Installation and Users Manual for the Manual Fire Shutter Opener

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Instructions</td>
<td>3</td>
</tr>
<tr>
<td>Introduction</td>
<td>4</td>
</tr>
<tr>
<td>Identifying your Opener</td>
<td>4</td>
</tr>
<tr>
<td>Planning</td>
<td>5</td>
</tr>
<tr>
<td>Installation</td>
<td>5-6</td>
</tr>
<tr>
<td>• Mounting</td>
<td>5</td>
</tr>
<tr>
<td>• The Release Arm</td>
<td>6</td>
</tr>
<tr>
<td>Setup and Adjustment</td>
<td>7-8</td>
</tr>
<tr>
<td>• Fire Shutter mechanism positions</td>
<td>7</td>
</tr>
<tr>
<td>• Fire Shutter mechanism linkage types</td>
<td>8</td>
</tr>
<tr>
<td>• Fire Shutter mechanism spring tension</td>
<td>8</td>
</tr>
<tr>
<td>• Descent Speed adjustment</td>
<td>8</td>
</tr>
<tr>
<td>Operation</td>
<td>8</td>
</tr>
<tr>
<td>Maintenance</td>
<td>9</td>
</tr>
<tr>
<td>• Testing</td>
<td>9</td>
</tr>
<tr>
<td>• Friction Disc</td>
<td>9</td>
</tr>
<tr>
<td>• Monthly Maintenance</td>
<td>9</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>9</td>
</tr>
<tr>
<td>Warranty</td>
<td>10</td>
</tr>
</tbody>
</table>
SAFETY SYMBOL AND SIGNAL WORD REVIEW

Safety symbol and signal word review
This commercial door opener has been designed and tested to offer safe service provided it is installed, operated, maintained and tested in strict accordance with the instructions and warnings contained in this manual.

When you see these Safety Symbols and Signal Words on the following pages, they will alert you to the possibility of serious injury or death if you do not comply with the warnings that accompany them. The hazard may come from something mechanical or from electric shock.

When you see this Signal Word on the following pages, it will alert you to the possibility of damage to your commercial door and/or the commercial door opener if you do not comply with the cautionary statements that accompany it.

THESE ARE IMPORTANT SAFETY INSTRUCTIONS. FOLLOW ALL INSTRUCTIONS AS INCORRECT INSTALLATION CAN LEAD TO SEVERE INJURY OR DEATH

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>WARNING</td>
<td>WARNING</td>
</tr>
</tbody>
</table>

Keep commercial door balanced. Sticking or binding doors must be repaired. Commercial doors, door springs, pulleys, brackets and their hardware are under extreme tension and can cause serious personal injury. Do not attempt to loosen, move or adjust them. Call for commercial door service.  

Disengage all existing commercial door locks to avoid damage to commercial door. Install the wall control (or any additional push buttons) in a location where the commercial door is visible during operation. Do not allow children to operate push button(s) or remote control(s). Serious personal injury from a closing commercial door may result from misuse of the opener.

Do not wear rings, watches or loose clothing while installing or servicing a commercial door opener.  

Permanently fasten all supplied labels adjacent to the wall control as a convenient reference and reminder of safe operating procedures.

To avoid serious personal injury from entanglement, remove all ropes connected to the commercial door before installing the door opener.  

Activate opener only when the door is in full view, free of obstructions and opener is properly adjusted. No one should enter or leave the building while the door is in motion.

Installation and wiring must be in compliance with your local building and electrical codes. Connect the power supply cord only to properly earthed mains.  

An electrician must disconnect electric power to the commercial door opener before making repairs or removing covers.

Moisture and water can destroy the electronic components. Make sure under all circumstances that water moisture or storage moisture cannot penetrate the electronics. The same applies for openings and cable entries.  

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard. A disconnection device incorporated in the fixed wiring must be provided in accordance with the wiring rules of the country in which it is installed.

After the installation a final test of the full function of the system and the full function of the safety devices must be done.  

The actuating member of a biased-off switch is to be located within direct sight of the door but away from moving parts. Unless it is key operated, it is to be installed at a minimum height of 1500mm and not accessible to the public.

When operating a biased-off switch, make sure that other persons are kept away.  

Make sure that people who install, maintain or operate the door follow these instructions. Keep these instructions in a safe place so that you can refer to them quickly when you need to.

The opener cannot be used with a driven part incorporating a wicket door (unless the opener cannot be operated with the wicket door open).  

If the opener is installed at a height less than 2.5 metres from floor level or any other level from which the unit can be accessed (eg mezzanine) the installer is responsible to fit guards to the opener to prevent access to the chain drive.

Ensure that entrapment between the driven part and the surrounding fixed parts due to the opening movement of the driven part is avoided  

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Motor may become hot during operation. Appropriate clearance and/or shielding should be supplied by the installer to ensure any cabling, wiring and/or other items cannot come in contact with the motor. If temperature rise exceeds 50°C all fixed wiring insulation must be protected, for example, by insulating sleeving having an appropriate temperature rating.  

Use the commercial door opener for its intended purpose.

WARNING: Important safety instructions. It is important for the safety of persons to follow all instructions. SAVE these instructions.
Congratulations on your purchase of the Grifco™ Manual Fire Shutter opener unit. For more than 50 years, we have been producing industrial mechanical openers that are well known for their proven reliability & robust design.

The Grifco Controlled Descent Mechanism has been developed to allow the safe emergency closing of fire shutters. The system allows efficient operation of the shutter during normal circumstances. If a fire is detected the linkage connected to the system's release arm will break, the shutter will then automatically descend to the ground under its own weight. The shutter lowers safely since its speed is limited by the controlled descent mechanism. This system eliminates the danger associated with a free-falling shutter.

**WARNING**

Please remove any locks fitted to the door before operation in order to prevent damage to the door.

**WARNING**

It is important to make sure the door always runs smoothly. Doors which stick or jam must be repaired immediately. Employ a qualified technician to repair the door, never attempt to repair it yourself.
PLANNING

Identify the type and dimensions of your commercial door. A survey of the application is recommended to see if any of the requirements below are not applicable with your installation.

Based on “standard shutter”:

- The shutter is correctly spring balanced
- The shutter has ≤ 1.0mm x ≥ 100mm slats
- The shutter has no wind-locks
- A ≥4:1 sprocket ratio is used
- Before installing the opener, check that the commercial door is in good mechanical condition, correctly balanced and open & closes properly.

BOTTOM RAIL WEIGHT AND/OR REVERSE SPRINGING

To provide the shutter with a greater initial closing force, particularly when fully open, the bottom rail should be made heavier. This can be achieved by attaching approximately 5kg of steel flat bar to the upper side of the bottom rail. An alternative or additional method to ensure the shutter will descend when released is to slightly reverse spring the shutter at its fully open position. This will give the shutter a bias towards closing when it is in its fully open position.

NOTE: The shutter must have radial ball or roller bearings on the shutter axle.

INSTALLATION

Mounting the Unit

The unit must be mounted accurately so that the drive sprocket lines up with the shutter platewheel. There is only a small allowance for adjustment of the drive sprocket position on the output shaft. Fit the correct length of drive chain around the drive sprocket and platewheel.
THE RELEASE ARM

The release arm may point in one of the six directions allowed by the six bolts on the plate upon which it is mounted. This is to allow the fusible linkage to be attached in the arrangement most convenient to you.

To change the direction of the arm, remove the bolt that attaches the bottom end of the arm to the u-bracket.

Tilt the arm about the u-bracket that is connected to the output shaft this will allow access to the bottom u-bracket.

The fixed u-bracket may be removed using a spanner on its outside.

Remove the bolt from the plate in the position that you wish to fit the u-bracket, screw the u-bracket into this hole.

Fit the spare bolt to the hole where the u-bracket was.

Refit the arm into the u-bracket using the nut, bolt and washers that were previously removed.
Fire Shutter Mechanism

**RELEASE ARM DISENGAGED POSITION**

When the release arm has no fusible linkage connected, the spring inside the mechanism will force the arm into its disengaged position. In this position the output shaft is disengaged from the drive sprocket and engaged with the flyweight shaft. This is the position of the arm for controlled descent of the shutter.

**RELEASE ARM "WAITING TO ENGAGE"**

The release arm may only be fully engaged on half of the output shaft rotation. For the other half of its rotation the arm will be held out at a slight angle to the plate. This will be called "waiting to engage". When the release arm is waiting to engage, operating it manually will cause it to automatically engage.

**RELEASE ARM ENGAGED POSITION**

In this position the output shaft is engaged with the sprocket and disengaged from the flyweight shaft. This is the position for normal manual operation of the shutter. To engage the arm, a spring assisted fusible linkage is used. In the engaged position the release arm is parallel to the mounting plate.

**Release Arm Positions**

- **Engaged**
  
  This release arm is being held in this position by a fusible link. This position is for NORMAL OPERATING using the hand chain.

- **Disengaged**
  
  If a fire or fire alarm signal causes the fusible link to break, the release arm will disengage and the door will undergo a controlled descent.
**Fire Shutter Mechanism**

**RELEASE ARM FUSIBLE LINKAGE TYPES**

There are three basic forms of fusible linkages, heat, voltage, and heat and voltage. These systems may be connected in series with a cable.

**FUSIBLE LINKAGE CONNECTION**

The fusible linkage should be connected in series with a spring so that it engages the release arm. The end of the linkage not connected to the release arm should be fastened to a secure fixed point. The linkage must be arranged so that the force provided to engage the release arm is in a direction close to parallel to the axis of the output shaft.

**RELEASE ARM SPRING TENSION**

When the release arm is in the engaged position, the spring should be stretched to be at least 250mm in length.

**ADJUSTING THE CONTROLLED DESCENT SPEED**

The speed at which the shutter falls during controlled descent can be adjusted by moving the governor flyweights. If the flyweights are at their outermost points on their shafts, descent speed will be at its lowest. If they are on their innermost points the descent speed will be at its highest. To move the flyweights, loosen their grub screws with an allen key and slide them into the desired position on their shafts. Tighten the grub screws with the allen key.

![Descent Speed Adjustment Diagram](image1)

**ADJUSTING THE SHUTTER HOLDING BRAKE**

To prevent the shutter from closing under its own weight during normal operation (with the release arm is engaged), an adjustable holding brake has been provided on the chainwheel shaft. If the shutter closes under its own weight during normal operation, loosen the grub screw on the holding brake adjustment nut and tighten the nut enough to ensure the shutter is held. Re-tighten the grub screw to lock the nut in place.

![Servicable Parts Diagram](image2)

**OPERATION**

If the operator is fitted to the shutter and has a spring assisted fusible link causing the release arm to engage or be waiting to engage, it is ready for operation. The shutter may now be operated manually.

If the fusible link breaks due to fire or fire alarm signal, the shutter will undergo controlled descent to the ground. The release arm is now disengaged.

To operate the shutter after controlled descent, the release arm must be re-engaged with a new fusible link.
MAINTENANCE

Testing

The controlled descent device should be tested every six months in most installations. In corrosive or dusty environments, the device should be tested more often.

To test the system, engage the release arm and lift the shutter 500mm with the hand chain. Then disengage the release arm. The shutter should fall steadily to the ground.

Friction Disc

Of the operator’s moving parts, the only one that could possibly wear is the friction disc. The disc is located on the governor. The disc is 6mm (1/4") thick. If the disc wears so that it is less than 3mm in thickness, it will need to be replaced. (This type of wear should not occur during the lifetime of the product.) To replace the disc, remove the selok pin that fixes the governor-hinging device to the shaft. When the pin is removed, the hinging device and the friction plate may be removed allowing replacement of the friction disc.

Monthly

—Check chain alignment and tension. Adjust if required

Quarterly

—Check tightness of fixing bolts and (sprocket) grub screws. Adjust if required *
—Check manual operation via hand chain
—Lubricate the drive chain
—Lubricate flyweight linkages and the sliding pin when it is extended from the output shaft
—Anticorrosion spray should be applied to all components to prevent them from deteriorating
—Check door balance. Adjust if required
—Conduct door maintenance in accordance with door manufactures guidelines. This will include door balance

SERVICE MUST BE CARRIED OUT BY A QUALIFIED TECHNICIAN

TROUBLESHOOTING

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<thead>
<tr>
<th>PROBLEM</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shutter will not lift after engaging release arm</td>
<td>Increase spring tension on release arm, or remove slack from cable linkage.</td>
</tr>
</tbody>
</table>
| Shutter does not descend when mechanism tested | A) Ensure drive chain is aligned between sprockets.  
B) Ensure drive chain is not overtightened.  
C) Ensure sprockets have not been attached so that eccentric rotation results.  
D) Check for and remove any obstructions from the shutter guides.  
E) Ensure roller or ball radial thrust bearings have been used on shutter axle.  
F) Increase the weight on the bottom rail.  And/or  
G) Increase shutter reverse springing.  
H) Release some of the spring tension from the shutter drum. |
| Shutter falls back down when operated        | Ensure release arm fully engaged.                                          |

CAUTION

DO NOT allow anticorrosion spray, grease or any other lubricating product come into contact with the friction disc or friction plates!
Chamberlain Limited Warranty - Grifco Products

Chamberlain Australia Pty Limited / Chamberlain New Zealand Limited (Chamberlain) is committed to manufacturing and supplying high quality goods. As part of this commitment, we seek to provide reliable service and support for our goods and are pleased to provide you, the original purchaser, with this Chamberlain Limited Warranty.

We also provide the following statement as required by the Australian Consumer Law: In Australia, in addition to your rights under this Chamberlain Limited Warranty, our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Chamberlain’s warranty

Chamberlain warrants to the original purchaser of the Grifco product (Unit) that:

1. The Unit (excluding the electric motor) is free from defects in materials and workmanship for a period of 24 months from the date of purchase.
2. The electric motor is free from defects in materials and workmanship for a period of 12 months from the date of purchase.

During the applicable Chamberlain Warranty period, if you are concerned that the Unit or electric motor may be defective, call our service centre on the toll free number below before removing the Unit and a Chamberlain technician will diagnose the problem. Once the problem has been diagnosed, subject to your rights under the Australian Consumer Law with respect to major failures, Chamberlain will provide you with:

1. parts for “do-it-yourself” repairs; or
2. shipping instructions for a factory repair or replacement.

If a factory repair or replacement is required, provided the defective part or Unit is returned to Chamberlain well packaged and in accordance with Chamberlain’s shipping instructions, Chamberlain will, subject to your rights under the Australian Consumer Law with respect to major failures:

1. in relation to the Unit (excluding the electric motor), repair or, at its option where permissible, replace any defective part or Unit (excluding the electric motor) and return it to you at no cost; and
2. in relation to the electric motor, replace the electric motor and return it to you at no cost.

Where the Unit has been installed by an authorised installer, you must call them for prompt on-site service. Chamberlain will furnish replacement parts free of charge through the authorised installer. A service fee for on-site service may apply.

Repairs and replacement parts provided under this Chamberlain Limited Warranty are provided free of charge and are warranted for the remaining portion of the original warranty period.

This Chamberlain Limited Warranty provides benefits which are in addition to your other rights and remedies as a consumer.

Exclusions

If our service centre determines that a warranty claim has been made in respect of a failure or defect arising under or out of any exclusion detailed below such that the claim is not covered under this Chamberlain Limited Warranty, we may, subject to your other rights and remedies as a consumer, charge you a fee to repair, replace and/or return the Unit to you.

This Chamberlain Limited Warranty does not cover any failure of, or defect in, the Unit due to:

1. non-compliance with the instructions regarding installation, operation, maintenance and testing of the Unit or of any product with which the Unit is used;
2. any attempt by a person other than an authorised installer to change settings, repair, dismantle, reinstall or move the Unit to another location once it has been installed;
3. tampering, neglect, abuse, wear and tear, accident, electrical storm, excessive use or conditions other than normal commercial use;
4. use of the Unit in conjunction with controls which have not been supplied, or pre-approved, by Chamberlain;
5. problems with, or relating to, the commercial door or commercial door hardware, including but not limited to the door springs, door rollers, door alignment, hinges, guides, slats and drums; or
6. problems caused by electrical faults.

If this Chamberlain Limited Warranty does not apply, you may have rights available to you under the Australian Consumer Law.

Liability – Australia only

Except as set out in the Australian Consumer Law (being Schedule 2 of the Competition and Consumer Act 2010) (as amended, consolidated or replaced):

1. all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that Chamberlain can lawfully exclude them; and
2. under no circumstances will Chamberlain be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit, other than those which were reasonably foreseeable as liable to result from the failure.

Liability – New Zealand only

Except as set out in the Fair Trading Act 1986 and the Consumer Guarantees Act 1993 (as amended, consolidated or replaced):

1. all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that Chamberlain can lawfully exclude them; and
2. under no circumstances will Chamberlain be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit, other than those which were reasonably foreseeable as liable to result from the failure.

Note

We request that you retain your sales docket or invoice as proof-of-purchase and attach it to this manual to enable you to establish the date of purchase in the unlikely event of a warranty service being required. Chamberlain reserves the right to change the design and specifications of the Unit without prior notification. Some features or accessories of the Unit may not be available in certain markets or areas. Please check with your distributor.

Chamberlain service centre contact details

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10

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