

INSTALLATION GUIDE

AUDITCON® 2100D LOCK



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5,410,301	5,709,114	D366,822
5,451,934	5,774,058	D388,308
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You should read all instructions carefully before you install and use your Auditcon 2100D lock. This will help you avoid unnecessary costs and concerns resulting from improper installation.

Basic Tools and Materials Needed

- Medium Phillips head screwdriver (#2) (magnetized tip recommended)
- Fine pitch hacksaw (32 teeth/inch)
- Small flat file
- All-purpose scissors
- Tape measure or ruler

Recommended, but not required:

- Needle-nosed pliers
- Torque screwdriver (30 inch-pounds/3.4 newton-meters capacity)
- Small vise grip
- Loctite® 262 (Red)

Table 1 - Recommended Torques for Lock Screws

Application	Screw P/N	Screw Size	Torque in Lbs	Torque N-M
Front cover mounting screws	205056	6-32	14 to 16	1.6 to 1.8
Cam mounting screw	105030	6-32	14 to 16	1.6 to 1.8
Base assembly mounting screws	205057	8-32	17 to 20	1.9 to 2.25
Lock case mounting screws	305026	1/4-20	25 to 30	2.8 to 3.4

Lock Parts for 2100D Installation

1. Lock case assembly
2. Front cover/keypad and base assembly
3. Dial
4. Decal
5. Front cover mounting screws (3)
6. Base assembly mounting screws (2)
7. Cam mounting screw (1)
8. Lock case mounting screws (4)
9. Spindle (shown) with plastic protective tube (not shown)
10. Lubricant
11. Spindle mounting clip (1)
12. Insulator tape (not shown)



Fig. 1 - Lock Parts for Installation

Design Parameters for the Auditcon 2100D

1. Bolt dimensions (nominal): .312 inches X 1.000 inches / 8 X 25,4 mm
2. Bolt movement (nominal) : .465 inches /11,8 mm
3. Maximum load movable by the bolt: 0,23 N
4. Maximum load against bolt when thrown (all directions): 1kN (maximum)
5. The lock can be fitted to safes or vault doors of any material.

Template

A template is provided as an aid for locating, drilling, and tapping the lock mounting screw holes relative to the spindle hole. Since the lock is designed to fit most industry standard container lock mounting screw hole patterns, the need to use this template should be minimal.

Prepare for New Installation of the Lock

1. Use the template to establish the exact relative locations of the mounting holes for the lock assembly, when necessary.
2. The lock case mounting screws (1/4-20) require drilled and tapped holes to 3/8” depth if possible (minimum 1/4” depth required).
3. The spindle hole diameter must be a minimum of 13/32” (10.32mm).

Note: *You may need to deburr the spindle hole, ensuring that there are no sharp edges that could cut the flex cable.*

4. The keypad/base assembly mounting screws (8-32) require drilled and tapped holes to 3/8” depth if possible (minimum 1/4” depth required).

INSTALLATION

WARNING: Mas-Hamilton locks are well protected from Electrostatic Discharge (ESD) damage once they are 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.
 - **Handle** the keypad cover assembly by the outer edge only.
 - **For the best protection, use an ESD wrist band grounded to the lock or container during installation. The lock is protected to greater than 15,000 V ESD when correctly installed, as tested by dBI Corporation for the lock to meet the CE mark specifications.**
-

Complete the following steps to install the lock:

Warning: *Do not take the lock case assembly apart at any time during installation. The lock will not operate if the back cover has been removed.*

1. Place the protective tube over the tube retainer on the lock case. Make sure that the flex cable is positioned on the outside of the tube (Figure 2).



Fig. 2 - Place tube over tube retainer

2. While holding the lock case assembly, carefully guide the end of the flex cable and the tube through the spindle hole of the container so that they are easily accessible at the outside of the container.
3. Hold the lock case assembly tightly against the inside of the container and mark the tube flush (to within 1/16") with the outside of the container door for cutting.
4. Guide the end of the cable and the tube back through the inside of the container.
5. Remove the tube from the spindle hole on the lock case and use scissors to cut the tube just inside your mark. Keep the cut as straight as possible. Place the tube back over the tube retainer on the lock case and tape the flex cable to the outside of the tube with the insulator tape provided.
6. While holding the lock case assembly, again carefully guide the end of the flex cable and the tube through the inside of the container so that they are easily accessible at the outside of the container.
7. Mount the lock case assembly to the inside of the container door in the proper orientation using the four lock case mounting screws.

Note: It is recommended that you use Loctite® 262 (Red) on the lock case mounting screws.

8. Insert the end of the spindle with the screw hole into the lock case assembly until the spindle is properly seated. The grooved side of the spindle should be oriented so that the grooves in the spindle align with the grooves in the drive cam. (Figure 3).

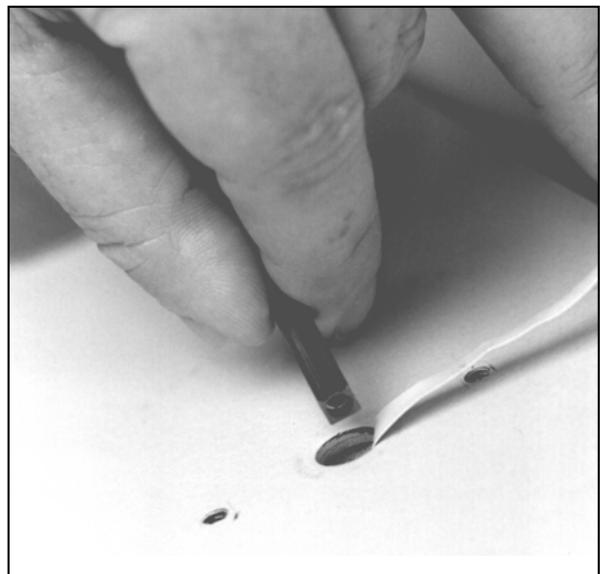


Fig. 3 - Insert screw hole side of spindle into spindle hole

9. Mark the spindle shaft 1 1/4" from the outside of the container door for cutting (plus or minus 1/8" allowed) (Figure 4).
10. Remove the spindle from the lock case to prevent damage to the flex cable while cutting.
11. Use the hacksaw to cut the spindle on the mark. You may want to use a small vise grip to secure the spindle when cutting.
12. Use a small, flat file to deburr the spindle after cutting.
13. Insert the spindle through the outside of the container into the lock case. Refer to Step 8 for proper insertion.
14. While holding the spindle, insert the cam mounting screw through the back of the lock case and into the end of the spindle. Turn the screw until it is securely attached to the spindle (Figure 5).
15. Remove the front cover from the base assembly (Figure 6).

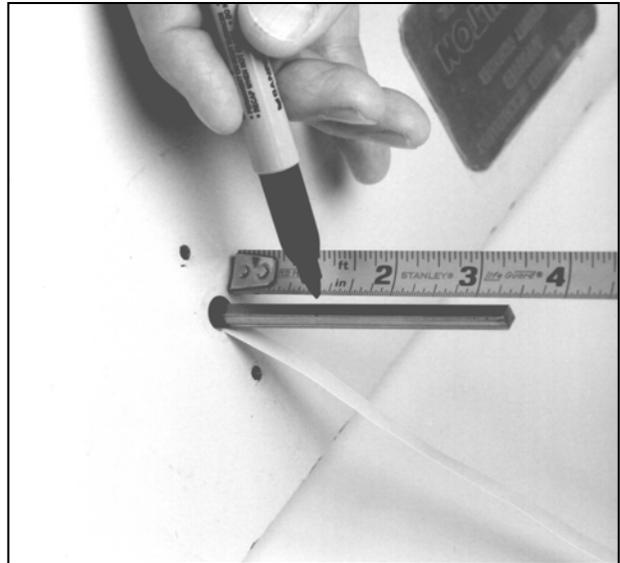


Fig. 4 - Mark spindle for cutting

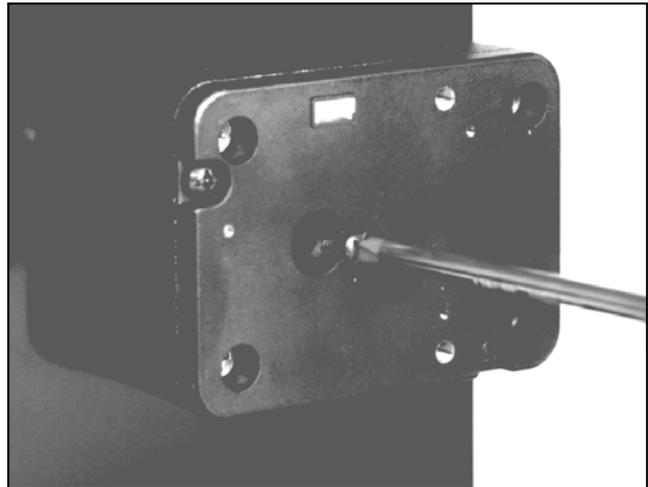


Fig. 5 - Insert cam mounting screw

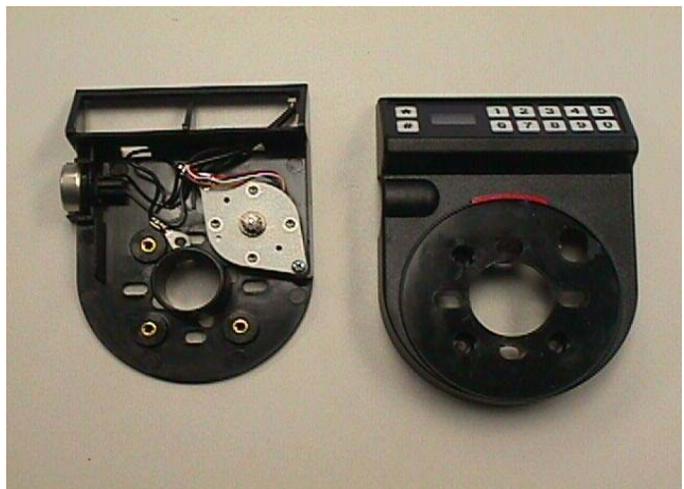


Fig. 6 - Remove front keypad/cover from base assembly

Caution: During the next series of steps in the installation, you will be handling the front cover and the cables. **It is very important that you take measures to observe ESD protection while handling the front cover and flex cable and when plugging in connectors. Do not touch the silver leads on the flex cable and do not touch the metal pins in the connectors.**

16. Hold the base assembly in the upright position (i.e., the keypad is positioned at the top) and hold the base in place. There are four available cable receiving holes on the base assembly (Figure 7). Guide the flex cable through the appropriate cable receiving hole on the back of the base assembly based on the orientation of the flex cable to the spindle. For example, if the flex cable comes out below the spindle, the cable should be guided through the bottom cable receiving hole (Figure 8).

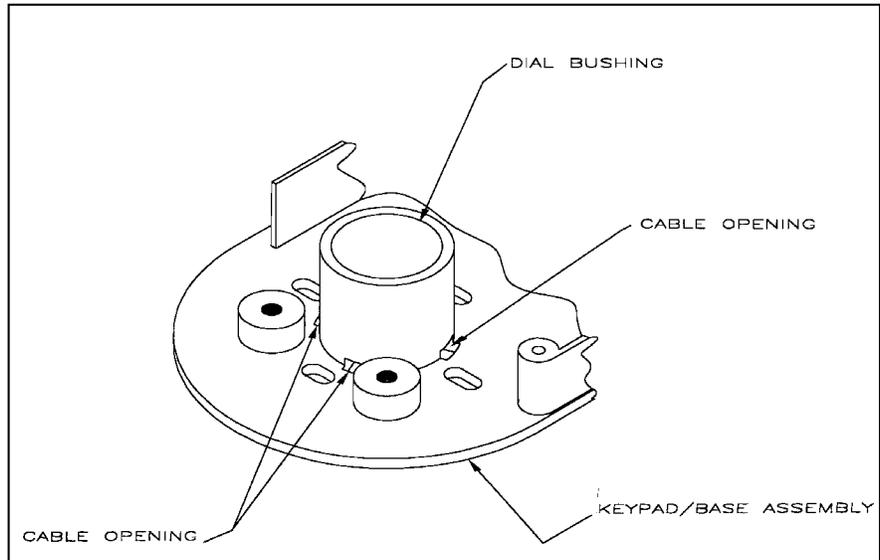


Fig. 7 - Base assembly dial bushing

17. Align the base assembly so that the dial bushing on the base assembly is centered over the spindle and position the base assembly so that it rests firmly against the container door.

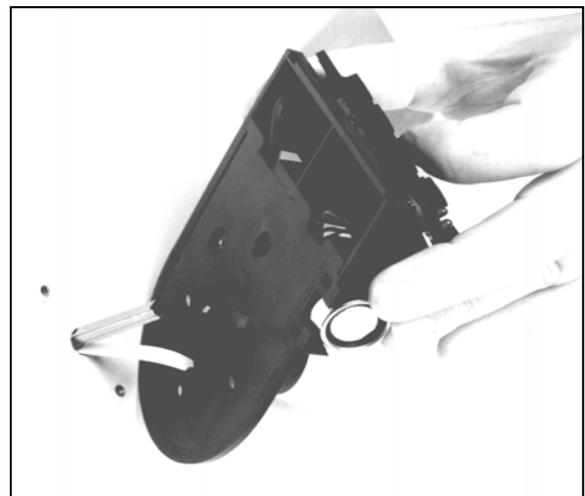


Fig. 8 - Guide flex cable through cable receiving hole

18. One end of the grounding wire is attached to the generator. The terminal on the other end of the wire will be attached to the base assembly using one of the two base assembly mounting screws. While holding the base assembly in place, attach it to the container door using the two base assembly mounting screws. (Make sure that you also attach the grounding wire at this time). Use either the two horizontal mounting holes or the two vertical holes, depending on the orientation in which you are mounting the lock. Visually center the dial bushing (Figure 7) on the base assembly with the center of the spindle hole and tighten the screws.
19. Route the flex cable toward the generator so that the cable is positioned in between the upper generator mounting stud and the generator. Guide the cable up through the same cable receiving hole where the other two cables have already been routed. The silver leads of the flex cable should be facing away from the container (Figures 9 and 10).



Fig. 9 - Route cable toward generator

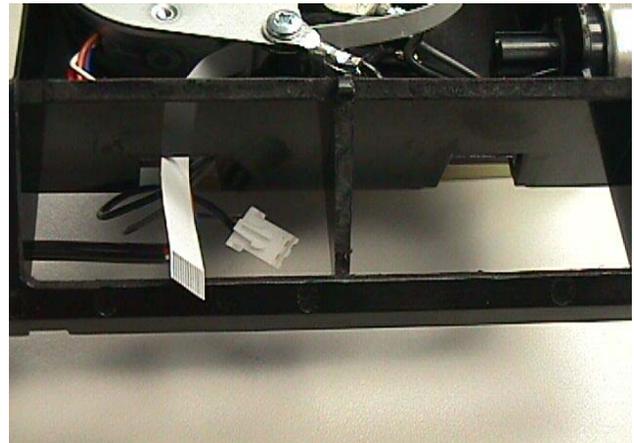


Fig. 10 - Guide cable through cable receiving hole

20. Apply a small amount of lubricant to the gear on the generator.
21. If the ZIF connector on the keypad assembly is not already open, pull the release on the ZIF connector outward to its open position (Figure 11).

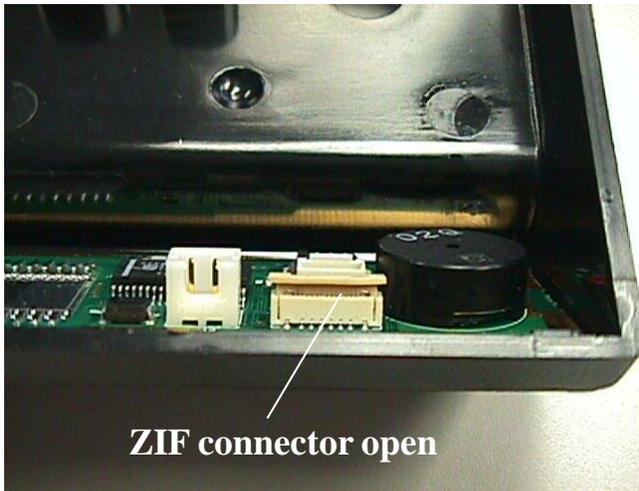


Fig. 11 - Pull release on ZIF connector outward

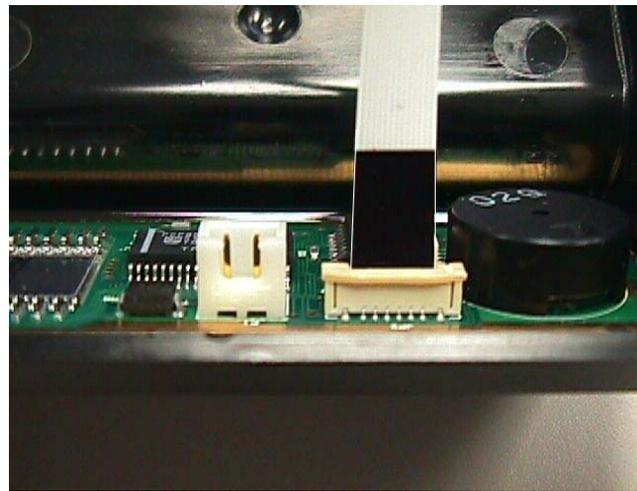


Fig. 12 - Plug flex cable into ZIF connector and close ZIF connector

22. Plug the flex cable into the ZIF connector so that the silver leads are facing the contacts in the connector. Close the ZIF connector to lock the flex cable in place. Ensure that both sides of the connector are snapped in place and that the flex cable is squared to the connector (Figure 12).
23. Fold the excess cable accordian style and position the cable under the keypad assembly so that it will not be pinched when the keypad assembly is snapped into place.
24. Plug the two pin key reader cable into the two pin connector on the keypad assembly, located next to the ZIF connector (Figure 12).
25. Plug the the four pin generator cable into the four pin connector on the keypad assembly, located just beneath the ZIF connector.
26. Center the front cover over the spindle and insert the catches on the top of the front cover into the base assembly.
27. Hold the keypad cover assembly in position on the base assembly.
28. Turn the spindle and cam so that the grooves in the spindle are facing toward the bolt. This should cause the bolt to be extended.

29. Center the dial over the spindle with the lip of the dial in the upright position so that it will cover the red bar on the front cover (Figures 13 and 14). This is referred to as the Home position. Place the dial onto the spindle and seat into the dial bushing. Push gently to place the dial so that the gear on the generator seats properly into the gear teeth on the dial.

Red bar is showing



Fig. 13 - Incorrect Position

Red bar is not showing



Fig. 14 - Correct Position

30. Test the operation of the lock before completing the installation of the front cover by verifying the following:
- Ensure that the dial turns freely without scraping.
 - Power the lock by turning the dial to the left (CCW) until **EP1** is displayed. Position the lock dial to the **HOME** position (i.e., the lip of the dial will be in the upright position and will cover the red bar). Key in the default Factory PIN (5025). If the combination is entered successfully, **OPr** is displayed, indicating that the lock is ready to open. To open the lock, turn the dial to the right (CW) until the bolt is retracted.
 - Close the lock by turning the dial to the left (CCW) until the bolt is fully extended and **CLS** (Closed Lock) is displayed. The lock close audit record is written at this time. The lock must be operated in this manner to ensure a valid close of the lock.

Note: *After correctly entering a valid combination, you must turn the lock dial to the right within ten seconds. Once you have turned the lock dial, you must retract the bolt within four seconds (by continuing to turn the dial to the right). If you do not turn the lock dial to the right or retract the bolt within the allotted time periods, you will need to rekey the factory combination to open the lock. You might also need to power the lock again. If the lock does not operate successfully, carefully remove the dial, check the flex cable connection and spindle orientation (grooves toward the bolt), and verify that all mounting screws are securely tightened.*

31. After you have successfully tested the lock operation, remove the dial from the spindle.
32. Apply lubricant to the bearing surface of the dial (i.e., the portion that fits into the dial bushing of the base assembly) prior to final dial installation.
33. Mount the front cover to the base assembly using the round mounting holes on the cover and the three mounting screws.
34. Once again, turn the spindle and cam so that the grooves in the spindle are facing toward the bolt. This should cause the bolt to be extended if it was not already.
35. Center the dial over the spindle with the lip of the dial in the upright position so that it will cover the red bar on the front cover (Figures 13 and 14). This is referred to as the Home position. Place the dial onto the spindle and seat into the dial bushing. Push gently to place the dial so that the gear on the generator seats properly into the gear teeth on the dial.

Note: *At this time you are ready to install the dial permanently so it is important that the spindle, cam, and dial are aligned and timed properly.*

36. Position the spindle mounting clip (Figure 15) over the spindle in the center of the front of the dial. The raised edges should be facing upwards. (The bowed side of the clip should be facing downward).

37. Test the operation of the lock again.

38. If the lock operates properly, orient the lip of the dial so that it covers the red portion of the front cover. Apply the decal to the dial. The Mas-Hamilton logo should be aligned horizontally (Figure 16).

39. If the lock does not operate properly, hold the dial and carefully remove the cam mounting screw. Carefully pull out the dial assembly and then pull out the spindle. Repeat steps 13-37. At this time you could re-adjust the base assembly mounting screws, the position of the spindle, or could replace the spindle if necessary.

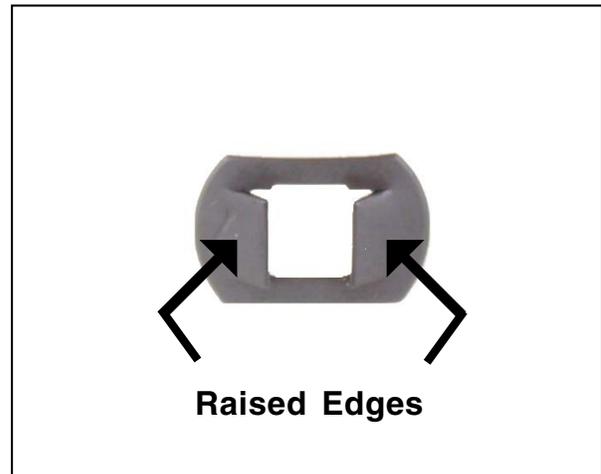


Fig. 15 - Spindle mounting clip with raised edges facing upwards



Fig. 16 - Apply decal to dial

Note: *The lock will not open if excessive force is applied to the end or side of the bolt. The installer should check for these conditions after installation.*

NOTES

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