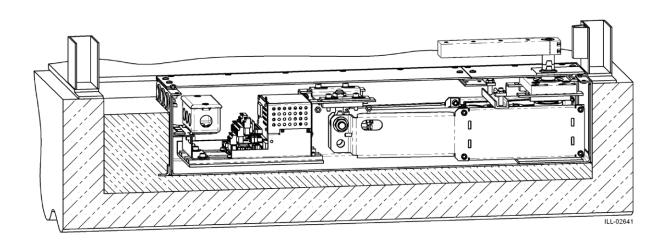


### **Besam SW200i-IG ADDENDUM**

### For

# **Swing Door Operator Installation and Service Manual Instructions**

(1009937-US)



1009955-US-2.0 - Issue 06-17-2013

#### Following pages have been revised:

Page	Revision 2.0		
7-17 New Output adaptor drawings and Kit numbers			
25	Added Output adaptor selection matrix		
27	Added comments on pit preparation and installation		
41	Added Leveling Bar Instructions.		

2 Issued 06-17-2013 1009955-US-2.0

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#### 1 Introduction

This manual supports Kits (1010324) & (1010274) and contains only information and instructions for the installation of the Besam SW200i-IG In Ground Besam Swing Door Operator not found in the Besam Swing Door Operator SW200i Installation and Service Manual Original Instructions (1009937-US), which is available from AAES.

TheSW200i-IG Kit (1010324) and Modernization Kit 1010274) include:

In Ground mounting enclosure (Not included with Modernization Kit)

Components to assemble & seal the enclosure (New cover included in Modernization Kit)

Components to mount SW200i Operator

Components to mount SW200i CU and Junction Box

Assembly Manual (1009955-US)

A SW200i Operator Kit (1007300) is required with both SW200i-IG Kits.

Each Kit requires the top of the SW200i-IG cover to be structurally positioned and secured relative to the finished floor level as indicated on the Output Adaptor Kit reference Drawings. See sections 8.3 and 6.3.

Output shaft configuration and Arm selection is application dependant, therefore neither an Arm nor an Output Shaft Adaptor Kit is included in the (1010324) Kit, or the (1010274) Modernization Kit. Specify and order the required SW200i compatible Output Shaft Adaptor and arm per directions outlined in section 6.3.

#### 2 Audience

This manual has been written for experienced In Ground field installation technicians and therefore provides overview information of the recommended way to assemble the product. As such the Addendum only provides important information that may not be otherwise known. Only Besam trained technicians should be allowed to carry out an installation of this door operator.

Additional application information is included to guide persons specifying the Besam SW200i-IG equipment to aid selection of Output Adaptor Kit(s).

#### **3 Technical Specifications**

For technical specifications, reference Besam Swing Door Operator SW200i US Installation and Service Original Instructions manual, (1009937-US).

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#### 4 Fastening and Securing Requirements

For all fastening locations and requirements, follow the hardware requirements spelled out in 1009937-US and 1009955-US. When a specific seating torque is essential for safety or performance the directions specify the recommended seating torque for the installer to insure proper Kit installation. Below are the recommended seating torque values

M6x1 Screws & Nuts; 13 N-m [120 in-lb]

M14x2 Nuts; 180 N-m [133 ft-lb]

The 1010324 SW200i-IG Enclosure must be connected structurally to the floor to support normal operating loads. See section 8.1 and 8.3 for requirement.

**Recommended Anchoring Cement:** 

SUPER POR-ROK®

EXTERIOR ANCHORING CEMENT

NON SHRINK GROUT

Manufactured by CGM Inc.

www.cgmbuildingproducts.com.

Or equivalent waterproof, non shrinking anchoring cement.

The anchoring cement is not included in Besam SW200i-IG KIT.

#### 5 Tools Required

In addition to the 1009937-US required tools, the following additional tools are required:

- Plumb Bob or laser square
- Torque Wrench(s) 120inlb to 150ftlb (13NM to 200NM]
- 4mm Allen wrench
- 5mm Allen wrench
- 7mm Allen wrench
- 10mm open end wrench
- Measuring device
- Calk Gun for Modernization Kit Epoxy application

#### 6 SW200i-IG Kit Ordering Information

For each door installation one of each of the following (6.1 to 6.3) Besam Kits must be ordered. Top Pivots and or Hinges are not included.

The SW200i-IG is compatible with any door within the SW200i Operator capability.

#### 6.1 SW200i Kit (1007300):

This Kit contains the Operator, Control Unit, electrical Junction Box, Switch and necessary mounting hardware. <u>ALL</u> set up, safe commissioning procedures, signage requirements and Safety Standards required by SW200i apply to the SW200i-IG Kit.

#### 6.2 SW200i-IG Kit (1010324) or Modernization Kit (1010274):

This Kit contains the Enclosure to be installed in the floor including the installation brackets, component mounting plates and the door pivot assembly. See detailed parts list section 7. The Modernization Kit does not include an enclosure. See detailed parts list section, 9.1.1.

1010324 requires (1) 1009658 + (1) 1010099.

1010274 requires (1) 1010267 + (1) 1010273.

#### 6.3 SW200i Output Adaptor Kit selection:

The SW200i Output Adaptor Kit is a modular set of parts kitted to adapt the SW200i to the application's specific Arm requirement. As part of every application one of the below listed kits must be selected from 6.3.1 to 6.3.3.

Each Output Adaptor Kit configuration includes the position of the **REQUIRED Safety Escutcheon**. Install as shown or as site conditions require.

NOTE: The SW200i-IG Gasket, Cover and Floating Seal should be assembled per sections 8.4.12 & 8.4.13 prior to connection of the Output Adaptor Kit and Door.

Output Shaft Adaptors are available for the following:

6.3.1-- Center Pivot Bottom Arms:

Besam Bottom Arm (1009408); (700lb [340KG] door compatible). See section 6.4 for description of Besam Bottom Arm.

Dorma Center Pivot Bottom Arm (BTS80 compatible) #7422 (200lb [91kg] maximum door weigh in a SW200i-IG application) (Non AAES supplied part).

REQUIRES converting centering M6 blind hole to M6 taped thru to secure adaptor to arm.

Rixson H28/H40 Square Drive rear & side load bottom arms. 700lb [340KG] door compatible)

Rixson 28 series Center Pivot Bottom Arm #282554 (200lb [91kg] maximum door weight in a SW200i-IG application). (Non AAES supplied part).

- 6.3.2—Offset Pivot Configuration using ¾" Rixson Offset Arms (H327 or similar). (700lb [340KG] compatible) See Rixson Literature for application information (Non AAES supplied part)
- 6.3.3 Independently Hung Bottom Slide Arm. Rixson Bottom Slide Arm (32555000 or similar) (see Rixson Literature) (Non AAES supplied part)

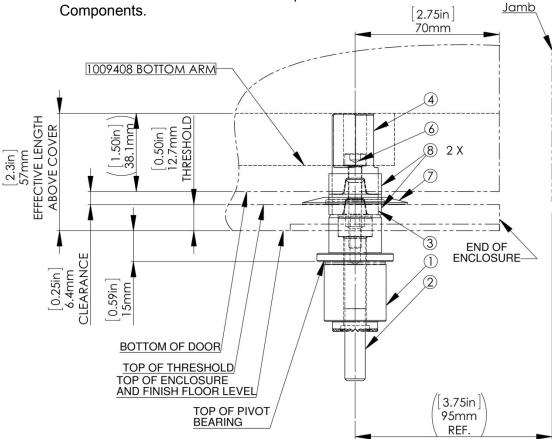
#### 6.3.1 Center Pivot configuration:

The Center Pivot Kit(s) provide connection to a Besam Center Pivot Bottom Arm (1009408), Rixson Square Drive bottom Arms #262022- & 262587-, Dorma BTS-80 #7422, and Rixson 28 series 282554. Effective Length(s) above the enclosure

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cover are available for threshold heights 6.4mm [1/4in], 12.7mm [1/2in] or 20 mm [3/4in] deep Terrazzo Pan.

1a: Kit 1010059: 57mm Output adaptor Kit for 12.7mm [1/2in] and 6.4mm [[1/4"] threshold. See section 6.4 for description of 1009408 Bottom Arm



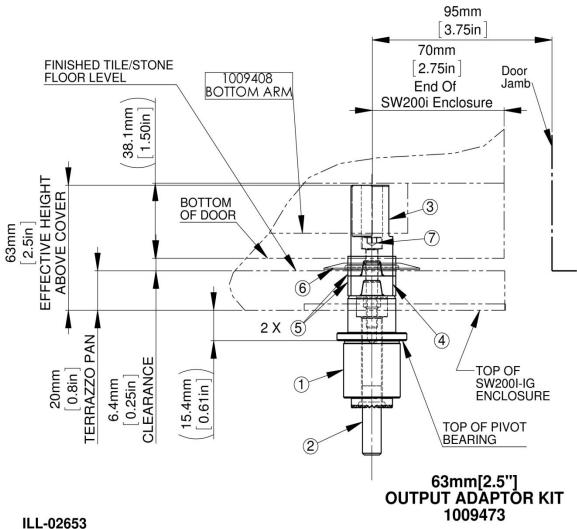
- !/4" Threshold applications:
  1. Omit Item #3 (1009512)
  2. Assemble Output Adaptor with #5 M6X30I SHCS
  3. Add (1009739) 1/8" spacer to 1009408 Bottom Arm

#### 57mm [2.3in] **OUTPUT ADAPTOR KIT** 1010059

#### III-02658

8	2	pcs.	Suport Ring SW200i	1010676			
7	1	pcs.	Escutcheon, Safety SW200i	1010096			
6	1	pcs.	M6 Socket Hear Cap Screw M6x1.0x40L Grade 12.9	1702159			
5	1	pcs.	M6 Socket Head Cap Screw M6x1.0x30L Grade 12.9	Screw M6x1.0x30L Grade 12.9 1702160			
4	1	pcs.	Adaptor, 39mm Door Pivot SW200I	1009366			
3	1	pcs.	Extension, 10mm SW200I	1009512			
2	1	pcs.	Screw, Retension SW200i	1009361			
1	1	pcs.	Adaptor, Output Shaft SW200i	1009359			
Pos.	Qty.	Unit	Description	Art.no.	Remark		

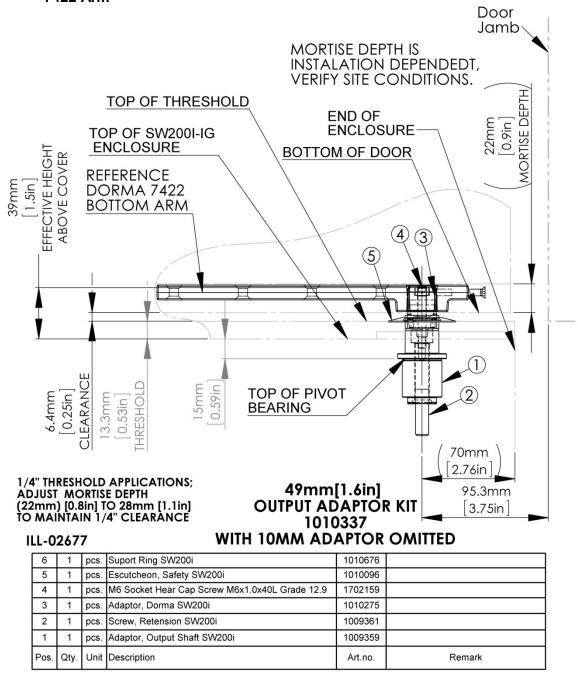
1b: Kit 1009473: 63mm [2.5 in] Output adaptor configuration with Besam Bottom Arm (1009408). For 20mm [3/4"] Terrazzo Pan.



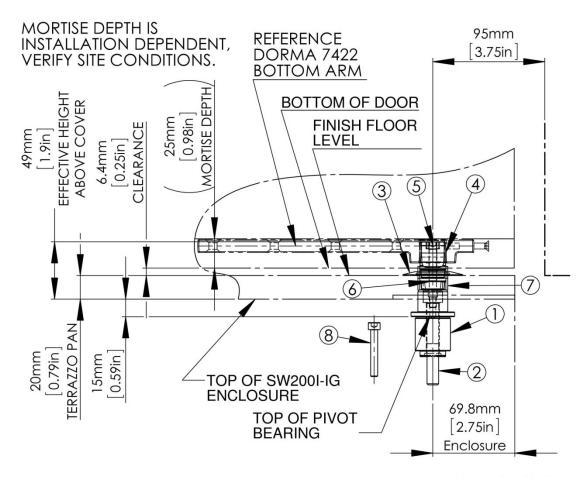
7	1	pcs.	M6 Socket Hear Cap Screw M6x1.0x40L Grade 12.9	1702159				
6	1	pcs.	Escutcheon, Safety SW200i	1010096	96			
5	2	pcs.	port Ring SW200i 1010676					
4	1	pcs.	Extension, 10mm SW200I	1009512				
3	1	pcs.	Adaptor, 46mm Door Pivot SW200I	1009365				
2	1	pcs.	Screw, Retension SW200i	1009361				
1	1	pcs.	Adaptor, Output Shaft SW200i	1009359				
Pos.	QTY.	Unit	Description	Art.no.	Remark			

1c. KIT 1010337: Output Adaptor Kit for 6.4mm [1/4"] and 12.7mm [1/2"] thresholds and Terrazzo Pan.

NOTE: Dorma BTS-80 Arm must be modified; thru tap the M6x 1.0 hole in the rear of the arm to allow the 1010337 Output Adaptor to be clamped to the 7422 Arm



#### 1d. KIT 1010337: Output adaptor Kit for Terrazzo Pan Applications.

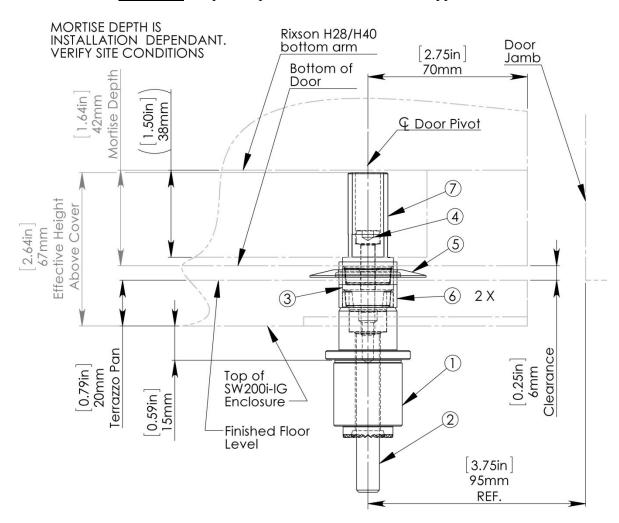


#### ILL-02678

# 49mm[1.6in] OUTPUT ADAPTOR KIT 1010337

8	1	pcs.	M6 Socket Hear Cap Screw M6x1.0x40L Grade 12.9	1702159	
7	2	pcs.	Suport Ring SW200i	1010676	
6	1	pcs.	Extension, 10mm SW200I	1009512	
5	1	pcs.	M6 Socket head Cap Screw M6x1.0.50L 12.9	1702161	
4	1	pcs.	Adaptor, Dorma SW200i	1010275	
3	1	pcs.	Escutcheon, Safety SW200i	1010096	
2	1	pcs.	Screw, Retension SW200i	1009361	
1	1	pcs.	Adaptor, Output Shaft SW200i	1009359	
Pos.	Qty.	Unit	Description	Art.no.	Remark

#### 1e. KIT 1010696: Output adaptor Kit for Terrazzo Pan Applications.

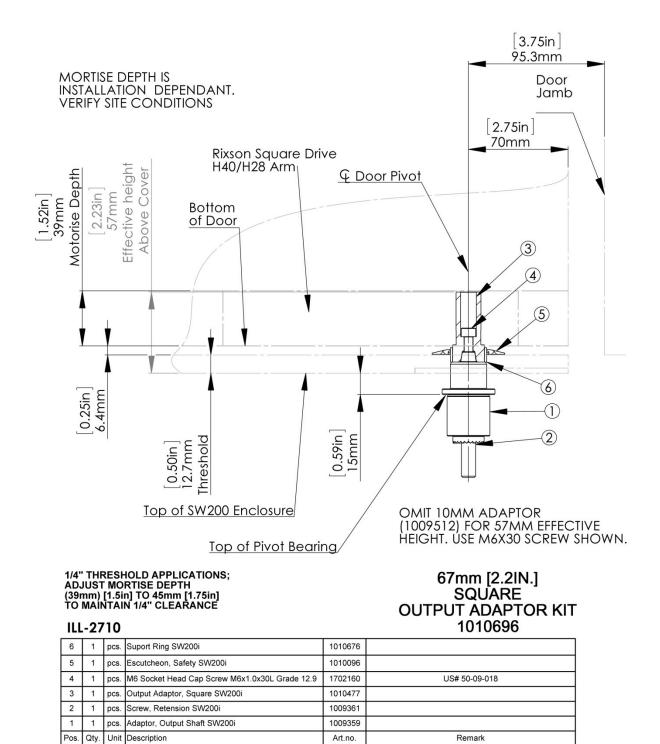


#### 67mm [2.6in] Output Adaptor Kit 1010696

#### ILL-2712

8	1	pcs.	M6 Socket Head Cap Screw M6x1.0x30L Grade 12.9	1702160	
7	7 1 pcs. Output Adaptor, Square SW200i		Output Adaptor, Square SW200i	1010477	
6	6 2 pcs. S		Suport Ring SW200i	1010676	
5	1 pcs. Escutcheon, Safety SW200i		Escutcheon, Safety SW200i	1010096	
4	1	pcs.	pcs. M6 Socket Hear Cap Screw M6x1.0x40L Grade 12.9		US# 50-09-172
3	1	pcs.	. Extension, 10mm SW200I		
2	1	pcs.	Screw, Retension SW200i	1009361	
1	1	pcs.	Adaptor, Output Shaft SW200i	1009359	
Pos.	. Qty Unit Description		Description	Art.no.	Remark

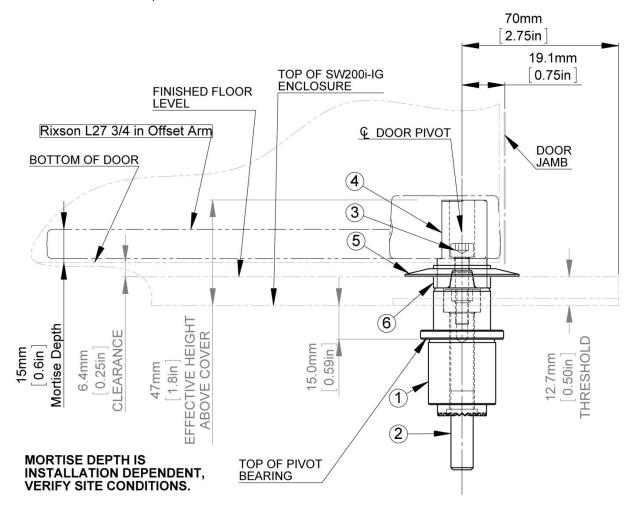
### 1f. KIT <u>1010696</u>: Output Adaptor Kit for 6.4mm [1/4"] and 12.7mm [1/2"] thresholds and Terrazzo Pan.



#### 6.3.2 Offset Pivot configuration:

The Kits below provide connection to a Rixson <sup>3</sup>/<sub>4</sub>" Offset Bottom Arm with the threshold heights shown or the available 20 mm [3/4in] deep Terrazzo Pan.

2a: <u>Kit 1010059</u>: 57mm Output Adaptor Kit Configured for 12.7mm [1/2in] and 6.4mm [1/4"] thresholds. (10mm adaptor omitted to provide 47mm effective height above cover)



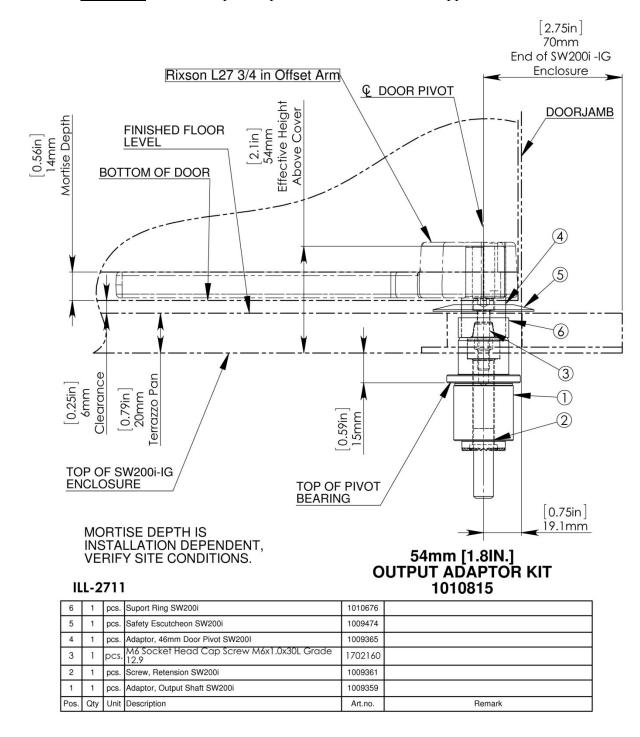
1/4" THRESHOLD APPLICATIONS; ADJUST MORTISE DEPTH (15mm) [0.6in] TO 21mm [0.8n] TO MAINTAIN 1/4" CLEARANCE

## 47mm [1.8IN.] OUTPUT ADAPTOR CONFIGURATION KIT # 1010059

#### III-02656

6	1	pcs.	Suport Ring SW200i	1010676	
5	1	pcs.	Escutcheon, Safety SW200i	1010096	
4	1 pcs. Adaptor, 39mm Door Pivot SW200I			1009366	
3	1	pcs.	M6 Socket Head Cap Screw M6x1.0x30L 12.9	1702160	US# 50-09-234
2	1	pcs.	Screw, Retension SW200i	1009361	
1	1	pcs.	Adaptor, Output Shaft SW200i	1009359	
Pos.	Qty.	Unit	Description	Art.no.	Remark

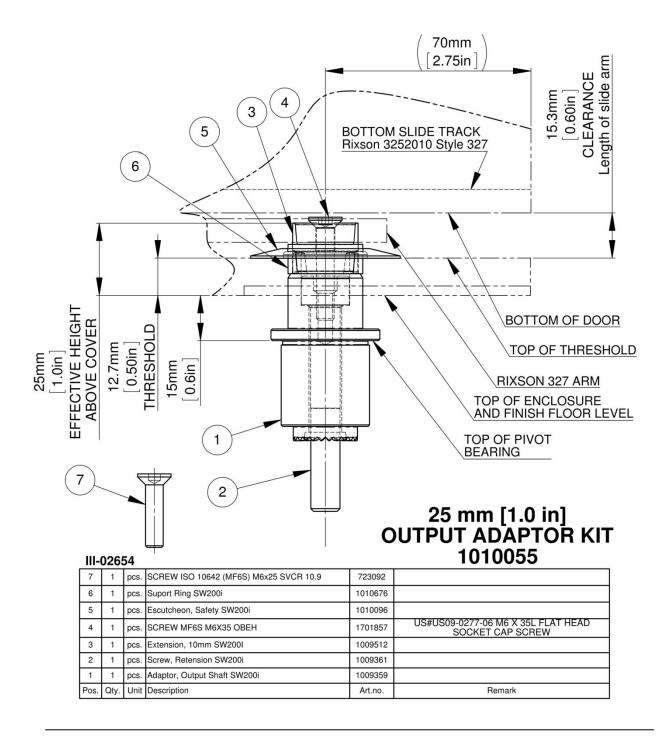
#### 2b. KIT 1010815: 54 mm Output adaptor Kit for Terrazzo Pan Applications.



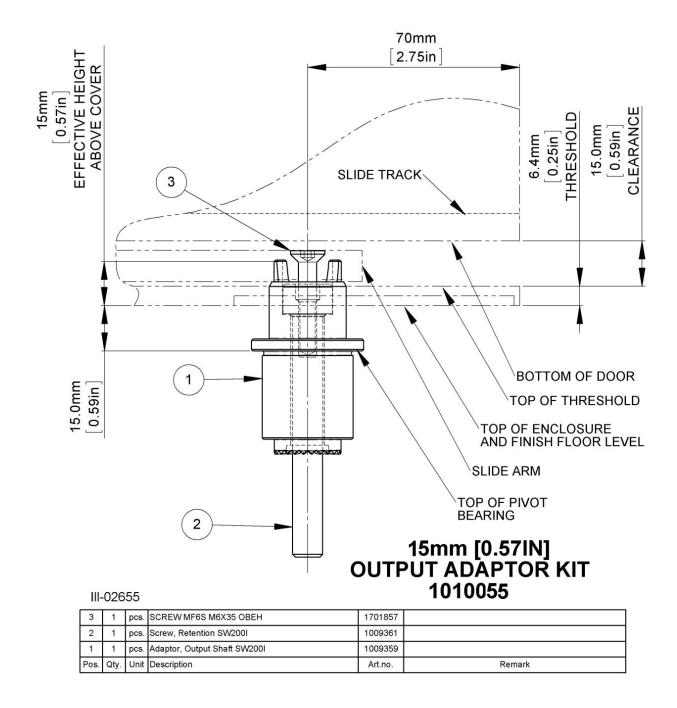
#### 6.3.3 Independently Hung Door, Slide Arm configuration:

The Kits below provide connection to a Rixson Sliding Bottom Arm with the threshold heights shown. Due to the power/automatic operation the SW200i-IG system the output shaft, which powers the door is positioned on the centerline of the closed door. This is to minimize the shearing hazard created by the Arm and Door Bottom edge. SEE Tech Drawings 1010942; single Independently Hung, and 1010943: double Independently Hung drawings.

3a: Kit 1010055: 25mm Output adaptor Kit for 12.7mm [1/2in] threshold.



3b: **<u>Kit 1010055</u>**: 25mm Output Adaptor Kit set up for 6.4mm [1/4in] threshold. 10mm adaptor omitted to provide 15mm effective height above cover.

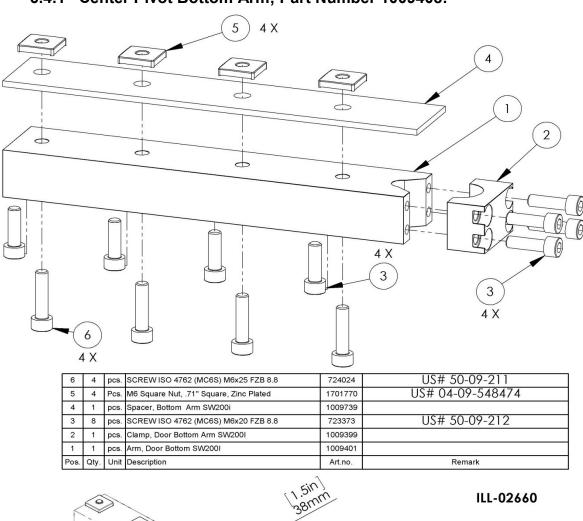


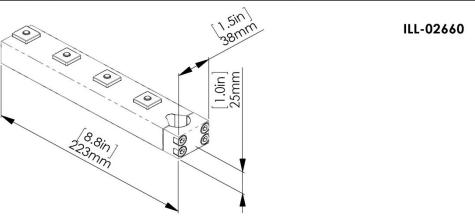
#### 6.4 Output Arm:

The available Besam Bottom Arm Kit will connect to a horizontal bottom rail equipped with a 1 ½" nominal trough or to a custom mortised door using alternative (user supplied) mounting screws. Item #4 (1009739) is provided to accommodate ½" thresholds or special site conditions as required

NOTE: The split between the Bottom Arm and Clamp is approximately the centerline of the Triangular Output Shaft. (+/- 0.015ln [0.4mm])

#### 6.4.1 Center Pivot Bottom Arm; Part Number 1009408:

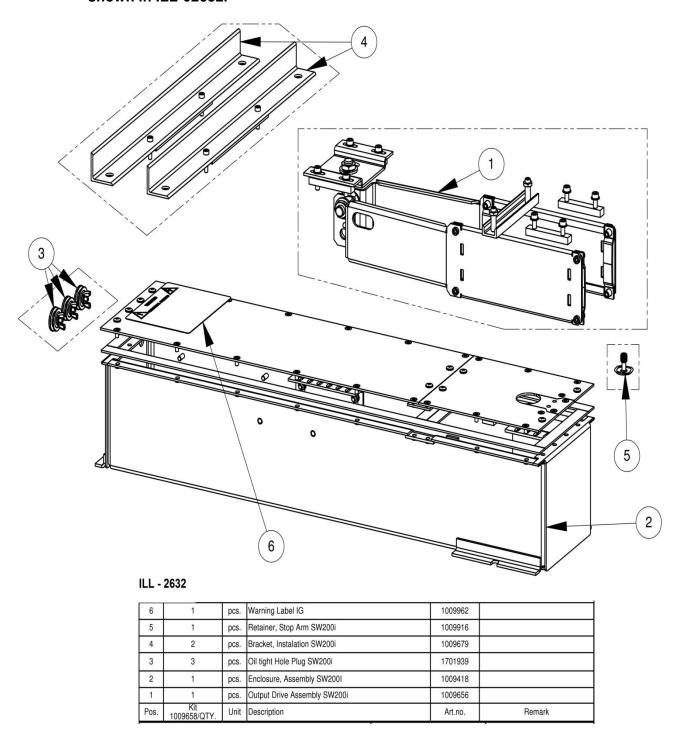




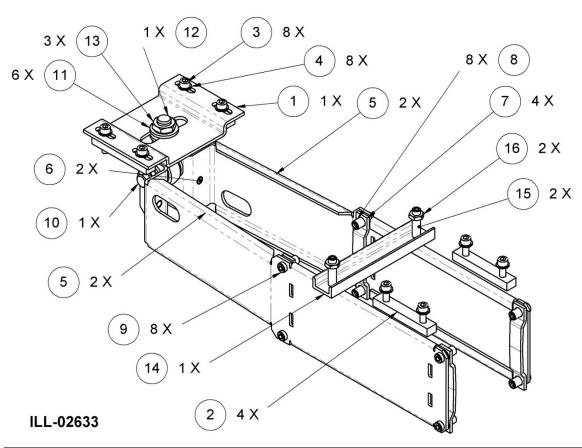
#### 7 SW200i-IG Kit Hardware Illustrations and Parts Lists

#### 7.1 SW200i-IG Kit:

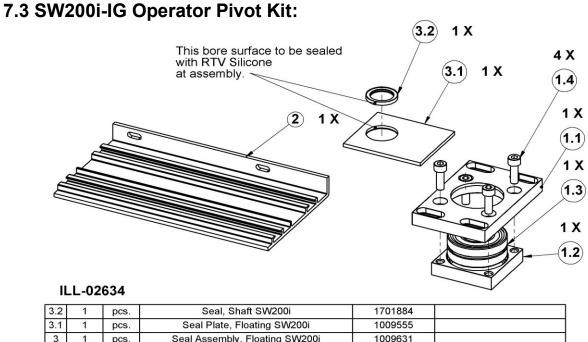
Part number 1010324 provides the subassemblies and components shown in ILL-02632.



### 7.2 SW200i-IG Operator Mount Kit:

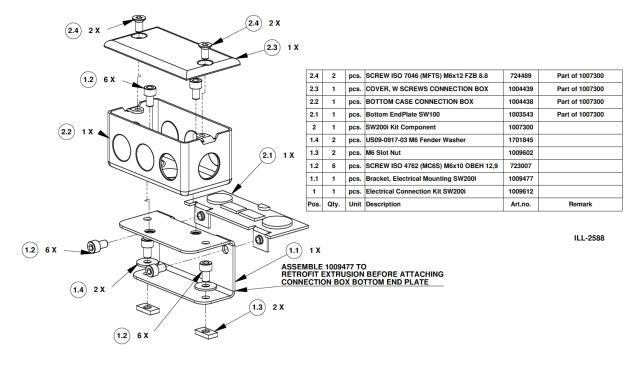


16	2	pcs.	NUT ISO 4035 (ML6M) M8 FZB 4.8	726002	M8 x 1.25 Jam Nut	
15	2	pcs.	M8x1.25x35 L Hex Socket Half Dog Set Screw	1701895		
14	1	pcs.	Bar, Leveling SW200i	1009586		
13	3	pcs.	M14 x 2.0 Hex Nut DIN 934	1701889		
12	1	pcs.	Spherical Rod End 14mm SW200i	1701886		
11	6	pcs.	Flat Washer, 14mm	1701887	Narrow DIN 125 15 x 28 x 2.5mm Zinc plated	
10	1	pcs.	M14 x 2.0 x 50L HHCS DIN 933	1701888		
9	8	pcs.	M6x1.0x16 DIN 7984 50-09-213	1701891		
8	8	pcs.	RIVET NUT BN 199 M6 SPH 630 FZB 4.8	726121	Part of 1009523 or Equivalent weld nut	
7	4	pcs.	Clamp, Operator SW200I	1009522	Part of 1009523	
6	2	pcs.	Stud, M6x1.0x15L PEM or Equivalent	1009363	1009364 Drawing & assembly	
5	2	pcs.	Mount, Gearbox SW200i	1009362	1009364 Drawing & assembly	
4	8	pcs.	WASHER DIN 988 7x13x1.2	1701106	Narrow DIN 125 7 x13 x 1.2mm Zinc plated	
3	8	pcs.	SCREW ISO 4762 (MC6S) M6x25 OBEH 12,9	723008		
2	4	pcs.	Clamp Bar SW200i	1009521		
1	1	pcs.	Bracket, Pivot SW200i	1009386		
Pos.	Qty.	Unit	Description	Art.no.	Remark	

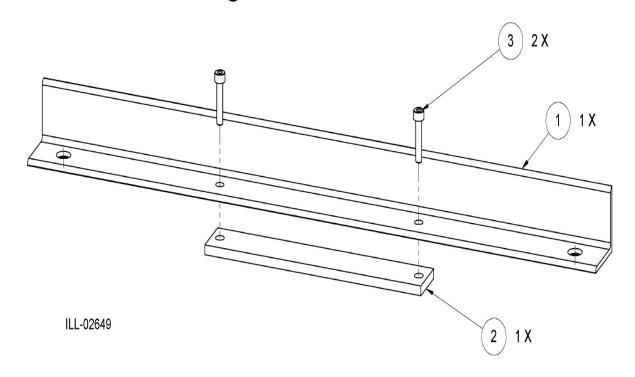


3.2	1	pcs.	Seal, Shaft SW200i	1701884	
3.1	1	pcs.	Seal Plate, Floating SW200i	1009555	
3	1	pcs.	Seal Assembly, Floating SW200i	1009631	
2	1	pcs.	Electritical Mounting Extrusion SW200i	1009561	
1.4	4	pcs.	SCREW ISO 4762 (MC6S) M8x25 FZB 8,8	723323	
1.3	1	pcs.	Bearing, Spherical Roller SW200I	1701862	
1.2	1	pcs.	Capture, Pivot Bearing SW200l	1009357	
1.1	1	pcs.	Support, Pivot Bearing SW200i	1009356	
1	1	pcs.	Pivot Assembly, Output SW200i	1009537	
Pos	QTY.	Unit	Description	Art.no.	Remark

#### 7.4 SW200i-IG Electrical Connection Kit:

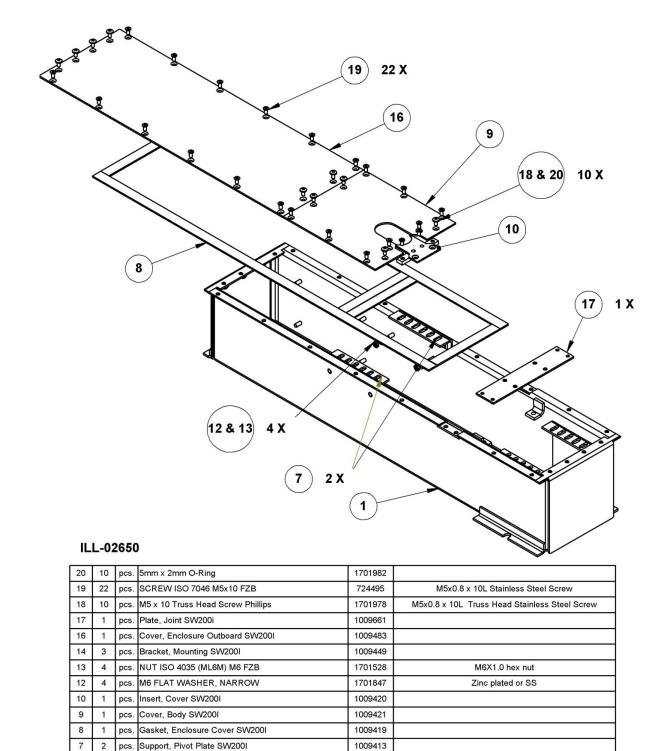


### 7.5 SW200i-IG Locating Bracket:



Pos.	Qty.	Unit	Description	Art.no.	Remark
1	1	pcs.	Bracket, Locating SW200i	1009587	
2	1	pcs.	Spacer, Assembly SW200i	1009588	
3	2	pcs.	SCREW ISO 4762 (MC6S) M5x25 FZB 8.8	723082	

#### 7.6 SW200i-IG Enclosure Assembly:



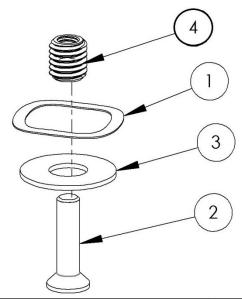
1009417

Remark

Body, Enclosure SW200i

Unit Description

### 7.7 SW200i-IG Retainer, Stop Arm:

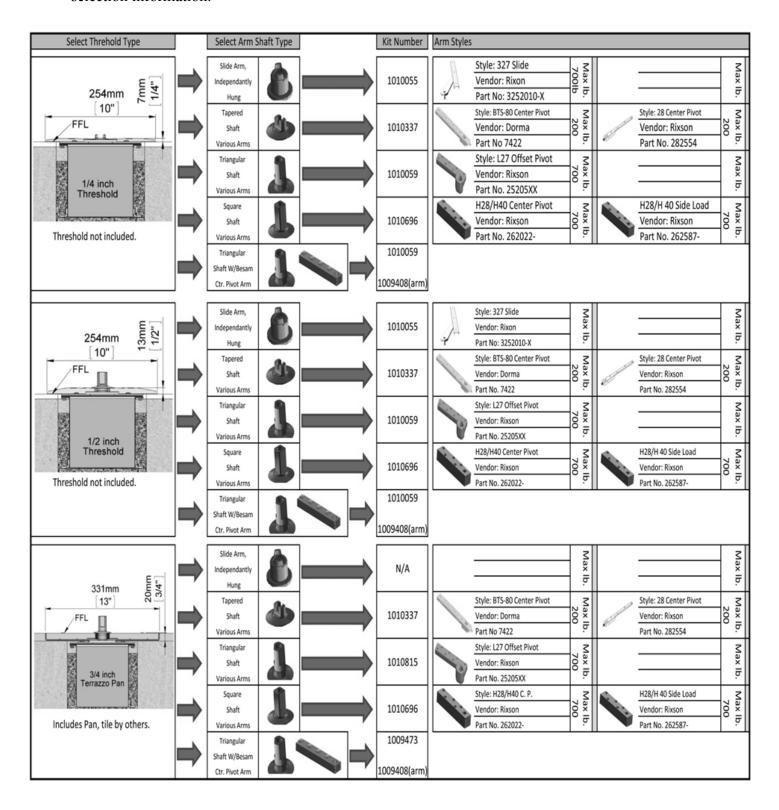


ILL-02651

4	1	pcs.	Thread insert M6 x M10	1701992	
3	1	pcs.	1701991		
2	1	pcs.	SCREW ISO 10642 (MF6S) M6x25 FZB 10.9	723895	
1	1	pcs.	Spring, Wave SW200i	1701990	
Pos.	QTY.	Unit	Description	Art.no.	Remark

#### 7.8 SW200i-IG Output Shaft Adaptor selection matrix:

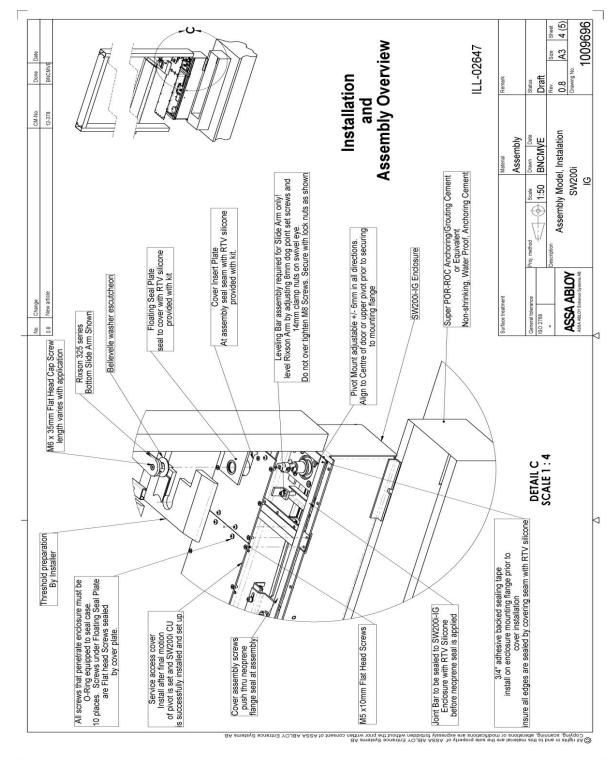
This selection chart, also available as FTS 13-001, graphically provides Output Adaptor Kit selection information.



#### 8 Installing the SW200i-IG

#### 8.1 SW 200i-IG Assembly Overview:

Illustration ILL-02647 is an overview of the installation of a SW200i-IG. The model shown is a slide arm on a 914mm (36in) door with a ½" threshold. Features and procedures apply to all models.



#### 8.2 Preparing to Assemble the SW200i-IG:

Inventory all components by laying out all parts and assemblies in the general location to be assembled. Reference the SW200i Installation and Service Manual (1009937-US.) to understand door handing and safe work procedures and safe operation of the SW200i.

#### 8.3 Pit Preparation:

Prepare the site pit per the specific direction detailed on the drive arm application drawing available from AAES online at: (http://www.besam.com/en/besam/us/Downloads/).

The recommended pit location relative to door jambs and door centerlines is provided by the referenced drawings. , in each case it is the responsibility of others to insure the installation meets minimum ADA door width and clear door opening requirements. Safe operation requirements such as finger guards and threshold design are the responsibility of others.

Each arm type (center pivot, offset pivot, or bottom slide) requires a specific relationship to the SW200i Gearbox output shaft. The enclosure is permanently mounted to the sub-floor using the Installation brackets and referenced Tech Drawings. (See section 8.4.2) A final alignment range of ±6mm (0.24in) is provided by the Pivot Bearing Assembly.

The pit is to be prepped per the anchoring cement manufacture's recommendations. Brackets and spacers are provided (1009587, see ILL-2648 below) to locate the enclosure during the cement anchoring procedure. The spacers offset the enclosure flange the thickness of the enclosure cover + gasket to establish the height relative to the finished floor or bottom of Terrazzo Pan. See Output Adaptor drawings above.

The Pit <u>MUST</u> drain any water that may reach the bottom of the enclosure flange. To prevent damage to the system some sites may require a sump pump. (By others.)

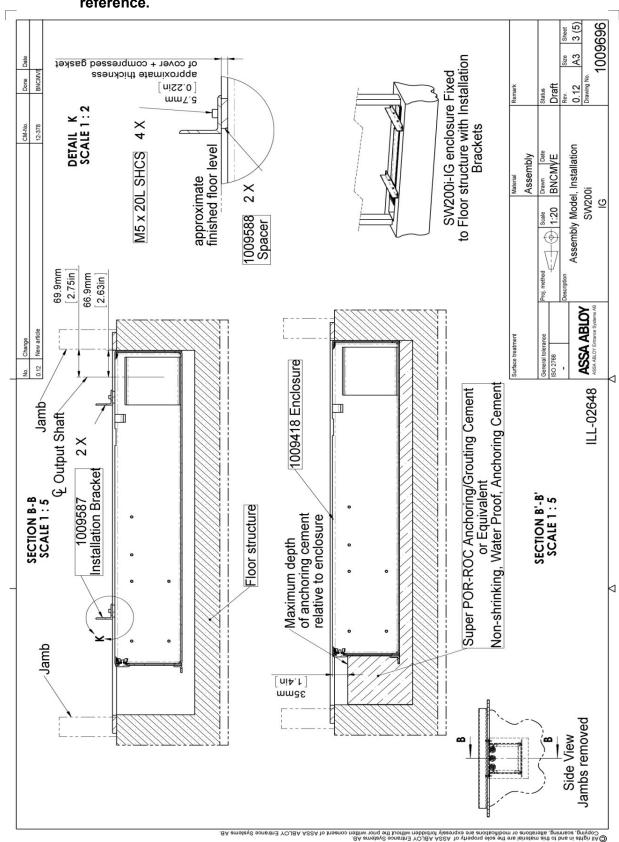
All Wiring must be water tight, Power must be Ground Fault Protected.

Provisions to fully support thresholds in area outside enclosure; by others.

Threshold mounting hardware **MUST** not penetrate the enclose body.

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### 8.3.1 Enclosure Position: Independently Hung enclosure shown for reference.



#### 8.4 In Ground Assembly:

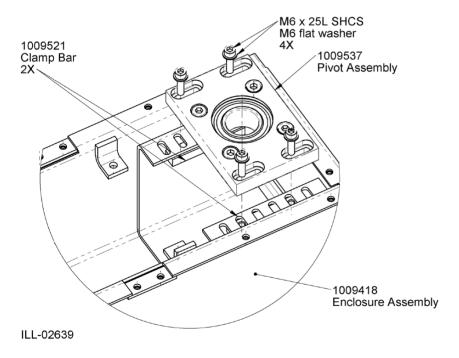
#### **CAUTION!**

This series of assemblies and adjustments should only be performed by AAES trained personnel.

#### 8.4.1 Pivot Assembly Installation:

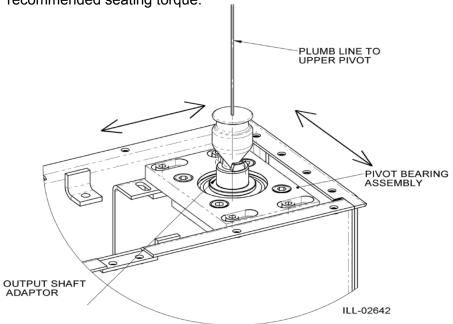
After enclosure is secure in the floor pit with cured POR-ROC<sup>®</sup> Anchoring Cement, alignment and assembly of the door operator begins with installation and alignment of the bottom door pivot.

- 1a. Attach Pivot Assembly (1009537) to SW200i-IG Enclosure mounting flanges with (2) Clamps (10009521) and (4) M6x1x25mmL SHCS.
- 1b. Snug screws to allow alignment to upper door pivot.



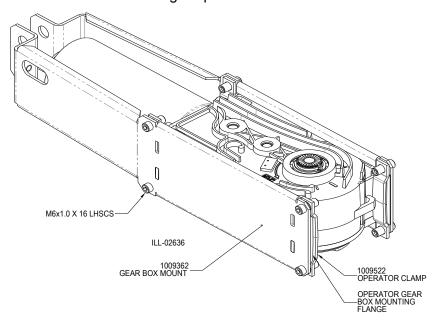
#### 8.4.2 Alignment of the Bottom Pivot to Upper Pivot Centerline Installation:

- 2a. Temporarily insert output shaft adaptor into pivot bearing bore.
- 2b.Using the slotted features of the output Bearing Support Brackets in (1009418) and the Pivot Bearing Assembly (1009537); align the bottom pivot to the upper pivot centerline. See ILL-02642.
- 2c. After final location relative to upper pivot, torque M6 screws to recommended seating torque.



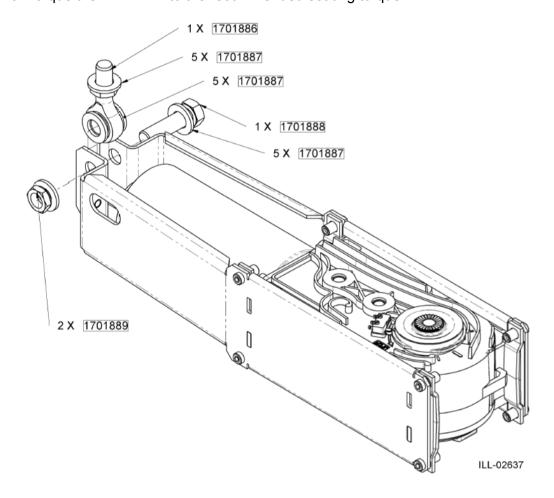
#### 8.4.3 Attach Gearbox Mount:

3a. Attach both Gearbox Mount (1009362) to SW200i Operator Gear Box mounting flanges with four Operator Clamps (10009522) and eight M6 x 1.0 x 16L Low Head Socket Cap Screws. Torque four M6 LHSHCS to the recommended seating torque.



#### 8.4.4 Determining Handing and Install Spherical Rod End:

- 4a. Determine correct operator handing per SW200i manual, 1009937-US section 6. This will orient OPEN Arrow on gearbox for the specific application. Stop Arm (1007313) will be on the up or down side depending on Door Handing..
- 4b. Install Rod End (1701886) in top outboard pivot hole, see ILL-02637, using (1) M14 x 50mm L HHB, four M14 flat washers and (1) M14 HHN and (1) M14 washer on threaded portion of Rod End.
- 4c. Torque the M14 HHN to the recommended seating torque.

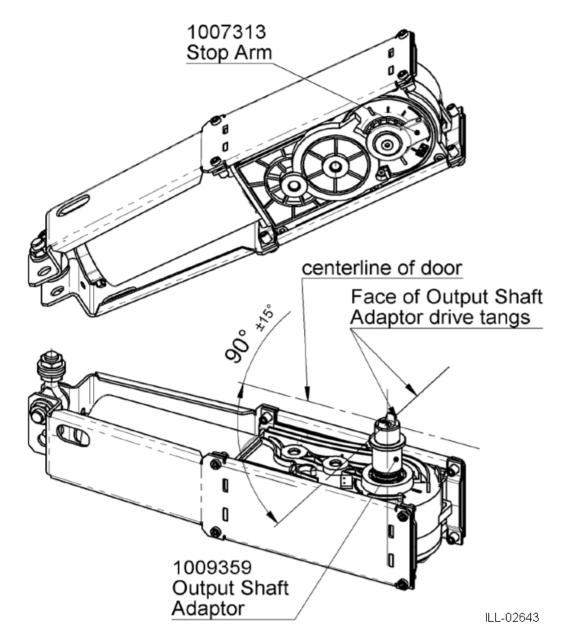


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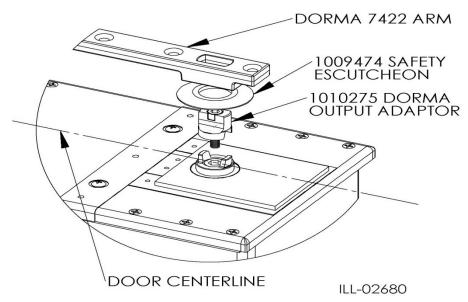
#### 8.4.5 Stop Arm and Output Adaptor orientation:

5a. ILL-02643 Illustrates the correct Stop Arm, 1007313, Output Adaptor, 1009359, and door centerline orientation at the door CLOSED position for a RH out-swing application using an AAES Bottom Arm (1009408) or similar. Each Arm type requires the installer to properly orient the Output Adaptor Drive Tangs relative to the Stop Arm. The Output Adaptor Kit drawings provide correct Output Drive Tang orientation at the Door Closed Position.

<u>NOTE:</u> The Operator Stop Arm (1007313) should be protected by a permanent Door Open Stop which acts on the Door to limit its travel. Damage to the Operator Stop Arm 1007313, may occur if it is used as a physical open door stop. The 1007313 Stop Arm is intended for Spring Preload set up and preliminary alignment only.

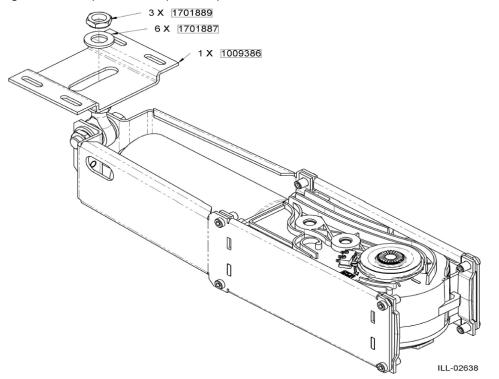


5b. Ill-02680 assumes the same stop arm orientation as above. For the Dorma BT80 (7422) and Rixson 28 (282554) series hidden arms (Dorma 7422 shown) the AAES Output Adaptor Drive Tangs are installed parallel to the door face and the stop arm. This Output Shaft Adaptor orientation is also applicable to Rixson Door Bottom Slide Arm applications. This orientation is also applicable to Bottom Slide Arms Section 6.3.3.



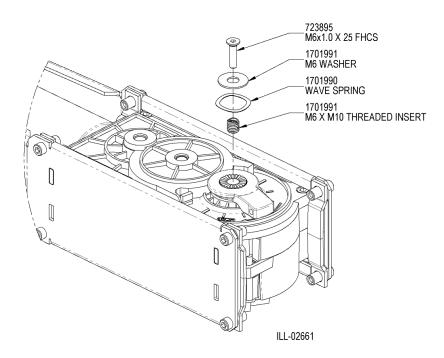
#### 8.4.6 Pivot Bracket Installation:

6a. Install **Pivot Bracket** (1009386) on rod end and secure with one each M14 HHN and M14 flat washer. Tighten to recommended seating torque after final alignment of Operator Output Adaptor to the door bottom. See section 8.4.11.



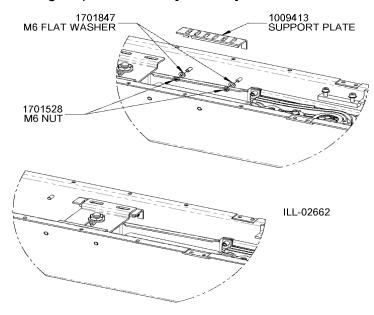
#### 8.4.7 Installing Stop Arm Retainer:

7a. Applications where the stop arm is on the bottom of the gearbox require the Stop Arm Retainer (1009916) as shown in ILL-02661.

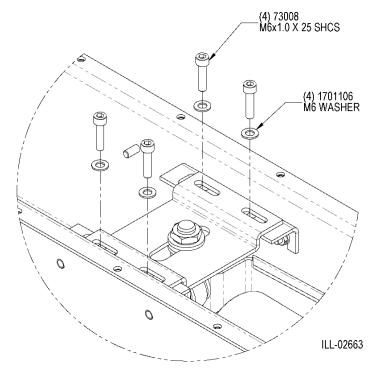


#### 8.4.8 Installing the Gear Box:

- 8a. Place the assembled Gear Box Support and Pivot Plate into the secured SW200i -IG Enclosure.
- 8b. Place the (2) Pivot Support Plates (1009413) over the (4) M6 Threaded Studs (1009363) indicated in the SW200i -IG Enclosure (1009417). Secure each with (2) M6 Nuts (1701528) and (2) Washers (1701847). Tighten nuts to recommended seating torque of 13 N-m [120 in-lb].



- 8c. Attach Pivot Bracket (1009537) to SW200i Enclosure mounting flanges with (2) Clamps (10009521) and (4) M6 x 1.0 Hex Head Nuts (1701528)
- 8d. Move the Gear Box so that the Output Shaft is roughly concentric with the Output Pivot Assembly and the Pivot Bracket is resting on the newly installed Support Plates.
- 8e. Snug screws to maintain alignment to the Pivot Assembly, but do not tighten completely.



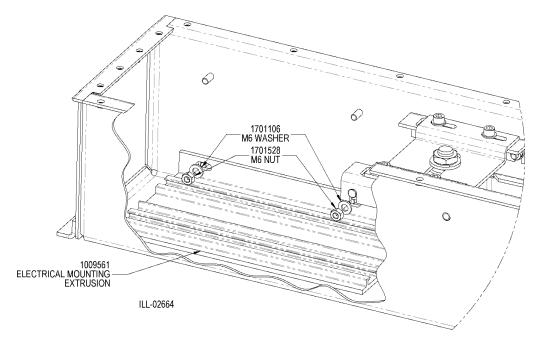
#### 8.4.9 Electrical Installation:

Normal electrical connection of the SW200i-IG Kit is accomplished per the 1009937-US manual except as Follows:

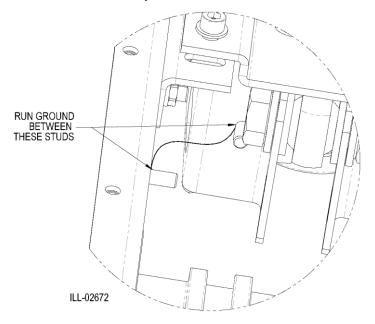
NOTE: All connections <u>MUST</u> pass into the SW200i-IG enclosure via Water-Tight fittings. Three oil-tight covers (1701939) are provided for sealing unused 0.54in. diameter access holes on the outboard end of the enclosure. All wiring must follow all local & national codes & standards.

Power connection **MUST** be GFI protected.

9a. Secure the Electrical Mounting Extrusion (1009561) to the Enclosure Assembly (1009418) by fitting the two slots in the Electrical Mounting Extrusion to the M6 Threaded Studs shown in Enclosure Assembly. Secure each with (2) M6 Nuts (1701528) and (2) Washers (1701847). Tighten nuts to recommended seating torque.



9b. Connect the Green Ground Strap (1010323) from one of the studs on the back of the Gear Box Mounting Plates to one of the studs on the side of SW200i-IG Enclosure. M6 nuts & washers are required.



- 9c. connect the Control Unit to the Electrical Mounting Extrusion per directions in 1009937-US.
- 9d. Connect the Electrical Mounting Bracket (1009477) to the Electrical Mounting Extrusion as shown in ILL-02588 (Section 7.4) using (2) M6x1.0 x 10 Socket Head Cap Screws (723007), (2) M6 Fender Washers (1701845) and (2) M6 Slot Nuts. Tighten screws to recommended seating torque.
- 9e. Connect the Bottom End Plate (1003543) to the Electrical Mounting Bracket as shown in ILL-02588 using (2) M6x1.0 x 10 Socket Head Cap Screws (723007). Tighten screws to recommended seating torque.

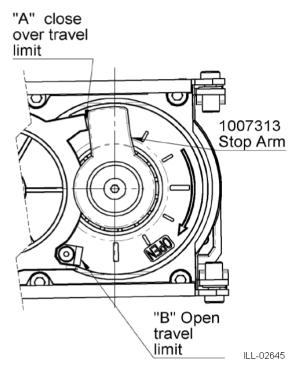
**Note**: The Activation Switch is a 115V device and **SHOULD NOT** be installed outside the enclosure except when installed per National & Local codes & standards.

- 9f. Connect the Bottom Case Connection Box (1004438) to the Electrical Mounting Bracket as shown in ILL-02588 using (2) M6x1.0 x 10 Socket Head Cap Screws (723007). Install the Connection Box cover. Tighten screws.
- 9g. Refer to Besam Swing Door Operator SW200i Installation and Service Manual Original Instructions (1009937-US) Section 12 to complete remaining electrical connections. (This is required to properly align the Output Adaptor Drive Tangs to the door open stop/door face.
- 9i. Set the four Arm Selection DIP switches according application configuration per 1009937-US section 12.3.2 Arm System Selection.
  - a: Besam 1009408, Rixson 28, Dorma 7422 and all other center pivot applications; Use DIP switch setting for **Concealed Out-swing, or Concealed In-swing** per application.
  - b: Rixson ¾" Offset Pivot Arm; Use DIP switch setting for <u>Sliding Push/Offset</u> <u>pivot</u>.
  - c: Bottom slide arm: Use DIP switch setting for Sliding Push/Offset pivot.

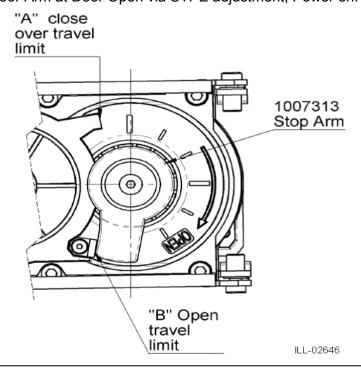
#### 8.4.10 Output Shaft Adaptor Installation:

10a. With the SW200i Operator PRELIMINARILY installed and the Control Unit wired per local codes & standards. Apply 115VAC to the Control Unit by turning the ON/OFF switch to ON... Adjust the STPE potentiometer until the Stop Arm rests fully on the Open Travel Position per ILL-02646.

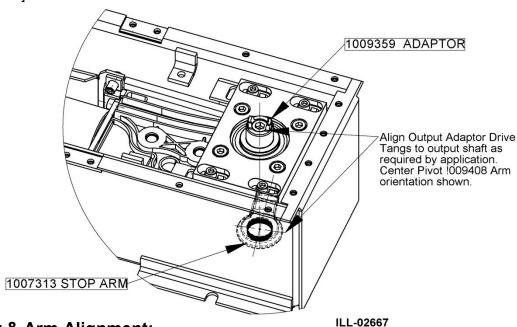
Stop Arm View I: Arm not connected to door; power off as it would be during installation.



Stop Arm View II Door Arm at Door Open via STPE adjustment, Power on.

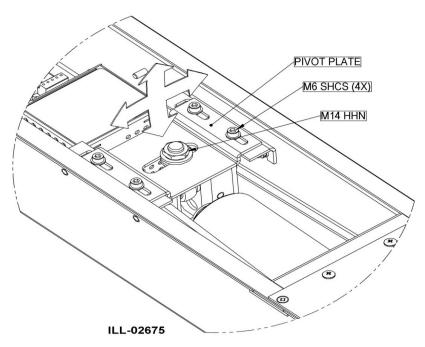


10b. Attach the Output Shaft Adapter (1009359) to the Gear Box using the Retention Screw (1009361) as shown in ILL02667. Install the Output Adaptor Drive Tangs relative to the output Stop Arm as required by the application. Insure the face gear teeth are properly engaged. Tighten M10 screw to recommended seating torque of 58 N-m [513 in-lb].



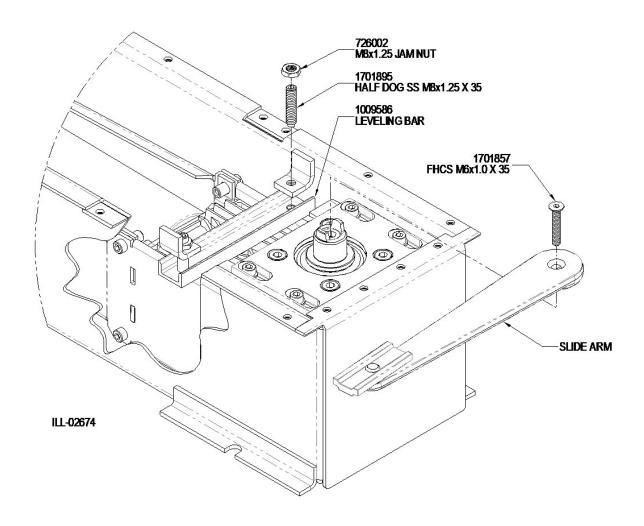
### 8.4.11 Final Door & Arm Alignment:

Adjustments may be made to the orientation of the Gear Box Stop Arm relative to the door operating plane and door bottom to the Bottom Arm Alignment via the Spherical Rod End and its M14 Jam Nuts. See ILL-02675. Alignment of the final door Open stop may be fine tuned by rotation in the Pivot Plate Slot (+/- 4°). Insure the M14 Jam Nut, and the four M6 SHCS are tightened to the recommended seating torque once final alignment is confirmed.



The SW200i-IG Kits are provided with a Leveling Bar 1009586 to initially align the Bottom Arm and door in the plane perpendicular to the closed door face. This Bar is not intended to support door loads arising from incorrectly aligned upper & lower pivots and/or movement due to a loose fit between the Door Bottom Arm and the Output Adaptor. On Center Pivot, and Offset Pivot applications this leveling bar is unnecessary: verify secure Bottom Arm/Output Adaptor clamping if Operator Gearbox rotation occurs during set up Correct before service initiation.

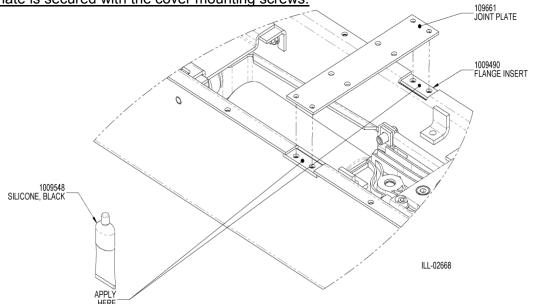
Do not over-tighten the M8 half dog set screws, Snug Only; secure with supplied M8 Jam Nuts.



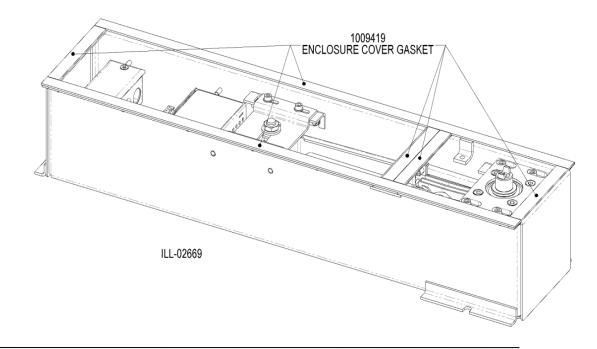
#### 8.4.12 Cover Installation:

The SW200i-IG Cover is constructed in two sections; the two sections are joined via a joint plate. To insure the box is sealed against splashing water all gaps must be filled with the supplied RTV silicon sealant as directed below. Failure to seal as directed or to install the O-Ring equipped screws as directed increases the probability water may enter the SW200i-IG Enclosure.

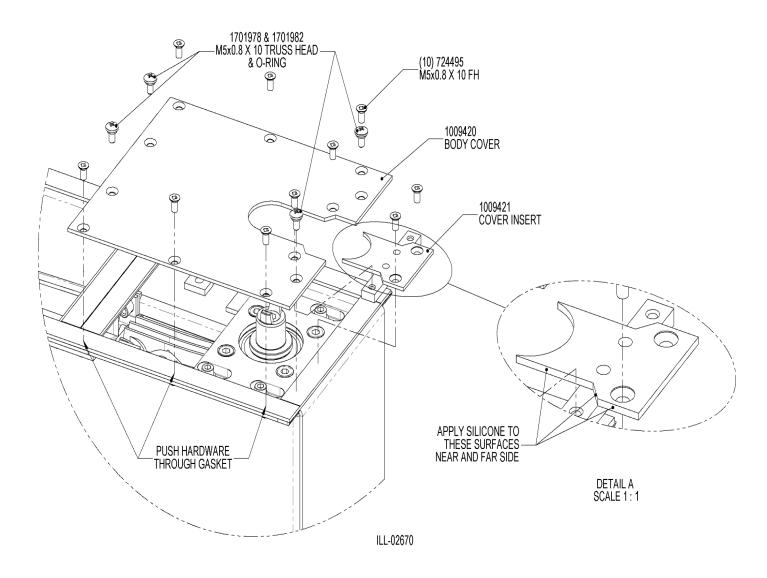
12a. Apply RTV Silicone Gel, (1009548) liberally to the top faces of the (2) Insert Flanges, (1009490). Place the Joint Plate (1009661) firmly on the two Insert Flanges such that the corner holes are concentric with the holes in the Insert Flanges. A bead of silicon should form around all contacting edges. The Joint Plate is secured with the cover mounting screws.



12b. Peel the backing from the Enclosure Cover Gaskets (1009419) and apply them as shown in ILL-02669. <u>Leave no gaps between the gaskets.</u>



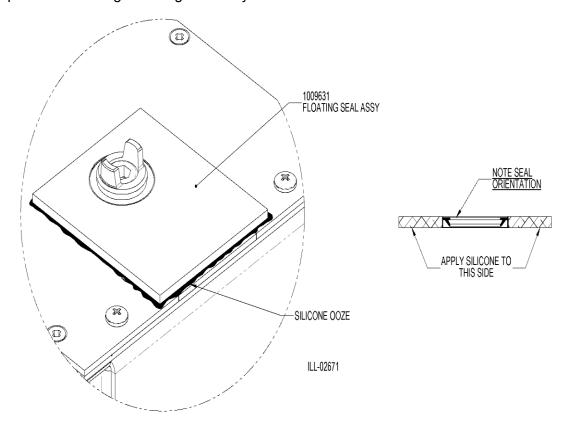
12c. Apply liberal amounts of Silicone Gel (1009548) to the faces of the Cover Insert (1009421) where it will come into contact with the Body Cover (1009420).



12d. Attach the Body Cover and Insert Cover to the Enclosure Body using (4) M5x0.8 X 10 Truss Head Screws with O-Rings, 1701978 & 1701982 and (10) M5x0.8 X 10 Flat Head Screws (724495). Reference illustration ILL-02670 above.

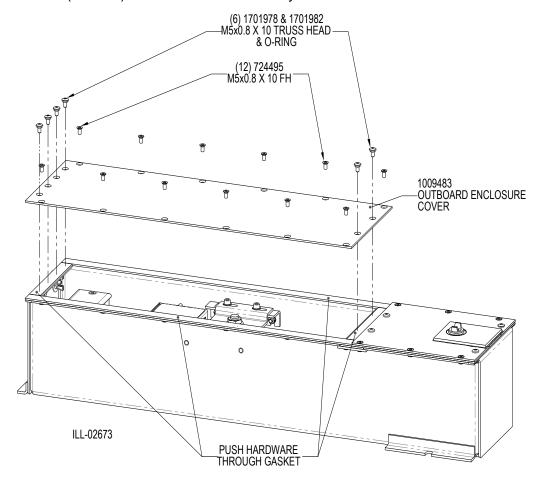
## 8.4.13 Floating Seal Installation:

- 13a. Apply RTV silicone to the of the underside of the Floating Seal Assembly (1009631), see ILL-02671. Do not allow silicone on the shaft seal lips. RTV silicon applied should be sufficient to ooze around the entire perimeter of the Floating Seal Assembly when pressed into place per 13b.
- 13b. Gently press the Floating Seal Assembly over the Output Shaft Adapter and onto the Body Cover allowing the seal & mounting plate to self center/align. Verify the seal lips are not damaged during assembly.



# 8.5 Finish Assembly and final enclosure sealing:

- 5a. Prior to final cover installation Complete **ALL** remaining assembly and set up procedures per Besam Swing Door Operator SW200i Installation and Service Manual Original Instructions, 1009937-US.
- 5b. Attach the Outboard Enclosure Cover to the Enclosure Body using (6) M5x0.8 X 10 Truss Head Screws with O-Rings (1701978 & 1701982) and (12) M5x0.8 X 10 Flat Head Screws (724495). Reference the assembly illustration ILL-02673 below.



#### 8.6 ANSI 156.19:

Assure completed automated door installation is in compliance with ANSI 156.19. Correct as required by the standard before placing door in service.

#### 9 In Ground Modernization Kit:

The SW200i-IG system is available in a kit to modernize most 6x 6 x 35 1/2"Long [152mmx160mmx905mm Long] In Ground door operators: "Opcon" or similar sized In Ground door operators.

The Modernization Kit, Part Number 1010274 replaces 1010324 in section 6.2 above. This section describes how to install the Retrofit Bracket (1010134), the Electronics Mounting Extrusion (1009561), and the revised Retrofit Cover Assembly (1010262). All other specification and assembly procedures including Arm selection are the same as the 1010324 Kits.

**NOTE:** The Modernization Kit places the mounting face of the Operator Output Shaft 3mm [1/8 in.] higher relative to the cover of the enclosure then the Standard SW200i-IG (1010324) Kit. All nominal "Effective Height Above Cover" dimensions indicated on the Output Adaptor Kit application drawings in section 6.3 are 3mm [0.12in] **LONGER**. IE; (1010337) 49mm Output Adaptor Kit will have a net 52mm "Effective Height Above Cover". Care must be taken to insure the Bottom Arm and door pivots will accommodate differences between the output shaft height of the existing Bottom Arm & Threshold or that an Output Adaptor Kit is selected to match the original shaft height within the operating range of the Door Arm & Pivot(s).

The Modernization Kit requires the existing enclosure to be dry, properly secured and suitable for re-use. Damaged cover attachment thread inserts, electrical connections which are not water tight, excessive enclosure misalignment to the door operating plane, improper pit drain(s), or improperly secured ancillary devices (IE thresholds) <u>MUST</u> be corrected prior to applying this Modernization Kit.

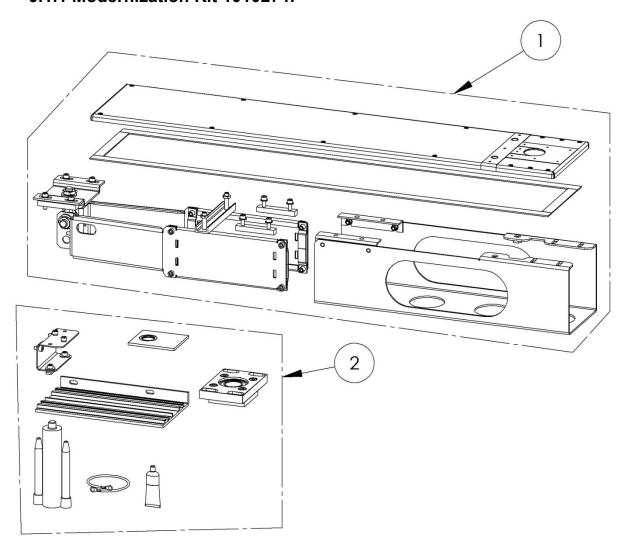
Follow all Warnings and Safety requirements per SW200i manual 1009957-US. Installer must follow all local codes and standards for a safe work zone and electrical connection.

#### 9.1 Modernization Kit Parts:

Part assemblies & detail part lists common to both the 1010274 & 1010324 SW200i-IG Kits are omitted in section 9, See section 7 above for parts not specifically identified in section 9.

All Output Adaptor Kits are common to both SW200i-IG applications. As noted above in Section 9 insure the 3mm reduction in "Effective Height above Cover" is accommodated in the Modernization process.

# **9.1.1 Modernization Kit 1010274:**

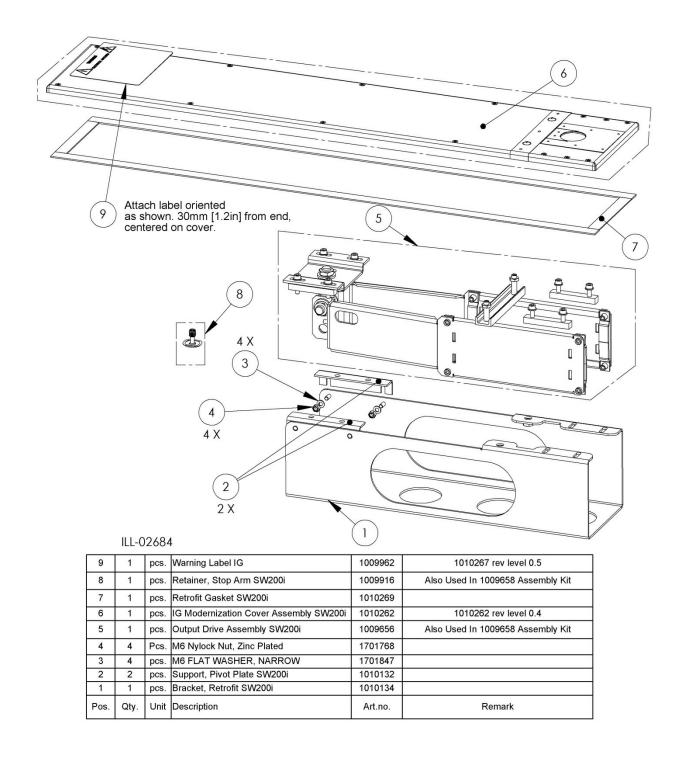


ILL-02682

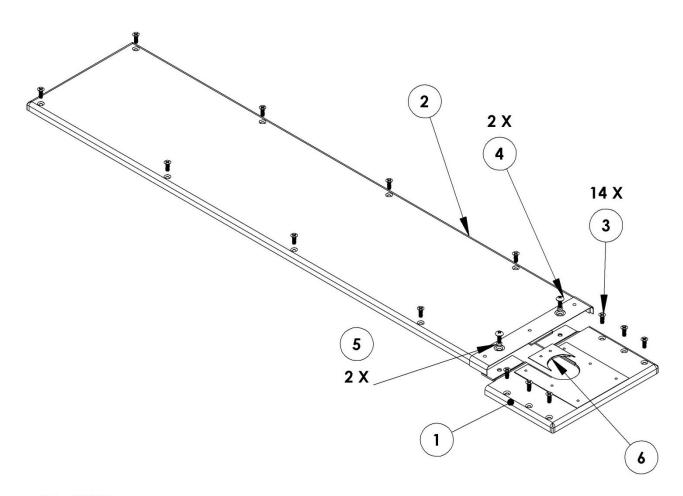
2	1	pcs.	Pivot Assembly Kit SW200i	1010273	
1	1	pcs.	Opcon Retrofit Kit SW200i	1010267	
Pos.	Qty.	Unit	Description	Art.no.	Remark

# 9.1.2 Output Assembly components:

Item 5 detail; see ILL-02633 section 7.2 Item 8 detail; see ILL-02651 section 7.7.



# 9.1.3 Modernization Cover Assembly:

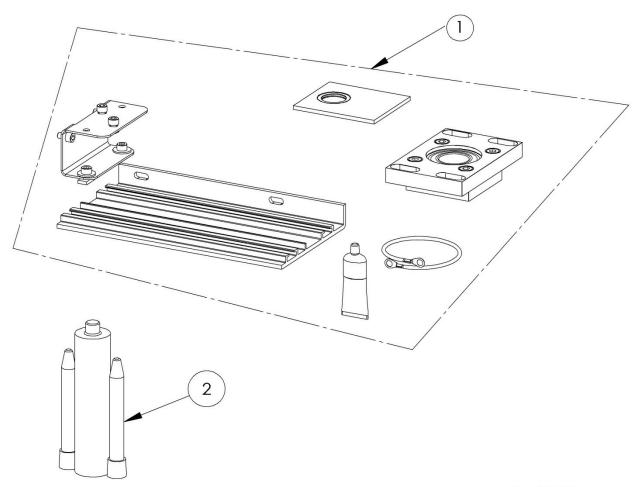


## ILL-02683

6	1	pcs.	Cover Insert SW200i	1010261	
5	2	pcs.	4mm x .5mm Oring High Nitrile Neoprene	1702030	
4	2	pcs.	10-32 UNF Truss Head Phillips Screw Stainless Steel	1702029	1/2" long
3	14	pcs.	8-32 UNF Phillips Flat Head Stainless Steel	1702028	1/2" long
2	1	pcs.	Service Cover Assembly SW2 0i	1010222	
1	1	pcs.	Output Cover Assembly SW200i	1010227	
Pos.	Qty.	Unit	Description	Art.no.	Remark

# 9.1.4 Pivot Assembly Kit:

Item 1 detail; see ILL-02634 section 7.3 & ILL-02588 section 7.4.



ILL-02681

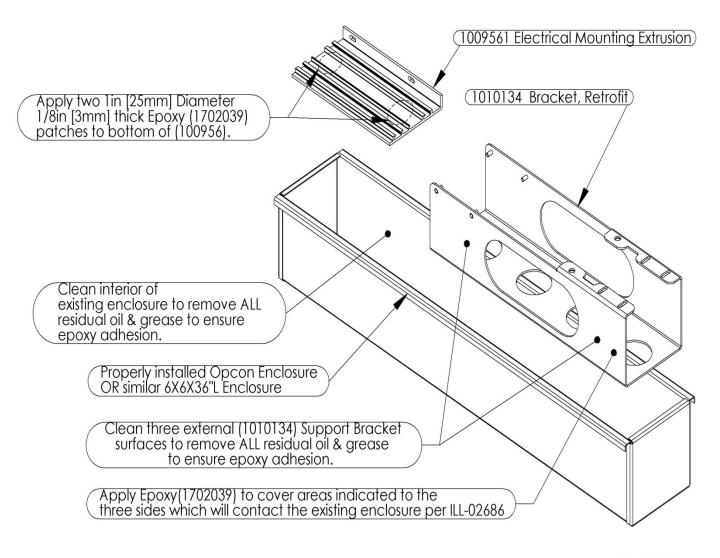
2	1	pcs.	Simpson Strong-Tie Epoxy 8.5 oz. Model #: SETPAC-EZ	1702039		
1	1	pcs.	SW200i-IG ASSEMBLY KIT SW200i	1010099	10099	
Pos.	Qty.	Unit	Description	Art.no.	Remark	

#### 9.2 Modernization Kit Installation:

The 1010274 Modernization Kit installs support features necessary to position the SW200i Operator & electronics within a previously installed pit box. Illustration ILL-02679 provides an overview of the installation and preliminary instructions for prepping the (1010134) Bracket and (1009561) Electrical Mounting Extrusion.

#### 9.2.1 1010274 Kit Preparation:

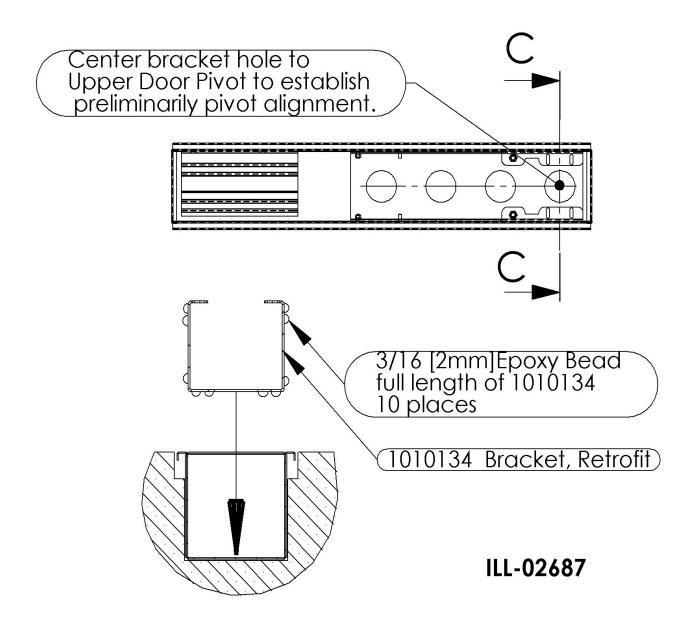
Prepare the existing enclosure and the supplied components per III-02679 & III-02687. Component cleanliness is essential for proper epoxy adhesion.



ILL-02679

#### 9.2.2 Bracket Installation:

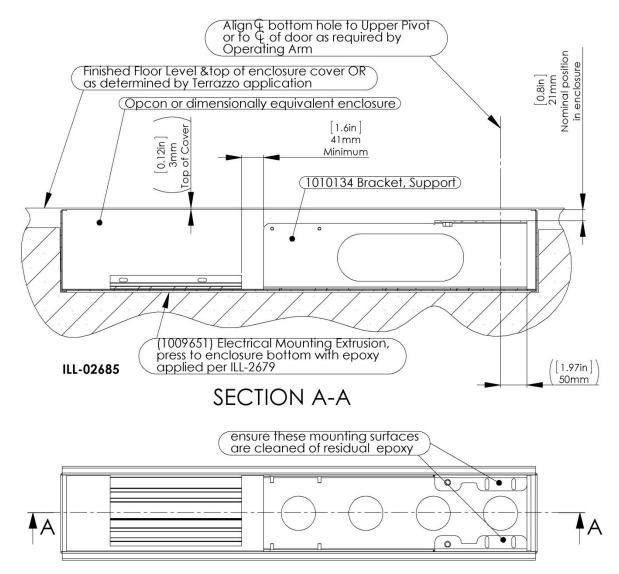
Apply the supplied structural epoxy (1702039) to the sides and bottom of (1010324) per Illustration ILL-02687. Read and follow all directions and warnings with the supplied epoxy. Do not attempt to complete assembly of operator, or support door loads until the epoxy has cured to prevent loss of alignment. Insure all epoxy is removed from the Pivot Bearing support surfaces (See ILL-02685).



# **SECTION C-C**

#### 9.2.3 Final Mounting Position:

The Location below orients the mounting bracket to allow proper alignment of the Pivot Assembly (1009537) in a 2 <sup>3</sup>/<sub>4</sub>" nominal Pivot Centerline application. Some installations <u>WILL</u> require alternative orientation to align the Modernization Kit to the door pivot.

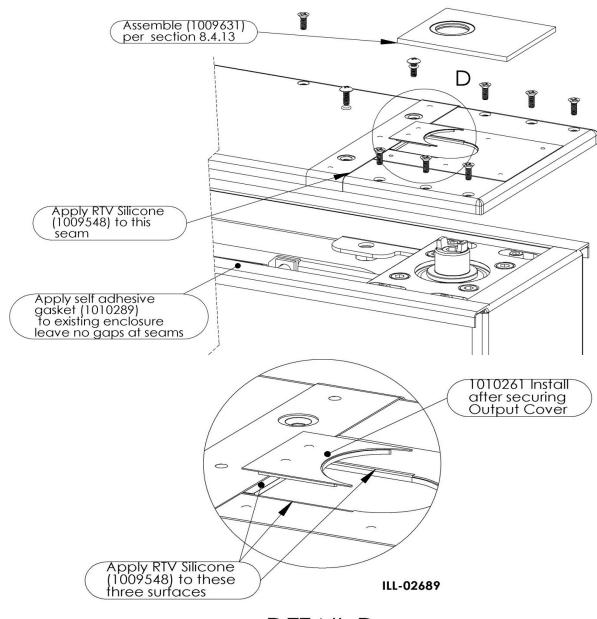


# 9.3 Operator Installation:

The SW200i Operator and Electronics are assembled, aligned, and entered into service following the directions in 8.4.1 to 8.4.11 above and 1009937-US. Insure The Ground Strap (section 8.4.9b) is connected to the prior installation ground point. If prior installation did not include proper ELECTICAL grounding or GFI, correct **BEFORE** continuing installation.

# 9.4 Cover Assembly:

The cover is assembled per ILL-02689. The existing cover threaded inserts are required to properly install the modernization cover.



**DETAIL D** 

#### 9.5 ANSI 156.19:

Assure completed automated door installation is in compliance with ANSI 156.19. Correct as required by the standard before placing door in service.

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ASSA ABLOY Entrance Systems Inc., 1900 Airport Road, Monroe, NC 28110, US Tel: (704) 290 5520 • Fax: (704) 290 5544
Tel: (877) 237 2687 (service) • Tel: (866) 237 2687 (sale)
www.besam-usa.com • marketing.na.besam@assaabloy.com