A COMPLETE GUIDE TO ELECTRIC STRIKES

HANCHETT ENTRY SYSTEMS, INC.

Taking Access Control Into the Next Century

As the Access Control Industry continues to grow, so do its related products such as electric strikes. The access control professional’s ability to select, install, and service electric strikes is extremely important to the future success of his/her business. This guide is divided into the five following sections:

1. Specify the appropriate electric strike to meet your customer’s needs.
2. Identify the basic tools used in the installation of an electric strike.
3. Properly install an electric strike.
4. Understand basic electronics.
5. Learn how to trouble shoot electric strike problems.

SECTION 1
Specifying the Proper Electric Strike to Meet Your Customer’s Needs

There are over 100 types of electric strikes on the market today designed to accommodate the many different types of locksets available. Couple this fact with the variety of other decisions to be made when selecting the appropriate electric strike and the task can seem overwhelming. The following questions should be addressed when selecting an electric strike.

QUESTION 1: What are the customer’s needs for security?

You have a choice when it comes to electric strikes. The prices range from about $30 to over $300. The most important concept you should take away from this guide is, “Don’t let the electric strike be the weak link in your access control system.” It is imperative that you choose an electric strike based on your customer’s needs rather than on price alone. Frequently a tremendous amount of money is put into the access control system, but when it comes to the electric strike, corners are cut. Don’t install an electric strike just because it is the cheapest product on the market. What happens if that product fails soon after it is installed? You may only have to spend $30 or $40 to replace the electric strike, but how much time will you spend going back to the site? How much is your time worth?

Aside from these issues, think about how your customer will perceive your services? Wouldn’t you rather provide quality service so that your customer will refer you to others? Isn’t it important for your customer to think of you as the one who will get it right the first time? Keep in mind that in your business, your customers can be the greatest marketing resource - make sure your customers are working for you rather than for your competitors!

Again, you have a choice when it comes to electric strikes. Make sure you evaluate your customer’s needs and get it right the first time.

QUESTION 2: What type of lock will the electric strike interface with? Cylindrical, Mortise, or Panic?

An understanding of the basic relationship between the lock and electric strike is the next essential step in determining what type of electric strike to use.

When you are dealing with existing door hardware, you should choose an electric strike that will perform the same function as the strike plate supplied with the lock. After all, an electric strike without electricity is nothing more than an expensive strike plate. To properly match the two, you only need to know five basic principles.

1) The relationship between the center lines of the lock and electric strike.

It is important to evaluate whether or not the type of lockset used is on center with the electric strike cavity. For example, the center line of a cylindrical lock should be matched up with the center line of the electric strike cavity, whereas the center line of the mortise lock is positioned 3/8" below the center line of the electric strike.
The following diagrams show the difference in the placement of a cylindrical lock vs. a mortise lock with an electric strike.

Diagram 1 A cylindrical lock aligned with its centerline equal to the centerline of the electric strike

Diagram 2 A mortise lock aligned with its centerline 3/8" below the centerline of the electric strike.

2) The depth and positioning of the electric strike cavity.
   It is important to select an electric strike with the correct cavity depth to accommodate the lock. Many electric strikes have shallow cavities and are designed to only accommodate 1/2" throw bolts. Similarly, the electric strike selected should have the cavity positioned to match up with the bolt of the locksets. (See above center lines.)

3) The type of bolt or bolts on the lock.
   There are as many as three components to some locksets, the latchbolt, deadlatch and deadbolt. Remember, the electric strike will need to provide the same function as the strike plate provided with the lockset. Therefore, a basic understanding of the lock is an important requirement when choosing an electric strike.

   - A **latchbolt** is a spring loaded bolt that is ramped on the closing side to enable it to be depressed upon the closing of the door. The bolt then will spring outward when positioned over the strike cavity to secure the door.

   - A **deadlatch** (sometimes called an “auxiliary dead locking lever”) is designed to work in conjunction with the latchbolt. When the deadlatch is depressed, it locks the latchbolt in the extended position. This allows the latchbolt to function similarly to a deadbolt, thus adding greater security to the door.

   - A **deadbolt** is a bolt that must be manually extended into the strike cavity to secure and lock a door. The deadbolt must similarly be manually retracted from the strike cavity to unlock a door.

   Unfortunately, ANSI (American National Standards Institute) specifications dictate the dimensions for the body of a mortise lock and its components, but they don’t state how the latchbolt, deadlatch and deadbolt are to be arranged on the lock. Therefore, most of the manufacturers design their mortise locks in slightly different configurations. This makes choosing an electric strike to accommodate these locks very difficult. Hanchett Entry Systems, Inc. (HES) has made this easier by providing interchangeable faceplate options for each of their electric strike lines. By using a universal body and changing the faceplate, HES can accommodate the bolt positioning of virtually every lockset on the market.

4) The relationship between the auxiliary dead latch (when applicable) and the electric strike.
   When accommodating a lockset with a latchbolt and a deadlatch, the electric strike must be designed to properly depress the deadlatch. Failure to do so will compromise the security of the lockset.

   These variables can become very confusing. HES has developed a reference chart to make your selection of an electric strike easier. While it is important to know all of the variables, a quick look at the chart will tell you what type of strike matches with a particular lock. (See appendix 2)
5) A mortised electric strike vs a surface mounted electric strike.

The term “mortise” is a wood worker’s term referring to a rectangle cavity cut into a piece of wood to receive a mating tenon (as in a mortise joint). The term “mortise lock” stems from the rectangle shape of the lock body and the rectangle cavity required in the end of the door for installation. Similarly, when an electric strike is installed in a door jamb so that the face plate is “flush” with the surface of the jamb, it is referred to as a mortise installation. Mortise electric strikes are used to accommodate most types of locksets, including mortise locks, cylindrical locks, cylindrical deadbolts and unit locks.

A “surface mounted” electric strike is one which is mounted on the surface or side of the door jamb. These electric strikes are used to accommodate “rim” (or surface) mounted panic exit devices and surface mounted latchbolts and deadbolts. (See diagram 4.)

HES offers three surface mounted electric strike options in their 7000 series and three in their 7400 series. The 783 and 783S option face plates are 9” long and 11/16” thick. These models are designed to replace the 3/4” strike plates provided with most rim exit devices. They are ideal for use on metal jambs. The HES 786 and 786S option face plates are 6” long and 1/2” thick. These models are used to accommodate vertical rim mounted panic exit devices installed on a pair of doors without a mullion. The HES 789 and 789S option face plates are 9” long and 1/2” thick. These models are designed to accommodate rim exit devices installed on aluminum doors.

Diagram 4: A rim mounted panic exit device and a mortise panic exit device aligned with electric strikes.

QUESTION 3: What type of jamb will the electric strike be installed into? Aluminum, wood or metal?

There are basically three types of jambs that will be encountered in the field, aluminum, wood and metal (steel).

If the electric strike is being installed into a hollow-metal jamb, almost any electric strike will work. However, there is an old adage about “hollow-metal” jambs and that is “hollow-metal rarely is.” What this means is, “hollow-metal” door jambs are usually not hollow - they are most often filled with concrete or other debris. This is done to help stabilize the door and door jamb.

Have you ever tried to install an electric strike with a solenoid protruding from it? It is not difficult to do if the door jamb is truly “hollow.” But, it becomes very difficult and sometimes impossible if the jamb is not “hollow.”

For ease of installation, you will need to choose an electric strike that is “installer friendly”. The HES electric strikes all have the solenoid designed within the body of the strike, making them easy to install.

Wood installations present many of the same difficulties as you might find with concrete filled metal jambs. What do you do with an electric strike with a protruding solenoid? In many applications, building codes prevent the installation of an electric strike designed with an external solenoid, when the installation penetrates the drywall. Again, choosing an electric strike that is “installer friendly” can alleviate many of hassles you may encounter in the field.

Aluminum jambs may present some difficulties as well. Aluminum jambs usually encase glass, both in the door itself and in the adjoining walls. Many times the glass is encased within 1-1/4” of the surface of the jamb, making it very difficult to install the electric strike. Selecting an electric strike that is compact enough to be installed in these jambs without cutting into the glass can save you money and time in the field. The HES 5000 series is ideal in these applications. It is a low-profile electric strike (1-1/16” backset), with strength and durability that exceeds every specification that has been designed for electric strikes.

Often you may be going into the field without a thorough knowledge of what type of jamb you will encounter. By using HES electric strikes you can be confident that you are using the most “installer friendly” strikes on the market.

QUESTION 4: What are the voltage requirements?

Electric strikes come in a variety of voltages, but 12 and 24 are the most common. If no system is present, you can choose the voltage and design your system around it. Many people choose 12 volt because of the easy access to batteries to back-up the system. The reason one would choose 24 volt is because it has a lower current draw. (See Basic Electronics.)
QUESTION 5: What building codes are in place at this installation?

You will frequently hear the terms, “Fail Safe” and “Fail Secure” in relation to electric strikes. Fail secure means that if the power fails the building is secure. In other words the electric strike requires power to unlock. Fail safe means that if the power fails, the building is safe to exit, the electric strike requires power to stay locked. Different types of building codes will require either fail safe or fail secure electric strikes.

If the door is “Fire Rated” by U.L. or one of the other testing facilities, a fail secure electric strike is necessary. This type of door is a barrier door. In a fire, the electric strike and door hardware must contain the door so it will not release. If the door is classified as a “Life Safety” door, the operation of the electric strike must be fail safe. Again, this means that the door will be safe to exit.

You should also be aware that if ADA (Americans with Disabilities Act) laws apply to the door, an audible (buzzer) or visual (LED) indication of the door status may be necessary.

Avoiding surprises while saving time and adding to your profit margin

In order to increase your profit from any type of job, you should be fully prepared the first time you visit the site. After reading this long list of variables to be considered when selecting an electric strike, you may be a bit overwhelmed by this task. HES, Inc. makes your job easier by offering the “Mobile Stock-Pac.” This tool-box sized kit includes everything you need to install the appropriate electric strike the first time you visit the site. (See diagram 5.)

HES Mobile Stock Pac 172-MSP

Includes:
- 1003-12DC Electric Strike
- J, K, KD, KM, H, Z Options
- 7000U Electric Strike
- 701, 702, 783 Options
- 2001 Plug-in Bridge Rectifier
- 2002-24P Plug-in AC Transformer
- 2005 Smart-Pac
- 2006 Plug-in Buzzer
- 2010 Push Button Switch
- 1003-105 Goof Plate
- 154-MTK Metal Template Kit
- A durable plastic carrying case.

Now that you’ve specified your electric strike it’s time to install it. The next section describes the basic tools used in the installation of electric Strikes.

SECTION 2
Basic Tools Used in the Installation of an Electric Strike

Various tool are used in the installation of an electric strike. Your choice of tools will depend on your personal preference and the type of installation you are doing. The following is a list of the most commonly used tools and some points of interest about them.

Die Grinder - A very fast cutting device and therefore the preferred tool for many installers.

Important Points:
- Requires a moderate degree of skill and practice.
- Ideal for hollow metal and concrete filled metal jambs.
- Easy to over-cut installation.
- Leaves a slight burn mark around the cutout (approximately 1/16” to 1/8”).
- Always wear a protective shield or glasses when using this tool.
- Cost: $165 to $500.

Dremel Tool - A very slow but clean cutting device used by many installers.

Important Points:
- Requires a moderate degree of skill and practice.
- Very slow but provides a clean cutout.
- Best to use for small repetitive surface cuts.
- Ideal for hollow metal or concrete filled metal jambs.
- Ideal for fine or small cutting areas (i.e. Cutting out the dust box in a metal jamb.)
- Always wear a protective shield or glasses when using this tool.
- Cost: $45 to $75.

Jig Saw - A common tool used by many installers.

Important Points:
- Requires a lesser degree of skill and practice.
- Moderate cutting speed and accuracy.
- Good for hollow metal and aluminum jambs.
- Always wear a protective shield or glasses when using this tool.
- Cost: $30 to $150.

Router - A common tool used by many installers.

Important Points:
- Requires a high degree of skill and practice.
- Easy to over-cut installation.
- Ideal for wood and aluminum jambs. Note: Installation jigs are available through specialty manufacturers to aid in routing aluminum jamb installations.
• Very messy - the router will spread debris over a large area.
• Always wear a protective shield or glasses when using this tool.
• Cost: $40-$200.

SECTION 3
Electric Strike Installations
Before you begin any type of installation, it is important to become familiar with the specific electric strike that you will be installing. Therefore, review the manufacturer’s installation instructions and template.

Make sure the electric strike selected is the right one for the application.
By taking the time to ask yourself these five simple questions, you will be able to choose the best electric strike for your application.

Q: Is the electric strike the correct voltage for the system?
Q: Is the electric strike the correct function, fail secure or fail safe, to meet the building codes and the application?
Q: Will the electric strike fully accommodate the lockset?
Q: Will the electric strike stand up to the usage frequency and durability requirements of the application?
Q: Will the electric strike fit into the door jamb or the in active door in a double door application?

Most electric strike manufactures provide templates to aid in the installation of their electric strikes. By investing a little time before you begin cutting the door jamb, you can avoid many hidden surprises.

Installing an Electric Strike in a hollow-metal jamb
The following step by step guide should help you in installing an electric strike in a hollow-metal jamb.

1. Mark the centerline of the lockset on the jamb where the strike will be installed.
   This will allow you to properly align the electric strike with the lockset (See diagram 6).

2. Using the manufacturer’s template (supplied with the electric strike) measure and mark the appropriate dimensions on the door jamb as specified.
   To simplify the installation and save time, HES offers a metal template kit to allow you to quickly mark the dimensions for their electric strikes. (See appendix 1)

Installers tip: It is often beneficial to first put masking tape on the door jamb where you will be installing the electric strike. This serves two important functions: 1) You can mark dimensions directly on the masking tape, which makes them easier to see in low-light conditions, 2) the masking tape protects the jamb surface from being scratched during the installation process.

Diagram 6 A section of an ANSI Metal Door Jamb with a typical electric strike preparation. Shown with a model 5000U electric strike with a 501 option.

3) Using one of the tools described in section 2, carefully cutout the required section or sections of the frame, as noted in the manufacturer’s electric strike installation template.

   If the metal frame has already been equipped with a standard ANSI 4-7/8" strike plate, you will want to use an ANSI 4-7/8" electric strike. In this type of installation, you will need to cut out a small section of the face of the jamb as specified in the manufacturer’s template instructions. This cutout is an extension of the 3-3/8" ANSI “Lip” of the jamb, onto the jamb face, which will be cut from 5/8" to 2-1/2", depending on the electric strike selected (see diagram 6).

   In most cases, a section of the ANSI dust box will also need to be removed to allow enough room (depth) for the electric strike to be installed. It is important to only remove the bottom section of the dust box, so that the welded mounting tab sections remain in place.

   HES is the only manufacturer to offer an electric strike, the 5000 series, which is specially designed to fit into this ANSI jamb preparation, without removing the ANSI dust box. The installation of this electric strike only requires a 5/8" cutout on the face of the jamb.
Installers tip: To obtain the best results, always cut well inside the lines and use a metal file to finish off the cutout.

If you do make a mistake and find that your cutout is too large, HES offers a “goof plate” trim enhancement adaptor (model 105) for each of their ANSI 4-7/8” electric strikes. This provides a 1 1/4” frame around the electric strike to enhance the appearance of the installation.

If the metal jamb is hollow, then the electric strike should be easy to insert into the jamb preparation. However, if the metal jamb has been filled with concrete or other materials, you will need to create a cavity large enough to install the electric strike. This can be accomplished with a hammer and chisel by simply chipping away the required material. In some more difficult cases you may find hardened concrete filling the jamb. This type of installation may require the use of a “hammer drill” or other devices to remove the required material.

In both of these situations it is easy to understand why you should select an electric strike with an internally mounted solenoid. An electric strike with a protruding solenoid would be very difficult to install in these jambs.

Tech Tip 3

If the metal jamb was not equipped with an ANSI jamb preparation or if the ANSI dust box is completely removed, then you will need to install mounting tabs in the jamb for the electric strike. HES offers universal mounting tabs for their electric strikes, which can be adjusted for a variety of jamb thicknesses.

An important difference between a metal jamb and a wood jamb, is the reveal of the jamb. This refers to the distance the electric strike is set back into the frame away from the jamb face. (See Diagram 7.) Many wood jamb installations require the addition of an extended lip to be added to the front of the electric strike, to accommodate the longer reveal. Additionally, many wood jambs are framed with a decorative wood trim, which extends the actual reveal even further.

Tech Tip 2

Installing an Electric Strike in a wood jamb

A Typical Wood Jamb

Diagram 7  A section of a Wood Door Jamb with a typical electric strike preparation. Shown with a model 5000U electric strike with a 504 option.

The following step by step guide should help you in installing an electric strike in a wood jamb.

1. Mark the horizontal centerline of the lockset on the jamb where the strike will be installed.

   This will allow you to properly align the electric strike horizontally with the lockset (See Section xx).

2. Mark the vertical centerline of the bolt on the jamb where the strike will be installed.

   This will allow you to properly align the electric strike vertically with the lockset.

3. Using the manufacturer’s template instructions (supplied with the electric strike) measure and mark the appropriate dimensions on the door jamb as specified.

4) Using one of the tools described in section 2, carefully cut out the required section or sections of the frame, as noted in the manufacturer’s electric strike installation template.
The electric strike that you choose for this installation, will only be as strong as its ability to be secured to the wood jamb. Therefore, you may want to select an electric strike with a longer face plate. This will allow you to place the mounting screws further away from the electric strike cutout, where they can be better secured into the wood. HES offers a variety of special electric strikes designed for wood jambs. The HES 5000 series includes the 504 option face plate, which is 10" long and with four mounting holes. Other models include the 5000 series 502 option, the 7000 series 702 option the 1003 series with six different 9" options (the -2 series), and the model 7505 electric strike. This provides a maximum anchoring potential, to increase the security of the door.

Installing an Electric Strike in the inactive door of a double door application

A Typical Double Door Installation

Diagram 8  An electric strike preparation in an inactive door of a double door application. Shown with a model 7000U electric strike with a 702 option.

Installing an electric strike in the inactive door of a pair of doors, is very similar to installing the unit in a metal or wood jamb. Whether your door is metal or wood, the electric strike will be positioned the same. It will be installed in the edge of the door in a similar fashion to how it appears in an ANSI metal jamb. This type of installation does require a little extra attention. There will only be about an 1/8" remaining between the electric strike cutout and the outside of the door. However, this is a very typical electric strike installation and can be mastered with a little practice.

An electric strike installation in an inactive door does require the installer to bring the power to the electric strike. This is accomplished by installing a power transfer, like an electrified hinge or a power cord, from the jamb to the door. The installer must then drill a hole through the door (horizontally) and install power leads inside the door up to the electric strike cutout.

Note: If the door is a “Fire Rated Door,” then you should check with your local fire marshal before you begin installing the electric strike. Otherwise, you might void the door’s rating and violate the building codes.

Installing an Electric Strike in an aluminum jamb

A Typical Aluminum Jamb Installation

Diagram 9  A section of an Aluminum Jamb with a typical electric strike preparation. Shown with a model 5000U electric strike with a 501AL option.

Aluminum jambs are made in many different styles. The electric strike may be positioned close to the edge (the face) of the jamb, similar to that of a metal jamb installation. Or, the electric strike may be positioned a distance away from the edge of the jamb, similar to that of a wood jamb. These installations will also require the addition of an extended lip to be added to the front of the electric strike, to accommodate the longer reveal. The following step by step guide should help you in installing an electric strike in an aluminum jamb.
1. Mark the horizontal centerline of the lockset on the jamb where the strike will be installed.

This will allow you to properly align the electric strike horizontally with the lockset (See Section xx).

2. Mark the vertical centerline of the bolt on the jamb where the strike will be installed.

This will allow you to properly align the electric strike vertically with the lockset. It is not uncommon to find an aluminum jamb with a 3" or 4" reveal. This makes finding the vertical centerline very important for a correct alignment with the lock.

3. Using the manufacturer’s template instructions (supplied with the electric strike) measure and mark the appropriate dimensions on the door jamb as specified.

4) Using one of the tools described above, carefully cutout the required section or sections of the frame, as noted in the manufacturer’s electric strike installation template.

Installers tip: Cutting an aluminum jamb with a router or a jig saw can be very messy and very noisy. It is always a good idea to spread out a drop cloth in front of your work area to capture the aluminum chips and then to bring a vacuum to clean up after your installation. It is also a good idea to wear eye and ear protection when performing this installation.

Installing a surface mounted electric strike to accommodate a surface mounted panic exit device on an aluminum jamb.

Many aluminum jambs are designed with a 1/2" door stop or blade stop. (See diagram 10.) The surface mounted panic exit devices designed to work with this type of jamb utilize the 1/2" stop as a strike plate. Therefore, the electric strike must be designed to directly replace a section of the stop, to perform the same function.

HES has designed the 7000 series modular electric strike, equipped with a 789 option, to accommodate surface mounted panic exit devices on aluminum jambs. This electric strike is designed with a 1/2" thick face plate, to replace the stop on the jamb. Additionally, this unit comes with a “keeper pocket trim adapter” to accommodate this special long reveal application.

SECTION 4 Understanding Basic Electronics.

How many times during the last few years have you been told that you must learn the fundamentals of electronics? Every year brings a host of new electronics products to the marketplace. Electric Strikes are but one product in a vast array of electronic devices and if you are to remain the “Go to Man” when it comes to access control then you must at least be able to interface the various pieces of equipment. Sometimes the interface is mechanical, such as matching a lockset to an electric strike. Often it is electrical, for instance providing the correct power source for that electric strike. Generally, mechanical problems are simple, but electrical problems may seem more complex. Actually, the electrical problems are no more complex than the mechanical ones if you think of them as interfacing problems. This may allow you to overcome the fear of the unknown.

The fundamental rule when interfacing two electrical components is to make sure that the source can provide what the load needs. A simple example would be an electric strike load, which requires 24 volts and draws .25 amps and therefore must be driven by a source that can supply .25 amps at 24 volts. The following diagram represents this rule in its simplest terms.
Certainly there are other principles that need to be understood, but using this rule as a foundation, everything is put into perspective.

The following is a list of questions that must be answered in order to understand the basic wiring of an electric strike.

**Does my electric strike require AC or DC operation and what is the difference between them?**

When viewed on an oscilloscope, alternating current (AC) swings plus and minus (seen as up and down on the scope) similar to the waves on the ocean. The source for this type of voltage is your wall outlet which usually provides 120 volts of alternating current. To make this source useful for most loads used by the installer (i.e. an electric strike) it must be reduced to 12 or 24 volts by the transformer. The output of the transformer is still alternating current.

Diagram 12  120 volts AC reduced to 12 volts AC by a transformer.

Direct current (DC) is like the ocean at high tide where all the water stays at a high level. Direct current, as required by an electric strike, is achieved by passing 12 or 24 volts alternating current through a bridge rectifier or by using 12 or 24 volt battery as the source.

Diagram 13  12 volt AC, 12 volt rectified AC converted to 12 volt DC output, 12 volt DC battery.

Most electric strikes are operated by either an electromagnetic coil or a solenoid. Both of these can be operated by both AC and DC power sources. However, AC or alternating current, is a less efficient source of power because it is alternating from positive to negative. This power drives the electric strike in very fast pulses, which results in a chattering or buzzing sound when the unit is energized. DC or direct current, is a consistent source of power. When an electric strike is operated by a DC power source, it operates very efficiently and quietly.

Many electric strikes are capable of operating on both AC and DC power. This is due to the basic design of their locking mechanisms. These electric strikes will make a buzzing sound when powered by AC and require the insertion of a bridge rectifier to operate silently.

Other electric strikes are only capable of operating on DC power. These units are mostly solenoid operated and require a more efficient power source to energize their large locking plunger or other complex locking mechanisms. These electric strikes operate silently and require the addition of an in-line DC buzzer to make noise if required.
Basic Wiring Diagrams

Diagram 14

SECTION 5

TROUBLE SHOOTING GUIDE

If an electric strike does not operate properly after installation, the following problems may need to be corrected.

Step 1. If the electric strike does not operate properly, open the door and re-energize the electric strike. If the electric strike operates properly with the door held open, the lockset may be preloading or binding the keeper of the electric strike.

Solution: The horizontal relationship between the lockset and the electric strike will have to be adjusted to eliminate the binding between the bolt of the lock and the electric strike keeper (also See Note 2.)

Step 2. If the electric strike does not operate with the door open, remove the electric strike from the jamb leaving the wiring connected and re-energize the electric strike. If the electric strike operates properly outside of the jamb, then the problem may be from a tight-fitting jamb cutout pinching the sides of the electric strike together.

Solution: The electric strike cutout in the door jamb needs to be slightly enlarged.

Step 3. If all mechanical problems have been eliminated without successful electric strike operation, check the following electrical problems:

a. Using a multimeter: Examine the power supply or transformer to verify that the output voltage is at the listed rating.

b. Verify that the power wires leading to the electric strike are a large enough gauge to handle the current requirements. Note: Some voltage may be lost when using smaller gaged wires over long distances. (See diagram 15)

c. Verify that the input voltage is within the recommended limits (+/-10%).

d. Confirm that the input voltage at the installation site is DC or properly rectified AC.

e. Verify that all peripheral devices such as bridge rectifiers, SMART-pacs, buzzers, LED’s etc. are properly connected.

f. Check that the switch, key pad, etc., meets the voltage requirements for the system.

Note 1: A quick way to determine if an electric strike is defective is to install it in a site where another electric strike has been installed and working properly. Another way is to use an alternative power source to test the electric strike (i.e. a DC battery pack.)

Note 2: If the voltage is slightly too low to operate the electric strike, a 35 volt, 220 micro-farad capacitor may be installed across the bridge rectifier (positive to positive, negative to negative) to provide an initial boost of power to the unit. This is also helpful to overcome slight preloading conditions (as in step 1.)

MINIMUM WIRE GAGE REQUIREMENTS

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<th>Solenoid Voltage</th>
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<tr>
<td>24 V (.25 amps)</td>
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<tr>
<td>12 V (.5 amps)</td>
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<tr>
<td>200 feet or less</td>
</tr>
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<td>18 gage</td>
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<td>18 gage</td>
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<td>200 feet to 300 feet</td>
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<td>16 gage</td>
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<td>300 feet to 400 feet</td>
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<td>14 gage</td>
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If you have any questions after reading this guide, call the Hanchett Entry Systems, Inc. technical service line:
1-800-626-7590
TO SIMPLIFY THE INSTALLATION AND SAVE TIME, HES OFFERS A METAL TEMPLATE KIT TO ALLOW YOU TO QUICKLY MARK THE DIMENSIONS FOR THEIR ELECTRIC STRIKES.
The H.E.S. Electric Strikes are designed to be installed in accordance with the ANSI/BHMA A156.5 4-7/8" jamb preparation.

When accommodating a Cylindrical Lock, the Electric Strike is to be installed centerline to centerline. When accommodating a Mortise Lock, the centerline of the Electric Strike is to be installed 3/8" above the centerline of the Mortise Lock.

**NOTE:** This chart is offered as a convenience only. H.E.S. assumes no liability for the differences between items compared. When compatibility is a concern, contact H.E.S. for application assistance.