



AUTOMATIC GATES



GUIDANCE FOR **HOME OWNERS**

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INSTALLING AN AUTOMATIC GATE?

ESSENTIAL GUIDANCE FOR HOMEOWNERS

Do you need an automatic gate?

If you are considering scaling up your home security first of all you need to be clear as to whether an automated gate really is the best solution. There is no doubt that an automated gate can make life a lot easier by offering the convenience of not having to get out of the car to open the gate - particularly in the pouring rain! And of course if you have children or pets, there is considerable peace of mind in knowing that they are unable to wander from the confines of the property. So always think carefully as

to precisely what your security needs are since a manually operated gate may sometimes deliver the desired level of protection without the additional costs associated with an automated gate. There is little point in investing in an automated gate if it is not going to be used on a regular basis. Equally if a gate is required to allow multiple cars or people through without the requisite security checks, an automated gate will be adding little to the overall security of the property.

Appearance

Obviously, any homeowner is keen to ensure that the gates they install will enhance the overall appearance of the property.

Open infill or solid?

If the gate is less than 1.8 metres high then there is little point in paying to install a solid gate as in terms of security, it can easily be scaled.

A gate over 1.8 metres that is solid will of course effectively screen the property so any opportunist burglar will be unable to view any 'assets' – but equally, if a burglar does manage to gain access they won't be seen and can therefore continue to operate unlawfully without fear of reprisal!

Style matters

There is no point installing a gate, which is not in keeping with the style (or even the colour) of the property. Should the gate be modern or traditional? Constructed of steel or timber? Given the investment an automated gate represents you need to make sure that the fabric of the gate is designed to deliver a long service life. If timber is your preference, then make sure you select a hardwood timber such as oak, which is more naturally durable and resistant to decay, fungal or insect attack. When selecting a hardwood timber is it important to check what service life guarantee is provided as this can vary according to the type of timber selected. If cost dictates that you need to opt for a softwood timber gate, then make sure it has been adequately protected so that it is capable of withstanding the elements over a sustained period of time. Particular attention should



be paid to the posts, which if affected by rot or insect attack, could seriously compromise the gate's structural integrity.

If a steel gate is more in keeping with your outside space, always insist on a gate that features a hot dip galvanised finish to protect against rust. Ideally, the gate should be galvanised and then polyester powder coated to enhance the level of protection. If your house is sited close to the sea, the gate would also need to feature a specialist marine coating. Aluminium or stainless steel gates do not require a coating for protection purposes but aluminium can be polyester powder coated to create a gate in your preferred choice of colour.

A good compromise between a timber or steel gate is one that features a strong steel frame clad with timber to replicate the good looks and rustic charm of a wooden gate.

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Type of gate

Automated gates come in a variety of

configurations: swing, sliding, bifolding or telescopic.

For a residential property, the most likely choice will be a swing gate – in either a single or double leaf (pair of gates) format. A sliding gate may be considered if the driveway is very wide or if space is at a premium and there is insufficient room for a swing gate to operate its full open and close cycle.

Automated swing gates offer the most cost effective solution and are the easiest of all automated gates to install. However, a swing gate will be more adversely affected by windy conditions so care needs to be taken to ensure that wind load factors are taken into consideration. A swing gate may also be problematic if the driveway is sloping.

Recommended type of gate operator'

A swing gate functions using either a ram or underground operator. Ram operators will ultimately offer the most 'powerful' solution to opening and closing the gates but because of the crushing hazards associated with this style of operator (especially if the gate is opening against a solid object) care must be taken to incorporate the necessary safety features to avoid an accident. Swing gates fitted with a ram operator are also easier to maintain because the operating equipment is not buried underground and is therefore easier to access.

An underground operator clearly has the advantage of not detracting from the aesthetic charm of the actual gate but be aware



of the expense associated with installing this type of operator, in addition to the added complications in terms of maintenance due to the limited access.

A sliding gate is typically

operated by a rack and pinion mechanism. Attention should be paid to the support rollers and these must be made in such a way as to reduce a drawing in hazard. Both the support rollers and the

motor drive should feature some kind of physical protection around the support posts along with physical stops to prevent overrun.

Site conditions

When installing a gate the site should ideally be level throughout the travelling distance of the gate. To prevent possible attempts by an intruder, the gap under the gate should not be more than 100mm. If this cannot be achieved further safety devices may be required to ensure the gate's safe operation and to prevent reducing gaps under the gate from creating a further hazard.

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Method of entry and exit

There are a variety of methods, which might be employed to gain access to premises using automated gates. The degree of security provided by the gate will be largely dictated by the method of entry and this in turn will have an impact on the safety requirements of the gate, see the table below.



| Type of Entry / exit | Control over security | Safety required |
|--|-----------------------|-----------------|
| Ground loop | 1 | Maximum |
| Push button | 1 | Maximum |
| Radio remote control* | 2 | Maximum |
| Digital keypad* | 2 | Maximum |
| Coded card reader | 3 | Maximum |
| Audio/video intercom | 3 | Maximum |
| Biometric card reader | 4 | Maximum |
| Automatic Number Plate Recognition | 4 | Maximum |
| Automatic Number Plate Recognition with secondary security check (e.g biometric) | 5 | Maximum |
| Guard house with remote control intercom | 4 | Maximum |
| Guard house with hold to run control | 4 | Minimum |
| Guard house with hold to run and airlock | 5 | Minimum |
| Time clock | 1 | Maximum |

KEY: 1 – None 2 – Minimal 3 – Fair 4 – Good 5 - excellent

* Typical for residential installation

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Safety recommendations

Before an automated gate is installed at your home, a full risk assessment should be undertaken by the installer, to identify all the potential risks associated with the gate. The installer should then put in place measures to eliminate or substantially reduce the likelihood of an automated gate accident occurring.

All automated gates should be installed with at least two different types of safety devices / features to protect gate users from the risk of injury or worse, as a result of becoming trapped by the gate. As the leading and original campaigner for improved standards of safety for automated gates, Gate Safe recommends the use of photocells (or light curtains/ laser scanners) and pressure edges on **all** gates that are automated. However, the person who takes responsibility for installing these devices must possess the appropriate knowledge to understand WHERE the devices should be sited to mitigate or eliminate the risk. The installer

must also have a clear understanding of how to select the correct pressure edges to ensure that they are capable of effectively stopping and reversing the gate when an object / person is detected.



Additional factors influencing gate safety

In addition to the general automated operation of the gate and the risks associated with this, there are some physical factors pertaining to the gate itself or the siting of the gate, which may influence its overall safety.

If the gate is not solid (whether it is a swing or sliding gate), mesh is frequently used, as the infill for the gate. This poses a risk in that people may try and climb the gate or reach through the mesh. If someone reaches through the mesh, the risk of entrapment must be considered. Similarly there is a need to safeguard against the risk of someone slipping and falling whilst the gate is in operation.

Vertical pales featuring on any automated gate are required to feature a maximum gap of 100 mm between the pales to minimise the risk of whole / part body entrapment.

Swing gate hinges must be fitted so that there are no reducing gaps as the gate opens and closes. If there are closing gaps, these should be protected by shrouds or electronically (i.e. using pressure edges). The failure of a swing gate hinge must not create a situation which could potentially lead to the gate falling i.e. the failure of one component should not jeopardise the safety of the entire gate. This can be mitigated by adding three hinges and a gate tether.

Gate posts must be sufficiently strong and correctly bedded into the ground to support the overall gate structure. The foundations into which the gate is installed must be adequate and consistent with the specific ground conditions for the site. For example a sandy type soil will require a deeper foundation than a stony soil.

The siting of any control equipment (push button or key switch) should be such that a person cannot put their arm through the gate to start the operation. Control equipment should always be (on both sides of the gate), a minimum of 1500 mm away from the gate or shrouded to prevent activation from the wrong side of the gate.

Objects which might obscure the photocells' ability to detect movement will also influence the operation of the gate. Snow, a build up of leaves or general debris can therefore represent a further potential safety hazard by sending a false message to the gate controller and not allowing the gate to move.

Automated gates should feature a lockable IP rated control cabinet, visual and / or audible warnings and signage. The electrical connection into the mains must be tested by an electrician qualified to 19th edition of BS EN 7671, with at least three years experience and fitted in accordance with Part P of Building Regulations 2000 for domestic installations.

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Finding an installer

Always seek out a Gate Safe Aware trained installer who has undergone the specialist training required to understand the protocol required to ensure a safe and compliant automated gate installation. Suitably trained installers can be found on the Gate Safe Aware installer register featured on the Gate Safe website (www.gate-safe.org).

Once the gate has been installed (it must be CE marked to demonstrate that it legally complies with the EU Machinery Directive). Be aware that just because a gate is CE marked, it is not necessarily safe. The installer should

provide a handover pack that will include:

- Location of control cabinet keys and manual release keys
- Details of how to put the gate into manual operation
- Details of key contacts
- A maintenance log book

In addition to this you should also be given a comprehensive briefing on how to use the gate, witness a demonstration on how to place the gate in manual operation and be provided with details of the weekly checks that need to be carried out to ensure the gate continues to operate correctly and safely.

Maintenance matters

As the owner of an automated gate, you are technically the owner of a machine, which just like your car requires routine maintenance. The gate should be checked over by a qualified installer every six months as a minimum. Most reputable installers will supply an automated gate with a warranty of a minimum of 12 – ideally 24 – months covering parts and labour.



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Legal Responsibilities

Homeowners:-

- Any residential complex that are managed by landlords, managing agents etc are subject to Health and Safety legislation
- Supply of Machinery (safety) Regulations 2008
- Health and Safety at Work Act 1974
- The Workplace (health, safety and welfare) Regulations 1992
- Provision and Use of Work Equipment Regulations 1998
- Owners of gates on privately owner residential land do not have the Health and safety legislation but the installer will always have to ensure that he is complying with SMSR 2008.

Installer:

- Supply of Machinery (safety) Regulations 2008
- Health and Safety at Work Act 1974
- The Workplace (health, safety and welfare) Regulations 1992
- Provision and Use of Work Equipment Regulations 1998

Important contacts

Gate Safe www.gate-safe.org / info@gate-safe.org / 01303 840 117

Trading Standards: www.tradingstandards.gov.uk/

RoSPA www.rospa.com/campaigns-fundraising/current/electric-gates/

Health and Safety Executive: www.hse.gov.uk/work-equipment-machinery/powerd-gates/introduction.htm

Glossary of terms

For a full glossary of automated gate related terms, visit the Gate Safe website, www.gate-safe.org.

Gate Safe working together with IOSH

GATE SAFE IS PROUD TO BE SUPPORTED BY THE FOLLOWING ORGANISATIONS



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