Vodafone Newark
Car Park Installation

Operation & Maintenance Manual

Table of Contents

Appendices

A. Challenger Barrier Specs: 'O+M Manual - Rising Arm Barrier (Challenger) B&W - 2013.pdf'

B. Challenger Barrier Overview: *"Challenger-Barrier.pdf"*

C. Vysionics V103 ANPR Bollard Camera specifications: *"V103 Bollard Camera - Data Sheet.pdf"*

D. ANPR Processor Server QuickStart Guide: *"Vysionics_ANPR_Processor_QuickStart_Guide.PDF"*

E. Vysionics V101-3 ANPR Mounted Cameras: *"Vysionics_V101_ANPR_Cameras-Data_Sheet.pdf"*

F. Generic Variable Message Signage specifications: *"STL_VMS_Spec.pdf"*

G. Bespoke Variable Message Signage spec diagram: *"vodafone_newark_vms_spec.jpg"*.

H. ADSL / 4G Router specifications: *"Draytek Vigor 2860 Series.pdf"*

Installation & System Overview

The Car Park Management System at Newark is designed to physically control access to the Main Car Park at Brunel House using an ANPR Bollard Camera, Access Card Reader & Barrier at the Main Car Park Entrance.

A 4m Newgate Challenger Barrier was installed with 2m gap left for cyclists & pedestrians, protected by 3 retractable bollards to allow access for large vehicles and goods delivery. A 4m length of speed hump was also installed to mitigate tailgating.

The existing Intercoms, Access Card Readers and double-height Post at the Main Car Park Entrance were retained.

System Operation: The vehicle approaches the barrier position and stops. The vehicle occupant operates the card reader or the ANPR system is activated. The barrier arm raises and the vehicle drives through. The barrier arm lowers when the vehicle has cleared an induction loop situated directly beneath the barrier arm. The barrier arm will not lower if the vehicle remains on the safety induction loop.

Existing ducting was utilised from the Barrier Control Column to the Intercom / Access Card Reader Post and the Barrier Control Column back to the building. New ducting containing power and Cat5 comms cabling was installed between the Barrier Control Column and the ANPR Bollard Camera as well as from the Barrier Control Column to the Variable Message Signage.

Variable Messaging Signage (VMS) at the Main Car Park Entrance indicates whether the car park is 'FULL' or has 'SPACES' – agreed to be restricted to these displays as the existing sliding gate on the Main Car Park Exit does not actively support any vehicle count and the gate's set operation allows tailgating, therefore preventing a fully accurate count of occupancy towards the end of each working day.

New ANPR monitoring of the Main Car Park Exit and Visitor Car Park Entrance & Exit was installed and uses wireless transmitters / receivers, significantly reducing civils & ground works costs.

The existing sliding gate at the Main Car Park Exit remains in place and is the responsibility of others (originally supplied by Newgate) as replacement within the NetFM installation was not requested or required.

The local NetFM ANPR Processor Server is housed with other miscellaneous system hardware within a cabinet mounted on the wall in the Baggage Room.

ADSL was provided by Demon Internet and installed / patched in by Vodafone (Roland Damon) as a standalone, dedicated connection for the Car Park Management System. This ADSL connection originates within the Comms Room and, due to instructions subsequently received from Vodafone Security following the original agreement of system design and installation, it was requested that the Router for this connection be moved to the secure Comms Room – rather than the originally agreed location of the Baggage Room. This location presents issues to the 4G Failover Router as there is minimal to nil 4G reception. Therefore, the standard ADSL router remains in place, with a Draytek 2860n 4G / ADSL Router + Static IP Vodafone SIM card left unconnected within the Comms Room as a standby.

Contacts & Stakeholders

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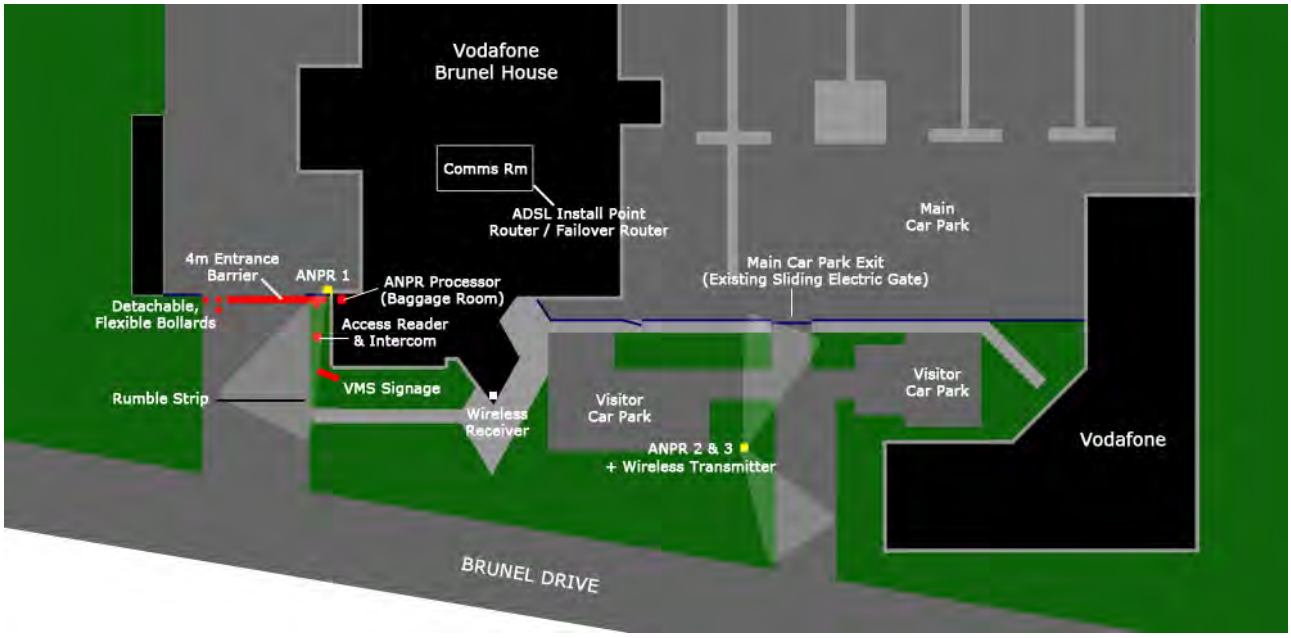
Installation Plan



Assets & Hardware Specifications

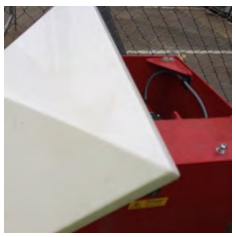
1. Newgate Challenger Barrier (Main Car Park Entrance)

Model: *4m Newgate Challenger*
Warranty: *4 years from 01.06.2016*

A 4m Newgate Challenger Barrier with PVC curtain was installed at the Main Entrance with new induction loops before and after the barrier. The barrier conforms to BS6571.

The Barrier Column houses the barrier's internal mechanism and the power source for the other hardware elements at the Main Car Park Entrance. Keys for the Barrier Column have been left with Security. Access to the column is gained as follows:

Unlock Barrier Column



Remove Top Cap from Column

Remove 2 x Fixing Screws

Slide Up Front Panel

Turn Switch at Base:
Vertical = On
Horizontal = Off

Challenger Barrier specifications accompany this document within the attached 'Challenger-Barrier.pdf' & 'O+M Manual - Rising Arm Barrier (Challenger) B&W - 2013.pdf' documents. The barrier offers both Manual & Automatic operation driven by ANPR & Access Card Reader.

2. Vysionics V103 ANPR Bollard Camera (Main Car Park Entrance)

Model: *Vysionics V103 ANPR Bollard*
Warranty: *Extended Warranty - 4 Years from 01.06.2015*

A Vysionics V103 Bollard Camera with bespoke powder-coated housing (RAL 3020) was installed at the Main Car Park Entrance next to the Barrier Column. The camera has been focused on a point just before the installed speed hump and should not be adjusted unless by qualified personnel. If for any reason access to the camera is required, the key has been left with onsite Security.

The V103 Version installed offers both Infrared & Overview (colour) images of vehicles and their registration plates. The camera is directly connected to the Barrier Column (power) and by CAT5 cable (comms) to the ANPR Processor Server (comms) housed in the Baggage Room via a duct to the barrier column.The camera is triggered by the first loop, takes an image of the vehicle and passes that image to the ANPR Processing server for OCR translation & analysis.

Camera specifications can be found in the attached 'V103 Bollard Camera - Data Sheet.pdf'.

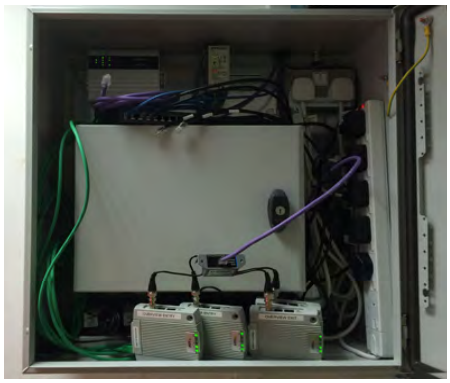
3. ANPR Processor Server & Hardware Cabinet (Baggage Room)

Server Warranty: *2 years from 22.07.2015*
Remote Server Support: *2 years from 22.07.2015.*
Schneider Enclosure: *Manufacturer Part No: NSYS3D6625P*

The ANPR Processor server is housed within a small cabinet, within a larger IP66-Rated 600mm x 600m x 250mm cabinet (Schneider Electronic Enclosure) containing other system hardware, on the far wall of the Baggage Room – as pictured.

The ANPR server connects to the NetFM CPMS server on a nightly basis (3am) to receive the following day's updated Whitelist and send Barrier Usage Data back to CPMS (as viewed within the CPMS Barrier Reports).

The whitelist is imported into the server and allocates users as either having permission (Approved / Whitelist) or not (Denied or Cancelled / Blacklist).



When the server receives an image of a vehicle at the barrier from the camera, it processes each vehicle registration, identifying whether the vehicle has permission to enter the car park before sending a signal back to the barrier to raise or stay down. It records each event and sends this information back to CPMS within a daily file to create the Barrier Usage Report.

Additionally, the 2 cameras monitoring the Main Car Park Exit and Visitor Car Park Entrance record any vehicle movements and send this data back to the server using wireless transmitter / receiver – with the receiver installed on the roof of the Reception area. However, these cameras purely monitor traffic and do not control any barrier or hardware due to the age and capability of the existing Main Car Park Exit sliding electric gate.

Additional system Hardware is also installed within the larger Server Cabinet in the Baggage Room. This includes a receiver for each camera, an Axis I/O unit for each camera, a korenix JetNet 3705 Industrial PoE Switch and an 8 Port Switch that provides connectivity between these I/O units and the ANPR server. The larger outer cabinet is closed (but cannot be locked) and, since original installation, has been vented to prevent system components overheating. The smaller inner cabinet that houses the ANPR server itself is locked and the 2 small silver keys are held by onsite Security.

The server can be accessed remotely using Teamviewer (Partner ID: 137 249 749 / Password: 996500) and numerous reports can be displayed & configured on an ad-hoc basis once logged in as an Admin user (u: netfm / p: netfmnewark) to the server.

Guide to using the server is within the attached "*Vysionics_ANPR_Processor_QuickStart_Guide.PDF*".

4. V101-3 ANPR Cameras (Main Car Park Exit / Visitor Car Park Entrance)

Camera(s) Model: *Vysionics V101-3 Dual ANPR*
Warranty: *Extended Warranty in place - 4 Years from 01.06.2015*

A new electric junction box, camera column and two Vysionics V101-3 ANPR cameras were installed to monitor the Main Car Park Exit and Visitor Car Park Entrance lane. The V101-3 ANPR Cameras offer a 3m-10m zoom capability and deliver dual image options of an Infrared (IR) & an Overview image of any vehicles exiting the Main Car Park and entering the Visitor Car Park.

Both cameras are connected by a wireless system to reduce civils costs and general disturbance on site. One wireless transmitter / receiver is mounted on the camera column to send images back from either camera to a second transmitter/receiver installed on the roof of the Reception area. CAT 5 cable has then been routed within the internal roof space back to the server in the Baggage Room.

5. Variable Message Signage (Sherrif Technologies)

Manufacturers Item No.: *STL-110-DD-1-1-6*
Warranty: *5 years from 01.07.2015*

Bespoke designed Variable Message Signage (VMS) – with "Welcome to Vodafone Newark" printed text - was installed to the Main Car Park Entrance, as pictured.

Signage offers a 110mm, 6 character alphanumeric display with Red / Amber text colour options to inform vehicles whether the car park is 'FULL' or has 'SPACES' available.

The text display of the VMS is calculated by counting & measuring vehicle movements through both Main Car Park Entrance & Exit, however this count may need regular re-setting due to the legacy sliding gate on Main Car Park Exit that facilitates a high degree of tailgating at peak exit times, thus corrupting a true count of vehicles and car park occupancy.

Signage is accessed internally using a standard triangular key / socket – and this has been left with onsite security along with all other access keys required for the car park system.

A 5m galvanised metal post with 76mm shaft was also supplied and cut to height. Post has access door just above ground level to provide access to electrical and communications cables & connectors. Ducting was laid between the Barrier Column and the Signage to take both power & comms cabling.

Full specifications are within the attached "STL_VMS_Spec.pdf" & "vodafone_newark_vms_spec.jpg".

6. ADSL / 4G Connectivity, Routers & SIM

A standalone Demon Internet ADSL connection was ordered by Mitie and installed by Data Techniques within the Comms Room at some point in April 2016. It is connected to a Technicolor ADSL router, provided & configured during ADSL installation and housed in a rack within the Comms Room.

The Comms Room location of the router was specified by Vodafone Security due to security concerns over it being publicly accessible within the Baggage Room. However, this became a requirement after the original system design had been agreed, installed and commissioned.

The changed location of the Comms Room does not provide good public network 4G coverage due to its concrete walls and position in the centre of the main building, so the proposed Draytek Vigor 2860n ADSL / 4G Failover Router is now ineffective as far as its 4G capability is concerned. For this reason, this router and associated Fixed Static IP SIM card have been left unconnected with the Technicolor Router within its rack in the Comms Room.

The ADSL line was patched through from the router in the Comms Room to the server in the Baggage Room by Roland Damon (Mitie).

ADSL Account & ADSL Router:

ADSL Provider:	*Demon Internet*	***ADSL username:***	*vod1636705074@demon.a*
Installer:	*Data Techniques*	***ADSL password:***	*ucs5074*
Internal Contact:	*Roland Damon (Mitie / Vodafone)*		
Technicolor Router U:	*admin*	***Router - Local IP:***	*192.168.100.100*
Technicolor Router P:	*DemonCPE*		

Draytek Vigor 2860n ADSL / 4G Failover Router:

Supplier:	*NetFM*	***Username:***	*admin*
External IP:	*vnewark.ddns.net*	***Password:***	*N3tfmC2P*
Local IP:	*192.168.100.100*	***Spec Sheet:***	*Draytek Vigor 2860 Series.pdf*

1Gb Fixed Static Public IP SIM Card:

Provider:	*Comms365*	***Contract:***	*14th March 2016 / 12m / SMC 01*
APN:	*comms365.com*	***Activation:***	*16th March 2016*
Network:	*Vodafone 3G / 4G (Public network).*	***Username:***	*netfm5*
SIM ID:	*9308*	***Password:***	*waka978*
ICCID:	*89441000302697847861*		
MSISDN:	*447341793693*	***IP Address:***	*109.72.26.162*

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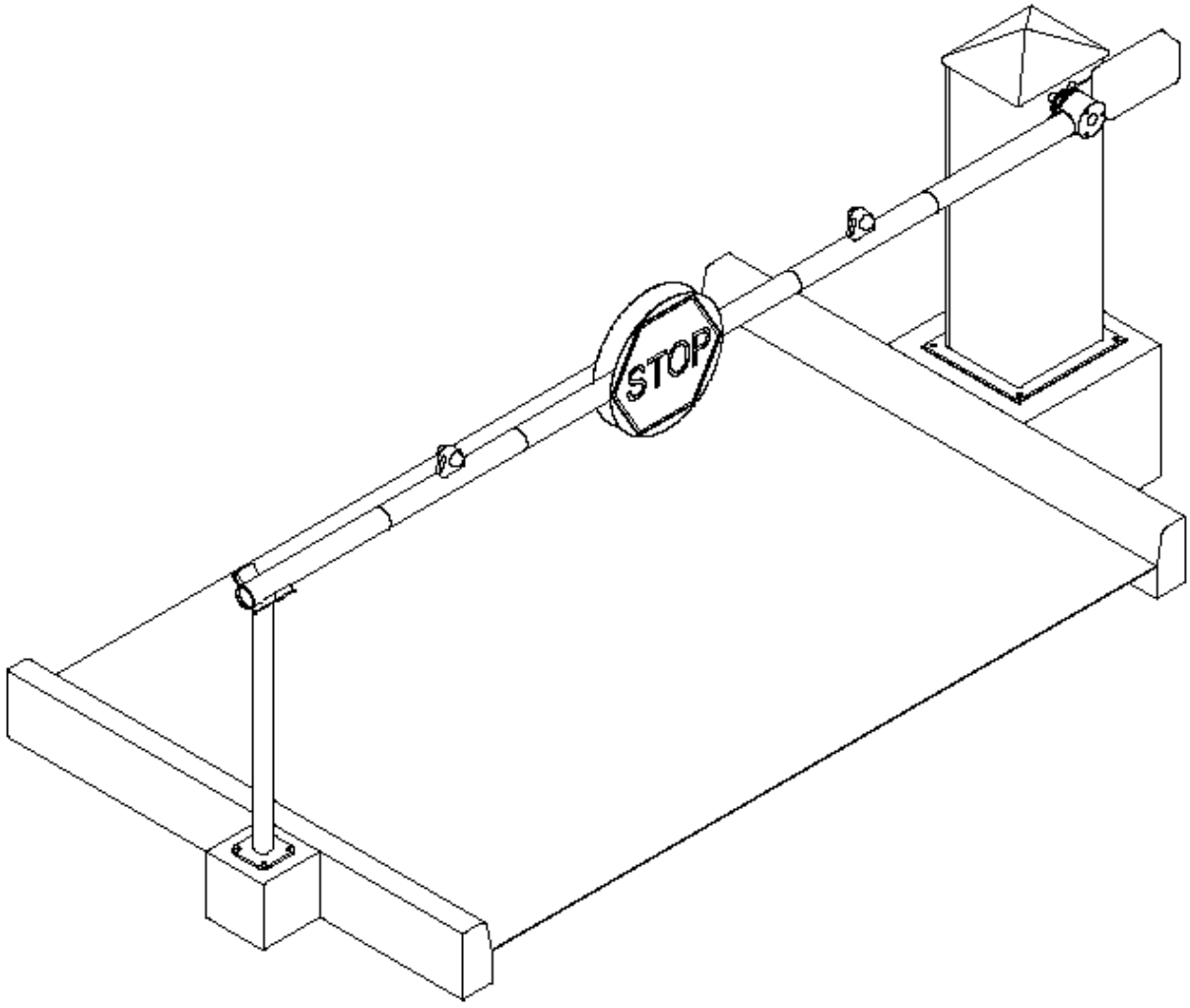
NEWGATE
SECURED ACCESS SOLUTIONS

INSTALLATION, COMISSIONING, OPERATION & MAINTENANCE MANUAL



CHALLENGER RISING ARM BARRIER

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INDEX

Page No:

1. SAFETY INFORMATION

SAFETY NOTICE:

Vehicle Control Barriers are designed to control the flow of Motor Vehicles and Motor Cyclists. It is dangerous to permit pedestrians, cyclists and equestrians to pass and travel through the Traffic Barrier when it is in motion.

It is recommended that easy alternative routes are provided for non-vehicular traffic and that suitable warning and direction signs are placed on either side of the Traffic Barrier.

IMPORTANT NOTE:

Only competent and skilled personnel should carry out procedures detailed in this manual.

2. TECHNICAL DATA

Construction	Steel Frame Aluminium Arm
Span(s)	Up to 7000mm (without Curtain) Up to 6000mm (with Half-Curtain) Up to 4500mm (with Hi-Bar Curtain)
Power Requirements	230v 1ph 50Hz
Current Consumption	2.4 amps
Operation Movement	90° (Horizontal to Vertical)
Time of Operation	6 seconds (Normal speed) 3 seconds (Fast speed) **Dependent on pole length and fitted equipment*
Handing	R.H. or L.H. (Optional)
Manual Operation	Plug in hand-wind handle
Weight	120 kg (Excluding pole attachments)
Dimensions	Cabinet 1100 x 375 x 320mm
IP Rating	IP54
Control System	Various (as specified)
Noise Level	Less than 70 Db.
Optional Accessories	Collapsible curtain Boom lights Plain “Stop” Sign Illuminated “Stop” Sign Basic tip support Lockable tip support Articulated Arm Pogo Stick Traffic Lights
Control Variations	Push buttons Induction loops Card reader Key-switch Coded keypad Opto device (photo cell) Radio signal

3. GENERAL SAFETY STANDARDS

SAFETY WARNING:

Before attempting to install and maintain the Newgate "Challenger" Rising Arm Barrier, it is important that the following notes are read and understood. Competent and skilled persons should always carry out any work. Keep these instructions for future use.

IMPORTANT NOTE:

Electrical wiring and adjustments must be carried out in compliance of current safety standards.

IMPORTANT NOTE:

The Traffic Barrier is essentially a barrier designed for entry/exit for motorised vehicles and is NOT DESIGNED for Pedestrian use. Any other usage will be deemed improper and dangerous. Therefore, it is recommended that suitable signage is erected warning pedestrians not to walk under the Traffic Barrier and separate access is provided for pedestrians.

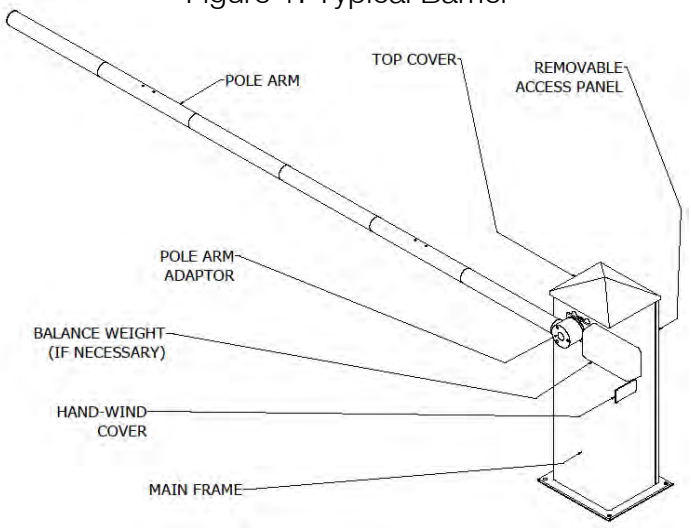
The traffic barrier is fundamentally a power driven arm rising and falling across an access route and whilst every precaution is taken to make the equipment as functionally as safe as possible, both operators and users should take sensible precautions not to abuse such a traffic control system. To this end, the barrier arm is fitted with a "Fracture Segment" to minimise any vehicular damage in the event of an accidental impact.

Employers have a responsibility under Sect 2 of the Health and Safety at Work Act 1974 to ensure as is reasonably practicable the health and safety of employees and other persons who may be affected by work activities. The Management of Health and Safety at Work Regulations 1999 further imposes a specific duty upon employers to carry out suitable and sufficient Risk Assessment of all risks to health and safety of employees and others. Therefore it is recommended a Risk Assessment be carried out by a competent person in accordance with Regulation 3 (I) Management of Health and Safety at Work Regulations 1999.

4. GENERAL DESCRIPTION

4.1. BASIC DESIGN

Figure 1: Typical Barrier



The Newgate "Challenger" rising arm barrier consists of a rigid pressed steel casing containing a conventional electric motor and gearbox drive. The final drive from the gearbox is via a crank and adjustable connecting rod or turnbuckle to the main output shaft, the geometry of this drive being arranged so that 180° motion of the gearbox shaft is translated to a 90° travel of the barrier arm. The main advantage of this mechanism is that under normal operation, the barrier arm accelerates and decelerates gently, thus giving a smoother operation to the system. The barrier arm is connected to the output shaft via a cast aluminium adaptor (Pole Arm Adaptor), giving simple replacement in the event of impact on the arm from a vehicle. Electrical limit switches control both the upper and lower limits of the barrier movement, both of which are easily set by means of adjustable strikers mounted directly on the output shaft, which is in turn attached to the mainframe by sealed self-aligning ball bearings.

The electrical control of the motor is through an inverter unit which gives a fixed and controlled acceleration and deceleration of the motor at all times and assists in controlling the "over run" after the electrical limit switches have been reached. This inverter unit is mounted on the front of a swing-out chassis for easy access.

5. HANDLING

5.1. TRANSPORTING

No specialised equipment is necessary for the handling of a Newgate "CHALLENGER" rising arm barrier, other than a standard fork lift truck and/or a conventional two wheeled sack truck, with a capacity to lift 120kg, as illustrated (Figure 2A). It is recommended that the protective wrapping be left in place until the barrier is located in its final position.

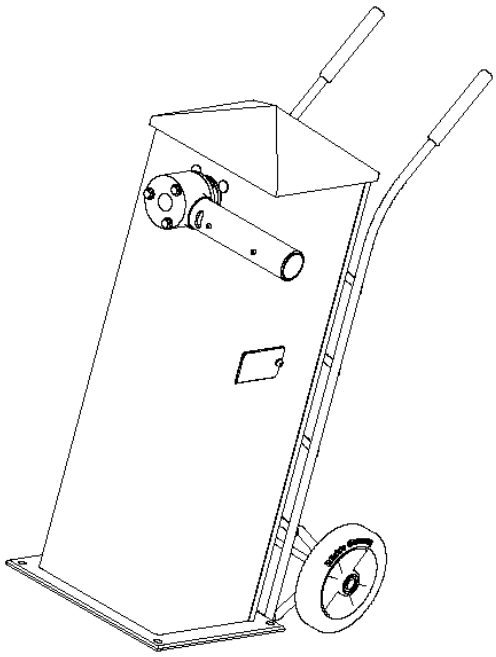


Figure 2A: Transporting

5.2. LIFTING

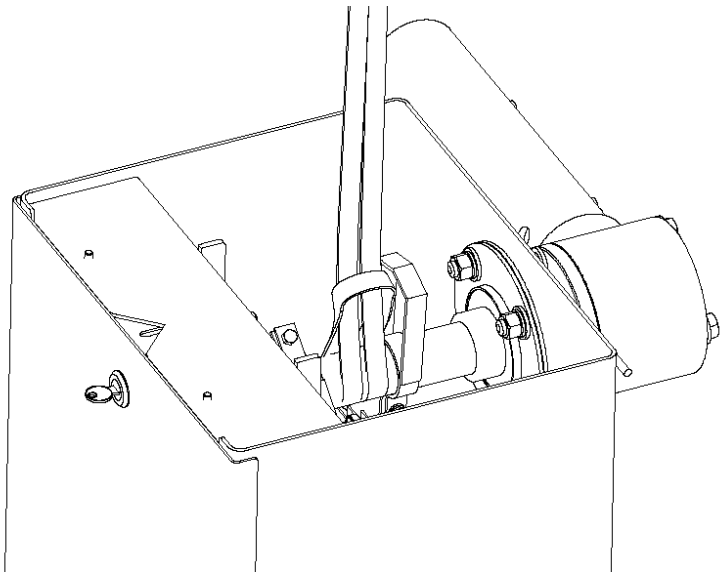


Figure 2B: Lifting

If it is felt desirable, or necessary in the event of crane-age only being available, it is permissible to lift the barrier from above using an adequate rated polyester round sling (weight = 120kg). The method of slinging is to unlock and remove the top cover and suspend the barrier from the centre of the output shaft, as illustrated in Figure 2B.

6. INSTALLATION

6.1. FOUNDATIONS

If details of the base have not been specified, we recommend a concrete mix to BS EN 206-1:2000 “Concrete specification, Performance, Production and Conformity” to type C32/40, which is equally suitable for external and internal environments. Alternative types of base construction may be acceptable, subject to discussions with our Contract Engineering Department. It is **not** necessary to pre-drill the base to receive the equipment; the drilling is carried out when the equipment is erected. We recommend a minimum of 7 to 10 days for the concrete to cure, depending on climate. This time can be reduced if additive agents are used.

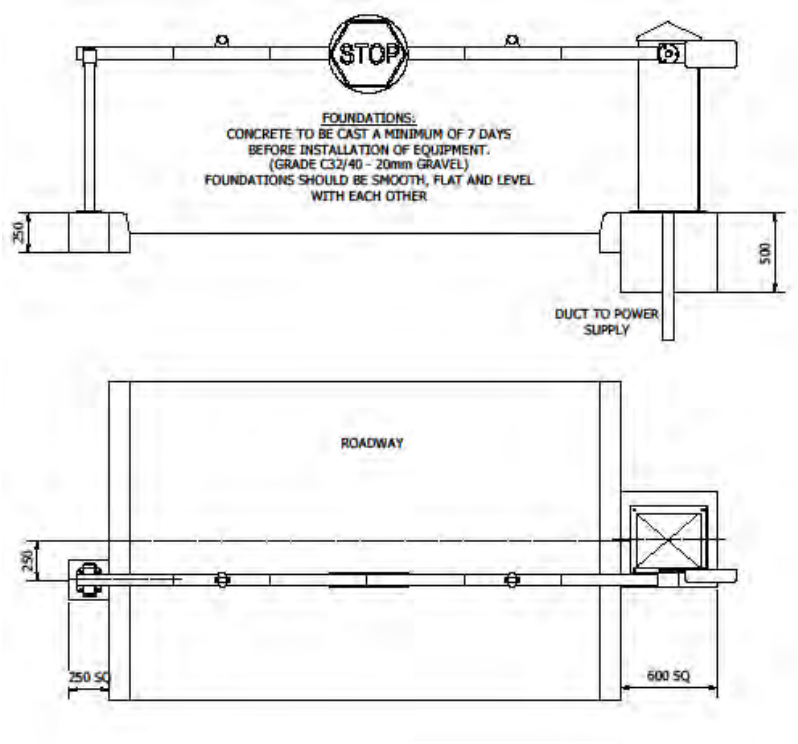


Figure 3 - Foundation Detail

IMPORTANT NOTE:

Where a tip support is required or if two barrier arms are to meet in the centre of the road, then **both** bases must be at the same level.

When ancillary equipment requires post mounting, (example: card reader, intercom, keypad etc.) the notes above can be applied. Drawings showing recommended positions of the equipment and foundation requirements can be supplied with the relevant data sheets.

Careful consideration should be made when deciding the location of the barrier to avoid overhead obstructions such as power cables, telephone cables, building canopies, trees and similar likely constructions, so as not to restrict the barrier arm in the vertical position.

Accessibility around the whole of the barrier pedestal should be maintained to a minimum of 1000mm to allow sufficient room for installation, subsequent maintenance and hand-wind operation.

IMPORTANT NOTE:

Newgate should be consulted immediately should any possible restrictions occur

6.2. CABLE DUCTING

Ducting carrying cables for power and control should enter the barrier pedestal from underground. Two ducts are normally required, one for the power supply, the other for the control. Where the power supply and control cables are to come from a common place, a single duct can be used.

These ducts must be sited **accurately** in the centre of the base. The use of cable access pits is recommended where there may be a number of ducts entering the barrier or long cable runs are necessary. We also recommend the ducts used be of 75mm diameter PVC. Slow bends should always be used wherever possible, and the inclusion of draw ropes throughout the ducting system, will ensure that the cables are easily installed.
Alternative types and sizes may be acceptable, subject to discussion with our Contract Engineering Department.

IMPORTANT NOTE:

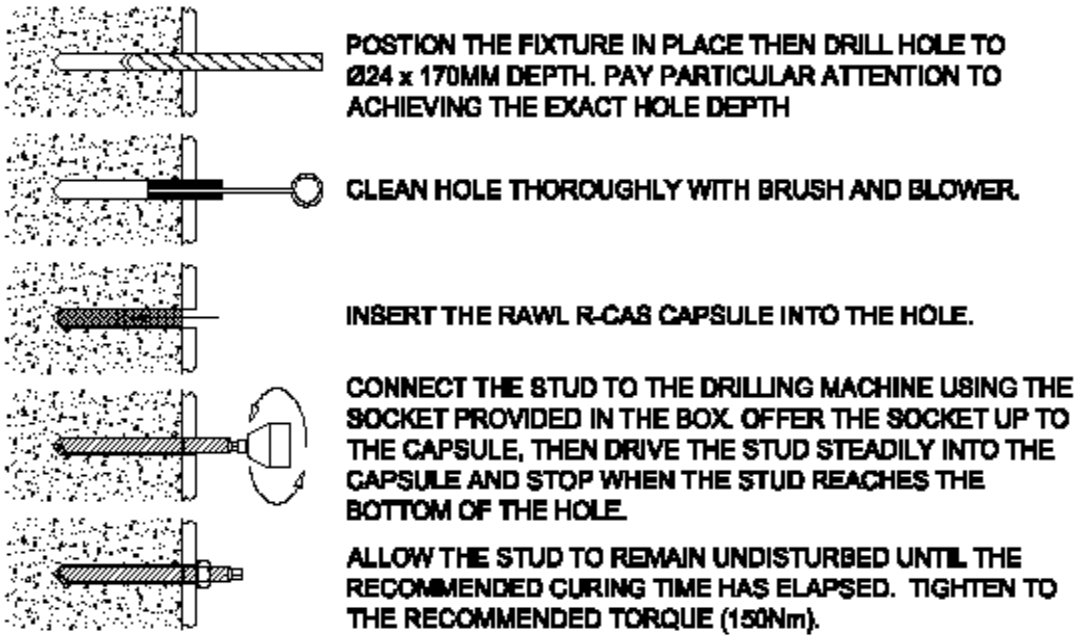
It is essential to route the ducting with care, to ensure that it does not interfere with the floor anchor equipment fixings.

6.3. BARRIER

Position the barrier on its concrete base and using the emergency handle, lower the barrier drive mechanism so the aluminium pole adapter is horizontal and pointing in the required direction. The alignment of the barrier can now be checked by temporarily mounting the pole. – **Remove the pole for safety whilst conducting the remainder of the installation.**

Using a 16mm heavy duty masonry bit in a suitable hammer drill, drill through the 4 holes in the barrier base plate to a minimum depth of 175mm taking care to keep the holes free of excessive dust. The 16mm x 160mm long expansion bolts can now be hammered into the prepared holes, keeping the nuts in the uppermost position. Before tightening up the nuts, check that the barrier is vertical, packing as necessary. Tighten down all four (4) foundation bolts. Cut or Grind off the surplus thread from the bolts for a neat finish and cap the nut. If levelling is necessary between the base and foundation ensure any gaps are grouted in using either Chemifix or Standard Cement.

In certain circumstances, standard bolts will not be sufficient for the gate installation, in these incidents chemical anchors will be provided instead, the installation should then be as follows;



IMPORTANT NOTE:

Always wear safety goggles/ visors when drilling/ hammering into concrete.

6.4. CHANGING THE HANDING OF THE BARRIER

Should it become necessary, it is a very simple matter to change the handing of the barrier. Simply by disconnecting the final drive linkage, swinging over the pole to its new position, reassembling the drive linkage to the opposite hand, resetting the limit switches and reversing the connections to the motor.

7. MECHANICAL ADJUSTMENTS

7.1. LINKAGE ADJUSTMENT

To obtain the correct linkage position and to adjust the turnbuckle, switch off the power and place the barrier in the down position, using the hand-wind handle. First release the locknut, by twisting the turnbuckle, use a 5mm diameter Tommy Bar in the holes provided, see Figure 4, this will set the position of the barrier arm in the lowered position, allow for the natural curvature of the pole if thought to be necessary.

Switch on at the power source, press the "RAISE" button and the barrier should raise to the upper limit switch and come to rest. As the barrier is in motion, check the rotation of the gearbox output lever, this should be as shown in Figure 5. Pressing the "DOWN" button will cause the barrier to descend to its lower limit and come to rest.

The limit switches should now be adjusted to give the desired opening of 90° of the arm, in conjunction with the correct rest positions of the final linkage as in Figure 4.

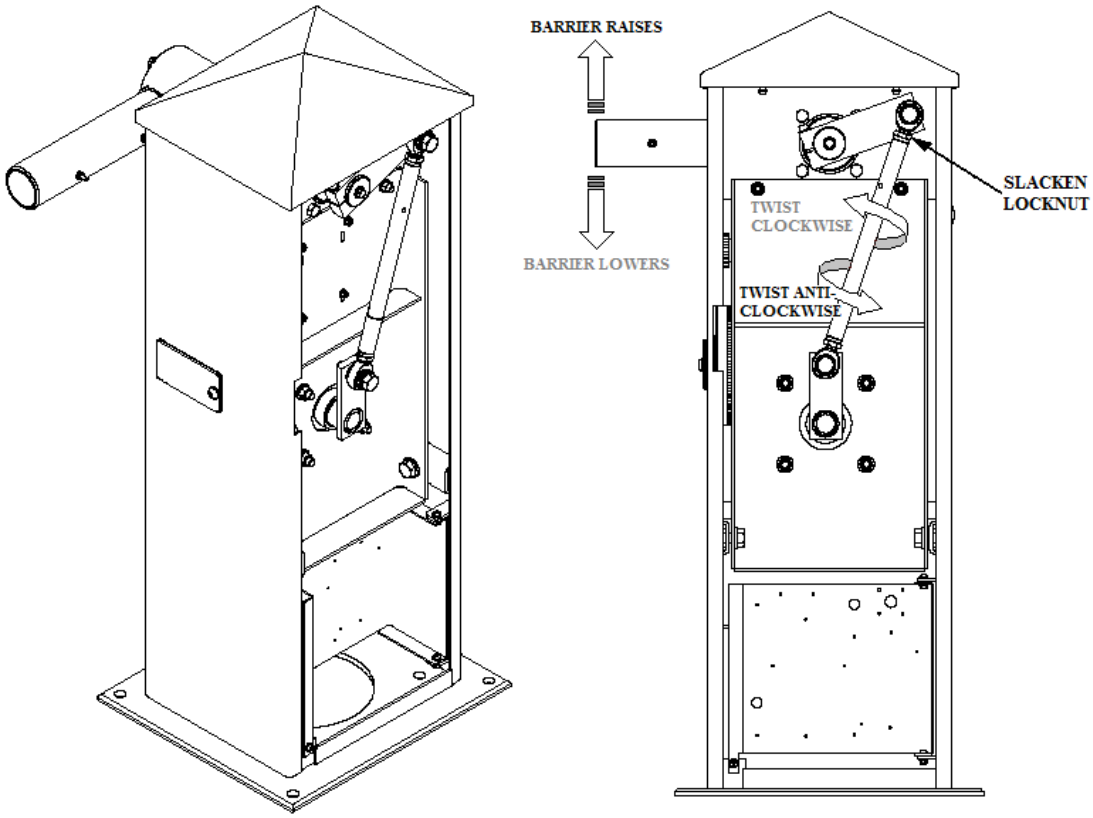


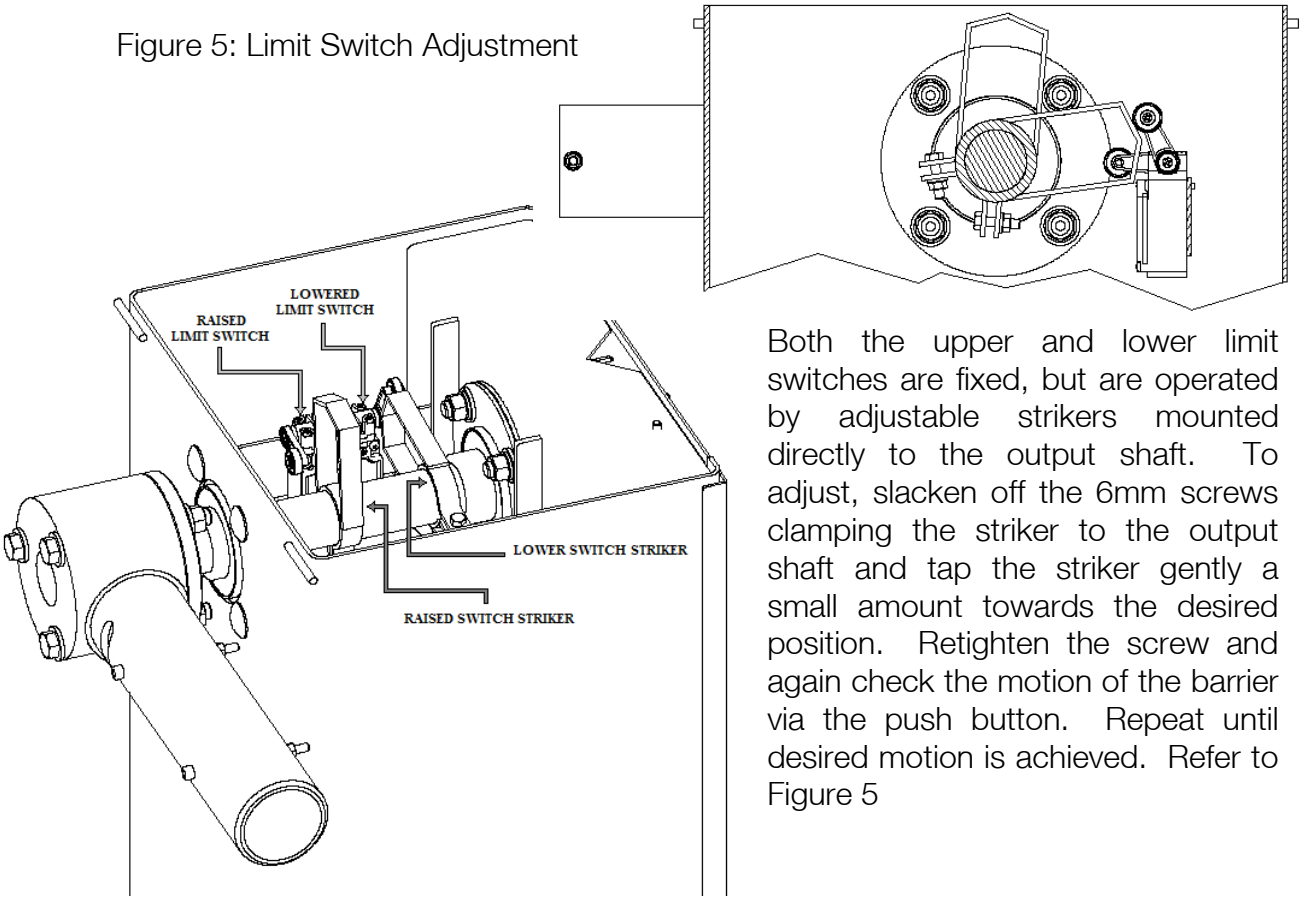
Figure 4: Linkage Adjustment

7.2. LIMIT SWITCH ADJUSTMENT

SAFETY NOTICE:

Before carrying out any adjustments: ensure power is isolated at source and check power is 'dead' with a multimeter before proceeding

Figure 5: Limit Switch Adjustment



Both the upper and lower limit switches are fixed, but are operated by adjustable strikers mounted directly to the output shaft. To adjust, slacken off the 6mm screws clamping the striker to the output shaft and tap the striker gently a small amount towards the desired position. Retighten the screw and again check the motion of the barrier via the push button. Repeat until desired motion is achieved. Refer to Figure 5

IMPORTANT NOTE:

Due to the nature of the final drive linkage, it may be found that if a limit switch is not adjusted correctly, the switch trip point may not be reached within the full motion of the barrier arm. If such a situation occurs, the barrier drive motor will continue to rotate resulting in a continuous up and down motion of the barrier. This is not detrimental to the mechanism, however, to correct this adjustment, switch off the power at the main source or stop with the "STOP" button, reset the relevant limit switch and continue. If this situation has arisen the drive linkage may have stopped on its wrong half circle. This will correct itself during its first operation afterwards.

7.3. BELT ADJUSTMENT

The primary drive between the Motor and Gearbox is by a toothed timing belt and would normally require no adjustment (See Figure 6). If the belt has stretched to the extent that the belt teeth are jumping on either pulley, it is recommended that a new belt be fitted.

The procedure for fitting a new belt is as follows:-

a. Position barrier at lowered position.
b. Switch off power at source.
c. Check that the power has been isolated at the panel isolator with the appropriate test instrument.
d. Unlock and remove top and front covers.
e. Remove M16 bolt from lower end of linkage.
f. Remove 2 off M10 nuts holding top of drive base.
g. Slacken 2 off M16 pivot bolts at bottom of drive base.

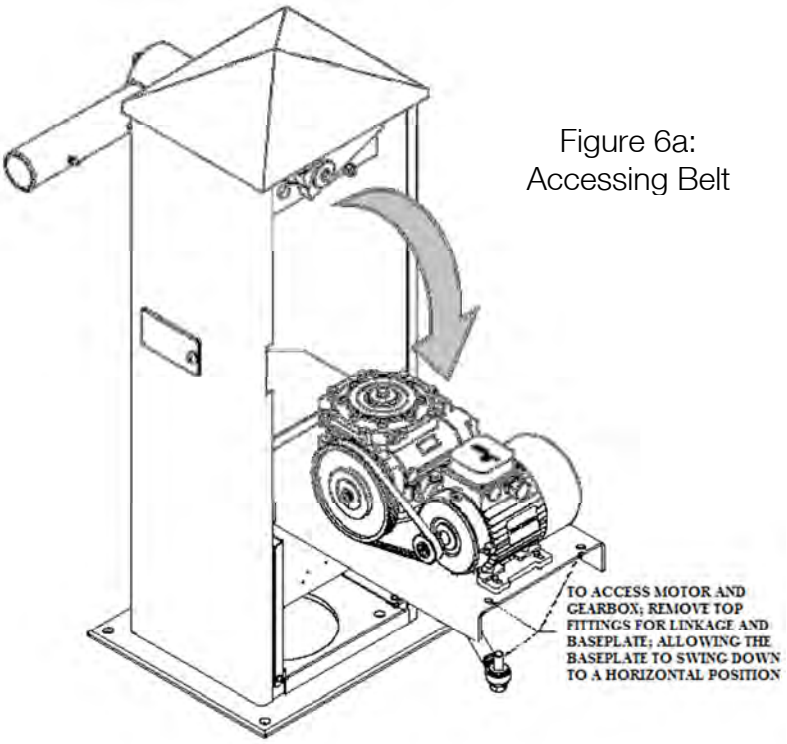
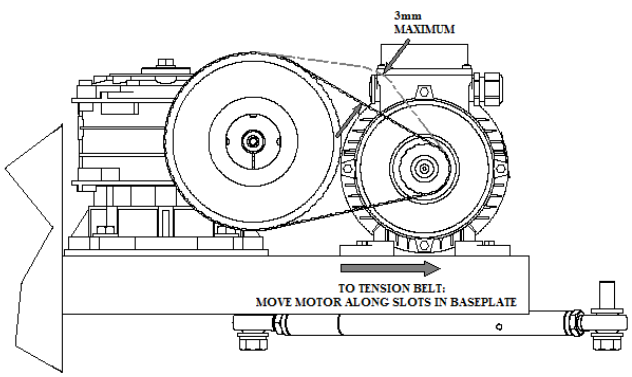


Figure 6a: Accessing Belt

h. Carefully hinge out complete drive base holding turnbuckle linkage clear until it comes to rest in a horizontal position.
i. Slacken off 4 M6 screws holding motor and slide towards gearbox.
j. Remove old belt and fit new replacement.
k. Pull motor right away from gearbox and tighten screws, ensuring that motor is square and parallel to gearbox. Check the belt tension as shown in Figure 6b.
l. Reverse the above procedure (c-i) to put barrier back into service.

Figure 6b: Belt Adjustment



IMPORTANT NOTE:

During Storage and handling of the drive belt; ensure that it does not become twisted or kinked.

8. COMMISSIONING

It is preferable that both the installation and commissioning take place when expected through traffic is at a minimum to avoid disruption.

It is helpful for the start-up and commissioning to be carried out with the top and side covers removed by unlocking the top cover and removing the two (2) screws holding the side cover in place. Both covers can then be removed by first lifting to clear the bottom retaining plate and carrying to a place of safety. Take care to stand clear of the linkage when operating.

SAFETY NOTICE:

DO NOT place your hands/ fingers inside the barrier with the power switched on or when the barrier is operating

9. OPERATION

9.1. STANDARD OPERATION OF CHALLENGER BARRIER

IMPORTANT INFORMATION:

The following procedure outlines the safe operation of a Newgate challenger barrier; these measures should be incorporated into the owner's on-site risk assessment.

It is recommended that all operators undergo manual handling training before attempting to operate the barrier manually.

9.1.1. BEFORE OPERATING

i. Vicinity of barrier must be first cleared of all possible obstacles or hazards.
ii. Site should be checked to ensure no vehicles/ pedestrians are within vicinity of barrier and any present are made aware the barrier will be operating.

9.1.2. CONTROLLED OPERATION

i. Barrier to be operated via customer specified access controls.

9.1.3. AUTOMATED OPERATION

ii. Vehicles should approach barrier and wait at specified distance from barrier, proceeding only once fully open.

IMPORTANT INFORMATION:

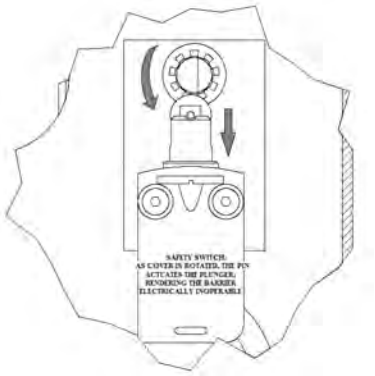
Suitable signage should be provided to indicate correct procedure to users.

The barrier will close automatically; vehicles should only proceed individually and successive vehicles must wait for the barrier to close and re-open before proceeding

9.1.4. AFTER OPERATING

i. Only once fully opened and securely locked into position should vehicles/ pedestrians be permitted access/ egress.

9.2. MANUAL OPERATION



Should the need arise to operate the barrier by hand, either during setting up or in the event of a power failure, the following procedure is to be adhered to. Remove the cap head screw using the hand-wind handle, which allows the cover to be removed (See Figure 7). This movement actuates a safety switch (Left), rendering the barrier electrically inoperable. Insert the handle through the resulting aperture and engage with the gearbox spindle. The handle may have to be rotated to engage the slot with the spindle key. The handle may be rotated in either direction to change the position of the barrier arm, due to the universal nature of the final drive linkage. If this should get out of synchronisation, the mechanism will correct itself after its first full operation when returned to power operation. Therefore, the barrier should be electrically operated immediately after a manual operation and the screw fully tightened.

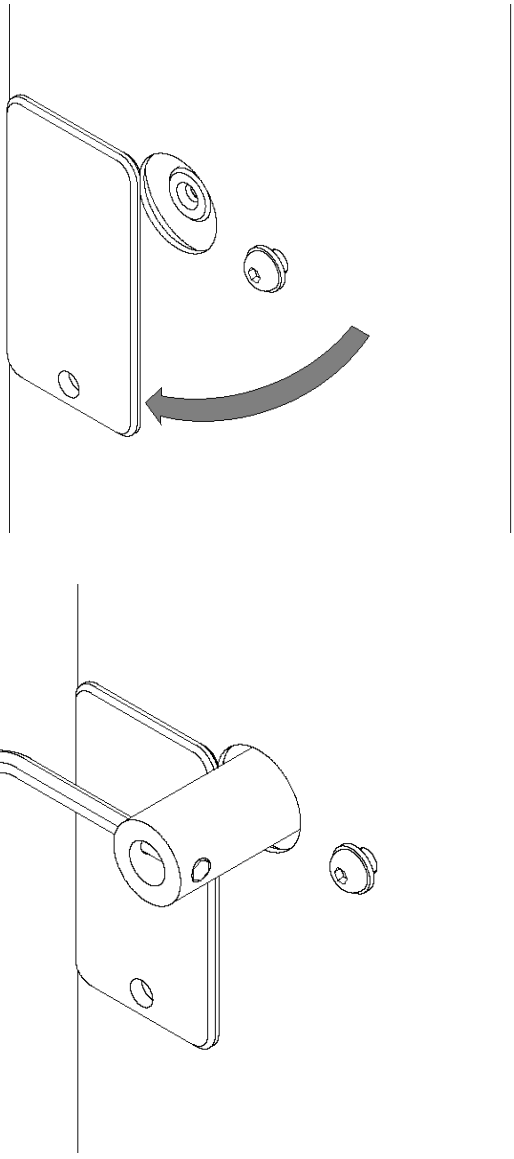


Figure 7: Manual Operation

IMPORTANT NOTE:

As the safety switch is operated by the hand-wind cover, it is important that the cover is replaced immediately following a manual operation and the screw fully tightened.

9.3. THE NEWGATE MOTOR INVERTER AND INTEGRAL LOGIC CONTROLLER

The motor frequency inverter performs both the logic function of the barrier operation and the control of the motor drive unit.
The barrier-mounted components, access control and remote equipment are wired to the inverter through the plugs mounted on the panel chassis.

Inverter with Blank

Inverter with Basic Control

9.4. INVERTER INPUTS & OUTPUTS

The inverter inputs and outputs are described as follows:

Digital Inputs:

DI1 - Auto/Manual
DI2 - Stop Signal (Stop Push Button/Barrier Door & Cover Switches)
DI3 - Lower Signal
DI4 - Raise Signal (Access Control & Auto Raise Loop)
DI5 - Barrier Lower/Safety Signal

Analogue Inputs:

AI1 - Barrier Not Lowered
AI2 - Barrier Not Raised

Digital Output:

DO - Traffic Lights

Relay Output:

RO - Pole Tip Magnetic Lock

Optional Relay Module:

K2 - Warning device
K3 - Barrier Lowered Feedback Signal
K4 - Barrier Raised Feedback Signal

9.5. INVERTER LOGIC OPERATIONS

There are several logic programs that serve to perform the standard operation and various optional functions of the barrier. These logic programs have to be installed in the inverter for the specific operation required. The standard and optional functions are listed as follow:

a. Standard Operation: Standard barrier operation with Auto/Manual selection.

b. Magnetic Tip Lock and/or Traffic Light Operation:
Operation as in (a.) plus control for:
- Pole tip magnetic lock
- Traffic lights (2 aspect only)

c. Warning Device and Raised/Lowered Feedback Operation:
Operation as in (b.) plus control for
- Barrier in operation (raise and lower) warning device (24VDC, 100mA max.)
- Two volt free barrier raised/lowered feedback signals (Max. 6A, 24VDC resistive load / 1500VA, 250VAC)

d. Auto Reverse Operation for options (a-c) above

10. OPERATION MODE

10.1. MODES OF OPERATION

There are two modes of operation 'Manual' and 'Auto' and these are selected by changing the state of Digital Input 1(DI1). With the link installed between the respective terminals 'Auto' operation is enabled, removing this link will enable 'Manual' operation. The terminal link is factory fitted as default (Auto Operation).

IMPORTANT NOTE:

The barrier power supply must be isolated before removing or installing this link.

10.1.1. AUTO MODE

The barrier is raised by supplying a volt free signal across the designated terminals. This can be either a pulse signal (<1sec.) or a maintained signal which will keep the barrier in the raised position. When the vehicle has passed over and clear of the safety induction loop or other vehicle detection equipment linked to the barrier (photo electric cell etc.), the barrier will lower. If no vehicle passes through the barrier within the pre-set time of 25 seconds the barrier will lower.
The standard mode of operation for the safety/lower control is to stop the barrier movement and then to continue to lower once the safety detection is clear. There is an Auto Reverse option available that can be programmed in to the inverter if required.
A stop signal can be supplied via a volt free signal across the designated terminals and this will stop the barrier movement when the signal is removed. If the barrier is in the lower phase then the lower operation will resume when the stop signal is reinstated.

10.1.2. MANUAL MODE

In this mode of operation the barrier is raised and lowered by a volt free signal across the designated terminals. This can be either a pulse signal (<1sec.) or a maintained signal which will keep the barrier in the required position. A stop signal can be supplied via a volt free signal across the designated terminals and this will stop the barrier movement if the signal is removed.

11. FAULT FINDING

11.1. INVERTER INDICATORS

The barrier inverter is supplied as standard with a blank cover showing the Power (green) and Fault (red) LED which indicate the operational status of the inverter. The following table shows the alarm and fault status of the inverter.

LED off	LED lit and steady		LED lit and blinking	
No Power	Green	Power supply on the board OK	Green	Drive in an alarm state
	Red	Drive in a fault state. To reset the fault, switch off the drive power, wait until LED goes off and switch on power	Red	Drive in a fault state. To reset the fault, switch off the drive power, wait until LED goes off and switch on power

If the inverter is supplied with a Basic or Assistant Control Panel (optional), please refer to the separate instruction manual specific for the panel.

11.2. CONTROL PANEL SIGNALS AND WIRING

The control panel external signals are terminated at the plug terminals which are labelled in blocks of ten (1-10 / 11-20 / 21-30 / 31-40) depending on the control option required.

IMPORTANT NOTE:

Refer to the barrier control panel schematic drawings in Appendix for the connection details of these interfaces

11.2.1. SIGNALS: INPUTS

- **Auto Mode Input: DI1**

The barrier Auto Mode input has to be active to enable the barrier to operate in the automatic mode (see Section 10 for the explanation of the Auto and Manual modes)

- Check the 24VDC signal between terminals 29(-ve)/ 12(+ve) is present to enable the barrier to operate in the auto mode

- **Stop Input: DI2**

The barrier Stop input has to be active for the barrier to operate, the signals for this input are an external stop (push button etc.), the barrier hand wind safety switch, top cover safety switch or access door safety switch.

- Check the 24VDC signal between terminals 29(-ve)/ 15(+ve) is present
- If an external stop push button or other device is not connected check the link between terminals 13/14 is fitted and secure
- Check the safety switches connected between terminals 14 / 15 are operating correctly and secure

- **Lower Input: DI3**

The barrier Lower input has to be active to lower the barrier or to maintain the barrier in the lowered position.

- Check the 24VDC signal between terminals 29(-ve)/ 16(+ve) is present to enable the barrier to lower
- Check the lower signal device connected between terminals 13/ 16 is operating correctly and secure

- **Raise Input: DI4**

The barrier Raise input has to be active to raise the barrier or to maintain the barrier in the raised position. The signals for this input can be derived from access control equipment, auto raise induction loop controller fitted in the control panel or external device (photo electric cell etc.).

- Check the 24VDC signal between terminals 29(-ve)/ 18,23,24(+ve) is present to enable the barrier to raise
- Check the raise signal device connected between terminals 13/ 18,23,24 is operating correctly and secure
- If an auto raise inhibit device is not connected check the link between terminals 17/ 18,23,24 is fitted and secure

- **Lower Safety Input: DI5**

The barrier lower safety input has to be active to enable the barrier to lower in either the auto or manual mode. The signals for this input can be derived from an induction loop controller fitted in the control panel or external device (photo electric cell etc.)

- Check the 24VDC signal between terminals 29 (-ve) / 20 (+ve)
- If an induction loop controller is not fitted check the link between the 24VDC +ve supply and terminal 19 is fitted and secure
- If an extra safety device is not connected check the link between terminals 19/20 is fitted and secure

11.2.2. SIGNALS: OUTPUTS

- Pole Tip Magnetic Lock: Relay Output 1

When supplied, the barrier pole tip magnetic lock is controlled from this output and operates at 24VDC level. There are time delays built in to the inverter control at both the energized and de-energized state to allow the smooth operation of the barrier pole.

- Check the 24VDC signal between terminals 29(-ve)/ 30(+ve)
- Check the 24VDC supply to the inverter relay common terminal 17 (ROCOM) and terminal 29(-ve)
- Check fuse F3
- Check condition and security of the cable supplying the 24VDC to the magnetic lock

- Traffic Lights: Digital Output

When supplied, the traffic light relay (R1) is controlled from this output and operate at 24VDC level. The supply to the traffic light head is controlled from the relay (R1) at either 230VAC or 24VDC level.

- Check the relay (R1) 24VDC signal between terminals 6(-ve)/ 3(+ve) when the light change from Red to Green
- Check the 24VDC supply to the inverter relay common terminal 20 (DOSRC) and terminal 3(-ve)
- Check the traffic light supply fuse F5
- Check the supply at the traffic light head, condition and security of the cable supplying the 230VAC or 24VDC

WARNING:

The supply voltage to the traffic light head can be either 230VAC or 24VDC

- Warning Device and Feedback: Relay Module K2-4

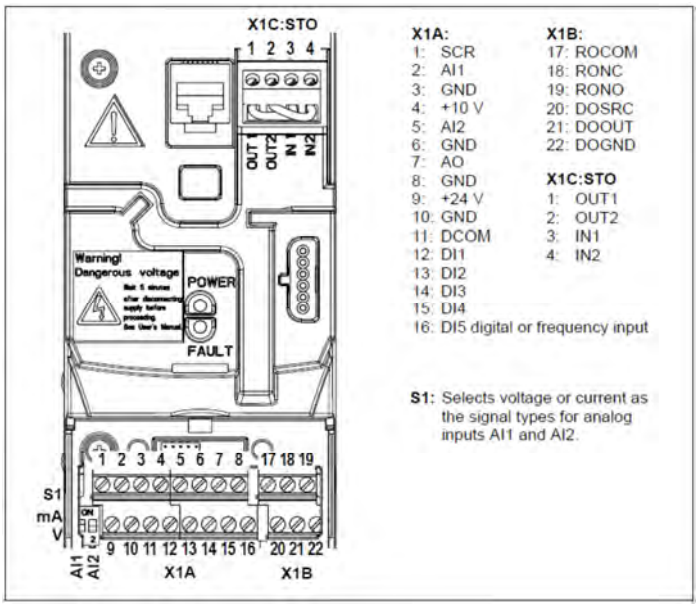
When supplied, the relay module is used to control the operation of a warning device at 24VDC level and volt free signals for barrier Raised and Lowered status.

- Warning Device - K2
  - Check the 24VDC signal between terminals 31(-ve) / 32(+ve)
  - Check the 24VDC supply to the inverter relay common terminal (K2-COM) and terminal 31 (-ve)
  - Check fuse F3
  - Check condition and security of the cable supplying the 24VDC to the warning device
- Lowered/Raised Feedback Volt Free Signals - K3 + K4
  - Check the continuity between terminals 36 / 37 (K3 - Lowered)
  - Check the continuity between terminals 38 / 39 (K4 - Raised)

IMPORTANT NOTE:

The technical data for the barrier lowered/raised volt free feedback signals (Max.6A, 24VDC resistive load / 1500VA, 250VAC)

11.2.3. INVERTER WIRING



Inverter control wiring terminal layout

IMPORTANT NOTE:

The user interfaces are via the Digital Inputs which have the following input impedance DI1-DI4=2kΩ, DI5=4kΩ
Set switch S1 - AI1 + AI2 to 'OFF' (V).
Ensure the Safe Torque Off (X1C:STO) terminals are linked as follows: OUT1 - IN1 / OUT2 - IN2
Refer to the barrier control panel schematic drawings in Appendix for the connection details of these interfaces

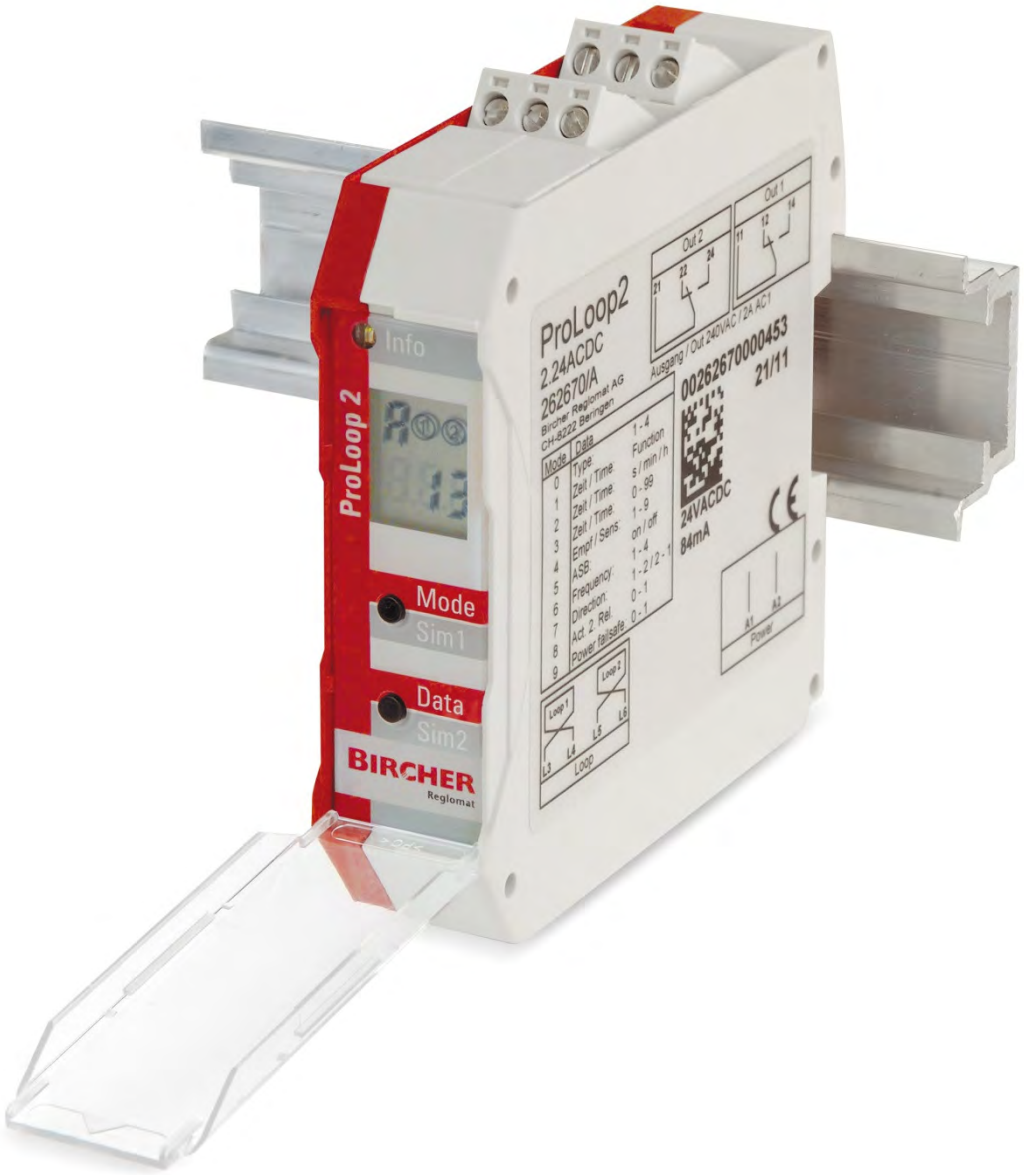
- **Digital Inputs: DI1-5 (Terminal block X1A-Lower)**

The inverter digital inputs are PNP connection and the voltage level is 24VDC with respect to DCOM (11) on the inverter connection terminal rail. The digital signal voltage to the inputs can be checked with a multimeter set on the DC voltage range.

- **Analogue Inputs: AI1-2 (Terminal block X1A-Upper)**

The inverter analogue inputs are 10V supplied internally from the inverter from +10V (4) on the inverter connection terminal rail. The analogue signal voltage to the inputs can be checked with a multimeter set on the DC voltage range and measured with respect to the ground connection GND (3 or 6) on the inverter connection terminal rail.

11.3. VEHICLE DETECTOR(S)



The dual loop detector is used to control the function of both the Safety/Lower and Auto (Entry or Exit) induction loops. All the settings for the induction loop configuration and functions are configured within the controller settings. These settings are explained in the following sections.

WARNING:

During the tuning period please ensure no vehicles are occupying the loop as the detector will tune in the vehicle and will not be able to detect them.

11.4. ELECTRICAL CONTROL PANEL AND SPARE PARTS

The layouts in Figures 8A and 8B show the components and part numbers for the Standard control panel.

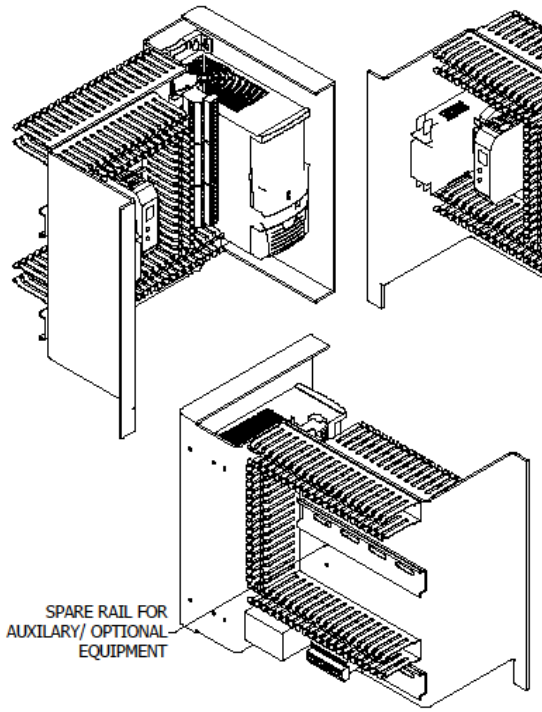


Figure 8A: Control Panel

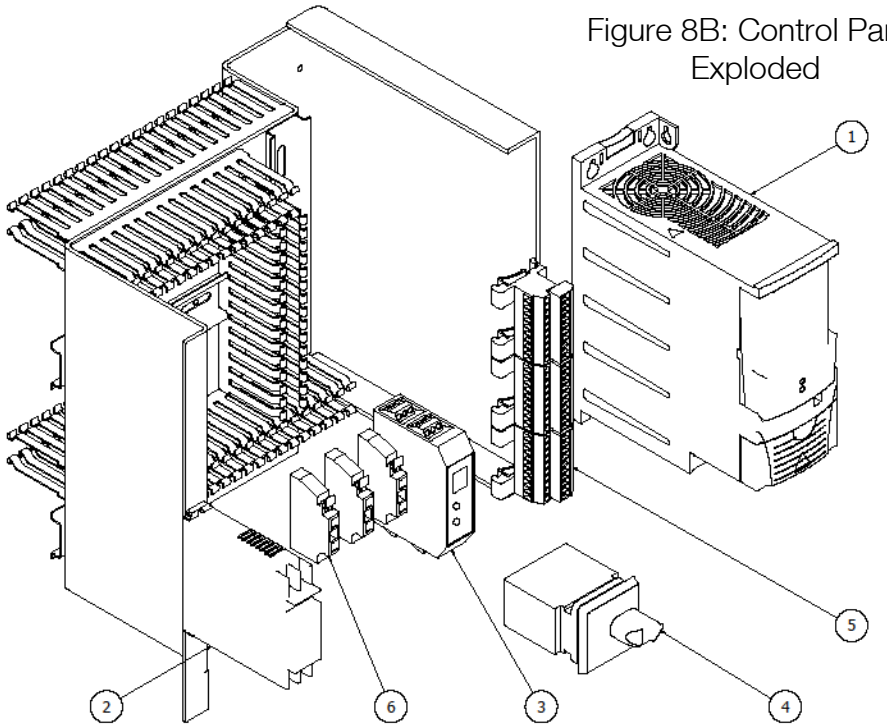


Figure 8B: Control Panel Exploded

Item	Description	Newgate Part No.
01	0.37kW Inverter	750/04/37403
02	Switch Mode Power Supply Unit	750/04/37281
03	Induction Loop Control Module	750/04/37405
04	Isolator Switch Front Plate and Handle	750/04/29280
	Isolator Switch – 25A	750/04/29279
05	Terminal Block 10 Way Plug	755/04/10319
06	Fuse Terminal	750/04/27362
	Fuse Link 0.5A	754/04/14422
	Fuse Link 1A	754/04/14423
	Fuse Link 2A	754/04/14424/000
	Fuse Link 5A	754/04/14424/001

11.5. CHALLENGER TRAFFIC BARRIER – GENERAL ASSEMBLY

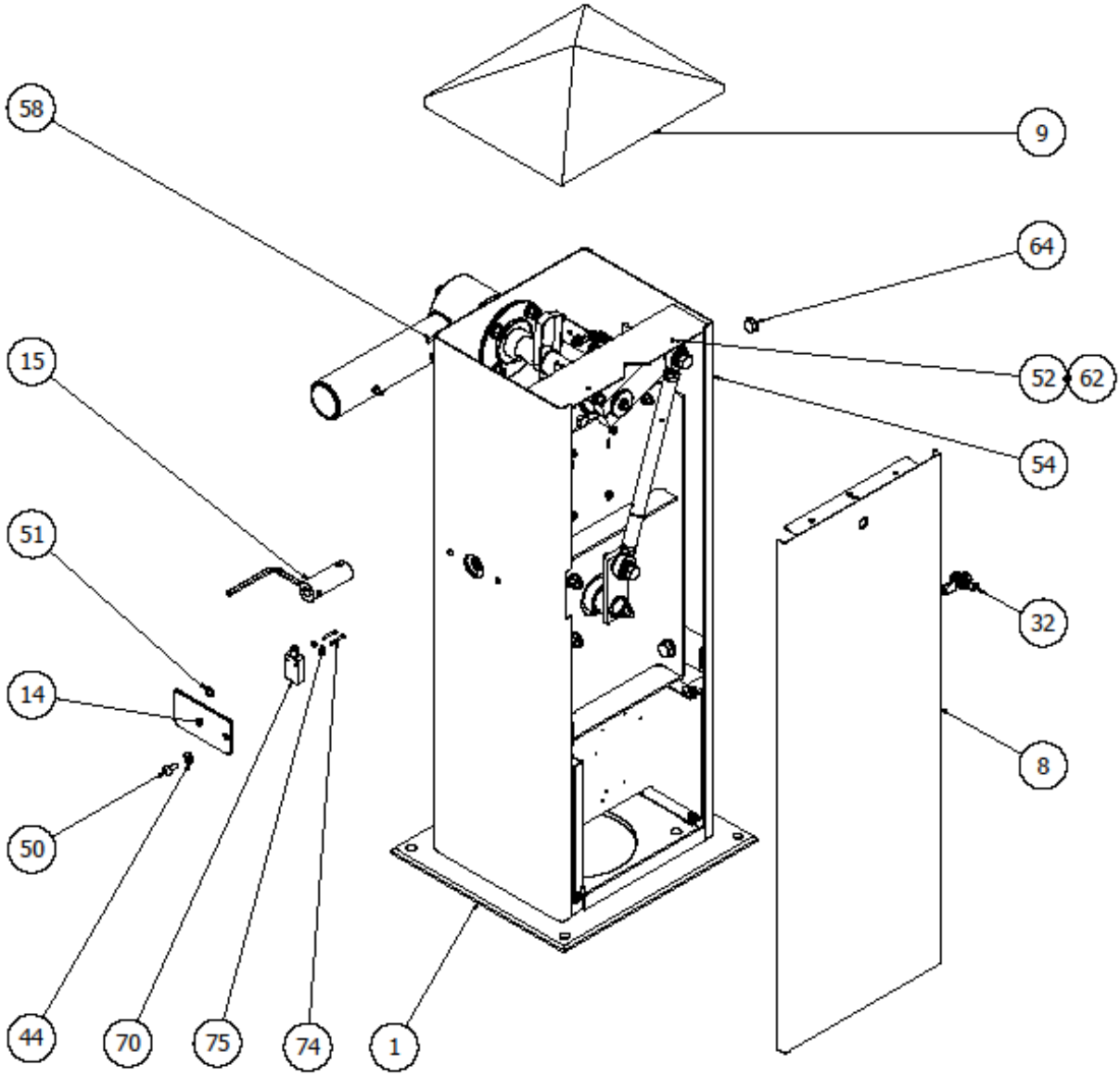


Figure 9A: Challenger Barrier Exploded

Figure 9B: Challenger Barrier
Exploded

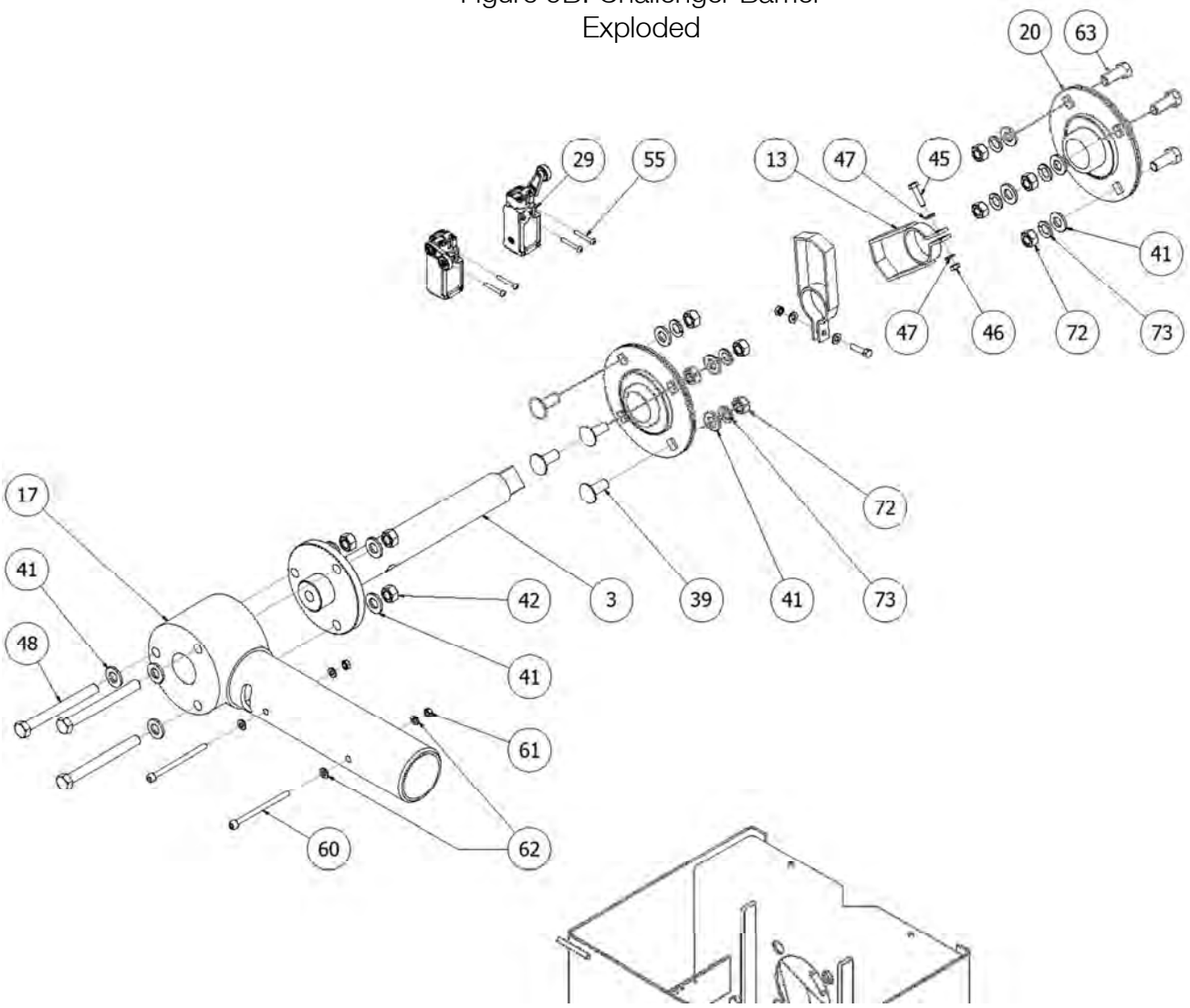
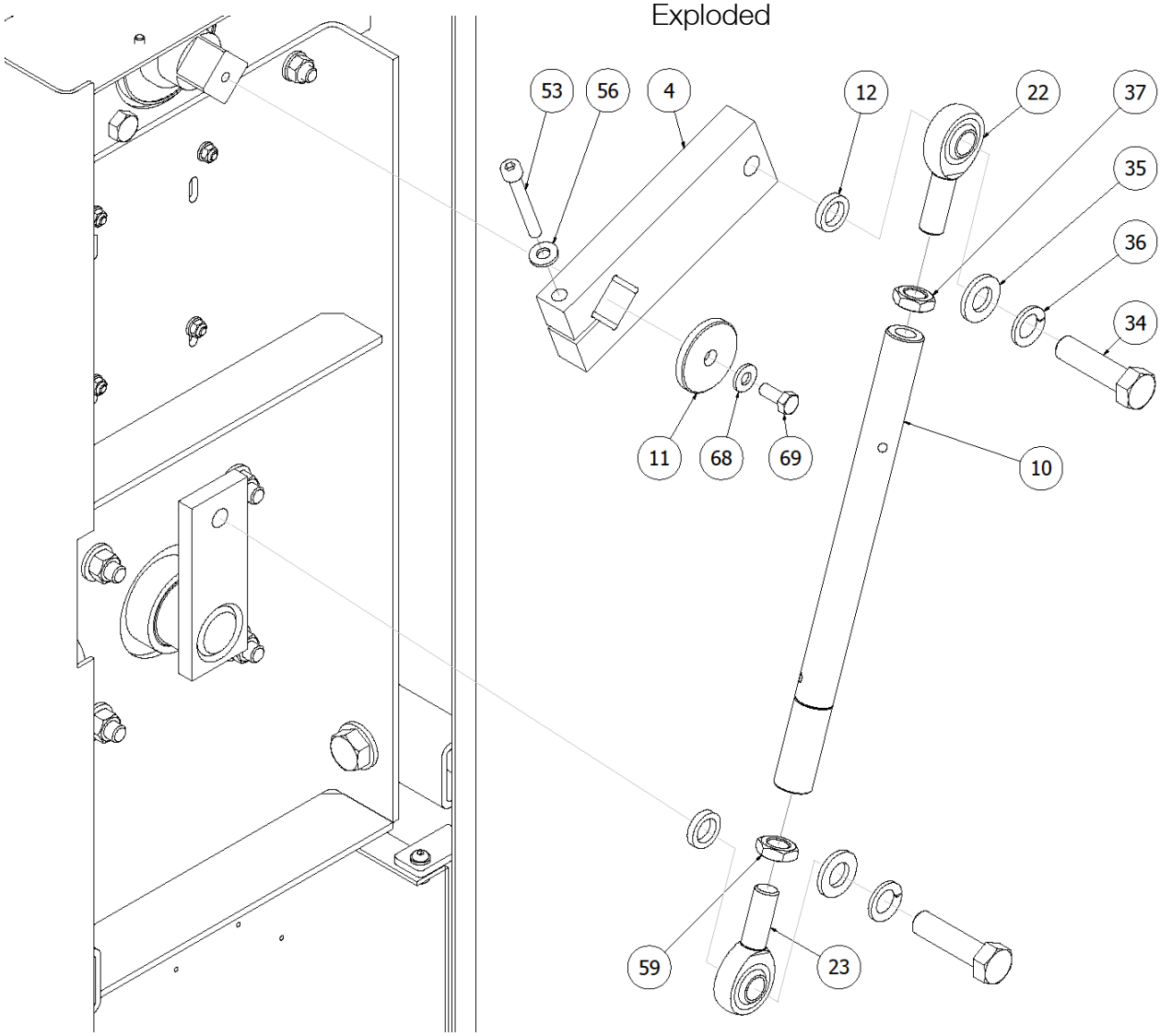


Figure 9C: Challenger Barrier Exploded



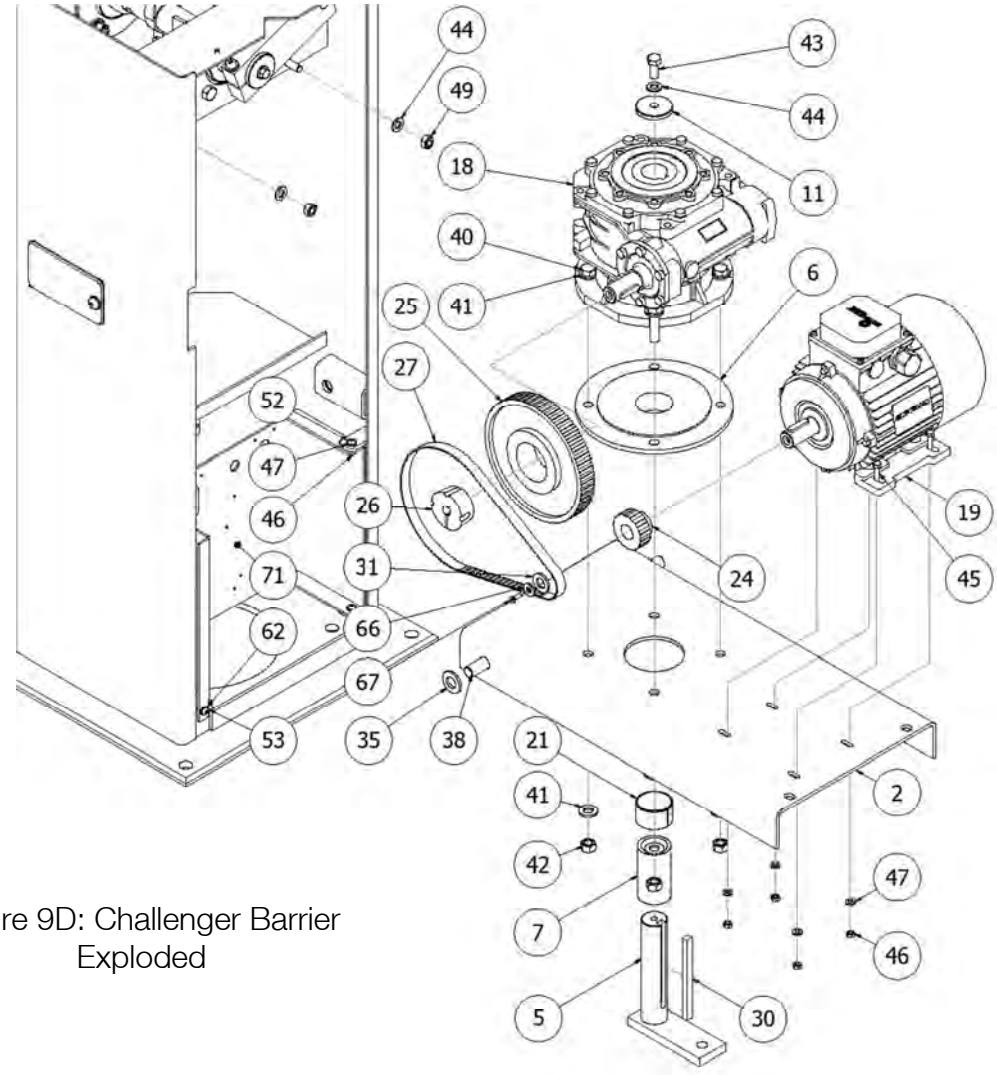


Figure 9D: Challenger Barrier Exploded

11.6. CHALLENGER TRAFFIC BARRIER – SPARE PARTS

Item	Description	Part Number
01	Main frame	302/01/10056
02	Drive base	302/02/10031
03	Output shaft assembly	302/03/26295
04	Output lever	602/03/24191
05	Gearbox lever assembly	302/03/10024
06	Gearbox plate	602/03/10021
07	Gearbox Shaft Sleeve	602/04/10020
08	Front Door cover	302/02/10058
09	Top cover	352/02/11081
-	Neoprene Strip	
10	Turnbuckle	602/04/10019
11	Shaft retainer	602/04/10018
12	Turnbuckle Spacer	602/04/10029
13	Limit switch striker	302/04/10032
14	Hand-wind cover	802/04/10033-000
15	Hand-wind handle	302/04/10036
16	Control panel (Not shown)	See order
17	Pole adapter	See order
18	Gearbox Motovario	510/04/29251
19	Motor D71	500/04/10300
20	Output shaft bearing	550/04/10302
21	Gearbox Shaft bush	550/04/10303
22	R H Rod end bearing	570/04/10304
23	L H Rod end bearing	570/04/10305
24	Motor pulley	502/04/10045
25	Gearbox pulley	520/04/10307
26	Taperlock bush	530/04/30044
27	Drive belt	540/04/10309
28	Cable harness (Not shown)	See order
29	Limit Switch	750/04/11162
30	Gearbox key	Engineered
31	M14 Washer	915/00/14000
32	Cover lock & keys	850/04/10310
33	Barrier Drawing (Not shown)	757/04/13256/001
34	M16 x 60 Hex Hd. Bolt	911/00/16060
35	M16 Round Washer	915/00/16000
36	M16 Spring Washer	916/00/16000
37	M16 Half Nut (RH)	913/00/16000/001
38	M16 x 40 Hex Setscrew	911/00/16040

Item	Description	Part Number
39	M12 x 30 Carriage Bolt	947/00/12000
40	M12 x 50 Hex Setscrew	910/00/12050
41	M12 Round Washer	915/00/12000
42	M12 Nyloc Nut	914/00/12000
43	M10 x 25 Hex Setscrew	911/00/10025
44	M10 Round washer	915/00/10000
45	M6 x 25 Hex screw	928/00/06025
46	M6 Nyloc nut	914/00/0600
47	M6 Round washer	915/00/0600
48	M12 x 120 Hex bolt	910/00/12120
49	M10 Nyloc nut	914/00/1000
50	M10x20 Cap Hd. Skt. Screw	919/00/10020
51	M10 Star Washer	900/04/14369
52	M6x16 Button Hd. Skt. Screw	925/00/06016
53	M8 x 60 Skt. Hd. Cap Screw	919/00/08060
54	Neoprene Sponge Strip	800/4/14409/001
55	M4 x 30 Skt. Hd. Cap Screw	919/00/04030
56	M8 Washer SS	000/00/00000/185
57	Not Used	
58	Cover Peg Rubber Sleeve	000/00/00000/150
59	M16 Half Nut (LH)	913/00/16000/000
60	M6 x 90 Cap Hd. Skt. Screw	919/00/06090
61	M6 Nyloc Nut SS	930/00/06000
62	M6 Washer	915/00/06000
63	M12 x 30 Hex Set Screw	911/00/12030
64	Body Plug	16236
65	Not Used	
66	M8 Penny Washer	929/00/80000
67	M5 x 16 CSK Set Screw	927/00/05016
68	M8 Washer	915/00/08000
69	M8 x 20 Hex Hd. Bolt	911/00/08020
70	Limit Switch	750/04/11162
71	Electric Chassis	302/2/10057
72	M12 Plain Nut	912/00/12000
73	M12 Spring Washer	916/00/12000
74	M4 x 30 Cap Hd. Skt. Screw	919/00/04030
75	M4 Washer	915/00/04000

12. MAINTENANCE

12.1. BEFORE CARRYING OUT MAINTENANCE

WARNING:

Before carrying out any maintenance on the barrier, ALWAYS ensure that the electrical power switch is off and preferably locked off. Always check the power source with a Multimeter to ensure the power is 'Dead'

The following must all be completed before starting maintenance of gate;

i. Obtain a Work Permit.
ii. Area to be cordoned off (using warning signs).
iii. Complete Risk Assessment for maintenance task (for example risk assessment see 13. Risk Assessment (Example)

12.2. WHILST CARRYING OUT MAINTENANCE

The following must all be adhered to whilst carrying out maintenance of gate;

i. The site Health & Safety Rules and Regulations are to be adhered to and observed at all times.
ii. Personal Protective Equipment is to be worn at all times whilst on site (i.e. Hi-Vis clothing, safety boots, safety glasses, ear defenders, gloves etc.)

12.3. AFTER CARRYING OUT MAINTENANCE

The following must all be completed after completing maintenance of gate;

i. Remove cordoned off area.
ii. Depart the site leaving the area clean and tidy.

12.4. ORDERING SPARE PARTS

SAFETY WARNING:

By using non-genuine Newgate parts you are potentially compromising the machine, causing risk to all those using the barrier.

Spare parts can be obtained by contacting Newgate parts department, for typical spare parts see '12.6 Spare Parts'.

12.5. SERVICE SCHEDULE

COMPONENT	MAINTENANCE TASK	TIME PERIOD			
		DAILY	WEEKLY	MONTHLY	YEARLY
All	Clean and Paint (where rusted)				✓
Boom lights & Stop Signs	Check Condition	✓			
Holding-Down Bolts	Check Tightness				✓
Linkage	Check for Wear & Lubricate				✓
Bearings	Check for Wear & Lubricate				✓
Limit Switches	Check and Adjust				✓
Hand-Wind Facility	Check Operation				✓
Motor	Check Operation				✓
Pulleys	Check for Wear and Looseness				✓
Belt	Check for Wear & Adjust				✓
Safety Switch	Check Operation				✓
Control Systems	Check and Report Faults				✓
All Electrical Terminations	Check and Tighten				✓
Inverter	Check Operation				✓
Curtain (If Fitted)	Check for 'free swing' and replace fittings as required				✓

12.6. FAULT FINDING

Possible causes of a barrier failing to raise or lower:-

1. Electrical power failure or isolated locally – Check and restore when possible.
2. Hand-wind cover not replaced after manual operation or screw not tight – Check and replace if open.
3. Control circuit fuse "blown" – Replace. (However, check the circuit for the reason the fuse has blown)
4. Limit switch or safety switch faulty – Replace.
5. Safety/Lower Induction loop sensitivity fault - Check loop detector display, reset the loop detector with induction loop clear of vehicles
6. Check the access control equipment is not keeping the barrier in the raised or lowered position
7. Check the Inverter fault status and take appropriate action by referring to the inverter
8. Check the Inverter 'Code' to reset, power down for 2-3 minutes then restart
9. For other faults not described in this manual; contact our Technical Department. Tel: 01636 700172 or our Service Department for advice Tel: 01636 704000

12.7. METHOD STATEMENT

MAINTENANCE OF A CHALLENGER TRAFFIC BARRIER

1. Obtain a Work Permit.
2. Cordon off area as required. (using Warning Signs)
3. Wear Personal Protective Equipment as and when required. (Hard Hat, Safety Glasses, High Vis Jackets, Gloves , Safety Boots)
4. Switch off electrical power. Localised as required
5. Electrical Power is to be checked that it is isolated with a multimeter, **before** work commences.
6. Remove barrier top and front cover and store in a safe place.
7. Hand-wind the barriers into the horizontal position, if required.
8. Inspect Barrier in horizontal position and adjust if required
9. Inspect barrier in vertical position and adjust as required.
10. Inspect drive linkage for wear and lubricate.
11. Inspect the raise, lower limit switches, and adjust if necessary.
12. Inspect the drive belt for wear and adjust the tension if necessary.
13. If the belt is worn or damaged replace.
14. Check the safety switch for correct operation.
15. Check the control systems and report if a fault is found.
16. Inspect all bearings and lubricate where required.
17. Check the drive motor for correct operation.
18. Check the pulleys on the motor for wear and looseness.
19. Check all the electrical terminals and tighten as required.
20. Check the motor overload unit for correct operation and adjust if necessary.
21. Check the Hand-wind handle for ease of operation.
22. Ensure the plinth, holding down bolts, are secure and are tight.
23. If fitted check the curtain for free swing and replace fixings as required.
24. If fitted check the boom lights and stop signs.
25. Where there are small rusty patches on the barrier clean with wire brush and paint with the appropriate colour paint. NB. Complete painting is not included in the scope of the maintenance. (Painting is subject to the condition of the barrier on commencement of the contract)
26. Replace top and front cover.
27. Wipe down and clean barrier.
28. Turn on power.
29. Test
30. Remove cordoned off area
31. Depart the site leaving the area clean and tidy.

12.8. RISK ASSESSMENT

MAINTENANCE OF A CHALLENGER TRAFFIC BARRIER

HAZARDS WHICH CAN BE FORESEEN:

1. Tripping hazards e.g. cables, extension leads, stored materials on site
2. Injuries due to lifting heavy objects.
3. Contact with hazardous substances
4. Electric shock
5. Fire
6. Oncoming vehicular traffic
7. Other Contractors working nearby.
8. Pedestrians
9. Hand entrapment.

CONTROLS IN PLACE TO MINIMISE THE RISK:

1. Operators trained and conversant with the mechanics of the barrier operating system.
2. Correct Manual Handling Training techniques to be adhered to at all times.
3. Care is to be exercised to reduce tripping hazards. eg. Removing such hazards away from the working area.
4. Working area to be cordoned off prior to commencing work.
5. Operators to wear Hi Vis Coats/Waistcoats/Waterproofs.
6. PPE to be worn as and when required and in line with Newgate (Newark) Ltd Policy. (Hard Hat, Safety Glasses, High Vis Jackets, Gloves, Safety Boots)
7. COSHH Regulations to be observed at all times.
8. All electrical power is to be isolated at supply, and checked with a multimeter to ensure it is switched off **before** proceeding with the work.
10. Operatives are to be made aware of the clients Health and Safety Procedure and Emergency Action Plan.

12.9. LUBRICATION, EARTH BONDING, SAFETY

The Newgate "CHALLENGER" Rising Arm Barrier is a very robust unit and has been designed for minimal maintenance. Both the gearbox and output shaft bearings are "sealed for life" and should require no lubrication whatsoever. The only points requiring lubrication are two-rod eye bearings, which will only need a check every 6 months and re-lubricate with a good quality grease through the nipples provided. The gearbox output shaft bearing is a dry bush and requires no additional lubrication.

WARNING:

All earth Bonding points should be connected correctly and if removed should be done so after insolating the barrier.
Reconnect all bonding points before turning back on.

WARNING:

When carrying out adjustments, inspection or maintenance inside the Challenger Traffic Barrier, it is important to isolate the electrical supply at the power source, to prevent injury in the event of accidental (or otherwise) operation. Always check the power source with an Avo Meter or Multimeter to ensure the power is 'Dead'

For further assistance, our Technical Department Tel: 01636 700172 or Services Department Tel: 01636 704000 should be consulted.

12.10. ACCESSORIES

12.10.1. "BREAKAWAY" POLE ADAPTOR

The standard pole adapter is designed with a 'Break Point' to give a certain amount of damage protection in the event of impact by a vehicle, this entails replacing the whole pole adapter. As an alternative, NEWGATE can provide (to special order) a modified pole adapter with an internal "Snap-Off" renewable element. This item is as illustrated below Figure 22:-

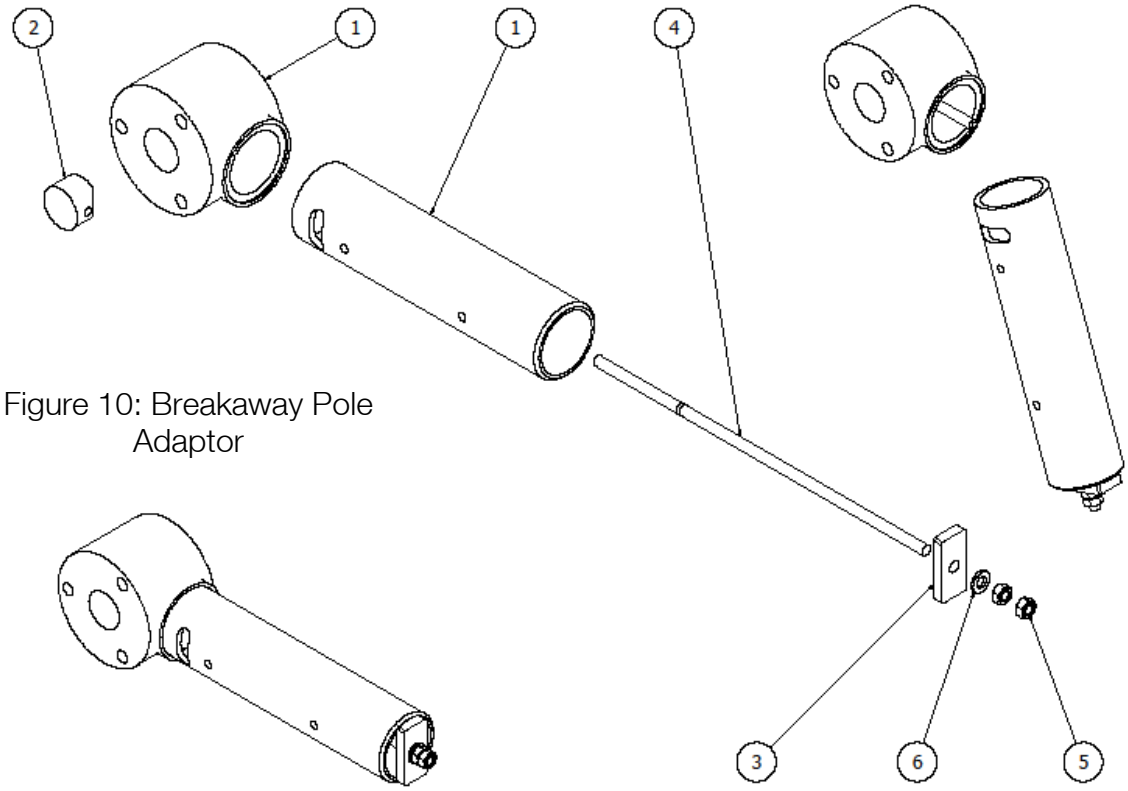


Figure 10: Breakaway Pole Adaptor

IMPORTANT INFORMATION:

When replacing the break pieces, item 04 – care should be taken not to over tension.
Tightening torque (Recommended); 10Nm (1.02 kg/m).

SPARE PARTS AVAILABLE:

Item	Description	Part Number
01	76mm Pole adapter (Shear Type)	202/02/10668
02	Centre boss	602/04/10674
03	End plate	602/04/10677
04	Break piece	602/04/10676
05	M 10 Hex nut	912/00/10000
06	M 10 Round washer	915/00/10000

NEWGATE
SECURED ACCESS SOLUTIONS

Tel: 01636 700172 / 704000 **Fax:** 01636 605400 / 605957
E-mail: sales@newgate.uk.com **URL:** www.newgate.uk.com

EC DECLARATION OF CONFORMITY

1. BUSINESS NAME & ADDRESS OF RESPONSIBLE PERSON:

Newgate (Newark) Ltd
Brunel Drive
Newark
Nottinghamshire
NG24 2DE

2. CAPACITY/ ROLE OF RESPONSIBLE PERSON:

Manufacturer

3. DESCRIPTION OF MACHINE:

(i) Description:- Rising Arm Barrier
(ii) Model:- Challenger (Automated)
(iii) Serial Number:-

4. RELEVANT EC DIRECTIVES & REGULATIONS COMPLIED WITH FOR ABOVE MACHINE.

Machinery Directive 2006/42/EC: The Supply of Machinery (Safety) Regulations 2008.

Low Voltage Directive (LVD) 2006/95/EC

5.

(i) RELEVANT EC TRANSPOSED HARMONISED STANDARDS

BS EN 12100 2010 Safety of machinery. General principles for design – Risk Assessments and Risk Reduction.

(ii) NATIONAL STANDARDS USED

BS 6571 Pt. 4 1989 Specification for barrier type parking control equipment.

(A full list of standards used is available on request)

6. DECLARATION:

I certify that on completion of manufacture of the machine detailed in (3) above that a full conformity assessment has been completed and relevant essential Health & Safety requirements complied with.

Name: **Alan Osgerby** **Kevin Smith**

Status within Company: **Joint Managing Directors**

Signatures:

Company Registration No: 1070158 VAT: 416 1521 86 Member of: Constructionline, Safecontractor, CHAS

QCD 04

14. REVISION RECORD

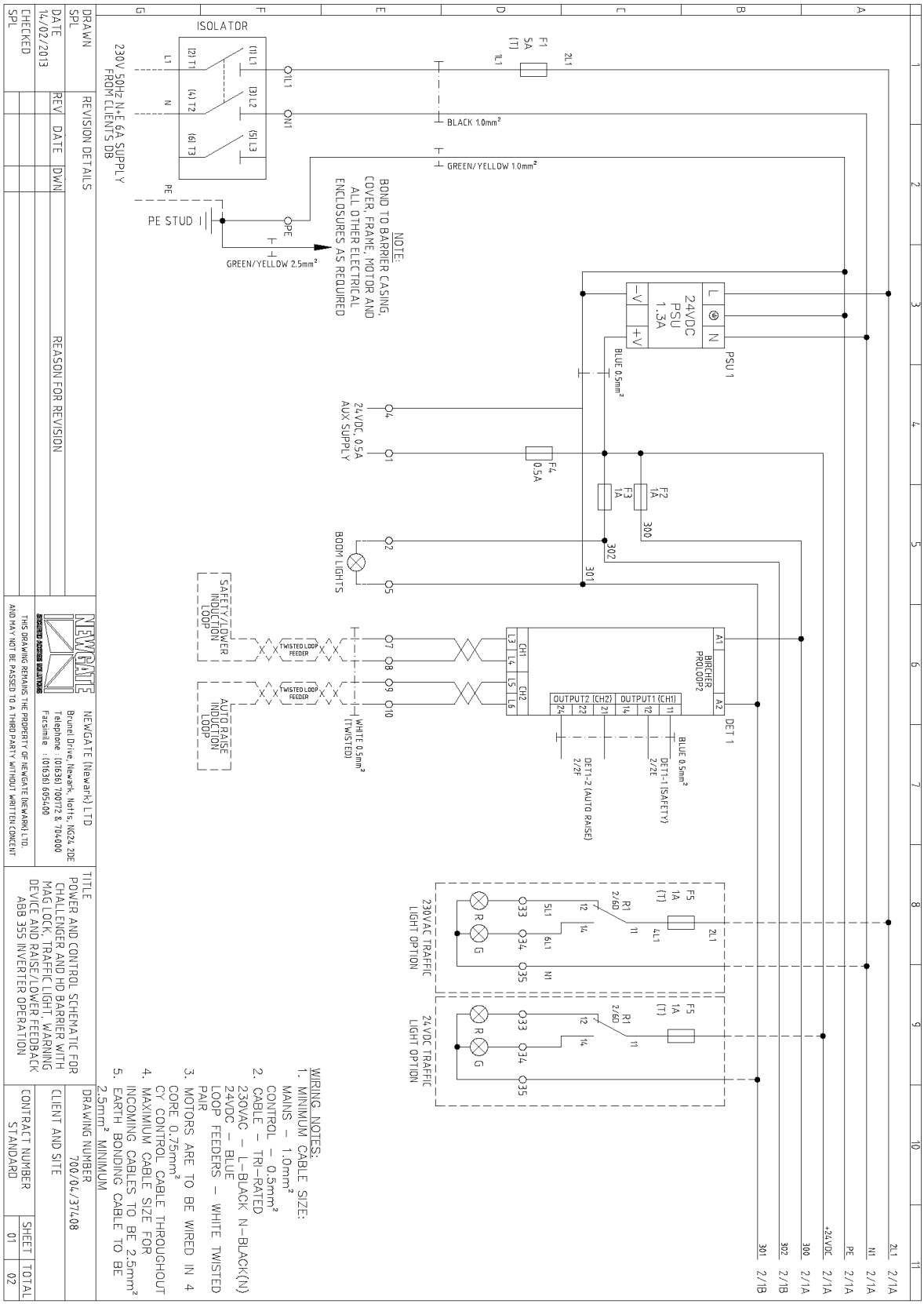
Rev. No.	Revision Description	Date

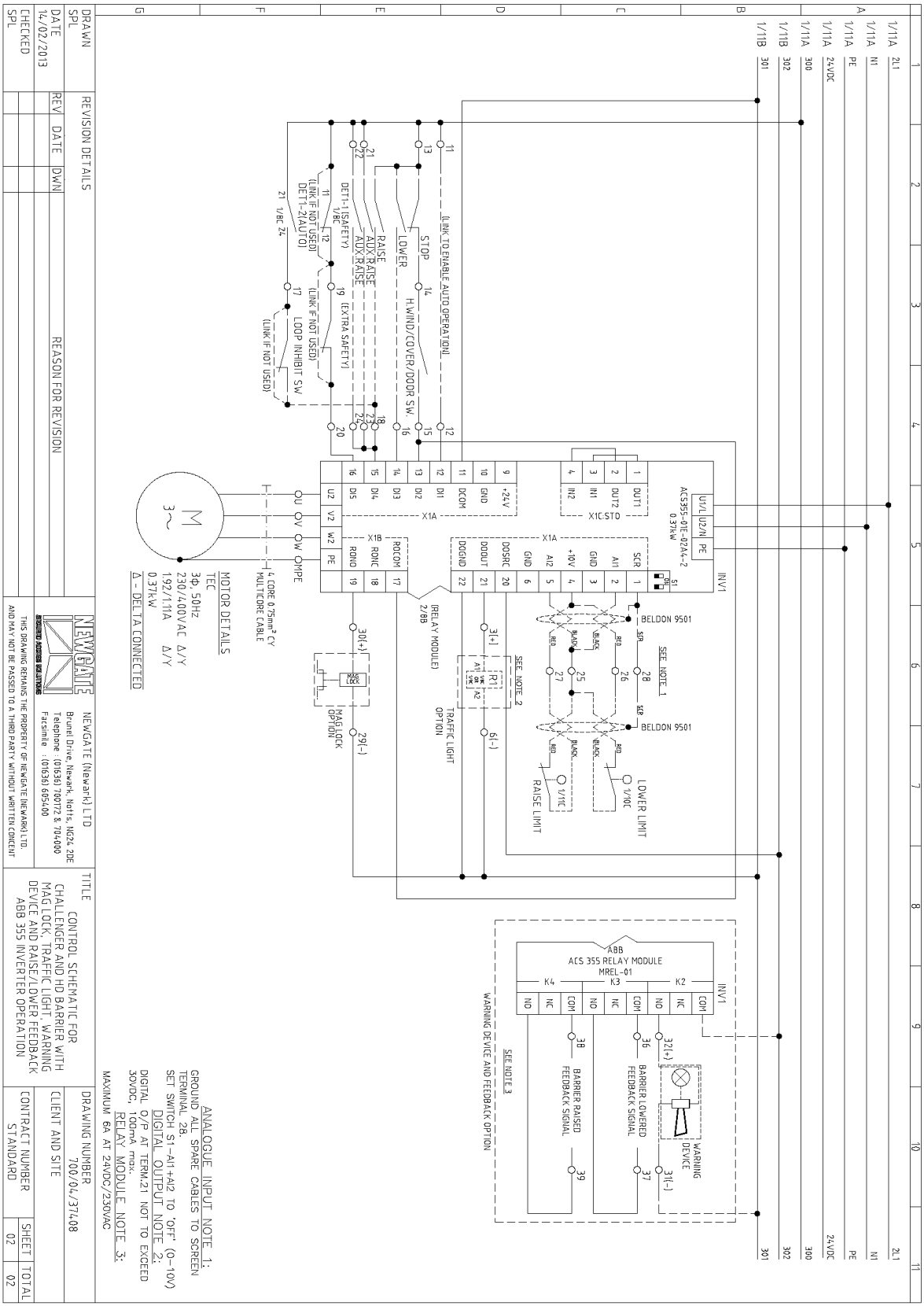
15. SERVICE – REPAIR

DATE	REPAIR No.	SERVICE	NEXT DUE
01-01-2010	123456	Annual Service	01-01-2011

16. APPENDIX 1

a) Standard Electrical Assembly Drawings 700/04/37408 (Sheets 1-2)
b) Bircher Proloop2 Manual


ISOLATOR
230V 50Hz N+E 6A SUPPLY FROM CLIENTS DB
F1 5A (T)
BLACK 1.0mm²
GREEN/YELLOW 1.0mm²
PE STUD
GREEN/YELLOW 2.5mm²
NOTE: BOND TO BARRIER CASING, COVER, FRAME, MOTOR AND ALL OTHER ELECTRICAL ENCLOSURES AS REQUIRED
24VDC PSU 1.3A
PSU 1
BLUE 0.5mm²
24VDC, 0.5A AUX SUPPLY
F4 0.5A
F2 1A
F3 1A
BOOM LIGHTS
SAFETY/LOWER INDUCTION LOOP
AUTO RAISE INDUCTION LOOP
TWISTED LOOP FEEDER
WHITE 0.5mm² (TWISTED)
BIRCHER PROLOOP2
OUTPUT2 (CH2)
OUTPUT1 (CH1)
DET 1
DET1+2 (AUTO RAISE)
DET1+1 (SAFETY)
230VAC TRAFFIC LIGHT OPTION
24VDC TRAFFIC LIGHT OPTION
F5 1A (T)
R1 2/6D
WIRING NOTES:
1. MINIMUM CABLE SIZE:
MAINS – 1.0mm²
CONTROL – 0.5mm²
2. CABLE – TRI-RATED
230VAC – L-BLACK N-BLACK(N)
24VDC – BLUE
LOOP FEEDERS – WHITE TWISTED PAIR
3. MOTORS ARE TO BE WIRED IN 4 CORE 0.75mm²
CY CONTROL CABLE THROUGHOUT
4. MAXIMUM CABLE SIZE FOR INCOMING CABLES TO BE 2.5mm²
5. EARTH BONDING CABLE TO BE 2.5mm² MINIMUM
DRAWN SPL
CHECKED SPL
DATE 14/02/2013
REVISION DETAILS
REV DATE DWN REASON FOR REVISION
NEWGATE (Newark) LTD
Brunel Drive, Newark, Notts, NG24 2DE
Telephone : (01636) 700172 & 704000
Facsimile : (01636) 605400
THIS DRAWING REMAINS THE PROPERTY OF NEWGATE (NEWARK) LTD. AND MAY NOT BE PASSED TO A THIRD PARTY WITHOUT WRITTEN CONSENT
TITLE
POWER AND CONTROL SCHEMATIC FOR CHALLENGER AND HD BARRIER WITH MAG LOCK, TRAFFIC LIGHT, WARNING DEVICE AND RAISE/LOWER FEEDBACK ABB 355 INVERTER OPERATION
CONTRACT NUMBER STANDARD
DRAWING NUMBER 700/04/37408
CLIENT AND SITE
SHEET 01
TOTAL 02


DRAWN SPL
DATE 14/02/2013
CHECKED SPL
REVISION DETAILS
REV DATE DWN REASON FOR REVISION
NEWGATE (Newark) LTD
Brunel Drive Newark, Notts, NG24 2DE
Telephone : (01636) 700172 & 704000
Facsimile : (01636) 605400
THIS DRAWING REMAINS THE PROPERTY OF NEWGATE (NEWARK) LTD. AND MAY NOT BE PASSED TO A THIRD PARTY WITHOUT WRITTEN CONSENT
TITLE
CONTROL SCHEMATIC FOR CHALLENGER AND HD BARRIER WITH MAGLOCK, TRAFFIC LIGHT, WARNING DEVICE AND RAISE/LOWER FEEDBACK ABB 355 INVERTER OPERATION
DRAWING NUMBER 700/04/3740B
CLIENT AND SITE
CONTRACT NUMBER STANDARD
SHEET 02 TOTAL 02
ANALOGUE INPUT NOTE 1:
GROUND ALL SPARE CABLES TO SCREEN TERMINAL 28.
SET SWITCH S1-AI1 +AI2 TO 'OFF' (0-10V)
DIGITAL OUTPUT NOTE 2:
DIGITAL O/P AT TERM.21 NOT TO EXCEED 30VDC, 100mA max.
RELAY MODULE NOTE 3:
MAXIMUM 6A AT 24VDC/230VAC
ACS355-01E-02A4-2
0.37kW
INV1
X1A
X1B
X1C:STO
BELDON 9501
LOWER LIMIT
RAISE LIMIT
TRAFFIC LIGHT OPTION
MAGLOCK OPTION
(RELAY MODULE)
LINK TO ENABLE AUTO OPERATION
STOP
LOWER
RAISE
AUX RAISE
H.WIND/COVER/DOOR SW.
LOOP INHIBIT SW.
(LINK IF NOT USED)
(EXTRA SAFETY)
MOTOR DETAILS
TEC
3Φ, 50Hz
230/400VAC Δ/Y
192/111A Δ/Y
0.37kW
Δ - DELTA CONNECTED
4 CORE 0.75mm² CY
MULTICORE CABLE
ABB
ACS 355 RELAY MODULE
MREL-01
K4 K3 K2
BARRIER RAISED FEEDBACK SIGNAL
BARRIER LOWERED FEEDBACK SIGNAL
WARNING DEVICE
WARNING DEVICE AND FEEDBACK OPTION
SEE NOTE 1
SEE NOTE 2
SEE NOTE 3

EN ISO 9001 Quality

BIRCHER Reglomat

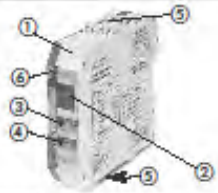
ProLoop2

Loop detector for industrial doors and gates, car parks and parking bollards

ENGLISH

Translation of the original instructions

General



① ProLoop2 loop detector DIN variant, mounting rail installation
② LCD display
③ «Mode» button
④ «Data»-button
⑤ Terminals
⑥ Info LED

1 Safety instructions

These devices and their accessories may only be operated in compliance with the operating instructions (intended use)!
These devices and their accessories may only be commissioned by trained and qualified personnel.
These devices may only be operated with the intended operating voltages and parameters.
If malfunctions occur that cannot be rectified, shut down the device and send it in for repair.
These devices are only allowed to be repaired by the manufacturer. Tampering and alterations are not permitted. This will invalidate all guarantee and warranty claims.

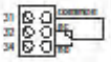
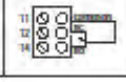
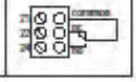
2 Mechanical mounting in the switch cabinet

The ProLoop2 is mounted on a 35 mm mounting rail acc. to EN 50 022 in the switch cabinet.
The terminals are pluggable and coded.

3 Electrical connection

The loop connection wiring to the loop detector must be twisted at least 20 times per meter.
Please wire the device in accordance with the terminal assignment. Make sure the terminals are assigned correctly.

3.1 ProLoop2 terminal connection diagram

A: Supply voltage connection	B: Loop connection 1-channel device	C: Loop connection 2-channel device	D: Alarm output connection (optional)	E: Relay connection output 1	F: Relay connection output 2
					

Output connection options (depending on the options ordered):

	Relay assignment:	Output connection diagram:
1-loop device	Output 1	E
	Output 2	F
	Alarm output	D

	Relay assignment:	Output connection diagram:
2-loop device	Output 1+2	E, F
	Alarm output	D

4 Value and parameter setting options

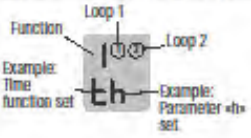
General

The settings of the ProLoop devices in this chapter are shown and explained for the 1-loop device. The settings for loop 2 of a 2-loop device should be made using the corresponding method.

4.1 LCD display and controls

Standard display 1-loop device	Standard display 2-loop device	Control button	Control button
			

Explanation of the LCD display



Explanation of the LED

Red + green:	Start-up phase
Green:	Operation
Red + green:	Configuration
Flashing green:	Output 1 and/or 2 activated
Flashing red:	Error
Flashing red + green:	Simulation

4.2 Basic functions 0 (see Table 4.11a for settings)

Parameters

1: Door and gate The assigned output relay picks up when the loop is activated and drops out when the loop returns to a non-activated condition.

2: Barrier The assigned output relay picks up when the loop is activated and drops out when the loop returns to a non-activated condition.

3: Quiescent current The assigned output relay drops out when the loop is activated and picks up again when the loop returns to a non-activated condition.

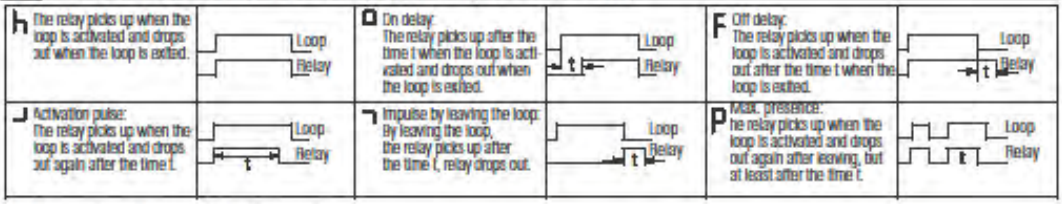
4: Direction logic Output 1 switches if an object moves from loop 1 to 2. Output 2 switches if an object moves from loop 1 to 2. **Both loops** must be activated for a short time. The outputs are reset again when loop 2 returns to a non-activated condition. Both loops must have returned to a non-activated condition for another direction detection.

0: Loop 2 Loop 2 can be deactivated in a 2-loop device.

Relay response to malfunctions (see chapter 6 Troubleshooting):

1. Door/gate systems	A malfunction causes the output relay to be released. The alarm relay drops out.	2. Barrier	A malfunction causes the output relay to pick up. The alarm relay drops out.	3. Quiescent current	A malfunction causes the output relay to be released. The alarm relay drops out.	4. Direction logic (2-loop device only)	A malfunction causes the output relays to be released. The alarm relay drops out.

4.3 Time functions 1, time unit 2 and time factor 3 (Einstellungen siehe Tabelle 4.11a)



4.4 Sensitivity 4 (see Table 4.11a for settings)

The sensitivity 5 (=Sensitivity) of the loop detector can be adapted in 9 stages: 51 = Lowest sensitivity, 59 = Highest sensitivity, 54 = Factory setting.

4.5 Automatic Sensitivity Boost ASB 5 (see Table 4.11a for settings)

ASB (=**A**utomatic **S**ensitivity **B**oost). ASB is required in order to be able to recognise trailer drawbars after activation.

4.6 Frequency 6 (see Table 4.11a for settings)

Four different frequencies F1, F2, F3, F4* can be set in order to avoid interference when using several loop detectors.

4.7 Direction logic 7 (see Table 4.11a for settings)

The direction logic function can only be used with a 2-loop device. Direction logic must have been set in the basic function (see chapter 4.2). Detection can be performed from: → Loop 1 to loop 2 → From loop 2 to loop 1 → from both directions

4.8 Output 2 8 (see Table 4.11b for settings)

In a device with 2 outputs, output 2 can be either activated or deactivated. In ProLoop 11, output 2 can also be set as an alarm output.

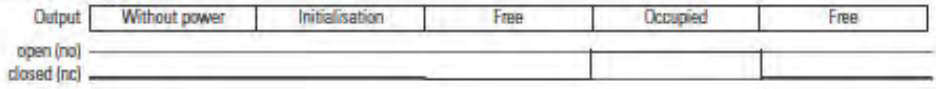
4.9 Protection against power failure 9 (see Table 4.11a for settings)

P 1 = Protection against power failure activated: The sensitivity is restricted to 1–5.

4.9.1 Signal characteristics with protection against power failure active (Function 9 = 1)

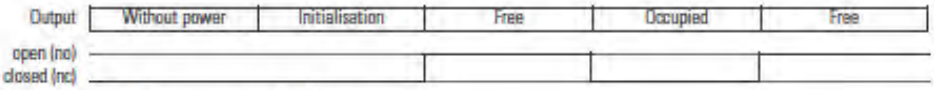
For Activation (e.g. Barriers)

Basic function 0 = **2 Barrier systems**



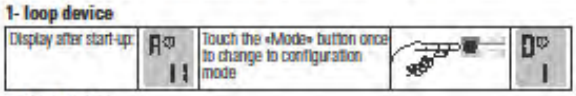
For Safeguarding (e.g. Barriers, bollards)

Basic function 0 = **3 Quiescent current**

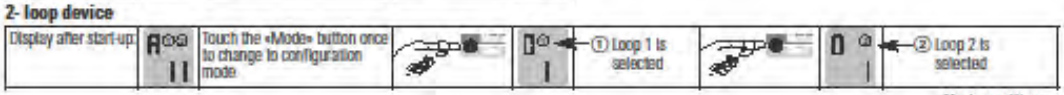


4 Changeover from operation to configuration mode

1- loop device



2- loop device



*factory settings

4.11 Configuration mode

Note on 2-loop device: After loop 1 has been set, the parameters for loop 2 are set (make the settings using the same procedure) and the settings are not shown in the table with the exception of the direction logic

Table 4.1a Settings

Function	LCD display	Button operation parameter							Notes
0 - Basic function	0 1		Door/gate systems* (0 1)	Barrier systems (0 2)	Quiescent current (0 3)	Direction logic (0 4)	Only 2-loop device: **Loop 2** activated: <1>* deactivated: <0> (0 1)		With deactivation of Loop 2 the output 2 becomes configurable → 8
1 - Time function	1 th		–* (1 th)	On delay (1 to)	Off delay (1 tF)	Activation pulse loop (1 t┘)	Time funct. pulse when loop is exited (1 t┐)	Max. presence (1 tP)	
2 - Time unit	2 th	This display does not appear with time function th (–)	0.1 second (2 tc)	1 second* (2 tC)	1 minute (2 tn)	1 hour (2 th)			The time unit multiplied by the time factor gives the set time.
3 - Time factor	3 C 1	This display does not appear with time function th (–)	1* (3 C 1)	Set value between 1 and 99 by touching or holding the <Data> button					
4 - Sensitivity	4 S7	S = Sensitivity	4* (4 S6)	Set value betw. 1 (lowest) and 9 (highest sens.) by touching or holding the <Data> button					Setting restrictions: rotection against power failure (with P1): Value 1-5
5 - Automatic Sensitivity Boost ASB	5 A1	ASB stands for Automatic Sensitivity Boost	Switched off* (5 A0)	Switched on (5 A1)					
6 - Frequency	6 F4		Frequency F4* (6 F4)	Frequency F1 (6 F1)	Frequency F2 (6 F2)	Frequency F3 (6 F3)			
7 - Direction logic	7 d--	This display appears only with a 2-loop device	Both directions* (7 d--)	Loop 2 to loop 1 (7 d -)	Loop 1 to loop 2 (7 d-)				The direction logic function can only be implemented with 2 loops and a 2-loop device
8 - Output 2 configuration	8 o 0		Output 2 is switched off (8 o 0)	Output 2 is activated (8 o 1)					Loop 2 has to be deactivated <0>
9 - Protection against power failure	9 P 0		Switched off* (9 P 0)	Switched on (9 P 1)					If parameter 9=P 1 parameter 5 must be set to off (5=A0)
A - Operating mode	A 11		Operating mode (A 11)	Error memory slot 1 (1 000)	Error memory slot 2 (2 000)	Error memory slot 3 (3 000)	Error memory slot 3 (4 000)	Error memory slot 5 (5 000)	Possible displays in case of error: see chapter 6 of these operating instructions

* Factory setting

Table 4.11b Different product variants (setting options)

ProLoop2	Loop 2	Output 2	Notes
1-loop device, 2 relays	–	1*/0	1 = Output 2 on; 0 = Output 2 off
2-loop device, 2 relays	active	–	Parameter 8 is not possible and is not displayed
	deactivated	1/0*	1 = Output 2 on; 0 = Output2 off

5 Simulation mode

Changeover to simulations mode	Press «Sim1» button		Press «Sim2» button		Press «Sim2» button		Press «Sim2» button		Anmerkungen
Changeover to simulation mode: Press the Sim1 + Sim2 buttons simultaneously for 2 seconds.	2 seconds	+	2 Sekunden	SIM LO					
Simulation mode:									
Activation of the loop		SIM LO		SIM L1		SIM L0		SIM L1	*L0* - No loop activation (time functions are active) *L1* - Loop activation (time functions are active) ① - Loop 1 ② - Loop 2
Activation of the output relay		SIM a0		SIM a1		SIM a0		SIM a1	*a0* - Activation of output *a1* - Activation of output ① - Loop 1 ② - Loop 2
Alarm output activation		SIM A0		SIM A1					*A0* - Switch off alarm relay *A1* - Switch on alarm relay
Inductance of loop 1		225							Measurement of the inductance, value in µH
Inductance of loop 2		221							Measurement of the inductance, value in µH
Exiting simulation mode	2 seconds	RUN							Return to function mode

6 Troubleshooting

E 001 If an error occurs, operating mode «A» and error display «E» light up alternately and an error code such as E 012 is displayed. The LED changes to flashing red, the 4 most recent errors are stored and can be interrogated.

Display	E001	E002	E011	E012	E101	E102	E201/E202	E301	E302	E311	E312
Error	Interruption Loop 1	Interruption Loop 2	Short circuit Loop 1	Short circuit Loop 2	Under-voltage	Over-voltage	Saving error	Loop 1 too large	Loop 2 too large	Loop 1 too small	Loop 2 too small

1 001 Briefly pressing the «Data» button shows the last of 4 errors on the display. Another short press switches to the error before that, and so on. When the button is pressed for the 5th time, the device switches back to automatic mode. If you press the «Data» button for 4 seconds during the query, all error messages are deleted. The figure shows memory slot 1 in which error 001, Interruption loop 1, has been stored (example).

7 Reset

2 Sekunden	**Reset 1 (recalibration)** The loop(s) is/are recalibrated.
+ 8 Sekunden	**Reset 2 (factory setting)** All values (except the error memory) are reset to the factory settings (see Table 4.11a). The loop(s) is/are recalibrated.

8 Most important technical data

	ProLoop2
Supply voltage / Power consumption	24 VAC -20% to +10%, max. 2 VA 24 VDC -10% to +20%, max. 1.5 W 100-240 VAC ± 10%, 50/60 Hz, max. 2.9 VA
Loop inductance	max. 20 to 1000 µH, ideally 80 to 300 µH
Loop connection wiring	At 20-40 µH: max. 100 m at 1.5 mm² max. 200 m with 1.5 mm² min. twisted 20x/m
Loop resistance	< 8 Ohm with connection wire
Output relay (loop)	max. 240 VAC; 2 A / 30 VDC; 1 A; AC-1
Output relay (alarm)	max. 40 VACDC; 0.3 A; AC-1
Dimensions	22.5 x 94 x 88 mm (B x H x T)
Housing mounting	Direct DIN rail mounting
Connection type	Plug-in terminals
Protection class	IP 20
Approvals, safety	See declaration of conformity at www.bircher-reglomat.com
Operating temperature	-20°C to +60°C
Storage temperature	-40°C to +70°C
Air humidity	<95% non-condensing

9 Declaration of conformity

Manufacturer: Bircher Reglomat AG, Wiesengasse 20, CH-8222 Beringen declares that the
Product, type: ProLoop2
Model: 24V AC/DC, UVAC, 1-loop devices, 2-loop devices
Intended purpose: Programmable loop detector for controlling gates and barriers as well as for regulating and counting cars in parking areas
If used in accordance with the intended purpose, complies with the basic requirements acc. to:
R&TTE Directive, Appendix III 1999/5/EC

10 Contact data

Manufacturer: **Bircher Reglomat AG**
Wiesengasse 20
CH-8222 Beringen
Switzerland

www.bircher-reglomat.com
info@bircher.com
Phone +41 (0)52 687 1111
Fax +41 (0)52 687 1112

11/11

> The Challenger provides smooth and consistent operation in the most demanding parking environments

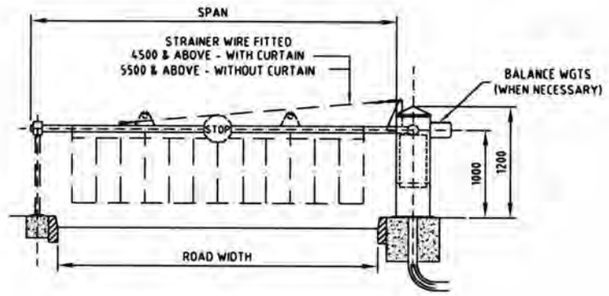
Challenger Rising Arm Barrier

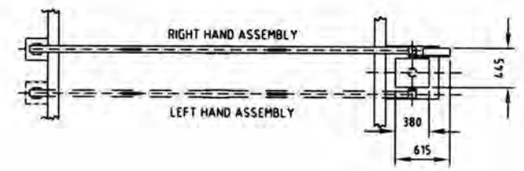
Reliable and uncompromising, the ever popular Newgate Challenger sets the standard for the very latest in quick to install, cost effective and simple to operate traffic barrier technology.

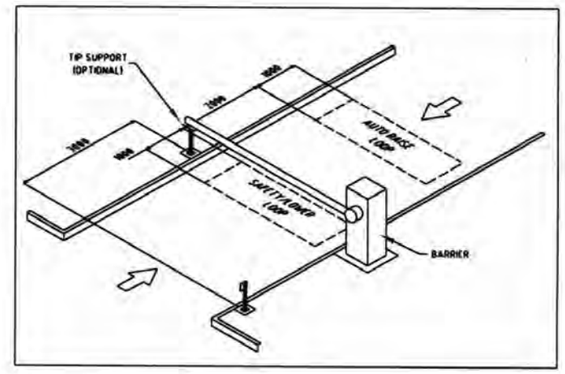
Manufactured from high quality steel and combining inverter drives and relay logic, the Challenger provides smooth and consistent operation in the most demanding parking environments. These include staff, visitor and underground car parks in commercial, retail, public and private sectors.

The Challenger barrier can be controlled from a manned security point or automatically by the vehicle occupant, using a wide range of access control systems. Proximity card, radio, token, keypad and intercom to name, but a few. These combined with induction loop or photocell facilities ensure that the barrier arm will open/close smoothly, safely and efficiently upon activation.

Challenger conforms to BS6571 and meets the stringent requirements of local authorities, government departments, The Ministry of Defence and other specifying bodies in the UK and international market places.







Construction	Frame - Steel Arm - Aluminium
Span(s)	Up to 7000mm (without curtain) Up to 6000mm (with half curtain) Up to 5000mm (with full curtain)
Dimensions	See above details
Drive Unit	Motor and Gearbox
Operating Supply	230v 1Ph 50Hz - 6 amps
Operating Speed	2.0 to 7.0 seconds
Power	0.37 Kw

Standard Opening	90 Degrees
Manual Operation	Included as Standard
Finish	Cabinet - Red (corporate colours available on request) Top Cover - White Arm - Red
Control Options	Card, Radio, Token, Keypad, Intercom, Push Button, Vehicle Transponder, Induction Loop and Photocell
Safety Features	Induction Loop or Photocell safety available on request
Accessories	Corporate Colours, Stop Signs, Boom Lights, PVC Half/Full Curtains, Tip Support Post, Access Reader Posts
Approved Standards	C.E. BS6571 PT4

Vysionics V103 Bollard Cameras

V103 Bollard Cameras

Our range of Bollard ANPR cameras have now been updated with a wealth of new features and improvements.

These cameras provide the same high quality images as our V102 range, but in a vandal-resistant enclosure that allows you to put the camera right where it needs to be. Particularly suited to automatic entry systems, these cameras are available in both standard and dual versions, and are simple to install and maintain.

Main Features

- High quality ANPR camera suitable for use with any of our ANPR processors or with DVR
- Instant set up with simple adjustment of zoom and focus
- Pulsed infrared illumination (as used in the V102 range)
- High performance optical filtering for perfect images in full sun or vehicle headlights
- Sony CCD sensor with 620 TV line resolution
- Minimum illumination 0 lux (dual version 1lux for colour overview images)
- Shutter speed of 1/100,000th sec (ANPR camera) ensures razor sharp images of moving vehicles
- Vandal-resistant cabinet with 6mm Lexan window
- Full height lockable access door simplifies installation and maintenance
- Rotating cabinet with base clamp for easy pan adjustment
- Cable entry by underground duct or surface conduit

These cameras are suitable for a wide range of applications but are particularly suited to automatic entry systems. It is essential with all ANPR systems to install the camera in the right location and this can become challenging at entrances with gates and barriers.

In order to grant access for the correct vehicle, the ANPR camera must view the first vehicle in the queue. This can be almost impossible with a pole-mounted ANPR camera, particularly if the barrier is fitted with skirts or for gate entrances. The bollard camera is the ideal solution for these situations and ensures the camera can be installed in the perfect location for maximum recognition.

The bollard camera can be supplied in a range of custom colours to suit the intended location and have been designed to resist vandalism. The cabinet is constructed from 2mm steel and is completed by a 6mm thick Lexan window. The full height rear access door simplifies both installation and maintenance and is fitted with a key-lock as standard.

The low height of the ANPR Bollard camera ensures that the license plate images are extremely sharp and free from skew, so allowing the ANPR processor to achieve maximum recognition accuracy. To minimise image degradation from the sun, these new models now feature an extendable sun-hood which provide additional shade for both the ANPR and optional overview camera.

The camera features a full height rear door which makes installation and maintenance very straight forward.

VYSIONICS V103

Dual Camera Version

These bollard ANPR cameras employ special optical filtering to ensure the highly reflective vehicle registration plates are correctly exposed under al lighting conditions. Whilst this ensures our processors achieve the highest possible recognition accuracy, it does also mean that images from an ANPR camera are rather dark and lacking any colour information (see below ANPR image).

If you need additional colour images of each vehicle in order to assist in determining make, model and colour, you will need to select the dual version of the bollard camera. This include both an ANPR camera plus an additional high resolution overview camera.

Our overview cameras feature a Sony ExView sensor and offer very sharp, full colour images with 560 TV line resolution. Like the ANPR camera, the overview camera has simple adjustment of both zoom and focus.

ANPR Image **Overview Image**

Whilst the ANPR camera will not be affected by the headlight glare, remember that the colour overview images at night will no be ideal due to the very low camera position. If you require high quality overview images at night when using a bollard camera, please consider using our stand-alone day/night overview camera and installing this at a height sufficient to avoid headlight glare.

Product Codes

Code	Model Description
V103-1	V103 Bollard Camera with 3-8 metre zoom
V103-2	V103 Bollard Dual Camera with 3-8 metre zoom

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VYSIONICS
Intelligent Traffic Solutions

Quick Start Guide

ANPR Processor

1-Lane Network
2-Lane Network
3-Lane Network
4-Lane Network

About this Guide
This guide is intended for users and commissioning engineers. It covers the initial setup of the complete range of ANPR processors but much of the content also applies to the range of ANPR processors which are based on standard PC architecture.

Safety Notices Used In This Manual
Important! - Indicates a potential hazard that could seriously damage the equipment or endanger the engineer or user. Do not proceed beyond these notices until you have fully understood the implications.

Legal Notice
Camera surveillance is prohibited by law in some countries. Check the laws in your local region before using ANPR cameras and associated equipment.

Liability
Every care has been taken in the preparation of this manual. Please inform us of any inaccuracies or omissions. We cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals without prior notice. We make no warranty of any kind with regard to the material contained within this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. We shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance or use of this material.

Trademark Acknowledgments
Internet Explorer, Microsoft and Windows are registered trademarks of the respective holders.

Support
Should you require any technical assistance, please contact your supplier.

1. Description

These ANPR processors will recognise and log vehicle number plates from live ANPR camera video feeds. The processors feature a wide range of interfaces which enable specific actions to be taken based on whether the vehicle is known to the system; these include opening vehicle barriers or gates, displaying custom messages on driver feedback signs or raising alerts.

The processors are available in 1, 2, 3, or 4-lane versions and all feature networking as standard, apart from model 5310 which is supplied as part of the Kit product. However, all models can be upgraded in the field without restriction and without the need for any additional hardware.

2. Installing the Processor

These units are intended for rack mounting but may also free-stand. The rack mount handles may be removed for free-standing use.

VGA Monitor

Choose a location where the various cables can be easily managed. If using the VGA output, the unit will need to be very close to the display unless you are intending to use a VGA extender. Similarly, the USB keyboard must also be adjacent to the processor unless third party extenders are used.

The processor must be used with the supplied mains adaptor. Use of any other power supply may damage the unit or lead to unreliable operation.

3. Set Up

To start the processor, momentarily press the *Start* button on the rear panel. The unit will take 2-3 seconds before the front panel indicators light up - this is normal. Do not repeatedly press the rear *Start* button or hold it down continuously.

The initialisation process will take a minute before the *Main Screen* appears and unit is ready for use. All processors are factory set with lane 1 pre-configured. This means that you just need to connect an ANPR camera to the *Lane 1 ANPR* BNC input on the rear panel in order for vehicles to be automatically recognised and appear on the *Main Screen.*

The main reason for vehicles not be recognised at this stage is due to poor camera set up. The golden rules are:-

(i) Always view vehicles from the front.
(ii) Ensure the number plates are large enough. The width of the vehicle should fill the frame (see image below left).
(iii) Ensure number plates are fairly level (horizontal) within the image.
(iv) Set the camera exposure for the reflective number plate, not the general scene (which will typically be very dark).

Perfect ANPR Image

Poor ANPR Image

4. Logging On

Before you can change any settings you will need to log on. On first use, the only account available will be the engineer's account. The username and password are supplied on a separate sheet packed with the processor.

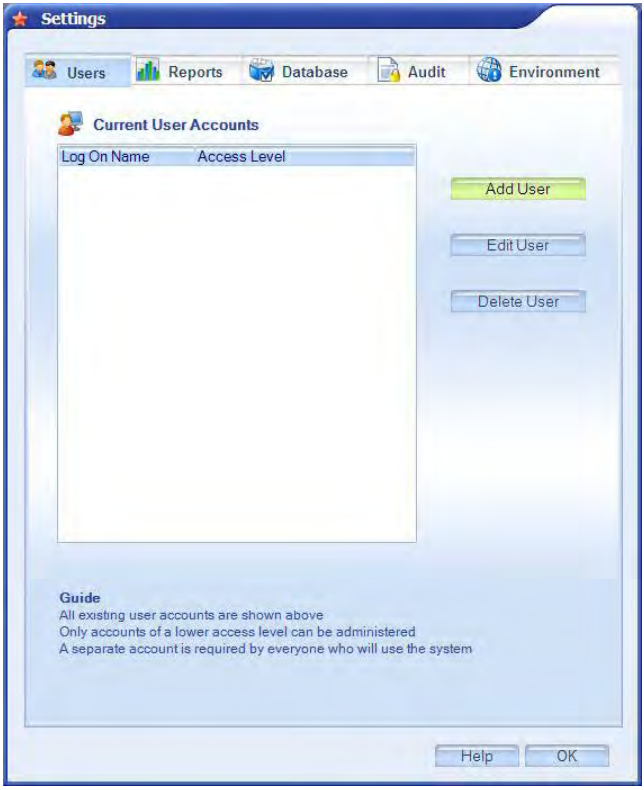
To log on, press the *Log On* toolbar button on the top left of the *Main Screen* (or press F2). The log on screen appears:-

Log On Screen

The engineer's account has unrestricted access to all areas, including diagnostics. This password should not be provided to the end user – instead, the commissioning engineer should create at least one Administrator account for the end user to use.

5. Adding Further Users

To add an additional user account, first ensure you are logged-on and then choose the *Settings* toolbar button at the top of the *Main Screen*.



Add User Account

Note that you are only able to add users with a lower account access than your own.

6. Configuring Additional Cameras

Each processor can accept up to 4 ANPR cameras and each of these four lanes may also have up to 3 overview cameras. The total number of possible video inputs is therefore 16.

ANPR cameras are designed to read highly reflective number plates and this usually results in a very dark image (see below left). It is often desirable, however, to record one or more high quality colour overview images of each recognised vehicle to aid identification (below right).

Typical ANPR Image

Typical Overview Image

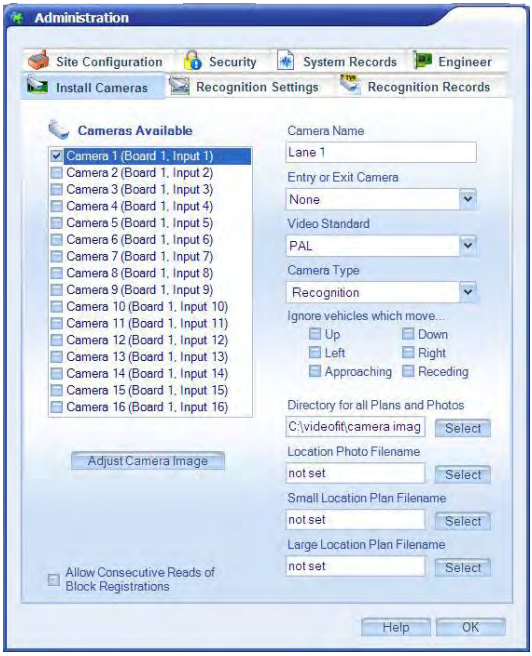
Eight BNC input connectors are provided on the rear of the processor. These are for the ANPR cameras (4 lanes) and one colour overview camera per lane. The remaining 8 overview cameras can be accessed using the optional Overview Expander (part 3730).

Although lane 1 is pre-configured, if you wish to add further ANPR or overview cameras you will need to configure them (see opposite).

Note that not all of the lanes may be available depending on the processor model.

6. Configuring Additional Cameras (continued)

To add additional cameras, first ensure you are logged-on with either the engineer or an administrator account and then choose the *Admin* toolbar button at the top right of the *Main Screen*. Then choose the *Install Cameras* tab:



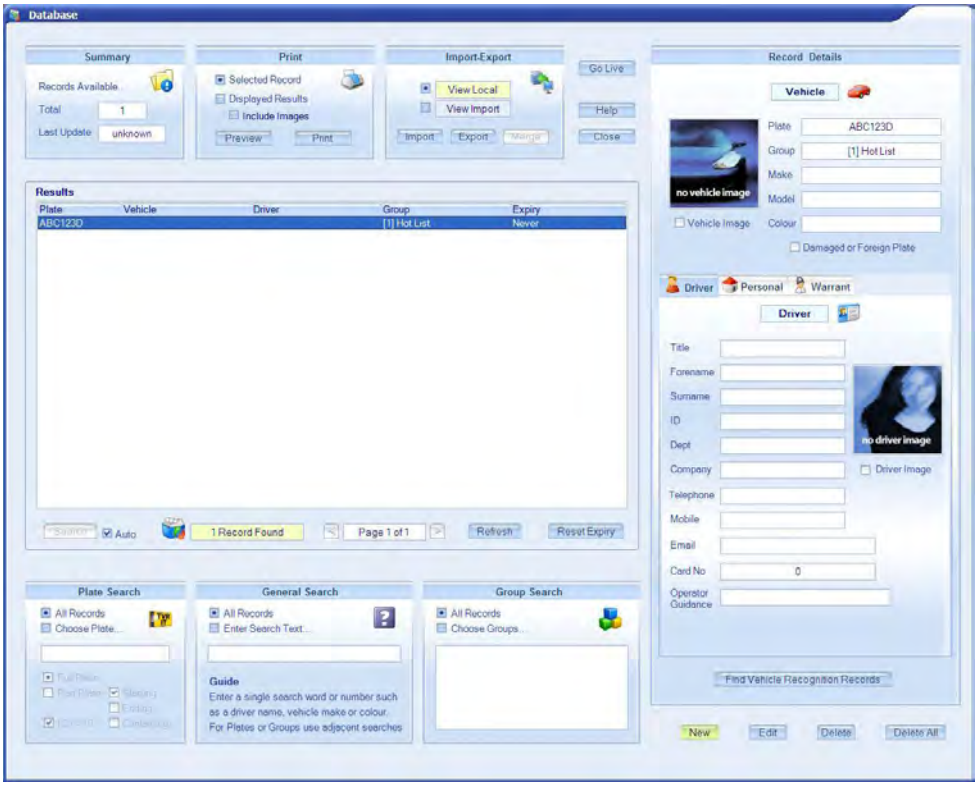
Add Cameras

Up to 16 cameras (4 lanes) may be displayed in the above form depending on the model. For each lane there is single ANPR camera and 3 overview cameras. Tick only those cameras you wish to use.

If you wish to view the live video of any input, select the camera from the list and press the *Adjust Camera Image* button.

7. Known Vehicle Database

One of the main benefits of an ANPR system is the ability to take various actions based on whether the vehicle is known. Allowing known vehicles to have automatic access to a site or raising automatic alerts for suspect vehicles are common requirements.



Database Screen

Known vehicles are entered in the *Database* screen. To display this window, choose the *Database* toolbar button at the top of the *Main Screen*.

8. Adding Vehicles to the Database

To manually add a new vehicle, press the *New* button in the bottom right hand corner of the screen. The minimum information you will need to enter are the vehicle registration and the group, although the access card number will also be required if you are using the optional Weigand interfaces.

It is the group which determines whether a vehicle will be allowed entry through a particular barrier as well as the content of the LED Sign message, alerts and offences. You should therefore group vehicles (staff, contractors, deliveries, etc) to allow you to control access by a simple modification to the group settings (see next section).

9. Additional Database Groups

There are almost 1,000 groups available for you to use. Groups 1 and 2 are preset as Hotlist and Visitor respectively and cannot be changed.

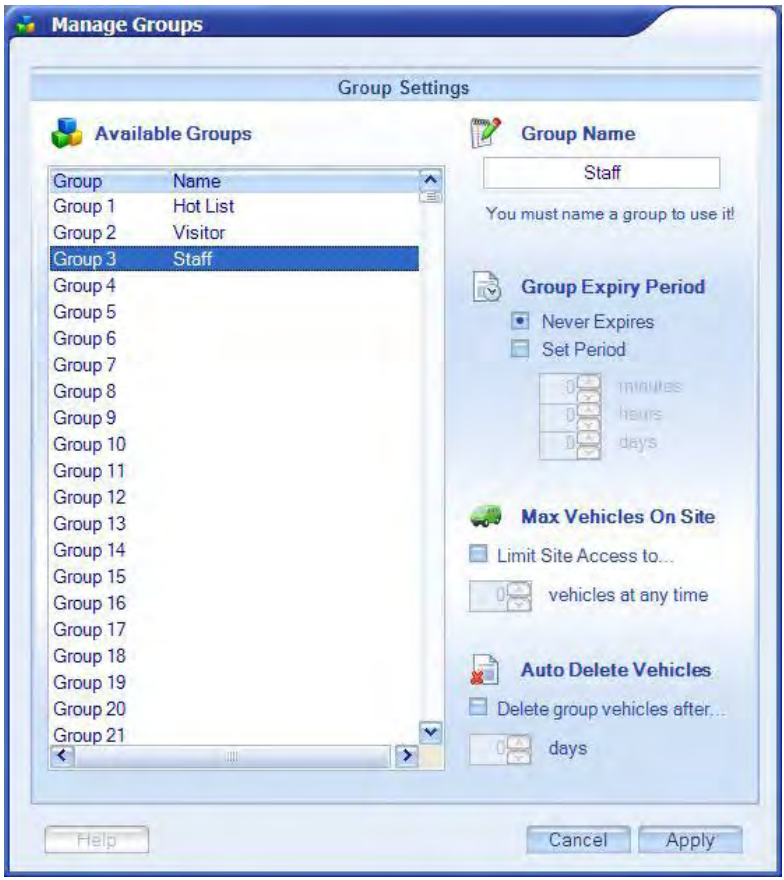
To add additional groups, ensure you are logged-on with sufficient access rights and choose the *Settings* toolbar at the top of the *Main Screen*. Then choose the *Database* tab.

The actions for each group are configured by choosing the *Group Settings* button (see next section).

Database Settings Screen

10. Group Settings

Here you can name each group, apart from groups 1 & 2 which are fixed. Use the *Group Expiry Setting* if you wish the vehicles to have only a limited period of access (the time period commences when that vehicle is added to the database). This is useful for custom visitor groups, for example, such as *Visitor 8 Hour* or *Contractor 30 Day*.

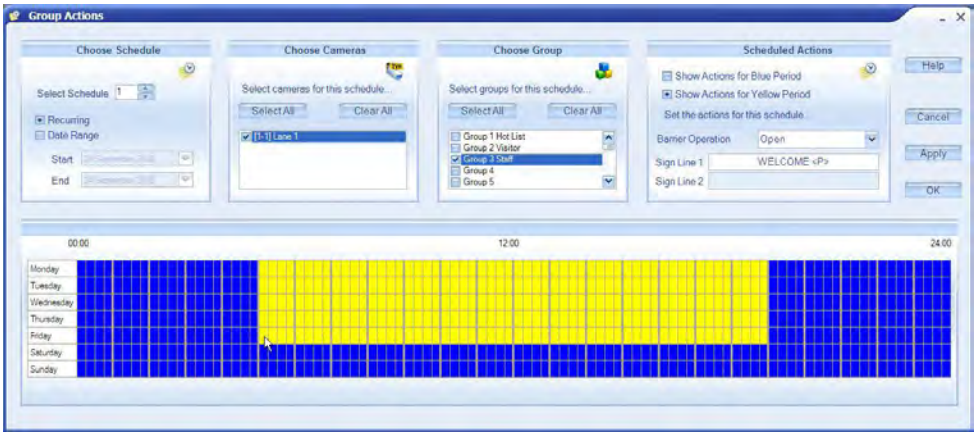


Adding Database Groups

11. Barrier Control & LED Sign Messages

Now that you have set up your groups you can configure which groups are allowed to open which barriers and also apply a time schedule, if required.

Choose the *Define Schedule* button from the *Database Settings* screen to display the scheduled group actions:-



Group Actions & Time Schedules

There are 8 schedules available for you to use, but please ensure you press the *Apply* button to save your settings before changing schedules.

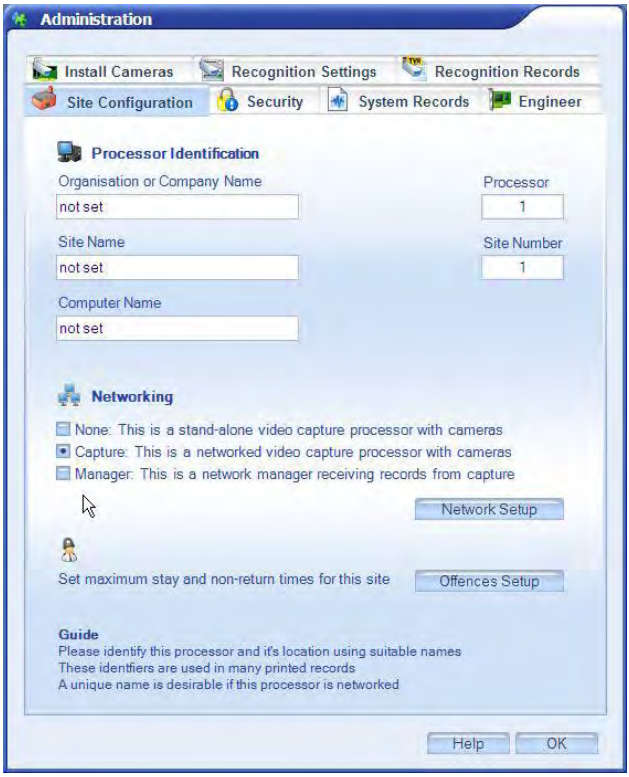
Select the camera(s) and group(s) you wish to manage and then choose the required action for the blue and yellow periods shown on the weekly grid. You can change the blue and yellow periods by dragging with the mouse across the grid.

Note the second message sign entry box will be enabled only if a two-line sign has previously been configured (located at Admin> Engineer>Sign/Serial/Text).

12. Networking

If you wish to create a network system then, as a first step, give each processor a unique processor number. This can be found on the *Engineer* tab in *Admin*.

Then choose *Capture* or *Manager* as required and press the *Network Setup button* (see below). Here you will need to add each processor that needs to communicate with this processor, together with the associated IP address.



Network Set Up

12. Networking (continued)

When creating a network system, the following settings will need to be configured:-

- User accounts (Capture & Manager)
- Camera Names (Capture & Manager)
- Group Names (Capture & Manager)
- Graphical Reports (Capture & Manager)
- Alerts (Capture & Manager)
- Schedules & Actions (Capture)
- Recognition Settings (Capture)

If required, Auto-correction would normally only be enabled on the capture processors and should be disabled at the Manager(s).

13. Troubleshooting

Vehicles Not Captured
If the system is not recognising vehicles, park a vehicle at the intended capture point and click the associated camera on the *Main Screen* to check the live image. The plate should have good contrast, be reasonably level in the picture and should be large enough to be read (a rectangular plate will be around a quarter of the total image width).

Remember that the same plate may not be captured again for a period of 1 minute – this default setting may be changed by navigating to *Admin>Recognition Settings* from the *Main Screen*.

Barrier Not Opening
If the barrier or gate is not opening for a vehicle, check the following:-

(i) Ensure the plate has been read correctly
(ii) Check the vehicle is in the correct group in the Database
(iii) Ensure that the group is correctly set to open the barrier for that group, by that camera at that time of day/day of week.

Databases Not Synchronised
For a networked system, any database updates performed at the Manager should automatically appear at the capture processor. If this does not happen, check for connectivity between all processors and that all firewalls are enabled in both directions.

End

Revision 3

VYSIONICS VORTEX

Vysionics VORTEX - Security & Access Control Solution

VORTEX ANPR

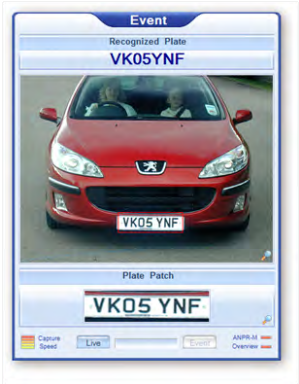
The Vysionics VORTEX ANPR (Automatic Number Plate Recognition) Access Control solution provides one of the most efficient ways of controlling traffic from a small car park to a major Access Control project with multiple entry and exit points. The system is capable of handling more than 4,000 cameras from 250 processors simultaneously in real-time. The VORTEX Access Control System uses state-of-the-art software to efficiently manage entry / exit traffic, traffic flow, journey time / dwell time as well as many other applications.

A typical VORTEX Access Control System would comprise of an ANPR camera, a number plate recognition computer with installed ANPR software engine, VORTEX Access Control application and optional barriers or variable messaging signs. The Vysionics Access Control software has been created by combining the industry leading Vysionics ANPR engine with sophisticated bolt-on modules for Access Control and Car Park Monitoring applications. The system is fully automated and operates 365 24/7 under all weather conditions.

Each window is designed to be clean, consistent, and informative with as much automation as possible. In normal operation, you can just observe the main screen which provides all the information you need.

Event

The event panel automatically displays each new vehicle on detection. The Infra Red plate patch image and full Overview recognition image may be enlarged by clicking the associated magnifier. To check the current live image from any camera, including networked cameras you can simply click the 'live' button.



In addition, when configured, other information such as current capture speed are also provided and whether the latest capture has recorded a movie-clip or additional overview images. If so, these can be viewed instantly by clicking on the record in the recent panel at the bottom of the main screen.

Cameras

Each time a vehicle is captured, the associated camera is automatically selected and its location image displayed in the cameras panel. As well as a street plan view, camera locations can also be displayed as a photo of the location.

For a closer look, the user may click the magnifier to display the image in full screen mode. In addition to a camera location name, each camera is also assigned to a unique ID. This allows the operator of a network server with multiple cameras to automatically see the location image no matter how large the system.

If a camera signal fails or no reads are reported to the sever, a warning icon (triangle) is displayed together with an optional audible alarm to alert the operator.

VYSIONICS VORTEX

Vehicle

Every vehicle captured is checked against the system database and any matches (white list/ black list) are automatically displayed in the vehicle panel. Report alarms are also checked and displayed together with any special message for this vehicle. The vehicle enquiry database is sophisticated and fully scalable. The database stores vehicle and driver details, complete with optional images to assist the operator when presented with a recognition event. The database is fully searchable by full or part plate (starting, ending, or containing certain characters) by group, or by any keyword such as name, company, vehicle, model or colour. Search parameters can be combined to create a very powerful search tool, simplifying tasks such as finding all vehicles of a certain make, model, or colour. Each time a vehicle is captured, the associated camera is automatically selected and its location image displayed in the cameras panel. As well as a street plan view, camera locations can also be displayed as a photo of the location. Whether you wish to maintain detailed records on tens of thousands of vehicles or just need to keep an up-to-date list of suspect vehicles in order to raise the alarm on detection, the database is a key part of VORTEX.

Home Screen 'Quick Reports'

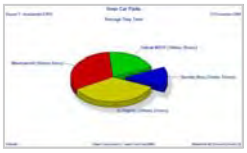
Quick Reports allows you to monitor any of your reports in real-time without having to leave the main screen. Any of the 64 plots from the 16 reports can be displayed here and Quick Reports is continuously updated with live data.

Comprehensive Reporting

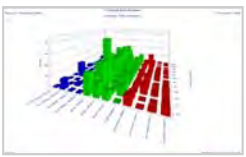
The Vysionics VORTEX system provides important benefits for data management and reporting. Our system provides comprehensive graphical reporting with all systems - for single cameras to multiple cameras. Up to 16 reports may be set and each can have up to four 'plots'.

Reports may be chosen from any of the following categories:

- Vehicle flow/count
- Average speed detection (if speed module installed)
- Average journey time (between two cameras)
- Average stay time
- Entry/exit data analysis
- Speed Analysis
- Journey time analysis
- Stay time analysis



Presentation



Charts may be displayed full-screen, printed or exported as bmp, jpg or png images. 3D bar charts can even be rotated and titled to ensure the best view of your data. All charts clearly show the % of recorded data available for the requested chart period, so you can ensure your reports are reliable.

Networked Systems

Our system is designed to be full scalable and will handle even the largest vehicle recognition system. We can accommodate more than 225 processors and 4,000 cameras simultaneously. We offer a full design service for networked system and would particularly recommend this service where network design and storage need careful planning to ensure success.

Review

Selecting any record in the recent list will take you to the review screen. Here single capture images or ANPR movies can be viewed together with any associated alarm or database information. ANPR movies may be played at a choice of speeds or stepped through frame by frame. When a single movie frame needs closer examination it may be enlarged, printed, and exported. The review screen also provides search capabilities which have been carefully designed and thought out to provide a very quick response, even when dealing with millions of records. Records may be searched by time, date, group, camera, plate text, (full, part, containing, ending) and also by event (speeding, stay time, and journey time).

When used together this provides a very powerful tool for simplifying complex searches such as finding al vehicles in a particular location at a particular time, all or vehicles with a partial number plate at a certain location between certain times. Whilst reviewing previous records, the ANPR recognition process remains unaffected and 'live; capture continues in the background.

View Site Maps

As an option, you can view specially drawn site maps that show an operator the position of the cameras and capture points, subject to availability.

Search and Compare

Charts may show live data in real-time or, by using the search facilities, compare data from up to four different periods. This makes it very easy to produce informative charts which might typically be used to:

- Identify car-park peak usage times (monthly)
- Discover the % vehicles exceeding the speed limit
- Check average car-park stay times (days of week)
- Compare rush hour journey times to other times.

Designed for Decades of Data

Charts may show any period from 1 hour to 24 years, with data stored in 5 minute increments. This means that even after 20 years, a chart can be displayed for a chose on hour period for any particular day. Search times remain typically less than a second.

VYSIONICS

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Wall-mounting steel enclosures
Selection guide



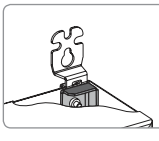

Specifications						Spacial S3D				
Dimensions (1)			Nº of doors	IP	Weight (kg)*	Plain door		Glazed door	Plain mounting plate	Silkscreened mounting plate (2)
						With mounting plate	Without mounting plate	Without mounting plate		
H	W	D				Page 2/8			Page 7/2	
300	200	150	1	66	3.02	NSYS3D3215P	NSYS3D3215		NSYMM32	
300	250	150	1	66	3.48	NSYS3D32515P	NSYS3D32515	NSYS3D32515T	NSYMM3025	
300	300	150	1	66	3.90	NSYS3D3315P	NSYS3D3315	NSYS3D3315T	NSYMM33	
300	300	200	1	66	4.50	NSYS3D3320P	NSYS3D3320	NSYS3D3320T	NSYMM33	
300	400	150	1	66	4.82	NSYS3D3415P	NSYS3D3415	NSYS3D3415T	NSYMM43	NSYMS43
300	400	200	1	66	5.60	NSYS3D3420P	NSYS3D3420	NSYS3D3420T	NSYMM43	NSYMS43
400	300	150	1	66	4.90	NSYS3D4315P	NSYS3D4315	NSYS3D4315T	NSYMM43	NSYMS43
400	300	200	1	66	5.00	NSYS3D4320P	NSYS3D4320	NSYS3D4320T	NSYMM43	NSYMS43
400	400	200	1	66	6.50	NSYS3D4420P	NSYS3D4420	NSYS3D4420T	NSYMM44	NSYMS44
400	600	200	1	66	10.50	NSYS3D4620P	NSYS3D4620	NSYS3D4620T	NSYMM64	NSYMS64
400	600	250	1	66	12.00	NSYS3D4625P	NSYS3D4625	NSYS3D4625T	NSYMM64	NSYMS64
500	300	200	1	66	7.50	NSYS3D5320P	NSYS3D5320	NSYS3D5320T	NSYMM53	NSYMS53
500	400	200	1	66	9.30	NSYS3D5420P	NSYS3D5420	NSYS3D5420T	NSYMM54	NSYMS54
500	400	250	1	66	10.20	NSYS3D5425P	NSYS3D5425	NSYS3D5425T	NSYMM54	NSYMS54
500	500	200	1	66	11.18	NSYS3D5520P	NSYS3D5520	NSYS3D5520T	NSYMM55	NSYMS55
500	500	250	1	66	12.06	NSYS3D5525P	NSYS3D5525	NSYS3D5525T	NSYMM55	NSYMS55
600	400	200	1	66	11.00	NSYS3D6420P	NSYS3D6420	NSYS3D6420T	NSYMM64	NSYMS64
600	400	250	1	66	12.00	NSYS3D6425P	NSYS3D6425	NSYS3D6425T	NSYMM64	NSYMS64
600	500	250	1	66	16.20	NSYS3D6525P	NSYS3D6525	NSYS3D6525T	NSYMM65	
600	600	200	1	66	14.00	NSYS3D6620P	NSYS3D6620	NSYS3D6620T	NSYMM66	NSYMS66
600	600	250	1	66	15.00	NSYS3D6625P	NSYS3D6625	NSYS3D6625T	NSYMM66	NSYMS66
600	600	300	1	66	17.00	NSYS3D6630P	NSYS3D6630	NSYS3D6630T	NSYMM66	NSYMS66
600	600	400	1	66	19.00	NSYS3D6640P	NSYS3D6640	NSYS3D6640T	NSYMM66	NSYMS66
600	800	300	1	66	25.50	NSYS3D6830P	NSYS3D6830	NSYS3D6830T	NSYMM86	NSYMS86
700	500	250	1	66	15.00	NSYS3D7525P	NSYS3D7525	NSYS3D7525T	NSYMM75	NSYMS75
800	600	200	1	66	21.00	NSYS3D8620P	NSYS3D8620	NSYS3D8620T	NSYMM86	NSYMS86
800	600	250	1	66	23.00	NSYS3D8625P	NSYS3D8625	NSYS3D8625T	NSYMM86	NSYMS86
800	600	300	1	66	25.00	NSYS3D8630P	NSYS3D8630	NSYS3D8630T	NSYMM86	NSYMS86
800	600	400	1	66	29.00	NSYS3D8640P	NSYS3D8640	NSYS3D8640T	NSYMM86	NSYMS86
800	800	250	1	66	30.00	NSYS3D8825P	NSYS3D8825	NSYS3D8825T	NSYMM88	
800	800	300	1	66	32.00	NSYS3D8830P	NSYS3D8830	NSYS3D8830T	NSYMM88	
800	1000	300	1	66	38.00	NSYS3D81030P	NSYS3D81030		NSYMM108	
800	1000	300	2	55	43.50	NSYS3D81030DP	NSYS3D81030D		NSYMM108	
800	1200	300	2	55	46.00	NSYS3D81230DP	NSYS3D81230D		NSYMM128	
1000	600	250	1	66	28.00	NSYS3D10625P	NSYS3D10625	NSYS3D10625T	NSYMM106	
1000	600	300	1	66	30.60	NSYS3D10630P	NSYS3D10630	NSYS3D10630T	NSYMM106	
1000	600	400	1	66	33.00	NSYS3D10640P	NSYS3D10640	NSYS3D10640T	NSYMM106	
1000	800	250	1	66	35.00	NSYS3D10825P	NSYS3D10825	NSYS3D10825T	NSYMM108	
1000	800	300	1	66	38.00	NSYS3D10830P	NSYS3D10830	NSYS3D10830T	NSYMM108	
1000	800	400	1	66	42.00	NSYS3D10840P	NSYS3D10840	NSYS3D10840T	NSYMM108	
1000	1000	300	1	66	46.00	NSYS3D101030P	NSYS3D101030	NSYS3D101030T	NSYMM1010	
1000	1000	300	2	55	46.00	NSYS3D101030DP	NSYS3D101030D	NSYS3D101030DT	NSYMM1010	
1000	1200	300	2	55	53.00	NSYS3D101230DP	NSYS3D101230D		NSYMM1210	
1000	1200	400	2	55	60.00	NSYS3D101240DP	NSYS3D101240D		NSYMM1210	
1200	600	300	1	66	37.00	NSYS3D12630P	NSYS3D12630	NSYS3D12630T	NSYMM126	
1200	600	400	1	66	42.00	NSYS3D12640P	NSYS3D12640	NSYS3D12640T	NSYMM126	
1200	800	300	1	66	45.00	NSYS3D12830P	NSYS3D12830	NSYS3D12830T	NSYMM128	
1200	800	400	1	66	49.00	NSYS3D12840P	NSYS3D12840	NSYS3D12840T	NSYMM128	
1200	1000	300	1	66	53.00	NSYS3D121030P	NSYS3D121030	NSYS3D121030T	NSYMM1210	
1200	1000	300	2	55	54.00	NSYS3D121030DP	NSYS3D121030D	NSYS3D121030DT	NSYMM1210	
1200	1000	400	2	55	61.00	NSYS3D121040DP	NSYS3D121040D		NSYMM1210	
1200	1200	300	2	55	64.00	NSYS3D121230DP	NSYS3D121230D		NSYMM1212	
1200	1200	400	2	55	90.00	NSYS3D121240DP	NSYS3D121240D		NSYMM1212	
1400	1000	300	2	55	80.00	NSYS3D141030DP	NSYS3D141030D		NSYMM1410	

(1) For other dimensions, see our aplication offer.
(2) In inverted use, the marking is inverted.

*Enclosure without mounting plate.

Wall-fixing brackets

Steel: **NSYAEFPFSC**
Stainless steel: **NSYAEFPFXSC**



Reinforcement for heavy loads

NSYAEFAHLBSC

Cable gland

Page **7/104**

Schneider Electric

VYSIONICS V101

Vysionics V101 ANPR Cameras

V101 ANPR Cameras

A new range of high performance ANPR cameras for a wide range of applications. These cameras provide the same high quality as our V102 range but at a very agreeable price point.

Available in both standard and dual versions, reliability and ease of installation are key features of the range.

Main Features

- High quality ANPR camera suitable for use with any of our ANPR processors or with a DVR
- Instant set up with external adjustment of zoom and focus
- Pulsed infrared illumination (as used in V102 Camera)
- High performance optical filtering for perfect images in full sun or vehicle headlights
- Sony CCD sensor with 620 TV line resolution
- Minimum illumination 0 lux (dual version 1 lux for colour overview images)
- Shutter speed fixed at 1/100,000th second ensures razor sharp images of moving vehicles
- Specially coated window rejects water droplets to ensure excellent images in poor weather
- Aluminium housing with stainless steel fittings
- Weatherproof junction box with interconnecting flexible steel conduit
- Choice of mounting adaptors, all with pan, tilt and roll adjustment

The V101 range of cameras are supplied with an array of accessories to simplify installation in a wide range of applications. The camera itself is factory-sealed and is supplied with pre-fitted flexible steel conduit to provide excellent protection for the local camera cables, and a neat, reliable installation every time. The cameras have external zoom and focus knobs to ensure the camera can be set up in seconds. To prevent tampering, particularly if the camera is mounted at a low level, a secure clamp and key are included.

A weatherproof junction box provides an ideal termination point for your power and video cable, and also serves as a test point during commissioning and servicing. Should you employ baluns for video transmission, these too can be accommodated within the junction box.

All these cameras connect with a three-way adjustment for setting pan, tilt, and roll. Roll adjustment is important for ANPR cameras since it allows the vehicle license plate to be set level in the image.

Just add the standard wall bracket, or the pole mount, which has industry standard 4" PCD fixings to enable mounting from a wide range of third party brackets and columns.

VYSIONICS V101

Dual Camera Version

V101 ANPR cameras employ special optical filtering to ensure that highly reflective vehicle registration plates are correctly exposed under all lighting conditions. Whilst this ensures our processors achieve the highest possible recognition accuracy, it does also mean that images from an ANPR camera are rather dark and lacking any colour information.

ANPR Image **Overview Image**

If you need additional colour images for each vehicle in order to assist in determining make, model, and colour, you will need to select on of our Dual cameras. These include both an ANPR camera plus an additional , high resolution Overview camera.

Our Overview cameras feature a Sony ExView sensor and offer very sharp, full colour images with 560 TV line resolution. Like the ANPR camera, the Overview camera has external adjustment of both zoom and focus.

The Dual camera will require some ambient illumination at night in order to obtain usable vehicle images.

Product Codes

Code	Model Description
V101-1	V101 Camera with 3-10 metre zoom
V101-2	V101 Camera with 10-20 metre zoom
V101-3	V101 Dual Camera with 3-10 metre zoom
V101-4	V101 Dual Camera with 10-20 metre zoom
V201	Standard wall bracket
V301	Pole mount

VYSIONICS

T: 01276 698 980
E: info@vysionics.com
www.vysionics.com

Alphanumeric, data driven, variable message signs

Variable message signs :: Character height– DD – Case Size (m^2) – No of displays – Number of characters

Variable message signs built around custom requirements with face designs supplied by the client.

Data driven VMS are to be communicated to via RS-232, RS-485, RJ-45 (TCP/IP) or wi-fi.

The signs can be factory programmed to integrate to any existing barrier and counting system, using any proprietary communications protocol as required.

The uniquely designed sign controller is based on a robust real time embedded operating system for maximum flexibility and reliability.

Market leading environmentally controlled enclosures. Manufactured using a number of different substrates, including aluminium, composite aluminium and steel. We use only 3M reflective vinyls in High Intensity Prismatic (HIP) reflective sheeting, which can incorporate any logos or colours. As a result, performance lives of up to 12 years can be expected, covering you for any failure against shrinkage, peeling, cracking or UV light fading

Alphanumeric displays show the real time numeric space availability of a car park. 4 character alphanumeric

VMS can also show FULL, whereas 6 character alphanumeric VMS show longer messages including CLOSED and SPACES

- 70mm – 4 characters
- 70mm – 6 characters
- 110mm – 4 characters
- 110mm – 6 characters

Sheriff Technologies Ltd.
Tel: 0191 230 4411
sales@sherifftechnologies.com
Company: 7135647

Alphanumeric, data driven, variable message signs

Variable message signs :: Character height– DD – Case Size (m^2) – No of displays – Number of characters

Type:	Data Driven
VMS character height:	70mm or 110mm
VMS display:	Any alphanumeric character in amber or red
Power consumption:	300mW typical average
Dimming:	Automatic intensity control
Light output:	8000 mcd maximum
Life:	100,000 hour operational life typical
Pixel Size:	10mm
LED/pixel:	2
Angle of view:	15 degrees
Viewing distance:	80 meters
Optical performance:	Conforms to TR2136
Operating temperature:	Range 0ºC - 50ºC

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Aluminium:	Grade NS4 H3 An alloyed non-heat treatable rolled aluminium sheet designed for general sheet metal work where higher mechanical properties are required together with a degree of formability. Each batch of aluminium used comes with a Certificate of Conformity, a requirement for the Highways Agency (supplied if requested on order).
Paint finish:	Trimite Two Pack Epoxy RAL 9005 semi-gloss We offer a manufacturer 15 year warranty on all paintwork provided this is maintained regularly over the same period.
Vinyl:	3M High Intensity Prismatic BS 8408:2005 D3 A2 V1 P1 LA 1.0 Suitable for left hand mount directional signage on 30 - 50mph roads Vinyls are all Highways Agency approved for the relevant roads.
Display screen:	Lexan Margard MR5e - Polycarbonate Sheet Premium grade, hardcoated, high optical quality Lexan polycarbonate sheet for building and vehicle safety & security glazing The Margard hardcoat gives improved abrasion and chemical resistance and maintains the UV protection of standard Lexan Exell D polycarbonate sheet
Gasket:	619-1629 - Sponge Rubber / Black PVC. Manufactured from PVC with embedded steel insert, bonded to sponge rubber sealing section (EPDM) Panel thickness 1-4mm
Locks and hinges appropriate to the construction of the sign enclosure	

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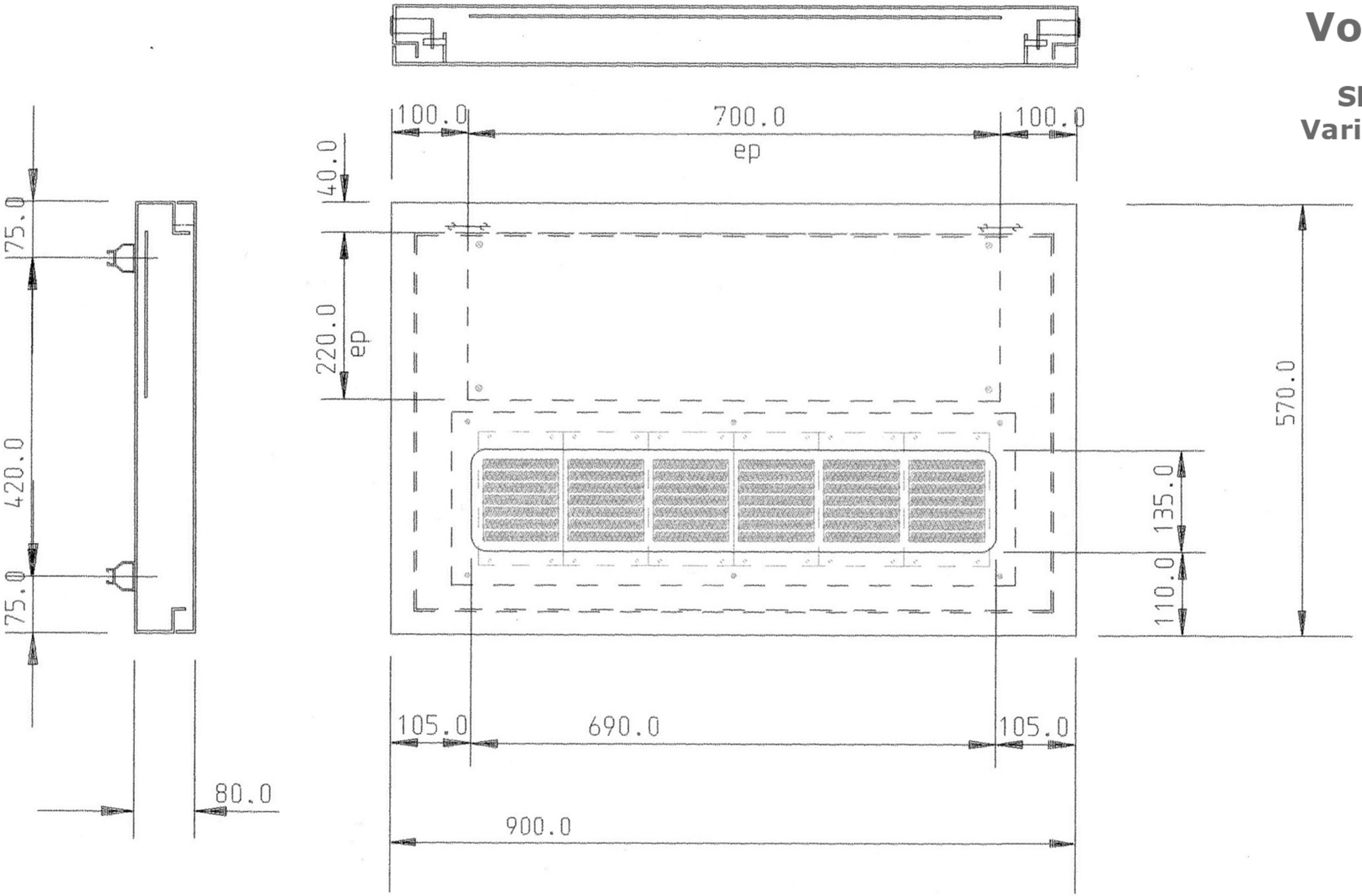
Company: 7135647

Vodafone Newark

Sherrif Technologies:
Variable Message Signage



vodafone sign

painted 693 grey

top hinged door

SKETCH NO.	
REV.	
DATE	
DRAWN BY	
CHECKED BY	

1 off

DrayTek

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Vigor 2860 ADSL/VDSL Router

SME

- Supports VDSL, ADSL, 3G/4G and Ethernet-based Broadband
- Supports either VDSL or ADSL, ideal if you have ADSL now and might get VDSL later
- VDSL compatible with BT Infinity™ ('FTTC')
- Support for G.INP & Vectoring (UK Models) - New!
- 3-WAN Simultaneous : VDSL/ADSL, Ethernet and 3G/4G (USB)
- Up to two USB 3G/4G modems can be used
- Wireless Management of compatible DrayTek APs - New!
- IPv6 Ready - See below for feature support
- High performance - up to 200Mb/s firewall throughput
- 802.11n Wireless LAN (Vigor2860n / 2860n-plus / 2860ac)
- Dual-band (2.4/5Ghz) simultaneous wireless (2860n-Plus & 2860ac)
- Extended DFS frequency

Product Code/EAN	Description
V2860-K / 4716779074185	Vigor 2860 (UK/IE)

range in 5Ghz band (2860n-Plus & 2860ac)
- DrayTek Firewall with huge flexibility
- 6-Port Gigabit Ethernet LAN Switch
- Temperature Monitoring (optional Thermometer)
- Wireless Guest Portal
- Multiple Private LAN Subnets
- SMS (Text Message) Alert
- VLANs (Port or 802.1q based)
- IGMP v3 MultiCast
- Includes SmartMonitor software
- Content Filtering (by keyword, data type or category)
- Ethernet and WiFi VLANs (common/distinct groups)
- LDAP Integration for VPN and user access
- QoS (Layer 2&3, 802.1p & TOS/DCSP)
- Up to 32 VPN tunnels for LAN-to-LAN or teleworkers
- VPN Trunk/Backup to remote sites
- SSL VPN - Tunnel or Proxy (5 users)
- USB Port for Printer, Logs or 3G Modem
- Optional VigorCare Available

Overview | VPN/SSL | VLAN | User Mgt. | WiFi | VoIP | 3G/4G | NAS | Specification | Screenshots | Accessories

Vigor 2860 Series VDSL/ADSL Router Firewall

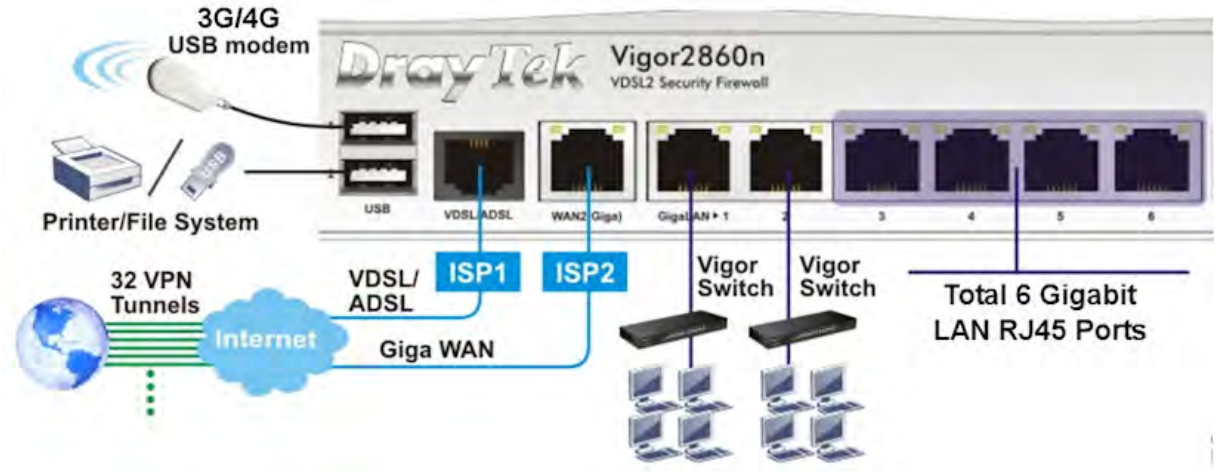
The Vigor 2860 series (including the Vigor 2860n and Vigor 2860Vn) is our new router/firewall which can support either ADSL or VDSL (BT Infinity™/FTTC). This makes the Vigor 2860 ideal ideal for users with ADSL now who might upgrade to VDSL later. Alternative WAN ports can insead provide connectivity to Ethenet feeds, secondary xDSL modems or a 3G/4G cellular service using a supported USB adaptor. This latest router series includes support for professional features such as VLAN tagging, Gigabit Ethernet built-in WiFi ('n' models).

Packed with professional-level features, the Vigor 2860 series offers truly comprehensive DSL connectivity and security. Compatible with all UK variants of ADSL (including ADSL2+ and Annex M), VDSL and VDSL2, the Vigor 2860 can also be used for cable-modem, leased line and EFM applications using its Gigabit Ethernet WAN port. On VDSL, the Vigor 2860 series supports the very latest services for speeds up to 80Mb/s (depending on line quality and length).

A 6-port Gigabit Ethernet switch on the LAN side provides high speed connectivity for your server, other local PCs or for uplink to a larger Ethernet switch. Comprehensive security features include content filtering, web application controls and an object based firewall management system.

Runs on either ADSL or VDSL

The Vigor2860's built in DSL interface will connect to either an ADSL or VDSL line. If you have a second line (of either type) you can add an additional modem (or your existing modem from your other line) to the Vigor2860's Ethernet WAN ports. You can set the two lines up in load balancing mode, where traffic is split across both of them, or into failover mode, where the other DSL line only kicks-in if your primary DSL line fails (or vice versa). ADSL makes a particularly good method of failover for VDSL because they are delivered differently. VDSL service is provided and powered by a cabinet in your street - that's where the line terminates. ADSL service, on the other hand, comes all the way from your local exchange, which coul be miles away and is powered from there. That means that if your street's VDSL cabinet is damaged, its DSLAM fails or you lose power to your street, you lose VDSL, but your ADSL line comes via a different method and route, so it's less likely that both would be affected. These failover methods can also be used instead for the other WAN ports on the router (Ethernet or 3G).



Robust & Comprehensive Firewall

Security is always taken seriously with DrayTek routers. The firewall protects against attacks including DoS (Denial of Service) attacks, IP-based attacks and access by unauthorised remote systems. Wireless, Ethernet and VPN are also protected by various protection systems. The latest ('Version 3') DrayTek object-based firewall allows even more setup flexibility than ever, enabling you to create combinations of users, rules and restrictions to suit multi-departmental organisations. The Vigor 2860 now also allows selective direction firewall rules of LAN to WAN, WAN to LAN or LAN to VPN. In addition, QoS (Quality of Service Assurance) can now be selectively applied to specific users.

IPv6 - Next Generation Internet Routing

The Vigor 2860 supports IPv6 - the successor to the current IPv4 addressing system that has been used since the Internet was first created. IPv4 address space is full up and IPv6 allows for much more efficient routing and a larger address space. IPv6 is supported both from your own ISP, but if your ISP does not (yet) support IPv6, the Vigor 2860 also supports IPv6 broker/tunnel services to provide IPv6 access using either TSPC or AICCU via 3rd party IPv6 providers. To learn all about IPv6, you can get our detailed guide to IPv6 here.

IPv6 on the Vigor 2860 series provides the following features:

- Operation on any one of the WAN ports (ADSL/VDSL, Ethernet or 3G)
- Connectivity to direct native IPv6 ISPs
- Built-in tunneling to 3rd party IPv6 brokers supporting TSPC or AICCU methods
- Default stateful firewall for all IPv6 LAN Clients/Devices
- DHCPv6 Client or Static IPv6 Client
- DHCPv6 & RADVD for client configuration
- IP Filtering Rules
- QoS for IPv6 with DiffServ
- Router Management over IPv6 (Telnet/HTTP) with IPv6 Access List
- Simultaneous (concurrent) operation with IPv4 ("Dual-Stack")
- Other router features are available on IPv4 only currently

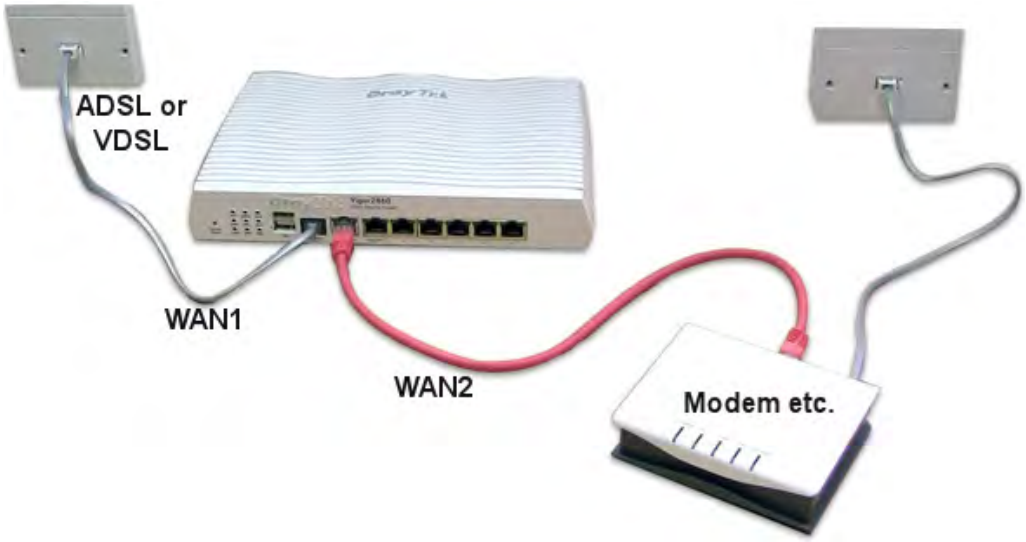
Web Content Filtering

The content control features of the Vigor 2860 allows you to set restrictions on web site access, blocking download of certain file or data types, blocking specific web sites with whitelists or blacklists, blocking IM/P2P applications or other potentially harmful or wasteful content. Restrictions can be per user, per PC or universal. Using DrayTek's GlobalView service, you can block whole categories of web sites (e.g. gambling, adult sites etc.), subject to an annual subscription to the Globalview service, which is continuously updated with new or changed site categorisations or sites which have become compromised (such as infected with Malware). A free 30-day trial is included with your new router.

WAN Load Balancing & Backup

The Vigor 2860 features three methods of WAN connectivity - ADSL/VDSL, Ethernet (Gigabit, switchable with LAN6) and a USB port for connection of a 3G modem. The Ethernet port can connect to a second ADSL modem (e.g. Vigor 120), a cable modem or any other Ethernet-based Internet feed. The multiple WAN interfaces can be used either for **WAN-Backup** or **load balancing**. Load-balancing or failover supports IPv4 only currently.

WAN-Backup provides contingency (redundancy) in case of your primary ADSL line or ISP suffering temporary outage). Internet Traffic will be temporarily routed via the secondary Internet access. When normal services is restored to your primary ADSL line, all traffic is switched back to that.



The Vigor 2860 can connect directly to an ADSL or VDSL line. WAN2 is a Gigabit Ethernet port and can connect to a secondary modem/connection, such as another DSL modem.

If you don't have VDSL or ADSL, the Ethernet WAN port can instead be used as your primary/only Internet connection (using NAT) so the same router can be used regardless of whether you have xDSL or Ethernet Internet connections currently.

The USB port provides Internet connectivity (main, backup or load balanced) by connecting to a compatible USB modem (or cellphone) for access to the high speed **3G cellular networks** from UK providers such as Vodafone, O2, 3 and EE. If you don't have ADSL at all, the USB/3G access method can be used as your primary/only Internet connection, ideal for temporary locations, mobile applications or where broadband access is not available.

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