

INSTALLATION INSTRUCTIONS

1580 SERIES EMLOCK®

The 1580 Series Emlock is mounted to the underside of the header, on the stop side of the door. A Top Jamb mounting kit (optional) can be used when mounting on the hinge side of the door. (Fig. 2D)

The armature is mounted to the door. A hardware kit is provided allowing the armature to pivot on it's center point.

LOCK MOUNTING

1. Locate the paper Template and fold along the dotted line. Place the folded edge of the template against the door, header stop, and vertical stop opposite the hinge side of the door (see Fig. 1). Tape in place at this position.

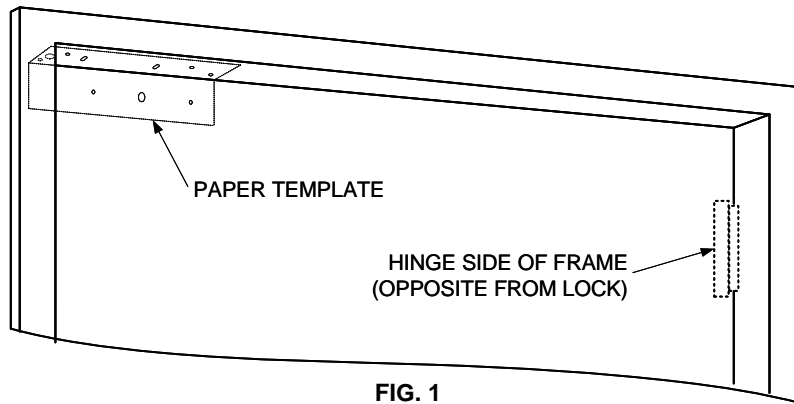


FIG. 1

2. Prior to drilling, inspect to see if any of the holes cannot be drilled due to the frame or door configuration. A Filler Plate or Angle Bracket may be required as shown in Figures 2B and 2C (see page 6 for part specifications). Figure 2A is a typical regular install.

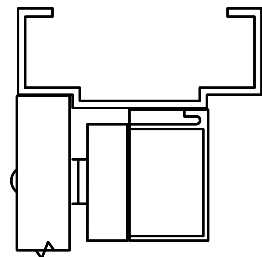


FIG. 2A
Regular

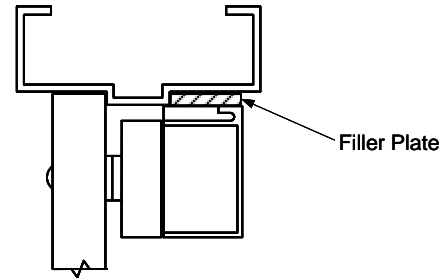


FIG. 2B
With Filler Plate

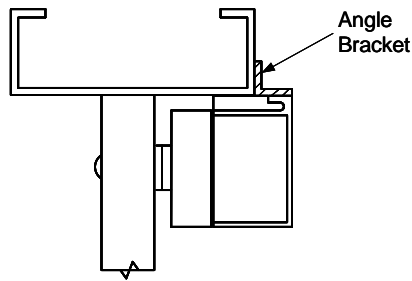


FIG. 2C
With Angle Bracket

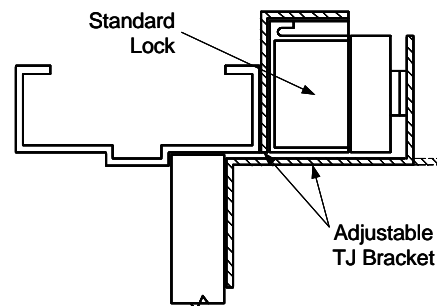


FIG. 2D
Top Jamb Bracket

Any suggestions or comments to this instruction or product are welcome. Please contact us through our website or email engineer@sdsecurity.com

LOCK MOUNTING (CONT.)

3. Mark hole locations on door and frame as indicated by template.
4. Drill holes in door and mount armature according to figure 3A, 3B, or 3C depending on door type.

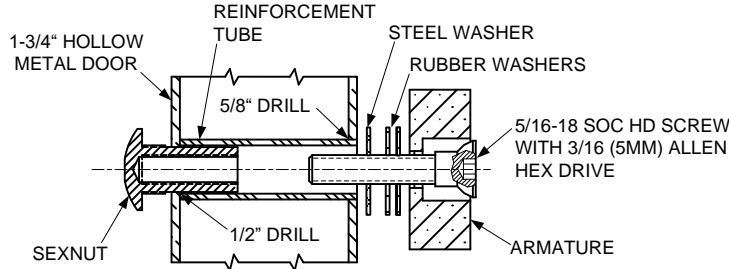


FIG. 3A HOLLOW METAL DOOR

From Sexnut side of door, drill exactly 1/2" hole thru one metal thickness only. From Armature side of door, drill 5/8" hole to insert reinforcement tube. Press in sexnut and reinforcement tube all the way. Mount armature to door as shown using hardware provided.

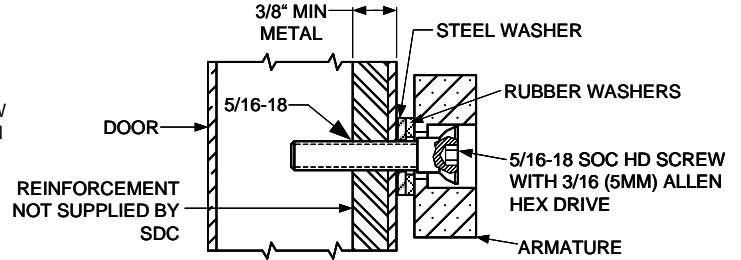


FIG. 3C REINFORCED DOOR

Drill and tap for 5/16-18 machine screw. Mount armature to door as shown with hardware provided.

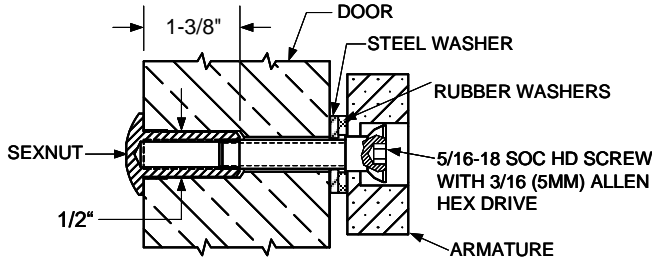
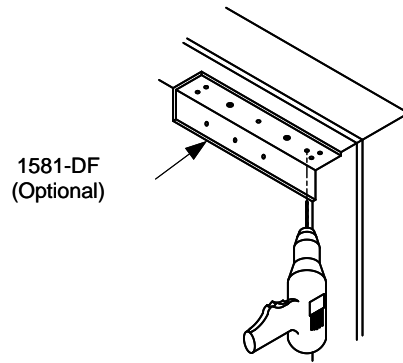


FIG. 3B SOLID DOOR

Drill 3/8" hole thru door from sexnut side of door. Opposite side door drill exactly 1/2" hole, 1-3/8" deep. Mount armature to door as shown with hardware provided.



OPTIONAL DRILL FIXTURE:

1581-DF

Drill many doors and frames in a fraction of the time.

5. Install mounting plate to header with provided screws, making sure that the interlocking detail is facing away from the door side of the stop (see Fig. 4). For up to 1/8" thick metal applications, use provided #10 self drill/tap screws. For applications with heavier gauge material, drill with a #21 bit and tap for provided #10-32 machine screws.

IMPORTANT! – It is highly recommended that you first install the mounting plate at the two slot locations only. This will allow you to make proper adjustments of the lock's position prior to marking, drilling, and tapping the five permanent mounting holes.

6. Holding the magnet housing at each end, engage the entire length of the interlocking detail by pushing towards the door (If necessary, tap with a soft hammer to ensure proper alignment and engagement).

Caution: *The lock body must be held in place until secured with mounting screws.* Integrated screws are located inside the housing at each end. Tighten the screws and check alignment.

7. Test operation. When all is operating properly, tighten all screws. Install anti-tamper plugs over integrated screw openings using a soft hammer to avoid damaging the housing.

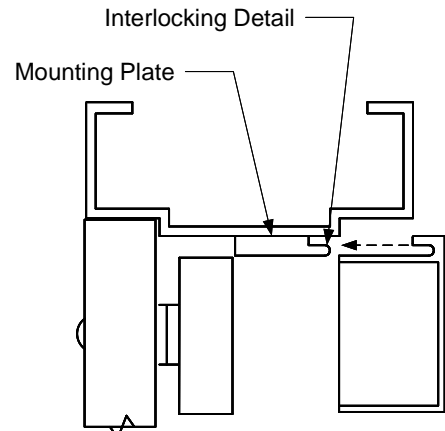


FIG. 4



ELECTRICAL SPECIFICATIONS

Voltage kickback protection standard

MODELS	1581	1582
INPUT VOLTAGE (VDC)	12/24 VDC	12/24 VDC
POWER CONSUMPTION (A)	.440 / .220	.880 / .440
COIL RESISTANCE (OHMS)	60* (PER COIL)	60* (PER COIL)
HOLDING FORCE (LBS)	650	650

*NOTE:

For a proper coil resistance reading, turn off the DC voltage. Use an ohmmeter and measure the resistance between the pins of the plug connector positions E1-E2 and E3-E4 refer to fig. 5A

The Performance levels are as follows:
 Access Control Line Security Level: 1
 Destructive Attack Level: 1
 Endurance Level: 4
 Stand-by Power Level: 1

SPECIAL LOCKING ARRANGEMENTS – UL 294
 BURGLARY-RESISTANT – UL 1034
 AUXILIARY LOCKS – UL 10C



ELECTRICAL INSTALLATION

1. Use jacketed cable for all wire runs. Refer to the SDC wire gauge chart (page 4) for proper lock power wire size (18 AWG gauge minimum).
2. Use only shielded cable for all signal wires. 22 AWG gauge (minimum) may be used for signal wires up to 1,000 feet.
3. All wires **must** be colored coded.
4. Use properly fused power source only. See Electrical Specifications.
5. Make all Emlock terminal connections according to Figure 5A

1581 & 1582 CONNECTIONS

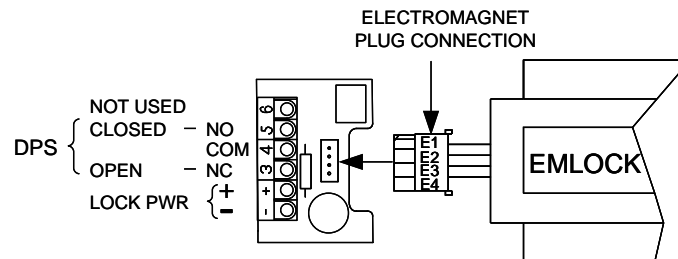
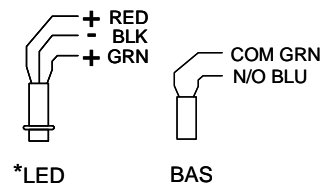


FIG. 5A

AVAILABLE OPTIONS FOR 1581 & 1582

BAS	Magnetic Bond Sensor	SPST, No, Dry
DPS	Door Position Switch	SPDT, Dry
*LED	Tri-Color LED Red or Green	20 mA
	Both on = Yellow	40 mA



*Two relay contacts are required for tri-color LED status (Red, Green & Amber)
 All switches rated for: 250 mA @ 30 VDC



IMPORTANT NOTES

FOR INDOOR USE ONLY

Do not run power wires and signal wires in the same cable or conduit.

Do not install a diode in parallel with any magnetic lock. A diode will cause a delay when releasing the door and residual magnetism to occur.

Although SDC recommends the use of a DC power supply, a transformer with an adjacent mounted full wave bridge rectifier may be used. A significant voltage drop will occur when using a full wave bridge rectifier.

Any low voltage condition will cause erratic operation of the optional bond sensor.

When using a full wave bridge rectifier, all access controls and/or release contacts must be located between the Emlock and rectifier to ensure quick release.

Electromagnet and armature should be handled carefully. Any damage to the surface such as paint, burrs, dirt and rust may hinder bonding of surface and reduce holding power.

SHOULD THE SURFACE PLATING BE DAMAGED:

Do not touch the lock face with your hands.

Use a soft, clean, dry cloth or abrasive cloth (i.e., Scotch-Brite) to clean lock face. Do not use sand paper.

A rust inhibitor such as M1 (manufactured by Starret) or LPS3 (manufactured by LPS Laboratories) can then be applied.

Apply a coat of inhibitor to armature face also.

AWG WIRE CHART

To determine the correct wire gauge to use on "one circuit" the following information is required:

1. The quantity, voltage, and current draw of all lock(s) to be used.
2. The distance in feet from the power supply to the furthest lock.

Add together the current draw (amps) of all locks on the same circuit. Cross reference the total amps with the distance between the power source and the furthest lock to determine the wire gauge required. All wiring must be installed in accordance with all state and local codes.

DISTANCE IN FEET FROM POWER SOURCE TO FARTHEST LOCKING DEVICE

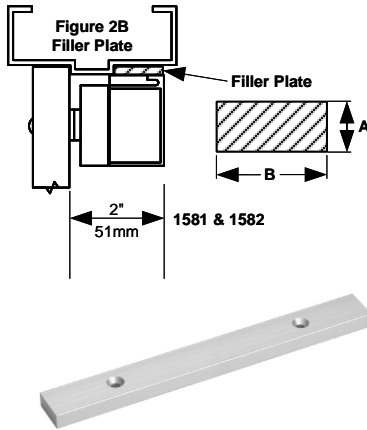
	AMPS	25	50	75	100	150	200	250	300	400	500	1000
Minimum Wire Gauge for 12 Volts AC or DC	0.25	18	18	18	18	18	16	16	14	14	12	
	0.50	18	18	18	16	16	14	12				
	0.75	18	18	16	14	12	12					
	1.00	18	16	14	14	12						
	1.50	18	14	12	12							
	2.00	16	14	12								
	2.50	16	12									

DISTANCE IN FEET FROM POWER SOURCE TO FARTHEST LOCKING DEVICE

	AMPS	25	50	75	100	150	200	250	300	400	500	1000
Minimum Wire Gauge for 24 Volts AC or DC	0.25	18	18	18	18	18	18	18	18	16	16	16
	0.50	18	18	18	18	18	16	16	14	14	12	
	0.75	18	18	18	18	16	14	14	12	12		
	1.00	18	18	16	16	14	14	12	12			
	1.50	18	18	16	14	14	12					
	2.00	18	16	14	14	12						
	2.50	18	16	14	12							

**TROUBLE SHOOTING**

PROBLEM	CAUSE	SOLUTION
Emlock releases slowly. (residual magnetism)	Control switch wired on AC side of power source.	Control switch must be wired on DC side of power supply. When an AC transformer and rectifier are used, the control switch must be wired between the rectifier and the Emlock.
	Field installed diode in parallel with power input.	Remove diode.
Poor holding force.	Armature installed rigidly.	Armature must pivot loosely from its center mounting point to permit full armature contact.
	Low voltage.	Check power supply load capacity. It must meet or exceed the combined current rating of all locks on the circuit. Check for proper voltage at the Emlock input. If low, determine if the correct wire gauge is being used to prevent excessive voltage drop.
	AC voltage input. (Emlock will make a humming noise)	Emlocks require DC input voltage. When AC voltage from a transformer is used, a full wave bridge rectifier must be installed to convert the AC voltage to DC voltage.
No holding force. Door does not lock.	No power.	Check the voltage at the Emlock. If the voltage is low or zero, double check all wire connections and the power supply.
	Input polarity reversed.	Check voltage polarity. Terminal (-) is: Negative. Terminal (+) is: Positive.
	Open circuit in Emlock coil.	Check coil continuity with OHM meter. See Fig. 5A and the Resistance Specifications. Verify that the reading isn't high or open.
	Magnet coil short.	Coil shorts or incorrect wiring will blow fuses. Measure the coil for correct resistance. See Fig. 3A and the Resistance specifications.



FILLER PLATES: For extension of the stop to provide a proper mounting surface on the underside of the header. See Figure 2B.

FOR 1581 SINGLE EMLOCK MODELS

PART #	A	B	(Metric)	LENGTH
FP01	1/8"	1-1/4"	(3 x 32mm)	
FP02	1/4"	1-1/4"	(6 x 32mm)	
FP03	3/8"	1-1/4"	(10 x 32mm)	
FP04	1/2"	1-1/4"	(13 x 32mm)	
FP05	5/8"	1-1/4"	(16 x 32mm)	

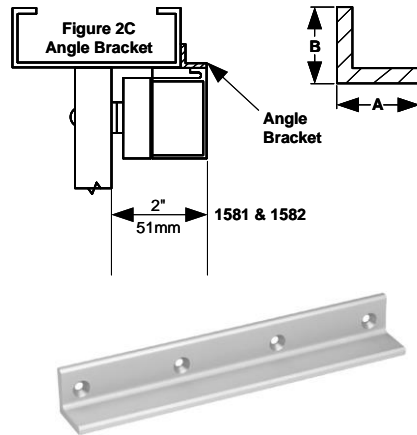
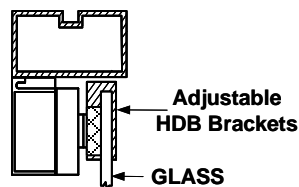
FOR 1582 DOUBLE EMLOCK MODEL

PART #	A	B	(Metric)	LENGTH
FP30	1/8"	1-1/4"	(3 x 32mm)	
FP31	1/4"	1-1/4"	(6 x 32mm)	
FP32	3/8"	1-1/4"	(10 x 32mm)	
FP33	1/2"	1-1/4"	(13 x 32mm)	
FP34	5/8"	1-1/4"	(16 x 32mm)	

HERCULITE BRACKET: Installation of the lock armature to glass doors without top rail. Field adjustable for 1/2", 5/8" and 3/4" all glass Herculite doors.

Kits for 1581
HDB1 - Single Lock

Kits for 1582
HDB2 - Double Lock



ANGLE BRACKETS: Used as extension on shallow door frames to provide adequate mounting surface. See Figure 2C.

FOR 1581 SINGLE EMLOCK MODELS

PART #	A	B	(Metric)	LENGTH
AB01	1"	1"	(25 x 25mm)	
AB02	1"	1-1/2"	(25 x 38mm)	
AB03	1-1/2"	1-1/2"	(38 x 38mm)	
AB04	2"	1-1/2"	(51 x 38mm)	

FOR 1582 DOUBLE EMLOCK MODEL

PART #	A	B	(Metric)	LENGTH
AB31	1"	1"	(25 x 25mm)	
AB32	1"	1-1/2"	(25 x 38mm)	
AB33	1-1/2"	1-1/2"	(38 x 38mm)	
AB34	2"	1-1/2"	(51 x 38mm)	

TOP JAMB KITS: Installation of a standard magnetic lock to the pull-side of hollow metal door openings. **INSWING DOOR KITS**

Kits for 650 lb locks
TJ81 - Single Lock: 1581
TJ82 - Double Lock: 1582

