1601 BREAK-AWAY OCTAGON ARM INSTALLATION KIT

DoorKing Part Number
1601-295

This kit is designed for a 1601 barrier gate operator **ONLY.** It **CANNOT** be used with 1602 or 1603 operators. The kit provides a break-away bracket assembly for a **octagon arm** with **OR** without reverse/LED edge **ONLY**. When the arm is raised, LEDs turn **GREEN**, and turns **RED** when lowered and remains **RED** in the down position. Arm will reverse if lowering and a obstruction is encountered. If the arm is struck and breaks away (pivots in **ONE DIRECTION ONLY**, see below), gate operator will automatically shut down. The arm manually snaps back into the release rollers to function normally again.
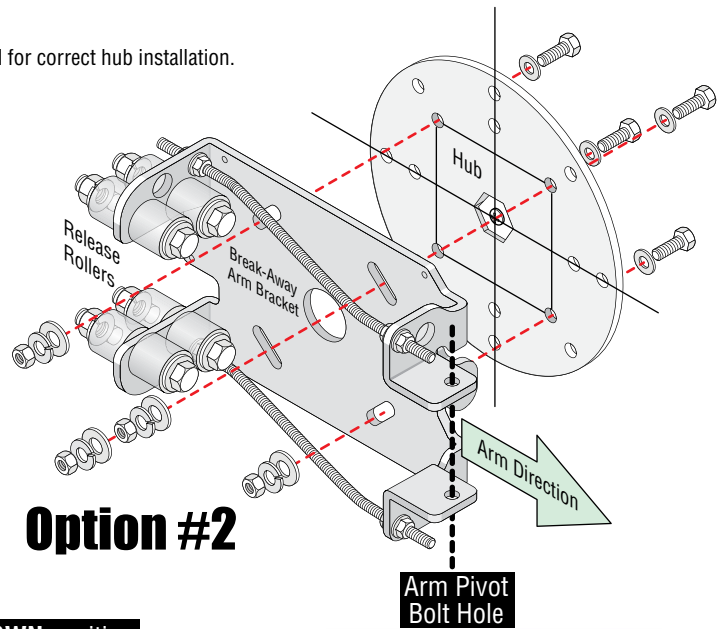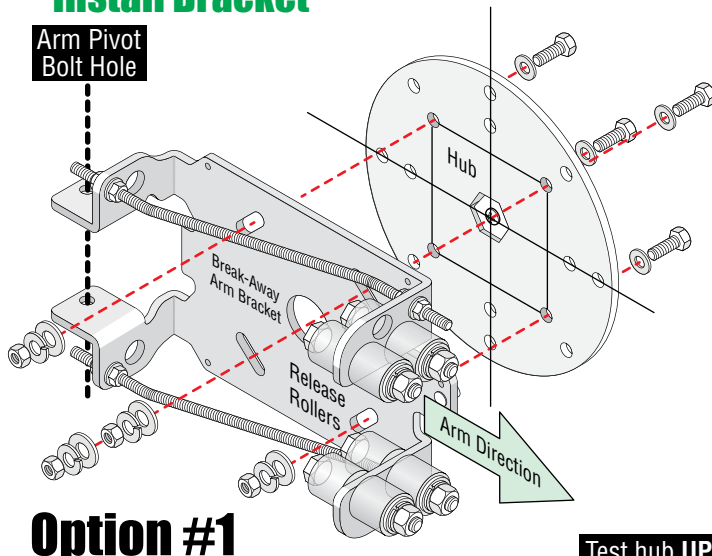
Break-Away Arm Direction Options

Arm will only pivot in **ONE DIRECTION** depending on which way the break-away arm bracket is installed. **Choose the desired break-away direction** and install break-away arm bracket accordingly (note position of **arm pivot bolt** and release rollers).

Option #1

Release Rollers

Arm Pivot Bolt

Break-Away Direction

Keep this area clear of structures

Option #2

6" Minimal Clearance needed

Arm Pivot Bolt

Break-Away Direction

17" Minimal Clearance needed

Release Rollers

Keep this area clear of structures
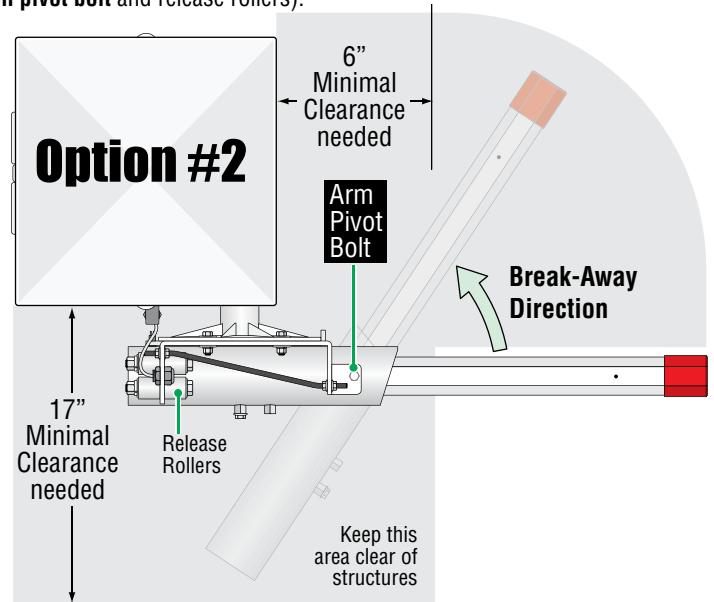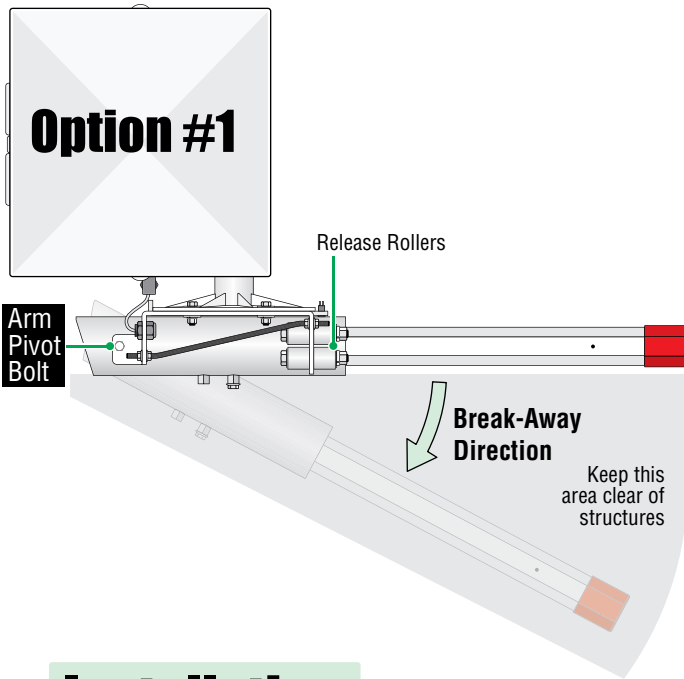
Installation

Install Bracket

Hub **MUST** already be installed on gate operator.
See your 1601 Barrier Installation/Owner's manual for correct hub installation.

Arm Pivot Bolt Hole

Hub

Break-Away Arm Bracket

Release Rollers

Arm Direction

Option #1

Release Rollers

Break-Away Arm Bracket

Hub

Arm Direction

Option #2

Arm Pivot Bolt Hole

Test hub **UP** and **DOWN** position before installing bracket.

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Install Reinforcing Sleeve on 14 ft 1-Piece Arm

Reinforcing sleeve **MUST** be used on 14 ft 1-piece arm or arm can bend and break at arm sleeve end when break-away occurs, see next page.

Reinforcing Sleeve
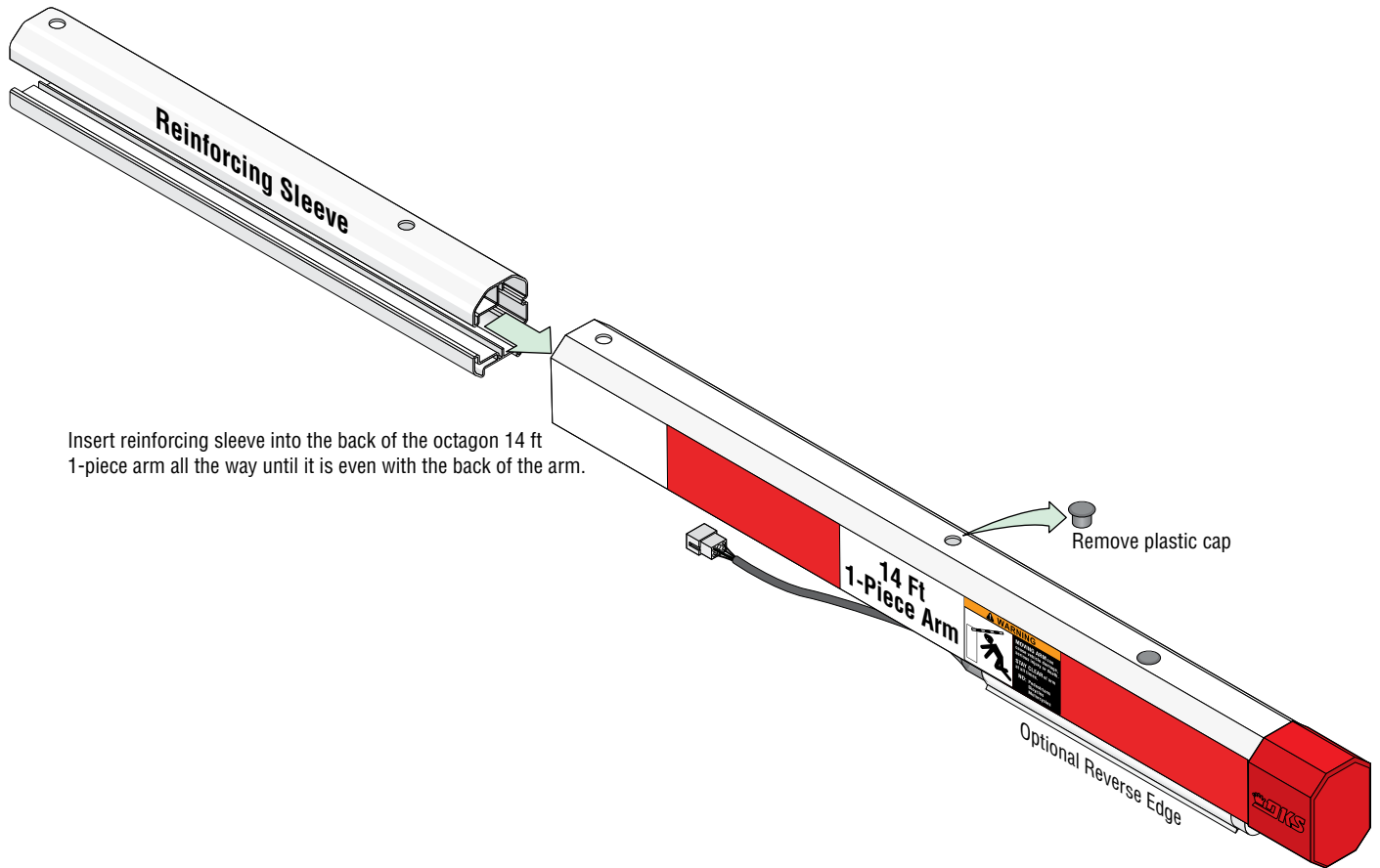
Insert reinforcing sleeve into the back of the octagon 14 ft 1-piece arm all the way until it is even with the back of the arm.

Remove plastic cap
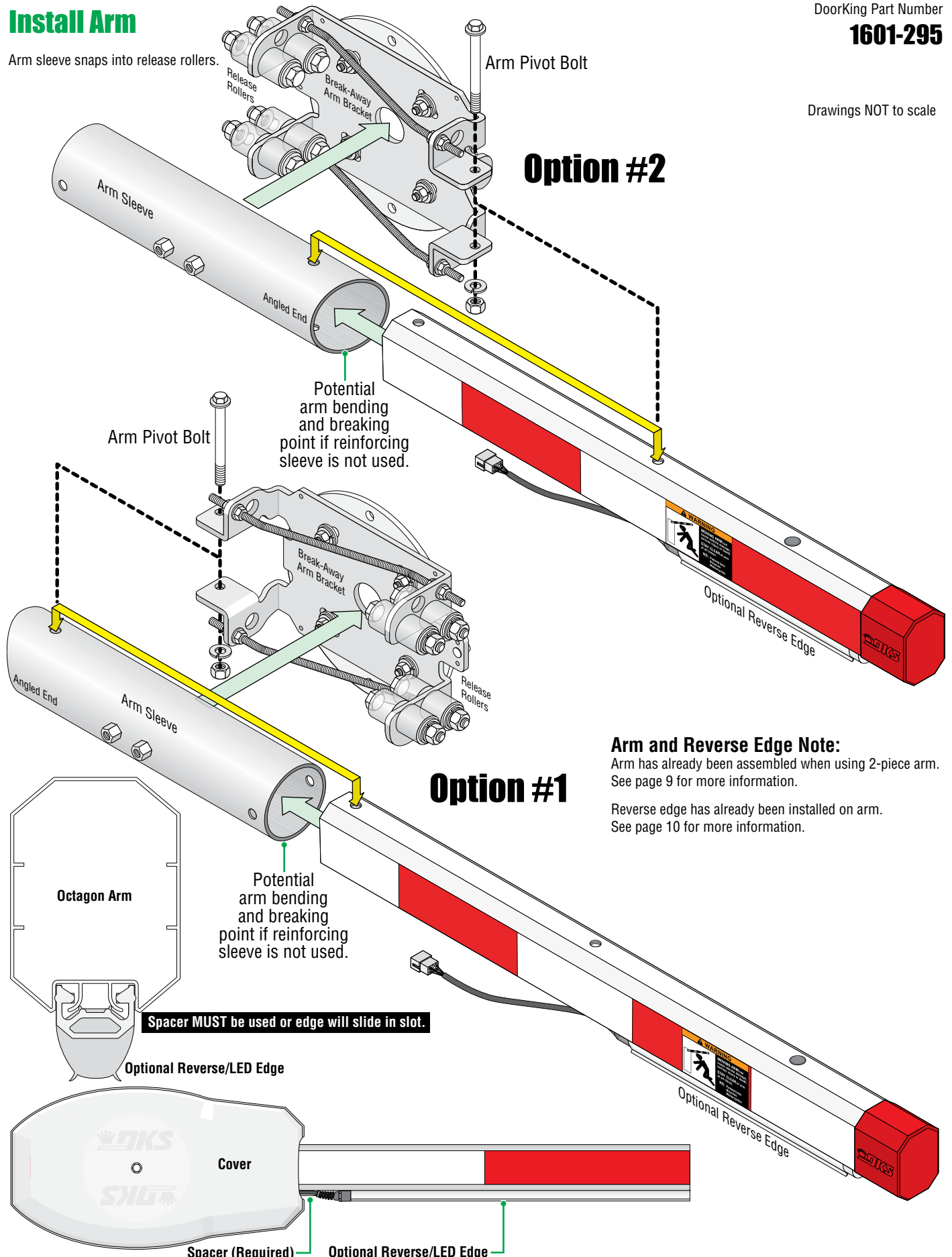
14 Ft 1-Piece Arm

Optional Reverse Edge

Drawing NOT to scale

Install Arm

Arm sleeve snaps into release rollers.

Drawings NOT to scale

Release Rollers

Break-Away Arm Bracket

Arm Pivot Bolt

Option #2

Arm Sleeve

Angled End

Potential arm bending and breaking point if reinforcing sleeve is not used.

Optional Reverse Edge

Arm Pivot Bolt

Break-Away Arm Bracket

Release Rollers

Angled End

Arm Sleeve

Option #1

Potential arm bending and breaking point if reinforcing sleeve is not used.

Arm and Reverse Edge Note:
Arm has already been assembled when using 2-piece arm. See page 9 for more information.

Reverse edge has already been installed on arm. See page 10 for more information.

Octagon Arm

Spacer MUST be used or edge will slide in slot.

Optional Reverse/LED Edge

Cover

Optional Reverse Edge

Spacer (Required)   **Optional Reverse/LED Edge**

Install Harness (1601-356)

Choose which side of the operator the arm is mounted on, remove knock-out and run wire harness accordingly as shown.

Cable Run Options

Near Side Option

Wire Harness Secured to Top of Cabinet for **FAR** side option

Included Adhesive Zip Ties

Knock-Out

Cable Grip

Cable Grip

See page 7 for arm connection options.

IMPORTANT: Allow slack in the wire harness between the cable grips of **at least 13"** or more for the rotating arm.

Far Side Option

Knock-Out

Cable Grip

Cable Grip

See page 7 for arm connection options.

Wiring to operator: See page 8.

IMPORTANT: Allow slack in the wire harness between the cable grips of **at least 13"** or more for the rotating arm.
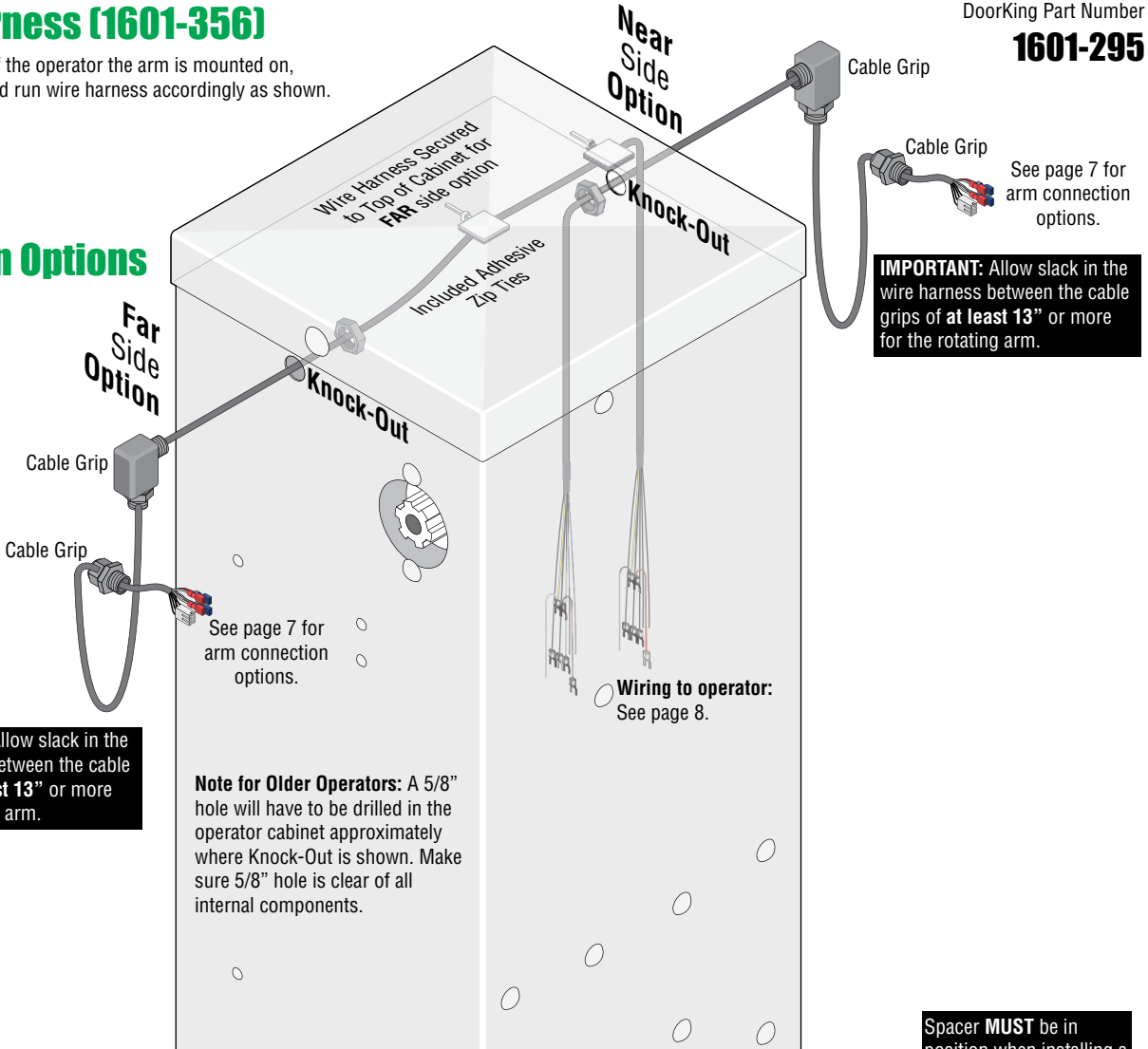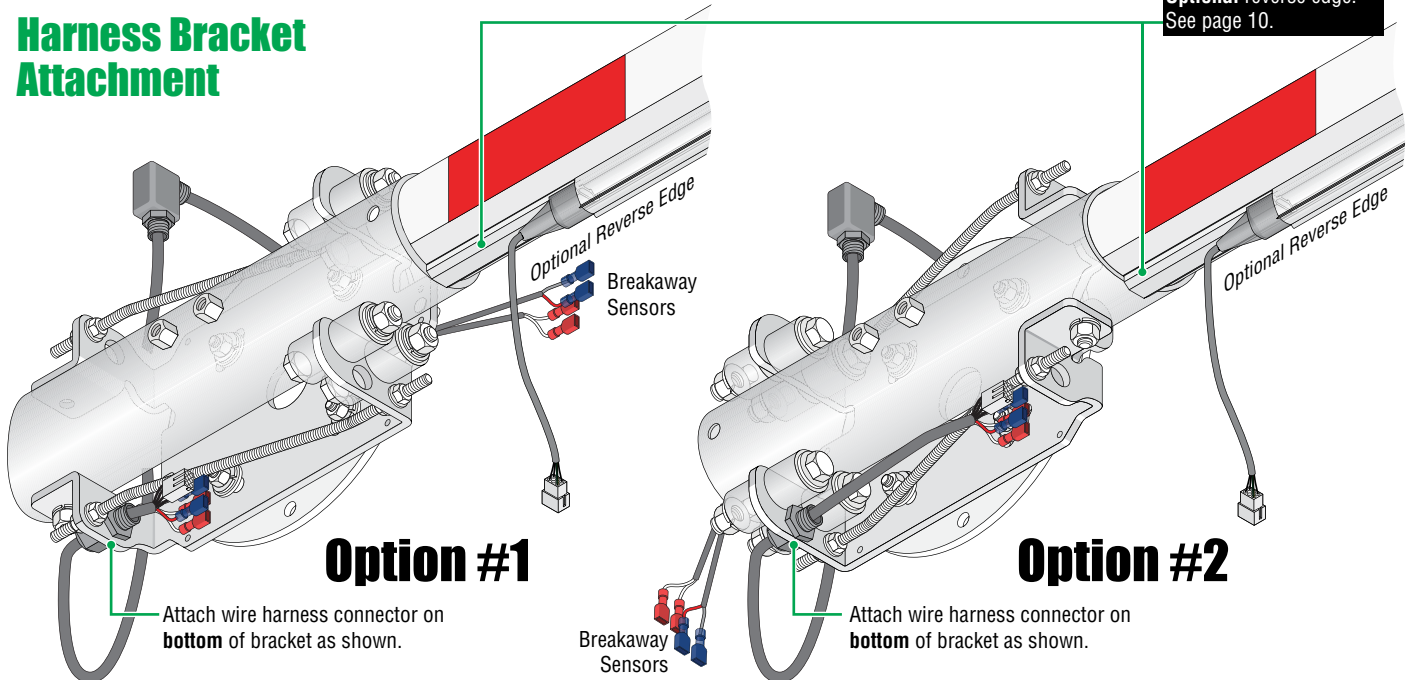
Note for Older Operators: A 5/8" hole will have to be drilled in the operator cabinet approximately where Knock-Out is shown. Make sure 5/8" hole is clear of all internal components.

Spacer **MUST** be in position when installing a **Optional** reverse edge. See page 10.

Harness Bracket Attachment

Optional Reverse Edge

Optional Reverse Edge

Breakaway Sensors

Option #1

Option #2

Attach wire harness connector on **bottom** of bracket as shown.

Breakaway Sensors

Attach wire harness connector on **bottom** of bracket as shown.

See page 7 for arm connection **options** and securing wires to bracket.

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Older Arm Cover

Older arm cover will need to have the reverse edge cut out of the existing cover. Only one side of the cover will need to be cut out depending on which side of the operator the arm is mounted on. Use this template as a guide to remove material from the cover.

Older Covers

X

X
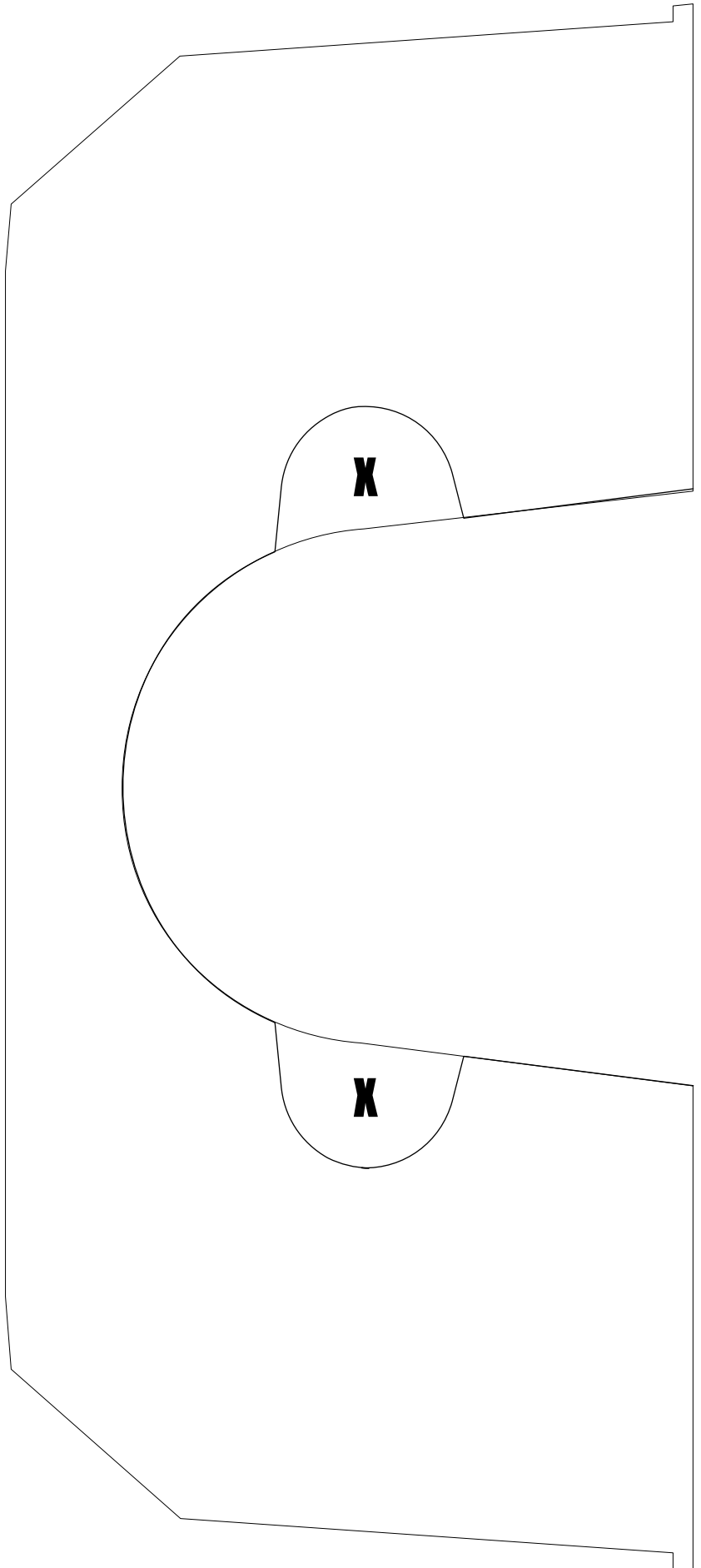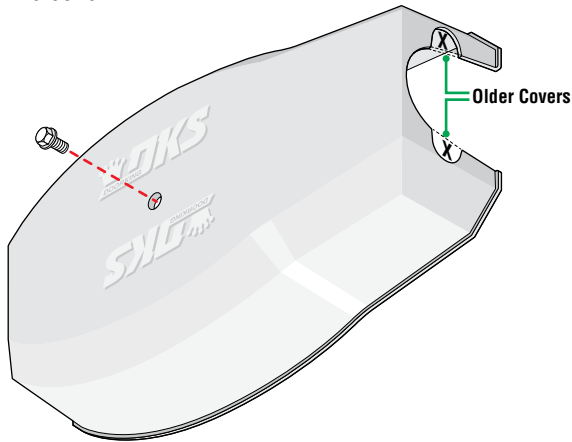
Mount Power Supply and Relay

DoorKing Part Number

DoorKing Part Number
1601-295

IMPORTANT: Power supply **MUST** be wired **BEFORE** mounting it as shown. See page 7.

Side of Electronic Box
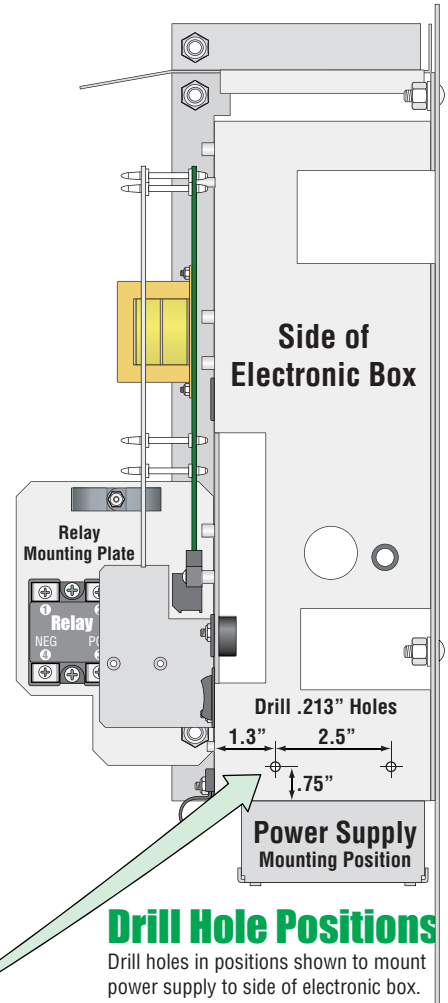
Relay Mounting Plate

Use Existing Carriage Bolt
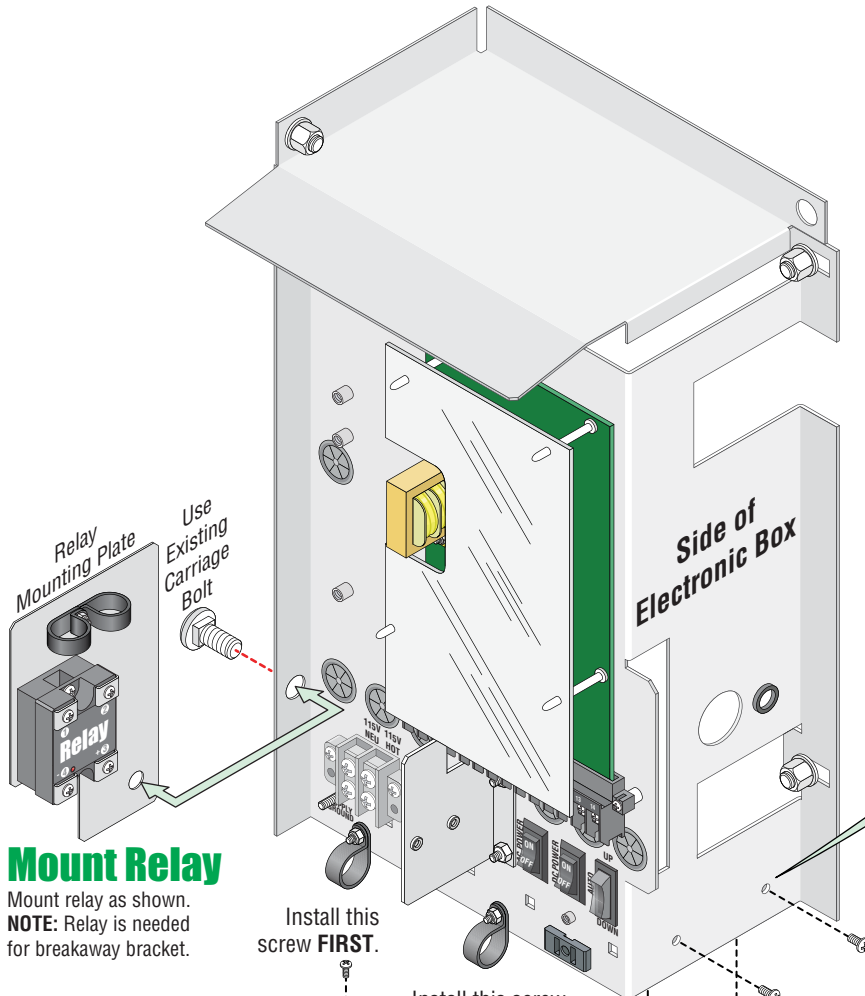
Mount Relay

Mount relay as shown.
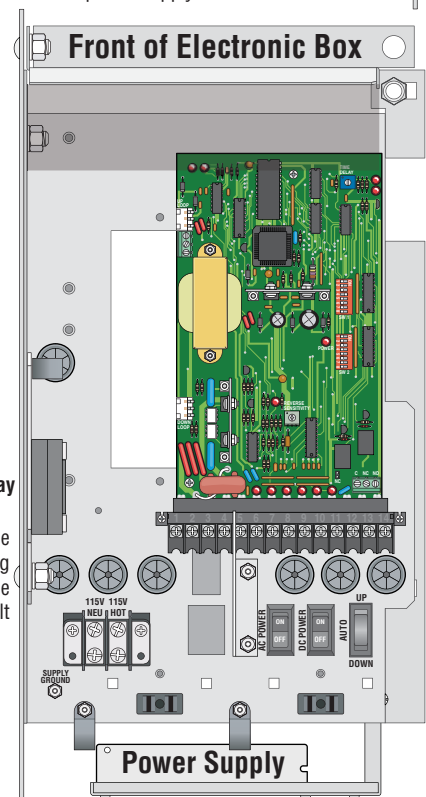**NOTE:** Relay is needed for breakaway bracket.

Install this screw **FIRST**.

Install this screw **SECOND**.

Terminal

Power Supply

Power Supply Mounting Plate

Mount Power Supply

Side of Electronic Box

Relay Mounting Plate

Relay

NEG   POS

Drill .213" Holes

1.3"   2.5"

.75"

Power Supply
Mounting Position

Drill Hole Positions

Drill holes in positions shown to mount power supply to side of electronic box.

Front of Electronic Box

Relay

Use
Existing
Carriage
Bolt

115V 115V
NEU HOT

SUPPLY
GROUND

AC POWER   DC POWER   AUTO
ON OFF   ON OFF   UP
                         DOWN

Power Supply

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6
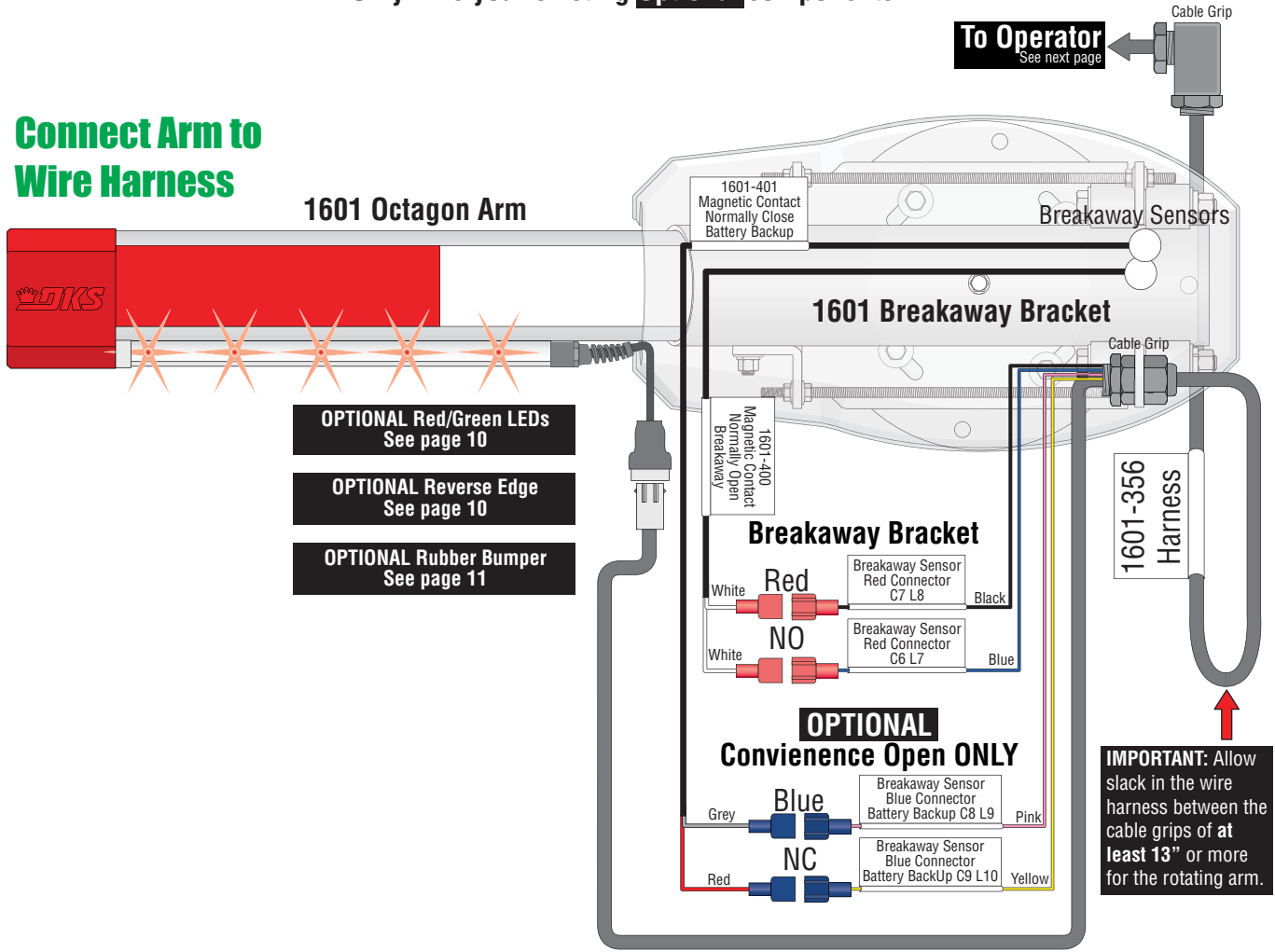
1601 Octagon Breakaway Arm - Arm Connection

MAKE SURE ALL POWER IS TURNED OFF TO OPERATOR!

Only wire your existing Optional components

Cable Grip

To Operator See next page

Connect Arm to Wire Harness

1601 Octagon Arm

Breakaway Sensors

1601-401 Magnetic Contact Normally Close Battery Backup

1601 Breakaway Bracket

Cable Grip

OPTIONAL Red/Green LEDs
See page 10

OPTIONAL Reverse Edge
See page 10

OPTIONAL Rubber Bumper
See page 11

1601-400 Magnetic Contact Normally Open Breakaway

Breakaway Bracket

1601-356 Harness

White — Red — Breakaway Sensor Red Connector C7 L8 — Black

White — NO — Breakaway Sensor Red Connector C6 L7 — Blue

OPTIONAL
Convienence Open ONLY

Grey — Blue — Breakaway Sensor Blue Connector Battery Backup C8 L9 — Pink

Red — NC — Breakaway Sensor Blue Connector Battery BackUp C9 L10 — Yellow

IMPORTANT: Allow slack in the wire harness between the cable grips of **at least 13"** or more for the rotating arm.

Secure Wires to Breakaway Bracket

Option #1

Arm Pivot Bolt

Zip tie wires to secure near pivot point

Option #2

Arm Pivot Bolt

Zip tie wires to secure near pivot point
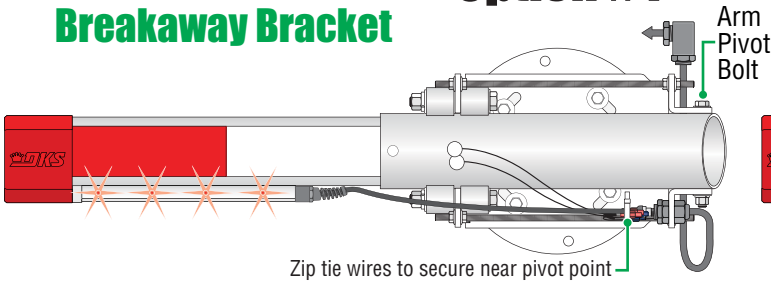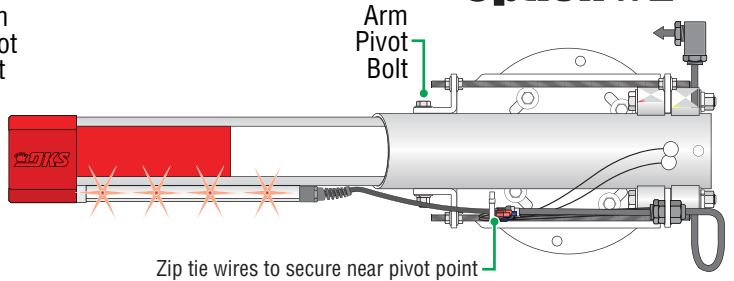
IMPORTANT: To secure wires to bracket, allow for some slack in the wires to account for the arm pivoting when arm "Breaks Away" from bracket. Test breakaway feature to **make sure** there is enough slack in the wires when securing wires.

Breakaway Arm Reset Procedure

If arm gets struck and breaks away, gate operator will automatically shut down (Breakaway sensors are tripped). Simply snap arm back into the release rollers. Make sure all wires are out of the way of the arm when snapping arm back in position. Normal operation can then continue.

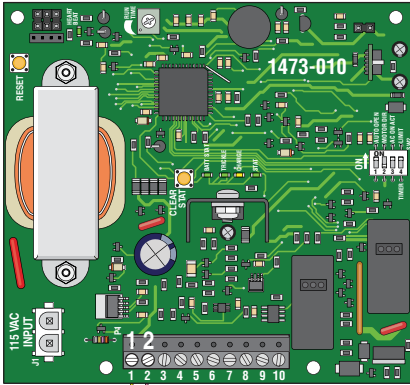**DO NOT OPERATE ARM WITHOUT BREAKAWAY SENSORS FUNCTIONING.**

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1601 Octagon Breakaway Arm - Wiring Operator

MAKE SURE ALL POWER IS TURNED OFF TO OPERATOR!

Only wire your existing Optional components

OPTIONAL Convenience Open 1473

NOTE: Will **NOT** work with older model 2340-010 convenience open board

1473-010

RESET

115V VAC INPUT

1 2

Terminal 1 Battery Backup PCB Breakaway Sensor NC C9 L15

Terminal 2 Battery Backup PCB Breakaway Sensor NC C8 L13

1601-010

TIME DELAY

LOOP

POWER

SW 1

SW 2

REVERSE SENSITIVITY

DOWN LOOP

Optional LED Traffic Light Kit
Sold Separately

White
Red/Brown
White
Black Green Red

Traffic Light Terminal

Traffic Light Cable

Arm Relay Contacts

Common Main PCB 12V Neg C7 L12

C NC NO

NO - Open - Green
NC - Close - Red

N-Open Main PCB Green Light C2 L2 Green

N-Close Main PCB Red Light C1 L1 Red

Common Main PCB LED Light C10 L11 White

1601-356 Harness

To Arm See previous page

NEU HOT

Terminal 2 Main PCB 110VAC HOT L14

115V HOT Terminal Block 2 Position L19

Terminal 9 Main PCB Reverse Edge C5 L5

Terminal 14 Main PCB Reverse Edge C4 L4 Grey

Grey/Pink

Black

White

115V Neutral Terminal Block 2 Position L20

SUPPLY GROUND

Ground Panel Stud L24
Required

Green

Traffic Light - Black (to V+ Power Supply)

1601-426 Power Supply 8.5A

L - Line Transformer 8.5 amp L21

N - Neutral Transformer 8.5 amp L22

Ground Transformer 8.5 amp L23

V- Transformer 8.5 amp L18

V+ Transformer 8.5 amp L17

L
N
V-
V+

Remove existing wire from Main PCB Terminal 2 and connect it to Relay #1

110VAC HOT Solid State Relay L16

Relay

1   **2**
NEG   POS
4   **3**

Relay for Breakaway Sensors

12V Positive (+) Solid State Relay C3 L3

12V Negative (-) Solid State Relay C6 L6

Red/Blue

Black

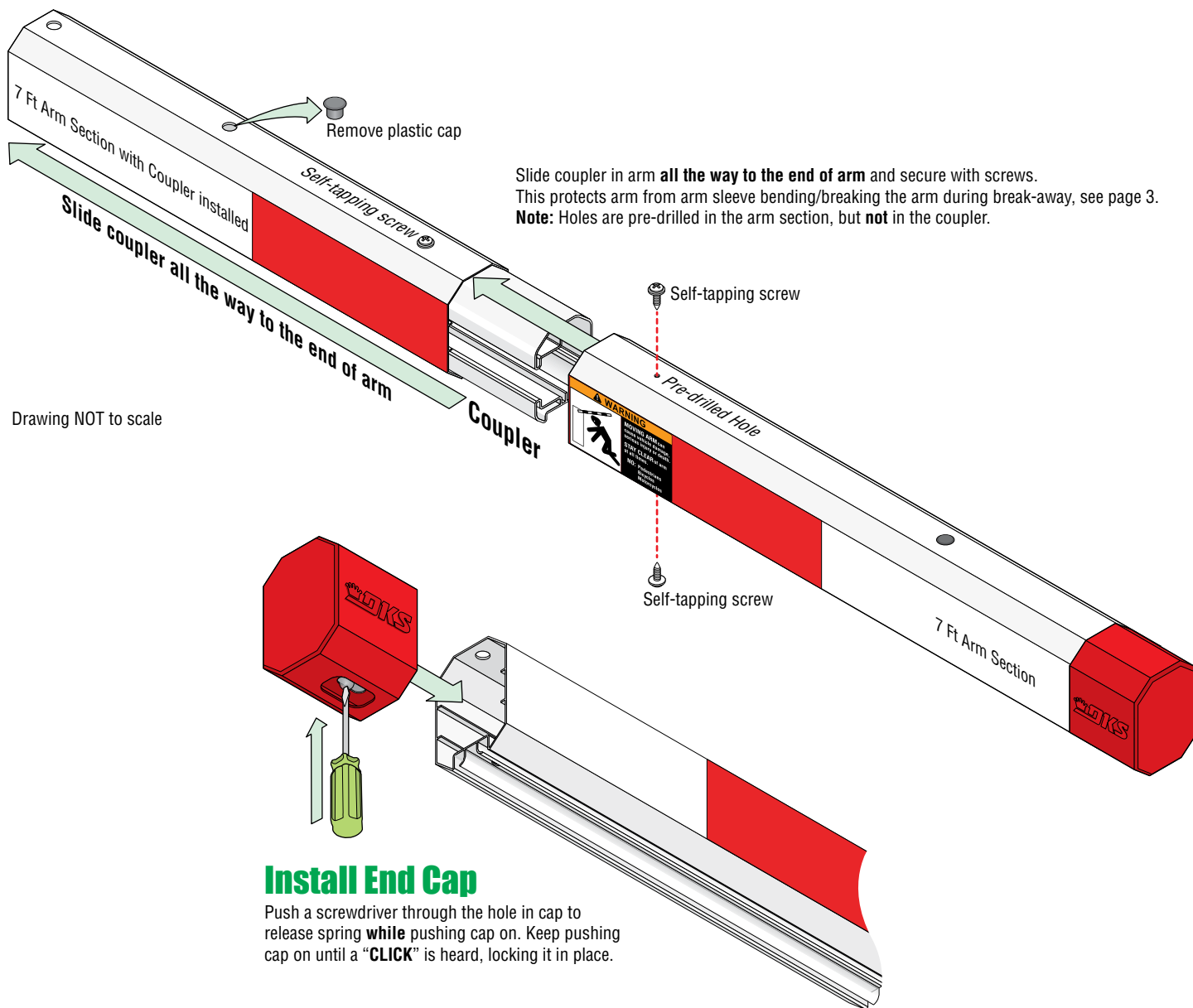Blue

Red

Pink
Yellow

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14 FT 2-PIECE OCTAGON ARM ASSEMBLY

DoorKing Part Number

1601-567

14 Ft 2-Piece Octagon Arm Kit

This kit is designed for use on a 1601 barrier gate operator **ONLY**. It has 2-7 ft arm sections that assemble into a 14 ft arm.

Assemble 2-Piece Arm

7 Ft Arm Section with Coupler installed

Slide coupler all the way to the end of arm

Remove plastic cap

Self-tapping screw

Slide coupler in arm **all the way to the end of arm** and secure with screws.
This protects arm from arm sleeve bending/breaking the arm during break-away, see page 3.
Note: Holes are pre-drilled in the arm section, but **not** in the coupler.

Self-tapping screw

Pre-drilled Hole

⚠ WARNING

Coupler

Drawing NOT to scale

Self-tapping screw

7 Ft Arm Section

Install End Cap

Push a screwdriver through the hole in cap to release spring **while** pushing cap on. Keep pushing cap on until a "**CLICK**" is heard, locking it in place.

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9

REVERSE EDGE / RED GREEN LED INSTALLATION

This kit is designed to install on a 14 ft aluminum **octagon arm** for a 1601 barrier gate operator. It **CANNOT** be used with a 1602 or 1603 operators.

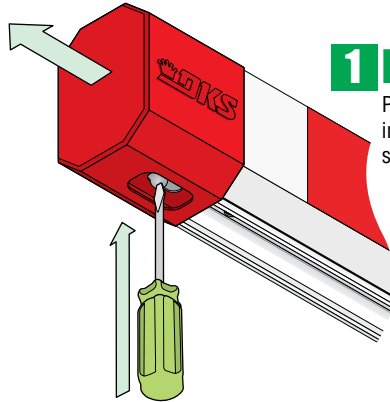**Note: DO NOT** operate arm with a malfunctioning reverse edge.

Installation

Octagon Arm

Spacer

Spacer MUST be used or edge will slide in slot.

Reverse/LED Edge

Cover

Spacer

Reverse/LED Edge

1 Remove End Cap
Push a screwdriver through hole in bottom of end cap to release spring **while** pulling cap off.

2 Slide on Spacer
Tip: Liquid soap will help spacer slide on easier.

5" Rubber Spacer

⚠ WARNING
MOVING ARM can...

3 Slide on Edge
Tip: Liquid soap will help reverse edge slide on easier.

⚠ WARNING
MOVING ARM can...
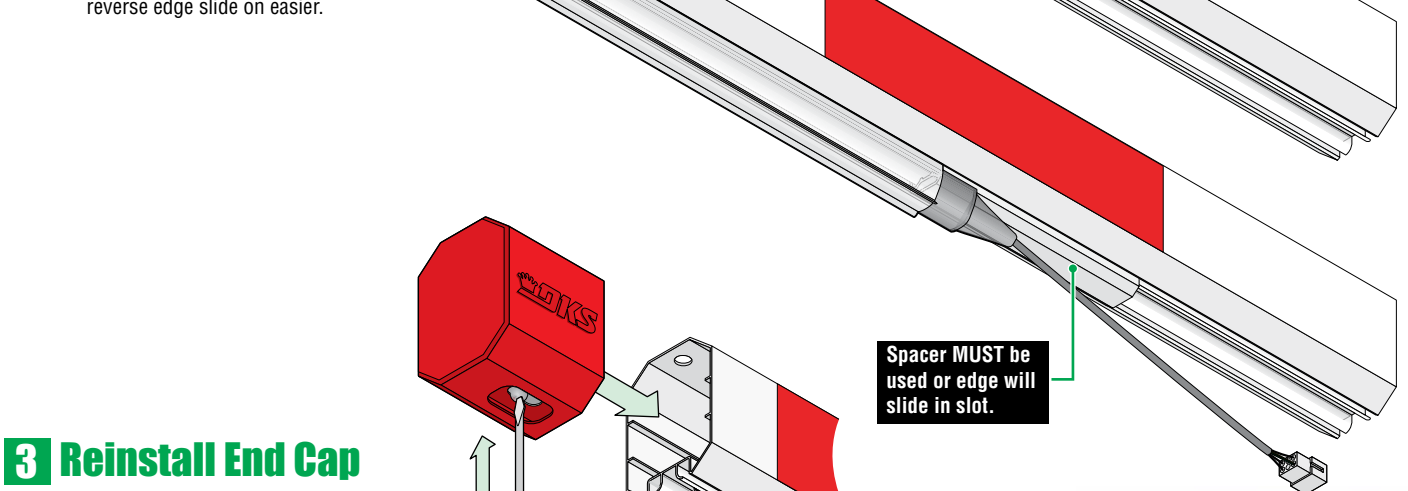
Spacer MUST be used or edge will slide in slot.

3 Reinstall End Cap
Push a screwdriver through the hole in cap to release spring **while** pushing cap on. Keep pushing cap on until a "**CLICK**" is heard which locks it in place.

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1601-269-G-7-21
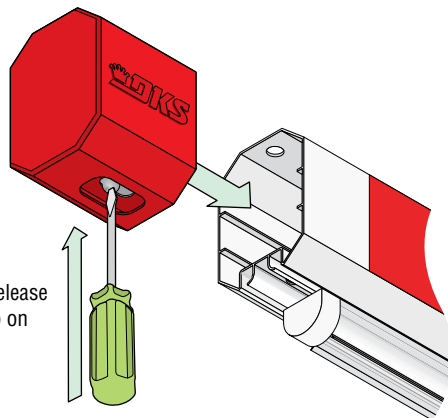
RUBBER BUMPER INSTALLATION

This rubber bumper is designed to install on a 14 ft aluminum **octagon arm** (not included) for a 1601 barrier gate operator. It **CANNOT** be used with a 1602 or 1603 operators.
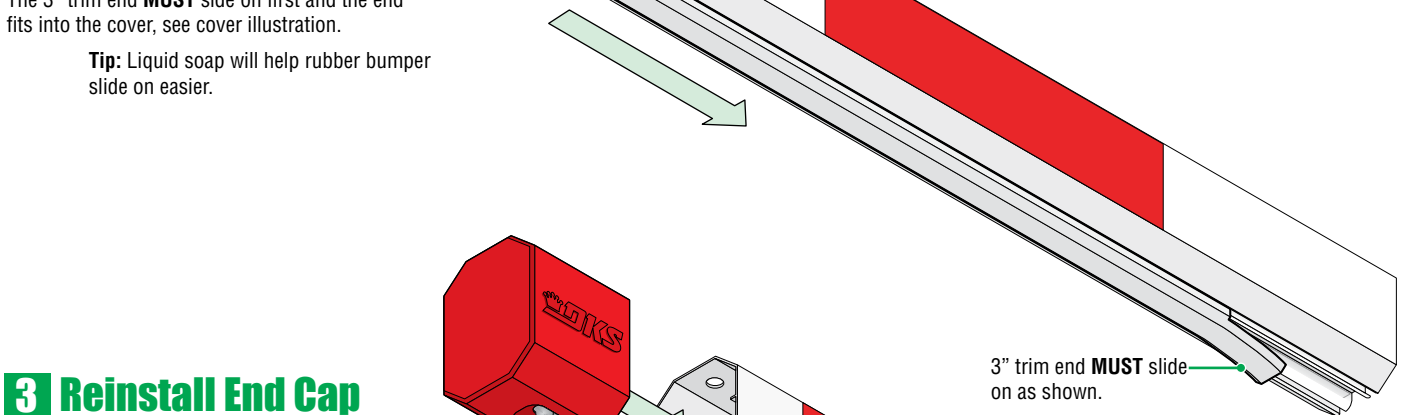
Installation

1 **Remove End Cap**

Push a screwdriver through hole in bottom of end cap to release spring **while** pulling cap off.

Octagon Arm

Rubber Bumper

3" Trim End

Cover

3" Trim End
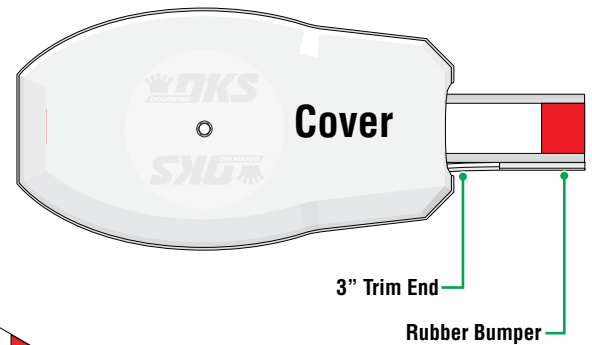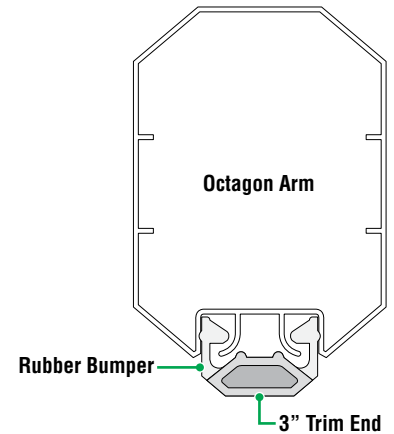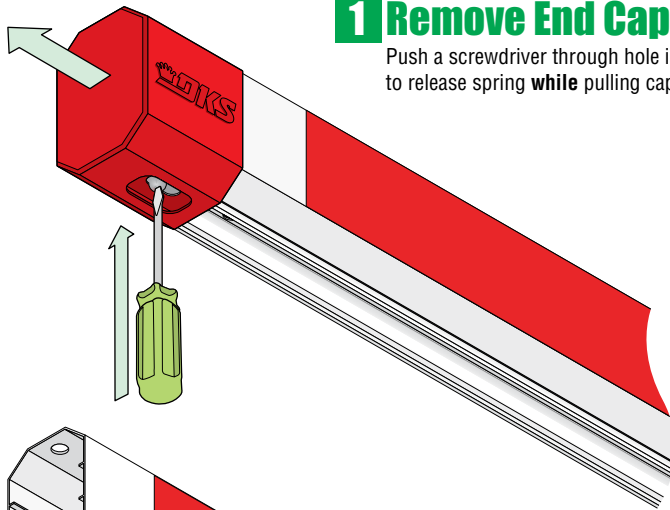
Rubber Bumper

2 **Slide on Rubber Bumper**

The 3" trim end **MUST** side on first and the end fits into the cover, see cover illustration.

Tip: Liquid soap will help rubber bumper slide on easier.

⚠ **WARNING**

3" trim end **MUST** slide on as shown.

3 **Reinstall End Cap**

Push a screwdriver through the hole in cap to release spring **while** pushing cap on. Keep pushing cap on until a "**CLICK**" is heard which locks it in place.

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