# DRS Rail System

For 2-1/2", 3-5/8", 4", 6", and 10" DRS Rail Systems

## Installation instructions

| EN |

dormakaba

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# 1 Technical specifications

## 1.1 Overview

These instructions are for installation of the DRS Rail System for the following mounting and style versions:

**1. Glass mounting**

### 1.1.1 General information
- dormakaba requires use of tempered laminated or tempered monolithic glass.
- dormakaba glass hardware is not suitable for harsh environment; for example, applications where chemicals (e.g. chlorine) are used such as indoor swimming pools, saunas, or salt-water pools.
- Do not swing doors with excessive force. Install limiting stop to prevent door from opening too far.
- If an impenetrable door panel material is chosen to be used for additional security purposes, then the two outermost bolts on each rail can be also be reversed, to hinder attempted disassembly after installation.

### 1.1.2 Intended use
- For pivoting doors in indoor or covered areas only.
- For automatic or manual slow opening and closing.

### 1.1.3 Glass requirements/fittings/mounting
- The substructure/wall must be able to bear permanent loads, be level (max. tolerance: 1/16" [2] per 39" [1m]).
- Fasteners must be sufficiently dimensioned for the substructure/wall and weight of the door.
- When adjusting glass components, always stick to the required clearance for the respective hardware. Adjust clearance so glass does not come in contact with any hard surfaces such as glass, metal or concrete.
- Do not use excessive force when installing the glass (avoid over tightening screws.)

### 1.1.4 Requirements for glass panel
- dormakaba requires use of fully tempered glass, which complies with ASTM C 1036 and ASTM C 1048. Secondary heat soaking processes are optional but not required. This applies to both tempered monolithic and tempered laminated glass.
- Clamping area must be flat and uncoated (no self-cleaning coating!)
- Never use glass with conchoidal fractures and/or damaged edges.

### 1.1.5 Safety instructions
- Installation requires two people.
- Always wear protective clothing.
- Only properly qualified and specially trained staff is authorized to mount dormakaba glass hardware.
- Due to crushing hazards and possible injury caused by breakage of glass during mounting, corresponding protective clothing (especially gloves and protective goggles) is required.
- Never clamp metal fitting hardware directly to glass surface.

### 1.1.6 Symbols used - Safety/Installation

⚠️ **CAUTION**

Mounting components must meet the requirements of substructure/wall and door weight. Please read the technical information for fittings.

⚠️ **WARNING**

Risk of breaking glass. When installing the door, support the door panel with a block of wood or similar object.

### 1.1.7 Maintenance, care, repair
- Immediately replace damaged parts.
- Always use original dormakaba parts.
- Clean clamping area with alcohol-based standard commercial cleaning agent before mounting the glass hardware.
- Use a damp cloth for occasional cleaning.
- Always use silicone - and oil-free cleaners (e.g. acetone).
- Check glass hardware at regular intervals for proper positioning, smooth operation and correct adjustment.
- High traffic door systems require inspection by properly qualified staff (specialized companies or installation firms.)
- Function of fittings is recommended to be inspected every 500,000 movements by a specialist.

### 1.1.8 Disposal
Disposal in accordance with local, state and national regulations.

## 1.2    Tempered laminate glass (TLG) and adhesive specifications

| Required parts for laminate glass with DRS Rail System (not included) | Part Number | Quantity | Usage recommendation |
|---|---|---|---|
| 3M™ Scotch-Weld™ Urethane Adhesive, DP 605 NS [1] | 934.800 | 1 tube | 1 tube per 10 fittings |
| 3M™ Scotch-Weld™ EPX™ Plus II Mixing Square Nozzle, 5.3mm [3] | 934.802 | 1 tip nozzle | 1 nozzle per 2 fittings |
| 3M™ Scotch-Weld™ EPX™ Plus II Applicator with 1:1 Plunger [2] | 934.801 | 1 applicator | |
| **Handling time frame** | **Function** | | **Time** |
| | Working life *(time between application and clamping of carrier)* | | 5 minutes @ 75°F |
| | Handling strength | | 20 minutes @ 73°F or more |
| | Full cure time *(normal door usage not recommended until full cure time has been met)* | | 48 hours @ 73°F or more |

**NOTE: Door glass should not be installed until the full cure time as been reached (see chart above).**

1.2.1  Clean clamping area with alcohol-based standard commercial cleaning agent before mounting the glass hardware.

**Important safety-related information for the mounting and use of dormakaba glass hardware.**

1.2.2  Never clamp metal fitting hardware directly to glass surface.
1.2.3  Never use clamping products on surfaces with self-cleaning coatings.

## 1.3    Tools recommended

Table 1

| | |
|---|---|
| 1/4" x 3/8" drive hex socket and socket wrench | Rubber mallet |
| 3/16" x 3/8" drive hex socket and socket wrench | #2 Phillips screwdriver |
| 3/8" drive torque wrench | |

## 1.4    Preparing the glass and rails

1.4.1  Fully clean surface of glass with an alcohol-based mild glass and surface cleaner. Ensure no debris is on gasket.
1.4.2  Be sure that all surfaces are completely dry before proceeding.
1.4.3  Check glass with, height and for any visible defects.

1.4.4  Check glass thickness and type.
1.4.5  Reference to step 2.1.1. Always use setting blocks, at minimum, on bottom rails of system.
1.4.6  Check that clamping surface is flat and without surface treatment of any kind. Example: self-cleaning coatings.
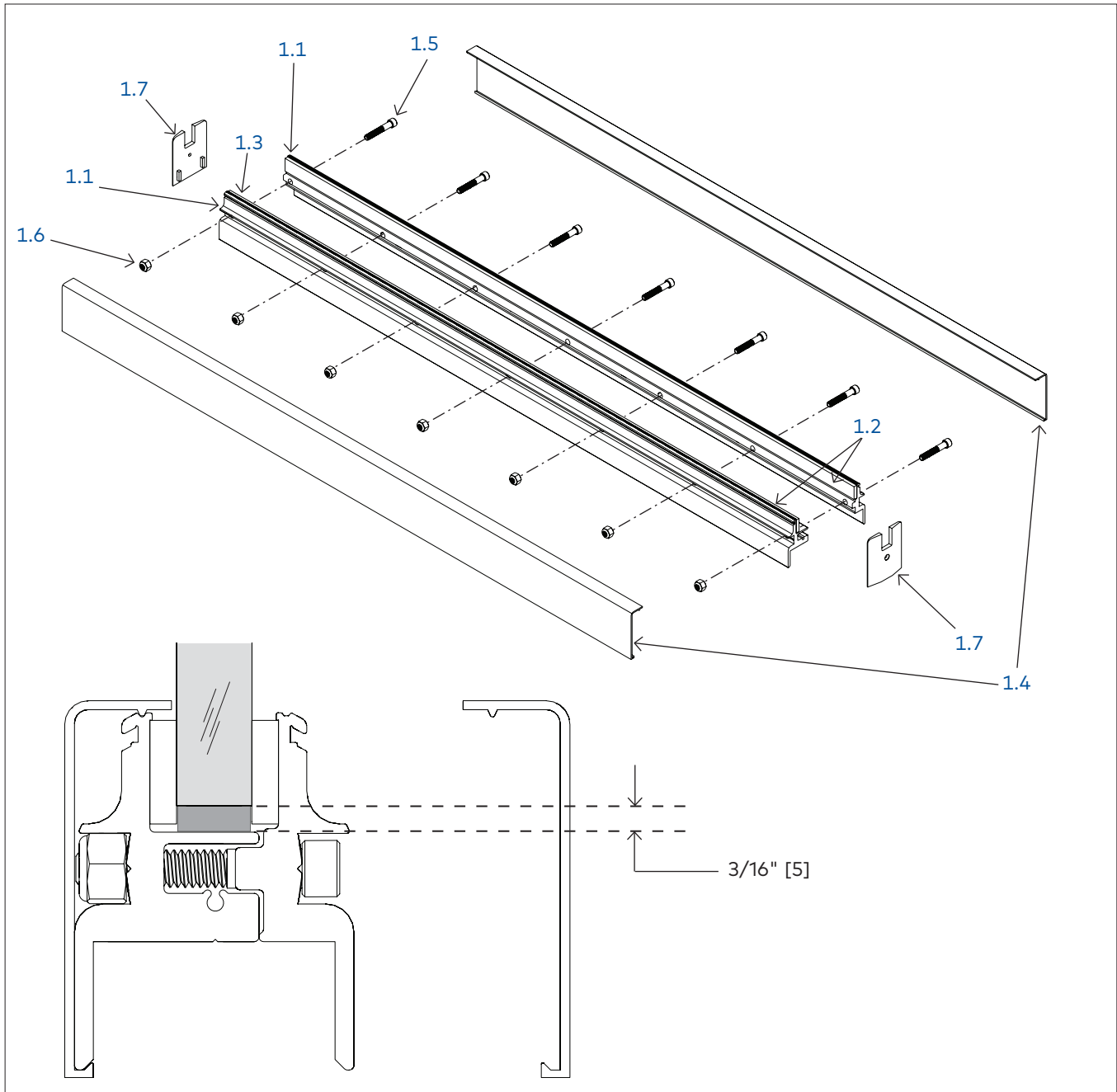
**1  Scotch-Weld Urethane Adhesive is a trademark of 3M.**

**2  Scotch-Weld™ EPX™ Plus II Applicator with 1:1 Plunger is a trademark of 3M.**

**3  Scotch-Weld™ EPX™ Plus II Mixing Square Nozzle is a trademark of 3M.**
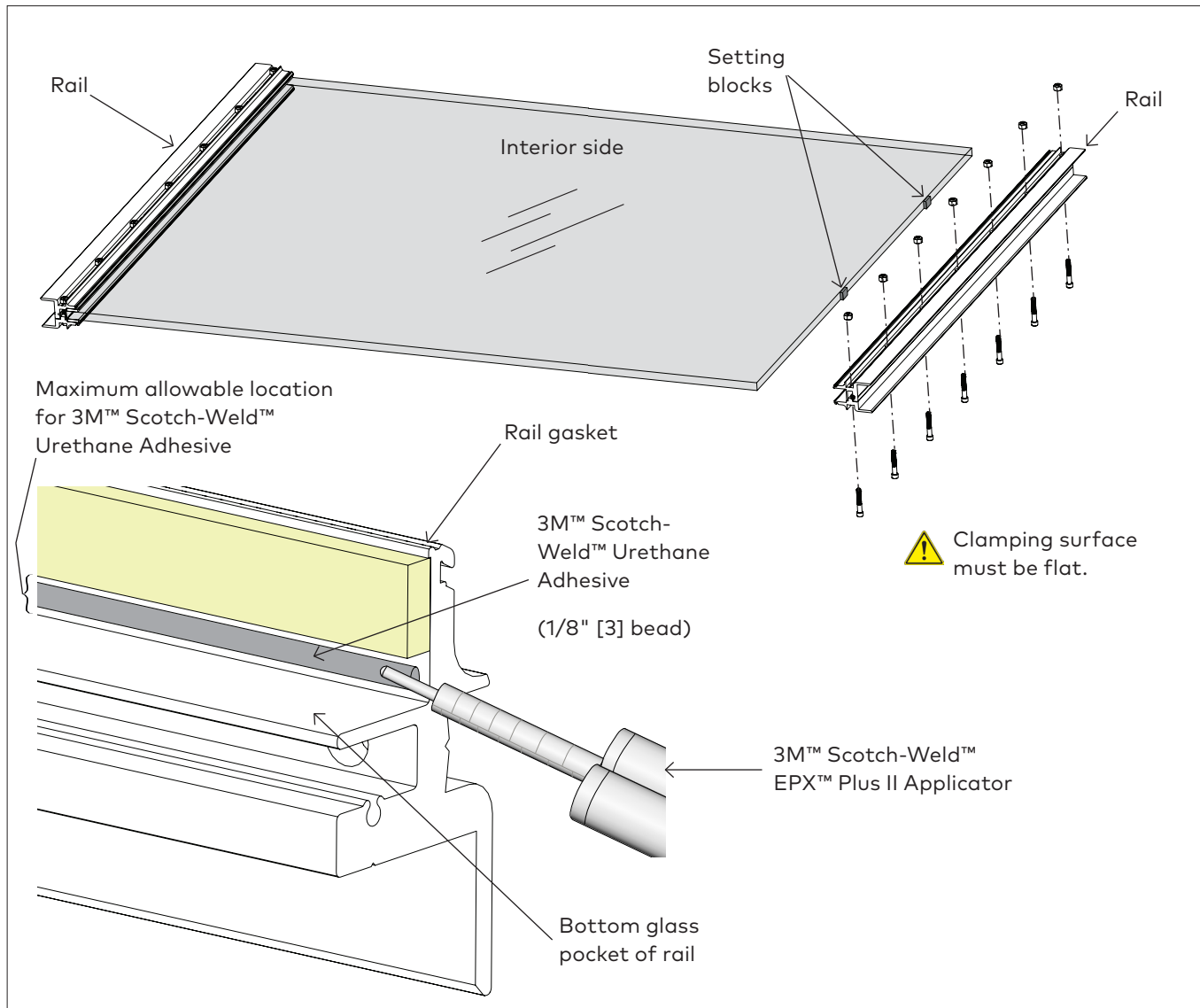
## 1.5    System setup
Fig. 1



3/16" [5]

1.5.1   Interior/exterior rails
1.5.2   Rail gasket(s)
1.5.3   3M™ Scotch-Weld™ Urethane Adhesive, DP 605 NS, off white (for laminate glass ONLY)
1.5.4   Cover assembly

1.5.5   For 2-1/2" Rails: use 1/4-20 x 1-1/4" SHCS
       For 3-5/8", 4", 6" & 10" Rails: use 5-16-18 x 1-1/4" SHCS
1.5.6   Lock nuts
1.5.7   End caps

# 2   Installation instructions
## 2.1    Install rails onto glass panel
Fig. 2

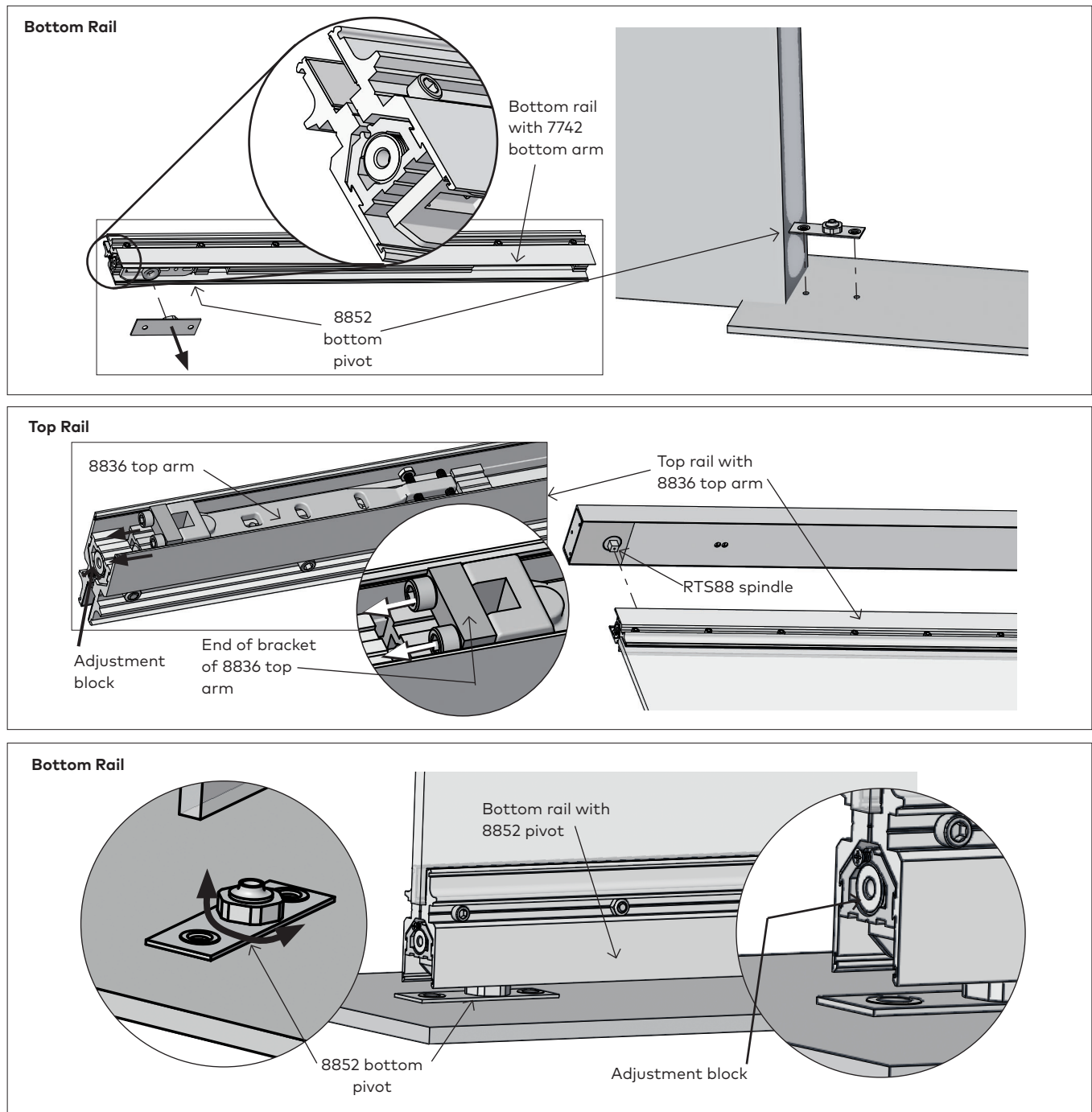

NOTE: The recommended adhesive's set-up time is 15 minutes for the duo-pak cartridges.

2.1.1   Lay glass flat on saw horses. Interior side facing upward.
2.1.2   Tape proper height setting blocks to top and bottom of glass panel.
        Place setting blocks 2-1/2" [64mm] off each edge. (Two each for rails up to 48" [1219mm].)
▪       Tempered monolithic glass: loosen bolts (but do not disassemble the rail), allowing both halves of rail to move freely.
▪       Tempered laminate glass ONLY: Apply 1/8" [3] bead of 3M™ Scotch-Weld™ Urethane Adhesive along inside of each section of top rail. Be sure the adhesive does not touch bottom glass pocket of rail.

2.1.3   Slide rail onto glass until setting blocks are snug against rail.
2.1.4   Gently hand-tighten the bolts.
2.1.5   Firmly tighten all bolts to appropriately specified torque. Start at center bolt and work outward. Repeat tightening sequence.
▪       Tempered monolithic: start at 10 ft-lbs (14Nm); work up to 15 ft-lbs (20Nm).
▪       Tempered laminate glass: start at 4 ft-lbs [5.5Nm]; work up to 8 ft-lbs [11Nm] (clamping surface must be flat)
2.1.6   Follow step 2.2 through 2.5 for bottom rail.
2.1.7   Check total height and corner-to-corner for squareness, accounting for top and bottom cover thickness. Adjust rail accordingly.

## 2.2    Install glass door panels and rails into frame:
         For use with: RTS88 header and 8852 bottom pivot

Fig. 3



Bottom Rail

Bottom rail with 7742 bottom arm

8852 bottom pivot

Top Rail

8836 top arm

Top rail with 8836 top arm

RTS88 spindle

Adjustment block

End of bracket of 8836 top arm

Bottom Rail

Bottom rail with 8852 pivot

8852 bottom pivot

Adjustment block

NOTE: See RTS88 Instructions for product install.

**Bottom Rail:**

2.2.1    Disassemble bottom half of 8852 bottom pivot from rail.

2.2.2    Secure bottom half of 8852 pivot to floor mounting surface using proper fasteners.

2.2.3    Spin nut on 8852 pivot until it is as low as it will go.

**Top Rail:**

2.2.4    Loosen end of bracket of 8836 top arm.

2.2.5    Install top rail (with 8836 top arm) onto RTS88 spindle.

2.2.6    Tighten end of bracket of 8836 top arm.

**Bottom Rail:**

2.2.7    Slide bottom rail onto 8852 pivot in the floor.
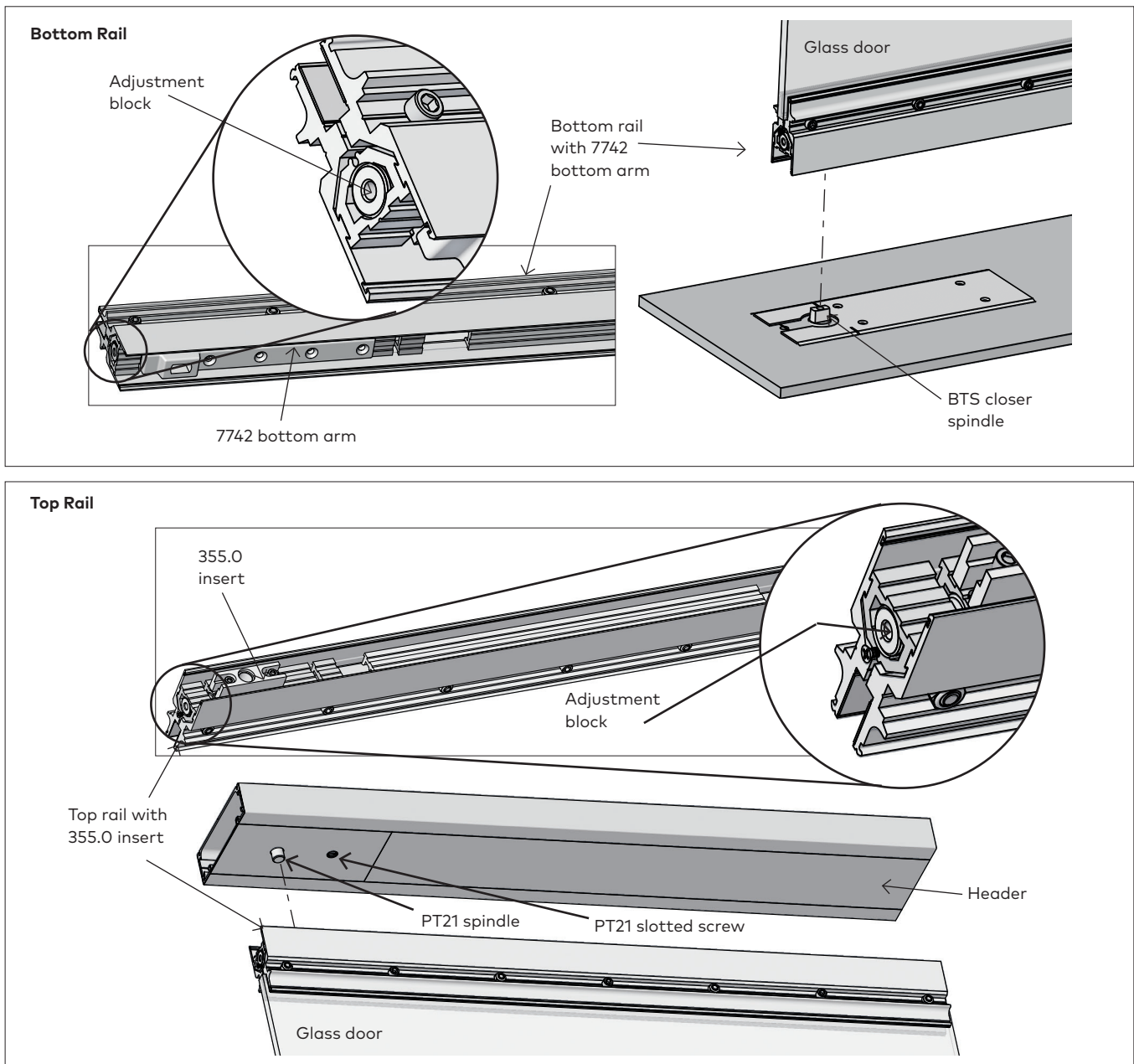
2.2.8    Adjust door height if necessary.

**Adjustments:**

2.2.9    Using a ³⁄₁₆" hex key, adjust the pivot, arm, or insert vertically inside each rail via the adjustment block in rail.

## 2.3     Install glass door panels and rails into frame:
### For use with: PT21 (walking beam pivot) and BTS80 with 7422 bottom arm

Fig. 4



NOTE:   See PT21 instructions for product install.
        See BTS80 instructions for product install.

**Bottom Rail:**

2.3.1   Set bottom rail (with 7422 bottom arm) onto the BTS80 spindle.

**Top Rail:**

2.3.2   Retract PT21 spindle all the way up via slotted screw.

2.3.3   Align top rail (with 355.0 insert) with PT21 walking beam pivot spindle.

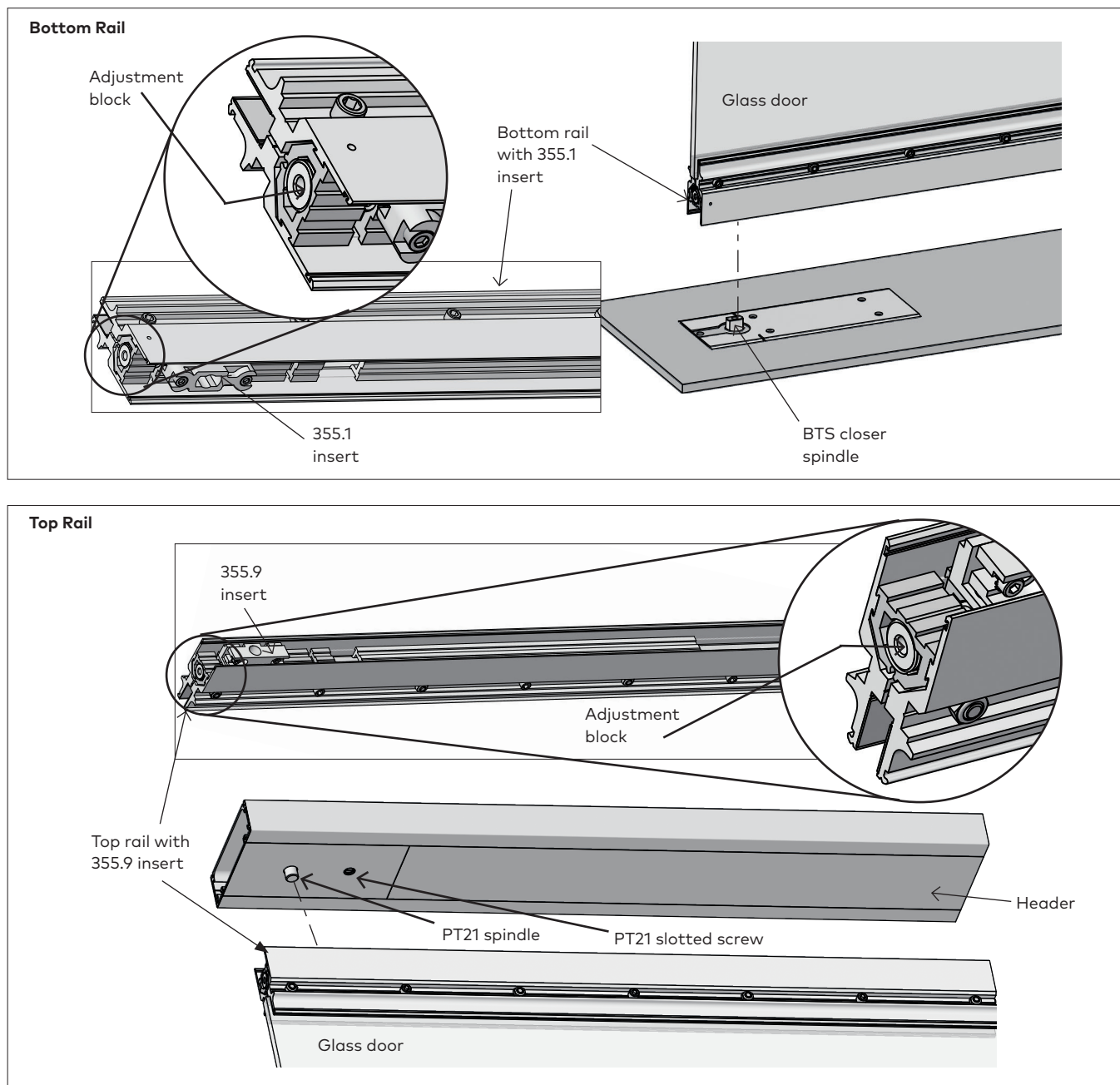2.3.4   Extend PT21 spindle and align spindle with 355.0 insert hole.

**Adjustments:**

2.3.5   Using a ³⁄₁₆" hex key, adjust the pivot, arm, or insert vertically inside each rail via the adjustment block in rail.

## 2.4     Install glass door panels and rails into frame:
### For use with: PT21 (walking beam pivot) and BTS80 with 355.1 insert

Fig. 5



**Bottom Rail**

Adjustment block

Glass door

Bottom rail with 355.1 insert

355.1 insert

BTS closer spindle



**Top Rail**

355.9 insert

Adjustment block

Top rail with 355.9 insert

Header

PT21 spindle          PT21 slotted screw

Glass door

NOTE:   See PT21 instructions for product install.
See BTS80 instructions for product install.

**Bottom Rail:**

2.4.1   Set bottom rail (with 355.1 insert) onto the BTS80 spindle.

**Top Rail:**

2.4.2   Retract PT21 spindle all the way up via slotted screw.

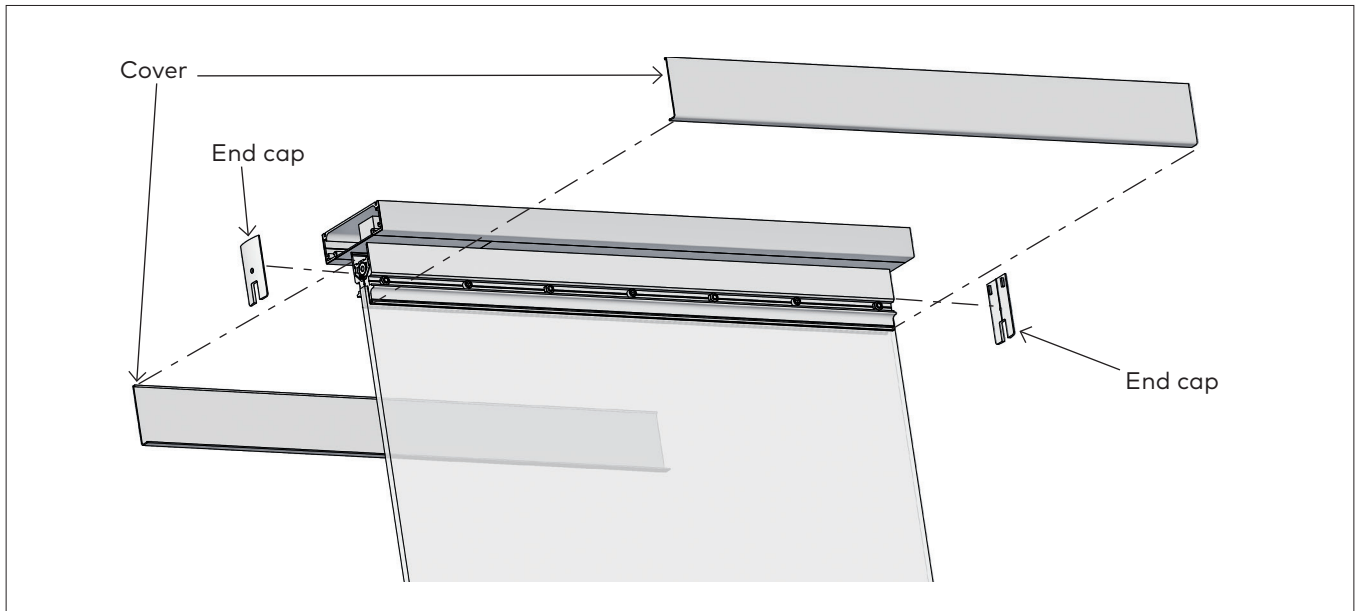2.4.3   Align top rail (with 355.9 insert) with PT21 walking beam pivot spindle.

2.4.4   Extend PT21 spindle and align spindle with 355.9 insert hole.

**Adjustments:**

2.4.5   Using a ³⁄₁₆″ hex key, adjust the pivot, arm, or insert vertically inside each rail via the adjustment block in rail.

## 2.5     Install rail covers and end caps

Fig. 6



2.5.1   Snap covers onto top and bottoms rails using a rubber mallet.

2.5.2   Install end caps using included 6-32 x3/4" Type F screws.