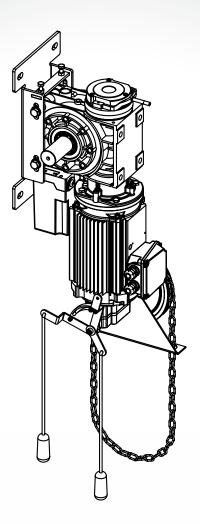


# **INSTALLATION MANUAL**

**PART 1 OF 2** 



# **Chain Drive Operator**

Installation and User Manual for D-Drive Chain Drive Door Operator
This manual should be read in conjunction with Installation Manual
D-Drive Wall Controller manual (PART 2 OF 2)

Chamberlain Australia Pty Ltd Unit 1, 75 Epping Rd North Ryde NSW 2113 Ph: 1800 GRIFCO www.grifco.com.au

Ref: D-M-DDO-001-D

17B Arrenway Drive, Rosedale 0623 Auckland Ph: 0800 653 667 www.grifco.co.nz

Chamberlain New Zealand Ltd



**GRIFCO®** 

## SAFETY INSTRUCTIONS



## **WARNING: THESE ARE IMPORTANT SAFETY INSTRUCTIONS.** FOLLOW ALL INSTRUCTIONS AS INCORRECT INSTALLATION CAN LEAD TO SEVERE INJURY OR DEATH **SAVE** these instructions

This commercial roller door operator 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.



## WARNING

Mechanical

When you see this Safety Symbol 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.

- Sticking or binding doors must be repaired. Commercial doors, 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.
- Do not wear rings, watches or loose clothing while installing or servicing a commercial door operator.
- To avoid serious personal injury from entanglement, remove all ropes connected to the commercial door before installing the door operator.
- After the installation a final test of the full function of the system and the full function of the safety devices must be done.
- When operating a biased-off switch, make sure that other persons are kept away.
- The operator cannot be used with a driven part incorporating a wicket door (unless the operator cannot be operated with the wicket door open).
- Operator 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 operator. If temperature rise exceeds 50°C all fixed wiring insulation must be protected, for example, by insulating sleeving having an appropriate temperature rating.
- Do not allow children to play with operator wall controls or remote controls. Keep remote controls away from children.
- Permanently fasten all supplied labels adjacent to the wall control as a convenient reference and reminder of safe operating procedures.
- 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 transmitter(s). Serious personal injury from a closing commercial door may result from misuse of the operator.
- Activate operator only when the door is in full view, free of obstructions and operator is properly adjusted. No one should enter or leave the building while the door is in motion.
- 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.
- 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.
- 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.
- Use the operator for its intended purpose. The operator is designed lifting non-spring-balanced roller doors.
- Automatic Drive Keep away from the area of the door as it may operate unexpectedly.
- Ensure that entrapment when operating the door in the open direction is avoided.
- This product is for indoor use only.
- If the operator is installed at a height less than 2.5 metres from floor level or any other level from which the operator can be accessed (eg mezzanine) the installer is responsible to fit guards as appropriate to prevent access to moving mechanisms to reduce risk of entrapment.



When you see this Safety Symbol and Signal Words on the following pages, they will alert **WARNING** 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 electric shock.

- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Installation and wiring must be in compliance with your local building and electrical codes. Connect the power supply cord only to properly earthed mains.
- 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.
- An electrician must disconnect electric power to the commercial door operator before making repairs or removing covers.



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 operator if you do not comply with the cautionary statements that accompany it.

# **CONTENTS**

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## INTRODUCTION

The D-Drive Chain Drive Operator is designed to automate Non-Spring Balanced Roller Shutters.

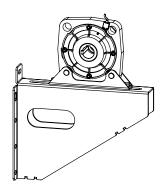
This document outlines the specification and mechanical installation details of the Chain Drive Operator (including Safety Brake device). It does not include details for the installation of the Wall Control, electrical connection, operation instructions, or door installation details. For these details, please refer to the supplied Grifco Wall Control manual.

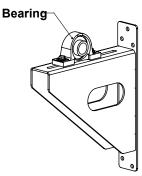
For details of door installation refer to the installation guide supplied by the door manufacturer.

Please use the table below to ensure the correct Chain Drive Operator for the correct Wall Control.

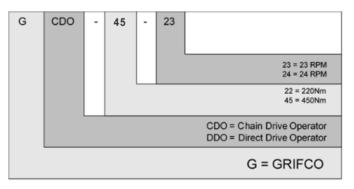
Operator and Wall Control System	Operator	Wall Control	Fastener Kit
GCD-45-23-SS	GCDO-45-23	DDC-22	DDMB02: M16 KIT
GCD-22-23-VS	GCDO-22-23	DDI-12	DDMB01: M12 KIT
GCD-45-23-VS	GCDO-45-23	DDI-15	DDMB02: M16 KIT

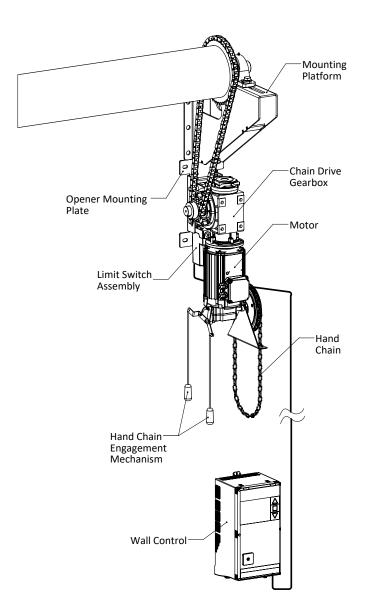
## SYSTEM OVERVIEW





**Grifco D-Drive Operator Part Number Nomenclature** 





# INTRODUCTION

## PARTS FOR INSTALLATION CHECKLIST

PARTS	QTY	NOTES	CHECK
Operator	1	Use Operator selection table above to ensure correct Operator is supplied. Check Drum Shaft diameter matches the Operator hollow shaft drive.	
Mounting Brackets	2	Use Mounting Bracket selection table to ensure correct Brackets are supplied	
Bearing	1	Ensure correct Bearing is supplied and internal diameter matches the Drum shaft diameter	
Drive Sprocket	1	Ensure the correct drive sprocket is supplied with the internal diameter matching the Drive Shaft diameter	
Drive Chain	1	Ensure the correct gauge Drive Chain is supplied to match the Plate Wheel and Drive Sprocket	
Hand Chain kit	1	Ensure correct length of chain is supplied for the application	
Manual Chain Engaging Cord kit	1	Ensure the correct length of Cord is supplied for the application	
Encoder/Internal Solenoid Brake Cable	Ensure the correct length of electrical cable is supplied for the application.  Note: The encoder/internal solenoid brake cable is supplied connected to the Operator connector box and is ready to connect to the Grifco Wall Control unit. Do not attempt to disconnect cable from the Operator.		
Motor Cable	1	Ensure the correct length of electrical cable is supplied for the application.  Note: For contactor controller installation, motor cable is not supplied.	
Fastener kit	1	Ensure fastener kit is supplied	
Safety Brake	1	Ensure the correct safety brake has been supplied for the Chain Drive Operator	

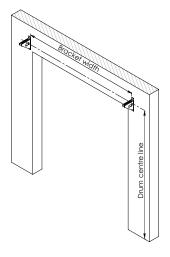
## **MOUNTING PLATFORM**

 Mark the wall with bracket positions as defined by the door manufacturer.

NOTE: The Operator is not handed; it can be positioned on either side of a door that best suits the application and available side-room.

See Operator installation section for changing the hand chain side.

• Ensure the bracket heights are correctly set to allow for the different centre heights of the brake and the Bearing.

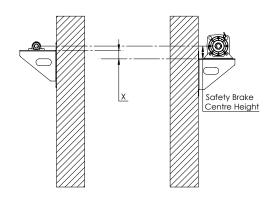


Safety Brake Models	Safety Brake Centreline Height	'X'
GSB-547	118mm	69mm
GSB-1017	150mm	93mm
GSB-1892	180mm	104mm

(40mm bearing centre height: 49mm)

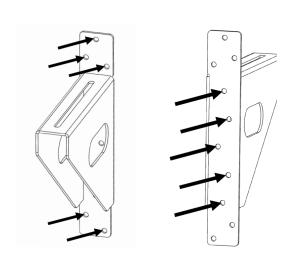
(50mm bearing centre height: 57mm)

(65mm bearing centre height: 76mm)



 Attach the brackets onto the wall using ALL available mounting holes (Mounting fasteners are not provided.)

NOTE: Method of bracket installation is dependent on the building structure and must be suitably engineered to ensure robust and safe installation.

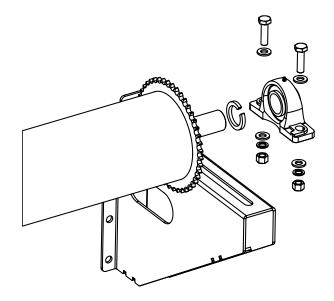


## **BRAKE BEARING**

- Slide the retaining ring over the drum shaft.
- · Slide the Bearing onto the shaft.
- · Mount the bearing onto the mount bracket.

Weld the retaining ring into position to prevent axial float

**NOTE**: Bearing to have correct orientation as shown. (bearing collar to be inside)





## WARNING

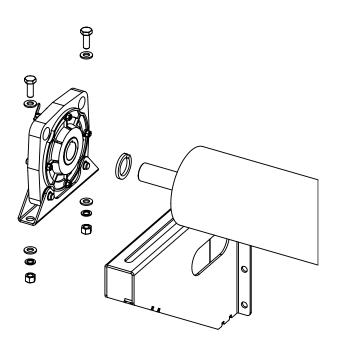
Mechanical

A SAFETY BRAKE MUST BE INSTALLED TO PREVENT DOOR FROM FALLING IN THE EVENT OF A MECHANICAL MALFUNCTION

- · Insert the brake shaft key into the drum shaft.
- Slide the retaining ring over the drum shaft
- Slide the safety brake onto the drum shaft.
- · Mount the safety brake onto the mount bracket
- · Weld the retaining ring into position to prevent axial float

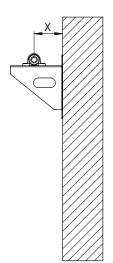
## NOTE: BOLT TORQUE VALUES

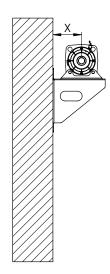
Bolt Size Tightening Torque	
M12	50 Nm
M16	70 Nm
M20	110 Nm



• Adjust the position of the brake and Bearing away from the wall (X) as defined by the door manufacturer.

NOTE: The Safety Brake is supplied with a cable for connection to the Operator controls. This cable is connected to a switch on the Safety Brake that is triggered in the event of a mechanical malfunction, causing the door to drop.





## Safety Brake and Operator Pairing

- Ensure the correct safety brake is used with the correct operator.
- Safety Brake switch to be connected in accordance with Wall Control manual

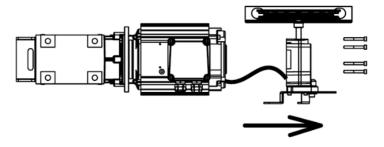
Operator	Safety Brake
GCDO-22-23	GSB-547
GCDO-22-23 / GCDO-45-23	GSB-1017
GCDO-45-23	GSB-1892

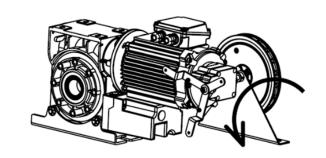
## **OPERATOR**

# CHANGE THE SIDE OF THE HAND CHAIN ASSEMBLY:

## NOTE: ONLY PERFORM THIS STEP IF REQUIRED

- Remove 4 bolts fixing the assembly to the back of the motor.
- · Rotate the assembly 180 degrees and replace bolts.
- Rotate the hand chain guide piece and pull cord housing to re-align in the down position



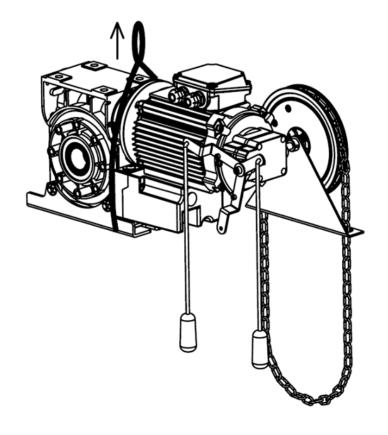


## **LIFTING POINTS**

• Use sling as shown for all models.



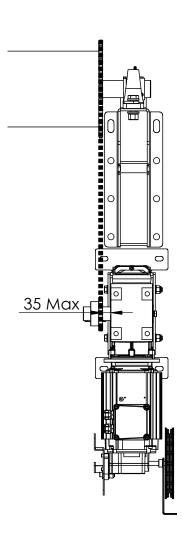
OPERATORS ARE HEAVY. TAKE CARE WHEN LIFTING.

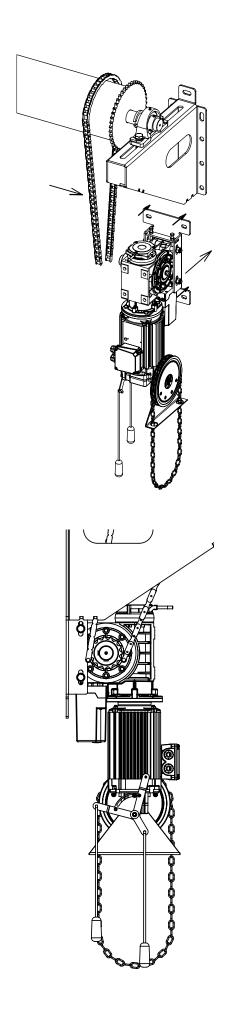


- Mount operator to the wall.
- Ensure mounting specification to the wall structure is correctly engineered
- Fit drive sprocket onto gearbox stub shaft ensuring alignment with the drum plate wheel
- · Tighten sprocket grub screws
- Fit drive chain and cut length to suit.
- Ensure chain is aligned with drive sprocket and plate wheel
- Set chain tension by adjusting screws on the gearbox bracket assembly
- Fit supplied hand chain over the chain wheel and through the chain guide holes
- · Link the chain together using the supplied chain link
- Ensure drive sprocket offset does not exceed dimension specified.

**Note**: Ensure hand chain is untangled and un-twisted before joining.

Hand Chain should be kept out of the way when not in use through the supplied wall mounted keeper.





## MANUAL CHAIN ENGAGING CORD

- Take the supplied Manual Chain Engaging Cord and cut to the required lengths so that ends are accessible from the ground.
- Tie each length to the cable loops extending from the emergency switch.
- Connect the RED and GREEN plastic pull-cord ends.

#### NOTE:

**RED** cord is for switching Operator OFF and engaging Hand Chain.

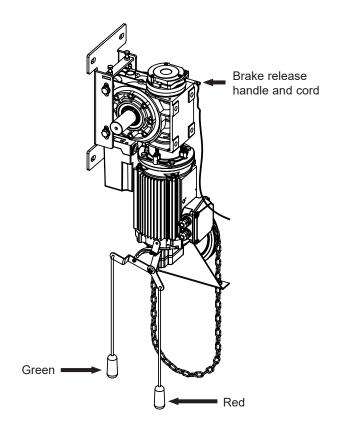
**GREEN** cord is for switching Operator ON and disengaging Hand Chain.

Check the function of each cable loop before attaching the coloured plastic ends.

## INSTALLATION OF THE BRAKE RELEASE CORD

The Brake Release Cord is used to release the motor brake during manual operation. If the motor brake is not released, extra effort is required to manually move the door.

- Screw the provided Brake Handle into the brake actuator (horse shoe shape)
- Tie the release cord to the Brake Handle and hang to the rear of the drive as shown
- Ensure the brake release cord is suitably retained to the wall to ensure no risk of entanglement with other equipment, moving objects or persons



#### **HAND CHAIN**

#### **Engaging the Hand Chain:**

#### **POWER OFF OPERATOR**

- Gently pull the cord with the RED handle downwards as far as possible. The control voltage will be interrupted and the door can no longer be operated electrically.
- · Release the hand chain from its wall keeper.
- Move the door in the OPEN or CLOSE direction by pulling on the hand chain.

#### Disengaging the Hand Chain:

#### **POWER ON OPERATOR**

- Gently pull the cord with the GREEN handle downwards as far as possible. The control voltage will be switched on again and the door can be operated electrically.
- · Attach the emergency hand chain to its wall keeper.

NOTE: When not in use, ensure chain, cables, and cords are securely attached to wall to avoid the risk of pedestrian and vehicular entanglement.

NOTE: To reduce load on the hand chain, the brake may need to be released if applicable. Refer to the next step.

## **OPERATION OF BRAKE RELEASE CORD**

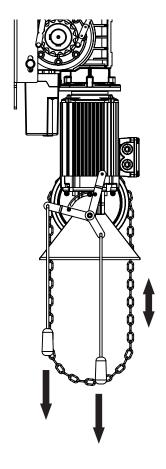
 Before operating the door via hand chain, pull the brake release cord firmly, and tie off to a suitable cleat or fixed point.

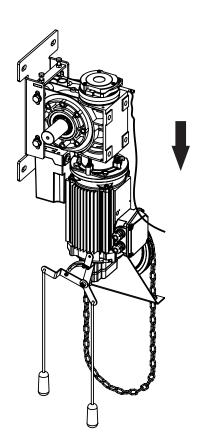


## WARNING

Mechanical

Ensure the brake release cord is not pulling on the motor brake, and thus the motor brake is properly engaged with the motor shaft before operating electrically.



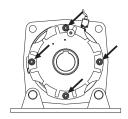


## **OPERATION**

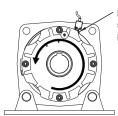
## **HOW TO RESET THE SAFETY BRAKE**

Warning: Before resetting the safety brake ensure that the door has been serviced, inspected and is a compliant and safe installation.

- 1. Using the mechanical hauling chain on the operator, rotate the Curtain Drum by at least one quarter of a revolution in the upwards direction.
- Loosen the bolts as indicated (without removing the nuts) to release the locking plate of the brake:



Rotate the locking plate in the direction indicated until the microswitch roller leaver is disengaged and sits freely in the locking plate cut-out (This may require some tapping of the locking plate with a mallet).



The microswitch roller must be disengaged from the switch and sit in the locking plate cut out.

4. Secure the locking plate bolts released in step 2 ensuring the following torque settings are applied:

For GSB-547 = 30 Nm For GSB-1017 = 60 Nm For GSB-1892 = 50 Nm

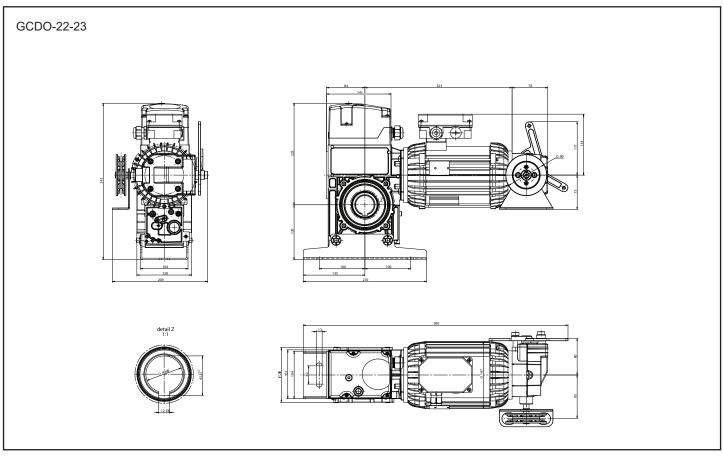
5. Re-engage the operator and test the door is free to move in both the upwards and downwards direction until the limits are reached at least 3 times.

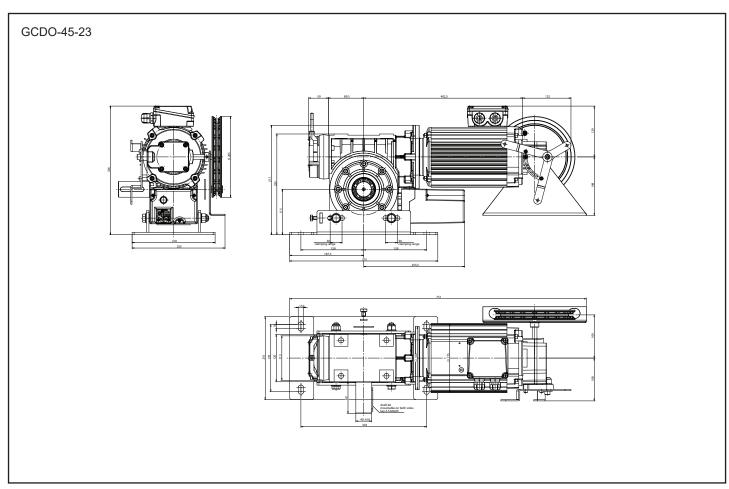
## **SPECIFICATION**

## **OPERATOR**

	GCDO-22-23	GCDO-45-23
Туре	Chain	Chain
Starting Torque Nm	220	450
Run Torque Nm	180	400
Speed rpm	23	23
Manual operation	Chain	Chain
Power kW	1	1.5
Voltage V	3~230	3~230/400
Current A	4	9.0/5.2
Cycles/ hr @ max. shaft revs	8	8
Max Output Shaft revs	40	40
Output Shaft Dia mm	40	40
Op Temp °C	+5, +40	+5, +40
Weight kg	31	47
Solenoid Brake	Yes	Yes
Safety Brake	Separate device	Separate device
Factory Motor winding connection	Delta	Star
	(VFD only)	]
Gearbox size	Size 3	Size 4
IP Rating	IP20	IP20

## **OPERATOR**

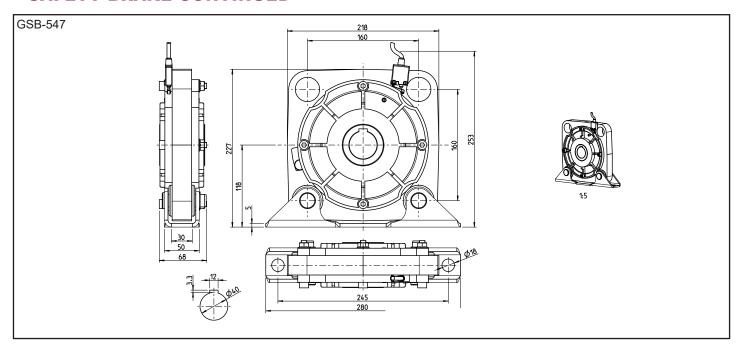


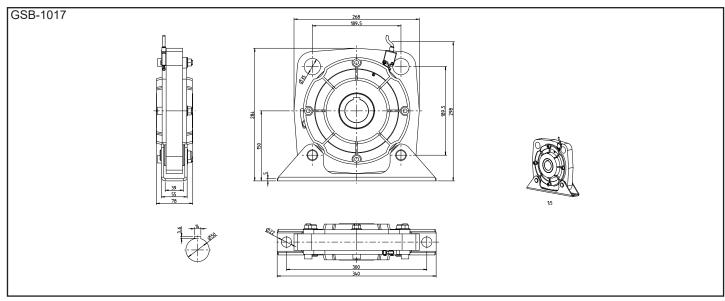


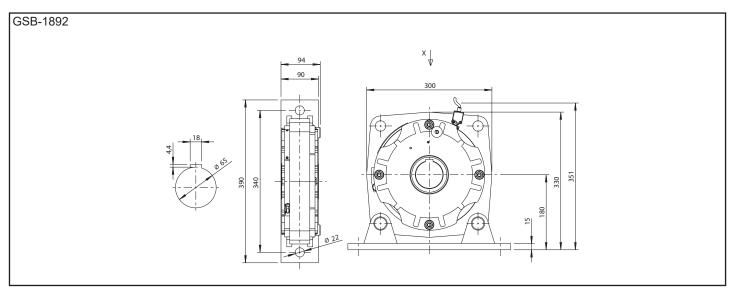
## **SAFETY BRAKE**

		GSB-547	GSB-1017	GSB-1892
Permissible torque	Nm	547	1017	1892
Maximum safety catch torque	Nm	2058	3509	8230
Maximum operating speed	min -1	20	18	12
Test certificate number		Door FV 3 / 014	Door FV 3 / 015	Door FV 3 / 016
Shaft mounting	mm	40	50	65
Bearing type		Self-aligning bearing	Self-aligning bearing	Fixed bearing
Unit weight	kg	12.5	21.0	34.0
Drum Diameter (mm)		Max. Door Weight in Kg		3
165		450	997	1990
168		442	979	1954
219		355	800	1499
273		283	635	1217

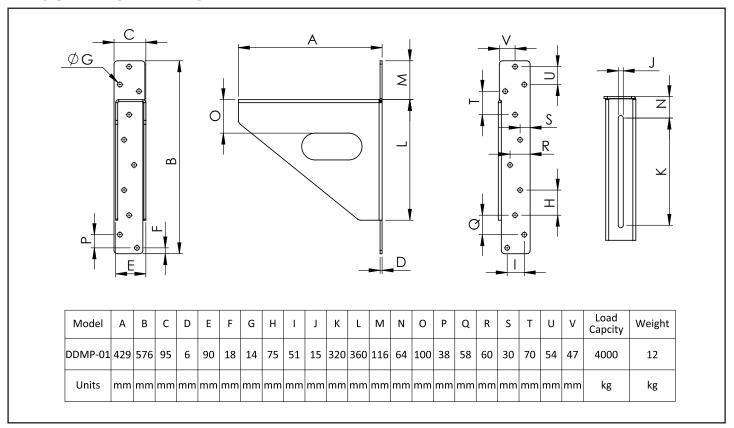
## **SAFETY BRAKE CONTINUED**

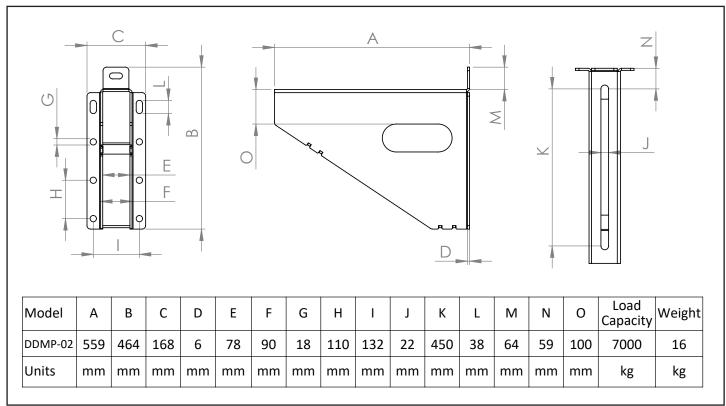






### MOUNTING PLATFORM







The maximum load each bracket can support is the 'Load capacity'. The calculation of determining the weight on each bracket must factor in the weight of the drum, the roller shutter curtain, the Operator and the dynamic forces of stopping and starting the door.

## **MAINTENANCE**

Frequently examine the installation for instability, signs of wear or damage to cables, and mounting. Do not use if repair or adjustment is necessary. Power must be turned off before servicing, cleaning or adjusting the operator.

Certain mechanical aspects of the installation as applicable must be checked, see below:

#### Monthly

- Examine the installation for signs of wear or damage to cables, and mounting. Do not use if repair or adjustment is necessary \*
- Check PE / IR beam/s and bump edge functionality where applicable

#### Quarterly

- Check tightness of fixing bolts and screws. Adjust if required \*
- Check correct electrical operation
- Check manual operation via hand chain
- Conduct door maintenance in accordance with door manufactures guidelines

#### \* SERVICE MUST BE CARRIED OUT BY A QUALIFIED TECHNICIAN

Refer to the Wall Control manual for further information regarding maintenance and maintenance schedules.

## WARRANTY

#### **CHAMBERLAIN WARRANTY**

## Limited Warranty in Australia and New Zealand

#### 1. Your consumer rights and guarantees

This Limited Warranty is provided by Chamberlain Australia Pty Ltd. Chamberlain New Zealand Limited (Chamberlain), contact details in Section 5 below. This Limited Warranty applies to a Grifco® Commercial unit (Unit) purchased in Australia and New Zealand, and gives you benefits which are in addition to your consumer rights and remedies under the Australian Consumer Law (or corresponding New Zealand consumer protection laws).

You can find out more information about your consumer rights and guarantees which the law provides in Australia at <a href="www.accc.gov.au">www.accc.gov.au</a>. in New Zealand at <a href="www.consumerprotection.govt.nz">www.consumerprotection.govt.nz</a>. We also provide this statement as required under the Australian Consumer Law:

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.

#### 2. What does our Limited Warranty cover?

Chamberlain warrants that, when purchased new in Australia or New Zealand. the Unit (all parts of the Unit other than globes and batteries) is free from defects in materials and workmanship (Limited Warranty) for the Limited Warranty period. subject to the terms and conditions of this Limited Warranty.

The Limited Warranty period (for Accessories see below) is 2 years (24 months) from the date of purchase or when a recommended cycle count for the purchased operator has been reached (which ever comes first)

The Limited Warranty period for remote controlled transmitters and accessories included with the Unit (Accessories) is 12 months from the date of purchase.

The Limited Warranty for genuine spare parts is free from defects in material and workmanship for a period of 6 months from date of purchase.

#### 3. Limited Warranty Conditions

The following terms and conditions apply to your Limited Warranty:

our Limited Warranty is effective from date of purchase as indicated in Section 2 above;

proof of purchase of the Unit is required;

Please also see the User Manual for the Unit available on our website. or provided at the time of purchase.

#### 4. What is not covered

Batteries and globes are not covered under the Chamberlain Limited Warranty

Travel costs incurred by Chamberlain or its authorised dealer in either travelling to and from areas outside a capital city area. These costs will be at the purchaser's expense.

Additional access costs incurred by Chamberlain or its authorised dealer in obtaining access to premises where the Unit is not readily accessible. These costs will be at the purchaser's expense.

Our Limited Warranty covers defects as explained, and does not cover all problems and mishaps that may occur in relation to the Unit including:

you got what you asked for but simply changed your mind, found it cheaper somewhere else, decided you did not like the purchase or had no use for it; you misused the Unit in any way that caused the problem; you knew of or were made aware of any deficiencies with the Unit before date of purchase:

use of the Unit with controls or third party devices or software which has not been supplied. or pre-approved, by Chamberlain;

problems relating to or residing in third party hardware, software or other items with which our product is used;

any loss of data related to you or provided by you. or loss related to downtime associated with use of the product whether through power outage, failure of internet or wireless connectivity, network disruptions. or otherwise

non-compliance with the relevant instructions in the User Manual; tampering, neglect abuse, wear and tear, accident, electrical storm, excessive use or conditions other than normal use;

problems with, or relating to, hardware, including but not limited to the

springs. hinges. guides:

problems caused by electrical faults or replacement of batteries or light bulbs, blown fuses, electrical surges, power surges or power strikes. fire, flood, rain, water, lightning or storms;

water or moisture ingress that causes corrosion or electrical malfunction; corrosion caused by sea air if located near a waterway, beach etc: lack of proper maintenance, service or care of the Unit; and/or damage caused by insects, pests or other after sale damage caused by events or accidents outside Chamberlain's reasonable control and not arising under normal and standard operating conditions.

#### 5. Where you need help with our product

If you have a problem with the Unit or if you are concerned it may be defective, please contact our Customer Service team below:

Australia Phone toll free 1800 474 326

Fax toll free 1800888121

Address Unit 1. 75 Epping Road North Ryde, NSW 2113

Email customerservice@chamberlainanz.com

Website https://www.grifco.com.au/

New Zealand Phone toll free 0800 653 667

Auckland Phone 09 477 2823 Fax toll free 0800653 663

Email customerservice@chamberlainanz.com

Website https://www.grifco.co.nz/

As a first step, our Customer Service team will provide product support assistance to help you try to resolve the problem and in some cases. replacement parts for "do it yourself repairs." If our technical team need to see the product to determine the nature of the fault we will arrange an inspection by an trained technician, or ask that you send the product to us.

If your product was installed at your premises by an authorised dealer, please contact the installer indicated in your sales documents for prompt on-site service. or consult our Customer Service team if you need help in finding a local service technician. A service fee for on-site service may apply.

Authorisation from Chamberlain is required for warranty service under this Limited Warranty.

### 6. Delivery Charges

If an inspection is required in order to determine the nature of the fault please send the Unit freight paid and well packaged in accordance with our instructions. Any costs associated with transporting the Unit will be at Chamberlain's cost if the Unit has breached a statutory consumer guarantee. Repairs and replacement parts provided under this Limited Warranty are free of charge (and repaired items or replacement parts for Units found to be defective will be returned to you at our cost), and warranted by Chamberlain for the remaining portion of the original warranty period. However. if you make a claim under this Limited Warranty. and this Limited Warranty does not apply, or if the law does not provide you with a statutory right or remedy as a consumer, you may be required to pay labour, assessment and/or freight costs and delivery charges to repair, replace and/or return the Unit to you.

#### 7. How to register your product

Please register your Unit and contact details at this link https://www.grifco.corn.au/warranty-registration. so that we or your authorised installer can locate your details and provide you with product support assistance as quickly as possible, and keep you up to date with product updates. Registration can also be done by contacting Chamberlain Customer Service.

#### 8. Important Reminder

All other guarantees (other than your statutory rights and guarantees as a consumer under applicable laws) are excluded to the fullest extent that we may lawfully do so. Unless the law requires us to do so. we do not accept any other liability, such as compensation for damages, injury or loss.

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