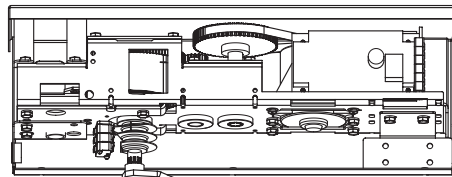
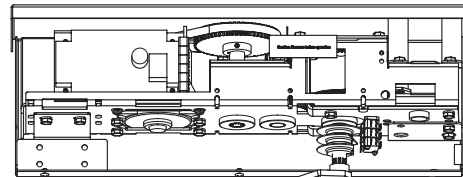




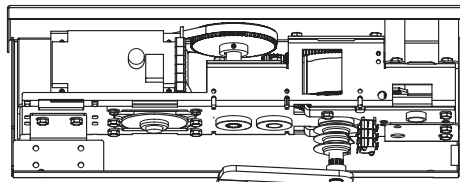
Commander Automatic door opener for elevators with aluminum cover



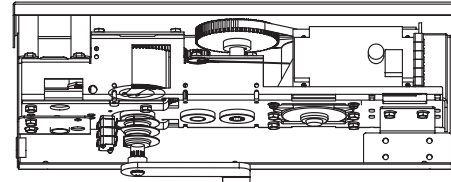
Left hand swing out
Pn: 300995
Stand in front of Commander
Door opens away from you



Right hand swing out
Pn: 300993
Stand in front of Commander
Door opens away from you



Left hand swing in
Pn: 300996
Stand in front of Commander
Door opens towards you






Right hand swing in
Pn: 300994
Stand in front of Commander
Door opens towards you

Door
Hinges

Mechanical Installation Guide

Standard notations

The following notations may be used throughout this guide to emphasize important safety information, mechanical concerns, and other important information. Savaria recommends that you review and follow all of these messages.

 DANGER	Danger messages indicate an imminently hazardous situation, which, if not avoided, results in death or serious injury. All danger messages feature a standard ISO safety alert symbol followed by the signal word <i>Danger</i> in capitalized black lettering on a red background.
 WARNING	Warning messages indicate a potentially hazardous situation, which, if not avoided, could result in death or serious injury. All warning messages feature a standard ISO safety alert symbol followed by the signal word <i>Warning</i> in capitalized black lettering on a dark yellow background.
 CAUTION	Caution messages indicate a potentially hazardous situation, which, if not avoided, could result in death or serious injury. All caution messages feature a standard ISO safety alert symbol followed by the signal word <i>Caution</i> in capitalized black lettering on a yellow background.
CAUTION	Caution messages that do not include the ISO safety alert symbol indicate a potentially hazardous situation for the machine only, which, if not avoided, could result in damage to the machine.
NOTE	Note messages provide information, such as reminders, general information about a previous statement, or additional guidelines that do not fit into the flow of the preceding text. All note messages include the signal word <i>Note</i> in capitalized white lettering on a blue background.



General


This guide is available through Savaria for Commander door operator mechanical installations.

Please contact Savaria for details regarding ordering information.

For technical support, please call (800) 791-7999.

Hazards and cautions

 ELECTRICAL SHOCK HAZARD
<p>Do not connect or disconnect wiring while the power is on. Failure to comply can result in death or serious injury. Before servicing, disconnect all power to the equipment. To prevent electric shock, wait at least five minutes after all indicators are OFF.</p>
 WARNING
<p style="text-align: center;">SUDDEN MOVEMENT HAZARD</p> <p>System may start unexpectedly upon application of power, resulting in death or serious injury. Clear all personnel from the drive, motor, and machine area before applying power. Secure covers, couplings, shaft keys, and machine loads before applying power to the drive. Unpredictable equipment operation can result in death or serious injury.</p>

 WARNING
<p>FIRE HAZARD</p> <p>Do not use an improper voltage source. Failure to comply can result in death or serious injury by fire. Verify that the rated voltage matches the voltage of the incoming power supply before applying power.</p>

Disclaimer

Follow the instruction steps to ensure your safety while installing and wiring the Commander operator. Failure to follow instructions renders the Limited Warranty null and void. In addition, any party installing the product who deviates from the installation instructions agrees to indemnify, save, and hold harmless the manufacturer from any and all loss, liability, or damage that may occur as a result of the deviation.

About this document

The purpose of the Commander operator is to open and close doors both connected to elevator openings and standalone; this guide describes mechanical installation.

Audience

- This document is for the following users:
- dealers
 - installers
 - test engineers/technicians
 - maintenance engineers.

Job site tools

- wood or metal plates and shims to build up wall in case of trim around door frame
- metal and wood stud finder
- slotted screwdrivers

- phillips screwdrivers
- sockets $\frac{1}{4}$ " to $\frac{9}{16}$ " Imperial; ensure to include a low profile socket set
- 3 ft. carpenter's level
- carpenter's square
- $\frac{3}{8}$ " reversible hand drill (variable speed)
- carbide drill bits
- tape measure
- wire tie wraps
- Volt-Ohm Meter (VOM)

Shop floor checks

- contents of Commander shipment against job order and bill of materials
- condition of Commander against shipping damage
- receiver and remote switch coding match
- Commander transformer converts main power supply to 16 volts AC 20 VA

Job site checks

- minimum 8" ceiling clearance from the top of the door
- backing plate mount area safely supports Commander
- identical Commander handing and door handing
- accessible job site wall outlet 120V standard
- elevator interlock - if used and if by others - is 12 VDC (refers to electric strike/lock)
- for *swing in* jobs only - operator arm does not contact any wall at 90° to the hinge side - requires 6 inch minimum clearance

Standard specifications

Feature	Description
Dimensions	<ul style="list-style-type: none"> • L $23\frac{1}{4}$" (590.55 mm) • H $7\frac{1}{2}$" (190.5 mm) with shaft, D 6" (152.4 mm), 7" (177.8) with mounting channel
Total weight	35 lb. (16 kg)
Motor	$\frac{1}{8}$ " hp, 12 volts DC
Power supply	120 volts AC, 60 hz, 1 phase (transformer provided) or 220 volts AC, 50 hz, 1 phase (transformer by others)
Transformer	16 volts AC 20 VA power limiting
Receiver	12 volts AC/DC

List of steps in this guide

The following table lists all steps found in this guide.

Table 1
List of steps in this guide

Step	Page
Remove mounting channel	5
Prepare the wall and attach the mounting channel	6
Attach Commander to mounting channel	7
Check spring tension	8
Add spring tension	8
Attach arm and channel or arm and bracket	10

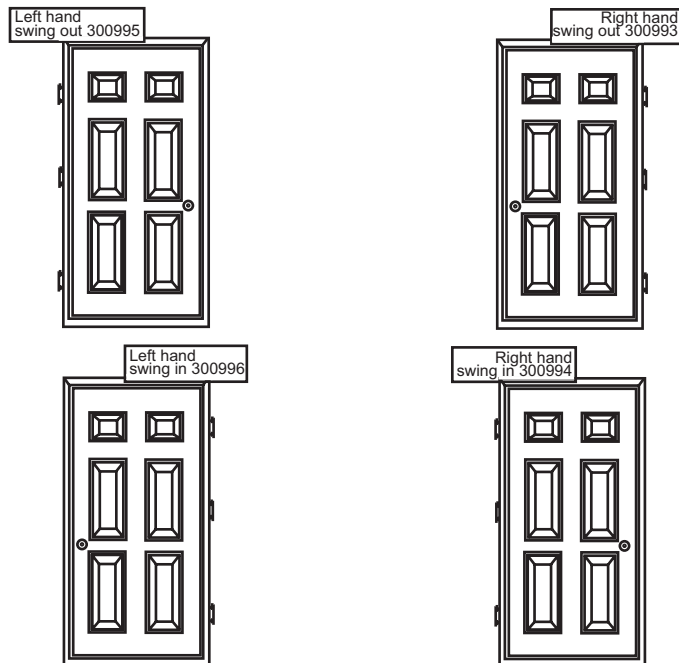
WARNING

TO REDUCE THE RISK OF SEVERE INJURY OR DEATH

1) READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.

- 2) Where possible, install the door opener 7 feet or more above the floor.
- 3) Do not connect the opener to source of power until instructed to do so.
- 4) Locate the control button: (a) within site of door; (b) at a minimum height of 5 feet so small children are not able to reach it; and (c) away from all moving parts of the door.

Figure 1
Door mount sides for each unit



Step: 1

Remove mounting channel**Purpose**

To remove the mounting channel from the Commander cover.

Considerations

After you unpack the Commander, you'll remove the three screws on the bottom of the cover, take the cover off, and remove the two screws that fasten the mounting channel to the cover. As a result, you'll be able to attach the mounting channel to the wall, then mount the Commander to the mounting channel.

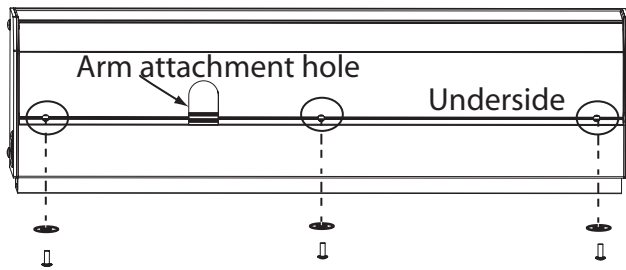
Step

- 1 Remove 3 x 10 x 24 - $\frac{1}{2}$ " screws with neoprene washers from Commander cover.

NOTE

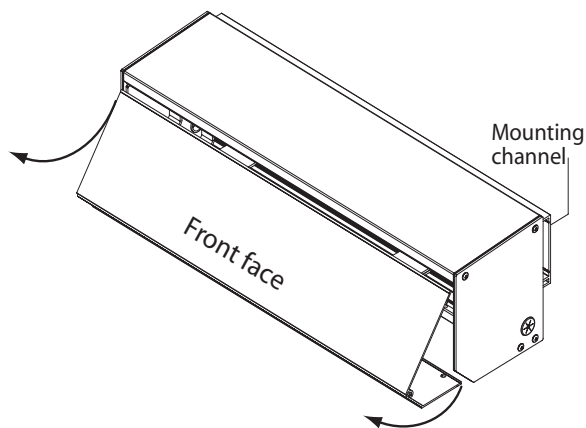
The screws are stainless steel, and therefore not magnetic. Use grease on screwdriver to ensure screws not lost.

Figure 2
Remove cover screws



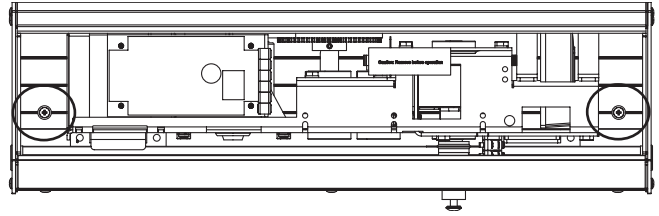
- 2 Open cover from bottom and remove at hook at top.

Figure 3
Remove cover



- 3 Remove 2 x 10 x 24 - $\frac{1}{2}$ " screws with neoprene washers that attach the Commander cover to mounting channel on both ends.

Figure 4
Remove 2 screws



- 4 Pop mounting channel cover and rotate upwards to remove.

Figure 5
Remove mounting channel

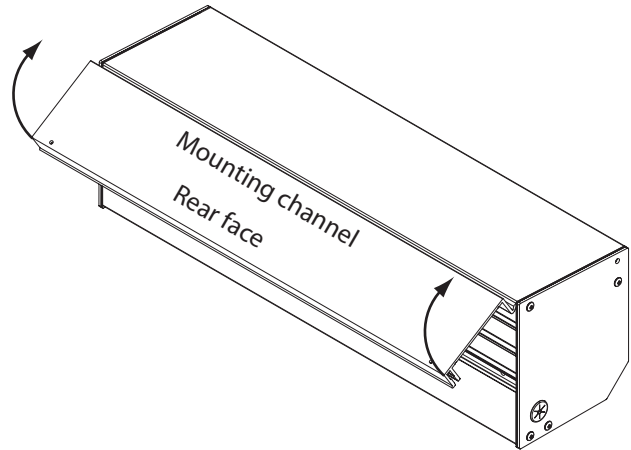
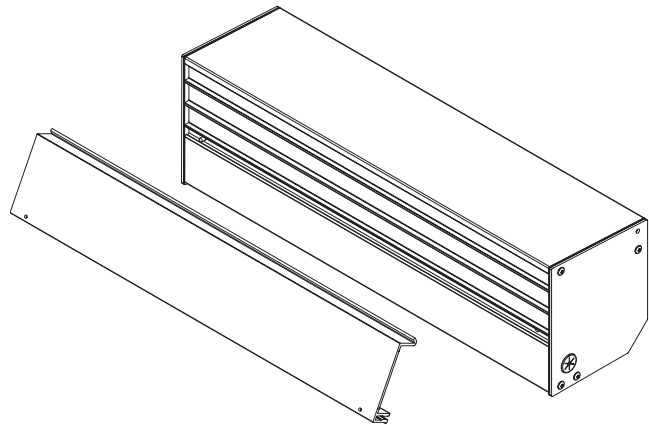


Figure 6
Mount channel off



Step: 1

Prepare the wall and attach the mounting channel

Purpose

To make the mounting channel – when attached to the wall – flush, plumb, square, and well supported; to drill the mounting holes in the mounting channel, and to attach the mounting channel.

Considerations

Ensure you find the wall studs or supporting structures.

Ensure to attach the Commander to a structurally supported wall frame.

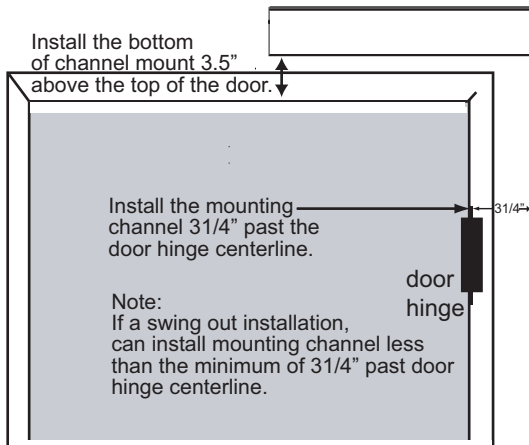
Ensure the structure and bolts you use support the torque weight of the Commander at 35 lbs.

Ensure the overhead clearance is a minimum of 8" from the top of the door to ensure the commander fits.

Step

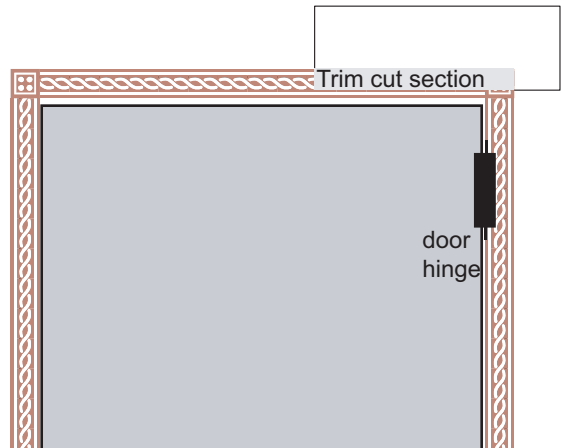
- 1 While holding the mounting channel on the wall, consider your mounting distances.

Figure 7
Mounting distances
general guidelines for all units



- 2 Install the mounting channel 3 1/2" from the top of the door to the bottom of the mounting channel; cut the door frame trim if the trim is greater than 3.5" from the top of the door.

Figure 8
Cut trim to wall



NOTE

There are usually 2" x 4" located around the top of the door frame above the hinges, and along the top side of the door frame; search for mount points in these areas first; if you do not find them, remove plaster and build up the wall.

Figure 9
Built out wall

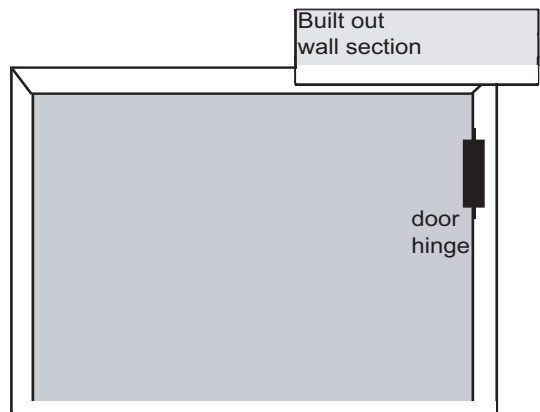
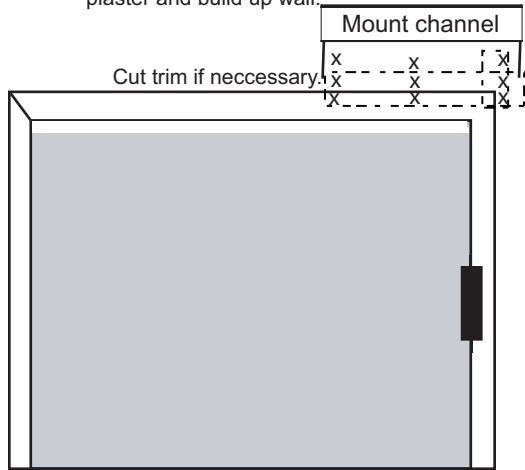


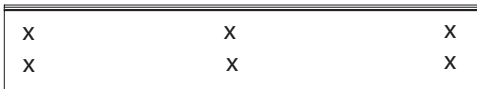
Figure 10
Possible mount points

Locate 2" x 4" and drill holes to mount or remove plaster and build up wall.



- 3 Drill four to six (recommended) $\frac{1}{4}$ " holes in the mounting channel.

Figure 11
Mounting channel drill holes
No. 12 screw - mark and drill $\frac{1}{4}$ " holes



- 4 Attach the mounting channel to the wall with the appropriate fasteners—wood screws or concrete anchor bolts.
Ensure to use a level and that the mounting channel is flush, plumb, and square.

Figure 12
Channel mount on wall



Step: 3
Attach Commander to mounting channel

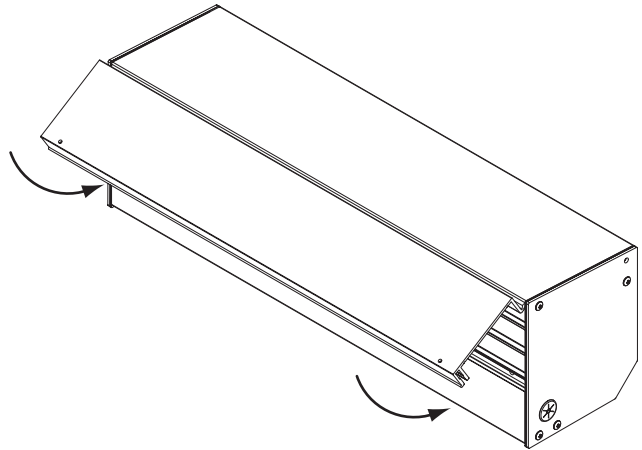
Purpose

To attach the Commander to the mounting channel.

Step

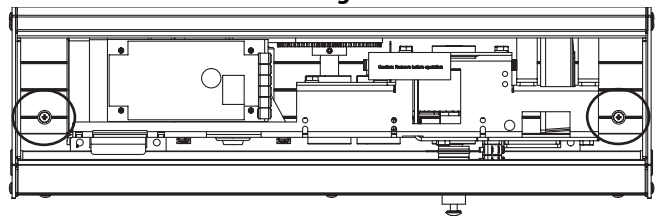
- 1 Hook the Commander onto the mounting channel at the top and snap into place.

Figure 13
Commander attachment to mounting channel



- 2 Screw 2 x 10 x 24 - $\frac{1}{2}$ " with neoprene washers into Commander mounting channel on each end.

Figure 14
Commander screws to mounting channel



8 Check spring tension

Step: 4
Check spring tension

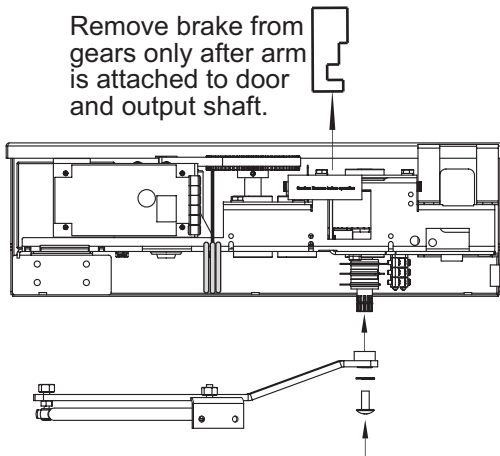
Purpose

To determine if the unit includes a factory pretensioned spring.

Step

- 1 Check the gear assembly.
If the spring is factory pretensioned, there is a removable brake plate inserted into the gear assembly.

Figure 15
Commander with brake



IF	Then
unit includes brake	go to Attach arm and channel or arm and bracket on page 10
unit does not include brake	go to Add spring tension on page 8

Step: 5
Add spring tension

Purpose

To create spring tension. The spring tension allows force to apply to the door when closing; add more tension when door includes weather stripping or high winds.

Isolate the mechanical force from the electrical force first to ensure correct mechanical force applies to the door.

Step

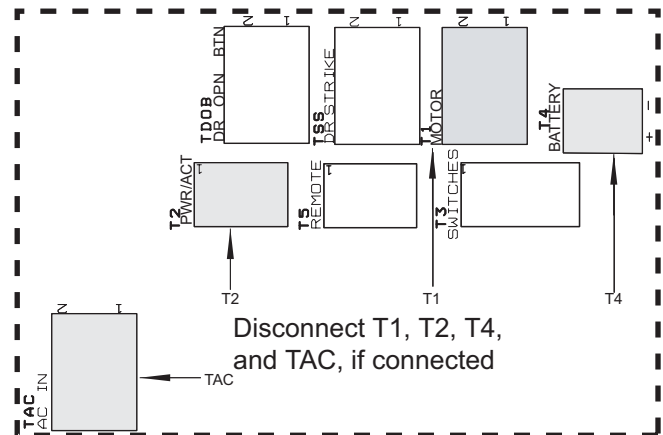
- 1 Disconnect the motor, battery, T2, and TAC, if connected, from the Commander main board.

NOTE

When you remove T1—the motor—only remove one of the wires.

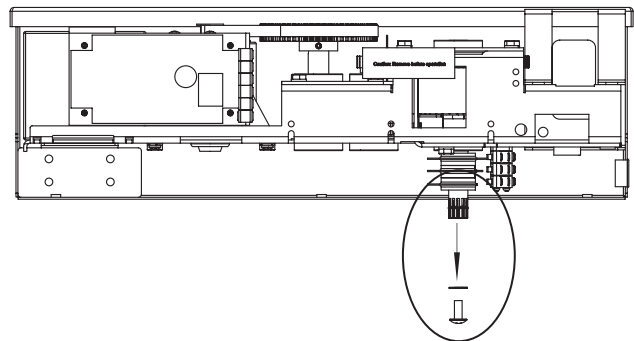
See the Commander electrical installation guide for a diagram of the Commander main board.

Figure 16
Commander electrical connections



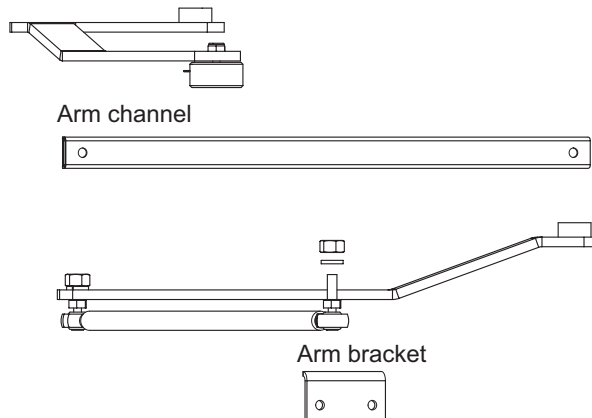
- 2 Remove the screw and washer from the bottom of the spring shaft

Figure 17
Spring shaft screw



- 3 Retrieve the door arm. Use the door arm to crank the spring shaft when adding and decreasing tension.

Figure 18
Door arm types
- with arm channel and with arm bracket

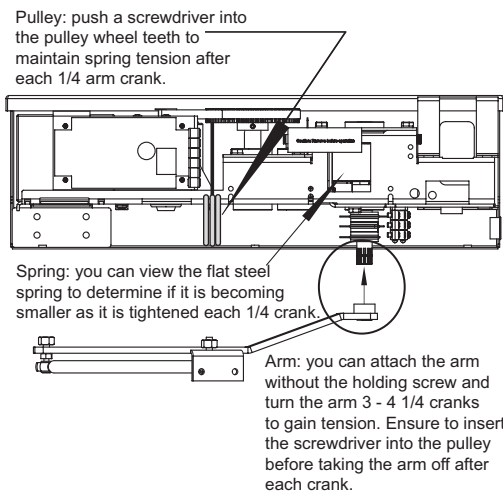


- Determine the tension to add to the spring.
Each $\frac{1}{4}$ turn of the door arm adds approximately 40 turns to the pulley.
Add enough tension so when the door is open 90° and let go, it closes on its own.

NOTE

Put a block in-between the door and frame so that when the door is 3" from closed, the block acts as a door brake. Pull the block away from the door just after the door contacts the block; the door should still close. Add and remove spring tension until the door closes into the latch slightly, but not with too much force.

Figure 19
Spring tension



- Determine the direction to crank the spring shaft.
You turn the crank either counterclockwise as viewed from the top looking down - right hand swing out and swing in - or clockwise - left hand swing out and swing in; you can see the spring tighten as you crank the door arm each $\frac{1}{4}$ turn.
- Add spring tension.
[Figure 20](#), [Figure 21](#), [Figure 22](#), and [Figure 23](#) describe the correct turn direction for each configuration.

Figure 20
Right hand swing out
part no. 300993 crank direction-counterclockwise

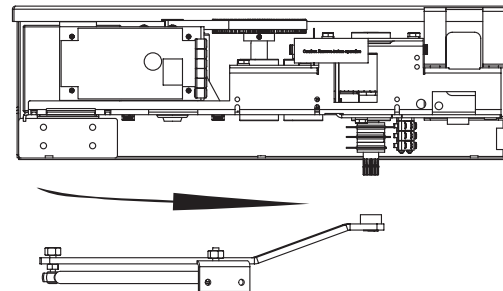


Figure 21
Right hand swing in
part no. 300994 crank direction-counterclockwise

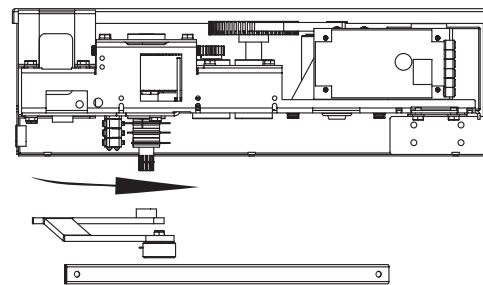


Figure 22
Left hand swing out
part no. 300995 crank direction-clockwise

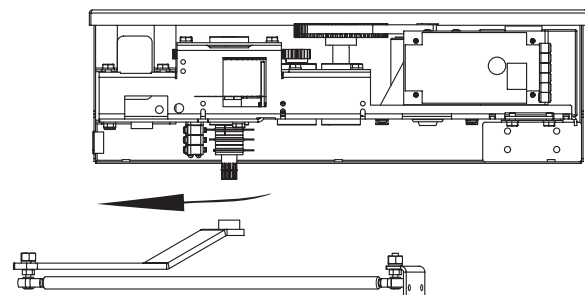
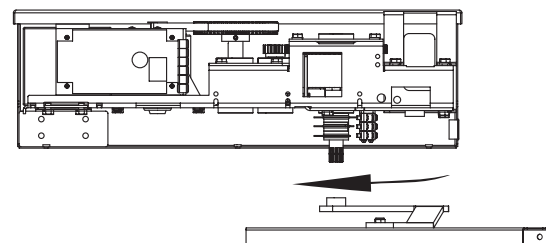


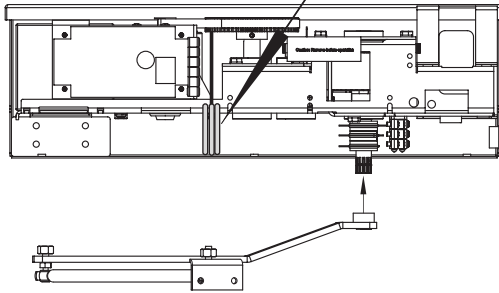
Figure 23
Left hand swing in
part 300996 crank direction-clockwise



- Determine how to maintain tension.
After each crank, use a screwdriver to hold the pulley to maintain the tension each crank creates.

Figure 24
Maintain crank tension

Pulley: push a screwdriver into the pulley wheel teeth to maintain spring tension after each 1/4 arm crank.



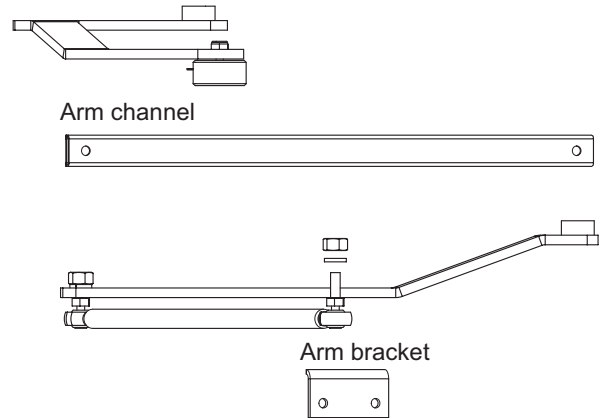
- 8 Add enough tension to allow the spring to mechanically shut the door. To maintain tension, ensure the screwdriver is in the shaft once complete. Do not remove screwdriver until the arm is attached to the sprocket and the door.
- 9 Reconnect the electrical connections; repeat [step 1](#) in reverse order.

Step: 6
Attach arm and channel or arm and bracket

Purpose

To attach the arm and the arm channel or arm bracket and to maintain spring tension.

Figure 25
Door arm types
- with arm channel and with arm bracket



NOTE

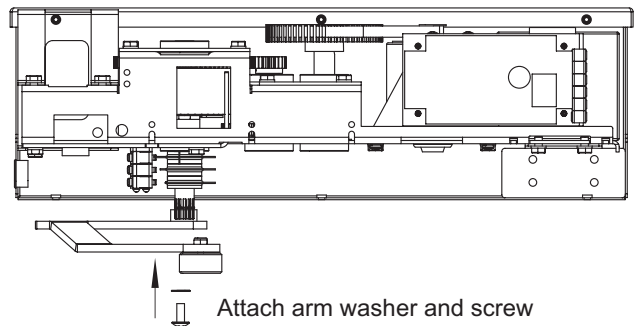
Completion of this step requires that the unit is factory pretensioned and is equipped with a brake to maintain the spring tension while installing the arm.

Requirements

The Commander is mounted and is ready for the door arm installation.

- 1 Attach arm, washer, and screw.

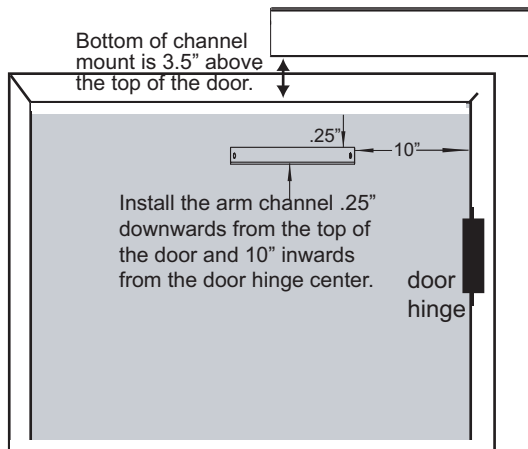
Figure 26
Attach arm screw



IF	Then
have door channel	see step 2 on page 10
have door bracket	see 4 on page 11

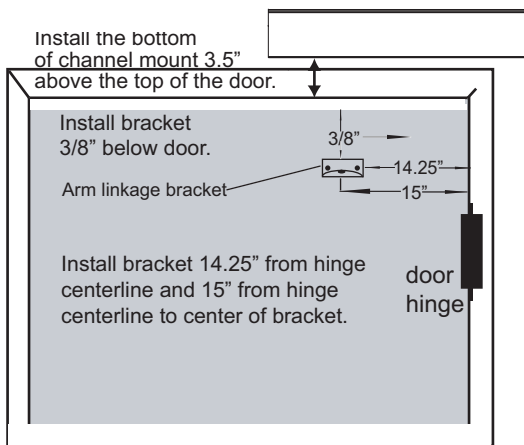
- 2 Attach channel to door.

Figure 27
Channel bracket on door



- 3 Insert arm roller into arm channel.
- 4 Attach arm bracket to door.

Figure 28
Arm bracket on door

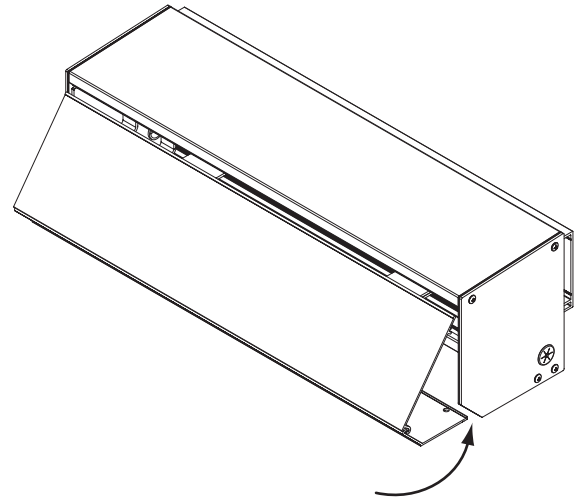


- 5 Remove the brake or screwdriver from the gear.
The Commander mechanical assembly is complete.
- 6 Attach front cover.

NOTE

Complete the wiring and door behavior setup tasks before attaching the cover; refer to the Electrical Installation Guide.

Figure 29
Commander front cover attachment



- 7 Tighten 3 x 10 x 24-1/2" screws and neoprene washers.

Figure 30
Cover screws

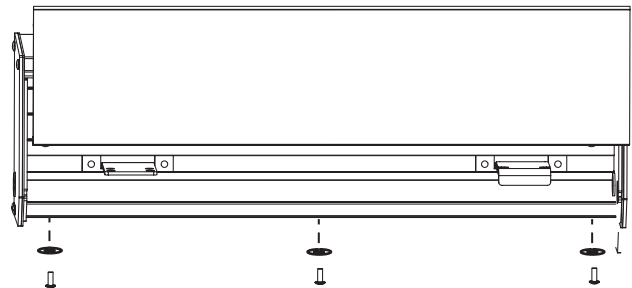
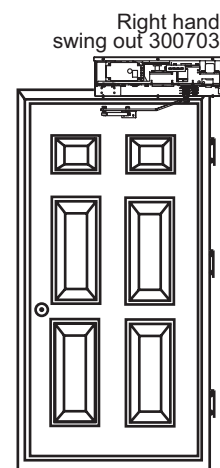


Figure 31
Complete mechanical assembly for part no. 300993-right hand swing out



Step: 1
Disassemble Commander

Purpose

To disassemble the main unit.

NOTE

This step is not part of installation. Use this step only to remove Commander for maintenance and repair.

Considerations

If you need to repair the Commander or replace any parts and need to remove it completely from its casing, you can unscrew 5 screws to remove the unit.

Step

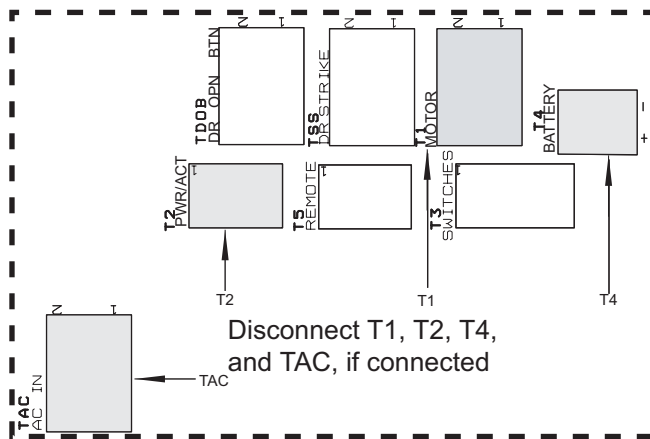
- 1 Turn off and disconnect all power to Commander.
- 2 Disconnect all wiring to locks and doors.
- 3 Disconnect the motor, battery, T2, and TAC, if connected, from the Commander main board.

NOTE

When you remove T1—the motor—only remove one of the wires.

See the Commander electrical installation guide for a diagram of the Commander main board.

Figure 32
Commander electrical connections

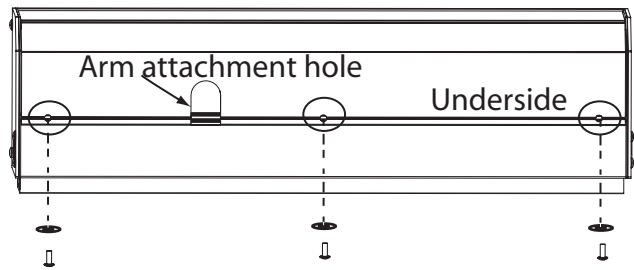


- 4 Remove the 3 x 10 x 24 - 1/2" screws with neoprene washers from Commander cover.

NOTE

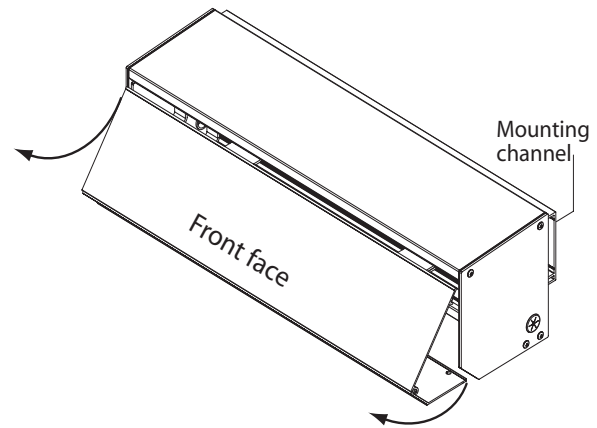
The screws are stainless steel, and therefore not magnetic. Use grease on screwdriver to ensure screws not lost.

Figure 33
Remove cover screws



- 5 Remove cover.

Figure 34
Remove cover

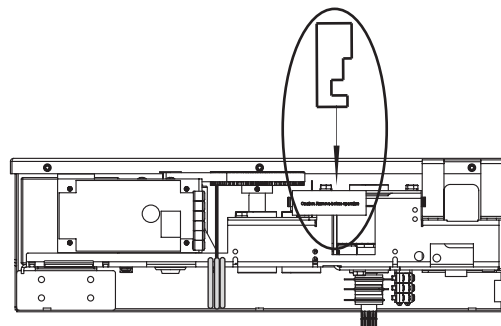


- 6 Insert the brake or a screwdriver into the gears to maintain spring tension, or allow the tension to loosen.

NOTE

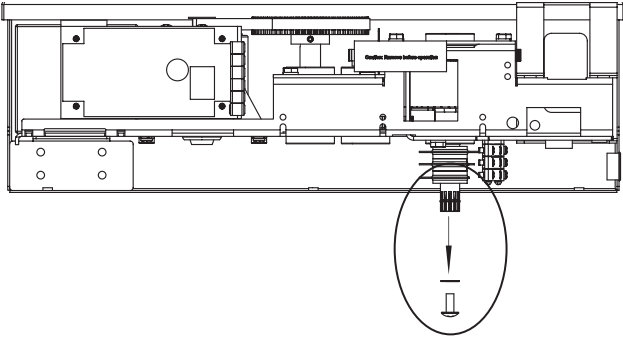
Ensure to add brake if requirement is to maintain spring tension while the commander is removed from the cover.

Figure 35
Commander with brake



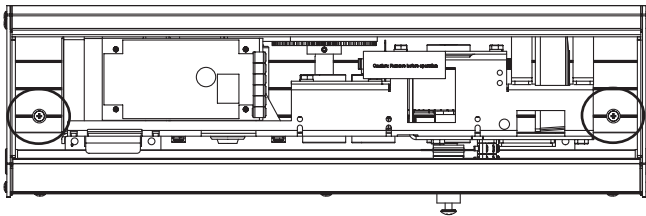
- 7 Remove the screw and washer from the bottom of the spring shaft.

Figure 36
Spring shaft screw



- 8 Unscrew 2 x 10 x 24 - 1/2" mounting channel to Commander cover screws with neoprene washers from Commander on each end.

Figure 37
Mounting channel to Commander screws



- 9 Snap the Commander off the mounting channel from the bottom side and remove Commander.

Figure 38
Remove mounting channel

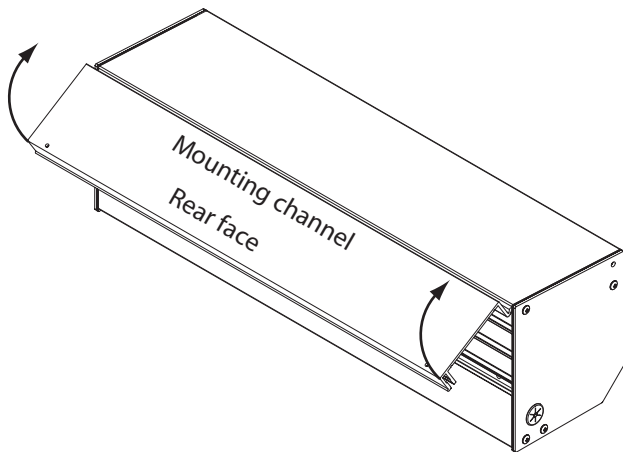
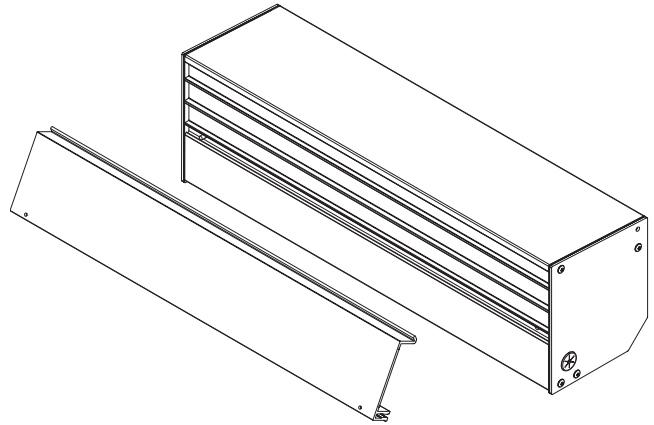
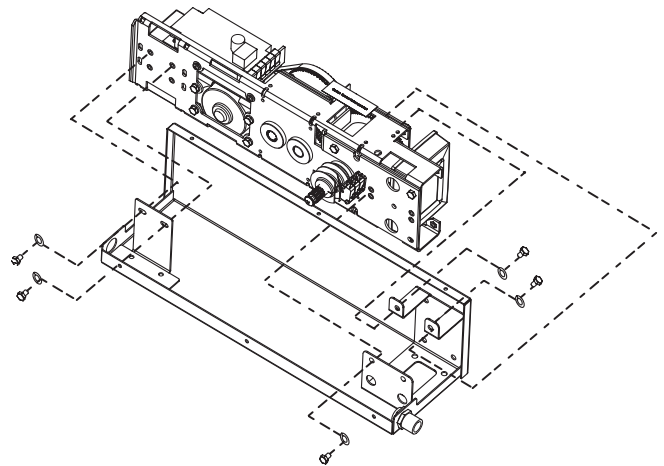


Figure 39
Mount channel off



- 10 Remove 5 screws and lock washers that hold the Commander to cover.

Figure 40
Remove 5 Commander screws



Commander Automatic Door Opener

MECHANICAL INSTALLATION GUIDE

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