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UT-ID 22.17.1-2

UNITEC Otis Glide[®] A Mechanical Installation Guide

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All jobsite work activities must comply with applicable Safety Policies and local regulatory requirements. If you are unsure of the requirements, please stop work immediately and consult your supervisor or EH&S.

1. Description

The Otis Glide A (Figure 1) is a closed-loop linear door operator. This document provides basic ordering and specification guidance for Modernization and Open Order upgrade applications of the Glide-A door operator.

The Glide A has one 135W motor and is designed to move a total mass of 317 kg / 700 lb. at speeds up to 1.9 seconds with 42 in. center-opening doors. The Glide A door operator may still be considered for higher moving mass applications; however, with you and your customer signing off on the expectation of lower speed and performance.

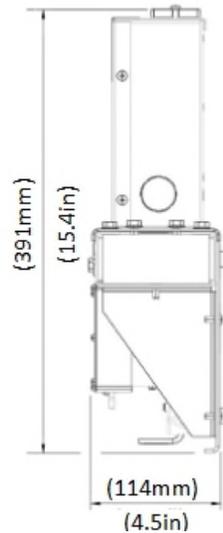
The Otis Glide A door operator is designed to work with various cab configurations, multiple mounting options, and multiple opening types. The following sections provide the steps required for mechanical installation and adjustment of the Glide A door operator. Electrical installation and adjustment are covered in UT-ID 22.17.1-3 and UT-ID 22.17.1-4.

Operator Dimensions

The Otis Glide A door operator width will cover all (or a significant portion) of the width of the car top, based on the sizes indicated in Table 1.

Table 1: Operator Widths

Entrance Width		Operator Type	Operator Length mm (in.)
Min mm (in.)	Max mm (in.)		
1295 mm (51 in.)	1524 mm (60 in.)	Center-Opening	1987 mm (78.2 in.)
940 mm (37 in.)	1270 mm (50 in.)		1682 mm (66.2 in.)
838 mm (33 in.)	914 mm (36 in.)		1508 mm (59.4 in.)
610 mm (24 in.)	813 mm (32 in.)		1454 mm (57.2 in.)
1219 mm (48 in.)	1524 mm (60 in.)	Single Slide	1987 mm (78.2 in.)
1041 mm (41 in.)	1194 mm (47 in.)		1682 mm (66.2 in.)
991 mm (39 in.)	1016 mm (40 in.)		1508 mm (59.4 in.)
610 mm (24 in.)	965 mm (38 in.)		1454 mm (57.2 in.)
1219 mm (48 in.)	1524 mm (60 in.)	Two Speed	1987 mm (78.2 in.)
1041 mm (41 in.)	1194 mm (47 in.)		1682 mm (66.2 in.)
991 mm (39 in.)	1016 mm (40 in.)		1508 mm (59.4 in.)
610 mm (24 in.)	965 mm (38 in.)		1454 mm (57.2 in.)



All operators are 391 mm (15.4 in.) tall and 114 mm (4.5 in.) deep. Operator mounting brackets and door/hanger interface brackets are not included in these measurements. See section 3 and 4 for nominal mounting locations.

Figure: Side view of Glide A operator.

Ordering a Glide A Door Operator Assembly

To order the Otis Glide A door operator assembly for modernization and Open Order upgrade, see UT-ID 22.17.1-1 *Otis Glide® A Specification and Ordering Guide*. That UT-ID will provide basic specification and ordering guidance as well as a list of the major components that are supplied with the Glide A door operator assembly (p/n AAA2450AE_). UT-ID 22.17.1-1 also helps you determine, in cases of using multidrop (serial) door operator communication, if your controller wiring diagram, motion board revision and software are compatible with the Glide A operator.

Components and hardware required for the mechanical installation and adjustment described in the sections below are provided with the Glide A door operator assembly (p/n AAA24450AE_), with certain exceptions for non-standard installation:

- Otis Glide A door operator mounting brackets for back side of header locations are included. Alternative mounting location brackets must be ordered separately. See section 3.
- Otis Glide A door operator header / door hitch brackets for standard operator mounting are included. Specialty brackets for higher mounted operators, or those on side slide (one speed or two speed) applications where a vane* interference may exist must be ordered separately. See Section 4.

*Please see Appendix C if you currently have an Otis Moveable Vane.

2. Operator Installation Overview

When installing an Otis Glide A operator, consider the following:

- Due to the Otis Glide A's acceleration capability, it is recommended to replace plastic or metal rollers with constant contacting urethane upthrust rollers. Constant contacting upthrust rollers reduce the tendency for the car doors to rock, while urethane increases the life expectancy of the roller and track. See Table 2 for urethane roller part numbers.

Table 2: Glide A Compatible Otis Upthrust Rollers
 (For help identifying hangers, see Appendix B for hanger illustrations.)

Hanger Type	Glide A Compatible Upthrust Roller w/ Urethane Tire
Bent offset one piece applied or bent offset integral hanger with 7/8 in. wide 1/2-20 threaded nut for upthrust roller	AAA456ZQ2
Bent offset one piece applied or bent offset integral hanger with 3/4 in. wide M12 threaded nut for upthrust roller	AAA456ZQ8
OVL (One "L" shaped hanger bracket per door)	AAA456ZQ10
OSC Mod AAA24510D_* (Two "L" shaped hanger brackets per door)	AAA456ZQ14
AU (One "I" shaped hanger bracket per door used with 2-1/2 in. tall solid bar track)	AAA456ZQ16

NOTE: Urethane upthrust rollers cannot be used on the hoistway side doors due to UL fire certifications.

- Ensure that the car-side door or track bumpers are adjusted properly and that the operator (once installed) opens fully without the belt brackets contacting the operator motors or any other equipment.
- When using the Otis Glide A on 2-speed doors, ensure that the existing relating cable is mounted correctly, with cables parallel to each other and termination blocks in line with pulleys.

Prior to installing an Otis Glide A operator, complete the following tasks:

- The superintendent, mechanic, and helper should review the scope of work and develop a detailed installation plan.
- Perform a job hazard analysis (JHA) to identify and mitigate any potential hazards.
- Review the existing controller wiring diagram to ensure compatibility with the controller signals, circuits, and voltage.

- Read this UT-ID completely before beginning.
- Take control of the elevator. Ensure no passengers are inside. Place barricades inside the cab by the entrance.
- Position the elevator at the landing where work will be performed at a suitable height for car top access.
- Provide a suitable barricade to protect the public from the open hoistway and work area.
- Block open the hoistway doors using the approved door wedge tool.
- **Lock out, tag out, and test and verify.**

3. Mounting the Operator to the Header

When possible, mount the Otis Glide A operator directly to the car header, using mounting brackets to connect the two. The necessary parts are provided with the standard assemblies. A drilling template for this purpose, applicable to Otis car headers, will also be added to the kit material from Unitec Parts. See Table 3 and Figure 1 for bracket dimensions and applications.

Table 3: Mounting Bracket Offset

Part Number	Door Opening	Door System	Offset (B)
AAA316JAN1	2-Speed	Next Generation (2003–Present)	25.5 mm (1 in.)
AAA316JAN2	S/S & C/O		14 mm (0.55 in.)
AAA316JAN3	S/S & C/O	Legacy (Pre–2002)	10 mm (0.4 in.)
AAA316JAN4	2-Speed		30.5 mm (1.2 in.)

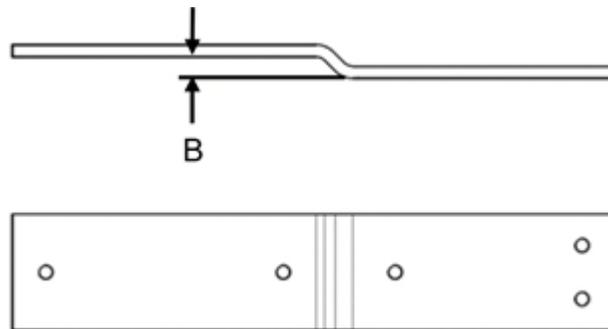


Figure 1: Mounting Bracket Offset Diagram

UNITEC OTIS GLIDE® A MECHANICAL INSTALLATION GUIDE

Figures 2, 3 and Table 4 show the nominal horizontal mounting locations for the mounting brackets left to right. Brackets should be placed so their mounting dimensions match Table 4 or get as close to dimension 'C' as possible. The Glide A horizontal mounting location is flexible so long as the coupled hoistway doors can achieve full-open with the Glide A hitch bracket at least 25.4 mm (1 in.) from contacting the door operator's belt-tensioning sheave. Mount the brackets onto the header using the two M10 x 20 hex head screws with serrated flanges. Note that there is a drilling template provided for you to mark your holes in the header.

Table 4: Mounting Bracket Spacing

Entrance Width		Operator Type	Nominal Spacing "C" mm (in.)
Min mm (in.)	Max mm (in.)		
1295 mm (51 in.)	1524 mm (60 in.)	Center-Opening	1533 mm (60.4 in.)
991 mm (39 in.)	1270 mm (50 in.)		1228 mm (48.3 in.)
813 mm (32 in.)	965 mm (38 in.)		1054 mm (41.5 in.)
762 mm (30 in.)	787 mm (31 in.)		1000 mm (39.4 in.)
1219 mm (48 in.)	1524 mm (60 in.)	Single Slide and 2-Speed	1533 mm (60.4 in.)
1016 mm (40 in.)	1194 mm (47 in.)		1228 mm (48.3 in.)
914 mm (36 in.)	991 mm (39 in.)		1054 mm (41.5 in.)
762 mm (30 in.)	889 mm (35 in.)		1000 mm (39.4 in.)

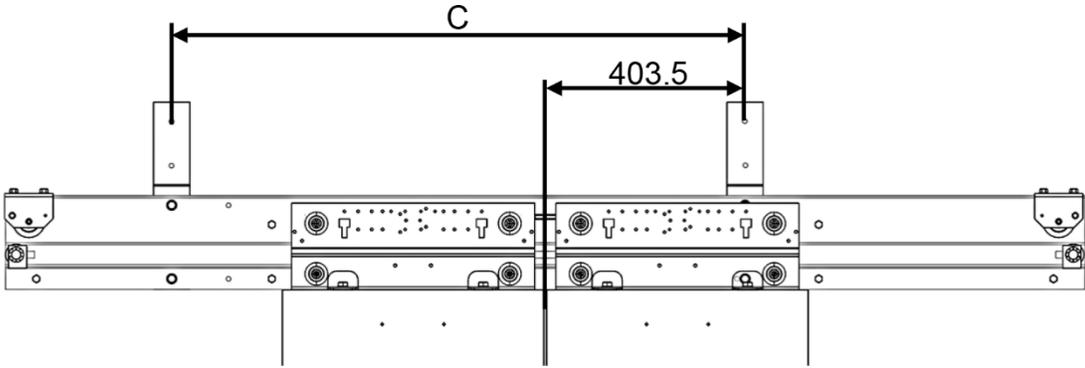


Figure 2: Mounting Bracket Locations, C/O (Nominal) (RH shown, LH opposite)

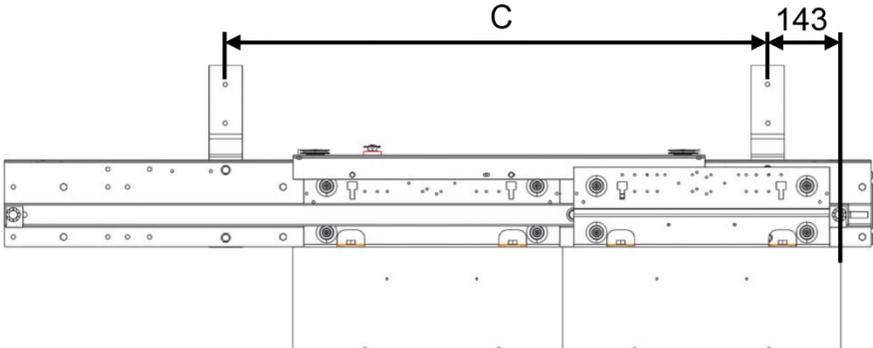
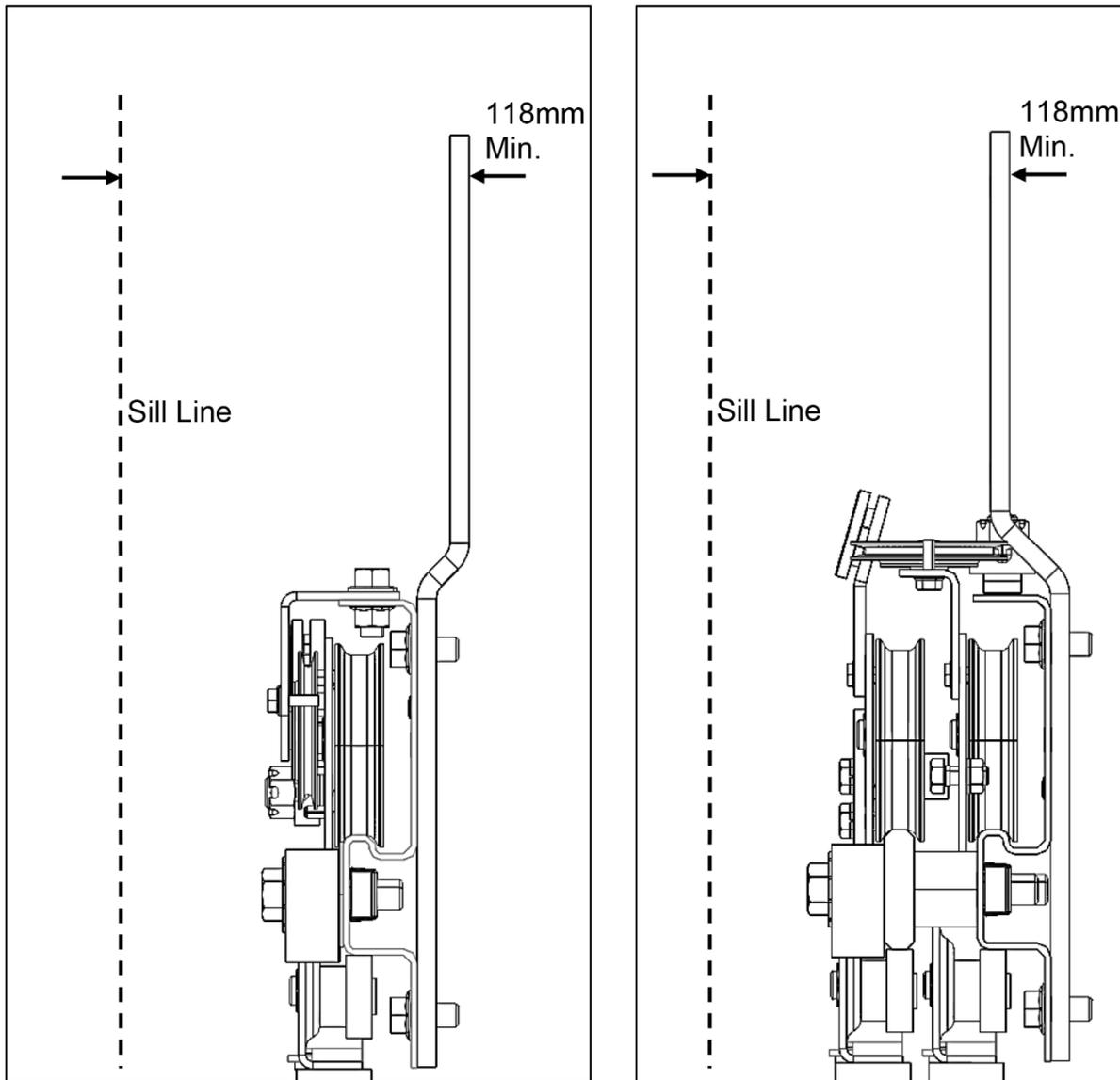


Figure 3: Mounting Bracket Locations, S/S & 2-Speed (Nominal) (RH shown, LH opposite)



**Figure 4: Mounting Bracket Front-to-Back location (C/O & S/S on left, 2-Speed on right)
 (Shim as needed using 255DY39 to achieve this min dimension.)**

NOTE: When spacing out mounting locations, with concern for running clearance, the Glide A Door Operator is 114 mm (4.5 in.) thick. The conduit fitting behind the operator, which is designed to fit between the mounting brackets, is 25.4 mm (1 in.) beyond the back of the Glide A Door Operator. This must be considered when determining available space.

Thread one M10x30 hex head screws with serrated flanges into the bracket's bottom hole and thread it into the dimension shown in Figure 5 (this will facilitate mounting and adjusting the location of the door operator).

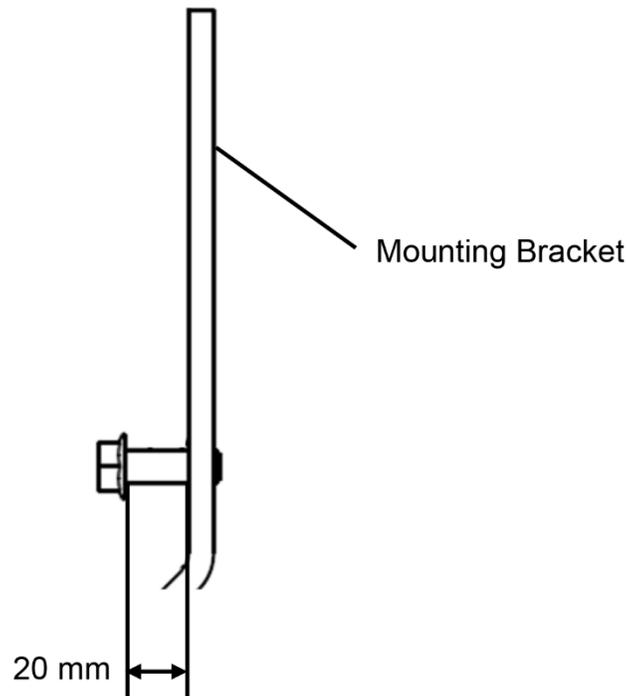


Figure 5: Mounting Bracket Screw Dimension

Place the door operator onto these screws using the key-slots provided in the operator and position the door operator to its nominal horizontal location (see Figures 6 and 7). Insert the top M10x30 hex head screws with serrated flanges and tighten all four screws.

NOTE: The outermost mounting holes on the Glide A Door Operator lintel have keyhole slots to allow for clearance to mount operator bolts prior to the operator, as desired. These keyholes are not required to be used, and only would be applicable if the outermost mounting holes are being used.

For the entire height of the hoistway, verify that the door operator will have running clearance of at least 19 mm (0.75 in.) between any obstructions, such as wire troughs, sills, fascia, etc. Shim mounting brackets using p/n 255DY39 shims, if necessary, per Figure 4.

Remember, if job site conditions cannot permit these exact measurements, the Glide A horizontal mounting is flexible so long as the coupled hoistway doors can achieve full-open with the hitch bracket at least 1 inch from contacting the door operator sheave.

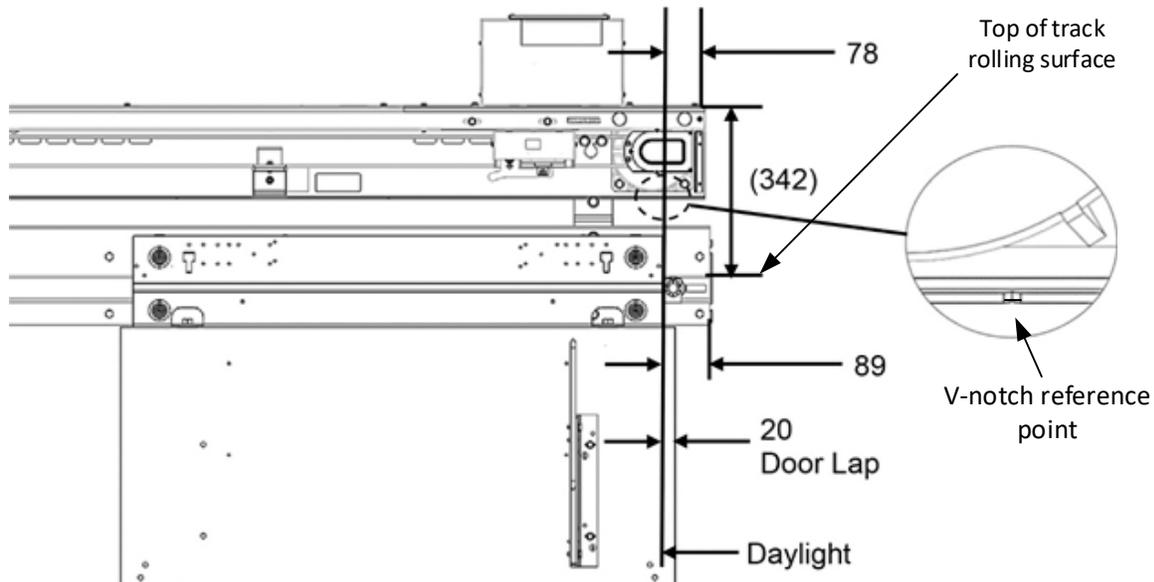


Figure 6: Single-Slide and 2-Speed Operator Position (Nominal) (RH shown, LH opposite)

A notch, located 78 mm (3.1 in.) from the end of the operator (see Figure 6), indicates the position relative to the strike column or “daylight line.”

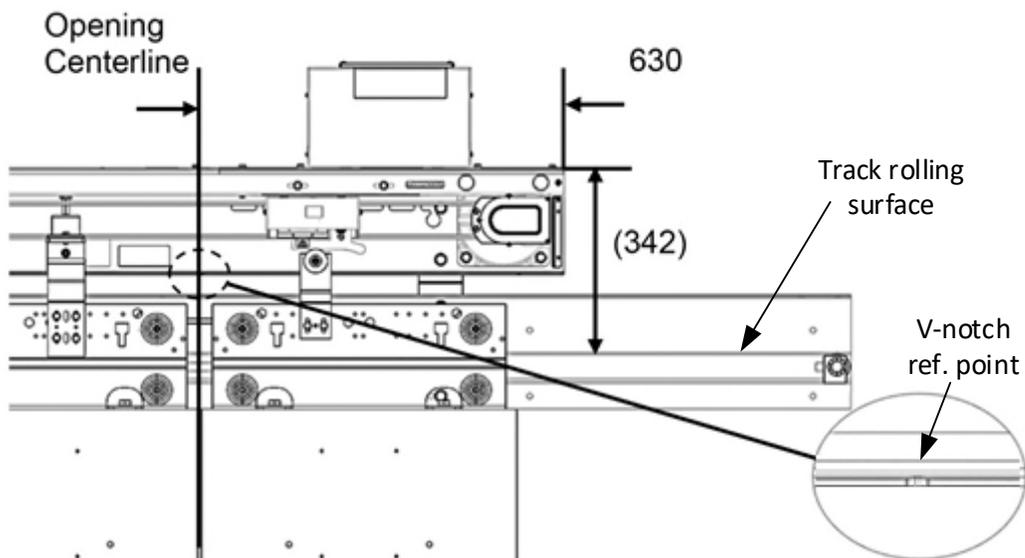


Figure 7: Center-Opening Operator Position (Nominal) (RH shown, LH opposite)

A notch, located 630 mm (24.8 in.) from the end of the operator (see Figure 7), indicates the position relative to the centerline of the entrance.

In the case where mounting brackets behind a header is not possible, use right angle brackets mounted to a flat surface using the left to right instructions in Figure 2 and Figure 3. See Figure 4 for front to back locations. See Figure 8 for an example using bracket AAA316GPM6 (qty. 2). Bracket mounting left to right should match the instructions found on page 6.



Figure 8: Right Angle Brackets for Mounting

NOTE: Rivet heads on the back side of the Glide A will interfere with a bracket exposed above the operator when bolted flush with the bracket. Spacers between the bracket and operator or cutting of the bracket (preferred method) will be needed for proper mounting (see Figure 9).



Figure 9: Right Angle Brackets for Mounting, Cut to Length

4. Belt Bracket Installation

The operator kit comes with door interface brackets AAA283BKX1, 3, and 4 (see Figure 10), one of which will be used to connect the operator belt hitch to the door or hanger. Table 5 specifies each bracket's intended application.

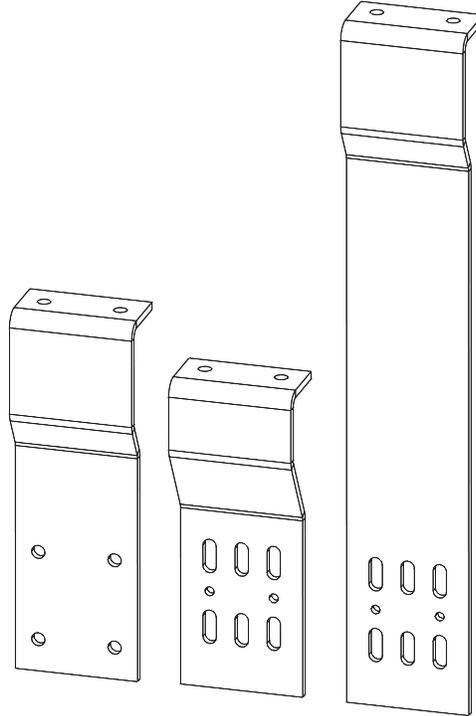


Figure 10: Door Interface Bracket AAA283BKX1, AAA283BKX3, and AAA283BKX4 (left to right)

Table 5: Door Interface Bracket Application

Part. No.	Mounting Surface	Length of Bracket mm (in)
AAA283BKX1	Straight Hangers	195 mm (7.7 in.)
AAA283BKX3	Offset Hangers	170 mm (6.7 in.)
AAA283BKX4	Door Panel	368 mm (14.5 in.)
AAA283BKX5 (not included)	Door Panel (higher mounting)	620 mm (24.4 in.)

The appropriate door interface brackets can be installed using the M6 x 16 hexagon head thread rolling screws. The door interface bracket is attached to the belt bracket using M8 serrated flange screws. The nominal bracket horizontal locations can be seen in Figures 14 and 15. The bracket should line up directly below the proximity switch (DCP). Adjust the bracket vertically so that the belt is level.

When installing a Glide A door operator on a side-slide entrance (single-speed, two-speed, etc.) where 6940 interlocks are used and two-piece hangers are present, order one bracket (p/n AAA392EW1) per operator. This bracket can be used to mount the operator belt hitch to the door face and provide clearance around the door 6940 vane. Do not mount the gate switch roller bracket to the door hitch bracket.

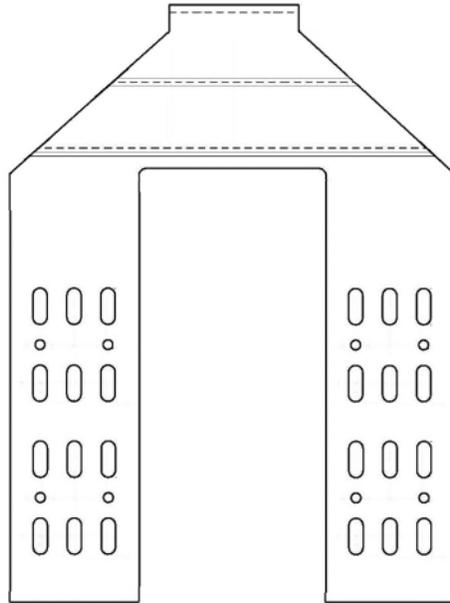


Figure 11: Door Interface Bracket for S/S and 2/S with Vane Interference

For mounting situations where door face mounting is required and the operator is higher than standard header mount brackets would allow, order bracket AAA283BKX5 with a length of 620 mm (24.4 in.). Bracket are sold separately. This bracket is not needed if the condition above regarding the 6940 vane is present, as the AAA392EW1 serves as the door bracket (see Figure 12).

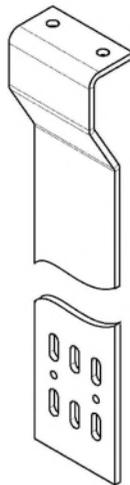


Figure 12: Door Interface Bracket for High Operator Mounting

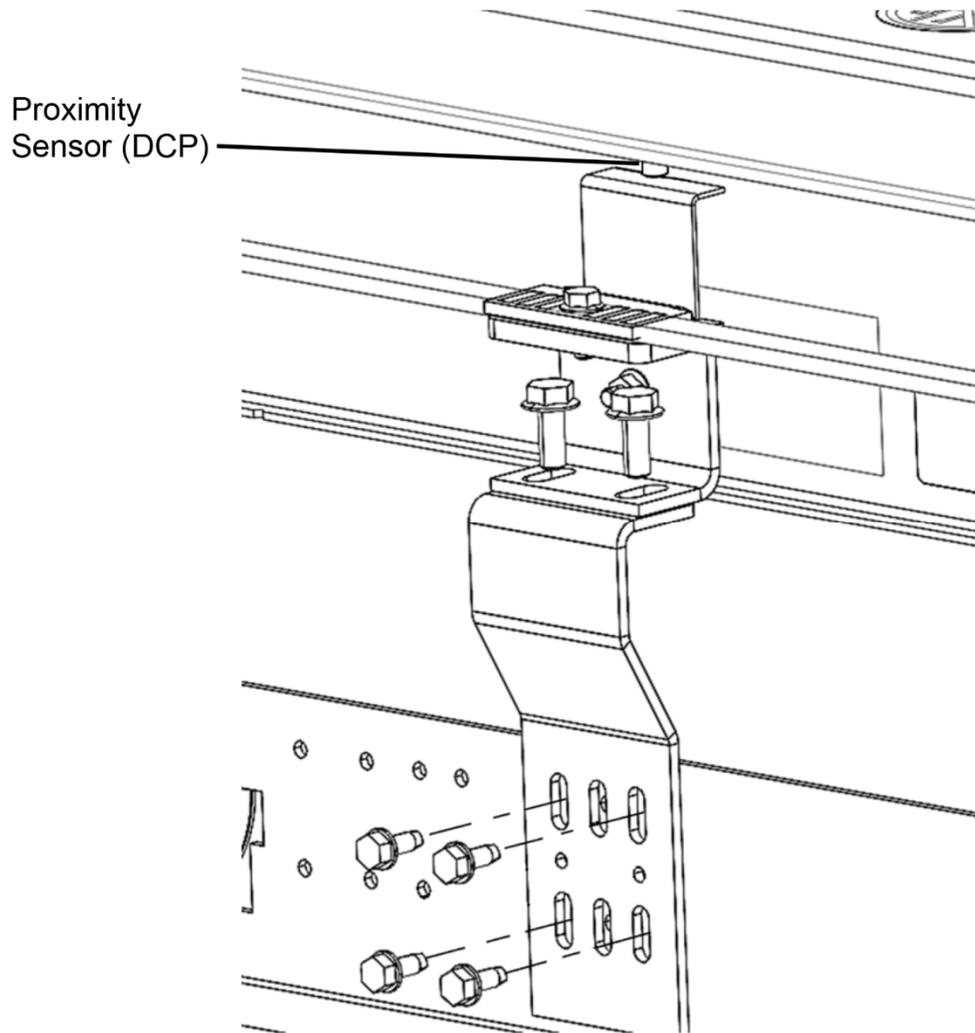


Figure 13: Door Interface Bracket Mounting

See section 8 for proper DCP sensor adjustment.

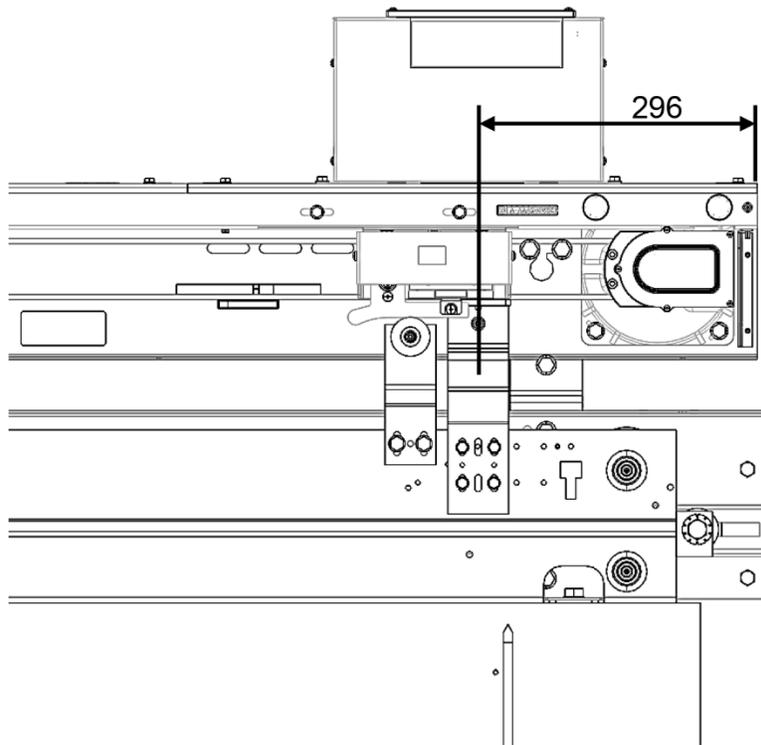


Figure 14: Door Interface Bracket Locations for S/S and 2-Speed (Nominal) (RH shown, LH opposite)

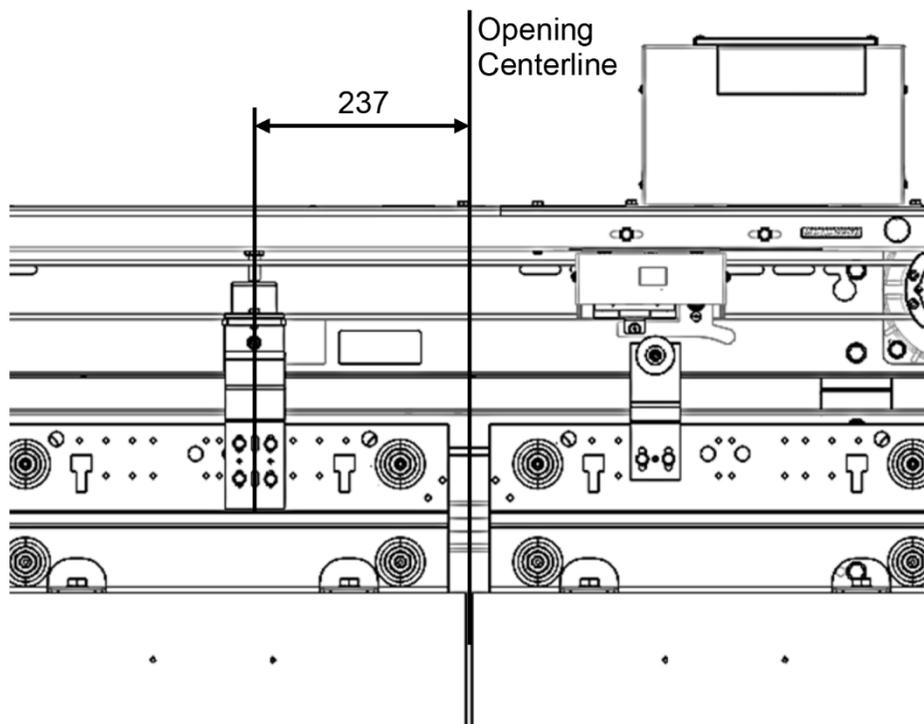


Figure 15: Belt Bracket Location for CO (Nominal) (RH shown, LH opposite)

5. Gate Switch Roller Installation

The operator kit comes with gate switch roller brackets AAA288AEK2, 4, and 288RH46 (see Figure 16). Table 6 lists each gate switch roller bracket's intended application.

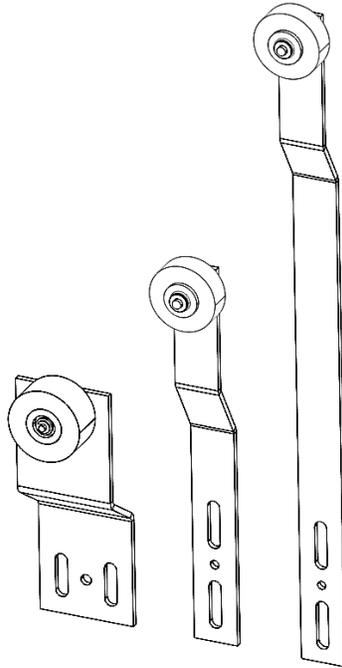


Figure 16: Gate Switch Rollers 288RH46, AAA288AEK2, and AAA288AEK4 (left to right)

Table 6: Door Interface Bracket Application

Part No.	Mounting Surface
AAA288AEK2	Straight Hangers
AAA288AEK4	Door Panel
288RH46	Offset Hangers

The appropriate brackets can be installed using the M6 x 16 hexagon head thread rolling screws. See Figures 17 and 18 for nominal horizontal gate switch roller bracket location. Left to right adjustment can be made as necessary in order to achieve proper actuation of the gate switch.

NOTE: Do not attach the gate switch roller bracket to the belt hitch or belt hitch bracket. The gate switch roller bracket must be fixed directly to the door hanger, door face, or a dedicated bracket which is independent of the door operator belt hitch.

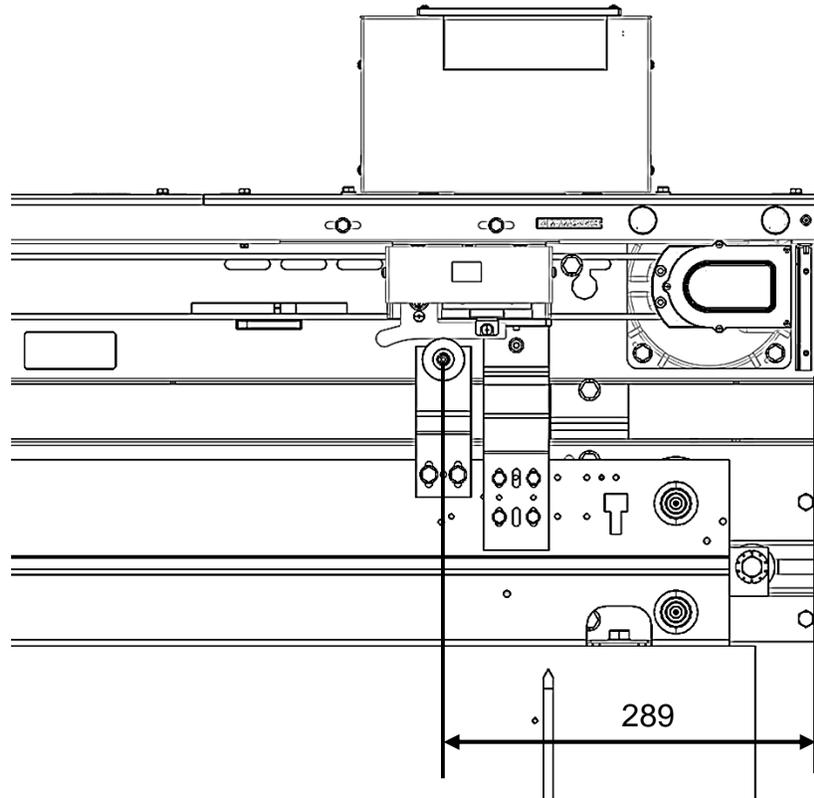


Figure 17: Gate Switch Roller Location (Single-Slide and 2-Speed)

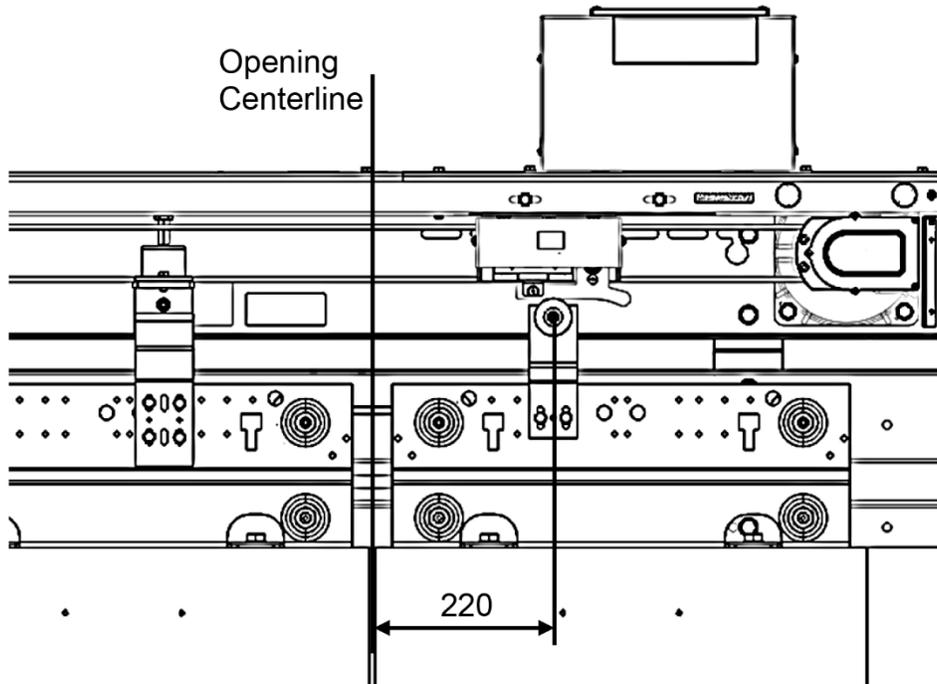


Figure 18: Gate Switch Roller Location (Center-Opening)

With doors fully closed, adjust the gate switch roller vertically so the contact on the gate switch lever arm aligns with the horizontal line on the switch plastic housing as shown in Figure 19 (gate switch front cover can be removed for better visibility). Gate switch should make up from 12–19 mm (0.47–0.75 in.) from fully closed position. See section 6 for gate switch horizontal adjustment. Once gate switch is properly located, drill a 5mm hole into the hanger/door using the hole in the roller bracket as a template and pin gate switch roller bracket with 5 mm x 10 mm slotted pin.

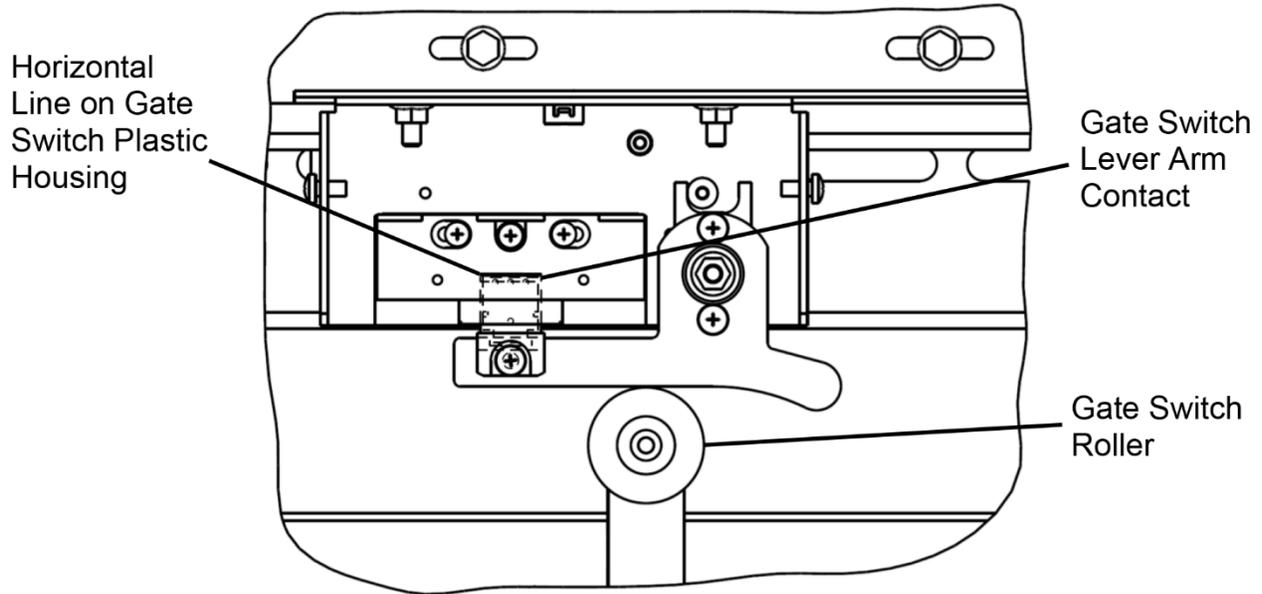


Figure 19: Gate Switch Roller Height Location

6. Gate Switch Adjustment

The gate switch installed on the Otis Glide A operator has +/- 14 mm (0.55 in.) adjustment left to right. Adjust the gate switch by loosening the M6 hex head screws with serrated flanges that hold it to the wire trough (see Figure 20). Major adjustments would require adjusting the gate switch roller location (see section 5).

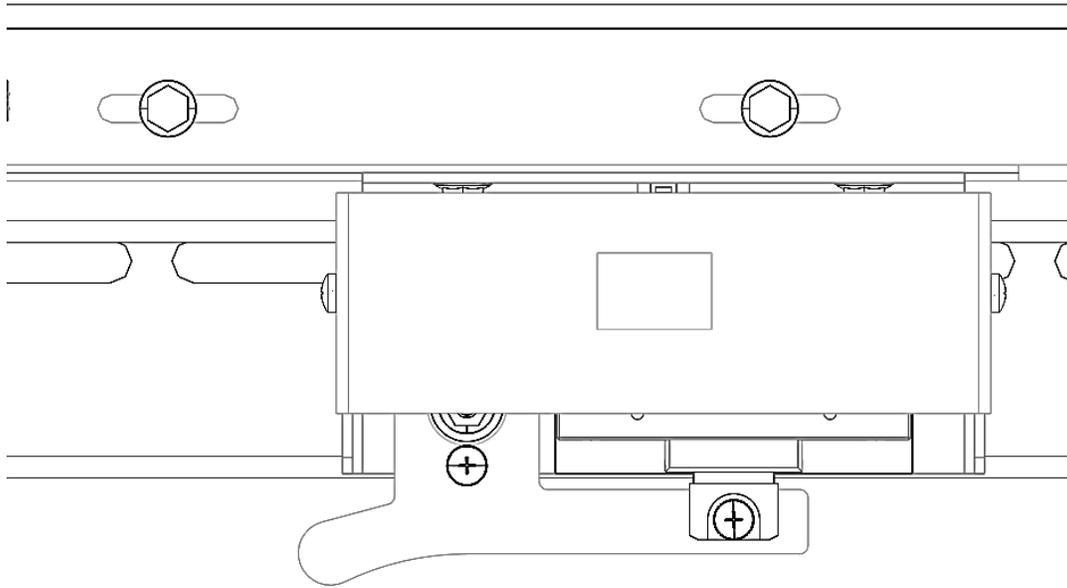


Figure 20: Gate Switch Horizontal Adjustment (front cover shown)

7. Belt Tension Adjustment

Proper belt tension is critical to operator performance. Tension is set in the factory, but can be re-calibrated using the procedure and illustrations shown below. These instructions are also found underneath the door operator cover.

1. Remove the door operator cover by loosening the M6 screws (see Figure 21).
2. Loosen bolts A and B.
3. Tighten bolt C to compress the spring until both brackets D and E touch. Do not over torque.
4. Slide brackets C and D away from motor to remove belt slack and tighten bolts B.
5. Loosen bolt C until there is about a 6mm (1/4 in.) gap between the bolt head and bracket E.

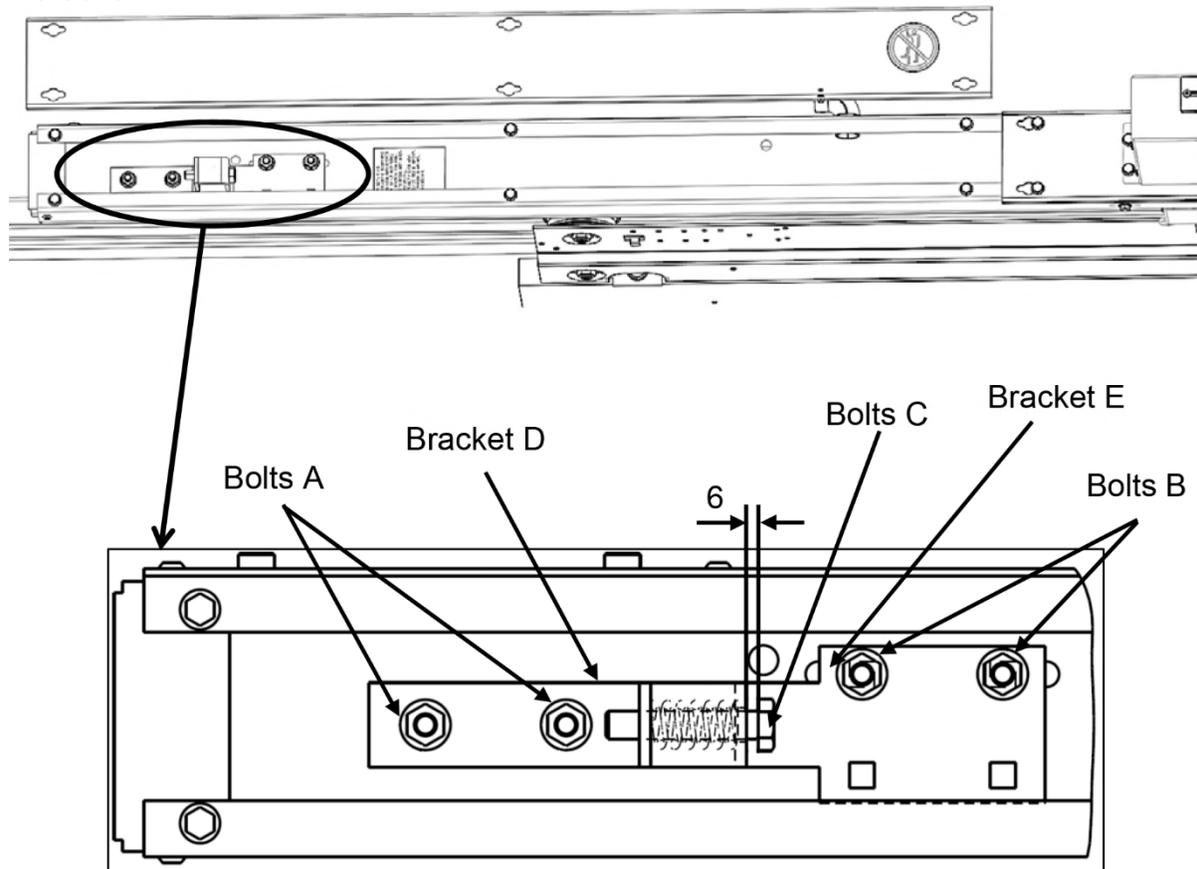


Figure 21: Adjusting Belt Tension

8. Proximity Sensor Adjustment

The proximity sensor (DCP) gap is set in the factory at 2.5 mm (0.10 in.). The sensor (p/n AAA608D12) is designed to detect the presence of the top belt bracket flag (see Figure 23).

Feeler gauges can be used to get the correct spacing (p/n MT-121086; see Figure 22).



Figure 22: MT-121086 Feeler Gauge Set

Nuts along the fully threaded sensor can be adjusted to move it up or down if the sensor gap is not correct. You can access the nut within the wire trough by removing the wire trough cover as shown in Figure 21.

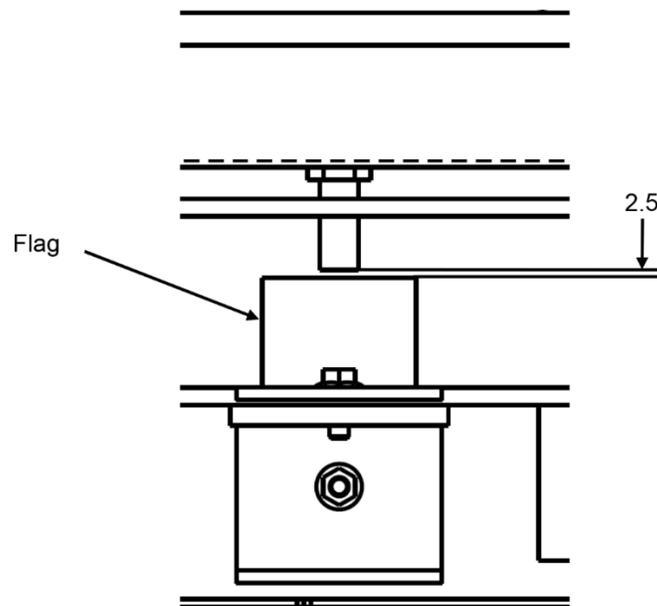


Figure 23: Proximity Sensor Gap

NOTE: When powered, the DCP sensor has an LED visible when the door operator top cover is removed which indicates activation of the DCP sensor.

Appendix A: Part Numbers

The following table lists all part numbers this document mentions.

Table 7: Related Part Numbers

Description	Part Number
Bracket, Door Interface (Straight Hanger)	AAA283BKX1
Bracket, Door Interface (Offset Hanger)	AAA283BKX3
Bracket, Door Interface (Door Face)	AAA283BKX4
Bracket, Door Interface (Door Face, high mount)	AAA283BKX5
Bracket, Door Interface (With Vane Interference)	AAA392EW1
Shims, Door Interface Bracket	255DY39
Bracket, Header-Mount, 2-Speed, NG Doors	AAA316JAN1
Bracket, Header-Mount, S/S & CO, NG Doors	AAA316JAN2
Bracket, Header-Mount, SS & CO, Legacy Doors	AAA316JAN3
Bracket, Header-Mount, 2-Speedtwo-spee, Legacy Doors	AAA316JAN4
Drill Template for Mounting Brackets	AAA27LB1
Roller, Urethane, Constant Contact, Upthrust	AAA456ZQ2
Roller, Urethane, Constant Contact, Upthrust	AAA456ZQ8
Roller, Urethane, Constant Contact, Upthrust	AAA456ZQ10
Roller, Urethane, Constant Contact, Upthrust	AAA456ZQ14
Roller, Urethane, Constant Contact, Upthrust	AAA456ZQ16
Lever, Roller Arm (Straight Hanger)	AAA288AEK2
Lever, Roller Arm (Door Face)	AAA288AEK4
Lever, Roller Arm (Offset Hanger)	288RH46
Sensor, Proximity	AAA608D12
Bracket, Flat Surface Mount	AAA316GPM6
Set, Feeler Gauge	MT-121086

Appendix B: Car Hanger Examples

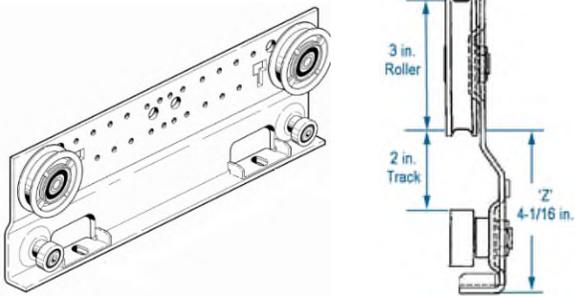


Figure 24: Offset Applied Hangers (389BA & AAA6331CH)

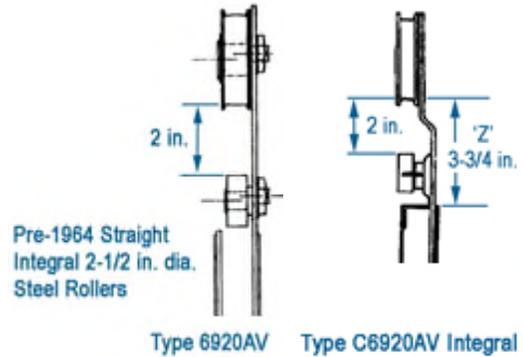


Figure 25: Straight and Offset Integral Hangers

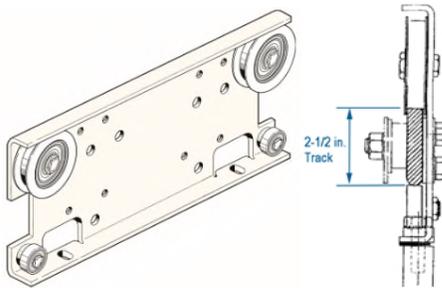


Figure 26: AU Hangers (straight)

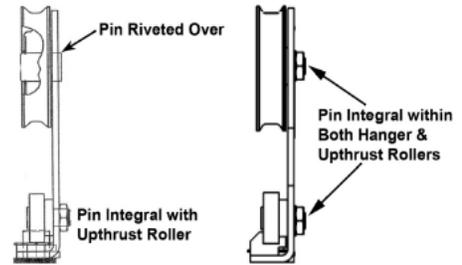


Figure 27: Nippon and NAO OVL Hangers (Note: these resemble AU hangers.)

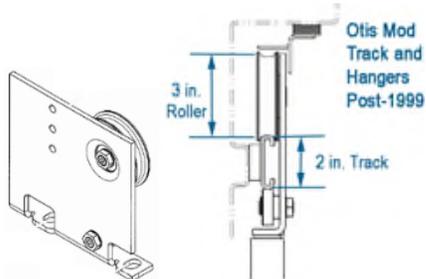


Figure 28: MOD Track & Hanger System Hangers

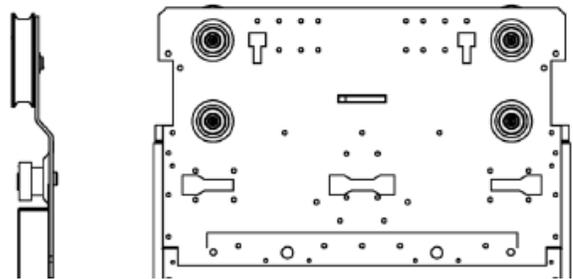
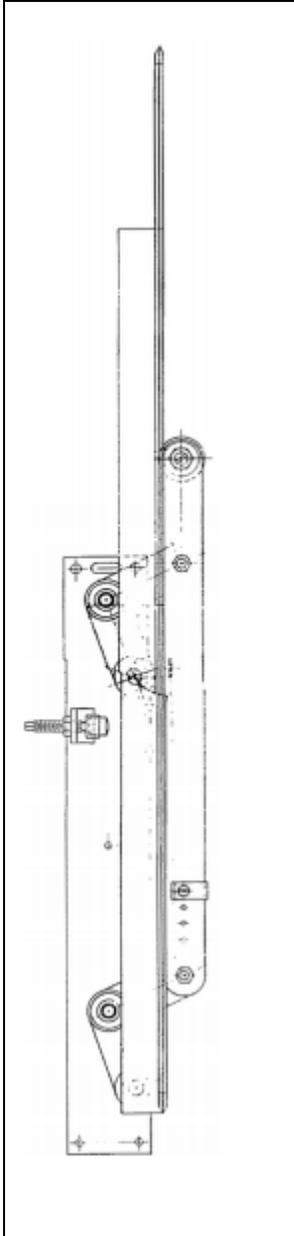


Figure 29: Weldless Doors

Appendix C: Moveable (Monkey Motion) Car Vane



If you are replacing an arm driven door operator with a belt driven operator and the old system has a movable vane... (sometimes appear on QL, 7770A, 6970 & on rare occasion 7300 operators), that monkey motion vane will now be **removed** as part of the door operator upgrade.

A new solid, stationary vane will be put in its place.

AAA6940BZ3 for the 12" right-hand vane and **AAA6940BZ4** for the 12" left-hand vane. Be sure to separately order the correct vane for your job site.

You are going to lose the translating motion of the car door with respect to the hall doors.

With the movable vane, the full open 'look' showed the car doors and hall doors in-line and flush with one another at the fully open position.

After the doo operator retrofit, the **car door track bumpers** should be moved out by about $\frac{3}{4}$ " to allow the car doors to move past full open (by $\frac{3}{4}$ " and allow the hall doors to achieve a full open state.