

Installation Guide

Kaba Mas High Security Pedestrian Exit Device

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Rev. B5 — August, 2018

WARNING: The Kaba Mas X-10 used with the DKX-10 is protected from Electrostatic Discharge (ESD) damage once installed, but can be damaged during the installation process if proper precautions are not observed. Follow these precautions to avoid ESD damage when installing the lock:

- Do not touch the end of the flex cable if the ESD protective cover has been removed.
- For the best protection, use an ESD wrist band grounded to the lock during installation.
- The lock is protected to greater than 25,000 V when correctly installed.

Note: The GSA approved Kaba Mas FF-L-2890B High Security Pedestrian (HSPED) Exit Device is available for use with a Kaba Mas, Style 1, X-10 combination lock or a Sargent & Greenleaf (S&G) 2740B, Style 2 combination lock.

This document designates the Exit Device with a modified CDX-10 lock as: DKX-10

This document also designates the Exit Device with a modified CDX base with the S&G 2740B lock as: DKX-19

The HSPED combines, through linkage, a Dorma model 9300 fire rated exit device and a Kaba Mas CDX-10 baseplate. If the system is ordered with a Kaba Mas X-10, the X-10 is mounted to the baseplate. If the system is ordered with an S&G combination lock, the S&G lock is mounted to the CDX-10 baseplate. The procedure to mount the DKX unit to the door is the same whether the combination lock is an X-10 or S&G 2740B lock. The process to install and set up the X-10 (once the CD base plate is mounted to the door) is the same as it would be for any X-10 or CDX-10 installation. The installation and setup for the S&G 2740B lock is also the same as it would be for any standard installation. A copy of Kaba Mas X-10 installation instructions are provided when the device is ordered with an X-10. S&G's 2740B lock installation instructions are provided with the S&G lock when it is specified.

Only technicians who have successfully completed manufacturer certified training for combination locks should install the DKX-10 or the DKX-19.

NOTE: One set of instructions should be left with the building owner after devices have been installed.

Trademarks

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- PowerStar Technology
- DKX-10, X-10

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INTRODUCTION

Installation Overview

The HSPED DKX-10 consists of:

1. A Rim Fire Exit Device (Dorma 9300F) and Outside Lever Trim Y09L with IC mortise cylinder (less core)
2. A modified High Security Pedestrian Door Lock (CDX-10)
3. Interface Hardware, Covers and Cover Brackets

The HSPED DKX-19 consists of:

1. A Rim Fire Exit Device (Dorma 9300F) and Outside Lever Trim Y09L with IC mortise cylinder (less core)
2. A High Security Pedestrian Door Lock (CDX-10 base) with the S&G 2740B combination lock
3. Interface Hardware, Covers and Cover Brackets

NOTE: Open box, lay out all parts and verify prior to beginning installation.

The Installation Guide will describe the steps required to install each component of the High Security Pedestrian Exit Device.

NOTE: Product requires a Minimum Door Width of 36" or greater. Interference between the strikes and covers may result if door is less than 36" wide.

Before beginning installation, be certain to have the following tools readily available:

- Measuring tape
- Level and straight edge
- Combination square
- Tape
- Hammer
- Center punch
- Electric hand drill
- 1/8" drill bit
- 1/4" drill bit
- 9/32" drill bit
- 5/16" drill bit
- 3/8" drill bit
- 1/2" drill bit
- #16, #21, and #25 and 7/16" drill bits
- 2 1/8" hole saw with 1/4" pilot
- 1" hole saw with 1/4" pilot
- Long nose pliers
- Pliers
- Adjustable wrench
- 3/8" box-end wrench
- Hacksaw
- File
- 1/4" or smaller slotted head .0.screwdriver
- #1 Phillips head screwdriver
- #3 Phillips head screwdriver
- #1 Phillips head stubby screwdriver
- Safety glasses

Other tools which may be required:

- #10-24 Screw cutter

For a metal door installation, the following tools are needed:

- Tap handle
- #10-24 tap
- #10-32 tap
- #12 - 24 tap

Door Handing

Determine whether the door is left hand reverse (LHR) or right hand reverse (RHR) by referring to Figure 1.

*This device will only work on out-swing doors and is handed (RHR or LHR).

NOTE: Installer must ensure that the door meets all building, fire and security code requirements prior to installing the High Security Pedestrian Exit Device.

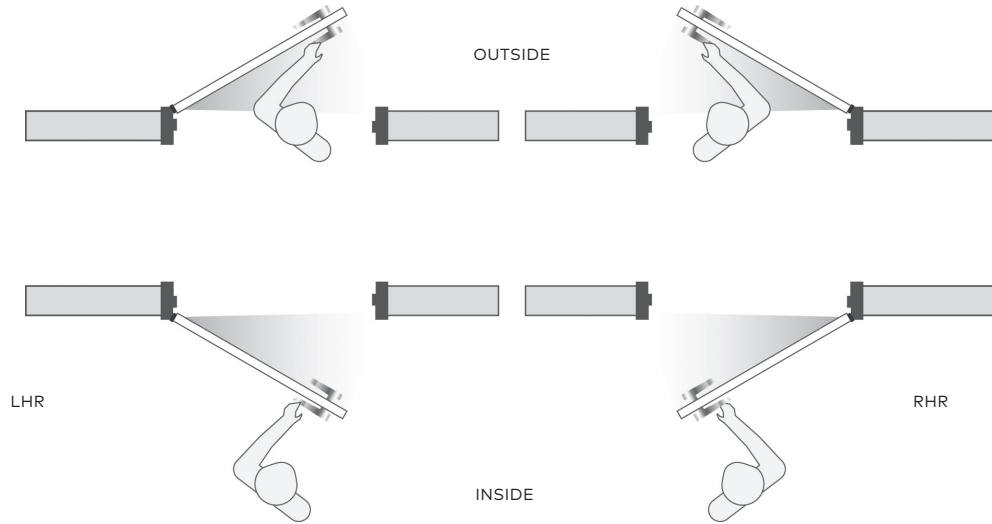


Figure 1 - Door Handing

DKX Series

Installation jigs are recommended when installing DKX-10 / DKX-19 High Security Pedestrian Door Systems. The jigs are especially helpful when installing multiple systems. Drill jigs require only a horizontal reference centerline to establish all hole locations.

Templates

DKX Series Lock Mounting

A template (#546.0117) is included to assist in laying out the hole locations for the DKX-10 lock assembly. This template is positioned on the inside of the door as described in the "DKX-10 Lock Assembly Template" section.

1 Parts Check

Packaging

The High Security Pedestrian Exit Device is packaged in two boxes:

1. The Rim Exit Device Box contains:

- Rim Exit Device with associated parts and mounting hardware
- Outside Lever Trim with Cylinder housing and mounting hardware
- Interface Hardware, Cam Plate Assembly (LHR Only) Covers and Cover Brackets with mounting hardware
- DKX Series Installation Instructions Kit - **514044** and Drill Template **546.0117**

2. The DKX-10 Box contains:

- A High Security Pedestrian Door Lock (CDX-10)

3. The DKX-19 Box contains:

- A High Security Pedestrian Door Lock Base Plate with S&G Model 2740 B Combination Lock

Rim Exit Device Box

	(4) #12-24 x 1" R.H.P.M.S. (Metal or Thru Bolts)	Chassis Mounting
	(4) #12 x 1-1/4" R.H.P.T.S. (Wood Door)	Chassis Mounting
	(2) #12-24 x 1" R.H.P.M.S. (Metal or Thru Bolts)	End Cap Bracket
	(2) #12-24 x 1" R.H.P.M.S. (Metal or Thru Bolts)	End Cap Bracket
	(2) #8-32 x 3/8" F.H.P.M.S.	Chassis Cover & End Cap
	(2) #10-32 x 5/8" F.H.P.M.S. (Metal)	Strike Mounting
	(2) #10 x 1" F.H.P.T.S. (Wood Door)	Strike Mounting

Covers & Other Misc. Parts:

(Qty. 1) Universal Chassis Cover **515030**

(Qty. 1) RHR Lock Cover **515031**

(Qty. 1) LHR Lock Cover **515032**

(Qty. 1) End Cap **515038**

(Qty. 1) Retainer Clip **515041**

(Qty. 1) Cable Connector Rod End **515040** (LHR - Short)

(Qty. 1) Cable Connector Rod End **515029** (RHR - Long)

(Qty. 1) Cable Assembly **115036**

(Qty. 1) Hex Nut, Brass **115123**

(Qty. 1) Lock Cover Bracket **515034**

Reference:

(Qty. 1) Lever Knob Cam **515027** (LHR-Short)

(Qty. 1) Lubricant **9810004** (Not Shown)

Rod Connector & Cable Assembly **514033** (RHR-Long)

(Qty. 1) Retainer Clip **515041**

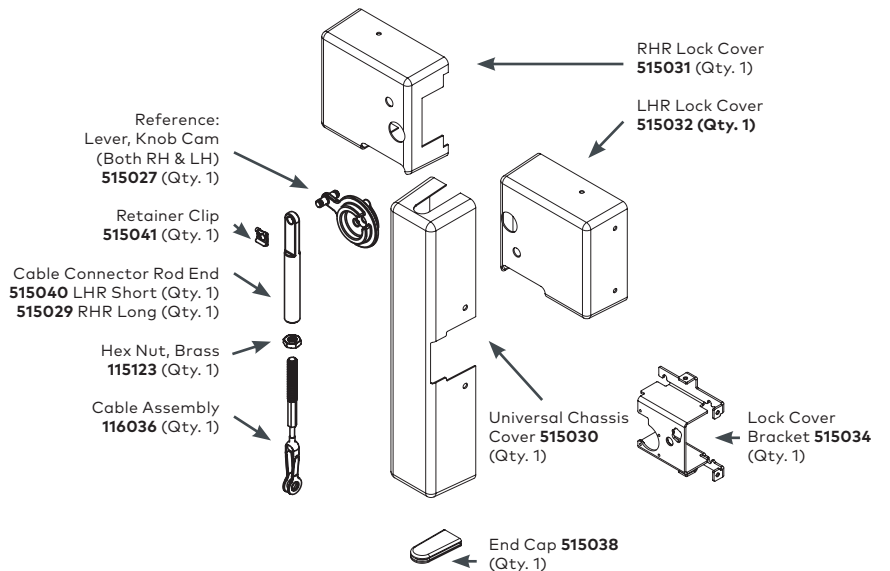
(Qty. 1) Cable Connector Rod End **515040** (LHR-Short)

515029 (RH R- Long)

(Qty. 1) Brass Hex Nut, Brass **115123**

(Qty. 1) Cable Assembly **116036**

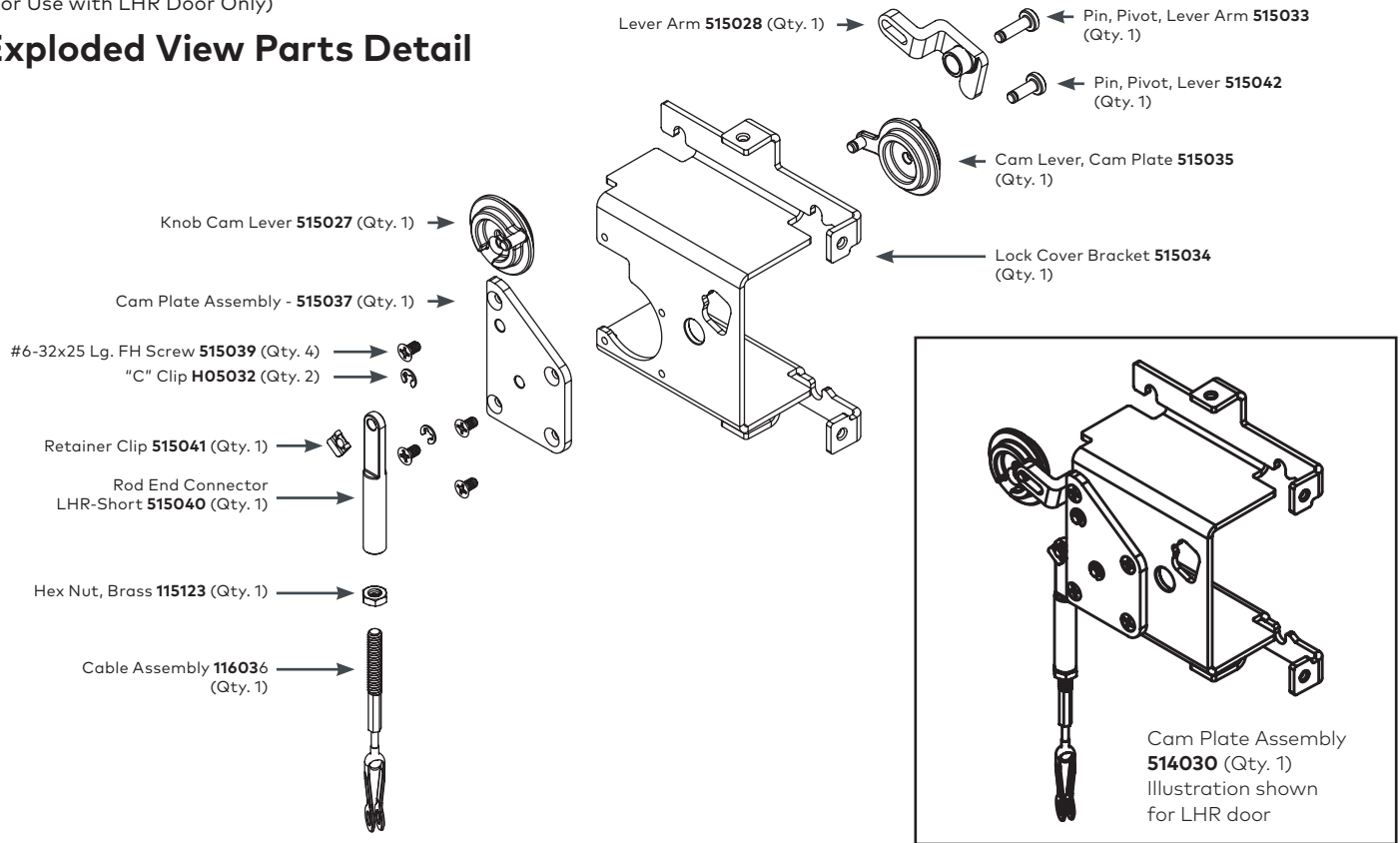
(Qty. 1) Cable Connector Rod End **515027** (RHR-Short)



Cam Plate Assembly

(For Use with LHR Door Only)

Exploded View Parts Detail



DKX-10 Box

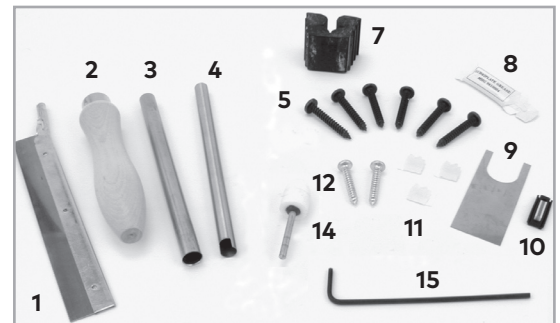
Lock Parts for Installation

1. Mounting Plates
2. DKX-10 Lock Body and Baseplate
3. Spindle
4. Dial Assembly
5. Installation Instructions
6. Installation Kit
7. Back Plate
8. Hub
9. Screw Kit
10. #2 Strike
11. Escutcheon Plate



DKX-10 Installation Kit Contents (P/N 504002)

1. Blade, saw (52 teeth/inch)
2. Handle, saw
3. Tube, outer
4. Tube, inner
5. DKX-10 to door mounting screws, pan head #10 x 1.25, Type AB (6)
6. Dial ring attaching locknuts, #8-32 (2). (Packaged with and used with exterior mounting plate)
7. Rubber vise clamp
8. Lubricant
9. Gauge, dial hub locating
10. Zebra Connector and Retainer
11. Cable Tie Clips (3)
12. Dial ring to door mounting screws, pan head #8 -32 X 1.0 Type AB (2).



13. Cover Lock Pin and Clip
14. Stone, deburring
15. Hex key ($\frac{5}{64}$ ")

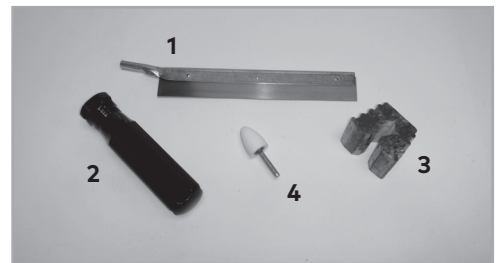
DKX-19 Box

Lock Parts for Installation

1. Mounting Plates
2. DKX-19 Lock Body (S&G 2740B)
3. Dial/Spindle Assembly
4. Install Kit
5. Misc. Install Kits (3X)
6. Strike Kit, #2
7. Lubrication
8. Escutcheon Plate
9. Back Plate

DKX-19 Installation Kit Contents (P/N 514044)

1. Blade, Saw (52 teeth/inch)
2. Handle, Saw
3. Rubber Vise Clamp
4. Stone, Deburring



2 DKX Series Door Preparation

Mark Rim Exit Device and Strike Locations

NOTE: Door must be fitted and hung properly before proceeding.

NOTE: Most doors are equipped with rubber bumpers to dampen the closure. The door **must** remain in the same state in which it was prepped.

1. With the door closed, establish the Rim Exit Device horizontal reference centerline by measuring (2) places approximately 12 inches apart, measuring $40\frac{5}{16}$ " off the floor. Using a level, or straight edge, scribe a line through your two marks to ensure they are parallel to the floor. This is the horizontal reference centerline to which the template will be aligned.
2. With the door closed, establish the template vertical reference centerline by measuring (2) places approximately 12 inches apart, measure 6 inches from the Strike mounting surface. Using a level, or straight edge, scribe a line through the two marks, assuring they are parallel to the Strike mounting surface. This is the vertical reference centerline to which the template will be aligned.

NOTE: Height is $40\frac{5}{16}$ " off floor, and 6" off the Strike mounting surface.

NOTE: The $40\frac{5}{16}$ " distance from the finished floor surface to the Rim Exit Device horizontal reference centerline is a suggested distance, and may be varied to meet application requirements. However, in no case should this distance be greater than 48" due to National Fire Protection Association code requirements.

NOTE: For Type 4, Electronic Trim, see additional Raceway Prep, page 30.

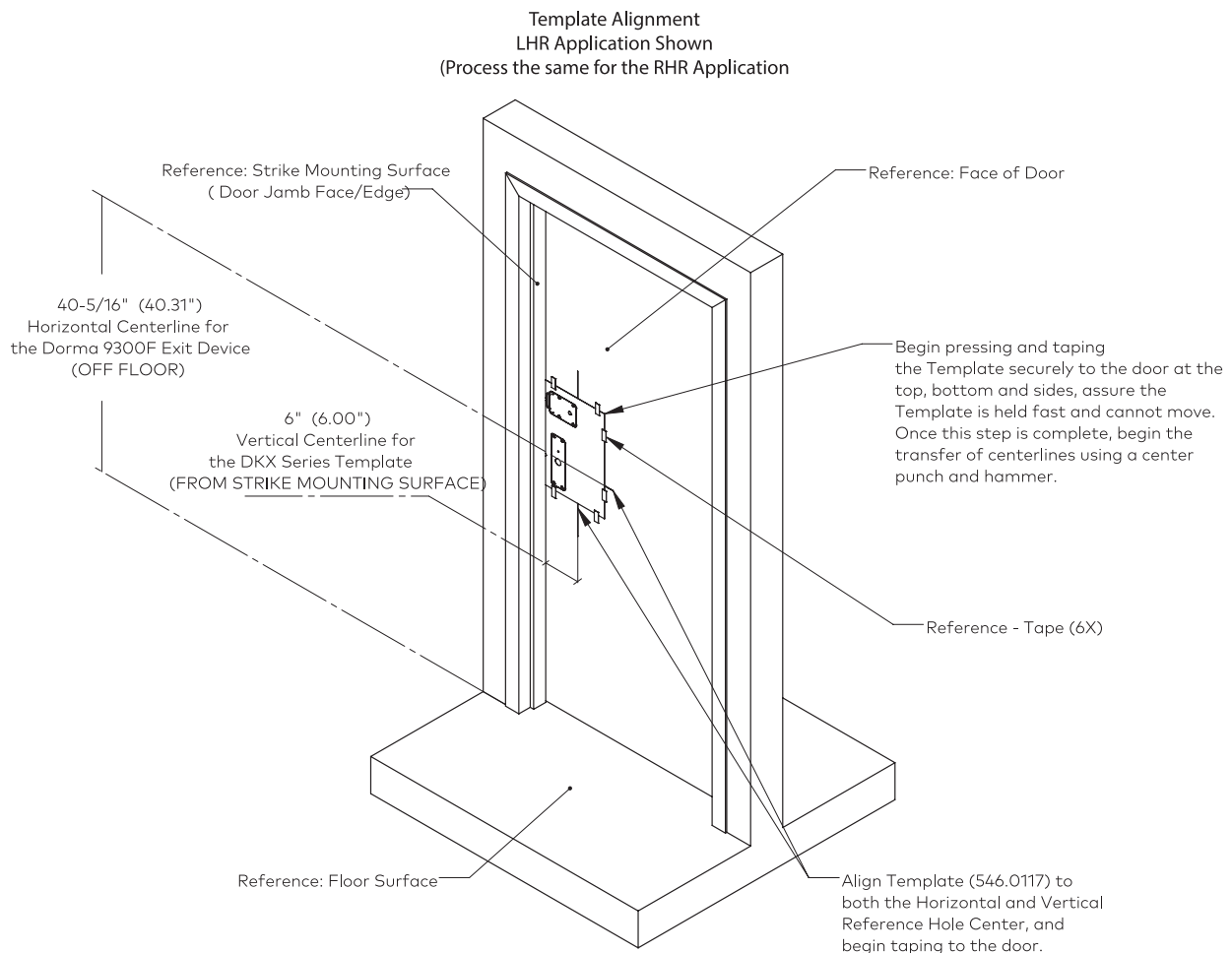


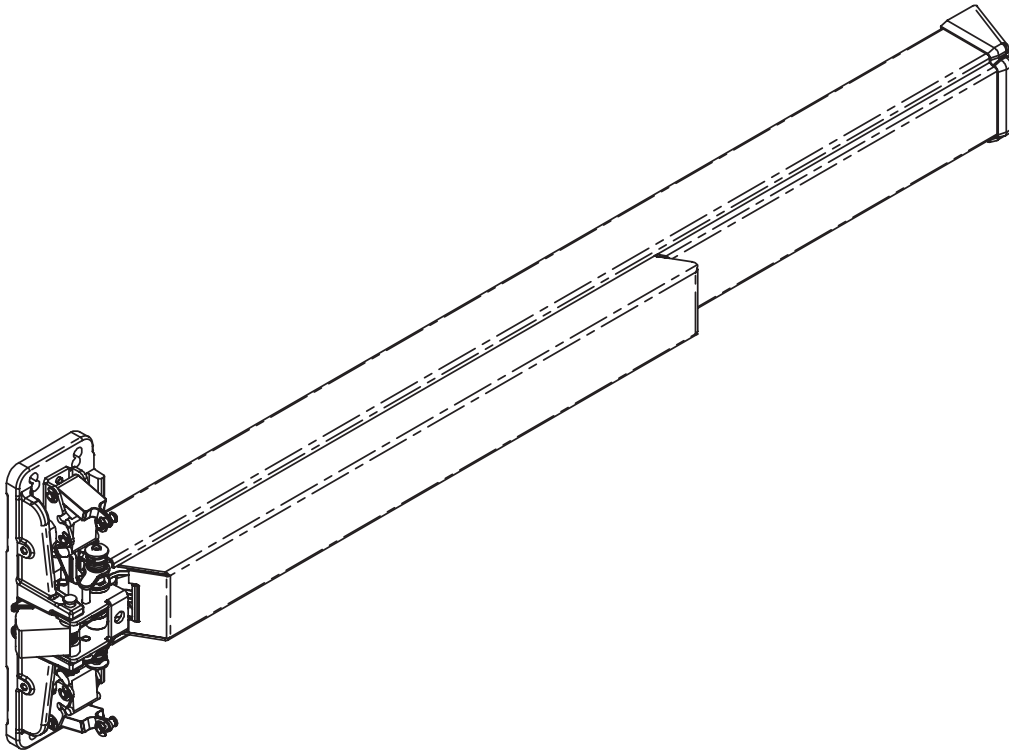
Figure 2 - Establish Rim Exit Device Horizontal and Vertical Reference Centerline

3. Position the DKX Series Template (**546.0117**) on the face of the door, positioning it so that the vertical and horizontal centerlines on the door are aligned to the same centerlines on the template. Once the alignment is assured, tape the template firmly to the door. Do not allow the template to slip; alignment must be maintained.
4. Transfer the horizontal centerlines to the Strike mounting surface, establishing the centerline of the Strikes (2X). Transfer the horizontal centerlines to the Strike mounting surface, establishing the centerline of the Strikes (2X).
5. All holes can now be drilled according to the diameters listed on the template. The $\frac{1}{8}$ " Pilot Hole, above the Exit Trim Spindle Hole for the Dorma 9300F Panic Bar, is to be drilled through, then on the opposite side of the door, a $2\frac{1}{8}$ " diameter hole is to be drilled using a Hole Saw x $1\frac{1}{4}$ " deep. This is for the Key Cylinder (clearance) on the Dorma outside Trim.
6. Ensure the Horizontal Centerlines (2X) were transferred onto the Strike mounting surface.

3 Install the Dorma 9300F Exit Device, Trim & Strike

1. Upon completion of this installation, you are now ready to install the DKX Lock to the Door.
2. Ensure the Panic Bar is functioning correctly, and that no play between the Bolt and Strike exists when door is closed.

9300F Fire Rim Exit Device Installation Instructions

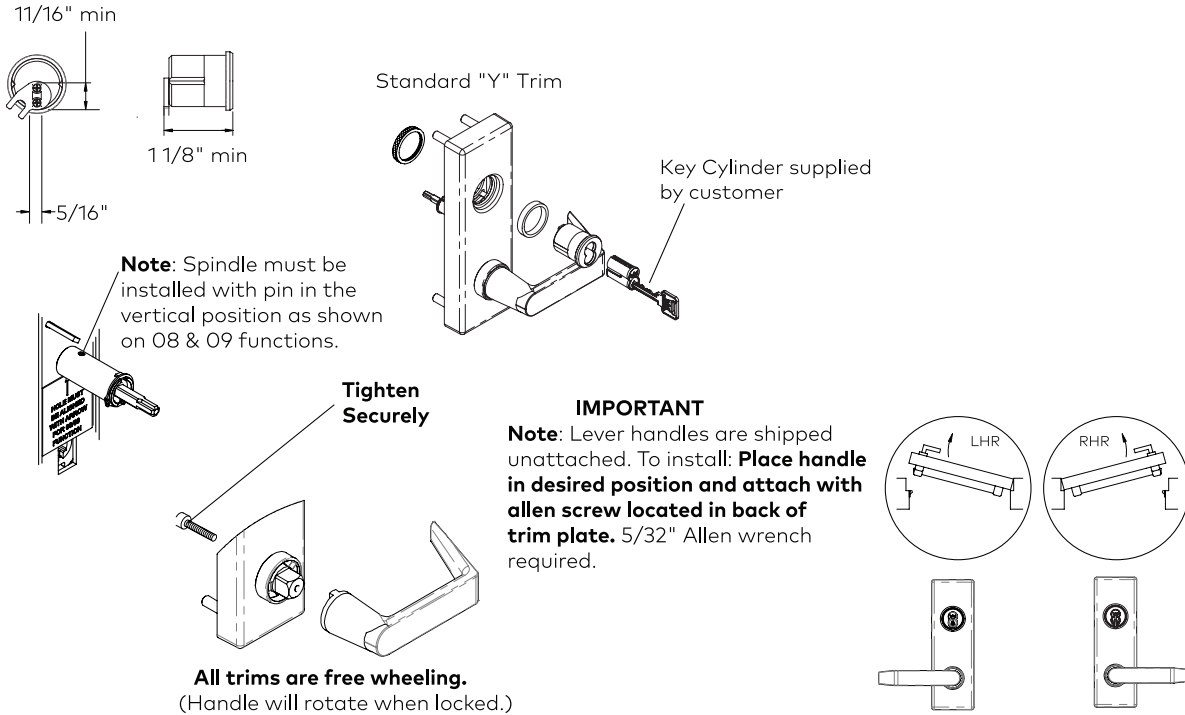


Refer to carton label for model and trim number prior to drilling. Prepare mounting holes and cut-outs per template.

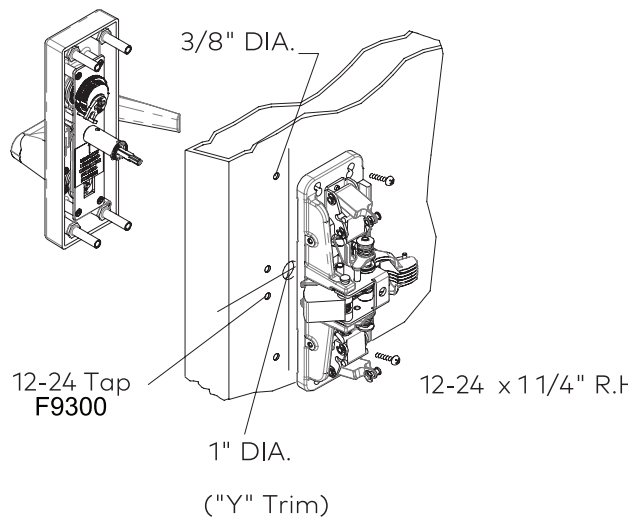
4 Handing change of trim, cylinder specifications and installation.

NOTE: For specific trim functions, cylinder type, and handing information, see additional instructions packed with trim.

NOTE: For Type 4 Electronic Trim, see additional documentation pages 28 through 30.

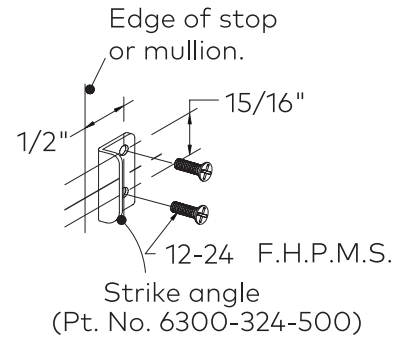
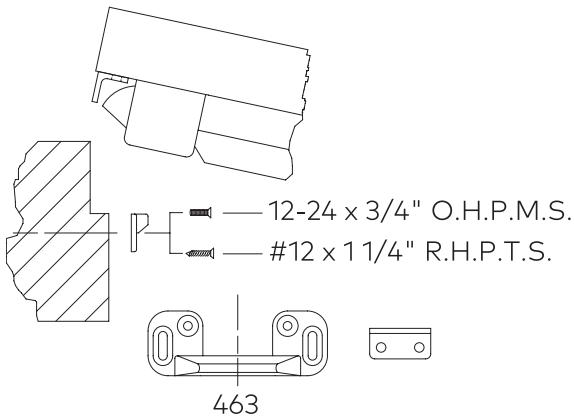


5 Secure chassis to door as in illustration below.



NOTE: Type 4 Electronic Trim requires a 24V Power Supply. Recommend dormakaba 469-100 Power Supply (P/N 95047053).

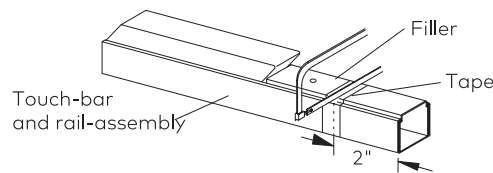
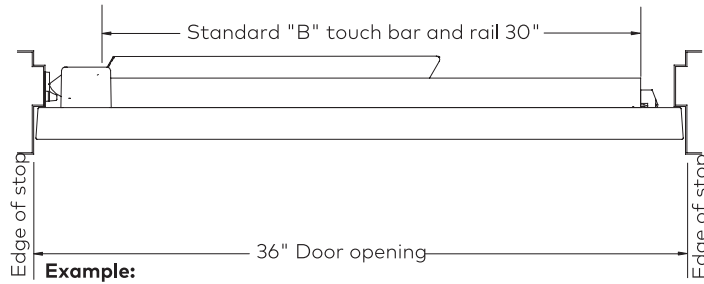
6 Install strike as in illustration below using proper fasteners.



NOTE: Prepare to install touch and rail on door.

NOTE: All dimensions are based on 5/8" stop height. Verify strikes, stile width, any trim, and stop height prior to making any cuts. If cutting is required follow instructions below.

Fits 36" door opening without cutting. Covers may interfere with strikes if less.



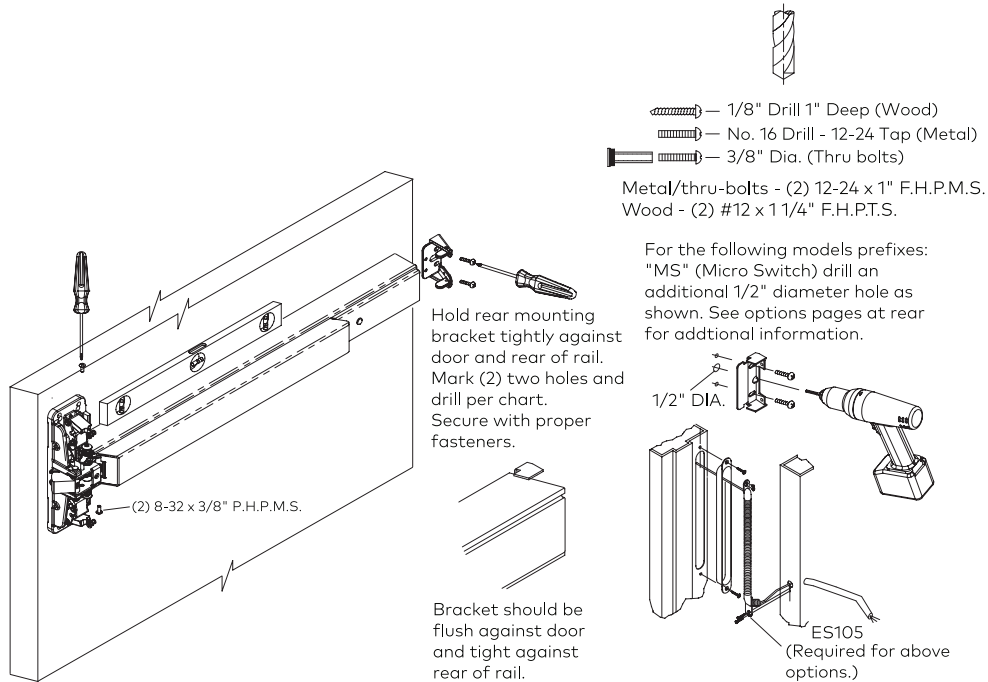
WARNING: If door is cut to 34" or less, covers may interfere with strike. Additional adjustments may be required for desired/adequate clearance.

NOTE: Do not cut wires.

7 Install touch bar and rail assembly and end cap to door.

Remove two 8-32 screws from chassis, slide touch bar and rail assembly under rear of chassis.

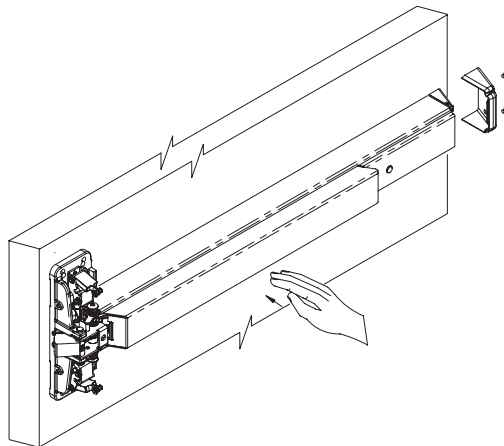
Remove protective covering from the touchbar and rail assembly prior to installing on door. Hold rear mounting bracket tightly against door and rear of rail. Assure Panic Bar is level, mark (2) holes and drill per chart. Secure with proper fasteners.



Install center case cover and end cap.

(6) 8-32 x 3/8" P.H.F.H.M.S.

Start all (4) screws prior to tightening.



General Maintenance Notes

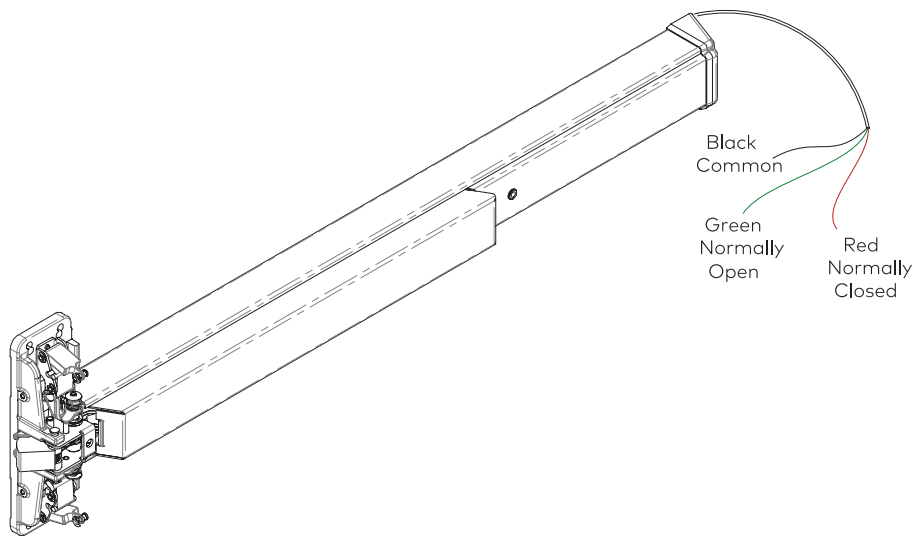
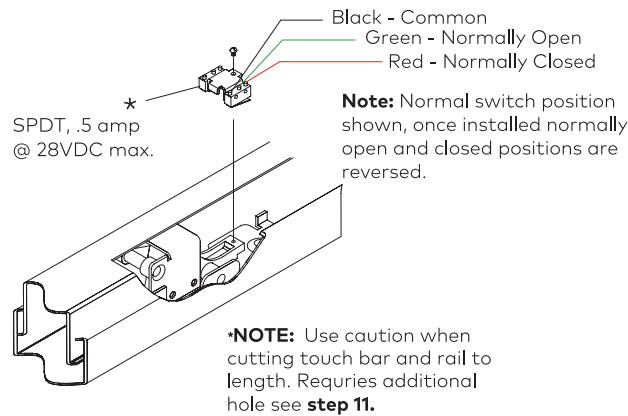
The dormakaba DKX Series Exit Devices are designed to give years of trouble-free service, however, depending on installation, location, climate conditions, etc., routine maintenance is recommended in all latch bolt locations. The device should be periodically cleaned and re-lubricated with Dura-Lube or equivalent to ensure proper function of all moving parts.

Options

"MS" Micro Switch: Monitors movement of touch bar, or can be used to signal an external light, horn etc.

Located on the rear arm assembly as shown. Comes standard with (2) two micro switches.

Both can be wired normally open or normally closed. On the standard 9000 series it can be added in the field by removing rear filler.



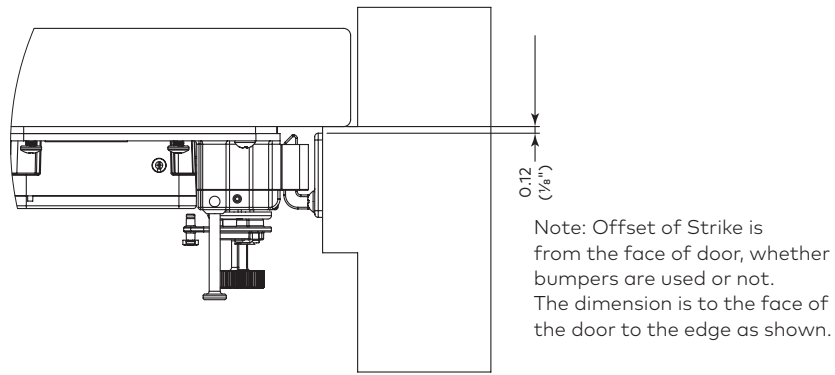
8 Install DKX Series Lock Strike

NOTE: It is recommended to install the DKX Series Strike (Type 2) first, followed by the Lock installation, relative to

THE Strike.

1. Locate the Strike horizontal centerline off of the Lock horizontal centerline, reference the Installation Template (546.0117), 9" above the Panic Bar horizontal centerline, and mark a horizontal line on the Strike mounting surface.
2. Position the Strike edge, $\frac{1}{8}$ " (.12") away from the face of the door while flat against the Strike mounting surface (Figure 3) centered on the horizontal centerline. The Qty.-2 Shims (515064) can be used for the .12" spacing, they are each .060" thick, two is .12").
3. Mark lines, and/or scribe the centers of the two slotted hole locations, mid slot. Now punch this center in preparation for drilling. Drill and tap the two slotted hole locations for attaching screws. (No. 25 drill, .149" diameter for the #10 thread forming screws. No. #21 drill, .159" diameter for the #10 machine screws).

Figure 3 - DKX Series Installation



4. Mount the Strike to the door jamb face using two (2) of the #10 flat head (115032) screws for the two (2) slotted holes.

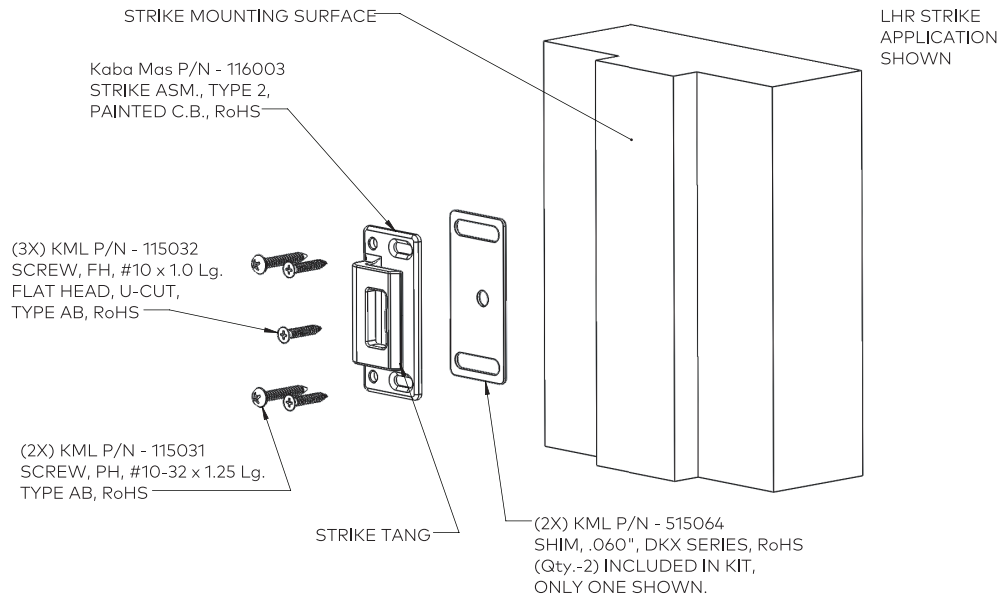


Figure 4

9 High Security Pedestrian Door Lock Installation (DKX-10)

NOTE: Refer to S&G 2740B Installation Instructions when installing the DKX-19.

WARNING: The electronics in the X-10 are susceptible to damage from Electro-Static Discharge (ESD). Ensure proper grounding.

ALTERNATE METHOD: Depending on the width of the door, it may be easier to insert the non-flared end of the outer tube through the spindle hole from the inside of the door and feed the cables through the tube, and then seat the flared end of the tube on the tube retainer.

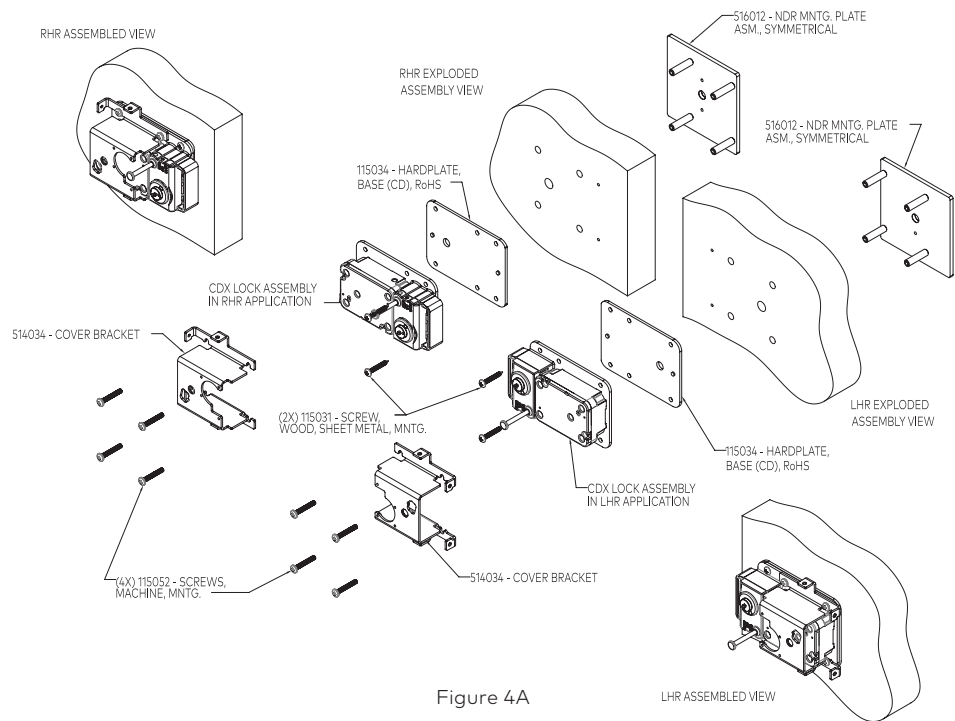


Figure 4A

1. Place the 3.5" x 5 x 1/8" hard plate against the back of the DKX Series lock case assembly.
2. Feed the cables and outer tube through the 0.5" hole in the door while positioning the DKX-10, hard plate, and Cover Bracket (**515034**), oriented correctly as shown in above illustration, against the door. Insert and slightly tighten two of the #10-32 machine screws (**115052**) (top and bottom, diagonal) to attach the DKX-10, hard plate and Cover Bracket (**515034**) to the door.

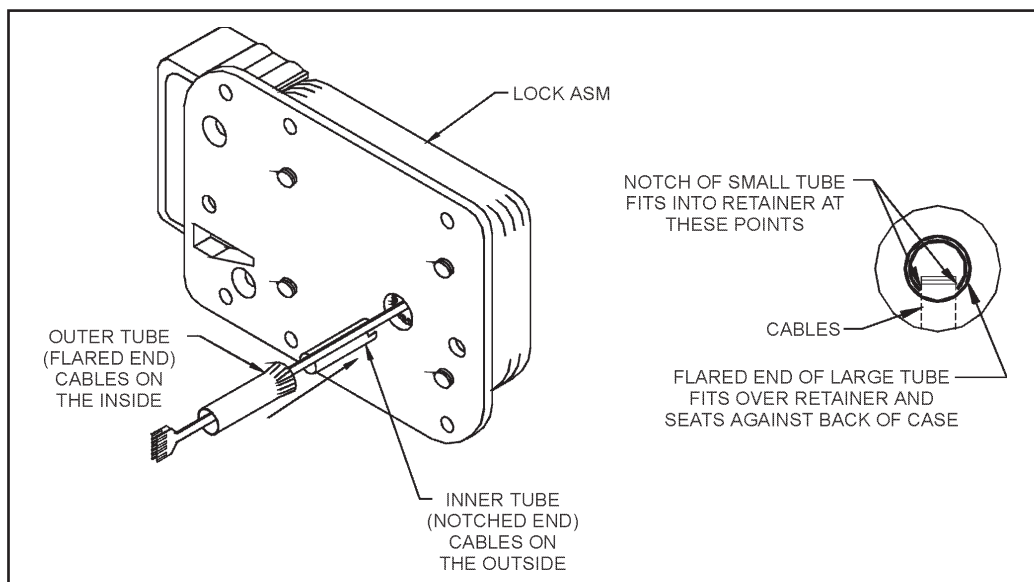


Figure 5 - Tube-Cable Assembly Relationships

HELPFUL HINT: If available, another inner tube inserted from the dial ring side, with the cables carefully fed through it, can be very helpful as a guide in feeding the cables through the door face.

3. Upon locating the Lock Assembly correctly, install the two remaining machine Screws (**115052**). With all four machine screws in place, and the Lock assembly located correctly, tighten all four screws to keep the assembly in place.
4. When sure the position of the lock is complete, install the two remaining mounting screws (**Sheet Metal/Wood_115031**) nearest the strike opening (top and bottom) to attach the DKX-10 assembly to the Door Panel.

10 Cutting the Tubes

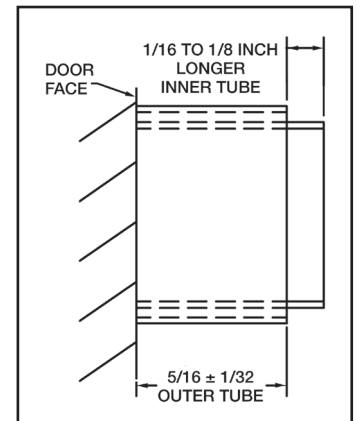
WARNING: The end of the large tube that is to be discarded must be from the plain (un-flared) end of the tube. The end of the small tube that is to be discarded must also be from the plain (un-notched) end of the tube.

1. Make sure that the outer tube is properly placed over the lock case tube retainer.
2. While holding the outer tube firmly in its seated position, use a 6" scale or ruler to measure $5/16"$ from the door face and mark the outer tube at this length.
3. Remove the lock case assembly from the door and remove the outer tube for cutting.
4. Assemble the saw blade and wooden saw handle provided. To assemble the saw, grip the saw frame in a vise, just below the neck. Drive the handle fully onto the neck. This will reduce the tendency of the handle to turn on the saw frame when sawing.

NOTE: This saw is intended only for cutting the tubes. A standard hacksaw should be used to cut the spindle.

5. Insert the tube to be cut into the rubber vise clamp (provided), with the mark just beyond the clamp. Then firmly clamp the rubber vise clamp in a vise. Use the saw to cut the tube where marked. Be careful to keep the cut as straight as possible. Remember the saw only cuts when pushing. Trying to cut while pulling may pull the handle off of the saw blade.
6. The inside and outside of the tubes must be deburred after cutting. Use the stone which is provided for this purpose. Make sure there are no sharp edges on either tube inside and outside so as not to damage the cables.
7. Install the inner tube on the lock case. Feed the cables through the outer tube and install the outer tube on the lock case. Measure and mark the inner tube to be $1/16"$ to $1/8"$ longer than the outer tube. Remove the inner tube and cut by the same method as described in Step 5.

WARNING: The end of the outer tube that is to be discarded must be from the plain (un-flared) end of the tube. The end of the inner tube that is to be discarded must also be from the plain (un-notched) end of the tube.

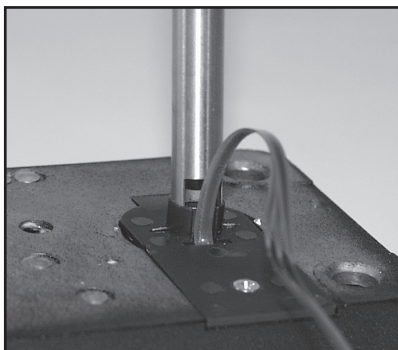


Inner and Outer Tubes

11 Installation of the Lock (Continuation of Step 9)

1. Place the inner tube into the lock case tube retainer. Ensure that the cutout in the tube aligns with the cables and allows the tube to seat completely in the tube retainer.
2. Refer to Figure 6. Feed the cables through the outer, larger, tube starting from the flared end of the tube. Seat the tube into position on the tube retainer on the back of the lock case assembly. Be careful to keep the cables pulled taut while seating the tube to avoid pinching damage to them.

ALTERNATE METHOD: Depending on the width of the door, it may be easier to insert the non-flared end of the outer tube through the spindle hole from the inside of the door and feed the cables through the tube, and then seat the flared end of the tube on the tube retainer.



Seat Inner Tube in Retainer

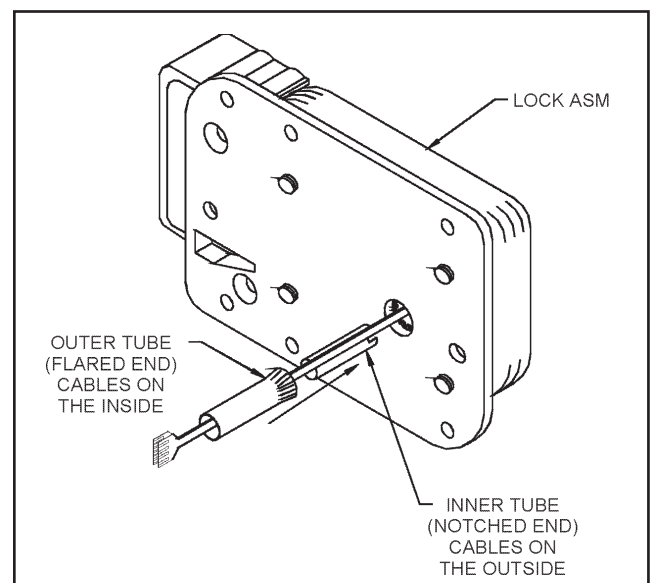


Figure 6 - Tube-Cable Assembly Relationships

3. Feed the cables and outer tube through the .500" inch hole in the door while positioning the DKX-10 and hard plate against the door. Insert and tighten slightly two #10-32 screws nearest the strike opening (top and bottom) to attach the DKX-10 and hard plate to the door.

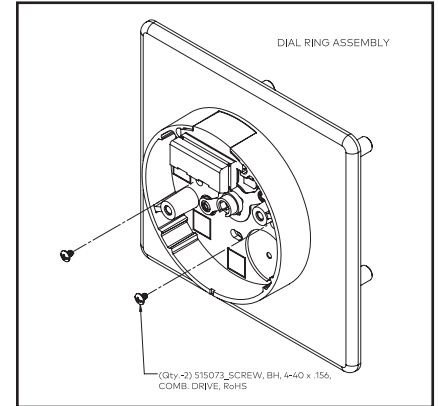
HELPFUL HINT: If available, another inner tube inserted from the dial ring side, with the cables carefully fed through it, can be very helpful as a guide in feeding the cables through the door face.

12 Installation of the Dial Ring

1. Remove the two screws from the dial ring assembly cover and remove the cover.

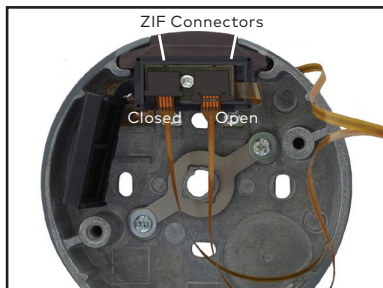
NOTE: Make sure the tubes are projecting through the door. If not, the tubes are not seated properly in the lock or they were not cut to the proper length. Correct the problem before proceeding.

2. If necessary, rotate the tube retainer in the dial ring so that the cables come through the notch in the tube retainer.
3. Feed the cables through the tube retainer on the dial ring assembly and place the dial ring assembly over the end of the tubes. Make sure the tubes are seated in the tube retainer on the dial ring assembly.
4. Attach the dial ring to the door with the dial ring mounting screws and tighten to the specified torque.



13 Installation of the Cables

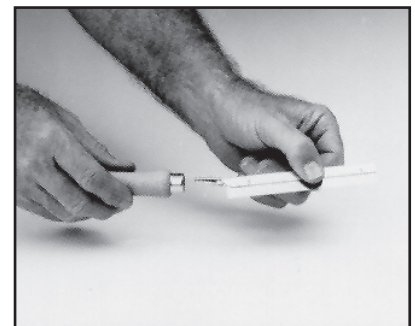
1. Open the ZIF (Zero Insertion Force) seal cover and move the ZIF connector locking actuators outward to their open position.
2. Plug the cables into the ZIF connectors with the bright metal tabs on the cables facing toward the circuit board to which the ZIF connectors are mounted. Push the cables into the connectors as far as they will go.



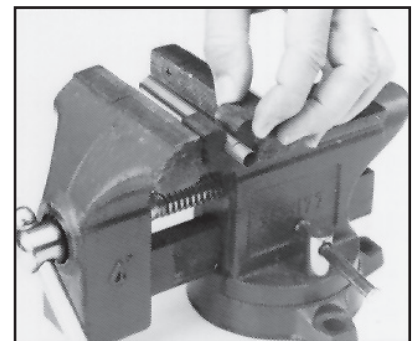
Closed & Open ZIF Connectors



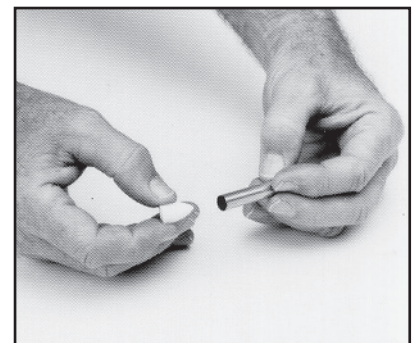
ZIF Seal Cover (shown closed)



Assemble Saw



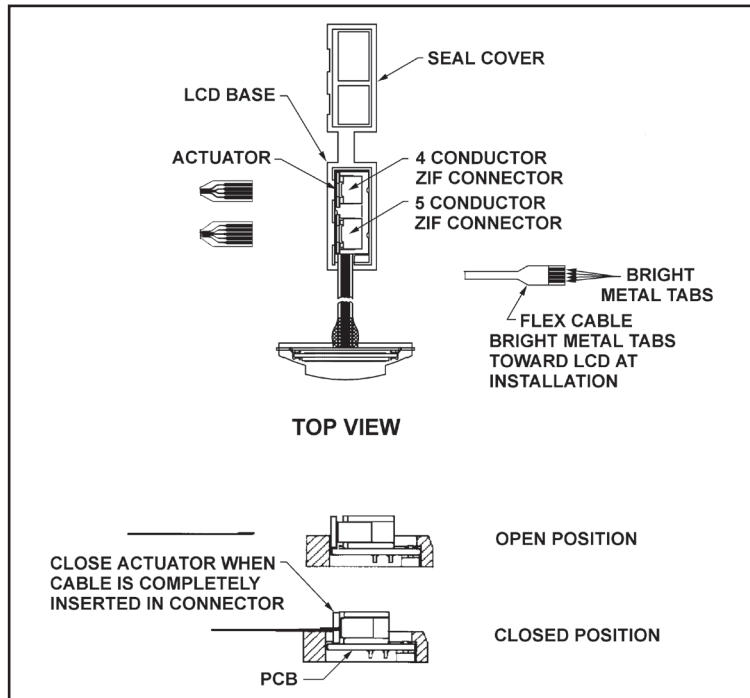
Cut Tube Using Vise



Deburr Tubes

- Close the ZIF locking actuators to lock the cables in place.
- Close the ZIF seal cover. When closing, be sure the tenons in the seal cover align with the holes in the coordinating piece of the seal cover.

LCD and ZIF connectors

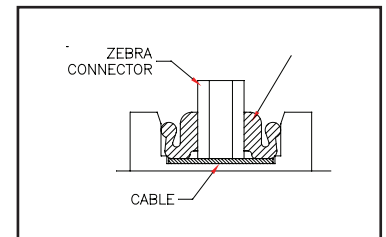


14 Installation of Generator Cable and Cable Guides

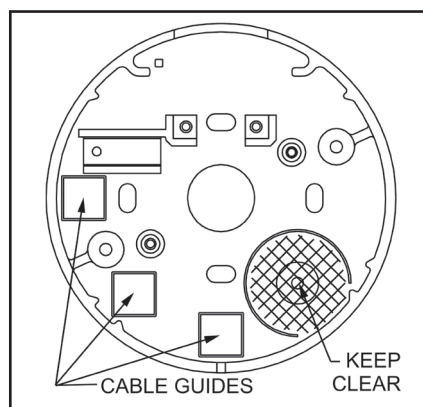
- Place the generator cable into the dial ring housing recess containing a post used for positioning the cable. The hole in the cable must be positioned over the post on the dial ring, and the five gold tabs must be exposed.
- The Zebra connector and Zebra connector housing are assembled at the factory but may come apart during shipment. If so, insert the Zebra connector back into the Zebra connector housing before proceeding.

CAUTION: The Zebra connector is an electrical connector. Keep it clean!

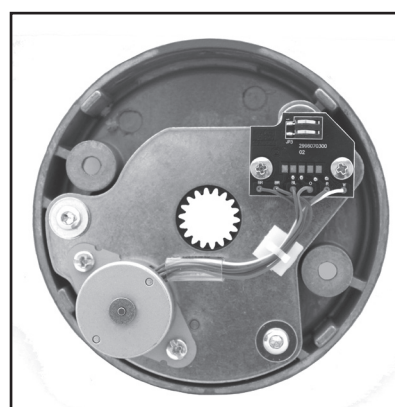
- Place the generator Zebra connector and connector housing assembly over the generator cable, and press it into the recess. The hole in the Zebra connector housing must be positioned over the post in the dial ring. Be sure that the black Zebra connector housing is positioned.
- Install at least one of the stick-on cable guides in an appropriate position to restrain the cables.
- Route the cables through the cable guide that was just installed.
- Depending on the thickness of the door, additional cable guides may be necessary to ensure the cables are sufficiently restrained. Install additional guides as needed, and route the LCD and generator cables through them to ensure that the cables do not get routed through the "KEEP CLEAR" area, over the Zebra connector, or near where the geared end of the dial hub will project through the dial ring cover.



Zebra Assembly



Cable Guide Locators



Dial Ring Cover

15 Installation of the Dial Ring Cover

1. Align the dial ring cover with the dial ring so that the generator will seat into the five o'clock position and the four aligning lugs align with the corresponding slots in the dial ring.
2. Carefully slide the dial ring cover into the dial ring.
3. Hold the dial ring cover in place and tighten the two dial ring cover mounting screws to the specified torque.

16 Cutting and Installing the Spindle

1. Ensure that the lock bolt is extended and remove the cam from the lock case.
2. Slide the dial hub onto the spindle, turning the hub slightly to align the generator drive gear teeth. Hold the drive cam assembly in place while installing the dial hub.
3. Snug down one setscrew to hold the dial hub in place.
4. Mark the spindle flush to the dial hub.
5. Loosen the setscrew and remove the hub.

ALTERNATE METHOD: The hub may be left on instead of removed, and used as a vise to hold the spindle while cutting.

8. Carefully cut the spindle so that it will be flush to the dial hub after installation.
-

CAUTION: The spindle should not extend past the dial hub once installed but may be recessed up to 1/32" below the surface of the hub. If it extends past the dial hub, it must be filed to flush.

9. Remove all burrs from the end of the spindle.

17 Installation of the Dial Hub and Dial

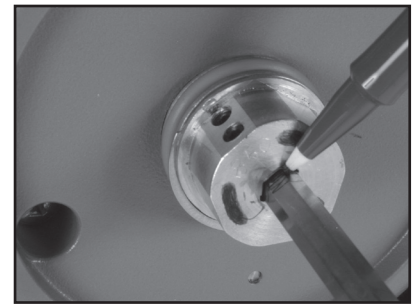
1. Apply lubricant to the hub bearing surface.
2. While holding the drive cam and spindle in their proper positions in the lock case assembly inside the door, push the dial hub assembly onto the spindle.
3. Make a bend in the dial hub locating gauge at its midpoint. This will keep it from acting as a spring as the hub is positioned for locking to the spindle.
4. Place the Dial Hub Locating Gauge over the spindle and between the dial hub assembly and the bushing in the dial ring cover. This sets up an initial 0.010" end play.
5. Push the dial hub and the spindle assembly toward each other. While maintaining a constant pressure on them, SECURELY tighten the setscrews in the dial hub assembly to 17-20 inch-pounds of torque (a minimum of 1" deflection of the handle of the hex key). Tighten the inner setscrew first.

CAUTION: Tighten in a downward motion in case the hex key should break.

6. Remove the dial hub locating gauge.
7. Apply lubricant to the retaining ring on the dial hub assembly and position the retaining ring so that an equal amount of it is consistently exposed around the hub. Also apply grease from the lubricant tube to the entire ramp area just inside the back of the dial and also to the inner surface of the 5-sided formed clutch spring within the dial.

NOTE: Ensure that the retaining ring gap is aligned with the setscrews and that an equal amount of the retaining ring is exposed around the hub so the dial can slide easily into place on the hub without interference from the retaining ring.

8. Ensure that the 5-sided flat spring is fully recessed in the dial with the spring gap aligned with the internal key of the dial.
9. Carefully align the dial assembly so that the 5-sided formed spring matches the flats of the dial hub assembly. Holding the dial square to the spindle, apply pressure to the dial until the retaining ring seats in the dial.

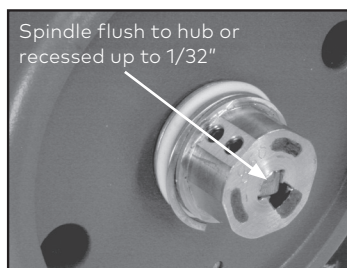


Mark Spindle Flush to Hub

NOTE: The dial should not be able to be pulled away from the dial hub assembly. The dial clutch should provide a slip torque of 7 to 25 inch-pounds.

2. Verify the operation of the lock as described on the following page under Installation Completion Checklist.
3. Check the operation of the lock by verifying the following:

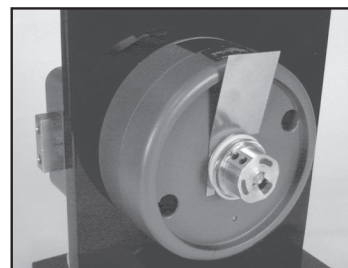
- Ensure that the dial turns freely without scraping or binding.
- Ensure that all screws have been securely tightened.
- Dial the combination (it has been factory set to 50-LEFT, 25-RIGHT, 50-LEFT). The lock should dial freely without scraping or rubbing and should open when the correct combination has been dialed.



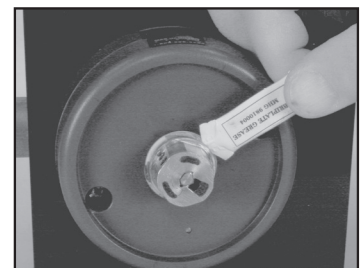
Spindle Flush or Recessed



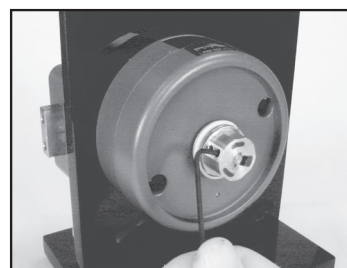
Apply Lubricant to Hub



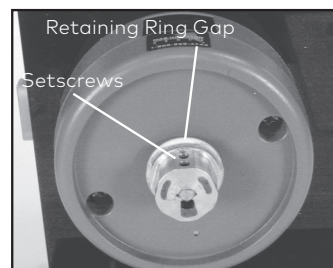
Place Gauge Between Dial Hub & Bushing



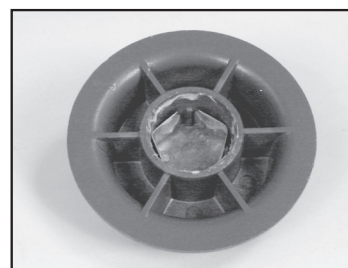
Apply Lubricant to Ret. Ring



Tighten Setscrews



Align Retaining Ring



5-Sided Flat Spring in Dial



Apply Pressure to Dial

Interface Hardware (DKX-10 and DKX-19)

Cable Assemblies

These steps describe how to attach the rod end connector (**515040** or **515029**), Figures 7 and 8, and stainless steel mechanical cable assembly (**116036**) to the lock and Rim Exit Device chassis. It also describes how to connect the cable assembly, and adjusting the cable length to achieve proper timing of the high security lock bolt retraction relative to the Rim Exit Device latchbolt.

18 Install Knob Lever Assembly

1. With the Lock Assembly and the Cover Bracket_ (**515034**) successfully installed, the Knob Lever Assembly must be attached.
2. Align the "Double D" Hole in the Knob Lever_ (**515027**) with the "Double D" protrusion on the Knob Assembly_ (**116035**), and push the Lever Knob_ (**515027**) onto the Knob Assembly_ (**116035**).
3. Align the Screw Hole in the Manual Knob_ (**515043**) with the hole in the Knob Lever_ (**515027**), and hold into slotted position.
4. Place the provided Screw_ (**515044**) through the Hole in the Manual Knob_ (**515043**) and screw the full Assembly into position. Tighten to a minimum of 15 in.-lbs.

DKX Series Knob Lever Assembly (Same for both RHR and LHR Applications). RHR shown.

Reference - (**515045_Nameplate**), Manual O/R Knob, DKX Series, RoHS - Not Shown
See Instruction Step #21 (Last Page) for Nameplate Installation

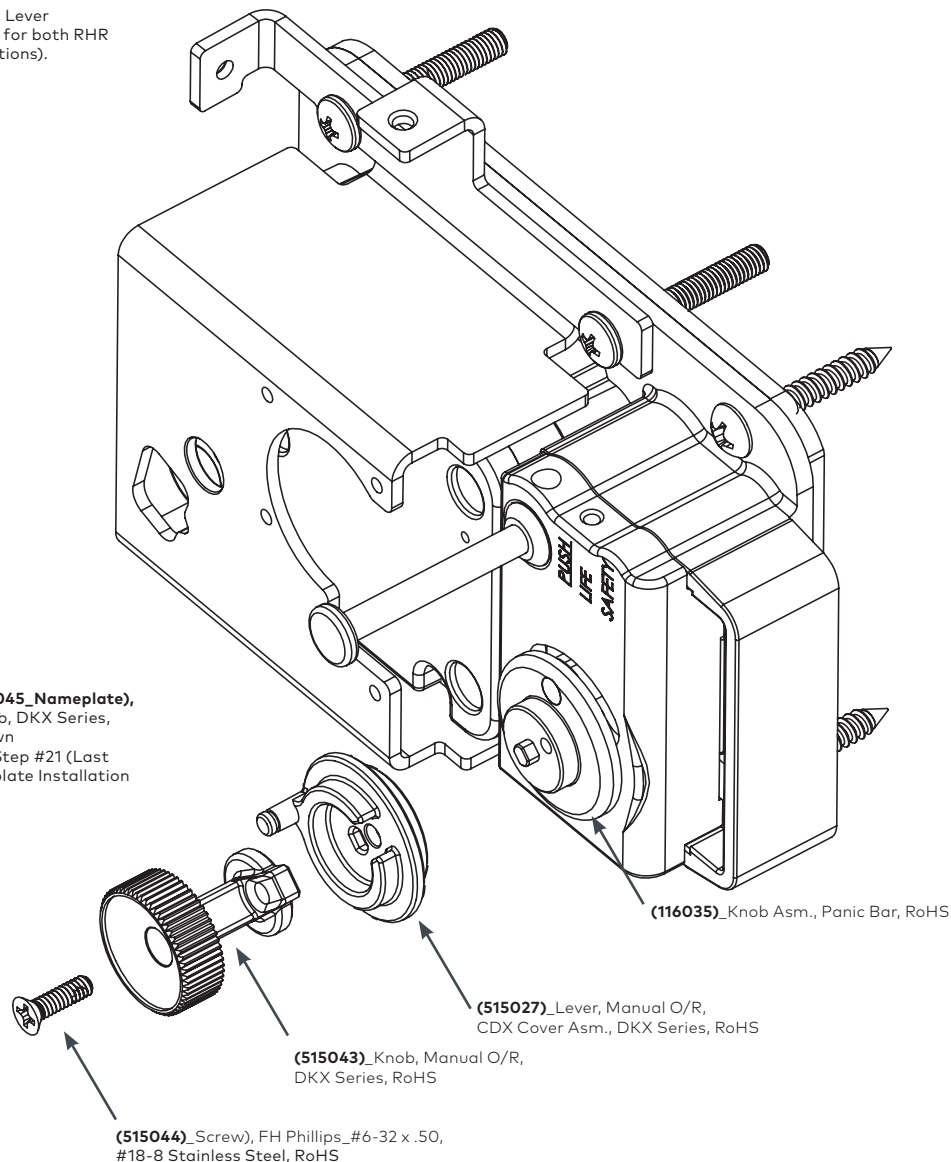


Figure 6

19 Install Lock Cable Assembly

1. Ensure correct assembly of the Rod End Connector (**515040** or **515029**), Jamb Nut (**115123**) and Cable Assembly (**116036**).

NOTE: Do not tighten the Jamb Nut Down on the Connector Rod until the optimum timing is achieved in opening the DKX-10 or DKX-19 high security lock

2. Attach this subassembly to the Cam Lever (**515027**) with the Retaining Clip (**515041**).

3. Refer to Figure 7 or Figure 8 depending on the handing of the installation.

Use lubricant (**9810004**) to adequately grease all moving parts. on both RHR and LHR cable/cam and levers. A generous application of grease is recommended.

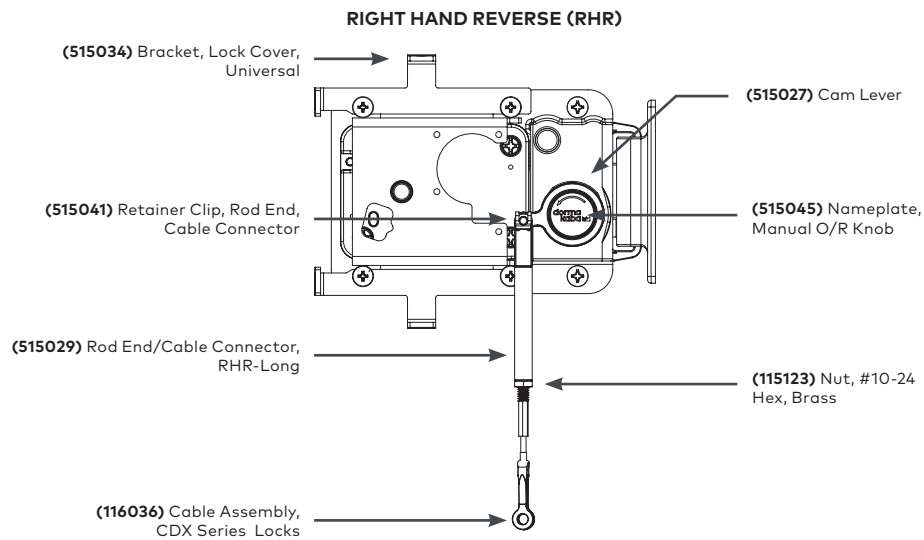


Figure 7

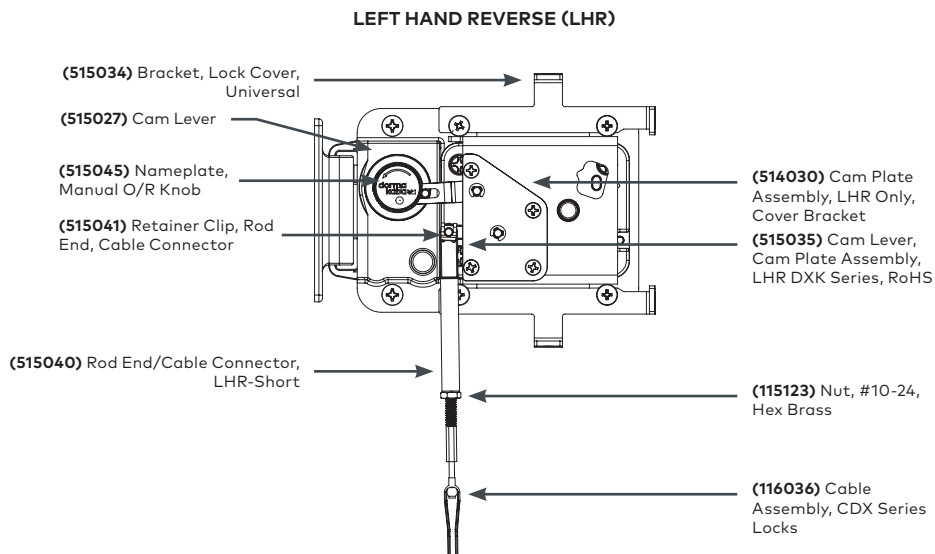


Figure 8

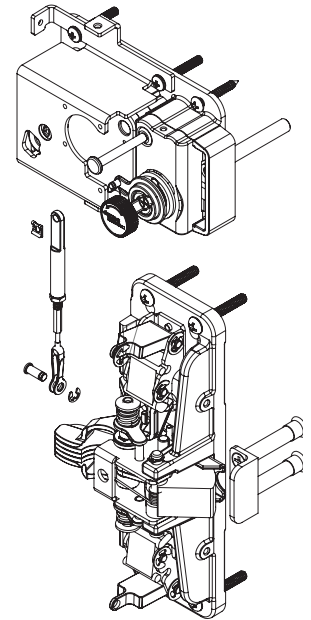


Figure 8 (RHR Application Shown)

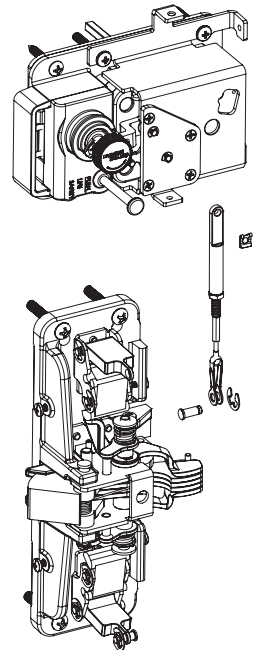


Figure 8 (LHR Application Shown)

Install Cable Assembly

1. Locate the cable assembly (**514040**), which has a strap fork (Clevis) secured by a ball and shank on one end and a brass threaded (**#10-24**) plug with a brass nut (**115123**) on the other end.

2. Refer to Figure 7 or Figure 8 depending on the handing of the installation. Spread the (Clevis) strap fork over the upper Lever Arm (**DK9300-020-520**) of the Rim Exit Device chassis and align the strap fork holes with the hole in the (Clevis).

- Secure the (Clevis) strap fork to the Lever Arm (**DK9300-020-520**) Pivot Pin (**6400-127-400**) and the "C"-Clip (**337-110**).
When the correct timing is achieved, tighten the Lock Nut (**115123**) down on the Connector Rod (**515040**), see next instruction.

Connect Cable Assemblies

- Refer to Figure 9 or Figure 10 depending on the handing of the installation. Move the brass jamb nut (**115123**) away from the open end of the brass threaded plug on the cable assembly (**116036**). Turn the brass threaded plug into the turnbuckle on the lock cable assembly until approximately half of the threaded plug is inside the turnbuckle.
- DO NOT tighten the brass nut on the threaded plug at this time.

Adjust Cable Length

The effective cable length may be changed by turning the brass threaded plug into and out of the turnbuckle. The cable length must be adjusted so that as the push bar of the Rim Exit Device is depressed, the DKX Series bolt is fully retracted and latched back just before the Rim Exit Device latch bolt clears its strike. Refer to Figure 9 and Figure 10 in preparation for adjusting the cable length. The proper sequence of adjustment is:

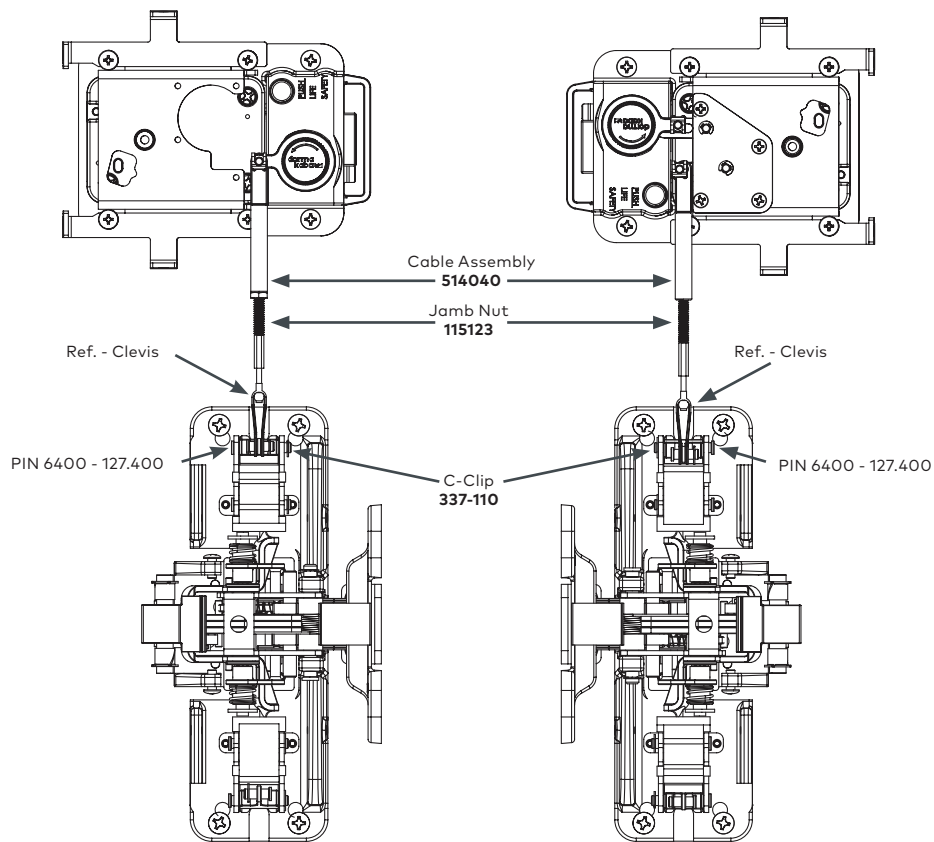


Figure 9 - RHR

Figure 10 - LHR

- With the door open, slowly depress the push bar and determine if the DKX Series bolt retracts and latches back prior to maximum depression of the push bar. If the DKX Series bolt does not retract and latch back, slightly shorten cable and recheck.
- Close the door and slowly depress the push bar until the Rim Exit Device latch bolt just clears its strike. Check to see if the DKX Series bolt is fully retracted and latched back at this point.

If not fully retracted and latched back: Shorten the cable length until the DKX Series bolt retracts and latches back just before the Rim Exit Device latch bolt clears its strike.

If fully retracted and latched back: With the door open, depress the push bar until the DKX Series bolt retracts and latches back. Depress the DKX Series bolt reset latch to allow the DKX Series bolt to extend. Check to see if the pulley restores clockwise sufficiently to prevent the DKX Series bolt from being pushed back. (A thin-blade screwdriver may be inserted between the end of the bolt and the bolt guard for the purpose of pushing back on the bolt.) If the DKX Series bolt can be pushed back, slightly increase the cable length and recheck the DKX Series bolt latching status by following the directions in Step 2 above.

3. Finger tighten nut. Then using wrench tighten down nut 1/8-1/4 turn max (30-40 in-lb). Do not exceed 50 in-lb, may result in failure.
4. Adjust the DKX Series strike so that the throat of the strike has minimum clearance of the bolt guard when the door is contacting the jamb.
5. Assuring no load on the DKX Bolt, from the strike (there should be no touching of the bolt against the strike), mark and transfer punch the remaining (3) screw locations for the DKX Series strike. Then install the remaining (3) screws. Ensure proper and correct function/location of both lock systems.
Ref. – (2) #10 pan head screws (115031), and the (1) #10 flat head screw are remaining.
6. Again, ensure proper function of all lock systems before continuation of cover installation.

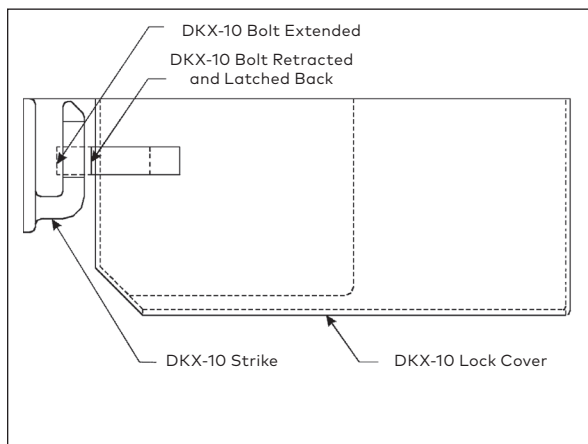


Figure 11 - Position of DKX-10 Bolt Fully Retracted and Latched Back (Top View LHR Shown)

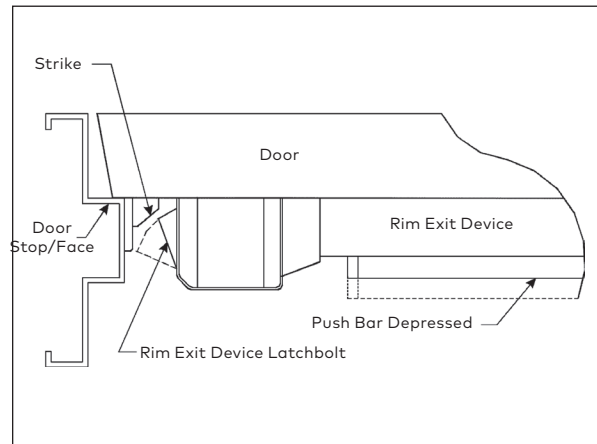


Figure 12 - Position of Latchbolt Just Prior to Clearing Strike (Top View LHR Shown)

Covers

20 Install Chassis Cover

1. Locate the chassis cover and plastic cover insert.
2. Orient the chassis cover as it will be installed, based on door handing, and slide the plastic cover insert into the bottom of the chassis cover.
3. Position the chassis cover over the Rim Exit Device, aligning the cover cutouts to fit over the chassis. Locate the cover flush to the surface of the door and bias the cover away from the door edge.
4. Secure the chassis cover to the Rim Exit Device chassis using four (4) #8-32 x 5/16" PHMS (105034) screws.

21 Install Lock Cover

1. Locate the correct lock cover based on door handing. (Both a RHR and a LHR lock cover are included in the Rim Exit Device box.)
2. Position the lock cover over the lock cover mounting brackets. Locate the cover flush to the surface of the door and bias the cover away from the door edge.
3. Secure the lock cover to the lock cover mounting brackets using four (4) #8-32 x 5/16" PHMS (105034) screws. See Figure 13.

22 Install Manual O/R Knob Label

Upon completion of the DKX Lock and Exit Device installation, acquire KML P/N **515045** Nameplate Label. Remove paper backing, orient correctly, locate concentrically while applying pressure to adhere the label to the knob.

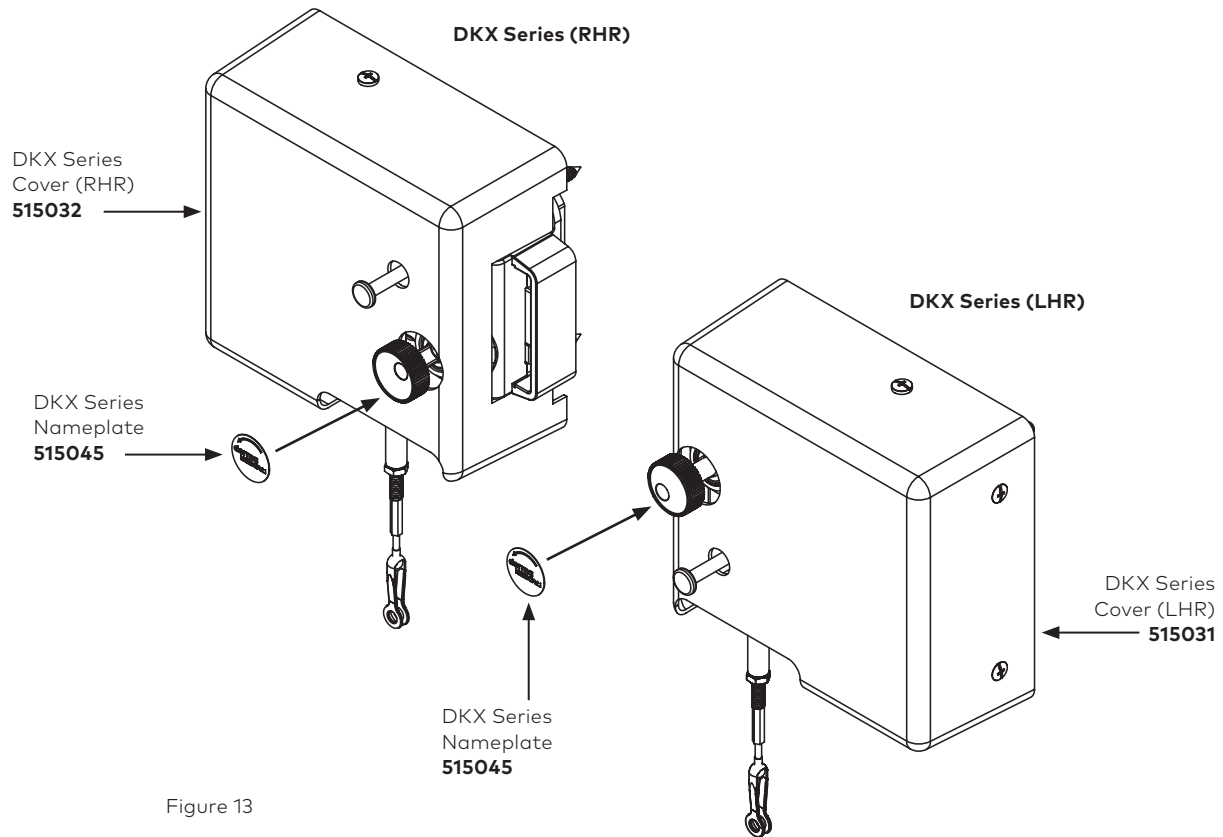


Figure 13

Maintenance

The DKX lock systems are designed to provide years of trouble free service. However, depending on installation environment, climate conditions and alike, routine maintenance is recommended in all latch bolt locations. The device should be cleaned periodically and re-lubricated with Dura-Lube or equivalent and the cable adjusted if necessary to insure proper operation of all functional parts.

9000 SERIES ELECTRIC TRIM INSTRUCTIONS

Specifications

Requires Dorma ES-100 Power Supply. (Use largest wire possible when wiring power supply and trim.) Power supply will handle two (2) pieces of electric trim. Supplies 4 amp in-rush.

NOTE: This product requires 24VDC.

All electric trim is "09" function. Key removable only when locked. Continuous Duty .15 amp hold @ 24VDC.

LFSC - Electric Unlock Fail Secure See next page for typical wiring diagram.

LFSS - Electric Lock Fail Safe Use caution during installation so wires do not get pinched. (See details below.)
(Must be ordered per function from factory.)

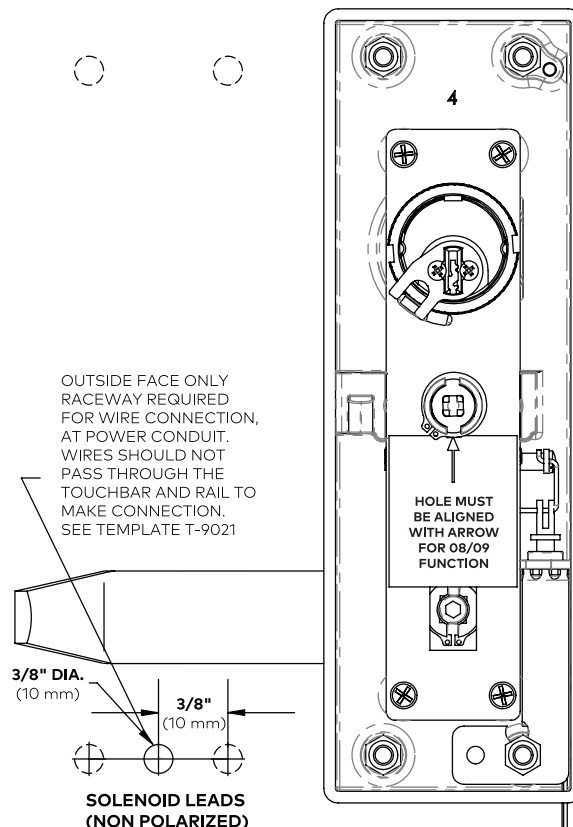
NOTE: Ref. Template T-9021 for door prep.

Wire Gauge Chart (AWG) • Distance in feet for 2 conductors from power source to the locking device											
AMPS	25	50	75	100	150	200	250	300	400	500	1000
.25	18	18	18	18	18	18	18	18	18	16	16
.50	18	18	18	18	18	18	18	16	16	14	
.75	18	18	18	18	18	16	16	14	14		
1.00	18	18	18	18	16	16	14	14			
1.50	18	18	18	16	16	14					
2.00	18	18	16	16	14						
2.50	18	18	16	14							
3.00	18	16	14	14							
3.50	18	16	14								

**Minimum Wire Gauge
for 24V AC/DC**

LFSC

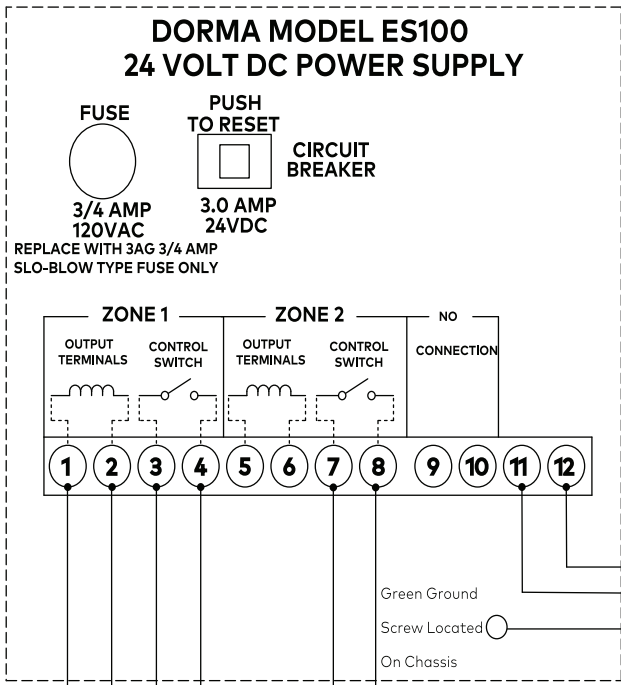
When solenoid is energized, trim remains in unlocked position. If power is interrupted, i.e., fire alarm is activated, solenoid is de-energized and trim is set in locked position.



TYPICAL WIRING INSTRUCTIONS

9000 SERIES ELECTRIC TRIM

This is a basic wiring diagram. For additional wire diagrams or project specific diagrams contact the DORMA technical service department at 1-800-523-8483.



CAUTION:

TURN OFF 120VAC POWER PRIOR TO MAKING ANY CONNECTIONS TO TERMINALS.

From UPS
Power Source
120 VAC
POWER LINE
(1.0 AMP MAX.)

WHITE (NEUTRAL)
BLACK (HOT)
GREEN (GROUND)

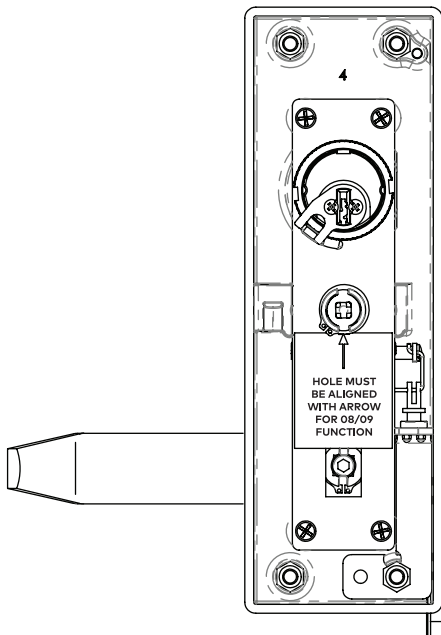
Green Ground
Screw Located
On Chassis

N.O. Contacts
for switching of
trim solenoid.

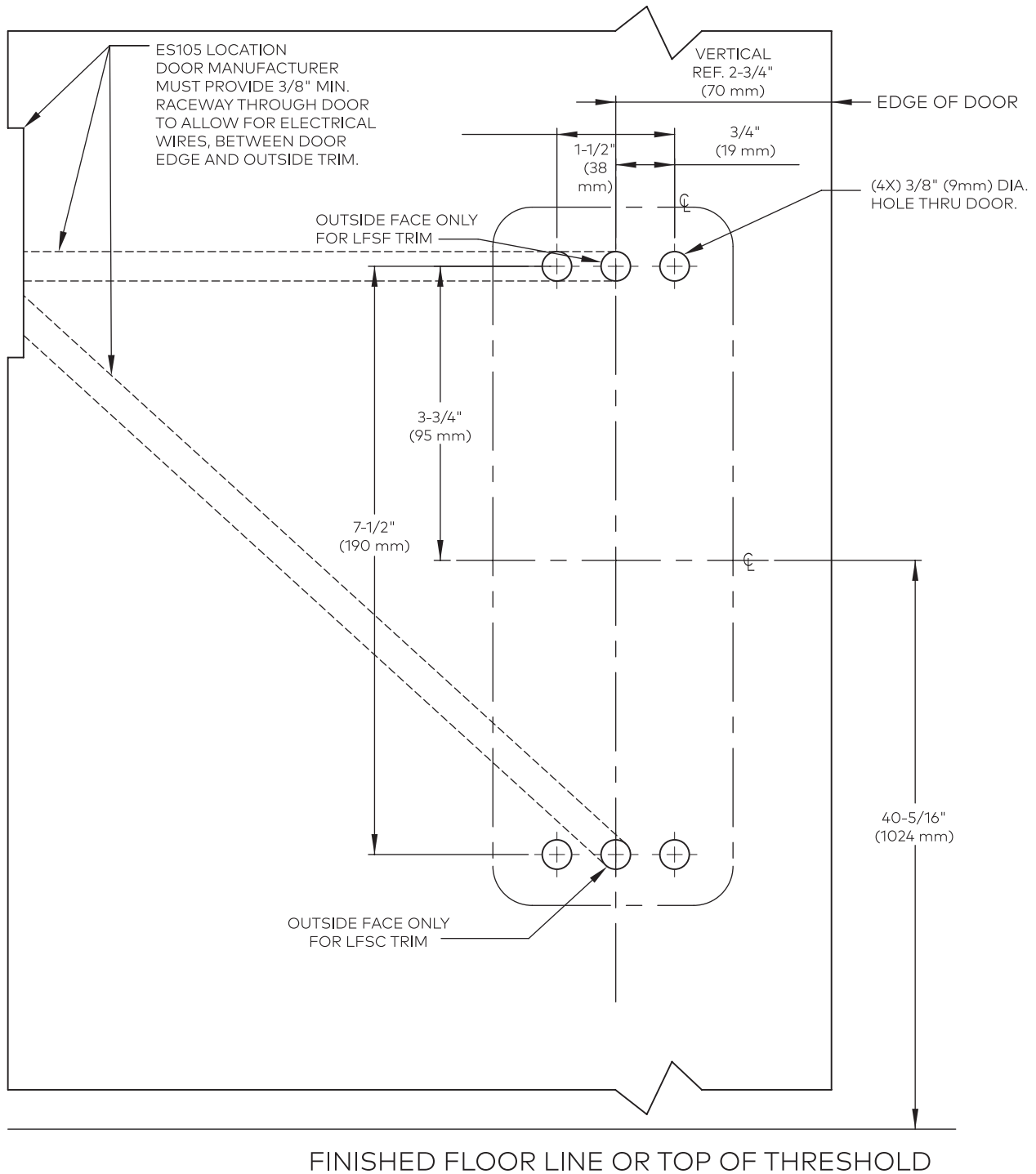
N.O. Contacts
for switching of
trim solenoid.

LFSC

When solenoid is energized, trim remains in unlocked position. If power is interrupted, i.e., fire alarm is activated, solenoid is de-energized and trim is set in locked position.



RHR Shown
(LHR Opposite)



NOTES:

- 1) SEE MASTER SHEET #T-0001 FOR SUGGESTED DOOR REINFORCEMENT.
- 2) SEE ADDITIONAL TRIM TEMPLATE WHEN REQUIRED.

LFSC or LFSF Function
Additional Raceway Prep

Kaba Mas LLC
1051 Newtown Pike, Ste. 150
Lexington KY 40511
T: 859 479 1329
F: 859 303 8993