INSTALLATION GUIDE

ILCO Generation E-760/770/790 Series
Retrofit Installation Guide - Unican System 700 to E-760/770/790
Each Generation E-760/770/790 retrofit kit for Unican System 700 locks includes:

(A) Outside lever handle for electronic override
(B) Outside housing for electronic override
(C) Battery holder with 3 AA batteries
(D) Inside trim assembly
(A1) Outside lever handle for key-in-knob mechanical override
(B1) Outside housing for key-in-knob mechanical override

Parts inside hardware bag:

(C1) Cylinder plug
(D1) Cylinder
(E) Thumbturn (hex) spindle
(E1) Cylinder Cap
(F) Compression spring
(G) Short square half-spindle (with slotted head)
(H) Long square half-spindle (with tapered end)
(I) Torx-head screw
(J) 3 x mounting screws (10-24, 1/8" hex head) or 12-24, 1/8" hex head for recent model only
(K) 1 extension spring
(L) Additional parts for Office or Storeroom function mortise

Parts available separately:

(M) Replacement strike and mounting screws
(N) Light duty drilling jig (part #138-51093)
— Paper drilling template

Tools Required

Safety glasses
1/8" hex (Allen) key
1/16" hex (Allen) key
3/32" hex (Allen) key
Small flat screwdriver
Torx screwdriver (T-15)
Phillips screwdriver (#2)
1/2" drill bit
Drill
Awl or center punch (if using paper template or mechanical override)
Clamp (if using metal jig)
Cleaning supplies

⚠️ For doors more than 2½" (63.5mm) thick, order the appropriate hardware bag to receive the correct length of spindles and mounting screws.

⚠️ For outdoor installations, order outdoor gasket 033-510181-1 for E-760. For 770/790 Series order gasket 033-512017-1

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ASM Office: Use L3, L4
ASM/ESM Storeroom: Use L2, L4

Install L3 on L4, then slide both parts onto the thumbturn together.
Install L2 on L4, then slide both parts onto the thumbturn together.
Target Audience

These instructions are designed for use by maintenance professionals or lock installers who are familiar with common safety practices and competent to perform the steps described. Kaba Ilco is not responsible for damage or malfunction due to incorrect installation, however arising.

Retrofitting a Unican model 700 lock with a new E-760/770/790 lock is a simple process of:

1. Removing the 700 series inside trim components and outside housing
2. Drilling 3 new mounting holes in the door
3. Installing the replacement strike (if desired)
4. Installing the E-760/770/790 series outside housing and inside trim assembly
5. Testing the E-760/770/790 lock
6. Programming the E-760/770/790 lock

Technical Assistance

For technical assistance, call: 1 800 906.4526 / +1 514.340.9025

Warnings and Cautions

Important: The mortise must be functioning correctly in order to install the E-760/770/790 lock. Before proceeding with these instructions, ensure the mortise is in good condition, or plan to install a new mortise. Test the auxiliary (anti-pick) latch and the deadbolt. The mortise should function smoothly and engage the strike with no excess friction.

Caution: Wear safety glasses when making the holes.
3 • REMOVE SYSTEM 700 COMPONENTS

1. Remove the battery cover (use a 1/16” Allen key to remove the retaining screw), and disconnect the battery cable.

2. Remove the inside lever handle and washer. Use a 3/32” Allen key to loosen the Domware screw.

3. Remove the trim plate. Gently pull the top of the trim plate away from the door with your fingers or a small screwdriver, then disengage the bottom of the trim plate from the support plate.

4. Remove the self-aligning mechanism (remove 2 screws). Remove the four screws attaching the support plate to the front housing, and remove the support plate from the door.

5. Remove the front housing from the door.

6. If participating in the North American buyback, pack all removed System 700 components for return shipment to Kaba Ilco.
Insert the metal jig spindles in the hubs on the mortise, so that the guides for the two holes are at the top, and the guide for the single hole is at the bottom. Drill the holes using a \( \frac{1}{2} " \) drill bit.

**Caution:** Wear safety glasses and clamp the jig securely when drilling. To avoid unsightly damage, drill holes half way through the door from the first side, then transfer the jig to the other side of the door to complete the drilling of the holes from the other side.

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**V INSTALL THE REPLACEMENT STRIKE**

If desired, remove the existing strike, and replace it with a new one. Retain the existing dust box.

**Ensure the new strike is an exact replacement for the old one and is properly adjusted so the mortise functions smoothly.**
1 Install the Outside Housing  (For E-760/770/790 with mechanical override see page 12)

Insert the slotted end of the short half-spindle (G) into the lever on the outside housing (at an angle of 45°), until it clips in place.

Insert the grooved end of the thumbturn spindle (E) in the upper hub of the outside housing. (It will clip in place.)

Place the outside housing on the door.

If installing the lock outdoors, use the Outdoor gasket 033-510181-1 for E-760 or 033-512017-1 for 770/790 on the outside housing prior to assembly, aligning the notch in the gasket with the battery compartment. (For both E-760/770/790 electronic and mechanical override models)

2 Install the Inside Trim Assembly

Put the thumbturn (T) in a vertical position, and turn the lever to the appropriate horizontal rest position for the handing of the door. Install the tension spring (K) between the cam on the lever (X) and the bracket on the inside trim assembly (Y) (inset).

Insert a compression spring (F) into the lever handle hub, and insert the tapered end of the long half-spindle (H) in the latch hub.

Place the inside trim assembly on the door. Fasten the inside trim assembly to the outside housing using the three 10-24, 1/8" hex head mounting screws (J) or 12-24 1/8" hex head mounting screws for recent locks.

For model E-761/771/791, the parts (L) must first be added to the inside trim assembly.

Follow the exploded views presented on page 3. Install only the parts indicated for the desired function (storeroom or office).
5 • INSTALL THE E-760/770/790 OUTSIDE HOUSING AND INSIDE TRIM ASSEMBLY

3 Install the Outside Lever

Assemble the lever on the outside housing, in the horizontal rest position appropriate to the handing of the door as shown. Simply push the lever onto the tube until it clicks in place. If more force is required, use a rubber mallet. Test the attachment of the handle by pulling smartly on it.

The lever is field reversible. If the handing is incorrect, insert a small pick or flat screwdriver in the hole in the hub as shown. Gently pry back the spring clip inside the hub, and remove the handle.

4 Install the Batteries

Three AA batteries should already be installed in the battery holder (C). Insert the battery holder into the outside housing and secure it using the 6-32 x 3/16" (7.9mm) Torx drive screw (I).

If the lock makes a continuous buzzing noise or the red LED lights continuously, reset the electronics by removing the battery holder for ten seconds, then reinsert it.

If installing the lock outdoors, use the Outdoor Kit (part #062-510180). Substitute the stainless steel battery screw for the screw provided with the lock. For weather conditions below 32°F (0°C), replace the batteries provided with the lock with lithium batteries (part #132-510183-K).

Warning! To avoid possible explosion and risk of injury or fire, double-check the polarity of lithium batteries.
6 • TEST THE OPERATION OF THE E-760/770/790 LOCK

Caution! Perform the following procedures in order, with the door OPEN unless otherwise indicated.

1 Inside Lever

Turn the inside lever downward. The latch bolt retracts fully.

If the lever feels tight (hard to turn, or does not return easily to its horizontal position), check the alignment of the lock assemblies. Loosen the mounting screws and shift the inside trim assembly slightly until the friction is eliminated. If the problem persists, check the position of the holes on the door (compared to the mortise).

2 Deadbolt

Turn the thumbturn back and forth. The deadbolt extends and retracts fully without undue friction.

Turn the thumbturn to extend the deadbolt again, then turn the inside lever. The deadbolt and the latch bolt retract simultaneously and fully without undue friction.

3 Outside Lever

Turn the outside lever downward. The latch bolt does not retract.

If the latch bolt retracts, verify that the batteries are properly installed.

If the lever feels tight (hard to turn, or does not return easily to its horizontal position), check the alignment of the lock assemblies. Loosen the mounting screws and shift the outside housing slightly until the friction is eliminated. If the problem persists, check the position of the holes on the door (compared to the mortise), and ensure the square spindle is not too long.

4 Electronics and Card Reader

Test the lock’s response to keycards: a Test keycard, a Grand Master keycard, and an Emergency keycard.

Insert keycards as shown below, with the magnetic stripe facing toward the door and to the left.

A Test the Lock Before Programming

Normal Entry: Verify that the deadbolt is retracted. Use the Test keycard in the reader. The red and green LEDs each flash once and then the green LED flashes for four seconds.

Turn the outside lever downward while the green LED is flashing. The latch retracts fully. Release the lever, then turn it again after the LED stops flashing. The latch must not retract after the LED stops flashing without first inserting the keycard.

Privacy Switch: Turn the thumbturn to the horizontal position. (On storeroom models, skip this test.) Use the Test keycard in the reader, but do not turn the lever. Instead of the normal sequence of indicator lights, you should see the following: The red and green LEDs each flash once and then the green LED flashes once, followed by the red LED flashing continuously for four seconds. If you see the flashing green LED, there is a problem with the privacy switch.

B Lock Programming

Program the lock with its room number (see Reference Manual).

Verify that the deadbolt is retracted, and use the Grand Master keycard in the reader. The green LED flashes for 4 seconds. Turn the outside lever downward while the green LED is flashing. The latch retracts fully. Release the lever, then turn it again after the LED stops flashing. The latch must not retract after the LED stops flashing without first inserting the keycard.

C Privacy Function (Lockout of Keycards)

Turn the thumbturn to the horizontal position for privacy.

Use the Grand Master Keycard in the reader. The red LED flashes once. Then, turn the outside lever downward. The latch does not retract.

D Emergency Keycard Access (Privacy Override)

Use the Emergency keycard in the reader. The red LED flashes for 4 seconds. Turn the outside lever downward while the LED is flashing. The deadbolt and latch bolt retract simultaneously and fully.

While standing outside the room, close the door and ensure that it is properly latched. Open the door using the Grand Master keycard using the same procedure.

5 Deadbolt Deactivation

A Deadbolt Deactivation by Thumbturn

While standing inside the room, close the door, and then turn the thumbturn to extend the deadbolt.

Turn the thumbturn to retract the deadbolt. Repeat several times.

B Deadbolt Deactivation by Lever

While standing inside the room, turn the thumbturn to extend the deadbolt.

Open the door by turning the lever. The deadbolt and the latch bolt retract simultaneously and fully. Take note of any excess friction, which might necessitate filing the strike (deadbolt area only). Repeat several times.
After retrofitting a door with an E-760/770/790 lock, transfer the security information from a neighbouring lock to the new lock by using the Reset Addresses function (see Reference Manual).

Resetting the addresses will ensure that all past lost and stolen keycards remain cancelled in the new lock, and will set the addresses for the Section, Floor, Group, Zone and Area sub-master level so that staff keycards in use at the property will have the same pattern of access to the door as before. This step makes the retrofit transparent, so that the lock accepts and rejects the same keycards as before.

Use the System 700 communication cable when reading the information from a System 700 lock, and the new E-760/770/790 communication cable when communicating with an E-760/770/790 lock.

When planning to retrofit a large number of doors, always ensure that each group of doors that shares the same pattern of sub-master levels has at least one functional lock from which to retrieve the information. Once the first E-760/770/790 lock in the group has received its programming, the source lock can be retrofitted, and the remaining E-760/770/790 locks can be programmed using the information from the first E-760/770/790 lock.

8 • OPERATING THE ELECTRONIC OVERRIDE

If the lock will not respond to any keycard (including the Emergency keycard), there are three options that should be attempted to open the door. In order, they are:

1. Verify the batteries, and replace them if they are providing less than 4 Volts total. Insert the Initialization keycard in the lock, then use the Emergency keycard.
2. Use the electronic override feature (requires FDU and communication cable).
3. Contact Technical Support for instructions on using the drill point.

Electronic Override Using the FDU

If the card reader fails, the E-760/770/790 lock can be opened using the FDU (Front Desk Unit). The lock must have been initialized by a valid FDU from the hotel where it is installed (i.e. with the correct internal and external hotel codes), before the electronic override can be used.

There are two possible security levels:

**Low security:** If an FDU with a software version lower than 6.5 overrides the lock, the lock audit records only the date and time.

**High security:** If an FDU with version 6.5 or higher software overrides the lock, the lock audit records the FDU number, the Authorization keycard number, the date and the time.

**Hardware Required:**
- Front Desk Unit (FDU), FDU to lock communication cable

**Minimum Authorization Keycard Required:**
- Programming Authorization (PA)
Steps to activate the E-760/770/790 electronic override:

1. Insert the communication cable into the lock. Wait 2 seconds, then connect the cable to serial port A of the FDU.

2. Press any key to activate the FDU, then swipe a PA or higher keycard through the FDU. If the green LED on the lock flashes once, disconnect the cable from Serial Port A, wait 2 seconds, and reconnect the cable.

Main Menu:
1 = Keycard
2 = Reset
?

3. Enter 4 to select the Programming Menu, then press <↓>.

Program
1 = A lock
2 = Another FDU
?

4. Wait 2 seconds. Enter 1 to select the Lock option, and press <↓>.

Enter Function
1 = Program Addresses
2 = Reset Addresses
?

5. Enter 6 to select the Override/Reset Time option, then press <↓>.

Ready to Override
or Reset Time
Strike a key,
or C to quit.

6. Wait 2 seconds, then press any key on the FDU to activate the electronic override.

Trying to establish link with lock
press any key to quit

7. The green LED on the lock should light. The following message should appear on the FDU screen immediately or within 2 seconds.

Communication Successful
Press any key to continue.

8. Open the door. You have only 4 seconds after this message appears to open the door.

9. Remove the communication cable from the lock.

Some messages on the screen may differ depending on the FDU version, but the menu choices are the same.
9 • Installing the key-in-knob mechanical override model

Parts and Tools List

Tools Required:

Cylinder (J, provided with lock) or equivalent (T) Small flat screwdriver (less than 1/8"

Diagram of lock:

(A) Lock housing (E) Drive tube (J) Cylinder
(B) Inside drive hub (F) Lever catch (K) Cylinder plug
(C) Nylon washer (G) Countersink (L) Override shaft
(D) Spring washer (H) Lever handle (M) Allen Key
(not for lever feel) (I) Cap (K1) Set Screw

Facing view of drive tube: (E)
9 • Installing the key-in-knob mechanical override model

1 Upon unpacking, the E-760/770/790 lock housing with mechanical override should look like the diagram below with:

(A) The small indents on the cross of the override shaft in line Horizontally
(B) The nylon washer and the spring washer (not for lever feel) on the drive tube
(C) The lever catch in the out position

Important: Assemble the lever, cylinder and lock components before affixing the entire unit to the door.

2 Preparing the outside housing for the installation of the lever handle

1. Insert the cylinder (J) to be used as a tool or equivalent tool to rotate the override shaft (L) and turn it clockwise until it stops so that the two small indents (M) on the cross are now vertically in line. (Fig.1)

2. Push in the lever catch (F) firmly. (see Fig. 2) to be flush with drive tube diameter.

Important: Assemble the lever, cylinder and lock components before affixing the entire unit to the door.
9 • Installing the key-in-knob mechanical override model

3 Preparing the lever handle and cylinder for installation

3. Insert the cylinder (J) without key (N) into the lever handle (H) (see Fig.3)

4. Insert plug (A) including Set Screw (K) into lever handle (H)

5. Insert key (N) into cylinder (J). Hold plug (K) in position. (See Fig. 5).

Caution: If the Lever is Not Assembled with the key in the position shown in Fig. 6 & Fig. 7, the inside mechanism of the lock could be damaged if the lever is rotated and forced.

4 Steps to attach the lever handle to the lock housing

*NOTE: the position of the key is very important

6. Right-handed Lever handle: Turn the key (N) approximately to 100° clockwise so that it is in the vertical position and the recess entry for key is in the top position. (See Fig. 6)

Left-handed lever handle: Turn the key (N) approximately to 100° clockwise so that it is in the vertical position and the recess entry for key is in the bottom position. (See Fig. 7)

Troubleshooting:

If you have assembled the lever and housing with the key (N) in the wrong position, the key (N) will get stuck. To remove the key (N), turn it so that it is in the vertical position and insert a small flat screwdriver (T) (see page 16 Fig.10A) into the hole under the lever handle to push Lever Catch (F) in (see page13 Fig.2). Remove key. If it is still stuck, turn the key 90° clockwise to the horizontal position and push the Lever Catch (F) in again with the small screwdriver (T). Remove key (N).
7. Fit the lever handle (H) onto the drive tube (E) see page 12. It should rest approximately 1/16" from the body of the housing. If not, wiggle and jiggle key (N) to align cylinder (J) with override shaft (L)(See Fig. 8)

If it can't be pushed that close to the housing, the lever catch (F) is probably not pushed in. Push it in. (see fig 2 page 13)

If the lever catch (F) is stuck, the override shaft (L) is in the wrong position. (see fig 2 page 13) The two small indents (M) on the cross of the override shaft (L) must be vertically aligned as in fig 2 page 13

8. Press the lever (H) firmly against the housing while turning the key (N) counterclockwise (this applies to both right-handed and left-handed locks) until it is in the horizontal position. (Fig. 9)

9. Remove the key (N). The lock will look as shown in Fig.10.

Gently check the rotation of the lever handle (H). It should easily rotate approximately 45º.

Troubleshooting:

Right-handed Lock: Turn the lever handle (H) clockwise without forcing it. If it stops at approximately 15º, it was not assembled correctly as shown in step 4 (Fig. 6 & 7) see page 14. Do not try to force it to turn. Release the lever handle (H). Insert the small screwdriver (T), page 16 into the small hole on the underside of the lever handle (H) and push in the lever catch (F) see page 17. Re-do steps 2, 3, 4 & 5.

Left-handed Lock: Turn the lever handle (H) counter-clockwise without forcing. The drive hub (B) (Fig.12 page16) should not rotate when the lever handle (H) is turned. If it does, it was not assembled correctly as shown in step 4 (Fig. 6 & 7). Release the lever handle (H). Insert the small screwdriver (T), page 16 into the small hole on the underside of the lever handle (H) and push in the lever catch (F). Re-do steps 2, 3, 4 & 5.
9 • Installing the key-in-knob mechanical override model

6 Verify the attachment of the lever handle

Very Important: To verify that the lever handle has been correctly attached to the housing:

10. Remove key (N)

11. Insert a small flat screwdriver (tool T, see page 12) into the hole on the underside of the lever handle (H) and push in the lever catch (F) see fig 10A.

12. Pull on the lever handle (H).

You should not be able to remove the lever handle (H). If it comes off of the housing, you did not assemble the lock correctly. Return to steps 2, 3, 4 & 5 and make sure that the lever (H) looks like Fig. 10 and repeat this verification process. (Step 6)

6a Adjust the lever feel

If applicable, to reduce the lever play, using the 5/64 allen key (P1), tighten the set screw (O1) while pushing the lever against the front housing. Make sure the lever rotates properly after tightening the set screw (O1) See fig 10B.

7 Test the movement of the lever handle (remove the key (N) in cylinder (J))

13. Turn the handle (H) clockwise (for a right-handed lock) or counter-clockwise (for a left-handed lock)

14. Release the handle (H) slowly. It should return freely to its horizontal position. (Fig.11)

8 Test the mechanical override function (Complete all tests in Section 4, pages 14 & 15 after lock is assembled on the door)

* This test can only be performed when the lock is not affixed to the door.

16. Without using the key (N), turn the lever handle (H) clockwise (for Right-handed locks) or counter-clockwise (for Left-handed locks). The inside drive hub (B) should not rotate when the handle (H) turns. (Fig. 12)

17. With the lever handle (H) in the horizontal position, insert the key (N) into the cylinder (J) and turn it clockwise until it stops. (This applies to both Right and Left-handed locks, see Fig.13)

18. Let go of the key (N), and again turn the lever handle (H) clockwise (for Right-handed locks) or counter-clockwise (for Left-handed locks). Now the inside drive hub (B) should rotate in the same direction as the lever handle (H) when it is turned. (Fig. 14)
9 • Installing the key-in-knob mechanical override model

Test the Mechanical Override Function (continued)

Verify the functionality of the override after the lock is installed on the door: (Door must be opened)

19. With the door open, insert key (N) in cylinder (J) and turn it clockwise until it stops.

20. Let go of the key (N) and turn the lever handle (H) (clockwise for right-handed and counter-clockwise for left-handed locks). The latch must retract.

21. Extend deadbolt and repeat the above operation (turn key (N) clockwise until it stops), latch and deadbolt must retract completely.

9 Cover the keyhole & cylinder with the cap

22. The cap (I) has a small groove on one edge (to allow ease of removal) this should be facing down. Insert bottom snap of cap (I), in handle hole below the cylinder (J). With a small screwdriver, push top snap of cap down while pushing the cap (I) into place to cover the keyhole (Fig. 15).

23. To remove the cap (I), insert a small flat screwdriver into the groove and gently pry the cap off, being careful not to damage it. (You may want to cover the bottom of the lever to protect the finish from being scratched through the process of removing the cap). (Fig. 16)

10 How to change lock cylinders

23a. Loosen the set screw (01) to free the lever using Allen Key (P1) (Approx. 1/4 turn).

24. Remove the cap (I) from the lever handle (H) (see step 23, Fig. 16).

25. Insert key (N).

26. Turn the key (N) clockwise until it stops.

27. Release key (N).

28. Use a small flat screwdriver to push in the lever catch (F) through the small hole underneath the lever handle (H) (Fig. 17).

29. Pull the lever handle (H) off of the lock housing (be careful not to lose the cylinder plug (K) see page 12).

30. Replace the old cylinder with the new one in the lever handle (H). Only same kind of cylinder with 2 grooves in cross, in the end of the cylinder plug could be used on the E-760/660/770/790 Series locks. (Fig. 18)
How to change lock cylinders (continued)

31. Re-insert the cylinder plug (K) (Fig. 19)

32. While holding the cylinder (J) and plug (K) in place, insert the key (M)

33. Turn the key (M) approximately 100º clockwise

34. Repeat the steps 1 to 9 to attach the lever handle (H) to the lock housing. (see Fig. 20)

Preparation the lever handle for Best Removable Core

F-5 Insert 6-pin Best adapter (thicker) into 6-pin removable core or insert 7-pin Best adapter (thinner) into 7-pin removable core. Insert the adapter until it makes contact with the removable core.

F-6 Using the control key, assemble the removable core with its adapter into the lever. Remove control key.

F-7 Insert the change key into the removable core.

Follow the rest of instructions from step 3.5 of page 14
9 • Installing the key-in-knob mechanical override model

The Recodable Cylinder with 3 different keys (for E-760/770/790 Series with override only)

Important: Read the following instructions before using any of the 3 keys supplied (Shown in Fig. 21)

The E-760/770/790 with a recodable cylinder can be operated with three different keys. The keys are numbered 1, 2 & 3, and each key is labeled and supplied in a separate plastic bag. It is very important to use them in order.

* Always read the label instructions on the label before using a key.

Caution: The use of key #2 automatically cancels the function of key #1, and the use of key #3 automatically cancels both keys #1 and #2.

If key #3 is used first, it will immediately make keys #1 and #2 unusable.

Once a key is cancelled, it can’t be reactivated unless the cylinder itself is re-pinned.

How to change lock combination from key #1 to key #2:

35. Insert key #2 into cylinder.
36. Turn the key clockwise until it stops (see Fig. 22) for both left-handed and right-handed locks.
37. Turn the key back counter-clockwise until it is in the horizontal position.
38. Remove the key.

Now the lock should work with key #2, and key #1 has been cancelled.

*Test: Try to use key #1 in the lock. It should no longer work.

How to change lock combination from key #2 to key #3

39. Insert key #3 into cylinder.
40. Turn the key clockwise until it stops.
41. Turn the key back counter-clockwise until it is in the horizontal position.
42. Remove the key.

Now the lock should work with key #3, and key #2 has been cancelled.

*Test: Try to use key #2 in the lock. It should no longer work.