



INSTALLATION INSTRUCTIONS
AND
OPERATION MANUAL

Cornell FireGard and AlarmGard
Retrofit Fire Door Operators

CHAIN, CRANK OR MOTOR OPERATOR CONVERSION PREPARING THE EXISTING FIRE DOOR

These instructions are to be used in conjunction with the installation manual provided with the retrofit operator. Please read and understand them both thoroughly before proceeding.



WARNING



Rolling fire door counterbalance spring mechanisms are under extreme tension that may cause serious injury or death if not handled properly. Only an experienced rolling door technician should perform this conversion.

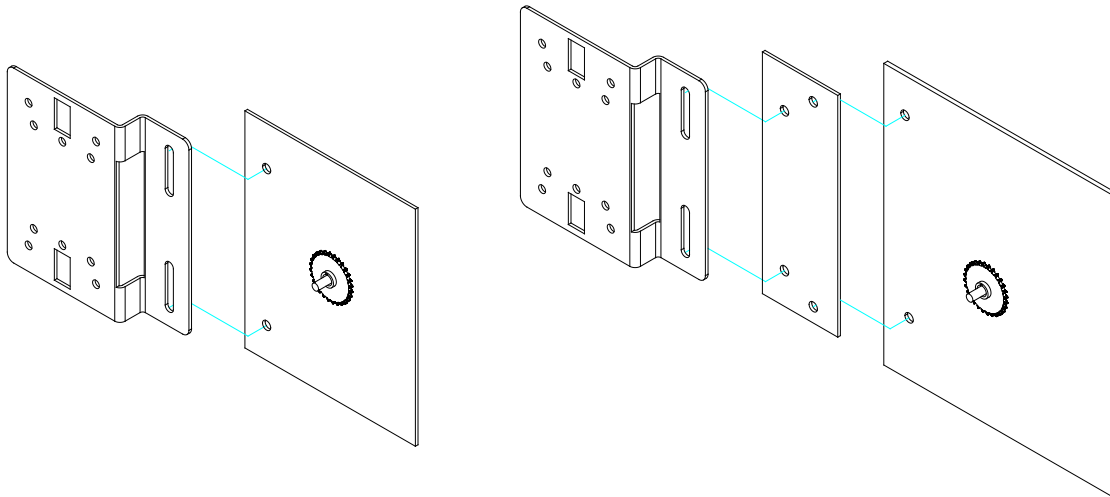
This conversion can be performed on any fire door where the driven sprocket of the operator can be installed on the main drive shaft of the door. If there are any questions about the feasibility of this conversion, call the Cornell Iron Works Service Department @ 1-800-233-8366

Familiarize yourself with the normal operating sequence of the brand door you are working on. You must know how to adjust spring tension and be aware of how the drop out mechanisms (when provided) function to allow the door to automatically close.

Review the new operator mounting and installation manual and verify that there is enough clearance to install the operator prior to beginning this conversion.

1. Advise a facility official that you will be taking the door out of service and obtain permission to disconnect any release devices, smoke detectors, or alarm connections to the door or door related components. If for any reason the door will be out of service overnight or an extended period of time during this conversion the curtain should be left in the down (closed) position whenever the door is not being actively worked on.
2. Before beginning the crank, chain or motor operator conversion verify that the door is free of damage, operating properly and well balanced. See guidelines at the end of this document.
3. With the door in the open position, place clamps on guides just below the bottom bar to prevent the door from closing during this modification.
4. Clamp adjusting side dropouts up to keep door from losing spring tension.
5. Disconnect the fusible link set up from the door assembly and retain all loose components.

6. If the door is motorized, have an electrician remove power from the existing motor operator and disconnect all control wiring.
7. Remove door hood if necessary to gain access to fasten mounting hardware.
8. Remove the original motor, chain or crank operator, and governor mechanisms from the operator head plate of the door.
Note: Do not remove any parts from the spring adjust side head plate.
9. Remove any studs that project outside the operator side head plate that would interfere with the new roller chain drive. Welded studs should be cut off as close to the head plate as possible and then ground flush.
10. Using the mounting bracket supplied as a template mark and drill two 9/16" diameter holes 1" from the edge of the operator head bracket for fastening the operator. Verify that the bolts will not interfere with the curtain. See details below to verify if bracket adapter is necessary. (It is permissible to weld the operator mounting plate to the door head plate if welding is allowed in the area you are working.)



Thru 13" Bracket Height

Over 13" Bracket Height

11. Bolt the mounting bracket to the head plate with hardware provided.
12. Bolt the operator to the mounting bracket with the hardware provided.
13. Install brace angles if supplied to tie operator back to wall.

14. Install the driven sprocket on the door shaft and align it with the operator sprocket.
15. Install the sensing edge on bottom of door. (if applicable)
16. If a retrofit motor operator is being supplied have an electrician reconnect power to operator and wire controls and sensing edge, if supplied. Wiring must comply with operator installation manual and all local codes.
17. Run the operator electrically with the push button **(without the roller chain connected to door)** to verify that the operator is phased properly (operator runs in the correct directions when open and close buttons are pressed) and the limit switches shut the operator off when tripped.
18. Fit and install roller chain and adjust the tension. (See instruction manual supplied with operator) Make final alignment adjustments on the sprockets and then tighten all set screws on all sprockets.
19. Remove the clamps from the guide.
20. If the retrofit is a motor operator, run the operator and adjust the limit switches. (See operator installation manual)
21. If the retrofit is a motor operator, test sensing edge operation. (If applicable)
22. Adjusting spring tension.
 - A. All units with retrofit operators, both manual and electric, need to be under balanced when the door is in the fully opened position to allow for automatic closing upon emergency signal. If the curtain stops short of the floor remove more spring tension, as described below, until the door comes to the fully closed position.



WARNING



Rolling fire door counterbalance spring mechanisms are under extreme tension that may cause serious injury or death if not handled properly. Only an experienced rolling door technician should perform this conversion.

Always wind tension when the door is in the up position. The springs are under the least amount of tension at this point.

- B. After the open and close limit switches have been adjusted (motorized units only) and you have verified that the door and operator are functioning properly, it is now time to adjust the spring tension to assure automatic closing.

- C. Operate the door to the full open position and place clamps on the guides approximately 18" down from stops.
 - D. Activate the automatic closing device on the operator by keeping tension on the release cable (manually operated doors), releasing the fusible link plunger (electrically or manually operated doors), or by disconnecting power to motor operated units until door curtain begins to close and rests on the clamps. If the door does not begin to close, remove spring tension until the door starts to drop and rests on the clamps.
 - E. Reset the operator by removing tension on the release cable (manually operated doors), re-engaging the fusible link plunger (electrically or manually operated doors), or by reconnecting power to motor operator units.
 - F. Raise the door to the fully opened position and remove the clamps from the guide assemblies.
 - G. Test the door by activating the automatic closing device on the operator by keeping tension on the release cable (manually operated doors), releasing the fusible link plunger (electrically or manually operated doors), or by disconnecting power to motor operated units until door curtain comes to a fully closed position. The average closing speed of the door should be somewhere between 6" and 24" per second.
 - H. If the door does not close fully, repeat steps A-F above and adjust spring tension accordingly until the door comes to the fully closed position.
 - I. Once the tension is properly set, lock the spring tension using original hardware, so the door can't lose tension. Do not use any fusible links on this connection.
23. Reinstall door hood, if it was removed to perform this conversion.
24. Reinstall the fusible link arrangement as per local requirements. If there are any questions about the acceptability of the existing fusible link arrangement refer to NFPA Bulletin 80 and the local "Authority Having Jurisdiction" for guidance. The existing chain has to be hooked to the fusible link chain pin on the operator. Once this is done and the fusible link chain is taut, remove the cotter pin at the operator (see the operator manual and fusible link detail included with the operator) Note: The spring-adjust side is permanently secured and not required to release. The fusible links are not to be connected to it.
25. If the door is motor operated (or manually operated with a release device) have fire alarm personnel connect the alarm system to the operator to proper terminals indicated on the wiring diagram. **(DRY CONTACT ONLY)**



WARNING



The fusible link setup and the fire alarm system (if required) must be properly connected to the operator. Failure to do this may result in failure of the door to respond properly under alarm conditions. Only an experienced rolling door technician should perform this connection.

26. Testing the retrofit operator.

NOTICE

- The door must be test dropped in the presence of the owner and local fire official.
- Test drop the door by all release methods and record results on the form supplied. Retain a copy of this form for your records and give a copy to the building owner for his records.
- With all of the conditions below (except motor down) the control circuit is deactivated. The push button will not work until alarm is reset, fusible link is replaced, or power is restored.

The retrofit operator will fire drop by the following methods.

- A. Upon alarm activation (Motor operator or manual operator with optional alarm release box) - the brake will release and the door will gravity close. A 10-second delay is optional and can be overridden by setting jumpers in the control box.
- B. Upon power loss (Motor operator or manual operator with optional alarm release box) – the brake will release and the door will gravity close (optional 10-second delay)
- C. Fusible link melts – The brake will release and the door will gravity close.