

# 100 Series UL Listed Vault Door Installation and Operation Manual January 01, 2024



Model 122-M-3680, UL Class M Model 122-1-3680, UL Class 1 Model 122-2-3680, UL Class 2 Model 122-3-3680, UL Class 3 Model 122-2-4880, UL Class 2 Model 122-3-4880, UL Class 3 Model 122-2-6096, UL Class 2

CAUTION EXTREMELY HEAVY TILTING HAZARD THIS PRODUCT SHOULD ONLY BE INSTALLED AND SERVICED BY PROFESSIONALS EXPERIENCED AND QUALIFIED IN THE INSTALLATION OF MODULAR VAULTS AND VAULT DOOR ASSEMBLIES

Manufacture Date:

Installed By / Date:

UL Serial Number:



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Dwg 20214	100 Series Vault Door, UL Class 1, 36" x 80" CO
Dwg 20215	100 Series Vault Door, UL Class 2, 36" x 80" CO
Dwg 20216	100 Series Vault Door, UL Class 3, 36" x 80" CO
Dwg 20217	100 Series Vault Door, UL Class 2, 48" x 80" CO
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### DISCLAIMER

The material in this manual is for information purposes only. The contents and the product described are subject to change without notice. The manufacturer makes no representations or warranties with respect to this manual. This product was designed for certain applications only. It may not be modified and/or used for any applications other than that which it was designed. The design specifications of the product described herein is subject to change without notice. The manufacturer reserves the right to make such changes without incurring any obligation to make them in units previously sold. Differences between the units you received, and the views contained herein are the result of design improvement and/or the addition of options as specified.

#### WARNINGS

**CAUTION**: If not properly installed, operated, and maintained, the use of this product presents the possibility of personal injury or property damage. Before use, all persons who will install, operate, or maintain this product should read this manual thoroughly. For safe, dependable performance, follow all instructions and recommendations contained herein.

**CAUTION**: Vault doors are heavy. When opening or closing, do not allow yourself or others to become trapped between the vault door and a fixed object, such as a wall. Always monitor the area a vault door is installed in, to prevent the possibility of small children becoming trapped.

#### 1. INTRODUCTION

- 1.1 Product Overview
  - The 100 Series Vault Door is a UL Listed product line. Certified by Underwriters Laboratories to comply with UL608. It is listed under the file number BP6254.
  - The front of the vault door presents a clean modern appearance and distinctive styling that will
    complement any type of interior design. It projects a feeling of elegance. From the polished
    stainless steel finish, to the black and stainless operating wheel.
  - The back of the vault door represents a unique approach to vault door design. A courtesy light, time lock and emergency vault ventilator with pass-through are all conveniently located on the rear of the door. All exposed surfaces (including the jamb, hinges, and locking bar) are satin finish stainless steel.
  - The vault doors feature a full-length locking bar. When the door is closed the hinge side fixed locking bar engages. Turning the operating wheel wedges the locking bar, opposite hinge side, into the jamb of the vestibule.
  - All doors are equipped with dual four-tumbler combination locks for controlled access by one or more attendants. A three-movement, 144-hour time lock prevents unauthorized vault entry prior to the specified time.
  - The 100 Series Vault Door is designed as a weld-in-place door for new installations with the 200 Series Modular Vault System. It is installed without grout and does not require a pit for installation.

#### 1.2 Part Identification

Refer to figures 1-1, 1-2, 1-3, and 1-4.



Figure 1-1 Front View (Shown with Door Closed)



- 1. Vault Door
- 2. Vestibule
- 3. Vestibule Bed Plate
- 4. Operating Wheel
- 5. Architrave Trim, Vertical

- 6. Architrave Trim, Horizontal
- 7. Hinge Cover
- 8. Combination Dial & Ring
- 9. Air Supply/Pass-Through



Figure 1-2 Front View (Shown with Door Open)



## FRONT VIEW (Shown with Door Open)

- 1. Vault Door
- 2. Vestibule
- 3. Service Access Panel
- 4. Key Lock, Access Panel
- 5. Courtesy Lamp (4)

- 6. Time Lock
- 7. Ventilation Grille
- 8. Emergency Fan Switch
- 9. Courtesy Lamp Switch
- 10. Passage Plug



Figure 1-3 Rear View (Shown with Day Gate Closed)



REAR VIEW (Shown with Day Gate Closed)

- 1. Acrylic Day Gate
- 2. Lower Hinge Bracket
- 3. Upper Hinge Bracket
- 4. Strike Bracket w/Cover

- 5. Lever Lock-Set
- 6. Trim, Vestibule Rear Right
- 7. Trim, Vestibule Rear Left
- 8. Trim, Vestibule Rear Top



Figure 1-4 Plan View (Shown with Door Open)



PLAN VIEW (Shown with Door Open)

- 1. Vault Door
- 2. Vestibule
- 3. Lifting Insert
- 4. Jack-Bolt
- 5. Wiring Access Box

- 6. Door Stop
- 7. Detent Operating Rod
- 8. Door Contacts
- 9. Architrave Trim, Vertical
- 10. Screw, TCS, #8x3/4"



## 1.3 Specifications

A.V.C. Model (36" x 80" CO)	122-M-3680	122-1-3680	122-2-3680	122-3-3680
U.L. Classification	М	One	Тwo	Three
U.L. Attack Resistance	One-Quarter Hour	One-Half Hour	One Hour	Two Hours
Concrete Thickness	3"	3"	5"	7"
Clear Opening (W x H)	36-7/8" x 80"	36-7/8" x 80"	36-7/8" x 80"	36-7/8" x 80"
Power Requirements	120 Volt / 10 Amp			
Shipping Crate Size (D x W x H)	58" x 91" x 32"			
Weight (Lbs.)	3600	3600	4000	4400

A.V.C. Model (48" x 80" CO)	122-2-4880	122-3-4880	122-2-6096
U.L. Classification	Two	Three	Two
U.L. Attack Resistance	One Hour	Two Hours	One Hours
Concrete Thickness	5"	7"	5"
Clear Opening (W x H)	48-7/8" x 80"	48-7/8" x 80"	60" x 96"
Power Requirements	120 Volt / 10 Amp	120 Volt / 10 Amp	120 Volt / 10 Amp
Shipping Crate Size (D x W x H)	70" x 91" x 32"	70" x 91" x 32"	82" x 107" x 32"
Weight (Lbs.)	4400	6000	6500

- 1.4 Dimensional Specifications
  - Refer to drawings #20213, #20214, #20215, #20216, #20217, #20218, and #20219 on the following pages.

















## 2. INSTALLATION

- 2.1 Safety and Pre-Installation Procedures
  - Only professionals experienced and qualified in the installation of vaults and vault doors should install this product. Misuse, lack of supervision and inspection can contribute to serious accidents or death.
  - Keep the work area clear of all trash and clutter.
  - Because of the extreme and concentrated weight of vault door components, vault door installation can be dangerous. Special methods for installation have been devised. Be sure the appropriate procedures are followed.
  - The door is shipped with (2) mechanical combination locks set for single control use as standard. Either combination will open. Make sure both combinations are "spun off/scrambled" before lifting or moving.
  - Know location of the nearest medical facility and "911" availability.
  - Verify the condition of safety equipment and tools.
  - When arriving at jobsite introduce yourself to the general contractor and/or job superintendent, and explain:
    - What equipment you will be installing?
    - What your schedule will be?
    - " What will be required of the contractor and/or electrician?
  - Check the best route into the building. Inform the contractor of weights involved. Inform the contractor of existing floor cracks or damage. If a basement or floor exists below the route of travel and/or under the vault area, the contractor and all trades must be notified.
  - Caution other people in the building to avoid the area in which the door is being installed. It is recommended to "cordon-off" the area.
  - Moving a vault door into position often requires the use of rollers. Do not use rollers of excessive length or diameter and stand clear of the rollers when moving the equipment. Stop motion of the load prior to repositioning a roller. Do not use threaded rod, rebar, conduit, or lightweight pipe for rollers.
  - Never stand under or directly in front of a load. Work from the side, allowing oneself plenty of room to move out of the way in case the load shifts.
  - Never leave a standing vault door unattended unless it is securely fastened or welded in place.
  - It is the responsibility of the installer to anticipate and correct all hazardous conditions, including careless or thoughtless acts of assistants or technicians who misguidedly try to "help".



### 2. INSTALLATION (continued)

#### 2.2 Apparel

Personal safety equipment required, but not limited to:

Hard Hat, Safety Glasses, Safety Shoes, Gloves, and First Aid Kit

- Wear a hard hat whenever working at an installation or construction site.
- Wear high top safety shoes with non-slip soles. Tools, bars, cribbing, rollers, etc., are frequently dropped and can cause injury.
- Safety glasses are a must.
- Leather faced gloves should be worn when handling cribbing, cables, chains or unfinished metals.
- 2.3 Unpacking and Inspection (Refer to Figure 2-1)
  - All doors are shipped on skids fully assembled and ready for installation.
  - Visually inspect exterior of shipping carton for damage. Note any damage on freight forwarders Bill of Lading.
  - Remove the top of shipping carton.
  - Carton should contain the following items:
    - 1 ea. Final Assembly, Vault Door
    - 2 ea. Trim, Vestibule Architrave Vertical
    - 1 ea. Trim, Vestibule Architrave Horizontal
    - 1 ea. Trim, Vestibule Rear Left Upright
    - 1 ea. Trim, Vestibule Rear Right Upright
    - 1 ea. Trim, Vestibule Rear Top
    - 1 ea. Final Assembly, Day Gate
    - 1 ea. Install Kit, Day Gate

(Day Gate Install Kit contains the following items)

- 2 ea. Brackets, Upper & Lower Day Gate Hinge
- 1 ea. Bracket, Day Gate Latch Strike
- 1 ea. Cover, Day Gate Latch Strike Bracket
- 6 ea. TPHMS, 1/4-20 x 3/4" lg. SS
- 3 ea. PPH TEK, #8-18 x 1/2" lg. SS
- 2 ea. Keys, Lever Lockset
- 1 ea. Accessory Kit, Vault Door
  - (Vault Door Accessory Kit contains the following items)
  - 1 ea. Assembly, Door Stop
    - 1 ea. Converter, Plug-In Power
  - 1 roll Safety Walk
  - 8 ea. TPHMS, 1/4-20 x 3/4" lg. SS
  - 1 ea. Key, 4-Wheel Combination Change
  - 1 ea. Key, Time Lock Winding
  - 2 ea. Keys, Service Access Door Lock
  - 1 ea. Vault Door Installation & Operation Manual



## 2. INSTALLATION (continued)

- 2.4 Site Requirements
  - Foundation
    - Vault door must be provided with a structurally sound foundation to ensure that it swings properly. The foundation must support the weight of the door plus installation forces without cracking or settling out of level.
    - For foundation details it is recommended a local registered engineer be contacted.
    - Minimum loading capacity of foundation at vault door is 20,000 lbs. This is a factor of the door weight plus forces created when door is "jacked-in".
  - Job Site Conditions
    - Installer is responsible for ensuring that job site is free and clear of all debris that would prohibit a proper and safe installation (example, construction materials, screws, nails, etc.). Inform the general contractor if conditions at the job site do not provide a safe working environment.
- 2.5 Rough Opening Details
  - The 100 Series Vault Door is to be installed in American Vault Corporations 200 Series Modular Vault System. Standard door uses a panel opening that is 52" wide x 88" high (nom). It is manufactured, application specific, for each class of vault (refer to Section 1.4 for opening specs).
- 2.6 Lifting and Moving (Refer to Figure 2-2)
  - Vault doors can be handled safely with chains and cables of sufficient capacity attached to a crane
    or forklift (refer to ANSI B30.9). Be extremely careful to keep the vault door supported evenly and
    to guard against tipping (refer to Section 1.3 for weights). Check this weight carefully before lifting
    or moving. Use chains or cables adjusted to the proper length for even lifting. When possible, the
    vault door should be moved while on the skid as shipped from the factory. Recommended fork
    length is 54", minimum.
- 2.7 Installation Instructions (Refer to Figure 2-2)
  - This procedure requires a minimum of two people that are skilled in the installation of vault doors. One person on the outside of the vault that is familiar with the operation and opening procedures of a mechanical combination lock. One person on the vault interior. This person enters prior to placing the vault door in the opening. This person(s) should be prepared to remain inside for an extended period of time.
  - Tools and items that should be inside the vault prior to placing the vault door in the opening: Light, Fans, Bars, Shim Assortment, (2) Safety/Installation Bars, (4) <sup>3</sup>/<sub>4</sub>" x 6" Coil Bolts, 1-1/8" Open End Wrench, and hand tools as required.
  - Using appropriate overhead lifting and rigging techniques, stand the vault door in front of the opening. CAUTION: Vault Doors are front heavy. Make sure the load is properly secured. Before removing the rigging attachments, move the vault door into masonry opening.
  - Secure the vault door using the safety/installation bars and coil bolts. These are available through American Vault Corporation. Request door install kit part number 102-2200-36 or 102-2200-48.
  - Shim under the vestibule bed plate on the interior and exterior of the vault door as required. When
    installing shims, never add more than 1/16" at a time (refer to Figure 2-2 for recommended shim
    locations).
  - After checking the vault door vestibule for "level & plumb", evenly torque (2) jack-bolts located on the top of the vault door vestibule (80 to 120 ft. lbs).



## 2. INSTALLATION (continued)

- 2.7 Installation Instructions, continued (Refer to Figure 2-2)
  - With jack-bolts securely tightened and (2) safety/installation bars in place, the vault door may now be opened. NOTE: There can never be too many safety devices in place.
  - Check door for proper floor clearances. Taking into account floor coverings etc. that may be applied at a later date.
  - Open the vault door to 90 & 180 degrees to make sure it does not run.
  - If vault door swings properly, it should now be welded to the inside of vault vestibule panels a minimum of 1" weld every 12". Full weld is recommended. Shims can be used between the vestibule and vestibule panels if spaces exist.
  - Check vault door for operation once again.
  - Safety/Installation bars and rigging attachments can now be removed.
  - Route wires from junction box in top of the vestibule through conduit provided in header of vault door opening. Hook-up low voltage power converter and alarm (refer to wiring diagram 102-1700 for connections).
  - Install vault door rear trim top, left and right sides.
  - Install day gate (day gate may be hinged left or right depending on installation requirements)
    - Attach the lower day gate hinge bracket to vault door vestibule.
    - Place (2) nylon washers and upper hinge bracket on top pin of the day gate.
    - Place other (2) nylon washers on day gate lower pin while installing into lower hinge bracket, then secure the upper hinge bracket.
    - Install latch strike bracket and cover.
  - Install front vestibule trim top, left and right sides.
  - Apply tread tape to vestibule bed plate.
  - Check ventilator fan and courtesy lights on rear of vault door for operation. Vault door will need to be closed to do this. Power comes through the contacts on the vestibule and door.
  - Check the time locks for proper operation.
  - Check combination locks for proper operation and function. Function as set from the factory is single use control. It can be converted to dual use control in the field (refer to Section 3.5).



Figure 2-1 Shipping Crate Assembly



- 1. Vault Door Assembly
- 2. Architrave Trim, Vertical
- 3. Architrave Trim, Horizontal
- 4. Trim, Vestibule Rear Left
- 5. Trim, Vestibule Rear Right

- 6. Trim, Vestibule Rear Top
- 7. Acrylic Day Gate Assembly
- 8. Day Gate Accessory Kit
- 9. Vault Door Accessory Kit



Figure 2-2 Lifting & Installation



6

3

2

12"

5

4

1



REAR VIEW (View from Vault Interior)

- 1. Vault Door Assembly
- 2. 3/4" x 4" Lg. Coil Bolt
- 3. 3/4" T-12 Lifting Swivel
- 4. Connecting Link
- 5. Chain Sling
- 6. 360° Swivel Safety Hook (from Lifting Device)

- 7. Vault Panel
- 8. Install/Safety Bar
- 9. Jack-Bolt
- 10. Jack-Bolt Shim
- 11. Door Vestibule Bed Plate Shim Location

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**FRONT VIEW** 

(View from Vault Exterior)

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Figure 2-2





## 3. OPERATION

- 3.1 Operation Overview
  - 3.1.1 Combination Locks
    - The 100 Series Vault Doors have two UL Listed, Group 2, 4-Wheel, Mechanical Combination Locks as standard. They are located on the rear of the vault door, behind the service access panel. They are operated via the dial & ring from the exterior of the vault door. The combination locks can be set for two different dialing operations, single or dual control (refer to Section 3.5). Refer to the combination lock manufacturer's instructions (Section 3.2) for proper operating procedures.
      - Single Control Operation: Requires that only one of the two combination locks be dialed to open the vault door. This can be either the upper or lower combination.
      - Dual Control Operation: Requires that both of the combination locks be dialed to open the vault door. This is a field convertible option.
  - 3.1.2 Time Lock
    - The 100 Series Vault Doors come standard with a UL listed, 3-movement, re-settable, time lock. It is located on the rear of the vault door through the service access panel. Refer to the time lock manufacturer's instructions (Section 3.2) for proper operating procedures.
  - 3.1.3 Operating Wheel
    - This is the main operating wheel. It has a black and stainless finish and is approximately 12" diameter located on the front of the vault door nearest to the off-hinge side of the door. After dialing combination(s) turn the operating wheel clockwise for a right swing vault door and counter-clockwise for a left swing vault door.
  - 3.1.4 Emergency Air Supply
    - The 100 Series Vault Door comes standard with an emergency air ventilator. It is located on the rear of the vault door and is operated by the ventilator fan switch. In the event someone was to be trapped in the vault, it will supply air to the vault interior.
  - 3.1.5 Day Lock
    - Day Lock is a feature that is used to lock the vault door in the open position, keeping personnel from inadvertently locking the door without authorization.
    - After opening the vault door, spin off the combination locks to secure. Prior to closing the vault door the combinations will have to be dialed.
  - 3.1.6 Day Gate
    - The day gate for the 100 Series Vault Door is available in acrylic or rod style. It comes standard with a storeroom function (exterior keyed access, interior passage) ADA compliant, lever lockset.
  - 3.1.7 Door Stop
    - Floor mounted stop has a stainless steel enclosure with rubber bumper. The door stop location is determined by the opening angle of the vault door.
- 3.2 Mechanical Combination & Time Lock Manufacturers Instructions

(Refer to following 3 pages)

## Four Wheel Safe Locks

Models 6631, 6643, 6651, 6731 Group 2 and 2M





## **TORQUE ADJUSTMENT** (not available on all models)

The torque adjustment feature allows the wheel pack tension to be adjusted for optimum lock performance. To adjust torque, remove the lock cover and insert a  $\frac{3}{32}$  hex wrench into the adjusting gear (see illustration at left). Turn clockwise to increase torque or counterclockwise to decrease torque. This adjustment should only be performed by a skilled technician using a specialized torque measuring tool. The wheel pack torque should never be less than 12 inch-ounces, and S&G recommends that it be set between 18 and 20 inch-ounces.

**Opening Index** 

## **OPENING THE LOCK**

The opening index is located at the top of the dial ring. Dial numbers to this mark when you want to open the lock. The changing index is located at approximately 11 o'clock on the dial ring. Dial numbers to this mark when preparing to insert the change key and when actually setting a new combination.

This lock is a precision mechanism, so extreme care must be used to align the combination numbers with the index.

Turn the dial smoothly and steadily. If, after turning the correct number of revolutions, any number of the combination is turned beyond the index when you meant to stop on it, the entire series of combination numbers must

20

be re-dialed. Do not attempt to turn the dial back to regain proper alignment with a "missed" number. Each time a selected number is aligned with the opening index, a revolution is counted.

## **TO UNLOCK ON A FACTORY SETTING OF 50**

- 1. Starting anywhere, turn the dial left until 50 comes to the opening index the FIFTH time.
- 2. Turn the dial right until it comes to a positive stop indicating the bolt has retracted.

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**Changing Index** 

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## TO UNLOCK ON A TRUE FOUR NUMBER COMBINATION

- 1. Starting anywhere, turn the dial right (clockwise), stopping when the first combination number comes to the opening index the FIFTH time.
- 2. Turn the dial left (counterclockwise), stopping when the second number comes to the opening index the FOURTH time.
- 3. Turn the dial right, stopping when the third number comes to the opening index the THIRD time.
- 4. Turn the dial left, stopping when the fourth number comes to the opening index the SECOND time.
- 5. Turn the dial slowly to the right until it comes to a positive stop, indicating the bolt has retracted.

## **CHANGING TO A NEW COMBINATION**

Make up a new combination consisting of four numbers. Do not set the fourth number between 0 and 20 if your lock uses a dial with the spindle splined on 50. This is called the *forbidden zone*, and only applies to the last number of the combination.

Do not set the fourth number between 90 and 99 or between 0 and 10 if the dial spindle is splined on 41.

Adjacent combination numbers should not be closer than five numbers to each other. Do not select combination numbers that all end with 0 or 5. Do not use numbers that represent birthdays, phone numbers, etc. Do not use numbers that comprise a strictly rising or falling sequence. For instance, 25 - 44 - 67 - 92 is not as good as 44 - 25 - 92 - 67.

- 1. Dial the existing combination to the **CHANGING** index as explained on the reverse side of this page.
- 2. Holding the dial with the fourth number at the changing index, insert the change key into the hole in the lock cover (Figure A) until the wing is entirely inside the lock case, and the key comes to a positive stop.
- 3. Turn the key one quarter turn counterclockwise (Figure B). With the change key in this position, turn the dial right (clockwise), stopping when the first combination number aligns with the **changing** index the fifth time.
- 4. Turn the dial left (counterclockwise), stopping when the second number aligns with the **changing** index the fourth time.
- 5. Turn the dial right, stopping when the third number aligns with the **changing** index the third time.
- 6. Turn the dial left, stopping when the fourth number aligns with the **changing** index the second time.
- 7. Turn the dial right 10 numbers. Holding the dial in this position, turn the change key clockwise a quarter turn and remove it (Figure C). Your new combination should now be installed in the lock.

Important: After changing the combination, the lock should be opened and locked several times (dialing to the opening index) WITH THE SAFE DOOR <u>OPEN</u>.

Warning: Never insert the change key into the lock when the cover is removed. Always be certain the wing of the change key is entirely within the lock (Figure B) before turning the key.

If an error is made in setting a combination, we suggest you call a qualified locksmith or safe technician.



Figure A

WING

**Figure B** 



#### **General Information:**

The Presidio timelocks are designed to provide the ultimate in protection, with combined ease of operation and durability. The timelocks utilize multiple movements to provide *"redundant safety"*. Only one movement is required to unlock the timelock. In the event that one movement should fail, the timelock will still operate correctly, opening at the exact, pre-set time. *Never lock the vault door with only one timelock movement functioning.* If you have any doubt as to the functionality of the timelock, contact the installing company or manufacturer of the equipment prior to locking the door.



#### Locking Procedure, Three Movement Assembly:

1. Determine the number of desired locking hours. Example: The time of locking is 5:00 PM and the desired unlocking time is 7:00 AM the following day. This equals 14 hours of locking time. The timelock can be wound up to a maximum of 144 hours of locking time.

2. Using the supplied winding key, wind each movement "ccw" for the predetermined locking hours. A *"pointer"* which reflects the movement's locking hours is usually located at the 1:30 position, to the right of the display wheel. *NOTE: Each movement in the timelock must be wound before any attempt is made to lock the timelock.* 

3. Depress the actuator lever, located in the bottom center of the front cover. Considerable resistance will be noted. This is a normal condition and part of the locking function.

4. Ascertain that all movements are fully functional, by observing the action of the balance wheels. If there are not at least (2) functional movements, move the release lever laterally until the actuator releases and is in the fully unlocked condition. The release lever is located below the far, right-hand timelock movement winding arbor. Contact a qualified service company immediately. Do not re-lock the timelock until a complete inspection/repair can be accomplished.

5. If all movements (or at least two) are functioning correctly, close the door and fully extend the locking bolts. Throw-off both combinations, by rotating each dial at least (4) times. If the vault locks are controlled by the timelock, attempt to dial each one open. Minimal lock bolt retraction will be noted, far short of allowing the combination lock to fully unlock. If the timelock controls the function of the locking bolts, attempt to retract the bolt work with the bolt control handle. Minimal retraction should be noted, far short of fully unlocked. In either test, be certain to fully extend and re-lock either the bolt work or the combination lock bolt on each lock.

NOTE: If you were able to open the vault door, repeat steps 1-5. If the vault door still fails to lock, contact a qualified service technician for immediate repair.

#### Locking Procedure, Two Movement Assembly:

1. Determine how many hours the vault is to remain locked.

2. Wind each movement "ccw" until the "pointer" of each movement is directly aligned with the predetermined locking hour.

3. Depress the locking plunger button, located between the two timelock movements. Timelocks supplied with a guard cover require the use of the winding key to depress the locking plunger. The winding key is also used to activate the emergency release lever.

Note: The locking plunger button should remain depressed, indicating that the timelock is prepared to lock the vault door once the bolt work and/or combination locks are thrown off. The first movement to reach "0" hour unlocks the timelock. The emergency release lever is located above the locking plunger button.



## 3. **OPERATION** (continued)

#### 3.3 Devices

- 3.3.1 Detent Operating Rod
  - The detent operating rod is a spring-loaded rod that secures the slide lock bar while the vault door is in the open position, preventing the slide lock bar from being extended before the door is closed.
  - When the door is closed the rod engages the side of the vestibule, pushing on the rod end while
    rotating the locking cam, releasing the shoulder bolt in the detent bracket.
- 3.3.2 Service Access Panel
  - Located on the rear of the vault door this hinged panel is secured with a key lock and covers the working mechanisms of the vault door. The time lock and emergency ventilator are exposed through this panel.
- 3.3.3 Door/Vestibule Contacts
  - There are three sets of contacts located on the hinge side between the vault door and vestibule. The first set of these contacts provides power to the door for the emergency ventilator fan and courtesy lights from the low voltage transformer. The second set is a spare with no connections made. The third set provides the alarm signal.
- 3.3.4 Alarm Switch
  - Located on the rear of the vault door behind the service access door and above the operating cam, this switch monitors the operating cam position and generates a signal for use by the alarm company.
- 3.3.5 Passage Access Plug
  - Located on the rear of the vault door, the round knob releases the passage plug. Turning the knob counter-clockwise releases the passage plug through the door.
- 3.3.6 Heat Rise Sensor
  - Located on the rear of the vault door, this device detects a rise in temperature at the vault door in the event of an attack by a torch and generates a signal for use by the alarm company.
- 3.3.7 Courtesy Lamp Switch
  - Located on the rear of the vault door, this switch turns the courtesy lamps "on & off".
- 3.3.8 Ventilator Fan Switch
  - Located on the rear of the vault door, this switch turns the emergency ventilation fan "on & off".



## 3. **OPERATION** (continued)

- 3.4 Emergency Escape Procedure (Refer to Figure 3-1)
  - In the event a person(s) is trapped on the interior of the vault with no other means of escape, the vault door locking mechanism may be released with the use of a 5/32" hex wrench.
  - If this will be incorporated into a standard operating procedure it is necessary that a 5/32" hex wrench and a key to the service access panel be placed inside the vault area for easy access.
  - Procedures for this are as follows:
    - Open day gate to gain access to the service access panel key lock.
    - Using key provided, open the service access panel exposing the interior of the vault door and the locking mechanism.
    - Insert 5/32" hex wrench into the shoulder bolt that attaches the lock plunger to the lock bridge bar. Turning counter-clockwise, remove shoulder bolt.
    - With shoulder bolt removed, the lock plunger will move freely. Slide lock plunger until it no longer engages the locking cam.
    - Using your hand, rotate the locking cam clockwise for a left swing door & counter-clockwise for a right swing door. This rotation will pull the slide lock bar, which is attached to the locking cam via the locking bar linkage.
    - The vault door locking mechanism is now released, and the vault door can be pushed open from the vault interior.
- 3.5 Single Control to Dual Control Conversion (Refer to Figure 3-1)
  - Procedures for converting the vault door from single combination lock control to dual combination lock control are as follows:
    - Open service access door.
    - Using 5/32" hex wrench, remove shoulder bolt from single control position.
    - Install shoulder bolt in dual control position.
    - Check for proper operation before closing door. Door should not open until both upper and lower combinations are dialed.
- 3.6 Emergency Air Operation (Refer to Figure 3-2)
  - The 100 Series Vault Door comes standard with an emergency air ventilator incorporated. It is located on the rear of the vault door and is operated by the ventilator fan switch. In the event a person(s) are trapped in the vault, it can supply emergency air to the vault interior.
  - Push the switch for desired operation.



Figure 3-1 Emergency Escape & Lock Conversion



(Shown with Day Gate Open 90°)

- 1. Fixed Lock Bar
- 2. Slide Lock Bar
- 3. Service Access Panel
- 4. Key Lock, Access Panel
- 5. Day Gate
- 6. Locking Cam

- 7. Operating Wheel Shaft
- 8. Locking Bar Linkage
- 9. Lock Plunger
- 10. Shoulder Bolt (Shown) T-Shaped Bolt (Optional)
- 11. Lock Bridge Bar

# Figure 3-1



Figure 3-2 Emergency Operation



## REAR VIEW (Shown with Day Gate Open 90°)

- 1. Service Access Panel
- 2. Key Lock, Access Panel
- 3. Courtesy Lamp (4)
- 4. Time Lock

- 5. Ventilation Grille
- 6. Passage Plug
- 7. Courtesy Lamp Switch
- 8. Emergency Fan Switch



### 4. MAINTENANCE

### 4.1 Preventative Maintenance:

While the 100 Series Vault Doors are manufactured with the highest quality components there are items that require attention on a regular basis. Always err on the side of caution anytime a problem arises to prevent a lockout or other potentially harmful situation from occurring.

- Combination Locks, Dials & Rings
  - Vault attendant should check daily for proper operation. When dialing combinations make sure they
    are opening on the correct numbers and have not slipped. A locksmith should be called anytime
    there is an indication that they are not functioning properly.
  - Refer to the manufacturers specifications in (Section 3.2)
- Time Locks
  - The movements in a time lock are precision watch quality components. There are 3 movements in each time lock. In order for the time lock to release the vault door for opening, only one movement is required to wind down, the others are for redundancy. To avoid potential lockouts make sure that each movement is winding down at the same time. The time lock should be checked, serviced and or replaced by a certified locksmith any time there is a movement not functioning.
  - Refer to the manufacturers specifications in (Section 3.2)
- Cleaning
  - Exposed surfaces of the 100 Series Vault Door are finished in brushed stainless steel, chrome plated steel, and anodized aluminum. Clean using a soft cloth and a high quality stainless steel cleaner such as ZEP Stainless Steel Cleaner. Clean the acrylic day gate with a glass cleaner. Do not use abrasive cleaners or cloths.
- Door Hinges
  - Pre-lubricated spherical bearings are incorporated in the upper and lower hinge blocks. Each door hinge should be inspected annually. If the vault door becomes difficult to swing open, the hinges should be checked. Other factors that can cause the vault door to not swing properly are floor coverings, foundation settling, etc. Anytime there is a concern regarding this, call a vault door specialist to inspect.
- Courtesy Lamps
  - The courtesy lamps located on the Time Lock/Ventilator panel on the rear of the vault door will operate only when the vault door is closed. They should be checked on a monthly basis. To check, use the day lock feature described in (Section 3.1.5). This will secure the vault door in the un-locked position. With a person on the vault interior close the vault door and actuate the courtesy lamp switch.
- Emergency Ventilator Fan
  - The emergency ventilator fan is located behind the Time Lock/Ventilator panel on the rear of the vault door. It should be checked on a monthly basis for proper operation. To check, use the day lock feature described in (Section 3.1.5). This will secure the vault door in the un-locked position. With a person on the vault interior, close the vault door and actuate the fan switch.



## 4 MAINTENANCE (continued)

4.2 Maintenance Record

Date	Type of Service Performed	Initials