

**100 Series UL Listed Vault Door
Installation and Operation Manual
January 15, 2009**



- Model 100, UL Class M
- Model 101, UL Class 1
- Model 102, UL Class 2
- Model 103, UL Class 3

CAUTION

EXTREMELY HEAVY

THIS PRODUCT SHOULD ONLY BE INSTALLED AND SERVICED BY
PROFESSIONALS EXPERIENCED AND QUALIFIED IN THE INSTALLATION
OF VAULTS AND VAULT DOOR ASSEMBLIES

TILTING HAZARD

Date of Manufacture:	
UL/Serial Number:	
Installed By:	



7500 Mars Drive
Waco, TX 76712
(254) 776-0100 P
(254) 776-0700 F
www.AmericanVault.us

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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 of BP6254.

The front of the 100 Series 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 door. All exposed surfaces (including the jamb, hinges and locking bar) are satin finish stainless steel.

The 100 Series 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 into the jamb of the vestibule.

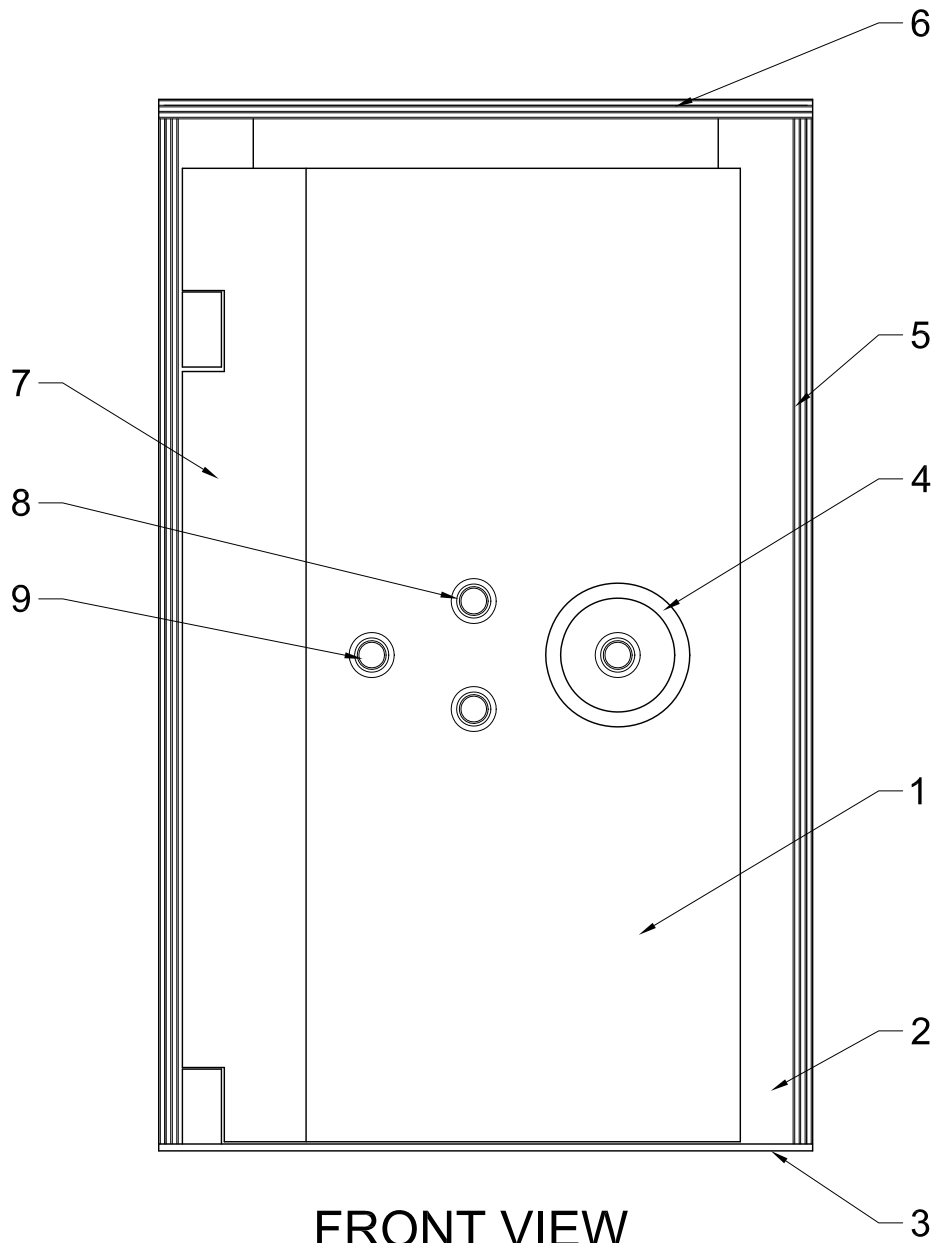
All doors are equipped with dual four-tumbler combination locks for controlled access by one or more attendants. A three-movement, 144-hour time lock prevents unauthorized vault entry prior to the specified time.

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 Names of the Parts

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

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

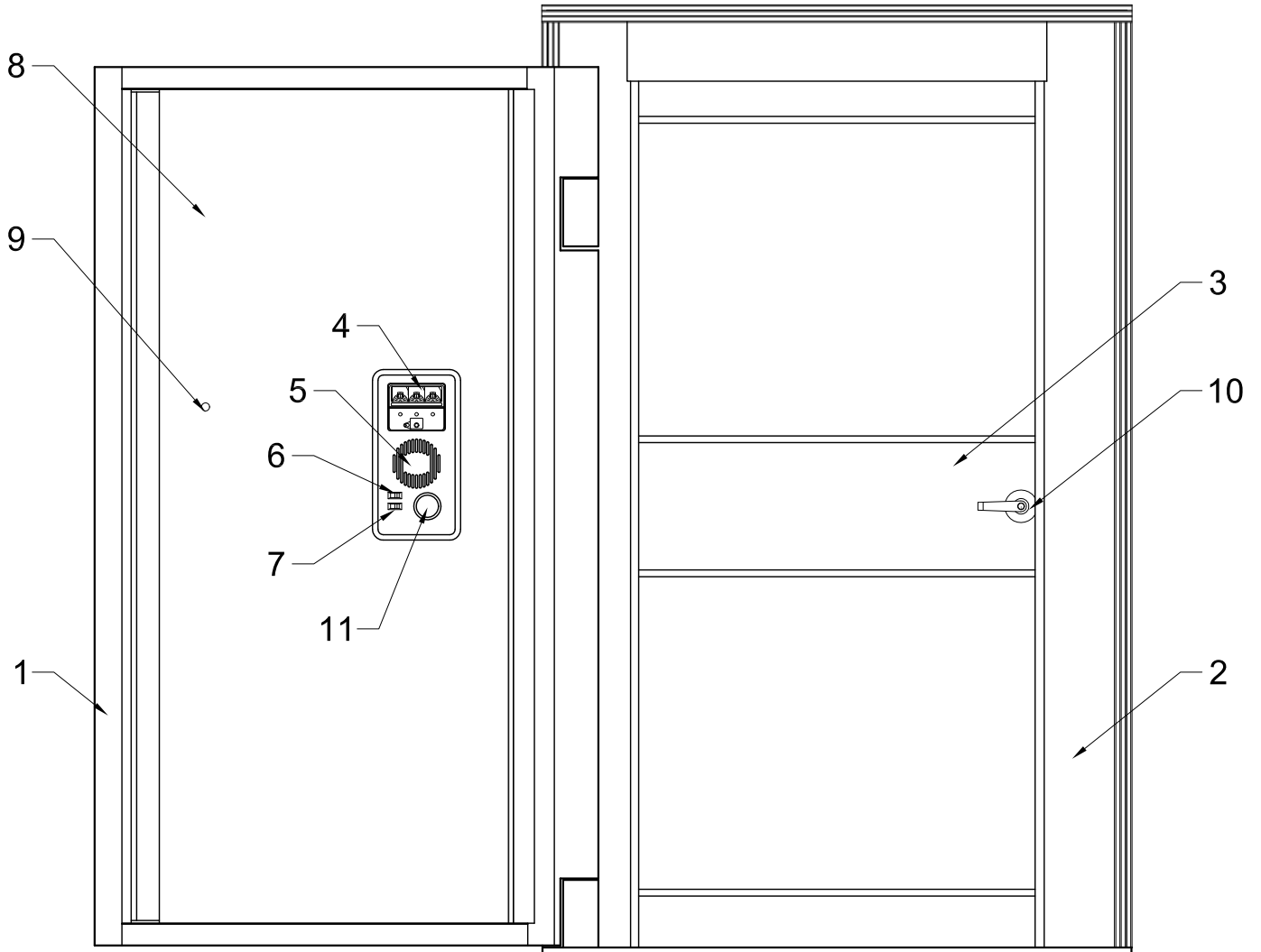


FRONT VIEW
(Shown with Door Closed)

- | | |
|------------------------------|--------------------------------|
| 1. Door | 6. Architrave Trim, Horizontal |
| 2. Vestibule | 7. Hinge Cover |
| 3. Vestibule Bed Plate | 8. Combination Dial & Ring |
| 4. Operating Wheel | 9. Air Supply/Pass-Through |
| 5. Architrave Trim, Vertical | |

Figure 1-1

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

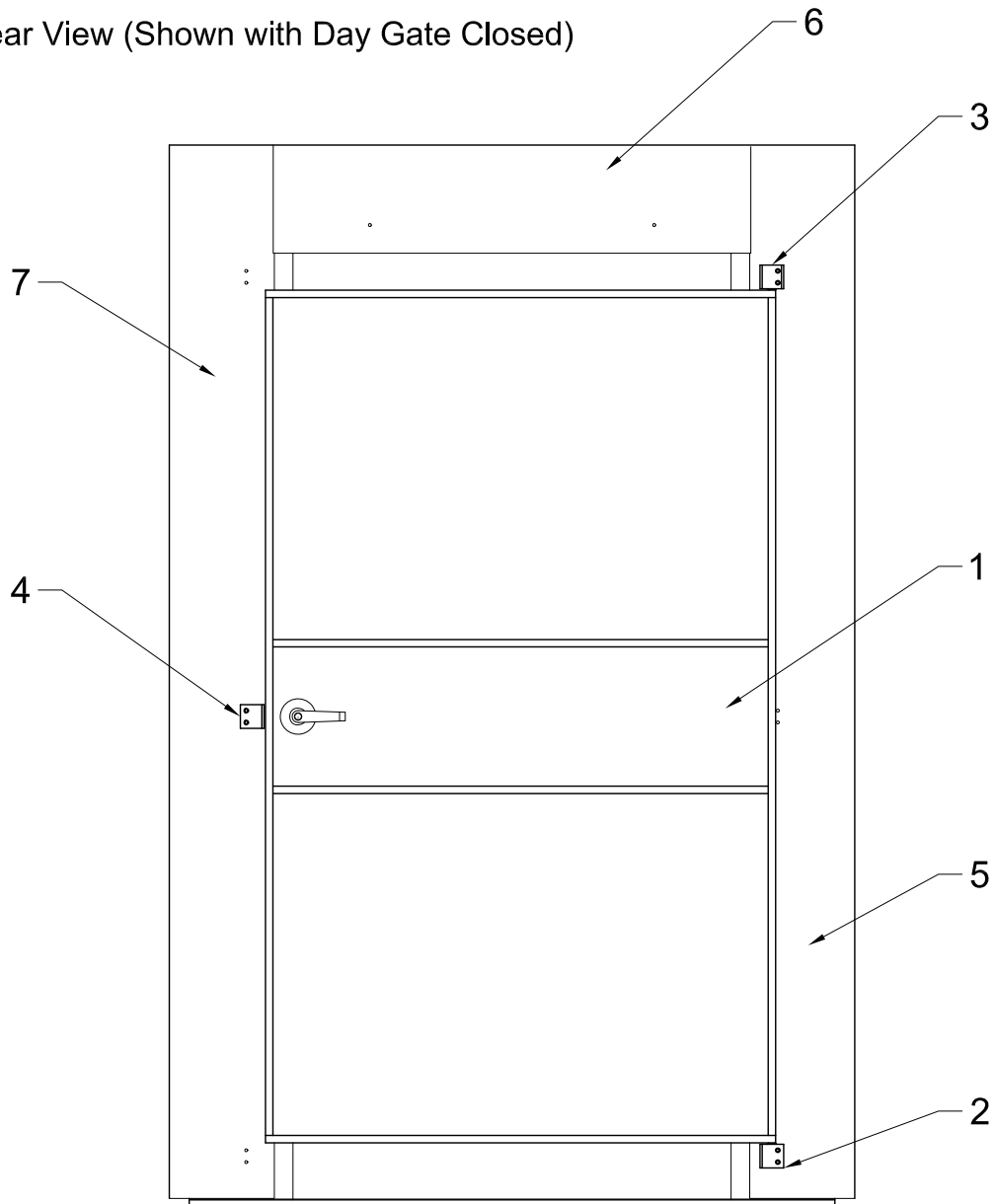


FRONT VIEW
(Shown with Door Open)

- | | |
|-----------------------|-------------------------|
| 1. Door | 6. Courtesy Lamp Switch |
| 2. Vestibule | 7. Emergency Fan Switch |
| 3. Day Gate | 8. Service Access Panel |
| 4. Time Lock | 9. Key Lock |
| 5. Ventilation Grille | 10. Lever Lock-Set |
| | 11. Passage Plug |

Figure 1-2

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

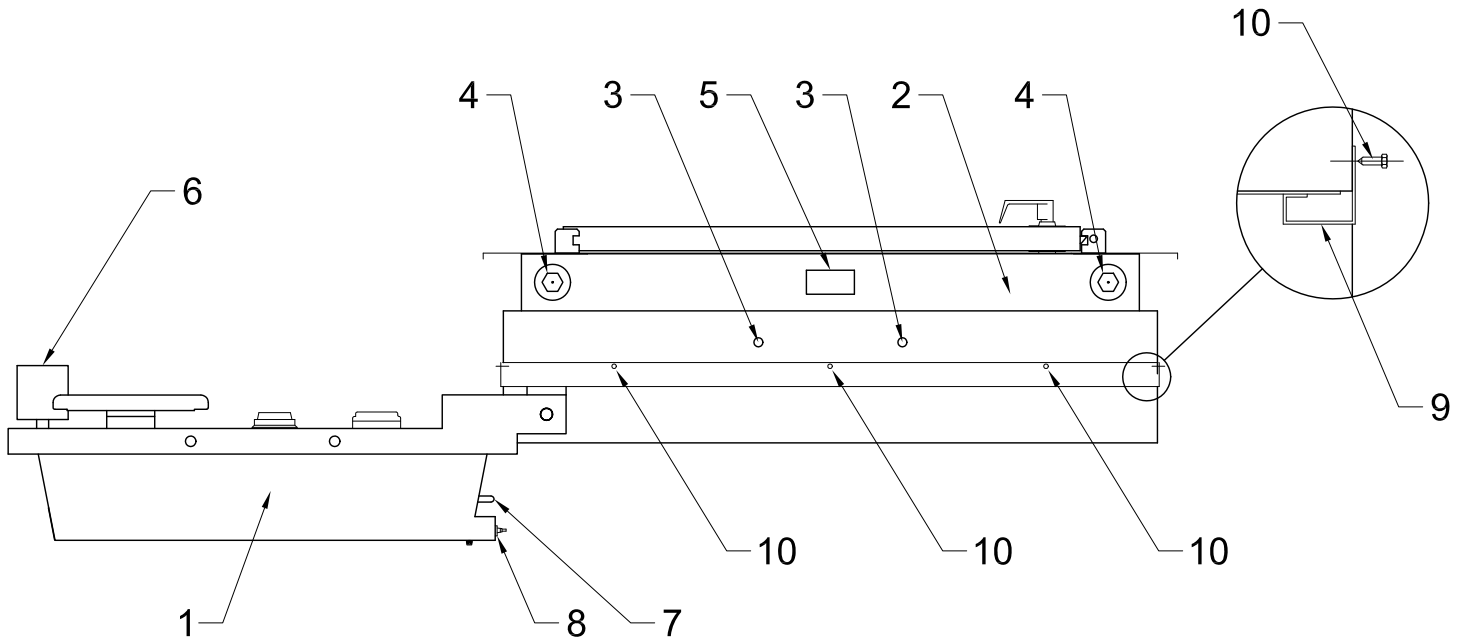


REAR VIEW
(Shown with Daygate Closed)

- | | |
|--|---------------------------------------|
| 1. Day Gate | 6. Trim, Vestibule Rear Upright, Top |
| 2. Lower Hinge Block | 7. Trim, Vestibule Rear Upright, Left |
| 3. Upper Hinge Block | |
| 4. Striker | |
| 5. Trim, Vestibule Rear Upright, Right | |

Figure 1-3

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



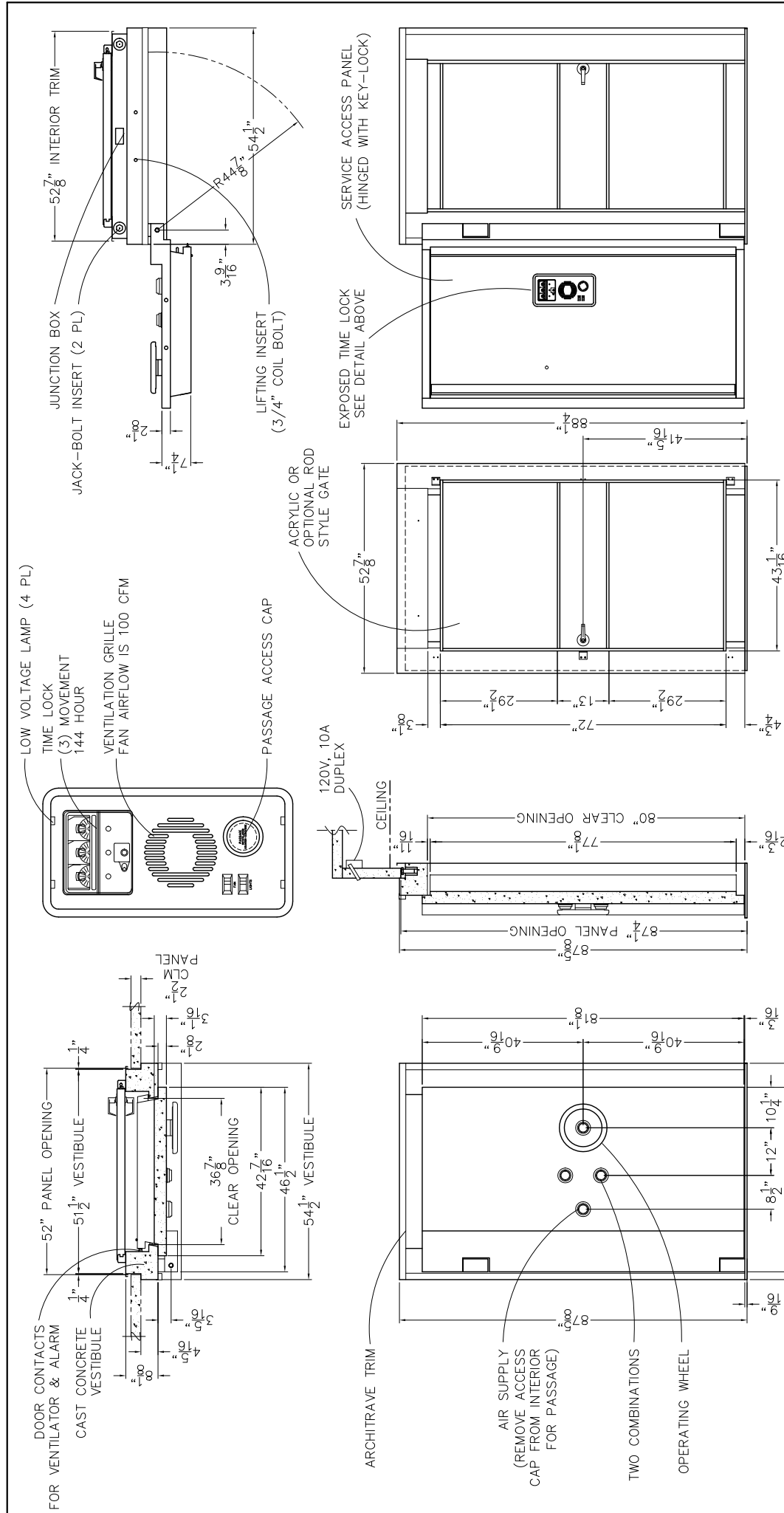
PLAN VIEW
(Shown with Door Open)

- | | |
|----------------------|------------------------------|
| 1. Door | 6. Door Stop |
| 2. Vestibule | 7. Detent Operating Rod |
| 3. Lifting Insert | 8. Door Contacts |
| 4. Jack-Bolt | 9. Architrave Trim, Vertical |
| 5. Wiring Access Box | 10. Screw, TCS, #8x3/4" |

Figure 1-4

1.3 Specifications

American Vault Model	100	101	102	103
U.L. Classification	M	One	Two	Three
U.L. Attack Resistance	One-Quarter Hour	One-Half Hour	One Hour	Two Hour
Door Thickness	3"	5"	7"	12"
Clear Opening (W x H)	37" x 80"	37" x 80"	37" x 80"	37" x 80"
Power Requirements (See Note)	110 volt/5 amp	110 volt/5 amp	110 volt/5 amp	110 volt/5 amp
Shipping Package Size (D x W x H)	58" x 91" x 32"	58" x 91" x 32"	58" x 91" x 32"	58" x 91" x 40"
Weight (Lbs.)	3600	4000	4400	7000



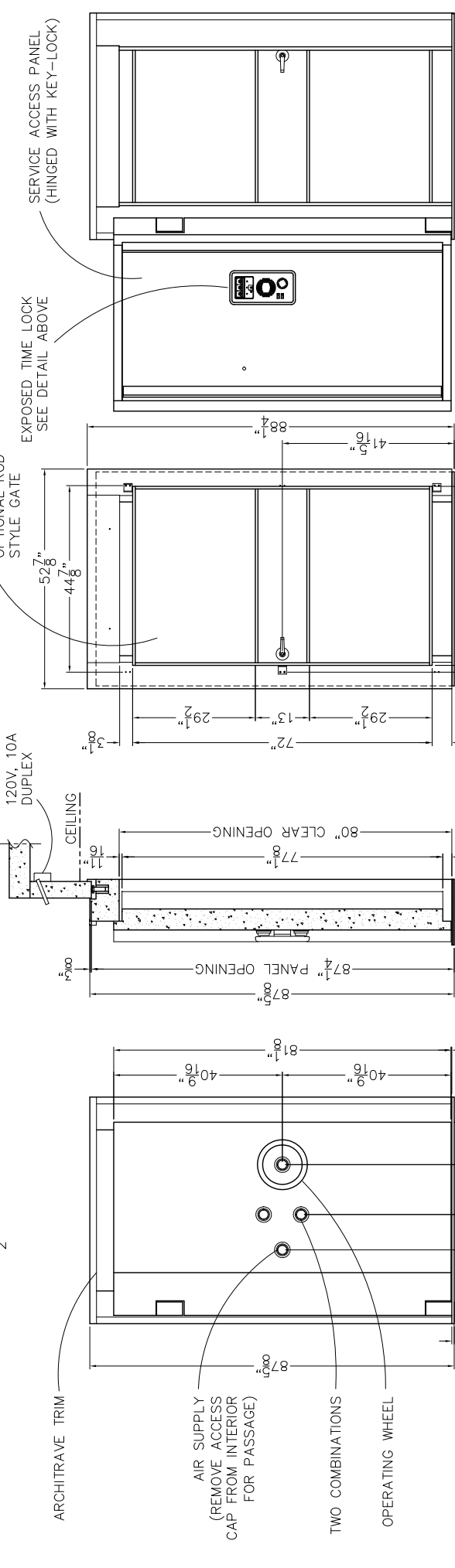
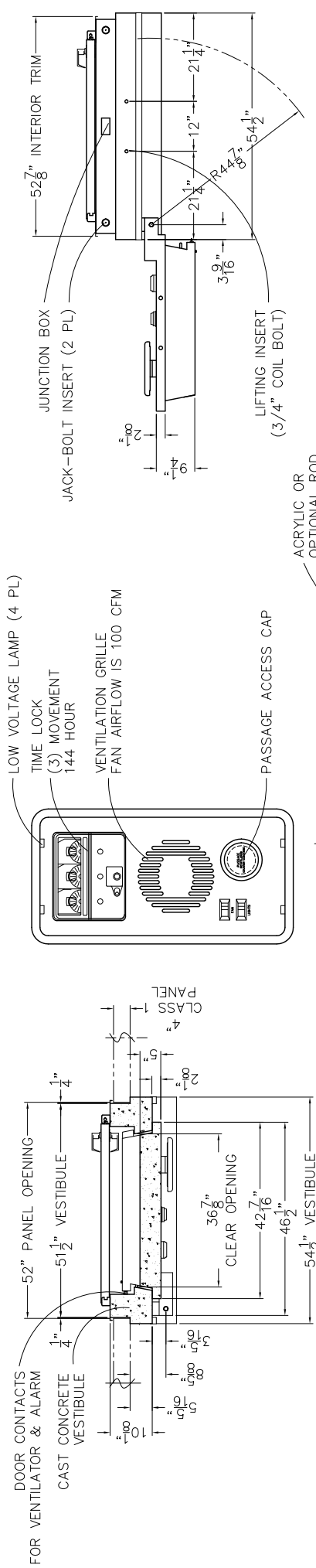
American Vault® Waco, Texas

DESCRIPTION PRODUCT APPLICATION DRAWING
 100 SERIES VAULT DOOR
 MODEL 100-01 CLM LS SHOWN
 MODEL 100-02 CLM RS OPPOSITE

SIZE DWG. NO. DATE SCALE NONE
B 20084 01.08.09 SHEET 1 OF 1

- NOTES:**
1. ALL EXPOSED DOOR & VESTIBULE SURFACES FINISHED IN STAINLESS STEEL.
 2. SECURITY BARRIER FOR DOOR AND VESTIBULE ARE CONSTRUCTED OF FIBER REINFORCED CONCRETE.
 3. DESIGNED, MANUFACTURED AND TESTED IN ACCORDANCE WITH UL STANDARD UL608 (CERTIFICATION BP6254).
 4. STANDARD DAYGATE IS CONSTRUCTED OF CLEAR ANODIZED EXTRUDED ALUMINUM PROFILES AND GRAY ACRYLIC SHEET WITH ADA COMPLIANT LEVER LOCK SET IN US26D FINISH.
 5. VESTIBULE IS DESIGNED FOR GROUTLESS INSTALL. IT IS TO BE WELDED TO MODULAR VAULT PANELS 1" WELD EVERY 12" MINIMUM. FULL WELD IS RECOMMENDED.
 6. SHIPPING WEIGHT IS 3,600 LBS.
 7. VESTIBULE IS CAST WITH TWO LIFT POINTS AT END. REQUEST (P/N 9040-0002) 3/4" T-12 LIFTING SWIVEL AND (P/N 9040-0006) 3/4"x4" COIL BOLT FOR PROPER RIGGING ATTACHMENT.
 8. VAULT DOOR REQUIRES INSTALL KIT FOR PROPER INSTALLATION. REQUEST KIT P/N 102-2200.

CAUTION!
ONLY PROFESSIONALS EXPERIENCED AND QUALIFIED IN THE INSTALLATION OF MODULAR VAULTS AND VAULT DOORS SHOULD INSTALL THIS PRODUCT.



American Vault® Waco, Texas

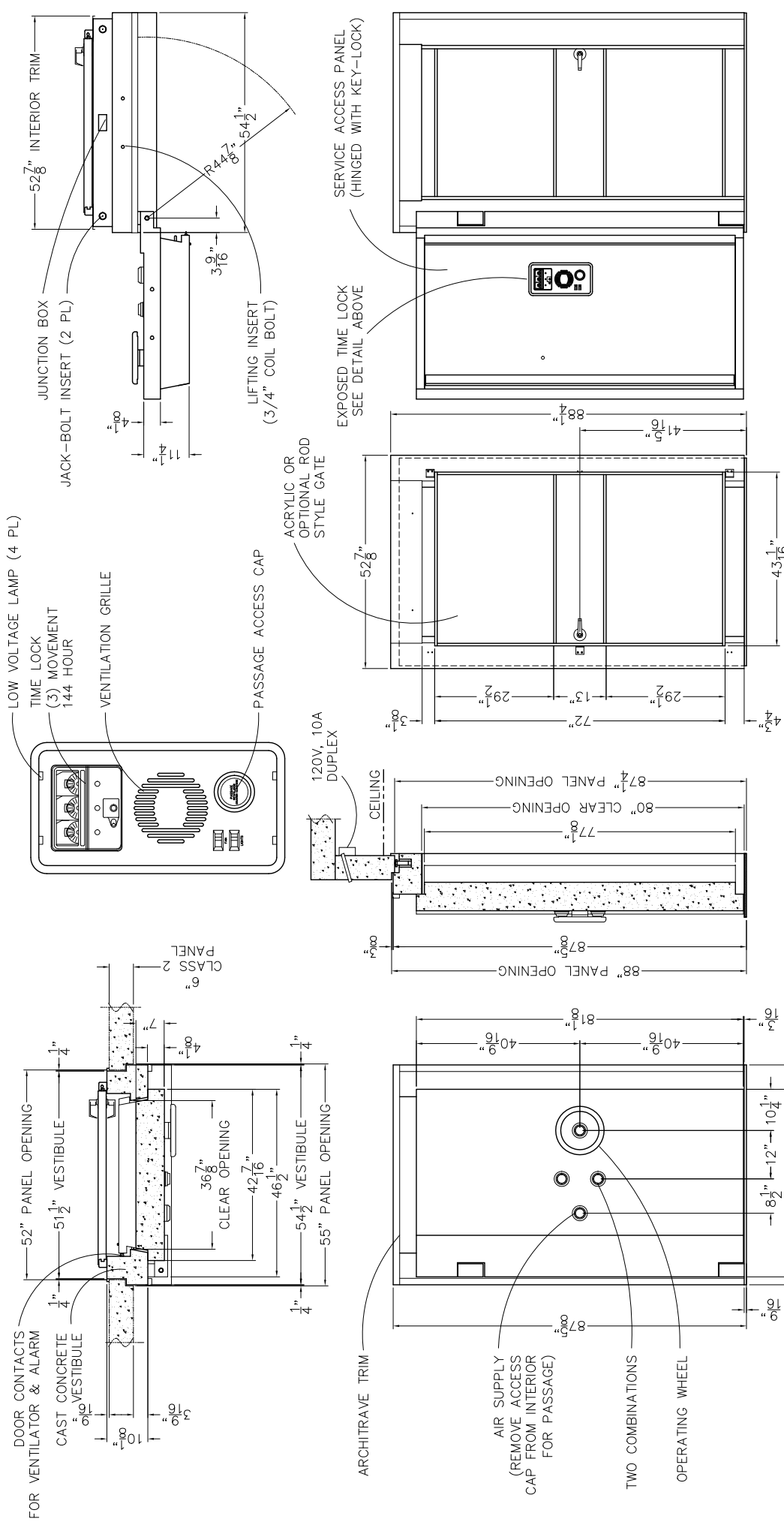
DESCRIPTION PRODUCT APPLICATION DRAWING
100 SERIES VAULT DOOR
MODEL 101-01 CL1 LS SHOWN
MODEL 101-02 CL1 RS OPPOSITE

SIZE DWG. NO. DATE SCALE NONE SHEET 1 OF 1

B 20085 01.07.09

- NOTES:
1. ALL EXPOSED DOOR & VESTIBULE SURFACES FINISHED IN STAINLESS STEEL.
 2. SECURITY BARRIER FOR DOOR AND VESTIBULE ARE CONSTRUCTED OF FIBER REINFORCED CONCRETE.
 3. DESIGNED, MANUFACTURED AND TESTED IN ACCORDANCE WITH UL STANDARD UL608 (CERTIFICATION BP6254).
 4. STANDARD DAYGATE IS CONSTRUCTED OF CLEAR ANODIZED EXTRUDED ALUMINUM PROFILES AND GRAY ACRYLIC SHEET WITH ADA COMPLIANT LEVER LOCK SET IN US26D FINISH.
 5. VESTIBULE IS DESIGNED FOR GROUTLESS INSTALL. IT IS TO BE WELDED TO MODULAR VAULT PANELS 1" WELD EVERY 12" MINIMUM. FULL WELD IS RECOMMENDED.
 6. SHIPPING WEIGHT IS 4,000 LBS.
 7. VESTIBULE IS CAST WITH TWO LIFT POINTS AT END. REQUEST (P/N 9040-0002) 3/4"-12 LIFTING SWIVEL AND (P/N 9040-0006) 3/4"x4" COIL BOLT FOR PROPER RIGGING ATTACHMENT.
 8. VAULT DOOR REQUIRES INSTALL KIT FOR PROPER INSTALLATION. REQUEST KIT P/N 102-2200.

CAUTION!
ONLY PROFESSIONALS EXPERIENCED AND QUALIFIED IN THE INSTALLATION OF MODULAR VAULTS AND VAULT DOORS SHOULD INSTALL THIS PRODUCT.



American Vault® Waco, Texas
 DESCRIPTION PRODUCT APPLICATION DRAWING
 100 SERIES VAULT DOOR
 MODEL 102-01 CL2 LS SHOWN
 MODEL 102-02 CL2 RS OPPOSITE

SIZE	DWG. NO.	DATE	SCALE	NONE
B	20086	01.08.09		

SHEET 1 OF 1

- NOTES:
- ALL EXPOSED DOOR & VESTIBULE SURFACES FINISHED IN STAINLESS STEEL.
 - SECURITY BARRIER FOR DOOR AND VESTIBULE ARE CONSTRUCTED OF FIBER REINFORCED CONCRETE.
 - DESIGNED, MANUFACTURED AND TESTED IN ACCORDANCE WITH UL STANDARD UL608 (CERTIFICATION BP6254).
 - STANDARD DAYGATE IS CONSTRUCTED OF CLEAR ANODIZED EXTRUDED ALUMINUM PROFILES AND GRAY ACRYLIC SHEET WITH ADA COMPLIANT LEVER LOCK SET IN US26D FINISH.
 - VESTIBULE IS DESIGNED FOR GROUTLESS INSTALL. IT IS TO BE WELDED TO MODULAR VAULT PANELS 1" WELD EVERY 12" MINIMUM. FULL WELD IS RECOMMENDED.
 - SHIPPING WEIGHT IS 4,400 LBS.
 - VESTIBULE IS CAST WITH TWO LIFT POINTS AT END. REQUEST (P/N 9040-0002) 3/4" T-12 LIFTING SWIVEL AND (P/N 9040-0006) 3/4"x4" COIL BOLT FOR PROPER RIGGING ATTACHMENT.
 - VAULT DOOR REQUIRES INSTALL KIT FOR PROPER INSTALLATION. REQUEST KIT P/N 102-2200.

CAUTION!
ONLY PROFESSIONALS EXPERIENCED AND QUALIFIED IN THE INSTALLATION OF MODULAR VAULTS AND VAULT DOORS SHOULD INSTALL THIS PRODUCT.

2 INSTALLATION

2.1 Safety and Pre-Installation Procedures

- 2.1.1 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.
- 2.1.2 Keep the work area clear of all trash and clutter.
- 2.1.3 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.
- 2.1.4 This door is shipped with two mechanical combinations set for single control use (either combination will open) as standard. Make sure both combinations are "spun off" (scrambled) before lifting or moving.
- 2.1.5 Know location of the nearest medical facility and "911" availability.
- 2.1.6 Verify the condition of safety equipment and tools.
- 2.1.7 When arriving at job-site introduce yourself to the General Contractor and/or job superintendent, explain:
 - The equipment you will be installing.
 - What your schedule will be.
 - What will be required of the contractor and/or electrician?
- 2.1.8 Check best route into building. Inform G.C. of weights involved. Inform G.C. of existing floor cracks or damage. If a basement or floor exists below the route of travel and/or under the vault area, the G.C. and all trades must be notified.
- 2.1.9 Caution other persons in the building to avoid the area in which the door is being installed. It is recommended to "cordon-off" the area.
- 2.1.10 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.
- 2.1.11 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.
- 2.1.12 Never leave a standing Vault Door unattended unless it is securely fastened or welded in place.
- 2.1.13 It is the responsibility of the installer to anticipate and correct all hazardous conditions, including careless or thoughtless act of assistants or technicians who misguidedly try to "help".

2 INSTALLATION (continued)

2.2 Apparel

2.2.1 Personal safety equipment required (but not limited to):

Hard Hat, Safety Glasses, Safety Shoes, Gloves, First aid kit

2.2.2 Wear a hard hat whenever working at an installation or construction site.

2.2.3 Wear high top safety shoes with non-slip soles. Tools, bars, cribbing, rollers, etc., are frequently dropped and can cause injury.

2.2.4 Safety glasses are a must.

2.2.5 Leather faced gloves should be worn when handling cribbing, cables, chains or unfinished metals.

2.3 Unpacking and Inspection (Refer to Figure 2-1)

2.3.1 All doors are shipped on skids fully assembled and ready for installation.

2.3.2 Visually inspect exterior of shipping carton for damage.

Note any damage on freight forwarders Bill of Lading.

2.3.3 Remove the top of shipping carton.

2.3.4 Carton should contain the following items:

- 1 ea. Final Assembly, 100 Series Vault Door
- 2 ea. 103-9876 Trim, Vestibule Architrave, Vertical
- 1 ea. 103-9877 Trim, Vestibule Architrave, Horizontal
- 1 ea. 102-9878 Trim, Vestibule Rear Upright, Left
- 1 ea. 102-9879 Trim, Vestibule Rear Upright, Right
- 1 ea. 102-9880 Trim, Vestibule Rear Upright, Top
- 1 ea. 102-1200 Final Assembly, 100 Series Acrylic Day Gate
- 1 ea. 102-5000 Install Kit, 100 Series Acrylic Day Gate

(Contains the following)

- 1 ea. Day Gate Hinge Block, Upper
- 1 ea. Day Gate Hinge Block, Lower
- 1 ea. Day Gate Striker Block
- 6 ea. 8076-1780 Screw, Cap, SH, S/S, ¼-20 x 2-1/2" lg.
- 1 pair Key, Lever Lockset
- 1 ea. 102-1900 Accessory Kit, 100 Series Vault Door

(Contains the following)

- 1 ea. 102-1800 Door Stop Assembly
- 1 ea. 7101-0001 Converter, Power, Plug-In 12v @ 1amp
- 1 roll 1016-0001 Safety Walk
- 8 ea. 8077-1732 Screw, Cap, BH, S/S, ¼-20 x 3/4" lg.
- 1 ea. 7882-0009 Key, 4-Wheel Combination Change
- 1 ea. 7895-1001 Key, Time Lock Winding
- 1 pair Key, Service Access Door Lock
- 1 ea. 100 Series Vault Door Installation & Operation Manual

2 INSTALLATION (continued)

2.4 Site Requirements

2.4.1 Foundation

- 2.4.1.1 A 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.
- 2.4.1.2 For foundation details it is recommended a local registered engineer be contacted.
- 2.4.1.3 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".

2.4.2 Job Site Conditions

- 2.4.2.1 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 G.C. if conditions at 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. It uses a stepped opening that is 52" wide x 88" high. It is manufactured application specific for each class of vault. Refer to section 1.4 for opening specifications.

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. Minimum recommended fork length is 54".

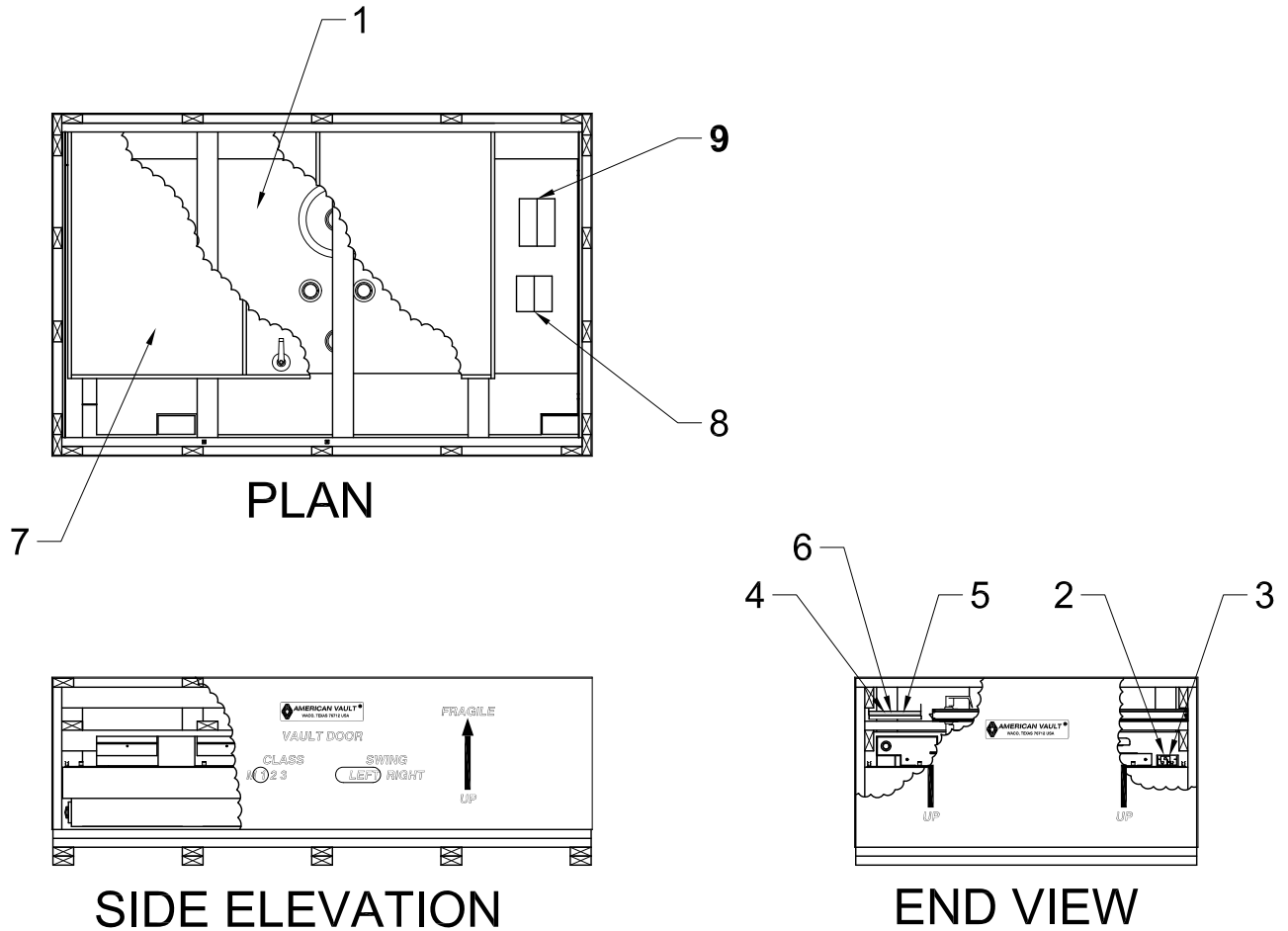
2.7 Installation Instructions (Refer to Figure 2-2)

- 2.7.1 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.
- 2.7.2 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 Bar, (4) 3/4" x 6" Coil Bolts, 1-1/8" open end wrench & hand tools as required.

2 INSTALLATION (continued)

- 2.7.3 Using appropriate overhead lifting and rigging techniques stand the Vault Door in front of the opening. CAUTION: Vault Doors are front heavy. Make sure load is properly secured. Without removing the rigging attachments, move the Vault Door into masonry opening.
- 2.7.4 Secure the Vault Door using the Safety/Installation Bars and coil bolts. These are available through American Vault. Request kit part number 102-2200.
- 2.7.5 Shim under the Vestibule bedplate 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.)
- 2.7.6 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).
- 2.7.7 With Jack-Bolts securely tightened and (2) Safety/Installation Bars in place, the Vault Door may now be opened. NOTICE: There can never be too many safety devices in place.
- 2.7.8 Check door for proper floor clearances. Taking into account floor coverings etc. that may be applied at a later date.
- 2.7.9 Open Vault Door to 90 & 180 deg to make sure it does not run.
- 2.7.10 If Vault Door swings properly, it should now be welded to the 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.
- 2.7.11 Check Vault Door for operation once again.
- 2.7.12 Safety/Installation Bars and rigging attachments can now be removed.
- 2.7.13 Route wires from junction box in top of the Vestibule through conduit provided in header of Vault Door opening. Hook-up low voltage transformer and alarm (refer to figure 2-3 for connections).
- 2.7.14 Install Vault Door Rear Trim (Top, Left & Right Side).
- 2.7.15 Install lower Day Gate hinge block. Place upper hinge block on top pin of Day Gate. Set lower Day Gate hinge pin in lower hinge block. Secure upper hinge block. Install Day Gate striker block. Note: Day Gate may be hinged right or left depending on installation requirements.
- 2.7.16 Install front Vestibule Trim (Top, Left & Right Side).
- 2.7.17 Apply tread tape to Vestibule Bed Plate.
- 2.7.18 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.
- 2.7.19 Check Time Locks for proper operation.
- 2.7.20 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 3.4).

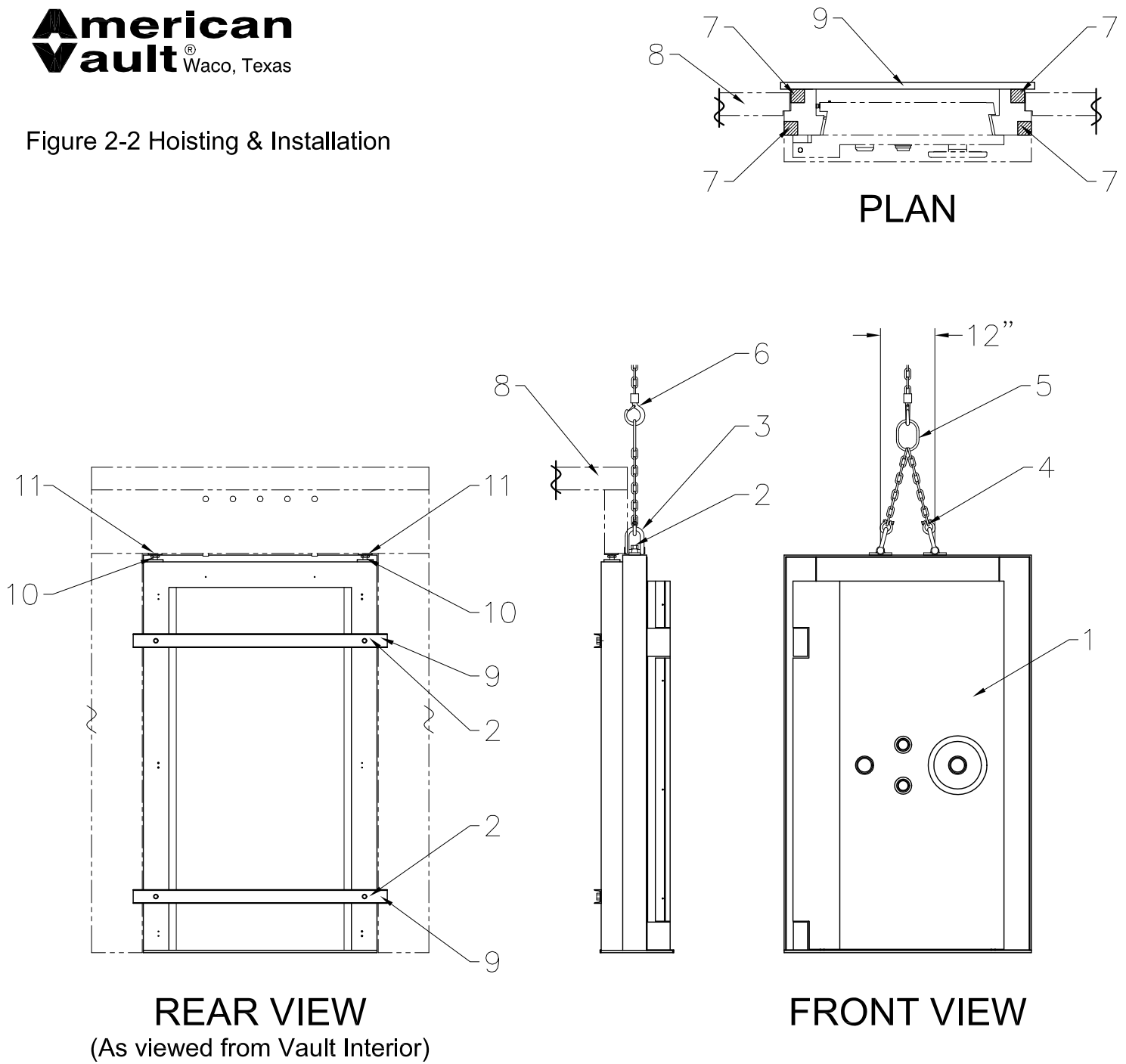
Figure 2-1 Shipping Assembly Drawing



- | | |
|--|--|
| 1. 100 Series Vault Door Assembly | 6. Trim, Vestibule Rear, Top |
| 2. Architrave Trim, Vertical | 7. 100 Series Acrylic Daygate Assembly |
| 3. Architrave Trim, Horizontal | 8. 100 Series Daygate Accessory Kit |
| 4. Trim, Vestibule Rear Upright, Left | 9. 100 Series Vault Door Accessory Kit |
| 5. Trim, Vestibule Rear Upright, Right | |

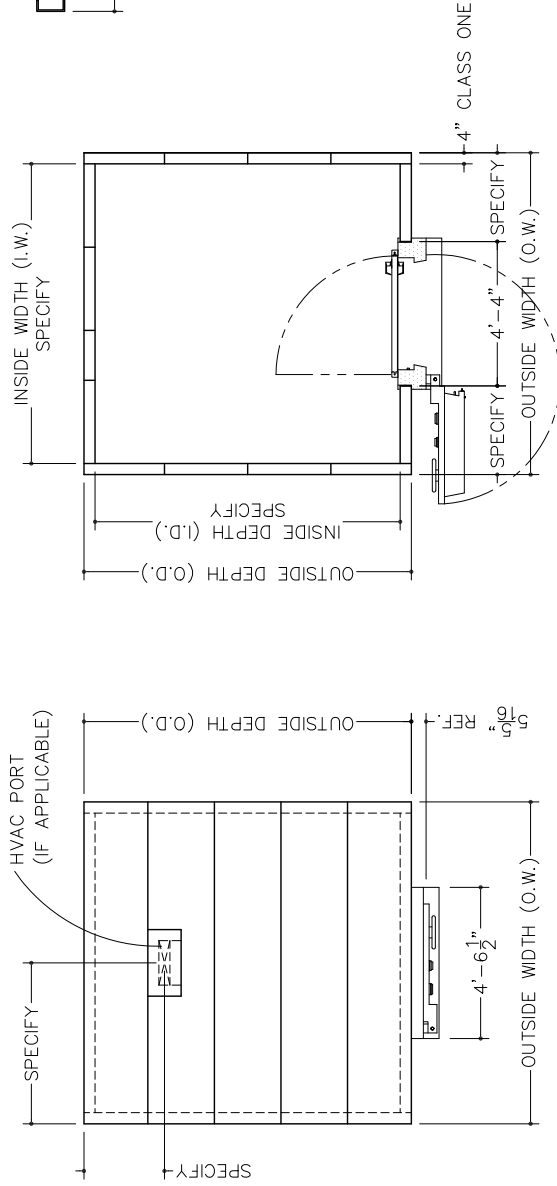
Figure 2-1

Figure 2-2 Hoisting & Installation



- | | |
|---|--------------------------------------|
| 1. 100 Series Vault Door Assembly | 7. Vestibule Bed Plate Shim Location |
| 2. 3/4" x 4" Lg. Coil Bolt | 8. Vault Panel |
| 3. Swivel Lifting Plate (T12) | 9. Install/Safety Bar |
| 4. Connecting Link | 10. Jack-Bolt |
| 5. Chain Sling | 11. Jack-Bolt Shim |
| 6. 360° Swivel Safety Hook
(from Lifting Device) | |

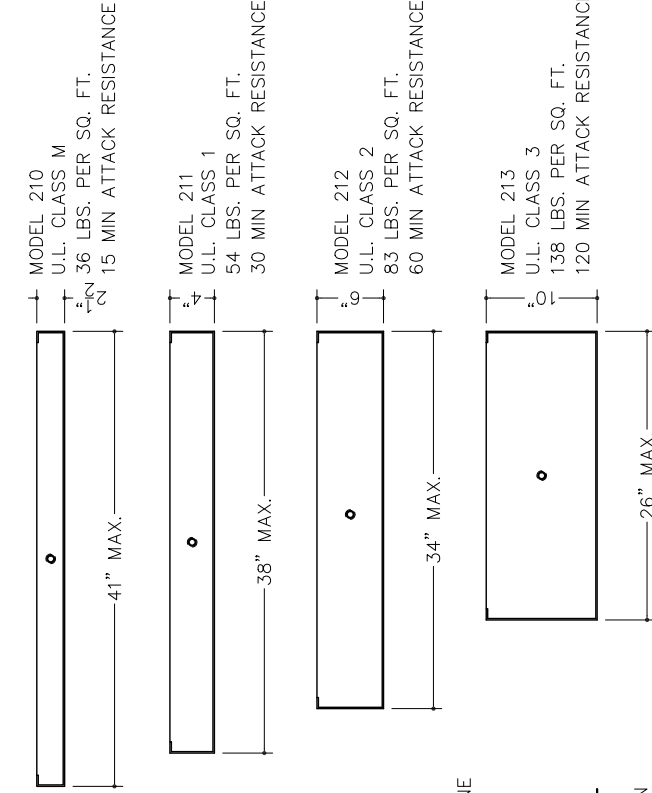
Figure 2-2



PLAN

PLAN (WALLS ONLY)

MODEL 211, U.L. CLASS 1 SHOWN
MODEL 101-01, U.L. CLASS 1, LEFT SWING DOOR SHOWN



MODEL 210
U.L. CLASS M
36 LBS. PER SQ. FT.
15 MIN ATTACK RESISTANCE

MODEL 211
U.L. CLASS 1
54 LBS. PER SQ. FT.
30 MIN ATTACK RESISTANCE

MODEL 212
U.L. CLASS 2
83 LBS. PER SQ. FT.
60 MIN ATTACK RESISTANCE

MODEL 213
U.L. CLASS 3
138 LBS. PER SQ. FT.
120 MIN ATTACK RESISTANCE

ONLY PROFESSIONALS EXPERIENCED AND QUALIFIED IN THE INSTALLATION OF MODULAR VAULTS AND VAULT DOORS SHOULD INSTALL THIS PRODUCT.

CAUTION!

WHEN SPECIFYING VAULT PROVIDE THE FOLLOWING:

- U.L. CLASS (M,1,2,3)
- NUMBER OF SIDES (5,6)
- INSIDE DIMENSIONS (WIDTH x DEPTH x HEIGHT)
- VAULT DOOR LOCATION
- HVAC PORT LOCATION (IF APPLICABLE)

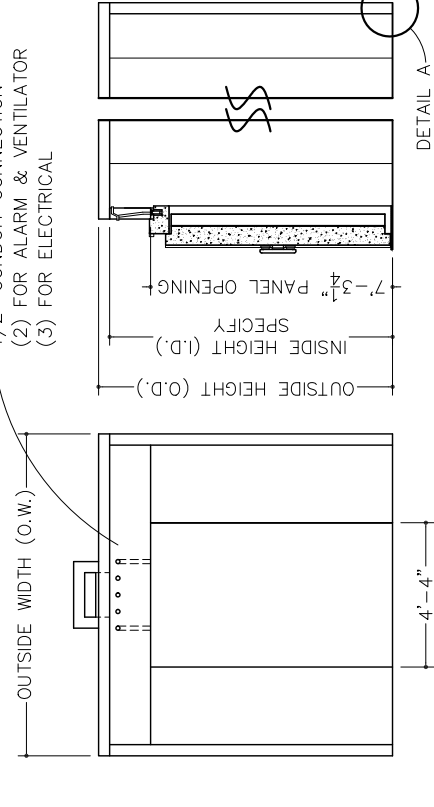
EXAMPLE:

CLASS 1, 5 SIDED, 9'-0" D x 12'-0" D x 8'-6" H
L.S. DOOR CENTERED ON 9'-0" WALL

NOTES:

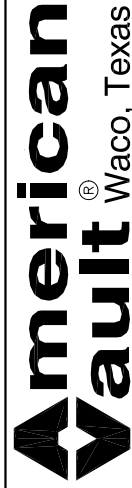
1. PANELS ARE CONSTRUCTED OF FIBER REINFORCED CONCRETE AND REBAR IN A FIVE-SIDED STEEL PAN. STEEL PAN FORMS INTERIOR OF VAULT WITH EXPOSED CONCRETE ON EXTERIOR.
2. ALL INSIDE ADJOINING SURFACES TO BE WELDED WITH 1" OF 1/8" WELD PER EACH FOOT OF LENGTH.
3. ALL UTILITY CONNECTIONS ARE BY OTHERS.
4. STRUCTURAL DESIGN OF FLOOR AND SUPPORTING FOUNDATION IS BY OTHERS.
5. SEISMIC CALCULATIONS (IF APPLICABLE) ARE BY OTHERS.
6. PANELS ARE SHIPPED "KNOCK-DOWN" TO BE ERECTED AT JOBSITE AS PER SPEC'S FURNISHED.
7. WHERE APPLICABLE FLOOR, CEILING & WALL COVERINGS ARE BY OTHERS.
8. ALL DIMENSIONS ARE NOMINAL. TOLERANCES OF 1/32" PER FOOT OF LENGTH ARE TO BE ALLOWED.
9. THIS STRUCTURE IS NOT DESIGNED FOR ADDITIONAL LOADS APPLIED TO THE ROOF.
10. ELECTRICIAN IS TO INSTALL 120 V, 10 AMP DUPLEX OUTLET ABOVE VAULT DOOR FOR VENTILATOR SUPPLY.
11. IT IS THE RESPONSIBILITY OF THE OWNER/ARCHITECT/GC TO ENSURE THAT ALL LOCAL, STATE & FEDERAL ADA REGULATIONS ARE COMPLIED WITH.
12. PANELS ARE CAST WITH LIFT POINTS EACH END. REQUEST (P/N 9040-0002) 3/4"-12 LIFTING SWIVEL AND (P/N 9040-0006) 3/4"x4" COIL BOLT FOR PROPER RIGGING ATTACHMENT.
13. VAULT DOOR REQUIRES INSTALL KIT FOR PROPER INSTALLATION. REQUEST KIT P/N 102-2200.

- 1/2" CONDUIT CONNECTION
- (2) FOR ALARM & VENTILATOR
- (3) FOR ELECTRICAL



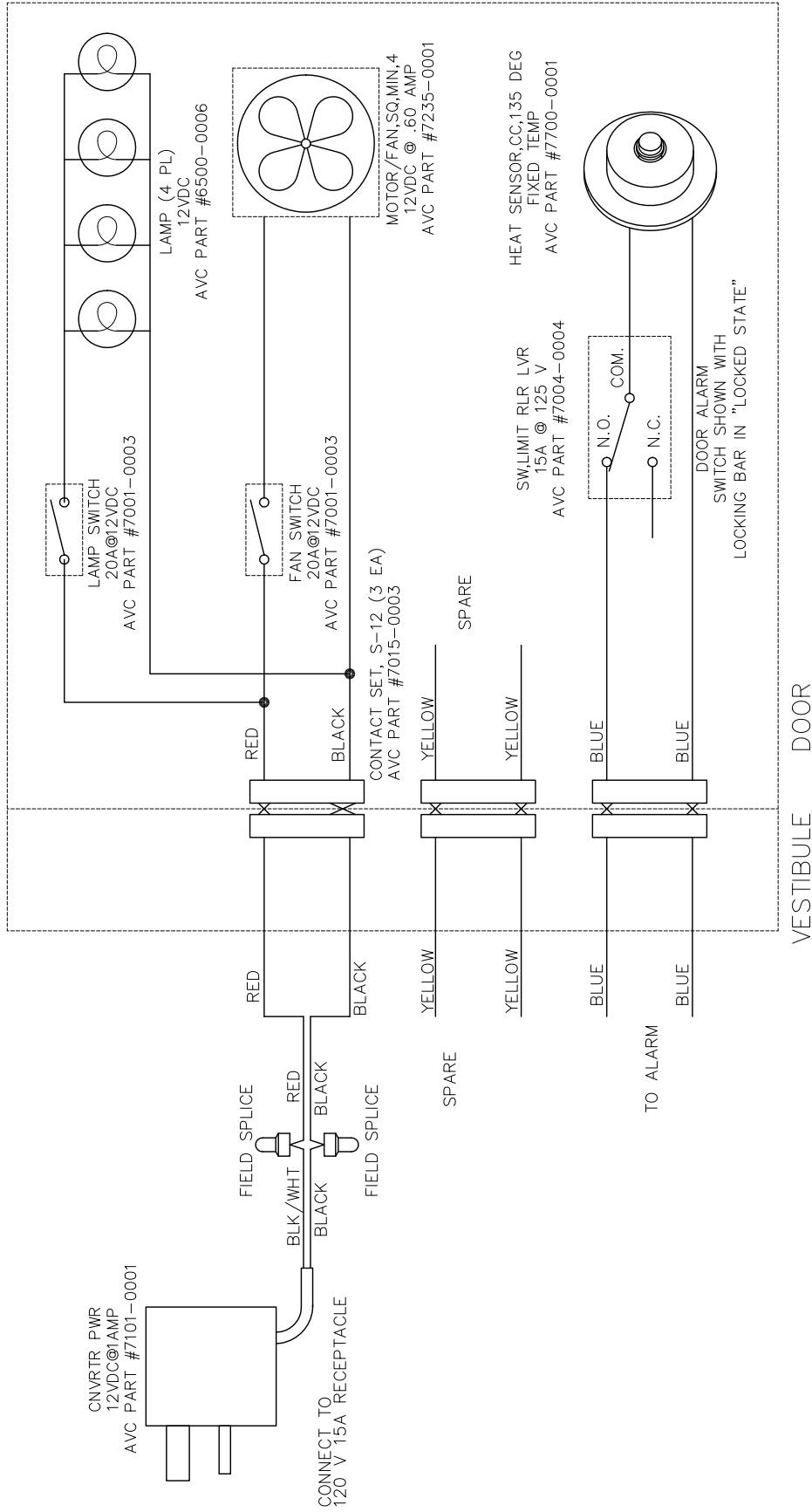
FRONT ELEVATION

SECTION THRU DOOR OPENING



DESCRIPTION PRODUCT APPLICATION DRAWING
210 SERIES BURGLARY RESISTANT
MODULAR VAULT PANELS

SIZE	DWG. NO.	DATE	SCALE	NONE
B	20155	01.08.09		
			SHEET	1 of 2



DO NOT SCALE		Www.americanVault.us	
FILE NAME: N:\DRAWINGS\102\102-1700A.dwg	DRAWN: CWB	REV: A	SCALE: 1:1
CHECK:	DATE: 01.08.2009	DWG NO: B	SHEET: 1 OF 1
DESCRIPTION: WIRING DIAGRAM 100 SERIES VAULT DOOR			
SIZE: B		DWG NO: 102-1700	

3 OPERATION

3.1 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 Door. 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 Control or Dual Control). Refer to the combination lock manufacturers instructions for proper operating procedures.

3.1.1.1 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.

3.1.1.2 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 Door. Refer to the time locks manufacturer's instructions for operation.

3.1.3 Operating Wheel

This is the main operating wheel. It is a chrome-plated wheel approximately 12" dial. 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 Supply incorporated. It is located on the rear of the Vault Door and is operated by the Ventilator/Passage Release Knob. In the event a person(s) are trapped in the vault, it can 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.

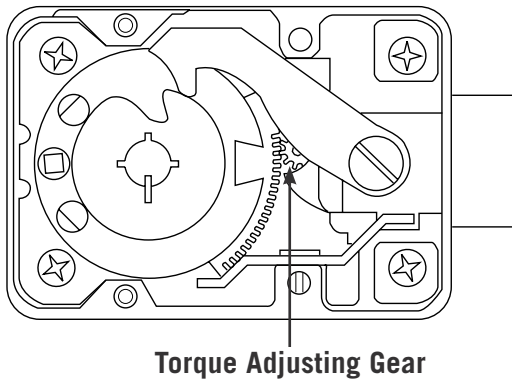
3.1.7 Door Stop

Floor mounted stop in a Stainless Steel enclosure with rubber bumper. The Door Stop location is determined by the opening angle of the Vault Door.



Four Wheel Safe Locks

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



TORQUE ADJUSTMENT (not available on all models)

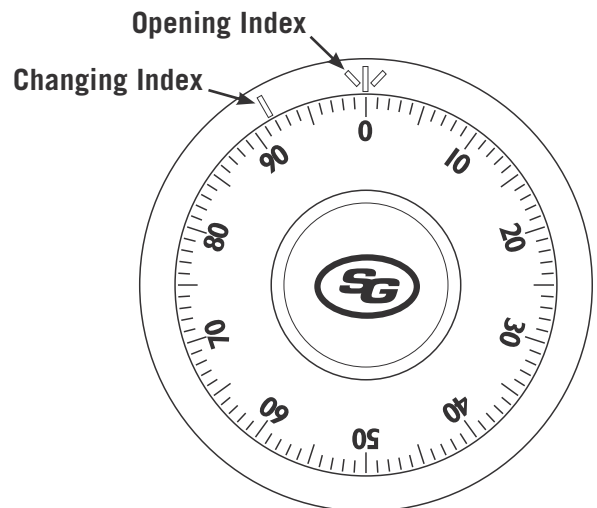
The torque adjustment feature allows the wheel pack tension to be adjusted for optimum lock performance. To adjust torque, remove the lock cover and insert a $\frac{3}{32}$ " hex wrench into the adjusting gear (see illustration at left). Turn clockwise to increase torque or counterclockwise to decrease 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 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 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.

Sargent & Greenleaf, Inc.

PO Box 930, Nicholasville, Kentucky 40356 USA
Phone (859) 885-9411
Phone (800) 826-7652
FAX (859) 887-2057
FAX (800) 634-4843

Sargent & Greenleaf S.A.

9, chemin du Croset
1024 Ecublens, Switzerland
Phone 41-21-691-9583
FAX 41-21-691-5349

TO UNLOCK ON A TRUE FOUR NUMBER COMBINATION

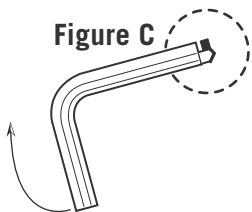
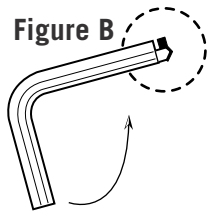
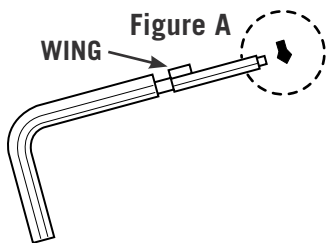
1. Starting anywhere, turn the dial right (clockwise), stopping when the first combination number comes to the opening index the FIFTH time.
2. Turn the dial left (counterclockwise), stopping when the second number comes to the opening index the FOURTH time.
3. Turn the dial right, stopping when the 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.



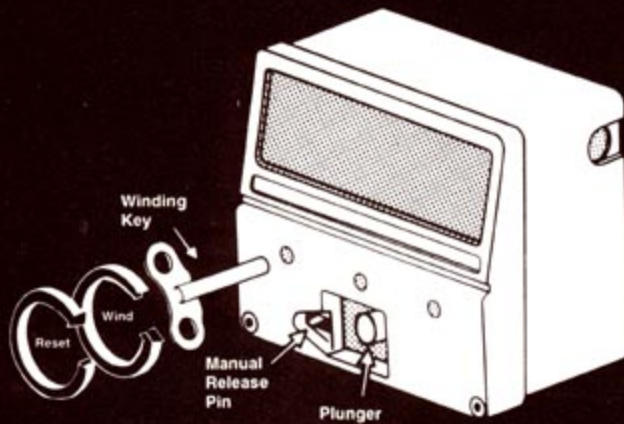
1. Dial the existing combination to the **CHANGING** index as explained on the reverse side of this page.
2. Holding the dial with the fourth number at the changing index, insert the change key into the hole in the lock cover (Figure A) until the wing is entirely inside the lock case, and the key comes 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 OPEN.

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.

Time Locks Equipped With
Reset Movements
Models: 6272, 6292, 6372 and 6392



To Re-Set Movements:

In the event of overwinding, the reset movements in this time lock have a clutch mechanism that allows the operator to manually correct the setting. Insert winding key and turn in clockwise direction until dial reads at least 4 hours less than desired time setting. The movement is now reset and can be rewound to the desired opening time. This is an exclusive feature of the S&G Time Lock with resettable time movements.

Release Feature:

As a safety feature, this time lock may be changed from a locked position to an unlocked position by pushing

the manual release pin to the left and releasing.

Day Open Feature:

As long as the plunger is *not* pressed, the time lock will remain in the release position after the movements are wound permitting locking and unlocking of the safe or vault during banking hours.

Important: To use the Day Open Feature, make certain the plunger is in the unlocked (not depressed) position.

General Information:

Built to rigid specifications by Swiss chronometric experts, the movements in your time lock allow you to manually correct any errors made when setting the time movement to the opening time. *This is an exclusive feature of S&G's "reset movement" time lock.* Each movement is also shock and dust-resistant and is accurate to within one minute every 24 hours. Each movement has a maximum winding time of 144 hours and is designed to operate at temperatures between -5 and +120 degrees Fahrenheit.

To Set Time Lock:

1. Determine the amount of time the safe or vault needs to be under time lock protection. Locking time is determined from the time the movements are wound until the time the safe or vault is desired open on the following day.

Example:

- A. Winding time - 9:00 a.m.
- B. Opening time - 8:00 a.m. next day
- C. Lapsed time - 23 hours
- D. Wind each movement to 23 hours.

The movements provided with this time lock can be wound to a maximum of 144 hours. Refer to Time Lock Winding Chart (furnished with each unit) for further guidance, if needed.

2. Insert winding key through holes in front cover directly in front of each time movement. Be sure key is fully inserted before winding.
3. Turn key counter-clockwise until the desired locking time is directly opposite the pointer on the time movement dial. Repeat this step for each movement in the lock. Each mark on the dial corresponds to one hour while

each audible "click" represents 12 minutes.

Note: The first movement reaching "O" will open the lock. Other movements insure reliability and assure consistent operation.

4. Visually check each time movement after winding to assure each one is running properly. You will be able to see the components moving. **Never lock the door unless at least two movements are running.** If a movement fails to start after winding, place the winding key on the winding arbor and wiggle the key slightly (but not enough to wind the movement). This causes a motion throughout all wheels of the movement and if the movement starts up readily, no further trouble need be anticipated.
5. Remove winding key after all winding operations are complete.

6. Push the plunger in center of lock case. This plunger should remain in a depressed position. The unit is now in a locked position.
7. Close safe or vault door firmly and lock.

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 Door

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 provides the alarm signal. The third set is a spare with no connections made.

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 Release Knob

Located on the rear of the Vault Door. This knob releases the Passage Plug. Turning the knob counter-clockwise releases the Passage Plug.

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)

- 3.4.1 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.
- 3.4.2 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.
- 3.4.3 Procedures for this are as follows:
 1. Open Day Gate to gain access to the Service Access Door key lock.
 2. Using key provided, open Service Access Door exposing the interior of Vault Door and the locking mechanism.
 3. Insert 5/32" hex wrench in the Shoulder Bolt that attaches Lock Plunger to the Lock Bridge Bar. Turning counter-clockwise remove Shoulder Bolt.
 4. With Shoulder Bolt removed, the Lock Plunger will move freely. Slide Lock Plunger until it no longer engages the Locking Cam.
 5. 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.
 6. The Vault Door locking mechanism is now released, and the Vault Door can be pushed open from the vault interior.

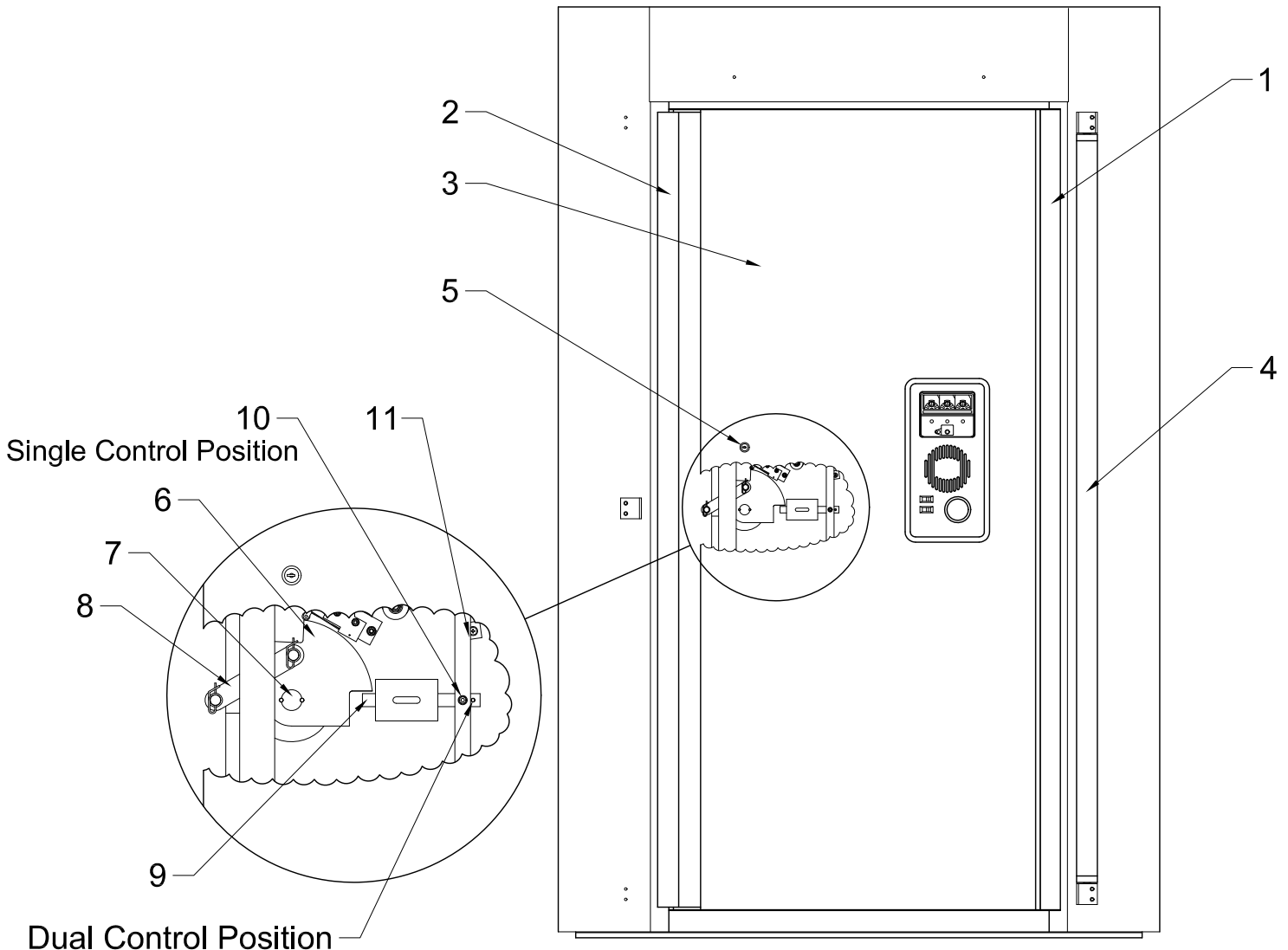
3.5 Single Control to Dual Control Conversion (Refer to Figure 3-1)

- 3.5.1 Procedures for converting the Vault Door from Single User Control to Dual User Control are as follows:
 1. Open Service Access Door.
 2. Using 5/32" hex wrench, remove shoulder bolt from single control position.
 3. Install shoulder bolt in dual control position.
 4. 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)

- 3.6.1 The 100 Series Vault Door comes standard with an Emergency Air Supply 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.
- 3.6.2 Push the switch for desired operation.

Figure 3-1 Emergency Escape & Lock Conversion



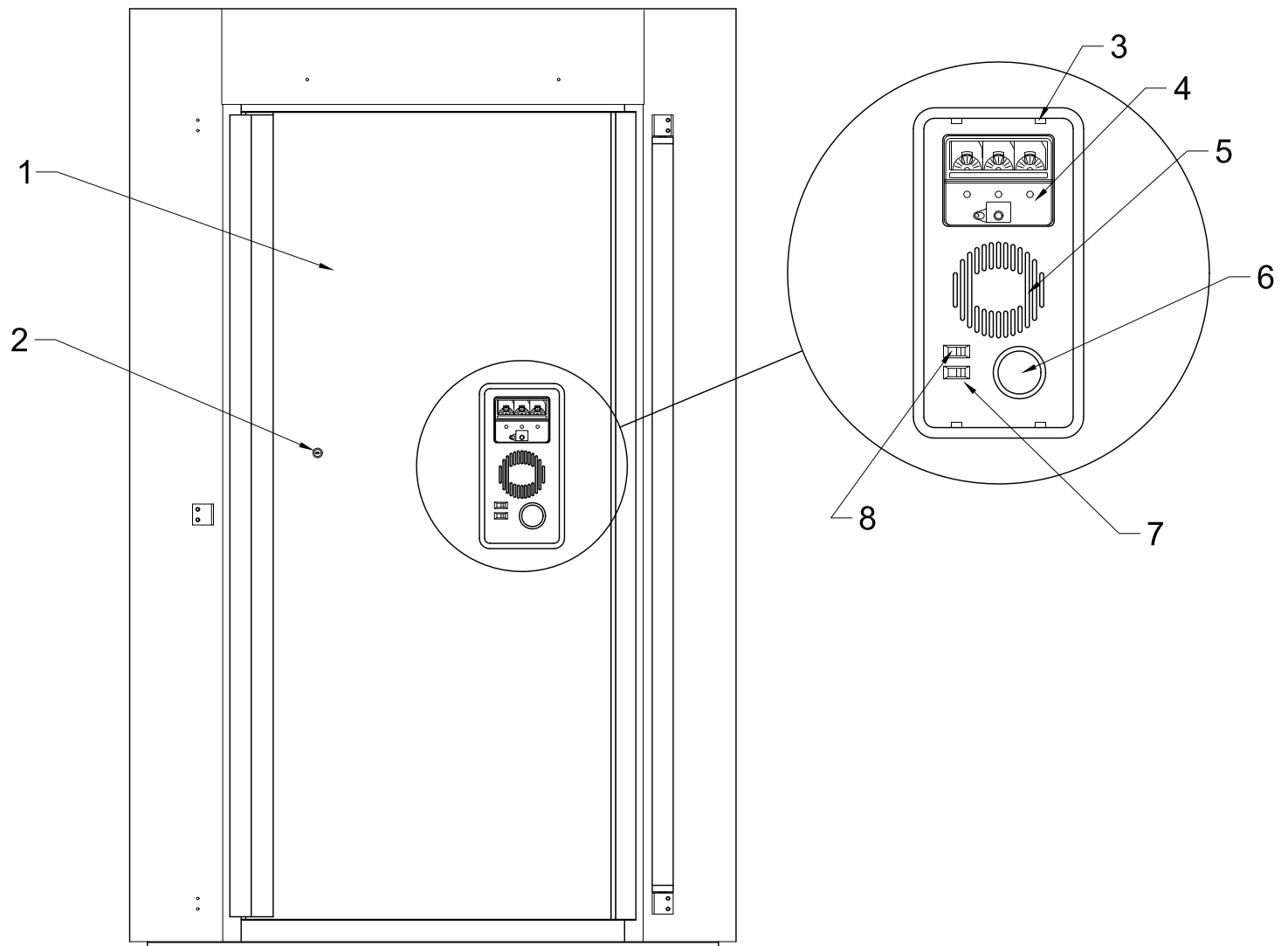
REAR VIEW

(Shown with Daygate Open 90 deg.)

- | | |
|----------------------------------|--------------------------|
| 1. Fixed Lock Bar | 7. Operating Wheel Shaft |
| 2. Slide Lock Bar | 8. Locking Bar Linkage |
| 3. Service Access Door | 9. Lock Plunger |
| 4. Day Gate | 10. Shoulder Bolt |
| 5. Key Lock, Service Access Door | 11. Lock Bridge Bar |
| 6. Locking Cam | |

Figure 3-1

Figure 3-2 Emergency Air Operation



REAR VIEW

(Shown with Daygate Open 90 deg.)

- | | |
|------------------------|-------------------------|
| 1. Service Access Door | 5. Ventilator Fan Grill |
| 2. Key Lock | 6. Passage Plug |
| 3. Courtesy Lamp (4) | 7. Courtesy Lamp Switch |
| 4. Day Gate | 8. Emergency Fan Switch |

Figure 3-2

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.

4.1.1 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 any time there is an indication that they are not functioning properly.

Refer to the Manufacturers Specifications in Section 3.2

4.1.2 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.

4.1.3 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.

4.1.4 Door Hinges

Pre-lubricated spherical bearings are incorporated in the upper and lower hinge blocks. They do not require lubrication on a regular basis. However, if the Vault Door becomes difficult to swing open they should be checked. Other factors that can cause the Vault Door to not swing properly are floor coverings, foundation settling, etc, etc. Anytime there is a concern regarding this, a vault door specialist should be called in to inspect.

4.1.5 Courtesy Lamps

The courtesy lamps located in the Ventilator/Time Lock 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.

4.1.6 Emergency Ventilator Fan

The Emergency Ventilator Fan is located behind the Ventilator/Time Lock 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.

