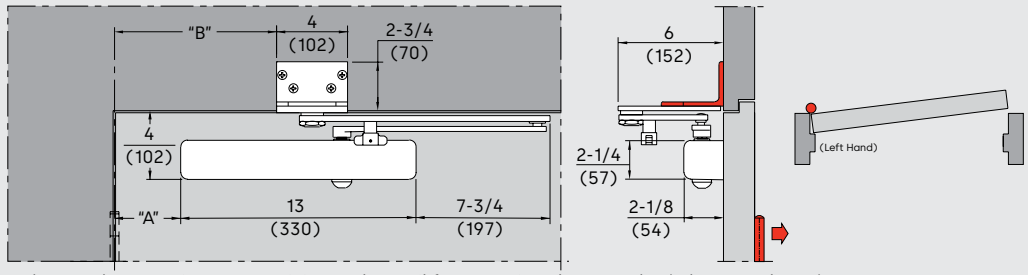
| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Template ref.** | **Dim "A" closer** | **Dim "B" soffit plate** | ***Cushion/ Hold open** | **Approx. backcheck** | **Approx. delayed action** | **Min. 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" (67) | 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 1°–2° less than the cushion angle listed in the chart

## Heavy-duty super parallel arm × Flush transom bracket

8616
SPA/SPAT/SPAK FTHD




4-1/2" × 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.

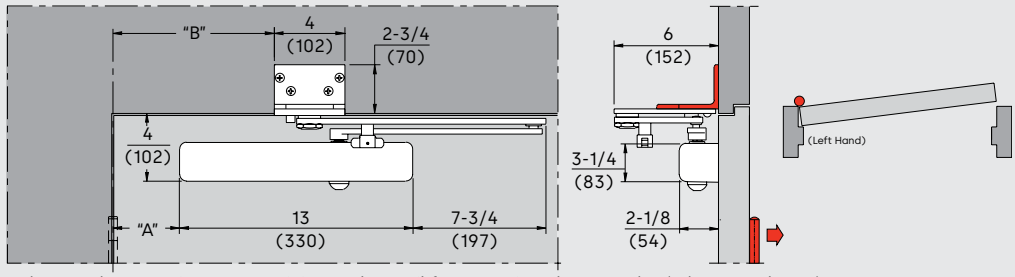
**Size selection chart**

| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Angle of opening/ hold open** | **Dim "A" Closer** | **Dim "B" S offit Plate** | **Approx. max. opening** | **Approx. backcheck** | **Approx. delayed action** | **Min. door width** |
|---|---|---|---|---|---|---|
| To 100° H.O. 90° | 4-3/8" (111) | 9-3/4" (248) | 100° | 60°–100° | 100°–75° | 26" |
| To 180° H.O. 123° | 3/4" (19) | 6-1/4" (159) | 180° | 80°–180° | 180°–95° | 23" |

## Heavy-duty parallel arm door saver × Cushion × Flush transom bracket

8616 DS/DST/DSK FTHD




4-1/2" × 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**

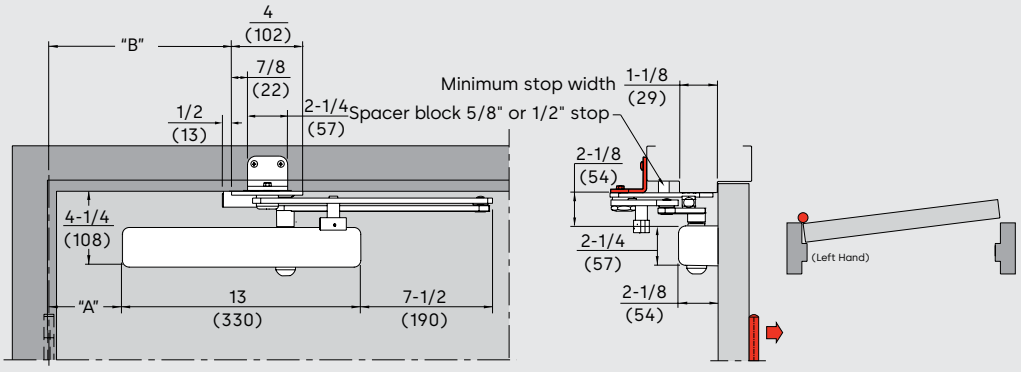
| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

| **Template ref.** | **Dim "A" closer** | **Dim "B" soffit plate** | ***Cushion/ Hold open** | **Approx. backcheck** | **Approx. delayed action** | **Min. 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" (67) | 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 1°–2° less than the cushion angle listed in the chart

## Heavy-duty parallel arm × Spring stop door saver

8616 SDS/SDST




4-1/2" × 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**

| | | Door width | | | | |
|---|---|---|---|---|---|---|
| **Closer** | **Interior/ Exterior** | **2'-0" min.** | **2'-6" max.** | **3'-0" max.** | **3'-6" max.** | **4'-0" max.** |
| 8616 | Interior | • | • | ♿ | • | • |
| | Exterior | • | • | • | • | N/A |

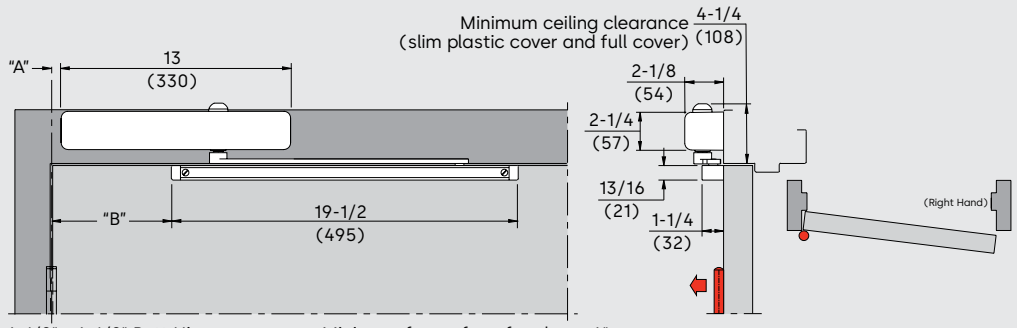
| **Template ref.** | **Dim "A" closer** | **Dim "B" soffit plate** | ***Dead stop/ Hold open** | **Approx. backcheck** | **Approx. delayed action** | **Min. door width** |
|---|---|---|---|---|---|---|
| 85° | 4-5/8" (117) | 10-5/8" (270) | 85° | 50°–85° | 85°–65° | 26" |
| 90° | 3-7/8" (98) | 9-7/8" (251) | 90° | 55°–90° | 90°–70° | 25" |
| 100° | 2-5/8" (67) | 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 1°–2° less than the cushion angle listed in the chart

# Technical drawings

## Track—Pull side door mounted

8616 T
8616 TH




4-1/2" × 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.

**Size selection chart**

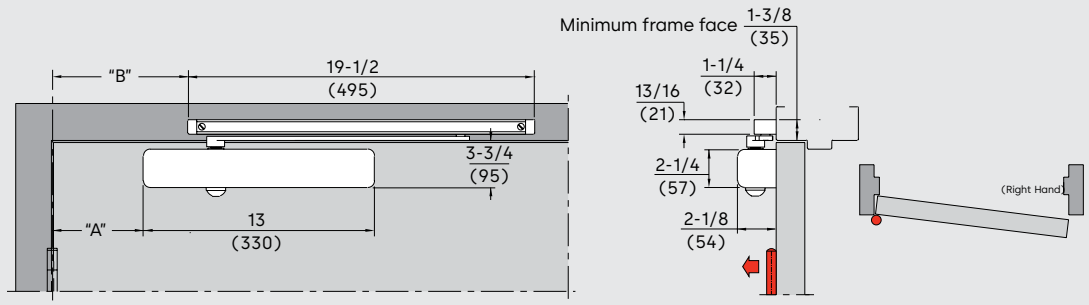
| Closer | Interior/ Exterior | Door width 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. |
|---|---|---|---|---|---|
| 8616 | Interior | • | • | ♿ | • |
| | Exterior | • | • | • | N/A |

| Template ref. | Dim "A" | Dim "B" | Cushion | Max. hold open | *Approx. Backcheck | Approx. delayed action | Min. 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.

## Jamb track—Pull side frame mounted

8616 JT
8616 JTH




4-1/2" × 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**

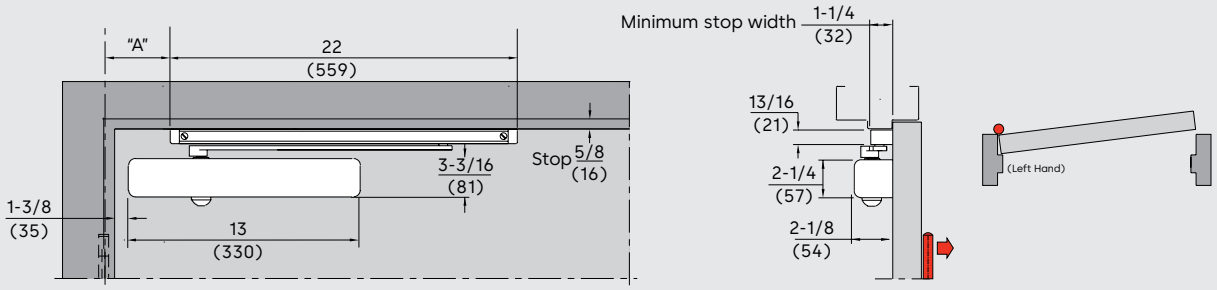
| Closer | Interior/ Exterior | Door width 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. |
|---|---|---|---|---|---|
| 8616 | Interior | • | • | ♿ | • |
| | Exterior | • | • | • | N/A |

| Template ref. | Dim "A" | Dim "B" | Cushion | Max. hold open | *Approx. Backcheck | Approx. delayed action | Min. door width |
|---|---|---|---|---|---|---|---|
| 85° | 6" (152) | 8" (203) | 85° | 80° | 60°–85° | 85°–60° | 31" |
| 90° | 5-1/2" (140) | 7-1/2" (191) | 90° | 85° | 65°–90° | 90°–65° | 30" |
| 110° | 4-1/4" (108) | 5-3/4" (146) | 110° | 100° | 80°–110° | 110°–80° | 28" |
| 175° | 3-3/4" (95) | 3-3/4" (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" × 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**

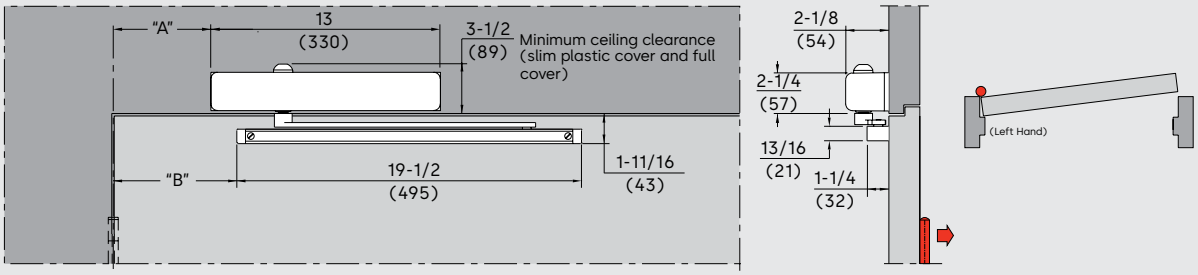
| Closer | Interior/ Exterior | 2'-6" max. | 3'-0" max. | 3'-6" max. |
|---|---|---|---|---|
| 8616 | Interior | • | ♿ | • |
| | Exterior | • | • | N/A |

| Template ref. | Dim "A" | Cushion | Max. hold open | *Approx. backcheck | Approx. delayed action | Min. door width |
|---|---|---|---|---|---|---|
| 85° | 9" (228) | 85° | 82° | 65°–85° | 85°–65° | 32" |
| 90° | 7-3/8"(187) | 90° | 87° | 65°–90° | 90°–65° | 30" |
| 100° | 5-3/8"(136) | 100° | 97° | 65°–100° | 100°–65° | 28" |

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

## Flush track—Push side door mounted × Backplate

8616 FT BP86T
8616 FTH BP86T




4-1/2" × 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**

| | | Door width | | | |
|---|---|---|---|---|---|
| Closer | Interior/ Exterior | 2'-0" min. | 2'-6" max. | 3'-0" max. | 3'-6" max. |
| 8616 | Interior | • | • | ♿ | • |
| | Exterior | • | • | • | N/A |

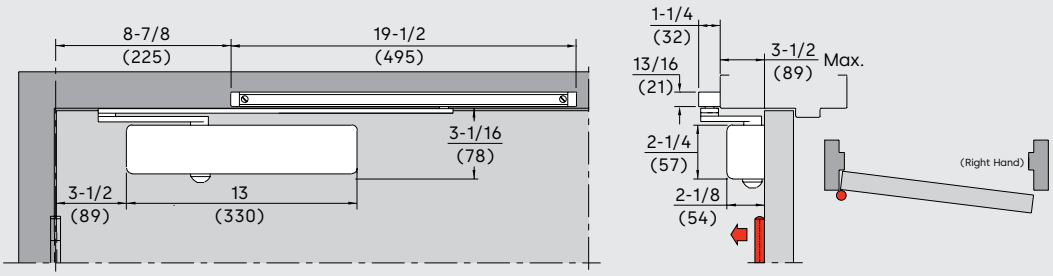
| Template ref. | Dim "A" | Dim "B" | Cushion | Max. hold open | *Approx. backcheck | Approx. delayed action | Min. door width |
|---|---|---|---|---|---|---|---|
| 85° | 4-7/8" (124) | 6-7/8" (175) | 85° | 82° | 60°–85° | 85°–60° | 29" |
| 90° | 4-3/8" (111) | 6-5/8" (168) | 90° | 87° | 65°–90° | 90°–65° | 28" |
| 110° | 3-3/8" (86) | 5-1/4" (133) | 110° | 105° | 75°–110° | 110°–75° | 26" |
| 140° | 2-3/8" (60) | 4-1/2" (114) | 135° | 125° | 85°–135° | 135°–85° | 25" |

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

# Technical drawings

### Track double egress—Pull side frame mounted

8616 TDE
8616 TDEH




4-1/2" × 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 postioning valve in "OFF" position.

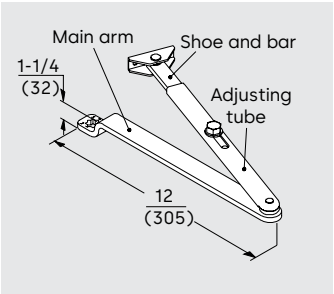
**Size selection chart**

| Closer | Interior/ Exterior | Door width 2'-0" min. | 3'-0" max. | 3'-6" max. |
|---|---|---|---|---|
| 8616 | Interior | • | ♿ | • |
| | Exterior | • | ♿ | N/A |

| Template ref. | Cushion | Max. hold open | *Approx. backcheck | Approx. delayed action | Min. door width |
|---|---|---|---|---|---|
| 125° | 125° | 110° | 70°–125° | 125°–70° | 30" |

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

# Accessories




### Flat form arm

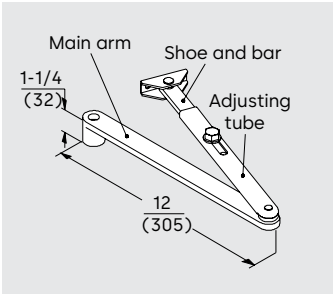
Standard flat-arm for 8600 Series closers. Arm is non-handed.

**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.

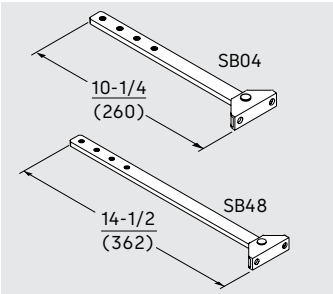
**AMF86** — Regular flat form main arm and adjusting tube.




### Flat form arm for MJ

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

**MJ** bracket ordered separately.

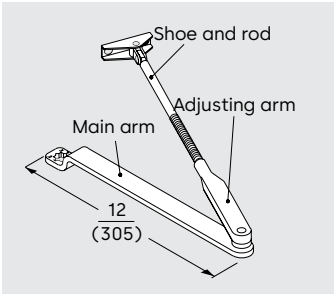



### Flat form arm shoe and bar

**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.



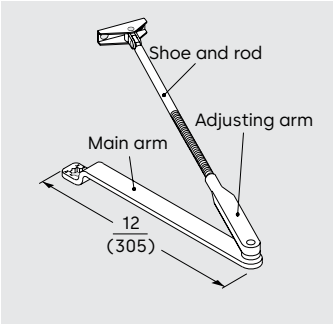

### Round form arm (8 mm rod)

**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.

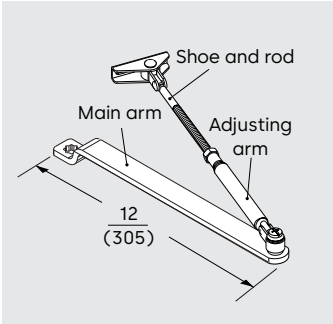
# Accessories




### 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.

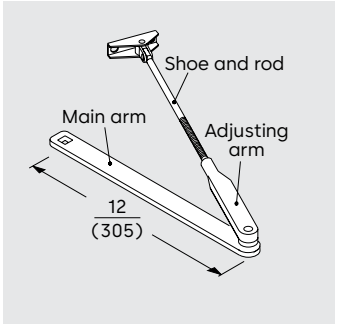
**AMR48** — Regular non-hold open main arm and adjusting arm. Accepts 10 mm rod.




### 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.

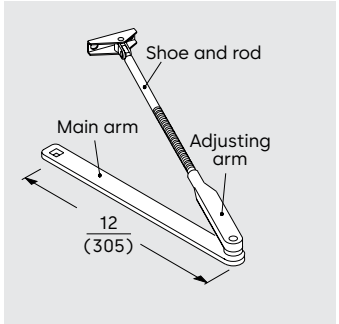



### Narrow profile arm (8 mm)

**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.

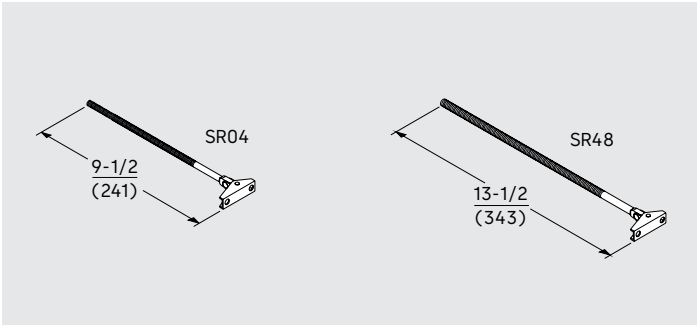
**AMR04NP** — Narrow profile main arm and adjusting arm. Used in conjunction with SR04 shoe and rod. Uses 8 mm rod.




### 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.



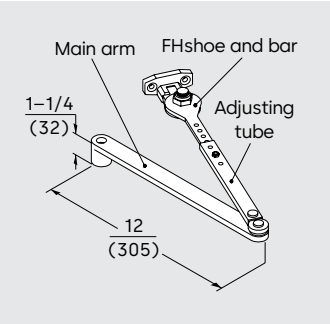

### Regular arm shoe and rod

**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.

# Accessories




### 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).

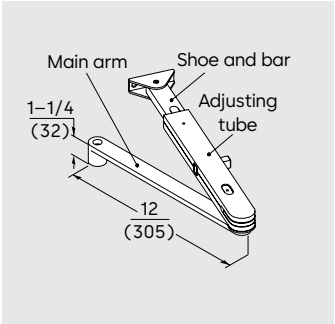
**FHJ** — Top jamb friction hold open arm complete (4"–8" [102 mm–203 mm] reveal).

**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.

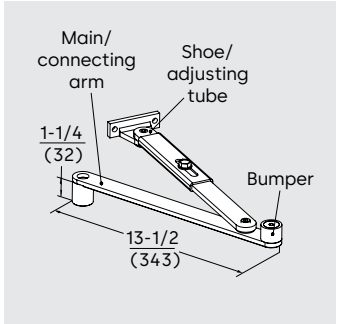
**PH** — Plunger hold open arm complete regular or top jamb mount (0"–1-1/2" [0 mm–38 mm] reveal).

**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).




### Cushion IS arm

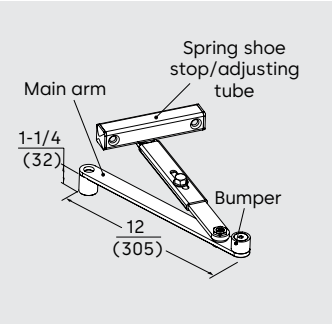
Provides a cushioned opening function for regular and top jamb applications at 85°, 90°, 95°, 100°, 105°, and 110°. Arm is non-handed.

**IS** — Cushion IS arm complete (0"–3-1/2" [0 mm–89 mm] reveal).

**ISJ** — Cushion IS top jamb arm complete (3-1/2"–6-1/2" [89 mm–165 mm] reveal).

**ISH** — Cushion IS hold open arm complete (0"–3-1/2" [0–89 mm] reveal).

**ISJH** — Cushion IS top jamb hold open arm complete. (3-1/2"–6-1/2" [89 mm–165 mm] reveal).




### Spring stop IS arm

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

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

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

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

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

### Cushion IS/Spring stop IS arm accessories

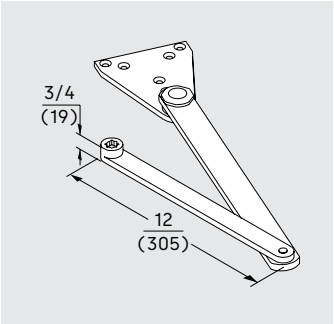
**SISM** — Cushion IS/spring stop IS main arm and connecting arm (0"–3-1/2" [0 mm–89 mm] reveal).

**SISJM** — Cushion IS/spring stop IS top jamb main arm and connecting arm (3-1/2"–6-1/2" [89 mm–165 mm] reveal).

**ISSB** — Cushion IS spring shoe stop and adjusting tube.

**BUMPER IS** — Cushion IS/spring stop IS urethane bumper.

**S SPRING IS** — Spring shoe stop assembly complete.



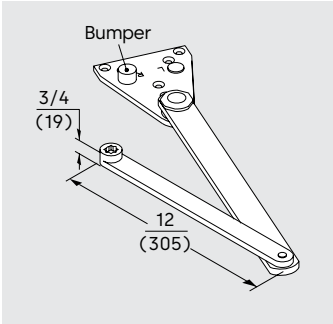

## Super parallel arm

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

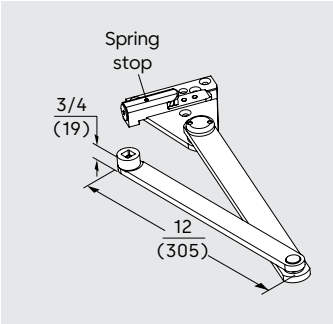
Heavy-duty parallel arm with integral cushioned opening function. Available in non-hold open, thumb turn hold open, and hex key turn hold open. Units can be installed to achieve either stop or stop and hold open at 85°, 90°, 100°, and 110°. Maximum opening is 110° (conditions permitting). Arm is non-handed.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

**BUMPER DS** — Door saver bumper only.



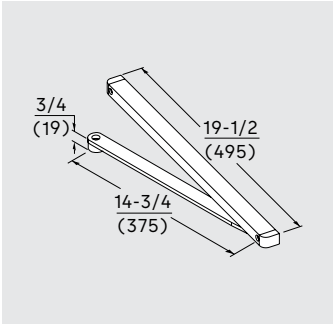

## Spring stop door saver arm

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.

**SDS** — Spring assist door saver arm.

**SDST** — Spring assist door saver arm thumb turn hold open.

**S SPRING DS** — Spring stop assembly complete.

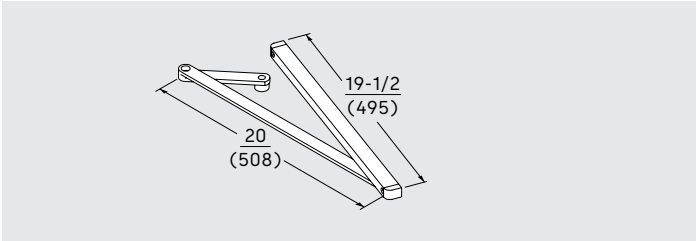



## Track arm

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.



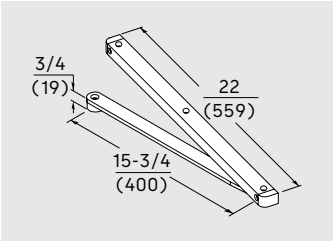

## TDE track arm

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.

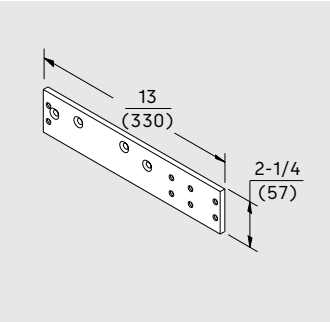



## Push side track arm

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

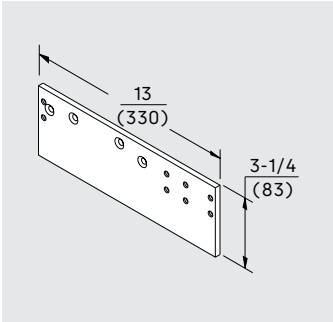
**PT86H** — Push-side track hold open arm complete. Used with PT track applications (closer on door, track on soffit).

# Accessories



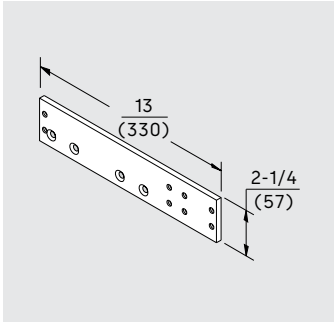

**Backplate**

**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.



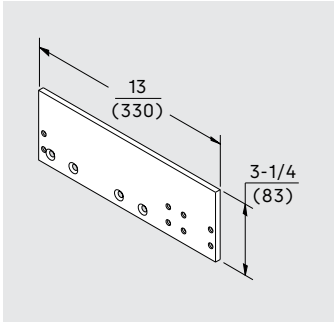

**Backplate**

**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.



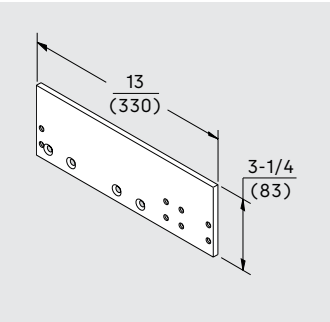

**Backplate**

**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.



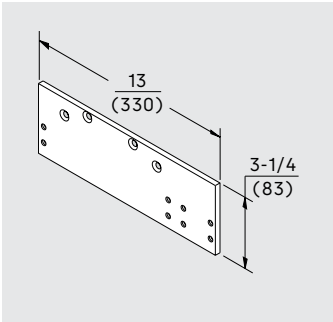

**Backplate**

**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.



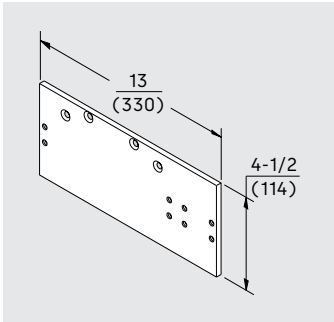

**Backplate**

**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.



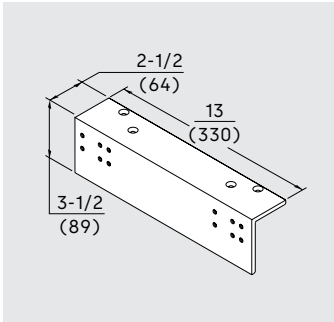

**Drop plate**

**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).



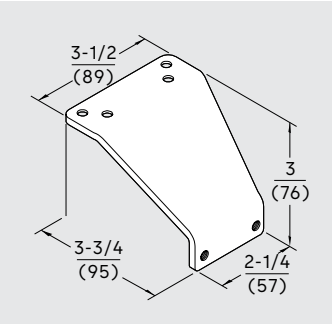

**Drop plate**

**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).



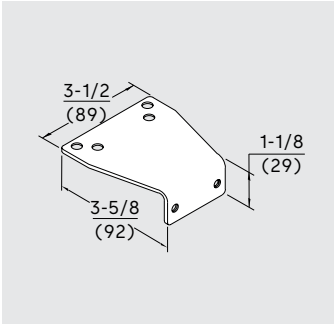

**Angle bracket**

**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.



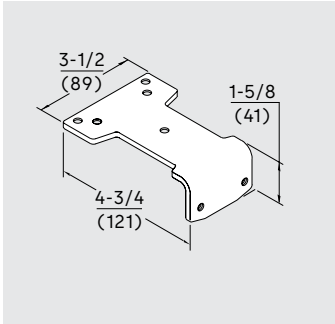

**Parallel drop bracket**

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



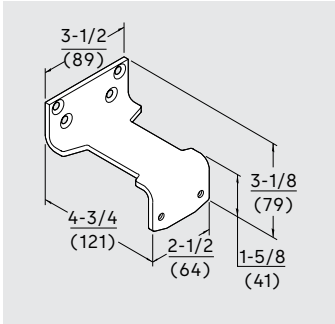

**Parallel arm bracket**

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



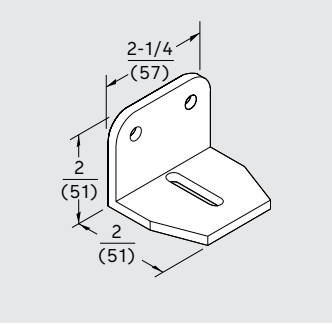

**Parallel hold open bracket**

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



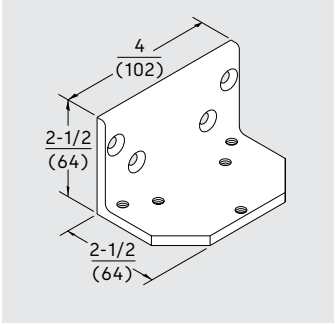

**Parallel flush transom bracket**

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



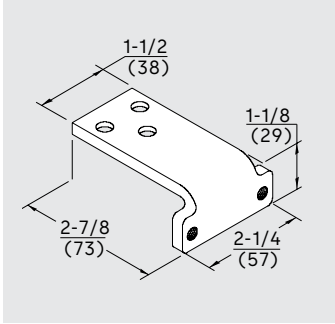

**Narrow frame bracket**

**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**

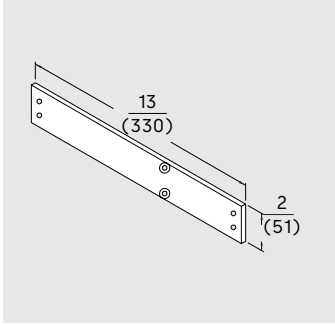
**FTHD** — For use with all DS and SPA applications where flush transom conditions prohibit normal installation of soffit bracket.




**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.

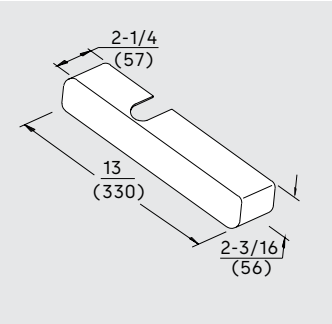
Flat form arm applications must use MJ in combination with AF8MJ arm.




**Conversion plate**

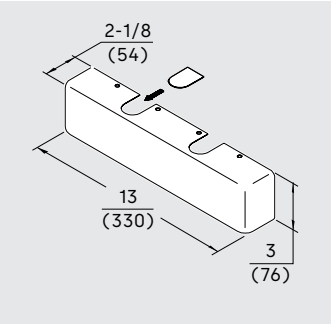
**BP86C** — For regular, top jamb, or parallel arm mounts. Permits replacement of existing 7600 Series closers with 8600 closers. Eliminates the need to remachine the door and frame.

# Accessories




### Slim plastic cover

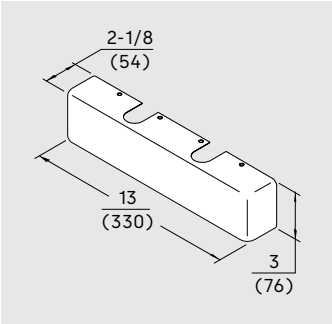
**COV** — Slim plastic cover furnished standard with 8600 Series closers.




### Full plastic cover

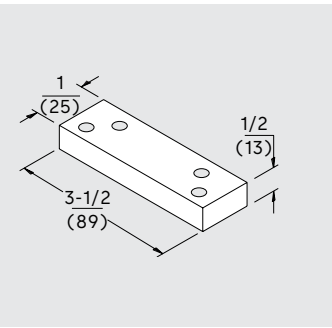
**FC** — Full plastic cover with interchangeable tab.

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



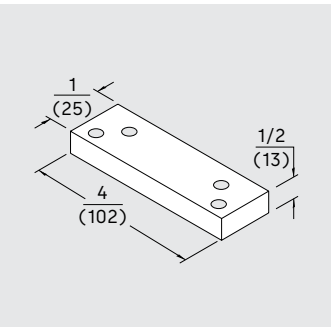

### Full metal cover

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



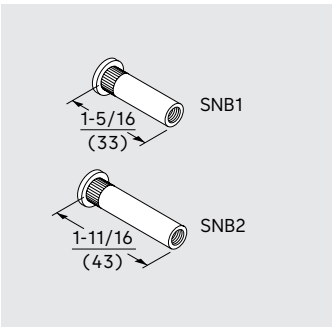

### Blade stop spacer

**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.

## Our Sustainability Commitment

We are committed to foster a sustainable development along our entire value chain in line with our economic, environmental and social responsibilities toward current and future generations. Sustainability at product level is an important, future-oriented approach in the field of construction. In order to give quantified disclosures of a product's environmental impact through its entire life cycle, dormakaba provides Environmental Product Declarations (EPD), based on holistic life cycle assessments. https://www.dormakabagroup.com/en/sustainability/product-declarations.

## Our offering

**Access Automation Solutions**

Entrance Automation
Entrance Security

**Access Control Solutions**

Electronic Access & Data
Escape and Rescue Systems
Lodging Systems

**Access Hardware Solutions**

Door Closers
Architectural Hardware
Mechanical Key Systems

**Services**

Technical Support
Installation and commissioning
Maintenance and Repair

**Key & Wall Solutions**

Key Systems
Movable / Sliding Walls

**Safe Locks**

Electronic Safe Locks
Mechanical Safe Locks
Boltworks and Accessories

**Glass systems**

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