Series 300 Automatic Hinge Gate

Operation and Maintenance Manual

Please read this manual before using this product for the first time! Act in accordance with the manual and keep it in a safe place for later use or for the following owner.
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FOREWORD

Thank you for choosing Heras. You have selected one of our industry-leading entrance control solutions. This manual gives operation and maintenance information for the chosen product.

DISCLAIMER

Although every effort has been made to ensure that the information contained in this manual is correct at the time of issue, no responsibility is accepted for any loss or damage arising from incorrect information.

This manual forms no part whatsoever of any contract or agreement between Heras and others. In no circumstances will Heras be responsible or liable for any costs, damage or injury whatsoever arising from the use of this Manual.

Should the product be tampered with and/or any non-approved equipment is fitted to the product then any warranty will be considered void.

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1  PREFACE

1.1  MANUFACTURER / SUPPLIER

Manufacturer: Heras UK
33 Stakehill Industrial Estate
Middleton, Manchester M24 2RW
England
Tel.: +44(0)1302 364 551
www.heras.co.uk

Technical Construction File: Heras UK, T&I Department

1.2  DEFINITIONS: USER / OPERATOR / ENGINEER

User: Anyone using the product.

Operator: A user who is familiar with all safety aspects dealt with in this manual. Operators are not allowed to carry out any installation work on the turnstile unless explicitly specified.

Engineer: The engineer is a Heras fitter (or an engineer employed by the customer who has been given explicit permission in writing from Heras) who is qualified to perform technical interventions on the turnstile.
1.3 **PRESCRIBED USE / APPLICATION**

Only the correct installation and maintenance by an authorised/qualified company or person in agreement with the user manual, logbook, checklists and maintenance lists can ensure the safe operation of the system.

A qualified person is, according to EN 12635, a person who has the required training, qualified knowledge and practical experience required to install, test and maintain the system correctly and safely.

1.4 **CONFORMITY WITH EUROPEAN DIRECTIVES**

The installation complies with the following EU Directives/ regulations:

<table>
<thead>
<tr>
<th>Directive/ Regulation</th>
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<tr>
<td>2006/42/ EC Machine Directive</td>
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<tr>
<td>2014/30 EU EMC Directive (electromagnetic compatibility)</td>
</tr>
<tr>
<td>305/2011 EC Construction Product Regulation</td>
</tr>
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</table>

The design and production has been executed compliant with the applicable product standard EN 13241 and the underlying standards EN 12604 and EN 12453.

A Declaration of Performance (DoP) and Declaration of Conformity (DoC) are obligatory for this product.

1.5 **DELIVERY**

The Series 300 must be installed, connected, set up and commissioned by a fitter or an engineer who also connects and programs any accessories. The control unit is adjusted to the options/accessories agreed with the user. The relevant options are laid down during handover.

Of course, you can add optional/accessories afterwards. Contact your supplier for this.

Gates are always delivered fully tested.

After installation and commissioning, by a Heras technician or a technician trained by Heras, the cover of the turnstile must be closed. This is done to prevent unauthorised access.
2 SAFETY

2.1 EXPLANATION OF THE SYMBOLS

Caution: To prevent personal injury, you must observe the safety instructions below.

Note: To prevent material damage, you must observe the safety instructions below.

Information: This is followed by further information or by a reference to other documents.

Warning: Risk of limbs getting crushed.

Warning: Risk of injury to hands by rotating parts.

2.2 GENERAL SAFETY INSTRUCTIONS

- The operator must read the entire user manual before the gate is used for the first time. The instructions stated in the user manual must be observed and complied with. All other forms of use can cause unexpected hazards and are forbidden.

- It is forbidden to apply the drive unit to gates other than those stated in this manual, without Heras’ permission.

- Applying a third-party drive unit and/or safety edge may affect safety and will invalidate the CE mark.

- The gate must only be put into use if all safety facilities are in place and connected, and work properly.

- All faults which might present a source of danger to the user or to third persons must be eliminated immediately.

- All warnings and safety notices on the equipment must be in place and clearly legible at all times.

- Closing the gate infill openings in any way, such as by means of banners, advertising signs etc, is not allowed as this may negatively affect the safe operation of the gate.

- All alterations or extensions to the gate must be carried out by qualified personnel using parts which the manufacturer has defined as suitable for such alterations or extensions. Any failure to comply with these instructions will be considered as non-compliant behavior and will invalidate the manufacturer’s guarantee, as a result of which the risk entirely transfers to the user.
- For a double sliding gate, it is strictly forbidden to remove the central slam support (mounted on the floor in the opening). This is important for the stability of the gate when closed.

- Improper usage or servicing or ignoring the operating instructions can be a source of danger for persons, and/or result in material damage.

- If the meaning of any part of these installation and operating instructions is not clear, then please contact your supplier before you use the equipment.

2.3 **INTENDED USE**

The gate is intended to control access to a specific plot, premises or site. The gate is intended for both industrial and private use.

The gate drive and control unit is adjusted to the options agreed with the user. The relevant options are laid down during hand-over.

The turnstile is commissioned to the options agreed with the user.

The relevant options are laid down during hand-over.

Carefully read this user manual before operating the turnstile. You must always be familiar with the operating mode the gate is in.

2.4 **SAFETY DURING USE**

Children or people with a disability must not operate the turnstile. Parents must supervise their children to prevent them playing with the turnstile.

**PARENTS ARE RESPONSIBLE FOR THEIR CHILDREN**

- Keep a safe distance from the moving gate. Warning icons to this effect have been installed in various locations.

- Only pass through the gate when it is completely open.

- The gate must not be operated in windy conditions, wind force ≥ X Beaufort. The gate leaf can swing in a way that can result in damage to the construction.

- The safety edges serve as emergency facilities to immediately stop and reverse the gate movement. Using them as a regular gate stop feature is not allowed. Since the head stiles of the gate have safety edges that cannot cover their full height, there is still some risk of people getting trapped by the gate here.

- When hold-to-run-control is employed, the gate must only be operated if it can be seen completely, directly and in real-time. Operation must be via a permanently installed operating device, for instance a key switch or push button. This operating device must be located in such a way that the operator’s position is safe. The gate must stop immediately when the button or key is released. Other operating devices are not allowed.

- The gate must be able to move freely without there being obstacles in the gate opening passage or anywhere else on the moving trajectory of the gate.

- Do not stick any objects through, over or under the gate which might block the gate.
• The gate running surface must always be free from snow, ice or dirt that might affect its sliding behaviour. In the event of frost, check this before commissioning the gate. If the running surface is blocked, the gate will not move at all or will not complete its movement. An irregular running surface may cause damage to the drive and/or road wheels.

• In certain circumstances, the sun can temporarily distort the gate. When closing the gate, the leaf is guided to its neutral position. When opening the gate, the leaf will move around somewhat. This has no adverse consequences for the construction.

• Climbing the gate is strictly forbidden as people climbing the gate could be hurt if the gate is started unexpectedly.

• Do not place any obstacles in the opening.

• Always lock the drive unit cabinet during use.

2.5 SAFETY DURING INSTALLATION, MAINTENANCE AND DISASSEMBLY

• When work is carried out or while cleaning the gate, the power supply to the system must be switched off and it must be ensured that it cannot be switched on unexpectedly.

• Use the necessary personal safety equipment.

• The gate is driven by means of a gear wheel. This is located under the beam and it is partly screened off by the drive unit cabinet. Beware of moving parts when carrying out maintenance under the gate at the drive unit cabinet.

• To move the gate manually, first switch the automatic fuse in the drive unit cabinet to “off” and make sure it cannot be switched on again (e.g. by locking the cabinet).

• The EN 13241 and EN 12453 standards must be taken into consideration during installation. To achieve a good safety level, both the above standards and the national regulations must be taken into account in non-EC countries.
3 EQUIPMENT

3.1 OVERVIEW

The BCL Series 300 automatic Hinge model is available in openings from 3 metres to a maximum of 7 metres dependent on infill structure. This model of gate is available in both single leaf version and double leaf version. Please note that the maximum opening of a single leaf speed gate is 4 metres, for openings greater than 4 meters then the double leaf version is recommended. The standard height of the gate leafs is 2 metres tall (2.4 metres is available at an extra cost). The gate leaf sections are fully welded assemblies constructed of steel tube frames, with closely spaced infill bars to reduce climb-over access. The opening and closing of the gate leafs is achieved by means of bi-directional hydraulic rams. These exert force between the gate hinge posts and the gate leaf. This force is transmitted via the ram’s fixing brackets. The rams are powered by electro-hydraulic power packs.

When the gate is closed, the two leaf sections are in a straight line and locking is achieved by means of a magnetic lock. Whilst the hydraulic rams coupled to the electro-hydraulic power packs provide a certain degree of locking it is still necessary to use a magnetic lock in order to avoid strain on the hydraulic circuit in the event of strong winds and/or the gates being pushed/forced.

The operation of the electro-hydraulic power packs is controlled by a microprocessor PCB based control unit located within the control cabinet.

Card readers when installed by others request, either entry or exit.

Traffic signals (available as an extra) control the single line one-way/two-way traffic through the gate system and vehicle passage can be monitored by two vehicle detection loops (when installed). A set of through-beam photoelectric sensors can be installed on the gateposts to provide a safety function.
3.2 DETAILS
Description: BCL 300 Series Automatic Hinge Gate

Controllers: 1. No. Integrated Controller. With provision for connection of remote push button and card access control.

Available Additional Equipment: Safety photocells, safety loops, safety edges and traffic signals. These are available on request and at an extra cost.

Electrical Supply: All automatic hinge gates required a single phase 230VAC 50 Hz supply rated @ 6 Amps. (Please note this is not the consumption)

4 OPERATION
4.1 USER SAFETY GUIDE
Heras products are designed for security applications thus maintaining a high level of security of the premises.

They can be fitted with various forms of safety equipment to safeguard the user. It is however essential that users operate the gate system in a sensible manner and in accordance with the operating procedure.

Vehicle Gates are designed to operate for vehicle access only and if the correct procedure is not followed or users attempt to defeat or misuse the system, damage may occur both to the vehicle and to the gate.

⚠️ The gate system may not have any pedestrian safety devices fitted, as it is intended for the sole use of vehicles!

300 Automatic Hinge Gate with Traffic Light
4.2 CONTROL LOGICS

The gate control panel can be set to work in automatic logic or semi-automatic logic. The factory default is automatic. It is possible to switch between semi-automatic and automatic by altering the dip-switch settings on the control PCB located within the control cabinet.

4.2.1. Automatic Logic

In Automatic logic it is necessary to momentarily press/activate the open input of the control panel (this may be the momentary contact closure of a card reader system). This will cause the gate to open. Please Note that the gates usually do not have open safety devices hence care should be taken to ensure that no pedestrians and/or obstructions are within the travel of the gate.

Once the gate is fully open then the gate will close after an adjustable pause time has elapsed (3-50 seconds); this is called the autoclose time. After this preset time providing no vehicles are present over the vehicle safety loops and/or safety photocell (when installed) the gate will close.

Note: Should no vehicle transit through the gate then the auto close time will elapse causing the gate to close therefore securing the site.

4.2.2. Semi-Automatic Logic

In Semi-automatic it is necessary to momentarily press/activate the open input of the control panel. This will cause the gate to open. Please Note that the gates usually do not have open safety devices hence care should be taken to ensure that no pedestrians and/or obstructions are within the travel of the gate. When the gate is fully open the gate will remain open and will not close until the close input is momentarily activated. The gate will not close if any safety devices have been activated.
4.3 SAFETY DEVICES

4.3.1. Photocell

Where safety photocells are installed any obstacle in front of the photocell will stop the gate from closing. Should the gate be closing and the photocell become activated then the gate will reopen and re-close after the autoclose time has elapsed (when the control panel is in automatic logic) when the control panel is in semi-automatic logic then the gate will not re-close after the safety photocell has been activated. It will then be necessary to activate the close input (button).

4.3.2. Inductive Loops

When installed inductive loops are installed as a pair. These loops will act purely as a safety devices activated by vehicles. Should the gate be closing and the loops be activated then the gate will reopen in the same manner as described in the Photocell section.

4.4 MANUAL OPERATION

If a power supply or control failure occurs, it may be necessary to open or close the gates manually.

The procedure is as follows:

- When possible electrically isolate the gate control panel elsewhere rather than within the gate electrical control panel enclosure. If this is not possible then use the key provided to unlock the control cabinet.

- Switch OFF the electrical mains supply using the isolator located within the control panel. This is necessary in order to power-down any magnetic locks installed on the gate.

- Each gate leaf has its own power pack. These are usually adjacent to the gate leaf housed in an enclosure. Turn anti-clockwise the chrome coloured manual release located at the bottom of the power pack as pictured below.

![Diagram of manual release](power-oil-type-fadini-a-15-by-agip.png)
• It is now possible to push the gate manually open/closed. If the gate is to be left open whilst in manual then we would advise that a rope be used to secure the gate.

• To return to normal operation, ensure that the roadway is clear of all traffic and pedestrians. Switch the power back ON using the isolator.

• Check that the control system is operating correctly by opening and closing the gates two or three times

Care should be taken whenever opening the control cabinet and isolating the system due to risk of electric shock.

5 TECHNICAL DETAILS

The Series 300 Vehicle Hinge Gate comprises of the following basic parts:

The gate post (s) - hollow steel square section to which the gate leaf hinges and the gate ram mechanism are fixed.

Gate leaves – Each gate leaf has its own mechanical stop.

The main drive mechanism - Bi-directional hydraulic rams driven by electro-hydraulic power pack.

Manual Release, Tap type valves are installed on the hydraulic power packs. These allow the fluid of the rams to be released back to the sump and to the opposite side of the ram cylinder therefore allowing the gates to be manually pushed open/closed.

5.1 ELECTRIC MOTOR

The electrical motors which drive the hydraulic pumps (part of the power packs) are powerful maintenance-free and reliable. These are single phase bi-directional motors with a capacitor connected across the open and close phases. The motors run at the single-phase voltage of 230VAC. The motors run at full power (torque) when required and the torque limitation of the gate is achieved hydraulically.

Always isolate the electrical supply and allow for power discharge prior to working on the motors. Lock the isolator in the off position located within the control cabinet using a pad lock and always carry out a voltage test.
6 MAINTENANCE

6.1 GENERAL

The security equipment described in this manual is designed to a high standard in order to cope easily with long periods of arduous duty. It is however, necessary to maintain the working efficiency at a level, which reduces wear and tear and so avoids premature breakdown.

A scheme of planned preventative maintenance will ensure an optimum return of reliability and security, at a minimum cost. Heras Service will be pleased to quote for a preventative maintenance scheme.

A system logbook should be kept for the system and a record kept of faults, damage, breakdowns and spares used. This record will help to identify any continuing problems such as worn or miss-aligned components.

6.2 WARNING

Whenever work is to be carried out, or checks are to be made on electrical components or connections, the complete system must be isolated at or adjacent to the control cabinet and locked out until work is completed.

It is recommended that a ‘permit to work’ system is instituted and that proper control of the mains supply is affected.

WARNING: Always carry out test to ensure that the electrical supply has been removed!

6.3 LIVE WORKING

If it is necessary to work on live equipment, such work must be carried out by skilled personnel who are aware of potential dangers and of the safety precautions, which must be taken. Moving parts of drive systems may present a particular danger of snagging or pick-up of loose clothing. For this reason, ties, scarves or other loose items must be removed.

Take special care when in proximity of trapping hazards – NEVER insert hands into trapping zones/areas.
6.4 ROUTINE MAINTENANCE

6.4.1. Six Monthly

- Ram Fixings (check to make sure secure)
- Hydraulic cylinders (check hose fitting and ensure there are no leaks)
- Hinge Bearings (carry out visual inspection)
- Push/pull brackets fastenings (check for tightness)
- Check to ensure magnetic locks align with receptor plates
- Isolate mains power before accessing control & terminal boxes.
- Clean photoelectric beam lenses
- Check all terminals in gate junction boxes
- Check all terminals in control cabinet
- Test photoelectric beam operations
- Run gates and check that operation is correct
- Test emergency stops
- Check operation in both automatic and manual modes

6.4.2. Annually

As six monthly checks but additionally clean and inspect powder coating-touch-up as necessary.

6.5 DECOMMISSIONING AND REMOVAL

Ensure that the gate is dismantled by a qualified technician.

⚠️ Disconnect the electricity supply in a safe way from the drive unit.

Use the installation manual.

At the end of their service lives the products must be disposed of in accordance with all local, regional and national rules and instructions.