OPERATING & APPLICATION INSTRUCTIONS

GENERAL

The Power Access Model 4300 opener converts most side hinged doors to power operation. The **jamb mount model 4300** mounts to the jamb on the "push" (non-swing) side of the door (see fig. 1) while the door closer mounts on the other side (pull).

For residential applications where the outside door usually opens in, the **door mount model 4300D** should be considered. The door mount opener is designed to be installed up side down at the top of the inside of the door (see fig. 2). With this application the opener is mounted on the inside of the door protected from vandalism and the elements.

Note - for a door mount application be sure to check that the clearance behind the door, when it's open, is at least 8-1/2", thus permitting the door to open the full 90 degrees.

An **inverted jamb mount model 4300V** is available for extra high doors where there is limited clearance above the door frame.

The standard jamb mount application accommodates reveals from 1/2" to 4-1/2" (distance from the back of the unit to the face of the door - see top view of drawing 4214). For applications where the reveal is greater than 4-1/2", but less than 9-1/2", the **extended arm model 4300X** is available. (see top view on drawing 4260).

Whenever possible, the opener should be mounted indoors to protect it from the elements and vandalism. When the unit must be outside, it must be protected from the elements. If outside temperatures drop below freezing the **low temperature model 4300LT** should be specified.

Left and right hand models are available - and the hand must be indicated when ordering. The hand is determined by standing on the "push" (non-swing) side of the door and observing on which side of the door the hinges are located - a door with hinges on the right requires a right hand unit - a door with hinges on the left requires a left hand unit. ***Door mount models are also handed from the push side even though they are installed on the pull side*.**

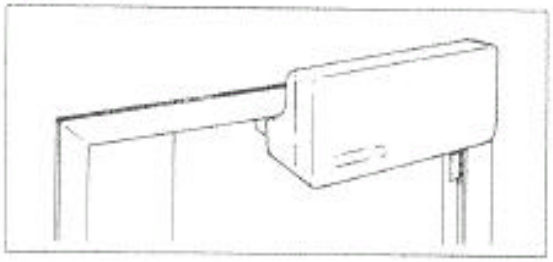

Fig. 1 4300R

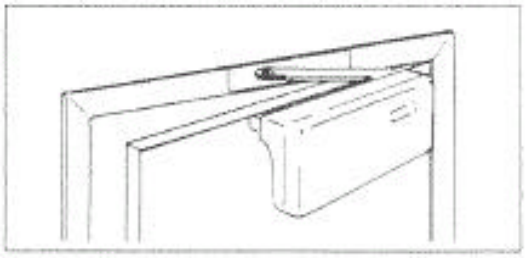

Fig. 2 4300DL

The Model 4300 incorporates durable long life components for trouble-free, dependable service. The unit has a number of important safety features - both electrical and mechanical. The door can be opened manually, independent of the opener, because the concealed, wheeled arm of the opener does not attach to the door.

A built-in safety circuit senses load changes and automatically stops the door in the event it meets an obstruction while opening. After timing out, the arm will automatically retract. The safety circuit potentiometer needs to be adjusted for each application. For additional protection, there is an externally mounted circuit breaker (3 ampere) as well as a thermally protected drive motor.

Since the opener arm does not attach to the door, a door closing device is required; such as, a concealed or surface mounted door closer - or, in some special cases, spring hinges. If a surface closer is used it must be on the opposite side of the door from the opener. (The LCN Super Smoothee® series is an excellent closer for outdoor applications, particularly where below zero winter temperatures may occur.)

OPERATION

An instantaneous dry contact signal from a control initiates the opening cycle. An electro-mechanical linear actuator pivots an arm with an attached roller that moves along the top face of the door and pushes it open. The door remains open for 0-30 seconds, depending on the setting of the adjustable timed hold open (THO) device. On closing, the arm retracts and a standard door closing device closes the door.

A blank latch strike plate (supplied with each unit) on the jamb prevents the door from latching when closed. If security is required, an electric strike may be interfaced with the operator.

Standard openers with the "THO" feature that receive an operate signal on the closing cycle, will stop and return to the open position and again time out, before returning to the closed position.

Openers may be ordered with a PC board #5410 which has a "signal to open/signal to close" feature. With this feature the door will open upon receiving the first signal and remain open until receiving a second signal. If a signal is received while closing, the opener will stop and return to the open position to await the next signal. If the door meets an obstruction while opening, it will stop and await the next signal, and then close.

APPLICATION

The three basic factors that determine the feasibility of an application are: (a) the door geometry, (b) the force required to open the door and (c) the volume of traffic. All of these items must be taken into account before attempting to install the Model 4300 on a door.

A. Geometry - The opener must be mounted in the correct relationship to the door hinge. When the door is in the open position, the opener is located laterally so that the door is open 90 degrees. If the opener is laterally too far from the hinge

point, less than a 90 degree opening will occur. If it is too close to the hinge point, a greater than a 90 degree opening will occur. If the opener is mounted too far from the face of the door, there may not be enough mechanical force to fully open the door. (See drawings 4214 and 4260).

Drawing 4214 - Illustrates the typical application of a hinge hung door where the jambs are 4-1/2" wide to 7-1/2" wide. The reveal (distance from the back of the unit to the face of the door) should not exceed 4-1/2". For reveals greater than 4-1/2," but less than 9-1/2", you may use the "deep reveal" model.

Note - the ceiling height should be at least 6" above the top of the door for clearance. If not, the ceiling might be notched or an inverted unit might be used if head clearance is not a problem - (see drawing 4261).

Drawing 4260 - Illustrates a deep reveal application for dimensions between 4-1/2" and 9-1/2"

Drawing 4261 - Illustrates the application of an inverted unit. No clearance is required above the top of the jamb, but this arrangement is not recommended for standard height doors because the door opening clearance would be reduced by about 9 inches.

Drawing 4262 - Illustrates an application with a shallow reveal that uses the P/N 4531 shallow reveal mounting bracket to provide a mounting surface for the opener.

Drawing 4264 - Illustrates the positioning of the opener with respect to the door pivot and off-set hinged doors. It also shows how to determine lateral location for any application.

Drawing 4269 - Illustrates a door mount application (typical of a residential front door) where the opener must be on the "pull" side of the door with the arm rolling against the top of the jamb. Minimum side clearance of 8-1/2" (i.e. the clearance behind the opened door) is required so that the opener may be located close to the hinge point to permit the door to open to 90 degrees.

Drawing 4265D - Illustrates the wiring to the printed circuit board, including proper control hookup. Also shown is the internal wiring to the various components.

Glass doors do not present a problem except in the case where the upper rail of the door is so narrow as to cause the roller to bear directly on the glass. In this case, the scuff plate P/N 5616NH (bearing plate) should be affixed to the top of the door.

B. Opening Forces at the start of the cycle can be adjusted to exert about 60-80 pounds of force on the latch edge of the door. As the door opens, the mechanical advantage steadily decreases as the roller moves across the face of the door - to about 15 - 20 pounds at the latch edge when the door is open. Door forces can be measured with a spring scale to determine if they exceed the capability of the opener. (Generally, if the door can be opened manually without excessive force, the opener will be able to push the door open without any problem). In the event that the door opening resistance exceeds the above forces, there are a number of things that can be done to reduce the forces on the door. In some cases it is possible to adjust the closer force (without reducing its ability to properly close the door) or replace the closer with one having a softer spring.

Mounting the opener closer to the face of the door also will help. When any of these steps are taken, it may be necessary to alter the lateral location of the opener so that the door is not opened significantly beyond, or less than, 90 degrees. Drawing 4264 shows the procedure for properly locating the opener.

C. The Model 4300 has been designed for use primarily on low traffic, secondary doors. It can also be used on many entrance doors, but because of its design and slower opening speed, (7-8 seconds) the Model 4300 is not suitable, and should not be used, for high traffic rate applications where all traffic or high rates of traffic would be using the door automation.

Most entrance doors being considered, are to be automated to provide accessibility for handicapped, elderly or burdened individuals. Steps should be taken to limit use to these individuals and have the general pedestrian traffic use the door manually. This can be best be done by locating controls (wall or post) slightly out of the mainstream of traffic, or providing radio control to specified users.

NOTE: FOR APPLICATIONS WHERE THE UNIT IS LOCATED ON THE OUTSIDE OF A SECURED DOOR AND IS EXPOSED TO POSSIBLE TAMPERING - THE ON/OFF TOGGLE SWITCH SHOULD BE DISCONNECTED AND THE UNIT SHOULD BE HARDWIRED.

D. Controls - Several types of controls are available in wired and/or wireless modes. The most commonly used control is the wireless push/plate. When using wireless controls with the Model 4300 series opener a 4470 receiver must also be ordered. In addition to wall mounted controls (surface or flush), there are post mounted, hand held, keyless programmable, sip and puff, ECU interface and others to meet specific user needs.

E. Electric Strikes - are used when the door being automated has a latch or deadbolt that will be used to secure the door. A strike is installed in the door frame, lined up with the latch or deadbolt. Strikes are wired to the door opener. When the opener receives a signal to open the door, it automatically unlocks the door.

F. Door closing devices - The 4300 opener is used in conjunction with independent door closers. Some doors in commercial buildings have concealed closers, however most closers are the surface mounted type which frequently have to be relocated or changed. Power Access carries a selection of LCN closers to meet most needs.