

## MOUNTING INSTRUCTIONS: 1107xD Series Surface Mounted Electro-Magnetic Lock Devices for Out Swinging Doors

**READ THOROUGHLY BEFORE INSTALLING REV#0001A**

**Note:** For in-swing (hinge side) door mounting the TJ bracket and hardware kit is required. Refer to Mounting Instructions for TJ1107.

**IMPORTANT:** Always handle electro-magnets and armatures carefully. The mating surfaces have been carefully manufactured to provide maximum holding power. Mating surface damage can significantly reduce holding power.

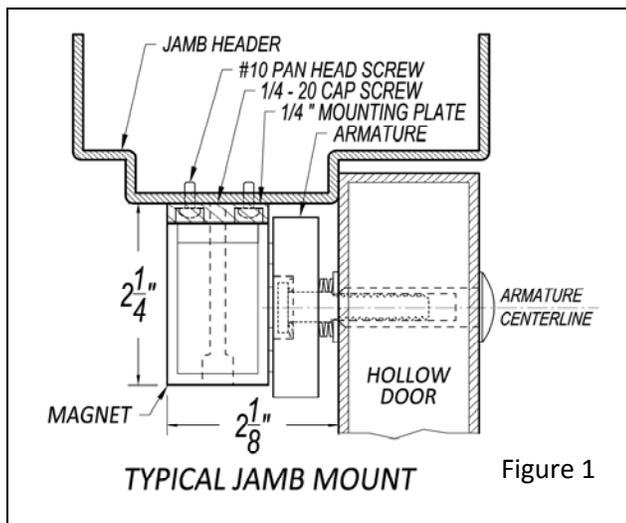
Before starting, make sure the correct drill template is available for the type of installation planned. Door swing and construction, door frame material and configuration must be considered before deciding on the proper mounting kit and method. See the Application Bulletins below for diagrams of typical door configurations and part numbers for spacers, shims and mounting brackets required for each type of installation.

The 1107xD Series Electro-magnet mounts firmly and rigidly to the underside of the header on the stop side of the door, while the armature mounts to the face of the door with special hardware that allows enough movement so that the armature can align itself to the magnet face for maximum effectiveness even if it is not perfectly parallel and/or square.

A 2-1/8" wide flat surface is required to mount the 1107xD series magnet (see Figure 1).

For installations involving drilling and tapping of hollow metal door frames, the material thickness should be at least 1/8". Sheet metal screws may be used for wood frames and clad frames. For thinly clad doors or wooden doors without sufficient solid backing, a reinforcing plate may be required. See Figure 3.

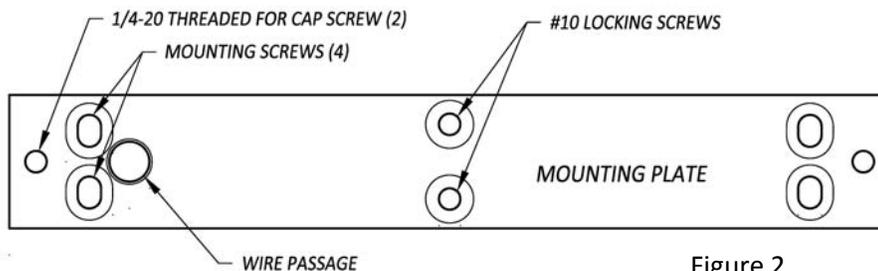
### STEP 1) MARK AND DRILL JAMB HEADER & INSTALL THE MAGNET MOUNTING PLATE



It is always a good idea to hold the complete assembly in place before drilling to make sure the placement does not interfere with door operators or coordinators. Magnetic locks should be mounted as close to the latch side of the door as is practical for maximum leverage.

Use the supplied template to mark the door and the jamb for drilling. Depending on the material, size the drill bit for either #10 Sheet Metal screws or for tapping 10-32 machine screws. **Do not prep jamb for the (2) # 10 locking screws at this time**

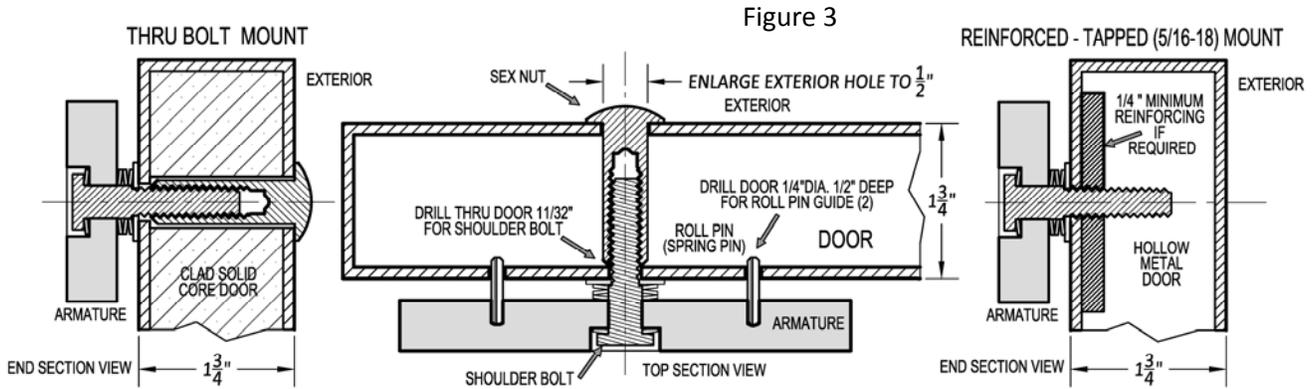
Use star washers (included) with the screws to prevent loosening over time. The four mounting screws seat in the slotted pocket holes of the mounting plate (Figure 2). Install the screws, but do not tighten fully to allow for adjustment after the armature has been mounted to ensure proper alignment. If a standard filler plate is used (Figure D Page 6), drill clearance holes in the filler plate for the mounting screws. The screws must go through the filler plate and into the frame material. **Do not attach the mounting plate to standard 1\" filler plate only.**



If a – **W (wide) filler plate** is used, the mounting plate should be attached directly to the filler plate using the pre-tapped holes, and clearance hole for wiring. Eliminate any sharp edges that could damage the wire insulation.

**STEP 2) PREPARE THE ARMATURE**

Insert the two Roll Pin pins into the 3/16" diameter blind holes. The pins act as guides that allow the armature enough movement to conform to the magnet face but prevent it from rotating. Tap the pins gently until they are firmly seated being extremely careful not to mar the face of the armature. See Figure 3 below.



Insert one spring washer on 5/16-18 shoulder screw and then insert screw through armature. Add three conical spring washers over shoulder and flat stop washer. See Figure 4 below or refer to the diagram enclosed in armature kit.

**STEP 3) ARMATURE MOUNTING**

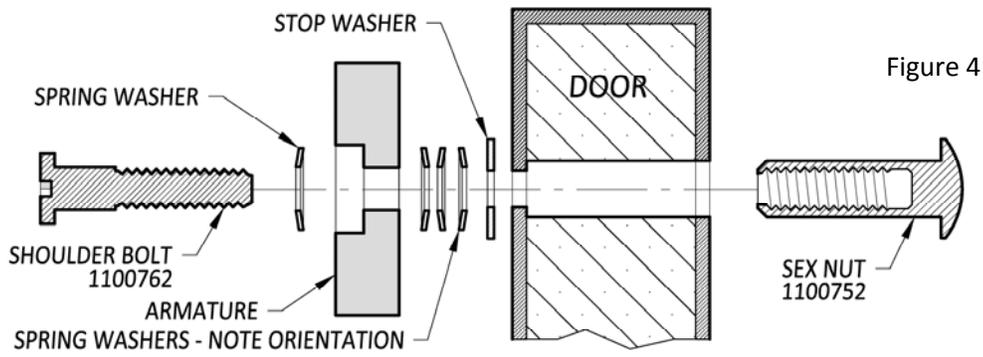
**THRU BOLT MOUNTING IN HOLLOW METAL DOOR**

Dimensions shown are for standard 1-3/4" thick doors. See **Parts for Non-standard Applications** below for hardware options and part numbers.

**Drill 11/32 hole** through door for the sex nut and shoulder bolt assembly. The hole on the exterior side of the door **only** must be **enlarged to 1/2"** to accommodate the sex nut. See Figure 3.

**Drill two 1/4" clearance holes** for the roll pins. For solid core doors, the holes should be 1/2" deep. **Important:** the pins must move freely and not bind. Enlarge the holes if needed to ensure that the armature is free to mate squarely with the magnet.

Insert shoulder screw/armature assembly through face of door, being sure that spring washers remain over shoulder, and hold firmly against door by pushing directly on head of screw. Insert sex nut from opposite face and assemble. When armature is floating freely, tighten 5/16-18-shoulder screw fully and securely.



**MACHINE SCREW MOUNTING,**

The door must be properly reinforced to 1/4" minimum thickness and structured to handle the load. Drill and tap thru reinforcing for 5/16-18 machine screw. Insert shoulder screw/armature assembly, being sure that spring washers remain over shoulder and flat washer is between shoulder and face of door. When armature is floating freely, tighten 5/16-18-shoulder screw fully and securely with 5-32 Allen wrench.

## THRU BOLT MOUNTING IN SOLID CORE WOOD DOOR

Drill 11/32" hole through the door for the shoulder bolt and then enlarge the opening on the outside of the door to 1/2" to accommodate the sex nut (Figure 4). Insert shoulder screw/armature assembly through face of door, being sure that spring washers remain over shoulder, and hold firmly against door by pushing directly on head of screw. Insert sex nut from opposite face and assemble. When armature is floating freely, tighten 5/16-18-shoulder screw fully and securely with 5-32 Allen wrench

### STEP 4) LOCK & ARMATURE ALIGNMENT

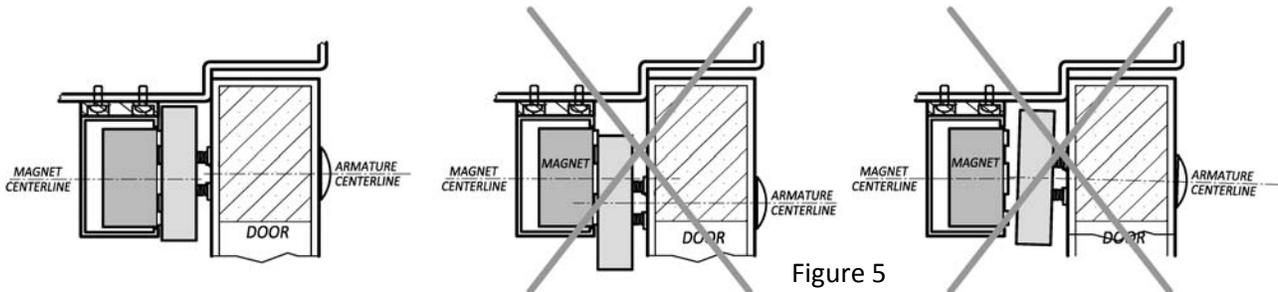


Figure 5

Make all electrical connections per figure 6 below. Attach the electro-magnet to the mounting plate using the (2) 1/4" cap screws and split washers, **do not over tighten the cap screws they will need to be removed for final adjustment.** With the electro-magnet energized and the armature fully engaged, position the Lock so that the door is snug against stops mark the position of the lock mounting plate; then **Turn the system off.** Remove the (2) 1/4" cap screws, remove the electro-magnet and fully tighten the (4) screws that hold the lock mounting plate to the header. Using the (2) 3/16" dia. holes in the mounting plate as a physical template prepare the frame for the (2) locking screws. Drill .159 dia. Holes (No. 21 drill) and tap frame for No. 10-32 machine screws, or drill two 11/64" dia. in the frame for No. 10 sheet metal screws. Secure mounting plate with #10 screws and lock washers. **The use of the # 10 locking screws is important.** They provide resistance to shear and rotation, and assure that maximum holding force is developed.

Re-install the electro-magnet using the 1/4" cap screws and check installation and alignment of armature and electro-magnet by opening and closing door while turning system on and off. Armature mounting surface must be in full contact with top and bottom rails of electro-magnet

## ELECTRICAL HOOKUP

The 1107 electro-magnetic lock should be connected to a Class 2 power supply. Leads are connected in series for 24 volt operation (as shipped from the factory) or connected in parallel for 12 volt operation. **For 12 volt operation**, cut the gray wire to make 2 equal lengths, strip back the insulation 3/8" on each lead and connect each gray wire end to the closer blue wire end – see Figure 6 below. **Note: For 12 VDC (parallel coils) the gray wire must be connected to the adjacent blue wire or the magnetic bond will be significantly reduced.**

If the Door Position Switch option is installed, connect the black 22 AWG wire to the common connection of the access control input for monitoring door status. Then connect either the red wire (for systems requiring normally closed contacts) or the white wire (for systems requiring normally open contacts). Refer to the device manual for details. Typically, Dortronics door control systems look for closed contacts to indicate that the door is secure (closed).

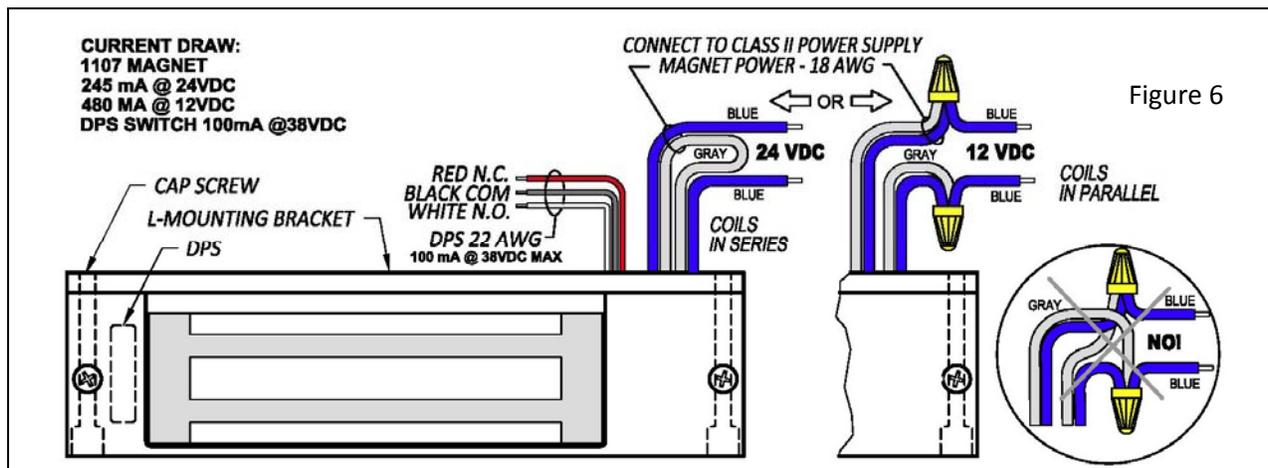


Figure 6

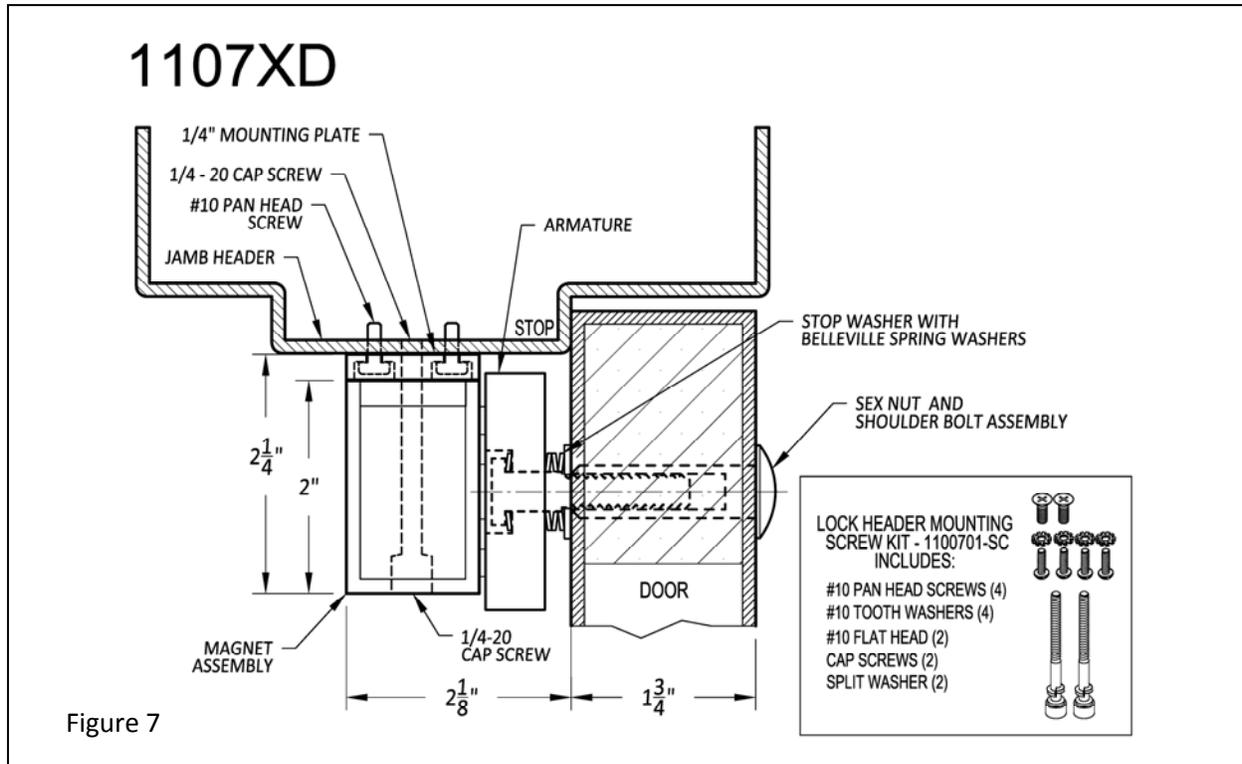
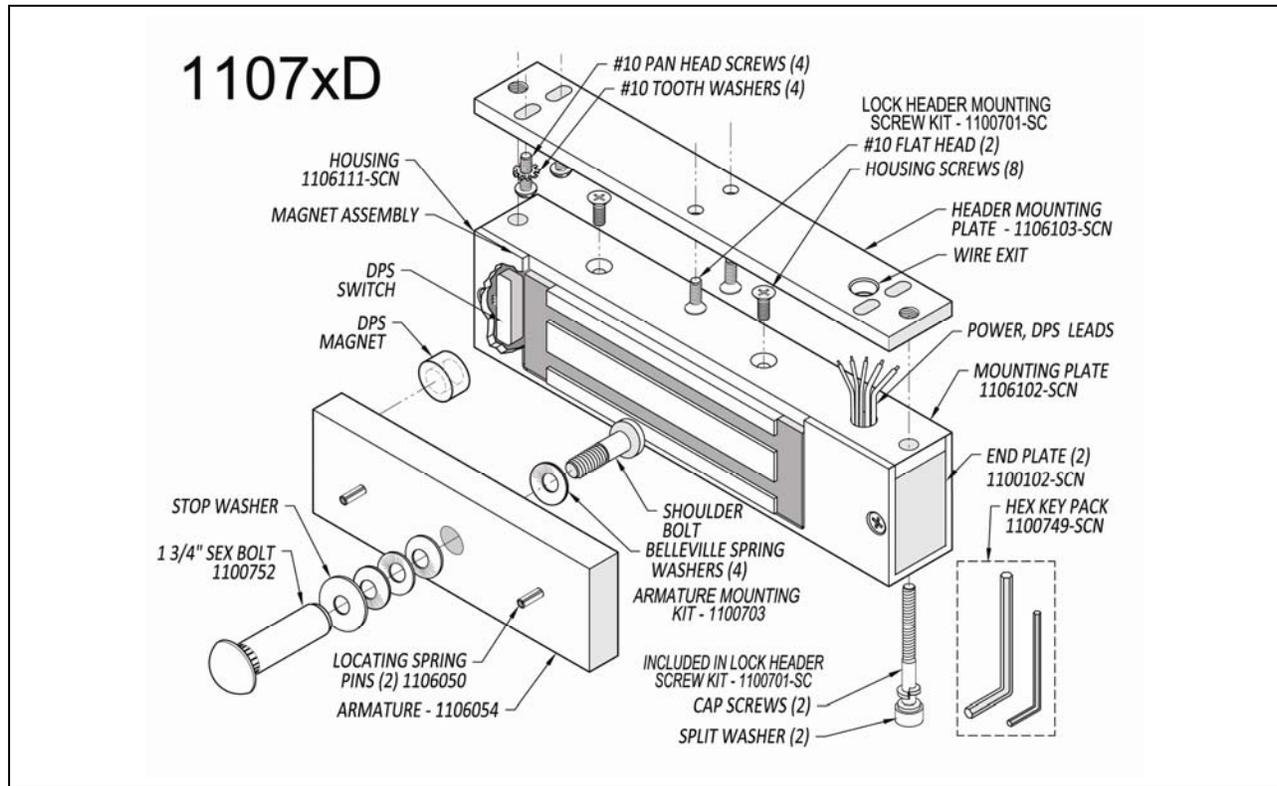
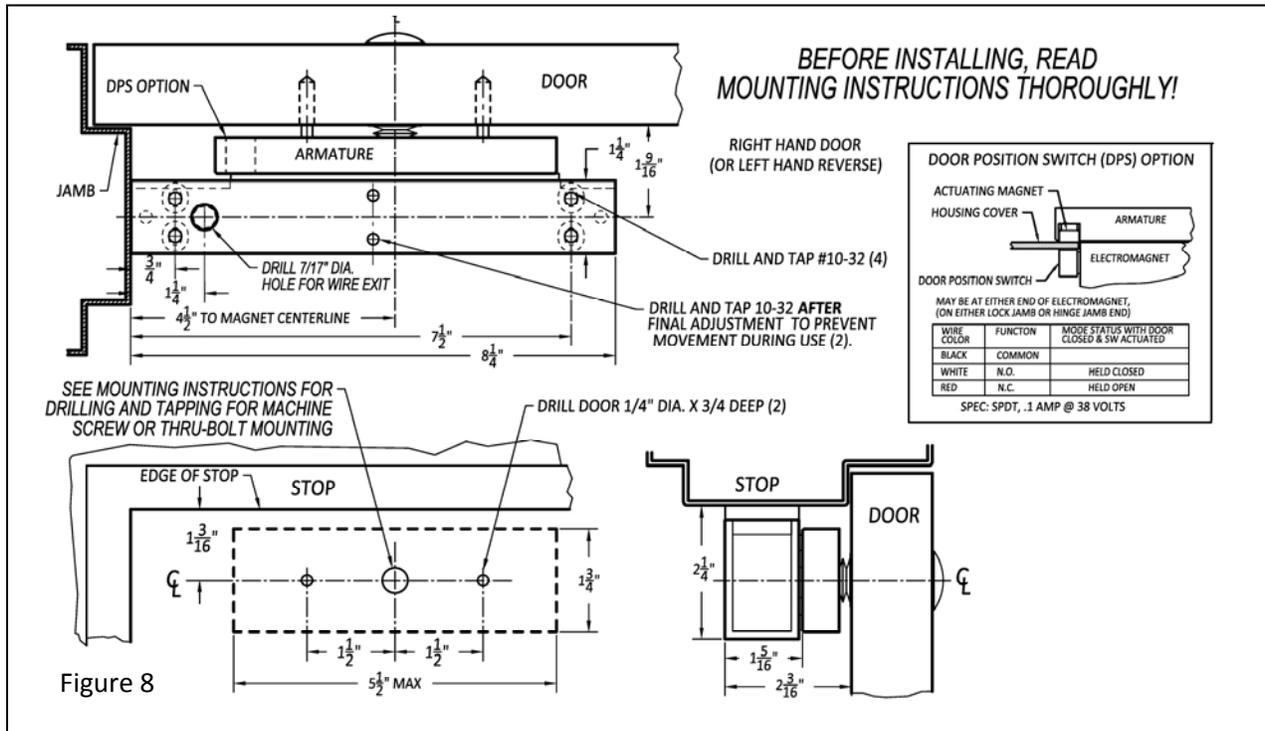


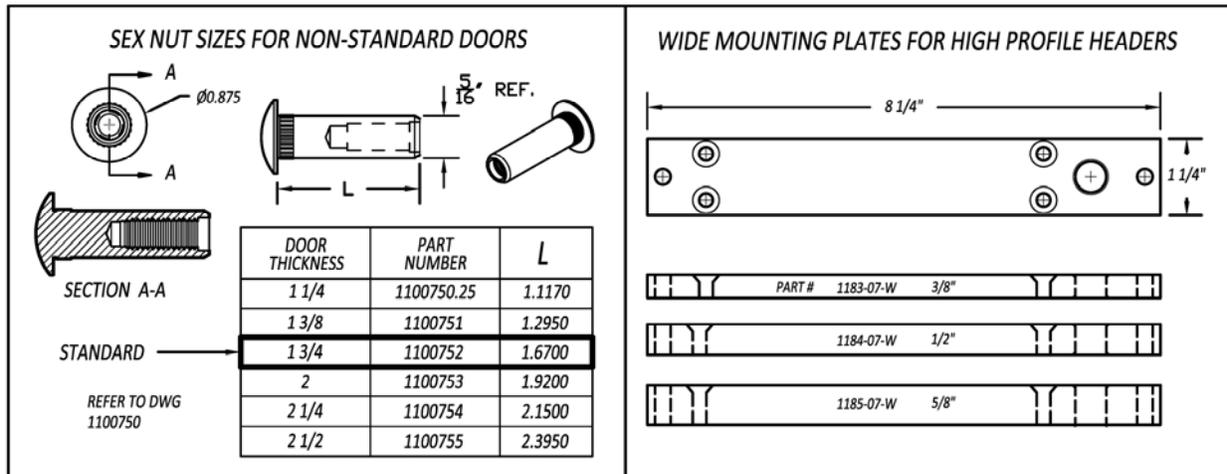
Figure 7



## PARTS FOR NON-STANDARD APPLICATIONS

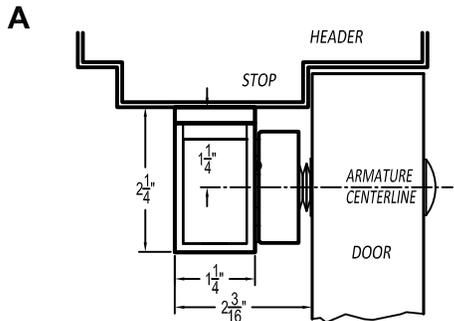
Match hardware to door thickness.

Use spacers as required for proper alignment between the face of the magnet and the armature.

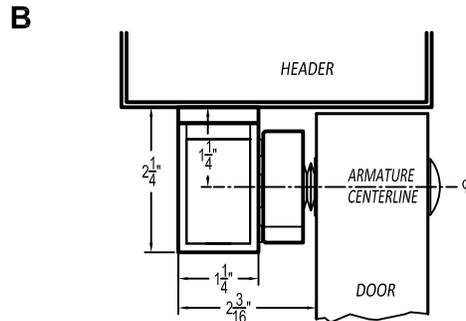


# Application Bulletin

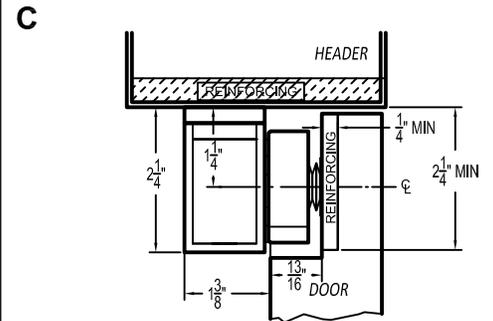
## 1107xD SERIES OUT-SWING DOORS



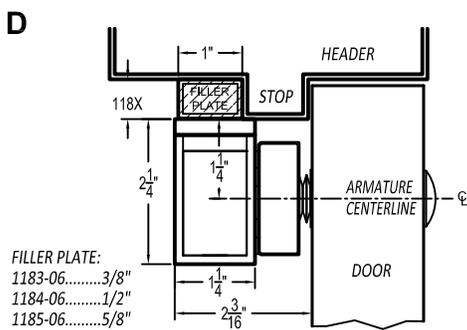
ON FULL WIDTH STOP WITH SURFACE MOUNTED ARMATURE



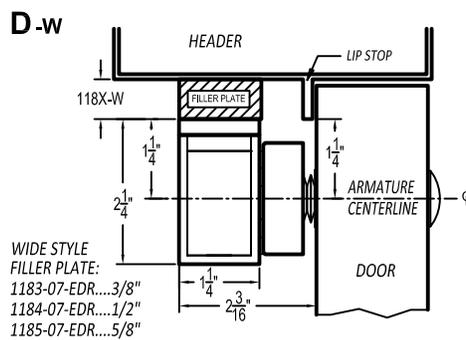
IN CASED OPENING WITH SURFACE MOUNTED ARMATURE



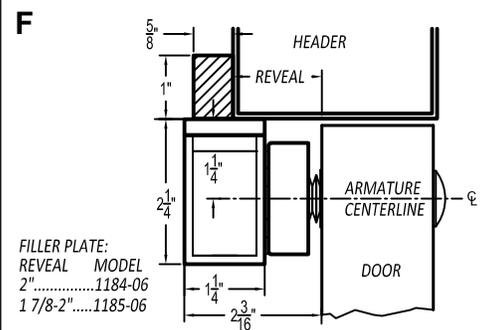
IN CASED OPENING WITH POCKETED ARMATURE



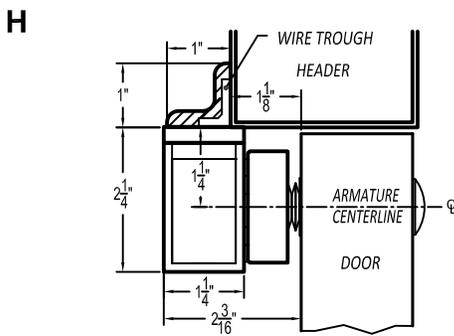
1180 SERIES FILLER PLATE FOR FRAME WITH NARROW STOP



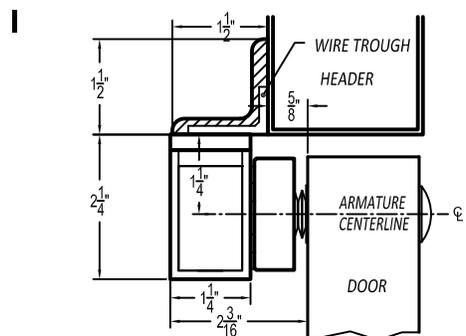
1180-W SERIES WIDE FILLER PLATE FOR FRAME WITH LIP STOP



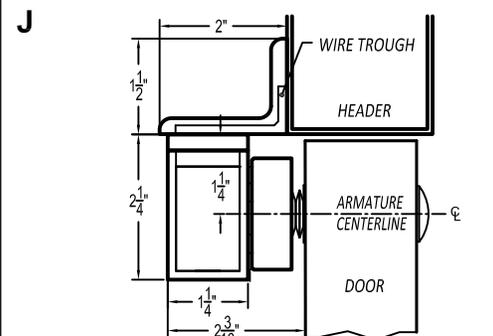
1180 SERIES FILLER PLATE AS HEADER EXTENSION BLOCK



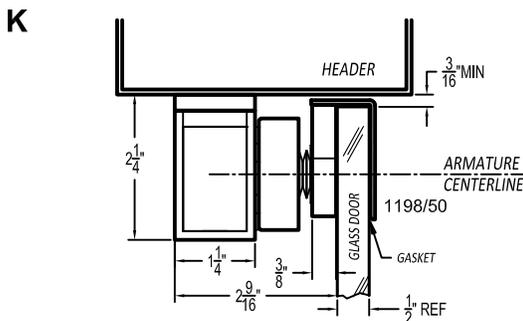
1191-06 ANGLE BRACKET



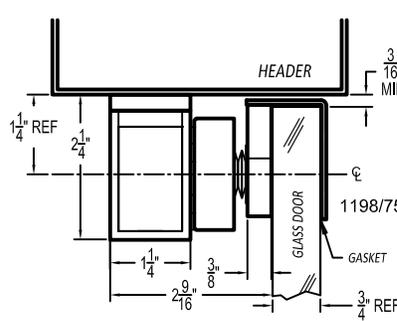
1192-06 ANGLE BRACKET



1193-06 ANGLE BRACKET



ARMATURE ATTACHED TO 1198 SERIES "U" BRACKET ON ALL-GLASS DOOR (FILLER PLATE OR ANGLE BRACKET AS REQUIRED)



111505 SURFACE MOUNT ARMATURE PLATE



**DORTRONICS  
SYSTEMS, INC.**

1668 SAG HARBOR TPKE., SAG HARBOR, NY 11963  
TEL: (631) 725 0505 FAX: (631) 725 8148 TOLL FREE: 800 906 0137  
WEBSITE: DORTRONICS.COM EMAIL: SALES@DORTRONICS.COM